TOWN OF ASHLAND CITY
Planning Commission Meeting
March 06, 2023 5:30 PM
Agenda

Chairwoman: Nicole Binkley
Committee Members: Gerald Greer, Vivian Foston, Steven Stratton, Mike Stuart, JT Smith, Jerome Terrell

CALL TO ORDER

ROLL CALL

APPROVAL OF AGENDA

APPROVAL OF MINUTES

1. February 6, 2023 Planning Commission Meeting Minutes

PUBLIC FORUM

OLD BUSINESS

2. Trash Discusson

NEW BUSINESS

3. Preliminary Site Plan: Valley Point Homes

OTHER

ADJOURNMENT

Those with disabilities who require certain accommodations in order to allow them to observe and/or participate in this meeting, or who have questions regarding the accessibility of the meeting, should contact the ADA Coordinator at 615-792-6455, M-F 8:00 AM – 4:00 PM. The town will make reasonable accommodations for those persons.

Town of Ashland City
Building & Codes Department
233 Tennessee Waltz Parkway Suite 103
Ashland City TN 37015
(615) 792-6455

APPLICATION FOR SITE PLAN APPROVAL

Site Plan Review Fee: $100.00

Date Received: 2/21/23

Property Address: 0 CALDWELL Rd
ASHLAND City TN 37015

Map # 64 **Parcel #** 11.01 **Acreage:** 2.03 AC

Property Owner(s): MELANIE QUINN

Phone: 615-788-9044

Description of project being reviewed: 18 UNIT
RESIDENTIAL REFER TO SITEPLAN

Having submitted plans for review by the Ashland City Planning Commission, I understand that I am responsible for all review fees incurred by the Town of Ashland City. In understand that the fee paid at the time of submittal is not applicable for the fees incurred through review. With my signature, I verify that I fully understand that I am responsible for said fees, and that I have received a copy of Ordinance #165.

Jimmy Brooks 2/15/23
Applicant Signature Date

Fire, Building & Life Safety Department

Ashland City Fire, Building & Life Safety Department

101 Court Street
Ashland City TN 37015
Fire & Life Safety: (615) 792-4531 – Building Codes (615) 792-6455

PLANNING COMMISSION SITE PLAN CHECKLIST

NAME OF SITE Valley Point Homes

LOCATION Caldwell Rd Ashland City, TN 37015 (Tax Map/ Parcel: 64/11.01) ZONING DISTRICT R-4

OWNER Melanie Guinn

ENGINEER Williams Engineering, inc. - Michael Williams, P.E.

1. Three (3) copies of the site plan. Please indicate at time of application if you would like any of the remaining copies after your case is heard and voted on.

2. Three (3) copies and an electronic PDF of revised site plans made available to the Fire, Building and Life Safety Department – according to planner/engineer comments. Also written response to all comments to match what was changed on revised site plans.

3. Location map of the site at a scale of not less than 1"=2000' (USGS map is acceptable). Map must show the following:
   a. Approximate site boundary
   b. Public streets in the vicinity
   c. Types of development of surrounding parcels
   d. Public water and sewer lines serving the site
   e. Map # and Parcel # of site location

4. Site boundary, stamped and signed by a registered surveyor.

5. The shape, size and location of all existing buildings on the lot.

6. The existing and intended use of the lot and of structures on it. If residential, give the number of dwelling units per building.

7. Topographic survey of the site with contour intervals at no greater than 5' intervals, stamped and signed by a registered surveyor.

8. Location of all driveways and entrances with dimensions from the centerline of the drive to the nearest property corner and to the nearest intersection (if the intersection is closer than 200 feet).

9. Dimensioned layout and location of all parking spaces including handicapped spaces.

10. Dimensioned layout and location of off-street loading bays and docks.

11. Location and area of open space.

12. A table showing the ground coverage, total floor area and building heights.

13. Location, dimension and heights of all fences and walls with materials specified.

14. Location, type and amount of landscaping.

15. Proposed means of surface drainage, including locations and sizes of all culverts, ditches and detention structures, storm-water system to be designed as per the requirements of the Ashland City Planning Commission.

16. Dimensioned location of all easements and right-of-ways.

17. Location of all portions of the site that are within the floodway and the 100-year floodplain. A note will be included which gives the FEMA map number from which this information was developed. In addition, if portions of the site are in the 100-year floodplain and/or the floodway, the 100-year flood elevation(s) at the site will be listed on the plan.

18. Location, size and distance to all public utilities serving the site including all fire hydrants.

19. Location, by type and size of all proposed signs, (Please note that signs larger than 40 sq. ft. are not permitted per the sign ordinance for the Town of Ashland City.

20. Vegetation, show at minimum the following:
    a. Existing tree masses and hedgerows
    b. General description of the tree types and sizes within the tree masses
    c. Location and identification of trees 15" in caliper (measured 4' above the ground) or larger
    d. Description of landscaping requirements for the site based upon surrounding land uses (see Zoning Ordinance Section 3, 140)

21. Identification of slopes greater than 15% and identification of those soils (SCS soil mapping is acceptable) on those slopes.

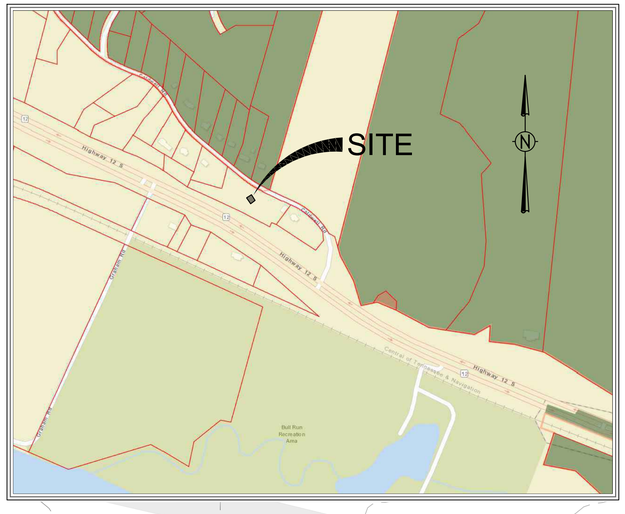
22. Site plan application fee $100

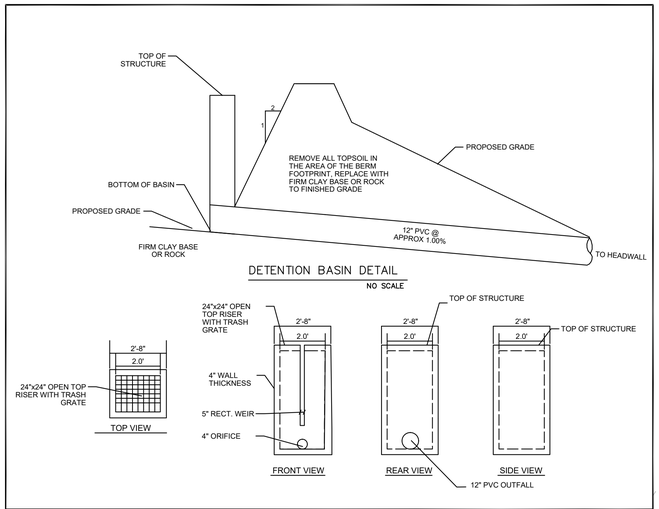
23. Additional engineering review etc., site inspection charges are subject to Section 14-301 of the Ashland City Municipal Code per Ordinance #165.

24. Three (3) sets of the construction plans for the site.

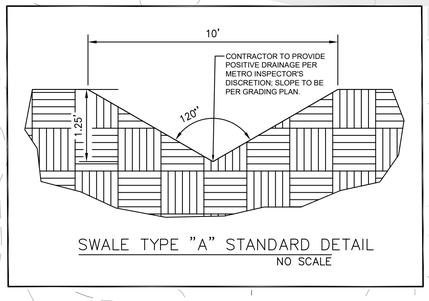
25. Submittal must be made at least 20 working days prior to the Planning Commission meeting to be heard.

26. If application is requesting a variance, application is to be submitted to the Building Official in accordance with Section 7.080 of the Ashland City Zoning Ordinance.





OUTLET STRUCTURE DETAIL



SWALE TYPE "A" STANDARD DETAIL
NO SCALE

LEGEND

- PROPERTY LINE
- EXISTING FENCE
- EXISTING OVERHEAD POWER LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATER LINE
- EXISTING CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED STORM SEWER
- 6" PERFORATED UNDERDRAIN
- HEADWALL
- ADS NYLOPLAST DOME INLET
- CLEANOUT/ OBSERVATION WELL
- JUNCTION BOX
- GRATE INLET
- PROPOSED SANITARY SEWER
- SANITARY MANHOLE
- SANITARY CLEANOUT
- TP TOP OF PAVEMENT
- TC TOP OF CURB
- TG TOP OF GRADE
- BG BOT OF GUTTER
- EX EXISTING SPOT ELV.
- TDEC STREAM
- DETENTION POND

TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

0 30 60 120 Feet

GRAPHIC SCALE

DEVELOPMENT / SITE DATA TABLE	
REGULATORY ZONING REQUIREMENT - ASHLAND CITY	
TAX MAP /PARCEL	64/11.01
ZONING	R-4
TOTAL AREA	88,583 SF / 2.03 AC
UNIT DENSITY	8.9 / AC
FRONT SETBACK	35 FT
REAR SETBACK	20 FT
MAX LOT COV. (MAX / PROVIDED)	40% / 19.7%
HEIGHT STANDARDS	3 STORIES
RESIDENTIAL UNIT SUMMARY	
NO. SINGLE FAMILY UNITS	8 UNITS
NO.DUPLEX UNITS	10 UNIT/AC
TOTAL UNITS	18 UNITS
UNIT DENSITY	8.9 / AC
DEVELOPMENT AREAS	
OPEN SPACE	43,455 SF / 1.00 AC
STREAM/ BUFFER	13,439 SF / 0.31 AC
BLD FOOTPRINT	17,440 SF / 0.40 AC
PAVEMENT	14,249 SF / 0.33 AC
BLD GROSS FLOOR AREA	31,800 SF / 0.73 AC
FAR	36%

STREAM BUFFER SIGN SPECIFICATIONS:

BUFFER SIGNS MAY BE PURCHASED FROM A VARIETY OF SIGN VENDORS. PLEASE MAKE CERTAIN THE COMPANY IS USING THE METRO APPROVED ARTWORK AND THE FOLLOWING SPECIFICATIONS:

- 12" X 18" WHITE 0.063 ALUMINUM
- BLACK AND KELLEY GREEN COPY
- SINGLE SIDED
- SIGN TO BE MOUNTED TO POST AT TOP AND BOTTOM WITH STAINLESS STEEL HARDWARE.

POST DESCRIPTION:
– 6' GALVANIZED U–CHANNEL OR 4'X4' PRESSURE TREATED LUMBER POST
– 2' BELOW GRADE
– 4' ABOVE GRADE

IF SIGN VENDOR DOES NOT HAVE THE APPROVED ARTWORK, PLEASE HAVE THEM CONTACT REBECCA DOHN @ 615–880–2420 OR REBECCA.DOHN@NASHVILLE.GOV.

NOTE:
BUFFER SIGNS ARE REQUIRED (1 PER 100 LF).

Tennessee811

Williams Engineering
Plan - Design - Build
Nashville: 865.679.5992 | mwilliams@civ-design.com

MICHAEL L. WILLIAMS
REGISTERED ENGINEER
AGRICULTURE
12390
NOVEMBER 18, 2008
STATE OF TENNESSEE
Michael Williams
2.14.2023

VALLEY POINT HOMES
FOR
JIMMY BROOKS
0 CALDWELL ROAD ASHLAND CITY, TN 37015

REVISIONS	DATE
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DEISGNED BY: MLW
DATE: 2/14/2023
SCALE: 1"=30'
JOB #: 20230210-1

SITE & DRAIANGE PLAN

C4.0

ITEM # 3.

APPENDIX D

FIRE APPARATUS ACCESS ROADS

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION D101 GENERAL

D101.1 Scope. Fire apparatus access roads shall be in accordance with this appendix and all other applicable requirements of the *International Fire Code*.

SECTION D102 REQUIRED ACCESS

D102.1 Access and loading. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an *approved* fire apparatus access road with an asphalt, concrete or other *approved* driving surface capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds (34 050 kg).

SECTION D103 MINIMUM SPECIFICATIONS

D103.1 Access road width with a hydrant. Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm), exclusive of shoulders (see Figure D103.1).

D103.2 Grade. Fire apparatus access roads shall not exceed 10 percent in grade.

Exception: Grades steeper than 10 percent as *approved* by the fire chief.

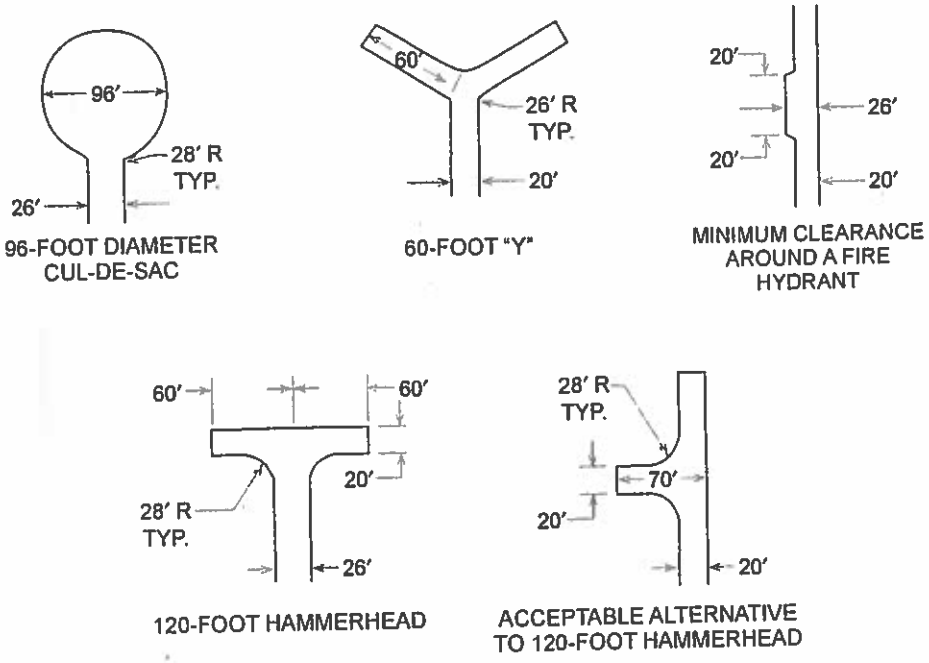
D103.3 Turning radius. The minimum turning radius shall be determined by the *fire code official*.

D103.4 Dead ends. Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) shall be provided with width and turnaround provisions in accordance with Table D103.4.

TABLE D103.4
REQUIREMENTS FOR DEAD-END FIRE APPARATUS ACCESS ROADS

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0-150	20	None required
151-500	20	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
501-750	26	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
Over 750	Special approval required	

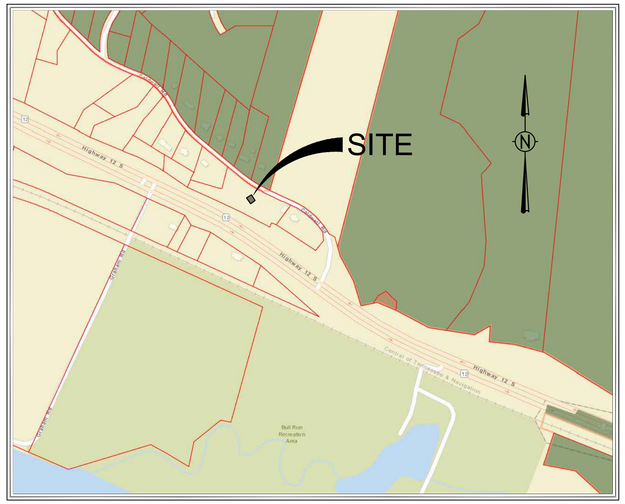
For SI: 1 foot = 304.8 mm.



For SI: 1 foot = 304.8 mm.

FIGURE D103.1
DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND

VALLEY POINT HOMES
CONSTRUCTION DRAWINGS
FOR
JIMMY BROOKS



TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

0 30 60 120 Feet

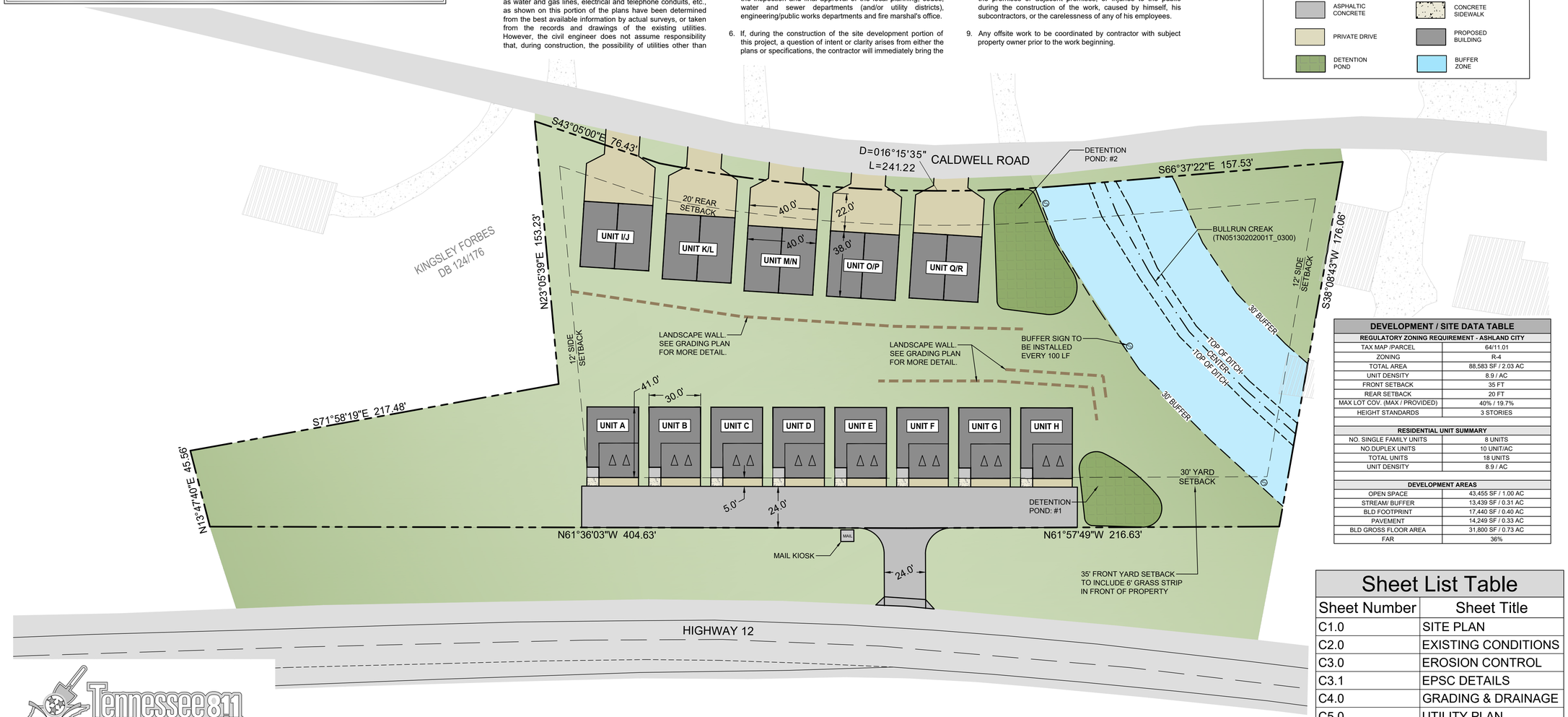
GRAPHIC SCALE

SITE CONSTRUCTION NOTES

1. The necessary permits for the work shown on these site development plans will be obtained by the contractor prior to commencement of any work on this project. The contractor shall give all necessary notices and obtain all permits and pay all fees involved in securing said permits. He shall also comply with all city, county and state building laws, ordinances or regulations relating to the construction of the project.
2. The contractor shall be responsible for and shall bear all expenses of field staking necessary for site and building layout. All layout shall be performed in accordance with the site layout plan.
3. The location of existing piping and underground utilities, such as water and gas lines, electrical and telephone conduits, etc., as shown on this portion of the plans have been determined from the best available information by actual surveys, or taken from the records and drawings of the existing utilities. However, the civil engineer does not assume responsibility that, during construction, the possibility of utilities other than those shown may be encountered or that actual location of those shown may vary somewhat from the location designated on this portion of the plans. In areas where it is necessary that the exact locations of underground lines be known, the contractor shall, at this own expense, furnish all labor and tools to either verify and substantiate or definitively establish the location of the lines.
4. The contractor must understand that the work is entirely at his risk until same is accepted and he will be held responsible for its safety by the owner. Therefore, the contractor shall furnish and install all necessary temporary works for the protection of the work, including barricades, warning signs, and lights.
5. The site development portion of this project will be subject to the inspection and final approval of the local planning, codes, water and sewer departments (and/or utility districts), engineering/public works departments and fire marshal's office.
6. If, during the construction of the site development portion of this project, a question of intent or clarity arises from either the plans or specifications, the contractor will immediately bring the matter to the attention of the civil engineer or owner's representative for resolution before the affected work items are initiated or pursued further.
7. The contractor will exercise extreme caution in the use of equipment in and around overhead and/or underground power lines. If at any time in the pursuit of this work the contractor must work in close proximity of the above-noted lines, the electric and/or telephone companies shall be contacted prior to such work and the proper safety measures taken. The contractor should make a thorough examination of the overhead lines in the project area prior to the initiation of construction.
8. The contractor shall be responsible for any damage done to the premises or adjacent premises, or injuries to the public during the construction of the work, caused by himself, his subcontractors, or the carelessness of any of his employees.
9. Any offsite work to be coordinated by contractor with subject property owner prior to the work beginning.

LEGEND

- PROPERTY LINE
- EXISTING FENCE
- EXISTING OVERHEAD POWER LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATER LINE
- EXISTING PUBLIC ROAD
- GRASS STRIP/ GREEN SPACE
- ASPHALTIC CONCRETE
- CONCRETE SIDEWALK
- PRIVATE DRIVE
- PROPOSED BUILDING
- DETENTION POND
- BUFFER ZONE



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Sheet List Table

Sheet Number	Sheet Title
C1.0	SITE PLAN
C2.0	EXISTING CONDITIONS
C3.0	EROSION CONTROL
C3.1	EPSC DETAILS
C4.0	GRADING & DRAINAGE
C5.0	UTILITY PLAN

Tennessee811

Williams Engineering
Plan - Design - Build
Nashville: 865.679.5992 | mwilliams@civ-design.com

MICHAEL L. WILLIAMS — 123901 — AGRICULTURE — NUMBER — REGISTERED PROFESSIONAL ENGINEER — STATE OF TENNESSEE
Michael Williams 2.23.2023

VALLEY POINT HOMES
FOR
JIMMY BROOKS
0 CALDWELL ROAD ASHLAND CITY, TN 37015

REVISIONS	DATE
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DESIGNED BY: MLW
DATE: 2/23/2023
SCALE: 1"=30'
JOB #: 20230210-1

SITE PLAN

C1.0

EXISTING CONDITIONS & DEMO NOTES

1. The contractor will be required to remove all excavated materials and such items shall become the property of the contractor. All items shall be properly disposed of at an off-site location. The contractor shall outline any and all possible haul routes and shall be prepared to submit such to the local jurisdiction public works department, the civil engineer and other authorities for approval.
2. If, at any time, prior to or during the demolition work, hazardous material is encountered, the contractor shall notify the owner's representative and appropriate governmental agency.
3. The contractor shall notify adjacent owners of work that may affect their property, potential noise, utility outage or disruption. Such operations shall be conducted by the contractor with minimum interference to adjacent owners. Adjacent egress and access shall be properly maintained at all times. Do not close or obstruct any roadways, parking or sidewalks without permission from the adjacent owners or the local jurisdiction public works department.
4. Prior to the commencement of demolition/grading operations, all overhead and underground utilities shall be located. All removal and/or relocation of utilities shall be coordinated with the respective utility companies.
5. The contractor will provide all necessary protective measures to safeguard existing utilities from damage during construction of this project. In the event that special equipment is required to work over or around the utilities, the contractor will be required to furnish such equipment at no additional cost to owner.
6. The contractor will be solely responsible for contacting all affected utilities prior to submitting his bid to determine the extent to which utility disconnections and/or adjustments will have upon the schedule of the work for the project. Some utility facilities may need to be adjusted concurrently with the contractor's operations, while some work may be required 'around' utility facilities that will remain in place. It is understood and agreed that the contractor will receive no additional compensation for delays or inconvenience caused by the utility adjustment.

FEMA FLOOD INFORMATION

Subject site is designated as Zone X (0.2% Annual Flood Chance Hazard) determined by FEMA Firm Flood Insurance Rate Map:
Map # 47021C0251E
Revised February 26, 2021

TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

0 30 60 120 Feet

GRAPHIC SCALE

LEGEND

- PROPERTY LINE
- EXISTING FENCE
- EXISTING OVERHEAD POWER LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATER LINE

Tennessee811

Williams Engineering
Plan - Design - Build
Nashville: 865.679.5992 | mwilliams@civ-design.com

MICHAEL L. WILLIAMS
REGISTERED PROFESSIONAL ENGINEER
AGRICULTURE
2.23.2023
NO. 122908
STATE OF TENNESSEE

VALLEY POINT HOMES

FOR

JIMMY BROOKS

0 CALDWELL ROAD ASHLAND CITY, TN 37015

REVISIONS	DATE
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DEISGNED BY: MLW

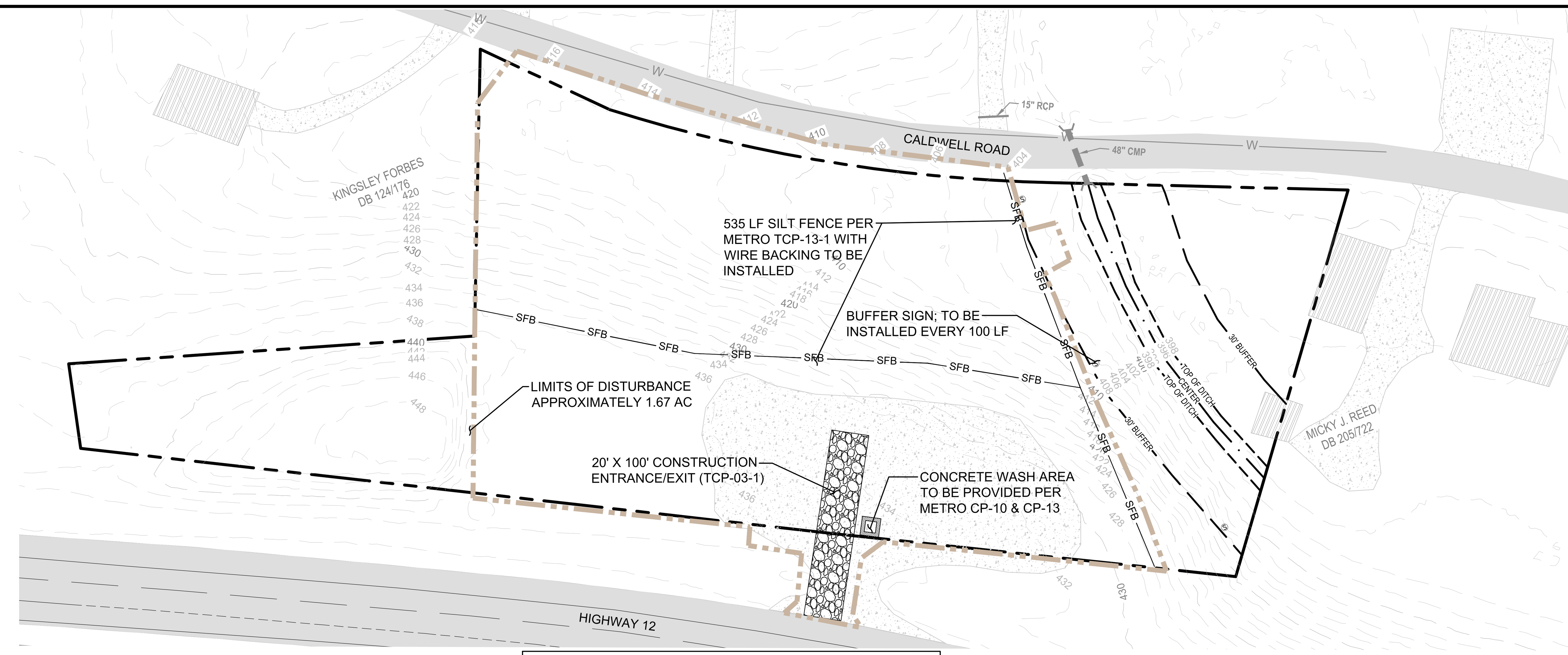
DATE: 2/23/2023

SCALE: 1"=30'

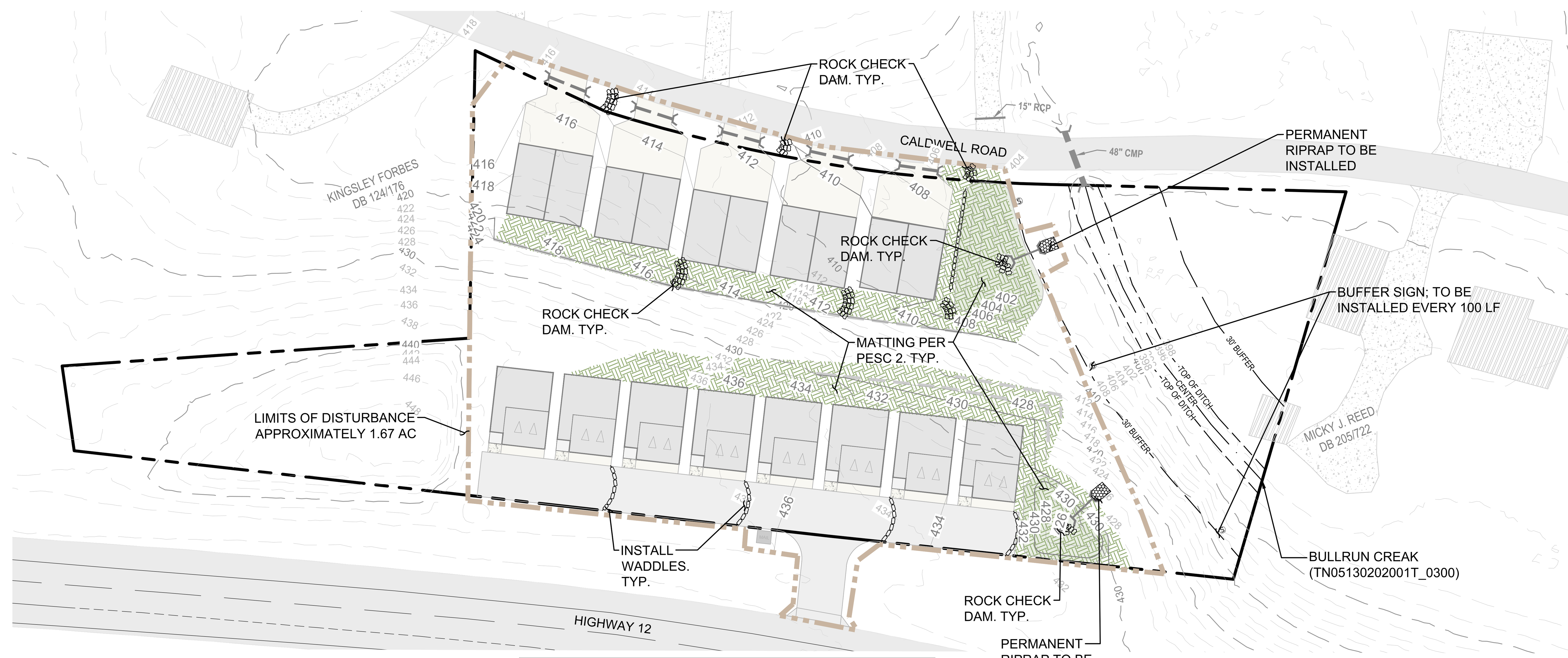
JOB #: 20230210-1

EXISTING CONDITIONS

C2.0



EROSION CONTROL - PHASE I



EROSION CONTROL - PHASE II

STREAM BUFFER SIGN SPECIFICATIONS:

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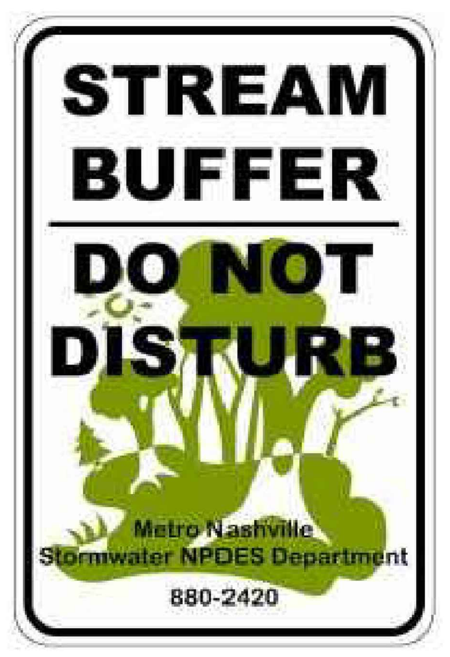

NOTE:
BUFFER SIGNS ARE REQUIRED (1 PER 100 LF).

TEMPORARY COVER SEEDING MIXTURES

SEEDING DATES	GRASS SEED	PERCENTAGES
January 1 to May 1	Italian Rye	33%
	Korean Lespedeza	33%
	Summer Oats	34%
May 1 to July 15	Sudan- Sorghum	100%
May 1 to July 15	StarrMillet	100%
July 15 to January 1	Balboa Rye	67%
	Italian Rye	33%

SOURCE: TDOT STANDARD SPECIFICATIONS:

PERMANENT COVER SEEDING MIXTURES

SEEDING DATES	GRASS SEED	PERCENTAGES
February 1 to July 1	Kentucky 31 Fescue	80%
	Korean Lespedeza	15%
	English Rye	5%
June 1 to August 15	Kentucky 31 Fescue	55%
	English Rye	20%
	Korean Lespedeza	15%
	German Millet	10%
April 15 to August 15	Bermudagrass (hulled)	70%
	Annual Lespedeza	30%
August 1 to December 1	Kentucky 31 Fescue	70%
	English Rye	20%
	White Clover	10%
February 1 to December 1	Kentucky 31 Fescue	70%
	Crown Vetch	25%
	English Rye	5%

SOURCE: TDOT STANDARD SPECIFICATIONS:

Tennessee Construction General Permit Certification Stamp
Metropolitan Government of Nashville Davidson County
Department of Water & Sewerage Services

Tennessee Construction General Permit Notice of Coverage (NOC) Certification:

Please fill out and sign/date one of the following two statements:

1. The project associated with these submitted plans is covered under Tennessee Construction General Permit TN_______________. The Total Disturbed Area is: 1.67 acres.

   Check all that apply: This site discharges into waters identified by TDEC as: Bull Run Creek (TN05130202001T_0300)
   ☐ Impaired for siltation ☐ Impaired for habitat alteration ☐ Exceptional

   Michael Williams — Signature   2/23/2023 — Date

   Circle one: Developer (Project Engineer) Other _______________

   Please attach a copy of the Notice of Coverage under the Construction General Permit.

   NOTE: A project will not be scheduled for a Pre-Construction Meeting until the State Construction General Permit NOC letter is submitted.

2. I hereby certify that this project does not require coverage under a Tennessee Construction General Permit. The Total Disturbed Area is: ________acres.

   Check all that apply: This site discharges into waters identified by TDEC as:
   ☐ Impaired for siltation ☐ Impaired for habitat alteration ☐ Exceptional

   ______________ Signature   ______________ Date

   Circle one: Developer Project Engineer Other _______________

TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

0 50 100 200 Feet
GRAPHIC SCALE

Erosion Prevention & Sediment Controls

1. All control measures must be properly installed and maintained in accordance with the manufacturer's specifications, tdec and local standards.
2. Contractors shall verify location, depth, and size of existing utilities prior to beginning construction, and shlal be responsible for making the necessary arrangements with the governing utility company for utilites requiring relocation.
3. Bmp capacity [sediment traps, silt fences, sedimentation ponds, and other sediment control] shall not be reduced by more than 50% at any given time. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the contractor must replace or modify the control for relevant site situations.
4. Where permanent or temporary vegetation cover is used as a control measure, the timing of the planting is critical. Planning for planting of vegetation cover during winter or dry months should be avoided.
5. If sediment escapes the permitted area, off-site accumulations of sediment that have not reached a stream must be removed at a frequency sufficient to minimize offsite impacts. The contractor shall not initiate remediation/restoration of a stream without consulting the division first. The noi general permit does not authorize access to private property. Arrangements concerning removal of sediment on adjoining property must be settled by the contractor and adjoining landowner.
6. Litter, construction debris, and construction chemicals exposed to storm water shall be picked up prior to anticipated storm events or before being carried off of the site by wind or otherwise prevented from becoming a pollutant source for storm water discharges. After use, materials used for epsc should be removed or otherwise prevented from becoming a pollutant source for storm water discharge.
7. Erodible material storage areas (including overburden and stockpiles of soil) and borrow pits are considered part of the site and should be addressed with appropriate bmp's accordingly.
8. Pre-construction vegetative ground cover shall not be destroyed, removed, or disturbed more than 15 days prior to grading or earth moving unless the area is stabilized. Contractor shall sequence events to minimize the exposure time of graded or denuded areas. Clearing and grubbing shall be held to the minimum necessary for grading and equipment operation. Existing vegetation at the site should be preserved to the maximum extent practicable.
9. Epsc measures must be in place and functional before moving operations begin and must be constructed and maintained throughout the construction period. Temporary measures may be removed at the beginning of the workaday, but must be replaced at the end of the workday.
10. The following records shall be maintained on or near site: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease or a portion of the site; the dates when stabilization measures are initiated; inspection records and rainfall records. Contractor shall maintain a rain gauge and daily rainfall records at the site, or use a reference site for a record of daily amount of precipitation.
11. A copy of the swppp shall be retained on-site and should be accessible to the director and the public. Once site is inactive or does not have an onsite location adequate to store the swppp, the location of the swppp, along with a contact phone number, shall be posted on-site. If the swppp is located off-site, reasonable local access to the plan, during normal working hours, must be provided.
12. Off-site vehicle tracking of sediments and the generation of dust shall be minimized. A stabilized construction access (a point of entrance/exit to a construction site) shall be constructed as needed to reduce the tracking of mud and dirt onto public roads by construction vehicles.
13. Inspections must be performed at least twice every calendar week. Inspections shall be performed at least 72 hours apart. Where sites or portions of construction sites have been temporarily stabilized, or runoff is unlikely due to winter conditions or due to extreme drought, such inspection has to be conducted once per month until thawing or precipitation results in runoff or construction activities resumes. Inspection requirement do not apply to definable areas that have been finally stabilized, as designed by the engineer. Written notification of the intent to change the inspection frequency and the justification for such request must be submitted to the local environmental field office, or the division's nashville central office for projects of tdot or tva. Should the division discover that monthly inspection of the division discover that monthly inspections of the site are not appropriate due to insufficient stabilization measures or otherwise, twice weekly inspections shall resume. The division may inspect the site to confirm or deny the notification to conduct monthly inspections.
14. Inspectors performing the required twice weekly inspections must have an active certification and a record of certification must be kept on site. Based on the results of the inspection, any inadequate control measures or control measures in despair shall be replaced or modified, or repaired as necessary, before the next rain event, but in no case more than 7 days after the need identified.
15. Outfall points shall be inspected to determine whether epsc measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.
16. Contractor shall provide an area for concrete wash down and equipment fueling in accordance with Metro CP-10 and CP-13, respectively. Contractor to coordinate exact location with NPDES department during preconstruction meeting. Control of other site wastes such as discarded building materials, chemicals, litter, and sanitary wastes that may cause adverse impacts to water quality is also required by the Grading Permittee
17. Exposed areas to be stabilized with 14 days after construction activities in the areas that have temporarily or permanently ceased. Areas with a slope of 3:1 or steeper shall be stabilized within 7 days.
18. All slopes 3:1 or steeper to be stabilized with erosion control blankets or matting.

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VALLEY POINT HOMES
FOR
JIMMY BROOKS
0 CALDWELL ROAD ASHLAND CITY, TN 37015

REVISIONS	DATE
-	-
-	-
-	-
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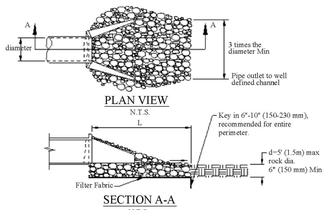
-	-
-	-

DESIGNED BY: MLW
DATE: 2/23/2023
SCALE: 1"=50'
JOB #: 20230210-1

EROSION CONTROL

C3.0

ACTIVITY: Outlet Protection | PESC – 07



Adapted from: Virginia Erosion & Sediment Control Handbook, 1992

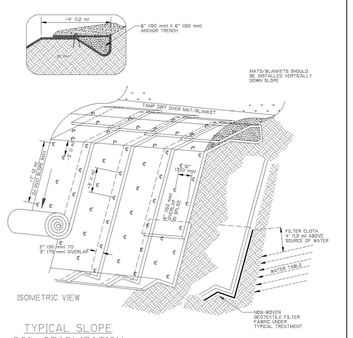
Pipe Diameter in (mm)	Discharge ft ^{3}/s (m ^{3}/s)	Apron Length, L ft (m)	Rip-Rap D_{50}Diameter Min in (mm)
12 (300)	4.9 (0.14)	10 (3)	4 (100)
	9.89 (0.28)	13 (4)	6 (150)
18 (450)	9.89 (0.28)	10 (3)	6 (150)
	20.13 (0.57)	16 (5)	8 (200)
	30.01 (0.85)	23 (7)	12 (300)
	39.90 (1.13)	26 (8)	16 (400)
24 (600)	30.01 (0.85)	16 (5)	8 (200)
	39.90 (1.13)	26 (8)	8 (200)
	50.14 (1.42)	26 (8)	12 (300)
	60.03 (1.70)	30 (9)	16 (400)
For larger or higher flows, consult a registered civil engineer			

Source: Adapted from USDA-SCS

Figure PESC-07-1
Outlet Protection Sizing

Stormwater Best Management Practices – Permanent EP&SC | PESC-07-3 | January 2014

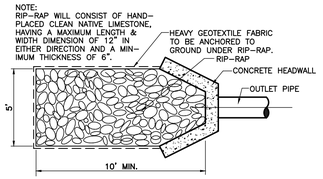
ACTIVITY: Geotextiles | PESC – 02



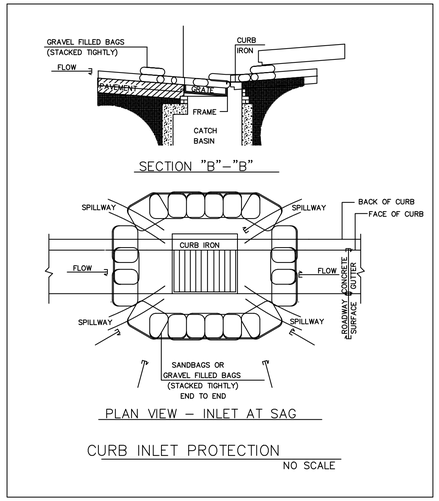
NOTES:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, SOIL CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

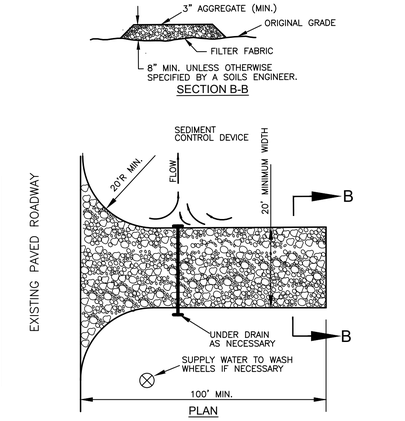
Figure PESC-02-2
Anchoring Geotextiles on Embankments

Volume 4
Stormwater Best Management Practices – Permanent E&S Control Management Practices PESC-02-4 | February 2000

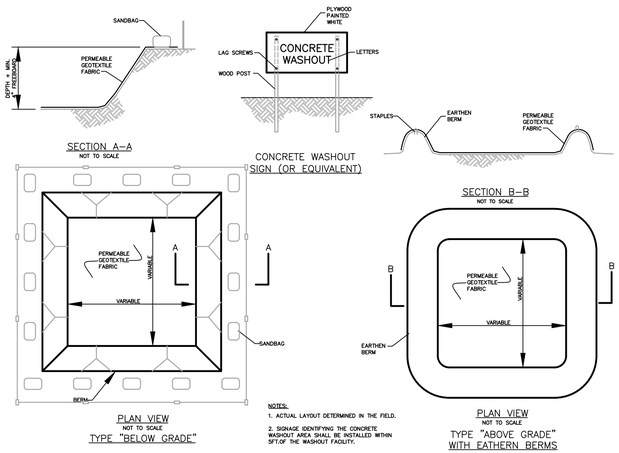


RIP-RAP DETAIL
(PER MWS TCP-20)
NOT TO SCALE



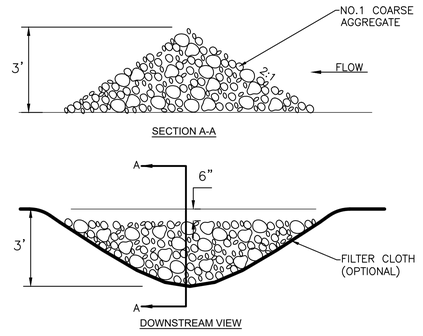


STABILIZED CONSTRUCTION ENTRANCE
(PER MWS TCP-03)
NOT TO SCALE

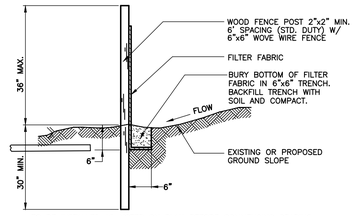


NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. SIGNAGE IDENTIFYING THE CONCRETE WASHOUT AREA SHALL BE INSTALLED WITHIN 5FT.OF THE WASHOUT FACILITY.

CONCRETE WASHOUT
(PER MWS CP-12)
NOT TO SCALE



ROCK CHECK DAM
(PER MWS TCP-12)
NOT TO SCALE



TO BE INSTALLED AS NOTED ON PLAN BEFORE COMMENCING GRADING OPERATION AND LEFT IN PLACE UNTIL A GOOD STAND OF GRASS IS ESTABLISHED OVER ALL DISTURBED AREAS. PRIOR TO INSTALLATION, CONTRACTOR SHOULD CONFIRM WITH THE CITY OF FRANKLIN ENGINEERING DEPT. THAT THIS DETAIL IS THE CURRENT AND APPROVED EROSION/SILTATION BARRIER.

EROSION/SILTATION FENCE
(PER MWS TCP-13)
NOT TO SCALE

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Nashville: 865.679.5992 | mwilliams@civ-design.com

MICHAEL L. WILLIAMS
REGISTERED ENGINEER
AGRICULTURE
2.23.2023
STATE OF TENNESSEE

VALLEY POINT HOMES
FOR
JIMMY BROOKS
0 CALDWELL ROAD ASHLAND CITY, TN 37015

REVISIONS	DATE
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DEISGNED BY: MLW

DATE: 2/23/2023

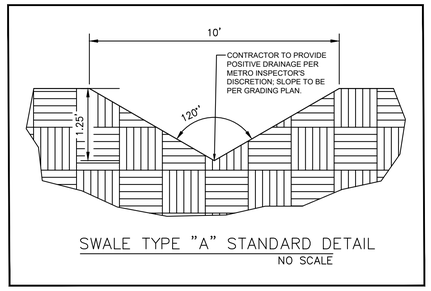
SCALE: N/A

JOB #: 20230210-1

EPSC DETAILS

C3.1

ITEM # 3.



SWALE TYPE "A" STANDARD DETAIL
NO SCALE

DRAINAGE STRUCTURE SCHEDULE				
NO.	TYPE	CASTING	RIM	INVERTS
ST1	HEADWALL	4310	427.70	425.70 (ST2)
ST2	HEADWALL	4310	428.00	426.00 (ST1)
ST3	HEADWALL	4310	402.70	400.70 (ST4)
ST4	HEADWALL	4310	403.00	401.00 (ST3)

PIPE TABLE			
LINE	SIZE/TYPE	LENGTH	SLOPE
ST1–ST2	8" HDPE	15'	2.00%
ST3–ST4	8" HDPE	15'	2.00%

LEGEND

- PROPERTY LINE
- EXISTING FENCE
- EXISTING OVERHEAD POWER LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATER LINE
- EXISTING CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED STORM SEWER
- 6" PERFORATED UNDERDRAIN
- HEADWALL
- ADS NYLOPLAST DOME INLET
- CLEANOUT/ OBSERVATION WELL
- JUNCTION BOX
- GRATE INLET
- PROPOSED SANITARY SEWER
- SANITARY MANHOLE
- SANITARY CLEANOUT
- TP TOP OF PAVEMENT
- TC TOP OF CURB
- TG TOP OF GRADE
- BG BOT OF GUTTER
- EX EXISTING SPOT ELV.
- TDEC BUFFER ZONE
- DETENTION POND

TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

0 30 60 120 Feet
GRAPHIC SCALE

STREAM BUFFER SIGN SPECIFICATIONS:

BUFFER SIGNS MAY BE PURCHASED FROM A VARIETY OF SIGN VENDORS. PLEASE MAKE CERTAIN THE COMPANY IS USING THE METRO APPROVED ARTWORK AND THE FOLLOWING SPECIFICATIONS:

- 12" X 18" WHITE 0.063 ALUMINUM
- BLACK AND KELLEY GREEN COPY
- SINGLE SIDED
- SIGN TO BE MOUNTED TO POST AT TOP AND BOTTOM WITH STAINLESS STEEL HARDWARE.

POST DESCRIPTION:
– 6' GALVANIZED U–CHANNEL OR 4'X4' PRESSURE TREATED LUMBER POST
– 2' BELOW GRADE
– 4' ABOVE GRADE

IF SIGN VENDOR DOES NOT HAVE THE APPROVED ARTWORK, PLEASE HAVE THEM CONTACT REBECCA DOHN @ 615–880–2420 OR REBECCA.DOHN@NASHVILLE.GOV.

NOTE:
BUFFER SIGNS ARE REQUIRED (1 PER 100 LF).

Tennessee811

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12390
STATE OF TENNESSEE
Michael Williams
2.23.2023

VALLEY POINT HOMES
FOR
JIMMY BROOKS
0 CALDWELL ROAD ASHLAND CITY, TN 37015

REVISIONS	DATE
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–	–

DEISGNED BY: MLW
DATE: 2/23/2023
SCALE: 1"=30'
JOB #: 20230210-1

GRADING & DRAINAGE

C4.0

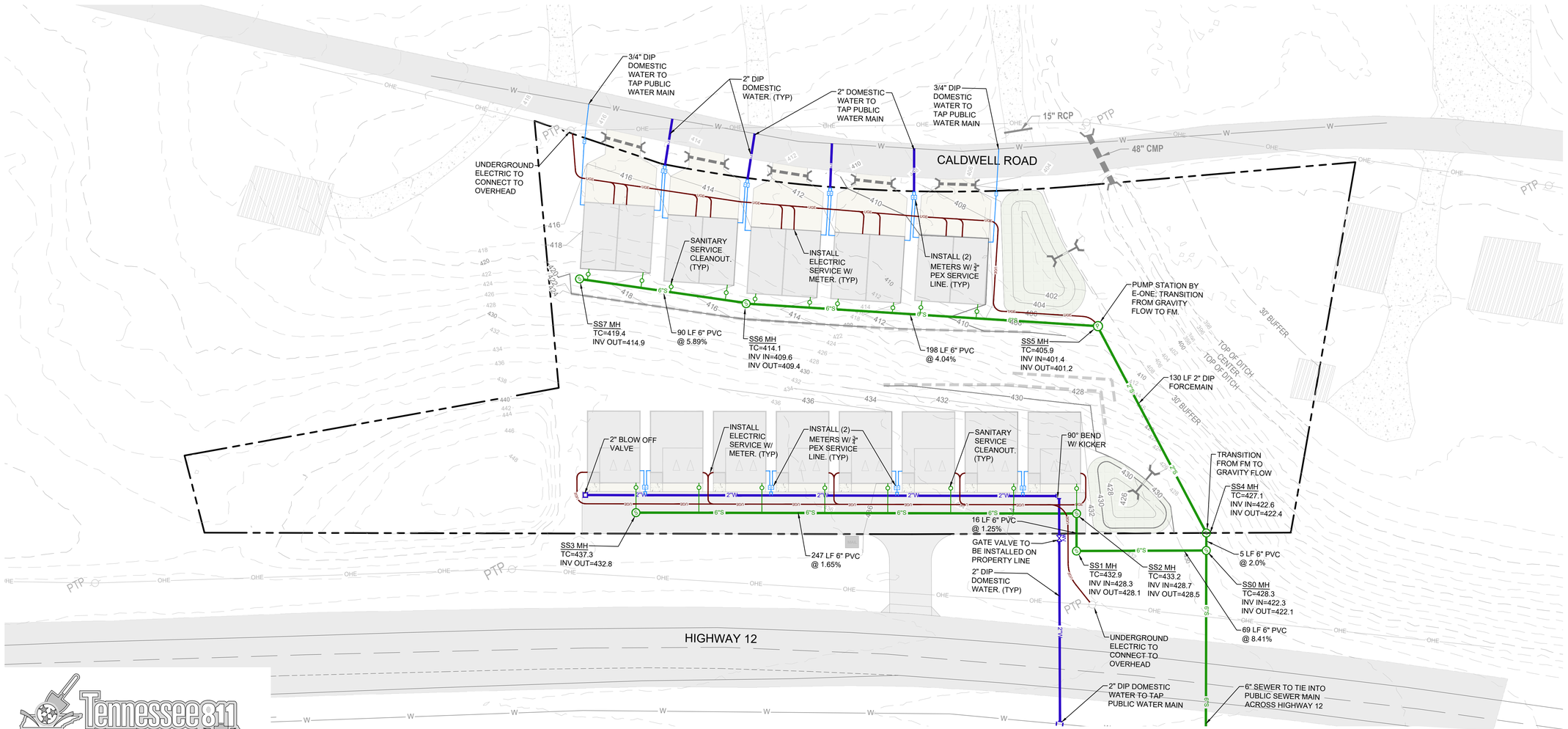
LEGEND

- PROPERTY LINE
- EXISTING FENCE
- EXISTING OVERHEAD POWER LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATER LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM SEWER
- HEADWALL
- ADS NYLOPLAST DOME INLET
- CLEANOUT/ OBSERVATION WELL
- JUNCTION BOX
- GRATE INLET
- PROPOSED SANITARY SEWER
- SANITARY MANHOLE
- SANITARY CLEANOUT
- PROPOSED WATER
- FIRE HYDRANT
- WATER VALVE
- TAPPING TEE
- UNDERGROUND ELECTRIC

TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

0 30 60 120 Feet

GRAPHIC SCALE



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STATE OF TENNESSEE
Michael Williams
2.23.2023

VALLEY POINT HOMES

FOR

JIMMY BROOKS

0 CALDWELL ROAD ASHLAND CITY, TN 37015

REVISIONS	DATE
-	-
-	-
-	-
-	-
-	-
-	-

DEISGNED BY: MLW

DATE: 2/23/2023

SCALE: 1"=30'

JOB #: 20230210-1

UTILITY PLAN

C5.0

HYDROLOGY REPORT
Valley Point Homes

0 Caldwell Rd
Ashaland City, TN 37015
Tax Map / Parcel: 64/11.01

Prepared By:

Williams Engineering
Plan - Design - Build

807 18th Ave South, Floor 10
Nashville, TN 37203
P: 865-679-59952

Table of Contents

I. Project Narrative & Detention Summary

The proposed building site is located at 0 Caldwell Rd Ashland City, TN 37015 where (18) units are to be constructed.

Pre Development

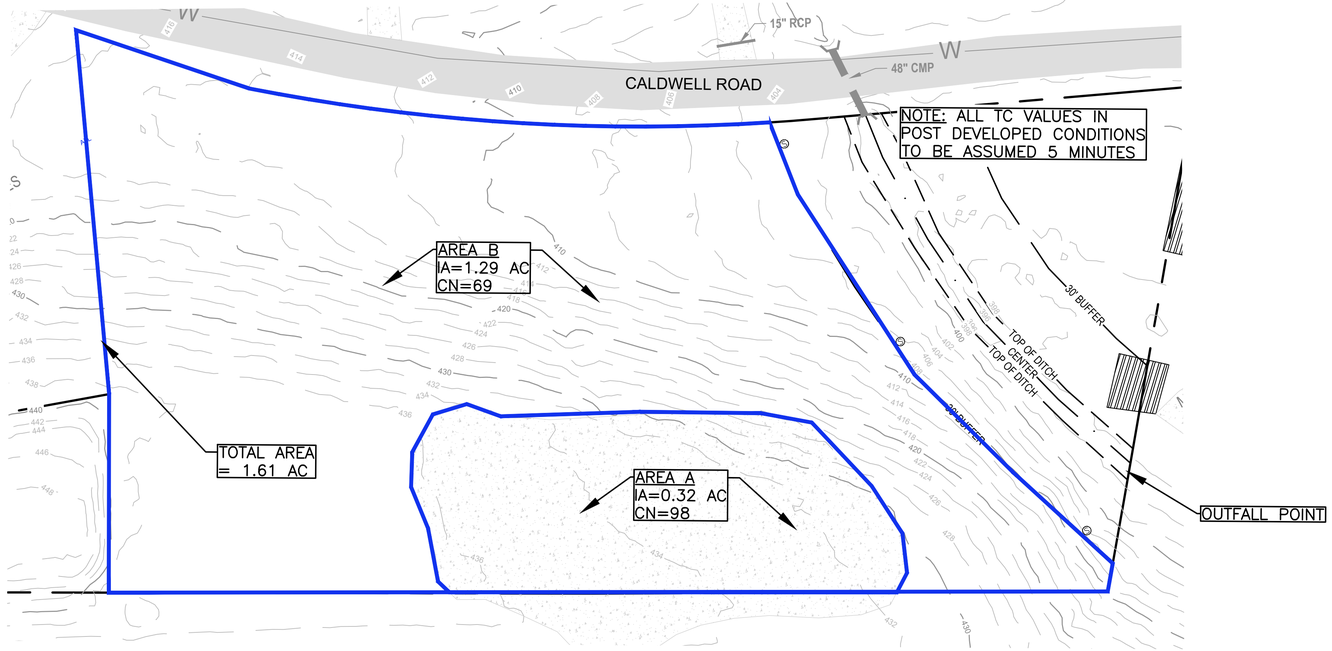
The total disturbed area of the site is 1.61 AC, in which 0.32 AC of existing gravel is present. The existing storm outfall point is located at the south east corner of the site. Per USDA web soil survey, the site is predominately comprised of Type B Soil. In existing conditions Time of Concentration was found to be a minimum of 5 minutes and this can be seen on the existing drainage map.

Post Development

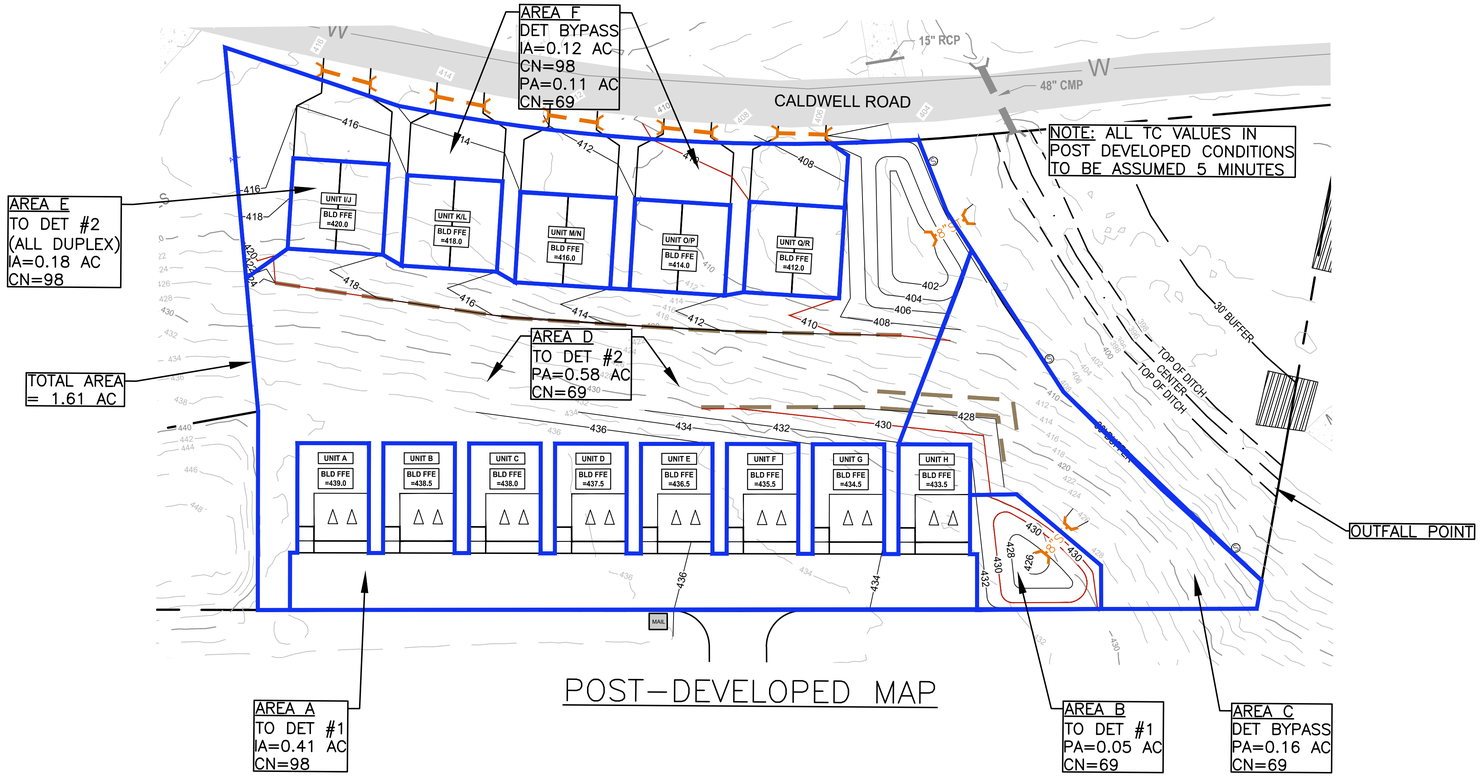
In post developed conditions, additional impervious area has been added to the site. In order to prevent an increase in storm runoff per storm intensity, Post-Developed peak flows must be less than that in Pre-Developed conditions. Two detention ponds have been provided to mitigate runoff. Detention Pond #1 is located at the southeast corner of the site, and Detention Pond #2 is located at the northeast corner of the site. A Pre vs Post storm map has been provided in this document, along with a hydrograph report to show Pre-Developed flow is less than Post-Developed flow. A 5 minute Time of concentration was used as a conservative value for Post Developed conditions. In consideration of the said values, Post Developed flow rates are less than existing conditions for the 2, 5, 10, 25, 50, & 100-yr storm frequencies as seen in the hydrograph report. In conclusion, stormwater has been mitigated for the subject proposed construction based on the Metro Stormwater manual.

Valley Point Homes						
SUMMARY – PRE-DEVELOPED VS POST-DEVELOPED DETENTION						
	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR
Pre-Developed Flow (cfs)	3.36	5.58	7.15	9.24	10.81	12.37
Pre-Developed Flow (cfs)	3.19	4.03	4.58	5.24	5.70	6.14

II. Pre-Developed & Post-Developed Map



PRE-DEVELOPED MAP



POST-DEVELOPED MAP

TENNESSEE STATE PLANE
COORDINATE SYSTEM - NAD 1983
VERTICAL DATUM - NAVD 1988

0 30 60 120 Feet

GRAPHIC SCALE

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2021-122906
ENGINEER
STATE OF TENNESSEE
Michael Williams
2.21.2023

VALLEY POINT HOMES

FOR

JIMMY BROOKS

0 CALDWELL ROAD ASHLAND CITY, TN 37015

REVISIONS	DATE
-	-
-	-
-	-
-	-
-	-
-	-

DEISGNED BY: MLW

DATE: 6/10/2021

SCALE: PER SCALE

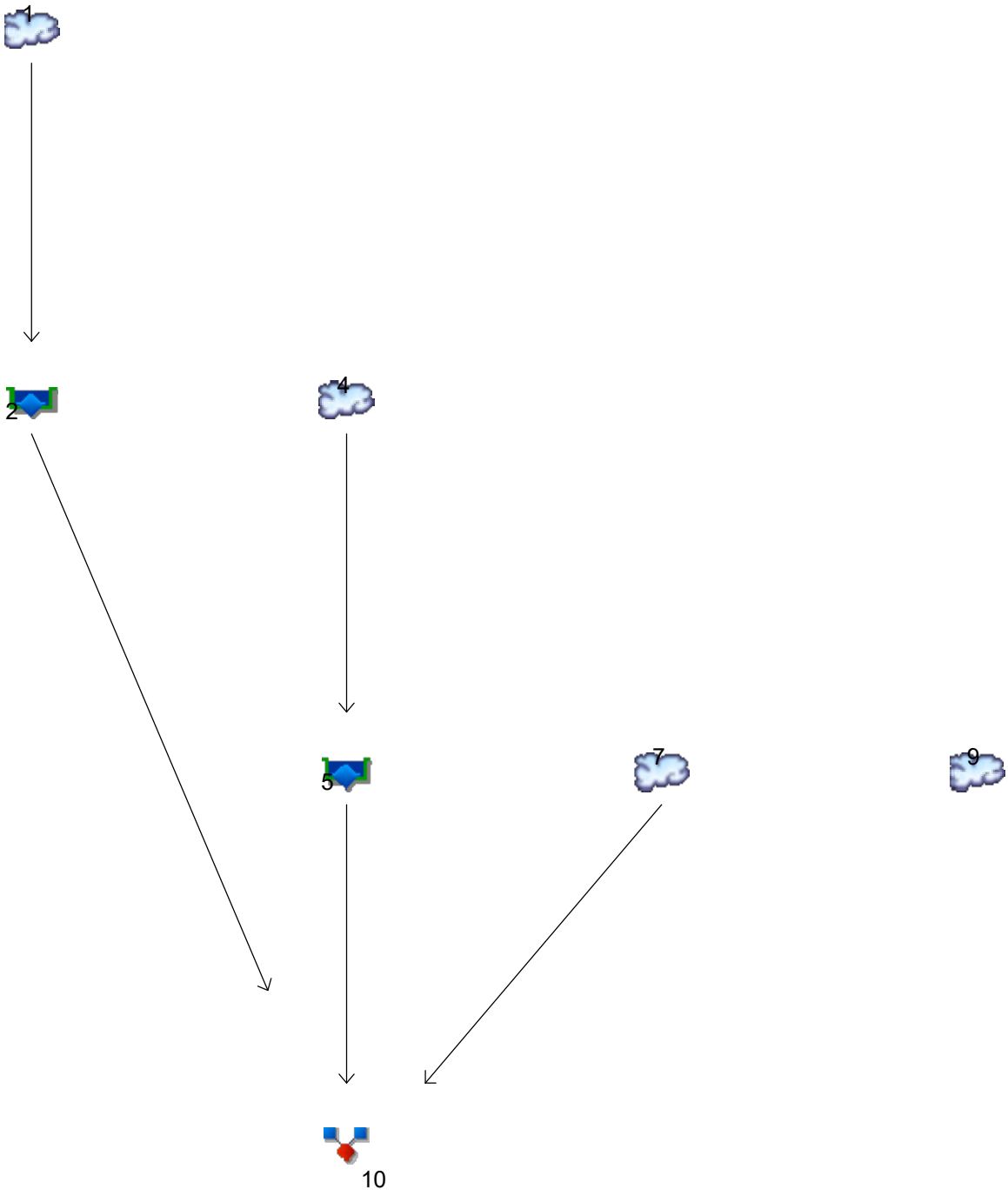
JOB #: 20230210-1

PRE-DEVELOPED
POST-DEVELOPED
MAPS

DET

III. Detention Hydrographs Report

Watershed Model Schematic



Legend

Hyd.	Origin	Description
1	SCS Runoff	To Det #1
2	Reservoir	After Det #1
4	SCS Runoff	To Det #2
5	Reservoir	After Det #2
7	SCS Runoff	Det Bypass
9	SCS Runoff	Pre-Developed
10	Combine	Post-Developed

Hydrograph Return Period Recap

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	------	-------	2.009	-------	2.727	3.196	3.791	4.231	4.664	To Det #1
2	Reservoir	1	-------	1.531	-------	1.772	1.933	2.073	2.175	2.275	After Det #1
4	SCS Runoff	------	-------	1.663	-------	2.729	3.487	4.478	5.224	5.965	To Det #2
5	Reservoir	4	-------	1.046	-------	1.364	1.569	1.819	1.973	2.079	After Det #2
7	SCS Runoff	------	-------	0.712	-------	1.075	1.317	1.626	1.855	2.080	Det Bypass
9	SCS Runoff	------	-------	3.355	-------	5.580	7.152	9.236	10.81	12.37	Pre-Developed
10	Combine	2, 5, 7,	-------	3.192	-------	4.032	4.584	5.240	5.700	6.136	Post-Developed

Hydrograph Summary Report

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	2.009	2	716	4,432	------	------	------	To Det #1
2	Reservoir	1.531	2	720	4,432	1	427.99	363	After Det #1
4	SCS Runoff	1.663	2	718	3,326	------	------	------	To Det #2
5	Reservoir	1.046	2	722	3,324	4	402.11	547	After Det #2
7	SCS Runoff	0.712	2	716	1,442	------	------	------	Det Bypass
9	SCS Runoff	3.355	2	718	6,709	------	------	------	Pre-Developed
10	Combine	3.192	2	718	9,198	2, 5, 7,	------	------	Post-Developed

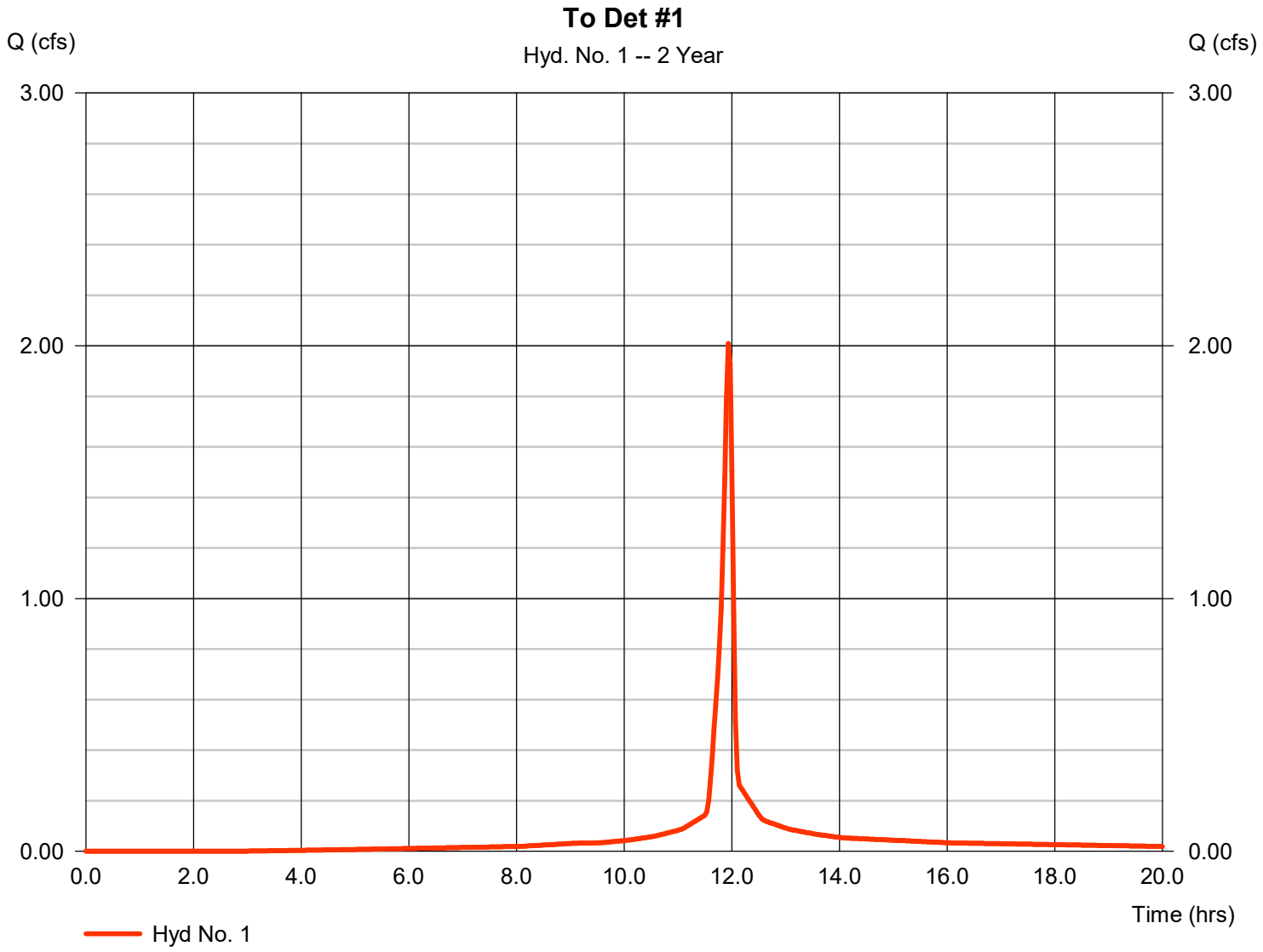
Hydrograph Report

Hyd. No. 1

To Det #1

Hydrograph type	= SCS Runoff	Peak discharge	= 2.009 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,432 cuft
Drainage area	= 0.460 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.39 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.410 x 98) + (0.050 x 69)] / 0.460



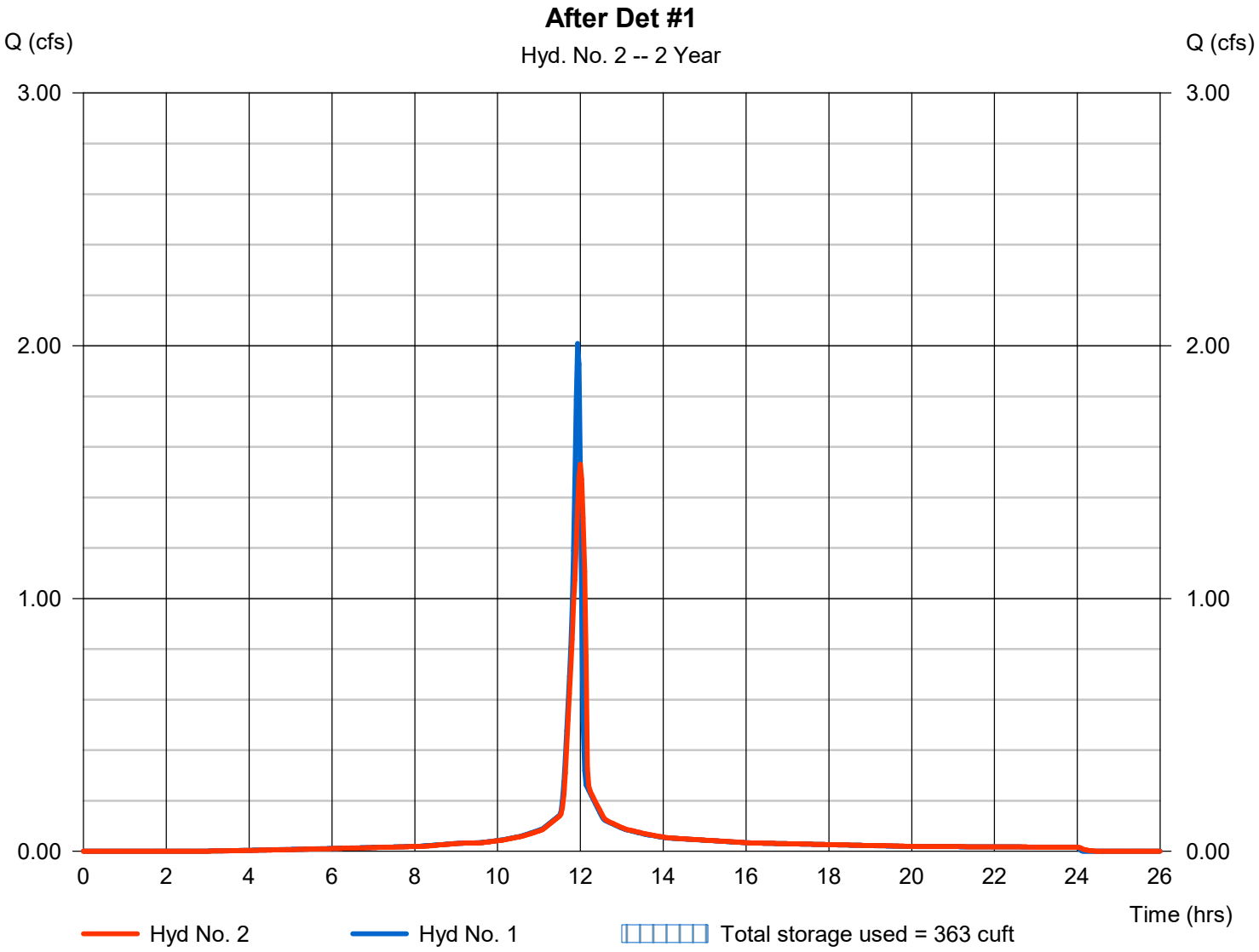
Hydrograph Report

Hyd. No. 2

After Det #1

Hydrograph type	= Reservoir	Peak discharge	= 1.531 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 4,432 cuft
Inflow hyd. No.	= 1 - To Det #1	Max. Elevation	= 427.99 ft
Reservoir name	= Det Pond #1	Max. Storage	= 363 cuft

Storage Indication method used.



Pond No. 1 - Det Pond #1

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 426.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	426.00	50	0	0
1.00	427.00	165	102	102
2.00	428.00	375	263	365
3.00	429.00	680	520	885
4.00	430.00	1,030	849	1,734

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	8.00	Inactive	Inactive
Span (in)	= 8.00	8.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 426.00	426.00	0.00	0.00
Length (ft)	= 15.00	1.00	0.00	0.00
Slope (%)	= 2.00	2.00	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

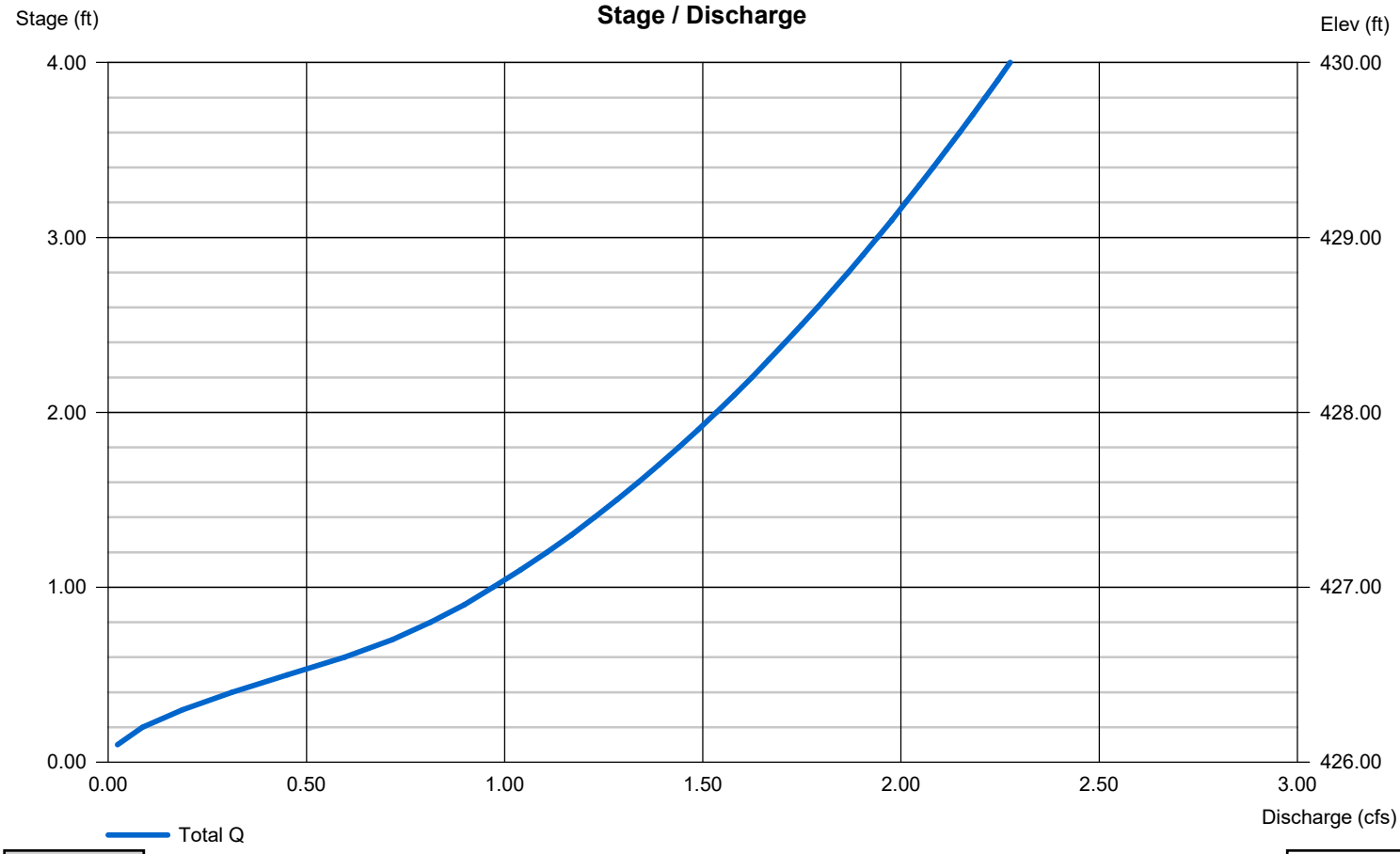
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	Inactive	Inactive	0.00
Crest El. (ft)	= 457.50	456.10	457.75	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	Ciplti	---
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).



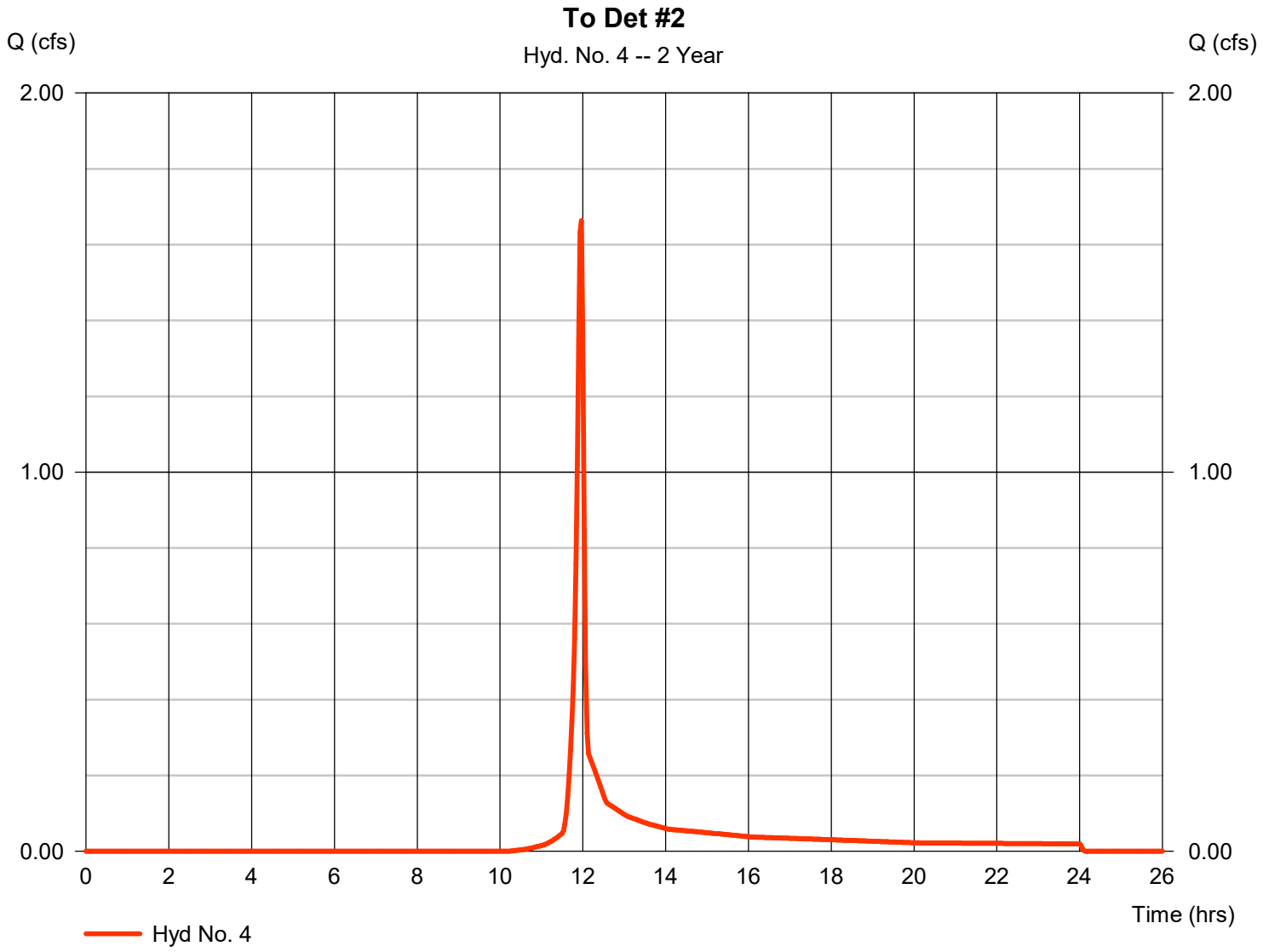
Hydrograph Report

Hyd. No. 4

To Det #2

Hydrograph type	= SCS Runoff	Peak discharge	= 1.663 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 3,326 cuft
Drainage area	= 0.760 ac	Curve number	= 76*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.39 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.580 x 69) + (0.180 x 98)] / 0.760



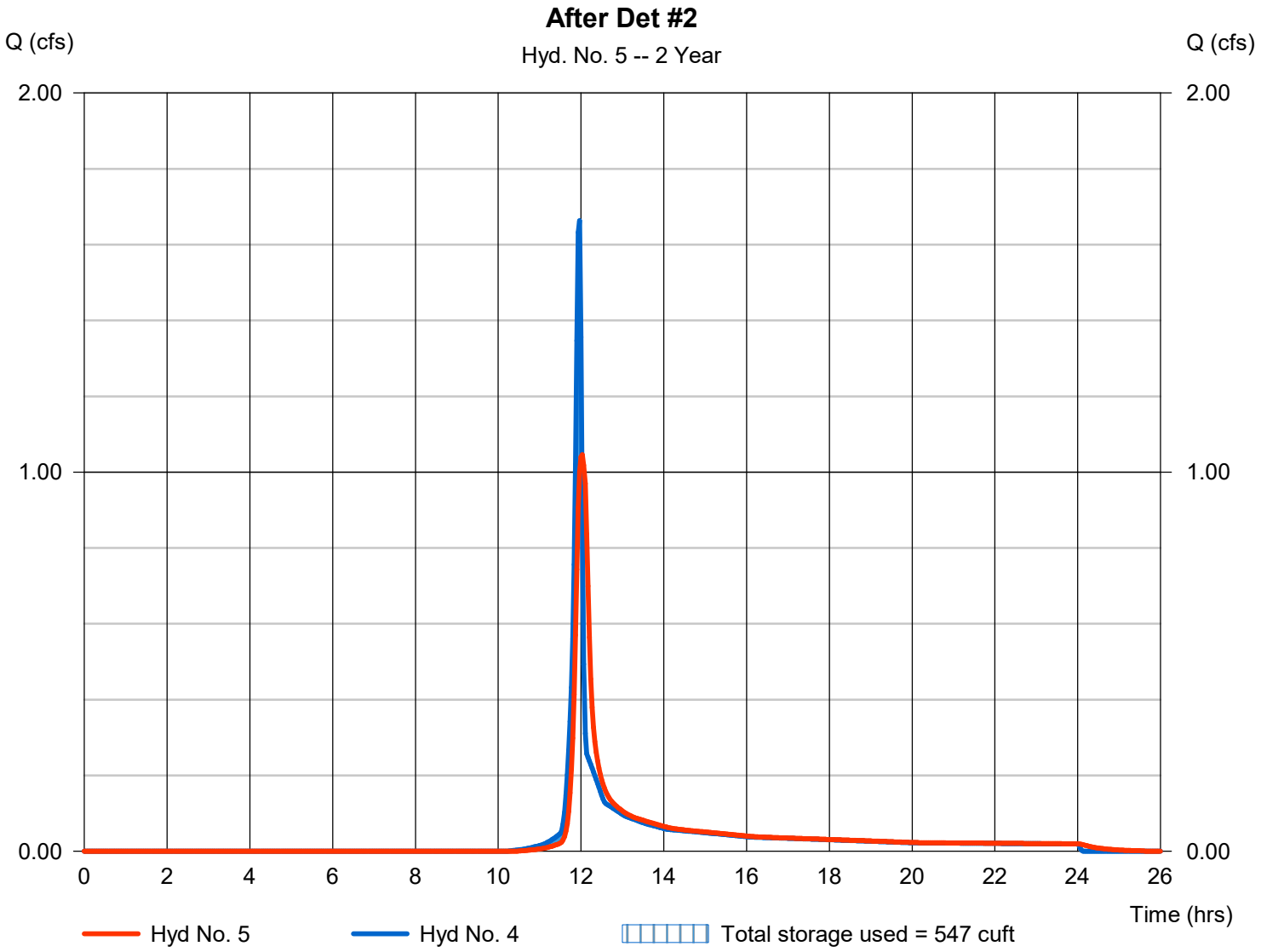
Hydrograph Report

Hyd. No. 5

After Det #2

Hydrograph type	= Reservoir	Peak discharge	= 1.046 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 3,324 cuft
Inflow hyd. No.	= 4 - To Det #2	Max. Elevation	= 402.11 ft
Reservoir name	= Det Pond #2	Max. Storage	= 547 cuft

Storage Indication method used.



Pond No. 2 - Det Pond #2

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 401.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	401.00	280	0	0
1.00	402.00	610	434	434
3.00	404.00	1,475	2,022	2,457
4.00	405.00	1,990	1,726	4,182

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	8.00	Inactive	Inactive
Span (in)	= 8.00	8.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 401.00	401.00	0.00	0.00
Length (ft)	= 25.00	1.00	0.00	0.00
Slope (%)	= 2.00	2.00	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

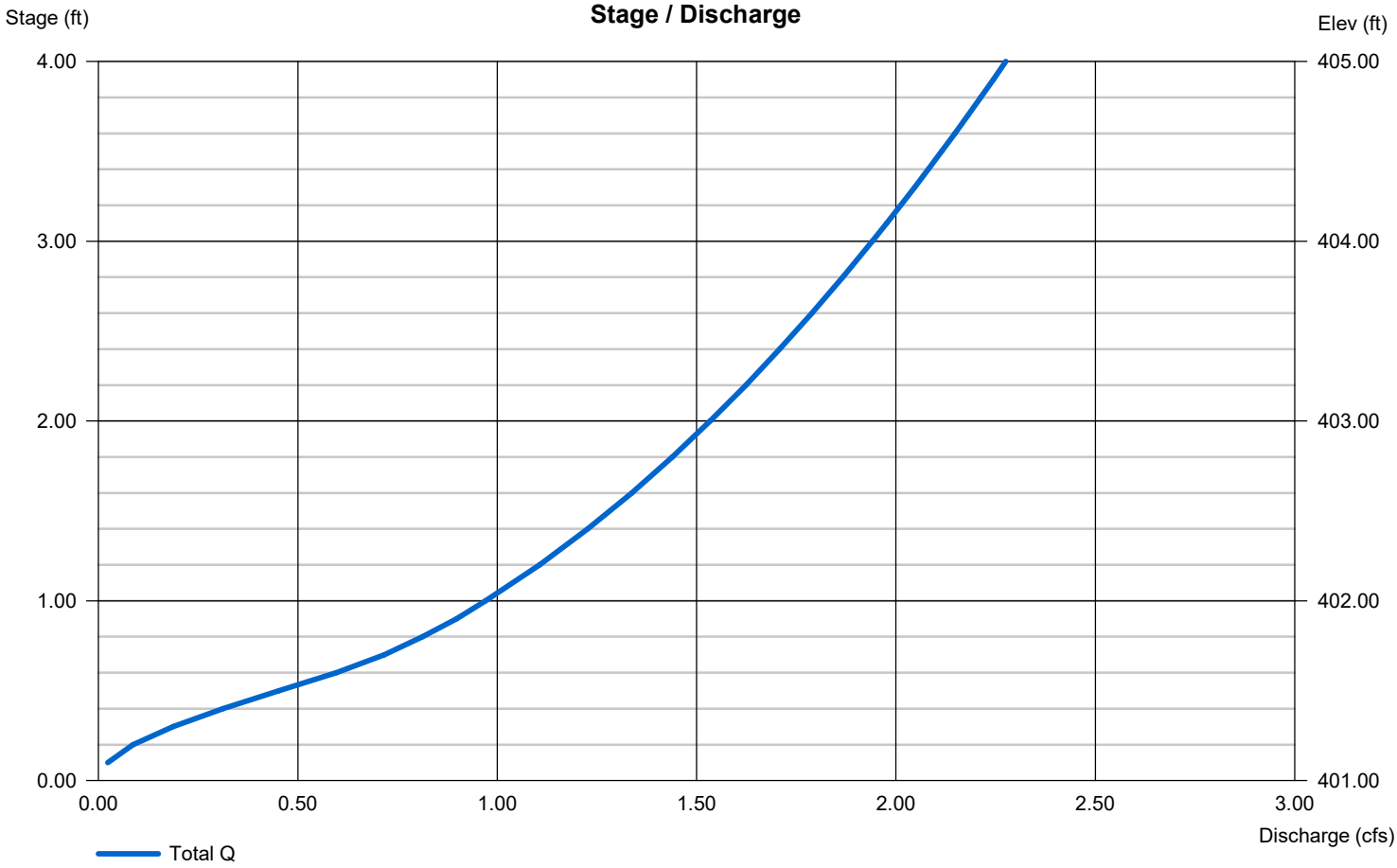
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	Inactive	Inactive	0.00
Crest El. (ft)	= 457.50	456.10	457.75	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	Ciplti	---
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).



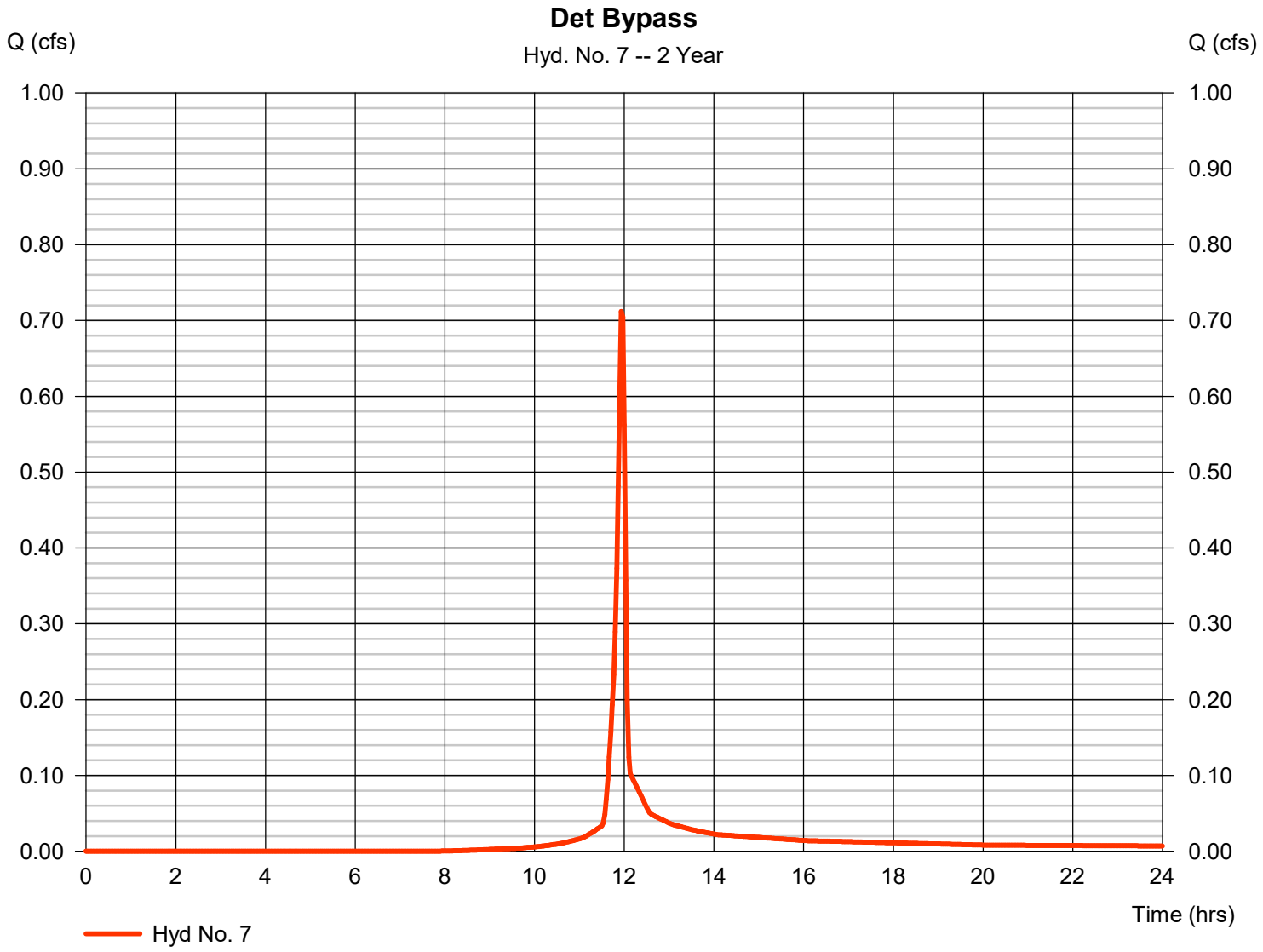
Hydrograph Report

Hyd. No. 7

Det Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 0.712 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,442 cuft
Drainage area	= 0.230 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.39 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.120 x 98) + (0.110 x 69)] / 0.230



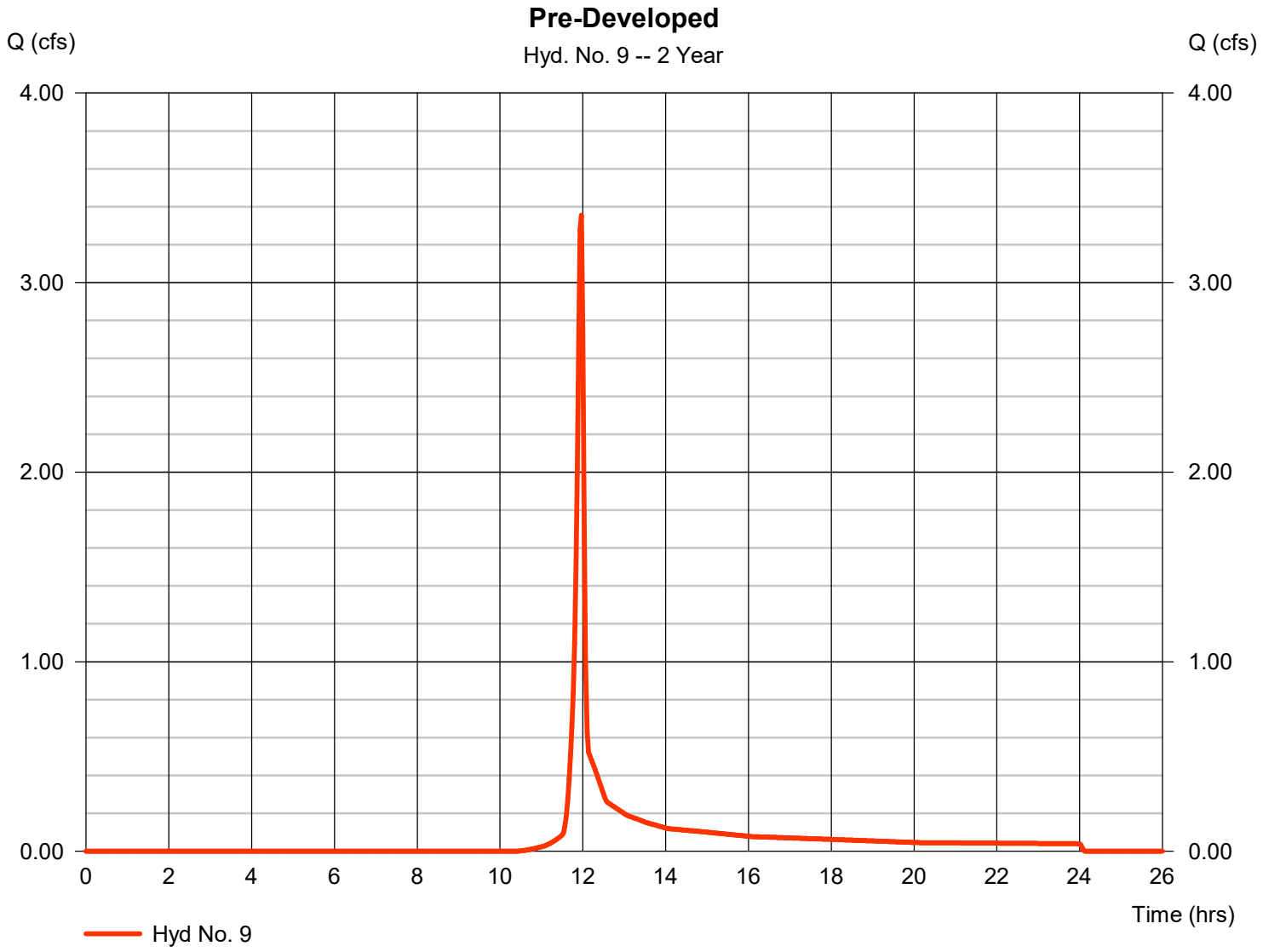
Hydrograph Report

Hyd. No. 9

Pre-Developed

Hydrograph type	= SCS Runoff	Peak discharge	= 3.355 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 6,709 cuft
Drainage area	= 1.610 ac	Curve number	= 75*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.39 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.290 x 69) + (0.320 x 98)] / 1.610

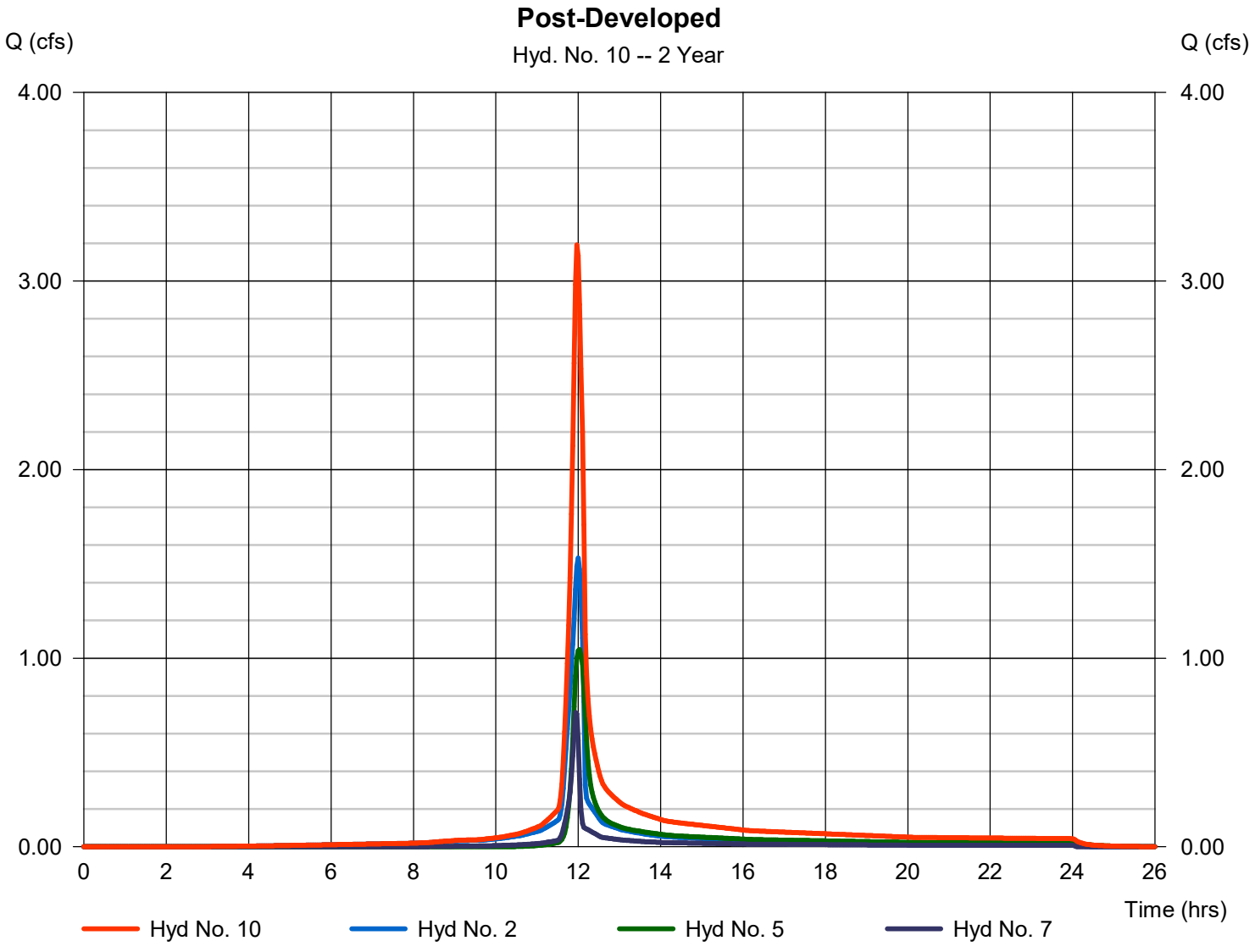


Hydrograph Report

Hyd. No. 10

Post-Developed

Hydrograph type	= Combine	Peak discharge	= 3.192 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 9,198 cuft
Inflow hyds.	= 2, 5, 7	Contrib. drain. area	= 0.230 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

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	2.727	2	716	6,144	------	------	------	To Det #1
2	Reservoir	1.772	2	720	6,143	1	428.56	655	After Det #1
4	SCS Runoff	2.729	2	718	5,508	------	------	------	To Det #2
5	Reservoir	1.364	2	722	5,507	4	402.65	1,095	After Det #2
7	SCS Runoff	1.075	2	716	2,205	------	------	------	Det Bypass
9	SCS Runoff	5.580	2	718	11,234	------	------	------	Pre-Developed
10	Combine	4.032	2	718	13,855	2, 5, 7,	------	------	Post-Developed

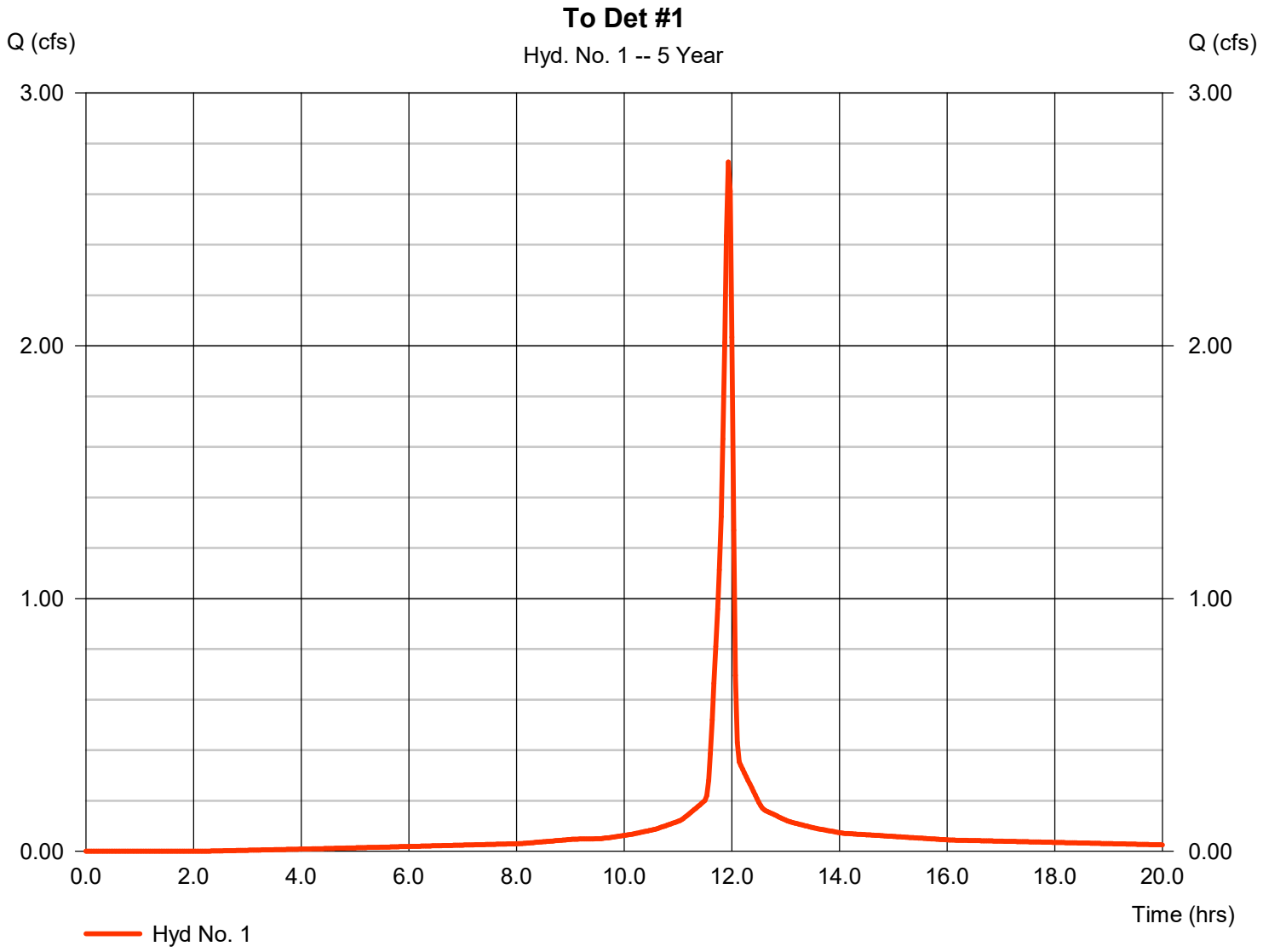
Hydrograph Report

Hyd. No. 1

To Det #1

Hydrograph type	= SCS Runoff	Peak discharge	= 2.727 cfs
Storm frequency	= 5 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 6,144 cuft
Drainage area	= 0.460 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.410 x 98) + (0.050 x 69)] / 0.460



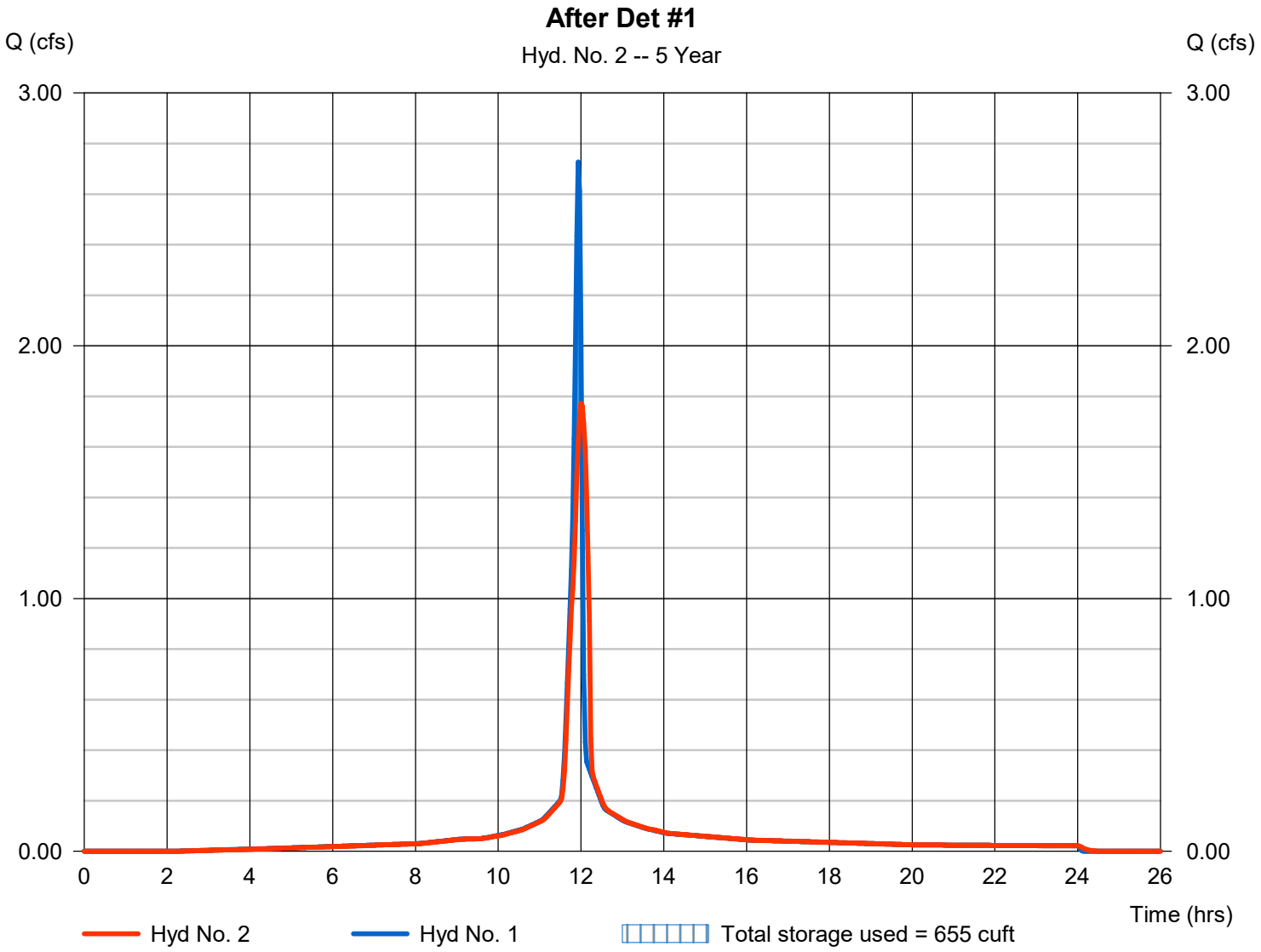
Hydrograph Report

Hyd. No. 2

After Det #1

Hydrograph type	=	Reservoir	Peak discharge	=	1.772 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	6,143 cuft
Inflow hyd. No.	=	1 - To Det #1	Max. Elevation	=	428.56 ft
Reservoir name	=	Det Pond #1	Max. Storage	=	655 cuft

Storage Indication method used.



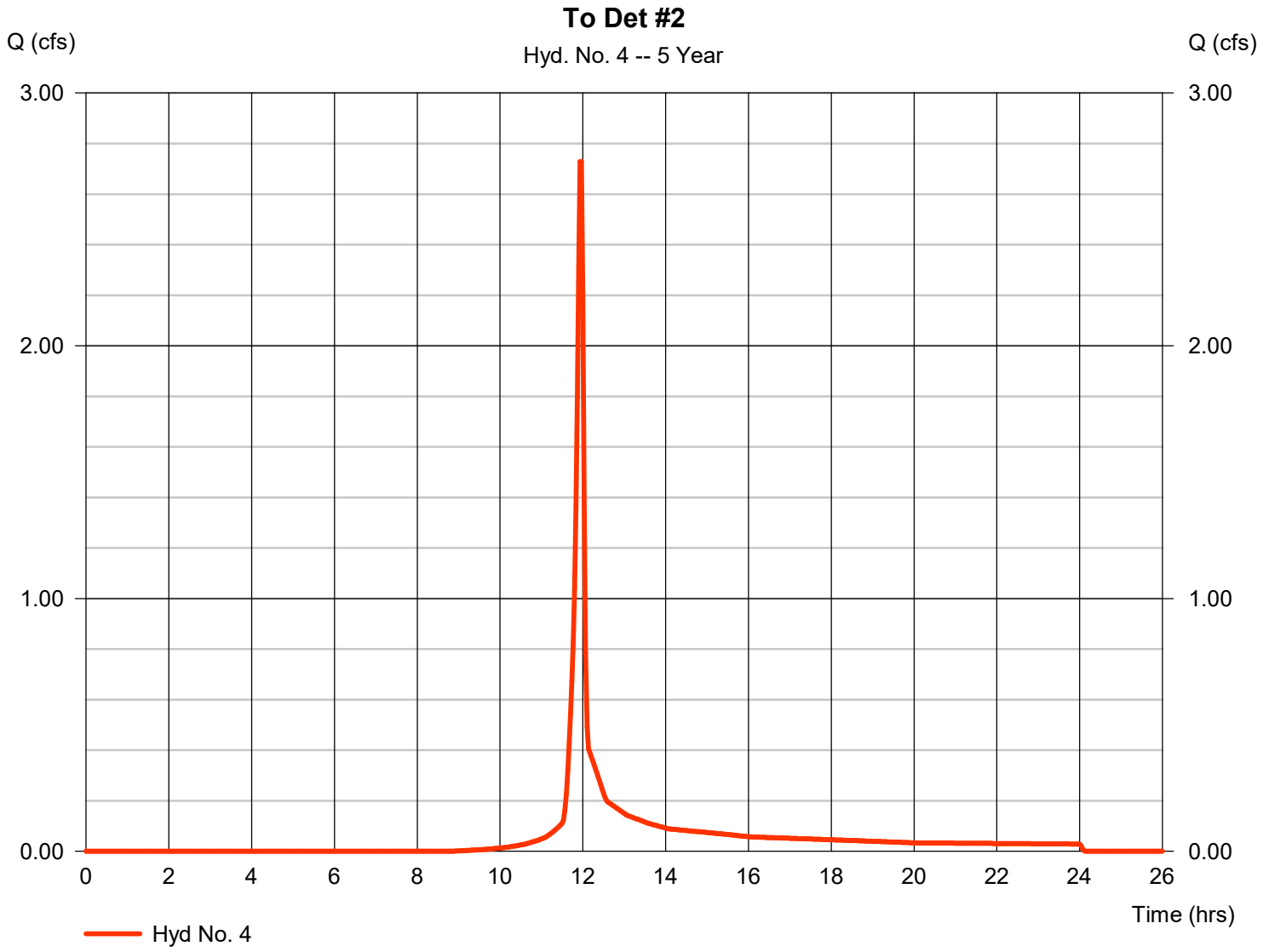
Hydrograph Report

Hyd. No. 4

To Det #2

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.729 cfs
Storm frequency	=	5 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	5,508 cuft
Drainage area	=	0.760 ac	Curve number	=	76*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.580 x 69) + (0.180 x 98)] / 0.760



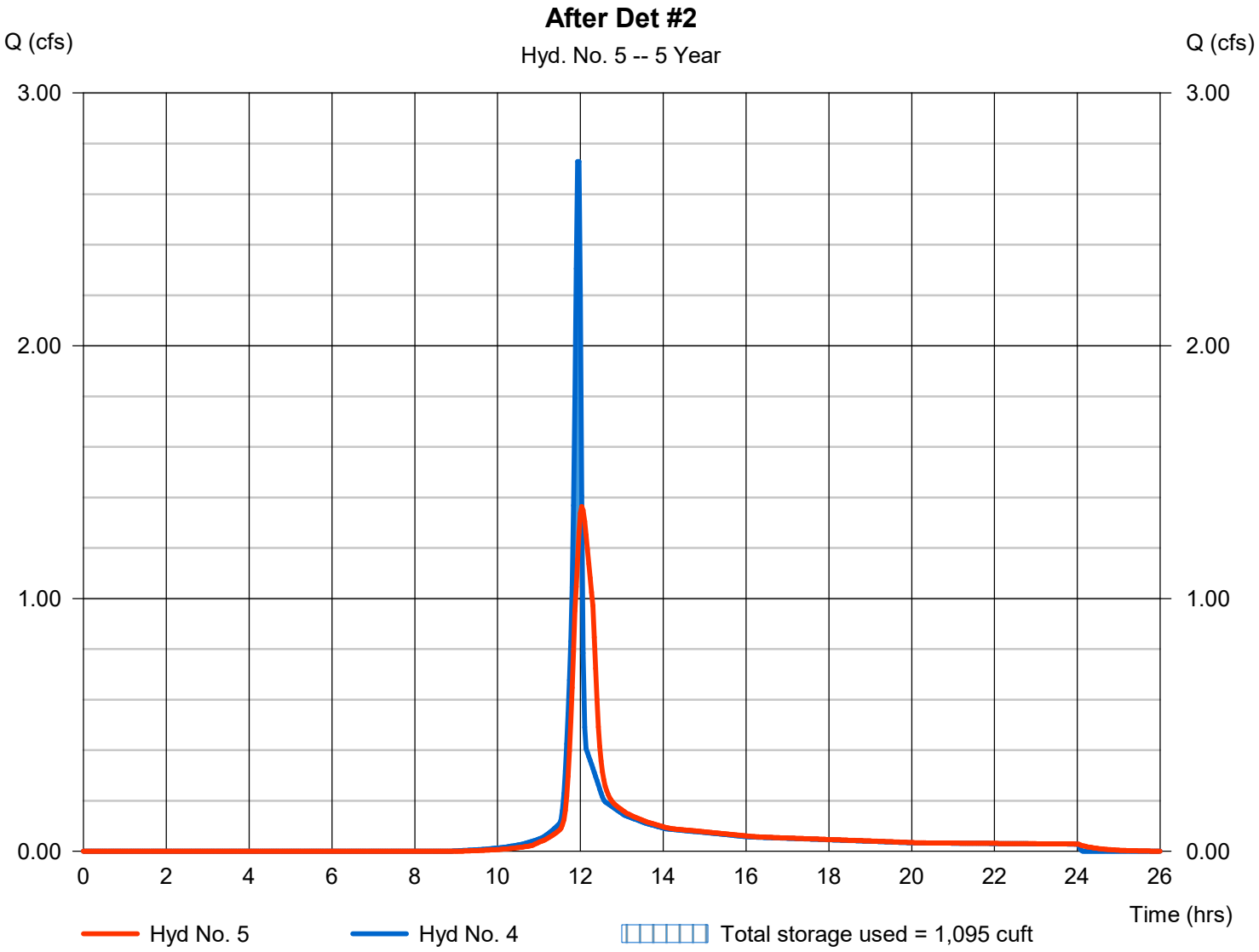
Hydrograph Report

Hyd. No. 5

After Det #2

Hydrograph type	= Reservoir	Peak discharge	= 1.364 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 5,507 cuft
Inflow hyd. No.	= 4 - To Det #2	Max. Elevation	= 402.65 ft
Reservoir name	= Det Pond #2	Max. Storage	= 1,095 cuft

Storage Indication method used.



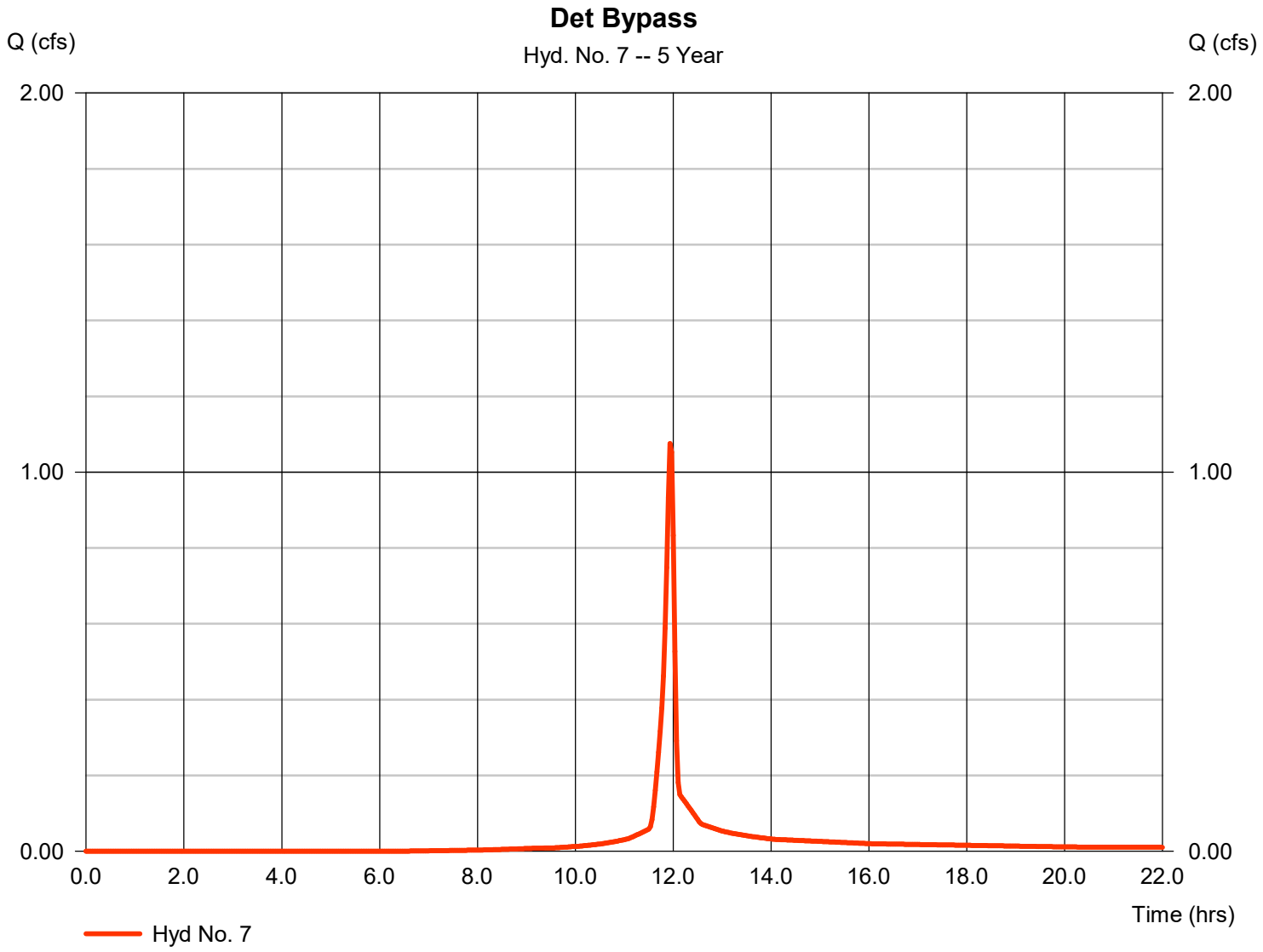
Hydrograph Report

Hyd. No. 7

Det Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.075 cfs
Storm frequency	=	5 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	2,205 cuft
Drainage area	=	0.230 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.120 x 98) + (0.110 x 69)] / 0.230



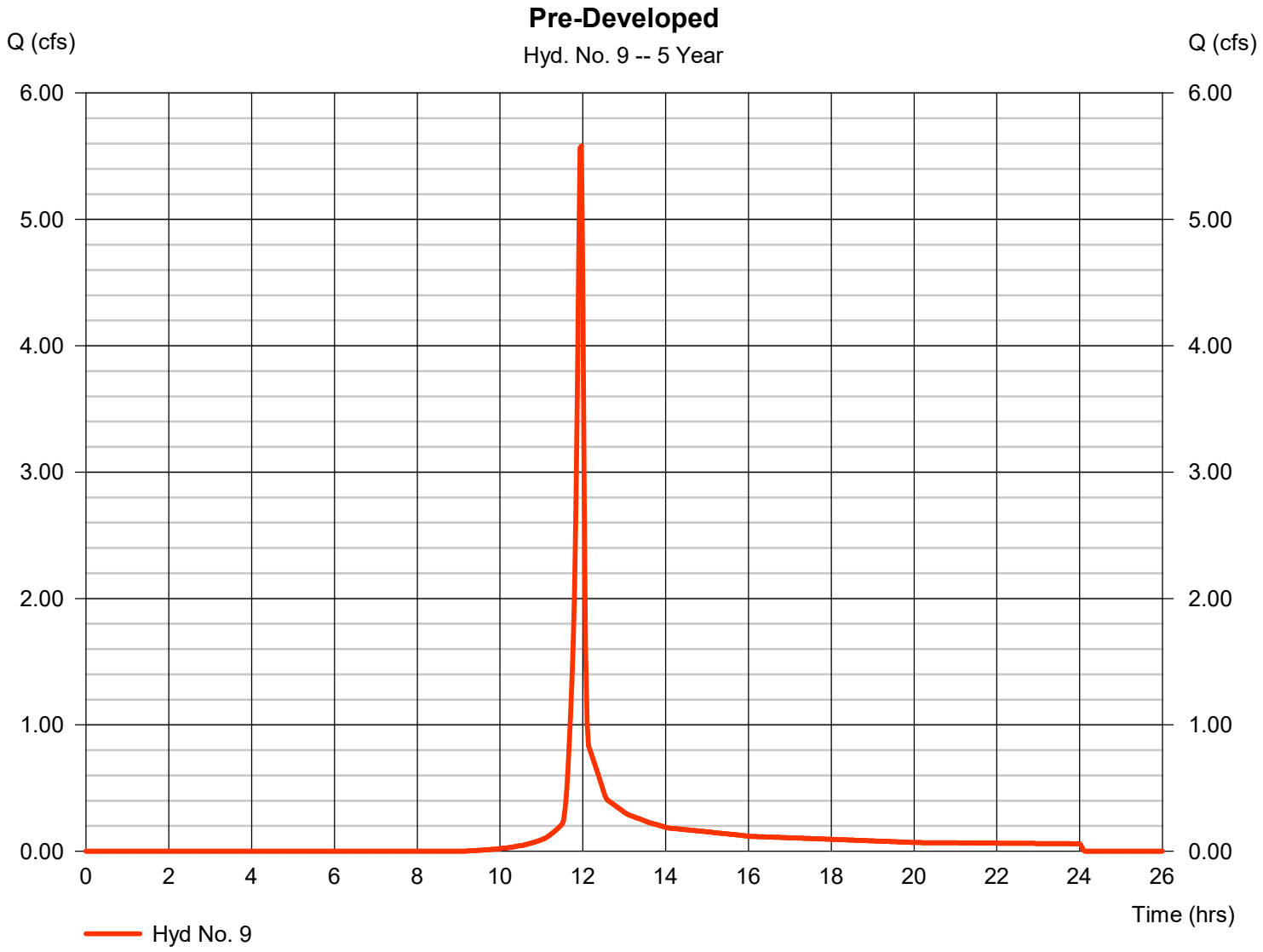
Hydrograph Report

Hyd. No. 9

Pre-Developed

Hydrograph type	= SCS Runoff	Peak discharge	= 5.580 cfs
Storm frequency	= 5 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 11,234 cuft
Drainage area	= 1.610 ac	Curve number	= 75*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.290 x 69) + (0.320 x 98)] / 1.610

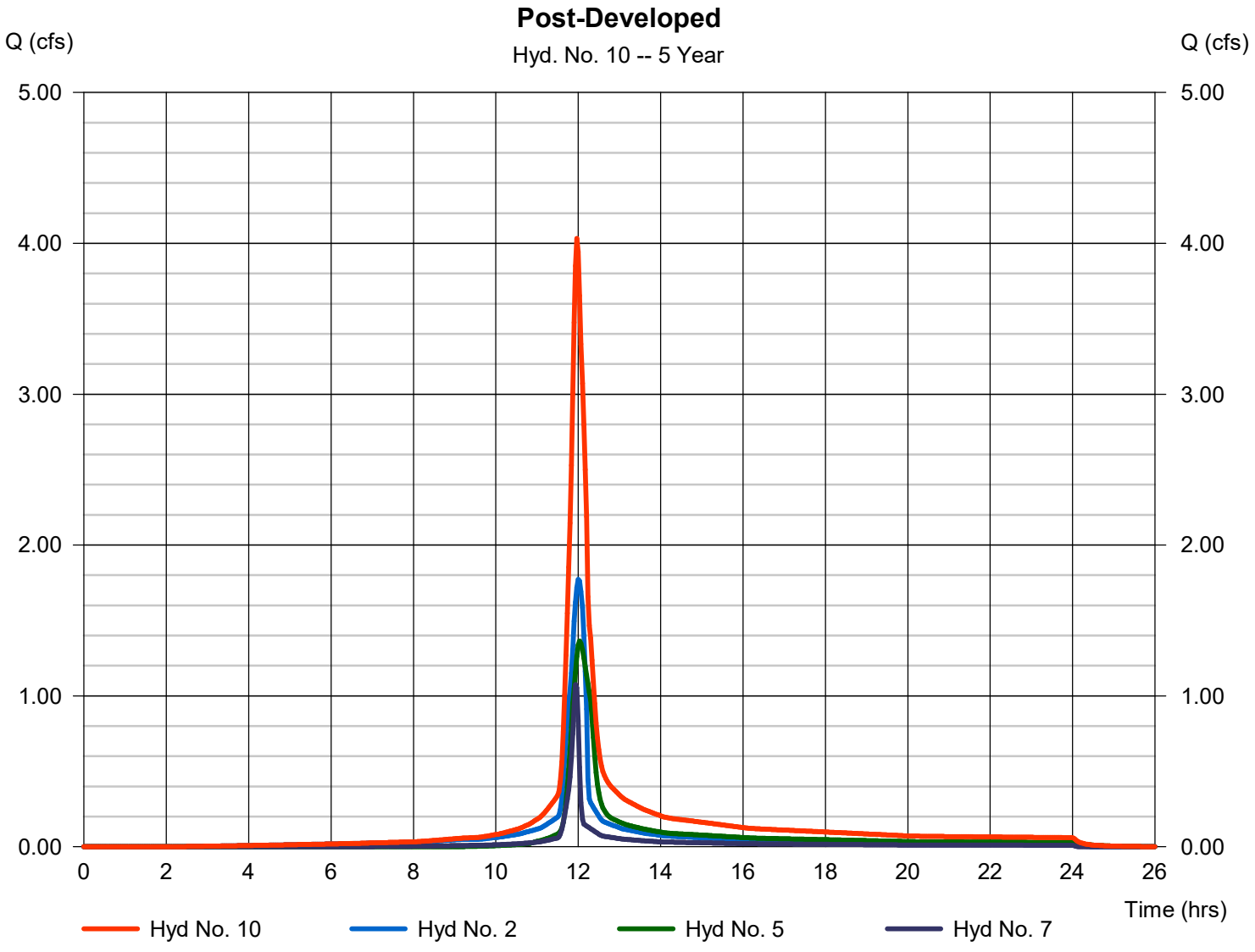


Hydrograph Report

Hyd. No. 10

Post-Developed

Hydrograph type	= Combine	Peak discharge	= 4.032 cfs
Storm frequency	= 5 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 13,855 cuft
Inflow hyds.	= 2, 5, 7	Contrib. drain. area	= 0.230 ac



Hydrograph Summary Report

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	3.196	2	716	7,275	------	------	------	To Det #1
2	Reservoir	1.933	2	722	7,275	1	428.98	873	After Det #1
4	SCS Runoff	3.487	2	716	7,051	------	------	------	To Det #2
5	Reservoir	1.569	2	722	7,049	4	403.08	1,524	After Det #2
7	SCS Runoff	1.317	2	716	2,725	------	------	------	Det Bypass
9	SCS Runoff	7.152	2	716	14,449	------	------	------	Pre-Developed
10	Combine	4.584	2	718	17,049	2, 5, 7,	------	------	Post-Developed

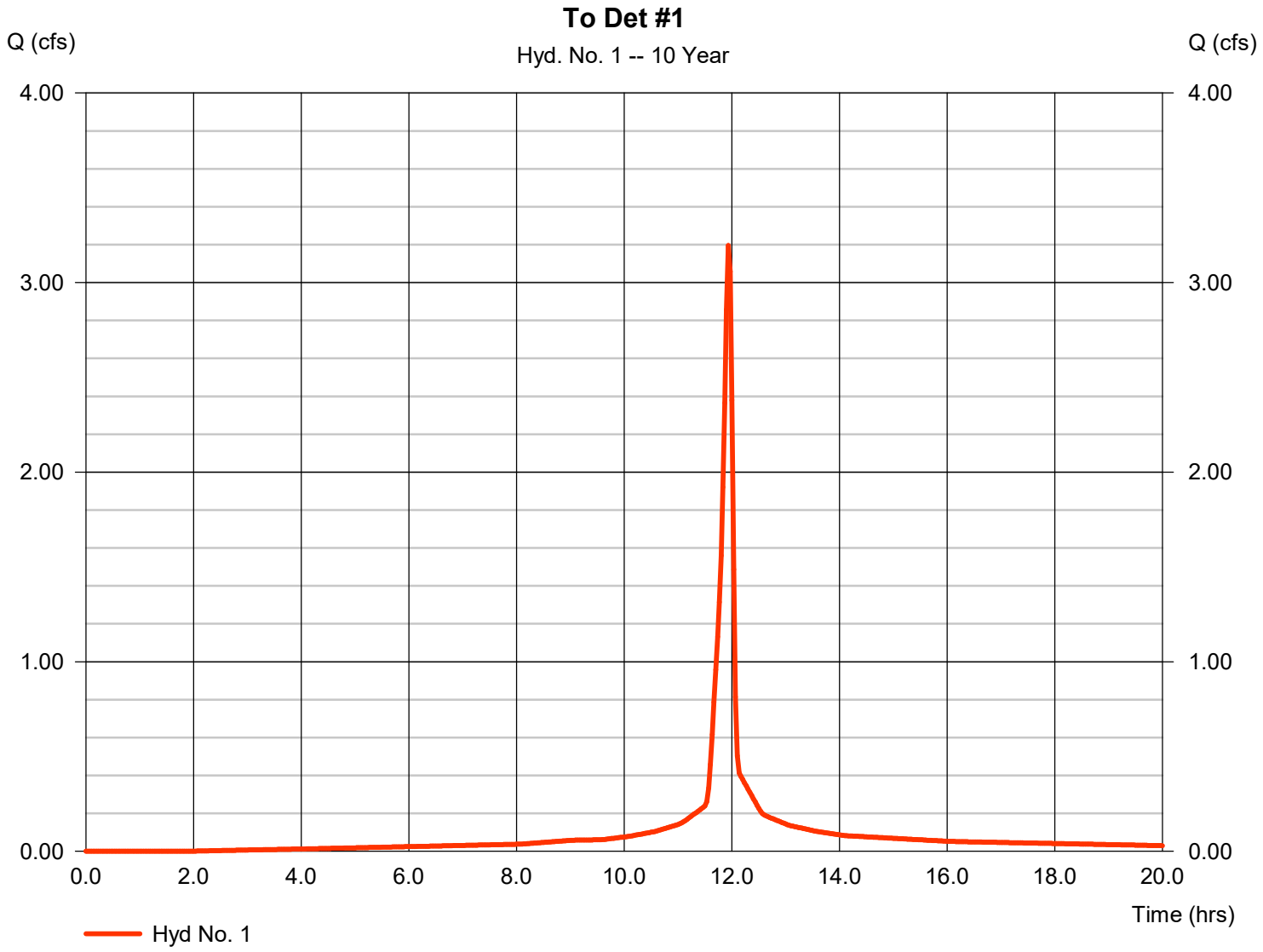
Hydrograph Report

Hyd. No. 1

To Det #1

Hydrograph type	= SCS Runoff	Peak discharge	= 3.196 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 7,275 cuft
Drainage area	= 0.460 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.23 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.410 x 98) + (0.050 x 69)] / 0.460



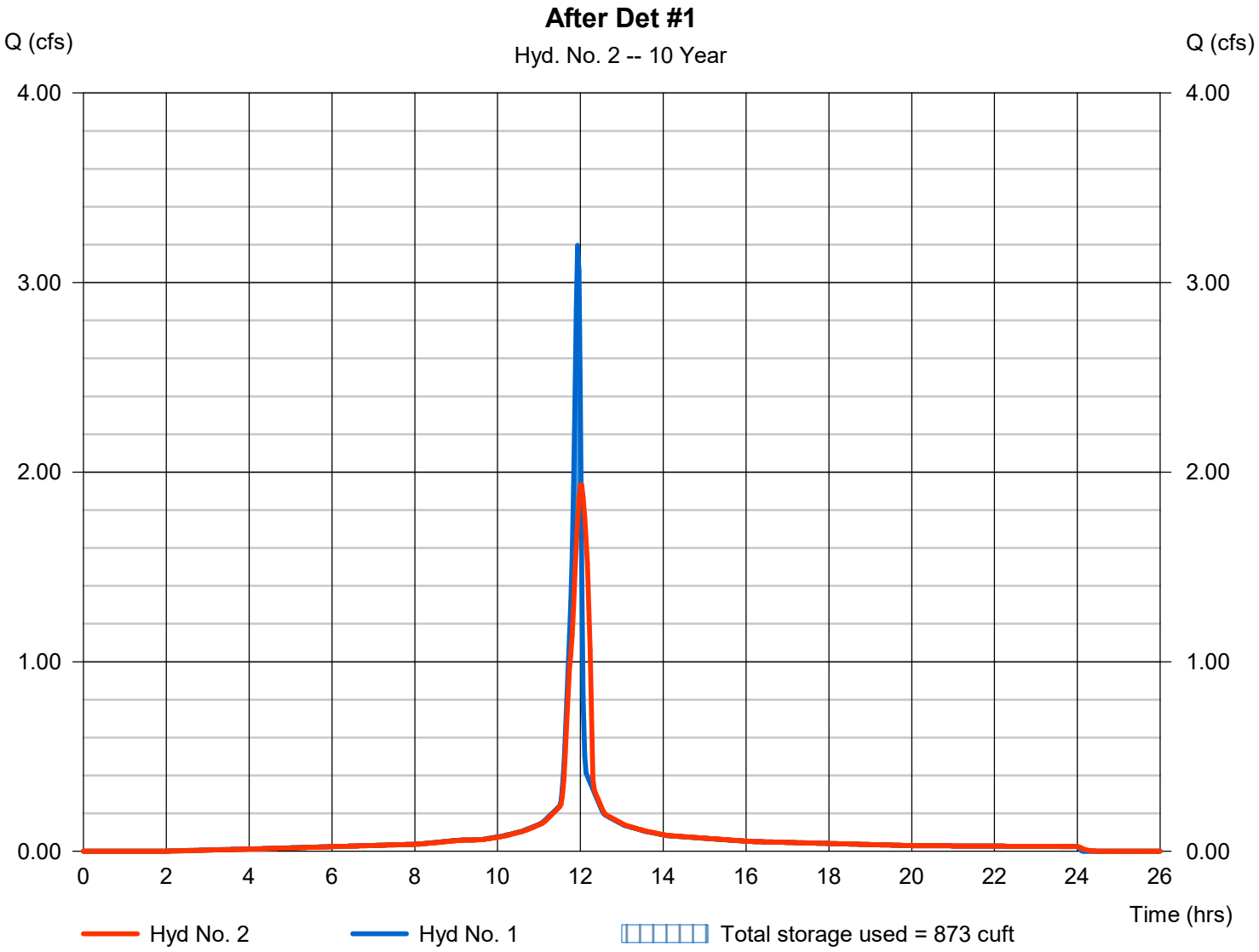
Hydrograph Report

Hyd. No. 2

After Det #1

Hydrograph type	=	Reservoir	Peak discharge	=	1.933 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.03 hrs
Time interval	=	2 min	Hyd. volume	=	7,275 cuft
Inflow hyd. No.	=	1 - To Det #1	Max. Elevation	=	428.98 ft
Reservoir name	=	Det Pond #1	Max. Storage	=	873 cuft

Storage Indication method used.



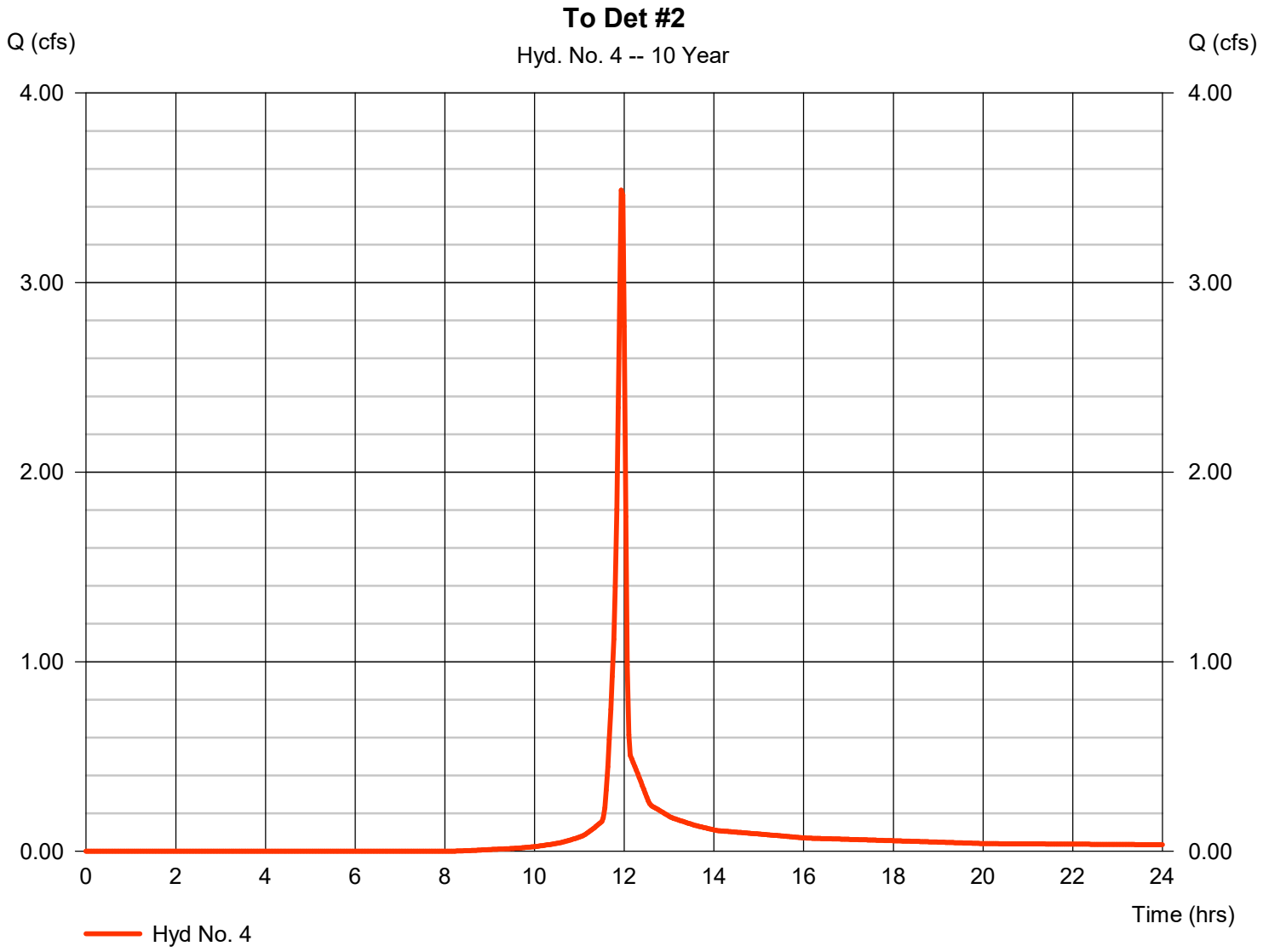
Hydrograph Report

Hyd. No. 4

To Det #2

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.487 cfs
Storm frequency	=	10 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	7,051 cuft
Drainage area	=	0.760 ac	Curve number	=	76*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.23 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.580 x 69) + (0.180 x 98)] / 0.760



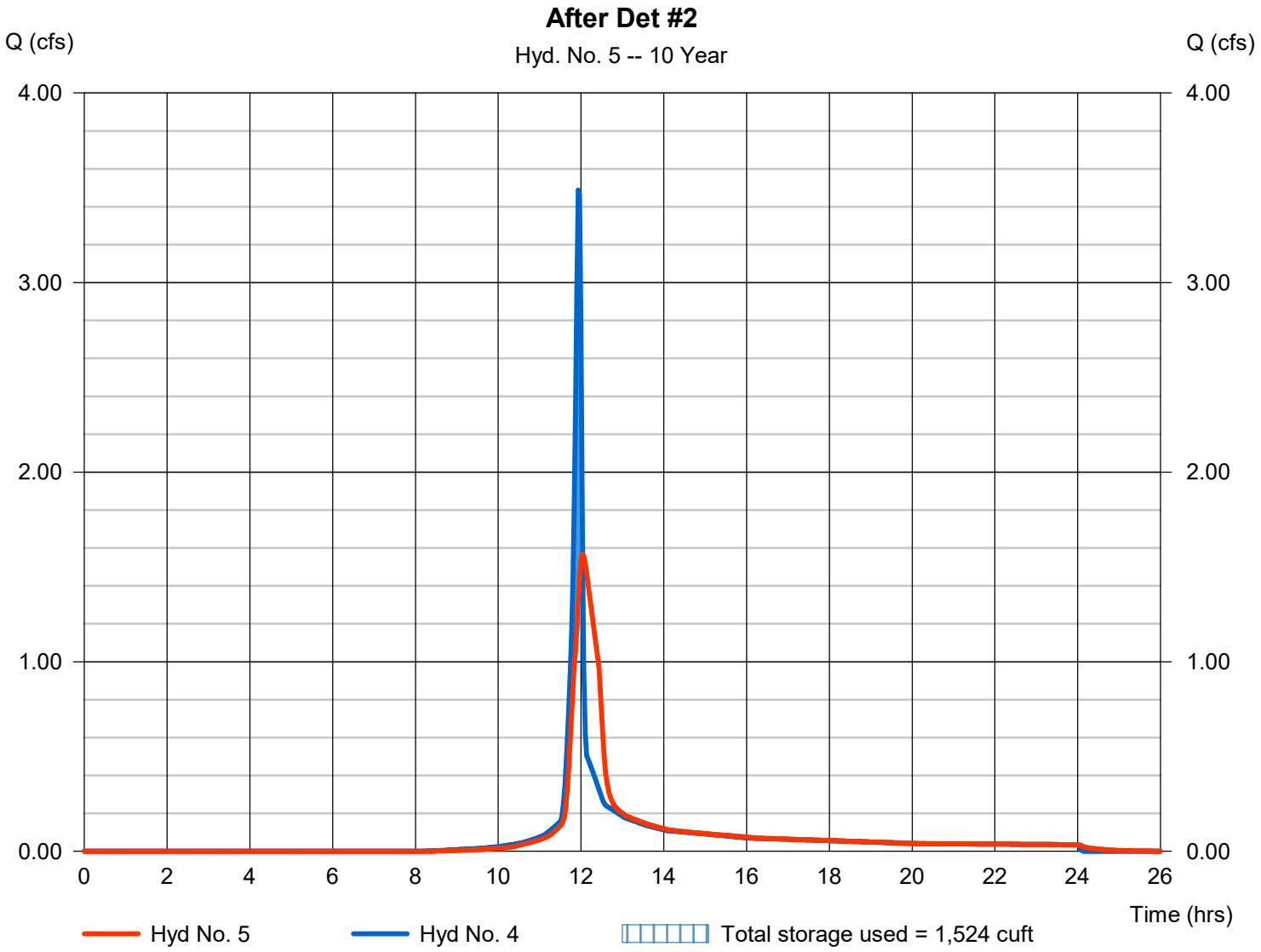
Hydrograph Report

Hyd. No. 5

After Det #2

Hydrograph type	= Reservoir	Peak discharge	= 1.569 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 7,049 cuft
Inflow hyd. No.	= 4 - To Det #2	Max. Elevation	= 403.08 ft
Reservoir name	= Det Pond #2	Max. Storage	= 1,524 cuft

Storage Indication method used.



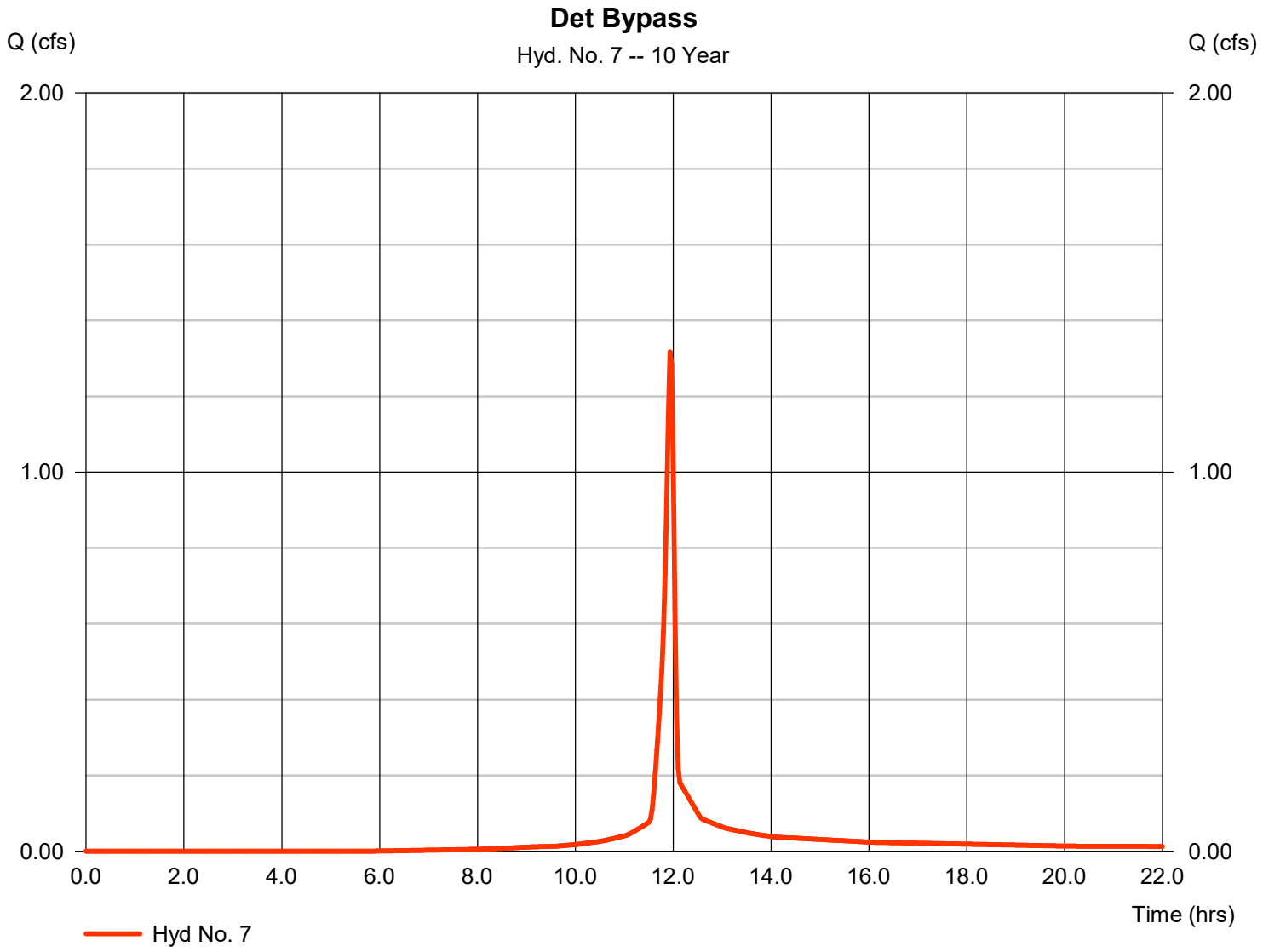
Hydrograph Report

Hyd. No. 7

Det Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.317 cfs
Storm frequency	=	10 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	2,725 cuft
Drainage area	=	0.230 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.23 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.120 x 98) + (0.110 x 69)] / 0.230



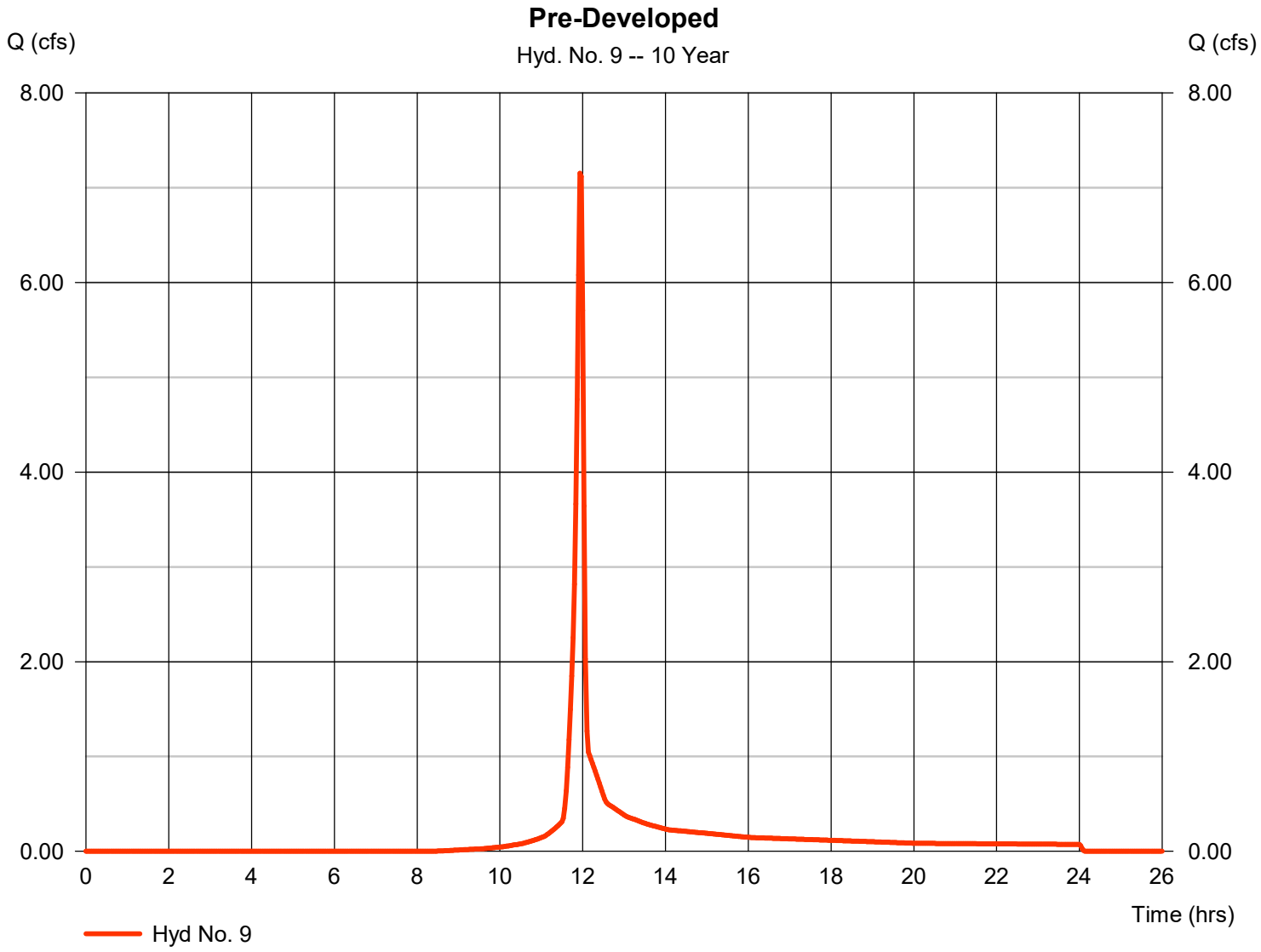
Hydrograph Report

Hyd. No. 9

Pre-Developed

Hydrograph type	= SCS Runoff	Peak discharge	= 7.152 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 14,449 cuft
Drainage area	= 1.610 ac	Curve number	= 75*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.23 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.290 x 69) + (0.320 x 98)] / 1.610

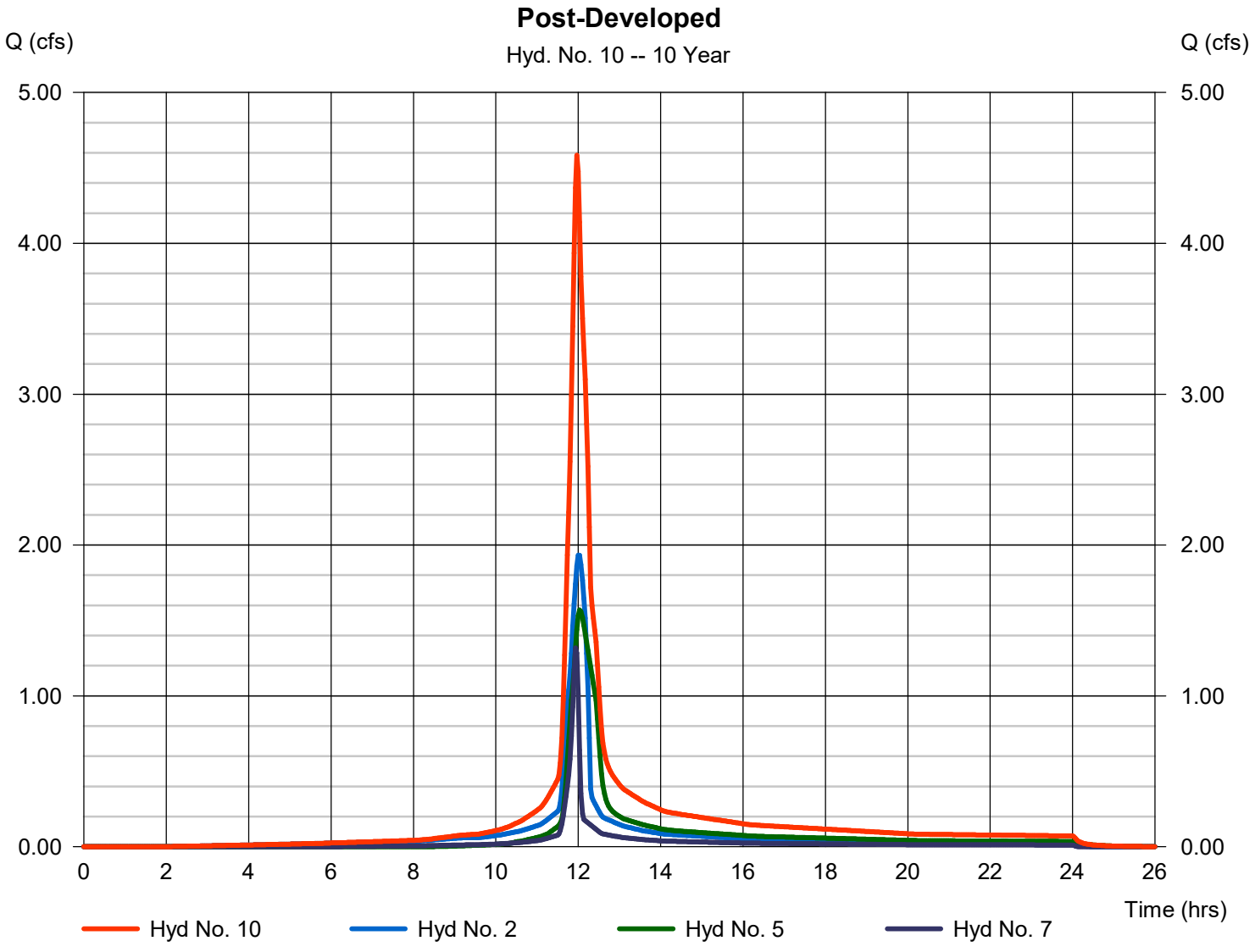


Hydrograph Report

Hyd. No. 10

Post-Developed

Hydrograph type	= Combine	Peak discharge	= 4.584 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 17,049 cuft
Inflow hyds.	= 2, 5, 7	Contrib. drain. area	= 0.230 ac



Hydrograph Summary Report

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	3.791	2	716	8,720	------	------	------	To Det #1
2	Reservoir	2.073	2	722	8,720	1	429.38	1,205	After Det #1
4	SCS Runoff	4.478	2	716	9,100	------	------	------	To Det #2
5	Reservoir	1.819	2	722	9,098	4	403.68	2,130	After Det #2
7	SCS Runoff	1.626	2	716	3,402	------	------	------	Det Bypass
9	SCS Runoff	9.236	2	716	18,732	------	------	------	Pre-Developed
10	Combine	5.240	2	718	21,220	2, 5, 7,	------	------	Post-Developed

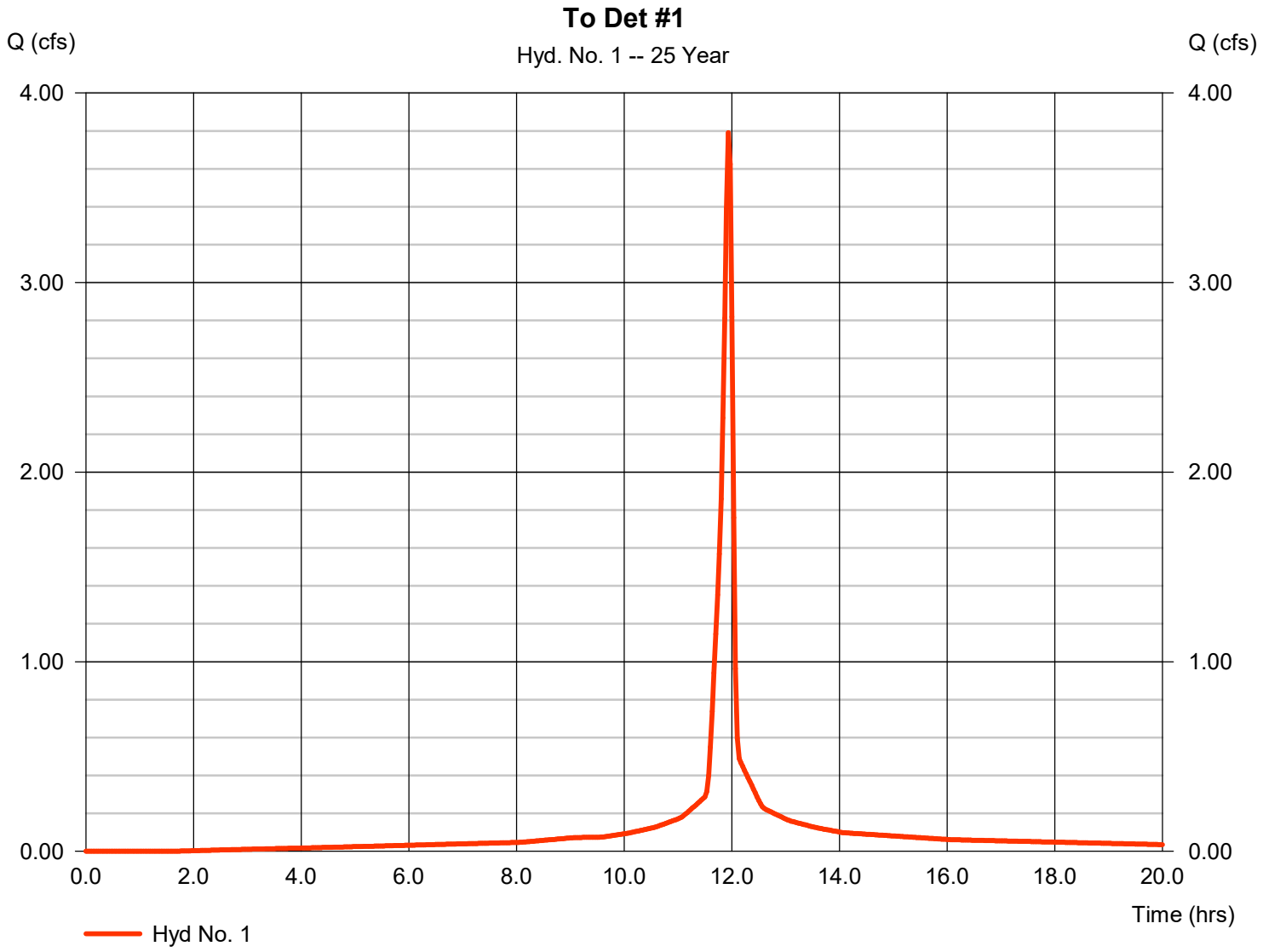
Hydrograph Report

Hyd. No. 1

To Det #1

Hydrograph type	= SCS Runoff	Peak discharge	= 3.791 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 8,720 cuft
Drainage area	= 0.460 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.16 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.410 x 98) + (0.050 x 69)] / 0.460



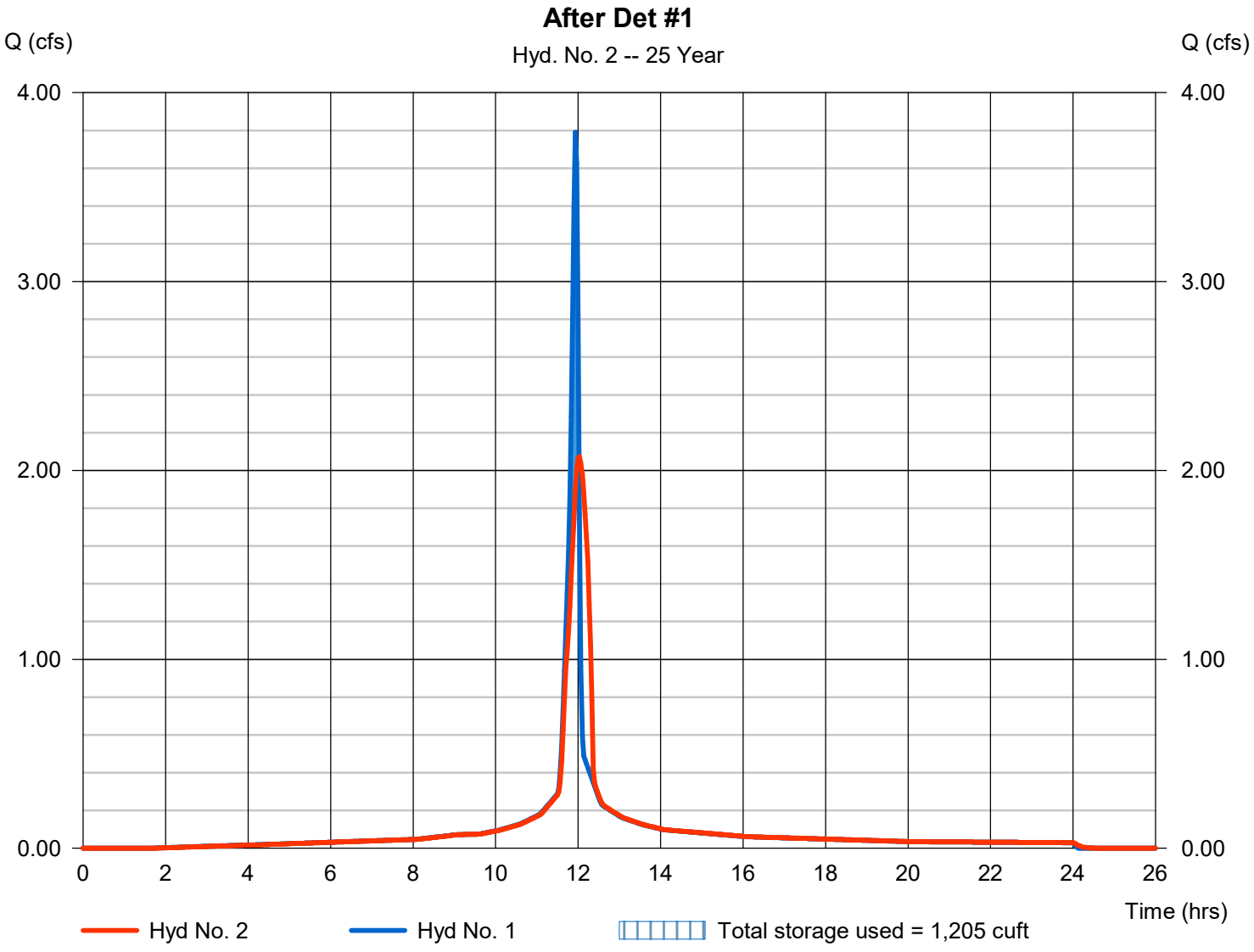
Hydrograph Report

Hyd. No. 2

After Det #1

Hydrograph type	= Reservoir	Peak discharge	= 2.073 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 8,720 cuft
Inflow hyd. No.	= 1 - To Det #1	Max. Elevation	= 429.38 ft
Reservoir name	= Det Pond #1	Max. Storage	= 1,205 cuft

Storage Indication method used.



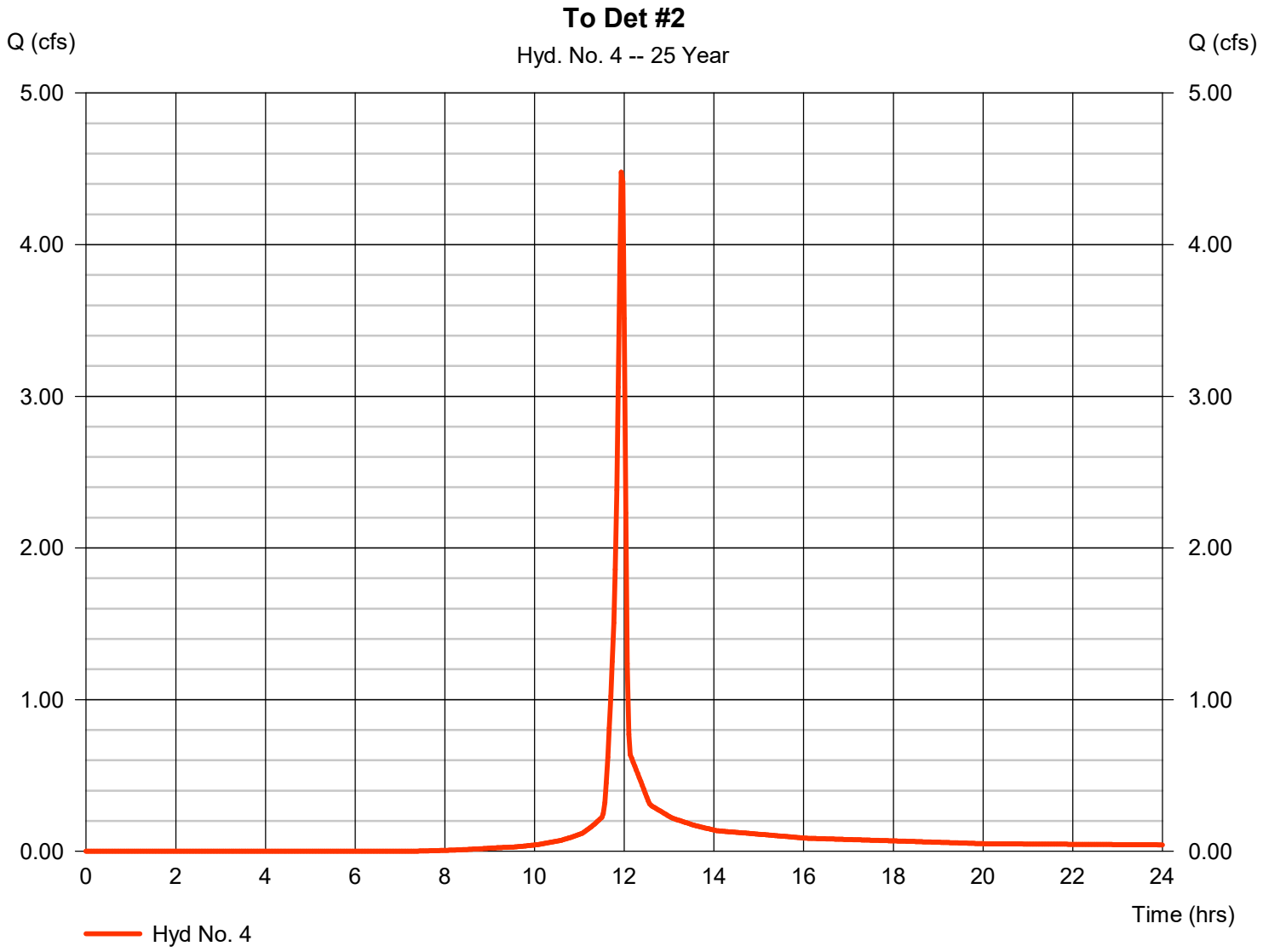
Hydrograph Report

Hyd. No. 4

To Det #2

Hydrograph type	= SCS Runoff	Peak discharge	= 4.478 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 9,100 cuft
Drainage area	= 0.760 ac	Curve number	= 76*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.16 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.580 x 69) + (0.180 x 98)] / 0.760



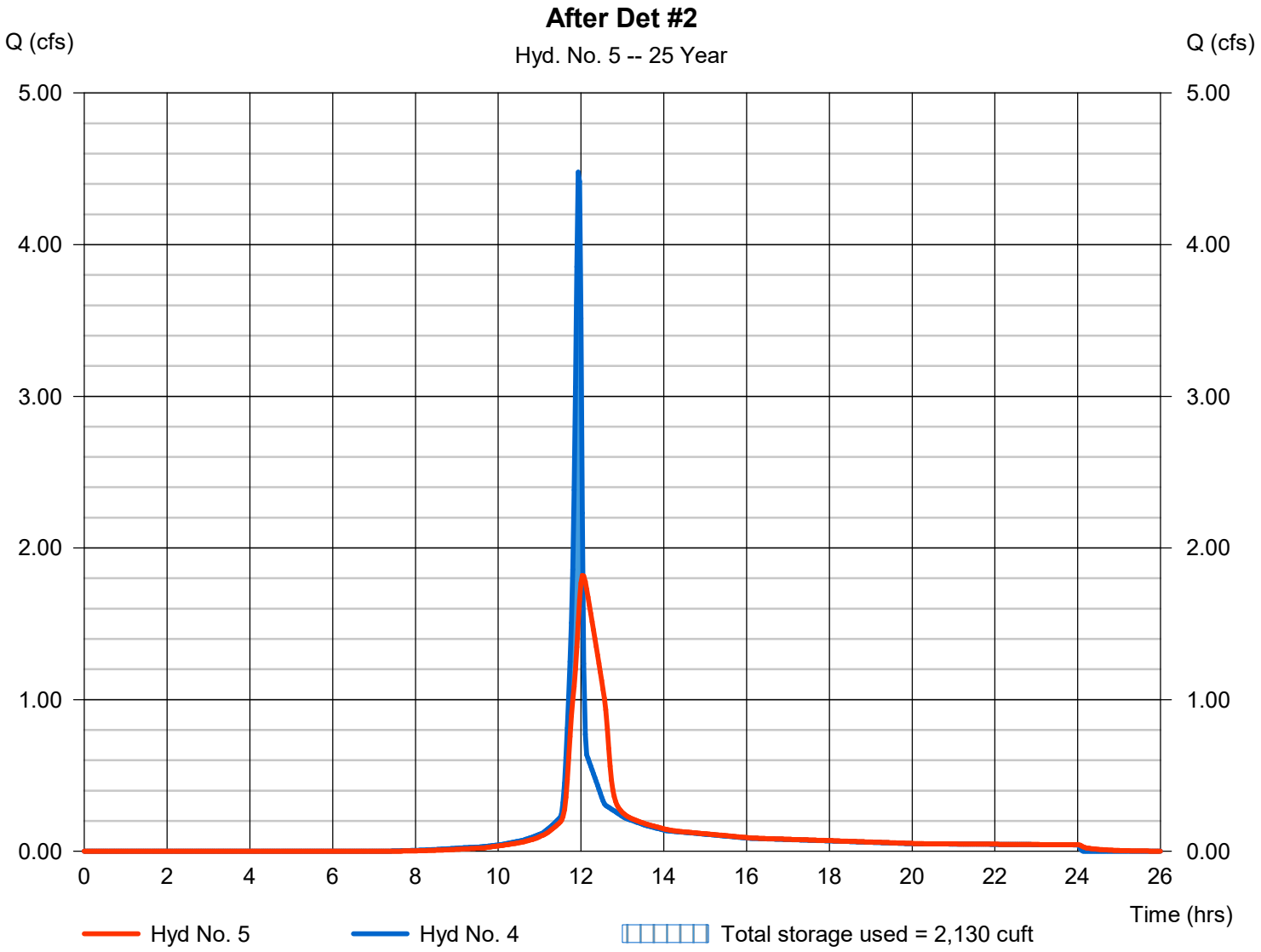
Hydrograph Report

Hyd. No. 5

After Det #2

Hydrograph type	=	Reservoir	Peak discharge	=	1.819 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.03 hrs
Time interval	=	2 min	Hyd. volume	=	9,098 cuft
Inflow hyd. No.	=	4 - To Det #2	Max. Elevation	=	403.68 ft
Reservoir name	=	Det Pond #2	Max. Storage	=	2,130 cuft

Storage Indication method used.



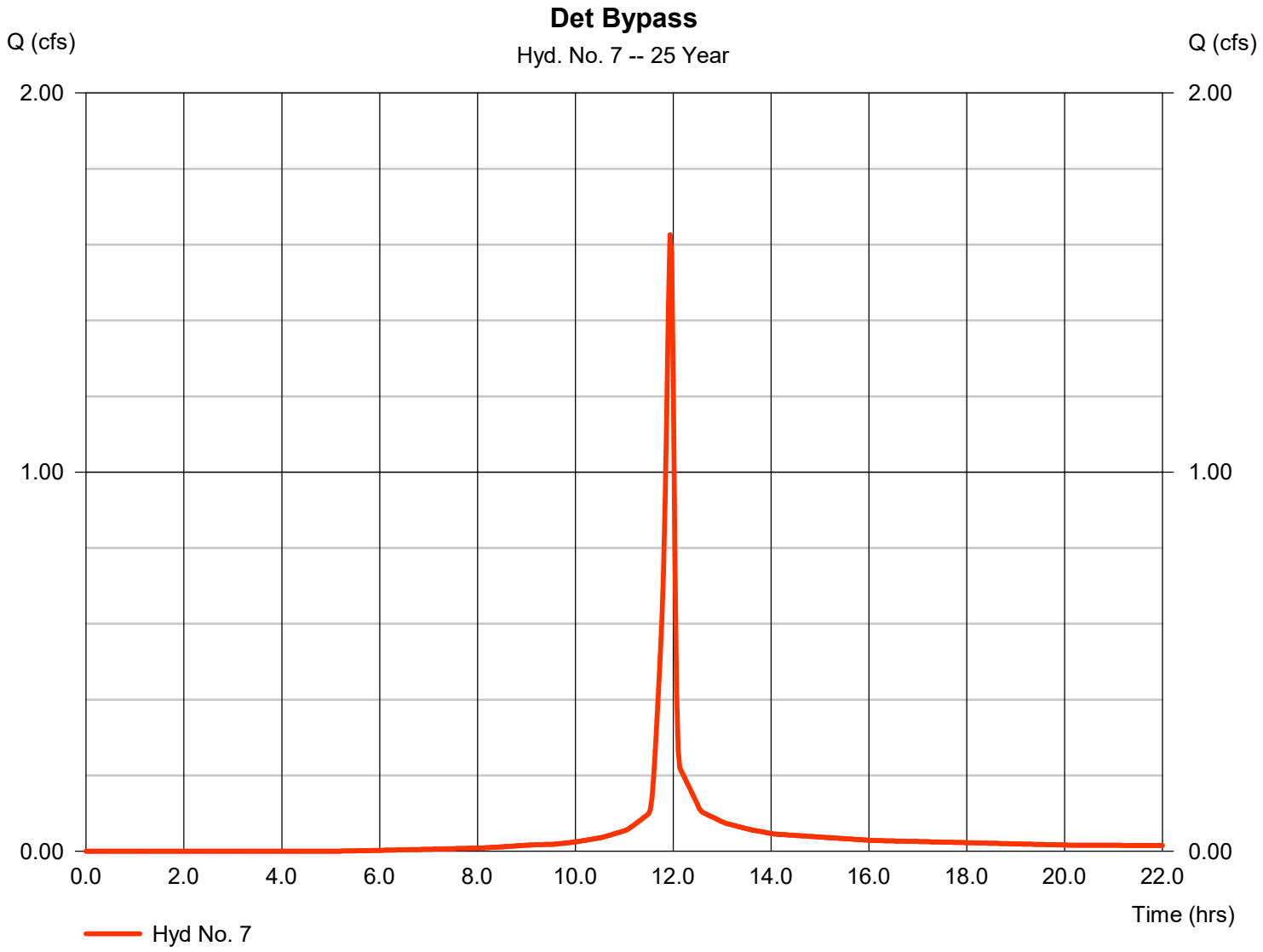
Hydrograph Report

Hyd. No. 7

Det Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.626 cfs
Storm frequency	=	25 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	3,402 cuft
Drainage area	=	0.230 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.16 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.120 x 98) + (0.110 x 69)] / 0.230



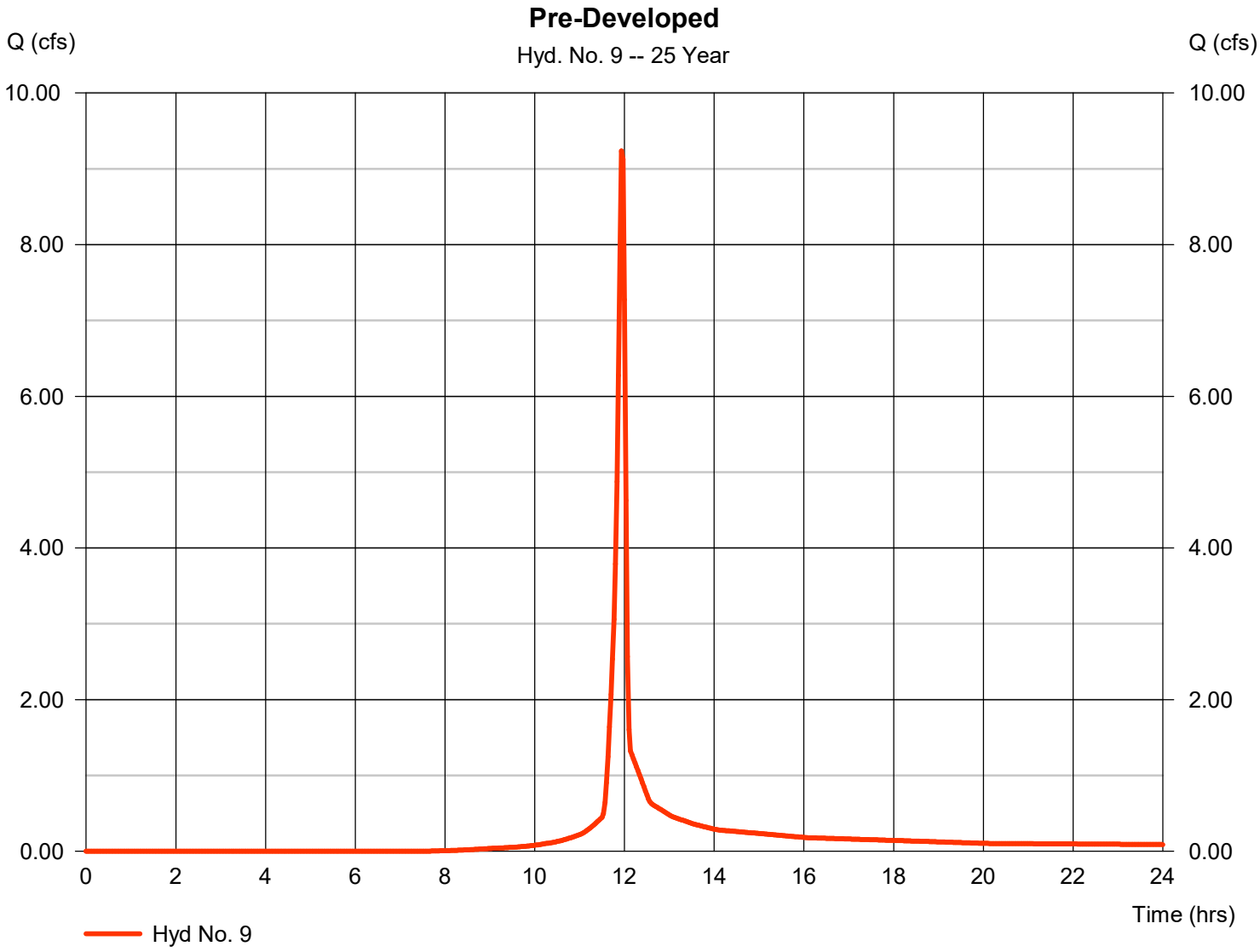
Hydrograph Report

Hyd. No. 9

Pre-Developed

Hydrograph type	= SCS Runoff	Peak discharge	= 9.236 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 18,732 cuft
Drainage area	= 1.610 ac	Curve number	= 75*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.16 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.290 x 69) + (0.320 x 98)] / 1.610

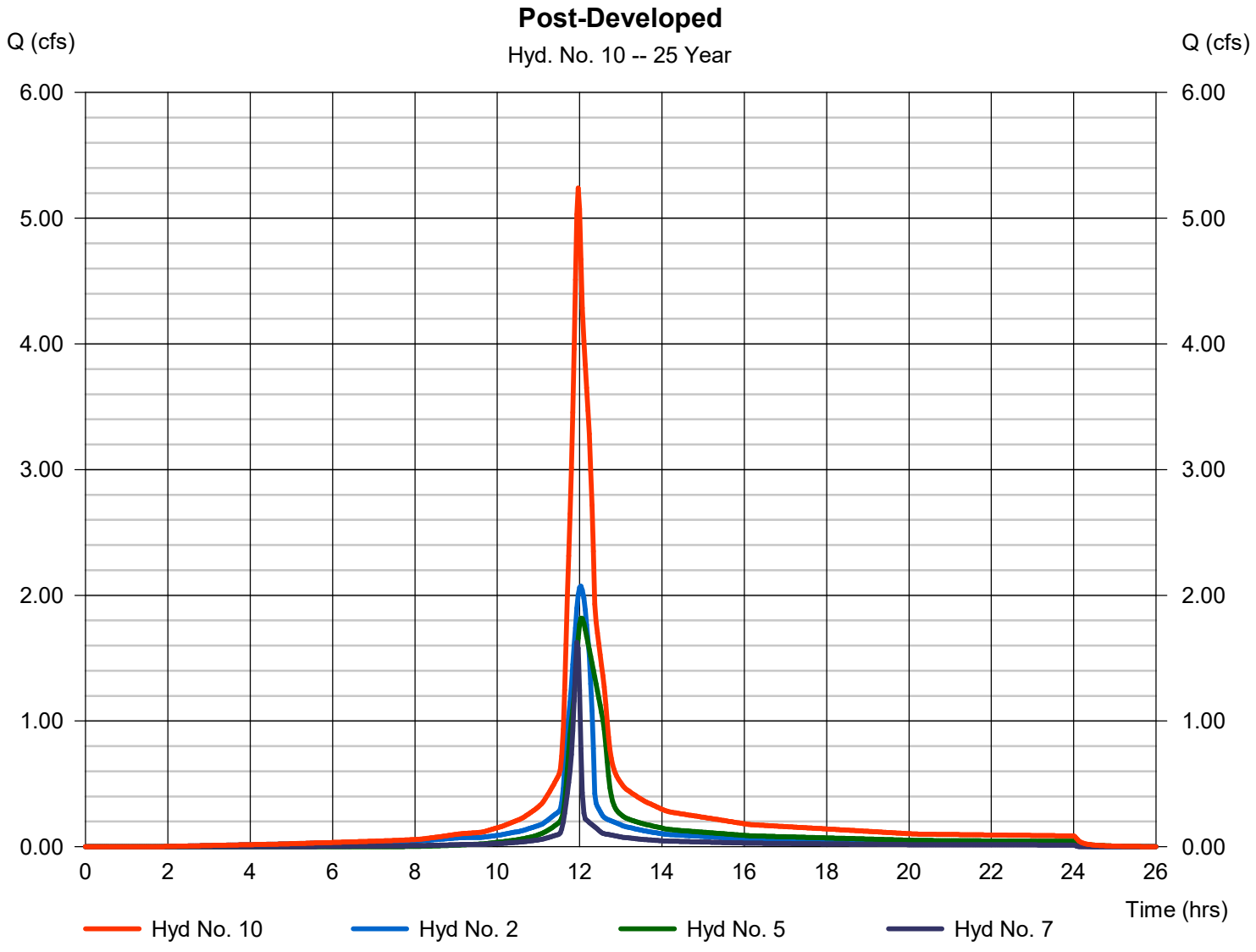


Hydrograph Report

Hyd. No. 10

Post-Developed

Hydrograph type	= Combine	Peak discharge	= 5.240 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 21,220 cuft
Inflow hyds.	= 2, 5, 7	Contrib. drain. area	= 0.230 ac



Hydrograph Summary Report

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	4.231	2	716	9,794	------	------	------	To Det #1
2	Reservoir	2.175	2	722	9,794	1	429.68	1,466	After Det #1
4	SCS Runoff	5.224	2	716	10,666	------	------	------	To Det #2
5	Reservoir	1.973	2	724	10,665	4	404.09	2,615	After Det #2
7	SCS Runoff	1.855	2	716	3,912	------	------	------	Det Bypass
9	SCS Runoff	10.81	2	716	22,012	------	------	------	Pre-Developed
10	Combine	5.700	2	718	24,370	2, 5, 7,	------	------	Post-Developed

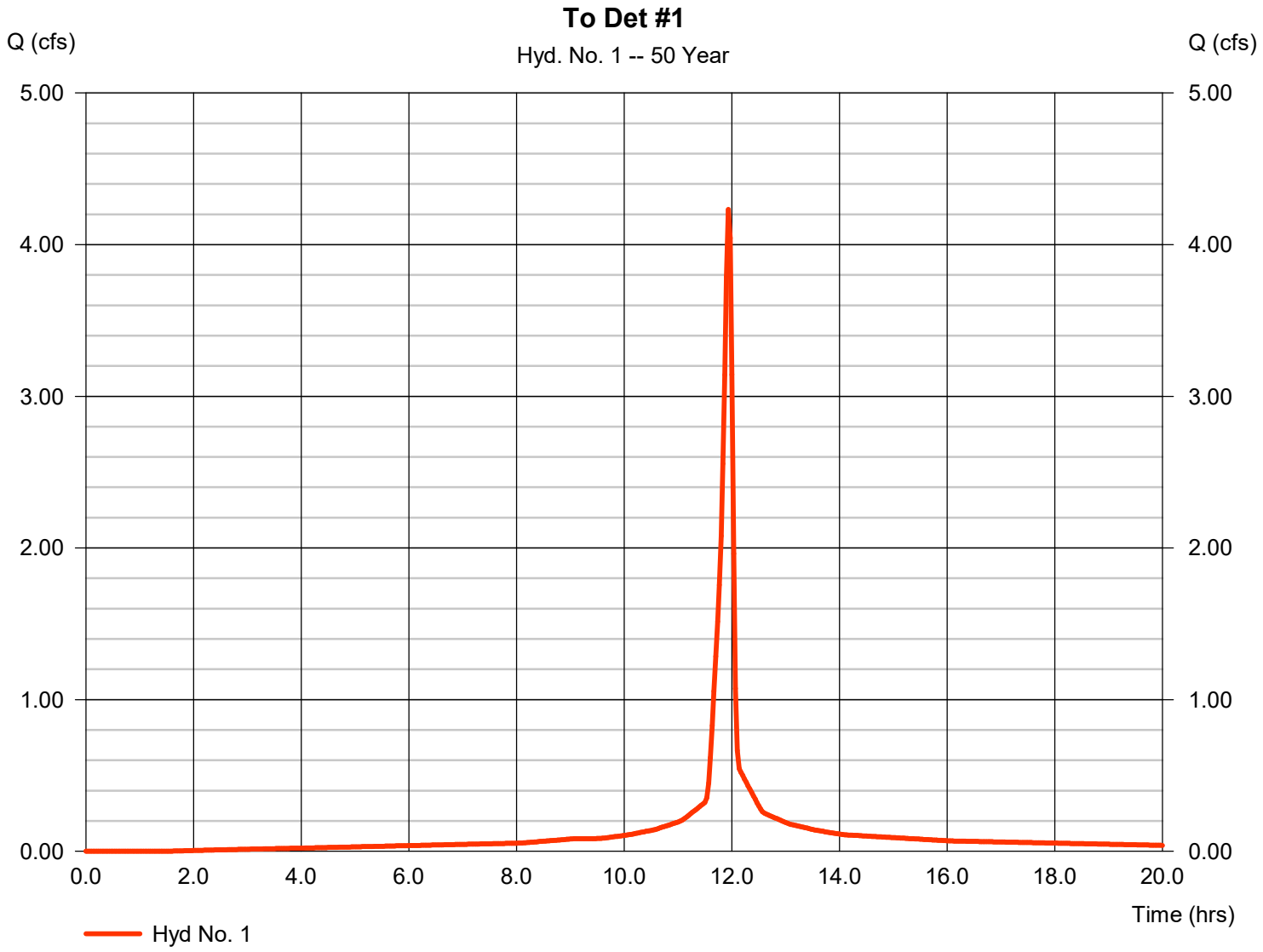
Hydrograph Report

Hyd. No. 1

To Det #1

Hydrograph type	= SCS Runoff	Peak discharge	= 4.231 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 9,794 cuft
Drainage area	= 0.460 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.85 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.410 x 98) + (0.050 x 69)] / 0.460



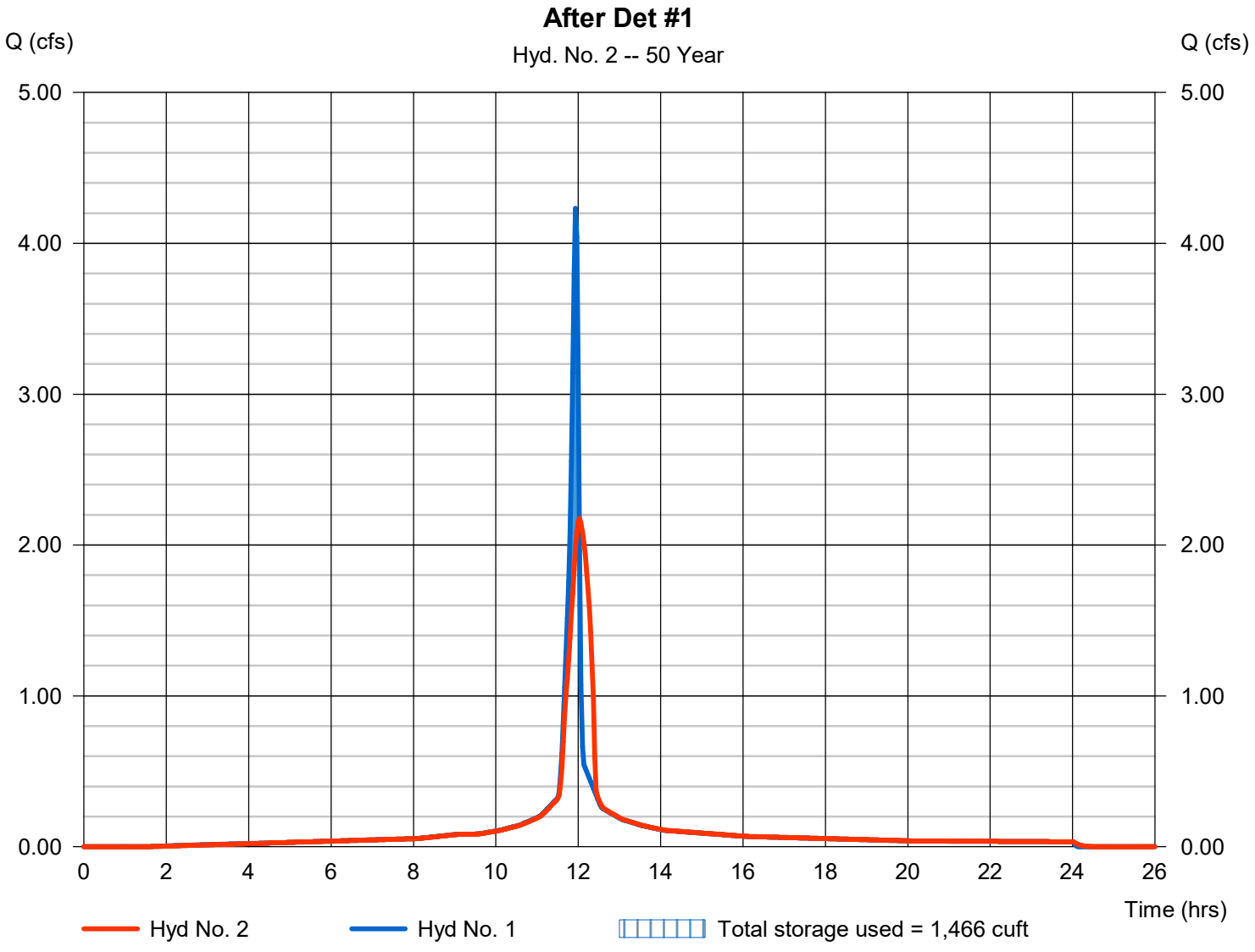
Hydrograph Report

Hyd. No. 2

After Det #1

Hydrograph type	= Reservoir	Peak discharge	= 2.175 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 9,794 cuft
Inflow hyd. No.	= 1 - To Det #1	Max. Elevation	= 429.68 ft
Reservoir name	= Det Pond #1	Max. Storage	= 1,466 cuft

Storage Indication method used.



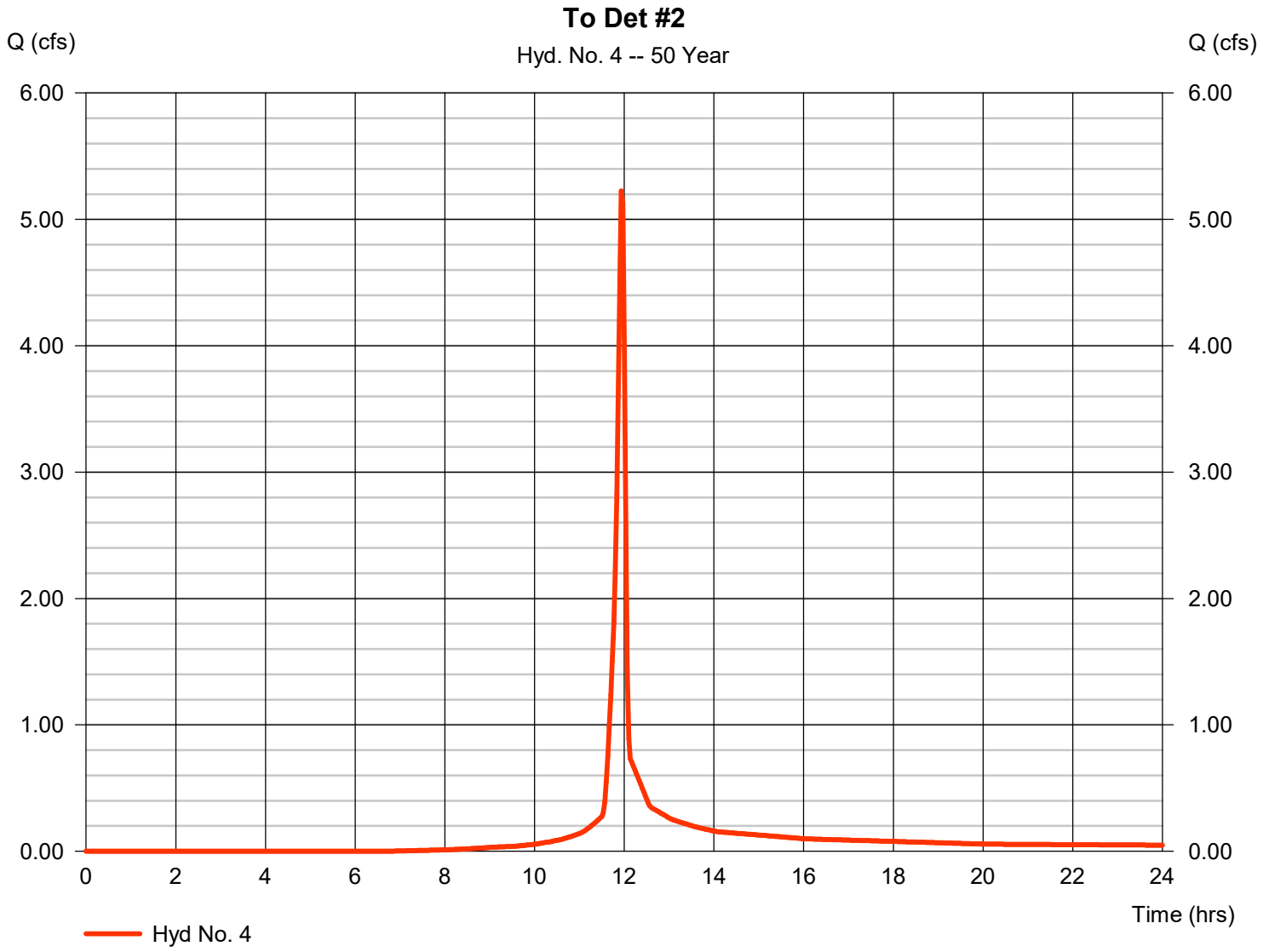
Hydrograph Report

Hyd. No. 4

To Det #2

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.224 cfs
Storm frequency	=	50 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	10,666 cuft
Drainage area	=	0.760 ac	Curve number	=	76*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.85 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.580 x 69) + (0.180 x 98)] / 0.760



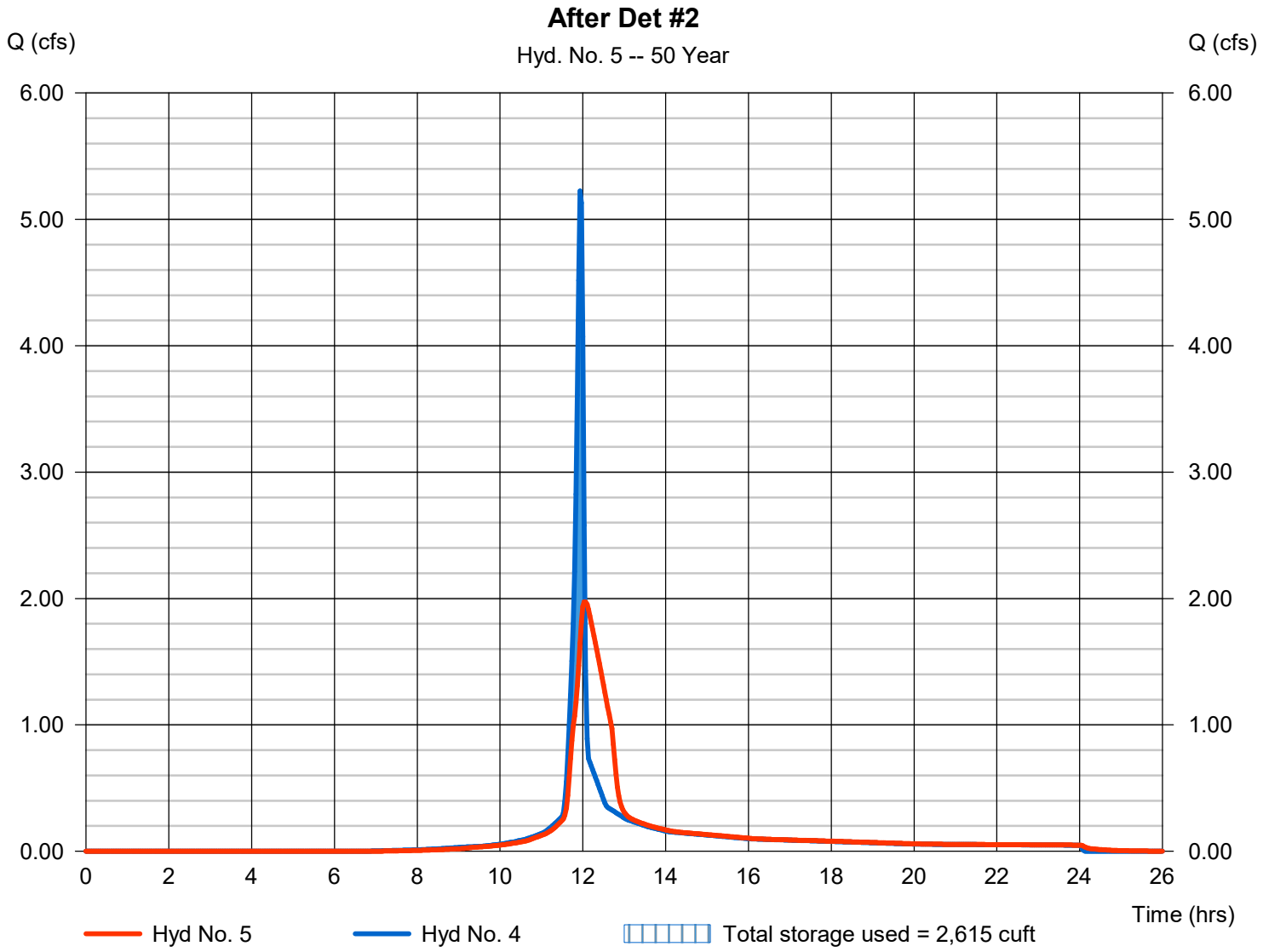
Hydrograph Report

Hyd. No. 5

After Det #2

Hydrograph type	=	Reservoir	Peak discharge	=	1.973 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.07 hrs
Time interval	=	2 min	Hyd. volume	=	10,665 cuft
Inflow hyd. No.	=	4 - To Det #2	Max. Elevation	=	404.09 ft
Reservoir name	=	Det Pond #2	Max. Storage	=	2,615 cuft

Storage Indication method used.



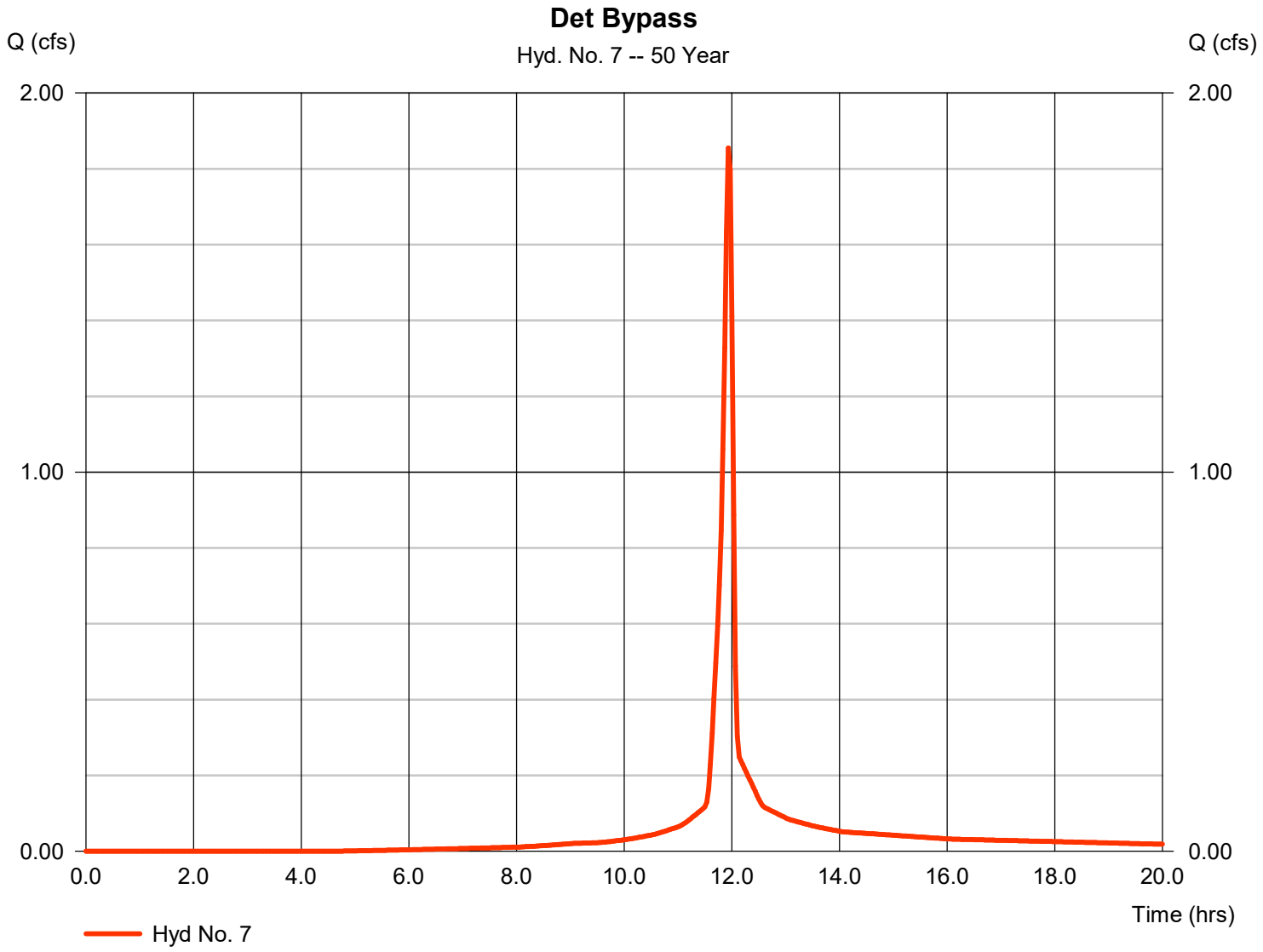
Hydrograph Report

Hyd. No. 7

Det Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.855 cfs
Storm frequency	=	50 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	3,912 cuft
Drainage area	=	0.230 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.85 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.120 x 98) + (0.110 x 69)] / 0.230



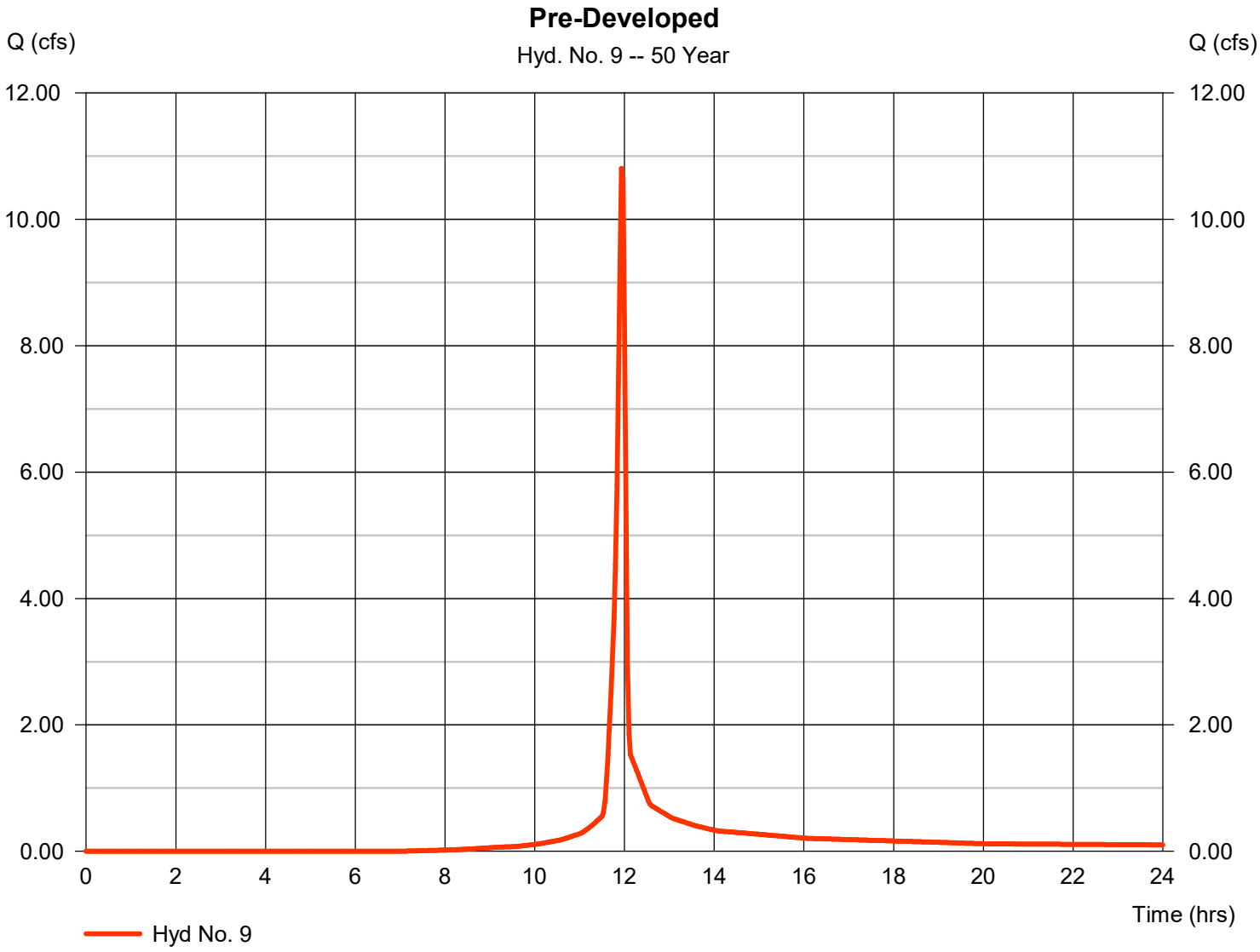
Hydrograph Report

Hyd. No. 9

Pre-Developed

Hydrograph type	= SCS Runoff	Peak discharge	= 10.81 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 22,012 cuft
Drainage area	= 1.610 ac	Curve number	= 75*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.85 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.290 x 69) + (0.320 x 98)] / 1.610

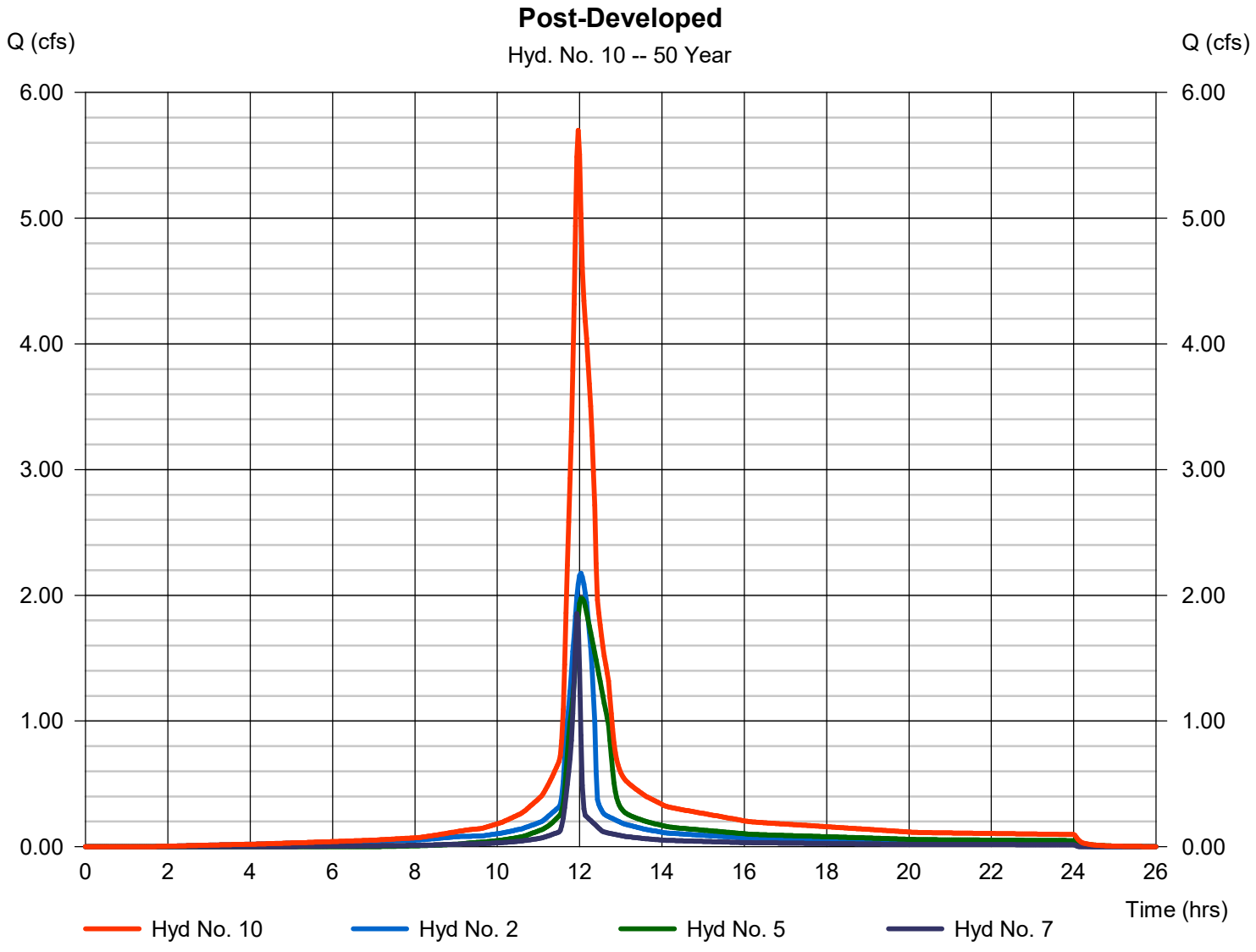


Hydrograph Report

Hyd. No. 10

Post-Developed

Hydrograph type	= Combine	Peak discharge	= 5.700 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 24,370 cuft
Inflow hyds.	= 2, 5, 7	Contrib. drain. area	= 0.230 ac



Hydrograph Summary Report

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	4.664	2	716	10,854	------	------	------	To Det #1
2	Reservoir	2.275	2	722	10,853	1	430.00	1,732	After Det #1
4	SCS Runoff	5.965	2	716	12,239	------	------	------	To Det #2
5	Reservoir	2.079	2	724	12,237	4	404.40	3,139	After Det #2
7	SCS Runoff	2.080	2	716	4,418	------	------	------	Det Bypass
9	SCS Runoff	12.37	2	716	25,311	------	------	------	Pre-Developed
10	Combine	6.136	2	718	27,509	2, 5, 7,	------	------	Post-Developed

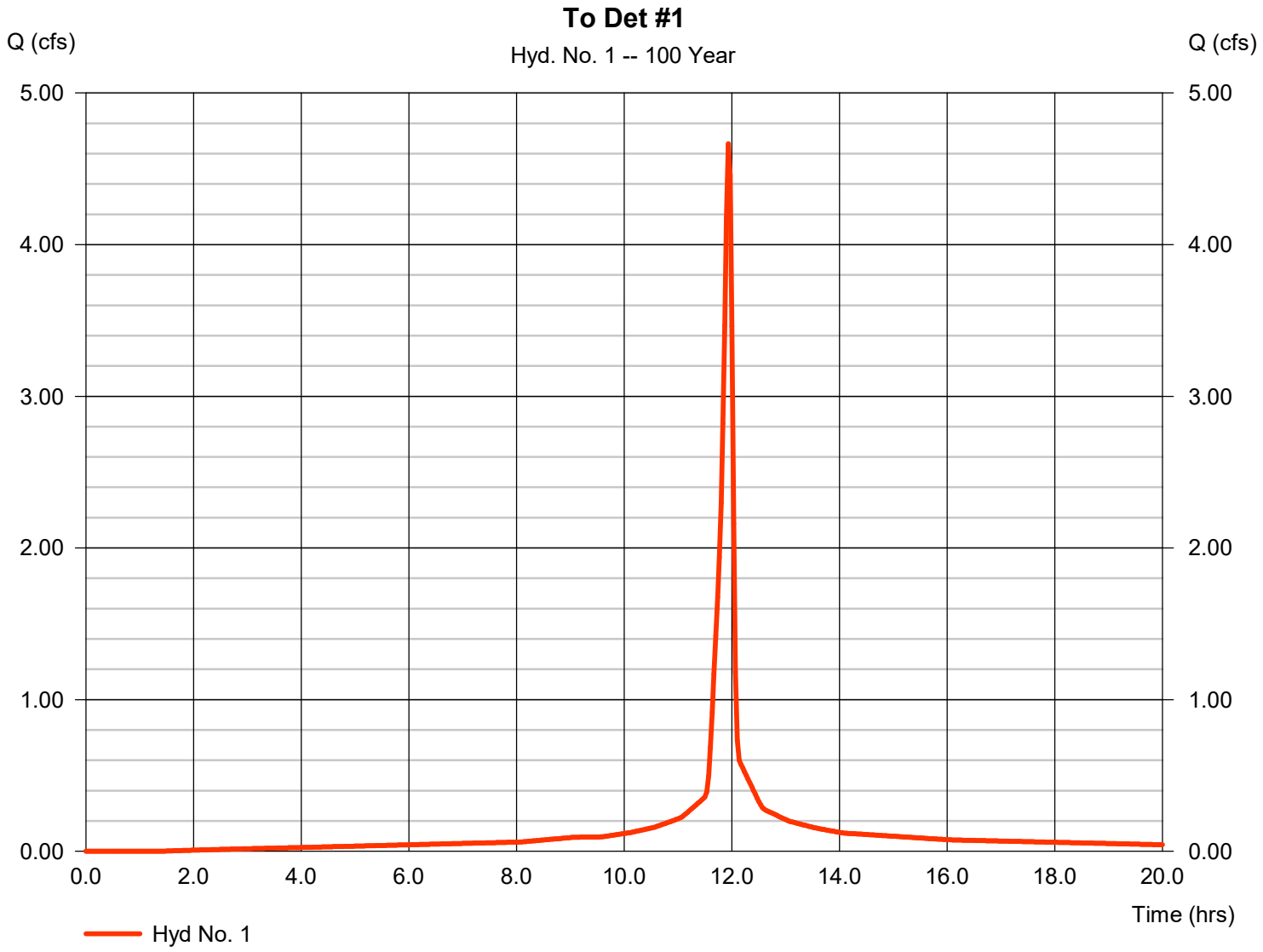
Hydrograph Report

Hyd. No. 1

To Det #1

Hydrograph type	= SCS Runoff	Peak discharge	= 4.664 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 10,854 cuft
Drainage area	= 0.460 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.53 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.410 x 98) + (0.050 x 69)] / 0.460



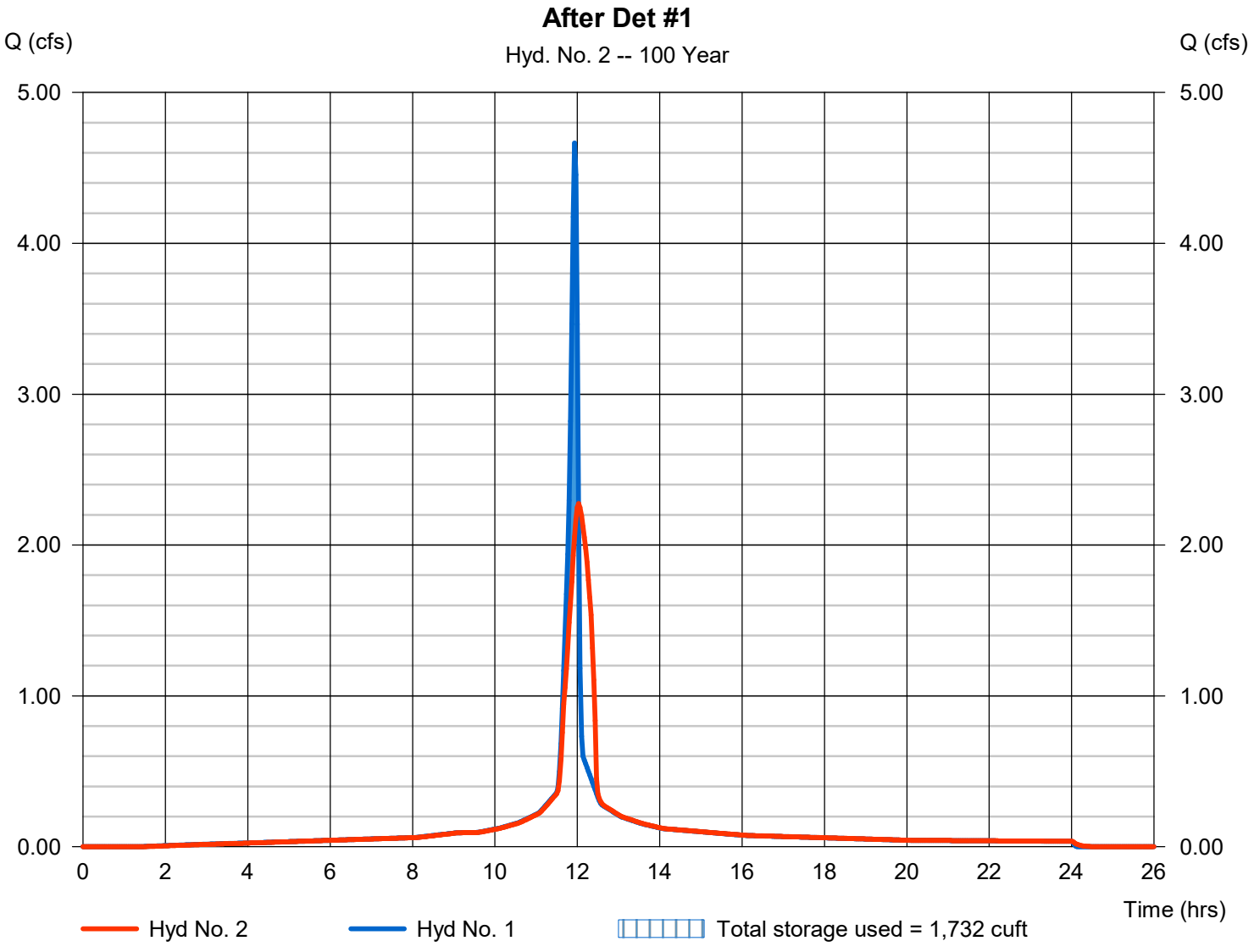
Hydrograph Report

Hyd. No. 2

After Det #1

Hydrograph type	= Reservoir	Peak discharge	= 2.275 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 10,853 cuft
Inflow hyd. No.	= 1 - To Det #1	Max. Elevation	= 430.00 ft
Reservoir name	= Det Pond #1	Max. Storage	= 1,732 cuft

Storage Indication method used.



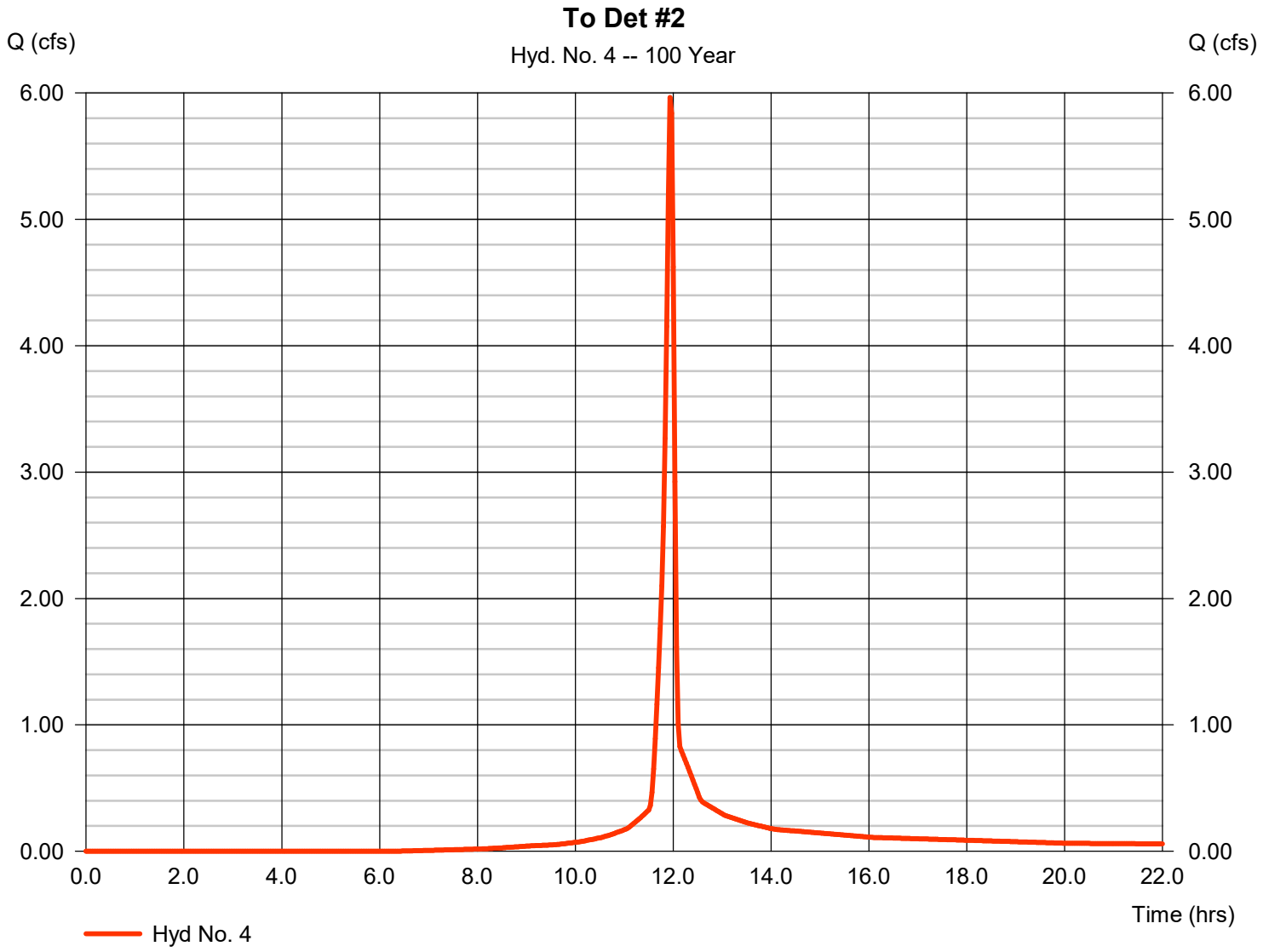
Hydrograph Report

Hyd. No. 4

To Det #2

Hydrograph type	= SCS Runoff	Peak discharge	= 5.965 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 12,239 cuft
Drainage area	= 0.760 ac	Curve number	= 76*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.53 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.580 x 69) + (0.180 x 98)] / 0.760



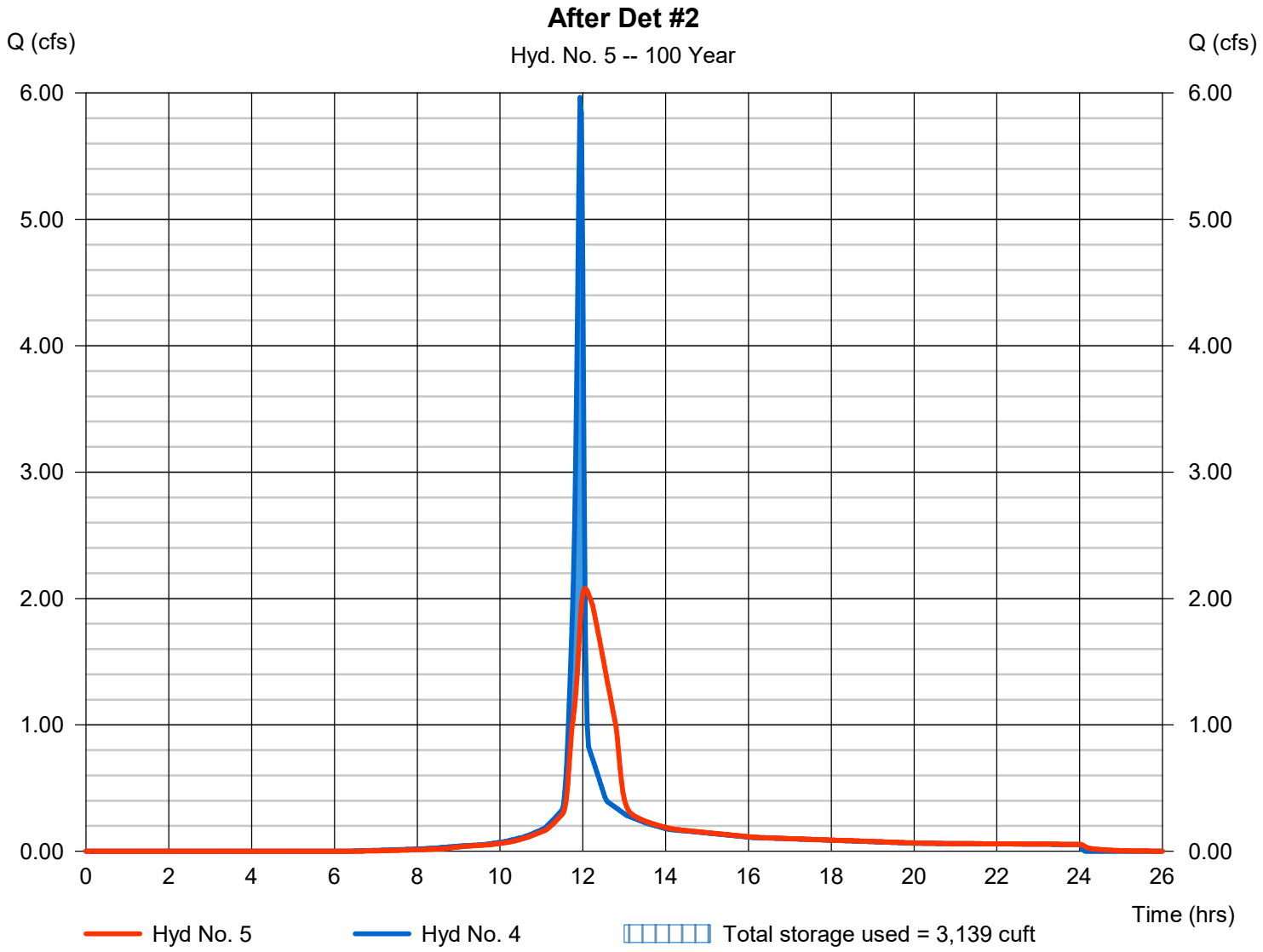
Hydrograph Report

Hyd. No. 5

After Det #2

Hydrograph type	=	Reservoir	Peak discharge	=	2.079 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.07 hrs
Time interval	=	2 min	Hyd. volume	=	12,237 cuft
Inflow hyd. No.	=	4 - To Det #2	Max. Elevation	=	404.40 ft
Reservoir name	=	Det Pond #2	Max. Storage	=	3,139 cuft

Storage Indication method used.



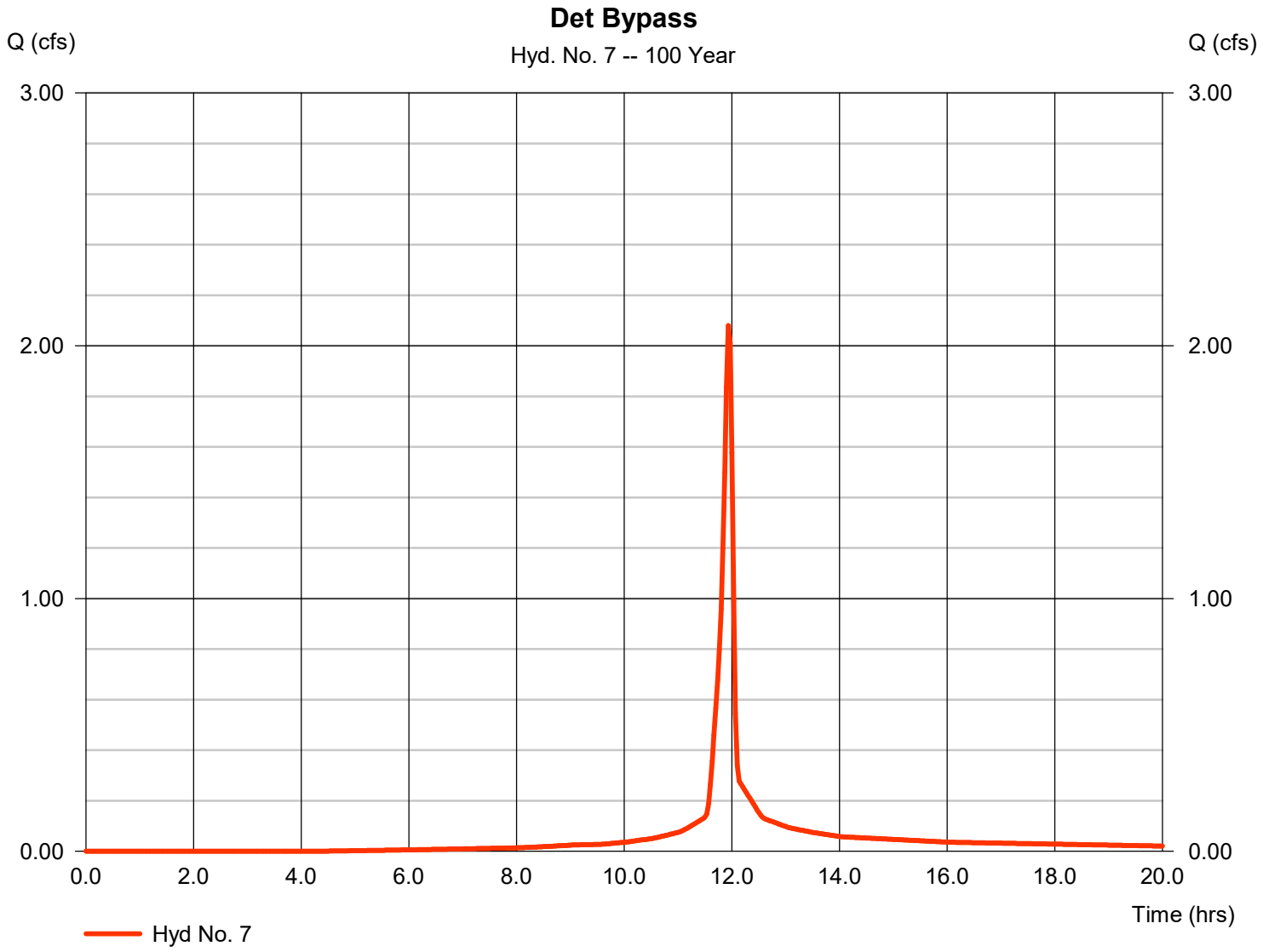
Hydrograph Report

Hyd. No. 7

Det Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 2.080 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,418 cuft
Drainage area	= 0.230 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.53 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.120 x 98) + (0.110 x 69)] / 0.230



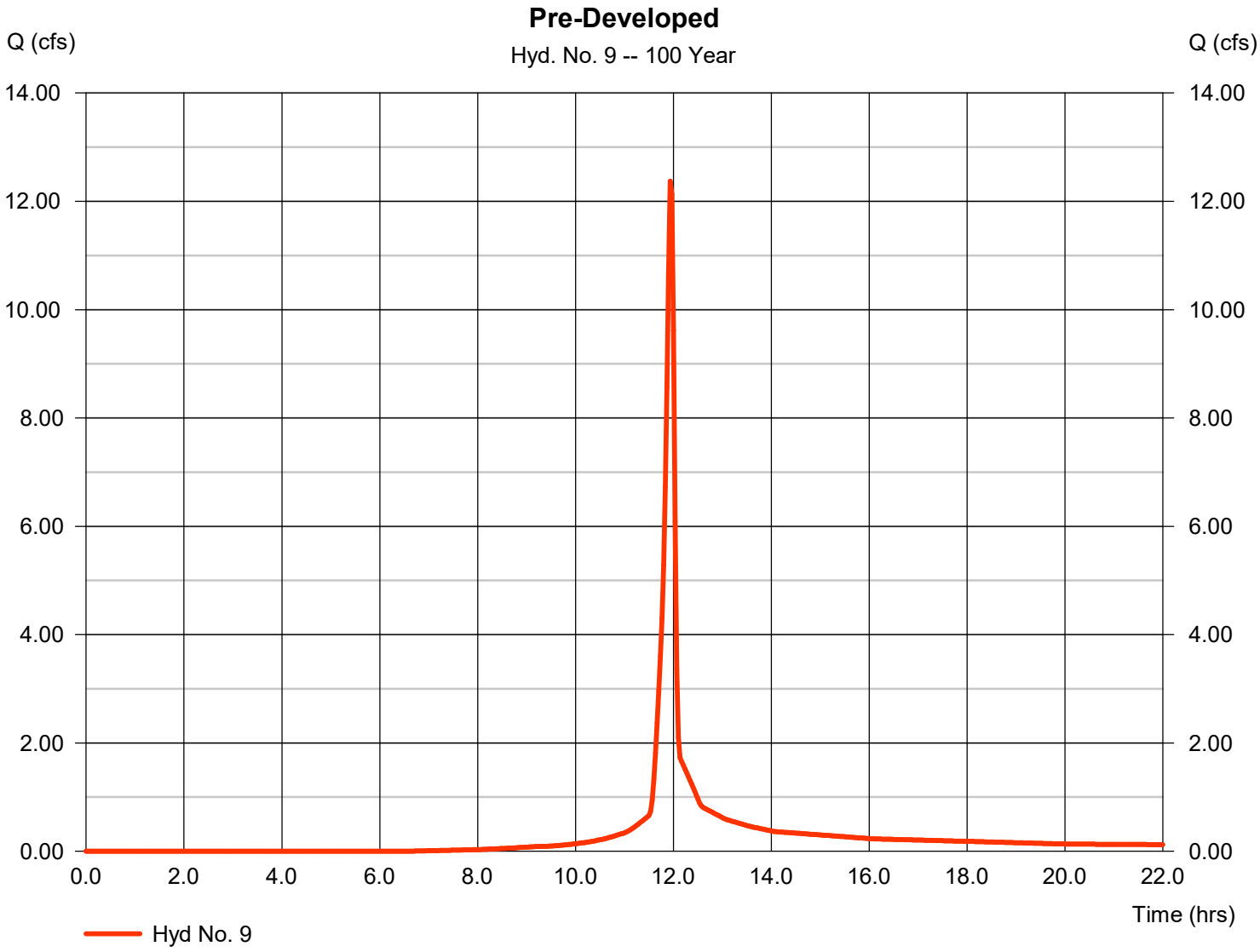
Hydrograph Report

Hyd. No. 9

Pre-Developed

Hydrograph type	= SCS Runoff	Peak discharge	= 12.37 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 25,311 cuft
Drainage area	= 1.610 ac	Curve number	= 75*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.53 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.290 x 69) + (0.320 x 98)] / 1.610

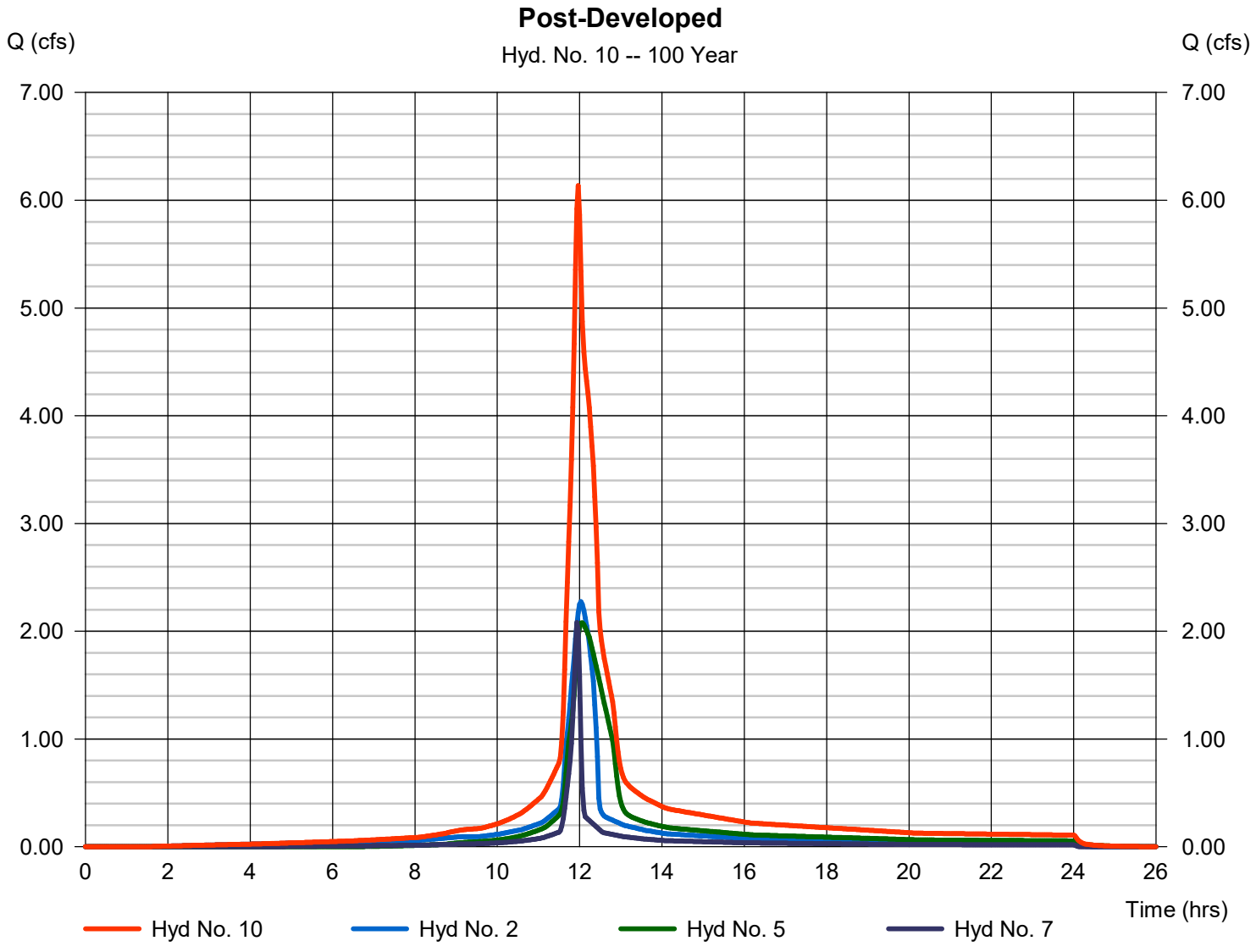


Hydrograph Report

Hyd. No. 10

Post-Developed

Hydrograph type	= Combine	Peak discharge	= 6.136 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 27,509 cuft
Inflow hyds.	= 2, 5, 7	Contrib. drain. area	= 0.230 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	21.3913	5.8000	0.6332	--------
3	0.0000	0.0000	0.0000	--------
5	48.6847	10.2000	0.7544	--------
10	66.7072	12.5000	0.7892	--------
25	65.3872	11.5000	0.7499	--------
50	79.9547	12.2000	0.7718	--------
100	170.7963	18.2000	0.9117	--------

File name: Nashville_Rainfall Intensity.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	4.74	3.73	3.13	2.73	2.44	2.22	2.04	1.90	1.78	1.68	1.59	1.51
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	6.25	5.04	4.27	3.72	3.32	3.00	2.75	2.54	2.36	2.21	2.08	1.97
10	6.97	5.72	4.88	4.28	3.82	3.46	3.17	2.93	2.73	2.55	2.40	2.27
25	7.99	6.55	5.60	4.92	4.40	4.00	3.67	3.40	3.17	2.98	2.81	2.66
50	8.90	7.31	6.25	5.48	4.90	4.45	4.08	3.78	3.52	3.30	3.11	2.94
100	9.72	8.13	7.01	6.17	5.51	4.99	4.56	4.20	3.90	3.64	3.41	3.21

Tc = time in minutes. Values may exceed 60.

e name: Z:\Projects\2607 Whites Creek Pike\1-Civil Engineering\Stormwater\Hydrographs\MWS Precipitation Data.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	3.39	0.00	4.50	5.23	6.16	6.85	7.53
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
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

IV. USDA Soil 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 Cheatham County, Tennessee

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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Contents

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: 1:1,260 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N 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: Cheatham County, Tennessee
Survey Area Data: Version 16, Sep 15, 2022

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

Date(s) aerial images were photographed: Mar 21, 2021—Mar 30, 2021

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
En	Ennis gravelly silt loam, occasionally flooded	0.1	3.7%
HaC	Hawthorne gravelly silt loam, 5 to 12 percent slopes	1.8	54.3%
HsF	Hawthorne-Sulphura association, 20 to 60 percent slopes	1.4	42.0%
Totals for Area of Interest		**3.3**	**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.

Cheatham County, Tennessee

En—Ennis gravelly silt loam, occasionally flooded

Map Unit Setting

National map unit symbol: kpd9
Elevation: 900 to 1,300 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 180 to 205 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Ennis and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ennis

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Parent material: Loamy alluvium derived from limestone, sandstone, and shale

Typical profile

H1 - 0 to 7 inches: gravelly silt loam
H2 - 7 to 60 inches: gravelly silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F122XY034TN - Well Drained Gravelly Alluvium
Hydric soil rating: No

HaC—Hawthorne gravelly silt loam, 5 to 12 percent slopes

Map Unit Setting

National map unit symbol: kpdf
Elevation: 900 to 1,300 feet
Mean annual precipitation: 48 to 55 inches

Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 185 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Hawthorne and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hawthorne

Setting

Landform: Hillslopes
Landform position (three-dimensional): Crest
Parent material: Gravelly residuum weathered from limestone and siltstone

Typical profile

H1 - 0 to 6 inches: gravelly silt loam
H2 - 6 to 33 inches: very channery silt loam
Cr - 33 to 43 inches: bedrock

Properties and qualities

Slope: 5 to 12 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 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 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Ecological site: F122XY020TN - Cherty Limestone Escarpment
Hydric soil rating: No

HsF—Hawthorne-Sulphura association, 20 to 60 percent slopes

Map Unit Setting

National map unit symbol: 2v5c6
Elevation: 360 to 930 feet
Mean annual precipitation: 48 to 55 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 185 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Hawthorne and similar soils: 53 percent
Sulphura and similar soils: 32 percent
Minor components: 15 percent

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

Description of Hawthorne

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Gravelly residuum weathered from limestone and siltstone

Typical profile

A - 0 to 6 inches: gravelly silt loam
Bw - 6 to 33 inches: very gravelly silt loam
Cr - 33 to 43 inches: bedrock

Properties and qualities

Slope: 20 to 60 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F122XY020TN - Cherty Limestone Escarpment
Hydric soil rating: No

Description of Sulphura

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Channery residuum weathered from limestone and shale

Typical profile

A - 0 to 10 inches: gravelly silt loam
Bw - 10 to 22 inches: very channery silt loam
R - 22 to 32 inches: bedrock

Properties and qualities

Slope: 20 to 60 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: F122XY020TN - Cherty Limestone Escarpment
Hydric soil rating: No

Minor Components

Sengtown

Percent of map unit: 8 percent
Landform: Hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Minvale

Percent of map unit: 7 percent
Landform: Hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

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February 25, 2023

Allen Nicholson
Town of Ashland City
233 TN Waltz Pkwy
Ashland City, TN 37015

REFERENCE: **Valley Point Homes (Plans Review**)

Dear Mr. Nicholson:

Our comments on the subject project plans and stormwater calculations are provided below:

- Provide revised drainage calculation submittal
    - Table summarizing runoff needs revision – mislabeled pre vs post headings, also reveal the unrouted post condition runoff then the routed/detained post development flows, also show the undetained bypass flows
    - Show Pipe/ditch calcs (loading vs. capacity and all basic results…..velocities, slopes, sizes etc)
    - Calc report should reveal all details on the pond outlet structures to compare details in calcs to outlet details in plans

Plans related comments

- Plans need to have all site details added that match the drainage intent…..curbs and drainage details that ensure water makes it to the ponds…..the buildings likely require downspout connection to prevent bypass of runoff straight to the stream instead of the ponds
- Contours should be reflected to include the landscaping walls (add top of wall and bottom of wall elevations and correct the proposed contours to match)
- Even if pipes/ditches are designed for lower year events, all flows up to the 100 year must be confirmed to make it to the ponds…..otherwise the site runoff is incorrect if ditches overflow and send water to the ditch undetained in the 100 year event…….check and provide clarity of results in drainage report
- No increased flows allowed onto the public ROWs, ensure all water is appriately captured and detained onsite….. to the pond and not bypassed as noted in drainage calcs
- Revise drainage at end of ditch to ensure water is directed into the pond and not into the pump station or directed into the stream
- Ensure EPSC plans reveal what items are temporary and should be removed vs items that may be permanent and part of the drainage plans that should remain
- Show on plan view where different curb types are utilized/planned
- Roadway/driveway details need revision and clarification
    - Clarify the roadway materials as details
    - Is the southern driveway a public or private roadway? Private roadways have the same specification requirements as public and there must be adequate turnaround (the current layout does not meet functional roadway dimension criteria, if you were using a

multifamily approach, these units still do not have the functional geometry of a parking lot and private drive aisles per town regulations) need to take a standard approach and revise these traffic routing layouts to match city regulations

- Add signage and pavement marking details
- Add driveway length and width dimensions, radii of connections (typical driveway if all equal) that reveal parking is sufficient to remain off sidewalks
- Show on plan view where all sidewalk ramps are needed and provide/reference to ramps and other ADA details (where are city required public sidewalks???)
- Add a bold note that all sidewalks, ramps, crosswalks and related pedestrian facilities must be ADA compliant
- Public works will provide further comments but there are several issues with drainage related to sewer/water details that must be clarified at a minimum…..cleanouts need to be revealed and shouldn't be in drainage ditches…..confirm tie in locations and invert details….reveal separation of private work from any city installed tap (details for crossing the state ROW????)…..profiles of sewer and water installations…..water and sewer details and plans callouts (meters, valves, etc).
- Provide elevations for buildings (various types shown on plan views) need to understand where roof drainage goes and how parking is accommodated
- Reveal lighting plan and photometrics
- Add landscaping plan that meets the Town regulations

Prior to issuance of a grading permit, all plans must be confirmed to match the final approved set supplied to the city (any plans changes due to water, sewer, TDOT permitting must be submitted back to the Planning/Codes office for records and verification vs. original submittals).

Respectfully,

Jason Lee Reynolds, P.E.
Project Manager