CAPIZZI LAW OFFICES

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February 12, 2026

Submittal for the Public Hearing of February 25, 2026

Via Hand Delivery
Amanda Booth – Secretary
Borough of Tenafly Planning Board
100 Riveredge Road
Tenafly, NJ 07670

Re: Knickerbocker Country Club – Tenafly PB (the "Applicant")
188 Knickerbocker Road; Block: 503, Lot 1 (the "Property")

Dear Ms. Booth:

As you are aware, this office represents the above referenced Applicant in connection with its application before the Tenafly Planning Board seeking Preliminary and Final Site Plan Approval, Major Soil Movement Permit and Major Tree Removal Permit to permit the Applicant to undertake the following work at the Property: (1) construction of short game area along the North East corner of the Property, (2) construction of new tennis, padel ball and pickleball courts along the Westerly portion of the Property along Knickerbocker Road, (3) construction of a junior golf area along the South Western portion of the Property proximate to proposed tennis courts, (4) modification of existing pool area to provide wet play area/kids pool, and (5) associated grading, drainage, lighting and landscaping improvements.

To that end, enclosed please find the following for consideration during the February 25, 2026 hearing:

1. Borough of Tenafly Planning Board Site Plan Review Application with Rider and Checklist for Determining Completeness of Application for Development attached thereto (18 copies);
2. Borough of Tenafly Soil Movement Permit Application (18 copies);
3. Borough of Tenafly Tree Removal Permit Application (18 copies);
4. Engineering Plan prepared by Boswell Engineering consisting of twenty-five (25) sheets dated October 24, 2024 and last revised as of January 14, 2026 (18 copies);
5. Stormwater Management Report prepared by Boswell Engineering dated July 15, 2025 and last revised as of November 17, 2025 (4 copies);

6. Landscape Plan prepared by KDC Architects consisting of nine (9) sheets dated July 26, 2024 and last revised as of October 10, 2025 (18 copies);
7. Tree Removal Correspondence prepared by Arbor Hill Tree Service, LLC dated August 27, 2025 (18 copies);
8. Historical Zoning Board of Adjustment resolution dated February 3, 2025 granting Amended Preliminary and Final Site Plan Approval to renovate and expand the existing Clubhouse (18 copies); and
9. Historical Planning Board Resolutions:
   - Minor subdivision approval dated December 8, 2021 (18 copies);
   - Site plan and conditional use approval dated September 9, 2015 (18 copies);
   - Waiver of site plan approval dated June 13, 2007 (18 copies); and
   - Site plan and conditional use approval dated March 21, 1990 (18 copies).

This letter shall also confirm this matter is scheduled to be heard before the Tenafly Planning Board on Wednesday, February 25, 2026, at 7:30pm.

Thank you.

Very truly yours,

Gloria Duby

Gloria Duby, Paralegal

MGC/gd
Enclosures
cc: **Via Overnight Mail w/ Enclosures**
Jeffrey Zenn, Esq. – Board Attorney
David Hals, P.E. – Board Engineer
David Novak, P.P. – Board Planner

BOROUGH OF TENAFLY
PLANNING BOARD
SITE PLAN REVIEW APPLICATION

Application No. PB# 1- _____ Date: _____
Street Address: 188 Knickerbocker Road, Tenafly NJ 07675
Block: 503 Lot: 1 Tax Map Page: _____
Applicant: Knickerbocker Country Club c/o Matthew G. Capizzi, Esq.
Phone Numbers: Business: 201-266-8300 Home: _____
Is Applicant Owner? xx Or Contract Purchaser? _____ Other _____
Name of Attorney: Matthew G. Capizzi, Esq. Phone: 201-266-8300
Address: 205 Fairview Avenue, Westwood NJ 07675
Name of Engineer: Jeffrey Morris, P.E. Phone: 201-641-0770
Name of Architect: Mark Diedrich, A.I.A. Phone: 678-244-6270 ext. 207

YES	NO	** APPLICANT SEEKS APPROVAL OF FOLLOWING**
xx		SITE PLAN – NO VARIANCE
		SITE PLAN – VARIANCE REQUIRED
		CONDITIONAL USE – NO VARIANCE REQUIRED
		MAJOR SUB-DIVISION
		MINOR SUB-DIVISION
		SUB-DIVISION –VARIANCE
		COMBINE OR MERGE LOTS
		INFORMAL REVIEW
		OTHER

GENERAL INFORMATION

Present Use Golf Facility **Non-Conforming?** No.
Proposed Use Same as Present. **Conforming Use?** Yes.
Existing Structure? Yes. **To Be Razed?** No. **To Be Improved?** No.
New Structure Proposed? No.
Is Fronting Street Improved? Yes. **Corner Lot?** Yes. **Other?** _____
Prior Applications/Appeals on this Property? xx **Yes** _____ **No**
Explain: Please refer to cover later dated February 13, 2026 attached hereto with the application.

APPLIED	APPROVED	***OTHER APPROVALS REQUIRED***
		Bergen County Planning Board Will be submitted should the application be approved by the Board
		B.C. Soil Conservation Will be submitted should the application be approved by the Board
		N.J. Dept. Environmental Protection
		Tenafly Board of Health
		Tenafly Board of Adjustment
		Tenafly Mayor and Council
		Other

Date Application Accepted _____ Date of Public Hearing _____ Original Decision Date _____
Extension Date If Any _____ Date If Withdrawn _____
Date Action Taken By Board _____ Approved _____ Yes _____ No
Filed with Planning Board _____ Filed with Board of Adjustment _____

Revised 6/2023

SITE PLAN REVIEW APPLICATION

APPLICATION NO. PB#1-_____ DATE: _____
STREET ADDRESS 188 Knickerbocker Road, Tenafly NJ 07675
BLOCK 503 LOT 1 TAX MAP PAGE _____

Describe Proposal See attached Rider

SITE DIMENSIONS:
Street Frontage 1,162.4 Ft.
Average Depth 940.0 Ft.
Width @ Front Setback Line 1,156 Ft.
Paved Width-Street 33.5 Ft.
Total Land Area 1,038,035 Sq. Ft.

SITE IMPROVEMENTS:
Total 1st Fl. Area of All Existing Buildings & Structures 29,273 SF.
Proposed – Additions to Existing Buildings/Structures 0 SF.
Proposed –New Buildings and/or Structures N/A SF.
Total 1st Floor Area –After Completion of this Proposal N/A SF.
Percent of Land Coverage 2.82 %
Total Floor Space – All Floors 83,050 SF.
Total On-Site Parking Spaces: 113 Off Site: _____

Proposed Uses Within All Buildings: _____

Zoning District Classification: R-20
Existing Variances? xx Explain: Please see attached Historical Borough of Tenafly Zoning Board of Adjustment resolution dated 2/3/2025 granting Amended Preliminary and Final Site Plan Approval.
New Variance(s) Requested? No. If YES, Attach Variance Application.

Check The Following Utilities That Are Available To The Site From Public Street Or Public Right-Of-Way:

xx Sanitary Sewer	xx Storm Sewers	xx Water Service
xx Gas Service	xx Electric Service	xx Telephone Service
xx CATV Hookup	_____ Other	

Maps Submitted With Application: Please refer to cover later dated February 13, 2026 attached hereto with the application.
Maps Prepared By: _____
Note Any Other Information Regarding Application Here: _____

Has Applicant Reviewed This Proposal With Bergen County Planning Board Or Other Required Jurisdiction? No. If So, Explain Status: _____

NOTE: Attach This Form To General Application Form And Attach The Site Plan Requirements Check List And Affidavit As To Ownership. If Variance Is Requested Also File Variance Application.

David Oaten, Treasurer of Knickerbocker Country Club
Print Applicant's Name

Applicant's Signature

Revised 6/2023

Knickerbocker Country Club
188 Knickerbocker Road
Block 503, Lot 1
Rider to the Borough of Tenafly Planning Board Site Plan Review Application

Describe Proposal:

The Applicant seeks Preliminary and Final Site Plan Approval, Major Soil Movement Permit, and Major Tree Removal Permit to permit the Applicant to undertake the following work at the Property: (1) construction of short game area along the North East corner of the Property, (2) construction of new tennis, padel ball and pickleball courts along the Westerly portion of the Property along Knickerbocker Road, (3) construction of a junior golf area along the South Western portion of the Property proximate to proposed tennis courts, (4) modification of existing pool area to provide wet play area/kids pool, and (5) associated grading, drainage, lighting and landscaping improvements.

SECTION 706B (4)

CHECKLIST FOR DETERMINING COMPLETENESS OF APPLICATION FOR DEVELOPMENT
LAND DEVELOPMENT REGULATIONS
BOROUGH OF TENAFLY, NEW JERSEY

CHECKLIST No. 4 - PRELIMINARY AND FINAL SITE PLAN

An application for development shall not be considered complete until all the material and information specified below has been submitted unless, upon receipt of a written request from the applicant, a specific requirement is waived by the municipal agency. The request for waiver shall accompany the application and shall be granted or denied within 45 days of receipt of said request.

Name of Applicant KNICKERBOCKER LLC. Application No. _____

Block 503 Lot(s) 1 Date Filed _____

REQUIRED DATA AND INFORMATION

C-Complete
I-Incomplete
NA-Not Applicable
WR-Waiver requested

	C	I	NA	WR	Comments
1. Completed application form twenty-four (24) copies.	[✓]	[ ]	[ ]	[ ]	
2. Filing fee (See Article VI).	[✓]	[ ]	[ ]	[ ]	
3. Twenty two (22) black or blue on white prints of all maps.	[✓]	[ ]	[ ]	[ ]	
4. Twenty two (22) copies of all other documents	[✓]	[ ]	[ ]	[ ]	
5. One (1) copy of the Checklist completed by the applicant.	[✓]	[ ]	[ ]	[ ]	
6. Completed County Planning Board application form (in triplicate) and County filing fee if the County Planning Board approval is required.	[ ]	[ ]	[ ]	[ ]	
7. Certified list of owners and block and lot number of properties located within 200' of the tract boundary.	[✓]	[ ]	[ ]	[ ]	
8. All maps signed and sealed by a licensed New Jersey Professional Engineer or Registered Architect.	[✓]	[ ]	[ ]	[ ]	
9. Name of tract or development.	[✓]	[ ]	[ ]	[ ]	
10. Tax map sheet, (w/ revision date), block & lot numbers.	[✓]	[ ]	[ ]	[ ]	
11. Date prepared and date(s) of revision(s).	[✓]	[ ]	[ ]	[ ]	
12. Plat scale not less than 1" = 40'.	[✓]	[ ]	[ ]	[ ]	
13. Graphic scale.	[✓]	[ ]	[ ]	[ ]	
14. Reference meridian.	[✓]	[ ]	[ ]	[ ]	
15. Maximum Sheet Size: 24" x 36".	[✓]	[ ]	[ ]	[ ]	

	C	I	NA	WR	Comments
16. Name, address, and license number of person preparing plat.	[✓]	[ ]	[ ]	[ ]	
17. Name and address of record owner.	[✓]	[ ]	[ ]	[ ]	
18. Names and address of applicant, if other than owner.	[✓]	[ ]	[ ]	[ ]	
19. Certification that applicant is owner or his authorized agent or that owner has given consent to file under an option agreement.	[ ]	[ ]	[ ]	[ ]	
20. Key map (scale: not less than 1" = 400') showing entire tract and its relation to surrounding area, including locations and names of principal roads.	[✓]	[ ]	[ ]	[ ]	
21. Names of owners of properties located within 200' of the tract.	[✓]	[ ]	[ ]	[ ]	
22. Signature block for signatures of Chairman and Secretary of the Planning Board and the Borough Engineer	[✓]	[ ]	[ ]	[ ]	
23. Existing property lines and other site lines, with bearings and distances.	[✓]	[ ]	[ ]	[ ]	
24. Zone district(s) and identification of zone boundaries located on or adjoining the property.	[✓]	[ ]	[ ]	[ ]	
25. Area of the lot in square feet and acres.	[✓]	[ ]	[ ]	[ ]	
26. Front, rear, and side building setback lines as required by the zoning regulations.	[✓]	[ ]	[ ]	[ ]	
27. All structures located within 200' of the tract.	[✓]	[ ]	[ ]	[ ]	
28. All existing and proposed structures on the tract with setback distances.	[✓]	[ ]	[ ]	[ ]	
29. Right-of-way lines, widths, and names of all existing streets adjoining the property.	[✓]	[ ]	[ ]	[ ]	
30. Location and widths of all other existing and proposed rights-of-way and easements, the purpose of any easements and the text of any restrictions applicable to same.	[✓]	[ ]	[ ]	[ ]	
31. Location on the property of existing and proposed:					
a. watercourses and other drainage courses.	[✓]	[ ]	[ ]	[ ]	
b. water supply and sewage disposal systems.	[✓]	[ ]	[ ]	[ ]	
c. culverts and/or storm drains with sizes.	[✓]	[ ]	[ ]	[ ]	
d. wooded areas.	[✓]	[ ]	[ ]	[ ]	
e. rock outcroppings.	[✓]	[ ]	[ ]	[ ]	
32. Location within 200' of the property of existing					
a. watercourses and other drainage courses.	[✓]	[ ]	[ ]	[ ]	
b. bridges.	[ ]	[ ]	[✓]	[ ]	
c. culverts and/or storm drains with sizes.	[✓]	[ ]	[ ]	[ ]	

	C	I	NA	WR	Comments
33. Certification from the Tax Collector that all taxes and assessments for local improvements on the property have been paid through the most recent installment date.	[ ]	[ ]	[ ]	[ ]	
34. Environmental Impact Statement for sites over 5 acres in size pursuant to Section 724.	[ ]	[ ]	[ ]	[✓]	
35. Existing and proposed contours at minimum 2' intervals when new buildings or parking areas are proposed. Contours shall extend at least 50' beyond the property.	[✓]	[ ]	[ ]	[ ]	
36. Elevations at corners of all proposed buildings and paved areas and at property corners.	[✓]	[ ]	[ ]	[ ]	
37. All flood hazard areas, lakes, ponds, marshes, bogs, swamps and streams.	[✓]	[ ]	[ ]	[ ]	
38. Freshwater wetlands including transition areas delineation or an affidavit by a qualified person stating that no wetlands on the property exist.	[ ]	[ ]	[✓]	[ ]	
39. If wetlands or transition areas are located on the property, the applicant shall submit one of the following:					
(1) A Freshwater Wetlands Permit from D.E.P.	[ ]	[ ]	[✓]	[ ]	
(2) A Letter of Exemption from D.E.P.	[ ]	[ ]	[✓]	[ ]	
(3) A Letter of Interpretation from D.E.P.	[ ]	[ ]	[✓]	[ ]	
40. A Soil Erosion and Sediment Control Plan if over 5,000 sq. ft. of ground area is being disturbed.	[✓]	[ ]	[ ]	[ ]	
41. All zoning requirements in accordance with the schedule referred to in Section 143-111 and the relationship of the proposed site plan to those requirements. Calculation of existing and proposed building and impervious coverage of the lot shall be included.	[✓]	[ ]	[ ]	[ ]	
42. Parking and loading spaces, with dimensions.	[✓]	[ ]	[ ]	[ ]	
43. Widths of traffic aisles.	[✓]	[ ]	[ ]	[ ]	
44. Direction of traffic flow.	[✓]	[ ]	[ ]	[ ]	
45. Specifications and construction detail sheet of existing and proposed paving and curbing.	[✓]	[ ]	[ ]	[ ]	
46. Tentative building floor plans. Scale: not less than 1/8"=1'.	[ ]	[ ]	[✓]	[ ]	
47. Front, rear, and side building elevation drawings showing building materials. Scale: not less than 1/8"=1'.	[ ]	[ ]	[✓]	[ ]	
a. 48. Utility systems showing connections to existing and proposed systems including, but not limited to:	[✓]	[ ]	[ ]	[ ]	
b. Plans and profiles of storm drainage facilities	[ ]	[ ]	[✓]	[ ]	

c. (ditches, pipes, detention facilities, etc.) showing materials, sizes, elevations and the like.	[✓]	[ ]	[ ]	[ ]
d. Drainage area map and drainage calculations.	[✓]	[ ]	[ ]	[ ]
e. Plans and profiles of existing and proposed sanitary sewers and appurtenant facilities.	[ ]	[ ]	[✓]	[ ]
f. Existing and proposed water mains, showing sizes and materials.	[✓]	[ ]	[ ]	[ ]
f. Location of any proposed individual sewage disposal system along with percolation test results approved by the Board of Health.	[ ]	[ ]	[✓]	[ ]
g. Existing electric and natural gas lines and proposed connections thereto.	[✓]	[ ]	[ ]	[ ]
h. Location of existing and proposed water wells.	[ ]	[ ]	[✓]	[ ]
i. Letter of intent to serve the property from utilities (gas, electric, telephone, etc.).	[ ]	[ ]	[✓]	[ ]
49. Location and description of all existing and proposed fuel and liquid storage facilities.	[ ]	[ ]	[✓]	[ ]
50. Location and description of all solid waste storage facilities.	[✓]	[ ]	[ ]	[ ]
51. In multi-family residential subdivisions containing 25 or more units and in non-residential developments utilizing 1,000 sq. ft. or more of land area, the location and description of provisions for the recycling of recyclable materials in accordance with the municipal recycling ordinance. The plan shall be accompanied by a description of the following:				
(a) The size, shape, materials or construction of the recycling area.	[ ]	[ ]	[ ]	[ ]
(b) Name and address of the collector of recycled materials.	[ ]	[ ]	[ ]	[ ]
(c) If recycled materials will be transferred to the Borough's recycling center or taken to some other location.	[ ]	[ ]	[ ]	[ ]
(d) Frequency of collection	[ ]	[ ]	[ ]	[ ]
52. A listing of all products sold, manufactured and used in connection with any industrial operation including any and all chemicals and fluids used along with a description of the methods of storing and disposing of said chemicals and fluids.	[ ]	[ ]	[✓]	[✓]
53. Number of employees, total and in maximum shift.	[ ]	[ ]	[ ]	[ ]
54. Location of existing and proposed fences, walls and sidewalks.	[✓]	[ ]	[ ]	[ ]

	C	I	NA	WR	Comments
55. A plan of landscaping, drawn, signed, and sealed by a CLA, showing basic treatment of all unpaved areas and buffers including number, size, and species of plantings.	[ ]	[ ]	[ ]	[ ]	
56. Location and identification of existing trees over 6 inch caliper.	[✓]	[ ]	[ ]	[ ]	
57. Present status and contemplated use of all existing and proposed buildings.	[✓]	[ ]	[ ]	[ ]	
58. Size, location, and details of existing and proposed signs.	[✓]	[ ]	[ ]	[ ]	
59. Location, nature of construction, height and area and direction of illumination measured in foot candles of existing and proposed lighting.	[✓]	[ ]	[ ]	[ ]	
60. Dedications for public parks, playgrounds or other public uses.	[ ]	[ ]	[✓]	[ ]	
61. Location and use of all property reserved by covenant in the deed for the common use of all property owners.	[ ]	[ ]	[✓]	[ ]	
62. Copies of any protective covenant and deed restriction.	[ ]	[ ]	[✓]	[ ]	
63. Identification of any historic site or historic district shown on the Master Plan or in the Zoning Regulations involving the property	[ ]	[ ]	[✓]	[ ]	
64. Ownership disclosure in accordance with C. 40: 55D-48.1.	[ ]	[ ]	[ ]	[ ]	
65. Cost estimates and proposed construction and maintenance bonds and construction time schedules related to building construction for any required improvements not proposed to be completed prior to the issuance of a Certificate of Occupancy.	[ ]	[ ]	[ ]	[ ]	
66. Separate application and fee filed for any conditional use or variance involved.	[ ]	[ ]	[ ]	[ ]	

[ ] Application declared complete.

Date_____

_____

Authorized Signature

[ ] Application declared incomplete.

Date_____

_____

Authorized Signature

BOROUGH OF TENAFLY
SOIL MOVING PERMIT

A. Applicant

Name of Applicant Knickerbocker Country Club

Address 188 Knickerbocker Road, Tenafly NJ 07670

Telephone No. _____ Email: _____

B. (a) Classification of Application (Check one)

[ ] **Home Improvement.** Any expansion or addition to an existing residence for which a certificate of occupancy has previously been issued, or for the construction of improvements such as, but not limited to, any garage, pond, patio, deck, driveway, sidewalk, or accessory building, on any residential lot(s) upon which there is an existing residence for which there exists a valid certificate of occupancy. The construction of a tennis court or a swimming pool shall not be considered a "home improvement."

[X] **Development.** The expansion or construction of any structures on residential or non-residential property that does not qualify as a home improvement.

C. Location of Property

Address 188 Knickerbocker Road, Tenafly NJ Zone R-20

Known as Block 503 in Lot 1 on the Tax Map of the Borough of Tenafly.

D. Property Owner (If different than Applicant)

Name of Property Owner Same as Applicant.

Address _____

Telephone No. _____

E. Soil Moving

Will you be moving any soil? (YES) NO (Circle one)

If yes, purpose or reason for soil moving
Redevelopment of Property.

-Proposed Site Plan and soil moving calculations must be attached.
-Certificate of Insurance naming the Borough as the additional insured must be attached.

Estimated cubic yards to be moved 7,000 C.Y.

Start Date TBD Expected Completion Date TBD

How will soil movement affect trees with a diameter of 6" or more and, what protection will be provided for such trees?

See attached Tree Mitigation Correspondence prepared by Arbor Hill Tree Service, LLC dated August 27, 2025.

Location/Source of Soil to be brought to Site (Import)

TBD

Attach a certification from a certified laboratory as to the soil suitability or the certification from a environmental consultant based upon the historical survey of the source site of the soil suitability.

Location/Destination of Soil (Export)

TBD

(Address and Town)

Person in Charge of Soil Operation:

Name: TBD

Address

Phone

Description of Equipment and Trucks to be Used

TBD

Number of Trucks to be Used TBD

Truck Route

TBD

G. **Soil Moving Fees:**

Minor Soil Moving <250cy:
$250.00 Engineer Fee + $125.00 for each plan revision; $100.00 Borough Fee

Intermediate Soil Moving >250cy:
$500.00 Engineer Fee + $125.00 each plan revision. $100.00 + $2.00/cy

Major Soil Moving > Planning Board appearance required.
$1,500.00 Application Fee and a $3,000.00 Escrow must be posted.

TOTAL SOIL FEE AMOUNT: $4,500.00

H. **Consent of Property Owner**

The undersigned hereby certifies that he or she is the owner of the property which is affected by this application and hereby consents to this application.

Signature of Property Owner DAVID OATEN TRUSTEE 9/25/2025 Date

I. **Certification of Applicant**

The undersigned hereby certifies that the information provided herein is true and complete to the best of my knowledge.

Signature of Applicant DAVID OATEN TRUSTEE 9/25/2025 Date

J. **FOR BOROUGH USE ONLY**
APPLICATION CHECK LIST

[ ] Consent of property owner
[ ] Site Plan
[ ] Certificate of Insurance
[ ] Certificate of soil suitability
[ ] Applicant certification
[ ] Permit fee:

Amount $_____ Check No. _____ Date Paid_____

SOIL APPLICATION COMPLETE by: _____ Date: _____

SOIL APPLICATION INCOMPLETE by: _____ Date: _____

SOIL BOND $_____ Check _____ Cash _____ Date _____

Received by: _____

BOROUGH OF TENAFLY
TREE REMOVAL PERMIT

A. Applicant

Name of Applicant Knickerbocker Country Club

Address 188 Knickerbocker Road, Tenafly NJ 07670

Telephone No. _____ Email: _____

B. Classification of Application (Check one)

[ ] **Home Improvement:** Any expansion or addition to an existing residence for which a certificate of occupancy has previously been issued, or for the construction of improvements such as, but not limited to, any garage, pond, patio, deck, driveway, sidewalk, or accessory building, on any residential lot(s) upon which there is an existing residence for which there exists a valid certificate of occupancy. The construction of a tennis court or a swimming pool shall not be considered a "home improvement."

[X] **Development:** The expansion or construction of any structures on residential or non-residential property that does not qualify as a home improvement.

[ ] **Other:** _____

C. Location of Property

Address 188 Knickerbocker Road, Tenafly NJ Zone R-20

Known as Block 503 in Lot 1 on the Tax Map of the Borough of Tenafly.

D. Property Owner (If different than Applicant)

Name of Property Owner Same as Applicant

Address _____

Telephone No. _____

E. Type of Permit Application (Check one)

[ ] **Minor tree removal application** means an application to remove less than twenty (20) trees from a single lot.

[X] **Major tree removal permit application** means an application to remove twenty (20) or more trees from a single lot.

F. Number of Trees to be Removed

The undersigned hereby applies for a permit to remove 96 trees of a caliper of six inches or more on the property identified above.

Total number of trees removed from this lot, including this request, within in twenty-four (24) month period from date of application: 96 trees.

G. Tree Removal Fees

The fee for a Tree Removal Permit shall be as follows:

[X] $25.00 per tree **TOTAL:** $2,400.00
[ ] $75.00 for review of any proposed revision or amendment to a previously approved tree removal permit.

Notwithstanding the above fee schedule, no permit fee shall be required for the removal of a dead or hazardous tree located within the buffer area, provided the applicant and/or property owner provides a certification from a Tree Specialist confirming the condition of the tree, and satisfies all of the other requirements of the ordinance and the provisions of Resolution #R02-194 adopted June 25, 2002.

H. Notice or Consent of Adjoining Property Owner (If Required)

In the event the Director of Public Works determines that any tree to be removed is located within the buffer area or in close proximity to the property line between the two properties, the applicant is required to notify the owner of the adjacent property by letter or personal contact and the applicant shall be required to submit written evidence of such notification at the time of application for a tree removal permit. In addition, in the case of any tree shown on a survey plan located on a property line, the applicant shall be required to obtain written consent from the adjacent property owner to remove said tree and said written consent shall be submitted by the applicant at the time of application for a tree removal permit.

I. Tree Removal Plan

Attach an original copy of a tree removal plan consisting of a map drawn to scale showing the location of all trees on the property of a caliper of six (6) inches or greater, and the location of all trees to be removed, the species of such trees, and their caliper. The tree removal plan must be prepared, signed and sealed by a licensed professional engineer or land surveyor, and must show the location of all existing and proposed structures on the property, together with the distance, up to fifteen (15) feet, that the trees proposed to be removed are located from such structures and from property lines.

J. Tree Mitigation Plan **[ ] Check if mitigation required**

[ ] Number of major trees required 237
[ ] Number of minor trees required 0
[ ] Total number of trees required for mitigation 237

Attach an original copy of a tree mitigation plan consisting of a map drawn to scale showing the location of all trees to be planted, the species of such trees and their caliper or size required.

K. List of Trees to be Removed

Attach an original copy of a separate list of the trees to be removed identifying each tree on the tree removal plan by species and caliper, and stating the condition of each tree as "dead," "poor," or "good," and further explaining why removal is felt justified under the Borough's tree removal standards.

L. Performance Bond **[x] Check if Required**

As a precondition to the issuance of a permit where mitigation is required, the applicant shall post a cash bond to assure mitigation in an amount equal to $ 250.00 for each minor tree and $450.00 for each major tree to be planted. The bond shall be returned to the applicant upon the completion of the required mitigation as provided in the ordinance.

Calculation of performance bond amount:

115	Major trees at $ 450.00 each	$ $51,750.00
	Minor trees at $ 250.00 each	$

O. Consent of Property Owner

The undersigned hereby certifies that he or she is the owner of the property which is affected by this application and hereby consents to this application.

Signature of Property Owner DAVID DATEN TRUSTOR Date 9/25/25

P. Certification of Applicant

The undersigned hereby certifies that the information provided herein is true and complete to the best of my knowledge.

Signature of Applicant DAVID DATEN TRUSTOR. Date 9/25/25

Q. **FOR BOROUGH USE ONLY**
APPLICATION CHECK LIST

[ ] Tree removal plan
[ ] Tree mitigation plan
[ ] List of trees to be removed
[ ] Notice to adjacent property owner, if applicable
[ ] Consent of property owner
[ ] Site Plan
[ ] Permit fee:

Amount $_____ Check No. _____ Date Paid_____

TREE APPLICATION COMPLETE by: _____ Date: _____

TREE APPLICATION INCOMPLETE: by:_____ Date: _____

APPLICATION DISPOSITION

[ ] Approved

[ ] Approved subject to posting required mitigation cash bond of $_____

[ ] Approved with exceptions noted_____

_____

[ ] Denied

By:_____Date_____

TREE BOND $_____ Check _____ Cash _____ Date _____

Received by: _____

ARBOR HILL TREE SERVICE, LLC
PO BOX 291
SPARKILL, NY 10976

August 27, 2025

Boswell Engineering
Attention: Jeffrey L. Morris

Dear Jeffrey:

I have reviewed the site for tree removal at Knickerbocker Country Club and found the wooded area to be in a state of decline.

Trees in the 6" to 12" caliper DBH are failing due to the lack of light created by overhanging canopies and competition for nutrients and water. They exhibit signs of broken limbs and weak attachments. These trees should
be removed.

Trees in the 18" to 24" caliper DBH consisting predominately of Maple, Oak and Cherry are similarly compromised. A substantial number of them suffer from co-dominant leaders. These trees exhibit more than one leader emanating from a single trunk. This condition, coupled with their poor condition, also warrant removal.

Trees in the 24" to 30" caliper DBH exhibit compromised canopies within the crown of the trees as well as broken and dead limbs, poor leaf development, cavities within their trunks and general signs of decline.

The remaining trees requiring further review and discussion are in the 30" to 36" caliper DBH. There are twelve of these trees. Two of them are completely dead, six are completely entangled in vines. This causes the canopies to be choked off, giving the false impression that they are in full leaf. The remaining four in this group are Oak which present serious questions regarding their viability due to the taper of their trunks and root structures.

My examination of the wooded floor reveals an area barren of any measurable flora or fauna, littered with downed trees and limbs and completely devoid of any sign of life in their canopies such as nesting birds or squirrels.

The lack of apparent viable wildlife in the forest floor and within the tree canopies lends support to the conclusion that the removal of the listed trees will have no adverse impact upon any wildlife or the existing environment, thus allowing Knickerbocker Country Club to move forward with their vision for the subject area.

I thank you for your consideration and look forward to working with you.

Edwin N. Ewald

Edwin N. Ewald
Certified Arborist
NJ 0833A

BOARD OF ADJUSTMENT

BOROUGH OF TENAFLY

IN THE MATTER OF THE APPLICATION OF
KNICKERBOCKER COUNTRY CLUB APPLICATION NO. BLOCK 503,
LOT 1 ZB-2024-13
188 KNICKERBOCKER ROAD R-20 ZONE

WHEREAS, an application was filed by Knickerbocker Country Club for relief from the Tenafly Land Development Regulations ("LDR") for amended site plan approval and variance at 188 Knickerbocker Road, also known and designated as Block 503, Lot 1 on the tax assessment map of the Borough of Tenafly; and

WHEREAS, applicant presented proof in the form of an affidavit that it complied with the statutory requirements as to service of notice of the application and the public hearing to be held on the within application;

WHEREAS, the Board of Adjustment conducted a public hearing on January 6, 2025, during which the applicant presented the following exhibits:

1. Application to the Zoning Board of Adjustment received November 12, 2024; 2. Site Plans titled "Knickerbocker Country Club 2024 Improvements" prepared by Boswell Engineering dated December 18, 2024, containing 4 sheets;
3. Architectural plans titled "Knickerbocker Country Club, Clubhouse Renovation and Addition, 188 Knickerbocker Road, Tenafly, New Jersey" prepared by Kuo Diedrich Chi Architects dated July 26, 2024, last revised October 24, 2024, consisting of 10 sheets;
4. Exhibit A-1, which is a cover of the site plan set revised as of January 6, 2025;

5. Exhibit A-2, which is the site plan revised as of January 6, 2025; and

WHEREAS, the Board of Adjustment received and reviewed the letter of denial from the Zoning Official dated November 4, 2024; and

WHEREAS, the Board of Adjustment received and reviewed the letter report of the Board Engineer, Schwanewede, Hals & Vince dated January 3, 2025; and **WHEREAS**, the applicant presented the testimony of Jeffrey Morris, a licensed professional engineer in the State of New Jersey, who described the proposed site plan and drainage plans; and

WHEREAS, the applicant presented the testimony of Chris Rijo, who was accepted as an expert in project design who described the architectural plan set. He testified that a corner of the structure on the property is being demolished, which is in poor shape structurally. He noted there is rotted wood, so that has to be demolished and will be rebuilt. Additionally, the remaining architectural updates will create better circulation and make the facility function more efficiently; and

WHEREAS, the applicant presented the testimony of David Spatz, who was sworn and accepted as an expert in planning. He testified that the proposed plan, while needing a setback variance, actually improves the current condition as the existing setback is only 18.4 feet and it will be enlarged to 24.37 feet. The new addition will be 36.8 feet away from Erledon Road. He testified that the improved setback provides adequate light, air and open space for neighbors. He also testified that the plan promotes a desirable visual environment and there is no adverse impact on the surrounding properties; and

WHEREAS, there was an opportunity for the public to question the witnesses as well as to comment on the application; and

NOW, THEREFORE, BE IT RESOLVED, by the Board of Adjustment of the Borough of Tenafly that it makes the following findings and conclusions:

1. Appropriate public notice of the holding of the hearing was given by the Board and appropriate announcements of the giving of such notice was made by the presiding officer of the meeting as required by the Open Public Meetings Act.

2. The applicant complied with statutory requirements for giving notice of the hearing of the application, including giving public notice by means of a legal advertisement in an appropriate newspaper and mailing notice to all neighboring property owners within 200 feet and/or by personal delivery.

3. Opportunity was provided to the applicant, as well as the public, to be heard.

4. The applicant is the owner of the subject property.

5. The property is located at 188 Knickerbocker Road. The property is located in the R-20 residential zone district. Knickerbocker Country Club is a "private recreation clubhouse" and is a permitted conditional use in the R-20 zone. Among other conditions of the conditional use criteria is that no building shall be located within 100 feet of a property line.

6. The applicant proposes adding various additions to the existing clubhouse building. The existing clubhouse building is within 100 feet of Erledon Road. The proposed application does not meet the conditional use criteria and therefore a d(3) variance is required.

7. The applicant seeks amended site plan approval for the following improvements: (i) removal of the northern corner of the existing building; (ii) an addition to the front

of the building with a new covered entry; (iii) reconstruction of the covered

members entrance in the front of the building; (iv) two additions to the rear of the building; (v) a new rear deck addition; and (vi) a new terrace area and patio improvements.

8. The proposed improvements conform with the bulk regulations of the LDR. The only deviation is that the proposed improvements are located 36.8 feet from Erledon Road which violates the conditional use criteria and therefore necessitates a d(3) variance. The existing structure is located only 18.4 feet from Erledon and portions of the structure will be razed and rebuilt 24.37 feet from the road making the setback

better and a bit more compliant. The new improvements will be setback 36. 8 feet from Erledon Road, all of which requires a variance.

9. The Board finds that the improvements are to fix structural defects on the property. The credible testimony was that a portion of the structure is in structurally poor shape, with rotted wood and has to be demolished and rebuilt. Further, the plans create a more efficient flow and will allow for more functional use of the facility. The Board finds that the improved setback provides better light, air and open space. It promotes a desirable visual environment and the Board finds there is a little impact on the surrounding properties and certainly nothing substantially adverse. Therefore, the Board finds that the applicant has submitted sufficient and substantial for the approval of the amended site plan and d(3) conditional use variance. This approval is consistent with the purposes of the LDR and the Master

Plan and the project is substantially in conformity with the Borough's zoning objectives.

NOW, THEREFORE, be it resolved on this 3rd day of February, 2025 that the application of Knickerbocker Country Club for amended site plan approval be and the same is hereby granted as well as the waiver of all site plan requirements not complied with upon the following conditions.

1. Applicant to construct improvements in accordance with the revised plans submitted in accordance with the testimony.

2. Applicant shall provide an as-built survey prior to the issuance of a certificate of occupancy.

3. Compliance with all required codes of the Borough as well as compliance with all ordinances and regulations of the Borough of Tenafly and any and all other requirements of governmental authorities having jurisdiction over same.

4. Continuing supervision by the Construction Code Official and the Borough Engineer.

5. Applicant shall comply with all comments in the Schwanewede, Hals & Vince letter dated January 3, 2025.

6. Applicant shall provide any financial assurances deemed necessary by the Borough Engineer and, if so, enter into a Developer Agreement with the Borough; and

BE IT FURTHER RESOLVED that the Applicant is hereby granted a variance from the conditional use criteria whereby the proposed setback from Erledon Road is 36.8 feet and

100 feet is required; and

BE IT FURTHER RESOLVED, that a copy of this Resolution certified by the Secretary to be a true copy be forwarded to the following officials of the Borough and governmental agencies, Construction Official, Borough Engineer, Board Engineer, Tax

Assessor, Administrative Officer of the Municipal Land Use Law, Zoning Officer and a copy to the attorneys for the applicant.

MOVED BY: Mr. Friedman

SECONDED BY: Mr. Brensilber

FOR: Mr. Friedman, Mr. Brensilber, Mr. Callahan, Mr. Lieberman, Dr. Paskhover, Mr. Cytryn

AGAINST: None

IT IS HEREBY CERTIFIED that this is a true and correct copy of a Resolution adopted by the Zoning Board of the Borough of Tenafly upon a roll call vote at its regular meeting held on February 3, 2025.

_____*Allan Cytryn*_____
Allan Cytryn, Vice Chair

IN THE MATTER OF THE APPLICATION OF:
KNICKERBOCKER COUNTRY CLUB
BLOCK 503, LOT 1
PB#1-21-11

Mr. Kagy offered the following Resolution and moved its adoption:

RESOLUTION

WHEREAS, Knickerbocker County Club, the owner of the property commonly known as 188 Knickerbocker Road, in the Borough of Tenafly, County of Bergen, State of New Jersey which property is currently designated on the tax assessment map of the Borough of Tenafly as Block 503, Lot 1 applied to the Planning Board of the Borough of Tenafly through its attorney, Matthew Capizzi, Esq., seeking minor subdivision approval, and

WHEREAS, the applicant presented proof in the form of an affidavit that it complied with the statutory requirements as to service of notice of the application and of the public hearing to be held on the within application; and

WHEREAS, the Planning Board conducted a public hearing on November 10, 2021 during which the applicant presented the following exhibits:

1. Plan entitled "Knickerbocker County Club Site Improvements, 188 Knickerbocker Road, Block 503 – Lot 1, Tax Map Sheet No. 5, Borough of Tenafly, Bergen County, New Jersey" prepared by Boswell Engineering dated August 24, 2021 containing three (3) sheets;
2. Tenafly Planning Board Resolution dated March 21, 1990;
3. Tenafly Planning Board Resolution dated June 13, 2007;
4. Tenafly Planning Board Resolution dated September 15, 2015;
5. Exhibit O-1 which is a photo of the Cipolini's back yard showing flooding;

6. Exhibit O-2 which is a similar photo; and

WHEREAS, the Planning Board received and reviewed the letter report of the Board Engineer, Schwanewede/Hals Engineering dated October 22, 2021; and

WHEREAS, the Planning Board received and reviewed the memo from the Tenafly Police Chief, Robert Chamberlain, dated November 1, 2021; and

WHEREAS, Mr. Capizzi presented the subdivision plan and indicated the plan is to create one new lot from the existing large lot both of which will be fully conforming with the Tenafly Land Development Regulations ("LDR"). In response to questions from the Board, Mr. Capizzi indicated that the applicant would stipulate to create a landscape buffer on the south side of the property of the same size or greater than what currently exists; and

WHEREAS, the applicant presented the testimony of Jeffrey Morris, a licensed professional engineer in the State of New Jersey, who described the proposed division of existing Lot 1 in Block 503 which is approximately 23.83 acres and the proposal to subdivide a fully conforming lot of approximately 23,543 square feet. He testified there are no variances requested or needed in connection with the subdivision. He further testified that the subdivision is to create a building lot for a single family home for a caretaker of the Country Club, He stipulated on behalf of the applicant that no variances will be required or requested in connection with the construction of the single family home on the property; and

WHEREAS, there was an opportunity for the public to question the witnesses as well as to comment on the application. Several members of the public did speak expressing their concerns about the application and flooding from previous activities of the applicant; and

WHEREAS, having heard all of the testimony and after having examined all of the exhibits, the Planning Board of the Borough of Tenafly makes the following findings and conclusions:

1. Appropriate public notice of the holding of the hearing was given by the Board and appropriate announcements of the giving of such notice was made by the presiding officer of the meeting as required by the Open Public Meetings Act.

2. The applicant complied with statutory requirements for giving notice of the hearing of the application, including giving public notice by means of a legal advertisement in an appropriate newspaper and mailing notice to all neighboring property owners within 200 feet and/or delivering by personal delivery said notice.

3. The applicant is the owner of Lot 1 in Block 503 on the Tenafly tax assessment map also known as 188 Knickerbocker Road (the "Property"). The Property is located at the easterly side of Knickerbocker Road in the R-20 Residential Zone District. The property is 23.83 acres. It contains the clubhouse building and recreation facilities of the Knickerbocker Country Club.

4. Applicant proposes to create a new building lot at the southwest corner of the Property with frontage on Knickerbocker Road. There are no new streets or extension of any off tract improvements. Accordingly, the subdivision is classified as a Minor Subdivision.

5. Proposed Lot 1.01 will contain the existing clubhouse building and facilities of Knickerbocker Country Club. Proposed lot 1.02 is the new building lot. It will

have an area of 23,543 square feet where the minimum required is 20,000 square feet. Proposed lot 1.02 meets all the requirement of the LDR.

6. The Board finds that no variance is needed for this subdivision.

7. The applicant agreed to comply with all comments of the Board Engineer's letter dated October 22, 2021. Additionally, the applicant stipulated that it will provide a landscape buffer along the south side of the Property similar to or greater than what currently exists upon completion of construction of the single family home.

8. The proposed subdivision meets all the requirements of the LDR.

9. The Board heard the concerns of several neighbors about flooding that occurs on their properties from what they believe to be prior activities of the applicant. While the Board is concerned about the allegations and the flooding this application is simply to subdivide a parcel of land and has no impact on drainage or flooding.

NOW, THEREFORE, be it resolved on this 8th day of December, 2021, that the application of Knickerbocker County Club for minor subdivision approval be and the same is hereby granted upon the following conditions:

A. That the applicant shall comply with the requirements set forth by the Board Engineer in his letter dated October 22, 2021;

B. That in the event of any destruction or removal of trees and buffering along the south side of the Property, the applicant shall create a vegetative/landscape buffer equal to or greater than what currently exists to the reasonable satisfaction of the Board Engineer;

C. Applicant shall construct a single family dwelling on proposed lot 1.02 that shall conform in full to the LDR and applicant shall not request any variances in connection therewith;

D. The applicant shall post cash escrow deposits as are determined by the Board Engineer to be necessary pursuant to the zoning ordinance of the Borough of Tenafly;

E. Applicant shall comply with all applicable laws and regulations regarding the development of the subject premises.

F. Applicant shall comply with the Borough's development fee ordinance at the time it seeks a construction permit.

G. This approval is conditioned on applicant obtaining all other necessary governmental permits and approvals including but not limited to Bergen County Planning and Bergen County Soil Conservation District approval;

H. The applicant shall submit a proposed subdivision deed subject to the review and approval of the Planning Board attorney and Board Engineer; and

FURTHER RESOLVED, that a copy of this Resolution, certified by the Secretary to be a true copy, be forwarded to the Construction Official, Board Engineer, Borough Engineer, Zoning Officer, Tax Assessor, Administrative Officer of the Municipal Land Use Law, the attorney for the applicant and any other official or governmental agency as applicable.

SECONDED BY: **Mr. Harrison**

FOR: **Mrs. Wilmit, Mr. Warms, Mr. Harrison, Mr. Kagy, Mrs. Park, Councilman Grossman and Mayor Zinna**

AGAINST: **NONE**

Dated: December 8, 2021

I hereby certify that the foregoing Resolution is a true copy of the Resolution which was adopted by the Planning Board of the Borough of Tenafly at a regular meeting held on December 8, 2021.

Amanda Booth, Secretary

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IN THE MATTER OF THE APPLICATION OF:
KNICKERBOCKER COUNTRY CLUB
BLOCK 503, LOT 1
PB# 1-15-08

Gene Marcantonio offered the following Resolution and moved its adoption:

RESOLUTION

WHEREAS, Knickerbocker Country Club, as owner of the property known as 188 Knickerbocker Road, in the Borough of Tenafly, County of Bergen, State of New Jersey which property is currently designated on the tax assessment map of the Borough of Tenafly as Block 503, Lot 1 applied to the Planning Board of the Borough of Tenafly seeking site plan and conditional use approval; and

WHEREAS, Knickerbocker Country Club was represented by its attorney, William Bailey of Huntington Bailey; and

WHEREAS, the applicant presented proof in the form of an affidavit that it complied with the statutory requirements as to service of notice of the application and of the public hearing to be held on the within application; and

WHEREAS, the Planning Board conducted a public hearing on August 26, 2015 during which the applicants presented the following exhibits:

1. Site Plan entitled "Knickerbocker Country Club Site Improvements, 188 Knickerbocker Road" prepared by Boswell Engineering dated May, 2015, last revised August 10, 2015 consisting of seven (7) sheets;
2. Architectural Plan entitled "The Pavilion at Knickerbocker Country Club, 188 Knickerbocker Road" prepared by Dahn & Krieger, Architects, dated July 7, 2014, last revised May 20, 2015 consisting of four (4) sheets;

3. Stormwater Management Report prepared by Boswell Engineering dated August 17, 2015;

4. Site Plan Application dated June 18, 2015;

5. Exhibit A-1 which is a rendering of the proposed new facility facing southerly prepared by William Dahn;

6. Exhibit A-2 which is a rendering of the proposed new facility facing easterly prepared by William Dahn;

7. Exhibit A-3 which is the cover sheet of the Site Plan revised as of August 26, 2015;

8. Exhibit A-4 which is Sheet #2 of the Site Plan revised as of August 26, 2015;

9. Exhibit A-5 which is Sheet #3 of the Site Plan revised as of August 26, 2015;

10. Exhibit A-6 which is Sheet #5 of the Site Plan revised as of August 26, 2015; and

WHEREAS, the Planning Board received and reviewed the letter report of the Board Engineer, Schwanewede/Hals Engineering dated August 19, 2015; and

WHEREAS, the Planning Board received and reviewed the memo of the Tenafly Chief of Police, Robert Chamberlain, dated August 17, 2015; and

WHEREAS, the Planning Board received and reviewed the memo of the Tenafly Fire Official dated August 18, 2015; and

WHEREAS, the Planning Board received and reviewed the comments of the Tenafly Director of Public Works, Robert Culvert, dated August 25, 2015; and

WHEREAS, the applicant presented the testimony of William Dahn, who is a licensed architect in the State of New Jersey. He described the existing site conditions and the applicant's proposal to demolish the existing one-story building around its pool area and in its place,

2. The applicant complied with statutory requirements for giving notice of the hearing of the application, including giving public notice by means of a legal advertisement in an appropriate newspaper and mailing notice to all neighboring property owners within 200 feet.

3. The applicant, Knickerbocker Country Club, is the owner of 188 Knickerbocker Road in Tenafly known and designated as Block 503, Lot 1 on the tax assessment map (the "Property"). The Property is located on the easterly side of Knickerbocker Road between Erledon Road and Country Club Road. The site is located in the R-20 Residential Zone District. A private recreation clubhouse is a conditional use in the R-20 Zone District.

4. In this application, the applicant seeks to raze the existing pool house and in its place, construct a new two-story building for a pool area and the platform tennis courts. Other improvements proposed are a half-court basketball court, an additional platform tennis court and various patio and walkway improvements.

5. The proposed two-story pavilion building is to replace the existing one-story building near the pool. The proposed basketball court is to be located south of the existing building and east of the one-story garage. That basketball court has been determined to be over an underground detention system. Accordingly, the applicant withdrew the request for the basketball court.

6. A new platform tennis court is to be located south of the existing court. That has been labeled "future" on the plans so that the approval granted herein will provide that the applicant may construct that platform tennis court in the future but any

current construction will not require that platform tennis court to be completed in order to obtain a certificate of occupancy.

7. A private recreation clubhouse is a conditional use in the R-20 Zone District. The architectural plans indicate the proposed building for the new pavilion will exceed the 35 foot height requirement. The applicant indicated that it will reduce the ridge height of the building so that it complies with the maximum 35 foot permitted height. Therefore, there is no variance required and the proposed improvements comply with all the conditional use criteria.

8. The applicant stipulated that it would comply with all comments made in the Schwanewede/Hals letter of August 19, 2015.

9. The proposed improvements comply with all the bulk regulations of the Tenafly Land Development Regulations ("LDR"). Moreover, upon the stipulation that the applicant will lower the ridge of the roof line to 35 feet, it complies with the conditional use criteria for a private recreation club house in the R-20 Zone District. Furthermore, this application will enhance the aesthetics of the club. These improvements are also setback very far from the surrounding streets, will not be visible to members of the public in general and does not affect any of the adjoining properties. Accordingly, the Board finds that the applicant has submitted sufficient and substantial proof for the granting of the site plan as set forth above. The approval is consistent with the purposes of the LDR and Master Plan and this project is substantially in conformity with the Borough's zoning objectives.

NOW, THEREFORE, be it resolved on this 9th day of September, 2015, that the application of Knickerbocker Country Club for preliminary and final site plan approval be and the same are hereby granted as well as waiver of all site plan requirements not complied with upon the following conditions:

A. The applicant will file with the Board Engineer and the Building Department revised plans in accordance with the applicant's testimony before the Planning Board and as set forth in the Board Engineer's letter report;

B. The applicant shall comply with all applicable laws and resolutions regarding the development of the subject premises;

C. The applicant shall comply with the recommendations and comments set forth in the Board Engineer's letter of August 19, 2015 as more specifically set forth below;

D. This approval is specifically conditioned upon the following:

1. Applicant will lower the height of the ridge of the roof to no more than 35 feet so that no height variance is needed;

2. The fourth paddle court shall be labeled "future" and does not have to be constructed at the same time as the new pool house and may be constructed at some time in the future;

3. The proposed half-court basketball court is withdrawn from the plans and shall be removed therefrom;

4. In connection with the seepage pits on the Property, applicant shall:

(a) Mark them;

(b) Provide access to them;

(c) Clean them; and

(d) Properly maintain them utilizing appropriate maintenance procedures.

5. Applicant shall file for a tree removal permit prior to removing any trees on site.

E. The applicant shall enter into an appropriate Developers Agreement with the Borough of Tenafly to ensure compliance with the terms of this Resolution;

F. All construction shall be in compliance with the New Jersey Uniform Construction Code, applicable ordinances of the Borough of Tenafly, regulations of administrative agencies and the laws of the State of New Jersey;

G. The applicant shall construct this development project in accordance with the plans presented to the Planning Board, which plans were marked into evidence. The final design, details and construction of this project shall be subject to and in accordance with the approval of the municipal engineer, if necessary, as to various construction matters;

H. The applicant shall comply with all the requirements of the Soil Erosion and Sediment Control Act. The applicant shall further submit a report of compliance to the Borough of Tenafly before a Certificate of Occupancy will be issued;

I. During the construction of the project, the applicant shall maintain the construction site in a safe condition and shall take appropriate measures to ensure the safety, health and welfare of the public. Furthermore, the applicant shall provide, if necessary, for the proper maintenance of the adjacent municipal street

on a daily basis to ensure that they are clean from dirt and debris which may accumulate from any excavation and/or construction on the site;

J. The applicant shall post a performance bond or an irrevocable letter of credit in an amount established by the Board Engineer at its own cost and expense if so required by the Board Engineer. The performance bond or irrevocable letter of credit is to ensure that all site work shall be completed in accordance with the plans submitted, details of which are to be set forth in a Developers Agreement. An escrow for inspection and legal fees shall be deposited with the Borough as established by the Borough Engineer, subject to increase to the maximum amounts permissible by ordinance, if required, to meet project demands. To the extent Bergen County requires similar bonding or performance guaranties, the applicant shall not be required to duplicate same, provided the Borough and County are named jointly therein;

K. The applicant shall maintain appropriate liability insurance, during the construction of this project, for personal injury in an amount of $2,000,000 and property damage in the amount of $500,000 together with necessary workman's compensation insurance. The Borough of Tenafly and its officials shall be named as insureds under the policy;

L. The applicant shall comply with the Borough's Development Fee ordinance at the time it seeks a construction permit;

M. This approval is conditioned on applicant obtaining all other necessary governmental permits and approvals including but not limited to Bergen County Planning Board and Bergen County Soil Conservation District approval;

N. The applicant shall file for zoning and building permits, as applicable, with the Zoning Official and Construction Officer and shall submit revised plans to the building department and Board Engineer for review of those plans for conformity with this approval and applicant shall comply with all comments made in conformity with this Resolution of Approval; and it is

FURTHER RESOLVED, that a copy of this Resolution, certified by the Acting Secretary to be a true copy, be forwarded to the Construction Official, Board Engineer, Borough Engineer, Zoning Officer, Tax Assessor, Administrative Officer of the Municipal Land Use Law, the attorney for the applicant and any other official or governmental agency as applicable.

SECONDED BY: Mr. Warms

FOR: Mr. Warms, Mr. Harrison, Mr. Marcantonio, Mrs. Gaines and Mayor Rustin

AGAINST: None

Dated: September 9, 2015

I hereby certify that the foregoing Resolution is a true copy of the Resolution which was adopted by the Planning Board of the Borough of Tenafly at a regular meeting held on September 9, 2015.

Christine Attanasio

Christine Attanasio, Acting Secretary

IN THE MATTER OF THE APPLICATION OF:
KNICKERBOCKER COUNTRY CLUB
BLOCK 503, LOT 1
PB #1-07-13

OFFERED BY: **Councilwoman Hoernlein**

SECONDED BY: **Ms. Wilmit**

at a regular meeting of the Tenafly Planning Board held on Wednesday, June13, 2007

WHEREAS, Sandford Furman on behalf of the Knickerbocker Country Club located at 188 Knickerbocker Road, Tenafly, New Jersey (Block 503, Lot 1) (the "Premises") applied to the Planning Board of the Borough of Tenafly for a waiver of site plan review under the Tenafly Land Development Regulations ("LDR"); and

WHEREAS, Knickerbocker Country Club is the owner of the Premises and is the applicant; and

WHEREAS, applicant applied for waiver of site plan approval to replace an existing canopy with a deck directly accessible from the existing dining room and new kitchen; and

WHEREAS, no variances are required and there will be no change in runoff as the deck will be built directly over an existing stone terrace; and

WHEREAS, the applicant submitted a site plan waiver application dated April 10, 2007, a letter on behalf of Knickerbocker Country Club dated May 11, 2007, Piazza Engineering Site Plan C-1 dated May 7, 2007, plans prepared by Arthur Harden Architects dated December 13, 2006 and January 17, 2007 and topographic plan prepared by Boswell Engineers dated May 15, 2003; and

WHEREAS, Mr. Furman appeared on behalf of the applicant and testified as indicated above; and

WHEREAS, the Planning Board has determined that the use is a permitted use and applicant provides more parking spaces on site than is required under the LDR; and

WHEREAS, pursuant to Section 703 of the LDR, the Planning Board may waive the requirements of site plan review if the Planning Board determines that the proposed development meets the requirements of the LDR and the Planning Board in making its decision shall look at whether the proposed use or change of use changes, alters or enlarges the previous use or it will change, alter, enlarge or effect drainage, traffic, parking, sidewalks, paving, landscaping, fencing, sanitary disposal or other similar considerations under the site plan review requirements; and

WHEREAS, the proposed replacement of an existing canopy with a deck which is directly accessible from the existing dining room and new kitchen conforms with the use provisions of the LDR for the property and the expansion will positively affect the exterior appearance as it will enhance the aesthetics of the rear of the building; and

WHEREAS, the proposed application meets the requirements of Section 703 of the LDR and a waiver of the site plan is appropriate upon the terms and conditions set forth below.

NOW, THEREFORE BE IT RESOLVED on this 13th day of June, 2007, that the application of Knickerbocker Country Club for waiver of site plan review is hereby granted upon the following conditions:

A. Applicant shall file for zoning and building permits, as applicable, with the Zoning Officer and Construction Official and shall file building plans in strict accordance with the site plan review by the Planning Board;
B. This approval is conditioned upon applicant obtaining all other necessary governmental permits and approvals; and
C. The applicant shall comply with all applicable Borough ordinances including the Borough's development fee ordinance; and

FURTHER RESOLVED, that a copy of this Resolution certified by the Secretary to be a true copy be forwarded to the following Borough officials and governmental agencies, Construction Official, Borough Engineer, Tax Assessor, Zoning Officer, Administrative Officer of the Municipal Land Use Law and a copy to the attorney for the applicant.

Vote Recorded as Follows:
FOR: Mr. Sellinger, Mrs. Kelly, Mr. Sowlakis, Ms. Wilmit, Councilwoman Hoernlein
AGAINST: None
ADOPTED: June 13, 2007

I hereby certify that the foregoing Resolution is a true copy of the Resolution which was adopted by the Planning Board of the Borough of Tenafly at a regular meeting held on June 13, 2007.

Valerie Nicolosi, Secretary

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RESOLUTION
TENAFLY PLANNING BOARD
APPLICATION NO. PB89-21

Offered by: Murray Handler

Seconded by: Frank Ingaannamorte

at a regular meeting of the Tenafly Planning Board held on March 21, 1990.

WHEREAS, The Knickerbocker Country Club has applied to this Board for site plan, conditional use and lot merger approval for Lots 6 and 7 in Block 29 also known as 188 Knickerbocker Road for the construction of a shed as shown on the plans entitled "Site Plan for Knickerbocker Country Club" prepared by Kevin J. Boswell dated March 13, 1989 and revised to January 3, 1990 and on the plans entitled "Proposed Shed Landscape Plan" prepared by Scott D. Stewart dated January 8, 1989 although the applicant corrected this date at the hearing to read January 8, 1990.

WHEREAS, a public hearing was held on this application on November 15, 1989 and continued on December 20, 1989, January 17, 1990 and March 7, 1990 and the Board has made the following findings of fact;

1. The site is 16.22 acres in area with 674.96 feet of frontage along the westerly side of Knickerbocker Road located in the R20 zone district.

2. The site is presently divided into two (2) lots which are both owned by the applicant. Lot 6 which is 2.83 acres in area with 261.10 feet of frontage along Knickerbocker Road is presently improved with an existing building which is used as a pro shop. Lot 7 is 12.28 acres in area and borders Lot 6 on three (3) sides. Lot 7 is presently used as a golf course.

3. The applicants propose to merge Lots 6 and 7 and construct a golf cart storage shed on the portion of the property previously known as Lot 7.

4. The proposed shed would be located on the northerly portion of the property, 45 feet from the nearest property line and set back 260 feet from Knickerbocker Road. The shed would contain 3,566 square feet of floor area and would be used solely for the storage of golf carts.

5. Anthony Barzalotto testified that he is a fire inspector and a licensed fire subcode official. He testified that he reviewed the plans for the proposed structure and determined that the plans comply with all fire code regulations.

6. Edward Kehoe testified that he is an experienced real estate broker and appraiser and that the proposed shed would not adversely affect the value of nearby residential properties.

7. During the course of the hearings in this matter, the applicant agreed to certain specific conditions which would be applied to the development:

A. No golf clubs will be stored in the golf cart shed.

B. The proposed stockade fence will be extended to run along the complete rear property line of Mr. and Mrs. Eden which is known as 8 Marcotte Lane.

C. Additional landscaping of the evergreen variety will be placed along the northwest corner of the proposed golf cart storage shed building in order to shield the facade of the building from view from the Eden's property.

D. No lighting will be permitted on the north side of the proposed storage shed.

E. No repairs or cart or vehicle washing will be permitted either inside the storage shed building or outside the building.

F. In the event a tree or planting set forth on the approved landscaping plan dies or is damaged or is removed, same shall be replaced as long as the storage shed building remains in order to maintain a desirable visual environment.

G. The applicant will install two (2) one thousand (1,000) gallon seepage pits instead of the one seepage pit shown on the plan as recommended by the Borough Engineer in his report dated September 8, 1989.

8. John Van Vorst, the Tenafly Superintendent of Parks, reviewed the proposed landscaping plan and visited the site. He rendered a report to this Board dated January 8, 1990 and provided testimony to this Board on March 7, 1990. He advised that the landscaping plan for the subject site is adequate to properly screen the building.

9. No variances are required for this application.

NOW, THEREFORE, BE IT RESOLVED that site plan and conditional use approval as requested by the applicant is hereby approved subject to the following terms and conditions:

1. Approval by the Bergen County Planning Board and all other governmental bodies with jurisdiction over this application.

2. The filing of a deed with the Bergen County Clerk by which Lots 6 and 7 in Block 29 are merged. The form of this deed shall be approved by this Board.

3. No golf clubs will be stored in the golf cart shed.

4. The proposed stockade fence will be extended to run along the complete rear property line of Mr. and Mrs. Eden which is known as 8 Marcotte Lane as shown on the amended plan dated January 3, 1990.

5. Additional landscaping of the evergreen variety will be placed along the northwest corner of the proposed golf cart storage shed building in order to shield the facade of the building from view from the Eden's property.

6. No lighting will be permitted on the north side of the proposed storage shed.

7. No repairs or cart or vehicle washing will be permitted either inside the storage shed building or outside the building.

8. In the event a tree or planting set forth on the approved landscaping plan dies or is damaged or is removed, same shall be replaced as long as the storage shed building remains in order to maintain a desirable visual environment.

9. The applicant shall advise John Van Vorst twenty-four (24) hours in advance of the installation of any landscaping required under the terms of this approval. Mr. Van Vorst shall monitor the installation and planting of all such landscaping material and shall render a report to this Board after completion of all landscaping installation. If field conditions warrant, Mr. Van Vorst may direct that additional planting along the north side of the building be installed in order to properly screen the building from adjacent property owners.

10. The applicant shall post a cash escrow in an amount to be established by the Board secretary to cover the cost of publication, engineering review and inspection and legal costs incurred by the Board.

11. The applicant shall install two (2) one thousand (1,000) gallon seepage pits instead of the one shown on the plans.

12. The building will not exceed fifteen (15) feet in height.

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS
188 KNICKERBOCKER ROAD
TAX MAP SHEET No. 5 LOT 1 BLOCK 503
BOROUGH OF TENAFLY
BERGEN COUNTY NEW JERSEY

PROPERTY OWNERS WITHIN 200' OF PROPERTY

ERIC & WENDY A. YECIES
4 MARCOTTE LANE
BLOCK 501 LOT 10

PETER & MARGARITA WALLACH
2 MARCOTTE LANE
BLOCK 501 LOT 11

SHU CHEN KUO & CHI MAN SHUM
197 KNICKERBOCKER ROAD
BLOCK 501 LOT 12

KNICKERBOCKER COUNTRY CLUB
191 KNICKERBOCKER ROAD
BLOCK 501 LOT 13

KNICKERBOCKER COUNTRY CLUB
163 KNICKERBOCKER ROAD
BLOCK 501 LOT 14

REMBERTO & MARTA PEREZ
123 KNICKERBOCKER ROAD
BLOCK 501 LOT 15.01

BRUCE & MIRIAM POMERANZ
107 KNICKERBOCKER ROAD
BLOCK 501 LOT 15.02

CAROLYN OSHIN & L. WHITMAN
11 CRABTREE LANE
BLOCK 501 LOT 16

STEVEN & IRIS MAYER
92 JOYCE ROAD
BLOCK 805 LOT 1

JOSEPH N. & MARIANNE W. REILLY
72 PALMER AVENUE
BLOCK 805 LOT 36

YIGAL & NAVIT BITTON
80 PALMER AVENUE
BLOCK 806 LOT 1

YONG SUE & BOK JIN LEE
41 BENJAMIN ROAD
BLOCK 806 LOT 15

ARIEL FRIED & ADAM BEHRMAN
84 PALMER AVENUE
BLOCK 806 LOT 16

ROBERT & MAGARET JORGENSEN
82 PALMER AVENUE
BLOCK 806 LOT 17

DENNIS J. & JANE F. ALLENDORF
46 BENJAMIN ROAD
BLOCK 809 LOT 1

JONES CECERE, K. & E. JONES
104 PALMER AVENUE
BLOCK 809 LOT 43

VLADISLAV & MARINA LYANDRES
100 PALMER AVENUE
BLOCK 809 LOT 44

JAMES H. & SUZANNA S. PYUN
96 PALMER AVENUE
BLOCK 809 LOT 45

MITCHELL D. & LAURA S. HOLLANDER
51 PALMER AVENUE
BLOCK 502 LOT 14

AVIV & TALYA DEKEL
67 ERLEDON ROAD
BLOCK 502 LOT 15

PETER SHAPIRO & ELENA SHERMAN
75 ERLEDON ROAD
BLOCK 502 LOT 16

THOMAS E. & FRANCESCA MOLNAR
79 ERLEDON ROAD
BLOCK 502 LOT 17

SHELTA KODJO
85 ERLEDON ROAD
BLOCK 502 LOT 18

JAMES H. & ELEIZABETH A. CLINGHAM JR.
93 ERLEDON ROAD
BLOCK 502 LOT 19

ANTHONY D. & ROSEMARY LIMBARDO
101 ERLEDON ROAD
BLOCK 502 LOT 20

HOUSUNG CHOI & ELI KIM
111 ERLEDON ROAD
BLOCK 502 LOT 21

YURAN XU
119 ERLEDON ROAD
BLOCK 502 LOT 22

FELICE FINE TOONKEL
127 ERLEDON ROAD
BLOCK 502 LOT 23

DANIEL & AYALA HODAK
137 ERLEDON ROAD
BLOCK 502 LOT 24

MARC & DEBRA KAPLAN
200 KINDERKAMACK ROAD
BLOCK 502 LOT 25

RAIS ZAWAHIR
91 KNICKERBOCKER ROAD
BLOCK 602 LOT 8

HOWARD & KAREN TUBIN
12 COUNTRY CLUB ROAD
BLOCK 603 LOT 1

CHIN YANG & ANITA GUNAWAN
22 COUNTRY CLUB ROAD
BLOCK 603 LOT 2

VENUGOPAL R. & CHITHRA DURGAM
28 COUNTRY CLUB ROAD
BLOCK 603 LOT 3

KATHERINE COUSINEAU
34 COUNTRY CLUB ROAD
BLOCK 603 LOT 4

ROBYN SIMON & JEFFREY A. BROWN
40 COUNTRY CLUB ROAD
BLOCK 603 LOT 5

ARTHUR S. THOMPSON & JANE GLOECKNER
71 PALMER AVENUE
BLOCK 503 LOT 2

WILLIAM SIU CHEONG & FUNG NINI WONG
75 PALMER AVENUE
BLOCK 503 LOT 3

ELAD NACHUM
79 PALMER AVENUE
BLOCK 503 LOT 4

CARL J. & JAME R. ANTIFONARIO
81 PALMER AVENUE
BLOCK 503 LOT 5

ARIK SHAHAR & DANA SHAHAR GARA
85 PALMER AVENUE
BLOCK 503 LOT 6

DANNY & DEANNA D. STEFFENS
91 PALMER AVENUE
BLOCK 503 LOT 7

BRIAN & ROSWITHA GROGAN
93 PALMER AVENUE
BLOCK 503 LOT 8

EDWARD & HELEN SHAPIRO
97 PALMER AVENUE
BLOCK 503 LOT 9

IRENE C. & FINN FJELDBERG
99 PALMER AVENUE
BLOCK 503 LOT 10

GREGORY L. LIMBARDO
103 PALMER AVENUE
BLOCK 503 LOT 11

IRIT HANA & RON HASHMONAY
107 PALMER AVENUE
BLOCK 503 LOT 12

MELVIN & MARI HIOKI
109 PALMER AVENUE
BLOCK 503 LOT 13

MARK & JANE CIPOLLINI
113 PALMER AVENUE
BLOCK 503 LOT 14

JIN WOO CHUN & MIKYUNG PARK
46 COUNTRY CLUB ROAD
BLOCK 603 LOT 6

IVAN & MARY ARGUELLO
52 COUNTRY CLUB ROAD
BLOCK 603 LOT 7

E. RICHARDS & WARD G. GRIFFITHS
58 COUNTRY CLUB ROAD
BLOCK 603 LOT 8

ELLEN W. SINGER
64 COUNTRY CLUB ROAD
BLOCK 603 LOT 9

HEE Y. KIM & NANCY CHUNG
70 COUNTRY CLUB ROAD
BLOCK 603 LOT 10

AURELIO VINLUAN & BELAN A. FINEZA
115 PALMER AVENUE
BLOCK 503 LOT 15

EBRAHIM FARAJI & SOHELIA K. AMIN
87 COUNTRY CLUB ROAD
BLOCK 503 LOT 16

ERIC & JULIE NATHAN BLOOM
83 COUNTRY CLUB ROAD
BLOCK 503 LOT 17

MAAYAN COHEN
75 COUNTRY CLUB ROAD
BLOCK 503 LOT 18

SHACHAR & NATALIE ALMAGOR
69 COUNTRY CLUB ROAD
BLOCK 503 LOT 19

DR. KOURKEN A. & MARLIESE R. DEGLIAN
63 COUNTRY CLUB ROAD
BLOCK 503 LOT 20

SEHOON CHANG & HAIKUN YANG
57 COUNTRY CLUB ROAD
BLOCK 503 LOT 21

DONNA B. AMSTERDAM TRUSTEE
51 COUNTRY CLUB ROAD
BLOCK 503 LOT 22

LISA CHEU
45 COUNTRY CLUB ROAD
BLOCK 503 LOT 23

HAOYU RAN & XIAOYING SONG
39 COUNTRY CLUB ROAD
BLOCK 503 LOT 24

JIN HYUCK LEE
33 COUNTRY CLUB ROAD
BLOCK 503 LOT 25

DAVID M. CERUTTI
27 COUNTRY CLUB ROAD
BLOCK 503 LOT 26

JEFFREY B. & CYNTHIA A. PATTISON
11 COUNTRY CLUB ROAD
BLOCK 503 LOT 27

GEORGE FENGWU & LAURA CHUI HUN PAO
76 COUNTRY CLUB ROAD
BLOCK 603 LOT 11

NAOKI & MIHO SHINDO
82 COUNTRY CLUB ROAD
BLOCK 603 LOT 12

FREDERICK & ROBIN PASTER
88 COUNTRY CLUB ROAD
BLOCK 603 LOT 13

JEFF & SHARON KURTZ
118 PALMER AVENUE
BLOCK 603 LOT 16

JOSHUA ZVI & ALEXANDRA TAI
116 PALMER AVENUE
BLOCK 603 LOT 17

CHUNG & JIEUN SUSAN SON
112 PALMER AVENUE
BLOCK 603 LOT 18

SHIMON & DANIELA BENTSADIK
64 HAMILTON PLACE
BLOCK 603 LOT 19

PUBLIC UTILITIES

UNITED WATER OF NEW JERSEY
200 OLD HOOK ROAD
HARRINGTON PARK, NEW JERSEY 07640

CABLEVISION
352 CENTRAL AVENUE
NEWARK, NEW JERSEY 07103

PUBLIC SERVICE ELECTRIC & GAS CO.
308 MAIN STREET
ORANGE, N.J. 07051
ATTN: CORP. SECRETARY

CONDITIONAL USE REQUIREMENTS, BOROUGH ORDINANCE CHAPTER 35-805.3:

a. Such use may include dining facilities and related indoor and outdoor recreational facilities, such as tennis courts, swimming pools, golf courses and the like.

THE PROPOSED 'POOL AND ACTIVITY' BUILDING FITS THE DESCRIPTION OF THE REQUIREMENT ABOVE, THEREFORE IT IS IN COMPLIANCE WITH THE BOROUGH'S CONDITIONAL USE REQUIREMENT.

b. No building shall be located within one hundred (100) feet of a property line. If a property contains both a clubhouse and golf course, there shall be a minimum lot area of seventy-five (75) acres and no building shall be located within thirty (30) feet of a property line.

THE EXISTING CLUB HOUSE LOCATED WITHIN 100 FT. OF A PROPERTY LINE. (E) PROPOSED ADDITION IS 37.0 FT. FROM PROPOSED LINE (V)

c. Building shall not cover more than twelve and one-half (12 1/2%) percent of the lot.

THE PROPOSED BUILDING COVERAGE IS 2.16 %.

d. No building shall exceed a height of two and one-half (2 1/2) stories and thirty five (35) feet.

THE PROPOSED BUILDING IS A 2 STORY BUILDING AND 34.96' HIGH. SEE CALCULATION ON SHEET 5.

e. No parking shall be located in a front yard. Parking shall otherwise be located at least twenty-five (25) feet from property line. (Ord. No. 97-29 p. 805C)

NO NEW PARKING IS PROPOSED. THE EXISTING CONDITIONS. (E) FOR PARKING IN FRONT YARD.

PROJECT LOCATION MAP
SCALE: 1"=200'

BOROUGH OF TENAFLY BULK REQUIREMENTS

BLOCK 503 LOT 1 (LOT AREA = 1,038,035 S.F. OR 23.83 ACRES)

ZONING DISTRICT – R-20 RESIDENTIAL DISTRICT	REQUIRED	EXISTING	PROPOSED
LOT REQUIREMENTS :			
MINIMUM LOT AREA (SQUARE FEET)	20,000	1,038,035	1,038,035
(ACRES)	0.46	23.83	23.83
MINIMUM LOT WIDTH (FEET)	100	1,140	1,140
MINIMUM LOT WIDTH AT STREET LINE (FEET)	60	913	913
MINIMUM FRONT YARD DEPTH :			
KNICKERBOCKER ROAD (FEET)	100	179.79	179.79
ERLEDON ROAD (FEET)	100	21.0	21.0 (enc)
REAR YARD SETBACK (FEET)	100	498.9	498.9
SIDE YARD SETBACK (FEET)	100	634.9	634.9 (E)
COMBINED SIDE YARD SETBACK (%)	30	79	80
MAXIMUM LOT COVERAGE :			
MAXIMUM BUILDING COVERAGE (%)	12.5	2.82	2.82
MAXIMUM IMPERVIOUS COVERAGE (%)	30	17.06	21.49
FAR (%)	22.5	7	8
MAXIMUM PRINCIPAL BUILDING HEIGHT (STORIES)	2 1/2	2 1/2	2 1/2
HEIGHT (FEET)	35	33.26	33.26(E)

(E) – EXISTING CONDITIONS
(*) – AVERAGE GRADE = 121.41' RIDGE ELEVATION = 154.67'
(enc) – EXISTING NON-CONFORMING

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	SITE LOCATION MAP
3-6	EXISTING CONDITIONS PLAN
7-12	SITE PLAN
13-18	SOIL EROSION AND SEDIMENT CONTROL PLAN
19-23	DETAIL SHEET
24-25	TREE REMOVAL PLAN

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
4	1-14-26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
3	12-23-25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
2	11-3-25	PER ENG. REV. LTR. 10-29-25	GK.T.	J.L.M.
1	11-8-24	ZONING BOARD SUBMISSION.	GK.T.	J.L.M.

OWNER/APPLICANT :
KNICKERBOCKER COUNTRY CLUB
188 KNICKERBOCKER ROAD
TENAFLY, NEW JERSEY 07670

BOROUGH OF TENAFLY

THIS SITE PLAN WAS APPROVED AT A MEETING OF THE PLANNING BOARD OF THE BOROUGH OF TENAFLY, NEW JERSEY, HELD ON _____

CHAIRMAN

SECRETARY

BOARD ENGINEER

JEFFREY L. MORRIS

PROFESSIONAL ENGINEER AND LAND SURVEYOR N.J. LIC. 24GB0397900
PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

KEVIN J. BOSWELL

PROFESSIONAL ENGINEER N.J. LIC. 32943

BOSWELL

330 PHILLIPS AVENUE SOUTH HACKENSACK NJ 07606 TEL: (201) 641-0770
P.O. BOX 371 180 MAIN STREET CHESTER NJ 07930 TEL: (908) 879-6209
17 MODEL AVENUE HOPEWELL NJ 08525 TEL: (609) 466-0002

N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27985000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

TITLE SHEET

BOROUGH OF TENAFLY
BERGEN COUNTY NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	10/24/24	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
G.K.T.	J.L.M.	AS NOTED	1 OF 25

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NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
4	1-14-26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
3	12-23-25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
2	11-3-25	PER ENG. REV. LTR. 10-29-25	GK.T.	J.L.M.
1	11-8-24	ZONING BOARD SUBMISSION.	GK.T.	J.L.M.

JEFFREY L. MORRIS

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HOPEWELL NJ 08525
TEL: (609) 466-0002

N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27988000

KNICKERBOCKER COUNTRY CLUB 2025 IMPROVEMENTS

SITE LOCATION MAP

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	10/24/24	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
G.K.T.	J.L.M.	1"=60'	2 OF 25

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EXISTING TENNIS COURTS
TO BE REMOVED
AREA= 13,556 SQ. FT.

EXISTING TENNIS COURTS
TO BE REMOVED
AREA= 12,642 SQ. FT.

EXISTING STORM DRAINAGE
TO BE REMOVED

EXISTING RAILROAD TIES
TO BE REMOVED

EXISTING RAILROAD TIES
TO BE REMOVED

EXISTING RAILROAD TIES
TO BE REMOVED

EXISTING WALKWAY AND WALLS
TO BE REMOVED
AREA = 3,574 SQ. FT.

EXISTING BUILDINGS
TO BE REMOVED
AREA= 260 SQ. FT.

EXISTING WATER FOUNTAIN
TO BE REMOVED

EXISTING TREE
TO BE REMOVED
TYP.

EXISTING WALKWAY
TO BE REMOVED
AREA= 550 SQ. FT.

EXISTING SHED
TO BE REMOVED
AREA= 102 SQ. FT.

EXISTING SHED
TO BE REMOVED
AREA= 102 SQ. FT.

BLOCK 503 LOT 2
N/F THOMPSON, ARTHUR
& JANE GLOECKNER

BLOCK 503 LOT 3
N/F WONG, WILLIAM SIU CHE
&FUNG NINI

BLOCK 503
LOT 1

LOT 2

LOT 6

BLOCK
N/F S
SHAH

MATCH LINE EXISTING CONDITIONS PLAN - 2

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
4	1-14-26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
3	12-23-25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
2	11-3-25	PER ENG. REV. LTR. 10-29-25	GK.T.	J.L.M.
1	11-8-24	ZONING BOARD SUBMISSION.	GK.T.	J.L.M.

JEFFREY L. MORRIS

PROFESSIONAL ENGINEER AND LAND SURVEYOR N.J. LIC. 24GB0397900
PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

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N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27985000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

EXISTING CONDITIONS PLAN-1

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	10/24/24	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	1"=20'	3 OF 25

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MATCH LINE EXISTING CONDITIONS PLAN - 1

MATCH LINE EXISTING CONDITIONS PLAN - 3

MATCH LINE EXISTING CONDITIONS PLAN - 4

BLOCK 503 LOT 1
N/F KNICKERBOCKER COUNTRY CLUB

EXISTING SHED
TO BE REMOVED
AREA= 192 SQ. FT.

EXISTING TREE
TO BE REMOVED
TYP.

BENJAMIN ROAD
(50' ROW)

BLOCK 503 LOT 7
N/F STEFFENS, DANNY
& DEANNA D

BLOCK 503 LOT 8
N/F GROGAN, BRIAN
& ROSWITHA

BLOCK 503 LOT 9
N/F SHAPIRO, PHILIP W
& JEANETTE E

BLOCK 503 LOT 10
N/F FJELDBERG,
IRENE C & FINN

BLOCK 503 LOT 11
N/F LIMBARDO, GREGORY L

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
4	1-14-26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
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1	11-8-24	ZONING BOARD SUBMISSION.	GK.T.	J.L.M.

JEFFREY L. MORRIS

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PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

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TEL: (609) 466-0002

N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27988000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

EXISTING CONDITIONS PLAN-2

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	OCT. 2024	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
G.K.T.	J.L.M.	1"=20'	4 OF 25

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MARCOTTE LANE
(60' ROW)

KNICKERBOCKER ROAD
(AKA COUTY ROUTE 505)
(60' ROW)

5' SIDEWALK EASEMENT

40' SETBACK

5' ROAD WIDENING EASEMENT

S 81°54' E

N 4° 01' 31" E - 6.79'

N 85° 43' 02" E - 594.57'

S 83°30' W

EXISTING CURB AND WALKWAY
TO BE REMOVED
AREA = 2,225 SQ. FT.

EXISTING WALKWAY
TO BE REMOVED
AREA = 1,954 SQ. FT.

EXISTING WALKWAY AND WALLS
TO BE REMOVED
AREA = 3,574 SQ. FT.

EXISTING KIDS POOL
TO BE REMOVED

EXISTING
TO BE RE
AREA= 1

MATCH LINE EXISTING CONDITIONS PLAN - 1

MATCH LINE EXISTING CONDITIONS PLAN - 4

GRAPHIC SCALE

0 10 20 40 80

(IN FEET)
1 inch = 20 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
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1	11–8–24	ZONING BOARD SUBMISSION.	GK.T.	J.L.M.

JEFFREY L. MORRIS

PROFESSIONAL ENGINEER AND LAND SURVEYOR N.J. LIC. 24GB03979O0
PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

KEVIN J. BOSWELL

PROFESSIONAL ENGINEER N.J. LIC. 32943

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N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27958000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

EXISTING CONDITIONS PLAN-3

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	OCT. 2024	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	1"=20'	5 OF 25

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MATCH LINE EXISTING CONDITIONS PLAN - 3

KNICKERBOCKER ROAD
(AKA COUTY ROUTE 505)
(60' ROW)

N 12° 51' 13" E - 1156.61'

5' COUNTY ROAD WIDENING EASEMENT

MACADAM WALKWAY

STONE

GRASS

TEE

CONC. CURB

SAN. MH
RIM=122.11
INV=109.96

SEEPAGE PIT
INV.106.65
INV.100.65–BOT

ELEC BOX
119.59

117.63
48" OAK

R–102.30
INV.98.50W
INV.97.05SE

ST. MH
R–101.50
INV.96.65NW
INV.98.405

102.10
golf net

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
4	1–14–26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
3	12–23–25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
2	11–3–25	PER ENG. REV. LTR. 10–29–25	GK.T.	J.L.M.
1	11–8–24	ZONING BOARD SUBMISSION.	GK.T.	J.L.M.

JEFFREY L. MORRIS

PROFESSIONAL ENGINEER AND LAND SURVEYOR N.J. LIC. 24GB0397900
PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

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N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27958000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

EXISTING CONDITIONS PLAN-4

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	OCT. 2024	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	1"=20'	6 OF 25

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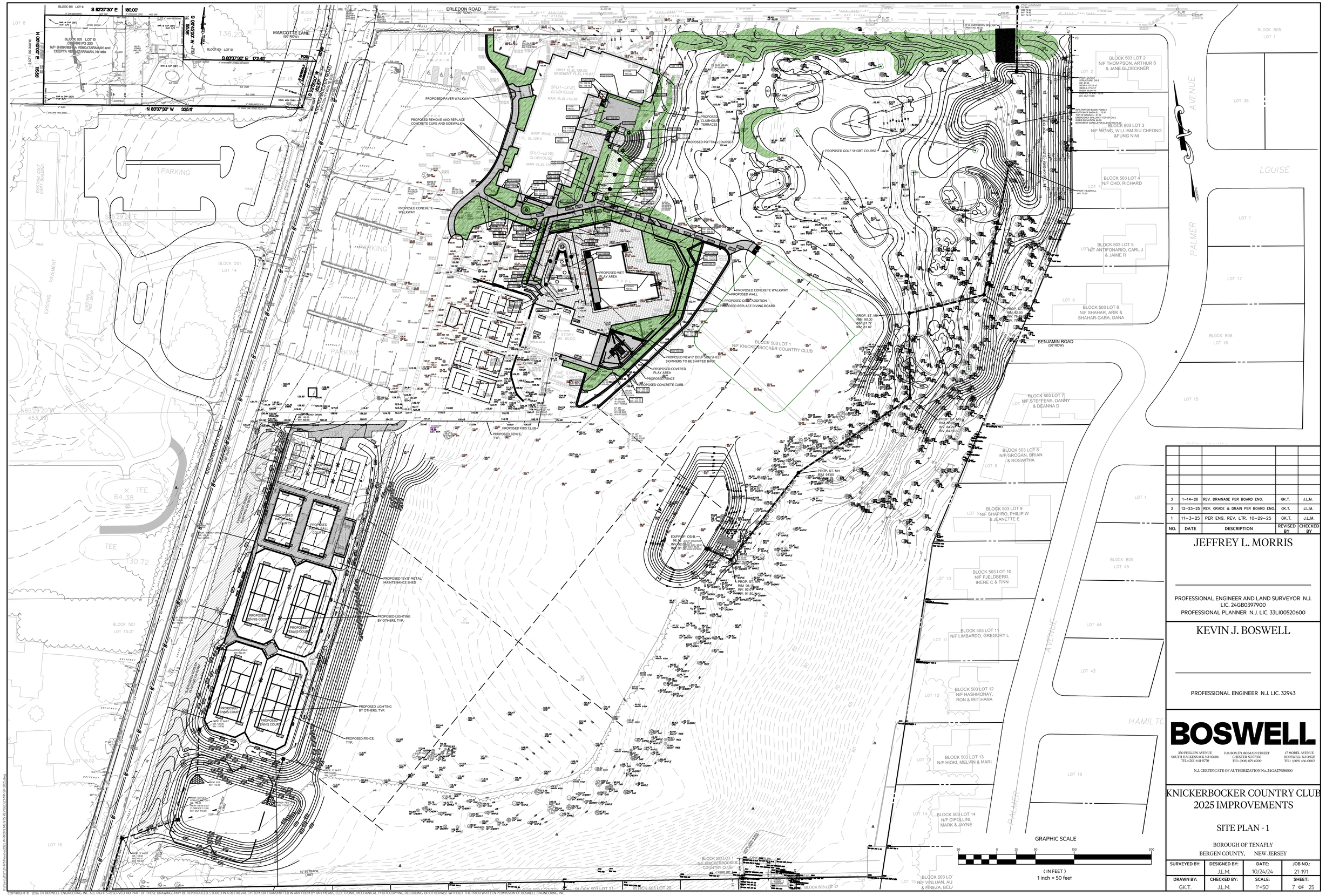
ERLEDON ROAD
(50' ROW)
MARCOTTE LANE
(60' ROW)
KNICKERBOCKER ROAD
(VARIABLE WIDTH ROW)
BENJAMIN ROAD
(50' ROW)
PALMER AVENUE
LOUISE
HAMILTON
BLOCK 501 LOT 9
BLOCK 501 LOT 10
BLOCK 501 LOT 11
BLOCK 501 LOT 12
BLOCK 501 LOT 13
BLOCK 501 LOT 14
BLOCK 501 LOT 15.01
BLOCK 501 LOT 15.02
BLOCK 501 LOT 16
BLOCK 501 LOT 17
BLOCK 501 LOT 18
BLOCK 501 LOT 19
BLOCK 501 LOT 20
BLOCK 501 LOT 21
BLOCK 503 LOT 1
N/F KNICKERBOCKER COUNTRY CLUB
BLOCK 503 LOT 2
N/F THOMPSON, ARTHUR S & JANE GLOECKNER
BLOCK 503 LOT 3
N/F WONG, WILLIAM SIU CHEONG &FUNG NIN
BLOCK 503 LOT 4
N/F CHO, RICHARD
BLOCK 503 LOT 5
N/F ANTIFONARIO, CARL J & JAIME R
BLOCK 503 LOT 6
N/F SHAHAR, ARIK & SHAHAR-GARA, DANA
BLOCK 503 LOT 7
N/F STEFFENS, DANNY & DEANNA D
BLOCK 503 LOT 8
N/F GROGAN, BRIAN & ROSWITHA
BLOCK 503 LOT 9
N/F SHAPIRO, PHILIP W & JEANETTE E
BLOCK 503 LOT 10
N/F FJELDBERG, IRENE C & FINN
BLOCK 503 LOT 11
N/F LIMBARDO, GREGORY L
BLOCK 503 LOT 12
N/F HASHIMOTO, RON & IRIT HANA
BLOCK 503 LOT 13
N/F HIOKI, MELVIN & MARI
BLOCK 503 LOT 14
N/F CIPOLLINI, MARK & JAYNE
BLOCK 503 LOT 15
N/F VINLUAN, AU & FINEZA, BELI
BLOCK 503 LOT 17
BLOCK 503 LOT 20
BLOCK 503 LOT 21
BLOCK 805 LOT 1
BLOCK 806 LOT 16
BLOCK 809 LOT 45
BLOCK 501 LOT 13
DWNR PID 202
N/F SHRIDHARA VENKATARAMAN and DEEPTA VENKATARAMAN, his wife
S 83°37'30" E 180.00'
N 06°05'00" E 150.56'
S 06°05'00" W 150.56'
S 83°37'30" E 172.45'
N 83°37'30" W 335.11'
PCB
S 06°05'00" W 60.00'
N85°29'20"W 453.39'
S85°29'20"E 228.85'
PROPOSED PAVER WALKWAY
PROPOSED REMOVE AND REPLACE CONCRETE CURB AND SIDEWALK
PROPOSED CONCRETE WALKWAY
PROPOSED WET PLAY AREA
PROPOSED CONCRETE WALKWAY
PROPOSED WALL
PROPOSED POOL ADDITION
PROPOSED REPLACE DIVING BOARD
PROPOSED NEW 8' DEEP SUN SHELF SKIMMERS TO BE SHIFTED BACK
PROPOSED COVERED PLAY AREA
PROPOSED FENCE
PROPOSED CONCRETE CURB
PROPOSED KIDS CLUB
PROPOSED FENCE, TYP.
PROPOSED CLUBHOUSE TERRACES
PROPOSED PUTTING COURSE
PROPOSED GOLF SHORT COURSE
PROPOSED 15'x15' METAL MAINTENANCE SHED
PROPOSED LIGHTING BY OTHERS, TYP.
PROPOSED FENCE, TYP.
PROPOSED EXTERIOR TENNIS COURTS
PROPOSED INTERIOR TENNIS COURTS
PROPOSED TENNIS COURT
PROPOSED TENNIS COURT
PROPOSED TENNIS COURT
PROPOSED TENNIS COURT
PROPOSED EXISTING TENNIS COURT
PROPOSED EXISTING TENNIS COURT
EXISTING GOLF CART BUILDING
EXISTING PAVEMENT
EXISTING ASPHALT PATH
PARKING
FIRST FL.EL129.00
BASEMENT FL.EL118.67
SPLIT-LEVEL CLUBHOUSE
MAIN FL.EL119.56
ROOF RIDGE EL.135.0
T.F.F.EL EL129.0
ONE STORY FRAME BLDG.
TWO STORY FRAME BLDG.
PROP. ST. MH
RIM 90.00
INV. 81.77
INV. 81.67
PROP. ST. MH
RIM 88.00
INV. 82.00
PROP. ST. MH
RIM 85.00
INV. 84.29
INV. 84.19
PROP. ST. MH
RIM 98.00
INV. 92.00
INV. 91.50
EXPROP. OS-B
TO BE REMOVED
TO BE REMOVED
PROP. OUTLET STRUCTURE OS-2
GR. 80.00
WEIR 1 EL 85.33-10' WEIR 2 EL 87.5-12' RISER ELEV. 80.00-10' BOTTOM OF SAND LAYER EL 79.00
INV. OUT 74.80
INFILTRATION BASIN POND-2
BOTTOM OF BASIN EL. 75.50
TOP OF BERM EL. 80.00
EMERGENCY SPILLWAY TOP OF DIS-2
RISER ELEVATION 80.00
BOTTOM OF SAND LAYER ELEVATION 76.00
PROP. HEADWALL
INV. 75.50
PROP. OUTLET STRUCTURE OS-1
GR. 85.00
WEIR 1 EL 89.33-10' WEIR 2 EL 91.5-12' RISER ELEV. 85.00-10' BOTTOM OF SAND LAYER ELEVATION 81.00
INV. OUT 79.80
PROP. OF EMERGENCY SPILLWAY OUTLET INV. 80.00
PROP. INLET
GR. 110.00
INV. 103.50
INV. 103.00
PROP. INLET
GR. 110.00
INV. 103.50
INV. 103.00
PROP. INLET
GR. 110.00
INV. 103.50
INV. 103.00
PROP. INLET
GR. 120.00
INV. 109.00
PROP. INLET
GR. 120.00
INV. 109.00
PROP. INLET
GR. 110.00
INV. 103.50
INV. 103.00
PROP. OUTLET STRUCTURE
GR. 115.00
WEIR 113.00-0.33'
2" ORIFICE 112.00
INV. OUT 110.00
PROP. INLET
GR. 110.00
INV. 103.50
INV. 103

ERLEDON ROAD
(50' ROW)

PROPOSED PAVER WALKWAY

PROPOSED REMOVE AND REPLACE CONCRETE CURB AND SIDEWALK

PROPOSED CONCRETE WALKWAY

PROPOSED CLUBHOUSE TERRACES

PROPOSED PUTTING COURSE

PROPOSED GOLF SHORT COURSE

PROPOSED WET PLAY AREA

PROPOSED CONCRETE WALKWAY

PROPOSED WALL

PROPOSED DECK ADDITION

PROPOSED REPLACE DIVING BOARD

MATCH LINE SITE PLAN - 3

MATCH LINE SITE PLAN - 4

GRAPHIC SCALE

(IN FEET)
1 inch = 20 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
3	1–14–26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
2	12–23–25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
1	11–3–25	PER ENG. REV. LTR. 10–29–25	GK.T.	J.L.M.

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PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

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N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27958000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

SITE PLAN - 2

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	10/24/24	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
G.K.T.	J.L.M.	1"=20'	8 OF 25

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PROP. DOGHOUSE
ST. MH
RIM 78.40
INV. 74.80
INV. 74.72

25' W. EMERGENCY SPILLWAY
CREST INV. 80.00

PROP. 82 L.F. 18" HDPE @ 1.46%

PROP. OUTLET
STRUCTURE: OS-2
GR. 80.00
WEIR-1.-76.33-10'
WEIR-2.-77.0-12'
RISER- 80.00-16'
ORIFICE:12"X36"- 75.00
INV. OUT 74.90

INFILTRATION BASIN: POND-2
BOTTOM OF BASIN EL.: 75.50
TOP OF BASIN EL.: 81.00
EMERGENCY SPILLWAY/ TOP OF OS-2
RISER ELEVATION: 80.00
BOTTOM OF SAND LAYER ELEVATION:75.00

PROP. HW-1
INV. 75.90

PROP. HEADWALL
INV. 75.50

PROP. 170 L.F. 24" HDPE @ 2.29%

PROP. 95 L.F. 24" HDPE @ 2.29%

PROP. ST. MH
RIM 90.00
INV. 81.77
INV. 81.67

PROP. ST. MH
RIM 82.00
INV. 79.49
INV. 79.39

PROPOSED GOLF SHORT COURSE

TOP OF DAM

TOP OF DAM - 10' WIDE

BLOCK 503 LOT 2
N/F THOMPSON, ARTHUR S
& JANE GLOECKNER

BLOCK 503 LOT 3
N/F WONG, WILLIAM SIU CHEONG
&FUNG NINI

BLOCK 503 LOT 4
N/F CHO, RICHARD

BLOCK 503 LOT 5
N/F ANTIFONARIO, CARL J
& JAIME R

BLOCK 503 LOT 6
N/F SHAHAR, ARIK &
SHAHAR-GARA, DANA

BLOCK 503 LOT 1
F KNICKERBOCKER COU

BENJAMIN ROAD
(50' ROW)

MATCH LINE SITE PLAN - 2

MATCH LINE SITE PLAN - 4

PROPOSED CONCRETE WALKWAY
OPOSED WALL
SED DECK ADDITION
REPLACE DIVING BOARD

GRAPHIC SCALE
20 0 10 20 40 60
(IN FEET)
1 inch = 20 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
3	1-14-26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
2	12-23-25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
1	11-3-25	PER ENG. REV. LTR. 10-29-25	GK.T.	J.L.M.

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N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27985000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

SITE PLAN-3

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	OCT. 2024	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	1"=20'	9 OF 25

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MATCH LINE SITE PLAN - 3

TOD 108.70

PROPOSED NEW 8" DEEP SUN SHELF SKIMMERS TO BE SHIFTED BACK

PROPOSED COVERED PLAY AREA

PROPOSED FENCE

PROPOSED CONCRETE CURB

TW. 109.25
BW. 000.00

TW. 000.00
BW. 000.00

PROPOSED KIDS CLUB

PROPOSED FENCE, TYP.

ONE STORY FRAME GARAGE

KNICKERBOCKER COUNTRY CLUB

PROP. 140 L.F. 24" HDPE @ 2.20%

PROP. ST. MH
RIM 88.00
INV. 84.29
INV. 84.19

PROP. ST. MH
RIM 91.00
INV. 88.29
INV. 88.19

PROP. ST. MH
RIM 98.15
INV. 92.01
INV. 91.50

EX/PROP. OS-B.
98.15
INV 92.01
INV. 91.50

OUTLET STRUCTURE
TOP ELEV. 97.00
ORIFICE ELEV. 93.50
WEIR ELEV. 95.00
INV. 93.50 (12"RCP)

EMERGENCY SPILLWAY
20 FT. WIDE
INV. 96.00

PROP. 24" HDPE
PROP. 81 L.F.
PROP. 131 L.F.

SCOUR HOLE (8'x12')
INV. 93.00
POS. 93.00
POS. 92.75

PROP. ST. MH
RIM 98.15
INV. 92.01
INV. 91.50

BLOCK 503 LOT 9
N/F SHAPIRO, F & JEANETT

LOT 10

LOT 11

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 feet

MATCH LINE SITE PLAN - 5

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
3	1-14-26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
2	12-23-25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
1	11-3-25	PER ENG. REV. LTR. 10-29-25	GK.T.	J.L.M.

JEFFREY L. MORRIS

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KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

SITE PLAN-4

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	OCT. 2024	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	1"=20'	10 OF 25

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MATCH LINE SITE PLAN - 4

KNICKERBOCKER ROAD
(AKA COUNTY ROUTE 505)
(60' ROW)

PROPOSED PICKLEBALL COURTS

PROPOSED PADEL BALL COURTS

PROPOSED PADEL BALL COURTS

PROPOSED TENNIS COURT

PROPOSED TENNIS COURT

PROPOSED KIDS CLUB

PROPOSED FENCE, TYP.

PROPOSED NEW 8" D
SKIMMERS TO BE SH

PROPOSED COVERED PLAY AREA

PROPOSED FENCE

PROPOSED CONCRETE CURB

TOD 108.70

TW. 109.25
BW. 000.00

TW. 000.00
BW. 000.00

PROPOSED 15'x15' METAL MAINTENANCE SHED

PROPOSED LIGHTING BY OTHERS, TYP.

PROP. TRENCH DRAIN
GR. 125.00
INV. 000.00

PROP. TRENCH DRAIN
GR. 124.00
INV. 123.00

PROP. TRENCH DRAIN
GR. 124.00
INV. 123.00

PROP. TRENCH DRAIN
GR. 124.00
INV. 123.00

PROP. FES-2
INV. 122.00

EVERGREEN SCREEN PLANTING ON BERM

EVERGREEN PLANTING

50.0'

50.0' TYP.

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 feet

MATCH LINE SITE PLAN - 6

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
3	1-14-26	REV. DRAINAGE PER BOARD ENG.	G.K.T.	J.L.M.
2	12-23-25	REV. GRADE & DRAIN PER BOARD ENG.	G.K.T.	J.L.M.
1	11-3-25	PER ENG. REV. LTR. 10-29-25	G.K.T.	J.L.M.

JEFFREY L. MORRIS

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PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

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KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

SITE PLAN-5

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
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DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
G.K.T.	J.L.M.	1"=20'	11 OF 25

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MATCH LINE SITE PLAN - 5

PROPOSED LIGHTING BY OTHERS, TYP.

PROPOSED FENCE, TYP.

PROPOSED TENNIS COURT

PROPOSED TENNIS COURT

50.0' TYP.

PROP. 'E' INLET
GR. 122.25
INV. 117.00

PROP. 'E' INLET
GR. 122.50
INV. 117.00

PROP. FES
INV. 112.00

PROP. FES
INV. 112.00

PROP. OUTLET
STRUCTURE: OS-1
GR. 115.50
WEIR 113.00 /0.33"
3" ORIFICE 112.00
INV. OUT 110.90

100' SETBACK LIMIT

78 L.F. 15" HDPE @ 1.0%

PROP. 'E' INLET
GR. 115.50
INV. 110.17
INV. 109.92

40' SETBACK LIMIT

205 L.F. 18" HDPE @ 0.8%

212 L.F. 18" HDPE @ 0.8%

76.51'

15' SETBACK LIMIT

CONNECT TO EXISTING STORM MANHOLE
INV. 107.85

CRABTREE LANE

COUNTRY CLUB RD.

BLOCK 503 LOT 27
N/FPATTISON, JEFFREY B & CYNTHIA A

BLOCK 503 LOT 26
N/F OPHIR, RONY & DALIA

BLOCK 503 LOT 25
N/FWALLER, DAVID

BLOCK 503 LOT 24
N/F GIESI HOLLAND LLC

LOT 15.02

LOT 16

LOT 27

LOT 26

LOT 25

LOT 24

LOT 1

LOT 2

LOT 3

LOT 4

DRIVEWAY

CONC. CURB

ASPH. CURB

RW

POOL

2121 CH-LINK FNC B

2122 CH-LINK FNC

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
3	1-14-26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
2	12-23-25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
1	11-3-25	PER ENG. REV. LTR. 10-29-25	GK.T.	J.L.M.

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KEVIN J. BOSWELL

PROFESSIONAL ENGINEER N.J. LIC. 32943

BOSWELL

330 PHILLIPS AVENUE
SOUTH HACKENSACK NJ 07606
TEL: (201) 641-0770

P.O. BOX 371 180 MAIN STREET
CHESTER NJ 07930
TEL: (908) 879-6209

17 MODEL AVENUE
HOPEWELL NJ 08525
TEL: (609) 466-0002

N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27988000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

SITE PLAN-6

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	OCT. 2024	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	1"=20'	12 OF 25

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STABILIZED CONSTRUCTION ACCESS
SILT FENCE
LIMIT OF DISTURBANCE
ERLEDON ROAD
(50' ROW)
MARCOTTE LANE
(60' ROW)
BENJAMIN ROAD
(50' ROW)
PROPOSED PAVER WALKWAY
PROPOSED REMOVE AND REPLACE CONCRETE CURB AND SIDEWALK
PROPOSED CONCRETE WALKWAY
PROPOSED CLUBHOUSE TERRACES
PROPOSED PUTTING COURSE
PROPOSED GOLF SHORT COURSE
TEMPORARY SOIL STOCKPILE AREA
PROPOSED WET PLAY AREA
PROPOSED CONCRETE WALKWAY
PROPOSED WALL
PROPOSED DECK ADDITION
PROPOSED REPLACE DIVING BOARD
PROPOSED NEW 8' DEEP SUN SHELF SKIMMERS TO BE SHIFTED BACK
PROPOSED COVERED PLAY AREA
PROPOSED FENCE
PROPOSED CONCRETE CURB
PROPOSED KIDS CLUB
PROPOSED FENCE, TYP.
PROPOSED TENNIS COURTS
PROPOSED PADDLE COURTS
PROPOSED BOCCE COURTS
PROPOSED 15'x15' METAL MAINTENANCE SHED
PROPOSED LIGHTING BY OTHERS, TYP.
INLET FILTER
IMIT OF DISTURBANCE
BLOCK 503 LOT 1
N/F KNICKERBOCKER COUNTRY CLUB
BLOCK 503 LOT 2
N/F THOMPSON, ARTHUR S & JANE GLOECKNER
BLOCK 503 LOT 3
N/F WONG, WILLIAM SIU CHEONG &FUNG NINI
BLOCK 503 LOT 4
N/F CHOI, RICHARD
BLOCK 503 LOT 5
N/F ANTIFONARIO, CARL J & JAIME R
BLOCK 503 LOT 6
N/F SHAHAR, ARIK & SHAHAR-GARA, DANA
BLOCK 503 LOT 7
N/F STEFFENS, DANNY & DEANNA D
BLOCK 503 LOT 8
N/F GROGAN, BRIAN & ROSWITHA
BLOCK 503 LOT 9
N/F SHAPIRO, PHILIP W & JEANETTE E
BLOCK 503 LOT 10
N/F FJELDBERG, IRENE C & FINN
BLOCK 503 LOT 11
N/F LIMBARDO, GREGORY L
BLOCK 503 LOT 12
N/F HASHMONAY, RON & IRIT HANA
BLOCK 503 LOT 13
N/F HIOKI, MELVIN & MARI
BLOCK 503 LOT 14
N/F CIPOLLINI, MARK & JAYNE
BLOCK 501 LOT 9
S 83°37'30" E 180.00'
BLOCK 501 LOT 13
DB 1466 PG 200
N/F BHRGTRH-HA VENKATARAMAN and DEEPTA VENKATARAMAN, his wife
S 06°45'00" W 255.95'
N 06°45'00" E 155.95'
BLOCK 501 LOT 12
S 83°37'30" E 172.45'
N 83°37'30" W 335.11'
BLOCK 501 LOT 14
N 06°45'00" E 255.95'
S 06°45'00" W 255.95'
N 83°37'30" W 335.11'
PARKING
EXISTING GOLF CART BLDG.
EXISTING PAVILION
EXISTING PAVILION
EXISTING PAVEMENT
EXISTING PAVEMENT
EXISTING PAVEMENT

ERLEDON ROAD
(50' ROW)

STABILIZED CONSTRUCTION ACCESS

SILT FENCE

PROPOSED PAVER WALKWAY

PROPOSED REMOVE AND REPLACE CONCRETE CURB AND SIDEWALK

PROPOSED CONCRETE WALKWAY

LIMIT OF DISTURBANCE

PROPOSED CLUBHOUSE TERRACES

PROPOSED PUTTING COURSE

PROPOSED WET PLAY AREA

PROPOSED CONCRETE WALKWAY

PROPOSED WALL

PROPOSED DECK ADDITION

PROPOSED REPLACE DIVING BOARD

MATCH LINE SOIL EROSION AND SEDIMENT CONTROL PLAN - 3

MATCH LINE SOIL EROSION AND SEDIMENT CONTROL PLAN - 4

GRAPHIC SCALE

(IN FEET)
1 inch = 20 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
3	1–14–26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
2	12–23–25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
1	11–3–25	PER ENG. REV. LTR. 10–29–25	GK.T.	J.L.M.

JEFFREY L. MORRIS

PROFESSIONAL ENGINEER AND LAND SURVEYOR N.J. LIC. 24GB0397900
PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

KEVIN J. BOSWELL

PROFESSIONAL ENGINEER N.J. LIC. 32943

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS
SOIL EROSION AND SEDIMENT CONTROL PLAN -2

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	10/24/24	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
G.K.T.	J.L.M.	1"=20'	14 OF 25

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LIMIT OF DISTURBANCE

PROP. DOGHOUSE ST. MH
RIM 78.40
INV. 74.80
INV: 74.72

PROP.OUTLET STRUCTURE-OS-2
GR. 83.00
WEIR INV. 80.50
ORICE INV. 75.50
INV.OUT. 74.00

25' W. EMERGENCY SPILLWAY
CREST INV. 80.00

PROP. 82 L.F. 18" HDPE @ 1.80%

PROP. OUTLET STRUCTURE: OS-2
GR. 80.00
WEIR-1 -76.33-10'
WEIR-2 -77.0-12'
RISER- 80.00-16'
ORIFICE.12"X36"- 75.00
INV. OUT 74.90

INFILTRATION BASIN: POND-2
BOTTOM OF BASIN EL.: 75.50
TOP OF BASIN EL.: 81.00
EMERGENCY SPILLWAY/ TOP OF OS-2
RISER ELEVATION: 80.00
BOTTOM OF SAND LAYER ELEVATION:75.00

TOP OF DAM

TOP OF DAM - 10' WIDE

PROP. 170 L.F. 24" HDPE @ 2.29%

PROP. 95 L.F. 24" HDPE @ 2.29%

PROP. HW-1
INV. 75.00

PROP. HEADWALL
INV. 75.50

PROP. ST. MH
RIM 82.00
INV. 79.49
INV. 79.39

PROP. ST. MH
RIM 90.00
INV. 81.77
INV. 81.67

SILT FENCE

PROPOSED GOLF SHORT COURSE

TEMPORARY SOIL STOCKPILE AREA

BLOCK 503 LOT 2
N/F THOMPSON, ARTHUR S & JANE GLOECKNER

BLOCK 503 LOT 3
N/F WONG, WILLIAM SIU CHEONG &FUNG NINI

BLOCK 503 LOT 4
N/F CHO, RICHARD

BLOCK 503 LOT 5
N/F ANTIFONARIO, CARL J & JAIME R

BLOCK 503 LOT 6
N/F SHAHAR, ARIK & SHAHAR-GARA, DANA

LOT 2 LOT 4 LOT 5 LOT 6

BENJAMIN ROAD
(50' ROW)

MATCH LINE SOIL EROSION AND SEDIMENT CONTROL PLAN - 2

MATCH LINE SOIL EROSION AND SEDIMENT CONTROL PLAN - 4

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
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1	11-3-25	PER ENG. REV. LTR. 10-29-25	GK.T.	J.L.M.

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KEVIN J. BOSWELL

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KNICKERBOCKER COUNTRY CLUB 2025 IMPROVEMENTS

SOIL EROSION AND SEDIMENT CONTROL PLAN - 3

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	10/24/24	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
G.K.T.	J.L.M.	1"=20'	15 OF 25

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MATCH LINE SOIL EROSION AND SEDIMENT CONTROL PLAN - 3

PROPOSED NEW 8" DEEP SUN SHELF SKIMMERS TO BE SHIFTED BACK

PROPOSED COVERED PLAY AREA

PROPOSED FENCE

PROPOSED CONCRETE CURB

TOD 108.70

TW. 109.25
BW. 000.00

TW. 000.00
BW. 000.00

TW. 109.25
BW. 000.00

ONE STORY FRAME GARAGE

KNICKERBOCKER COUNTRY CLUB

PROP. 1064 L.F. 24" HDPE @ 2.29%

PROP. 70 L.F. 24" HDPE @ 2.29%

PROP. ST. MH
RIM 88.00
INV. 84.29
INV. 84.19

PROP. ST. MH
RIM 91.00
INV. 88.29
INV. 88.19

PROP. 140 L.F. 24" HDPE @ 2.29%

PROP. ST. MH
RIM 98.15
INV. 92.01
INV. 91.50

PROP. 81 L.F. 24" HDPE @ 2.29%

EMERGENCY SPILLWAY
30 FT. WIDE
INV. 96.00

OUTLET STRUCTURE
TOP ELEV. 97.00
ORIFICE ELEV. 93.50
WEIR ELEV. 95.00
93.50 (12"RCP)

SCOUR HOLE (8'x8')
INV. 93.00
TOS 93.00
BOS 92.00

EX/PROP. OS-B.
98.15
INV 92.01
INV. 91.50

SILT FENCE

LIMIT OF DISTURBANCE

BLOCK 503 LOT
N/F STEFFENS, DAI
& DEANNA D

BLOCK 503 LOT 8
N/F GROGAN, BRIAN
& ROSWITHA

BLOCK 503 LOT 9
N/F SHAPIRO, PHILIP W
& JEANETTE F

BLOCK 503 LC
N/F FJELDBE
IRENE C & F

BLOCK 503 LOT 11
N/F LIMBARDO, GREGOF

LOT 8

LOT 9

LOT 10

LOT 11

GRAPHIC SCALE
30 0 10 20 40 80
(IN FEET)
1 inch = 20 feet

MATCH LINE SOIL EROSION AND SEDIMENT CONTROL PLAN - 5

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
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KEVIN J. BOSWELL

PROFESSIONAL ENGINEER N.J. LIC. 32943

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS
SOIL EROSION AND SEDIMENT CONTROL PLAN - 4

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	10/24/24	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	1"=20'	16 OF 25

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MATCH LINE SOIL EROSION AND SEDIMENT CONTROL PLAN - 4

STABILIZED CONSTRUCTION ACCESS

INLET FILTER

KNICKERBOCKER ROAD (AKA COUNTY ROUTE 505) (60' ROW)

PROP. TRENCH DRAIN GR. 125.00 INV. 000.00

PROP. TRENCH DRAIN GR. 124.00 INV. 123.00

PROP. TRENCH DRAIN GR. 124.00 INV. 123.50

PROP. FES-2 INV. 122.00

EVERGREEN SCREEN PLANTING ON BERM

PROPOSED PICKLEBALL COURTS

PROPOSED PADEL BALL COURTS

PROPOSED PADEL BALL COURTS

PROPOSED TENNIS COURT

PROPOSED TENNIS COURT

PROPOSED 15'x15' METAL MAINTENANCE SHED

PROPOSED LIGHTING BY OTHERS, TYP.

PROPOSED KIDS CLUB

PROPOSED FENCE, TYP.

PROPOSED NE SKIMMERS TO

PROPOSED COVERED PLAY AREA

PROPOSED FENCE

PROPOSED CONCRETE CURB

TEMPORARY SOIL STOCKPILE AREA

SILT FENCE

SILT FENCE

LIMIT OF DISTURBANCE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 feet

MATCH LINE SOIL EROSION AND SEDIMENT CONTROL PLAN - 6

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
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PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

KEVIN J. BOSWELL

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KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS
SOIL EROSION AND SEDIMENT CONTROL PLAN - 5

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	10/24/24	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
G.K.T.	J.L.M.	1"=20'	17 OF 25

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MATCH LINE SOIL EROSION AND SEDIMENT CONTROL PLAN - 5

INLET FILTER

LIMIT OF DISTURBANCE

PROPOSED TENNIS COURT

PROPOSED TENNIS COURT

50.0' TYP.

PROP. 'E' INLET
GR. 122.25
INV. 117.00

PROPOSED LIGHTING BY OTHERS, TYP.

PROPOSED FENCE, TYP.

INLET FILTER

PROP. 'E' INLET
GR. 122.50
INV. 117.00

PROP. FES
INV. 112.00

PROP. OUTLET STRUCTURE: OS-1
GR. 115.50
WEIR 113.00 /0.33"
3" ORIFICE 112.00
INV. OUT 110.90

100' SETBACK LIMIT

PROP. FES
INV. 112.00

78 LF - 15" HDPE @ 1.0%

212 LF - 18" HDPE @ 0.8%

265 LF - 18" HDPE @ 0.8%

76.51'

SILT FENCE

15' SETBACK LIMIT

PROP. 'E' INLET
GR. 115.50
INV. 110.17
INV. 109.92

40' SETBACK LIMIT

INLET FILTER

CONNECT TO EXISTING STORM MANHOLE
INV. 107.85

CRABTREE LANE

COUNTRY CLUB RD.

BLOCK 503 LOT 27
N/FPATTISON, JEFFREY B & CYNTHIA A

BLOCK 503 LOT 26
N/F OPHIR, RONY & DALIA

BLOCK 503 LOT 25
N/FWALLER, DAVID

BLOCK 503 LOT 24
N/F GIESI HOLLAND LLC

LOT 15.02

LOT 16

BLOCK 602
LOT 8

LOT 27

LOT 25

LOT 24

POD

RW

DECK

DRIVEWAY

CONC. CURB

ASPH. CURB

2121 OH-LINE

2122 OH-LINE

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 feet

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JEFFREY L. MORRIS

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PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

KEVIN J. BOSWELL

PROFESSIONAL ENGINEER N.J. LIC. 32943

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS
SOIL EROSION AND SEDIMENT CONTROL PLAN - 6

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	10/24/24	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	1"=20'	18 OF 25

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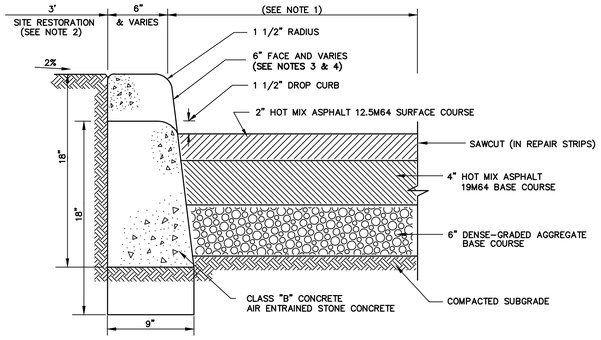
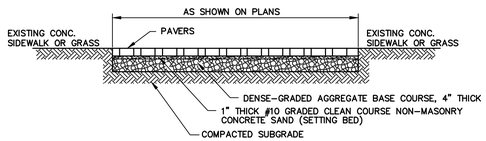


NOTES:

1) IN AREAS WHERE EXISTING PAVEMENT IS TO REMAIN, A 2' WIDE PAVEMENT REPAIR STRIP SHALL BE CONSTRUCTED ADJACENT TO THE PROPOSED CURB. THE FOLLOWING ITEMS OF WORK WITHIN THE REPAIR STRIP ARE INCLUDED UNDER THE 9" X 18" CONCRETE VERTICAL CURB ITEM:
   - SAWCUT
   - CONCRETE CURING AND SEALING COMPOUND
   - EXCAVATION, UNCLASSIFIED
   - BACKFILL MATERIAL
   - COMPACTED SUBGRADE
   - DENSE-GRADED AGGREGATE BASE COURSE
   - HOT MIX ASPHALT 19M64 BASE COURSE
   - REMOVAL OF MONOLITHIC CONCRETE CURB AND GUTTER (IF REQUIRED)
2) SPRINKLER HEADS TO BE RESET AND/OR RELOCATED, IF REQUIRED, COST TO BE INCLUDED IN THE CURB ITEM. NEW TOPSOIL, 5" THICK, FERTILIZING AND SEEDING, TYPE A-3 AND STRAW MULCHING SHALL BE MEASURED AND PAID FOR SEPARATELY AND NOT INCLUDED IN THE CURB ITEM. CONCRETE DRIVEWAY APRON RECONSTRUCTION SHALL ALSO BE MEASURED AND PAID FOR SEPARATELY AND NOT INCLUDED IN THE CURB ITEM.
3) TOP OF CURB SHALL NOT BE SET HIGHER THAN ADJACENT EXISTING OR PROPOSED SIDEWALK UNDER ANY CONDITION. CURB HEIGHT TO TAPER INTO EXISTING ADJACENT CURB HEIGHT, WHERE APPLICABLE.
4) FOR 8" CURB FACE, CURB DEPTH SHALL BE INCREASED TO 20".
5) FULL CURB DEPTH SHALL BE MAINTAINED AT DROP CURBS.
6) 4" THICK, COARSE AGGREGATE SIZE NO. 57 SHALL BE CONSTRUCTED UNDERNEATH PROPOSED CURB IN WET FIELD CONDITIONS, AS DIRECTED THE ENGINEER.
7) ALL CONCRETE SURFACES SHALL BE TREATED WITH A CONCRETE CURING AND SEALING COMPOUND.

9" x 18" CONCRETE VERTICAL CURB

N.T.S.

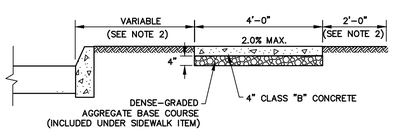


NOTES:

1. PAVER COLOR/FINISH SHALL BE APPROVED BY OWNER IN WRITING.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWING OF PAVERS PRIOR TO ORDERING

PAVER SIDEWALK/DRIVEWAY

N.T.S.



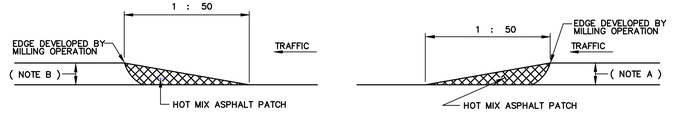
PROVIDE 1/2" PREFORMED EXPANSION JOINT FILLER, 4" DEPTH AT 10'± O.C.

CONCRETE SIDEWALK, 4" THICK

N.T.S.

NOTES:

1. ALL CONCRETE SURFACES SHALL BE TREATED WITH A CONCRETE CURING AND SEALING COMPOUND.
2. LAWN RESTORATION, IF APPLICABLE, SHALL INCLUDE NEW TOPSOIL (5" THICK), FERTILIZING AND SEEDING, TYPE A-3 AND STRAW MULCHING. ALL ASSOCIATED COSTS SHALL BE MEASURED AND PAID FOR UNDER THE SEPARATE RESPECTIVE LINE ITEMS IN THE PROJECT.



NOTE B:

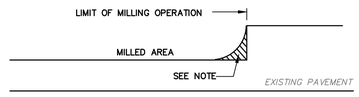
HOT MIX ASPHALT PATCH TO BE USED WHEN LEADING END OF MILLING OPERATION IS EQUAL TO OR GREATER THAN 1" IN HEIGHT. HOT MIX ASPHALT PATCH IS NOT REQUIRED FOR EDGES LESS THAN 1".

NOTE A:

HOT MIX ASPHALT PATCH TO BE USED WHEN TRAILING EDGE DEVELOPED BY MILLING OPERATION IS EQUAL TO OR GREATER THAN 1-1/2" IN HEIGHT. HOT MIX ASPHALT PATCH IS NOT REQUIRED FOR EDGE LESS THAN 1-1/2" IN HEIGHT.

MILLING TRANSITIONS

N.T.S.

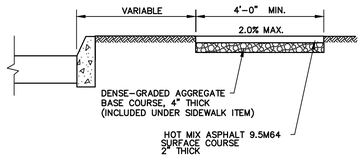


NOTE:

AT THE LIMITS OF THE MILLING OPERATION THE HOT MIX ASPHALT MATERIAL LEFT BY THE DRUM RADIUS SHALL BE REMOVED. SAWING OR TRANSVERSE MILLING SHALL BE USED TO INSURE THAT THE FACE OF THE PAVING JOINT IS CLEAN AND VERTICAL. THIS END TREATMENT IS NOT APPLICABLE TO TEMPORARY LIMITS OF MILLING (I.E. END OF WORKDAY). THIS DETAIL IT IS APPLICABLE TO ALL AREAS WHERE THE COMPLETED MILLING OPERATION MATCHES ANY EXISTING PAVEMENT INCLUDING AT BRIDGES.

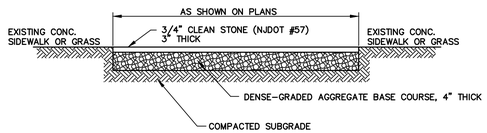
END TREATMENT FOR MILLING OPERATIONS

N.T.S.



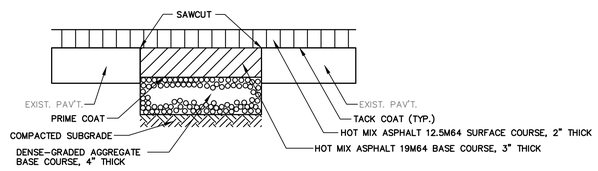
HOT MIX ASPHALT SIDEWALK, 6" THICK

N.T.S.



GRAVEL DRIVEWAY, 7" THICK

N.T.S.



NOTE: PAYMENT FOR SAWCUT TO BE INCLUDED IN THE VARIOUS ITEMS OF THE PROPOSAL.

PAVEMENT RESURFACING AND RECONSTRUCTION DETAIL

N.T.S.

NOTE:

ALL CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE SAFETY CODES. APPLICABLE SAFETY CODES SHALL MEAN THE LATEST EDITION INCLUDING ANY AND ALL AMENDMENTS, REVISIONS AND ADDITIONS THERETO OF THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S "OCCUPATIONAL SAFETY AND HEALTH STANDARDS"(OSHA); "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION" OF THE STATE OF NEW JERSEY, DEPARTMENT OF LABOR AND INDUSTRY, BUREAU OF ENGINEERING AND SAFETY; "CONSTRUCTION SAFETY CODE," AND "MAINTENANCE, CONSTRUCTION AND DEMOLITION," AND "BUILDING CODE."

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
3	1-14-26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
2	12-23-25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
1	11-3-25	PER ENG. REV. LTR. 10-29-25	GK.T.	J.L.M.

JEFFREY L. MORRIS

PROFESSIONAL ENGINEER AND LAND SURVEYOR N.J. LIC. 24GB0397900
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KEVIN J. BOSWELL

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BOSWELL

330 PHILLIPS AVENUE, SOUTH HACKENSACK NJ 07606, TEL: (201) 641-0770
P.O. BOX 571 180 MAIN STREET, CHESTER NJ 07930, TEL: (908) 879-6209
17 MODEL AVENUE, HOPEWELL NJ 08525, TEL: (609) 466-0002

N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27958000

KNICKERBOCKER COUNTRY CLUB 2025 IMPROVEMENTS

DETAIL SHEET-1

BOROUGH OF TENAFLY
BERGEN COUNTY NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	OCT. 2024	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	AS NOTED	19 OF 25

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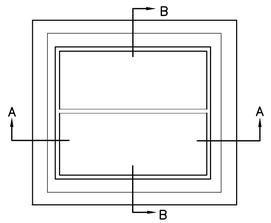
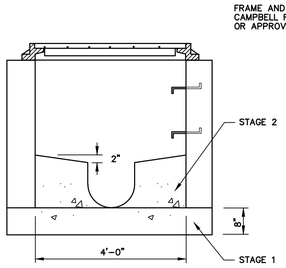
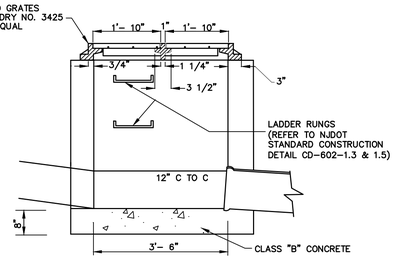


INLET, TYPE E WITH NJDEP CURB FRAME AND BICYCLE SAFE GRATE

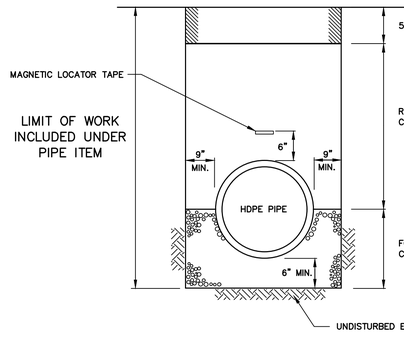
N.T.S.



SECTION A–A



SECTION B–B

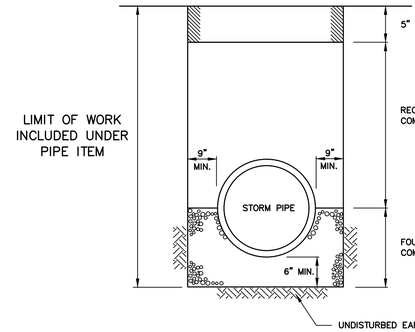


THE FOLLOWING ITEMS OF WORK ARE INCLUDED UNDER THE PIPE ITEM
UNLESS OTHERWISE NOTED:

- EXCAVATION, UNCLASSIFIED
- RECYCLED CONCRETE AGGREGATE
- FOUNDATION STONE BEDDING
- BORROW TOPSOIL
- FERTILIZING AND SEEDING
- STRAW MULCHING
- MAGNETIC LOCATOR TAPE
- BYPASS PUMPING (IF REQUIRED)
- DEWATERING (IF REQUIRED)
- SHEETING (IF REQUIRED)

PIPE TRENCH AND LAWN REPAIR (HDPE PIPE)

N.T.S.

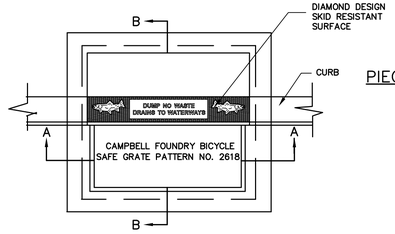


THE FOLLOWING ITEMS OF WORK ARE INCLUDED UNDER THE PIPE ITEM
UNLESS OTHERWISE NOTED:

- EXCAVATION, UNCLASSIFIED
- RECYCLED CONCRETE AGGREGATE
- FOUNDATION STONE BEDDING
- BORROW TOPSOIL
- FERTILIZING AND SEEDING
- STRAW MULCHING
- BYPASS PUMPING (IF REQUIRED)
- DEWATERING (IF REQUIRED)
- SHEETING (IF REQUIRED)

PIPE TRENCH AND LAWN REPAIR

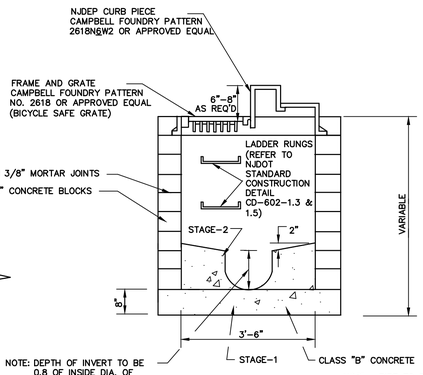
N.T.S.



INLET, TYPE B WITH NJDEP CURB PIECE–BACK–FRAME AND BICYCLE SAFE GRATE

N.T.S.

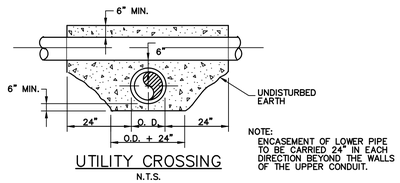
SECTION A–A



NOTE: DEPTH OF INVERT TO BE 0.8 OF INSIDE DIA. OF THE MAIN SEWER THROUGH THE INLET

SECTION B–B

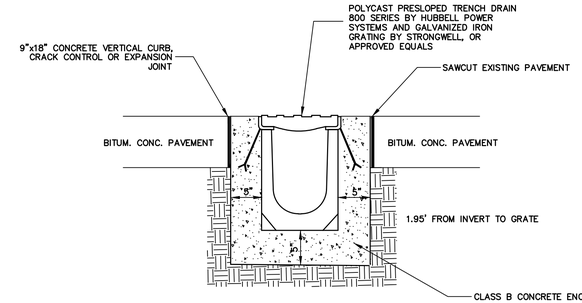
NOTE: PIPE TO BE CUT FLUSH WITH BASIN WALL



NOTE:
ENCASEMENT OF LOWER PIPE TO BE CARRIED 24" IN EACH DIRECTION BEYOND THE WALLS OF THE UPPER CONDUIT.

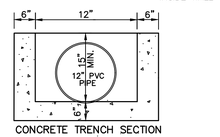
UTILITY CROSSING

N.T.S.



TRENCH DRAIN SECTION

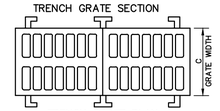
N.T.S.



CONCRETE TRENCH SECTION

CROSS SECTION ILLUSTRATING HEAVY DUTY GRATE

TRENCH GRATE SECTION

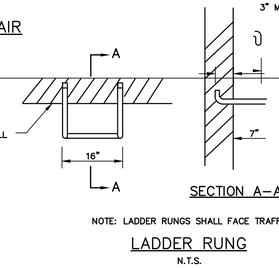


TRENCH GRATE PLAN
CAMBELL FOUNDRY

PATTERN NUMBERS		DIMENSIONS IN INCHES						STANDARD GRATE TYPE
COVER	GRATE	A		C		D	E	X	
——	4526 C	3	3/4	17	3/4	16	3	2	2

TRENCH DRAIN DETAIL

NTS.



SECTION A–A

NOTE: LADDER RUNGS SHALL FACE TRAFFIC

LADDER RUNG

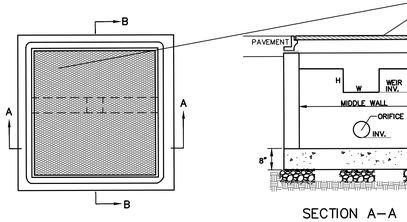
N.T.S.

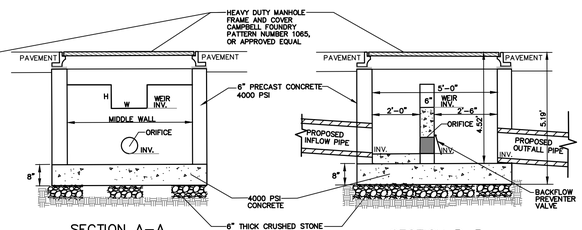
MANHOLE NOTES

1. MANHOLES MAY BE CONSTRUCTED OF BRICK, CONCRETE, CONCRETE BLOCK OR PRECAST CONCRETE.
2. WHEN THE DEPTH OF A MANHOLE EXCEEDS 10 FT. AS MEASURED FROM TOP OF COVER TO INVERT, WALLS OF BRICK, CONCRETE OR CONCRETE BLOCK BELOW A DEPTH OF 8 FT. SHALL BE 12" THICK. THE OVERALL HORIZONTAL DIMENSIONS SHALL BE INCREASED 12" AND THE DEPTH OF THE FOUNDATION INCREASED TO 12". WHEN ROCK IS ENCOUNTERED THE HORIZONTAL DIMENSION AND DEPTH OF THE FOUNDATION SHALL NOT BE INCREASED. THE THICKNESS OF PRECAST CONCRETE MANHOLE WALLS DOES NOT HAVE TO BE INCREASED IF THE DEPTH EXCEEDS 10 FEET.
3. CASTINGS OF PRECAST MANHOLES SHALL BE ADJUSTED TO GRADE WITH COURSES OF BRICK OR CONCRETE BLOCK, AS REQUIRED, 12" MAXIMUM.
4. AS AN ALTERNATE TO THE STANDARD MANHOLE FRAME AND COVER, A 39 " DIAMETER FRAME WITH A 4" FLANGE MAY BE FURNISHED WITH ALL OTHER DIMENSIONS AND WEIGHTS REMAINING THE SAME.
5. IN BRICK, CONCRETE OR CONCRETE BLOCK MANHOLES, INVERTS SHALL BE CONSTRUCTED IN TWO STAGES.
6. AS AN ALTERNATE, COPOLYMER POLYPROPYLENE PLASTIC LADDER RUNGS MAY BE FURNISHED IN PRECAST MANHOLES AND INLETS.

* H= VERTICAL HEIGHT/DIMENSION OF THE WEIR OPENING.

OUTLET STRUCRURE FOR DETENTION SYSTEMS										
STRUCTURE ID.	GR. ELEV.	ORIFICE		WEIR			INFLOW PIPE		OUTFALL PIPE	
		SIZE	INV.	ELEV.	W	H*	PIPE	INV.	PIPE	INV.
OS–1	115.50	3"	112.00	113.00	24"		15" HDPE	111.00	15" HDPE	110.90
OS–2	80.00	12" x 36"	75.00	76.33 77.00	10" 12"		18" HDPE	75.00	18" HDPE	74.50





SECTION A–A

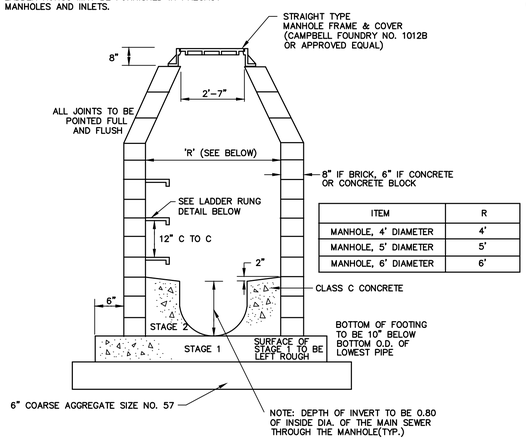
SECTION B–B

NOTE:
THIS DETAIL FOR DIMENSIONING PURPOSES ONLY
REINFORCEMENT TO BE SPECIFIED BY
THE MANUFACTURER AND APPROVED BY
THE ENGINEER.

NOTE: SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

STORM DRAIN OUTLET STRUCTURE DETAIL

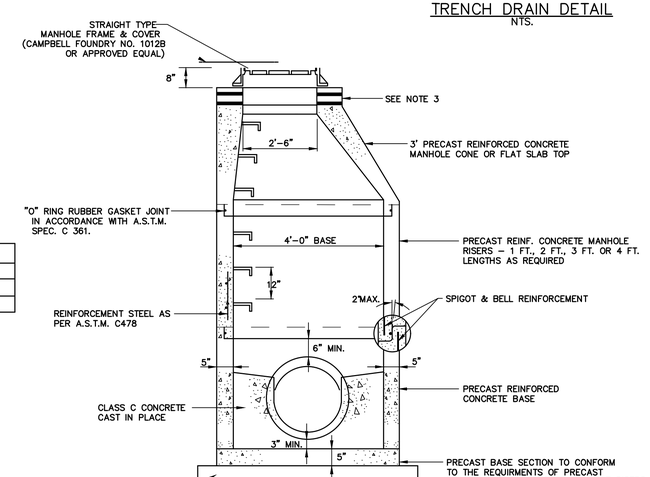
N.T.S.



ITEM	R
MANHOLE, 4' DIAMETER	4'
MANHOLE, 5' DIAMETER	5'
MANHOLE, 6' DIAMETER	6'

MANHOLE, 4' DIAMETER, MANHOLE 5' DIAMETER MANHOLE, 6' DIAMETER

N.T.S.



MANHOLE, 4' DIAMETER

N.T.S.

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
3	1–14–26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
2	12–23–25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
1	11–3–25	PER ENG. REV. LTR. 10–29–25	GK.T.	J.L.M.

JEFFREY L. MORRIS

PROFESSIONAL ENGINEER AND LAND SURVEYOR N.J. LIC. 24GB03979900
PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

KEVIN J. BOSWELL

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SOUTH HACKENSACK NJ 07606
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CHESTER NJ 07930
TEL: (908) 879-6209

17 MODEL AVENUE
HOPEWELL NJ 08525
TEL: (609) 466-0002

N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27988000

KNICKERBOCKER COUNTRY CLUB 2025 IMPROVEMENTS

DETAIL SHEET-2

BOROUGH OF TENAFLY
BERGEN COUNTY NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	OCT. 2024	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	AS NOTED	20 OF 25

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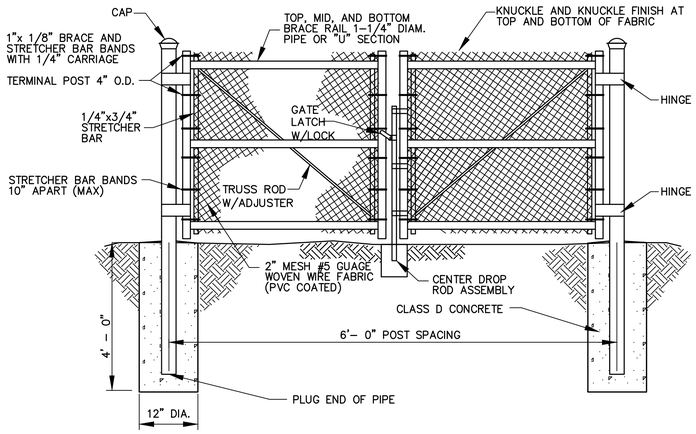
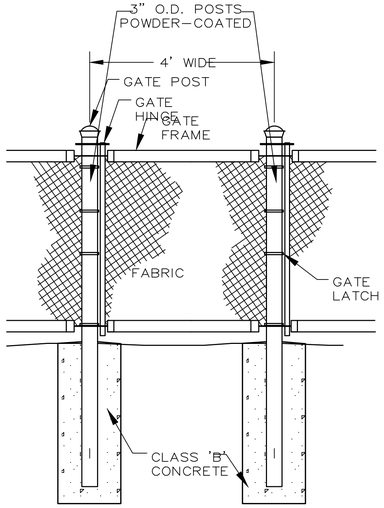


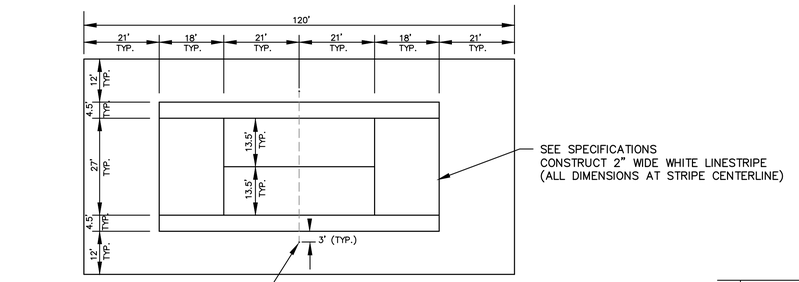
DOUBLE GATE, CHAIN-LINK FENCE, PVC-COATED STEEL (6' WIDE, 10' HIGH)

N.T.S.



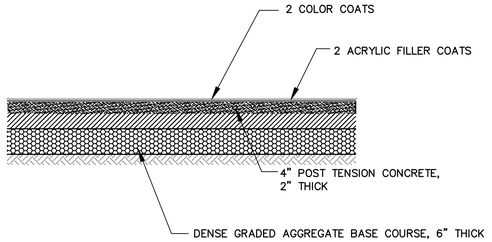
GATE, CHAIN-LINK FENCE, PVC-COATED STEEL, 4' WIDE

N.T.S.



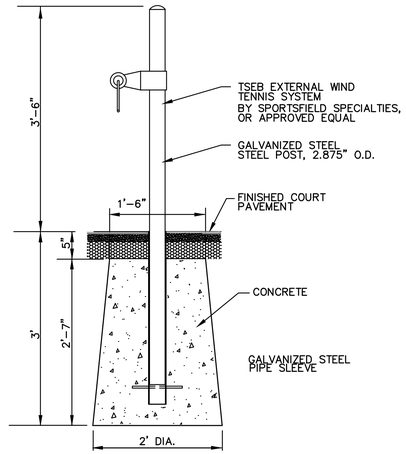
TENNIS COURT LAYOUT AND LINESTRIPING

NOT TO SCALE



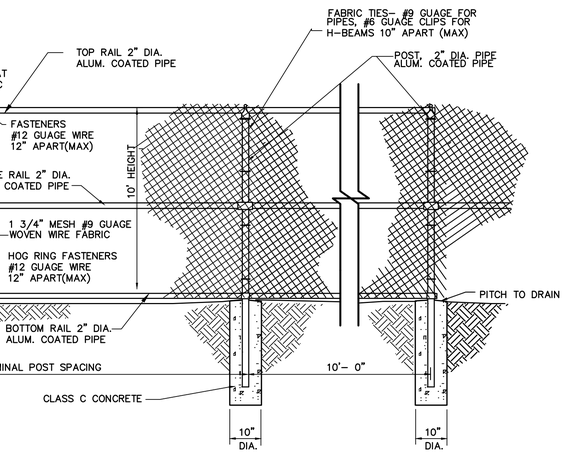
TENNIS COURT PAVEMENT SECTION

NOT TO SCALE



TENNIS NET POST SLEEVE AND FOOTING

NOT TO SCALE

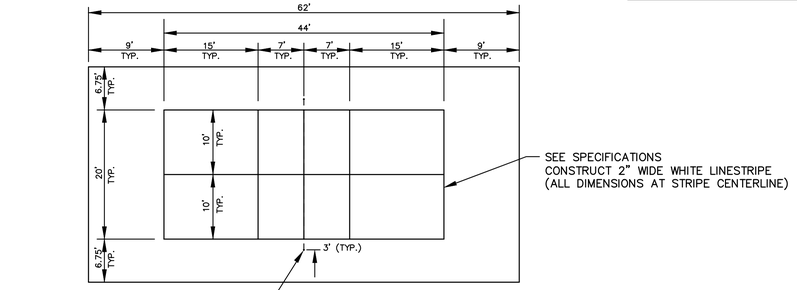


1. FABRIC SHALL BE #9 GAUGE PVC COATED STEEL. ALL PIPE TO CONFORM TO CURRENT ASTM DESIGNATED A120 ,SCHEDULE 40, PLAIN END.

2. INSTALL WINDSCREEN/ VINYL COATED POLYESTER MESH, (2) VCP6 BY SPORTSFIELD SPECIALTIES, INC. OR APPROVED EQUAL.

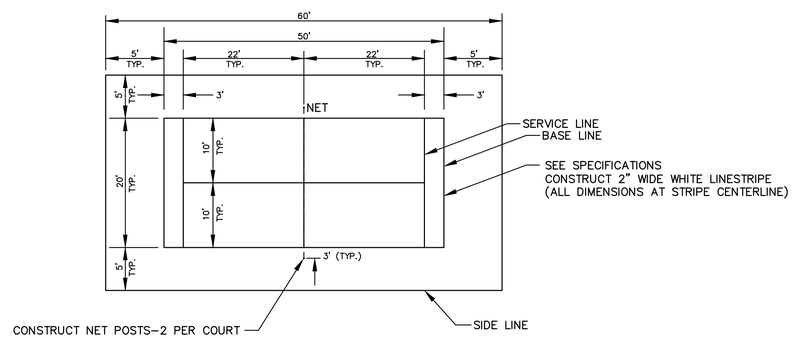
CHAIN LINK FENCE DETAIL-ENLOSURE FOR TENNIS COURT

NOT TO SCALE



PICKLEBALL COURT LAYOUT AND LINESTRIPING

NOT TO SCALE



PADEL COURT LAYOUT AND LINESTRIPING

NOT TO SCALE

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
3	1-14-26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
2	12-23-25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
1	11-3-25	PER ENG. REV. LTR. 10-29-25	GK.T.	J.L.M.

JEFFREY L. MORRIS

PROFESSIONAL ENGINEER AND LAND SURVEYOR N.J. LIC. 24GB0397900
PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

KEVIN J. BOSWELL

PROFESSIONAL ENGINEER N.J. LIC. 32943

BOSWELL

330 PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07606, TEL: (201) 641-0770
P.O. BOX 571 180 MAIN STREET, CHESTER NJ 07930, TEL: (908) 879-6299
17 MODEL AVENUE, HOPEWELL NJ 08525, TEL: (609) 466-0002

N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27988000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

DETAIL SHEET-3

BOROUGH OF TENAFLY
BERGEN COUNTY NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	OCT. 2024	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	AS NOTED	21 OF 25

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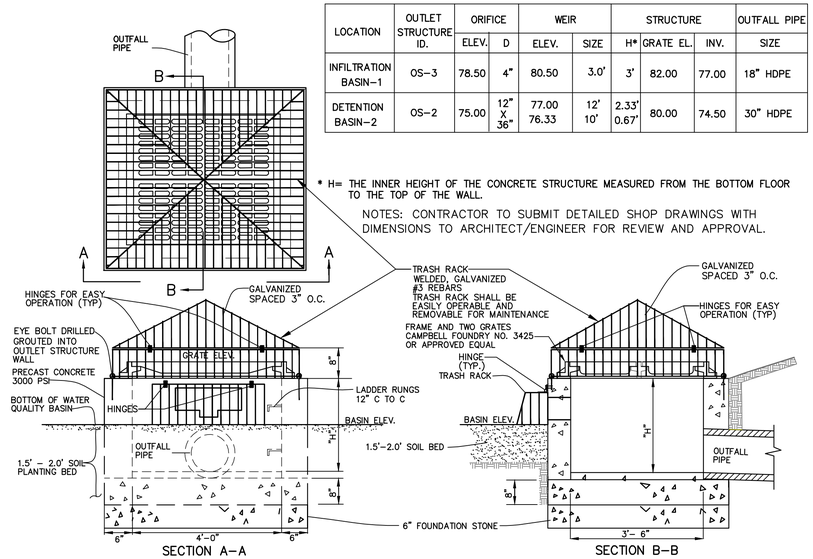
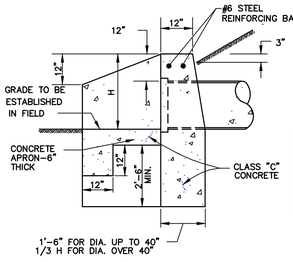
LOCATION	OUTLET STRUCTURE ID.	ORIFICE		WEIR		STRUCTURE			OUTFALL PIPE
		ELEV.	D	ELEV.	SIZE	H*	GRATE EL.	INV.	SIZE
INFILTRATION BASIN–1	OS–3	78.50	4"	80.50	3.0'	3'	82.00	77.00	18" HDPE
DETENTION BASIN–2	OS–2	75.00	12" X 36"	77.00 76.33	12' 10'	2.33' 0.67'	80.00	74.50	30" HDPE

* H= THE INNER HEIGHT OF THE CONCRETE STRUCTURE MEASURED FROM THE BOTTOM FLOOR TO THE TOP OF THE WALL.

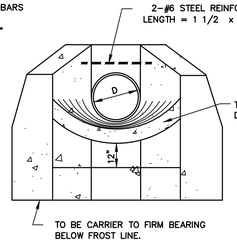
NOTES: CONTRACTOR TO SUBMIT DETAILED SHOP DRAWINGS WITH DIMENSIONS TO ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL.



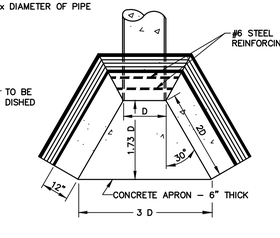
WATER QUALITY – INFILTRATION BASIN
OUTLET STRUCTURE WITH TRASH RACK
N.T.S.



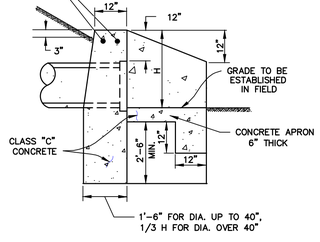
OUTLET END



END VIEW



PLAN



INLET END

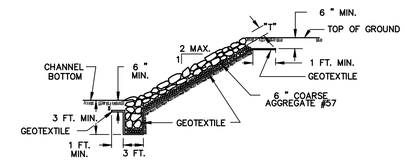
VOLUME OF CONCRETE IN HEADWALLS IN CUBIC YARDS

PIPE SIZE	CORR. STEEL PIPE	REIN. CONC. PIPE	APRONS IN CUBIC YARDS
12"	1.4 C.Y.	1.4 C.Y.	0.2 C.Y.
15"	1.7	1.7	0.2
18"	2.1	2.1	0.3
21"	2.5	2.5	0.4
24"	2.9	2.9	0.5
27"	3.3	3.4	0.6
30"	3.7	3.8	0.7
36"	4.7	4.8	0.9
42"	5.8	6.3	1.2
48"	7.6	8.4	1.5
54"	9.7	10.7	1.8
60"	12.2	13.4	2.1
66"	15.0	16.4	2.5
72"	18.1	19.9	3.0

GENERAL NOTES

1. ALL EDGES TO BE CHAMFERED 1".
2. THE RUBBING OF HEADWALLS TO REMOVE FORM MARKS AS REQUIRED IN DIVISION 500 FOR CONCRETE STRUCTURES, WILL NOT BE REQUIRED FOR HEADWALLS AT THE BOTTOM OF EMBANKMENTS IN RURAL AREAS.
3. FOR SLOPE DRAIN HEADWALLS, DIMENSIONS AND APRON GRADES SHALL BE SET BY ENGINEER.
4. FOR MORE THAN ONE PIPE, SET THE PIPES A MINIMUM OF ONE FOOT APART (OUTSIDE BARREL TO OUTSIDE BARREL) ; THERE SHALL BE 12" ABOVE THE TOP OF A PIPE IN A WING–WALL. THE TERMINUS OF THE WINGWALL SHALL BE 2 X DIAMETER FROM THE CENTERLINE OF THE PIPE IN A WINGWALL.
5. THE TERMINUS FOR OUTLET AND INLET APRONS SHALL BE SET BY EXTENDING THE PIPE GRADE AHEAD AND BACK, RESPECTIVELY.
6. FOR ARCH PIPE, THE SPAN SHALL BE SUBSTITUTED FOR D.

CONCRETE HEADWALLS AND APRONS
N.T.S.

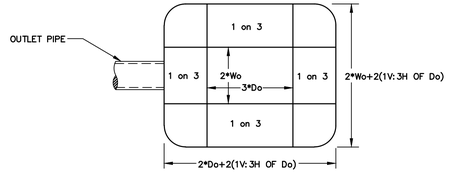


RIPRAP STONE SLOPE PROTECTION
N.T.S.

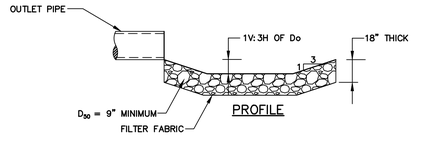
NOTE:
FOR WIDTHS AND SLOPES REFER TO CONSTRUCTION PLANS

$T = 2d_{50}$

d_{50} = DESIGNATED MEDIAN STONE SIZE, 6 " MIN.



PLAN VIEW



PROFILE

SCOUR HOLE DETAIL
N.T.S.

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
3	1–14–26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
2	12–23–25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
1	11–3–25	PER ENG. REV. LTR. 10–29–25	GK.T.	J.L.M.

JEFFREY L. MORRIS
PROFESSIONAL ENGINEER AND LAND SURVEYOR N.J. LIC. 24GB0397900
PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

KEVIN J. BOSWELL
PROFESSIONAL ENGINEER N.J. LIC. 32943

BOSWELL
330 PHILLIPS AVENUE SOUTH HACKENSACK, NJ 07606 TEL: (201) 641-0770
P.O. BOX 171 180 MAIN STREET CHESTER NJ 07930 TEL: (908) 879-6209
17 MODEL AVENUE HOPEWELL, NJ 08525 TEL: (609) 466-0002
N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27958000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

DETAIL SHEET-4

BOROUGH OF TENAFLY
BERGEN COUNTY NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	OCT. 2024	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	AS NOTED	22 OF 25

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SOIL EROSION NOTES

1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY (NJ STANDARDS), AND WILL BE INSTALLED IN PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT STABILIZATION IS ESTABLISHED.

2. ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING AND MULCHING. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREA WILL BE MULCHED WITH UNROTTED STRAW AT A RATE OF 2 TONS PER ACRE ANCHORED BY APPROVED METHODS. (I.E. PEG AND TWINE, MULCH NETTING, OR LIQUID MULCH BINDER)

3. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF 2 TONS PER ACRE, ACCORDING TO THE NJ STANDARDS.

4. STABILIZATION SPECIFICATIONS:

4.A. TEMPORARY SEEDING AND MULCHING:
GROUND LIMESTONE – APPLIED UNIFORMLY ACCORDING TO SOIL TEST RECOMMENDATIONS. FERTILIZER – APPLY 11 LBS./1,000 SF OF 10–20–10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN (UNLESS A SOIL TEST INDICATES OTHERWISE) WORKED INTO THE SOIL A MINIMUM OF 4". SEED – PERENNIAL RYEGRASS 100 LBS./ACRE (2.3 LB/1,000 SF) OR OTHER APPROVED SEED; PLANT BETWEEN MARCH 1 AND MAY 15 OR BETWEEN AUGUST 15 AND OCTOBER 1. MULCH – UNROTTED STRAW OR HAY AT A RATE OF 70 TO 90 LBS./1,000 SF APPLIED TO ACHIEVE 95% SOIL SURFACE COVERAGE. MULCH SHALL BE ANCHORED BY APPROVED METHODS (I.E. PEG AND TWINE, MULCH NETTING, OR LIQUID MULCH BINDER)

4.B. PERMANENT SEEDING AND MULCHING:
TOPSOIL – A UNIFORM APPLICATION TO AN AVERAGE DEPTH OF 5", MINIMUM OF 4" FIRMED IN PLACE IS REQUIRED.
GROUND LIMESTONE – APPLIED UNIFORMLY ACCORDING TO SOIL TEST RECOMMENDATIONS. FERTILIZER – APPLY 11 LBS/1,000 SF OF 10–10–10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN (UNLESS A SOIL TEST INDICATES OTHERWISE) WORKED INTO SOIL A MINIMUM OF 4". SEED – TURF TYPE TALL FESCUE (BLEND OF 3 CULTIVARS) 350 LBS./ACRE (8 LBS./1,000 SF) OR OTHER APPROVED SEED: PLANT BETWEEN MARCH 1 AND OCTOBER 1 (SUMMER SEEDING REQUIRES IRRIGATION). MULCH – UNROTTED STRAW OR HAY AT A RATE OF 70 TO 90 LBS./1,000 SF TO ACHIEVE 95% SOIL SURFACE COVERAGE. MULCH SHALL BE ANCHORED BY APPROVED METHODS (I.E. PEG AND TWINE, MULCH NETTING, OR LIQUID MULCH BINDING).

5. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.

6. SOIL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS, INCLUDING AFTER EVERY STORM EVENT.

7. STOCKPILES ARE NOT TO BE LOCATED WITHIN 50' OF A FLOODPLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITY. THE BASE OF ALL STOCKPILES SHALL BE CONTAINED BY A HAYBALE SEDIMENT BARRIER OR SILT FENCE

8. A CRUSHED STONE, VEHICLE WHEEL–CLEANING BLANKET WILL BE INSTALLED WHEREVER A CONSTRUCTION ACCESS ROAD INTERSECTS ANY PAVED ROADWAY. SAID BLANKET WILL BE COMPOSED OF 1" – 2 1/2" CRUSHED STONE, 6" THICK, WILL BE AT LEAST 30' x 100', AND SHOULD BE UNDERLAIN WITH A SUITABLE SYNTHETIC SEDIMENT FILTER FABRIC AND MAINTAINED.

9. MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT EXCEED 3:1 UNLESS OTHERWISE APPROVED BY THE DISTRICT.

10. DRIVEWAYS MUST BE STABILIZED WITH 1" – 2 1/2" CRUSHED STONE OR SUBBASE PRIOR TO INDIVIDUAL LOT CONSTRUCTION.

11. ALL SOIL WASHED, DROPPED, SPILLED OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT–OF–WAYS, WILL BE REMOVED IMMEDIATELY. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.

12. CATCH BASIN INLETS WILL BE PROTECTED WITH AN INLET FILTER DESIGNED IN ACCORDANCE SECTION 28–1 OF THE NJ STANDARDS.

13. STORM DRAINAGE OUTLETS WILL BE STABILIZED, AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.

14. DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT CONTROL BAG OR OTHER APPROVED FILTER IN ACCORDANCE WITH SECTION 14–1 OF THE NJ STANDARDS.

15. DUST SHALL BE CONTROLLED VIA THE APPLICATION OF WATER, CALCIUM CHLORIDE OR OTHER APPROVED METHOD IN ACCORDANCE WITH SECTION 16–1 OF THE NJ STANDARDS.

16. TREES TO REMAIN AFTER CONSTRUCTION ARE TO BE PROTECTED WITH A SUITABLE FENCE INSTALLED AT THE DRIP LINE OR BEYOND IN ACCORDANCE WITH SECTION 9–1 OF THE NJ STANDARDS.

17. THE PROJECT OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFF–SITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

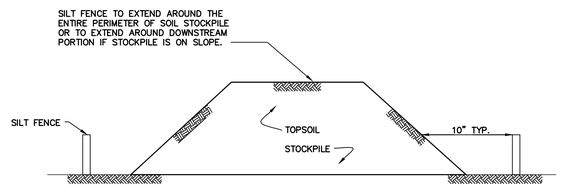
18. ANY REVISION TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE DISTRICT FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION IN THE FIELD.

19. A COPY OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE THROUGHOUT CONSTRUCTION.

20. THE BERGEN COUNTY SOIL CONSERVATION DISTRICT MUST BE NOTIFIED, IN WRITING, AT LEAST 48 HOURS PRIOR TO ANY LAND DISTURBANCE: BERGEN COUNTY SCD, 700 KINDERKAMACK ROAD, SUITE 106, ORADELL, NJ 07649 TEL : 201–261–4407; FAX 201–261–7573.

21. THE BERGEN COUNTY SOIL CONSERVATION DISTRICT MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE ON OR OFF–SITE EROSION PROBLEMS DURING CONSTRUCTION

22. THE OWNER MUST OBTAIN A DISTRICT ISSUED REPORT OF COMPLIANCE PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY. THE DISTRICT REQUIRES AT LEAST ONE WEEK'S NOTICE TO FACILITATE THE SCHEDULING OF ALL REPORT OF COMPLIANCE INSPECTIONS. ALL SITE WORK MUST BE COMPLETED, INCLUDING TEMPORARY/PERMANENT STABILIZATION OF ALL EXPOSED AREA, PRIOR TO THE ISSUANCE OF A REPORT OF COMPLIANCE BY THE DISTRICT.



TEMPORARY STOCKPILE DETAIL

N.T.S.

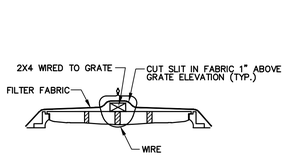
NOTES:

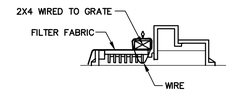
1. AN ON–SITE DRAINAGE SWALE SHALL BE LOCATED BETWEEN THE TOPSOIL STOCKPILE AND OFF–SITE PROPERTY.
2. REFERENCE IS MADE TO THE SILT FENCE DETAIL FOR MATERIALS AND INSTALLATION METHODS.
3. IF THE STOCKPILE IS TO REMAIN FOR MORE THAN 14 DAYS, IT SHALL BE STABILIZED WITH BURLAP MATTING OR SEEDED WITHIN 7 DAYS OF COMPLETION TO MINIMIZE EROSION. ACID PRODUCING SOILS SHALL BE COVERED WITH POLYETHYLENE SHEETING.
4. INSPECTION OF SILT FENCES SHOULD BE AT LEAST ONCE PER WEEK AND AFTER RAIN EVENTS IN EXCESS OF 1/2". REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. SEDIMENT TRAPPED BY THE FENCES SHALL BE REMOVED AND PROPERLY DISPOSED OF WHENEVER SIGNIFICANT ACCUMULATION OCCURS.
6. SILT FENCES SHALL BE MAINTAINED IN PLACE UNTIL TOPSOIL STOCKPILE HAS BEEN ELIMINATED AND SHALL BE REMOVED ONLY WHEN THE PROJECT IS COMPLETED.

CONSTRUCTION SEQUENCE

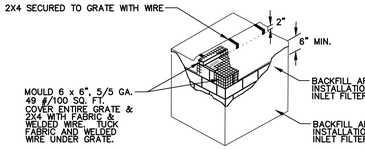
IMPLEMENTATION OF SOIL EROSION AND SEDIMENT CONTROL MEASURES – SILT FENCE – INLET FILTERS	1 DAY
CLEARING SITE	2 WEEKS
CONSTRUCT IMPROVEMENTS:	
– ROUGH GRADING & PARKING LOT CONSTRUCTION	2 WEEKS
– DRAINAGE AND UTILITY CONSTRUCTION	6 WEEKS
– CURB, SIDEWALK, DRIVEWAY & WALKWAY CONSTRUCTION	4 WEEKS
– FINAL GRADING & PARKING LOT PAVING	1 WEEK
– ROADWAY RESURFACING	2 WEEKS
– CONSTRUCT WALLS, POOL AREA RECONSTRUCTION	6 WEEKS
– TENNIS, PICKLE BALL AND PADLEL BALL COURTS CONSTRUCTION	6 WEEKS
– GOLF COURSE AREA CONSTRUCTION AND RESTORATION	4 WEEKS
– SITE RESTORATION	1 WEEK
UNIFORMLY APPLY TOPSOIL TO AN AVERAGE DEPTH OF 5", MINIMUM 4", FIRMED IN PLACE. PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION	3 DAYS
REMOVAL OF ALL TEMPORARY SOIL EROSION AND SEDIMENT CONTROL MEASURES	1 DAY

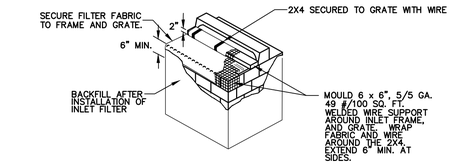
THIS SCHEDULE IS FOR SOIL EROSION AND SEDIMENT CONTROL PURPOSES ONLY.





NOTE: TWO TRAFFIC CONES TO BE PLACED ON EACH SIDE OF INLET





1. CONTRACTOR IS TO CLEAN INLET FILTER AFTER EVERY STORM.
2. CONTRACTOR TO REMOVE FABRIC AND MESH JUST PRIOR TO PAVING.
3. IF BOTTOM OF ROADWAY IS BELOW TOP OF INLET GRATE, CONSTRUCT PROPERLY FILTERED OPENING(S) IN INLET WALL TO ALLOW PASSAGE OF WATER.
4. THE PROTECTION DEVICE WILL BE DESIGNED TO CAPTURE OR FILTER RUNOFF FROM THE 1 YEAR, 24 HOUR STORM EVENT AND SHALL SAFELY CONVEY HIGHER FLOWS DIRECTLY INTO THE STORM SEWER SYSTEM.

INLET FILTER, TYPE 1 DETAIL

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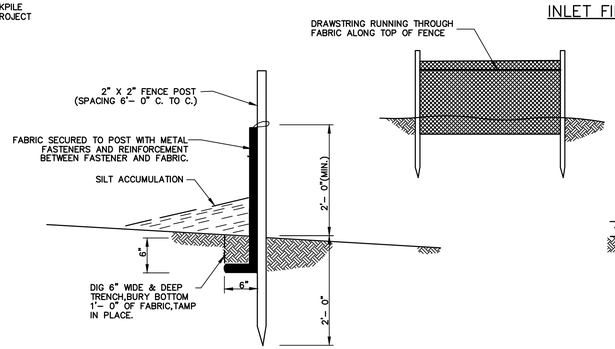

SILT FENCE DETAIL

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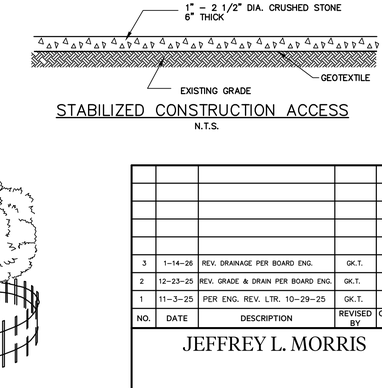

STABILIZED CONSTRUCTION ACCESS

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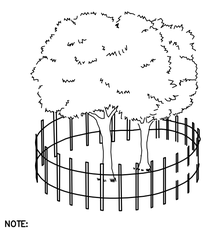
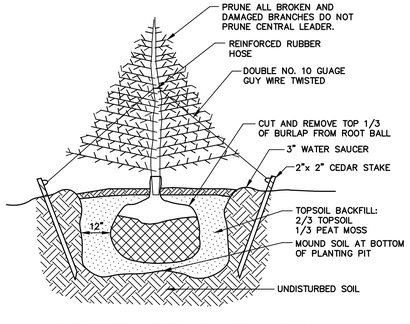


NOTE:
ALL TREES TO BE PRESERVED SHALL BE TAGGED BY THE OWNER OR HIS REPRESENTATIVE AND PROTECTED WITH SNOW FENCE AROUND THE PERIMETER OF THE TREE AT THE DRIP LINE.

TREE PROTECTION

N.T.S.



EVERGREEN TREE PLANTING DETAIL

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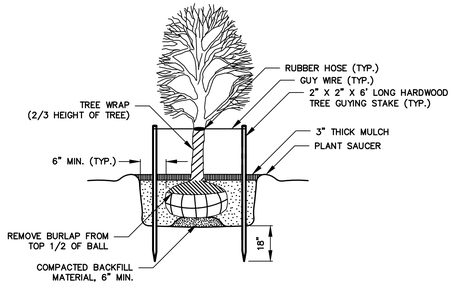

PLANTING DETAIL

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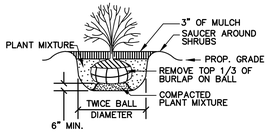

SHRUB PLANTING DETAIL

N.T.S.

LANDSCAPE NOTES:

1. THE HOLE SHALL BE LARGE ENOUGH TO ACCEPT THE ROOT BALL OF THE PLATING WITHOUT TWISTING OR BENDING.
2. THE HOLE SHALL BE AT A DEPTH THAT THE FINAL SOIL LEVEL WILL BE WHERE IT WAS WHEN THE PLANT WAS GROWING IN THE PREVIOUS LOCATION.
3. ALL TREES SHALL BE OF NURSERY STOCK; SHALL BE OF SYMMETRICAL GROWTH; SHALL BE FREE OF DISEASE, INSECTS AND MECHANICAL INJURY; SHALL BE STRAIGHT OF STEM, WITH A WELL BALANCED TOP; SHALL BE OF VIGOROUS GROWTH; AND SHALL HAVE A WELL–DEVELOPED ROOT SYSTEM.
4. LOOSE TOPSOIL MIXTURE SHALL BE CAREFULLY WORKED BETWEEN ROOTS AND FIRMED TO AVOID AIR POCKETS.
5. THE HOLE SHALL BE SOAKED AFTER PLANTING AND ANY SETTLING FILLED.
6. A SOIL SAUCER SHALL BE PROVIDED TO RETAIN WATER AROUND THE HOLE.
7. IF WEATHER IS COOL & DRY, SOAK ONCE A WEEK. IF WEATHER IS WARM & DRY, SOAK TWICE A WEEK. THE LANDSCAPE ARCHITECT IS RESPONSIBLE FOR WATERING OF ALL THE PROPOSED PLANTS AND TREES FOR A PERIOD OF ONE YEAR.
8. PLANTS SHALL BE PLANTED UPRIGHT; FACED IN A DIRECTION SO AS TO GIVE THE BEST APPEARANCE.
9. TREES SHALL BE SUPPORTED, IN ACCORDANCE WITH THE DETAILS, IMMEDIATELY AFTER PLANTING.
10. FERTILIZER TO BE USED SHALL BE COMPLETE FERTILIZER AND SHALL BE A STANDARD PRODUCT COMPLYING WITH STATE AND FEDERAL FERTILIZER LAWS.
11. ALL NEW PLANT MATERIAL SHALL CONFORM TO THE AMERICAN ASSOCIATION OF NURSERYMEN'S STANDARDS FOR NURSERY STOCK RELATIVE TO QUALITY CONTROL.
12. ALL NEWLY PLANTED MATERIAL SHALL BE MULCHED WITH A MINIMUM OF 3" SHREDDED HARDWOOD DARK BROWN MULCH. A MAXIMUM OF ONE (1) INCH OF MULCH WITHIN TWELVE (12) INCHES OF ROOT FLARE SHALL BE PROVIDED. NO MULCH SHALL COME INTO CONTACT WITH THE ROOT FLARE.
13. ANY DISTURBED AREAS SHALL BE TOPSOILED WITH A 5" MIN. THICKNESS AND SEEDED AS PER SPECIFICATIONS.
14. DO NOT FILL WITHIN TEN (10) FEET OF EXISTING TREES TO REMAIN.
15. TOPSOIL SHALL BE NATURAL, FRIABLE, FERTILE, PRODUCTIVE SOIL OF A GOOD LOAM TYPE, IT SHALL BE FREE OF STONES OVER ONE (1) INCH SIZE, STICKS, WITHOUT A MIXTURE OF SUBSOIL OR OTHER FOREIGN MATTER. IT SHALL NOT BE WORKED IN A MUDDY OR WET CONDITION.
16. ALL PLANT RELOCATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
17. ALL SUBSTITUTIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLANT INSTALLATION.
18. ALL WIRE BASKETS SHALL BE REMOVED PRIOR TO BACKFILLING THE PLANTING PIT.
19. IF ANY DISCREPANCIES BETWEEN THE PLANTING SCHEDULE AND THE PLAN EXIST, THE PLAN SHALL SUPERSEDE.
20. INSPECTION OF THE LAWNS AND PLANTING WORK TO DETERMINE COMPLETION OF THE CONTRACT WORK WILL BE MADE BY THE ENGINEER. THE LAWN AREAS MUST HAVE A MINIMUM OF THREE (3) MOWINGS BEFORE A REQUEST FOR ACCEPTANCE CAN BE REQUESTED.
21. ALL PLANT MATERIAL SHALL BE GUARANTEED AS INSTALLED UNDER THE CONTRACT FOR A PERIOD OF TWO (2) YEARS FROM DATE OF PROJECT ACCEPTANCE. THE CONTRACTOR IS TO REPLACE ALL TREES, SHRUBS OR GROUND COVER THAT ARE IN AN UNHEALTHY OR UNSIGHTLY CONDITION, IN THE OPINION OF THE ENGINEER, OR THAT HAVE LOST THEIR NATURAL SHAPE DUE TO DEAD BRANCHES OR EXCESSIVE PRUNING. ALL REPLACEMENT PLANTINGS ARE TO BE COMPLETED NO LATER THAN THE NEXT SUCCEEDING PLANTING SEASON AFTER RECEIPT OF THE ENGINEER'S INSTRUCTIONS. REPLACEMENT OF PLANTINGS IS TO BE IN ACCORDANCE WITH THE SPECIFICATIONS. ALL REPLACEMENT SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
22. AT THE COMPLETION OF THE GUARANTEE PERIOD, ALL TREE WRAPPINGS, STAKES, GUY WIRES, WATERING SAUCERS, ETC. SHALL BE REMOVED BY THE CONTRACTOR.

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
3	1–14–26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
2	12–23–25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
1	11–3–25	PER ENG. REV. LTR. 10–29–25	GK.T.	J.L.M.

JEFFREY L. MORRIS

PROFESSIONAL ENGINEER AND LAND SURVEYOR N.J. LIC. 24GB0397900
PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

KEVIN J. BOSWELL

PROFESSIONAL ENGINEER N.J. LIC. 32943

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330 PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07606, TEL: (201) 641-0770
P.O. BOX 521 180 MAIN STREET, CHESTER NJ 07930, TEL: (908) 879-6209
17 MODEL AVENUE, HOPEWELL, NJ 08525, TEL: (609) 466-0002

N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27958000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

DETAIL SHEET-5

BOROUGH OF TENAFLY
BERGEN COUNTY NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	OCT. 2024	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	AS NOTED	23 OF 25

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TREE REMOVAL SCHEDULE

KEY	QTY	COMMON NAMES	SIZE
P	1	PINE	12"
P	1	PINE	15"
P	5	PINE	18"
P	16	PINE	24"
P	2	PINE	27"
P	1	PINE	30"
P	4	PINE	36"
Ma	5	MAPLE	6"
Ma	13	MAPLE	8"
Ma	3	MAPLE	10"
Ma	9	MAPLE	12"
Ma	4	MAPLE	15"
Ma	2	MAPLE	18"
Ma	3	MAPLE	24"
O	6	OAK	6"
O	1	OAK	10"
O	4	OAK	12"
O	2	OAK	18"
O	1	OAK	20"
O	2	OAK	24"
O	4	OAK	30"
O	2	OAK	36"
Ch	1	CHERRY	8"
Ch	2	CHERRY	10"
Ch	7	CHERRY	12"
Ch	2	CHERRY	15"
Ch	1	CHERRY	18"
T	15	TREE	6"
T	17	TREE	8"
T	10	TREE	10"
T	14	TREE	12"
T	14	TREE	15"
T	10	TREE	18"
T	1	TREE	21"
T	6	TREE	24"
T	1	TREE	36"

TOTAL TREES TO BE REMOVED = 192

TOTAL TREE REMOVAL BY DIAMETER

DIAMETER	QUANTITY	MITIGATION NUMBER
6"–12"	72	72 MINOR
12"–16"	57	57 MAJOR
16"–18"	0	0 MAJOR
18"–24"	22	66 MAJOR
24"–30"	29	116 MAJOR
30"–36"	5	25 MAJOR
36"+	7	49 MAJOR

TOTAL MITIGATION REQUIRED :
72 MINOR TREES
313 MAJOR TREES

TOTAL TREE REMOVAL BY DIAMETER AS PER ARBORIST RECOMMENDATIONS

DIAMETER	QUANTITY	MITIGATION NUMBER
6"–12"	72	0 MINOR (1.)
12"–16"	57	57 MAJOR
16"–18"	0	0 MAJOR
18"–24"	22	0 MAJOR (2.)
24"–30"	29	116 MAJOR
30"–36"	5	15 MAJOR (4.)
36"+	7	49 MAJOR

TOTAL MITIGATION REQUIRED :
0 MINOR TREES
237 MAJOR TREES

NOTES:

1. TREES IN THE 6" TO 12" CALIPER DBH ARE FAILING DUE TO LACK OF LIGHT CREATED BY OVERHANGING CANOPIES AND COMPETITION FOR NUTRIENTS AND WATER. THEY EXHIBIT SIGNS OF BROKEN LIMBS AND WEAK ATTACHMENTS. THESE TREES SHOULD BE REMOVED.

2. TREES IN THE 18" TO 24" CALIPER DBH CONSISTING PREDOMINATELY OF MAPLE, OAK AND CHERRY ARE SIMILARLY COMPROMISED. A SUBSTANTIAL NUMBER OF THEM SUFFER FROM CO-DOMINANT LEADERS. THESE TREES EXHIBIT MORE THAN ONE LEADER EMANATING FROM A SINGLE TRUNK. THIS CONDITION, COUPLED WITH THEIR POOR CONDITION, ALSO WARRANT REMOVAL.

3. TREES IN THE 24" TO 30" CALIPER DBH EXHIBIT COMPROMISED CANOPIES WITHIN THE CROWN OF THE TREES AS WELL AS BROKEN AND DEAD LIMBS, POOR LEAF DEVELOPMENT, CAVITIES WITHIN THEIR TRUNKS AND GENERAL SIGNS OF DECLINE.

4. TREES IN THE 30" TO 36" CALIPER DBH HAVE TWO COMPLETELY DEAD TREES. THE OTHERS ARE COMPLETELY ENTANGLED IN VINES. THIS CAUSES THE CANOPIES TO BE CHOKED OFF, GIVING THE FALSE IMPRESSION THAT

NOTE:
RECOMMENDATIONS ARE AS PER EDWN N. EWALD, CERTIFIED ARBORIST, NJ0833A

SEE ARBORIST LETTER DATED 8-27-25 FOR COMPLETE FINDINGS.

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
5	1-14-26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
4	12-23-25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
3	11-3-25	PER ENG. REV. LTR. 10-29-25	GK.T.	J.L.M.
2	9-2-25	REVISED AS PER ARBORIST.	GK.T.	J.L.M.
1	11-8-24	ZONING BOARD SUBMISSION.	GK.T.	J.L.M.

JEFFREY L. MORRIS

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HOPEWELL, NJ 08525
TEL: (609) 466-0002

N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27985000

KNICKERBOCKER COUNTRY CLUB 2025 IMPROVEMENTS

TREE REMOVAL PLAN - 1

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	6/30/25	21-191
DRAWN BY:	**CHECKED BY:**	**SCALE:**	**SHEET:**
GK.T.	J.L.M.	1"=60'	24 OF 25

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BLOCK 503 LOT 2
N/F THOMPSON, ARTHUR S
& JANE GLOECKNER

BLOCK 503 LOT 3
N/F WONG, WILLIAM SIU CHEONG
&FUNG NINI

EXISTING TREE
TO BE REMOVED
TYP.

BLOCK 503 LOT 4
N/F CHO, RICHARD

BLOCK 503 LOT 5
N/F ANTIFONARIO, CARL J
& JAIME R

BLOCK 503 LOT 6
N/F SHAHAR, ARIK &
SHAHAR-GARA, DANA

BLOCK 503 LOT 7
N/F STEFFENS, DANNY
& DEANNA D

BLOCK 503 LOT 8
N/F GROGAN, BRIAN
& ROSWITHA

BLOCK 503 LOT 9
N/F SHAPIRO, PHILIP W
& JEANETTE E

BLOCK 503 LOT 1
N/F KNICKERBOCKER COUNTRY CLUB

BENJAMIN ROAD
(50' ROW)

PALMER AVENUE

LOUI

LOT 1
LOT 2
LOT 36
LOT 4
LOT 17
LOT 6
LOT 7
LOT 8
LOT 9

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY
4	1-14-26	REV. DRAINAGE PER BOARD ENG.	GK.T.	J.L.M.
3	12-23-25	REV. GRADE & DRAIN PER BOARD ENG.	GK.T.	J.L.M.
2	11-3-25	PER ENG. REV. LTR. 10-29-25	GK.T.	J.L.M.
1	11-8-24	ZONING BOARD SUBMISSION.	GK.T.	J.L.M.

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PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

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N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27985800

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

TREE REMOVAL PLAN - 2

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	10/24/24	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
GK.T.	J.L.M.	1"=30'	25 OF 25

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Stormwater Management Report

For

KNICKERBOCKER COUNTRY CLUB
2024 IMPROVEMENTS

BLOCK 503, LOT 1
BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

OUR FILE NO. 21-191

Prepared by:

Boswell Engineering
330 Phillips Avenue
South Hackensack, NJ 07606

July 15, 2025

Revised: November 17, 2025

Jeffrey L. Morris, P.E.
Professional Engineer
NJ License No. 30979

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♦ TABLE OF CONTENTS	2
♦ INTRODUCTION	3
♦ PROJECT LOCATION & EXISTING CONDITIONS	3
♦ PROPOSED CONDITIONS	5
♦ STORMWATER DISCHARGE SUMMARY	6

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♦ **APPENDIX A - MAPS AND PLANS**

- o AREA MAP AND SITE LOCATION MAP (Google Maps)
- o TAX PARCEL LOCATION MAP
- o USGS TOPOGRAPHIC LOCATION MAP
- o BOUNDARY AND TOPOGRAPHIC SURVEY
- o FEMA FLOOD LOCATION MAP
- o WETLAND LOCATION MAP
- o EXISTING CONDITIONS SITE LOCATION PLAN
- o EXISTING CONDITIONS DRAINAGE MAP
- o PROPOSED CONDITIONS DRAINAGE MAP
- o SITE, GRADING AND DRAINAGE PLAN

♦ **APPENDIX B - PROJECT INFORMATION & CALCULATION SUMMARY**

- o PROPERTY AND PROJECT SITE INFORMATION
- o LOT COVERAGE CALCULATION SHEET
- o PRE- & POST-DEVELOPMENT DISCHARGE COMPARISON
- o NOAA Atlas 14 Precipitation Data

♦ **APPENDIX C - STORMWATER QUANITY CALCULATIONS**
(Based on NOAA Atlas 14, Project Site Precipitation Data)

- o DETENTION/INFILTRATION BASINS STORAGE CALCULATIONS
- o PRE- & POST-DEVELOPMENT RUNOFF CALCULATIONS
- o RUNOFF HYDROGRAPHS
- o DETENTION BASINS STORAGE, ROUTING & DISCHARGE CALCULATIONS

- **APPENDIX D - STORMWATER QUANITY CALCULATIONS (Based on NJ.AC.7:8-5.7 (d) as Table 5-6)**
    - DETENTION/INFILTRATION BASINS STORAGE CALCULATIONS
    - PRE- & POST-DEVELOPMENT RUNOFF CALCULATIONS
    - RUNOFF HYDROGRAPHS
    - DETENTION BASINS STORAGE, ROUTING & DISCHARGE CALCULATIONS
- **APPENDIX E - BERGEN COUNTY CUSTOM SOIL RESOURCE REPORT**

I. INTRODUCTION

This Report is for the Stormwater Management aspect of the proposed site improvements project for the Knickerbocker Country Club. The project site is located on the 23.83 acres property of the country club. Multiple areas of the property will be developed. The development consists 4 new tennis courts, 2 padel ball courts, 3 pickleball courts, concrete walkway, chain link fences, associated drainage system..

The existing clubhouse and pool area improvements include: 2,347 Sq.Ft. clubhouse deck, lounge seating, terraces, proposed covered play area, proposed kids club, stamped concrete apron around the perimeter of the pool, retaining wall, additional concrete sidewalks and fences.

The project also consists associated drainage systems with stormwater detention / infiltration basins. The project also consists the removal of 4 existing tennis courts.

The project site is located at the corner of Knickerbocker Road and Erledon Road,

at 188 Knickerbocker Road in the Borough of Tenafly, Bergen County.

II. PROJECT LOCATION AND EXISTING CONDITIONS

The project site is located at 188 Knickerbocker Road on Lot 1 in Block 503 in the Borough of Tenafly, Bergen County, New Jersey. The total lot area is 23.83 acres.

The North-Westerly part of the property is developed under existing conditions. Existing driveways, parking areas, the clubhouse, pool, etc. are all located within this area. Some of the proposed improvements will take place within the developed portion of the property, around the existing clubhouse and pool. Under existing conditions most of the ground cover within this area is impervious cover, such as roof, concrete, asphalt, etc.

The South-Western part of the property currently is un-developed, vegetated open area.

The existing ground slope varies between 3 and 10 percent and slopes from West to Easterly direction.

The North-Eastern part of the property under current conditions is a vegetated open area, trees are located along the Easterly and Northerly property lines, with the exception of the area occupied by the four existing tennis courts which will be removed as part of the proposed development.

The South-Eastern portion of the property is un-developed, vegetated open area. The existing ground slope is about 14 percent, sloping from North-West to South Easterly direction.

The soil within the developed, North-Westerly section of the property is Urban Land, it covers approximately 13 percent of the property.

Boonton, moderately well drained gravelly loam (BohC), with 8 to 15 percent slopes, covers the middle part of the lot area of the proposed site improvements, about 37 percent of the property. Drainage class: moderately well drained, depth to restrictive feature: more than 80 inches. Hydrologic Soil Group: C.

Soil along the Eastern property line: (BohE) Boonton moderately well drained, gravelly loam, Steep slope area with 25 to 45 percent slopes. Drainage class: Moderately well drained. Runoff Class: Very high., Hydrologic Soil Group: C. This soil covers about 20% of the property.

(BouC) Boonton-Urban land complex with 8 to 15 percent slopes, located along the Southerly property line, covers about 18 percent of the property. Drainage class: well drained, Runoff class: Medium. Hydrologic Soil Group: C.

There is an existing drainage system on the property, collecting rainwater from existing roofs, paved parking areas, concrete sidewalks, tennis courts, etc. The existing drainage system consists 15 seepage pits, two trench drains, 8 catch basins, 13 manholes and the associated piping system. The rainwater from the existing drainage systems is discharged unto the undeveloped vegetated Areas of the property. There is also an existing detention pond with approximately 9,300 storage capacity, located in the middle area of the property. The rainwater outflow from the basin is controlled by an outlet structure, including an orifice, a weir, emergency spillway and a 12 inch outflow pipe. The rainwater is discharged onto a vegetated open area through an 8 x 9 feet scour-hole.

From an area along the Northerly property line the rainwater is flowing overland into the municipal drainage system located within the R.O.W of Erledon Road.

The rainwater from the Southerly and Easterly portions of the property flowing over land onto the neighboring residential properties under existing conditions.

III. PROPOSED CONDITIONS

As shown on the plans, the proposed development will include the demolition of four existing tennis courts, re-grading the North-East part of the property, a few improvements around the existing clubhouse and pool, three pickleball courts, two padel ball courts, four tennis courts, concrete sidewalks, chain-link fences and gates, associated drainage system, consisting two above ground detention / infiltration basins with outlet control structures. Catch basins, trench drains, manholes, associated piping systems, grass swales and other associated site

improvements, such as site lighting and landscaping. The proposed development will disturb approximately 14 acres of land, and will increase the amount of impervious coverage, by 0.59 acres.

As a result of the development, the peak rate of stormwater runoff will increase,

to offset this increase, two above ground detention/ infiltration basins are being proposed. The excavated, above ground detention basins with outlet control structures will reduce the rate of discharge from the project site. Hydrologic and hydraulic analysis were completed using SCS methodology to calculate the existing and proposed runoff for the 2, 10, and 100-year storm events. The existing and proposed runoff and routing calculations can be found in the Stormwater Management Report of the project, in Appendix 'C'.

IV. STORMWATER DISCHARGE SUMMARY

(Based on existing, project site precipitation data.)

The existing rates of runoff from the project site for the 2-, 10-, and 100-year storms will be reduced as follows: 2 year storm by 29.1 percent, 10 year storm by 35.0 percent and the 100 year storm by 31.7 percent.

Table 1.1

Stormwater Discharge Summary of Routing Computations.

Calculations are based on NOAA Atlas 14 , Project Site Precipitation Data)

Storm Frequency	Pre-Development Peak Rate of Runoffs	Post Development Peak Outflow Rate
2-Year	26.02 C.F. S	18.44 C.F.S.
10-Year	56.00 C.F.S.	36.39 C.F.S.
100-Year	120.36 C.F.S.	82.23 C.F.S.

V. STORMWATER DISCHARGE SUMMARY

(Based on NJ.AC / NJDEP future) precipitation data.)

The existing rates of runoff from the project site for the 2-, 10-, and 100-year storms will be reduced as follows: 2 year storm by 31.9 percent, 10 year storm by 34.1 percent and the 100 year storm by 32.9 percent.

Table 1.2

Stormwater Discharge Summary of Routing Computations.

(Calculations are based on NJ.AC.7:8-5.7 (d) as Table 5-6)

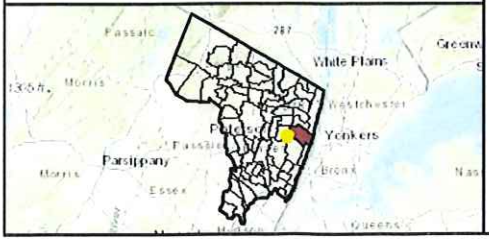
Storm Frequency	Pre-Development Peak Rate of Runoffs	Post Development Peak Outflow Rate
2-Year	37.68 C.F. S	25.67 C.F.S.
10-Year	79.45 C.F.S.	52.33 C.F.S.
100-Year	180.46 C.F.S.	121.17 C.F.S.

The existing rates of runoff generated on the subject site will be reduced as listed above in Table 1.1 & 1.2 (Infiltration was not taken into consideration in the calculations.)

APPENDIX - A

MAPS AND PLANS

NOTES:
NEARMAP IMAGE DATE:
MARCH 19, 2025



AERIAL LOCATION MAP

KNICKERBOCKER COUNTY CLUB

188 KNICKERBOCKER ROAD

BLOCK: 503 | LOT: 1

BOROUGH OF TENAFLY

BERGEN COUNTY, NEW JERSEY

BOSWELL
EST 1924

N W E S

0 100 200
FEET

NORTHING: 759,560	DRAWN BY: JMW	DATE: MAY 1, 2025	PROJECT NO.: 21-191
EASTING: 636,627	CHECKED BY: FJR	SCALE: 1 IN = 200 FT	SHEET: 1 OF 1

NOTES:
NJ OFFICE OF GEOGRAPHIC INFORMATION SYSTEMS PARCELS/MOD-IV COMPOSITE LAYER

TAX PARCEL LOCATION MAP

KNICKERBOCKER COUNTY CLUB

188 KNICKERBOCKER ROAD

BLOCK: 503 | LOT: 1

BOROUGH OF TENAFLY

BERGEN COUNTY, NEW JERSEY

BOSWELL
EST 1924

N W E S

0 100 200
FEET

NORTHING: 759,560	DRAWN BY: JMW	DATE: MAY 1, 2025	PROJECT NO.: 21-191
EASTING: 636,627	CHECKED BY: FJR	SCALE: 1 IN = 200 FT	SHEET: 1 OF 1

NOTES:
UNITED STATES GEOLOGICAL SURVEY (USGS)
HACKENSACK AND YONKERS QUADRANGLES

USGS TOPOGRAPHIC LOCATION MAP

KNICKERBOCKER COUNTY CLUB

188 KNICKERBOCKER ROAD

BLOCK: 503 | LOT: 1

BOROUGH OF TENAFLY

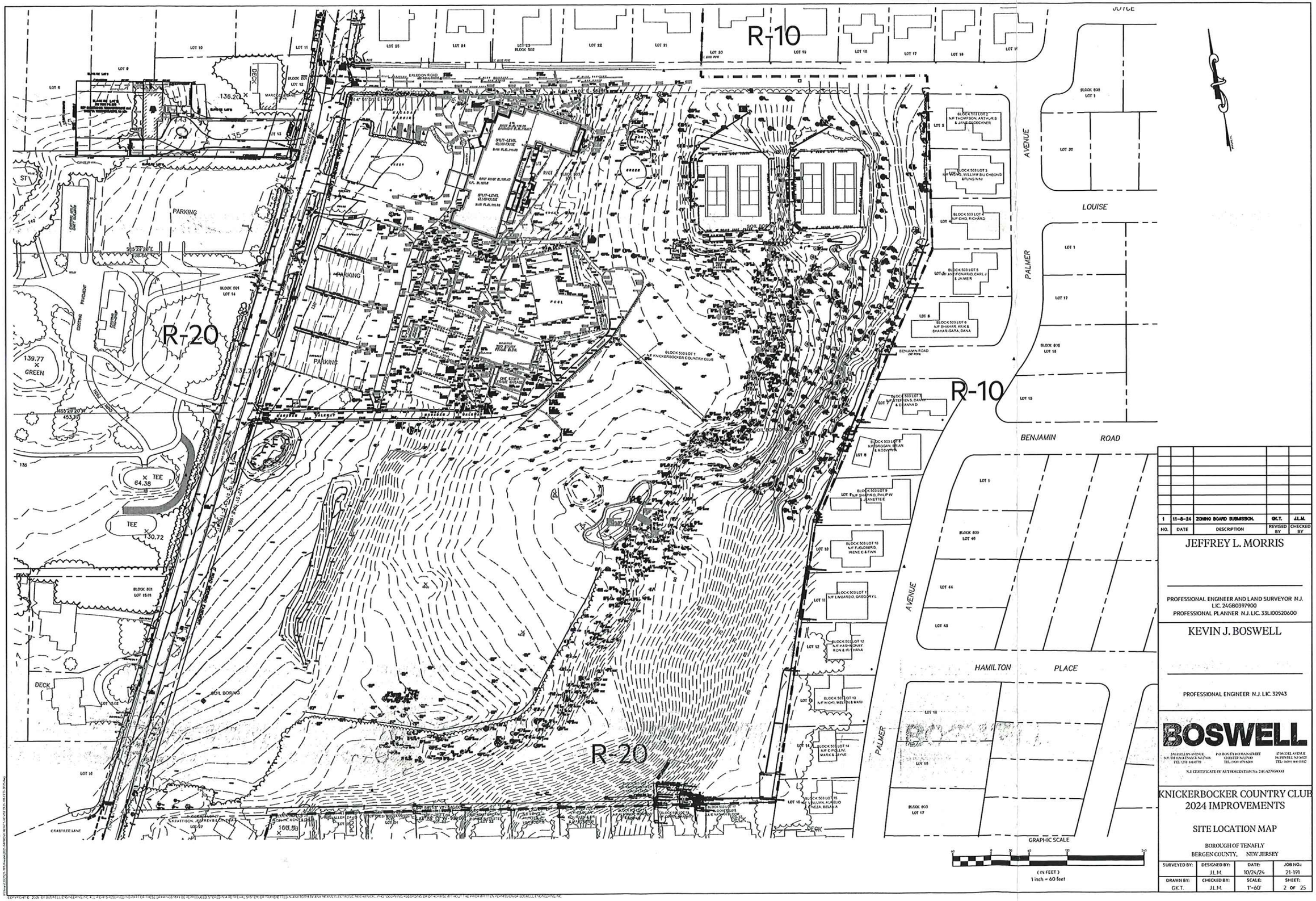
BERGEN COUNTY, NEW JERSEY

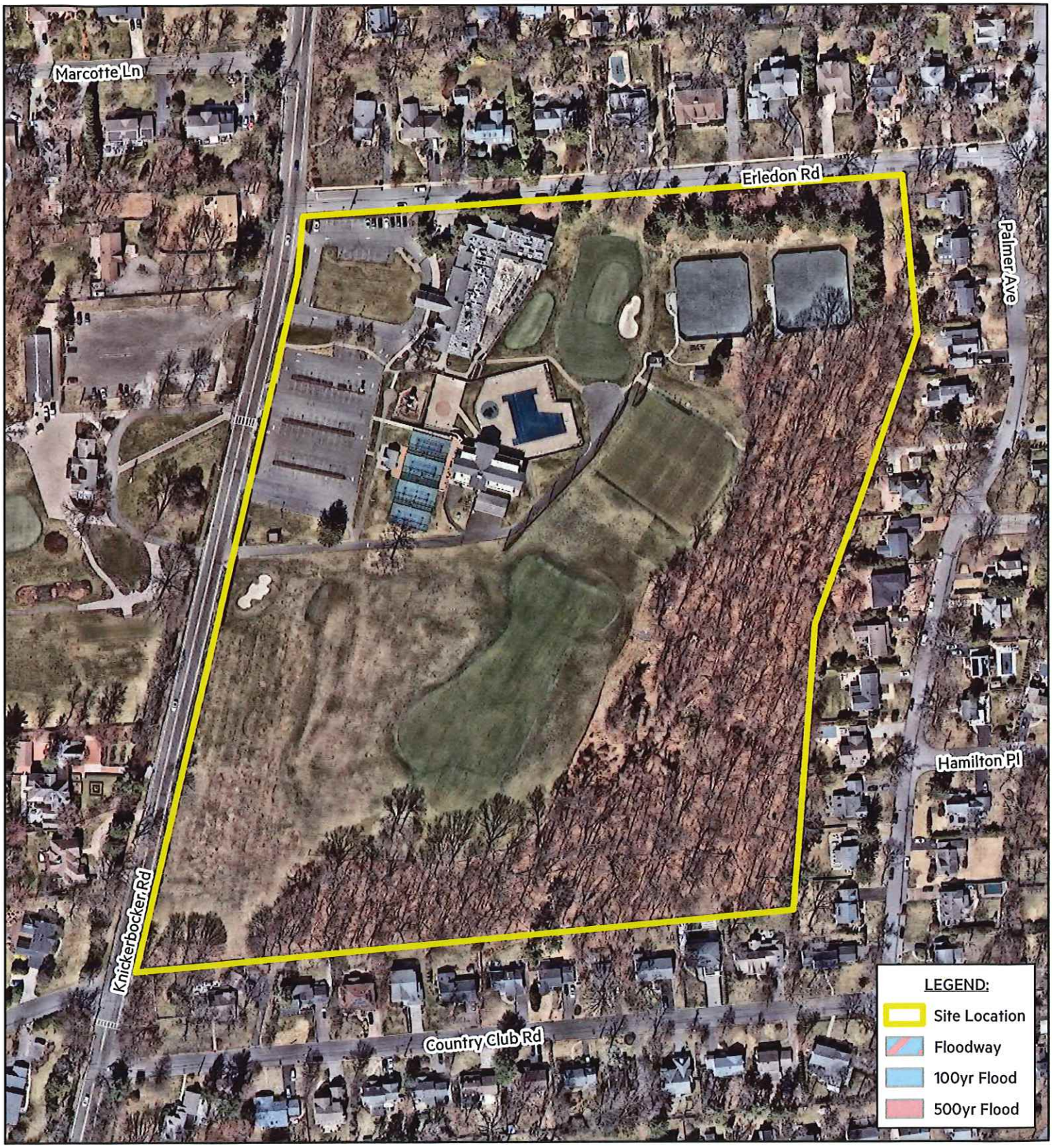
BOSWELL
EST 1924

N W E S

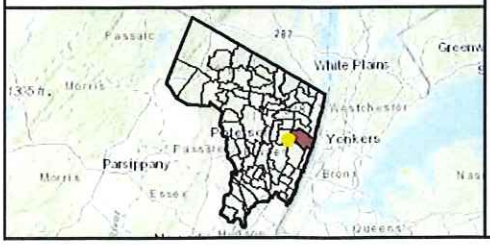
0 500 1,000
FEET

NORTHING: 759,560	DRAWN BY: JMW	DATE: MAY 1, 2025	PROJECT NO.: 21-191
EASTING: 636,627	CHECKED BY: FJR	SCALE: 1 IN = 1,000 FT	SHEET: 1 OF 1


R-10
R-20
R-10
R-20
PARKING
PARKING
PARKING
DECK
DECK
DECK
POOL
SOIL BORING
SOIL BORING
SOIL BORING



NOTES:
BERGEN COUNTY FEMA FLOOD DATALAYER
FIRM: 34003C0211H



FEMA FLOOD LOCATION MAP

KNICKERBOCKER COUNTY CLUB

188 KNICKERBOCKER ROAD

BLOCK: 503 | LOT: 1

BOROUGH OF TENAFLY

BERGEN COUNTY, NEW JERSEY

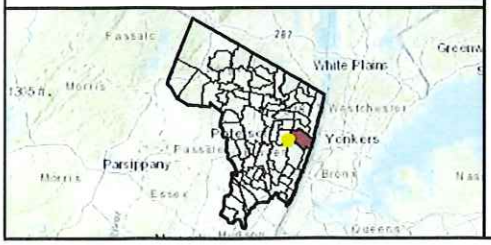
BOSWELL
EST 1924

N W E S

0 100 200
FEET

NORTHING: 759,560	DRAWN BY: JMW	DATE: MAY 1, 2025	PROJECT NO.: 21-191
EASTING: 636,627	CHECKED BY: FJR	SCALE: 1 IN = 200 FT	SHEET: 1 OF 1

NOTES:
NJDEP FRESHWATER WETLANDS DATALAYER



WETLAND LOCATION MAP

KNICKERBOCKER COUNTY CLUB

188 KNICKERBOCKER ROAD

BLOCK: 503 | LOT: 1

BOROUGH OF TENAFLY

BERGEN COUNTY, NEW JERSEY

BOSWELL

EST 1924

N W E S

0 100 200

FEET

NORTHING: 759,560	DRAWN BY: JMW	DATE: MAY 1, 2025	PROJECT NO.: 21-191
EASTING: 636,627	CHECKED BY: FJR	SCALE: 1 IN = 200 FT	SHEET: 1 OF 1

PERVIOUS AREA = 15,340 SQ.FT.
IMPERVIOUS AREA = 13,998 SQ.FT.
29,338 SQ. FT.
EX-DA-7

PERVIOUS AREA = 33,808 SQ.FT.
IMPERVIOUS AREA = 95,930 SQ.FT.
EX-DA-6
129,738 SQ. FT.

PERVIOUS AREA = 255,852 SQ.FT.
IMPERVIOUS AREA = 46,155 SQ.FT.
EX-DA-3
301,505 SQ. FT.

PERVIOUS AREA = 374,089 SQ.FT.
IMPERVIOUS AREA = 29,809 SQ.FT.
EX-DA-4
403,914 SQ. FT.

PERVIOUS AREA = 194,848 SQ.FT.
IMPERVIOUS AREA = 0 SQ.FT.
EX-DA-2
194,848 SQ. FT.

ERLEDON ROAD
PARKING
PAVEMENT
EXISTING GOLF DRIVE BUILDING
SPLIT-LEVEL CLUBHOUSE
POOL
TENNIS BUILDING
PUMP STATION
TEE
PALMER AVENUE
LOUISE
BENJAMIN ROAD
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GRAPHIC SCALE
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(IN FEET)
1 inch = 50 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY

JEFFREY L. MORRIS

PROFESSIONAL ENGINEER AND LAND SURVEYOR N.J. LIC. 24GB03979900
PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

KEVIN J. BOSWELL

PROFESSIONAL ENGINEER N.J. LIC. 32943

BOSWELL

130 PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07606, TEL: (201) 641-0770
P.O. BOX 372, 150 MAIN STREET, CHESTER, NJ 07930, TEL: (908) 879-6209
17 MORAL AVENUE, BOSWELL, NJ 08825, TEL: (908) 806-0002

N.J. CERTIFICATE OF AUTHORIZATION No. 24GA27958000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

EXISTING DRAINAGE AREA MAP

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	10/24/24	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
G.K.T.	J.L.M.	1"=50'	1 OF 1

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DA-7
50,277 SQ. FT.
=1.15 AC.
IMPERV: 13,998 SF. =0.32 AC.
PERV: 36,279 SF. =0.83 AC.

DA-6
126,010 SQ. FT.
=2.89 AC.
IMPERV: 92,202 SF.
=2.12 AC.
PERV: 33,808 SF. =0.78 AC.

DA-8
TOTAL DEP.
14,767 SQ.FT.
0.34 AC.

121,898 SQ. FT.
=2.80 AC.
IMPERVIOUS: 5,197 SF.
=0.1 AC.
PERVIOUS: 116,701 SF.
=2.68 AC.

DA-3
245,014 SQ. FT.
=5.62 AC.
IMPERVIOUS: 49,394 SF.
=1.13 AC.
PERVIOUS: 195,620 SF.
=4.49 AC.

DA-4
293,912 SQ. FT.
=6.75 AC.
IMPERVIOUS: 0.00 SF.
=0.00 AC.
PERVIOUS: 293,912 SF.
6.75 AC.

DA-1
83,402 SQ. FT.
=1.91 AC.
IMPERVIOUS: 50,957 SF.
=1.17 AC.
PERVIOUS: 32,445 SF.
=0.74 AC.

DA-1.B
20,062 SQ. FT.
=0.46 AC.

DA-2
124,063 SQ. FT.
=2.85 AC.
IMPERVIOUS: 0.00 SF.
PERVIOUS: 124,063 SF.
=2.85 AC.

ERLEDON ROAD
MARCOTTE LANE
PARKING
LOUISE
PALMER AVENUE
BENJAMIN ROAD
HAMILTON

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 feet

NO.	DATE	DESCRIPTION	REVISED BY	CHECKED BY

JEFFREY L. MORRIS

PROFESSIONAL ENGINEER AND LAND SURVEYOR N.J. LIC. 24GB0397900
PROFESSIONAL PLANNER N.J. LIC. 33LI00520600

KEVIN J. BOSWELL

PROFESSIONAL ENGINEER N.J. LIC. 32943

BOSWELL

NJ CERTIFICATE OF AUTHORIZATION No. 24GA27958000

KNICKERBOCKER COUNTRY CLUB
2025 IMPROVEMENTS

PROPOSED DRAINAGE AREA MAP

BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

SURVEYED BY:	DESIGNED BY:	DATE:	JOB NO.:
	J.L.M.	10/24/24	21-191
DRAWN BY:	CHECKED BY:	SCALE:	SHEET:
G.K.T.	J.L.M.	1"=50'	1 OF 1

PERVIOUS AREA = 13540 SQ.FT.
IMPERVIOUS AREA = 13,998 SQ.FT.
79,538 SQ. FT.
EX-DA-7

PERVIOUS AREA = 33808 SQ.FT.
IMPERVIOUS AREA = 95,930 SQ.FT.
EX-DA-6
129,738 SQ. FT.

PERVIOUS AREA = 255,352 SQ. FT.
IMPERVIOUS AREA = 46,153 SQ. FT.
EX-DA-3
301,505 SQ. FT.

PERVIOUS AREA = 374,088 SQ. FT.
IMPERVIOUS AREA = 29,826 SQ. FT.
EX-DA-4
403,914 SQ. FT.

PERVIOUS AREA = 194,848 SQ. FT.
IMPERVIOUS AREA = 0 SQ. FT.
EX-DA-2
194,848 SQ. FT.

ERLEDON ROAD
MARCOTTE LANE
PARKING
EXISTING GOLF CART BUILDING
EXISTING PAVEMENT
EXISTING PAVILION
BLOCK 601 LOT 14
BLOCK 601 LOT 15.01
BLOCK 601 LOT 18
TEE
PROPOSED JUNIOR GOLF AREA
PROPOSED GOLF SHORT COURSE
PROPOSED PUTTING COURSE
PROPOSED CONCRETE WALKWAY
PROPOSED POOL AREA
PROPOSED DECK ADDITION
PROPOSED REPLACE DIVING BOARD
PROPOSED COVERED PLAY AREA
PROPOSED OFFICE
PROPOSED CONCRETE CURB
PROPOSED FENCE TYP.
PROPOSED LIGHTING BY OTHERS TYP.
PROPOSED CONCRETE PATIO
PROPOSED RETAINING WALL
PROPOSED SPLIT-LEVEL CLUBHOUSE
PROPOSED TENNIS COURTS
PROPOSED PADEL COURTS
PROPOSED BASKETBALL COURTS
PROPOSED SWIMMING POOL COURTS
PROPOSED SWIMMING POOL COVER
PROPOSED SWIMMING POOL COVER COURTS
PROPOSED SWIMMING POOL COVER COURTS
PROPOSED SWIMMING POOL COVER COURTS

APPENDIX - B

PROJECT INFORMATION AND SUMMARY OF

CALCULATIONS

BOSWELL ENGINEERING

330 PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07606

PROJECT SUMMARY DATA SHEET

Project:	Knickerbocker Country Club Improvements	BY:	LS	Checked:
Location:	188 Knickerbocker Road, Tenafly,Bergen county NJ	Date:	7/15/25	Date:
Job No:	21-191	Rev.:		

Applicant: Knickerbocker Country Club
188 Knickerbocker Road
Borough of Tenafly, Bergen County, NJ 07670

Project Address: 188 Knickerbocker Road

Property: Borough of Tenafly, Bergen County, nNJ 07670

Block and Lot No. Block 503, Lot 1

Lot Area (Ac.): 23.83

Limit of Disturbance (Ac.) 602767 SF.=13.84 AC

Total Drainage Area: 1,059,343 SF.= 24.32 AC.

Ground Coverage	Existing Conditions	Proposed Conditions
Total Imperv. (Sf)	185907.00	211748.00
Total Perv. (Sf)	873436.00	847595.00
Total Drainage Area (Sf)	1059343.00	1059343.00
Tc (Hour)	0.19	0.1
CN.	**78**	**79**

BOSWELL ENGINEERING

330 PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07606

EXISTING & PROPOSED RUN-OFF & DISCHARGE COMPARISON

Project:	Knickerbocker Country Club Improvements	BY: LS	Checked:
Location:	188 Knickerbocker Road, Tenafly,Bergen county NJ	Date: 07.15.25	Date:
Job No:	21-191	Rev.: 11.17.25	

Precipitation data based on:
NOAA Atlas 14 for location: Tenafly, Bergen County New Jersey
County Specific, NJ. 24-Hr. Rainfall Frequency Data
With Type III Distribution (See Hydraflow Hydrographs Computer Calculations)
SOIL - HSG: C

Drainage Area	Description	2yr	10yr	100yr
ODA	Existing Rate of Discharge (cfs)	26.02	56.00	120.36
ODA	Proposed Rate of Discharge (cfs)	18.44	36.39	82.23

POINT / LINE OF DISCHARGE ANALYSIS:

Discharge Location	Existing rate of discharge cfs.			Proposed Rate of Discharge (cfs.)		
	2 YR.	10 YR.	100 YR.	2YR	10 YR	100 YR
Property Line N. Erledon Road	1.27	2.18	3.99	9.27	17.78	38.28
Property Line E. Residential Lots	20.88.	45.02	97.04	7.342	16.11	34.54
Property Line S. Residential Lots	4.332	9.59	20.68	3.1	6.8	14.58
Country Club Road Knickerbocker Rd. Corner, Exist. Mh.	0.00	0.00	0.00	0.224	0.489	2.023

BOSWELL ENGINEERING

30 PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07606

DRAINAGE AREAS GROUND COVER SUMMARY SHEET

Project: Knickerbocker Country Club BY: LS Chkd:
Location: Boorugh of Tenafly, Bergen County, NJ Date: 7/10/25 Date:
Job No: 21-191

Drainage Area Name/ID	Drainage Area (SF.)	Ground coverage of Drainage Areas:				
		Existing (SF.)		Total	Proposed (SF.)	
		Impervious	Pervious	Acres	Impervious	Pervious
ODA	1,059,343	185,907	873,436	24.32	211,748	847,595
DA-1	0	0	0	1.91	50957	32445
DA-2	194848	0	194848	2.85	0	124063
DA-3	301505	46153	255352	5.62	49394	195620
DA-4	403914	29826	374088	6.75	0	293912
DA-5	0	0	0	2.80	5197	116701
DA-6	129738	95930	33808	2.89	92202	33808
DA-7	29338	13998	15340	1.15	13998	36279
DA-8	0	0	0	0.34	0	14767
Total (Ac)	**24.32**	**4.27**	**20.05**		**4.86**	**19.46**

BOSWELL ENGINEERING

330 PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07606

EXISTING DRAINAGE AREAS GROUND COVER SUMMARY SHEET

Project: KNICKERBOCKER COUNTRY CLUB
Location: Borough of Tenafly, Bergen County, NJ
Job.: 21-191

BY: LS Chkd:
Date: 06.16.25 Date:

DA-1	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	0	0	0
	0.00	**0.00**	**0.00**

DA-2	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	0	194848	194848
	0.00	**4.47**	**4.47**

DA-3	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	46153	255352	301505
	1.06	**5.86**	**6.92**

DA-4	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	29826	374088	403914
	0.68	**8.59**	**9.27**

DA-5	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	0	0	0
	0.00	**0.00**	**0.00**

DA-6	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	95930	33808	129738
	2.20	**0.78**	**2.98**

DA-7	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	13998	15340	29338
	0.32	**0.35**	**0.67**

DA-8	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	0	0	0
	0.00	**0.00**	**0.00**

75979	824288	900267	
1.74	**18.92**	**20.67**	
109928	49148	159076	
2.52	**1.13**	**3.65**	

1059343.00	SF.	Total Drainage Area
24.32	AC.	Total Drainage Area

BOSWELL ENGINEERING

330 PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07606

PROPOSED DRAINAGE AREAS GROUND COVER SUMMARY SHEET

Project: KNICKERBOCKER COUNTRY CLUB
Location: Borough of Tenafly, Bergen County, NJ
Job.: 21-191

BY: LS Chkd:
Date: 06.16.25 Date:

DA-1	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	50957	32445	83402
	1.17	**0.74**	**1.91**

DA-2	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	0	124063	124063
	0.00	**2.85**	**2.85**

DA-3	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	49394	195620	245014
	1.13	**4.49**	**5.62**

DA-4	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	0	293912	293912
	0.00	**6.75**	**6.75**

DA-5	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	5197	116701	121898
	0.12	**2.68**	**2.80**

DA-6	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	92202	33808	126010
	2.12	**0.78**	**2.89**

DA-7	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	13998	36279	50277
	0.32	**0.83**	**1.15**

DA-8	IMPERV. AREA(SF)	PERVIOUS AREA(SF)	TOTAL AREA(SF)
	0	14767	14767
	0.00	**0.34**	**0.34**

100351	646040	746391	1059343.00 SF. Total Drainage Area
2.30	**14.83**	**17.13**	24.32 AC. Total Drainage Area
111397	201555	312952	
2.56	**4.63**	**7.18**	

APPENDIX - C

STORMWATER QUANTITY CALCULATIONS

(Based on NOAA Atlas 14, Project Site Precipitation Data)

BOSWELL ENGINEERING
330 PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07606
DRAINAGE AREA: DA-1 - BASIN-1

Project:	Knickerbocker Country Club	BY: LS	Checked:
Location:	Tenafly, Bergen County	Date: 6/19/25	Date:
Job No:	21-191	Revised:	

A. Elevation- Storage Relation

Elev.	Area (SF)	Ave. Area	Storage (CF)	∑ Volume (CF)	
112.00	8528.00		0.00	0.00	
		8821.25			
112.50	9114.50		4410.63	4410.63	
		9407.75			
113.00	9701.00		4703.88	9114.50	
		10010.75			
113.50	10320.50		5005.38	14119.88	
		10630.25			
114.00	10940.00		5315.13	19435.00	
		11259.50			
114.50	11579.00		5629.75	25064.75	
		11898.50			
115.00	12218.00		5949.25	31014.00	OS-1-GR 115.00
		12546.75			
115.50	12875.50		6273.38	37287.38	
		13204.25			
116.00	13533.00		6602.13	43889.50	
		13924.00			
116.50	14315.00		6962.00	50851.50	
		14706.00			
117.00	15097.00		7353.00	58204.50	

BOSWELL ENGINEERING
330 PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07606
DRAINAGE AREA: DA-8 - BASIN-2

Project: Knickerbocker Country Club
Location: Tenafly, Bergen County
Job No: 21-191

BY: LS
Date: 5/5/25
Revised: 11.13.25

Checked:
Date:

A. Elevation- Storage Relation

Elev.	Area (SF)	Ave. Area	Storage (CF)	∑ Volume (CF)	
7500	4735.00		0.00	0.00	
		5378.50			
76.00	6022.00		5378.50	5378.50	
		6345.00			
76.50	6668.00		3172.50	8551.00	
		6991.00			
77.00	7314.00		3495.50	12046.50	
		7650.50			
77.50	7987.00		3825.25	15871.75	
		8323.50			
78.00	8660.00		4161.75	20033.50	
		9025.00			
78.50	9390.00		4512.50	24546.00	
		9755.00			
79.00	10120.00		4877.50	29423.50	
		10561.50			
79.50	11003.00		5280.75	34704.25	
		11444.50			
80.00	11886.00		5722.25	40426.50	Emergency Spillway, 80.00
		12342.00			OS-2 Riser, 80.00
80.50	12798.00		6171.00	46597.50	
		13254.00			
81.00	13710.00		6627.00	53224.50	T.O.B.: 81.00

BOSWELL ENGINEERING

PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07(

DRAINAGE AREA: EXIST. DA-3

EXIST. BASIN - A

Project: Knickerbocker Country Club BY: LS Checked:
Location: Tenafly, Bergen County Date: 7/10/25 Date:
Job No: 21-191 Revised:

A. Elevation- Storage Relation

Elev.	Area (SF)	Ave. Area	Storage (CF	Volume (CF)	
93.5	730.00		0.00	0.00	
		1120.00			
94.00	1510.00		560.00	560.00	
		1998.50			
94.50	2487.00		999.25	1559.25	
		2995.00			
95.00	3503.00		1497.50	3056.75	
		3736.50			
95.50	3970.00		1868.25	4925.00	
		4203.00			
96.00	4436.00		2101.50	7026.50	Emergency Spillway 96.00
		4679.00			
96.50	4922.00		2339.50	9366.00	
		5171.00			
97.00	5420.00		2585.50	11951.50	T.O.B.: 97.00

BOSWELL ENGINEERING

330 PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07606

PROPOSED DRAINAGE AREA: DA-3

EXIST/PROP. BASIN B

Project: Knickerbocker Country Club | BY: LS | Checked:
Location: Tenafly, Bergen County | Date: 7/10/25 | Date:
Job No: 21-191 | Revised: 11/14/25

A. Elevation- Storage Relation

Elev.	Area (SF)	Ave. Area	Storage (CF)	∑ Volume (CF)	
93.5	6410.00		0.00	0.00	
		6683.50			
94.00	6957.00		3341.75	3341.75	
		7256.75			
94.50	7556.50		3628.38	6970.13	
		7856.25			
95.00	8156.00		3928.13	10898.25	
		8489.00			
95.50	8822.00		4244.50	15142.75	
		9155.00			
96.00	9488.00		4577.50	19720.25	
		9844.00			
96.50	10200.00		4922.00	24642.25	
		10556.00			
97.00	10912.00		5278.00	29920.25	
		11230.50			
97.50	11549.00		5615.25	35535.50	
		11867.50			
98.00	12186.00		5933.75	41469.25	Emergency Spillway 98.00
		12566.00			
98.50	12946.00		6283.00	47752.25	
		13326.00			
99.00	13706.00		6663.00	54415.25	T.O.B.: 99.00

NOAA Atlas 14, Volume 2, Version 3
Location name: Tenafly, New Jersey, USA*
Latitude: 40.9187°, Longitude: -73.9774°
Elevation: 125 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.342 (0.310-0.378)	0.409 (0.371-0.452)	0.487 (0.442-0.538)	0.547 (0.494-0.603)	0.622 (0.559-0.686)	0.678 (0.607-0.748)	0.732 (0.650-0.809)	0.786 (0.692-0.871)	0.858 (0.747-0.957)	0.912 (0.786-1.02)
10-min	0.538 (0.487-0.593)	0.645 (0.584-0.712)	0.767 (0.695-0.848)	0.857 (0.774-0.944)	0.969 (0.871-1.07)	1.05 (0.940-1.16)	1.13 (1.00-1.25)	1.20 (1.06-1.34)	1.30 (1.13-1.45)	1.37 (1.18-1.54)
15-min	0.666 (0.604-0.734)	0.800 (0.725-0.883)	0.954 (0.865-1.05)	1.07 (0.966-1.18)	1.21 (1.09-1.33)	1.31 (1.17-1.45)	1.42 (1.26-1.56)	1.51 (1.33-1.68)	1.63 (1.42-1.82)	1.72 (1.48-1.92)
30-min	0.895 (0.812-0.988)	1.08 (0.983-1.20)	1.33 (1.21-1.47)	1.51 (1.37-1.67)	1.75 (1.57-1.93)	1.92 (1.72-2.12)	2.10 (1.86-2.32)	2.27 (2.00-2.52)	2.50 (2.18-2.79)	2.67 (2.30-2.99)
60-min	1.10 (1.00-1.22)	1.35 (1.22-1.49)	1.69 (1.53-1.86)	1.95 (1.76-2.14)	2.30 (2.06-2.53)	2.57 (2.30-2.84)	2.85 (2.53-3.15)	3.13 (2.76-3.47)	3.52 (3.06-3.92)	3.81 (3.29-4.28)
2-hr	1.37 (1.24-1.51)	1.66 (1.50-1.83)	2.09 (1.89-2.31)	2.43 (2.19-2.68)	2.89 (2.60-3.19)	3.28 (2.92-3.62)	3.66 (3.24-4.05)	4.07 (3.57-4.52)	4.63 (4.01-5.16)	5.08 (4.35-5.69)
3-hr	1.52 (1.39-1.68)	1.85 (1.68-2.05)	2.33 (2.12-2.58)	2.72 (2.46-3.00)	3.25 (2.92-3.59)	3.69 (3.30-4.07)	4.14 (3.67-4.57)	4.62 (4.05-5.11)	5.28 (4.56-5.87)	5.82 (4.96-6.50)
6-hr	1.98 (1.80-2.17)	2.39 (2.19-2.63)	3.00 (2.74-3.30)	3.49 (3.17-3.83)	4.18 (3.77-4.58)	4.74 (4.25-5.20)	5.33 (4.74-5.85)	5.95 (5.24-6.56)	6.83 (5.92-7.56)	7.54 (6.46-8.38)
12-hr	2.44 (2.21-2.71)	2.95 (2.67-3.28)	3.72 (3.36-4.12)	4.34 (3.91-4.81)	5.24 (4.69-5.78)	5.99 (5.32-6.62)	6.79 (5.97-7.50)	7.65 (6.66-8.48)	8.89 (7.60-9.88)	9.91 (8.36-11.1)
24-hr	2.73 (2.52-2.99)	3.31 (3.04-3.62)	4.21 (3.87-4.60)	4.97 (4.55-5.42)	6.10 (5.55-6.63)	7.06 (6.37-7.68)	8.11 (7.25-8.84)	9.27 (8.20-10.1)	11.0 (9.54-12.0)	12.5 (10.7-13.7)
2-day	3.19 (2.92-3.53)	3.86 (3.53-4.27)	4.93 (4.50-5.44)	5.83 (5.30-6.42)	7.17 (6.46-7.88)	8.32 (7.44-9.15)	9.59 (8.49-10.6)	11.0 (9.61-12.1)	13.1 (11.2-14.5)	14.8 (12.5-16.5)
3-day	3.36 (3.09-3.68)	4.06 (3.74-4.45)	5.17 (4.75-5.65)	6.10 (5.59-6.66)	7.47 (6.79-8.14)	8.64 (7.80-9.41)	9.92 (8.87-10.8)	11.3 (10.0-12.4)	13.4 (11.6-14.7)	15.1 (13.0-16.7)
4-day	3.53 (3.27-3.82)	4.26 (3.96-4.62)	5.41 (5.01-5.86)	6.37 (5.88-6.89)	7.77 (7.12-8.39)	8.96 (8.16-9.68)	10.2 (9.26-11.1)	11.6 (10.4-12.6)	13.7 (12.1-14.9)	15.4 (13.4-16.9)
7-day	4.14 (3.86-4.46)	4.98 (4.64-5.36)	6.22 (5.78-6.69)	7.24 (6.71-7.78)	8.72 (8.04-9.37)	9.96 (9.12-10.7)	11.3 (10.2-12.1)	12.7 (11.4-13.7)	14.8 (13.1-16.0)	16.4 (14.4-17.9)
10-day	4.73 (4.43-5.07)	5.66 (5.29-6.07)	6.96 (6.50-7.46)	8.03 (7.48-8.60)	9.57 (8.86-10.2)	10.8 (9.99-11.6)	12.2 (11.1-13.1)	13.6 (12.3-14.7)	15.7 (14.0-16.9)	17.3 (15.3-18.8)
20-day	6.39 (6.01-6.80)	7.59 (7.14-8.08)	9.08 (8.53-9.66)	10.2 (9.61-10.9)	11.8 (11.1-12.6)	13.1 (12.2-13.9)	14.3 (13.3-15.3)	15.6 (14.4-16.7)	17.3 (15.8-18.6)	18.7 (16.9-20.1)
30-day	7.99 (7.55-8.47)	9.44 (8.91-10.0)	11.1 (10.4-11.7)	12.3 (11.6-13.1)	14.0 (13.1-14.8)	15.2 (14.2-16.1)	16.4 (15.3-17.4)	17.6 (16.4-18.7)	19.2 (17.7-20.5)	20.3 (18.7-21.8)
45-day	10.2 (9.63-10.7)	12.0 (11.3-12.6)	13.8 (13.1-14.6)	15.3 (14.4-16.1)	17.1 (16.1-18.0)	18.5 (17.4-19.5)	19.8 (18.6-20.9)	21.1 (19.7-22.3)	22.7 (21.1-24.1)	23.9 (22.2-25.5)
60-day	12.2 (11.6-12.8)	14.3 (13.6-15.1)	16.4 (15.6-17.2)	17.9 (17.0-18.9)	19.9 (18.8-20.9)	21.3 (20.1-22.4)	22.7 (21.4-23.9)	23.9 (22.5-25.2)	25.5 (23.8-26.9)	26.6 (24.8-28.2)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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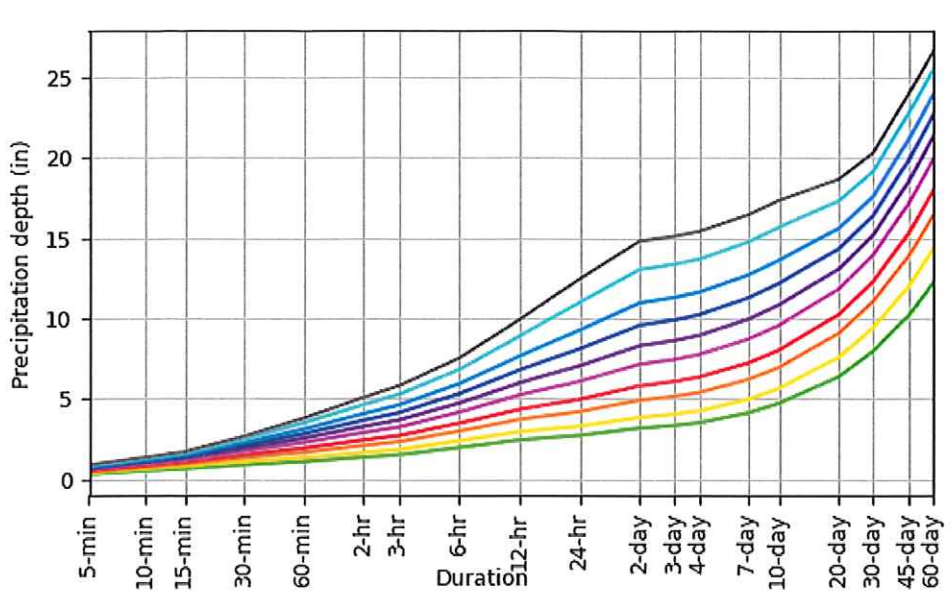
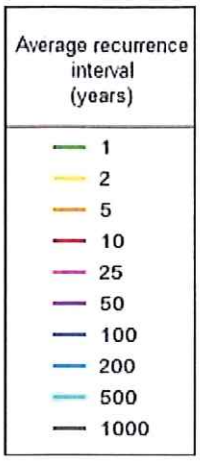
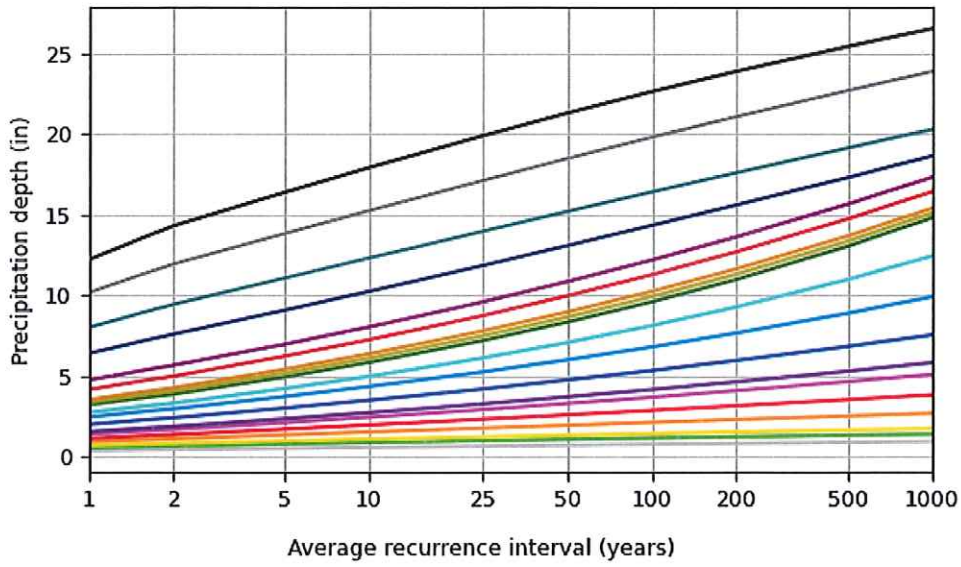
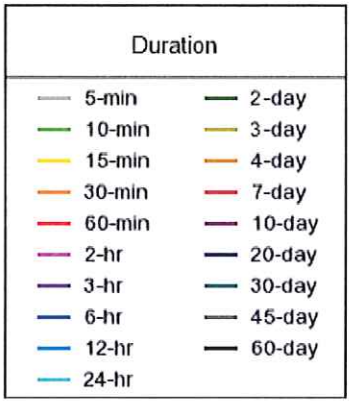
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 40.9187°, Longitude: -73.9774°









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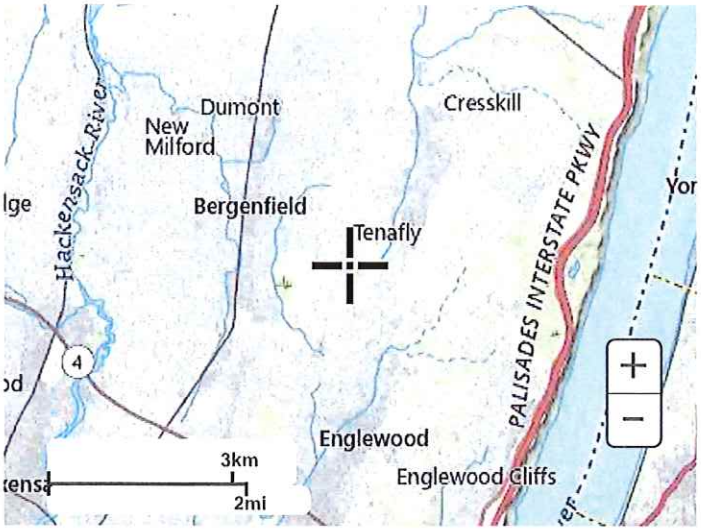
Maps & aerials

Small scale terrain



Large scale terrain

Large scale map

Large scale aerial

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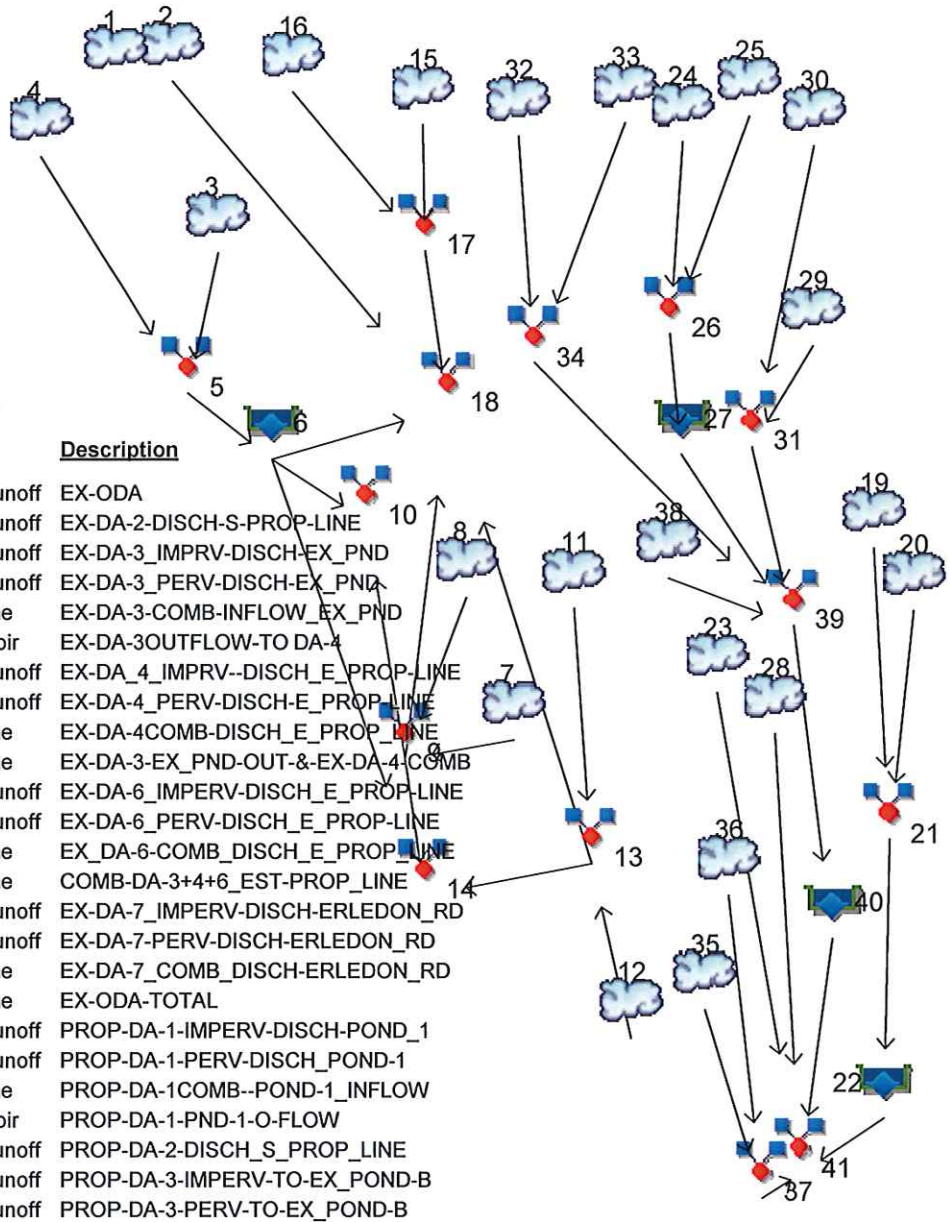
Watershed Model Schematic

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



Legend

Hyd.	Origin	Description
1	SCS Runoff	EX-ODA
2	SCS Runoff	EX-DA-2-DISCH-S-PROP-LINE
3	SCS Runoff	EX-DA-3_IMPRV-DISCH-EX_PND
4	SCS Runoff	EX-DA-3_PERV-DISCH-EX_PND
5	Combine	EX-DA-3-COMB-INFLOW_EX_PND
6	Reservoir	EX-DA-3OUTFLOW-TO DA-4
7	SCS Runoff	EX-DA_4_IMPRV--DISCH_E_PROP-LINE
8	SCS Runoff	EX-DA-4_PERV-DISCH-E_PROP-LINE
9	Combine	EX-DA-4COMB-DISCH_E_PROP_LINE
10	Combine	EX-DA-3-EX_PND-OUT-&-EX-DA-4-COMB
11	SCS Runoff	EX-DA-6_IMPERV-DISCH_E_PROP-LINE
12	SCS Runoff	EX-DA-6_PERV-DISCH_E_PROP-LINE
13	Combine	EX_DA-6-COMB_DISCH_E_PROP_LINE
14	Combine	COMB-DA-3+4+6_EST-PROP_LINE
15	SCS Runoff	EX-DA-7_IMPERV-DISCH-ERLEDON_RD
16	SCS Runoff	EX-DA-7-PERV-DISCH-ERLEDON_RD
17	Combine	EX-DA-7_COMB_DISCH-ERLEDON_RD
18	Combine	EX-ODA-TOTAL
19	SCS Runoff	PROP-DA-1-IMPERV-DISCH-POND_1
20	SCS Runoff	PROP-DA-1-PERV-DISCH_POND-1
21	Combine	PROP-DA-1COMB--POND-1_INFLOW
22	Reservoir	PROP-DA-1-PND-1-O-FLOW
23	SCS Runoff	PROP-DA-2-DISCH_S_PROP_LINE
24	SCS Runoff	PROP-DA-3-IMPERV-TO-EX_POND-B
25	SCS Runoff	PROP-DA-3-PERV-TO-EX_POND-B
26	Combine	PROP-DA-3_COMB-EX_POND-B-INFLOW
27	Reservoir	PROP-DA-3-EX-PND_B-OUT
28	SCS Runoff	DA-4-PROP-PERV-DISCH-E_PROP-LINE
29	SCS Runoff	DA-5-PROP-IMPERV-BASIN-2-INFLOW
30	SCS Runoff	DA5-PROP-PERV-BASIN-2-INFLOW
31	Combine	PROP-DA-5-COMB-TOBASIN-2
32	SCS Runoff	DA-6-IMPERV-TO BASIN-2
33	SCS Runoff	DA-6-PROP-PERV-TO BASIN-2
34	Combine	DA-6-PROP- COMB-TO-BASIN-2
35	SCS Runoff	PROP-DA-7-IMPERV-TO-N-PROP-LINE
36	SCS Runoff	PROP-DA-7-PERV-TO-N-PROP_LINE
37	Combine	PROP-DA-7-COMB-TO-N-PROP_LINE
38	SCS Runoff	DA-8-PROP-PERV-TO-BASIN-2
39	Combine	PROP-COMB-INFLOW-BASIN-2
40	Reservoir	PROP-BASIN-2_OUTFLOW
41	Combine	PROP-ODA-TOTAL

Hydrograph Return Period Recap

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

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	-------	29.75	-------	-------	60.28	-------	-------	122.13	EX-ODA
2	SCS Runoff	------	-------	4.332	-------	-------	9.587	-------	-------	20.68	EX-DA-2-DISCH-S-PROP-LINE
3	SCS Runoff	------	-------	2.951	-------	-------	4.461	-------	-------	7.306	EX-DA-3_IMPRV-DISCH-EX_PND
4	SCS Runoff	------	-------	5.679	-------	-------	12.57	-------	-------	27.11	EX-DA-3_PERV-DISCH-EX_PND
5	Combine	3, 4	-------	8.177	-------	-------	16.34	-------	-------	33.29	EX-DA-3-COMB-INFLOW_EX_PND
6	Reservoir	5	-------	6.291	-------	-------	15.19	-------	-------	32.83	EX-DA-3OUTFLOW-TO DA-4
7	SCS Runoff	------	-------	1.893	-------	-------	2.862	-------	-------	4.687	EX-DA_4_IMPRV--DISCH_E_PRO
8	SCS Runoff	------	-------	9.344	-------	-------	20.50	-------	-------	43.95	EX-DA-4_PERV-DISCH-E_PROP-L
9	Combine	7, 8	-------	11.24	-------	-------	23.36	-------	-------	48.64	EX-DA-4COMB-DISCH_E_PROP_L
10	Combine	6, 9	-------	14.64	-------	-------	34.32	-------	-------	78.50	EX-DA-3-EX_PND-OUT-&-EX-DA-4
11	SCS Runoff	------	-------	6.126	-------	-------	9.259	-------	-------	15.16	EX-DA-6_IMPERV-DISCH_E_PRO
12	SCS Runoff	------	-------	0.756	-------	-------	1.673	-------	-------	3.609	EX-DA-6_PERV-DISCH_E_PROP-L
13	Combine	11, 12	-------	6.800	-------	-------	10.79	-------	-------	18.54	EX_DA-6-COMB_DISCH_E_PROP
14	Combine	6, 9, 13	-------	20.88	-------	-------	45.02	-------	-------	97.04	COMB-DA-3+4+6_EST-PROP_LIN
15	SCS Runoff	------	-------	0.891	-------	-------	1.347	-------	-------	2.206	EX-DA-7_IMPERV-DISCH-ERLED
16	SCS Runoff	------	-------	0.381	-------	-------	0.835	-------	-------	1.791	EX-DA-7-PERV-DISCH-ERLEDON_
17	Combine	15, 16	-------	1.272	-------	-------	2.182	-------	-------	3.996	EX-DA-7_COMB_DISCH-ERLEDO
18	Combine	2, 6, 9, 13, 17	-------	26.02	-------	-------	56.00	-------	-------	120.36	EX-ODA-TOTAL
19	SCS Runoff	------	-------	3.258	-------	-------	4.924	-------	-------	8.064	PROP-DA-1-IMPERV-DISCH-PON
20	SCS Runoff	------	-------	0.654	-------	-------	1.436	-------	-------	3.112	PROP-DA-1-PERV-DISCH_POND-
21	Combine	19, 20	-------	3.740	-------	-------	6.057	-------	-------	10.61	PROP-DA-1COMB--POND-1_INFL
22	Reservoir	21	-------	0.224	-------	-------	0.489	-------	-------	2.023	PROP-DA-1-PND-1-O-FLOW
23	SCS Runoff	------	-------	3.100	-------	-------	6.802	-------	-------	14.58	PROP-DA-2-DISCH_S_PROP_LIN
24	SCS Runoff	------	-------	3.146	-------	-------	4.756	-------	-------	7.789	PROP-DA-3-IMPERV-TO-EX_PON
25	SCS Runoff	------	-------	4.351	-------	-------	9.630	-------	-------	20.77	PROP-DA-3-PERV-TO-EX_POND-
26	Combine	24, 25	-------	7.031	-------	-------	13.65	-------	-------	27.36	PROP-DA-3_COMB-EX_POND-B-I
27	Reservoir	26	-------	1.609	-------	-------	4.536	-------	-------	13.24	PROP-DA-3-EX-PND_B-OUT
28	SCS Runoff	------	-------	7.342	-------	-------	16.11	-------	-------	34.54	DA-4-PROP-PERV-DISCH-E_PRO
29	SCS Runoff	------	-------	0.334	-------	-------	0.505	-------	-------	0.827	DA-5-PROP-IMPERV-BASIN-2-INF
30	SCS Runoff	------	-------	2.369	-------	-------	5.201	-------	-------	11.27	DA5-PROP-PERV-BASIN-2-INFLO
31	Combine	29, 30	-------	2.547	-------	-------	5.521	-------	-------	11.80	PROP-DA-5-COMB-TOBASIN-2
32	SCS Runoff	------	-------	5.903	-------	-------	8.923	-------	-------	14.61	DA-6-IMPERV-TO BASIN-2
33	SCS Runoff	------	-------	0.848	-------	-------	1.861	-------	-------	3.991	DA-6-PROP-PERV-TO BASIN-2

Hydrograph Return Period Recap

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

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
34	Combine	32, 33	-------	6.751	-------	-------	10.78	-------	-------	18.60	DA-6-PROP- COMB-TO-BASIN-2
35	SCS Runoff	------	-------	0.891	-------	-------	1.347	-------	-------	2.206	PROP-DA-7-IMPERV-TO-N-PROP-
36	SCS Runoff	------	-------	0.903	-------	-------	1.981	-------	-------	4.247	PROP-DA-7-PERV-TO-N-PROP_LI
37	Combine	35, 36	-------	1.794	-------	-------	3.328	-------	-------	6.452	PROP-DA-7-COMB-TO-N-PROP_LI
38	SCS Runoff	------	-------	0.370	-------	-------	0.811	-------	-------	1.740	DA-8-PROP-PERV-TO-BASIN-2
39	Combine	27, 31, 34, 38	-------	9.805	-------	-------	17.97	-------	-------	37.50	PROP-COMB-INFLOW-BASIN-2
40	Reservoir	39	-------	7.476	-------	-------	14.50	-------	-------	31.83	PROP-BASIN-2_OUTFLOW
41	Combine	22, 23, 28, 37, 40	-------	18.44	-------	-------	36.39	-------	-------	82.23	PROP-ODA-TOTAL

Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	29.75	3	729	119,581	------	------	------	EX-ODA
2	SCS Runoff	4.332	3	729	18,021	------	------	------	EX-DA-2-DISCH-S-PROP-LINE
3	SCS Runoff	2.951	3	726	11,100	------	------	------	EX-DA-3_IMPRV-DISCH-EX_PND
4	SCS Runoff	5.679	3	729	23,625	------	------	------	EX-DA-3_PERV-DISCH-EX_PND
5	Combine	8.177	3	729	34,725	3, 4	------	------	EX-DA-3-COMB-INFLOW_EX_PND
6	Reservoir	6.291	3	735	34,721	5	95.57	5,220	EX-DA-3OUTFLOW-TO DA-4
7	SCS Runoff	1.893	3	726	7,121	------	------	------	EX-DA_4_IMPRV--DISCH_E_PRO
8	SCS Runoff	9.344	3	726	32,467	------	------	------	EX-DA-4_PERV-DISCH-E_PROP-L
9	Combine	11.24	3	726	39,588	7, 8	------	------	EX-DA-4COMB-DISCH_E_PROP_L
10	Combine	14.64	3	729	74,308	6, 9	------	------	EX-DA-3-EX_PND-OUT-&-EX-DA-4
11	SCS Runoff	6.126	3	726	23,038	------	------	------	EX-DA-6_IMPERV-DISCH_E_PRO
12	SCS Runoff	0.756	3	729	3,145	------	------	------	EX-DA-6_PERV-DISCH_E_PROP-L
13	Combine	6.800	3	726	26,182	11, 12	------	------	EX_DA-6-COMB_DISCH_E_PROP
14	Combine	20.88	3	726	100,491	6, 9, 13	------	------	COMB-DA-3+4+6_EST-PROP_LIN
15	SCS Runoff	0.891	3	726	3,351	------	------	------	EX-DA-7_IMPERV-DISCH-ERLED
16	SCS Runoff	0.381	3	726	1,323	------	------	------	EX-DA-7-PERV-DISCH-ERLEDON_
17	Combine	1.272	3	726	4,674	15, 16	------	------	EX-DA-7_COMB_DISCH-ERLEDO
18	Combine	26.02	3	726	123,186	2, 6, 9, 13, 17	------	------	EX-ODA-TOTAL
19	SCS Runoff	3.258	3	726	12,252	------	------	------	PROP-DA-1-IMPERV-DISCH-PON
20	SCS Runoff	0.654	3	735	3,077	------	------	------	PROP-DA-1-PERV-DISCH_POND-
21	Combine	3.740	3	726	15,329	19, 20	------	------	PROP-DA-1COMB--POND-1_INFL
22	Reservoir	0.224	3	879	15,249	21	113.02	9,337	PROP-DA-1-PND-1-O-FLOW
23	SCS Runoff	3.100	3	726	10,772	------	------	------	PROP-DA-2-DISCH_S_PROP_LIN
24	SCS Runoff	3.146	3	726	11,833	------	------	------	PROP-DA-3-IMPERV-TO-EX_PON
25	SCS Runoff	4.351	3	729	18,102	------	------	------	PROP-DA-3-PERV-TO-EX_POND-
26	Combine	7.031	3	726	29,935	24, 25	------	------	PROP-DA-3_COMB-EX_POND-B-I
27	Reservoir	1.609	3	759	29,914	26	95.09	11,649	PROP-DA-3-EX-PND_B-OUT
28	SCS Runoff	7.342	3	726	25,512	------	------	------	DA-4-PROP-PERV-DISCH-E_PRO
29	SCS Runoff	0.334	3	726	1,257	------	------	------	DA-5-PROP-IMPERV-BASIN-2-INF
30	SCS Runoff	2.369	3	735	11,142	------	------	------	DA5-PROP-PERV-BASIN-2-INFLO
31	Combine	2.547	3	732	12,399	29, 30	------	------	PROP-DA-5-COMB-TOBASIN-2
32	SCS Runoff	5.903	3	726	22,200	------	------	------	DA-6-IMPERV-TO BASIN-2
33	SCS Runoff	0.848	3	726	2,948	------	------	------	DA-6-PROP-PERV-TO BASIN-2

Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
34	Combine	6.751	3	726	25,148	32, 33	------	------	DA-6-PROP- COMB-TO-BASIN-2
35	SCS Runoff	0.891	3	726	3,351	------	------	------	PROP-DA-7-IMPERV-TO-N-PROP-
36	SCS Runoff	0.903	3	726	3,137	------	------	------	PROP-DA-7-PERV-TO-N-PROP_LI
37	Combine	1.794	3	726	6,488	35, 36	------	------	PROP-DA-7-COMB-TO-N-PROP_LI
38	SCS Runoff	0.370	3	726	1,285	------	------	------	DA-8-PROP-PERV-TO-BASIN-2
39	Combine	9.805	3	726	68,746	27, 31, 34, 38	------	------	PROP-COMB-INFLOW-BASIN-2
40	Reservoir	7.476	3	735	68,744	39	75.92	4,929	PROP-BASIN-2_OUTFLOW
41	Combine	18.44	3	726	126,765	22, 23, 28, 37, 40	------	------	PROP-ODA-TOTAL

Hydrograph Report

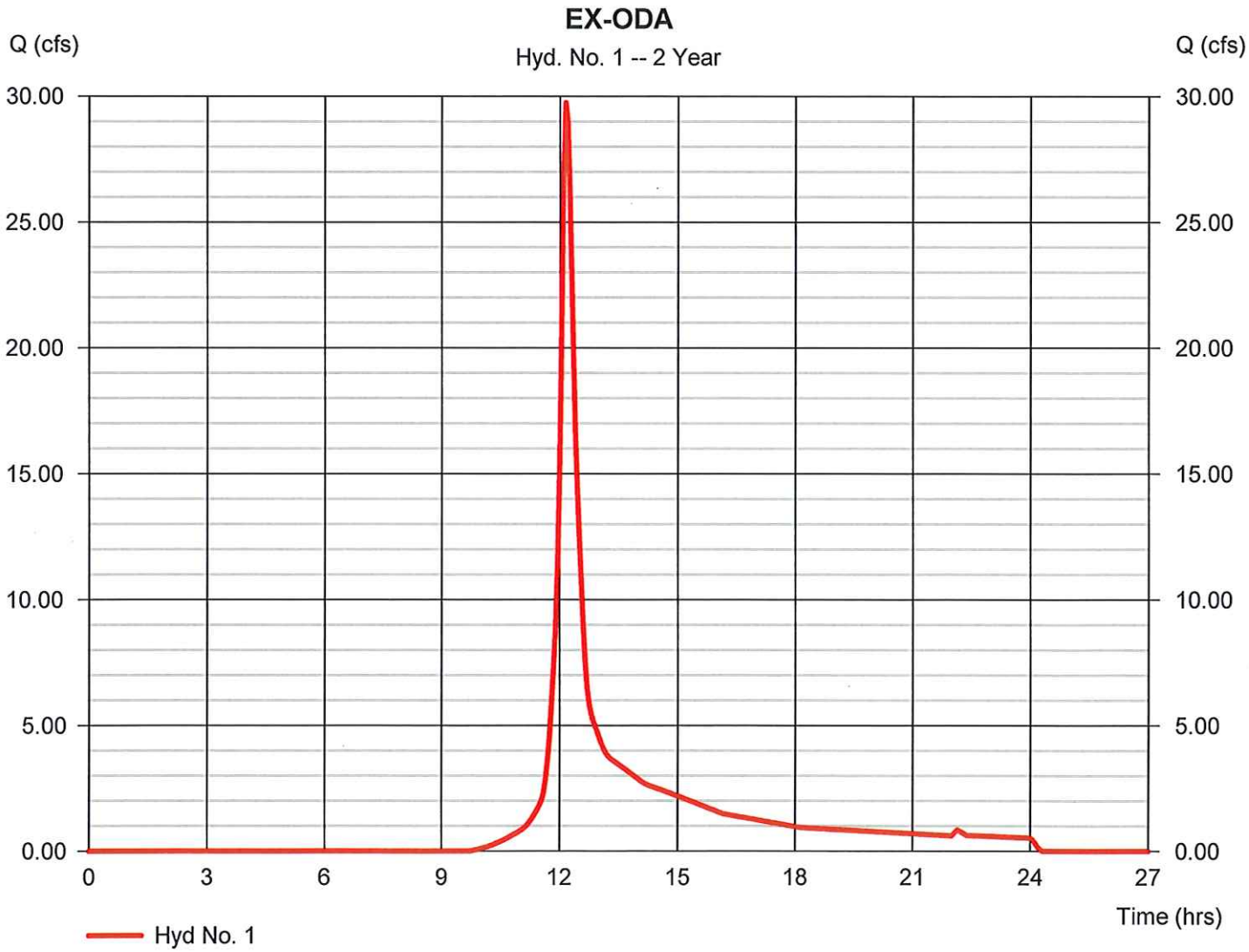
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 1

EX-ODA

Hydrograph type	= SCS Runoff	Peak discharge	= 29.75 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 119,581 cuft
Drainage area	= 24.320 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.50 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.270 x 98) + (20.050 x 74)] / 24.320



TR55 Tc Worksheet

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

Hyd. No. 1

EX-ODA

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 5.40		0.00		0.00		
Travel Time (min)	**= 9.43**	**+**	**0.00**	**+**	**0.00**	**=**	**9.43**
Shallow Concentrated Flow							
Flow length (ft)	= 497.50		0.00		0.00		
Watercourse slope (%)	= 6.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.95		0.00		0.00		
Travel Time (min)	**= 2.10**	**+**	**0.00**	**+**	**0.00**	**=**	**2.10**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 11.50 min

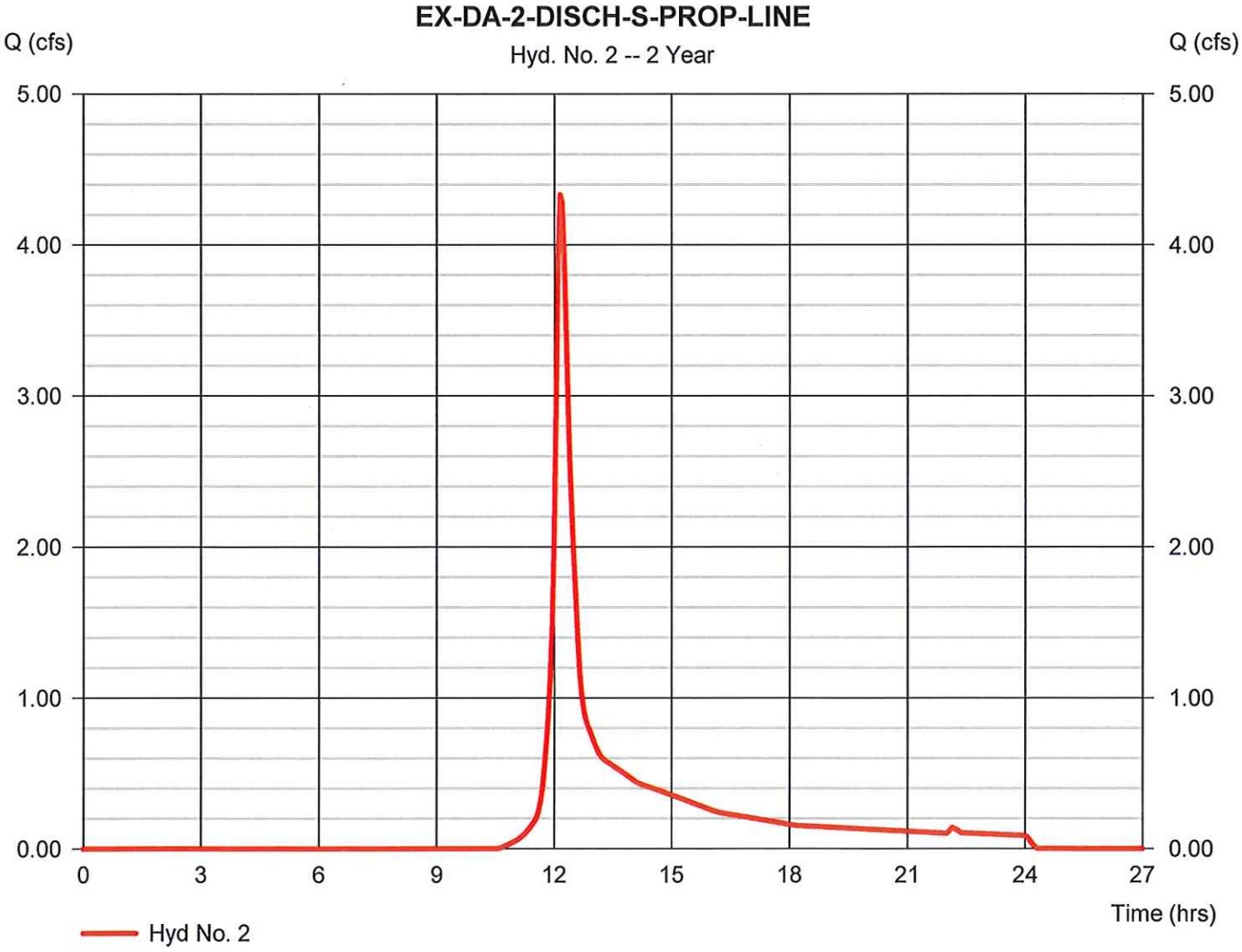
Hydrograph Report

Hyd. No. 2

EX-DA-2-DISCH-S-PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 4.332 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 18,021 cuft
Drainage area	= 4.470 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.70 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.470 x 74)] / 4.470



TR55 Tc Worksheet

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

Hyd. No. 2

EX-DA-2-DISCH-S-PROP-LINE

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 5.20		0.00		0.00		
Travel Time (min)	**= 9.57**	**+**	**0.00**	**+**	**0.00**	**=**	**9.57**
Shallow Concentrated Flow							
Flow length (ft)	= 488.00		0.00		0.00		
Watercourse slope (%)	= 20.80		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=7.36		0.00		0.00		
Travel Time (min)	**= 1.11**	**+**	**0.00**	**+**	**0.00**	**=**	**1.11**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 10.70 min

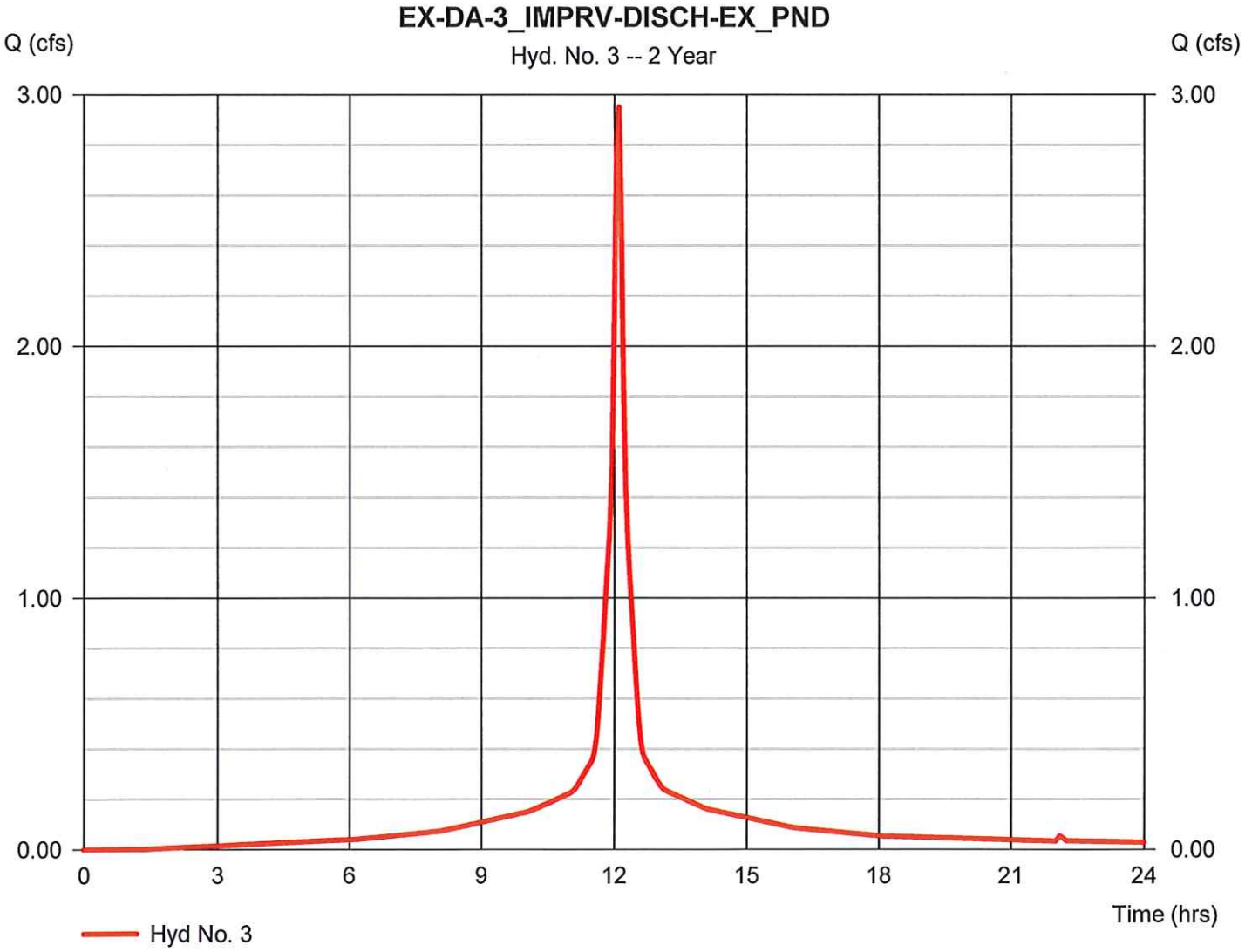
Hydrograph Report

Hyd. No. 3

EX-DA-3_IMPRV-DISCH-EX_PND

Hydrograph type	= SCS Runoff	Peak discharge	= 2.951 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 11,100 cuft
Drainage area	= 1.060 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.060 x 98)] / 1.060



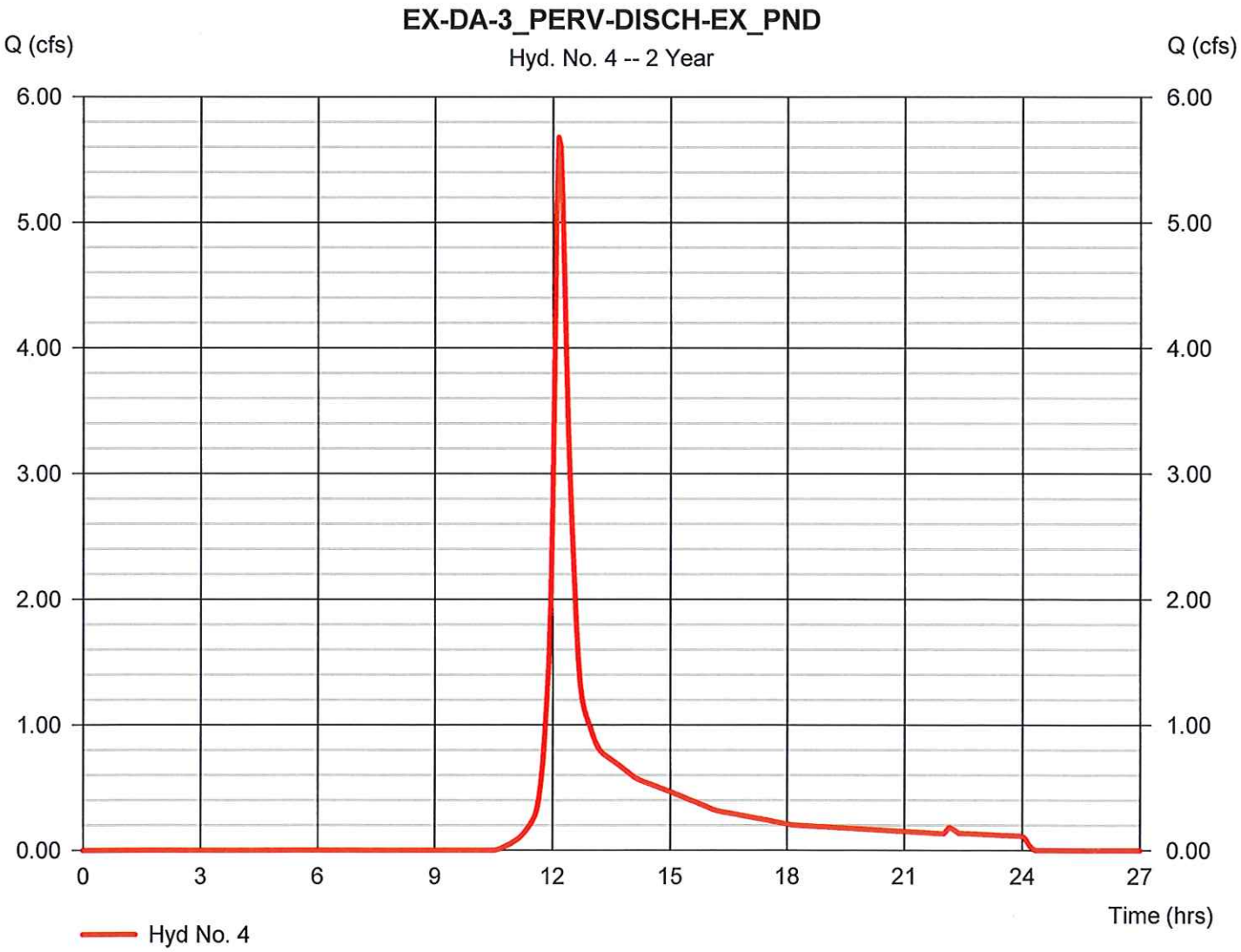
Hydrograph Report

Hyd. No. 4

EX-DA-3_PERV-DISCH-EX_PND

Hydrograph type	= SCS Runoff	Peak discharge	= 5.679 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 23,625 cuft
Drainage area	= 5.860 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.50 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.860 x 74)] / 5.860



TR55 Tc Worksheet

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

Hyd. No. 4

EX-DA-3_PERV-DISCH-EX_PND

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 5.40		0.00		0.00		
Travel Time (min)	**= 9.43**	**+**	**0.00**	**+**	**0.00**	**=**	**9.43**
Shallow Concentrated Flow							
Flow length (ft)	= 497.50		0.00		0.00		
Watercourse slope (%)	= 6.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.95		0.00		0.00		
Travel Time (min)	**= 2.10**	**+**	**0.00**	**+**	**0.00**	**=**	**2.10**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

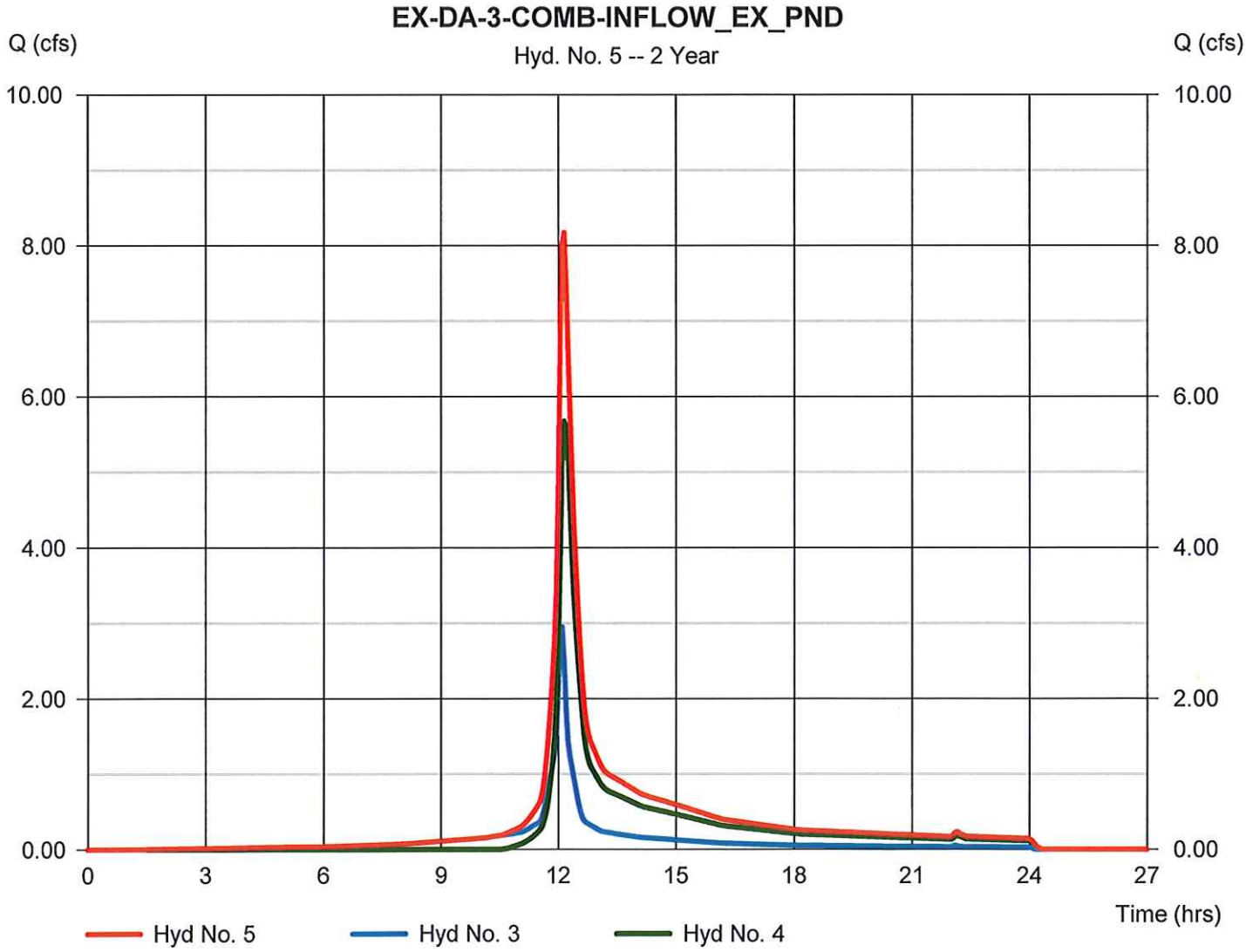
Total Travel Time, Tc ..... 11.50 min

Hydrograph Report

Hyd. No. 5

EX-DA-3-COMB-INFLOW_EX_PND

Hydrograph type	= Combine	Peak discharge	= 8.177 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 34,725 cuft
Inflow hyds.	= 3, 4	Contrib. drain. area	= 6.920 ac



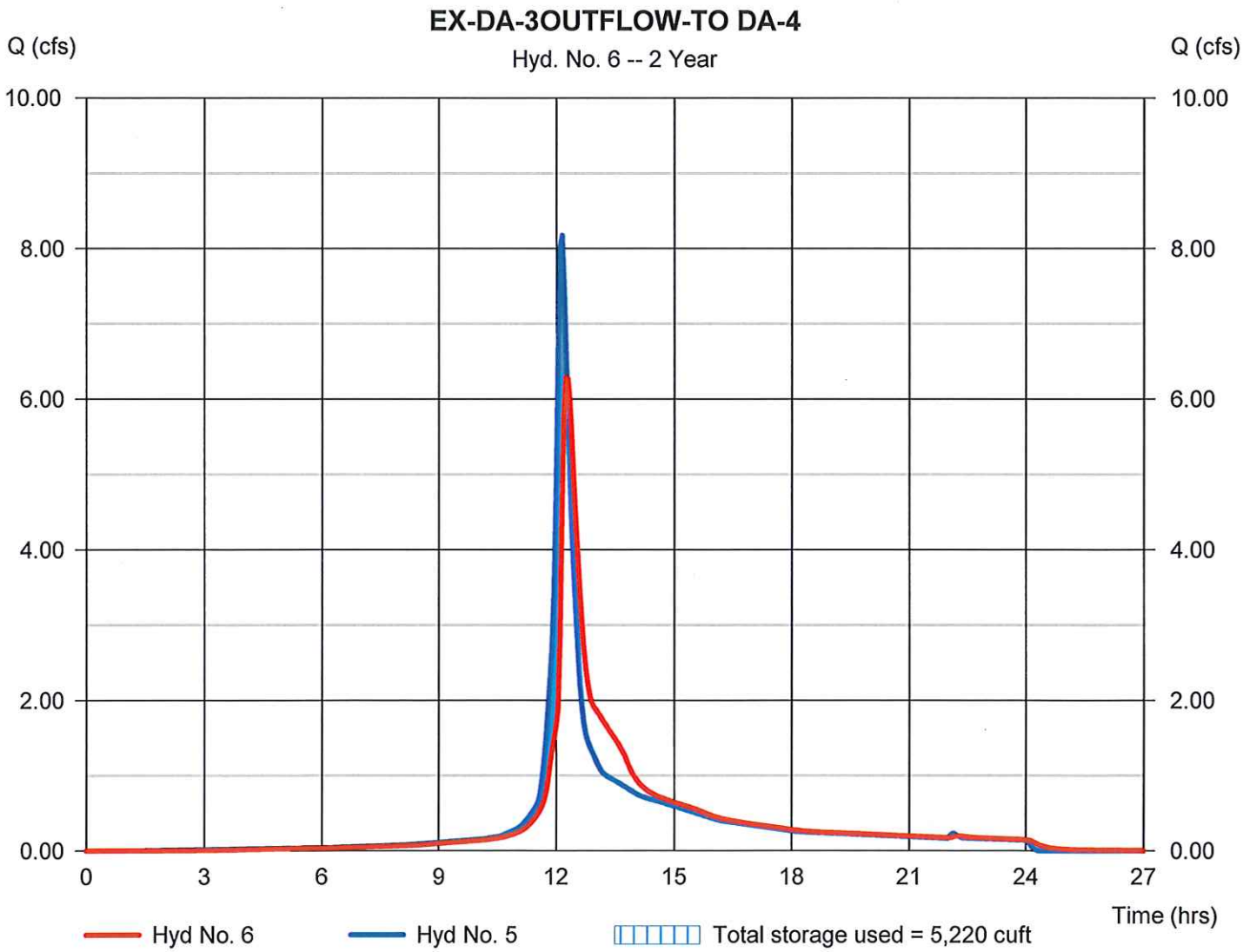
Hydrograph Report

Hyd. No. 6

EX-DA-3OUTFLOW-TO DA-4

Hydrograph type	= Reservoir	Peak discharge	= 6.291 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.25 hrs
Time interval	= 3 min	Hyd. volume	= 34,721 cuft
Inflow hyd. No.	= 5 - EX-DA-3-COMB-INFLOW-EX_PND	Max. Elevation	= 95.57 ft
Reservoir name	= Ex-PND-A-EX-DA-3	Max. Storage	= 5,220 cuft

Storage Indication method used.



Pond Report

Pond No. 1 - Ex-PND-A-EX-DA-3

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	93.50	n/a	0	0
0.50	94.00	n/a	560	560
1.00	94.50	n/a	999	1,559
1.50	95.00	n/a	1,498	3,057
2.00	95.50	n/a	1,868	4,925
2.50	96.00	n/a	2,102	7,027
3.00	96.50	n/a	2,340	9,366
3.50	97.00	n/a	2,586	11,952

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	10.00	0.00	0.00
Span (in)	= 24.00	6.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 93.50	93.50	0.00	0.00
Length (ft)	= 31.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 3.00	15.00	0.00	0.00
Crest El. (ft)	= 95.00	96.00	0.00	0.00
Weir Coeff.	= 3.33	2.60	3.33	3.33
Weir Type	= Rect	Broad	---	---
Multi-Stage	= Yes	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	93.50	0.00	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.50	560	94.00	0.56 ic	0.55 ic	---	---	0.00	0.00	---	---	---	---	0.548
1.00	1,559	94.50	1.48 ic	1.43 ic	---	---	0.00	0.00	---	---	---	---	1.431
1.50	3,057	95.00	1.99 ic	1.93 ic	---	---	0.00	0.00	---	---	---	---	1.930
2.00	4,925	95.50	5.61 ic	1.99 ic	---	---	3.53	0.00	---	---	---	---	5.522
2.50	7,027	96.00	11.74 ic	1.89 ic	---	---	9.84 s	0.00	---	---	---	---	11.73
3.00	9,366	96.50	17.07 ic	1.71 ic	---	---	15.36 s	13.79	---	---	---	---	30.86
3.50	11,952	97.00	21.09 ic	1.50 ic	---	---	19.59 s	39.00	---	---	---	---	60.09

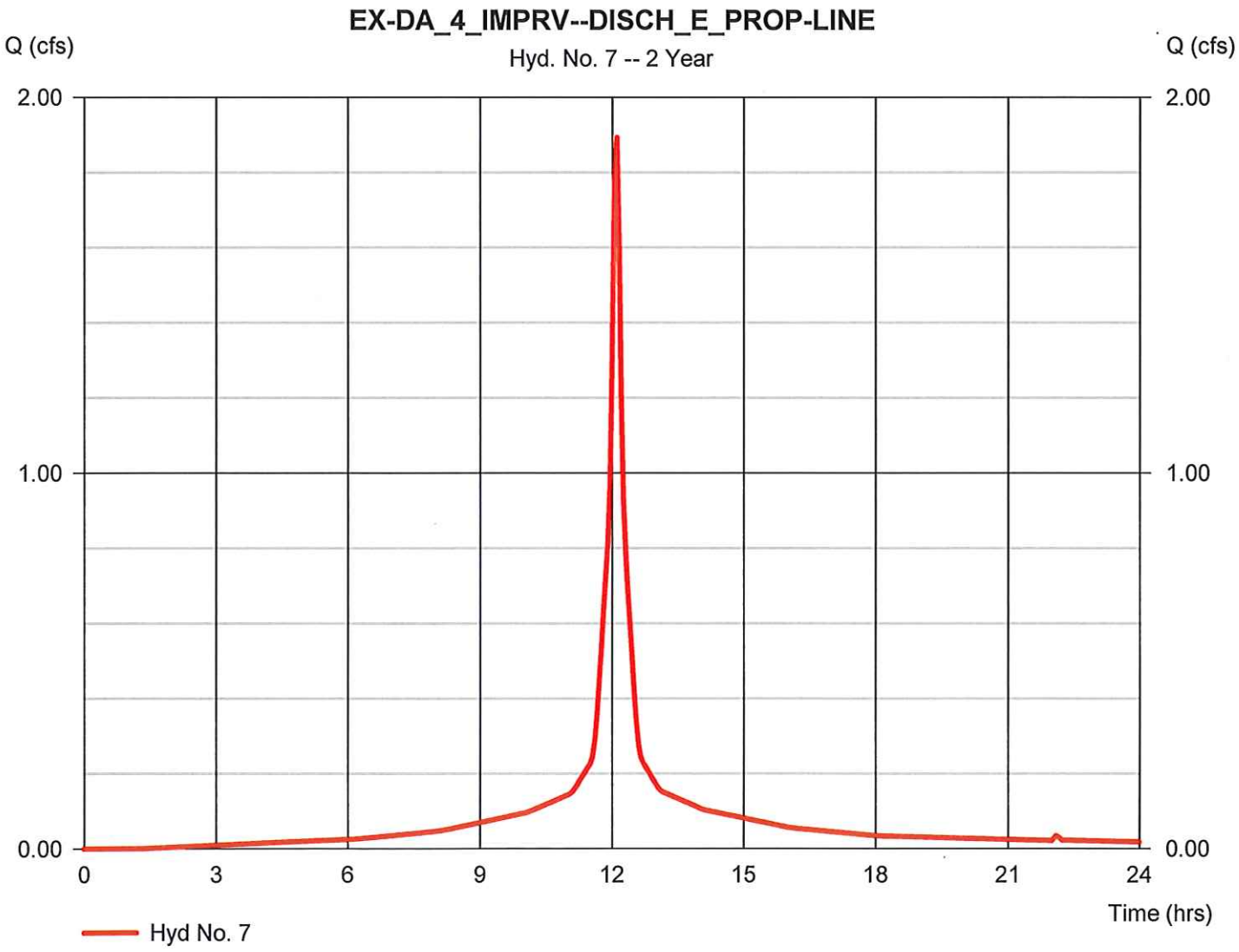
Hydrograph Report

Hyd. No. 7

EX-DA_4_IMPRV--DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 1.893 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 7,121 cuft
Drainage area	= 0.680 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.680 x 98)] / 0.680



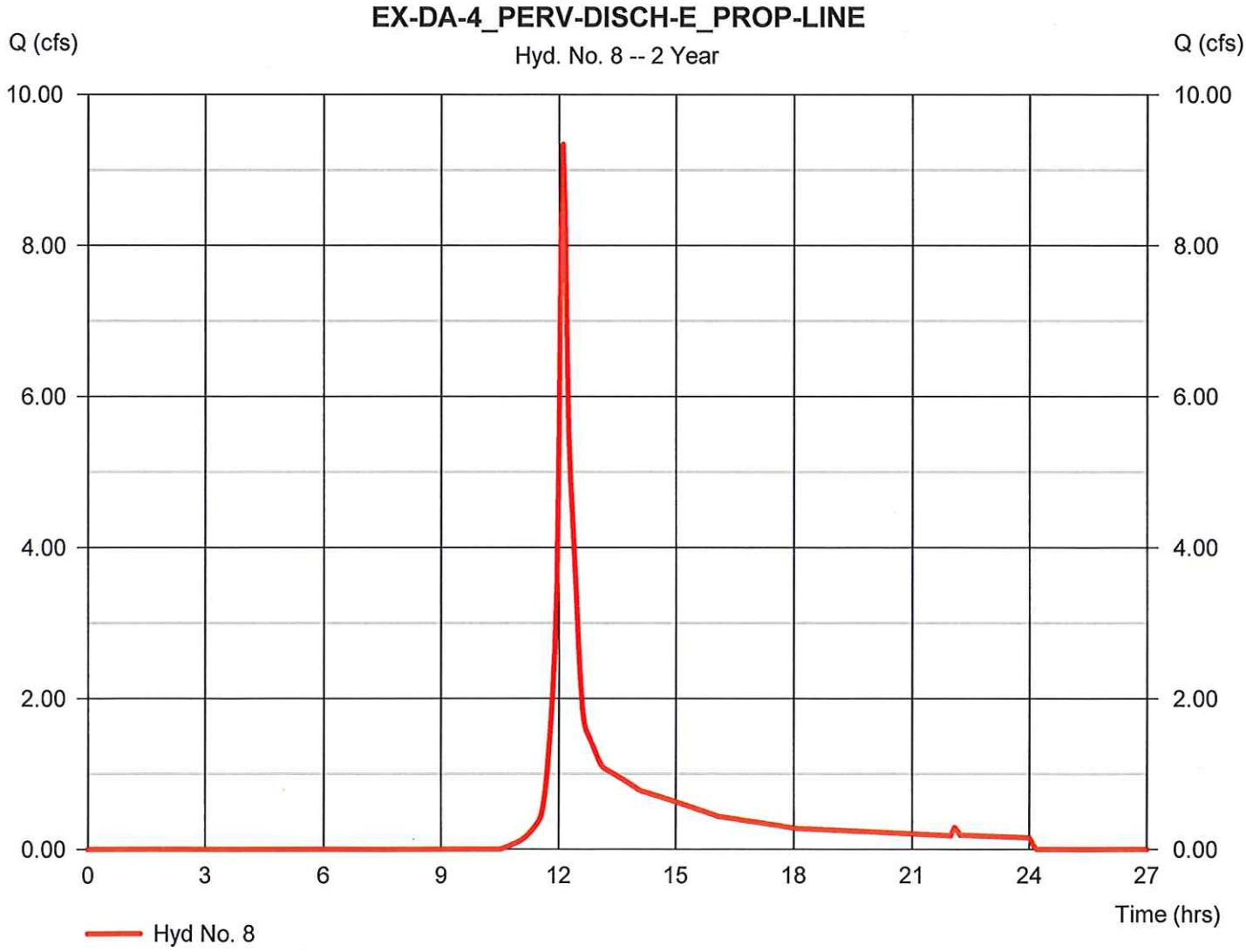
Hydrograph Report

Hyd. No. 8

EX-DA-4_PERV-DISCH-E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 9.344 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 32,467 cuft
Drainage area	= 8.590 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.70 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(8.590 x 74)] / 8.590



TR55 Tc Worksheet

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

Hyd. No. 8

EX-DA-4_PERV-DISCH-E_PROP-LINE

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 7.50		0.00		0.00		
Travel Time (min)	**= 8.27**	**+**	**0.00**	**+**	**0.00**	**=**	**8.27**
Shallow Concentrated Flow							
Flow length (ft)	= 438.00		0.00		0.00		
Watercourse slope (%)	= 10.30		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=5.18		0.00		0.00		
Travel Time (min)	**= 1.41**	**+**	**0.00**	**+**	**0.00**	**=**	**1.41**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

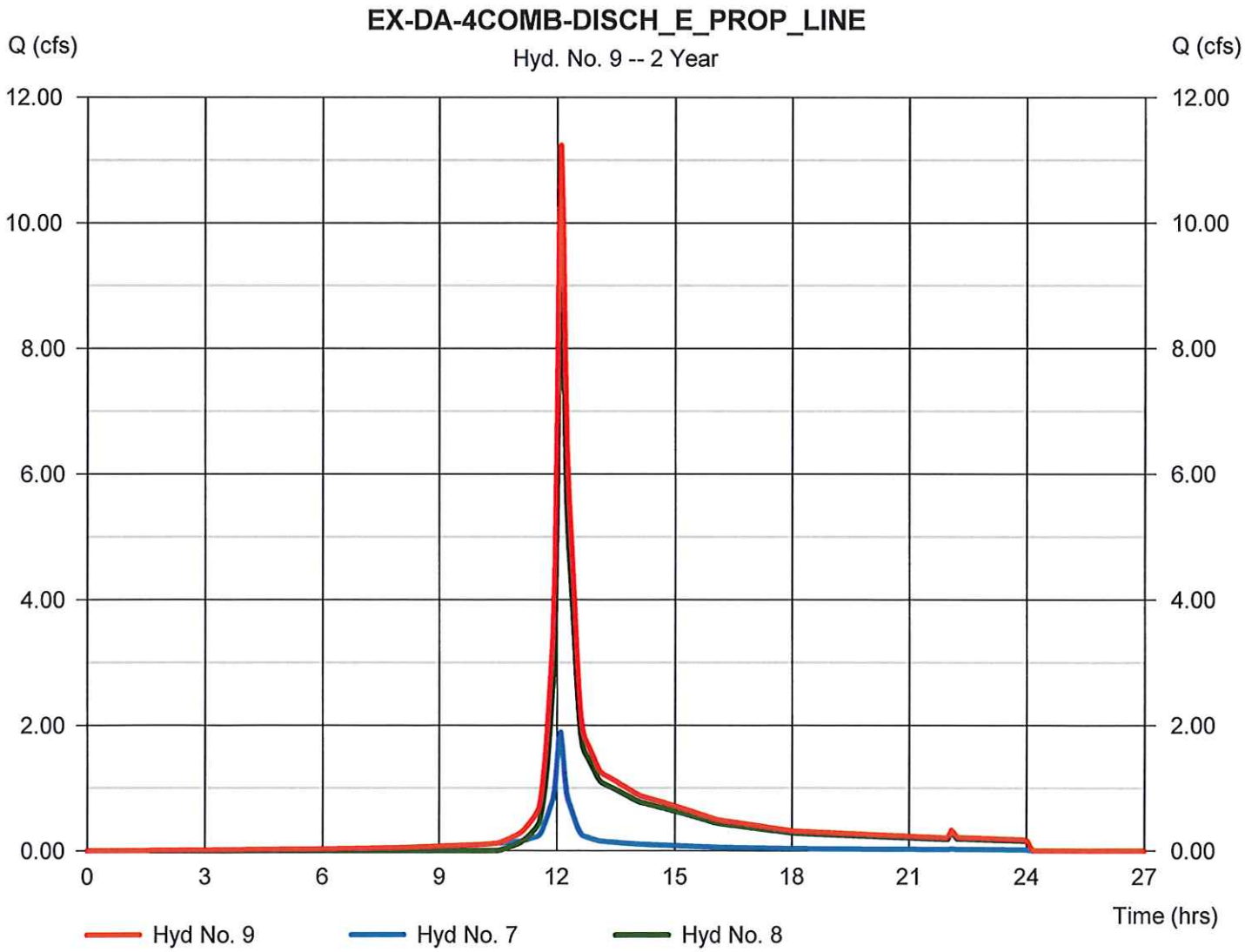
Total Travel Time, Tc ..... 9.70 min

Hydrograph Report

Hyd. No. 9

EX-DA-4COMB-DISCH_E_PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 11.24 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 39,588 cuft
Inflow hyds.	= 7, 8	Contrib. drain. area	= 9.270 ac

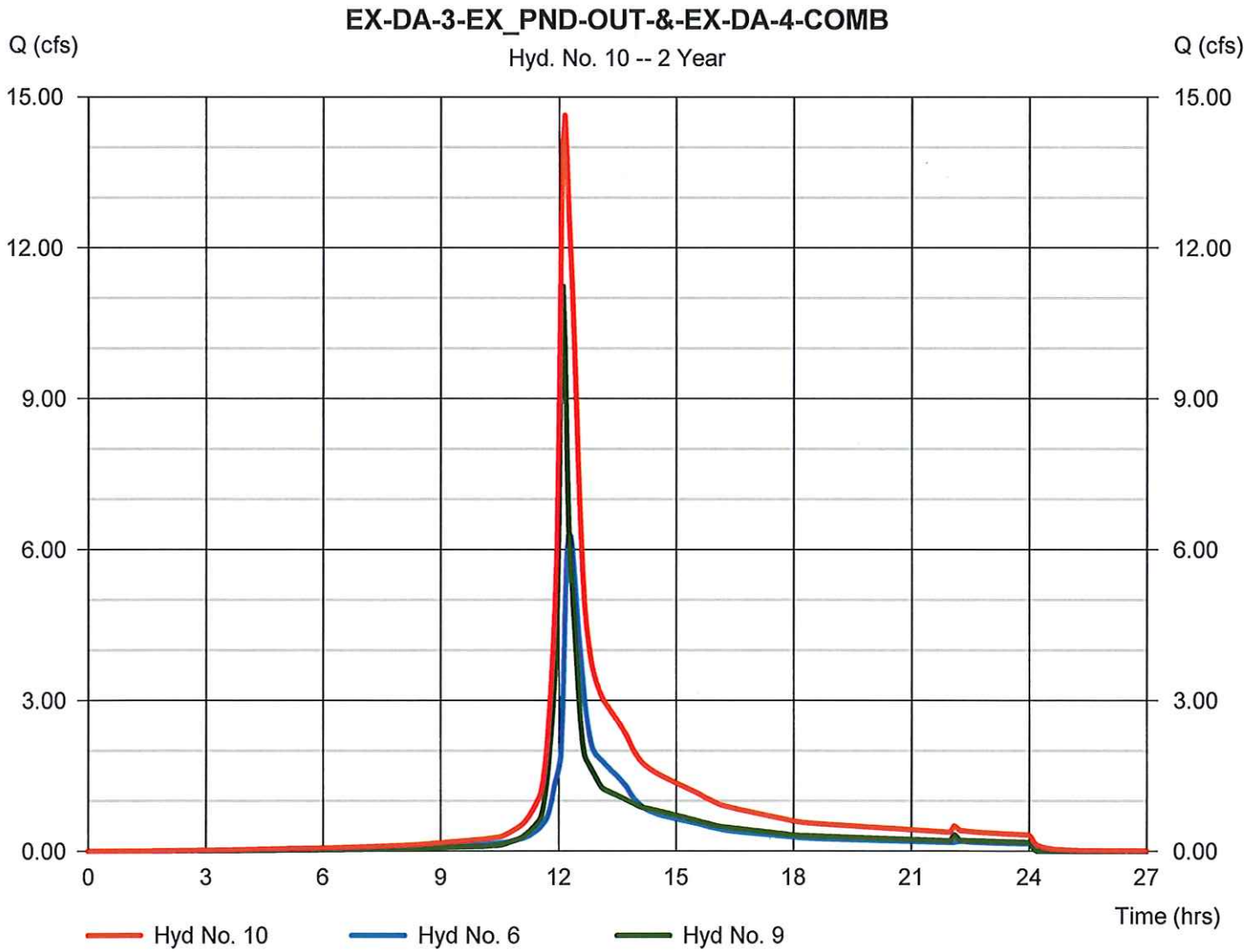


Hydrograph Report

Hyd. No. 10

EX-DA-3-EX_PND-OUT-&-EX-DA-4-COMB

Hydrograph type	= Combine	Peak discharge	= 14.64 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 74,308 cuft
Inflow hyds.	= 6, 9	Contrib. drain. area	= 0.000 ac



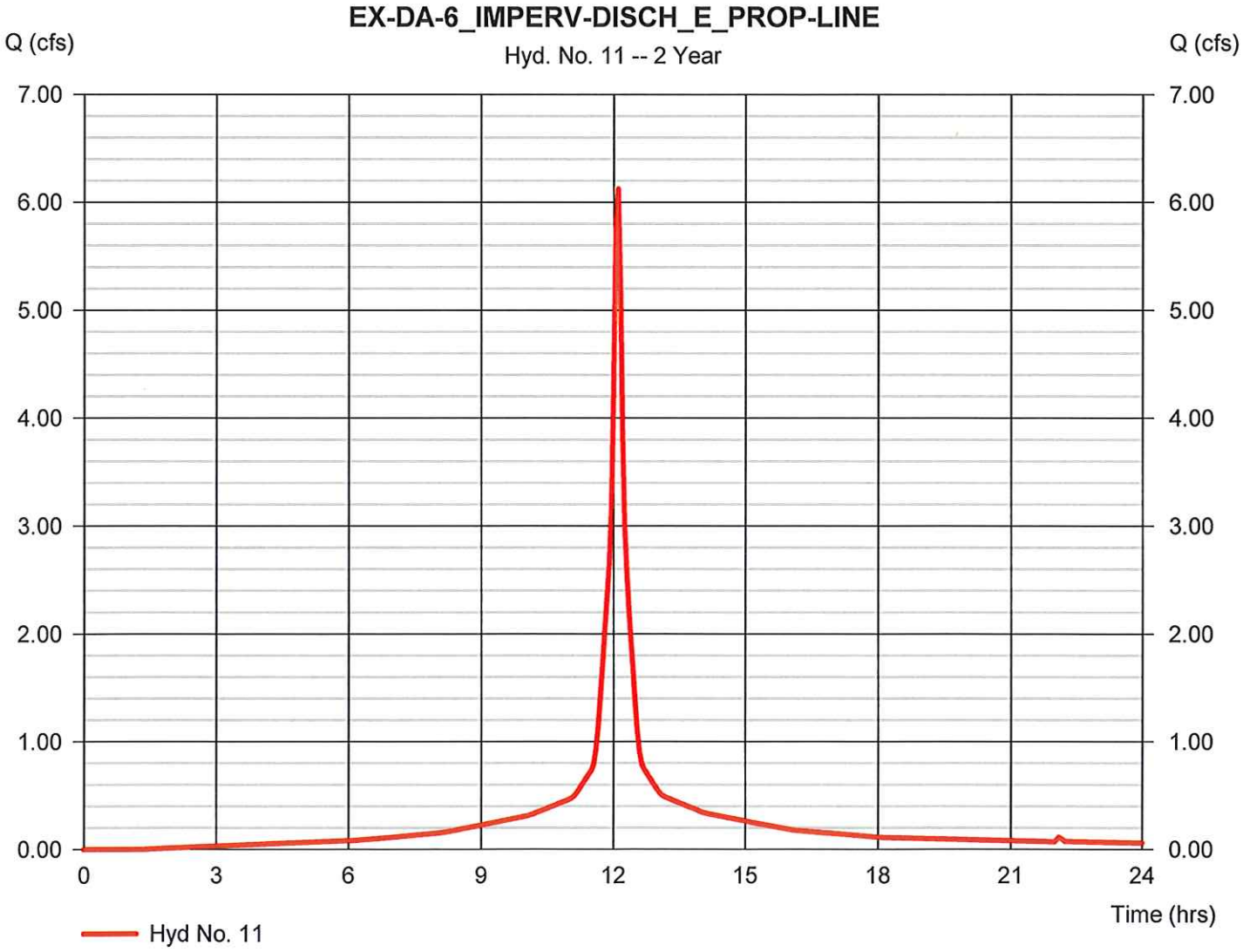
Hydrograph Report

Hyd. No. 11

EX-DA-6_IMPERV-DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 6.126 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 23,038 cuft
Drainage area	= 2.200 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.200 x 98)] / 2.200



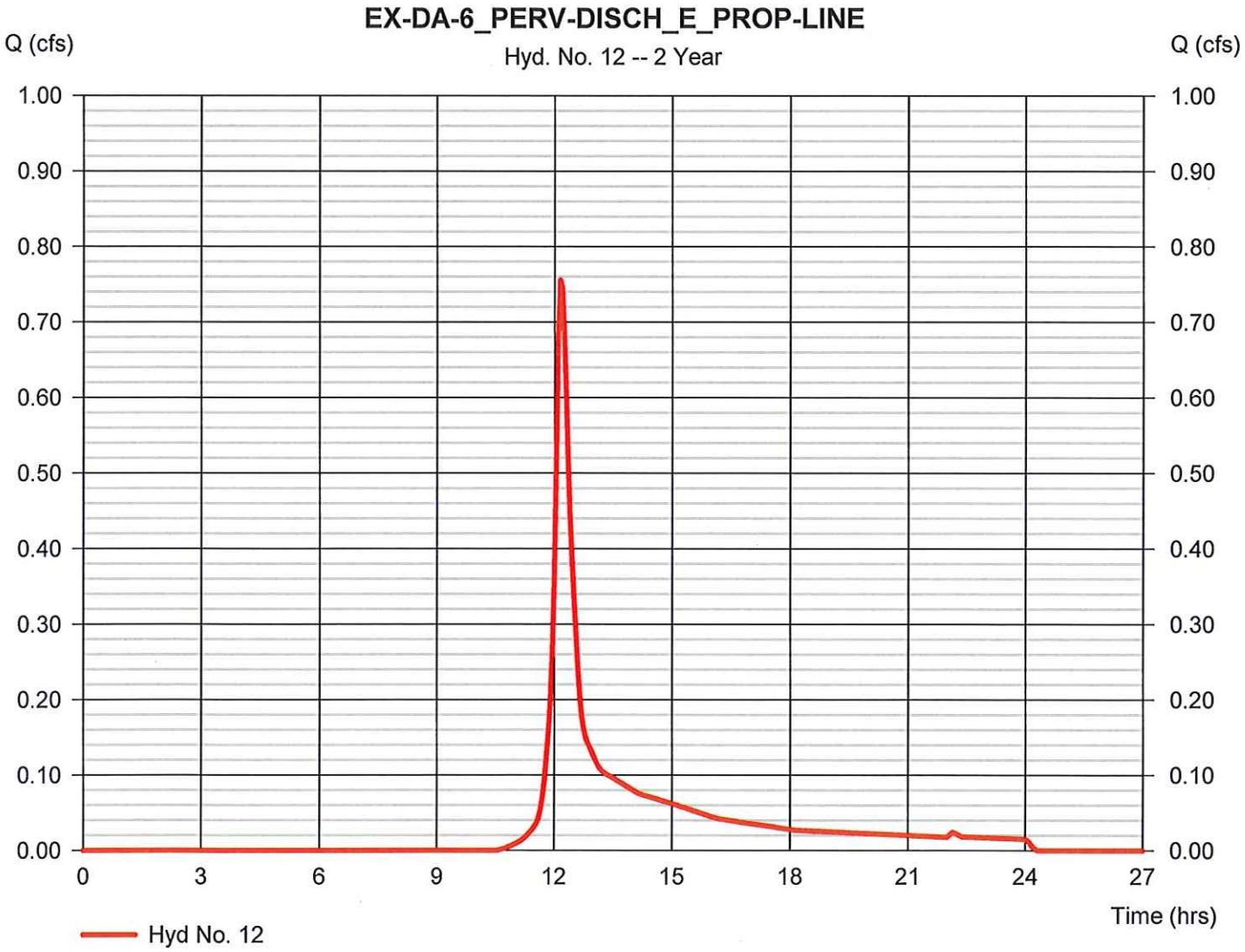
Hydrograph Report

Hyd. No. 12

EX-DA-6_PERV-DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 0.756 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 3,145 cuft
Drainage area	= 0.780 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.90 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.780 x 74)] / 0.780



TR55 Tc Worksheet

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

Hyd. No. 12

EX-DA-6_PERV-DISCH_E_PROP-LINE

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 4.17		0.00		0.00		
Travel Time (min)	**= 10.46**	**+**	**0.00**	**+**	**0.00**	**=**	**10.46**
Shallow Concentrated Flow							
Flow length (ft)	= 72.00		0.00		0.00		
Watercourse slope (%)	= 3.60		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.06		0.00		0.00		
Travel Time (min)	**= 0.39**	**+**	**0.00**	**+**	**0.00**	**=**	**0.39**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

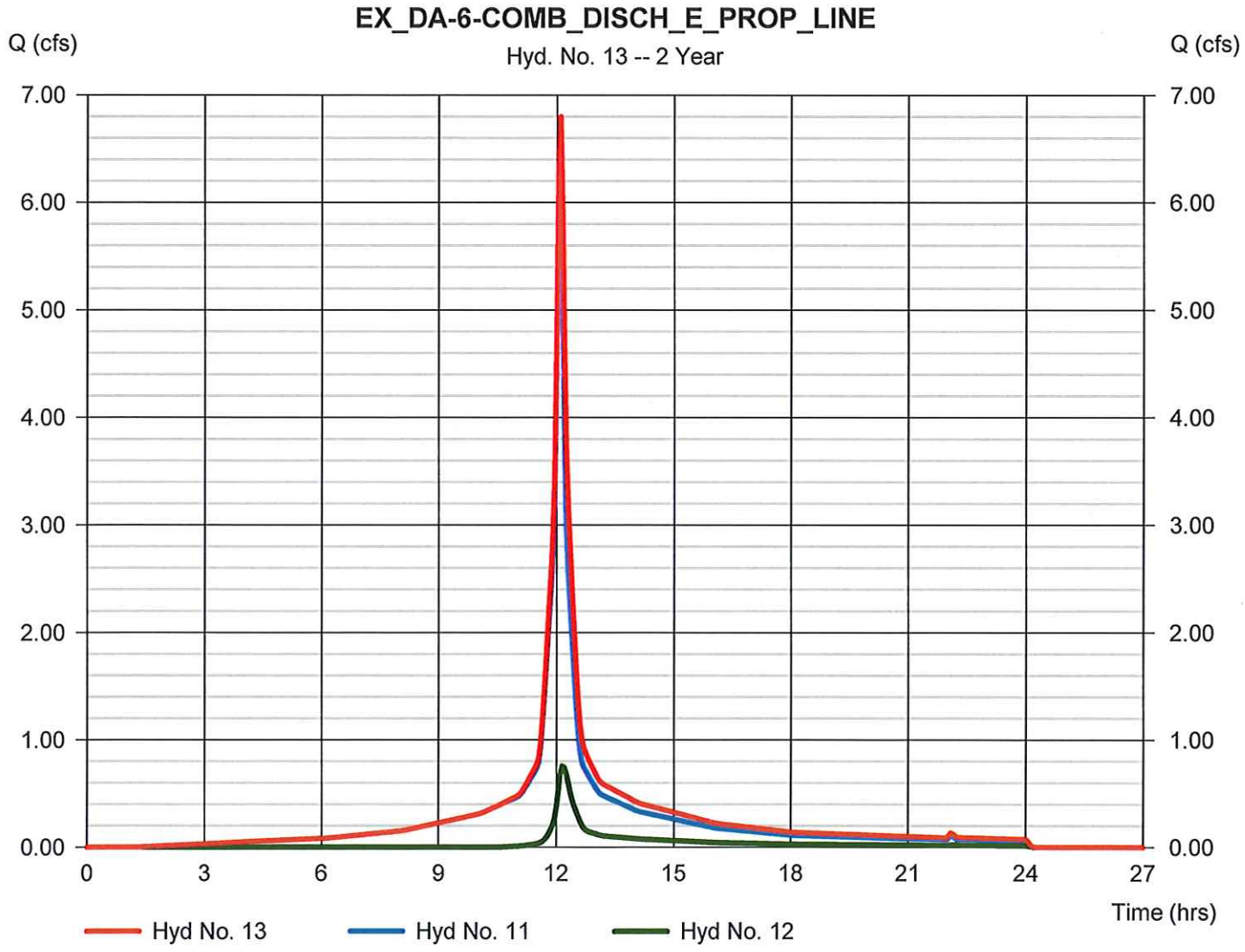
Total Travel Time, Tc ..... 10.90 min

Hydrograph Report

Hyd. No. 13

EX_DA-6-COMB_DISCH_E_PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 6.800 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 26,182 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 2.980 ac

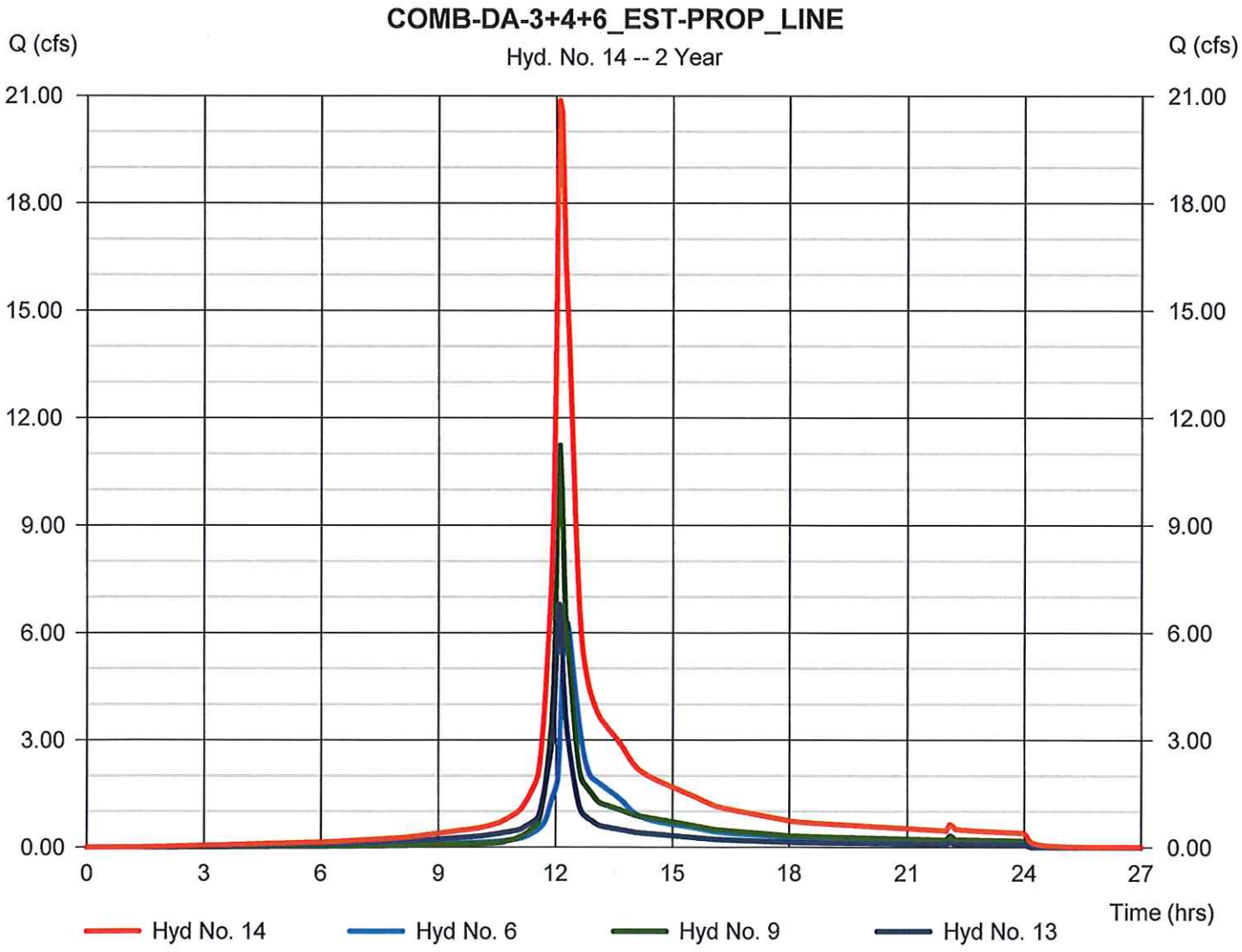


Hydrograph Report

Hyd. No. 14

COMB-DA-3+4+6_EST-PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 20.88 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 100,491 cuft
Inflow hyds.	= 6, 9, 13	Contrib. drain. area	= 0.000 ac



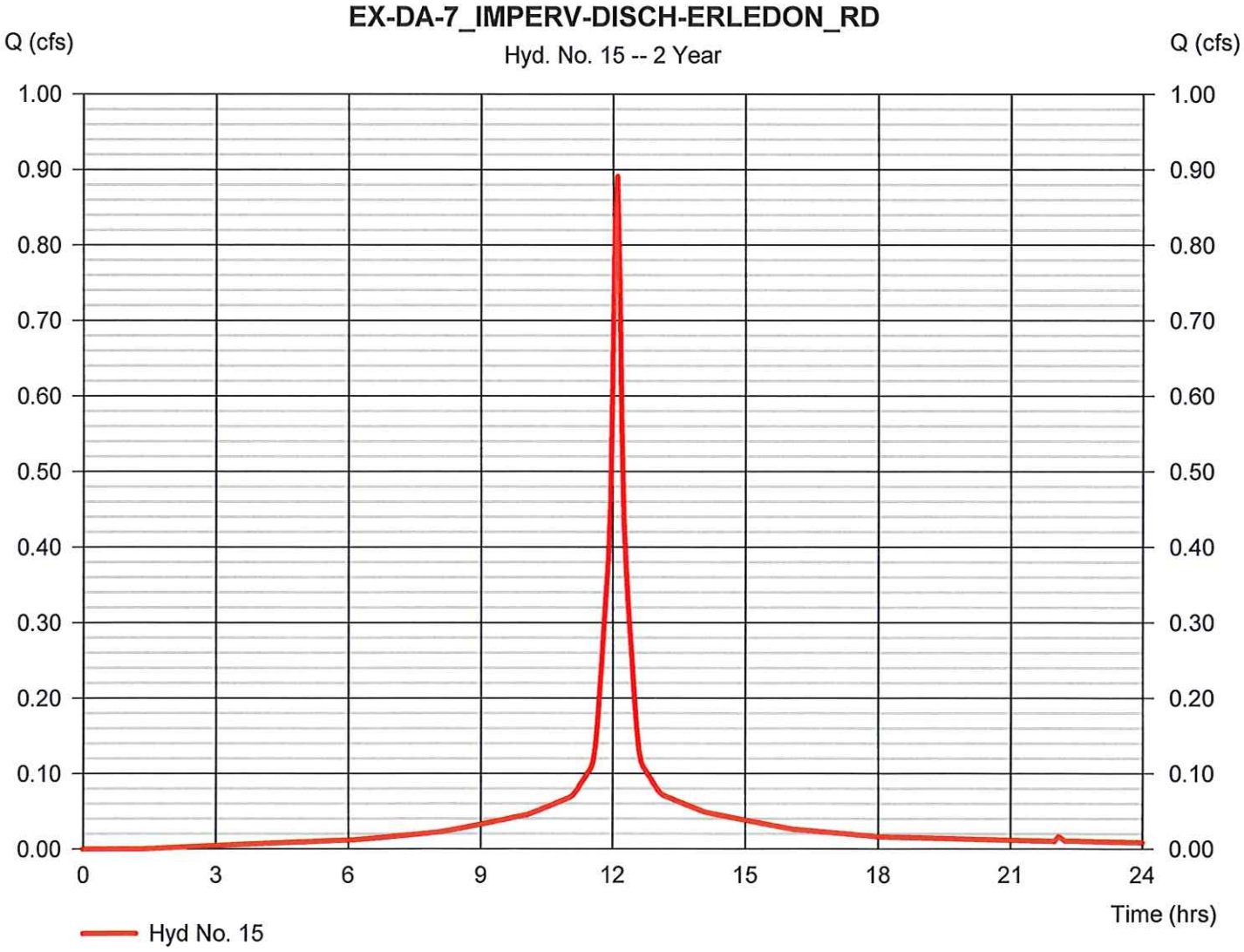
Hydrograph Report

Hyd. No. 15

EX-DA-7_IMPERV-DISCH-ERLEDON_RD

Hydrograph type	= SCS Runoff	Peak discharge	= 0.891 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 3,351 cuft
Drainage area	= 0.320 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.320 x 98)] / 0.320



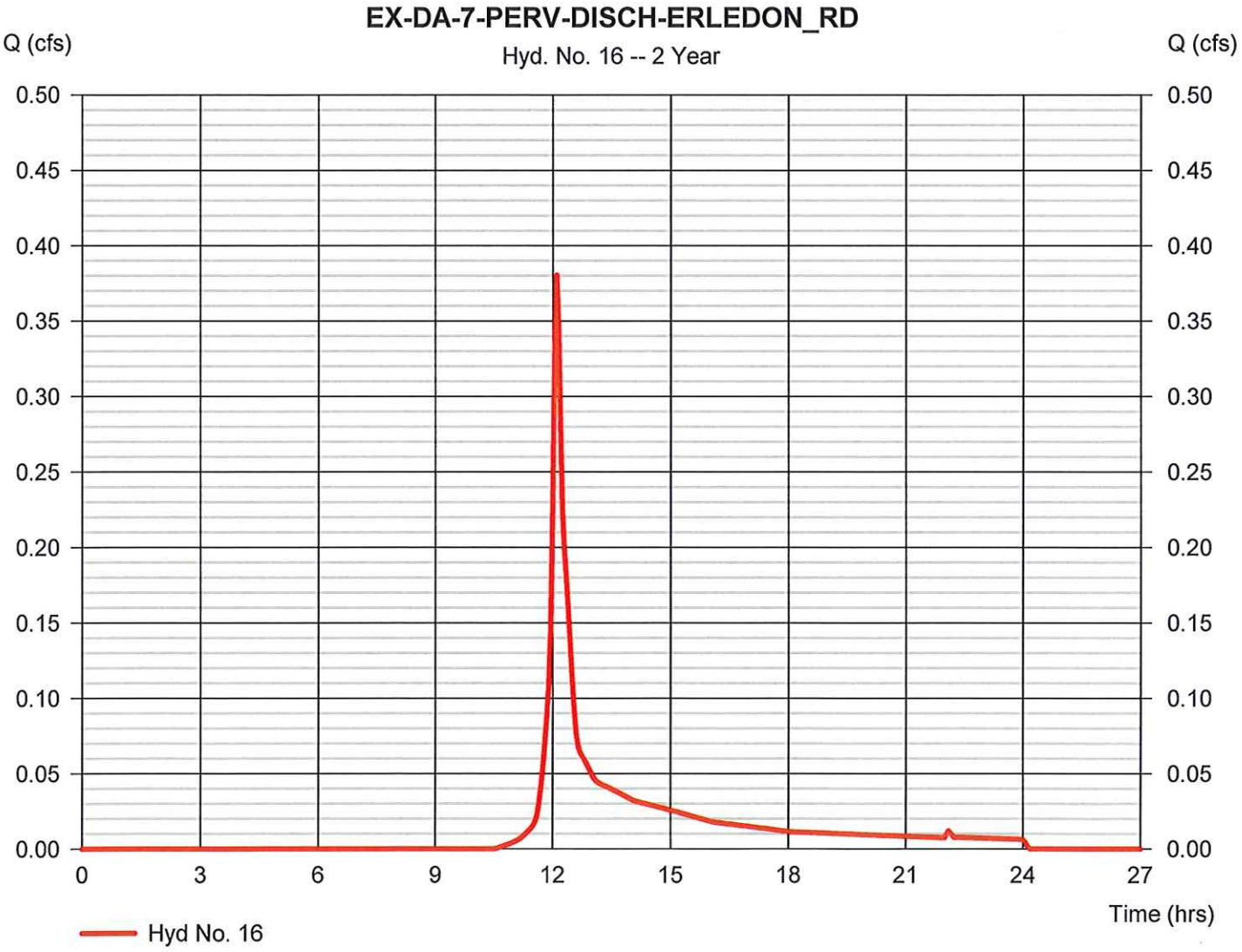
Hydrograph Report

Hyd. No. 16

EX-DA-7-PERV-DISCH-ERLEDON_RD

Hydrograph type	= SCS Runoff	Peak discharge	= 0.381 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 1,323 cuft
Drainage area	= 0.350 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.350 x 74)] / 0.350



TR55 Tc Worksheet

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

Hyd. No. 16

EX-DA-7-PERV-DISCH-ERLEDON_RD

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 9.85		0.00		0.00		
Travel Time (min)	**= 7.42**	**+**	**0.00**	**+**	**0.00**	**=**	**7.42**
Shallow Concentrated Flow							
Flow length (ft)	= 0.00		0.00		0.00		
Watercourse slope (%)	= 0.00		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	=0.00		0.00		0.00		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

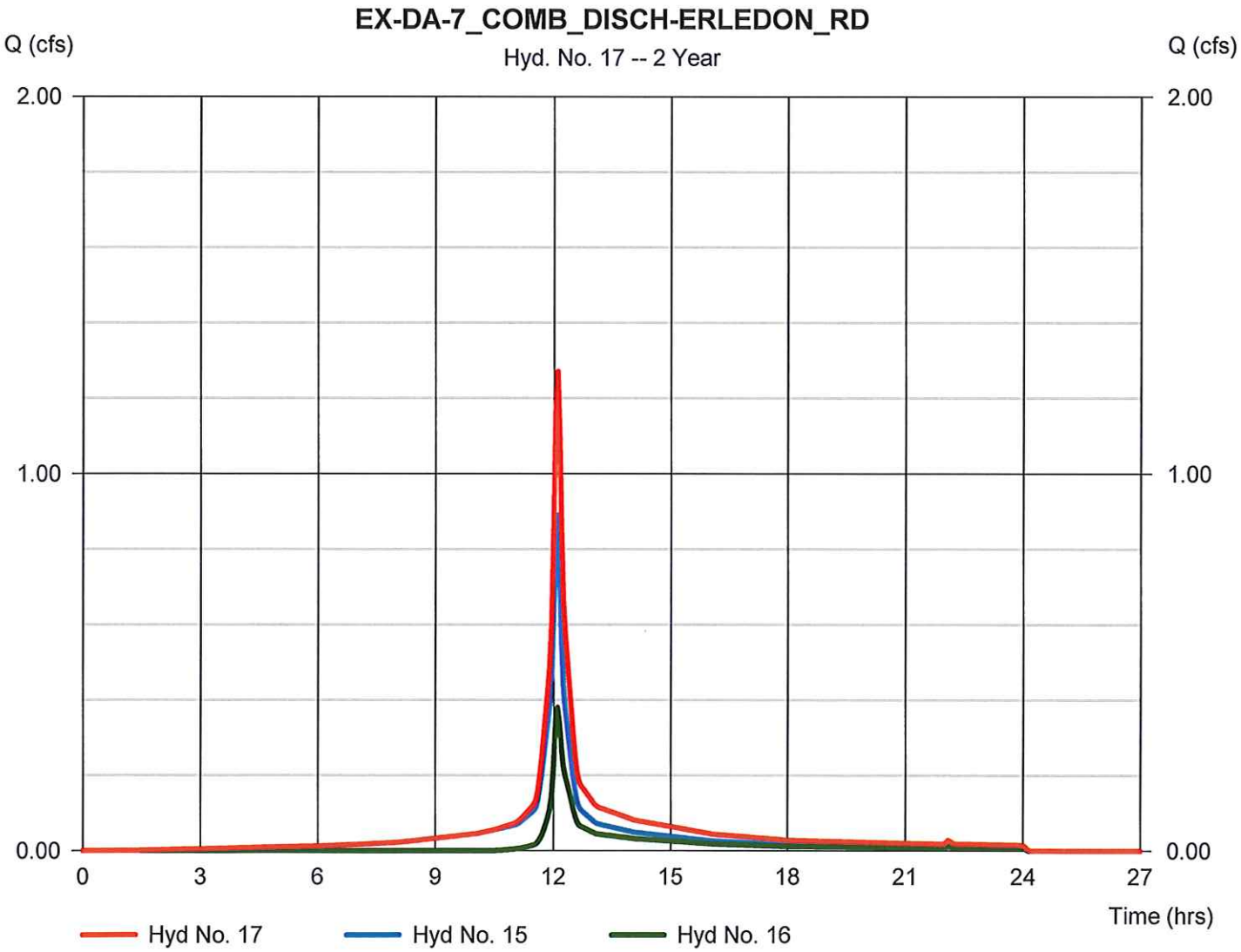
Total Travel Time, Tc ..... 7.40 min

Hydrograph Report

Hyd. No. 17

EX-DA-7_COMB_DISCH-ERLEDON_RD

Hydrograph type	= Combine	Peak discharge	= 1.272 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 4,674 cuft
Inflow hyds.	= 15, 16	Contrib. drain. area	= 0.670 ac

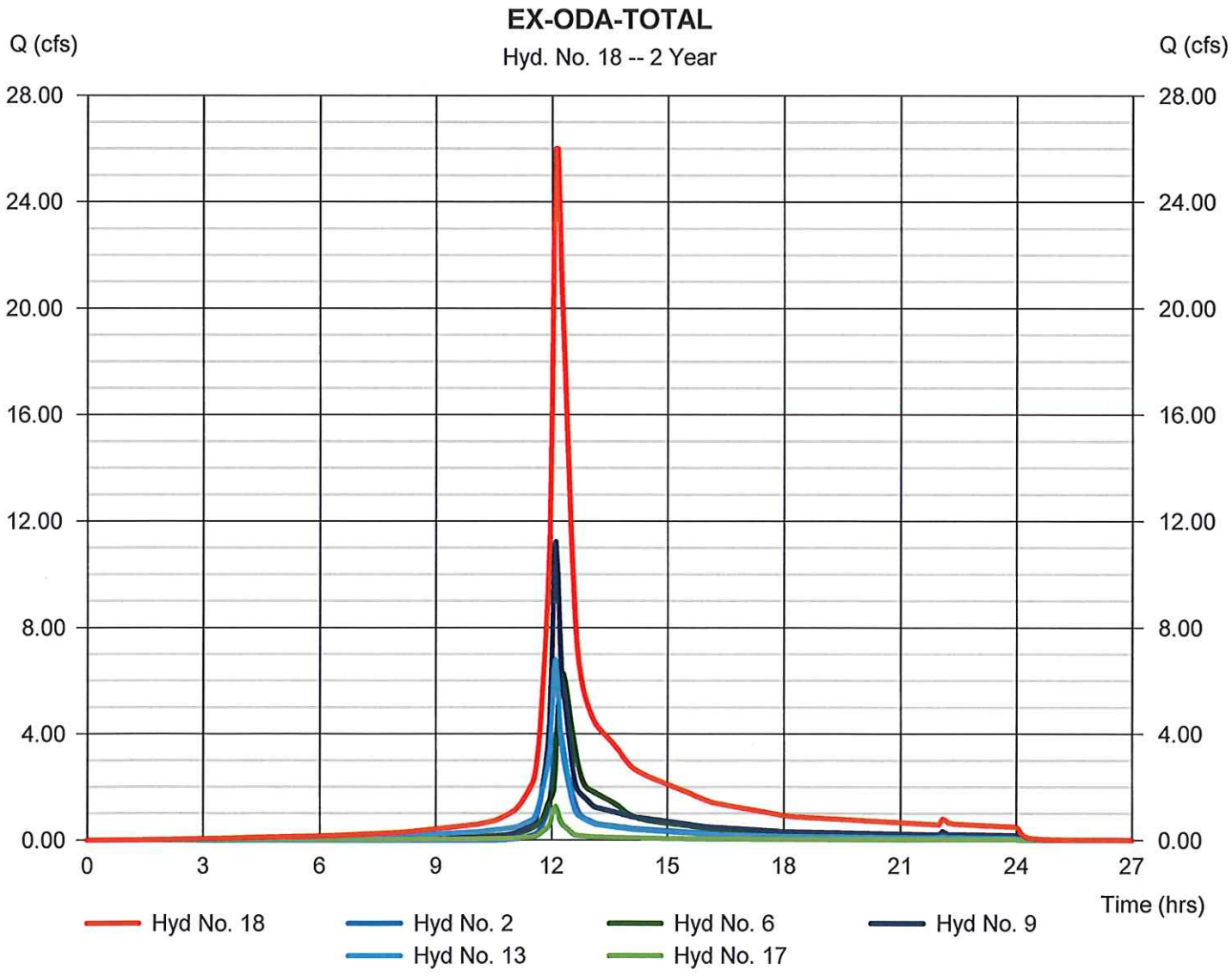


Hydrograph Report

Hyd. No. 18

EX-ODA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 26.02 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 123,186 cuft
Inflow hyds.	= 2, 6, 9, 13, 17	Contrib. drain. area	= 4.470 ac



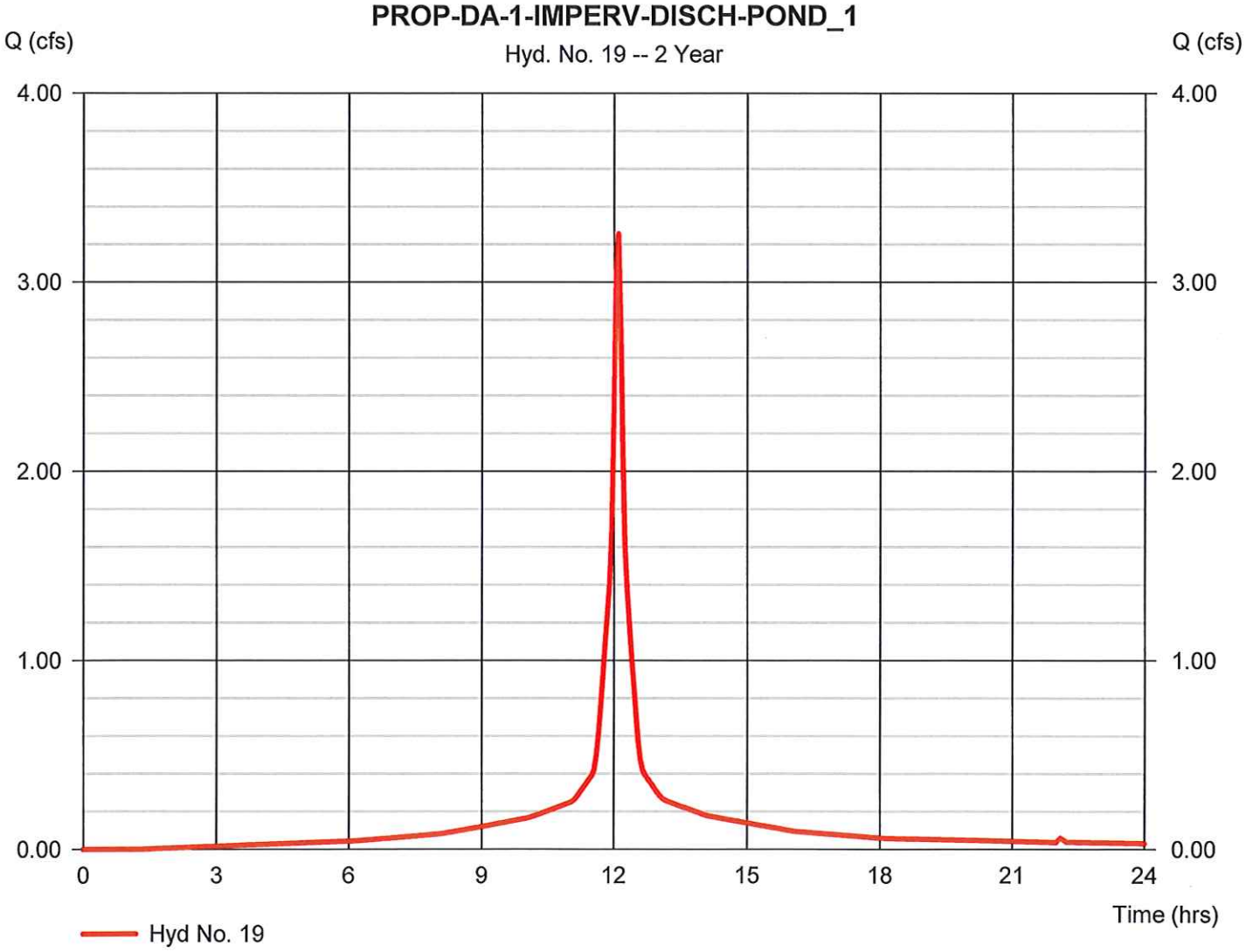
Hydrograph Report

Hyd. No. 19

PROP-DA-1-IMPERV-DISCH-POND_1

Hydrograph type	= SCS Runoff	Peak discharge	= 3.258 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 12,252 cuft
Drainage area	= 1.170 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.170 x 98)] / 1.170



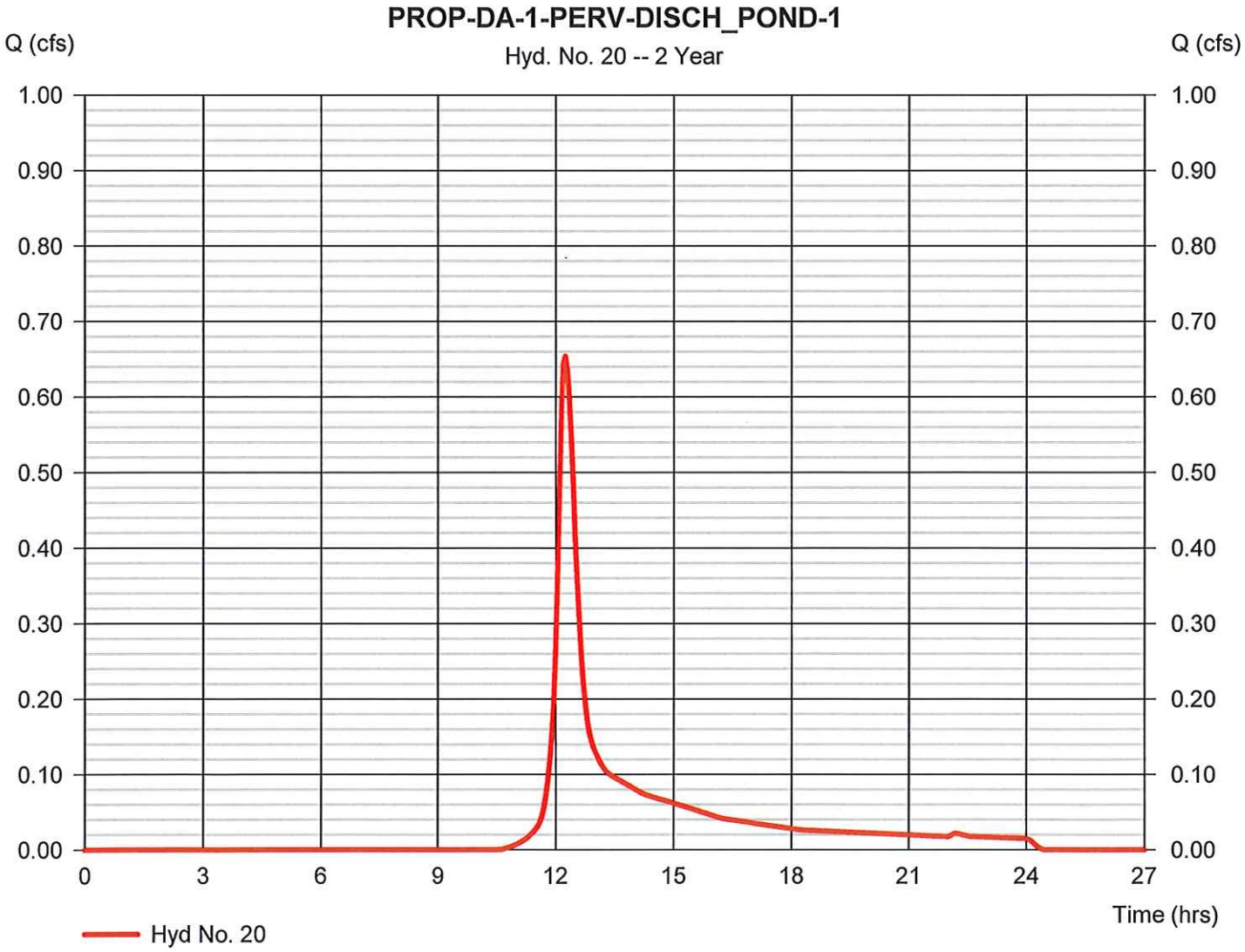
Hydrograph Report

Hyd. No. 20

PROP-DA-1-PERV-DISCH_POND-1

Hydrograph type	= SCS Runoff	Peak discharge	= 0.654 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.25 hrs
Time interval	= 3 min	Hyd. volume	= 3,077 cuft
Drainage area	= 0.740 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.50 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.280 x 74)] / 0.740



TR55 Tc Worksheet

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

Hyd. No. 20

PROP-DA-1-PERV-DISCH_POND-1

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.150		0.011		0.011		
Flow length (ft)	= 52.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 0.65		0.00		0.00		
Travel Time (min)	**= 8.93**	**+**	**0.00**	**+**	**0.00**	**=**	**8.93**
Shallow Concentrated Flow							
Flow length (ft)	= 50.00		0.00		0.00		
Watercourse slope (%)	= 0.65		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=1.30		0.00		0.00		
Travel Time (min)	**= 0.64**	**+**	**0.00**	**+**	**0.00**	**=**	**0.64**
Channel Flow							
X sectional flow area (sqft)	= 14.30		0.00		0.00		
Wetted perimeter (ft)	= 14.49		0.00		0.00		
Channel slope (%)	= 0.75		0.00		0.00		
Manning's n-value	= 0.200		0.015		0.015		
Velocity (ft/s)	=0.64						
			0.00				
					0.00		
Flow length (ft)	({0})343.0		0.0		0.0		
Travel Time (min)	**= 8.94**	**+**	**0.00**	**+**	**0.00**	**=**	**8.94**

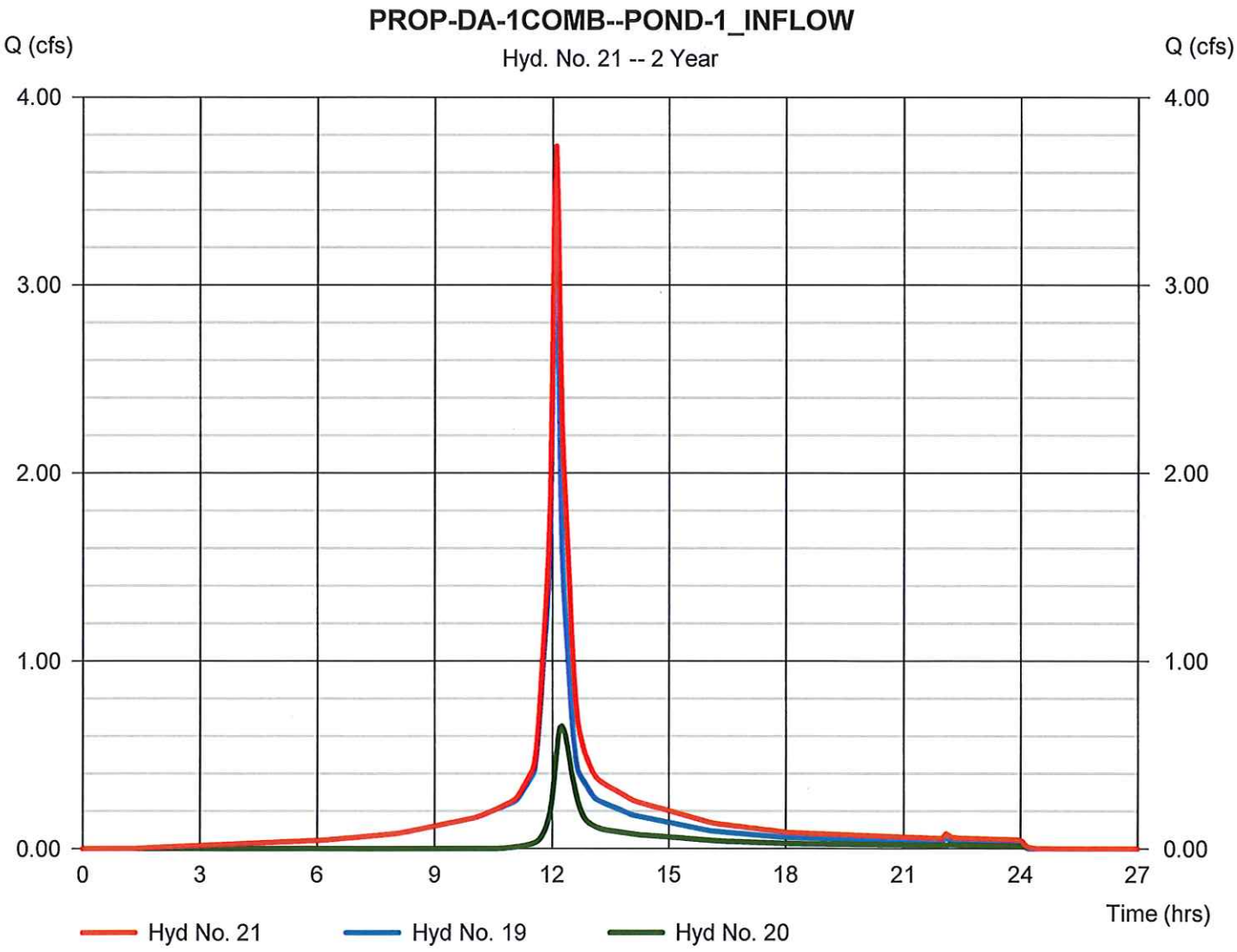
Total Travel Time, Tc ..... 18.50 min

Hydrograph Report

Hyd. No. 21

PROP-DA-1COMB--POND-1_INFLOW

Hydrograph type	= Combine	Peak discharge	= 3.740 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 15,329 cuft
Inflow hyds.	= 19, 20	Contrib. drain. area	= 1.910 ac



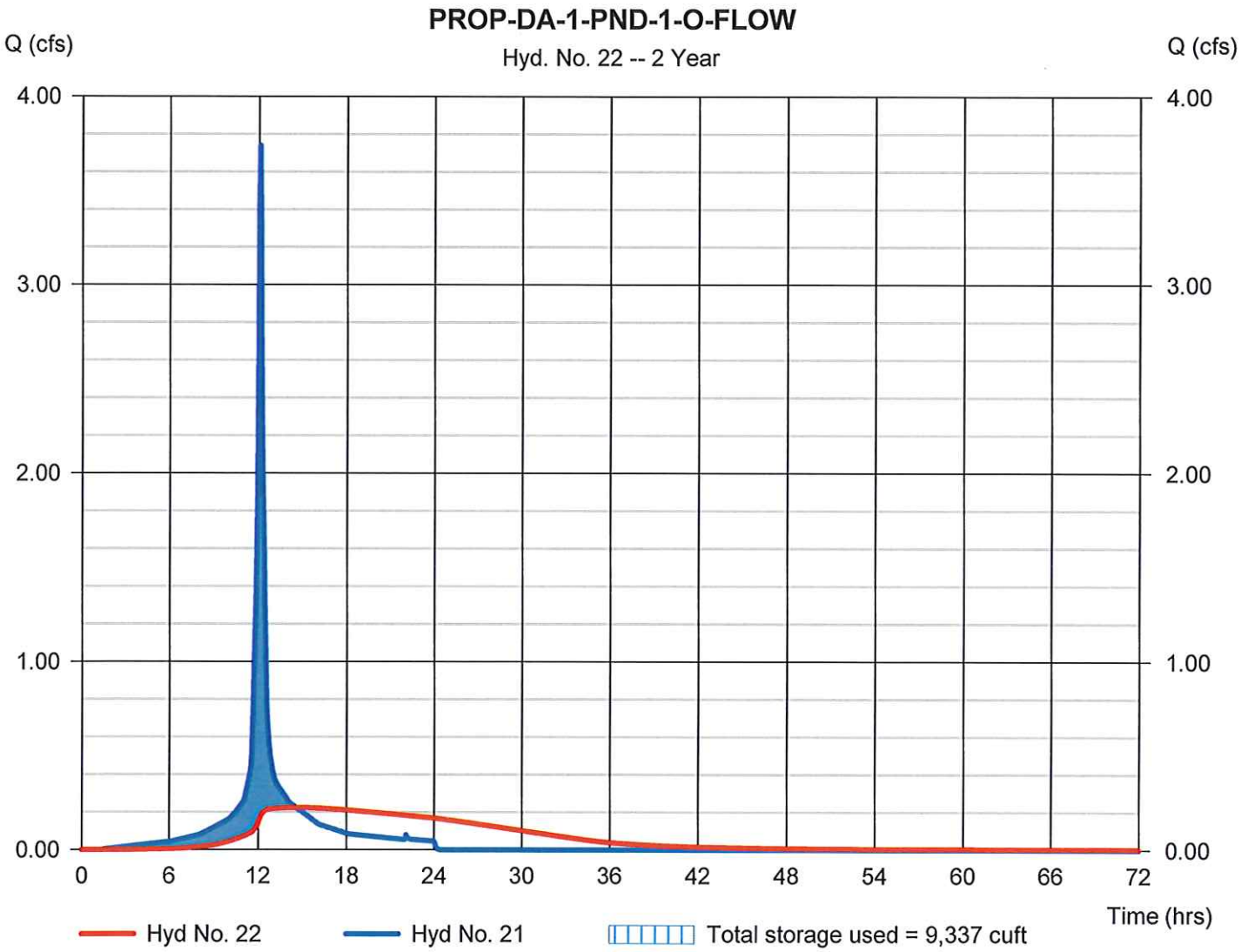
Hydrograph Report

Hyd. No. 22

PROP-DA-1-PND-1-O-FLOW

Hydrograph type	= Reservoir	Peak discharge	= 0.224 cfs
Storm frequency	= 2 yrs	Time to peak	= 14.65 hrs
Time interval	= 3 min	Hyd. volume	= 15,249 cuft
Inflow hyd. No.	= 21 - PROP-DA-1COMB--POND-1_EVLOW	Max. Elevation	= 113.02 ft
Reservoir name	= POND-1	Max. Storage	= 9,337 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Pond No. 3 - POND-1

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	112.00	n/a	0	0
0.50	112.50	n/a	4,411	4,411
1.00	113.00	n/a	4,704	9,115
1.50	113.50	n/a	5,005	14,120
2.00	114.00	n/a	5,315	19,435
2.50	114.50	n/a	5,630	25,065
3.00	115.00	n/a	5,949	31,014
3.50	115.50	n/a	6,273	37,287
4.00	116.00	n/a	6,602	43,890
4.50	116.50	n/a	6,962	50,852
5.00	117.00	n/a	7,353	58,205

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	3.00	0.00	0.00
Span (in)	= 15.00	3.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 110.90	112.00	0.00	0.00
Length (ft)	= 73.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .011	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.33	1.50	16.00	0.00
Crest El. (ft)	= 113.25	114.25	115.50	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= Rect	Rect	Broad	---
Multi-Stage	= Yes	Yes	Yes	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	112.00	0.00	0.00	---	---	0.00	0.00	0.00	---	---	---	0.000
0.50	4,411	112.50	4.09 ic	0.14 ic	---	---	0.00	0.00	0.00	---	---	---	0.145
1.00	9,115	113.00	4.09 ic	0.22 ic	---	---	0.00	0.00	0.00	---	---	---	0.221
1.50	14,120	113.50	4.09 ic	0.28 ic	---	---	0.14	0.00	0.00	---	---	---	0.414
2.00	19,435	114.00	4.09 ic	0.32 ic	---	---	0.71	0.00	0.00	---	---	---	1.037
2.50	25,065	114.50	4.09 ic	0.36 ic	---	---	1.54	0.62	0.00	---	---	---	2.524
3.00	31,014	115.00	6.15 ic	0.37 ic	---	---	2.54	3.24	0.00	---	---	---	6.154
3.50	37,287	115.50	10.11 ic	0.24 ic	---	---	3.06 s	6.80 s	0.00	---	---	---	10.11
4.00	43,890	116.00	12.42 ic	0.06 ic	---	---	1.32 s	3.63 s	7.41 s	---	---	---	12.42
4.50	50,852	116.50	13.16 ic	0.03 ic	---	---	0.93 s	2.79 s	9.41 s	---	---	---	13.15
5.00	58,205	117.00	13.82 ic	0.02 ic	---	---	0.77 s	2.48 s	10.49 s	---	---	---	13.75

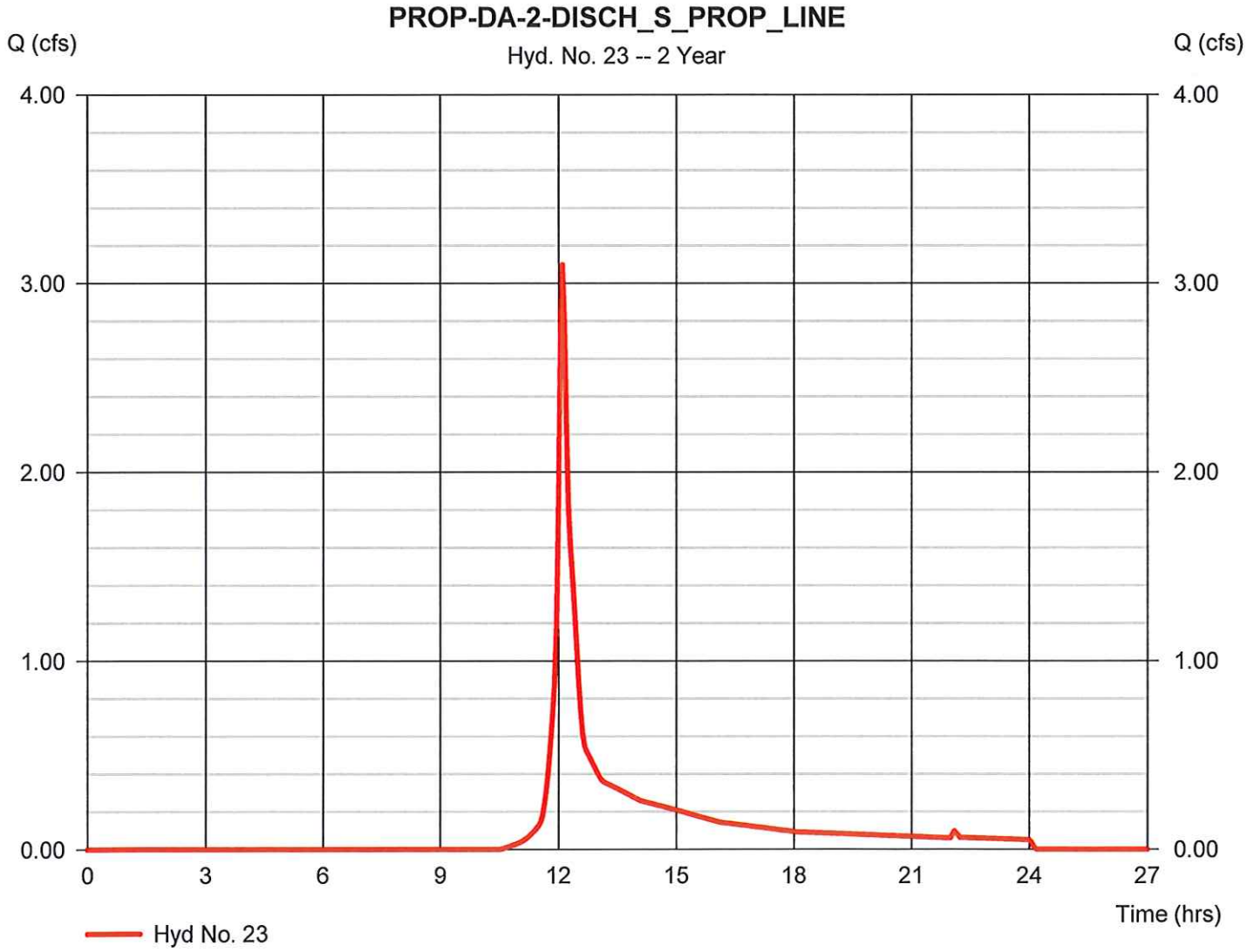
Hydrograph Report

Hyd. No. 23

PROP-DA-2-DISCH_S_PROP_LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 3.100 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 10,772 cuft
Drainage area	= 2.850 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.90 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.850 x 74)] / 2.850



TR55 Tc Worksheet

Hyd. No. 23

PROP-DA-2-DISCH_S_PROP_LINE

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 9.65		0.00		0.00		
Travel Time (min)	**= 7.48**	**+**	**0.00**	**+**	**0.00**	**=**	**7.48**
Shallow Concentrated Flow							
Flow length (ft)	= 165.00		0.00		0.00		
Watercourse slope (%)	= 14.70		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=6.19		0.00		0.00		
Travel Time (min)	**= 0.44**	**+**	**0.00**	**+**	**0.00**	**=**	**0.44**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 7.90 min

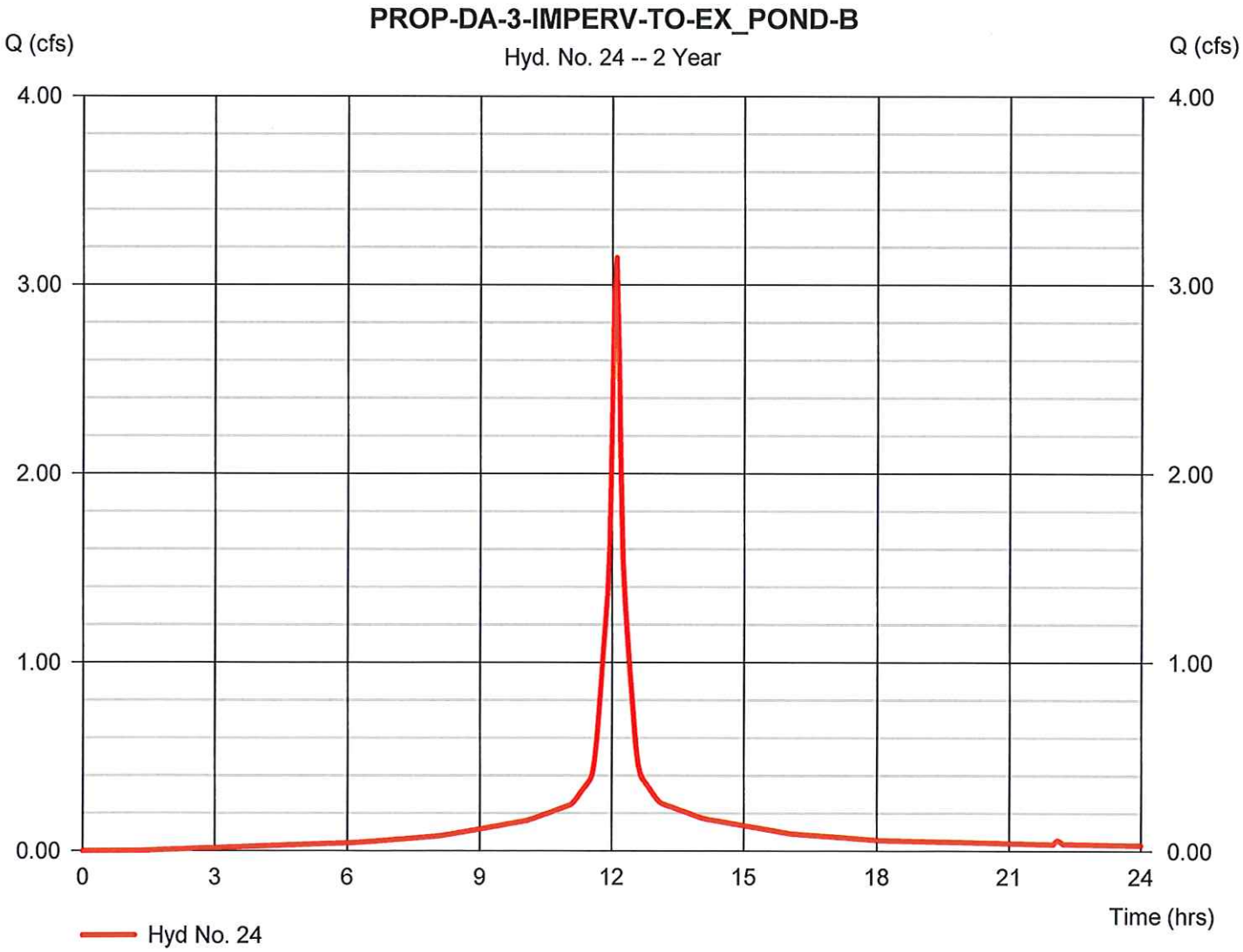
Hydrograph Report

Hyd. No. 24

PROP-DA-3-IMPERV-TO-EX_POND-B

Hydrograph type	= SCS Runoff	Peak discharge	= 3.146 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 11,833 cuft
Drainage area	= 1.130 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.130 x 98)] / 1.130



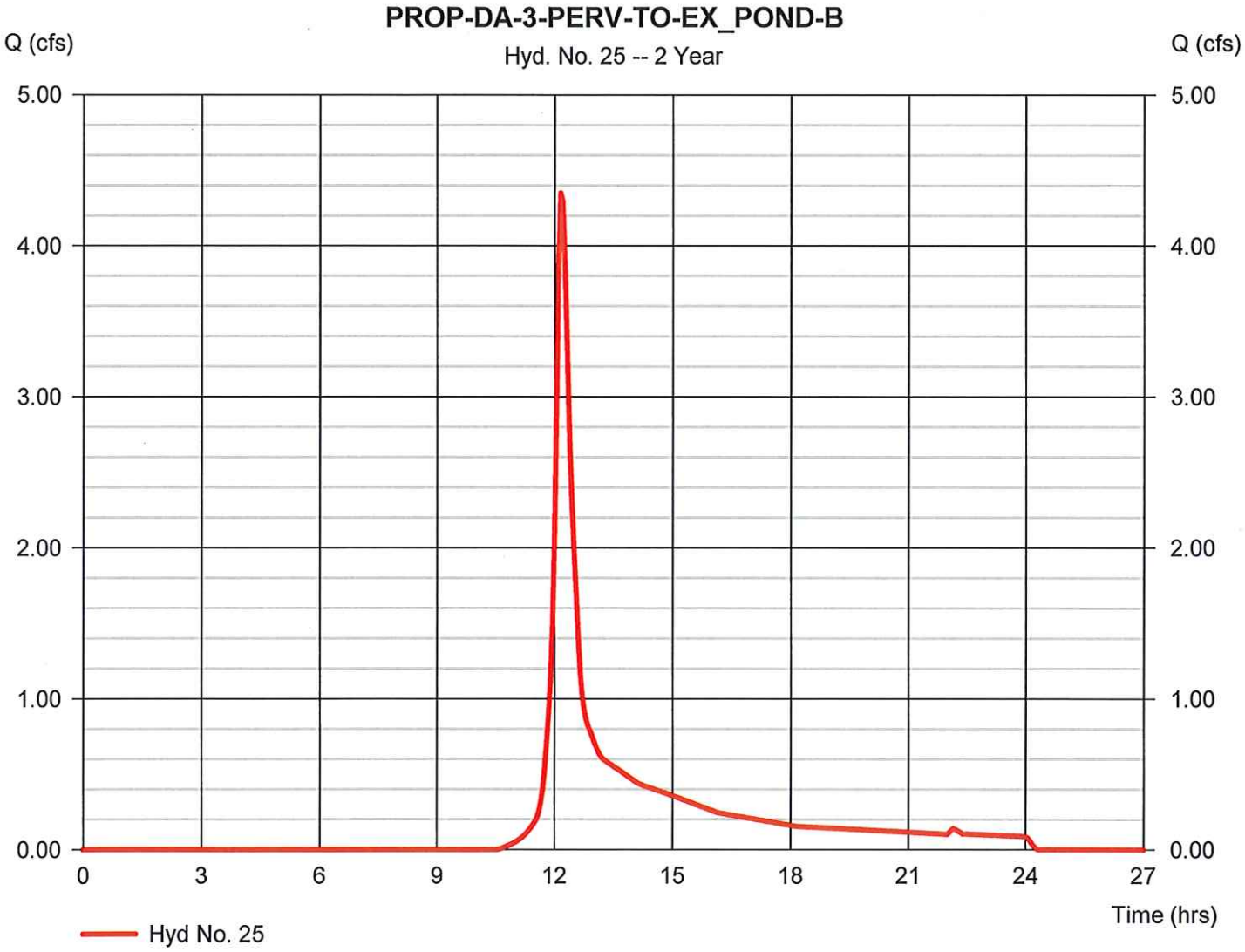
Hydrograph Report

Hyd. No. 25

PROP-DA-3-PERV-TO-EX_POND-B

Hydrograph type	= SCS Runoff	Peak discharge	= 4.351 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 18,102 cuft
Drainage area	= 4.490 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.80 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.490 x 74)] / 4.490



TR55 Tc Worksheet

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

Hyd. No. 25

PROP-DA-3-PERV-TO-EX_POND-B

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 11.62		0.00		0.00		
Travel Time (min)	**= 6.94**	**+**	**0.00**	**+**	**0.00**	**=**	**6.94**
Shallow Concentrated Flow							
Flow length (ft)	= 525.80		0.00		0.00		
Watercourse slope (%)	= 3.59		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.06		0.00		0.00		
Travel Time (min)	**= 2.87**	**+**	**0.00**	**+**	**0.00**	**=**	**2.87**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

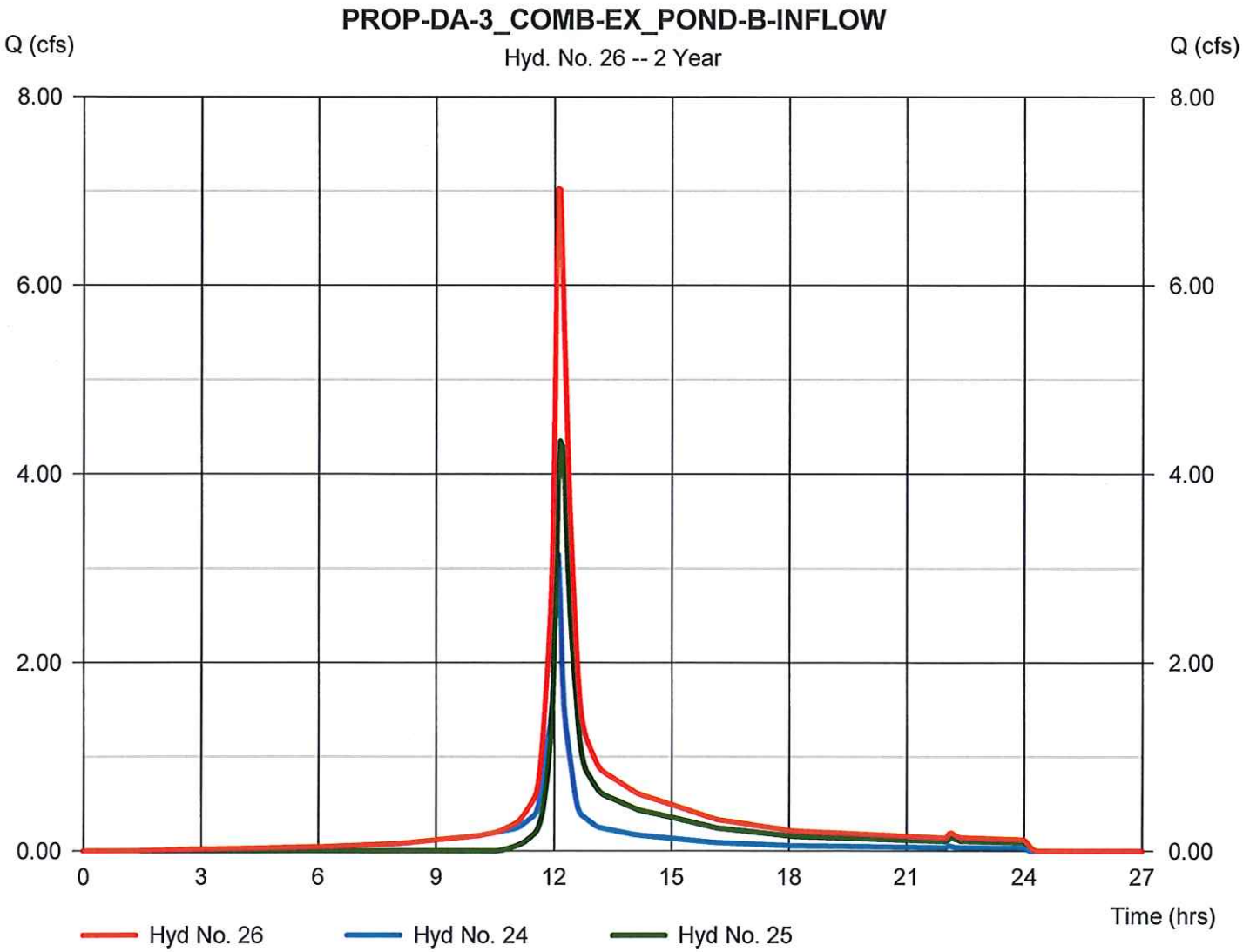
Total Travel Time, Tc ..... 9.80 min

Hydrograph Report

Hyd. No. 26

PROP-DA-3_COMB-EX_POND-B-INFLOW

Hydrograph type	= Combine	Peak discharge	= 7.031 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 29,935 cuft
Inflow hyds.	= 24, 25	Contrib. drain. area	= 5.620 ac



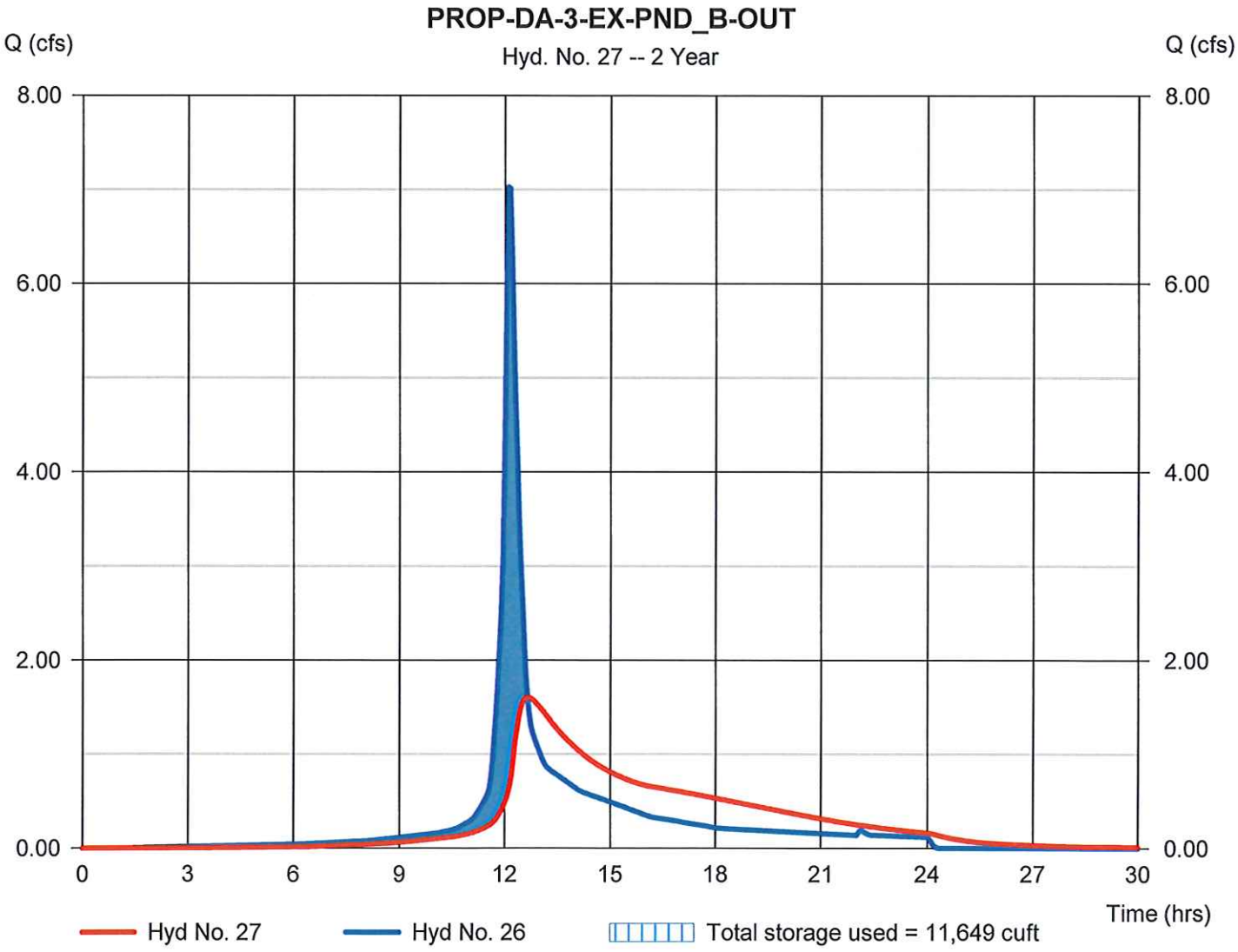
Hydrograph Report

Hyd. No. 27

PROP-DA-3-EX-PND_B-OUT

Hydrograph type	= Reservoir	Peak discharge	= 1.609 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.65 hrs
Time interval	= 3 min	Hyd. volume	= 29,914 cuft
Inflow hyd. No.	= 26 - PROP-DA-3_COMB-EX_POND-B-INFLOW	Max. Elevation	= 95.09 ft
Reservoir name	= EX-PND-B-PROP-DA-3	Max. Storage	= 11,649 cuft

Storage Indication method used.



Pond Report

Pond No. 2 - EX-PND-B-PROP-DA-3

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	93.50	n/a	0	0
0.50	94.00	n/a	3,342	3,342
1.00	94.50	n/a	3,628	6,970
1.50	95.00	n/a	3,928	10,898
2.00	95.50	n/a	4,245	15,143
2.50	96.00	n/a	4,578	19,720
3.00	96.50	n/a	4,922	24,642
3.50	97.00	n/a	5,278	29,920
4.00	97.50	n/a	5,615	35,536
4.50	98.00	n/a	5,934	41,469
5.00	98.50	n/a	6,283	47,752
5.50	99.00	n/a	6,663	54,415

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	3.00	0.00	0.00
Span (in)	= 24.00	3.00	0.00	0.00
No. Barrels	= 1	3	0	0
Invert El. (ft)	= 93.50	93.50	0.00	0.00
Length (ft)	= 31.00	0.00	0.00	0.00
Slope (%)	= 4.80	0.00	0.00	n/a
N-Value	= .011	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.50	0.50	10.00	0.00
Crest El. (ft)	= 94.50	96.00	98.00	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= Rect	Rect	Broad	---
Multi-Stage	= Yes	Yes	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	93.50	0.00	0.00	---	---	0.00	0.00	0.00	---	---	---	0.000
0.50	3,342	94.00	0.00	0.43 ic	---	---	0.00	0.00	0.00	---	---	---	0.434
1.00	6,970	94.50	0.00	0.66 ic	---	---	0.00	0.00	0.00	---	---	---	0.663
1.50	10,898	95.00	0.60 ic	0.83 ic	---	---	0.59	0.00	0.00	---	---	---	1.420
2.00	15,143	95.50	1.73 ic	0.97 ic	---	---	1.66	0.00	0.00	---	---	---	2.636
2.50	19,720	96.00	3.06 ic	1.09 ic	---	---	3.06	0.00	0.00	---	---	---	4.151
3.00	24,642	96.50	5.31 ic	1.20 ic	---	---	4.71	0.59	0.00	---	---	---	6.500
3.50	29,920	97.00	8.15 ic	1.30 ic	---	---	6.49 s	1.66	0.00	---	---	---	9.456
4.00	35,536	97.50	11.43 ic	1.40 ic	---	---	8.36 s	3.06	0.00	---	---	---	12.82
4.50	41,469	98.00	14.97 ic	1.48 ic	---	---	10.26 s	4.71	0.00	---	---	---	16.45
5.00	47,752	98.50	18.61 ic	1.57 ic	---	---	12.03 s	6.58 s	9.19	---	---	---	29.37
5.50	54,415	99.00	22.01 ic	1.64 ic	---	---	13.68 s	8.33 s	26.00	---	---	---	49.65

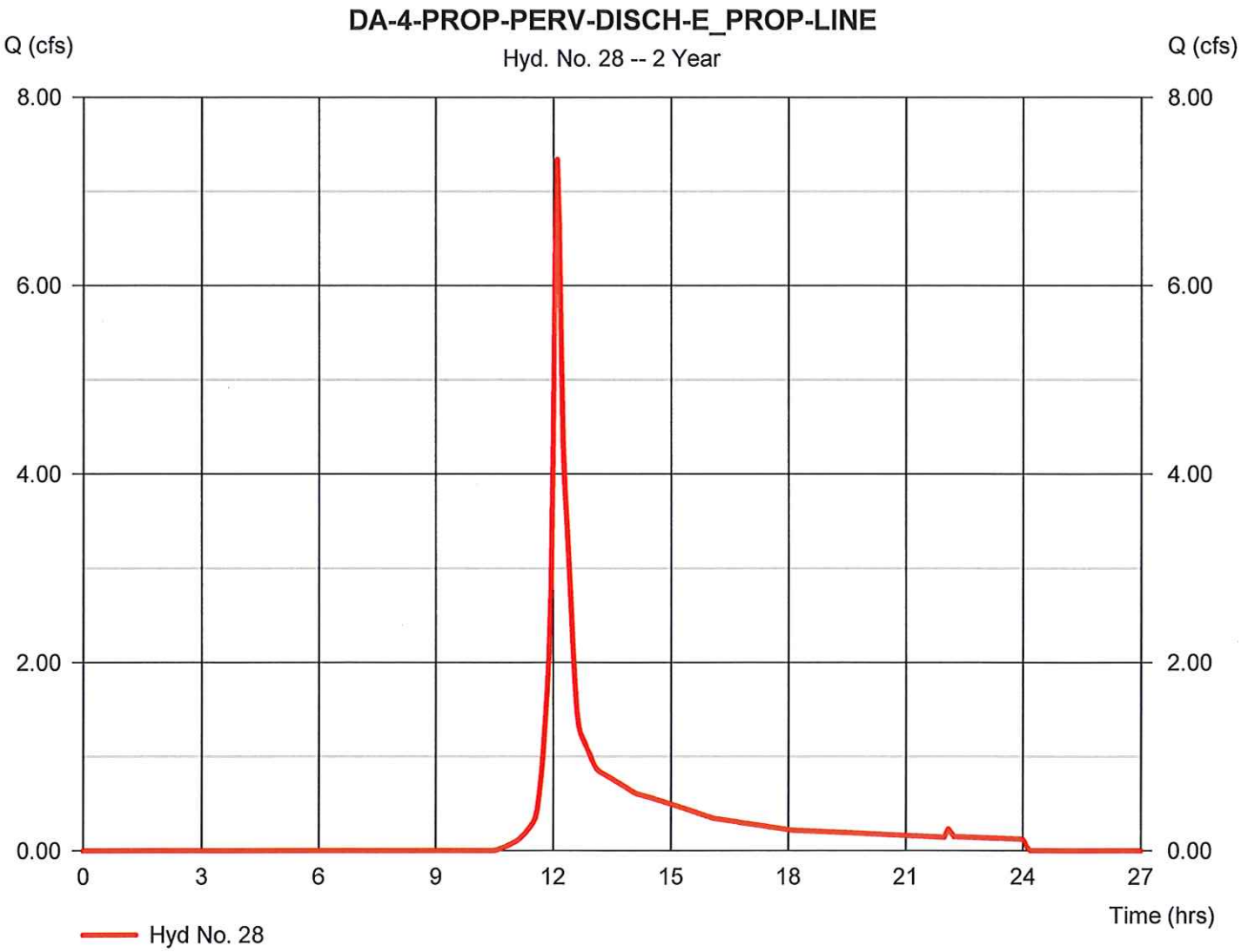
Hydrograph Report

Hyd. No. 28

DA-4-PROP-PERV-DISCH-E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 7.342 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 25,512 cuft
Drainage area	= 6.750 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.70 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.110 x 74)] / 6.750



TR55 Tc Worksheet

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

Hyd. No. 28

DA-4-PROP-PERV-DISCH-E_PROP-LINE

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 7.50		0.00		0.00		
Travel Time (min)	**= 8.27**	**+**	**0.00**	**+**	**0.00**	**=**	**8.27**
Shallow Concentrated Flow							
Flow length (ft)	= 438.00		0.00		0.00		
Watercourse slope (%)	= 10.30		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=5.18		0.00		0.00		
Travel Time (min)	**= 1.41**	**+**	**0.00**	**+**	**0.00**	**=**	**1.41**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 9.70 min

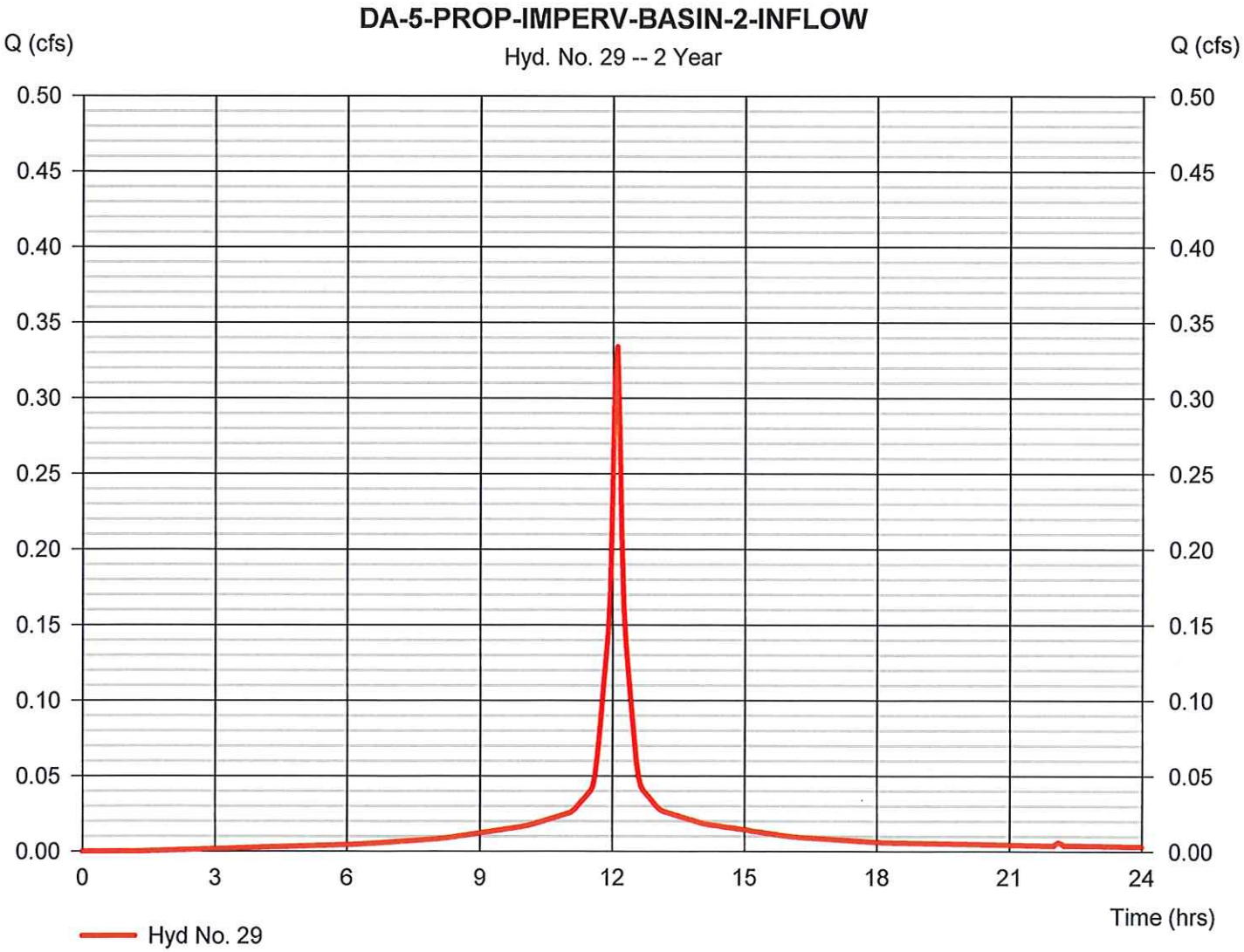
Hydrograph Report

Hyd. No. 29

DA-5-PROP-IMPERV-BASIN-2-INFLOW

Hydrograph type	= SCS Runoff	Peak discharge	= 0.334 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 1,257 cuft
Drainage area	= 0.120 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.120 x 98)] / 0.120



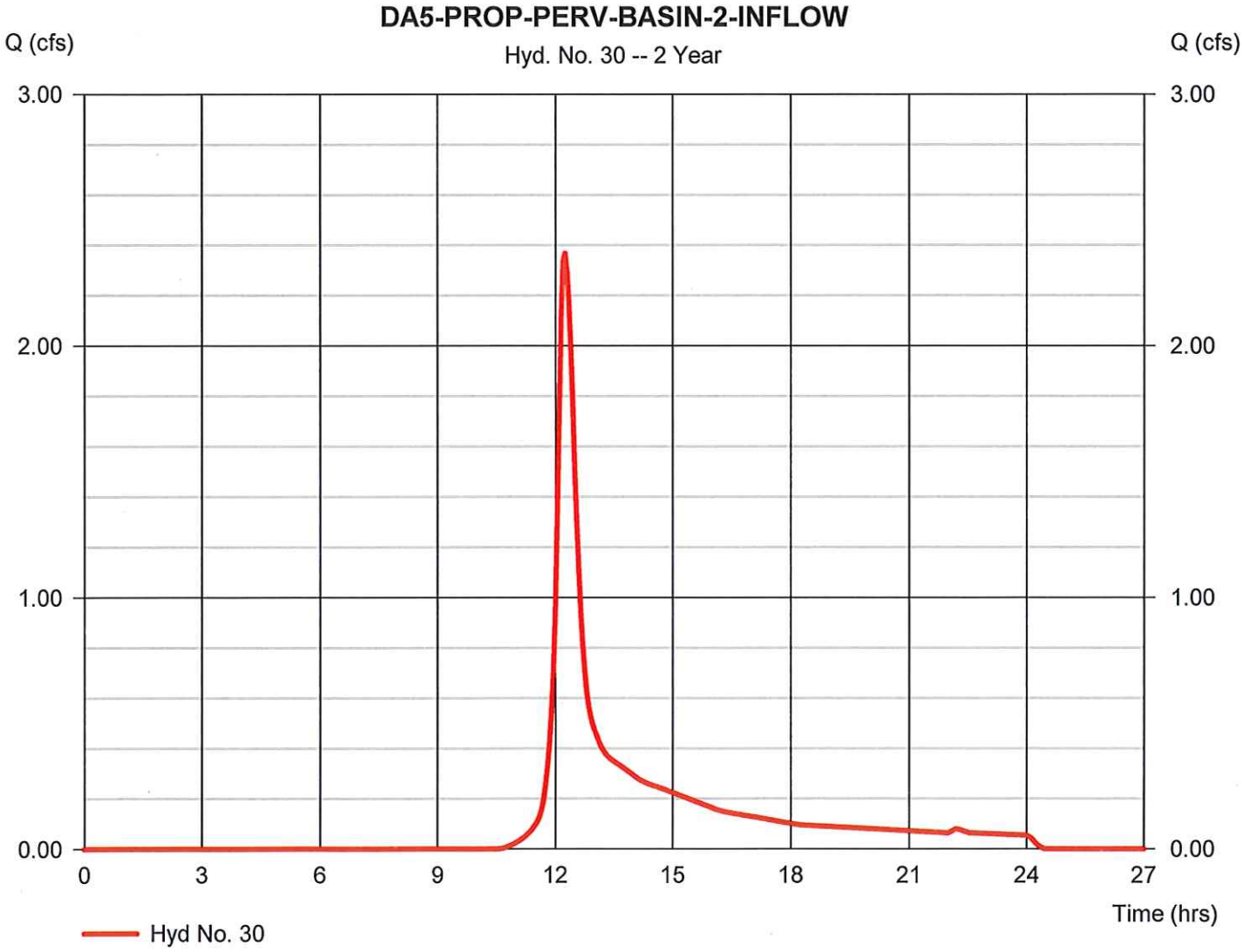
Hydrograph Report

Hyd. No. 30

DA5-PROP-PERV-BASIN-2-INFLOW

Hydrograph type	= SCS Runoff	Peak discharge	= 2.369 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.25 hrs
Time interval	= 3 min	Hyd. volume	= 11,142 cuft
Drainage area	= 2.680 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.680 x 74)] / 2.680



TR55 Tc Worksheet

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

Hyd. No. 30

DA5-PROP-PERV-BASIN-2-INFLOW

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 14.03**	**+**	**0.00**	**+**	**0.00**	**=**	**14.03**
Shallow Concentrated Flow							
Flow length (ft)	= 367.00		0.00		0.00		
Watercourse slope (%)	= 5.48		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.78		0.00		0.00		
Travel Time (min)	**= 1.62**	**+**	**0.00**	**+**	**0.00**	**=**	**1.62**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

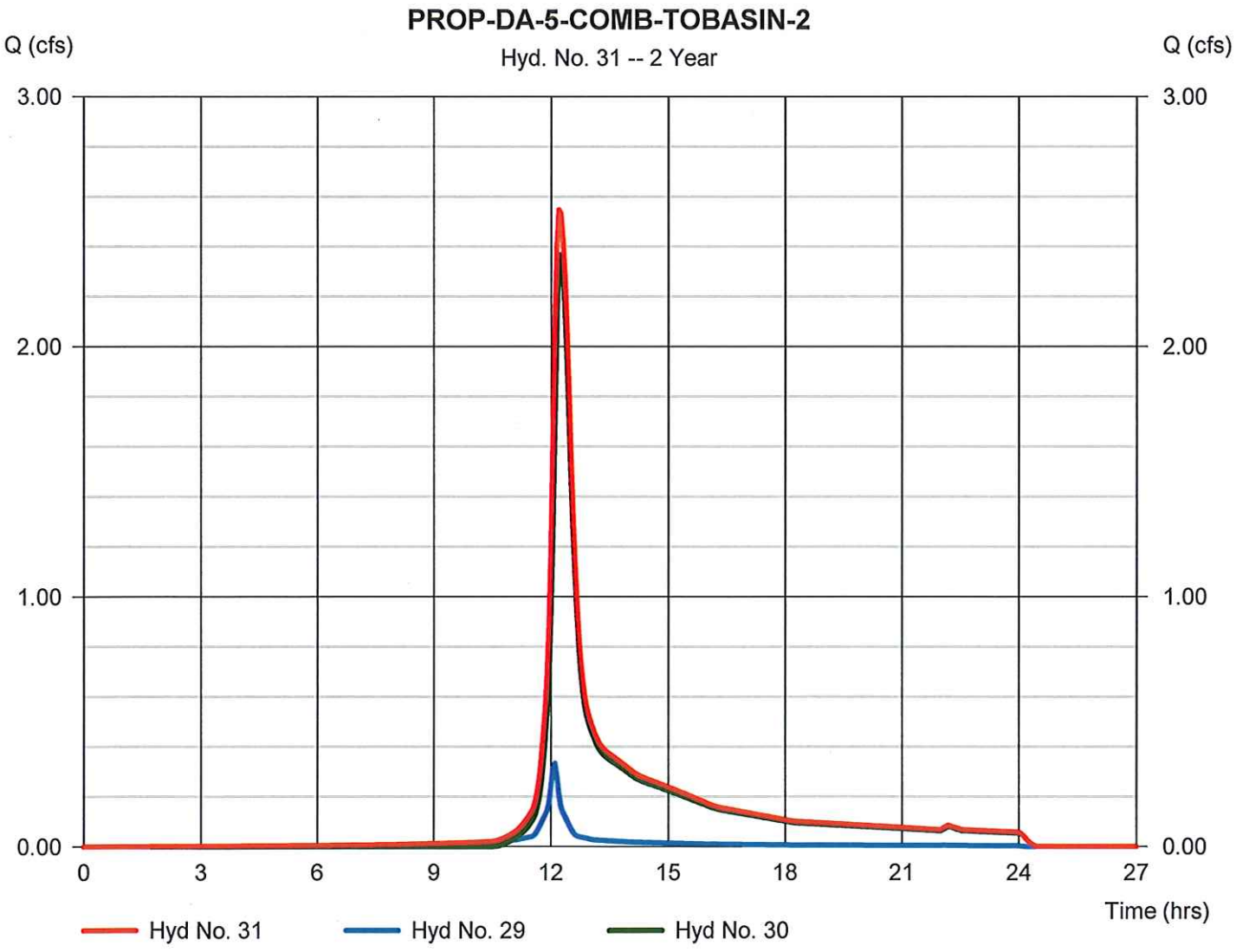
Total Travel Time, Tc ..... 15.70 min

Hydrograph Report

Hyd. No. 31

PROP-DA-5-COMB-TOBASIN-2

Hydrograph type	= Combine	Peak discharge	= 2.547 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 12,399 cuft
Inflow hyds.	= 29, 30	Contrib. drain. area	= 2.800 ac



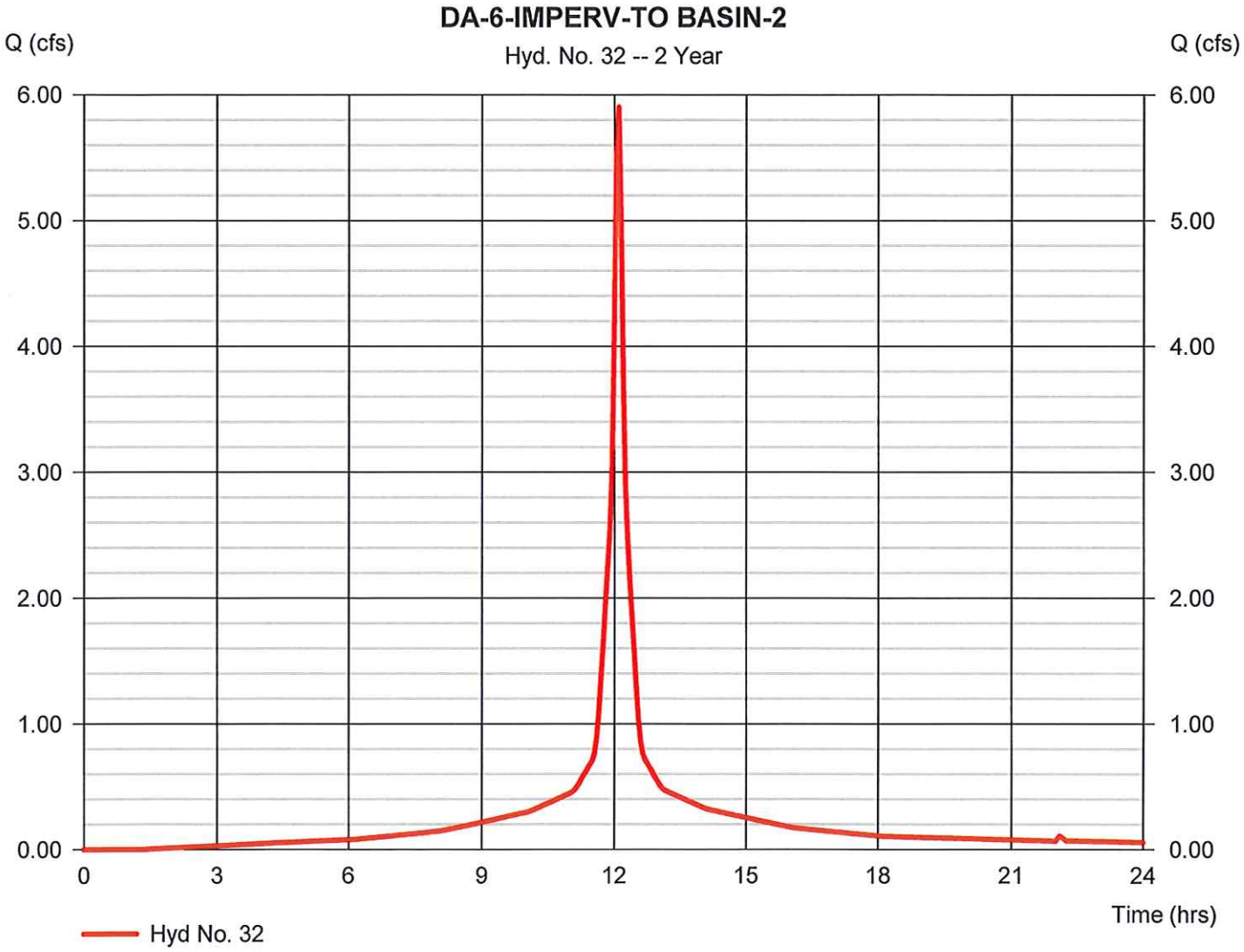
Hydrograph Report

Hyd. No. 32

DA-6-IMPERV-TO BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 5.903 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 22,200 cuft
Drainage area	= 2.120 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.120 x 98)] / 2.120



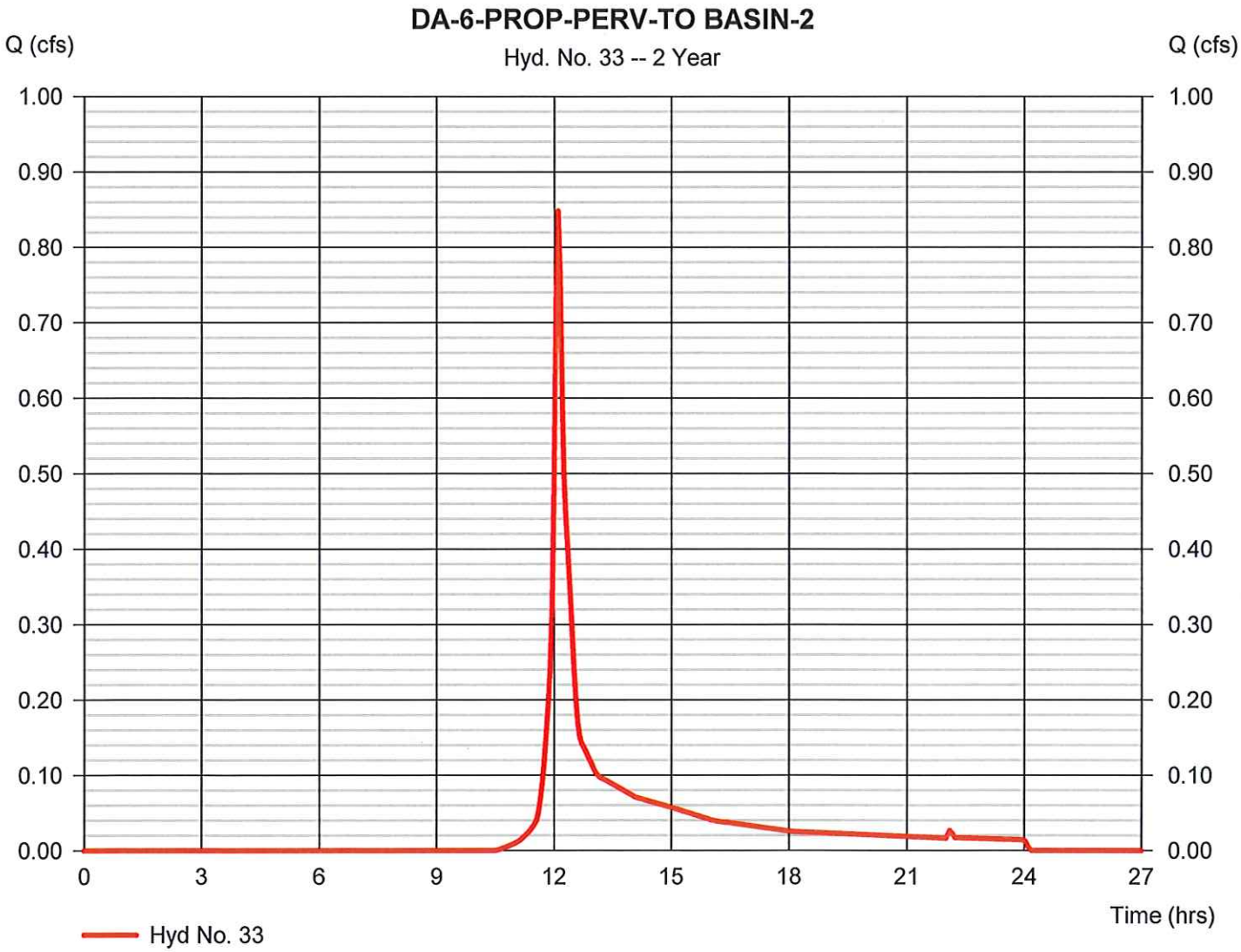
Hydrograph Report

Hyd. No. 33

DA-6-PROP-PERV-TO BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.848 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 2,948 cuft
Drainage area	= 0.780 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.80 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(7.026 x 79)] / 0.780



TR55 Tc Worksheet

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

Hyd. No. 33

DA-6-PROP-PERV-TO BASIN-2

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.130		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 4.17		0.00		0.00		
Travel Time (min)	**= 6.40**	**+**	**0.00**	**+**	**0.00**	**=**	**6.40**
Shallow Concentrated Flow							
Flow length (ft)	= 72.00		0.00		0.00		
Watercourse slope (%)	= 3.60		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.06		0.00		0.00		
Travel Time (min)	**= 0.39**	**+**	**0.00**	**+**	**0.00**	**=**	**0.39**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

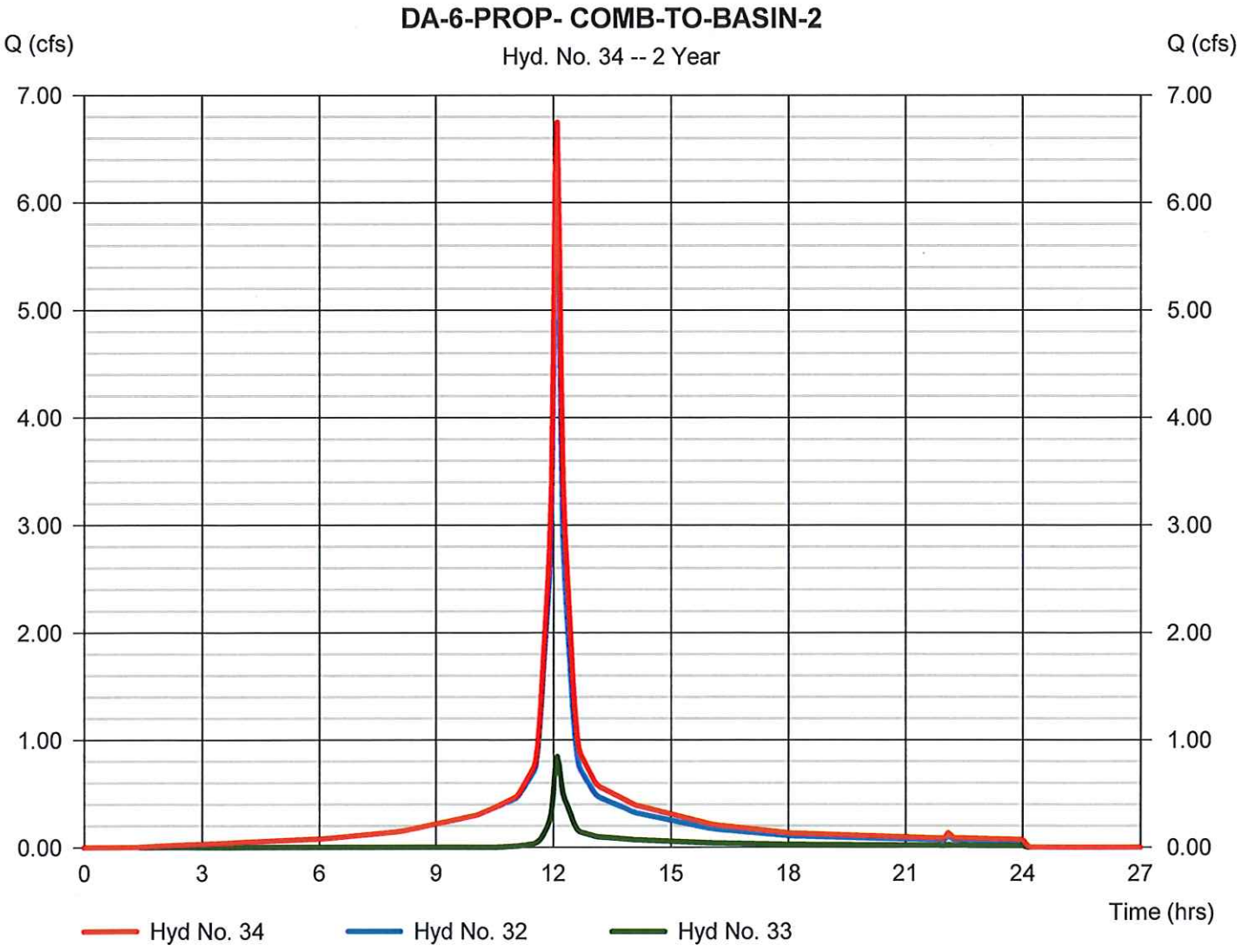
Total Travel Time, Tc ..... 6.80 min

Hydrograph Report

Hyd. No. 34

DA-6-PROP- COMB-TO-BASIN-2

Hydrograph type	= Combine	Peak discharge	= 6.751 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 25,148 cuft
Inflow hyds.	= 32, 33	Contrib. drain. area	= 2.900 ac



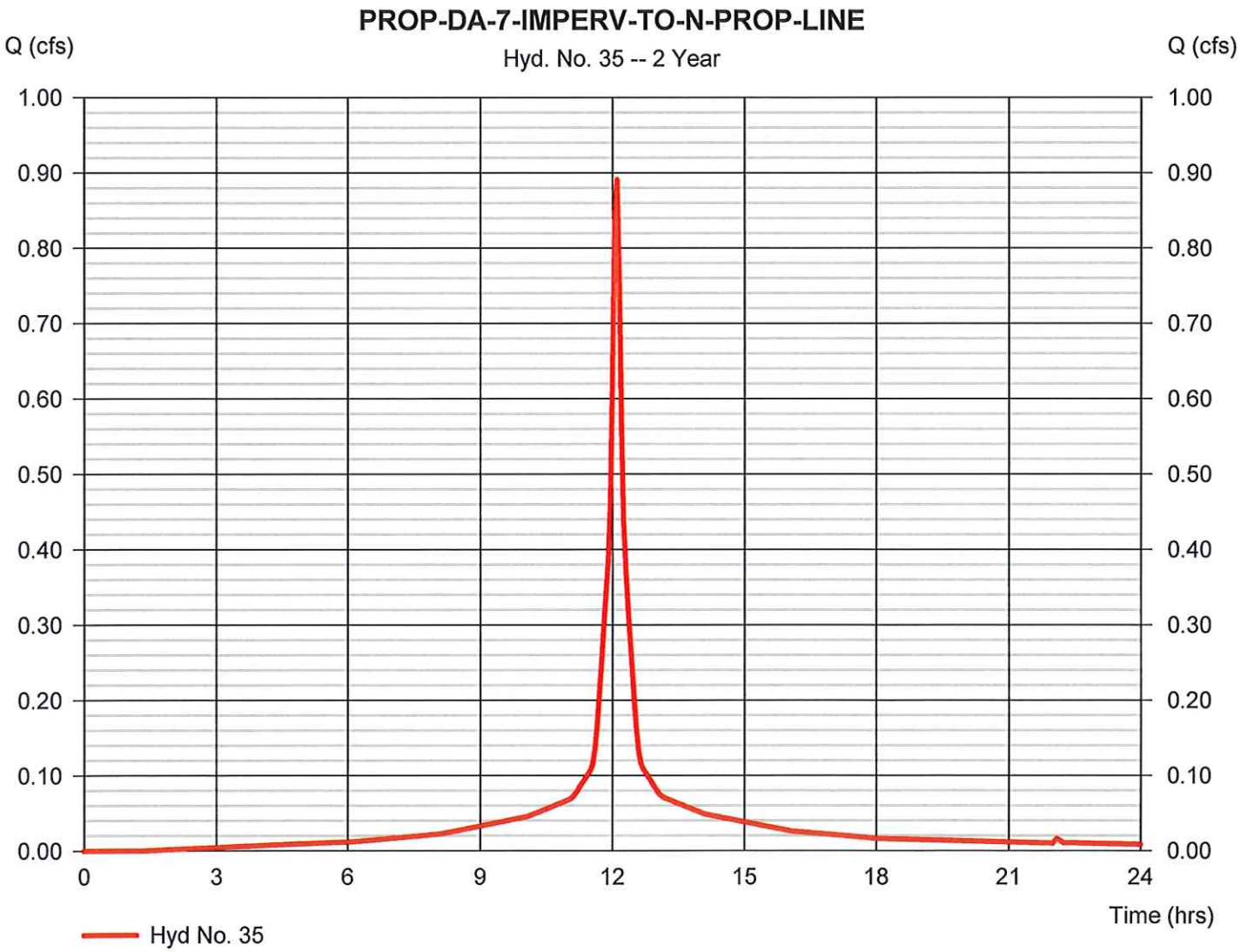
Hydrograph Report

Hyd. No. 35

PROP-DA-7-IMPERV-TO-N-PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 0.891 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 3,351 cuft
Drainage area	= 0.320 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.320 x 98)] / 0.320



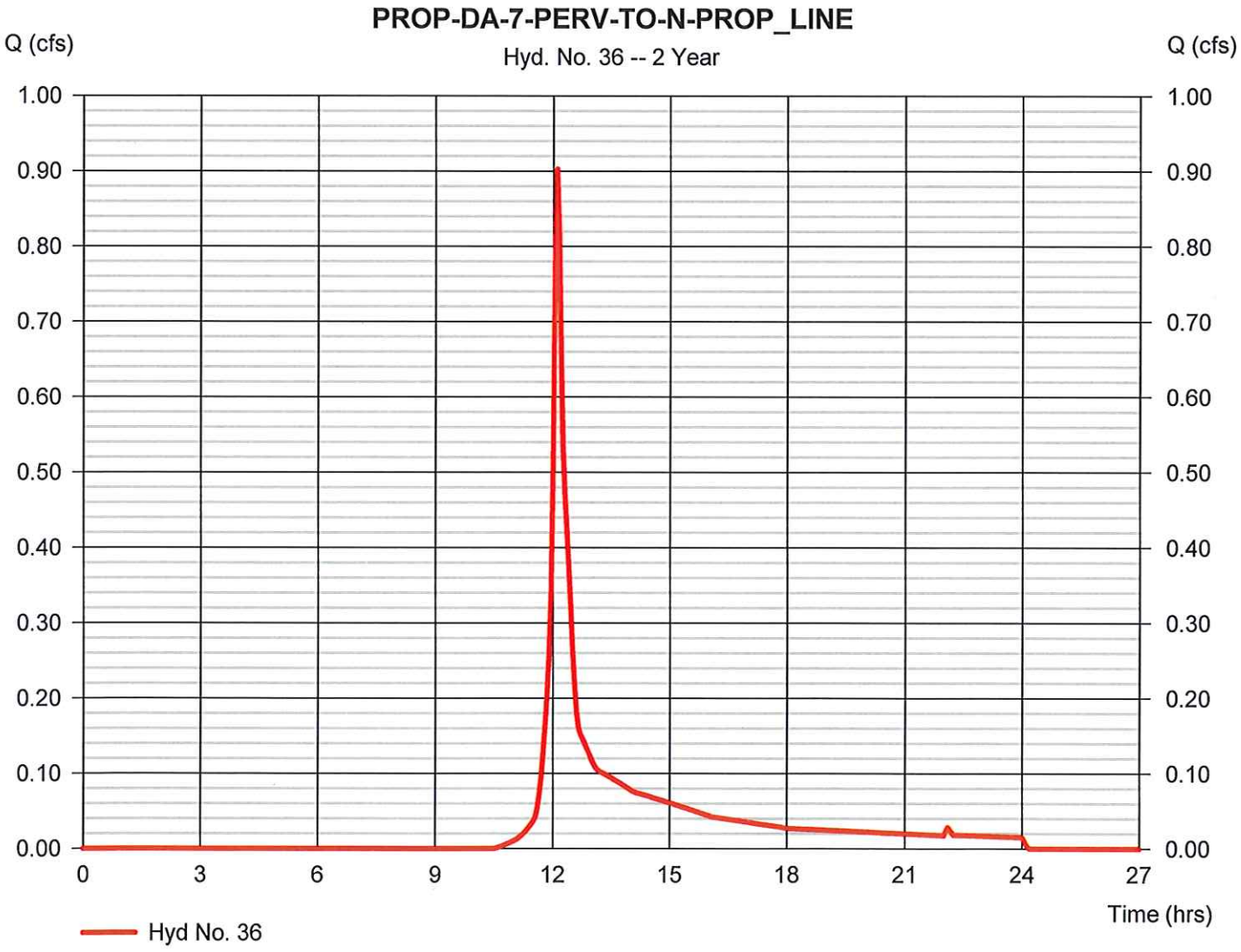
Hydrograph Report

Hyd. No. 36

PROP-DA-7-PERV-TO-N-PROP_LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 0.903 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 3,137 cuft
Drainage area	= 0.830 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 74)] / 0.830



TR55 Tc Worksheet

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

Hyd. No. 36

PROP-DA-7-PERV-TO-N-PROP_LINE

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 9.85		0.00		0.00		
Travel Time (min)	**= 7.42**	**+**	**0.00**	**+**	**0.00**	**=**	**7.42**
Shallow Concentrated Flow							
Flow length (ft)	= 0.00		0.00		0.00		
Watercourse slope (%)	= 0.00		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	=0.00		0.00		0.00		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

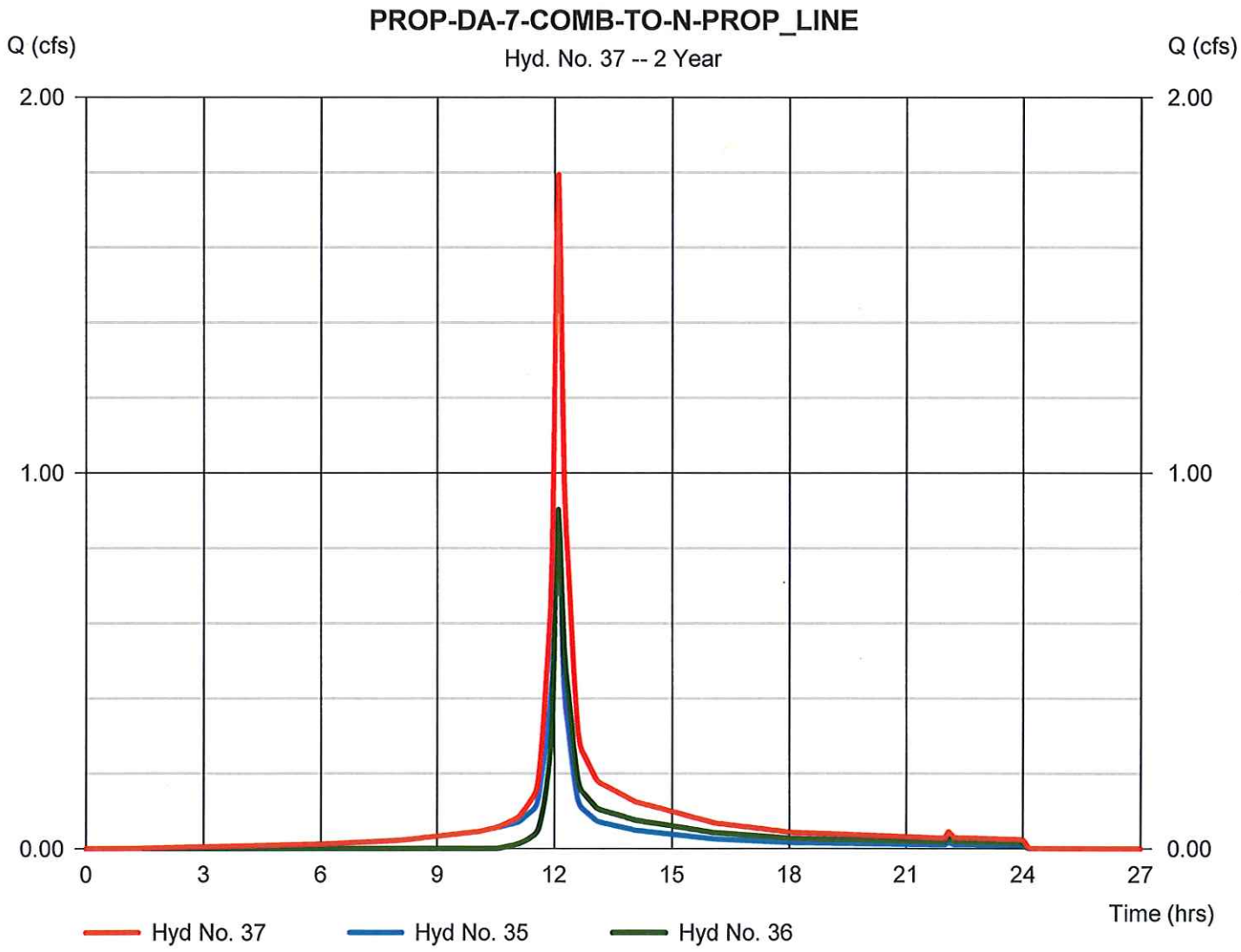
Total Travel Time, Tc ..... 7.40 min

Hydrograph Report

Hyd. No. 37

PROP-DA-7-COMB-TO-N-PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 1.794 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 6,488 cuft
Inflow hyds.	= 35, 36	Contrib. drain. area	= 1.150 ac



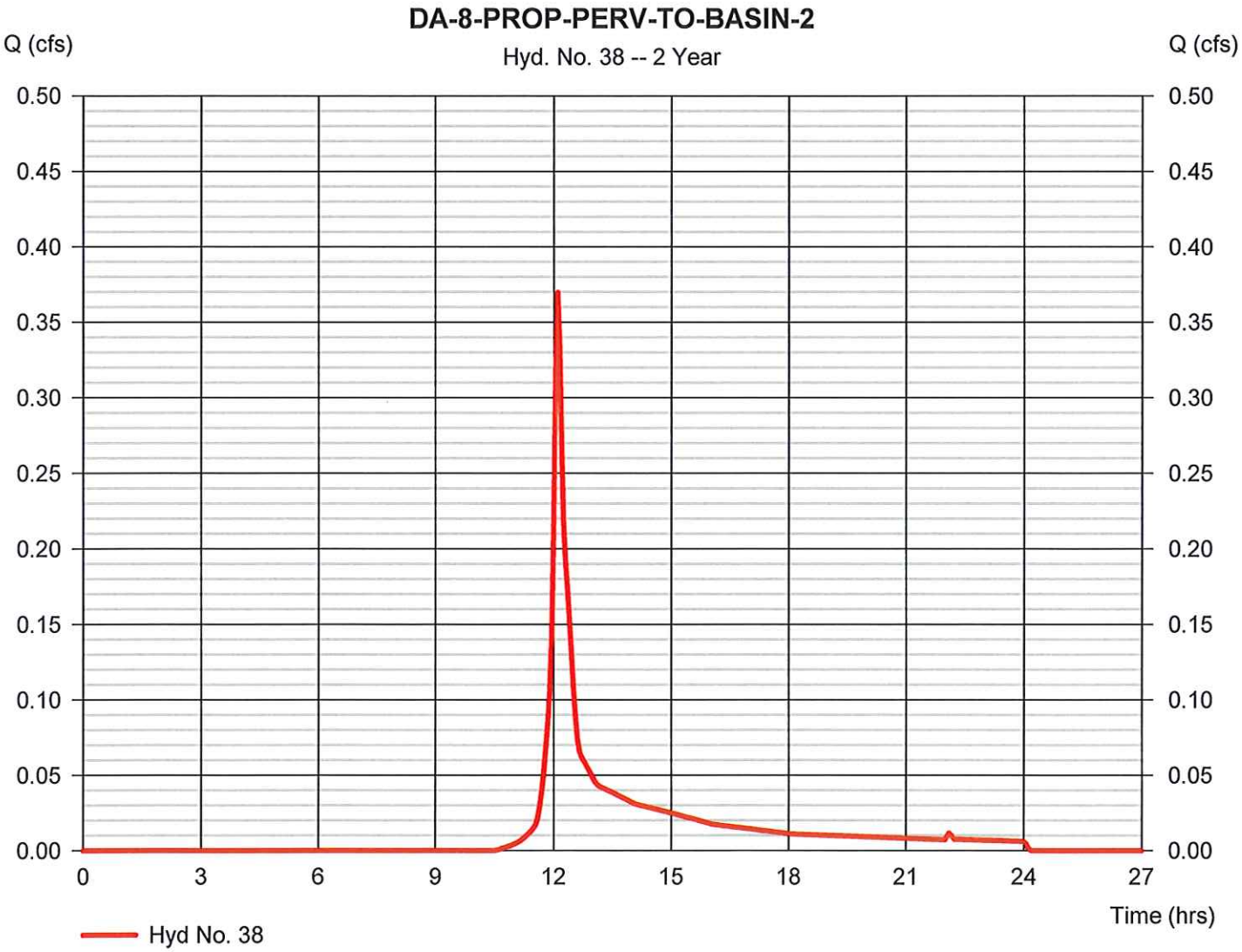
Hydrograph Report

Hyd. No. 38

DA-8-PROP-PERV-TO-BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.370 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 1,285 cuft
Drainage area	= 0.340 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.50 min
Total precip.	= 3.31 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.340 x 74)] / 0.340



TR55 Tc Worksheet

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

Hyd. No. 38

DA-8-PROP-PERV-TO-BASIN-2

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 74.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 7.40		0.00		0.00		
Travel Time (min)	**= 6.53**	**+**	**0.00**	**+**	**0.00**	**=**	**6.53**
Shallow Concentrated Flow							
Flow length (ft)	= 0.00		0.00		0.00		
Watercourse slope (%)	= 0.00		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	=0.00		0.00		0.00		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

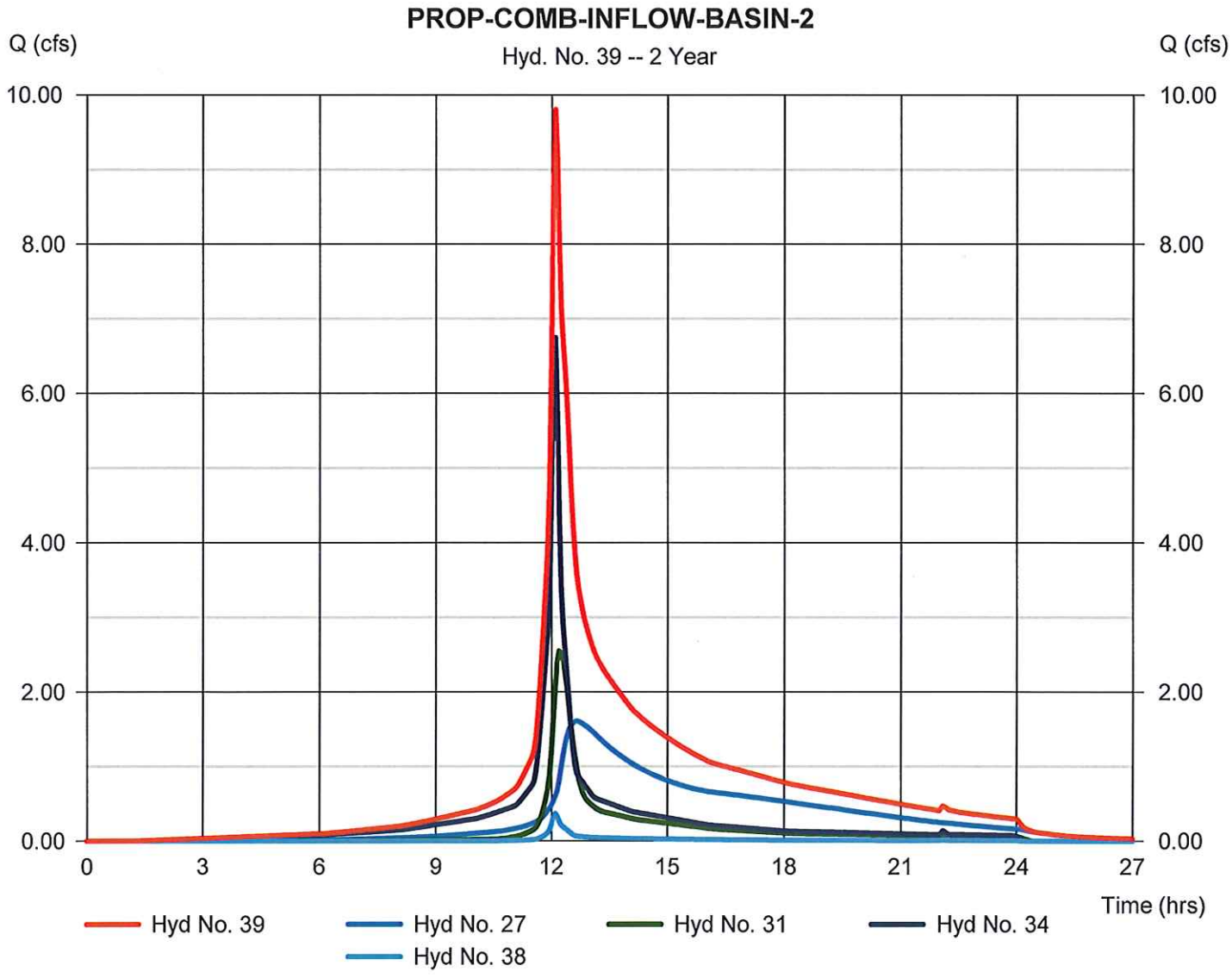
Total Travel Time, Tc ..... 6.50 min

Hydrograph Report

Hyd. No. 39

PROP-COMB-INFLOW-BASIN-2

Hydrograph type	= Combine	Peak discharge	= 9.805 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 68,746 cuft
Inflow hyds.	= 27, 31, 34, 38	Contrib. drain. area	= 0.340 ac



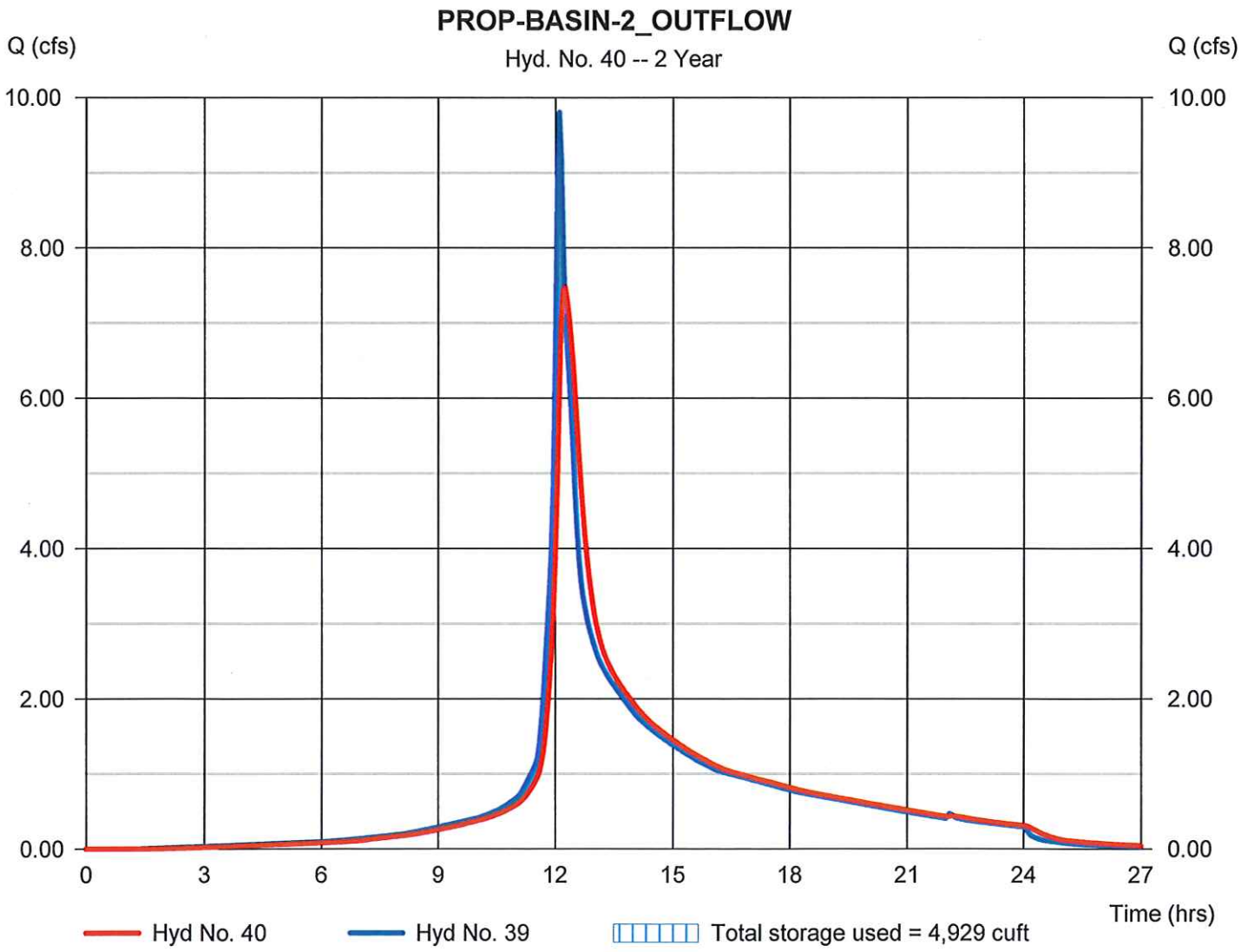
Hydrograph Report

Hyd. No. 40

PROP-BASIN-2_OUTFLOW

Hydrograph type	= Reservoir	Peak discharge	= 7.476 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.25 hrs
Time interval	= 3 min	Hyd. volume	= 68,744 cuft
Inflow hyd. No.	= 39 - PROP-COMB-INFLOW-BASIN2	Max. Elevation	= 75.92 ft
Reservoir name	= POND-2	Max. Storage	= 4,929 cuft

Storage Indication method used.



Pond Report

Pond No. 4 - POND-2

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	75.00	n/a	0	0
0.50	75.50	n/a	2,689	2,689
1.00	76.00	n/a	2,689	5,379
1.50	76.50	n/a	3,173	8,551
2.00	77.00	n/a	3,496	12,047
2.50	77.50	n/a	3,825	15,872
3.00	78.00	n/a	4,162	20,034
3.50	78.50	n/a	4,513	24,546
4.00	79.00	n/a	4,878	29,424
4.50	79.50	n/a	5,281	34,704
5.00	80.00	n/a	5,722	40,427
5.50	80.50	n/a	6,171	46,598
6.00	81.00	n/a	6,627	53,225

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 30.00	12.00	0.00	0.00
Span (in)	= 30.00	36.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 74.50	75.00	0.00	0.00
Length (ft)	= 52.00	0.00	0.00	0.00
Slope (%)	= 4.80	0.00	0.00	n/a
N-Value	= .011	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 10.00	12.00	16.00	0.00
Crest El. (ft)	= 76.33	77.00	80.00	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= Rect	Rect	Broad	---
Multi-Stage	= Yes	Yes	Yes	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

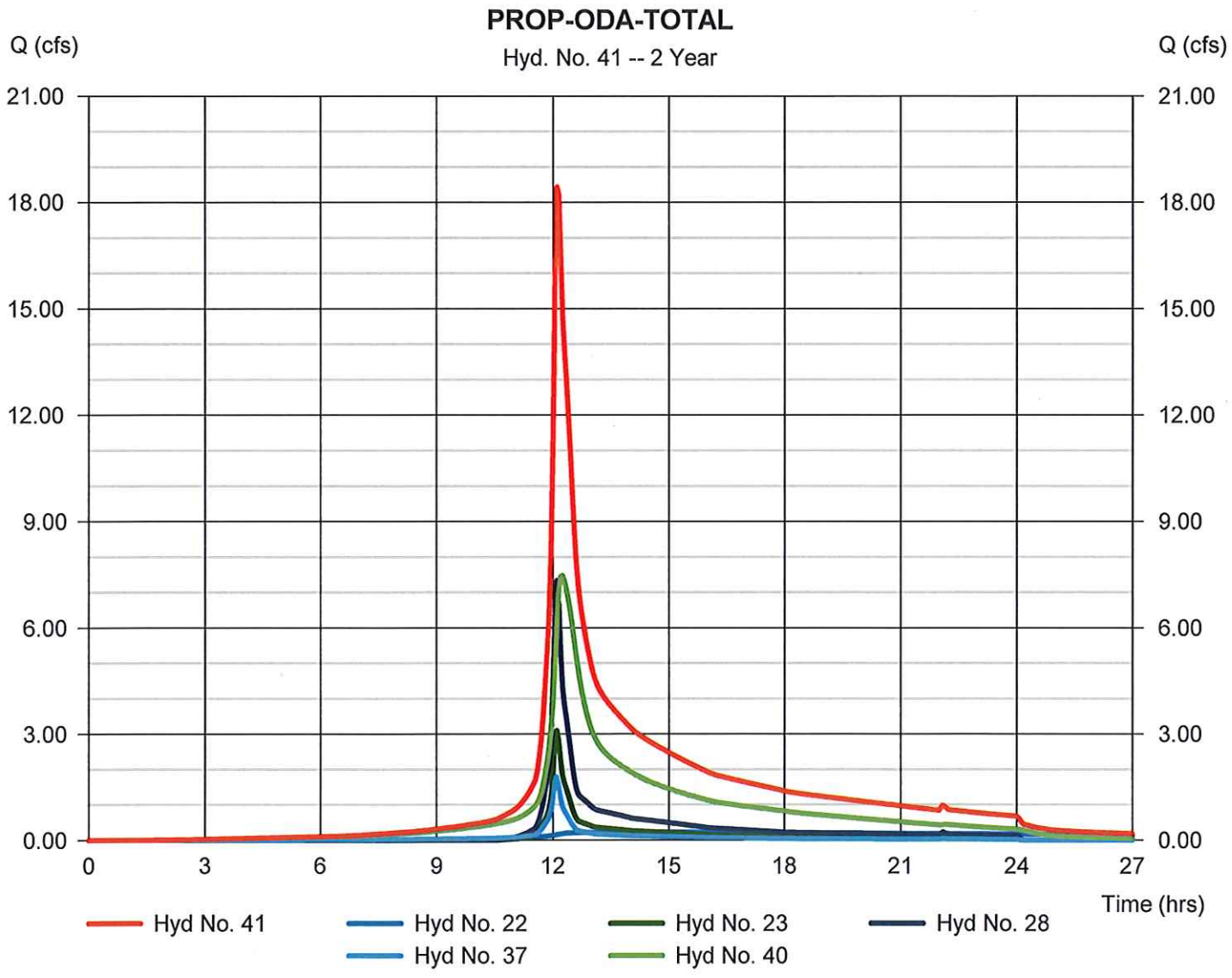
Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	75.00	0.00	0.00	---	---	0.00	0.00	0.00	---	---	---	0.000
0.50	2,689	75.50	3.64 ic	3.61 ic	---	---	0.00	0.00	0.00	---	---	---	3.611
1.00	5,379	76.00	8.31 ic	8.31 ic	---	---	0.00	0.00	0.00	---	---	---	8.312
1.50	8,551	76.50	12.79 ic	10.37 ic	---	---	2.33	0.00	0.00	---	---	---	12.71
2.00	12,047	77.00	23.06 ic	8.02 ic	---	---	15.04 s	0.00	0.00	---	---	---	23.06
2.50	15,872	77.50	30.48 ic	4.25 ic	---	---	17.95 s	8.26 s	0.00	---	---	---	30.47
3.00	20,034	78.00	35.16 ic	2.77 ic	---	---	19.30 s	13.06 s	0.00	---	---	---	35.13
3.50	24,546	78.50	39.05 ic	2.06 ic	---	---	20.58 s	16.35 s	0.00	---	---	---	38.98
4.00	29,424	79.00	42.52 ic	1.65 ic	---	---	21.83 s	18.98 s	0.00	---	---	---	42.45
4.50	34,704	79.50	45.71 ic	1.37 ic	---	---	23.01 s	21.19 s	0.00	---	---	---	45.57
5.00	40,427	80.00	48.68 ic	1.18 ic	---	---	24.16 s	23.16 s	0.00	---	---	---	48.50
5.50	46,598	80.50	51.48 ic	0.97 ic	---	---	23.85 s	23.54 s	2.80 s	---	---	---	51.16
6.00	53,225	81.00	54.13 ic	0.81 ic	---	---	23.63 s	23.86 s	5.29 s	---	---	---	53.60

Hydrograph Report

Hyd. No. 41

PROP-ODA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 18.44 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 126,765 cuft
Inflow hyds.	= 22, 23, 28, 37, 40	Contrib. drain. area	= 9.600 ac



Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	60.28	3	729	237,146	------	------	------	EX-ODA
2	SCS Runoff	9.587	3	729	37,975	------	------	------	EX-DA-2-DISCH-S-PROP-LINE
3	SCS Runoff	4.461	3	726	17,074	------	------	------	EX-DA-3_IMPRV-DISCH-EX_PND
4	SCS Runoff	12.57	3	729	49,783	------	------	------	EX-DA-3_PERV-DISCH-EX_PND
5	Combine	16.34	3	729	66,858	3, 4	------	------	EX-DA-3-COMB-INFLOW_EX_PND
6	Reservoir	15.19	3	732	66,853	5	96.13	7,638	EX-DA-3OUTFLOW-TO DA-4
7	SCS Runoff	2.862	3	726	10,953	------	------	------	EX-DA_4_IMPRV--DISCH_E_PRO
8	SCS Runoff	20.50	3	726	68,415	------	------	------	EX-DA-4_PERV-DISCH-E_PROP-L
9	Combine	23.36	3	726	79,368	7, 8	------	------	EX-DA-4COMB-DISCH_E_PROP_L
10	Combine	34.32	3	729	146,221	6, 9	------	------	EX-DA-3-EX_PND-OUT-&-EX-DA-4
11	SCS Runoff	9.259	3	726	35,437	------	------	------	EX-DA-6_IMPERV-DISCH_E_PRO
12	SCS Runoff	1.673	3	729	6,626	------	------	------	EX-DA-6_PERV-DISCH_E_PROP-L
13	Combine	10.79	3	726	42,063	11, 12	------	------	EX_DA-6-COMB_DISCH_E_PROP
14	Combine	45.02	3	726	188,285	6, 9, 13	------	------	COMB-DA-3+4+6_EST-PROP_LIN
15	SCS Runoff	1.347	3	726	5,154	------	------	------	EX-DA-7_IMPERV-DISCH-ERLED
16	SCS Runoff	0.835	3	726	2,788	------	------	------	EX-DA-7-PERV-DISCH-ERLEDON_
17	Combine	2.182	3	726	7,942	15, 16	------	------	EX-DA-7_COMB_DISCH-ERLEDO
18	Combine	56.00	3	726	234,201	2, 6, 9, 13, 17	------	------	EX-ODA-TOTAL
19	SCS Runoff	4.924	3	726	18,846	------	------	------	PROP-DA-1-IMPERV-DISCH-PON
20	SCS Runoff	1.436	3	732	6,483	------	------	------	PROP-DA-1-PERV-DISCH_POND-
21	Combine	6.057	3	726	25,329	19, 20	------	------	PROP-DA-1COMB--POND-1_INFL
22	Reservoir	0.489	3	822	25,250	21	113.58	14,926	PROP-DA-1-PND-1-O-FLOW
23	SCS Runoff	6.802	3	726	22,699	------	------	------	PROP-DA-2-DISCH_S_PROP_LIN
24	SCS Runoff	4.756	3	726	18,202	------	------	------	PROP-DA-3-IMPERV-TO-EX_PON
25	SCS Runoff	9.630	3	729	38,145	------	------	------	PROP-DA-3-PERV-TO-EX_POND-
26	Combine	13.65	3	729	56,346	24, 25	------	------	PROP-DA-3_COMB-EX_POND-B-I
27	Reservoir	4.536	3	750	56,325	26	96.10	20,699	PROP-DA-3-EX-PND_B-OUT
28	SCS Runoff	16.11	3	726	53,760	------	------	------	DA-4-PROP-PERV-DISCH-E_PRO
29	SCS Runoff	0.505	3	726	1,933	------	------	------	DA-5-PROP-IMPERV-BASIN-2-INF
30	SCS Runoff	5.201	3	732	23,479	------	------	------	DA5-PROP-PERV-BASIN-2-INFLO
31	Combine	5.521	3	732	25,412	29, 30	------	------	PROP-DA-5-COMB-TOBASIN-2
32	SCS Runoff	8.923	3	726	34,148	------	------	------	DA-6-IMPERV-TO BASIN-2
33	SCS Runoff	1.861	3	726	6,212	------	------	------	DA-6-PROP-PERV-TO BASIN-2

Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
34	Combine	10.78	3	726	40,361	32, 33	------	------	DA-6-PROP- COMB-TO-BASIN-2
35	SCS Runoff	1.347	3	726	5,154	------	------	------	PROP-DA-7-IMPERV-TO-N-PROP-
36	SCS Runoff	1.981	3	726	6,611	------	------	------	PROP-DA-7-PERV-TO-N-PROP_LI
37	Combine	3.328	3	726	11,765	35, 36	------	------	PROP-DA-7-COMB-TO-N-PROP_LI
38	SCS Runoff	0.811	3	726	2,708	------	------	------	DA-8-PROP-PERV-TO-BASIN-2
39	Combine	17.97	3	726	124,806	27, 31, 34, 38	------	------	PROP-COMB-INFLOW-BASIN-2
40	Reservoir	14.50	3	735	124,804	39	76.59	9,182	PROP-BASIN-2_OUTFLOW
41	Combine	36.39	3	726	238,278	22, 23, 28, 37, 40	------	------	PROP-ODA-TOTAL

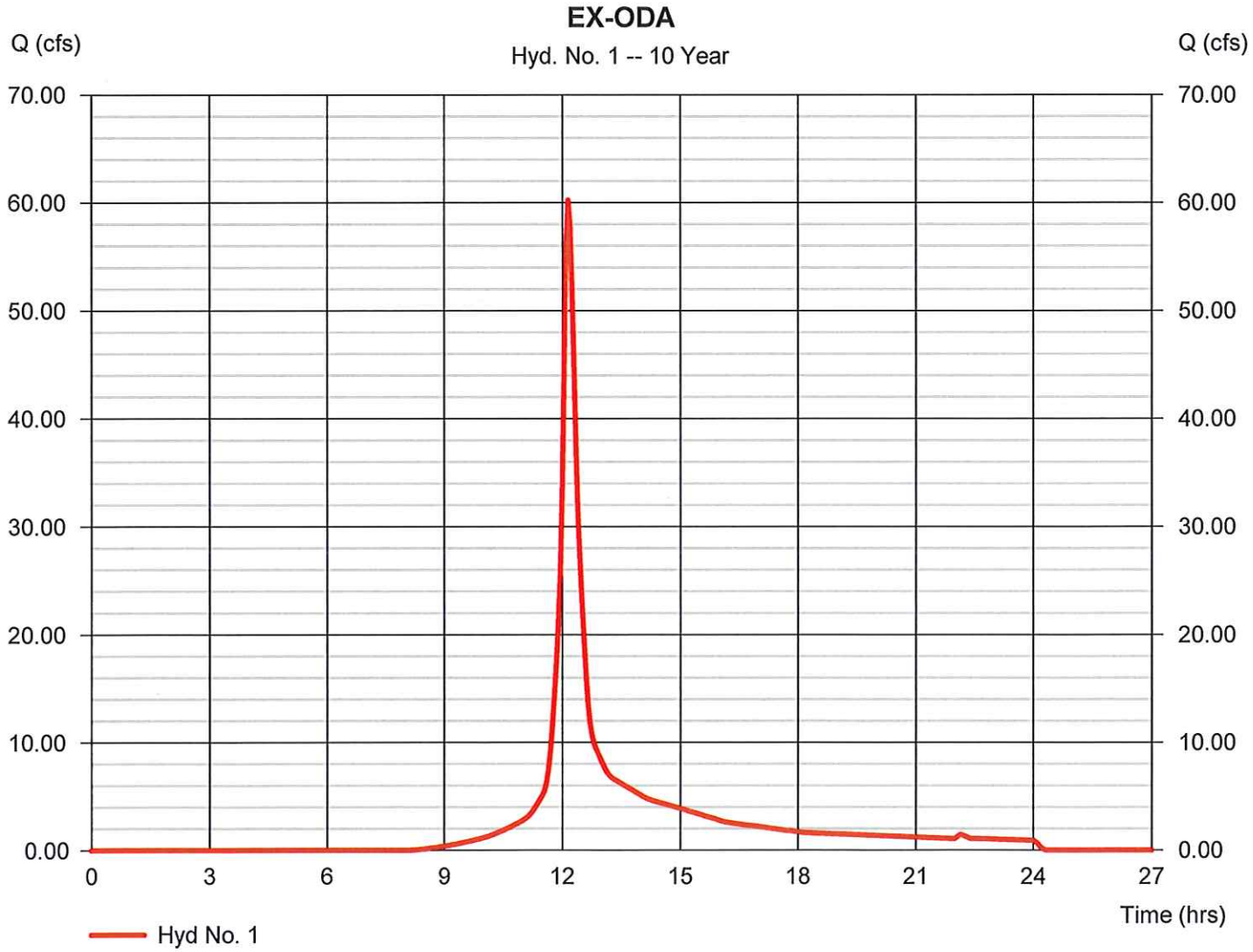
Hydrograph Report

Hyd. No. 1

EX-ODA

Hydrograph type	= SCS Runoff	Peak discharge	= 60.28 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 237,146 cuft
Drainage area	= 24.320 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.50 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.270 x 98) + (20.050 x 74)] / 24.320



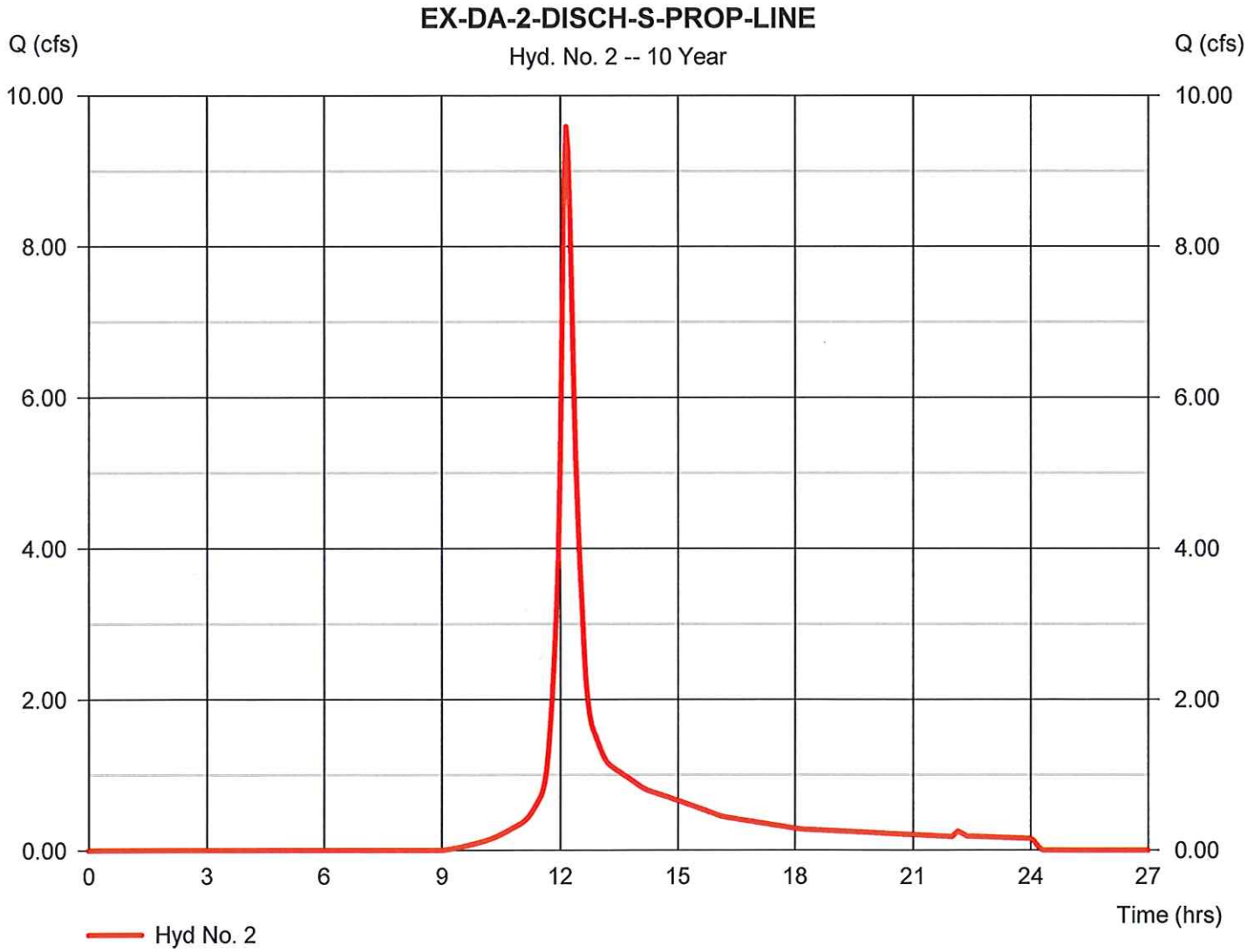
Hydrograph Report

Hyd. No. 2

EX-DA-2-DISCH-S-PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 9.587 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 37,975 cuft
Drainage area	= 4.470 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.70 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.470 x 74)] / 4.470



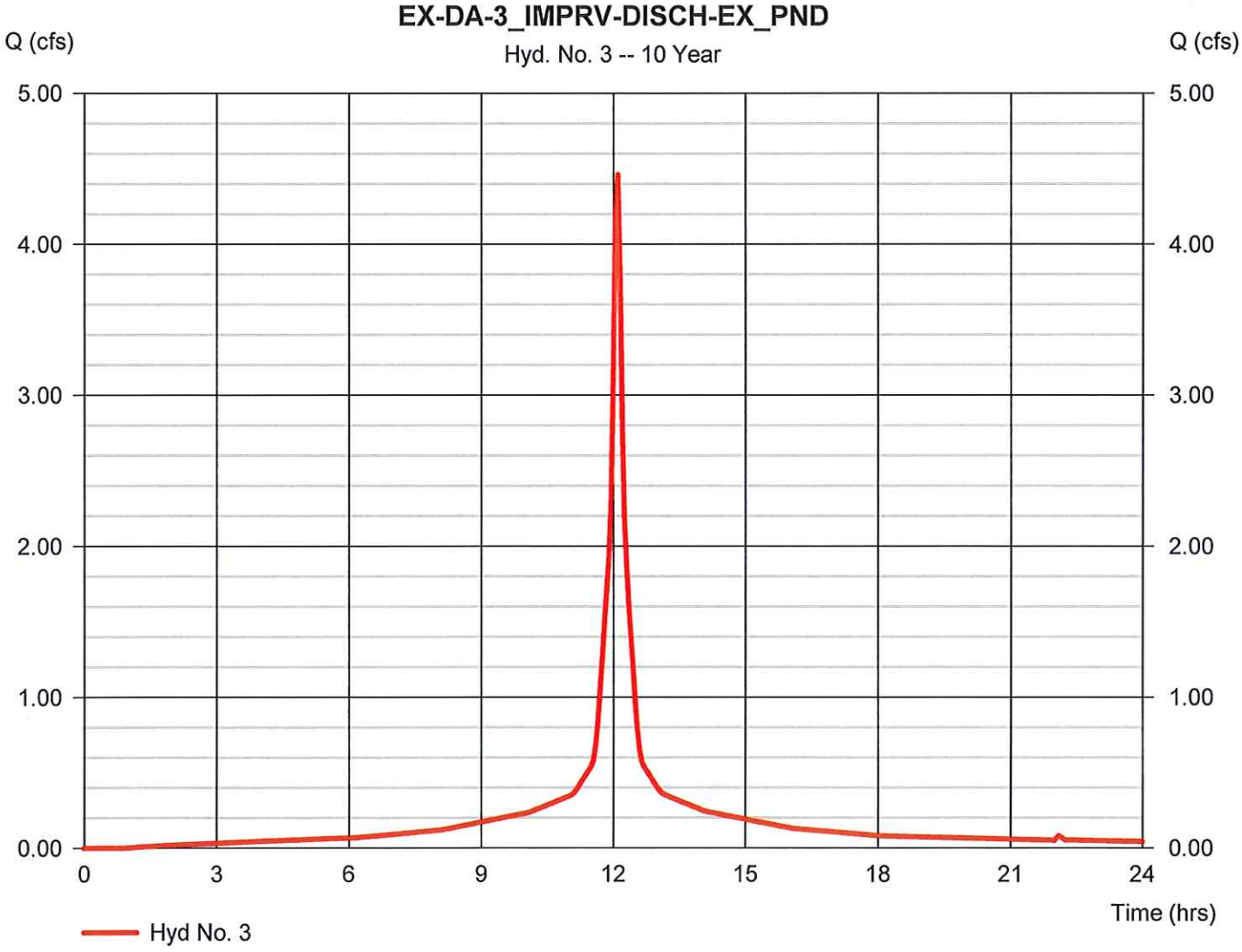
Hydrograph Report

Hyd. No. 3

EX-DA-3_IMPRV-DISCH-EX_PND

Hydrograph type	= SCS Runoff	Peak discharge	= 4.461 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 17,074 cuft
Drainage area	= 1.060 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.060 x 98)] / 1.060



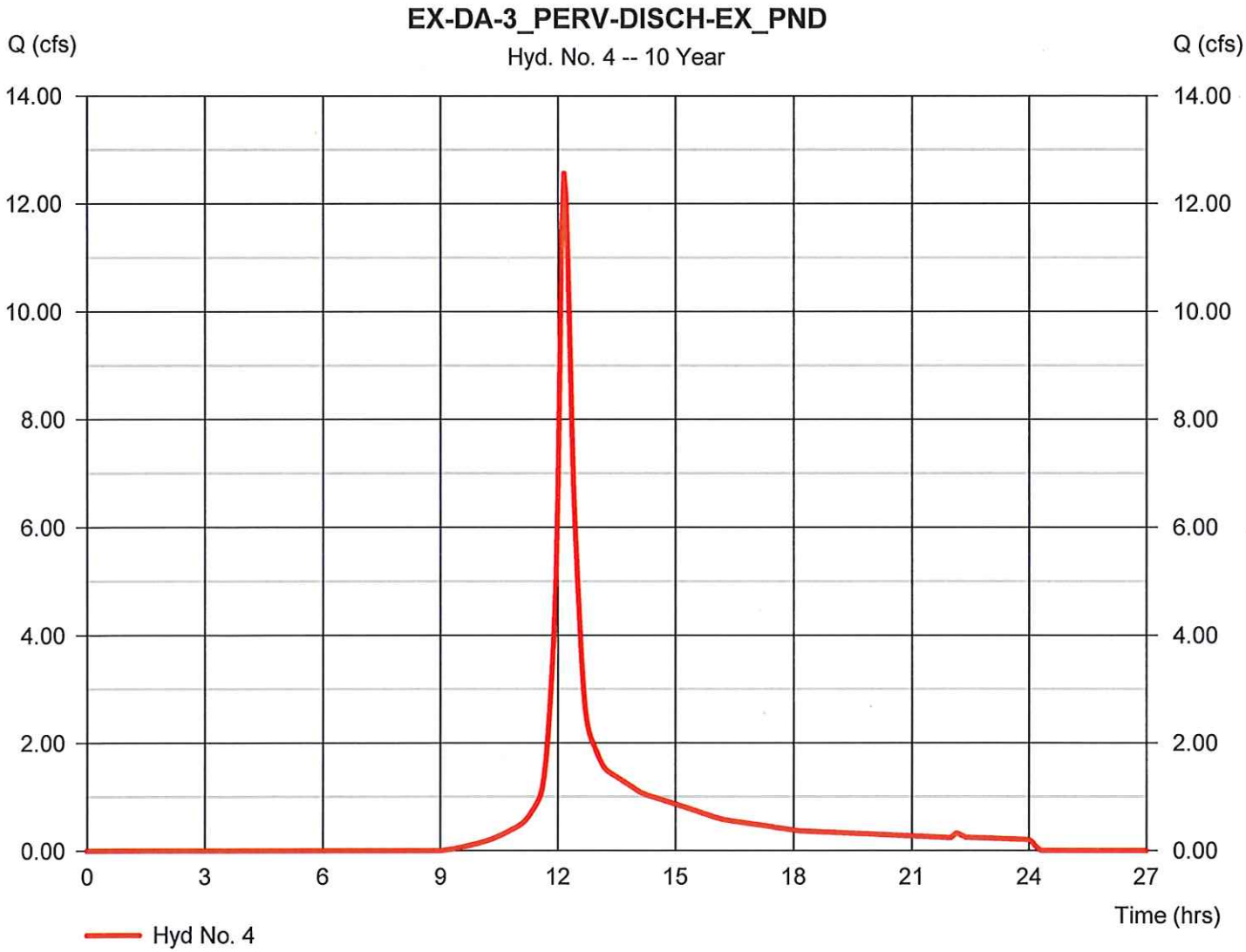
Hydrograph Report

Hyd. No. 4

EX-DA-3_PERV-DISCH-EX_PND

Hydrograph type	= SCS Runoff	Peak discharge	= 12.57 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 49,783 cuft
Drainage area	= 5.860 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.50 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.860 x 74)] / 5.860

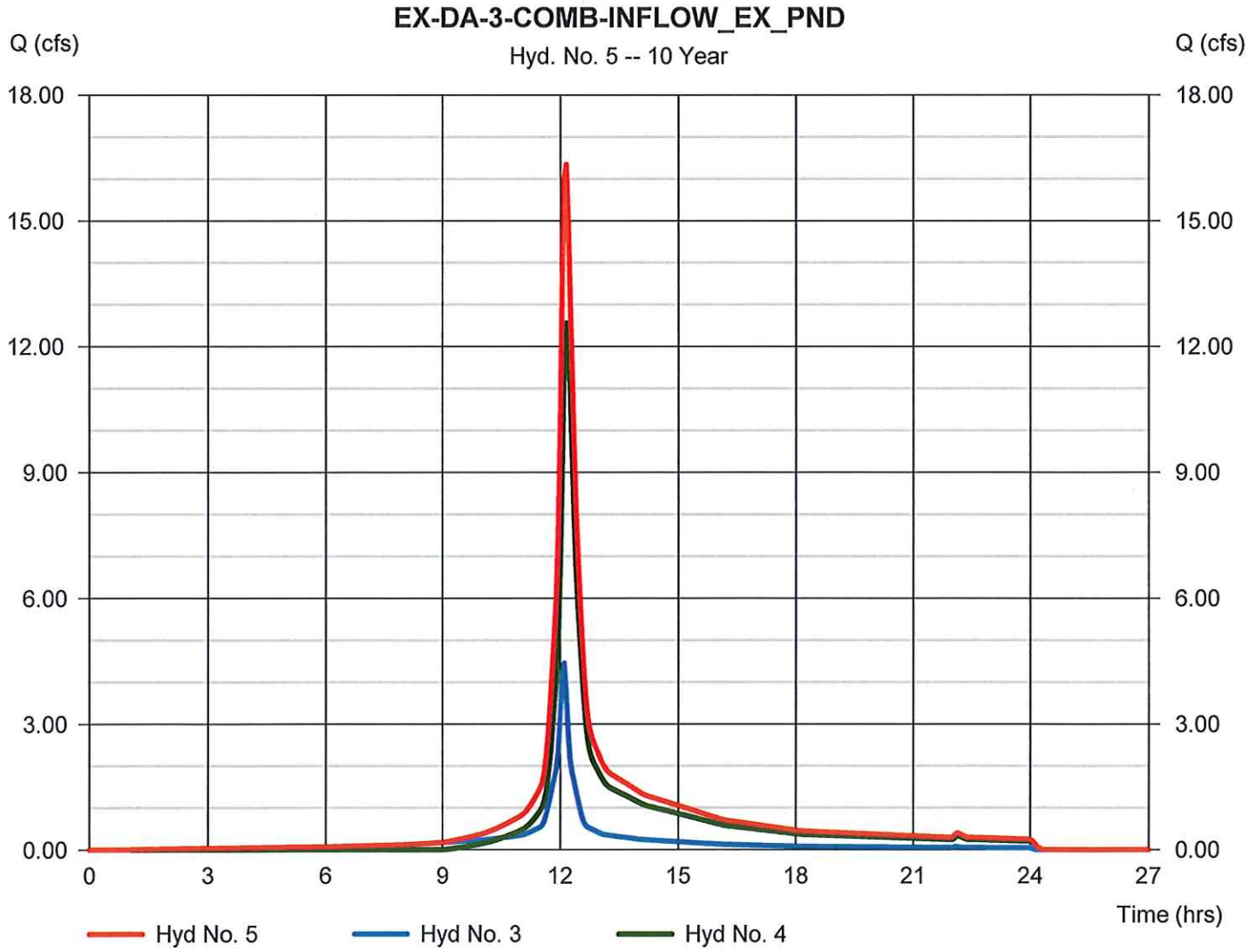


Hydrograph Report

Hyd. No. 5

EX-DA-3-COMB-INFLOW_EX_PND

Hydrograph type	= Combine	Peak discharge	= 16.34 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 66,858 cuft
Inflow hyds.	= 3, 4	Contrib. drain. area	= 6.920 ac



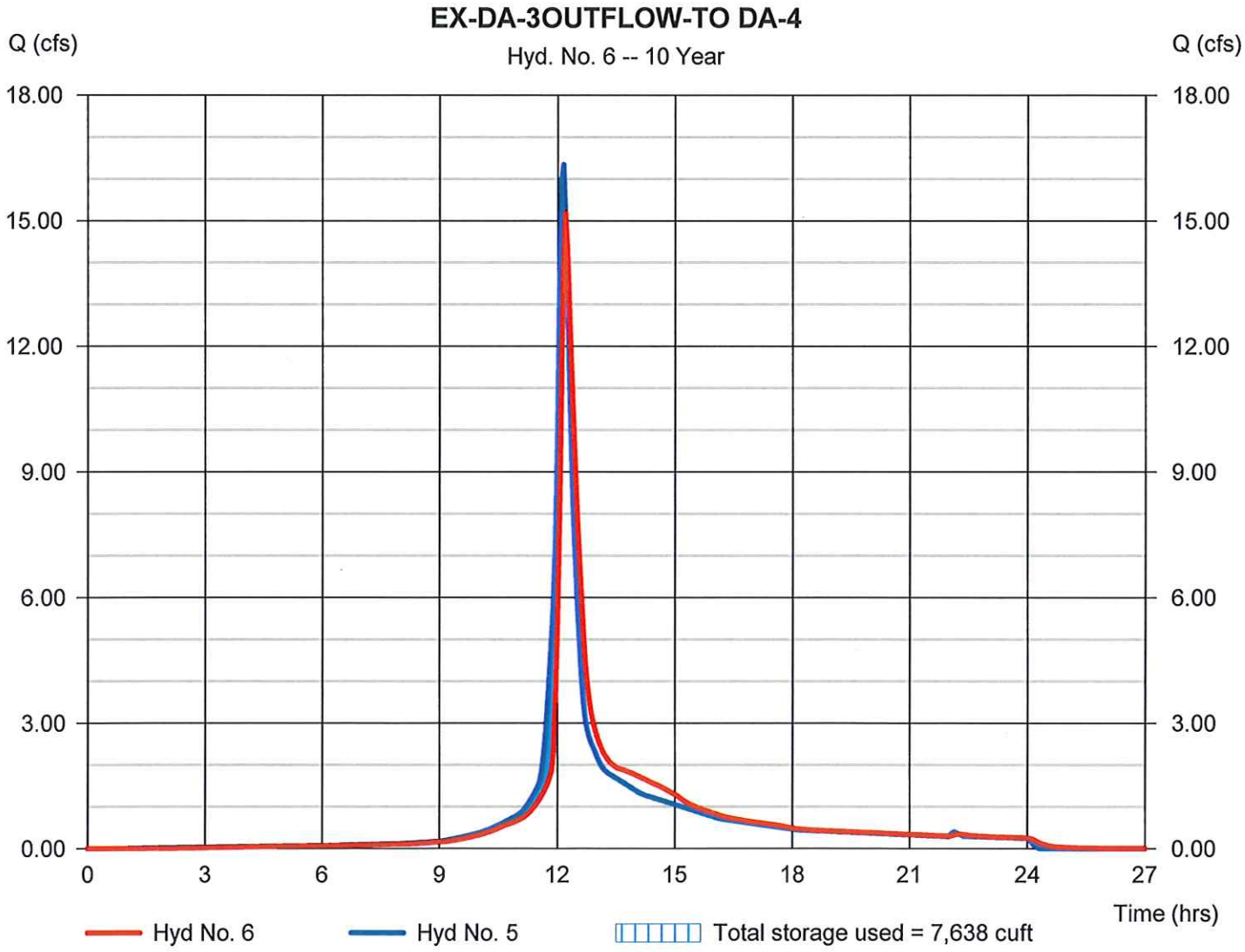
Hydrograph Report

Hyd. No. 6

EX-DA-3OUTFLOW-TO DA-4

Hydrograph type	= Reservoir	Peak discharge	= 15.19 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 66,853 cuft
Inflow hyd. No.	= 5 - EX-DA-3-COMB-INFLOW-EX_PND	Max. Elevation	= 96.13 ft
Reservoir name	= Ex-PND-A-EX-DA-3	Max. Storage	= 7,638 cuft

Storage Indication method used.



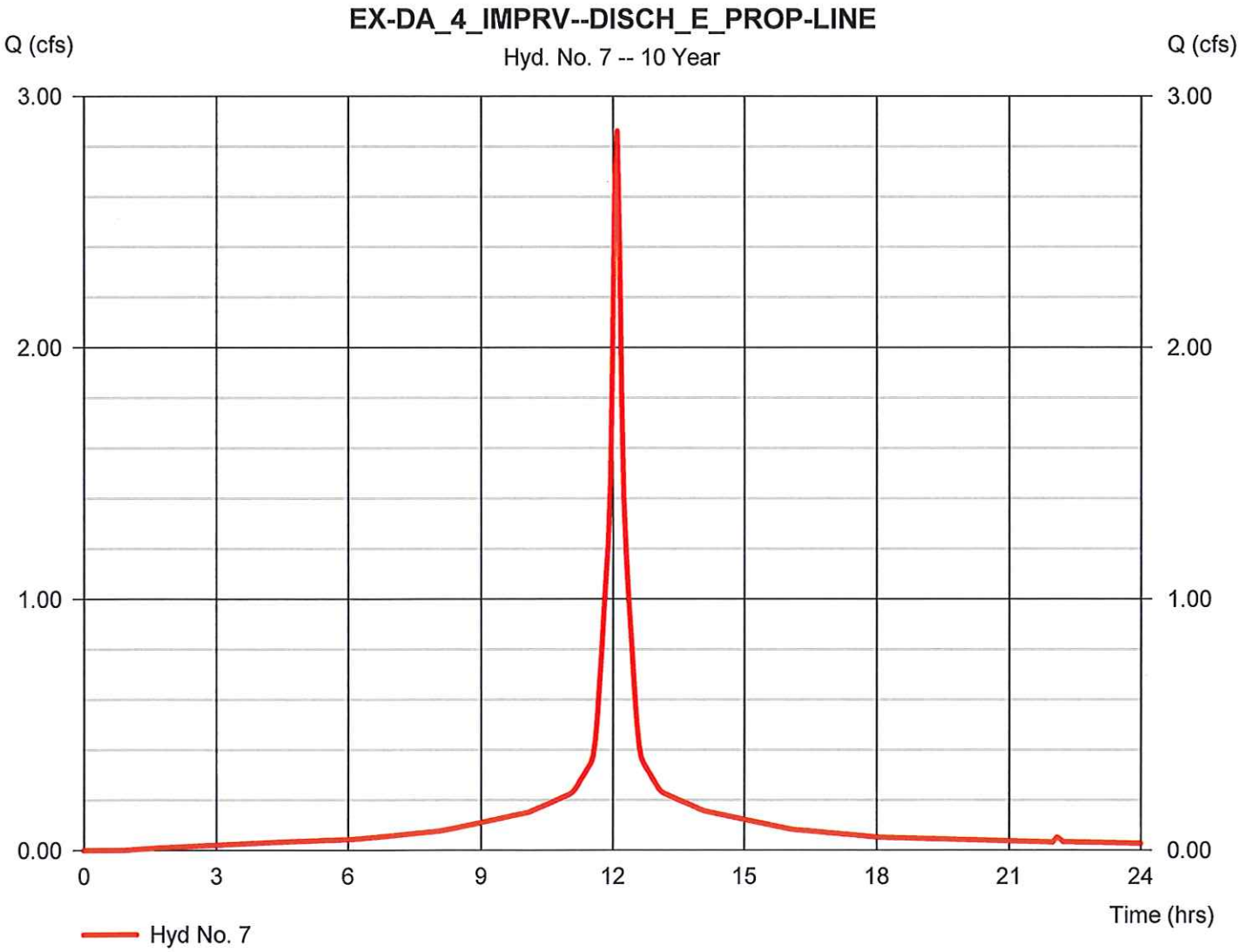
Hydrograph Report

Hyd. No. 7

EX-DA_4_IMPRV--DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 2.862 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 10,953 cuft
Drainage area	= 0.680 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.680 x 98)] / 0.680



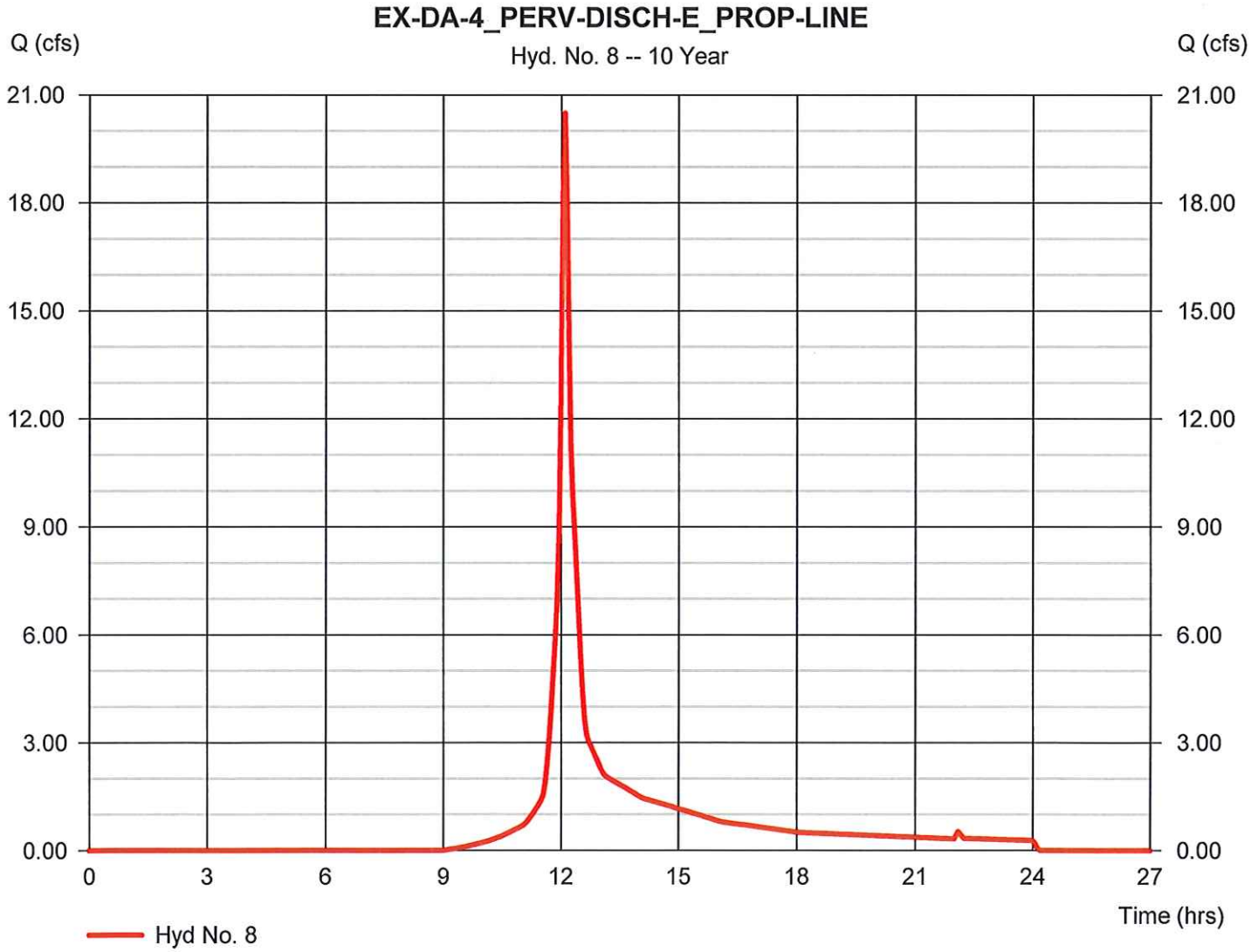
Hydrograph Report

Hyd. No. 8

EX-DA-4_PERV-DISCH-E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 20.50 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 68,415 cuft
Drainage area	= 8.590 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.70 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(8.590 x 74)] / 8.590

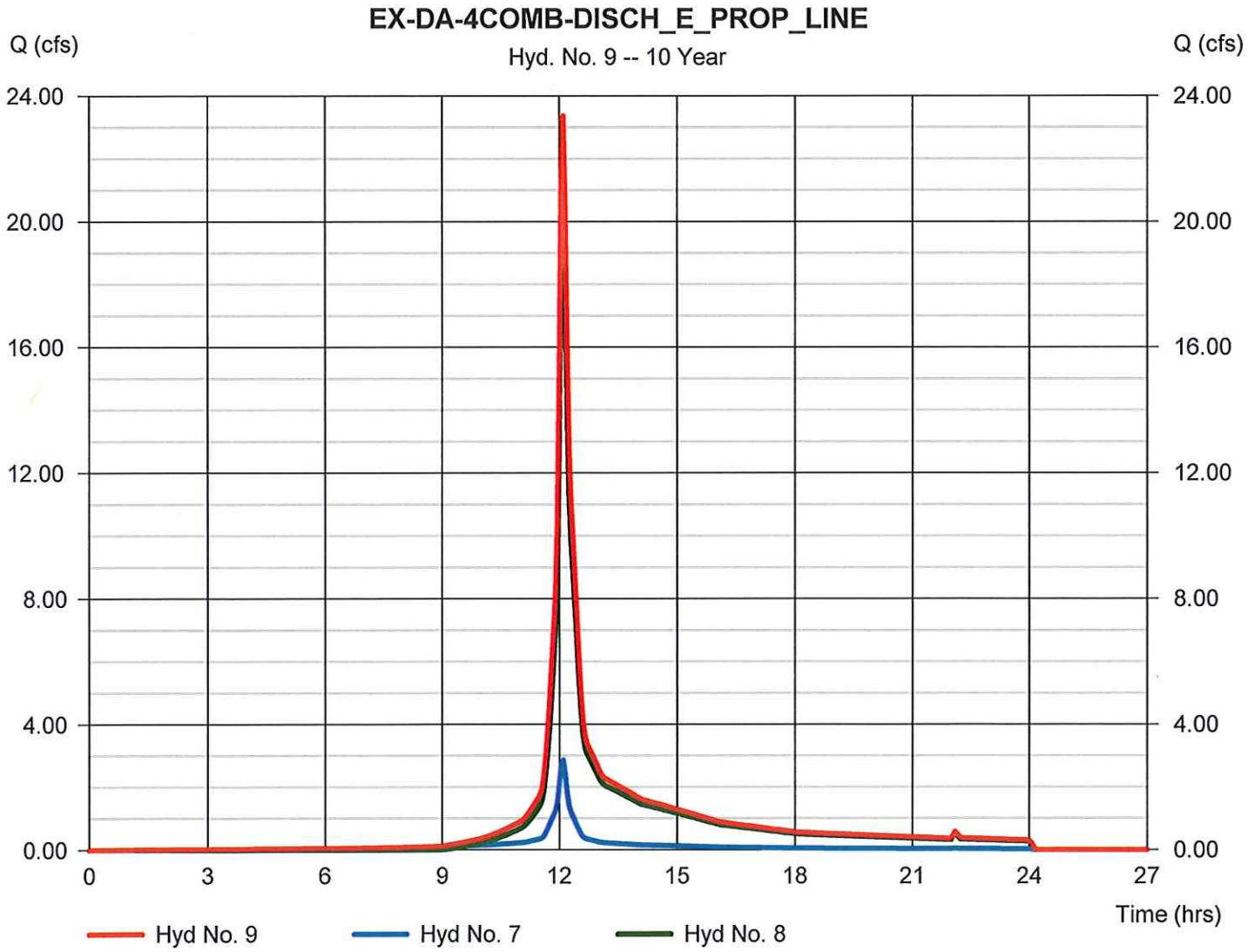


Hydrograph Report

Hyd. No. 9

EX-DA-4COMB-DISCH_E_PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 23.36 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 79,368 cuft
Inflow hyds.	= 7, 8	Contrib. drain. area	= 9.270 ac

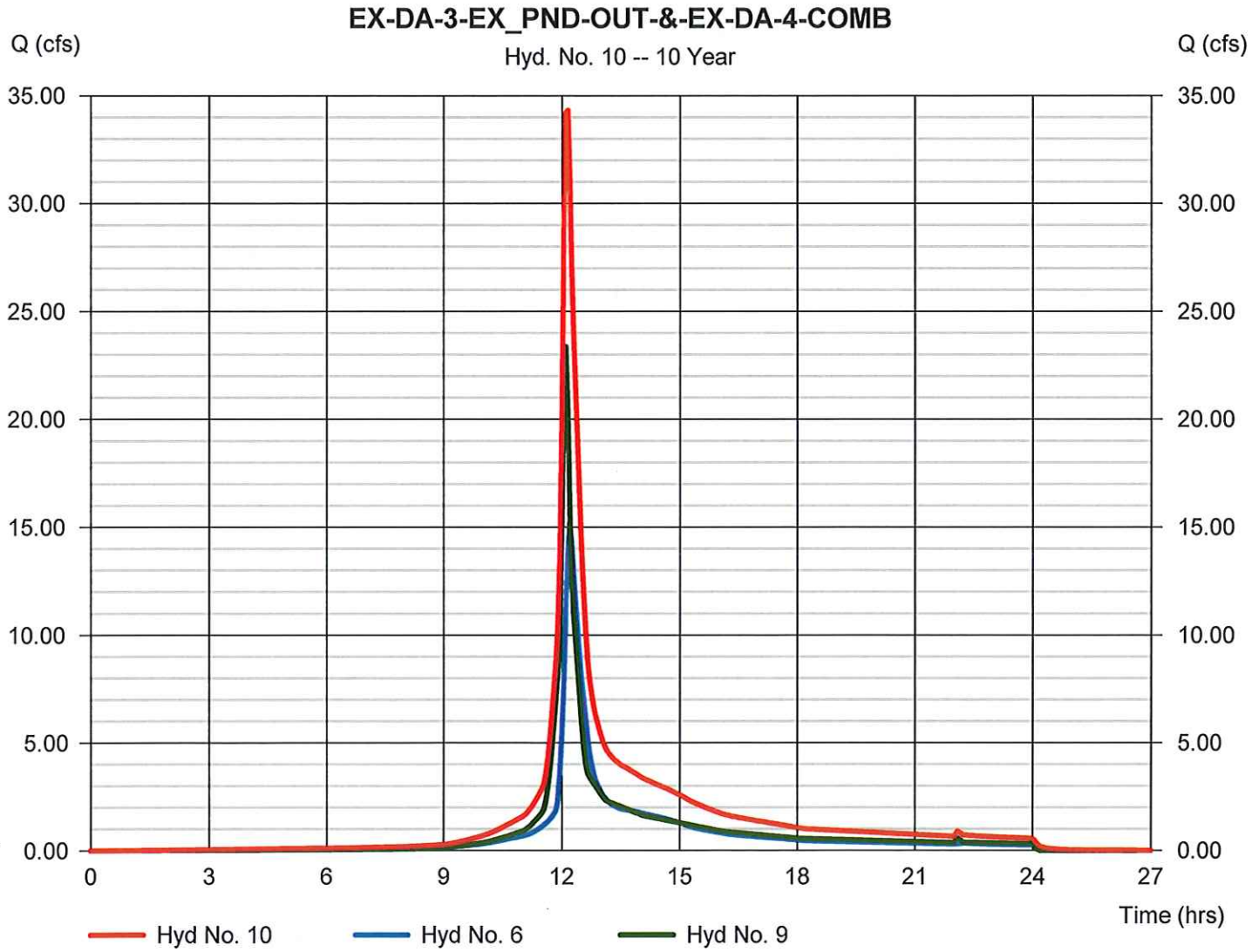


Hydrograph Report

Hyd. No. 10

EX-DA-3-EX_PND-OUT-&-EX-DA-4-COMB

Hydrograph type	= Combine	Peak discharge	= 34.32 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 146,221 cuft
Inflow hyds.	= 6, 9	Contrib. drain. area	= 0.000 ac



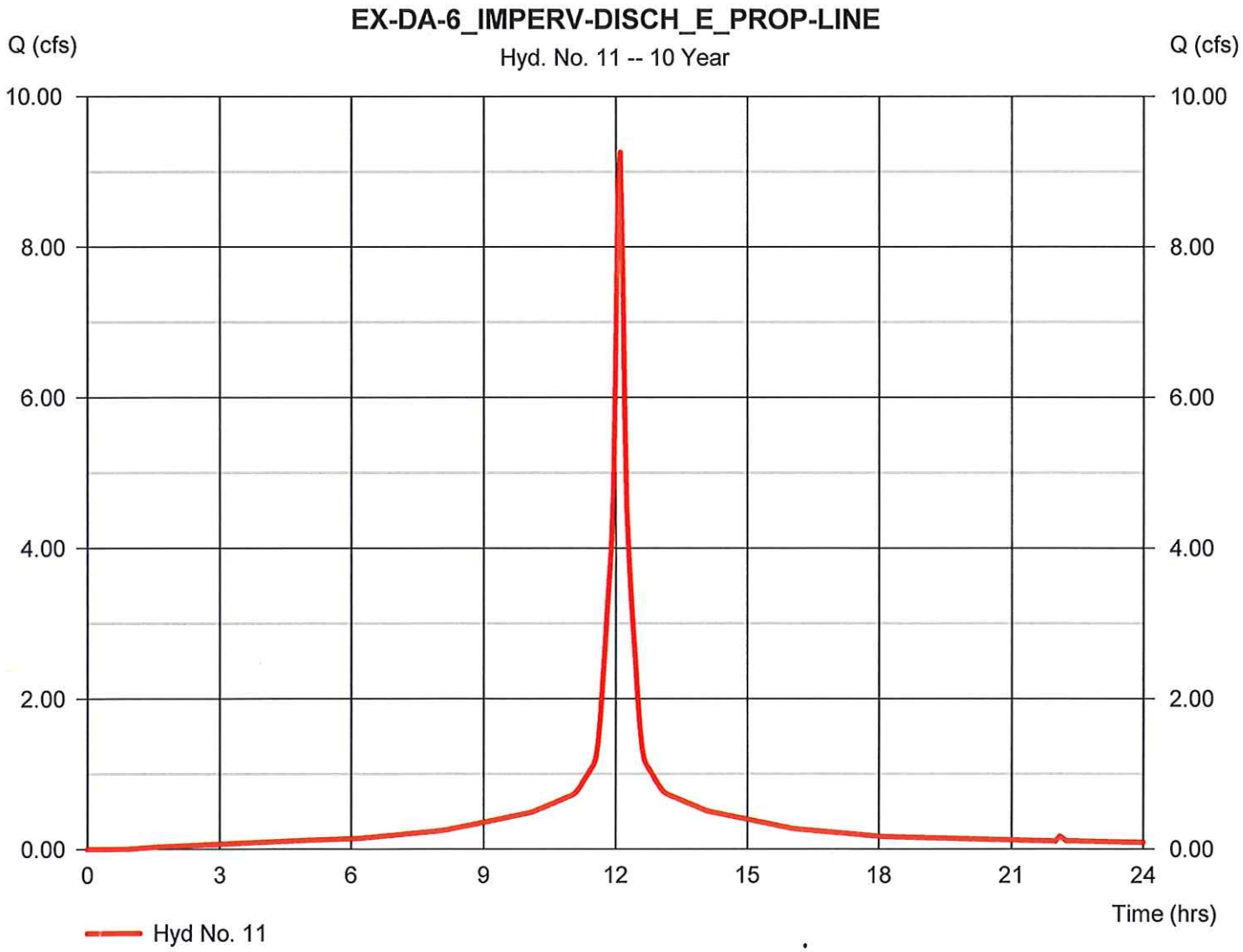
Hydrograph Report

Hyd. No. 11

EX-DA-6_IMPERV-DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 9.259 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 35,437 cuft
Drainage area	= 2.200 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.200 x 98)] / 2.200



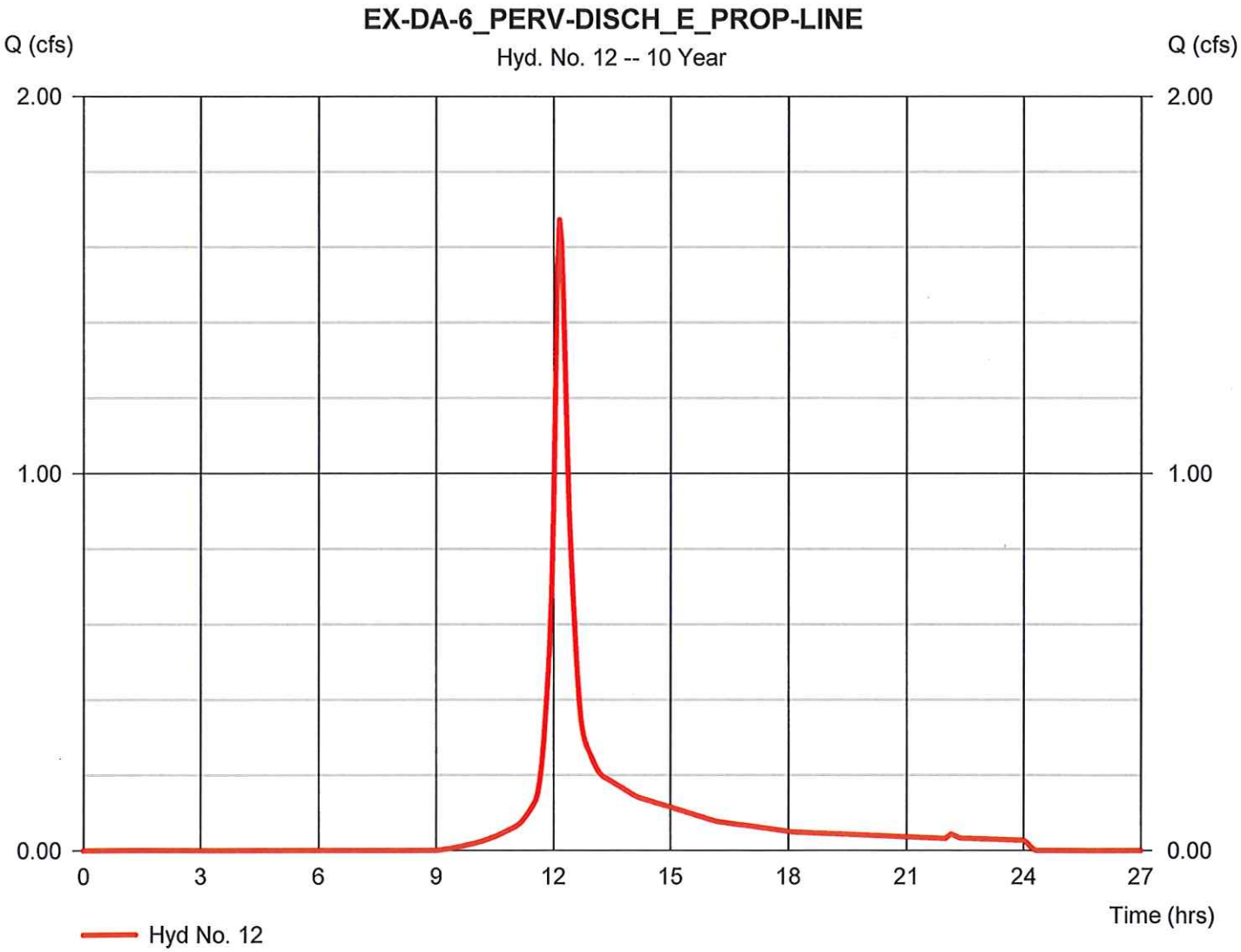
Hydrograph Report

Hyd. No. 12

EX-DA-6_PERV-DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 1.673 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 6,626 cuft
Drainage area	= 0.780 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.90 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.780 x 74)] / 0.780

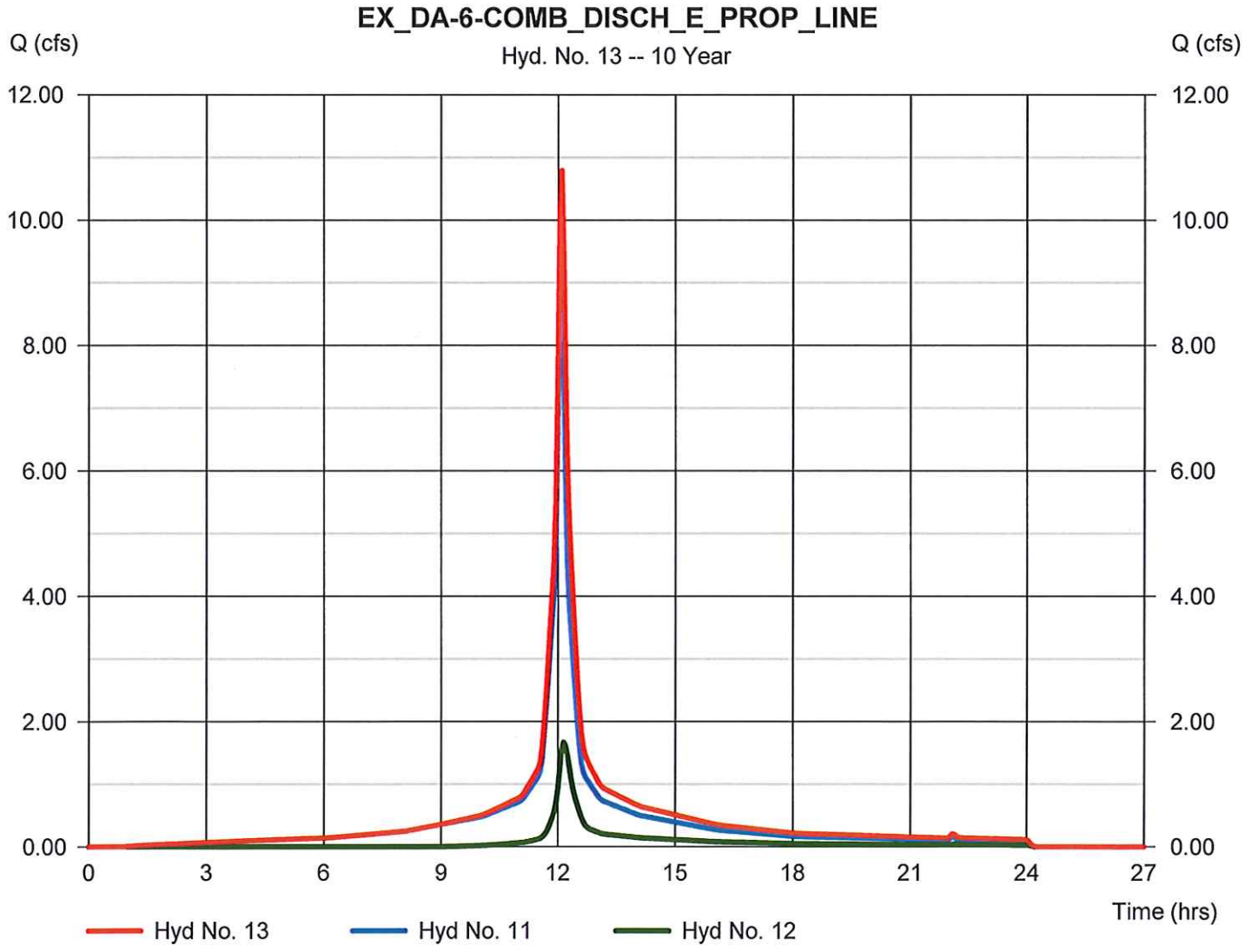


Hydrograph Report

Hyd. No. 13

EX_DA-6-COMB_DISCH_E_PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 10.79 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 42,063 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 2.980 ac

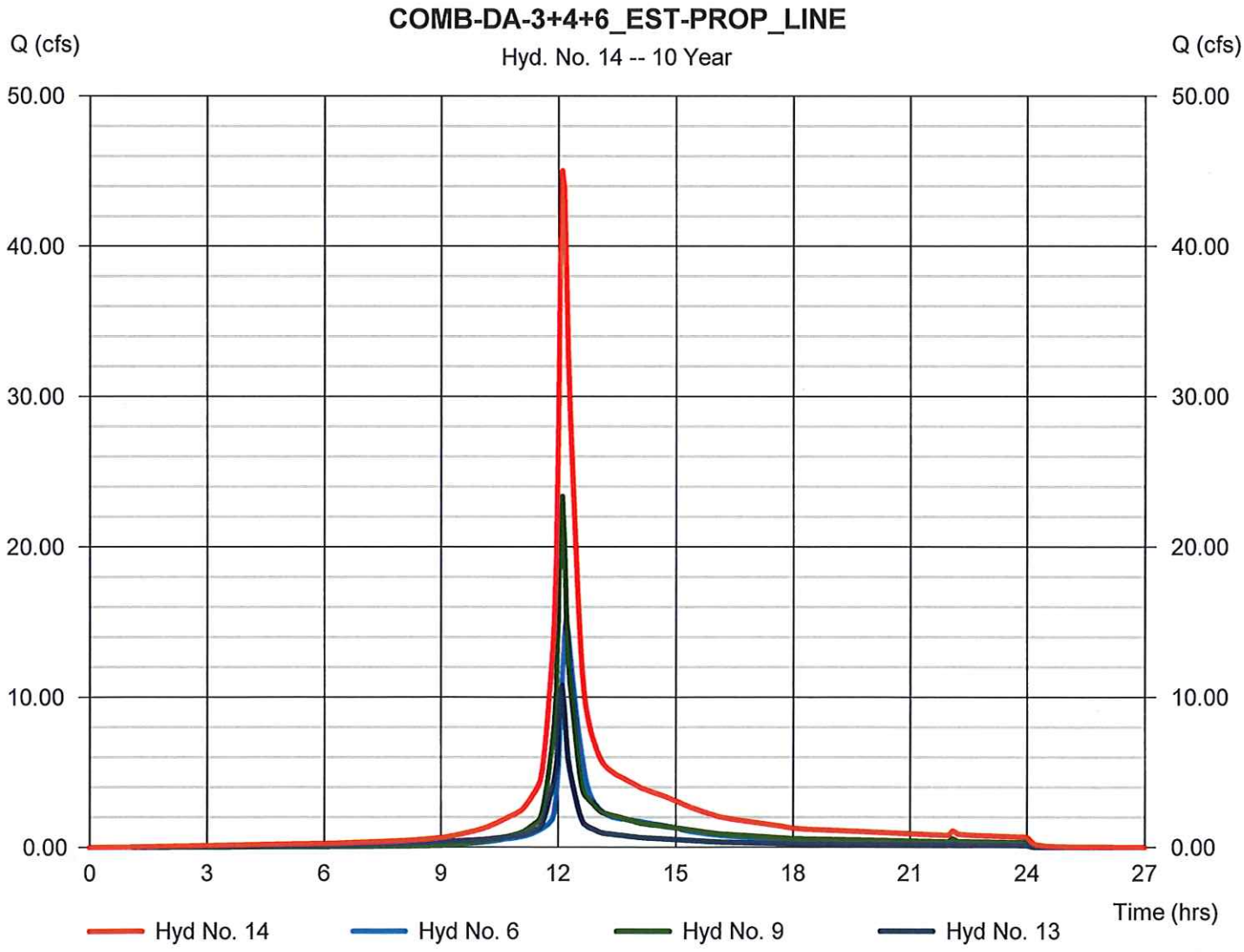


Hydrograph Report

Hyd. No. 14

COMB-DA-3+4+6_EST-PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 45.02 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 188,285 cuft
Inflow hyds.	= 6, 9, 13	Contrib. drain. area	= 0.000 ac



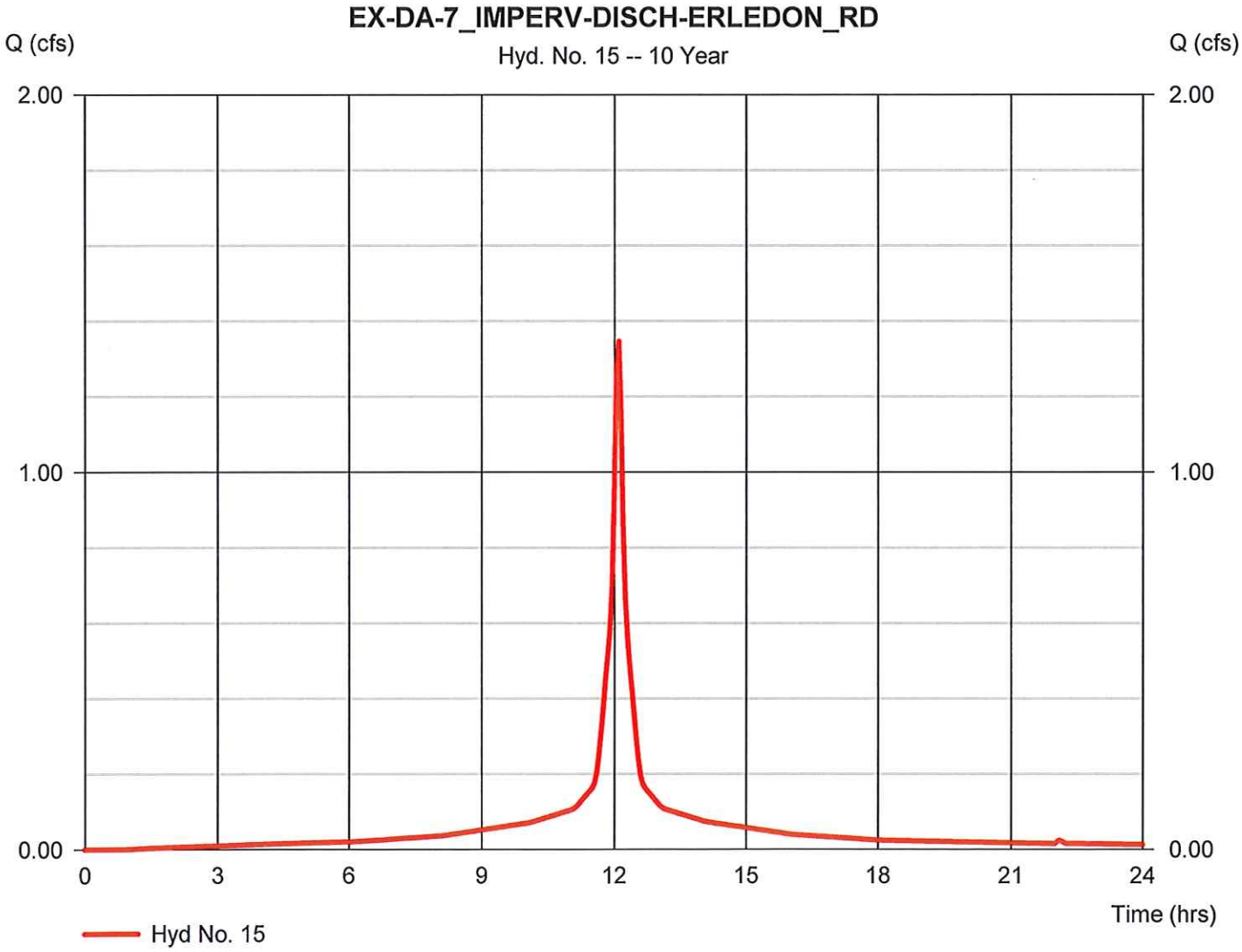
Hydrograph Report

Hyd. No. 15

EX-DA-7_IMPERV-DISCH-ERLEDON_RD

Hydrograph type	= SCS Runoff	Peak discharge	= 1.347 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 5,154 cuft
Drainage area	= 0.320 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.320 x 98)] / 0.320



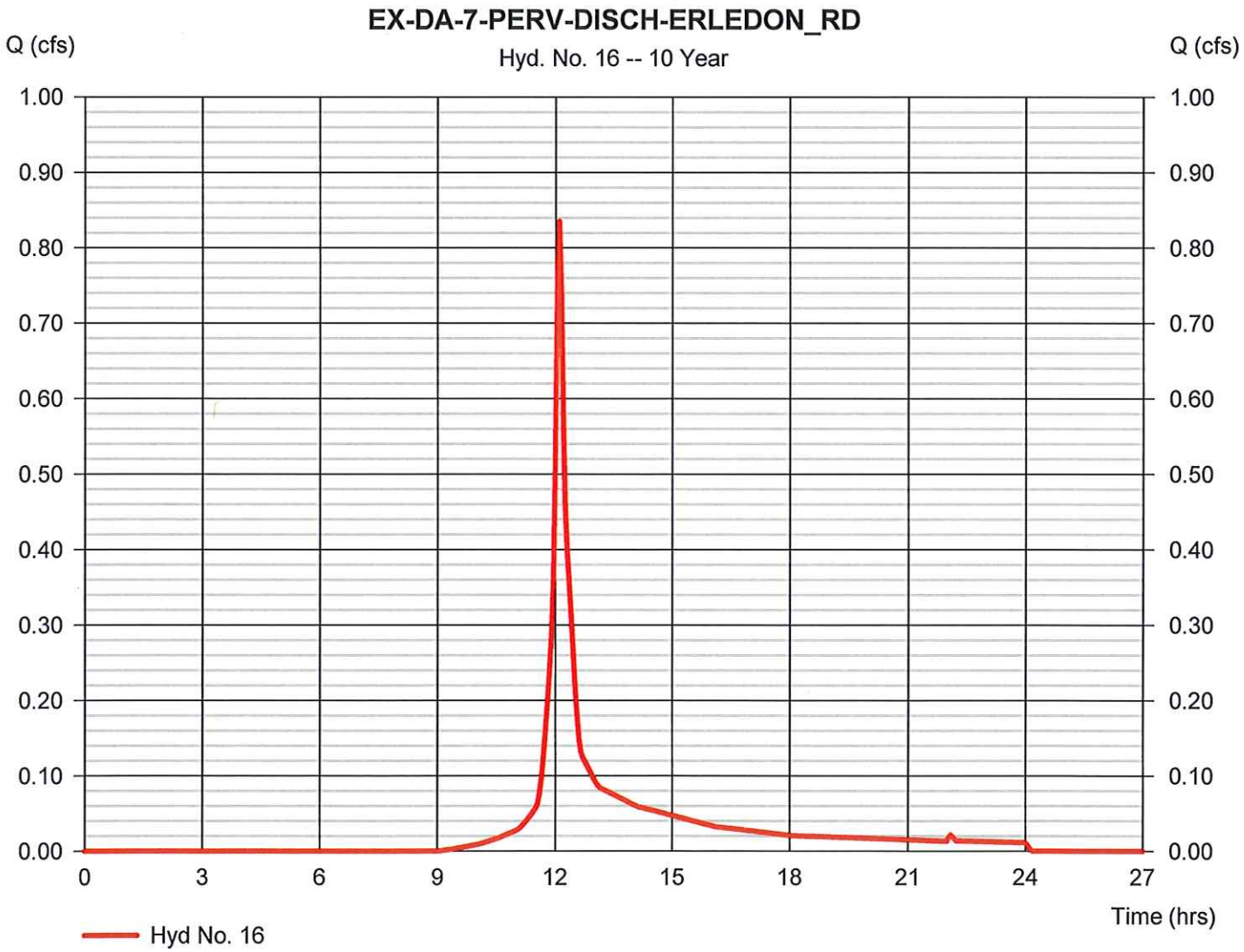
Hydrograph Report

Hyd. No. 16

EX-DA-7-PERV-DISCH-ERLEDON_RD

Hydrograph type	= SCS Runoff	Peak discharge	= 0.835 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 2,788 cuft
Drainage area	= 0.350 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.350 x 74)] / 0.350

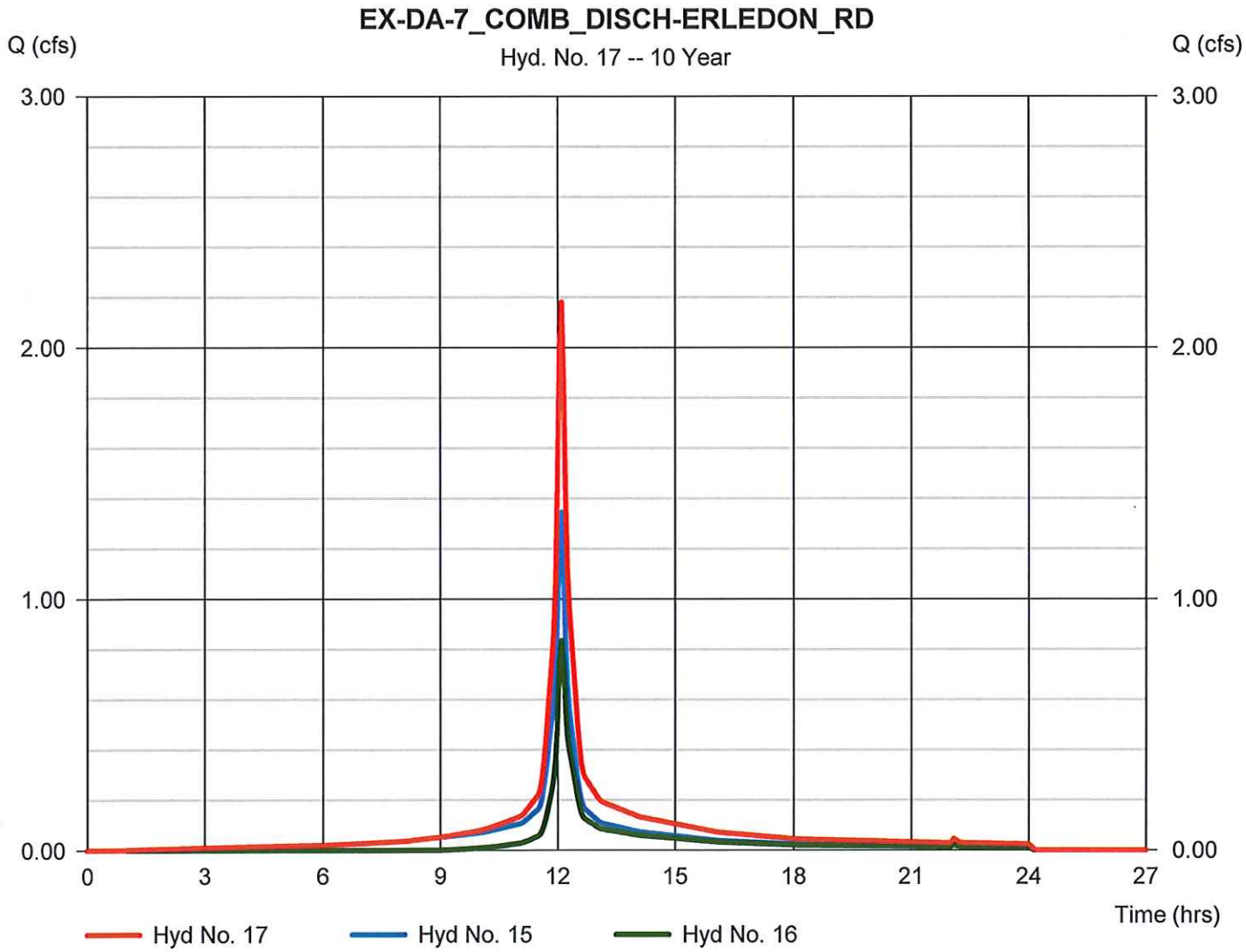


Hydrograph Report

Hyd. No. 17

EX-DA-7_COMB_DISCH-ERLEDON_RD

Hydrograph type	= Combine	Peak discharge	= 2.182 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 7,942 cuft
Inflow hyds.	= 15, 16	Contrib. drain. area	= 0.670 ac

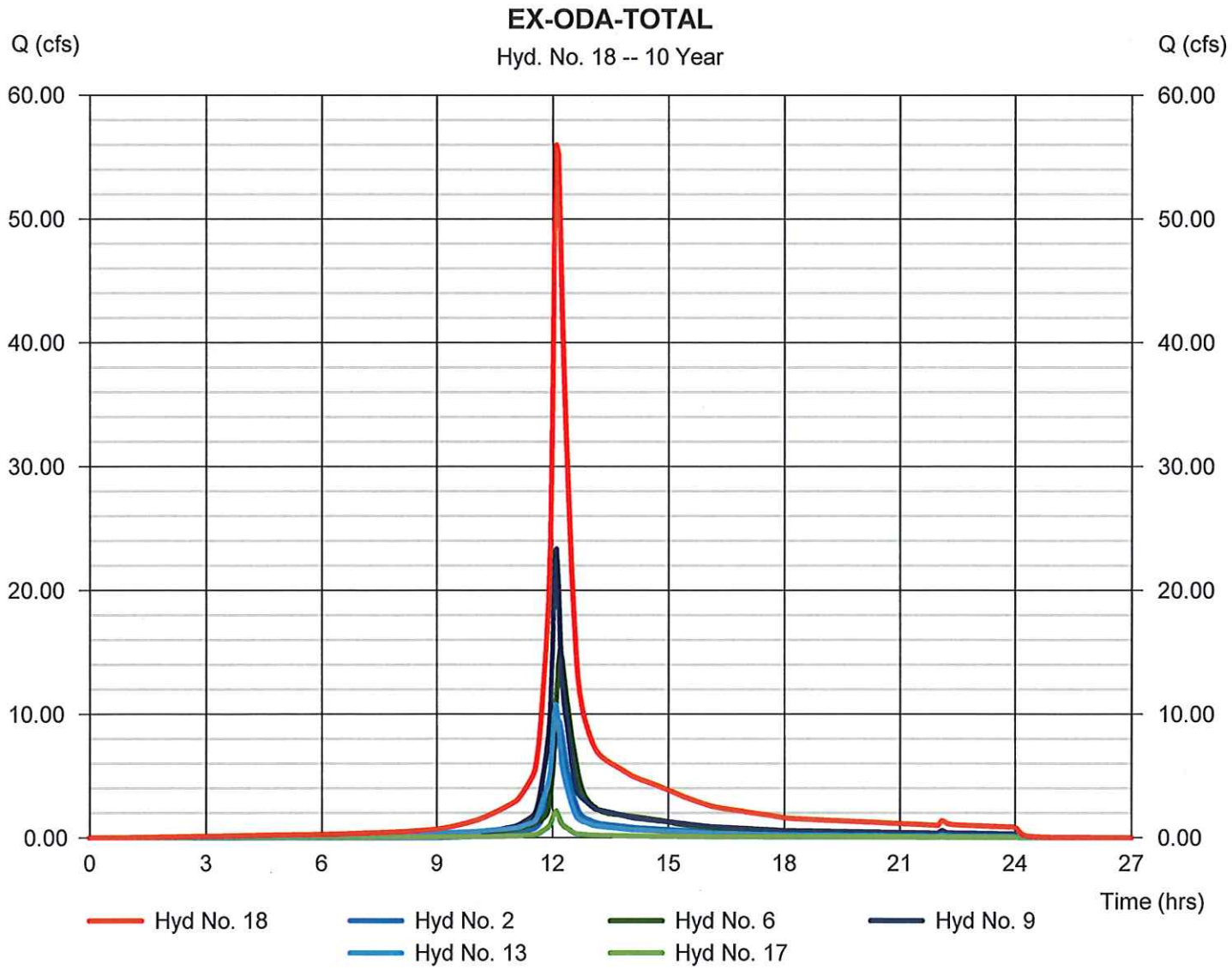


Hydrograph Report

Hyd. No. 18

EX-ODA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 56.00 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 234,201 cuft
Inflow hyds.	= 2, 6, 9, 13, 17	Contrib. drain. area	= 4.470 ac



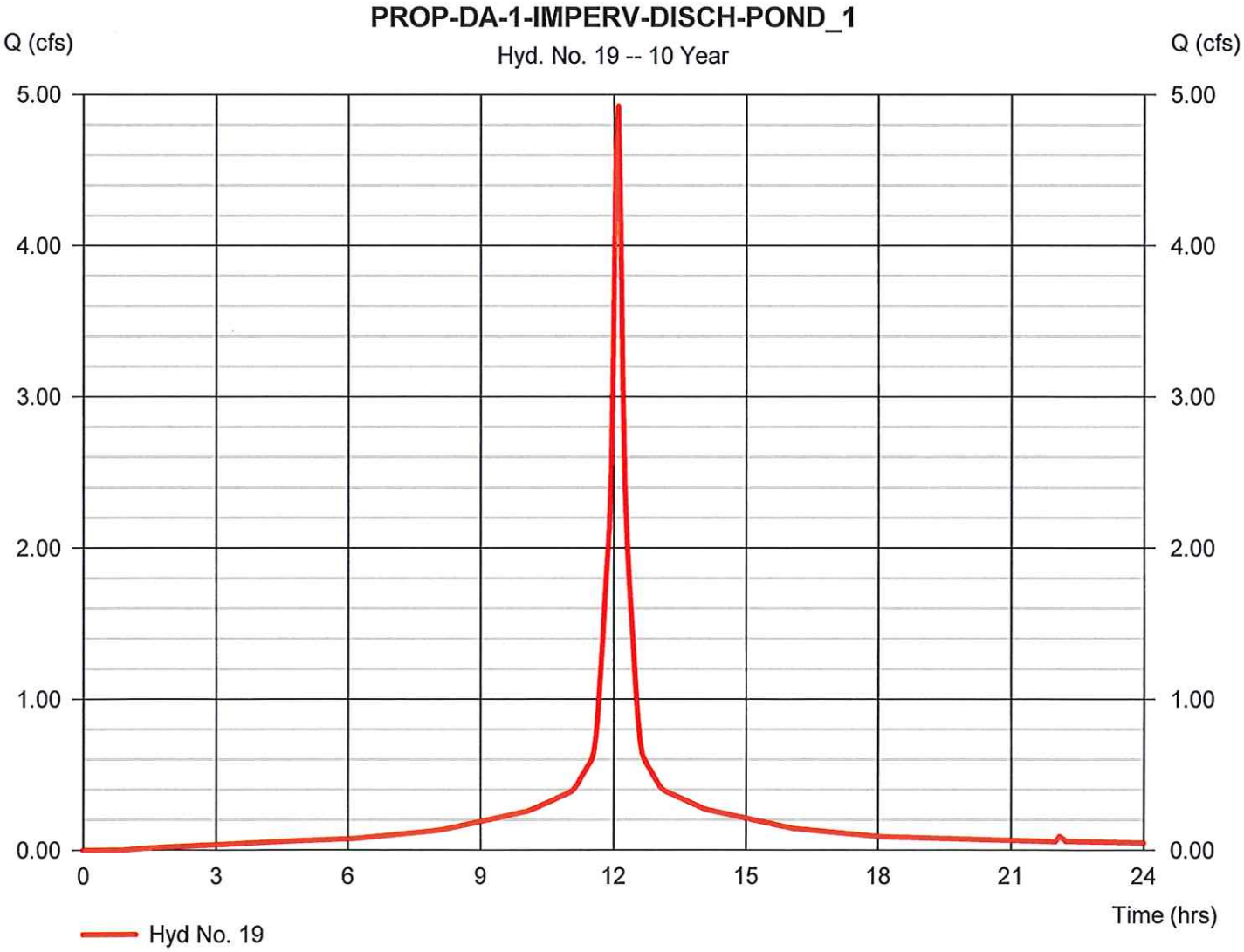
Hydrograph Report

Hyd. No. 19

PROP-DA-1-IMPERV-DISCH-POND_1

Hydrograph type	= SCS Runoff	Peak discharge	= 4.924 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 18,846 cuft
Drainage area	= 1.170 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.170 x 98)] / 1.170



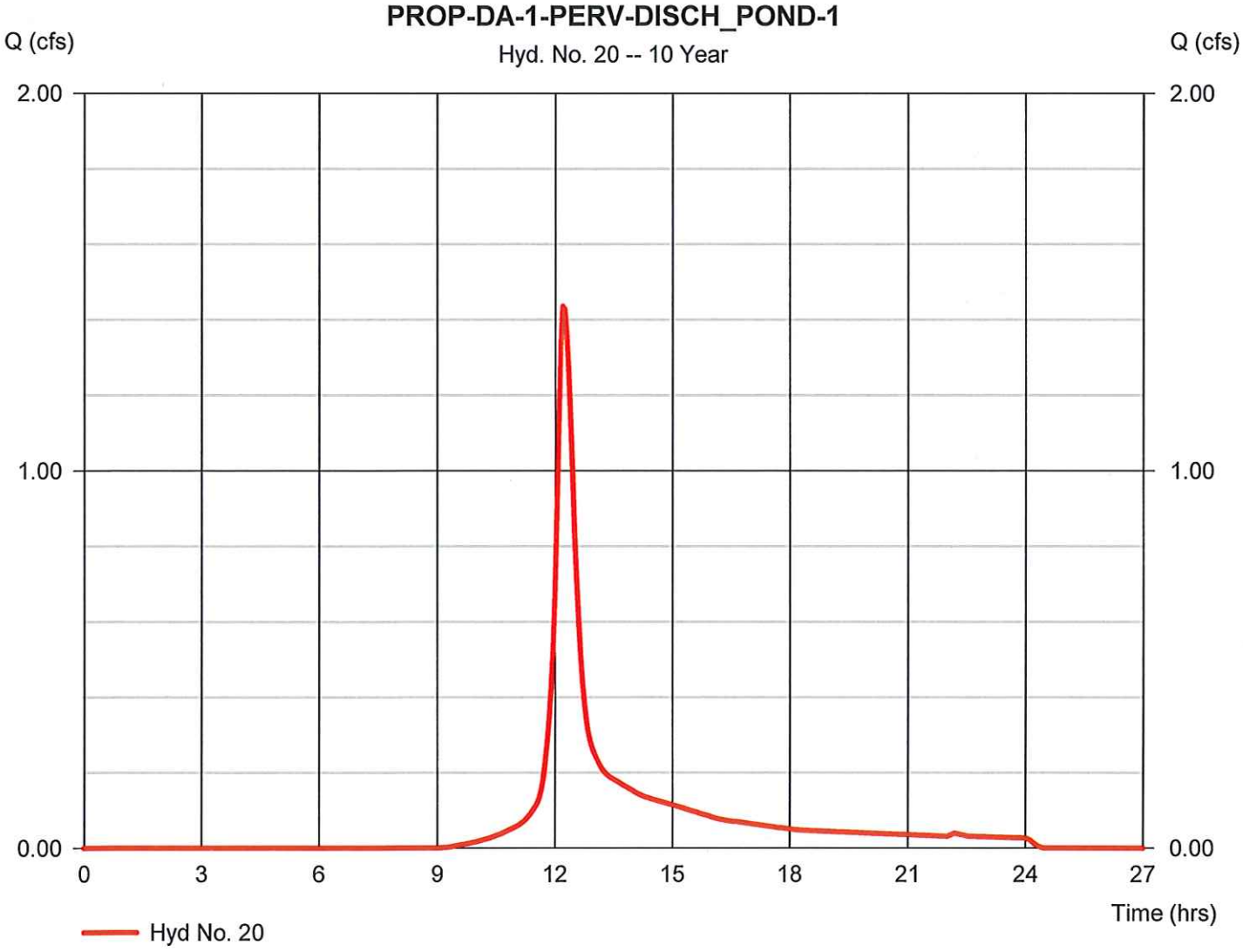
Hydrograph Report

Hyd. No. 20

PROP-DA-1-PERV-DISCH_POND-1

Hydrograph type	= SCS Runoff	Peak discharge	= 1.436 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 6,483 cuft
Drainage area	= 0.740 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.50 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.280 x 74)] / 0.740

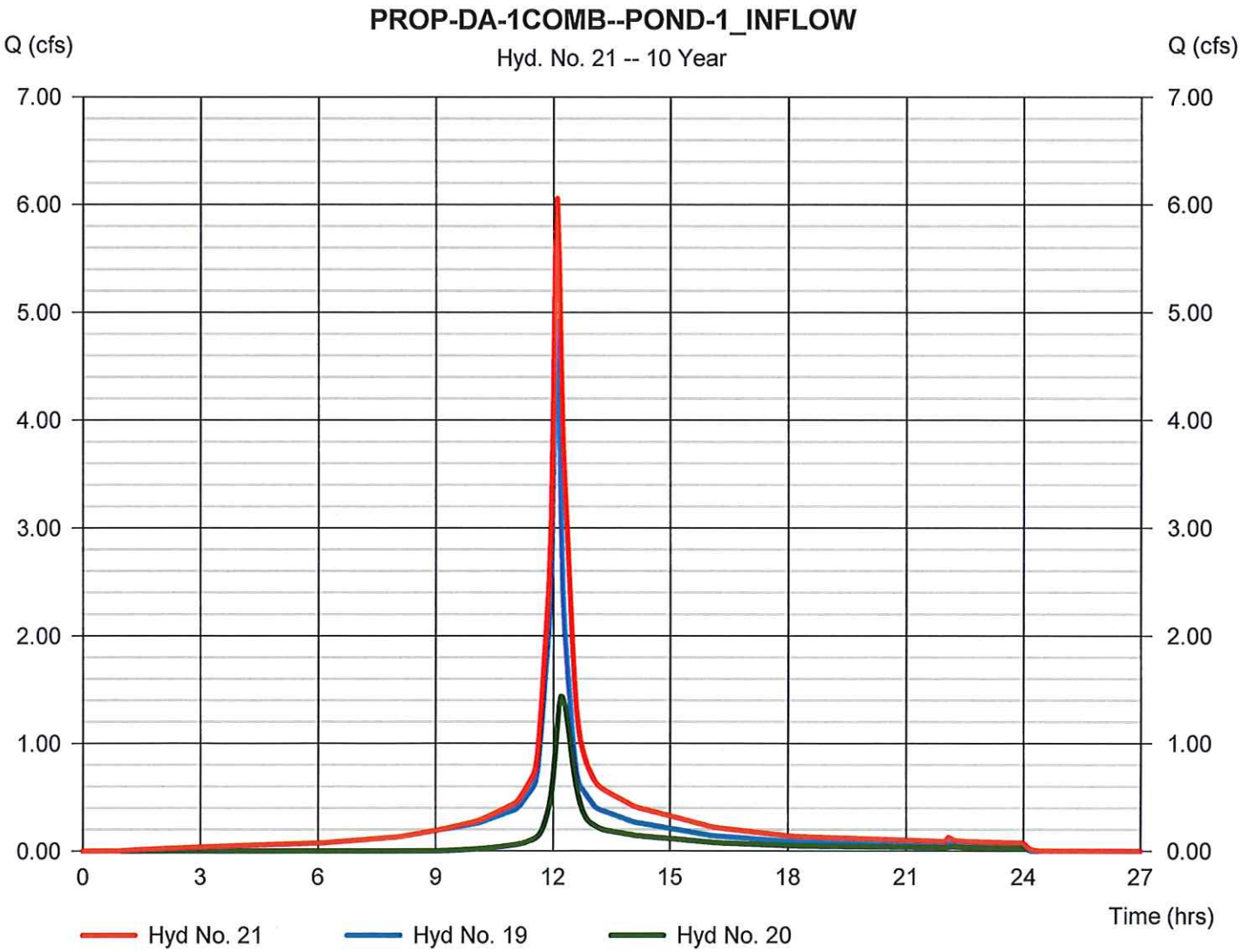


Hydrograph Report

Hyd. No. 21

PROP-DA-1COMB--POND-1_INFLOW

Hydrograph type	= Combine	Peak discharge	= 6.057 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 25,329 cuft
Inflow hyds.	= 19, 20	Contrib. drain. area	= 1.910 ac



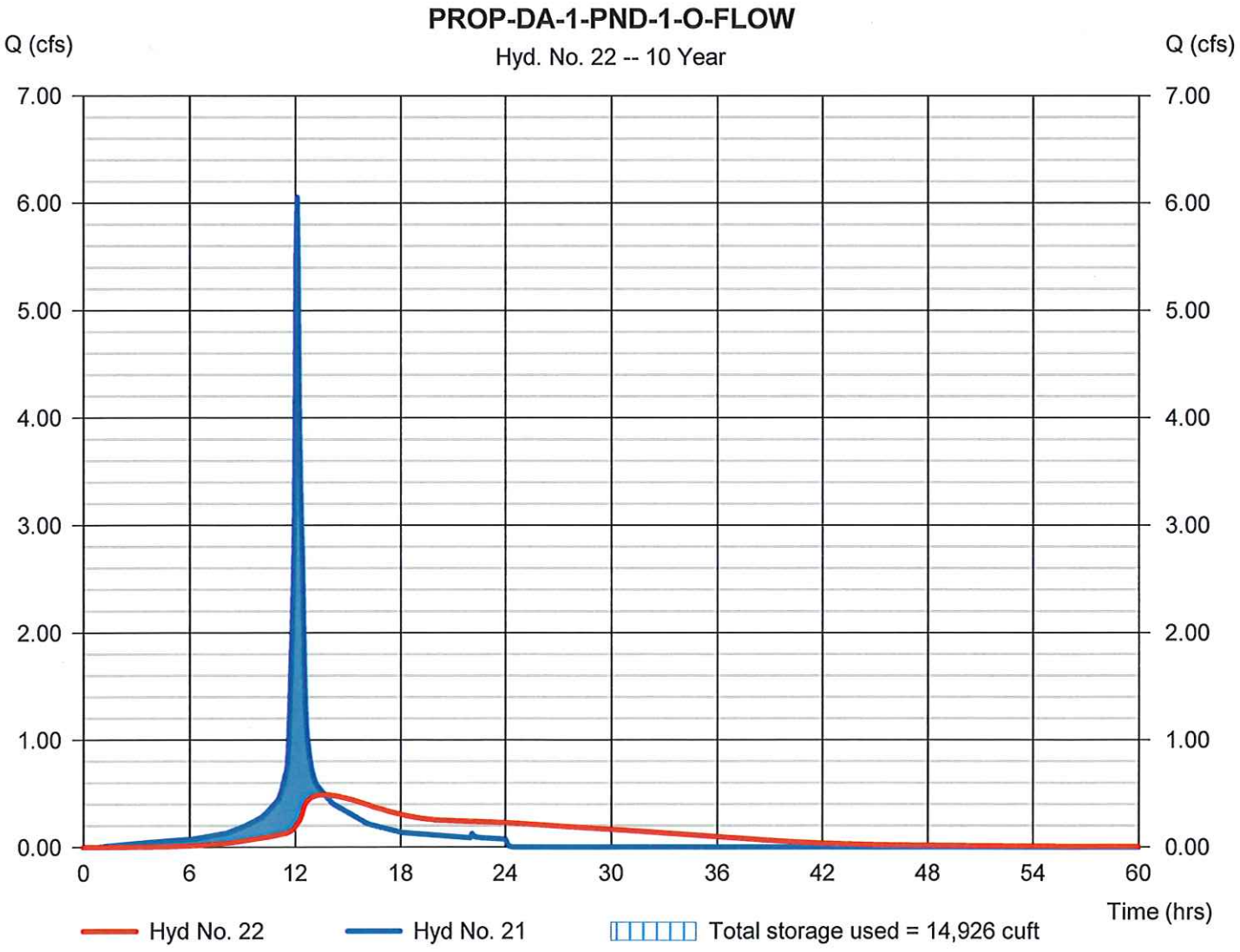
Hydrograph Report

Hyd. No. 22

PROP-DA-1-PND-1-O-FLOW

Hydrograph type	= Reservoir	Peak discharge	= 0.489 cfs
Storm frequency	= 10 yrs	Time to peak	= 13.70 hrs
Time interval	= 3 min	Hyd. volume	= 25,250 cuft
Inflow hyd. No.	= 21 - PROP-DA-1COMB--POND-1_EVLOW	Max. Elevation	= 113.58 ft
Reservoir name	= POND-1	Max. Storage	= 14,926 cuft

Storage Indication method used.



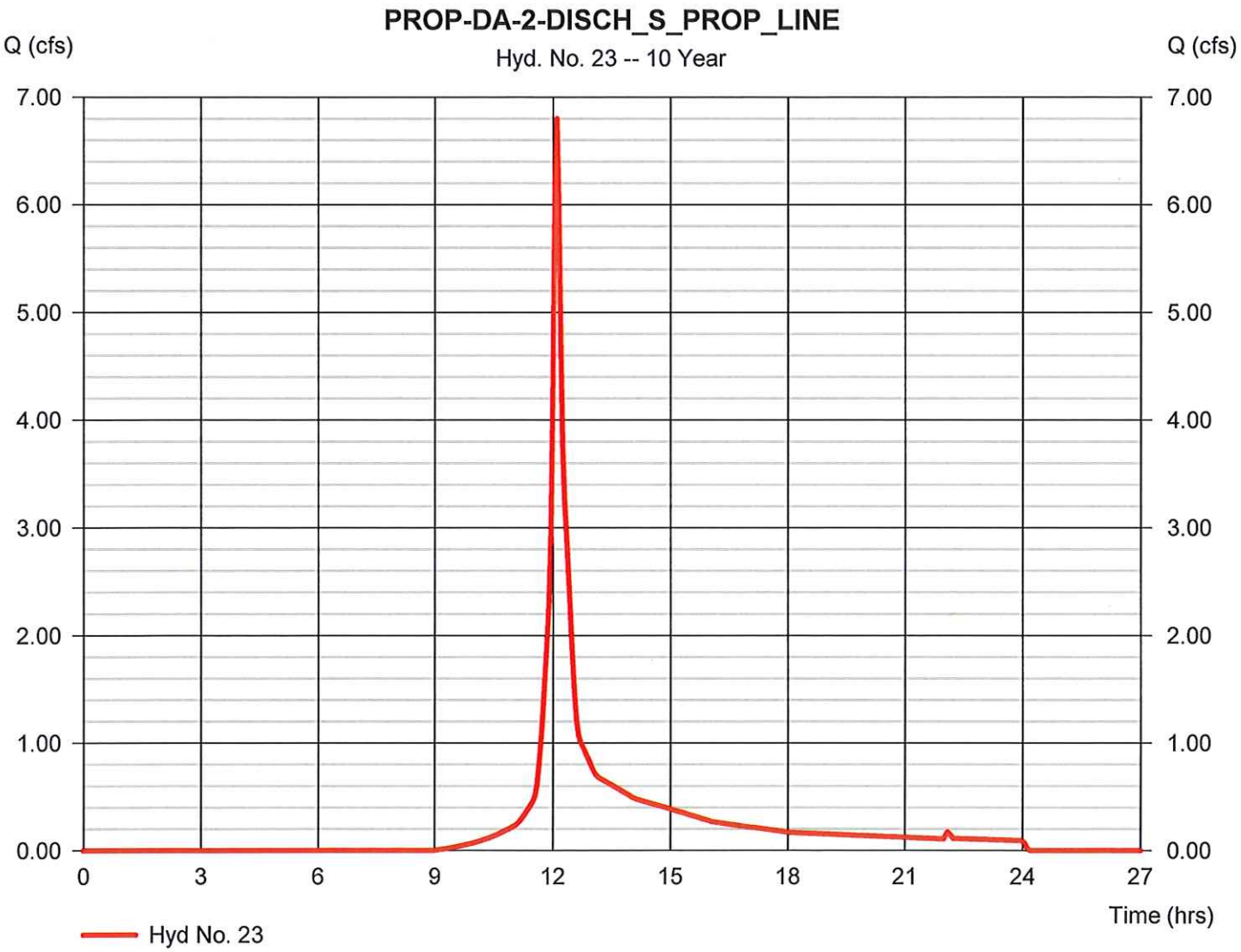
Hydrograph Report

Hyd. No. 23

PROP-DA-2-DISCH_S_PROP_LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 6.802 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 22,699 cuft
Drainage area	= 2.850 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.90 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.850 x 74)] / 2.850



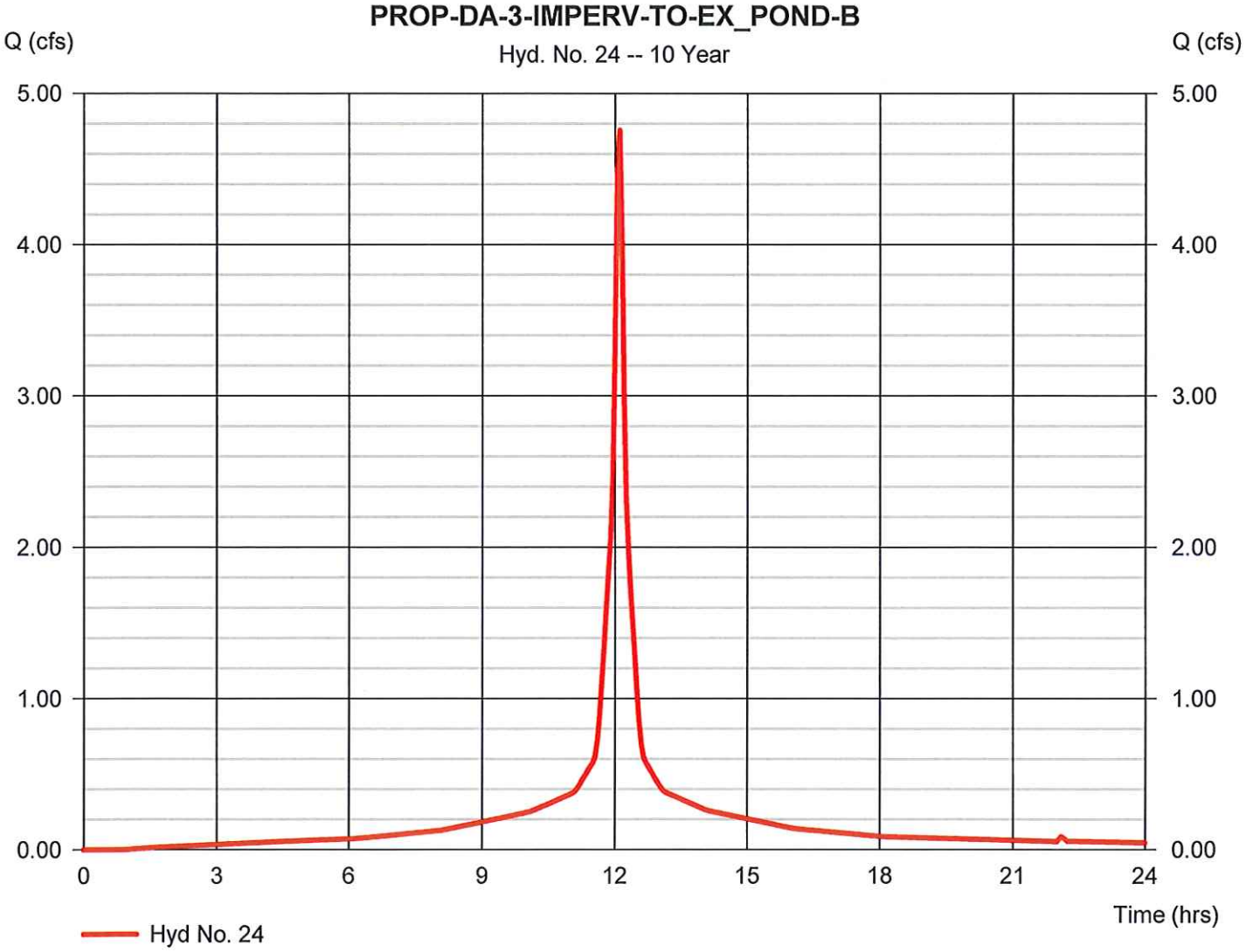
Hydrograph Report

Hyd. No. 24

PROP-DA-3-IMPERV-TO-EX_POND-B

Hydrograph type	= SCS Runoff	Peak discharge	= 4.756 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 18,202 cuft
Drainage area	= 1.130 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.130 x 98)] / 1.130



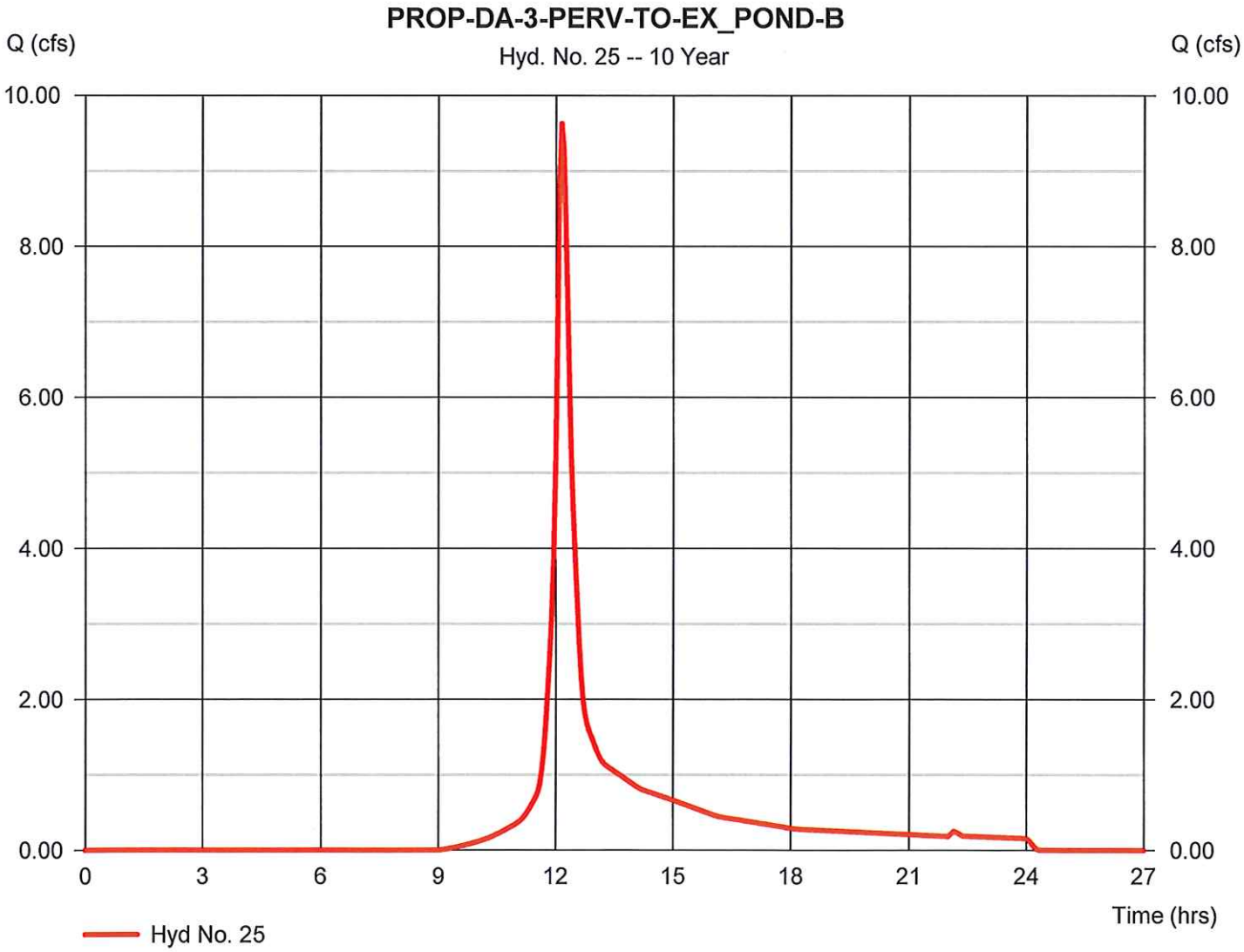
Hydrograph Report

Hyd. No. 25

PROP-DA-3-PERV-TO-EX_POND-B

Hydrograph type	= SCS Runoff	Peak discharge	= 9.630 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 38,145 cuft
Drainage area	= 4.490 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.80 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.490 x 74)] / 4.490

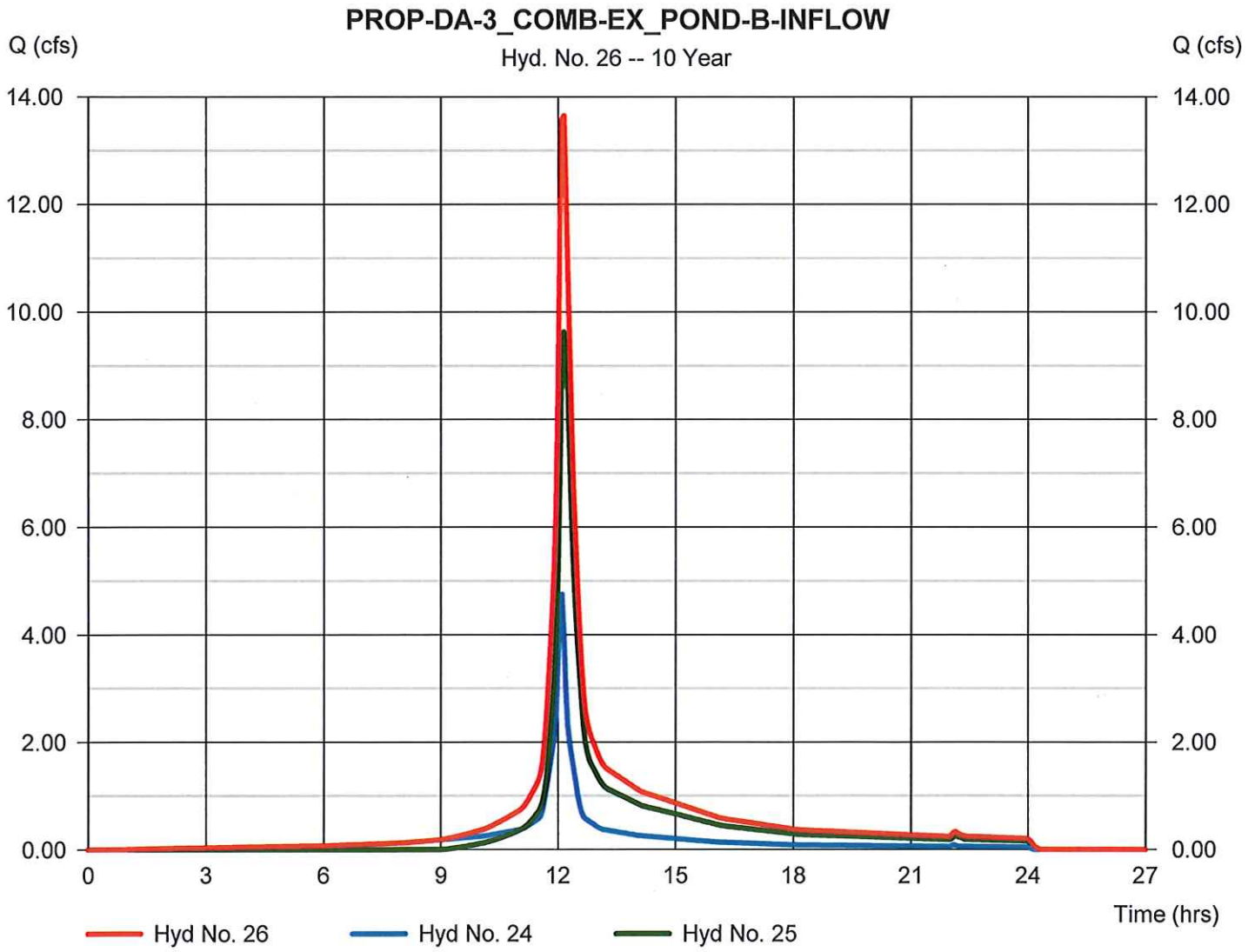


Hydrograph Report

Hyd. No. 26

PROP-DA-3_COMB-EX_POND-B-INFLOW

Hydrograph type	= Combine	Peak discharge	= 13.65 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 56,346 cuft
Inflow hyds.	= 24, 25	Contrib. drain. area	= 5.620 ac



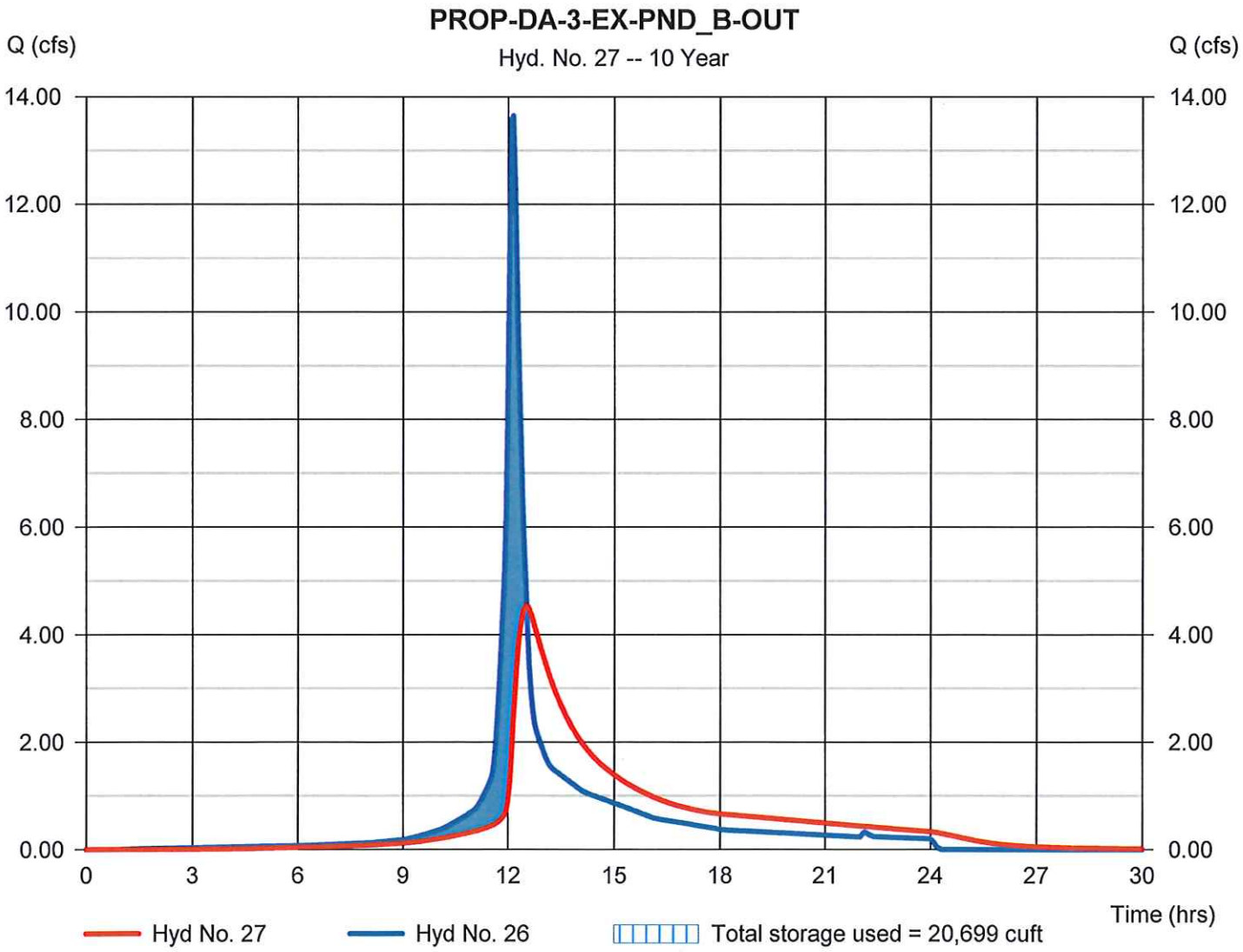
Hydrograph Report

Hyd. No. 27

PROP-DA-3-EX-PND_B-OUT

Hydrograph type	= Reservoir	Peak discharge	= 4.536 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.50 hrs
Time interval	= 3 min	Hyd. volume	= 56,325 cuft
Inflow hyd. No.	= 26 - PROP-DA-3_COMB-EX_POND_B-INFLOW	Max. Elevation	= 96.10 ft
Reservoir name	= EX-PND-B-PROP-DA-3	Max. Storage	= 20,699 cuft

Storage Indication method used.



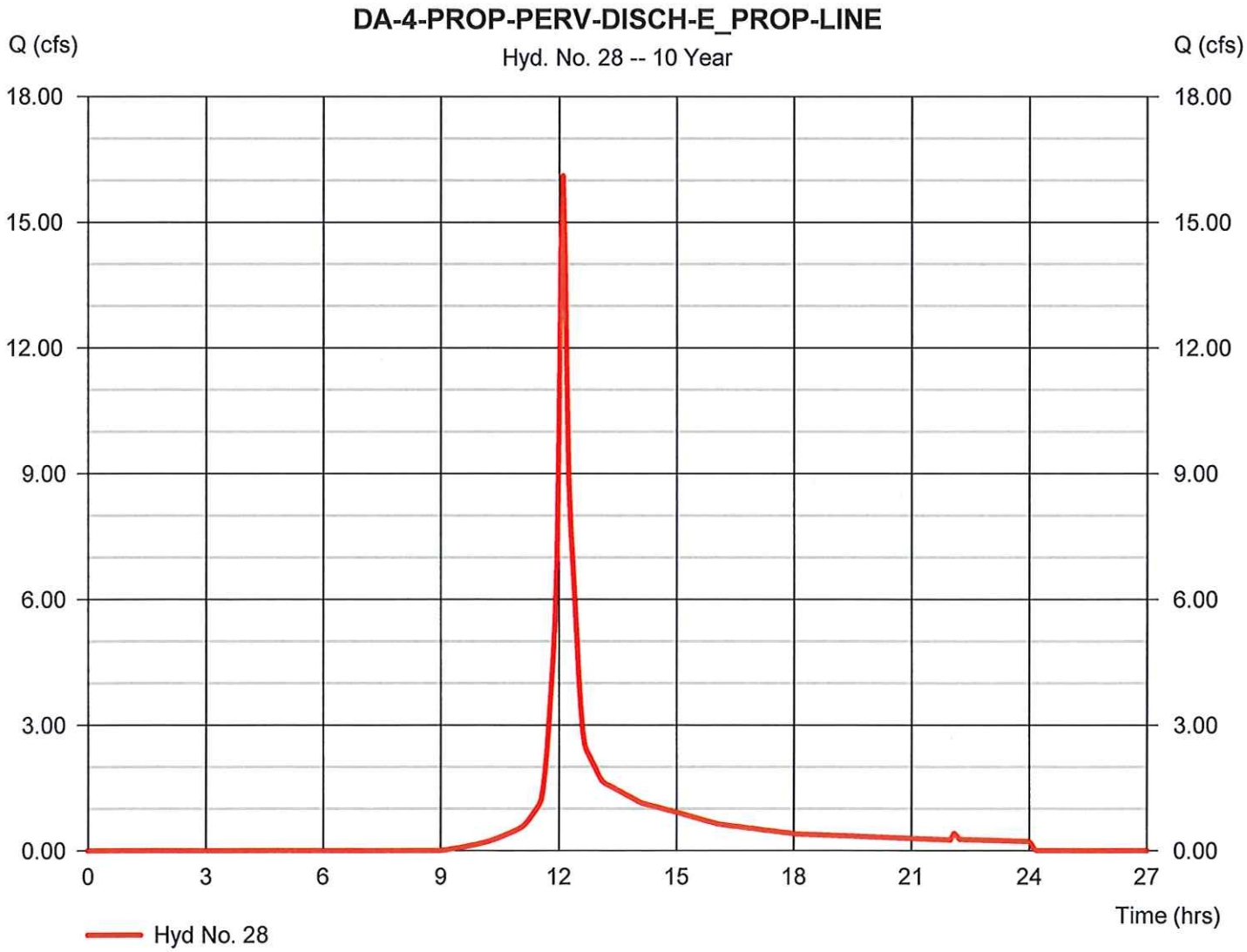
Hydrograph Report

Hyd. No. 28

DA-4-PROP-PERV-DISCH-E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 16.11 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 53,760 cuft
Drainage area	= 6.750 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.70 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.110 x 74)] / 6.750



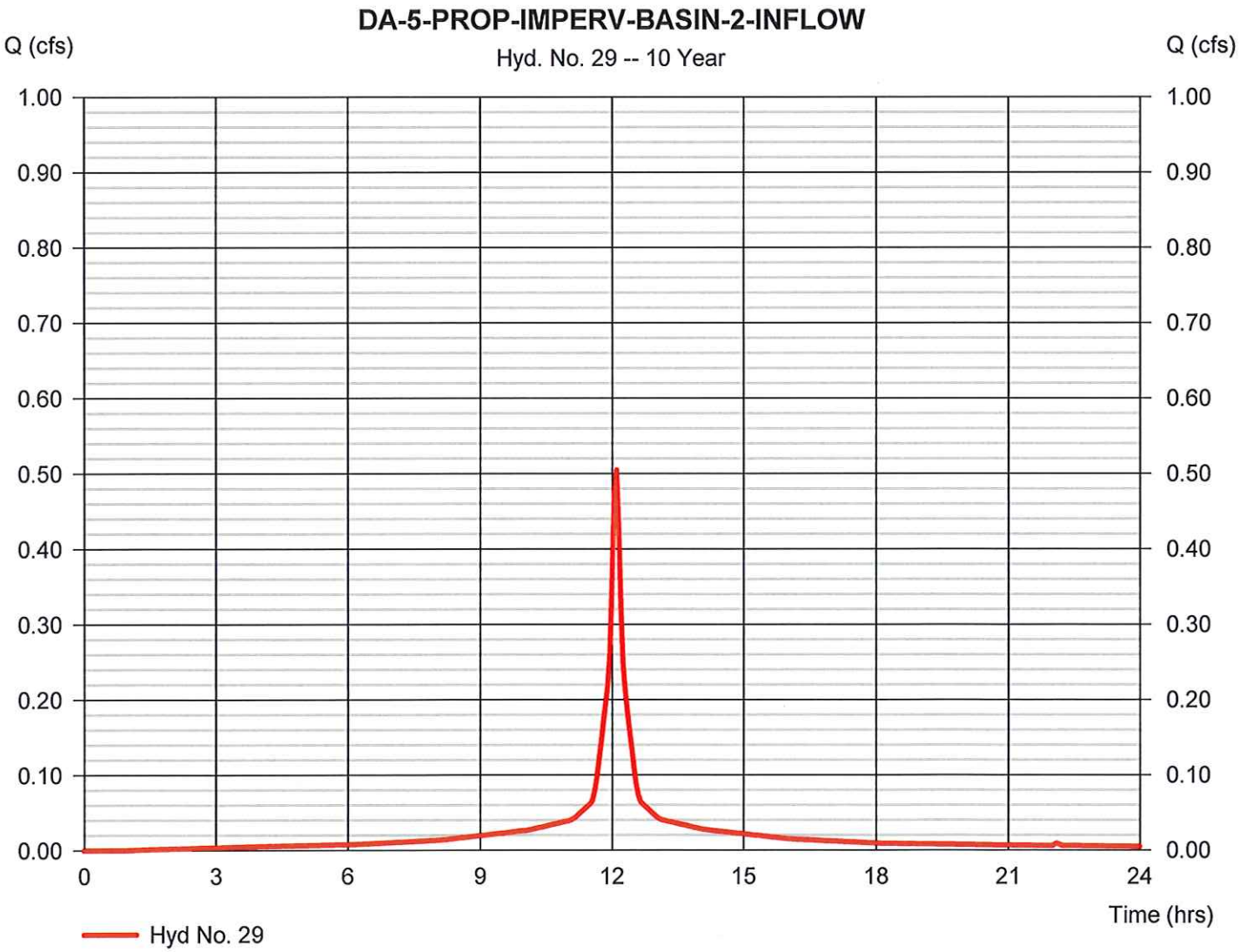
Hydrograph Report

Hyd. No. 29

DA-5-PROP-IMPERV-BASIN-2-INFLOW

Hydrograph type	= SCS Runoff	Peak discharge	= 0.505 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 1,933 cuft
Drainage area	= 0.120 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.120 x 98)] / 0.120



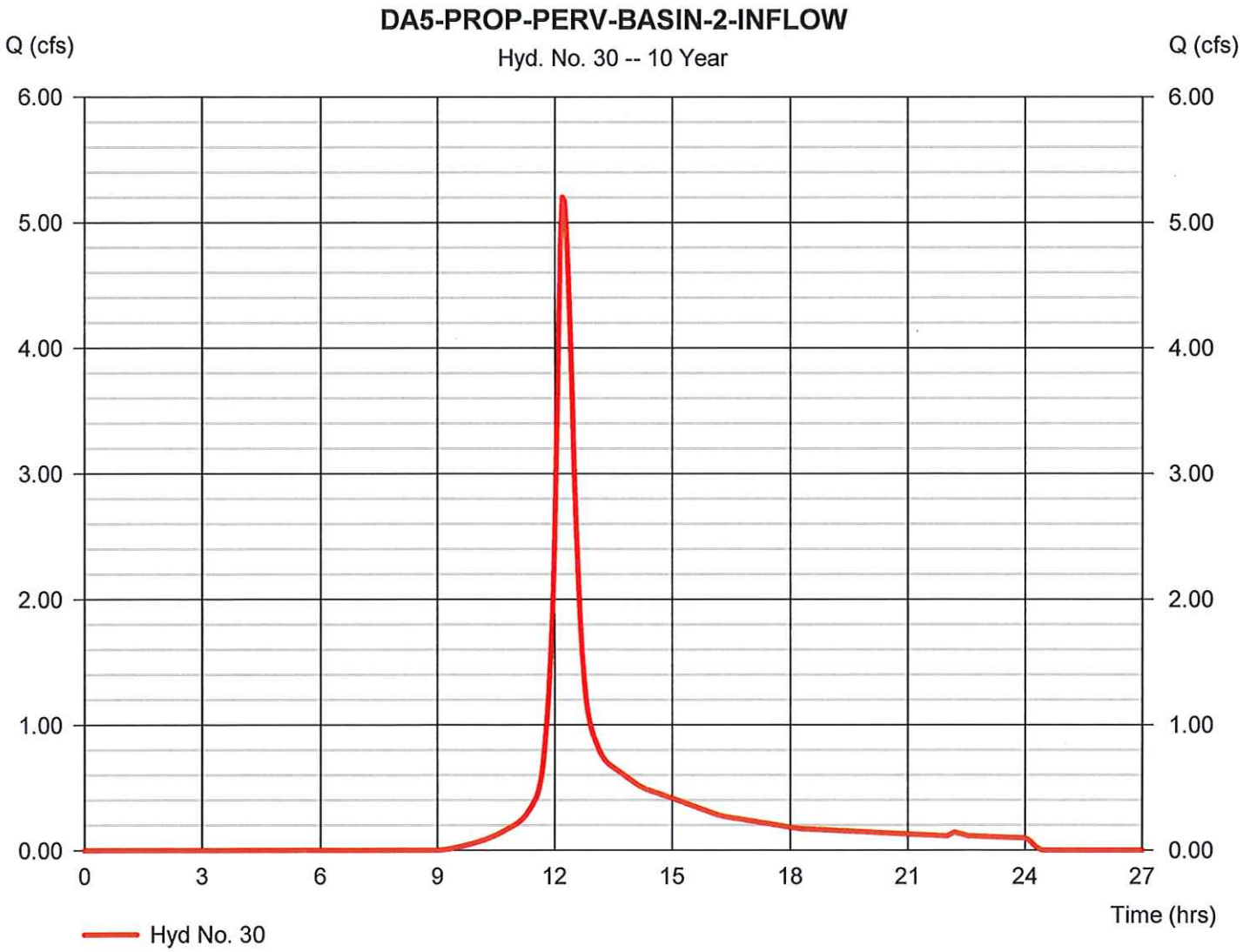
Hydrograph Report

Hyd. No. 30

DA5-PROP-PERV-BASIN-2-INFLOW

Hydrograph type	= SCS Runoff	Peak discharge	= 5.201 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 23,479 cuft
Drainage area	= 2.680 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.680 x 74)] / 2.680

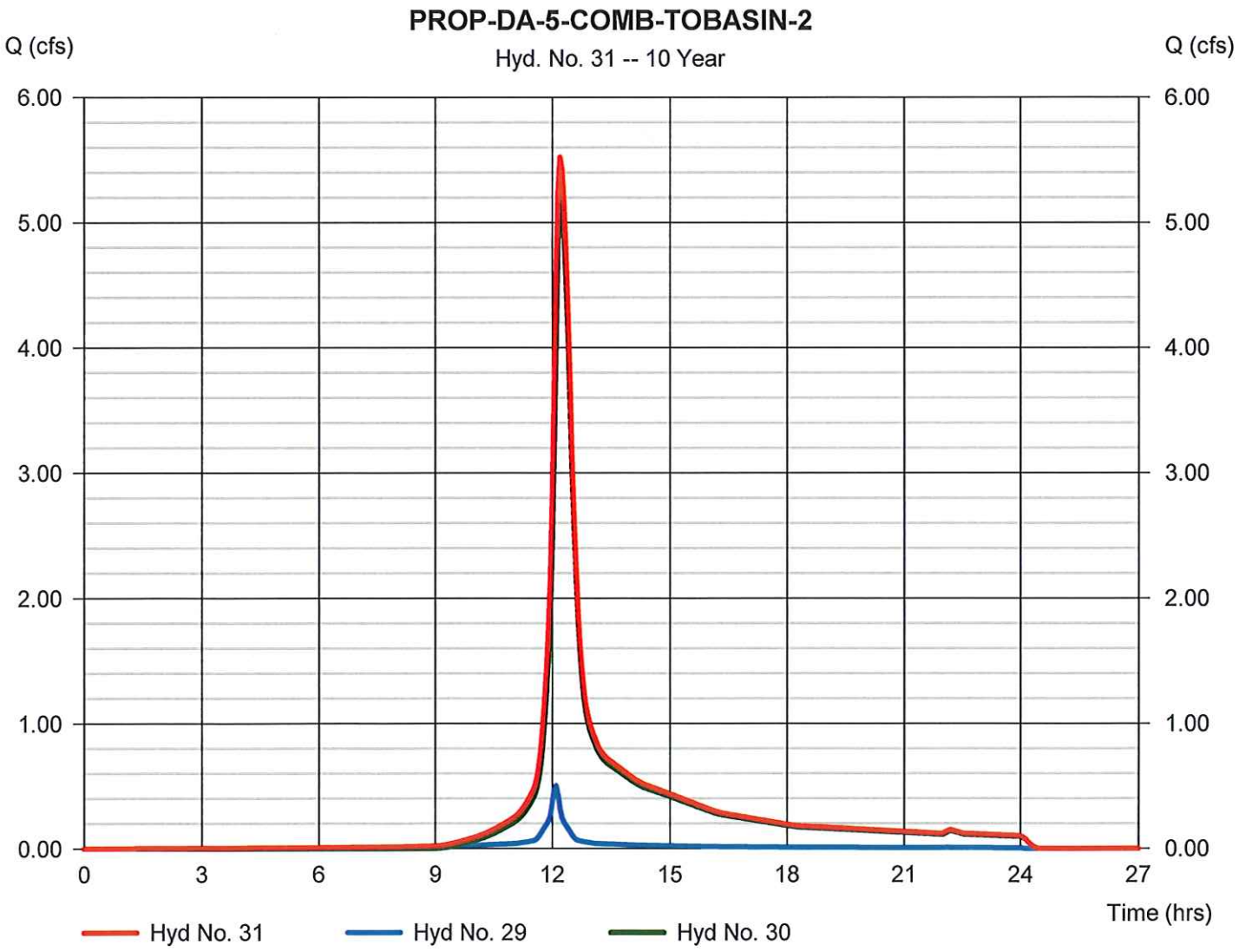


Hydrograph Report

Hyd. No. 31

PROP-DA-5-COMB-TOBASIN-2

Hydrograph type	= Combine	Peak discharge	= 5.521 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 25,412 cuft
Inflow hyds.	= 29, 30	Contrib. drain. area	= 2.800 ac



Hydrograph Report

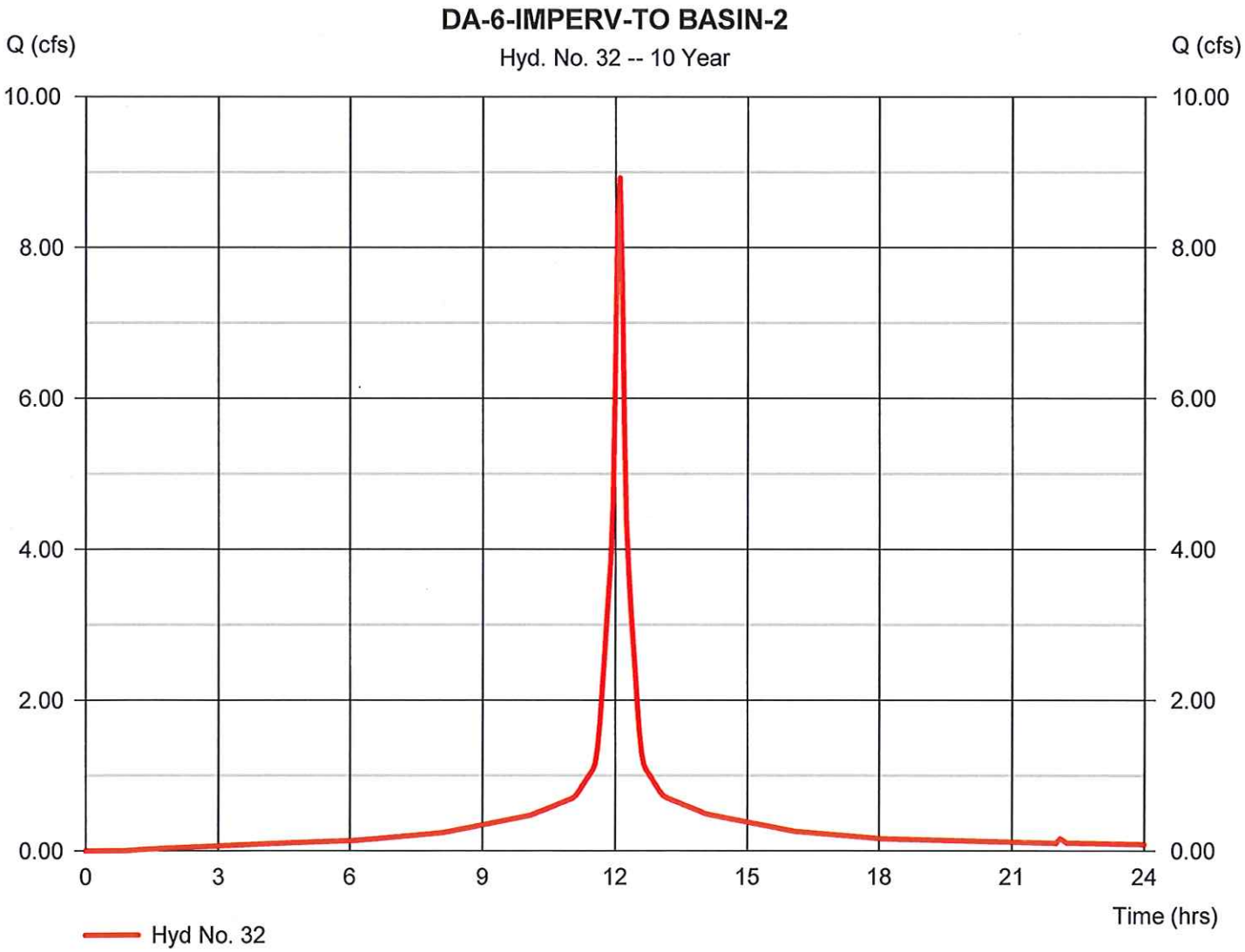
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 32

DA-6-IMPERV-TO BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 8.923 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 34,148 cuft
Drainage area	= 2.120 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.120 x 98)] / 2.120



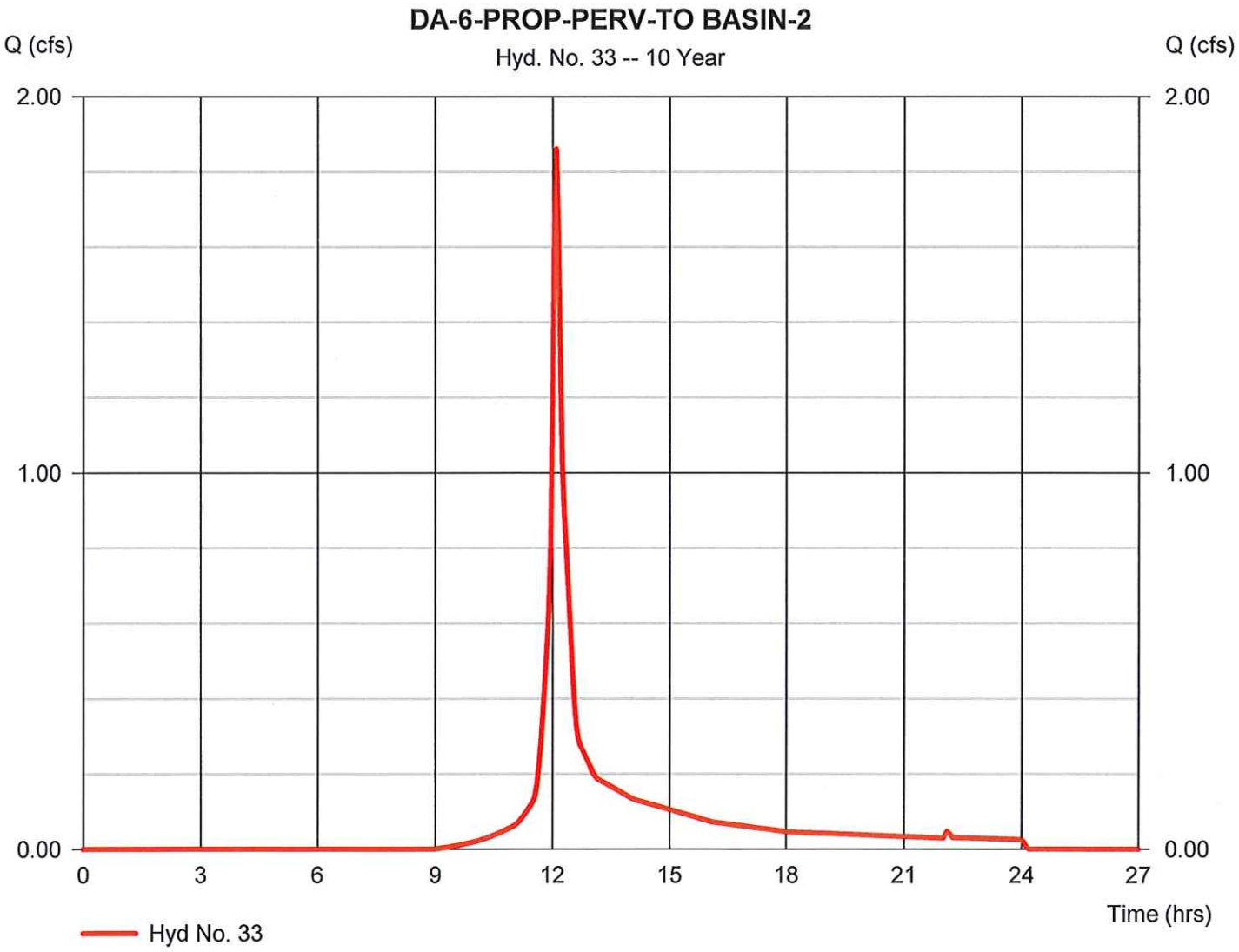
Hydrograph Report

Hyd. No. 33

DA-6-PROP-PERV-TO BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 1.861 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 6,212 cuft
Drainage area	= 0.780 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.80 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(7.026 x 79)] / 0.780

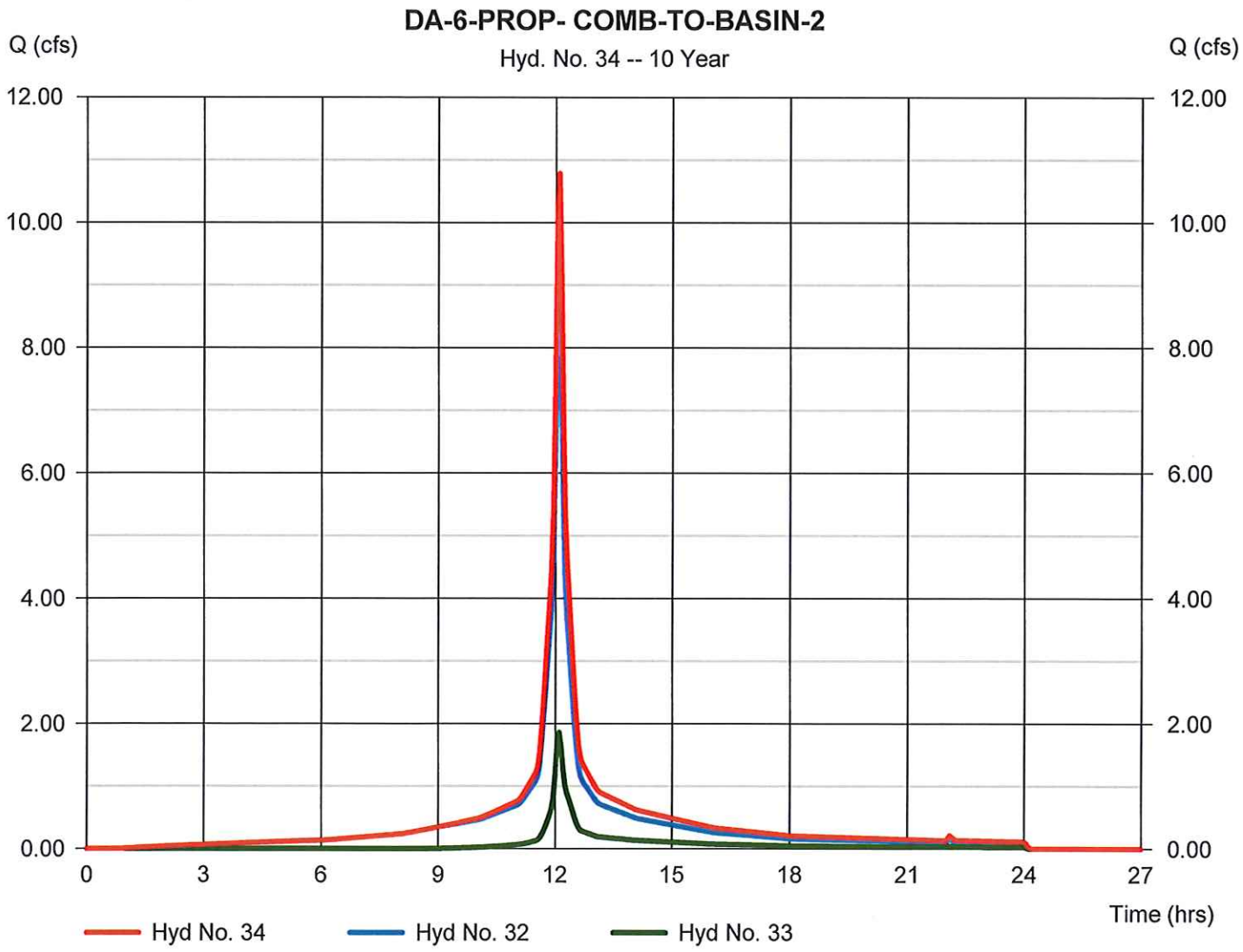


Hydrograph Report

Hyd. No. 34

DA-6-PROP- COMB-TO-BASIN-2

Hydrograph type	= Combine	Peak discharge	= 10.78 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 40,361 cuft
Inflow hyds.	= 32, 33	Contrib. drain. area	= 2.900 ac



Hydrograph Report

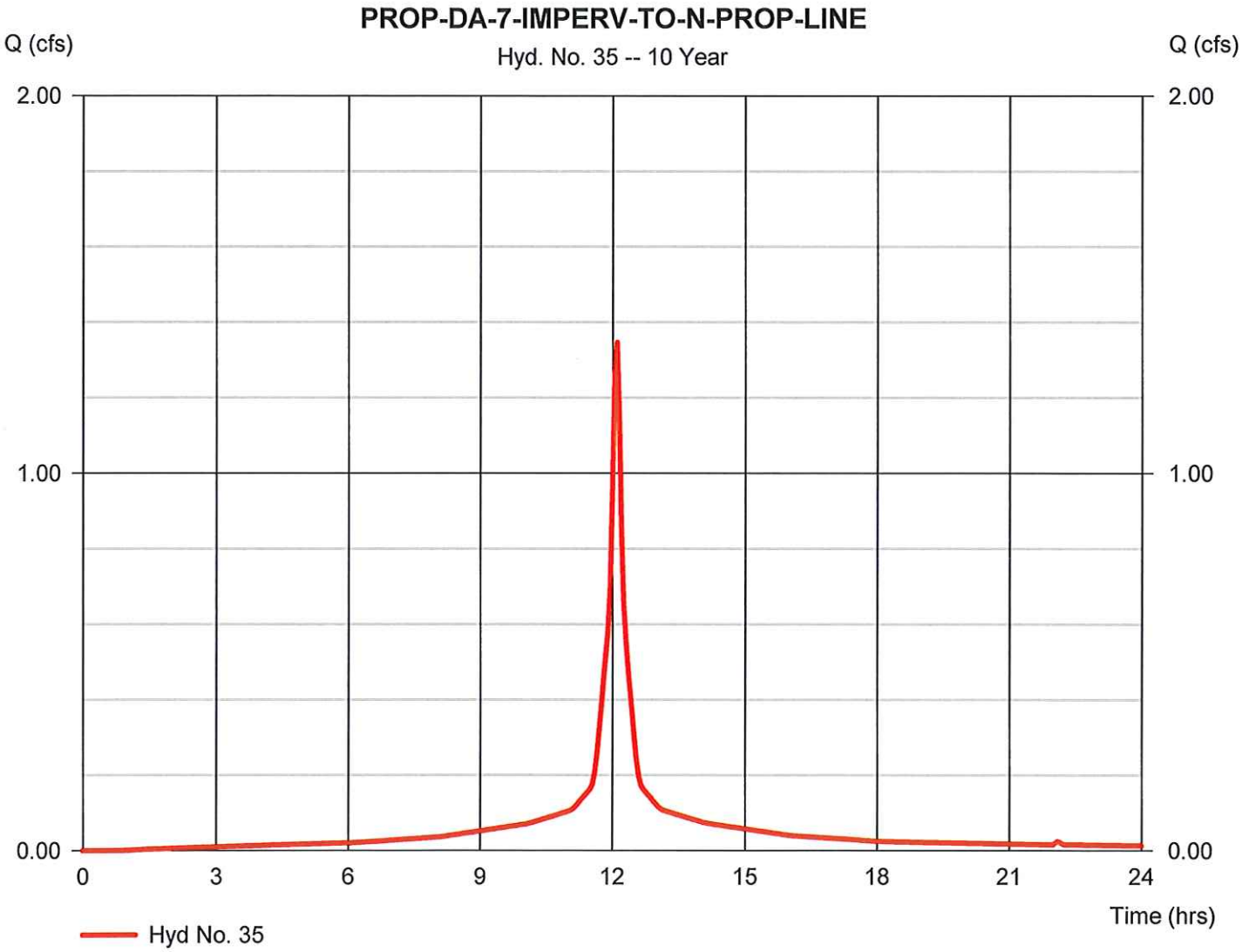
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 35

PROP-DA-7-IMPERV-TO-N-PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 1.347 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 5,154 cuft
Drainage area	= 0.320 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.320 x 98)] / 0.320



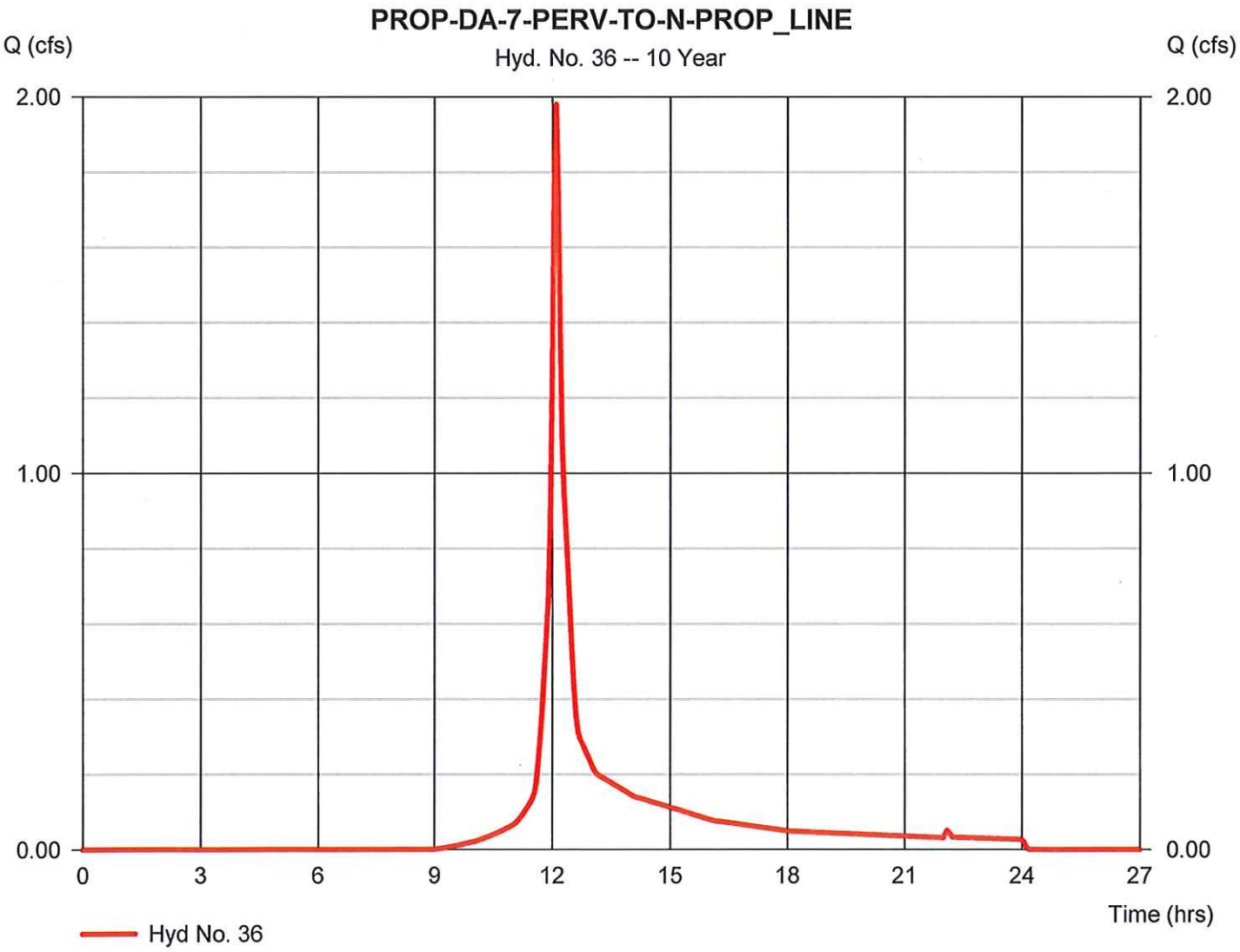
Hydrograph Report

Hyd. No. 36

PROP-DA-7-PERV-TO-N-PROP_LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 1.981 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 6,611 cuft
Drainage area	= 0.830 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 74)] / 0.830

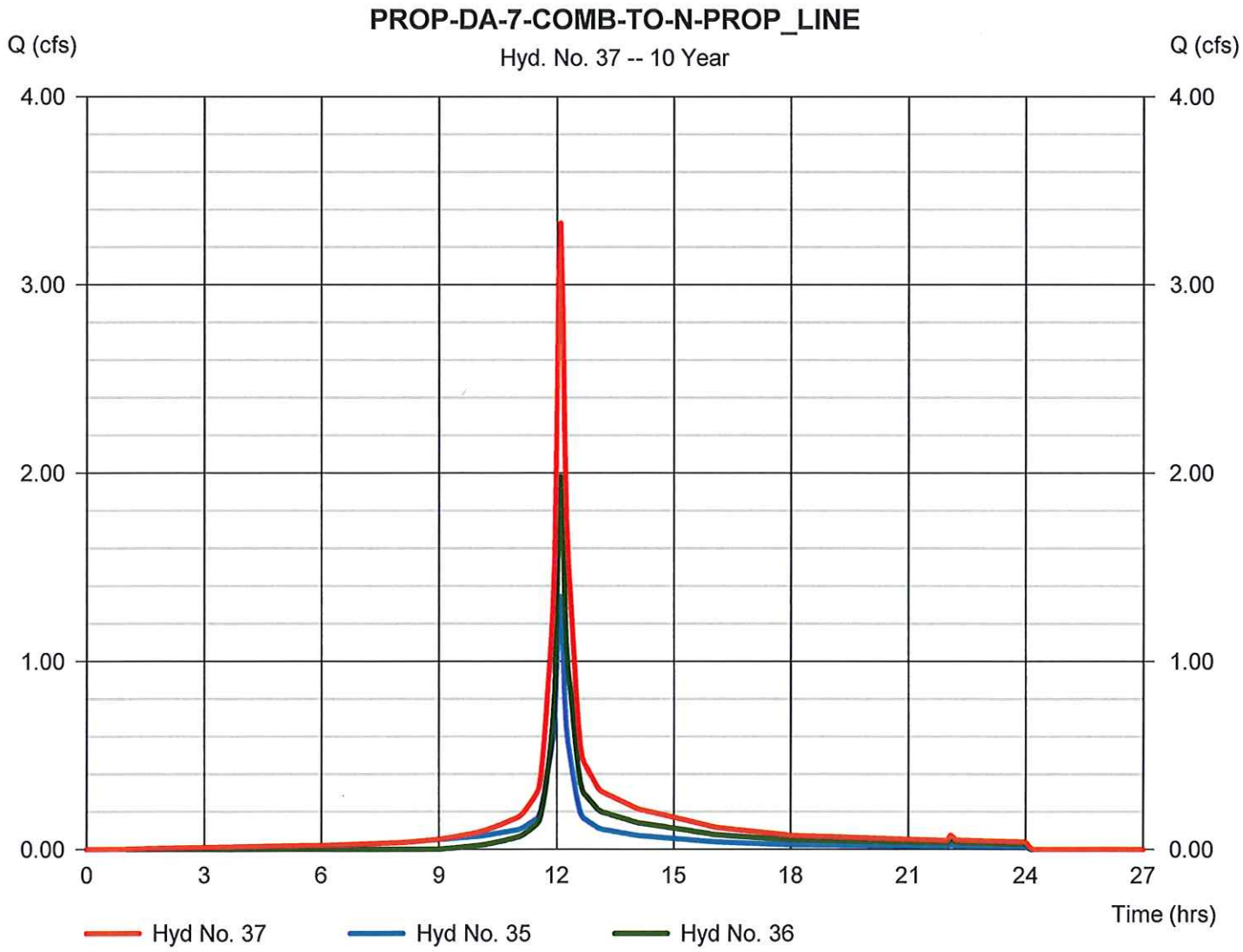


Hydrograph Report

Hyd. No. 37

PROP-DA-7-COMB-TO-N-PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 3.328 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 11,765 cuft
Inflow hyds.	= 35, 36	Contrib. drain. area	= 1.150 ac



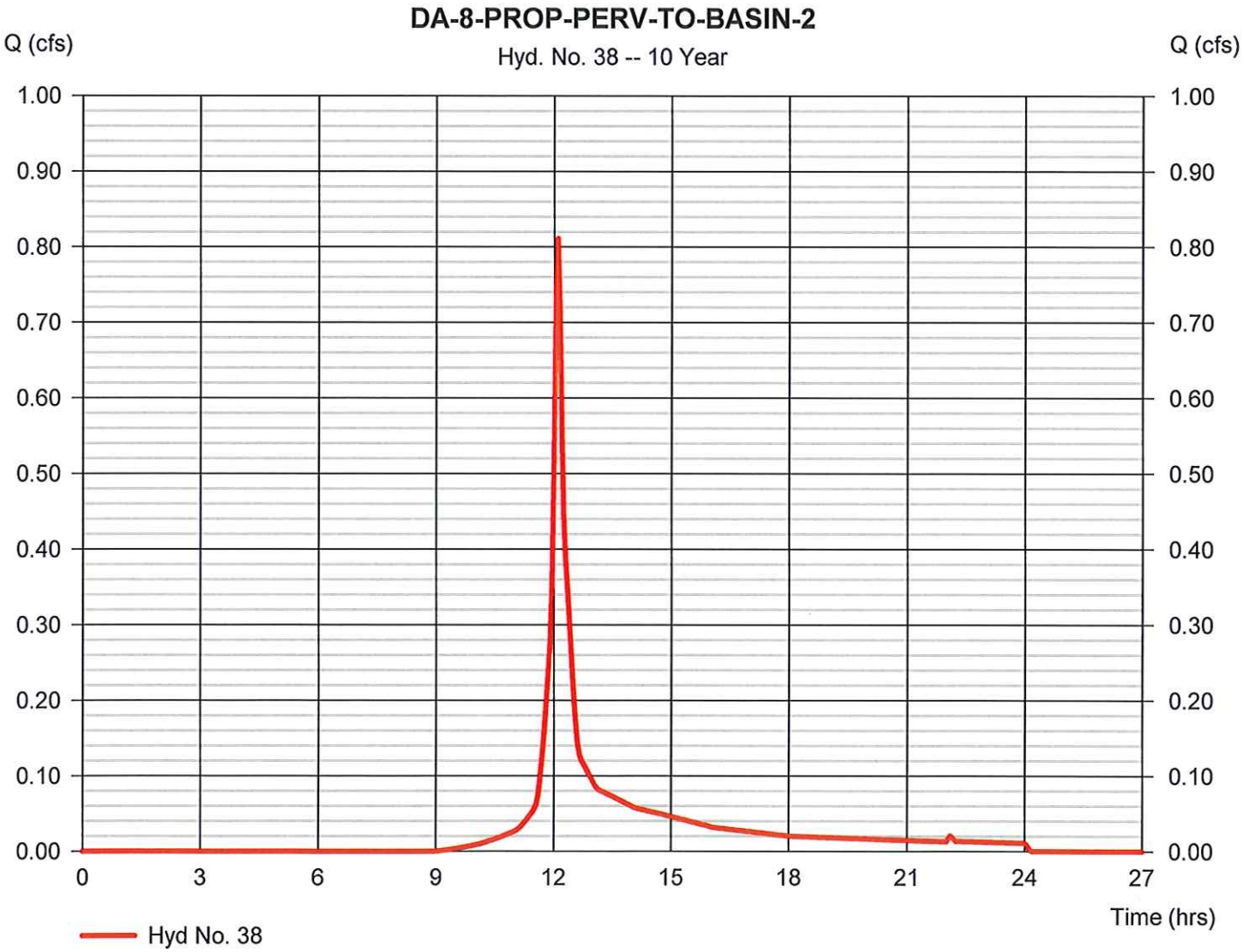
Hydrograph Report

Hyd. No. 38

DA-8-PROP-PERV-TO-BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.811 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 2,708 cuft
Drainage area	= 0.340 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.50 min
Total precip.	= 4.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.340 x 74)] / 0.340

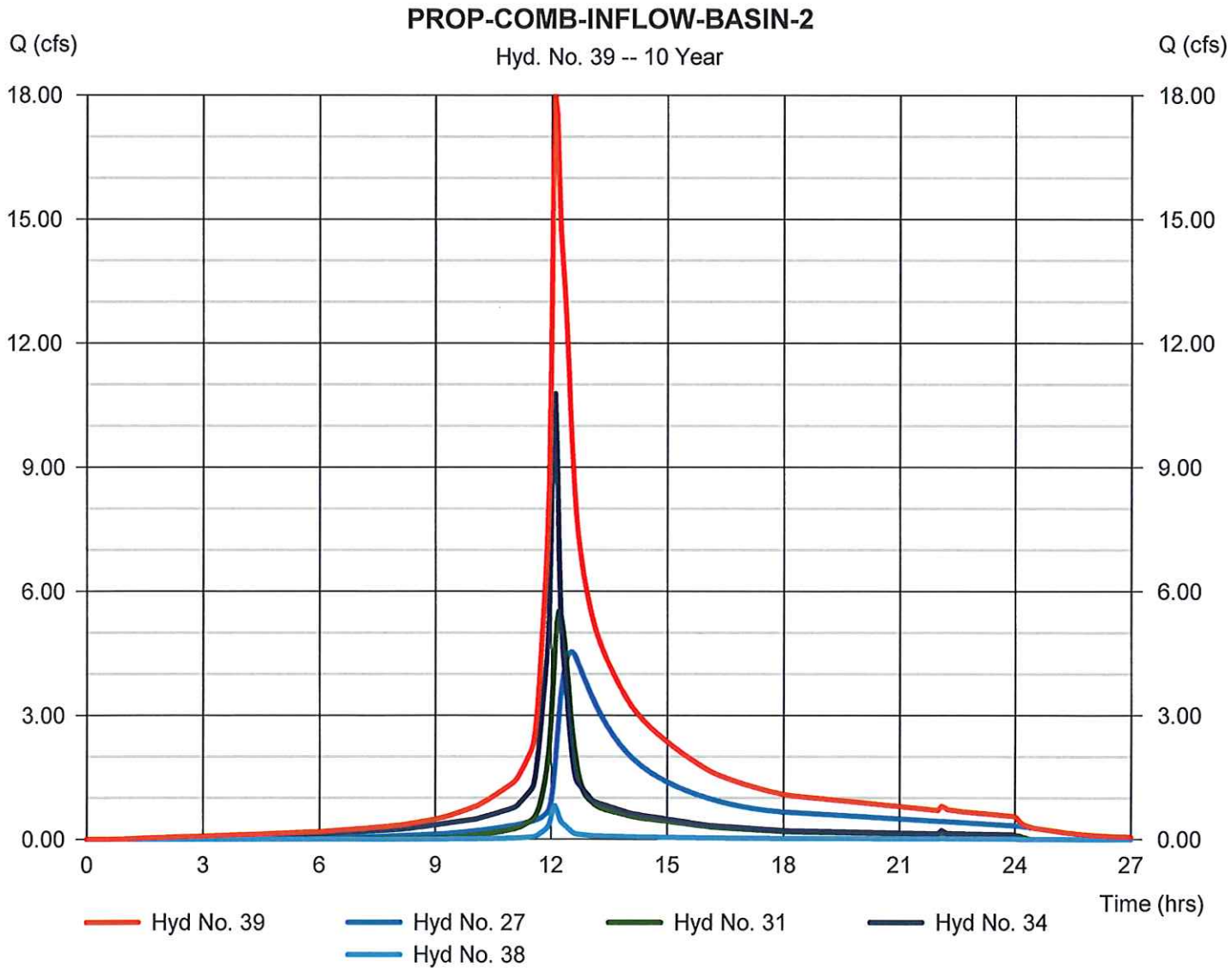


Hydrograph Report

Hyd. No. 39

PROP-COMB-INFLOW-BASIN-2

Hydrograph type	= Combine	Peak discharge	= 17.97 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 124,806 cuft
Inflow hyds.	= 27, 31, 34, 38	Contrib. drain. area	= 0.340 ac



Hydrograph Report

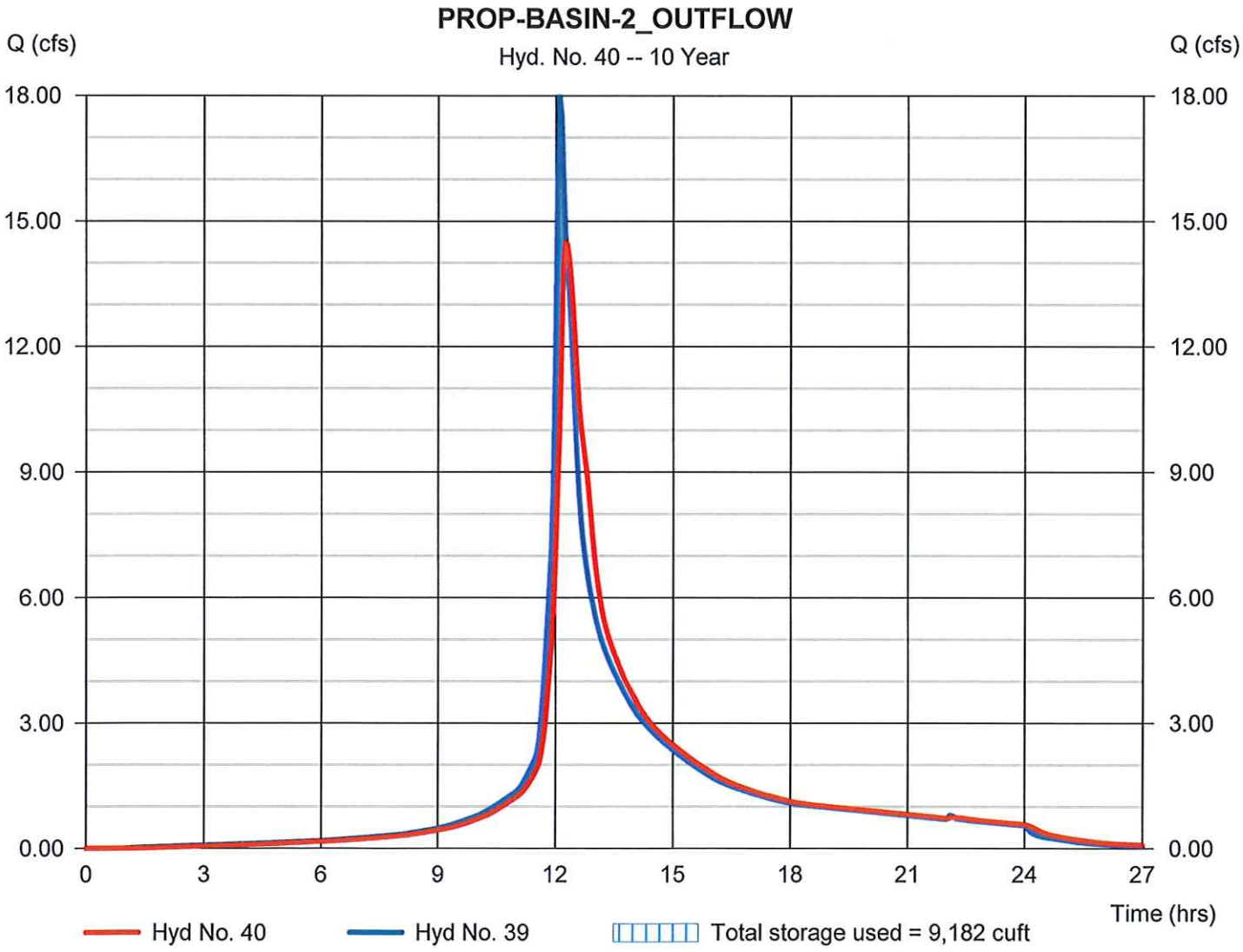
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 40

PROP-BASIN-2_OUTFLOW

Hydrograph type	= Reservoir	Peak discharge	= 14.50 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.25 hrs
Time interval	= 3 min	Hyd. volume	= 124,804 cuft
Inflow hyd. No.	= 39 - PROP-COMB-INFLOW-BASIN-2	Max. Elevation	= 76.59 ft
Reservoir name	= POND-2	Max. Storage	= 9,182 cuft

Storage Indication method used.

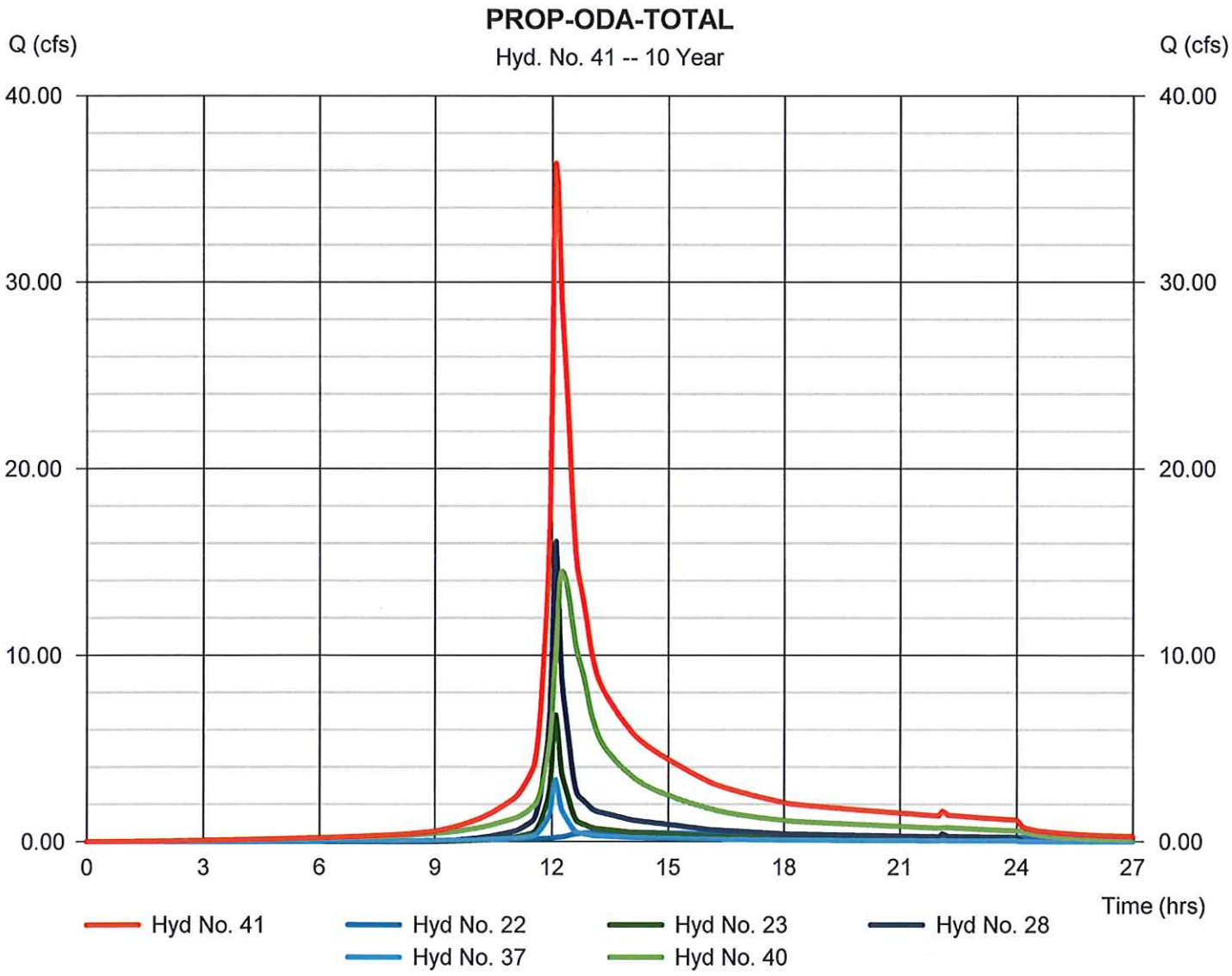


Hydrograph Report

Hyd. No. 41

PROP-ODA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 36.39 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 238,278 cuft
Inflow hyds.	= 22, 23, 28, 37, 40	Contrib. drain. area	= 9.600 ac



Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	122.13	3	729	484,913	------	------	------	EX-ODA
2	SCS Runoff	20.68	3	729	81,523	------	------	------	EX-DA-2-DISCH-S-PROP-LINE
3	SCS Runoff	7.306	3	726	28,390	------	------	------	EX-DA-3_IMPRV-DISCH-EX_PND
4	SCS Runoff	27.11	3	729	106,873	------	------	------	EX-DA-3_PERV-DISCH-EX_PND
5	Combine	33.29	3	729	135,263	3, 4	------	------	EX-DA-3-COMB-INFLOW_EX_PND
6	Reservoir	32.83	3	729	135,259	5	96.54	9,564	EX-DA-3OUTFLOW-TO DA-4
7	SCS Runoff	4.687	3	726	18,212	------	------	------	EX-DA_4_IMPRV--DISCH_E_PRO
8	SCS Runoff	43.95	3	726	146,871	------	------	------	EX-DA-4_PERV-DISCH-E_PROP-L
9	Combine	48.64	3	726	165,083	7, 8	------	------	EX-DA-4COMB-DISCH_E_PROP_L
10	Combine	78.50	3	726	300,342	6, 9	------	------	EX-DA-3-EX_PND-OUT-&-EX-DA-4
11	SCS Runoff	15.16	3	726	58,923	------	------	------	EX-DA-6_IMPERV-DISCH_E_PRO
12	SCS Runoff	3.609	3	729	14,225	------	------	------	EX-DA-6_PERV-DISCH_E_PROP-L
13	Combine	18.54	3	726	73,148	11, 12	------	------	EX_DA-6-COMB_DISCH_E_PROP
14	Combine	97.04	3	726	373,490	6, 9, 13	------	------	COMB-DA-3+4+6_EST-PROP_LIN
15	SCS Runoff	2.206	3	726	8,571	------	------	------	EX-DA-7_IMPERV-DISCH-ERLED
16	SCS Runoff	1.791	3	726	5,984	------	------	------	EX-DA-7-PERV-DISCH-ERLEDON_
17	Combine	3.996	3	726	14,555	15, 16	------	------	EX-DA-7_COMB_DISCH-ERLEDO
18	Combine	120.36	3	726	469,568	2, 6, 9, 13, 17	------	------	EX-ODA-TOTAL
19	SCS Runoff	8.064	3	726	31,336	------	------	------	PROP-DA-1-IMPERV-DISCH-PON
20	SCS Runoff	3.112	3	732	13,918	------	------	------	PROP-DA-1-PERV-DISCH_POND-
21	Combine	10.61	3	726	45,254	19, 20	------	------	PROP-DA-1COMB--POND-1_INFL
22	Reservoir	2.023	3	759	45,174	21	114.40	23,986	PROP-DA-1-PND-1-O-FLOW
23	SCS Runoff	14.58	3	726	48,729	------	------	------	PROP-DA-2-DISCH_S_PROP_LIN
24	SCS Runoff	7.789	3	726	30,265	------	------	------	PROP-DA-3-IMPERV-TO-EX_PON
25	SCS Runoff	20.77	3	729	81,887	------	------	------	PROP-DA-3-PERV-TO-EX_POND-
26	Combine	27.36	3	729	112,152	24, 25	------	------	PROP-DA-3_COMB-EX_POND-B-I
27	Reservoir	13.24	3	744	112,132	26	97.56	36,239	PROP-DA-3-EX-PND_B-OUT
28	SCS Runoff	34.54	3	726	115,411	------	------	------	DA-4-PROP-PERV-DISCH-E_PRO
29	SCS Runoff	0.827	3	726	3,214	------	------	------	DA-5-PROP-IMPERV-BASIN-2-INF
30	SCS Runoff	11.27	3	732	50,405	------	------	------	DA5-PROP-PERV-BASIN-2-INFLO
31	Combine	11.80	3	732	53,619	29, 30	------	------	PROP-DA-5-COMB-TOBASIN-2
32	SCS Runoff	14.61	3	726	56,780	------	------	------	DA-6-IMPERV-TO BASIN-2
33	SCS Runoff	3.991	3	726	13,336	------	------	------	DA-6-PROP-PERV-TO BASIN-2

Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
34	Combine	18.60	3	726	70,116	32, 33	------	------	DA-6-PROP- COMB-TO-BASIN-2
35	SCS Runoff	2.206	3	726	8,571	------	------	------	PROP-DA-7-IMPERV-TO-N-PROP-
36	SCS Runoff	4.247	3	726	14,191	------	------	------	PROP-DA-7-PERV-TO-N-PROP_LI
37	Combine	6.452	3	726	22,762	35, 36	------	------	PROP-DA-7-COMB-TO-N-PROP_LI
38	SCS Runoff	1.740	3	726	5,813	------	------	------	DA-8-PROP-PERV-TO-BASIN-2
39	Combine	37.50	3	729	241,680	27, 31, 34, 38	------	------	PROP-COMB-INFLOW-BASIN-2
40	Reservoir	31.83	3	738	241,678	39	77.63	16,971	PROP-BASIN-2_OUTFLOW
41	Combine	82.23	3	726	473,753	22, 23, 28, 37, 40	------	------	PROP-ODA-TOTAL

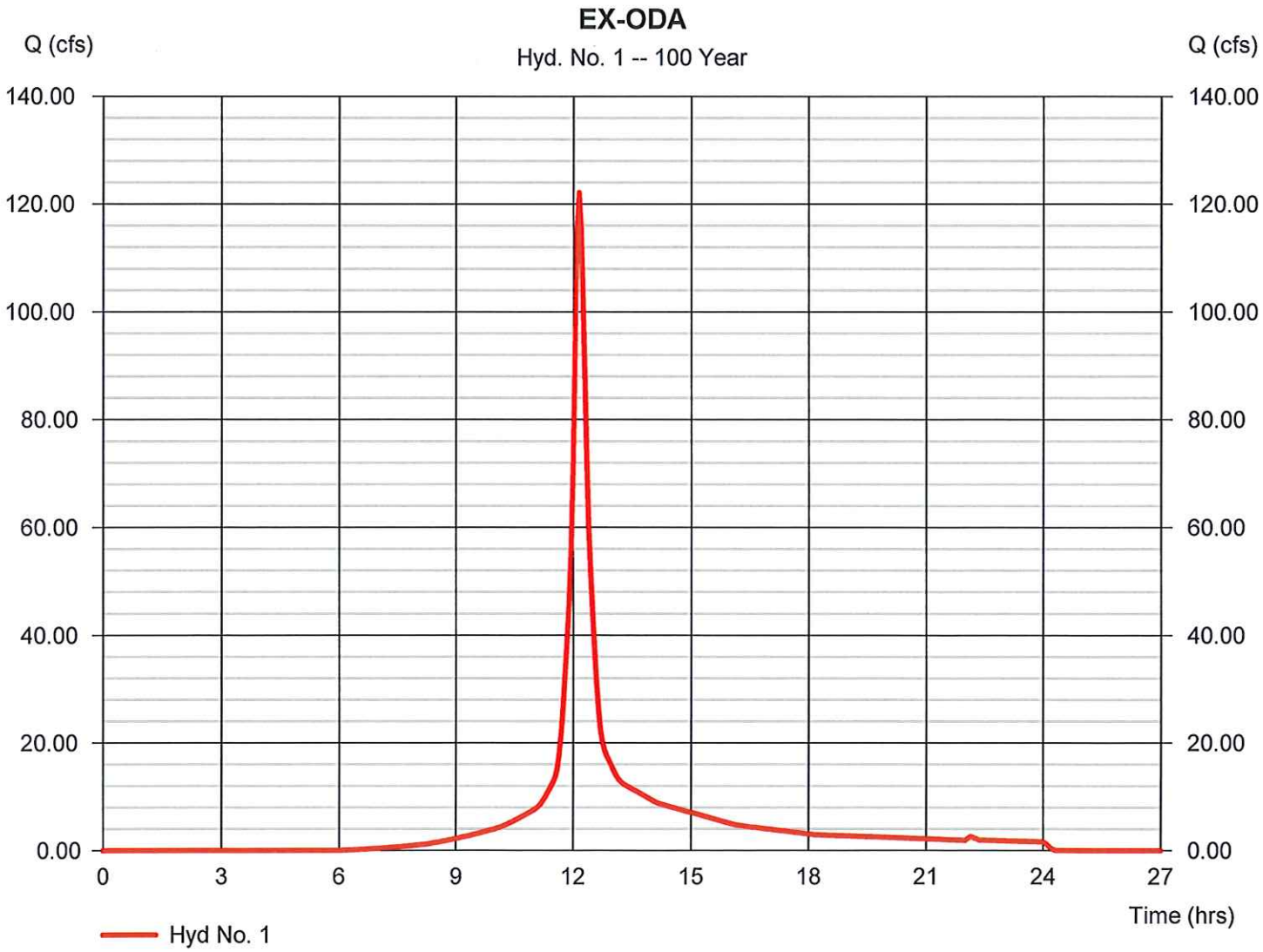
Hydrograph Report

Hyd. No. 1

EX-ODA

Hydrograph type	= SCS Runoff	Peak discharge	= 122.13 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 484,913 cuft
Drainage area	= 24.320 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.50 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.270 x 98) + (20.050 x 74)] / 24.320



Hydrograph Report

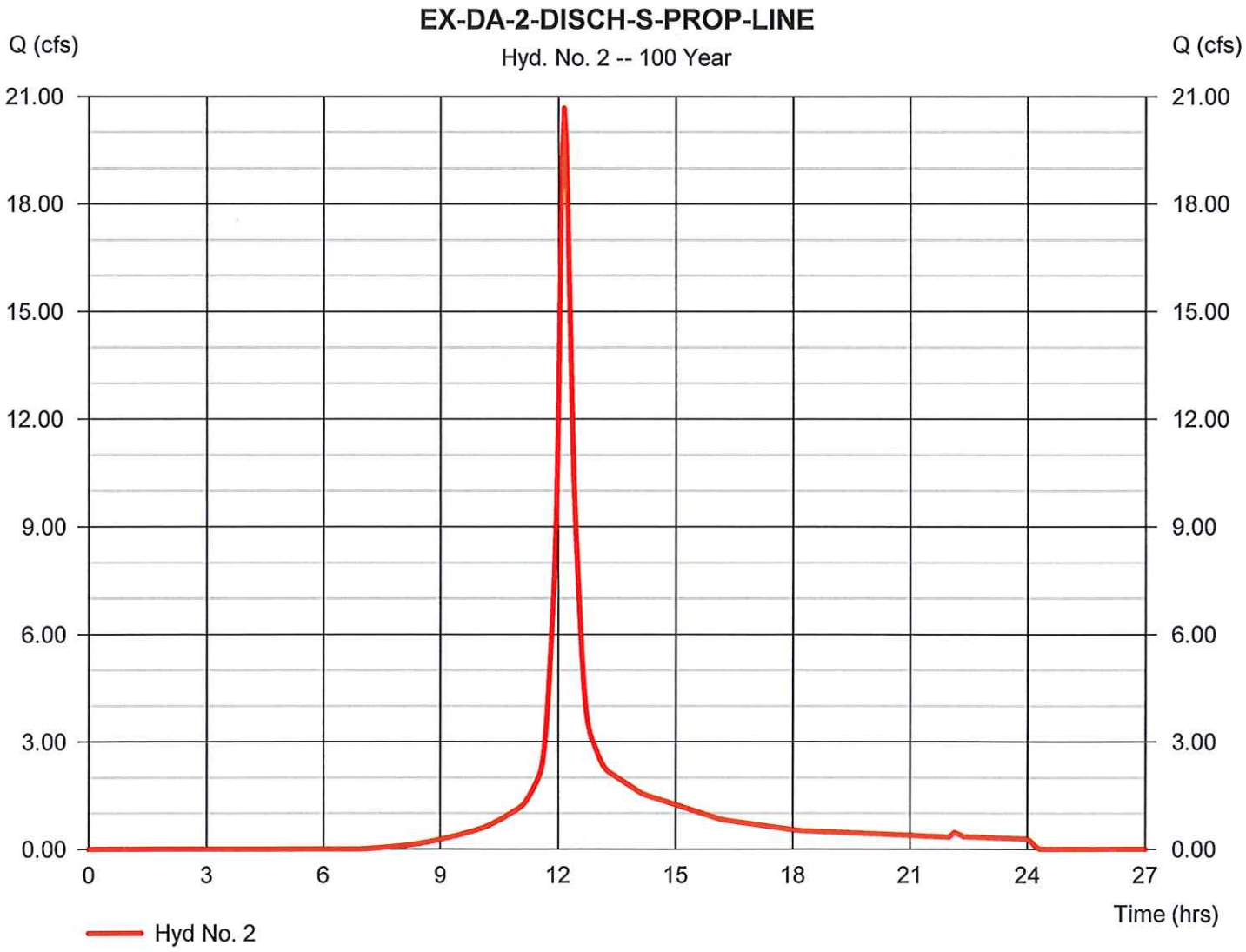
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 2

EX-DA-2-DISCH-S-PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 20.68 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 81,523 cuft
Drainage area	= 4.470 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.70 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.470 x 74)] / 4.470



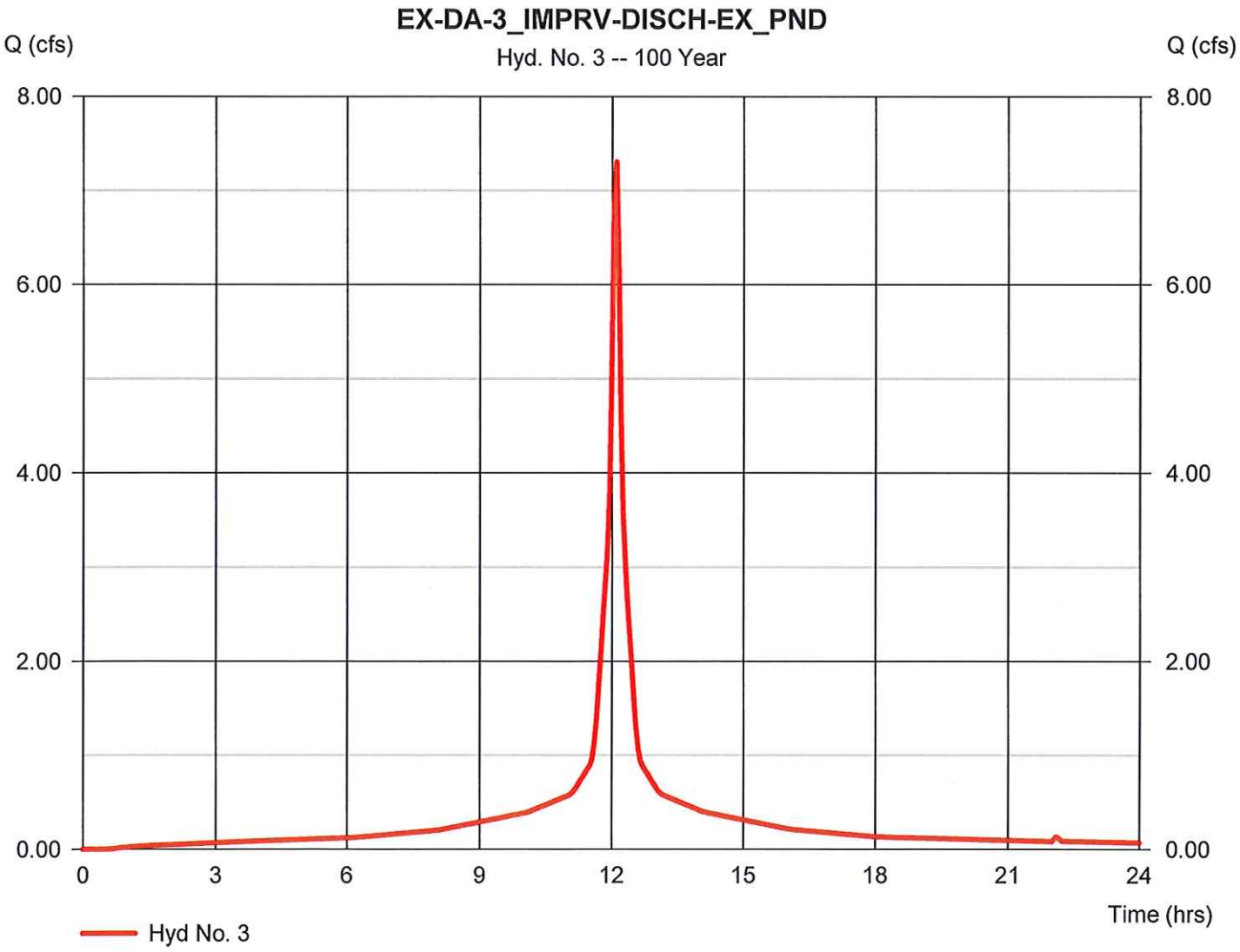
Hydrograph Report

Hyd. No. 3

EX-DA-3_IMPRV-DISCH-EX_PND

Hydrograph type	= SCS Runoff	Peak discharge	= 7.306 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 28,390 cuft
Drainage area	= 1.060 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.060 x 98)] / 1.060



Hydrograph Report

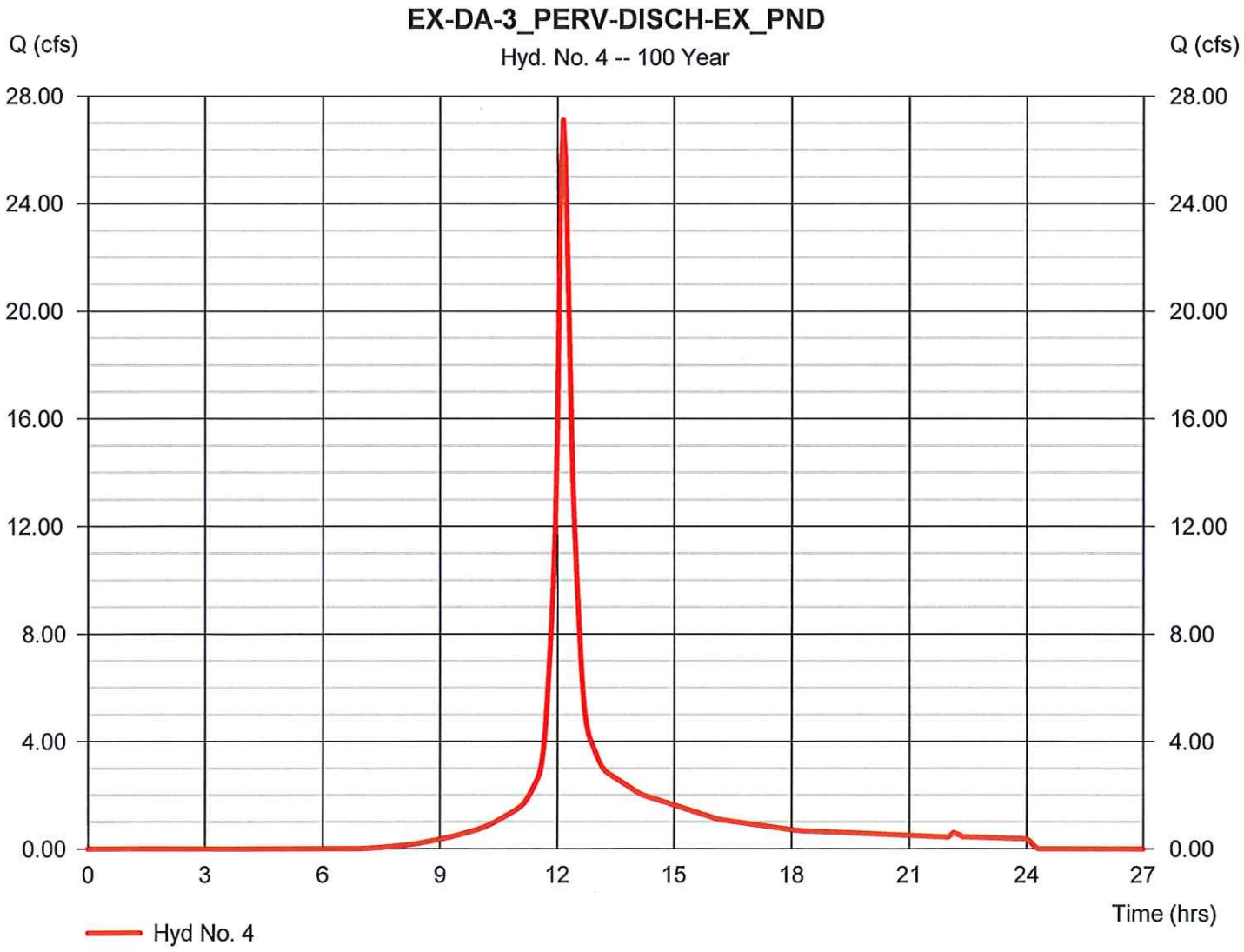
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 4

EX-DA-3_PERV-DISCH-EX_PND

Hydrograph type	= SCS Runoff	Peak discharge	= 27.11 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 106,873 cuft
Drainage area	= 5.860 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.50 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.860 x 74)] / 5.860

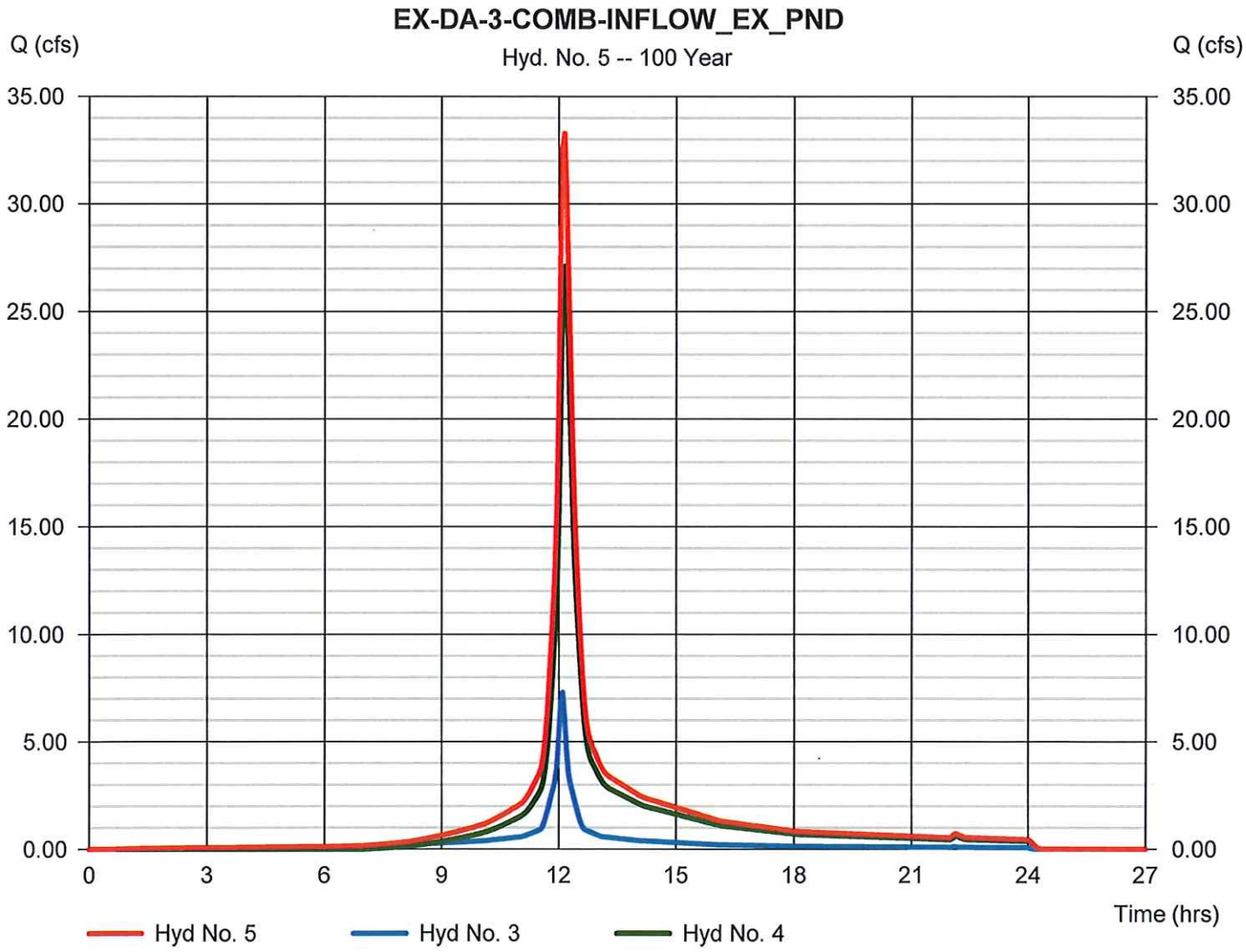


Hydrograph Report

Hyd. No. 5

EX-DA-3-COMB-INFLOW_EX_PND

Hydrograph type	= Combine	Peak discharge	= 33.29 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 135,263 cuft
Inflow hyds.	= 3, 4	Contrib. drain. area	= 6.920 ac



Hydrograph Report

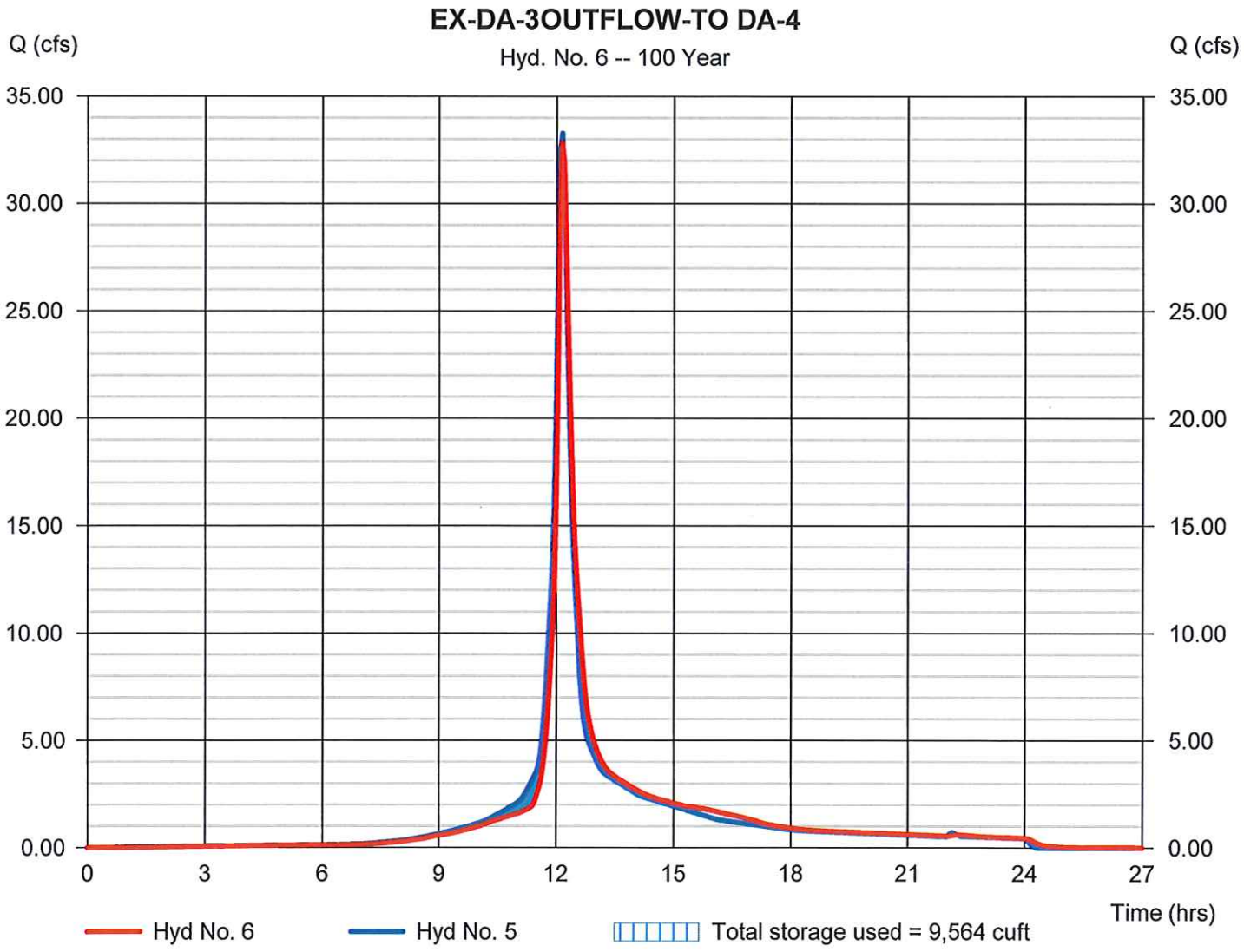
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 6

EX-DA-3OUTFLOW-TO DA-4

Hydrograph type	= Reservoir	Peak discharge	= 32.83 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 135,259 cuft
Inflow hyd. No.	= 5 - EX-DA-3-COMB-INFLOW-EX_PND	Max. Elevation	= 96.54 ft
Reservoir name	= Ex-PND-A-EX-DA-3	Max. Storage	= 9,564 cuft

Storage Indication method used.



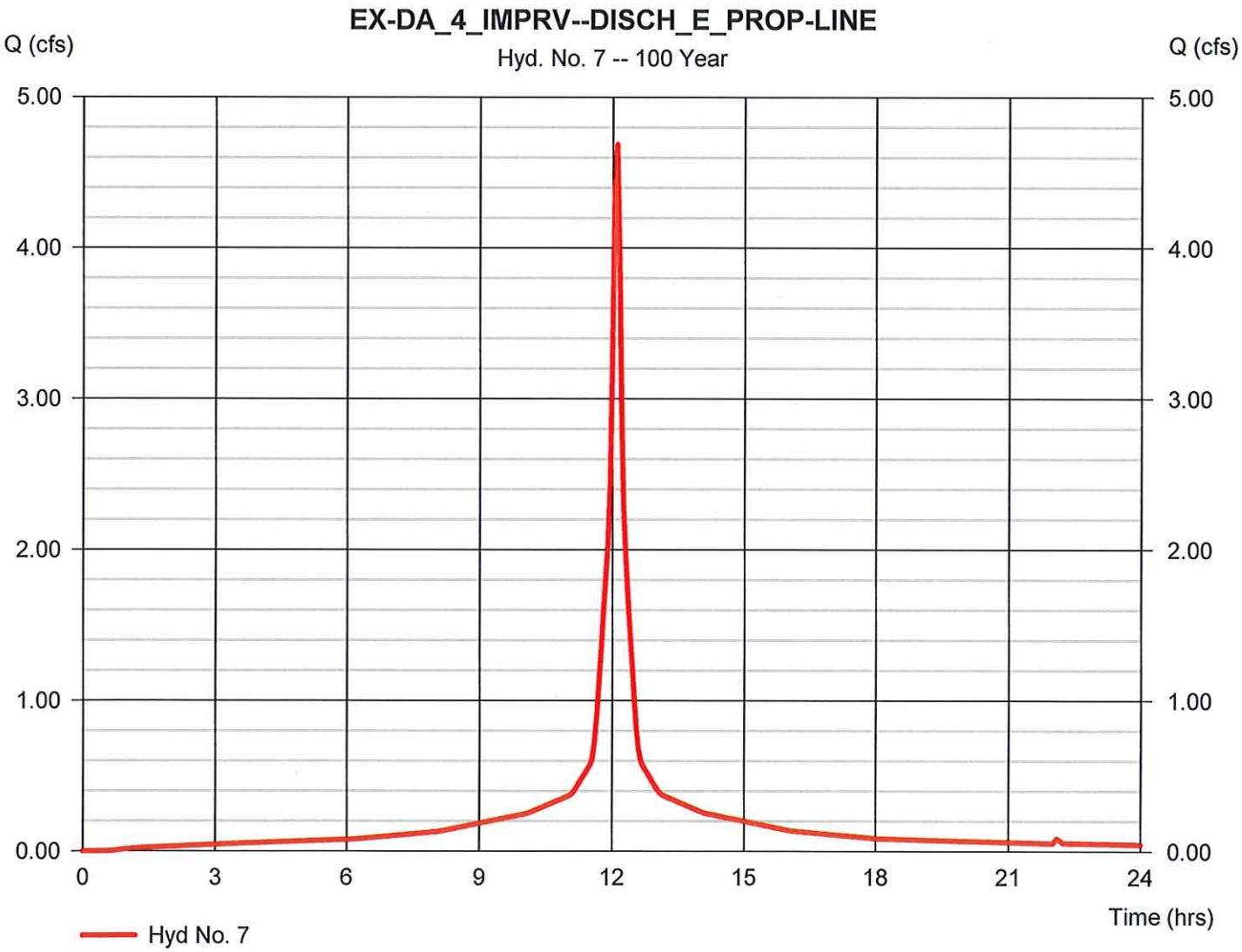
Hydrograph Report

Hyd. No. 7

EX-DA_4_IMPRV--DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 4.687 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 18,212 cuft
Drainage area	= 0.680 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.680 x 98)] / 0.680



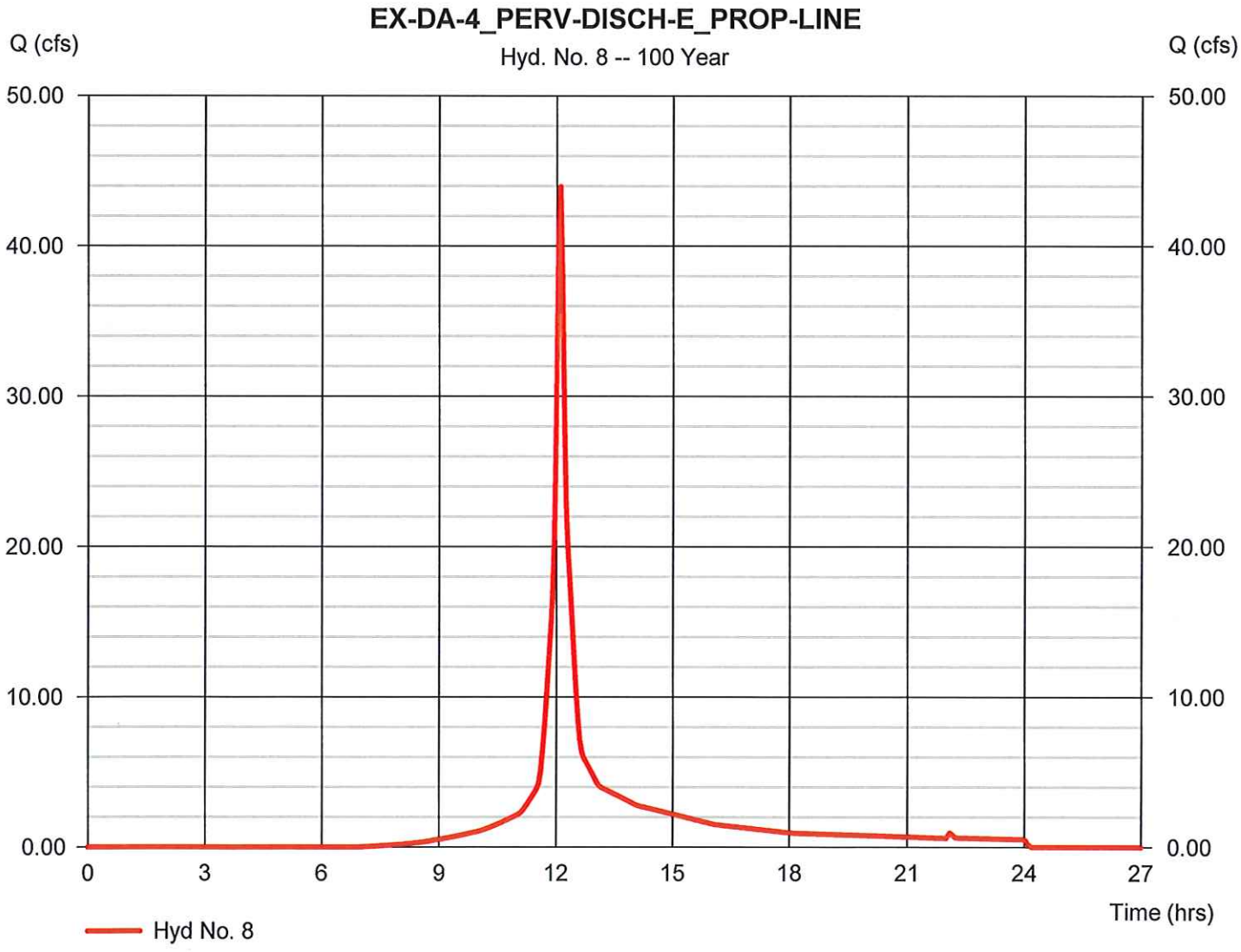
Hydrograph Report

Hyd. No. 8

EX-DA-4_PERV-DISCH-E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 43.95 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 146,871 cuft
Drainage area	= 8.590 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.70 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(8.590 x 74)] / 8.590

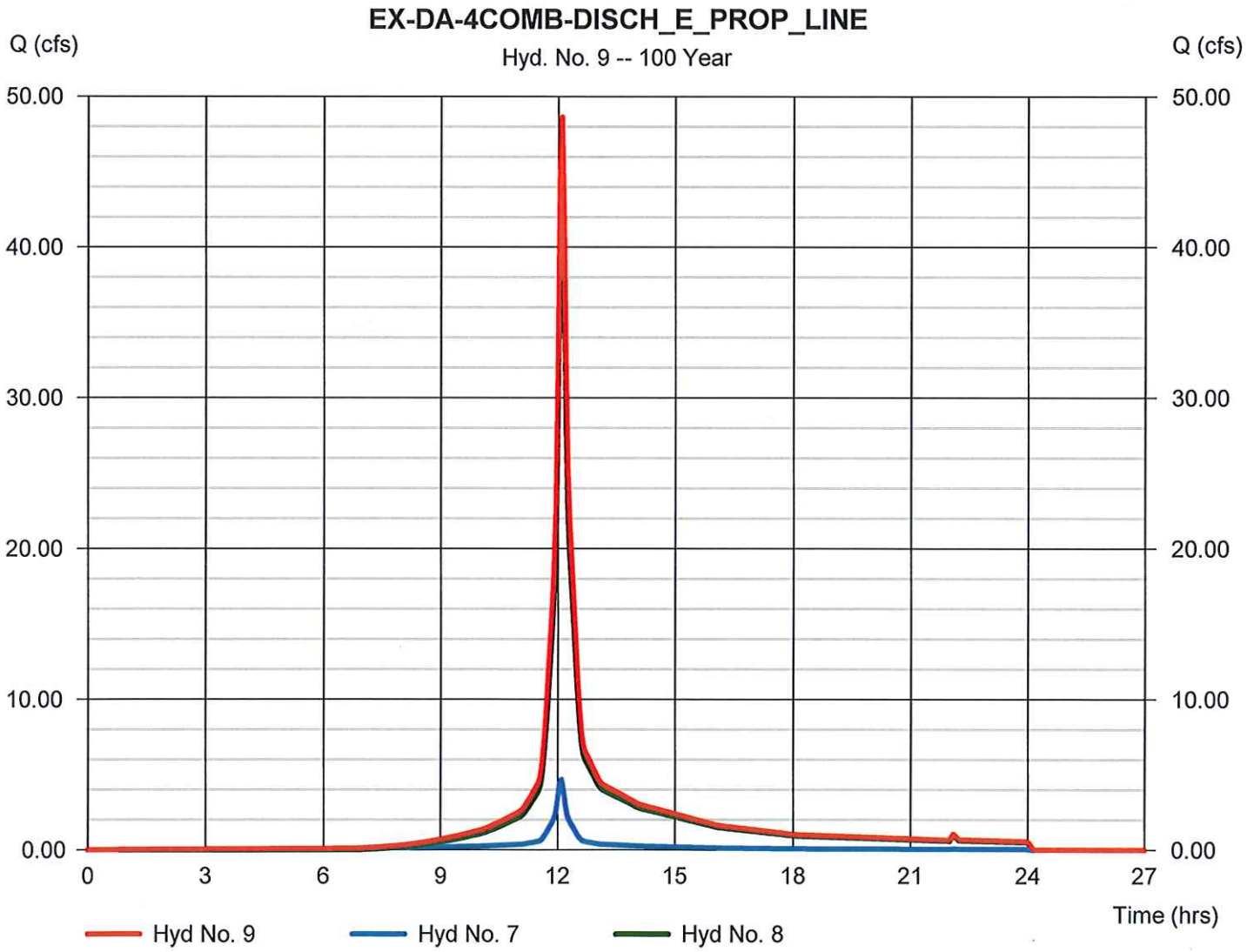


Hydrograph Report

Hyd. No. 9

EX-DA-4COMB-DISCH_E_PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 48.64 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 165,083 cuft
Inflow hyds.	= 7, 8	Contrib. drain. area	= 9.270 ac

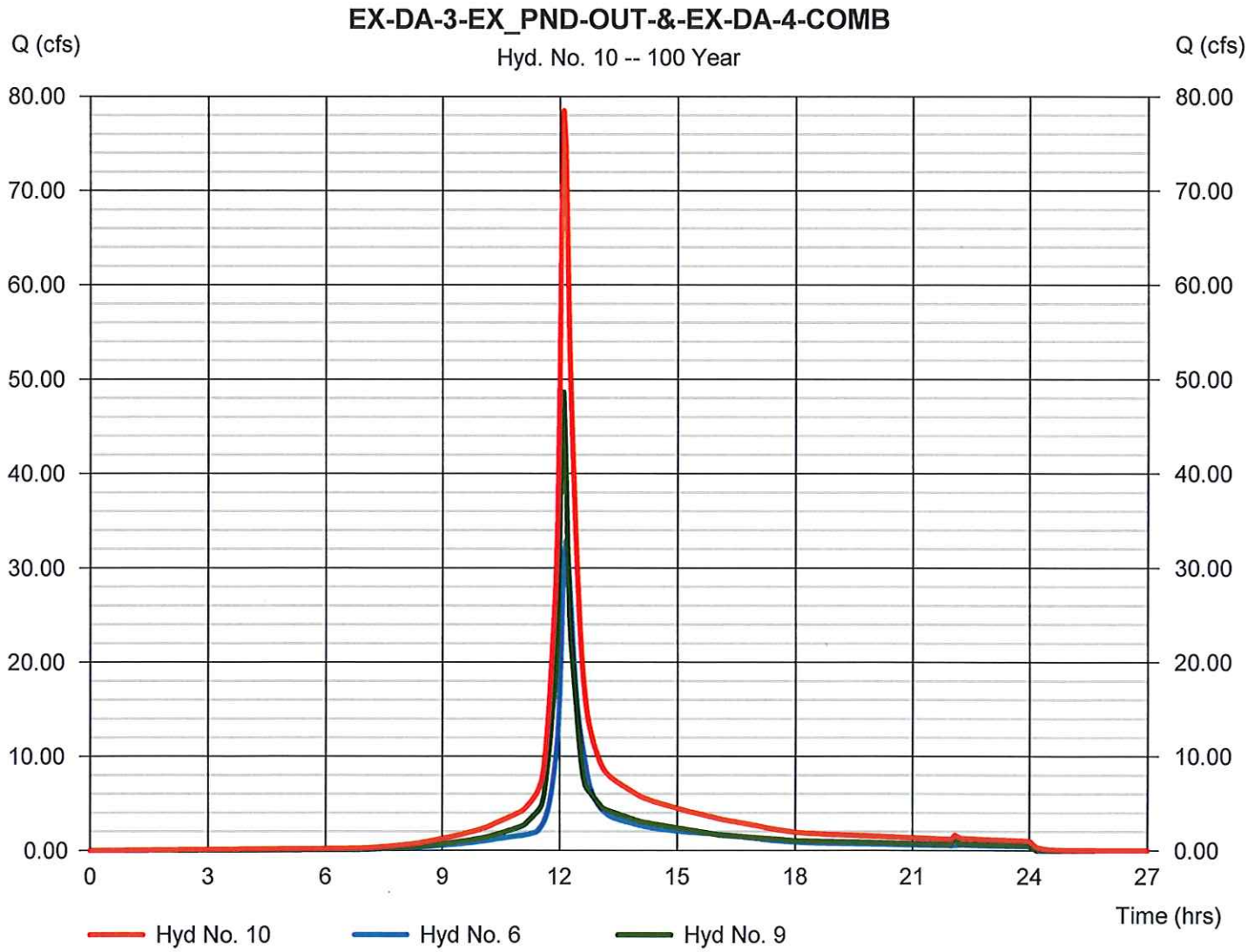


Hydrograph Report

Hyd. No. 10

EX-DA-3-EX_PND-OUT-&-EX-DA-4-COMB

Hydrograph type	= Combine	Peak discharge	= 78.50 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 300,342 cuft
Inflow hyds.	= 6, 9	Contrib. drain. area	= 0.000 ac



Hydrograph Report

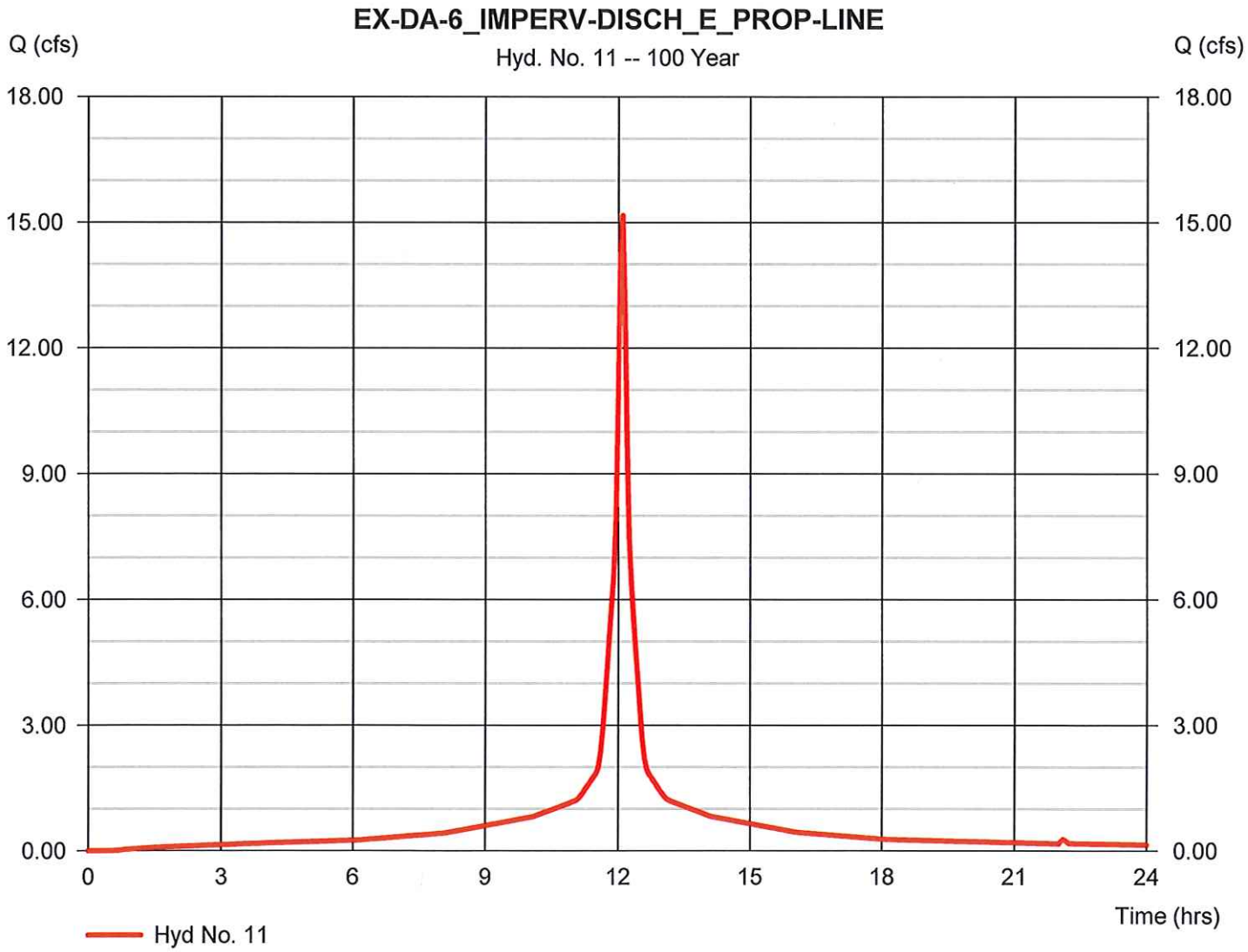
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 11

EX-DA-6_IMPERV-DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 15.16 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 58,923 cuft
Drainage area	= 2.200 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.200 x 98)] / 2.200



Hydrograph Report

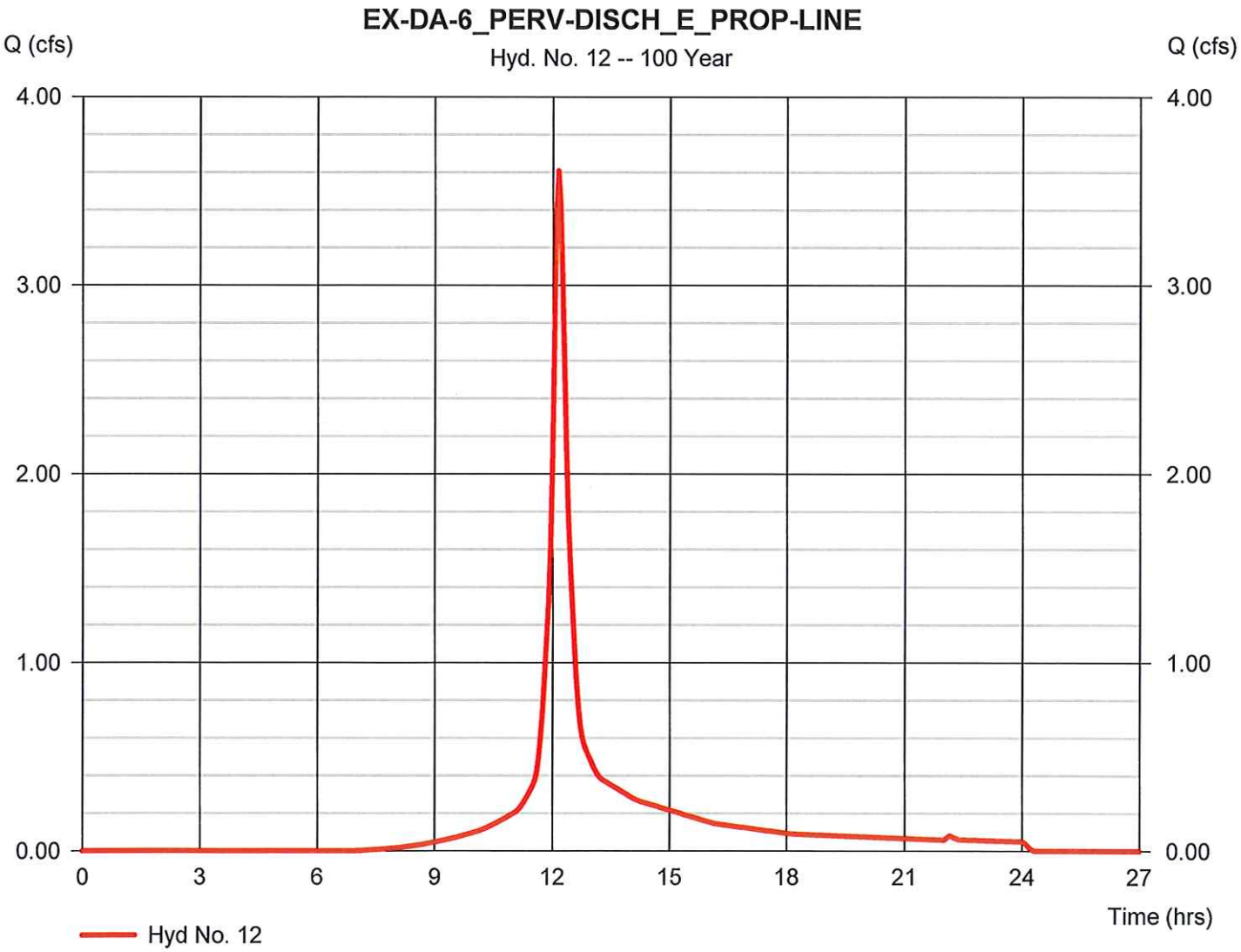
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 12

EX-DA-6_PERV-DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 3.609 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 14,225 cuft
Drainage area	= 0.780 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.90 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.780 x 74)] / 0.780

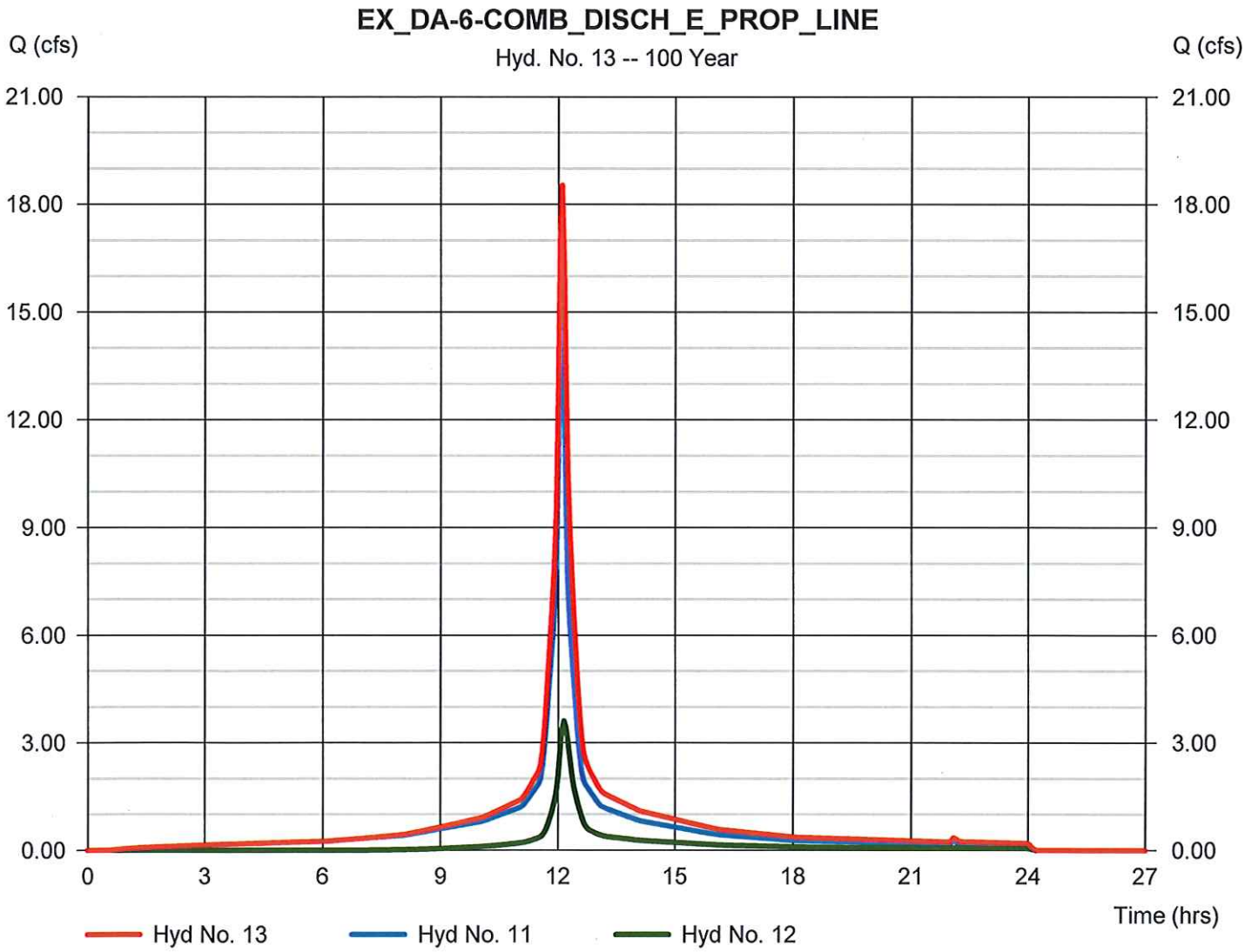


Hydrograph Report

Hyd. No. 13

EX_DA-6-COMB_DISCH_E_PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 18.54 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 73,148 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 2.980 ac



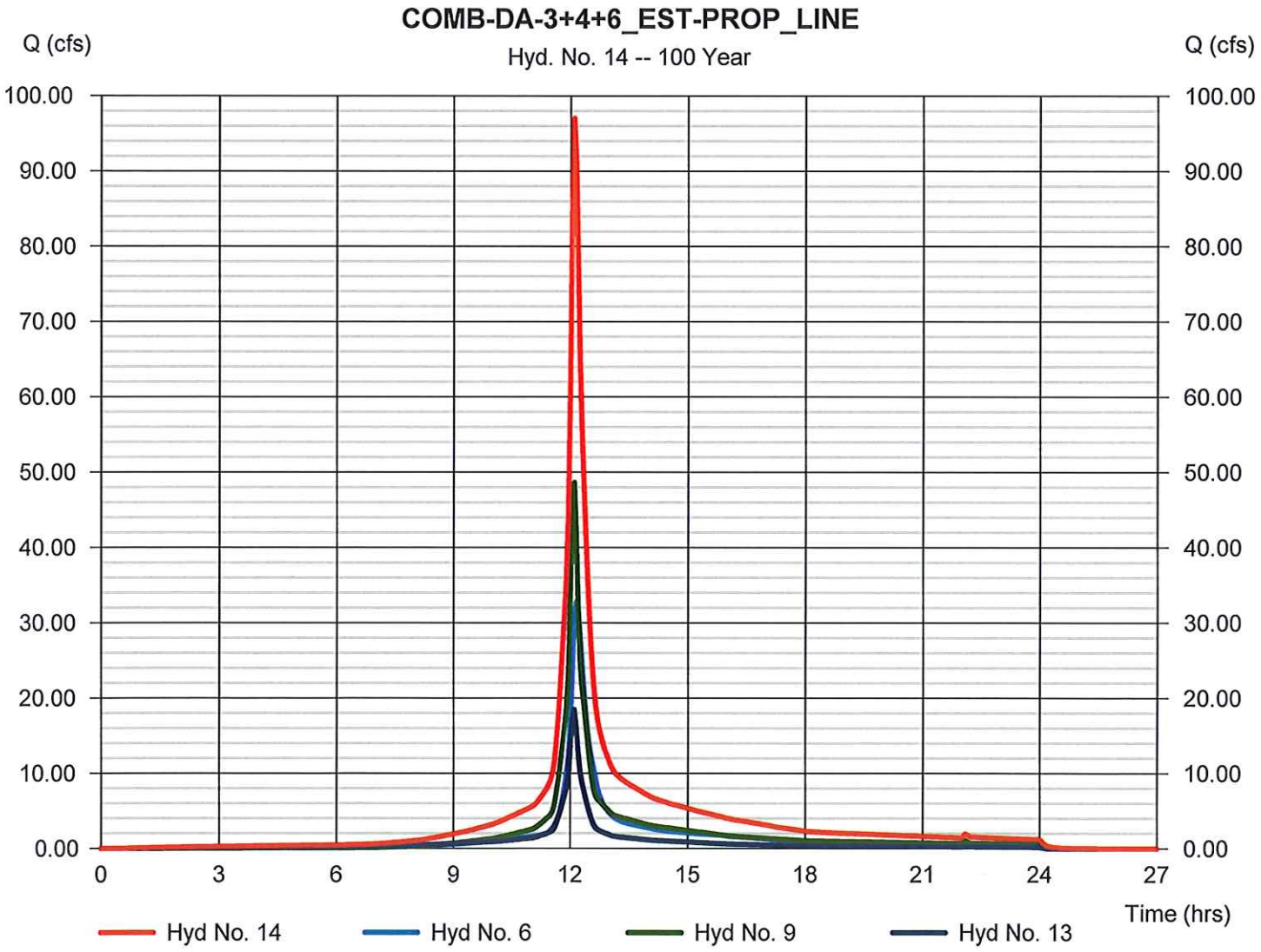
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 14

COMB-DA-3+4+6_EST-PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 97.04 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 373,490 cuft
Inflow hyds.	= 6, 9, 13	Contrib. drain. area	= 0.000 ac



Hydrograph Report

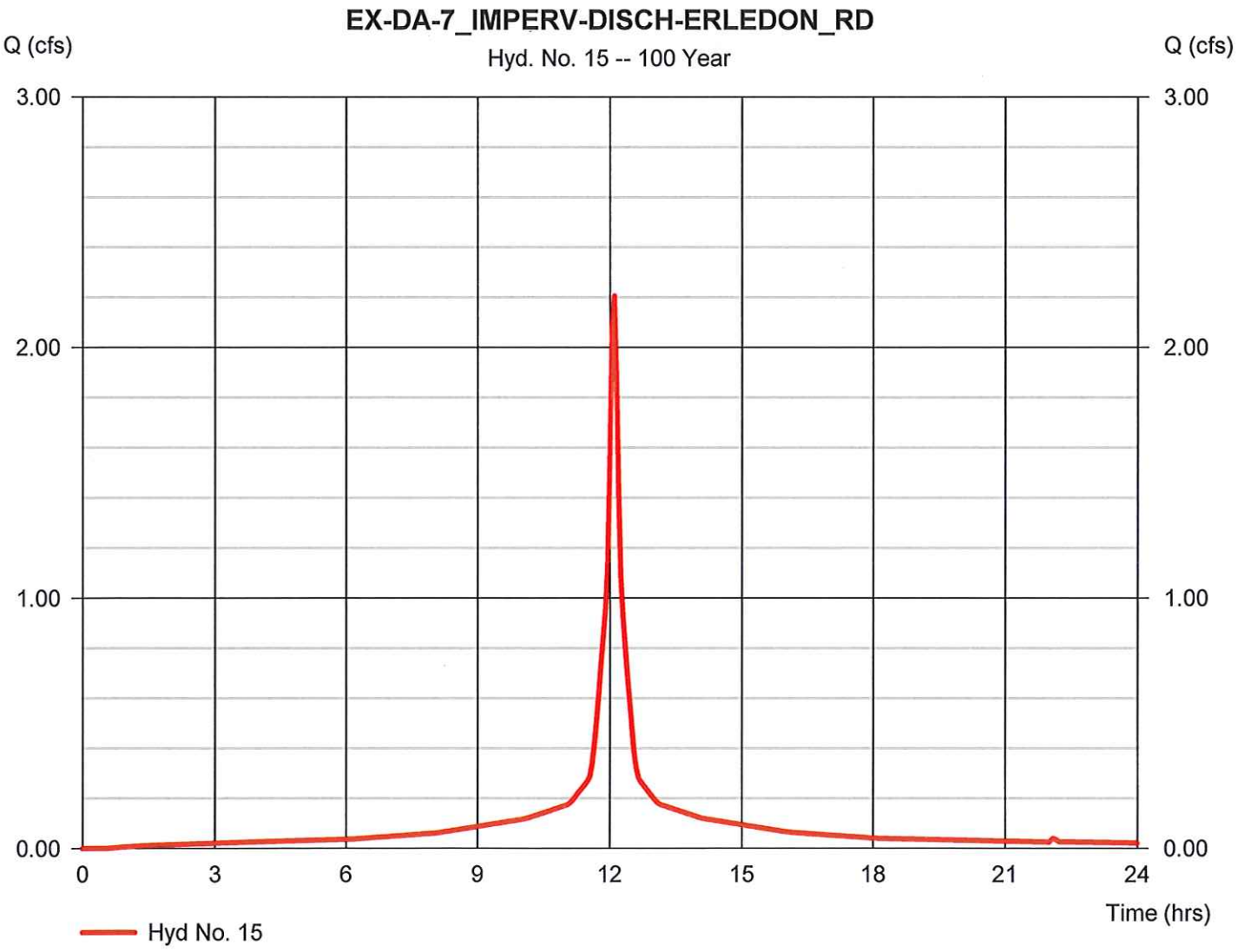
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 15

EX-DA-7_IMPERV-DISCH-ERLEDON_RD

Hydrograph type	= SCS Runoff	Peak discharge	= 2.206 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 8,571 cuft
Drainage area	= 0.320 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.320 x 98)] / 0.320



Hydrograph Report

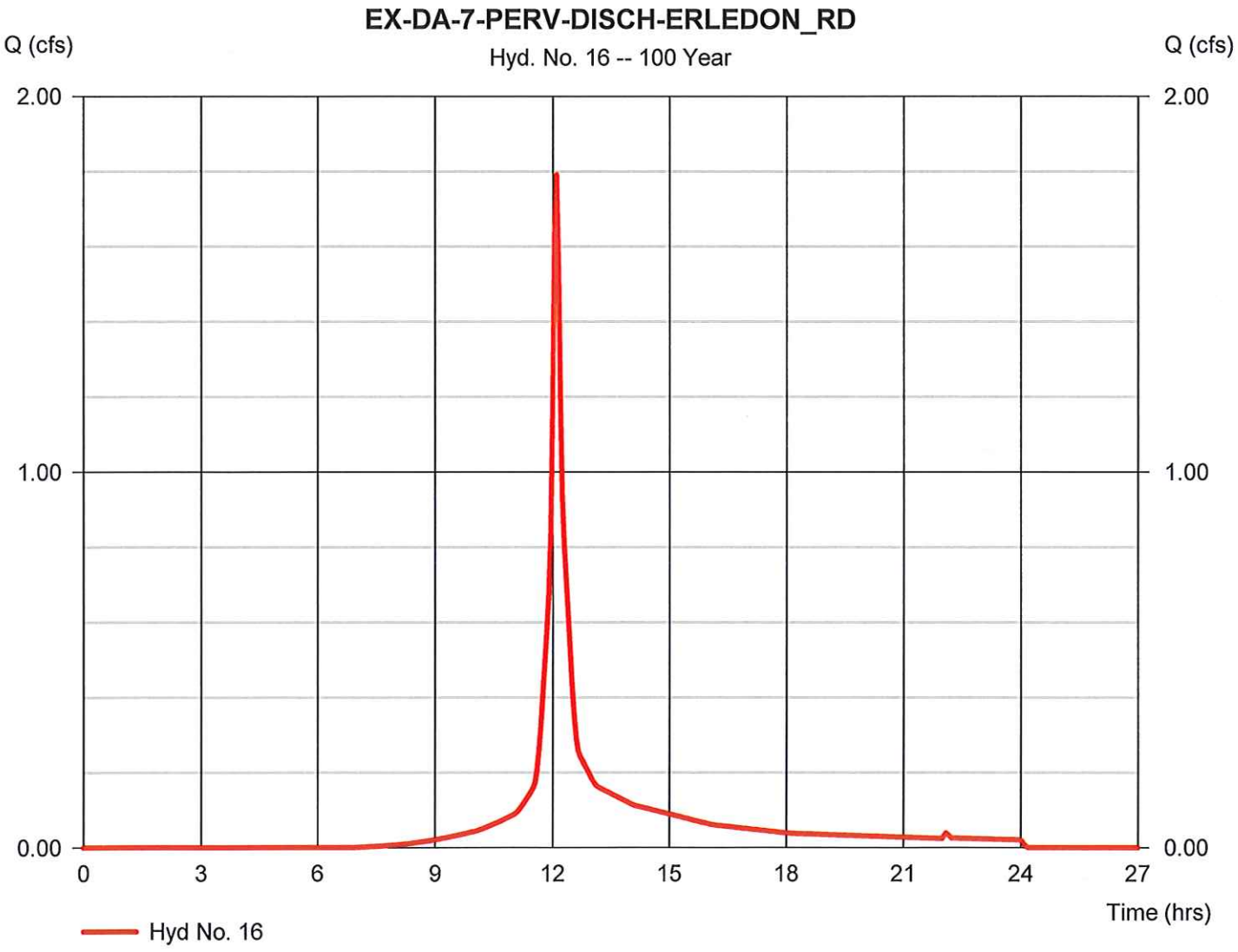
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 16

EX-DA-7-PERV-DISCH-ERLEDON_RD

Hydrograph type	= SCS Runoff	Peak discharge	= 1.791 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 5,984 cuft
Drainage area	= 0.350 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.350 x 74)] / 0.350

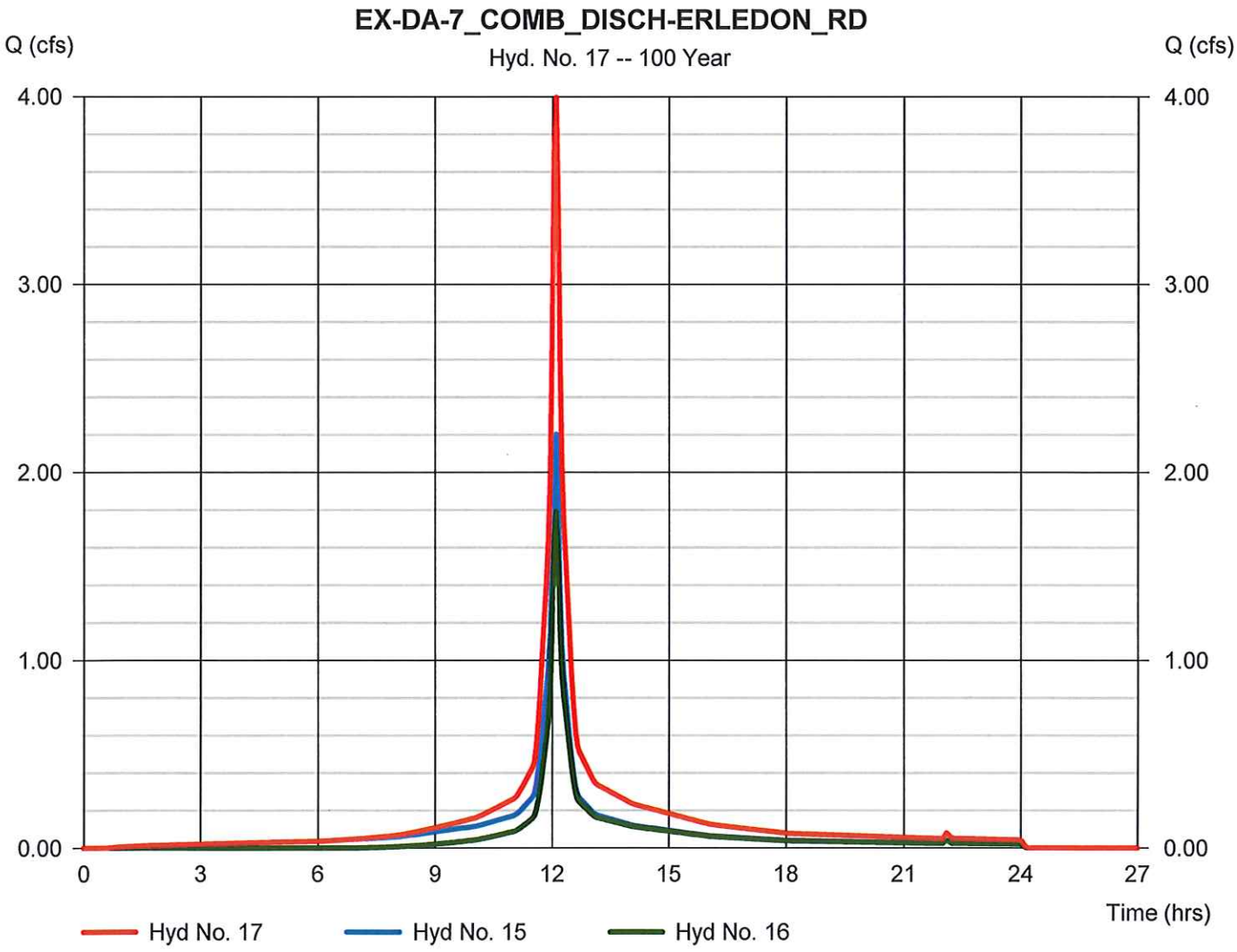


Hydrograph Report

Hyd. No. 17

EX-DA-7_COMB_DISCH-ERLEDON_RD

Hydrograph type	= Combine	Peak discharge	= 3.996 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 14,555 cuft
Inflow hyds.	= 15, 16	Contrib. drain. area	= 0.670 ac

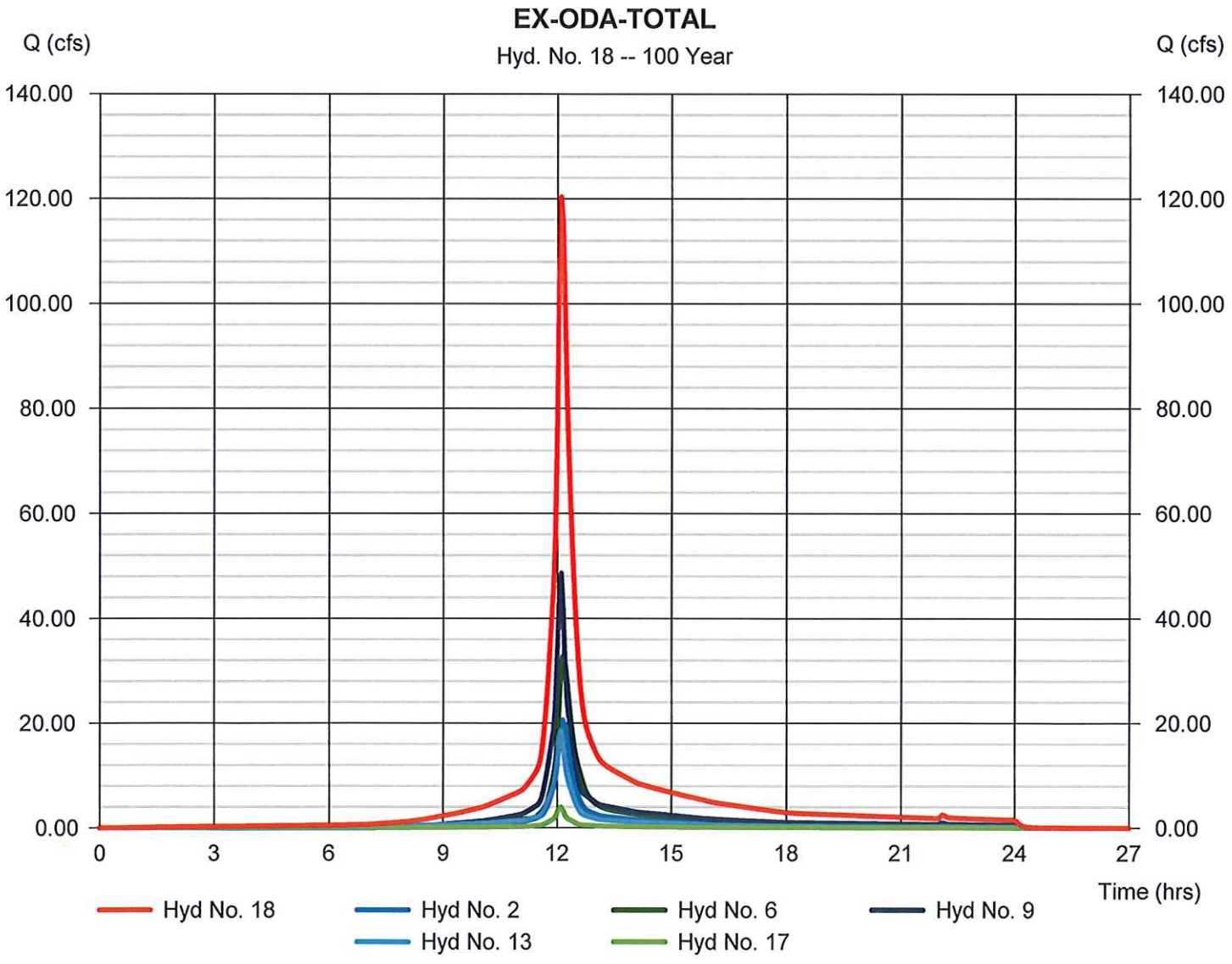


Hydrograph Report

Hyd. No. 18

EX-ODA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 120.36 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 469,568 cuft
Inflow hyds.	= 2, 6, 9, 13, 17	Contrib. drain. area	= 4.470 ac



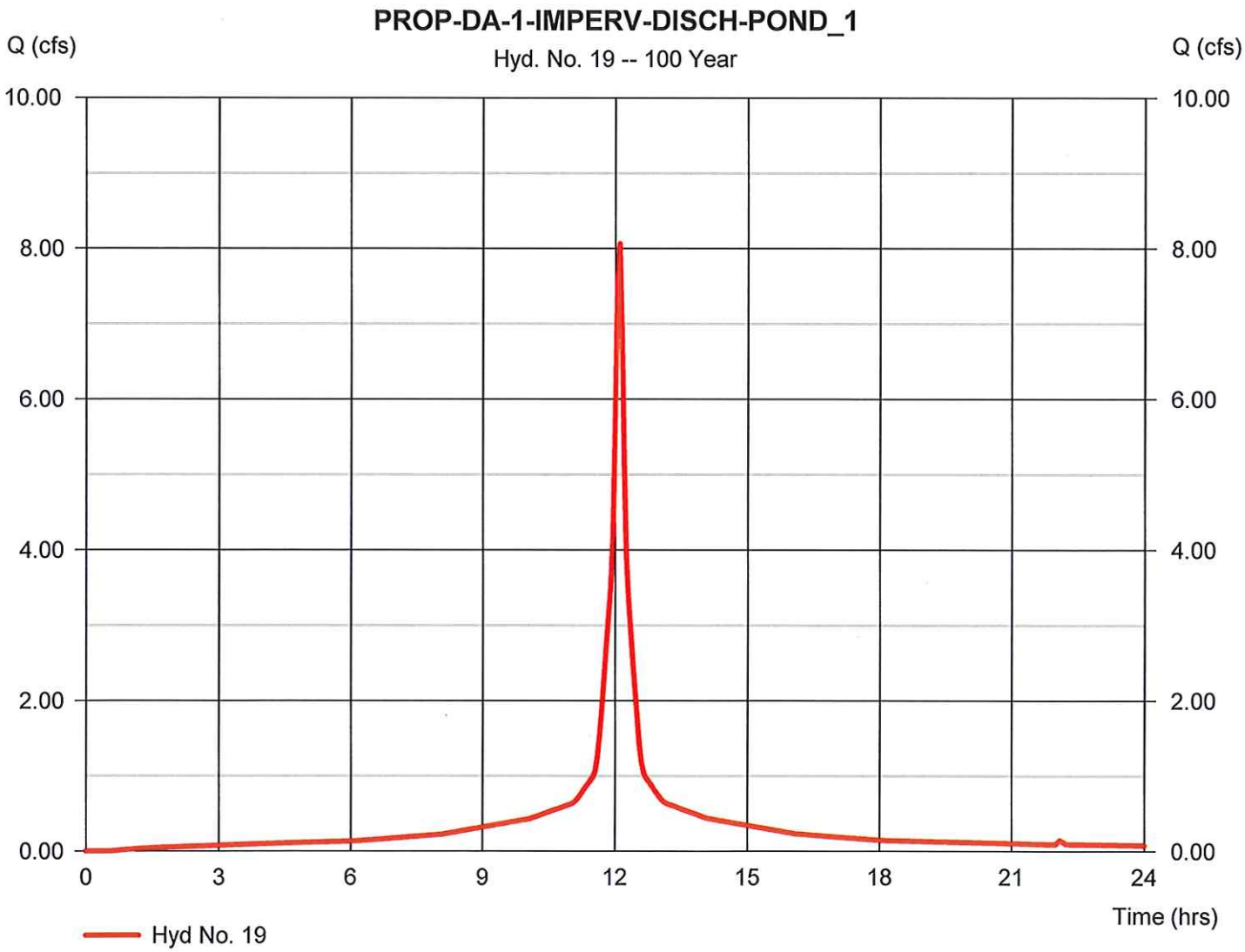
Hydrograph Report

Hyd. No. 19

PROP-DA-1-IMPERV-DISCH-POND_1

Hydrograph type	= SCS Runoff	Peak discharge	= 8.064 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 31,336 cuft
Drainage area	= 1.170 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.170 x 98)] / 1.170



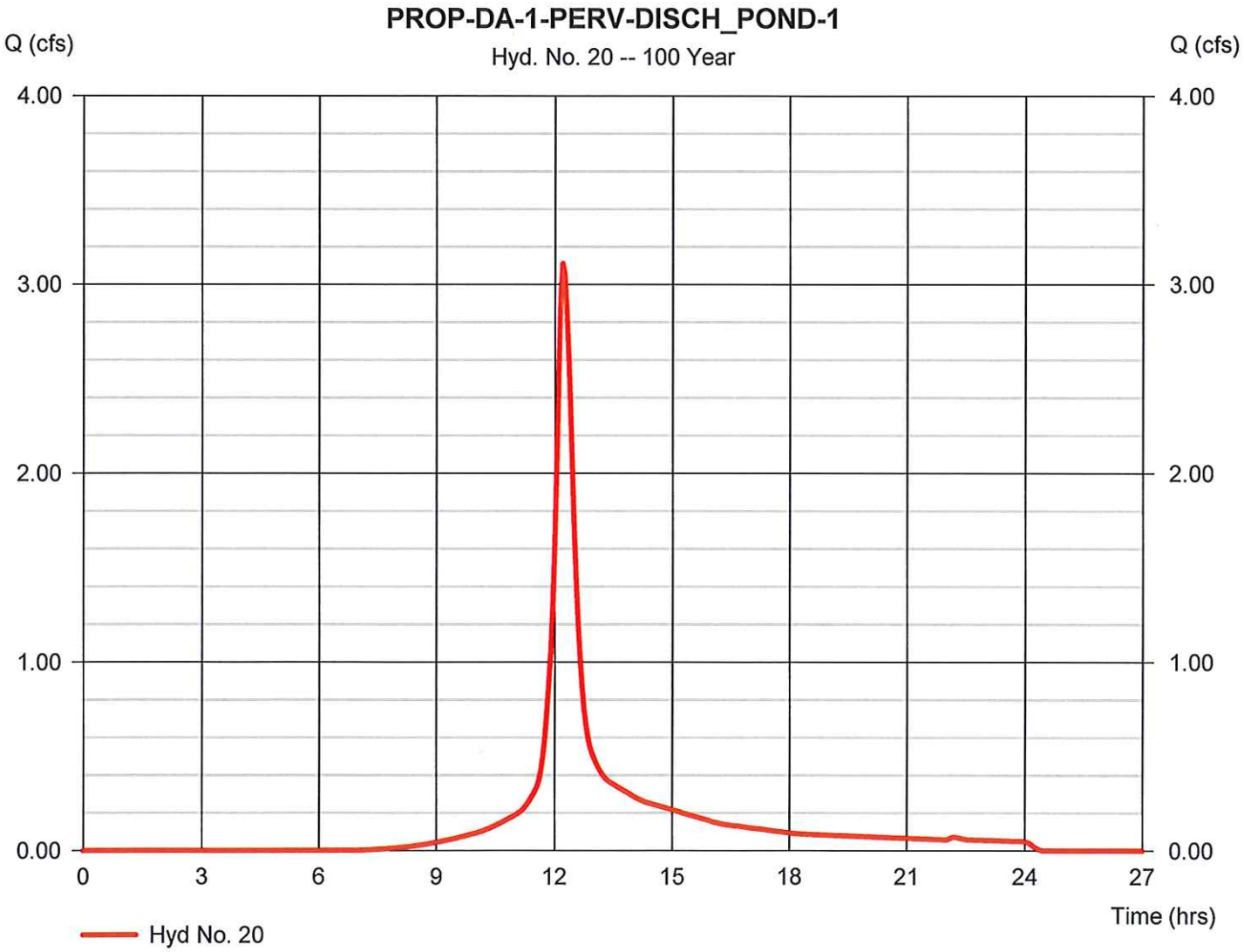
Hydrograph Report

Hyd. No. 20

PROP-DA-1-PERV-DISCH_POND-1

Hydrograph type	= SCS Runoff	Peak discharge	= 3.112 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 13,918 cuft
Drainage area	= 0.740 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.50 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.280 x 74)] / 0.740

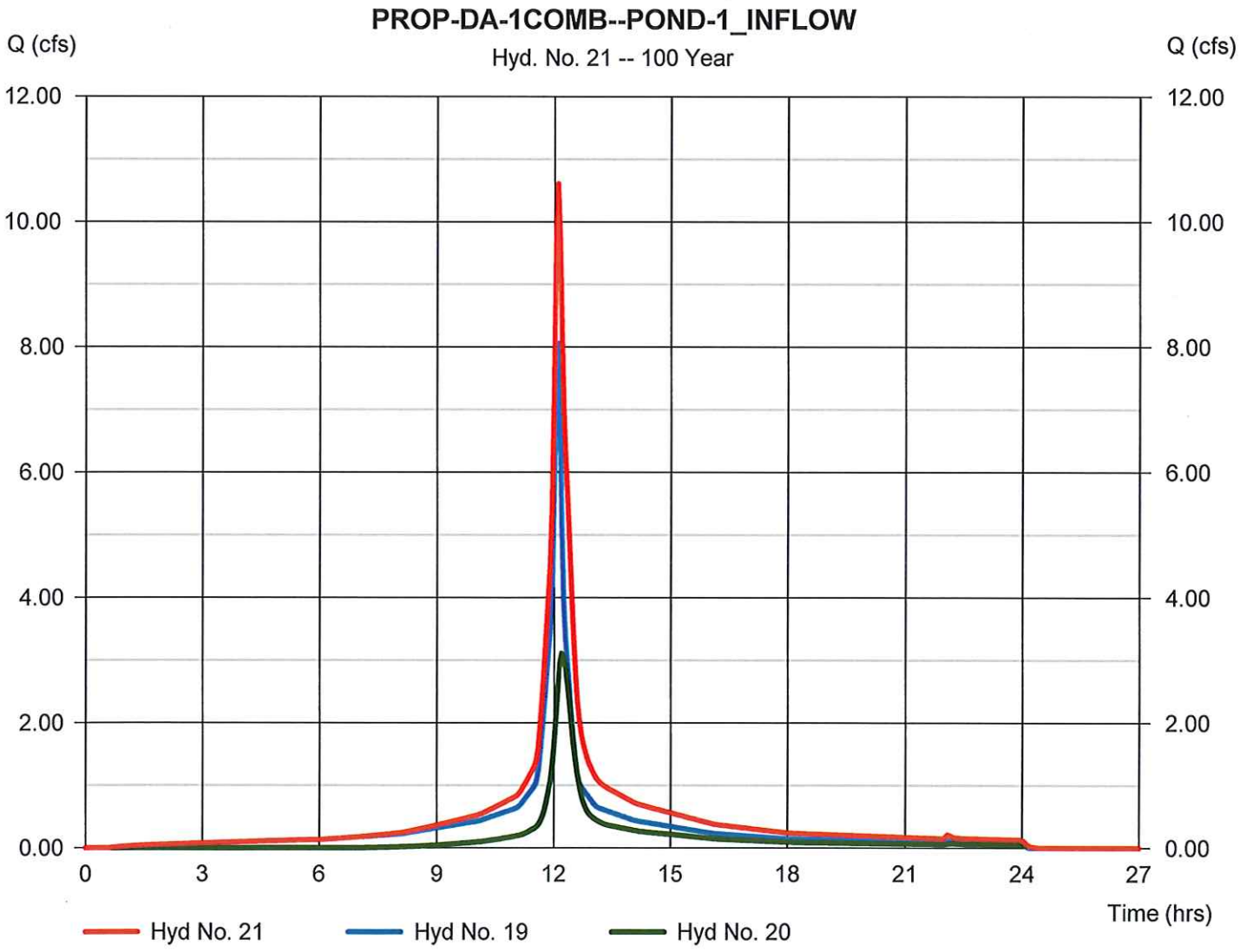


Hydrograph Report

Hyd. No. 21

PROP-DA-1COMB--POND-1_INFLOW

Hydrograph type	= Combine	Peak discharge	= 10.61 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 45,254 cuft
Inflow hyds.	= 19, 20	Contrib. drain. area	= 1.910 ac



Hydrograph Report

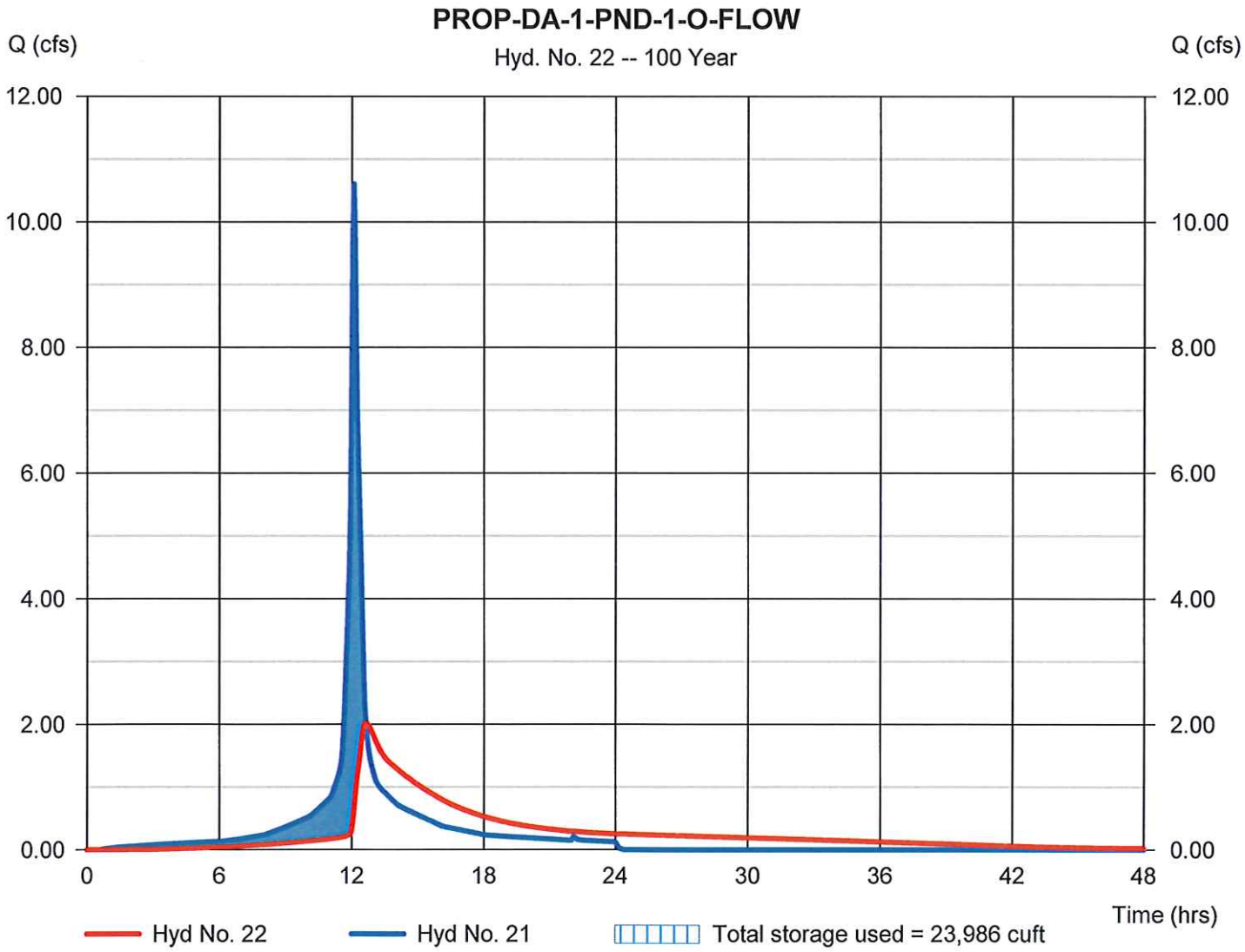
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 22

PROP-DA-1-PND-1-O-FLOW

Hydrograph type	= Reservoir	Peak discharge	= 2.023 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.65 hrs
Time interval	= 3 min	Hyd. volume	= 45,174 cuft
Inflow hyd. No.	= 21 - PROP-DA-1COMB--POND-1	Max. Elevation	= 114.40 ft
Reservoir name	= POND-1	Max. Storage	= 23,986 cuft

Storage Indication method used.



Hydrograph Report

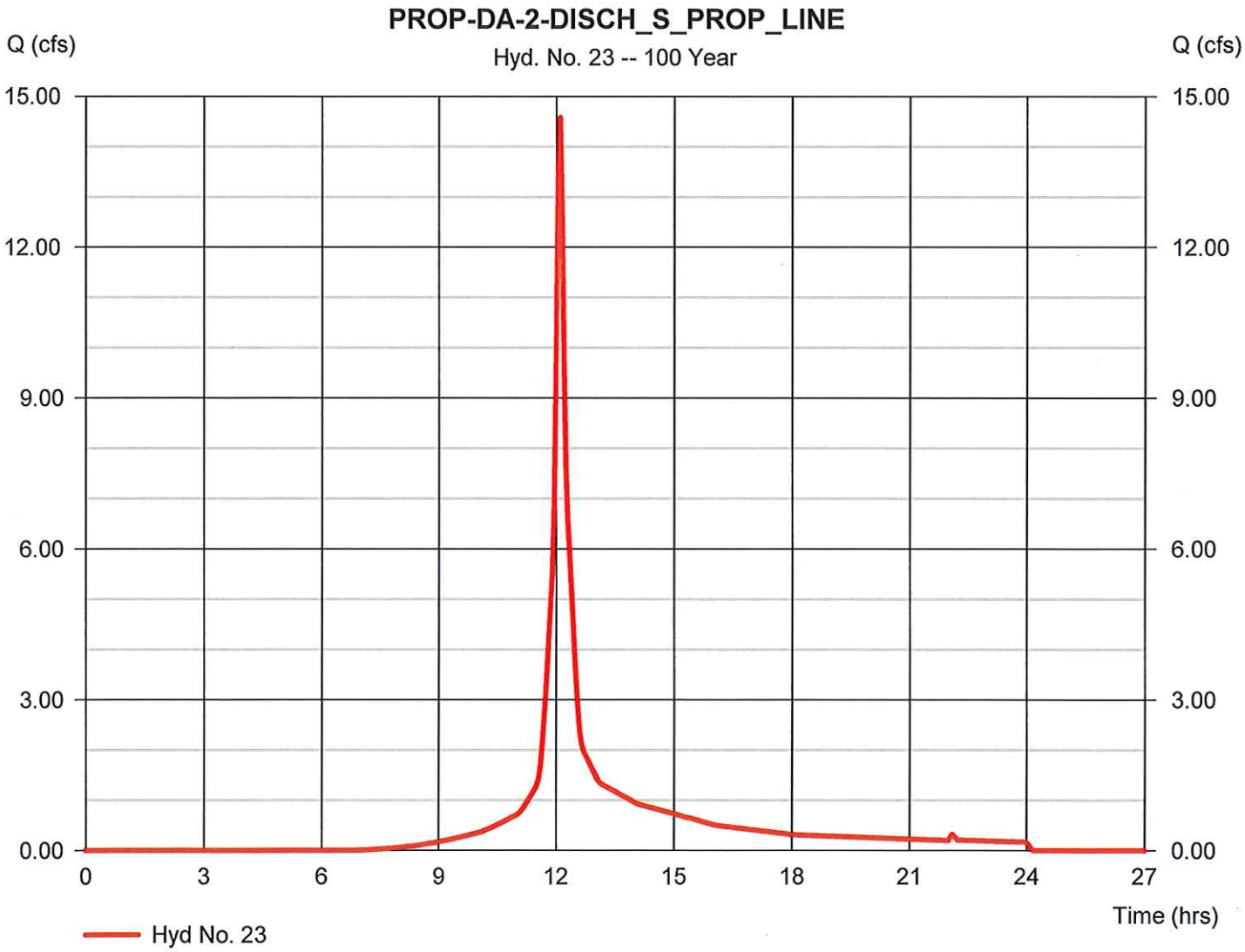
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 23

PROP-DA-2-DISCH_S_PROP_LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 14.58 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 48,729 cuft
Drainage area	= 2.850 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.90 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.850 x 74)] / 2.850



Hydrograph Report

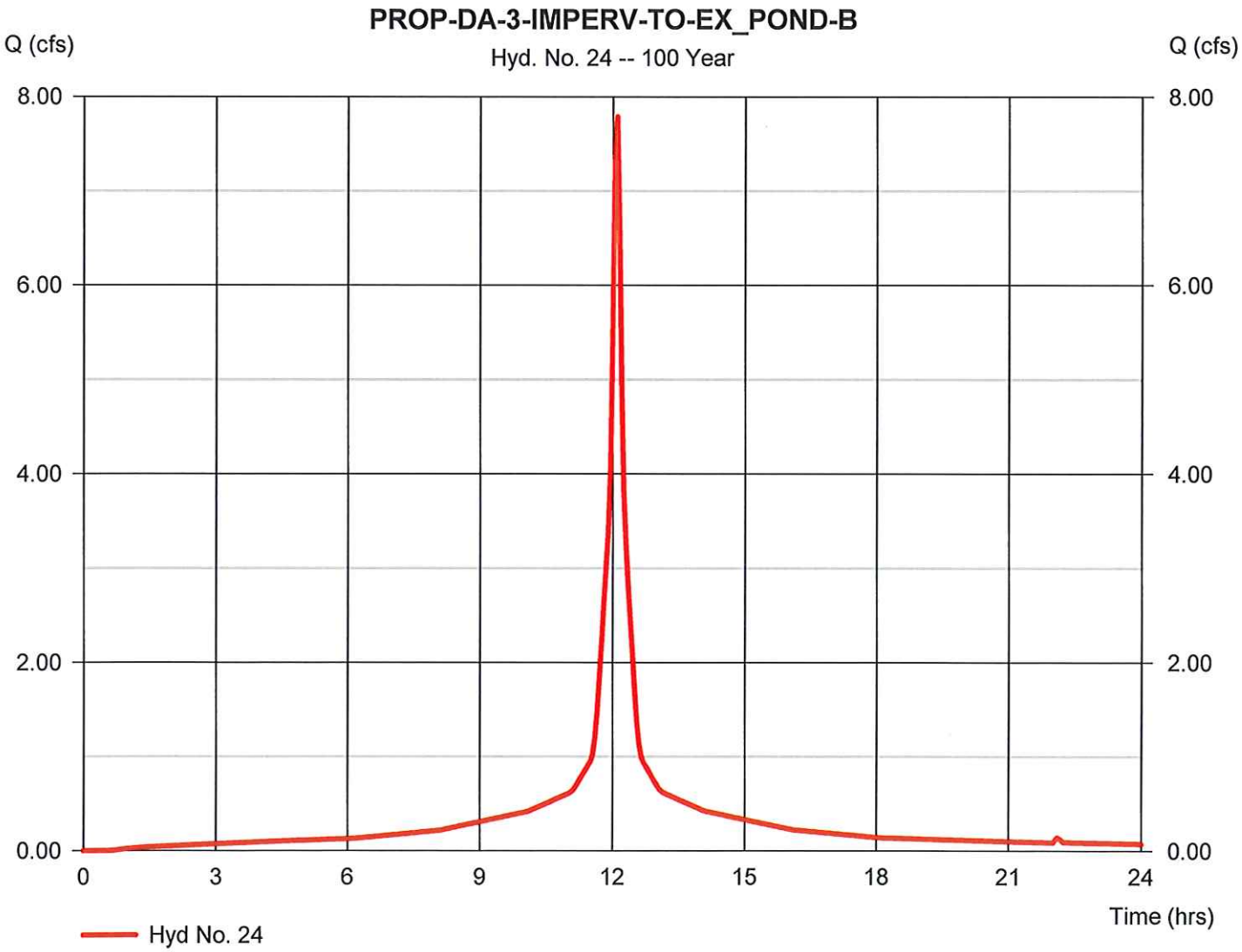
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 24

PROP-DA-3-IMPERV-TO-EX_POND-B

Hydrograph type	= SCS Runoff	Peak discharge	= 7.789 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 30,265 cuft
Drainage area	= 1.130 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.130 x 98)] / 1.130



Hydrograph Report

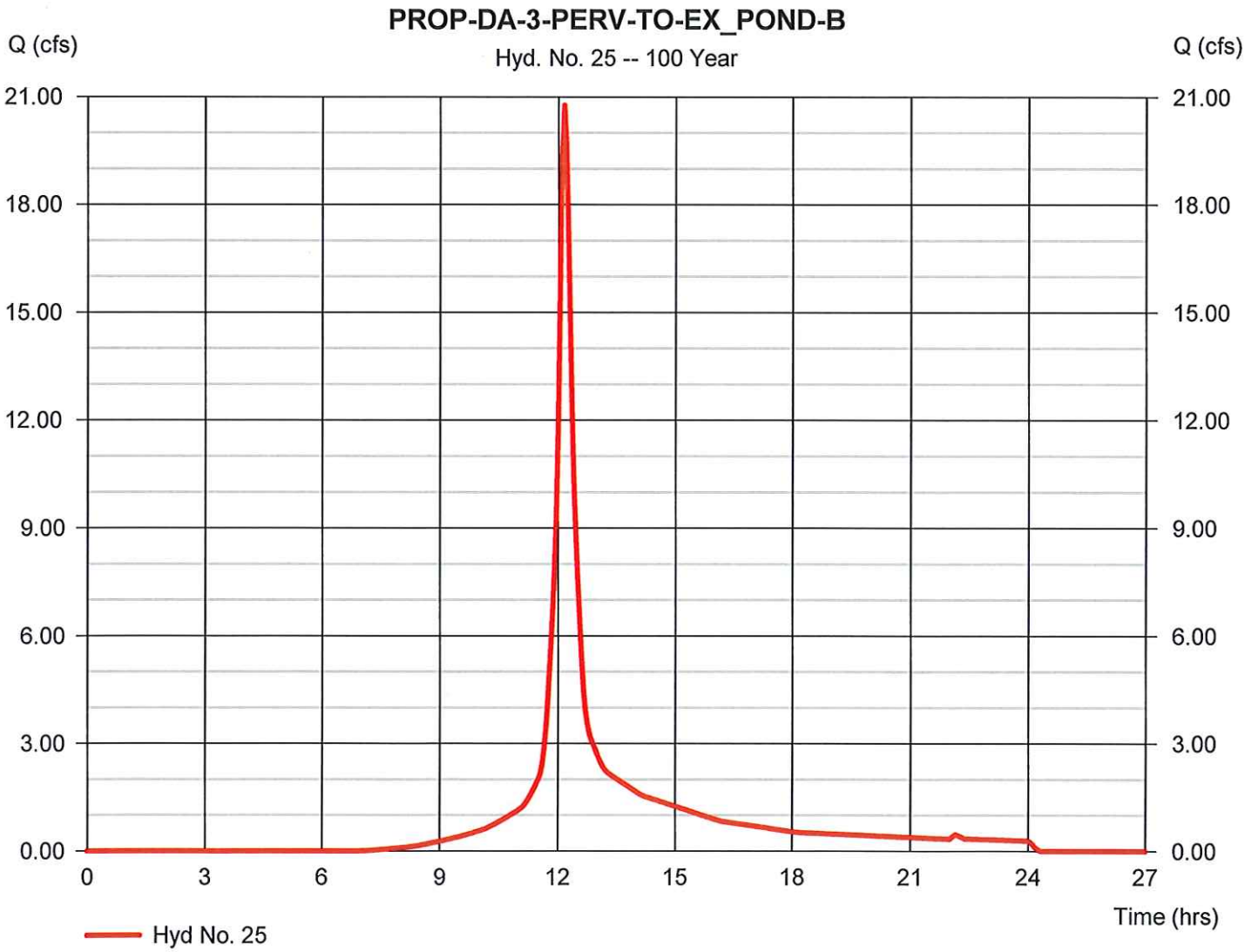
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 25

PROP-DA-3-PERV-TO-EX_POND-B

Hydrograph type	= SCS Runoff	Peak discharge	= 20.77 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 81,887 cuft
Drainage area	= 4.490 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.80 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.490 x 74)] / 4.490

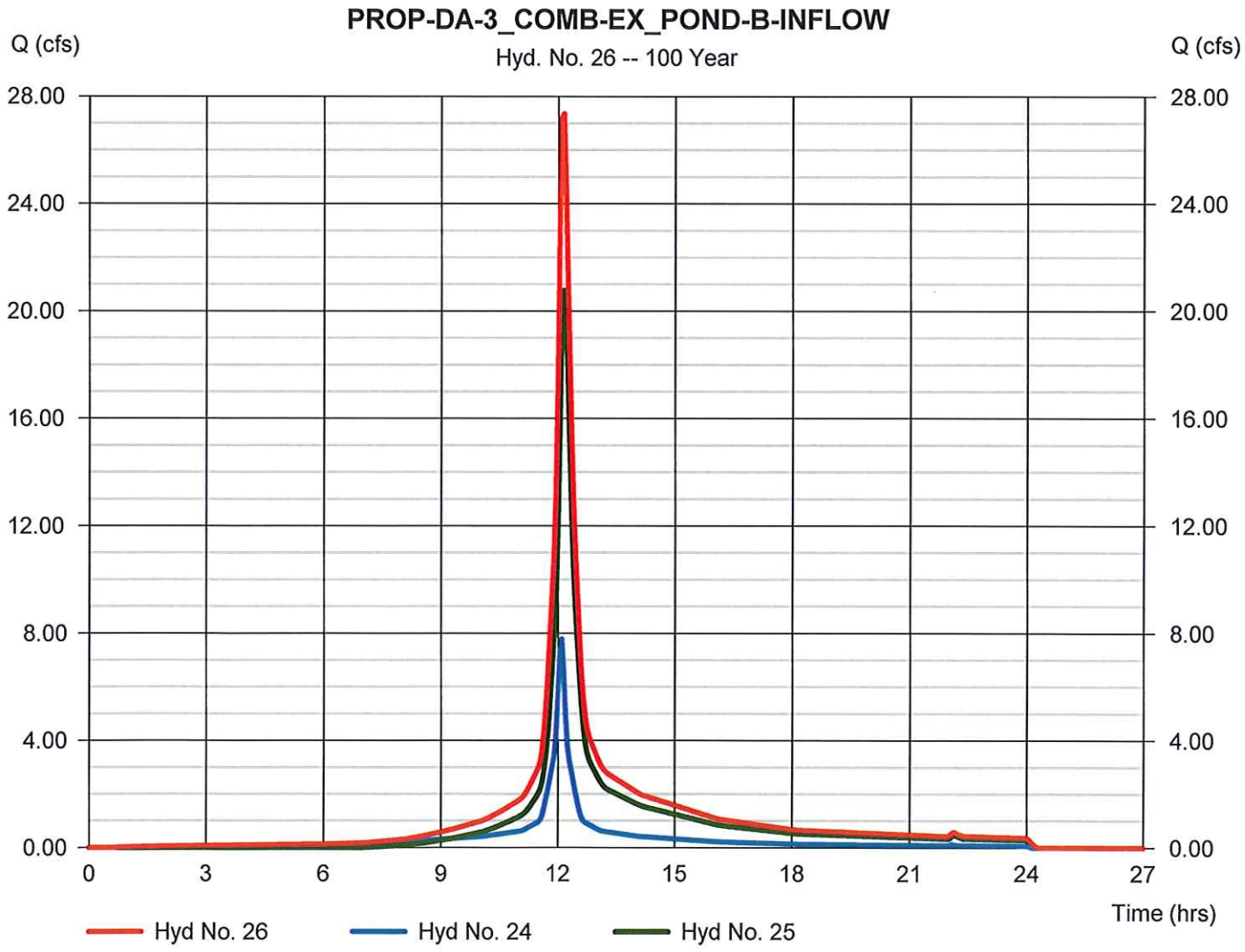


Hydrograph Report

Hyd. No. 26

PROP-DA-3_COMB-EX_POND-B-INFLOW

Hydrograph type	= Combine	Peak discharge	= 27.36 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 112,152 cuft
Inflow hyds.	= 24, 25	Contrib. drain. area	= 5.620 ac



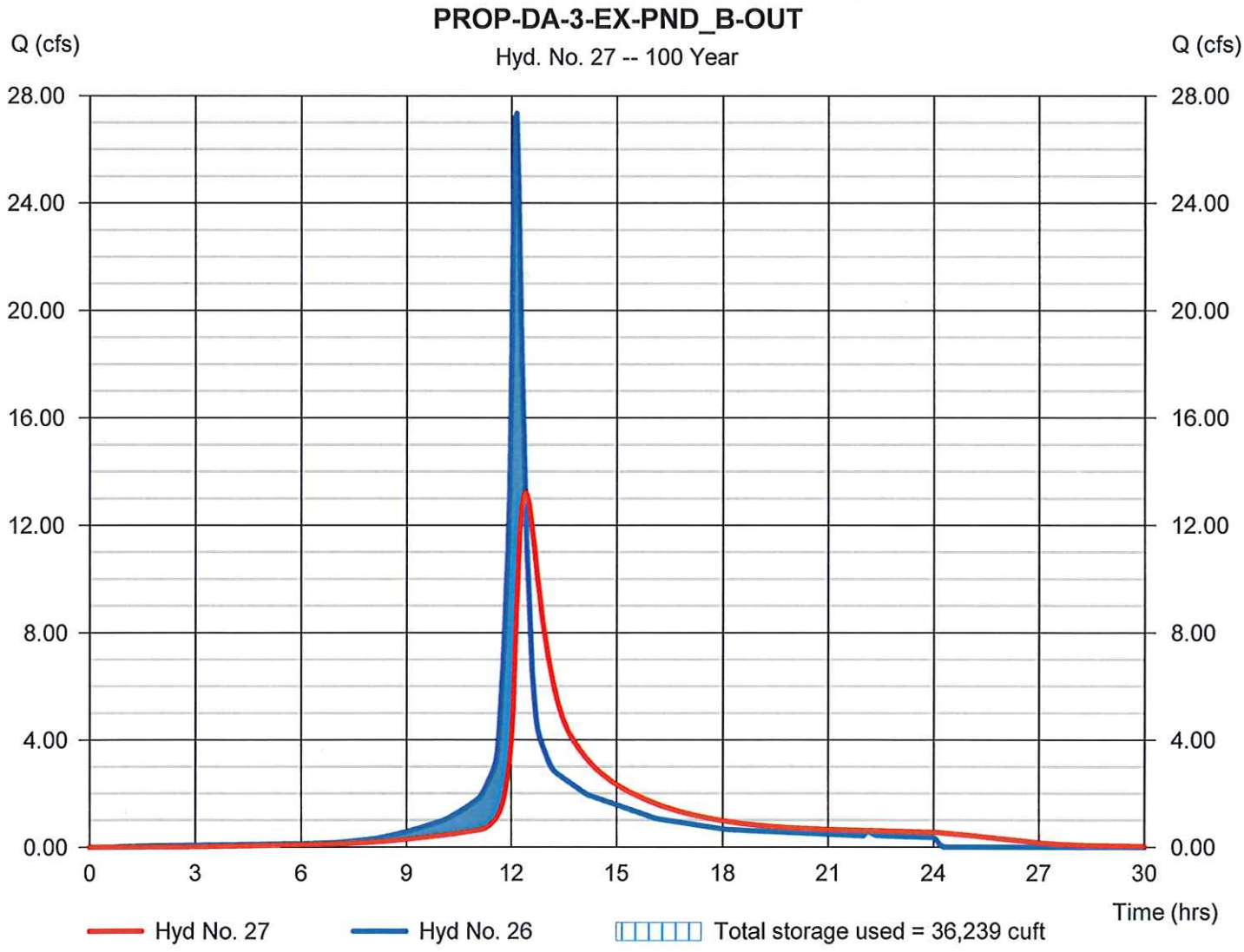
Hydrograph Report

Hyd. No. 27

PROP-DA-3-EX-PND_B-OUT

Hydrograph type	= Reservoir	Peak discharge	= 13.24 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.40 hrs
Time interval	= 3 min	Hyd. volume	= 112,132 cuft
Inflow hyd. No.	= 26 - PROP-DA-3_COMB-EX_POND_B_INFLOW	Max. Elevation	= 97.56 ft
Reservoir name	= EX-PND-B-PROP-DA-3	Max. Storage	= 36,239 cuft

Storage Indication method used.



Hydrograph Report

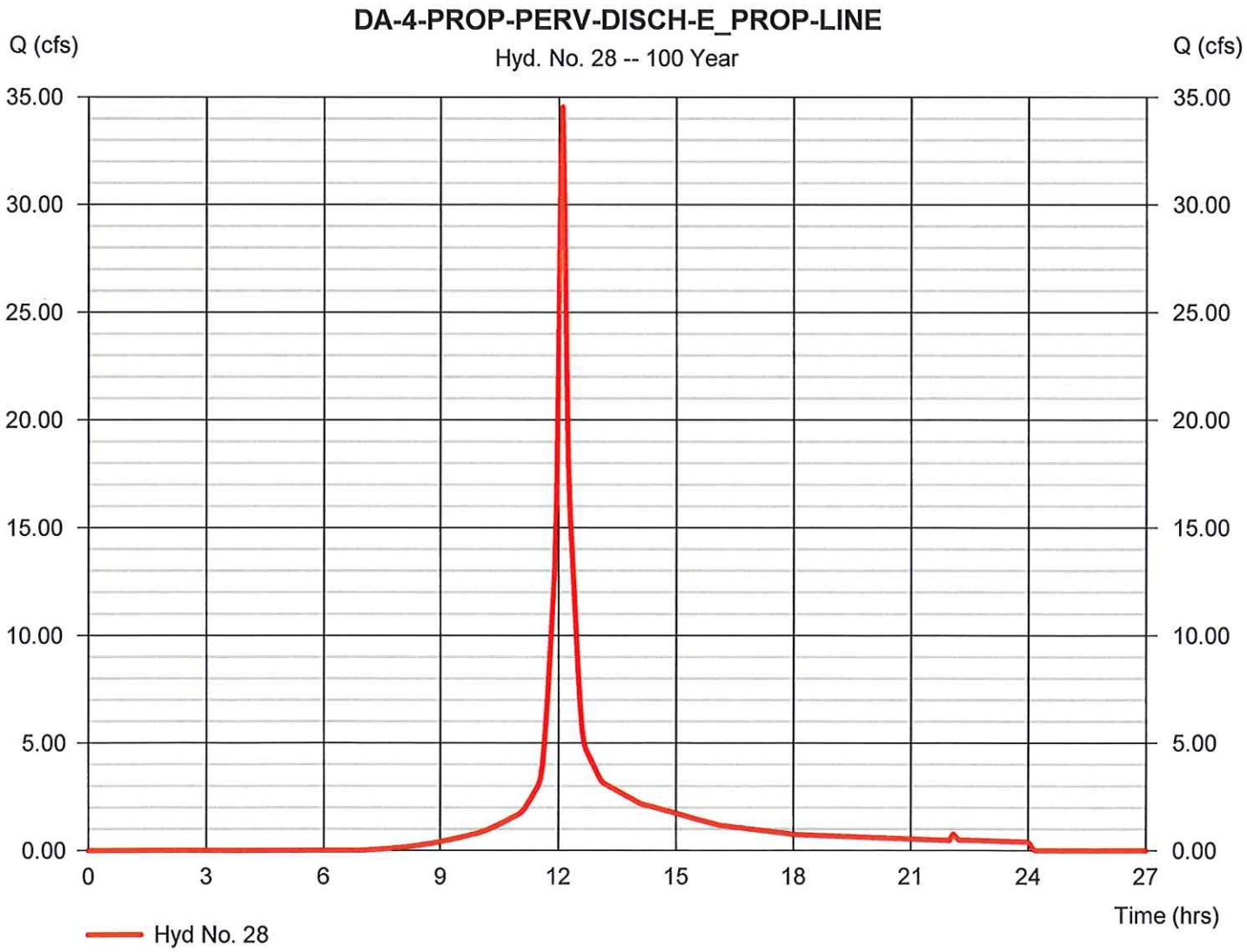
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 28

DA-4-PROP-PERV-DISCH-E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 34.54 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 115,411 cuft
Drainage area	= 6.750 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.70 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.110 x 74)] / 6.750



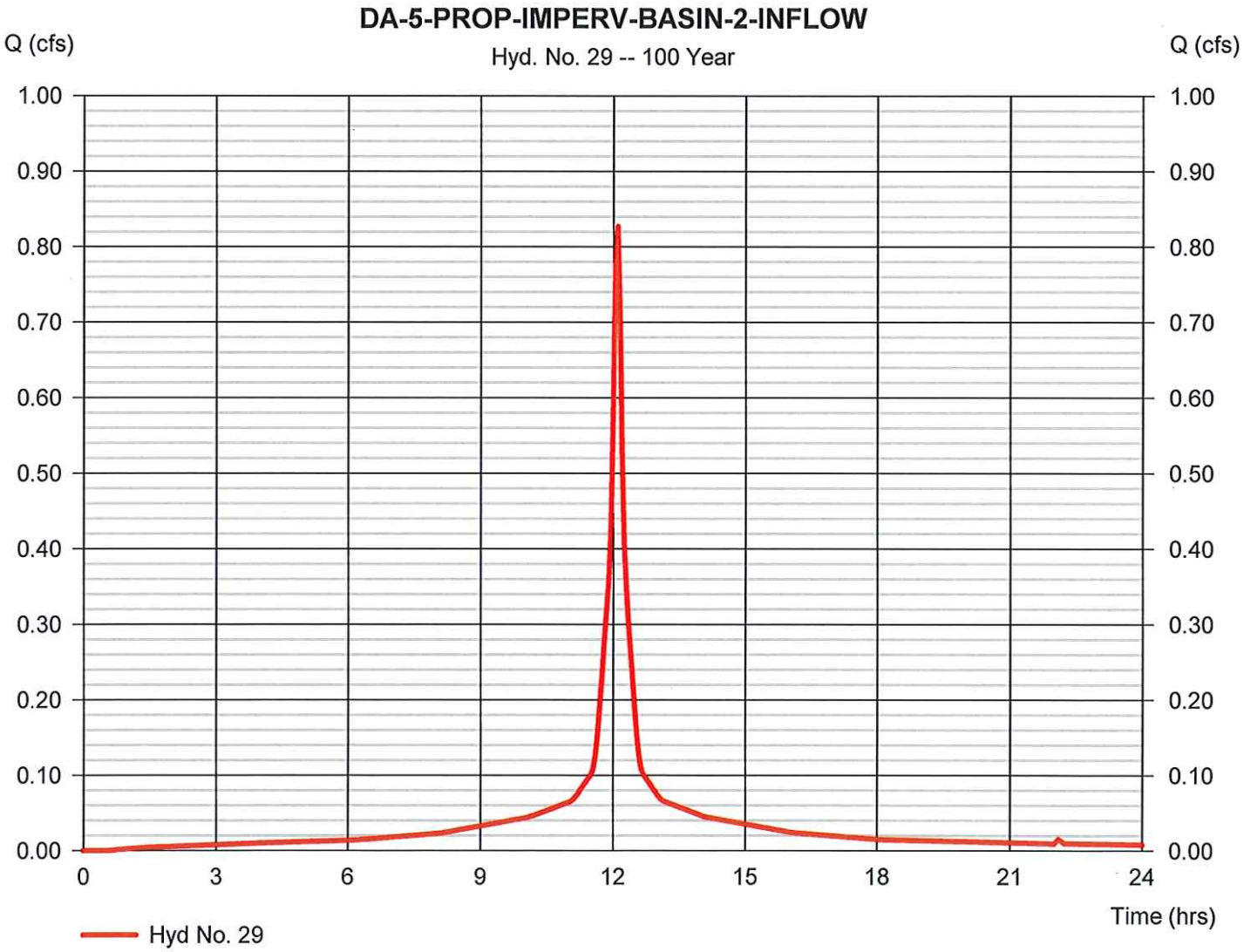
Hydrograph Report

Hyd. No. 29

DA-5-PROP-IMPERV-BASIN-2-INFLOW

Hydrograph type	= SCS Runoff	Peak discharge	= 0.827 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 3,214 cuft
Drainage area	= 0.120 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.120 x 98)] / 0.120



Hydrograph Report

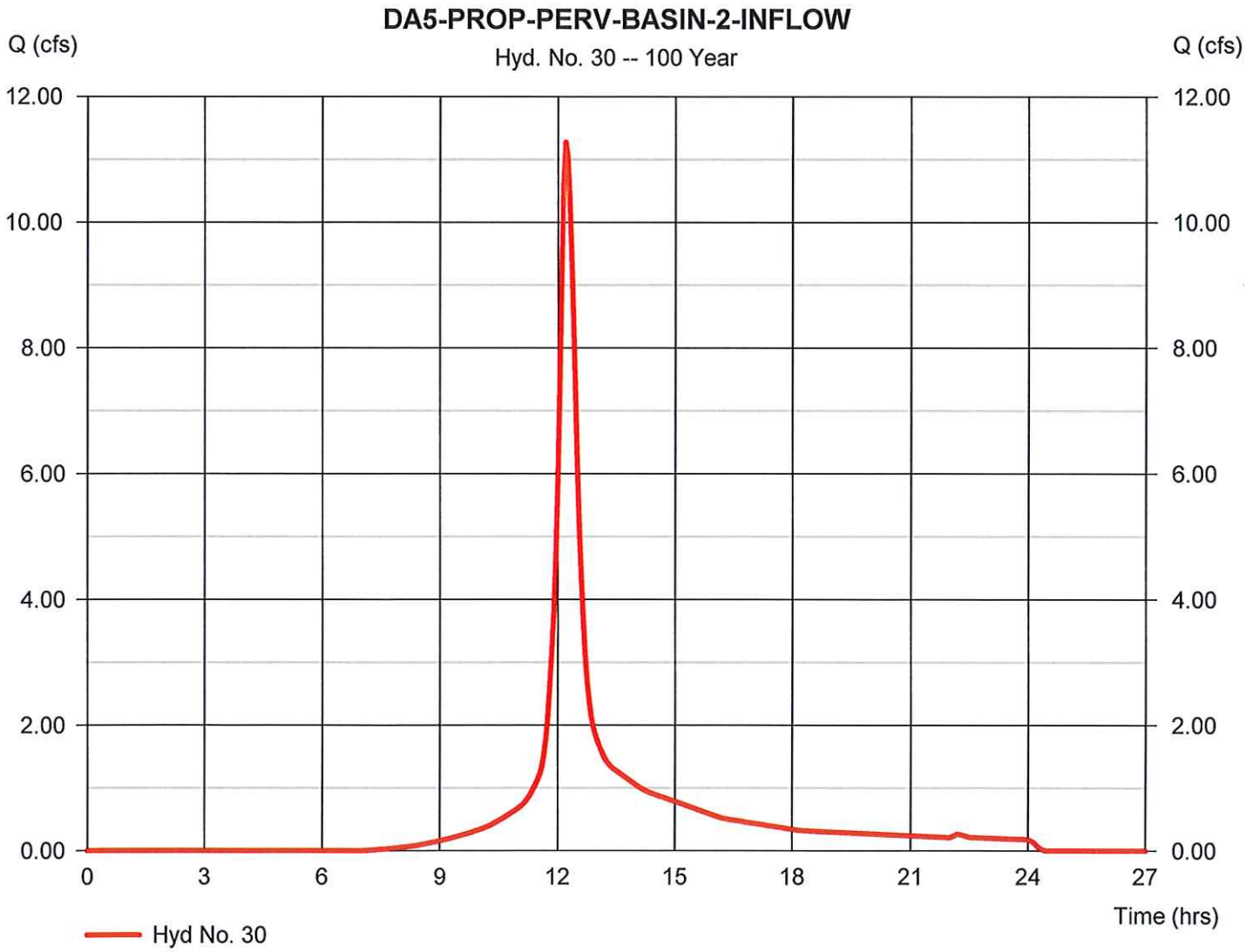
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 30

DA5-PROP-PERV-BASIN-2-INFLOW

Hydrograph type	= SCS Runoff	Peak discharge	= 11.27 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 50,405 cuft
Drainage area	= 2.680 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.680 x 74)] / 2.680

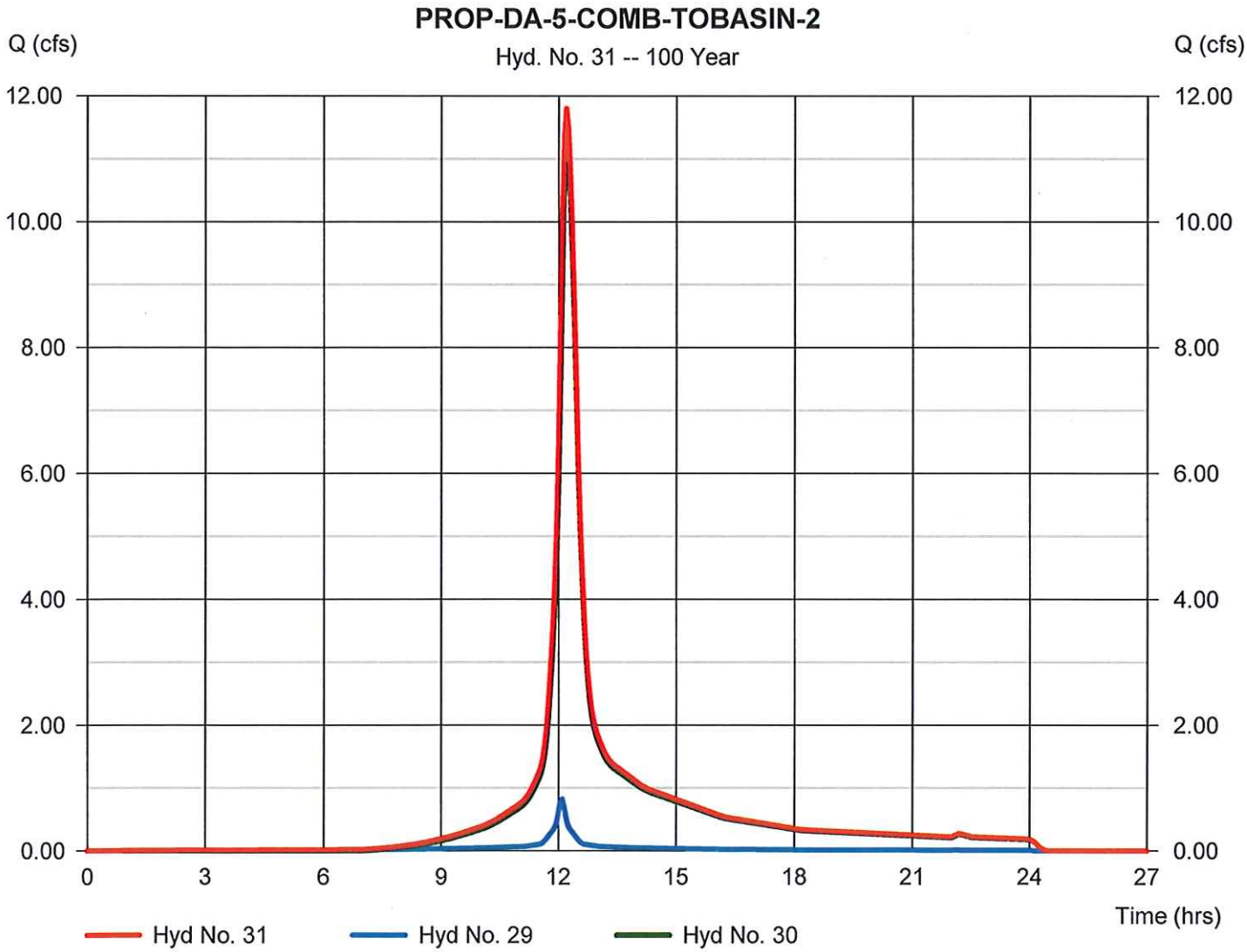


Hydrograph Report

Hyd. No. 31

PROP-DA-5-COMB-TOBASIN-2

Hydrograph type	= Combine	Peak discharge	= 11.80 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 53,619 cuft
Inflow hyds.	= 29, 30	Contrib. drain. area	= 2.800 ac



Hydrograph Report

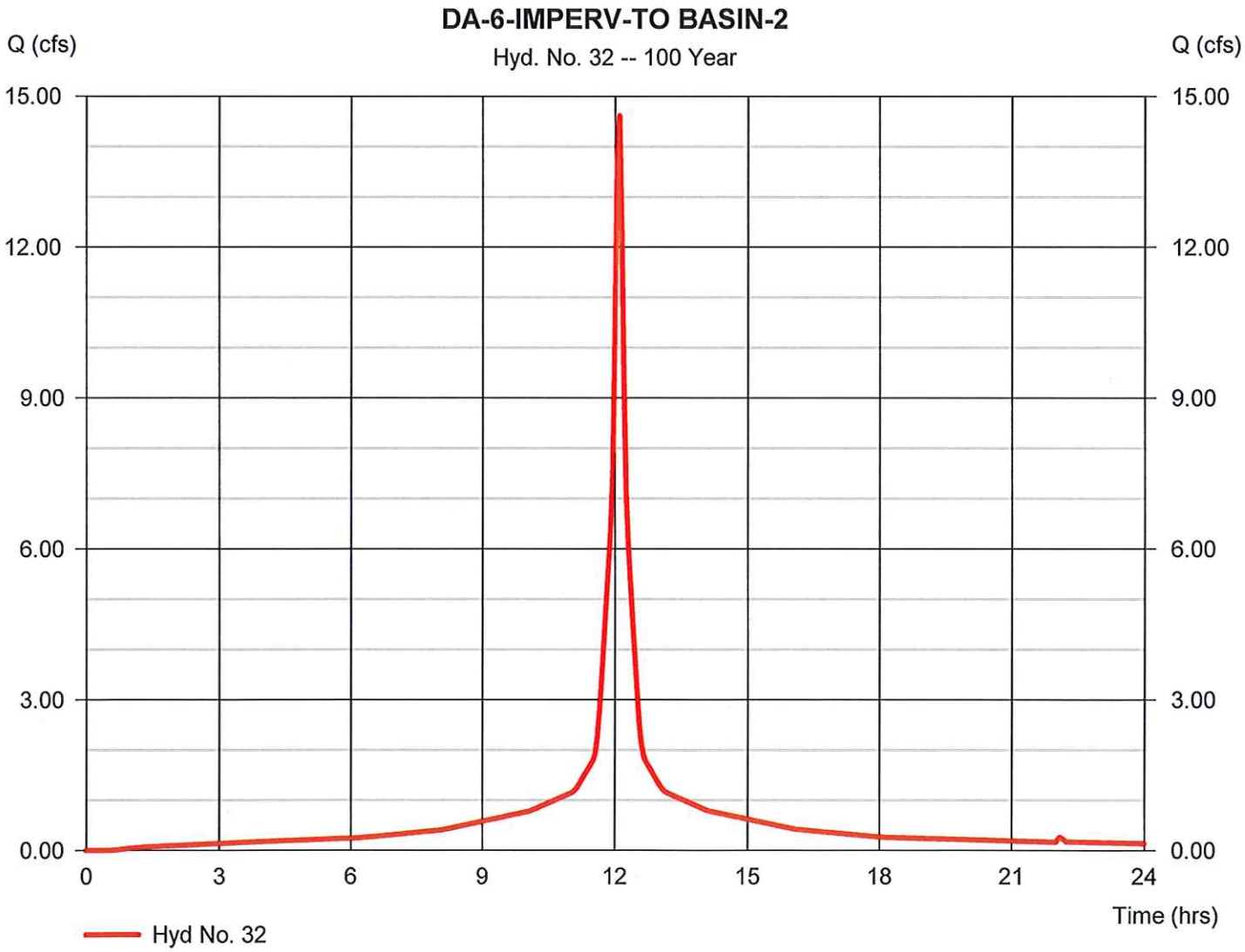
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 32

DA-6-IMPERV-TO BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 14.61 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 56,780 cuft
Drainage area	= 2.120 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.120 x 98)] / 2.120



Hydrograph Report

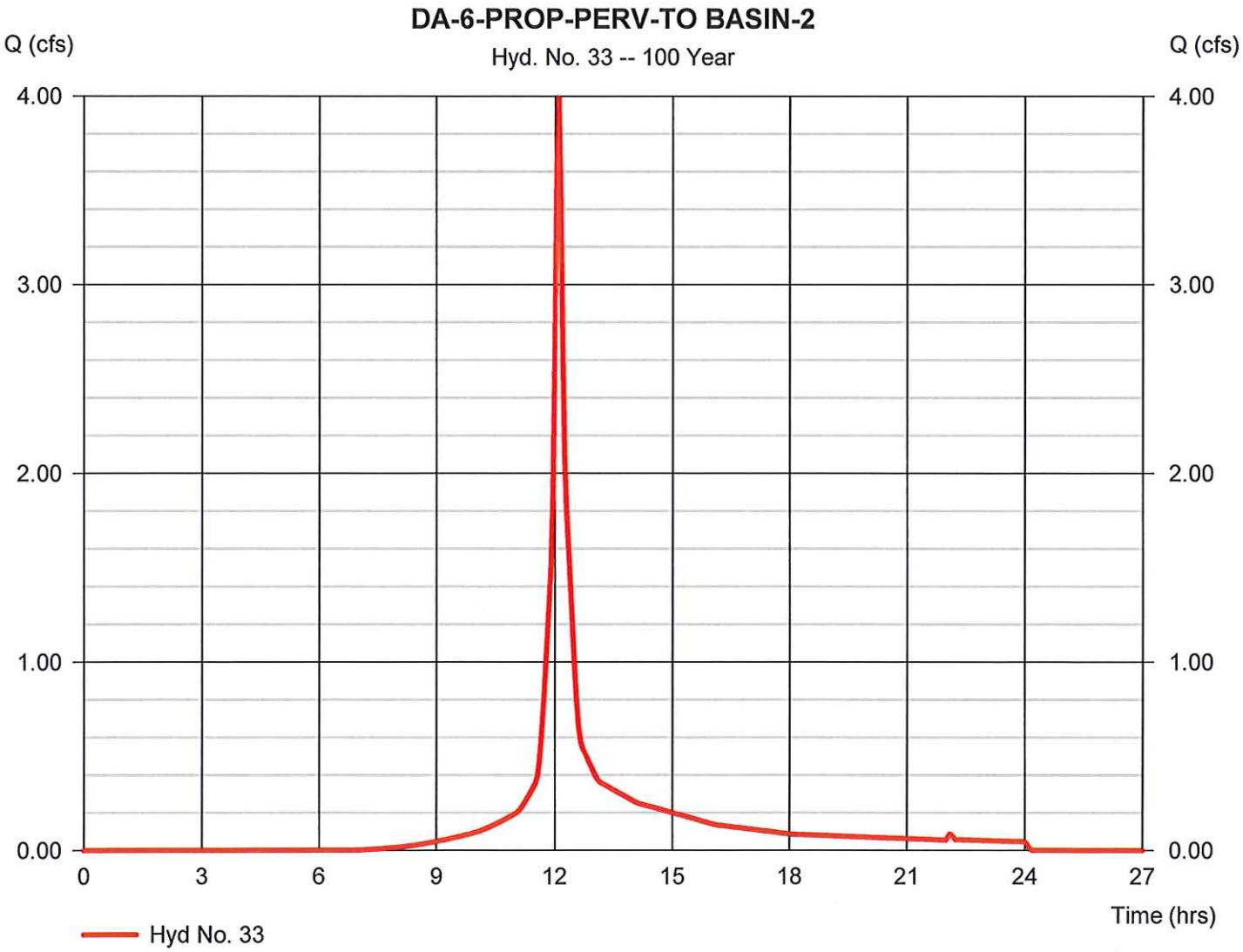
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 33

DA-6-PROP-PERV-TO BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 3.991 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 13,336 cuft
Drainage area	= 0.780 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.80 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(7.026 x 79)] / 0.780



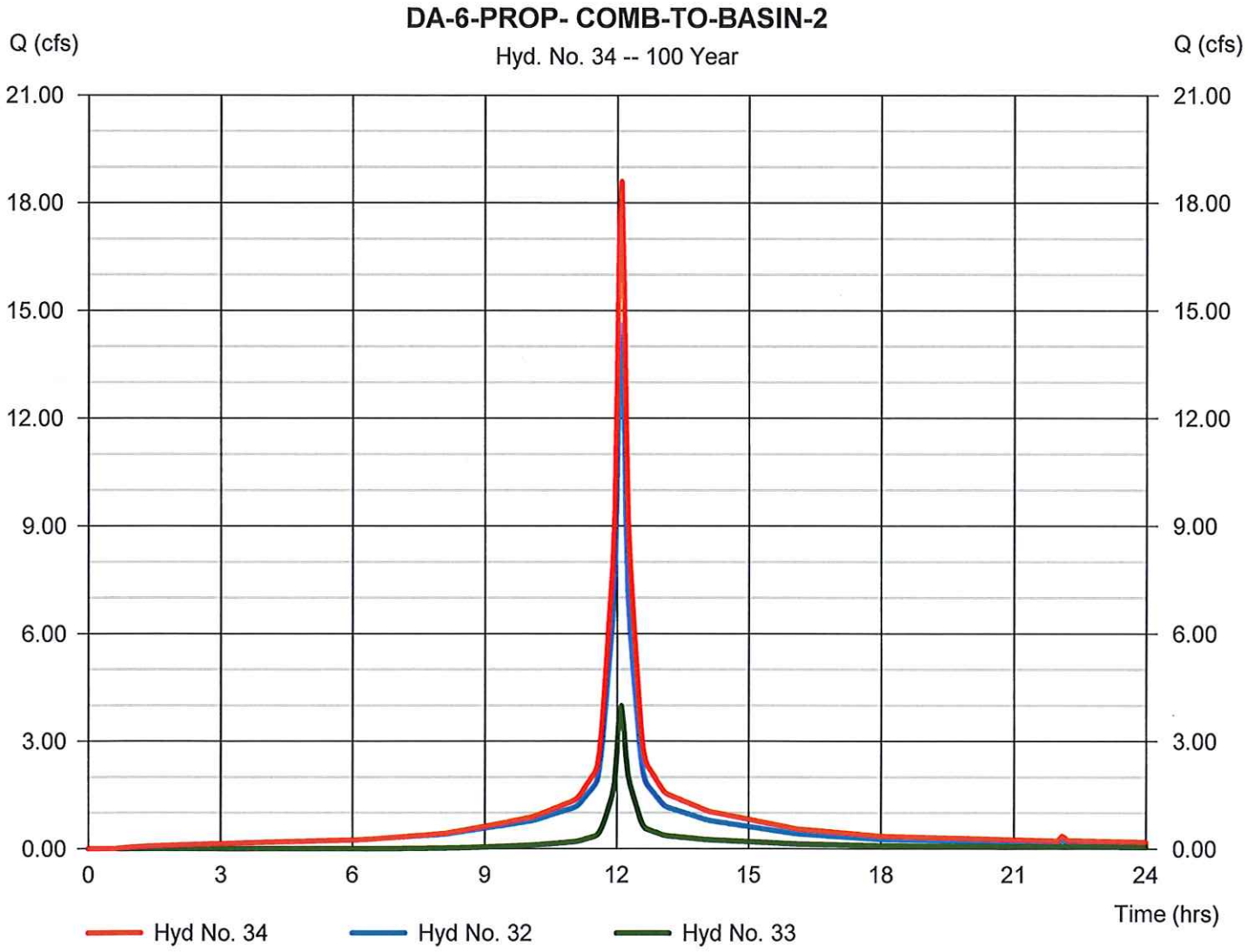
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 34

DA-6-PROP- COMB-TO-BASIN-2

Hydrograph type	= Combine	Peak discharge	= 18.60 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 70,116 cuft
Inflow hyds.	= 32, 33	Contrib. drain. area	= 2.900 ac



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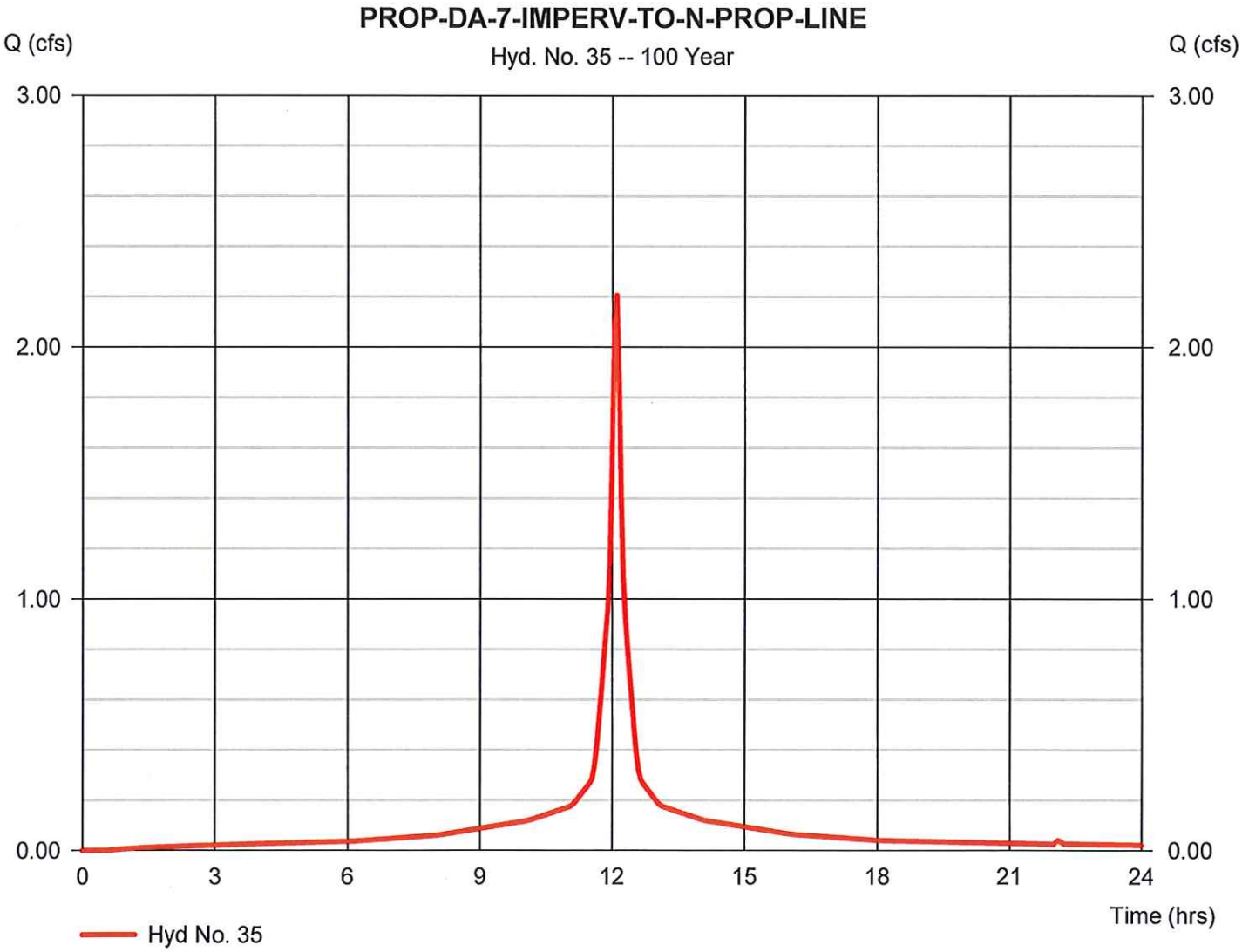
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 35

PROP-DA-7-IMPERV-TO-N-PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 2.206 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 8,571 cuft
Drainage area	= 0.320 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.320 x 98)] / 0.320



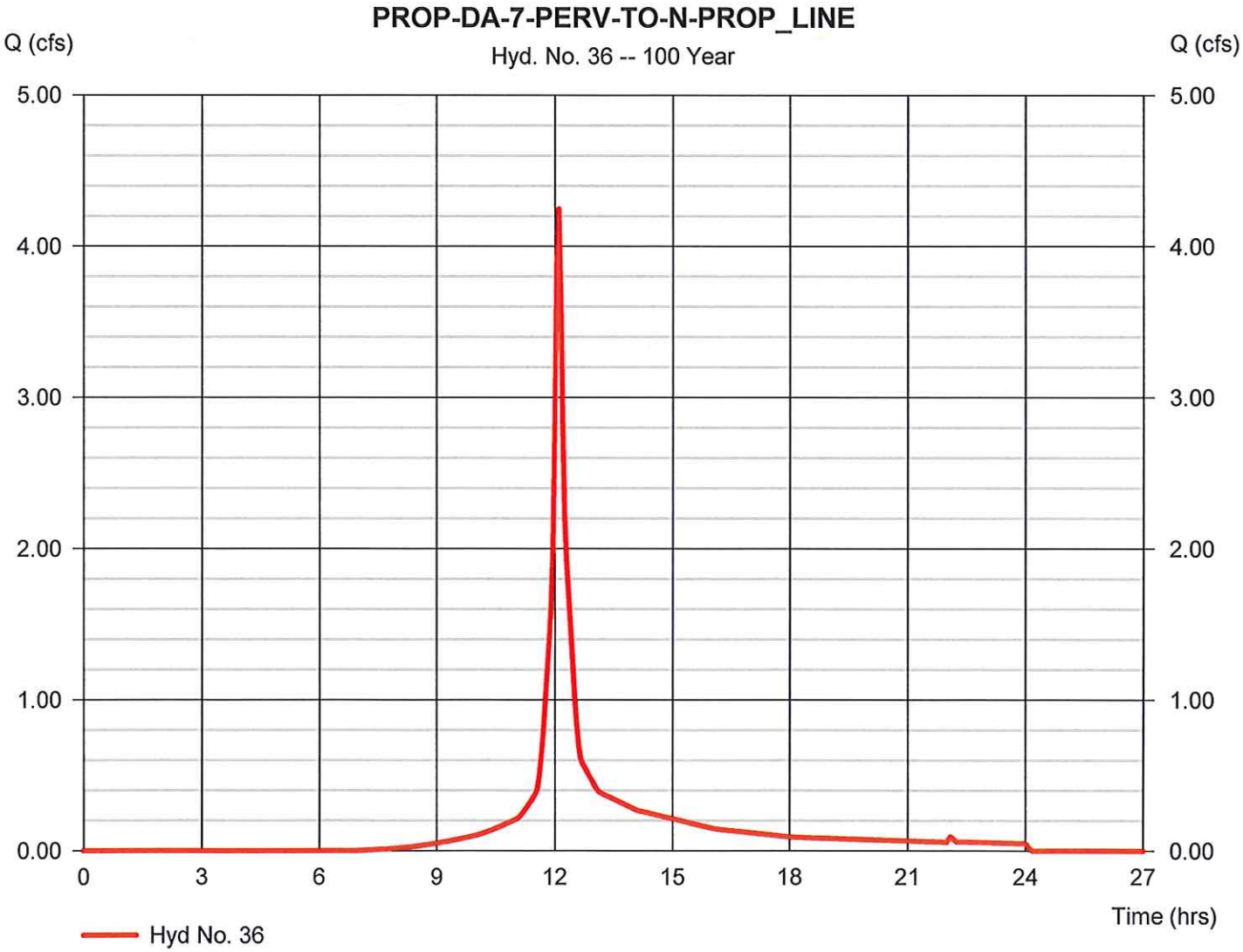
Hydrograph Report

Hyd. No. 36

PROP-DA-7-PERV-TO-N-PROP_LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 4.247 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 14,191 cuft
Drainage area	= 0.830 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 74)] / 0.830



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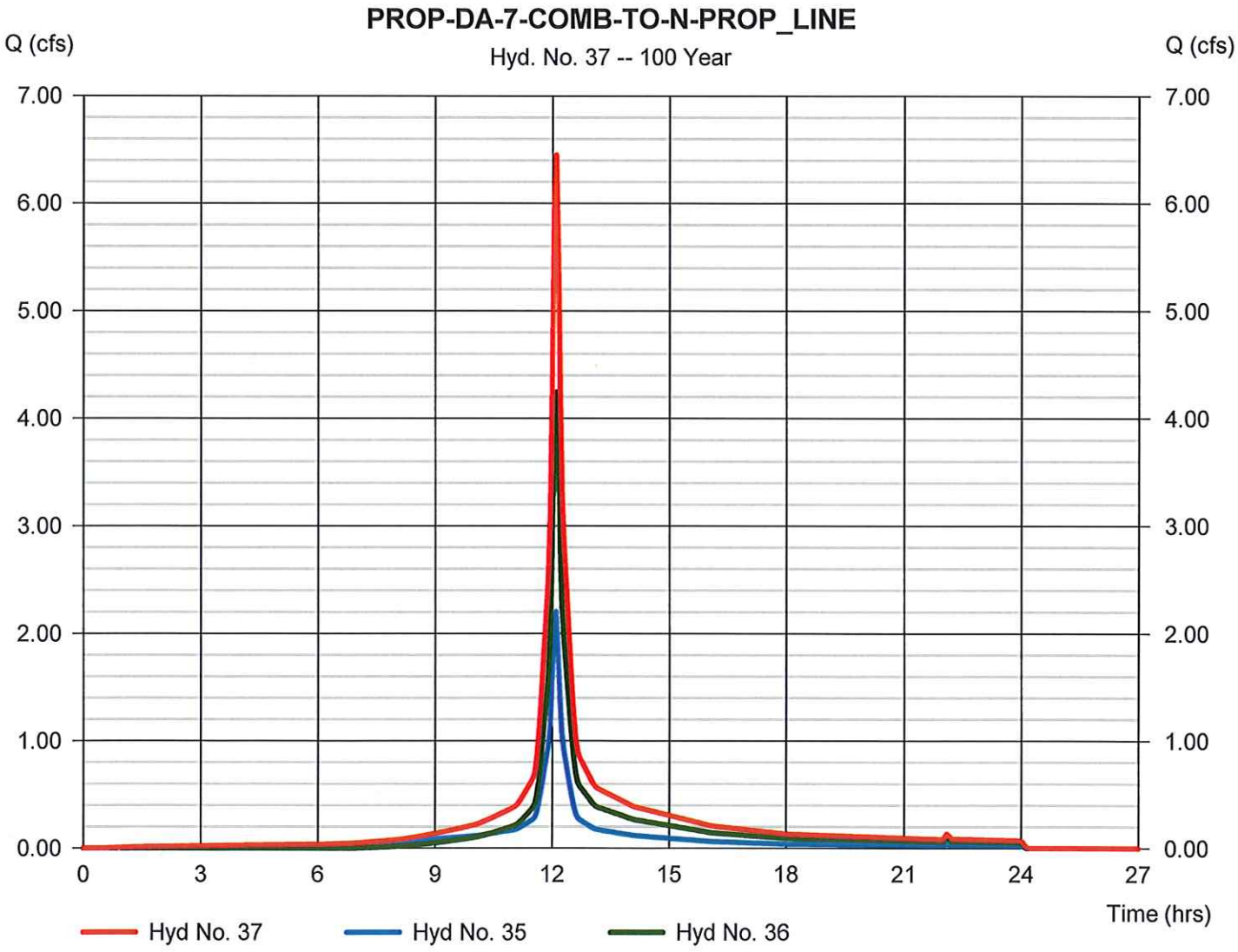
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 37

PROP-DA-7-COMB-TO-N-PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 6.452 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 22,762 cuft
Inflow hyds.	= 35, 36	Contrib. drain. area	= 1.150 ac



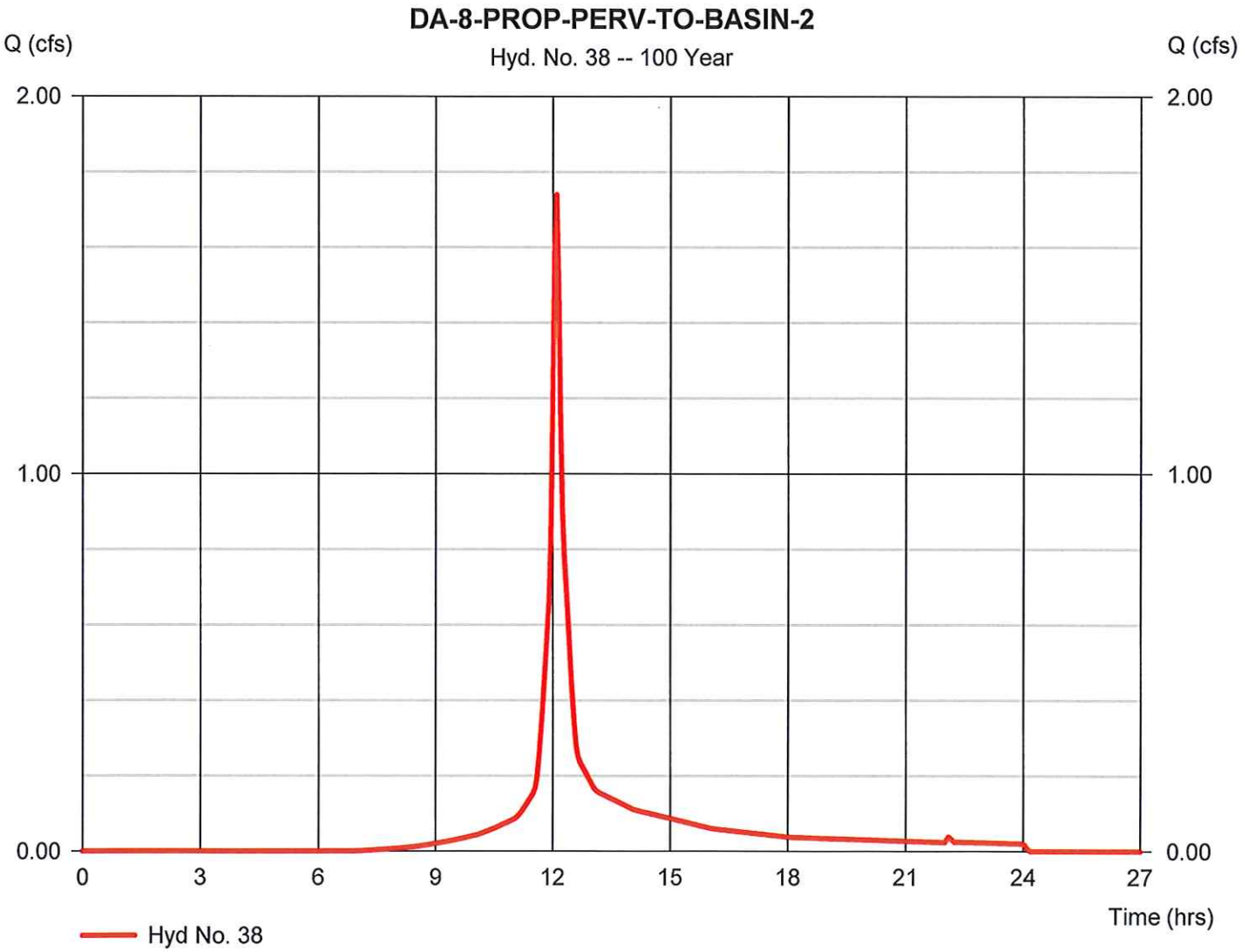
Hydrograph Report

Hyd. No. 38

DA-8-PROP-PERV-TO-BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 1.740 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 5,813 cuft
Drainage area	= 0.340 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.50 min
Total precip.	= 8.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.340 x 74)] / 0.340

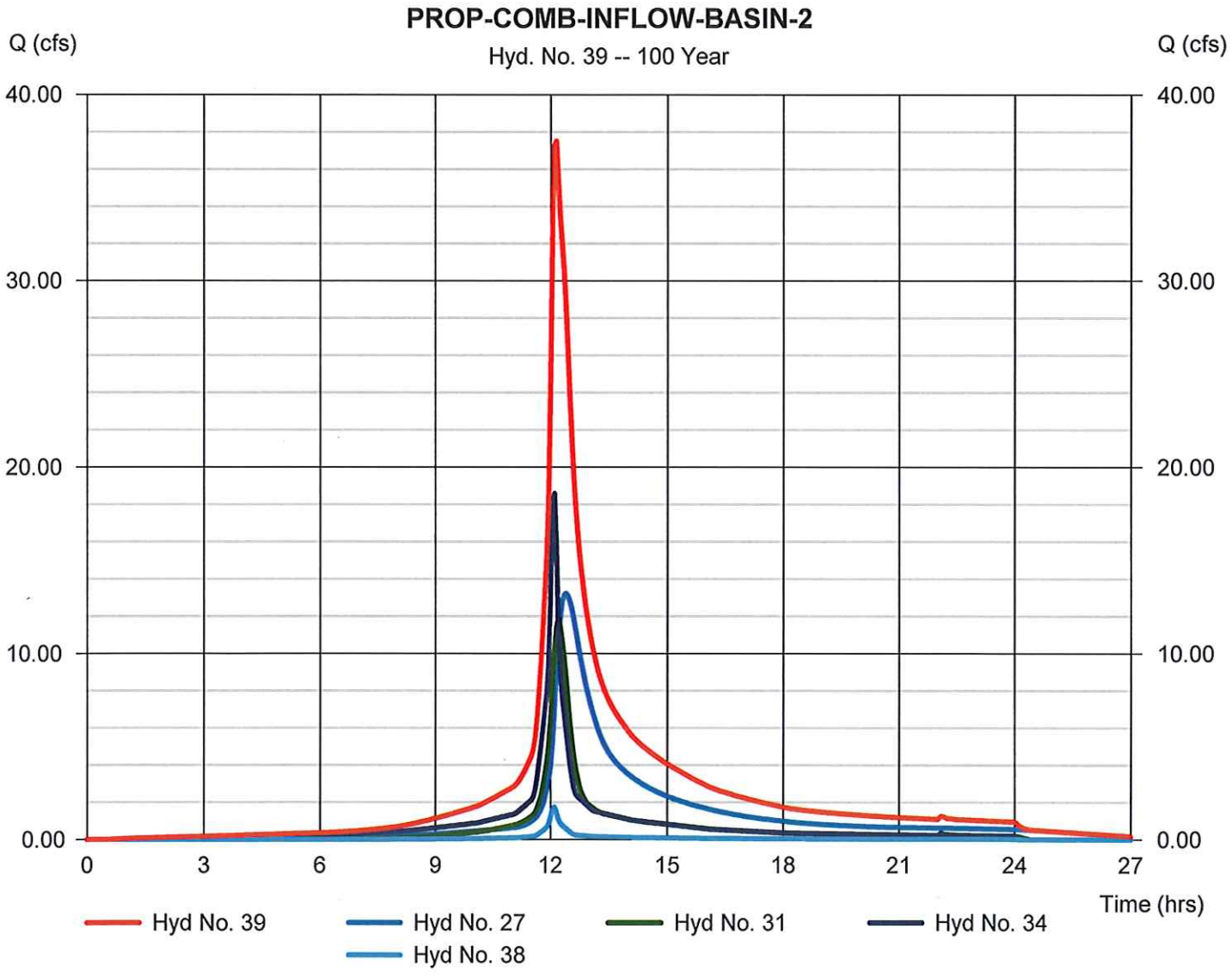


Hydrograph Report

Hyd. No. 39

PROP-COMB-INFLOW-BASIN-2

Hydrograph type	= Combine	Peak discharge	= 37.50 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 241,680 cuft
Inflow hyds.	= 27, 31, 34, 38	Contrib. drain. area	= 0.340 ac



Hydrograph Report

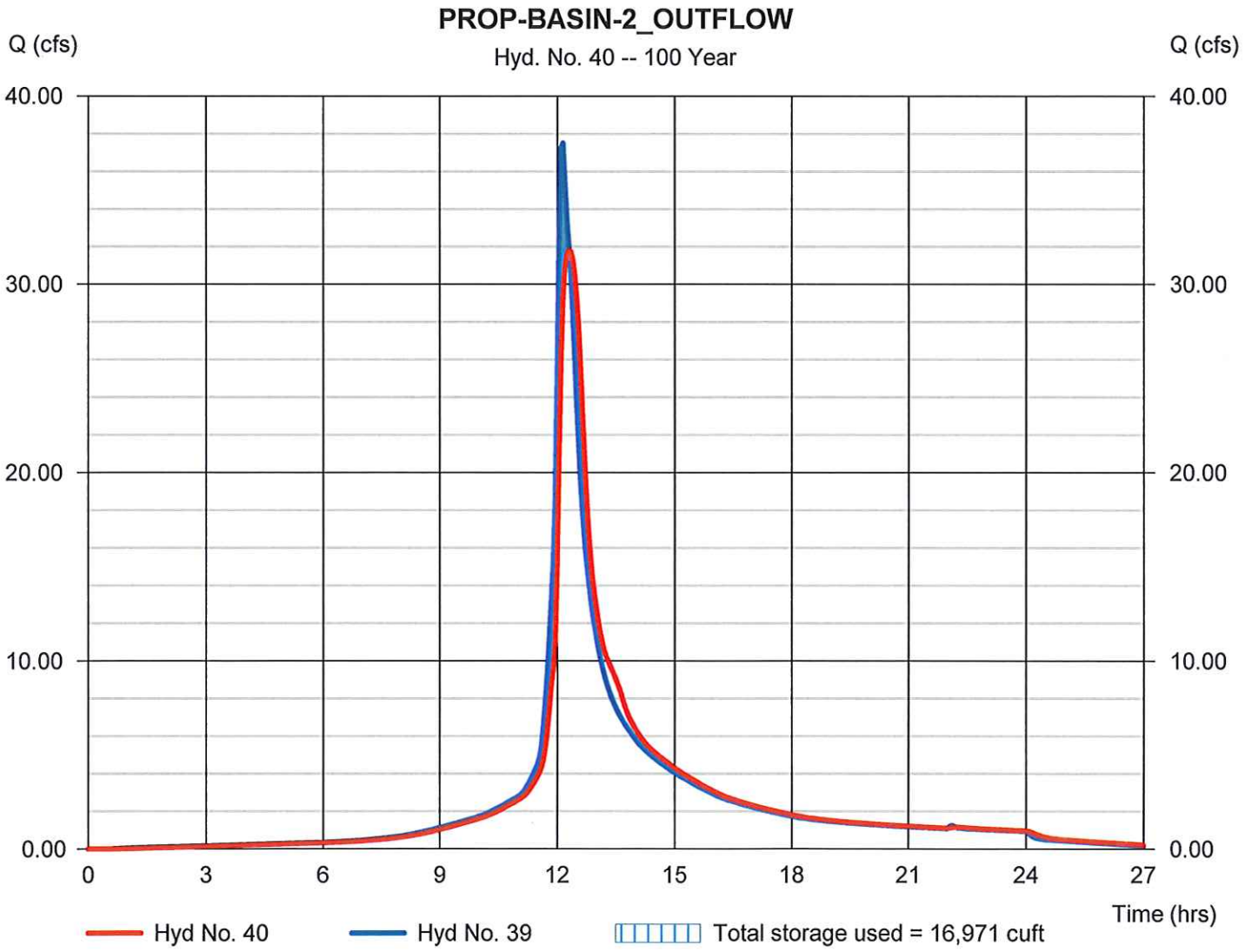
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 40

PROP-BASIN-2_OUTFLOW

Hydrograph type	= Reservoir	Peak discharge	= 31.83 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.30 hrs
Time interval	= 3 min	Hyd. volume	= 241,678 cuft
Inflow hyd. No.	= 39 - PROP-COMB-INFLOW-BASIN-2	Max. Elevation	= 77.63 ft
Reservoir name	= POND-2	Max. Storage	= 16,971 cuft

Storage Indication method used.

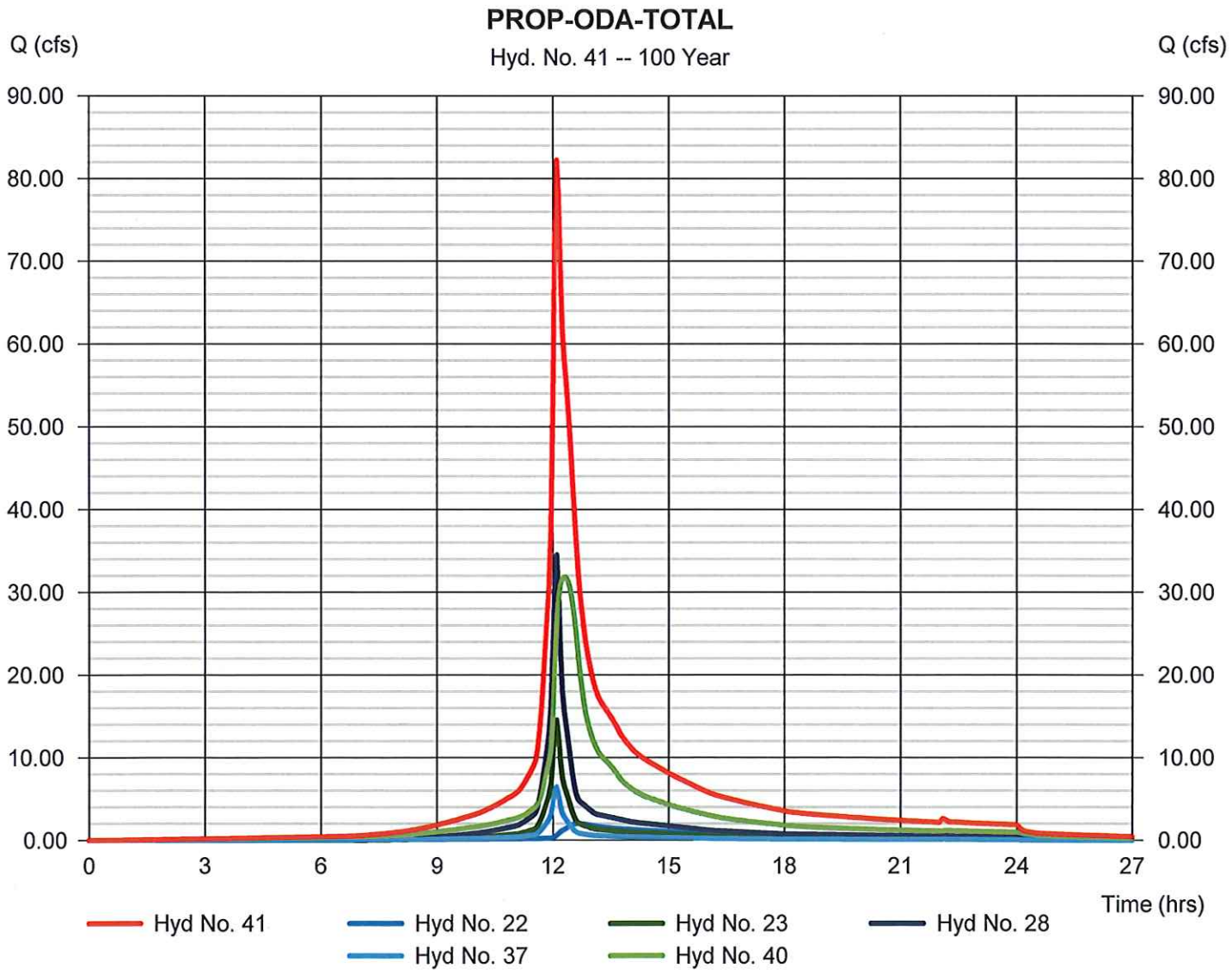


Hydrograph Report

Hyd. No. 41

PROP-ODA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 82.23 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 473,753 cuft
Inflow hyds.	= 22, 23, 28, 37, 40	Contrib. drain. area	= 9.600 ac



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	124.3484	17.2000	1.0242	--------
3	0.0000	0.0000	0.0000	--------
5	49.2463	9.4000	0.7805	--------
10	162.7553	18.5000	1.0083	--------
25	200.6197	19.6000	1.0160	--------
50	181.9380	19.2000	0.9673	--------
100	227.7936	21.3001	0.9883	--------

File name: Trenton.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.20	4.22	3.55	3.06	2.69	2.40	2.16	1.97	1.81	1.67	1.55	1.45
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.14	4.87	4.07	3.52	3.11	2.80	2.55	2.35	2.18	2.03	1.91	1.80
10	6.75	5.56	4.72	4.10	3.63	3.25	2.94	2.69	2.48	2.29	2.14	2.00
25	7.75	6.42	5.48	4.78	4.23	3.80	3.45	3.15	2.91	2.69	2.51	2.35
50	8.34	6.96	5.97	5.23	4.66	4.20	3.82	3.51	3.25	3.02	2.82	2.65
100	9.00	7.58	6.54	5.76	5.15	4.65	4.24	3.90	3.61	3.36	3.14	2.95

Tc = time in minutes. Values may exceed 60.

Precip. file name: R:\Years\2021\21-191\Private\STORMWATER CALCS\HYDGRF\21-191.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.87	3.31	0.00	4.46	4.97	0.00	7.47	8.11
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	2.87	3.31	0.00	4.42	4.97	6.43	7.47	8.11

APPENDIX - D

STORMWATER QUANTITY CALCULATIONS

(Based on NJ.AC.7:8-5.7 (d) as Table 5-6)

BOSWELL ENGINEERING

330 PHILLIPS AVENUE, SOUTH HACKENSACK, NJ 07606

EXISTING & PROPOSED RUN-OFF & DISCHARGE COMPARISON

Project:	Knickerbocker Country Club Improvements	BY: LS	Checked:
Location:	188 Knickerbocker Road, Tenafly,Bergen county NJ	Date: 07.15.25	Date:
Job No:	21-191	Rev.: 11.17.25	

Precipitation data based on:
Future Storm Events as per NJ. AC. 7:8-5.7 (D) AS Table 5-6
County Specific, NJ. 24-Hr. Rainfall Frequency Data
With Type III Distribution (See Hydraflow Hydrographs Computer Calculations)
SOIL - HSG: C

Drainage Area	Description	2yr	10yr	100yr
ODA	Existing Rate of Discharge (cfs)	37.88	79.45	180.46
ODA	Proposed Rate of Discharge (cfs)	25.67	52.33	121.17

POINT / LINE OF DISCHARGE ANALYSIS:

Discharge Location	Existing rate of discharge cfs.			Proposed Rate of Discharge (cfs.)		
	2 YR.	10 YR.	100 YR.	2YR	10 YR	100 YR
Property Line N. Erledon Road	1.63	2.83	5.76	11.89	25.71	55.1
Property Line E. Residential Lots	30.32	64.11	144.88	10.68	22.64	52.72
Property Line S. Residential Lots	6.33	13.52	31.66	4.51	9.56	22.26
Country Club Road Knickerbocker Rd. Corner, Exist. Mh.	0.00	0.00	0.00	0.262	0.873	5.634

Future Precipitation Change Factors at N.J.A.C. 7:8-5.7(d) as Table 5-6

County	Future Precipitation Change Factors		
	2-year Design Storm	10-year Design Storm	100-year Design Storm
Atlantic	1.22	1.24	1.39
Bergen	1.20	1.23	1.37
Burlington	1.17	1.18	1.32
Camden	1.18	1.22	1.39
Cape May	1.21	1.24	1.32
Cumberland	1.20	1.21	1.39
Essex	1.19	1.22	1.33
Gloucester	1.19	1.23	1.41
Hudson	1.19	1.19	1.23
Hunterdon	1.19	1.23	1.42
Mercer	1.16	1.17	1.36
Middlesex	1.19	1.21	1.33
Monmouth	1.19	1.19	1.26
Morris	1.23	1.28	1.46
Ocean	1.18	1.19	1.24
Passaic	1.21	1.27	1.50
Salem	1.20	1.23	1.32
Somerset	1.19	1.24	1.48
Sussex	1.24	1.29	1.50
Union	1.20	1.23	1.35
Warren	1.20	1.25	1.37

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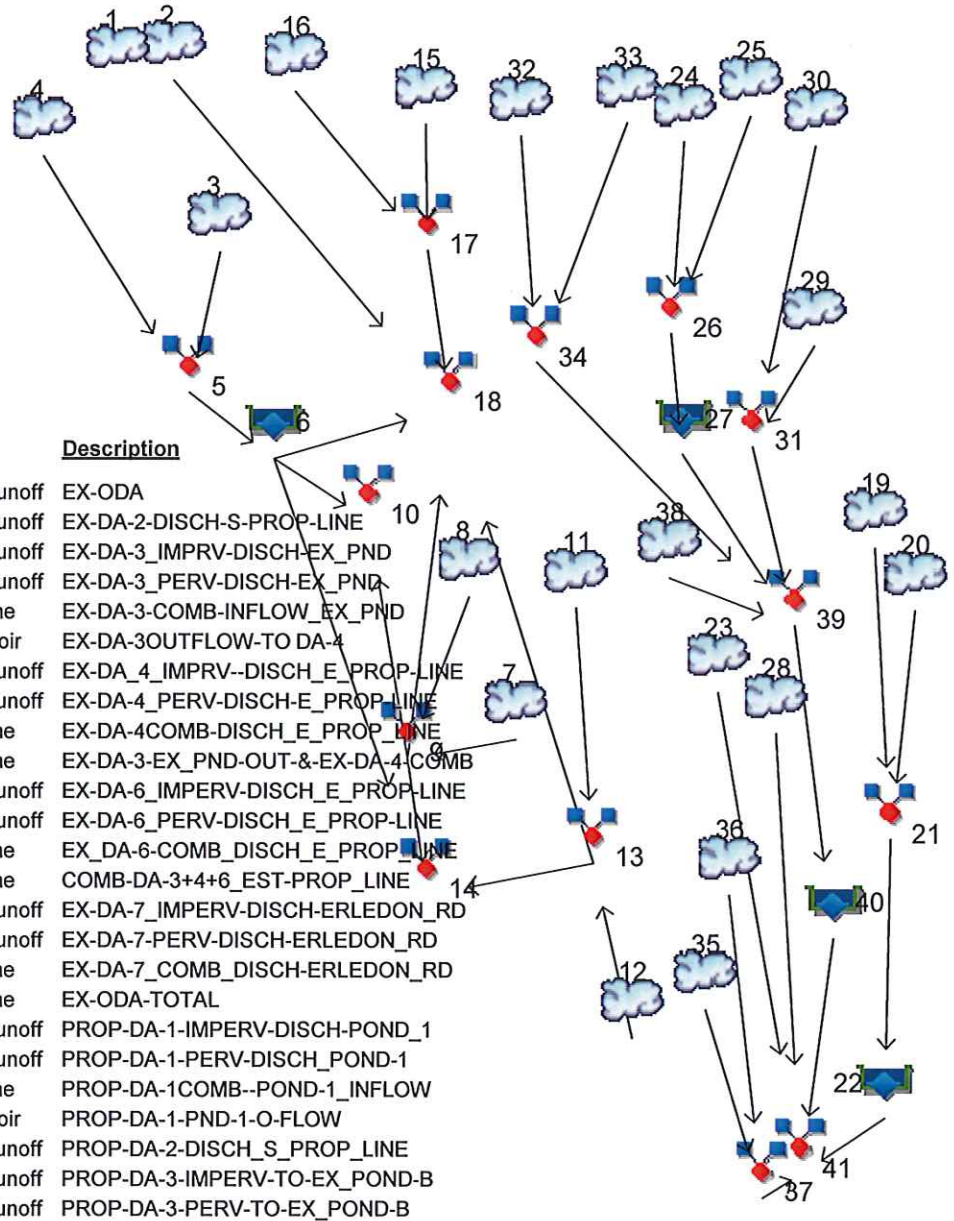
Watershed Model Schematic

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



Legend

Hyd.	Origin	Description
1	SCS Runoff	EX-ODA
2	SCS Runoff	EX-DA-2-DISCH-S-PROP-LINE
3	SCS Runoff	EX-DA-3_IMPRV-DISCH-EX_PND
4	SCS Runoff	EX-DA-3_PERV-DISCH-EX_PND
5	Combine	EX-DA-3-COMB-INFLOW_EX_PND
6	Reservoir	EX-DA-3OUTFLOW-TO DA-4
7	SCS Runoff	EX-DA_4_IMPRV--DISCH_E_PROP-LINE
8	SCS Runoff	EX-DA-4_PERV-DISCH-E_PROP_LINE
9	Combine	EX-DA-4COMB-DISCH_E_PROP_LINE
10	Combine	EX-DA-3-EX_PND-OUT-&-EX-DA-4-COMB
11	SCS Runoff	EX-DA-6_IMPERV-DISCH_E_PROP-LINE
12	SCS Runoff	EX-DA-6_PERV-DISCH_E_PROP-LINE
13	Combine	EX_DA-6-COMB_DISCH_E_PROP_LINE
14	Combine	COMB-DA-3+4+6_EST-PROP_LINE
15	SCS Runoff	EX-DA-7_IMPERV-DISCH-ERLEDON_RD
16	SCS Runoff	EX-DA-7-PERV-DISCH-ERLEDON_RD
17	Combine	EX-DA-7_COMB_DISCH-ERLEDON_RD
18	Combine	EX-ODA-TOTAL
19	SCS Runoff	PROP-DA-1-IMPERV-DISCH-POND_1
20	SCS Runoff	PROP-DA-1-PERV-DISCH_POND-1
21	Combine	PROP-DA-1COMB--POND-1_INFLOW
22	Reservoir	PROP-DA-1-PND-1-O-FLOW
23	SCS Runoff	PROP-DA-2-DISCH_S_PROP_LINE
24	SCS Runoff	PROP-DA-3-IMPERV-TO-EX_POND-B
25	SCS Runoff	PROP-DA-3-PERV-TO-EX_POND-B
26	Combine	PROP-DA-3_COMB-EX_POND-B-INFLOW
27	Reservoir	PROP-DA-3-EX-PND_B-OUT
28	SCS Runoff	DA-4-PROP-PERV-DISCH-E_PROP-LINE
29	SCS Runoff	DA-5-PROP-IMPERV-BASIN-2-INFLOW
30	SCS Runoff	DA5-PROP-PERV-BASIN-2-INFLOW
31	Combine	PROP-DA-5-COMB-TOBASIN-2
32	SCS Runoff	DA-6-IMPERV-TO BASIN-2
33	SCS Runoff	DA-6-PROP-PERV-TO BASIN-2
34	Combine	DA-6-PROP- COMB-TO-BASIN-2
35	SCS Runoff	PROP-DA-7-IMPERV-TO-N-PROP-LINE
36	SCS Runoff	PROP-DA-7-PERV-TO-N-PROP_LINE
37	Combine	PROP-DA-7-COMB-TO-N-PROP_LINE
38	SCS Runoff	DA-8-PROP-PERV-TO-BASIN-2
39	Combine	PROP-COMB-INFLOW-BASIN-2
40	Reservoir	PROP-BASIN-2_OUTFLOW
41	Combine	PROP-ODA-TOTAL

Hydrograph Return Period Recap

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

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	-------	41.51	-------	-------	82.44	-------	-------	182.04	EX-ODA
2	SCS Runoff	------	-------	6.327	-------	-------	13.52	-------	-------	31.66	EX-DA-2-DISCH-S-PROP-LINE
3	SCS Runoff	------	-------	3.553	-------	-------	5.495	-------	-------	10.02	EX-DA-3_IMPRV-DISCH-EX_PND
4	SCS Runoff	------	-------	8.295	-------	-------	17.72	-------	-------	41.50	EX-DA-3_PERV-DISCH-EX_PND
5	Combine	3, 4	-------	11.30	-------	-------	22.36	-------	-------	49.97	EX-DA-3-COMB-INFLOW_EX_PND
6	Reservoir	5	-------	9.502	-------	-------	21.49	-------	-------	49.64	EX-DA-3OUTFLOW-TO DA-4
7	SCS Runoff	------	-------	2.279	-------	-------	3.525	-------	-------	6.427	EX-DA_4_IMPRV--DISCH_E_PRO
8	SCS Runoff	------	-------	13.59	-------	-------	28.82	-------	-------	67.10	EX-DA-4_PERV-DISCH-E_PROP-L
9	Combine	7, 8	-------	15.87	-------	-------	32.34	-------	-------	73.52	EX-DA-4COMB-DISCH_E_PROP_L
10	Combine	6, 9	-------	22.22	-------	-------	50.52	-------	-------	118.88	EX-DA-3-EX_PND-OUT-&-EX-DA-4
11	SCS Runoff	------	-------	7.374	-------	-------	11.40	-------	-------	20.79	EX-DA-6_IMPERV-DISCH_E_PRO
12	SCS Runoff	------	-------	1.104	-------	-------	2.358	-------	-------	5.525	EX-DA-6_PERV-DISCH_E_PROP-L
13	Combine	11, 12	-------	8.374	-------	-------	13.59	-------	-------	26.00	EX_DA-6-COMB_DISCH_E_PROP
14	Combine	6, 9, 13	-------	30.32	-------	-------	64.11	-------	-------	144.88	COMB-DA-3+4+6_EST-PROP_LIN
15	SCS Runoff	------	-------	1.073	-------	-------	1.659	-------	-------	3.025	EX-DA-7_IMPERV-DISCH-ERLED
16	SCS Runoff	------	-------	0.554	-------	-------	1.174	-------	-------	2.734	EX-DA-7-PERV-DISCH-ERLEDON_
17	Combine	15, 16	-------	1.626	-------	-------	2.833	-------	-------	5.758	EX-DA-7_COMB_DISCH-ERLEDO
18	Combine	2, 6, 9, 13, 17	-------	37.68	-------	-------	79.45	-------	-------	180.46	EX-ODA-TOTAL
19	SCS Runoff	------	-------	3.921	-------	-------	6.065	-------	-------	11.06	PROP-DA-1-IMPERV-DISCH-PON
20	SCS Runoff	------	-------	0.949	-------	-------	2.029	-------	-------	4.775	PROP-DA-1-PERV-DISCH_POND-
21	Combine	19, 20	-------	4.648	-------	-------	7.694	-------	-------	15.02	PROP-DA-1COMB--POND-1_INFL
22	Reservoir	21	-------	0.262	-------	-------	0.873	-------	-------	5.634	PROP-DA-1-PND-1-O-FLOW
23	SCS Runoff	------	-------	4.508	-------	-------	9.561	-------	-------	22.26	PROP-DA-2-DISCH_S_PROP_LIN
24	SCS Runoff	------	-------	3.787	-------	-------	5.858	-------	-------	10.68	PROP-DA-3-IMPERV-TO-EX_PON
25	SCS Runoff	------	-------	6.355	-------	-------	13.58	-------	-------	31.80	PROP-DA-3-PERV-TO-EX_POND-
26	Combine	24, 25	-------	9.560	-------	-------	18.53	-------	-------	40.83	PROP-DA-3_COMB-EX_POND-B-I
27	Reservoir	26	-------	2.653	-------	-------	7.527	-------	-------	27.37	PROP-DA-3-EX-PND_B-OUT
28	SCS Runoff	------	-------	10.68	-------	-------	22.64	-------	-------	52.72	DA-4-PROP-PERV-DISCH-E_PRO
29	SCS Runoff	------	-------	0.402	-------	-------	0.622	-------	-------	1.134	DA-5-PROP-IMPERV-BASIN-2-INF
30	SCS Runoff	------	-------	3.435	-------	-------	7.348	-------	-------	17.29	DA5-PROP-PERV-BASIN-2-INFLO
31	Combine	29, 30	-------	3.677	-------	-------	7.743	-------	-------	18.01	PROP-DA-5-COMB-TOBASIN-2
32	SCS Runoff	------	-------	7.105	-------	-------	10.99	-------	-------	20.04	DA-6-IMPERV-TO BASIN-2
33	SCS Runoff	------	-------	1.234	-------	-------	2.617	-------	-------	6.092	DA-6-PROP-PERV-TO BASIN-2

Hydrograph Return Period Recap

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

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
34	Combine	32, 33	-------	8.339	-------	-------	13.61	-------	-------	26.13	DA-6-PROP- COMB-TO-BASIN-2
35	SCS Runoff	------	-------	1.073	-------	-------	1.659	-------	-------	3.025	PROP-DA-7-IMPERV-TO-N-PROP-
36	SCS Runoff	------	-------	1.313	-------	-------	2.784	-------	-------	6.483	PROP-DA-7-PERV-TO-N-PROP_LI
37	Combine	35, 36	-------	2.385	-------	-------	4.443	-------	-------	9.508	PROP-DA-7-COMB-TO-N-PROP_LI
38	SCS Runoff	------	-------	0.538	-------	-------	1.141	-------	-------	2.656	DA-8-PROP-PERV-TO-BASIN-2
39	Combine	27, 31, 34, 38	-------	12.74	-------	-------	24.50	-------	-------	58.01	PROP-COMB-INFLOW-BASIN-2
40	Reservoir	39	-------	9.501	-------	-------	21.27	-------	-------	45.59	PROP-BASIN-2_OUTFLOW
41	Combine	22, 23, 28, 37, 40	-------	25.67	-------	-------	52.33	-------	-------	121.17	PROP-ODA-TOTAL

Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	41.51	3	729	164,473	------	------	------	EX-ODA
2	SCS Runoff	6.327	3	729	25,545	------	------	------	EX-DA-2-DISCH-S-PROP-LINE
3	SCS Runoff	3.553	3	726	13,474	------	------	------	EX-DA-3_IMPRV-DISCH-EX_PND
4	SCS Runoff	8.295	3	729	33,489	------	------	------	EX-DA-3_PERV-DISCH-EX_PND
5	Combine	11.30	3	729	46,963	3, 4	------	------	EX-DA-3-COMB-INFLOW_EX_PND
6	Reservoir	9.502	3	735	46,958	5	95.83	6,315	EX-DA-3OUTFLOW-TO DA-4
7	SCS Runoff	2.279	3	726	8,644	------	------	------	EX-DA_4_IMPRV--DISCH_E_PRO
8	SCS Runoff	13.59	3	726	46,022	------	------	------	EX-DA-4_PERV-DISCH-E_PROP-L
9	Combine	15.87	3	726	54,666	7, 8	------	------	EX-DA-4COMB-DISCH_E_PROP_L
10	Combine	22.22	3	729	101,624	6, 9	------	------	EX-DA-3-EX_PND-OUT-&-EX-DA-4
11	SCS Runoff	7.374	3	726	27,965	------	------	------	EX-DA-6_IMPERV-DISCH_E_PRO
12	SCS Runoff	1.104	3	729	4,458	------	------	------	EX-DA-6_PERV-DISCH_E_PROP-L
13	Combine	8.374	3	726	32,422	11, 12	------	------	EX_DA-6-COMB_DISCH_E_PROP
14	Combine	30.32	3	726	134,046	6, 9, 13	------	------	COMB-DA-3+4+6_EST-PROP_LIN
15	SCS Runoff	1.073	3	726	4,068	------	------	------	EX-DA-7_IMPERV-DISCH-ERLED
16	SCS Runoff	0.554	3	726	1,875	------	------	------	EX-DA-7-PERV-DISCH-ERLEDON_
17	Combine	1.626	3	726	5,943	15, 16	------	------	EX-DA-7_COMB_DISCH-ERLEDO
18	Combine	37.68	3	726	165,534	2, 6, 9, 13, 17	------	------	EX-ODA-TOTAL
19	SCS Runoff	3.921	3	726	14,872	------	------	------	PROP-DA-1-IMPERV-DISCH-PON
20	SCS Runoff	0.949	3	735	4,361	------	------	------	PROP-DA-1-PERV-DISCH_POND-
21	Combine	4.648	3	726	19,233	19, 20	------	------	PROP-DA-1COMB--POND-1_INFL
22	Reservoir	0.262	3	891	19,154	21	113.28	11,937	PROP-DA-1-PND-1-O-FLOW
23	SCS Runoff	4.508	3	726	15,269	------	------	------	PROP-DA-2-DISCH_S_PROP_LIN
24	SCS Runoff	3.787	3	726	14,364	------	------	------	PROP-DA-3-IMPERV-TO-EX_PON
25	SCS Runoff	6.355	3	729	25,660	------	------	------	PROP-DA-3-PERV-TO-EX_POND-
26	Combine	9.560	3	729	40,023	24, 25	------	------	PROP-DA-3_COMB-EX_POND-B-I
27	Reservoir	2.653	3	756	40,002	26	95.51	15,199	PROP-DA-3-EX-PND_B-OUT
28	SCS Runoff	10.68	3	726	36,164	------	------	------	DA-4-PROP-PERV-DISCH-E_PRO
29	SCS Runoff	0.402	3	726	1,525	------	------	------	DA-5-PROP-IMPERV-BASIN-2-INF
30	SCS Runoff	3.435	3	735	15,794	------	------	------	DA5-PROP-PERV-BASIN-2-INFLO
31	Combine	3.677	3	732	17,320	29, 30	------	------	PROP-DA-5-COMB-TOBASIN-2
32	SCS Runoff	7.105	3	726	26,948	------	------	------	DA-6-IMPERV-TO BASIN-2
33	SCS Runoff	1.234	3	726	4,179	------	------	------	DA-6-PROP-PERV-TO BASIN-2

Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
34	Combine	8.339	3	726	31,127	32, 33	------	------	DA-6-PROP- COMB-TO-BASIN-2
35	SCS Runoff	1.073	3	726	4,068	------	------	------	PROP-DA-7-IMPERV-TO-N-PROP-
36	SCS Runoff	1.313	3	726	4,447	------	------	------	PROP-DA-7-PERV-TO-N-PROP_LI
37	Combine	2.385	3	726	8,514	35, 36	------	------	PROP-DA-7-COMB-TO-N-PROP_LI
38	SCS Runoff	0.538	3	726	1,822	------	------	------	DA-8-PROP-PERV-TO-BASIN-2
39	Combine	12.74	3	726	90,270	27, 31, 34, 38	------	------	PROP-COMB-INFLOW-BASIN-2
40	Reservoir	9.501	3	738	90,268	39	76.19	6,568	PROP-BASIN-2_OUTFLOW
41	Combine	25.67	3	726	169,370	22, 23, 28, 37, 40	------	------	PROP-ODA-TOTAL

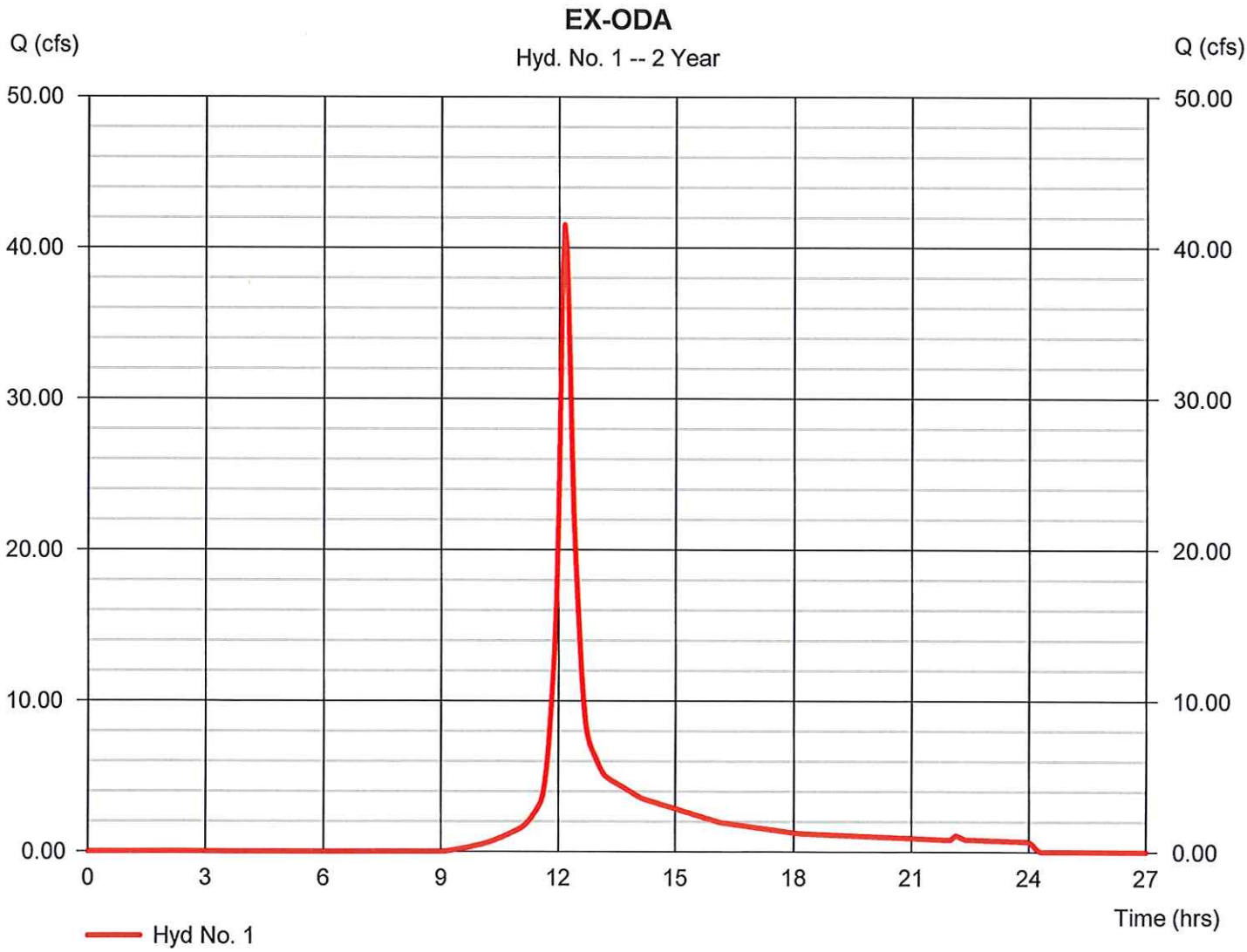
Hydrograph Report

Hyd. No. 1

EX-ODA

Hydrograph type	= SCS Runoff	Peak discharge	= 41.51 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 164,473 cuft
Drainage area	= 24.320 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.50 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.270 x 98) + (20.050 x 74)] / 24.320



TR55 Tc Worksheet

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

Hyd. No. 1

EX-ODA

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 5.40		0.00		0.00		
Travel Time (min)	**= 9.43**	**+**	**0.00**	**+**	**0.00**	**=**	**9.43**
Shallow Concentrated Flow							
Flow length (ft)	= 497.50		0.00		0.00		
Watercourse slope (%)	= 6.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.95		0.00		0.00		
Travel Time (min)	**= 2.10**	**+**	**0.00**	**+**	**0.00**	**=**	**2.10**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 11.50 min

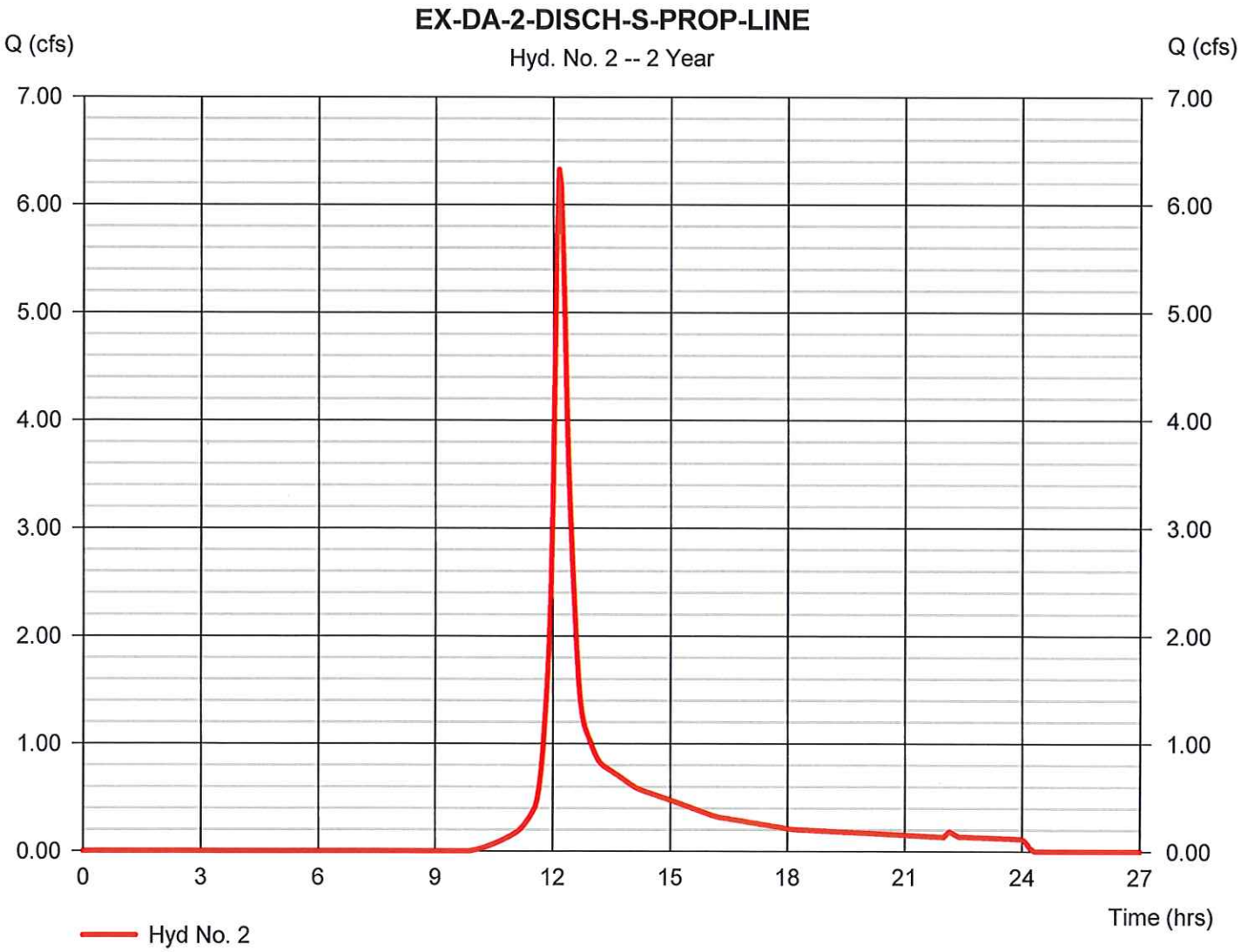
Hydrograph Report

Hyd. No. 2

EX-DA-2-DISCH-S-PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 6.327 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 25,545 cuft
Drainage area	= 4.470 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.70 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.470 x 74)] / 4.470



TR55 Tc Worksheet

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

Hyd. No. 2

EX-DA-2-DISCH-S-PROP-LINE

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 5.20		0.00		0.00		
Travel Time (min)	**= 9.57**	**+**	**0.00**	**+**	**0.00**	**=**	**9.57**
Shallow Concentrated Flow							
Flow length (ft)	= 488.00		0.00		0.00		
Watercourse slope (%)	= 20.80		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=7.36		0.00		0.00		
Travel Time (min)	**= 1.11**	**+**	**0.00**	**+**	**0.00**	**=**	**1.11**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 10.70 min

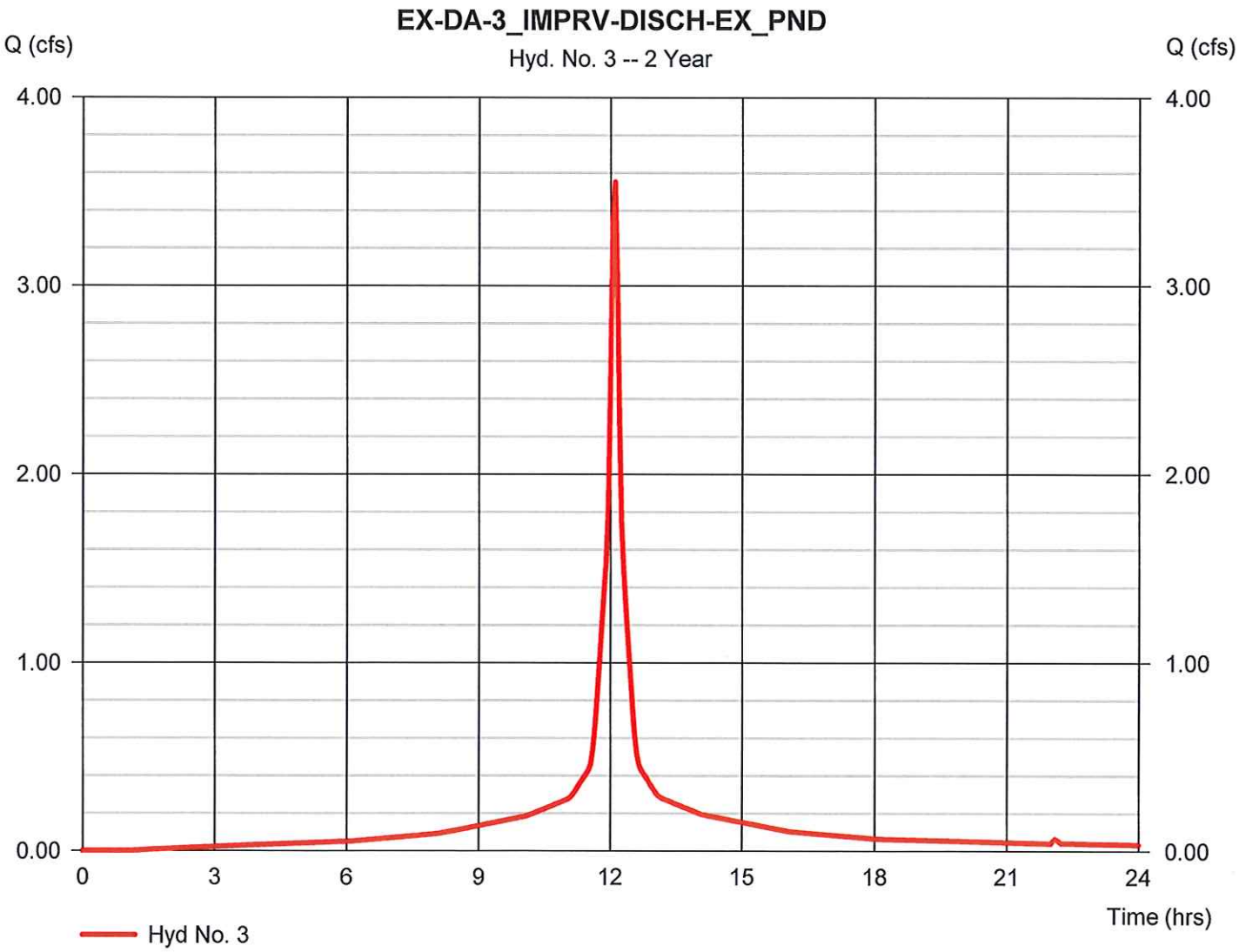
Hydrograph Report

Hyd. No. 3

EX-DA-3_IMPRV-DISCH-EX_PND

Hydrograph type	= SCS Runoff	Peak discharge	= 3.553 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 13,474 cuft
Drainage area	= 1.060 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.060 x 98)] / 1.060



Hydrograph Report

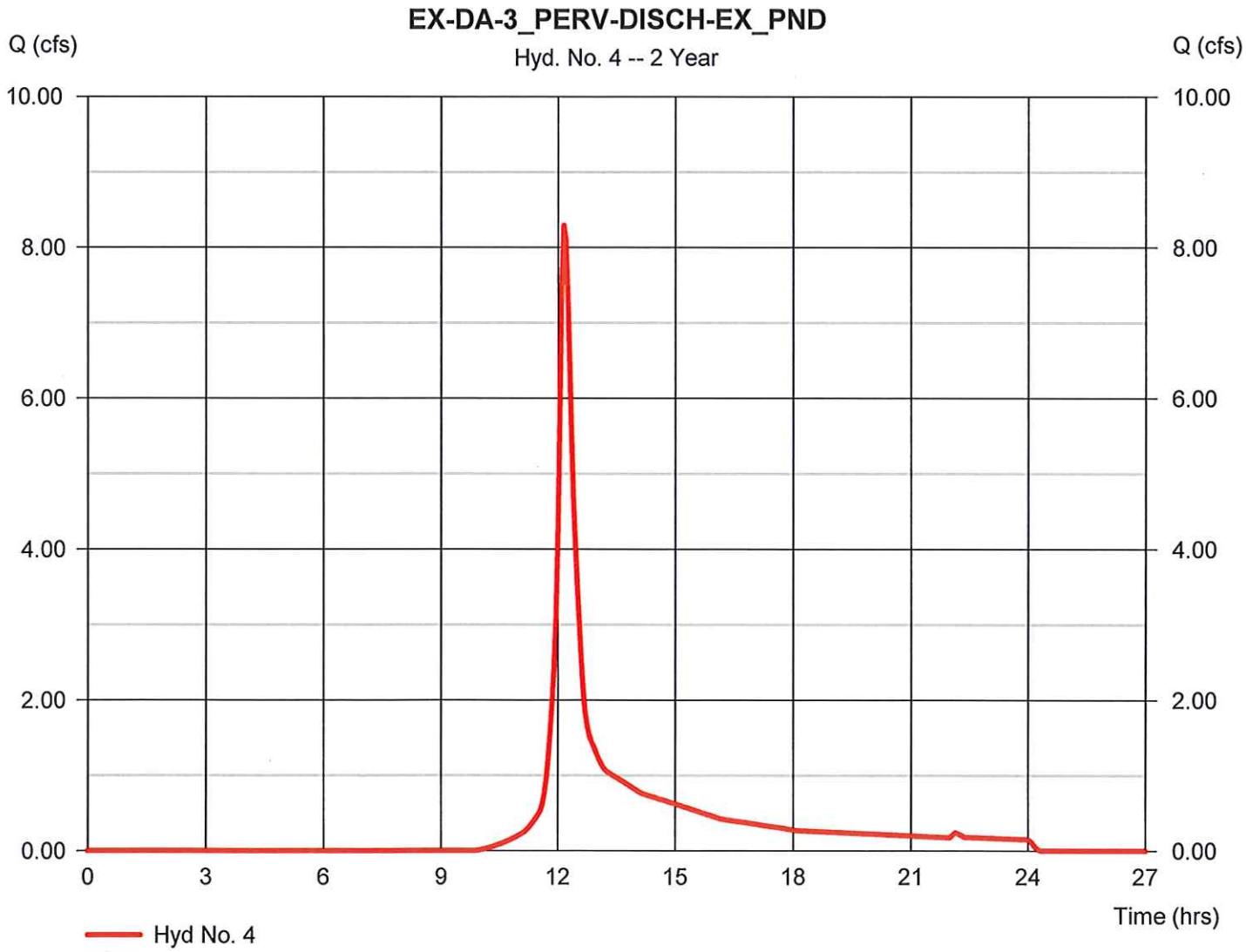
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 4

EX-DA-3_PERV-DISCH-EX_PND

Hydrograph type	= SCS Runoff	Peak discharge	= 8.295 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 33,489 cuft
Drainage area	= 5.860 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.50 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.860 x 74)] / 5.860



TR55 Tc Worksheet

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

Hyd. No. 4

EX-DA-3_PERV-DISCH-EX_PND

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 5.40		0.00		0.00		
Travel Time (min)	**= 9.43**	**+**	**0.00**	**+**	**0.00**	**=**	**9.43**
Shallow Concentrated Flow							
Flow length (ft)	= 497.50		0.00		0.00		
Watercourse slope (%)	= 6.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.95		0.00		0.00		
Travel Time (min)	**= 2.10**	**+**	**0.00**	**+**	**0.00**	**=**	**2.10**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

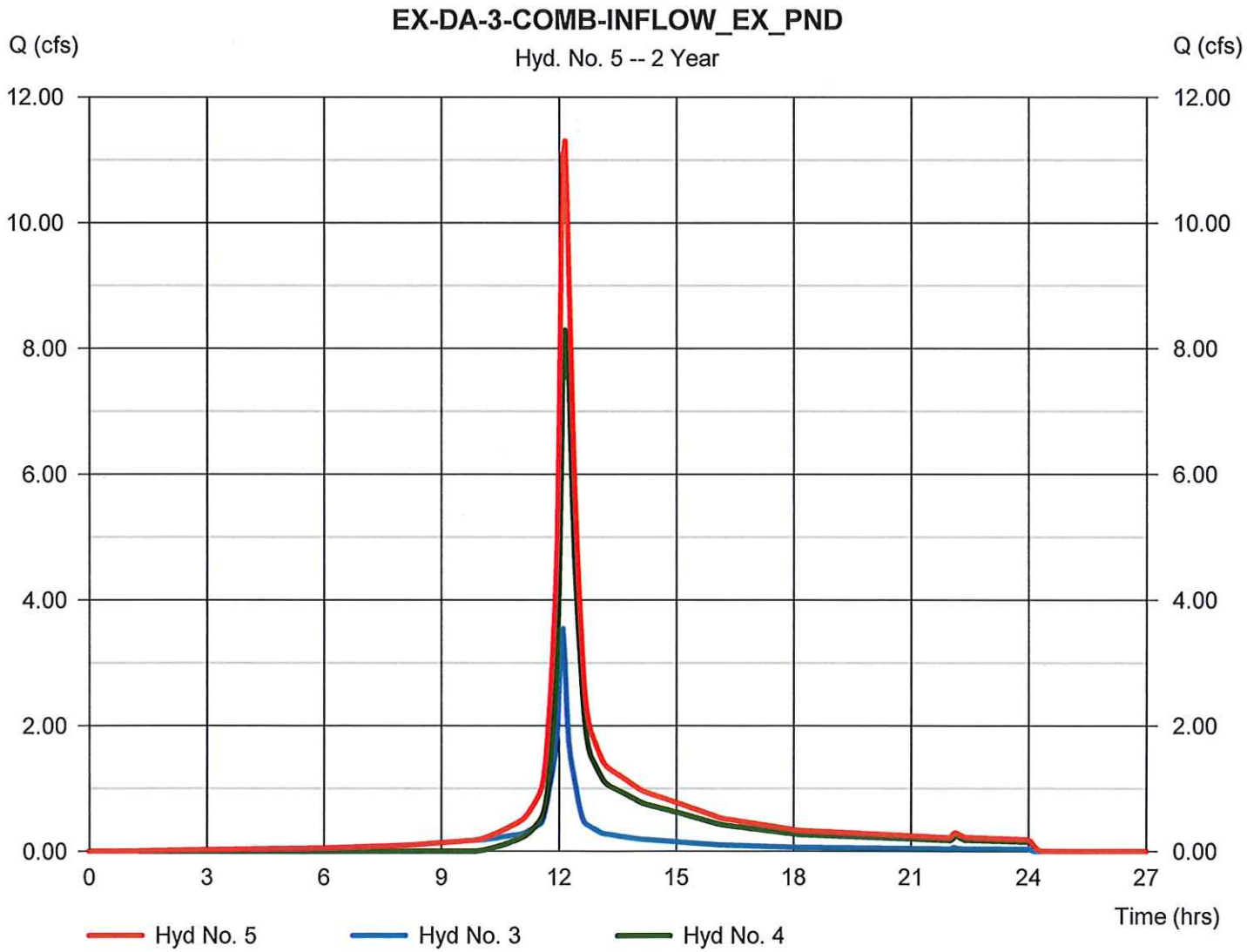
Total Travel Time, Tc ..... 11.50 min

Hydrograph Report

Hyd. No. 5

EX-DA-3-COMB-INFLOW_EX_PND

Hydrograph type	= Combine	Peak discharge	= 11.30 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 46,963 cuft
Inflow hyds.	= 3, 4	Contrib. drain. area	= 6.920 ac



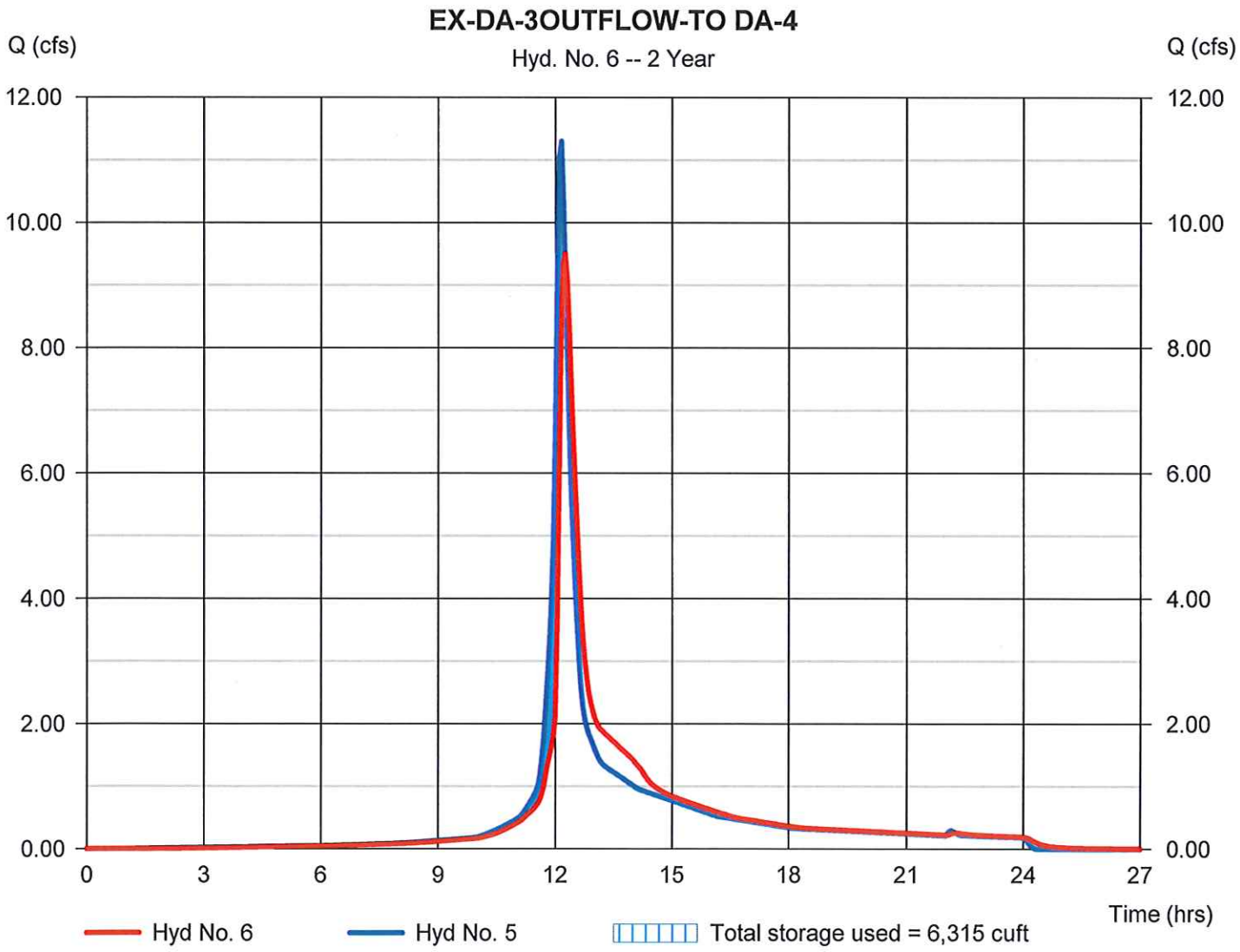
Hydrograph Report

Hyd. No. 6

EX-DA-3OUTFLOW-TO DA-4

Hydrograph type	= Reservoir	Peak discharge	= 9.502 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.25 hrs
Time interval	= 3 min	Hyd. volume	= 46,958 cuft
Inflow hyd. No.	= 5 - EX-DA-3-COMB-INFLOW-EX_PND	Max. Elevation	= 95.83 ft
Reservoir name	= Ex-PND-A-EX-DA-3	Max. Storage	= 6,315 cuft

Storage Indication method used.



Pond Report

Pond No. 1 - Ex-PND-A-EX-DA-3

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	93.50	n/a	0	0
0.50	94.00	n/a	560	560
1.00	94.50	n/a	999	1,559
1.50	95.00	n/a	1,498	3,057
2.00	95.50	n/a	1,868	4,925
2.50	96.00	n/a	2,102	7,027
3.00	96.50	n/a	2,340	9,366
3.50	97.00	n/a	2,586	11,952

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	10.00	0.00	0.00
Span (in)	= 24.00	6.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 93.50	93.50	0.00	0.00
Length (ft)	= 31.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 3.00	15.00	0.00	0.00
Crest El. (ft)	= 95.00	96.00	0.00	0.00
Weir Coeff.	= 3.33	2.60	3.33	3.33
Weir Type	= Rect	Broad	---	---
Multi-Stage	= Yes	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	93.50	0.00	0.00	---	---	0.00	0.00	---	---	---	---	0.000
0.50	560	94.00	0.56 ic	0.55 ic	---	---	0.00	0.00	---	---	---	---	0.548
1.00	1,559	94.50	1.48 ic	1.43 ic	---	---	0.00	0.00	---	---	---	---	1.431
1.50	3,057	95.00	1.99 ic	1.93 ic	---	---	0.00	0.00	---	---	---	---	1.930
2.00	4,925	95.50	5.61 ic	1.99 ic	---	---	3.53	0.00	---	---	---	---	5.522
2.50	7,027	96.00	11.74 ic	1.89 ic	---	---	9.84 s	0.00	---	---	---	---	11.73
3.00	9,366	96.50	17.07 ic	1.71 ic	---	---	15.36 s	13.79	---	---	---	---	30.86
3.50	11,952	97.00	21.09 ic	1.50 ic	---	---	19.59 s	39.00	---	---	---	---	60.09

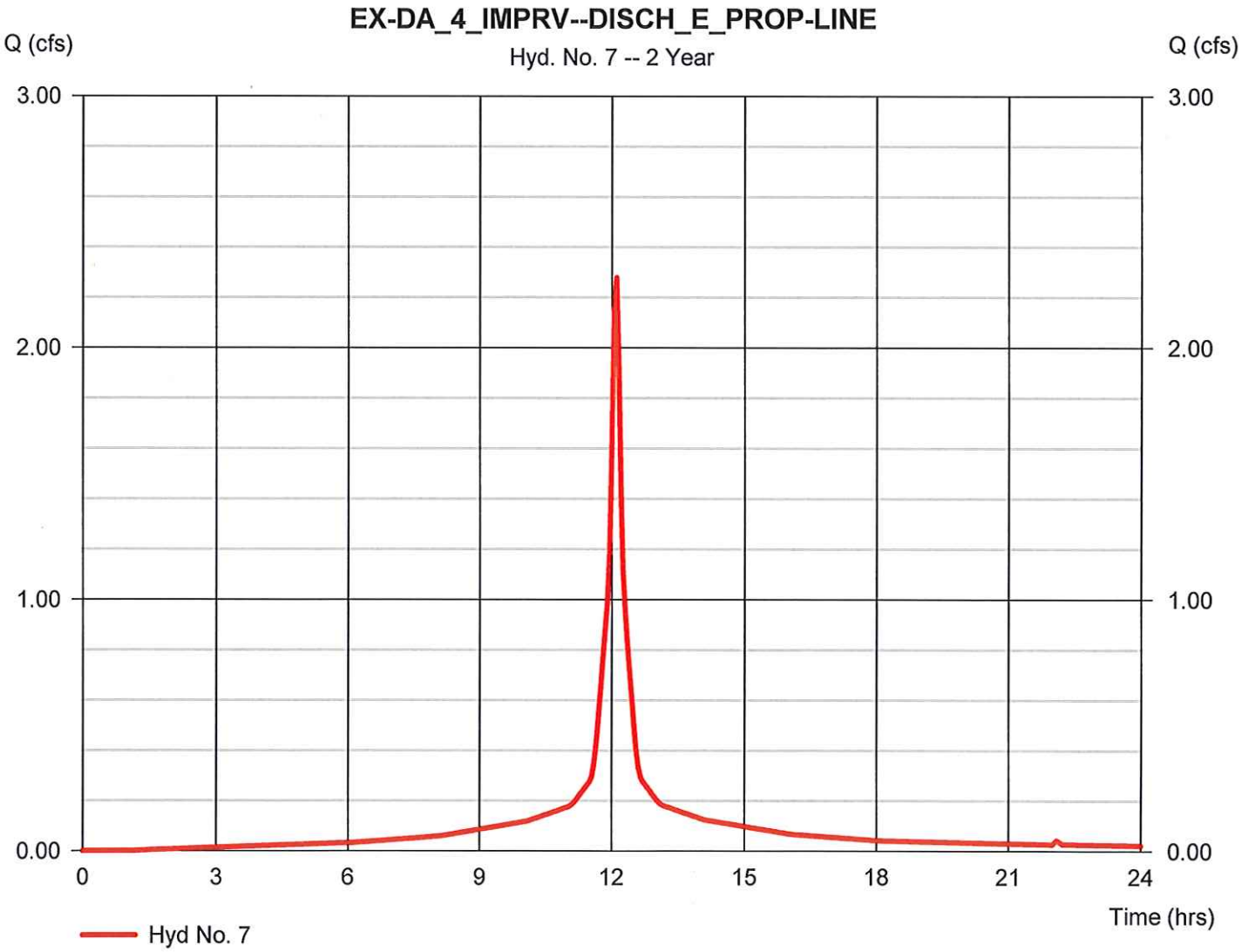
Hydrograph Report

Hyd. No. 7

EX-DA_4_IMPRV--DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 2.279 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 8,644 cuft
Drainage area	= 0.680 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.680 x 98)] / 0.680



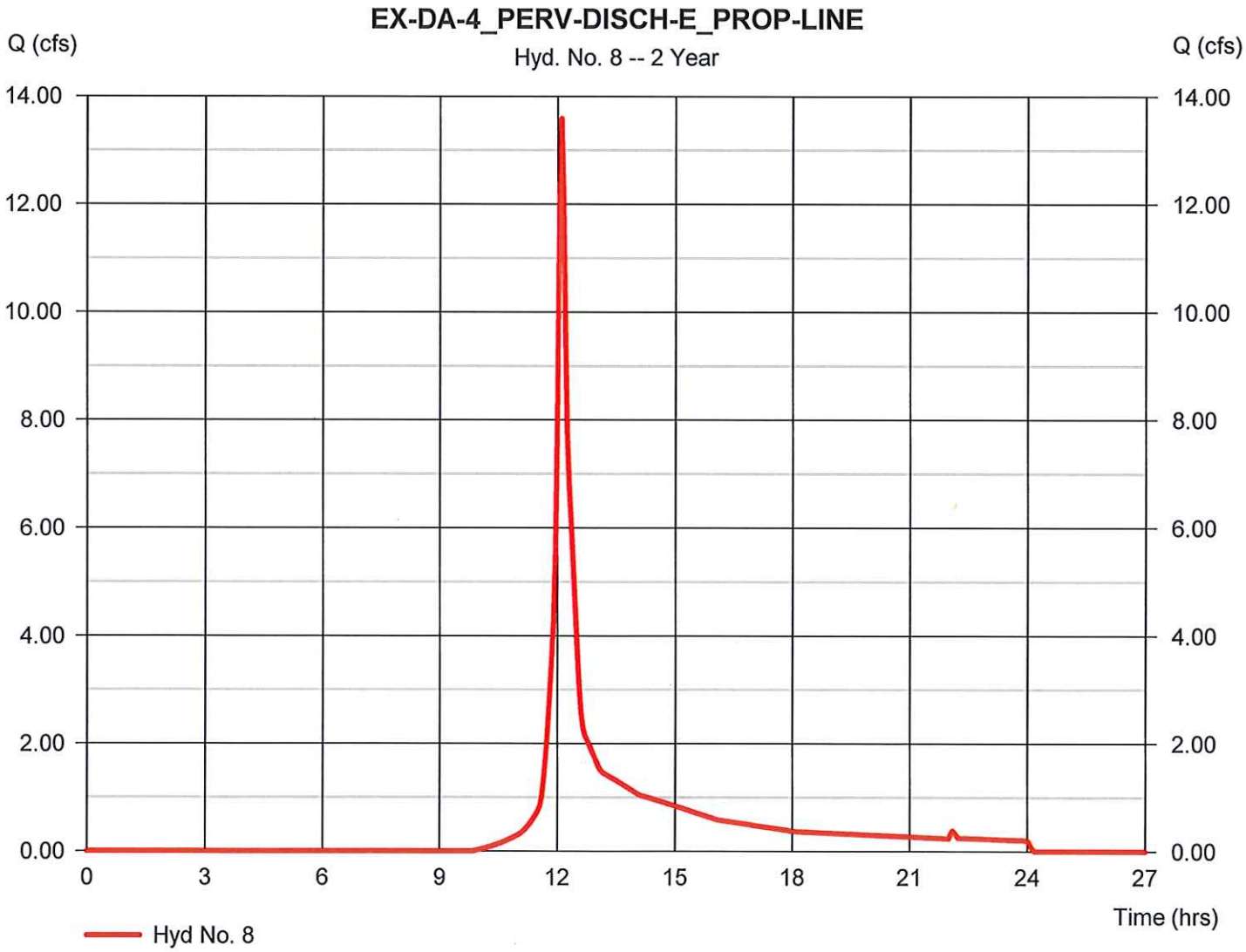
Hydrograph Report

Hyd. No. 8

EX-DA-4_PERV-DISCH-E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 13.59 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 46,022 cuft
Drainage area	= 8.590 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.70 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(8.590 x 74)] / 8.590



TR55 Tc Worksheet

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

Hyd. No. 8

EX-DA-4_PERV-DISCH-E_PROP-LINE

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 7.50		0.00		0.00		
Travel Time (min)	**= 8.27**	**+**	**0.00**	**+**	**0.00**	**=**	**8.27**
Shallow Concentrated Flow							
Flow length (ft)	= 438.00		0.00		0.00		
Watercourse slope (%)	= 10.30		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=5.18		0.00		0.00		
Travel Time (min)	**= 1.41**	**+**	**0.00**	**+**	**0.00**	**=**	**1.41**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

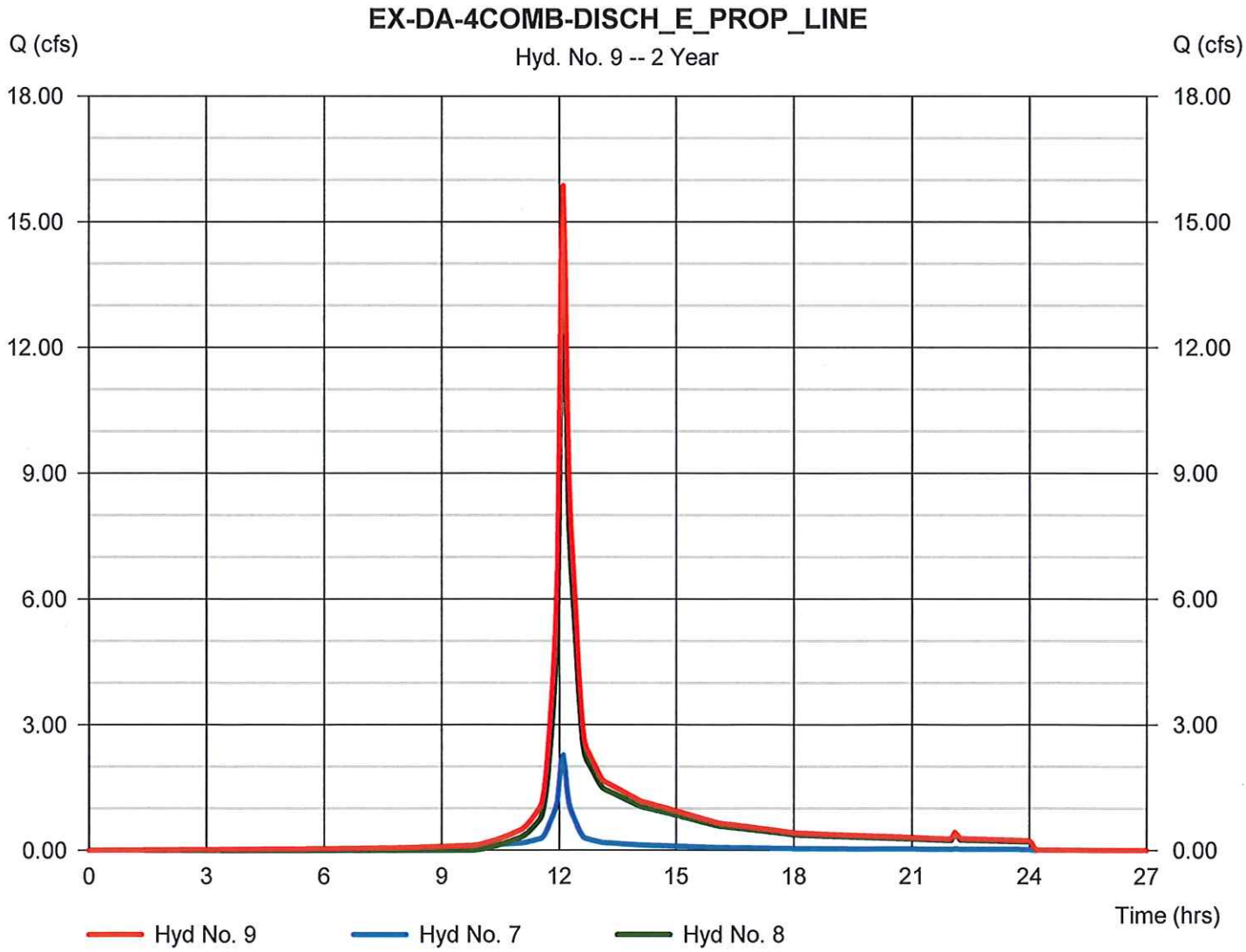
Total Travel Time, Tc ..... 9.70 min

Hydrograph Report

Hyd. No. 9

EX-DA-4COMB-DISCH_E_PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 15.87 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 54,666 cuft
Inflow hyds.	= 7, 8	Contrib. drain. area	= 9.270 ac

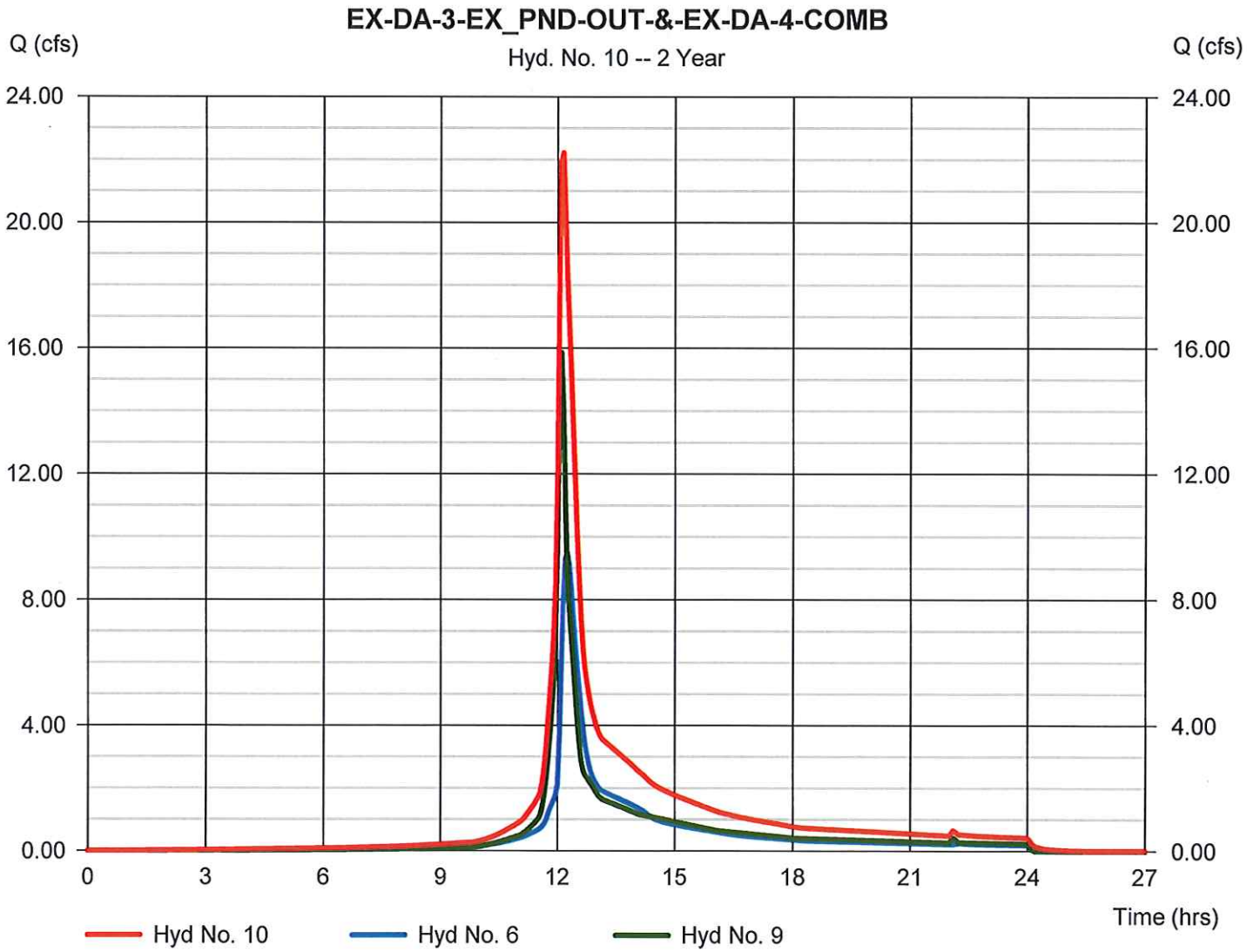


Hydrograph Report

Hyd. No. 10

EX-DA-3-EX_PND-OUT-&-EX-DA-4-COMB

Hydrograph type	= Combine	Peak discharge	= 22.22 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 101,624 cuft
Inflow hyds.	= 6, 9	Contrib. drain. area	= 0.000 ac



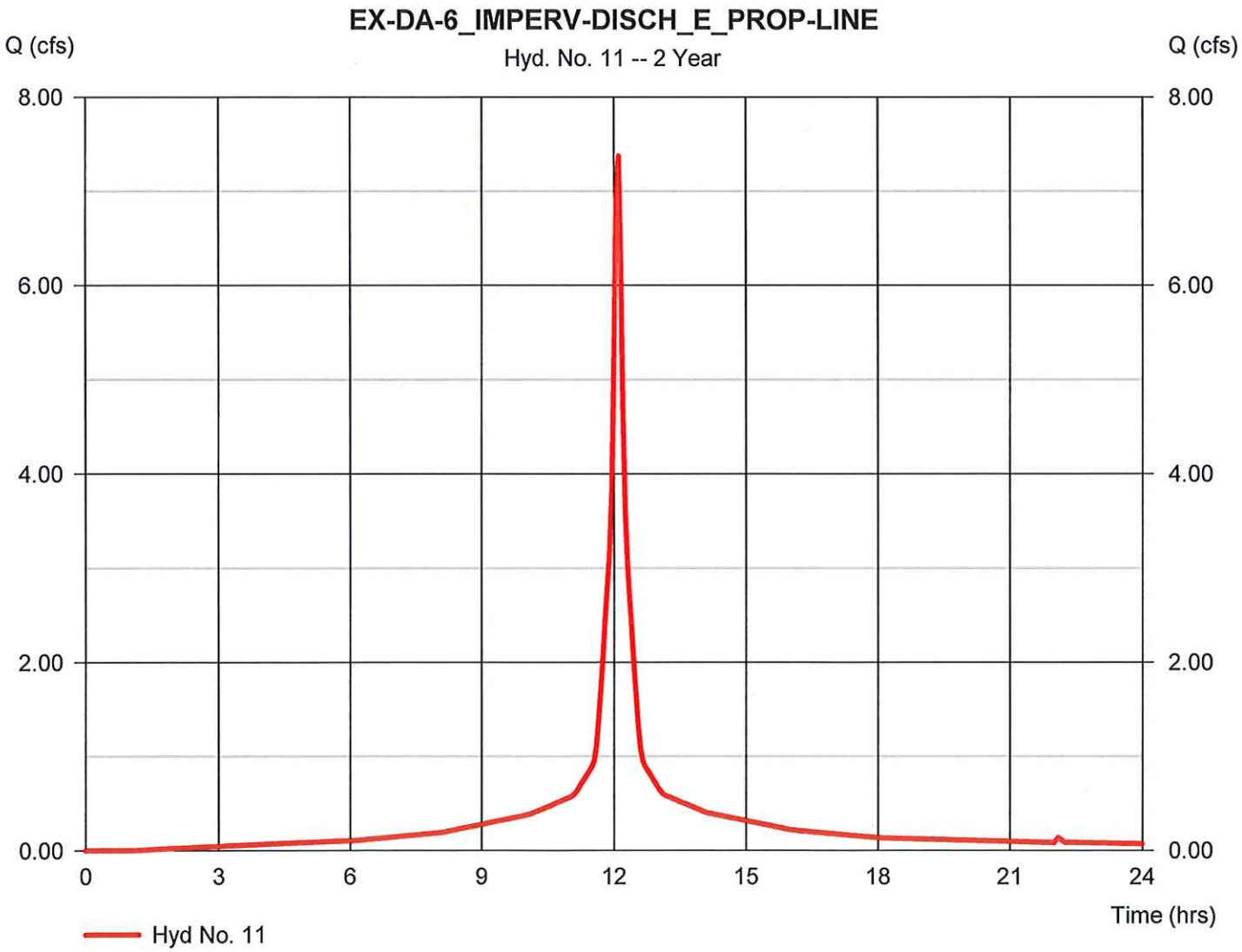
Hydrograph Report

Hyd. No. 11

EX-DA-6_IMPERV-DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 7.374 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 27,965 cuft
Drainage area	= 2.200 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.200 x 98)] / 2.200



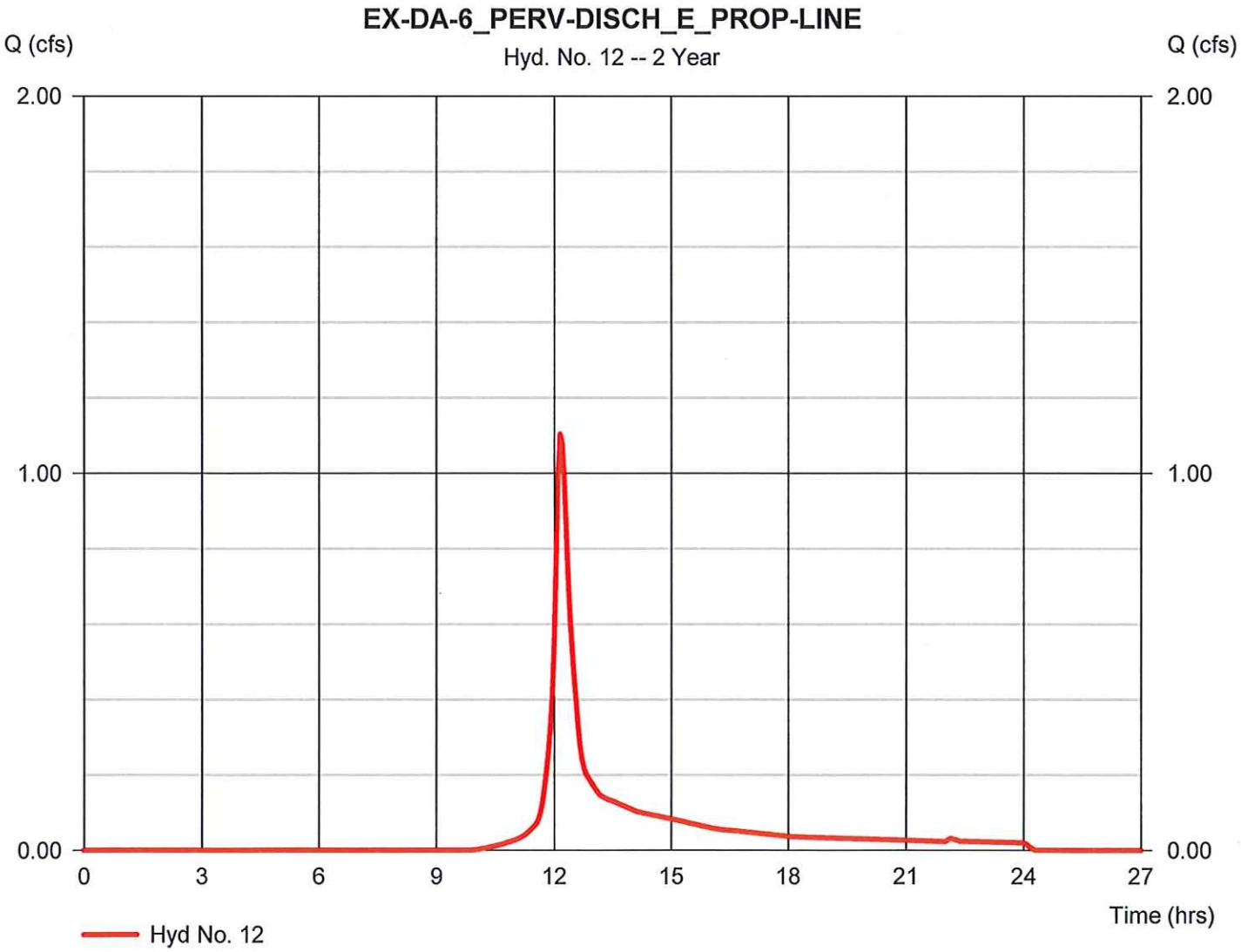
Hydrograph Report

Hyd. No. 12

EX-DA-6_PERV-DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 1.104 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 4,458 cuft
Drainage area	= 0.780 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.90 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.780 x 74)] / 0.780



TR55 Tc Worksheet

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

Hyd. No. 12

EX-DA-6_PERV-DISCH_E_PROP-LINE

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 4.17		0.00		0.00		
Travel Time (min)	**= 10.46**	**+**	**0.00**	**+**	**0.00**	**=**	**10.46**
Shallow Concentrated Flow							
Flow length (ft)	= 72.00		0.00		0.00		
Watercourse slope (%)	= 3.60		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.06		0.00		0.00		
Travel Time (min)	**= 0.39**	**+**	**0.00**	**+**	**0.00**	**=**	**0.39**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

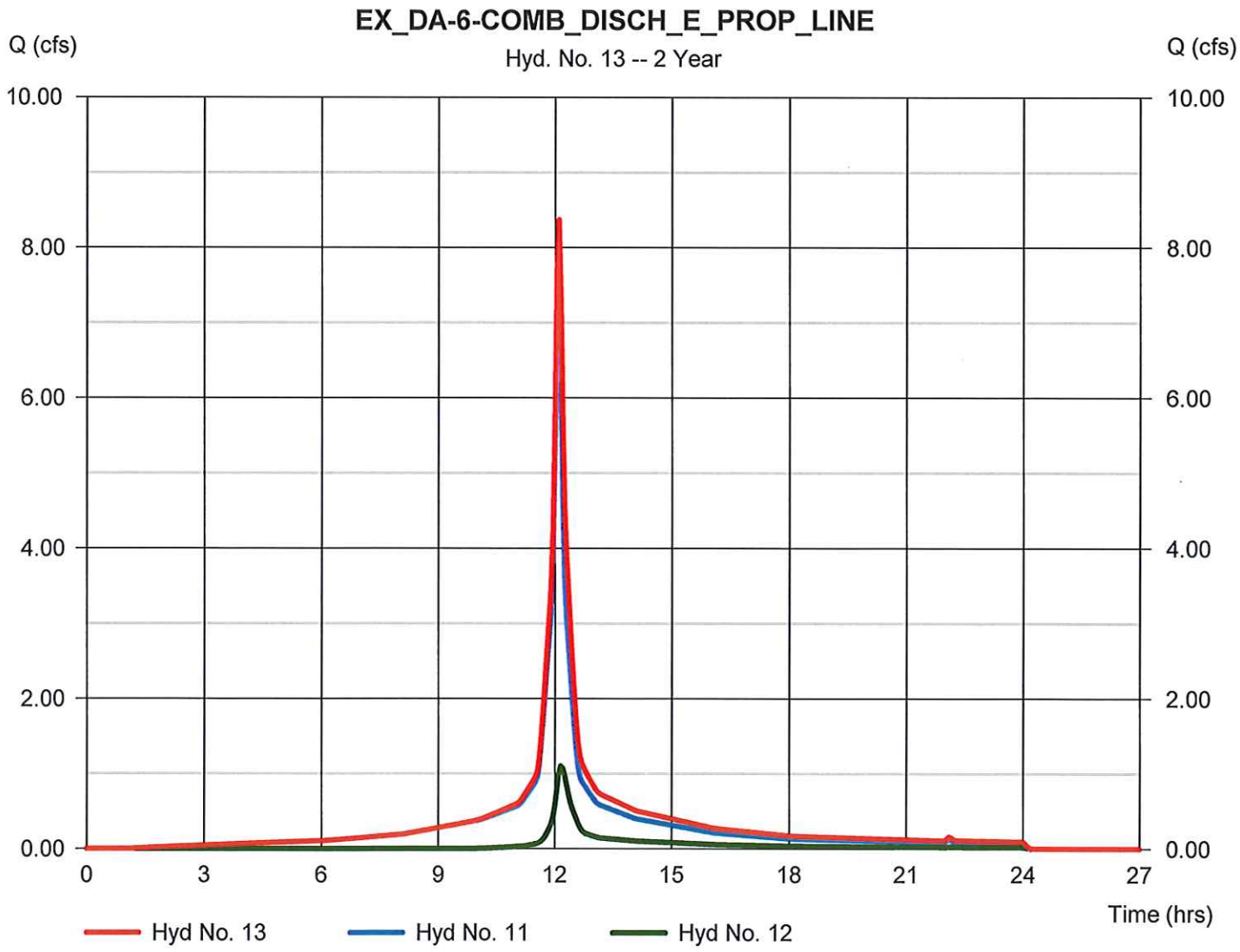
Total Travel Time, Tc ..... 10.90 min

Hydrograph Report

Hyd. No. 13

EX_DA-6-COMB_DISCH_E_PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 8.374 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 32,422 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 2.980 ac

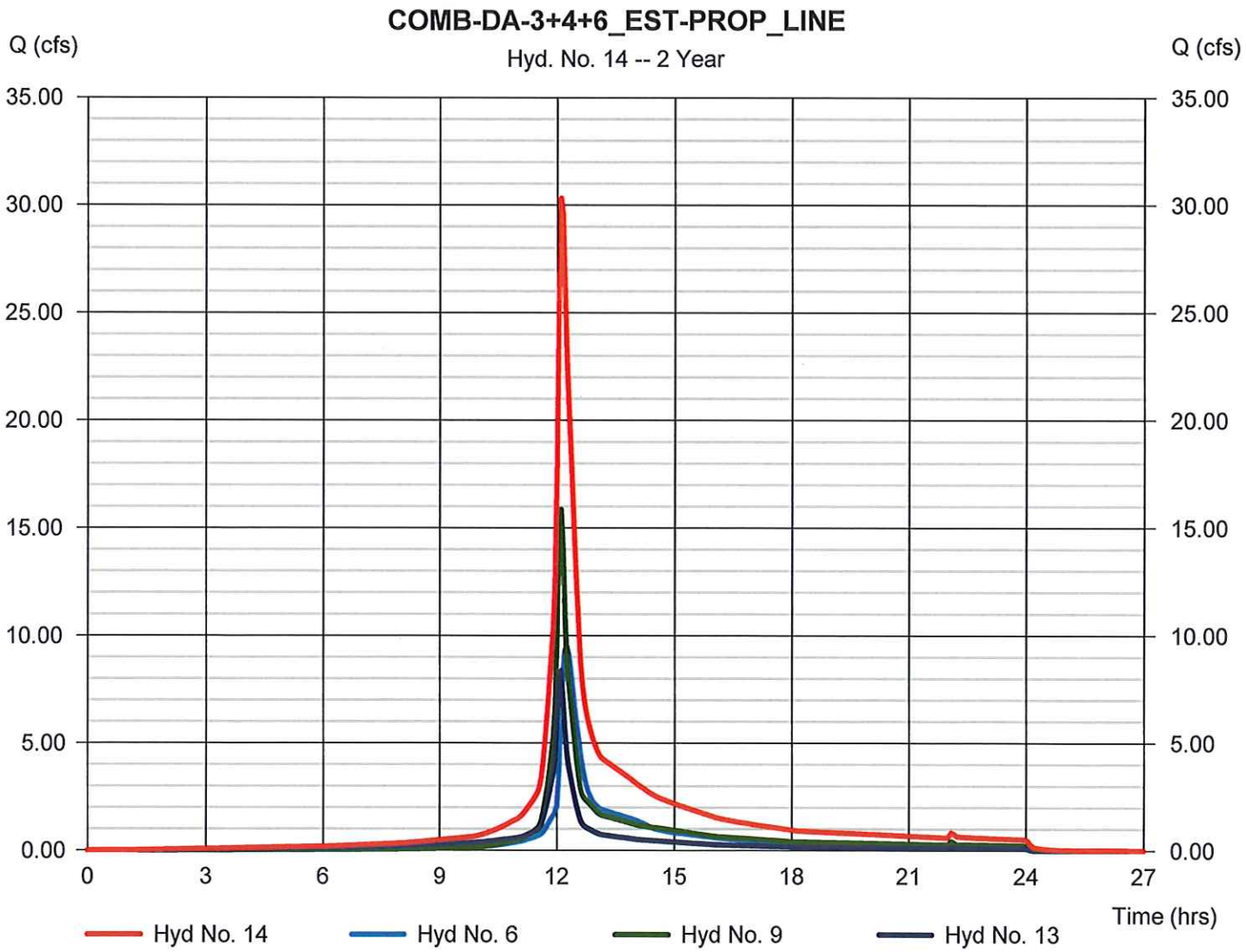


Hydrograph Report

Hyd. No. 14

COMB-DA-3+4+6_EST-PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 30.32 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 134,046 cuft
Inflow hyds.	= 6, 9, 13	Contrib. drain. area	= 0.000 ac



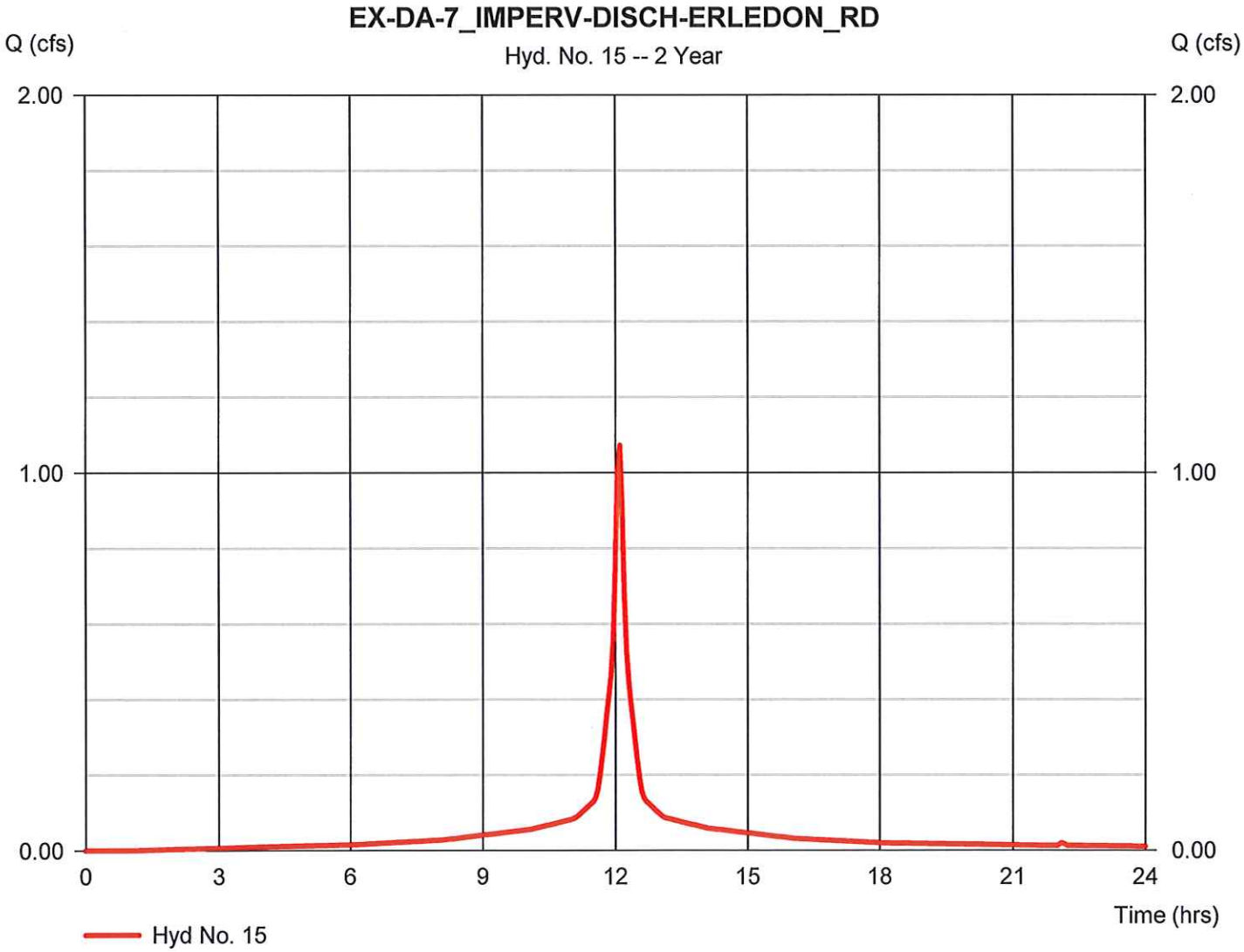
Hydrograph Report

Hyd. No. 15

EX-DA-7_IMPERV-DISCH-ERLEDON_RD

Hydrograph type	= SCS Runoff	Peak discharge	= 1.073 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 4,068 cuft
Drainage area	= 0.320 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.320 x 98)] / 0.320



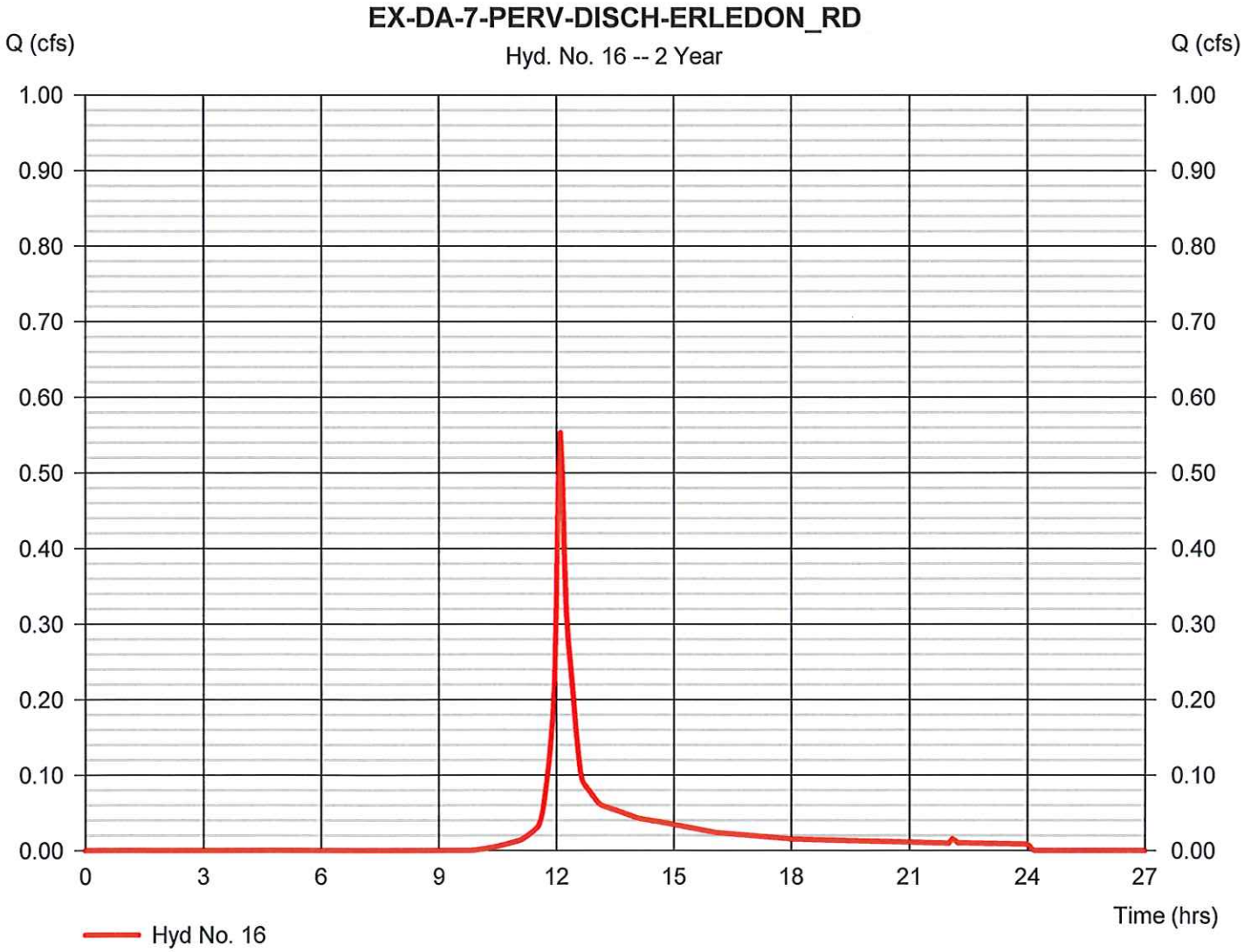
Hydrograph Report

Hyd. No. 16

EX-DA-7-PERV-DISCH-ERLEDON_RD

Hydrograph type	= SCS Runoff	Peak discharge	= 0.554 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 1,875 cuft
Drainage area	= 0.350 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.350 x 74)] / 0.350



TR55 Tc Worksheet

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

Hyd. No. 16

EX-DA-7-PERV-DISCH-ERLEDON_RD

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 9.85		0.00		0.00		
Travel Time (min)	**= 7.42**	**+**	**0.00**	**+**	**0.00**	**=**	**7.42**
Shallow Concentrated Flow							
Flow length (ft)	= 0.00		0.00		0.00		
Watercourse slope (%)	= 0.00		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	=0.00		0.00		0.00		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

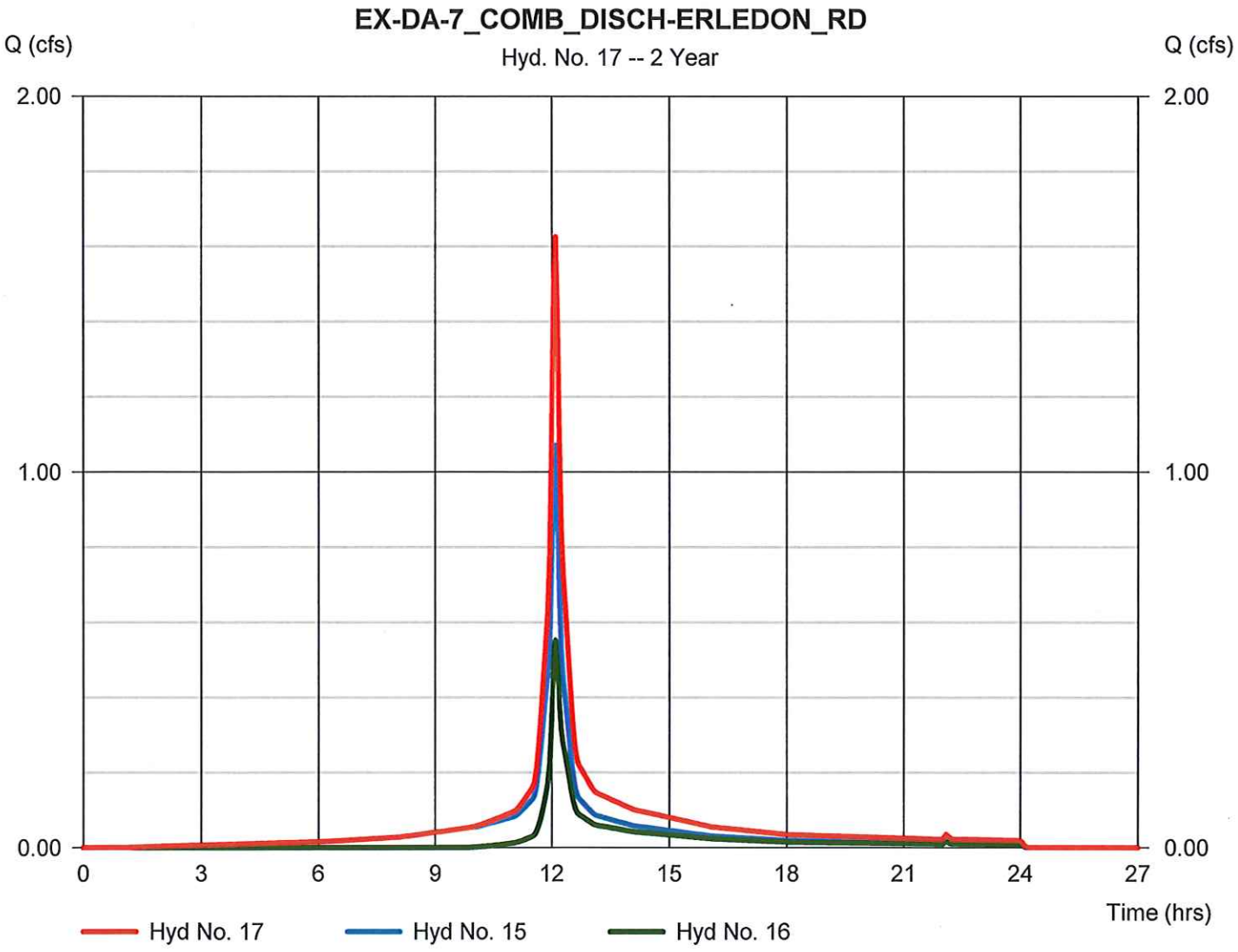
Total Travel Time, Tc ..... 7.40 min

Hydrograph Report

Hyd. No. 17

EX-DA-7_COMB_DISCH-ERLEDON_RD

Hydrograph type	= Combine	Peak discharge	= 1.626 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 5,943 cuft
Inflow hyds.	= 15, 16	Contrib. drain. area	= 0.670 ac

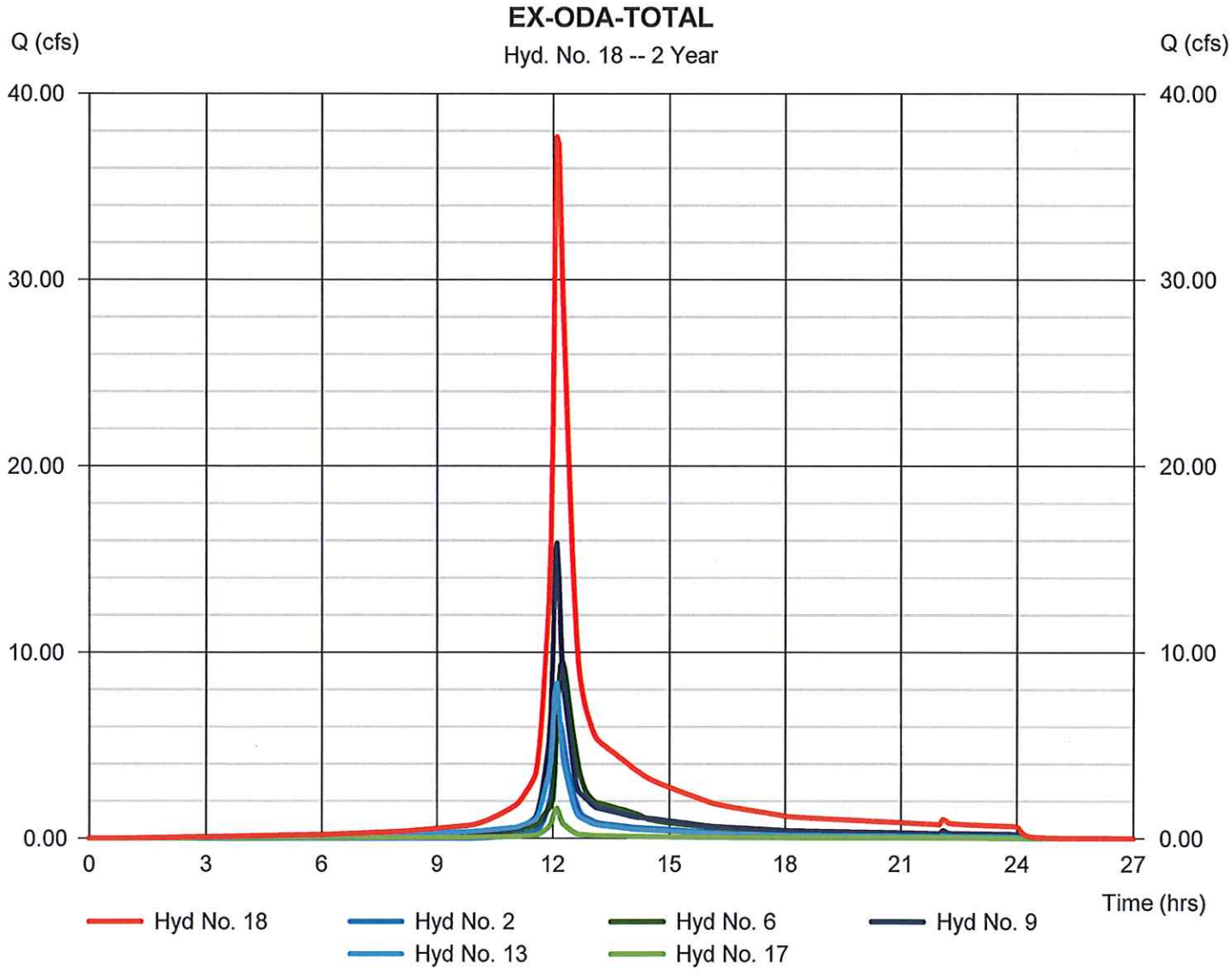


Hydrograph Report

Hyd. No. 18

EX-ODA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 37.68 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 165,534 cuft
Inflow hyds.	= 2, 6, 9, 13, 17	Contrib. drain. area	= 4.470 ac



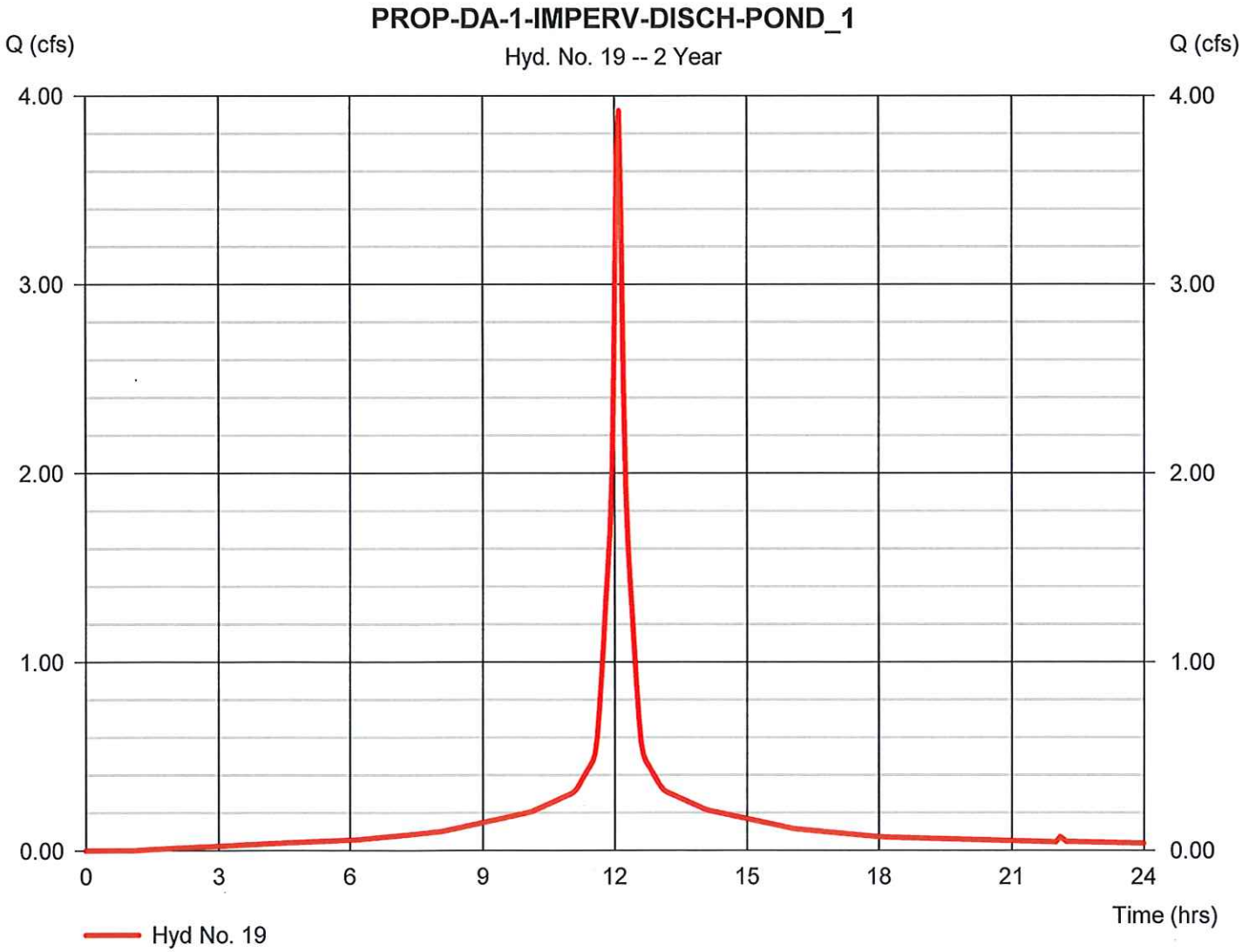
Hydrograph Report

Hyd. No. 19

PROP-DA-1-IMPERV-DISCH-POND_1

Hydrograph type	= SCS Runoff	Peak discharge	= 3.921 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 14,872 cuft
Drainage area	= 1.170 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.170 x 98)] / 1.170



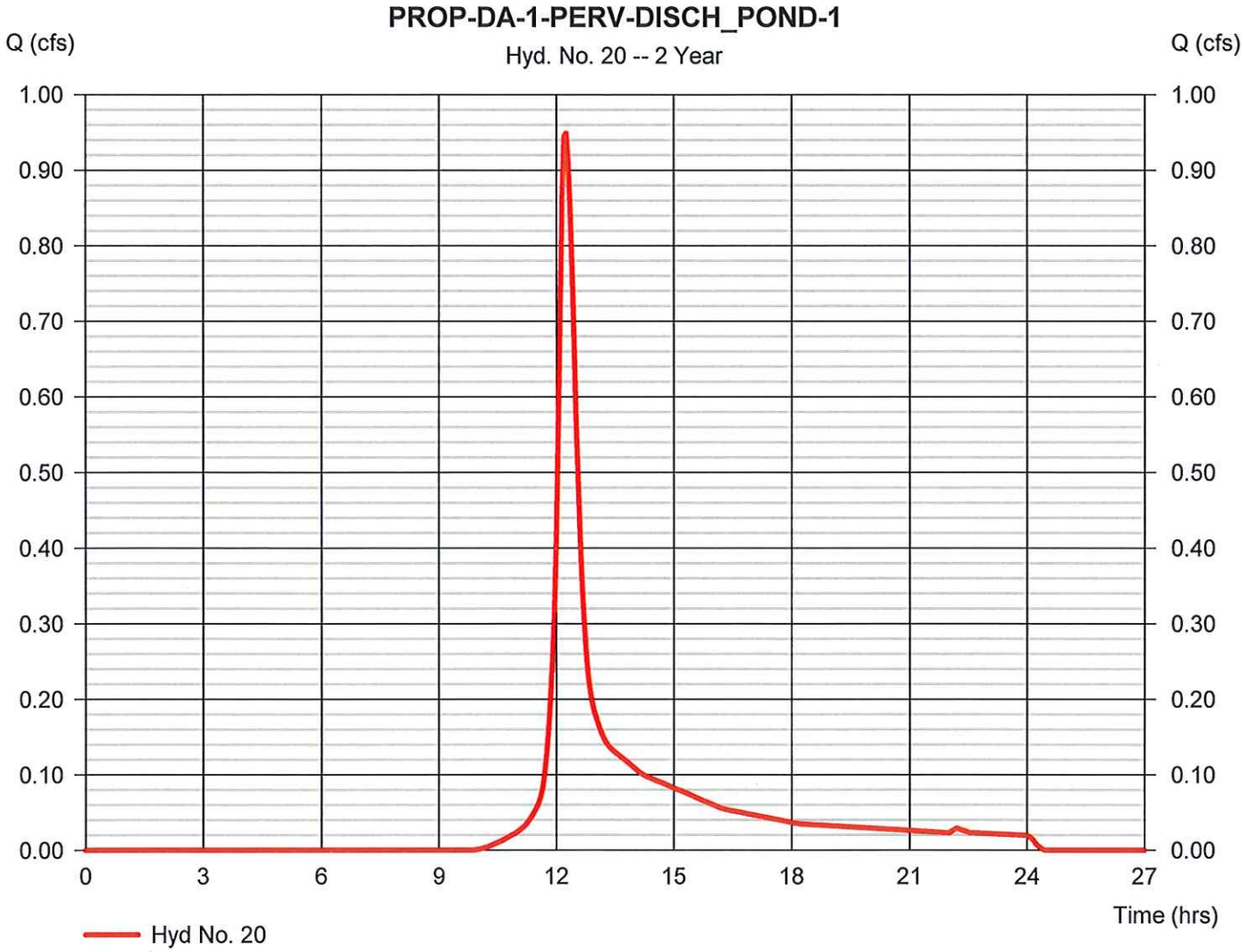
Hydrograph Report

Hyd. No. 20

PROP-DA-1-PERV-DISCH_POND-1

Hydrograph type	= SCS Runoff	Peak discharge	= 0.949 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.25 hrs
Time interval	= 3 min	Hyd. volume	= 4,361 cuft
Drainage area	= 0.740 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.50 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.280 x 74)] / 0.740



TR55 Tc Worksheet

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

Hyd. No. 20

PROP-DA-1-PERV-DISCH_POND-1

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.150		0.011		0.011		
Flow length (ft)	= 52.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 0.65		0.00		0.00		
Travel Time (min)	**= 8.93**	**+**	**0.00**	**+**	**0.00**	**=**	**8.93**
Shallow Concentrated Flow							
Flow length (ft)	= 50.00		0.00		0.00		
Watercourse slope (%)	= 0.65		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=1.30		0.00		0.00		
Travel Time (min)	**= 0.64**	**+**	**0.00**	**+**	**0.00**	**=**	**0.64**
Channel Flow							
X sectional flow area (sqft)	= 14.30		0.00		0.00		
Wetted perimeter (ft)	= 14.49		0.00		0.00		
Channel slope (%)	= 0.75		0.00		0.00		
Manning's n-value	= 0.200		0.015		0.015		
Velocity (ft/s)	=0.64						
			0.00				
					0.00		
Flow length (ft)	({0})343.0		0.0		0.0		
Travel Time (min)	**= 8.94**	**+**	**0.00**	**+**	**0.00**	**=**	**8.94**

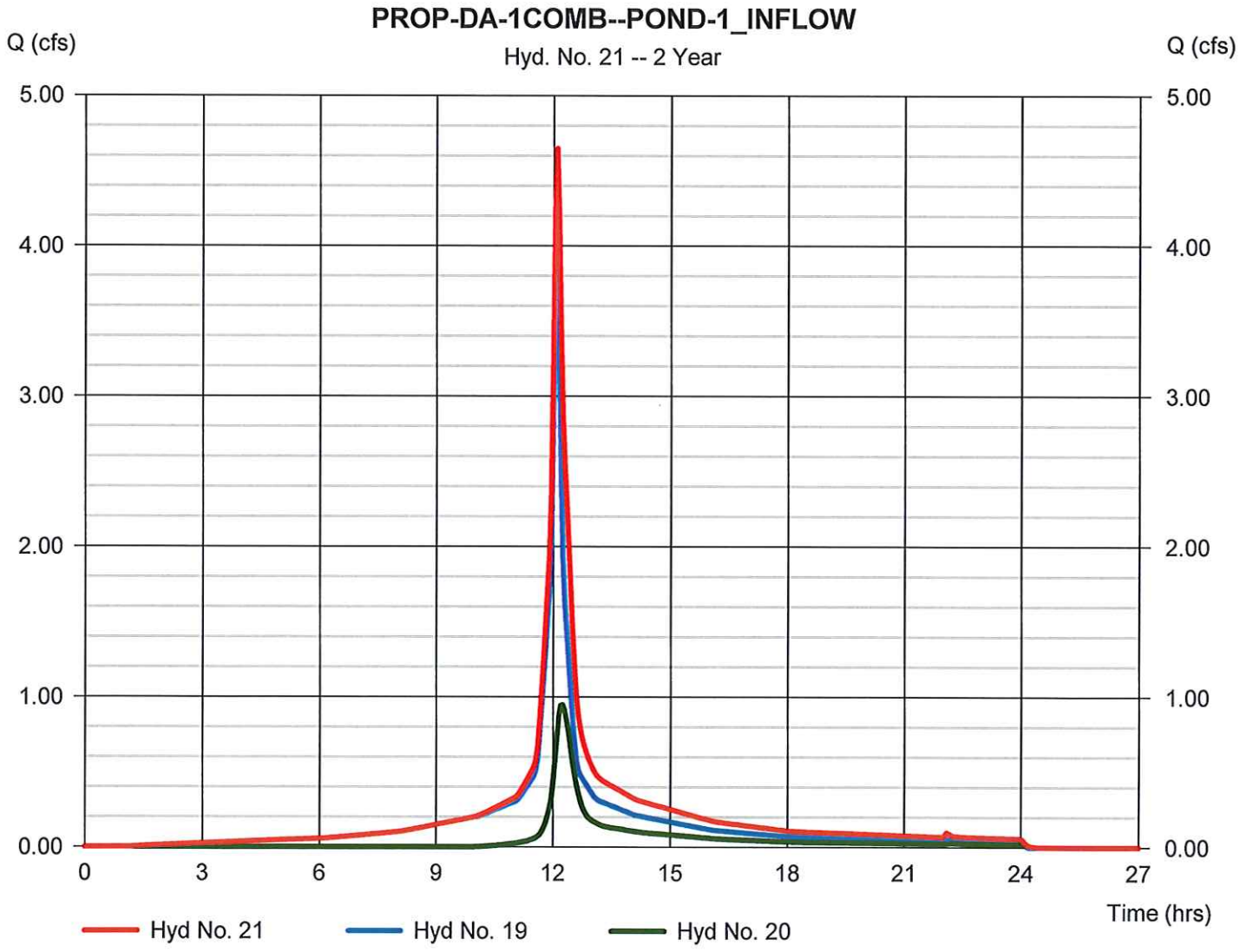
Total Travel Time, Tc ..... 18.50 min

Hydrograph Report

Hyd. No. 21

PROP-DA-1COMB--POND-1_INFLOW

Hydrograph type	= Combine	Peak discharge	= 4.648 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 19,233 cuft
Inflow hyds.	= 19, 20	Contrib. drain. area	= 1.910 ac



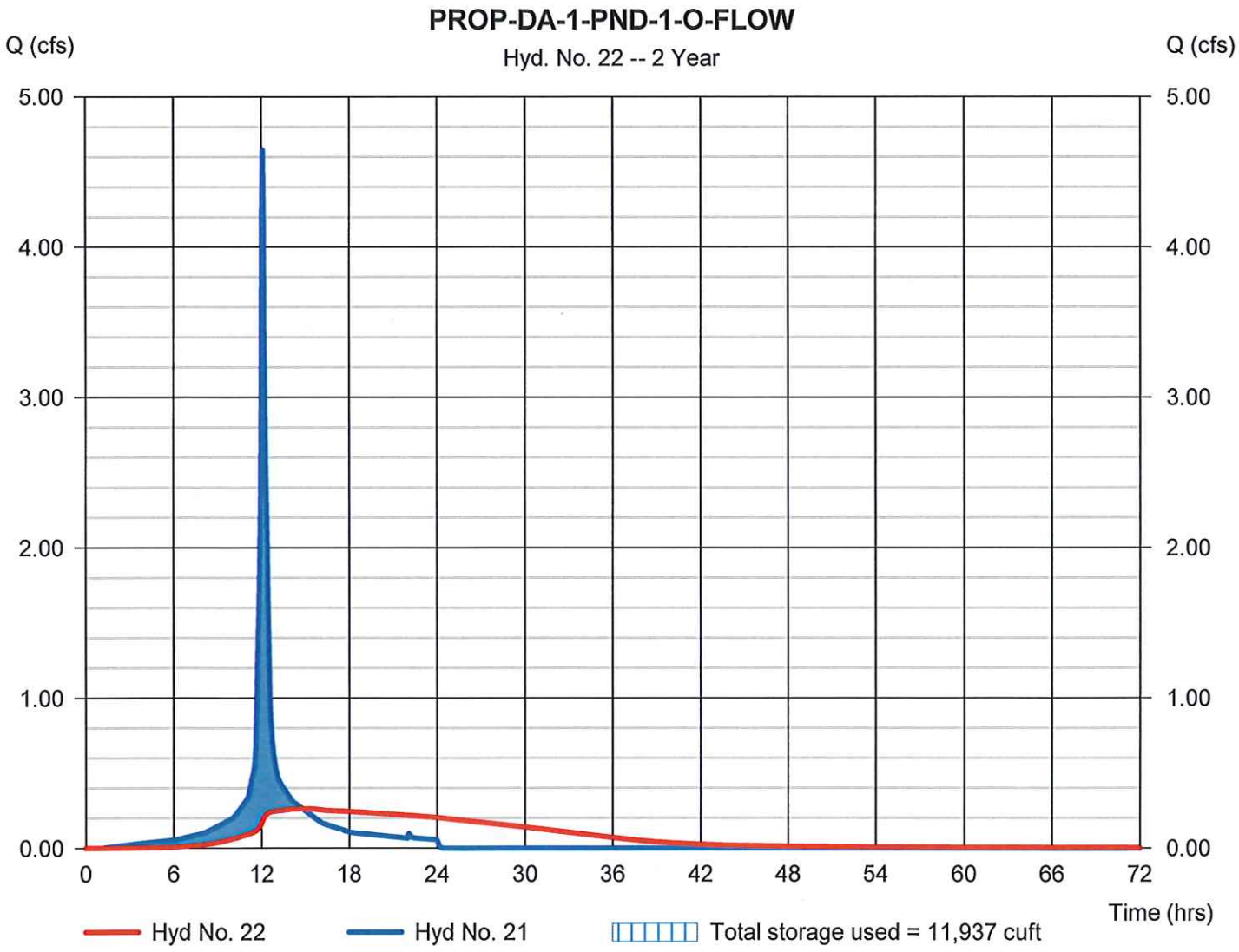
Hydrograph Report

Hyd. No. 22

PROP-DA-1-PND-1-O-FLOW

Hydrograph type	= Reservoir	Peak discharge	= 0.262 cfs
Storm frequency	= 2 yrs	Time to peak	= 14.85 hrs
Time interval	= 3 min	Hyd. volume	= 19,154 cuft
Inflow hyd. No.	= 21 - PROP-DA-1COMB--POND-1_INFLOW	Max. Elevation	= 113.28 ft
Reservoir name	= POND-1	Max. Storage	= 11,937 cuft

Storage Indication method used.



Pond Report

Pond No. 3 - POND-1

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	112.00	n/a	0	0
0.50	112.50	n/a	4,411	4,411
1.00	113.00	n/a	4,704	9,115
1.50	113.50	n/a	5,005	14,120
2.00	114.00	n/a	5,315	19,435
2.50	114.50	n/a	5,630	25,065
3.00	115.00	n/a	5,949	31,014
3.50	115.50	n/a	6,273	37,287
4.00	116.00	n/a	6,602	43,890
4.50	116.50	n/a	6,962	50,852
5.00	117.00	n/a	7,353	58,205

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	3.00	0.00	0.00
Span (in)	= 15.00	3.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 110.90	112.00	0.00	0.00
Length (ft)	= 73.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .011	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.33	1.50	16.00	0.00
Crest El. (ft)	= 113.25	114.25	115.50	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= Rect	Rect	Broad	---
Multi-Stage	= Yes	Yes	Yes	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	112.00	0.00	0.00	---	---	0.00	0.00	0.00	---	---	---	0.000
0.50	4,411	112.50	4.09 ic	0.14 ic	---	---	0.00	0.00	0.00	---	---	---	0.145
1.00	9,115	113.00	4.09 ic	0.22 ic	---	---	0.00	0.00	0.00	---	---	---	0.221
1.50	14,120	113.50	4.09 ic	0.28 ic	---	---	0.14	0.00	0.00	---	---	---	0.414
2.00	19,435	114.00	4.09 ic	0.32 ic	---	---	0.71	0.00	0.00	---	---	---	1.037
2.50	25,065	114.50	4.09 ic	0.36 ic	---	---	1.54	0.62	0.00	---	---	---	2.524
3.00	31,014	115.00	6.15 ic	0.37 ic	---	---	2.54	3.24	0.00	---	---	---	6.154
3.50	37,287	115.50	10.11 ic	0.24 ic	---	---	3.06 s	6.80 s	0.00	---	---	---	10.11
4.00	43,890	116.00	12.42 ic	0.06 ic	---	---	1.32 s	3.63 s	7.41 s	---	---	---	12.42
4.50	50,852	116.50	13.16 ic	0.03 ic	---	---	0.93 s	2.79 s	9.41 s	---	---	---	13.15
5.00	58,205	117.00	13.82 ic	0.02 ic	---	---	0.77 s	2.48 s	10.49 s	---	---	---	13.75

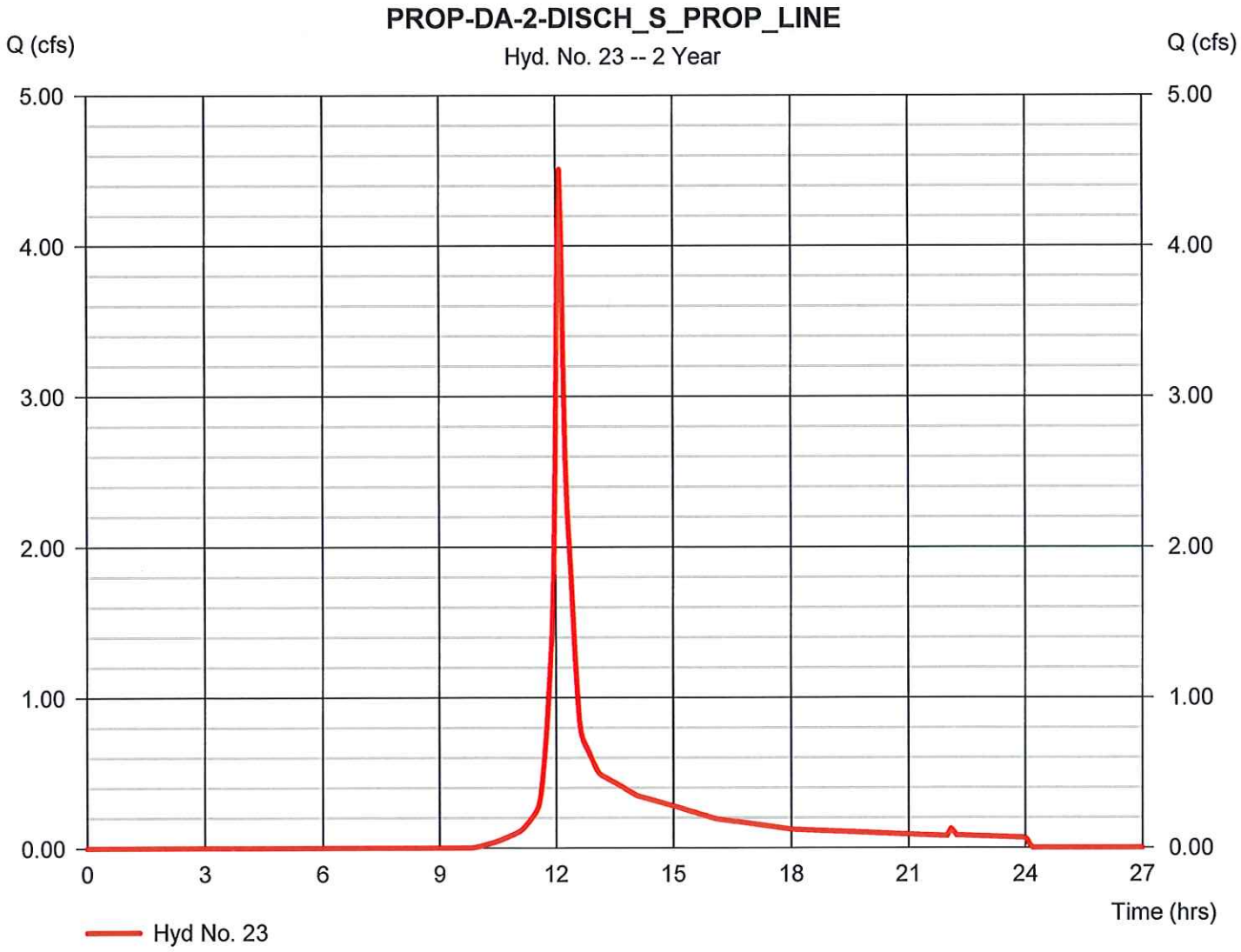
Hydrograph Report

Hyd. No. 23

PROP-DA-2-DISCH_S_PROP_LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 4.508 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 15,269 cuft
Drainage area	= 2.850 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.90 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.850 x 74)] / 2.850



TR55 Tc Worksheet

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

Hyd. No. 23

PROP-DA-2-DISCH_S_PROP_LINE

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 9.65		0.00		0.00		
Travel Time (min)	**= 7.48**	**+**	**0.00**	**+**	**0.00**	**=**	**7.48**
Shallow Concentrated Flow							
Flow length (ft)	= 165.00		0.00		0.00		
Watercourse slope (%)	= 14.70		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=6.19		0.00		0.00		
Travel Time (min)	**= 0.44**	**+**	**0.00**	**+**	**0.00**	**=**	**0.44**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 7.90 min

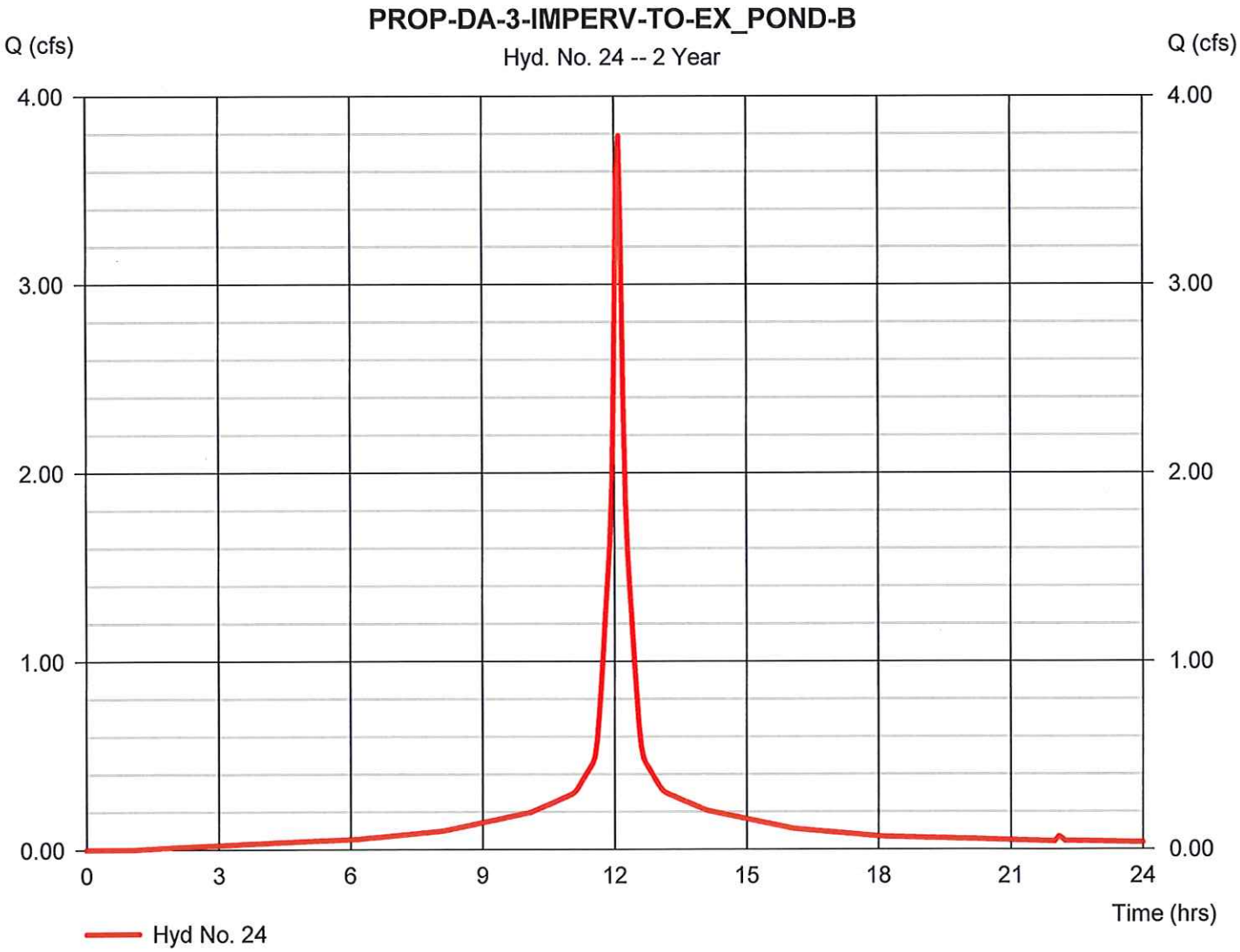
Hydrograph Report

Hyd. No. 24

PROP-DA-3-IMPERV-TO-EX_POND-B

Hydrograph type	= SCS Runoff	Peak discharge	= 3.787 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 14,364 cuft
Drainage area	= 1.130 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.130 x 98)] / 1.130



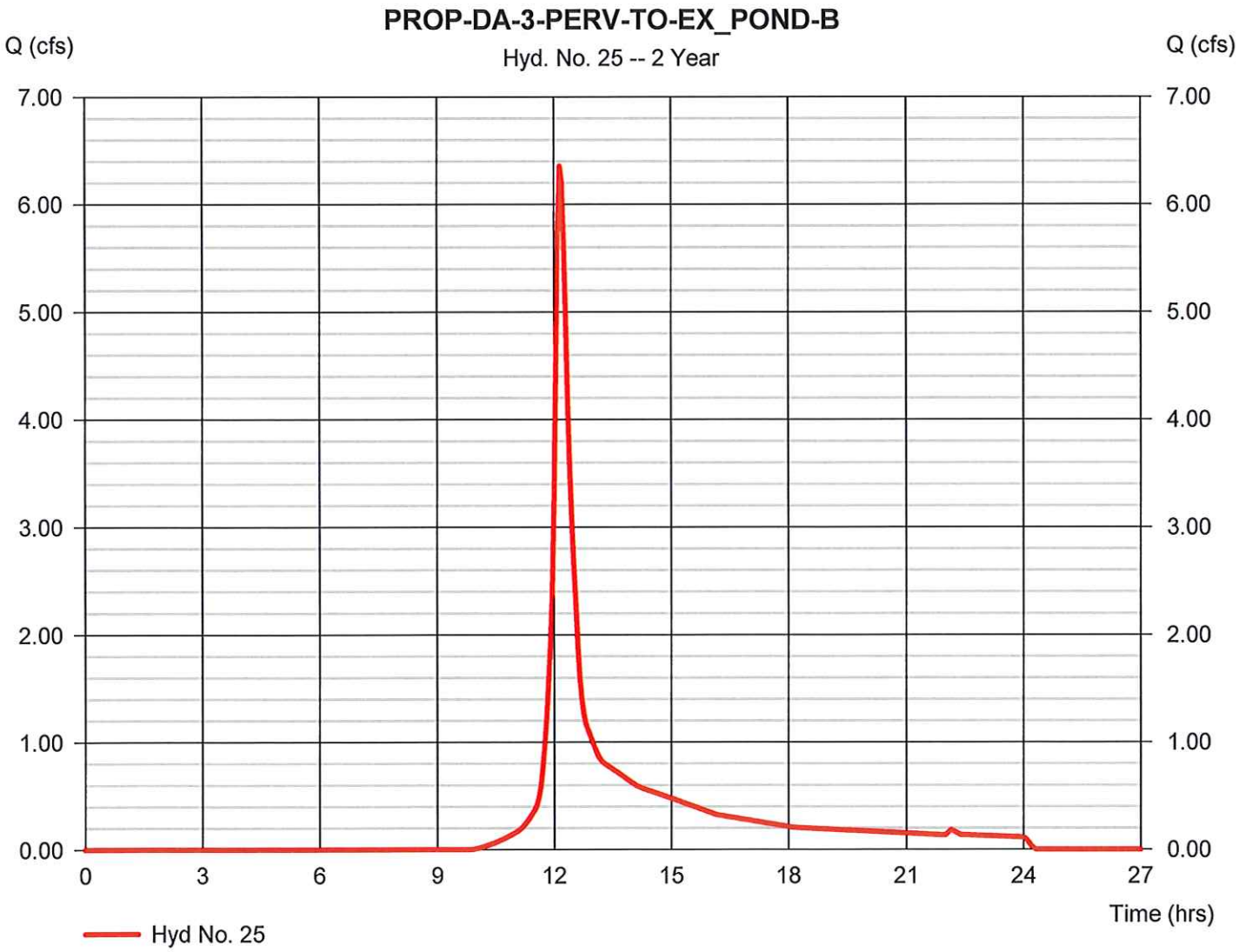
Hydrograph Report

Hyd. No. 25

PROP-DA-3-PERV-TO-EX_POND-B

Hydrograph type	= SCS Runoff	Peak discharge	= 6.355 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 25,660 cuft
Drainage area	= 4.490 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.80 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.490 x 74)] / 4.490



TR55 Tc Worksheet

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

Hyd. No. 25

PROP-DA-3-PERV-TO-EX_POND-B

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 11.62		0.00		0.00		
Travel Time (min)	**= 6.94**	**+**	**0.00**	**+**	**0.00**	**=**	**6.94**
Shallow Concentrated Flow							
Flow length (ft)	= 525.80		0.00		0.00		
Watercourse slope (%)	= 3.59		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.06		0.00		0.00		
Travel Time (min)	**= 2.87**	**+**	**0.00**	**+**	**0.00**	**=**	**2.87**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

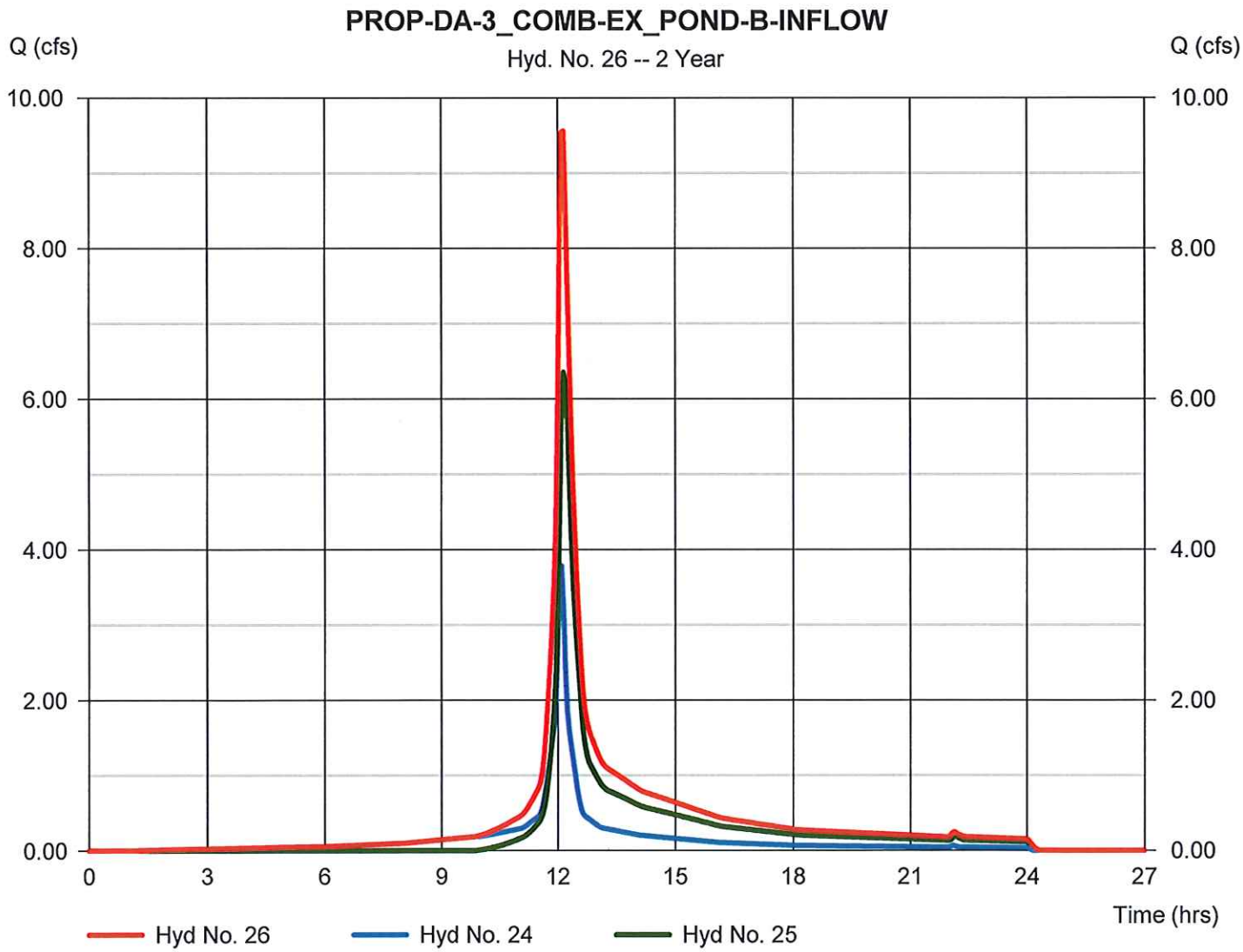
Total Travel Time, Tc ..... 9.80 min

Hydrograph Report

Hyd. No. 26

PROP-DA-3_COMB-EX_POND-B-INFLOW

Hydrograph type	= Combine	Peak discharge	= 9.560 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 40,023 cuft
Inflow hyds.	= 24, 25	Contrib. drain. area	= 5.620 ac



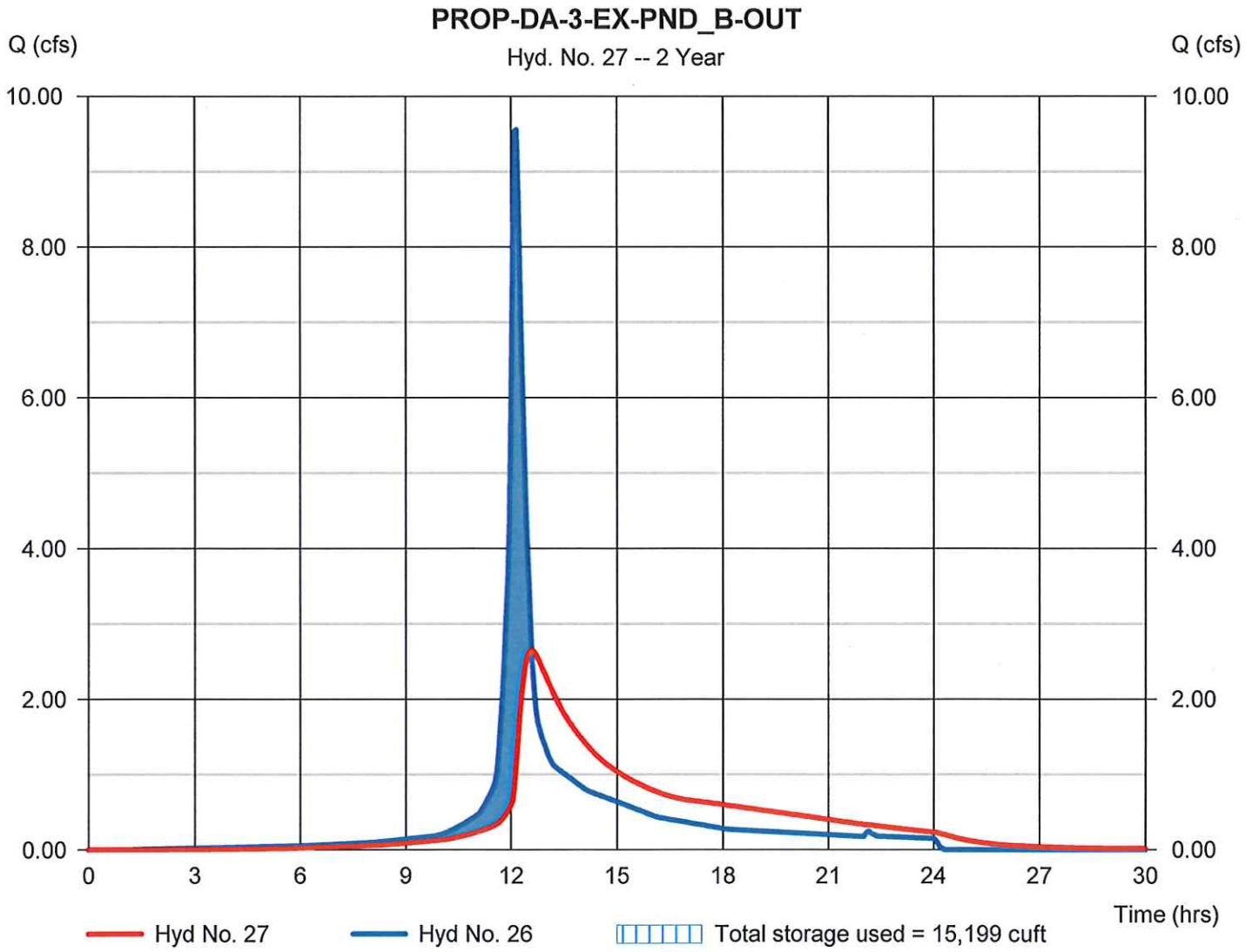
Hydrograph Report

Hyd. No. 27

PROP-DA-3-EX-PND_B-OUT

Hydrograph type	= Reservoir	Peak discharge	= 2.653 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.60 hrs
Time interval	= 3 min	Hyd. volume	= 40,002 cuft
Inflow hyd. No.	= 26 - PROP-DA-3_COMB-EX_POND B-INFLOW	Max. Elevation	= 95.51 ft
Reservoir name	= EX-PND-B-PROP-DA-3	Max. Storage	= 15,199 cuft

Storage Indication method used.



Pond Report

Pond No. 2 - EX-PND-B-PROP-DA-3

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	93.50	n/a	0	0
0.50	94.00	n/a	3,342	3,342
1.00	94.50	n/a	3,628	6,970
1.50	95.00	n/a	3,928	10,898
2.00	95.50	n/a	4,245	15,143
2.50	96.00	n/a	4,578	19,720
3.00	96.50	n/a	4,922	24,642
3.50	97.00	n/a	5,278	29,920
4.00	97.50	n/a	5,615	35,536
4.50	98.00	n/a	5,934	41,469
5.00	98.50	n/a	6,283	47,752
5.50	99.00	n/a	6,663	54,415

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	3.00	0.00	0.00
Span (in)	= 24.00	3.00	0.00	0.00
No. Barrels	= 1	3	0	0
Invert El. (ft)	= 93.50	93.50	0.00	0.00
Length (ft)	= 31.00	0.00	0.00	0.00
Slope (%)	= 4.80	0.00	0.00	n/a
N-Value	= .011	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.50	0.50	10.00	0.00
Crest El. (ft)	= 94.50	96.00	98.00	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= Rect	Rect	Broad	---
Multi-Stage	= Yes	Yes	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	93.50	0.00	0.00	---	---	0.00	0.00	0.00	---	---	---	0.000
0.50	3,342	94.00	0.00	0.43 ic	---	---	0.00	0.00	0.00	---	---	---	0.434
1.00	6,970	94.50	0.00	0.66 ic	---	---	0.00	0.00	0.00	---	---	---	0.663
1.50	10,898	95.00	0.60 ic	0.83 ic	---	---	0.59	0.00	0.00	---	---	---	1.420
2.00	15,143	95.50	1.73 ic	0.97 ic	---	---	1.66	0.00	0.00	---	---	---	2.636
2.50	19,720	96.00	3.06 ic	1.09 ic	---	---	3.06	0.00	0.00	---	---	---	4.151
3.00	24,642	96.50	5.31 ic	1.20 ic	---	---	4.71	0.59	0.00	---	---	---	6.500
3.50	29,920	97.00	8.15 ic	1.30 ic	---	---	6.49 s	1.66	0.00	---	---	---	9.456
4.00	35,536	97.50	11.43 ic	1.40 ic	---	---	8.36 s	3.06	0.00	---	---	---	12.82
4.50	41,469	98.00	14.97 ic	1.48 ic	---	---	10.26 s	4.71	0.00	---	---	---	16.45
5.00	47,752	98.50	18.61 ic	1.57 ic	---	---	12.03 s	6.58 s	9.19	---	---	---	29.37
5.50	54,415	99.00	22.01 ic	1.64 ic	---	---	13.68 s	8.33 s	26.00	---	---	---	49.65

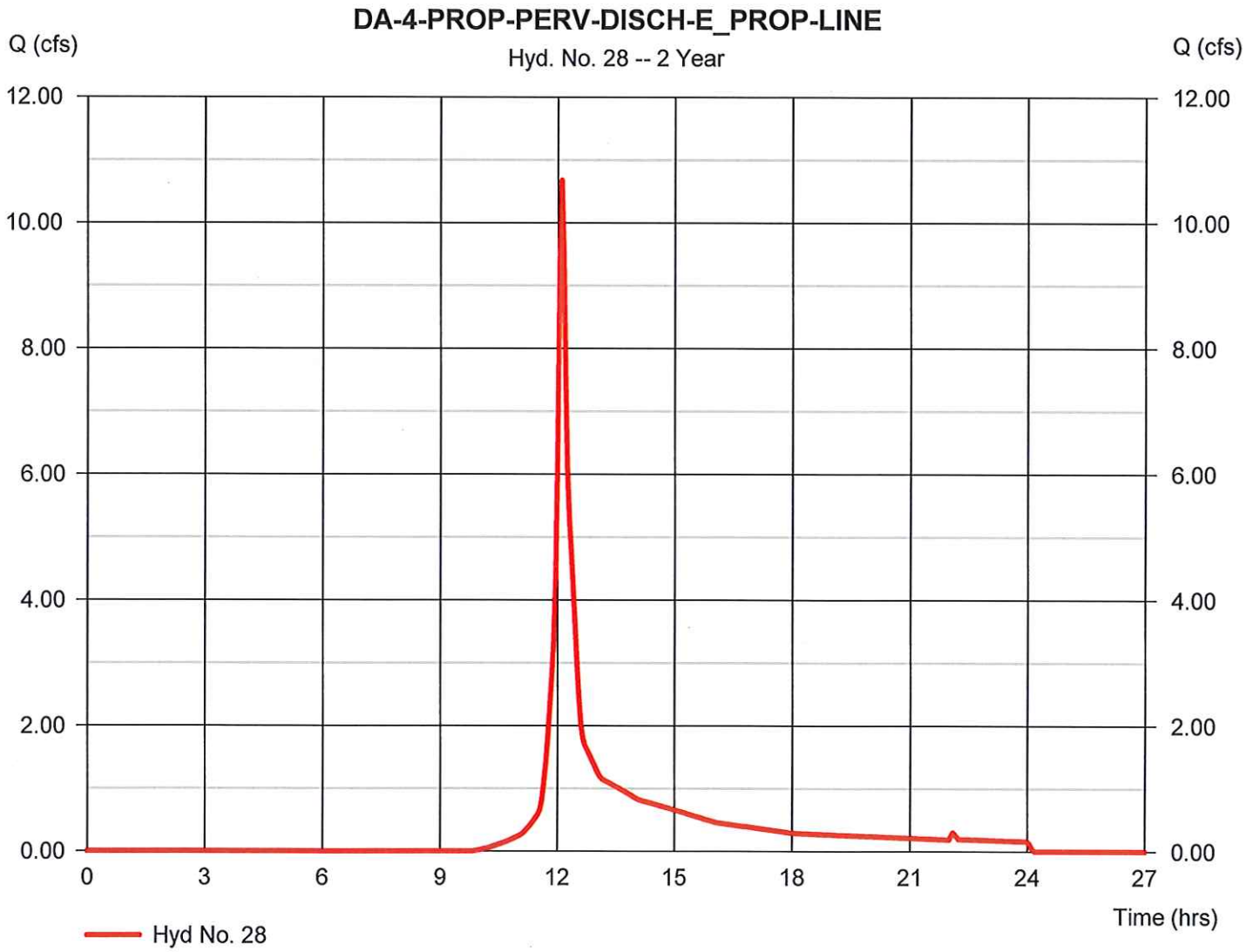
Hydrograph Report

Hyd. No. 28

DA-4-PROP-PERV-DISCH-E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 10.68 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 36,164 cuft
Drainage area	= 6.750 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.70 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.110 x 74)] / 6.750



TR55 Tc Worksheet

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

Hyd. No. 28

DA-4-PROP-PERV-DISCH-E_PROP-LINE

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 7.50		0.00		0.00		
Travel Time (min)	**= 8.27**	**+**	**0.00**	**+**	**0.00**	**=**	**8.27**
Shallow Concentrated Flow							
Flow length (ft)	= 438.00		0.00		0.00		
Watercourse slope (%)	= 10.30		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=5.18		0.00		0.00		
Travel Time (min)	**= 1.41**	**+**	**0.00**	**+**	**0.00**	**=**	**1.41**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 9.70 min

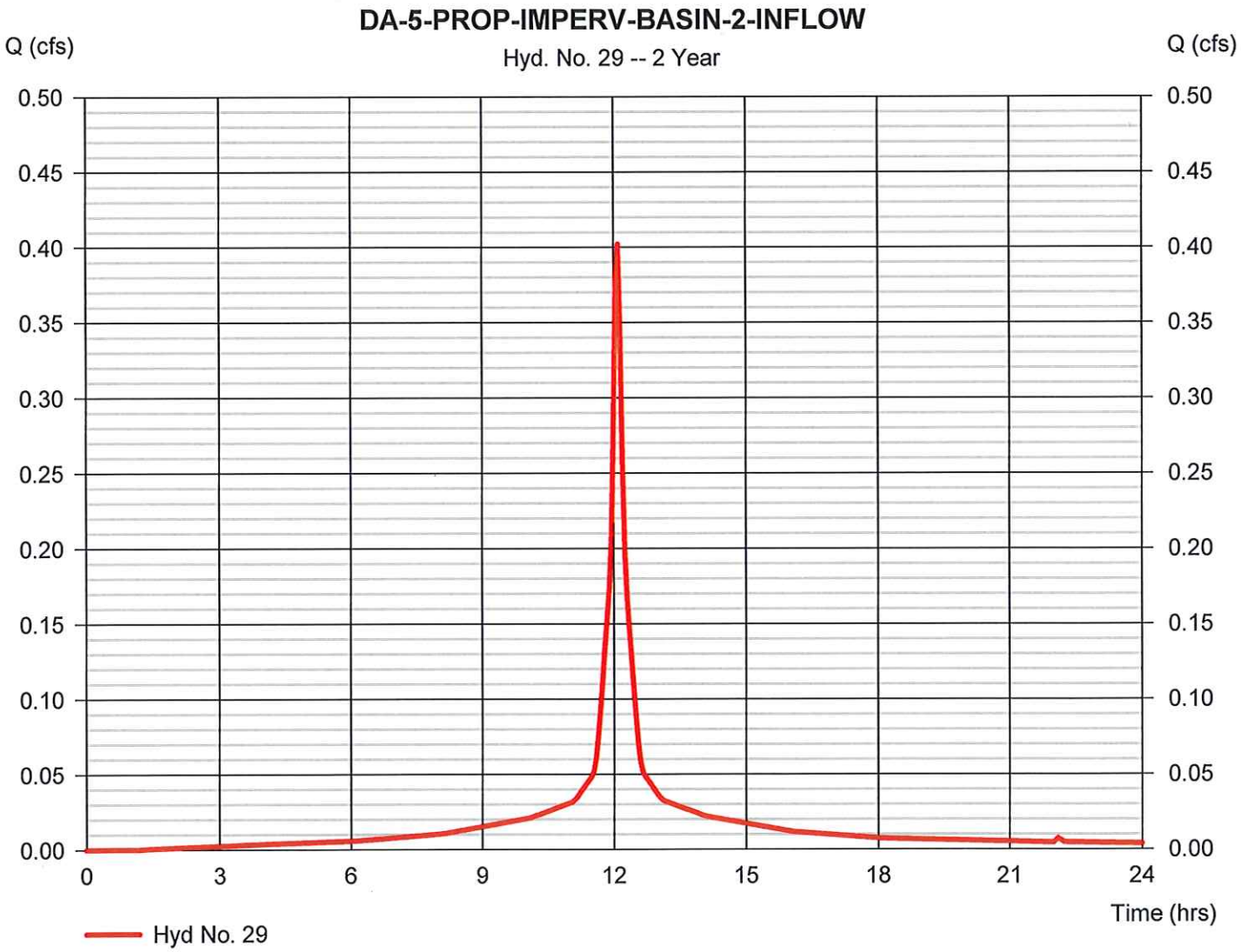
Hydrograph Report

Hyd. No. 29

DA-5-PROP-IMPERV-BASIN-2-INFLOW

Hydrograph type	= SCS Runoff	Peak discharge	= 0.402 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 1,525 cuft
Drainage area	= 0.120 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.120 x 98)] / 0.120



Hydrograph Report

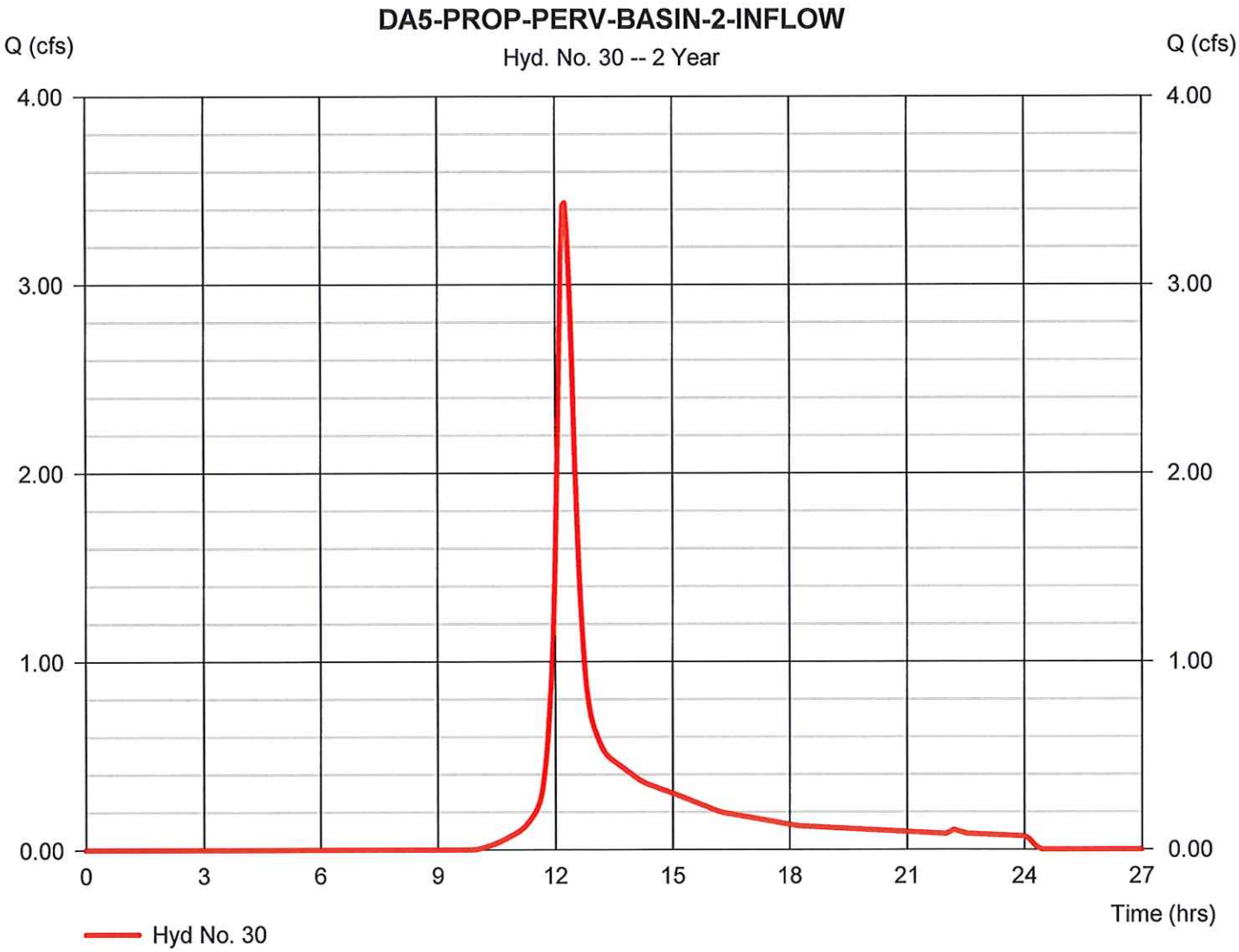
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 30

DA5-PROP-PERV-BASIN-2-INFLOW

Hydrograph type	= SCS Runoff	Peak discharge	= 3.435 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.25 hrs
Time interval	= 3 min	Hyd. volume	= 15,794 cuft
Drainage area	= 2.680 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.680 x 74)] / 2.680



TR55 Tc Worksheet

Hyd. No. 30

DA5-PROP-PERV-BASIN-2-INFLOW

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 14.03**	**+**	**0.00**	**+**	**0.00**	**=**	**14.03**
Shallow Concentrated Flow							
Flow length (ft)	= 367.00		0.00		0.00		
Watercourse slope (%)	= 5.48		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.78		0.00		0.00		
Travel Time (min)	**= 1.62**	**+**	**0.00**	**+**	**0.00**	**=**	**1.62**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

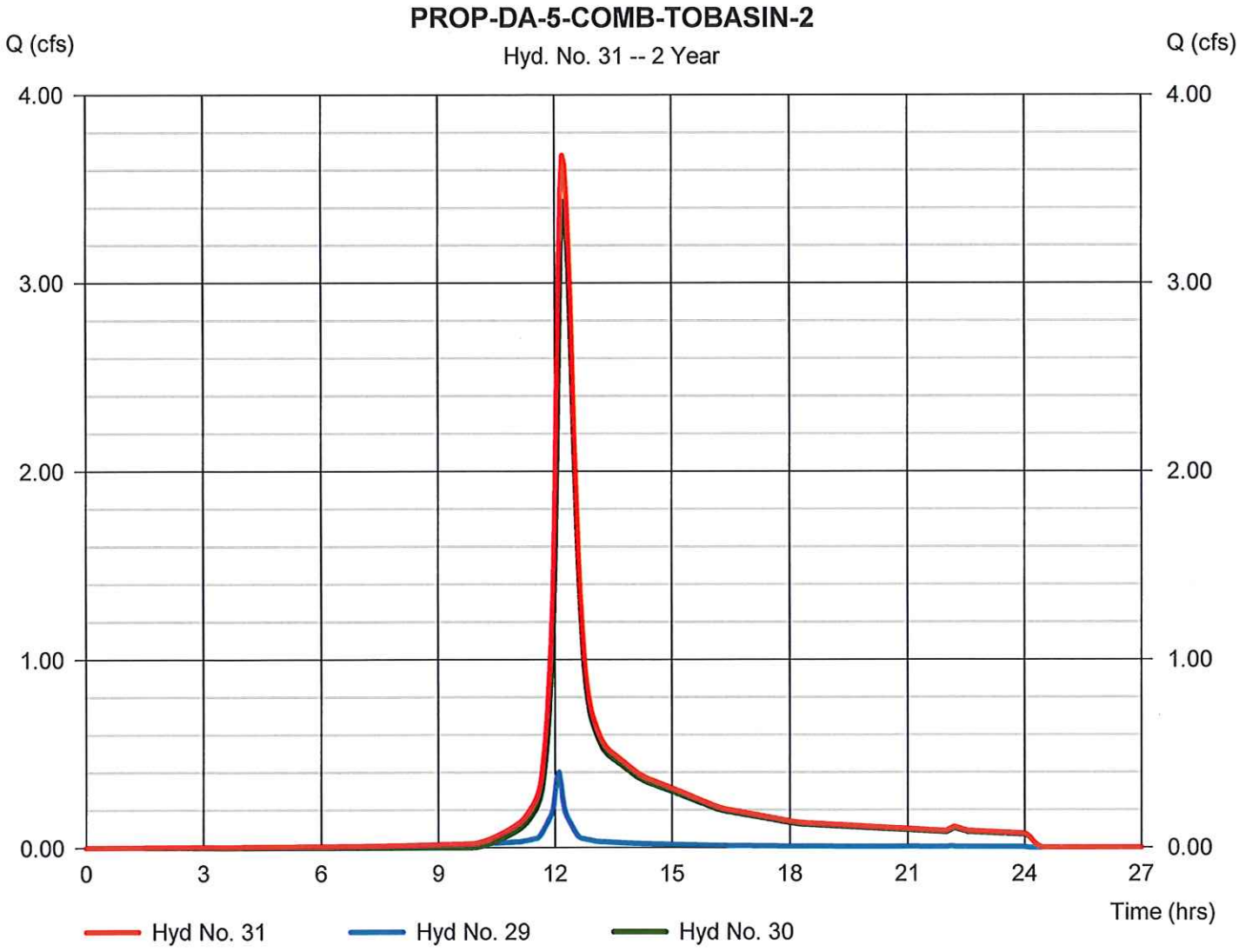
Total Travel Time, Tc ..... 15.70 min

Hydrograph Report

Hyd. No. 31

PROP-DA-5-COMB-TOBASIN-2

Hydrograph type	= Combine	Peak discharge	= 3.677 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 17,320 cuft
Inflow hyds.	= 29, 30	Contrib. drain. area	= 2.800 ac



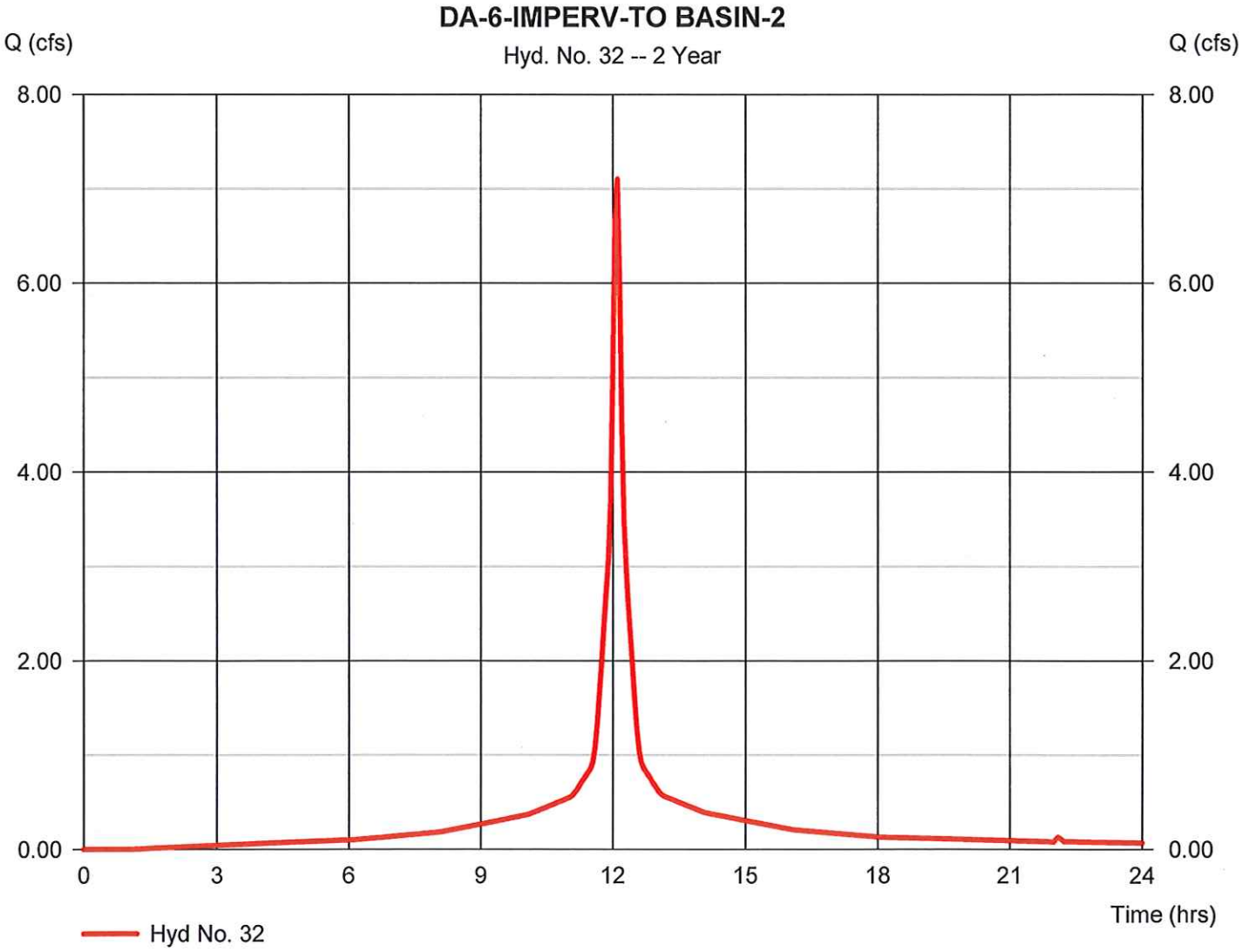
Hydrograph Report

Hyd. No. 32

DA-6-IMPERV-TO BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 7.105 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 26,948 cuft
Drainage area	= 2.120 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.120 x 98)] / 2.120



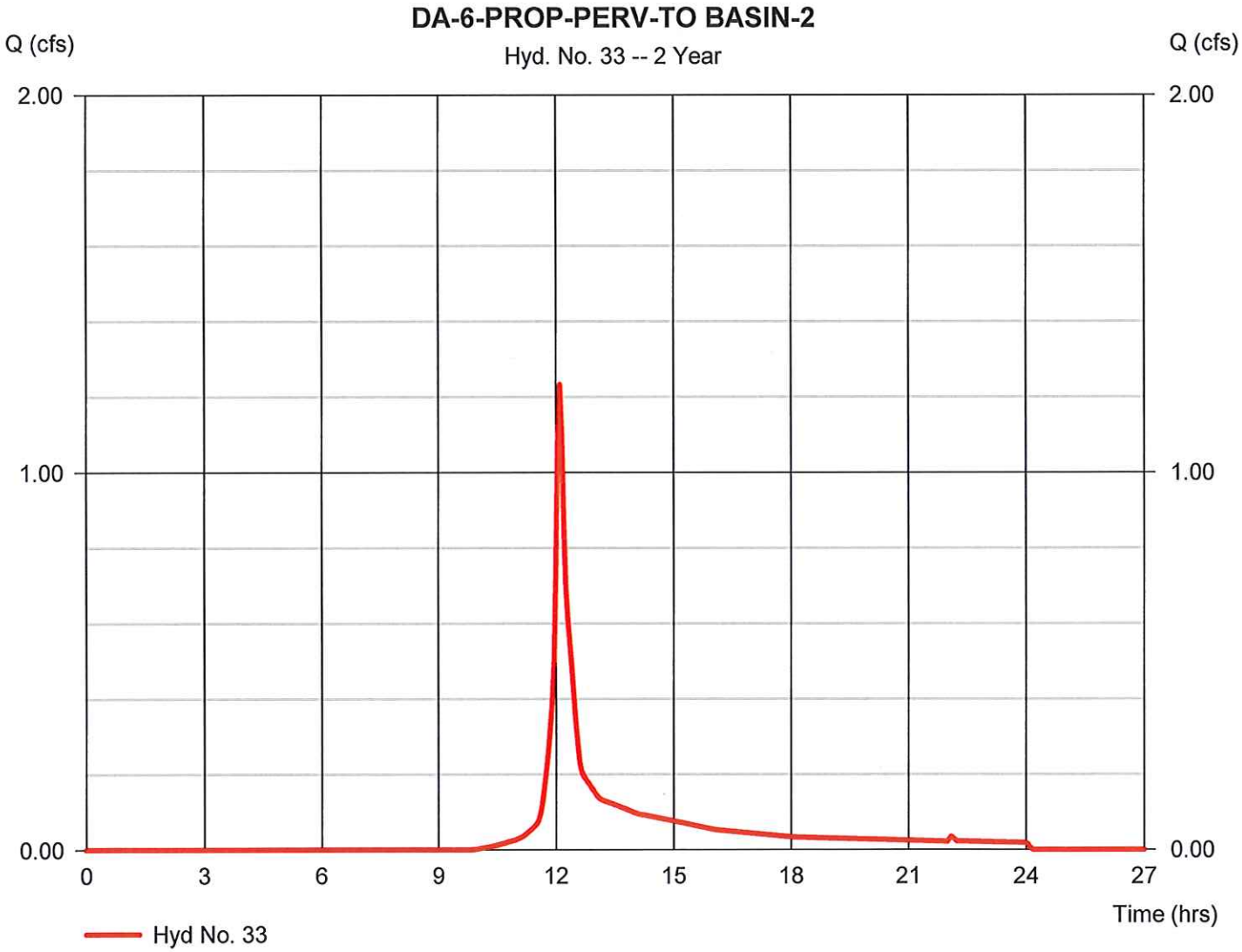
Hydrograph Report

Hyd. No. 33

DA-6-PROP-PERV-TO BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 1.234 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 4,179 cuft
Drainage area	= 0.780 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.80 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(7.026 x 79)] / 0.780



TR55 Tc Worksheet

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

Hyd. No. 33

DA-6-PROP-PERV-TO BASIN-2

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.130		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 4.17		0.00		0.00		
Travel Time (min)	**= 6.40**	**+**	**0.00**	**+**	**0.00**	**=**	**6.40**
Shallow Concentrated Flow							
Flow length (ft)	= 72.00		0.00		0.00		
Watercourse slope (%)	= 3.60		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.06		0.00		0.00		
Travel Time (min)	**= 0.39**	**+**	**0.00**	**+**	**0.00**	**=**	**0.39**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

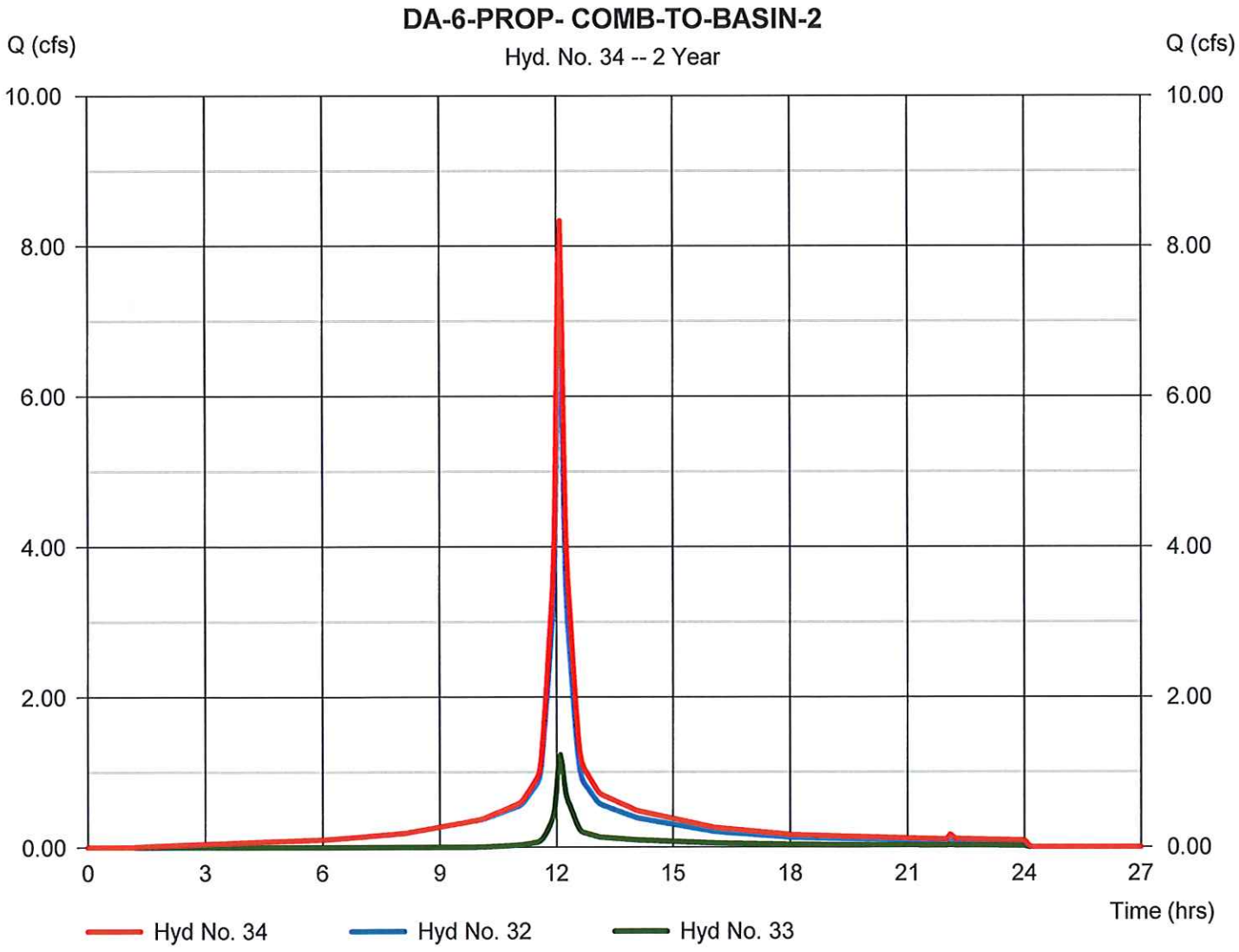
Total Travel Time, Tc ..... 6.80 min

Hydrograph Report

Hyd. No. 34

DA-6-PROP- COMB-TO-BASIN-2

Hydrograph type	= Combine	Peak discharge	= 8.339 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 31,127 cuft
Inflow hyds.	= 32, 33	Contrib. drain. area	= 2.900 ac



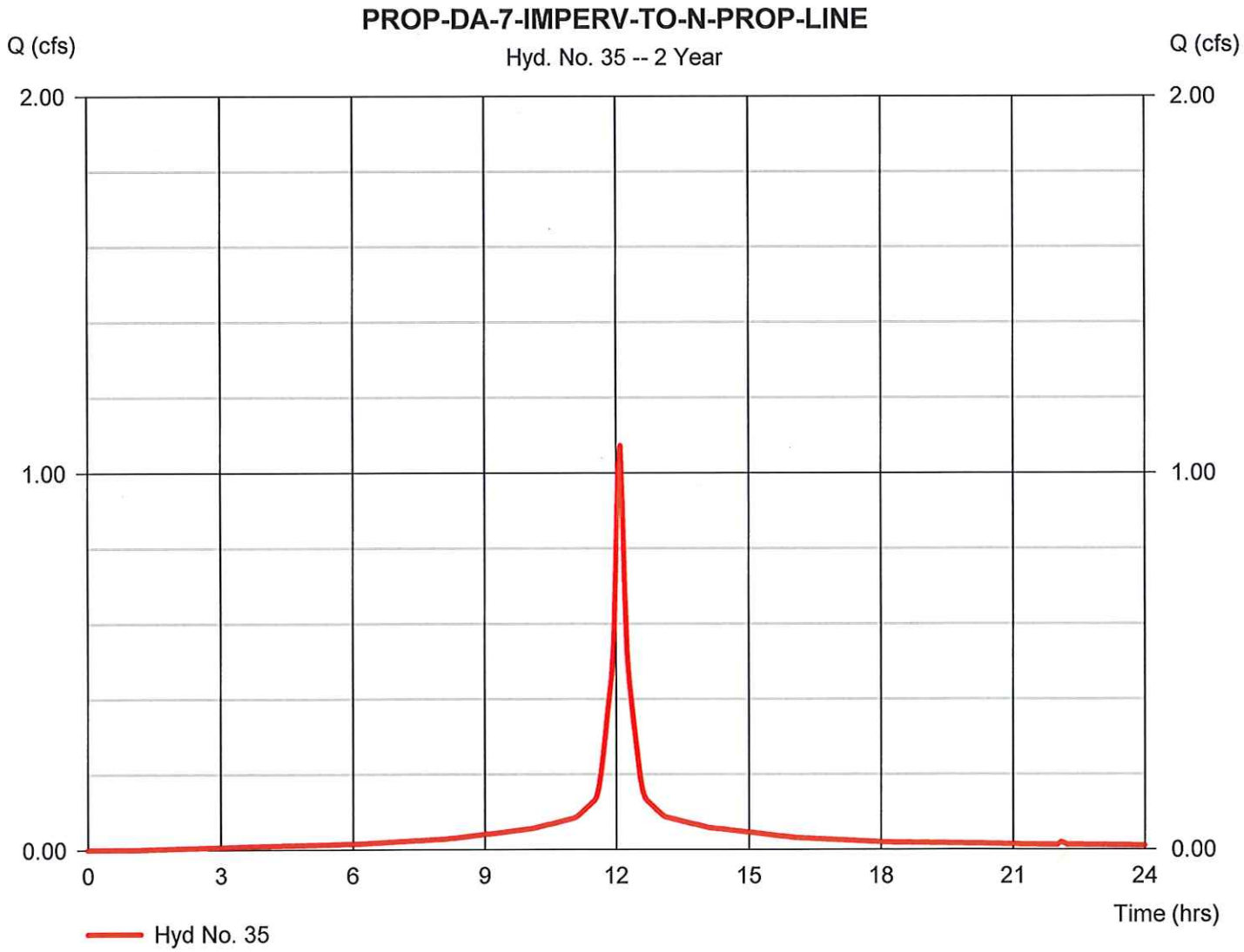
Hydrograph Report

Hyd. No. 35

PROP-DA-7-IMPERV-TO-N-PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 1.073 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 4,068 cuft
Drainage area	= 0.320 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.320 x 98)] / 0.320



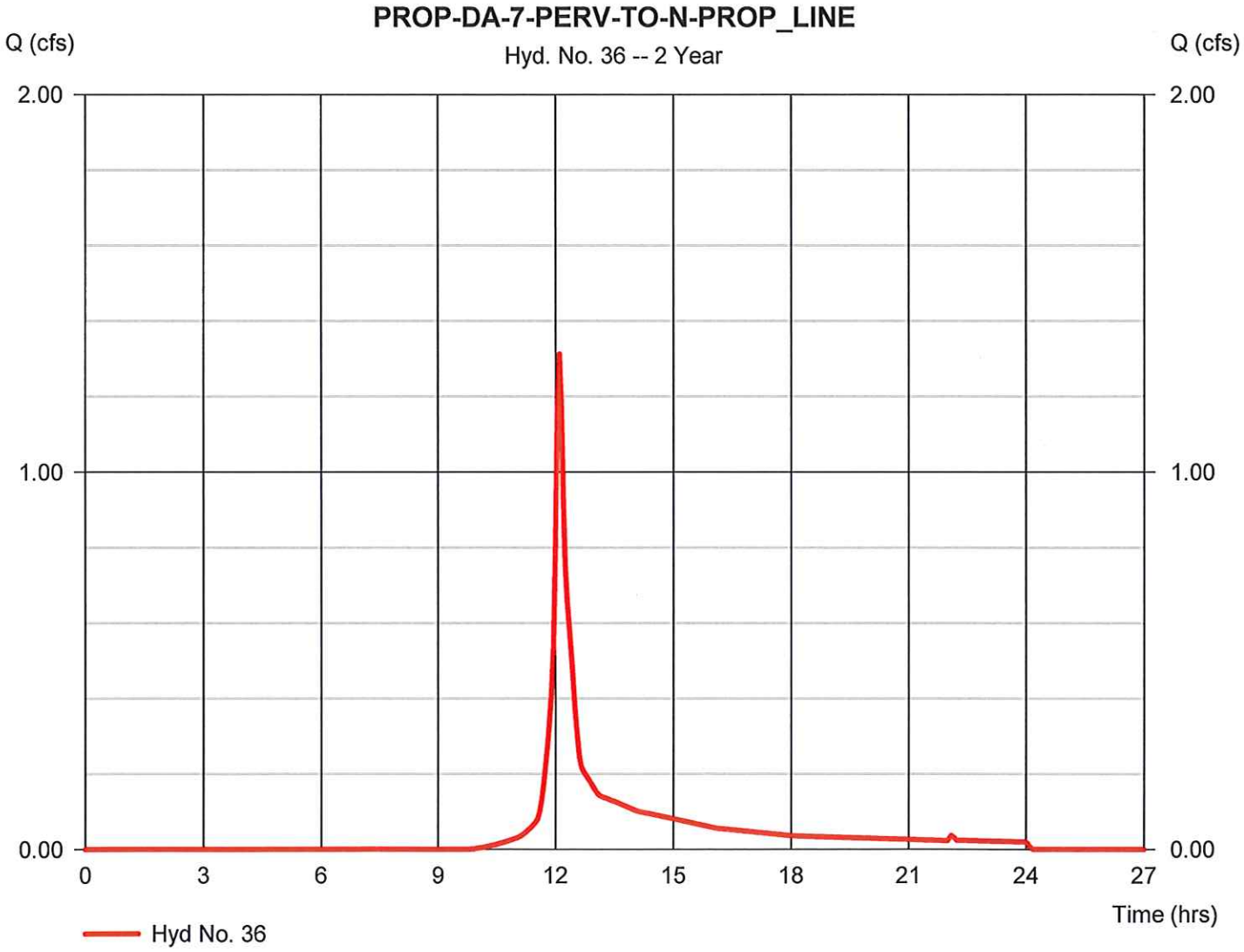
Hydrograph Report

Hyd. No. 36

PROP-DA-7-PERV-TO-N-PROP_LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 1.313 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 4,447 cuft
Drainage area	= 0.830 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 74)] / 0.830



TR55 Tc Worksheet

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

Hyd. No. 36

PROP-DA-7-PERV-TO-N-PROP_LINE

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 9.85		0.00		0.00		
Travel Time (min)	**= 7.42**	**+**	**0.00**	**+**	**0.00**	**=**	**7.42**
Shallow Concentrated Flow							
Flow length (ft)	= 0.00		0.00		0.00		
Watercourse slope (%)	= 0.00		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	=0.00		0.00		0.00		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 7.40 min

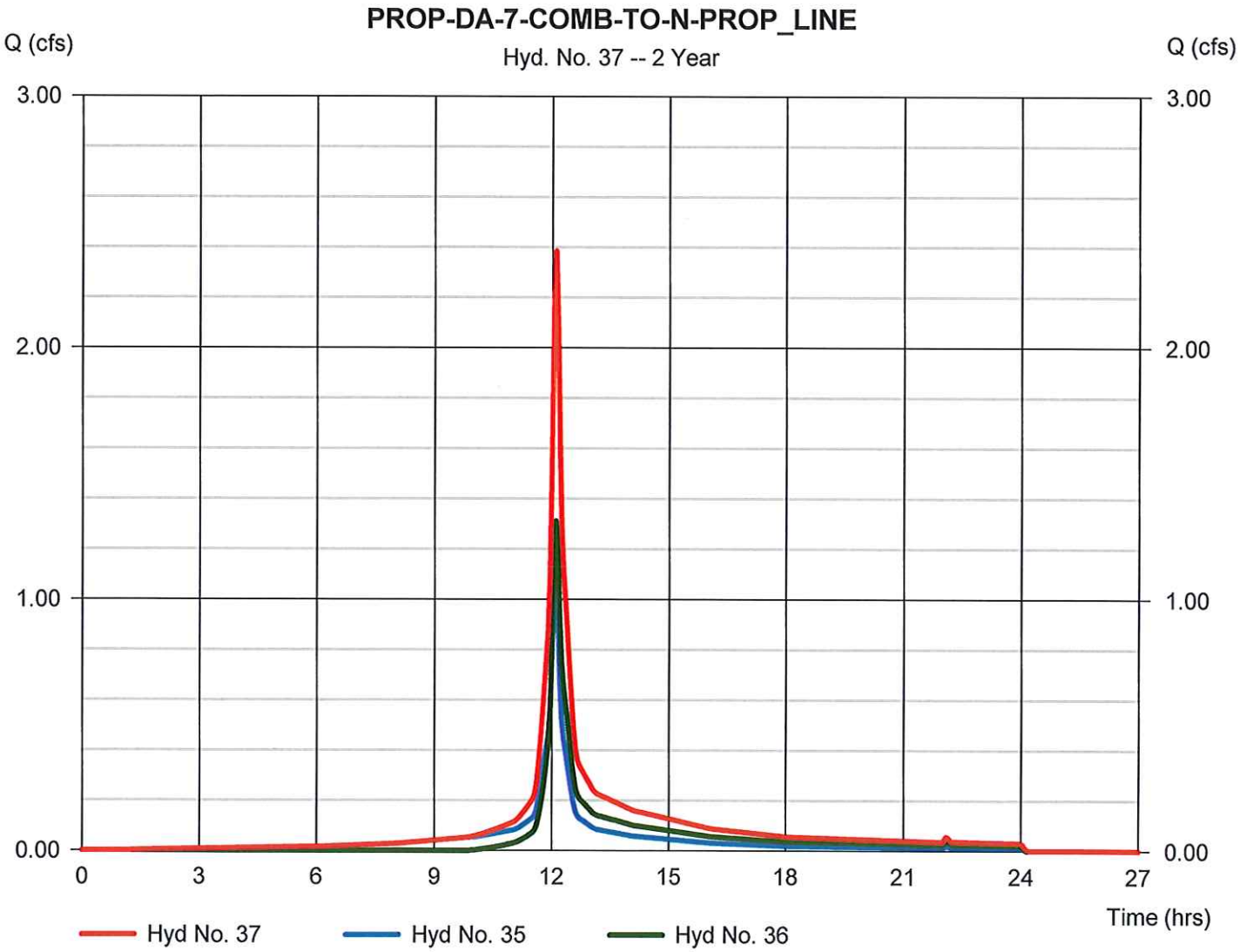
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 37

PROP-DA-7-COMB-TO-N-PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 2.385 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 8,514 cuft
Inflow hyds.	= 35, 36	Contrib. drain. area	= 1.150 ac



Hydrograph Report

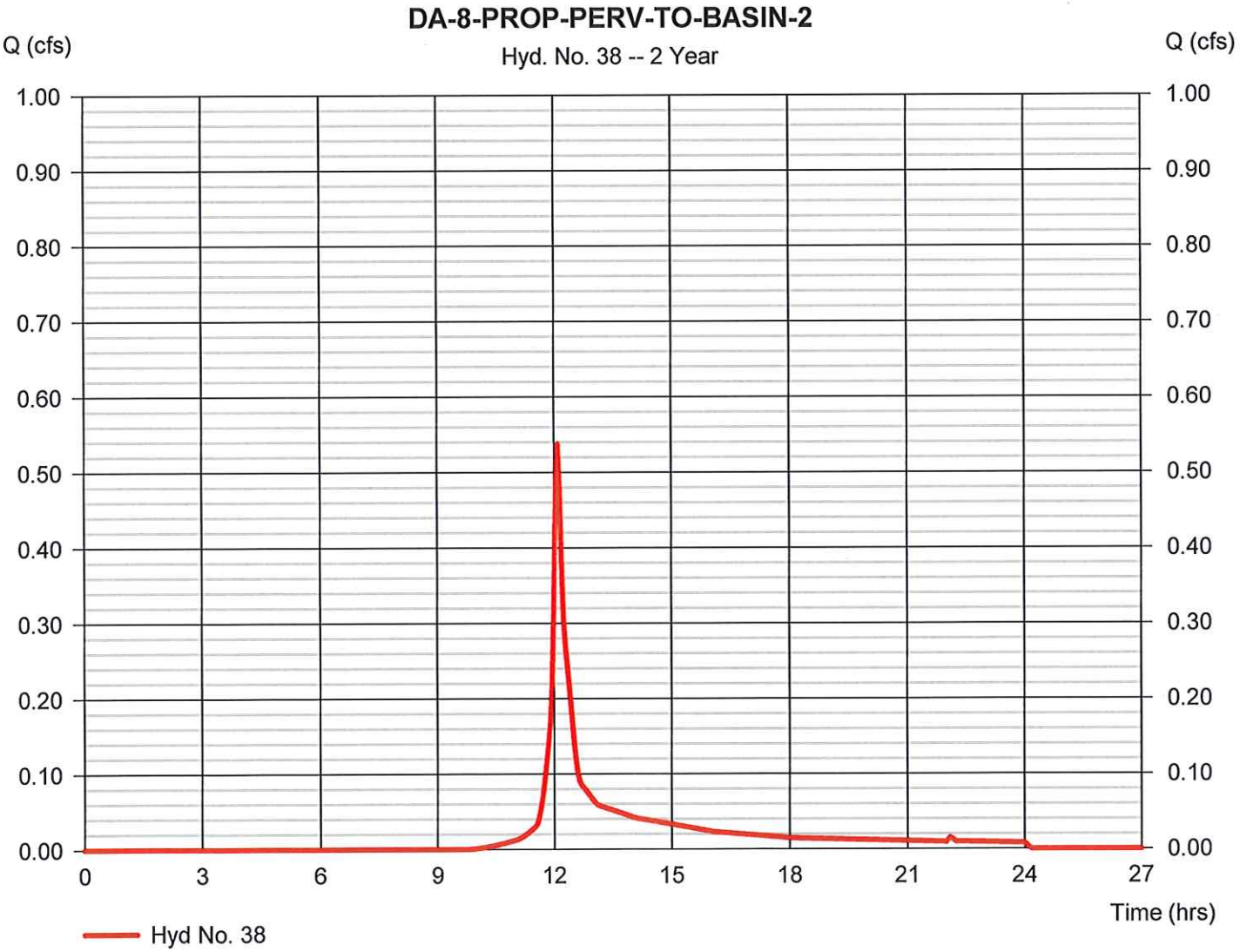
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 38

DA-8-PROP-PERV-TO-BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.538 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 1,822 cuft
Drainage area	= 0.340 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.50 min
Total precip.	= 3.97 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.340 x 74)] / 0.340



TR55 Tc Worksheet

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

Hyd. No. 38

DA-8-PROP-PERV-TO-BASIN-2

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 74.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.31		0.00		0.00		
Land slope (%)	= 7.40		0.00		0.00		
Travel Time (min)	**= 6.53**	**+**	**0.00**	**+**	**0.00**	**=**	**6.53**
Shallow Concentrated Flow							
Flow length (ft)	= 0.00		0.00		0.00		
Watercourse slope (%)	= 0.00		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	=0.00		0.00		0.00		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00		0.00		0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

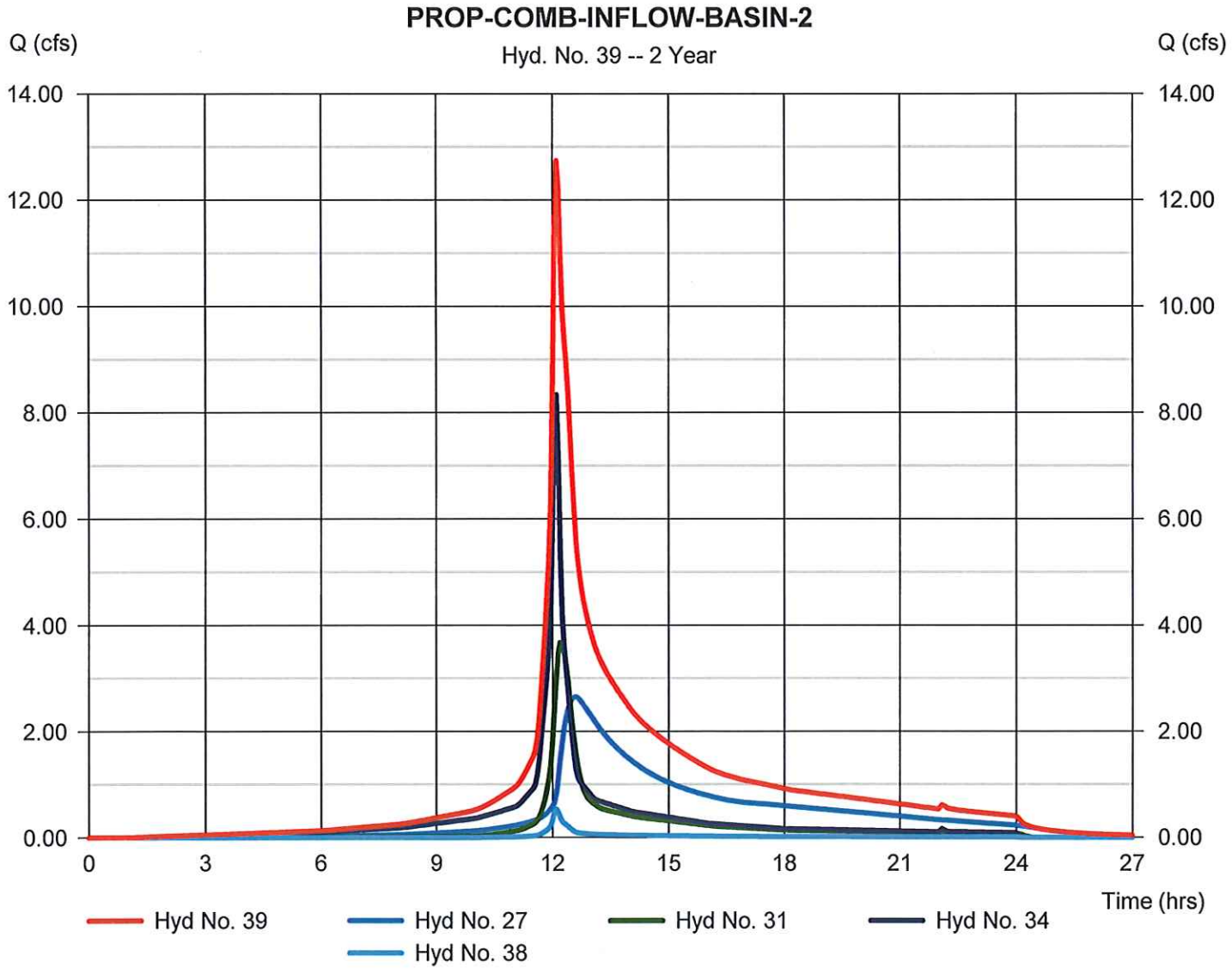
Total Travel Time, Tc ..... 6.50 min

Hydrograph Report

Hyd. No. 39

PROP-COMB-INFLOW-BASIN-2

Hydrograph type	= Combine	Peak discharge	= 12.74 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 90,270 cuft
Inflow hyds.	= 27, 31, 34, 38	Contrib. drain. area	= 0.340 ac



Hydrograph Report

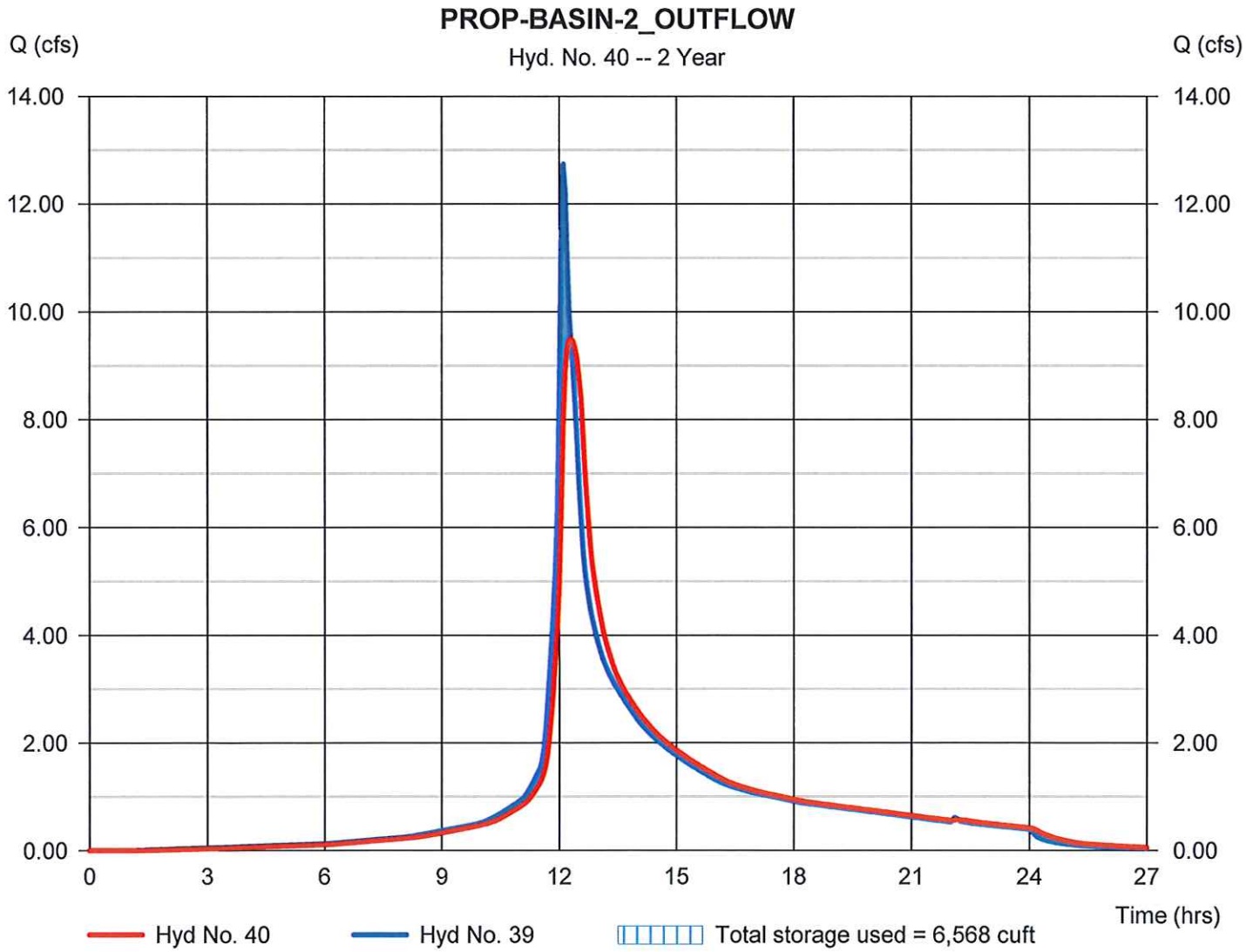
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 40

PROP-BASIN-2_OUTFLOW

Hydrograph type	= Reservoir	Peak discharge	= 9.501 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.30 hrs
Time interval	= 3 min	Hyd. volume	= 90,268 cuft
Inflow hyd. No.	= 39 - PROP-COMB-INFLOW-BASIN-2	Max. Elevation	= 76.19 ft
Reservoir name	= POND-2	Max. Storage	= 6,568 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Pond No. 4 - POND-2

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	75.00	n/a	0	0
0.50	75.50	n/a	2,689	2,689
1.00	76.00	n/a	2,689	5,379
1.50	76.50	n/a	3,173	8,551
2.00	77.00	n/a	3,496	12,047
2.50	77.50	n/a	3,825	15,872
3.00	78.00	n/a	4,162	20,034
3.50	78.50	n/a	4,513	24,546
4.00	79.00	n/a	4,878	29,424
4.50	79.50	n/a	5,281	34,704
5.00	80.00	n/a	5,722	40,427
5.50	80.50	n/a	6,171	46,598
6.00	81.00	n/a	6,627	53,225

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 30.00	12.00	0.00	0.00
Span (in)	= 30.00	36.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 74.50	75.00	0.00	0.00
Length (ft)	= 52.00	0.00	0.00	0.00
Slope (%)	= 4.80	0.00	0.00	n/a
N-Value	= .011	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 10.00	12.00	16.00	0.00
Crest El. (ft)	= 76.33	77.00	80.00	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= Rect	Rect	Broad	---
Multi-Stage	= Yes	Yes	Yes	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

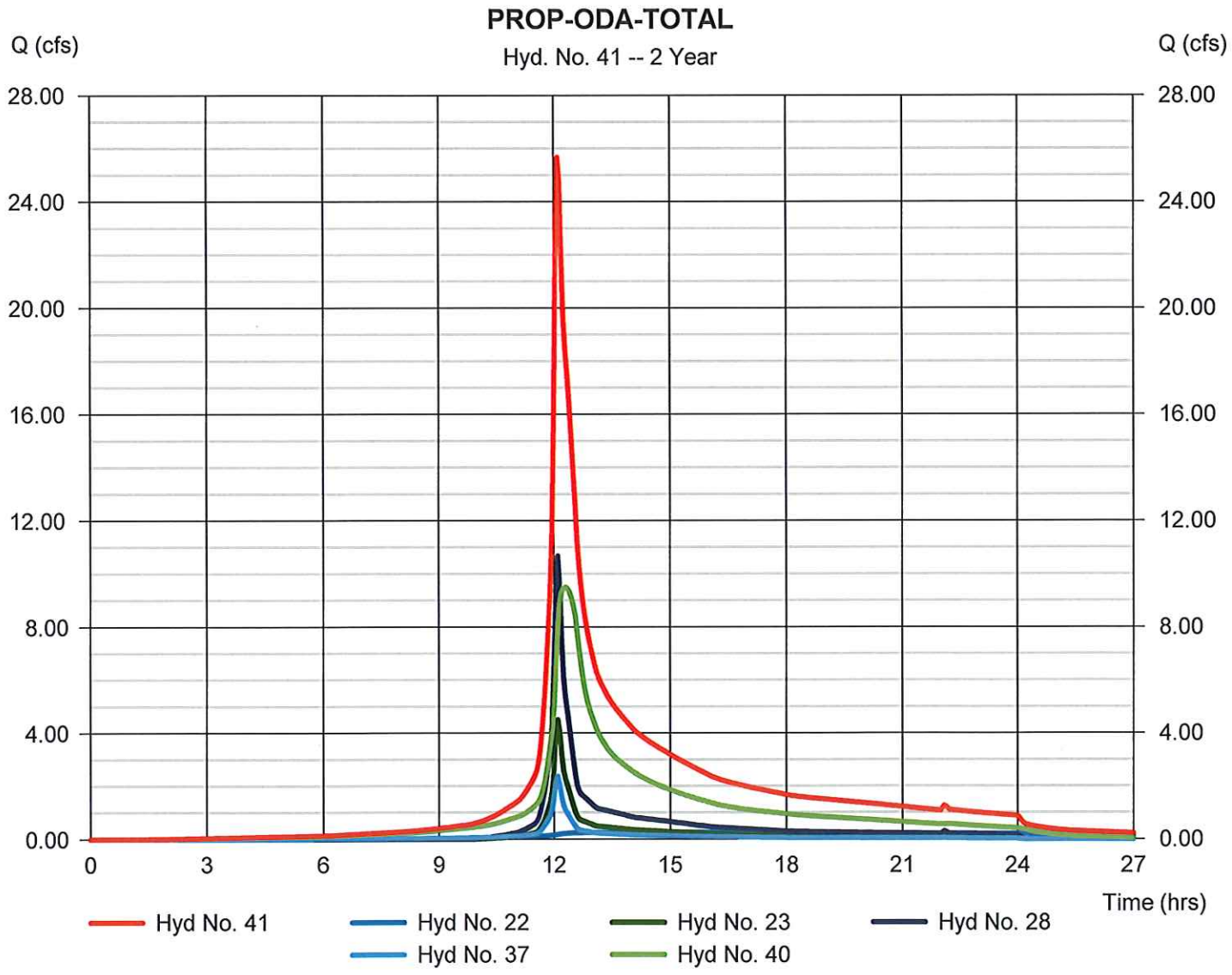
Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	75.00	0.00	0.00	---	---	0.00	0.00	0.00	---	---	---	0.000
0.50	2,689	75.50	3.64 ic	3.61 ic	---	---	0.00	0.00	0.00	---	---	---	3.611
1.00	5,379	76.00	8.31 ic	8.31 ic	---	---	0.00	0.00	0.00	---	---	---	8.312
1.50	8,551	76.50	12.79 ic	10.37 ic	---	---	2.33	0.00	0.00	---	---	---	12.71
2.00	12,047	77.00	23.06 ic	8.02 ic	---	---	15.04 s	0.00	0.00	---	---	---	23.06
2.50	15,872	77.50	30.48 ic	4.25 ic	---	---	17.95 s	8.26 s	0.00	---	---	---	30.47
3.00	20,034	78.00	35.16 ic	2.77 ic	---	---	19.30 s	13.06 s	0.00	---	---	---	35.13
3.50	24,546	78.50	39.05 ic	2.06 ic	---	---	20.58 s	16.35 s	0.00	---	---	---	38.98
4.00	29,424	79.00	42.52 ic	1.65 ic	---	---	21.83 s	18.98 s	0.00	---	---	---	42.45
4.50	34,704	79.50	45.71 ic	1.37 ic	---	---	23.01 s	21.19 s	0.00	---	---	---	45.57
5.00	40,427	80.00	48.68 ic	1.18 ic	---	---	24.16 s	23.16 s	0.00	---	---	---	48.50
5.50	46,598	80.50	51.48 ic	0.97 ic	---	---	23.85 s	23.54 s	2.80 s	---	---	---	51.16
6.00	53,225	81.00	54.13 ic	0.81 ic	---	---	23.63 s	23.86 s	5.29 s	---	---	---	53.60

Hydrograph Report

Hyd. No. 41

PROP-ODA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 25.67 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 169,370 cuft
Inflow hyds.	= 22, 23, 28, 37, 40	Contrib. drain. area	= 9.600 ac



Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	82.44	3	729	324,545	------	------	------	EX-ODA
2	SCS Runoff	13.52	3	729	53,183	------	------	------	EX-DA-2-DISCH-S-PROP-LINE
3	SCS Runoff	5.495	3	726	21,181	------	------	------	EX-DA-3_IMPRV-DISCH-EX_PND
4	SCS Runoff	17.72	3	729	69,720	------	------	------	EX-DA-3_PERV-DISCH-EX_PND
5	Combine	22.36	3	729	90,902	3, 4	------	------	EX-DA-3-COMB-INFLOW_EX_PND
6	Reservoir	21.49	3	729	90,897	5	96.30	8,449	EX-DA-3OUTFLOW-TO DA-4
7	SCS Runoff	3.525	3	726	13,588	------	------	------	EX-DA_4_IMPRV--DISCH_E_PRO
8	SCS Runoff	28.82	3	726	95,814	------	------	------	EX-DA-4_PERV-DISCH-E_PROP-L
9	Combine	32.34	3	726	109,402	7, 8	------	------	EX-DA-4COMB-DISCH_E_PROP_L
10	Combine	50.52	3	726	200,299	6, 9	------	------	EX-DA-3-EX_PND-OUT-&-EX-DA-4
11	SCS Runoff	11.40	3	726	43,961	------	------	------	EX-DA-6_IMPERV-DISCH_E_PRO
12	SCS Runoff	2.358	3	729	9,280	------	------	------	EX-DA-6_PERV-DISCH_E_PROP-L
13	Combine	13.59	3	726	53,241	11, 12	------	------	EX_DA-6-COMB_DISCH_E_PROP
14	Combine	64.11	3	726	253,540	6, 9, 13	------	------	COMB-DA-3+4+6_EST-PROP_LIN
15	SCS Runoff	1.659	3	726	6,394	------	------	------	EX-DA-7_IMPERV-DISCH-ERLED
16	SCS Runoff	1.174	3	726	3,904	------	------	------	EX-DA-7-PERV-DISCH-ERLEDON_
17	Combine	2.833	3	726	10,298	15, 16	------	------	EX-DA-7_COMB_DISCH-ERLEDO
18	Combine	79.45	3	726	317,021	2, 6, 9, 13, 17	------	------	EX-ODA-TOTAL
19	SCS Runoff	6.065	3	726	23,379	------	------	------	PROP-DA-1-IMPERV-DISCH-PON
20	SCS Runoff	2.029	3	732	9,079	------	------	------	PROP-DA-1-PERV-DISCH_POND-
21	Combine	7.694	3	726	32,459	19, 20	------	------	PROP-DA-1COMB--POND-1_INFL
22	Reservoir	0.873	3	780	32,379	21	113.89	18,236	PROP-DA-1-PND-1-O-FLOW
23	SCS Runoff	9.561	3	726	31,789	------	------	------	PROP-DA-2-DISCH_S_PROP_LIN
24	SCS Runoff	5.858	3	726	22,580	------	------	------	PROP-DA-3-IMPERV-TO-EX_PON
25	SCS Runoff	13.58	3	729	53,421	------	------	------	PROP-DA-3-PERV-TO-EX_POND-
26	Combine	18.53	3	729	76,001	24, 25	------	------	PROP-DA-3_COMB-EX_POND-B-I
27	Reservoir	7.527	3	747	75,980	26	96.68	26,563	PROP-DA-3-EX-PND_B-OUT
28	SCS Runoff	22.64	3	726	75,290	------	------	------	DA-4-PROP-PERV-DISCH-E_PRO
29	SCS Runoff	0.622	3	726	2,398	------	------	------	DA-5-PROP-IMPERV-BASIN-2-INF
30	SCS Runoff	7.348	3	732	32,882	------	------	------	DA5-PROP-PERV-BASIN-2-INFLO
31	Combine	7.743	3	732	35,280	29, 30	------	------	PROP-DA-5-COMB-TOBASIN-2
32	SCS Runoff	10.99	3	726	42,362	------	------	------	DA-6-IMPERV-TO BASIN-2
33	SCS Runoff	2.617	3	726	8,700	------	------	------	DA-6-PROP-PERV-TO BASIN-2

Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
34	Combine	13.61	3	726	51,063	32, 33	------	------	DA-6-PROP- COMB-TO-BASIN-2
35	SCS Runoff	1.659	3	726	6,394	------	------	------	PROP-DA-7-IMPERV-TO-N-PROP-
36	SCS Runoff	2.784	3	726	9,258	------	------	------	PROP-DA-7-PERV-TO-N-PROP_LI
37	Combine	4.443	3	726	15,652	35, 36	------	------	PROP-DA-7-COMB-TO-N-PROP_LI
38	SCS Runoff	1.141	3	726	3,792	------	------	------	DA-8-PROP-PERV-TO-BASIN-2
39	Combine	24.50	3	726	166,115	27, 31, 34, 38	------	------	PROP-COMB-INFLOW-BASIN-2
40	Reservoir	21.27	3	735	166,112	39	76.91	11,383	PROP-BASIN-2_OUTFLOW
41	Combine	52.33	3	726	321,223	22, 23, 28, 37, 40	------	------	PROP-ODA-TOTAL

Hydrograph Report

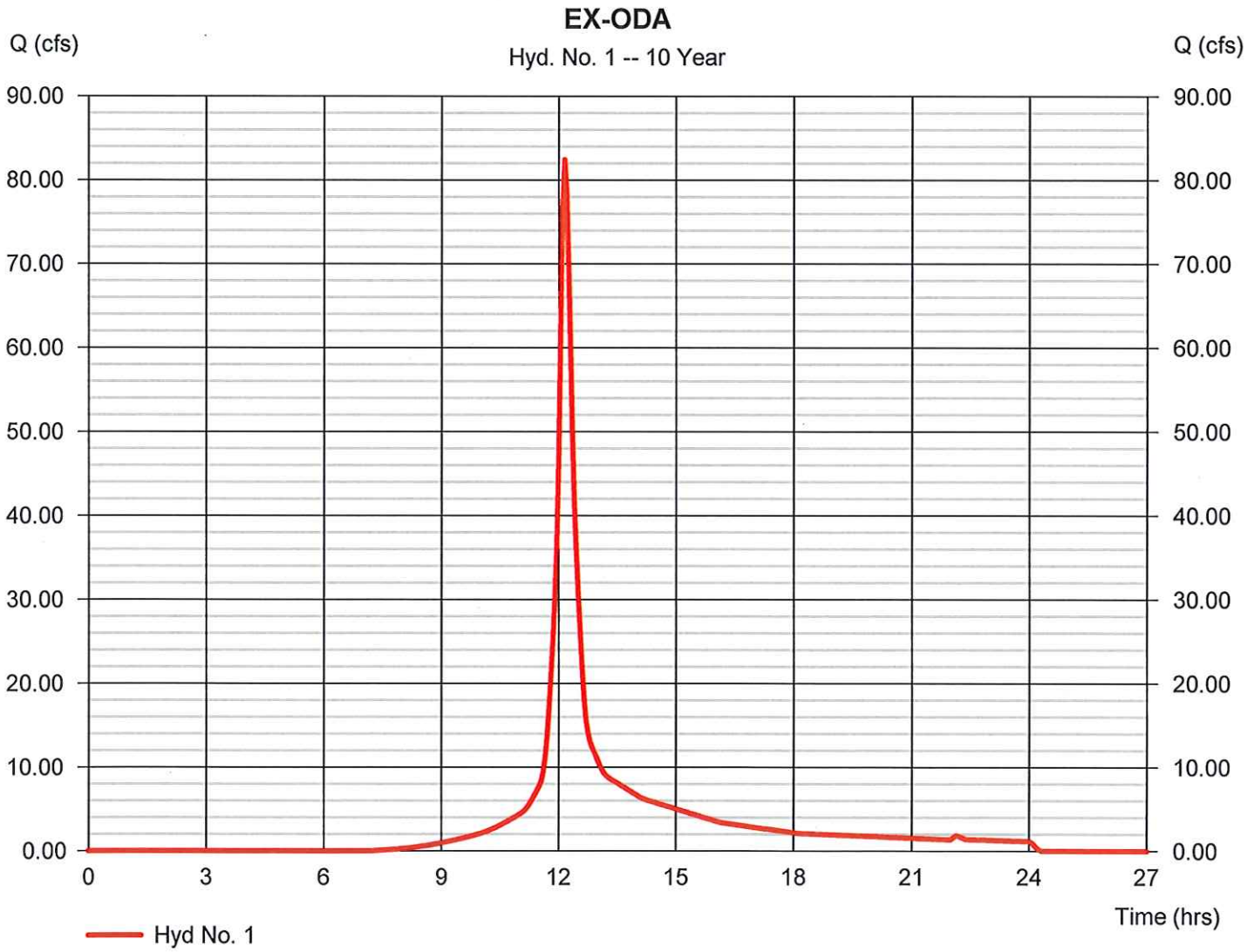
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 1

EX-ODA

Hydrograph type	= SCS Runoff	Peak discharge	= 82.44 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 324,545 cuft
Drainage area	= 24.320 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.50 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.270 x 98) + (20.050 x 74)] / 24.320



Hydrograph Report

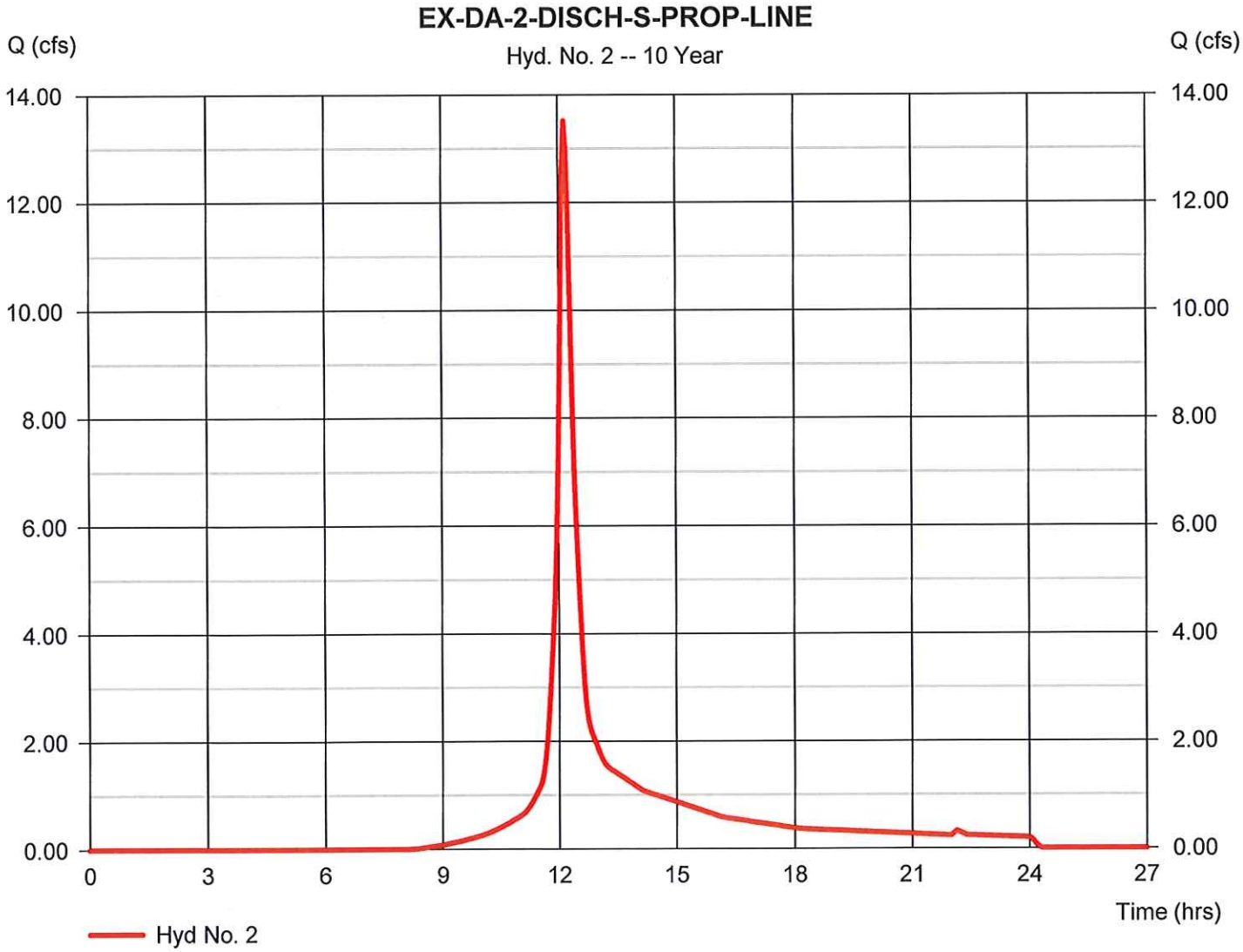
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 2

EX-DA-2-DISCH-S-PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 13.52 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 53,183 cuft
Drainage area	= 4.470 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.70 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.470 x 74)] / 4.470



Hydrograph Report

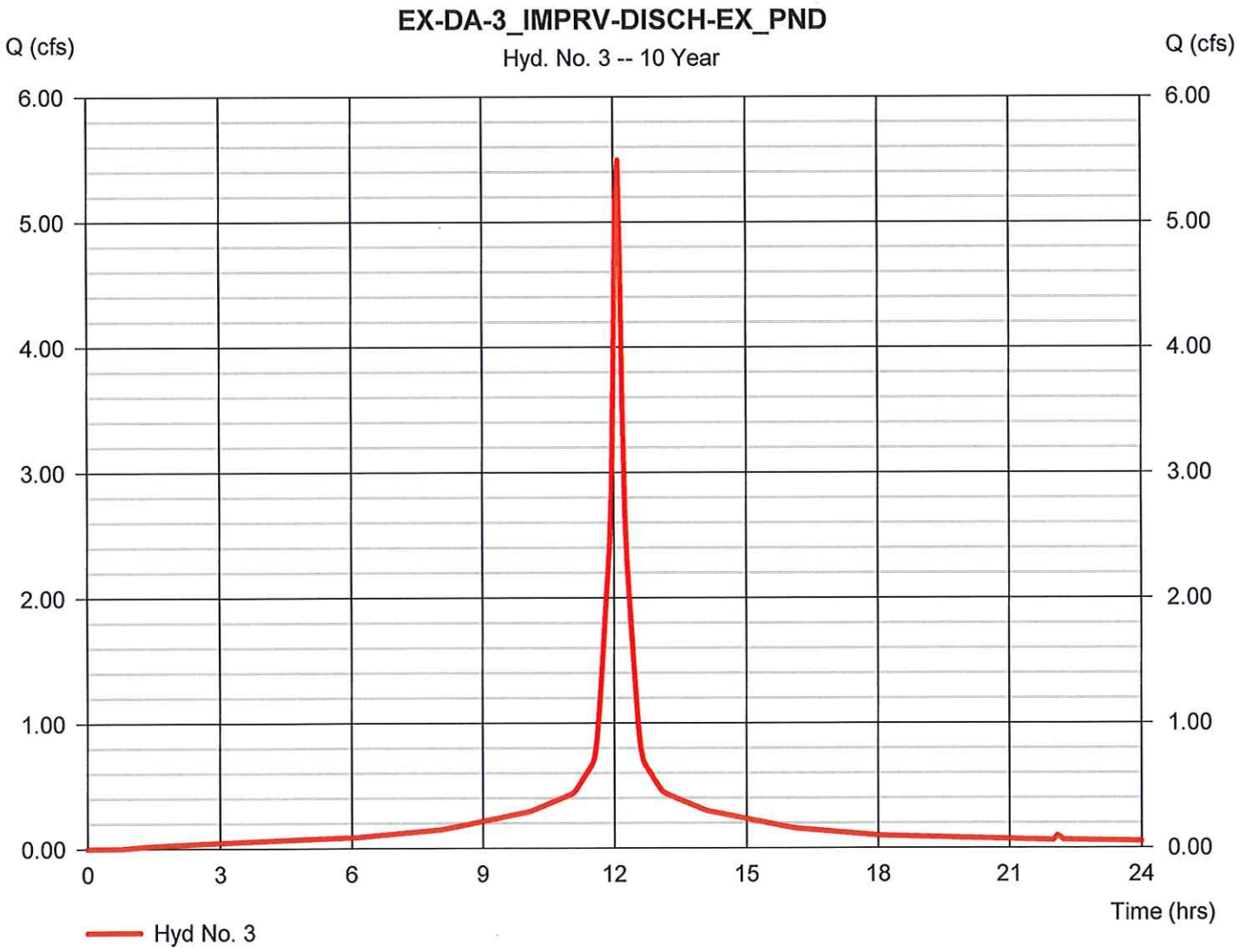
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 3

EX-DA-3_IMPRV-DISCH-EX_PND

Hydrograph type	= SCS Runoff	Peak discharge	= 5.495 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 21,181 cuft
Drainage area	= 1.060 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.060 x 98)] / 1.060



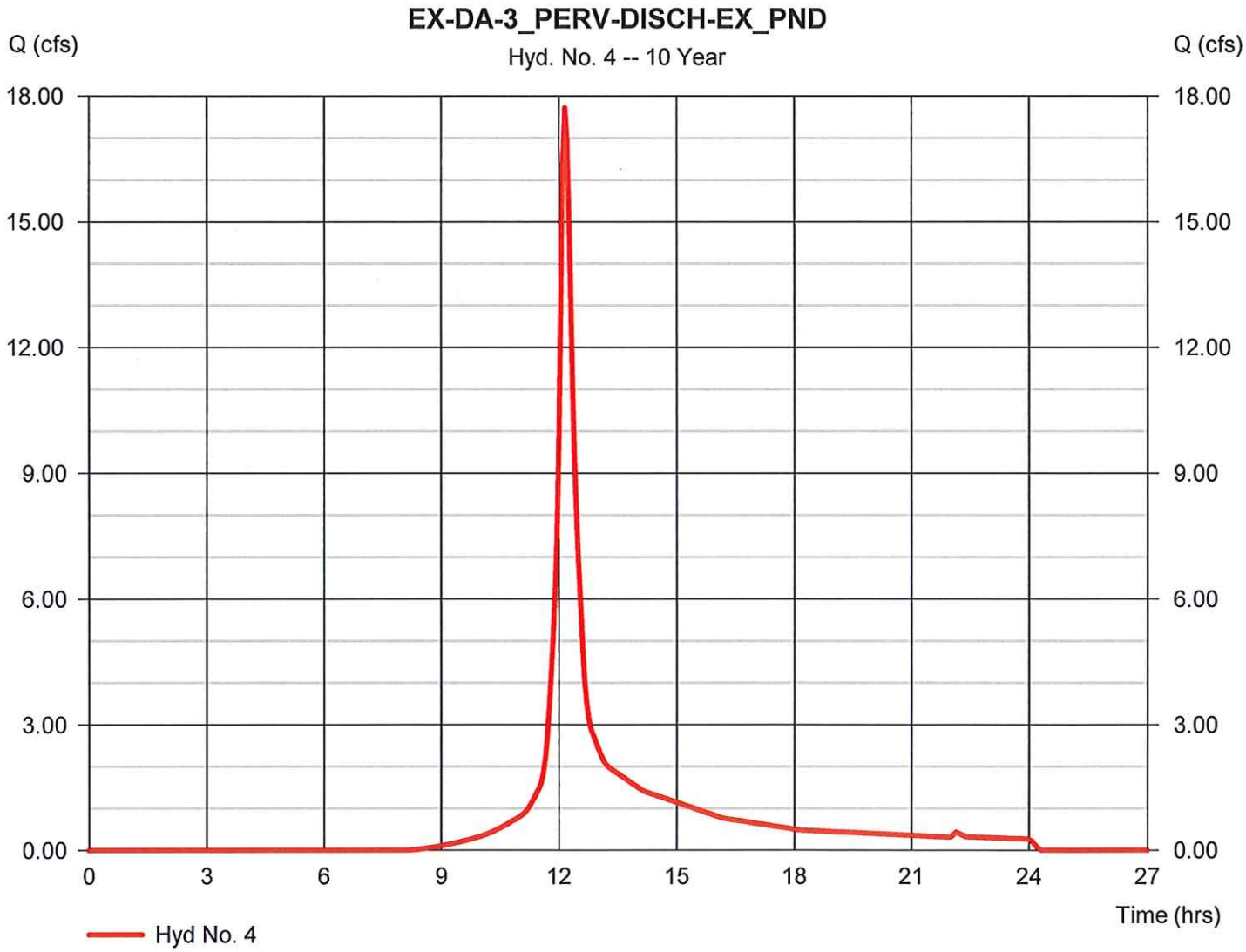
Hydrograph Report

Hyd. No. 4

EX-DA-3_PERV-DISCH-EX_PND

Hydrograph type	= SCS Runoff	Peak discharge	= 17.72 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 69,720 cuft
Drainage area	= 5.860 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.50 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.860 x 74)] / 5.860

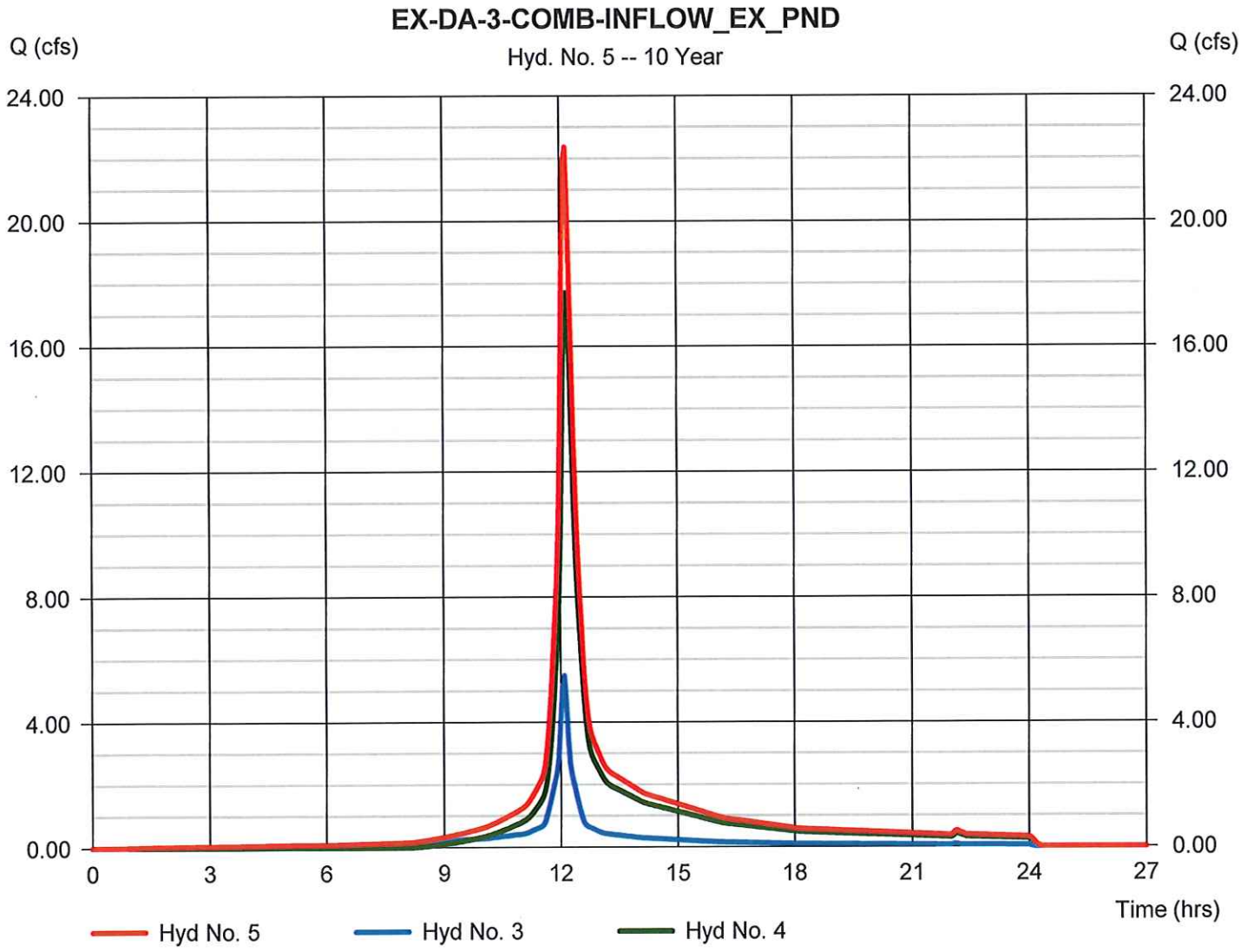


Hydrograph Report

Hyd. No. 5

EX-DA-3-COMB-INFLOW_EX_PND

Hydrograph type	= Combine	Peak discharge	= 22.36 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 90,902 cuft
Inflow hyds.	= 3, 4	Contrib. drain. area	= 6.920 ac



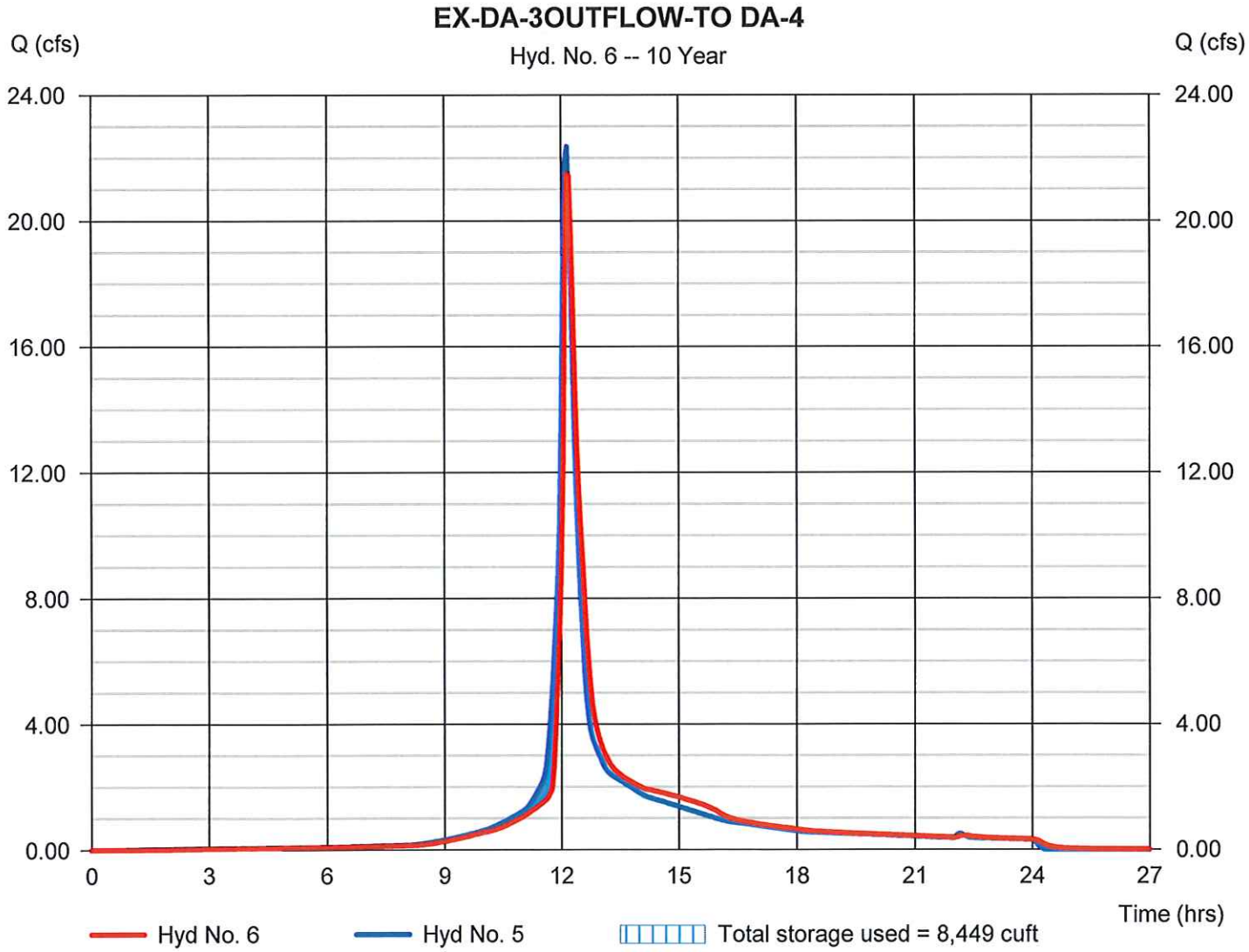
Hydrograph Report

Hyd. No. 6

EX-DA-3OUTFLOW-TO DA-4

Hydrograph type	= Reservoir	Peak discharge	= 21.49 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 90,897 cuft
Inflow hyd. No.	= 5 - EX-DA-3-COMB-INFLOW-EX. PND	Max. Elevation	= 96.30 ft
Reservoir name	= Ex-PND-A-EX-DA-3	Max. Storage	= 8,449 cuft

Storage Indication method used.



Hydrograph Report

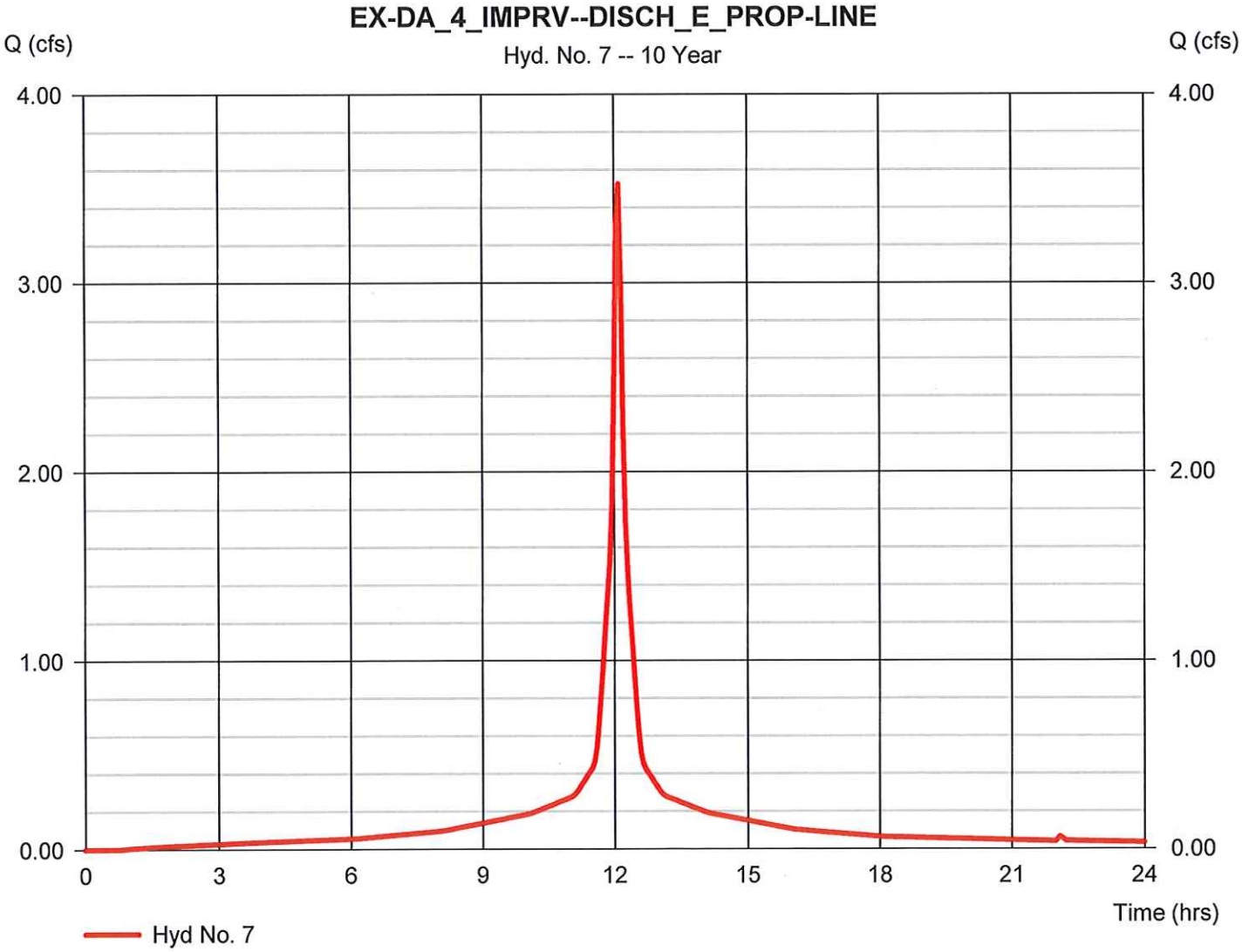
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 7

EX-DA_4_IMPRV--DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 3.525 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 13,588 cuft
Drainage area	= 0.680 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.680 x 98)] / 0.680



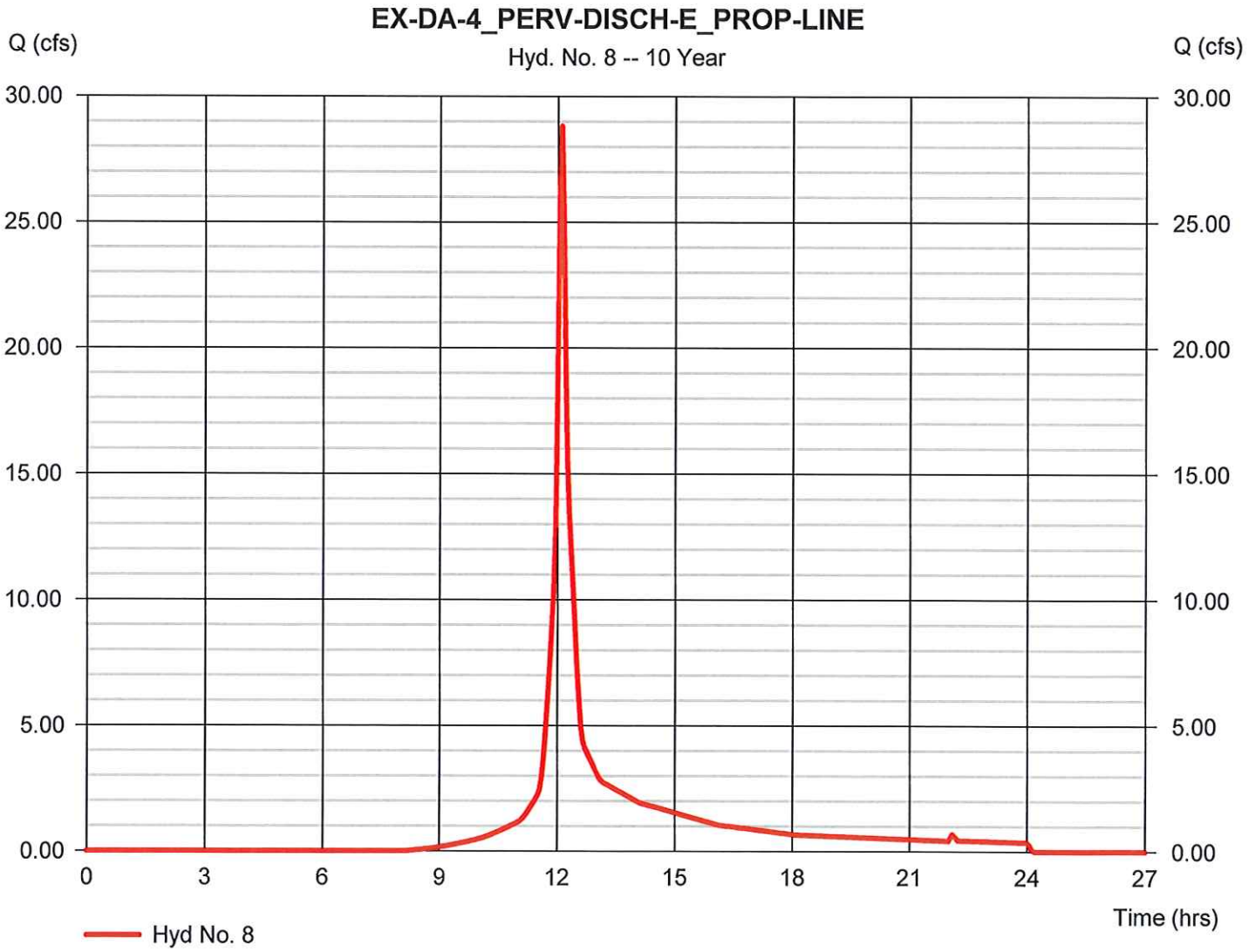
Hydrograph Report

Hyd. No. 8

EX-DA-4_PERV-DISCH-E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 28.82 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 95,814 cuft
Drainage area	= 8.590 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.70 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(8.590 x 74)] / 8.590

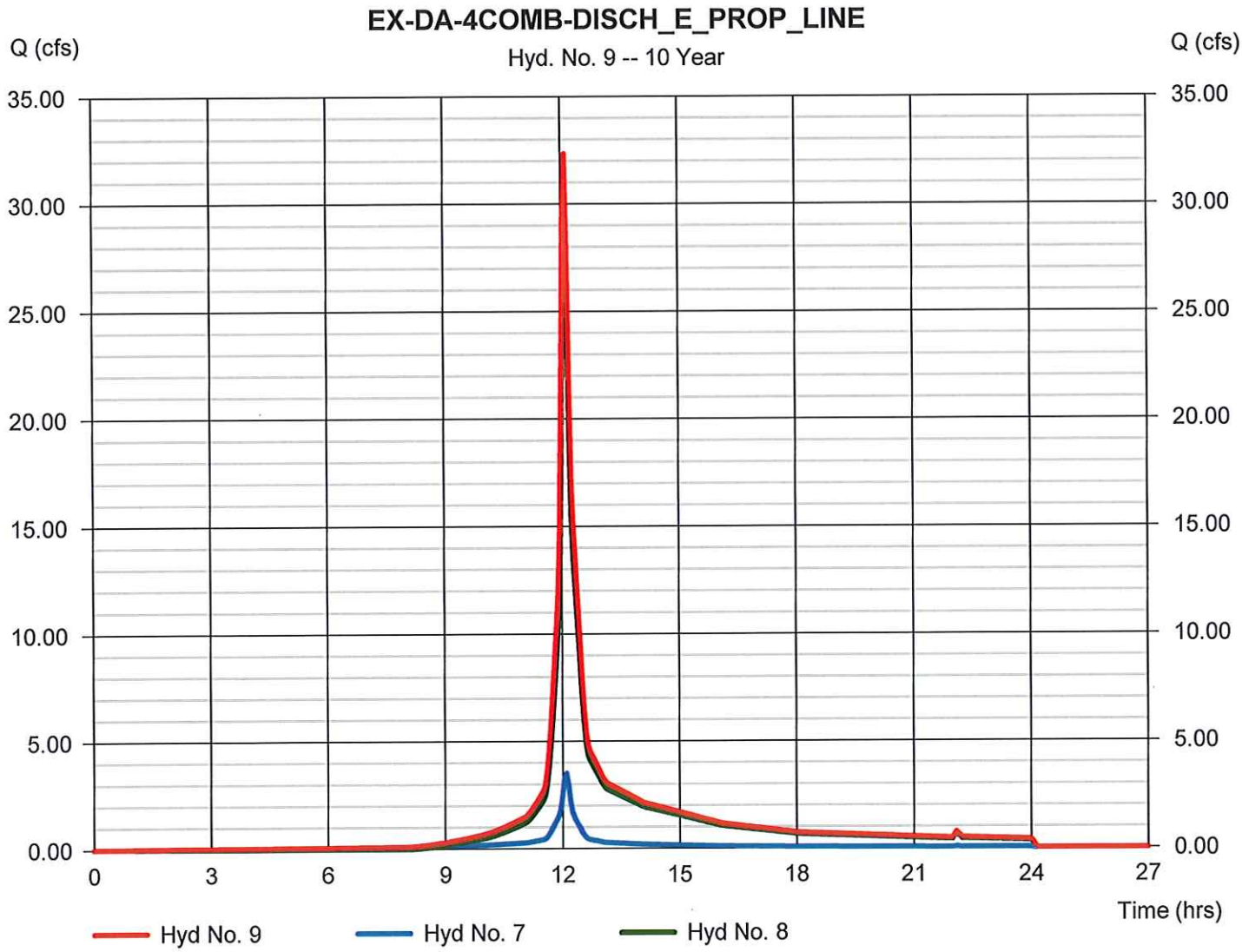


Hydrograph Report

Hyd. No. 9

EX-DA-4COMB-DISCH_E_PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 32.34 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 109,402 cuft
Inflow hyds.	= 7, 8	Contrib. drain. area	= 9.270 ac

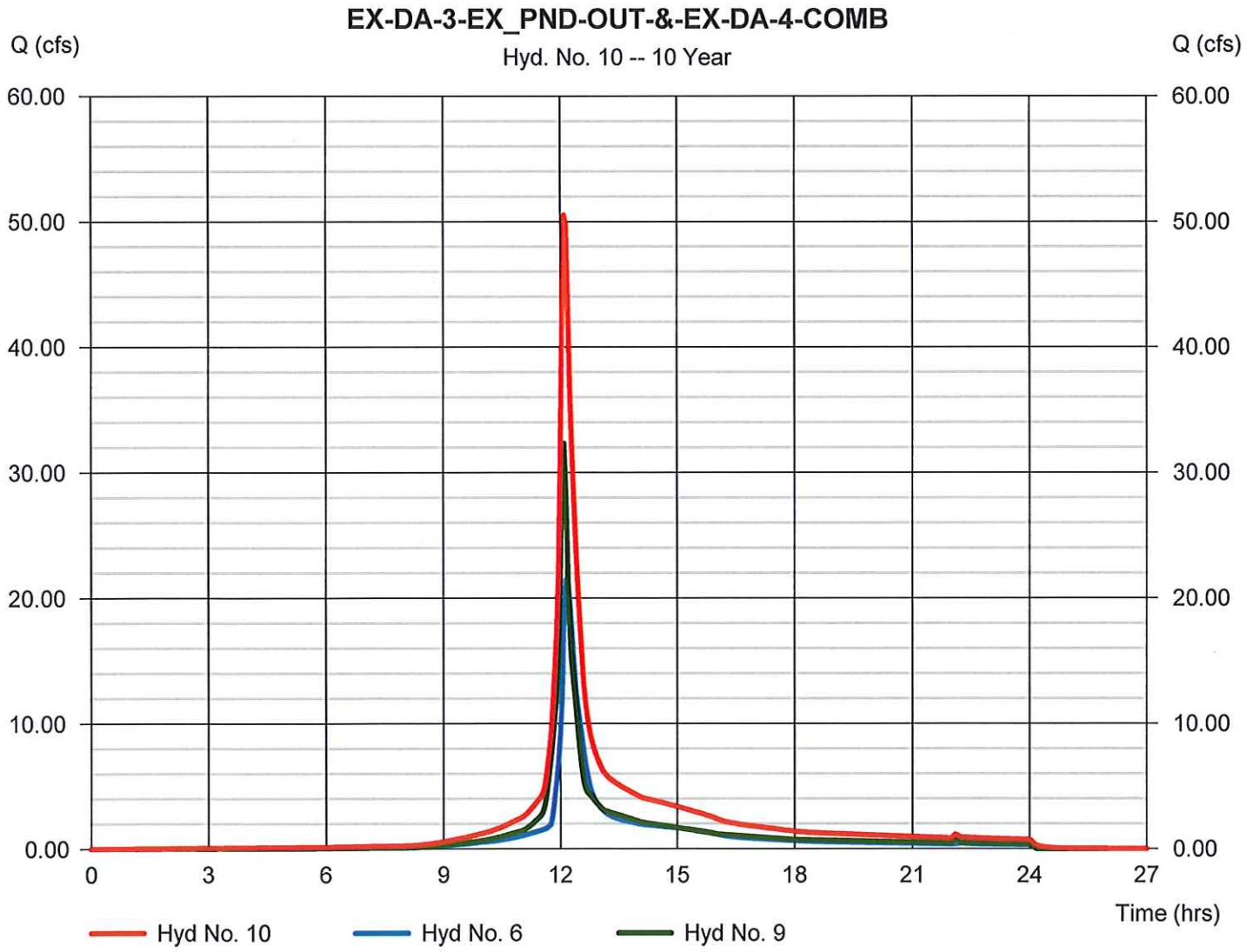


Hydrograph Report

Hyd. No. 10

EX-DA-3-EX_PND-OUT-&-EX-DA-4-COMB

Hydrograph type	= Combine	Peak discharge	= 50.52 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 200,299 cuft
Inflow hyds.	= 6, 9	Contrib. drain. area	= 0.000 ac



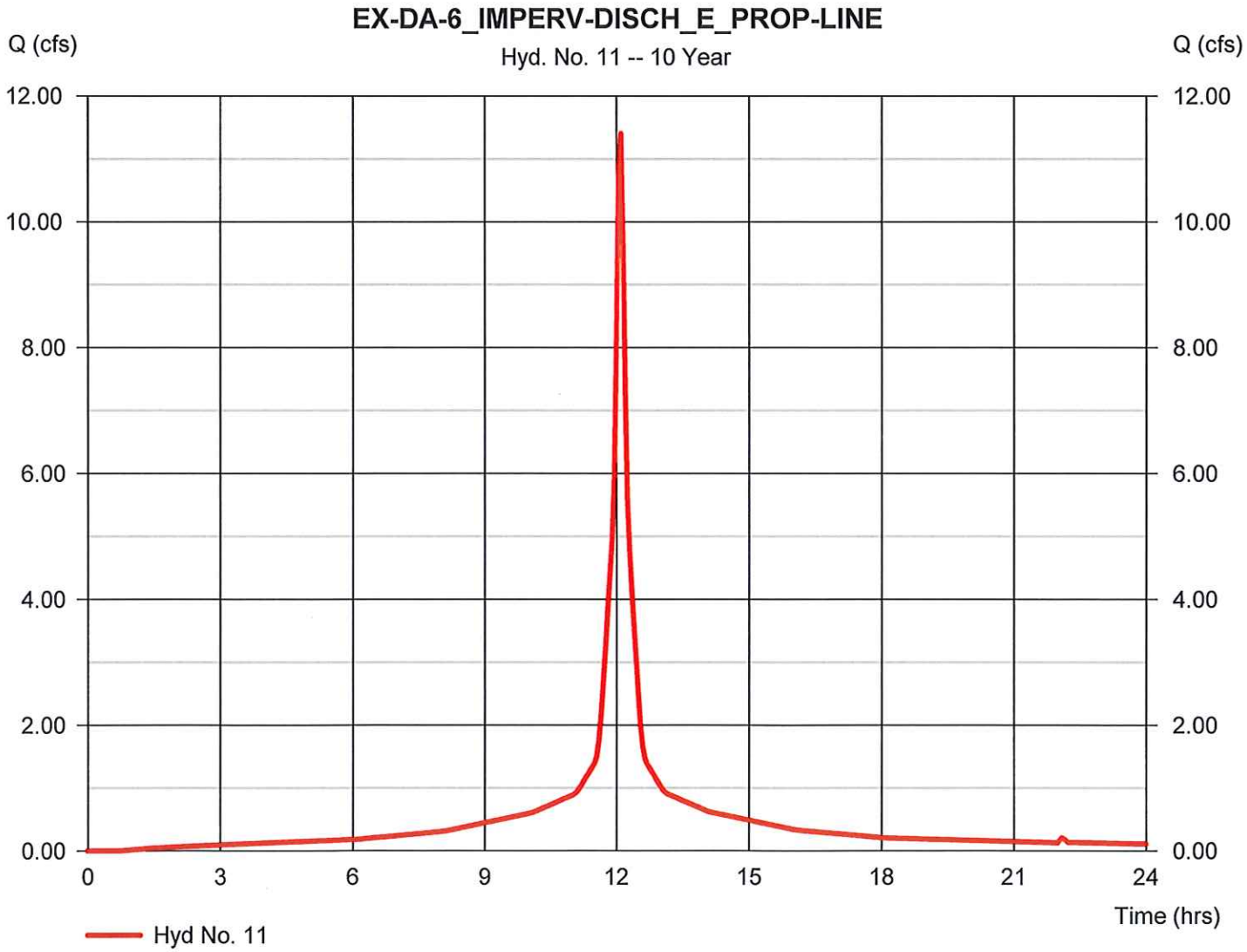
Hydrograph Report

Hyd. No. 11

EX-DA-6_IMPERV-DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 11.40 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 43,961 cuft
Drainage area	= 2.200 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.200 x 98)] / 2.200



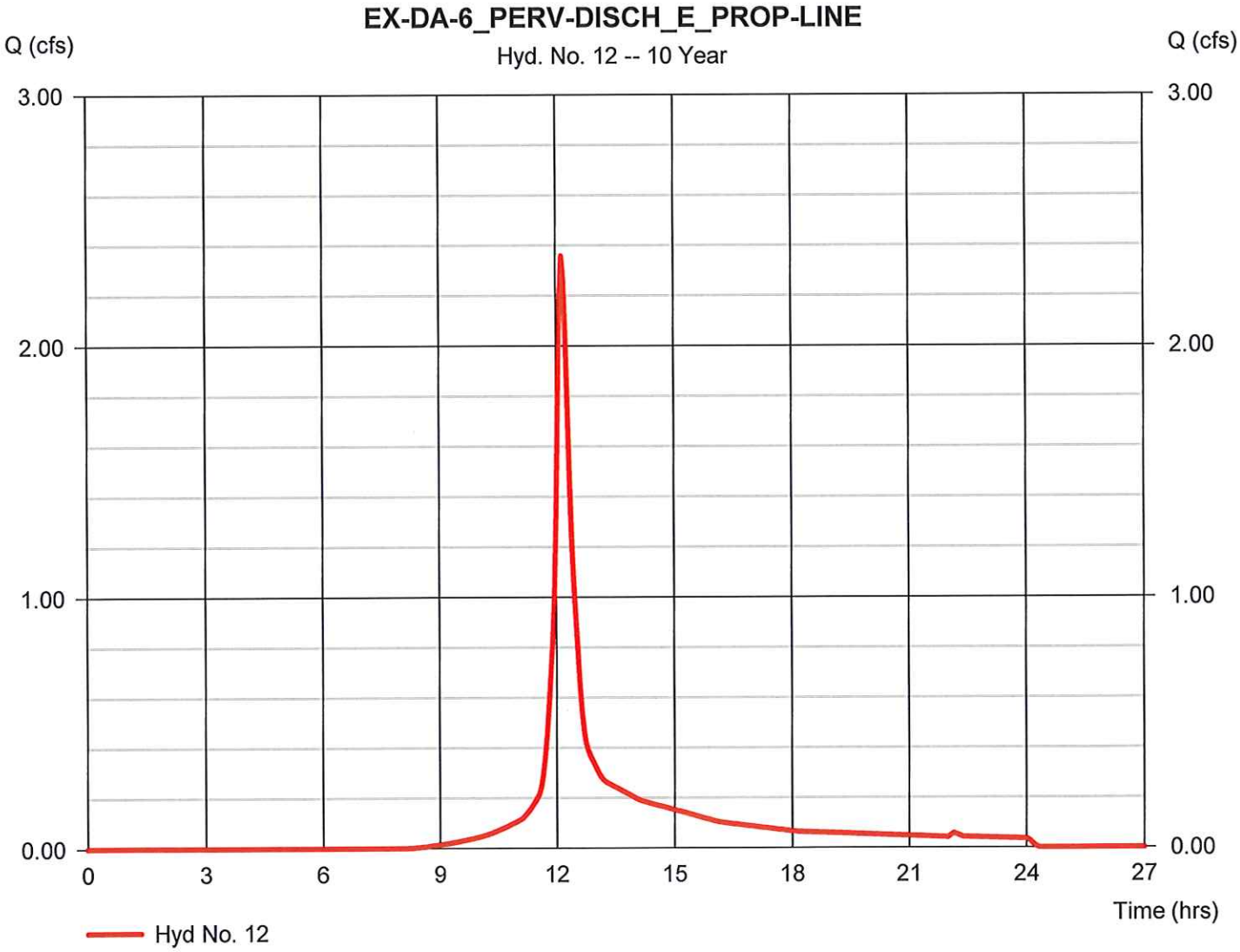
Hydrograph Report

Hyd. No. 12

EX-DA-6_PERV-DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 2.358 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 9,280 cuft
Drainage area	= 0.780 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.90 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.780 x 74)] / 0.780

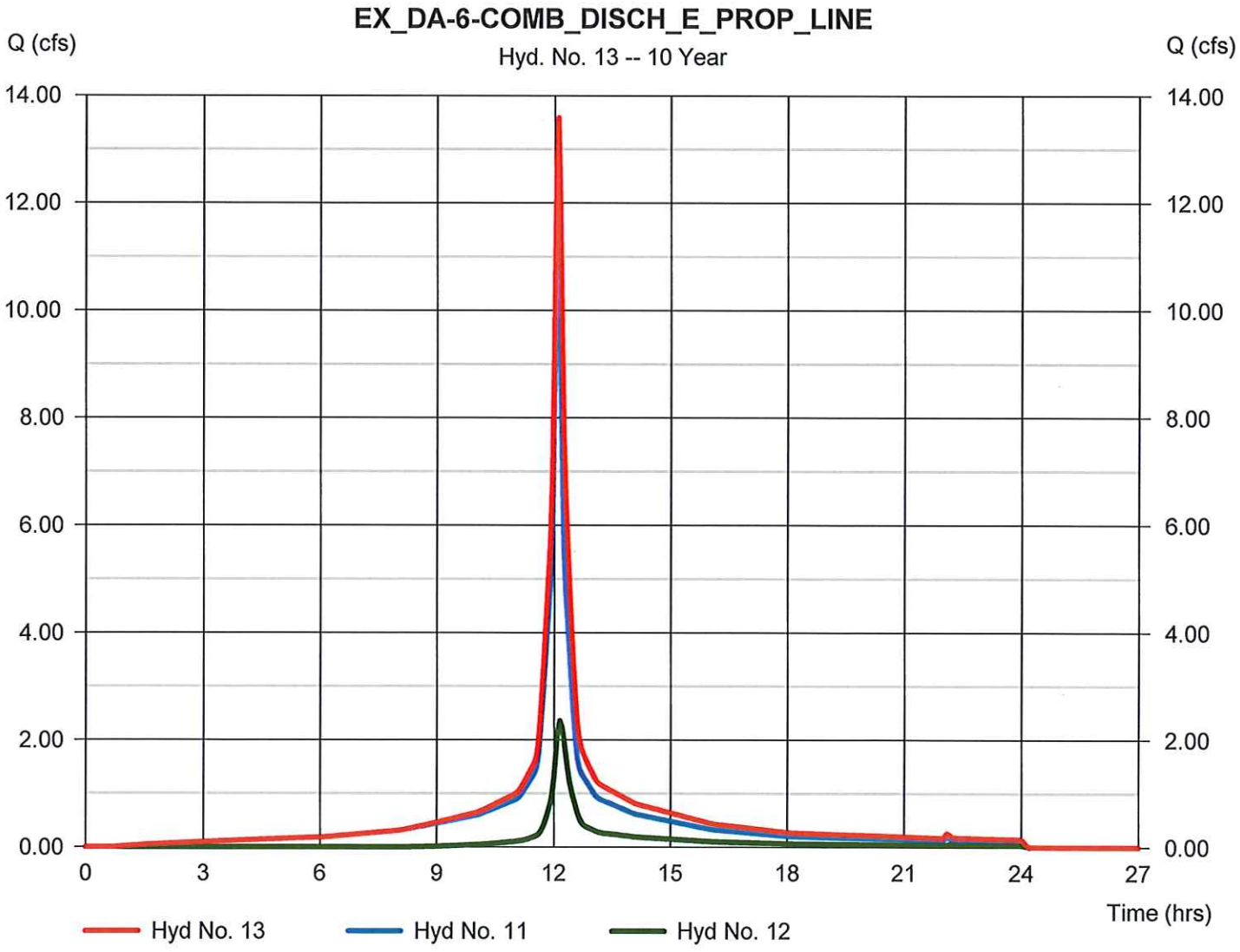


Hydrograph Report

Hyd. No. 13

EX_DA-6-COMB_DISCH_E_PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 13.59 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 53,241 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 2.980 ac

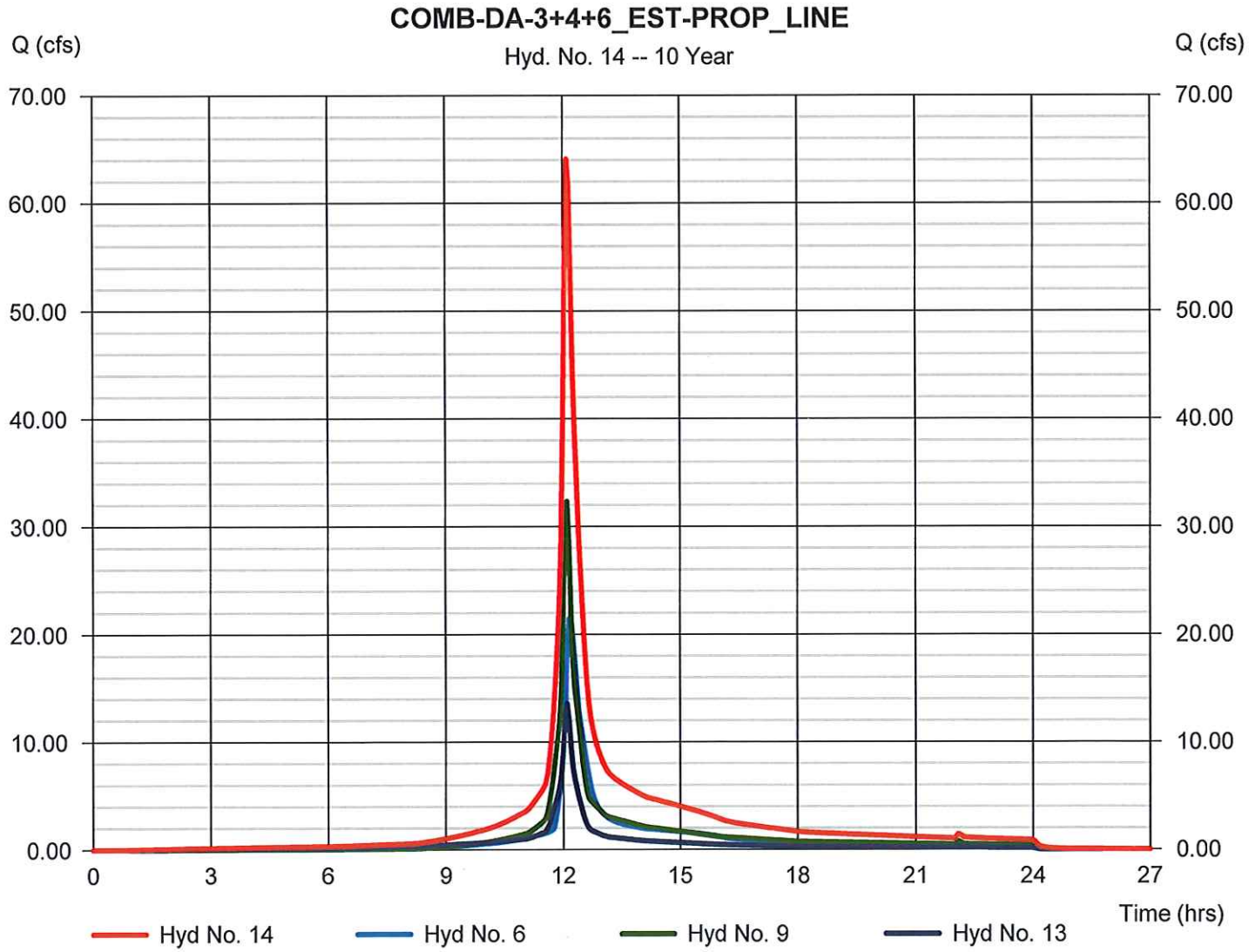


Hydrograph Report

Hyd. No. 14

COMB-DA-3+4+6_EST-PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 64.11 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 253,540 cuft
Inflow hyds.	= 6, 9, 13	Contrib. drain. area	= 0.000 ac



Hydrograph Report

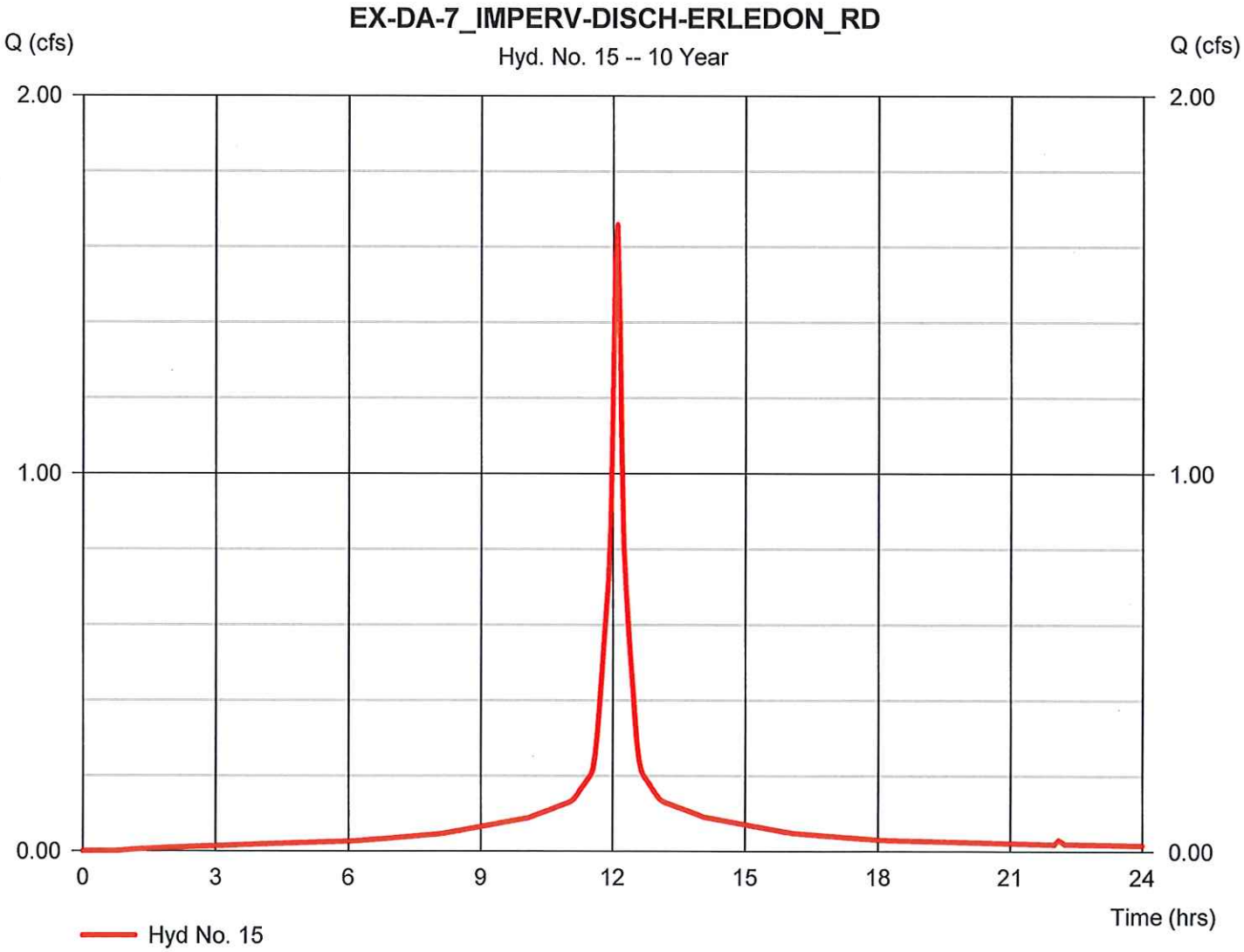
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 15

EX-DA-7_IMPERV-DISCH-ERLEDON_RD

Hydrograph type	= SCS Runoff	Peak discharge	= 1.659 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 6,394 cuft
Drainage area	= 0.320 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.320 x 98)] / 0.320



Hydrograph Report

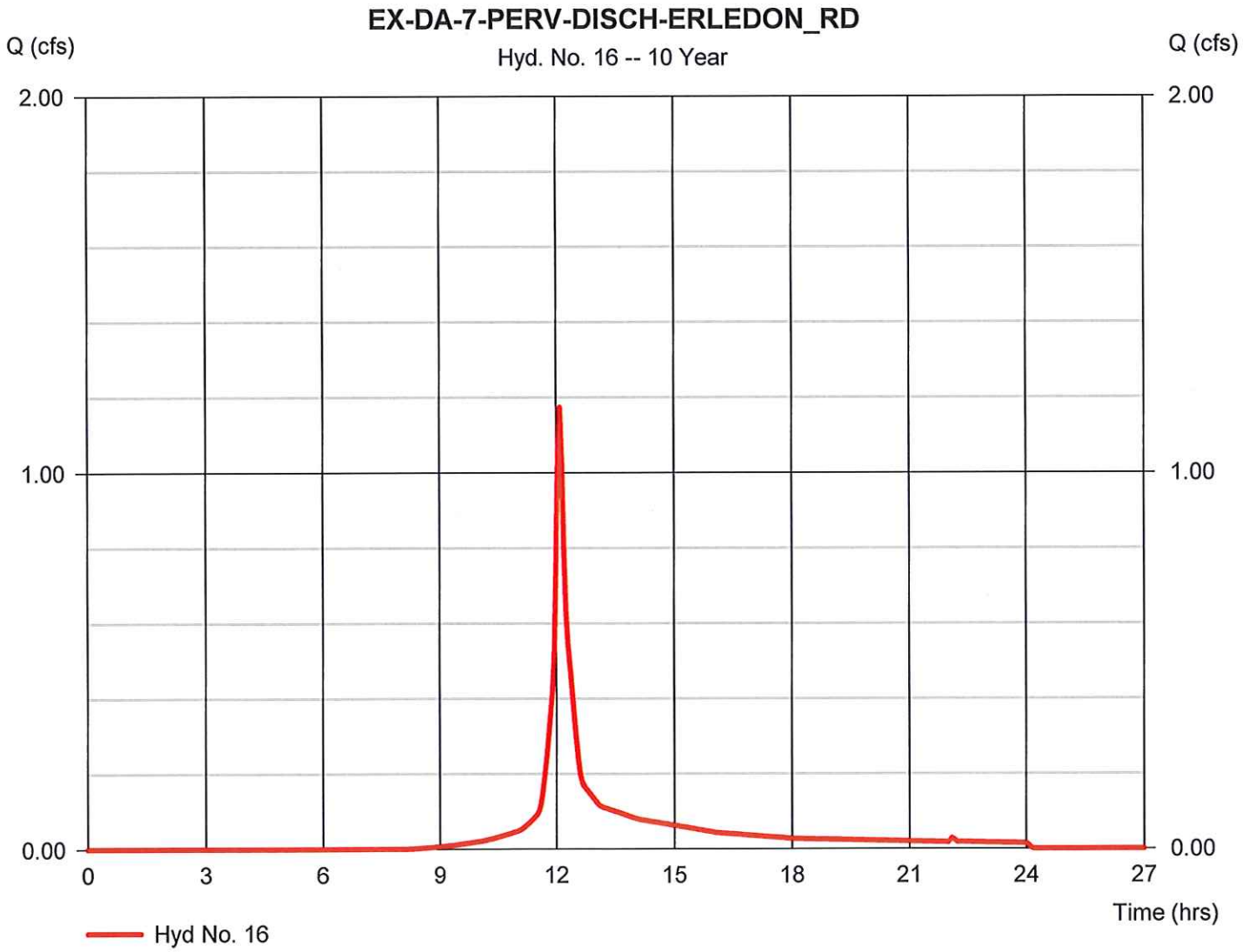
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 16

EX-DA-7-PERV-DISCH-ERLEDON_RD

Hydrograph type	= SCS Runoff	Peak discharge	= 1.174 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 3,904 cuft
Drainage area	= 0.350 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.350 x 74)] / 0.350

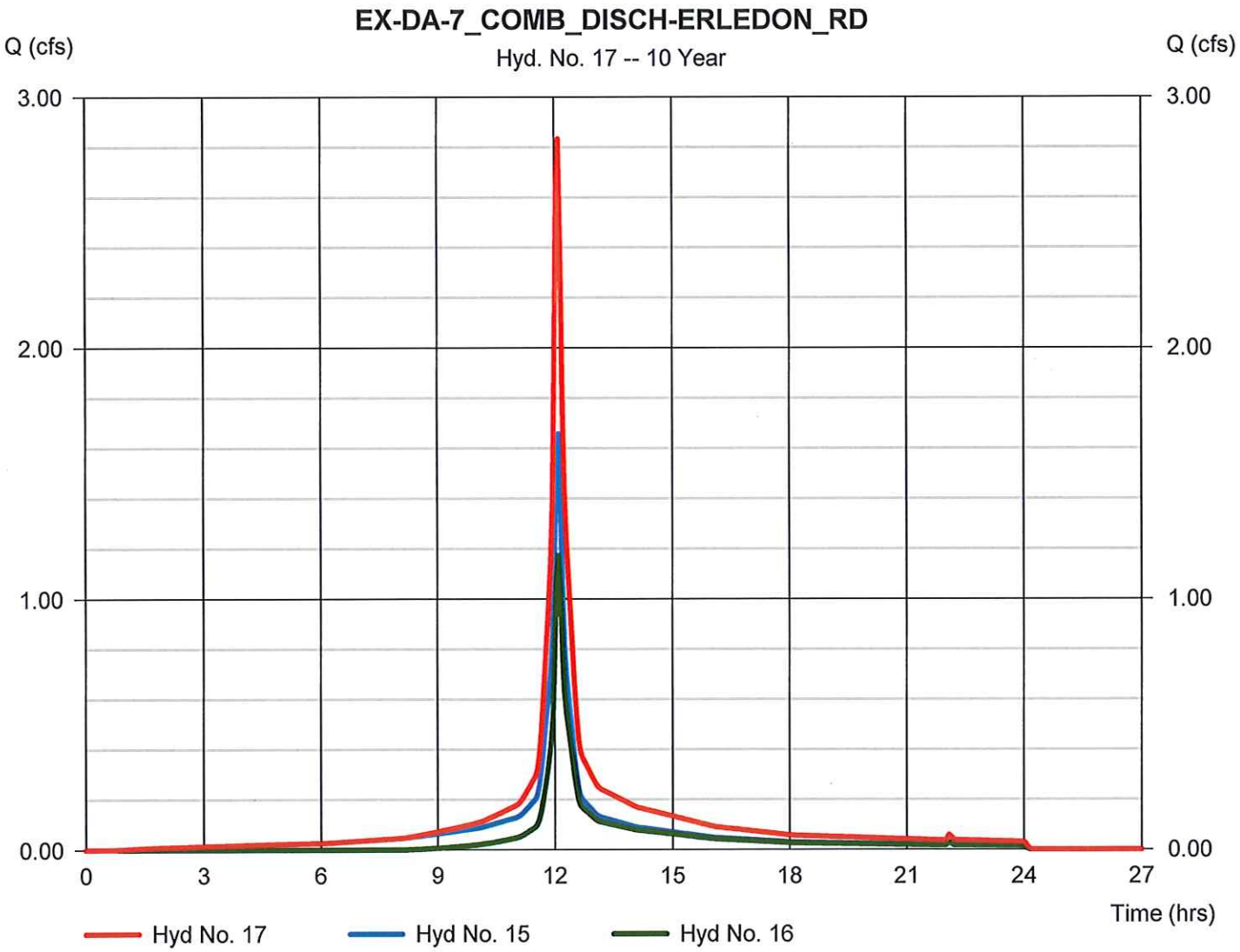


Hydrograph Report

Hyd. No. 17

EX-DA-7_COMB_DISCH-ERLEDON_RD

Hydrograph type	= Combine	Peak discharge	= 2.833 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 10,298 cuft
Inflow hyds.	= 15, 16	Contrib. drain. area	= 0.670 ac

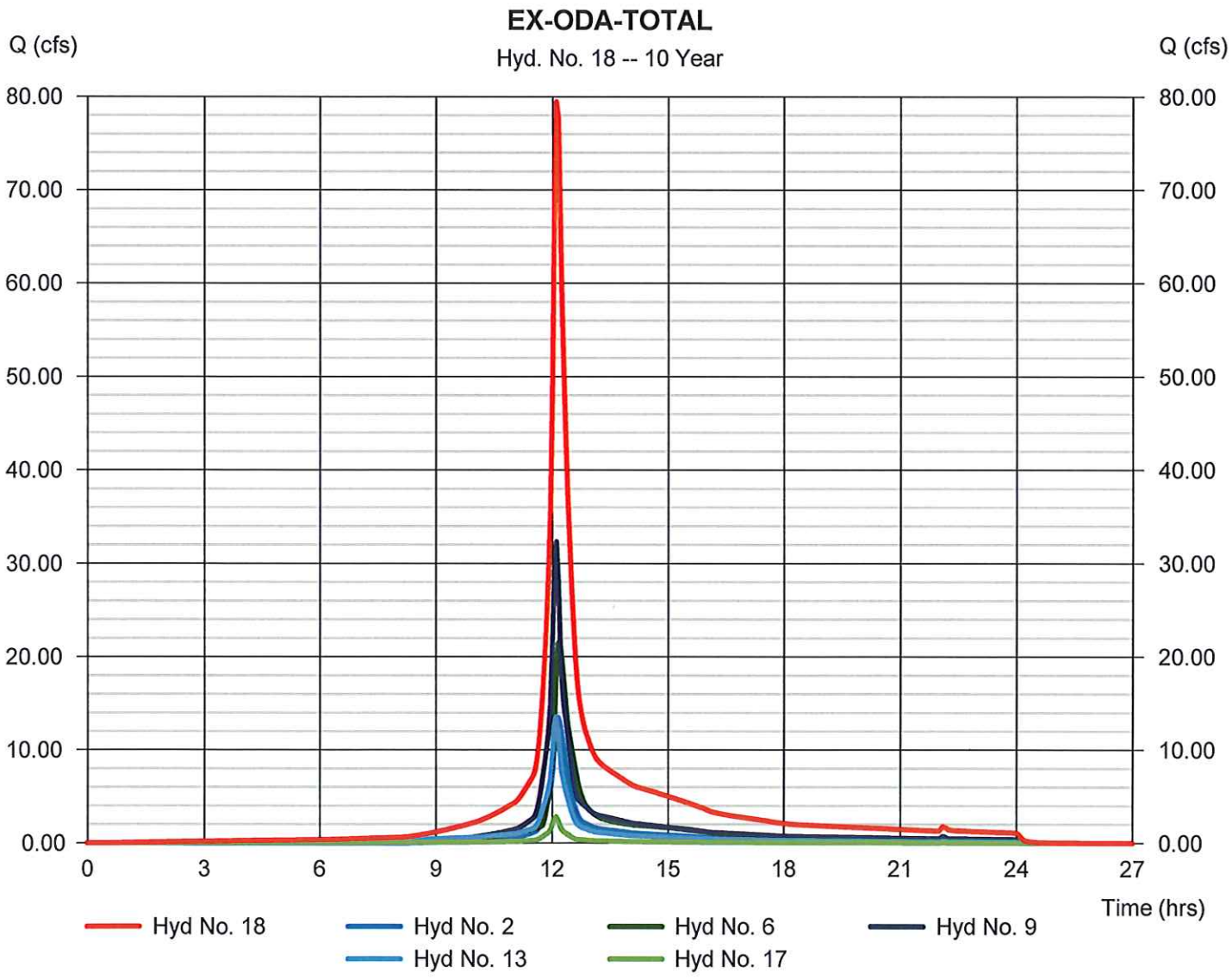


Hydrograph Report

Hyd. No. 18

EX-ODA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 79.45 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 317,021 cuft
Inflow hyds.	= 2, 6, 9, 13, 17	Contrib. drain. area	= 4.470 ac



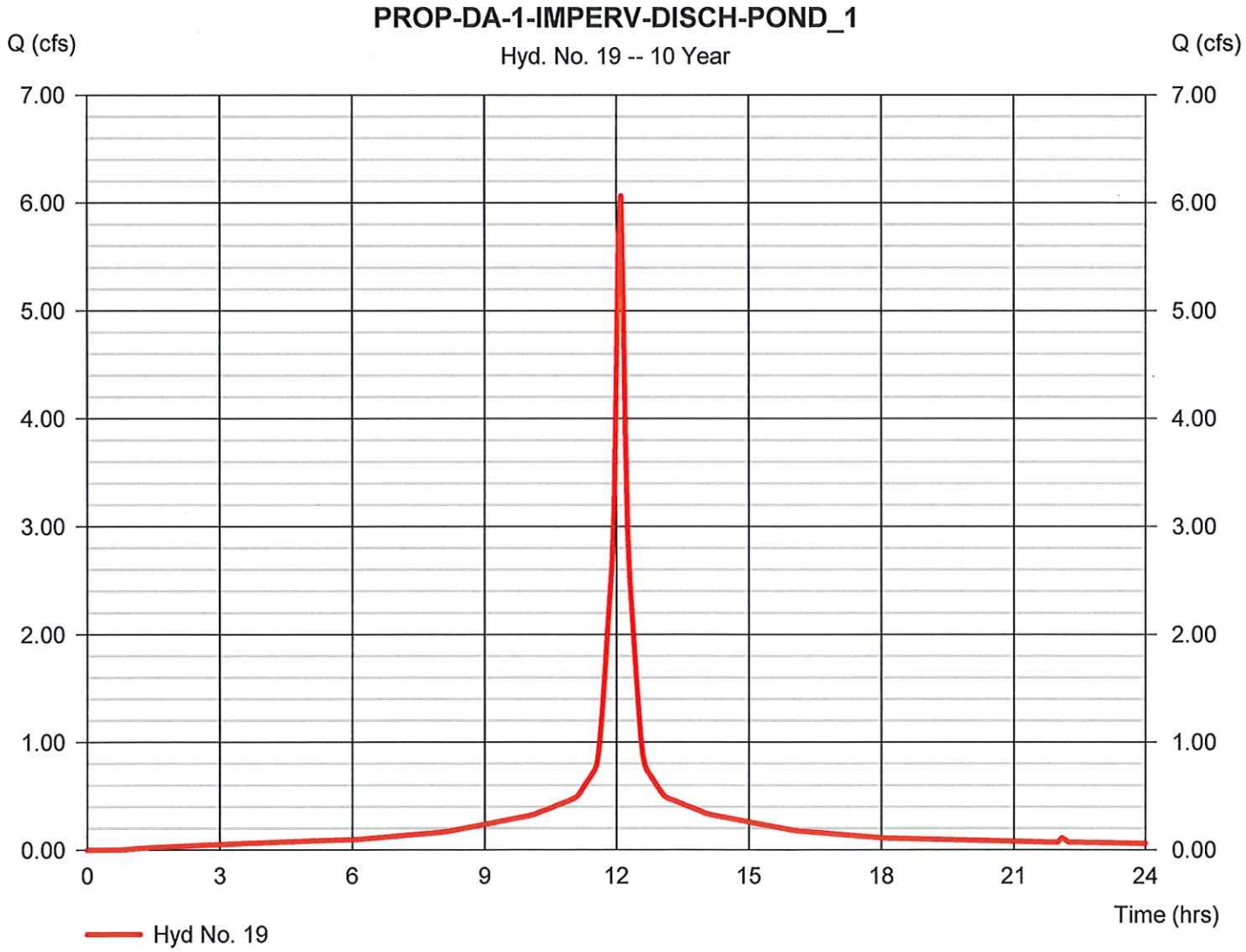
Hydrograph Report

Hyd. No. 19

PROP-DA-1-IMPERV-DISCH-POND_1

Hydrograph type	= SCS Runoff	Peak discharge	= 6.065 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 23,379 cuft
Drainage area	= 1.170 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.170 x 98)] / 1.170



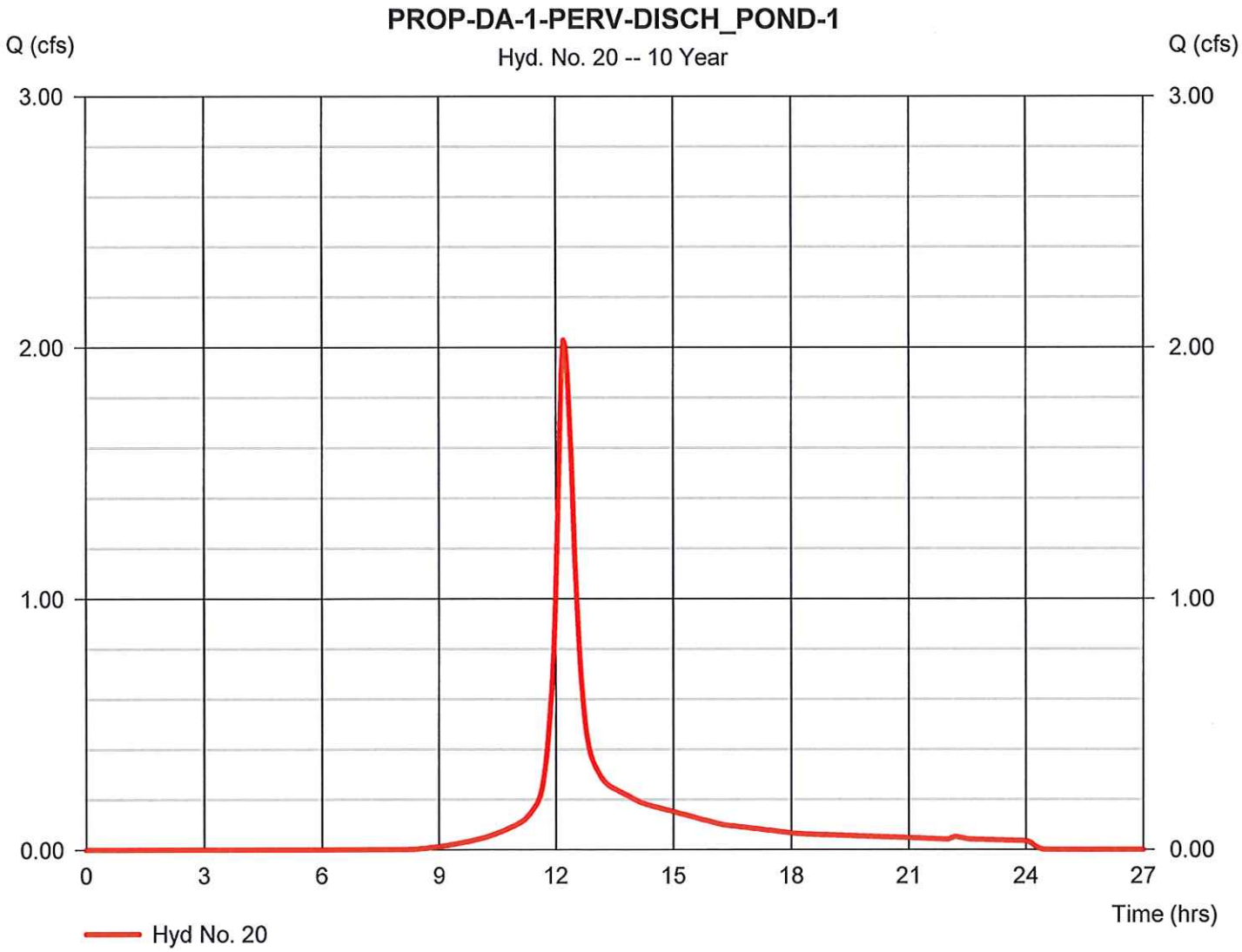
Hydrograph Report

Hyd. No. 20

PROP-DA-1-PERV-DISCH_POND-1

Hydrograph type	= SCS Runoff	Peak discharge	= 2.029 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 9,079 cuft
Drainage area	= 0.740 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.50 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.280 x 74)] / 0.740

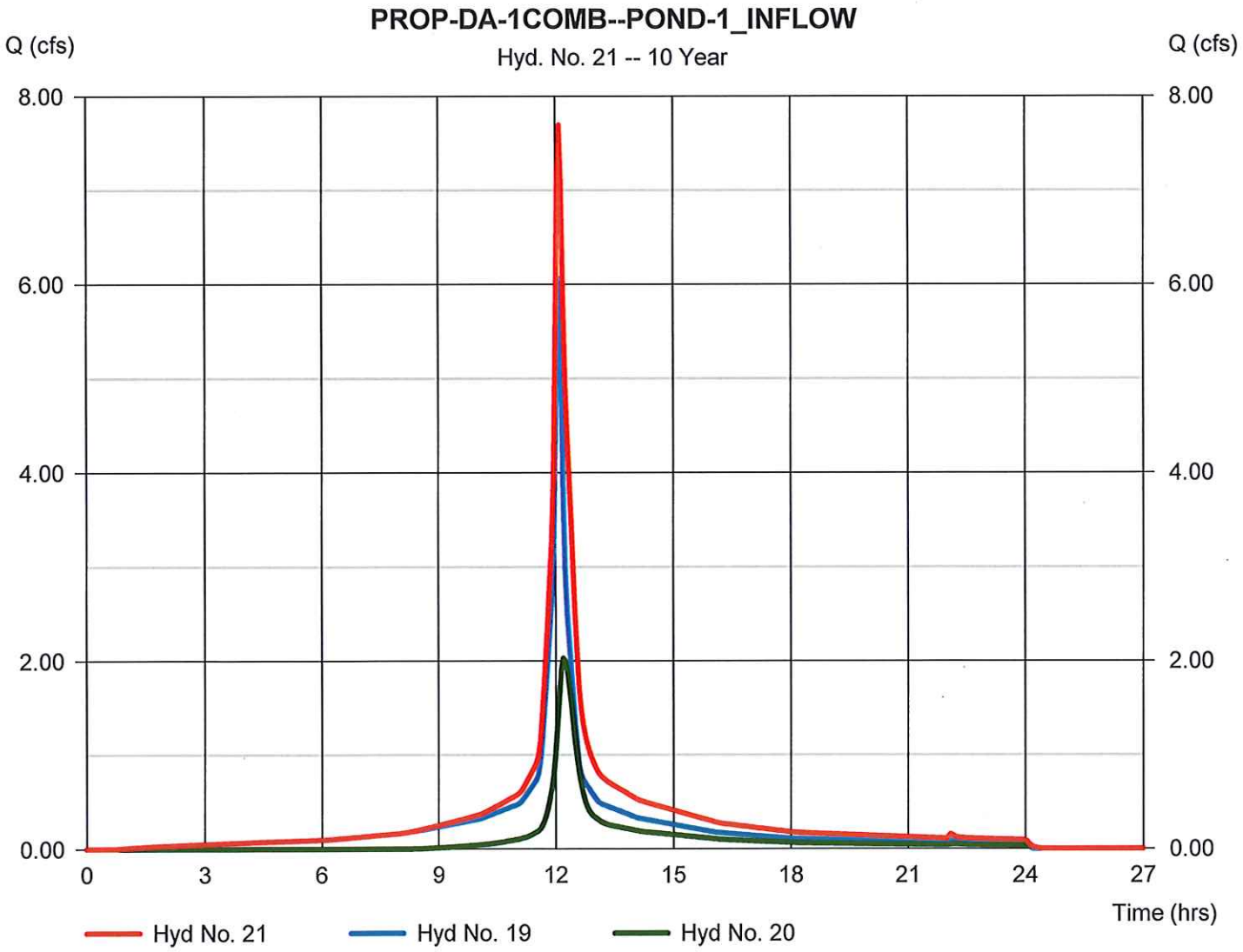


Hydrograph Report

Hyd. No. 21

PROP-DA-1COMB--POND-1_INFLOW

Hydrograph type	= Combine	Peak discharge	= 7.694 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 32,459 cuft
Inflow hyds.	= 19, 20	Contrib. drain. area	= 1.910 ac



Hydrograph Report

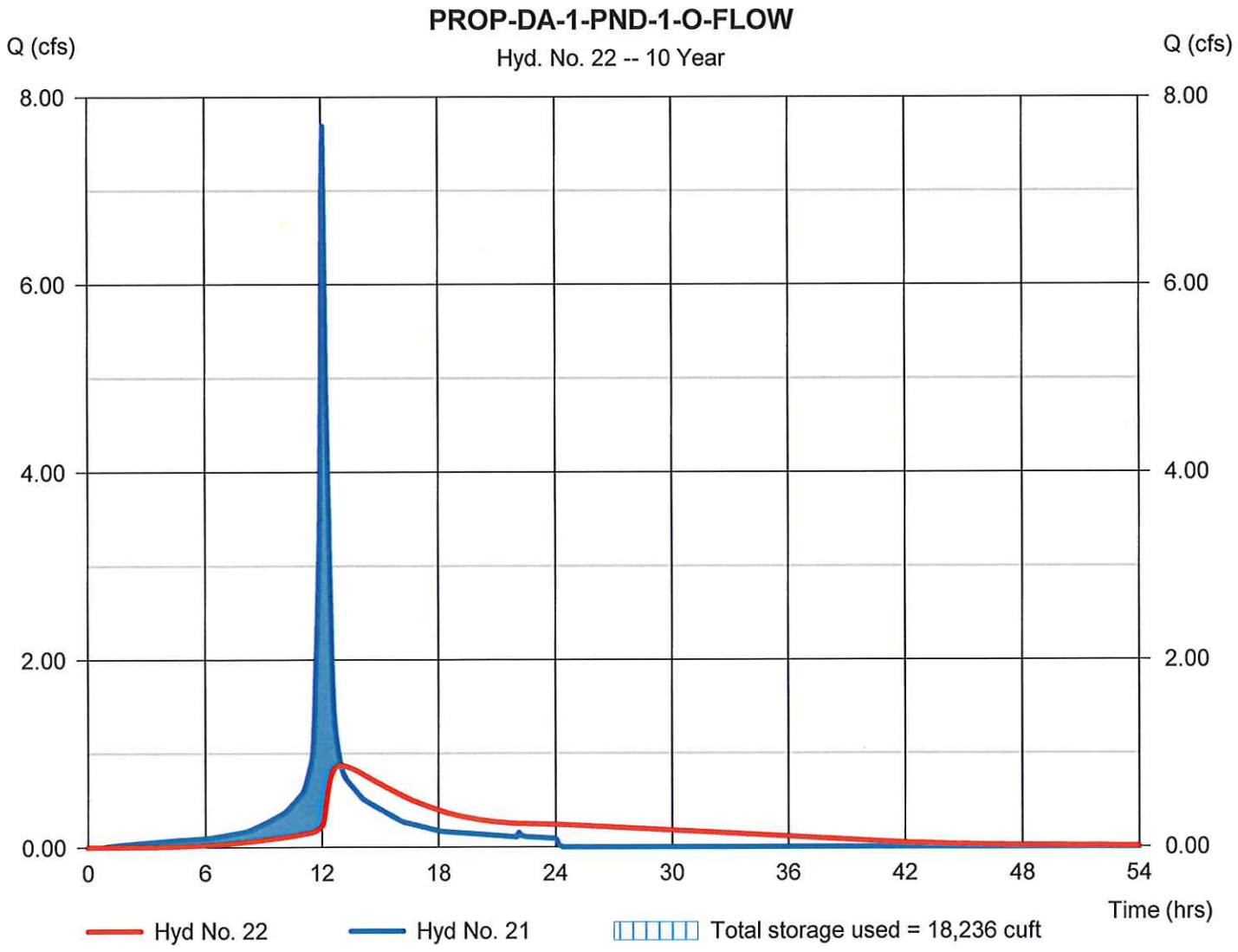
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 22

PROP-DA-1-PND-1-O-FLOW

Hydrograph type	= Reservoir	Peak discharge	= 0.873 cfs
Storm frequency	= 10 yrs	Time to peak	= 13.00 hrs
Time interval	= 3 min	Hyd. volume	= 32,379 cuft
Inflow hyd. No.	= 21 - PROP-DA-1COMB--POND-1_INFLOW	Max. Elevation	= 113.89 ft
Reservoir name	= POND-1	Max. Storage	= 18,236 cuft

Storage Indication method used.



Hydrograph Report

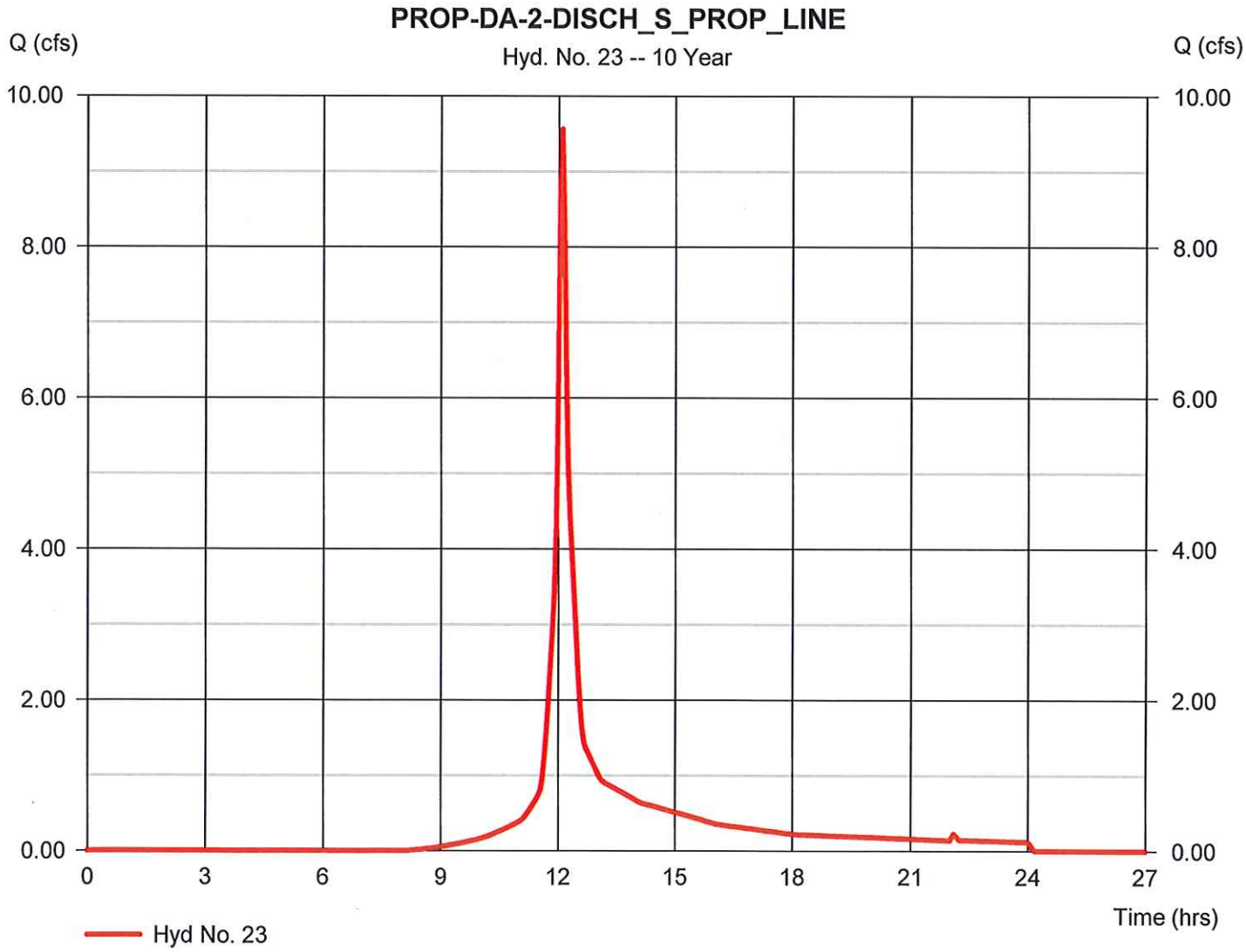
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 23

PROP-DA-2-DISCH_S_PROP_LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 9.561 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 31,789 cuft
Drainage area	= 2.850 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.90 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.850 x 74)] / 2.850



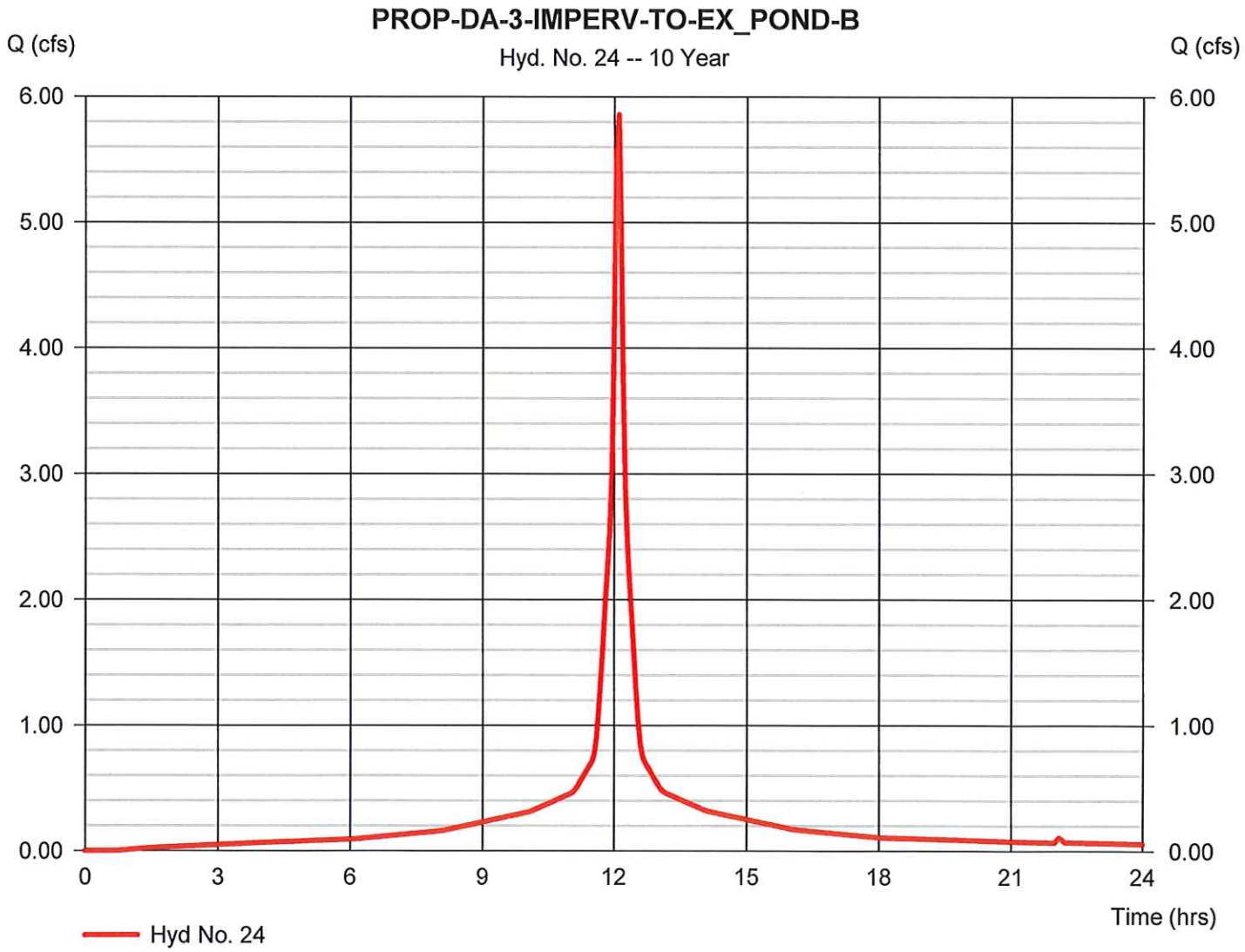
Hydrograph Report

Hyd. No. 24

PROP-DA-3-IMPERV-TO-EX_POND-B

Hydrograph type	= SCS Runoff	Peak discharge	= 5.858 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 22,580 cuft
Drainage area	= 1.130 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.130 x 98)] / 1.130



Hydrograph Report

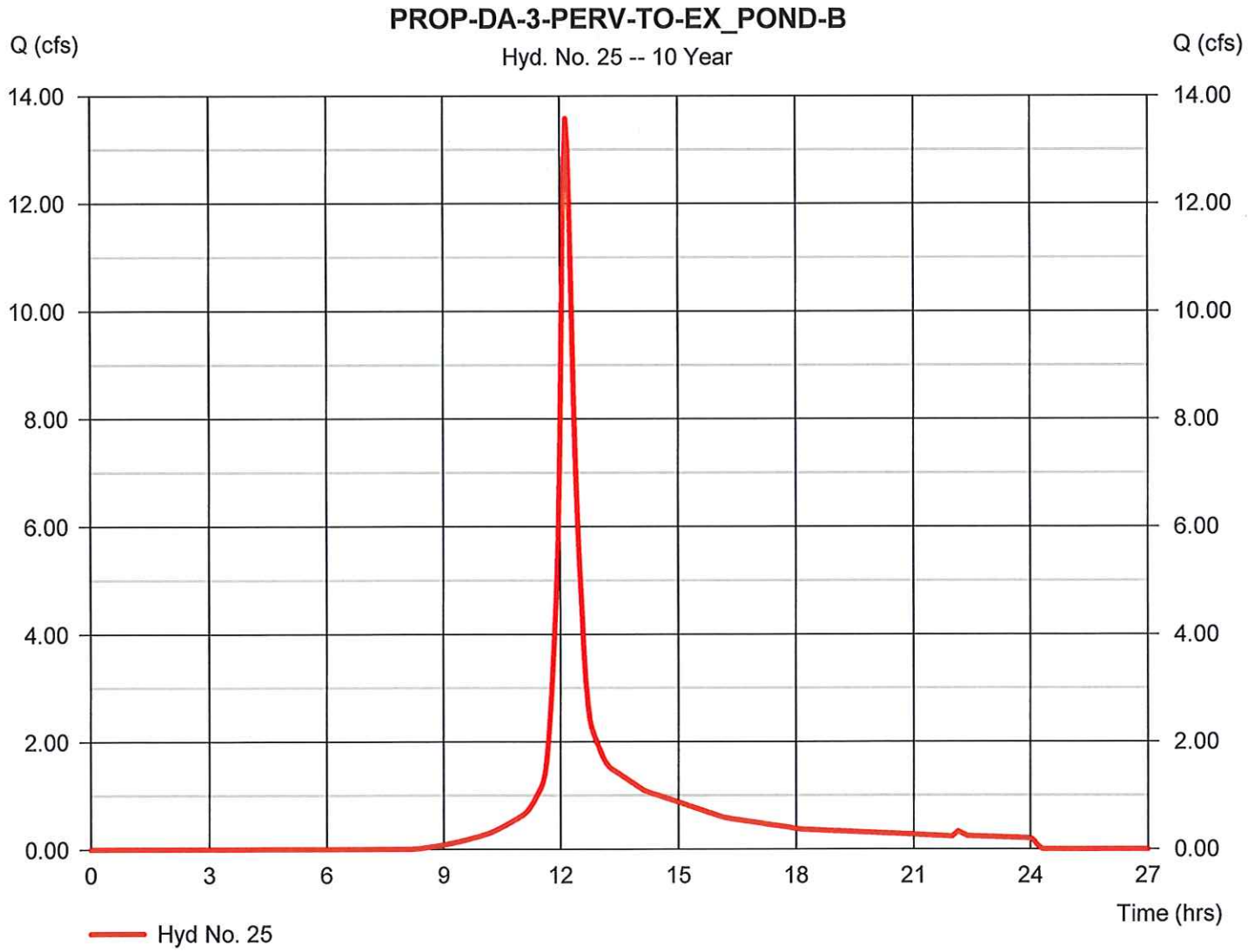
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 25

PROP-DA-3-PERV-TO-EX_POND-B

Hydrograph type	= SCS Runoff	Peak discharge	= 13.58 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 53,421 cuft
Drainage area	= 4.490 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.80 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.490 x 74)] / 4.490



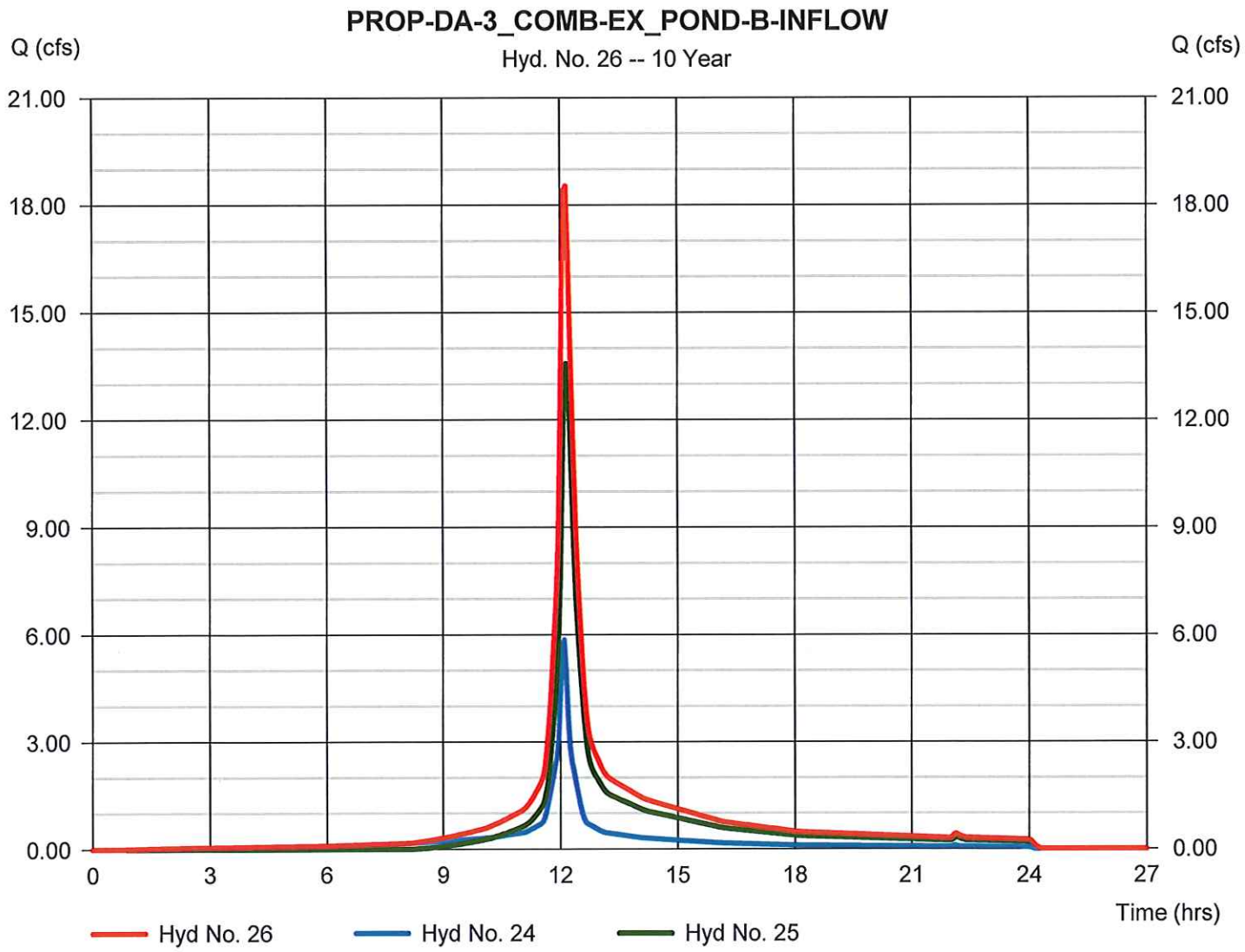
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 26

PROP-DA-3_COMB-EX_POND-B-INFLOW

Hydrograph type	= Combine	Peak discharge	= 18.53 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 76,001 cuft
Inflow hyds.	= 24, 25	Contrib. drain. area	= 5.620 ac



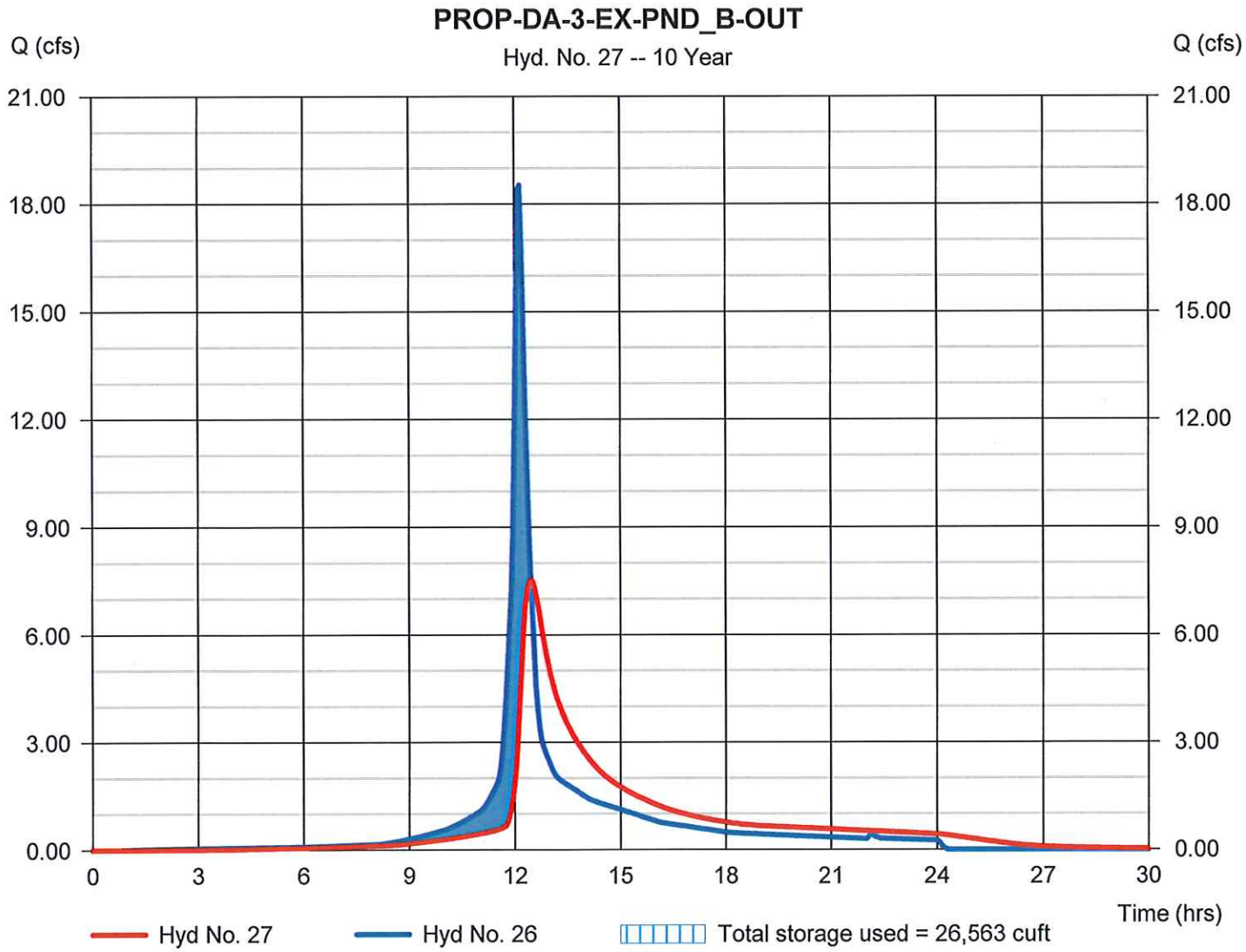
Hydrograph Report

Hyd. No. 27

PROP-DA-3-EX-PND_B-OUT

Hydrograph type	= Reservoir	Peak discharge	= 7.527 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.45 hrs
Time interval	= 3 min	Hyd. volume	= 75,980 cuft
Inflow hyd. No.	= 26 - PROP-DA-3_COMB-EX_POND-B-INFLOW	Max. Elevation	= 96.68 ft
Reservoir name	= EX-PND-B-PROP-DA-3	Max. Storage	= 26,563 cuft

Storage Indication method used.



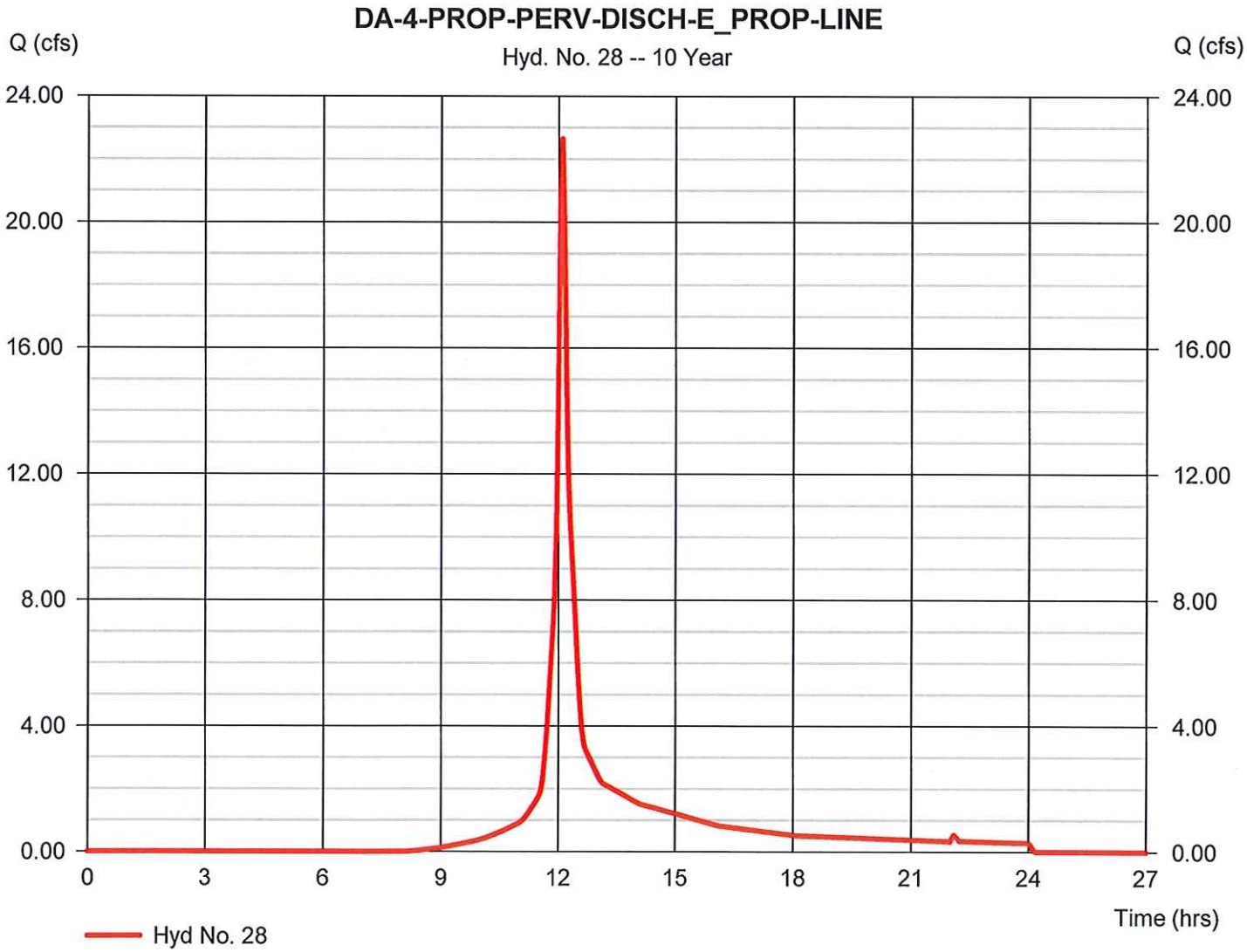
Hydrograph Report

Hyd. No. 28

DA-4-PROP-PERV-DISCH-E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 22.64 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 75,290 cuft
Drainage area	= 6.750 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.70 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.110 x 74)] / 6.750



Hydrograph Report

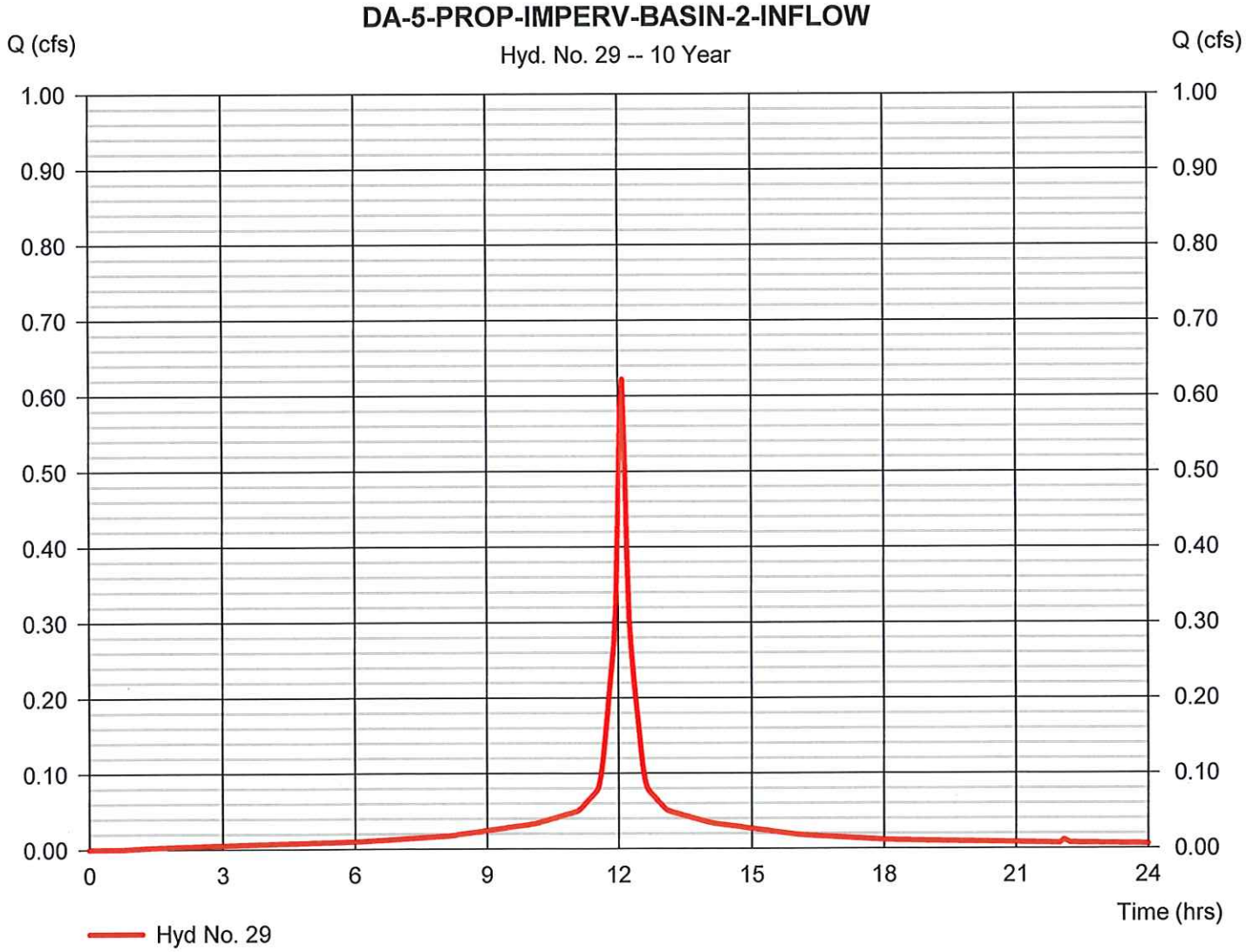
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 29

DA-5-PROP-IMPERV-BASIN-2-INFLOW

Hydrograph type	= SCS Runoff	Peak discharge	= 0.622 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 2,398 cuft
Drainage area	= 0.120 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.120 x 98)] / 0.120



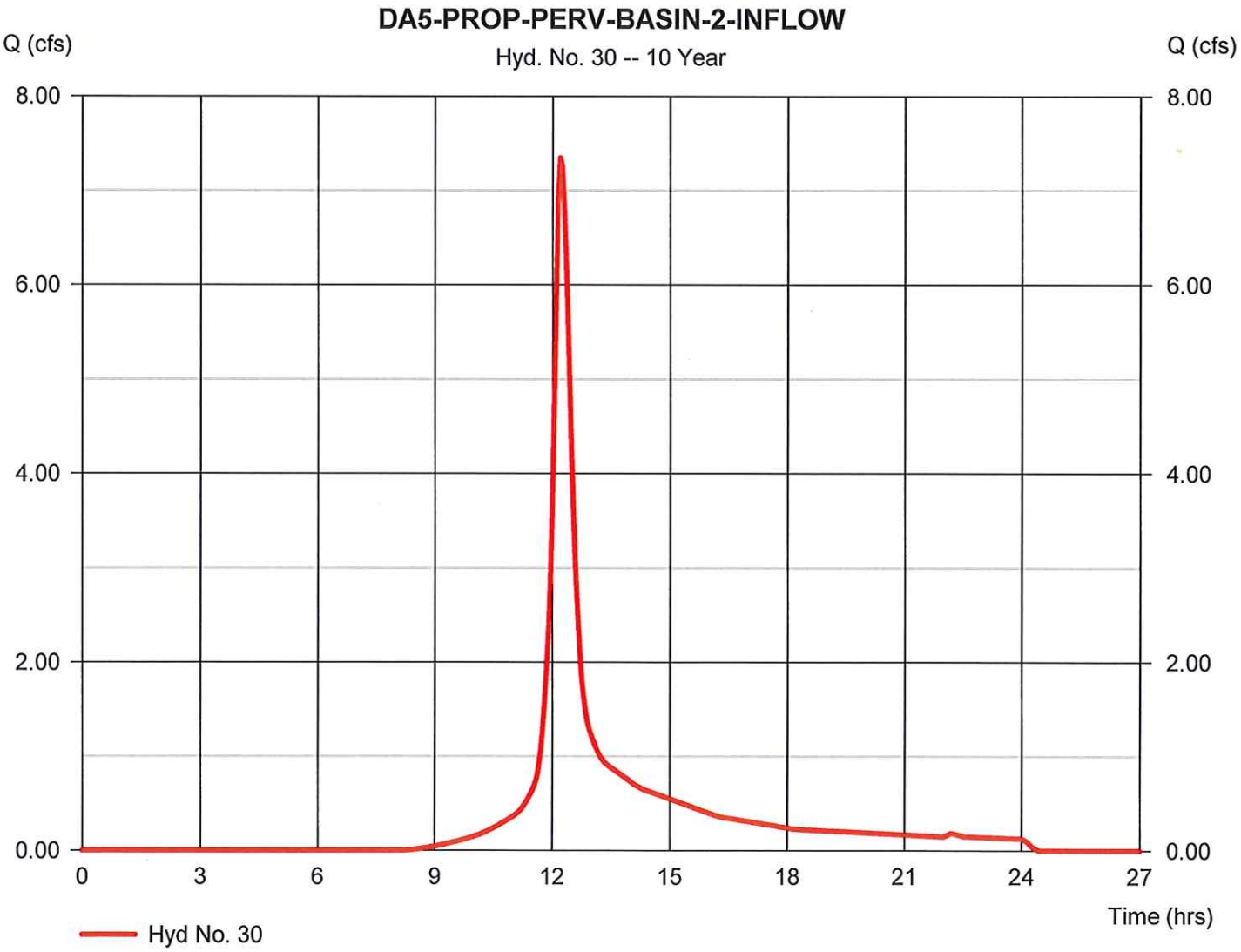
Hydrograph Report

Hyd. No. 30

DA5-PROP-PERV-BASIN-2-INFLOW

Hydrograph type	= SCS Runoff	Peak discharge	= 7.348 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 32,882 cuft
Drainage area	= 2.680 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.680 x 74)] / 2.680



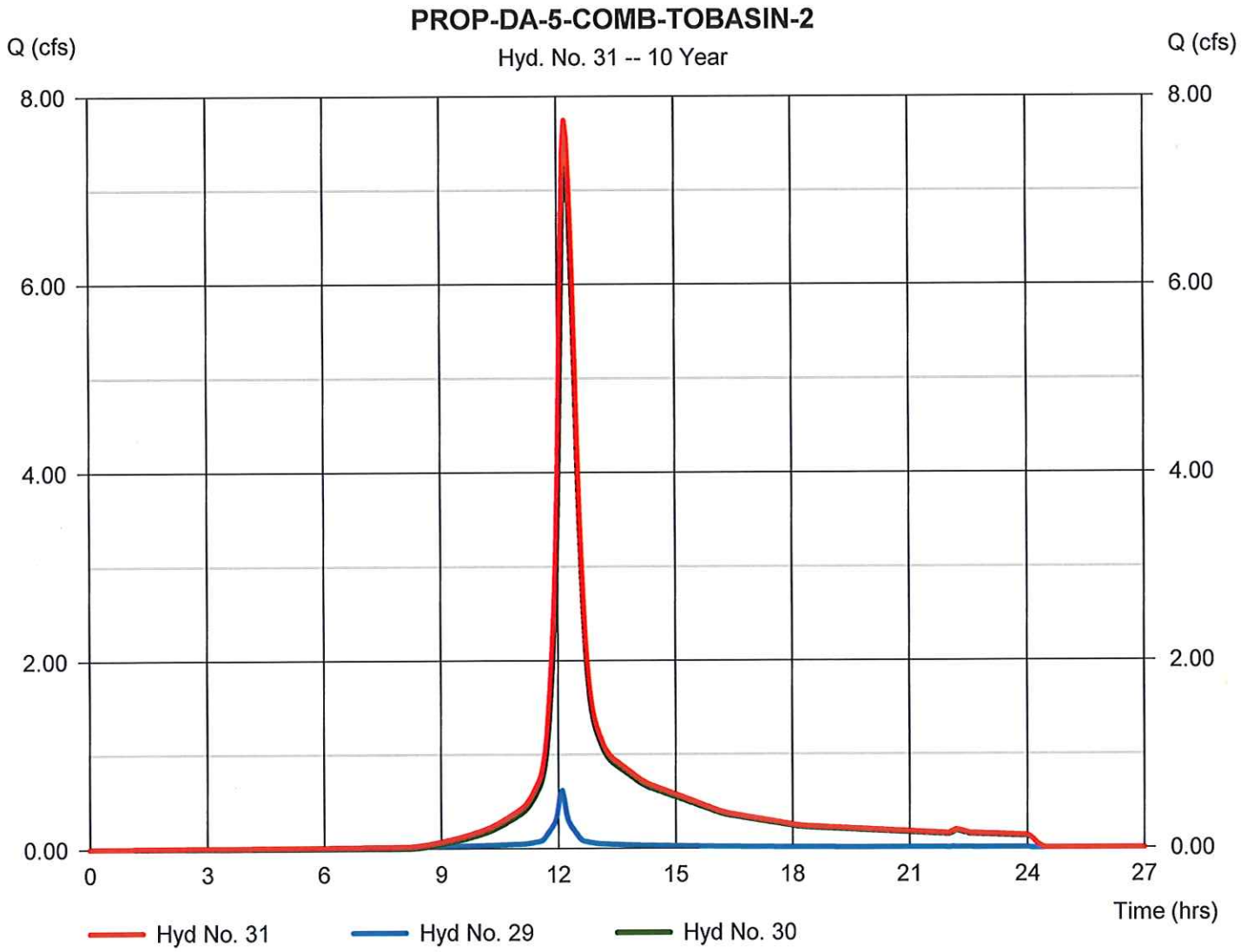
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 31

PROP-DA-5-COMB-TOBASIN-2

Hydrograph type	= Combine	Peak discharge	= 7.743 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 35,280 cuft
Inflow hyds.	= 29, 30	Contrib. drain. area	= 2.800 ac



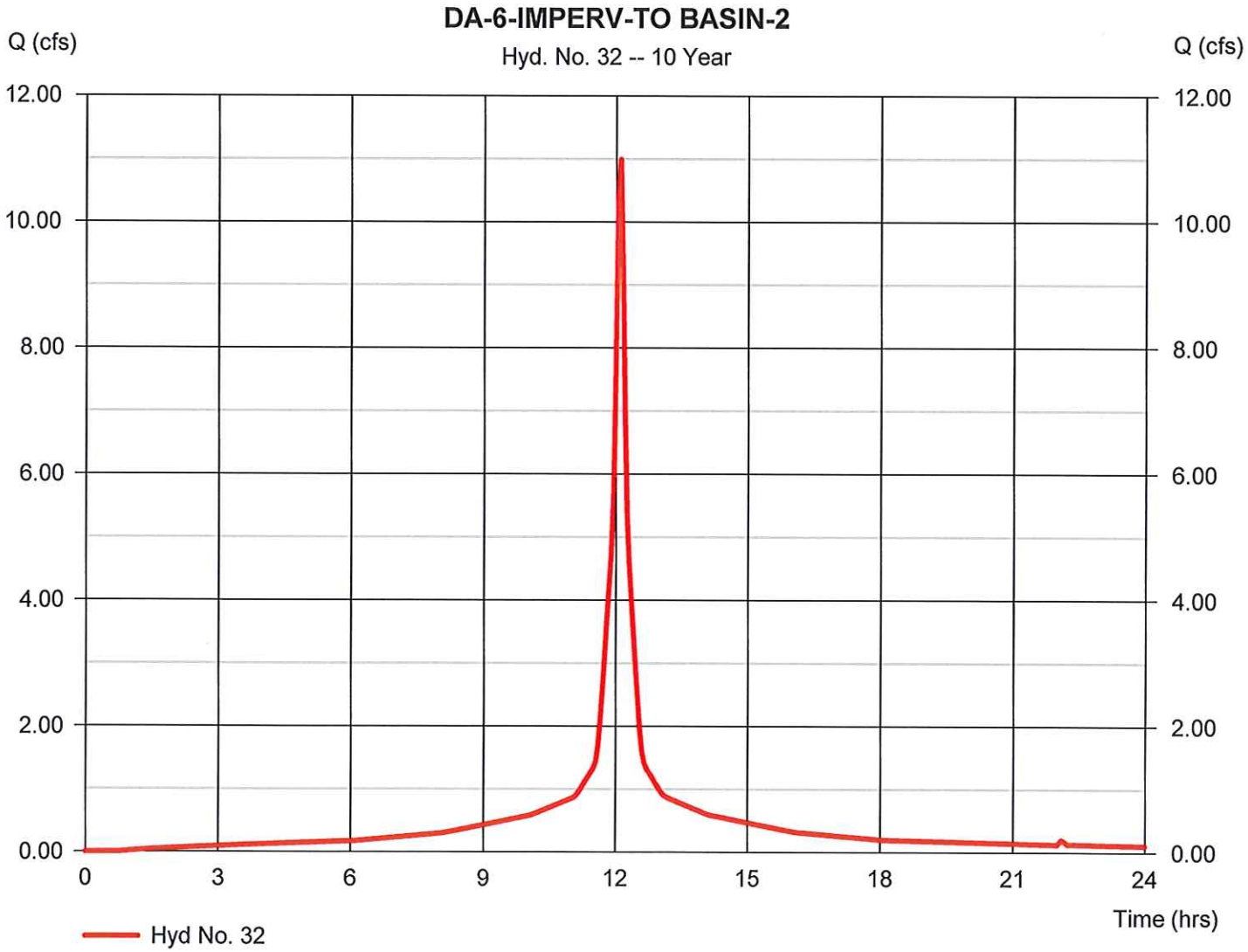
Hydrograph Report

Hyd. No. 32

DA-6-IMPERV-TO BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 10.99 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 42,362 cuft
Drainage area	= 2.120 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.120 x 98)] / 2.120



Hydrograph Report

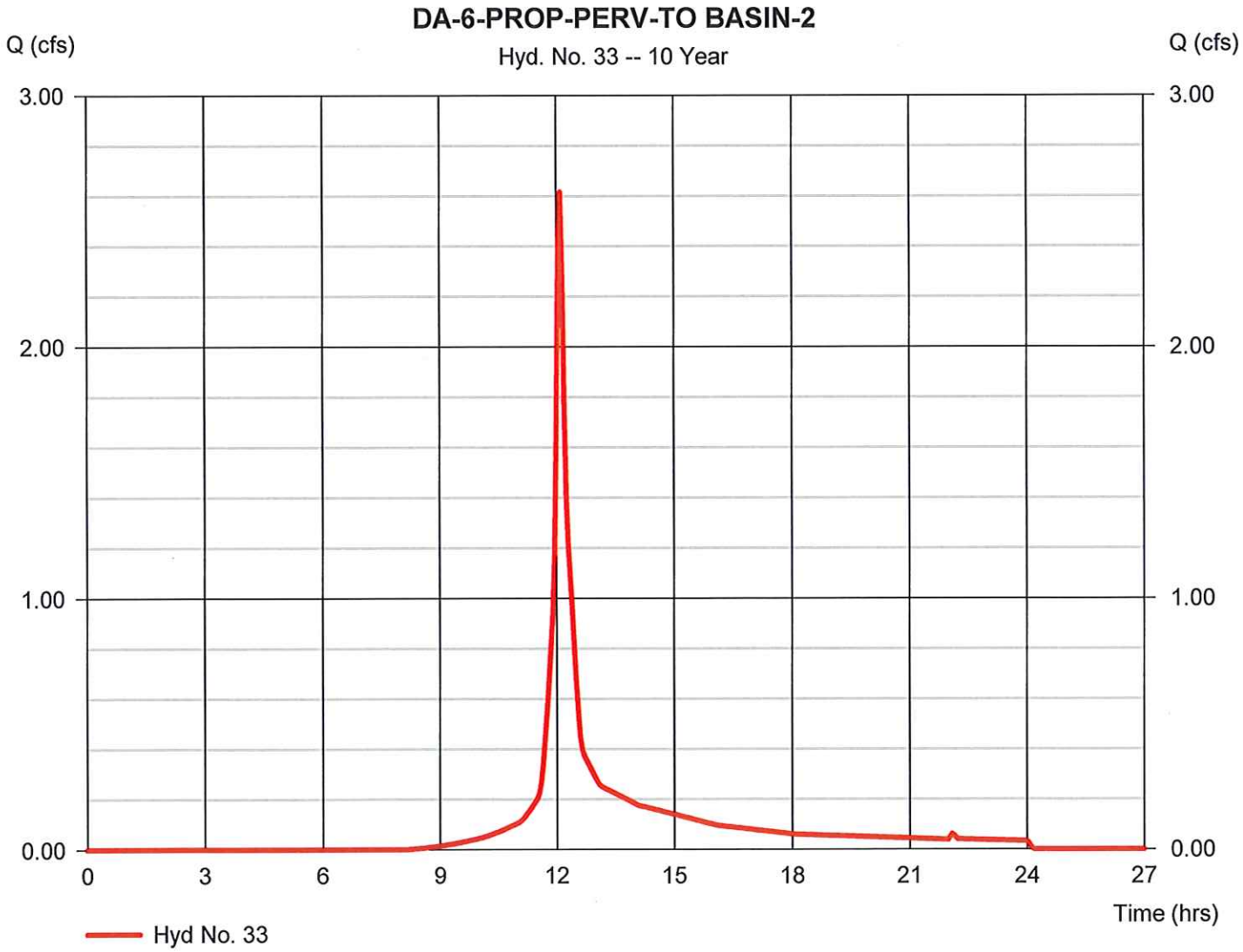
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 33

DA-6-PROP-PERV-TO BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 2.617 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 8,700 cuft
Drainage area	= 0.780 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.80 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(7.026 x 79)] / 0.780

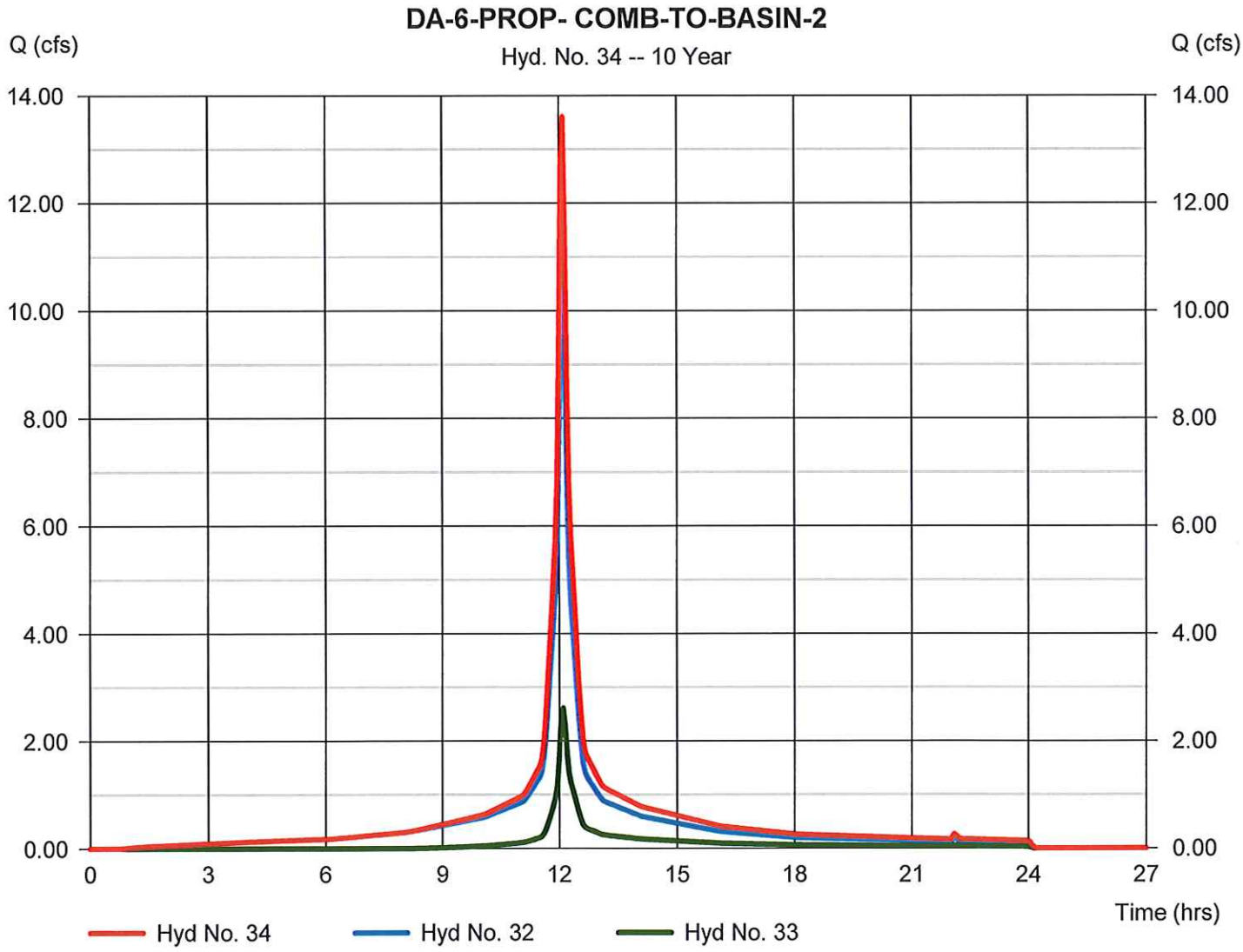


Hydrograph Report

Hyd. No. 34

DA-6-PROP- COMB-TO-BASIN-2

Hydrograph type	= Combine	Peak discharge	= 13.61 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 51,063 cuft
Inflow hyds.	= 32, 33	Contrib. drain. area	= 2.900 ac



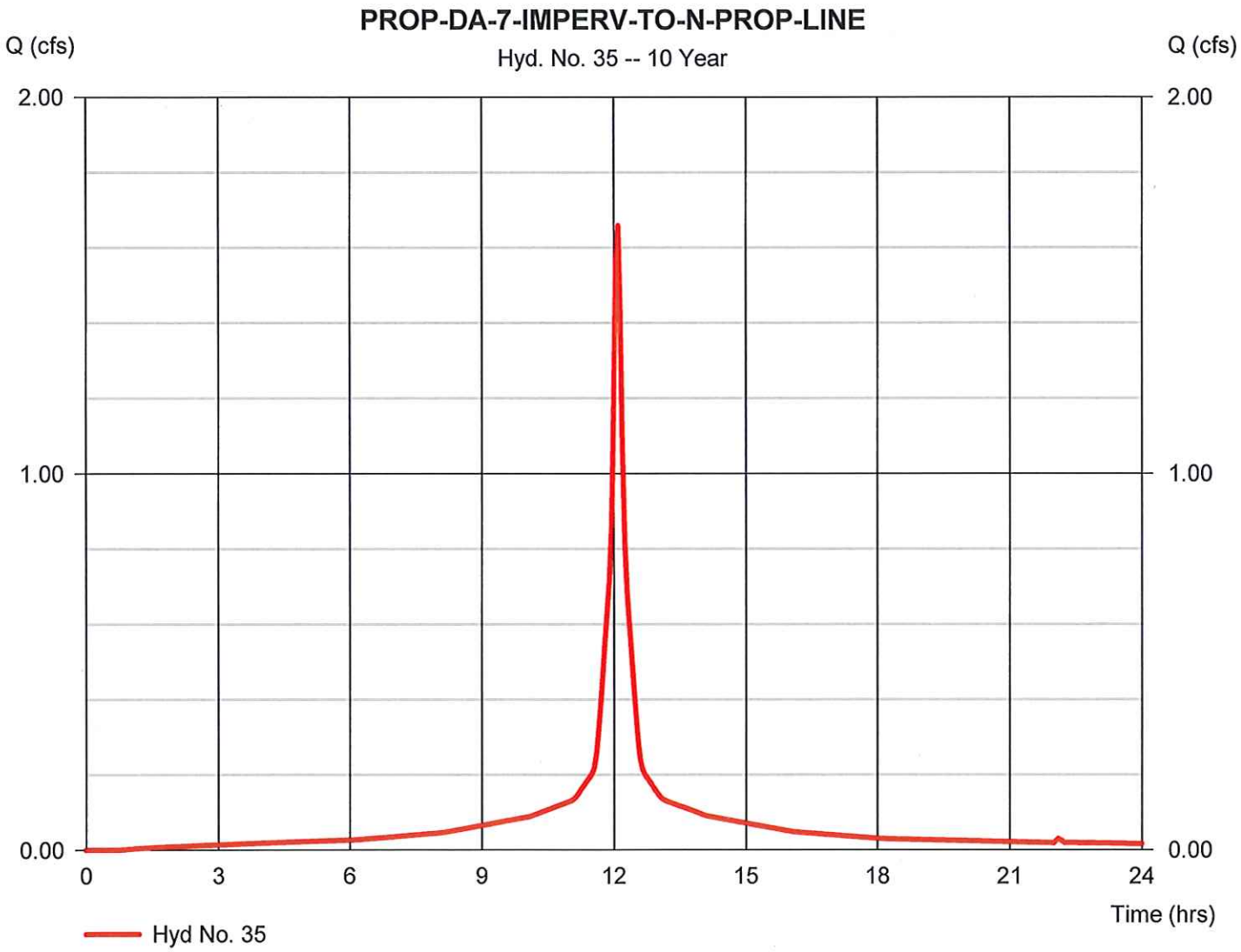
Hydrograph Report

Hyd. No. 35

PROP-DA-7-IMPERV-TO-N-PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 1.659 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 6,394 cuft
Drainage area	= 0.320 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.320 x 98)] / 0.320



Hydrograph Report

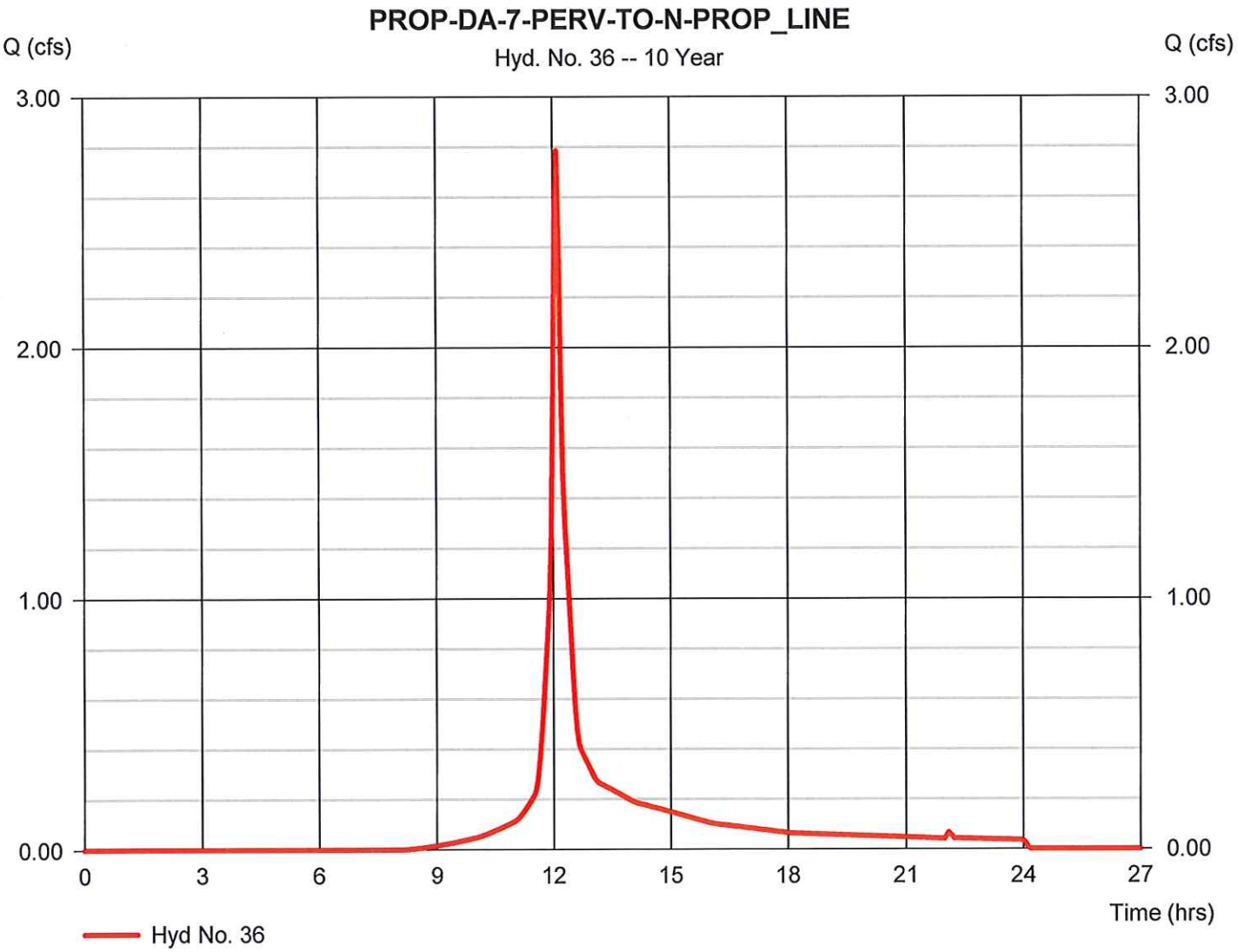
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 36

PROP-DA-7-PERV-TO-N-PROP_LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 2.784 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 9,258 cuft
Drainage area	= 0.830 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 74)] / 0.830

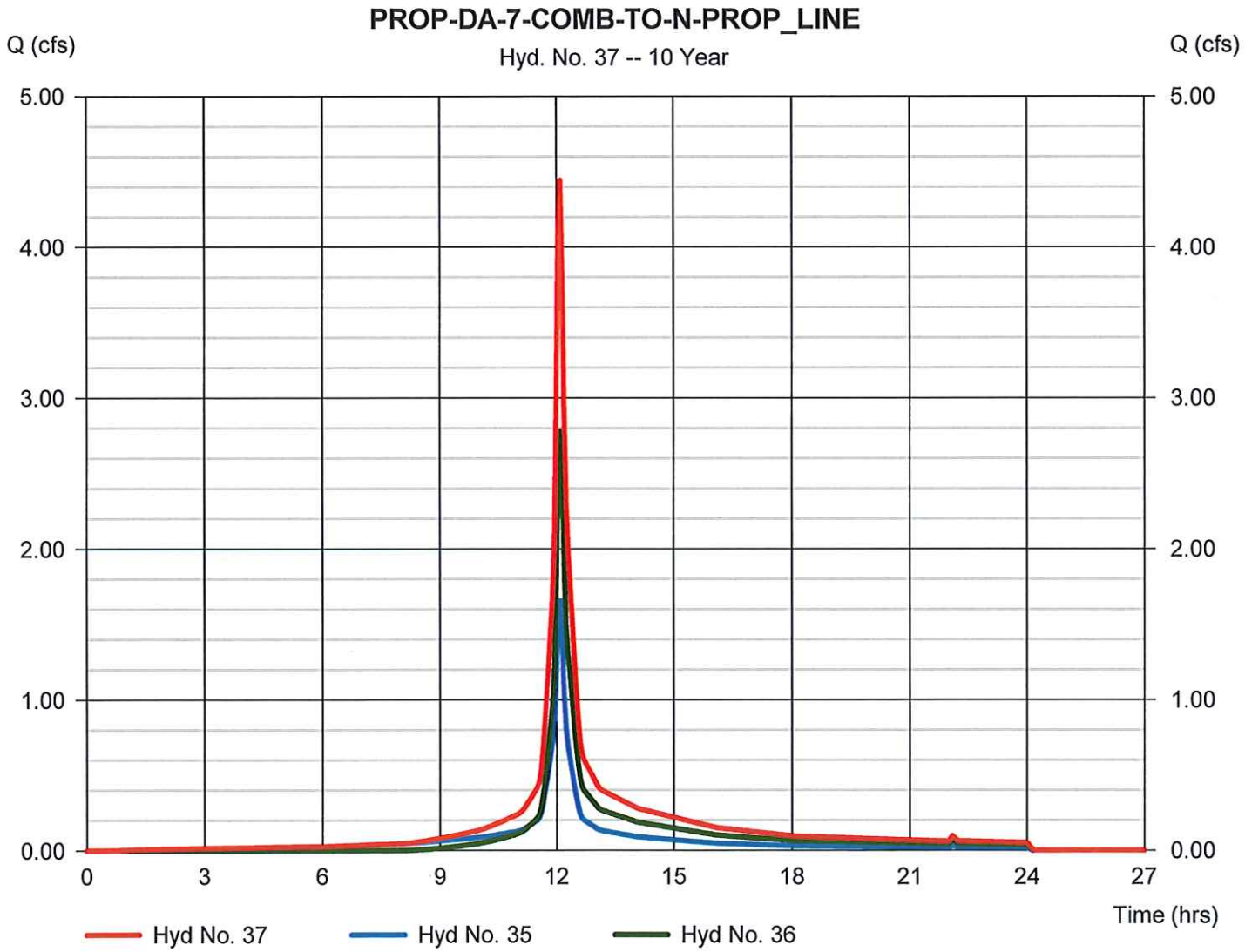


Hydrograph Report

Hyd. No. 37

PROP-DA-7-COMB-TO-N-PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 4.443 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 15,652 cuft
Inflow hyds.	= 35, 36	Contrib. drain. area	= 1.150 ac



Hydrograph Report

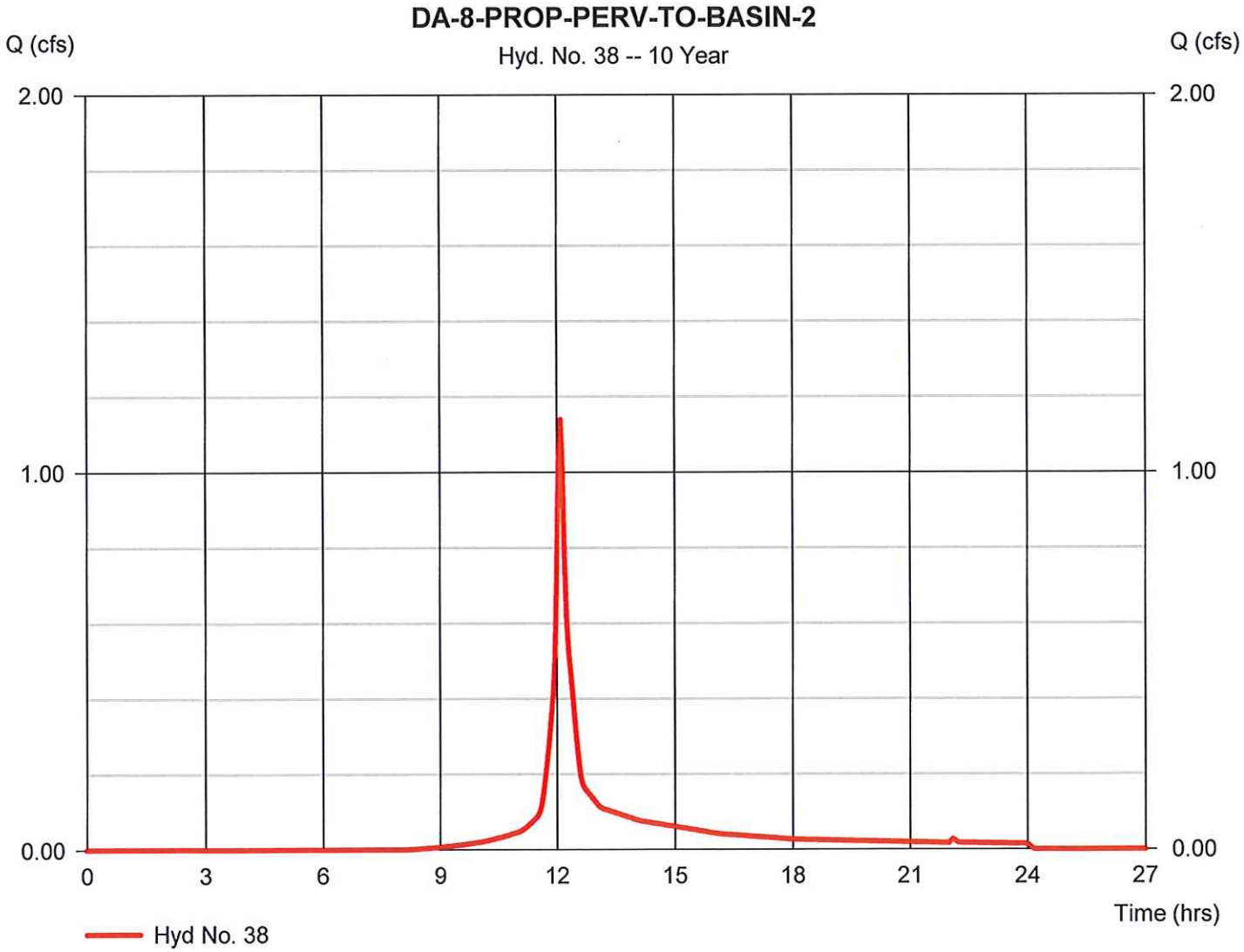
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 38

DA-8-PROP-PERV-TO-BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 1.141 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 3,792 cuft
Drainage area	= 0.340 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.50 min
Total precip.	= 6.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.340 x 74)] / 0.340



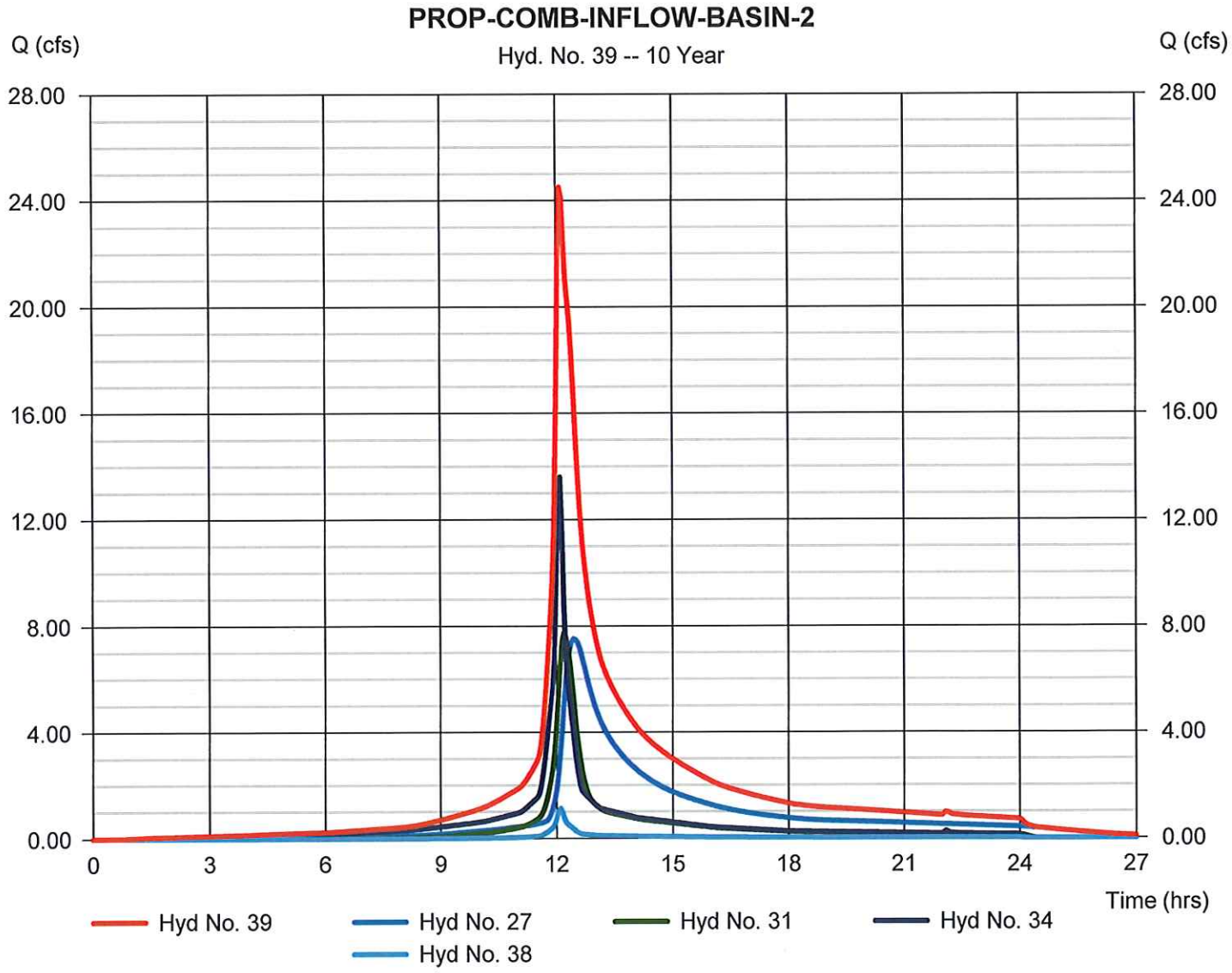
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 39

PROP-COMB-INFLOW-BASIN-2

Hydrograph type	= Combine	Peak discharge	= 24.50 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 166,115 cuft
Inflow hyds.	= 27, 31, 34, 38	Contrib. drain. area	= 0.340 ac



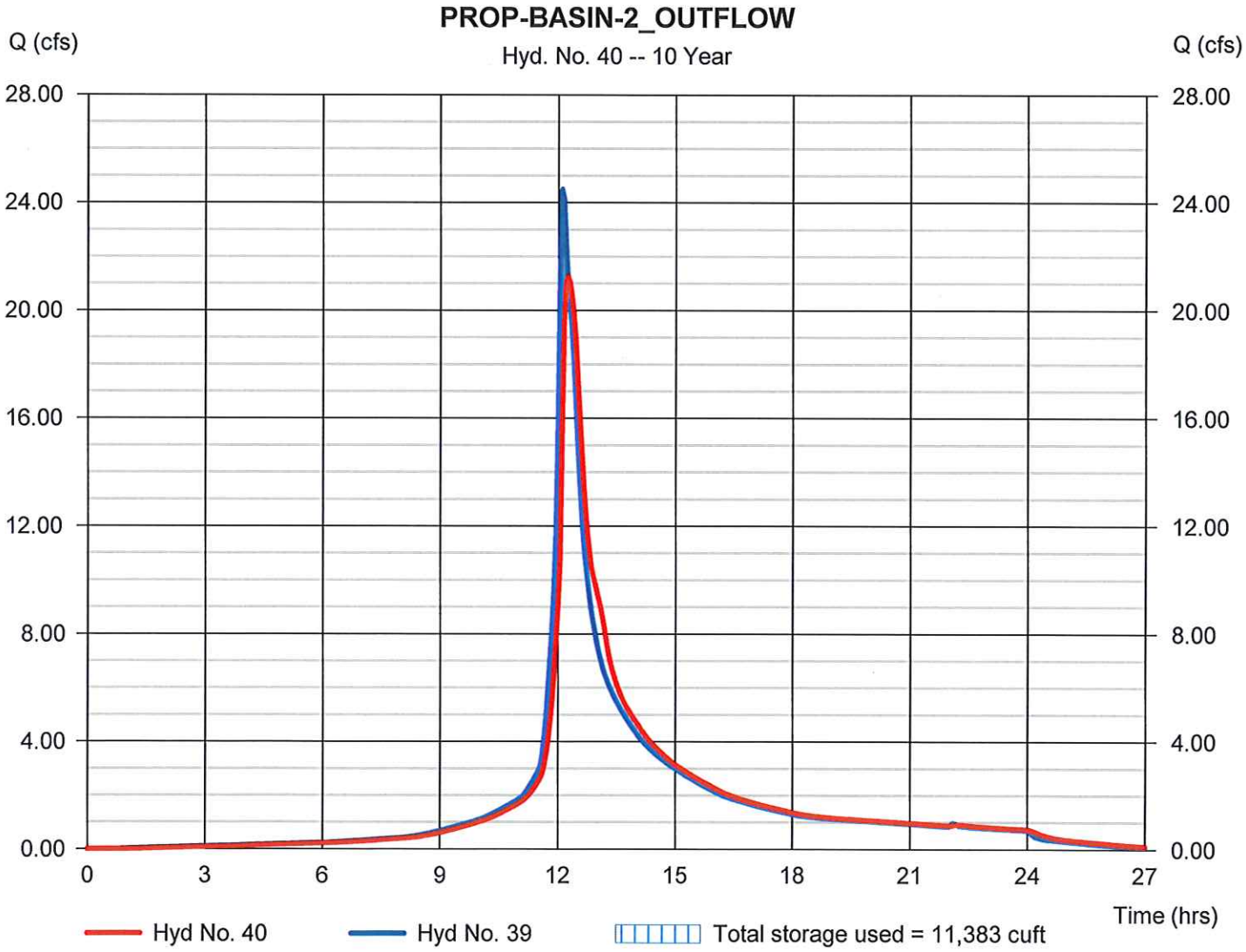
Hydrograph Report

Hyd. No. 40

PROP-BASIN-2_OUTFLOW

Hydrograph type	= Reservoir	Peak discharge	= 21.27 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.25 hrs
Time interval	= 3 min	Hyd. volume	= 166,112 cuft
Inflow hyd. No.	= 39 - PROP-COMB-INFLOW-BASIN-2	Max. Elevation	= 76.91 ft
Reservoir name	= POND-2	Max. Storage	= 11,383 cuft

Storage Indication method used.



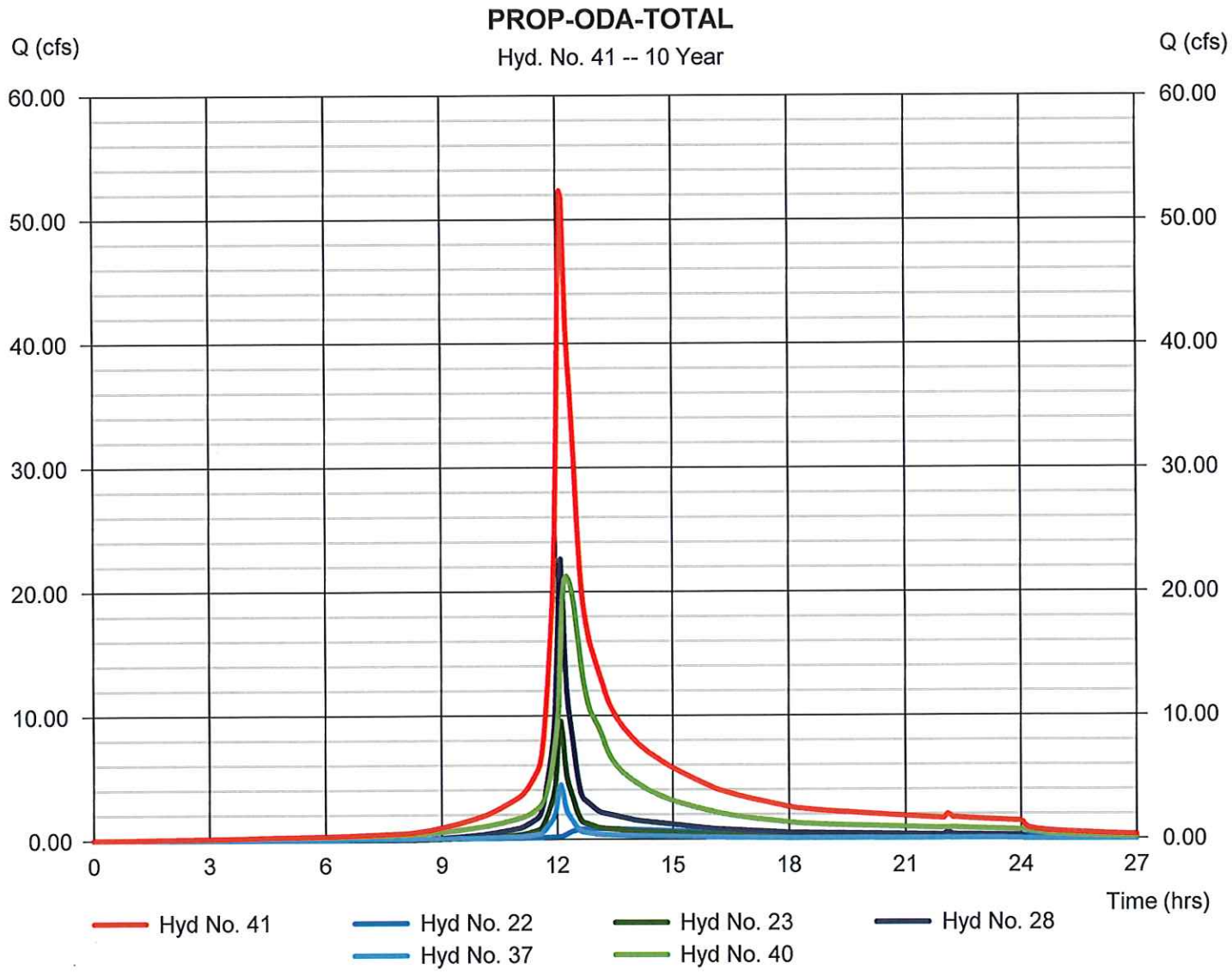
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 41

PROP-ODA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 52.33 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 321,223 cuft
Inflow hyds.	= 22, 23, 28, 37, 40	Contrib. drain. area	= 9.600 ac



Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	182.04	3	729	734,552	------	------	------	EX-ODA
2	SCS Runoff	31.66	3	729	126,248	------	------	------	EX-DA-2-DISCH-S-PROP-LINE
3	SCS Runoff	10.02	3	726	39,207	------	------	------	EX-DA-3_IMPRV-DISCH-EX_PND
4	SCS Runoff	41.50	3	729	165,507	------	------	------	EX-DA-3_PERV-DISCH-EX_PND
5	Combine	49.97	3	729	204,714	3, 4	------	------	EX-DA-3-COMB-INFLOW_EX_PND
6	Reservoir	49.64	3	729	204,709	5	96.83	11,098	EX-DA-3OUTFLOW-TO DA-4
7	SCS Runoff	6.427	3	726	25,152	------	------	------	EX-DA_4_IMPRV--DISCH_E_PRO
8	SCS Runoff	67.10	3	726	227,448	------	------	------	EX-DA-4_PERV-DISCH-E_PROP-L
9	Combine	73.52	3	726	252,600	7, 8	------	------	EX-DA-4COMB-DISCH_E_PROP_L
10	Combine	118.88	3	726	457,309	6, 9	------	------	EX-DA-3-EX_PND-OUT-&-EX-DA-4
11	SCS Runoff	20.79	3	726	81,373	------	------	------	EX-DA-6_IMPERV-DISCH_E_PRO
12	SCS Runoff	5.525	3	729	22,030	------	------	------	EX-DA-6_PERV-DISCH_E_PROP-L
13	Combine	26.00	3	726	103,403	11, 12	------	------	EX_DA-6-COMB_DISCH_E_PROP
14	Combine	144.88	3	726	560,712	6, 9, 13	------	------	COMB-DA-3+4+6_EST-PROP_LIN
15	SCS Runoff	3.025	3	726	11,836	------	------	------	EX-DA-7_IMPERV-DISCH-ERLED
16	SCS Runoff	2.734	3	726	9,267	------	------	------	EX-DA-7-PERV-DISCH-ERLEDON_
17	Combine	5.758	3	726	21,103	15, 16	------	------	EX-DA-7_COMB_DISCH-ERLEDO
18	Combine	180.46	3	726	708,064	2, 6, 9, 13, 17	------	------	EX-ODA-TOTAL
19	SCS Runoff	11.06	3	726	43,276	------	------	------	PROP-DA-1-IMPERV-DISCH-PON
20	SCS Runoff	4.775	3	732	21,553	------	------	------	PROP-DA-1-PERV-DISCH_POND-
21	Combine	15.02	3	726	64,829	19, 20	------	------	PROP-DA-1COMB--POND-1_INFL
22	Reservoir	5.634	3	747	64,750	21	114.94	30,273	PROP-DA-1-PND-1-O-FLOW
23	SCS Runoff	22.26	3	726	75,463	------	------	------	PROP-DA-2-DISCH_S_PROP_LIN
24	SCS Runoff	10.68	3	726	41,796	------	------	------	PROP-DA-3-IMPERV-TO-EX_PON
25	SCS Runoff	31.80	3	729	126,813	------	------	------	PROP-DA-3-PERV-TO-EX_POND-
26	Combine	40.83	3	729	168,609	24, 25	------	------	PROP-DA-3_COMB-EX_POND-B-I
27	Reservoir	27.37	3	738	168,589	26	98.44	47,018	PROP-DA-3-EX-PND_B-OUT
28	SCS Runoff	52.72	3	726	178,728	------	------	------	DA-4-PROP-PERV-DISCH-E_PRO
29	SCS Runoff	1.134	3	726	4,439	------	------	------	DA-5-PROP-IMPERV-BASIN-2-INF
30	SCS Runoff	17.29	3	732	78,058	------	------	------	DA5-PROP-PERV-BASIN-2-INFLO
31	Combine	18.01	3	732	82,496	29, 30	------	------	PROP-DA-5-COMB-TOBASIN-2
32	SCS Runoff	20.04	3	726	78,414	------	------	------	DA-6-IMPERV-TO BASIN-2
33	SCS Runoff	6.092	3	726	20,653	------	------	------	DA-6-PROP-PERV-TO BASIN-2

Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
34	Combine	26.13	3	726	99,067	32, 33	------	------	DA-6-PROP- COMB-TO-BASIN-2
35	SCS Runoff	3.025	3	726	11,836	------	------	------	PROP-DA-7-IMPERV-TO-N-PROP-
36	SCS Runoff	6.483	3	726	21,977	------	------	------	PROP-DA-7-PERV-TO-N-PROP_LI
37	Combine	9.508	3	726	33,813	35, 36	------	------	PROP-DA-7-COMB-TO-N-PROP_LI
38	SCS Runoff	2.656	3	726	9,003	------	------	------	DA-8-PROP-PERV-TO-BASIN-2
39	Combine	58.01	3	729	359,155	27, 31, 34, 38	------	------	PROP-COMB-INFLOW-BASIN-2
40	Reservoir	45.59	3	744	359,152	39	79.50	34,737	PROP-BASIN-2_OUTFLOW
41	Combine	121.17	3	726	711,906	22, 23, 28, 37, 40	------	------	PROP-ODA-TOTAL

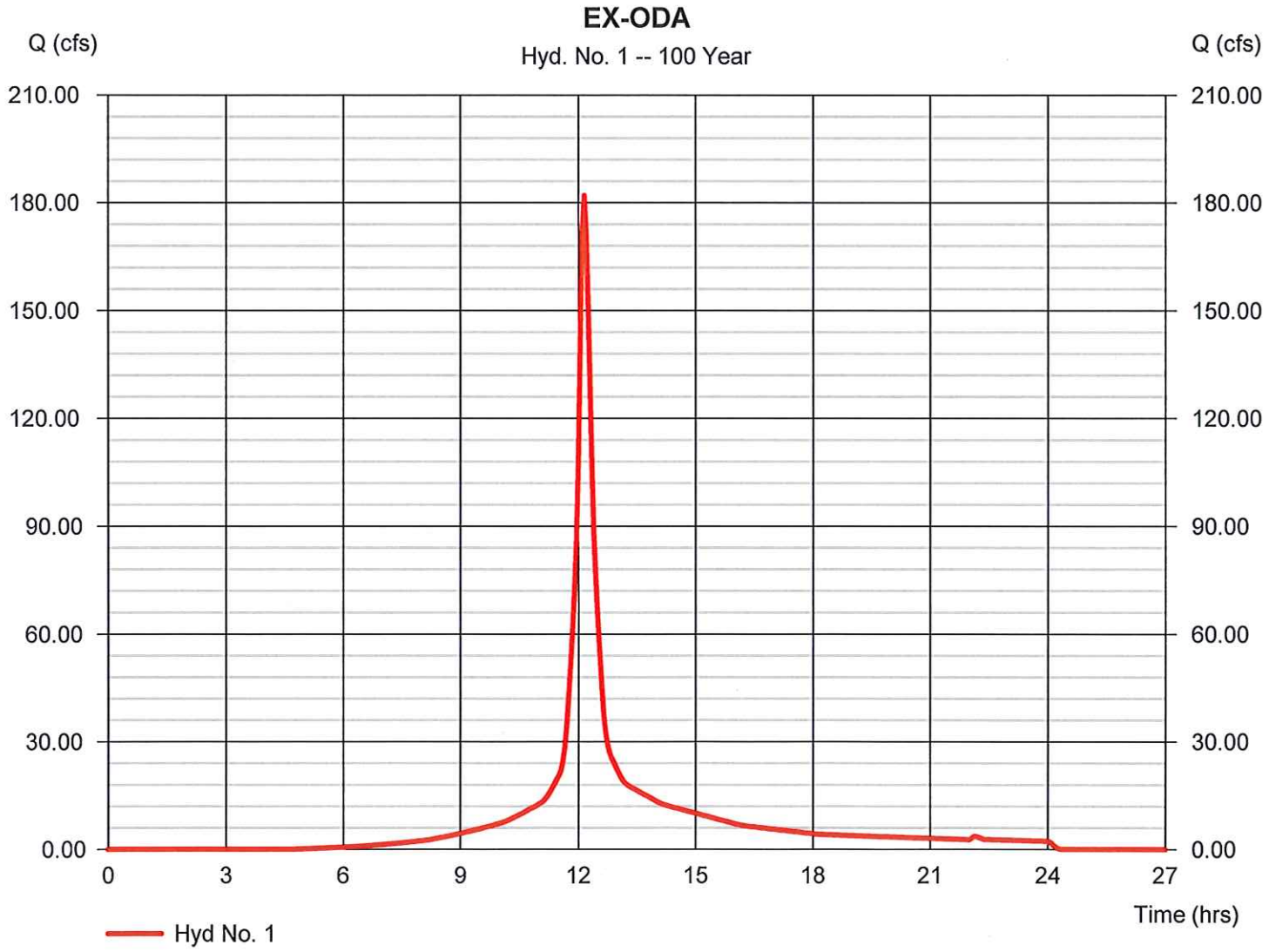
Hydrograph Report

Hyd. No. 1

EX-ODA

Hydrograph type	= SCS Runoff	Peak discharge	= 182.04 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 734,552 cuft
Drainage area	= 24.320 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.50 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.270 x 98) + (20.050 x 74)] / 24.320



Hydrograph Report

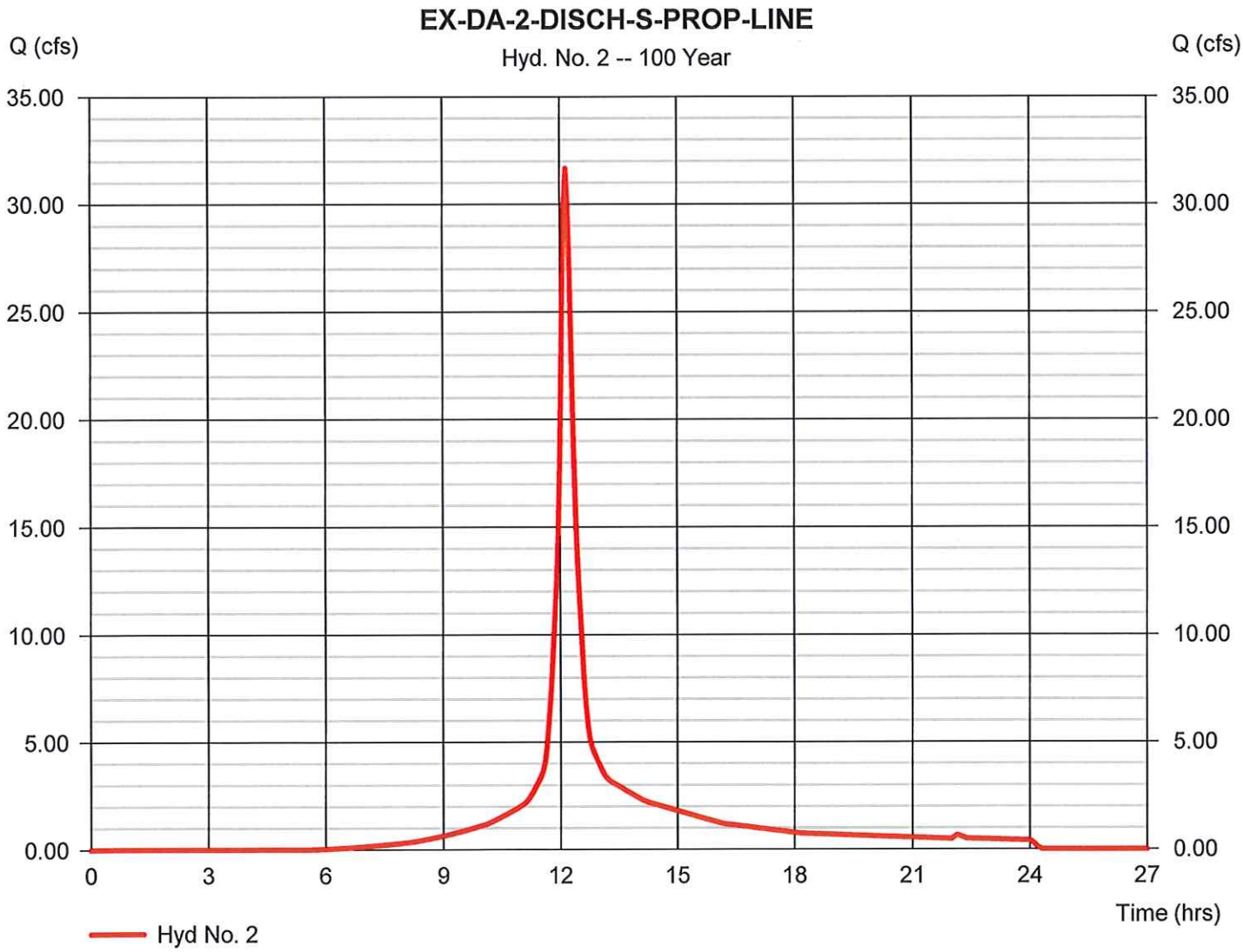
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 2

EX-DA-2-DISCH-S-PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 31.66 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 126,248 cuft
Drainage area	= 4.470 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.70 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.470 x 74)] / 4.470



Hydrograph Report

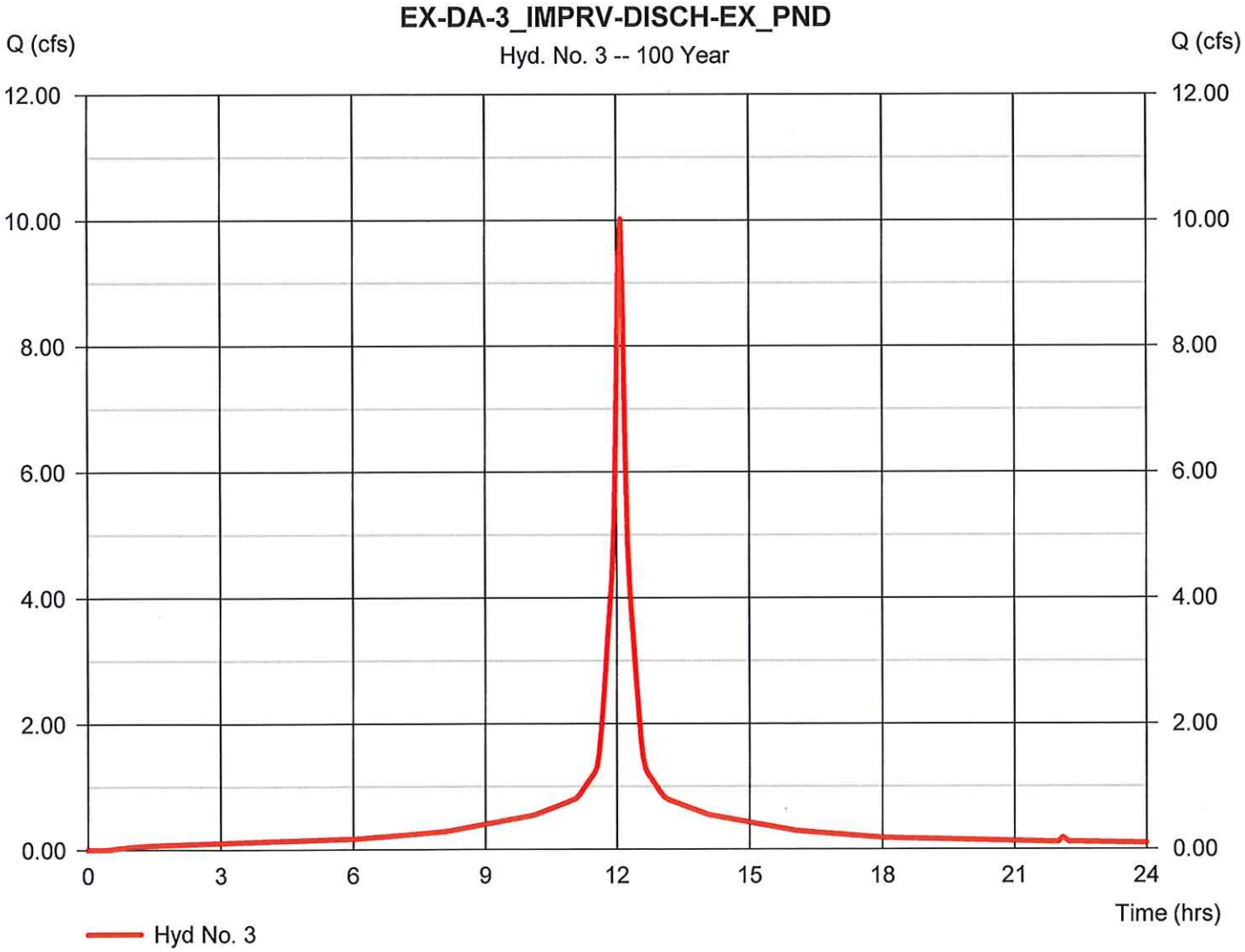
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 3

EX-DA-3_IMPRV-DISCH-EX_PND

Hydrograph type	= SCS Runoff	Peak discharge	= 10.02 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 39,207 cuft
Drainage area	= 1.060 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.060 x 98)] / 1.060



Hydrograph Report

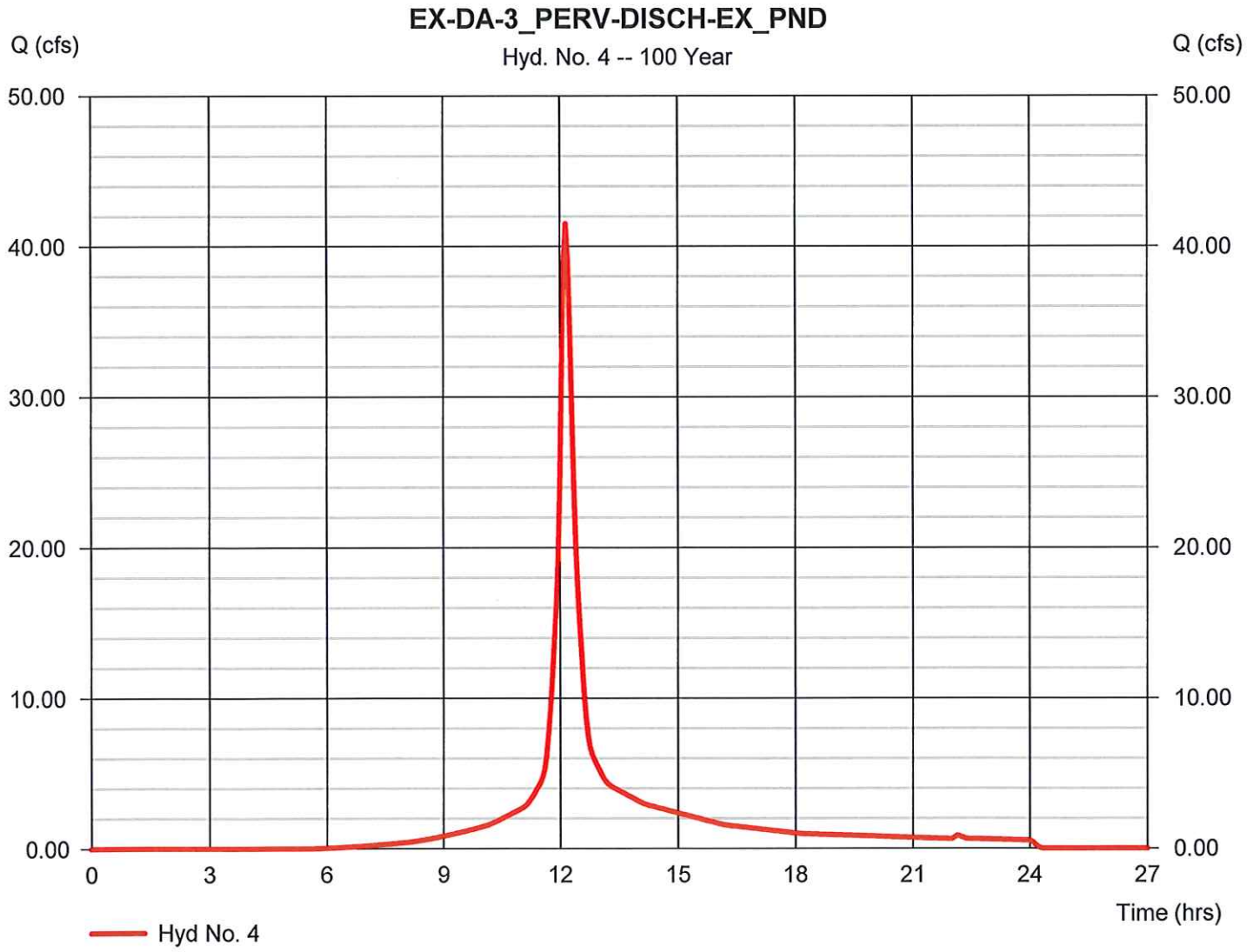
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 4

EX-DA-3_PERV-DISCH-EX_PND

Hydrograph type	= SCS Runoff	Peak discharge	= 41.50 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 165,507 cuft
Drainage area	= 5.860 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.50 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.860 x 74)] / 5.860



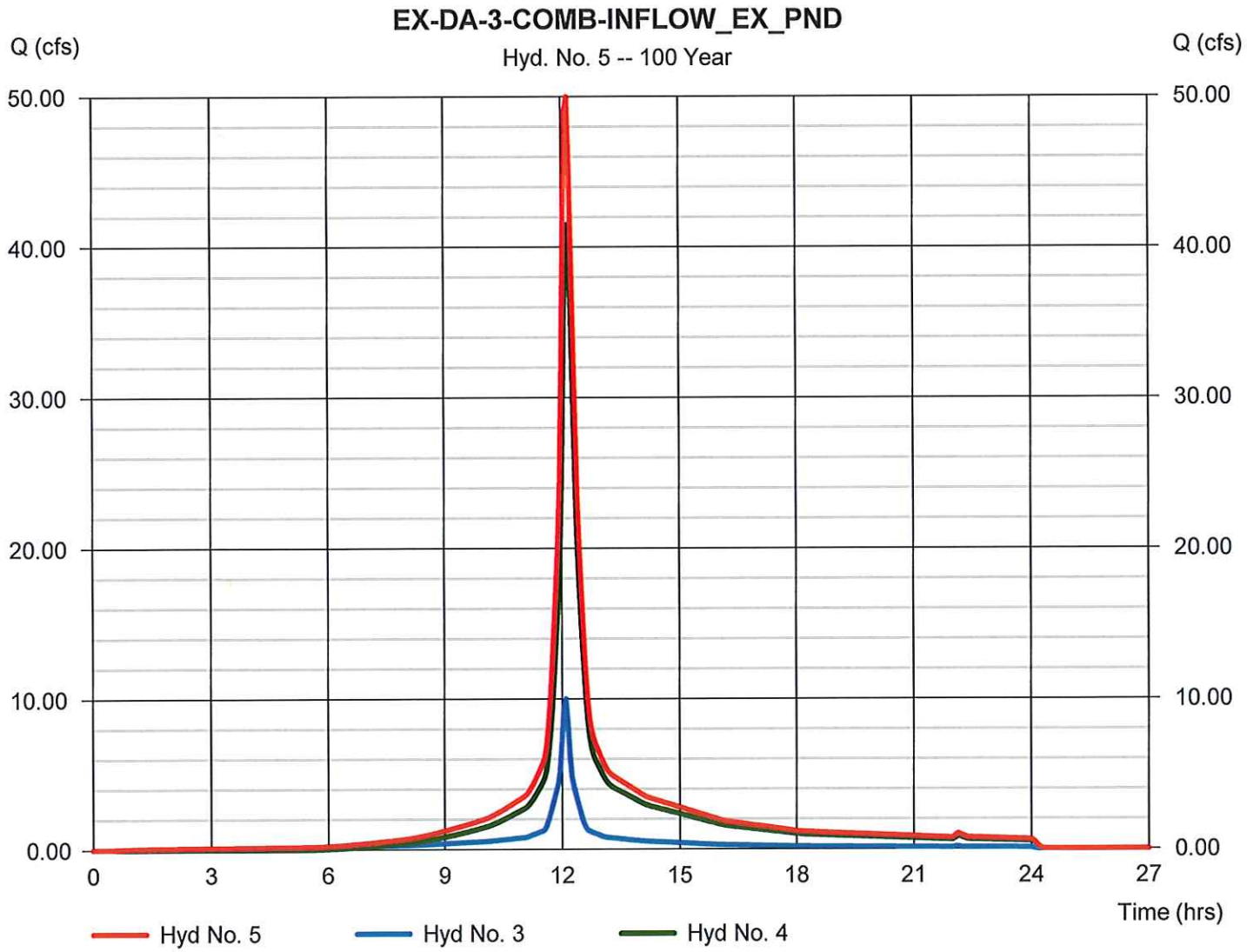
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 5

EX-DA-3-COMB-INFLOW_EX_PND

Hydrograph type	= Combine	Peak discharge	= 49.97 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 204,714 cuft
Inflow hyds.	= 3, 4	Contrib. drain. area	= 6.920 ac



Hydrograph Report

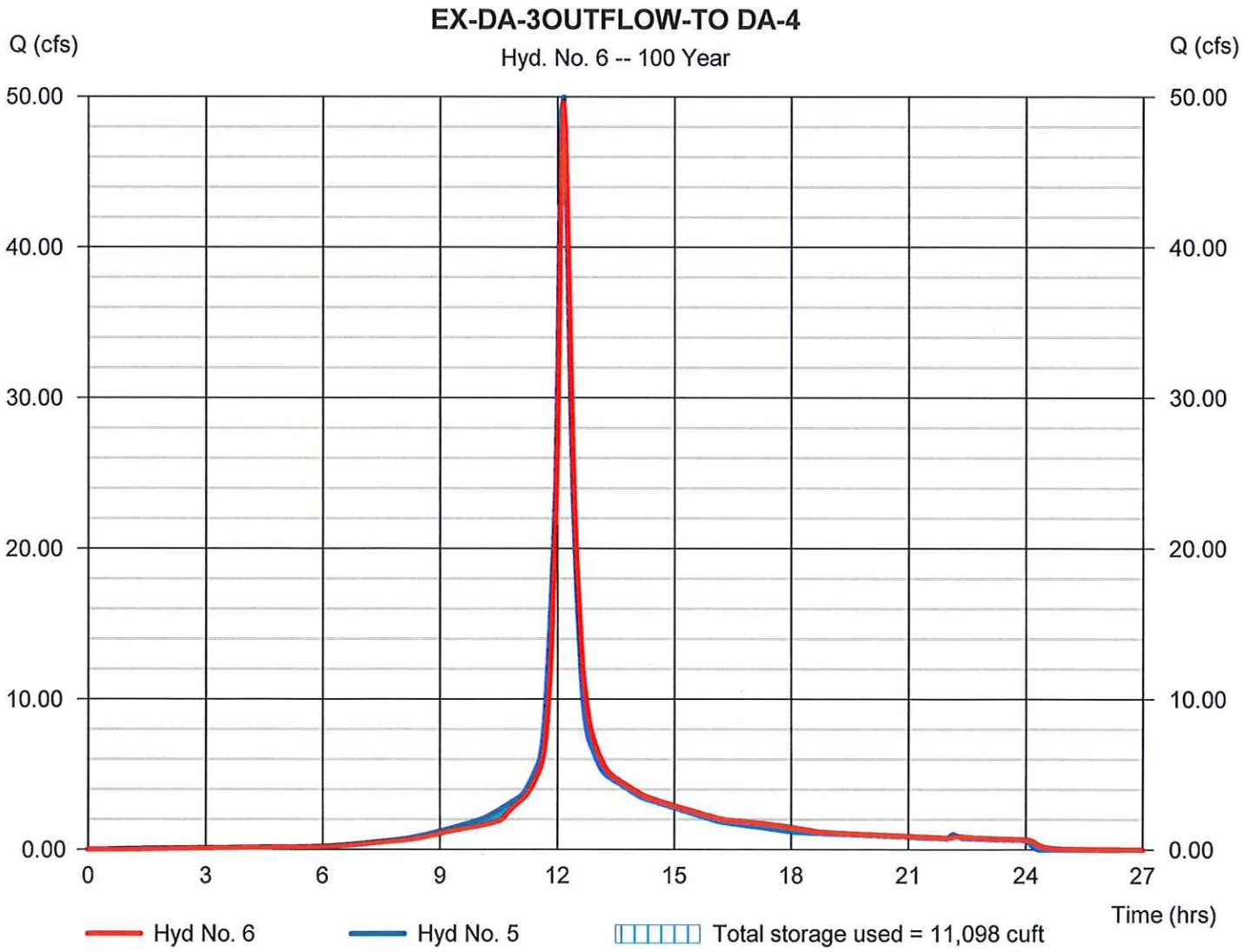
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 6

EX-DA-3OUTFLOW-TO DA-4

Hydrograph type	= Reservoir	Peak discharge	= 49.64 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 204,709 cuft
Inflow hyd. No.	= 5 - EX-DA-3-COMB-INFLOW-EX_PND	Max. Elevation	= 96.83 ft
Reservoir name	= Ex-PND-A-EX-DA-3	Max. Storage	= 11,098 cuft

Storage Indication method used.



Hydrograph Report

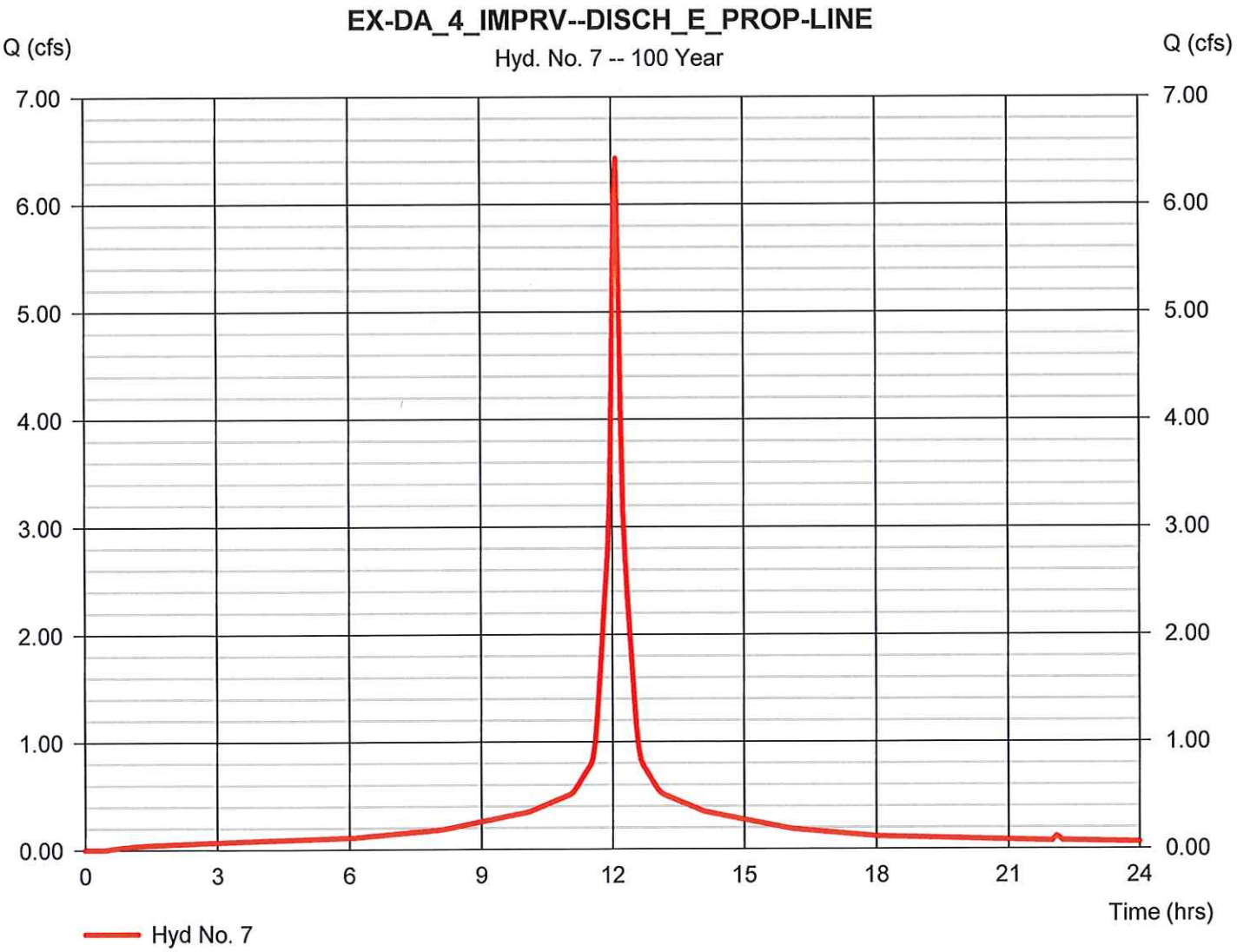
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 7

EX-DA_4_IMPRV--DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 6.427 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 25,152 cuft
Drainage area	= 0.680 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.680 x 98)] / 0.680



Hydrograph Report

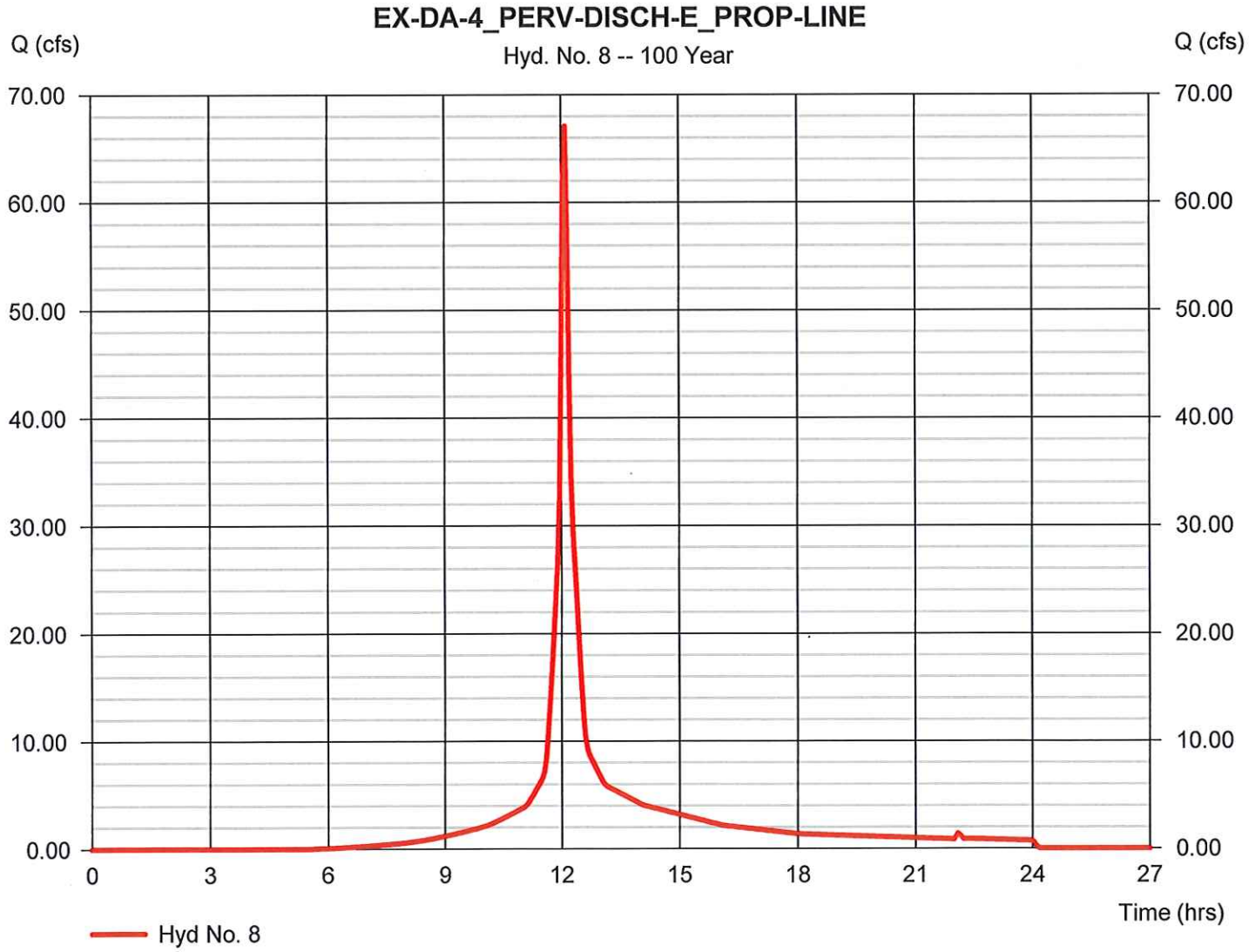
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 8

EX-DA-4_PERV-DISCH-E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 67.10 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 227,448 cuft
Drainage area	= 8.590 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.70 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(8.590 x 74)] / 8.590



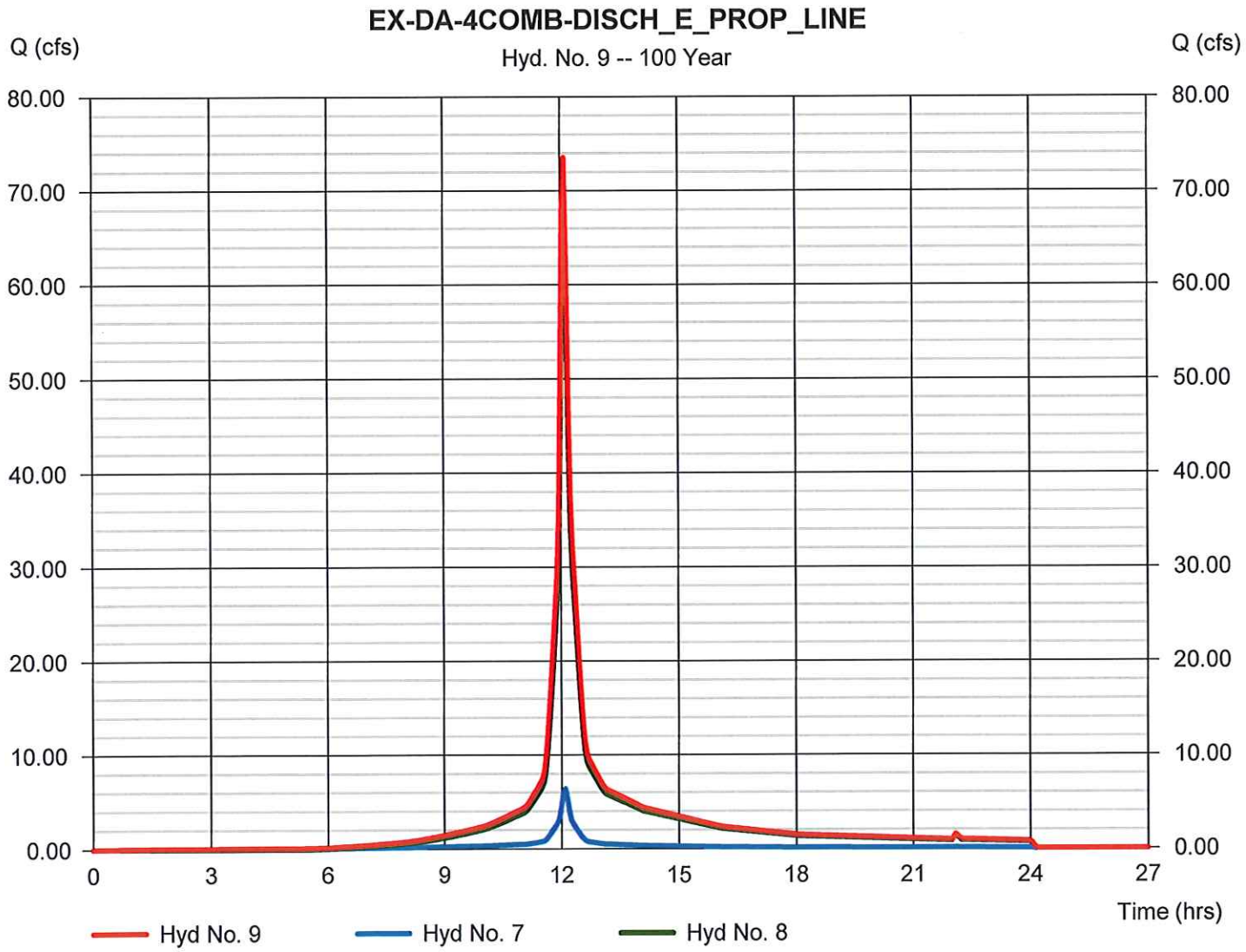
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 9

EX-DA-4COMB-DISCH_E_PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 73.52 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 252,600 cuft
Inflow hyds.	= 7, 8	Contrib. drain. area	= 9.270 ac

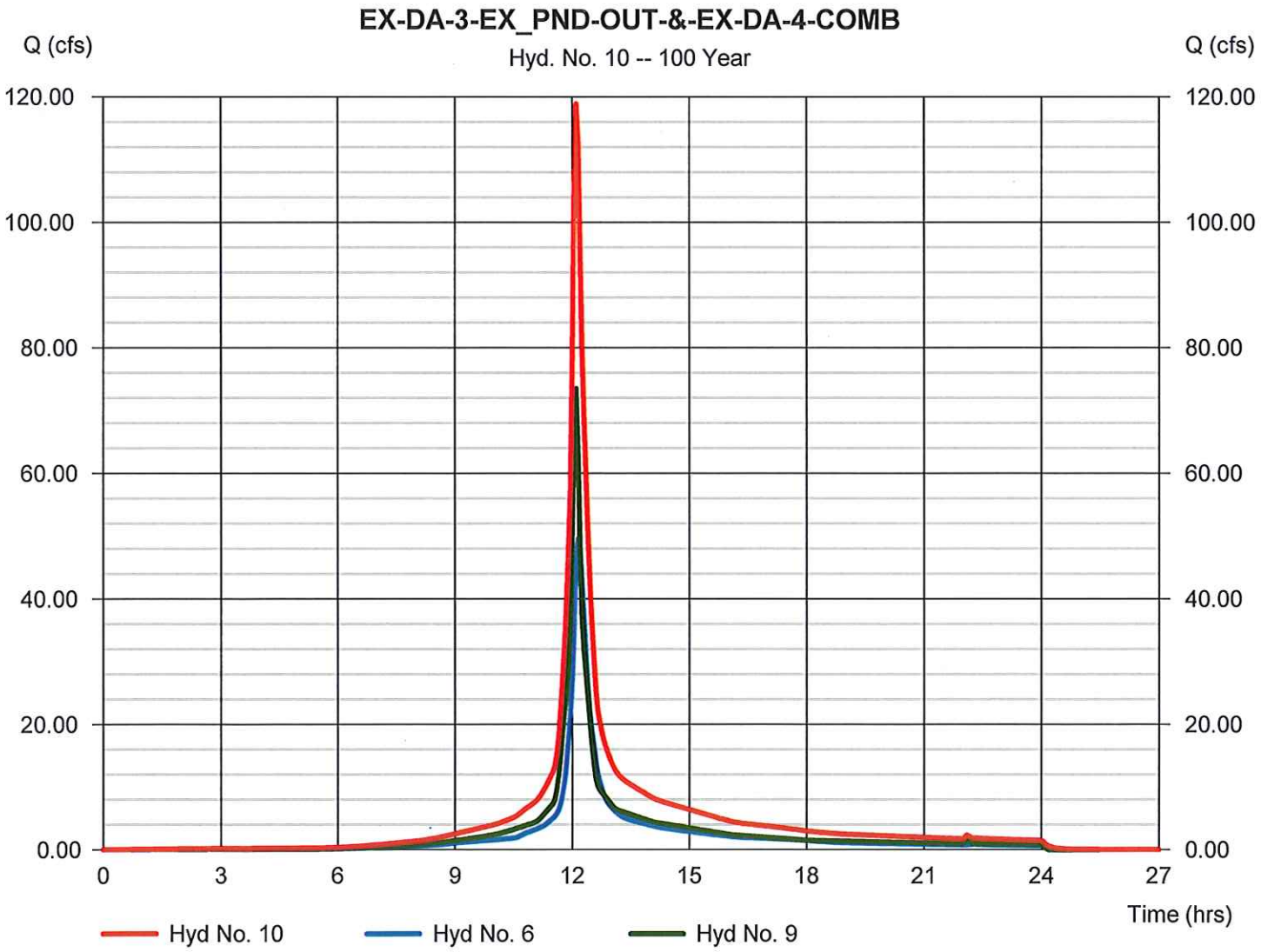


Hydrograph Report

Hyd. No. 10

EX-DA-3-EX_PND-OUT-&-EX-DA-4-COMB

Hydrograph type	= Combine	Peak discharge	= 118.88 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 457,309 cuft
Inflow hyds.	= 6, 9	Contrib. drain. area	= 0.000 ac



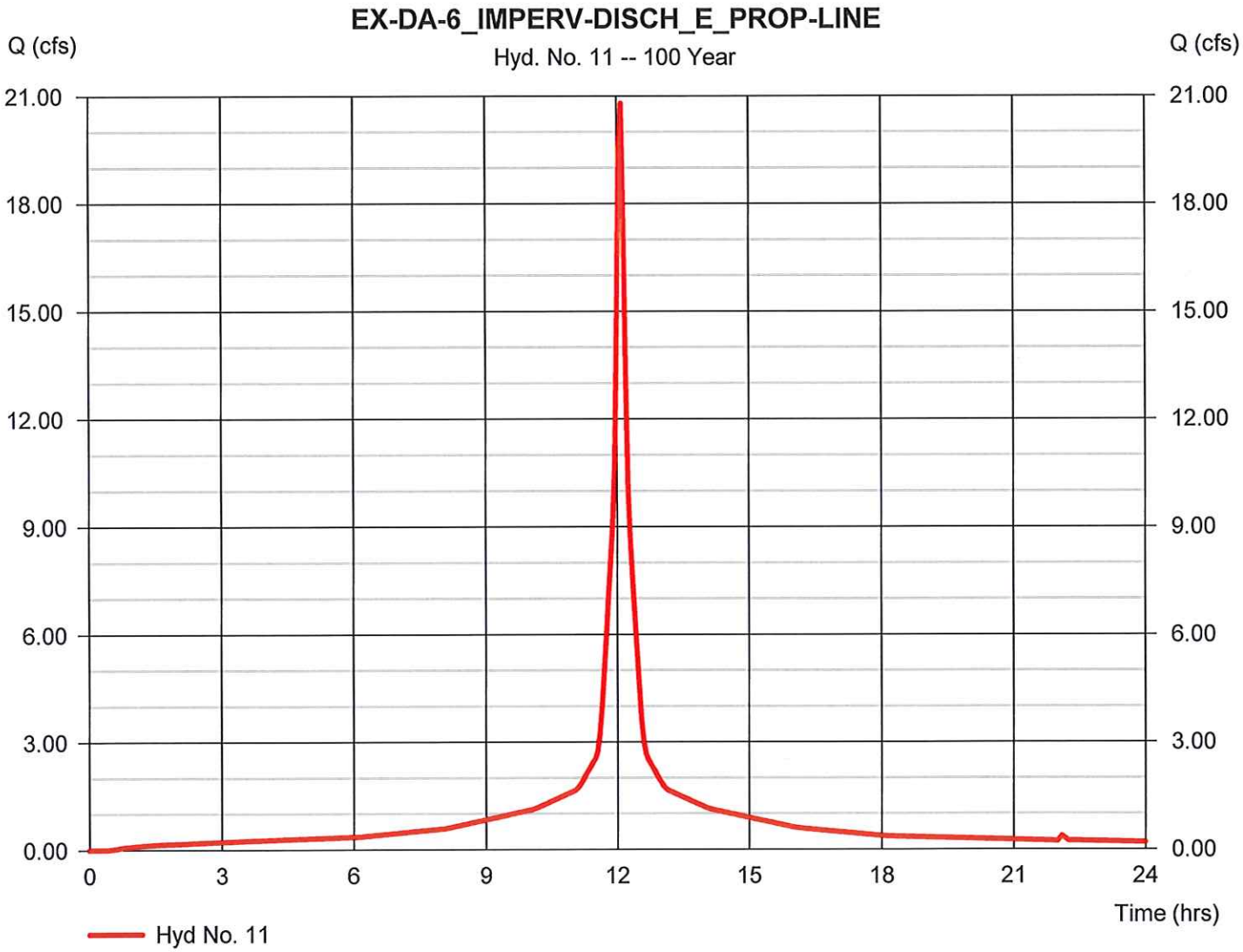
Hydrograph Report

Hyd. No. 11

EX-DA-6_IMPERV-DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 20.79 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 81,373 cuft
Drainage area	= 2.200 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.200 x 98)] / 2.200



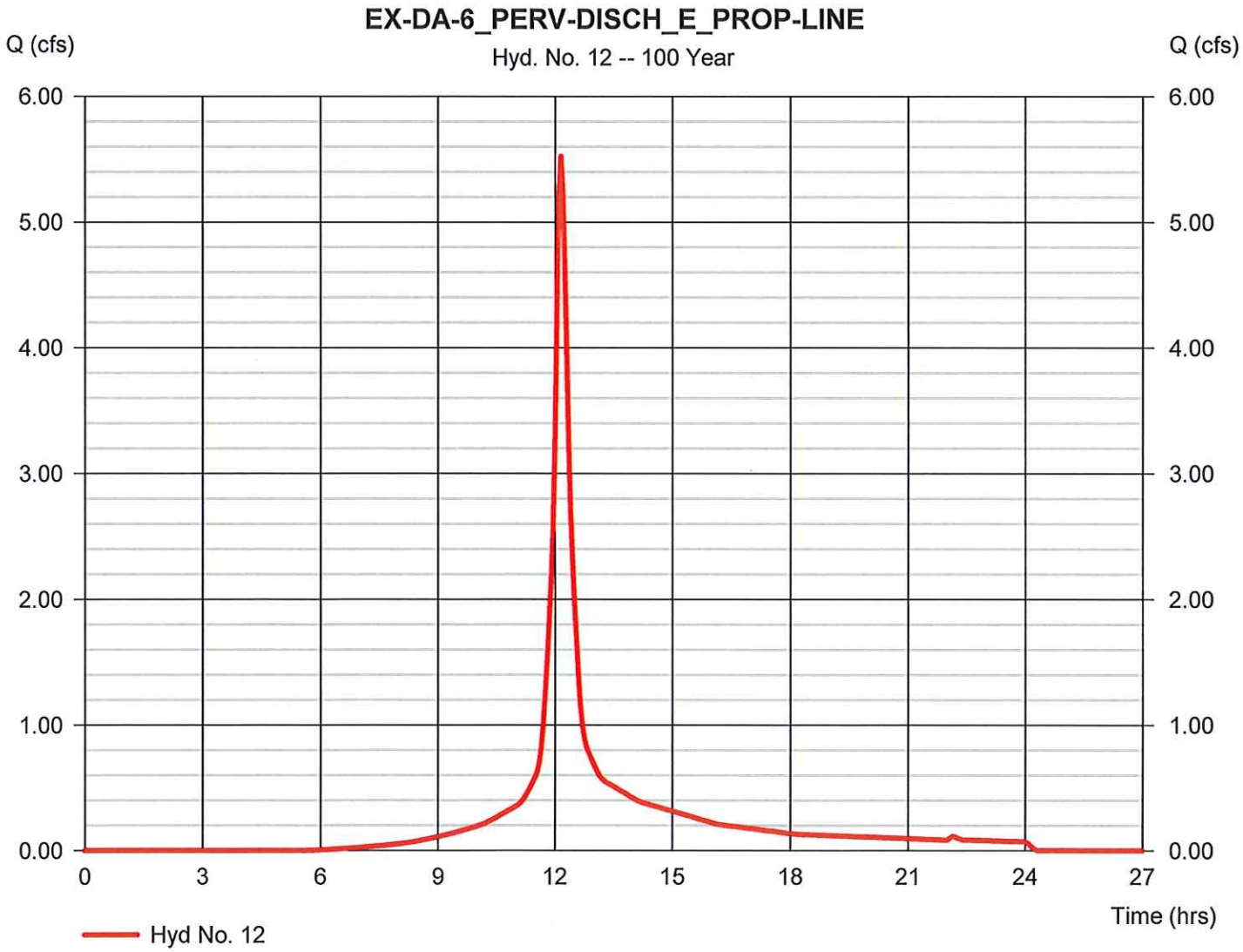
Hydrograph Report

Hyd. No. 12

EX-DA-6_PERV-DISCH_E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 5.525 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 22,030 cuft
Drainage area	= 0.780 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.90 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.780 x 74)] / 0.780

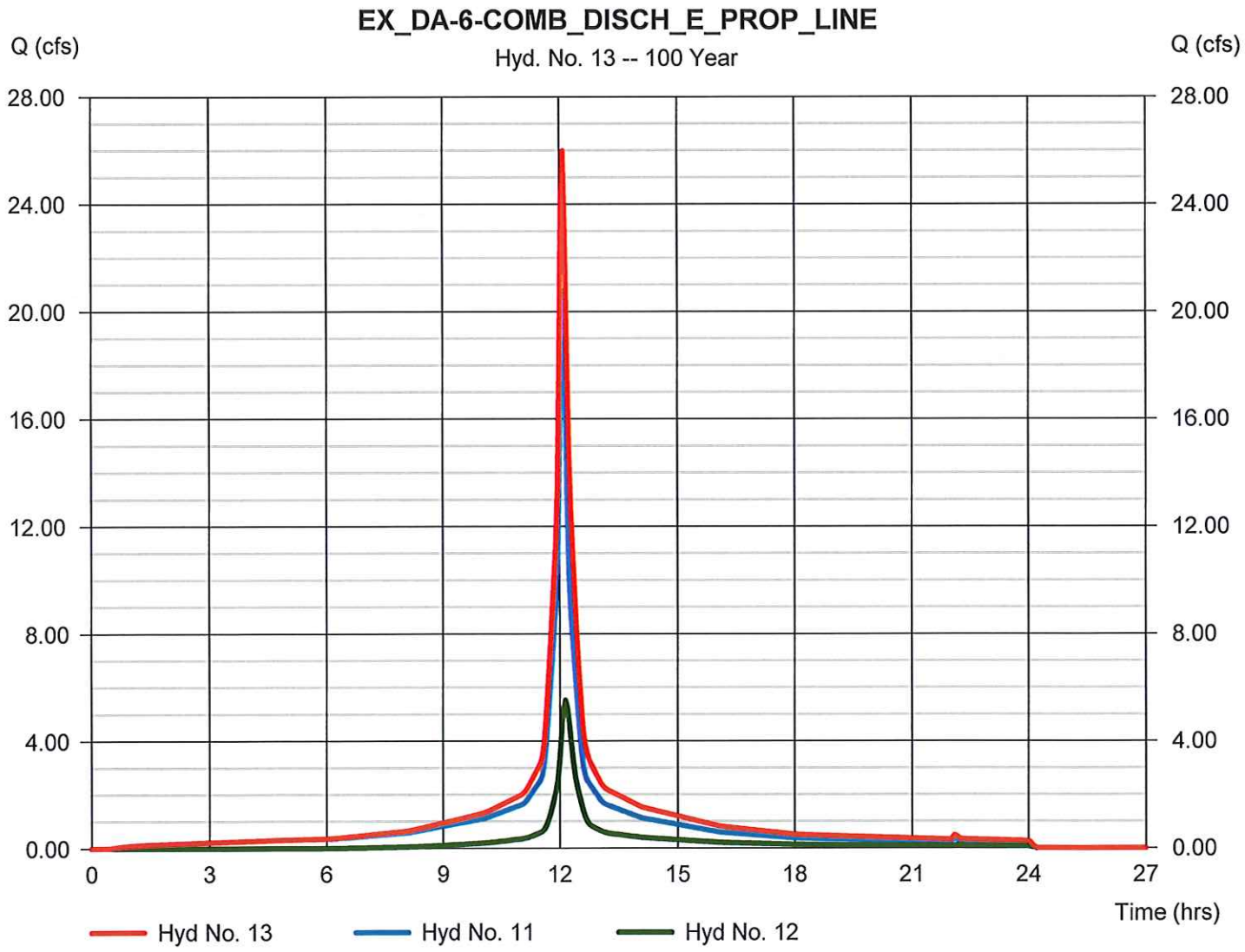


Hydrograph Report

Hyd. No. 13

EX_DA-6-COMB_DISCH_E_PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 26.00 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 103,403 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 2.980 ac



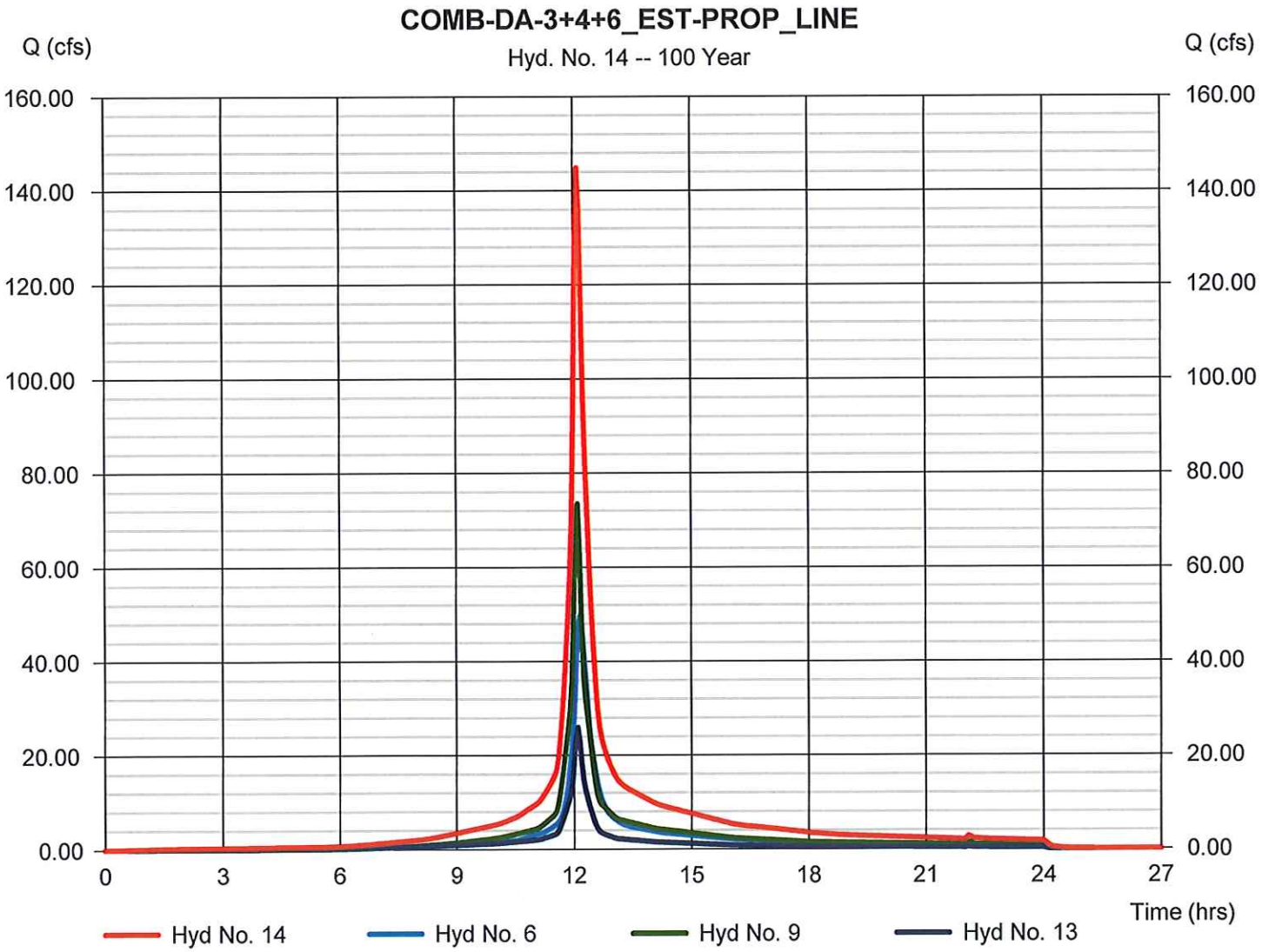
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 14

COMB-DA-3+4+6_EST-PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 144.88 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 560,712 cuft
Inflow hyds.	= 6, 9, 13	Contrib. drain. area	= 0.000 ac



Hydrograph Report

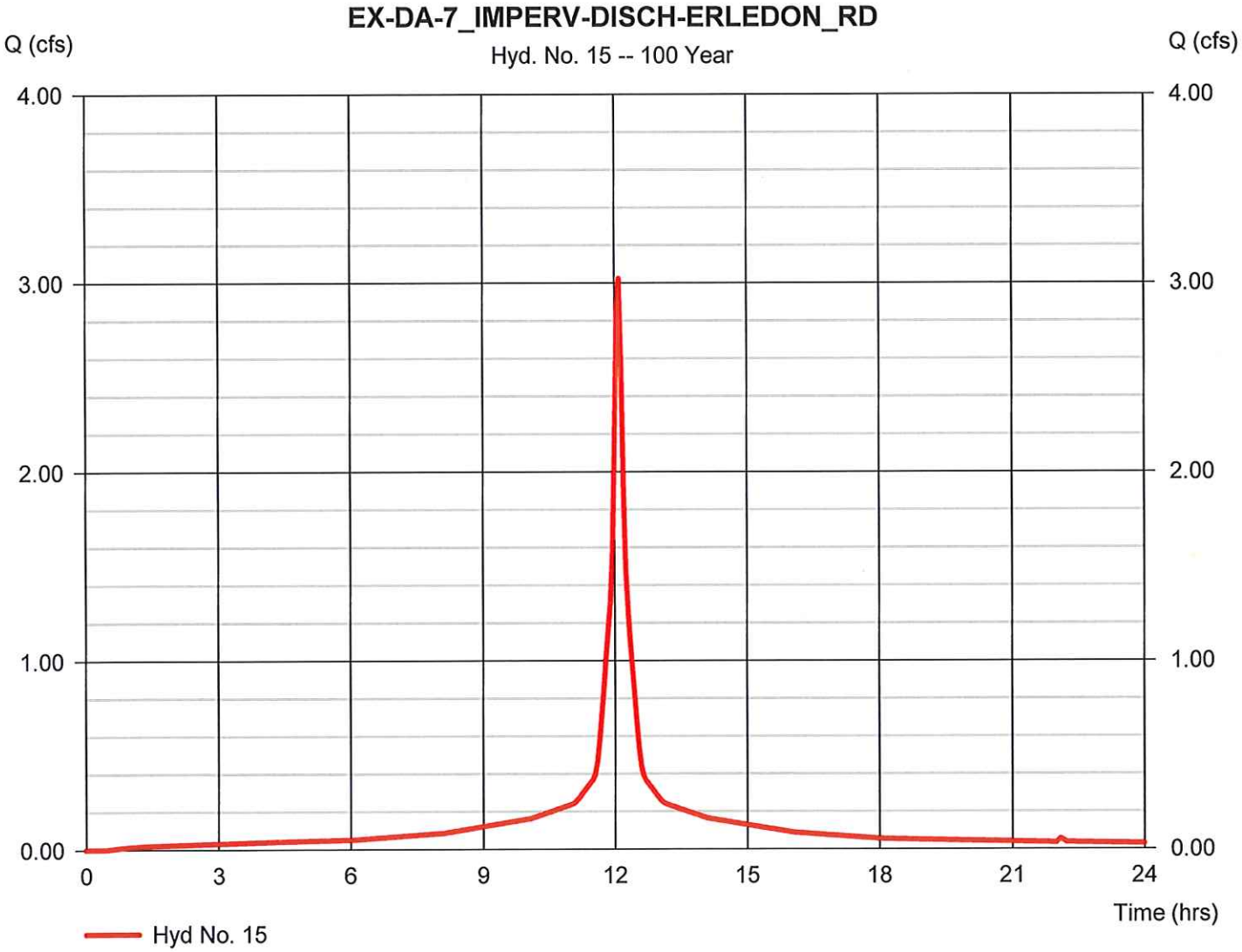
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 15

EX-DA-7_IMPERV-DISCH-ERLEDON_RD

Hydrograph type	= SCS Runoff	Peak discharge	= 3.025 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 11,836 cuft
Drainage area	= 0.320 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.320 x 98)] / 0.320



Hydrograph Report

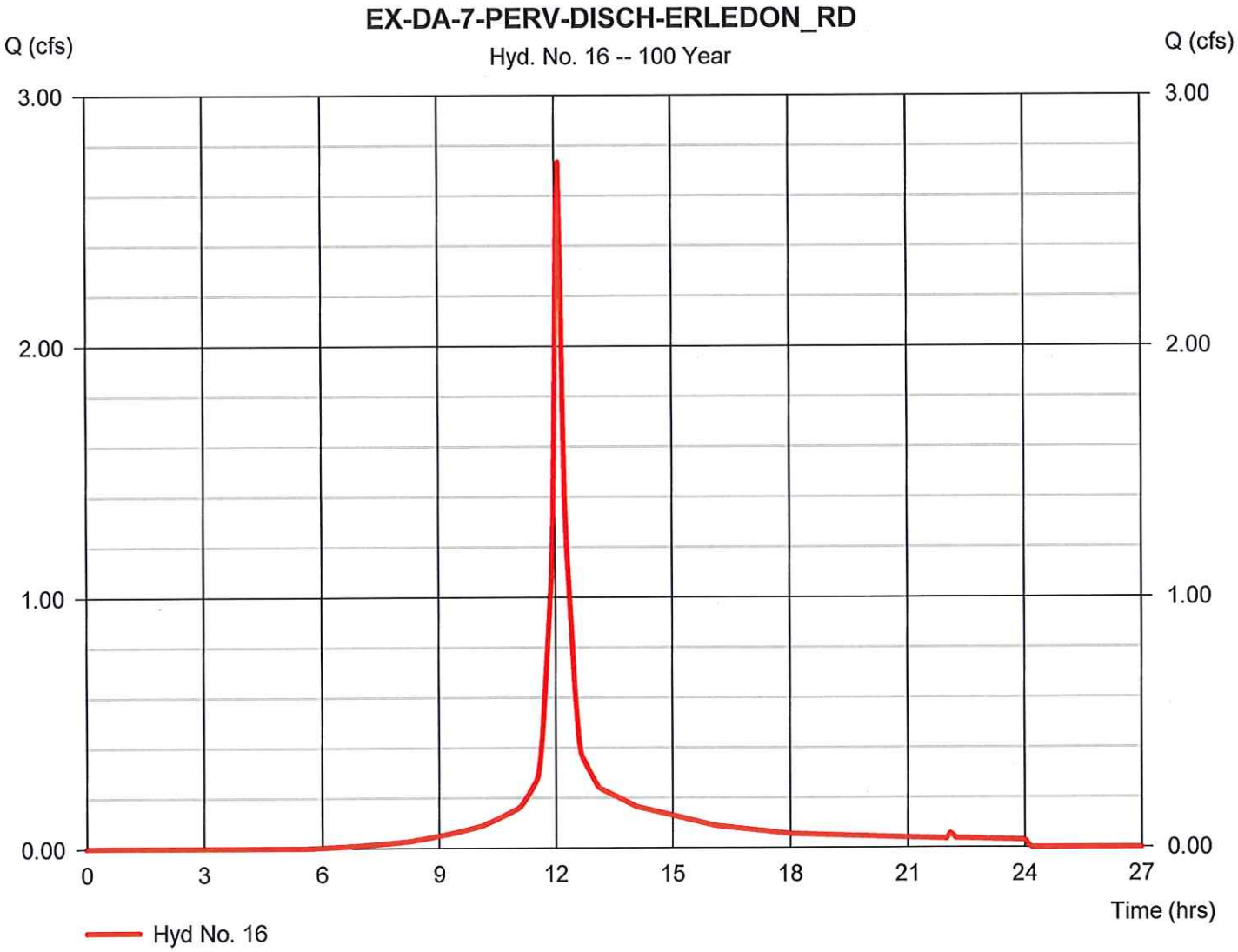
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 16

EX-DA-7-PERV-DISCH-ERLEDON_RD

Hydrograph type	= SCS Runoff	Peak discharge	= 2.734 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 9,267 cuft
Drainage area	= 0.350 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.350 x 74)] / 0.350



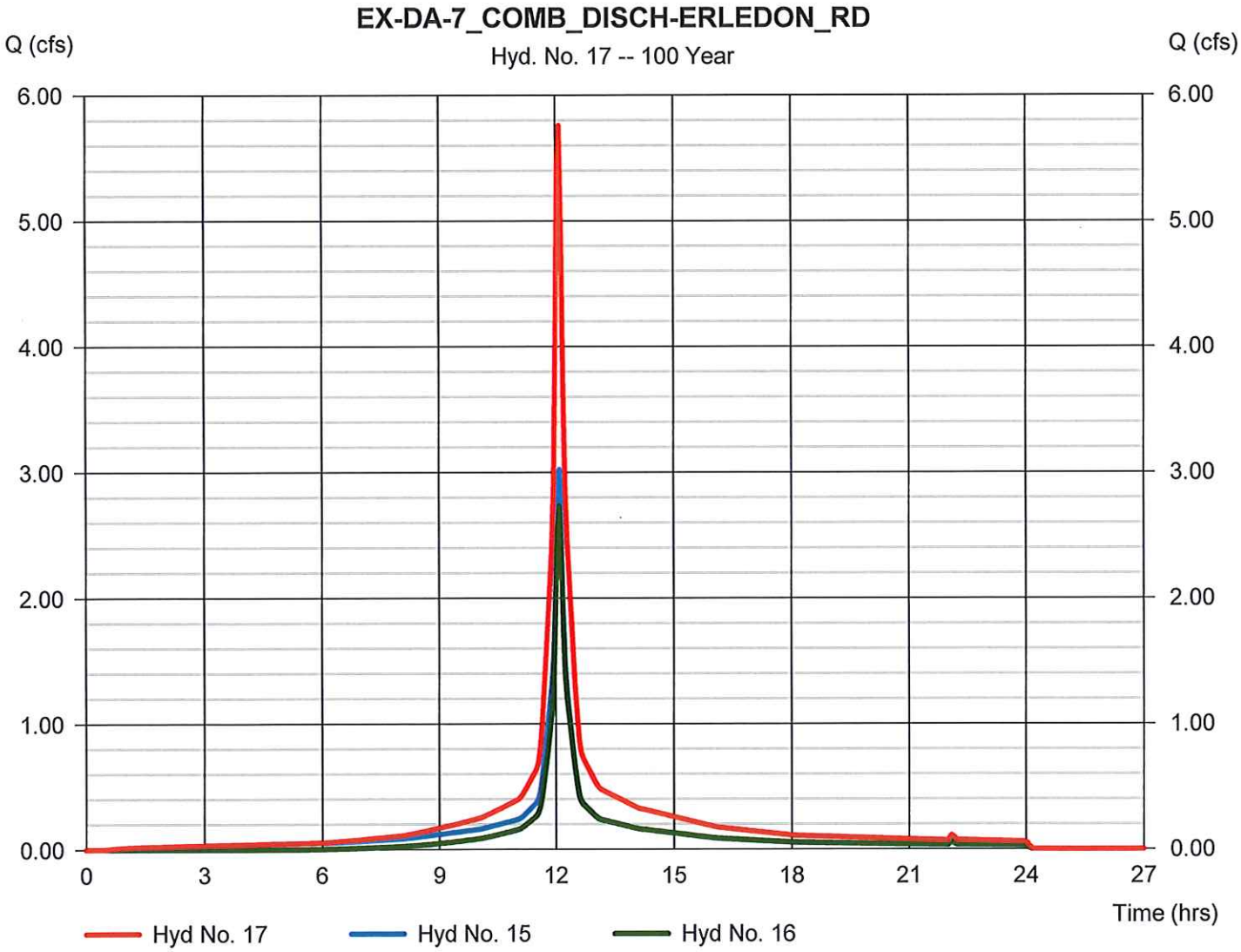
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 17

EX-DA-7_COMB_DISCH-ERLEDON_RD

Hydrograph type	= Combine	Peak discharge	= 5.758 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 21,103 cuft
Inflow hyds.	= 15, 16	Contrib. drain. area	= 0.670 ac



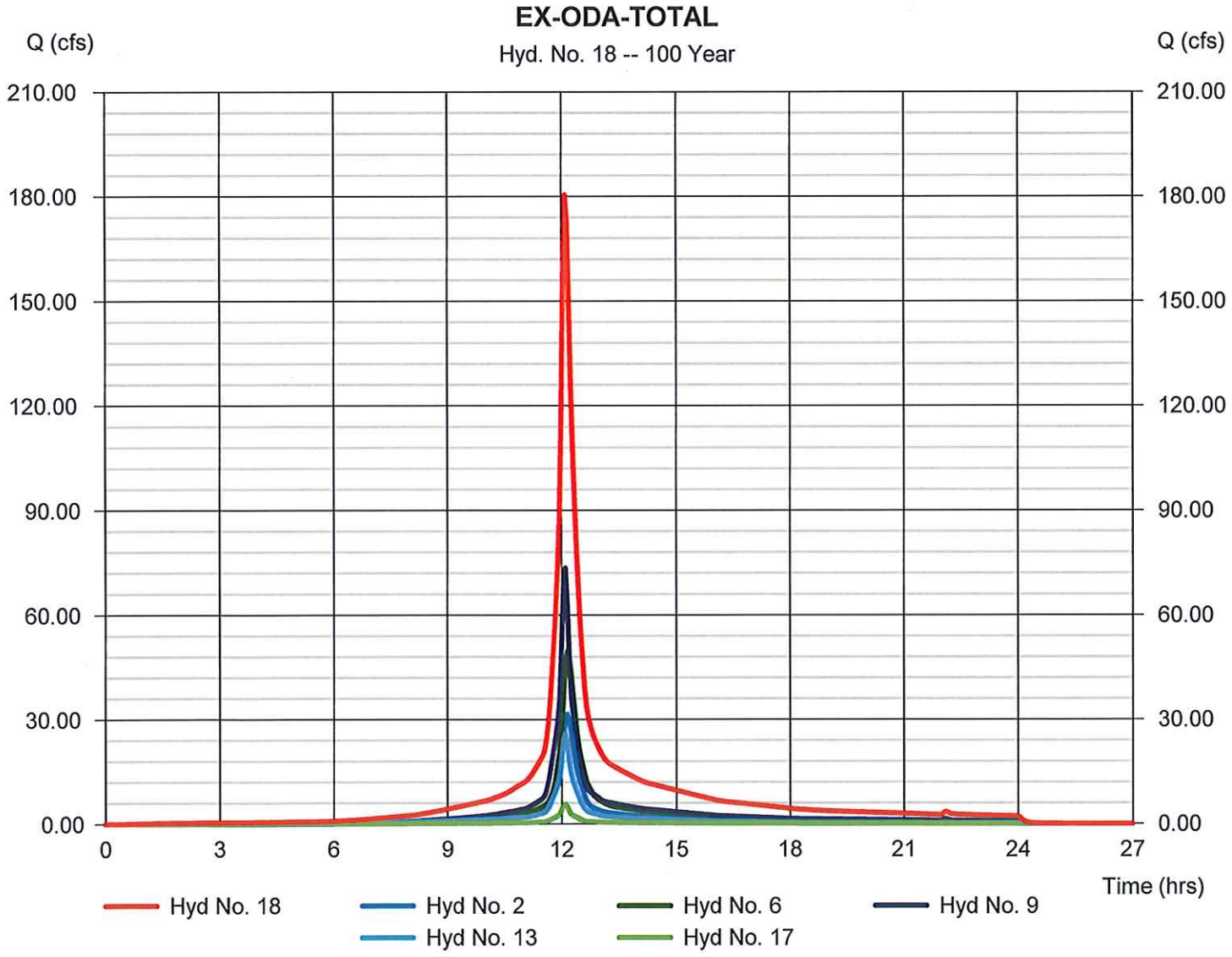
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 18

EX-ODA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 180.46 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 708,064 cuft
Inflow hyds.	= 2, 6, 9, 13, 17	Contrib. drain. area	= 4.470 ac



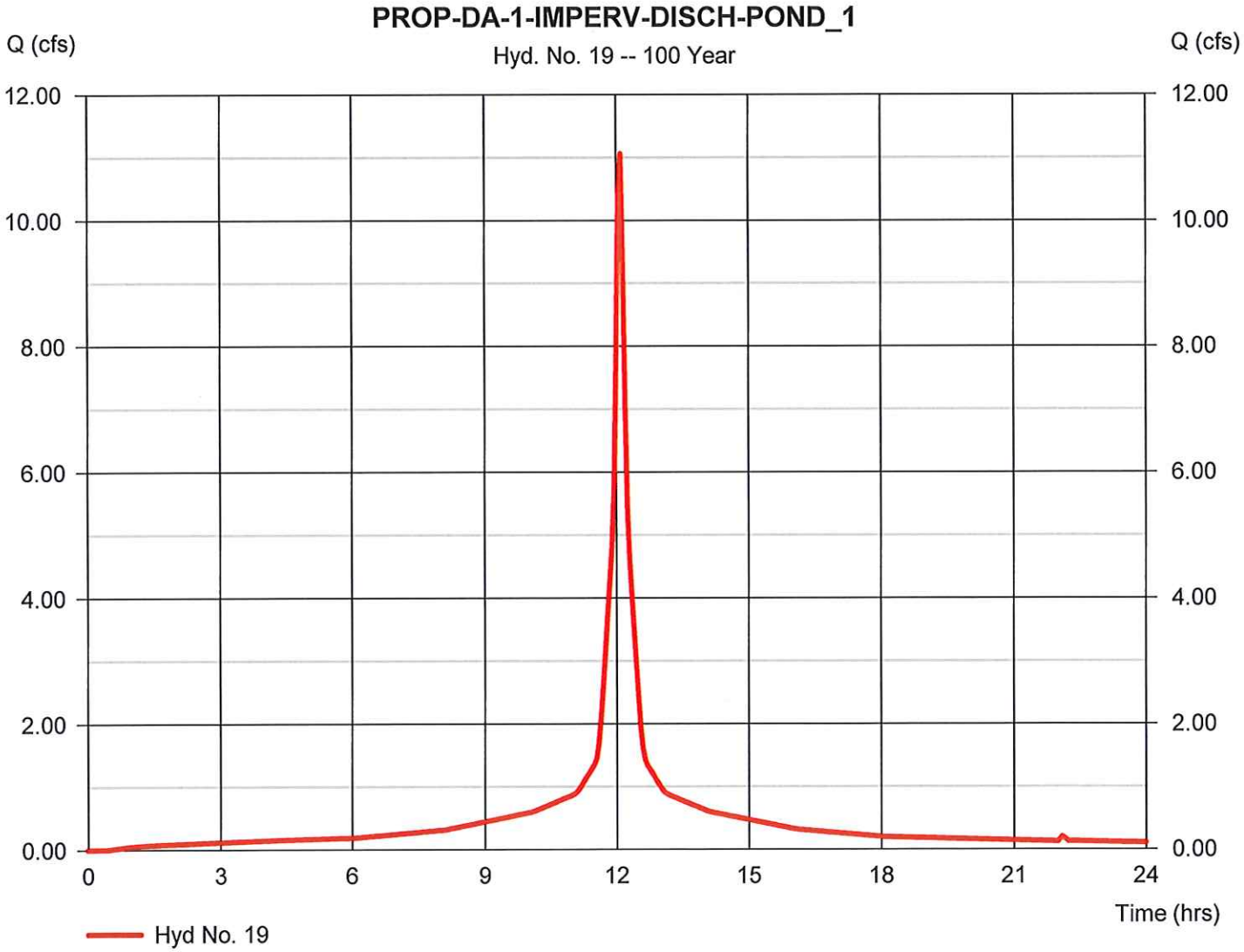
Hydrograph Report

Hyd. No. 19

PROP-DA-1-IMPERV-DISCH-POND_1

Hydrograph type	= SCS Runoff	Peak discharge	= 11.06 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 43,276 cuft
Drainage area	= 1.170 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.170 x 98)] / 1.170



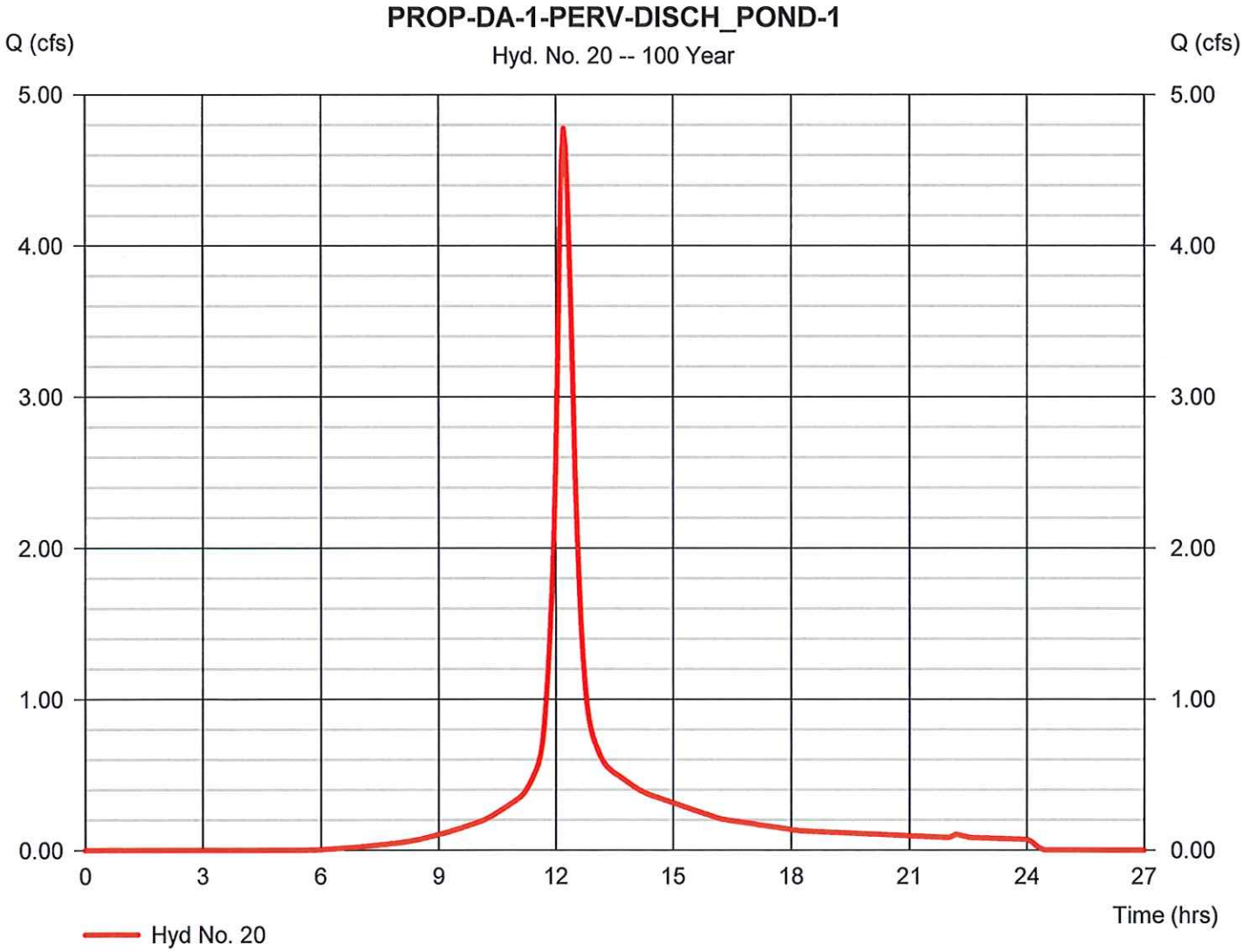
Hydrograph Report

Hyd. No. 20

PROP-DA-1-PERV-DISCH_POND-1

Hydrograph type	= SCS Runoff	Peak discharge	= 4.775 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 21,553 cuft
Drainage area	= 0.740 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.50 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.280 x 74)] / 0.740



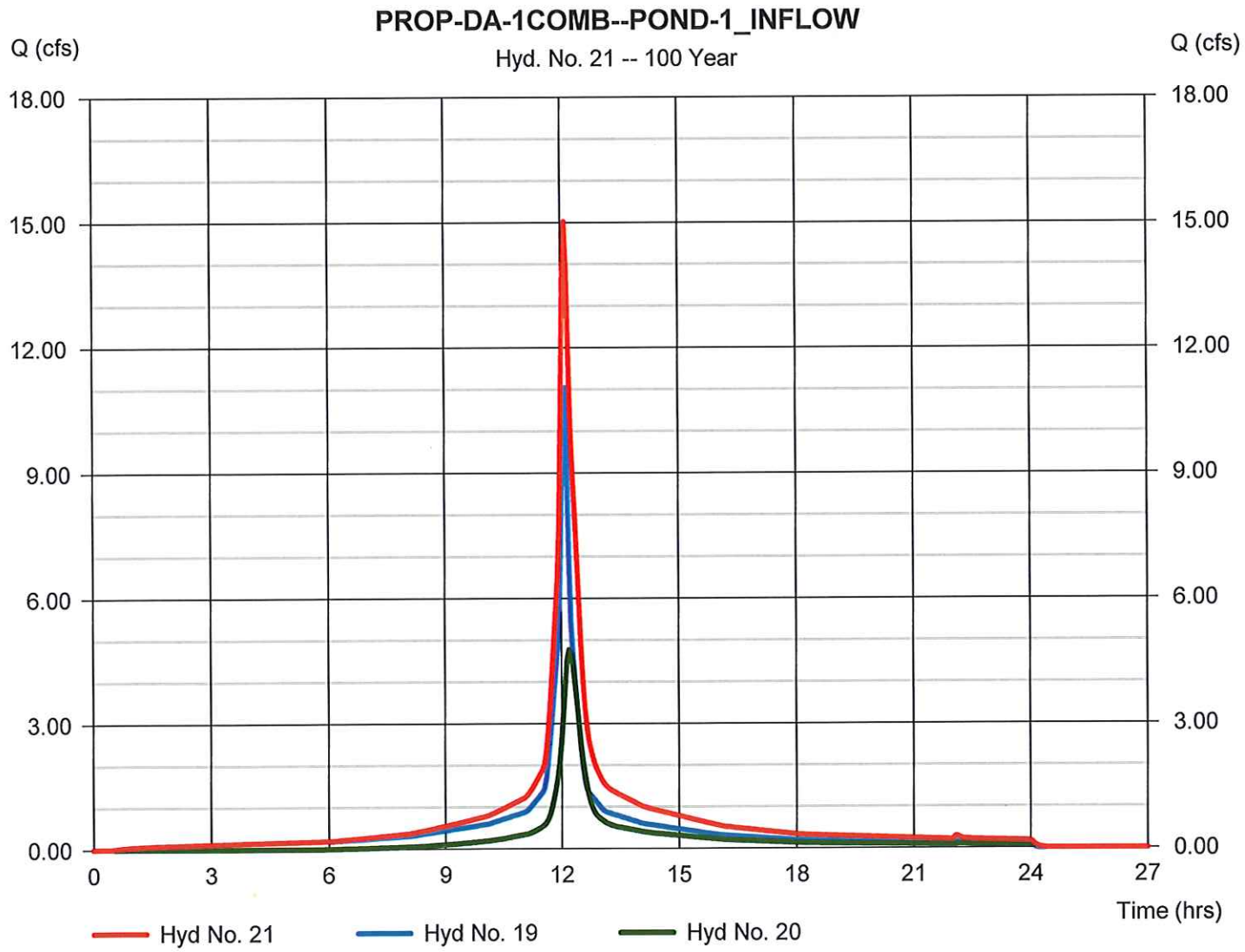
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 21

PROP-DA-1COMB--POND-1_INFLOW

Hydrograph type	= Combine	Peak discharge	= 15.02 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 64,829 cuft
Inflow hyds.	= 19, 20	Contrib. drain. area	= 1.910 ac



Hydrograph Report

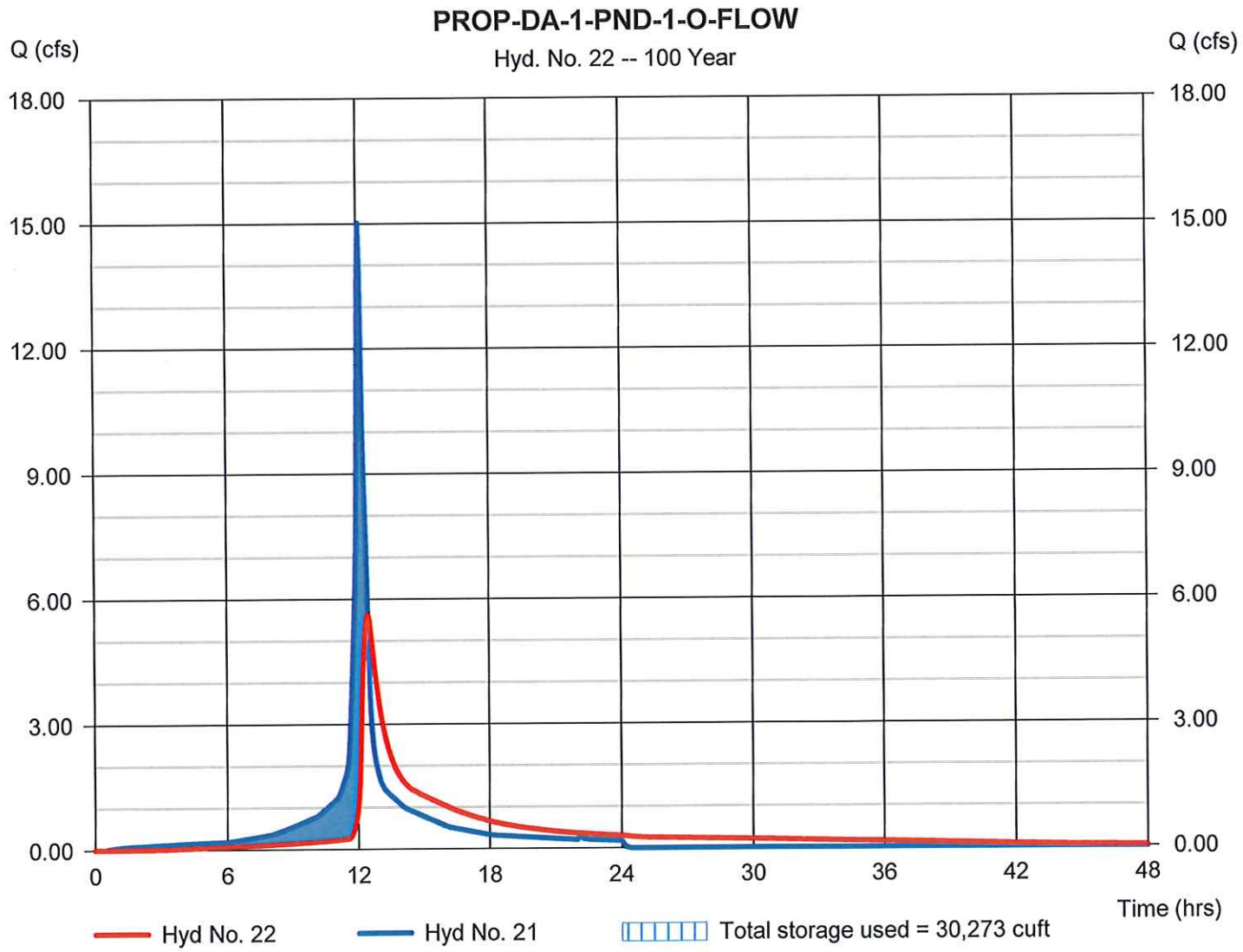
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 22

PROP-DA-1-PND-1-O-FLOW

Hydrograph type	= Reservoir	Peak discharge	= 5.634 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.45 hrs
Time interval	= 3 min	Hyd. volume	= 64,750 cuft
Inflow hyd. No.	= 21 - PROP-DA-1COMB--POND-1	Max. Elevation	= 114.94 ft
Reservoir name	= POND-1	Max. Storage	= 30,273 cuft

Storage Indication method used.



Hydrograph Report

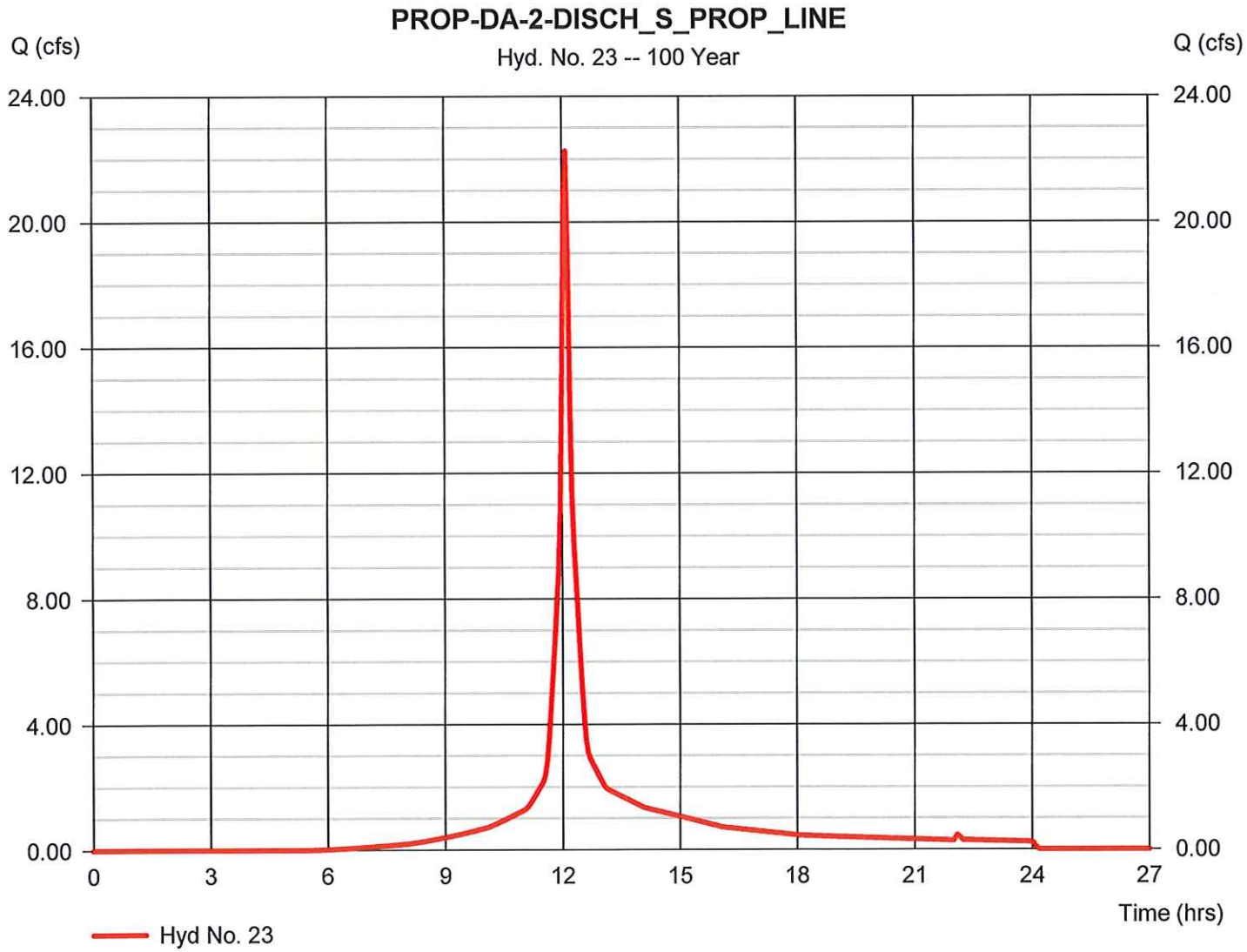
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 23

PROP-DA-2-DISCH_S_PROP_LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 22.26 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 75,463 cuft
Drainage area	= 2.850 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.90 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.850 x 74)] / 2.850



Hydrograph Report

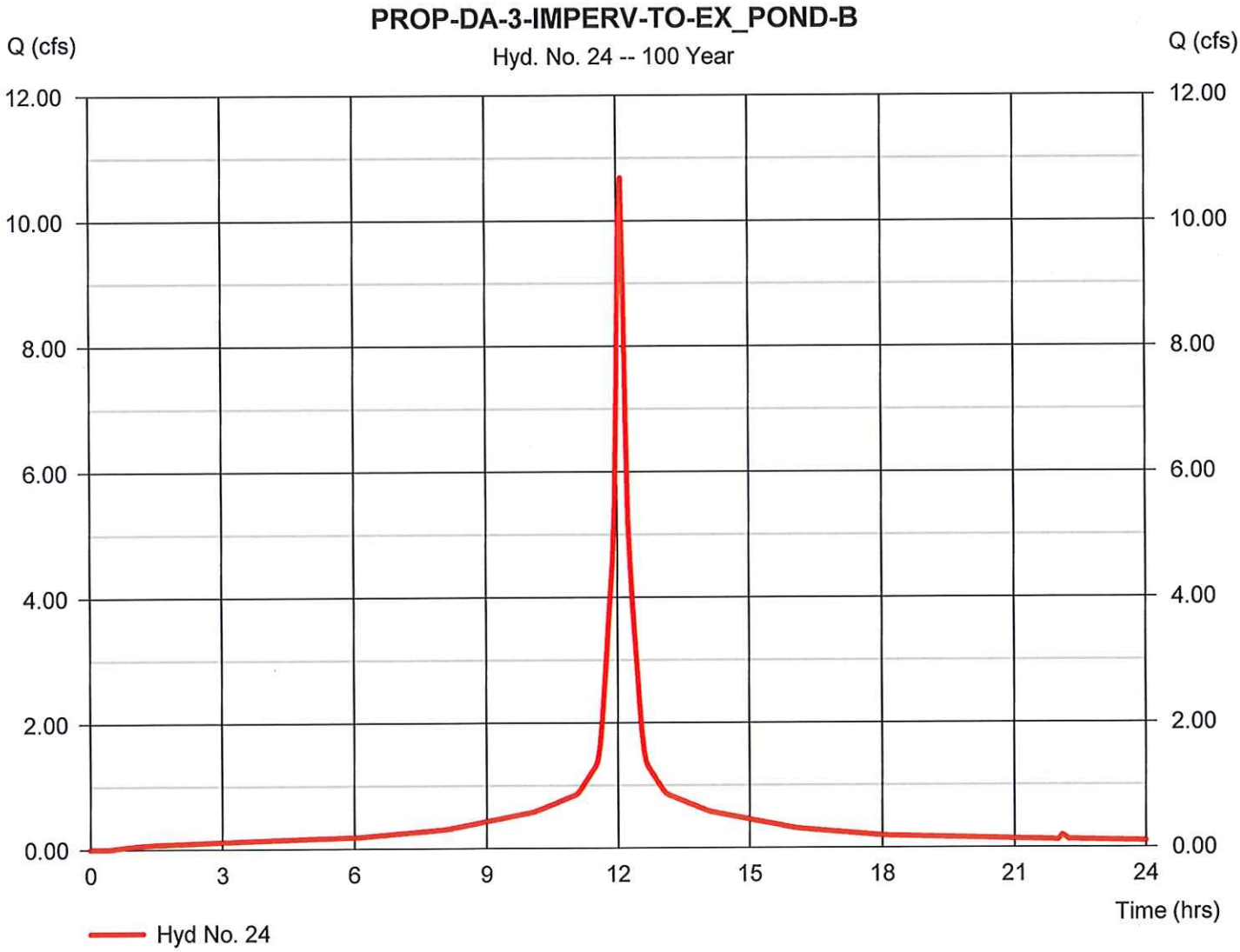
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 24

PROP-DA-3-IMPERV-TO-EX_POND-B

Hydrograph type	= SCS Runoff	Peak discharge	= 10.68 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 41,796 cuft
Drainage area	= 1.130 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.130 x 98)] / 1.130



Hydrograph Report

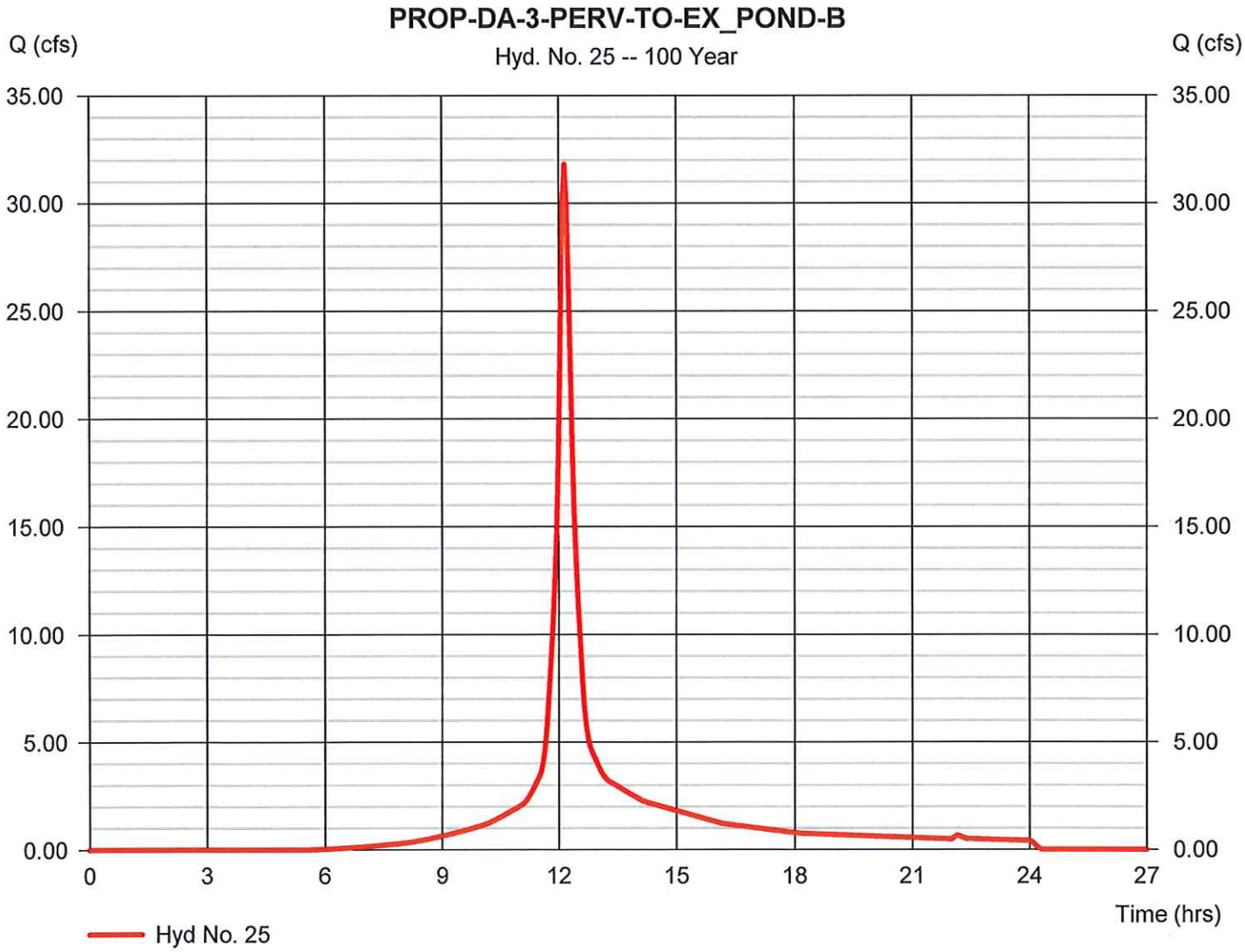
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 25

PROP-DA-3-PERV-TO-EX_POND-B

Hydrograph type	= SCS Runoff	Peak discharge	= 31.80 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 126,813 cuft
Drainage area	= 4.490 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.80 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(4.490 x 74)] / 4.490



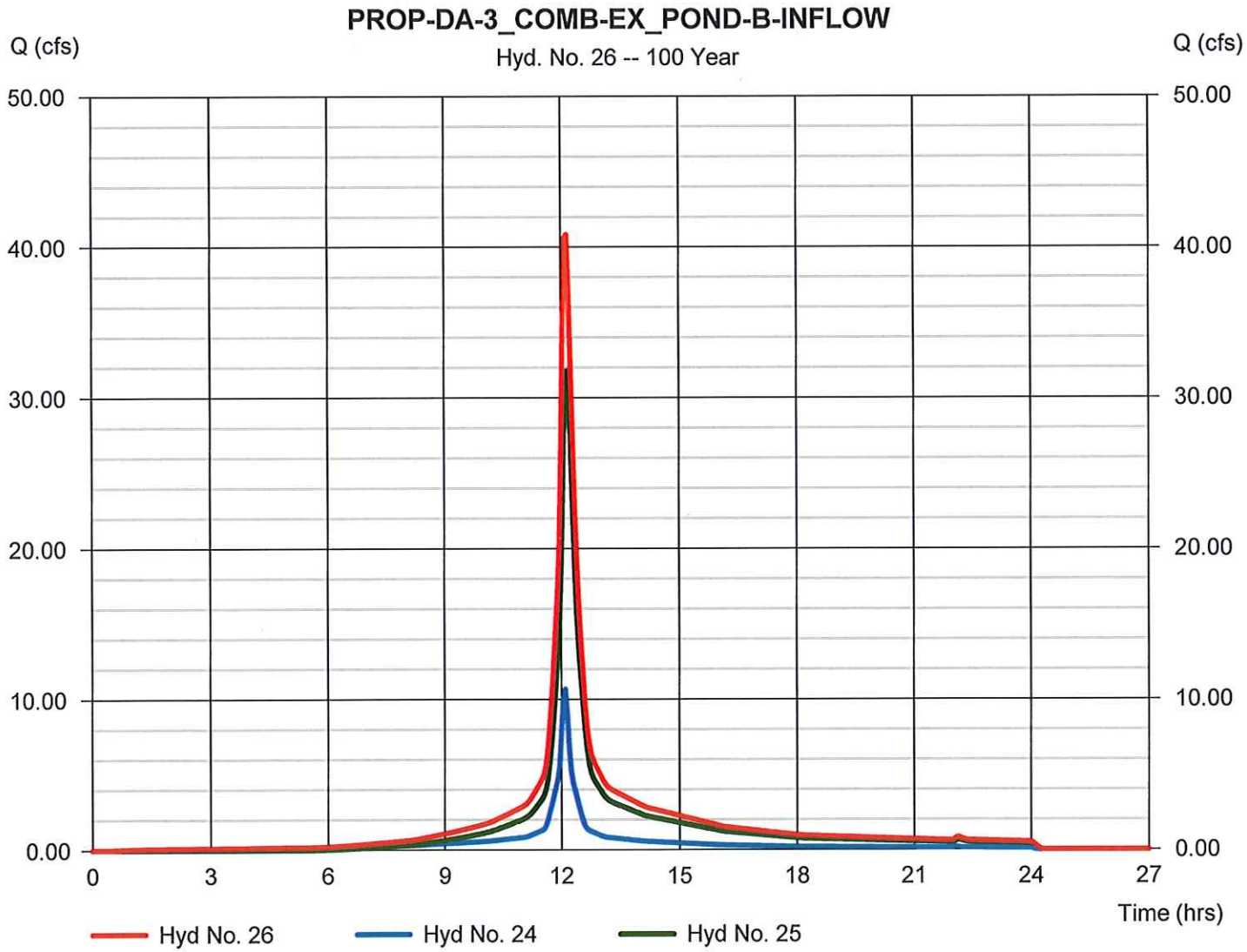
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 26

PROP-DA-3_COMB-EX_POND-B-INFLOW

Hydrograph type	= Combine	Peak discharge	= 40.83 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 168,609 cuft
Inflow hyds.	= 24, 25	Contrib. drain. area	= 5.620 ac



Hydrograph Report

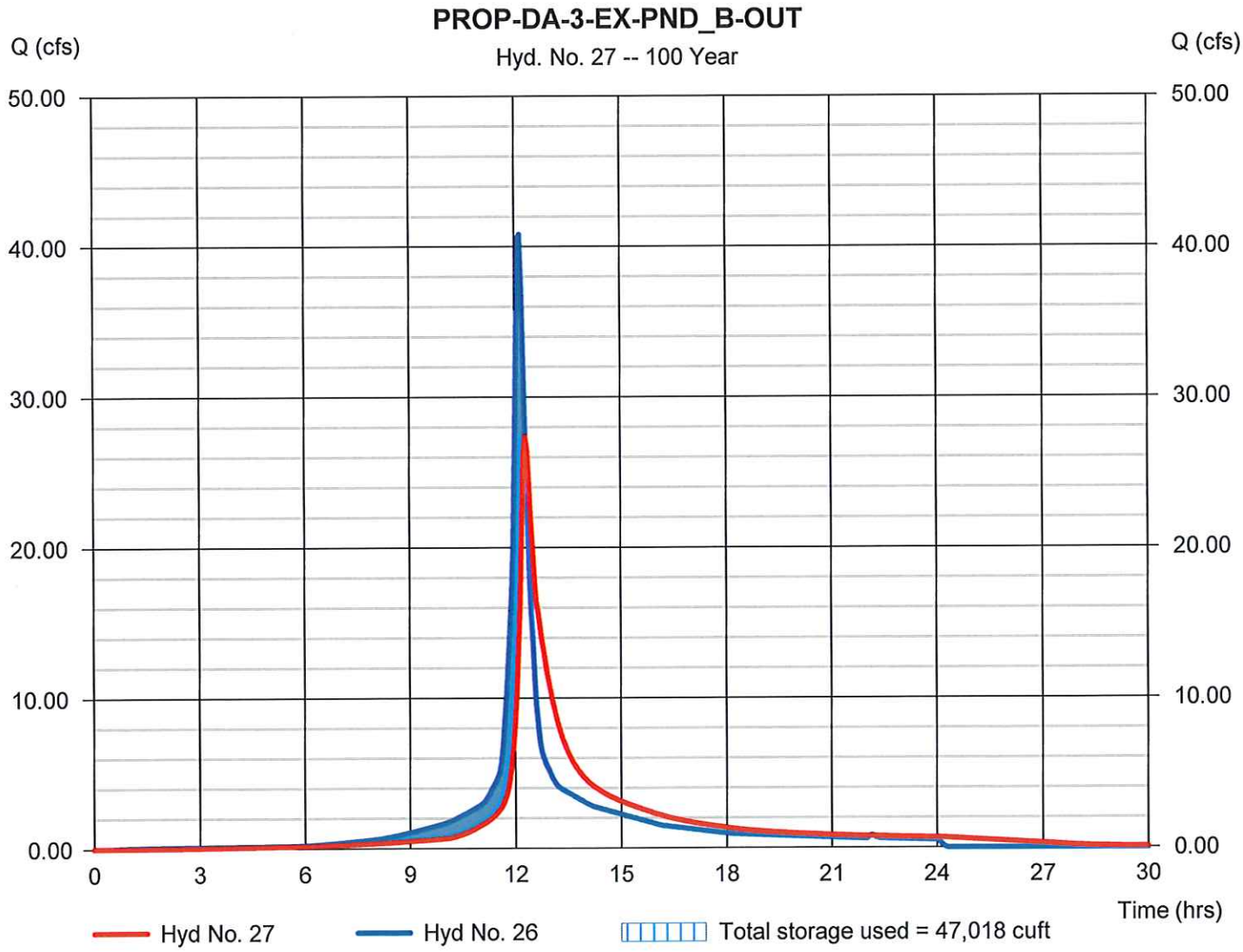
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 27

PROP-DA-3-EX-PND_B-OUT

Hydrograph type	= Reservoir	Peak discharge	= 27.37 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.30 hrs
Time interval	= 3 min	Hyd. volume	= 168,589 cuft
Inflow hyd. No.	= 26 - PROP-DA-3_COMB-EX_POND-B-INFLOW	Max. Elevation	= 98.44 ft
Reservoir name	= EX-PND-B-PROP-DA-3	Max. Storage	= 47,018 cuft

Storage Indication method used.



Hydrograph Report

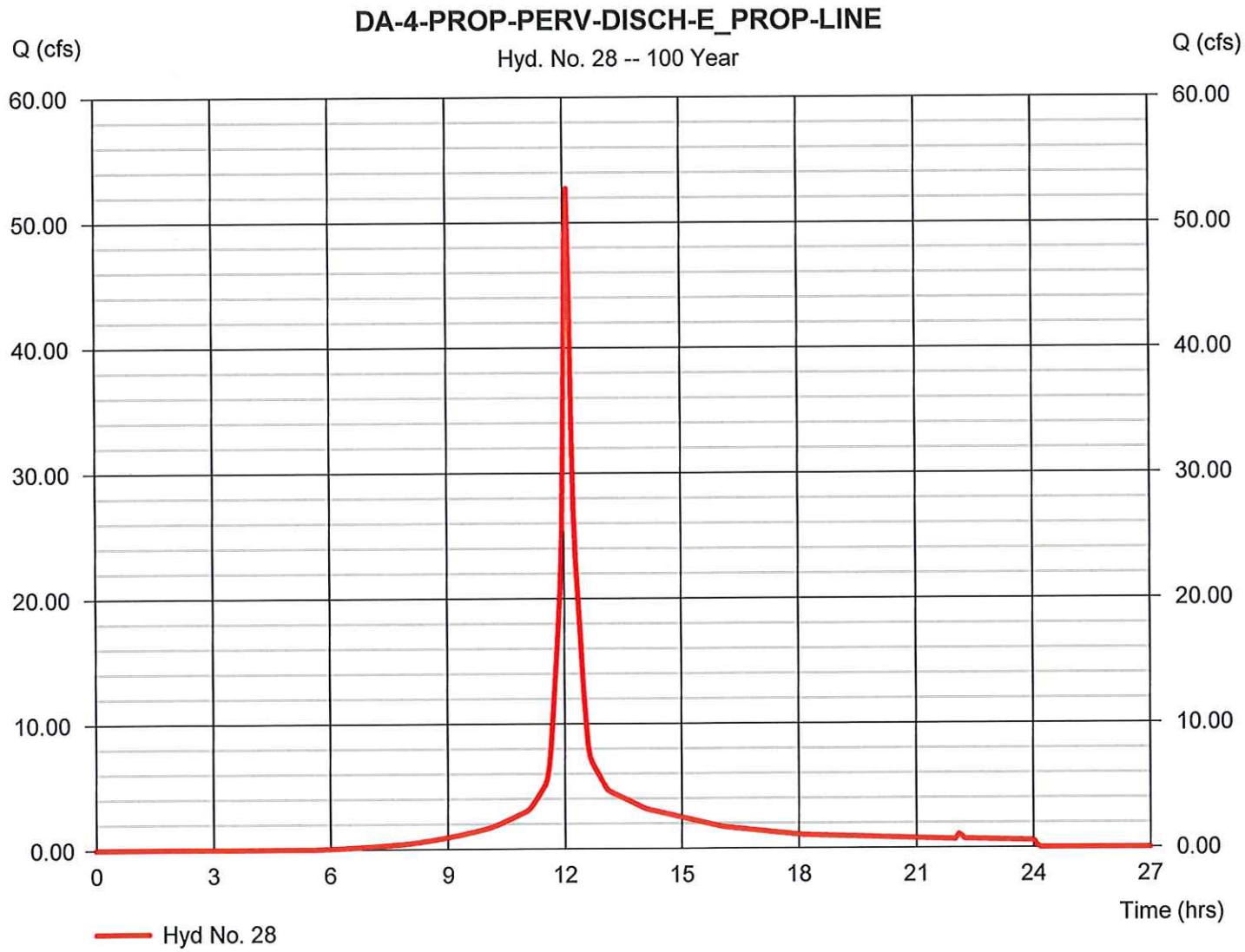
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 28

DA-4-PROP-PERV-DISCH-E_PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 52.72 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 178,728 cuft
Drainage area	= 6.750 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 9.70 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.110 x 74)] / 6.750



Hydrograph Report

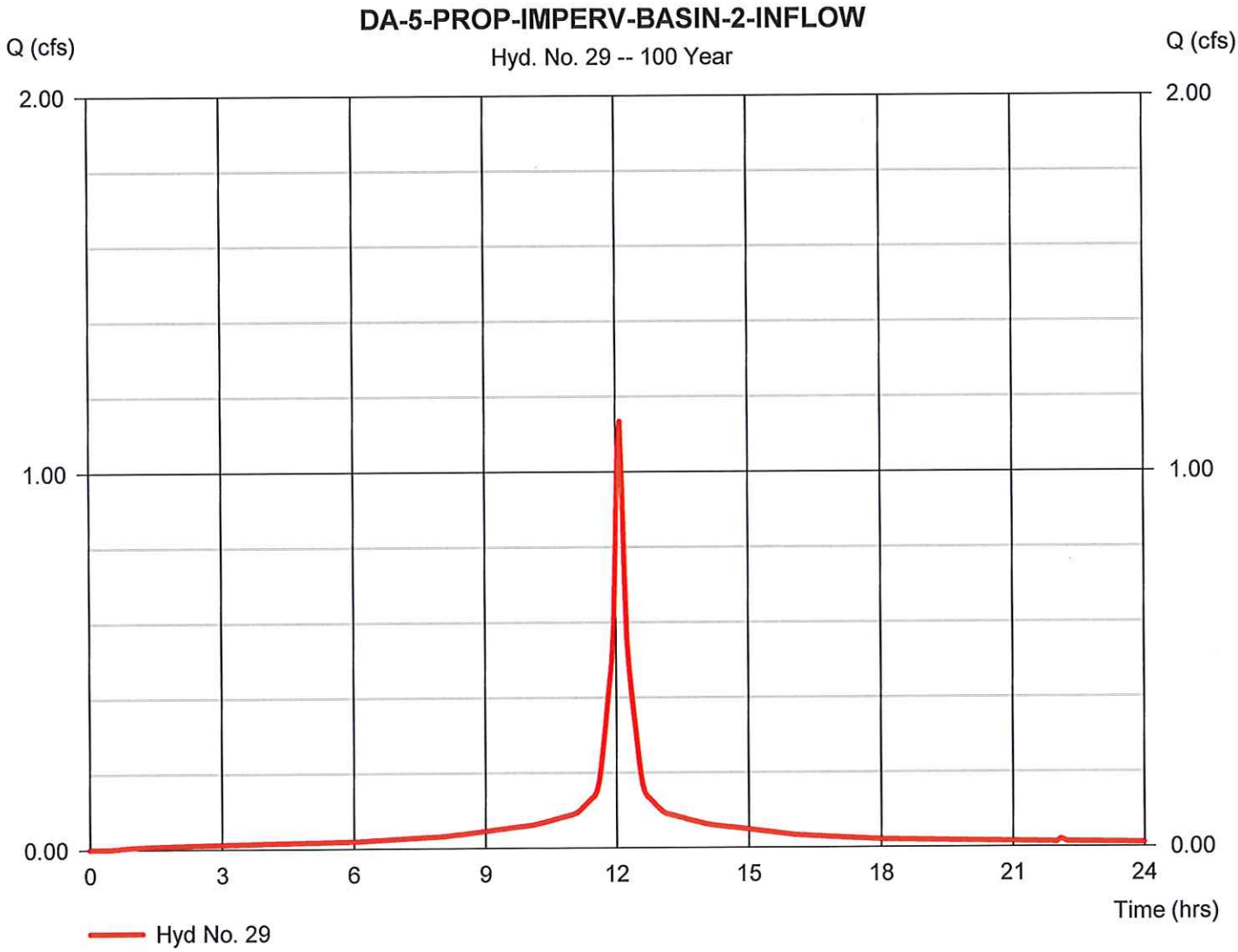
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 29

DA-5-PROP-IMPERV-BASIN-2-INFLOW

Hydrograph type	= SCS Runoff	Peak discharge	= 1.134 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 4,439 cuft
Drainage area	= 0.120 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.120 x 98)] / 0.120



Hydrograph Report

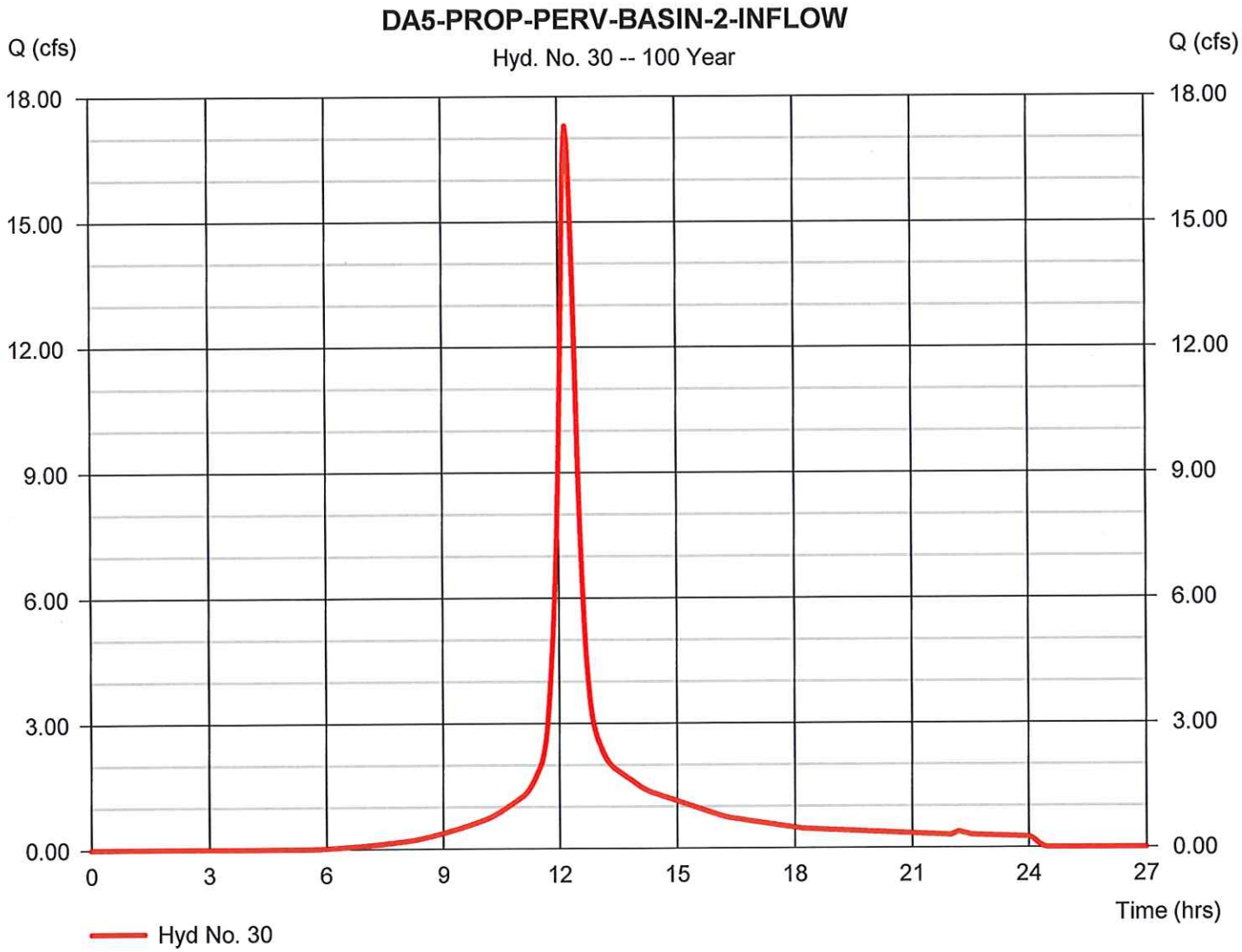
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 30

DA5-PROP-PERV-BASIN-2-INFLOW

Hydrograph type	= SCS Runoff	Peak discharge	= 17.29 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 78,058 cuft
Drainage area	= 2.680 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.680 x 74)] / 2.680

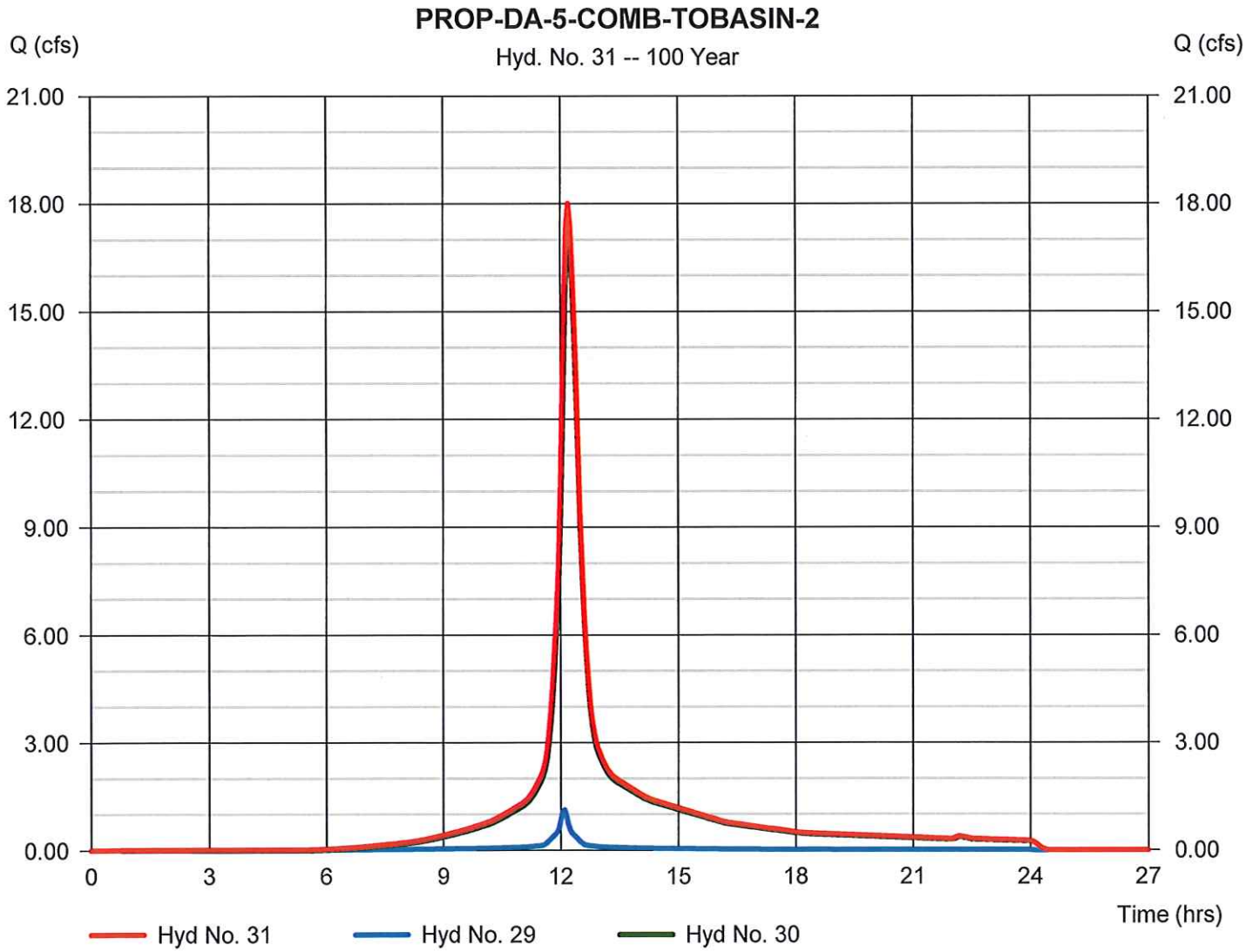


Hydrograph Report

Hyd. No. 31

PROP-DA-5-COMB-TOBASIN-2

Hydrograph type	= Combine	Peak discharge	= 18.01 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 3 min	Hyd. volume	= 82,496 cuft
Inflow hyds.	= 29, 30	Contrib. drain. area	= 2.800 ac



Hydrograph Report

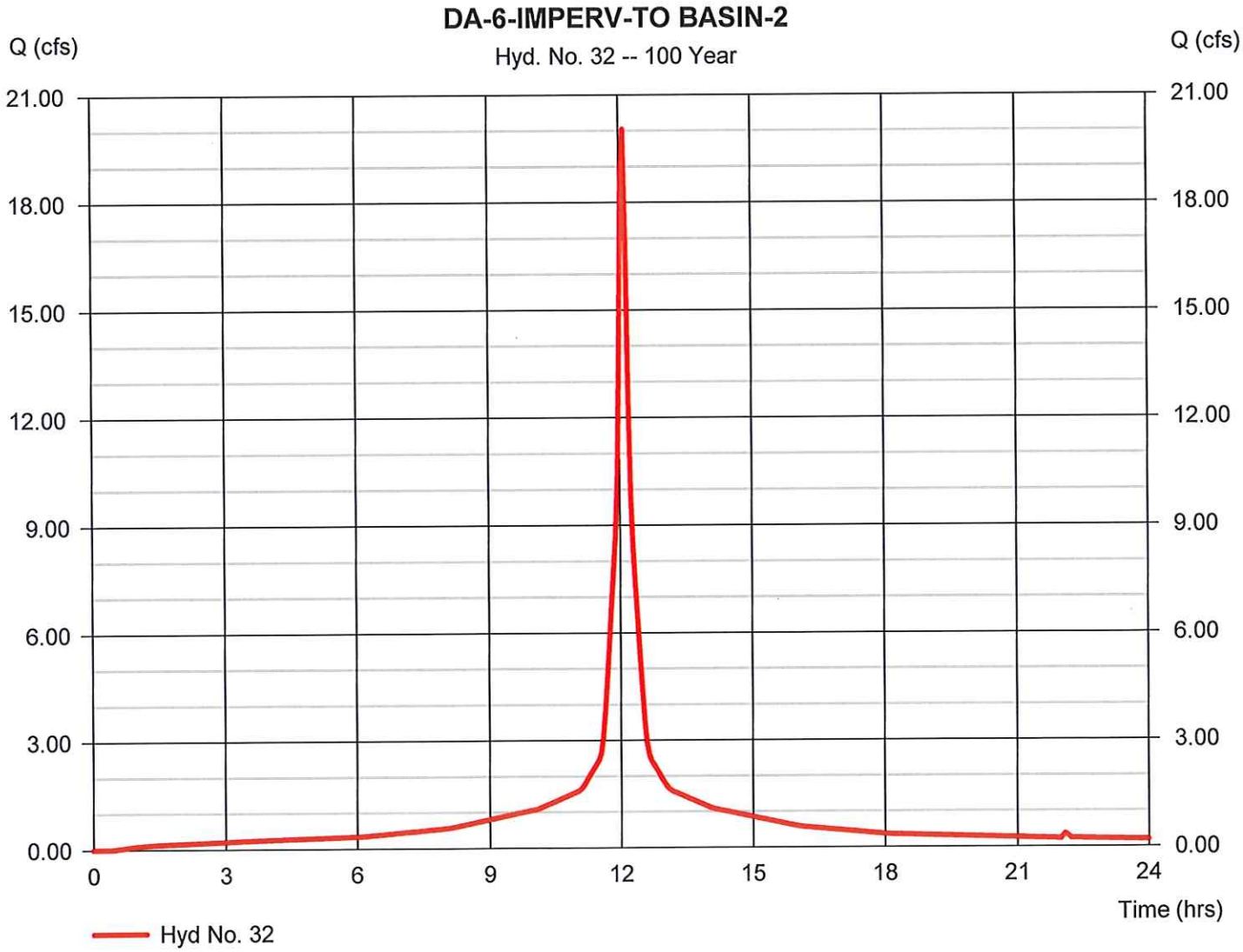
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 32

DA-6-IMPERV-TO BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 20.04 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 78,414 cuft
Drainage area	= 2.120 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.120 x 98)] / 2.120



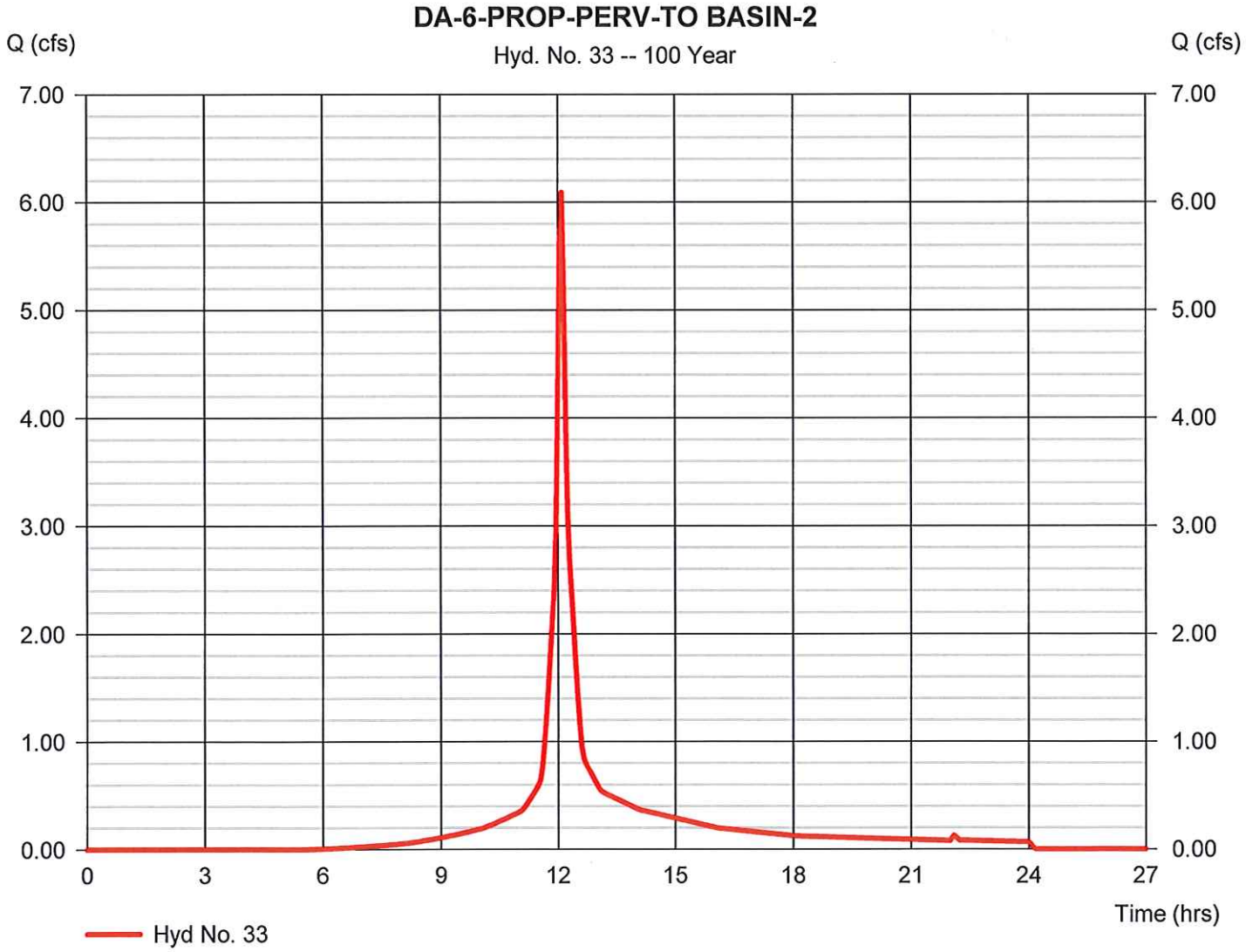
Hydrograph Report

Hyd. No. 33

DA-6-PROP-PERV-TO BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 6.092 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 20,653 cuft
Drainage area	= 0.780 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.80 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(7.026 x 79)] / 0.780



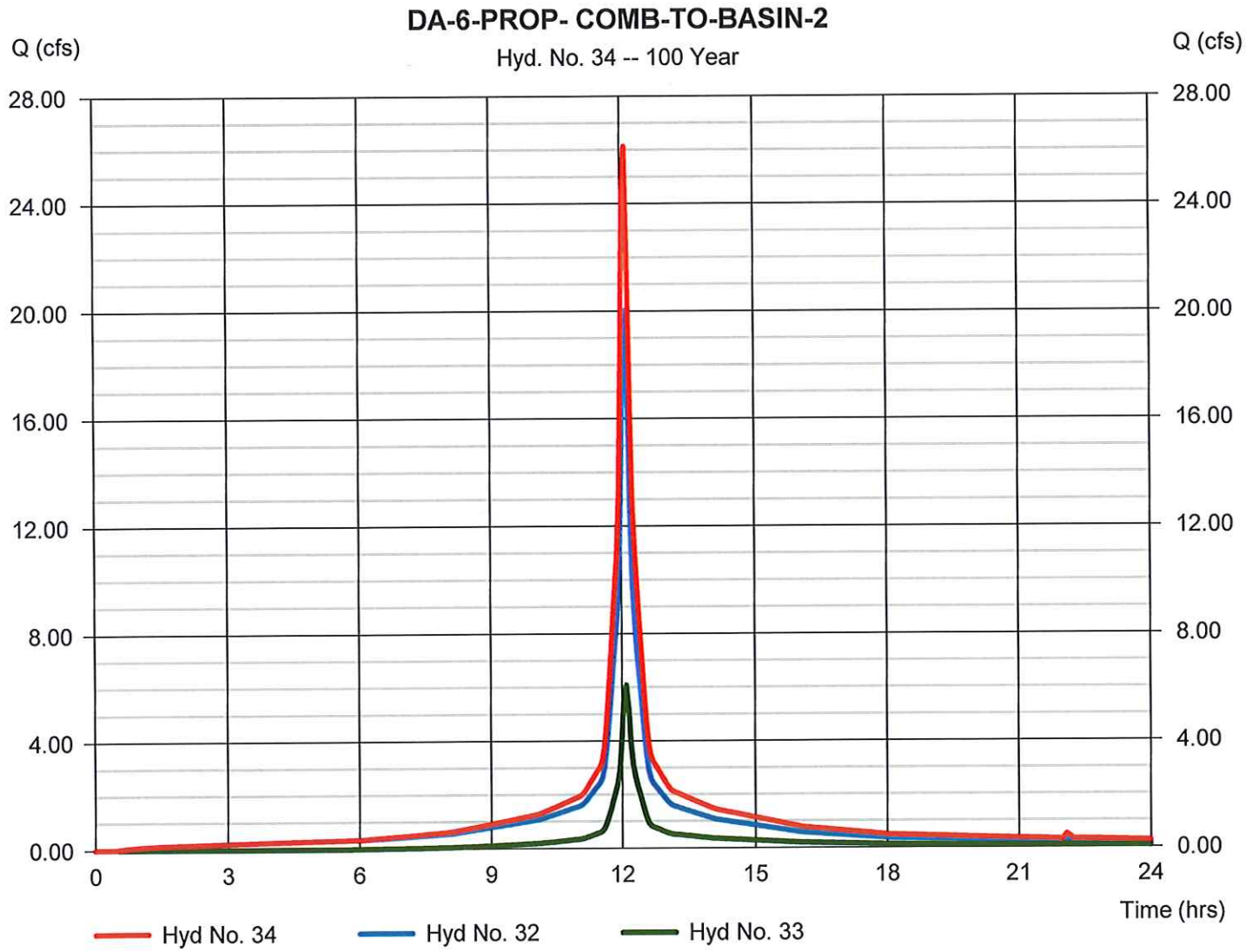
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 34

DA-6-PROP- COMB-TO-BASIN-2

Hydrograph type	= Combine	Peak discharge	= 26.13 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 99,067 cuft
Inflow hyds.	= 32, 33	Contrib. drain. area	= 2.900 ac



Hydrograph Report

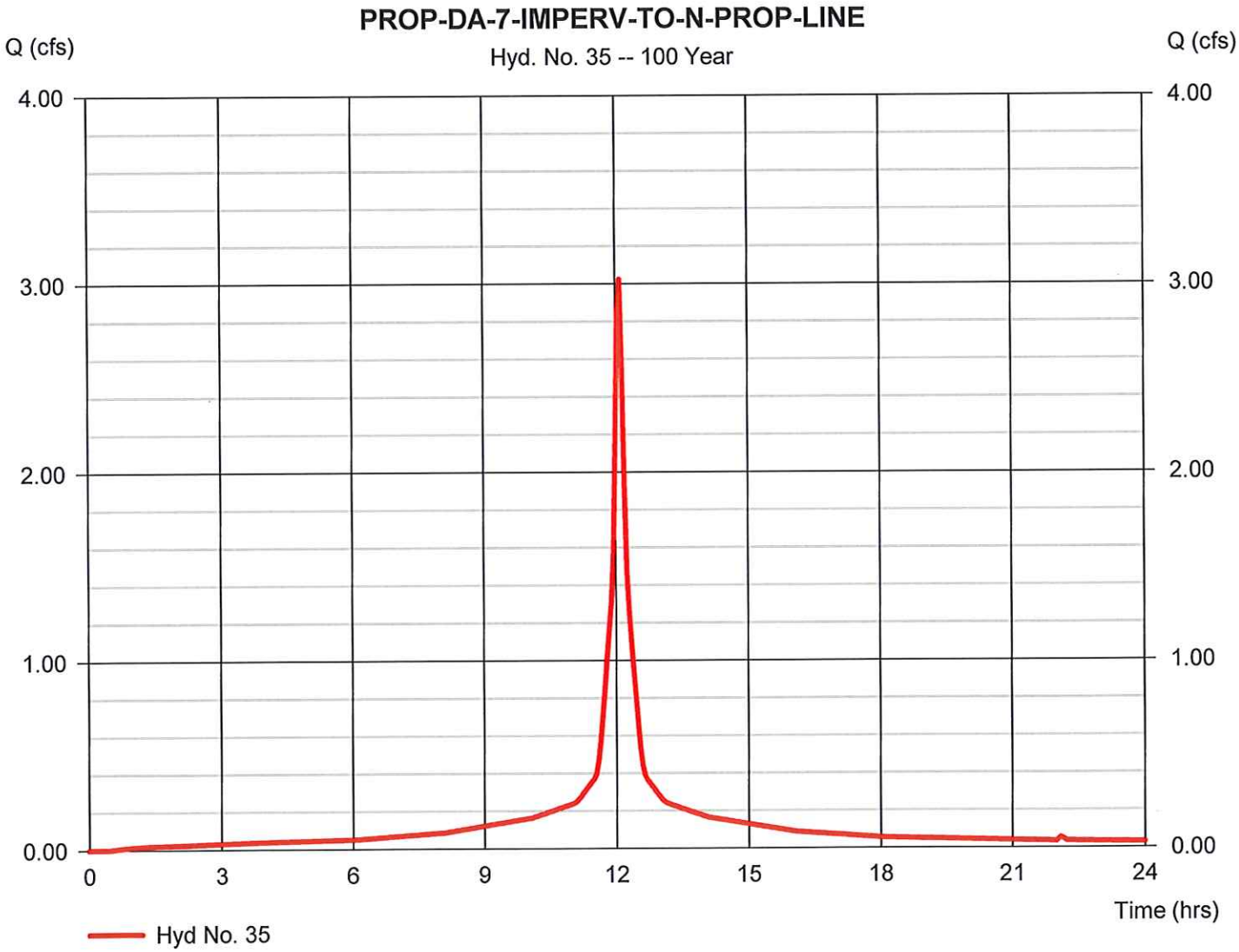
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 35

PROP-DA-7-IMPERV-TO-N-PROP-LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 3.025 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 11,836 cuft
Drainage area	= 0.320 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.320 x 98)] / 0.320



Hydrograph Report

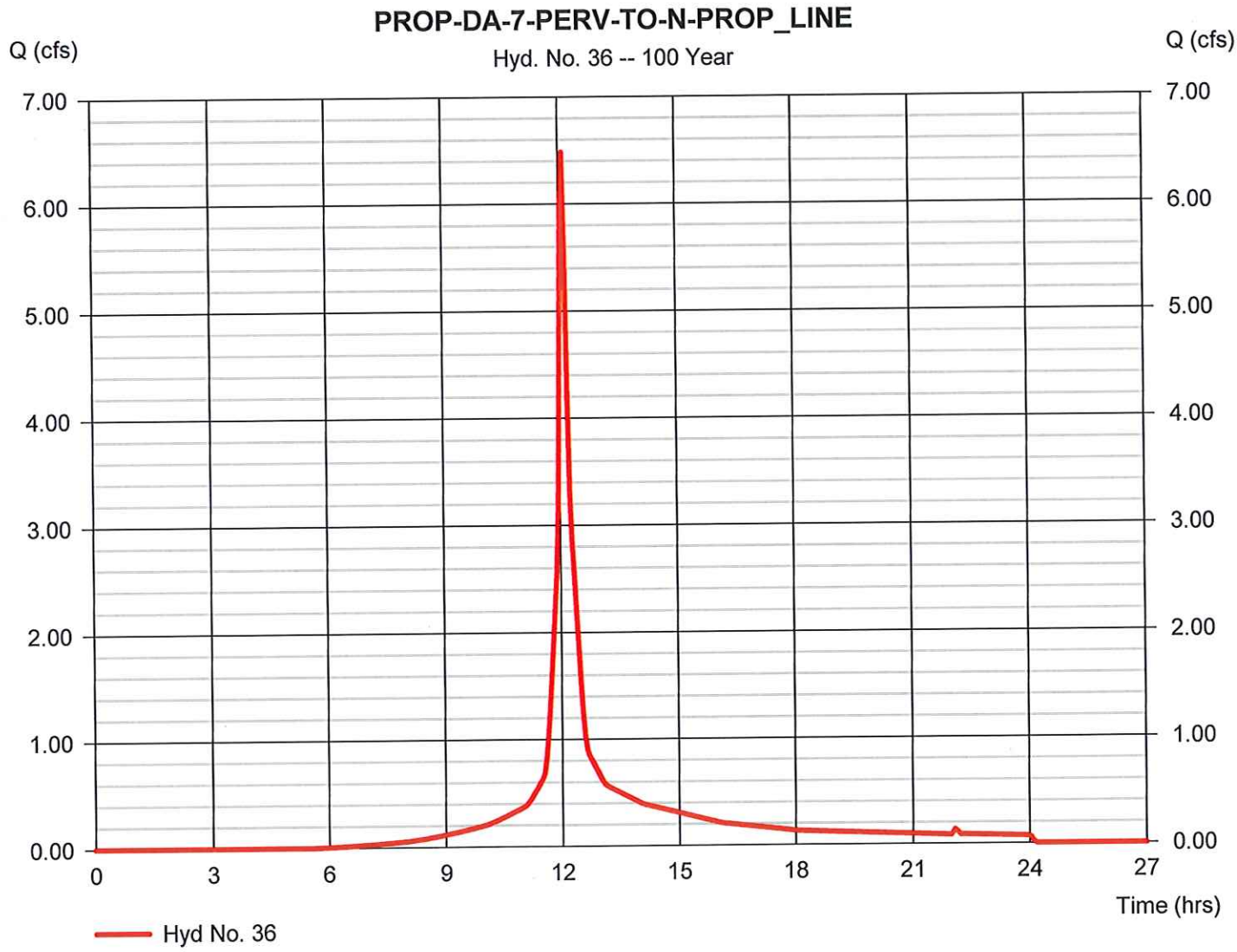
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 36

PROP-DA-7-PERV-TO-N-PROP_LINE

Hydrograph type	= SCS Runoff	Peak discharge	= 6.483 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 21,977 cuft
Drainage area	= 0.830 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 74)] / 0.830

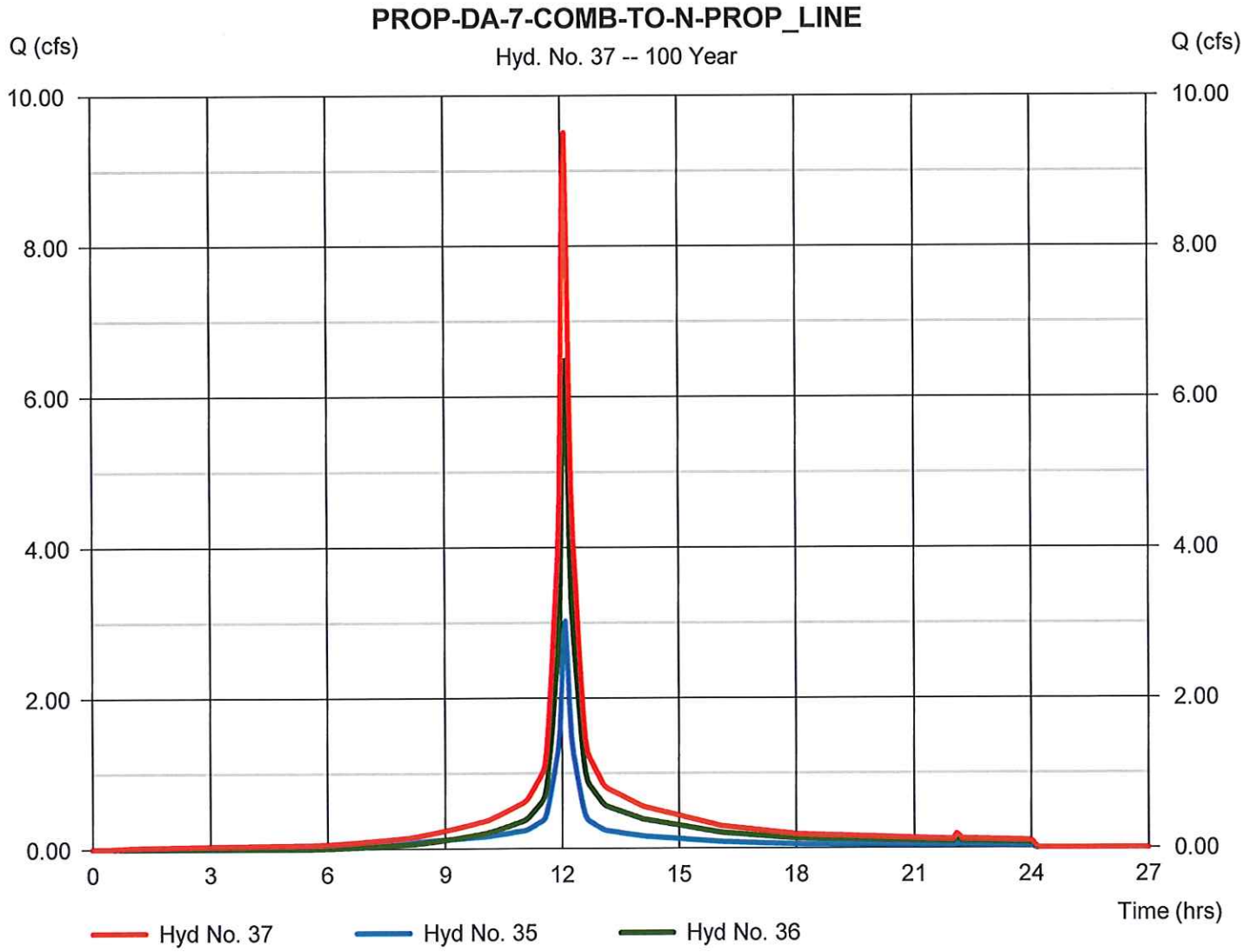


Hydrograph Report

Hyd. No. 37

PROP-DA-7-COMB-TO-N-PROP_LINE

Hydrograph type	= Combine	Peak discharge	= 9.508 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 33,813 cuft
Inflow hyds.	= 35, 36	Contrib. drain. area	= 1.150 ac



Hydrograph Report

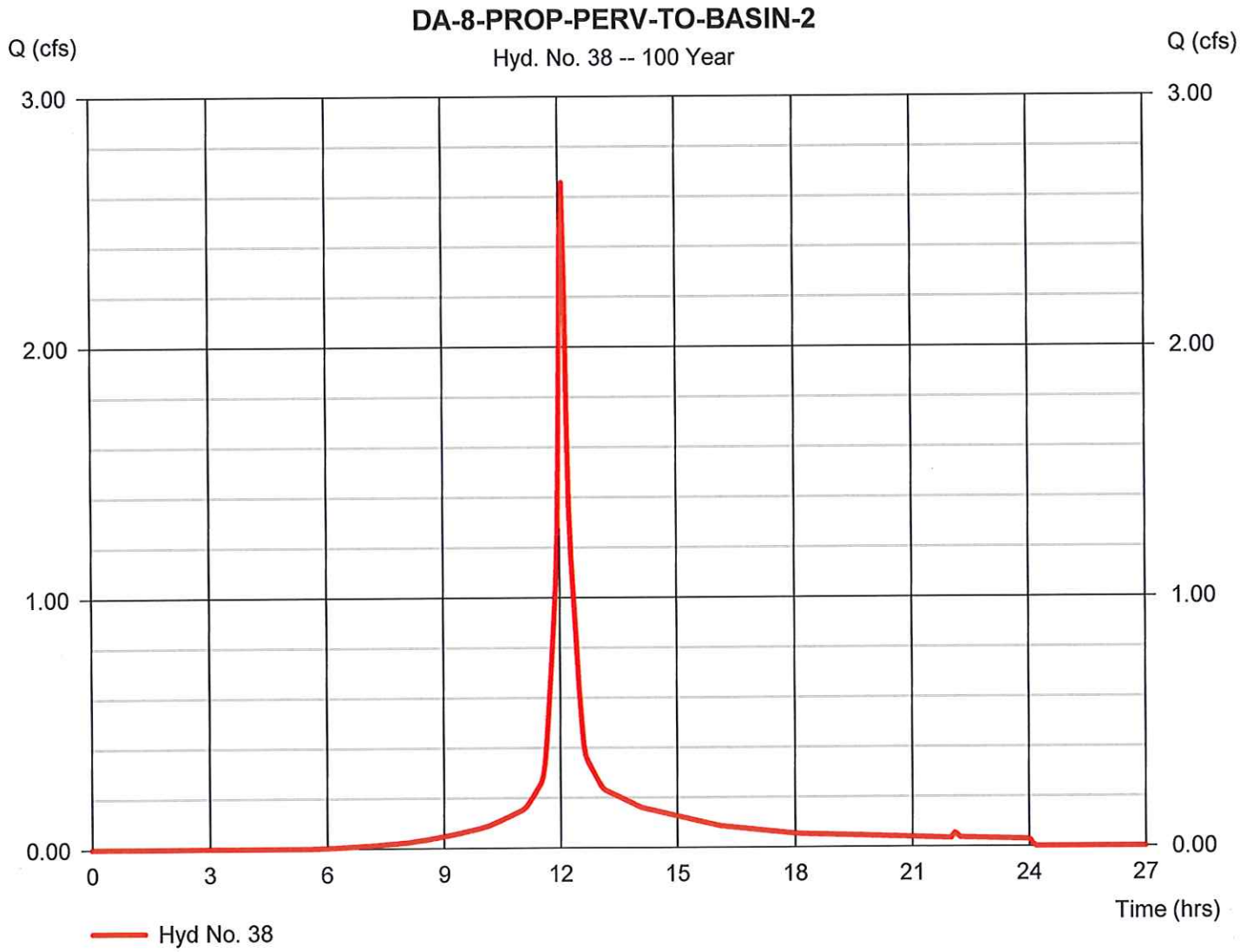
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 38

DA-8-PROP-PERV-TO-BASIN-2

Hydrograph type	= SCS Runoff	Peak discharge	= 2.656 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 9,003 cuft
Drainage area	= 0.340 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.50 min
Total precip.	= 11.11 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.340 x 74)] / 0.340



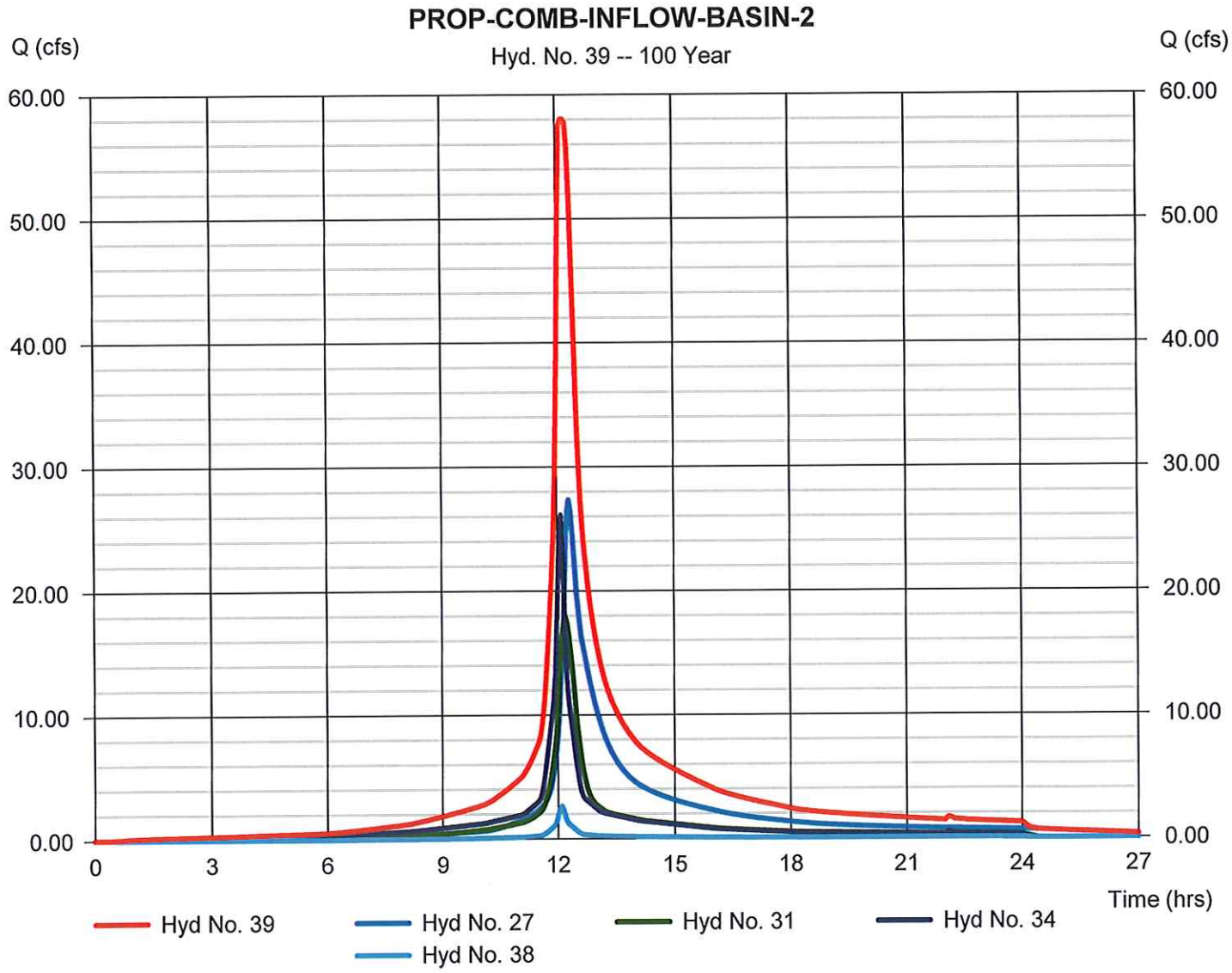
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Monday, 11 / 17 / 2025

Hyd. No. 39

PROP-COMB-INFLOW-BASIN-2

Hydrograph type	= Combine	Peak discharge	= 58.01 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.15 hrs
Time interval	= 3 min	Hyd. volume	= 359,155 cuft
Inflow hyds.	= 27, 31, 34, 38	Contrib. drain. area	= 0.340 ac



Hydrograph Report

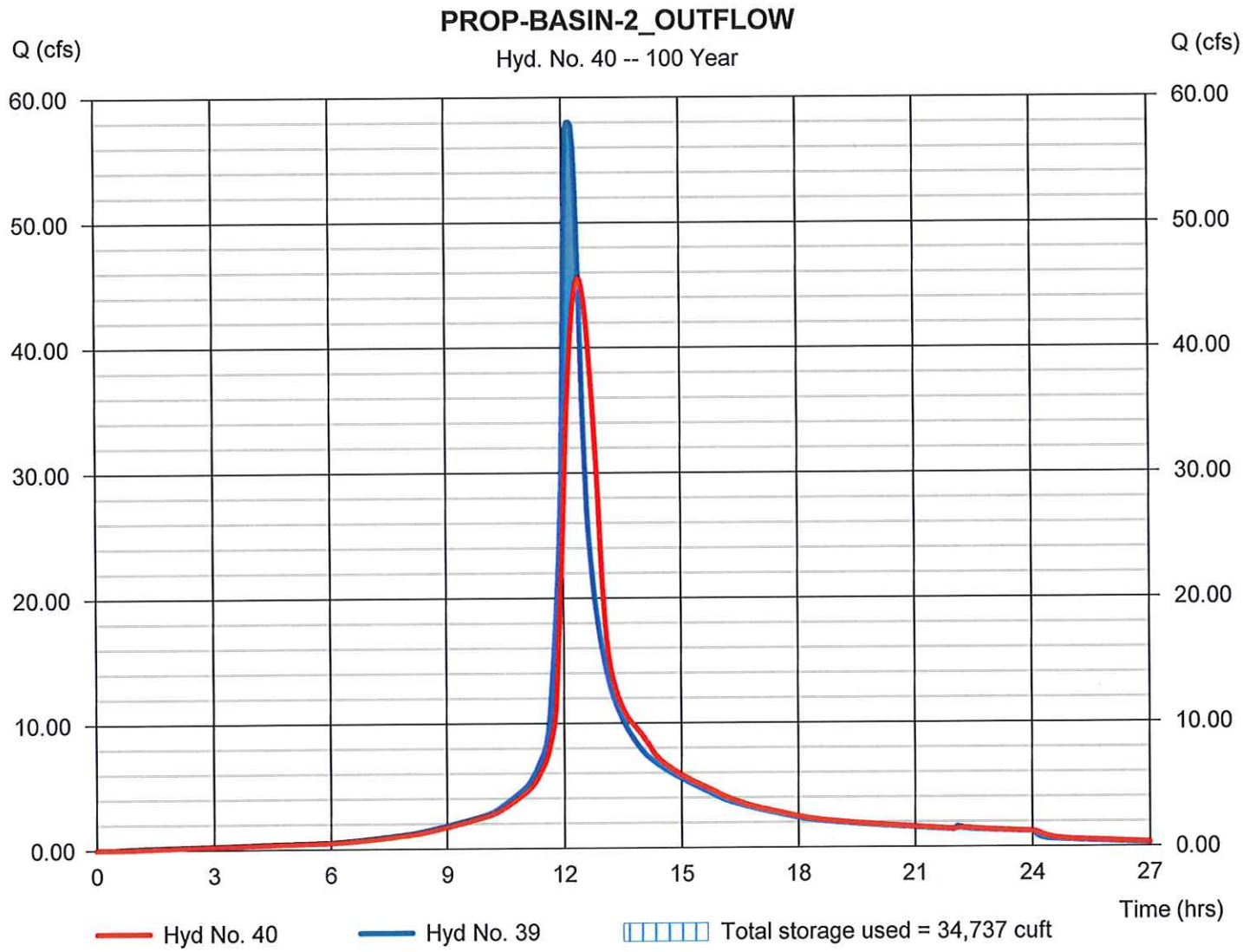
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 40

PROP-BASIN-2_OUTFLOW

Hydrograph type	= Reservoir	Peak discharge	= 45.59 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.40 hrs
Time interval	= 3 min	Hyd. volume	= 359,152 cuft
Inflow hyd. No.	= 39 - PROP-COMB-INFLOW-BASIN2	Max. Elevation	= 79.50 ft
Reservoir name	= POND-2	Max. Storage	= 34,737 cuft

Storage Indication method used.



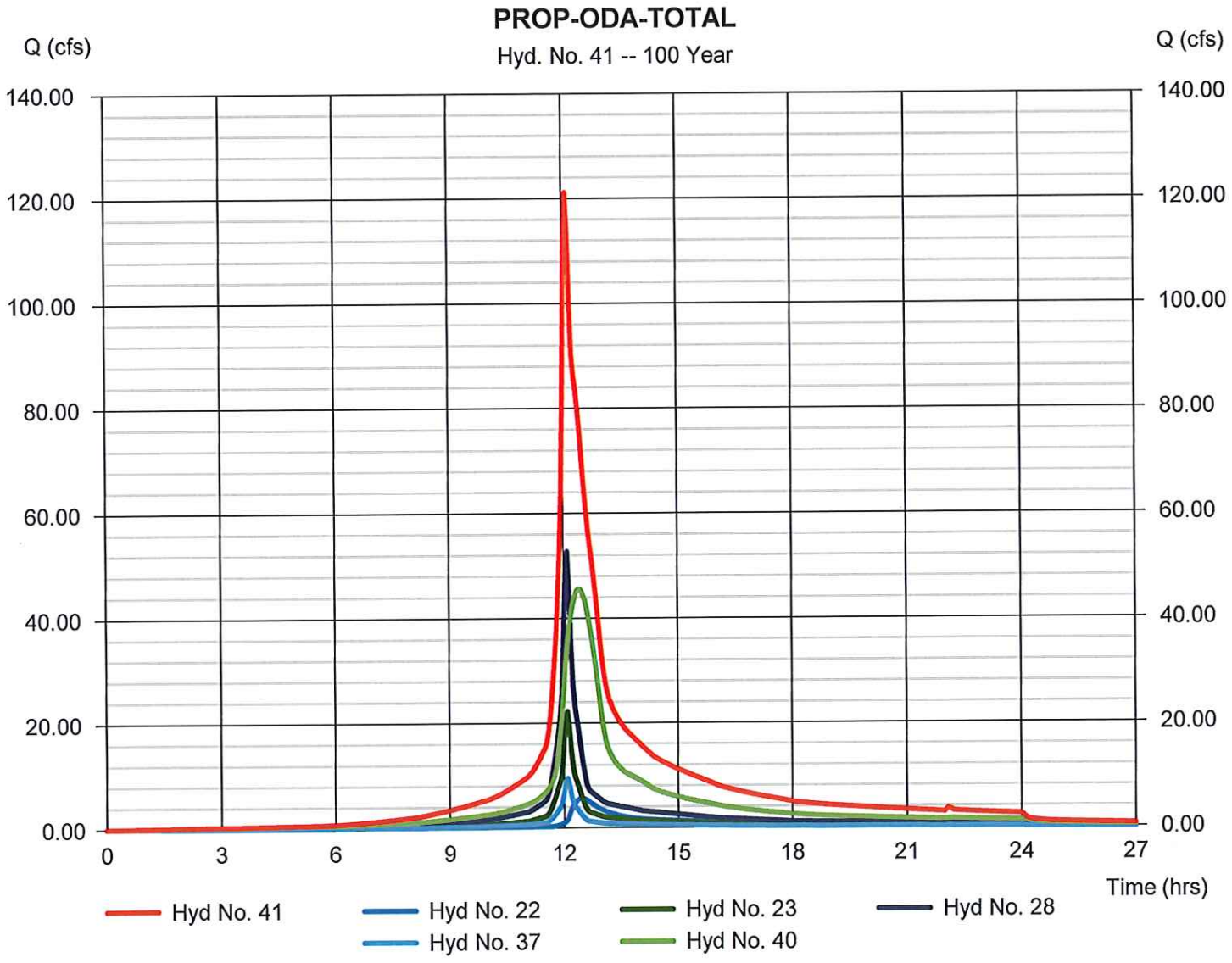
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Monday, 11 / 17 / 2025

Hyd. No. 41

PROP-ODA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 121.17 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 3 min	Hyd. volume	= 711,906 cuft
Inflow hyds.	= 22, 23, 28, 37, 40	Contrib. drain. area	= 9.600 ac



Hydraflow Rainfall Report

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

Monday, 11 / 17 / 2025

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	124.3484	17.2000	1.0242	--------
3	0.0000	0.0000	0.0000	--------
5	49.2463	9.4000	0.7805	--------
10	162.7553	18.5000	1.0083	--------
25	200.6197	19.6000	1.0160	--------
50	181.9380	19.2000	0.9673	--------
100	227.7936	21.3001	0.9883	--------

File name: Trenton.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.20	4.22	3.55	3.06	2.69	2.40	2.16	1.97	1.81	1.67	1.55	1.45
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.14	4.87	4.07	3.52	3.11	2.80	2.55	2.35	2.18	2.03	1.91	1.80
10	6.75	5.56	4.72	4.10	3.63	3.25	2.94	2.69	2.48	2.29	2.14	2.00
25	7.75	6.42	5.48	4.78	4.23	3.80	3.45	3.15	2.91	2.69	2.51	2.35
50	8.34	6.96	5.97	5.23	4.66	4.20	3.82	3.51	3.25	3.02	2.82	2.65
100	9.00	7.58	6.54	5.76	5.15	4.65	4.24	3.90	3.61	3.36	3.14	2.95

Tc = time in minutes. Values may exceed 60.

Precip. file name: R:\Years\2021\21-191\Private\STORMWATER CALCS\HYDGRF\Hydgrf_F\21-191-F.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.87	3.97	0.00	4.46	6.11	0.00	7.47	11.11
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	2.87	3.97	0.00	4.42	6.11	6.43	7.47	11.11

APPENDIX - E

BERGEN COUNTY CUSTOM SOIL RESOURCE REPORT

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Bergen County, New Jersey

April 8, 2025

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.

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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

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

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

Map Scale: 1:3,490 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0, 50, 100, 200, 300

Feet: 0, 150, 300, 600, 900

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 1:24,000.

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: Bergen County, New Jersey
Survey Area Data: Version 21, Sep 3, 2024

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

Date(s) aerial images were photographed: Oct 10, 2022—Oct 16, 2022

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
BohC	Boonton moderately well drained gravelly loam, 8 to 15 percent slopes	12.5	37.4%
BohE	Boonton moderately well drained gravelly loam, 25 to 45 percent slopes	7.0	20.9%
BouB	Boonton-Urban land complex, 0 to 8 percent slopes	0.1	0.4%
BouC	Boonton-Urban land complex, 8 to 15 percent slopes	6.1	18.1%
BouE	Boonton-Urban land complex, 25 to 45 percent slopes	0.3	0.9%
DuuC	Dunellen-Urban land complex, 8 to 15 percent slopes	2.7	8.2%
UdwuB	Udorthents, wet substratum-Urban land complex	0.4	1.3%
UR	Urban land	4.3	12.9%
Totals for Area of Interest		**33.5**	**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 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.

Bergen County, New Jersey

BohC—Boonton moderately well drained gravelly loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1kgyj
Elevation: 50 to 500 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Boonton, Moderately Well Drained

Setting

Landform: Ground moraines
Landform position (three-dimensional): Upper third of mountainflank, center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy basal till derived from basalt

Typical profile

Ap - 0 to 6 inches: gravelly loam
Bt - 6 to 23 inches: gravelly loam
Bx - 23 to 41 inches: gravelly fine sandy loam
C1 - 41 to 44 inches: gravelly fine sandy loam
C2 - 44 to 66 inches: gravelly loamy fine sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: 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 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Riverhead

Percent of map unit: 5 percent
Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Haledon

Percent of map unit: 5 percent
Landform: Ground moraines
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Holyoke

Percent of map unit: 5 percent
Landform: Ridges, hills, ground moraines
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Hydric soil rating: No

BohE—Boonton moderately well drained gravelly loam, 25 to 45 percent slopes

Map Unit Setting

National map unit symbol: 1kgym
Elevation: 50 to 500 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Boonton, moderately well drained, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boonton, Moderately Well Drained

Setting

Landform: Ground moraines
Landform position (three-dimensional): Upper third of mountainflank, center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy basal till derived from basalt

Typical profile

Ap - 0 to 4 inches: gravelly loam
Bt - 4 to 20 inches: gravelly loam
Bx - 20 to 40 inches: gravelly fine sandy loam
C1 - 40 to 44 inches: gravelly fine sandy loam
C2 - 44 to 66 inches: gravelly loamy fine sand

Properties and qualities

Slope: 25 to 45 percent
Depth to restrictive feature: More than 80 inches
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 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: Unranked

BouB—Boonton-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1kgys
Elevation: 50 to 500 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Boonton and similar soils: 50 percent
Urban land, boonton substratum: 40 percent

Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boonton

Setting

Landform: Ground moraines
Landform position (three-dimensional): Upper third of mountainflank, center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy basal till derived from basalt

Typical profile

A - 0 to 5 inches: loam
BA - 5 to 8 inches: silt loam
BE - 8 to 17 inches: silt loam
Bt - 17 to 30 inches: silt loam
Btx1 - 30 to 40 inches: gravelly fine sandy loam
Btx2 - 40 to 47 inches: fine sandy loam
CBt1 - 47 to 58 inches: loamy sand
CBt2 - 58 to 72 inches: loamy sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 20 to 36 inches to fragipan
Drainage class: Well drained
Runoff class: Low
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: More than 80 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: C
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Description of Urban Land, Boonton Substratum

Setting

Landform: Ground moraines
Landform position (three-dimensional): Lower third of mountainflank, upper third of mountainflank, center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Typical profile

H1 - 0 to 12 inches: material
H2 - 12 to 47 inches: silt loam
2CBt1 - 47 to 58 inches: loamy sand

2CBt2 - 58 to 72 inches: loamy sand

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Minor Components

Udorthents, boonton substratum

Percent of map unit: 10 percent
Landform: Ground moraines
Landform position (three-dimensional): Lower third of mountainflank, upper third of mountainflank, center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

BouC—Boonton-Urban land complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1kgyv
Elevation: 50 to 500 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Boonton and similar soils: 50 percent
Urban land, boonton substratum: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boonton

Setting

Landform: Ground moraines
Landform position (three-dimensional): Upper third of mountainflank, center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy basal till derived from basalt

Typical profile

A - 0 to 5 inches: loam
BA - 5 to 8 inches: silt loam
BE - 8 to 17 inches: silt loam
Bt - 17 to 30 inches: silt loam
Btx1 - 30 to 40 inches: gravelly fine sandy loam

Btx2 - 40 to 47 inches: fine sandy loam
CBt1 - 47 to 58 inches: loamy sand
CBt2 - 58 to 72 inches: loamy sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 36 inches to fragipan
Drainage class: Well drained
Runoff class: Medium
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: More than 80 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): 3e
Hydrologic Soil Group: C
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Description of Urban Land, Boonton Substratum

Setting

Landform: Ground moraines
Landform position (three-dimensional): Lower third of mountainflank, upper third of mountainflank, center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Typical profile

H1 - 0 to 12 inches: material
H2 - 12 to 47 inches: silt loam
2CBt1 - 47 to 58 inches: loamy sand
2CBt2 - 58 to 72 inches: loamy sand

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Minor Components

Udorthents, boonton substratum

Percent of map unit: 10 percent
Landform: Ground moraines
Landform position (three-dimensional): Lower third of mountainflank, upper third of mountainflank, center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

BouE—Boonton-Urban land complex, 25 to 45 percent slopes

Map Unit Setting

National map unit symbol: 1kgyx
Elevation: 50 to 500 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Boonton and similar soils: 50 percent
Urban land, boonton red sandstone lowland substratum: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boonton

Setting

Landform: Ground moraines
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Upper third of mountainflank, center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy basal till derived from basalt

Typical profile

A - 0 to 5 inches: loam
BA - 5 to 8 inches: gravelly loam
BE - 8 to 17 inches: silt loam
Bt - 17 to 30 inches: silt loam
Btx1 - 30 to 40 inches: gravelly fine sandy loam
Btx2 - 40 to 47 inches: fine sandy loam
CBt1 - 47 to 58 inches: loamy sand
CBt2 - 58 to 72 inches: loamy sand

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 20 to 36 inches to fragipan
Drainage class: Well drained
Runoff class: 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: More than 80 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): 6e
Hydrologic Soil Group: C
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Description of Urban Land, Boonton Red Sandstone Lowland Substratum

Setting

Landform position (three-dimensional): Lower third of mountainflank
Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Typical profile

H1 - 0 to 12 inches: material
H2 - 12 to 47 inches: silt loam
2CBt1 - 47 to 58 inches: loamy sand
2CBt2 - 58 to 72 inches: loamy sand

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Minor Components

Udorthents, boonton red sandstone lowland substratum

Percent of map unit: 10 percent
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

DuuC—Dunellen-Urban land complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: b0rv
Elevation: 50 to 150 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Dunellen and similar soils: 60 percent
Urban land, dunellen substratum: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dunellen

Setting

Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy outwash derived from sandstone

Typical profile

A1 - 0 to 8 inches: sandy loam
A2 - 8 to 14 inches: sandy loam
BA - 14 to 20 inches: sandy loam
Bt - 20 to 31 inches: sandy loam
C - 31 to 42 inches: sandy loam
2C - 42 to 70 inches: stratified gravelly sand to sand to loamy sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 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: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F144AY023CT - Well Drained Outwash
Hydric soil rating: No

Description of Urban Land, Dunellen Substratum

Setting

Landform: Outwash plains
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Typical profile

H1 - 0 to 12 inches: material
H2 - 12 to 31 inches: sandy loam
2C - 31 to 42 inches: sandy loam
3C - 42 to 70 inches: loamy sand

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Minor Components

Udorthents, dunellen substratum

Percent of map unit: 10 percent
Landform: Outwash plains
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

UdwuB—Udorthents, wet substratum-Urban land complex

Map Unit Setting

National map unit symbol: 1kgz3
Elevation: 0 to 570 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, wet substratum, and similar soils: 68 percent
Urban land: 30 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Wet Substratum

Setting

Landform: Flats
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy lateral spread deposits

Typical profile

A - 0 to 36 inches: sand
2O - 36 to 60 inches: muck

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Tidal marshes
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Typical profile

C - 0 to 60 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Minor Components

Transquaking, very frequently flooded

Percent of map unit: 1 percent
Landform: Tidal marshes
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Pawcatuck, very frequently flooded

Percent of map unit: 1 percent
Landform: Tidal marshes
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

UR—Urban land

Map Unit Setting

National map unit symbol: b0ss
Elevation: 0 to 170 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Minor Components

Udorthents

Percent of map unit: 5 percent
Landform: Low hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

(12) IC-6

(8) IC-6

(3) IC-6

EXISTING LANDSCAPE AREA TO REMAIN

TREE MITIGATION SCHEDULE:

ABBR.	QTY.	BOTANICAL NAME	COMMON NAME	COND.	SIZE	NOTES*
TREES						
EVERGREEN TREE						
IC-6	66	Ilex x 'Conaf'	Oak Leaf™ Red Holly	B&B	8' ht.	1/2/4/8
TO-12	153	Thuja occidentalis 'Green Giant'	'Green Giant' Artborvitae	B&B	8' ht.	1/2/4/8
DECIDUOUS TREE						
AS-6	14	Acer saccharum 'Green Mountain'	'Green Mountain' Sugar Maple	B&B	3.5" cal.	1/2/4/7
MG-12	4	Metasequoia glyptostroboides	Dawn Redwood	B&B	3.5" cal.	1/2/4/7
QA-4	17	Quercus acutissima	Chestnut Oak	B&B	3.5" cal.	1/2/4/7
FLOWERING TREE						
PK-4	15	Prunus 'Kanzan'	'Kanzan' Flowering Cherry	B&B	3" cal.	1/2/4/8

** SEE PLANT SPECIFIC CONDITION NOTES BELOW FOR EACH PLANT AS SPECIFIED*

PLANT SPECIFIC CONDITION NOTES:

1. ALL PLANTS SHALL HAVE **MATCHED** CHARACTERISTICS IN FORM, COLOR, VIGOR, GROWTH HABIT, AND FOLIAGE DENSITY. ANY PLANT THAT DEVIATES SUBSTANTIALLY FROM THE ACCEPTED NORM WILL BE REJECTED ON-SITE.
2. ALL LIKE PLANTS SHALL HAVE A SIMILAR CENTRAL GROWTH **LEADER** AT A CONSISTENT HEIGHT ABOVE THE ROOT COLOR WITHOUT ANY VISIBLE DAMAGE. ALL PLANTS WITH A BROKEN OR DAMAGED CENTRAL LEADER WILL BE REJECTED ON-SITE.
3. EACH PLANT SHALL HAVE **MULTIPLE TRUNKS** WITH SIMILAR DIAMETER, STRENGTH, VIGOR, AND HABIT. THE PLANT SHALL BE LIMBED UP WITH ACCEPTABLE NURSERY PRUNING PRACTICES TO HIGHLIGHT THE MULTI-TRUNK FORM.
4. EACH PLANT SHALL EXHIBIT EXEMPLARY **SPECIMEN** QUALITIES THAT BEST PORTRAY THE UNIQUENESS OF THE SPECIFIED SPECIES - FORM, HABIT, COLOR, TEXTURE, SIZE, VIGOR.
5. EACH **STANDARD** PLANT SHALL HAVE A CLEAR, SINGLE, STRAIGHT TRUNK WITH NO VISIBLE DAMAGE. THE LIMBED UP CLEAR HEIGHT SHALL BE COMPLIANT WITH DESIGN INTENT, LOCAL CODE, AND NURSERY BEST PRACTICES.
6. ARRANGE THE PLANTS SPECIFIED IN A **HEDGE** FORMATION SO THAT THE FOLIAGE FROM ONE PLANT OVERLAPS THE FOLIAGE OF THE ADJACENT PLANT AFTER 5 YEARS OF GROWTH. GROWTH RATES WILL VARY BY SPECIES AND MICRO-CLIMATE.
7. THIS TREE IS CATEGORIZED AS A **MAJOR TREE** FOR PURPOSES OF TREE MITIGATION.
8. THIS TREE IS CATEGORIZED AS A **MINOR TREE** FOR PURPOSES OF TREE MITIGATION.

TREE MITIGATION CALCULATIONS:

TREE MITIGATION REQUIRED = 0 MINOR TREES / 237 MAJOR TREES (SEE CIVIL & ARBORIST PLANS)
TREE MITIGATION PROVIDED = 231 MINOR TREES / 35 MAJOR TREES (SEE SCHEDULE THIS SHEET)

SURPLUS / DEFICIT:
MINOR = **231 MINOR TREE SURPLUS**
- (231 minor trees provided - 0 minor trees required = 231 minor tree surplus)
- 2 minor trees = 1 major tree (pursuant to Borough of Tenefly Code chapter 26-1.6.d.3(d))
- minor tree surplus = 115.5 major trees

MAJOR = **-87 MAJOR TREE DEFICIT**
- ((35 major trees provided -237 major trees required) + 115 (from minor tree surplus) = -87 TREE DEFICIT)

X1 **PLANTING PLAN: CLUBHOUSE**

Scale: 1/16" = 1'-0"

0 8 16 32 48

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ARCHITECT:

CONSULTANT:

REVISIONS

DATE:	DESCRIPTION:
09/18/24	SCHEMATIC DESIGN
02/28/25	DESIGN DEVELOPMENT
06/30/25	DEMO SET
08/27/25	PERMIT SET (PRICING)
10/10/25	PERMIT/FOR CONSTRUCTION

PROJECT:

KNICKERBOCKER COUNTRY CLUB

CLUBHOUSE RENOVATION & ADDITION

188 KNICKERBOCKER RD
TENAFLY, NJ 07670

JOB NUMBER: 24008

DATE: 07/26/2024

TITLE:

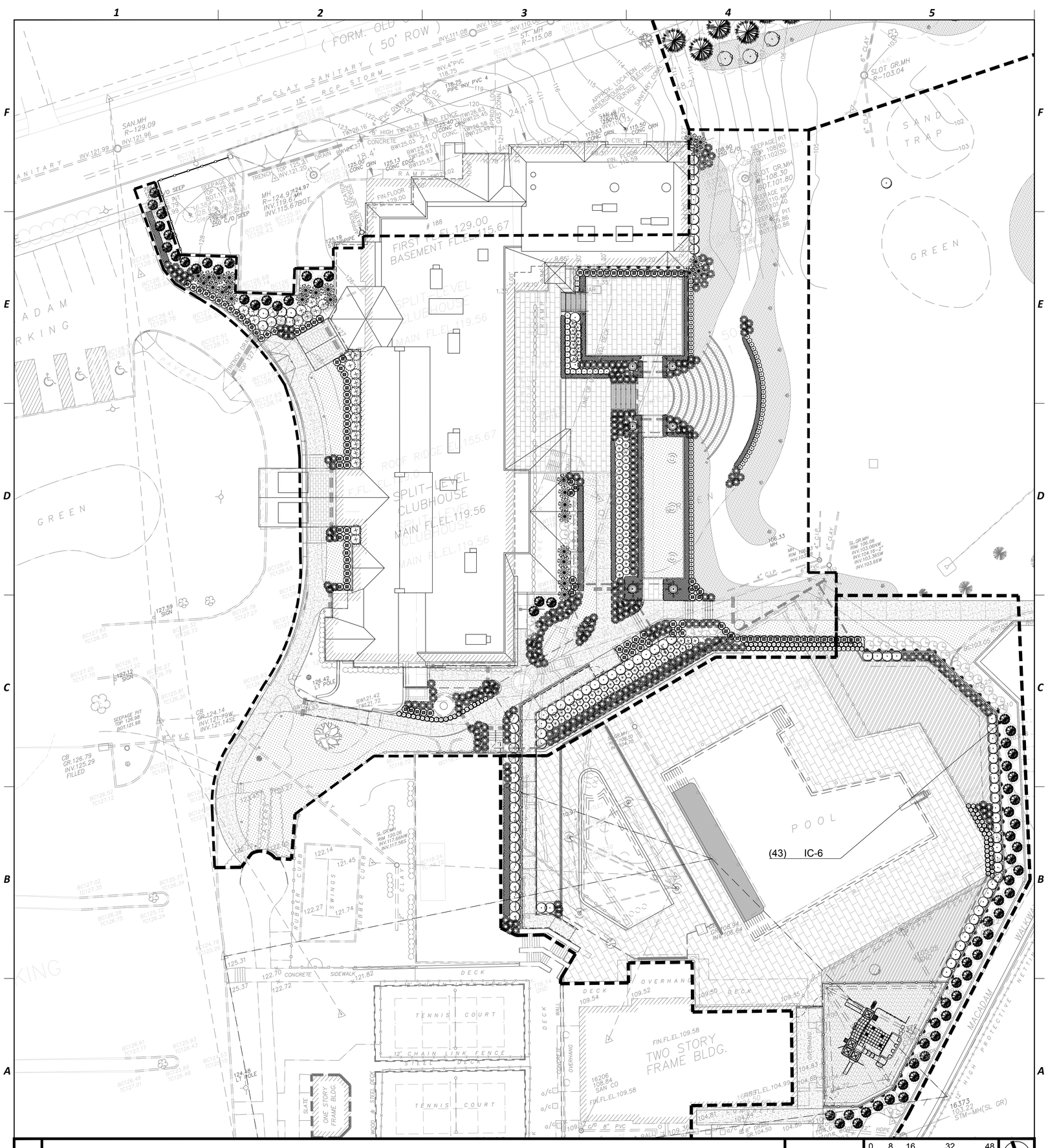
TREE MITIGATION PLAN

SHEET:

L7-01

RELEASED FOR CONSTRUCTION

/Volumes/quercus/Private/qllc/ACTIVE JOBS/24325 Knickerbocker CC/deliverables/04-CD/SHEET SET/CLUBHOUSE SET/L7-00 CH.DWG Plotted: Oct 02, 2025 - 5:58pm by jonathanyoung



X2 **PLANTING PLAN: POOL**

Scale: 1/16" = 1'-0"

0 8 16 32 48

TREE MITIGATION SCHEDULE:

ABBR.	QTY.	BOTANICAL NAME	COMMON NAME	COND.	SIZE	NOTES*
TREES						
EVERGREEN TREE						
IC-6	66	Ilex x 'Conaf'	Oak Leaf™ Red Holly	B&B	8' ht.	1/2/4/8
TO-12	153	Thuja occidentalis 'Green Giant'	'Green Giant' Artborvitae	B&B	8' ht.	1/2/4/8
DECIDUOUS TREE						
AS-6	14	Acer saccharum 'Green Mountain'	'Green Mountain' Sugar Maple	B&B	3.5" cal.	1/2/4/7
MG-12	4	Metasequoia glyptostroboides	Dawn Redwood	B&B	3.5" cal.	1/2/4/7
QA-4	17	Quercus acutissima	Chestnut Oak	B&B	3.5" cal.	1/2/4/7
FLOWERING TREE						
PK-4	15	Prunus 'Kanzan'	'Kanzan' Flowering Cherry	B&B	3" cal.	1/2/4/8

** SEE PLANT SPECIFIC CONDITION NOTES BELOW FOR EACH PLANT AS SPECIFIED*

PLANT SPECIFIC CONDITION NOTES:

1. ALL PLANTS SHALL HAVE **MATCHED** CHARACTERISTICS IN FORM, COLOR, VIGOR, GROWTH HABIT, AND FOLIAGE DENSITY. ANY PLANT THAT DEVIATES SUBSTANTIALLY FROM THE ACCEPTED NORM WILL BE REJECTED ON-SITE.
2. ALL LIKE PLANTS SHALL HAVE A SIMILAR CENTRAL GROWTH **LEADER** AT A CONSISTENT HEIGHT ABOVE THE ROOT COLOR WITHOUT ANY VISIBLE DAMAGE. ALL PLANTS WITH A BROKEN OR DAMAGED CENTRAL LEADER WILL BE REJECTED ON-SITE.
3. EACH PLANT SHALL HAVE **MULTIPLE TRUNKS** WITH SIMILAR DIAMETER, STRENGTH, VIGOR, AND HABIT. THE PLANT SHALL BE LIMBED UP WITH ACCEPTABLE NURSERY PRUNING PRACTICES TO HIGHLIGHT THE MULTI-TRUNK FORM.
4. EACH PLANT SHALL EXHIBIT EXEMPLARY **SPECIMEN** QUALITIES THAT BEST PORTRAY THE UNIQUENESS OF THE SPECIFIED SPECIES - FORM, HABIT, COLOR, TEXTURE, SIZE, VIGOR.
5. EACH **STANDARD** PLANT SHALL HAVE A CLEAR, SINGLE, STRAIGHT TRUNK WITH NO VISIBLE DAMAGE. THE LIMBED UP CLEAR HEIGHT SHALL BE COMPLIANT WITH DESIGN INTENT, LOCAL CODE, AND NURSERY BEST PRACTICES.
6. ARRANGE THE PLANTS SPECIFIED IN A **HEDGE** FORMATION SO THAT THE FOLIAGE FROM ONE PLANT OVERLAPS THE FOLIAGE OF THE ADJACENT PLANT AFTER 5 YEARS OF GROWTH. GROWTH RATES WILL VARY BY SPECIES AND MICRO-CLIMATE.
7. THIS TREE IS CATEGORIZED AS A **MAJOR TREE** FOR PURPOSES OF TREE MITIGATION.
8. THIS TREE IS CATEGORIZED AS A **MINOR TREE** FOR PURPOSES OF TREE MITIGATION.

TREE MITIGATION CALCULATIONS:

TREE MITIGATION REQUIRED = 0 MINOR TREES / 237 MAJOR TREES (SEE CIVIL & ARBORIST PLANS)
TREE MITIGATION PROVIDED = 231 MINOR TREES / 35 MAJOR TREES (SEE SCHEDULE THIS SHEET)

SURPLUS / DEFICIT:
MINOR = **231 MINOR TREE SURPLUS**
- (231 minor trees provided - 0 minor trees required = 231 minor tree surplus)
- 2 minor trees = 1 major tree (pursuant to Borough of Tenefly Code chapter 26-1.6.d.3(d))
- minor tree surplus = 115.5 major trees

MAJOR = **-87 MAJOR TREE DEFICIT**
- ((35 major trees provided -237 major trees required) + 115 (from minor tree surplus) = -87 TREE DEFICIT)

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ARCHITECT:

CONSULTANT:

REVISIONS

DATE:	DESCRIPTION:
09/18/24	*SCHEMATIC DESIGN*
02/28/25	*DESIGN DEVELOPMENT*
06/30/25	*DEMO SET*
08/27/25	*PERMIT SET (PRICING)*
10/10/25	*PERMIT/FOR CONSTRUCTION*

PROJECT:

KNICKERBOCKER COUNTRY CLUB

CLUBHOUSE RENOVATION & ADDITION

188 KNICKERBOCKER RD TENAFLY, NJ 07670

JOB NUMBER: *24008*

DATE: *07/26/2024*

TITLE:

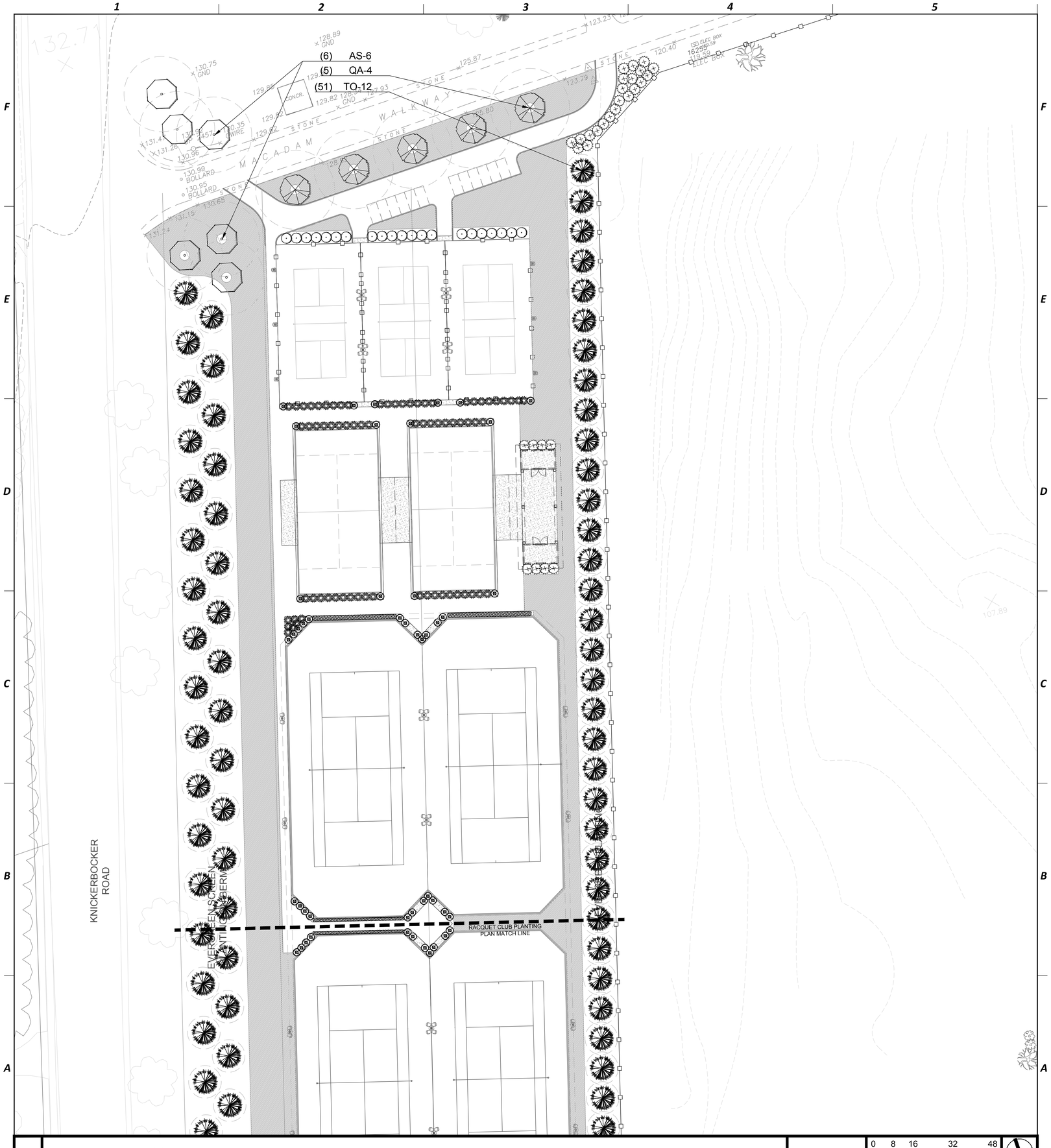
TREE MITIGATION PLAN

SHEET:

L7-02

RELEASED FOR CONSTRUCTION

/Volumes/quercus/Private/qllc/ACTIVE JOBS/24325 Knickerbocker CC/deliverables/04-CD/SHEET SET/CLUBHOUSE SET/L7-00 CH.DWG Plotted: Oct 02, 2025 - 5:58pm by jonathanyoung



X3 **PLANTING PLAN: RACQUET CLUB** Scale: 1/16" = 1'-0" 0 8 16 32 48

TREE MITIGATION SCHEDULE:

ABBR.	QTY.	BOTANICAL NAME	COMMON NAME	COND.	SIZE	NOTES*
TREES						
EVERGREEN TREE						
IC-6	66	Ilex x 'Conaf'	Oak Leaf™ Red Holly	B&B	8' ht.	1/2/4/8
TO-12	153	Thuja occidentalis 'Green Giant'	'Green Giant' Artborvitae	B&B	8' ht.	1/2/4/8
DECIDUOUS TREE						
AS-6	14	Acer saccharum 'Green Mountain'	'Green Mountain' Sugar Maple	B&B	3.5" cal.	1/2/4/7
MG-12	4	Metasequoia glyptostroboides	Dawn Redwood	B&B	3.5" cal.	1/2/4/7
QA-4	17	Quercus acutissima	Chestnut Oak	B&B	3.5" cal.	1/2/4/7
FLOWERING TREE						
PK-4	15	Prunus 'Kanzan'	'Kanzan' Flowering Cherry	B&B	3" cal.	1/2/4/8

** SEE PLANT SPECIFIC CONDITION NOTES BELOW FOR EACH PLANT AS SPECIFIED*

PLANT SPECIFIC CONDITION NOTES:

1. ALL PLANTS SHALL HAVE **MATCHED** CHARACTERISTICS IN FORM, COLOR, VIGOR, GROWTH HABIT, AND FOLIAGE DENSITY. ANY PLANT THAT DEVIATES SUBSTANTIALLY FROM THE ACCEPTED NORM WILL BE REJECTED ON-SITE.
2. ALL LIKE PLANTS SHALL HAVE A SIMILAR CENTRAL GROWTH **LEADER** AT A CONSISTENT HEIGHT ABOVE THE ROOT COLOR WITHOUT ANY VISIBLE DAMAGE. ALL PLANTS WITH A BROKEN OR DAMAGED CENTRAL LEADER WILL BE REJECTED ON-SITE.
3. EACH PLANT SHALL HAVE **MULTIPLE TRUNKS** WITH SIMILAR DIAMETER, STRENGTH, VIGOR, AND HABIT. THE PLANT SHALL BE LIMBED UP WITH ACCEPTABLE NURSERY PRUNING PRACTICES TO HIGHLIGHT THE MULTI-TRUNK FORM.
4. EACH PLANT SHALL EXHIBIT EXEMPLARY **SPECIMEN** QUALITIES THAT BEST PORTRAY THE UNIQUENESS OF THE SPECIFIED SPECIES - FORM, HABIT, COLOR, TEXTURE, SIZE, VIGOR.
5. EACH **STANDARD** PLANT SHALL HAVE A CLEAR, SINGLE, STRAIGHT TRUNK WITH NO VISIBLE DAMAGE. THE LIMBED UP CLEAR HEIGHT SHALL BE COMPLIANT WITH DESIGN INTENT, LOCAL CODE, AND NURSERY BEST PRACTICES.
6. ARRANGE THE PLANTS SPECIFIED IN A **HEDGE** FORMATION SO THAT THE FOLIAGE FROM ONE PLANT OVERLAPS THE FOLIAGE OF THE ADJACENT PLANT AFTER 5 YEARS OF GROWTH. GROWTH RATES WILL VARY BY SPECIES AND MICRO-CLIMATE.
7. THIS TREE IS CATEGORIZED AS A **MAJOR TREE** FOR PURPOSES OF TREE MITIGATION.
8. THIS TREE IS CATEGORIZED AS A **MINOR TREE** FOR PURPOSES OF TREE MITIGATION.

TREE MITIGATION CALCULATIONS:

TREE MITIGATION REQUIRED = 0 MINOR TREES / 237 MAJOR TREES (SEE CIVIL & ARBORIST PLANS)
TREE MITIGATION PROVIDED = 231 MINOR TREES / 35 MAJOR TREES (SEE SCHEDULE THIS SHEET)

SURPLUS / DEFICIT:
MINOR = **231 MINOR TREE SURPLUS**
- (231 minor trees provided - 0 minor trees required = 231 minor tree surplus)
- 2 minor trees = 1 major tree (pursuant to Borough of Tenefly Code chapter 26-1.6.d.3(d))
- minor tree surplus = 115.5 major trees

MAJOR = **-87 MAJOR TREE DEFICIT**
- ((35 major trees provided -237 major trees required) + 115 (from minor tree surplus) = -87 TREE DEFICIT)

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ARCHITECT:

CONSULTANT:

REVISIONS

DATE:	DESCRIPTION:
09/18/24	SCHEMATIC DESIGN
02/28/25	DESIGN DEVELOPMENT
06/30/25	DEMO SET
08/27/25	PERMIT SET (PRICING)
10/10/25	PERMIT/FOR CONSTRUCTION

PROJECT:

KNICKERBOCKER COUNTRY CLUB

CLUBHOUSE RENOVATION & ADDITION

188 KNICKERBOCKER RD
TENAFLY, NJ 07670

JOB NUMBER: 24008

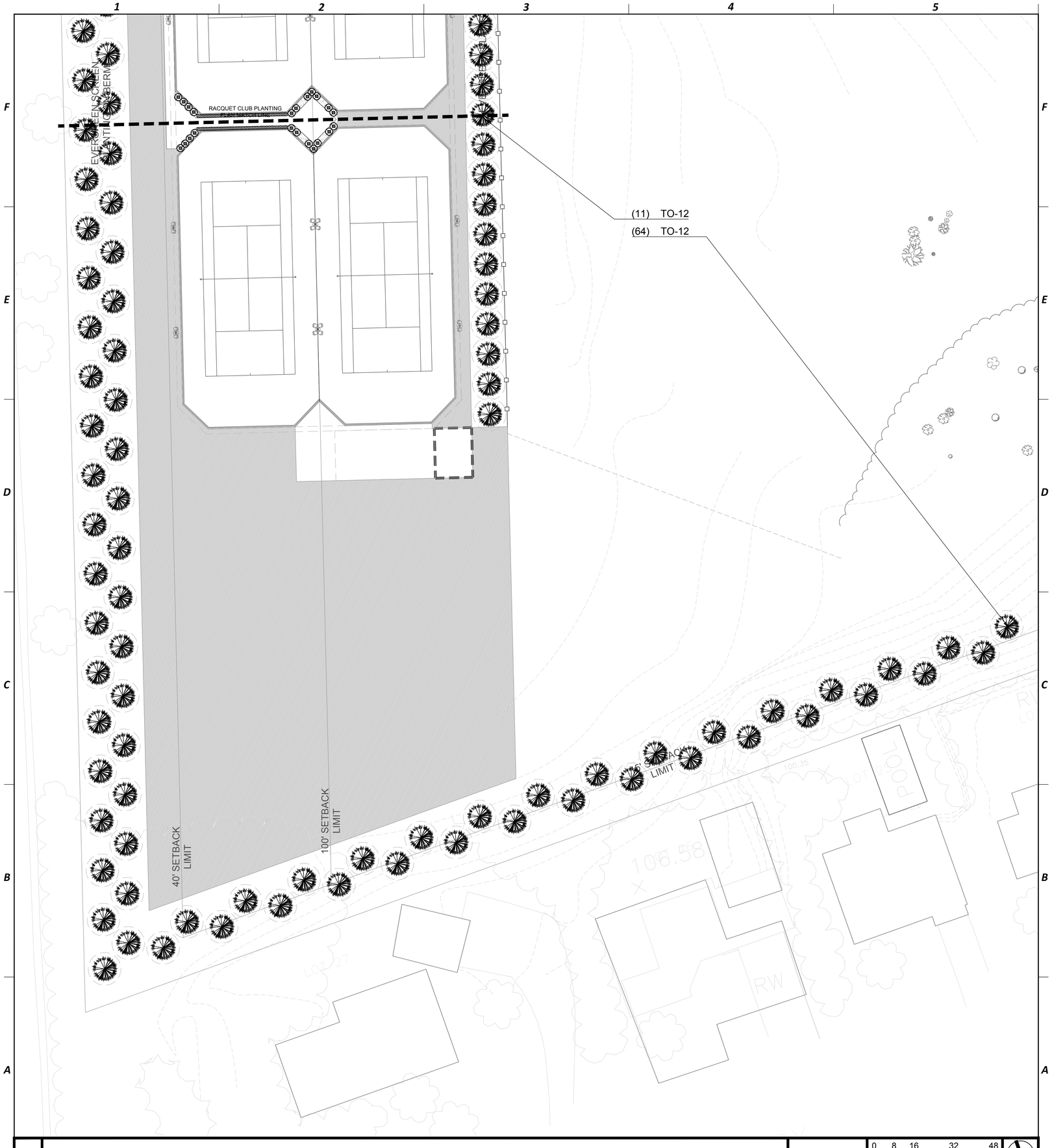
DATE: 07/26/2024

TITLE: **TREE MITIGATION PLAN**

SHEET: L7-03

RELEASED FOR CONSTRUCTION

/Volumes/quercus/Private/qllc/ACTIVE JOBS/24325 Knickerbocker CC/deliverables/04-CD/SHEET SET/CLUBHOUSE SET/L7-00 CH.DWG Plotted: Oct 02, 2025 - 5:58pm by jonathanyoung



X4 **PLANTING PLAN: RACQUET CLUB** Scale: 1/16" = 1'-0" 0 8 16 32 48

TREE MITIGATION SCHEDULE:

ABBR.	QTY.	BOTANICAL NAME	COMMON NAME	COND.	SIZE	NOTES*
TREES						
EVERGREEN TREE						
IC-6	66	Ilex x 'Conaf'	Oak Leaf™ Red Holly	B&B	8' ht.	1/2/4/8
TO-12	153	Thuja occidentalis 'Green Giant'	'Green Giant' Artborvitae	B&B	8' ht.	1/2/4/8
DECIDUOUS TREE						
AS-6	14	Acer saccharum 'Green Mountain'	'Green Mountain' Sugar Maple	B&B	3.5" cal.	1/2/4/7
MG-12	4	Metasequoia glyptostroboides	Dawn Redwood	B&B	3.5" cal.	1/2/4/7
QA-4	17	Quercus acutissima	Chestnut Oak	B&B	3.5" cal.	1/2/4/7
FLOWERING TREE						
PK-4	15	Prunus 'Kanzan'	'Kanzan' Flowering Cherry	B&B	3" cal.	1/2/4/8

** SEE PLANT SPECIFIC CONDITION NOTES BELOW FOR EACH PLANT AS SPECIFIED*

PLANT SPECIFIC CONDITION NOTES:

1. ALL PLANTS SHALL HAVE **MATCHED** CHARACTERISTICS IN FORM, COLOR, VIGOR, GROWTH HABIT, AND FOLIAGE DENSITY. ANY PLANT THAT DEVIATES SUBSTANTIALLY FROM THE ACCEPTED NORM WILL BE REJECTED ON-SITE.
2. ALL LIKE PLANTS SHALL HAVE A SIMILAR CENTRAL GROWTH **LEADER** AT A CONSISTENT HEIGHT ABOVE THE ROOT COLOR WITHOUT ANY VISIBLE DAMAGE. ALL PLANTS WITH A BROKEN OR DAMAGED CENTRAL LEADER WILL BE REJECTED ON-SITE.
3. EACH PLANT SHALL HAVE **MULTIPLE TRUNKS** WITH SIMILAR DIAMETER, STRENGTH, VIGOR, AND HABIT. THE PLANT SHALL BE LIMBED UP WITH ACCEPTABLE NURSERY PRUNING PRACTICES TO HIGHLIGHT THE MULTI-TRUNK FORM.
4. EACH PLANT SHALL EXHIBIT EXEMPLARY **SPECIMEN** QUALITIES THAT BEST PORTRAY THE UNIQUENESS OF THE SPECIFIED SPECIES - FORM, HABIT, COLOR, TEXTURE, SIZE, VIGOR.
5. EACH **STANDARD** PLANT SHALL HAVE A CLEAR, SINGLE, STRAIGHT TRUNK WITH NO VISIBLE DAMAGE. THE LIMBED UP CLEAR HEIGHT SHALL BE COMPLIANT WITH DESIGN INTENT, LOCAL CODE, AND NURSERY BEST PRACTICES.
6. ARRANGE THE PLANTS SPECIFIED IN A **HEDGE** FORMATION SO THAT THE FOLIAGE FROM ONE PLANT OVERLAPS THE FOLIAGE OF THE ADJACENT PLANT AFTER 5 YEARS OF GROWTH. GROWTH RATES WILL VARY BY SPECIES AND MICRO-CLIMATE.
7. THIS TREE IS CATEGORIZED AS A **MAJOR TREE** FOR PURPOSES OF TREE MITIGATION.
8. THIS TREE IS CATEGORIZED AS A **MINOR TREE** FOR PURPOSES OF TREE MITIGATION.

TREE MITIGATION CALCULATIONS:

TREE MITIGATION REQUIRED = 0 MINOR TREES / 237 MAJOR TREES (SEE CIVIL & ARBORIST PLANS)
TREE MITIGATION PROVIDED = 231 MINOR TREES / 35 MAJOR TREES (SEE SCHEDULE THIS SHEET)

SURPLUS / DEFICIT:
MINOR = **231 MINOR TREE SURPLUS**
- (231 minor trees provided - 0 minor trees required = 231 minor tree surplus)
- 2 minor trees = 1 major tree (pursuant to Borough of Tenefly Code chapter 26-1.6.d.3(d))
- minor tree surplus = 115.5 major trees

MAJOR = **-87 MAJOR TREE DEFICIT**
- ((35 major trees provided -237 major trees required) + 115 (from minor tree surplus) = -87 TREE DEFICIT)

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ARCHITECT:

CONSULTANT:

REVISIONS

DATE:	DESCRIPTION:
09/18/24	SCHEMATIC DESIGN
02/28/25	DESIGN DEVELOPMENT
06/30/25	DEMO SET
08/27/25	PERMIT SET (PRICING)
10/10/25	PERMIT/FOR CONSTRUCTION

PROJECT:

KNICKERBOCKER COUNTRY CLUB

CLUBHOUSE RENOVATION & ADDITION

188 KNICKERBOCKER RD
TENAFLY, NJ 07670

JOB NUMBER: 24008

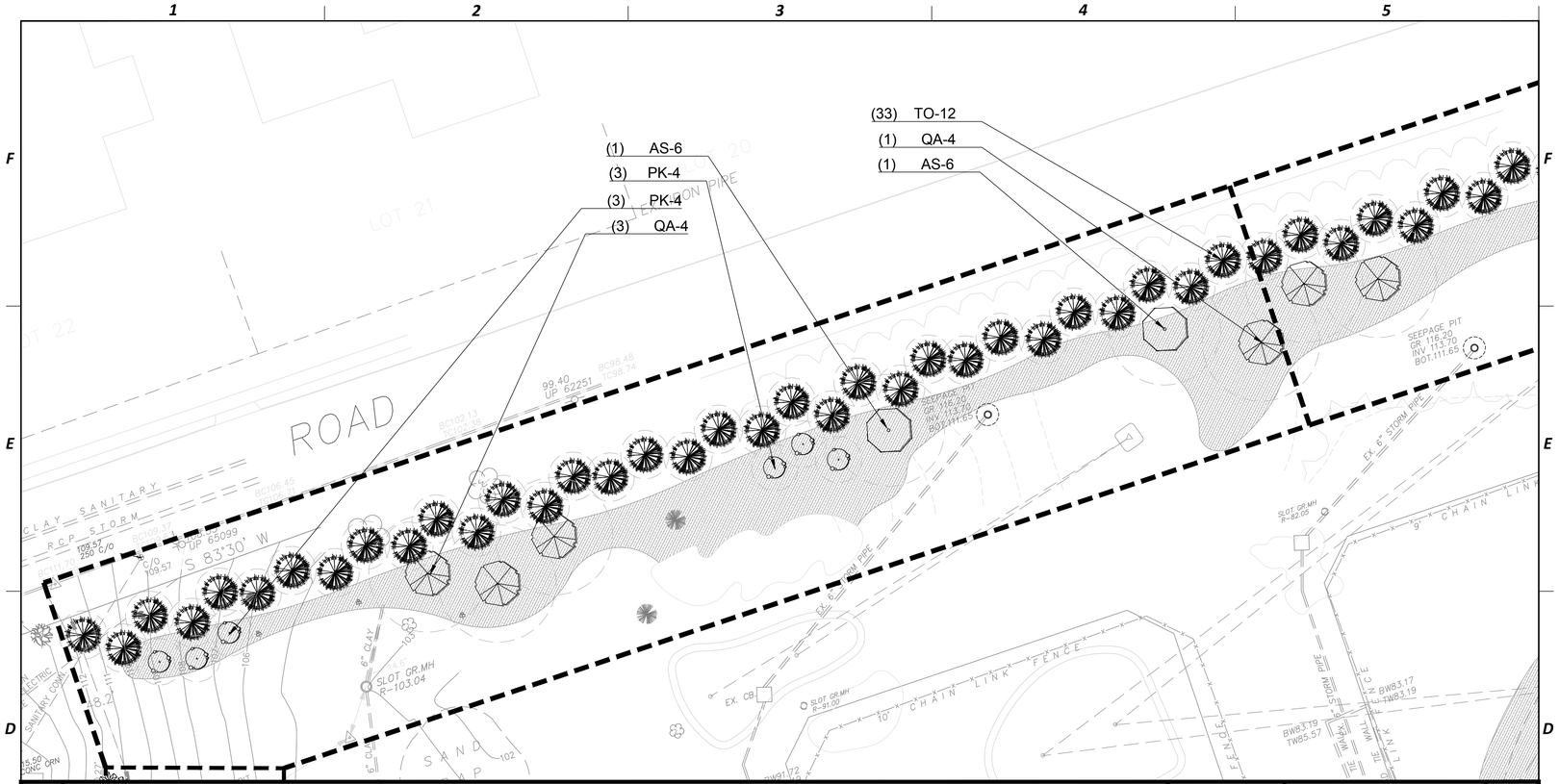
DATE: 07/26/2024

TITLE: **TREE MITIGATION PLAN**

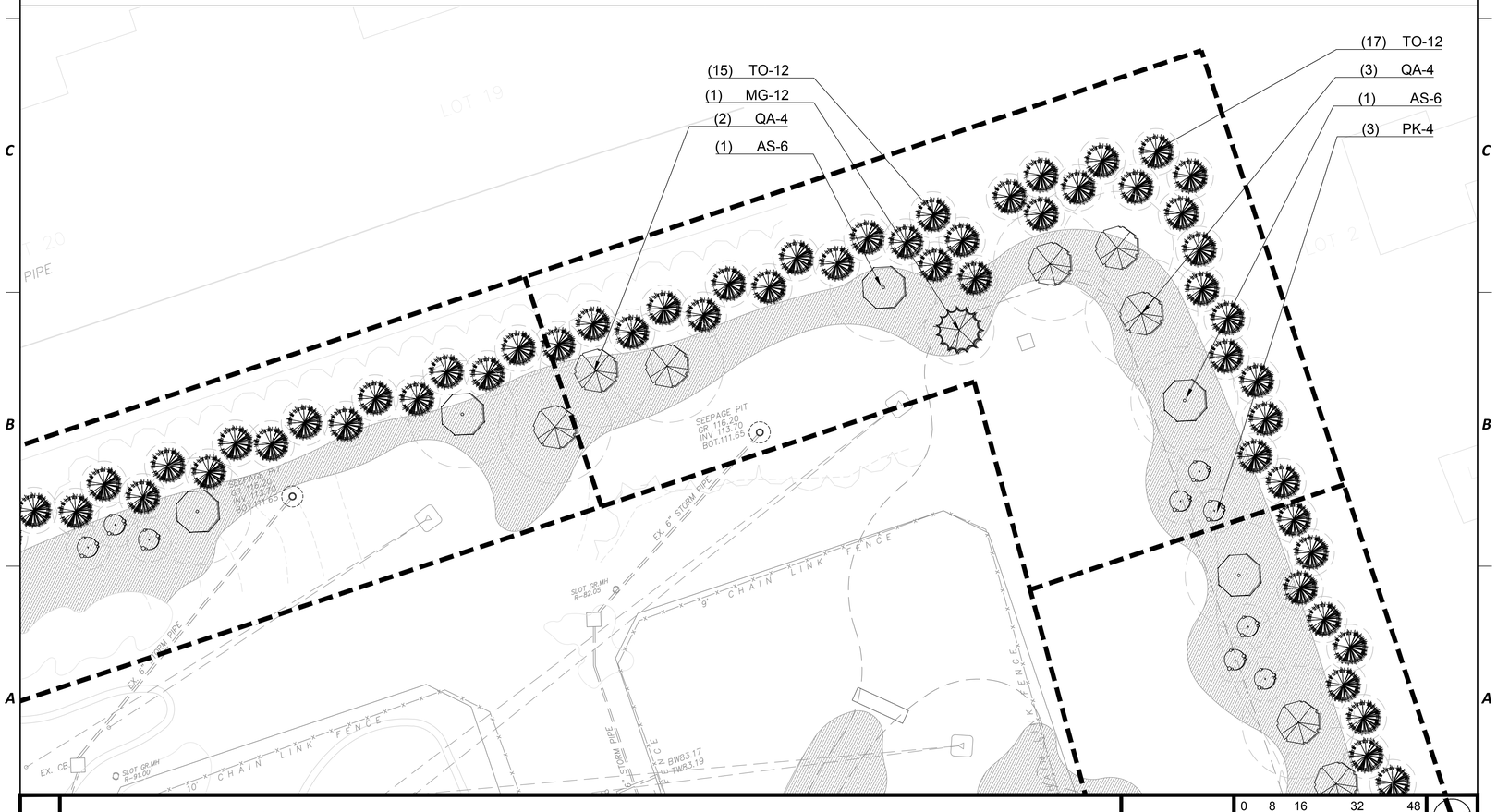
SHEET: L7-04

RELEASED FOR CONSTRUCTION

/Volumes/quercus/Private/djlc/ACTIVE JOBS/24325 Knickerbocker CC/deliverables/04-CD/SHEET SET/CLUBHOUSE SET/L7-00 CH.DWG Plotted: Oct 02, 2025 - 5:58pm by jonathanyoung



X5.1 | **PLANTING PLAN: GOLF SHORT GAME BOUNDARY** | Scale: 1/16" = 1'-0" | 0 8 16 32 48



X5.2 | **PLANTING PLAN: GOLF SHORT GAME BOUNDARY** | Scale: 1/16" = 1'-0" | 0 8 16 32 48

TREE MITIGATION SCHEDULE:

ABBR.	QTY.	BOTANICAL NAME	COMMON NAME	COND.	SIZE	NOTES*
TREES						
EVERGREEN TREE						
IC-6	66	Ilex x 'Conaf'	Oak Leaf™ Red Holly	B&B	8' ht.	1/2/4/8
TO-12	153	Thuja occidentalis 'Green Giant'	'Green Giant' Artborvitae	B&B	8' ht.	1/2/4/8
DECIDUOUS TREE						
AS-6	14	Acer saccharum 'Green Mountain'	'Green Mountain' Sugar Maple	B&B	3.5" cal.	1/2/4/7
MG-12	4	Metasequoia glyptostroboides	Dawn Redwood	B&B	3.5" cal.	1/2/4/7
QA-4	17	Quercus acutissima	Chestnut Oak	B&B	3.5" cal.	1/2/4/7
FLOWERING TREE						
PK-4	15	Prunus 'Kanzan'	'Kanzan' Flowering Cherry	B&B	3" cal.	1/2/4/8

** SEE PLANT SPECIFIC CONDITION NOTES BELOW FOR EACH PLANT AS SPECIFIED*

PLANT SPECIFIC CONDITION NOTES:

1. ALL PLANTS SHALL HAVE **MATCHED** CHARACTERISTICS IN FORM, COLOR, VIGOR, GROWTH HABIT, AND FOLIAGE DENSITY. ANY PLANT THAT DEVIATES SUBSTANTIALLY FROM THE ACCEPTED NORM WILL BE REJECTED ON-SITE.
2. ALL LIKE PLANTS SHALL HAVE A SIMILAR CENTRAL GROWTH **LEADER** AT A CONSISTENT HEIGHT ABOVE THE ROOT COLOR WITHOUT ANY VISIBLE DAMAGE. ALL PLANTS WITH A BROKEN OR DAMAGED CENTRAL LEADER WILL BE REJECTED ON-SITE.
3. EACH PLANT SHALL HAVE **MULTIPLE TRUNKS** WITH SIMILAR DIAMETER, STRENGTH, VIGOR, AND HABIT. THE PLANT SHALL BE LIMBED UP WITH ACCEPTABLE NURSERY PRUNING PRACTICES TO HIGHLIGHT THE MULTI-TRUNK FORM.
4. EACH PLANT SHALL EXHIBIT EXEMPLARY **SPECIMEN** QUALITIES THAT BEST PORTRAY THE UNIQUENESS OF THE SPECIFIED SPECIES - FORM, HABIT, COLOR, TEXTURE, SIZE, VIGOR.
5. EACH **STANDARD** PLANT SHALL HAVE A CLEAR, SINGLE, STRAIGHT TRUNK WITH NO VISIBLE DAMAGE. THE LIMBED UP CLEAR HEIGHT SHALL BE COMPLIANT WITH DESIGN INTENT, LOCAL CODE, AND NURSERY BEST PRACTICES.
6. ARRANGE THE PLANTS SPECIFIED IN A **HEDGE** FORMATION SO THAT THE FOLIAGE FROM ONE PLANT OVERLAPS THE FOLIAGE OF THE ADJACENT PLANT AFTER 5 YEARS OF GROWTH. GROWTH RATES WILL VARY BY SPECIES AND MICRO-CLIMATE.
7. THIS TREE IS CATEGORIZED AS A **MAJOR TREE** FOR PURPOSES OF TREE MITIGATION.
8. THIS TREE IS CATEGORIZED AS A **MINOR TREE** FOR PURPOSES OF TREE MITIGATION.

TREE MITIGATION CALCULATIONS:

TREE MITIGATION REQUIRED = 0 MINOR TREES / 237 MAJOR TREES (SEE CIVIL & ARBORIST PLANS)
TREE MITIGATION PROVIDED = 231 MINOR TREES / 35 MAJOR TREES (SEE SCHEDULE THIS SHEET)

SURPLUS / DEFICIT:
MINOR = **231 MINOR TREE SURPLUS**
- (231 minor trees provided - 0 minor trees required = 231 minor tree surplus)
- 2 minor trees = 1 major tree (pursuant to Borough of Tenefly Code chapter 26-1.6.d.3(d))
- minor tree surplus = 115.5 major trees

MAJOR = **-87 MAJOR TREE DEFICIT**
- ((35 major trees provided -237 major trees required) + 115 (from minor tree surplus) = -87 TREE DEFICIT)

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ARCHITECT:

CONSULTANT:

REVISIONS

DATE:	DESCRIPTION:
09/18/24	SCHEMATIC DESIGN
02/28/25	DESIGN DEVELOPMENT
06/30/25	DEMO SET
08/27/25	PERMIT SET (PRICING)
10/10/25	PERMIT/FOR CONSTRUCTION

PROJECT:

KNICKERBOCKER COUNTRY CLUB

CLUBHOUSE RENOVATION & ADDITION

188 KNICKERBOCKER RD
TENAFLY, NJ 07670

JOB NUMBER: 24008

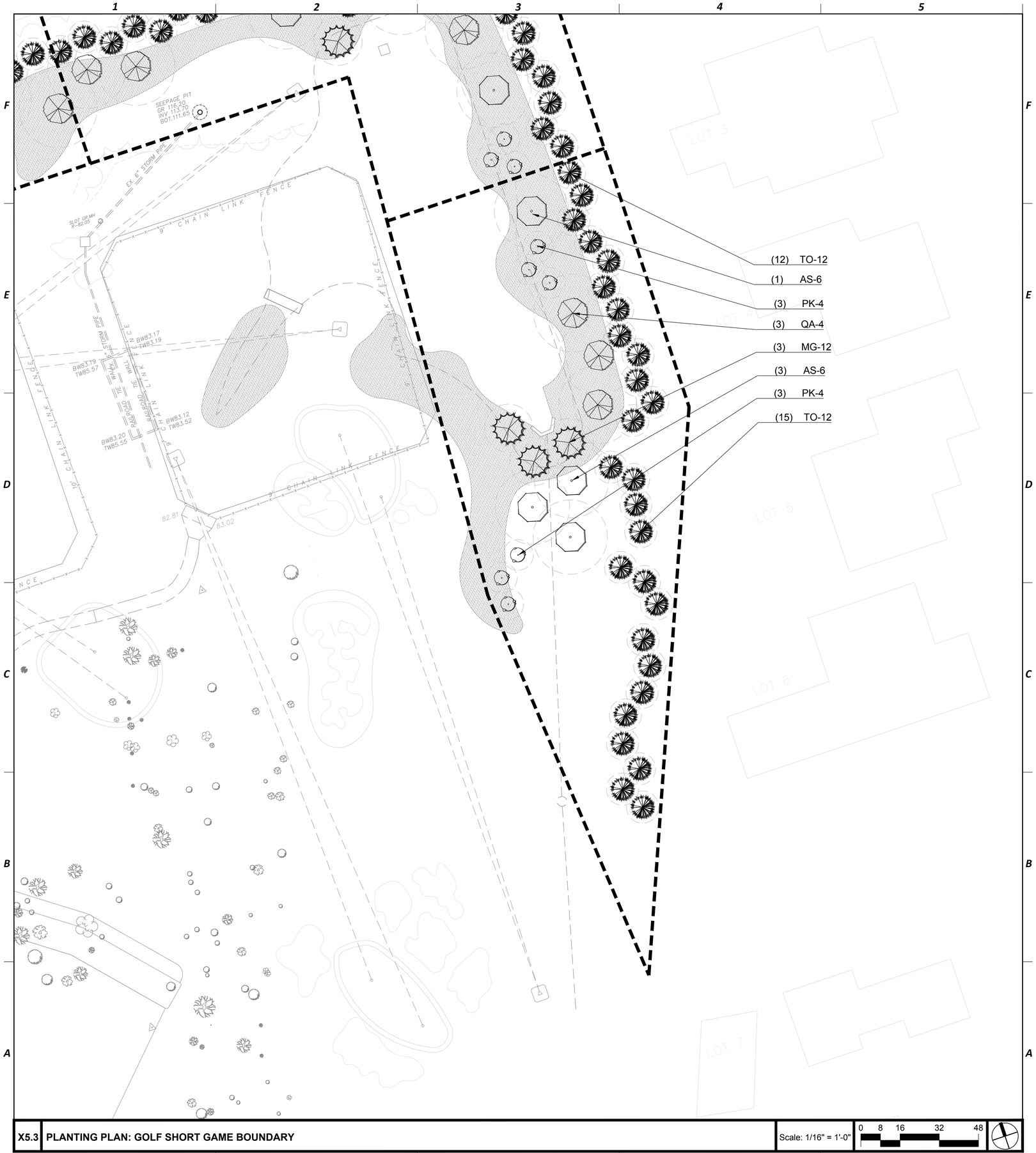
DATE: 07/26/2024

TITLE: **TREE MITIGATION PLAN**

SHEET: L7-05

RELEASED FOR CONSTRUCTION

/Volumes/quercus/Private/dlk/ACTIVE JOBS/24325 Knickerbocker CC/deliverables/04-CD/SHEET SET/CLUBHOUSE SET/L7-00 CH.DWG Plotted: Oct 02, 2025 - 5:58pm by jonathanyoung



TREE MITIGATION SCHEDULE:

ABBR.	QTY.	BOTANICAL NAME	COMMON NAME	COND.	SIZE	NOTES*
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TO-12	153	Thuja occidentalis 'Green Giant'	'Green Giant' Artborvitae	B&B	8' ht.	1/2/4/8
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MG-12	4	Metasequoia glyptostroboides	Dawn Redwood	B&B	3.5" cal.	1/2/4/7
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** SEE PLANT SPECIFIC CONDITION NOTES BELOW FOR EACH PLANT AS SPECIFIED*

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2. ALL LIKE PLANTS SHALL HAVE A SIMILAR CENTRAL GROWTH **LEADER** AT A CONSISTENT HEIGHT ABOVE THE ROOT COLOR WITHOUT ANY VISIBLE DAMAGE. ALL PLANTS WITH A BROKEN OR DAMAGED CENTRAL LEADER WILL BE REJECTED ON-SITE.
3. EACH PLANT SHALL HAVE **MULTIPLE TRUNKS** WITH SIMILAR DIAMETER, STRENGTH, VIGOR, AND HABIT. THE PLANT SHALL BE LIMBED UP WITH ACCEPTABLE NURSERY PRUNING PRACTICES TO HIGHLIGHT THE MULTI-TRUNK FORM.
4. EACH PLANT SHALL EXHIBIT EXEMPLARY **SPECIMEN** QUALITIES THAT BEST PORTRAY THE UNIQUENESS OF THE SPECIFIED SPECIES - FORM, HABIT, COLOR, TEXTURE, SIZE, VIGOR.
5. EACH **STANDARD** PLANT SHALL HAVE A CLEAR, SINGLE, STRAIGHT TRUNK WITH NO VISIBLE DAMAGE. THE LIMBED UP CLEAR HEIGHT SHALL BE COMPLIANT WITH DESIGN INTENT, LOCAL CODE, AND NURSERY BEST PRACTICES.
6. ARRANGE THE PLANTS SPECIFIED IN A **HEDGE** FORMATION SO THAT THE FOLIAGE FROM ONE PLANT OVERLAPS THE FOLIAGE OF THE ADJACENT PLANT AFTER 5 YEARS OF GROWTH. GROWTH RATES WILL VARY BY SPECIES AND MICRO-CLIMATE.
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X5.3 PLANTING PLAN: GOLF SHORT GAME BOUNDARY

Scale: 1/16" = 1'-0"

0 8 16 32 48

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09/18/24	SCHEMATIC DESIGN
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10/10/25	PERMIT/FOR CONSTRUCTION

PROJECT:

KNICKERBOCKER COUNTRY CLUB

CLUBHOUSE RENOVATION & ADDITION

188 KNICKERBOCKER RD
TENAFLY, NJ 07670

JOB NUMBER: 24008

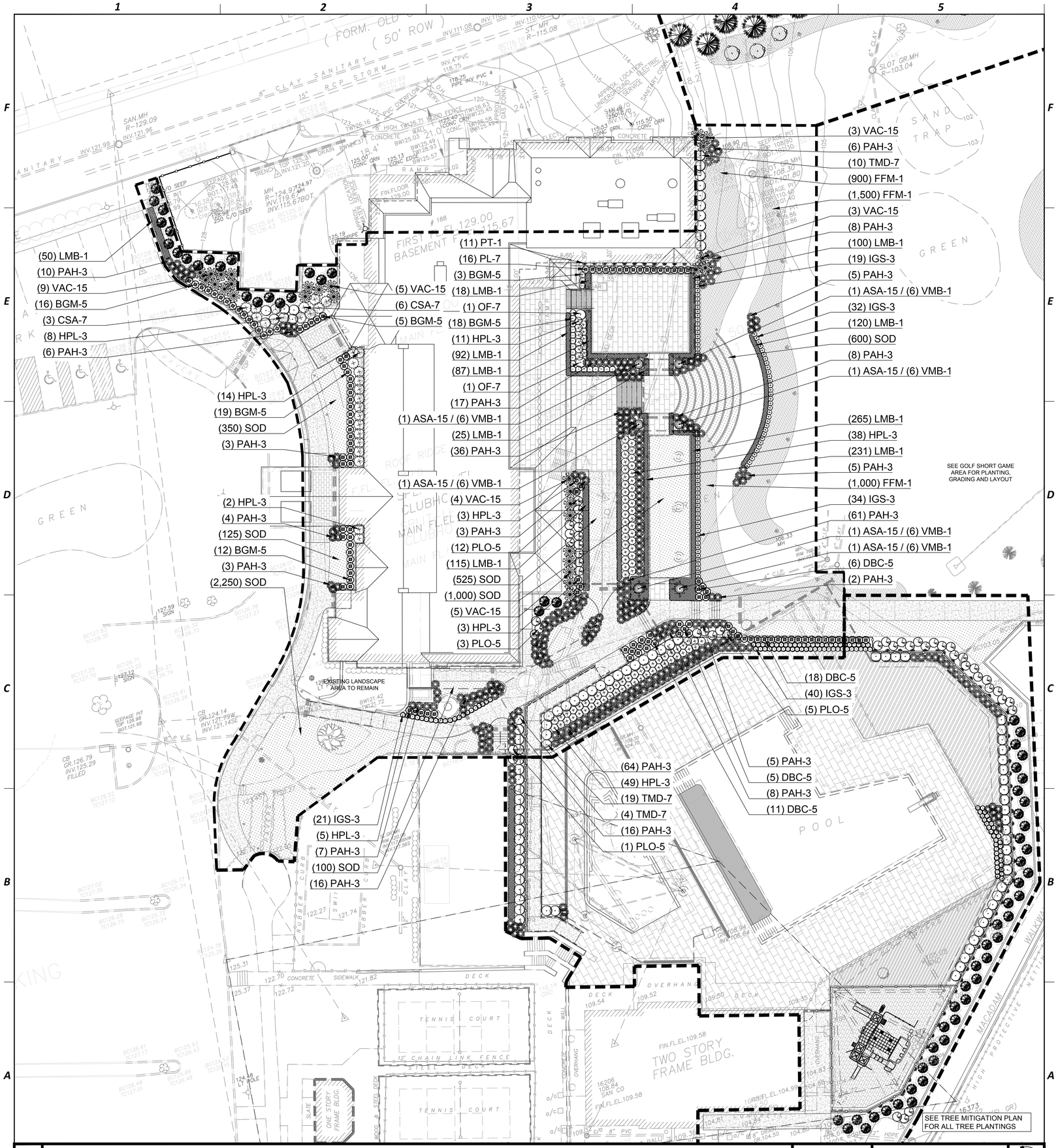
DATE: 07/26/2024

TITLE: **TREE MITIGATION PLAN**

SHEET: L7-06

RELEASED FOR CONSTRUCTION

/Volumes/quercus/Private/qhc/ACTIVE JOBS/24325 Knickerbocker CC/deliverables/04-CD/SHEET SET/CLUBHOUSE SET/L7-00 CH.DWG Plotted: Oct 02, 2025 - 5:58pm by jonathanyoung



X1 **PLANTING PLAN: CLUBHOUSE** Scale: 1/16" = 1'-0" 0 8 16 32 48

/Volumes/quercus/Private/qtic/ACTIVE JOBS/24325 Knickerbocker CC/deliverables/04-cd/SHEET SET/CLUBHOUSE SET/L8-00 CH.dwg Plotted: Oct 02, 2025 - 5:58pm by jonathonyoung

PLANTING SCHEDULE

SYM	QTY	BOTANICAL NAME	COMMON NAME	COND	SIZE	MIN. HT.	O.C.	NOTES*
SHRUBS								
ASA-15	6	Acer shirasawanum 'Autumn Moon'	Full Moon Maple	CONT	15 GAL.	48" HT.	-	1/2/4
BGM-5	121	Buxus 'Green Mountain'	'Green Mountain' Boxwood	CONT	5 GAL.	24" HT.	30"	1/6/FULL
CSA-7	9	Cornus sericea 'Artic Fire'	'Arctic Fire' Red-Osier Dogwood	CONT	7 GAL.	36" HT.	48"	1/FULL
DBC-5	44	Distylium 'Blue Cascade'	'Blue Cascade Distylium	CONT	5 GAL.	24"HT.	30"	1
HPL-3	133	Hydrangea paniculata 'Little Lime'	"Little Lime' Hydrangea	CONT	3 GAL.	24" HT.	36"	1/FULL
IGS-3	192	Ilex glabra 'Strongbox'	'Strongbox' Inkberry Holly	CONT	3 GAL.	12" HT.	24"	1/6/FULL
OF-7	2	Osmanthus fragrans	Fragrant Tea Olive	CONT	7 GAL.	48" HT.	-	1/2/4
PAH-3	386	Pennisetum alopecuroides 'Hameln'	'Hameln' Fountain Grass	CONT	3 GAL.	24" HT.	36"	FULL
PL-7	37	Prunus laurocerasus	English Cherry Laurel	CONT	7 GAL.	42" HT.	42"	FULL TO BASE
PLO-5	46	Prunus laurocerasus 'Otto Luyken'	'Otto Luyken' Cherry Laurel	CONT	5 GAL.	24" HT.	42"	1/6/FULL
TMD-7	113	Taxus x media 'Densiformis'	Demse Spreading Yew	CONT	7 GAL.	30" HT.	48"	1/6/FULL
VAC-15	23	Viburnum awabuki 'Chindo'	'Chindo' Viburnum	CONT	15 GAL.	54" HT.	48"	1/6/FULL
GC / VINES								
FFM-1	3,400	Festuca sp.	Fine Fescue Seed Mix #1	SF	SEED	-	-	50% Hard Fine Fescue / 50% Sheep Fine Fescue
LMB-1	1433	Liriope muscari 'Big Blue'	'Big Blue' Lilyturf	CONT	1 GAL.	12" HT.	12"	
PT-1	63	Parthenocissus tricuspidata	Boston Ivy	CONT	1 GAL.	18" Ldr	60"	
SOD	4950	Festuca / Poa Mix	Tall Fescue / Bluegrass Mix	SOD	ROLL	-	-	
VMB-1	36	Vinca minor 'Bowles'	'Bowles' Common Periwinkle	CONT	1 GAL.	12" Ldr	-	

** SEE PLANT SPECIFIC CONDITION NOTES BELOW FOR EACH PLANT AS SPECIFIED*

PLANT SPECIFIC CONDITION NOTES:

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5. EACH **STANDARD** PLANT SHALL HAVE A CLEAR, SINGLE, STRAIGHT TRUNK WITH NO VISIBLE DAMAGE. THE LIMBED UP CLEAR HEIGHT SHALL BE COMPLIANT WITH DESIGN INTENT, LOCAL CODE, AND NURSERY BEST PRACTICES.
6. ARRANGE THE PLANTS SPECIFIED IN A **HEDGE** FORMATION SO THAT THE FOLIAGE FROM ONE PLANT OVERLAPS THE FOLIAGE OF THE ADJACENT PLANT AFTER 5 YEARS OF GROWTH. GROWTH RATES WILL VARY BY SPECIES AND MICRO-CLIMATE.

GENERAL LANDSCAPE NOTES

- ALL LANDSCAPE WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND ORDINANCES. IF ADDITIONAL PERMITTING IS REQUIRED IT SHALL BE THE RESPONSIBILITY OF THE LC.
- VERIFICATION OF EXISTING CONDITIONS IS THE RESPONSIBILITY OF THE LC. THIS INCLUDES BUT IS NOT LIMITED TO: SOIL CONDITIONS, UTILITIES (UNDERGROUND AND ABOVE GROUND), EXISTING STRUCTURES, ETC.
- THE LC MUST CONFIRM THE AVAILABILITY OF ALL SPECIFIED PLANT MATERIAL PRIOR TO THE COMMENCEMENT OF WORK. THE LC SHALL ARRANGE FOR APPROVAL FOR PLANT MATERIALS BY THE LA VIA FIELD VISITS/TAGGING AND OR SUBMISSION OF PLANT SAMPLES AT THE DISCRETION OF THE LA.
- ALL PLANT MATERIAL SHALL MEET OR EXCEED THE AMERICAN STANDARDS FOR NURSERY STOCK AS ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMAN AND APPROVED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE INC.
- ALL PLANT MATERIAL SHALL BE SUBJECT TO APPROVAL AT THE JOB SITE BY THE LA PRIOR TO INSTALLATION. WHEN DELIVERED PLANT MATERIAL DOES NOT COMPLY WITH THE REQUIREMENTS, THE LA RESERVES THE RIGHT TO REJECT SUCH PLANTS AND REQUIRE THE LC TO REPLACE REJECTED WORK AND CONTINUE SPECIFIED MAINTENANCE UNTIL RE-INSPECTED AND FOUND TO BE ACCEPTABLE. THE LC SHALL REMOVE REJECTED PLANTS AND MATERIALS FROM THE PLANTING SITE WITHIN 72 HOURS AND REPLACE WITH ACCEPTABLE MATERIALS.
- NO PLANT SUBSTITUTIONS WILL BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE LA. ANY SUBSTITUTIONS MUST BE SUBMITTED IN WRITING ACCOMPANIED BY PICTURES OR SAMPLES FOR APPROVAL BY THE LA PRIOR TO INSTALLATION.
- ALL SHRUB BEDS SHALL BE TILLED TO MINIMUM DEPTH OF 12". PLANTING BEDS TO BE SEPARATED FROM LAWN AREAS WITH A 4" DEEP EXCAVATED TRENCH. THE TRENCH SHALL HAVE A VERTICAL FACE AGAINST THE LAWN AREA, AND A GENTLY TAPERED EDGE LEADING INTO THE SHRUB BED.
- THE LANDSCAPE CONTRACTOR SHALL ENSURE ADEQUATE VERTICAL DRAINAGE IN ALL PLANT BEDS AND PLANTERS. VERTICAL DRILLING THROUGH HARDPAN AND COMPACTED FILL SHALL BE ACCOMPLISHED TO ENSURE DRAINAGE.
- ALL PLANTING BEDS SHALL BE STAKED AND OR PAINTED BY THE LC FOR APPROVAL BY THE LA PRIOR TO PLANT INSTALLATION. TREES SHALL BE LOCATED WITH STAKES OR FLAGS FOR APPROVAL BY THE LA PRIOR TO INSTALLATION.
- THE PLANT QUANTITIES SHOWED ON THE LANDSCAPE CONTRACT DOCUMENTS ARE FOR THE CONVENIENCE OF THE LANDSCAPE CONTRACTOR. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES AND REPORTING ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT FOR CLARIFICATION PRIOR TO CONTRACT AWARD AND COMMENCEMENT OF WORK.
- ALL PLANTING BEDS SHALL BE MULCHED WITH A 4" LAYER OF MULCH AS SPECIFIED. ALL TREES SHALL HAVE A 4" THICK MULCH RING PLACED AROUND THE BASE OF THE TRUNK. THE LANDSCAPE SCOPE OF WORK INCLUDES MULCHING AS AN INTEGRAL PART OF THE PROJECT AND NOT AS A SEPARATE COST ITEM.
- ALL PLANT MATERIALS SHALL RECEIVE ADEQUATE WATERING BY THE LC AS REQUIRED UNTIL THE LANDSCAPE IRRIGATION SYSTEM IS FULLY OPERATIONAL AND UNTIL FINAL ACCEPTANCE BY OWNER.
- QUANTITIES NECESSARY TO COMPLETE THE WORK ON THE DRAWING SHALL BE FURNISHED BY THE LC. QUANTITY ESTIMATES HAVE BEEN MADE CAREFULLY, BUT THE LANDSCAPE ARCHITECT ASSUMES NO LIABILITY FOR OMISSIONS OR ERRORS. HIS ESTIMATES ARE ONLY AN AID FOR CLARIFICATION OF UNITS AND A CHECK FOR THE CONTRACTOR TO COMPARE WITH HIS OWN ESTIMATES. DIFFERENCES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. NO EXTRA COMPENSATION SHALL BE ALLOWED FOR EXTRA QUANTITIES NECESSARY TO COMPLETE THE WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF PLANT MATERIAL ACCORDING TO DRAWINGS.
- ALL PLANTS SHALL BE WARRANTED TO REMAIN ALIVE AND HEALTHY AND IN THRIVING CONDITION FOR ONE YEAR FROM THE DATE OF JOB ACCEPTANCE. PLANTS SHALL BE SPECIMEN QUALITY. PLANTS SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL BRANCHED, AND DENSELY FOLIATED WHEN IN LEAF.

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09/18/24	*SCHEMATIC DESIGN*
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08/27/25	*PERMIT SET (PRICING)*
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PROJECT:

KNICKERBOCKER COUNTRY CLUB

CLUBHOUSE RENOVATION & ADDITION

188 KNICKERBOCKER RD TENAFLY, NJ 07670

JOB NUMBER: *24008*

DATE: *07/26/2024*

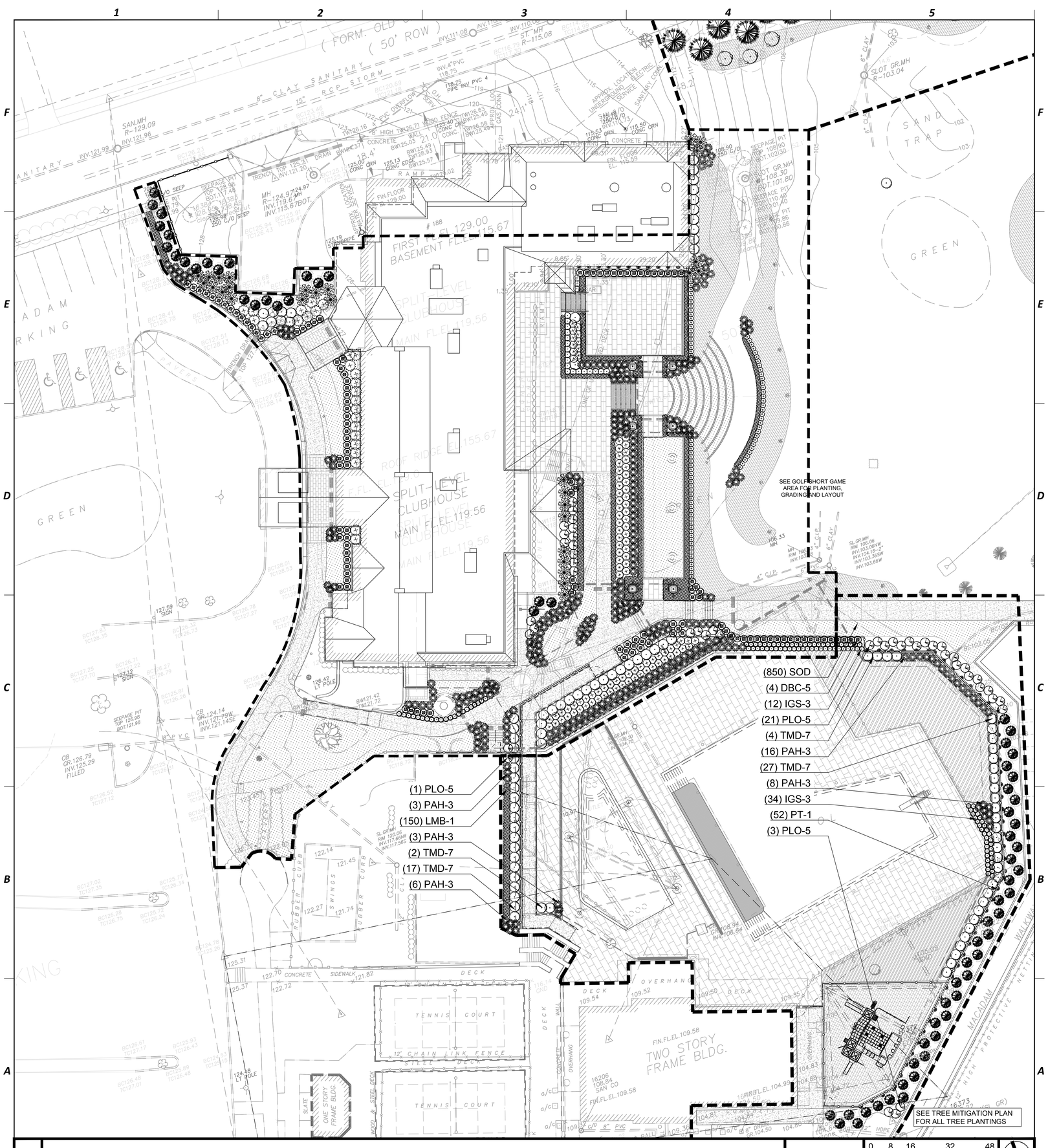
TITLE:

PLANTING PLAN

SHEET:

L8-01

RELEASED FOR CONSTRUCTION



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SOD	4950	Festuca / Poa Mix	Tall Fescue / Bluegrass Mix	SOD	ROLL	-	-	
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ARCHITECT:

CONSULTANT:

REVISIONS

DATE:	DESCRIPTION:
09/18/24	SCHEMATIC DESIGN
02/28/25	DESIGN DEVELOPMENT
06/30/25	DEMO SET
08/27/25	PERMIT SET (PRICING)
10/10/25	PERMIT/FOR CONSTRUCTION

PROJECT:

KNICKERBOCKER COUNTRY CLUB

CLUBHOUSE RENOVATION & ADDITION

188 KNICKERBOCKER RD TENAFLY, NJ 07670

JOB NUMBER: 24008

DATE: 07/26/2024

TITLE: **PLANTING PLAN**

SHEET: L8-02

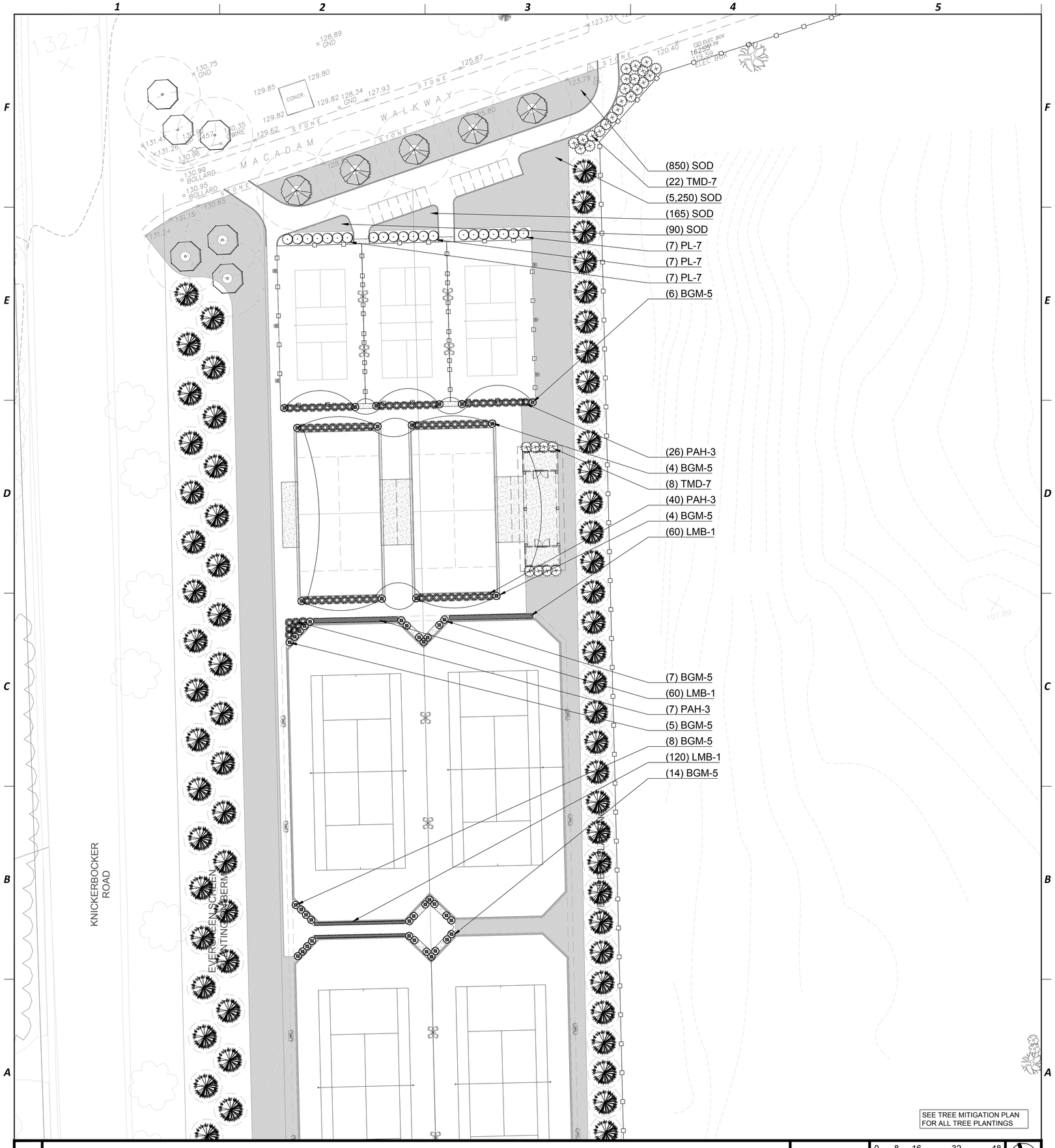
RELEASED FOR CONSTRUCTION

X2 **PLANTING PLAN: POOL**

Scale: 1/16" = 1'-0"

0 8 16 32 48

/Volumes/quercus/Private/qllc/ACTIVE JOBS/24325 Knickerbocker CC/deliverables/04-CD/SHEET SET/CLUBHOUSE SET/L8-00 CH.dwg Plotted: Oct 02, 2025 - 5:59pm by jonathanyoung



X3 **PLANTING PLAN: RACQUET CLUB**

Scale: 1/16" = 1'-0"

0 8 16 32 48

PLANTING SCHEDULE

SYM	QTY	BOTANICAL NAME	COMMON NAME	COND	SIZE	MIN. HT.	O.C.	NOTES
SHRUBS								
ASA-15	6	Acer shirasawanum 'Autumn Moon'	Full Moon Maple	CONT	15 GAL.	48" HT.	-	1/2/4
BGM-5	121	Buxus 'Green Mountain'	'Green Mountain' Boxwood	CONT	5 GAL.	24" HT.	30"	1/6/FULL
CSA-7	9	Cornus sericea 'Artic Fire'	'Arctic Fire' Red-Osier Dogwood	CONT	7 GAL.	36" HT.	48"	1/FULL
DBC-5	44	Distylium 'Blue Cascade'	'Blue Cascade Distylium	CONT	5 GAL.	24"HT.	30"	1
HPL-3	133	Hydrangea paniculata 'Little Lime'	"Little Lime' Hydrangea	CONT	3 GAL.	24" HT.	36"	1/FULL
IGS-3	192	Ilex glabra 'Strongbox'	'Strongbox' Inkberry Holly	CONT	3 GAL.	12" HT.	24"	1/6/FULL
OF-7	2	Osmanthus fragrans	Fragrant Tea Olive	CONT	7 GAL.	48" HT.	-	1/2/4
PAH-3	386	Pennisetum alopecuroides 'Hameln'	'Hameln' Fountain Grass	CONT	3 GAL.	24" HT.	36"	FULL
PL-7	37	Prunus laurocerasus	English Cherry Laurel	CONT	7 GAL.	42" HT.	42"	FULL TO BASE
PLO-5	46	Prunus laurocerasus 'Otto Luyken'	'Otto Luyken' Cherry Laurel	CONT	5 GAL.	24" HT.	42"	1/6/FULL
TMD-7	113	Taxus x media 'Densiformis'	Demse Spreading Yew	CONT	7 GAL.	30" HT.	48"	1/6/FULL
VAC-15	23	Viburnum awabuki 'Chindo'	'Chindo' Viburnum	CONT	15 GAL.	54" HT.	48"	1/6/FULL
GC / VINES								
FFM-1	3,400	Festuca sp.	Fine Fescue Seed Mix #1	SF	SEED	-	-	50% Hard Fine Fescue / 50% Sheep Fine Fescue
LMB-1	1433	Liriope muscari 'Big Blue'	'Big Blue' Lllyturf	CONT	1 GAL.	12" HT.	12"	
PT-1	63	Parthenocissus tricuspidata	Boston Ivy	CONT	1 GAL.	18" Ldr	60"	
SOD	4950	Festuca / Poa Mix	Tall Fescue / Bluegrass Mix	SOD	ROLL	-	-	
VMB-1	36	Vinca minor 'Bowles'	'Bowles' Common Periwinkle	CONT	1 GAL.	12" Ldr	-	

** SEE PLANT SPECIFIC CONDITION NOTES BELOW FOR EACH PLANT AS SPECIFIED*

PLANT SPECIFIC CONDITION NOTES:

1. ALL PLANTS SHALL HAVE **MATCHED** CHARACTERISTICS IN FORM, COLOR, VIGOR, GROWTH HABIT, AND FOLIAGE DENSITY. ANY PLANT THAT DEVIATES SUBSTANTIALLY FROM THE ACCEPTED NORM WILL BE REJECTED ON-SITE.
2. ALL LIKE PLANTS SHALL HAVE A SIMILAR CENTRAL GROWTH **LEADER** AT A CONSISTENT HEIGHT ABOVE THE ROOT COLOR WITHOUT ANY VISIBLE DAMAGE. ALL PLANTS WITH A BROKEN OR DAMAGED CENTRAL LEADER WILL BE REJECTED ON-SITE.
3. EACH PLANT SHALL HAVE **MULTIPLE TRUNKS** WITH SIMILAR DIAMETER, STRENGTH, VIGOR, AND HABIT. THE PLANT SHALL BE LIMBED UP WITH ACCEPTABLE NURSERY PRUNING PRACTICES TO HIGHLIGHT THE MULTI-TRUNK FORM.
4. EACH PLANT SHALL EXHIBIT EXEMPLARY **SPECIMEN** QUALITIES THAT BEST PORTRAY THE UNIQUENESS OF THE SPECIFIED SPECIES - FORM, HABIT, COLOR, TEXTURE, SIZE, VIGOR.
5. EACH **STANDARD** PLANT SHALL HAVE A CLEAR, SINGLE, STRAIGHT TRUNK WITH NO VISIBLE DAMAGE. THE LIMBED UP CLEAR HEIGHT SHALL BE COMPLIANT WITH DESIGN INTENT, LOCAL CODE, AND NURSERY BEST PRACTICES.
6. ARRANGE THE PLANTS SPECIFIED IN A **HEDGE** FORMATION SO THAT THE FOLIAGE FROM ONE PLANT OVERLAPS THE FOLIAGE OF THE ADJACENT PLANT AFTER 5 YEARS OF GROWTH. GROWTH RATES WILL VARY BY SPECIES AND MICRO-CLIMATE.

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