ABINGTON TOWNSHIP

JUNE 12, 2025

BOARD OF COMMISSIONERS WORKING SESSION

TOWNSHIP OF ABINGTON

BOARD OF COMMISSIONERS WORKING SESSION

A G E N D A
June 12, 2025
7:30 PM

There are three ways for the public to participate in the meeting: in-person, online or by phone. Residents who wish to attend in person can do so in the Abington Township Board Room located at 1176 Old York Road, Abington, PA 19001, 2nd Floor. Alternative means of public participation are offered for those who do not wish to or are unable to attend the meetings in person. Residents who wish to participate in the meeting remotely can access the meeting online by a computer, iPad, iPhone, or Android at https://us06web.zoom.us/j/88216803878. This link will enable residents to hear the meeting, see presentations, and ask questions. There will be no video interaction capabilities. Residents, who are unable to join online, can listen to and participate in the meeting by calling 1-929-436-2866 and entering the meeting ID number 882-1680-3878 when prompted.

CALL TO ORDER

CONSIDER APPROVAL OF MINUTES

a. Motion to approve the Minutes from the Working Session of May 8, 2025.

PUBLIC COMMENT ON AGENDA ITEMS

UNFINISHED BUSINESS

NEW BUSINESS

a. Review LD-24-01 - 2241 Old Welsh Road - Final Major Subdivision and Land Development plan. *(Mr. Hassan)*

b. Discuss an Ordinance amending the Code of the Township of Abington at Part II [General Legislation], Chapter 162 [Zoning], Article XIX [Nonconforming Uses, Structures, Lots and Signs] by amending and restating Section 1908 [Expansion of or Construction on a Nonconforming Lot] to revise provisions for special exceptions. *(Ms. Gallagher)*

c. Discuss an Ordinance amending the Code of the Township of Abington at Part II[General Legislation], Chapter 162 [Zoning], at Article II [Definitions], Article XXI [Use Regulations], Article XXII [Parking and Transportation], and the Comprehensive Use Matrix to incorporate provisions for the C-39 [Medical Marijuana Dispensary] and D-18 [Medical Marijuana

Grower/Processor] Uses. *(Ms. Gallagher)*

d. Discuss an Ordinance amending the Code of the Township of Abington at Part II [General Legislation], Chapter 58 [Animals], to add a new Article, Article VII [Sale of Dogs and Cats]. *(Ms. Gallagher)*

ADJOURNMENT

BOARD POLICY ON PUBLIC PARTICIPATION

For Information Purposes Only

The Township shall conduct business in accordance with the Commonwealth of Pennsylvania Laws governing the conduct of public meetings and only establish guidelines that shall govern public participation at meetings consistent with the law.

Each commenter shall:

- Direct their comments to the Presiding Officer;
- Speak from the podium or into a microphone designated by the presiding officer;
- State their name for the record;
- Either orally or in writing provide their address for the record;
- Have a maximum of three minutes to make their comments. Each commenter when speaking to a specific agenda item, is to keep their comments relative to that identified agenda item;
- Speak one time per agenda item;
- When commenting on non-agenda items, the commenter is to keep their comments related to matters of the Township of Abington, Montgomery County, Pennsylvania.
- State a question to the Presiding Officer after all commenters have spoken, and;
- Be seated after speaking or upon the request of the presiding officer;
- Not engage in debate, dialogue or discussion;
- Not disrupt the public meeting, and;
- Exercise restraint and sound judgement in avoiding the use of profane language, and the maligning of others.

Board of Commissioners Working Session May 8, 2025

The stated Working Session of the Board of Commissioners of the Township of Abington was held on Thursday, May 8, 2025 via webinar and in-person at the Township Administration Building, Abington, PA, with President Hecker presiding.

CALL TO ORDER: 7:58 p.m.

PRESENT: Commissioners ROTHMAN, DiPLACIDO, LANEY-MARTIN, BROWNE, WINEGRAD, HENRY, ZAPPONE, YOUNG-GERTZ, SPIEGELMAN, SCHREIBER, BOWMAN, VAHEY, HECKER
Excused: Commissioners BRODSKY, BOLE

Also Present: Township Manager Christman
Township Solicitor Clarke

CONSIDER APPROVAL OF MINUTES:

President Hecker made a MOTION, seconded by Commissioner Spiegelman to approve the minutes from the Working Session of April 10, 2025.

MOTION was ADOPTED 13-0.

UNFINISHED BUSINESS: None.

NEW BUSINESS:

Review and discuss amending an ordinance revising the Volunteer Service Tax Credit Program originally established pursuant to Ordinance No. 2143, enacting Tax Credits for Volunteer Members of the Volunteer Fire Companies of the Abington Township Fire Department and Non-Profit Emergency Service Agencies.

Mr. Tom McAneney, Director of Fire and Code Services, said this is a request to amend an existing ordinance. Originally, the ability to allow tax credits was a result of Act 172 of 2016 in Abington Township in which we are one of the first municipalities to embrace it when Ordinance No. 2143 was adopted in December 2017.

Act 172 allows the municipality to permit a 20% rebate on property or earned income tax; however, a 20% maximum rebate is not a very utilized tool by the members. In 2020, the state updated the law to allow 100% tax rebate on property as well as earned income tax.

The proposed amendment would increase the potential amount of the tax rebate, but in return, incentivize members to run on more fire calls and attend more training. The point and tiered system are modeled after the Montgomery County Tax Rebate Program that was put into place this year.

Last year, the Fire Department ran 1,917 calls for service totaling 24,274 volunteer hours of service. We have a membership of about 230 with 130 active members, the other 100 are retired and administrative, and the highest tax rebate they can obtain is 25%. Only active members can obtain higher than that.

President Hecker said on behalf of the Board of Commissioners, we are incredibly fortunate to have a fire department and the fire companies in this Township, and their volunteerism and spirit and what Mr. McAneney and his colleagues have done to save this community time and time again, especially with the most recent SPS disaster, we could not exist as a community without the work that they do.

We are here tonight to discuss how we can get something done that would be meaningful and to retain what has been built over the past 25-30 years.

Mr. McAneney said we appreciate the sentiment, and we would not have a strong department if we didn't have such a great relationship with the Board. While the numbers across the state have been diminishing, we are fortunate that our membership has remained remarkably steady.

In 2013, we had 190 active members. As of April 1st, we have 226 active members, and that is due to the partnership between the Township and the fire department, and with the support of the Board of Commissioners, we can put together such great programs and training and have become an attractive agency for those to volunteer with.

President Hecker asked for any comments from Commissioners.

Commissioner Browne said when he first became Commissioner, he was informed by one of our firefighters about the programs and the tax breaks, and after doing some research, we have an elite fire company in Abington.

The Abington Township Fire Department has CFAI International Accreditation, and they are the only 100% all-volunteer fire departments in the country, which speak not only to the accreditation, but also to the ongoing training and the work done to keep it. The dedication in keeping that accreditation was shown in the results of the recent fires. He is full-throated in support for this ordinance as the men and women of the fire companies deserve it wholeheartedly. It is an effective retention and recruitment tool, and he hopes to vote on the ordinance shortly.

Commissioner Schreiber echoed Commissioner Browne's sentiments. The accreditation helps with the recruitment and the training helps with accreditation, so it works both ways. She is in full support, and it is wonderful. Members are also able to receive benefits from the County. Is that correct?

Mr. McAneney replied yes.

Commissioner Spiegelman said this is an upgrade for the retired and administrative members and he also echoes the sentiments of his friends. With everything the ATF does saves the residents money in our day-to-day lives in so many ways such as insurance rates that are suppressed because we have the best fire suppression anywhere. He wholeheartedly supports this.

Commissioner Young Gertz said this is a wonderful program and she is so proud to be in this community. Also, a volunteer who is injured in the course of duty will retain eligibility to a certain degree. Is that correct?

Mr. McAneney replied yes. They retain eligibility for a certain number of years afterwards or until their injury subsides. Also, the earned income tax credit is a policy decision that needs to be made by the Board.

Manager Christman noted this will be back before the Board of Commissioners at their meeting in June for a vote for advertisement and then in July for final ratification.

President Hecker asked for any public comment. There was none.

ADJOURNMENT: 8:14 p.m.

Respectfully submitted,

Liz Vile, Recording Secretary

BOARD OF COMMISSIONERS WORKING SESSION

AGENDA ITEM

June 12, 2025

DATE

AGENDA ITEM NUMBER

Administration

DEPARTMENT

FISCAL IMPACT
Cost > $10,000
Yes ☐ No ☐

PUBLIC BID REQUIRED
Cost > $20,100
Yes ☐ No ☐

AGENDA ITEM:

LD-24-01 -2241 Old Welsh Road

EXECUTIVE SUMMARY:

Under the prior and current plans submission, the Applicant is proposing to demolish the existing detached garage, gazebo, stone walls, and rear concrete driveway on the site, and subdivide the existing previously consolidated 56,250 SF (or approx. 1.29-acre) lot into seven (7) new lots as follows:

- Lots 1 through 4 – will consist of a 7,542.40 SF to 7,737.01 SF lots facing Parkview Avenue. Lot 1 will consist of a 7,542.20 SF corner lot fronting Parkview Avenue and Fairview Avenue with the remaining Lots 2 to 4 as interior lots fronting Parkview Avenue. A new 1,814 SF single-family detached dwelling is proposed on each lot with the main entrance to the dwellings facing Parkview Avenue. A 214 SF porch and an attached 200 SF front facing garage, 12-ft wide driveway, and driveway apron is proposed fronting Parkview Avenue.
- Lot 5 – will consist of a 10,545.51 SF corner lot fronting Old Welsh Road and Fairview Avenue. Lot 5 will comprise the existing single-family detached dwelling to remain. No new garage is proposed for Lot 5. A new porous asphalt driveway off of Fairview Avenue, retaining walls, and a rear concrete walkway between the house and new porous asphalt driveway are proposed on the site.
- Lots 6 and 7 – will consist of a 7,603.17 SF and 7,627.98 SF lot, respectively. These interior lots will be fronting Old Welsh Road. Both lots will be improved with a new 1,814 SF single-family detached dwelling, a 214 SF porch, an attached 200 SF front facing garage, 12-ft wide driveway, driveway apron facing Old Welsh Road, and retaining walls. Each new single-family detached dwelling will

have a proposed asphalt driveway to accommodate two (2) offstreet parking spaces. In addition, new curbing, sidewalk, walkways, landscaping, and stormwater management facilities are proposed under this land development submission. Each new single-family dwelling will be serviced by public water and sewer service.

9-24-24 - **Planning Commission Meeting Summary**

- The PC made a motion to recommend approval of the LD project and approval of 3 out the 5 waivers requested. The PC did not approve the waivers regarding the right-of-way width (Section 146-24.D.(1) and streetlighting (Section 146-38). The motion was first made by Daryl Baker and second by Lucy Strackhouse. All were in favor, no one opposed.
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    - For the right-of-way, the waiver request was to not widen the existing 24' wide roadway to 30' wide. The developer stated that they weren't sure if the developer would be responsible for dedicating the remaining 6' or if the road would be split and 3' from both sides of the road would be needed. The PC recommended that the Township look into what the requirement would be if the road is required to be widened.
    -
    - For the streetlighting, the waiver request was to not provide additional street lights because there are already existing street lights located at the Fairview & Parkview Ave intersection and the Fairview & Old Welsh Rd intersection. The PC recommended that the Township look into whether additional street lights are needed along any of the frontages of the site.

PREVIOUS BOARD ACTIONS:

Planning Commission - 9/24/24 - See Executive Summary
Board of Commissioners - 10/10/24
Working Session - 1/9/25
Planning Commission - 5/27/25 - Final Review

RECOMMENDED BOARD ACTIONS:

Review LD-24-01 - 2241 Old Welsh Road - Final Major Subdivision and Land Development plan.*(Mr. Hassan)*

May 9, 2025

ABINT130037

Mr. Christopher S. Christman, Township Manager
Abington Township
1176 Old York Road
Abington, PA 19001

RE: Executive Summary for LD-24-01 – 2241 Old Welsh Road
PARID: 30-00-48540-00-3/ TMID: 30125 004
Final Major Subdivision & Land Development Plans Review (1st Submission)

Dear Mr. Christman:

We have received a copy of the "Preliminary Major Subdivision & Land Development Plans" consisting of seventeen (17) sheets dated March 7, 2024, last revised April 4, 2025, as well as a PCSM Report dated March 7, 2024, last revised November 15, 2024; as prepared by Cornerstone Consulting Engineers & Design Services, Inc., located at 213 West Main Street, Lansdale, PA, for the above referenced project on behalf of the Applicant David Sharrow. The Application was deemed complete on March 13, 2024.

Under the prior and current plans submission, the Applicant is proposing to demolish the existing detached garage, gazebo, stone walls, and rear concrete driveway on the site, and subdivide the existing previously consolidated 56,250 SF (or approx. 1.29-acre) lot into seven (7) new lots as follows:

Existing Lot	New Lots
Lot 5 - consist of a 10,545.51 SF corner lot fronting Old Welsh Road and Fairview Avenue, comprised of the existing single-family detached dwelling to remain	Lots 1 – 4 - consist of a 7,508.88 SF to 7,737.01 SF lots
	Lots 6 and 7 – consist of a 7,603.17 SF and 7,627.98 SF lots
	Each new dwelling will have a 66 SF covered porch and an attached 263.29 SF front facing garage, driveway for (2) off-street parking spaces, and driveway apron
	New curbing, sidewalk, walkways, landscaping, and stormwater management facilities
	Public water and sewer service

Under the current submission, the Applicant is also proposing roadway widening between 3.5 and 2.5 feet along Parkview Avenue.

This project is located within the R4 – Residential High Density Zoning District. The site is a triple-frontage lot fronted by Parkview Avenue to the north; Fairview Avenue to the west; Old Welsh Road (SR 2029) to the south; and residential properties zoned within the R4 – High Density Residential Zoning District to the east.

In accordance with the FEMA, Flood Insurance Rate Map (FIRM) Panel No. 42091C0313G, effective March 2, 2016, the tract is identified to be primarily located within Zone X primarily located within Zone X, an area outside the 0.2% chance flood and minimal flood hazard. Therefore, based on the FEMA FIRM determination, this site is not located within the Floodplain Conservation District, and is therefore not subject to the floodplain regulations of

the Floodplain Conservation District. In addition, per the Abington Township Riparian Corridor Analysis Map, Figure 15.2, this parcel is not located within and intersecting the Riparian Corridor; and is not subject to the regulations of the Riparian Corridor Conservation District.

There are existing precautionary (slopes of 15% to 25%) and prohibited (slopes of 25% and up) steep slopes on the site as shown on the Existing Conditions Plan (Sheet 2). However, these existing steep slopes on the site do not span five contiguous 10-foot contour intervals; and therefore, the site is not located within the Steep Slope Conservation Overlay District, and the site is not subject to the Steep Slope Conservation Overlay District requirements.

Waivers Received:

The Applicant appeared before the Abington Township Board of Commissioners at their regularly scheduled meeting held on January 9, 2025; and was granted the following waivers in accordance with Resolution 25-002, adopted on January 9, 2025:

1. **§142-408.B.(1) – Stream Bank Erosion Requirements –** A waiver from the requirement to utilize the SCS Type II distribution.

2. **§146-11.B.(7) – Existing Conditions Plan –** A waiver from the requirement to show the existing utilities within 400 linear feet of the site.

3. **§146-38 – Streetlighting –** A waiver from the requirement to install street lighting along each street frontage.

4. **§146-43.C.(3).(a) – Excavation and Fills –** A waiver to permit the proposed grading due to existing on-site grades; the area of slopes of 15% or steeper has been minimized to the greatest extent possible.

Issues:

The following issues have been identified from the staff reviews as follows:

- Limit of Disturbance:
    - Under the previous submission, the limit of disturbance area was labeled as 43,286 SF (0.994 Acres). Since the disturbance area was close to 1-acre, the plans were submitted to the Montgomery County Conservation District (MCCD) for review to determine if a NPDES Permit would be required. An inadequate letter dated February 7, 2025 was received from MCCD which indicated that the Applicant shall review the planned disturbance area to ensure construction operations can properly take place in less than 0.991 acres; otherwise, a PAG-02 General Permit may be required. Other general comments regarding the plans were also provided in this letter. Under the current plan submission, the limit of disturbance area is labeled as 42,854 SF (0.984 Acres), which is less than the 0.991 acre specified in the MCCD inadequate review; however, a revised letter from MCCD regarding the updated plans has not been received. The revised plan shall be sent to MCCD to determine if a PAG-02 General Permit would be required for this project.

Summary:

The Applicant would be eligible for Final Major Land Development Plans approval contingent the Applicant address the above review comment.

If you have any questions or comments with this submittal, please do not hesitate to contact me.

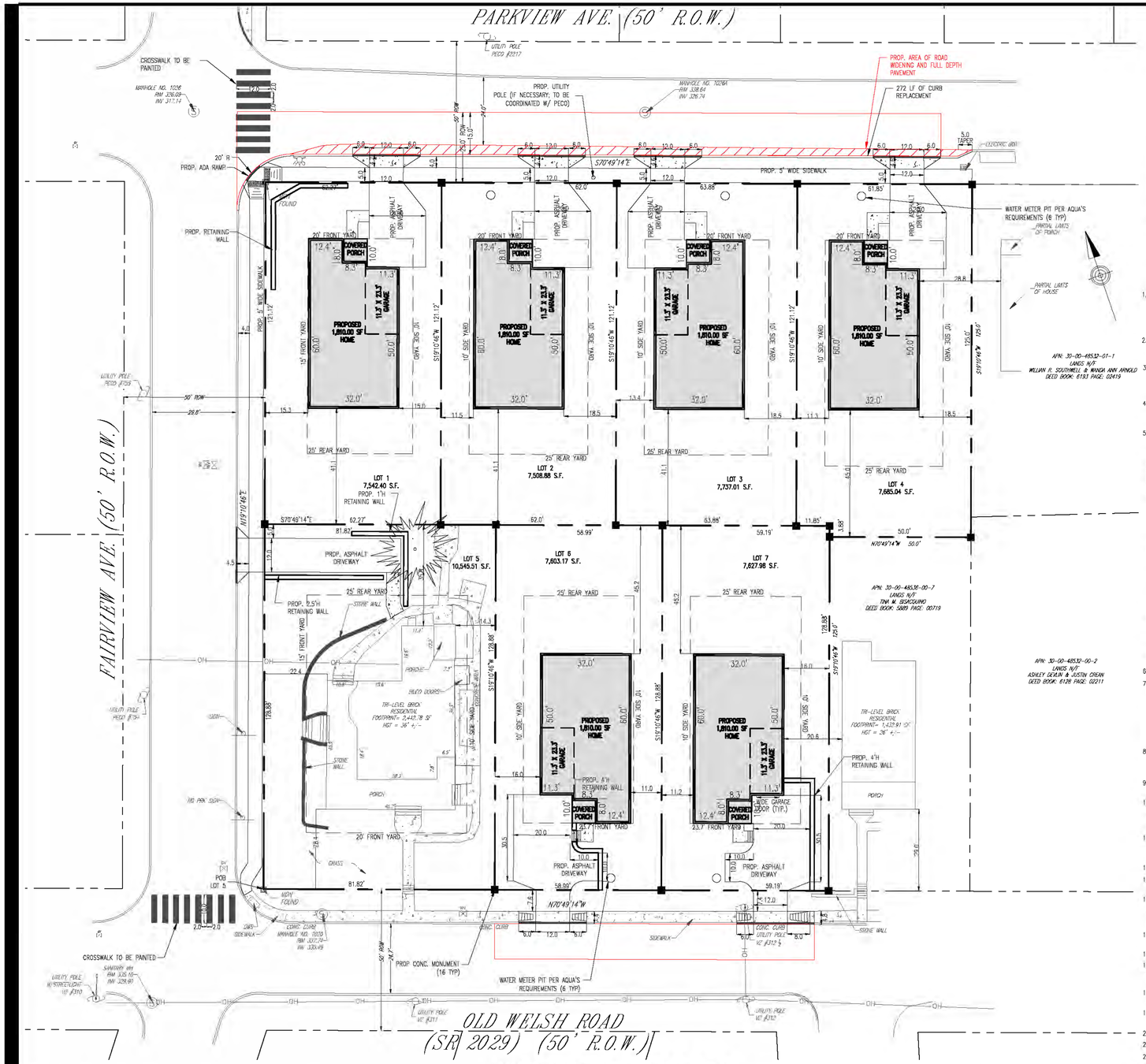
Sincerely,

PENNONI ASSOCIATES INC.

Khaled R. Hassan, PE
Township Engineer

cc: Terry Castorina, Administration & Grants Manager
Ashley McIlvaine, Assistant Township Manager & Assistant CAO

U:\ACCOUNTS\ABINT\ABINT130037 - LD-24-01-2241 OLD WELSH ROAD SUBDIVISION\ADMIN\LD-24-01-PC MTG FINAL EXEC SUMMARY - 05.09.25 2241 OLD WELSH RD.DOCX



GRAPHIC SCALE

20 0 10 20 40 60

(IN FEET)
1 inch = 20 ft.

SHEET LIST

1. SITE AND SUBDIVISION PLAN
2. EXISTING CONDITIONS PLAN
3. AERIAL PLAN
4. PROPERTY IDENTIFICATION PLAN
5. GRADING PLAN
6. UTILITY PLAN
7. STORMWATER PLAN
8. EROSION AND SEDIMENTATION CONTROL PLAN STAGE 1
9. EROSION AND SEDIMENTATION CONTROL PLAN STAGE 2
10. EROSION & SEDIMENTATION CONTROL PLAN NOTES
11. EROSION & SEDIMENTATION CONTROL DETAILS
12. SITE DETAILS
13. SITE DETAILS
14. SITE DETAILS
15. SITE DETAILS
16. LANDSCAPE PLAN
17. PCSM PLAN

LOCATION MAP

GENERAL NOTES

1. THIS PLAN REFERENCES A PLAN: CARROLL ENGINEERING CORPORATION, 949 EASTON ROAD, WARRINGTON, PA 18976, PLAN TITLED: "PLAN OF BOUNDARY & TOPOGRAPHY", DATED: 6/25/2023
2. OWNER/APPLICANT: 2241 OLD WELSH, LLC, 712 CANTERBURY LANE, HORSHAM, PA 19044
3. PROJECT LOCATION INFORMATION: 2241 OLD WELSH ROAD, ABINGTON TOWNSHIP, PA 19090, MONTGOMERY COUNTY, PENNSYLVANIA, DEED BOOK 5611 PAGE 2521
4. ZONING INFORMATION: ZONING DISTRICT: R-4 MEDIUM HIGH DENSITY RESIDENTIAL DISTRICT; EXISTING USE: SINGLE FAMILY RESIDENTIAL HOME; PROPOSED USE: SEVEN (7) LOT SUBDIVISION; SIX (6) H-7 SINGLE FAMILY DETACHED DWELLING UNITS AND A-13 FOR THE FENCES & RETAINING WALLS
5. ZONING BULK AND AREA REQUIREMENTS:
CURRENT R-4 ZONING DISTRICT:

MINIMUM LOT REQUIREMENTS:	REQUIRED	EXISTING	PROPOSED (LOT 1)	PROPOSED (LOT 2)	PROPOSED (LOT 3)	PROPOSED (LOT 4)	PROPOSED (LOT 5)	PROPOSED (LOT 6)	PROPOSED (LOT 7)
MIN. LOT AREA:	7,500 SF	56,250.0 SF	7,542.40 SF	7,508.88 SF	7,737.01 SF	7,685.04 SF	10,545.51 SF	7,603.17 SF	7,827.98 SF
MIN. LOT WIDTH:	50 FT	200.0 FT	62.27 FT	61.99 FT	63.88 FT	61.85 FT	81.82 FT	58.99 FT	59.185 FT
MIN. LOT DEPTH:	100 FT	250.0 FT	121.12 FT	121.12 FT	121.12 FT	125' FT	128.88 FT	128.88 FT	128.88 FT
BUILDING:									
MIN. FRONT YARD SETBACK:	20 FT (THE FRONT YARD ON ONE SIDE OF A CORNER LOT MAY BE REDUCED TO A DEPTH OF NOT LESS THAN 15 FT)	22.40 & 28.4' FT	20.0 & 15.3 FT	20.0 FT	20.0 FT	20.0 FT	28.4 & 22.4 FT	23.7 FT	23.7 FT
MIN. REAR YARD:	25 FT	76.32 FT	41.1 FT	41.1 FT	41.1 FT	45.0 FT	35.50 FT	45.2 FT	45.2 FT
MIN. SIDE YARD:	10 FT	132.28 FT	15.5 FT	11.5 & 13.4 FT	18.5 FT	11.3 & 18.5 FT	14.30 FT	16.0 & 11.0 FT	11.2 & 16.0 FT
MAX. BLDG AREA:	40%	5.98% (3,362.56 SF)	24.05% (1,814.0 SF)	24.16% (1,814.0 SF)	23.45% (1,814.0 SF)	23.60% (1,814.0 SF)	23.16% (2,442.78 SF)	23.86% (1,814.0 SF)	23.78% (1,814.0 SF)
MAX. IMPERVIOUS AREA:	55%	17.16% (9,650.0 SF)	34.80% (2,624.84 SF)	34.87% (2,618.27 SF)	33.79% (2,614.35 SF)	33.96% (2,609.58	45.04% (4,749.44 SF)	36.89% (2,804.73 SF)	37.83% (2,885.75 SF)
MIN. GREEN AREA:	45%	82.84% (46,600 SF)	65.20% (4,917.56 SF)	65.13% (4,890.61 SF)	66.21% (5,122.66 SF)	66.04% (5,075.46 SF)	54.96% (5,796.07 SF)	63.11% (4,788.44 SF)	62.17% (4,742.23 SF)
MAX. BLDG HEIGHT:	35 FT	35 FT	<27 FT	<27 FT	<27 FT	<27 FT	<27 FT	<27 FT	<27 FT
MAX. BLDG LENGTH:	100 FT	66.0 FT	60.0 FT	60.0 FT	60.0 FT	60.0 FT	60.0 FT	60.0 FT	60.0 FT
MIN. BLDG SEPARATION:	20 FT	137.43 LF	28.5 FT	26.5 & 31.9 FT	31.9 & 29.8 FT	29.8 & 28.8 FT	30.3 FT	22.2 & 30.3 FT	22.2 & 20.8 FT

6. PER SEC. 210.3.H: 8' WIDE GARAGE DOOR /32' = 25% (30% PERMITTED)
7. PER SEC 210.3.H, H-7.4.c.(4) SINGLE-FAMILY DETACHED DWELLING UNIT – INFILL DEVELOPMENT:
BUILDING FOOTPRINT. THE BUILDING FOOTPRINT SHALL BE WITHIN 20% OF THE AVERAGE OF THAT OF THE TWO REFERENCE HOUSES.
REFERENCE HOUSE 1: 2241 OLD WELSH = 2,442.77 SF
REFERENCE HOUSE 2: 2227 OLD WELSH = 1,432.91 SF
AVERAGE BUILDING FOOTPRINT = 1,937.84 SF
20% OF THE AVERAGE BUILDING FOOTPRINT = 387.57 SF
PERMITTED FOOTPRINT AREA = 1,550.27 SF TO 2,325.41 SF
PROPOSED FOOTPRINT = 1,814 SF
8. MINIMUM PARKING REQUIREMENTS:
REQUIRED PARKING: 2 OFF-STREET PARKING SPACES EXCLUSIVE OF GARAGE SPACE
PROPOSED PARKING: 2 OFF-STREET PARKING SPACES EXCLUSIVE OF GARAGE SPACE
9. THE WORD "CERTIFY" OR "CERTIFICATE" AS SHOWN AND USED HEREON MEANS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THIS PLAN AND REFERENCED SURVEY AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EXPRESSED OR IMPLIED.
10. THE DRAWING IS PREPARED BY CORNERSTONE CONSULTING ENGINEERS AND ARCHITECTURAL, INC. AND NO PART OF THIS DRAWING MAY BE REPRODUCED BY PHOTOCOPYING, RECORDING OR BY ANY OTHER MEANS, OR STORED, PROCESSED, OR TRANSMITTED IN OR BY ANY COMPUTER OR OTHER SYSTEMS WITHOUT THE PRIOR WRITTEN PERMISSION OF THE SURVEYOR, ENGINEER, ARCHITECT, OR DESIGN PROFESSIONAL. COPIES OF THIS PLAN WITHOUT A RAISED IMPRESSION OR COLOR SEAL ARE NOT VALID.
11. BY GRAPHICAL PLOTTING ONLY, THIS PROPERTY IS LOCATED IN FLOOD ZONE X – AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, PER MAP ENTITLED "FIRM, FLOOD INSURANCE RATE MAP, MONTGOMERY COUNTY, PENNSYLVANIA (ALL JURISDICTIONS), MAP NUMBER 42091C0313G, EFFECTIVE DATE MARCH 2, 2016.
12. THE PROPERTY OWNER IS RESPONSIBLE FOR THE MAINTENANCE OF THE INFILTRATION BASIN LOCATED ON THEIR PROPERTY.
13. STREETLIGHTS AND STREET NAME SIGNS ARE TO BE INSTALLED AT THE EXPENSE OF THE SUBDIVIDER/LAND DEVELOPER IN ACCORDANCE WITH TOWNSHIP STANDARDS AND DEDICATED TO THE TOWNSHIP.
14. THE PHILADELPHIA ELECTRIC COMPANY AND THE BELL TELEPHONE COMPANY OF PENNSYLVANIA ARE GRANTED THE RIGHT TO CONSTRUCT, MAINTAIN AND REPAIR POLE LINES AND UNDERGROUND EQUIPMENT ON, UNDER AND ACROSS LOTS, AND THIS SHALL BE SO REDITED IN ALL DEED DESCRIPTIONS, TOGETHER WITH THE RIGHT TO CONSTRUCT, MAINTAIN AND REPAIR POLE LINES AND UNDERGROUND EQUIPMENT ON, UNDER AND ACROSS ALL HIGHWAYS IN THIS TRACT.
15. ACCESS TO OLD WELSH ROAD FOR LOTS 6 AND 7 WILL REQUIRE APPROVAL BY THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION THROUGH A HIGHWAY OCCUPANCY PERMIT AS REQUIRED BY SECTION 420 P.L. 1242, NO. 428 KNOWN AS THE STATE HIGHWAY LAW.
16. AREA OF PARCEL IS 56,250 SQUARE FEET OR 1.28 ACRES.
17. NO CHANGE SHALL BE MADE IN THE CONTOUR OF THE LAND NOR SHALL GRADING, EXCAVATING, REMOVAL, OR DESTRUCTION OF THE TOPSOIL, TREES, OR OTHER VEGETATIVE COVER OF THE LAND CAN BE COMMENCED UNTIL SUCH TIME THAT A GRADING PERMIT IS APPLIED FOR AND APPROVED.
18. NO REGULATED ACTIVITIES SHALL COMMENCE UNTIL THE TOWNSHIP ISSUES WRITTEN APPROVAL OF A SWM SITE PLAN, WHICH DEMONSTRATES COMPLIANCE WITH THE REQUIREMENTS OF TOWNSHIP CODE CHAPTER 142 STORMWATER MANAGEMENT.
19. PRIOR TO FINAL APPROVAL OF THE PCSM SITE PLAN, THE OWNER SHALL SIGN AND RECORD AN OPERATION AND MAINTENANCE (O&M) AGREEMENT COVERING ALL STORMWATER CONTROL FACILITIES WHICH ARE TO BE PRIVATELY OWNED.
20. TO THE APPLICANT'S KNOWLEDGE, THE PROPERTY HAS NOT RECEIVED PRIOR VARIANCES AND/OR SPECIAL EXCEPTIONS.
21. A BLANKET EASEMENT FOR EACH LOT IS OFFERED TO THE TWP FOR THE STORMWATER MANAGEMENT FACILITIES.
22. VERTICAL DATUM ARE BASED ON NAVD88. FOR CONVERSION TO ABINGTON TOWNSHIP'S SANITARY SEWER DATUM: -4.07 FT.

LEGEND & ABBREVIATIONS

- PROPERTY BOUNDARY
- ADJOINER BOUNDARY
- RIGHT OF WAY LINE
- EXISTING FENCE
- OH — EXISTING OVERHEAD WIRE
- EXISTING CURB
- EXISTING DEPRESSED CURB (DC)
- EXISTING SIGN
- EXISTING UTILITY POLE (UP)
- GUY WIRE
- LAMP POST
- (S) SEWER MANHOLE
- (C) COMMUNICATION MANHOLE
- (E) ELECTRIC MANHOLE
- (W) WATER MANHOLE
- (U) UNKNOWN MANHOLE
- STORM INLET
- GM GAS METER
- WM WATER METER
- GV GAS VALVE
- WV WATER VALVE
- CO CLEAN OUT
- (TBR) TO BE REMOVED
- PROP. BLDG. AREA
- PROP. CONCRETE
- ROADWAY TO BE MILLED AND OVERLAID

LIST OF WAIVERS GRANTED BY RESOLUTION NO. 25-002

1: 142-408. B. (1) – STREAM BANK EROSION REQUIREMENTS: A WAIVER IS REQUESTED TO UTILIZE THE RATIONAL METHOD IN THE DESIGN OF THE STORMWATER MANAGEMENT SYSTEM IN LIEU OF THE SCS TYPE II DISTRIBUTION.
2: SECTION 146-11.B.(7) – EXISTING CONDITIONS PLAN: A WAIVER IS REQUESTED TO PERMIT THE APPLICATION WITHOUT SHOWING THE EXISTING UTILITIES WITHIN 400 LINEAR FEET OF THE SITE.
3: SECTION 146-38 – STREET LIGHTING: A WAIVER IS REQUESTED FOR INSTALLATION OF STREET LIGHTING ALONG EACH STREET FRONTAGE.
4: SECTION 146-43.C.(3)(A) – EXCAVATION AND FILLS: A WAIVER IS REQUESTED TO PERMIT CUT AND FILL SLOPES OF 15% OR STEEPER.

APPROVAL BLOCK

APPROVED BY THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF ABINGTON THIS _____ DAY OF _____, 2025.

ATTEST:

_____ PRESIDENT

_____ SECRETARY

_____ ENGINEER

SURVEYOR'S STATEMENT

I, _____, A REGISTERED SURVEYOR OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE PLAN, PREPARED FROM A FIELD SURVEY ON _____, 2025 CORRECTLY REPRESENTS THE PROPERTY BOUNDARY OF THE PROPOSED LAND DEVELOPMENT.

_____ DATE

_____ STEVEN J. ROMICH, PLS PA LICENSE#: SU057592

OWNER'S STATEMENT

COMMONWEALTH OF PENNSYLVANIA

COUNTY OF MONTGOMERY

ON THE _____ DAY OF _____, A.D. 2025, BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, RESIDING IN _____ PERSONALLY APPEARED _____ WHO ACKNOWLEDGED HIMSELF TO BE THE MEMBER, BEING AUTHORIZED TO DO SO, HE EXECUTED THE FOREGOING PLAN BY SIGNING THAT SAID CORPORATION IS THE OWNER OF THE DESIGNATED LAND, THAT ALL NECESSARY APPROVAL OF THE PLAN HAS BEEN OBTAINED AND IS ENDORSED THEREON AND THAT SAID CORPORATION DESIRES THAT THE FOREGOING PLAN MAY BE DULY RECORDED.

NOTARY PUBLIC _____

MY COMMISSION EXPIRES _____

_____ _____

OWNER'S OR AUTHORIZED CORPORATE MEMBER'S SIGNATURES

_____ _____

PRINTED NAME PRINTED NAME

SWORN AND SUBSCRIBED BEFORE THIS _____ DAY OF _____, 2025.

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS, IN AND FOR THE COUNTY OF MONTGOMERY AT ABINGTON PENNSYLVANIA IN PLAN BOOK NO. _____ PAGE NO._____ ON_____ 2025.

_____ RECORDER OF DEEDS

MCPC No. 24-0068-001

PROCESSED and REVIEWED. A report has been prepared by the Montgomery County Planning Commission in accordance with the Municipalities Planning Code.

Certified this date _____

MONTGOMERY COUNTY PLANNING COMMISSION

CLIENT DATA

Cornerstone
Consulting Engineers & Design Services, Inc.
213 West Main Street . Lansdale . PA 19446
Phone: 215-362-2600 . Fax: 215-362-8400
WWW.CORNERSTONENET.COM

Poconos Region 570-839-1770
Lehigh Valley Region 610-820-9200
Philadelphia Region 215-362-2600

REVISIONS

NO	BY	DESCRIPTION	DATE
1	RL	REVISED PER TWP REVIEWS	7/26/2024
2	EMR	REVISED PER CLIENT COMMENTS	11/14/2024
3	DJB	REVISED PER MCPC AND TRAIL REVIEW	4/04/2025

PENNSYLVANIA ONE CALL SYSTEM, INC.
925 Irwin Run Road
West Mifflin, Pennsylvania 15122 - 1078
811
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL STEVEN J. ROMICH LAND SURVEYOR SU057592 PENNSYLVANIA

PROJECT LOCATION

FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC

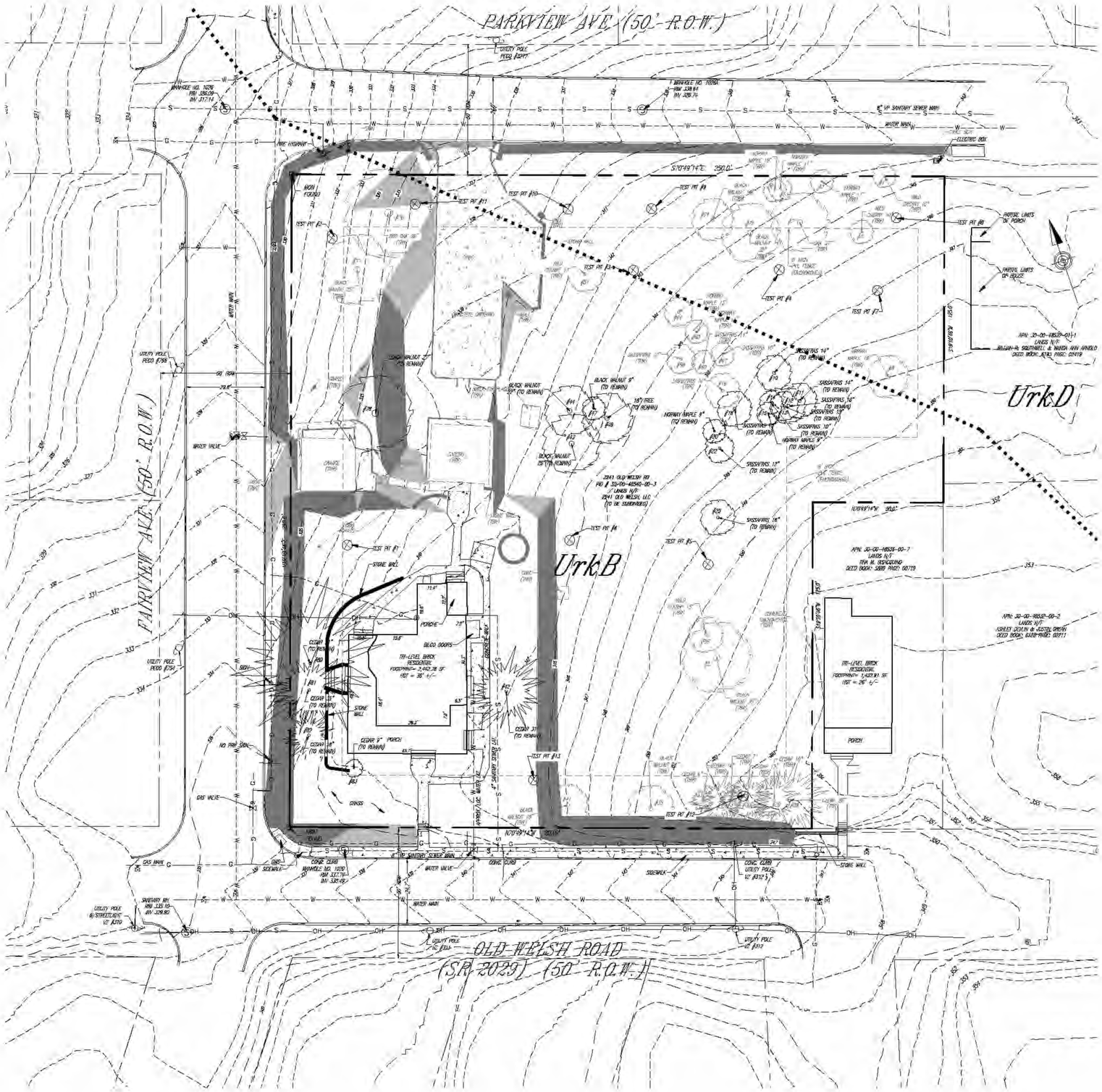
TITLE

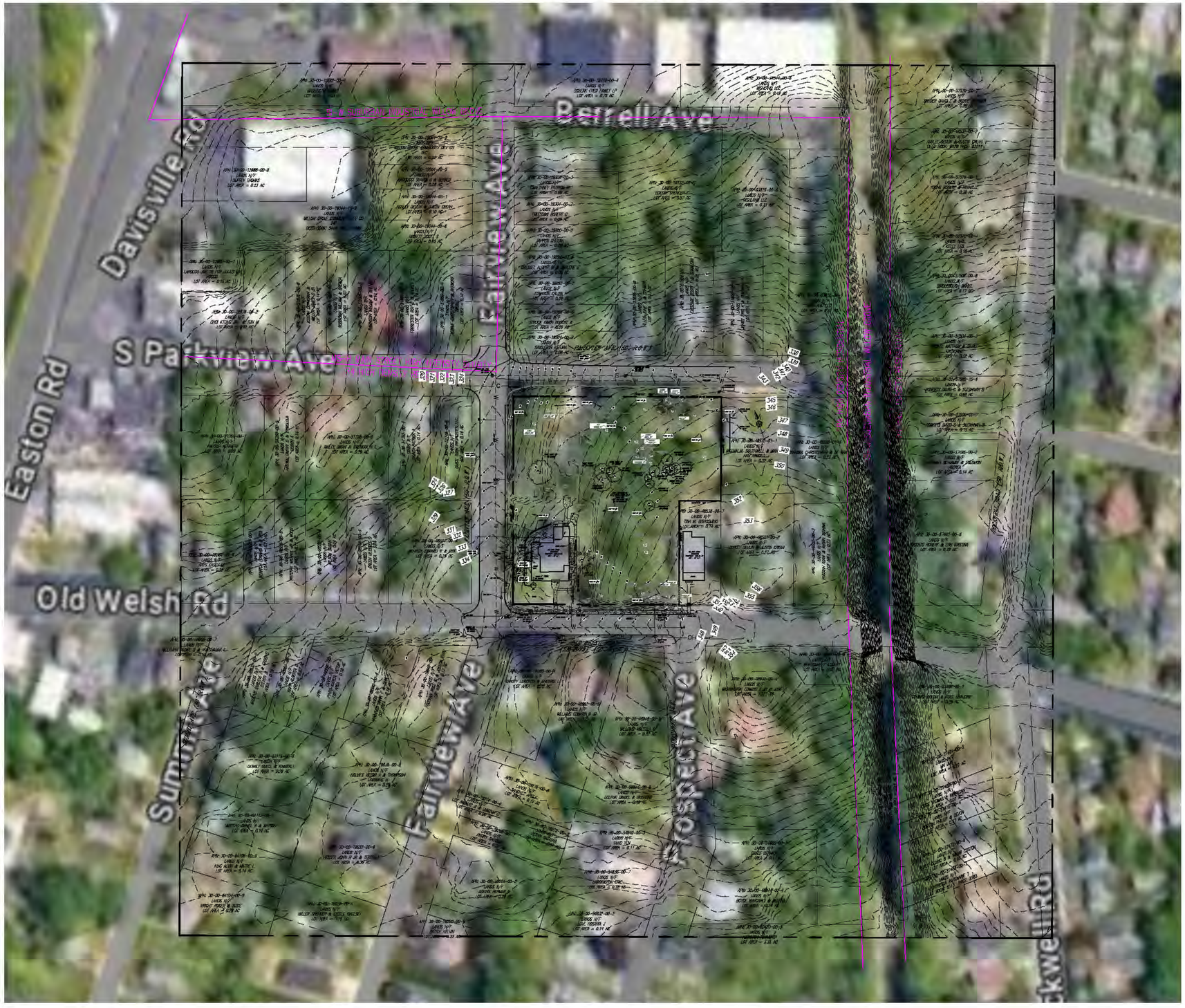
SITE AND SUBDIVISION PLAN

PROJ. #	23-0548	DATE	03/7/2024
CAD ID.	23-0548	DRN BY	RL
SCALE	AS NOTED	CHK BY	JBA

SHEET 1 OF 17

REVISION 3


PARKVIEW AVE. (50' R.O.W.)
FAIRVIEW AVE. (50' R.O.W.)
OLD WELSH ROAD (SR 2029) (50' R.O.W.)
UrkB
UrkD
S 70°49'14" E 256.0'
2241 OLD WELSH RD
PID # 30-00-48540-00-3
LANDS N/F
2241 OLD WELSH, LLC
(TO BE SUBDIVIDED)
APN: 30-00-48535-00-1
LANDS N/F
WILLIAM H. SOUTHALL & WANDA ANN ARNOLD
DEED BOOK: 4743 PAGE: 01978
APN: 30-00-48535-00-7
LANDS N/F
TIFFANY M. DESROSIERS
DEED BOOK: 5889 PAGE: 00719
APN: 30-00-48535-00-2
LANDS N/F
ASHLEY JOSLYN & KASTEN ORSINI
DEED BOOK: 6488 PAGE: 02911
TRI-LEVEL BRICK RESIDENTIAL FOOTPRINT= 2,462.28 SF. HGT = 35' +/-
TRI-LEVEL BRICK RESIDENTIAL FOOTPRINT= 1,423.93 SF. HGT = 25' +/-
TEST PIT #1
TEST PIT #2
TEST PIT #3
TEST PIT #4
TEST PIT #5
TEST PIT #6
TEST PIT #7
TEST PIT #8
TEST PIT #9
TEST PIT #10
TEST PIT #11
TEST PIT #12
TEST PIT #13
PERC #1
PERC #2
PERC #3
PATIO LIMITS OF PORCH
PATIO LIMITS OF HOUSE
PORCH
PORCH
STONE WALL
GAZEBO
GAS VALVE
WATER VALVE
WATER MAIN
SANITARY MH
CONC. CURB
SIDEWALK
STONE WALL
NO PARKING SIGN
UTILITY POLE
ELECTRIC BOX
FIRE HYDRANT
SHED
BLACK WALNUT 9" (TO REMAIN)
BLACK WALNUT 7" (TO REMAIN)
BLACK WALNUT 28" (TO REMAIN)
NORWAY MAPLE 9" (TO REMAIN)
NORWAY MAPLE 8" (TO REMAIN)
SASSAFRAS 14" (TO REMAIN)
SASSAFRAS 12" (TO REMAIN)
SASSAFRAS 16" (TO REMAIN)
SASSAFRAS 18" (TO REMAIN)
SASSAFRAS 10" (TO REMAIN)
SASSAFRAS 7" (TO REMAIN)
SASSAFRAS 8" (TO REMAIN)
SASSAFRAS 12" (TO REMAIN)
18" TREE (TO REMAIN)
CEDAR 18" (TO REMAIN)
CEDAR 9" PORCH (TO REMAIN)
CEDAR 37" (TO REMAIN)
CEDAR 36" (TO REMAIN)
CEDAR 18" (TO REMAIN)
CEDAR 10" (TO REMAIN)
CEDAR 10" (TO REMAIN)
CEDAR 10



NOTES:

1. PROPERTY KNOWN AS TAX MAP PARCEL 30-00-48538-00-3 AS SHOWN ON THE OFFICIAL TAX MAP OF THE TOWNSHIP OF ABINGTON, COMMONWEALTH OF PENNSYLVANIA.

2. AREA OF PARCEL IS 56,250 SQUARE FEET OR 1.29 ACRES.

3. LOCATION OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE AND HAVE NOT BEEN LOCATED. ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD ARE SHOWN. ALL LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, AND THE MAPS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES.

4. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CARROLL ENGINEERING CORP., AND OTHER REFERENCE MATERIAL AS LISTED HEREON. SURVEY (& TOPOGRAPHIC) INFORMATION SHOWN HEREON DERIVED FROM A FIELD SURVEY PERFORMED BY CARROLL ENGINEERING CORP. IN JUNE, 2023.

5. COPYRIGHT © 2023, CORNERSTONE CONSULTING ENGINEERS AND ARCHITECTURAL, INC. ALL RIGHTS RESERVED. NO PART OF THIS DRAWING MAY BE REPRODUCED BY PHOTOCOPYING, RECORDING OR BY ANY OTHER MEANS, OR STORED, PROCESSED, OR TRANSMITTED IN OR BY ANY COMPUTER OR OTHER SYSTEMS WITHOUT THE PRIOR WRITTEN PERMISSION OF THE SURVEYOR. COPIES OF THIS PLAN WITHOUT A RAISED OR COLORED SEAL ARE NOT VALID.

6. THIS PLAN IS VALID ONLY WHEN SIGNED AND SEALED WITH A RAISED OR COLORED SEAL AND WAS PREPARED IN ACCORDANCE WITH THE MINIMUM STANDARD OF ACCURACY OF THE STATE IN WHICH THE PROJECT IS LOCATED. THE WORD "CERTIFY" OR "CERTIFICATE" AS SHOWN AND USED HEREON MEANS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THIS PLAN AND REFERENCED SURVEY AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EXPRESSED OR IMPLIED.

7. VERTICAL DATUM ARE BASED ON NAVD88, HORIZONTAL DATUM BASED ON PA STATE PLANE NAD83E. FOR CONVERSION TO ABINGTON TOWNSHIP'S SANITARY SEWER DATUM -4.07 FT.

8. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND SUBJECT THERETO.

9. SUBJECT TO ANY AND ALL EASEMENTS OF RECORD WHETHER SHOWN HEREON OR NOT.

10. NO EVIDENCE OF STORM WATER IMPOUNDMENT WAS FOUND ON THIS SITE OR ON ADJACENT PROPERTIES.

11. BY GRAPHICAL PLOTTING ONLY THIS PROPERTY IS LOCATED IN FLOOD ZONE X. (SEE MAP REFERENCE #3).

12. BOUNDARY RESOLUTION BASED ON FOUND EVIDENCE AND OTHER REFERENCE MATERIALS AS LISTED HEREON AVAILABLE AT THE TIME OF SURVEY. (DESCRIPTION OF PARCEL, AS RECORDED IN BOOK 5611, PAGE 2521, DOES NOT PRESENT A MATHEMATICAL CLOSURE. THE COURSES DESCRIBED HEREON WERE DETERMINED BY FOUND MONUMENTS, ADJOINERS AND RESULTING CALCULATIONS.

13. THERE ARE 28 TREES BEEN REMOVED & 58 TREES ARE PROPOSED. (SEE LANDSCAPE PLAN)

REFERENCES:

1. THE OFFICIAL TAX MAP OF THE TOWNSHIP ABINGTON, COMMONWEALTH OF PENNSYLVANIA.

2. MAP ENTITLED "FINAL FLOOD INSURANCE RATE MAP, MONTGOMERY COUNTY, PENNSYLVANIA (ALL JURISDICTIONS), MAP NUMBER 42091C0313G, EFFECTIVE MARCH 2, 2016.

3. DEEDS OF RECORD RECORDED OF SUBJECT PARCEL (BOOK 5611 PAGE 2521).

4. PLAN PREPARED BY CHARLES K. AIKMAN, TITLED "PLAN OF COTTAGE LOTS OF THE WILLOW GROVE HOMETEAD CO. AT WILLOW GROVE, PENNA. "DATED OCTOBER OF 1896. (PLAN BOOK 419, PAGE 500.

5. PLAN PREPARED BY YERKES ASSOCIATES, INC. TITLED "FINAL MINOR SUBDIVISION PREPARED FOR 2219 OLD WELSH LLC., DATED MAY 23, 2018 AND LAST REVISED JANUARY 15, 2019. (PLAN BOOK 50, PAGE 49).

6. PLAN PREPARED BY PAVLITSKI LAND SURVEYING, TITLED "RECORD PLAN PREPARED FOR STEVE KOZLOWSKI", DATED MARCH 21, 2002, AND LAST REVISED MAY 28, 2002. (PLAN BOOK A60, PAGE 451).

7. PLAN PREPARED BY EASTERN/CHADROW ASSOCIATES, INC., TITLED "FINAL PLAN OF MINOR SUBDIVISION-SAM BRACCIA, DATED APRIL 26, 2002, AND LAST REVISED MAY, 2002. (PLAN BOOK A61, PAGE 46).

LEGEND & ABBREVIATIONS

- PROPERTY BOUNDARY
- ADJOINER BOUNDARY
- RIGHT OF WAY LINE
- BUILDING SETBACK LINE
- 195 EXISTING CONTOUR
- x 95 EXISTING SPOT ELEVATION
- EXISTING TREE
- EXISTING TREELINE
- EXISTING FENCE
- EXISTING SIGN
- EXISTING UTILITY POLE (UP)
- C - T CONDUIT - TRANSFORMER
- L - M LIGHT - METER
- OH EXISTING OVERHEAD WIRE
- G APPROXIMATE GAS LINE
- W APPROXIMATE WATER LINE
- C APPROXIMATE TELCO LINE
- E APPROXIMATE ELECTRIC LINE
- EXISTING CURB
- EXISTING DEPRESSED CURB (DC)
- ROCK TEST PIT LOCATIONS
- INFILTRATION TEST PIT LOCATIONS

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

CLIENT DATA

Cornerstone
Consulting Engineers & Design Services, Inc.
213 West Main Street . Lansdale . PA 19446
Phone: 215-362-2600 . Fax: 215-362-8400
WWW.CORNERSTONENET.COM
Philadelphia Region 215-362-2600
Pocono Region 570-839-1770
Lehigh Valley Region 610-820-7200

NO.	BY	DESCRIPTION	DATE
1	RL	REVISED PER TWP REVIEWS	7/26/2024
2	EMR	REVISED PER CLIENT COMMENTS	11/14/2024
3	DR	REVISED PER MCCD AND FINAL REVIEW	4/04/2025

REVISIONS

PENNSYLVANIA ONE CALL SYSTEM, INC.
925 Irwin Run Road
West Mifflin, Pennsylvania 15122 - 1078
811
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776

J.B. ANDERSON
PROFESSIONAL ENGINEER
DELAWARE LICENSE No. PE 19438
PENNSYLVANIA LICENSE No. PE 055536
MARYLAND LICENSE No. 28113
NEW JERSEY LICENSE No. 24GE04520400
VIRGINIA LICENSE No. 0402 045725
FLORIDA LICENSE No. 75184
NEW YORK LICENSE No. 093667-1

PROJECT LOCATION

FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19050
PREPARED FOR:
2241 OLD WELSH, LLC

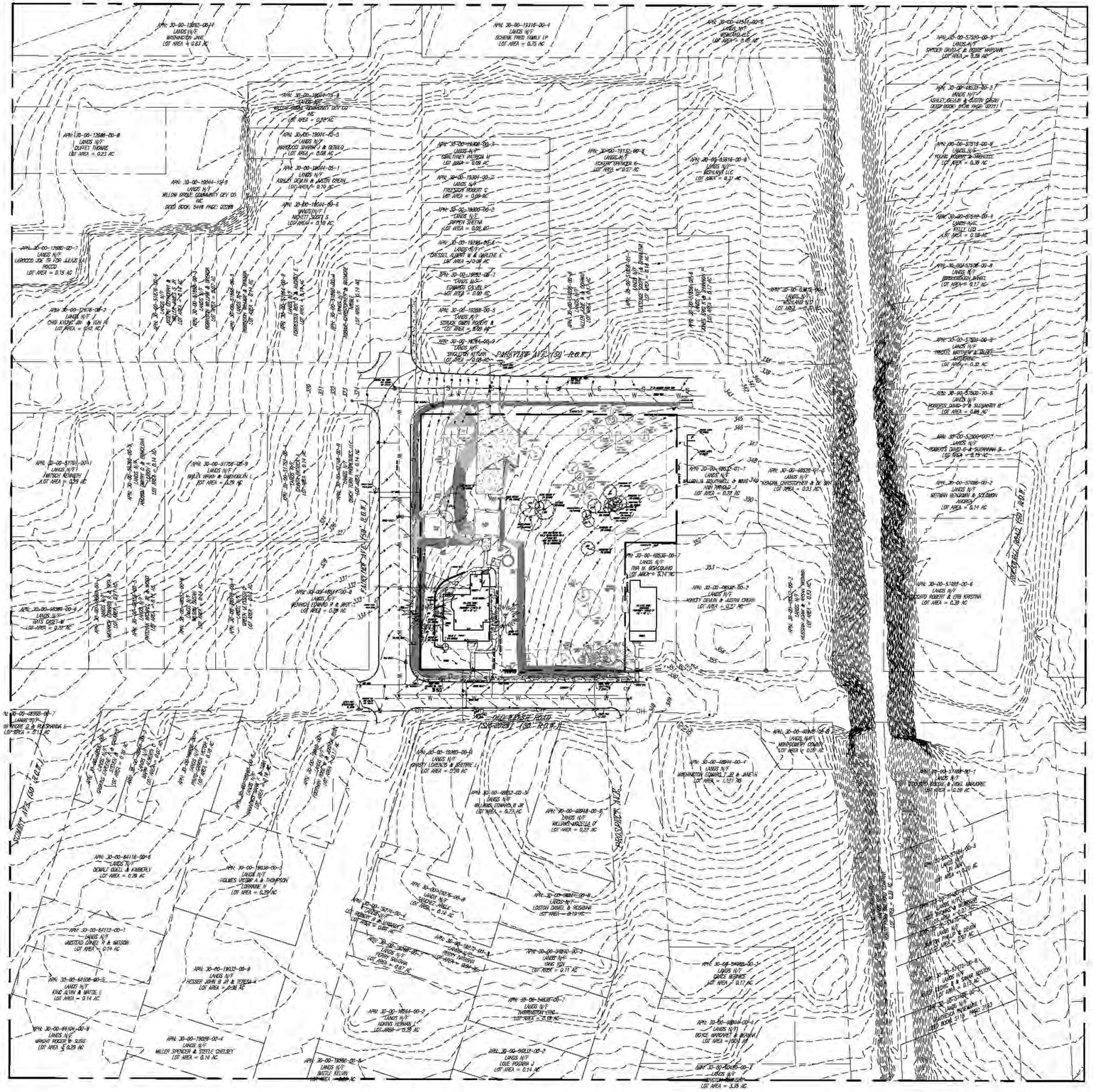
TITLE

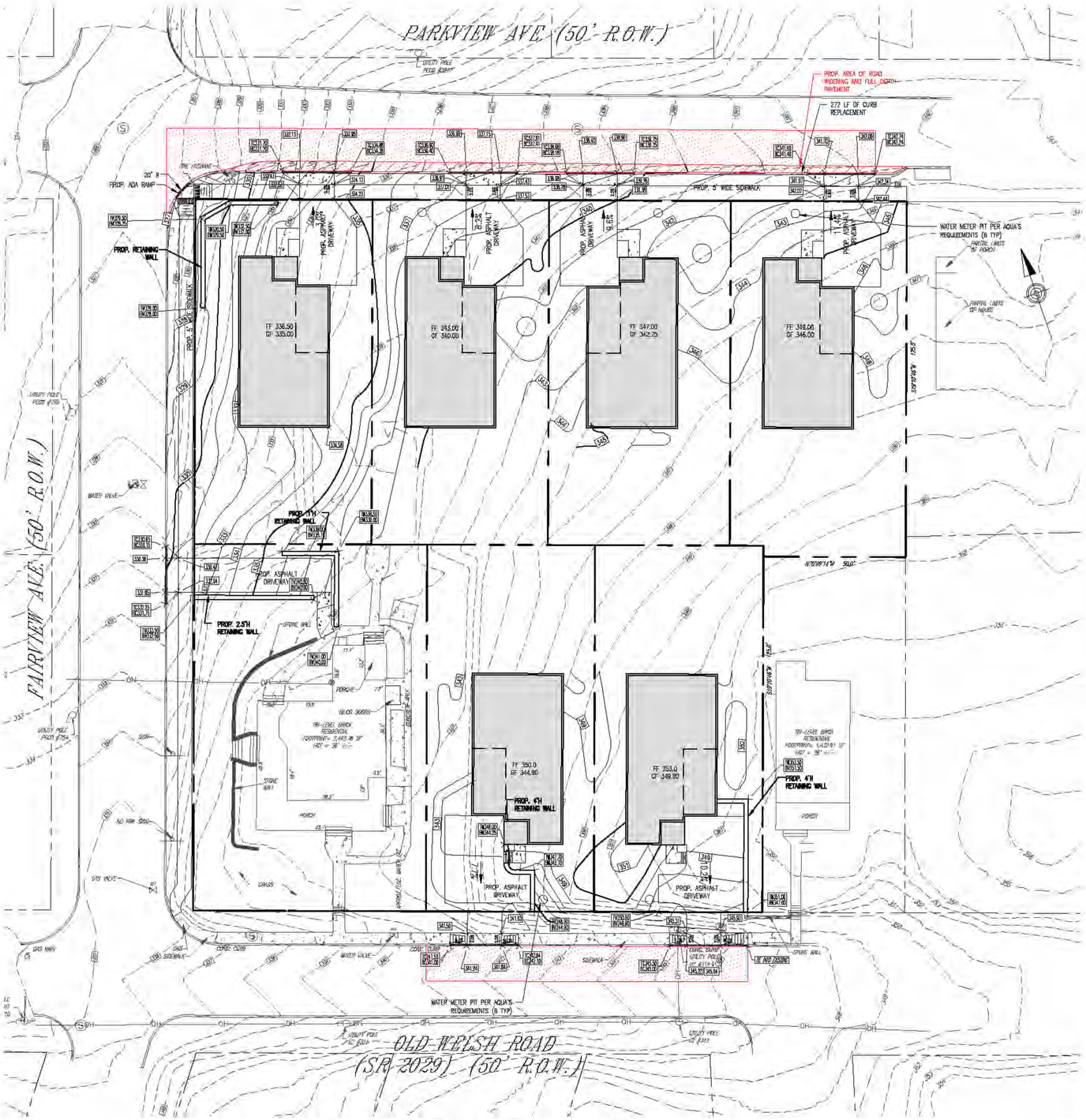
AERIAL PLAN

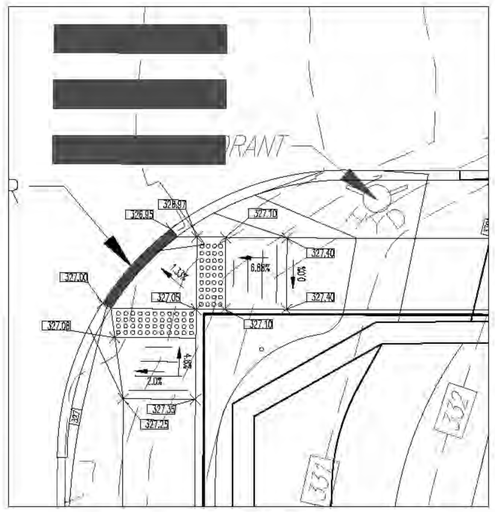
ROJ. #	23-0548	DATE	05/7/2024
AD ID.	23-0548	DRN BY	RL
CALE	AS NOTED	CHK BY	JBA

SHEET 3 OF 17

REVISION 3


PARKVIEW AVE. (50' - R.O.W.)
OLD WELSH ROAD (SR 0232) (50' - R.O.W.)
SYDENHAM DR. (50' - R.O.W.)
HANCOCK DR.
APN: 30-00-12892-00-4
LANDS N/F
WASHINGTON JANE
LOT AREA = 0.63 AC
APN: 30-00-19315-00-1
LANDS N/F
SECHENA FIXED FAMILY LP
LOT AREA = 0.75 AC
APN: 30-00-43541-00-5
LANDS N/F
WENGARD ALEC
LOT AREA = 0.18 AC
APN: 30-00-57529-00-5
LANDS N/F
SNYDER DAVID C & DEBBIE MARYANN
LOT AREA = 0.38 AC
APN: 30-00-48639-00-3
LANDS N/F
ASHLEY DEVLIN & AUSTIN CREHN
DEED BOOK: 6078 PAGE: 02011
APN: 30-00-57515-00-9
LANDS N/F
YOUNG ROBERT & CHRISTIE
LOT AREA = 0.38 AC
APN: 30-00-57516-00-1
LANDS N/F
KELLY LOD
LOT AREA = 0.18 AC
APN: 30-00-43506-00-8
LANDS N/F
BRENNEISEN JARED
LOT AREA = 0.17 AC
APN: 30-00-57504-00-2
LANDS N/F
HUGES MATTHEW & BLAKE MCPHERSON
LOT AREA = 0.32 AC
APN: 30-00-57500-70-5
LANDS N/F
MORRIS DAVID P & SUSANNAH B
LOT AREA = 0.46 AC
APN: 30-00-57499-00-7
LANDS N/F
MORRIS DAVID P & SUSANNAH B
LOT AREA = 0.75 AC
APN: 30-00-57498-00-2
LANDS N/F
NETHAN BENJAMIN & SOLOMON ANDREA
LOT AREA = 0.14 AC
APN: 30-00-57489-00-6
LANDS N/F
RICCIO ROBERT & CRIS KRISTINA
LOT AREA = 0.29 AC
APN: 30-00-57488-00-7
LANDS N/F
TOOMEY MELISSA & LOGAN MOORE
LOT AREA = 0.29 AC
APN: 30-00-48044-00-4
LANDS N/F
WASHINGTON EDWARD J JR & JANE M
LOT AREA = 1.127 AC
APN: 30-00-48046-00-6
LANDS N/F
MONTGOMERY CRAIG
LOT AREA = 0.05 AC
APN: 30-00-48042-00-8
LANDS N/F
WILLIAMS EDWARD E JR
LOT AREA = 0.23 AC
APN: 30-00-48043-00-9
LANDS N/F
WILLIAMS MELISSA D
LOT AREA = 0.23 AC
APN: 30-00-48041-00-7
LANDS N/F
LOSTON DANIEL & ROSANN
LOT AREA = 0.19 AC
APN: 30-00-57491-00-3
LANDS N/F
VINE IRA
LOT AREA = 0.11 AC
APN: 30-00-57492-00-4
LANDS N/F
QUICK REBECCA
LOT AREA = 0.17 AC
APN: 30-00-57493-00-5
LANDS N/F
BOYCE MARGARET & JOANNA
LOT AREA = 1.00 AC
APN: 30-00-57494-00-6
LANDS N/F
MONTGOMERY CRAIG
LOT AREA = 0.35 AC
APN: 30-00-48035-00-7
LANDS N/F
IVAN M. BISKOUPIO
LOT AREA = 0.14 AC
APN: 30-00-48037-01-1
LANDS N/F
WILLIAM M. SOUTHALL & WAN YING
LOT AREA = 0.39 AC
APN: 30-00-48038-01-2
LANDS N/F
KENDALL CHRISTOPHER & JIE SHU
LOT AREA = 0.23 AC
APN: 30-00-48039-00-3
LANDS N/F
WENGARD ALEC
LOT AREA = 0.17 AC
APN: 30-00-48040-00-5
LANDS N/F
WENGARD ALEC
LOT AREA = 0.18 AC
APN: 30-00-48042-00-8
LANDS N/F
WILLIAMS EDWARD E JR
LOT AREA = 0.23 AC
APN: 30-00-48043-00-9
LANDS N/F
WILLIAMS MELISSA D
LOT AREA = 0.23 AC
APN: 30-00-48044-00-4
LANDS N/F
WASHINGTON EDWARD J JR & JANE M
LOT AREA = 1.127 AC
APN: 30-00-48046-00-6
LANDS N/F
MONTGOMERY CRAIG
LOT AREA = 0.05 AC
APN: 30-00-48041-00-7
LANDS N/F
LOSTON DANIEL & ROSANN
LOT AREA = 0.19





GRADING AND DRAINAGE NOTES

1. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE SOILS REPORT REFERENCED IN THIS PLAN SET. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS AS SPECIFIED IN THE SOILS REPORT. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 95% OF MODIFIED , MOISTURE CONTENT AT TIME OF U.A.S.T.M. TEST D-1557 PROCTOR MAXIMUM DENSITY PER PLACEMENT SHALL NOT EXCEED 2% ABOVE NOR 3% BELOW OPTIMUM. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED SOILS ENGINEER, REGISTERED WITHIN THE STATE WHERE THE WORK IS PERFORMED, VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD AREA AND AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS AND THE RECOMMENDATIONS SET FORTH IN THE SOILS REPORT.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 1% MIN. SLOPE AGAINST ALL ISLANDS GUTTERS, CURBS AND 2.0% ON ALL CONCRETE SURFACES, AND 2.0% MIN. ON ASPHALT, EXCEPT AS NOTED ON PLANS. ANY DISCREPANCIES THAT MAY EFFECT THE PUBLIC SAFETY OR PROJECT COST, MUST BE IDENTIFIED TO THE ENGINEER IN WRITING IMMEDIATELY. PROCEEDING WITH CONSTRUCTION WITH DESIGN DISCREPANCIES IS DONE SO AT THE CONTRACTOR'S OWN RISK.
3. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILL MATERIAL COMPACTED TO 95% OPTIMUM DENSITY (AS DETERMINED BY MODIFIED PROCTOR METHOD).
4. IN CASE OF DISCREPANCIES BETWEEN PLANS, THE SITE PLAN WILL SUPERCEDE IN ALL CASES. NOTIFY ENGINEER OF RECORD OF ANY CONFLICT.
5. LOCATION OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION. SANITARY SEWER AND ALL OTHER UTILITY SERVICE CONNECTION POINTS SHALL BE CONFIRMED INDEPENDENTLY BY THE CONTRACTOR IN FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES SHALL BE REPORTED IMMEDIATELY IN WRITING TO THE ENGINEER. CONSTRUCTION SHALL COMMENCE BEGINNING AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UP GRADIENT, INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY TEST PIT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY UTILITY "ONE-CALL" NUMBER 72 HOURS PRIOR TO ANY EXCAVATION ON THIS SITE. CONTRACTOR SHALL ALSO NOTIFY LOCAL WATER AND SEWER DEPARTMENTS TO MARK OUT THEIR UTILITIES.
7. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT BUILDING UTILITY CONNECTION LOCATION. WHERE CONFLICTS EXIST WITH THESE SITE PLANS, ENGINEER IS TO BE NOTIFIED PRIOR TO CONSTRUCTION TO RESOLVE SAME. SERVICE SIZES TO BE DETERMINED BY ARCHITECT.
8. ALL PAVEMENT SLOPES WITHIN HANDICAP PARKING AREAS SHALL NOT EXCEED 2% IN ANY DIRECTION AS WELL AS ON ALL SIDEWALK CROSS SLOPES.
9. ALL EXISTING CAPS, LIDS, RIMS, ETC. TO REMAIN SHALL BE RESET FLUSH WITH PROPOSED GRADE.
10. SITE IS LOCATED OUTSIDE OF THE 100 YR. AND 500 YR. FLOOD ZONE.
11. THE CONTRACTOR SHALL ADHERE TO ALL TERMS AND CONDITIONS AS OUTLINED IN THE GENERAL NPDES PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
12. THE PROPOSED FINISHED GRADING SHOWN ON THIS PLAN HAS BEEN USED TO DESIGN THE STORMWATER MANAGEMENT FACILITIES. THE CONTRACTOR SHALL COMPLY WITH THE GENERAL GRADING SCHEME INDICATED UNLESS OTHERWISE APPROVED BY THE TOWNSHIP ENGINEER.
13. INLETS SHALL BE PENNDOT TYPE M, OR TYPE C. INLETS EXCEEDING 5 FT. IN DEPTH SHALL BE EQUIPPED WITH STEPS IN ACCORDANCE WITH PENNDOT PUB. 408.
14. CONTRACTOR SHALL NOT ENCROACH ONTO ADJOINING PROPERTIES UNLESS A TEMPORARY CONSTRUCTION EASEMENT HAS BEEN GRANTED BY THE ADJOINING PROPERTY OWNER. CONTRACTOR SHALL HAVE PROPERTY LINES CLEARLY MARKED AND SHALL CONSTRUCT SUCH BARRIERS WHICH ARE NECESSARY TO PREVENT ENCROACHMENT ONTO ADJOINING PROPERTIES.
15. NO EXCAVATION OR FILL ON LOTS SHALL BE MADE WITH A FACE STEEPER THAN THREE (3) HORIZONTAL TO ONE (1) VERTICAL (3:1). SPECIAL SLOPE REQUIREMENTS APPLY TO THE DETENTION POND. SEE APPLICABLE DETAILS.
16. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL BE RESPONSIBLE FOR INSURING THAT ALL CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT ARE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) STANDARDS.
17. THE PROPOSED CONCRETE CURB REVEAL IS 8" (INCH).
18. RAINWATER CONDUCTORS (RWC) SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) FOR PIPING BEYOND PLUMBING CONTRACTOR'S LIMIT OF WORK.
19. ALL STORMPIPE SHALL BE SMOOTH BORE HIGH DENSITY POLYETHEYLENE PIPE UNLESS OTHERWISE SHOWN.
20. CLEANOUTS AND CURB BOXES WITHIN PAVED AREAS MUST HAVE TRAFFIC LOADING FRAMES AND COVERS MEETING HS-25 LIVE LOAD.
21. CONTRACTOR SHALL NOT CONNECT PIPES INTO THE CORNER OF INLET BOXES.

LEGEND

- PROPERTY BOUNDARY
- EXISTING UTILITY POLE
- EXISTING OVERHEAD WIRE
- EXISTING CURB
- PROPOSED CONTOURS
- EXISTING CONTOURS
- EXISTING TREES
- EXISTING WATER MAIN
- EXISTING ELECTRICAL LINE
- EXISTING SANITARY LINE
- EXISTING GAS LINE
- PROPOSED STORM SEWER
- PROPOSED FORCEMAIN
- PROPOSED SANITARY SEWER
- PROPOSED WATER LINE
- PROPOSED ELECTRICAL LINE
- PROPOSED TELEPHONE LINE
- PROPOSED SANITARY SEWER CLEANOUT
- PROPOSED STORM DRAINAGE INLET
- PROPOSED MANHOLE
- PROPOSED HYDRANT
- 15% TO 25% STEEP SLOPES (1,833.25 SF) 1,591.06 SF DISTURBED
- 25%+ STEEP SLOPES (5,774.14 SF) 4,898.35 SF DISTURBED
- LIMIT OF DISTURBANCE

CLIENT DATA

Cornerstone
Consulting Engineers & Design Services, Inc.
213 West Main Street . Lansdale . PA 19446
Phone: 215-362-2600 . Fax: 215-362-8400
WWW.CORNERSTONENET.COM
Philadelphia Region 215-362-2600
Lehigh Valley Region 610-820-8200
Pocono Region 570-839-1770

NO.	BY	DESCRIPTION	DATE
1	RL	REVISED PER ZONE REVIEWS	7/26/2024
2	EMR	REVISED PER CLIENT COMMENTS	11/14/2024
3	DJR	REVISED PER MCCD AND FINAL REVIEW	4/04/2025

REVISIONS

PENNSYLVANIA ONE CALL SYSTEM, INC.
925 Irwin Run Road
West Mifflin, Pennsylvania 15122 - 1078
811
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776

J.B. ANDERSON
REGISTERED LANDSCAPE ARCHITECT
DELAWARE LICENSE No. PE15438
PENNSYLVANIA LICENSE No. PE055536
MARYLAND LICENSE No. 29333
NEW JERSEY LICENSE No. 24GI04529400
VIRGINIA LICENSE No. 0402-045725
FLORIDA LICENSE No. 75184
NEW YORK LICENSE No. 093667-1

PROJECT LOCATION

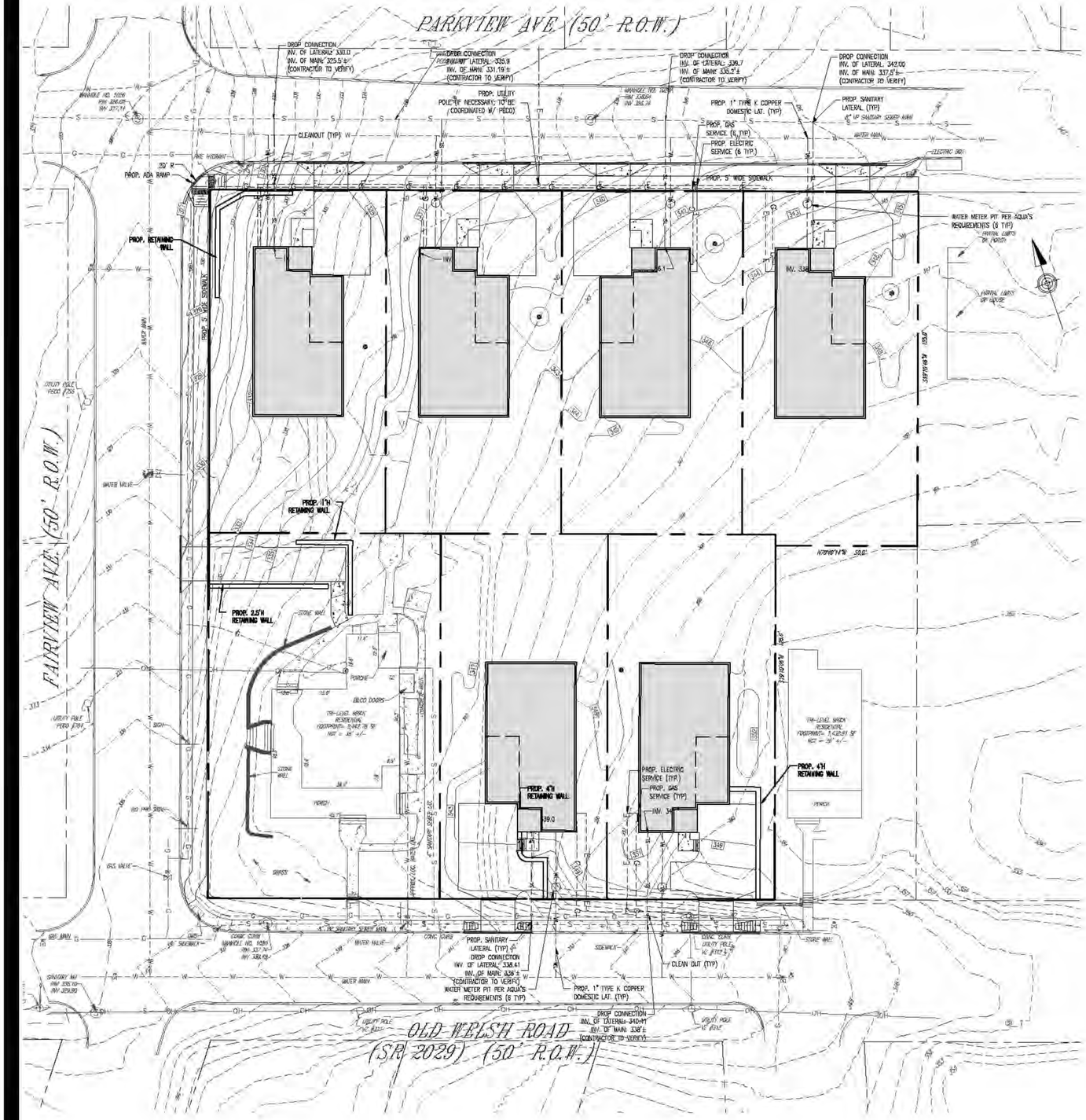
FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC
TITLE

GRADING PLAN

ROJ. # 23-0548 DATE 10/7/2024
AD ID. 23-0548 DRN BY RC
CALE AS NOTED CHK BY JBA

SHEET 5 OF 17

REVISION 3



GRADING AND DRAINAGE NOTES

1. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE SOILS REPORT REFERENCED IN THIS PLAN SET. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS AS SPECIFIED IN THE SOILS REPORT. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 95% OF MODIFIED - MOISTURE CONTENT AT TIME OF U.A.S.T.M. TEST D-1557 PROCTOR MAXIMUM DENSITY PER PLACEMENT SHALL NOT EXCEED 3% ABOVE NOR 3% BELOW OPTIMUM. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED SOILS ENGINEER, REGISTERED WITHIN THE STATE WHERE THE WORK IS PERFORMED, VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD AREA AND AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS AND THE RECOMMENDATIONS SET FORTH IN THE SOILS REPORT.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 1% MIN. SLOPE AGAINST ALL BLANDS GUTTERS, CURBS AND 2.0% ON ALL CONCRETE SURFACES, AND 2.0% MIN. ON ASPHALT, EXCEPT AS NOTED ON PLANS. ANY DISCREPANCIES THAT MAY EFFECT THE PUBLIC SAFETY OR PROJECT COST, MUST BE IDENTIFIED TO THE ENGINEER IN WRITING IMMEDIATELY. PROCEEDING WITH CONSTRUCTION WITH DESIGN DISCREPANCIES IS DONE SO AT THE CONTRACTOR'S OWN RISK.
3. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILL MATERIAL COMPACTED TO 95% OPTIMUM DENSITY (AS DETERMINED BY MODIFIED PROCTOR METHOD).
4. IN CASE OF DISCREPANCIES BETWEEN PLANS, THE SITE PLAN WILL SUPERCEDE IN ALL CASES. NOTIFY ENGINEER OF RECORD OF ANY CONFLICT.
5. LOCATION OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION. SANITARY SEWER AND ALL OTHER UTILITY SERVICE CONNECTION POINTS SHALL BE CONFIRMED INDEPENDENTLY BY THE CONTRACTOR IN FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES SHALL BE REPORTED IMMEDIATELY IN WRITING TO THE ENGINEER. CONSTRUCTION SHALL COMMENCE BEGINNING AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UP GRADIENT. INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY TEST PIT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY UTILITY "ONE-CALL" NUMBER 72 HOURS PRIOR TO ANY EXCAVATION ON THIS SITE. CONTRACTOR SHALL ALSO NOTIFY LOCAL WATER AND SEWER DEPARTMENTS TO MARK OUT THEIR UTILITIES.
7. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT BUILDING UTILITY CONNECTION LOCATION. WHERE CONFLICTS EXIST WITH THESE SITE PLANS, ENGINEER IS TO BE NOTIFIED PRIOR TO CONSTRUCTION TO RESOLVE SAME. SERVICE SIZES TO BE DETERMINED BY ARCHITECT.
8. ALL PAVEMENT SLOPES WITHIN HANDICAP PARKING AREAS SHALL NOT EXCEED 2% IN ANY DIRECTION AS WELL AS ON ALL SIDEWALK CROSS SLOPES.
9. ALL EXISTING CAPS, LIDS, RIMS, ETC. TO REMAIN SHALL BE RESET FLUSH WITH PROPOSED GRADE.
10. SITE IS LOCATED OUTSIDE OF THE 100 YR. AND 500 YR. FLOOD ZONE.
11. THE CONTRACTOR SHALL ADHERE TO ALL TERMS AND CONDITIONS AS OUTLINED IN THE GENERAL NPDES PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
12. THE PROPOSED FINISHED GRADING SHOWN ON THIS PLAN HAS BEEN USED TO DESIGN THE STORMWATER MANAGEMENT FACILITIES. THE CONTRACTOR SHALL COMPLY WITH THE GENERAL GRADING SCHEME INDICATED UNLESS OTHERWISE APPROVED BY THE TOWNSHIP ENGINEER.
13. INLETS SHALL BE PENNDOT TYPE M, OR TYPE C. INLETS EXCEEDING 5 FT. IN DEPTH SHALL BE EQUIPPED WITH STEPS IN ACCORDANCE WITH PENNDOT PUB. 408.
14. CONTRACTOR SHALL NOT ENCROACH ONTO ADJOINING PROPERTIES UNLESS A TEMPORARY CONSTRUCTION EASEMENT HAS BEEN GRANTED BY THE ADJOINING PROPERTY OWNER. CONTRACTOR SHALL HAVE PROPERTY LINES CLEARLY MARKED AND SHALL CONSTRUCT SUCH BARRIERS WHICH ARE NECESSARY TO PREVENT ENCROACHMENT ONTO ADJOINING PROPERTIES.
15. NO EXCAVATION OR FILL ON LOTS SHALL BE MADE WITH A FACE STEEPER THAN THREE (3) HORIZONTAL TO ONE (1) VERTICAL (3:1). SPECIAL SLOPE REQUIREMENTS APPLY TO THE DETENTION POND. SEE APPLICABLE DETAILS.
16. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL BE RESPONSIBLE FOR INSURING THAT ALL CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT ARE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) STANDARDS.
17. THE PROPOSED CONCRETE CURB REVEAL IS 6" (INCH).
18. RAINWATER CONDUCTORS (PWC) SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) FOR PIPING BEYOND PLUMBING CONTRACTOR'S LIMIT OF WORK.
19. ALL STORMPIPE SHALL BE SMOOTH BORE HIGH DENSITY POLYETHEYLENE PIPE UNLESS OTHERWISE SHOWN.
20. CLEANOUTS AND CURB BOXES WITHIN PAVED AREAS MUST HAVE TRAFFIC LOADING FRAMES AND COVERS MEETING HS-25 LIVE LOAD.
21. CONTRACTOR SHALL NOT CONNECT PIPES INTO THE CORNER OF INLET BOXES.

UTILITY NOTES

GENERAL NOTES

1. COORDINATE LOCATIONS AND TIE-IN POINTS OF PROPOSED MECHANICAL AND ELECTRICAL SYSTEMS WITH THE APPROPRIATE CONSULTANTS PLANS, AND / OR THE APPROPRIATE GOVERNMENTAL AGENCY HAVING JURISDICTION AT THE TIME OF CONSTRUCTION.
2. ALL TRENCHES SHALL BE SHORED IN ACCORDANCE WITH OSHA STANDARDS.
3. PA ONE CALL SERIAL NO. 20161682749.
4. ALL ELECTRICAL LINES TO LIGHT POLES SHALL BE INSTALLED IN 1 1/2" PVC CONDUIT WITH NECESSARY PULL/JUNCTION BOXES.
5. CLEANOUTS AND CURB BOXES WITHIN PAVED AREAS MUST HAVE TRAFFICE LOADING FRAMES AND COVERS MEETING HS-25 LIVE LOAD.
6. CONTRACTOR SHALL NOT CONNECT PIPES INTO THE CORNER OF INLET BOXES.

WATER NOTES

1. ALL WATER PIPES SHALL HAVE A MINIMUM COVER OF FOUR (4) FEET. A MINIMUM VERTICAL CLEARANCE OF EIGHTEEN (18) INCHES OR A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET SHALL BE MAINTAINED AT ALL CROSSINGS OF WATER LINES WITH SANITARY OR STORM SEWERS. IF 18" VERTICAL CLEARANCE CANNOT BE MAINTAINED, THE SANITARY SEWER, SEWER LATERAL OR WATER LINE IF NECESSARY SHALL BE CONCRETE ENCASED, IN ACCORDANCE WITH PA. D.E.P. REQUIREMENTS.
2. ALL WATER SYSTEM MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH AQUA PENNSYLVANIA STANDARDS AND SPECIFICATIONS.

SANITARY SEWER NOTES

1. ALL SANITARY PIPE WITHIN THE TOWNSHIP R.O.W. SHALL BE CLASS 52 DUCTILE IRON PIPE.
2. ALL SANITARY SYSTEM MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LOCAL SEWER AUTHORITY STANDARDS AND SPECIFICATIONS.
3. ALL PROPOSED SANITARY SEWER SERVICES SHALL BE COORDINATED WITH THE MECHANICAL/ PLUMBING CONSTRUCTION DOCUMENTS.
4. SANITARY SEWER LINES AND STORM SEWER CROSSINGS SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF EIGHTEEN (18) INCHES OR A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET. IF 18" VERTICAL CLEARANCE CANNOT BE MAINTAINED, THE SANITARY SEWER OR SEWER LATERAL SHALL BE CONCRETE ENCASED, IN ACCORDANCE WITH PA D.E.P. REQUIREMENTS.
5. WITHIN EXISTING OR PROPOSED SEWER EASEMENTS, THERE SHALL NOT BE BUILT, INSTALLED, CONSTRUCTED, PLANTED , OR LOCATED ANY TEMPORARY OR PERMANENT BUILDINGS OR STRUCTURES, OR ANY TREES, SHRUBS, OR OTHER LANDSCAPING, EXCEPT TREES, SHRUBS, AND OTHER LANDSCAPING WHICH WILL NOT GROW MORE THAN SIX FEET (6') IN HEIGHT.
6. A MINIMUM SLOPE OF 2% SHOULD BE PROVIDED FOR SEWER LATERALS, UNLESS OTHERWISE NOTED.
7. ALL SEWER LATERAL CONNECTIONS TO THE GRAVITY MAIN SHALL UTILIZE A WYE AND A 45 DEGREE ELBOW.
8. CONTRACTOR SHALL RESTORE TO EXISTING CONDITIONS ALL SURFACE AREA WITHIN THE RIGHT-OF-WAY OVER THE PROPOSED SANITARY LATERAL. ALL PAVEMENT ENCOUNTERED SHALL BE REPLACED IN KIND.

LEGEND

- PROPERTY BOUNDARY
- EXISTING UTILITY POLE
- OHW — EXISTING OVERHEAD WIRE
- EXISTING CURB
- EXISTING CONTOURS
- EXISTING TREES
- EXISTING WATER MAIN
- EXISTING ELECTRICAL LINE
- EXISTING SANITARY LINE
- EXISTING GAS LINE
- PROPOSED STORM SEWER
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER LINE
- E — PROPOSED ELECTRICAL LINE
- T — PROPOSED TELEPHONE LINE
- INFILTRATION TEST PIT LOCATION

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

CLIENT DATA

Cornerstone
Consulting Engineers & Design Services, Inc.
213 West Main Street . Lansdale . PA 19446
Phone: 215-362-2600 . Fax: 215-362-8400
WWW.CORNERSTONENET.COM
Philadelphia Region 215-362-2600
Lehigh Valley Region 610-820-8200
Pocono Region 570-839-1770

NO.	BY	DESCRIPTION	DATE
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3	DR	REVISED PER MCCD AND FINAL REVIEW	4/04/2025

PENNSYLVANIA ONE CALL SYSTEM, INC.
925 Irwin Run Road
West Mifflin, Pennsylvania
15122 - 1078

811

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MARYLAND LICENSE No. 29333
NEW JERSEY LICENSE No. 24GI04529400
VIRGINIA LICENSE No. 0402 045725
FLORIDA LICENSE No. 75184
NEW YORK LICENSE No. 093667-1

PROJECT LOCATION

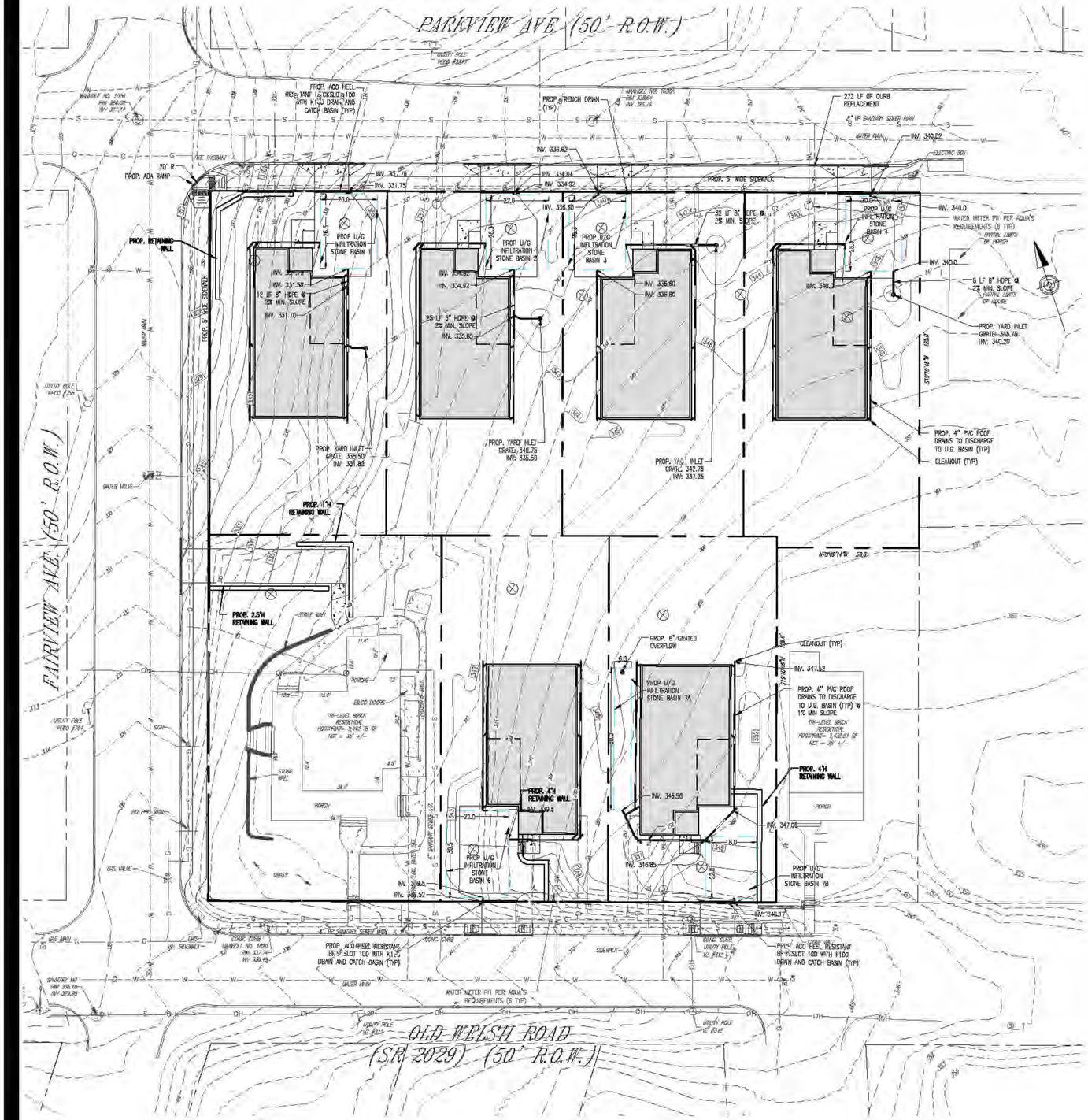
FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC
TITLE

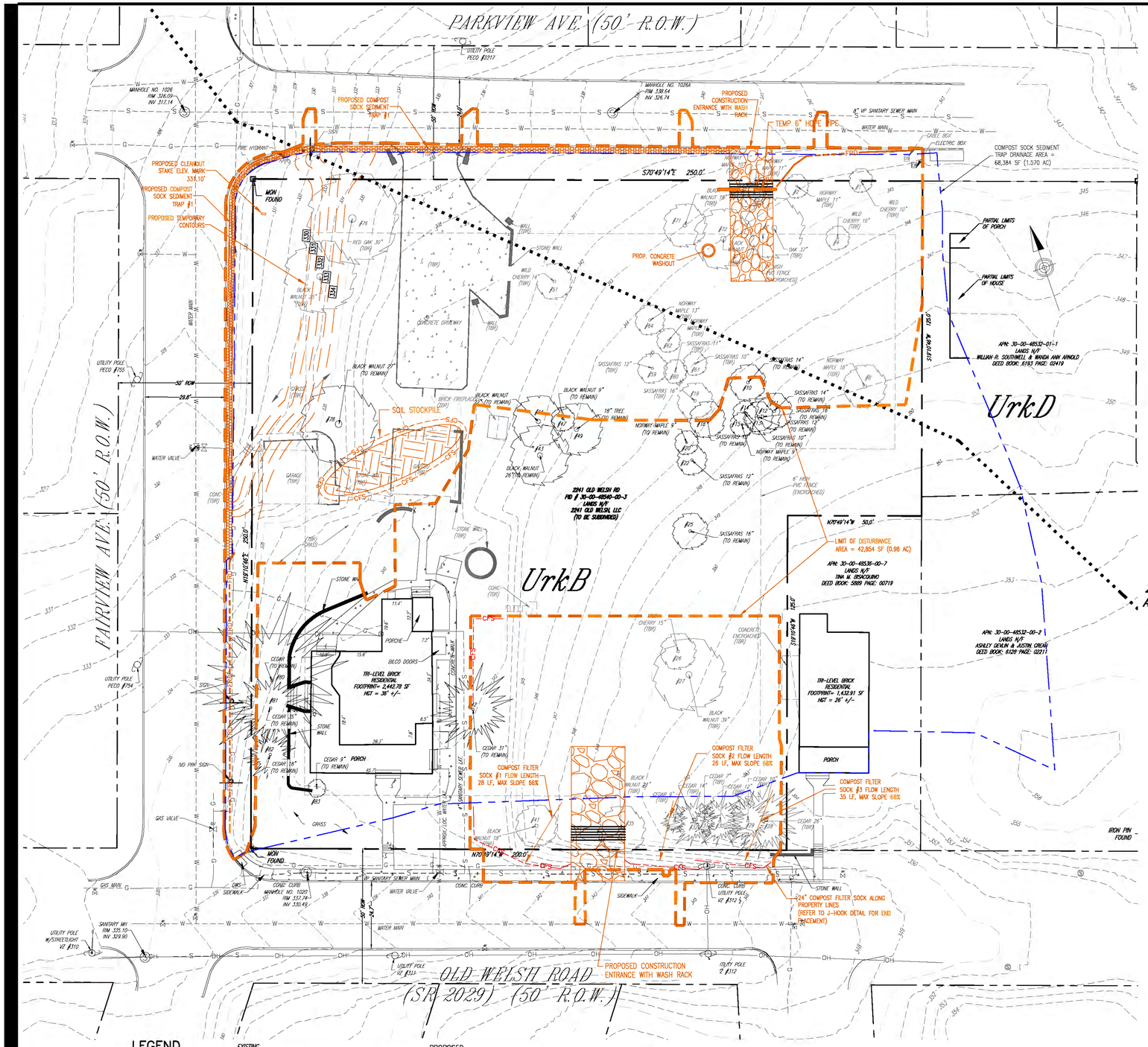
UTILITY PLAN

PROJ. # 24-0548 DATE 10/7/2024
CAD ID: 24-0548 DRN BY RL
SCALE AS NOTED CHK BY JBA

SHEET 6 OF 17

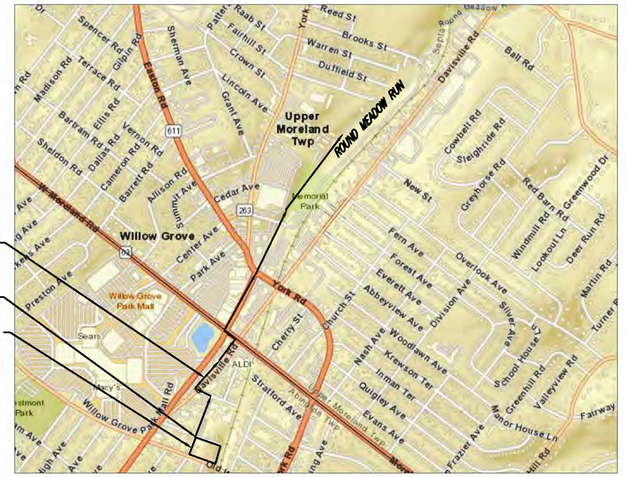
REVISION 3


PARKVIEW AVE (50' R.O.W.)
FAIRVIEW AVE (50' R.O.W.)
OLD WELSH ROAD (SR 2029) (50' R.O.W.)
PROP. ACO HEEL RESISTANT BP-9SLOT 100 WITH K100 DRAIN AND CATCH BASIN (TYP)
PROP. 6" FRENCH DRAIN (TYP)
272 LF OF CURB REPLACEMENT
8" VP SANITARY SEWER MAIN
WATER MAIN
INV. 349.22
INV. 338.63
INV. 334.24
INV. 334.92
INV. 331.75
INV. 331.58
12 LF 8" HDPE @ 2% MIN. SLOPE
INV. 331.70
PROP. U/G INFILTRATION STONE BASIN 1
PROP. U/G INFILTRATION STONE BASIN 2
PROP. U/G INFILTRATION STONE BASIN 3
PROP. U/G INFILTRATION STONE BASIN 4
PROP. U/G INFILTRATION STONE BASIN 5
PROP. U/G INFILTRATION STONE BASIN 6
PROP. U/G INFILTRATION STONE BASIN 7A
PROP. U/G INFILTRATION STONE BASIN 7B
PROP. RETAINING WALL
PROP. ADA RAMP
PROP. 5' WIDE SIDEWALK
INV. 335.80
INV. 334.92
35 LF 8" HDPE @ 2% MIN. SLOPE
INV. 336.60
INV. 336.80
INV. 340.0
WATER METER PIT PER AQUA'S REQUIREMENTS (8 TYP)
8 LF 8" HDPE @ 2% MIN. SLOPE
PROP. YARD INLET GRATE: 348.78 INV: 340.20
PROP. 4" PVC ROOF DRAINS TO DISCHARGE TO U.G. BASIN (TYP)
CLEANOUT (TYP)
PROP. YARD INLET GRATE: 336.50 INV: 331.88
PROP. YARD INLET GRATE: 346.75 INV: 335.50
PROP. YARD INLET GRATE: 342.75 INV: 337.25
PROP. 11'H RETAINING WALL
PROP. 2.5'H RETAINING WALL
PROP. 6" GRATED OVERFLOW
CLEANOUT (TYP)
INV. 347.52
PROP. 4" PVC ROOF DRAINS TO DISCHARGE TO U.G. BASIN (TYP) @ 1% MIN. SLOPE
PROP. 4'H RETAINING WALL
INV. 339.5
INV. 346.50
INV. 347.08
INV. 346.85
INV. 339.8
INV. 339.50
INV. 346.17
PROP. ACO HEEL RESISTANT BP-9SLOT 100 WITH K100 DRAIN AND CATCH BASIN (TYP)
PROP. ACO HEEL RESISTANT BP-9SLOT 100 WITH K100 DRAIN AND CATCH BASIN (TYP)
WATER METER PIT PER AQUA'S REQUIREMENTS (8 TYP)
SANITARY MH INV. 335.70 INV. 329.89
SANITARY MH INV. 332.74 INV. 326.09
EXISTING HOUSE
EXISTING GARAGE
EXISTING SHED
EXISTING PORCH
EXISTING STONE WALL
EXISTING WOOD FENCE
EXISTING CHAIN LINK FENCE
EXISTING UTILITY POLE
EXISTING GAS VALVE
EXISTING WATER VALVE
EXISTING SIGN
EXISTING CONCRETE CURB
EXISTING SIDEWALK
EXISTING CONCRETE MANHOLE NO. 1080 INV. 332.74 INV. 326.09
EXISTING CONCRETE MANHOLE NO. 1080 INV. 332.74 INV. 326.09
EXISTING CONCRETE UTILITY POLE W/ #332-3
EXISTING CONCRETE UTILITY POLE W/ #332-2
EXISTING UTILITY POLE W/ GUY
EXISTING UTILITY POLE W/ GUY
EXISTING UTILITY POLE W/ GUY



PROJECT SITE
2241 OLD WELSH ROAD
ABINGTON TOWNSHIP, PA

LOCATION MAP (USGS GERMANTOWN QUADRANGLE)



LOCATION MAP (USGS GERMANTOWN QUADRANGLE)

EROSION AND SEDIMENT CONTOL NOTES:

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 TO MARK THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
16. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES ~~ 6 TO 12 INCHES ON COMPACTED SOILS ~~ PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
33. CONTRACTOR SHALL COORDINATE ANY CHANGE OF WASHOUT LOCATION WITH CONSERVATION DISTRICT.
34. SEDIMENT FROM E&S BMPs SHALL BE PLACED IN LANDSCAPED AREAS THAT ARE NOT BMP'S AND STABILIZED WITH SEED AND MULCH IMMEDIATELY. IF PLACED ON SLOPES GREATER THAN 3:1, APPLY EROSION CONTROL MATTING OR HYDRO SEED.

SEE SHEET 9 FOR STAGE II AND ADDITIONAL E&S NOTES

LEGEND

EXISTING		PROPOSED	
PROPERTY BOUNDARY		CONSTRUCTION ENTRANCE	
EXISTING OVERHEAD WIRE	OH	TOPSOIL STOCKPILE	
EXISTING CONTOUR	95	COMPOST FILTER SEDIMENT TRAP	
EXISTING SPOT ELEVATION	95.2	LIMIT OF DISTURBANCE	
EXISTING TREE		CONCRETE WASHOUT	
EXISTING TREELINE		6' CHAINLINK CONST. FENCE	-OF- -OF- -OF- -OF-
SOIL BOUNDARY /IDENTIFIER	UrkB	COMPOST FILTER SEDIMENT TRAP DRAINAGE AREA	
EXISTING OVERHEAD WIRE	OH	COMPOST FILTER SOCK	CFS
APPROXIMATE WATER LINE	W	FILTREXX RUNOFF DIVERSION SOCK	FRD
APPROXIMATE SANITARY LINE	S		
EXISTING UTILITY POLE (UP)			

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

CLIENT DATA

Cornerstone
Consulting Engineers & Design Services, Inc.
213 West Main Street . Lansdale . PA 19446
Phone: 215-362-2600 . Fax: 215-362-8400
WWW.CORNERSTONENET.COM
Philadelphia Region 215-362-2600
Pocono Region 570-839-1770
Lehigh Valley Region 610-820-8200

REVISIONS

NO	BY	DESCRIPTION	DATE
1	RL	REVISED PER TWP REVIEWS	7/26/2024
2	RL	REVISED PER CLIENT COMMENTS	11/14/2024
3	EMR	REVISED PER COUNTY REVIEW	4/04/2025
4	DB	REVISED PER MCCD AND FINAL REVIEW	
5			

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VIRGINIA LICENSE No. 0402 045725
FLORIDA LICENSE No. 75184
NEW YORK LICENSE No. 095667-1

PROJECT LOCATION

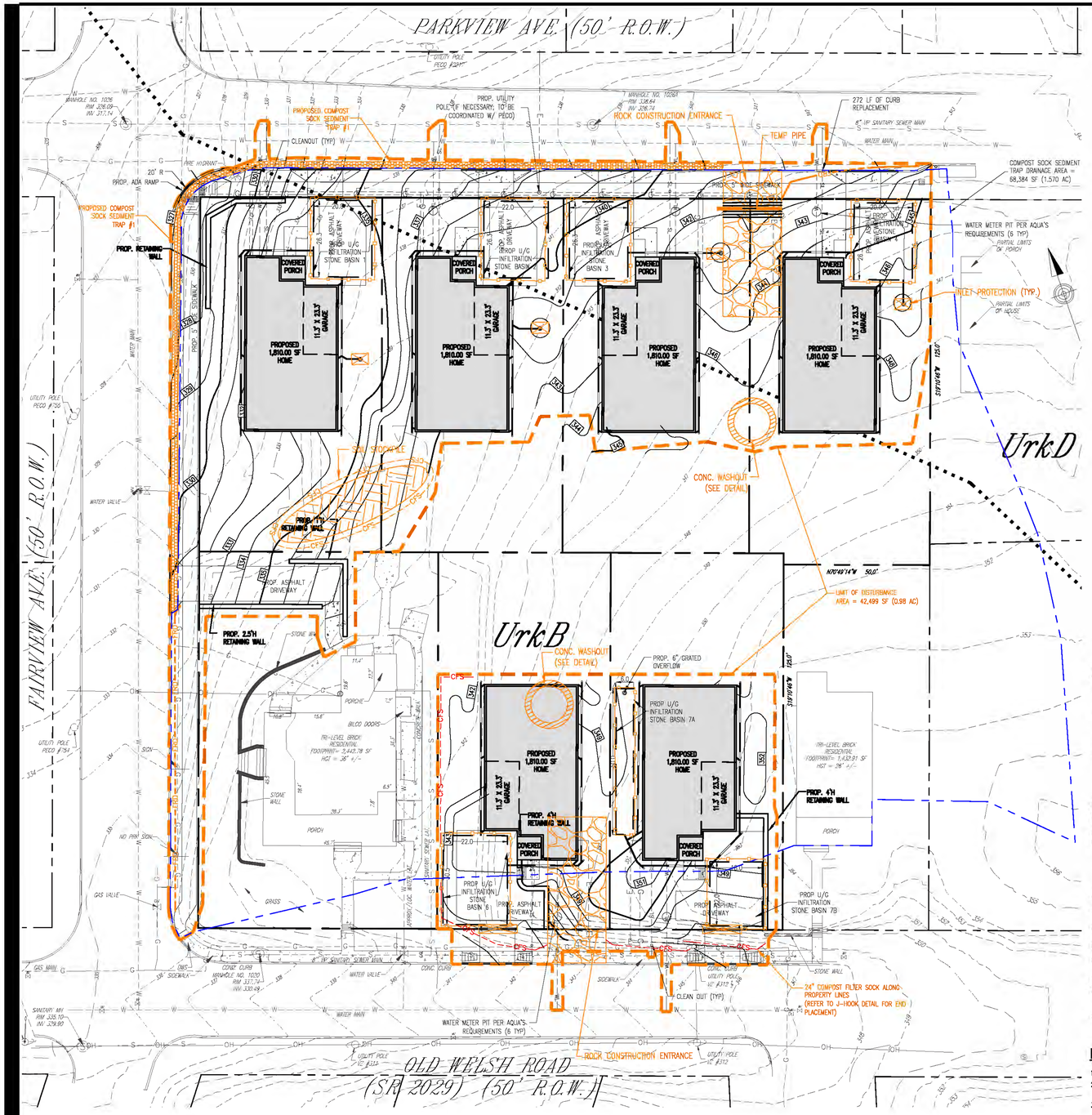
FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC
TITLE

EROSION AND SEDIMENTATION CONTROL PLAN STAGE 1

PROJ. #	23-0548	DATE	03/7/2024
CAD ID	23-0548	DRN BY	RL
SCALE	AS NOTED	CHK BY	JBA

SHEET 8 OF 17

REVISION 3



LEGEND & ABBREVIATIONS

- PROPERTY BOUNDARY
- ADJOINER BOUNDARY
- N/A — BUILDING SETBACK LINE
- EXISTING CONTOUR
- 95 — EXISTING SPOT ELEVATION
- EXISTING FENCE
- OH — EXISTING OVERHEAD WIRE
- G — APPROXIMATE GAS LINE
- W — APPROXIMATE WATER LINE
- C — APPROXIMATE CABLE LINE
- E — APPROXIMATE ELECTRIC LINE
- S — APPROXIMATE SANITARY LINE
- STORM SEWER LINE
- EXISTING SIGN
- EXISTING UTILITY POLE (UP)
- (S) — SEWER MANIFOLD
- (C) — COMMUNICATION MANHOLE
- (E) — ELECTRIC MANHOLE
- (W) — WATER MANHOLE
- STORM INLET
- UTILITY VALVE
- TBR — TO BE REMOVED
- PROP. STORM SEWER LINE
- S — PROP. SANITARY SEWER LINE
- W — PROP. WATER LINE
- E — PROP. ELECTRIC SERVICE
- 95 — PROP. CONTOUR LINE
- PROP. BUILDING AREA
- PROP. CONCRETE AREA
- UrkB — SOIL BOUNDARY /IDENTIFIER
- CONSTRUCTION ENTRANCE
- TOPSOIL STOCKPILE
- COMPOST FILTER SEDIMENT TRAP
- CFS — COMPOST FILTER SOCK
- COMPOST FILTER AND CONCRETE BLOCK INLET PROTECTION
- LIMIT OF DISTURBANCE
- CONSTRUCTION FENCE
- COMPOST FILTER SEDIMENT TRAP DRAINAGE AREA
- FRD — FILTREXX RUNOFF DIVERSION SOCK

E&S CONTROL PLAN DESIGN NOTES

THE E&S PLAN HAS BEEN DESIGNED TO ACHIEVE THE FOLLOWING;
1. MINIMIZE THE EXTENT AND THE DURATION OF EARTH DISTURBANCE
2. MAXIMIZE THE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION
3. MINIMIZE SOIL COMPACTION
4. UTILIZE CONTROL MEASURES THAT PREVENT OR MINIMIZE THE GENERATION OF INCREASED STORMWATER RUNOFF

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

OVERALL SEQUENCE OF CONSTRUCTION

NOTES:

A. CONTRACTOR SHALL COORDINATE A PRE-CONSTRUCTION MEETING WITH THE MONTGOMERY COUNTY CONSERVATION DISTRICT (MCCD), ABINGTON TOWNSHIP, PROPERTY OWNER AND/OR DEVELOPMENT REPRESENTATIVE, DESIGN ENGINEER (CCEDS), AND CONSTRUCTION REVIEW PROFESSIONALS.

B. CONTRACTOR SHALL CONTACT MCCD SEVEN (7) DAYS PRIOR TO THE START OF WORK.

C. THE CONTRACTOR IS ADVISED TO FULLY REVIEW THE SEQUENCE OF CONSTRUCTION AND ENSURE PROPER SEQUENCING CAN BE MAINTAINED WITH THE ANTICIPATED CONTRACTOR WORK METHODS. SHOULD THE CONTRACTOR FEEL THAT MODIFICATIONS ARE DESIRED, HE SHALL PROVIDE THE MODIFIED SEQUENCE IN WRITING TO THE MCCD FOR APPROVAL.

D. CESSATION OF ACTIVITY FOR A PERIOD OF FOUR (4) DAYS OR LONGER REQUIRES TEMPORARY STABILIZATION.

E. IN NO CASE SHALL AN AREA EXCEEDING 15,000 SQUARE FEET REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED.

F. CONTRACTOR SHALL BE REQUIRED TO MINIMIZED THE EXTENT AND DURATION OF EARTH DISTURBANCE. DISTURBED AREAS SHALL BE BROUGHT TO FINAL GRADES AND STABILIZED AS SOON AS POSSIBLE. EARTH DISTURBANCE SHALL BE LIMITED TO ONLY THOSE AREAS NECESSARY TO COMPLETE GRADING AND INSTALLATION OF IMPROVEMENTS AS SPECIFIED IN EACH STAGE OF THE SEQUENCE BELOW.

G. ANY WATER PUMPED FROM WORK AREAS MUST BE TREATED FOR SEDIMENT REMOVAL PRIOR TO DISCHARGING TO A SURFACE WATER.

H. ALL CONCRETE TRUCKS SHALL BE DIRECTED TO A CONCRETE WASHOUT PRIOR TO LEAVING THE SITE.

STAGE 1 (PLAN SHEET 8)

1. INSTALL CONSTRUCTION ENTRANCES AND PERIMETER CONSTRUCTION FENCING. FENCING SHALL BE INSTALLED AT THE PERIMETER OF THE PROJECT AS SHOWN TO AVOID DISTURBANCE OUTSIDE OF THE DESIGNATED LIMITS.
2. INSTALL COMPOST SOCK SEDIMENT TRAP. MINIMAL CLEARING OF VEGETATION MAY OCCUR TO ALLOW ACCESS AND INSTALLATION OF THE SOCKS. ENSURE INTENDED RUNOFF FROM DISTURBED AREAS IS DIVERTED TO THE SEDIMENT TRAP AT ALL TIMES DURING CONSTRUCTION.
3. GRADE SEDIMENT TRAP AREA TO ACHIEVE TEMPORARY ELEVATIONS SHOWN ON THE PLAN.
4. CLEARING, GRUBBING, AND DEMOLITION CAN OCCUR ONCE COMPOST SOCK SEDIMENT TRAP IS INSTALLED. DISPOSE OF WASTE MATERIALS IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
5. CONTINUE BY STRIPPING TOPSOIL AND ROUGH GRADING THE SITE AND BUILDING AREAS. CONTRACTOR SHALL STOCKPILE TOPSOIL AND INSTALL THE ASSOCIATED COMPOST FILTER SOCK. STABILIZE THE STOCKPILE WITH TEMPORARY SEEDING AS DIRECTED IN THE SEEDING AND FERTILIZATION NOTES.
6. CONSTRUCTION OF THE BUILDING FOUNDATIONS CAN BEGIN AT THIS POINT IN TIME. STONE THE ACCESS TO THE BUILDINGS FOR NON-EARTH MOVING EQUIPMENT. BUILDING CONSTRUCTION CAN BEGIN WHEN FOUNDATION IS ACCEPTED. PLACE STONE OVER AREAS SURROUNDING THE BUILDING USED FOR ANY STAGING OR EQUIPMENT.

STAGE 2 (PLAN SHEET 9)

7. INSTALL EROSION CONTROL MATTING ON ALL SLOPES 3h:1V OR GREATER, AND WHERE INDICATED ON THE PLAN.
8. INSTALL UTILITY SERVICES WHERE INDICATED ON THE PLAN. ANY EROSION CONTROL BMP'S THAT ARE REMOVED OR DISTURBED TO INSTALL UTILITIES SHALL BE REPLACED IMMEDIATELY FOLLOWING INSTALLATION OF THE UTILITY, AND SHALL BE IN PLACE AT THE END OF EACH WORKING DAY.
9. INSTALL SUBSURFACE DETENTION BASINS AND INLETS IN ACCORDANCE WITH THE PCSM PLAN AND SHOP DRAWINGS. THIS IS A CRITICAL STAGE IN THE PROJECT THAT MUST BE REVIEWED BY A LICENSED PROFESSIONAL.
10. INSTALL INLET PROTECTION ON ALL INLETS TO ENSURE NO SEDIMENT ENTERS THE BASIN DURING BACKFILL AND STABILIZATION OPERATIONS. THE PIPES LEADING FROM THE INLETS SHALL BE BLOCKED UNTIL THE UPSTREAM TRIBUTARY AREAS ARE STABILIZED.
11. COMPLETE FINE GRADING OF BUILDING AND DRIVEWAY AREAS. INSTALL SIDEWALKS AND STONE BASE WITHIN DRIVEWAY AREAS IF NOT INSTALLED PREVIOUSLY. STABILIZE ALL LANDSCAPE AREAS OUTSIDE OF THE SEDIMENT TRAP.
12. ONCE UPSTREAM DRAINAGE AREAS ARE STABILIZED WITH STONE, EROSION CONTROL MATTING, LANDSCAPE OR PERMANENT PAVEMENT/CONCRETE, AND SUBSURFACE DETENTION BASIN CAN BE INSTALLED AT THIS TIME.
13. INSTALL ANY REMAINING PAVING AND CONCRETE AREAS.
14. INSTALL LANDSCAPING AND FINAL SEED OR SOD ON DISTURBED AREAS.
15. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. EROSION AND SEDIMENTATION CONTROLS SHALL REMAIN IN PLACE AND FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT MCCD FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSATION OF THE TEMPORARY EROSION AND SEDIMENTATION CONTROL STRUCTURES. UPON APPROVAL FROM MCCD THAT THE COMPOST SOCK SEDIMENT TRAP CAN BE REMOVED, THE RIP RAP APRON FOR THE EXISTING FLARED END SECTION CAN BE INSTALLED. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF E&S STRUCTURES SHALL BE STABILIZED IMMEDIATELY.

PROJECT NARRATIVE

THE PURPOSE OF THIS SEDIMENTATION AND EROSION CONTROL PLAN IS TO PROVIDE THE CONTRACTOR WITH THE MINIMUM REQUIREMENTS NECESSARY TO IMPLEMENT EROSION AND SEDIMENT CONTROL FEATURES TO REDUCE THE AMOUNT OF DENUDED SOILS FROM LEAVING THE SITE DURING THE DEMOLITION PROCESS. THE PLAN IS NOT INTENDED TO ADDRESS ALL THE POSSIBLE TOPOGRAPHIC CONDITIONS WHICH WOULD AFFECT CONSTRUCTION AND PLACEMENT OF SEDIMENTATION AND EROSION CONTROL FEATURES, HOWEVER, THE PLAN DOES ILLUSTRATE THE FOLLOWING CONSTRUCTION PROCEDURES FOR IMPLEMENTING SEDIMENTATION AND CONTROL FEATURES FOR THIS TYPE OF DEVELOPMENT.

RESPONSIBLE AGENT: 2241 OLD WELSH LLC
PO BOX 411
MOORESTOWN, NJ 08057

THE APPLICANT IS PROPOSING TO CONSTRUCT A RESIDENTIAL DEVELOPMENT CONSISTING OF 6 SINGLE FAMILY DETACHED DWELLING UNITS WITH ASSOCIATED SITE IMPROVEMENTS, INCLUDING STORMWATER MANAGEMENT.

EARTH DISTURBANCE NARRATIVE PER §102.4(b)(5)(ii)

PAST CONDITIONS:
THE SITE IS SITUATED AT THE NORTHEAST CORNER OF OLD WELSH ROAD AND FAIRVIEW DRIVE. IT IS BOUNDED BY OLD WELSH ROAD, FAIRVIEW AVENUE, AND PARKVIEW AVENUE. PAST USE OF THE PROPERTY INCLUDES A SINGLE-FAMILY DETACHED DWELLING. NO STORMWATER MANAGEMENT HAS EVER BEEN CONSTRUCTED ON THE SITE.

PRESENT CONDITIONS:
THE CURRENT SITE CONSISTS OF ONE PARCEL WITH THE EXISTING SINGLE FAMILY DWELLING CONSTRUCTED NEAR THE INTERSECTION OF OLD WELSH ROAD AND FAIRVIEW AVENUE. ALONG WITH THE SINGLE FAMILY DWELLING, THE PROPERTY PROVIDES DRIVEWAY ACCESS TO PARKVIEW AVENUE. THE UNDEVELOPED PORTIONS OF THE PROPERTY CONSIST OF MAINTAINED TREE AREAS AND MOWED LAWN. STORMWATER RUNOFF FLOWS IN AN NORTH WESTERLY DIRECTION ACROSS THE PROPERTY TO INTERSECTION OF FAIRVIEW AVENUE AND PARKVIEW AVENUE. THE WATER FLOWS UNCONTROLLED INTO THE INTERSECTION AND PROCEEDS DOWN FAIRVIEW AVENUE UNTIL IT IS COLLECTED IN THE TOWNSHIP AND STATE STORMWATER COLLECTION FACILITIES. THE RUNOFF IS THEN CONVEYED THROUGH UNDERGROUND PIPING AND DISCHARGES TO TRIBUTARY 02457 TO THE PENNYPACK CREEK, WHICH HAS A CHAPTER 93 CLASSIFICATION OF TSF, MF.

PROPOSED CONDITIONS:
THE PROPOSED DEVELOPMENT WILL INCLUDE CONSTRUCTION OF SIX (6) NEW SINGLE-FAMILY DETACHED DWELLINGS WITH ASSOCIATED PAVED DRIVEWAY AND AN SUBSURFACE STORMWATER MANAGEMENT INFILTRATION BASINS. THE BASIN IS DESIGNED TO MANAGE THE INCREASED RUNOFF TO BE GENERATED BY THE PROPOSED IMPROVEMENTS. THE EXISTING DRAINAGE PATTERNS WILL NOT BE CHANGED AND WILL CONTINUE TO FLOW TO THE EXISTING DISCHARGE POINTS AND THEN TO TRIBUTARY 02457 TO THE PENNYPACK CREEK.

BMP NARRATIVE PER §102.4(b)(5)(vii)

PRIOR TO INITIATION OF EARTH DISTURBANCE, COMPOST FILTER SEDIMENT TRAP AND COMPOST FILTER SOCKS WILL BE INSTALLED TO PREVENT SEDIMENT FROM LEAVING THE SITE. A ROCK CONSTRUCTION ENTRANCE WITH WASH RACK WILL BE INSTALLED TO PREVENT TRUCKS FROM TRACKING SOIL OFF SITE. TOPSOIL WILL BE STOCKPILED WITHIN COMPOST FILTER SOCKS TO CONTAIN SEDIMENT. A CONCRETE WASHOUT STATION IS PROPOSED TO CONTAIN CONCRETE WASH WATER. EROSION CONTROL MATTING IS TO BE UTILIZED ON ANY 3:1 OR GREATER SLOPES AND WITHIN THE REAR YARD SWALE TO STABILIZE EXPOSED SOIL IN THOSE AREAS.

ESPC PROJECT NOTES

1. PROJECT LOCATION: PROJECT IS LOCATED AT 2241 OLD WELSH ROAD, ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA.
2. LIMIT OF DISTURBANCE: THE PROJECT HAS A TOTAL LIMIT OF EARTH DISTURBANCE OF 0.98 ACRES. NO SOIL STOCKPILING OR EARTH DISTURBANCE OF ANY KIND IS PERMITTED OUTSIDE OF THE LIMIT OF DISTURBANCE (LOD).
3. WATERSHED: THIS PROJECT IS LOCATED IN THE PENNYPACK WATERSHED WHICH HAS A CHAPTER 93 CLASSIFICATION OF TSF, MF (TROUT STOCKING FISHES, MIGRATORY FISH)
4. DISCHARGE: EXISTING AND PROPOSED SITE RUNOFF DISCHARGE TO TRIBUTARY 02457 TO THE PENNYPACK CREEK (TSF-TROUT STOCKING FISHES, MF-MIGRATORY FISH).
5. NO RIPARIAN BUFFERS ARE REQUIRED. THE PROJECT WILL NOT DISCHARGE WITHIN 150 FEET OF A HQ/EV STREAM.
6. THE PLAN MINIMIZES THE EXTENT AND DURATION OF EARTH DISTURBANCE.
   - 6.1. THE PLAN AND SEQUENCE OF CONSTRUCTION HAVE BEEN DEVELOPED TO LIMIT DISTURBANCE OF THE EXISTING SITE TO THE MINIMUM AREA NECESSARY TO INSTALL THE PROPOSED IMPROVEMENTS. DISTURBED AREAS ARE TO BE STABILIZED PROMPTLY IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION.
7. THE PLAN MAXIMIZES THE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION.
   - 7.1. THE PLAN PROPOSES DISCHARGE TO EXISTING DRAINAGE PATHS WHICH WILL PROVIDE A STABLE CONVEYANCE TO THE RECEIVING WATERCOURSE.
   - 7.2. FENCING IS TO BE PLACED AT THE LIMITS OF DISTURBANCE TO PRESERVE EXISTING VEGETATION WHERE POSSIBLE. THE SEQUENCE OF CONSTRUCTION STIPULATES PROTECTION OF PERIMETER AREAS OUTSIDE THE PROPOSED LIMIT OF DISTURBANCE.
   - 7.3. THE PLAN UTILIZES COMPOST FILTER SOCKS, ROCK CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT TO PREVENT SEDIMENT FROM LEAVING THE SITE AND ENTERING DOWNSTREAM VEGETATION, STRUCTURES AND WATERS.
8. THE PLAN MINIMIZES SOIL COMPACTION.
   - 8.1. THE PLAN AND SEQUENCE OF CONSTRUCTION LIMIT EARTH DISTURBANCE TO THE MINIMUM AREA AND DURATION NECESSARY TO INSTALL THE PROPOSED IMPROVEMENTS, THUS LIMITING EXCESSIVE SOIL COMPACTION CAUSED BY HEAVY EQUIPMENT MOVING OVER THE SITE.
9. THE PLAN UTILIZES OTHER MEASURES OR CONTROLS THAT PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF.
   - 9.1. THE SEQUENCE OF CONSTRUCTION HAS BEEN DEVELOPED TO MINIMIZE THE LENGTH OF TIME DISTURBED AREAS ARE EXPOSED TO CONDITIONS WHICH CAUSE ACCELERATED EROSION AND SEDIMENT TRANSPORT. PROMPT STABILIZATION OF THE SITE ALLOWS VEGETATION TO QUICKLY ESTABLISH, PROMOTING INFILTRATION AND EVAPOTRANSPIRATION OF RUNOFF. IT ALSO ALLOWS FOR MORE IMMEDIATE USE OF THE PROPOSED POST CONSTRUCTION BMP'S THAT WILL CONTROL THE RATE OF RUNOFF FROM THE CONSTRUCTED SITE.

LOCATION MAP (USGS GERMANTOWN QUADRANGLE)

SOILS LEGEND AND TABLE OF LIMITATIONS & RESOLUTIONS
BASED ON U.S.D.A. - N.R.C.S. SOILS SURVEY (WEBSOILSURVEY.NRCS.USDA.GOV) 2/29/2024
LIMITATIONS FOR SITE DEVELOPMENT

SOIL	SLOPE	DEPTH TO RESTRICTIVE LAYER	RUNOFF CLASS
UrkB	0-8%	10"+	HIGH
UrkD	8-25%	10"+	HIGH

UrkB & UrkD - URBAN LAND, 0-25% SLOPES

TABLE E.1 LIMITATION OF PENNSYLVANIA SOILS PERTAINING TO EARTHMOVING PROJECTS FROM THE EROSION AND SEDIMENT CONTROL MANUAL DOES NOT LIST THESE SOIL TYPES. USE LIMITATIONS AND RESOLUTIONS FROM BELOW IF ANY LIMITATIONS ARE ENCOUNTERED.

RESOLUTIONS FOR LIMITATIONS:
- CUTBANKS CAVE = APPROPRIATE PRECAUTIONS SHALL BE TAKEN TO SAFEGUARD WORKERS DURING ALL TRENCHING AND EXCAVATION OPERATIONS. ALL APPLICABLE OSHA STANDARDS AND REGULATIONS MUST BE IMPLEMENTED AT ALL TIMES.
- CORROSIVE TO CONCRETE/STEEL = UNDERGROUND PIPES SHALL BE PROTECTED AND/OR DIFFERENT MATERIAL SPECIFIED.
- DROUGHTY = PROVIDE IRRIGATION TO SOILS.
- EASILY ERODIBLE = DESIGN AN EROSION AND SEDIMENTATION PLAN DETAILING A SEQUENCE OF CONSTRUCTION AND EROSION CONTROL MEASURES WHICH SHALL BE IMPLEMENTED THROUGHOUT CONSTRUCTION.
- FLOODING = INSTALL FLOOD CONTROL MEASURES; IMPROVE CHANNELS; RAISE FOUNDATIONS.
- DEPTH TO SATURATED ZONE/SEASONAL HIGH WATER TABLE = OBTAIN SOIL FROM OTHER AREA OF SITE OR OFF SITE; SELECT APPROPRIATE SEED MIXTURE; PROVIDE DRAINAGE CHANNELS OR UNDERDRAINS.
- HYDRIC/HYDRIC INCLUSIONS = DESIGN SITE TO AVOID AREAS OF HYDRIC SOILS; PERFORM A WETLAND SURVEY.
- LOW STRENGTH/LANDSLIDE PRONE = PRECAUTIONS SHALL BE TAKEN TO PREVENT SLOPE FAILURES (SUCH AS AVOIDING OVER-STEEPING, OVERLOADING SLOPES, REMOVAL OF LATERAL SUPPORT, AND/OR FAILURE TO PREVENT SATURATION OF SLOPES). SETBACKS SHALL BE MAINTAINED FROM AREAS OF WEAK SOILS, AND/OR FILL MATERIAL MAY NEED TO BE IMPORTED TO INCREASE STRENGTH.
- SLOW PERCOLATION = AVOID LOCATING INFILTRATION AREAS WITHIN THESE AREAS; SOIL TESTING SHALL BE USED TO IDENTIFY AREAS OF CONCERN; AND UNDERDRAINS SHALL BE USED.
- PIPING = INSTALL A CUT-OFF WALL OR A CLAY PLUG IF PIPING BEGINS TO FORM.
- POOR SOURCE OF TOPSOIL = SOIL AMENDMENTS SHALL BE USED TO PROMOTE GROWTH OF DESIRED VEGETATION. AREAS OF GOOD TOPSOIL ON SITE SHALL BE RELOCATED AND STORED FOR LATER USE ON THE SITE.
- FROST ACTION = PRECAUTIONS SHALL BE IMPLEMENTED TO PREVENT DAMAGE WHEN FROST IS ANTICIPATED.
- WETNESS = INSTALL SURFACE DRAINAGE MEASURES; DESIGN THE E&S PLAN TO AVOID ADDITIONAL PONDING IN THESE AREAS, GRADE THE SITE TO ELEVATE THESE AREAS.
- LOW DEPTH TO BEDROCK = REVISE DESIGN TO RELOCATE; EXCAVATE RIPPABLE ROCK OR BLAST

SITE INSPECTION LOG REQUIREMENTS:

UNTIL THIS SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION POLLUTION CONTROL (E&SPC) FACILITIES MUST BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL E&SPC FACILITIES AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS.
SITE INSPECTIONS SHALL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE LOG SHALL INCLUDE THE DATE, AND TIME OF THE INSPECTIONS, DESCRIPTIONS OF ANY E&SPC FACILITY DEFICIENCIES, AND THE NAME OF THE PERSON CONDUCTING THE INSPECTION. THE INSPECTION LOG SHALL BE KEPT ONSITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST.
AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP'S MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMP'S MUST BE STABILIZED IMMEDIATELY.

ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, E&SPC REPAIR OR REPLACEMENT, AND ANY STABILIZATION SATISFACTORILY, REPLACEMENT FACILITIES OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQURED.

WHERE E&SPC FACILITIES FAIL TO ALLEVIATE EROSION OR SEDIMENT POLLUTION THE INSPECTION LOG SHALL INCLUDE THE FOLLOWING INFORMATION:
1. THE LOCATION & SEVERITY OF E&SPC FACILITY FAILURE, AND ANY POLLUTION EVENTS RESULTING FROM THE FAILURE.
2. REMEDIAL STEPS TAKEN TO REDUCE, ELIMINATE, AND PREVENT THE RECURRENCE OF THE FACILITY FAILURE AND/OR POLLUTION EVENT.
3. A TIMEFRAME TO CORRECT THE FACILITY FAILURE AND/OR POLLUTION EVENT, INCLUDING THE APPROXIMATE FUTURE DATE WHEN THE ACTIMTY WILL RETURN TO COMPLIANCE.

CONSTRUCTION WASTE AND PROPER WASTE DISPOSAL NOTES

THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE , OR DISPOSE OF ALL BUILDING MATERIALS AND WASTE PRODUCTS IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ. AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIALS OR WASTE PRODUCTS AT THE SITE.

THE DEVELOPMENT OF THE SITE WILL CREATE DEBRIS MATERIAL TO BE REMOVED FROM THE PROPERTY. IT WILL CONSIST OF THE EXISTING ASPHALT, CONCRETE, BRICKS, AND OTHER BUILDING MATERIAL FROM THE EXISTING STRUCTRUES TO BE DEMOLISHED. THE ASPHALT, BRICK, AND CONCRETE WILL BE TAKEN TO A RECYCLE CENTER AND THE OTHER DEBRIS WILL BE TAKEN TO THE APPROPRIATE LANDFILL SITE.

GEOLOGIC FORMATION NOTE

THERE ARE NO GEOLOGIC FORMATIONS OR SOILS CONDITIONS ON THE PROJECT SITE THAT HAVE THE POTENTIAL TO CAUSE POLLUTION DURING EARTH DISTURBANCE ACTIMITIES. EXPOSED SOIL WILL BE CONTAINED WITH SILT FENCE.

POTENTIAL THERMAL IMPACT NOTE

THIS IS A RESIDENTIAL DEVELOPMENT WITH MINIMUM PROPOSED IMPERVIOUS COVERAGE. PROPOSED IMPERVIOUS COVERAGE INCLUDES THE HOMES. THE PROPOSED DESIGN PROVIDES FOR NATIVE LANDSCAPE COVERAGE SO MUCH OF THE POST DEVELOPMENT RUNOFF WILL FLOW OVERLAND AND DIRECTLY TO THE SUBSURFACE BASINS WHERE THE RUNOFF WILL BE DETAINED BELOW GROUND AND INFILTRATED; THUS REDUCING ANY HEATED HEATED RUNOFF FROM ENTERING THE RECEIVING WATERS.

SPOIL AND BORROW AREAS NOTE

- THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY MONTGOMERY COUNTY, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.

SEE SHEET 10 FOR ADDITIONAL E&S NOTES

CLIENT DATA

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Philadelphia Region 215-362-2600
Lehigh Valley Region 610-820-8200
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NEW JERSEY LICENSE No. 24GE04052400
VIRGINIA LICENSE No. 0402 048725
FLORIDA LICENSE No. 75184
NEW YORK LICENSE No. 093667-1

PROJECT LOCATION

FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC

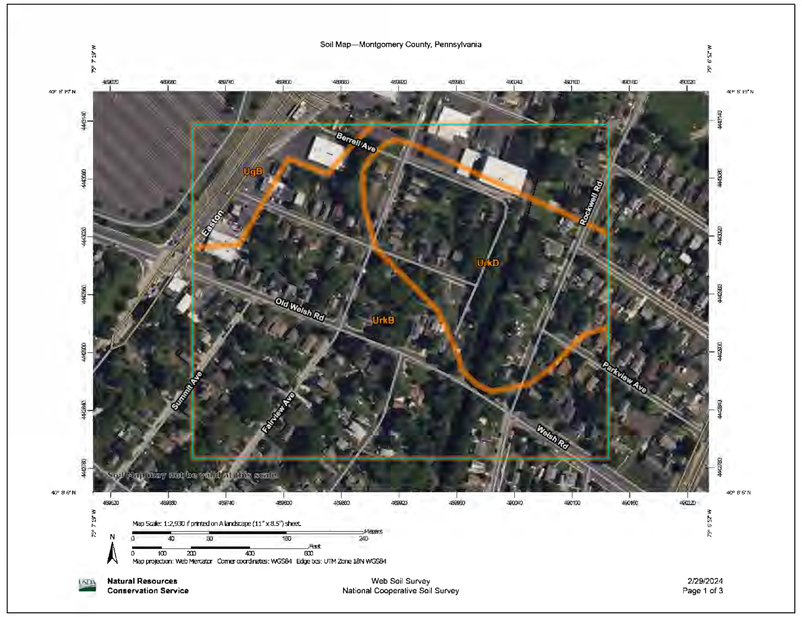
TITLE

EROSION AND SEDIMENTATION CONTROL PLAN STAGE 2

PROJ. #	23-0548	DATE	03/7/2024
CAD ID.	23-0548	DRN BY	RL
SCALE	AS NOTED	CHK BY	JBA

SHEET 9 OF 17

REVISION 3



GENERAL STORMWATER MAINTENANCE NOTES

THE OWNER AND ALL FUTURE OWNERS OF THE PROPERTY, (COLLECTIVELY, THE "OWNER") SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE STORMWATER FACILITIES IN ACCORDANCE WITH THE TOWNSHIP'S ORDINANCES AND THE PA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP), AND SHALL KEEP ALL FACILITIES IN A GOOD, SAFE AND ATTRACTIVE CONDITION, AND IN A CONDITION SUFFICIENT TO MEET OR EXCEED THE DESIGN STANDARDS AND SPECIFICATIONS SET FORTH ON THE PLAN. THE STORMWATER FACILITIES SHALL BE IMPLEMENTED AND MAINTAINED TO THE MINIMUM STANDARDS AND REQUIREMENTS AS SET FORTH IN THE ORDINANCE INCLUDING ANY BEST MANAGEMENT PRACTICES (BMPS) AS DEEMED NECESSARY TO MEET THE PURPOSE OF THE STORMWATER ORDINANCE. SAID MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

A. OWNER SHALL REGULARLY PERFORM ALL INSPECTION AND MAINTENANCE OF THE STORMWATER FACILITIES AS IS NECESSARY AND DESIRABLE TO INSURE THE PROPER FUNCTIONING OF THE STORMWATER FACILITIES.
B. OWNER SHALL NOT ALTER THE AREA OF THE STORMWATER FACILITY IN A MANNER WHICH WOULD CAUSE THE FACILITY TO DIFFER FROM WHAT IS SHOWN ON THE PLAN WITHOUT WRITTEN APPROVAL OF THE TOWNSHIP AND DEP.
C. OWNER SHALL REMOVE DEBRIS AND SILT FROM THE FACILITY TO ENSURE THAT THE FACILITY REMAINS IN GOOD WORKING ORDER.
D. OWNER SHALL MAKE ALL REPAIRS NECESSARY TO ENSURE THE CONTINUED PROPER OPERATION OF THE FACILITY.
E. OWNER SHALL REESTABLISH VEGETATION BY SEEDING AND MULCHING OR SODDING SCOURED AREAS WHERE VEGETATION HAS NOT BEEN SUCCESSFULLY ESTABLISHED OR WHERE THE VEGETATION HAS BEEN DAMAGED OR DESTROYED.
F. OWNER SHALL MOW AS NECESSARY TO MAINTAIN ADEQUATE STRANDS OF GRASS AND TO CONTROL WEEDS. CHEMICAL WEED CONTROL MAY BE USED IF FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS ARE MET.
G. OWNER SHALL REMOVE THE SILT FROM ALL PERMANENT STRUCTURES WHICH TRAP SILT OR SEDIMENT IN ORDER TO KEEP THE MATERIAL FROM BUILDING UP IN GRASS WATERWAYS, PIPES, DETENTION OR RETENTION BASINS, INFILTRATION STRUCTURES, BMPS AND/OR OTHER FACILITIES, AND THUS REDUCING THEIR CAPACITY.
H. OWNER SHALL KEEP ALL PIPES, SWALES, DETENTION FACILITIES AND OUTLET STRUCTURES FREE OF ANY DEBRIS OR OTHER OBSTRUCTION.
I. OWNER SHALL IMPLEMENT THE OPERATION AND MAINTENANCE SCHEDULE IN ACCORDANCE WITH THIS PLAN.

BMP MATERIAL DISPOSAL REQUIREMENTS

MATERIALS REMOVED FROM BMP'S DURING MAINTENANCE AND REPAIR ACTIVITIES SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AT EITHER A PROPERLY LICENSED LANDFILL OR A COMPOSTING FACILITY. MORE SPECIFICALLY:

- IF MOWING ACTIVITIES OCCUR WITHIN ABOVE GRADE BMP'S, THE OPERATOR IS REQUIRED TO COLLECT ALL GRASS CLIPPINGS AND DISPOSE OF THE CLIPPINGS IN A LANDFILL OR COMPOSTING FACILITY.
- ANY SEDIMENT TAKEN FROM BMP'S SHALL BE DISPOSED OF IN A LANDFILL.
- TRASH SHALL BE PROPERLY DISPOSED OF BY A TRASH CARRIER OR BROUGHT DIRECTLY TO A LANDFILL. APPROPRIATE MATERIALS SHALL BE RECYCLED BY A RECYCLING CARRIER OR BROUGHT TO A RECYCLING CENTER.
- ANY WEEDS OR DETRITUS TAKEN FROM ABOVE GRADE BMP'S SHALL BE DISPOSED OF IN A LANDFILL OR BROUGHT TO A COMPOSTING CENTER.

GEOLOGIC FORMATION NOTE

THERE ARE NO GEOLOGIC FORMATIONS OR SOILS CONDITIONS ON THE PROJECT SITE THAT HAVE THE POTENTIAL TO CAUSE POLLUTION DURING EARTH DISTURBANCE ACTIVITIES. EXPOSED SOIL WILL BE CONTAINED WITH SILT SOCK.

POTENTIAL THERMAL IMPACT NOTE

POTENTIAL FOR THERMAL IMPACTS ADDRESSED: PROPOSED ADDITIONAL IMPERVIOUS AREA HAS THE POTENTIAL TO INCREASE THE TEMPERATURE OF RUNOFF FROM THE SITE. A PORTION OF THE EXISTING IMPERVIOUS SURFACES WHICH ARE CURRENTLY LOCATED WITHIN THE RIPARIAN BUFFER AND/OR FLOODPLAIN WILL BE REMOVED AND THE AREAS RESTORED WITH NATIVE SPECIES; THUS OFF-SETTING SOME OF THE NEW IMPERVIOUS COVERAGE. THE PROPOSED DWELLING HAS BEEN LOCATED TO MAINTAIN THE EXISTING DRIVEWAY AND THE INCREASE IN IMPERVIOUS COVERAGE WILL BE MANAGED WITH THE UNDERGROUND DETENTION BASIN. THE PROPOSED DESIGN ALSO PROVIDES FOR NATIVE LANDSCAPING, SO MUCH OF THE POST DEVELOPMENT RUNOFF WILL FLOW OVERLAND TO THE SUBSURFACE BASIN WHERE THE RUNOFF WILL BE DETAINED BELOW GROUND. THIS UNDERGROUND STORAGE WILL PROVIDE COOLING OF ANY HEATED RUNOFF PRIOR TO IT REACHING THE RECEIVING WATERS. FURTHERMORE, THE EXISTING RIPARIAN BUFFER TO THE CREEK WILL BE MAINTAINED WITH THE PROPOSED SITE IMPROVEMENTS.

TEMPORARY STABILIZATION & PERMANENT STABILIZATION

1. MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER.
2. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.
3. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED. E&SPCPM P168
4. SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLNADS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.

TEMPORARY SEEDING SPECIFICATIONS

ALL DISTURBED EARTH SURFACES OR TOPSOIL SHALL BE STABILIZED AND SEEDED WITH A CONTRACTOR'S MIX IN ACCORDANCE WITH PADEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL MARCH 2012, CURRENT EDITION, AS FOLLOWS:

MIXTURE 1- ANNUAL RYEGRASS, SPREAD AT A SEEDING RATE OF 10 LB. PER 1,000 SQ. YDS.
MIXTURE 2- PERENNIAL RYEGRASS SPREAD AT A SEEDING RATE OF 15 LBS PER 1,000 SQ. YDS.

OTHER MIXTURES PER TABLE 11.4 MAY BE USED WITH CONSERVATION DISTRICT APPROVAL

LIME AND FERTILIZER AND MULCH SPECIFICATIONS
TEMPORARY SEEDING –
- LIME 2000 LB PER ACRE
- FERTILIZER 10-10-10 500 LB PER ACRE
- MULCH, HAY OR STRAW – 3 TONS PER ACRE (AFTER TEMPORARY SEEDING HAS BEEN PERFORMED)

PERMANENT SEEDING SPECIFICATIONS

IMMEDIATELY UPON FINAL GRADING OF ANY PHASE OR SECTION, TOPSOIL SHALL BE BROUGHT BACK OVER THE DISTURBED AREAS WHICH ARE NOT TO BE PAVED OR BUILT UPON. THIS TOPSOIL SHALL BE SPREAD TO A SMOOTH FINISH GRADE WITH A MINIMUM DEPTH OF SIX (6) INCHES. THE TOPSOIL SHALL THEN BE:

A. RAKED FREE OF STONES;
B. LIMED AND FERTILIZED AS NECESSARY;
C. PLANTED WITH GRASS OR OTHER SPECIFIED SEED, AND
D. MULCHED TO PROTECT THE SEED FROM DRYNESS AND EROSION. (STRAW OR HAY AT 1240 LB. PER 1000 SQ. YDS.)

PERMANENT SEEDING SHALL BE UNDERTAKEN IN ACCORDANCE WITH PADEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL MARCH 2012, CURRENT EDITION, AS FOLLOWS:

MIXTURE 2- PRIMARILY KENTUCKY BLUEGRASS, SPREAD AT A SEEDING RATE OF 25 LB. PER 1000 SQ. YDS.

OTHER MIXTURES PER TABLE 11.4 MAY BE USED WITH CONSERVATION DISTRICT APPROVAL

NOTE: SLURRY APPLICATIONS MUST INCLUDE A STRAW MULCH BINDER AT A RATE OF 3.0 TONS PER ACRE.

LIME AND FERTILIZER SPECIFICATIONS
PERMANENT SEEDING –

-PULVERIZED AGR. LIMESTONE- 410 LBS. PER 1,000 S.Y.
-10-10-20 ANALYSIS COMMERCIAL- 140 LBS. PER 1,000 S.Y.

MULCHED TO PROTECT THE SEED FROM DRYNESS AND EROSION. (STRAW OR HAY AT 1240 LB. PER 1000 SQ. YDS.)

MAINTENANCE PROGRAM

RECORD KEEPING: THE SITE OPERATOR SHOULD KEEP WRITTEN REPORTS OF WHEN EROSION CONTROL BMP'S ARE INSPECTED, CLEANED, REPAIRED, OR OTHERWISE ALTERED. REPORTS SHALL NOTE THE DATE AND TIME OF INSPECTION AND REPAIR, THE NAME OF THE PERSON CONDUCTING THE WORK, TIME SINCE LAST RAINFALL EVENT, AND DESCRIPTION OF ANY REPAIRS. RECEIPTS, REPORTS AND RECORDS SHALL BE FILED SHOULD DEP OR THE MUNICIPALITY REQUIRE DOCUMENTATION OF BMP IMPLEMENTATION.

ROCK CONSTRUCTION ENTRANCE:

ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

COMPOST FILTER SOCKS:

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED OF IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR.

POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

INLET PROTECTION:

INLETS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE DEPTH OF A FILTER BAG OR WHEN FLOW CAPACITY IS REDUCED SO AS TO CAUSE FLOODING OR BYPASS OF THE INLET.

DAMAGED OR CLOGGED BAGS SHALL BE REPLACED IMMEDIATELY FOLLOWING INSPECTION.

TOPSOIL STOCKPILE:

SILT FENCE MUST BE PLACED AROUND THE PERIMETER OF ALL STOCKPILES. UPON COMPLETION OR TEMPORARY CESSATION OF DISTURBANCE ACTIVITY, OR ANY STAGE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED.

DEWATERING BAG:

LIMIT PUMPING RATE TO 1/2 THE MANUFACTURER'S MAXIMUM PUMPING RATE.

WHEN SEDIMENTS FILL 1/2 THE VOLUME OF FILTER BAG, IMMEDIATELY REMOVE FROM SERVICE. PROPERLY DISPOSE OF SPENT BAGS AND SEDIMENTS.

CONCRETE WASHOUT:

CONCRETE WASHOUT SHALL BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY. ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% OF THE WASHOUT CAPACITY. ANY PLASTIC LINERS USED SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.

UNFORESEEN EROSIVE CONDITIONS

1. SHOULD ANY UNFORESEEN EROSIVE CONDITIONS DEVELOP DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE THE ACTION TO REMEDY SUCH CONDITIONS AND TO PREVENT DAMAGE TO ADJACENT PROPERTIES AS A RESULT OF INCREASED RUNOFF AND/OR SEDIMENT DISPLACEMENT. STOCKPILES OF WOOD SHIPS, HAY BALES, CRUSHED STONE, AND OTHER ACCEPTABLE MULCHES SHALL BE HELD IN READINESS TO IMMEDIATELY ADDRESS EMERGENCY EROSION AND SEDIMENTATION PROBLEMS.
2. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH ALL OF THE PROVISIONS OF APPENDIX 64, "EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART 1, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUB-PART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL."
3. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT ALL EROSION & AIR AND WATER POLLUTION IS MINIMIZED. STATE & LOCAL LAWS CONCERNING POLLUTION ABATEMENT SHALL BE OBSERVED.
4. MEASURES FOR THE PROTECTION OF EXISTING TREES AND SHRUBS SHALL BE TAKEN BY THE CONTRACTOR TO ELIMINATE UNNECESSARY DAMAGE.

*A COPY OF THESE EROSION & SEDIMENT POLLUTION CONTROL PLANS MUST BE POSTED AND AVAILABLE AT THE CONSTRUCTION SITE IN ACCORDANCE WITH STATE AND FEDERAL LAW.

SEEDING AND MULCHING NOTES

1. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENT. ANY DISTURBED AREA ON WHICH CONSTRUCTION ACTIVITY HAS CEASED MUST BE IMMEDIATELY SEEDED AND MULCHED. DURING NON-GERMINATION PERIODS, MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN ONE (1) YEAR SHALL BE IMMEDIATELY MULCHED AND SEEDED WITH A QUICK-GROWING TEMPORARY SEED MIXTURE. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE REDISTURBED WITHIN ONE YEAR MUST BE IMMEDIATELY MULCHED AND SEEDED WITH THE PERMANENT SEED MIXTURE.
2. DIVERSIONS, CHANNELS, SWALES, SEDIMENT BASINS, SEDIMENT TRAPS SHALL BE STABILIZED IMMEDIATELY WITH EROSION CONTROL BLANKET AND SEEDED. SOIL STOCKPILES AND ALL OTHER DISTURBED AREAS SHALL BE SEEDED AND MULCHED IMMEDIATELY.
3. HAY/STRAW MULCH MUST BE APPLIED AT A RATE OF AT LEAST 3 TONS PER ACRE.
4. AREAS UTILIZING VEGETATIVE STABILIZATION MUST BE SEEDED AND MULCHED WITHIN THE APRIL 15TH TO OCTOBER 15TH GERMINATION WINDOW. SEEDING WILL ACCOMPLISHED THROUGH HYDROSEEDING OR CONVENTIONAL SEEDING METHODS. (NOTE: HYDROSEED IS NOT CONSIDERED STABILIZATION UNTIL IT GERMINATES.)
5. GEOTEXTILE EROSION CONTROL CHANNEL LINING AND SLOPE PROTECTION SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS IMMEDIATELY UPON THE COMPLETION OF GRADING ACTIVITIES.

EROSION CONTROL REVISION NOTE

- BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E & S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE MONTGOMERY COUNTY. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

PCSM BMP OPERATIONS AND MAINTENANCE REQUIREMENTS

BMP TYPE: SUBSURFACE BASIN

APPLIED AREAS: THIS BMP APPLIES TO SUBSURFACE INFILTRATION BASINS

EQUIPMENT: VISUAL INSPECTION, VAC TRUCK AS NEEDED

RECORD KEEPING: THE SITE OPERATOR/MANAGER SHOULD KEEP LOGS OF WHEN THE FACILITY IS CLEANED AND FILE THE RECEIPTS OR LOGS FOR THEIR RECORDS SHOULD THE MUNICIPALITY REQUIRE DOCUMENTATION OF THE BMP IMPLEMENTATION.

RESPONSIBLE PARTY: THE OWNER, OR AUTHORIZED OWNER REPRESENTATIVE, IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF BMP'S ONCE CONSTRUCTION IS COMPLETED.

VISUAL INSPECTION

THE UNDERGROUND BASINS SHALL BE INSPECTED AT THE END OF THE WINTER SEASON, AT LEAST ONCE EVERY THREE MONTHS AND AFTER ANY MAJOR RAINFALL EVENT TO ENSURE THAT THE BED HAS DRAINED. SHOULD THE VISUAL INSPECTION REVEAL THAT THERE IS PONDED WATER, OR THERE HAVE BEEN CONTINUOUS RAIN EVENTS, ALLOW AN ADDITIONAL 24 HOURS FOR DRAWDOWN.

THE BED SHALL BE INSPECTED AT THE POP-UP EMITTER. LOG BOOK ENTRIES SHALL NOTE THE DATE, TIME, APPROXIMATE NUMBERS OF DAYS AFTER A RAINFALL EVENT, AND NAME OF PERSON INSPECTING THE FACILITY. INSPECTIONS DO NOT NEED TO BE COMPLETED BY A PROFESSIONAL AND CAN BE COMPLETED BY ON-SITE STAFF.

BED MAINTENANCE

OWNER SHALL FIELD VERIFY DRAW DOWN TIME AFTER EACH MAJOR STORM. SHOULD IT BE DETERMINED THAT THE BASIN IS NOT DRAINING PROPERLY, THEN THE BASIN SHALL BE DRAINED BY USE OF A VAC TRUCK AND THE BOTTOM CLEANED ACCORDINGLY. IT IS IMPERATIVE THAT IF THIS OCCURS, THAT A MORE STRINGENT MAINTENANCE REGIME OCCUR IN THE UPSTREAM DRAINAGE FACILITIES. SEDIMENT BUILD-UP AND CLOGS SHALL BE REMOVED IMMEDIATELY. IF THE BASIN CONTINUES TO HOLD WATER A PROFESSIONAL ENGINEER AND THE CONSERVATION DISTRICT SHOULD BE CONSULTED FOR FURTHER INVESTIGATION AND REMEDIATION AS NECESSARY.

CLIENT DATA

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REVISIONS

NO	BY	DESCRIPTION	DATE
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MARYLAND LICENSE No. 29313
NEW JERSEY LICENSE No. 24GE04052400
VIRGINIA LICENSE No. 0402 045725
FLORIDA LICENSE No. 75184
NEW YORK LICENSE No. 093667-1

PROJECT LOCATION

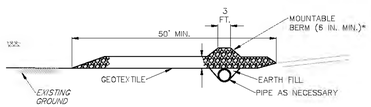
FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC

TITLE

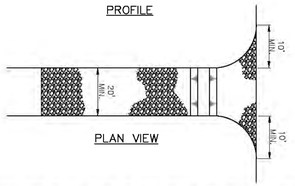
EROSION AND SEDIMENTATION CONTROL PLAN NOTES

PROJ. #	23-0548	DATE	03/7/2024
CAD ID.	23-0548	DRN BY	RL
SCALE	AS NOTED	CHK BY	JBA

SHEET 10 OF 17
REVISION 3



PROFILE



PLAN VIEW

NOTES:

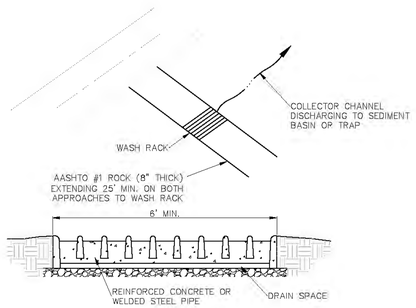
REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE



NOTES:

WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.

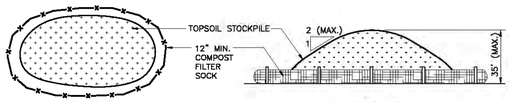
WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICULAR TRAFFIC.

A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-2
ROCK CONSTRUCTION ACCESS WITH WASH RACK

NOT TO SCALE



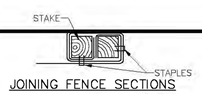
PLAN VIEW

COMPOST FILTER SOCK MUST BE PLACED AROUND THE PERIMETER OF ALL STOCKPILES. IMMEDIATELY APPLY TEMPORARY SEEDING TO ALL STOCKPILES WHICH WILL BE IN PLACE FOR 20 DAYS OR MORE.

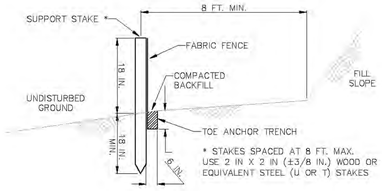
PROFILE

TOPSOIL STOCKPILE DETAIL

NOT TO SCALE



JOINING FENCE SECTIONS



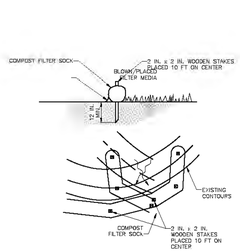
* STAKES SPACED AT 8 FT. MAX. USE 2 IN X 2 IN (±3/8 IN.) WOOD OR EQUIVALENT STEEL (U OR T) STAKES

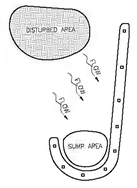
SECTION VIEW

NOTES:

– FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.
– FABRIC WIDTH SHALL BE 30 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES.
– SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.
– SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.
– ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET (STANDARD CONSTRUCTION DETAIL # 4-6).
– FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

STANDARD CONSTRUCTION DETAIL #4-7
STANDARD SILT FENCE (18" HIGH)





"J" HOOK PLACEMENT

NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

MAINTENANCE ITEMS:

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS. PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURERS' RECOMMENDATIONS.

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK

TABLE 4.1
Compost Sock Fabric Minimum Specifications

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years
Two-ply systems					
Inner Containment Netting				HDPE biaxial net Continuously wound Fusion-welded junctures 3/4" X 3/4" Max. aperture size	
Outer Filtration Mesh				Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch) 3/16" Max. aperture size	
Sock fabrics composed of burlap may be used on projects lasting 6 months or less.					

Filtrexx & JMD

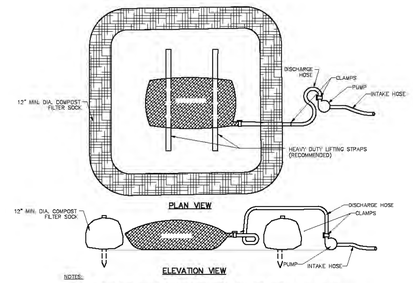
Compost should be a well decomposed, weed-free organic matter derived from agriculture, food, stump grindings, and yard or wood/bark organic matter sources. The compost should be aerobically composted. The compost should possess no objectionable odors and should be reasonably free (<1% by dry weight) of man-made foreign matter. The compost product should not resemble the raw material from which it was derived. Wood and bark chips, ground construction debris or reprocessed wood products are not acceptable as the organic component of the mix.

The physical parameters of the compost should comply with the standards in Table 4.2. The standards contained in the PennDOT Publication 408 are an acceptable alternative.

TABLE 4.2
Compost Standards

Organic Matter Content	80% - 100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5 - 8.0
Moisture Content	35% - 55%
Particle Size	98% pass through 1" screen
Soluble Salt Concentration	5.0 dS/m (mmhos/cm) Maximum

Filtrexx



PLAN VIEW

ELEVATION VIEW

NOTE:

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

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. MDC MIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	390 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	#0 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT ON HAND FOR IMMEDIATE REPLACEMENT. ALL USED FILTER BAGS SHALL BE PLACED ON STRAW TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSED) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

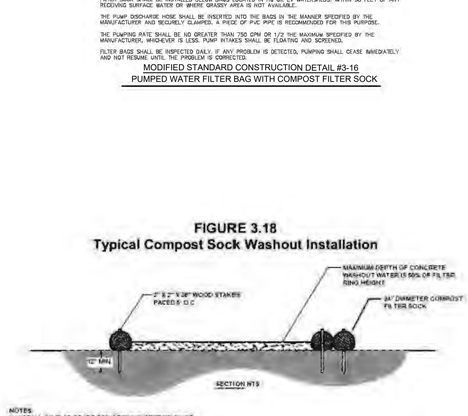
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

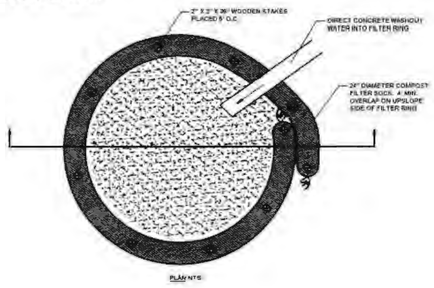
FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

MODIFIED STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG WITH COMPOST FILTER SOCK

FIGURE 3.18
Typical Compost Sock Washout Installation



NOTES
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE
2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.

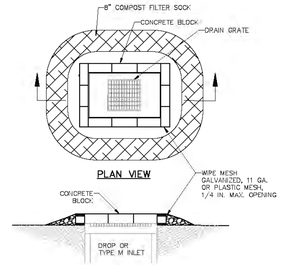


1. A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.
2. ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
3. ACCUMULATED MATERIALS HSOULD BE REMOVED WHEN THEY REACH 75% CAPACITY.
4. PLASTIC LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.

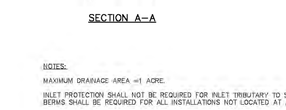
NOTES:
1. CONCRETE TRUCKS SHALL BE EQUIPPED WITH AT LEAST 50 GALLONS OF WATER TO CLEAN THE TRUCK AND HOPPER, PLUS AT LEAST 7 GALLONS OF WATER TO CLEAN CONCRETE CHUTE.

MAINTENANCE:
1. ALL CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
2. ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY.
3. ANY PLASTIC LINERS USED SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.

CONCRETE WASHOUT DETAIL



PLAN VIEW



SECTION A–A

NOTES:

MAXIMUM DRAINAGE AREA =1 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.

TOP OF BLOCK SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.

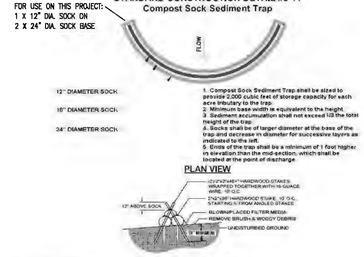
SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 8 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

STANDARD CONSTRUCTION DETAIL
COMPOST FILTER AND CONCRETE BLOCK INLET PROTECTION

STANDARD CONSTRUCTION DETAIL #3-11
Compost Sock Sediment Trap

FOR USE ON THIS PROJECT:
1 X 12" DIA. SOCK ON
2 X 24" DIA. SOCK BASE



Adapted from Filtrexx

STAKING DETAIL

Sock material shall meet the standards of Table 4.1. Compost shall meet the standards of Table 4.2.

Compost sock sediment traps shall not exceed three socks in height and shall be stacked in pyramidal form as shown above. Minimum trap height is one 24" diameter sock. Additional storage may be provided by means of an excavated sump 12" deep extending 1 to 3 feet upslope of the socks along the lower side of the trap.

Compost sock sediment traps shall provide 2,000 cubic feet storage capacity with 12" freeboard for each tributary drainage acre. (See manufacturer for anticipated settlement.)

The maximum tributary drainage area is 5.0 acres. Since compost socks are "flow-through," no spillway is required.

Compost sock sediment traps shall be inspected weekly and after each runoff event. Sediment shall be removed when it reaches 1/3 the height of the socks.

Photodegradable and biodegradable socks shall not be used for more than 1 year.

CLIENT DATA

cornerstone
Consulting Engineers & Design Services, Inc.
213 West Main Street . Lansdale . PA 19446
Phone: 215-362-2600 Fax: 215-362-8400
WWW.CORNERSTONENET.COM
Philadelphia Region 215-362-2600
Lehigh Valley Region 610-820-8200
Pocono Region 570-839-1770

REVISIONS

NO	BY	DESCRIPTION	DATE
1	RL	REVISED PER TWP REVIEWS	7/30/2024
2	EMR	REVISED PER CLIENT COMMENTS	11/14/2024
3	DB	REVISED PER MCCD AND FINAL REVIEW	4/04/2025

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VIRGINIA LICENSE No. 0402.045725
FLORIDA LICENSE No. 75184
NEW YORK LICENSE No. 093667-1

PROJECT LOCATION

FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC

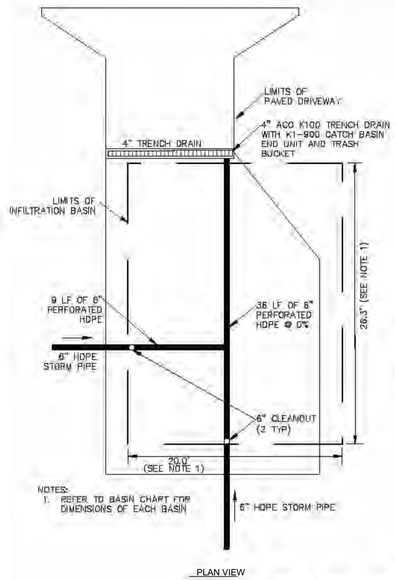
TITLE

EROSION AND SEDIMENTATION CONTROL DETAILS

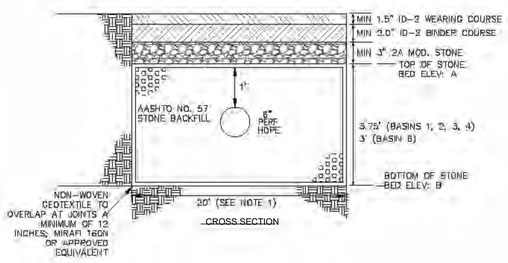
PROJ. #	23-0548	DATE	03/7/2024
CAD ID.	23-0548	DRN BY	RL
SCALE	AS NOTED	CHK BY	JBA

SHEET 11 OF 17

REVISION 3



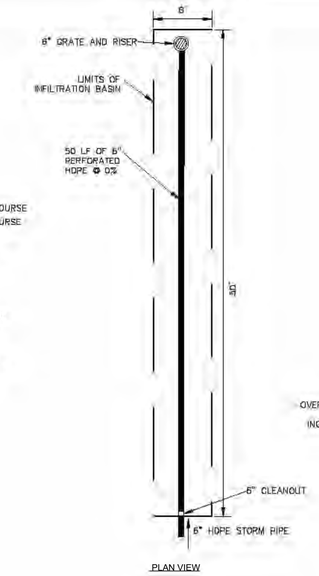
PLAN VIEW



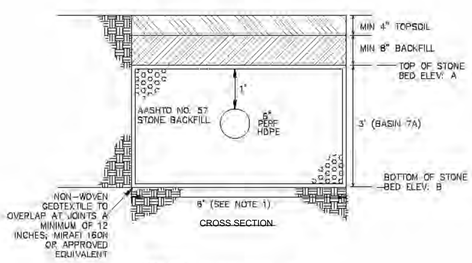
CROSS SECTION

INFILTRATION BASIN DETAIL LOTS 1-4 & 6

N.T.S.



PLAN VIEW

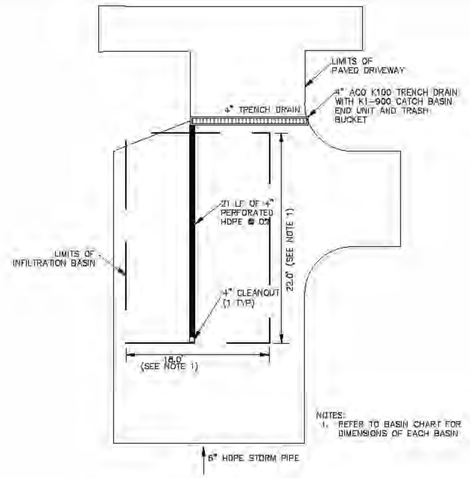


CROSS SECTION

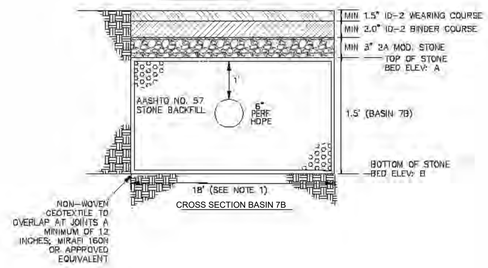
NOTES:
1. REFER TO BASIN CHART FOR DIMENSIONS OF EACH BASIN

INFILTRATION BASIN DETAIL LOT 7A

N.T.S.



PLAN VIEW BASIN 7B



CROSS SECTION BASIN 7B

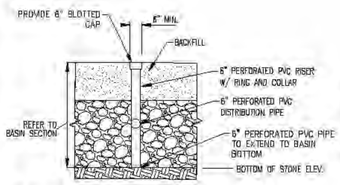
INFILTRATION BASIN DETAIL LOT 7B

N.T.S.

INFILTRATION BASIN INFORMATION AND INFILTRATION DRAW DOWN CALCULATIONS

LOT NUMBER	LOT 1	LOT 2	LOT 3	LOT 4	LOT 5	LOT 6	LOT 7 (BASIN 7A)	LOT 7 (BASIN 7B)
TEST PIT # AND INFILTRATION RATE	TEST PIT # 11 DESIGN RATE:0.69 IN/HR	TEST PIT # 10 DESIGN RATE:0.63 IN/HR	TEST PIT # 9 DESIGN RATE:0.75 IN/HR	TEST PIT # 8 DESIGN RATE:0.75 IN/HR	NO BASIN PROPOSED FOR LOT 5 WITH EXISTING HOUSE	TEST PIT # 13 DESIGN RATE:0.50 IN/HR	TEST PIT # 12 DESIGN RATE:0.63 IN/HR	TEST PIT # 12 DESIGN RATE:0.63 IN/HR
BASIN SIZE AND STORAGE VOLUME*	20'x28.3'x3.75' 1,972.5x0.40= 789 CF	22'x28.3'x3.75' 2,169.75x0.40= 868 CF	20'x28.3'x3.75' 1,972.5x0.40= 789 CF	20'x28.3'x3.75' 1,972.5x0.40= 789 CF		22'x30.5'x3.0' 2,013x0.40= 805 CF	6'x50'x3' 900x0.40= 360 CF	22'x18'x1.5' 594x0.40= 237 CF
TOP OF BASIN (A)	332.80'	335.92'	337.68'	341.01'		340.50'	348.00'	346.50'
BOTTOM OF BASIN (B)	329.05'	332.17'	333.91'	337.26'		337.50'	345.00'	345.00'
LIMITING ZONE ELEV	NOT ENCOUNTER AT ELEV. 328'	NOT ENCOUNTER AT ELEV. 332'	NOT ENCOUNTER AT ELEV. 334'	NOT ENCOUNTER AT ELEV. 337'		NOT ENCOUNTER AT ELEV. 336'	BEDROCK AT ELEV. 345'	BEDROCK AT ELEV. 343'
DRAIN DOWN CALCULATION	3.75 x (1 HR/0.69 IN) x (12 IN/1 FT) = 65 HRS	3.75 x (1 HR/0.63 IN) x (12 IN/1 FT) = 71 HRS	3.75 x (1 HR/0.75 IN) x (12 IN/1 FT) = 60 HRS	3.75 x (1 HR/0.75 IN) x (12 IN/1 FT) = 60 HRS		3.0 x (1 HR/0.50 IN) x (12 IN/1 FT) = 72 HRS	3.0 x (1 HR/0.63 IN) x (12 IN/1 FT) = 57 HRS	1.5 x (1 HR/0.63 IN) x (12 IN/1 FT) = 28.57 HRS

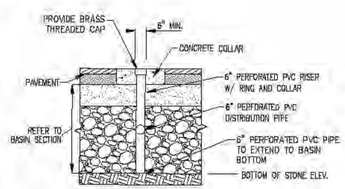
*BASIN VOLUME IS BASED ON 40% VOID SPACE WITHIN STONE AREA.



6" GRATED OVERFLOW AND OBSERVATION WELL

OBSERVATION WELL NOTES:

1. THE OBSERVATION WELL MUST BE PLACED AT THE INVERT OF THE STONE BED.
2. AN OBSERVATION WELL MUST BE LOCATED NEAR THE CENTER OF THE STONE BED SYSTEM TO MONITOR THE LEVEL AND DURATION OF WATER STORED WITHIN THE SMP (DRAIN DOWN TIME).
3. ADEQUATE INSPECTION AND MAINTENANCE ACCESS TO THE OBSERVATION WELL MUST BE PROVIDED.
4. A MANHOLE MAY BE USED IN LIEU OF AN OBSERVATION WELL IF THE INVERT OF THE MANHOLE IS INSTALLED AT OR BELOW THE BOTTOM OF THE SMP AND THE MANHOLE IS CONFIGURED IN SUCH A WAY THAT STORMWATER CAN FLOW FREELY BETWEEN THE SMP AND THE MANHOLE AT THE SMP'S INVERT.



TYPICAL CLEANOUT AND OBSERVATION WELL

OBSERVATION WELL NOTES:

1. THE OBSERVATION WELL MUST BE PLACED AT THE INVERT OF THE STONE BED.
2. AN OBSERVATION WELL MUST BE LOCATED NEAR THE CENTER OF THE STONE BED SYSTEM TO MONITOR THE LEVEL AND DURATION OF WATER STORED WITHIN THE SMP (DRAIN DOWN TIME).
3. ADEQUATE INSPECTION AND MAINTENANCE ACCESS TO THE OBSERVATION WELL MUST BE PROVIDED.
4. A MANHOLE MAY BE USED IN LIEU OF AN OBSERVATION WELL IF THE INVERT OF THE MANHOLE IS INSTALLED AT OR BELOW THE BOTTOM OF THE SMP AND THE MANHOLE IS CONFIGURED IN SUCH A WAY THAT STORMWATER CAN FLOW FREELY BETWEEN THE SMP AND THE MANHOLE AT THE SMP'S INVERT.

MAINTENANCE: SUBSURFACE INFILTRATION BASIN

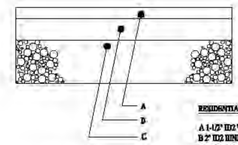
APPLIED AREAS: THIS BMP APPLIES TO THE SUBSURFACE INFILTRATION BASIN

EQUIPMENT: VISUAL INSPECTION, VAC TRUCK AS NEEDED

RECORD KEEPING: THE SITE OPERATOR/MANAGER SHOULD KEEP LOGS OF WHEN THE FACILITY IS CLEANED AND FILE THE RECEIPTS OR LOGS FOR THEIR RECORDS SHOULD THE MUNICIPALITY REQUIRE DOCUMENTATION OF THE BMP IMPLEMENTATION.

RESPONSIBLE PARTY: THE OWNER, OR AUTHORIZED OWNER REPRESENTATIVE, IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF BMP'S ONCE CONSTRUCTION IS COMPLETED.

EARLY MAINTENANCE ACTIVITY	FREQUENCY
INSPECT EROSION CONTROL AND FLOW SPREADING DEVICES UNTIL SOIL SETTLEMENT AND VEGETATIVE ESTABLISHMENT OF CONTRIBUTING AREAS HAS OCCURRED.	BIWEEKLY
INSPECT INLET CONTROLS, OUTLET STRUCTURES, AND STORAGE AREAS FOR TRASH AND SEDIMENT ACCUMULATION.	MONTHLY FOR THE FIRST YEAR AFTER INSTALLATION TO DETERMINE ONGOING MAINTENANCE FREQUENCY
ONGOING MAINTENANCE ACTIVITY	**FREQUENCY**
REGULARLY CLEAN OUT GUTTERS AND CATCH BASINS TO REDUCE SEDIMENT LOAD TO DETENTION SYSTEM. CLEAN INTERMEDIATE SUMP BOXES, REPLACE FILTERS, AND OTHERWISE CLEAN PRETREATMENT AREAS IN DIRECTLY CONNECTED SYSTEMS.	AS NEEDED
REMOVE SEDIMENT AND DEBRIS FROM SUBSURFACE DETENTION SMP SEDIMENTATION CHAMBER, AS APPLICABLE, WHEN THE SEDIMENT ZONE IS 1/4 FULL.	AS NEEDED
REMOVE SEDIMENT AND DEBRIS FROM PIPE/VAULT SYSTEMS. SEDIMENT DEPTH IS NOT TO REACH A MAXIMUM DEPTH OF FOUR INCHES BELOW THE SMP'S OUTLET INVERT ELEVATION. REMOVAL OF SEDIMENT FROM GRID SYSTEMS MUST BE PER MANUFACTURERS RECOMMENDATIONS OR AS PER THE SITE-SPECIFIC MAINTENANCE SCHEDULE.	AS NEEDED
INSPECT SUBSURFACE DETENTION FACILITY AND CONTROL STRUCTURES.	QUARTERLY
REMOVE FLOATING DEBRIS AND ACCUMULATED PETROLEUM PRODUCTS.	QUARTERLY
MAINTAIN RECORDS OF ALL INSPECTIONS AND MAINTENANCE ACTIVITY.	ONGOING



RESIDENTIAL DRIVEWAY:
A 1-1/2" ID2 WEARING COURSE
B 2" ID2 BINDER COURSE
C 6" 2A MODIFIED STONE BASE

SUBGRADE STABILITY VERIFICATION

After contractor has prepared subgrade in accordance with PADOT
408, Section 210 (subgrade) a subgrade stability verification is required prior to placement of subbase material. A triaxle full-loaded maximum load (quarry slip of loaded weight will be required in the field) is required to run over entire roadway subgrade (including curb lines), over all trenches and anywhere directed by Township Engineer or his/her representative in the field. Areas displaying pronounced elasticity, pumping, movement or deformation under the loaded triaxle will be noted and marked
in the field. The areas noted and or marked showing unstable subgrade must be corrected and reverified for required stability prior to starting subbase construction. All areas that are to be paved and or curbed are required to be proof rolled by this method.

TYPICAL RESIDENTIAL DRIVEWAY PAVEMENT SECTION (ON-SITE)

CLIENT DATA

Cornerstone
Consulting Engineers & Design Services, Inc.
213 West Main Street . Lansdale . PA 19446
Phone: 215-362-2600 . Fax: 215-362-8400
WWW.CORNERSTONENET.COM
Philadelphia Region 215-362-2600
Lehigh Valley Region 610-820-6200
Pocono Region 570-839-1770

NO.	BY	DESCRIPTION	DATE
1	BL	REVISED PER TWP REVIEWS	7/26/2024
2	LMP	REVISED PER CLIENT COMMENTS	11/14/2024
3	DB	REVISED PER MCD AND FINAL REVIEW	4/04/2025

KEY NOTES

PENNSYLVANIA ONE CALL SYSTEM, INC.
925 Irwin Run Road
West Mifflin, Pennsylvania 15122 - 1078

811

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776

J.B. ANDERSON
PROFESSIONAL ENGINEER
DELAWARE LICENSE No. PE 15418
PENNSYLVANIA LICENSE No. PE 055536
MARYLAND LICENSE No. 29113
NEW JERSEY LICENSE No. 24GE04529400
VIRGINIA LICENSE No. 0402 045725
FLORIDA LICENSE No. 75184
NEW YORK LICENSE No. 093667-1

PROJECT LOCATION

FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC

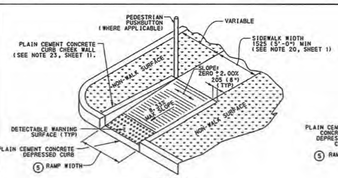
TITLE

DETAILS

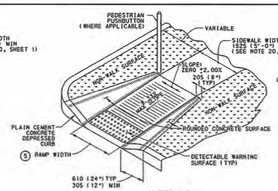
PROJ. #	24-0548	DATE	05/7/2024
JOB ID.	24-0548	DRN BY	BL
SCALE	AS NOTED	CHK BY	JBA

SHEET 12 OF 17

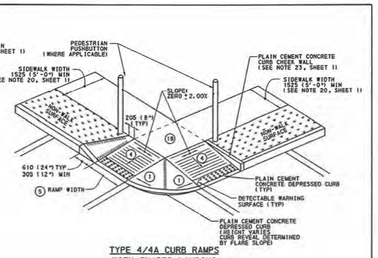
REVISION 3



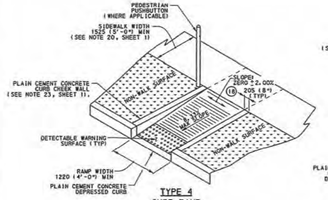
TYPE 4
CURB RAMP
(PARALLEL)



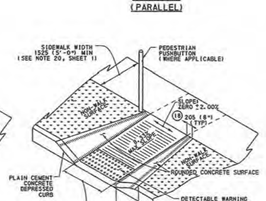
ALTERNATE
TYPE 4A
CURB RAMP
(PARALLEL)



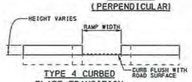
TYPE 4/4A CURB RAMPS
WITH SHARED LANDING



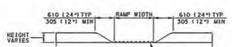
TYPE 4
CURB RAMP
(PERPENDICULAR)



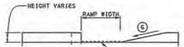
ALTERNATE
TYPE 4A
CURB RAMP
(PERPENDICULAR)



TYPE 4 CURBED
FLARE TRANSITION



TYPE 4A NON-TRAVERSABLE
ROLLED FLARE TRANSITION



COMBINATION
TRANSITION

TYPICAL ELEVATIONS
FOR DEPRESSED CURBS

1 SIDE FLARES 10.00% MAX SLOPE
4 8.33% MAX RAMP SLOPE
5 CURB RAMP WIDTH IS EQUAL TO SIDEWALK WIDTH WHEN THE SIDEWALK WIDTH IS GREATER THAN OR EQUAL TO THE MINIMUM 1220 (4'-0") WIDTH.
6 SLOPE VARIES SEE RAMP DETAILS
18 CURB RAMPS REQUIRE A 1220 (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SEE DETAILS FOR LOCATIONS AND DIMENSIONS.

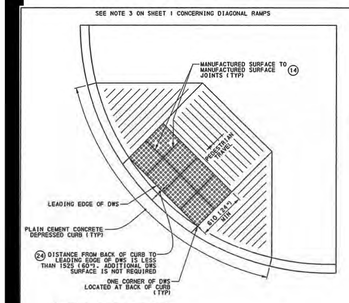
NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

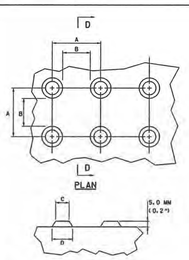
CURB RAMPS AND SIDEWALKS

NEW CONSTRUCTION OR
ALTERATION DETAILS
TYPE 4 CURB RAMPS

RECOMMENDED JUN. 1, 2010	RECOMMENDED JUN. 1, 2010	SHT 3. OF 13
CHIEF, HWY. GA DIVISION	DIRECTOR, BUREAU OF DESIGN	RC-67M

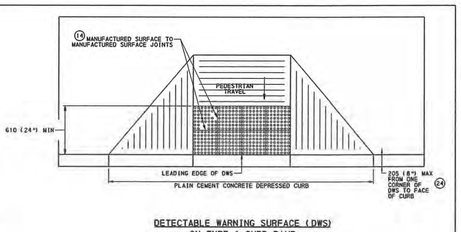


DETECTABLE WARNING SURFACE (DWS)
ON CURVED SURFACES

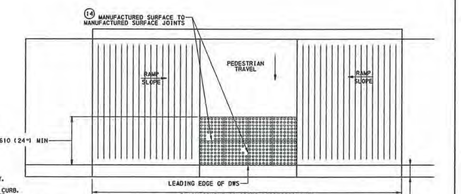


TRUNCATED DOME DIMENSIONS		
DIM	MIN mm (inch)	MAX mm (inch)
A	61 (2.4")	61 (2.4")
B	17 (0.65")	37 (1.5")
C	(13)	(13)
D	23 (0.91")	36 (1.4")

DETECTABLE WARNING SURFACE (DWS)
TRUNCATED DOME DETAILS



DETECTABLE WARNING SURFACE (DWS)
ON TYPE 1 CURB RAMP

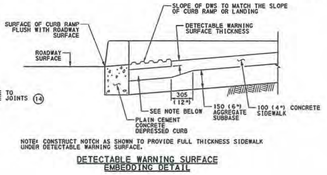


DETECTABLE WARNING SURFACE (DWS)
ON TYPE 2 CURB RAMP

DISTANCE LESS THAN 1525 (60") PERPENDICULAR DWS PERMITTED
DETECTABLE WARNING SURFACE (TYP)
610 (24") MIN
MANUFACTURED SURFACE TO MANUFACTURED SURFACE JOINTS
LEADING EDGE OF DWS
PLAIN CEMENT CONCRETE DEPRESSED CURB
BOTTOM OF RAMP
ONE CORNER OF DWS LOCATED AT BACK OF CURB
DISTANCE GREATER THAN 1525 (60") RADIAL DWS REQUIRED
8.33% MAX SLOPE

DETECTABLE WARNING SURFACE (DWS)
ON CURVED SURFACES

13 TYPE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.
14 PLACE ADJACENT DWS TILES WITH MANUFACTURED SURFACE TO MANUFACTURED SURFACE. CUT TILES ALONG THE PERIMETER ONLY.
24 LOCATE ONE CORNER OF THE DWS AT THE BACK OF CURB. NO OTHER POINT ON THE LEADING EDGE OF THE DWS MAY BE MORE THAN 1525 (60") AWAY FROM THE BACK OF CURB.



NOTE: CONSTRUCT NOTCH AS SHOWN TO PROVIDE FULL THICKNESS SIDEWALK UNDER DETECTABLE WARNING SURFACE.

DETECTABLE WARNING SURFACE
EMBEDDING DETAIL

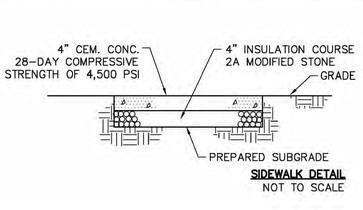
NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

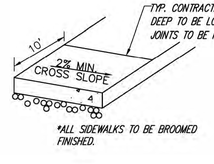
CURB RAMPS AND SIDEWALKS

NEW CONSTRUCTION OR
ALTERATION DETAILS
DETECTABLE WARNING SURFACE

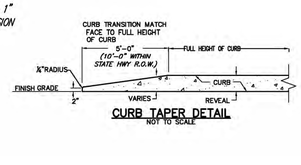
RECOMMENDED JUN. 1, 2010	RECOMMENDED JUN. 1, 2010	SHT 9. OF 13
CHIEF, HWY. GA DIVISION	DIRECTOR, BUREAU OF DESIGN	RC-67M



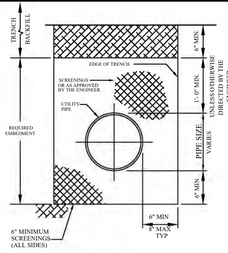
SIDEWALK DETAIL
NOT TO SCALE



*ALL SIDEWALKS TO BE BROOMED FINISHED.

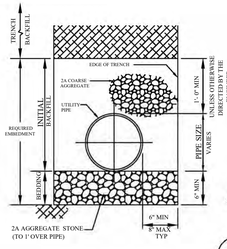


CURB TAPER DETAIL
NOT TO SCALE



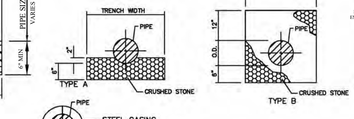
PIPE O.D. PLUS 1' TO 1'-4"

COPPER PIPE

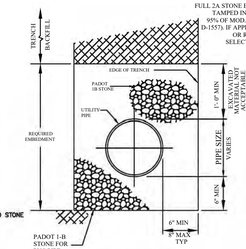


PIPE O.D. PLUS 1' TO 1'-4"

DUCTILE IRON PIPE

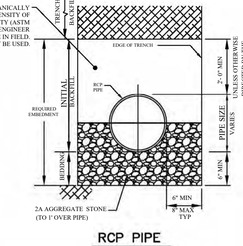


TYPES OF CRUSHED STONE PIPE
CRADLES AND STEEL CASING



PIPE O.D. PLUS 1' TO 1'-4"

P.V.C. PIPE

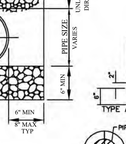


RCP PIPE

PIPE SIZE	6" AND 8"			10" AND 12"			14" AND 16"		
DEGREE BEND OR DEFLECTION	11 1/4°	22 1/2°	45°	11 1/4°	22 1/2°	45°	11 1/4°	22 1/2°	45°
LENGTH	3.00	4.00	6.00	4.50	6.00	8.00	6.00	8.00	11.00
WIDTH	3.00	3.00	3.00	3.00	3.00	4.00	3.50	3.50	5.00
DEPTH	2.00	3.00	4.00	3.00	4.50	5.00	3.50	5.00	5.00
SQ. IN. REINFORCING	0.17	0.33	0.65	0.37	0.74	1.46	0.66	1.32	2.60

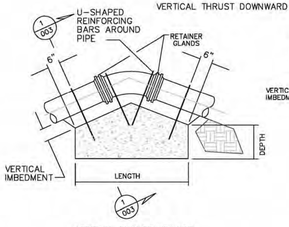
BAR NO.	5	6	7	8	9	10	11
CROSS-SECTION IN.² PER BAR	0.31	0.44	0.60	0.79	1.00	1.27	1.56
VERTICAL IMBEDMENT	15"	19"	26"	35"	44"	56"	68"

VERTICAL THRUST BLOCKING –
UPWARD THRUSTS SCHEDULE OF DIMENSIONS
150 P.S.I. WORKING PRESSURE



SEE HORIZONTAL THRUST BLOCKING TABLES FOR BEARING SURFACE AREA FOR DOWNWARD THRUST.

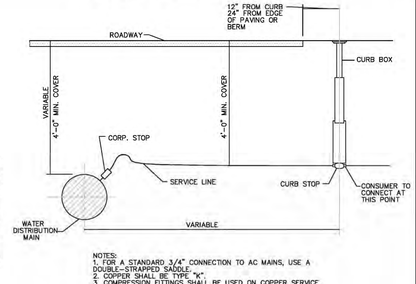
VERTICAL THRUST DOWNWARD



VERTICAL THRUST UPWARD

NOTES:
1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 P.S.I. AT THE END OF 28 DAYS.
2. PAINT ALL EXPOSED STEEL WITH TWO COATS OF ASPHALT PAINT.
3. ALL COUPLED OR JOINTS SHALL BE CONVEYED WITH CONCRETE.
4. ALL-THREADS WITH PIPE STRAPS MAY BE USED IN PLACE OF REINFORCING BARS.
5. ALL THRUST BLOCKS SHOWN ARE INTENDED AS A GUIDE AND SHALL WITHSTAND THE REQUIRED PRESSURE.
6. RETAINER GLANDS REQUIRED ON ALL MECHANICAL JOINT FITTINGS.
7. CERTAIN SITUATIONS MAY WARRENT THE USE OF TIE RODS, AUTHORIZED BY THE WATER COMPANY ONLY.

VERTICAL THRUST BLOCKING

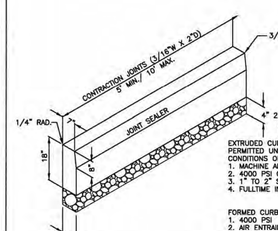


NOTES:
1. RETAINER GLANDS REQUIRED ON ALL MECHANICAL JOINT FITTINGS.
2. VALVE BOX SHALL BE 2 PIECE SCREW TYPE.

GATE VALVE INSTALLATION

NOTES:
1. FOR A STANDARD 3/4" CONNECTION TO AC MAINS, USE A DOUBLE--STRAPPED SADDLE.
2. COPPER SHALL BE TYPE "K".
3. COMPRESSION FITTINGS SHALL BE USED ON COPPER SERVICE.
4. COPPER SERVICE SHALL BE LAID LOOSELY HORIZONTALLY TO PREVENT DAMAGE UPON SETTING OF TRENCH.

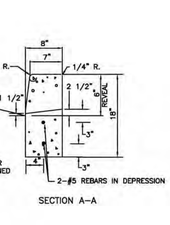
WATER LINE
SERVICE CONNECTION



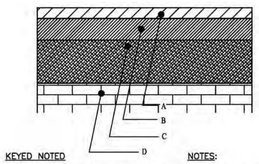
EXTRUDED CURB SHALL BE PERMITTED UNDER FOLLOWING CONDITIONS ONLY:
1. MACHINE APPROVED BY ENGINEER
2. 4000 PSI CONCRETE AIR ENTRAINED
3. 1" TO 2" SLUMP
4. FULLTIME INSPECTION

FORMED CURB SHALL BE:
1. 4000 PSI
2. AIR ENTRAINED
3. 4" SLUMP

* A CONTRACTION JOINT SHALL BE PLACED EVERY 10 FEET MINIMUM



SECTION A–A



KEYED NOTED

A – 1.5 INCHES SUPERPAVE VOLUMETRIC ASPHALT MIXTURE DESIGN, 9.5mm, PG 64–22, WMA WEARING COURSE, 3–10 MILLION Esals, SRL–E

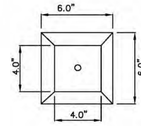
B – 2.0 INCHES SUPERPAVE VOLUMETRIC ASPHALT MIXTURE DESIGN, 19mm, PG 64–22, WMA BINDER COURSE, 3–10 MILLION Esals

C – 9.0 INCHES SUPERPAVE VOLUMETRIC ASPHALT MIXTURE DESIGN, 25mm, PG 64–22, WMA BASE COURSE, 3–10 MILLION Esals

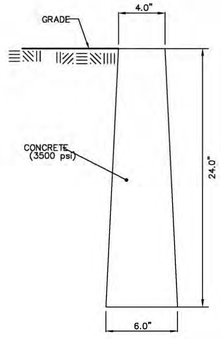
D – 8.0 INCHES SUBBASE (NO. 2A)

NOTES:
THIS PAVEMENT SECTION DETAIL REFLECTS MINIMUM REQUIREMENTS. ENGINEER TO DETERMINE DESIGN BASED ON GEO–TECHNICAL DATA OF SPECIFIC PROJECT.

(FOR USE WITHIN RIGHT–OF–WAY LINES)
PAVEMENT SECTION DETAIL

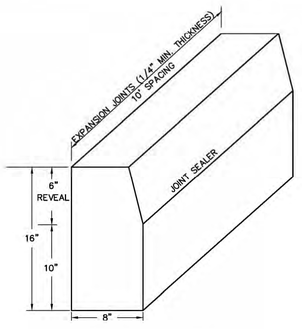


PLAN

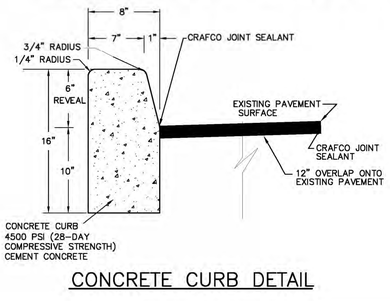


ELEVATION

CONCRETE MONUMENT (TYP.)



TYPICAL CONCRETE CURB DETAIL
NOT TO SCALE



CONCRETE CURB DETAIL

CLIENT DATA

Cornerstone
Consulting Engineers & Design Services, Inc.
213 West Main Street . Lansdale . PA 19446
Phone: 215-362-2600 . Fax: 215-362-8400
WWW.CORNERSTONENET.COM

Pocono Region
570-839-1770

Lehigh Valley Region
610-820-6200

Philadelphia Region
215-362-2600

REVISIONS

NO	BY	DESCRIPTION	DATE
1	RL	REVISED PER TWP REVIEWS	7/6/2024
2	EMR	REVISED PER CLIENT COMMENTS	11/14/2024
3	DJB	REVISED PER ARC'D AND FINAL REVIEW	4/04/2025

PENNSYLVANIA ONE CALL SYSTEM, INC.
925 Irwin Run Road
West Mifflin, Pennsylvania
15122 - 1076

811
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776

J.B. ANDERSON
PROFESSIONAL ENGINEER
DELAWARE LICENSE No. PE 15858
PENNSYLVANIA LICENSE No. PE055536
MARYLAND LICENSE No. 29313
NEW JERSEY LICENSE No. 24GE04520400
VIRGINIA LICENSE No. 0402 045725
FLORIDA LICENSE No. 75184
NEW YORK LICENSE No. 095667-1

PROJECT LOCATION

FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC

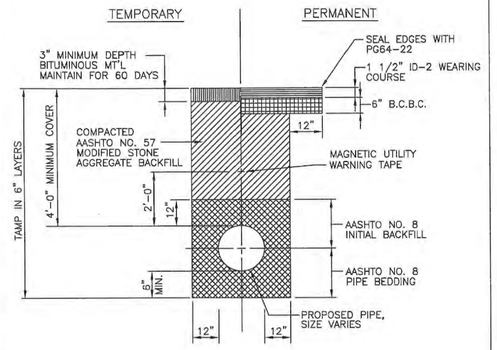
TITLE

DETAILS

PROJ. #	23-0548	DATE	03/7/2024
CAD ID.	23-0548	DRN BY	RL
SCALE	AS NOTED	CHK BY	JBA

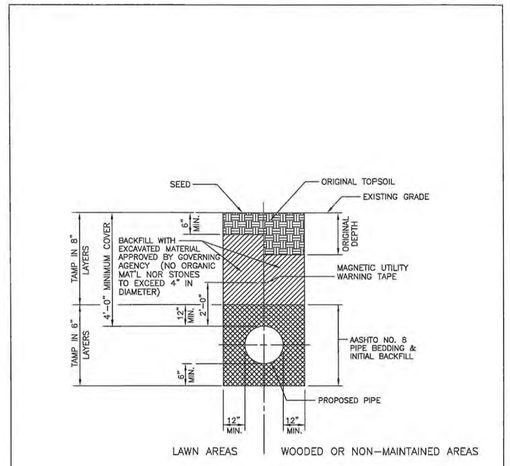
SHEET 13 OF 17

REVISION 3

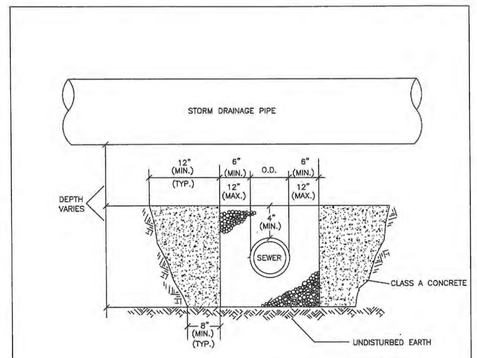


ALL WORK TO BE DONE IN ACCORDANCE WITH PADOT PUBLICATION 408

Township of Abington STANDARD DETAIL - SANITARY SEWER	
BACKFILL AND PAVEMENT RESTORATION DETAIL FOR STATE / TWP. ROADS	DATE: OCTOBER 2015 DETAIL: 1



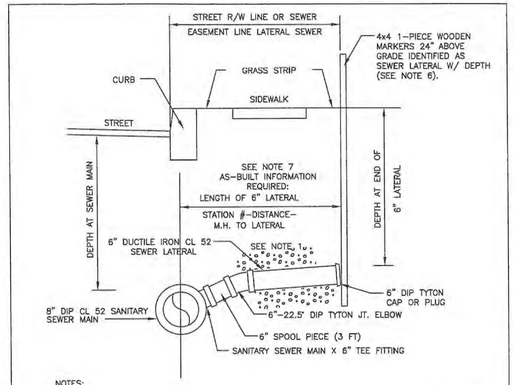
Township of Abington STANDARD DETAIL - SEWER SYSTEM	
TRENCH RESTORATION LAWN / WOODED AREAS	DATE: NOVEMBER 2015 DETAIL: 2



NOTES:

1. PIERS TO BE 5 FT. LONG CENTERED ON STORM DRAIN.
2. USE 3000 PSI CLASS A CONCRETE.
3. FORM PIERS AGAINST SOLID TRENCH WALLS.
4. PIERS REQUIRED WHEN CLEARANCE BETWEEN PIPES IS LESS THAN 18".
5. MAINTAIN SLOPE OF EACH UTILITY AT CROSSING.

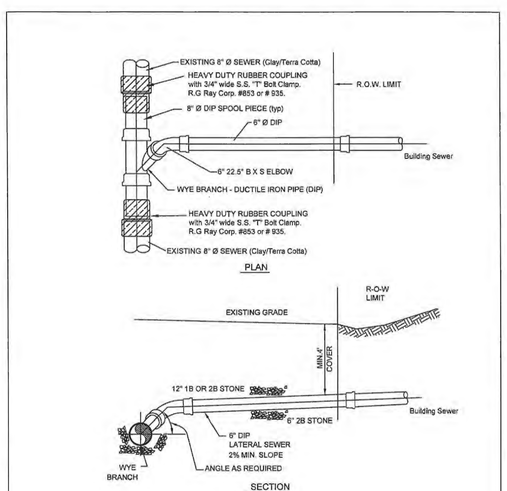
Township of Abington STANDARD DETAIL - SEWER SYSTEM	
GRAVITY SEWER CROSSING DETAIL USING PIER SUPPORTS	DATE: NOVEMBER 2015 DETAIL: 7



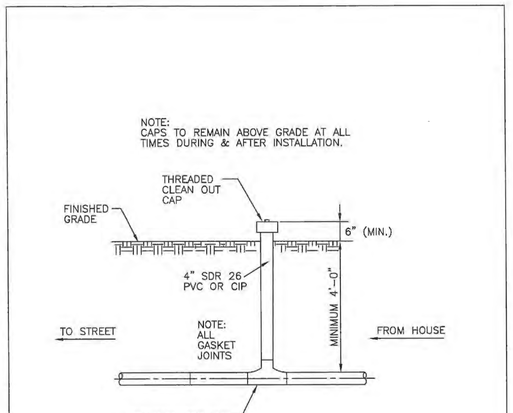
NOTES:

1) PROVIDE 6" OF AASHTO NO. 8 (1B) OR 2B STONE BELOW PIPE AND 12" ABOVE PIPE (TYPICAL ENTIRE LENGTH OF LATERAL).
2) MINIMUM SLOPE = 1% (1/8" PER FT.)
3) MINIMUM DEPTH OF COVER = 4 FT
4) PIPE MATERIALS: ALL PIPES TO BE DUCTILE IRON PIPE CLASS 52 WALL THICKNESS
5) DEVELOPER SHALL TEST AGAINST 6" TYTON CAP OR PLUG.
6) DEVELOPER SHALL INSTALL THE LATERAL SEWER TO THE EDGE OF THE SEWER EASEMENT FOR SEWERS LOCATED IN AN EASEMENT OR TO THE STREET RIGHT-OF-WAY AS A MINIMUM, OR TO SUCH POINT, AS REQUIRED, TO CLEAR STREET SIDEWALKS AND UNDERGROUND UTILITIES.
7) INFORMATION THAT IS REQUIRED FOR RECORD PLANS

Township of Abington STANDARD DETAIL - SEWER SYSTEM	
SEWER LATERAL INSTALLATION DETAIL	DATE: JANUARY 2106 DETAIL: 18

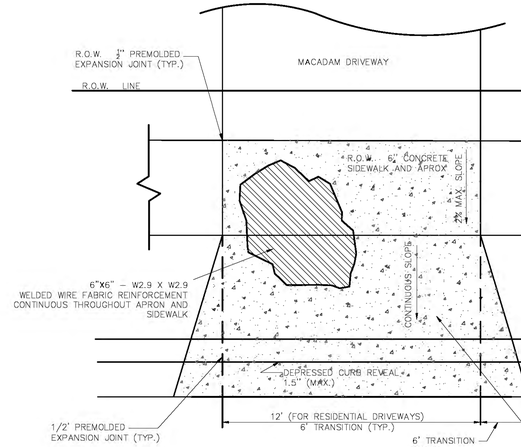


Township of Abington STANDARD DETAIL - SANITARY SEWER	
LATERAL CONNECTION TO EXISTING CLAY OR TERRA COTTA SEWER MAIN	DATE: OCTOBER 2015 DETAIL: 25

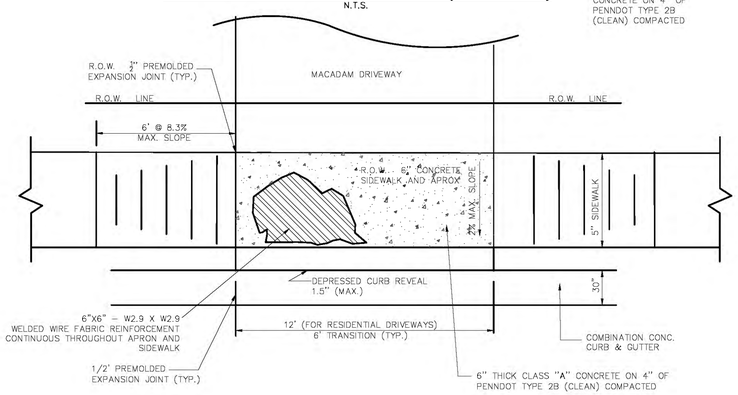


*CLEANOUTS LOCATED WITHIN ASPHALT SURFACES SHALL CONFORM TO THIS DETAIL BUT BE MODIFIED TO USE THE "CLEAN-OUT PROTECTION SLEEVE" DETAIL.

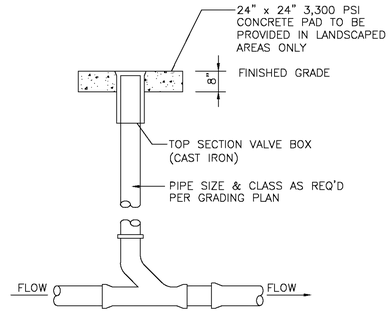
Township of Abington STANDARD DETAIL - SEWER SYSTEM	
TYPICAL BUILDING SEWER CLEANOUT ASSEMBLY	DATE: JANUARY 2016 DETAIL: 38



DRIVEWAY AND APRON DETAIL (LOTS 1-5)
N.T.S.

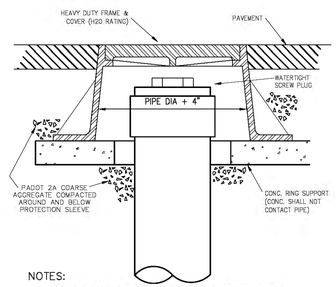


DRIVEWAY AND APRON DETAIL (LOTS 6-7)
N.T.S.



See Specifications for approved bedding material.

ONE WAY CLEAN-OUT
N.T.S.



NOTES:

FRAME AND COVER SHALL BE NEENAH FOUNDRY COMPANY MODEL R-1976 OR APPROVED EQUAL.
CLEAN-OUT PROTECTION SLEEVES ARE TO BE INSTALLED FOR CLEAN-OUTS LOCATED IN PAVED AREAS, OR LESS THAN 3 FEET FROM A PAVED AREA.

CLEAN-OUT PROTECTION SLEEVE
(FOR USE IN OR NEAR PAVED AREAS)
N.T.S.

CLIENT DATA

Cornerstone
Consulting Engineers & Design Services, Inc.
213 West Main Street . Lansdale . PA 19446
Phone: 215-362-2600 . Fax: 215-362-8400
WWW.CORNERSTONENET.COM
Philadelphia Region 215-362-2600
Lehigh Valley Region 610-820-8200
Pocono Region 570-839-1770

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MARYLAND LICENSE No. 29313
NEW JERSEY LICENSE No. 24GE04852600
VIRGINIA LICENSE No. 0402 048725
FLORIDA LICENSE No. 75184
NEW YORK LICENSE No. 095667-1

PROJECT LOCATION

FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
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7 LOT SUBDIVISION
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PREPARED FOR:
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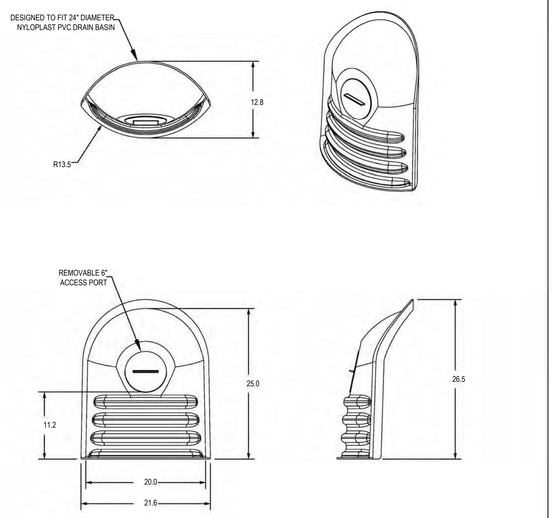
TITLE

DETAILS

PROJ. #	23-0548	DATE	03/7/2024
CAD ID.	23-0548	DRN BY	RL
SCALE	AS NOTED	CHK BY	JBA

SHEET 14 OF 17

REVISION 3



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DRAWN BY	JJC	MATERIAL	HIGH DENSITY POLYETHYLENE
DATE	07-02-12		
APP'D BY	JJC		
DATE	07-02-12		
REV BY	CJA	PROJECT NO./NAME	
DATE	08-20-14		
APP'D BY	CJA		
DATE	08-20-14		
DWG SIZE	A	SCALE NTS	SHEET 1 OF 1

ADS Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

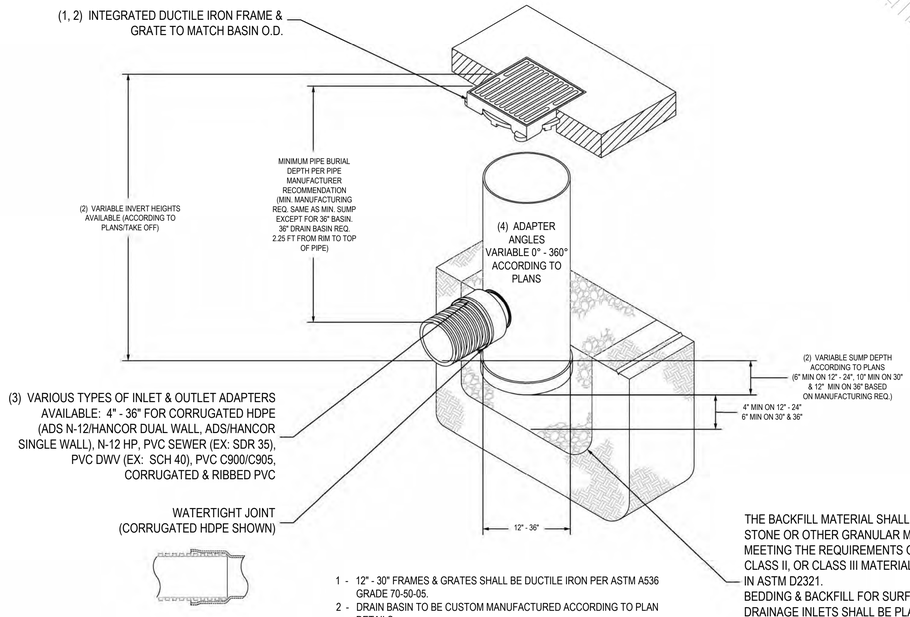
TITLE: NYLOPLAST 24" ENVIROHOOD FOR UP TO 15" OUTLET

DWG NO. 7004-110-106 REV B

ADS DRAIN BASIN

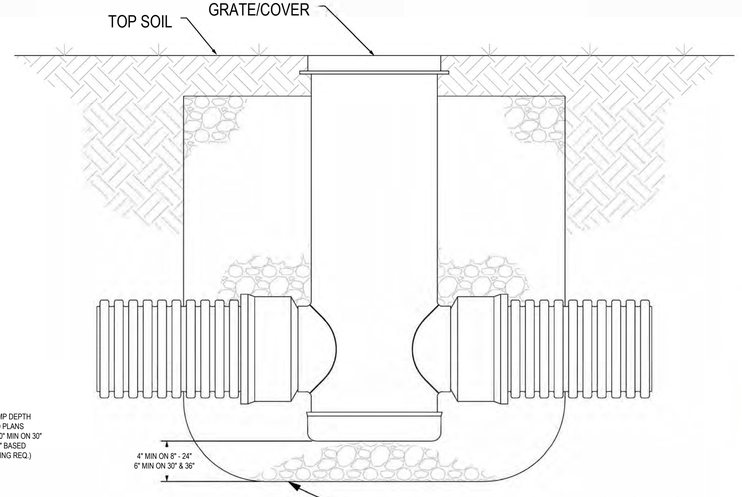
NON TRAFFIC INSTALLATION

ADS NYLOPLAST 2 FT X 2FT STRUCTURE



1 - 12" - 30" FRAMES & GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS.
3 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 36").
4 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
5 - ROAD & HIGHWAY GRATE SHALL MEET H-20 LOAD RATING.

THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321.
BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.



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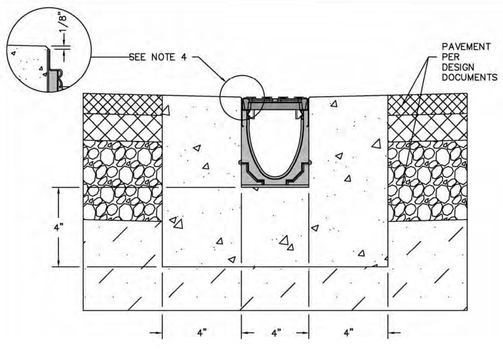


NOTES:
1. IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR EXISTING GROUND CONDITIONS. ENGINEERING ADVICE MAY BE REQUIRED.
2. MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. ENGINEERING ADVICE MAY BE REQUIRED.
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.
6. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.

SPECIFICATION CLAUSE

K100 KLASSIKDRAIN 'DRAINLOK' LOAD CLASS B

GENERAL
~~THE SURF~~ACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE K100 CHANNEL SYSTEM WITH GALVANIZED STEEL EDGE RAILS AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC.

MATERIALS
~~CHANNELS~~ SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN GALVANIZED STEEL EDGE RAIL. MINIMUM PROPERTIES OF POLYMER CONCRETE WILL BE AS FOLLOWS:

COMPRESSIVE STRENGTH:	14,000 PSI
FLEXURAL STRENGTH:	4,000 PSI
TENSILE STRENGTH:	1,500 PSI
WATER ABSORPTION:	0.07%
FROST PROOF	YES
DILUTE ACID AND ALKALI RESISTANT	YES
B117 SALT SPRAY TEST COMPLIANT	YES

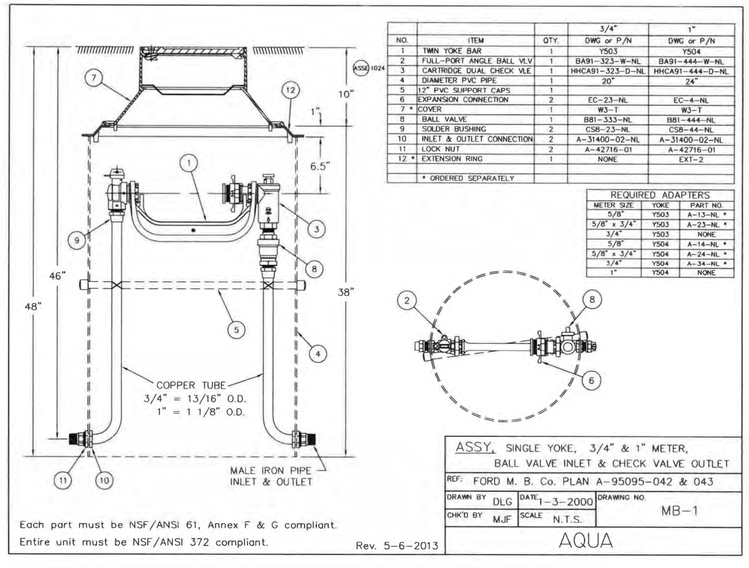
THE SYSTEM SHALL BE 4" (100mm) NOMINAL INTERNAL WIDTH WITH A 5.1" (130mm) OVERALL WIDTH AND A BUILT-IN SLOPE OF 0.5%. CHANNEL INVERT SHALL HAVE DEVELOPED "V" SHAPE. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.

THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

CHANNEL SHALL WITHSTAND LOADING TO PROPER LOAD CLASS AS OUTLINED BY EN 1433. GRATE TYPE SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND INTENDED APPLICATION. GRATES SHALL BE SECURED USING 'DRAINLOK' BOLTLESS LOCKING SYSTEM. CHANNEL AND GRATE SHALL BE CERTIFIED TO MEET THE SPECIFIED EN 1433 LOAD CLASS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

K1D-B-EAP	K100 - KLASSIKDRAIN - LOAD CLASS: B Exposed Asphalt Pavement	ACO Polymer Products, Inc. 825 W. Beechcraft St.
ACO 08/16/16 DATE:	INSTALLATION DRAWING – ACO DRAIN	Casa Grande, AZ 85122 Tel: 520-421-9988 Fax: 520-421-9899 / 9470 Pinecone Dr. Mentor, OH 44060 Tel: 440-639-7230 Fax: 440-639-7235 / 4211 Pleasant Rd. Fort Mill, SC 29708 Tel: 440-639-7230 Fax: 803-802-1063

TRENCH DRAIN AT DRIVEWAY



NO.	ITEM	QTY.	3/4" DWG or P/N	1" DWG or P/N
1	TWIN YOKE BAR	1	Y503	Y504
2	FULL-PORT ANGLE BALL VLV	1	BA91-323-W-NL	BA91-444-W-NL
3	CARTRIDGE DUAL CHECK VLE	1	HHCA91-323-D-NL	HHCA91-444-D-NL
4	DIAMETER PVC PIPE	1	20"	24"
5	12" PVC SUPPORT CAPS	1		
6	EXPANSION CONNECTION	2	EC-23-NL	EC-4-NL
7 *	COVER	1	W3-1	W3-T
8	BALL VALVE	1	BB1-333-NL	BB1-444-NL
9	SOLDER BUSHING	2	CS8-23-NL	CS8-44-NL
10	INLET & OUTLET CONNECTION	2	A-31400-02-NL	A-31400-02-NL
11	LOCK NUT	2	A-42716-01	A-42716-01
12 *	EXTENSION RING	1	NONE	EXT-2
	* ORDERED SEPARATELY			

REQUIRED ADAPTERS		
METER SIZE	YOKE	PART NO.
5/8"	Y503	A-13-NL *
5/8" x 3/4"	Y503	A-23-NL *
3/4"	Y503	NONE
5/8"	Y504	A-14-NL *
5/8" x 3/4"	Y504	A-24-NL *
3/4"	Y504	A-34-NL *
1"	Y504	NONE

Each part must be NSF/ANSI 61, Annex F & G compliant.
Entire unit must be NSF/ANSI 372 compliant.
Rev. 5-6-2013

ASSY. SINGLE YOKE, 3/4" & 1" METER, BALL VALVE INLET & CHECK VALVE OUTLET
REF: FORD M. B. Co. PLAN A-95095-042 & 043
DRAWN BY DLG | DATE 1-3-2000 | DRAWING NO. MB-1
CHK'D BY MJF | SCALE N.T.S.
AQUA

CLIENT DATA

Cornerstone
Consulting Engineers & Design Services, Inc.
213 West Main Street . Lansdale . PA 19446
Phone: 215-362-2600 . Fax: 215-362-8400
WWW.CORNERSTONENET.COM
Philadelphia Region 215-362-2600
Lehigh Valley Region 610-820-8200
Pocono Region 570-839-1770

REVISIONS

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1	RLL	REVISED PER TWP REVIEWS	7/5/2024
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PENNSYLVANIA ONE CALL SYSTEM, INC.
925 Irwin Run Road
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J.B. ANDERSON
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA LICENSE No. PE034586
COMMONWEALTH OF PENNSYLVANIA, LICENSE No. PE 055536
DELAWARE LICENSE No. 29913
NEW JERSEY LICENSE No. 24GE04520400
VIRGINIA LICENSE No. 0402 045725
FLORIDA LICENSE No. 75194
NEW YORK LICENSE No. 093667-1

PROJECT LOCATION

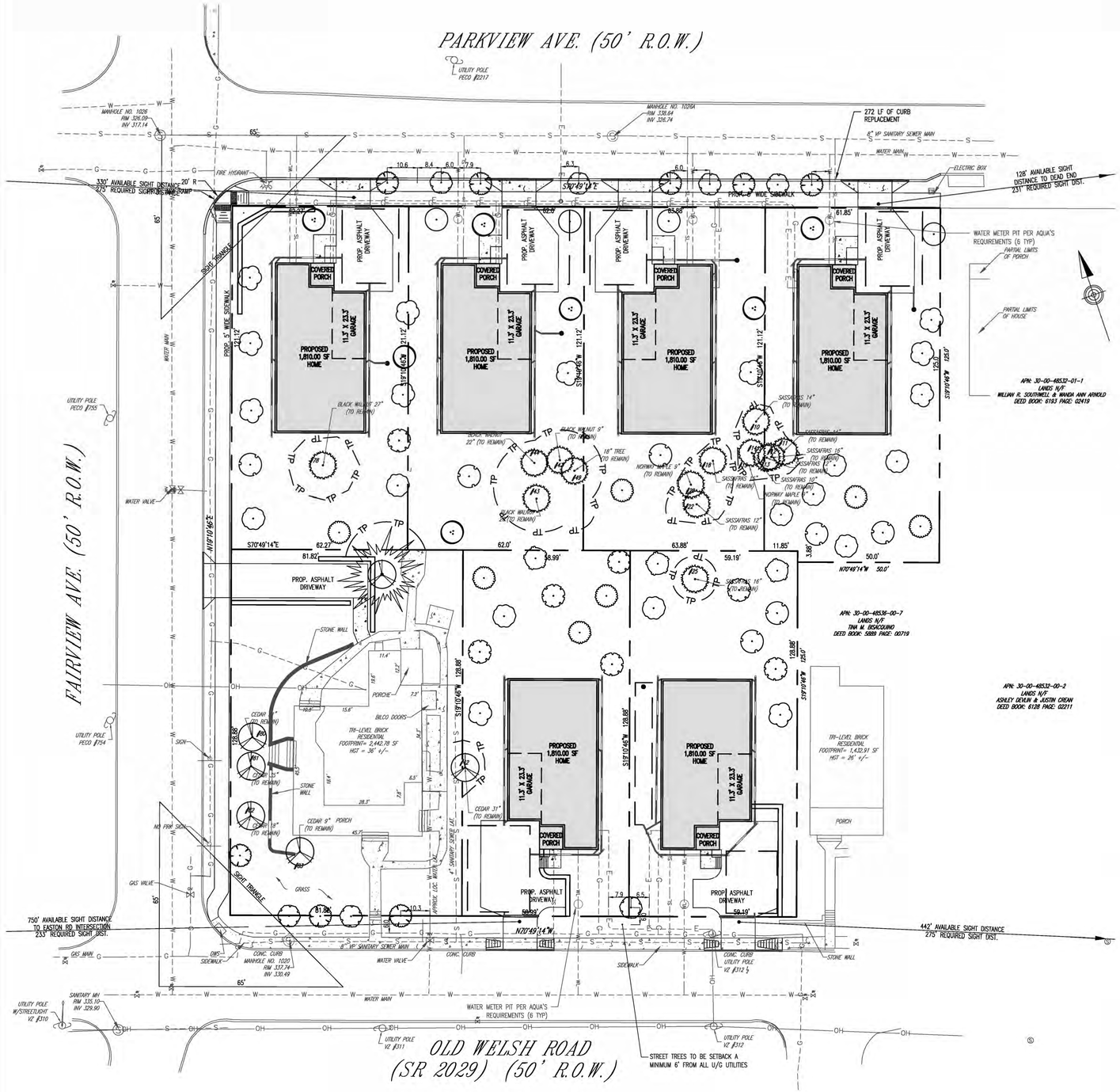
FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC
TITLE

DETAILS

PROJ. #	23-0548	DATE	03/7/2024
CAD ID	23-0548	DRN BY	JS
SCALE	AS NOTED	CHK BY	JBA

SHEET 15 OF 17

REVISION 3



PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	SIZE	CONTAINER	QTY
TREE REPLACEMENT					
	AS	Acer saccharum / Sugar Maple	3" Cal.	B&B	7
	AM	Amelanchier canadensis / Canadian Serviceberry Multi-trunk	3" Cal.	B&B	7
	CA	Carya ovata / Shagbark Hickory	3" Cal.	B&B	9
	CP	Celtis occidentalis `Prairie Pride` / Prairie Pride Hackberry	3" Cal.	B&B	3
	CC	Cercis canadensis / Eastern Redbud	3" Cal.	B&B	12
	CV	Chionanthus virginicus / White Fringetree	2.5" Cal.	B&B	4
	FG	Fagus grandifolia / American Beech	3" Cal.	B&B	7
	QM	Quercus muehlenbergii / Chinkapin Oak	3" Cal.	B&B	7
STREET TREES					
	GP	Ginkgo biloba `Princeton Sentry` / Princeton Sentry Ginkgo	2.5" Cal.	B&B	8
	NS	Nyssa sylvatica / Black Tupelo	2.5" Cal.	B&B	7

ABINGTON TOWNSHIP – LANDSCAPE COMPLIANCE CHART

	REQUIRED	PROVIDED
ZONING DISTRICT: R-4; MEDIUM-HIGH-DENSITY RESIDENTIAL DISTRICT		
SEC. 2401.A.2.d.(1) TREE REPLACEMENT FOR EACH TREE WITH A MINIMUM CALIPER OF SIX INCHES (6") IS REMOVED, IT SHALL BE REPLACED WITH TWO (2) 3 TO 3 ½" CAL. TREES TREES TO BE REMOVED: 28 TREES TO REPLACED: 28 x 2 = 56	56 TREES	56 TREES
SEC. 2402.B.2. STREET TREES ONE CANOPY TREE PER 40 LF OF FRONTAGE. TOTAL LINEAR FRONTAGE OF SITE = 700 / 40 = 18	18 STREET TREES	15 STREET TREES (1-3 EXISTING IN LOT 5 ALONG FAIRVIEW AVE.)

LEGEND & ABBREVIATIONS

- CENTERLINE OF ROAD
- PROPERTY BOUNDARY
- ADJOINER BOUNDARY
- RIGHT OF WAY LINE
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING OVERHEAD WIRE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING TELCO LINE
- EXISTING ELECTRIC LINE
- PROPOSED ELECTRIC LINE
- EXISTING GAS LINE
- PROPOSED GAS LINE
- EXISTING SANITARY LINE
- PROPOSED SANITARY LINE
- EXISTING CURB
- DEPRESSED CURB
- U/G - A/G UNDER/ABOVE GROUND
- SIGN
- UTILITY POLE (UP)
- UTILITY POLE WITH ROAD LIGHT
- HYDRANT
- STORM MANHOLE
- SANITARY MANHOLE
- ELECTRIC MANHOLE
- WATER MANHOLE
- STORM INLET
- GAS METER
- WATER METER
- TRAFFIC SIGNAL BOX
- ELECTRIC VAULT
- GAS VALVE
- WATER VALVE
- CLEAN OUT
- MONITORING WELL
- CONCRETE MONUMENT FOUND
- IRON PIN FOUND
- IRON PIPE FOUND
- NAIL FOUND
- EXISTING LIGHT FIXTURES
- PROPOSED BUILDING
- CONCRETE
- DECIDUOUS TREE
- CONIFEROUS TREE
- LSA LANDSCAPE AREA
- TP TP TP TREE PROTECTION FENCE

GENERAL NOTES:

1. THIS PLAN TO BE UTILIZED FOR LANDSCAPE PURPOSES ONLY.
2. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF TWELVE (12) MONTHS.
3. ALL SIGHT TRIANGLES SHALL REMAIN CLEAR AND ANY PLANT, WHICH WOULD ENDANGER SAFETY SUCH AS UNSTABLE LIMBS, SHALL BE REMOVED AND THE PLANT MATERIAL REPLACED. IT SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER AND SUCCESSIVE PROPERTY OWNERS TO ENSURE ALL PLANTINGS AND ARCHITECTURAL ELEMENTS ARE MAINTAINED TO PROVIDE A SAFE ENVIRONMENT.
4. THE LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR AND MARKED IN THE FIELD, PRIOR TO ANY DIGGING OPERATIONS.
5. ALL PLANT MATERIALS AND PLANTING PRACTICES SHALL BE IN ACCORDANCE WITH THE "AMERICAN STANDARD FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
6. ALL PLANTS SHALL BE WATERED THOROUGHLY BY THE CONTRACTOR AT LEAST THREE (3) TIMES IN THE FIRST MONTH AFTER PLANTING. ADDITIONAL WATERING MAY BE REQUIRED DURING THE SUMMER MONTHS, DEPENDING ON RAINFALL AMOUNTS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

CLIENT DATA

Cornerstone
Consulting Engineers & Design Services, Inc.
213 West Main Street . Lansdale . PA 19446
Phone: 215-362-2600 . Fax: 215-362-8400
WWW.CORNERSTONENET.COM
Philadelphia Region 215-362-2600
Lehigh Valley Region 610-820-8200
Pocono Region 570-839-1770

REVISIONS

NO	BY	DESCRIPTION	DATE
1	RL	REVISED PER TWP REVIEWS	7/26/2024
2	EMR	REVISED PER CLIENT COMMENTS	11/14/2024
3	DJB	REVISED PER ARCO AND FINAL REVIEW	4/04/2025

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J.B. ANDERSON
DANA H. MILLER
PROFESSIONAL ENGINEER
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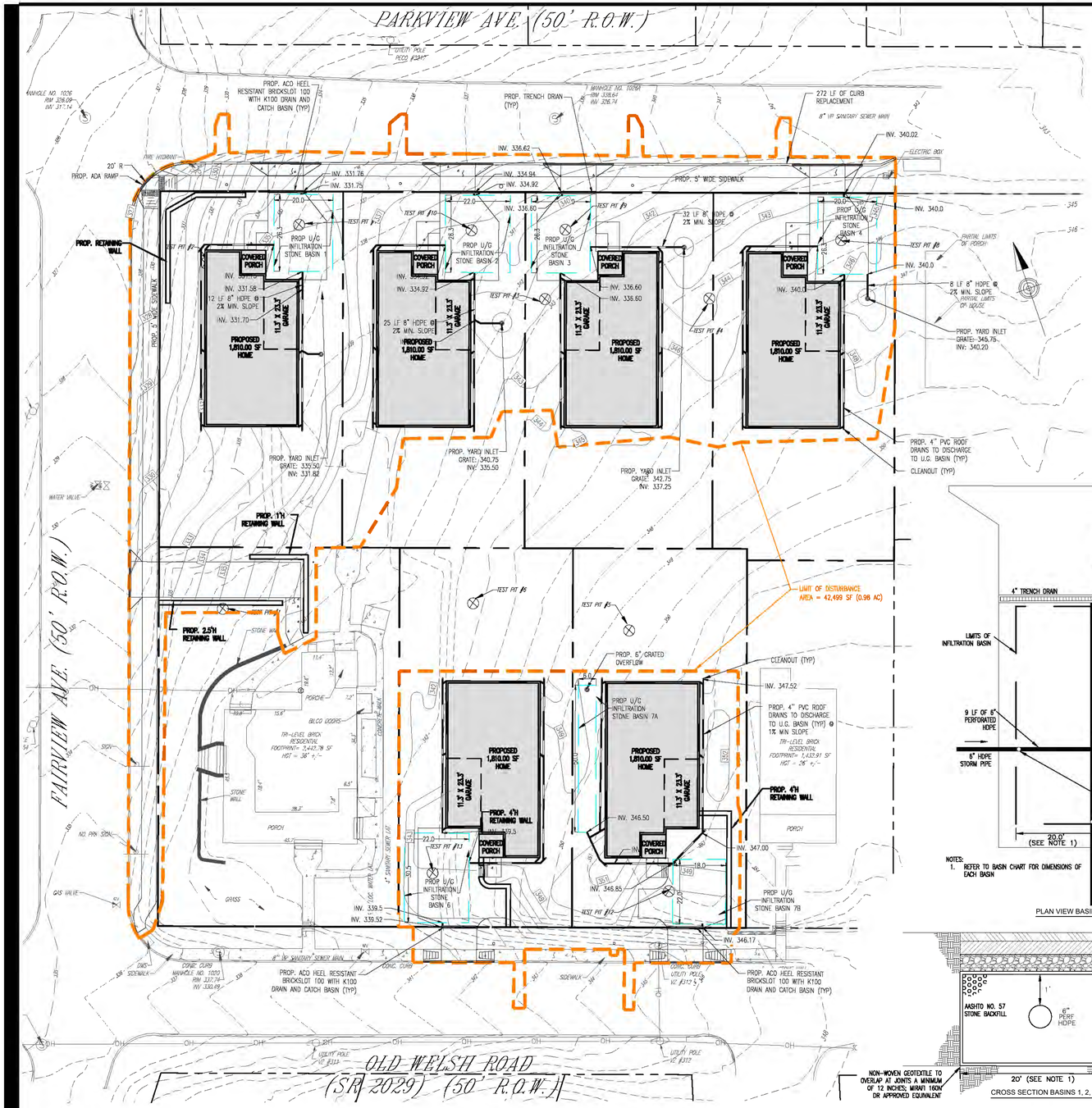
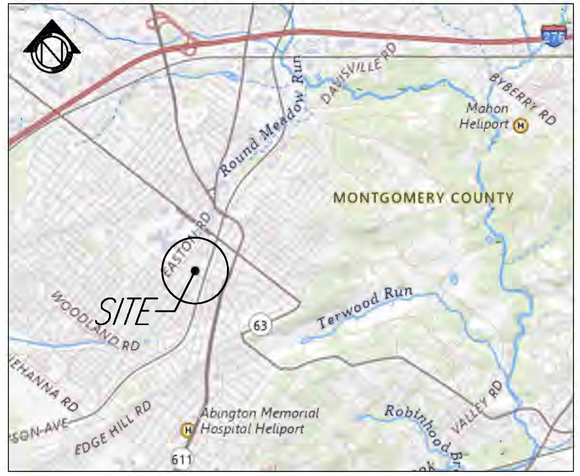
LANDSCAPE PLAN

PROJ. #	23-0548	DATE	03/7/2024
CAD ID.	23-0548	DRN BY	RL
SCALE	AS NOTED	CHK BY	JBA

SHEET 16 OF 17

REVISION 3

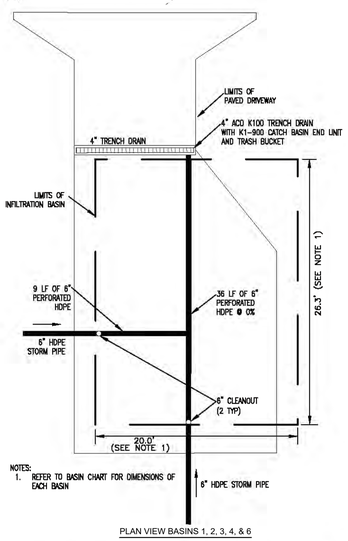




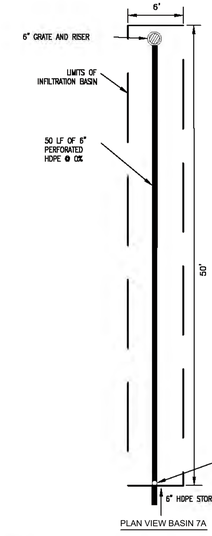
LOCATION MAP

LEGEND

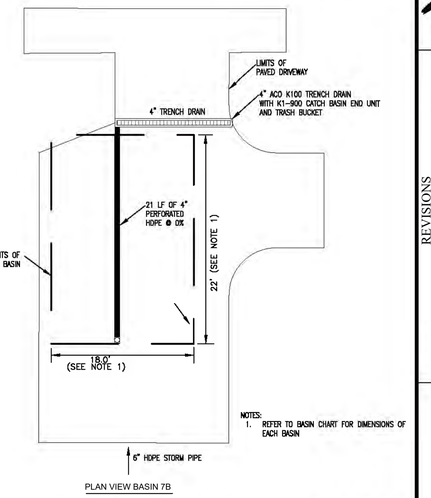
- PROPERTY BOUNDARY
- EXISTING UTILITY POLE
- OH — EXISTING OVERHEAD WIRE
- EXISTING CURB
- 250' — PROPOSED CONTOURS
- EXISTING CONTOURS
- EXISTING TREES
- EXISTING WATER MAIN
- EXISTING ELECTRICAL LINE
- EXISTING SANITARY LINE
- EXISTING GAS LINE
- PROPOSED STORM SEWER
- PROPOSED FORCEMAIN
- PROPOSED SANITARY SEWER
- PROPOSED WATER LINE
- PROPOSED ELECTRICAL LINE
- PROPOSED TELEPHONE LINE
- C.O. — PROPOSED SANITARY SEWER CLEANOUT
- PROPOSED STORM DRAINAGE INLET
- PROPOSED MANHOLE
- PROPOSED HYDRANT
- LIMIT OF DISTURBANCE
- INFILTRATION TEST PIT LOCATIONS
- PROPOSED U/G STONE BASIN FOOTPRINT



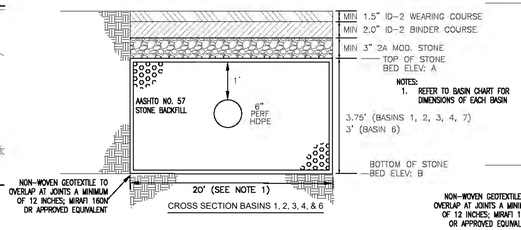
PLAN VIEW BASINS 1, 2, 3, 4, & 6

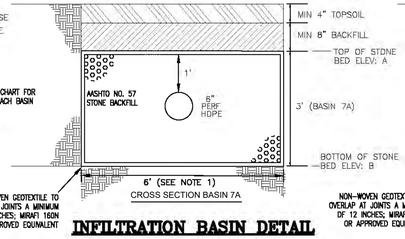


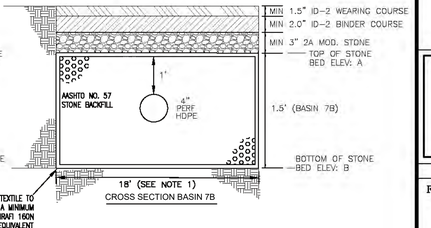
PLAN VIEW BASIN 7A



PLAN VIEW BASIN 7B







INFILTRATION BASIN DETAIL

N.T.S.

MUNICIPAL OFFICIAL

_____, ON THIS DATE _____ HAS REVIEWED AND HEREBY CERTIFIES THAT THE SWM SITE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE MUNICIPAL ORDINANCE NO._____.

_____
SIGNATURE

APPLICANT'S STATEMENT

I, _____, HEREBY ACKNOWLEDGE THAT ANY REVISION TO THE APPROVED DRAINAGE PLAN MUST BE APPROVED BY THE MUNICIPALITY, AND THAT A REVISED EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE MUNICIPALITY OR CONSERVATION DISTRICT FOR APPROVAL.

_____ _____
SIGNATURE DATE

DESIGN ENGINEER

I, _____, ON THIS DATE _____ HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL REQUIREMENTS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION'S (DEP'S) REGULATIONS AND THIS CHAPTER.

_____
SIGNATURE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

INFILTRATION BASIN INFORMATION AND INFILTRATION DRAW DOWN CALCULATIONS

LOT NUMBER	LOT 1	LOT 2	LOT 3	LOT 4	LOT 5	LOT 6	LOT 7 (BASIN 7A)	LOT 7 (BASIN 7B)
TEST PIT # AND INFILTRATION RATE	TEST PIT # 11 DESIGN RATE:0.69 IN/HR	TEST PIT # 10 DESIGN RATE:0.63 IN/HR	TEST PIT # 9 DESIGN RATE:0.75 IN/HR	TEST PIT # 8 DESIGN RATE:0.75 IN/HR	NO BASIN PROPOSED FOR LOT 5 WITH EXISTING HOUSE	TEST PIT # 13 DESIGN RATE:0.50 IN/HR	TEST PIT # 12 DESIGN RATE:0.63 IN/HR	TEST PIT # 12 DESIGN RATE:0.63 IN/HR
BASIN SIZE AND STORAGE VOLUME*	20'x26.3'x3.75' 1,972.5x0.40= 789 CF	22'x26.3'x3.75' 2,169.75x0.40= 868 CF	20'x26.3'x3.75' 1,972.5x0.40= 789 CF	20'x26.3'x3.75' 1,972.5x0.40= 789 CF		22'x30.5'x3.0' 2,013x0.40= 805 CF	6'x50'x3' 900x0.40= 360 CF	22'x18'x1.5' 594x0.40= 237 CF
TOP OF BASIN (A)	332.80'	335.92'	337.66'	341.01'		340.50'	348.00'	346.50'
BOTTOM OF BASIN (B)	329.05'	332.17'	333.91'	337.26'		337.50'	345.00'	345.00'
LIMITING ZONE ELEV	NOT ENCOUNTER AT ELEV. 328'	NOT ENCOUNTER AT ELEV. 332'	NOT ENCOUNTER AT ELEV. 334'	NOT ENCOUNTER AT ELEV. 337'		NOT ENCOUNTER AT ELEV. 336'	BEDROCK AT ELEV. 343'	BEDROCK AT ELEV. 343'
DRAIN DOWN CALCULATION	3.75 x (1 HR/0.69 IN) x (12 IN/1 FT) = 65 HRS	3.75 x (1 HR/0.63 IN) x (12 IN/1 FT) = 71 HRS	3.75 x (1 HR/0.75 IN) x (12 IN/1 FT) = 60 HRS	3.75 x (1 HR/0.75 IN) x (12 IN/1 FT) = 60 HRS		3.0 x (1 HR/0.50 IN) x (12 IN/1 FT) = 72 HRS	3.0 x (1 HR/0.63 IN) x (12 IN/1 FT) = 57 HRS	1.5 x (1 HR/0.63 IN) x (12 IN/1 FT) = 28.57 HRS

*BASIN VOLUME IS BASED ON 40% VOID SPACE WITHIN STONE AREA.

CLIENT DATA

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Consulting Engineers & Design Services, Inc.
213 West Main Street . Lansdale . PA 19446
Phone: 215-362-2600 . Fax: 215-362-8400
WWW.CORNERSTONENET.COM
Pocono Region 570-839-1770
Lehigh Valley Region 610-820-8200
Philadelphia Region 215-362-2600

REVISIONS

NO	BY	DESCRIPTION	DATE
1	RL	REVISED PER TWP REVIEWS	2/6/2024
2	DMR	REVISED PER CLIENT COMMENTS	11/14/2024
3	DB	REVISED PER MCCD AND FINAL REVIEW	4/04/2025

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VIRGINIA LICENSE No. 0402-045725
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NEBRASKA LICENSE No. 093667-1

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OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC

TITLE

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

PROJ. #	23-0548	DATE	03/7/2024
CAD ID.	23-0548	DRN BY	RL
SCALE	AS NOTED	CHK BY	JBA

SHEET 17 OF 17

REVISION 3

Cornerstone Consulting
Engineers & Design Services, Inc.

213 West Main Street Lansdale, PA
Tel 610.820.8200 ◆ Fax 610.820.3706

Leesburg - VA ◆ Orlando - FL
New York - NY ◆ Dallas - TX
Lansdale - PA

1176 N. Irving Street . Allentown, PA
Tel 610.820.8200 ◆ Fax 610.820.3706

January 2, 2025
VIA: Electronic Mail

Township of Abington
1176 Old York Road
Abington, PA 19001

Attn: Mr. Richard Manfredi,
Township Manager

RE: LD-24-01
Subdivision and Land Development Application
Waiver Request
2241 Old Welsh Road
Abington, PA 19090

Dear Mr. Manfredi,

As a part of the Subdivision and Land Development plan submission package, please accept this letter as a formal waiver request for the above referenced project. Our office, on behalf of the applicant, 2241 Old Welsh, LLC, respectfully requests the following waivers from the Board of Commissioners.

WAIVERS REQUESTED:

1. *142-408. B. (1) – Stream bank Erosion Requirements. In addition to the control of water quality volume (in order to minimize the impact of stormwater runoff on downstream stream bank erosion), the primary requirement is to design a BMP to detain the proposed conditions two-year, twenty-four-hour storm event to the existing conditions one-year flow using the SCS Type II distribution. Additionally, provisions shall be made (such as adding a small orifice at the bottom of the outlet structure or a sand filter) so that the proposed conditions one-year, twenty-four-hour storm event takes at least 24 hours to drain from the facility from a point when the maximum volume of water from the one-year, twenty-four-hour storm event is captured (i.e., the maximum water surface elevation is achieved in the facility). Release of water can begin at the start of the storm (i.e., the invert of the water volume control or [or water quality] orifice is at the invert of the facility).*

   A waiver is requested to utilize the Rational Method in the design of the stormwater management system in lieu of the SCS Type II distribution. The infiltration galleries were designed to infiltrate the increased volume of stormwater up to and including the 100 year storm. In addition, the site is approximately 1.29 acres and the total drainage area is 1.48 acres. The Rational Method is more suitable for estimating runoff in small drainage areas.

2. *Section 146-11.B.(7) – Existing Conditions Plan. The location, size and ownership of all underground and above ground public or private utilities, on the site and within 400 feet of any portion of the site, including waterlines, sanitary sewer lines, storm sewer lines, electric lines, telephone lines, gas mains, fire hydrants and streetlights.*

A waiver is requested to permit the application without showing the existing utilities within 400 linear feet of the site. The utilities immediately surrounding the site are shown in the plan set and an aerial of the surrounding area within 400 feet is provided on sheet 3.

3. *Section 146-38 – Streetlighting. Streetlighting shall be installed along each street in each subdivision and along each street front abutting a public street in each land development by the subdivider/land developer and at the expense of the subdivider/land developer.*

   A waiver is requested for the requirement to install street lighting along each street frontage. There are existing street lights located at the intersection of Fairview Ave / Parkview Ave and at Fairview Ave / Old Welsh Road. Due to the residential nature of the area and that there are existing street lights at the intersections, additional lighting does not seem necessary. As an alternative, the applicant will agree to install post lights at the end of the driveways for lots 1 through 4.

4. *Section 146-43.C.(3)(a) – Excavation and Fills. Cut and fill slopes shall not be 15% or steeper, except as approved by the Township Zoning Hearing Board. The Township Engineer may require the use of retaining walls, cribbing or other measures necessary to stabilize slopes which are either cut into or filled.*

   A waiver is requested to permit the proposed grading due to the existing grades of the site. The area of slopes of 15% or steeper has been minimized to the greatest extent possible. The use of retaining walls have been shown in the grading design to mitigate the areas of steep slope.

It is the developer's intent to comply with all Township requirements. However, it is their opinion that strict conformance with the noted ordinance sections above would create unnecessary impacts to the proposed development of the site.

Should you have any questions or wish to discuss the project, please feel free to contact our office at your convenience.

Sincerely,
Cornerstone Consulting
Engineers & Design Services, Inc.

John Anderson, P.E.
Principal/Partner

POST CONSTRUCTION STORMWATER MANAGEMENT REPORT

FOR

OLD WELSH ROAD SUBDIVISION

BY
2241 OLD WELSH, LLC

2241 OLD WELSH ROAD
TOWNSHIP OF ABINGTON
MONTGOMERY COUNTY
PENNSYLVANIA

March 7, 2024
July 26, 2024
Revised November 15, 2024

PREPARED BY

John B. Anderson, P.E.
License Number: PE055536

Cornerstone Consulting Engineers & Design Services, Inc.
213 West Main Street, Lansdale, PA 19446
Phone (215)362-2600 Fax (215)362-8400

Table of Contents

Introduction

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3.0 Proposed Conditions
4.0 Soil Conditions
5.0 Thermal Impact Analysis
6.0 Township Compliance Summary
7.0 Hydrographs for each Township Code Section
    7.1 Section 142-406 Water Volume Control Requirements
    7.2 Section 142-408 Stream Bank Erosion Requirements (Channel Protection) and Section 142-409 Stormwater Peak Rate Control and Management Districts – 1-, 2-, 5-, and 10-year design storms
    7.3 Section 142-408 Stream Bank Erosion Requirements (Channel Protection) and Section 142-409 Stormwater Peak Rate Control and Management Districts – 25-, 50-, and 100-year design storms

Appendices

Pre-Development Drainage Area Map
Post Development Drainage Area Map

Introduction

The purpose of this report is to identify the existing and proposed conditions concerning the stormwater management issues for the subject development. Outlined in the body of this document is a stormwater management design that is intended to comply with the Township of Abington's Stormwater Management Ordinances to reduce the peak rate of runoff of the proposed development conditions to that of the pre-development conditions or less. As discussed further below, the site is located within the Pennypack Creek, which has an approved Act 167. The hydrograph development calculation method used for this report is the Dekalb Rational Method as utilized through Hydraflow Hydrographs. This method has been utilized to calculate the peak rate of runoff for the 1, 2, 5, 10, 25, 50 and 100 year storm events for estimating and designing the stormwater management facilities on-site.

The area associated with the total earth disturbance is less than one acre, therefore, the project will not require NPDES approval. The stormwater management practices proposed for the site include an underground infiltration basin on each parcel and porous pavement. The basins on each lot have been designed to meet the water quality requirement of the homes through infiltration and further reduce the site's release rate of the site's stormwater runoff as defined by the Township's Stormwater Management Ordinance.

Existing Conditions

The property is located at 2241 Old Welsh Road, in Abington Township, Montgomery County, Pennsylvania. The 1.3-acre residential lot currently contains a single family home with accessory structures and a large maintained grass area. The site does not contain any stormwater management at this time. The property is surrounded by residential properties. It is bordered to the south by Old Welsh Road, to the west by Fairview Avenue, and to the north by Parkview Avneue. Access to the site is taken from Parkview Avneue.

The stormwater runoff will be analyzed as one drainage area for the site. The stormwater runoff from the site flows in a northwesterly direction towards the intersection of Fairview and Parkview Avenue, which has been labeled as POI 1. Even a small runoff area which flows towards Old Welsh Road then flows to Fairview Avneue towards this same intersection. There is no storm sewer piping located within any of the surrounding roadways. The site's runoff continues to flow in a northwesterly direction down the roadways towards Easton Road, where it is eventually collected by the public sewer system.

Proposed Conditions

The developer is proposing a seven lot subdivision of the existing parcel, with the existing residential home to remain. The existing accessory buildings will be demolished, and the existing driveway removed, to allow for the construction of six (6) new single family homes with additional site improvements. Access to the six homes is

provided via Old Welsh Road and Parkview Ave. A driveway to the existing home is proposed off Fairview Avneue.

The slope of the lot is to remain generally the same as the pre-developed conditions. The stormwater runoff is directed via overland flow towards the surrounding roadways. The roof leaders for each proposed home discharge to an underground infiltration basin located within the front yards. These basins are designed to have no discharge for the 100-year storm but there is a trench drain located at the property line of the driveway, which will allow discharge for any larger storms once the basins are full. This overflow runoff will also flow into the surrounding streets. There is no stormwater runoff directed towards any adjoining properties.

Runoff from the site eventually flows to the Pennypack Creek, which has a Chapter 93 designation of WWF, Warm Water Fishes, and MF, Migratory Fishes.

The proposed improvements contemplate the re-grading of the site and construction of six (6) subgrade stormwater infiltration basins. These basins are proposed to be stone. The basins are designed to meet the reduced pre-to post-development runoff rate, up to the 100-year, 24-hour design storm. The proposed basins are necessary to account for the increased flow rate that will be generated by the creation of impervious surfaces on site.

The stie has been designed to reduce the peak rate of runoff for the proposed conditions below that of the pre-development runoff rates. The basins have proven to satisfy the requirements to maximize BMP technologies and protect the physical qualities of the receiving surface waters. As shown in the attached calculations, the design meets and exceeds the requirements of the Township of Abington.

The complete design of the system is contained within the body of this report.

Soils Conditions

The site contains the following soils based on the U.S.D.A.-N.R.C.S. Soils Survey of Montgomery County, from the USDA website: UrkB – Urban Land-Edgemont Complex, 0-8% slopes and UrkD – Urban Land-Edgemont Complex, 8-25% slopes. The following is a summary table detailing the physical characteristics and limitations of each soil.

Soil	Slope	Depth to Restrictive Layer	Runoff Class
UrkB	0-8%	10”+	High
UrkD	8-25%	10”+	High

UrkB and UrkD do not have any limitations pertaining to earthmoving projects per Table E.1 in the Erosion and Sediment Control Manual.

However, the following is a list of possible resolutions if soil limitations are encountered.

- Cutbanks Cave = Appropriate precautions shall be taken to safeguard workers during all trenching and excavation operations. All applicable OSHA standards and regulations must be implemented at all times.
- Corrosive to Concrete/Steel = Underground pipes shall be protected and/or different material specified.
- Droughty = Provide irrigation to soils.
- Easily Erodible = Design an erosion and sedimentation plan detailing a sequence of construction and erosion control measures which shall be implemented throughout construction.
- Flooding = Install flood control measures; improve channels; raise foundations.
- Depth to Saturated zone/Seasonal high water table = Obtain soil from other area of site or off site; Select appropriate seed mixture; Provide drainage channels or underdrains.
- Hydric/Hydric Inclusions = Design site to avoid areas of hydric soils; Perform a wetland survey.
- Low strength/Landslide prone = Precautions shall be taken to prevent slope failures (such as avoiding over-steeping, overloading slopes, removal of lateral support, and/or failure to prevent saturation of slopes). Setbacks shall be maintained from areas of weak soils, and/or fill material may need to be imported to increase strength.
- Slow percolation = Avoid locating infiltration areas within these areas; soil testing shall be used to identify areas of concern; and underdrains shall be used.
- Piping = Install a clay plug if piping begins to form.
- Poor source of topsoil = Soil amendments shall be used to promote growth of desired vegetation. Areas of good topsoil on site shall be relocated and stored for later use on the site.
- Frost Action = Precautions shall be implemented to prevent damage when frost is anticipated.
- Wetness = Install surface drainage measures; Design the E&S plan to avoid additional ponding in these areas, Grade the site to elevate these areas.
- Low depth to bedrock = Revise design to relocate; Excavate rippable rock or blast

The site has been designed to avoid soil limitations when possible. These soils are mapped on the E&S Control plan sheets and a limitation and resolution table is also provided on the plan sheets.

Thermal Impact Analysis

This is a residential development with minimum proposed imperivous coverage. Proposed impervious coverage includes the driveways and homes. The proposed design provides for native landscape coverage. Also, the post development runoff will flow to the subsurface basins where the runoff will be detained below ground; thus cooling any heated runoff prior to it reaching the receiving waters.

Potential Geologic / Soil Conditions Pollution Analysis

There are no geologic formations or soils conditions on the project site that have the potential to cause pollution during earth disturbance activities. Exposed soil will be contained with silt fence.

Abington Township's Stormwater Management Requirements

As explained above, the proposed improvements contemplate the construction of an underground infiltration bed containing stone storage on each lot to manage the roof runoff and pavement for the driveway. These improvements address the six components of the Township's Stormwater Management Ordinance as specified below:

1. **Section 142-404 Nonstructural Project Design** - The site layout and stormwater management have been designed to preserve the integrity of the stream channels and maintain and protect the physical, biological, and chemical qualities of the receiving stream. The underground basins are designed to prevent an increase in the rate of stormwater runoff from pre- to post development conditions and to minimize any increase in the stormwater runoff volume from the site post construction. Finally, the site has been laid out to minimize the impervious areas, maximize the protection of existing drainage features and existing vegetation, minimize land clearing and grading, and minimize soil compaction.

2. **Section 142-405 Groundwater Recharge Requirements** –

Recharge Volume, Re_v = (1/12) (Impervious area)

Basin 1 = (1'/12") (2,338 sf) = 195 cf req'd for Lot 1
Basin 2 = (1'/12") (2,620 sf) = 219 cf req'd for Lot 2
Basin 3 = (1'/12") (1,974 sf) = 165 cf req'd for Lot 3
Basin 4 = (1'/12") (2,425 sf) = 202 cf req'd for Lot 4
Basin 6 = (1'/12") (2,404 sf) = 201 cf req'd for Lot 6
Basin 7A = (1'/12") (1,814 sf) = 152 cf req'd for Lot 7
Basin 7B = (1'/12") (1,102 sf) = 92 cf req'd for Lot 7

(The recharge volume can be a component of the water quality volume.)

The design of basins will infiltrate the entire stone storage area, which is 789 cf for Lots 1, 3, and 4, 868 cf for Lot 2, 805 cf for Lot 6, 360 cf for Lot 7 (Basin A), and 180 cf for Lot 7 (Basin B).

3. **Section 142-406 Water Volume Control Requirements** –

A. Design Storm Method, CG-1 in the BMP Manual

a. Post-development total runoff volume for all storms equal to or less than the two-year, twenty-four-hour storm event shall not be increased. Utilizing the SCS Method.

Proposed Condition Design Storm	Post-Development Runoff (cf) TOTAL	Pre Development Condition Design Storm	Pre Development Runoff (cf), Area 1	Summary (cf)
1-year	3,573*	1-year	4,301	3,573 < 4,301
2-year	5,453**	2-year	6,092	5,453<6,092

*Basin 1 Storage = 789 cf Volume to Basin 1 = 827 cf
Basin 1 Runoff = 827 – 789 = 38 cf
*Basin 2 Storage = 868 cf Volume to Basin 2 = 923 cf
Basin 2 Runoff = 923 – 868 = 55 cf
*Basin 7A Storage = 360 cf Volume to Basin 7 = 384 cf
Basin 7 Runoff = 384 – 360 = 24 cf
*All other basins fully store the runoff collected for the one-year storm.
*Therefore, 1-yr Post-Development Runoff =
Total Bypass + Total Basin Runoff = 3,456 + (38 + 55+24) = 3,573 cf

**Basin 1 Storage = 789 cf Volume to Basin 1 = 1,081 cf
Basin 1 Runoff = 1,081 - 789 = 292 cf
**Basin 2 Storage = 868 cf Volume to Basin 2 = 1,120 cf
Basin 2 Runoff = 1,207 – 868 = 339 cf
**Basin 3 Storage = 789 cf Volume to Basin 3 = 867 cf
Basin 3 Runoff = 867 - 789 = 78 cf
**Basin 7A Storage = 360 cf Volume to Basin 7A = 468 cf
Basin 7 Runoff = 468 – 360 = 108 cf
**Basin 7B Storage = 237 cf Volume to Basin 7B = 265 cf
Basin 7 Runoff = 265 – 237 = 28 cf
**All other basin fully store the runoff collect for the two-year storm.
**Therefore, 2-yr Post-Development Runoff =
Total Bypass + Basin Runoff = 4,608 + (292 + 339 + 78+108+28) = 5,453 cf

b. Existing (predevelopment) non-forested pervious areas must be considered meadow.
CN = 71

c. Twenty percent of existing impervious area, when present, shall be considered meadow in the model for existing conditions.
Existing Impervious Area = 9,650 sf (20% = 1,930 sf)
Existing Pervious Area = 54,804 sf
Existing Impervious Area used in Hydroflow = 7,720 sf/ 0.177 ac
Existing Pervious Area used in Hydroflow = 56,734 sf / 1.302 ac

4. **Section 142-407 Water Quality Requirements** –

Water Quality Volume, $WQ_v = [P*Rv*A] / 12$
P = 1 inch
Rv = 0.05 + 0.009(I)
I = percent of the area that is impervious
Calculating for Lot 6, which has the largest impervious area and is 96% of the area draining to a basin. (worst case)
A = 0.057 ac; Rv = 0.05 + 0.009(96) = 0.914
$WQ_v = [1*0.914*0.057] / 12 = 0.004342$ ac-ft = 189 cf req'd

Met through infiltration of the ground water recharge volume above, which is true for each lot. The smallest basin (Lot 7B) infiltrates 237 cf.

5. **Section 142-408 Stream Bank Erosion Requirements (Channel Protection)** –

A. There is no perennial or intermittent stream through the site.

B. In addition to the control of water quality volume, the BMP shall detain the proposed conditions two-year, twenty-four-hour storm event to the existing conditions one-year flow using the SCS Type II distribution.

Waiver Requested to allow Rational Method.

Proposed Condition Design Storm	Post-Development Runoff (cfs) TOTAL	Pre - Development Condition Design Storm	Pre - Development Runoff (cfs), Area 1	Summary (cfs)
2-year	1.869	1-year	2.206	1.869<2.206

C. The proposed conditions one-year, twenty-four-hour storm event takes at least 24 hours to drain from the facility from a point when the maximum volume of water from the one-year, twenty-four-hour storm event is captured (i.e., the maximum water surface elevation is achieved in the facility). Release of water can begin at the start of the storm (i.e., the invert of the water volume control or [or water quality] orifice is at the invert of the facility).

- Basin 1: 1-yr runoff = 827 cf; 1-yr elevation in basin = 3.75' dp;
  Infiltration rate = 0.69 in/hr
  Dewatering Time = (3.75')(12 in/ft)(hr/0.69 in) = 65 hrs
- Basin 2: 1-yr runoff = 923 cf; 1-yr elevation in basin = 3.75' dp;
  Infiltration rate = 0.63 in/hr; Dewatering Time = 71 hrs
- Basin 3: 1-yr runoff = 665 cf; 1-yr elevation in basin = 3.16' dp;
  Infiltration rate = 0.75 in/hr; Dewatering Time = 51 hrs

- Basin 4: 1-yr runoff = 623 cf; 1-yr elevation in basin = 2.96' dp;
  Infiltration rate = 0.75 in/hr; Dewatering Time = 47 hrs
- Basin 6: 1-yr runoff = 509 cf; 1-yr elevation in basin = 1.90' dp;
  Infiltration rate = 0.50 in/hr; Dewatering Time = 46 hrs
- Basin 7A: 1-yr runoff = 384 cf; 1-yr elevation in basin = 3.00' dp;
  Infiltration rate = 0.63 in/hr; Dewatering Time = 57 hrs
- Basin 7B: 1-yr runoff = 216 cf; 1-yr elevation in basin = 1.5' dp;
  Infiltration rate = 0.63 in/hr; Dewatering Time = 29 hrs

6. **Section 142-409 Stormwater Peak Rate Control and Management Districts** – This site is located within the Pennypack Creek Watershed, District A.

Proposed Condition Design Storm	Post-Development Runoff (cfs) TOTAL	Pre Development Condition Design Storm	Pre Development Runoff (cfs), Area 1	Summary (cfs)
2-year	1.869	1-year	2.206	1.869<2.206
5-year	2.215	5-year	3.147	2.215<3.147
10-year	2.463	10-year	3.507	2.463<3.507
25-year	3.188	25-year	4.558	3.188<4.558
50-year	3.429	50-year	4.906	3.429<4.906
100-year	3.666	100-year	5.251	3.666<5.251

As proven above, the site has been designed to meet the City's Stormwater Management Ordinance utilizing an underground detention bed. Additional details for the design of the SMP will be provided within plan set.

Cornerstone Consulting Engineers & Design Services, Inc.
231 W. Main Street, Lansdale, PA 19446
Phone (215) 362-2600 **Fax (215) 362-8400**

Time of Concentration Worksheet

Project: 2241 Old Welsh Road Subdivision

Location: Abington Twp.

Developemnt Type: ☑ Pre-Development ☐ Post-Development

☑ Tc ☐ Tt

Sheet Flow (Applicable to Tc only)	**Segment ID**	A-B		
1. Surface Description (Table 3-1)		Grass		
2. Manning's Roughness Coefficient, n (Table 3-1)		0.2		
3. Flow Length, L (Total L < 300 ft)	ft	140		
4. Two year 24 hour rainfall, P2	in	3.2		
5. Land Slope, s	ft/ft	0.07		
6. Tt = 0.007 (nL)^0.8 / P2^0.5 s^0.4	hr	0.1620862 +	+	= 0.162086

Shallow Concentrated Flow	**Segment ID**	B-C	C-D				
7. Surface Description : ☑ Paved ☑ Unpaved							
8. Flow Length, L	ft	39	53				
9. Watercourse Slope, s	ft/ft	0.05	0.17				
10. Average Velocity, V (PADOT table 10.4.2 - English)	ft/s	4.5	6.7				
11. Tt = L / 3600 V — Compute Tt	hr	0.0024074 +	0.002213 +	+	+	+	= 0.00462

Channel Flow	**Segment ID**		
12. Cross Sectional Flow Area, a	ft^2		
13. Wetted Perimeter, Pw	ft		
14. Hydraulic Radius, r = a / Pw — Compute r	ft		
15. Channel Slope, s	ft/ft		
16. Manning's Roughness Coefficient, n			
17. V = 1.49 r^2/3 s^0.5 / n — Compute V	ft/s		
18. Flow Length, L	ft		
19. Tt = L / 3600 V — Compute Tt	hr	+	= 0

20. Watershed or subarea Tc or Tt (add Tt in steps 6, 11, and 19) 0.166707 hr / 10.0024 min

Cornerstone Consulting Engineers & Design Services, Inc.
231 W. Main Street, Lansdale, PA 19446
Phone (215) 362-2600

Time of Concentration Worksheet

Project: 2241 Old Welsh Road Subdivision

Location: Abington Twp.

Developemnt Type: ☐ Pre- ☑ Post- ☑ Tc ☐ Tt

Sheet Flow (Applicable to Tc only)	**Segment ID**			
1. Surface Description (Table 3-1) ☐ Paved ☑ Unpaved		Grass		
2. Manning's Roughness Coefficient, n (Table 3-1)		0.20		
3. Flow Length, L (Total L < 300 ft)	ft	107		
4. Two year 24 hour rainfall, P2	in	3.2		
5. Land Slope, s	ft/ft	0.10		
6. Tt = 0.007 (nL)^0.8 / P2^0.5 s^0.4	hr	0.113987 +	+	= 0.113987

Shallow Concentrated Flow	**Segment ID**						
7. Surface Description :		B-C	C-D				
8. Flow Length, L	ft	28	42				
9. Watercourse Slope, s	ft/ft	0.05	0.17				
10. Average Velocity, V (PADOT table 10.4.2 - English)	ft/s	3.6	6.7				
11. Tt = L / 3600 V — Compute Tt	hr	0.00216 +	0.001754 +	+	+	+	= 0.003914

Channel Flow	**Segment ID**		
12. Cross Sectional Flow Area, a	ft^2		
13. Wetted Perimeter, Pw	ft		
14. Hydraulic Radius, r = a / Pw — Compute r	ft		
15. Channel Slope, s	ft/ft		
16. Manning's Roughness Coefficient, n			
17. V = 1.49 r^2/3 s^0.5 / n — Compute V	ft/s		
18. Flow Length, L	ft		
19. Tt = L / 3600 V — Compute Tt	hr	+	= 0

20. Watershed or subarea Tc or Tt (add Tt in steps 6, 11, and 19) — 0.117901 hr / 7.074055 min

Section 142-406 Water Volume Control Hydrographs

Proposed Condition Design Storm	Post-Development Runoff (cf) TOTAL	Pre Development Condition Design Storm	Pre Development Runoff (cf), Area 1	Summary (cf)
1-year	3,573*	1-year	4,301	3,573 < 4,301
2-year	5,453**	2-year	6,092	5,453<6,092

- Hydrograph 1 - Existing (predevelopment) non-forested pervious areas must be considered meadow. CN = 71

- Twenty percent of existing impervious area, when present, shall be considered meadow in the model for existing conditions.
  - Existing Impervious Area = 9,650 sf (20% = 1,930 sf)
  - Existing Pervious Area = 54,804 sf
  - Hydrograph 1: Existing Pervious Area used in Hydroflow
    = 56,734 sf / 1.302 ac
  - Hydrograph 2: Existing Impervious Area used in Hydroflow
    = 7,720 sf/ 0.177 ac

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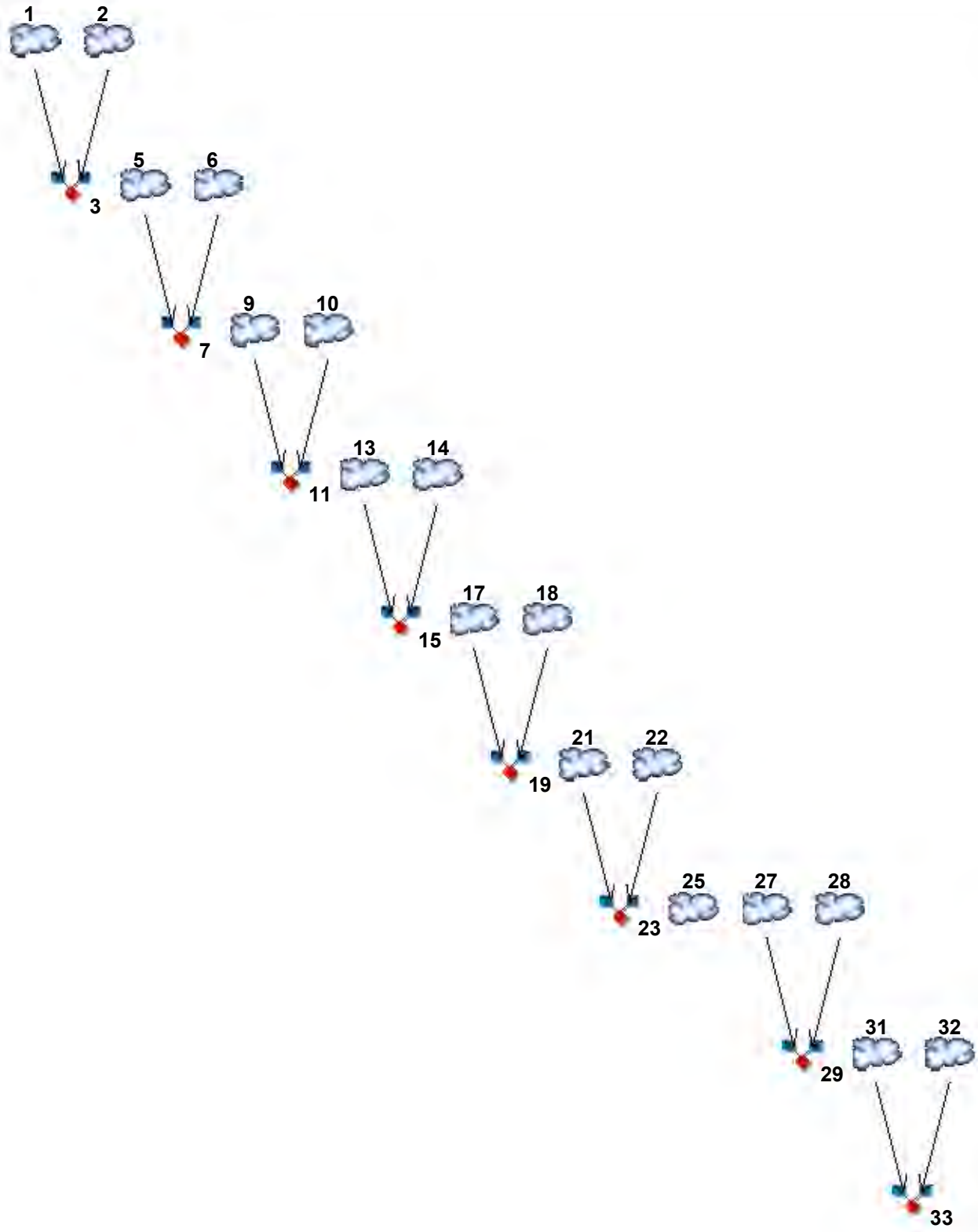
Watershed Model Schematic



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	------	1.102	1.778	-------	-------	-------	-------	-------	-------	PRE Meadow SCS
2	SCS Runoff	------	0.607	0.734	-------	-------	-------	-------	-------	-------	PRE Impervious SCS
3	Combine	1, 2	1.697	2.498	-------	-------	-------	-------	-------	-------	Total Pre
5	SCS Runoff	------	0.211	0.254	-------	-------	-------	-------	-------	-------	Post to Basin 1 Impervious SCS
6	SCS Runoff	------	0.164	0.238	-------	-------	-------	-------	-------	-------	Post to Basin 1 Lawn SCS
7	Combine	5, 6	0.372	0.489	-------	-------	-------	-------	-------	-------	Total to Basin 1
9	SCS Runoff	------	0.234	0.283	-------	-------	-------	-------	-------	-------	Post to Basin 2 Impervious SCS
10	SCS Runoff	------	0.185	0.268	-------	-------	-------	-------	-------	-------	Post to Basin 2 Lawn SCS
11	Combine	9, 10	0.416	0.547	-------	-------	-------	-------	-------	-------	Total to Basin 2
13	SCS Runoff	------	0.176	0.212	-------	-------	-------	-------	-------	-------	Post to Basin 3 Impervious SCS
14	SCS Runoff	------	0.125	0.182	-------	-------	-------	-------	-------	-------	Post to Basin 3 Lawn SMS
15	Combine	13, 14	0.298	0.391	-------	-------	-------	-------	-------	-------	Total to Basin 3
17	SCS Runoff	------	0.218	0.264	-------	-------	-------	-------	-------	-------	Post to Basin 4 Impervious SCS
18	SCS Runoff	------	0.055	0.079	-------	-------	-------	-------	-------	-------	Post to Basin 4 Lawn SMS
19	Combine	17, 18	0.272	0.342	-------	-------	-------	-------	-------	-------	Total to Basin 4
21	SCS Runoff	------	0.215	0.259	-------	-------	-------	-------	-------	-------	Post to Basin 6 Impervious SCS
22	SCS Runoff	------	0.003	0.005	-------	-------	-------	-------	-------	-------	Post to Basin 6 Lawn SCS
23	Combine	21, 22	0.218	0.264	-------	-------	-------	-------	-------	-------	Total to Basin 6
25	SCS Runoff	------	0.164	0.198	-------	-------	-------	-------	-------	-------	Post to Basin 7A Impervious SCS
27	SCS Runoff	------	0.090	0.108	-------	-------	-------	-------	-------	-------	Post to Basin 7B Impervious SCS
28	SCS Runoff	------	0.003	0.005	-------	-------	-------	-------	-------	-------	Post to Basin 7B Lawn SCS
29	Combine	27, 28	0.093	0.113	-------	-------	-------	-------	-------	-------	Total to Basin 7B
31	SCS Runoff	------	0.850	1.234	-------	-------	-------	-------	-------	-------	POST BYPASS Lawn
32	SCS Runoff	------	0.674	0.815	-------	-------	-------	-------	-------	-------	POST BYPASS Impervious
33	Combine	31, 32	1.511	2.038	-------	-------	-------	-------	-------	-------	BYPASS TOTAL

Hydrograph Summary Report

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

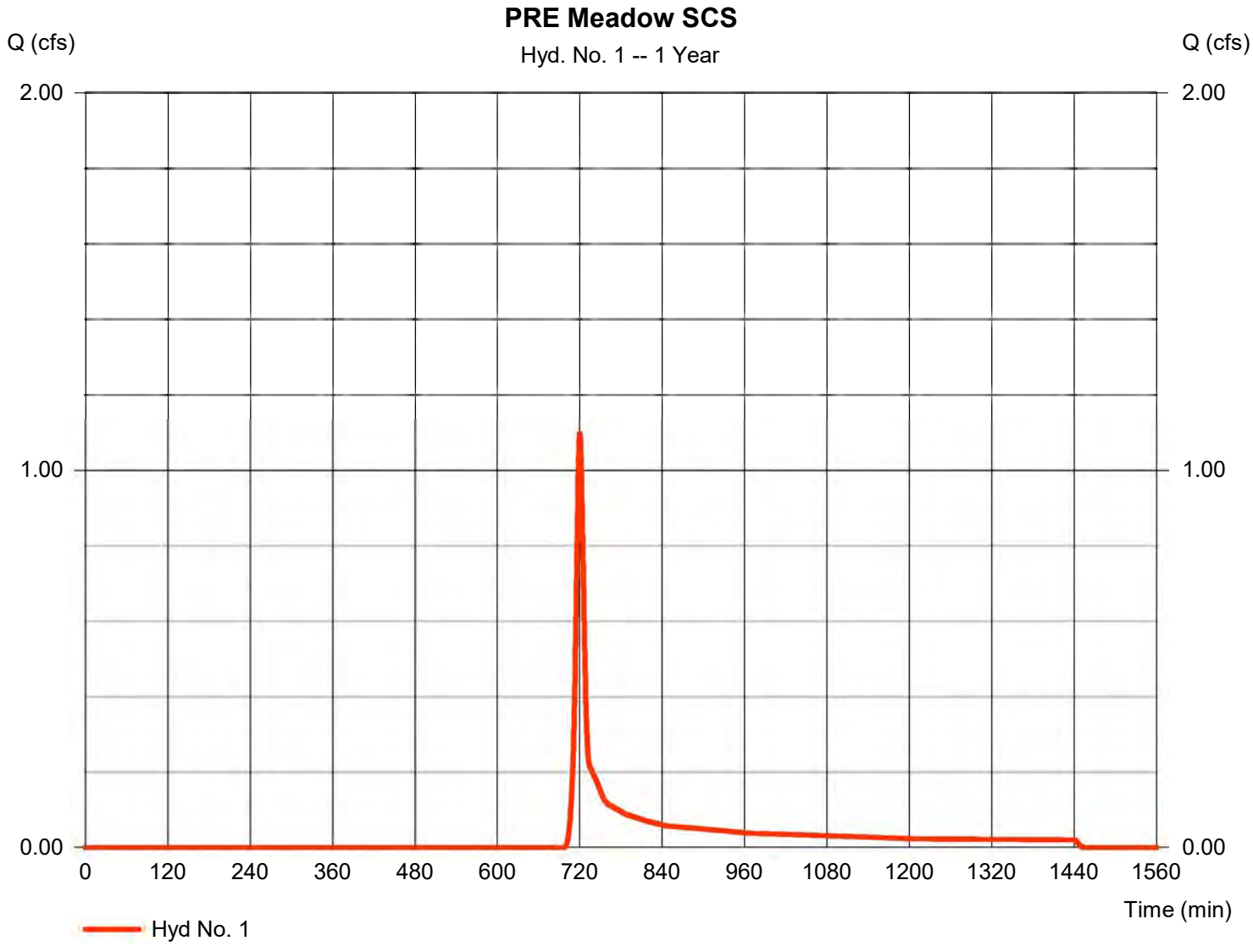
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1.102	1	720	2,733	------	------	------	PRE Meadow SCS
2	SCS Runoff	0.607	1	719	1,568	------	------	------	PRE Impervious SCS
3	Combine	1.697	1	720	4,301	1, 2	------	------	Total Pre
5	SCS Runoff	0.211	1	717	493	------	------	------	Post to Basin 1 Impervious SCS
6	SCS Runoff	0.164	1	718	334	------	------	------	Post to Basin 1 Lawn SCS
7	Combine	0.372	1	718	827	5, 6	------	------	Total to Basin 1
9	SCS Runoff	0.234	1	717	548	------	------	------	Post to Basin 2 Impervious SCS
10	SCS Runoff	0.185	1	718	375	------	------	------	Post to Basin 2 Lawn SCS
11	Combine	0.416	1	718	923	9, 10	------	------	Total to Basin 2
13	SCS Runoff	0.176	1	717	411	------	------	------	Post to Basin 3 Impervious SCS
14	SCS Runoff	0.125	1	718	254	------	------	------	Post to Basin 3 Lawn SMS
15	Combine	0.298	1	718	665	13, 14	------	------	Total to Basin 3
17	SCS Runoff	0.218	1	717	511	------	------	------	Post to Basin 4 Impervious SCS
18	SCS Runoff	0.055	1	718	111	------	------	------	Post to Basin 4 Lawn SMS
19	Combine	0.272	1	717	623	17, 18	------	------	Total to Basin 4
21	SCS Runoff	0.215	1	717	502	------	------	------	Post to Basin 6 Impervious SCS
22	SCS Runoff	0.003	1	718	6	------	------	------	Post to Basin 6 Lawn SCS
23	Combine	0.218	1	717	509	21, 22	------	------	Total to Basin 6
25	SCS Runoff	0.164	1	717	384	------	------	------	Post to Basin 7A Impervious SCS
27	SCS Runoff	0.090	1	717	210	------	------	------	Post to Basin 7B Impervious SCS
28	SCS Runoff	0.003	1	718	6	------	------	------	Post to Basin 7B Lawn SCS
29	Combine	0.093	1	717	216	27, 28	------	------	Total to Basin 7B
31	SCS Runoff	0.850	1	719	1,815	------	------	------	POST BYPASS Lawn
32	SCS Runoff	0.674	1	718	1,641	------	------	------	POST BYPASS Impervious
33	Combine	1.511	1	719	3,456	31, 32	------	------	BYPASS TOTAL

Hydrograph Report

Hyd. No. 1

PRE Meadow SCS

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.102 cfs
Storm frequency	=	1 yrs	Time to peak	=	720 min
Time interval	=	1 min	Hyd. volume	=	2,733 cuft
Drainage area	=	1.302 ac	Curve number	=	71
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	2.67 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

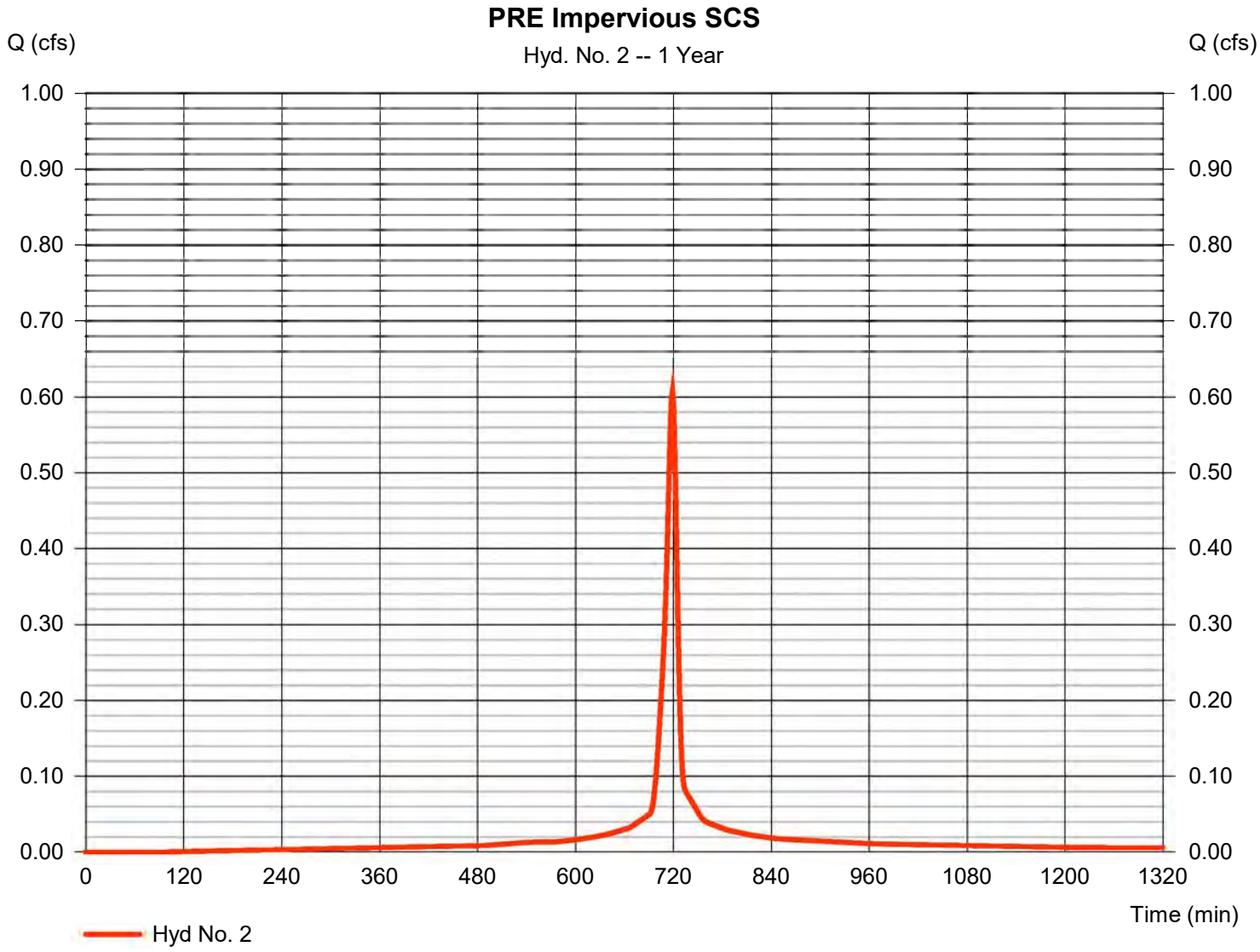


Hydrograph Report

Hyd. No. 2

PRE Impervious SCS

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.607 cfs
Storm frequency	=	1 yrs	Time to peak	=	719 min
Time interval	=	1 min	Hyd. volume	=	1,568 cuft
Drainage area	=	0.177 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	2.67 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

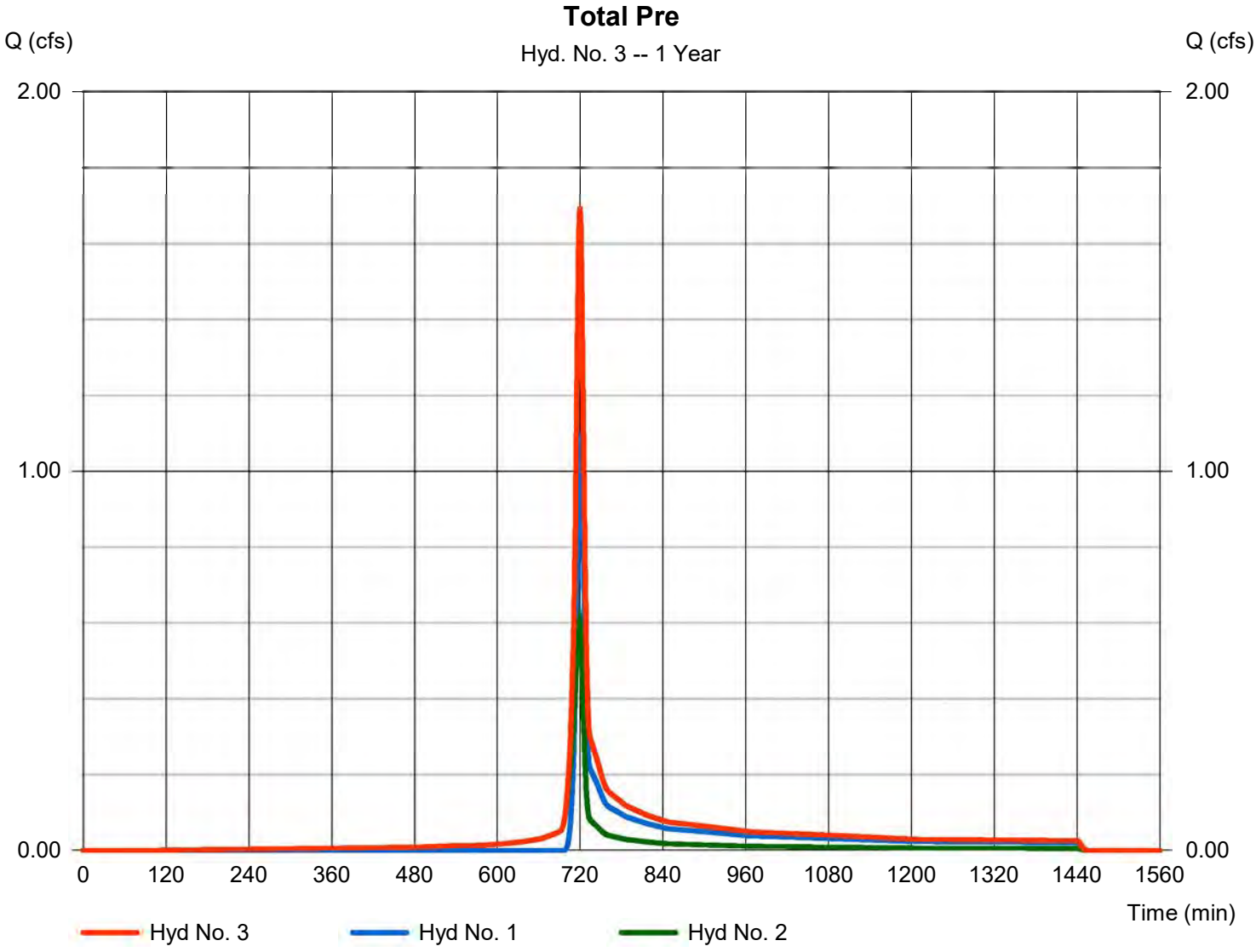


Hydrograph Report

Hyd. No. 3

Total Pre

Hydrograph type	= Combine	Peak discharge	= 1.697 cfs
Storm frequency	= 1 yrs	Time to peak	= 720 min
Time interval	= 1 min	Hyd. volume	= 4,301 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 1.479 ac

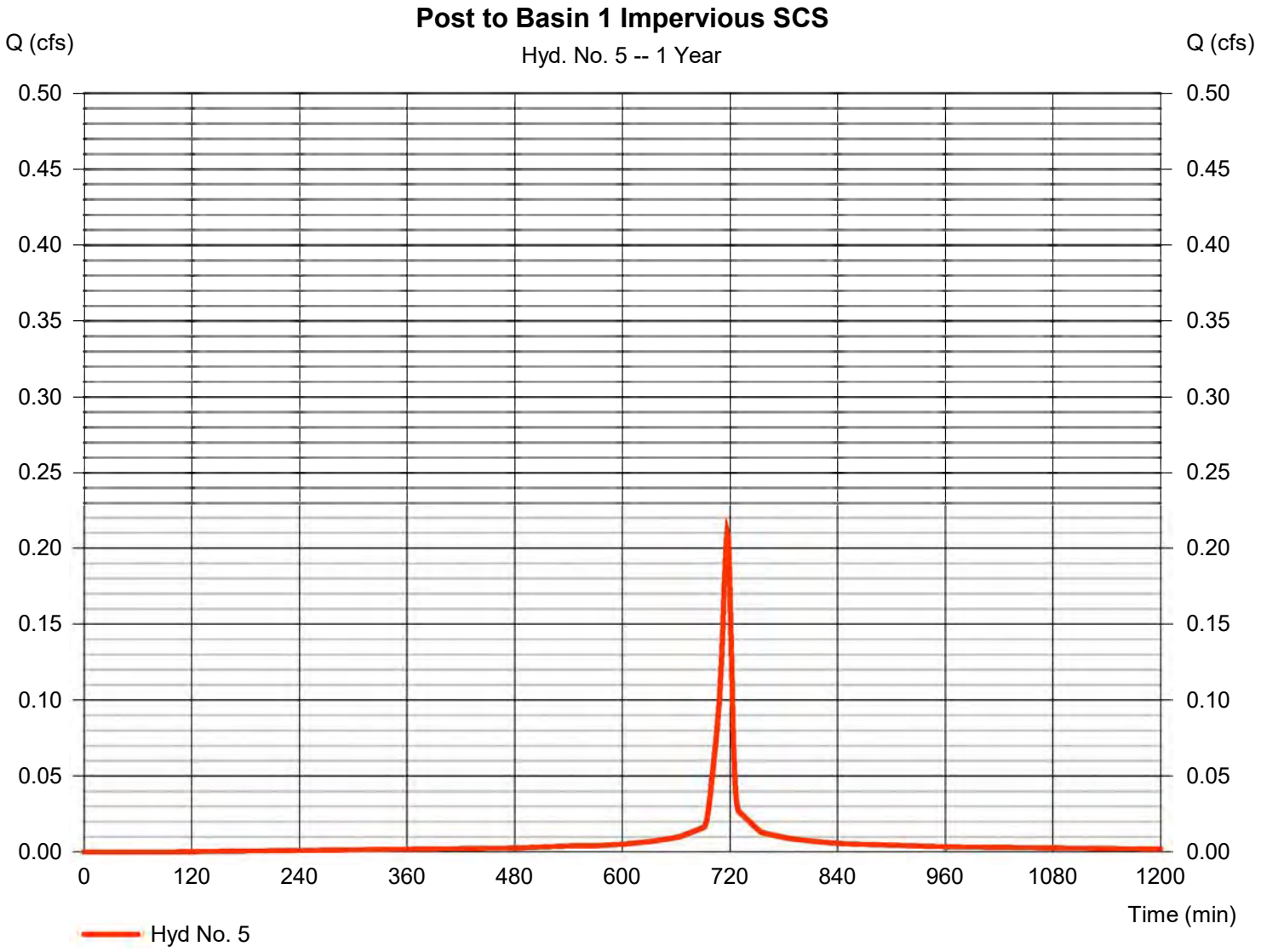


Hydrograph Report

Hyd. No. 5

Post to Basin 1 Impervious SCS

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.211 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	493 cuft
Drainage area	=	0.054 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.67 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

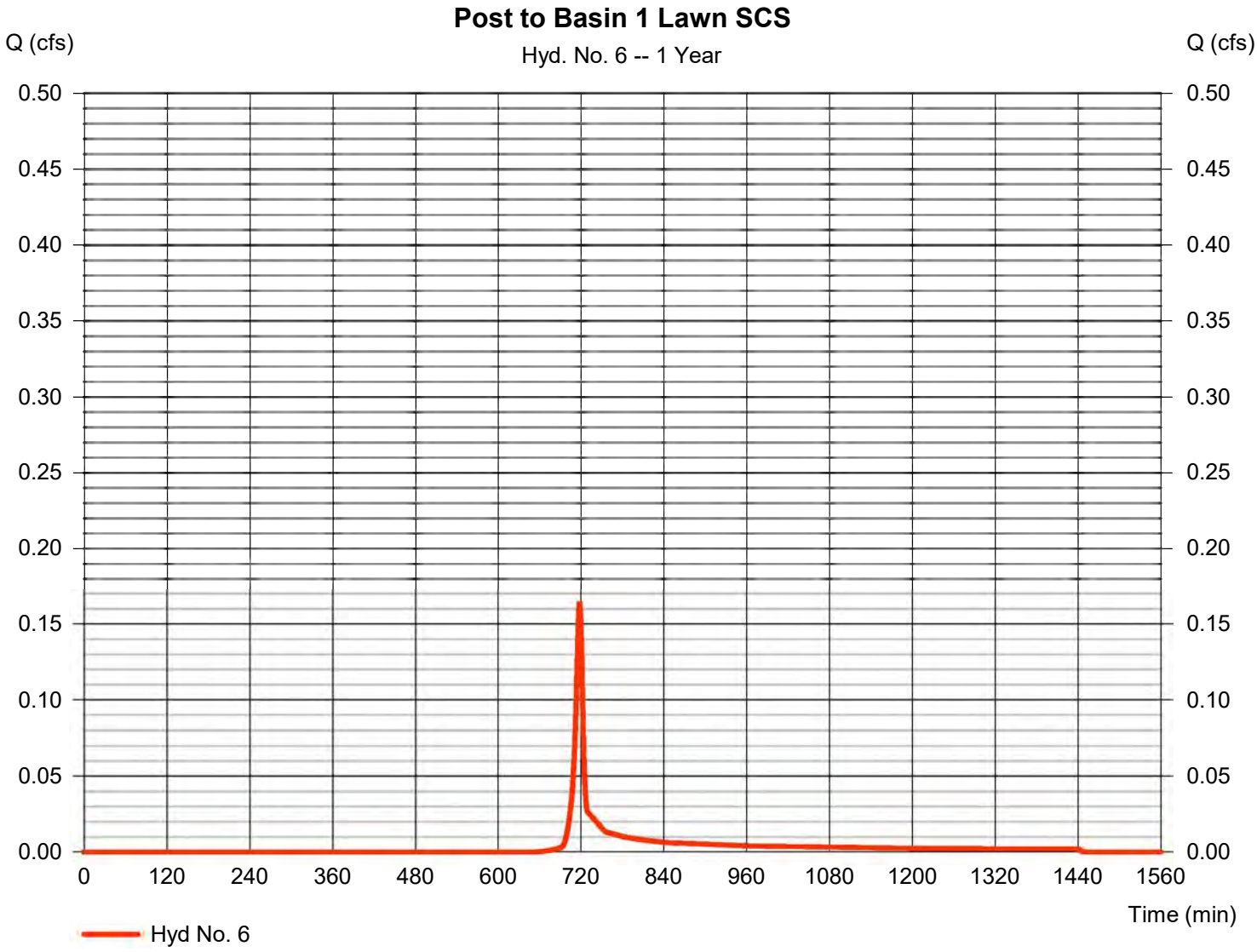


Hydrograph Report

Hyd. No. 6

Post to Basin 1 Lawn SCS

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.164 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	334 cuft
Drainage area	=	0.105 ac	Curve number	=	77
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.67 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

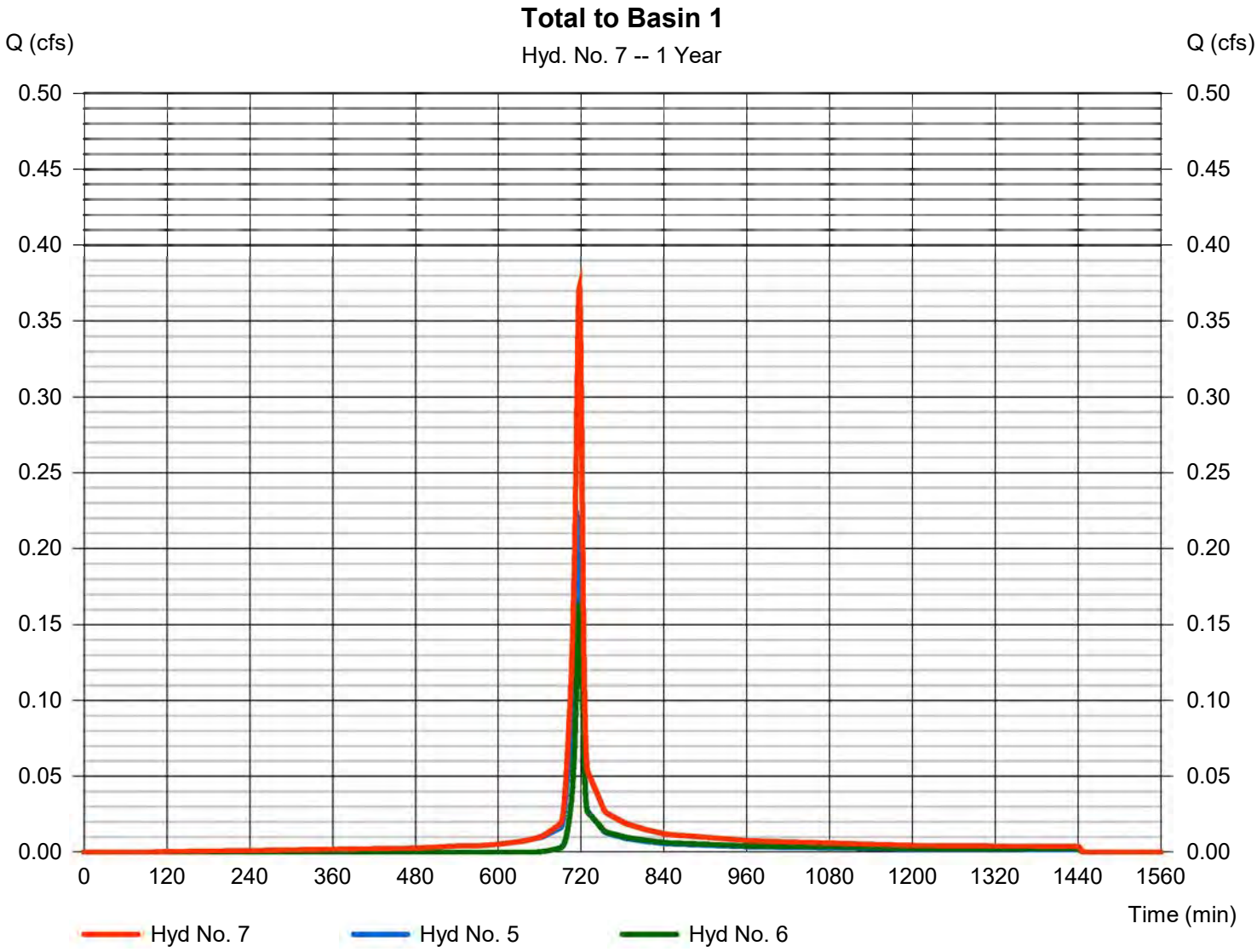


Hydrograph Report

Hyd. No. 7

Total to Basin 1

Hydrograph type	= Combine	Peak discharge	= 0.372 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 827 cuft
Inflow hyds.	= 5, 6	Contrib. drain. area	= 0.159 ac

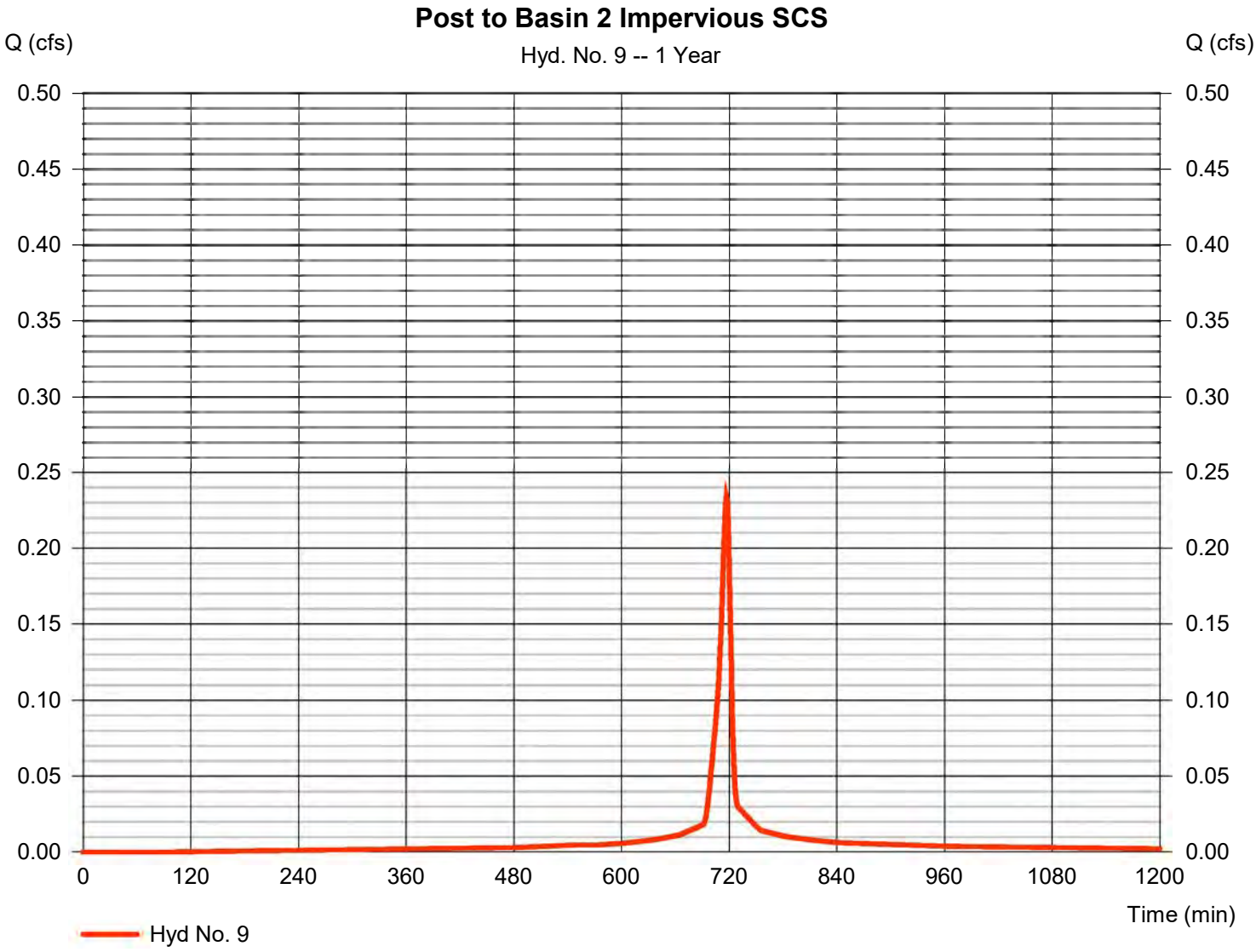


Hydrograph Report

Hyd. No. 9

Post to Basin 2 Impervious SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.234 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 548 cuft
Drainage area	= 0.060 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.67 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

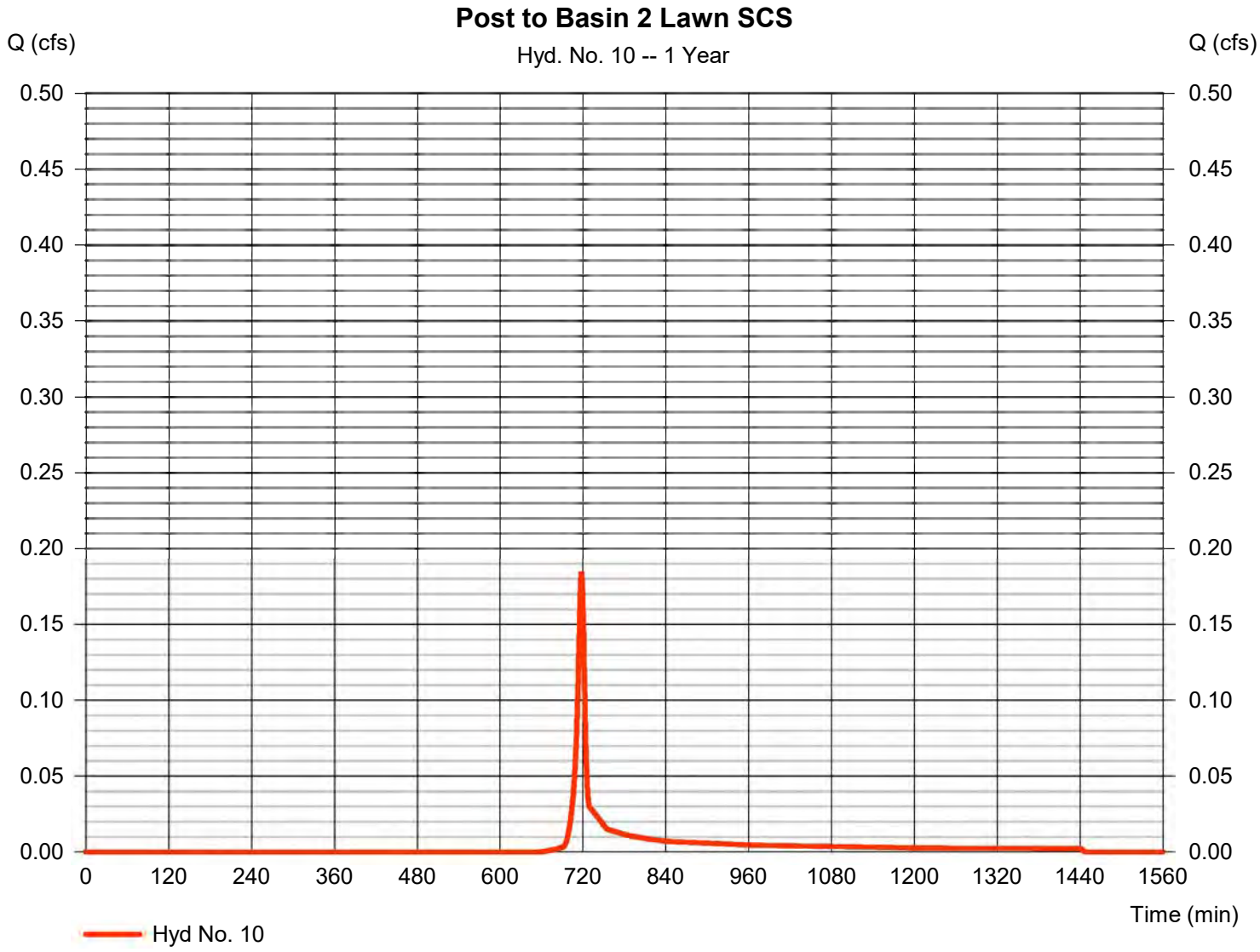


Hydrograph Report

Hyd. No. 10

Post to Basin 2 Lawn SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.185 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 375 cuft
Drainage area	= 0.118 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.67 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

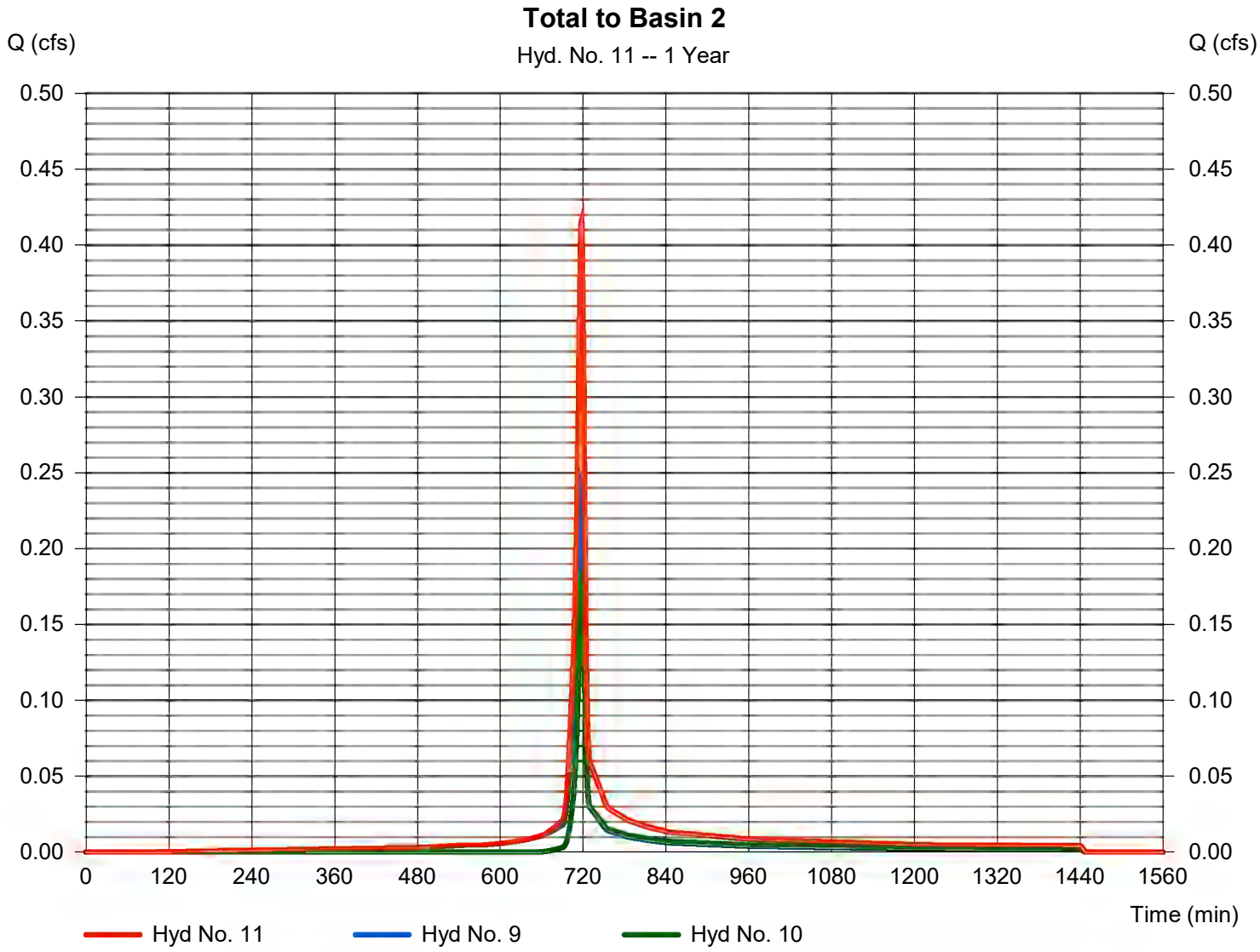


Hydrograph Report

Hyd. No. 11

Total to Basin 2

Hydrograph type	= Combine	Peak discharge	= 0.416 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 923 cuft
Inflow hyds.	= 9, 10	Contrib. drain. area	= 0.178 ac

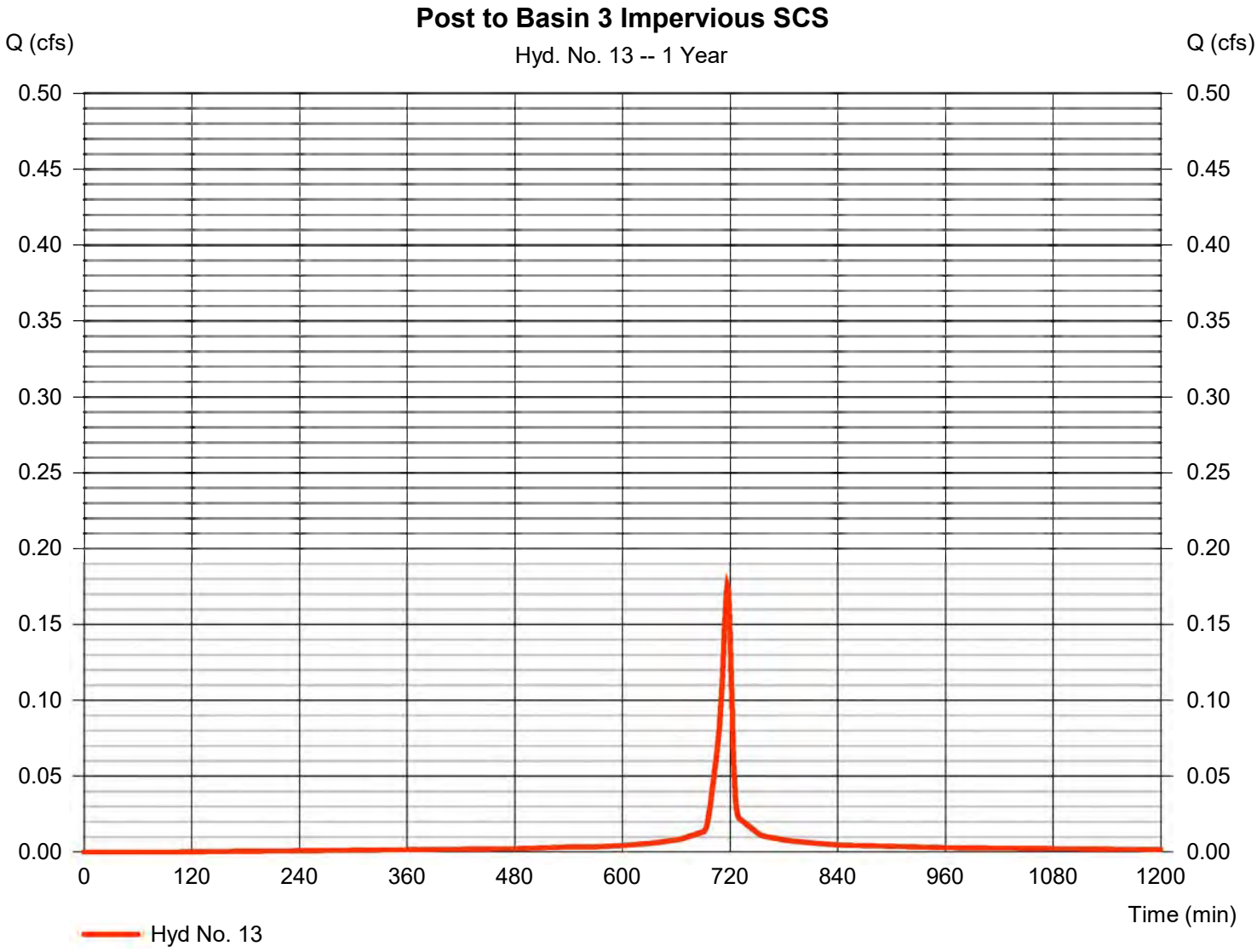


Hydrograph Report

Hyd. No. 13

Post to Basin 3 Impervious SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.176 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 411 cuft
Drainage area	= 0.045 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.67 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

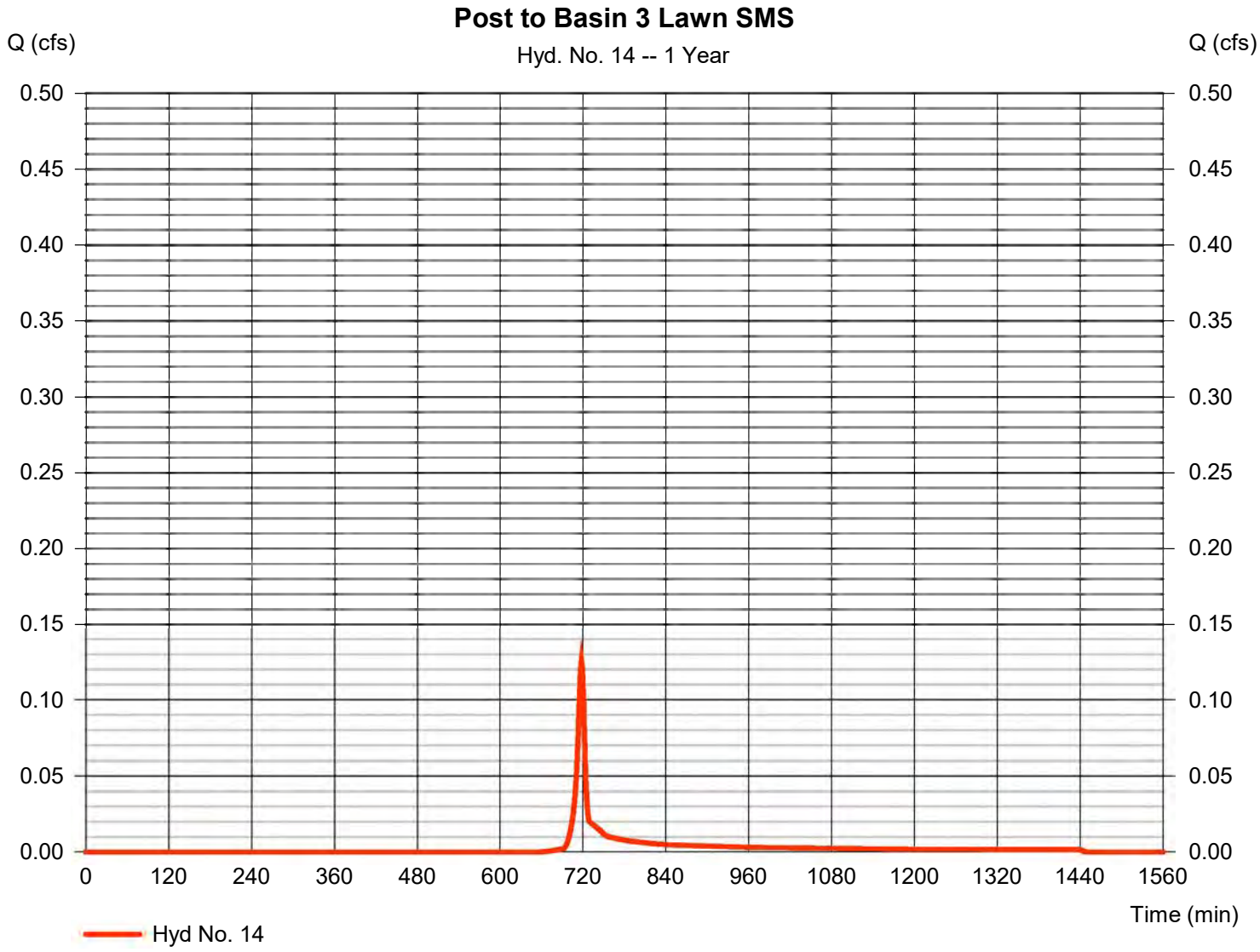


Hydrograph Report

Hyd. No. 14

Post to Basin 3 Lawn SMS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.125 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 254 cuft
Drainage area	= 0.080 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.67 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

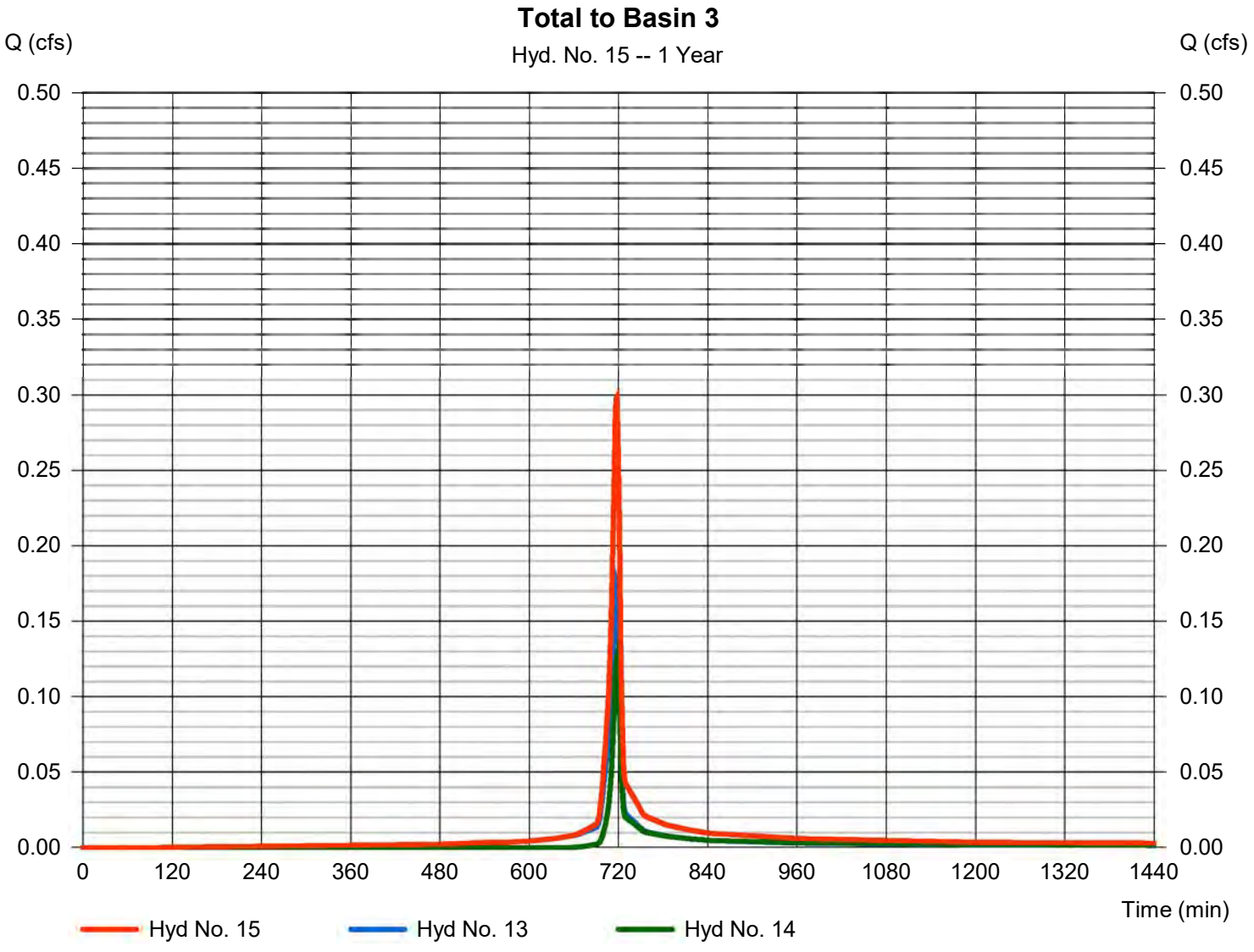


Hydrograph Report

Hyd. No. 15

Total to Basin 3

Hydrograph type	= Combine	Peak discharge	= 0.298 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 665 cuft
Inflow hyds.	= 13, 14	Contrib. drain. area	= 0.125 ac

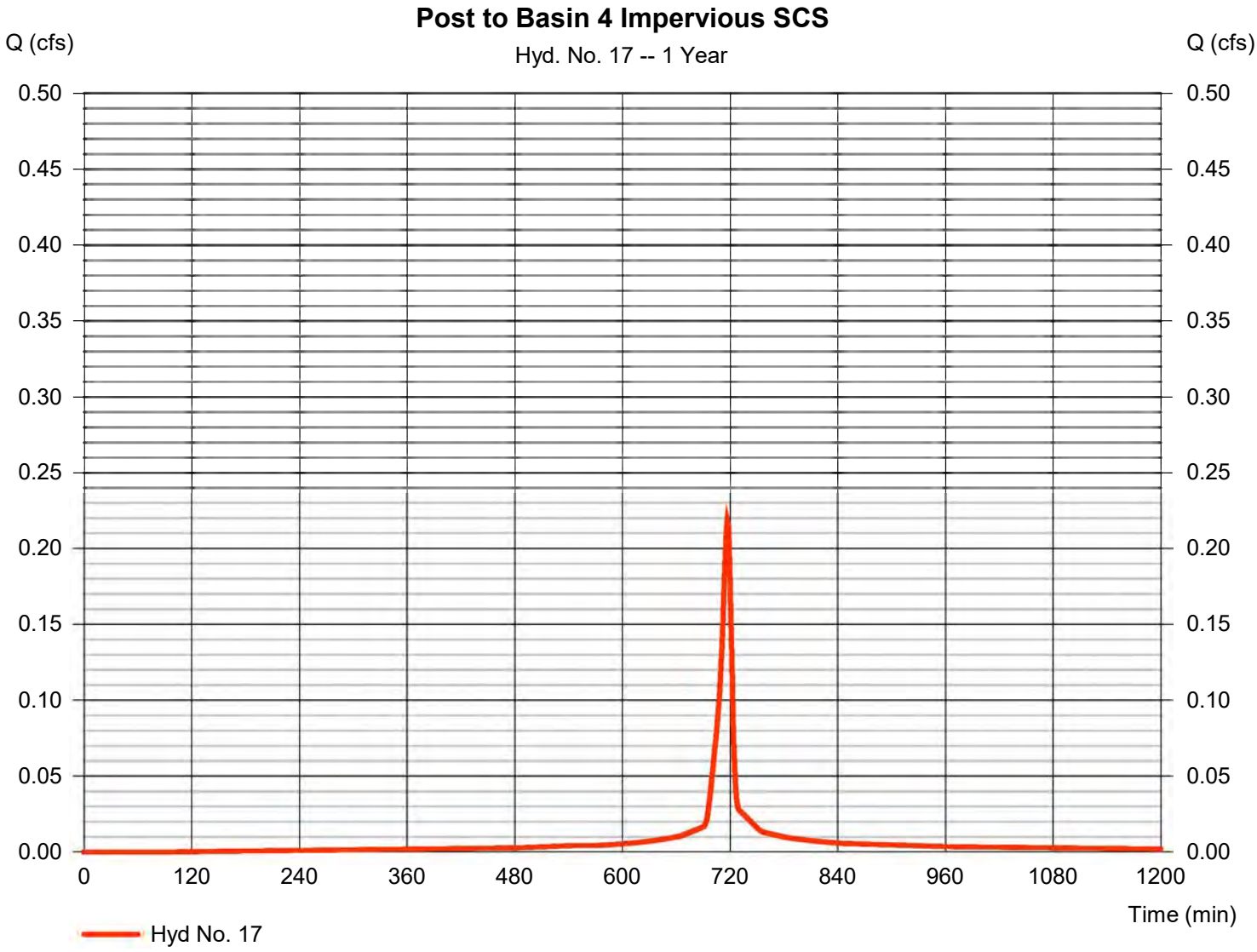


Hydrograph Report

Hyd. No. 17

Post to Basin 4 Impervious SCS

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.218 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	511 cuft
Drainage area	=	0.056 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.67 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

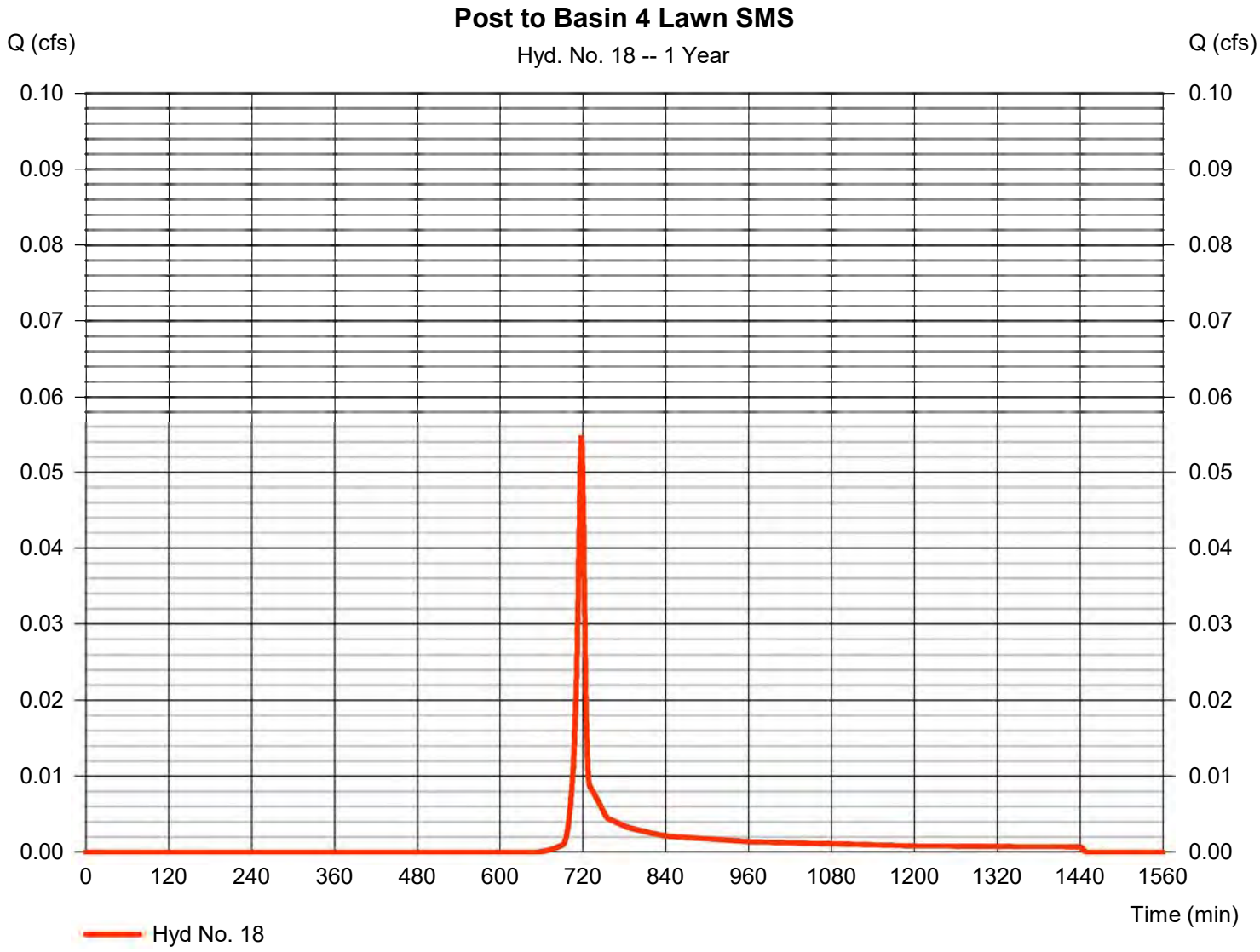


Hydrograph Report

Hyd. No. 18

Post to Basin 4 Lawn SMS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.055 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 111 cuft
Drainage area	= 0.035 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.67 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

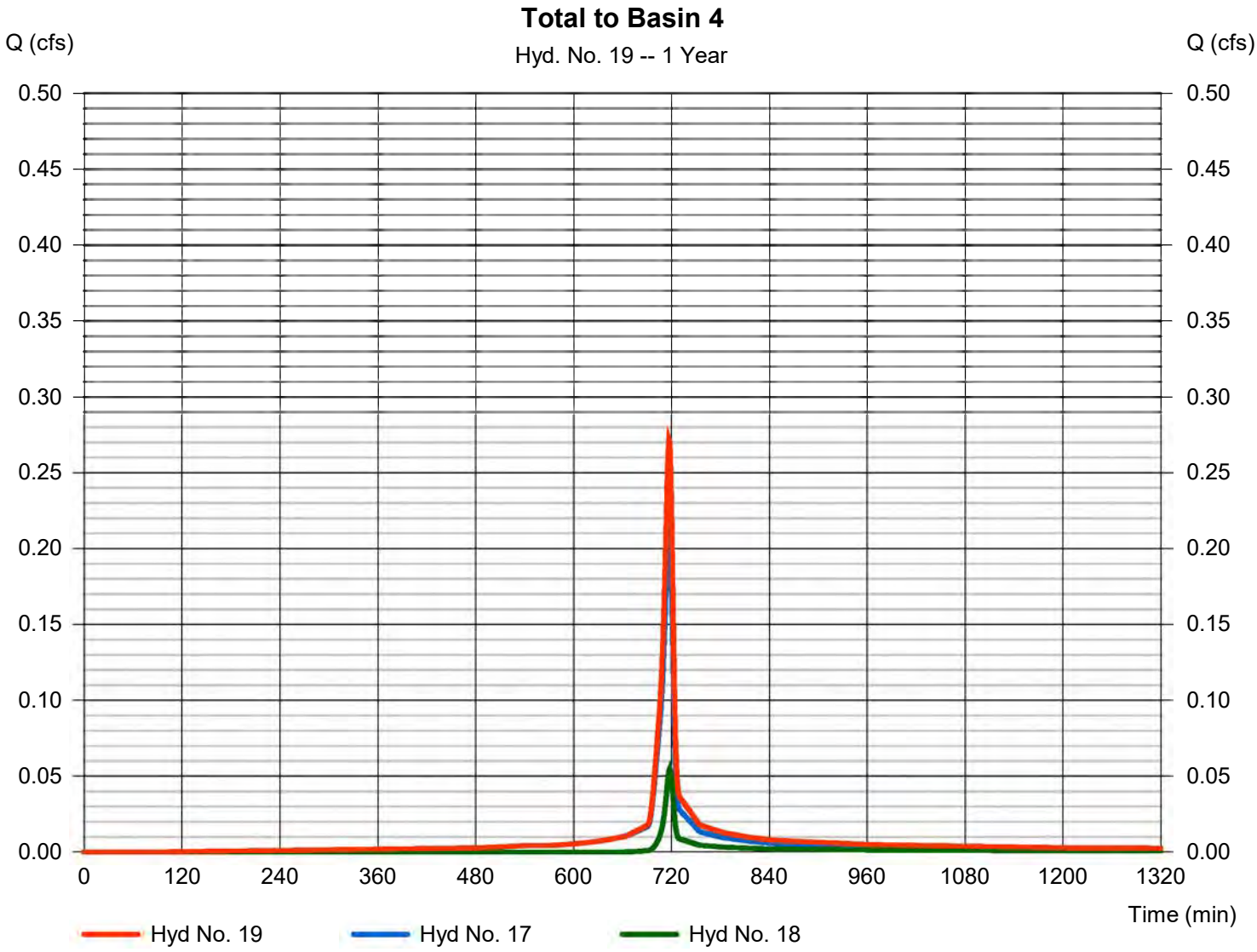


Hydrograph Report

Hyd. No. 19

Total to Basin 4

Hydrograph type	= Combine	Peak discharge	= 0.272 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 623 cuft
Inflow hyds.	= 17, 18	Contrib. drain. area	= 0.091 ac

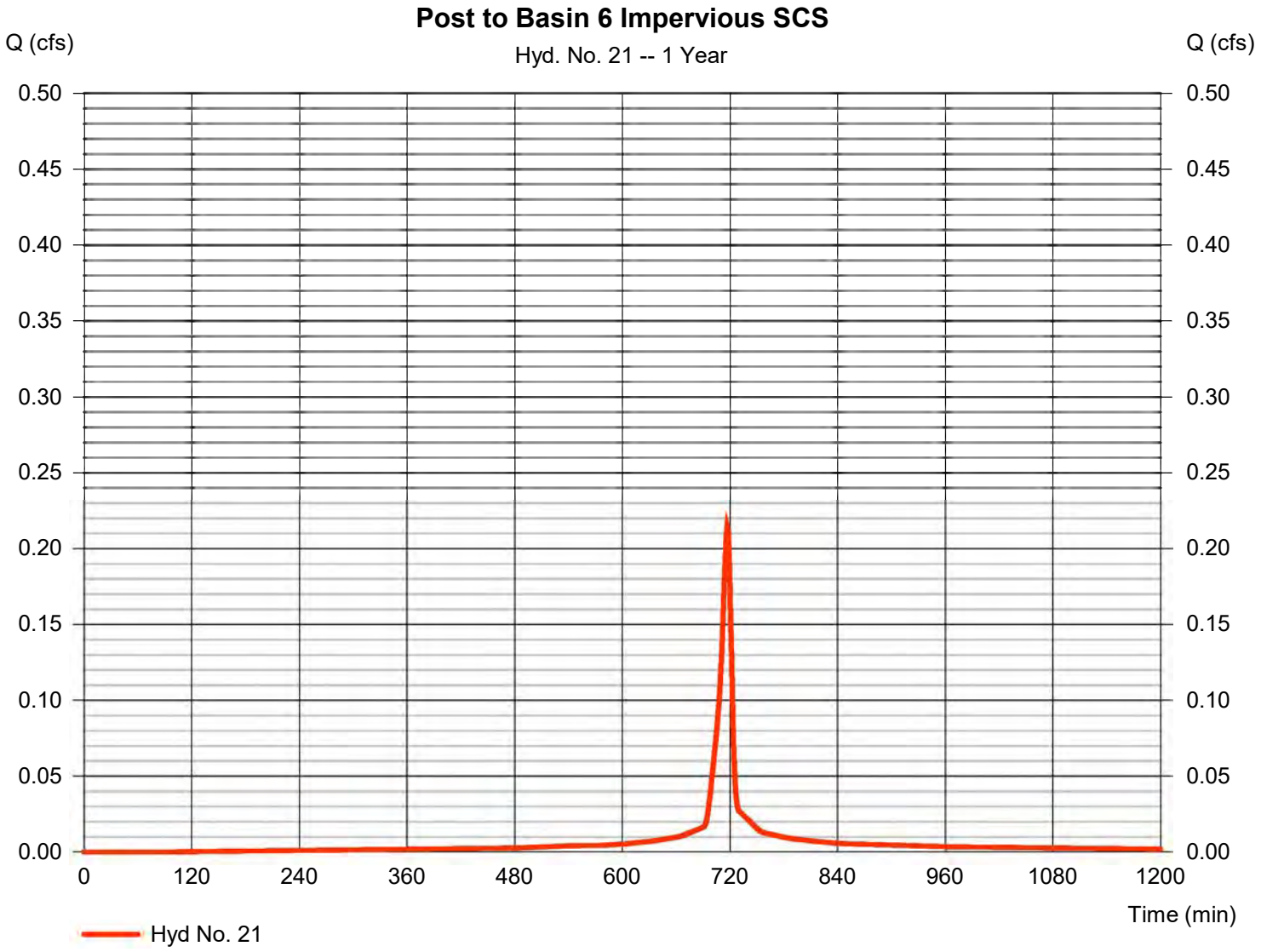


Hydrograph Report

Hyd. No. 21

Post to Basin 6 Impervious SCS

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.215 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	502 cuft
Drainage area	=	0.055 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.67 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

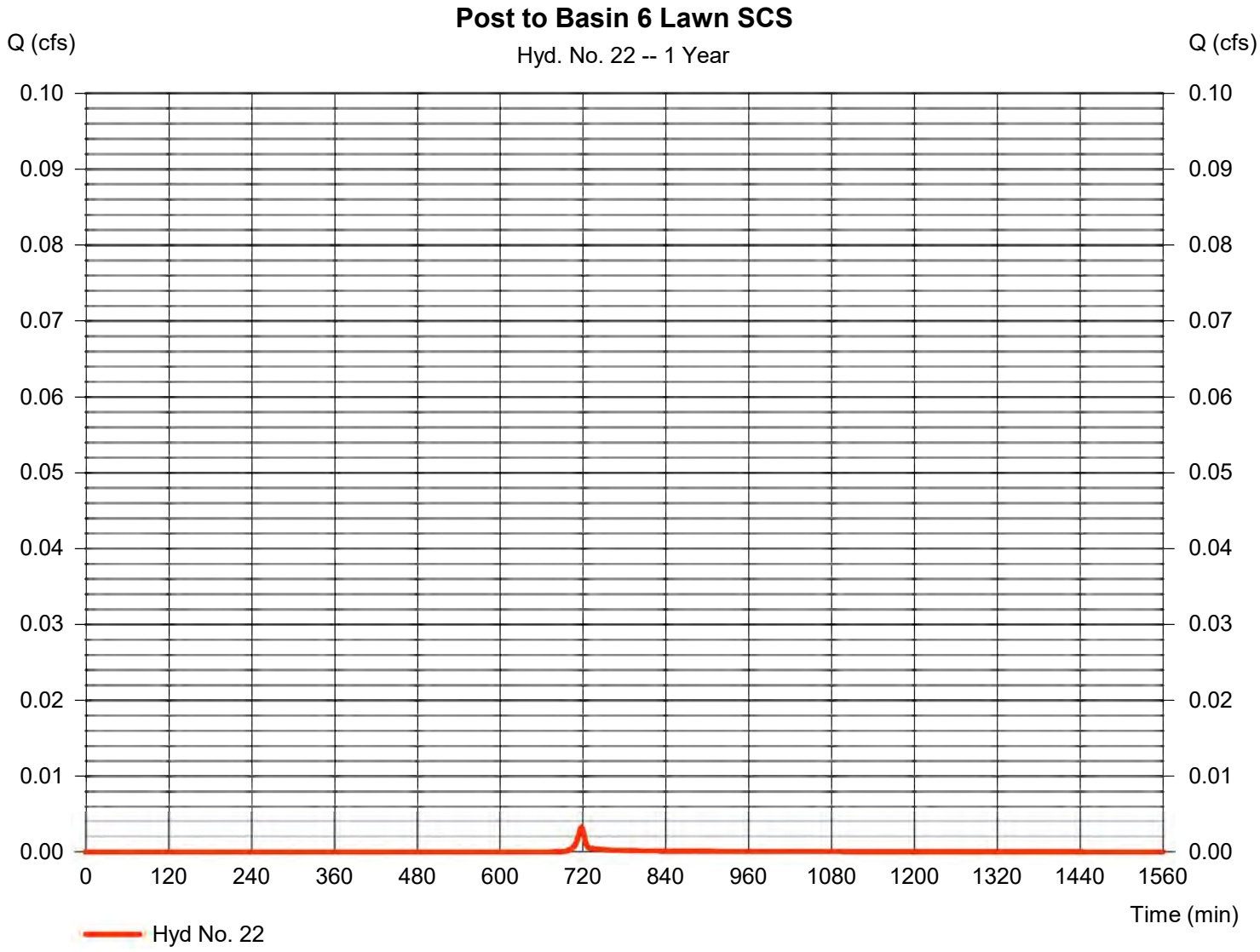


Hydrograph Report

Hyd. No. 22

Post to Basin 6 Lawn SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.003 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 6 cuft
Drainage area	= 0.002 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.67 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

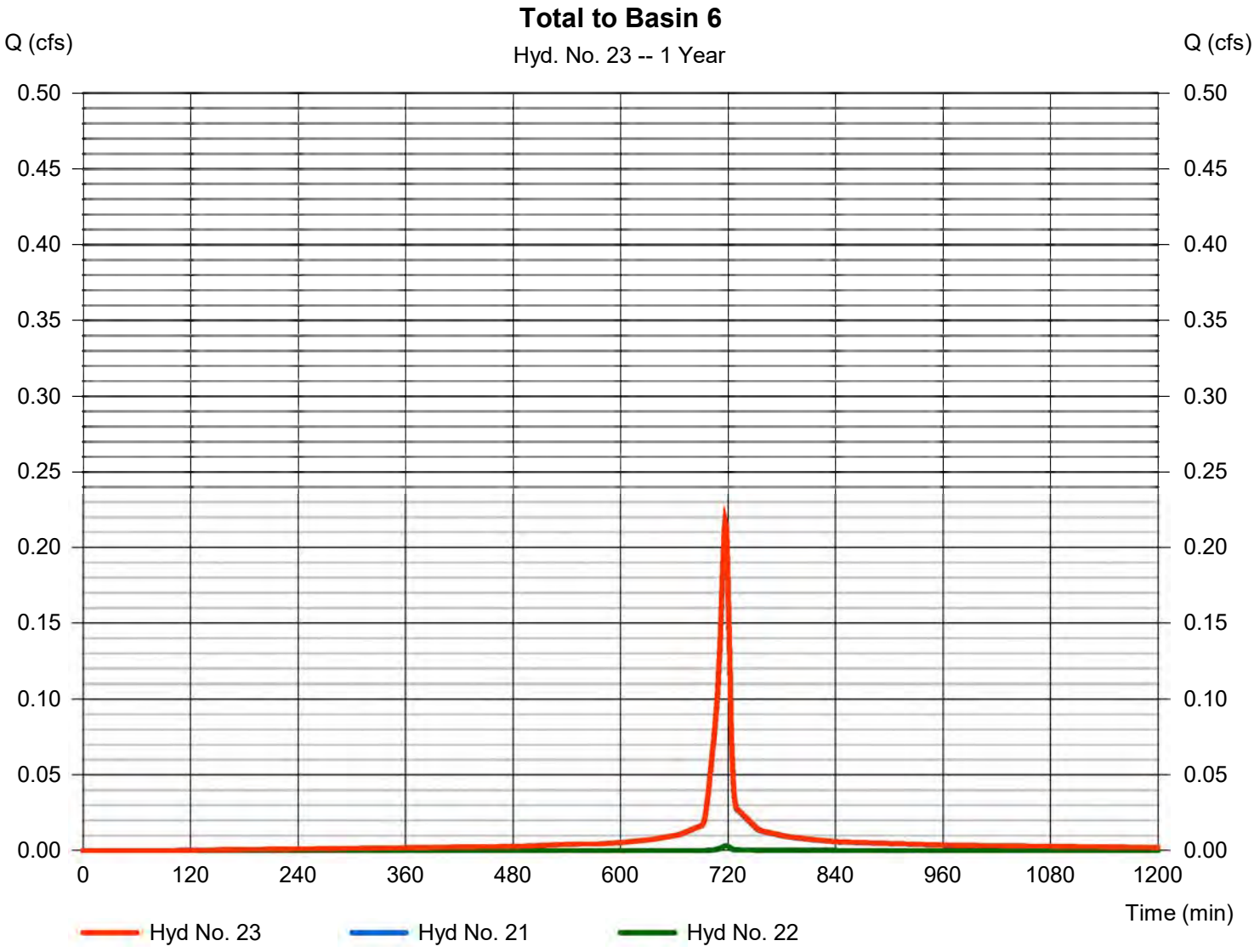


Hydrograph Report

Hyd. No. 23

Total to Basin 6

Hydrograph type	= Combine	Peak discharge	= 0.218 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 509 cuft
Inflow hyds.	= 21, 22	Contrib. drain. area	= 0.057 ac

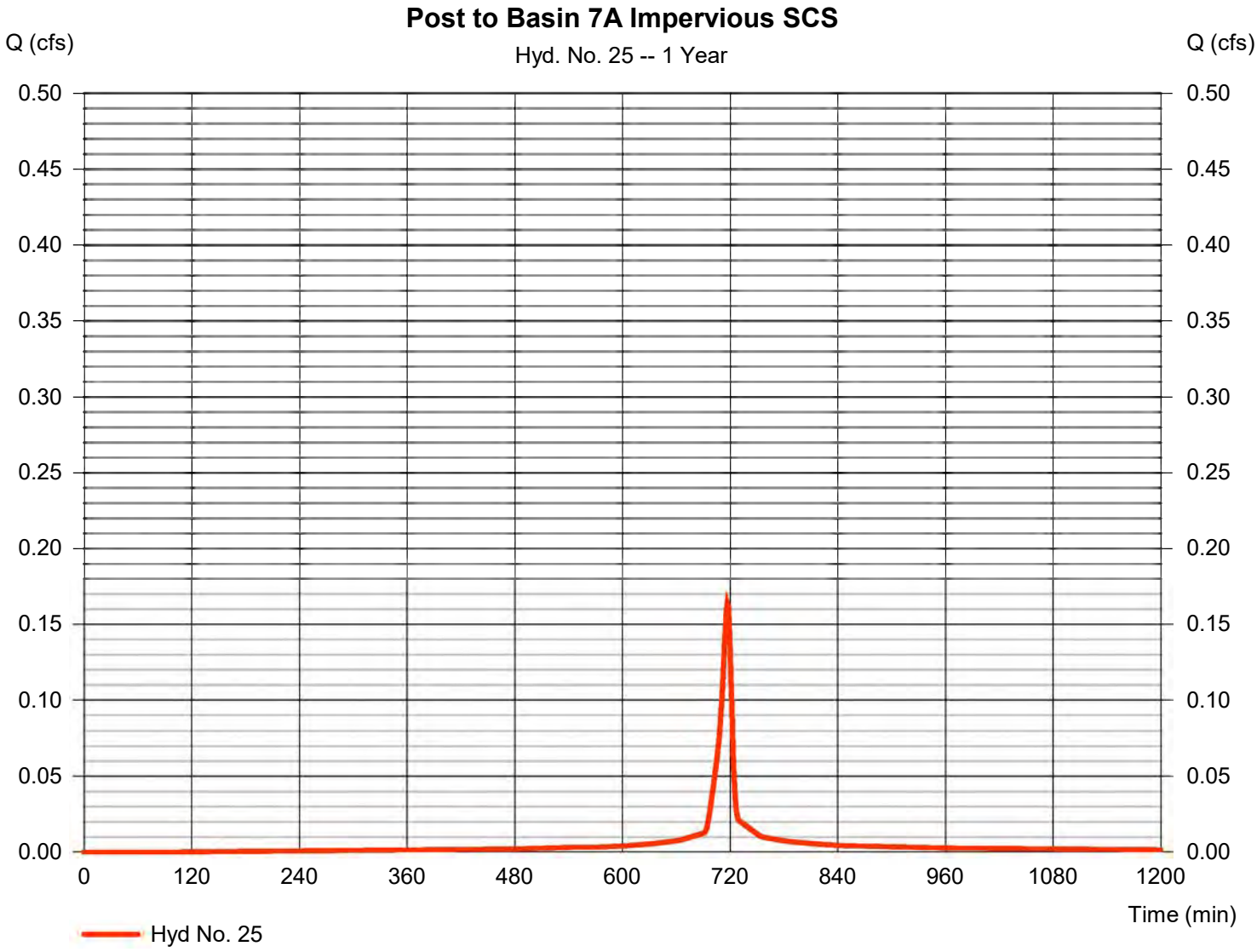


Hydrograph Report

Hyd. No. 25

Post to Basin 7A Impervious SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.164 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 384 cuft
Drainage area	= 0.042 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.67 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

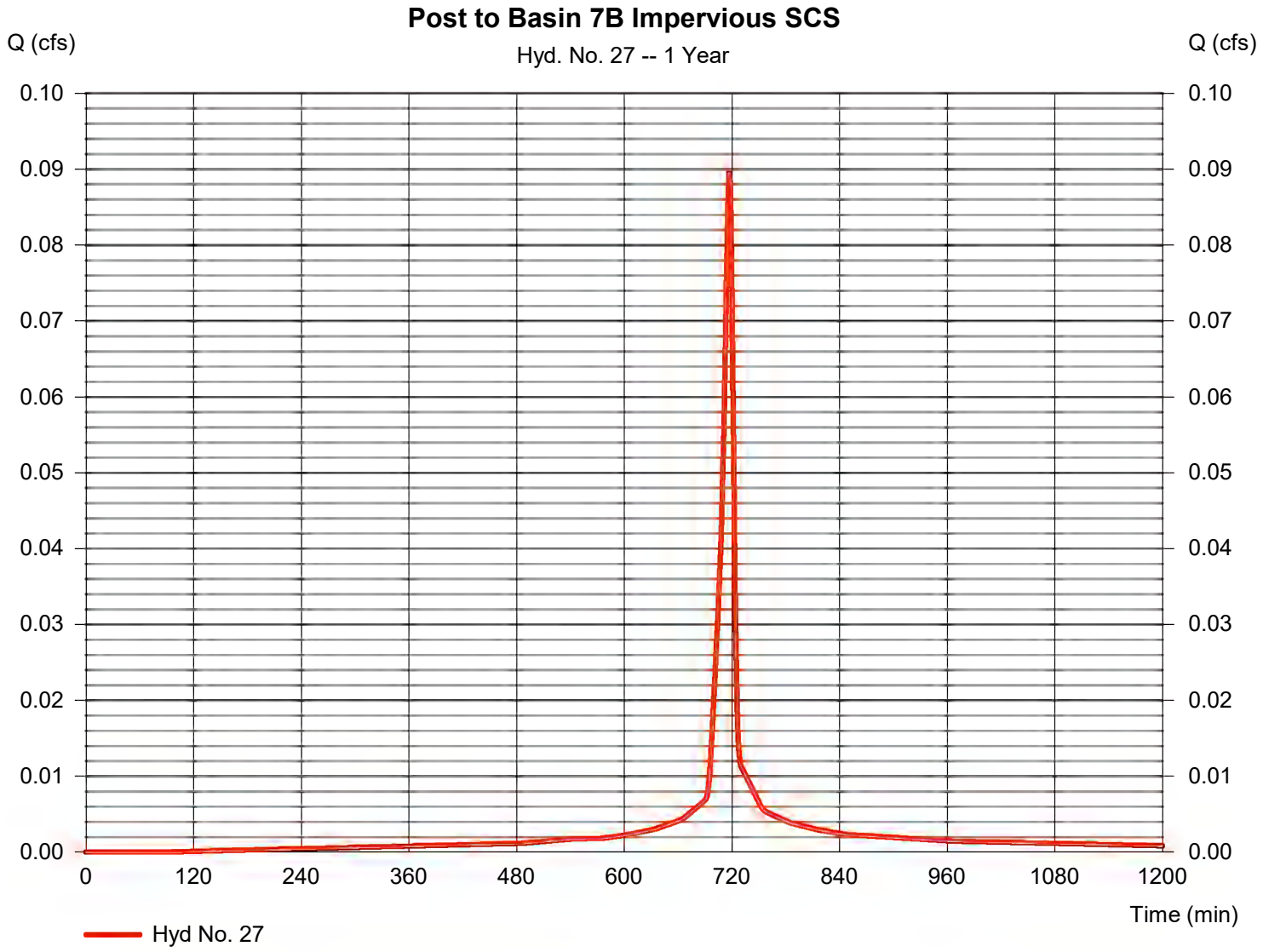


Hydrograph Report

Hyd. No. 27

Post to Basin 7B Impervious SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.090 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 210 cuft
Drainage area	= 0.023 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.67 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

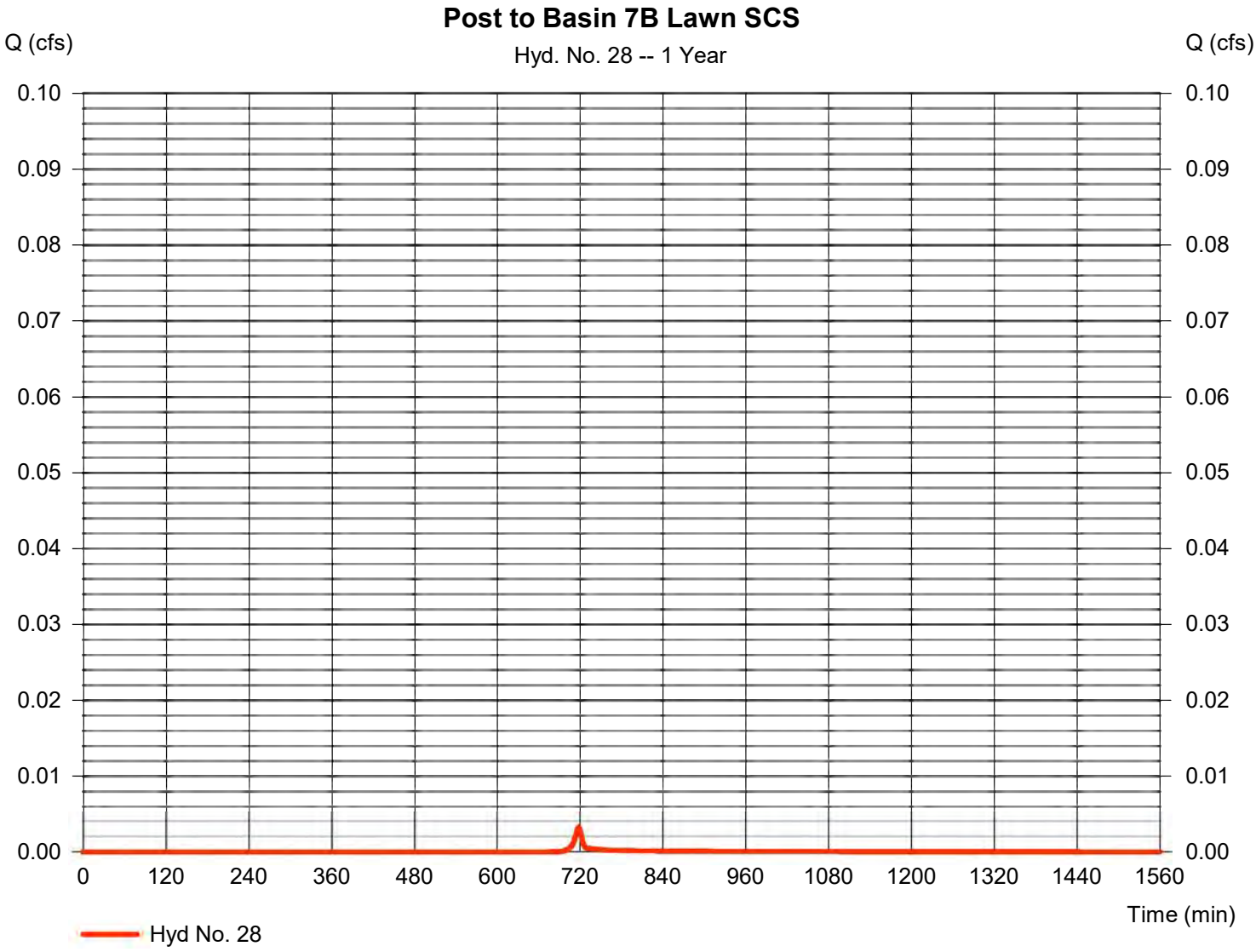


Hydrograph Report

Hyd. No. 28

Post to Basin 7B Lawn SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.003 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 6 cuft
Drainage area	= 0.002 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.67 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

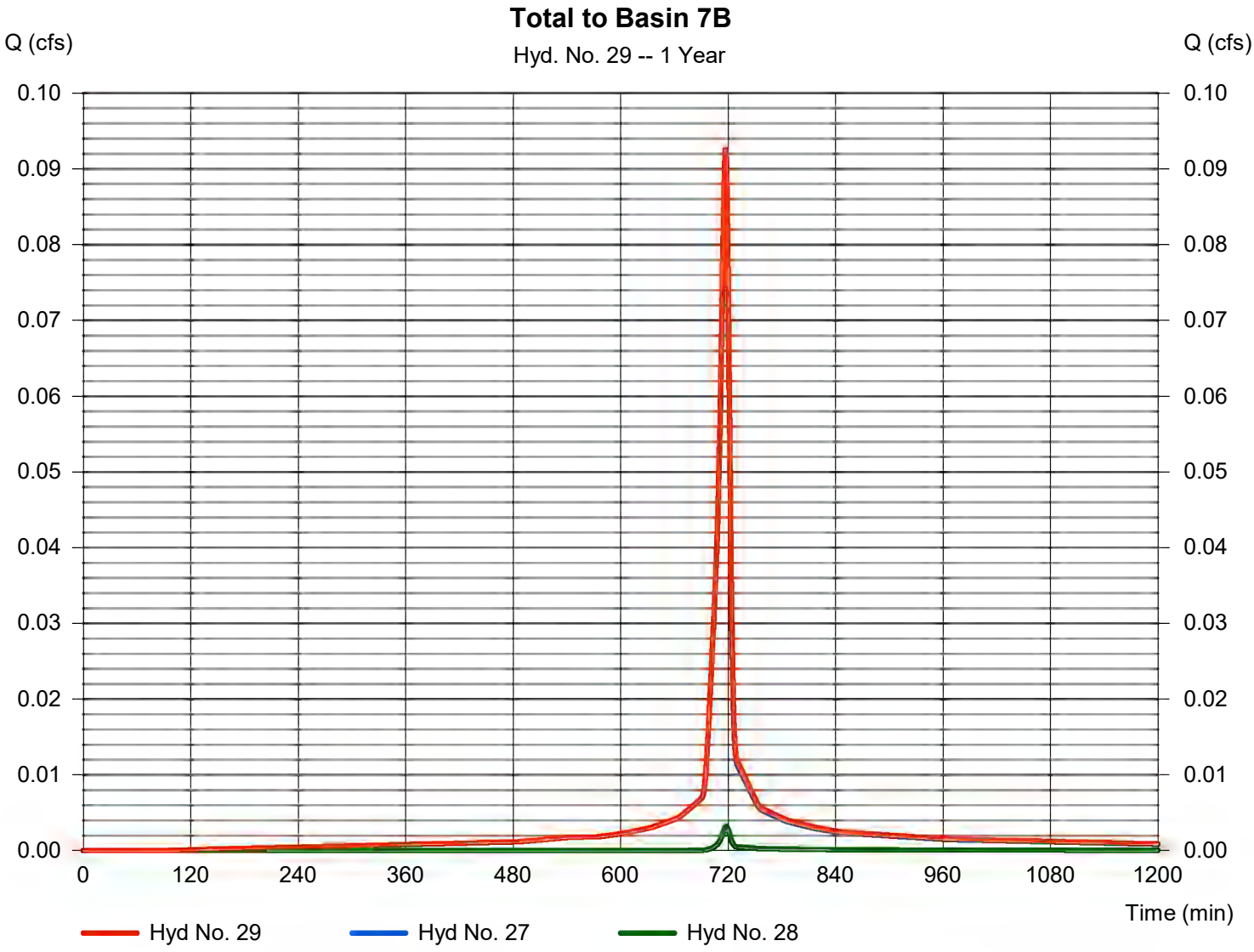


Hydrograph Report

Hyd. No. 29

Total to Basin 7B

Hydrograph type	= Combine	Peak discharge	= 0.093 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 216 cuft
Inflow hyds.	= 27, 28	Contrib. drain. area	= 0.025 ac

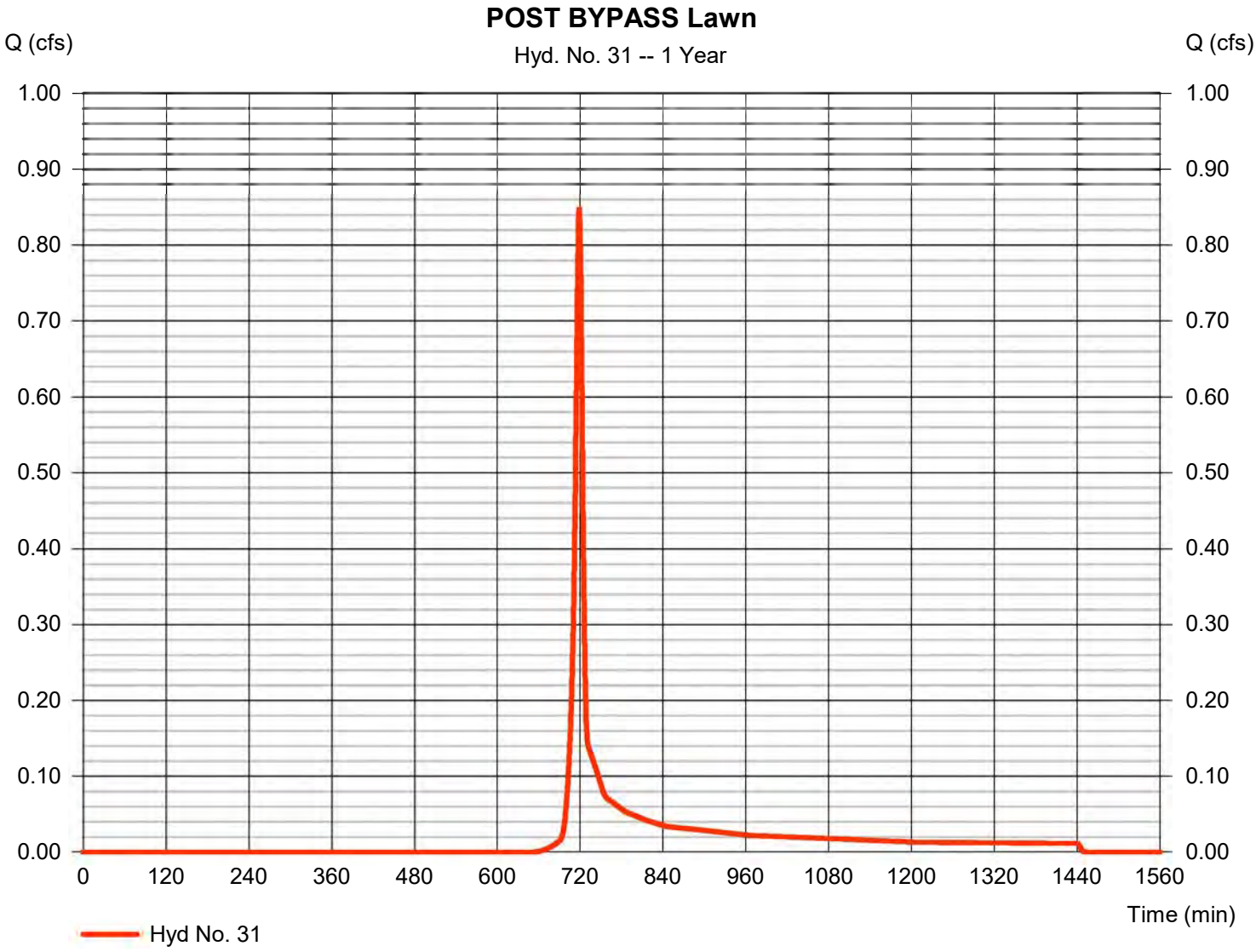


Hydrograph Report

Hyd. No. 31

POST BYPASS Lawn

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.850 cfs
Storm frequency	=	1 yrs	Time to peak	=	719 min
Time interval	=	1 min	Hyd. volume	=	1,815 cuft
Drainage area	=	0.604 ac	Curve number	=	77
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	7.10 min
Total precip.	=	2.67 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

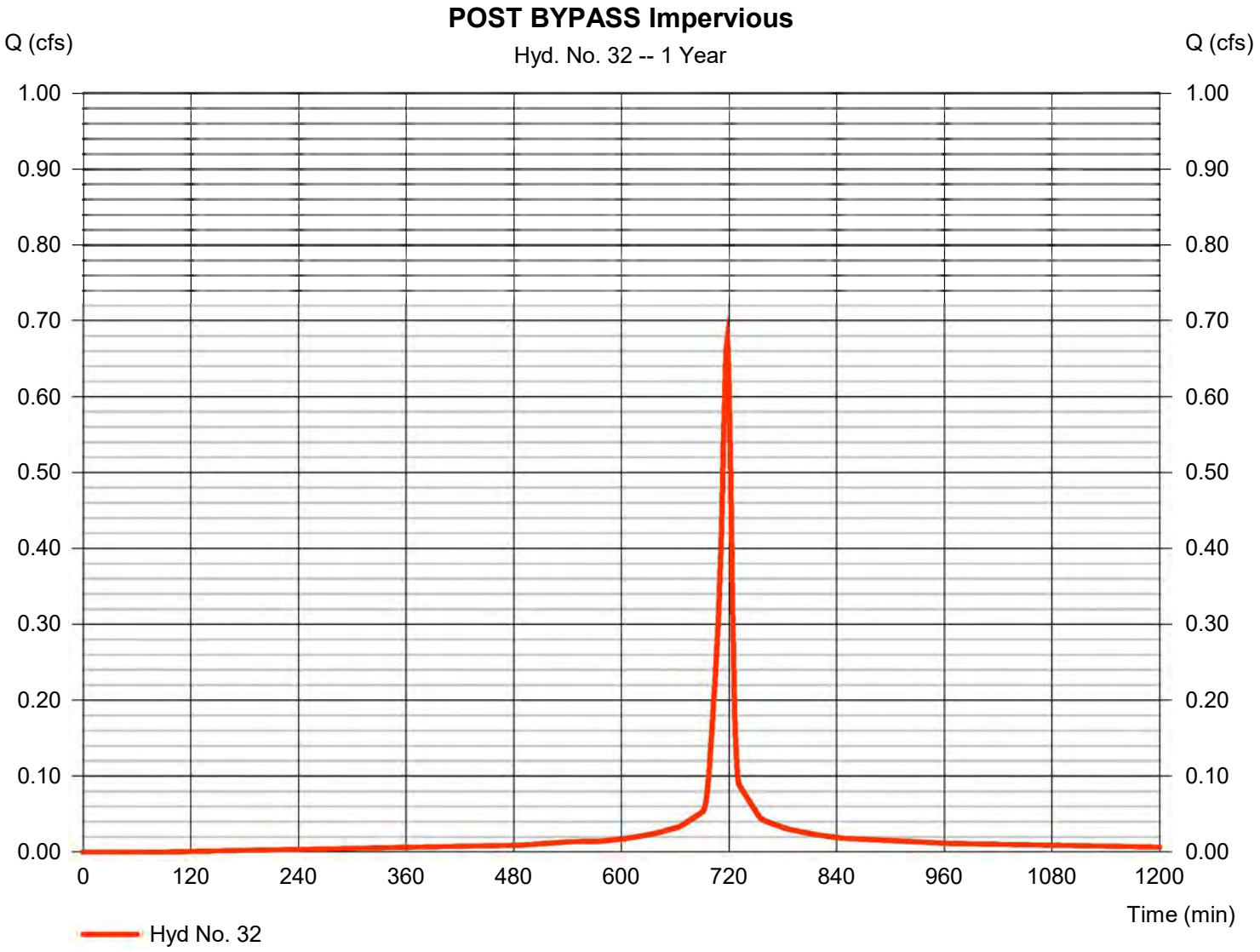


Hydrograph Report

Hyd. No. 32

POST BYPASS Impervious

Hydrograph type	= SCS Runoff	Peak discharge	= 0.674 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 1,641 cuft
Drainage area	= 0.190 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 7.10 min
Total precip.	= 2.67 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

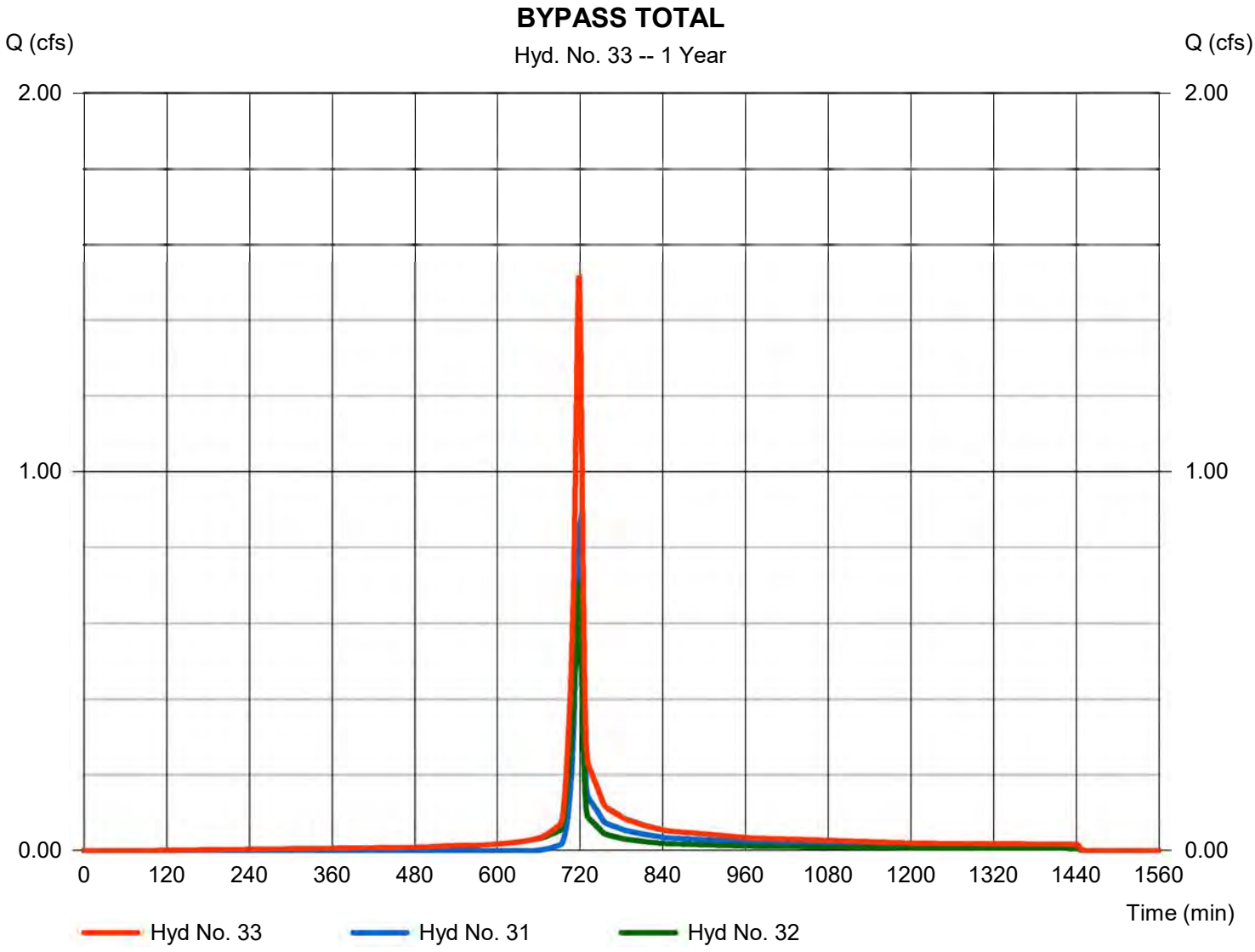


Hydrograph Report

Hyd. No. 33

BYPASS TOTAL

Hydrograph type	= Combine	Peak discharge	= 1.511 cfs
Storm frequency	= 1 yrs	Time to peak	= 719 min
Time interval	= 1 min	Hyd. volume	= 3,456 cuft
Inflow hyds.	= 31, 32	Contrib. drain. area	= 0.794 ac



Hydrograph Summary Report

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

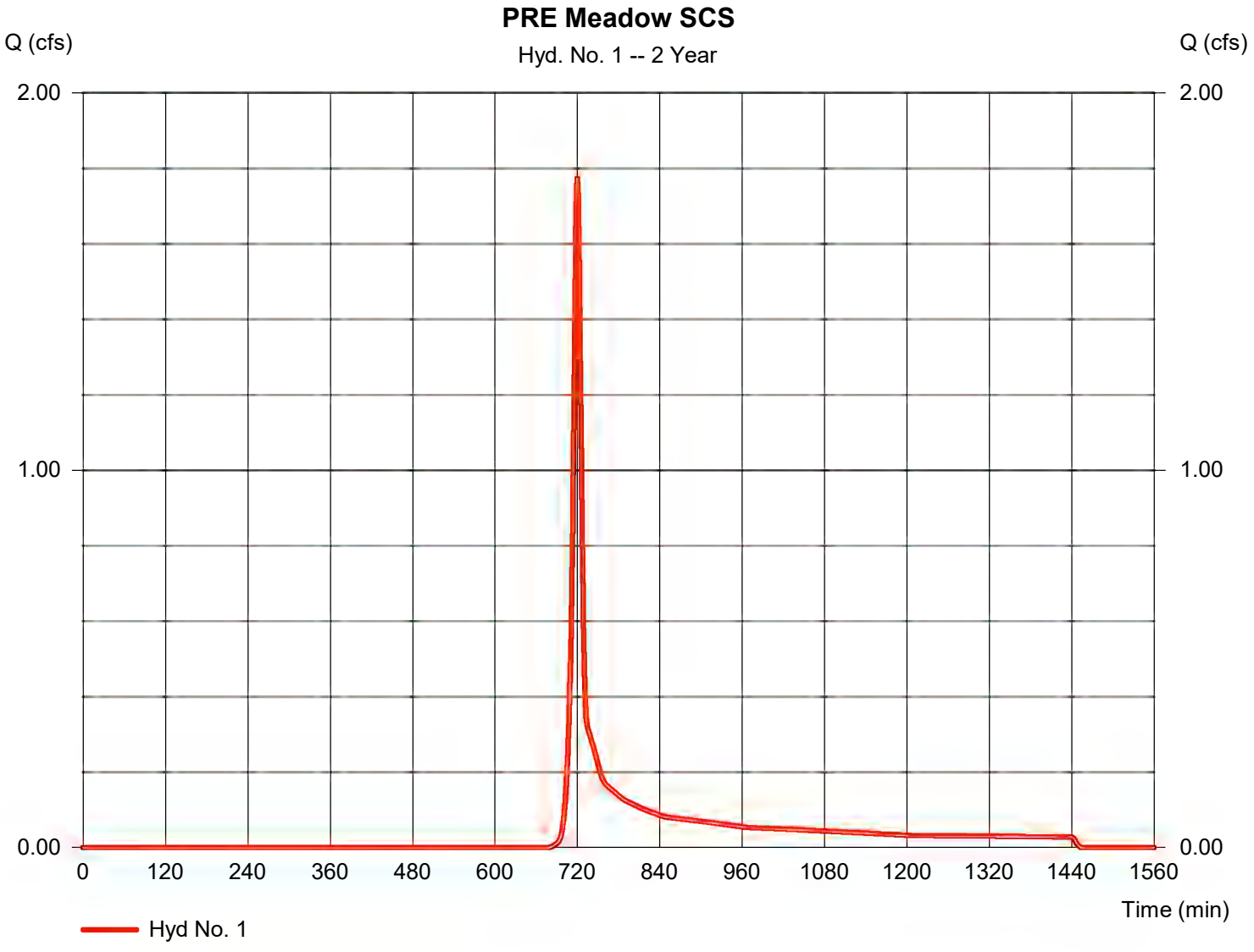
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1.778	1	720	4,179	------	------	------	PRE Meadow SCS
2	SCS Runoff	0.734	1	719	1,913	------	------	------	PRE Impervious SCS
3	Combine	2.498	1	720	6,092	1, 2	------	------	Total Pre
5	SCS Runoff	0.254	1	717	602	------	------	------	Post to Basin 1 Impervious SCS
6	SCS Runoff	0.238	1	718	479	------	------	------	Post to Basin 1 Lawn SCS
7	Combine	0.489	1	718	1,081	5, 6	------	------	Total to Basin 1
9	SCS Runoff	0.283	1	717	669	------	------	------	Post to Basin 2 Impervious SCS
10	SCS Runoff	0.268	1	718	538	------	------	------	Post to Basin 2 Lawn SCS
11	Combine	0.547	1	718	1,207	9, 10	------	------	Total to Basin 2
13	SCS Runoff	0.212	1	717	502	------	------	------	Post to Basin 3 Impervious SCS
14	SCS Runoff	0.182	1	718	365	------	------	------	Post to Basin 3 Lawn SMS
15	Combine	0.391	1	718	867	13, 14	------	------	Total to Basin 3
17	SCS Runoff	0.264	1	717	624	------	------	------	Post to Basin 4 Impervious SCS
18	SCS Runoff	0.079	1	718	160	------	------	------	Post to Basin 4 Lawn SMS
19	Combine	0.342	1	717	784	17, 18	------	------	Total to Basin 4
21	SCS Runoff	0.259	1	717	613	------	------	------	Post to Basin 6 Impervious SCS
22	SCS Runoff	0.005	1	718	9	------	------	------	Post to Basin 6 Lawn SCS
23	Combine	0.264	1	717	622	21, 22	------	------	Total to Basin 6
25	SCS Runoff	0.198	1	717	468	------	------	------	Post to Basin 7A Impervious SCS
27	SCS Runoff	0.108	1	717	256	------	------	------	Post to Basin 7B Impervious SCS
28	SCS Runoff	0.005	1	718	9	------	------	------	Post to Basin 7B Lawn SCS
29	Combine	0.113	1	717	265	27, 28	------	------	Total to Basin 7B
31	SCS Runoff	1.234	1	719	2,606	------	------	------	POST BYPASS Lawn
32	SCS Runoff	0.815	1	718	2,002	------	------	------	POST BYPASS Impervious
33	Combine	2.038	1	718	4,608	31, 32	------	------	BYPASS TOTAL

Hydrograph Report

Hyd. No. 1

PRE Meadow SCS

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.778 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	1 min	Hyd. volume	=	4,179 cuft
Drainage area	=	1.302 ac	Curve number	=	71
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	3.21 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

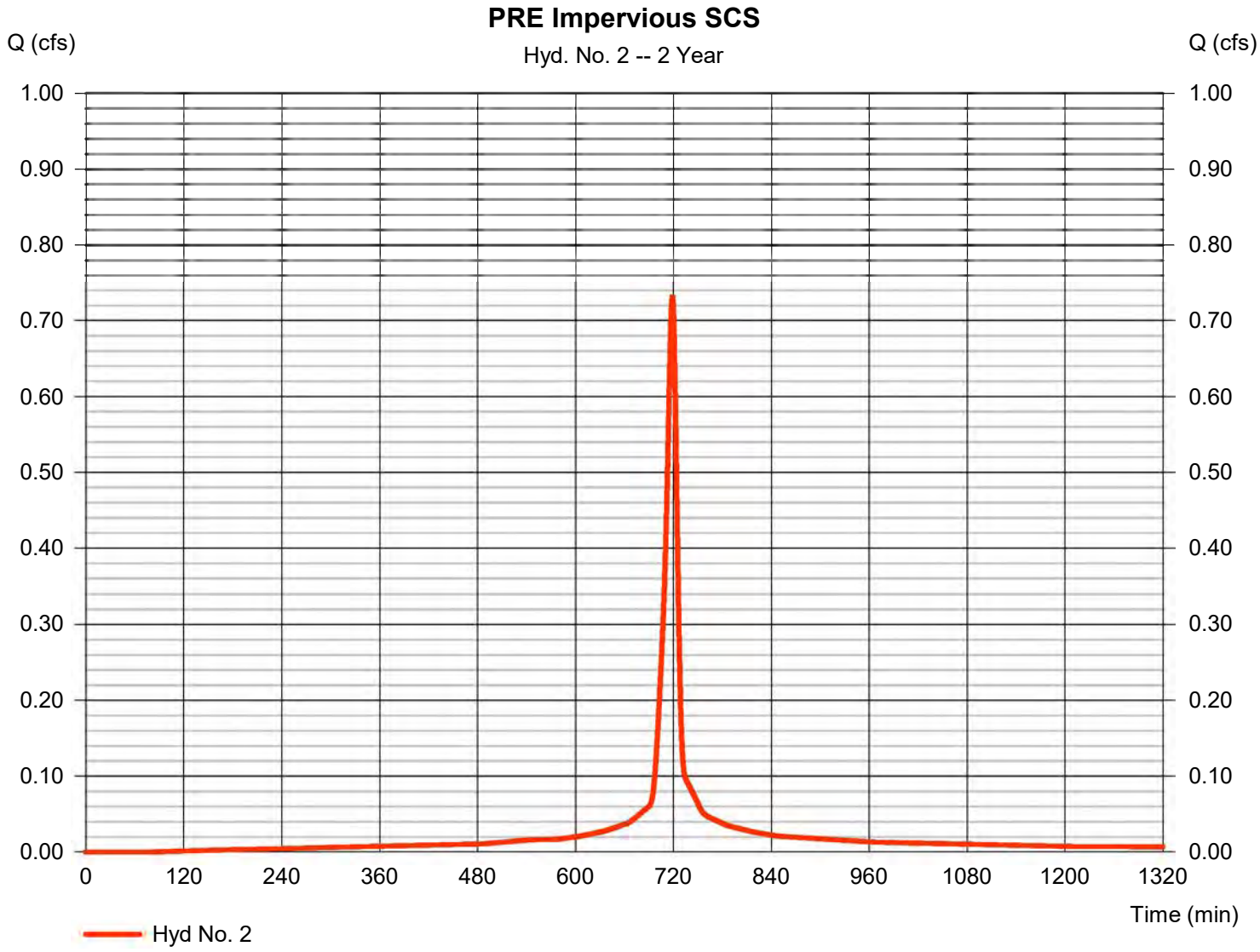


Hydrograph Report

Hyd. No. 2

PRE Impervious SCS

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.734 cfs
Storm frequency	=	2 yrs	Time to peak	=	719 min
Time interval	=	1 min	Hyd. volume	=	1,913 cuft
Drainage area	=	0.177 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	3.21 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

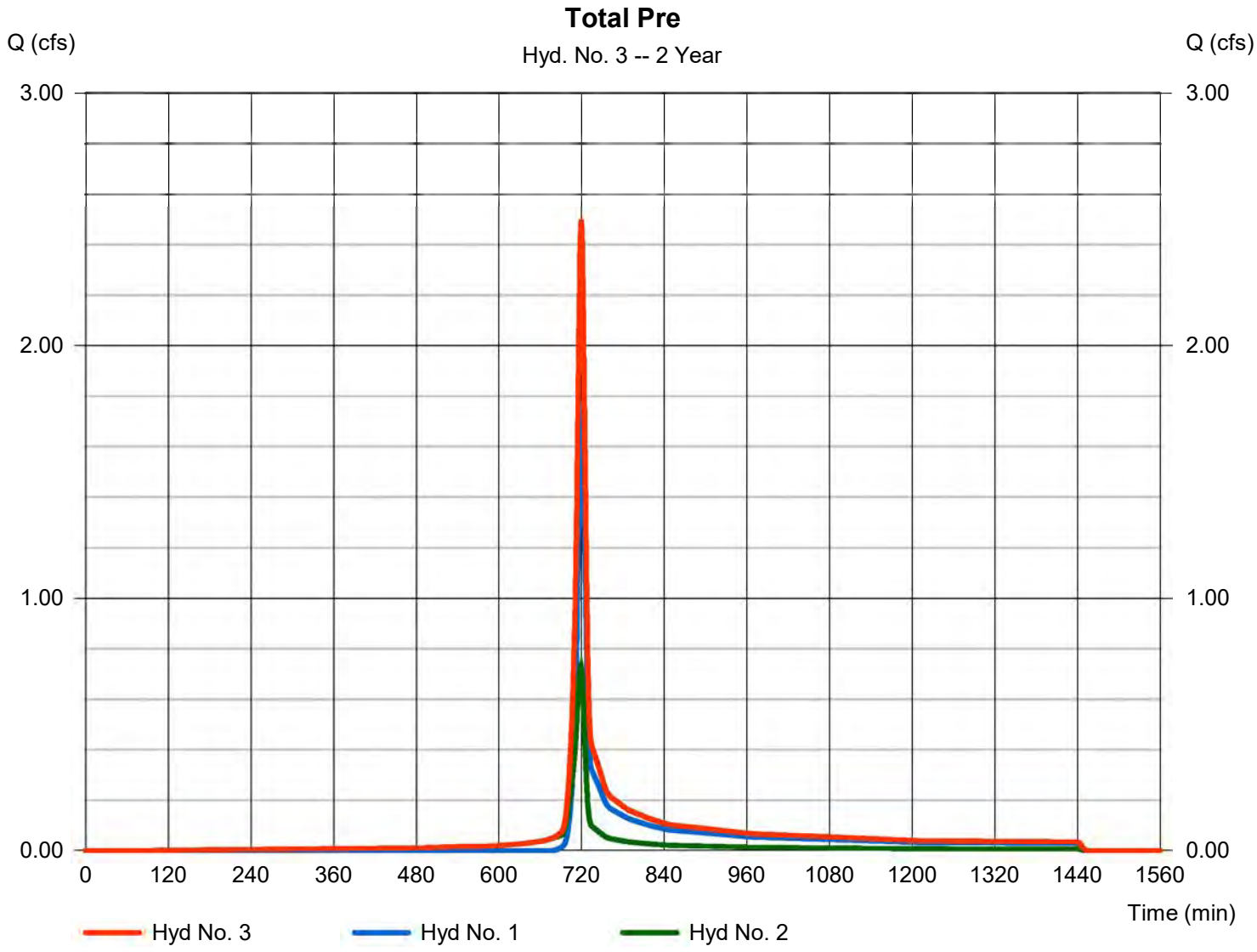


Hydrograph Report

Hyd. No. 3

Total Pre

Hydrograph type	= Combine	Peak discharge	= 2.498 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 1 min	Hyd. volume	= 6,092 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 1.479 ac

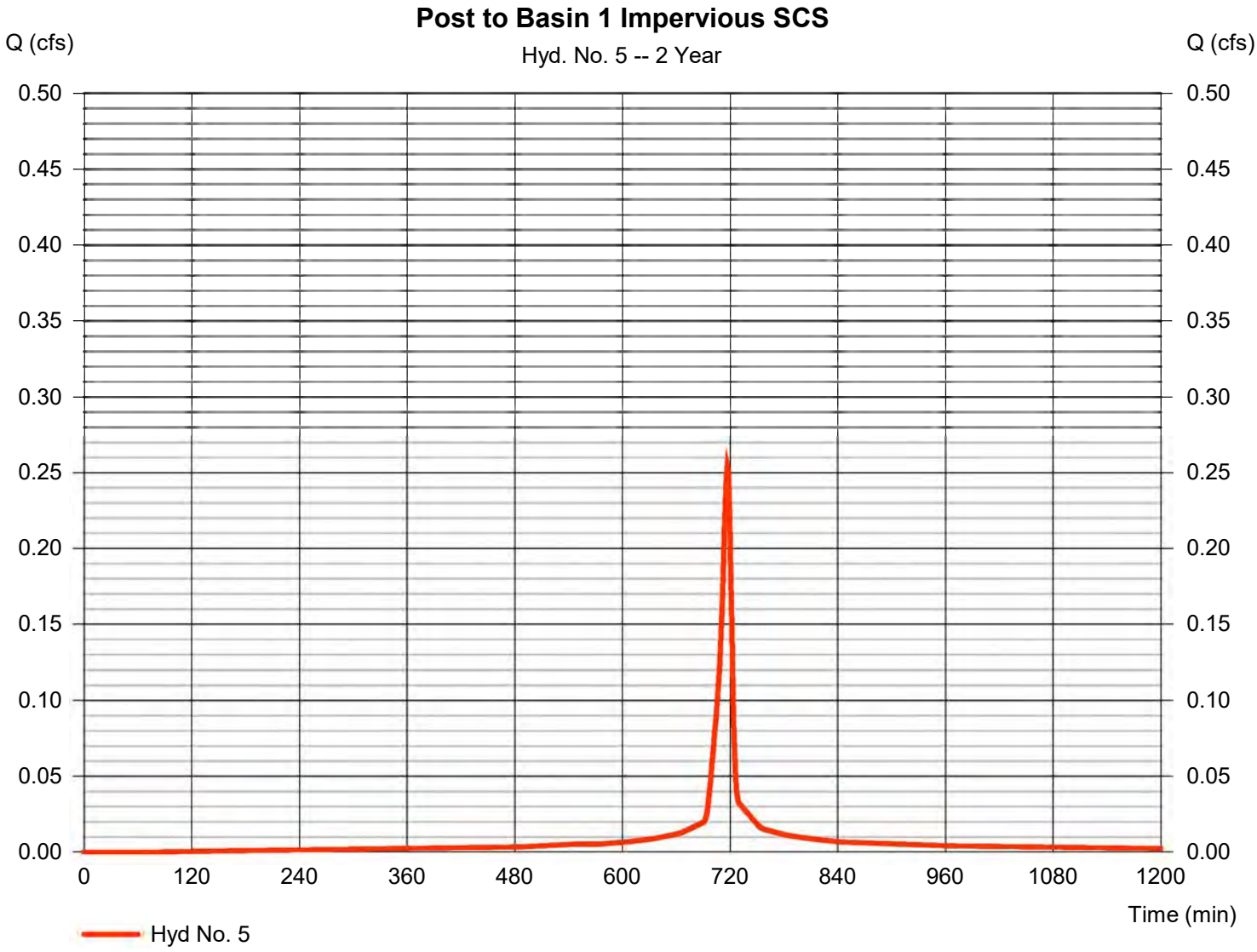


Hydrograph Report

Hyd. No. 5

Post to Basin 1 Impervious SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.254 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 602 cuft
Drainage area	= 0.054 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

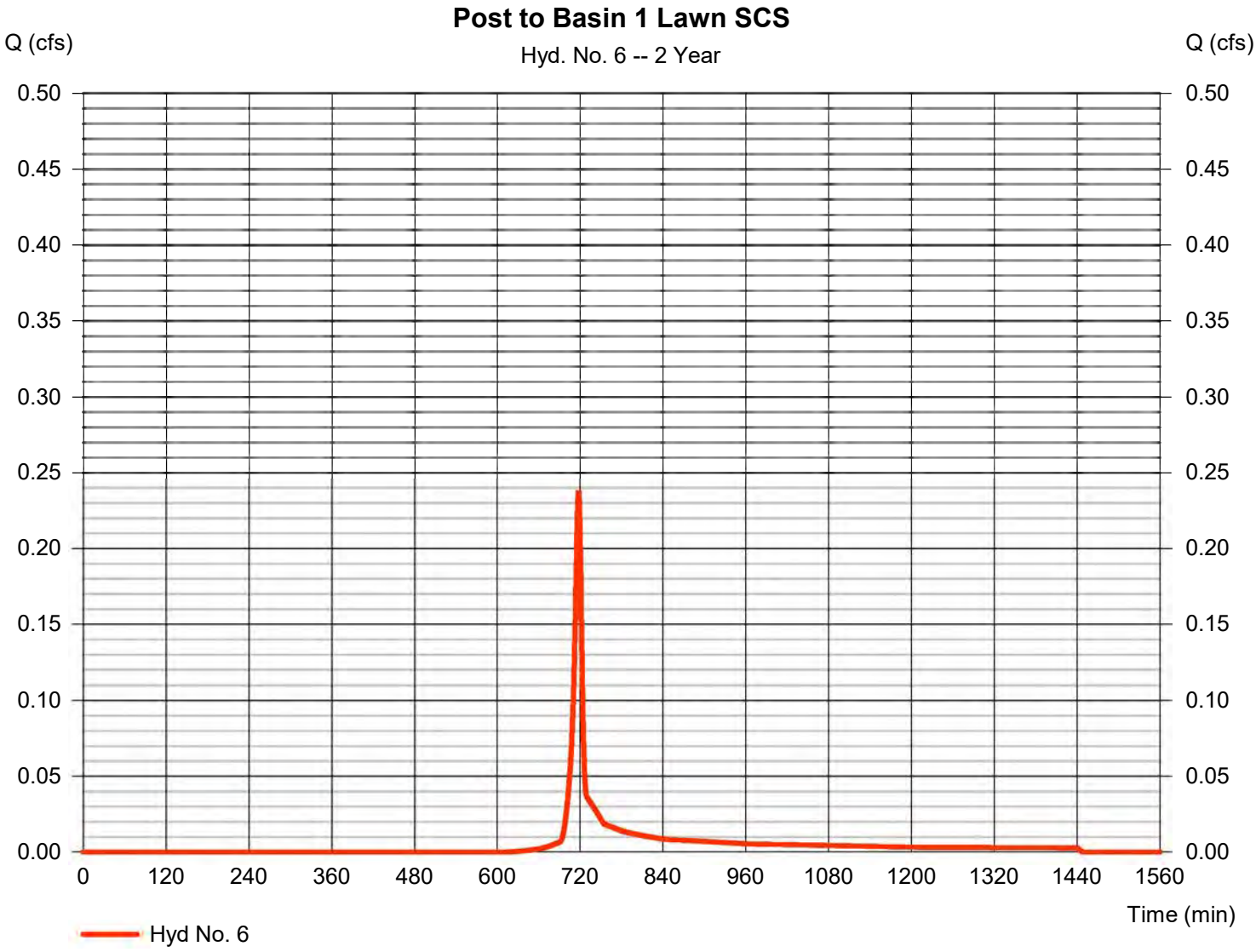


Hydrograph Report

Hyd. No. 6

Post to Basin 1 Lawn SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.238 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 479 cuft
Drainage area	= 0.105 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

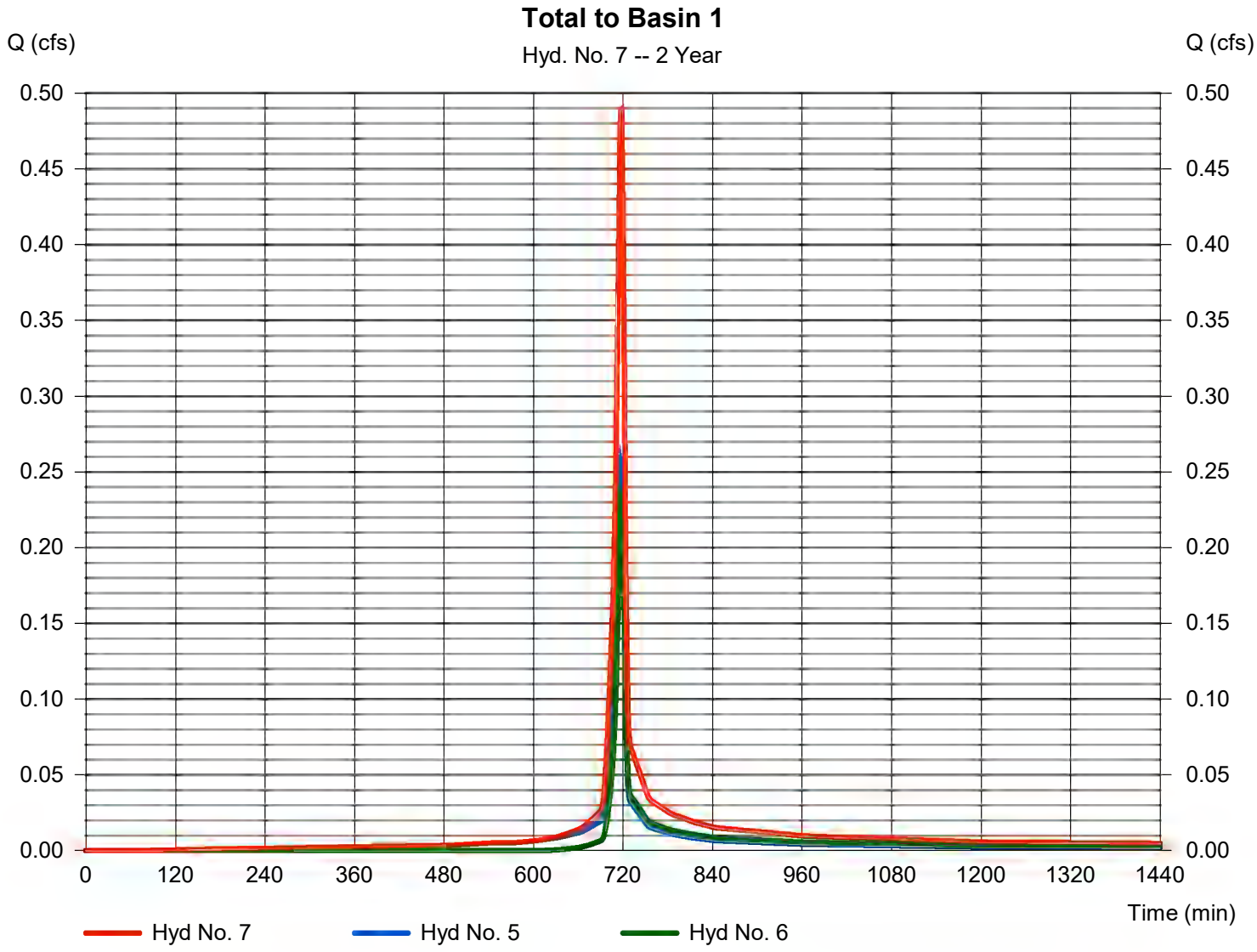


Hydrograph Report

Hyd. No. 7

Total to Basin 1

Hydrograph type	= Combine	Peak discharge	= 0.489 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 1,081 cuft
Inflow hyds.	= 5, 6	Contrib. drain. area	= 0.159 ac

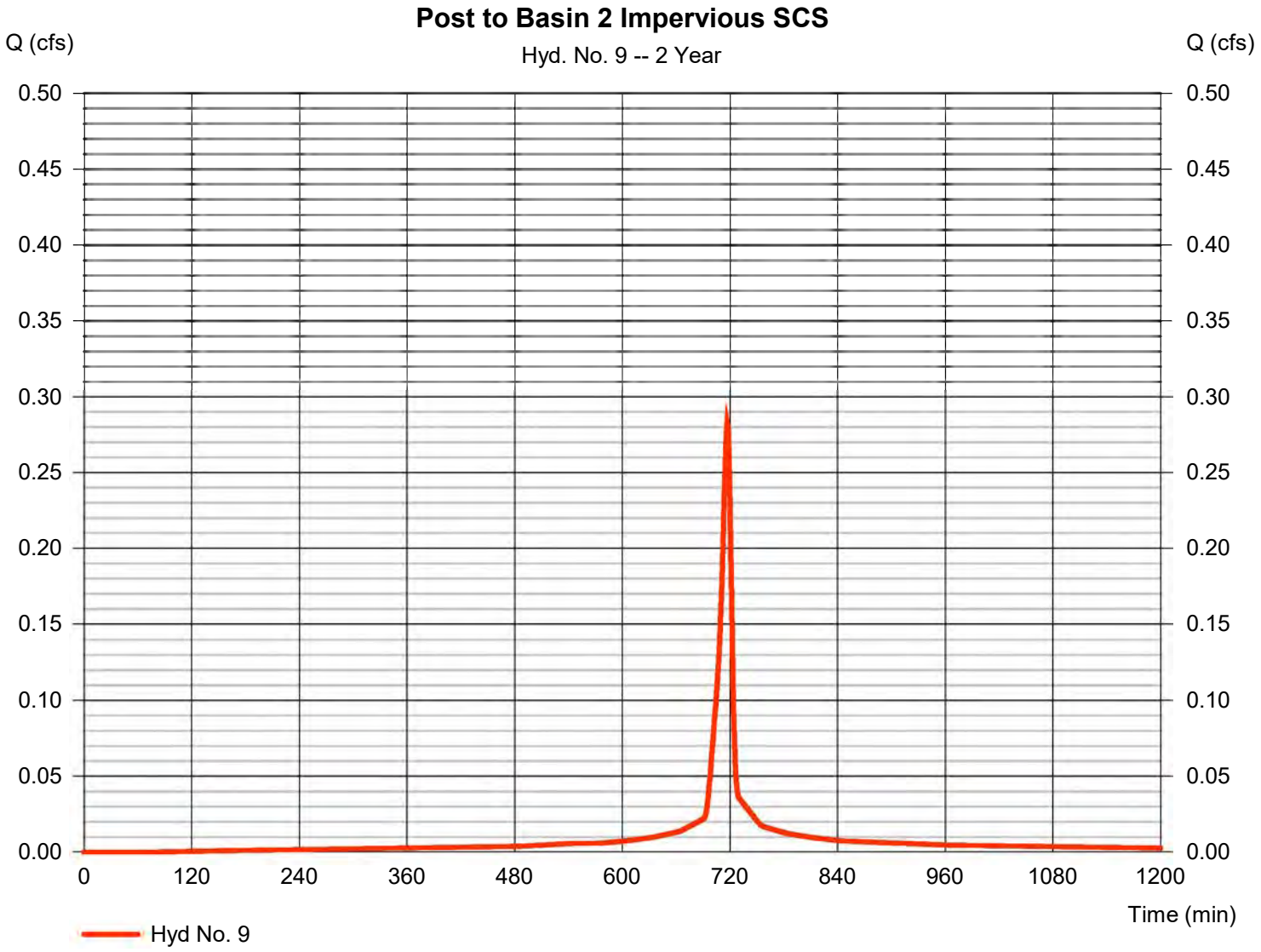


Hydrograph Report

Hyd. No. 9

Post to Basin 2 Impervious SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.283 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 669 cuft
Drainage area	= 0.060 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

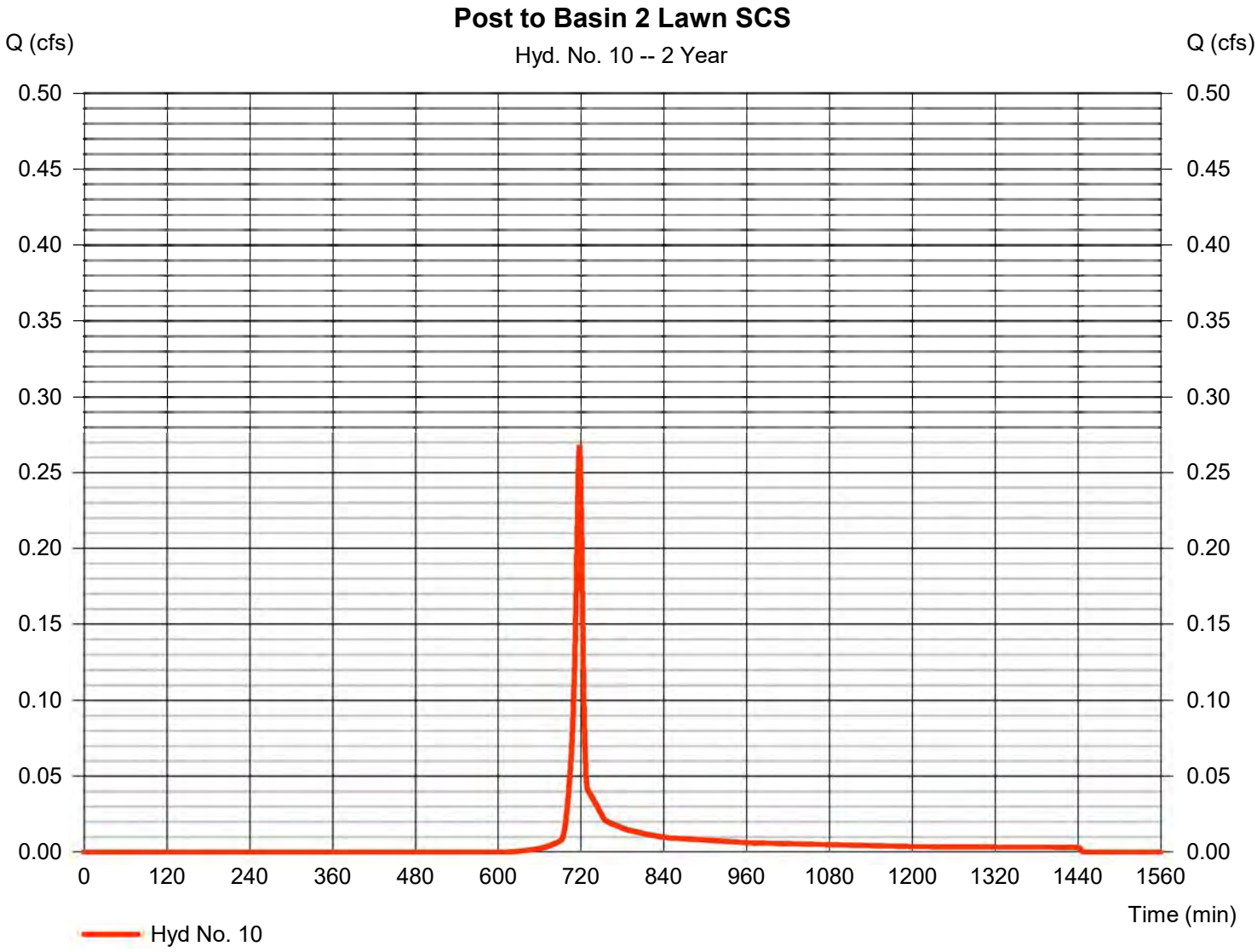


Hydrograph Report

Hyd. No. 10

Post to Basin 2 Lawn SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.268 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 538 cuft
Drainage area	= 0.118 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

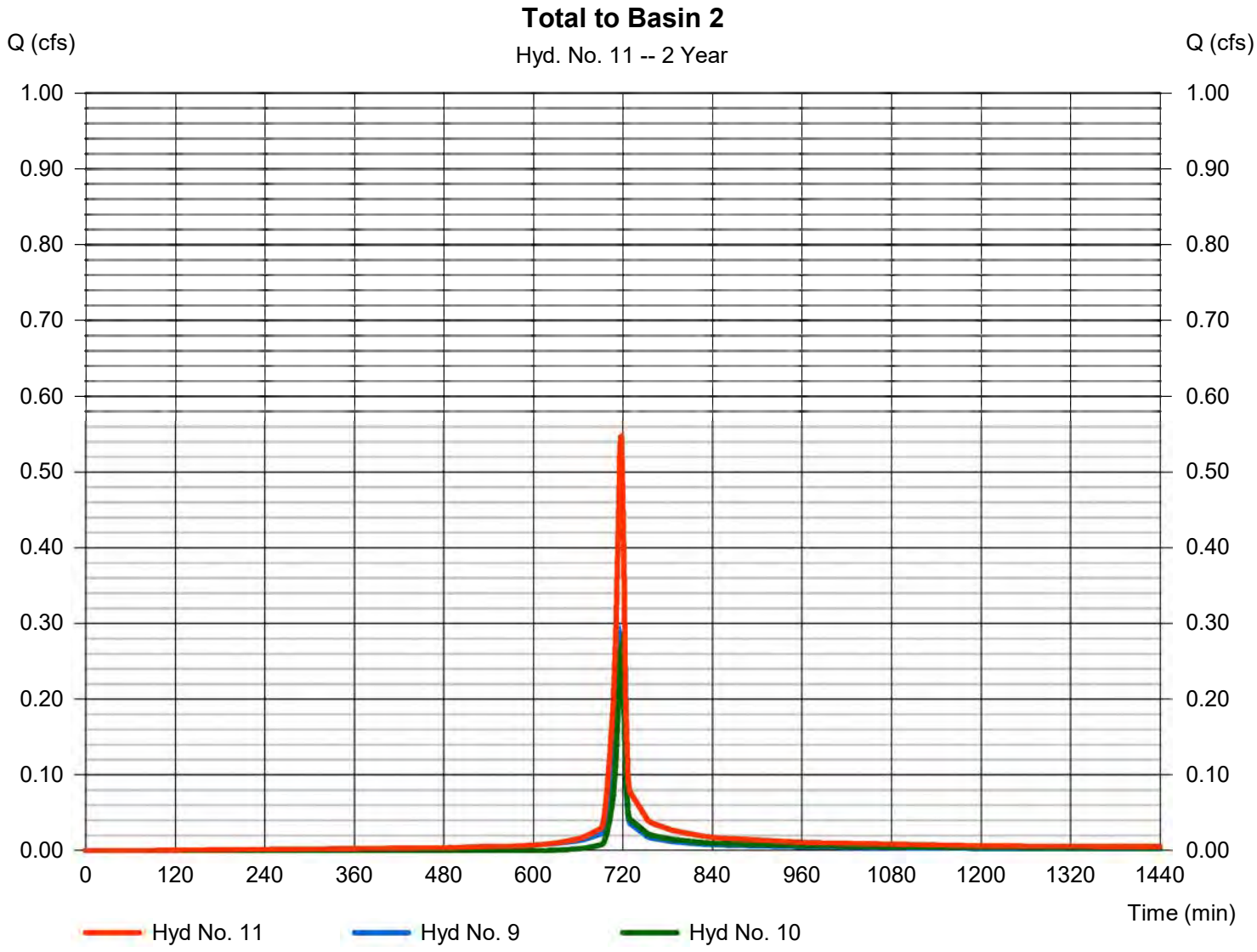


Hydrograph Report

Hyd. No. 11

Total to Basin 2

Hydrograph type	= Combine	Peak discharge	= 0.547 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 1,207 cuft
Inflow hyds.	= 9, 10	Contrib. drain. area	= 0.178 ac

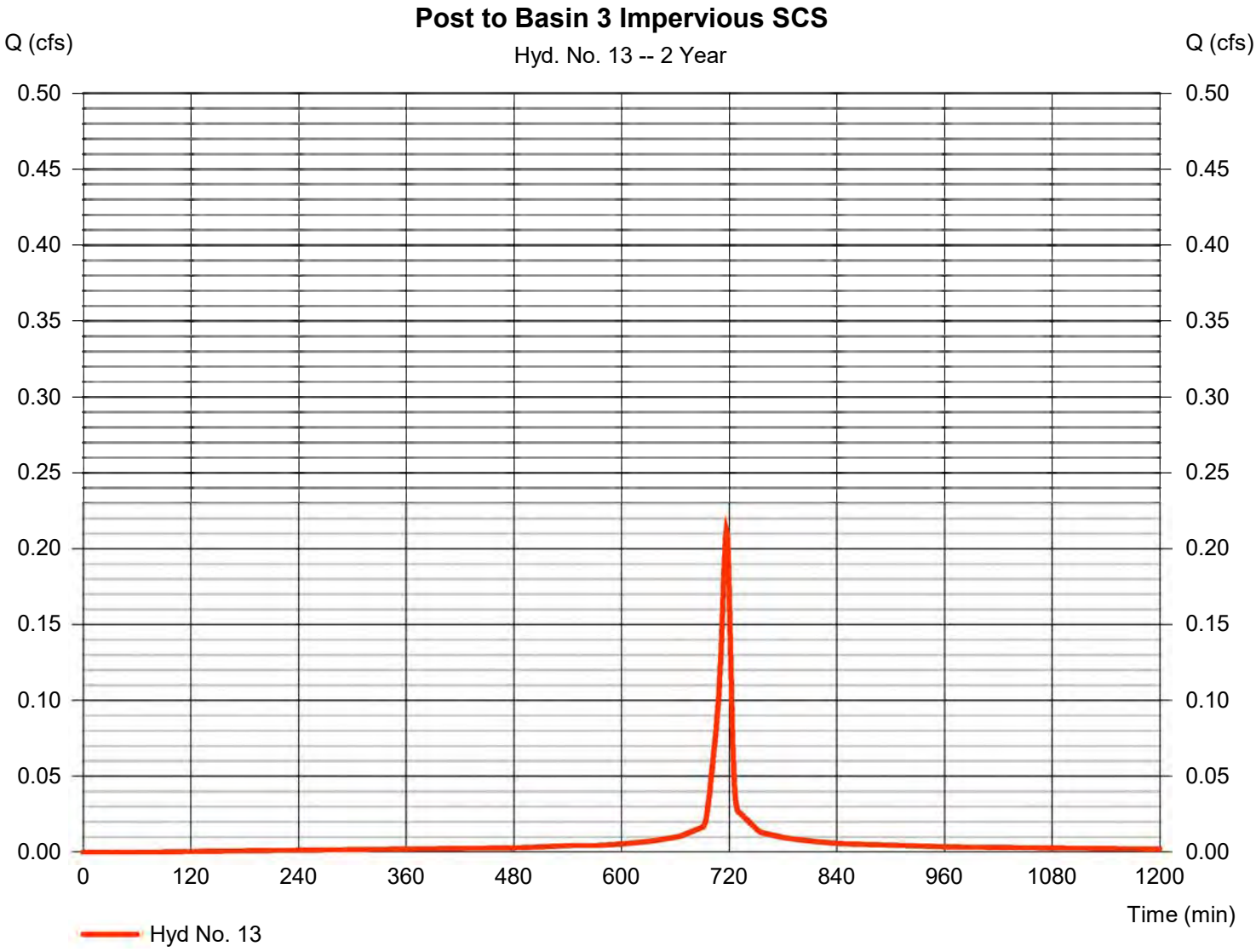


Hydrograph Report

Hyd. No. 13

Post to Basin 3 Impervious SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.212 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 502 cuft
Drainage area	= 0.045 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

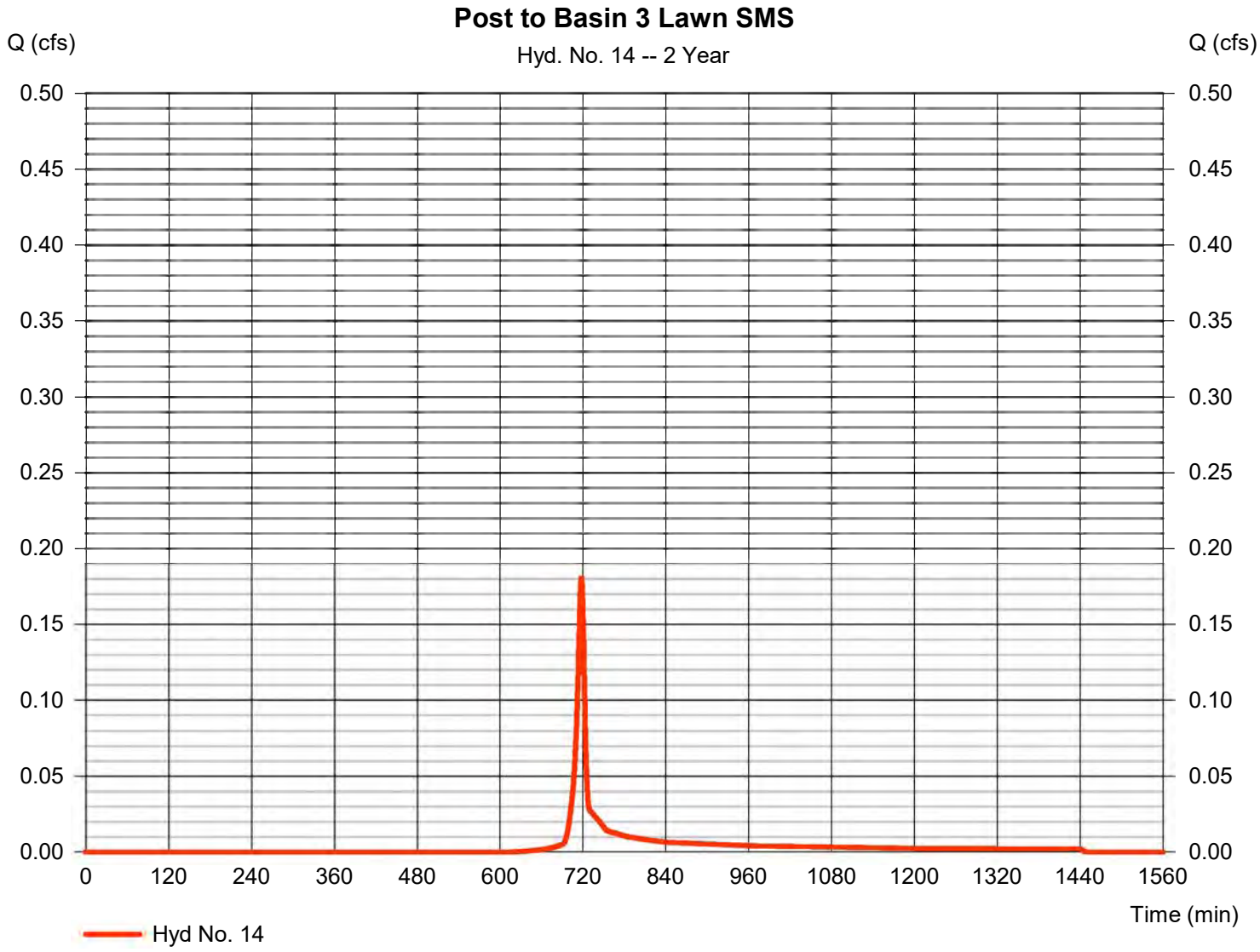


Hydrograph Report

Hyd. No. 14

Post to Basin 3 Lawn SMS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.182 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 365 cuft
Drainage area	= 0.080 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

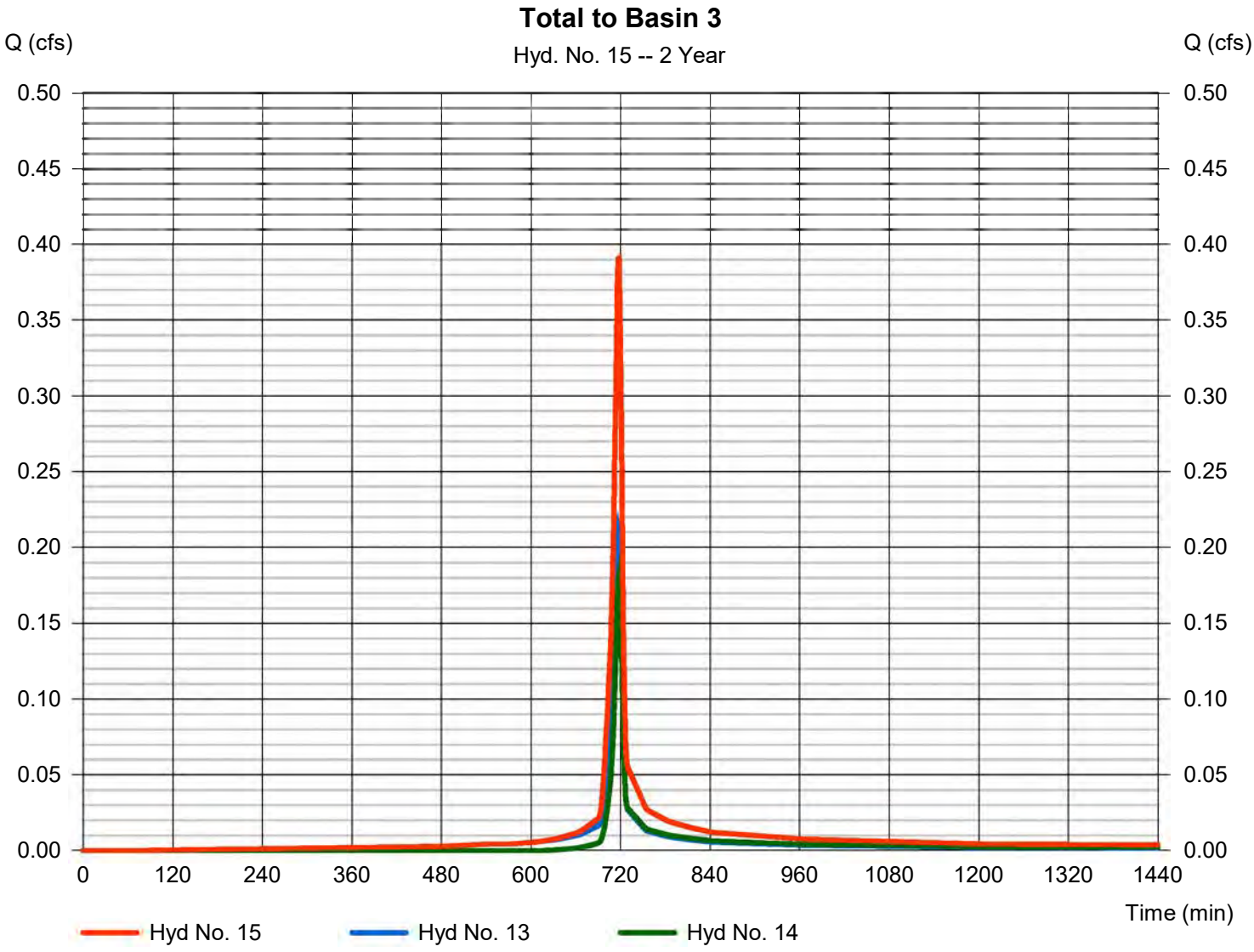


Hydrograph Report

Hyd. No. 15

Total to Basin 3

Hydrograph type	= Combine	Peak discharge	= 0.391 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 867 cuft
Inflow hyds.	= 13, 14	Contrib. drain. area	= 0.125 ac

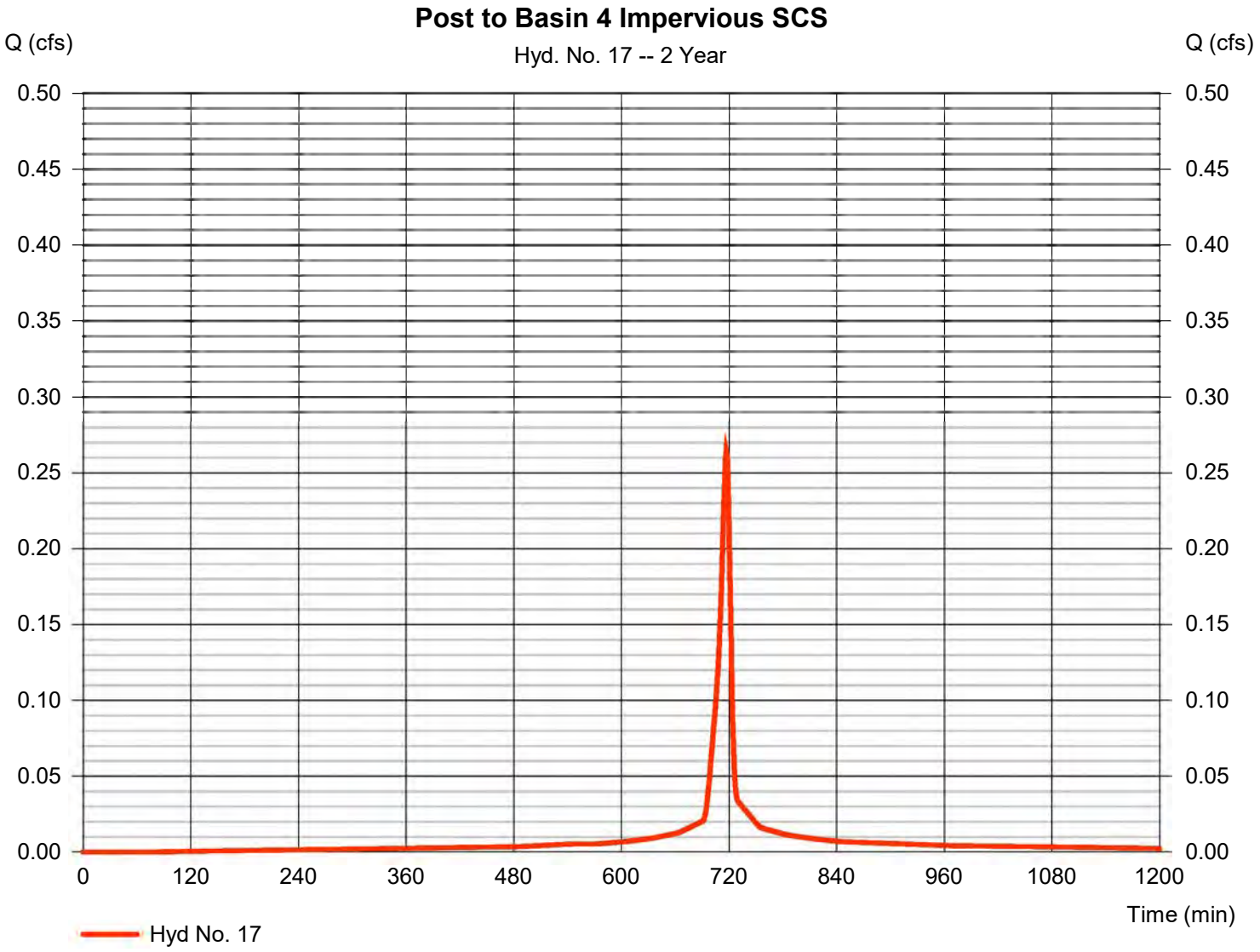


Hydrograph Report

Hyd. No. 17

Post to Basin 4 Impervious SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.264 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 624 cuft
Drainage area	= 0.056 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

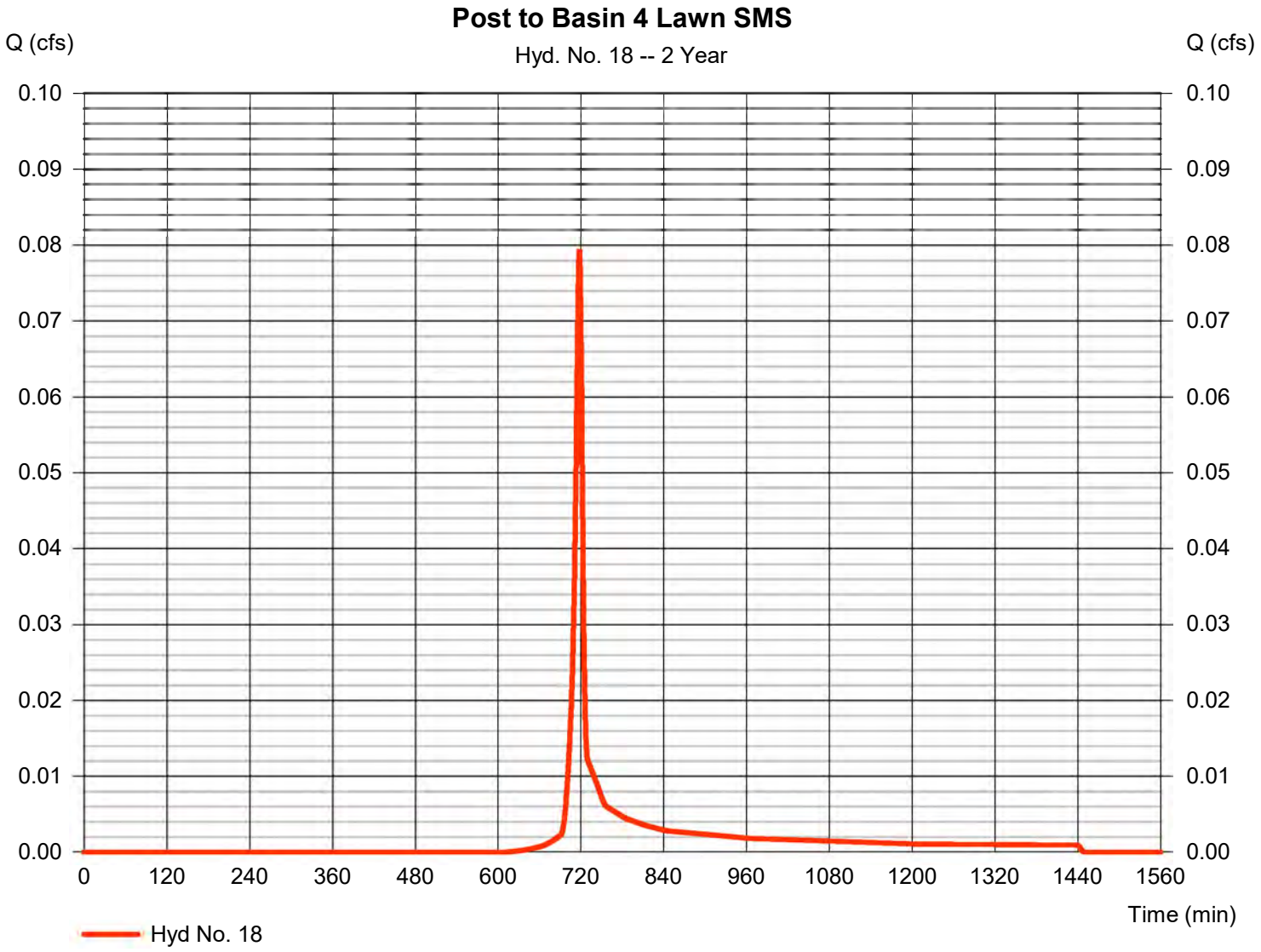


Hydrograph Report

Hyd. No. 18

Post to Basin 4 Lawn SMS

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.079 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	160 cuft
Drainage area	=	0.035 ac	Curve number	=	77
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.21 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

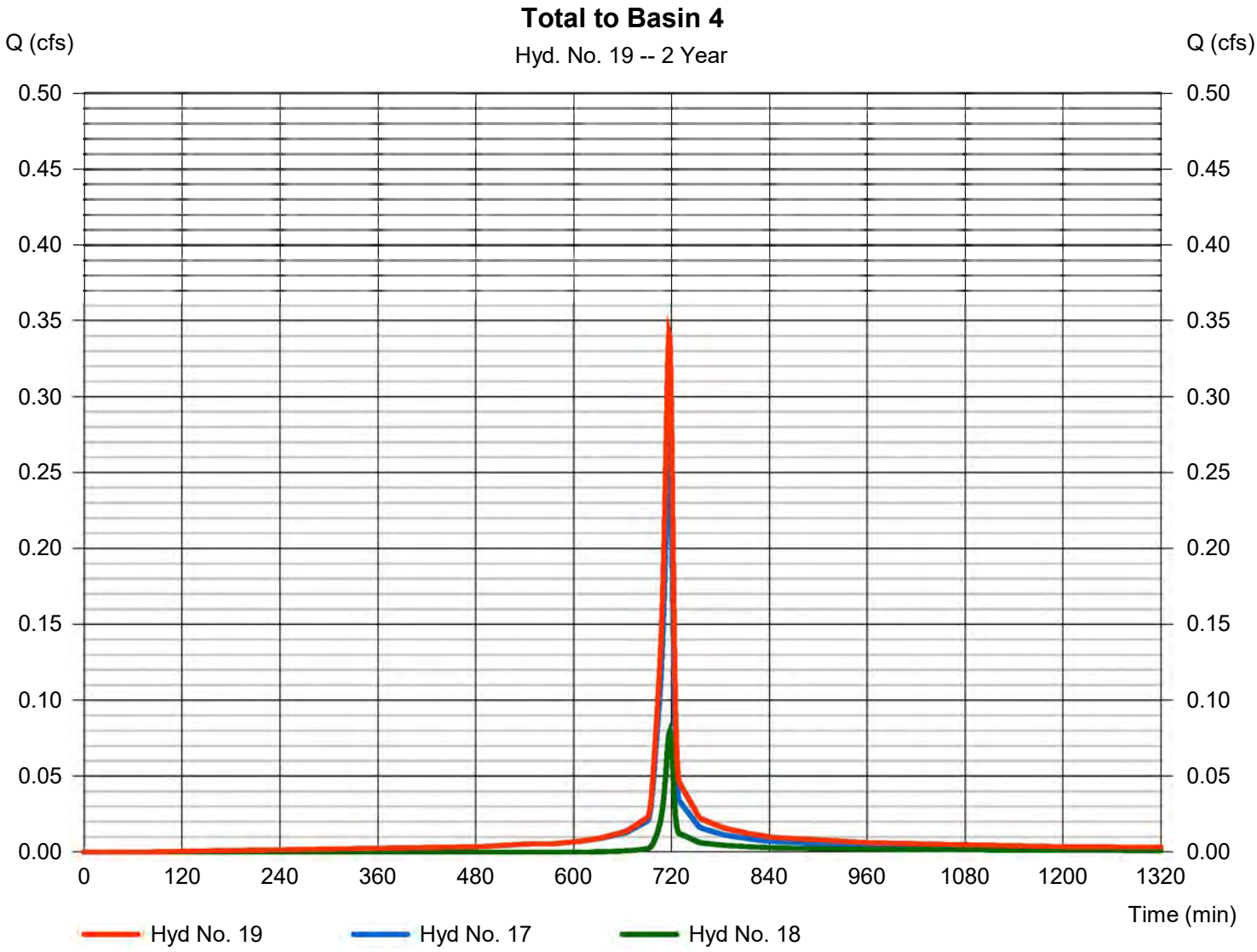


Hydrograph Report

Hyd. No. 19

Total to Basin 4

Hydrograph type	= Combine	Peak discharge	= 0.342 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 784 cuft
Inflow hyds.	= 17, 18	Contrib. drain. area	= 0.091 ac

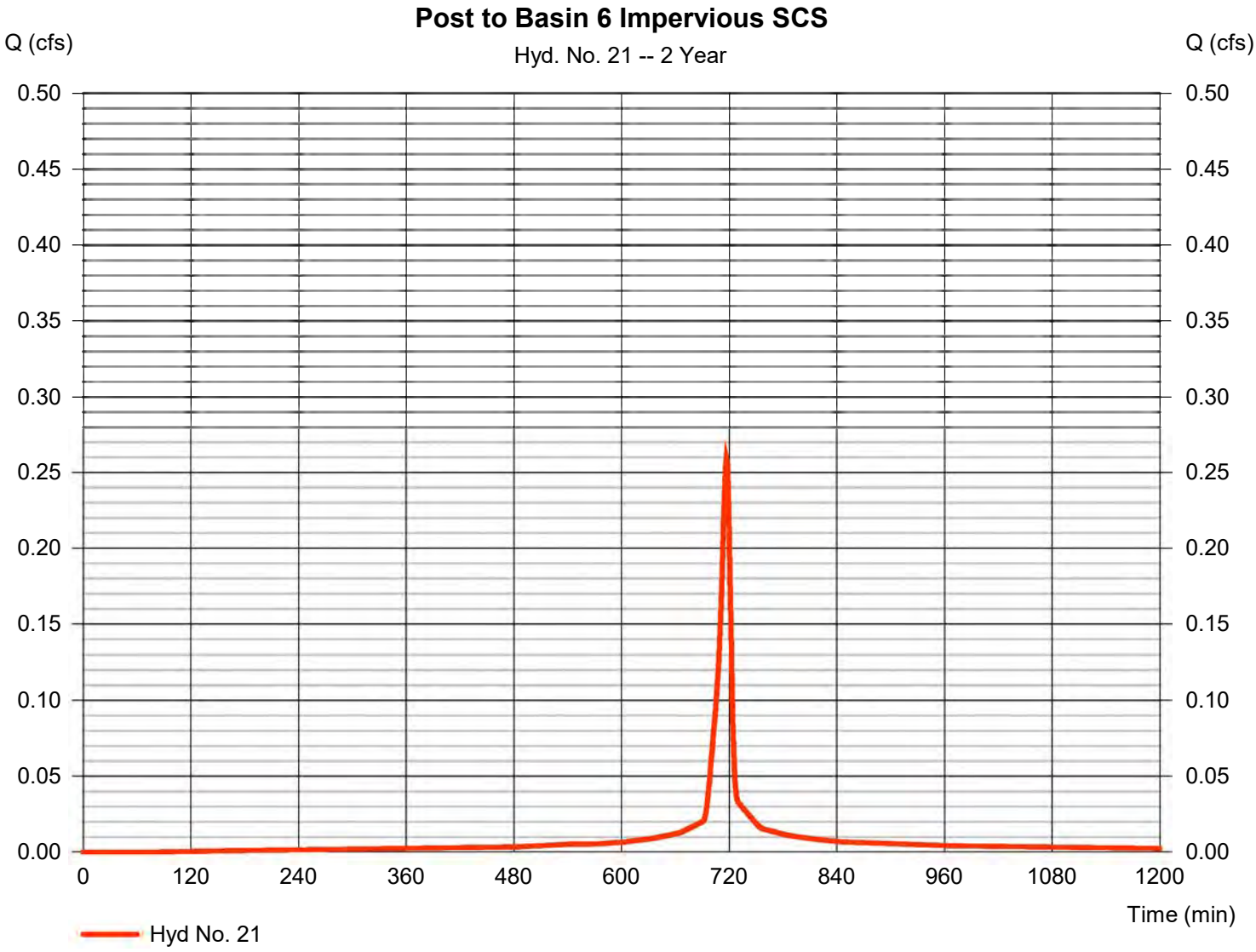


Hydrograph Report

Hyd. No. 21

Post to Basin 6 Impervious SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.259 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 613 cuft
Drainage area	= 0.055 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

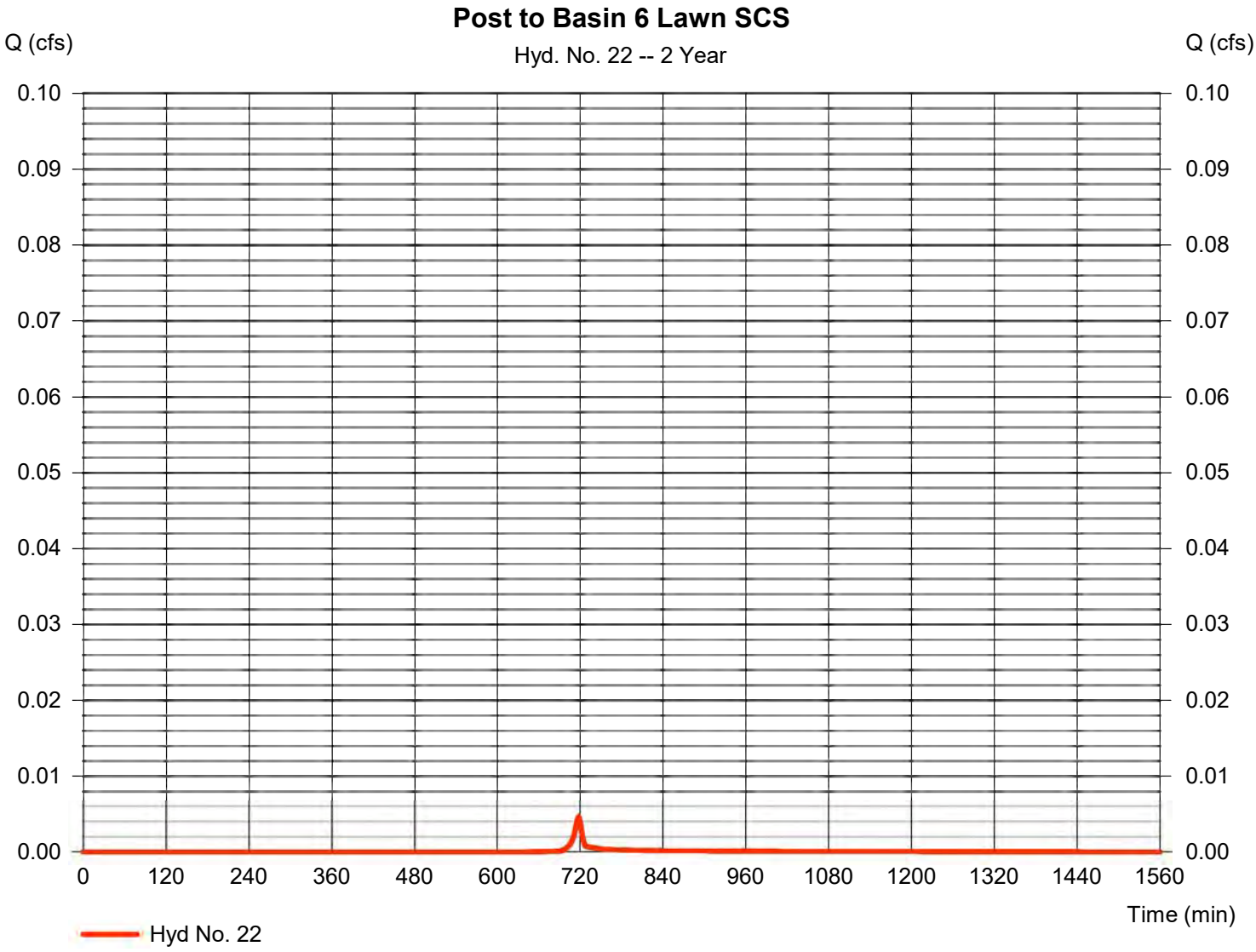


Hydrograph Report

Hyd. No. 22

Post to Basin 6 Lawn SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.005 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 9 cuft
Drainage area	= 0.002 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

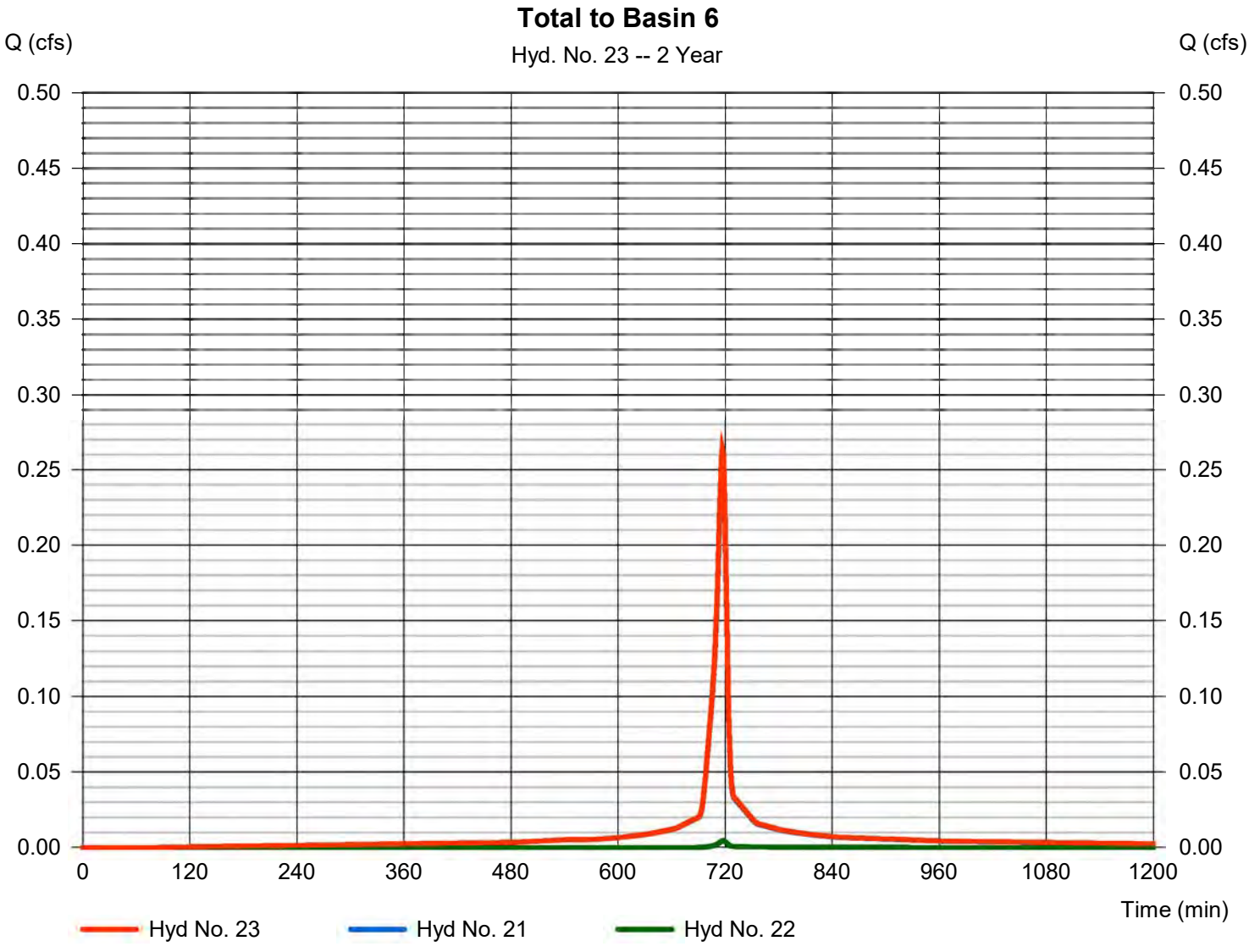


Hydrograph Report

Hyd. No. 23

Total to Basin 6

Hydrograph type	= Combine	Peak discharge	= 0.264 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 622 cuft
Inflow hyds.	= 21, 22	Contrib. drain. area	= 0.057 ac

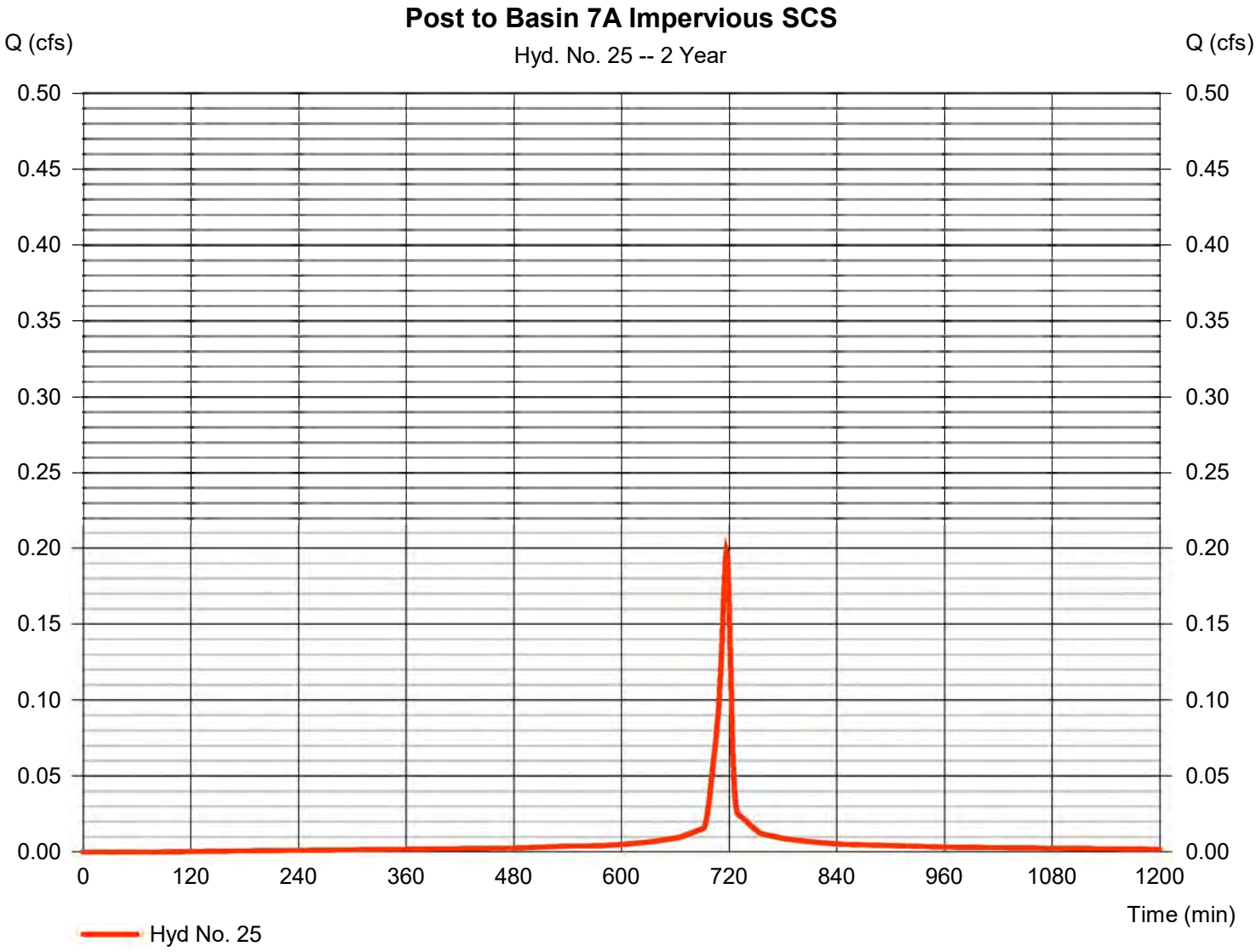


Hydrograph Report

Hyd. No. 25

Post to Basin 7A Impervious SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.198 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 468 cuft
Drainage area	= 0.042 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

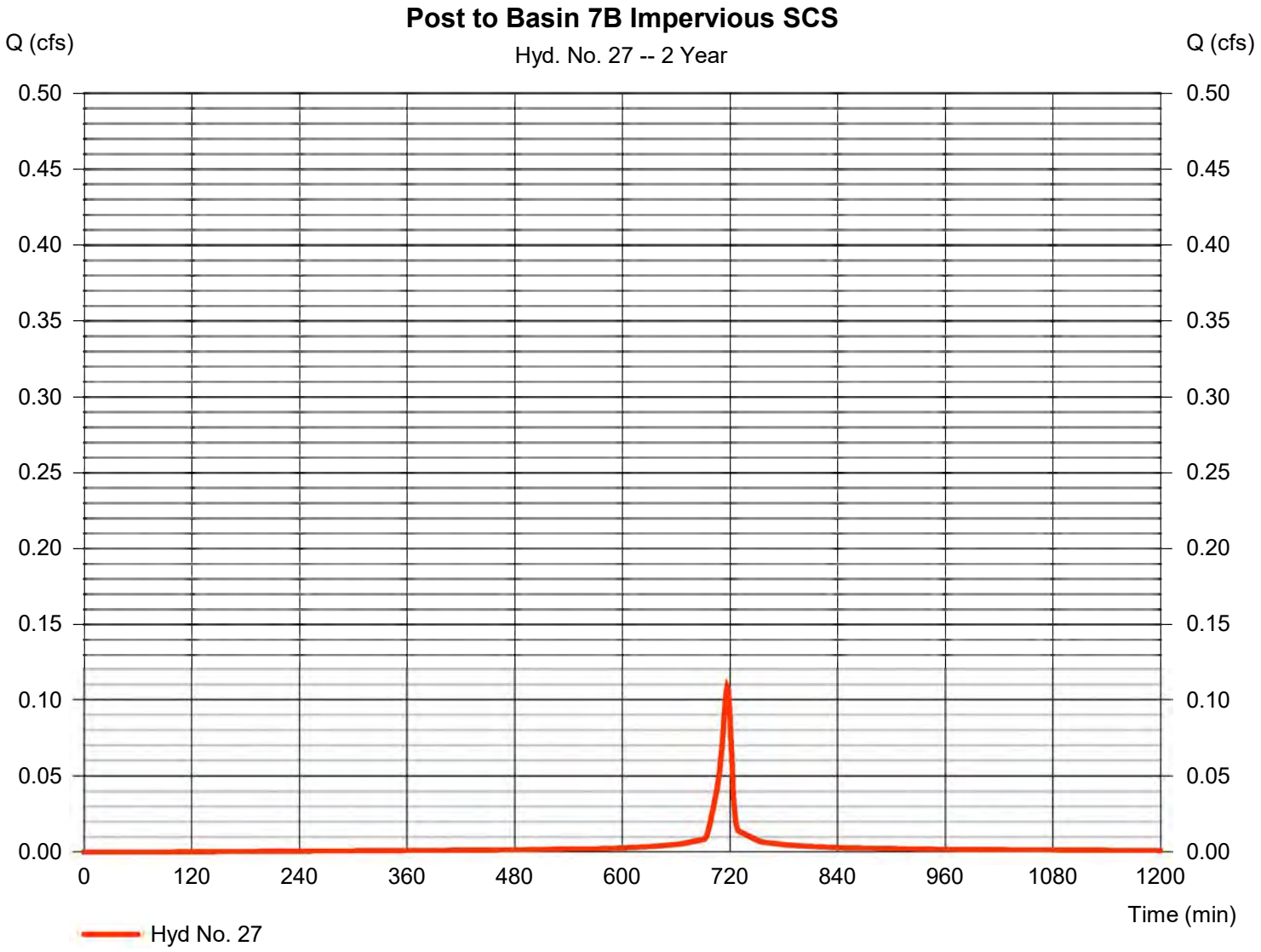


Hydrograph Report

Hyd. No. 27

Post to Basin 7B Impervious SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.108 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 256 cuft
Drainage area	= 0.023 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

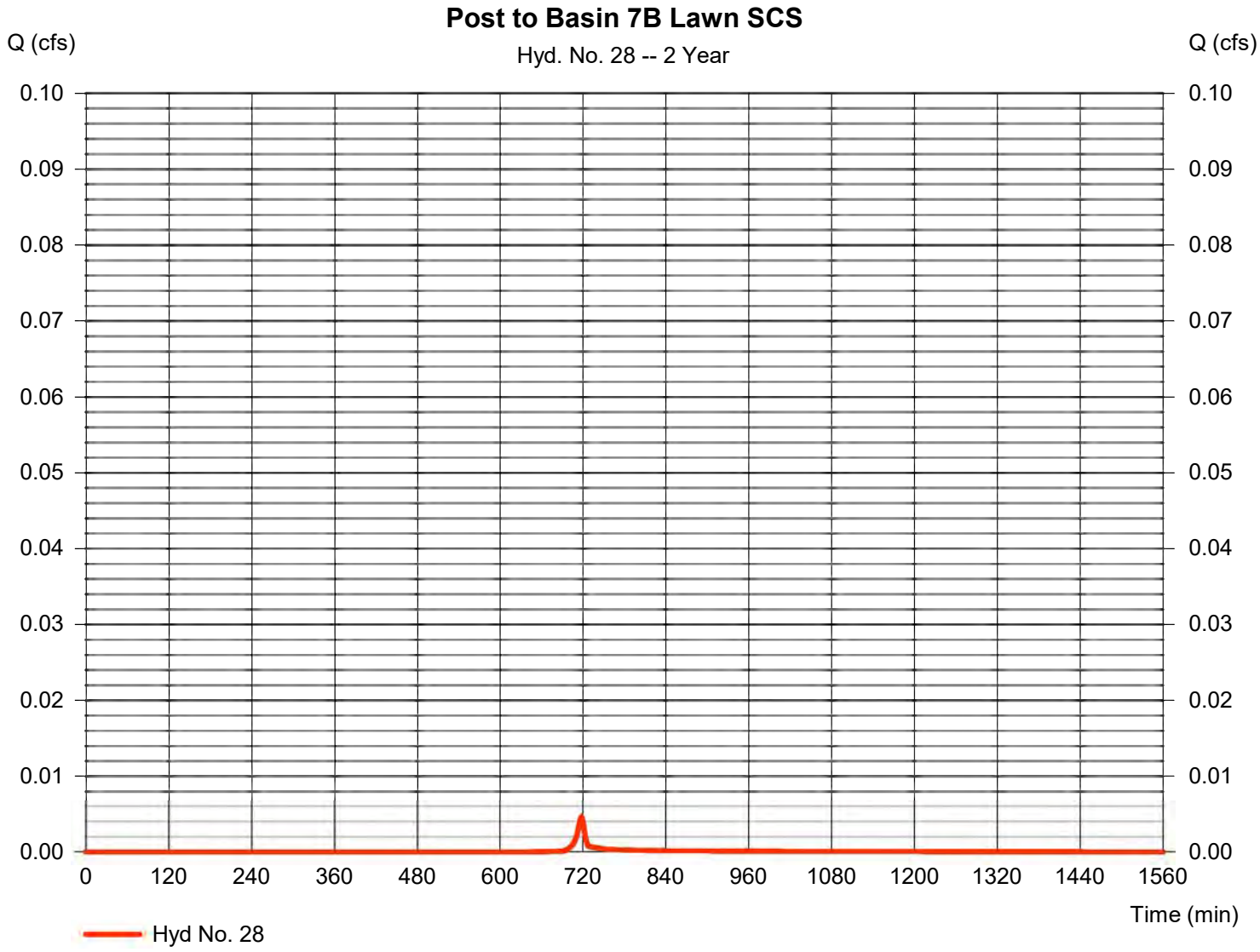


Hydrograph Report

Hyd. No. 28

Post to Basin 7B Lawn SCS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.005 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 9 cuft
Drainage area	= 0.002 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

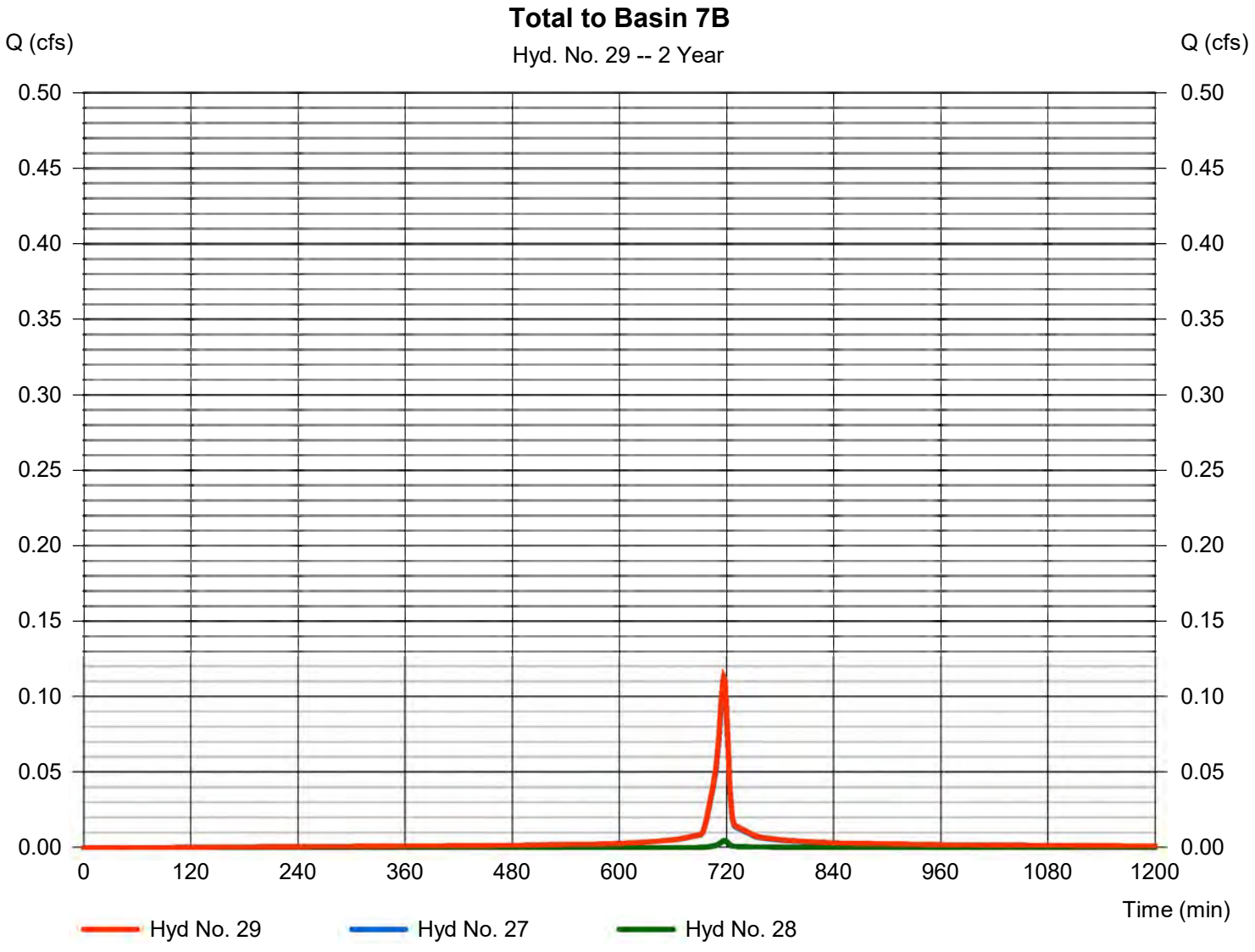


Hydrograph Report

Hyd. No. 29

Total to Basin 7B

Hydrograph type	= Combine	Peak discharge	= 0.113 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 265 cuft
Inflow hyds.	= 27, 28	Contrib. drain. area	= 0.025 ac

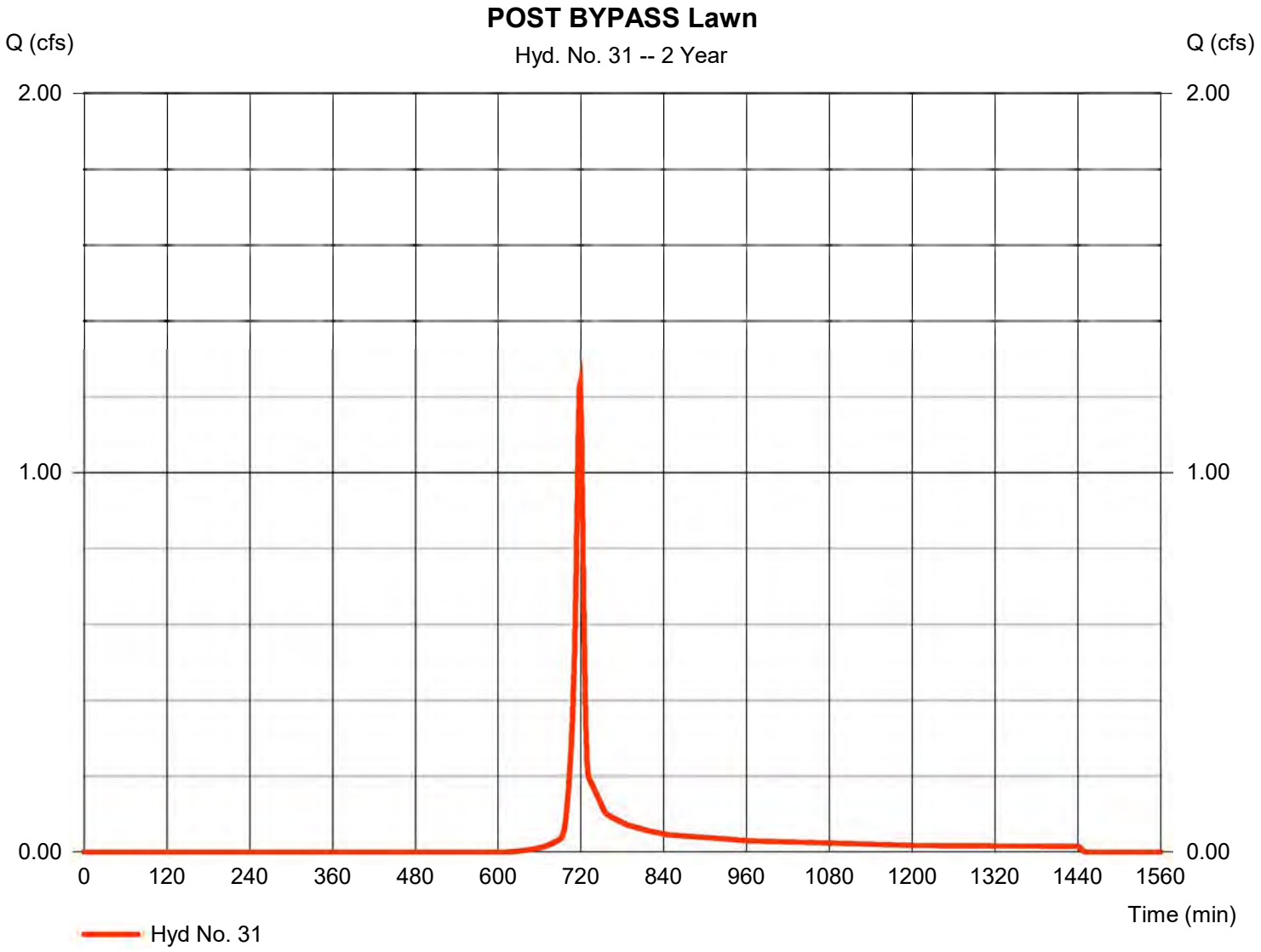


Hydrograph Report

Hyd. No. 31

POST BYPASS Lawn

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.234 cfs
Storm frequency	=	2 yrs	Time to peak	=	719 min
Time interval	=	1 min	Hyd. volume	=	2,606 cuft
Drainage area	=	0.604 ac	Curve number	=	77
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	7.10 min
Total precip.	=	3.21 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

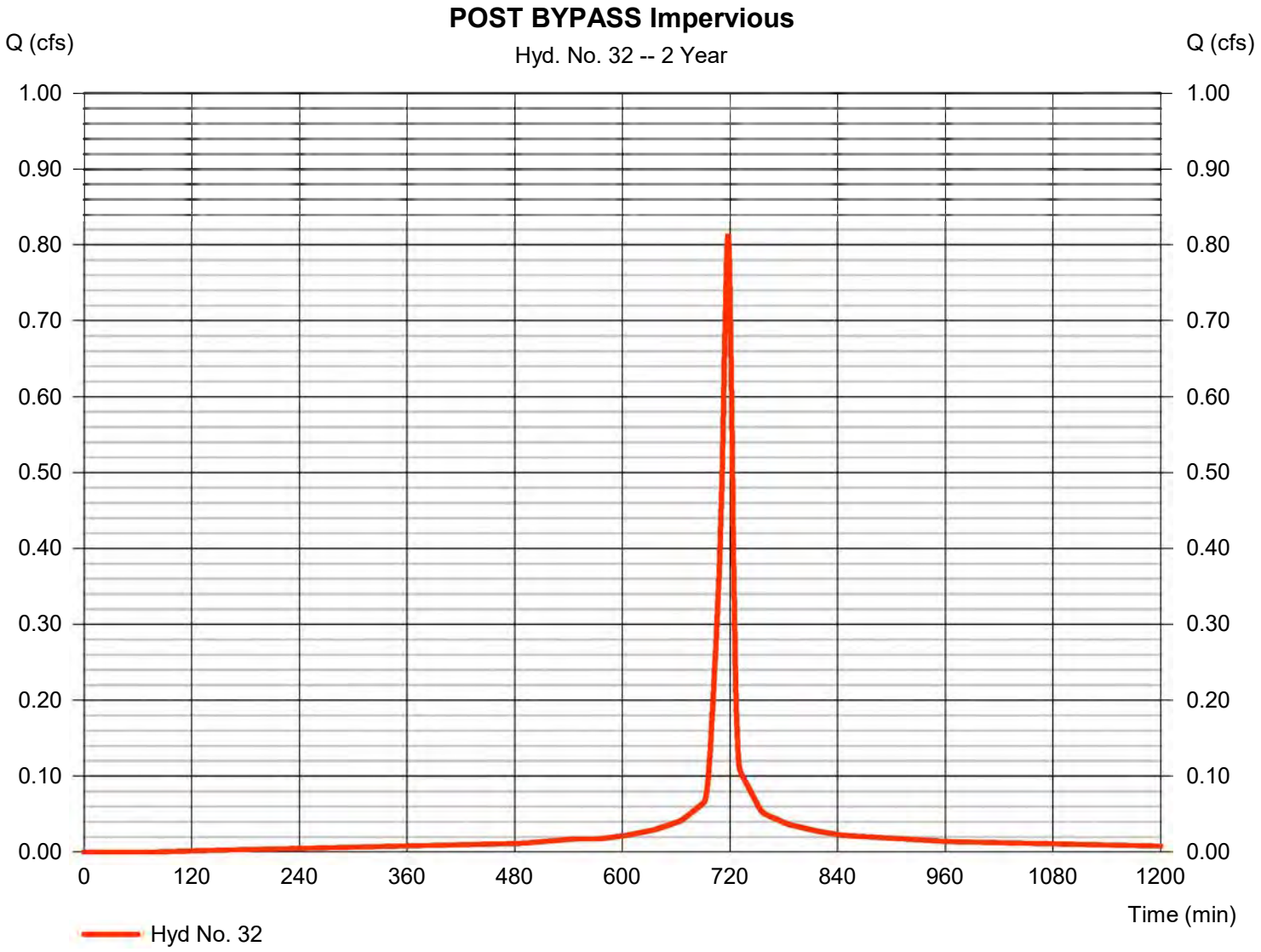


Hydrograph Report

Hyd. No. 32

POST BYPASS Impervious

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.815 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	2,002 cuft
Drainage area	=	0.190 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	7.10 min
Total precip.	=	3.21 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

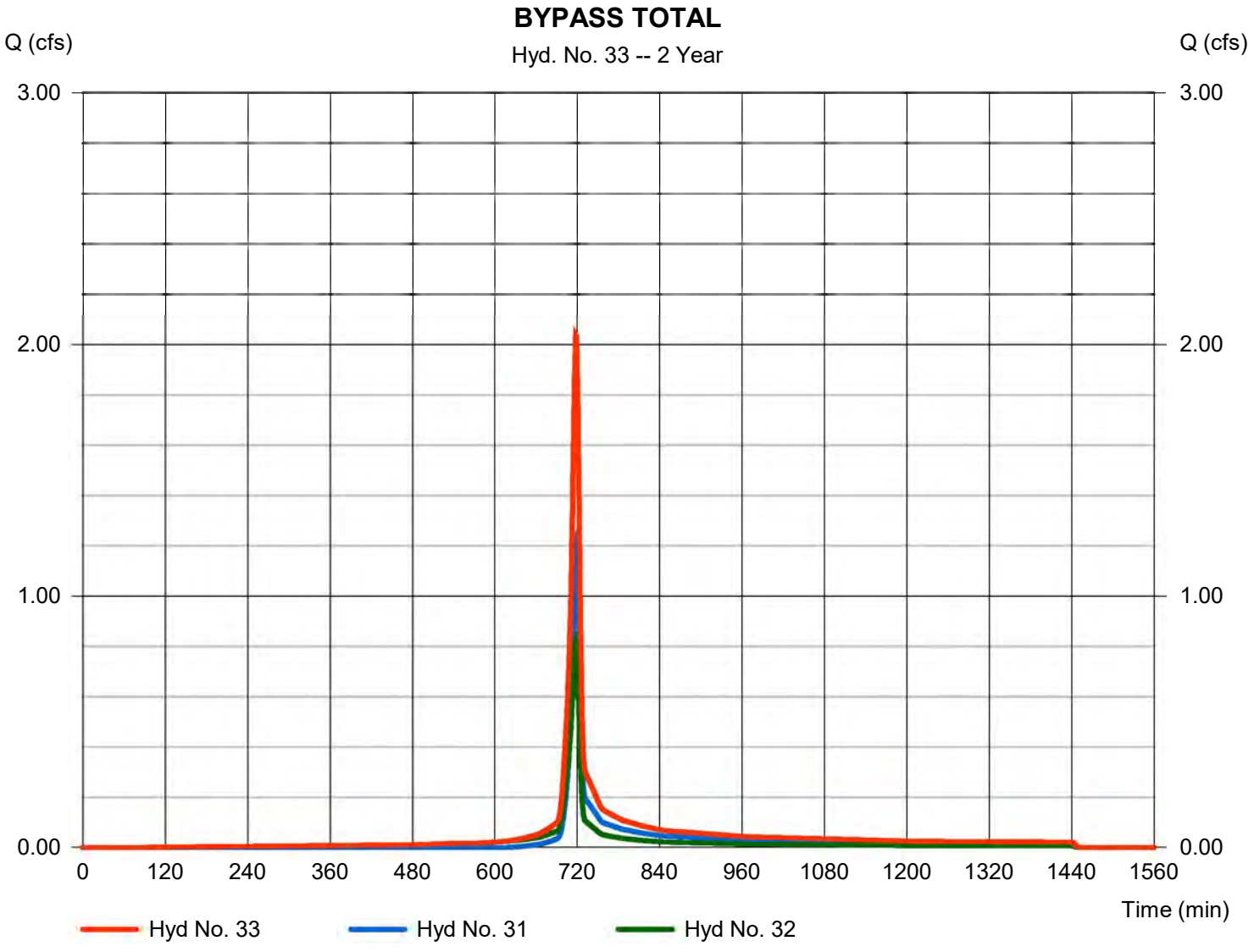


Hydrograph Report

Hyd. No. 33

BYPASS TOTAL

Hydrograph type	= Combine	Peak discharge	= 2.038 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 4,608 cuft
Inflow hyds.	= 31, 32	Contrib. drain. area	= 0.794 ac



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	51.6066	12.5000	0.8820	--------
2	61.7637	12.8000	0.8782	--------
3	0.0000	0.0000	0.0000	--------
5	63.8911	12.7000	0.8340	--------
10	62.8636	12.2000	0.7999	--------
25	58.2993	11.3000	0.7476	--------
50	51.5586	10.1000	0.6966	--------
100	47.5005	9.2000	0.6567	--------

File name: Abington Rainfall.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	4.13	3.31	2.77	2.39	2.11	1.89	1.71	1.57	1.45	1.35	1.26	1.18
2	4.93	3.96	3.33	2.88	2.54	2.28	2.07	1.90	1.75	1.63	1.52	1.43
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	5.82	4.73	4.00	3.49	3.10	2.79	2.54	2.34	2.17	2.03	1.90	1.79
10	6.46	5.27	4.48	3.91	3.48	3.15	2.88	2.66	2.47	2.31	2.17	2.05
25	7.23	5.92	5.06	4.44	3.98	3.61	3.31	3.07	2.86	2.69	2.53	2.40
50	7.78	6.37	5.46	4.81	4.32	3.94	3.63	3.37	3.16	2.97	2.81	2.67
100	8.32	6.82	5.86	5.18	4.67	4.27	3.95	3.68	3.45	3.26	3.09	2.94

Tc = time in minutes. Values may exceed 60.

Precip. file name: P:_Projects\2016\16-0205\Engineering\Rev-3\Site's SCS #s.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.67	3.21	0.00	4.03	4.70	5.68	6.50	7.38
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Section 142-408 Stream Bank Erosion Requirements

(Channel Protection) and Section 142-409

Stormwater Peak Rate Control and Management Districts

Hydrographs for 1-, 2-, 5-, and 10-year design storms

(Waiver Requested to allow Rational Method for Section 142-408.)

Proposed Condition Design Storm	Post-Development Runoff (cfs) TOTAL	Pre Development Condition Design Storm	Pre Development Runoff (cfs), Area 1	Summary (cfs)
2-year	1.869	1-year	2.206	1.869<2.206
5-year	2.215	5-year	3.147	2.215<3.147
10-year	2.463	10-year	3.507	2.463<3.507
25-year	3.188	25-year	4.558	3.188<4.558
50-year	3.429	50-year	4.906	3.429<4.906
100-year	3.666	100-year	5.251	3.666<5.251

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Runoff Curve Number

Project:

Location:

Developemnt Type: ☑ Pre-Development ☐ Post-Development

PRE-DEVELOPMENT AREA 1
(storms less than 25-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Impervious	0.95	0.222	0.21
	Medow	0.36	1.258	0.45
	Totals =		1.480	0.66

C (Weighted) = Total Product = Total Area 0.4485

Use C = 0.45

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Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 1
(storms less than 25-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.054	0.05
	Lawn	0.38	0.105	0.04
	Totals =		0.159	0.0912

C (Weighted) = Total Product = 0.5735849
Total Area

Use C = 0.57

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Phone (215) 362-2600

Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 2
(storms less than 25-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.060	0.06
	Lawn	0.38	0.118	0.04
	Totals =		0.178	0.10184

C (Weighted) = Total Product = 0.5721348
Total Area

Use C = 0.57

Cornerstone Consulting Engineers & Architectural, Inc.
213 W. Main Street, Lansdale, PA 19446
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Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 3
(storms less than 25-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.045	0.04
	Lawn	0.38	0.080	0.03
	Totals =		0.125	0.07315

C (Weighted) = Total Product = Total Area 0.5852

Use C = 0.59

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Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 4
(storms less than 25-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.056	0.05
	Lawn	0.38	0.035	0.01
	Totals =		0.091	0.0665

C (Weighted) = Total Product = Total Area 0.7307692

Use C = 0.73

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Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 6
(storms less than 25-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.055	0.05
	Lawn	0.38	0.002	0.00
	Totals =		0.057	0.05301

C (Weighted) = Total Product = / Total Area 0.93

Use C = 0.93

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Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 7A
(storms less than 25-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.042	0.04
	Lawn	0.38	0.000	0.00
	Totals =		0.042	0.0399

C (Weighted) = Total Product = / Total Area 0.95

Use C = 0.95

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Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 7B
(storms less than 25-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.023	0.02
	Lawn	0.38	0.002	0.00
	Totals =		0.025	0.02261

C (Weighted) = Total Product = Total Area 0.9044

Use C = 0.91

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Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

POST DEVELOPMENT BYPASS AREA
(storms less than 25-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB				
	Impervious	0.95	0.197	0.19
	Lawn	0.38	0.604	0.23
	Totals =		0.801	0.41667

C (Weighted) = Total Product = 0.5201873
Total Area

Use C = 0.52

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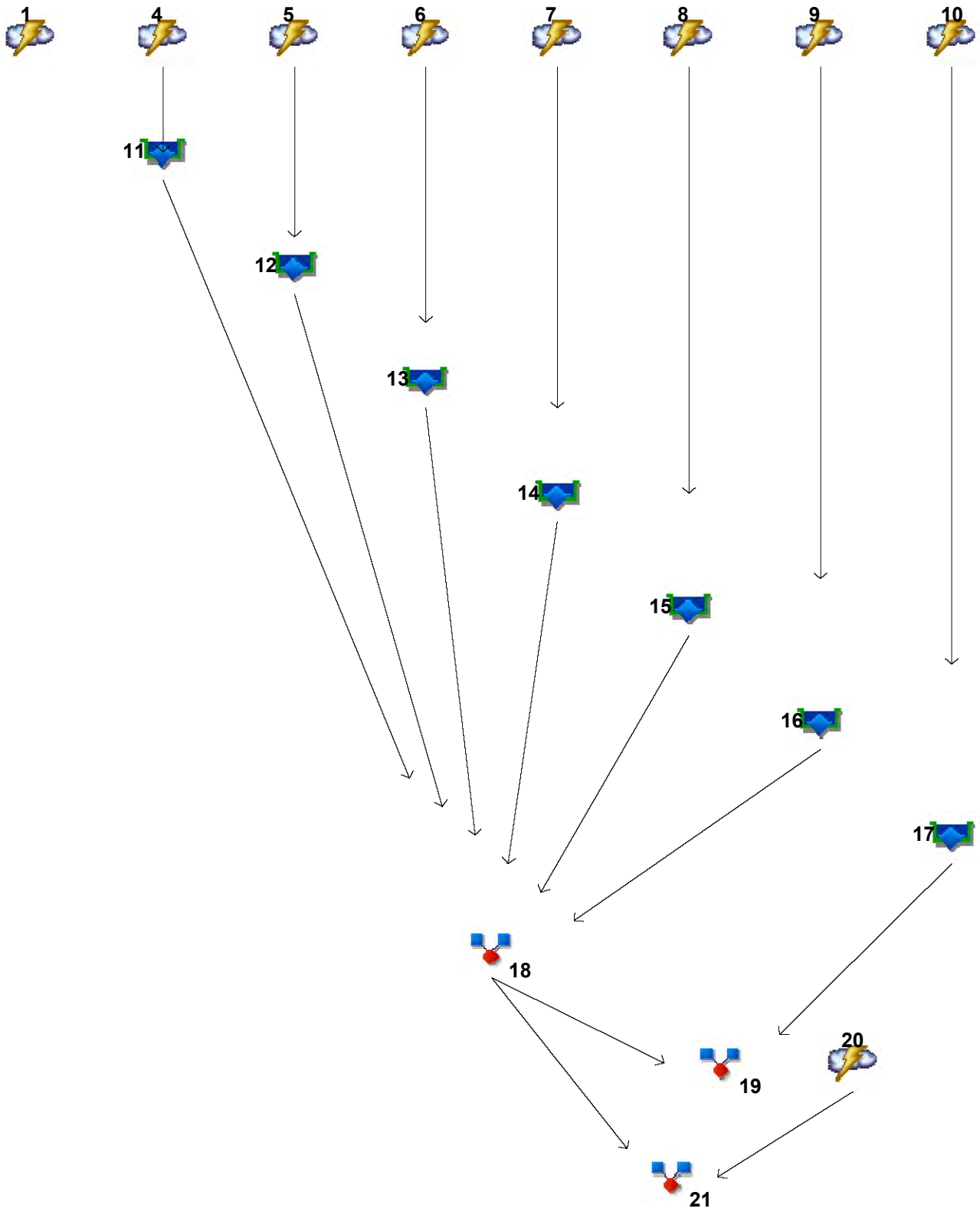
Watershed Model Schematic



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	Dekalb	------	2.206	2.640	-------	3.147	3.507	-------	-------	-------	PRE DA POI 1 (storms less than 25-y
4	Dekalb	------	0.375	0.447	-------	0.527	0.585	-------	-------	-------	BASIN 1
5	Dekalb	------	0.419	0.500	-------	0.590	0.655	-------	-------	-------	BASIN 2
6	Dekalb	------	0.305	0.363	-------	0.429	0.476	-------	-------	-------	BASIN 3
7	Dekalb	------	0.275	0.327	-------	0.386	0.429	-------	-------	-------	BASIN 4
8	Dekalb	------	0.219	0.261	-------	0.308	0.342	-------	-------	-------	BASIN 6
9	Dekalb	------	0.165	0.197	-------	0.232	0.258	-------	-------	-------	BASIN 7A
10	Dekalb	------	0.094	0.112	-------	0.132	0.147	-------	-------	-------	BASIN 7B
11	Reservoir	4	0.000	0.000	-------	0.000	0.000	-------	-------	-------	BASIN 1
12	Reservoir	5	0.000	0.000	-------	0.000	0.000	-------	-------	-------	BASIN 2
13	Reservoir	6	0.000	0.000	-------	0.000	0.000	-------	-------	-------	BASIN 3
14	Reservoir	7	0.000	0.000	-------	0.000	0.000	-------	-------	-------	BASIN 4
15	Reservoir	8	0.000	0.000	-------	0.000	0.000	-------	-------	-------	BASIN 6
16	Reservoir	9	0.000	0.000	-------	0.000	0.000	-------	-------	-------	BASIN 7A
17	Reservoir	10	0.000	0.000	-------	0.000	0.000	-------	-------	-------	BASIN 7B
18	Combine	11, 12, 13, 14, 15, 16, 17, 18	0.000	0.000	-------	0.000	0.000	-------	-------	-------	Basin 1-7A
19	Combine		0.000	0.000	-------	0.000	0.000	-------	-------	-------	Total Basin
20	Dekalb	------	1.565	1.869	-------	2.215	2.463	-------	-------	-------	BYPASS
21	Combine	18, 20	1.565	1.869	-------	2.215	2.463	-------	-------	-------	Total Post Dkalb

Hydrograph Summary Report

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

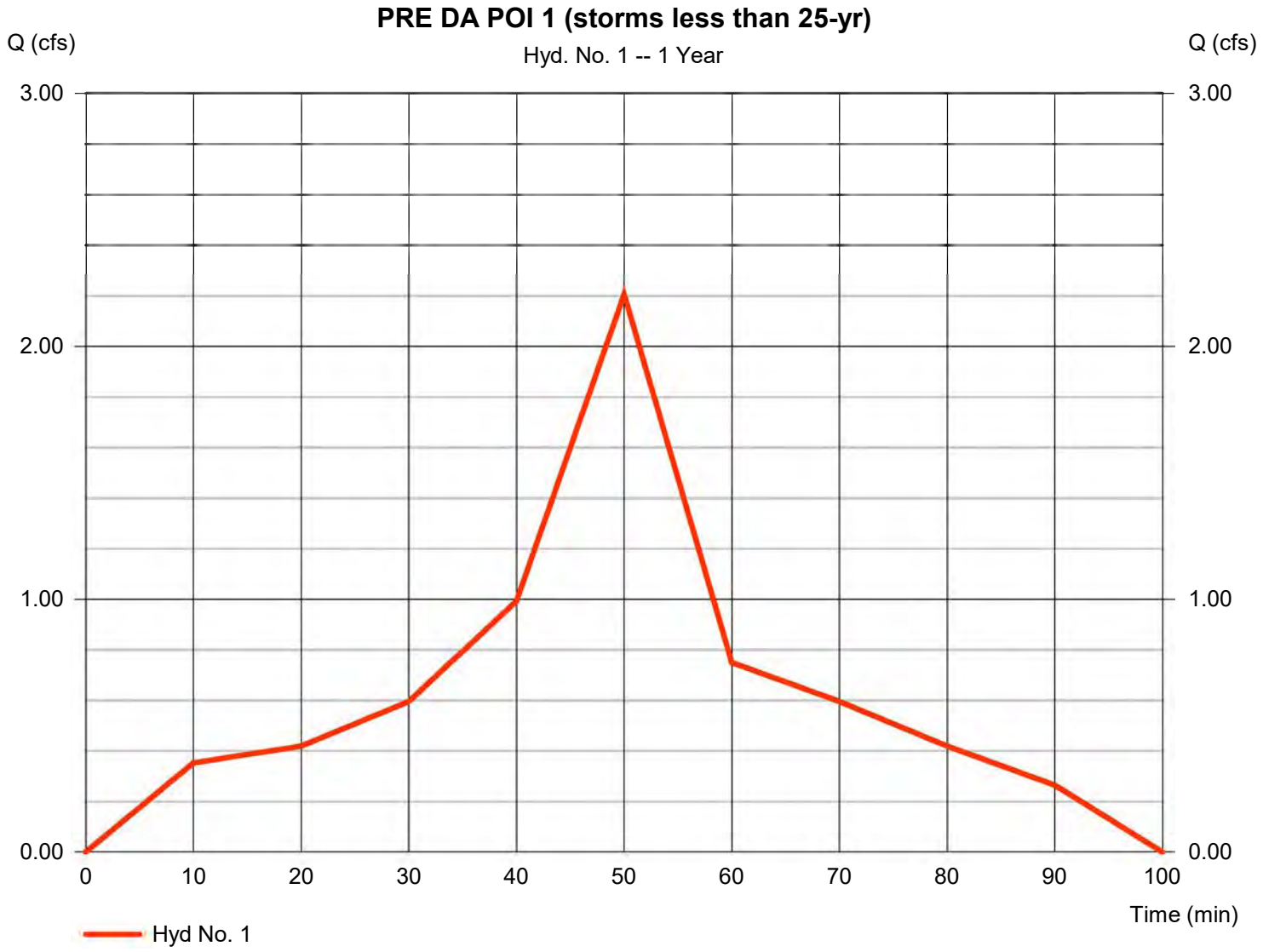
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Dekalb	2.206	1	50	3,957	------	------	------	PRE DA POI 1 (storms less than 25-y
4	Dekalb	0.375	1	25	336	------	------	------	BASIN 1
5	Dekalb	0.419	1	25	376	------	------	------	BASIN 2
6	Dekalb	0.305	1	25	273	------	------	------	BASIN 3
7	Dekalb	0.275	1	25	246	------	------	------	BASIN 4
8	Dekalb	0.219	1	25	197	------	------	------	BASIN 6
9	Dekalb	0.165	1	25	148	------	------	------	BASIN 7A
10	Dekalb	0.094	1	25	84	------	------	------	BASIN 7B
11	Reservoir	0.000	1	n/a	0	4	330.65	336	BASIN 1
12	Reservoir	0.000	1	n/a	0	5	333.80	376	BASIN 2
13	Reservoir	0.000	1	n/a	0	6	335.21	273	BASIN 3
14	Reservoir	0.000	1	n/a	0	7	338.43	246	BASIN 4
15	Reservoir	0.000	1	n/a	0	8	338.23	197	BASIN 6
16	Reservoir	0.000	1	n/a	0	9	346.23	148	BASIN 7A
17	Reservoir	0.000	1	n/a	0	10	345.70	84.4	BASIN 7B
18	Combine	0.000	1	n/a	0	11, 12, 13, 14, 15, 16, 17, 18	------	------	Basin 1-7A
19	Combine	0.000	1	n/a	0		------	------	Total Basin
20	Dekalb	1.565	1	35	1,965	------	------	------	BYPASS
21	Combine	1.565	1	35	1,965	18, 20	------	------	Total Post Dkalb

Hydrograph Report

Hyd. No. 1

PRE DA POI 1 (storms less than 25-yr)

Hydrograph type	= Dekalb	Peak discharge	= 2.206 cfs
Storm frequency	= 1 yrs	Time to peak	= 50 min
Time interval	= 1 min	Hyd. volume	= 3,957 cuft
Drainage area	= 1.480 ac	Runoff coeff.	= 0.45
Intensity	= 3.312 in/hr	Tc by User	= 10.00 min
IDF Curve	= Abington Rainfall.IDF	Asc/Rec limb fact	= n/a

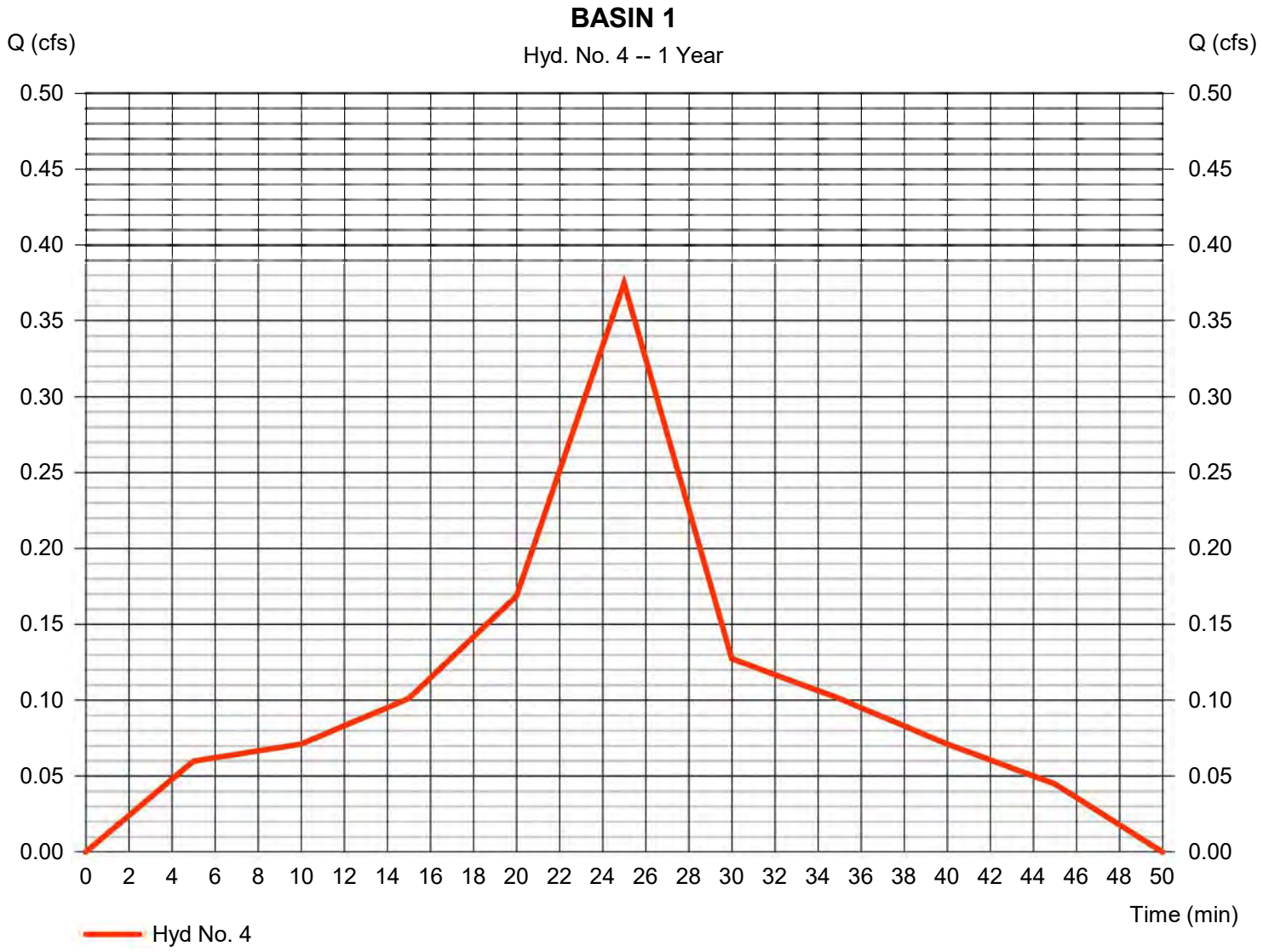


Hydrograph Report

Hyd. No. 4

BASIN 1

Hydrograph type	=	Dekalb	Peak discharge	=	0.375 cfs
Storm frequency	=	1 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	336 cuft
Drainage area	=	0.159 ac	Runoff coeff.	=	0.57
Intensity	=	4.134 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

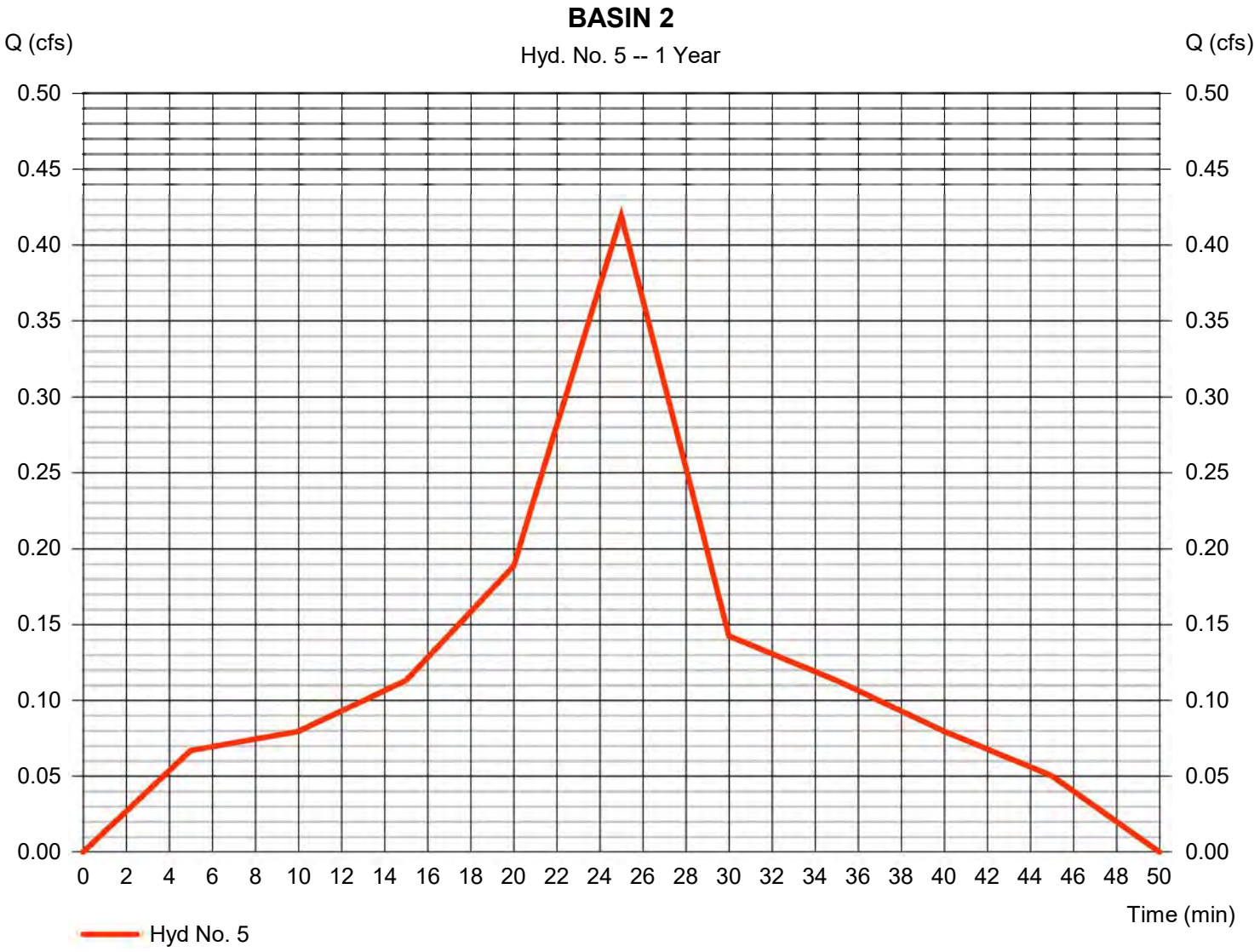


Hydrograph Report

Hyd. No. 5

BASIN 2

Hydrograph type	= Dekalb	Peak discharge	= 0.419 cfs
Storm frequency	= 1 yrs	Time to peak	= 25 min
Time interval	= 1 min	Hyd. volume	= 376 cuft
Drainage area	= 0.178 ac	Runoff coeff.	= 0.57
Intensity	= 4.134 in/hr	Tc by User	= 5.00 min
IDF Curve	= Abington Rainfall.IDF	Asc/Rec limb fact	= n/a

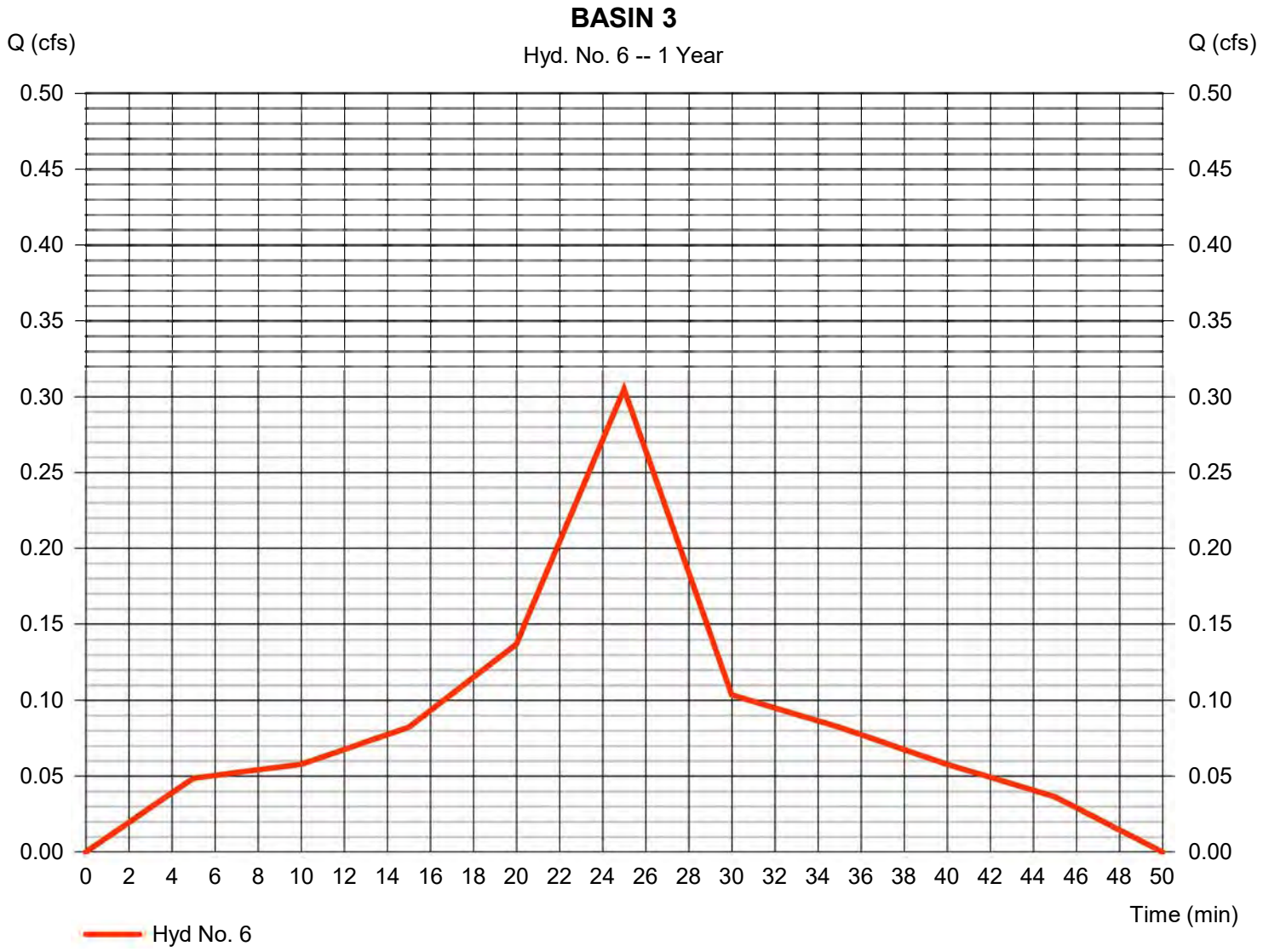


Hydrograph Report

Hyd. No. 6

BASIN 3

Hydrograph type	=	Dekalb	Peak discharge	=	0.305 cfs
Storm frequency	=	1 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	273 cuft
Drainage area	=	0.125 ac	Runoff coeff.	=	0.59
Intensity	=	4.134 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

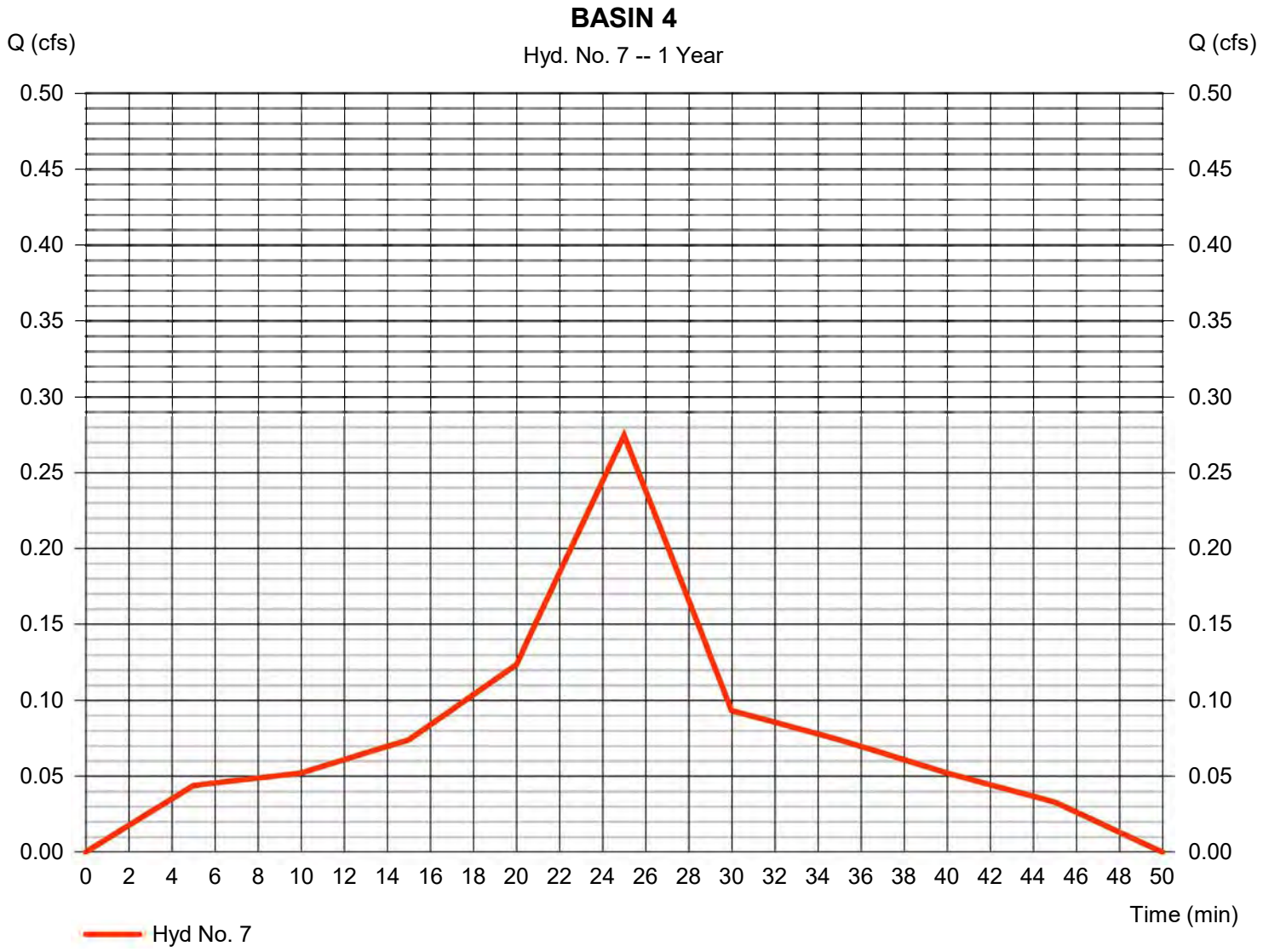


Hydrograph Report

Hyd. No. 7

BASIN 4

Hydrograph type	=	Dekalb	Peak discharge	=	0.275 cfs
Storm frequency	=	1 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	246 cuft
Drainage area	=	0.091 ac	Runoff coeff.	=	0.73
Intensity	=	4.134 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

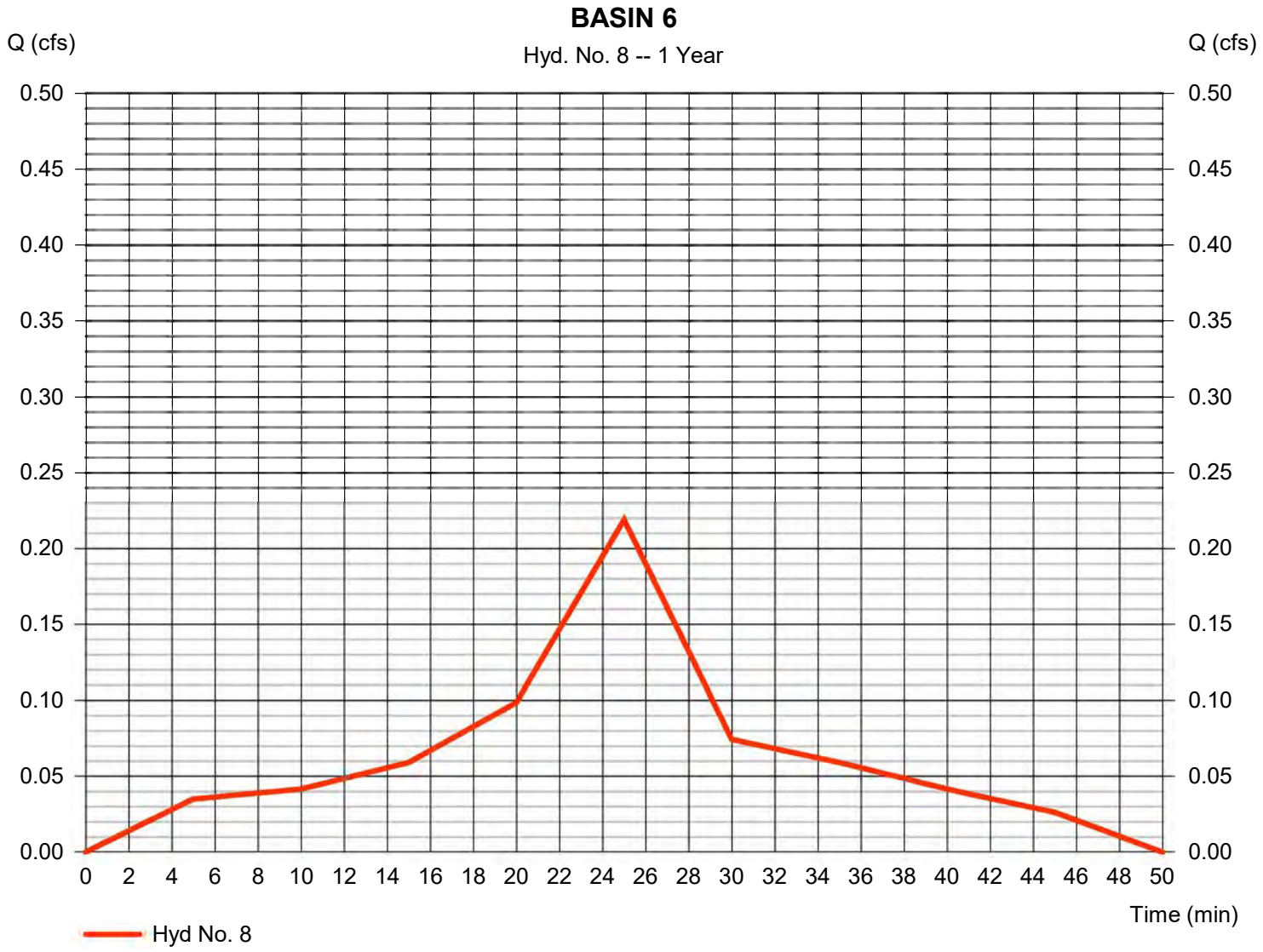


Hydrograph Report

Hyd. No. 8

BASIN 6

Hydrograph type	=	Dekalb	Peak discharge	=	0.219 cfs
Storm frequency	=	1 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	197 cuft
Drainage area	=	0.057 ac	Runoff coeff.	=	0.93
Intensity	=	4.134 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

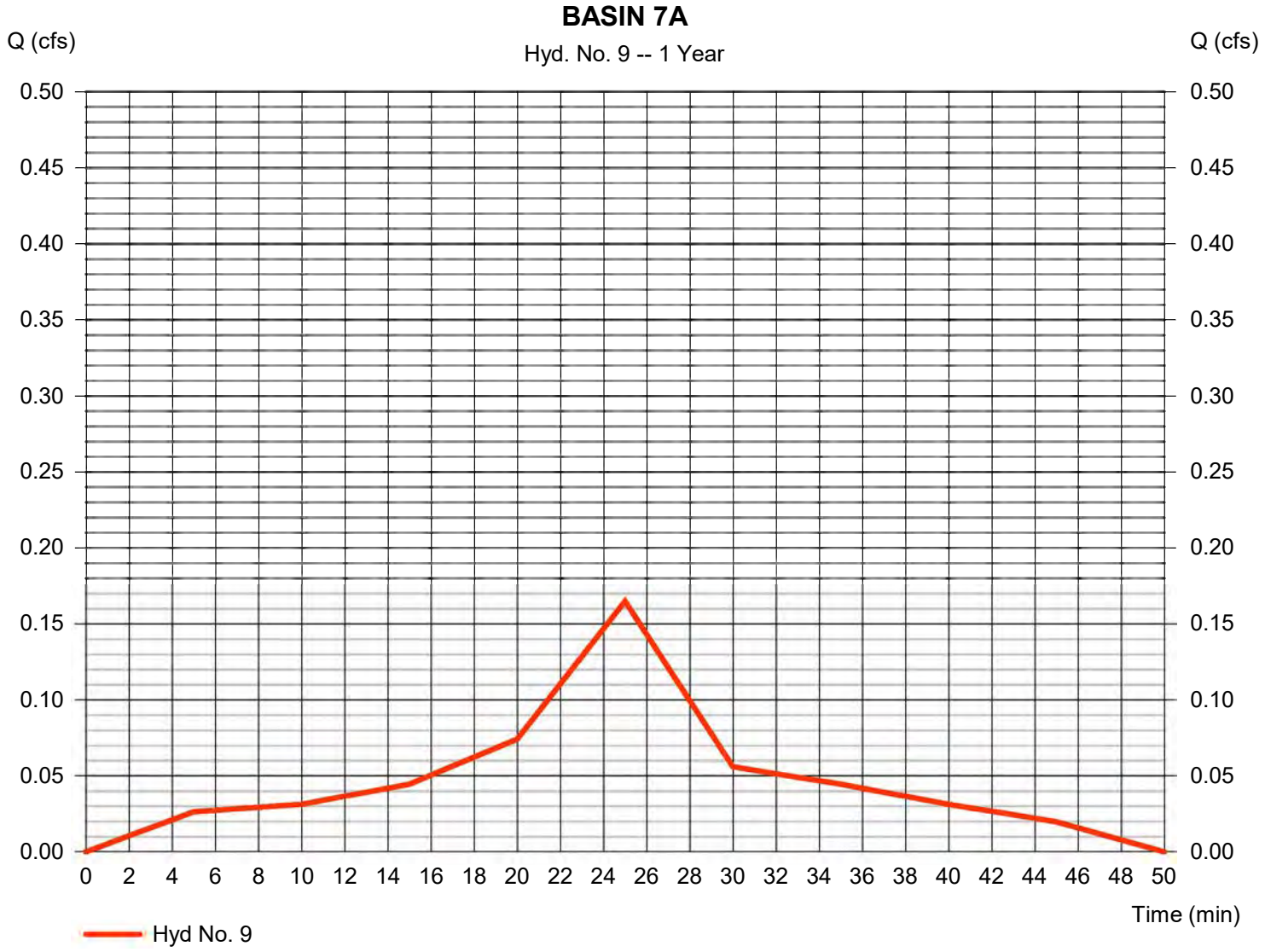


Hydrograph Report

Hyd. No. 9

BASIN 7A

Hydrograph type	=	Dekalb	Peak discharge	=	0.165 cfs
Storm frequency	=	1 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	148 cuft
Drainage area	=	0.042 ac	Runoff coeff.	=	0.95
Intensity	=	4.134 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

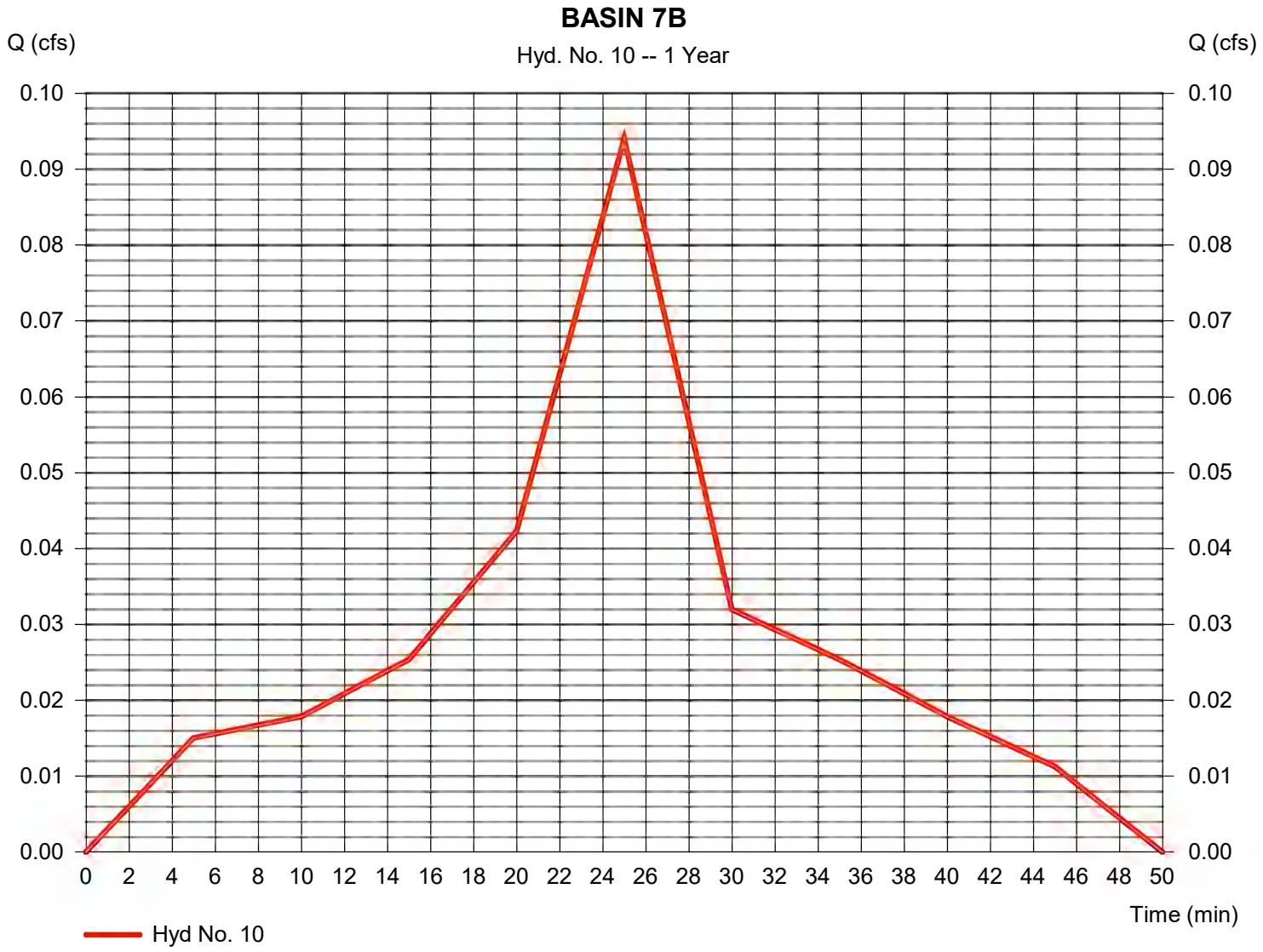


Hydrograph Report

Hyd. No. 10

BASIN 7B

Hydrograph type	=	Dekalb	Peak discharge	=	0.094 cfs
Storm frequency	=	1 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	84 cuft
Drainage area	=	0.025 ac	Runoff coeff.	=	0.91
Intensity	=	4.134 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a



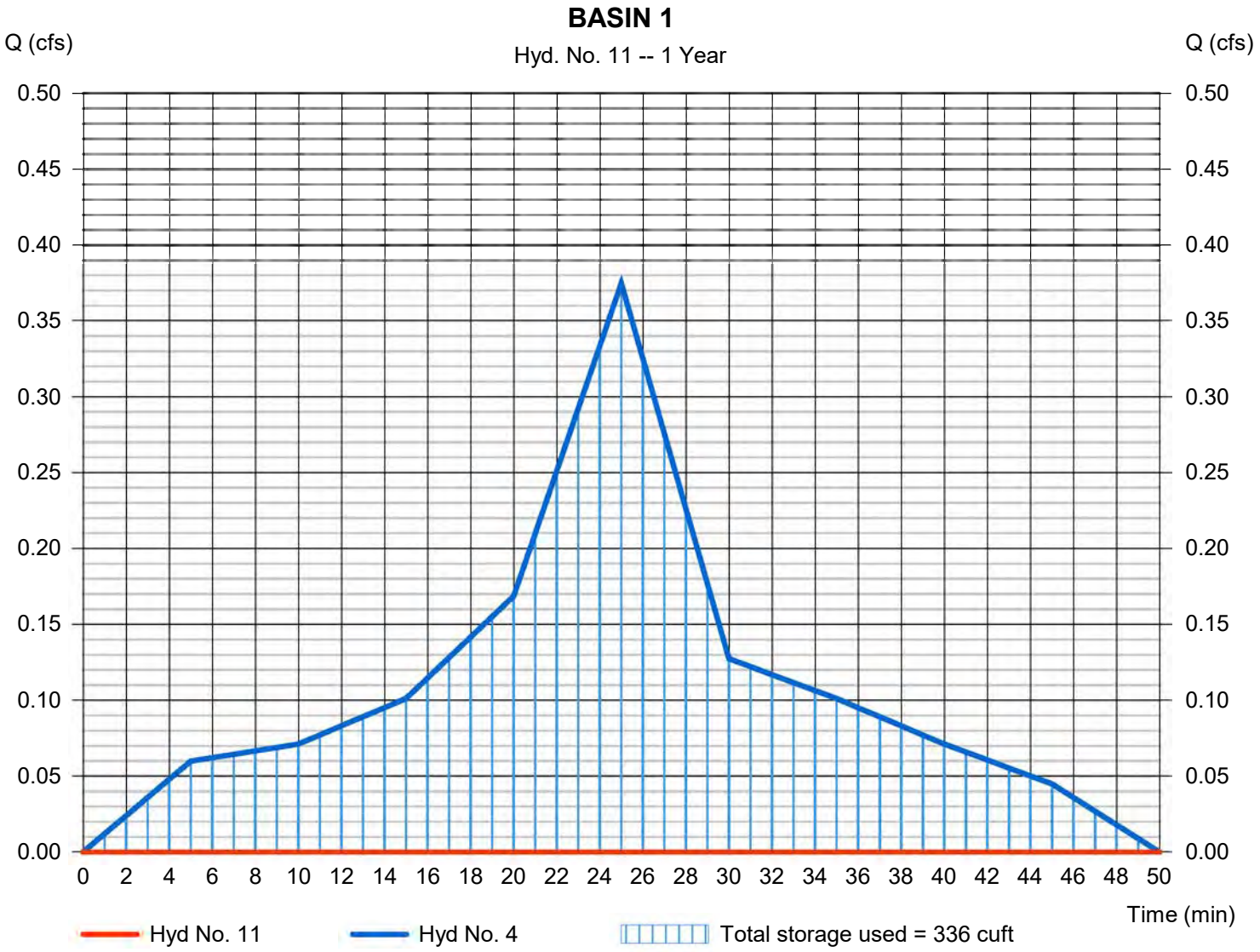
Hydrograph Report

Hyd. No. 11

BASIN 1

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 4 - BASIN 1	Max. Elevation	= 330.65 ft
Reservoir name	= Basin 1	Max. Storage	= 336 cuft

Storage Indication method used.



Pond Report

Pond No. 3 - Basin 1

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	329.05	n/a	0	0
0.75	329.80	n/a	158	158
1.75	330.80	n/a	210	368
2.75	331.80	n/a	211	579
3.75	332.80	n/a	210	789

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 332.75	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	329.05	0.00	---	---	---	---	---	---	---	---	---	0.000
0.08	16	329.13	0.00	---	---	---	---	---	---	---	---	---	0.000
0.15	32	329.20	0.00	---	---	---	---	---	---	---	---	---	0.000
0.22	47	329.27	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	63	329.35	0.00	---	---	---	---	---	---	---	---	---	0.000
0.38	79	329.42	0.00	---	---	---	---	---	---	---	---	---	0.000
0.45	95	329.50	0.00	---	---	---	---	---	---	---	---	---	0.000
0.52	111	329.58	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	126	329.65	0.00	---	---	---	---	---	---	---	---	---	0.000
0.68	142	329.73	0.00	---	---	---	---	---	---	---	---	---	0.000
0.75	158	329.80	0.00	---	---	---	---	---	---	---	---	---	0.000
0.85	179	329.90	0.00	---	---	---	---	---	---	---	---	---	0.000
0.95	200	330.00	0.00	---	---	---	---	---	---	---	---	---	0.000
1.05	221	330.10	0.00	---	---	---	---	---	---	---	---	---	0.000
1.15	242	330.20	0.00	---	---	---	---	---	---	---	---	---	0.000
1.25	263	330.30	0.00	---	---	---	---	---	---	---	---	---	0.000
1.35	284	330.40	0.00	---	---	---	---	---	---	---	---	---	0.000
1.45	305	330.50	0.00	---	---	---	---	---	---	---	---	---	0.000
1.55	326	330.60	0.00	---	---	---	---	---	---	---	---	---	0.000
1.65	347	330.70	0.00	---	---	---	---	---	---	---	---	---	0.000
1.75	368	330.80	0.00	---	---	---	---	---	---	---	---	---	0.000
1.85	389	330.90	0.00	---	---	---	---	---	---	---	---	---	0.000
1.95	410	331.00	0.00	---	---	---	---	---	---	---	---	---	0.000
2.05	431	331.10	0.00	---	---	---	---	---	---	---	---	---	0.000
2.15	452	331.20	0.00	---	---	---	---	---	---	---	---	---	0.000
2.25	474	331.30	0.00	---	---	---	---	---	---	---	---	---	0.000
2.35	495	331.40	0.00	---	---	---	---	---	---	---	---	---	0.000
2.45	516	331.50	0.00	---	---	---	---	---	---	---	---	---	0.000
2.55	537	331.60	0.00	---	---	---	---	---	---	---	---	---	0.000
2.65	558	331.70	0.00	---	---	---	---	---	---	---	---	---	0.000
2.75	579	331.80	0.00	---	---	---	---	---	---	---	---	---	0.000
2.85	600	331.90	0.00	---	---	---	---	---	---	---	---	---	0.000
2.95	621	332.00	0.00	---	---	---	---	---	---	---	---	---	0.000
3.05	642	332.10	0.00	---	---	---	---	---	---	---	---	---	0.000
3.15	663	332.20	0.00	---	---	---	---	---	---	---	---	---	0.000
3.25	684	332.30	0.00	---	---	---	---	---	---	---	---	---	0.000
3.35	705	332.40	0.00	---	---	---	---	---	---	---	---	---	0.000
3.45	726	332.50	0.00	---	---	---	---	---	---	---	---	---	0.000
3.55	747	332.60	0.00	---	---	---	---	---	---	---	---	---	0.000

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Basin 1

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.65	768	332.70	0.00	---	---	---	---	---	---	---	---	---	0.000
3.75	789	332.80	0.01 ic	---	---	---	---	---	---	---	---	---	0.008

...End

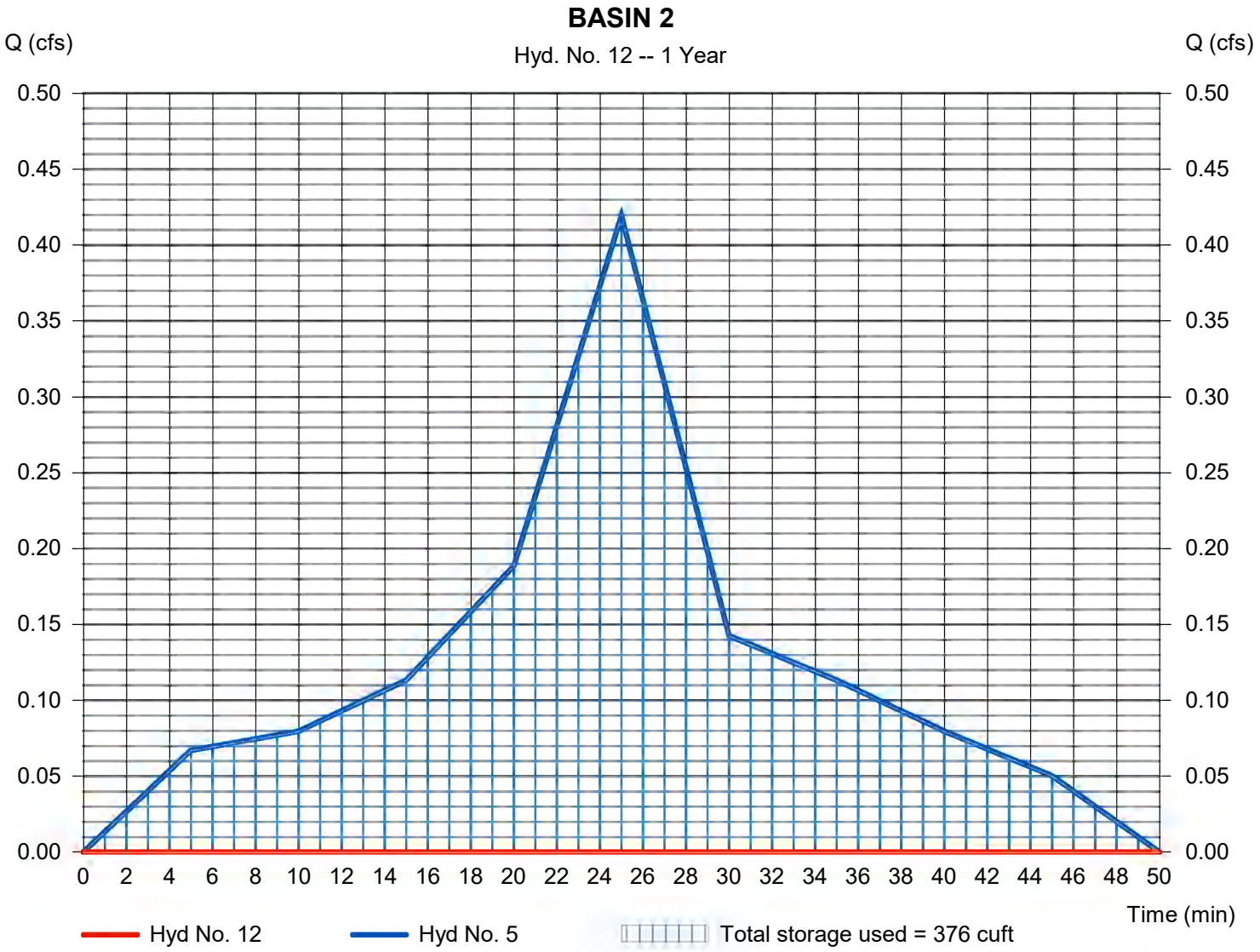
Hydrograph Report

Hyd. No. 12

BASIN 2

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 5 - BASIN 2	Max. Elevation	= 333.80 ft
Reservoir name	= Basin 2	Max. Storage	= 376 cuft

Storage Indication method used.



Pond No. 4 - Basin 2

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	332.17	n/a	0	0
0.75	332.92	n/a	174	174
1.75	333.92	n/a	231	405
2.75	334.92	n/a	231	636
3.75	335.92	n/a	232	868

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 335.90	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	332.17	0.00	---	---	---	---	---	---	---	---	---	0.000
0.08	17	332.24	0.00	---	---	---	---	---	---	---	---	---	0.000
0.15	35	332.32	0.00	---	---	---	---	---	---	---	---	---	0.000
0.22	52	332.40	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	70	332.47	0.00	---	---	---	---	---	---	---	---	---	0.000
0.38	87	332.55	0.00	---	---	---	---	---	---	---	---	---	0.000
0.45	104	332.62	0.00	---	---	---	---	---	---	---	---	---	0.000
0.52	122	332.70	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	139	332.77	0.00	---	---	---	---	---	---	---	---	---	0.000
0.68	157	332.85	0.00	---	---	---	---	---	---	---	---	---	0.000
0.75	174	332.92	0.00	---	---	---	---	---	---	---	---	---	0.000
0.85	197	333.02	0.00	---	---	---	---	---	---	---	---	---	0.000
0.95	220	333.12	0.00	---	---	---	---	---	---	---	---	---	0.000
1.05	243	333.22	0.00	---	---	---	---	---	---	---	---	---	0.000
1.15	266	333.32	0.00	---	---	---	---	---	---	---	---	---	0.000
1.25	290	333.42	0.00	---	---	---	---	---	---	---	---	---	0.000
1.35	313	333.52	0.00	---	---	---	---	---	---	---	---	---	0.000
1.45	336	333.62	0.00	---	---	---	---	---	---	---	---	---	0.000
1.55	359	333.72	0.00	---	---	---	---	---	---	---	---	---	0.000
1.65	382	333.82	0.00	---	---	---	---	---	---	---	---	---	0.000
1.75	405	333.92	0.00	---	---	---	---	---	---	---	---	---	0.000
1.85	428	334.02	0.00	---	---	---	---	---	---	---	---	---	0.000
1.95	451	334.12	0.00	---	---	---	---	---	---	---	---	---	0.000
2.05	474	334.22	0.00	---	---	---	---	---	---	---	---	---	0.000
2.15	497	334.32	0.00	---	---	---	---	---	---	---	---	---	0.000
2.25	521	334.42	0.00	---	---	---	---	---	---	---	---	---	0.000
2.35	544	334.52	0.00	---	---	---	---	---	---	---	---	---	0.000
2.45	567	334.62	0.00	---	---	---	---	---	---	---	---	---	0.000
2.55	590	334.72	0.00	---	---	---	---	---	---	---	---	---	0.000
2.65	613	334.82	0.00	---	---	---	---	---	---	---	---	---	0.000
2.75	636	334.92	0.00	---	---	---	---	---	---	---	---	---	0.000
2.85	659	335.02	0.00	---	---	---	---	---	---	---	---	---	0.000
2.95	682	335.12	0.00	---	---	---	---	---	---	---	---	---	0.000
3.05	706	335.22	0.00	---	---	---	---	---	---	---	---	---	0.000
3.15	729	335.32	0.00	---	---	---	---	---	---	---	---	---	0.000
3.25	752	335.42	0.00	---	---	---	---	---	---	---	---	---	0.000
3.35	775	335.52	0.00	---	---	---	---	---	---	---	---	---	0.000
3.45	798	335.62	0.00	---	---	---	---	---	---	---	---	---	0.000
3.55	822	335.72	0.00	---	---	---	---	---	---	---	---	---	0.000

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Basin 2

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.65	845	335.82	0.00	---	---	---	---	---	---	---	---	---	0.000
3.75	868	335.92	0.00 ic	---	---	---	---	---	---	---	---	---	0.001

...End

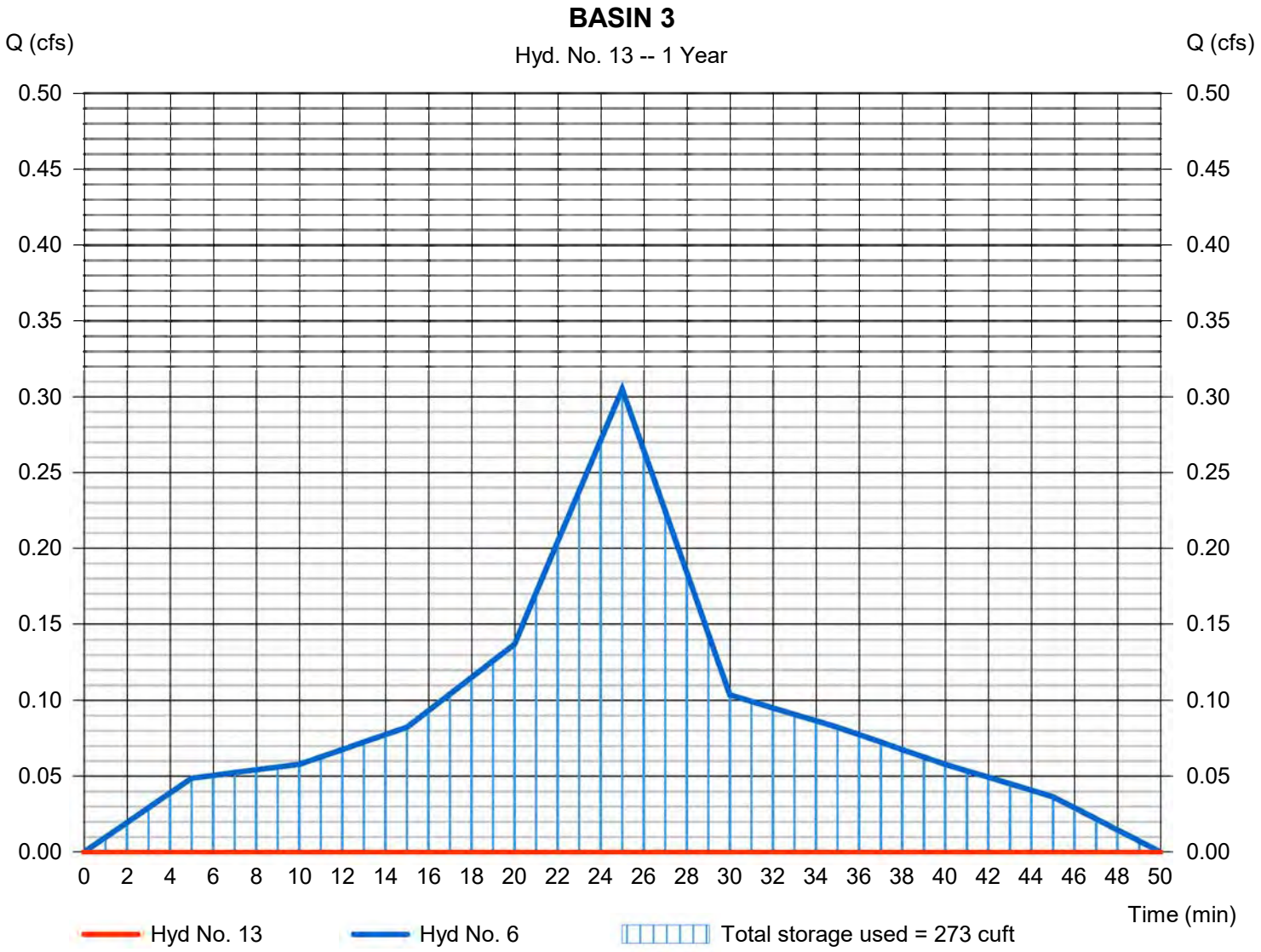
Hydrograph Report

Hyd. No. 13

BASIN 3

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	1 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	6 - BASIN 3	Max. Elevation	=	335.21 ft
Reservoir name	=	Basin 3	Max. Storage	=	273 cuft

Storage Indication method used.



Pond No. 5 - Basin 3

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	333.91	n/a	0	0
0.75	334.66	n/a	158	158
1.75	335.66	n/a	210	368
2.75	336.66	n/a	211	579
3.75	337.66	n/a	210	789

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 337.60	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	333.91	0.00	---	---	---	---	---	---	---	---	---	0.000
0.08	16	333.98	0.00	---	---	---	---	---	---	---	---	---	0.000
0.15	32	334.06	0.00	---	---	---	---	---	---	---	---	---	0.000
0.22	47	334.14	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	63	334.21	0.00	---	---	---	---	---	---	---	---	---	0.000
0.38	79	334.29	0.00	---	---	---	---	---	---	---	---	---	0.000
0.45	95	334.36	0.00	---	---	---	---	---	---	---	---	---	0.000
0.52	111	334.44	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	126	334.51	0.00	---	---	---	---	---	---	---	---	---	0.000
0.68	142	334.59	0.00	---	---	---	---	---	---	---	---	---	0.000
0.75	158	334.66	0.00	---	---	---	---	---	---	---	---	---	0.000
0.85	179	334.76	0.00	---	---	---	---	---	---	---	---	---	0.000
0.95	200	334.86	0.00	---	---	---	---	---	---	---	---	---	0.000
1.05	221	334.96	0.00	---	---	---	---	---	---	---	---	---	0.000
1.15	242	335.06	0.00	---	---	---	---	---	---	---	---	---	0.000
1.25	263	335.16	0.00	---	---	---	---	---	---	---	---	---	0.000
1.35	284	335.26	0.00	---	---	---	---	---	---	---	---	---	0.000
1.45	305	335.36	0.00	---	---	---	---	---	---	---	---	---	0.000
1.55	326	335.46	0.00	---	---	---	---	---	---	---	---	---	0.000
1.65	347	335.56	0.00	---	---	---	---	---	---	---	---	---	0.000
1.75	368	335.66	0.00	---	---	---	---	---	---	---	---	---	0.000
1.85	389	335.76	0.00	---	---	---	---	---	---	---	---	---	0.000
1.95	410	335.86	0.00	---	---	---	---	---	---	---	---	---	0.000
2.05	431	335.96	0.00	---	---	---	---	---	---	---	---	---	0.000
2.15	452	336.06	0.00	---	---	---	---	---	---	---	---	---	0.000
2.25	474	336.16	0.00	---	---	---	---	---	---	---	---	---	0.000
2.35	495	336.26	0.00	---	---	---	---	---	---	---	---	---	0.000
2.45	516	336.36	0.00	---	---	---	---	---	---	---	---	---	0.000
2.55	537	336.46	0.00	---	---	---	---	---	---	---	---	---	0.000
2.65	558	336.56	0.00	---	---	---	---	---	---	---	---	---	0.000
2.75	579	336.66	0.00	---	---	---	---	---	---	---	---	---	0.000
2.85	600	336.76	0.00	---	---	---	---	---	---	---	---	---	0.000
2.95	621	336.86	0.00	---	---	---	---	---	---	---	---	---	0.000
3.05	642	336.96	0.00	---	---	---	---	---	---	---	---	---	0.000
3.15	663	337.06	0.00	---	---	---	---	---	---	---	---	---	0.000
3.25	684	337.16	0.00	---	---	---	---	---	---	---	---	---	0.000
3.35	705	337.26	0.00	---	---	---	---	---	---	---	---	---	0.000
3.45	726	337.36	0.00	---	---	---	---	---	---	---	---	---	0.000
3.55	747	337.46	0.00	---	---	---	---	---	---	---	---	---	0.000

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Basin 3

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.65	768	337.56	0.00	---	---	---	---	---	---	---	---	---	0.000
3.75	789	337.66	0.01 ic	---	---	---	---	---	---	---	---	---	0.011

...End

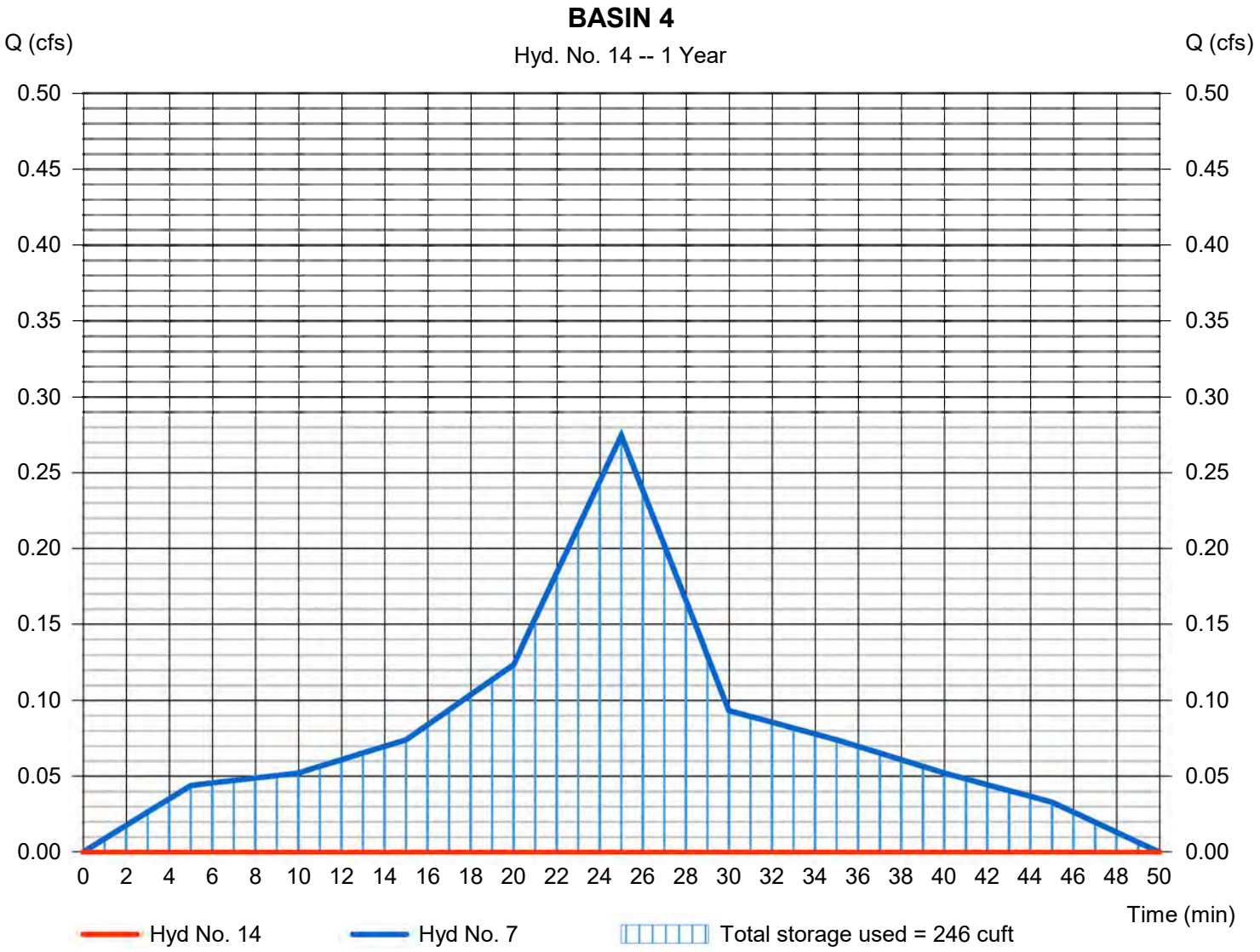
Hydrograph Report

Hyd. No. 14

BASIN 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	1 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	7 - BASIN 4	Max. Elevation	=	338.43 ft
Reservoir name	=	Basin 4	Max. Storage	=	246 cuft

Storage Indication method used.



Pond No. 6 - Basin 4

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	337.26	n/a	0	0
0.75	338.01	n/a	158	158
1.75	339.01	n/a	210	368
2.75	340.01	n/a	211	579
3.75	341.01	n/a	210	789

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 341.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	337.26	0.00	---	---	---	---	---	---	---	---	---	0.000
0.08	16	337.33	0.00	---	---	---	---	---	---	---	---	---	0.000
0.15	32	337.41	0.00	---	---	---	---	---	---	---	---	---	0.000
0.22	47	337.48	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	63	337.56	0.00	---	---	---	---	---	---	---	---	---	0.000
0.38	79	337.64	0.00	---	---	---	---	---	---	---	---	---	0.000
0.45	95	337.71	0.00	---	---	---	---	---	---	---	---	---	0.000
0.52	111	337.79	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	126	337.86	0.00	---	---	---	---	---	---	---	---	---	0.000
0.68	142	337.94	0.00	---	---	---	---	---	---	---	---	---	0.000
0.75	158	338.01	0.00	---	---	---	---	---	---	---	---	---	0.000
0.85	179	338.11	0.00	---	---	---	---	---	---	---	---	---	0.000
0.95	200	338.21	0.00	---	---	---	---	---	---	---	---	---	0.000
1.05	221	338.31	0.00	---	---	---	---	---	---	---	---	---	0.000
1.15	242	338.41	0.00	---	---	---	---	---	---	---	---	---	0.000
1.25	263	338.51	0.00	---	---	---	---	---	---	---	---	---	0.000
1.35	284	338.61	0.00	---	---	---	---	---	---	---	---	---	0.000
1.45	305	338.71	0.00	---	---	---	---	---	---	---	---	---	0.000
1.55	326	338.81	0.00	---	---	---	---	---	---	---	---	---	0.000
1.65	347	338.91	0.00	---	---	---	---	---	---	---	---	---	0.000
1.75	368	339.01	0.00	---	---	---	---	---	---	---	---	---	0.000
1.85	389	339.11	0.00	---	---	---	---	---	---	---	---	---	0.000
1.95	410	339.21	0.00	---	---	---	---	---	---	---	---	---	0.000
2.05	431	339.31	0.00	---	---	---	---	---	---	---	---	---	0.000
2.15	452	339.41	0.00	---	---	---	---	---	---	---	---	---	0.000
2.25	474	339.51	0.00	---	---	---	---	---	---	---	---	---	0.000
2.35	495	339.61	0.00	---	---	---	---	---	---	---	---	---	0.000
2.45	516	339.71	0.00	---	---	---	---	---	---	---	---	---	0.000
2.55	537	339.81	0.00	---	---	---	---	---	---	---	---	---	0.000
2.65	558	339.91	0.00	---	---	---	---	---	---	---	---	---	0.000
2.75	579	340.01	0.00	---	---	---	---	---	---	---	---	---	0.000
2.85	600	340.11	0.00	---	---	---	---	---	---	---	---	---	0.000
2.95	621	340.21	0.00	---	---	---	---	---	---	---	---	---	0.000
3.05	642	340.31	0.00	---	---	---	---	---	---	---	---	---	0.000
3.15	663	340.41	0.00	---	---	---	---	---	---	---	---	---	0.000
3.25	684	340.51	0.00	---	---	---	---	---	---	---	---	---	0.000
3.35	705	340.61	0.00	---	---	---	---	---	---	---	---	---	0.000
3.45	726	340.71	0.00	---	---	---	---	---	---	---	---	---	0.000
3.55	747	340.81	0.00	---	---	---	---	---	---	---	---	---	0.000

Continues on next page...

Basin 4

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.65	768	340.91	0.00	---	---	---	---	---	---	---	---	---	0.000
3.75	789	341.01	0.00 ic	---	---	---	---	---	---	---	---	---	0.000

...End

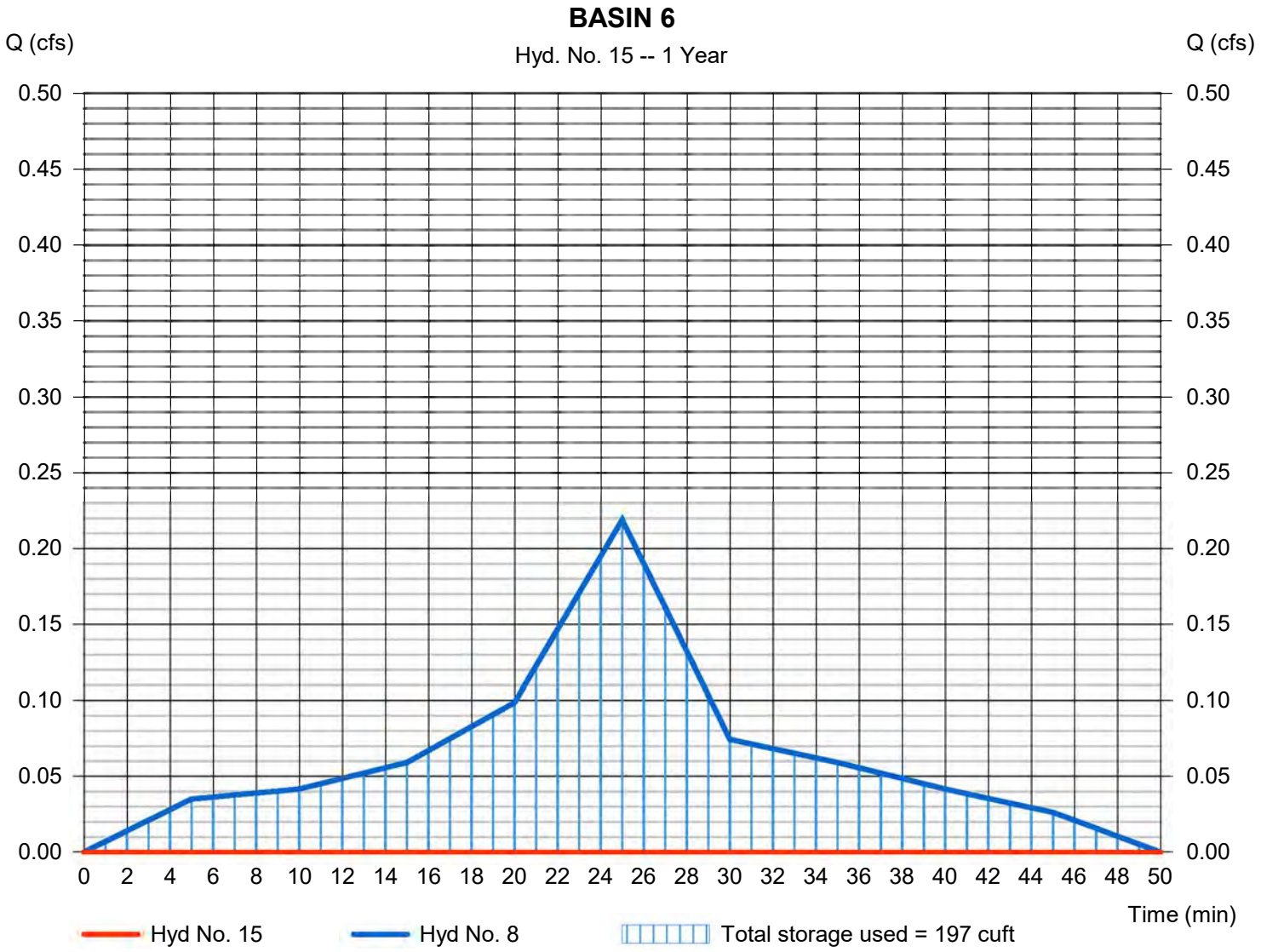
Hydrograph Report

Hyd. No. 15

BASIN 6

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	1 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	8 - BASIN 6	Max. Elevation	=	338.23 ft
Reservoir name	=	Basin 6	Max. Storage	=	197 cuft

Storage Indication method used.



Pond No. 7 - Basin 6

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	337.50	n/a	0	0
1.00	338.50	n/a	268	268
2.00	339.50	n/a	269	537
3.00	340.50	n/a	268	805

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 340.45	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	337.50	0.00	---	---	---	---	---	---	---	---	---	0.000
0.10	27	337.60	0.00	---	---	---	---	---	---	---	---	---	0.000
0.20	54	337.70	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	81	337.80	0.00	---	---	---	---	---	---	---	---	---	0.000
0.40	107	337.90	0.00	---	---	---	---	---	---	---	---	---	0.000
0.50	134	338.00	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	161	338.10	0.00	---	---	---	---	---	---	---	---	---	0.000
0.70	188	338.20	0.00	---	---	---	---	---	---	---	---	---	0.000
0.80	215	338.30	0.00	---	---	---	---	---	---	---	---	---	0.000
0.90	242	338.40	0.00	---	---	---	---	---	---	---	---	---	0.000
1.00	268	338.50	0.00	---	---	---	---	---	---	---	---	---	0.000
1.10	295	338.60	0.00	---	---	---	---	---	---	---	---	---	0.000
1.20	322	338.70	0.00	---	---	---	---	---	---	---	---	---	0.000
1.30	349	338.80	0.00	---	---	---	---	---	---	---	---	---	0.000
1.40	376	338.90	0.00	---	---	---	---	---	---	---	---	---	0.000
1.50	403	339.00	0.00	---	---	---	---	---	---	---	---	---	0.000
1.60	430	339.10	0.00	---	---	---	---	---	---	---	---	---	0.000
1.70	456	339.20	0.00	---	---	---	---	---	---	---	---	---	0.000
1.80	483	339.30	0.00	---	---	---	---	---	---	---	---	---	0.000
1.90	510	339.40	0.00	---	---	---	---	---	---	---	---	---	0.000
2.00	537	339.50	0.00	---	---	---	---	---	---	---	---	---	0.000
2.10	564	339.60	0.00	---	---	---	---	---	---	---	---	---	0.000
2.20	591	339.70	0.00	---	---	---	---	---	---	---	---	---	0.000
2.30	617	339.80	0.00	---	---	---	---	---	---	---	---	---	0.000
2.40	644	339.90	0.00	---	---	---	---	---	---	---	---	---	0.000
2.50	671	340.00	0.00	---	---	---	---	---	---	---	---	---	0.000
2.60	698	340.10	0.00	---	---	---	---	---	---	---	---	---	0.000
2.70	725	340.20	0.00	---	---	---	---	---	---	---	---	---	0.000
2.80	751	340.30	0.00	---	---	---	---	---	---	---	---	---	0.000
2.90	778	340.40	0.00	---	---	---	---	---	---	---	---	---	0.000
3.00	805	340.50	0.01 ic	---	---	---	---	---	---	---	---	---	0.008

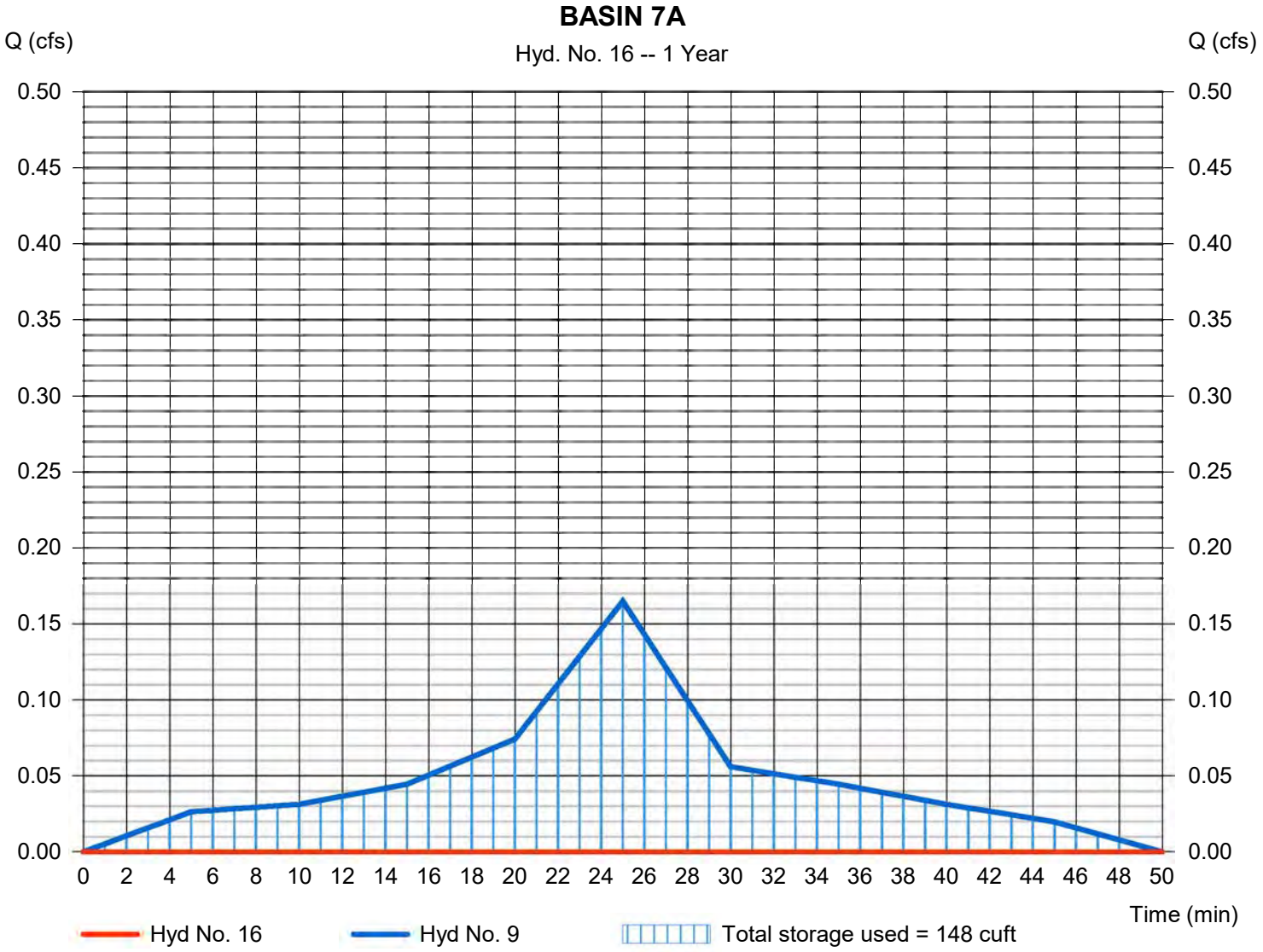
Hydrograph Report

Hyd. No. 16

BASIN 7A

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	1 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	9 - BASIN 7A	Max. Elevation	=	346.23 ft
Reservoir name	=	Basin 7A	Max. Storage	=	148 cuft

Storage Indication method used.



Pond Report

Pond No. 8 - Basin 7A

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	345.00	n/a	0	0
1.00	346.00	n/a	120	120
2.00	347.00	n/a	120	240
3.00	348.00	n/a	120	360

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 347.95	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	345.00	0.00	---	---	---	---	---	---	---	---	---	0.000
0.10	12	345.10	0.00	---	---	---	---	---	---	---	---	---	0.000
0.20	24	345.20	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	36	345.30	0.00	---	---	---	---	---	---	---	---	---	0.000
0.40	48	345.40	0.00	---	---	---	---	---	---	---	---	---	0.000
0.50	60	345.50	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	72	345.60	0.00	---	---	---	---	---	---	---	---	---	0.000
0.70	84	345.70	0.00	---	---	---	---	---	---	---	---	---	0.000
0.80	96	345.80	0.00	---	---	---	---	---	---	---	---	---	0.000
0.90	108	345.90	0.00	---	---	---	---	---	---	---	---	---	0.000
1.00	120	346.00	0.00	---	---	---	---	---	---	---	---	---	0.000
1.10	132	346.10	0.00	---	---	---	---	---	---	---	---	---	0.000
1.20	144	346.20	0.00	---	---	---	---	---	---	---	---	---	0.000
1.30	156	346.30	0.00	---	---	---	---	---	---	---	---	---	0.000
1.40	168	346.40	0.00	---	---	---	---	---	---	---	---	---	0.000
1.50	180	346.50	0.00	---	---	---	---	---	---	---	---	---	0.000
1.60	192	346.60	0.00	---	---	---	---	---	---	---	---	---	0.000
1.70	204	346.70	0.00	---	---	---	---	---	---	---	---	---	0.000
1.80	216	346.80	0.00	---	---	---	---	---	---	---	---	---	0.000
1.90	228	346.90	0.00	---	---	---	---	---	---	---	---	---	0.000
2.00	240	347.00	0.00	---	---	---	---	---	---	---	---	---	0.000
2.10	252	347.10	0.00	---	---	---	---	---	---	---	---	---	0.000
2.20	264	347.20	0.00	---	---	---	---	---	---	---	---	---	0.000
2.30	276	347.30	0.00	---	---	---	---	---	---	---	---	---	0.000
2.40	288	347.40	0.00	---	---	---	---	---	---	---	---	---	0.000
2.50	300	347.50	0.00	---	---	---	---	---	---	---	---	---	0.000
2.60	312	347.60	0.00	---	---	---	---	---	---	---	---	---	0.000
2.70	324	347.70	0.00	---	---	---	---	---	---	---	---	---	0.000
2.80	336	347.80	0.00	---	---	---	---	---	---	---	---	---	0.000
2.90	348	347.90	0.00	---	---	---	---	---	---	---	---	---	0.000
3.00	360	348.00	0.01 ic	---	---	---	---	---	---	---	---	---	0.008

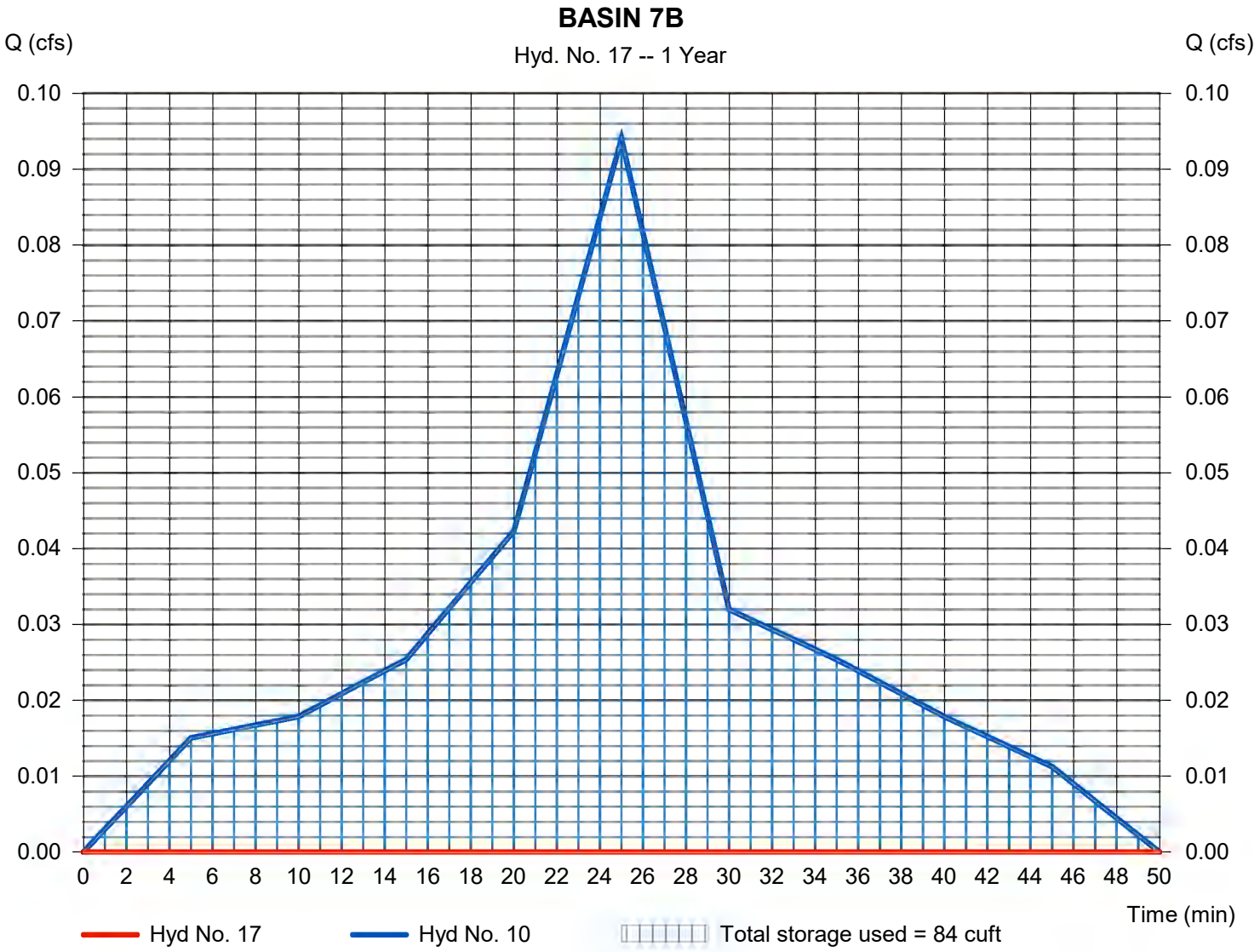
Hydrograph Report

Hyd. No. 17

BASIN 7B

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	1 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	10 - BASIN 7B	Max. Elevation	=	345.70 ft
Reservoir name	=	Basin 7B	Max. Storage	=	84 cuft

Storage Indication method used.



Pond Report

Pond No. 9 - Basin 7B

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	345.00	n/a	0	0
0.50	345.50	n/a	60	60
1.00	346.00	n/a	60	120
1.50	346.50	n/a	60	180

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 346.50	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

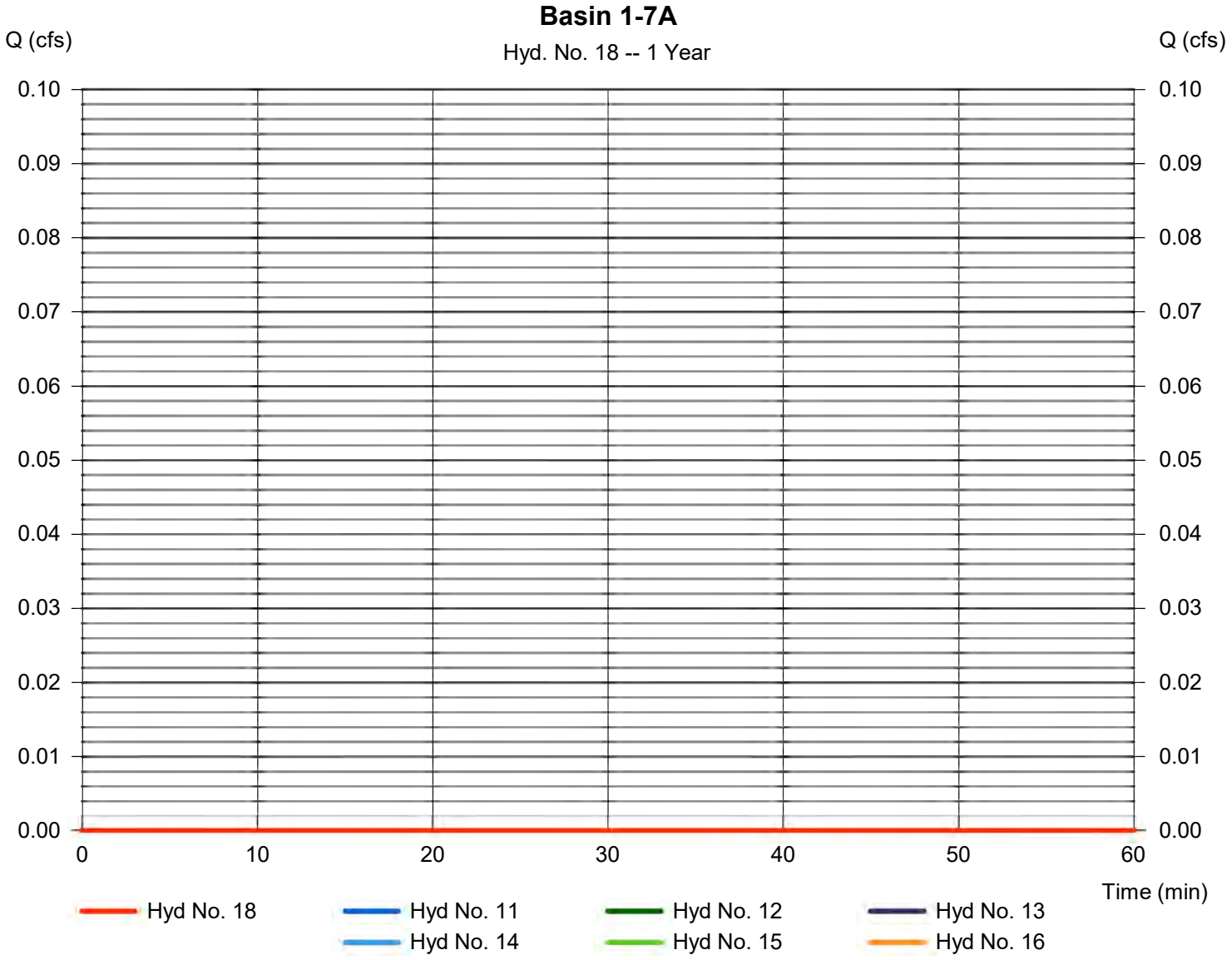
Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	345.00	0.00	---	---	---	---	---	---	---	---	---	0.000
0.05	6	345.05	0.00	---	---	---	---	---	---	---	---	---	0.000
0.10	12	345.10	0.00	---	---	---	---	---	---	---	---	---	0.000
0.15	18	345.15	0.00	---	---	---	---	---	---	---	---	---	0.000
0.20	24	345.20	0.00	---	---	---	---	---	---	---	---	---	0.000
0.25	30	345.25	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	36	345.30	0.00	---	---	---	---	---	---	---	---	---	0.000
0.35	42	345.35	0.00	---	---	---	---	---	---	---	---	---	0.000
0.40	48	345.40	0.00	---	---	---	---	---	---	---	---	---	0.000
0.45	54	345.45	0.00	---	---	---	---	---	---	---	---	---	0.000
0.50	60	345.50	0.00	---	---	---	---	---	---	---	---	---	0.000
0.55	66	345.55	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	72	345.60	0.00	---	---	---	---	---	---	---	---	---	0.000
0.65	78	345.65	0.00	---	---	---	---	---	---	---	---	---	0.000
0.70	84	345.70	0.00	---	---	---	---	---	---	---	---	---	0.000
0.75	90	345.75	0.00	---	---	---	---	---	---	---	---	---	0.000
0.80	96	345.80	0.00	---	---	---	---	---	---	---	---	---	0.000
0.85	102	345.85	0.00	---	---	---	---	---	---	---	---	---	0.000
0.90	108	345.90	0.00	---	---	---	---	---	---	---	---	---	0.000
0.95	114	345.95	0.00	---	---	---	---	---	---	---	---	---	0.000
1.00	120	346.00	0.00	---	---	---	---	---	---	---	---	---	0.000
1.05	126	346.05	0.00	---	---	---	---	---	---	---	---	---	0.000
1.10	132	346.10	0.00	---	---	---	---	---	---	---	---	---	0.000
1.15	138	346.15	0.00	---	---	---	---	---	---	---	---	---	0.000
1.20	144	346.20	0.00	---	---	---	---	---	---	---	---	---	0.000
1.25	150	346.25	0.00	---	---	---	---	---	---	---	---	---	0.000
1.30	156	346.30	0.00	---	---	---	---	---	---	---	---	---	0.000
1.35	162	346.35	0.00	---	---	---	---	---	---	---	---	---	0.000
1.40	168	346.40	0.00	---	---	---	---	---	---	---	---	---	0.000
1.45	174	346.45	0.00	---	---	---	---	---	---	---	---	---	0.000
1.50	180	346.50	0.00	---	---	---	---	---	---	---	---	---	0.000

Hydrograph Report

Hyd. No. 18

Basin 1-7A

Hydrograph type	= Combine	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyds.	= 11, 12, 13, 14, 15, 16	Contrib. drain. area	= 0.000 ac

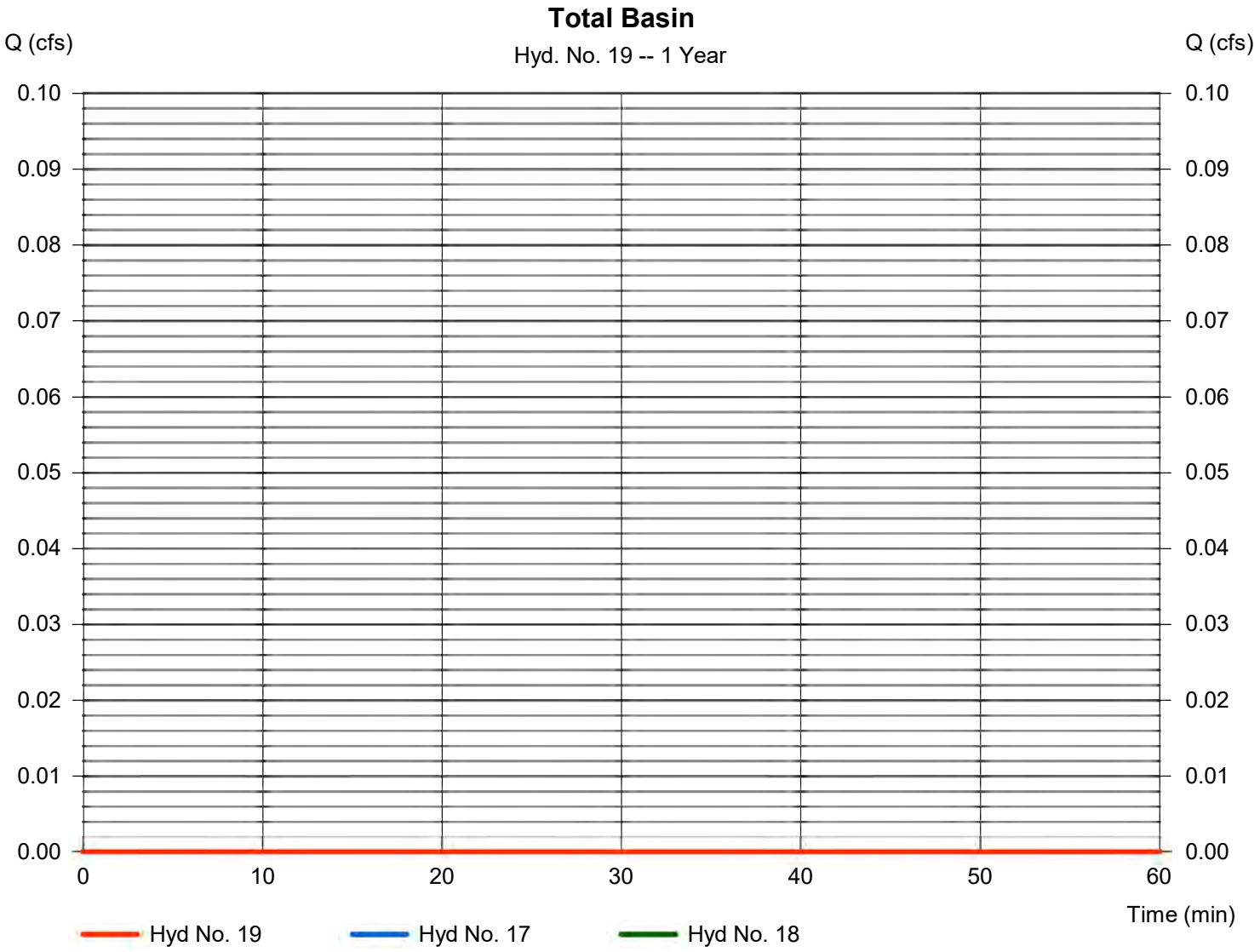


Hydrograph Report

Hyd. No. 19

Total Basin

Hydrograph type	= Combine	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyds.	= 17, 18	Contrib. drain. area	= 0.000 ac

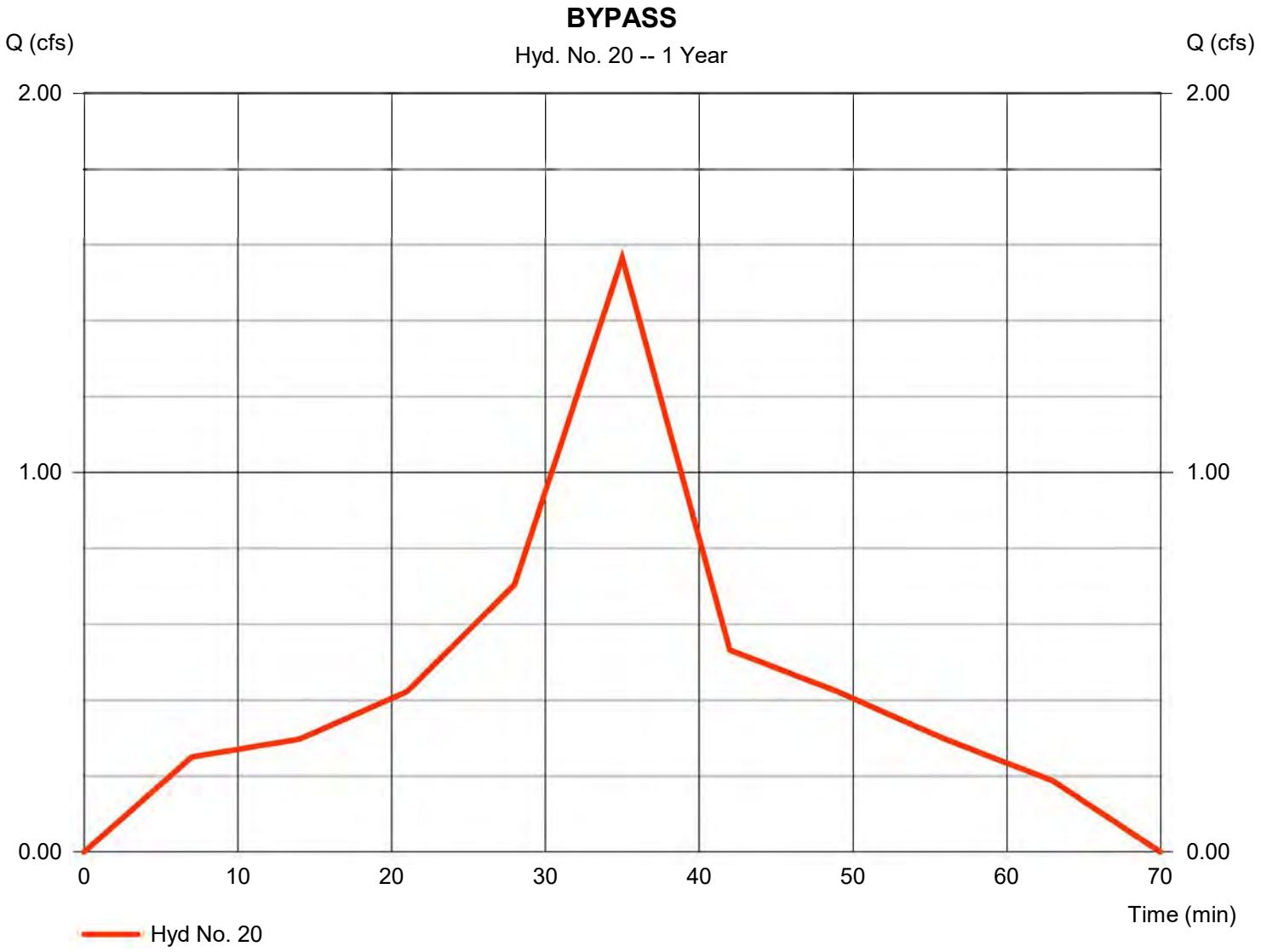


Hydrograph Report

Hyd. No. 20

BYPASS

Hydrograph type	=	Dekalb	Peak discharge	=	1.565 cfs
Storm frequency	=	1 yrs	Time to peak	=	35 min
Time interval	=	1 min	Hyd. volume	=	1,965 cuft
Drainage area	=	0.801 ac	Runoff coeff.	=	0.52
Intensity	=	3.757 in/hr	Tc by User	=	7.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

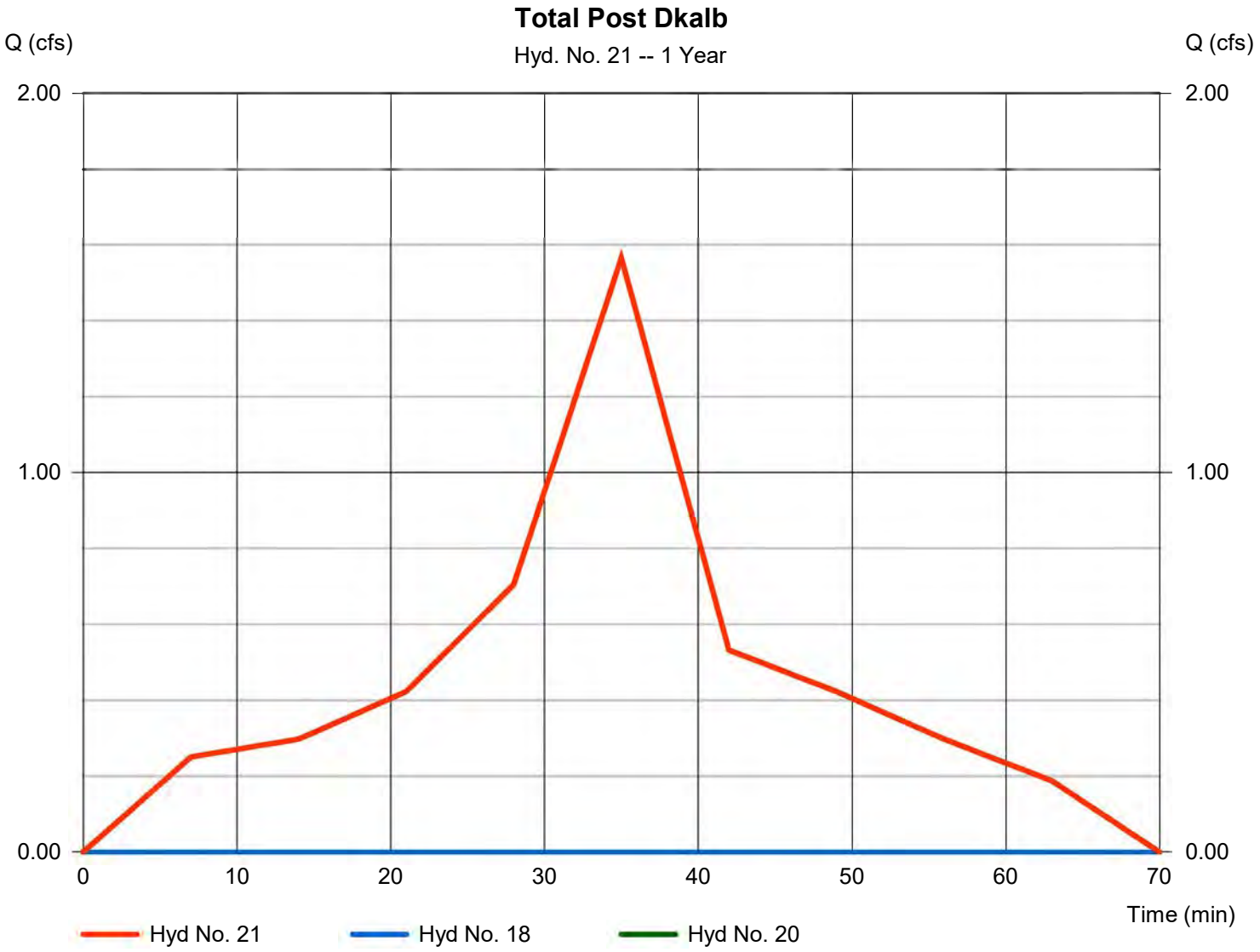


Hydrograph Report

Hyd. No. 21

Total Post Dkalb

Hydrograph type	= Combine	Peak discharge	= 1.565 cfs
Storm frequency	= 1 yrs	Time to peak	= 35 min
Time interval	= 1 min	Hyd. volume	= 1,965 cuft
Inflow hyds.	= 18, 20	Contrib. drain. area	= 0.801 ac



Hydrograph Summary Report

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

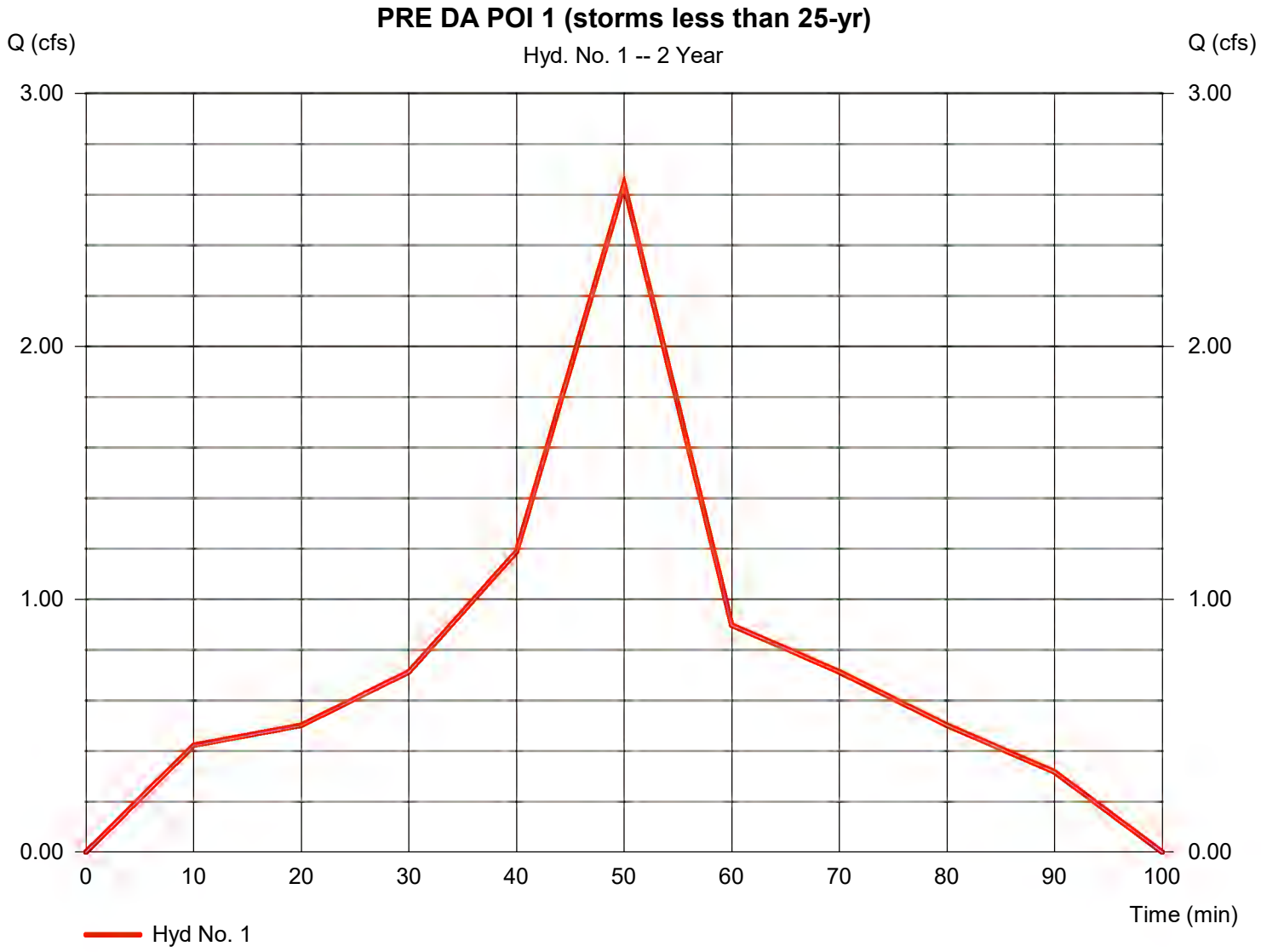
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Dekalb	2.640	1	50	4,736	------	------	------	PRE DA POI 1 (storms less than 25-y
4	Dekalb	0.447	1	25	401	------	------	------	BASIN 1
5	Dekalb	0.500	1	25	448	------	------	------	BASIN 2
6	Dekalb	0.363	1	25	326	------	------	------	BASIN 3
7	Dekalb	0.327	1	25	294	------	------	------	BASIN 4
8	Dekalb	0.261	1	25	234	------	------	------	BASIN 6
9	Dekalb	0.197	1	25	176	------	------	------	BASIN 7A
10	Dekalb	0.112	1	25	101	------	------	------	BASIN 7B
11	Reservoir	0.000	1	n/a	0	4	330.95	401	BASIN 1
12	Reservoir	0.000	1	n/a	0	5	334.11	448	BASIN 2
13	Reservoir	0.000	1	n/a	0	6	335.46	326	BASIN 3
14	Reservoir	0.000	1	n/a	0	7	338.66	294	BASIN 4
15	Reservoir	0.000	1	n/a	0	8	338.37	234	BASIN 6
16	Reservoir	0.000	1	n/a	0	9	346.47	176	BASIN 7A
17	Reservoir	0.000	1	n/a	0	10	345.84	101	BASIN 7B
18	Combine	0.000	1	n/a	0	11, 12, 13, 14, 15, 16, 17, 18	------	------	Basin 1-7A
19	Combine	0.000	1	n/a	0		------	------	Total Basin
20	Dekalb	1.869	1	35	2,347	------	------	------	BYPASS
21	Combine	1.869	1	35	2,347	18, 20	------	------	Total Post Dkalb

Hydrograph Report

Hyd. No. 1

PRE DA POI 1 (storms less than 25-yr)

Hydrograph type	= Dekalb	Peak discharge	= 2.640 cfs
Storm frequency	= 2 yrs	Time to peak	= 50 min
Time interval	= 1 min	Hyd. volume	= 4,736 cuft
Drainage area	= 1.480 ac	Runoff coeff.	= 0.45
Intensity	= 3.964 in/hr	Tc by User	= 10.00 min
IDF Curve	= Abington Rainfall.IDF	Asc/Rec limb fact	= n/a

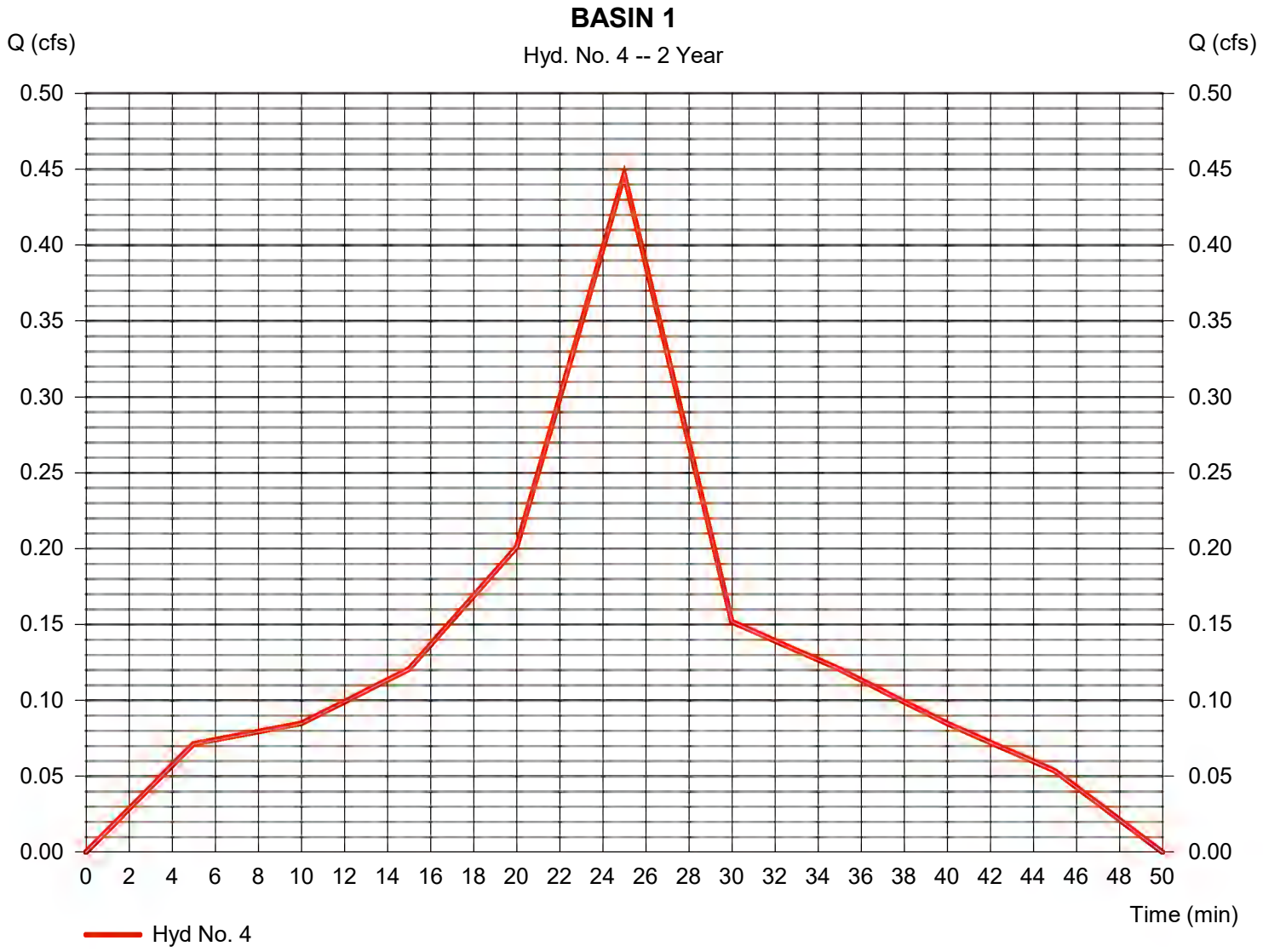


Hydrograph Report

Hyd. No. 4

BASIN 1

Hydrograph type	=	Dekalb	Peak discharge	=	0.447 cfs
Storm frequency	=	2 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	401 cuft
Drainage area	=	0.159 ac	Runoff coeff.	=	0.57
Intensity	=	4.927 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

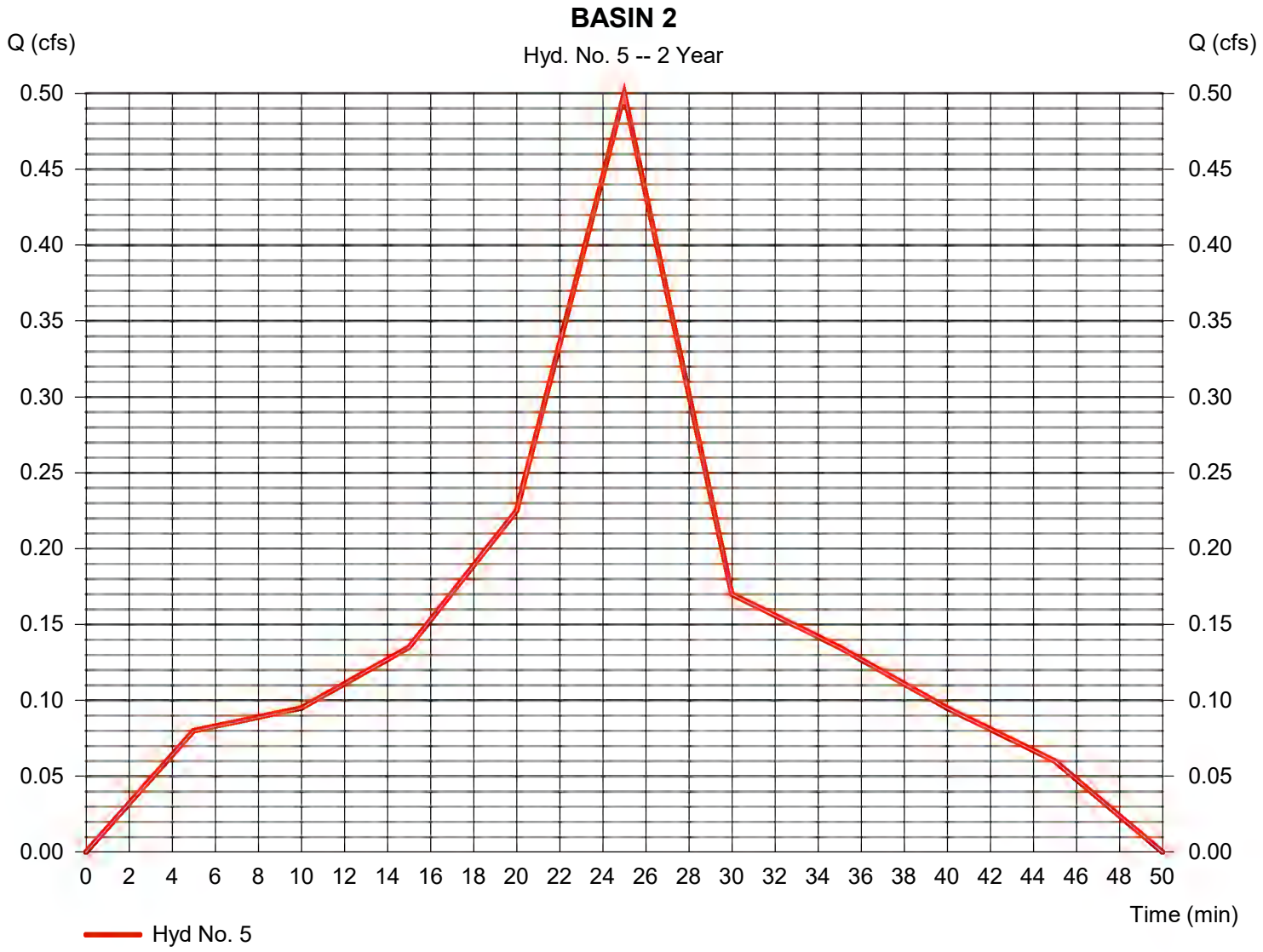


Hydrograph Report

Hyd. No. 5

BASIN 2

Hydrograph type	=	Dekalb	Peak discharge	=	0.500 cfs
Storm frequency	=	2 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	448 cuft
Drainage area	=	0.178 ac	Runoff coeff.	=	0.57
Intensity	=	4.927 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

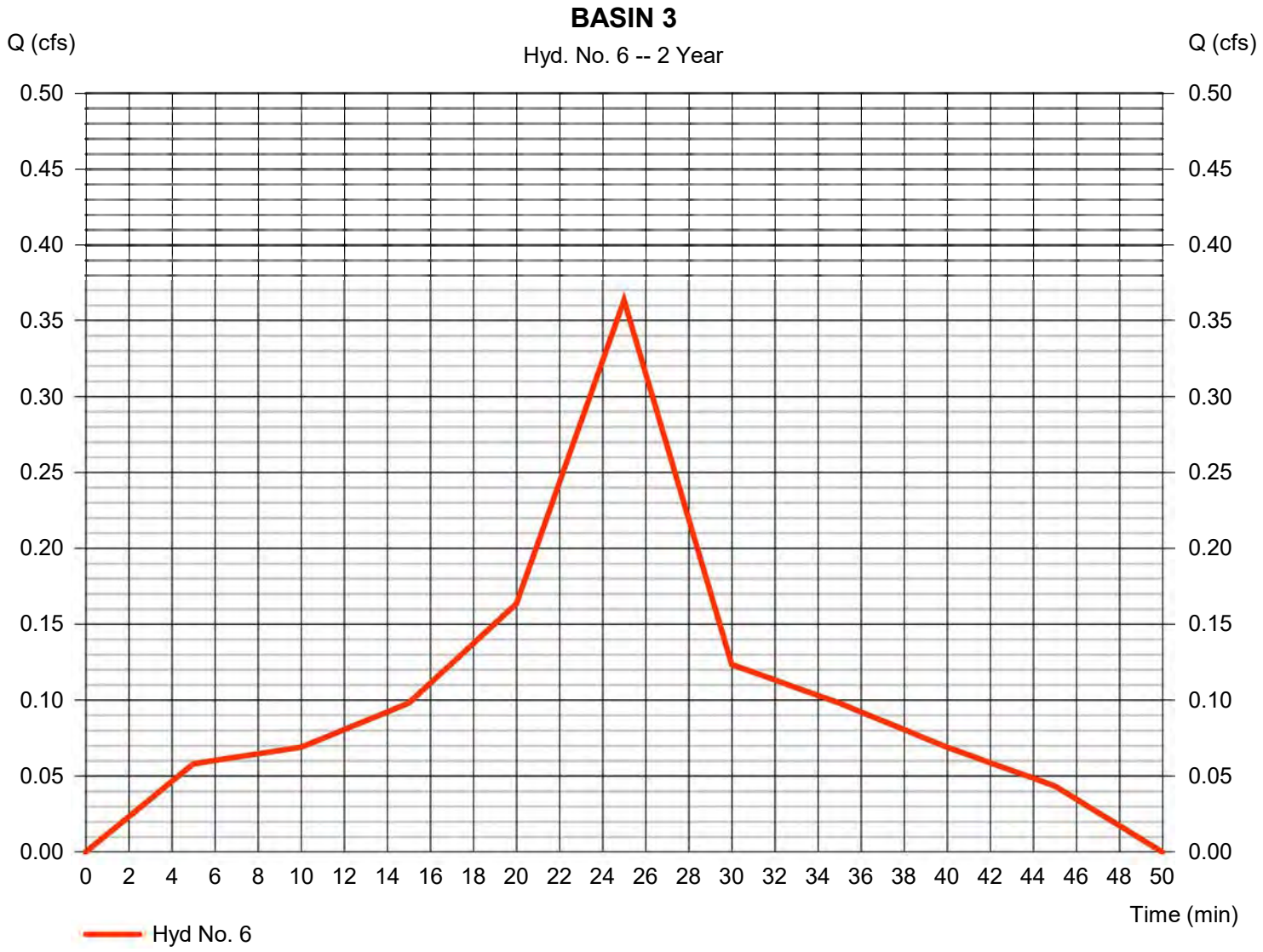


Hydrograph Report

Hyd. No. 6

BASIN 3

Hydrograph type	=	Dekalb	Peak discharge	=	0.363 cfs
Storm frequency	=	2 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	326 cuft
Drainage area	=	0.125 ac	Runoff coeff.	=	0.59
Intensity	=	4.927 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

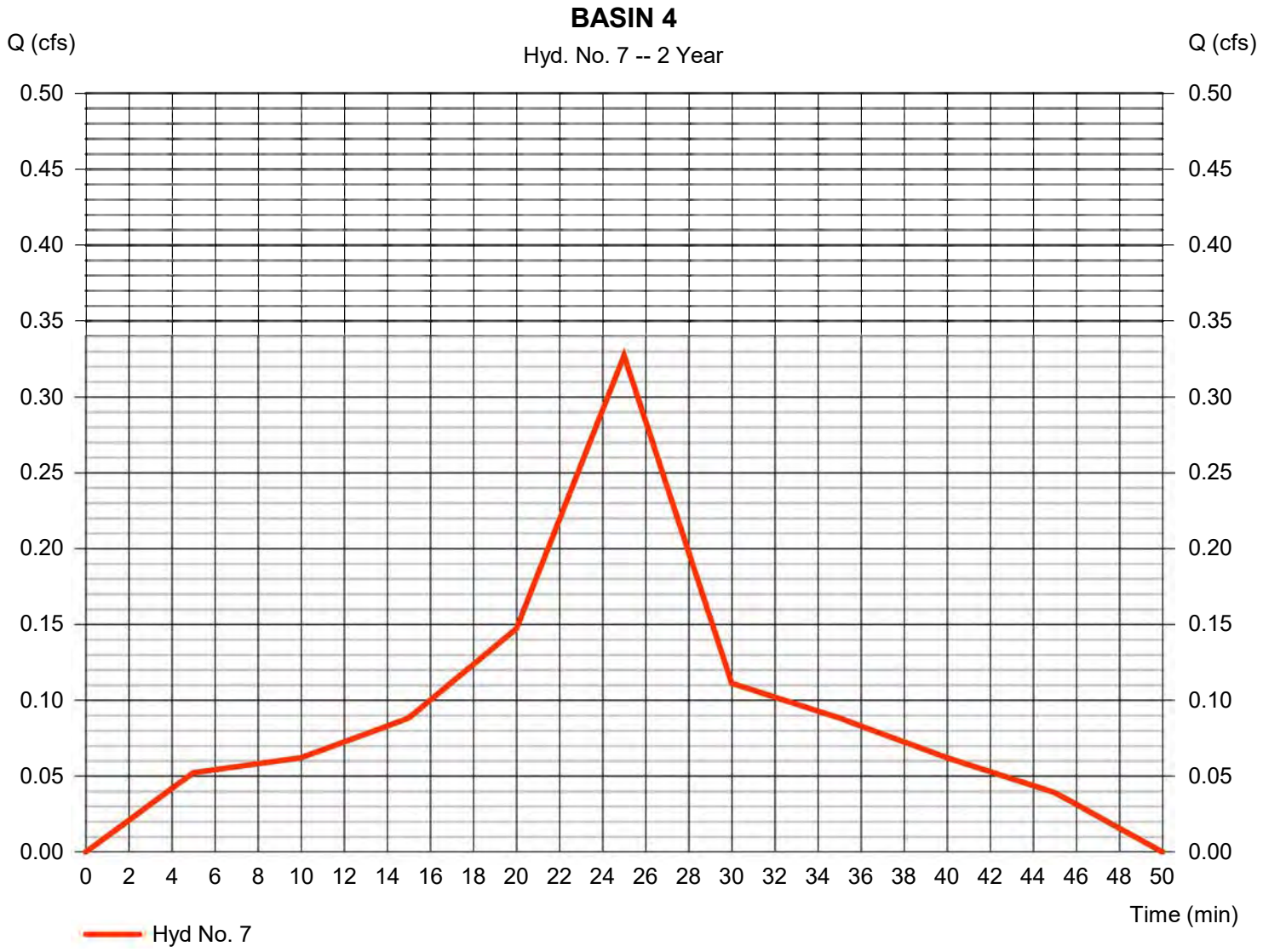


Hydrograph Report

Hyd. No. 7

BASIN 4

Hydrograph type	=	Dekalb	Peak discharge	=	0.327 cfs
Storm frequency	=	2 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	294 cuft
Drainage area	=	0.091 ac	Runoff coeff.	=	0.73
Intensity	=	4.927 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

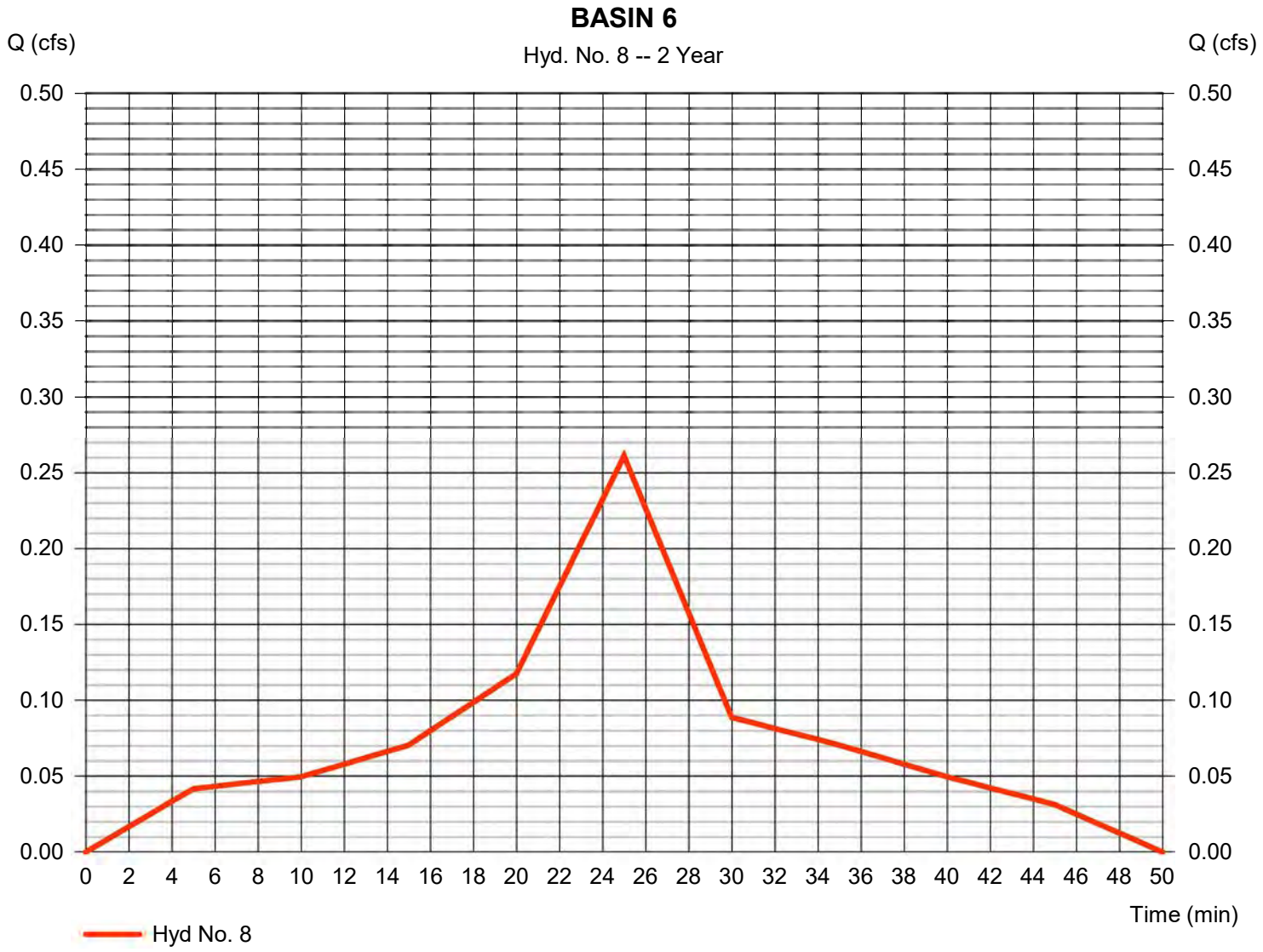


Hydrograph Report

Hyd. No. 8

BASIN 6

Hydrograph type	=	Dekalb	Peak discharge	=	0.261 cfs
Storm frequency	=	2 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	234 cuft
Drainage area	=	0.057 ac	Runoff coeff.	=	0.93
Intensity	=	4.927 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

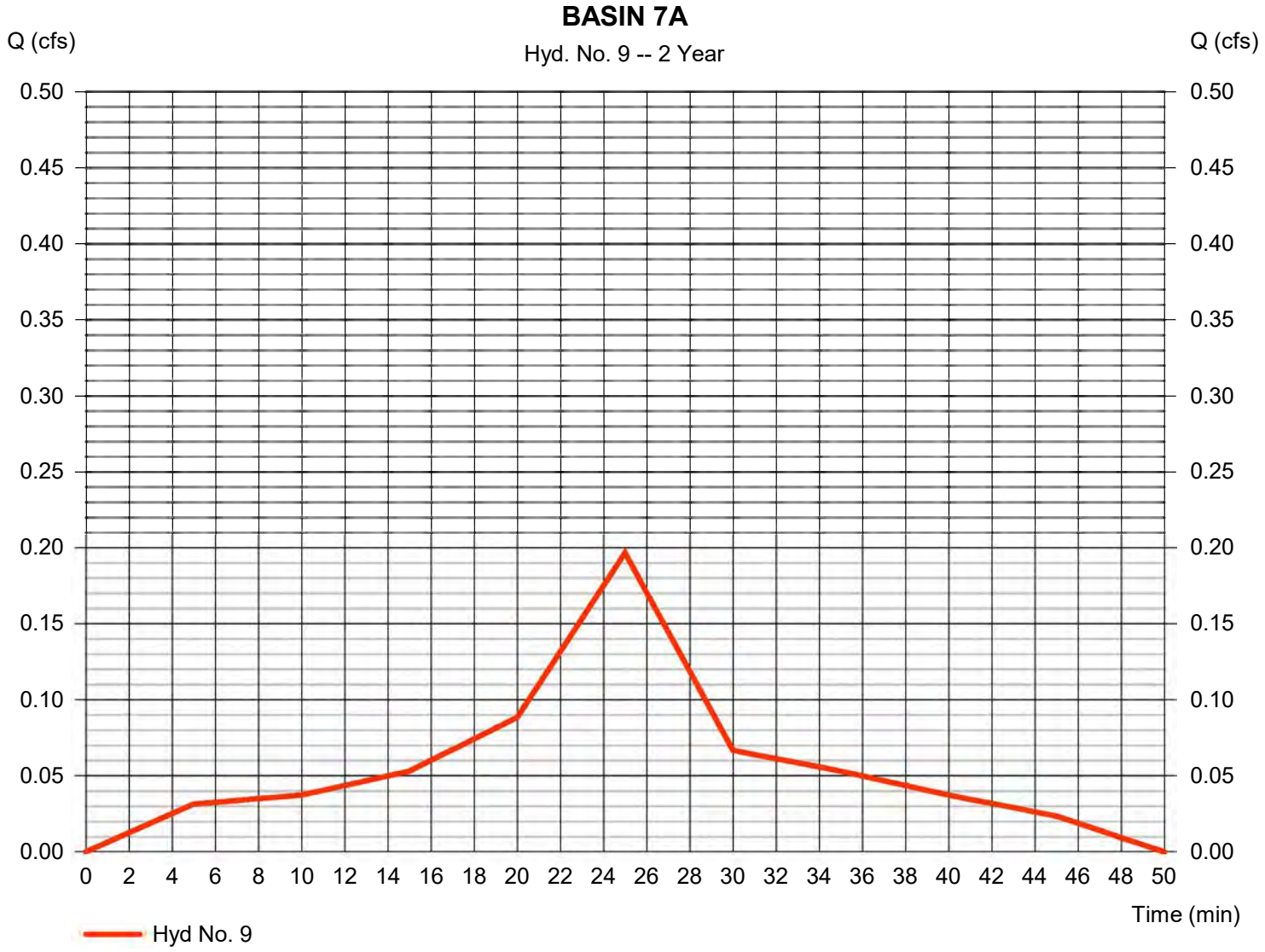


Hydrograph Report

Hyd. No. 9

BASIN 7A

Hydrograph type	=	Dekalb	Peak discharge	=	0.197 cfs
Storm frequency	=	2 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	176 cuft
Drainage area	=	0.042 ac	Runoff coeff.	=	0.95
Intensity	=	4.927 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

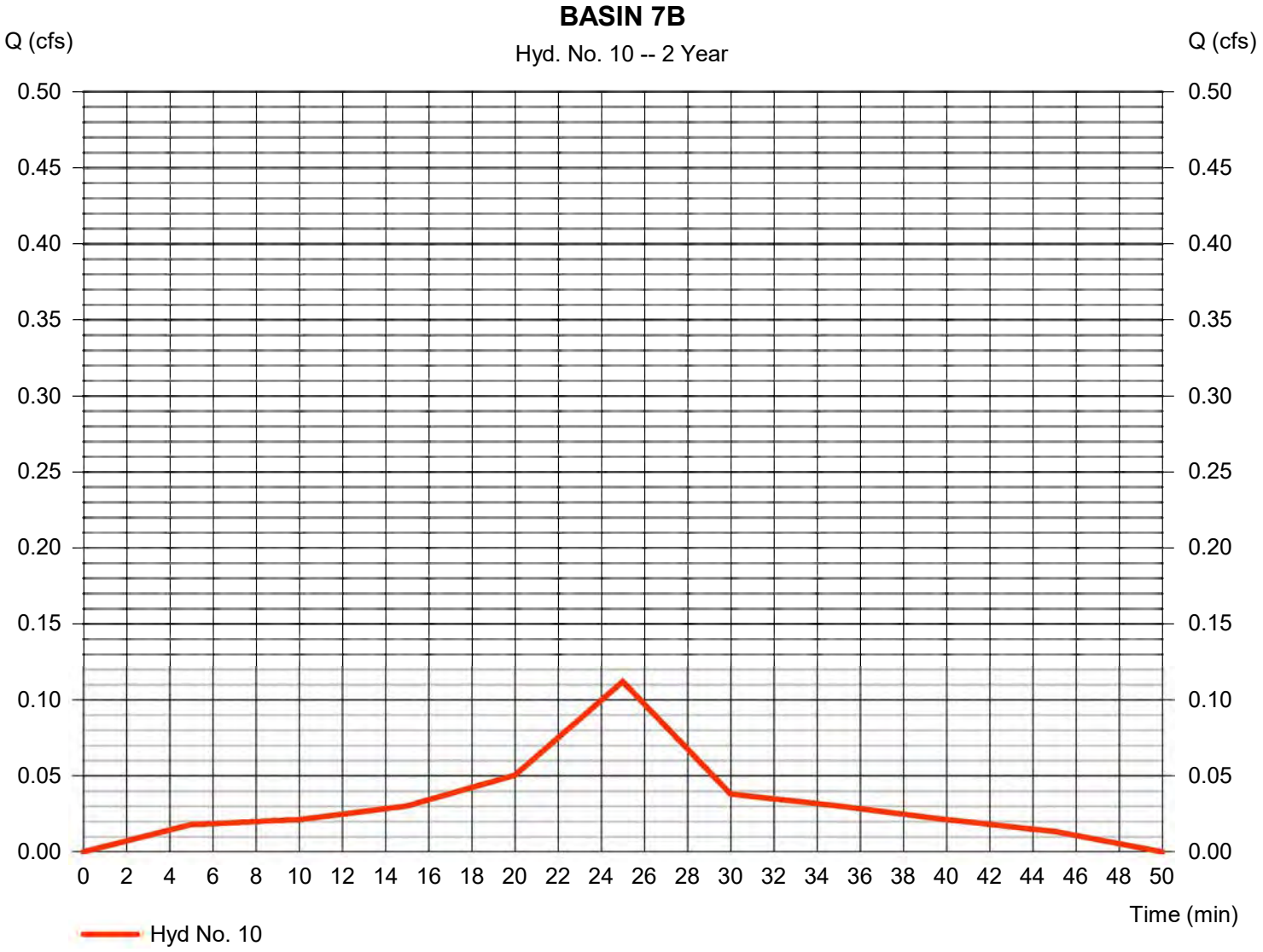


Hydrograph Report

Hyd. No. 10

BASIN 7B

Hydrograph type	=	Dekalb	Peak discharge	=	0.112 cfs
Storm frequency	=	2 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	101 cuft
Drainage area	=	0.025 ac	Runoff coeff.	=	0.91
Intensity	=	4.927 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a



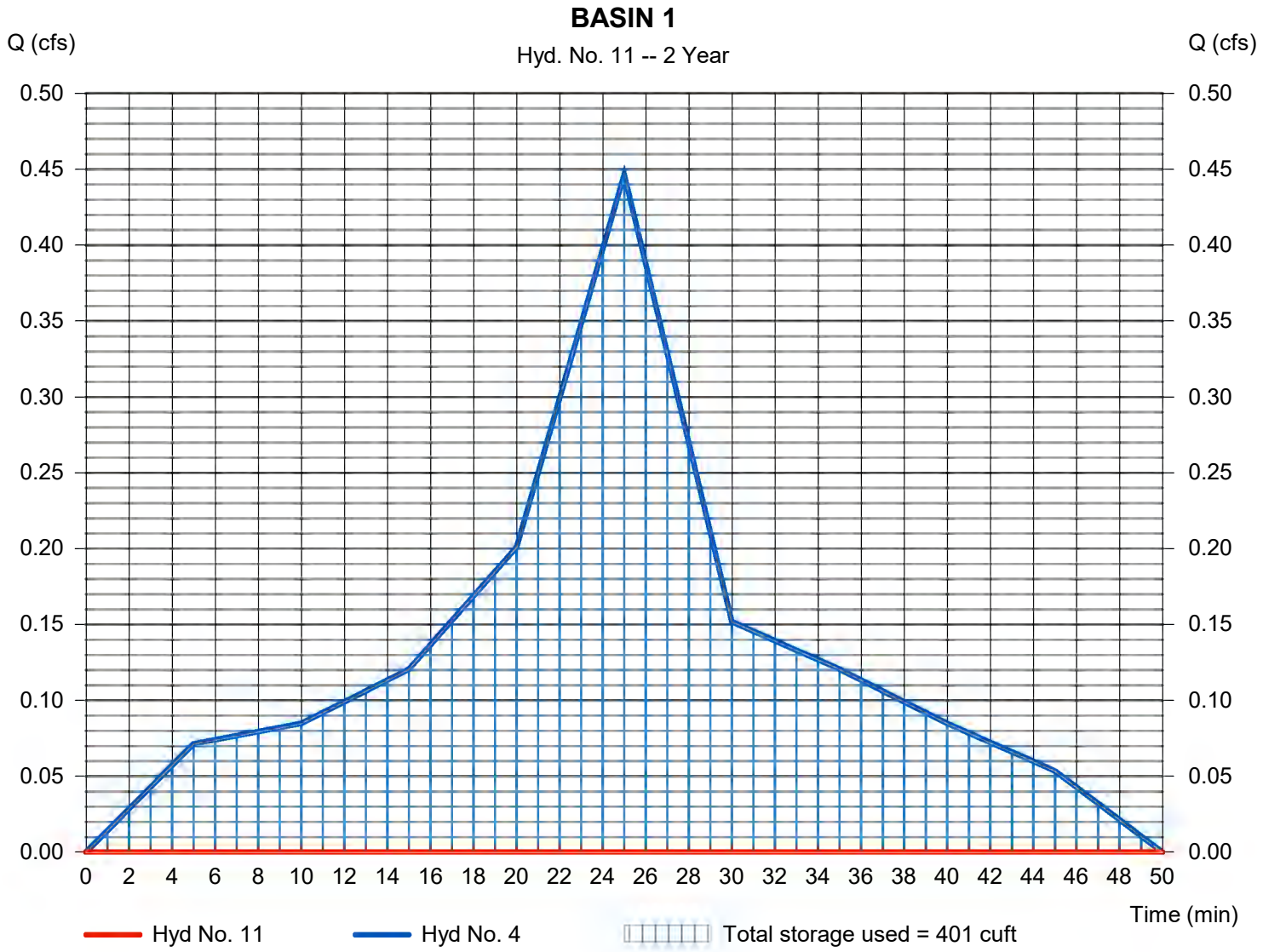
Hydrograph Report

Hyd. No. 11

BASIN 1

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	4 - BASIN 1	Max. Elevation	=	330.95 ft
Reservoir name	=	Basin 1	Max. Storage	=	401 cuft

Storage Indication method used.



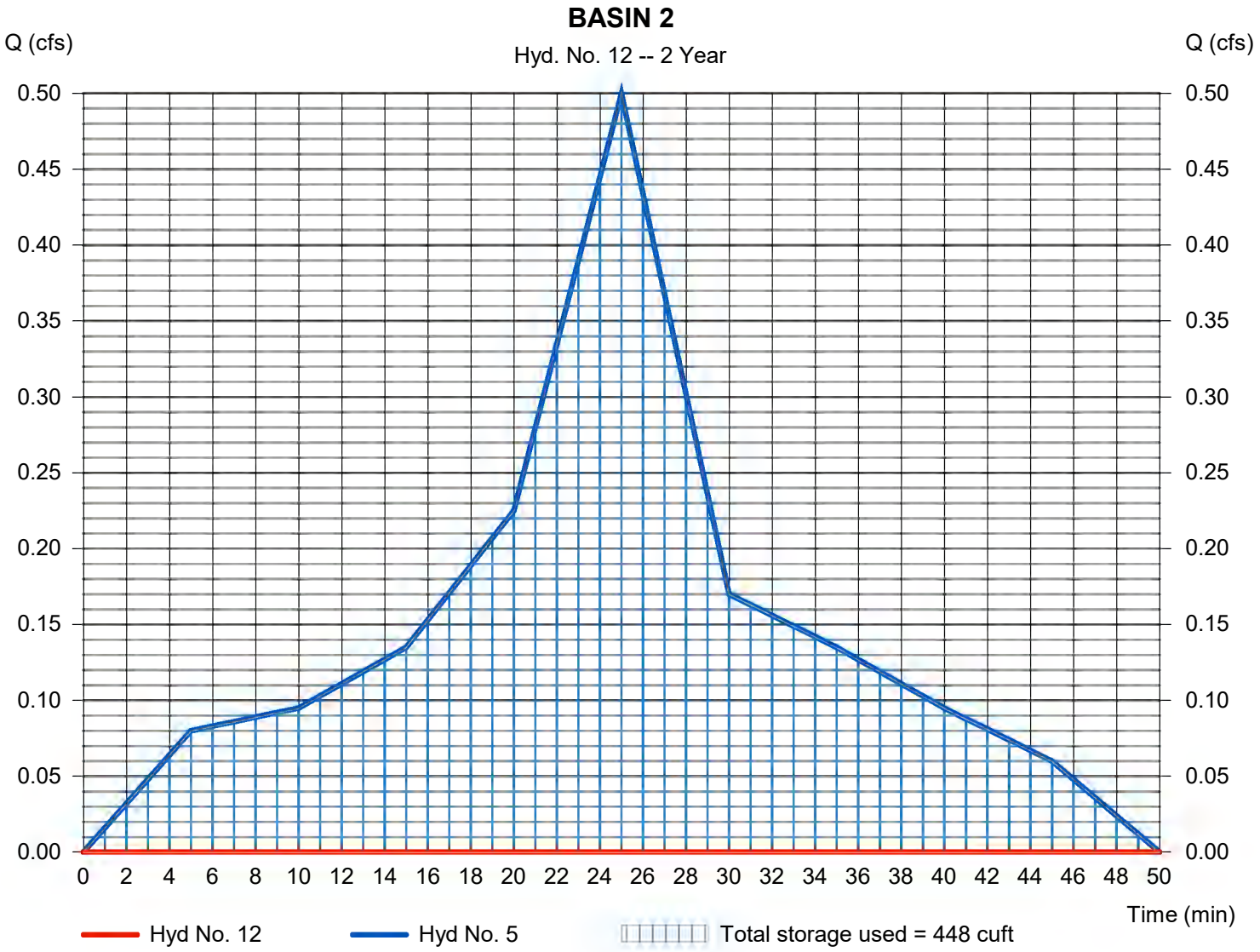
Hydrograph Report

Hyd. No. 12

BASIN 2

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 5 - BASIN 2	Max. Elevation	= 334.11 ft
Reservoir name	= Basin 2	Max. Storage	= 448 cuft

Storage Indication method used.



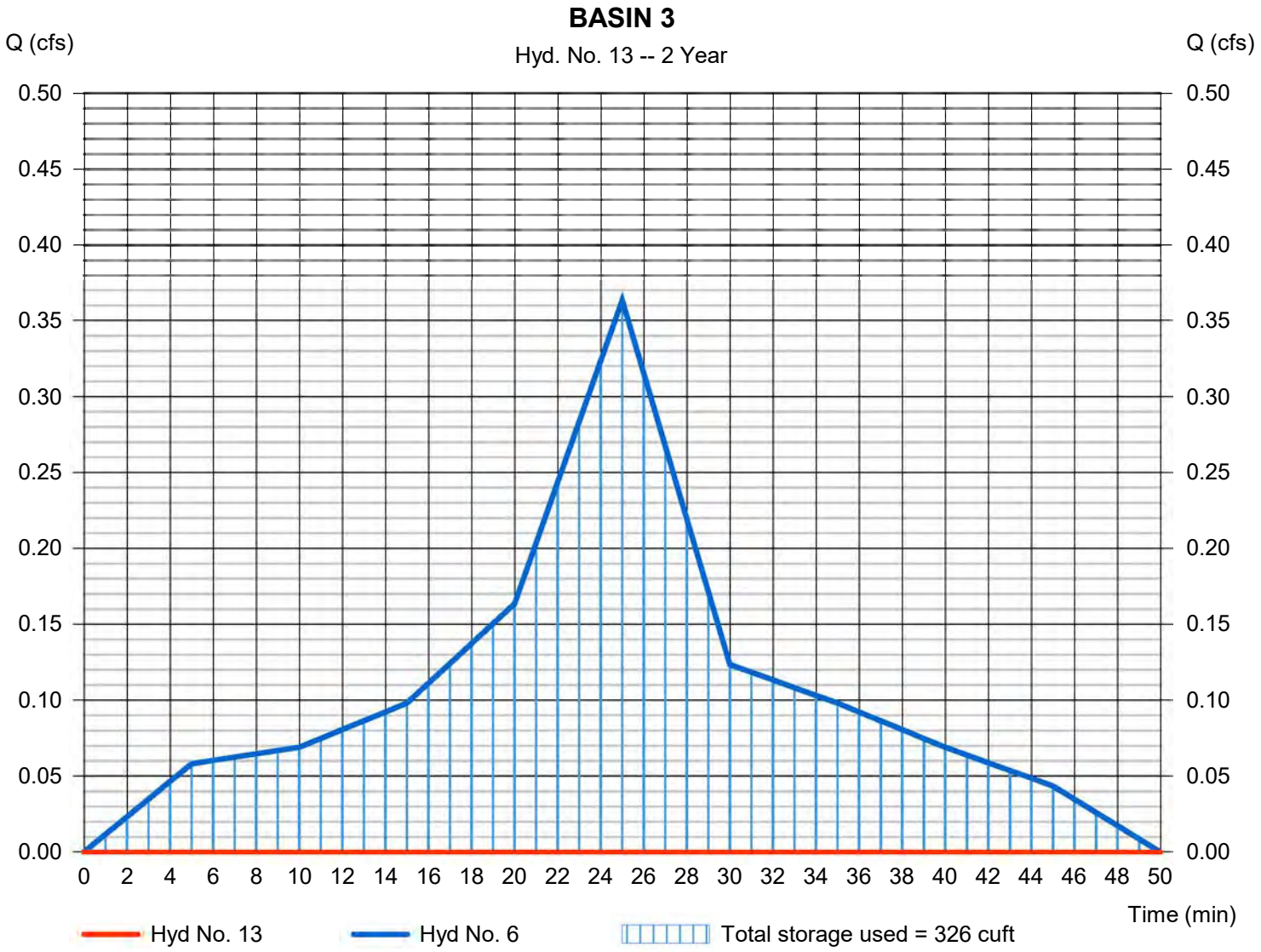
Hydrograph Report

Hyd. No. 13

BASIN 3

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	6 - BASIN 3	Max. Elevation	=	335.46 ft
Reservoir name	=	Basin 3	Max. Storage	=	326 cuft

Storage Indication method used.



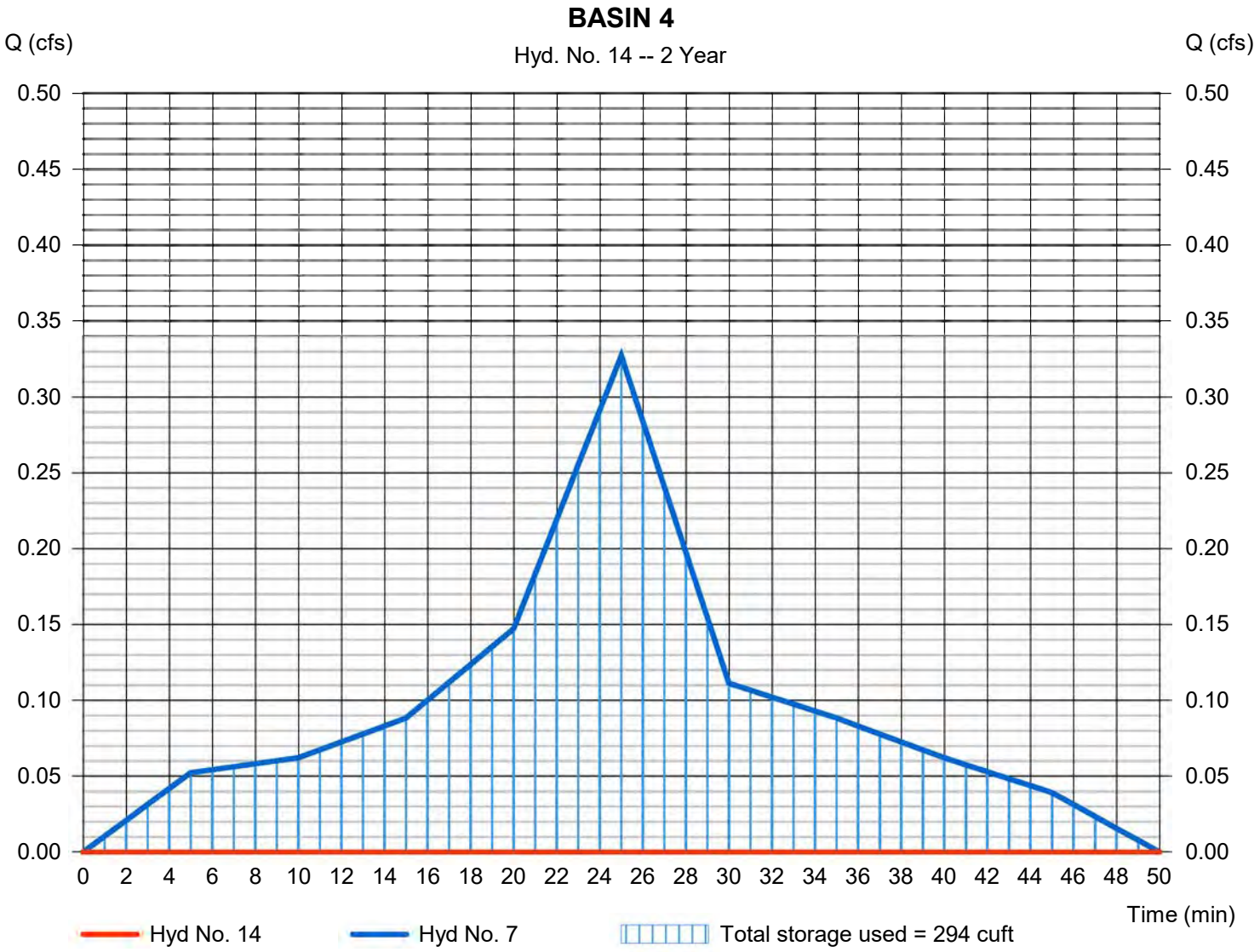
Hydrograph Report

Hyd. No. 14

BASIN 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	7 - BASIN 4	Max. Elevation	=	338.66 ft
Reservoir name	=	Basin 4	Max. Storage	=	294 cuft

Storage Indication method used.



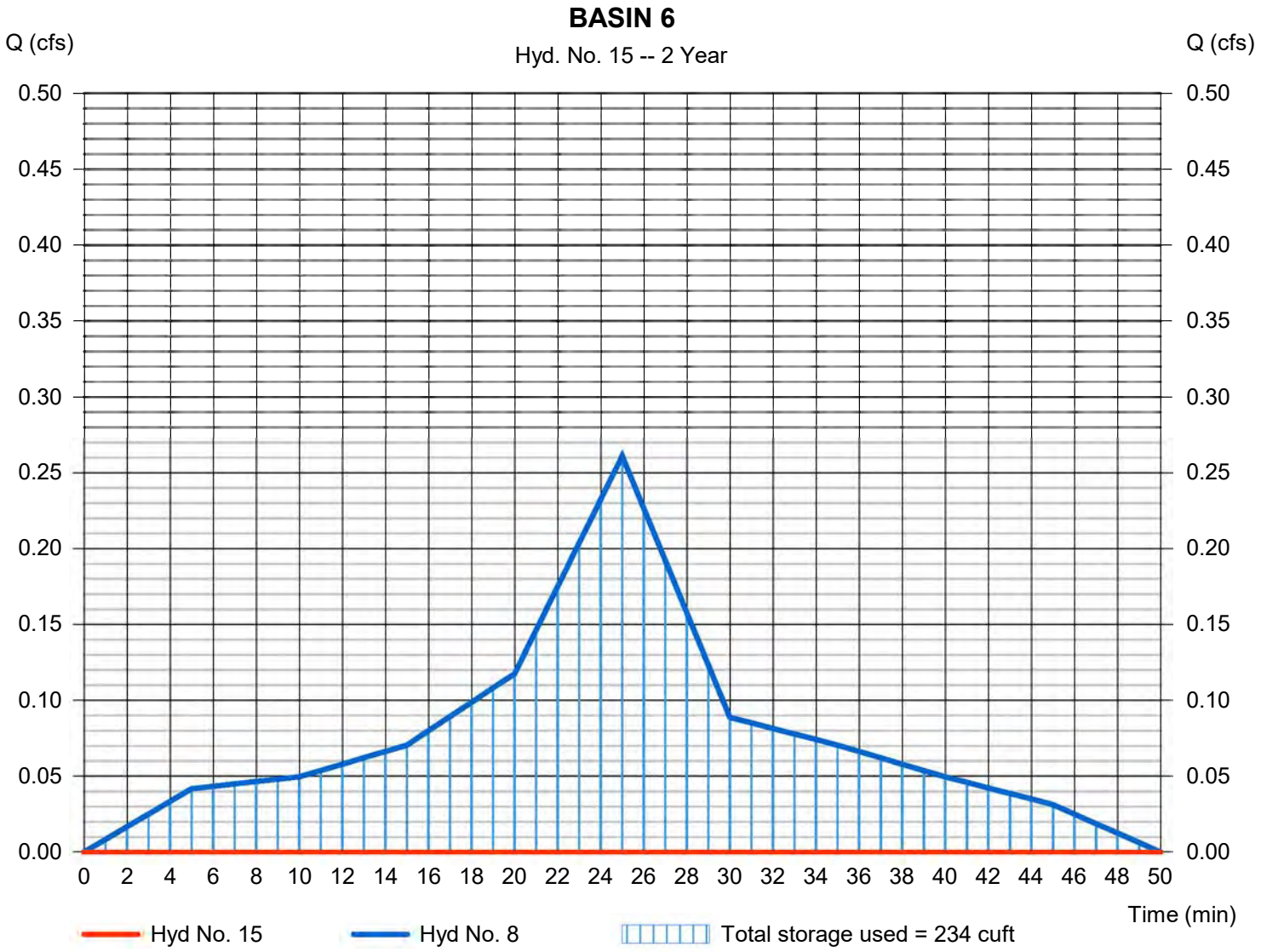
Hydrograph Report

Hyd. No. 15

BASIN 6

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	8 - BASIN 6	Max. Elevation	=	338.37 ft
Reservoir name	=	Basin 6	Max. Storage	=	234 cuft

Storage Indication method used.



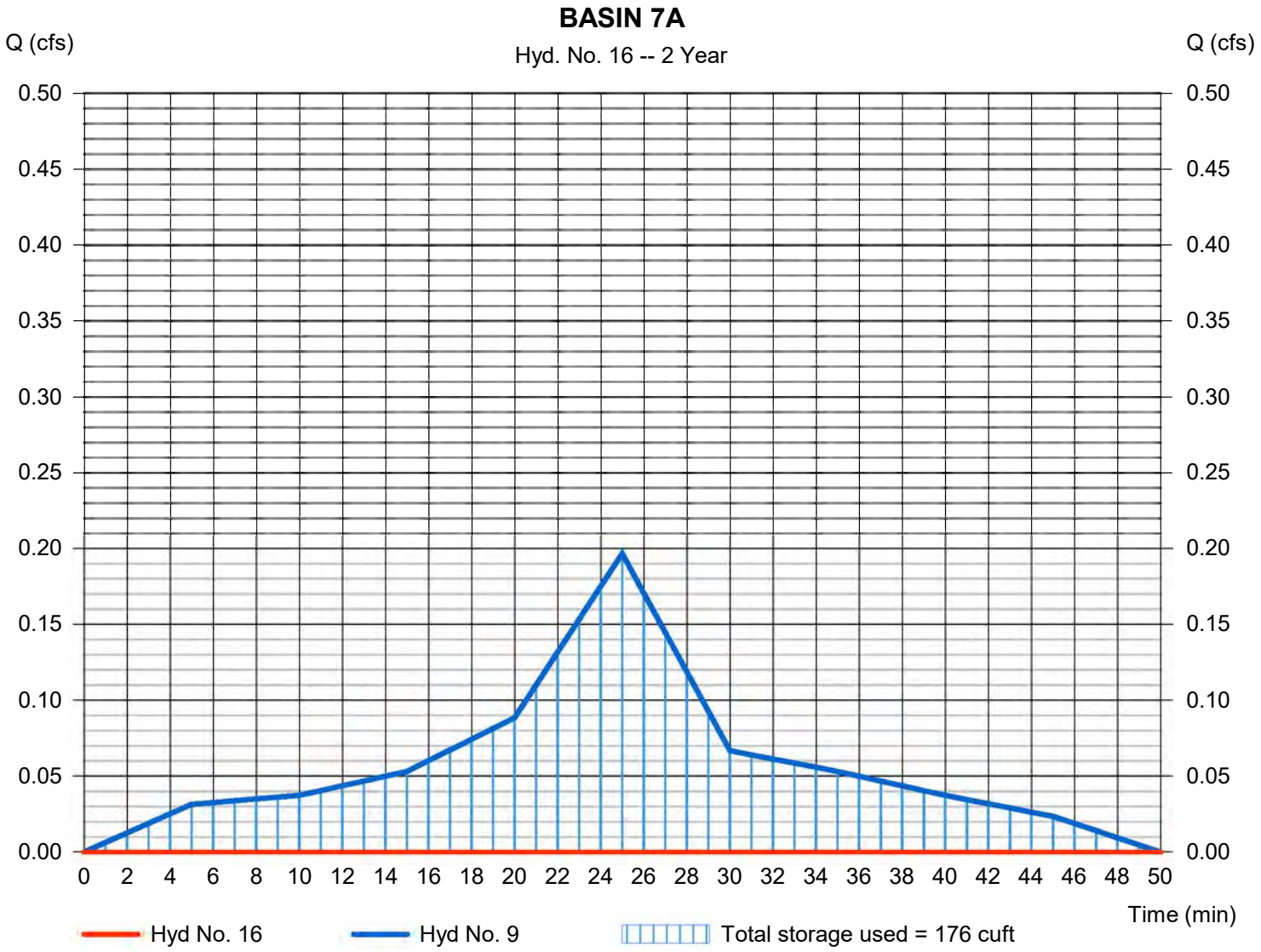
Hydrograph Report

Hyd. No. 16

BASIN 7A

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	9 - BASIN 7A	Max. Elevation	=	346.47 ft
Reservoir name	=	Basin 7A	Max. Storage	=	176 cuft

Storage Indication method used.



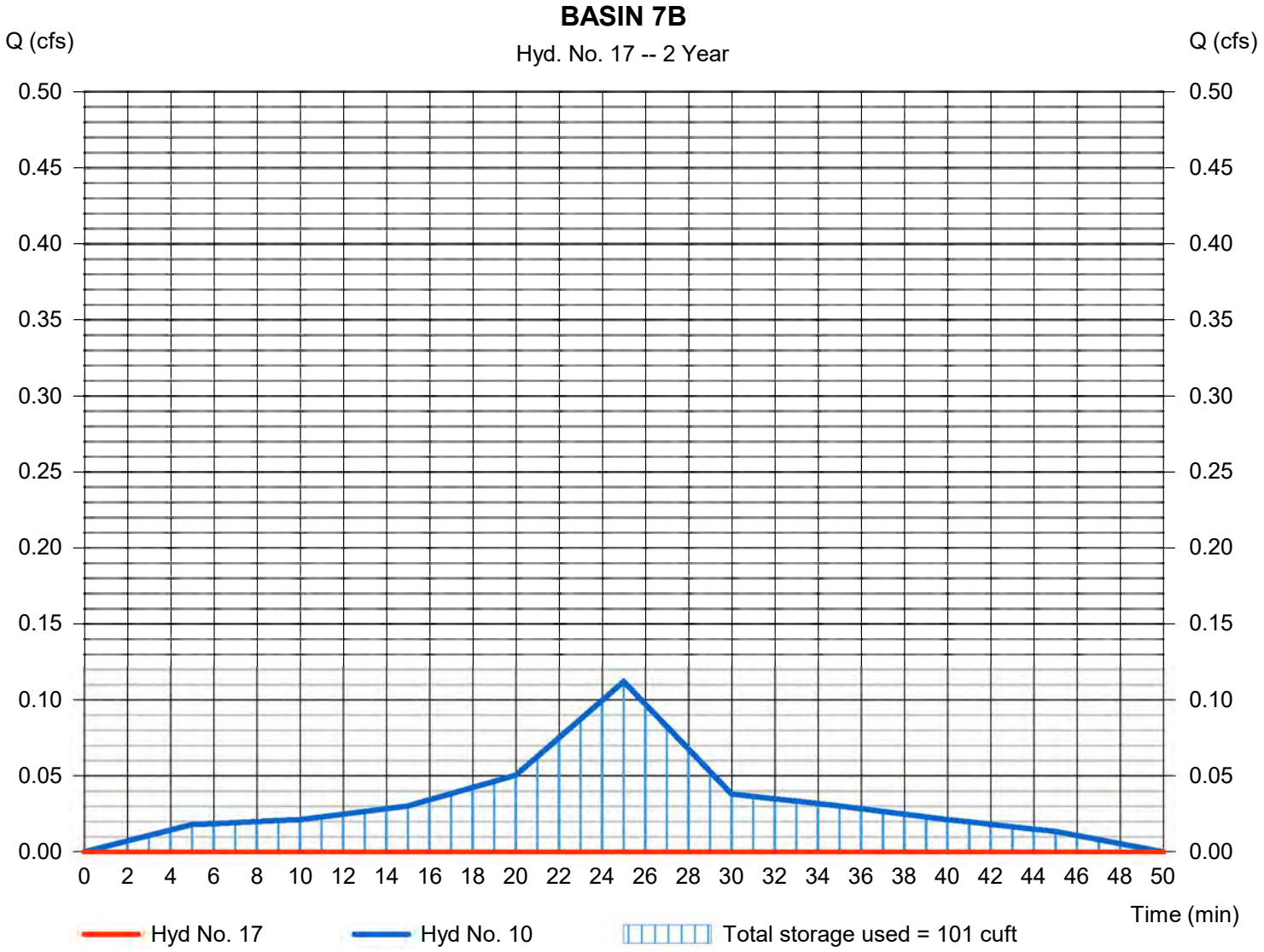
Hydrograph Report

Hyd. No. 17

BASIN 7B

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	10 - BASIN 7B	Max. Elevation	=	345.84 ft
Reservoir name	=	Basin 7B	Max. Storage	=	101 cuft

Storage Indication method used.

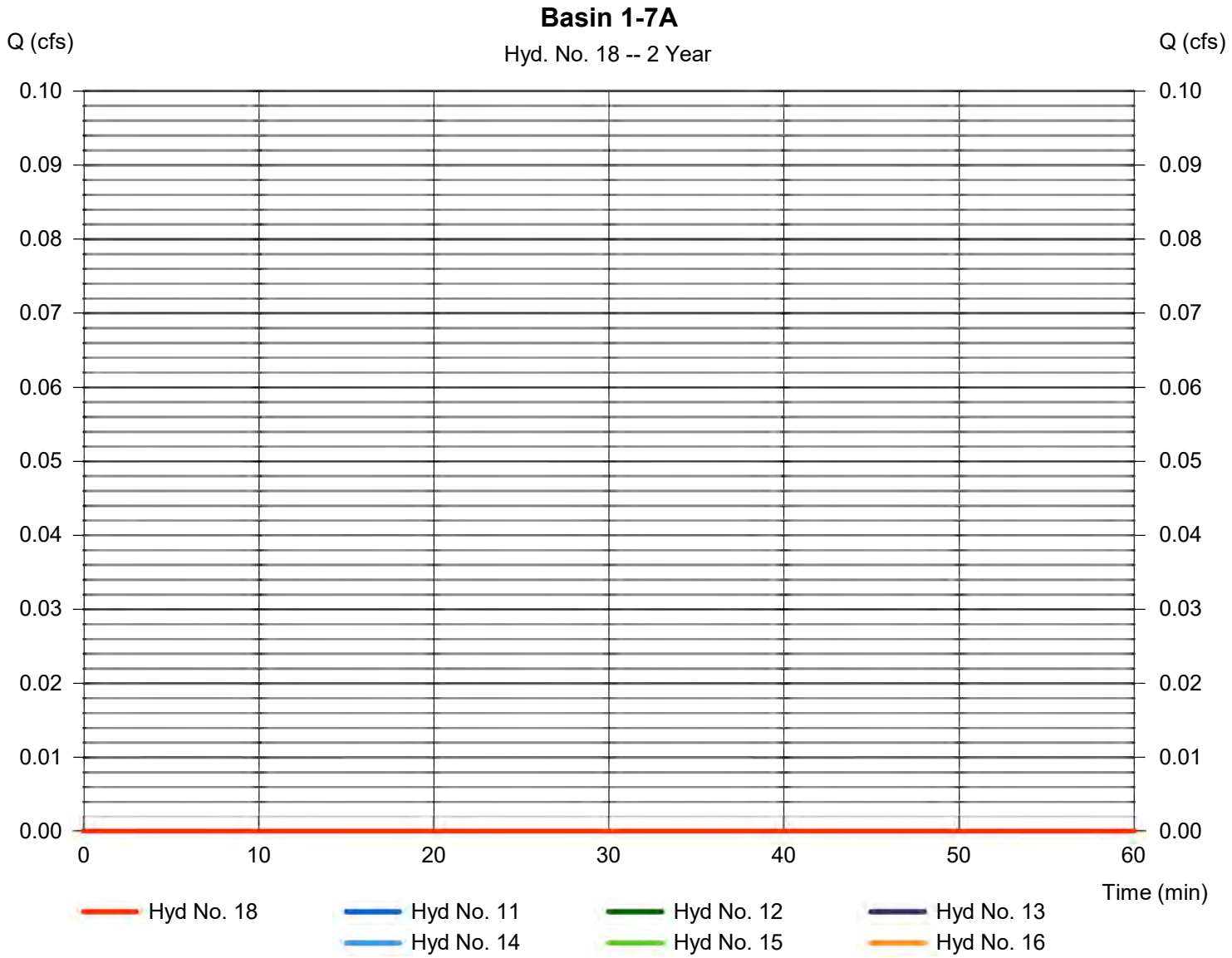


Hydrograph Report

Hyd. No. 18

Basin 1-7A

Hydrograph type	= Combine	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyds.	= 11, 12, 13, 14, 15, 16	Contrib. drain. area	= 0.000 ac

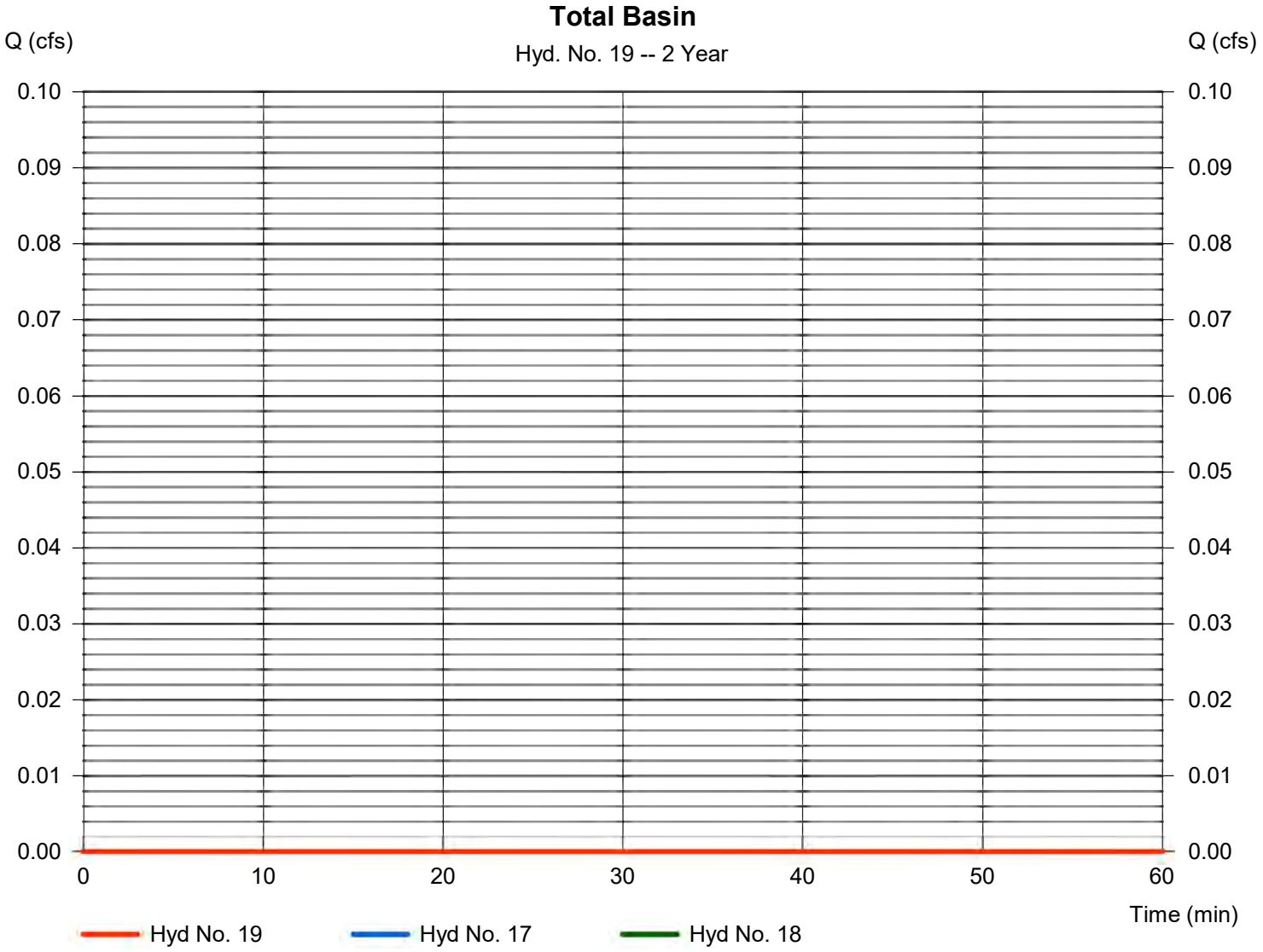


Hydrograph Report

Hyd. No. 19

Total Basin

Hydrograph type	= Combine	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyds.	= 17, 18	Contrib. drain. area	= 0.000 ac

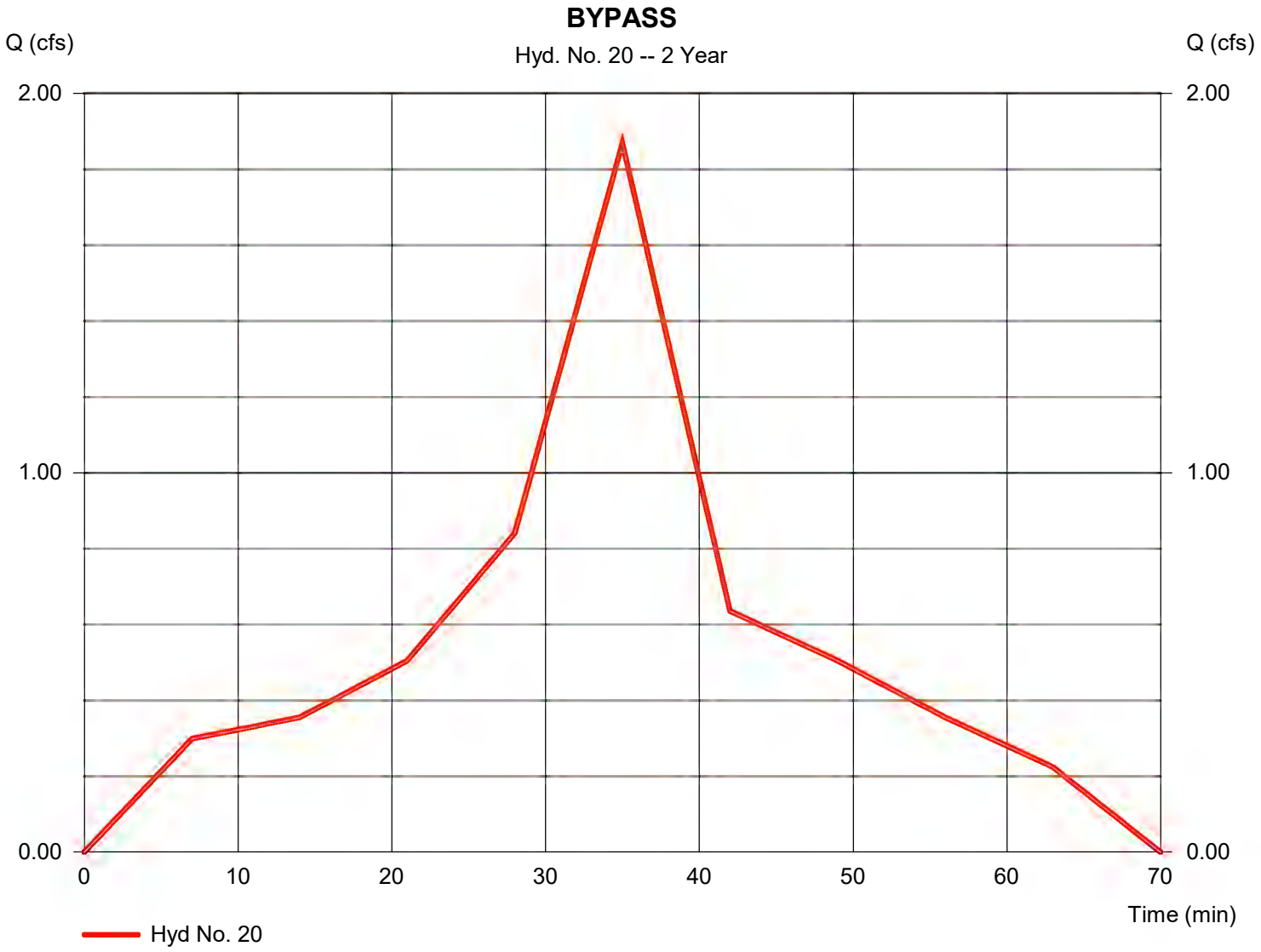


Hydrograph Report

Hyd. No. 20

BYPASS

Hydrograph type	=	Dekalb	Peak discharge	=	1.869 cfs
Storm frequency	=	2 yrs	Time to peak	=	35 min
Time interval	=	1 min	Hyd. volume	=	2,347 cuft
Drainage area	=	0.801 ac	Runoff coeff.	=	0.52
Intensity	=	4.487 in/hr	Tc by User	=	7.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

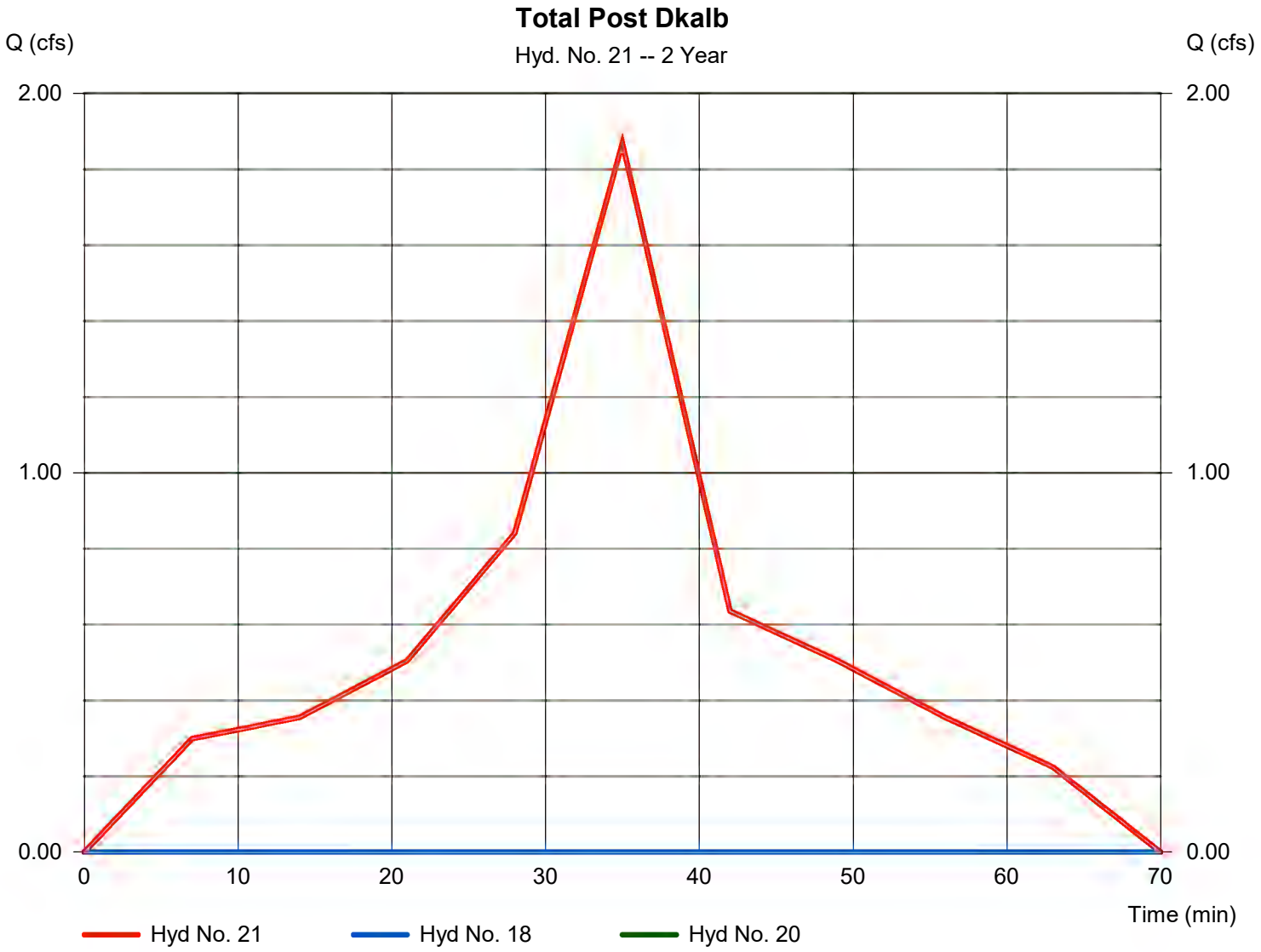


Hydrograph Report

Hyd. No. 21

Total Post Dkalb

Hydrograph type	=	Combine	Peak discharge	=	1.869 cfs
Storm frequency	=	2 yrs	Time to peak	=	35 min
Time interval	=	1 min	Hyd. volume	=	2,347 cuft
Inflow hyds.	=	18, 20	Contrib. drain. area	=	0.801 ac



Hydrograph Summary Report

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

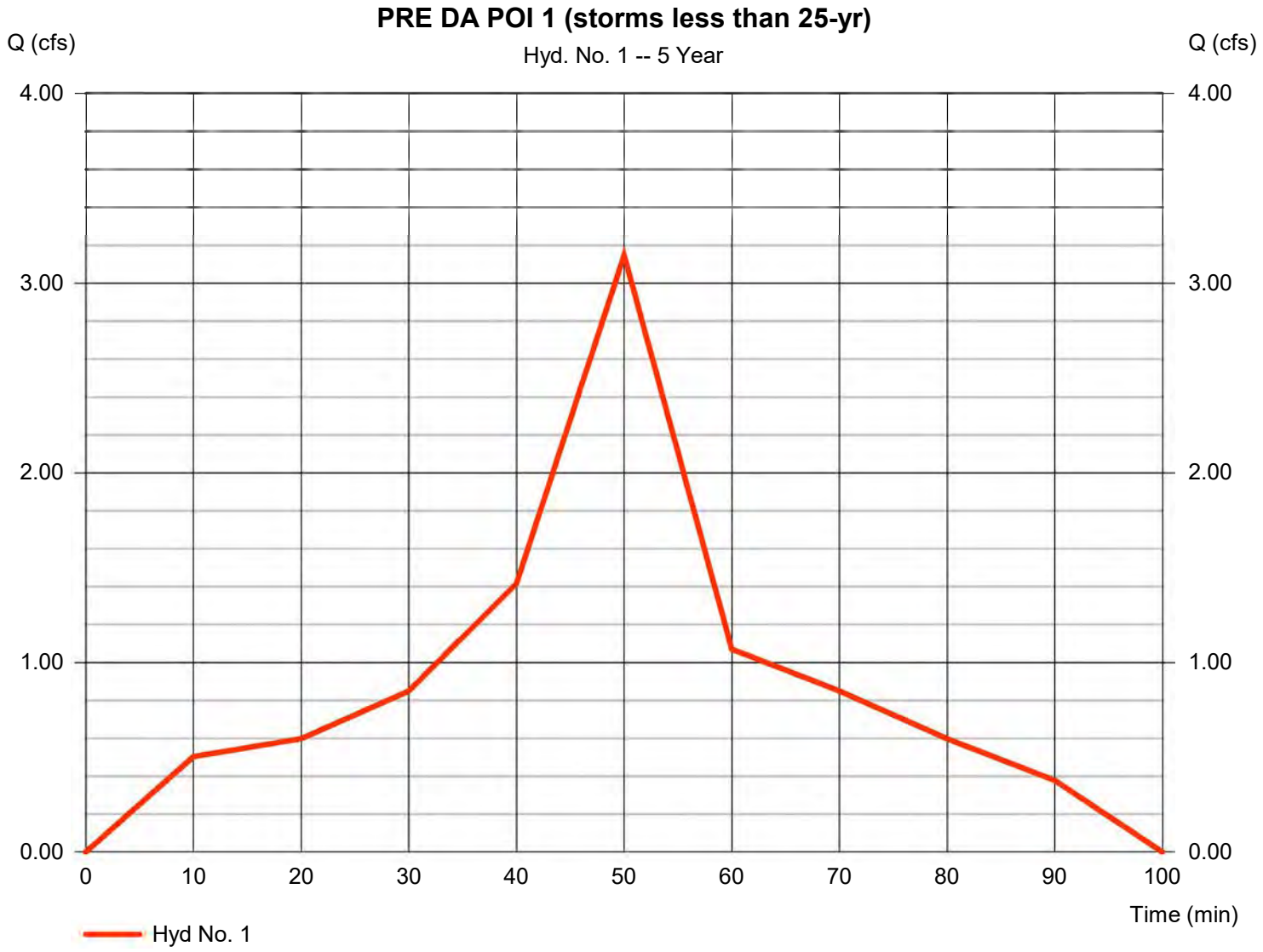
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Dekalb	3.147	1	50	5,646	------	------	------	PRE DA POI 1 (storms less than 25-y
4	Dekalb	0.527	1	25	473	------	------	------	BASIN 1
5	Dekalb	0.590	1	25	529	------	------	------	BASIN 2
6	Dekalb	0.429	1	25	385	------	------	------	BASIN 3
7	Dekalb	0.386	1	25	347	------	------	------	BASIN 4
8	Dekalb	0.308	1	25	277	------	------	------	BASIN 6
9	Dekalb	0.232	1	25	208	------	------	------	BASIN 7A
10	Dekalb	0.132	1	25	119	------	------	------	BASIN 7B
11	Reservoir	0.000	1	n/a	0	4	331.30	473	BASIN 1
12	Reservoir	0.000	1	n/a	0	5	334.46	529	BASIN 2
13	Reservoir	0.000	1	n/a	0	6	335.74	385	BASIN 3
14	Reservoir	0.000	1	n/a	0	7	338.91	347	BASIN 4
15	Reservoir	0.000	1	n/a	0	8	338.53	277	BASIN 6
16	Reservoir	0.000	1	n/a	0	9	346.73	208	BASIN 7A
17	Reservoir	0.000	1	n/a	0	10	345.99	119	BASIN 7B
18	Combine	0.000	1	n/a	0	11, 12, 13, 14, 15, 16, 17, 18	------	------	Basin 1-7A
19	Combine	0.000	1	n/a	0		------	------	Total Basin
20	Dekalb	2.215	1	35	2,782	------	------	------	BYPASS
21	Combine	2.215	1	35	2,782	18, 20	------	------	Total Post Dkalb

Hydrograph Report

Hyd. No. 1

PRE DA POI 1 (storms less than 25-yr)

Hydrograph type	= Dekalb	Peak discharge	= 3.147 cfs
Storm frequency	= 5 yrs	Time to peak	= 50 min
Time interval	= 1 min	Hyd. volume	= 5,646 cuft
Drainage area	= 1.480 ac	Runoff coeff.	= 0.45
Intensity	= 4.726 in/hr	Tc by User	= 10.00 min
IDF Curve	= Abington Rainfall.IDF	Asc/Rec limb fact	= n/a

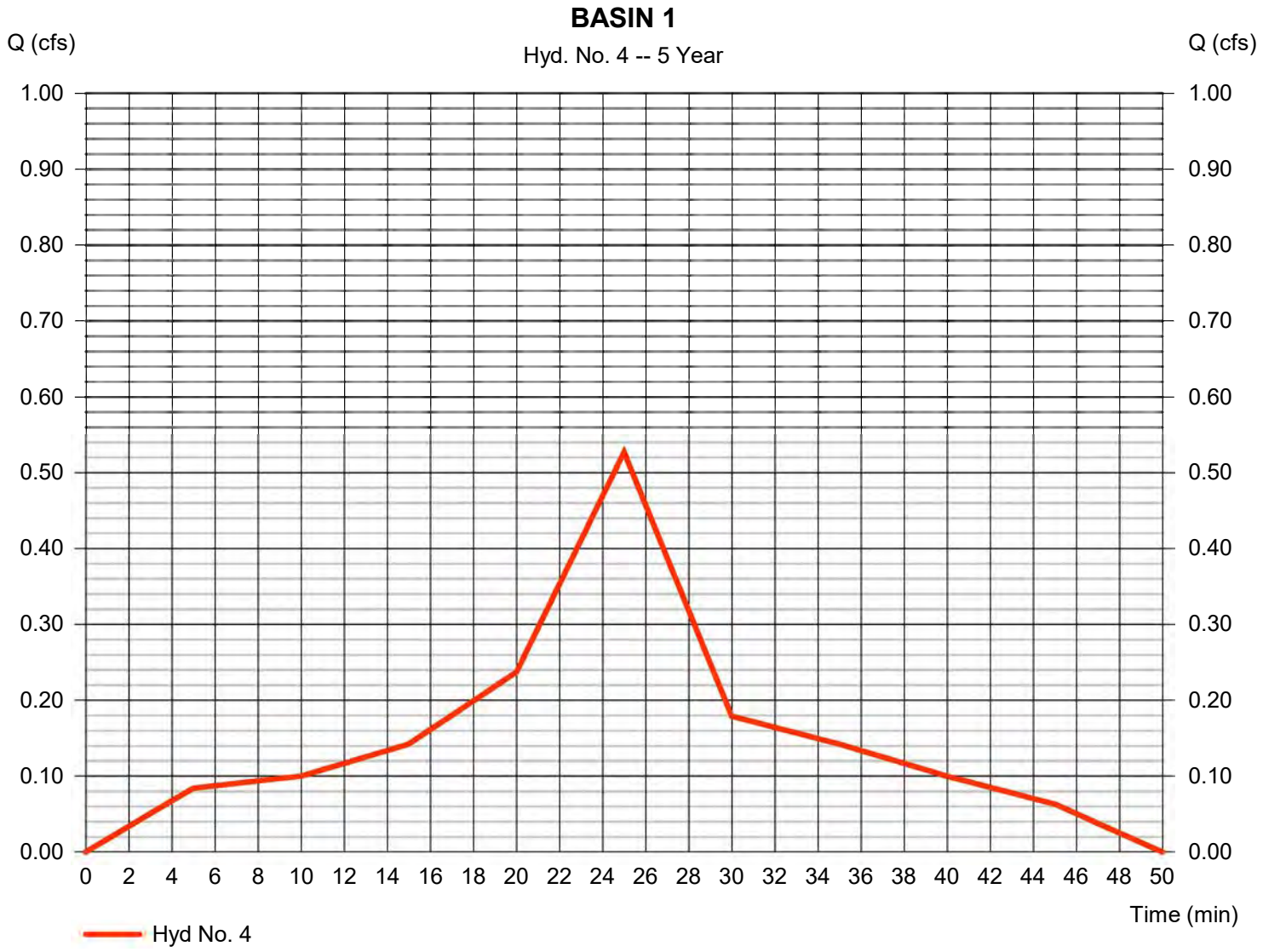


Hydrograph Report

Hyd. No. 4

BASIN 1

Hydrograph type	=	Dekalb	Peak discharge	=	0.527 cfs
Storm frequency	=	5 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	473 cuft
Drainage area	=	0.159 ac	Runoff coeff.	=	0.57
Intensity	=	5.815 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

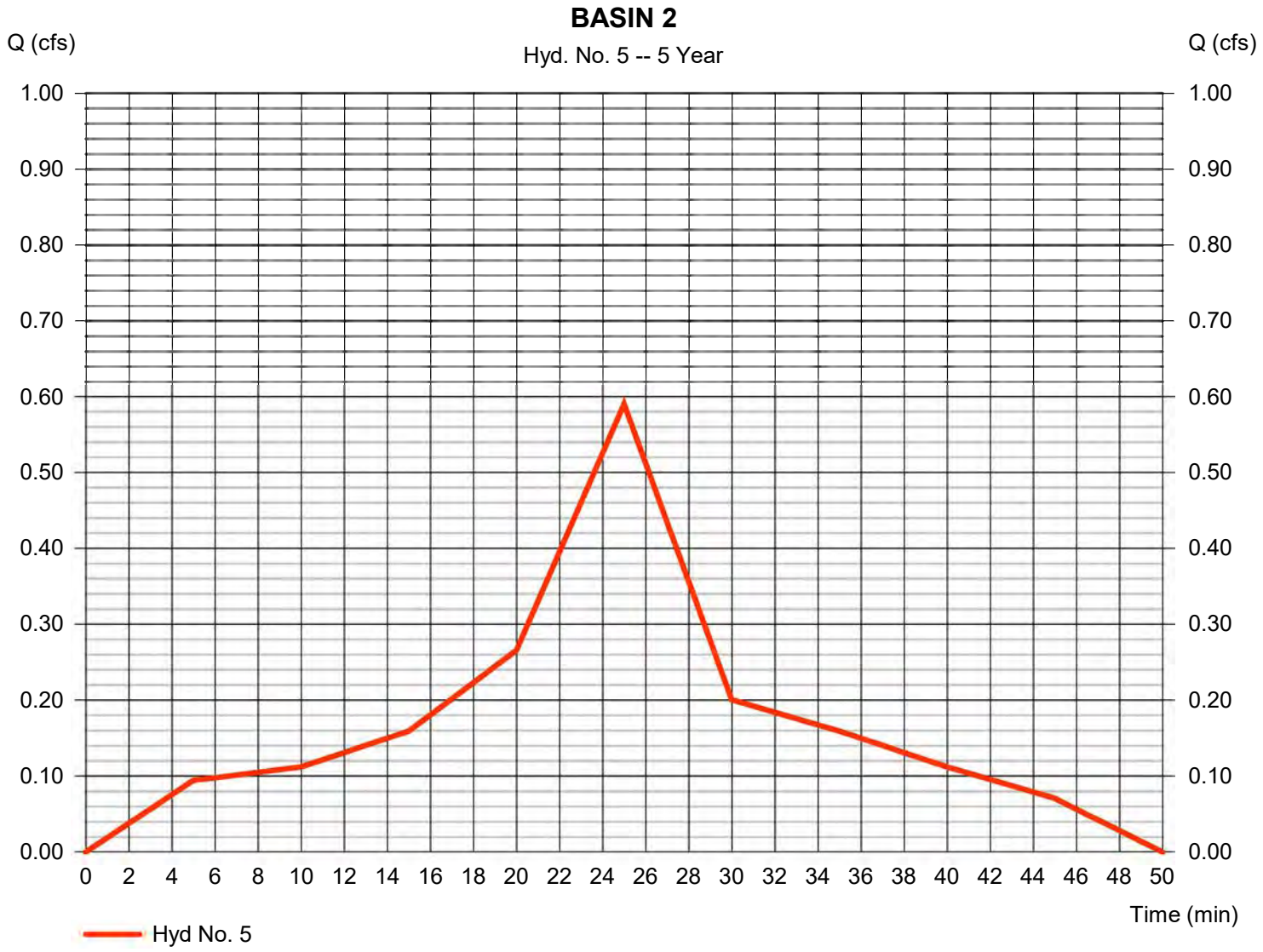


Hydrograph Report

Hyd. No. 5

BASIN 2

Hydrograph type	=	Dekalb	Peak discharge	=	0.590 cfs
Storm frequency	=	5 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	529 cuft
Drainage area	=	0.178 ac	Runoff coeff.	=	0.57
Intensity	=	5.815 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

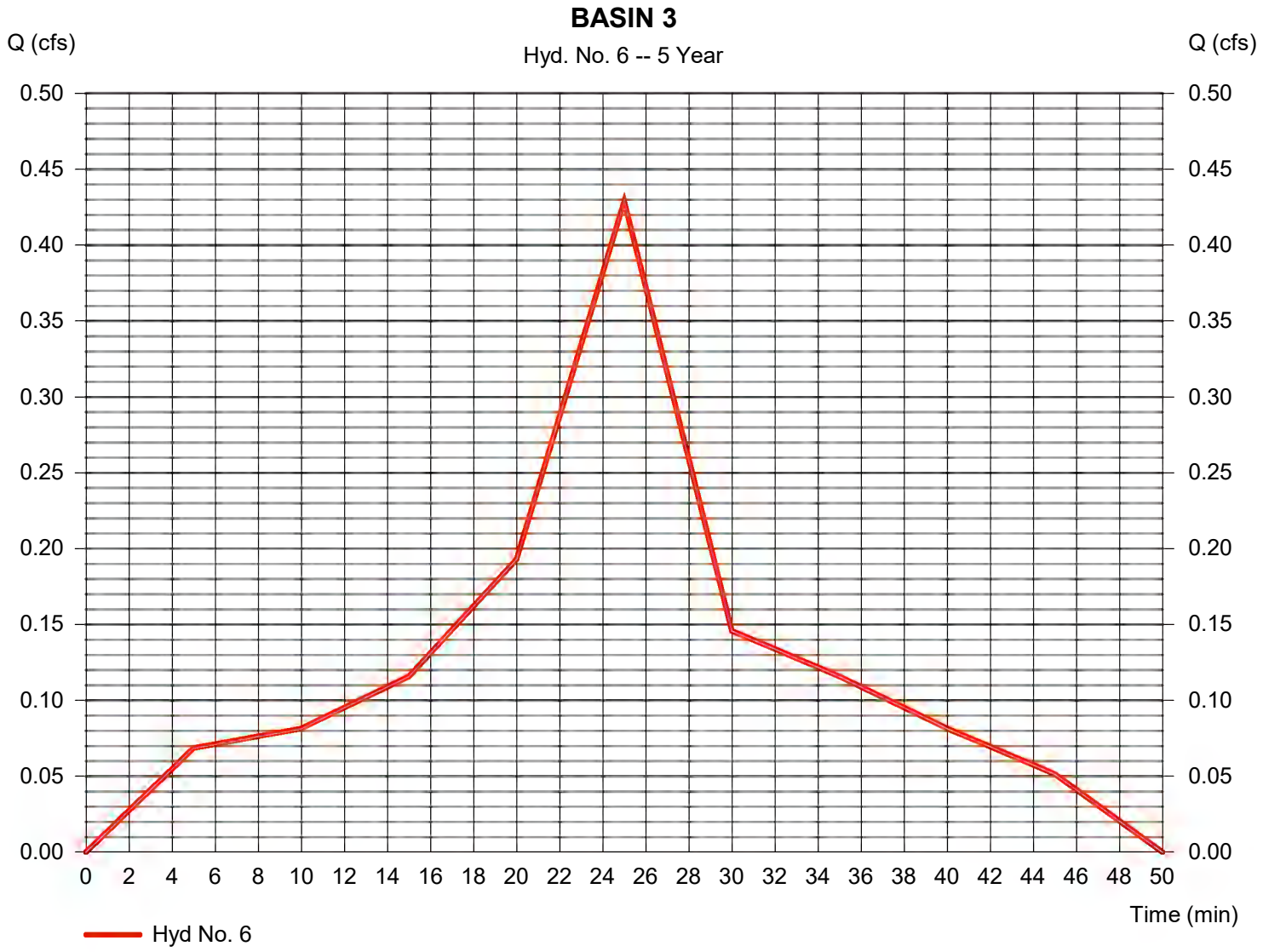


Hydrograph Report

Hyd. No. 6

BASIN 3

Hydrograph type	=	Dekalb	Peak discharge	=	0.429 cfs
Storm frequency	=	5 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	385 cuft
Drainage area	=	0.125 ac	Runoff coeff.	=	0.59
Intensity	=	5.815 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

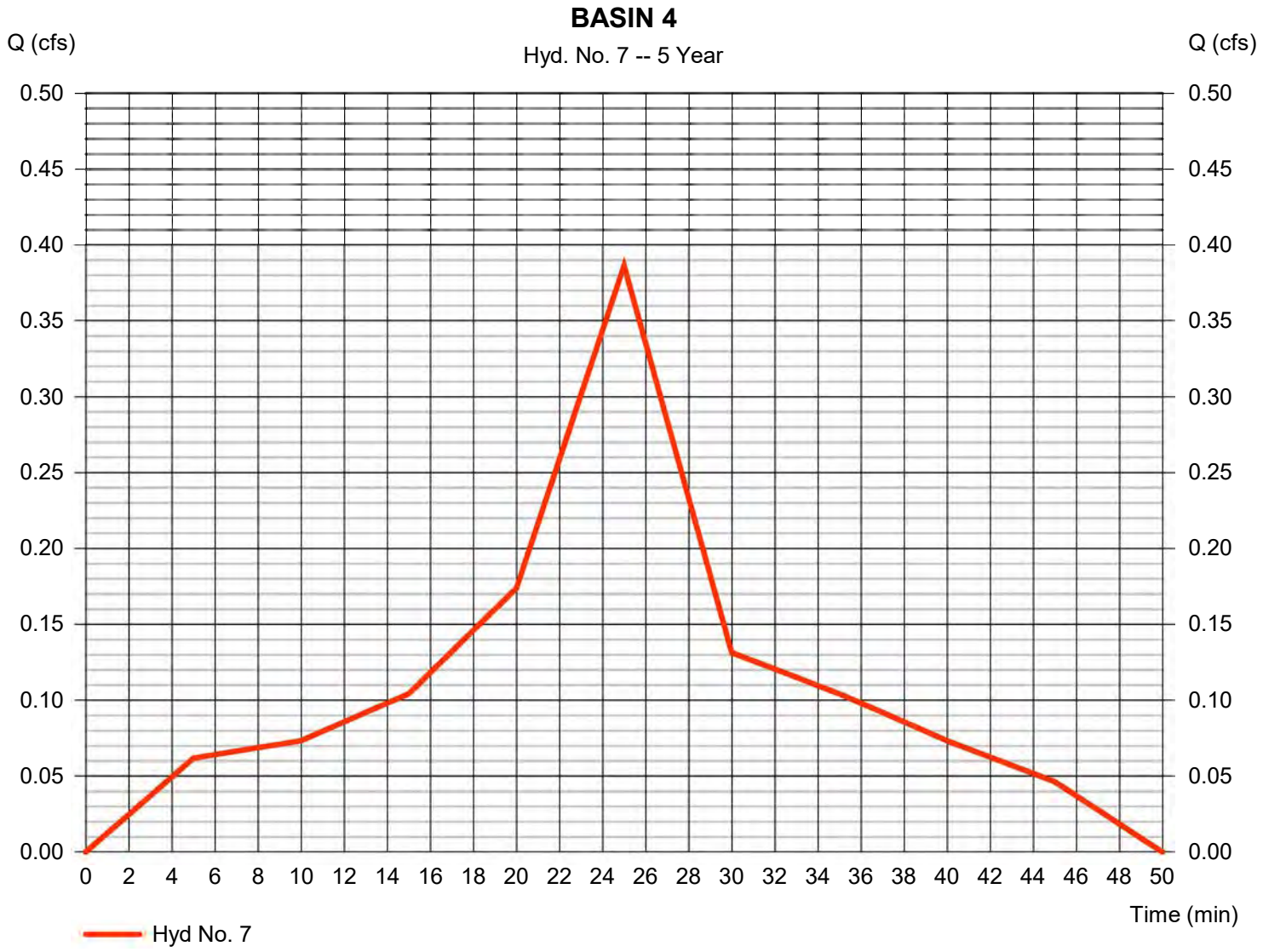


Hydrograph Report

Hyd. No. 7

BASIN 4

Hydrograph type	=	Dekalb	Peak discharge	=	0.386 cfs
Storm frequency	=	5 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	347 cuft
Drainage area	=	0.091 ac	Runoff coeff.	=	0.73
Intensity	=	5.815 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

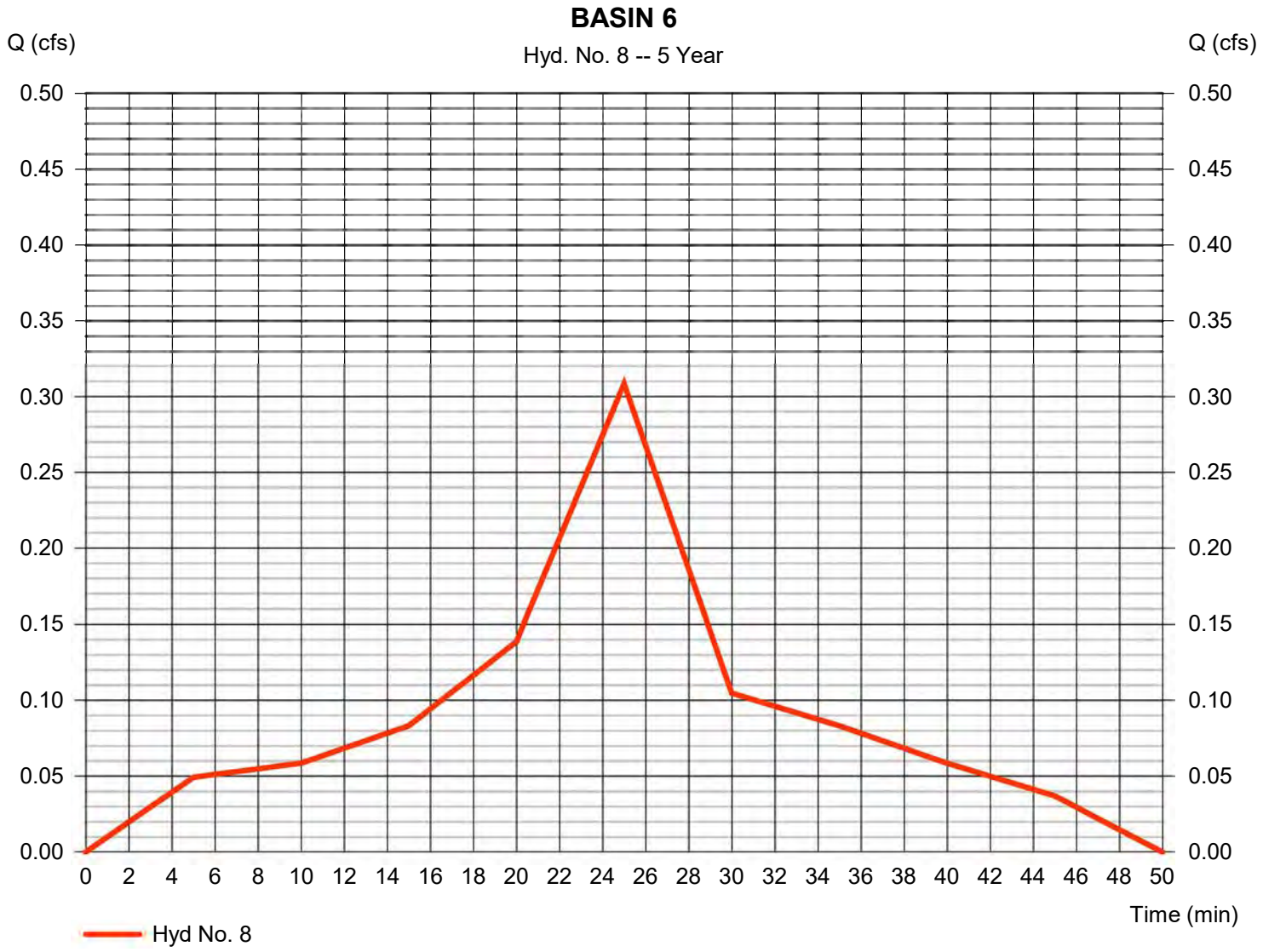


Hydrograph Report

Hyd. No. 8

BASIN 6

Hydrograph type	=	Dekalb	Peak discharge	=	0.308 cfs
Storm frequency	=	5 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	277 cuft
Drainage area	=	0.057 ac	Runoff coeff.	=	0.93
Intensity	=	5.815 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

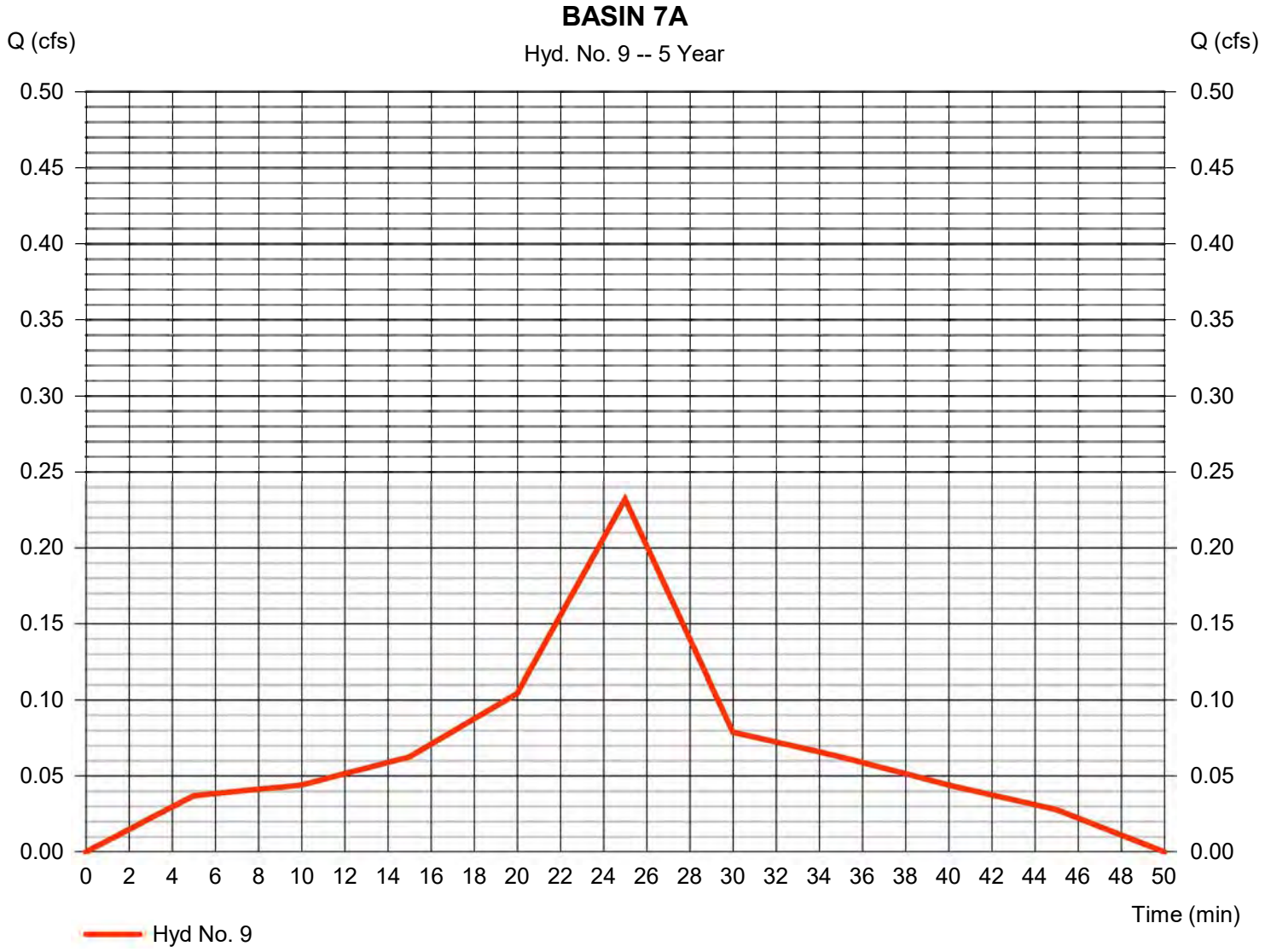


Hydrograph Report

Hyd. No. 9

BASIN 7A

Hydrograph type	=	Dekalb	Peak discharge	=	0.232 cfs
Storm frequency	=	5 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	208 cuft
Drainage area	=	0.042 ac	Runoff coeff.	=	0.95
Intensity	=	5.815 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

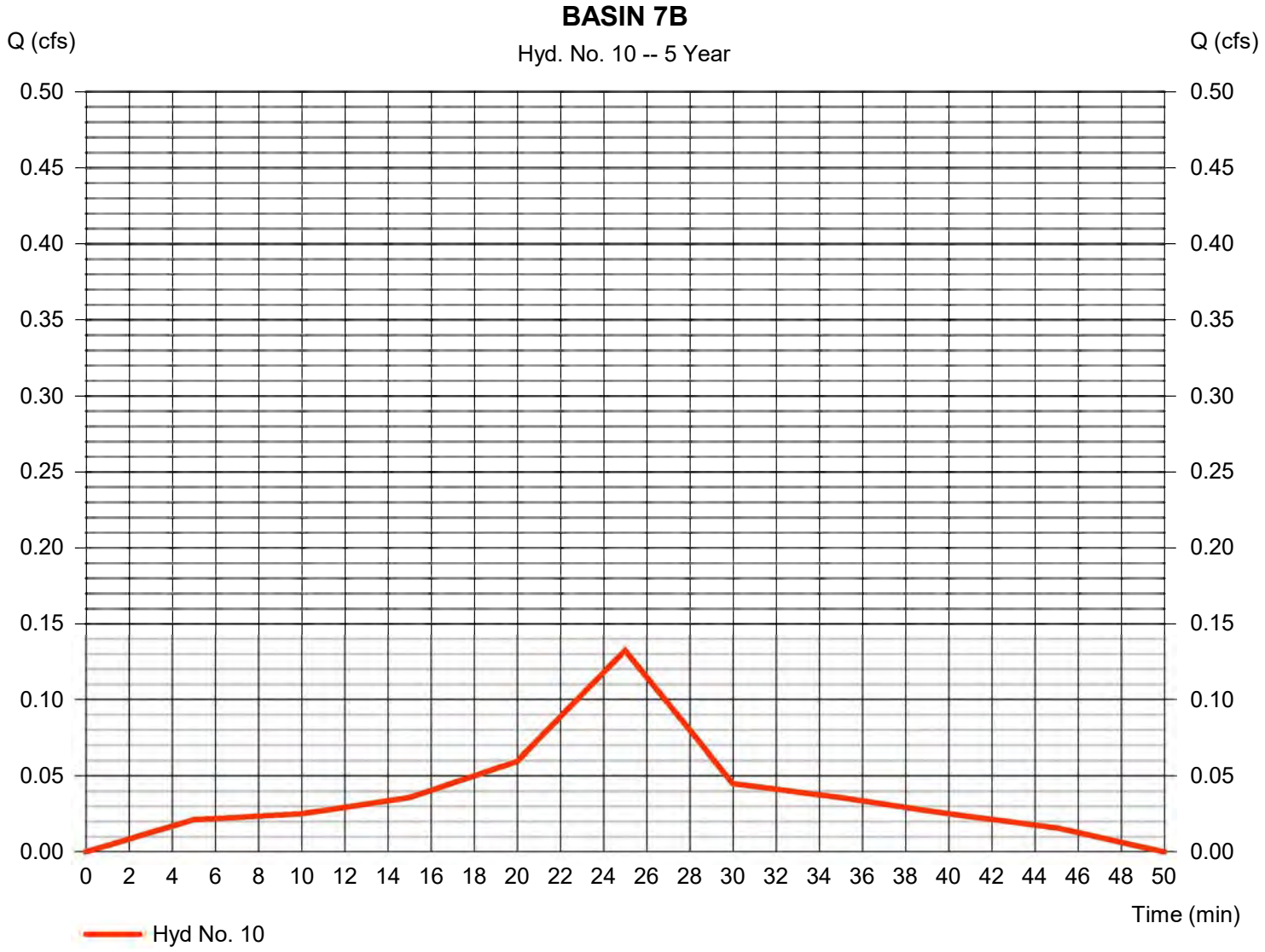


Hydrograph Report

Hyd. No. 10

BASIN 7B

Hydrograph type	=	Dekalb	Peak discharge	=	0.132 cfs
Storm frequency	=	5 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	119 cuft
Drainage area	=	0.025 ac	Runoff coeff.	=	0.91
Intensity	=	5.815 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a



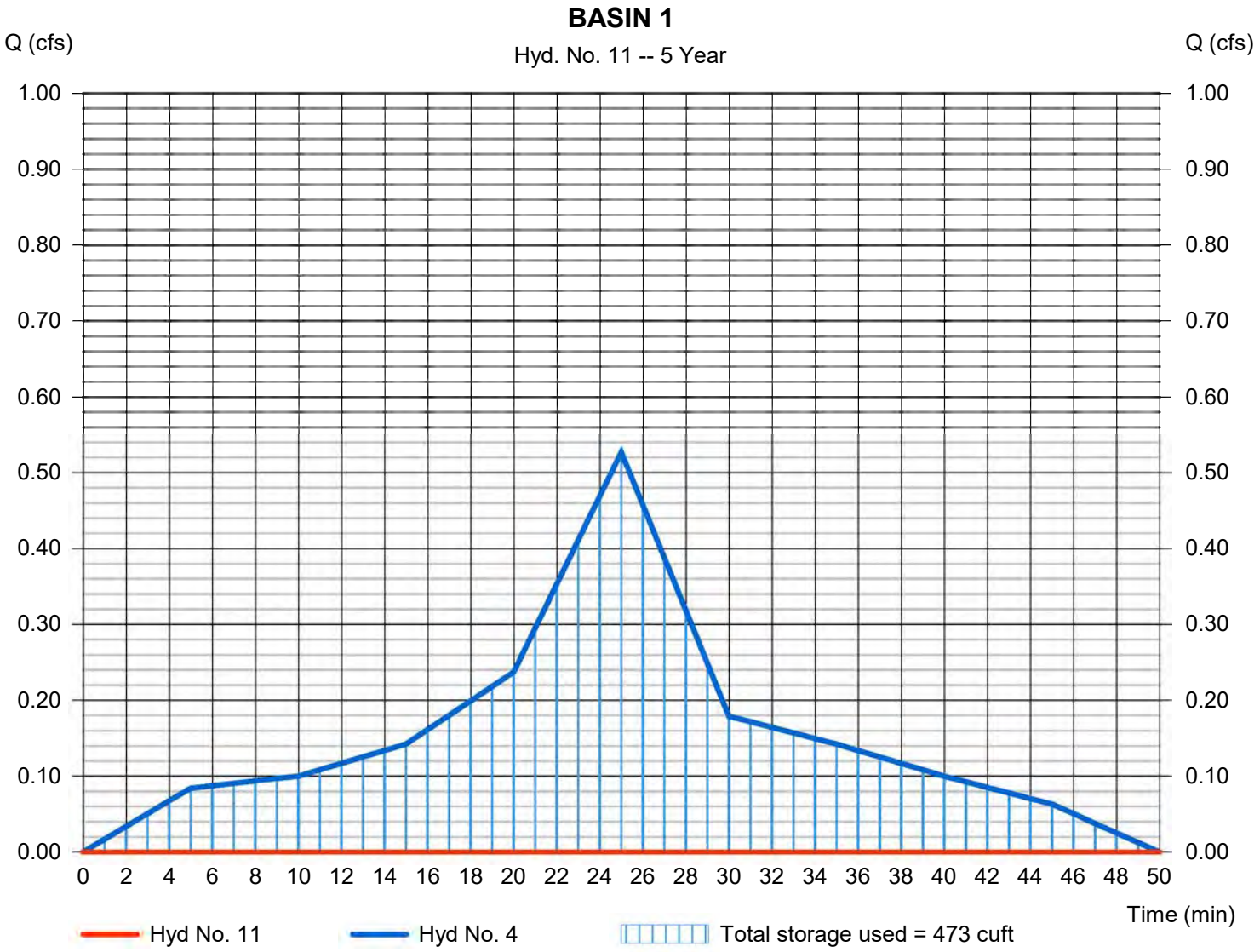
Hydrograph Report

Hyd. No. 11

BASIN 1

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 4 - BASIN 1	Max. Elevation	= 331.30 ft
Reservoir name	= Basin 1	Max. Storage	= 473 cuft

Storage Indication method used.



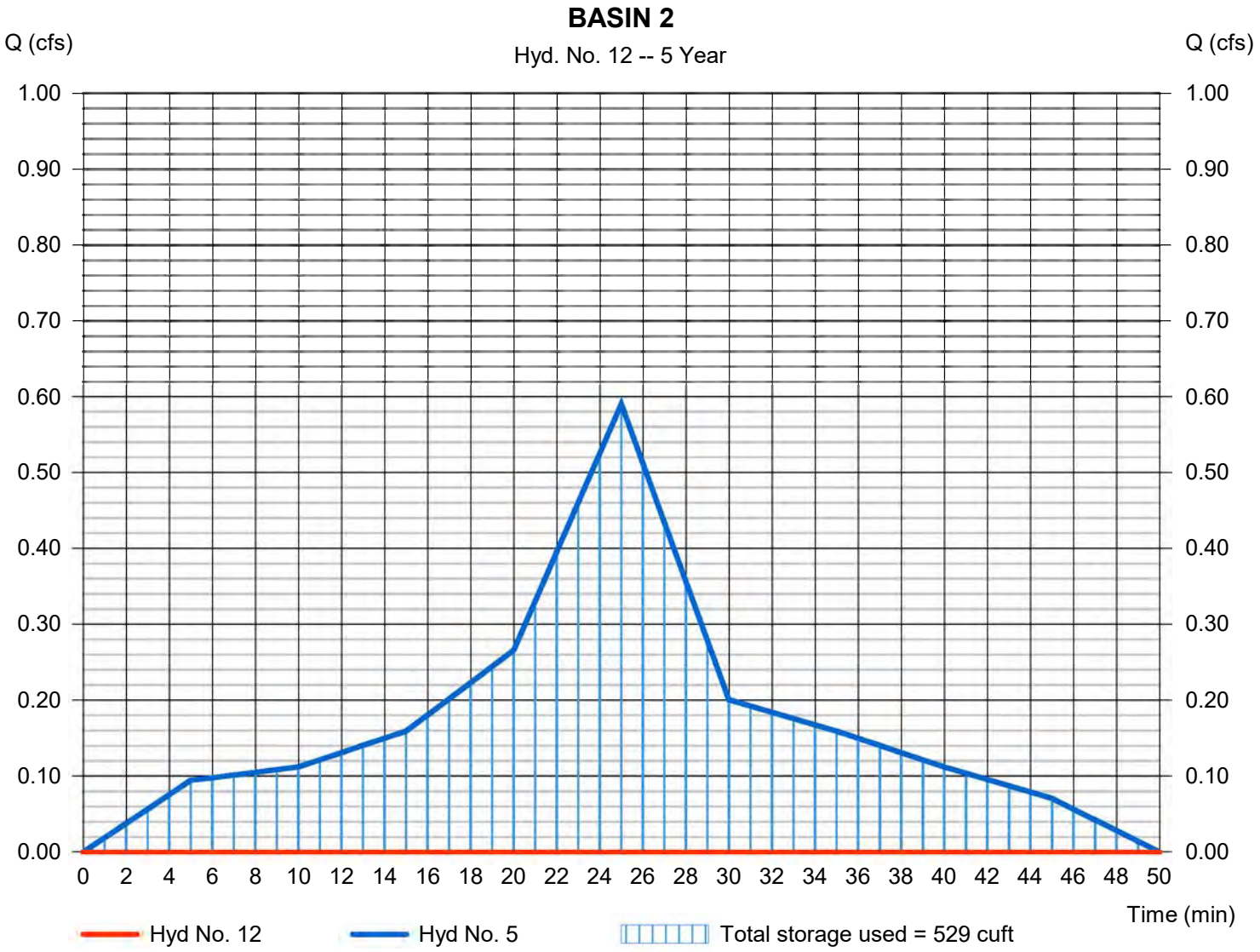
Hydrograph Report

Hyd. No. 12

BASIN 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	5 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	5 - BASIN 2	Max. Elevation	=	334.46 ft
Reservoir name	=	Basin 2	Max. Storage	=	529 cuft

Storage Indication method used.



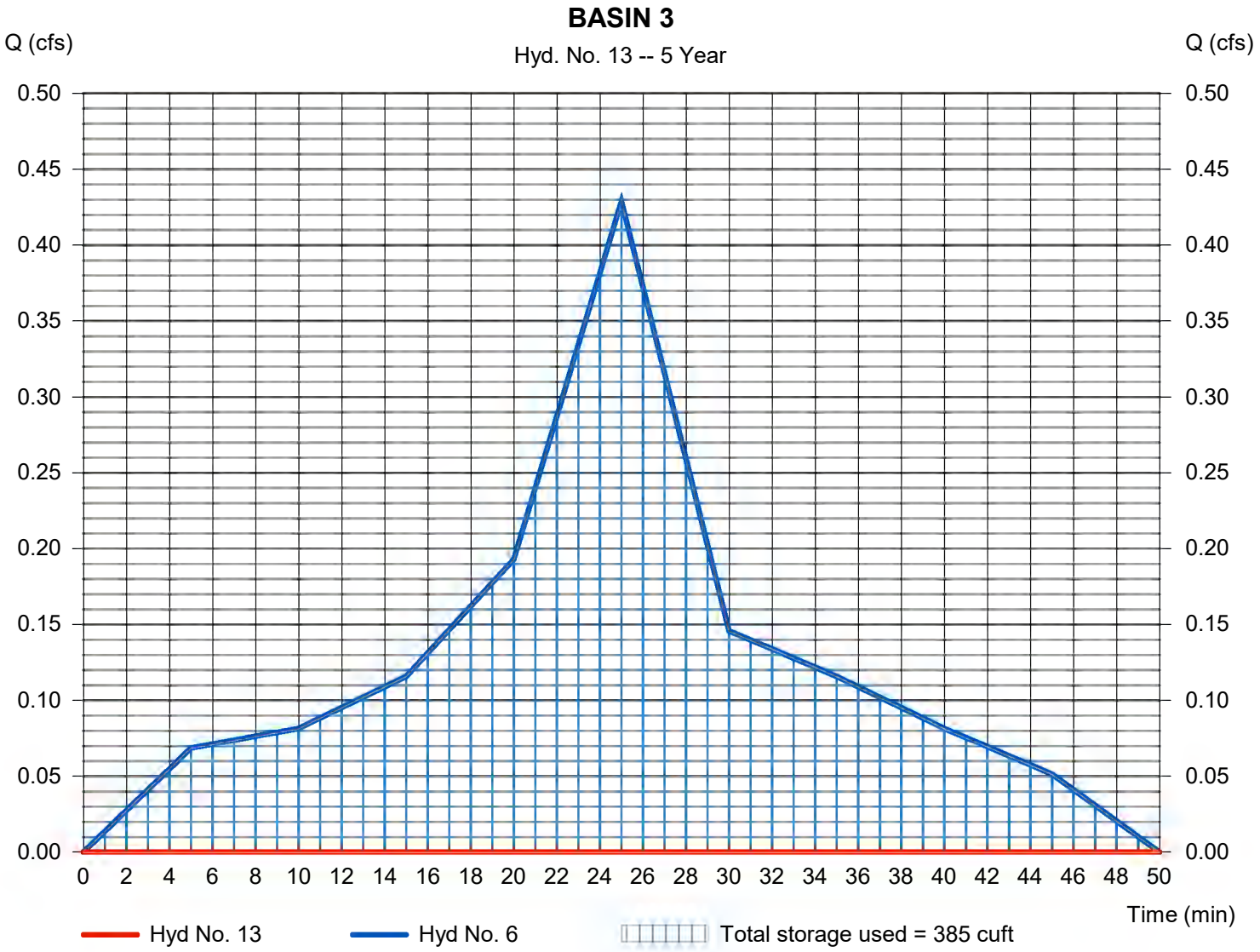
Hydrograph Report

Hyd. No. 13

BASIN 3

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	5 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	6 - BASIN 3	Max. Elevation	=	335.74 ft
Reservoir name	=	Basin 3	Max. Storage	=	385 cuft

Storage Indication method used.



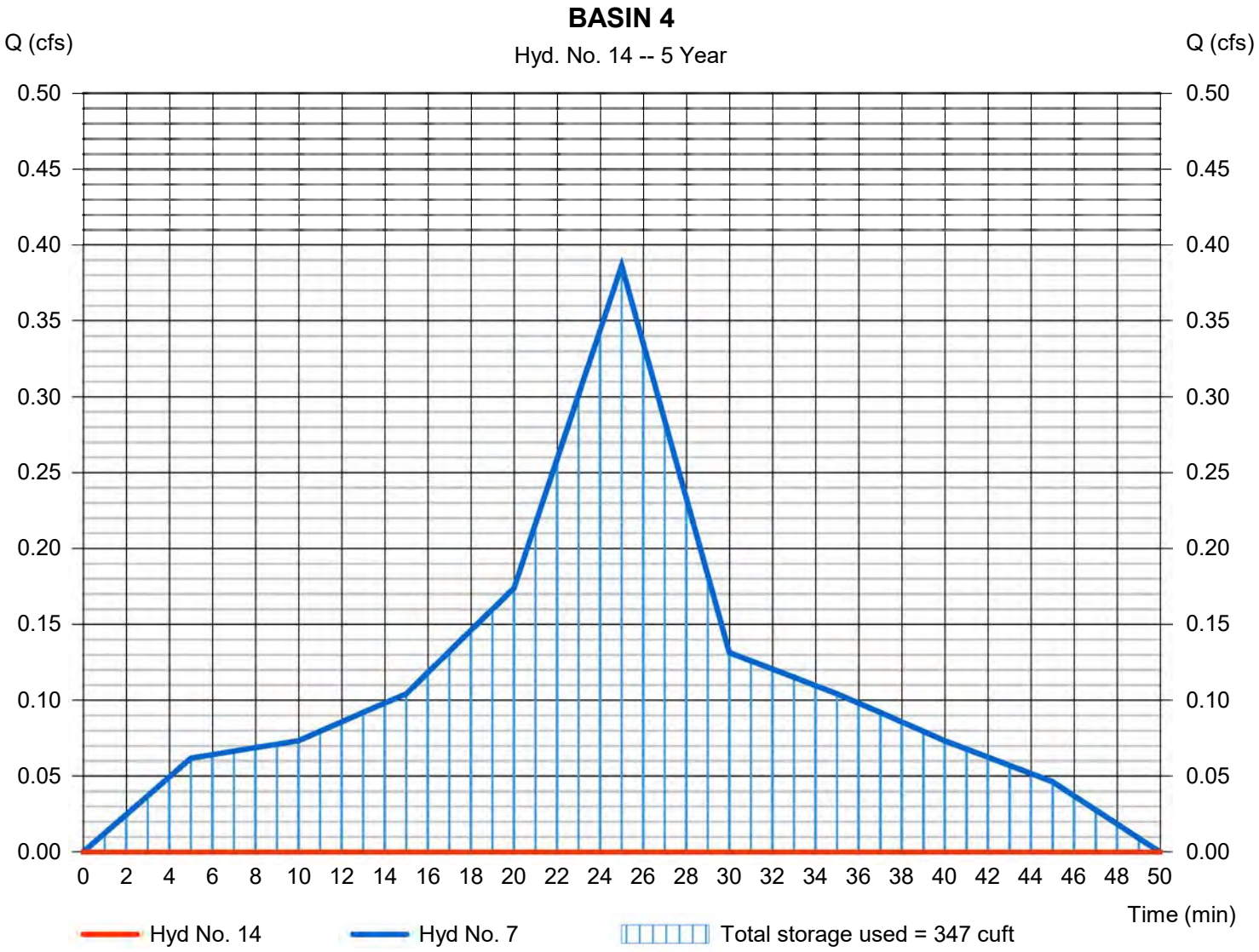
Hydrograph Report

Hyd. No. 14

BASIN 4

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 7 - BASIN 4	Max. Elevation	= 338.91 ft
Reservoir name	= Basin 4	Max. Storage	= 347 cuft

Storage Indication method used.



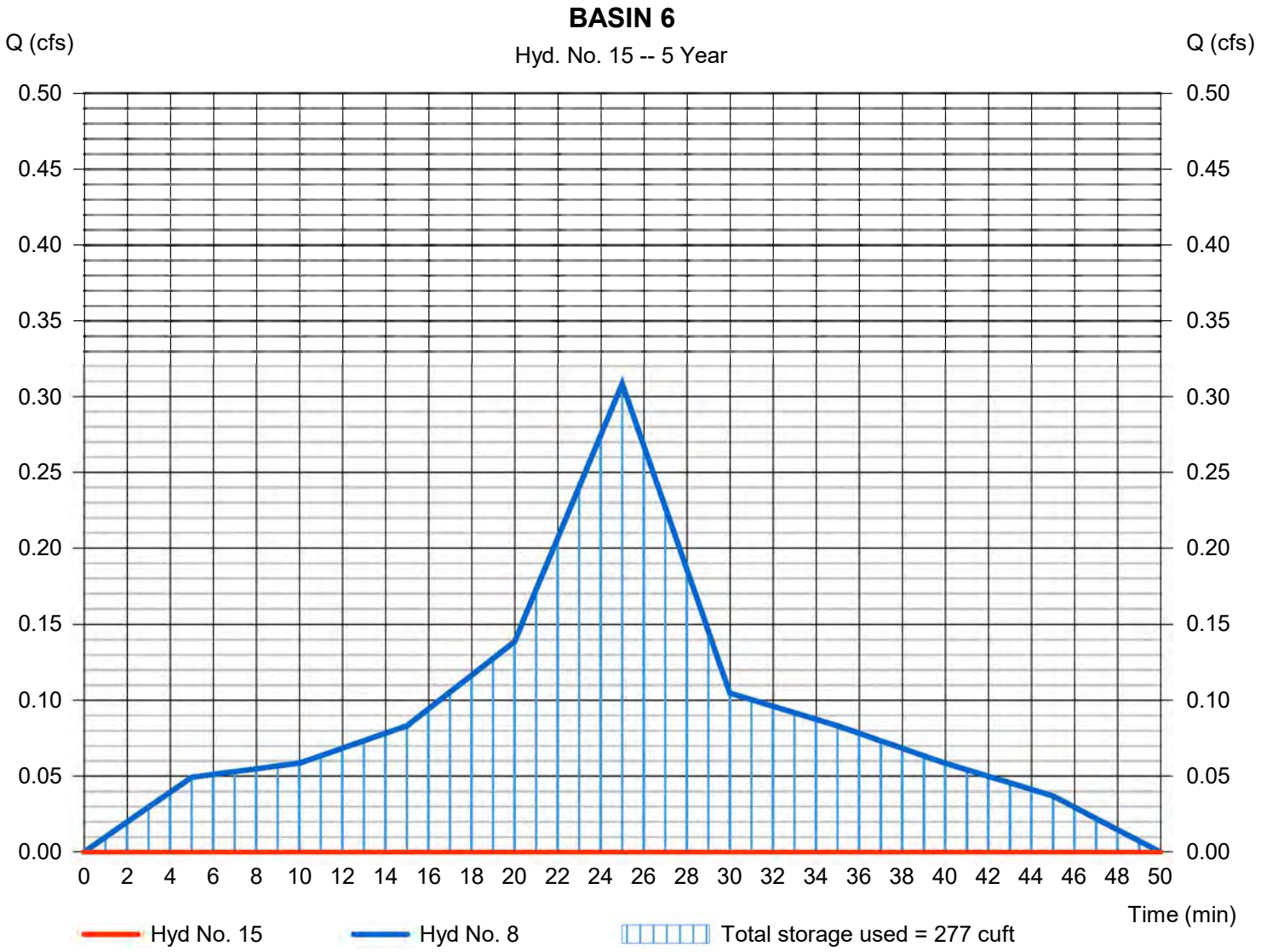
Hydrograph Report

Hyd. No. 15

BASIN 6

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	5 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	8 - BASIN 6	Max. Elevation	=	338.53 ft
Reservoir name	=	Basin 6	Max. Storage	=	277 cuft

Storage Indication method used.



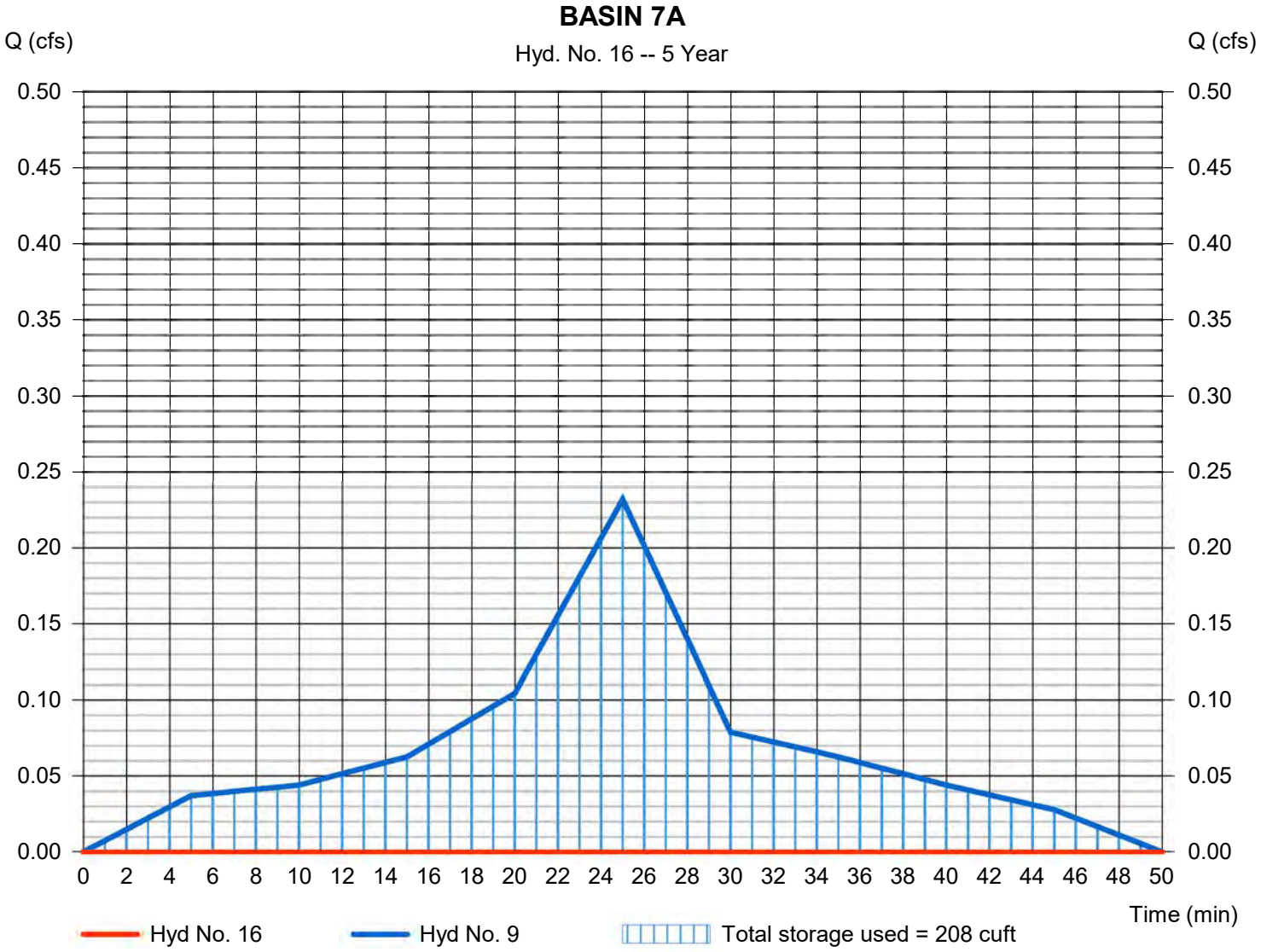
Hydrograph Report

Hyd. No. 16

BASIN 7A

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	5 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	9 - BASIN 7A	Max. Elevation	=	346.73 ft
Reservoir name	=	Basin 7A	Max. Storage	=	208 cuft

Storage Indication method used.



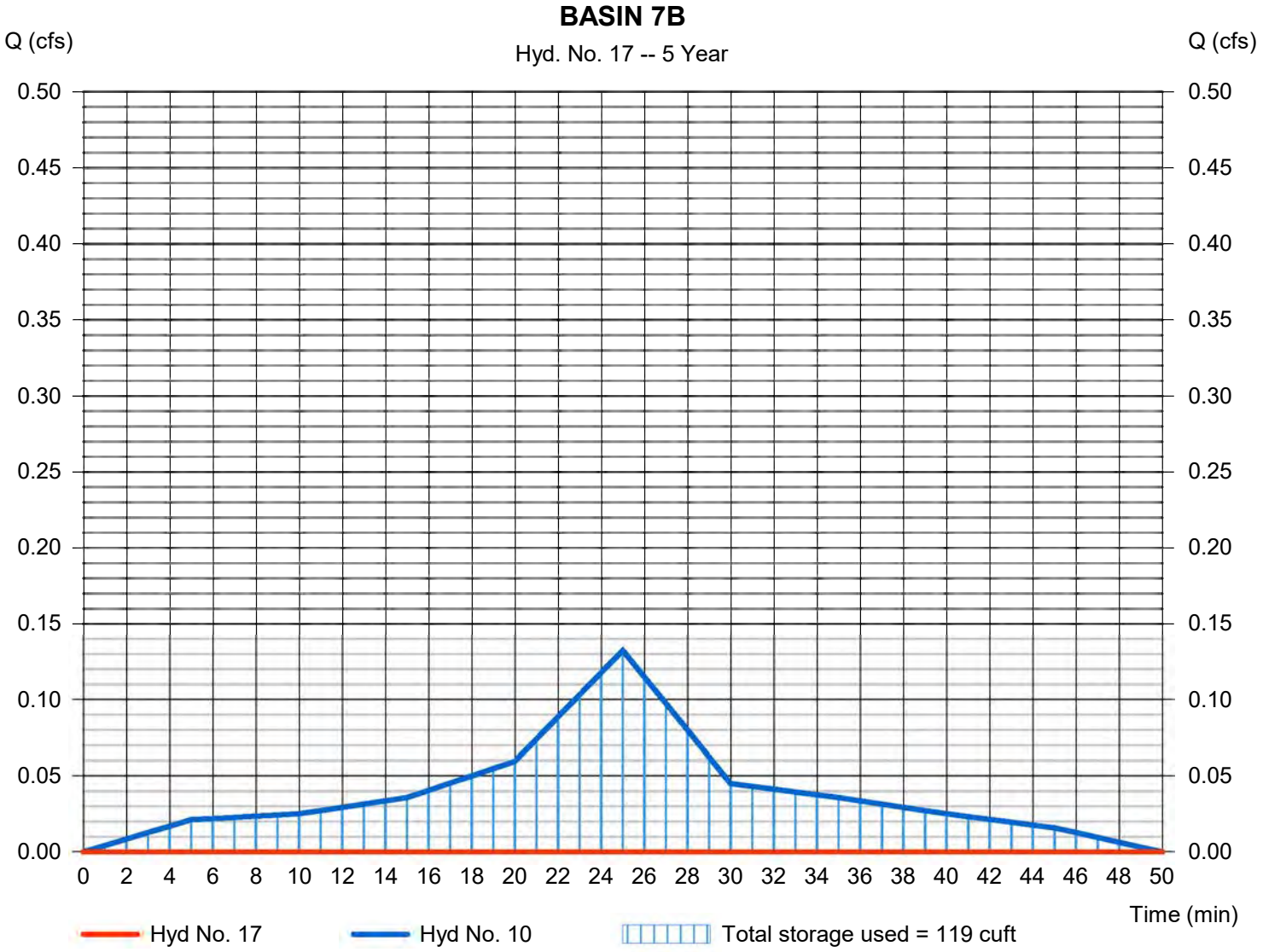
Hydrograph Report

Hyd. No. 17

BASIN 7B

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	5 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	10 - BASIN 7B	Max. Elevation	=	345.99 ft
Reservoir name	=	Basin 7B	Max. Storage	=	119 cuft

Storage Indication method used.

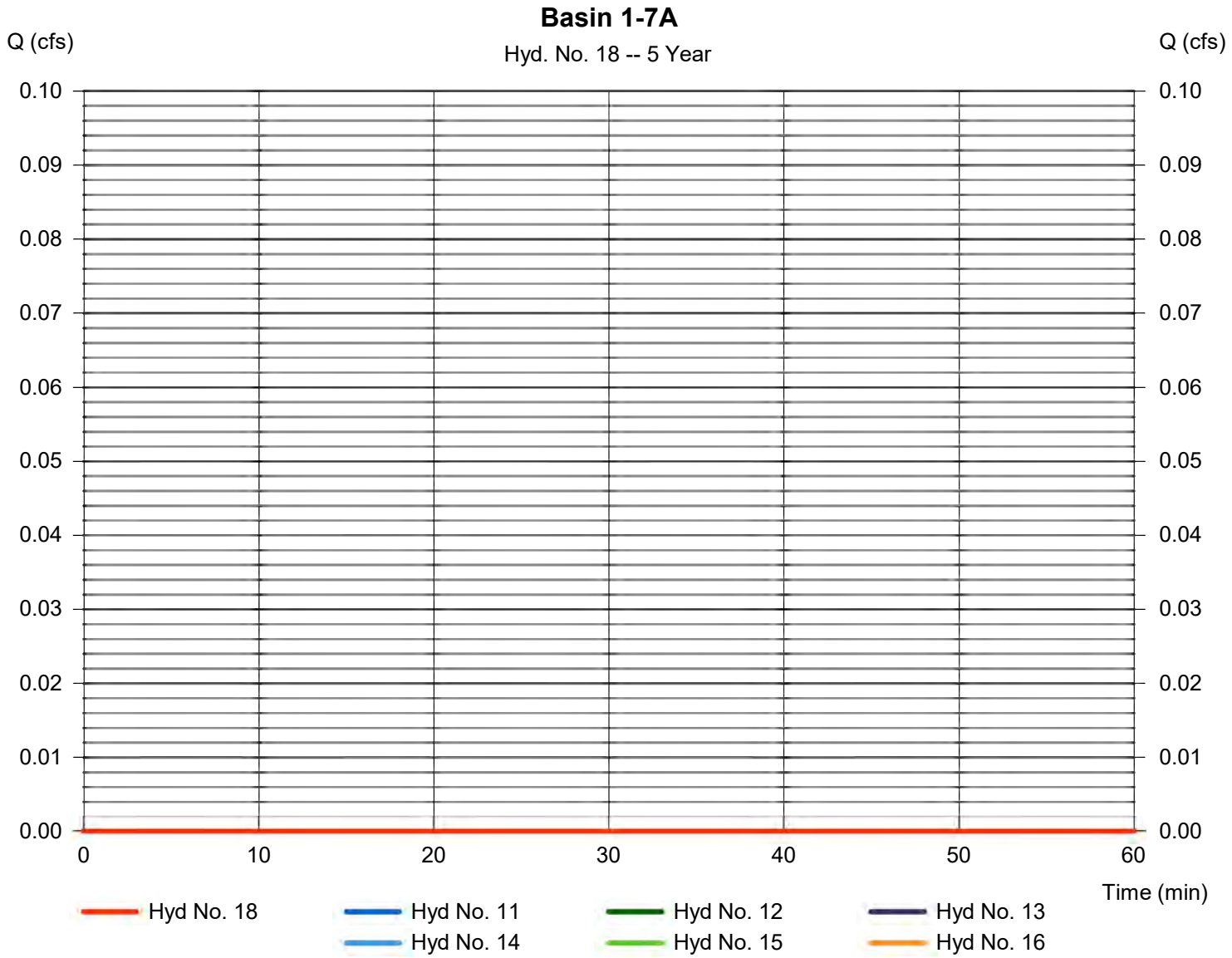


Hydrograph Report

Hyd. No. 18

Basin 1-7A

Hydrograph type	= Combine	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyds.	= 11, 12, 13, 14, 15, 16	Contrib. drain. area	= 0.000 ac

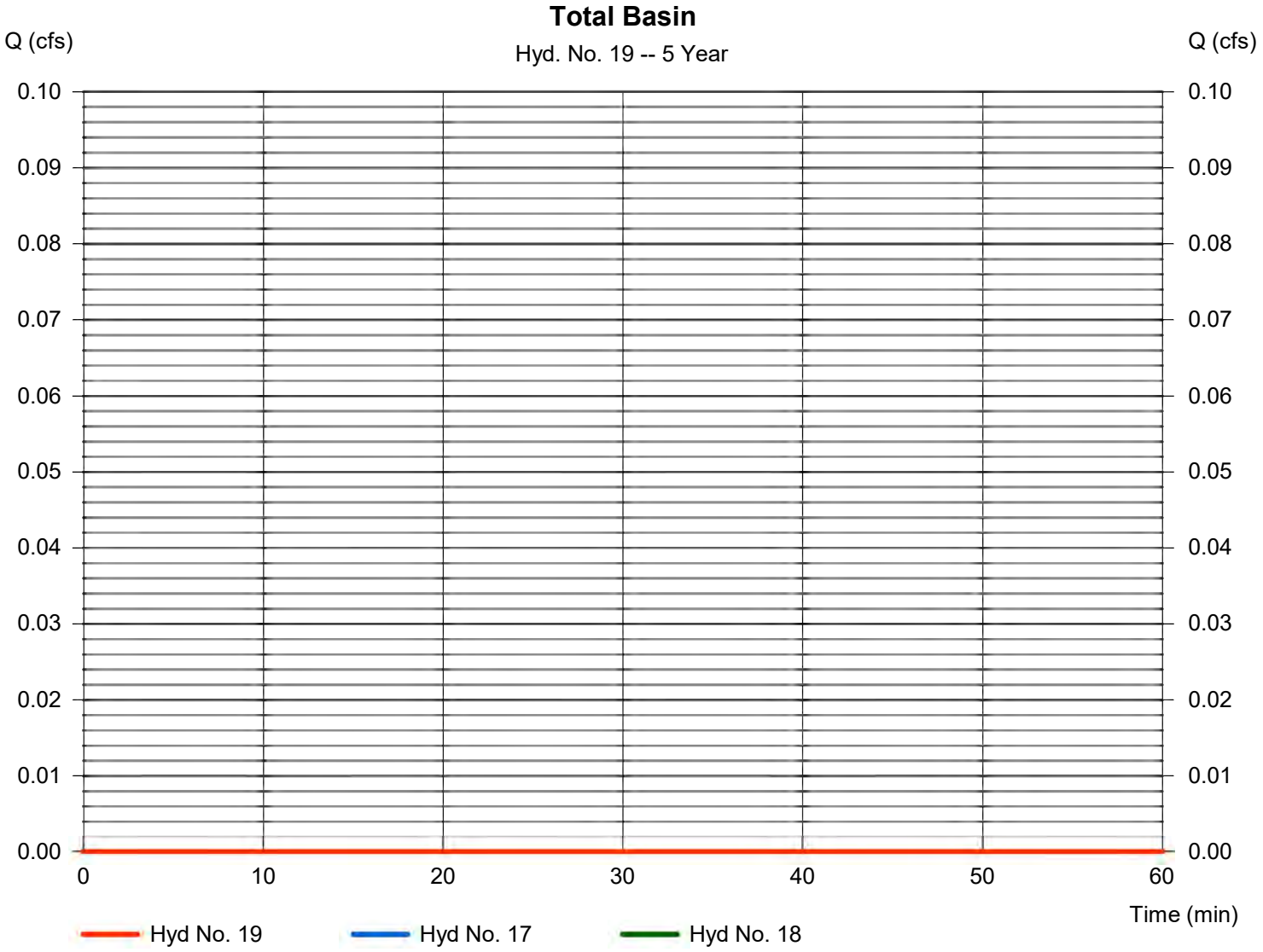


Hydrograph Report

Hyd. No. 19

Total Basin

Hydrograph type	= Combine	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyds.	= 17, 18	Contrib. drain. area	= 0.000 ac

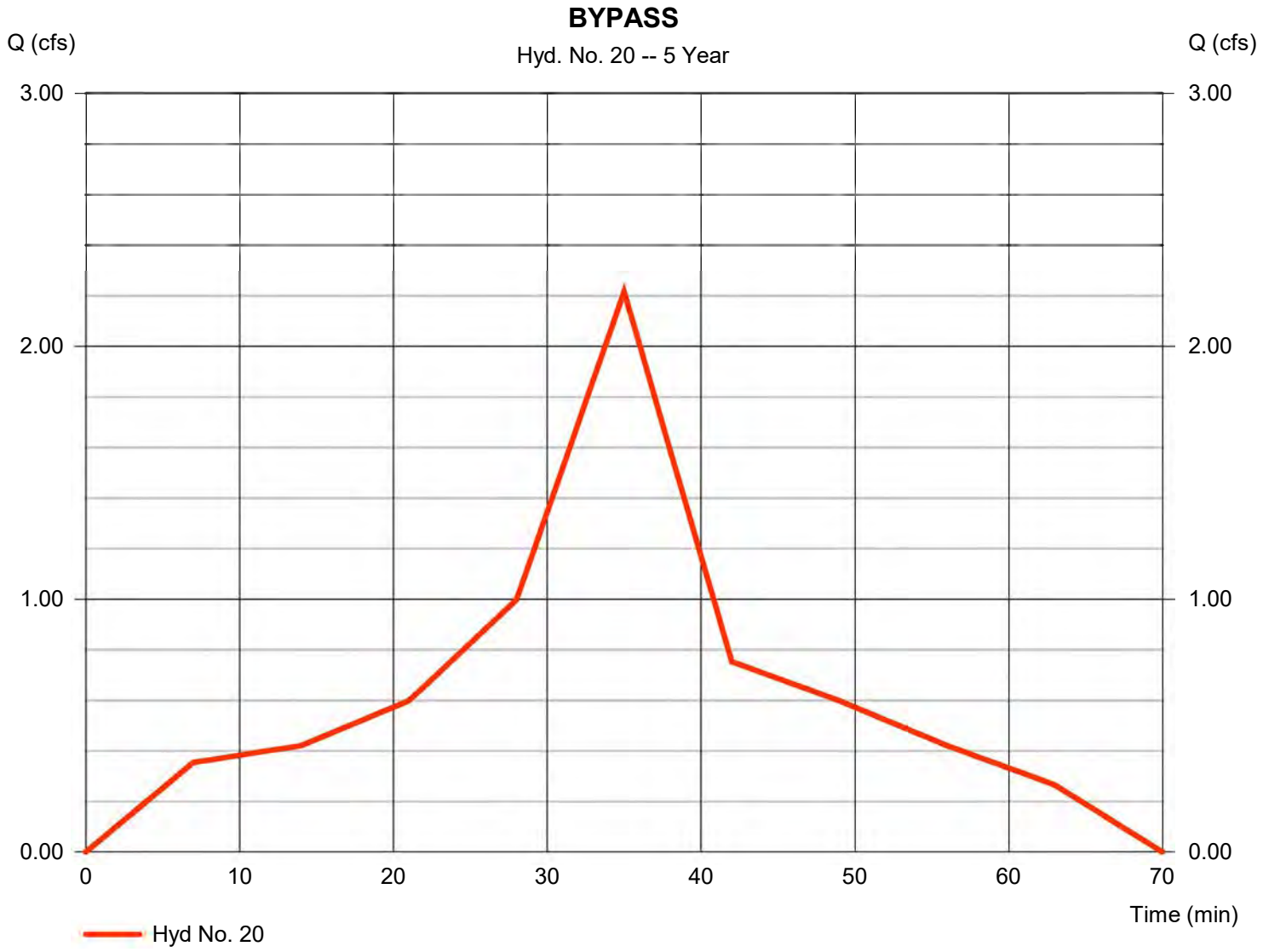


Hydrograph Report

Hyd. No. 20

BYPASS

Hydrograph type	=	Dekalb	Peak discharge	=	2.215 cfs
Storm frequency	=	5 yrs	Time to peak	=	35 min
Time interval	=	1 min	Hyd. volume	=	2,782 cuft
Drainage area	=	0.801 ac	Runoff coeff.	=	0.52
Intensity	=	5.319 in/hr	Tc by User	=	7.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

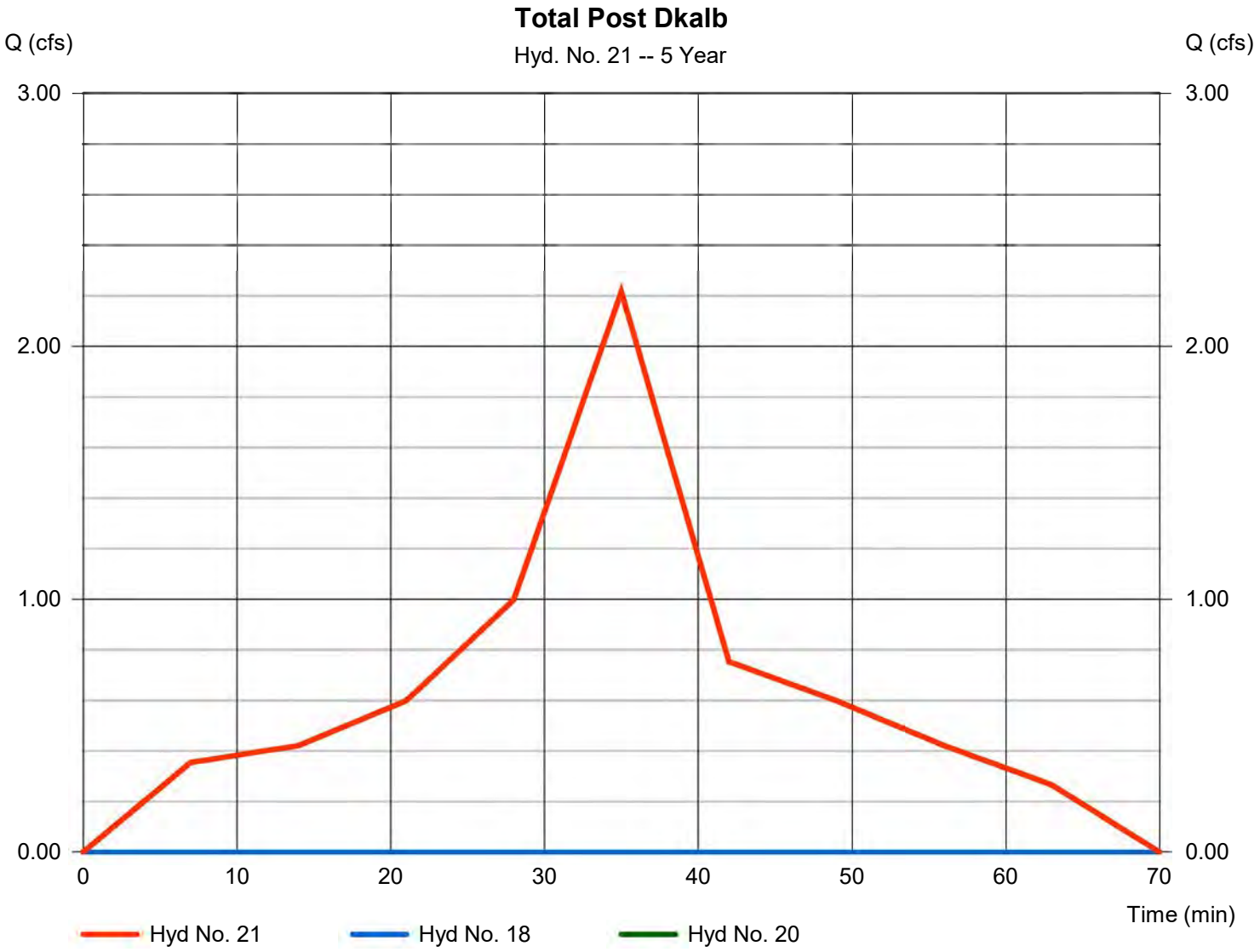


Hydrograph Report

Hyd. No. 21

Total Post Dkalb

Hydrograph type	= Combine	Peak discharge	= 2.215 cfs
Storm frequency	= 5 yrs	Time to peak	= 35 min
Time interval	= 1 min	Hyd. volume	= 2,782 cuft
Inflow hyds.	= 18, 20	Contrib. drain. area	= 0.801 ac



Hydrograph Summary Report

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

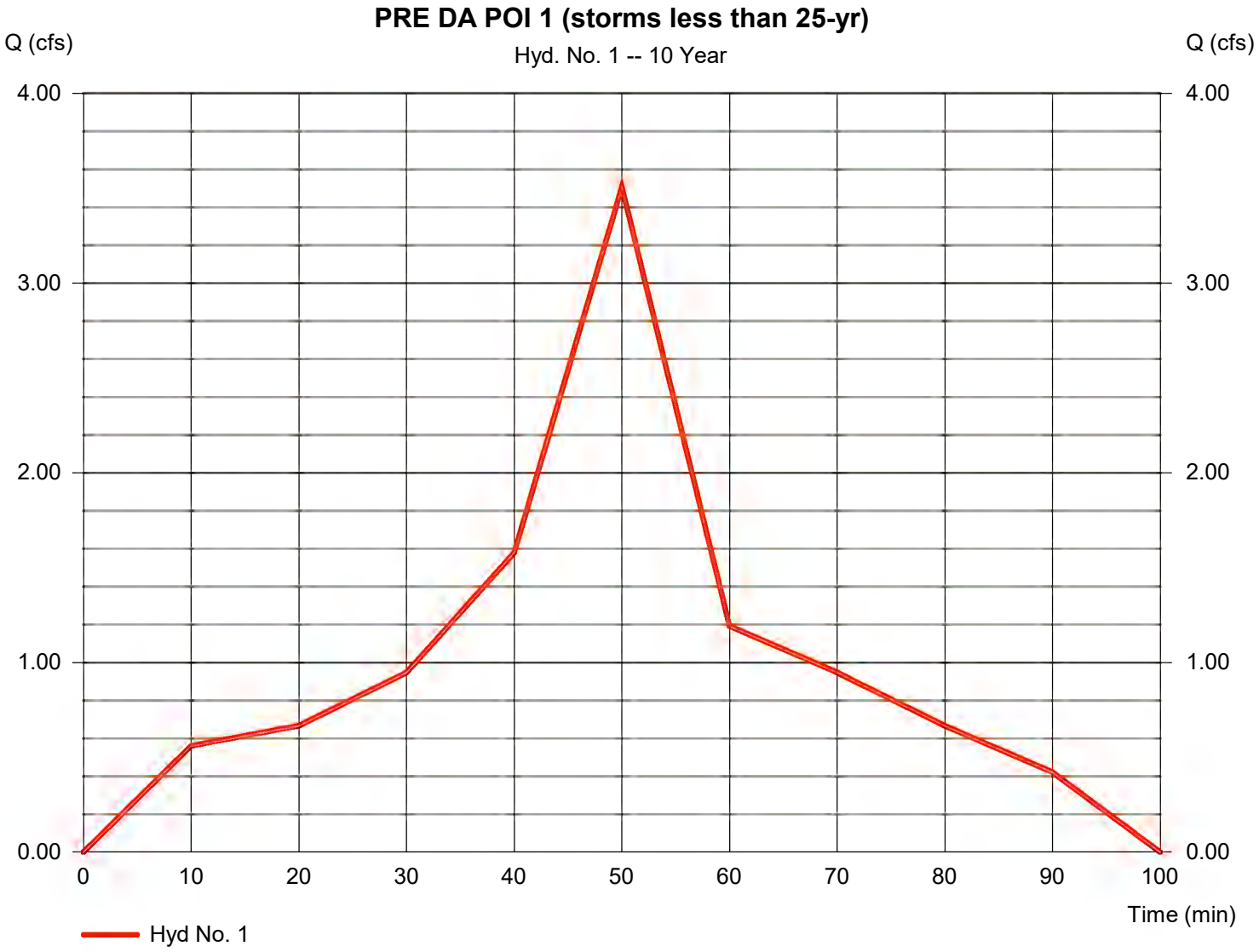
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Dekalb	3.507	1	50	6,291	------	------	------	PRE DA POI 1 (storms less than 25-y
4	Dekalb	0.585	1	25	525	------	------	------	BASIN 1
5	Dekalb	0.655	1	25	588	------	------	------	BASIN 2
6	Dekalb	0.476	1	25	427	------	------	------	BASIN 3
7	Dekalb	0.429	1	25	385	------	------	------	BASIN 4
8	Dekalb	0.342	1	25	307	------	------	------	BASIN 6
9	Dekalb	0.258	1	25	231	------	------	------	BASIN 7A
10	Dekalb	0.147	1	25	132	------	------	------	BASIN 7B
11	Reservoir	0.000	1	n/a	0	4	331.54	525	BASIN 1
12	Reservoir	0.000	1	n/a	0	5	334.71	588	BASIN 2
13	Reservoir	0.000	1	n/a	0	6	335.94	427	BASIN 3
14	Reservoir	0.000	1	n/a	0	7	339.09	385	BASIN 4
15	Reservoir	0.000	1	n/a	0	8	338.64	307	BASIN 6
16	Reservoir	0.000	1	n/a	0	9	346.93	231	BASIN 7A
17	Reservoir	0.000	1	n/a	0	10	346.10	132	BASIN 7B
18	Combine	0.000	1	n/a	0	11, 12, 13, 14, 15, 16, 17, 18	------	------	Basin 1-7A
19	Combine	0.000	1	n/a	0		------	------	Total Basin
20	Dekalb	2.463	1	35	3,093	------	------	------	BYPASS
21	Combine	2.463	1	35	3,093	18, 20	------	------	Total Post Dkalb

Hydrograph Report

Hyd. No. 1

PRE DA POI 1 (storms less than 25-yr)

Hydrograph type	= Dekalb	Peak discharge	= 3.507 cfs
Storm frequency	= 10 yrs	Time to peak	= 50 min
Time interval	= 1 min	Hyd. volume	= 6,291 cuft
Drainage area	= 1.480 ac	Runoff coeff.	= 0.45
Intensity	= 5.266 in/hr	Tc by User	= 10.00 min
IDF Curve	= Abington Rainfall.IDF	Asc/Rec limb fact	= n/a

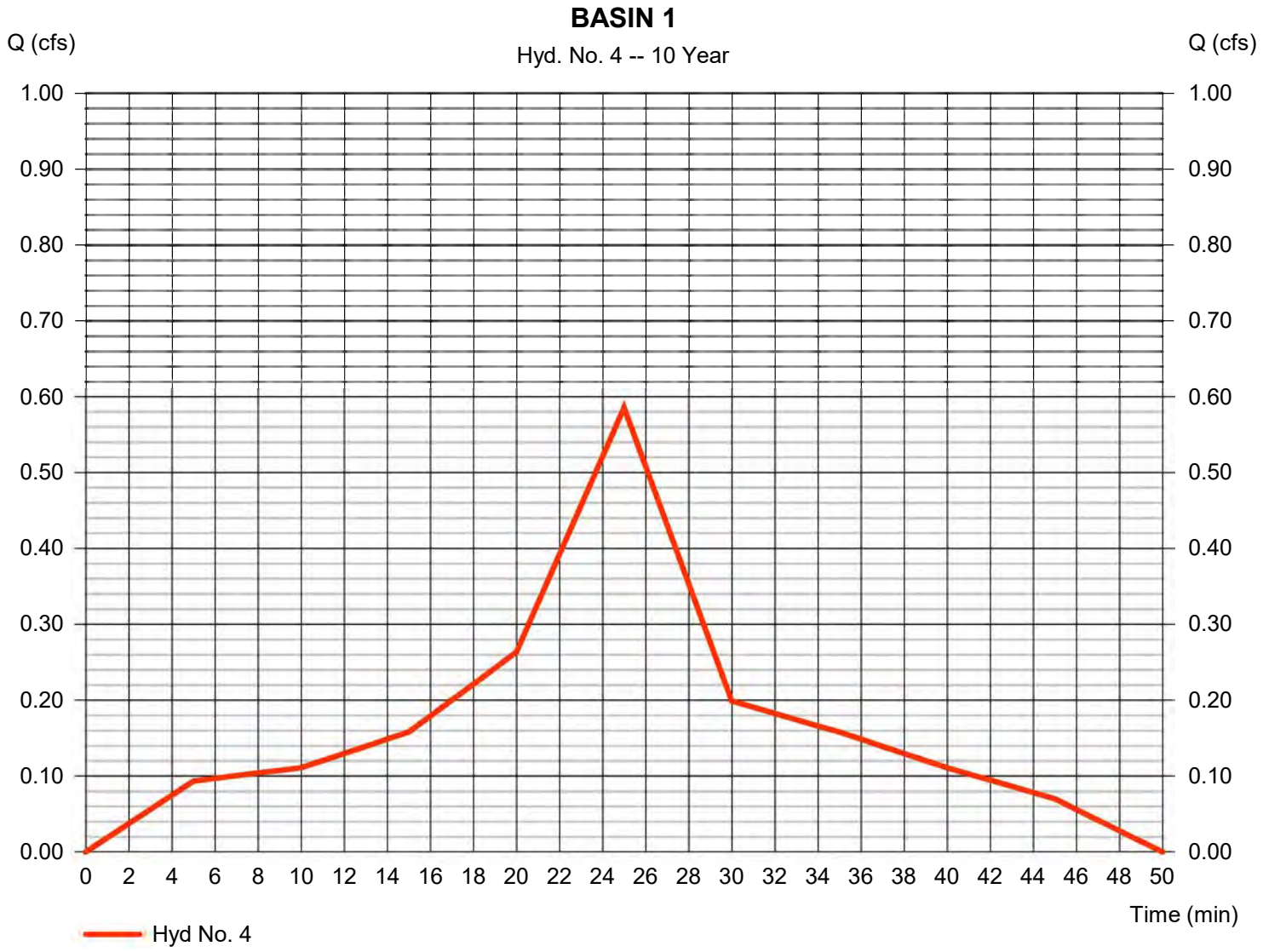


Hydrograph Report

Hyd. No. 4

BASIN 1

Hydrograph type	=	Dekalb	Peak discharge	=	0.585 cfs
Storm frequency	=	10 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	525 cuft
Drainage area	=	0.159 ac	Runoff coeff.	=	0.57
Intensity	=	6.458 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

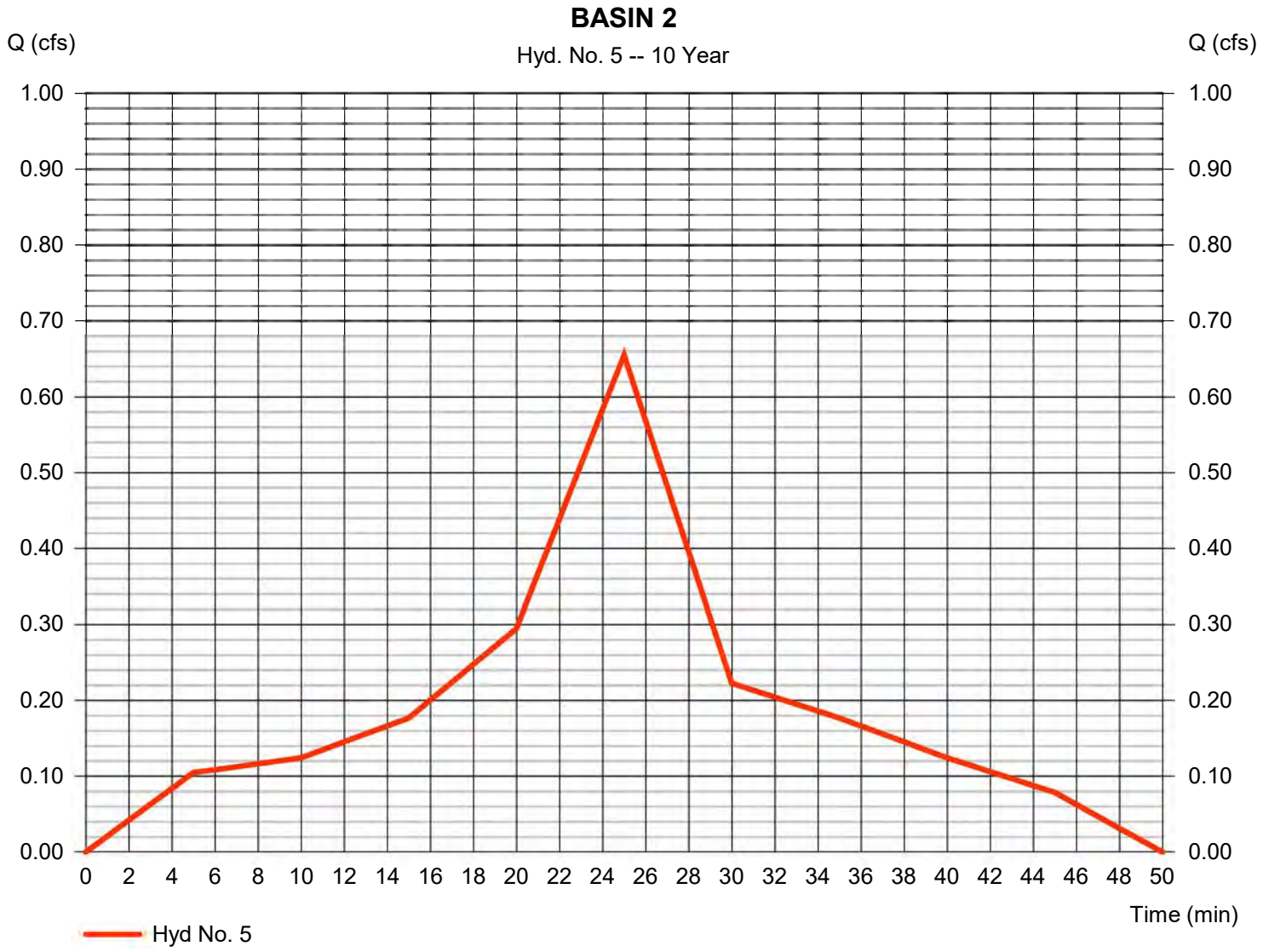


Hydrograph Report

Hyd. No. 5

BASIN 2

Hydrograph type	=	Dekalb	Peak discharge	=	0.655 cfs
Storm frequency	=	10 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	588 cuft
Drainage area	=	0.178 ac	Runoff coeff.	=	0.57
Intensity	=	6.458 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

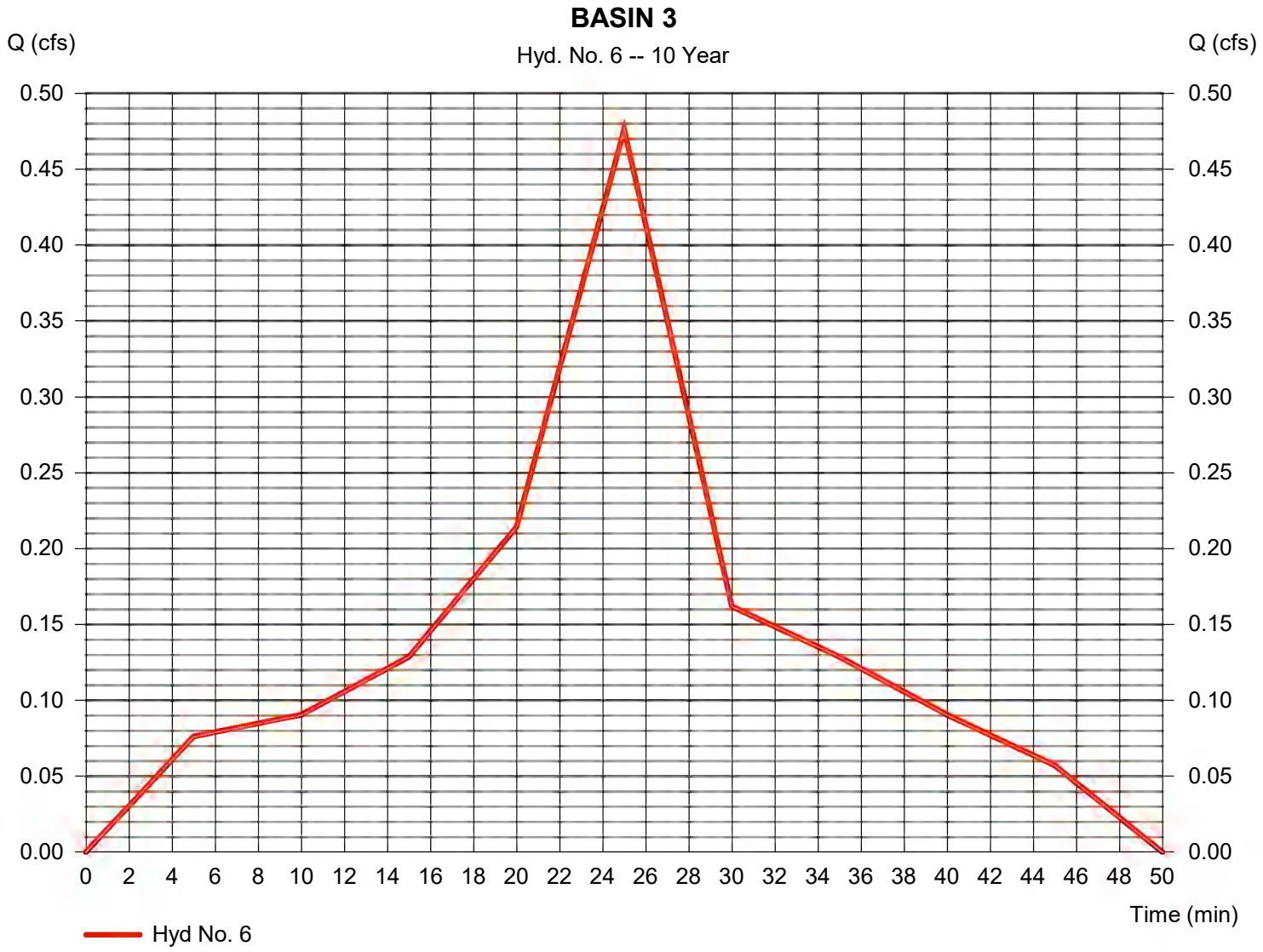


Hydrograph Report

Hyd. No. 6

BASIN 3

Hydrograph type	=	Dekalb	Peak discharge	=	0.476 cfs
Storm frequency	=	10 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	427 cuft
Drainage area	=	0.125 ac	Runoff coeff.	=	0.59
Intensity	=	6.458 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

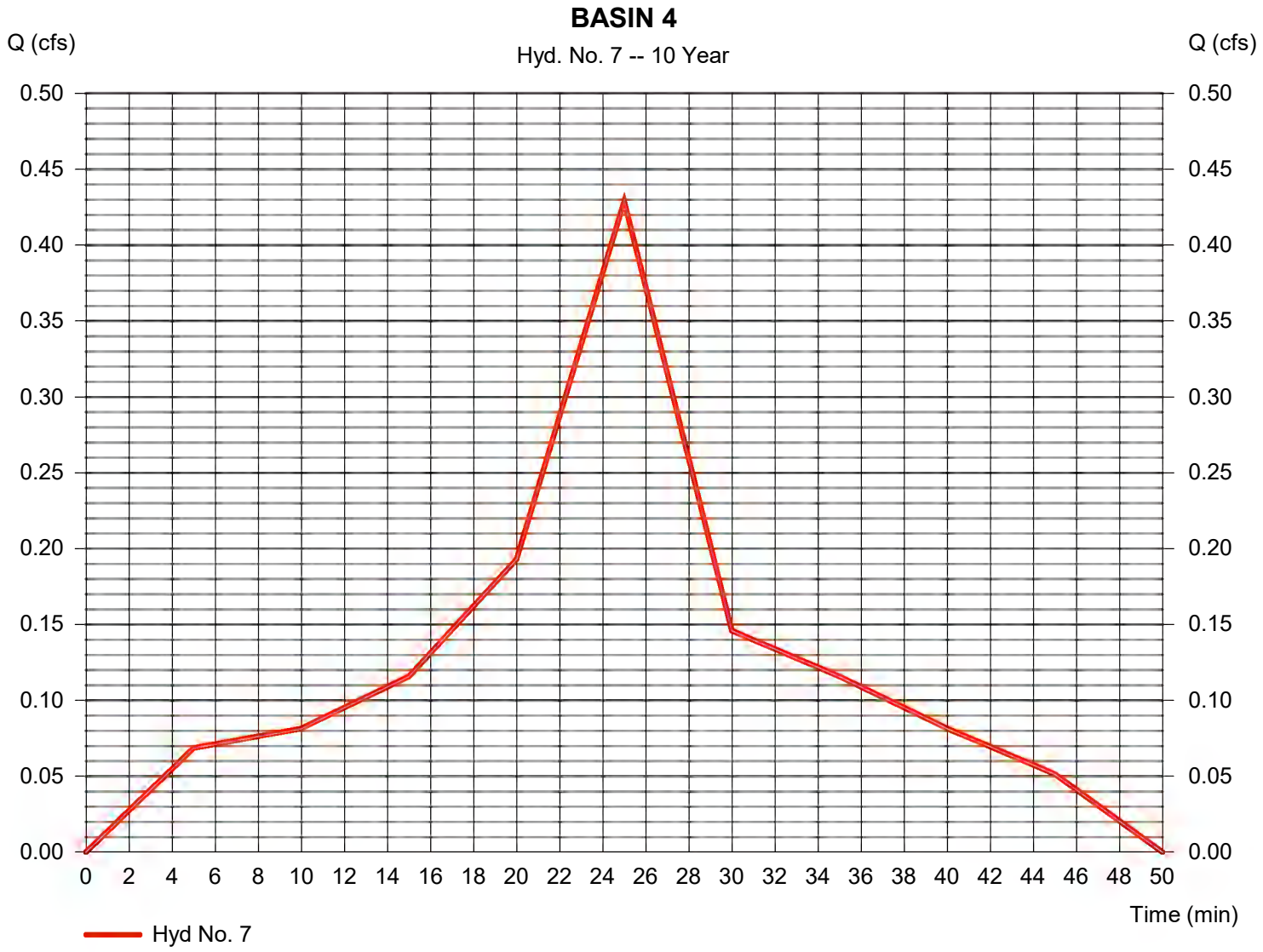


Hydrograph Report

Hyd. No. 7

BASIN 4

Hydrograph type	=	Dekalb	Peak discharge	=	0.429 cfs
Storm frequency	=	10 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	385 cuft
Drainage area	=	0.091 ac	Runoff coeff.	=	0.73
Intensity	=	6.458 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

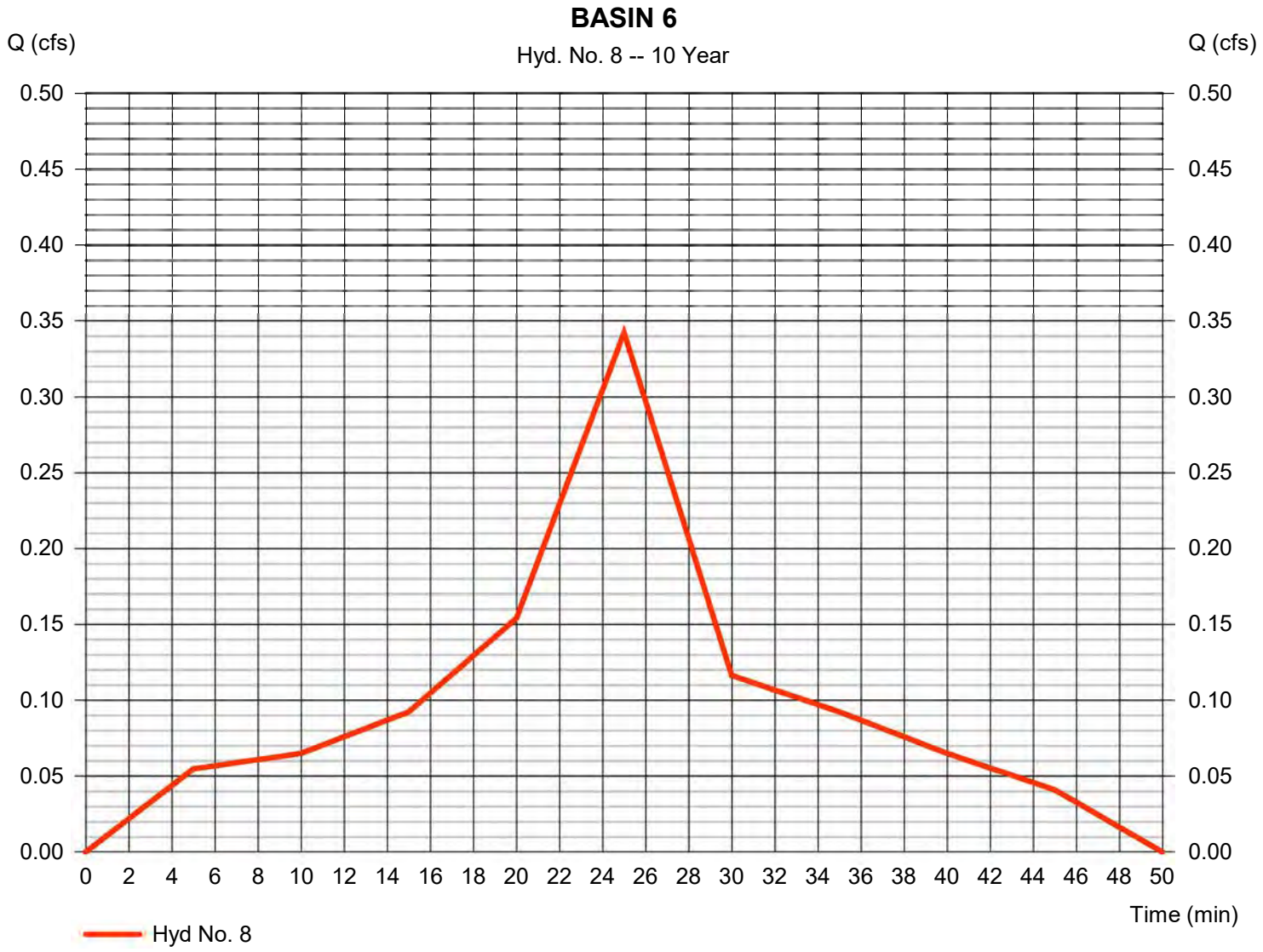


Hydrograph Report

Hyd. No. 8

BASIN 6

Hydrograph type	=	Dekalb	Peak discharge	=	0.342 cfs
Storm frequency	=	10 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	307 cuft
Drainage area	=	0.057 ac	Runoff coeff.	=	0.93
Intensity	=	6.458 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

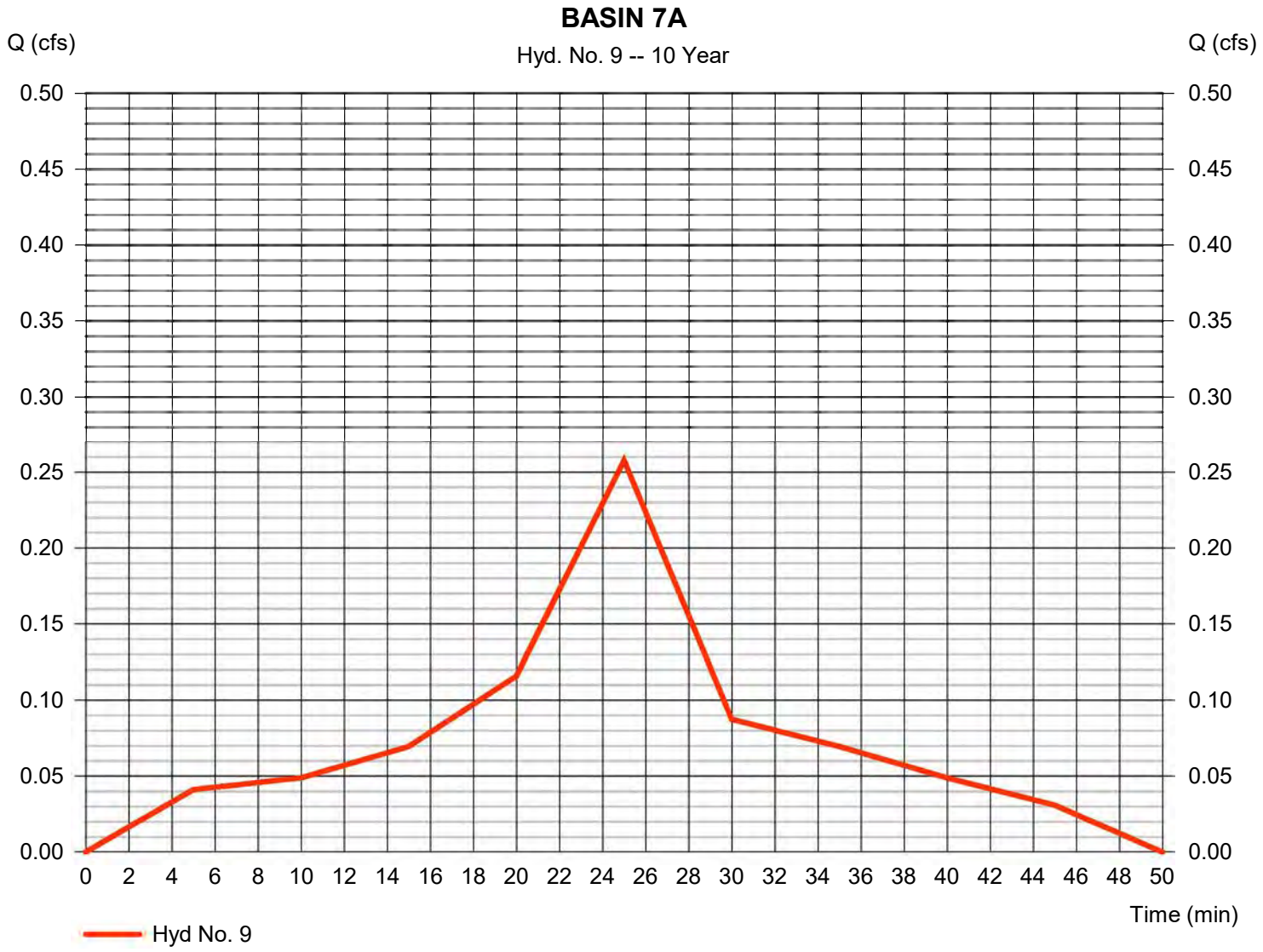


Hydrograph Report

Hyd. No. 9

BASIN 7A

Hydrograph type	=	Dekalb	Peak discharge	=	0.258 cfs
Storm frequency	=	10 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	231 cuft
Drainage area	=	0.042 ac	Runoff coeff.	=	0.95
Intensity	=	6.458 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

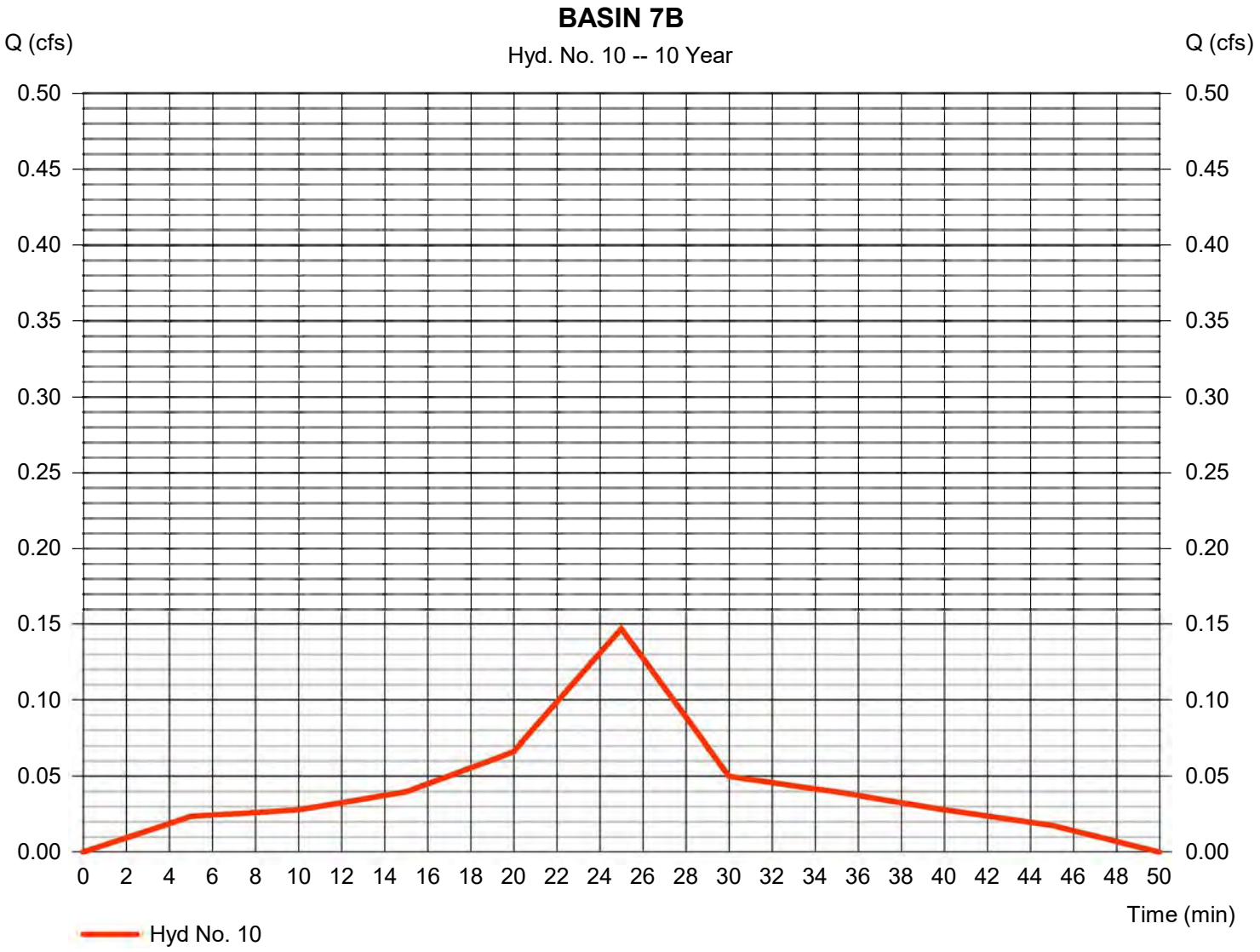


Hydrograph Report

Hyd. No. 10

BASIN 7B

Hydrograph type	=	Dekalb	Peak discharge	=	0.147 cfs
Storm frequency	=	10 yrs	Time to peak	=	25 min
Time interval	=	1 min	Hyd. volume	=	132 cuft
Drainage area	=	0.025 ac	Runoff coeff.	=	0.91
Intensity	=	6.458 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a



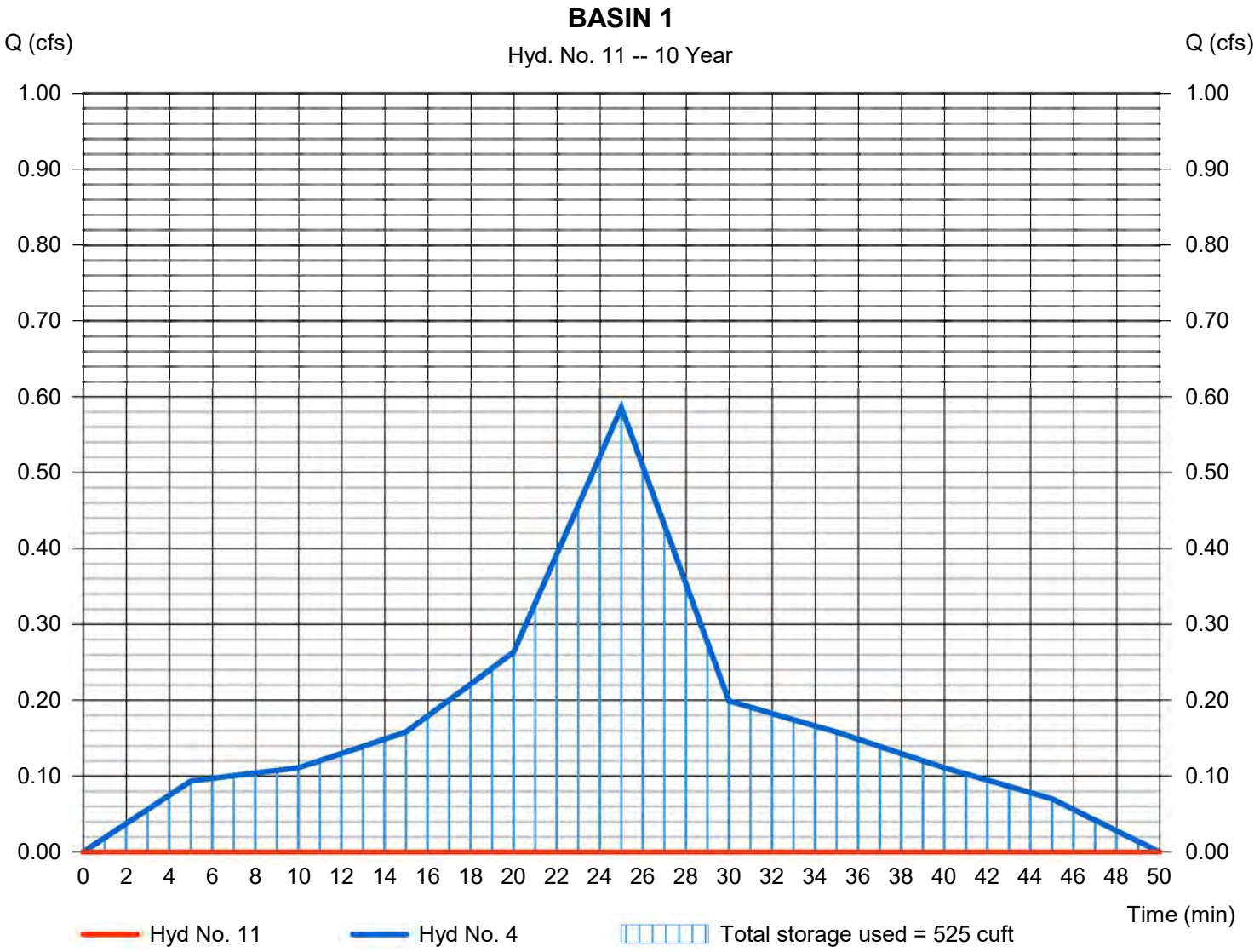
Hydrograph Report

Hyd. No. 11

BASIN 1

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 4 - BASIN 1	Max. Elevation	= 331.54 ft
Reservoir name	= Basin 1	Max. Storage	= 525 cuft

Storage Indication method used.



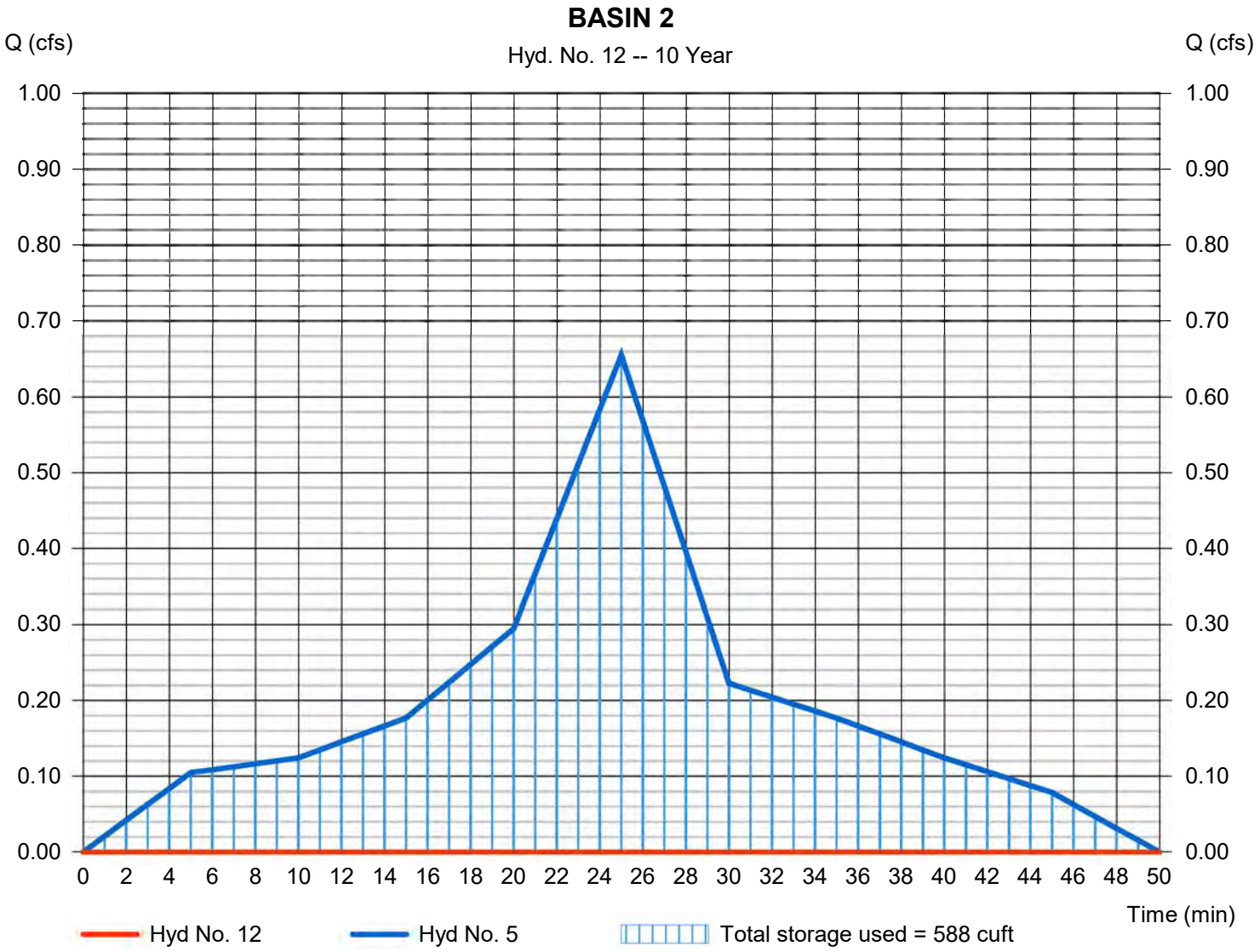
Hydrograph Report

Hyd. No. 12

BASIN 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	10 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	5 - BASIN 2	Max. Elevation	=	334.71 ft
Reservoir name	=	Basin 2	Max. Storage	=	588 cuft

Storage Indication method used.



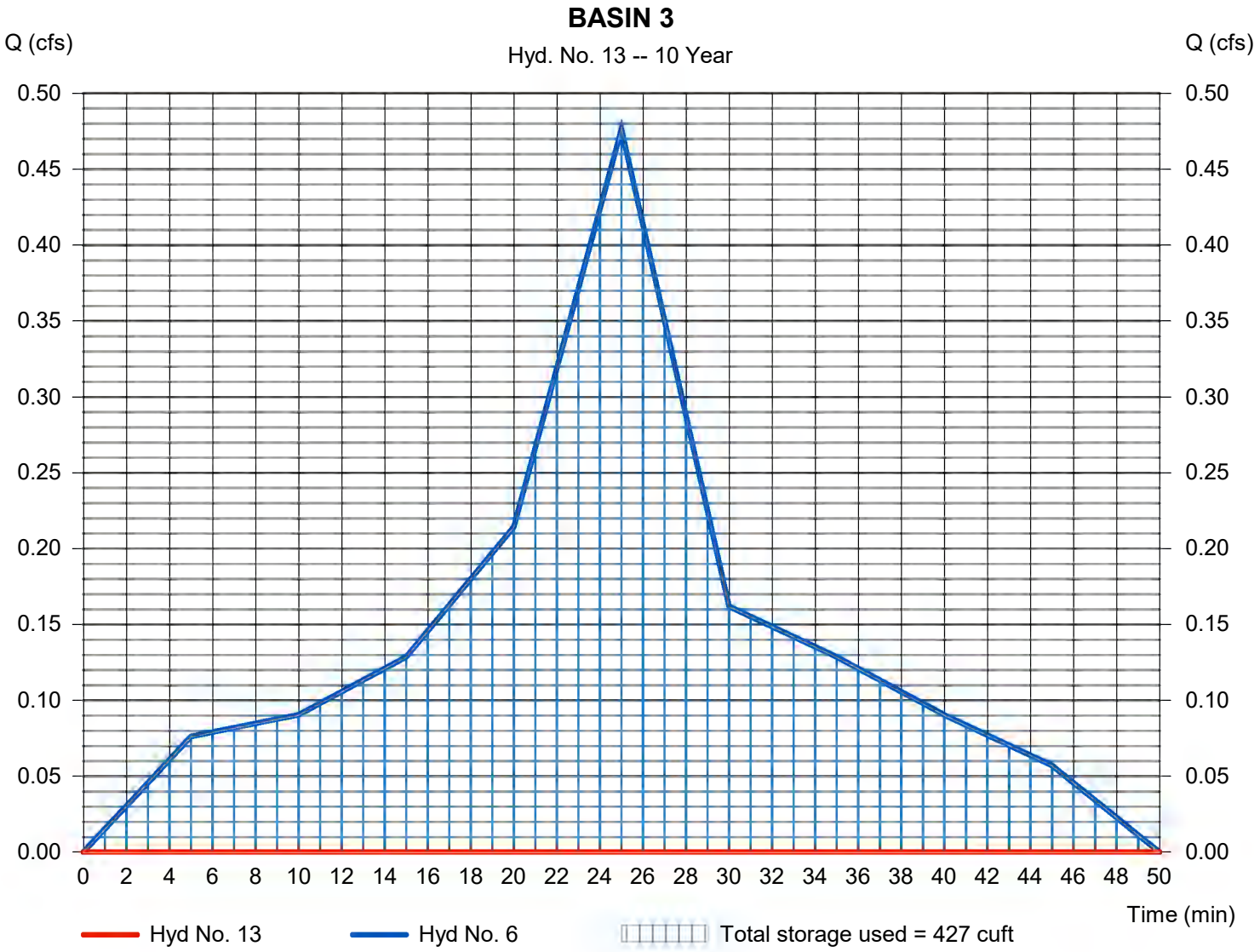
Hydrograph Report

Hyd. No. 13

BASIN 3

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	10 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	6 - BASIN 3	Max. Elevation	=	335.94 ft
Reservoir name	=	Basin 3	Max. Storage	=	427 cuft

Storage Indication method used.



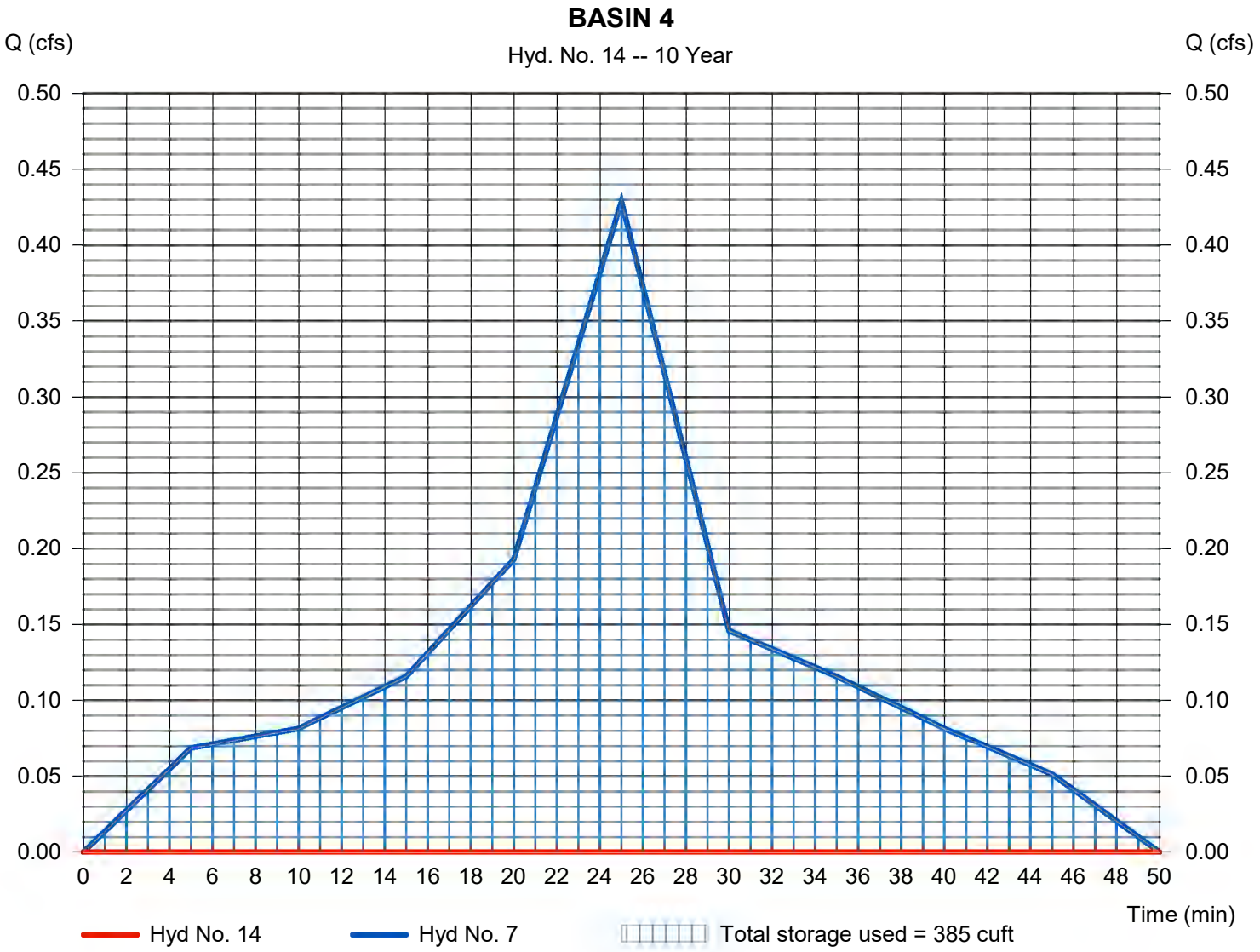
Hydrograph Report

Hyd. No. 14

BASIN 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	10 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	7 - BASIN 4	Max. Elevation	=	339.09 ft
Reservoir name	=	Basin 4	Max. Storage	=	385 cuft

Storage Indication method used.



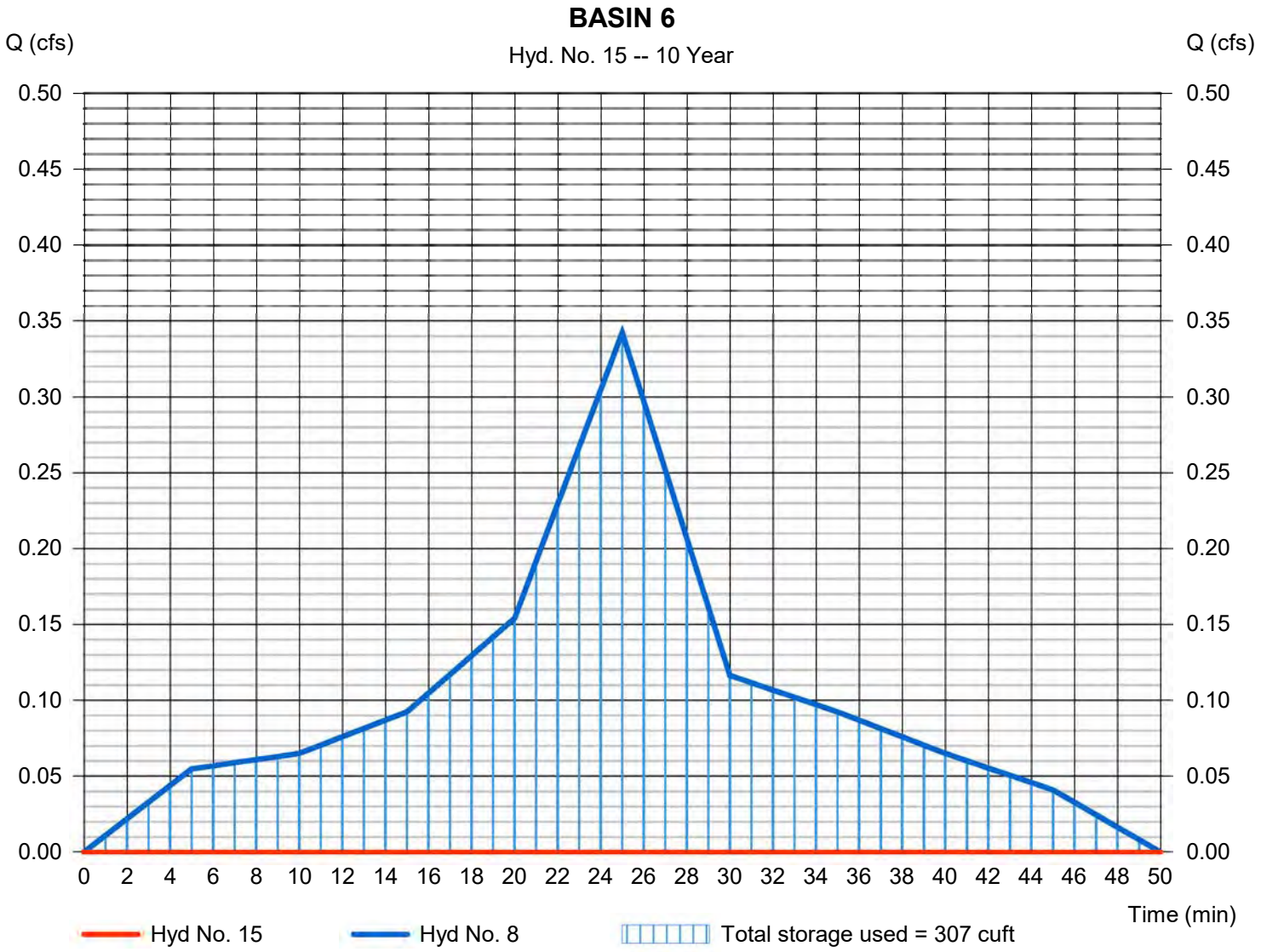
Hydrograph Report

Hyd. No. 15

BASIN 6

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	10 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	8 - BASIN 6	Max. Elevation	=	338.64 ft
Reservoir name	=	Basin 6	Max. Storage	=	307 cuft

Storage Indication method used.



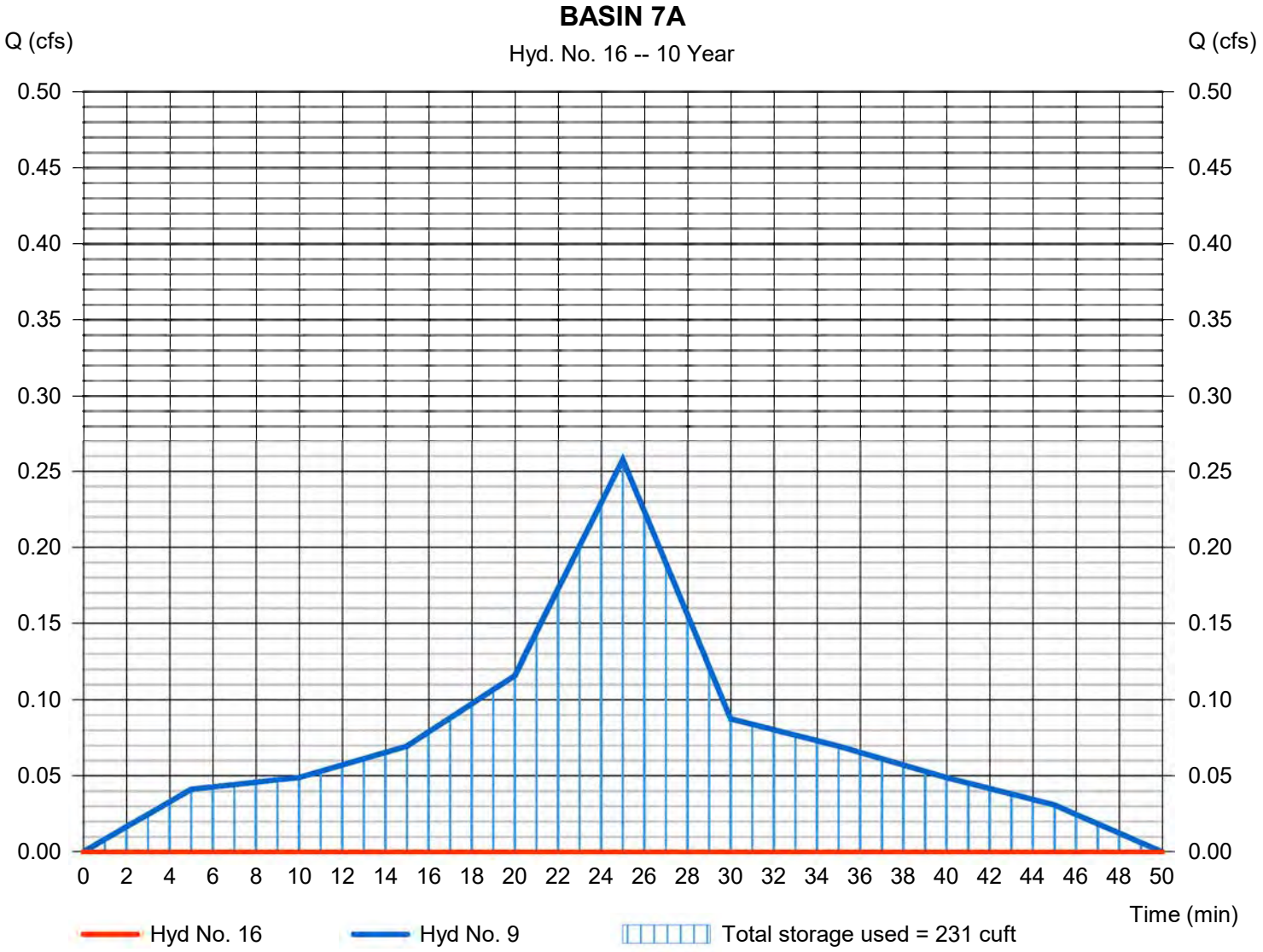
Hydrograph Report

Hyd. No. 16

BASIN 7A

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	10 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	9 - BASIN 7A	Max. Elevation	=	346.93 ft
Reservoir name	=	Basin 7A	Max. Storage	=	231 cuft

Storage Indication method used.



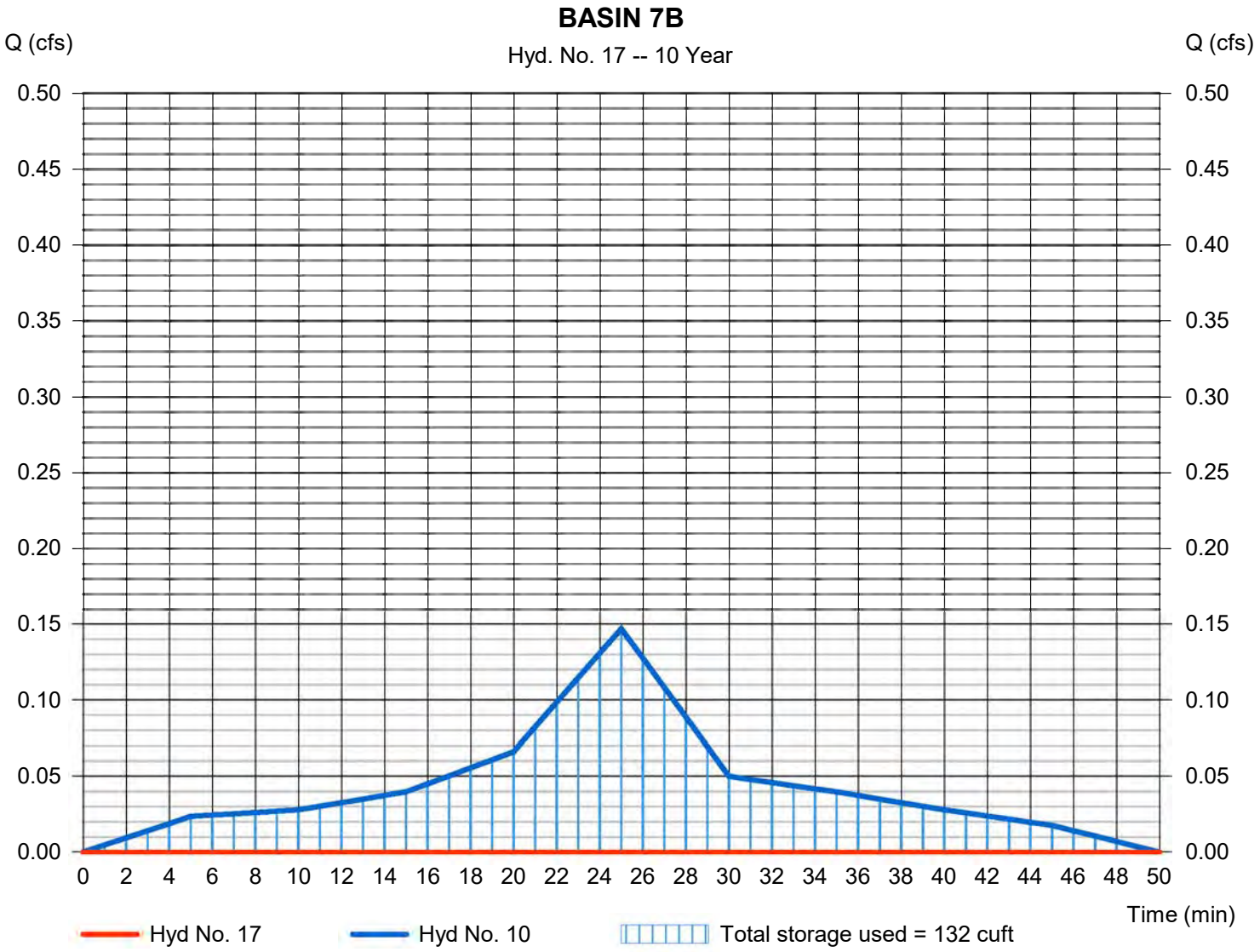
Hydrograph Report

Hyd. No. 17

BASIN 7B

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	10 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	10 - BASIN 7B	Max. Elevation	=	346.10 ft
Reservoir name	=	Basin 7B	Max. Storage	=	132 cuft

Storage Indication method used.

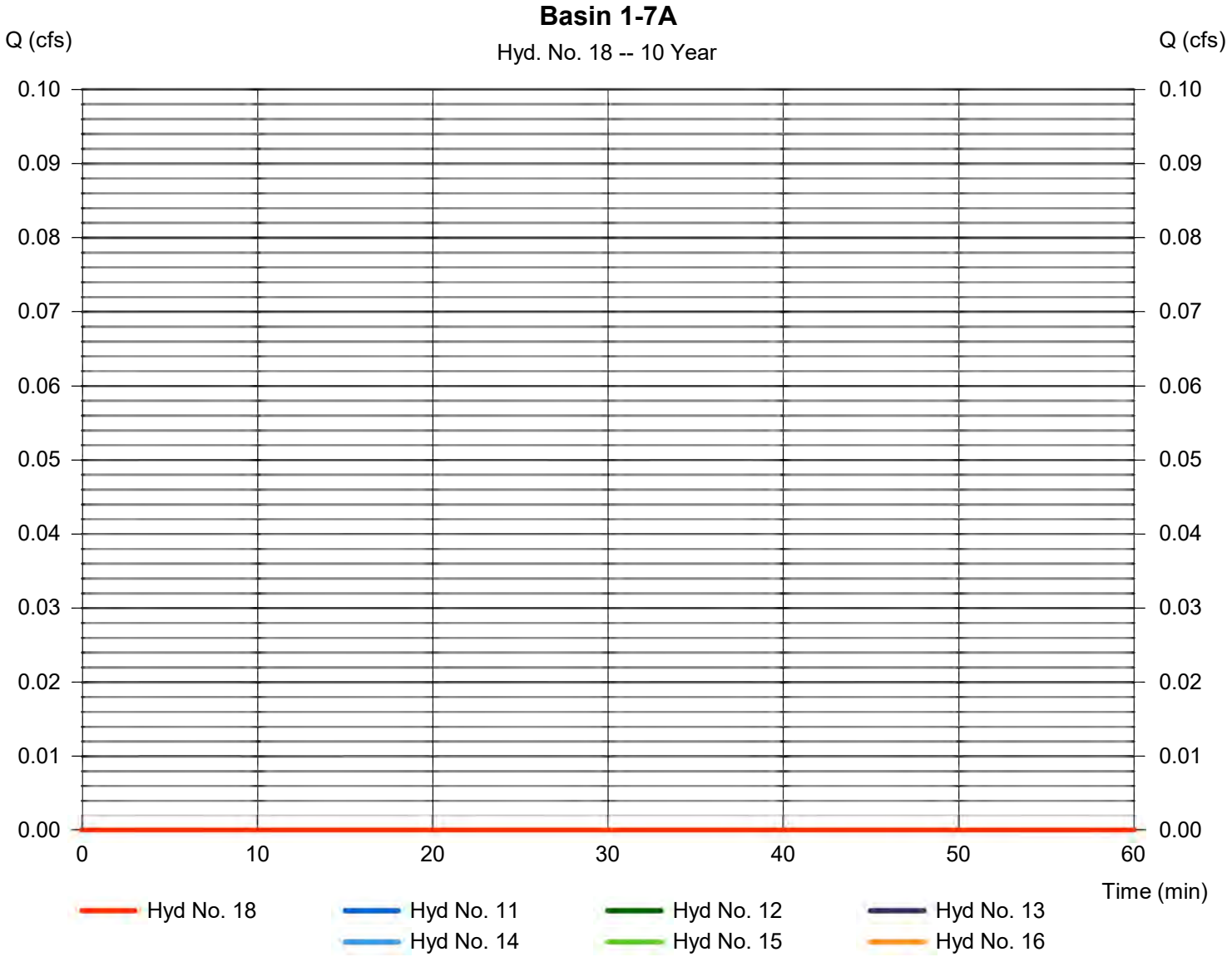


Hydrograph Report

Hyd. No. 18

Basin 1-7A

Hydrograph type	= Combine	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyds.	= 11, 12, 13, 14, 15, 16	Contrib. drain. area	= 0.000 ac

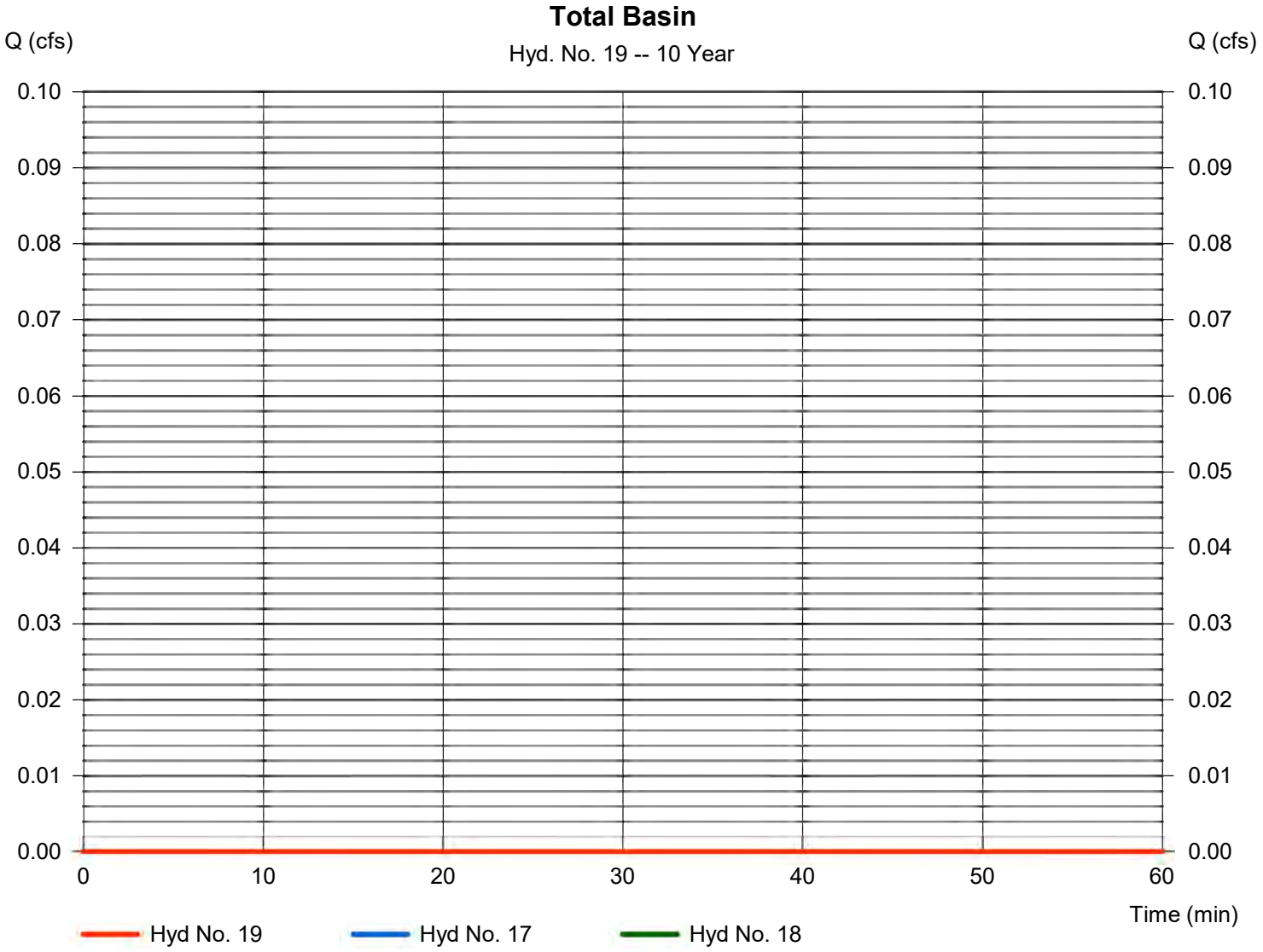


Hydrograph Report

Hyd. No. 19

Total Basin

Hydrograph type	= Combine	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyds.	= 17, 18	Contrib. drain. area	= 0.000 ac

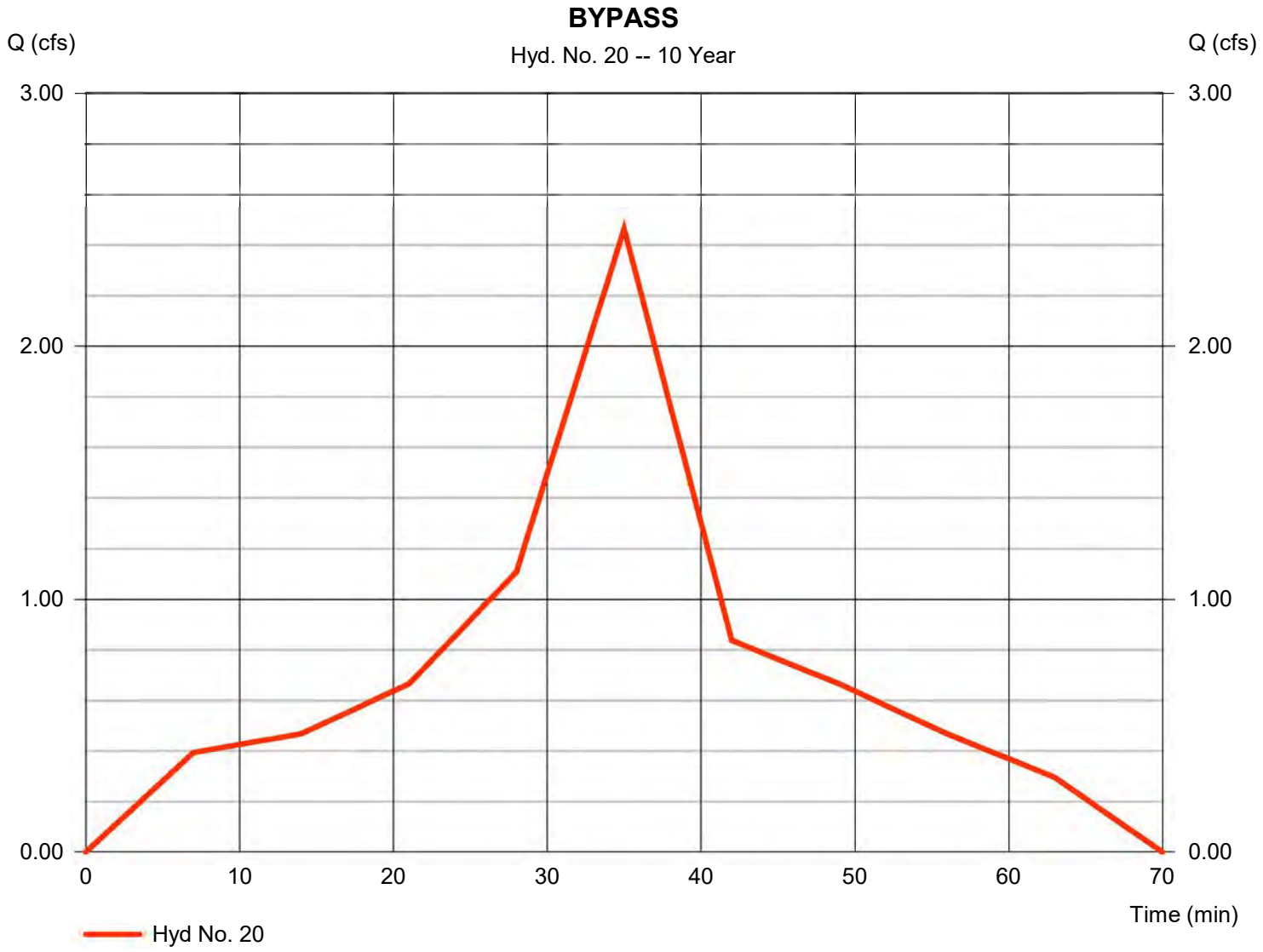


Hydrograph Report

Hyd. No. 20

BYPASS

Hydrograph type	=	Dekalb	Peak discharge	=	2.463 cfs
Storm frequency	=	10 yrs	Time to peak	=	35 min
Time interval	=	1 min	Hyd. volume	=	3,093 cuft
Drainage area	=	0.801 ac	Runoff coeff.	=	0.52
Intensity	=	5.914 in/hr	Tc by User	=	7.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

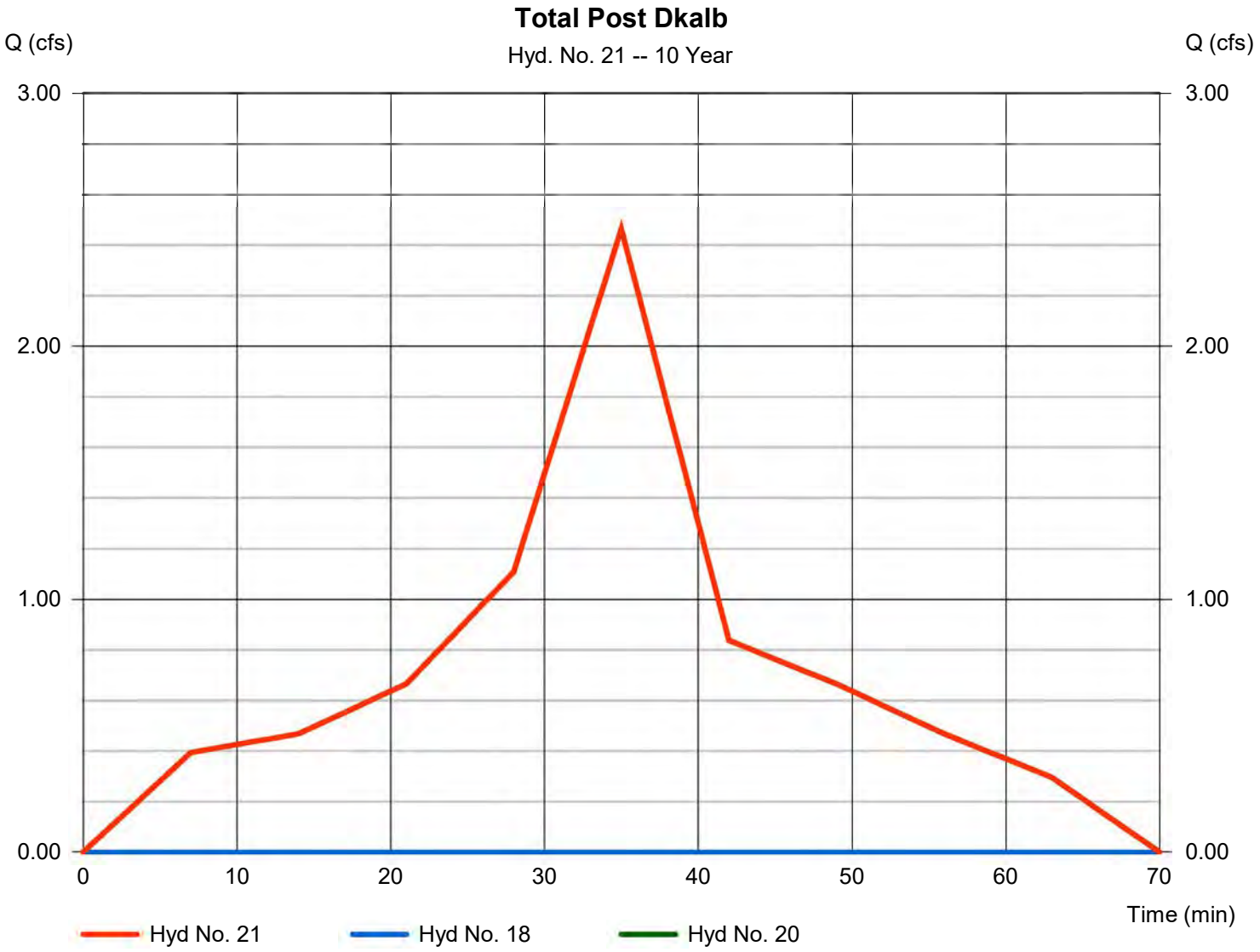


Hydrograph Report

Hyd. No. 21

Total Post Dkalb

Hydrograph type	=	Combine	Peak discharge	=	2.463 cfs
Storm frequency	=	10 yrs	Time to peak	=	35 min
Time interval	=	1 min	Hyd. volume	=	3,093 cuft
Inflow hyds.	=	18, 20	Contrib. drain. area	=	0.801 ac



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	51.6066	12.5000	0.8820	--------
2	61.7637	12.8000	0.8782	--------
3	0.0000	0.0000	0.0000	--------
5	63.8911	12.7000	0.8340	--------
10	62.8636	12.2000	0.7999	--------
25	58.2993	11.3000	0.7476	--------
50	51.5586	10.1000	0.6966	--------
100	47.5005	9.2000	0.6567	--------

File name: Abington Rainfall.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	4.13	3.31	2.77	2.39	2.11	1.89	1.71	1.57	1.45	1.35	1.26	1.18
2	4.93	3.96	3.33	2.88	2.54	2.28	2.07	1.90	1.75	1.63	1.52	1.43
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	5.82	4.73	4.00	3.49	3.10	2.79	2.54	2.34	2.17	2.03	1.90	1.79
10	6.46	5.27	4.48	3.91	3.48	3.15	2.88	2.66	2.47	2.31	2.17	2.05
25	7.23	5.92	5.06	4.44	3.98	3.61	3.31	3.07	2.86	2.69	2.53	2.40
50	7.78	6.37	5.46	4.81	4.32	3.94	3.63	3.37	3.16	2.97	2.81	2.67
100	8.32	6.82	5.86	5.18	4.67	4.27	3.95	3.68	3.45	3.26	3.09	2.94

Tc = time in minutes. Values may exceed 60.

Precip. file name: P:_Projects\2016\16-0205\Engineering\Rev-3\Site's SCS #s.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.67	3.21	0.00	4.03	4.70	5.68	6.50	7.38
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NOAA Atlas 14, Volume 2, Version 3
Location name: Willow Grove, Pennsylvania, USA*
Latitude: 40.1367°, Longitude: -75.1187°
Elevation: 342 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

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

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	4.14 (3.77-4.54)	4.93 (4.49-5.41)	5.82 (5.28-6.38)	6.46 (5.87-7.09)	7.24 (6.53-7.93)	7.79 (7.00-8.54)	8.33 (7.45-9.16)	8.82 (7.84-9.72)	9.41 (8.29-10.4)	9.86 (8.62-11.0)
10-min	3.30 (3.01-3.62)	3.94 (3.59-4.33)	4.66 (4.23-5.11)	5.17 (4.69-5.66)	5.77 (5.21-6.32)	6.20 (5.57-6.80)	6.62 (5.92-7.27)	6.99 (6.21-7.71)	7.45 (6.56-8.26)	7.76 (6.79-8.65)
15-min	2.75 (2.51-3.02)	3.30 (3.01-3.63)	3.93 (3.57-4.31)	4.36 (3.95-4.78)	4.87 (4.40-5.34)	5.23 (4.70-5.74)	5.58 (4.99-6.13)	5.88 (5.22-6.48)	6.24 (5.50-6.92)	6.50 (5.68-7.24)
30-min	1.89 (1.72-2.07)	2.28 (2.08-2.51)	2.79 (2.54-3.06)	3.15 (2.86-3.46)	3.61 (3.26-3.95)	3.94 (3.54-4.33)	4.27 (3.82-4.69)	4.57 (4.07-5.05)	4.97 (4.38-5.51)	5.26 (4.60-5.86)
60-min	1.18 (1.07-1.29)	1.43 (1.30-1.57)	1.79 (1.62-1.96)	2.05 (1.86-2.25)	2.40 (2.17-2.63)	2.67 (2.40-2.93)	2.94 (2.63-3.23)	3.21 (2.85-3.54)	3.56 (3.14-3.95)	3.84 (3.36-4.28)
2-hr	0.706 (0.639-0.777)	0.858 (0.779-0.945)	1.08 (0.976-1.19)	1.25 (1.13-1.37)	1.47 (1.32-1.62)	1.65 (1.48-1.81)	1.84 (1.63-2.02)	2.02 (1.78-2.22)	2.28 (1.98-2.52)	2.47 (2.13-2.75)
3-hr	0.514 (0.465-0.569)	0.625 (0.566-0.690)	0.787 (0.711-0.869)	0.912 (0.822-1.01)	1.08 (0.972-1.19)	1.22 (1.09-1.34)	1.36 (1.21-1.50)	1.50 (1.32-1.67)	1.70 (1.48-1.90)	1.86 (1.59-2.08)
6-hr	0.323 (0.294-0.358)	0.391 (0.356-0.434)	0.491 (0.445-0.542)	0.571 (0.516-0.630)	0.686 (0.614-0.756)	0.780 (0.693-0.860)	0.881 (0.776-0.972)	0.987 (0.860-1.09)	1.14 (0.974-1.27)	1.26 (1.06-1.41)
12-hr	0.195 (0.179-0.216)	0.236 (0.216-0.262)	0.298 (0.272-0.330)	0.350 (0.318-0.387)	0.427 (0.383-0.471)	0.493 (0.438-0.543)	0.564 (0.495-0.623)	0.642 (0.555-0.712)	0.758 (0.641-0.846)	0.856 (0.710-0.960)
24-hr	0.114 (0.105-0.123)	0.137 (0.127-0.149)	0.173 (0.160-0.188)	0.203 (0.187-0.221)	0.248 (0.226-0.268)	0.285 (0.259-0.308)	0.326 (0.294-0.352)	0.371 (0.332-0.401)	0.437 (0.385-0.472)	0.492 (0.429-0.533)
2-day	0.065 (0.060-0.071)	0.079 (0.072-0.086)	0.100 (0.092-0.109)	0.117 (0.107-0.127)	0.142 (0.129-0.154)	0.163 (0.147-0.176)	0.185 (0.167-0.201)	0.209 (0.187-0.227)	0.244 (0.215-0.265)	0.272 (0.238-0.297)
3-day	0.046 (0.042-0.050)	0.055 (0.051-0.060)	0.070 (0.064-0.076)	0.082 (0.075-0.089)	0.099 (0.090-0.107)	0.113 (0.103-0.122)	0.128 (0.116-0.138)	0.144 (0.129-0.156)	0.167 (0.149-0.181)	0.186 (0.164-0.202)
4-day	0.036 (0.034-0.039)	0.044 (0.041-0.047)	0.055 (0.051-0.060)	0.064 (0.059-0.069)	0.077 (0.071-0.083)	0.088 (0.080-0.095)	0.099 (0.090-0.107)	0.111 (0.101-0.120)	0.128 (0.115-0.139)	0.142 (0.127-0.154)
7-day	0.024 (0.022-0.026)	0.029 (0.027-0.031)	0.036 (0.033-0.039)	0.042 (0.039-0.045)	0.050 (0.046-0.054)	0.057 (0.052-0.061)	0.064 (0.059-0.069)	0.072 (0.065-0.077)	0.083 (0.075-0.089)	0.092 (0.082-0.099)
10-day	0.019 (0.018-0.020)	0.023 (0.021-0.025)	0.028 (0.026-0.030)	0.032 (0.030-0.034)	0.038 (0.035-0.041)	0.043 (0.039-0.046)	0.047 (0.044-0.051)	0.053 (0.048-0.056)	0.060 (0.054-0.064)	0.065 (0.059-0.070)
20-day	0.013 (0.012-0.014)	0.015 (0.014-0.016)	0.018 (0.017-0.019)	0.021 (0.019-0.022)	0.024 (0.022-0.025)	0.026 (0.025-0.028)	0.029 (0.027-0.031)	0.032 (0.029-0.034)	0.035 (0.032-0.037)	0.038 (0.035-0.040)
30-day	0.010 (0.010-0.011)	0.012 (0.012-0.013)	0.015 (0.014-0.015)	0.016 (0.015-0.017)	0.018 (0.017-0.019)	0.020 (0.019-0.021)	0.022 (0.020-0.023)	0.023 (0.022-0.025)	0.026 (0.024-0.027)	0.027 (0.025-0.029)
45-day	0.009 (0.008-0.009)	0.010 (0.010-0.011)	0.012 (0.011-0.013)	0.013 (0.013-0.014)	0.015 (0.014-0.016)	0.016 (0.015-0.017)	0.017 (0.016-0.018)	0.018 (0.017-0.019)	0.020 (0.018-0.021)	0.020 (0.019-0.022)
60-day	0.008 (0.007-0.008)	0.009 (0.009-0.010)	0.011 (0.010-0.011)	0.012 (0.011-0.012)	0.013 (0.012-0.014)	0.014 (0.013-0.015)	0.015 (0.014-0.016)	0.016 (0.015-0.016)	0.017 (0.016-0.018)	0.017 (0.016-0.018)

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

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

Please refer to NOAA Atlas 14 document for more information.

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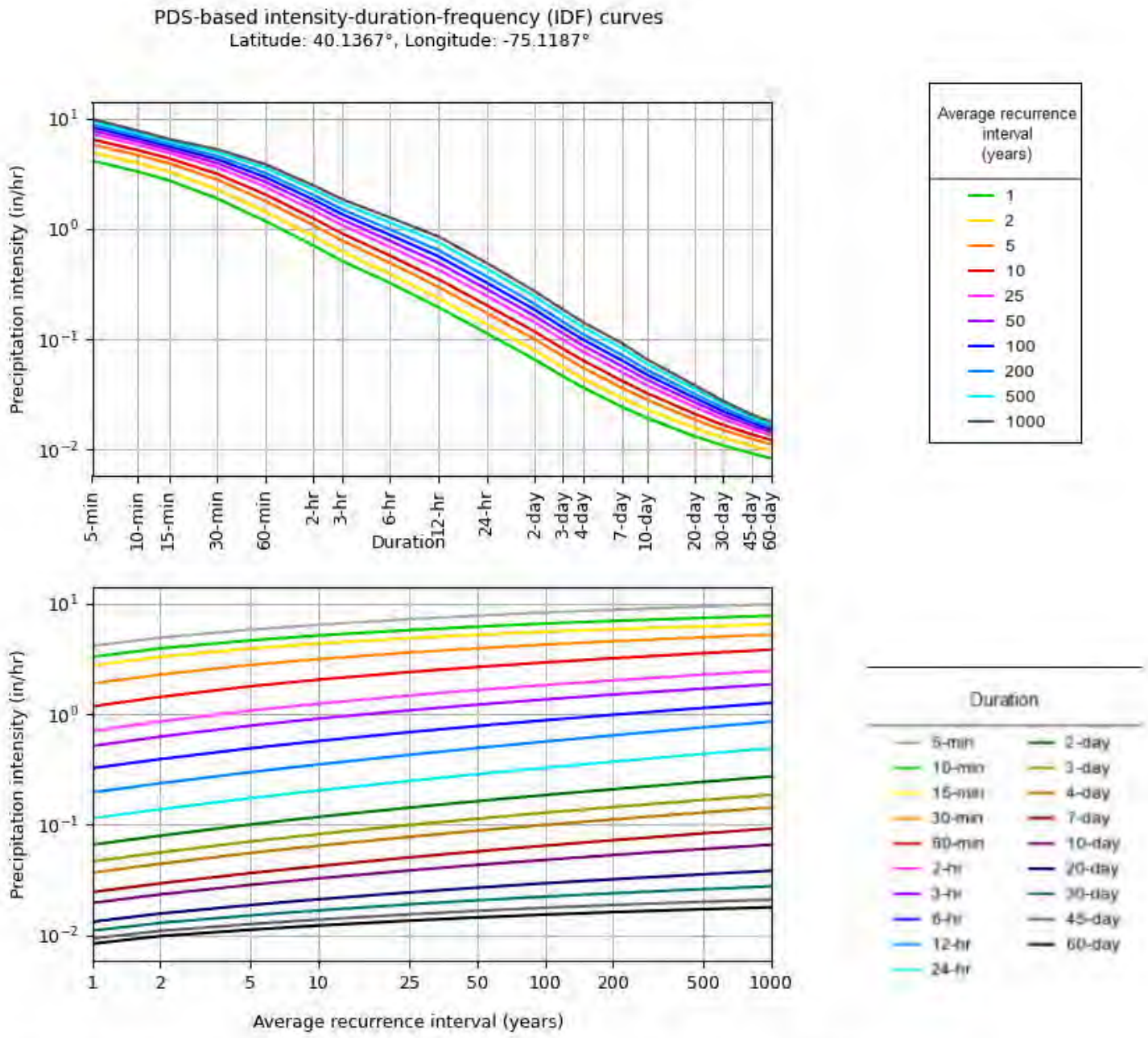
PF graphical



NOAA Atlas 14, Volume 2, Version 3

Created (GMT): Mon Mar 4 21:12:00 2024

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Maps & aerials

Small scale terrain

Large scale terrain

Large scale map

Large scale aerial

Back to Top

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

Disclaimer

Section 142-409

Stormwater Peak Rate Control and Management Districts

Hydrographs for 25-, 50-, and 100-year design storms

Proposed Condition Design Storm	Post-Development Runoff (cfs) TOTAL	Pre Development Condition Design Storm	Pre Development Runoff (cfs), Area 1	Summary (cfs)
2-year	1.869	1-year	2.206	1.869<2.206
5-year	2.215	5-year	3.147	2.215<3.147
10-year	2.463	10-year	3.507	2.463<3.507
25-year	3.188	25-year	4.558	3.188<4.558
50-year	3.429	50-year	4.906	3.429<4.906
100-year	3.666	100-year	5.251	3.666<5.251

Cornerstone Consulting Engineers & Architectural, Inc.
213 W. Main Street, Lansdale, PA 19446
Phone (215) 362-2600

Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☑ Pre-Development ☐ Post-Development

PRE-DEVELOPMENT AREA 1
(storms 25 to 100-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Impervious	0.95	0.222	0.21
	Meadow	0.44	1.258	0.55
	Totals =		1.480	0.76

C (Weighted) = Total Product = Total Area 0.5165

Use C = 0.52

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Runoff Curve Number

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Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 1
(storms 25 to 100-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.054	0.05
	Lawn	0.49	0.105	0.05
	Totals =		0.159	0.10275

C (Weighted) = Total Product = Total Area 0.6462264

Use C = 0.65

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Runoff Curve Number

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Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 2
(storms 25 to 100-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.060	0.06
	Lawn	0.49	0.118	0.06
	Totals =		0.178	0.11482

C (Weighted) = Total Product = 0.6450562
Total Area

Use C = 0.65

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Runoff Curve Number

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Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 3
(storms 25 to 100-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.045	0.04
	Lawn	0.49	0.080	0.04
	Totals =		0.125	0.08195

C (Weighted) = Total Product = Total Area 0.6556

Use C = 0.66

Cornerstone Consulting Engineers & Architectural, Inc.
213 W. Main Street, Lansdale, PA 19446
Phone (215) 362-2600

Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 4
(storms 25 to 100-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.056	0.05
	Lawn	0.49	0.035	0.02
	Totals =		0.091	0.07035

C (Weighted) = Total Product = 0.7730769
Total Area

Use C = 0.77

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213 W. Main Street, Lansdale, PA 19446
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Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 6
(storms 25 to 100-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.055	0.05
	Lawn	0.49	0.002	0.00
	Totals =		0.057	0.05323

C (Weighted) = Total Product = 0.9338596
Total Area

Use C = 0.93

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Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 7A
(storms 25 to 100-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.042	0.04
	Lawn	0.49	0.000	0.00
	Totals =		0.042	0.0399

C (Weighted) = Total Product = Total Area 0.95

Use C = 0.95

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Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

Basin 7B
(storms 25 to 100-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB	Porous Pavement	0.80	0.000	0.00
	Impervious	0.95	0.023	0.02
	Lawn	0.49	0.002	0.00
	Totals =		0.025	0.02283

C (Weighted) = Total Product = Total Area 0.9132

Use C = 0.92

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Runoff Curve Number

Project: 2241 Old Welsh Road Subdivision

Location: 2241 Old Welsh Road Subdivision

Developemnt Type: ☐ Pre-Development ☑ Post-Development

POST DEVELOPMENT BYPASS AREA
(storms 25 to 100-year)

Runoff Coefficient

Soil Name and Hydraulic Group (Appendix A)	Cover Description	C	Area (Acres)	Product of C * Area
UrkD, UrkB				
	Impervious	0.95	0.197	0.19
	Lawn	0.49	0.604	0.30
	Totals =		0.801	0.48311

C (Weighted) = Total Product = 0.6031336
Total Area

Use C = 0.60

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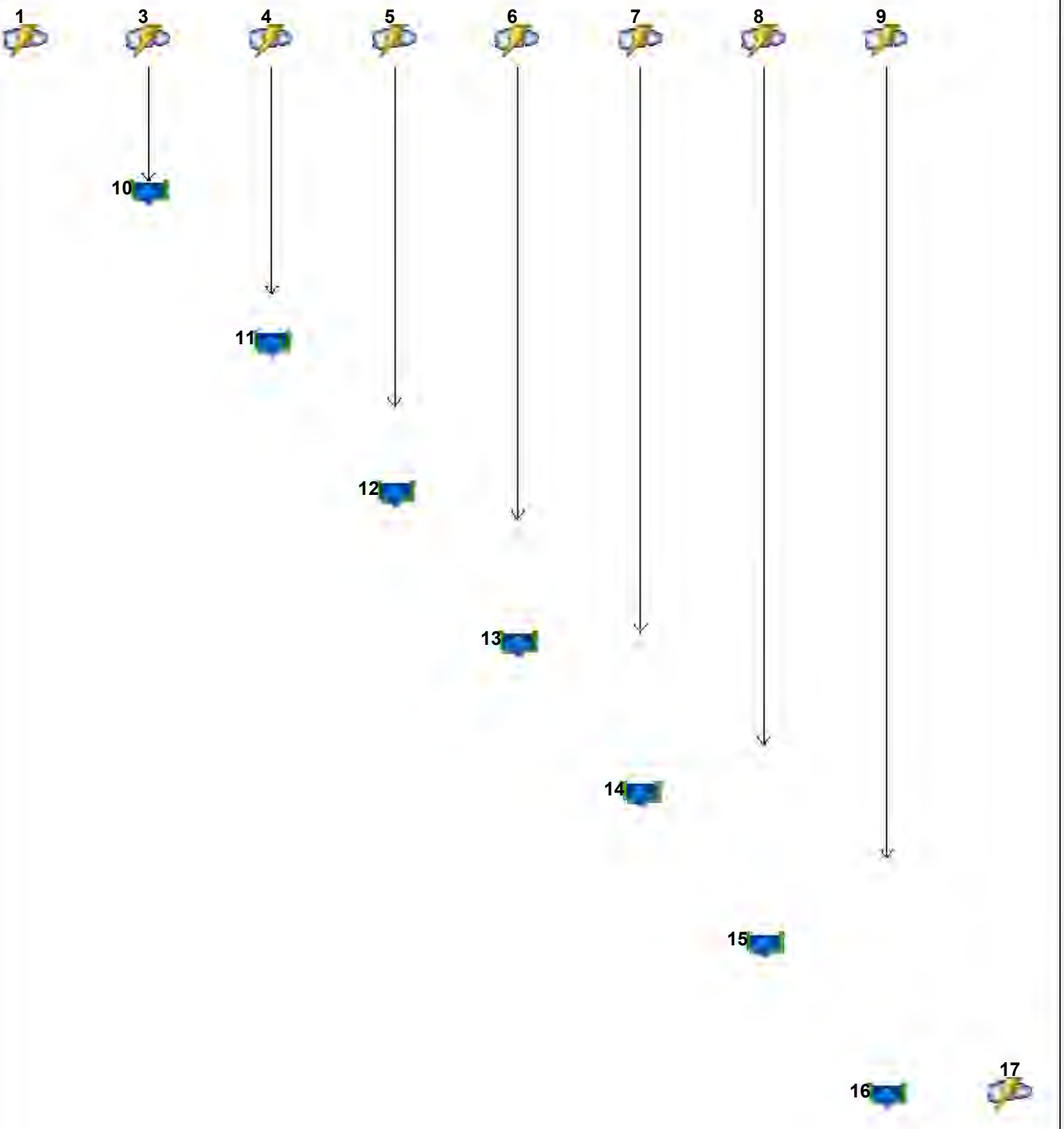
Watershed Model Schematic



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	Dekalb	------	-------	-------	-------	-------	-------	4.558	4.906	5.251	PRE DA POI 1 (storms 25-100 yr)
3	Dekalb	------	-------	-------	-------	-------	-------	0.748	0.804	0.860	BASIN 1
4	Dekalb	------	-------	-------	-------	-------	-------	0.837	0.900	0.962	BASIN 2
5	Dekalb	------	-------	-------	-------	-------	-------	0.597	0.642	0.686	BASIN 3
6	Dekalb	------	-------	-------	-------	-------	-------	0.507	0.545	0.583	BASIN 4
7	Dekalb	------	-------	-------	-------	-------	-------	0.383	0.412	0.441	BASIN 6
8	Dekalb	------	-------	-------	-------	-------	-------	0.289	0.310	0.332	BASIN 7A
9	Dekalb	------	-------	-------	-------	-------	-------	0.166	0.179	0.191	BASIN 7B
10	Reservoir	3	-------	-------	-------	-------	-------	0.000	0.000	0.000	BASIN 1
11	Reservoir	4	-------	-------	-------	-------	-------	0.000	0.000	0.000	BASIN 2
12	Reservoir	5	-------	-------	-------	-------	-------	0.000	0.000	0.000	BASIN 3
13	Reservoir	6	-------	-------	-------	-------	-------	0.000	0.000	0.000	BASIN 4
14	Reservoir	7	-------	-------	-------	-------	-------	0.000	0.000	0.000	BASIN 6
15	Reservoir	8	-------	-------	-------	-------	-------	0.000	0.000	0.000	BASIN 7A
16	Reservoir	9	-------	-------	-------	-------	-------	0.000	0.000	0.000	BASIN 7B
17	Dekalb	------	-------	-------	-------	-------	-------	3.188	3.429	3.666	BYPASS

Hydrograph Summary Report

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

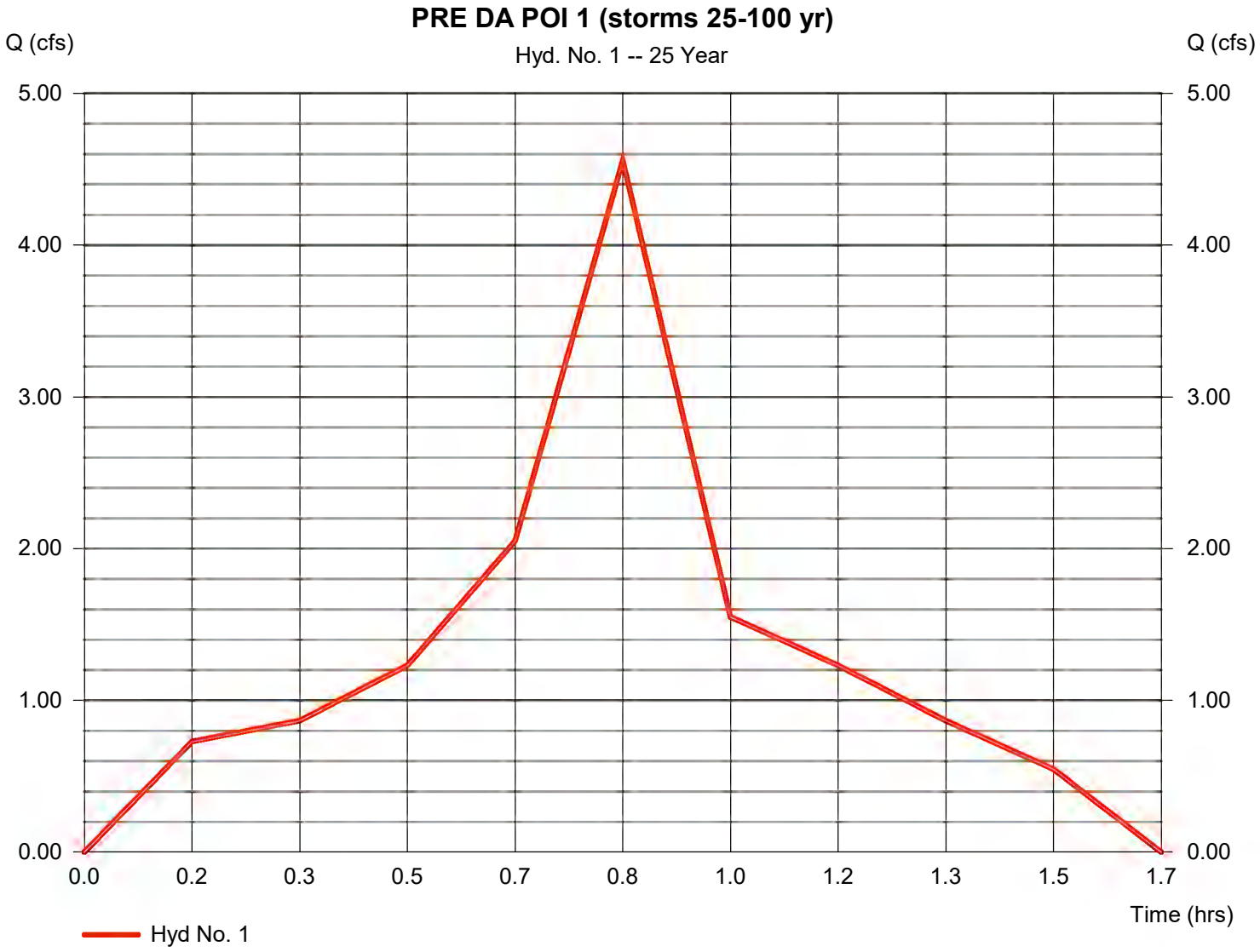
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Dekalb	4.558	1	50	8,177	------	------	------	PRE DA POI 1 (storms 25-100 yr)
3	Dekalb	0.748	1	25	671	------	------	------	BASIN 1
4	Dekalb	0.837	1	25	751	------	------	------	BASIN 2
5	Dekalb	0.597	1	25	535	------	------	------	BASIN 3
6	Dekalb	0.507	1	25	455	------	------	------	BASIN 4
7	Dekalb	0.383	1	25	344	------	------	------	BASIN 6
8	Dekalb	0.289	1	25	259	------	------	------	BASIN 7A
9	Dekalb	0.166	1	25	149	------	------	------	BASIN 7B
10	Reservoir	0.000	1	n/a	0	3	332.24	671	BASIN 1
11	Reservoir	0.000	1	n/a	0	4	335.41	751	BASIN 2
12	Reservoir	0.000	1	n/a	0	5	336.54	535	BASIN 3
13	Reservoir	0.000	1	n/a	0	6	339.67	455	BASIN 4
14	Reservoir	0.000	1	n/a	0	7	338.78	344	BASIN 6
15	Reservoir	0.000	1	n/a	0	8	347.16	259	BASIN 7A
16	Reservoir	0.000	1	n/a	0	9	345.94	149	BASIN 7B
17	Dekalb	3.188	1	35	4,004	------	------	------	BYPASS

Hydrograph Report

Hyd. No. 1

PRE DA POI 1 (storms 25-100 yr)

Hydrograph type	= Dekalb	Peak discharge	= 4.558 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.83 hrs
Time interval	= 1 min	Hyd. volume	= 8,177 cuft
Drainage area	= 1.480 ac	Runoff coeff.	= 0.52
Intensity	= 5.923 in/hr	Tc by User	= 10.00 min
IDF Curve	= Abington Rainfall.IDF	Asc/Rec limb fact	= n/a

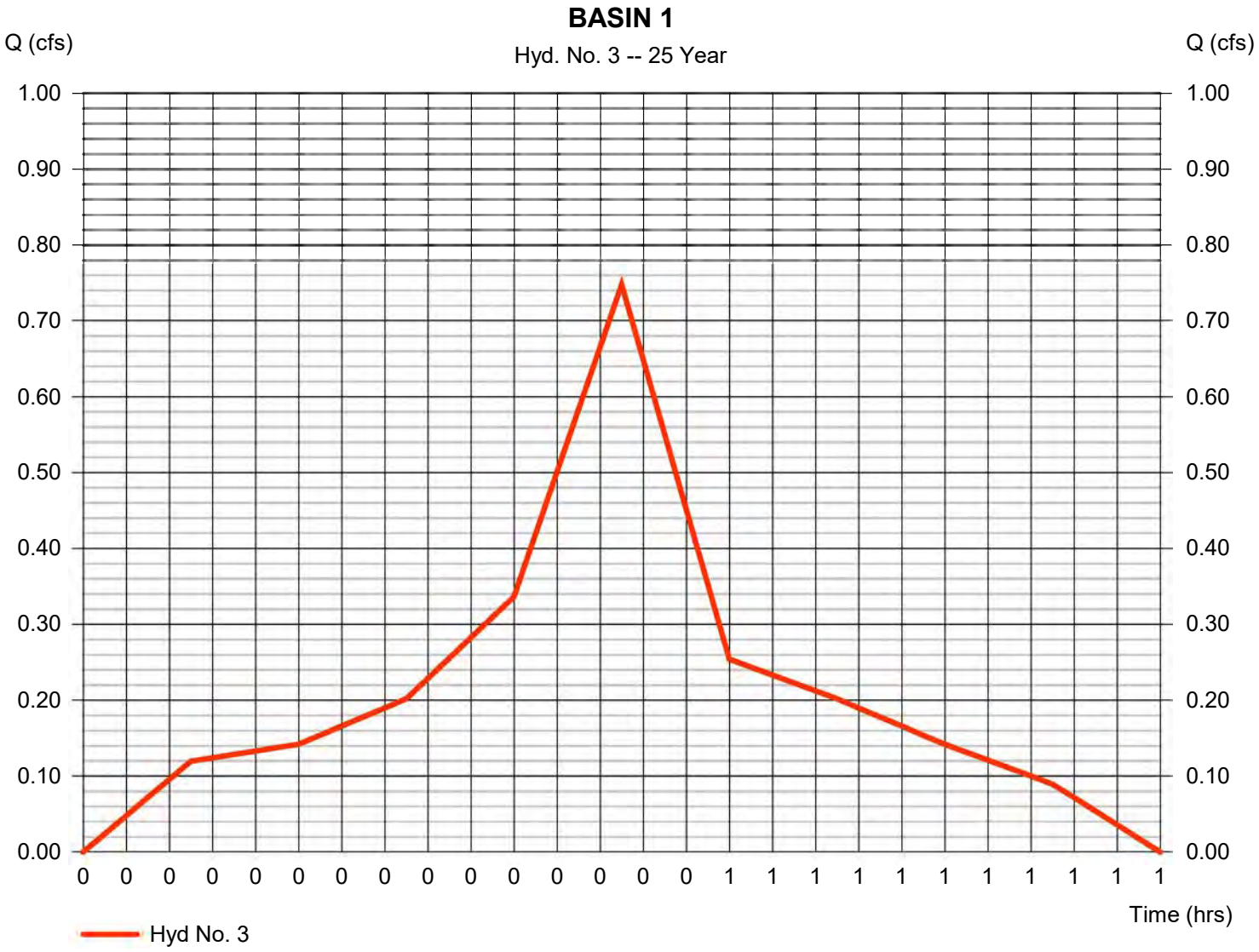


Hydrograph Report

Hyd. No. 3

BASIN 1

Hydrograph type	=	Dekalb	Peak discharge	=	0.748 cfs
Storm frequency	=	25 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	671 cuft
Drainage area	=	0.159 ac	Runoff coeff.	=	0.65
Intensity	=	7.234 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

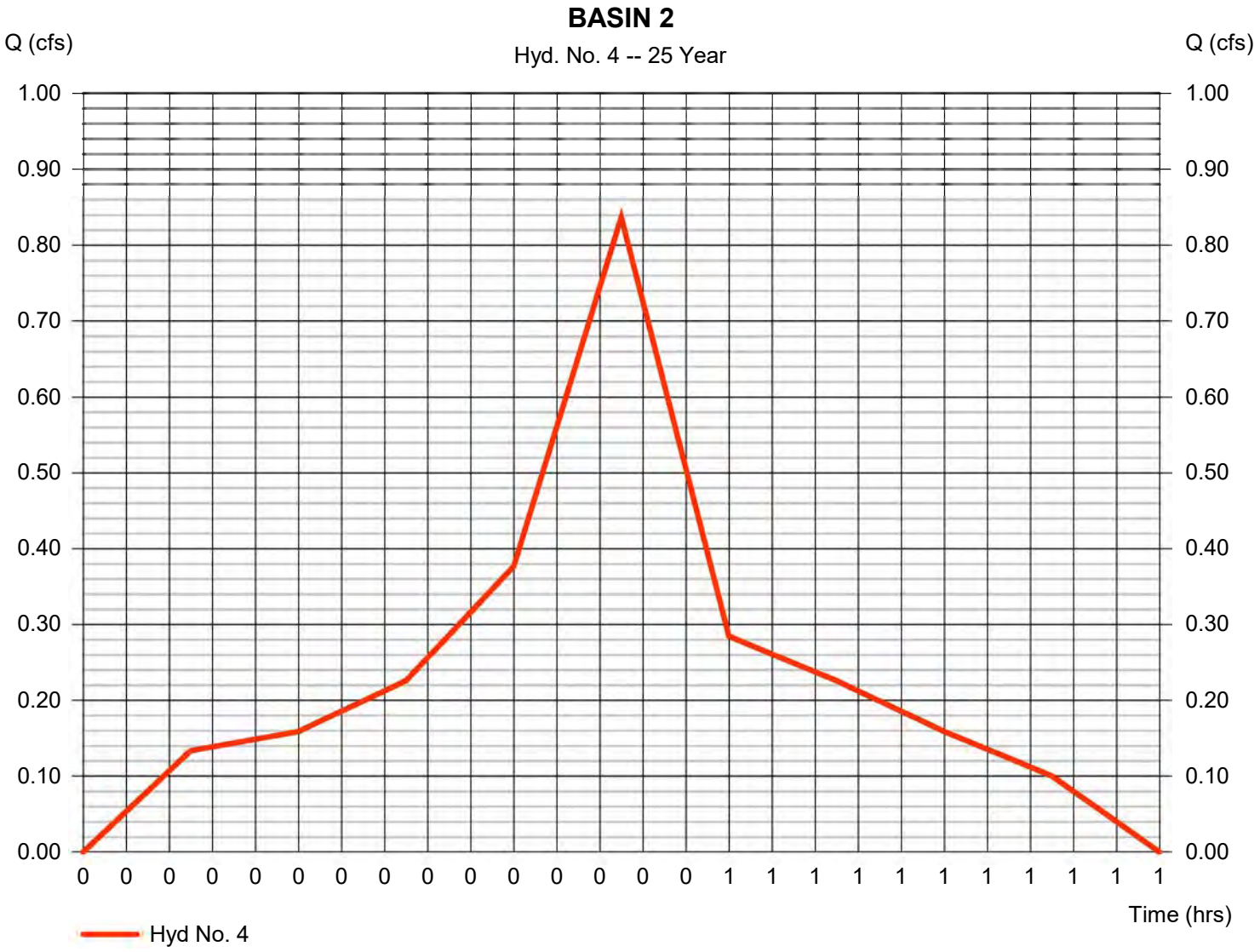


Hydrograph Report

Hyd. No. 4

BASIN 2

Hydrograph type	=	Dekalb	Peak discharge	=	0.837 cfs
Storm frequency	=	25 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	751 cuft
Drainage area	=	0.178 ac	Runoff coeff.	=	0.65
Intensity	=	7.234 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

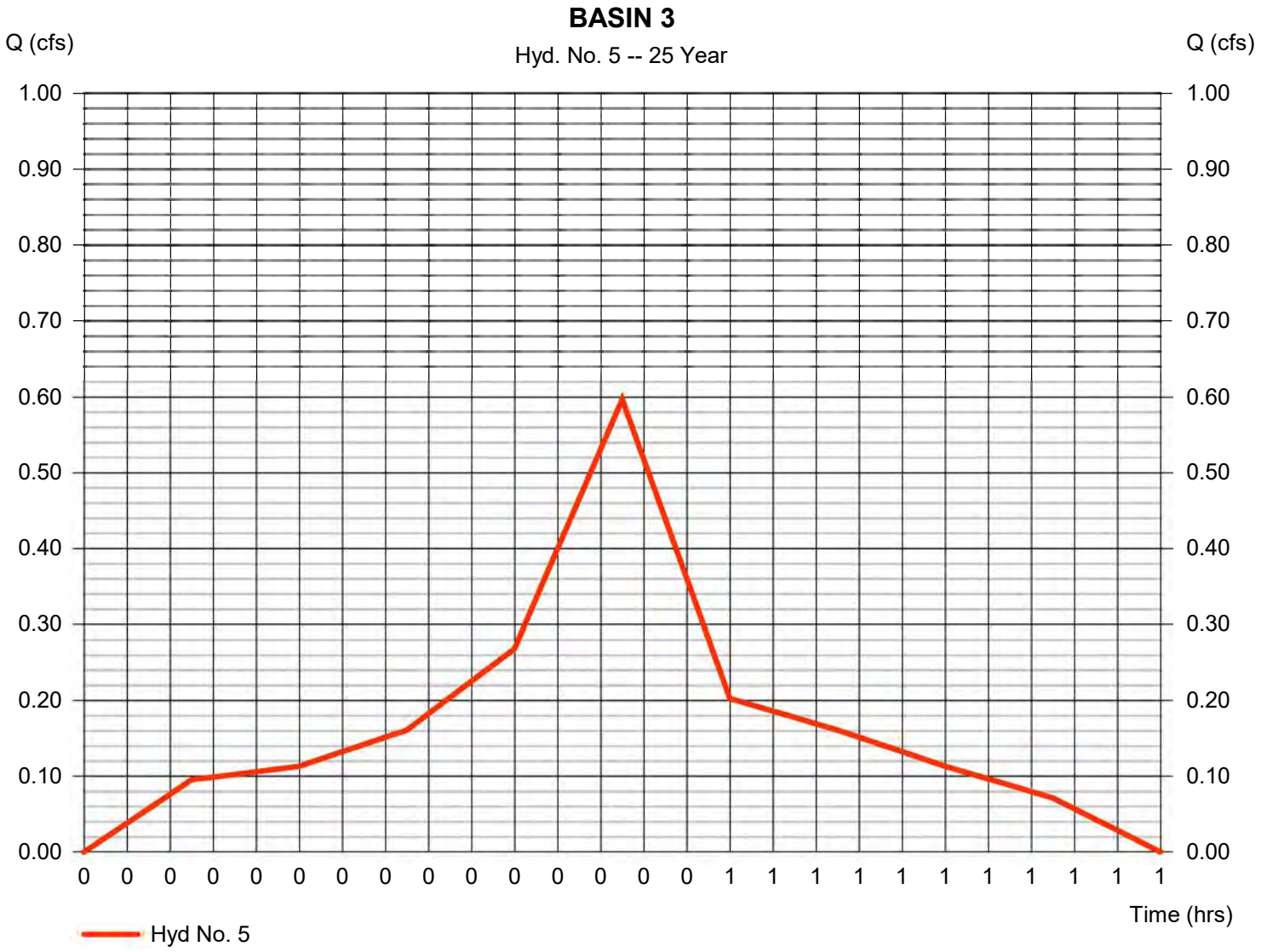


Hydrograph Report

Hyd. No. 5

BASIN 3

Hydrograph type	=	Dekalb	Peak discharge	=	0.597 cfs
Storm frequency	=	25 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	535 cuft
Drainage area	=	0.125 ac	Runoff coeff.	=	0.66
Intensity	=	7.234 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

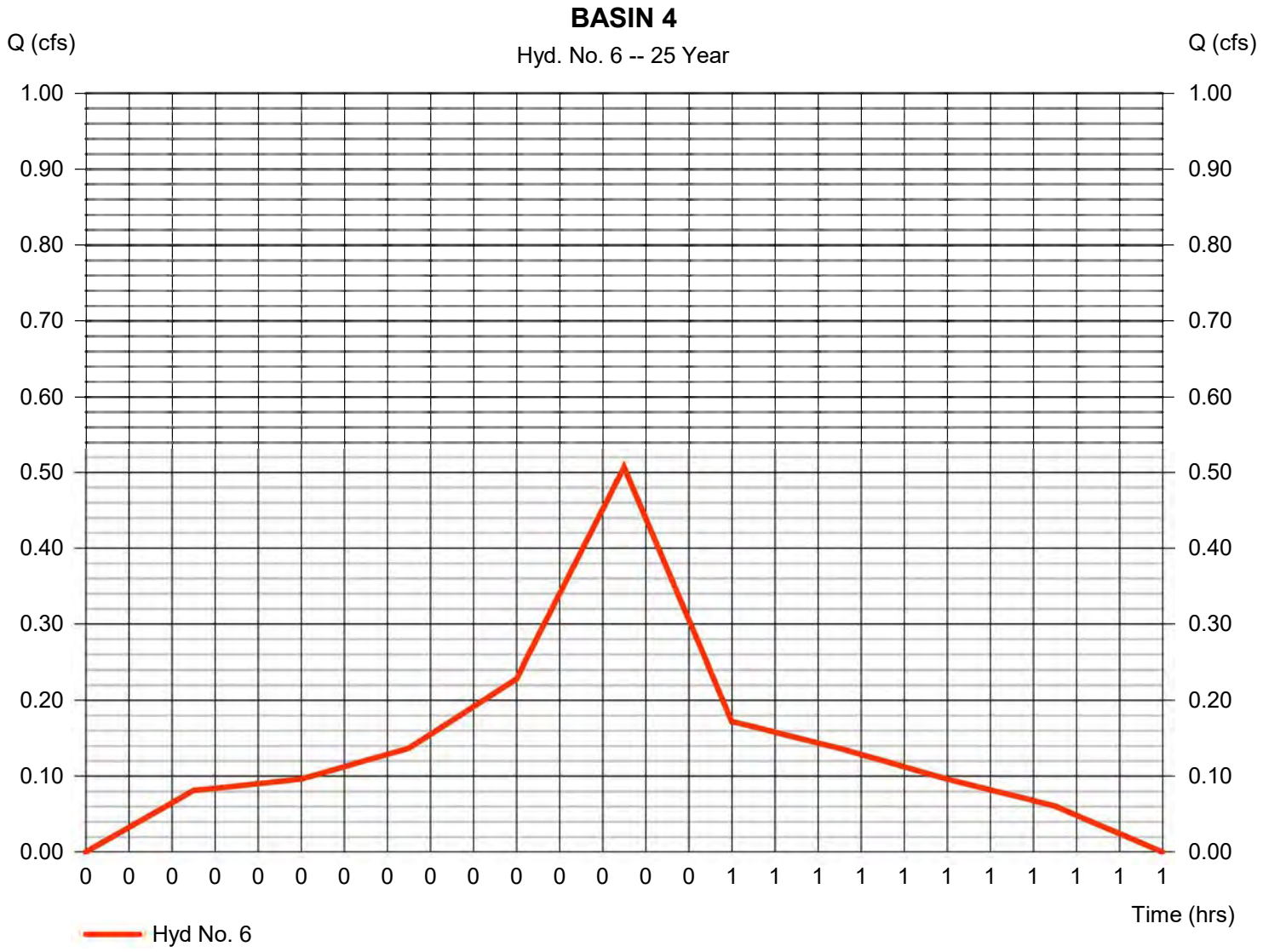


Hydrograph Report

Hyd. No. 6

BASIN 4

Hydrograph type	=	Dekalb	Peak discharge	=	0.507 cfs
Storm frequency	=	25 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	455 cuft
Drainage area	=	0.091 ac	Runoff coeff.	=	0.77
Intensity	=	7.234 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

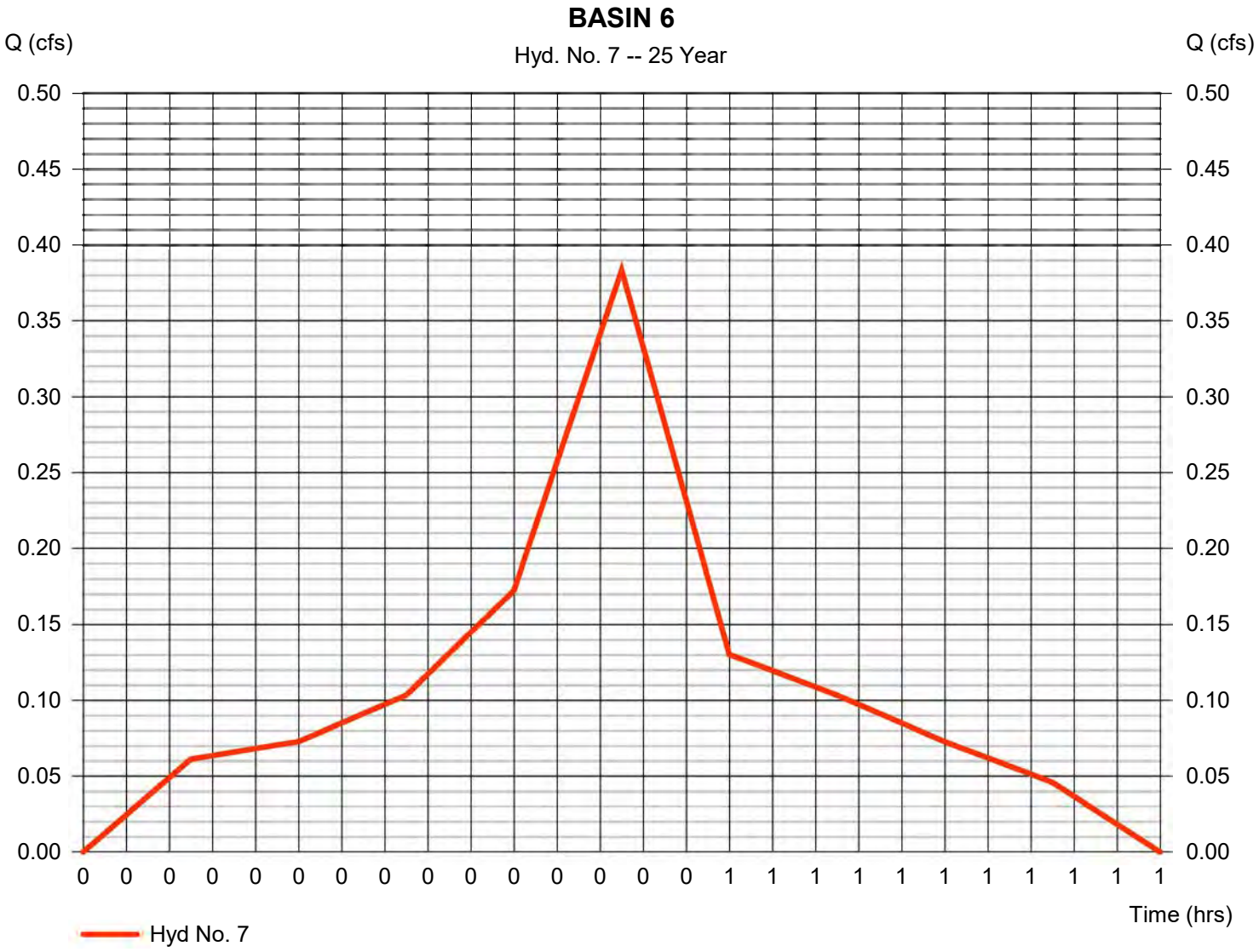


Hydrograph Report

Hyd. No. 7

BASIN 6

Hydrograph type	=	Dekalb	Peak discharge	=	0.383 cfs
Storm frequency	=	25 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	344 cuft
Drainage area	=	0.057 ac	Runoff coeff.	=	0.93
Intensity	=	7.234 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

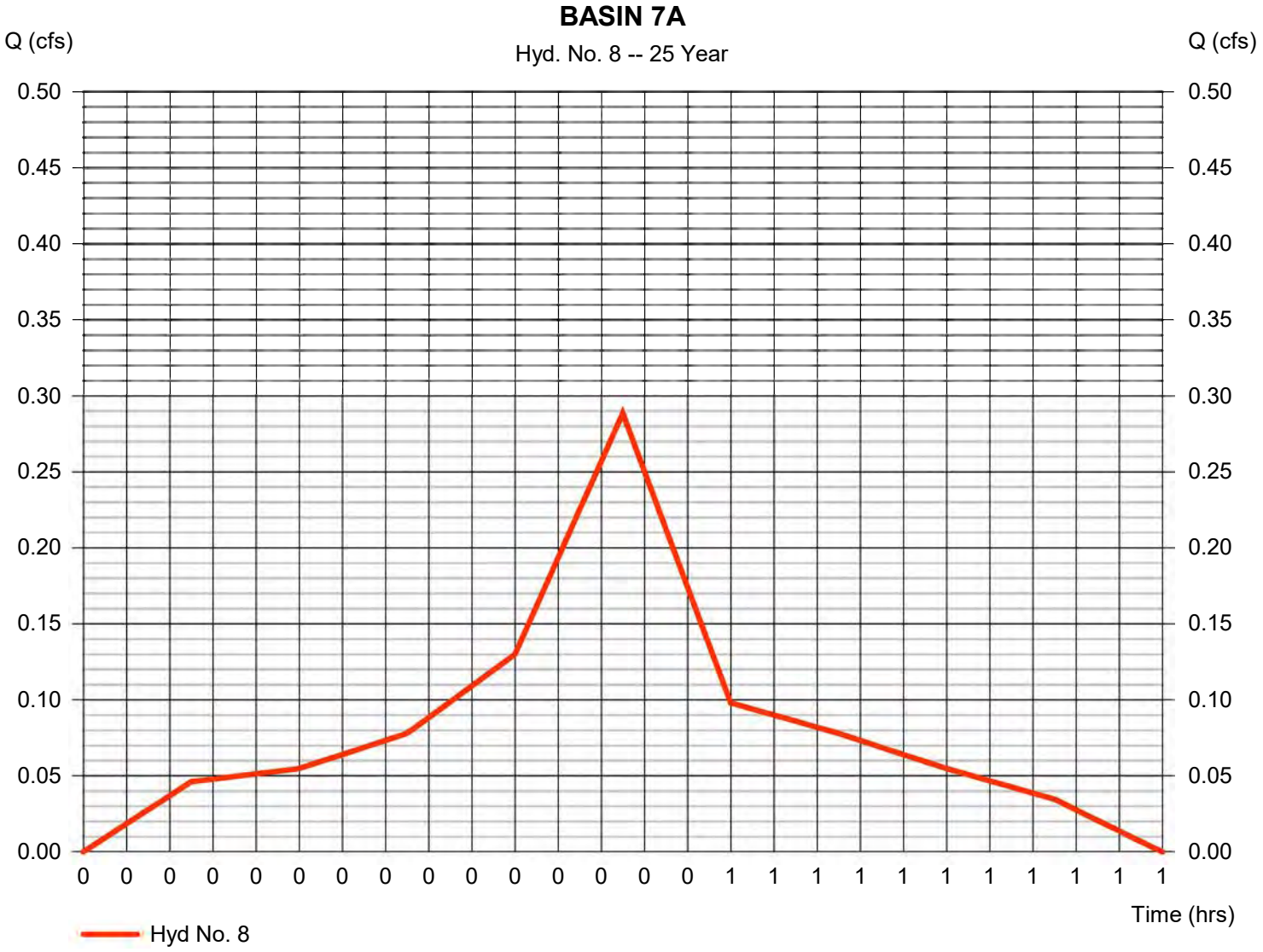


Hydrograph Report

Hyd. No. 8

BASIN 7A

Hydrograph type	=	Dekalb	Peak discharge	=	0.289 cfs
Storm frequency	=	25 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	259 cuft
Drainage area	=	0.042 ac	Runoff coeff.	=	0.95
Intensity	=	7.234 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

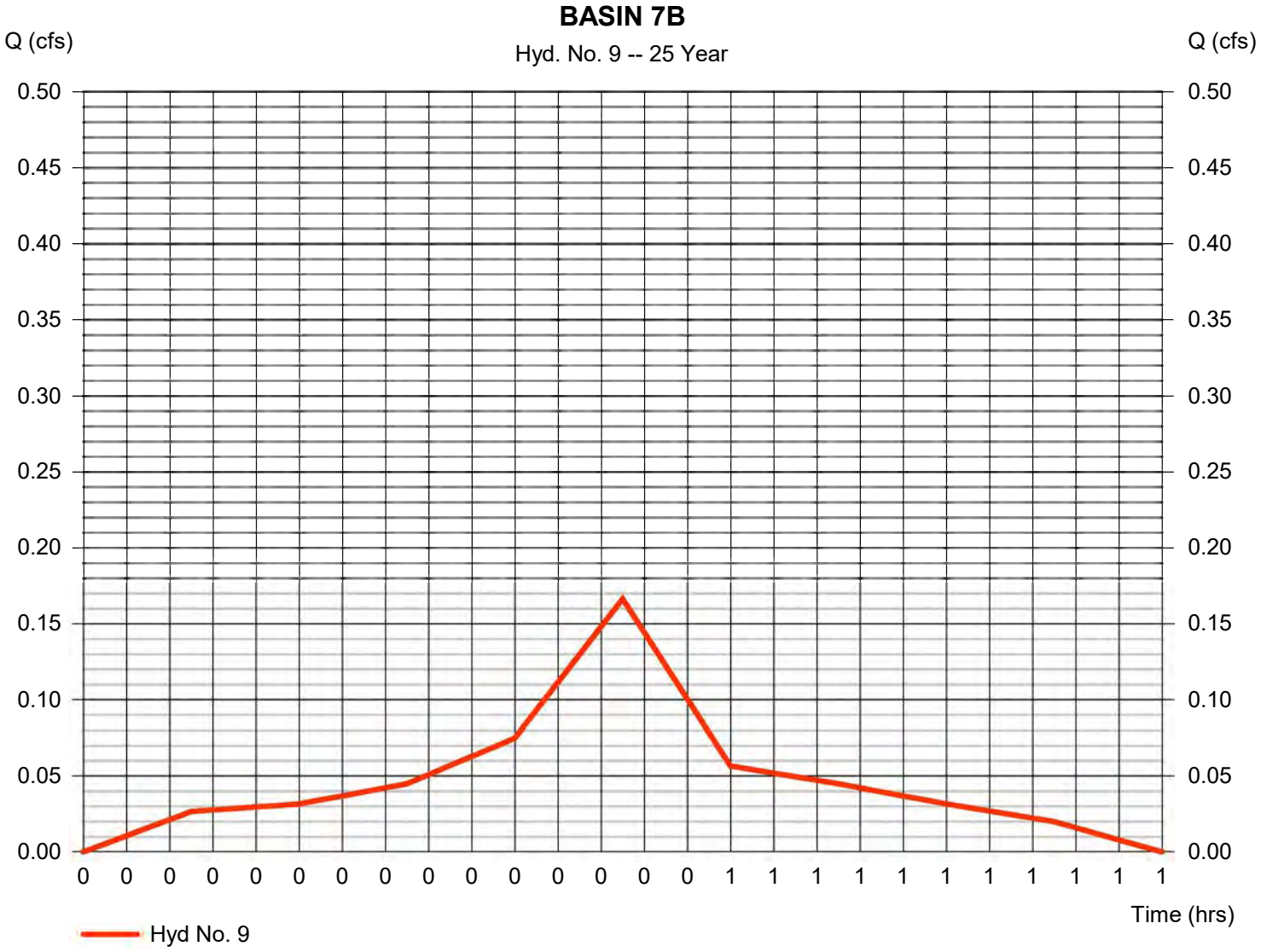


Hydrograph Report

Hyd. No. 9

BASIN 7B

Hydrograph type	=	Dekalb	Peak discharge	=	0.166 cfs
Storm frequency	=	25 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	149 cuft
Drainage area	=	0.025 ac	Runoff coeff.	=	0.92
Intensity	=	7.234 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a



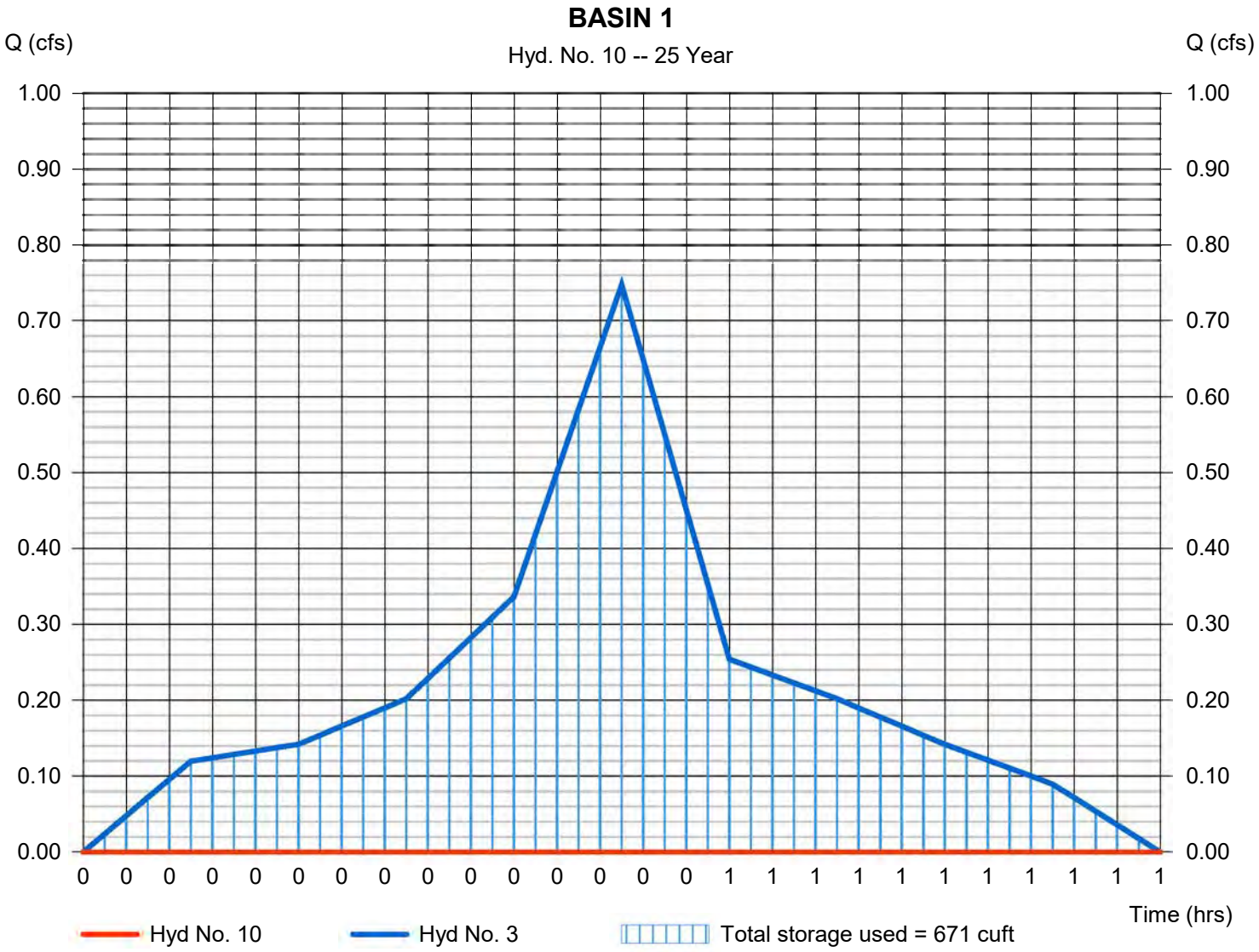
Hydrograph Report

Hyd. No. 10

BASIN 1

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	25 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	3 - BASIN 1	Max. Elevation	=	332.24 ft
Reservoir name	=	Basin 1	Max. Storage	=	671 cuft

Storage Indication method used.



Pond Report

Pond No. 3 - Basin 1

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	329.05	n/a	0	0
0.75	329.80	n/a	158	158
1.75	330.80	n/a	53	210
2.75	331.80	n/a	368	579
3.75	332.80	n/a	210	789

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 332.79	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	329.05	0.00	---	---	---	---	---	---	---	---	---	0.000
0.08	16	329.13	0.00	---	---	---	---	---	---	---	---	---	0.000
0.15	32	329.20	0.00	---	---	---	---	---	---	---	---	---	0.000
0.22	47	329.27	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	63	329.35	0.00	---	---	---	---	---	---	---	---	---	0.000
0.38	79	329.42	0.00	---	---	---	---	---	---	---	---	---	0.000
0.45	95	329.50	0.00	---	---	---	---	---	---	---	---	---	0.000
0.52	110	329.58	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	126	329.65	0.00	---	---	---	---	---	---	---	---	---	0.000
0.68	142	329.73	0.00	---	---	---	---	---	---	---	---	---	0.000
0.75	158	329.80	0.00	---	---	---	---	---	---	---	---	---	0.000
0.85	163	329.90	0.00	---	---	---	---	---	---	---	---	---	0.000
0.95	168	330.00	0.00	---	---	---	---	---	---	---	---	---	0.000
1.05	174	330.10	0.00	---	---	---	---	---	---	---	---	---	0.000
1.15	179	330.20	0.00	---	---	---	---	---	---	---	---	---	0.000
1.25	184	330.30	0.00	---	---	---	---	---	---	---	---	---	0.000
1.35	189	330.40	0.00	---	---	---	---	---	---	---	---	---	0.000
1.45	195	330.50	0.00	---	---	---	---	---	---	---	---	---	0.000
1.55	200	330.60	0.00	---	---	---	---	---	---	---	---	---	0.000
1.65	205	330.70	0.00	---	---	---	---	---	---	---	---	---	0.000
1.75	210	330.80	0.00	---	---	---	---	---	---	---	---	---	0.000
1.85	247	330.90	0.00	---	---	---	---	---	---	---	---	---	0.000
1.95	284	331.00	0.00	---	---	---	---	---	---	---	---	---	0.000
2.05	321	331.10	0.00	---	---	---	---	---	---	---	---	---	0.000
2.15	358	331.20	0.00	---	---	---	---	---	---	---	---	---	0.000
2.25	395	331.30	0.00	---	---	---	---	---	---	---	---	---	0.000
2.35	431	331.40	0.00	---	---	---	---	---	---	---	---	---	0.000
2.45	468	331.50	0.00	---	---	---	---	---	---	---	---	---	0.000
2.55	505	331.60	0.00	---	---	---	---	---	---	---	---	---	0.000
2.65	542	331.70	0.00	---	---	---	---	---	---	---	---	---	0.000
2.75	579	331.80	0.00	---	---	---	---	---	---	---	---	---	0.000
2.85	600	331.90	0.00	---	---	---	---	---	---	---	---	---	0.000
2.95	621	332.00	0.00	---	---	---	---	---	---	---	---	---	0.000
3.05	642	332.10	0.00	---	---	---	---	---	---	---	---	---	0.000
3.15	663	332.20	0.00	---	---	---	---	---	---	---	---	---	0.000
3.25	684	332.30	0.00	---	---	---	---	---	---	---	---	---	0.000
3.35	705	332.40	0.00	---	---	---	---	---	---	---	---	---	0.000
3.45	726	332.50	0.00	---	---	---	---	---	---	---	---	---	0.000
3.55	747	332.60	0.00	---	---	---	---	---	---	---	---	---	0.000

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Basin 1

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.65	768	332.70	0.00	---	---	---	---	---	---	---	---	---	0.000
3.75	789	332.80	0.00 ic	---	---	---	---	---	---	---	---	---	0.000

...End

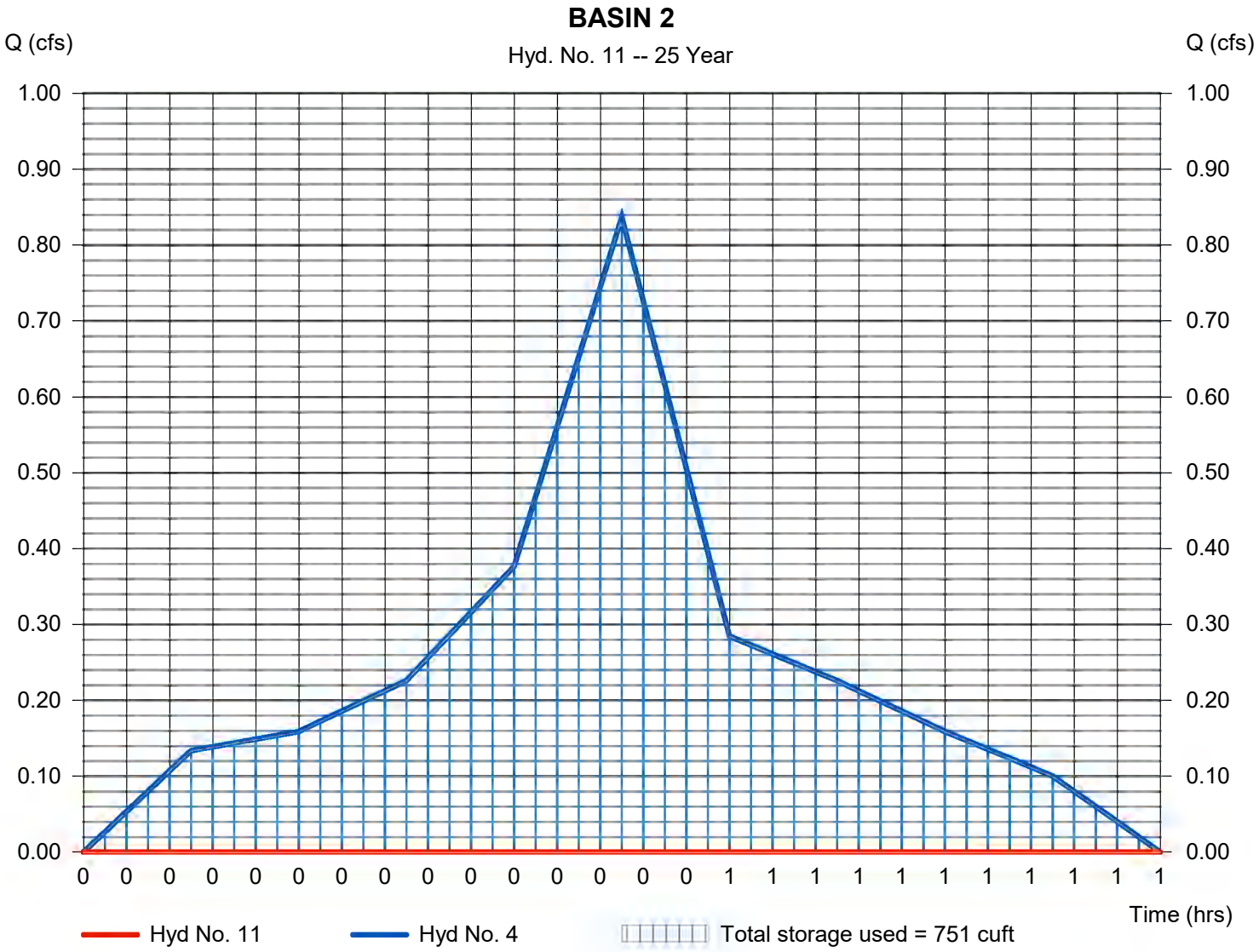
Hydrograph Report

Hyd. No. 11

BASIN 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	25 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	4 - BASIN 2	Max. Elevation	=	335.41 ft
Reservoir name	=	Basin 2	Max. Storage	=	751 cuft

Storage Indication method used.



Pond No. 4 - Basin 2

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	332.17	n/a	0	0
0.75	332.92	n/a	174	174
1.75	333.92	n/a	231	405
2.75	334.92	n/a	232	637
3.75	335.92	n/a	231	868

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 335.91	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	332.17	0.00	---	---	---	---	---	---	---	---	---	0.000
0.08	17	332.24	0.00	---	---	---	---	---	---	---	---	---	0.000
0.15	35	332.32	0.00	---	---	---	---	---	---	---	---	---	0.000
0.22	52	332.40	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	70	332.47	0.00	---	---	---	---	---	---	---	---	---	0.000
0.38	87	332.55	0.00	---	---	---	---	---	---	---	---	---	0.000
0.45	104	332.62	0.00	---	---	---	---	---	---	---	---	---	0.000
0.52	122	332.70	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	139	332.77	0.00	---	---	---	---	---	---	---	---	---	0.000
0.68	157	332.85	0.00	---	---	---	---	---	---	---	---	---	0.000
0.75	174	332.92	0.00	---	---	---	---	---	---	---	---	---	0.000
0.85	197	333.02	0.00	---	---	---	---	---	---	---	---	---	0.000
0.95	220	333.12	0.00	---	---	---	---	---	---	---	---	---	0.000
1.05	243	333.22	0.00	---	---	---	---	---	---	---	---	---	0.000
1.15	266	333.32	0.00	---	---	---	---	---	---	---	---	---	0.000
1.25	290	333.42	0.00	---	---	---	---	---	---	---	---	---	0.000
1.35	313	333.52	0.00	---	---	---	---	---	---	---	---	---	0.000
1.45	336	333.62	0.00	---	---	---	---	---	---	---	---	---	0.000
1.55	359	333.72	0.00	---	---	---	---	---	---	---	---	---	0.000
1.65	382	333.82	0.00	---	---	---	---	---	---	---	---	---	0.000
1.75	405	333.92	0.00	---	---	---	---	---	---	---	---	---	0.000
1.85	428	334.02	0.00	---	---	---	---	---	---	---	---	---	0.000
1.95	451	334.12	0.00	---	---	---	---	---	---	---	---	---	0.000
2.05	475	334.22	0.00	---	---	---	---	---	---	---	---	---	0.000
2.15	498	334.32	0.00	---	---	---	---	---	---	---	---	---	0.000
2.25	521	334.42	0.00	---	---	---	---	---	---	---	---	---	0.000
2.35	544	334.52	0.00	---	---	---	---	---	---	---	---	---	0.000
2.45	567	334.62	0.00	---	---	---	---	---	---	---	---	---	0.000
2.55	591	334.72	0.00	---	---	---	---	---	---	---	---	---	0.000
2.65	614	334.82	0.00	---	---	---	---	---	---	---	---	---	0.000
2.75	637	334.92	0.00	---	---	---	---	---	---	---	---	---	0.000
2.85	660	335.02	0.00	---	---	---	---	---	---	---	---	---	0.000
2.95	683	335.12	0.00	---	---	---	---	---	---	---	---	---	0.000
3.05	706	335.22	0.00	---	---	---	---	---	---	---	---	---	0.000
3.15	729	335.32	0.00	---	---	---	---	---	---	---	---	---	0.000
3.25	752	335.42	0.00	---	---	---	---	---	---	---	---	---	0.000
3.35	776	335.52	0.00	---	---	---	---	---	---	---	---	---	0.000
3.45	799	335.62	0.00	---	---	---	---	---	---	---	---	---	0.000
3.55	822	335.72	0.00	---	---	---	---	---	---	---	---	---	0.000

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Basin 2

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.65	845	335.82	0.00	---	---	---	---	---	---	---	---	---	0.000
3.75	868	335.92	0.00 ic	---	---	---	---	---	---	---	---	---	0.000

...End

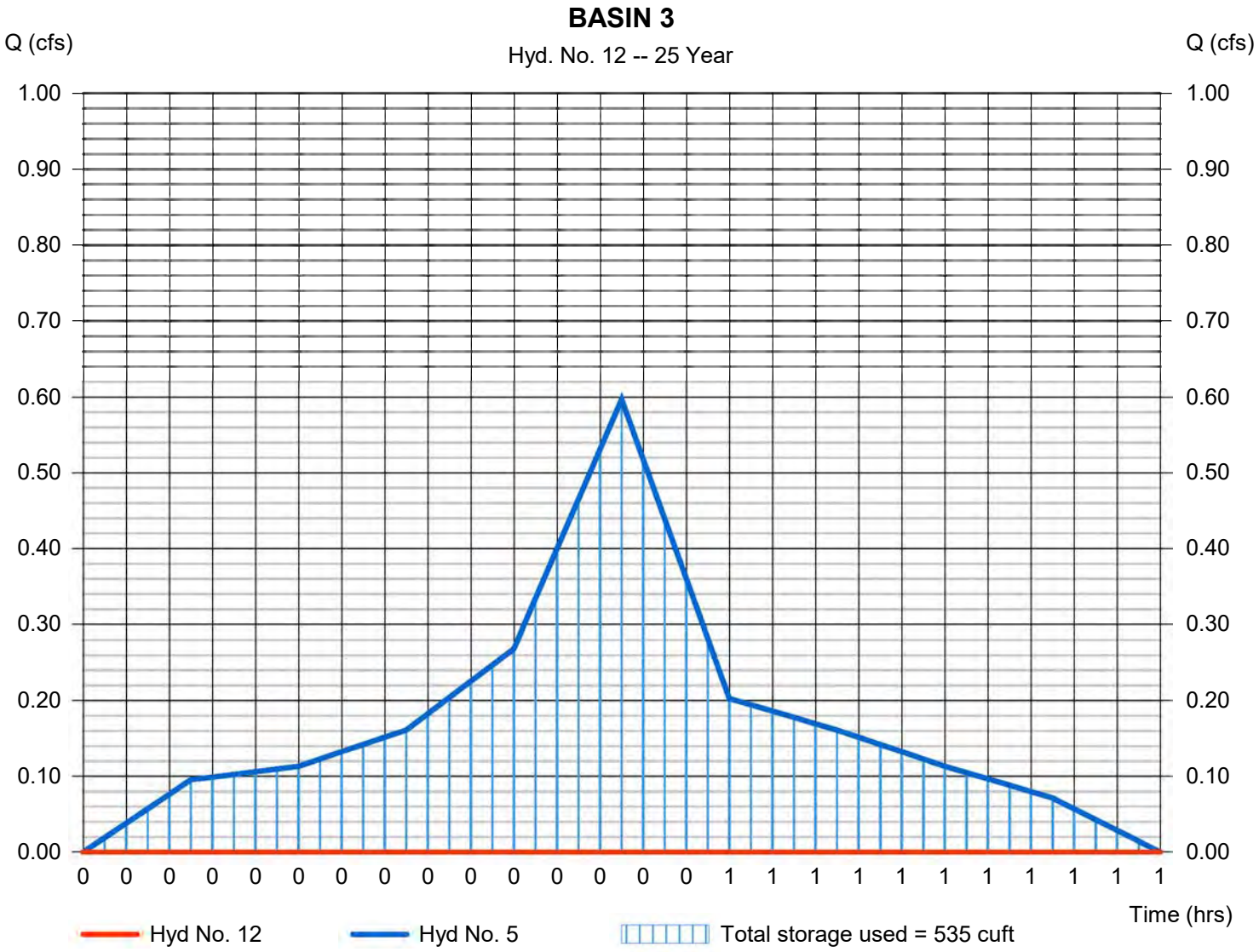
Hydrograph Report

Hyd. No. 12

BASIN 3

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	25 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	5 - BASIN 3	Max. Elevation	=	336.54 ft
Reservoir name	=	Basin 3	Max. Storage	=	535 cuft

Storage Indication method used.



Pond No. 5 - Basin 3

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	333.91	n/a	0	0
0.75	334.66	n/a	158	158
1.75	335.66	n/a	53	210
2.75	336.66	n/a	368	579
3.75	337.66	n/a	210	789

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 337.65	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	333.91	0.00	---	---	---	---	---	---	---	---	---	0.000
0.08	16	333.98	0.00	---	---	---	---	---	---	---	---	---	0.000
0.15	32	334.06	0.00	---	---	---	---	---	---	---	---	---	0.000
0.22	47	334.14	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	63	334.21	0.00	---	---	---	---	---	---	---	---	---	0.000
0.38	79	334.29	0.00	---	---	---	---	---	---	---	---	---	0.000
0.45	95	334.36	0.00	---	---	---	---	---	---	---	---	---	0.000
0.52	110	334.44	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	126	334.51	0.00	---	---	---	---	---	---	---	---	---	0.000
0.68	142	334.59	0.00	---	---	---	---	---	---	---	---	---	0.000
0.75	158	334.66	0.00	---	---	---	---	---	---	---	---	---	0.000
0.85	163	334.76	0.00	---	---	---	---	---	---	---	---	---	0.000
0.95	168	334.86	0.00	---	---	---	---	---	---	---	---	---	0.000
1.05	174	334.96	0.00	---	---	---	---	---	---	---	---	---	0.000
1.15	179	335.06	0.00	---	---	---	---	---	---	---	---	---	0.000
1.25	184	335.16	0.00	---	---	---	---	---	---	---	---	---	0.000
1.35	189	335.26	0.00	---	---	---	---	---	---	---	---	---	0.000
1.45	195	335.36	0.00	---	---	---	---	---	---	---	---	---	0.000
1.55	200	335.46	0.00	---	---	---	---	---	---	---	---	---	0.000
1.65	205	335.56	0.00	---	---	---	---	---	---	---	---	---	0.000
1.75	210	335.66	0.00	---	---	---	---	---	---	---	---	---	0.000
1.85	247	335.76	0.00	---	---	---	---	---	---	---	---	---	0.000
1.95	284	335.86	0.00	---	---	---	---	---	---	---	---	---	0.000
2.05	321	335.96	0.00	---	---	---	---	---	---	---	---	---	0.000
2.15	358	336.06	0.00	---	---	---	---	---	---	---	---	---	0.000
2.25	395	336.16	0.00	---	---	---	---	---	---	---	---	---	0.000
2.35	431	336.26	0.00	---	---	---	---	---	---	---	---	---	0.000
2.45	468	336.36	0.00	---	---	---	---	---	---	---	---	---	0.000
2.55	505	336.46	0.00	---	---	---	---	---	---	---	---	---	0.000
2.65	542	336.56	0.00	---	---	---	---	---	---	---	---	---	0.000
2.75	579	336.66	0.00	---	---	---	---	---	---	---	---	---	0.000
2.85	600	336.76	0.00	---	---	---	---	---	---	---	---	---	0.000
2.95	621	336.86	0.00	---	---	---	---	---	---	---	---	---	0.000
3.05	642	336.96	0.00	---	---	---	---	---	---	---	---	---	0.000
3.15	663	337.06	0.00	---	---	---	---	---	---	---	---	---	0.000
3.25	684	337.16	0.00	---	---	---	---	---	---	---	---	---	0.000
3.35	705	337.26	0.00	---	---	---	---	---	---	---	---	---	0.000
3.45	726	337.36	0.00	---	---	---	---	---	---	---	---	---	0.000
3.55	747	337.46	0.00	---	---	---	---	---	---	---	---	---	0.000

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Basin 3

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.65	768	337.56	0.00	---	---	---	---	---	---	---	---	---	0.000
3.75	789	337.66	0.00 ic	---	---	---	---	---	---	---	---	---	0.000

...End

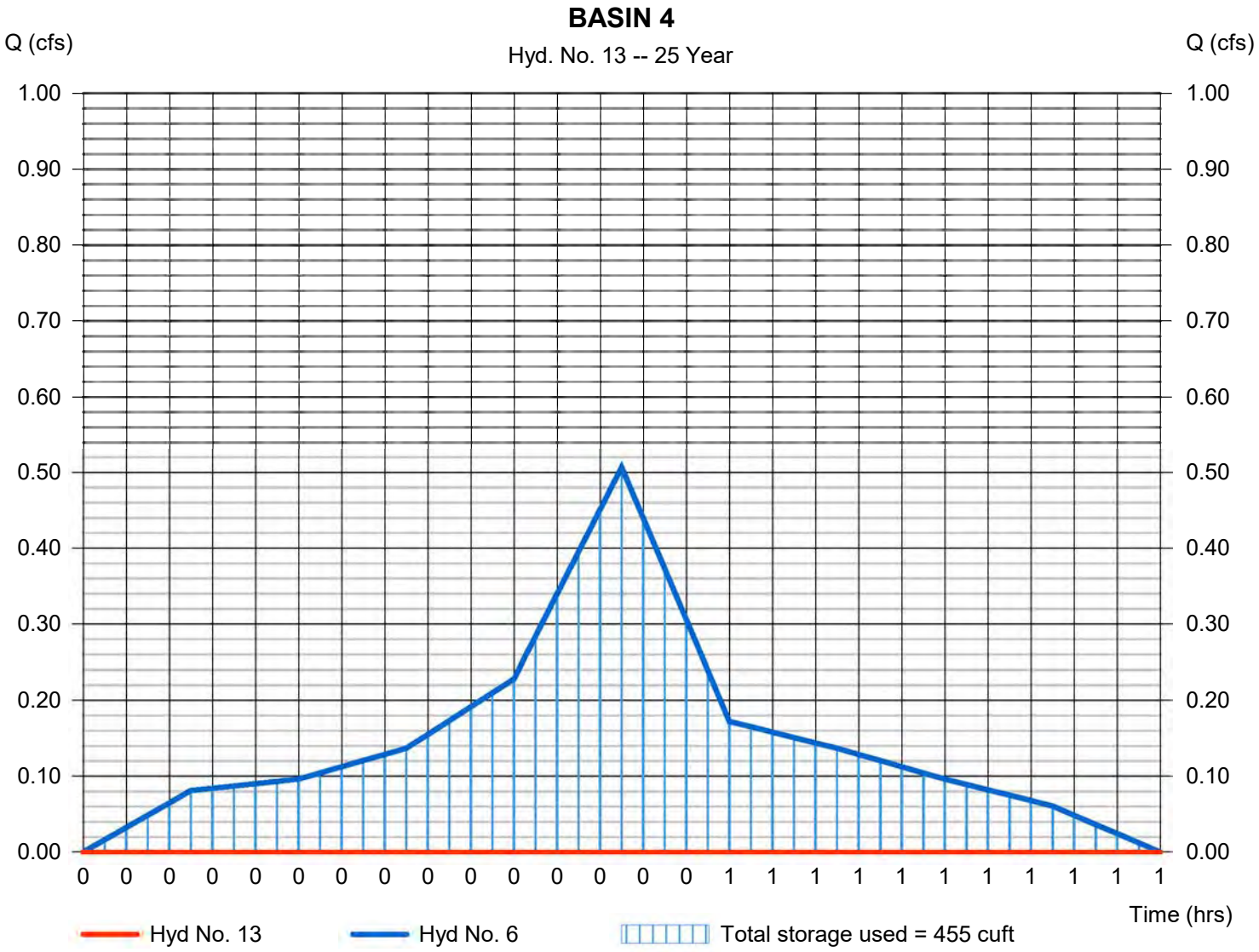
Hydrograph Report

Hyd. No. 13

BASIN 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	25 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	6 - BASIN 4	Max. Elevation	=	339.67 ft
Reservoir name	=	Basin 4	Max. Storage	=	455 cuft

Storage Indication method used.



Pond No. 6 - Basin 4

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	337.26	n/a	0	0
0.75	338.01	n/a	158	158
1.75	339.01	n/a	53	210
2.75	340.01	n/a	368	579
3.75	341.01	n/a	210	789

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 341.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	337.26	0.00	---	---	---	---	---	---	---	---	---	0.000
0.08	16	337.33	0.00	---	---	---	---	---	---	---	---	---	0.000
0.15	32	337.41	0.00	---	---	---	---	---	---	---	---	---	0.000
0.22	47	337.48	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	63	337.56	0.00	---	---	---	---	---	---	---	---	---	0.000
0.38	79	337.64	0.00	---	---	---	---	---	---	---	---	---	0.000
0.45	95	337.71	0.00	---	---	---	---	---	---	---	---	---	0.000
0.52	110	337.79	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	126	337.86	0.00	---	---	---	---	---	---	---	---	---	0.000
0.68	142	337.94	0.00	---	---	---	---	---	---	---	---	---	0.000
0.75	158	338.01	0.00	---	---	---	---	---	---	---	---	---	0.000
0.85	163	338.11	0.00	---	---	---	---	---	---	---	---	---	0.000
0.95	168	338.21	0.00	---	---	---	---	---	---	---	---	---	0.000
1.05	174	338.31	0.00	---	---	---	---	---	---	---	---	---	0.000
1.15	179	338.41	0.00	---	---	---	---	---	---	---	---	---	0.000
1.25	184	338.51	0.00	---	---	---	---	---	---	---	---	---	0.000
1.35	189	338.61	0.00	---	---	---	---	---	---	---	---	---	0.000
1.45	195	338.71	0.00	---	---	---	---	---	---	---	---	---	0.000
1.55	200	338.81	0.00	---	---	---	---	---	---	---	---	---	0.000
1.65	205	338.91	0.00	---	---	---	---	---	---	---	---	---	0.000
1.75	210	339.01	0.00	---	---	---	---	---	---	---	---	---	0.000
1.85	247	339.11	0.00	---	---	---	---	---	---	---	---	---	0.000
1.95	284	339.21	0.00	---	---	---	---	---	---	---	---	---	0.000
2.05	321	339.31	0.00	---	---	---	---	---	---	---	---	---	0.000
2.15	358	339.41	0.00	---	---	---	---	---	---	---	---	---	0.000
2.25	395	339.51	0.00	---	---	---	---	---	---	---	---	---	0.000
2.35	431	339.61	0.00	---	---	---	---	---	---	---	---	---	0.000
2.45	468	339.71	0.00	---	---	---	---	---	---	---	---	---	0.000
2.55	505	339.81	0.00	---	---	---	---	---	---	---	---	---	0.000
2.65	542	339.91	0.00	---	---	---	---	---	---	---	---	---	0.000
2.75	579	340.01	0.00	---	---	---	---	---	---	---	---	---	0.000
2.85	600	340.11	0.00	---	---	---	---	---	---	---	---	---	0.000
2.95	621	340.21	0.00	---	---	---	---	---	---	---	---	---	0.000
3.05	642	340.31	0.00	---	---	---	---	---	---	---	---	---	0.000
3.15	663	340.41	0.00	---	---	---	---	---	---	---	---	---	0.000
3.25	684	340.51	0.00	---	---	---	---	---	---	---	---	---	0.000
3.35	705	340.61	0.00	---	---	---	---	---	---	---	---	---	0.000
3.45	726	340.71	0.00	---	---	---	---	---	---	---	---	---	0.000
3.55	747	340.81	0.00	---	---	---	---	---	---	---	---	---	0.000

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Basin 4

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.65	768	340.91	0.00	---	---	---	---	---	---	---	---	---	0.000
3.75	789	341.01	0.00 ic	---	---	---	---	---	---	---	---	---	0.000

...End

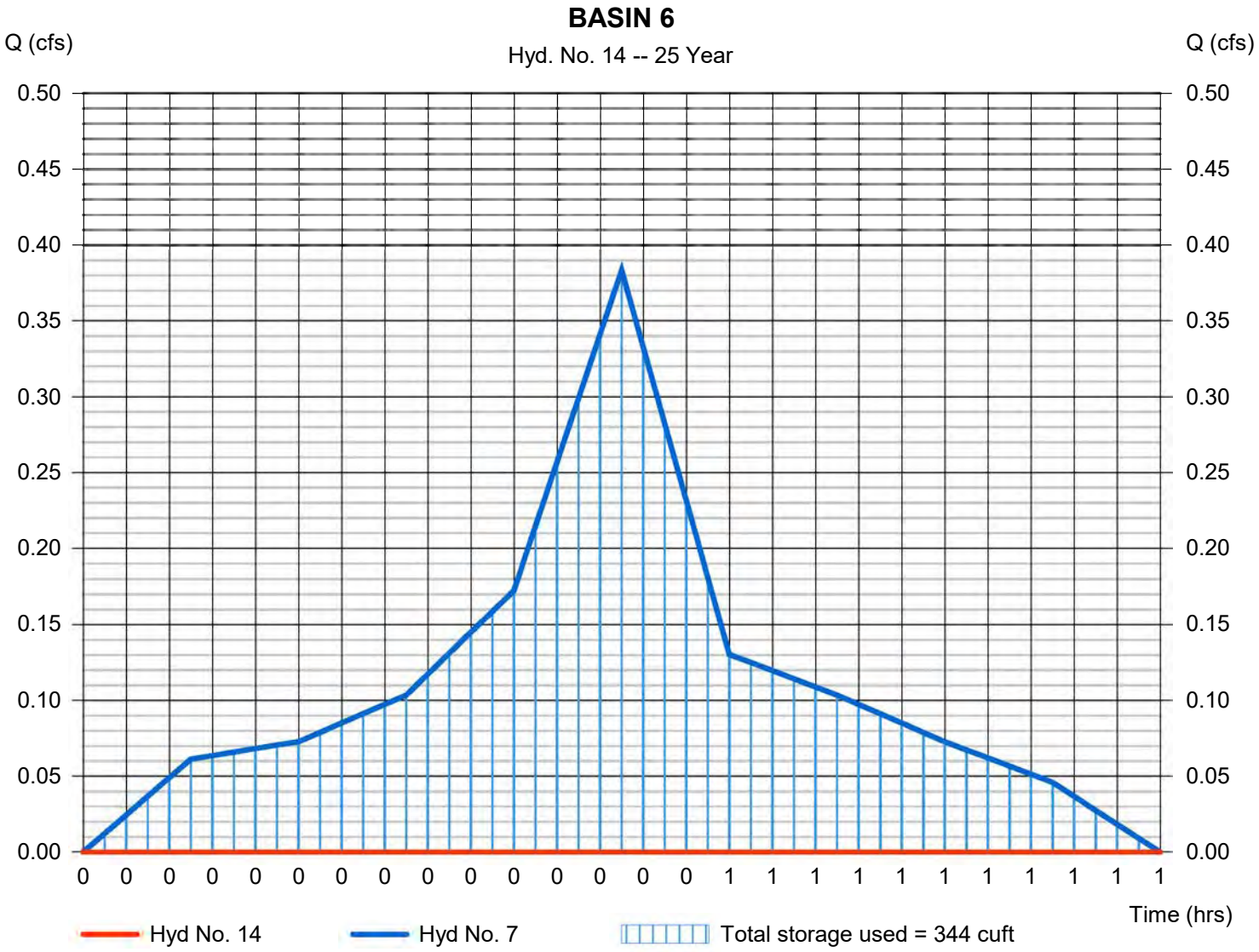
Hydrograph Report

Hyd. No. 14

BASIN 6

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	25 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	7 - BASIN 6	Max. Elevation	=	338.78 ft
Reservoir name	=	Basin 6	Max. Storage	=	344 cuft

Storage Indication method used.



Pond Report

Pond No. 7 - Basin 6

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	337.50	n/a	0	0
1.00	338.50	n/a	268	268
2.00	339.50	n/a	268	536
3.00	340.50	n/a	268	804

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 340.45	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	337.50	0.00	---	---	---	---	---	---	---	---	---	0.000
0.10	27	337.60	0.00	---	---	---	---	---	---	---	---	---	0.000
0.20	54	337.70	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	80	337.80	0.00	---	---	---	---	---	---	---	---	---	0.000
0.40	107	337.90	0.00	---	---	---	---	---	---	---	---	---	0.000
0.50	134	338.00	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	161	338.10	0.00	---	---	---	---	---	---	---	---	---	0.000
0.70	188	338.20	0.00	---	---	---	---	---	---	---	---	---	0.000
0.80	214	338.30	0.00	---	---	---	---	---	---	---	---	---	0.000
0.90	241	338.40	0.00	---	---	---	---	---	---	---	---	---	0.000
1.00	268	338.50	0.00	---	---	---	---	---	---	---	---	---	0.000
1.10	295	338.60	0.00	---	---	---	---	---	---	---	---	---	0.000
1.20	322	338.70	0.00	---	---	---	---	---	---	---	---	---	0.000
1.30	348	338.80	0.00	---	---	---	---	---	---	---	---	---	0.000
1.40	375	338.90	0.00	---	---	---	---	---	---	---	---	---	0.000
1.50	402	339.00	0.00	---	---	---	---	---	---	---	---	---	0.000
1.60	429	339.10	0.00	---	---	---	---	---	---	---	---	---	0.000
1.70	456	339.20	0.00	---	---	---	---	---	---	---	---	---	0.000
1.80	482	339.30	0.00	---	---	---	---	---	---	---	---	---	0.000
1.90	509	339.40	0.00	---	---	---	---	---	---	---	---	---	0.000
2.00	536	339.50	0.00	---	---	---	---	---	---	---	---	---	0.000
2.10	563	339.60	0.00	---	---	---	---	---	---	---	---	---	0.000
2.20	590	339.70	0.00	---	---	---	---	---	---	---	---	---	0.000
2.30	616	339.80	0.00	---	---	---	---	---	---	---	---	---	0.000
2.40	643	339.90	0.00	---	---	---	---	---	---	---	---	---	0.000
2.50	670	340.00	0.00	---	---	---	---	---	---	---	---	---	0.000
2.60	697	340.10	0.00	---	---	---	---	---	---	---	---	---	0.000
2.70	724	340.20	0.00	---	---	---	---	---	---	---	---	---	0.000
2.80	750	340.30	0.00	---	---	---	---	---	---	---	---	---	0.000
2.90	777	340.40	0.00	---	---	---	---	---	---	---	---	---	0.000
3.00	804	340.50	0.01 ic	---	---	---	---	---	---	---	---	---	0.008

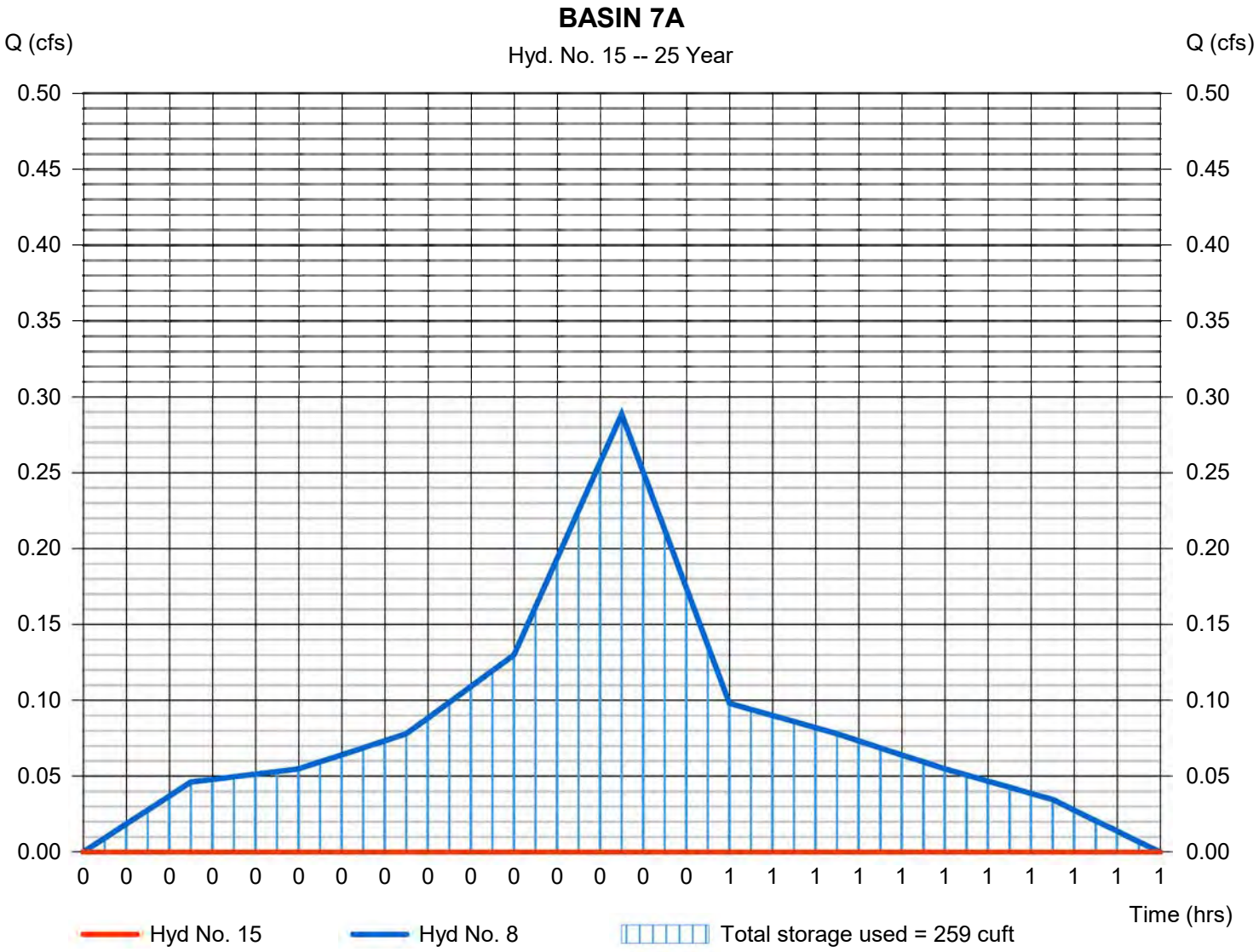
Hydrograph Report

Hyd. No. 15

BASIN 7A

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	25 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	8 - BASIN 7A	Max. Elevation	=	347.16 ft
Reservoir name	=	Basin 7A	Max. Storage	=	259 cuft

Storage Indication method used.



Pond Report

Pond No. 8 - Basin 7A

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	345.00	n/a	0	0
1.00	346.00	n/a	120	120
2.00	347.00	n/a	120	240
3.00	348.00	n/a	120	360

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 347.95	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	345.00	0.00	---	---	---	---	---	---	---	---	---	0.000
0.10	12	345.10	0.00	---	---	---	---	---	---	---	---	---	0.000
0.20	24	345.20	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	36	345.30	0.00	---	---	---	---	---	---	---	---	---	0.000
0.40	48	345.40	0.00	---	---	---	---	---	---	---	---	---	0.000
0.50	60	345.50	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	72	345.60	0.00	---	---	---	---	---	---	---	---	---	0.000
0.70	84	345.70	0.00	---	---	---	---	---	---	---	---	---	0.000
0.80	96	345.80	0.00	---	---	---	---	---	---	---	---	---	0.000
0.90	108	345.90	0.00	---	---	---	---	---	---	---	---	---	0.000
1.00	120	346.00	0.00	---	---	---	---	---	---	---	---	---	0.000
1.10	132	346.10	0.00	---	---	---	---	---	---	---	---	---	0.000
1.20	144	346.20	0.00	---	---	---	---	---	---	---	---	---	0.000
1.30	156	346.30	0.00	---	---	---	---	---	---	---	---	---	0.000
1.40	168	346.40	0.00	---	---	---	---	---	---	---	---	---	0.000
1.50	180	346.50	0.00	---	---	---	---	---	---	---	---	---	0.000
1.60	192	346.60	0.00	---	---	---	---	---	---	---	---	---	0.000
1.70	204	346.70	0.00	---	---	---	---	---	---	---	---	---	0.000
1.80	216	346.80	0.00	---	---	---	---	---	---	---	---	---	0.000
1.90	228	346.90	0.00	---	---	---	---	---	---	---	---	---	0.000
2.00	240	347.00	0.00	---	---	---	---	---	---	---	---	---	0.000
2.10	252	347.10	0.00	---	---	---	---	---	---	---	---	---	0.000
2.20	264	347.20	0.00	---	---	---	---	---	---	---	---	---	0.000
2.30	276	347.30	0.00	---	---	---	---	---	---	---	---	---	0.000
2.40	288	347.40	0.00	---	---	---	---	---	---	---	---	---	0.000
2.50	300	347.50	0.00	---	---	---	---	---	---	---	---	---	0.000
2.60	312	347.60	0.00	---	---	---	---	---	---	---	---	---	0.000
2.70	324	347.70	0.00	---	---	---	---	---	---	---	---	---	0.000
2.80	336	347.80	0.00	---	---	---	---	---	---	---	---	---	0.000
2.90	348	347.90	0.00	---	---	---	---	---	---	---	---	---	0.000
3.00	360	348.00	0.01 ic	---	---	---	---	---	---	---	---	---	0.008

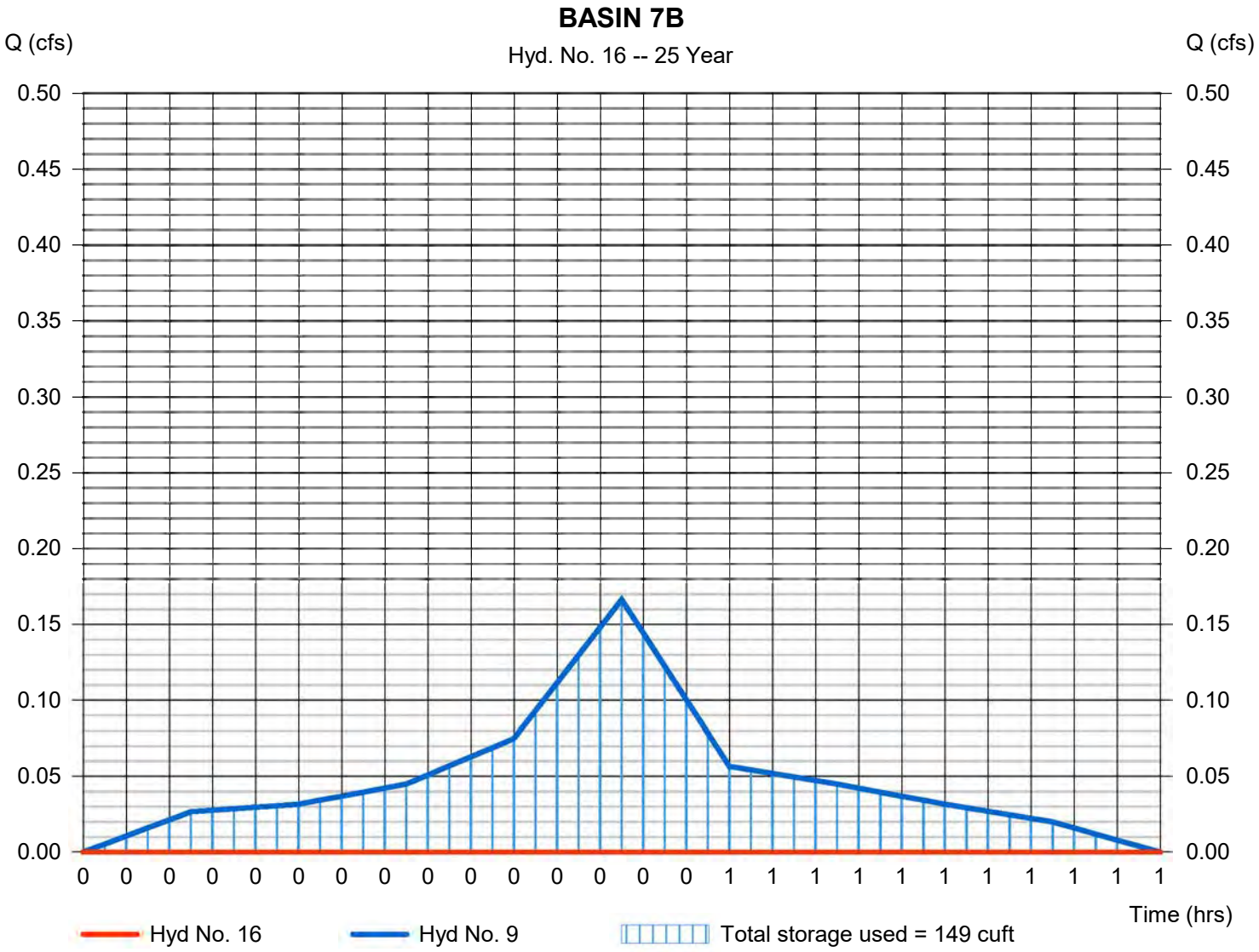
Hydrograph Report

Hyd. No. 16

BASIN 7B

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	25 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	9 - BASIN 7B	Max. Elevation	=	345.94 ft
Reservoir name	=	Basin 7B	Max. Storage	=	149 cuft

Storage Indication method used.



Pond Report

Pond No. 9 - Basin 7B

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	345.00	n/a	0	0
0.50	345.50	n/a	79	79
1.00	346.00	n/a	79	158
1.50	346.50	n/a	79	237

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 4.00	0.00	0.00	0.00
Span (in)	= 4.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 346.17	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

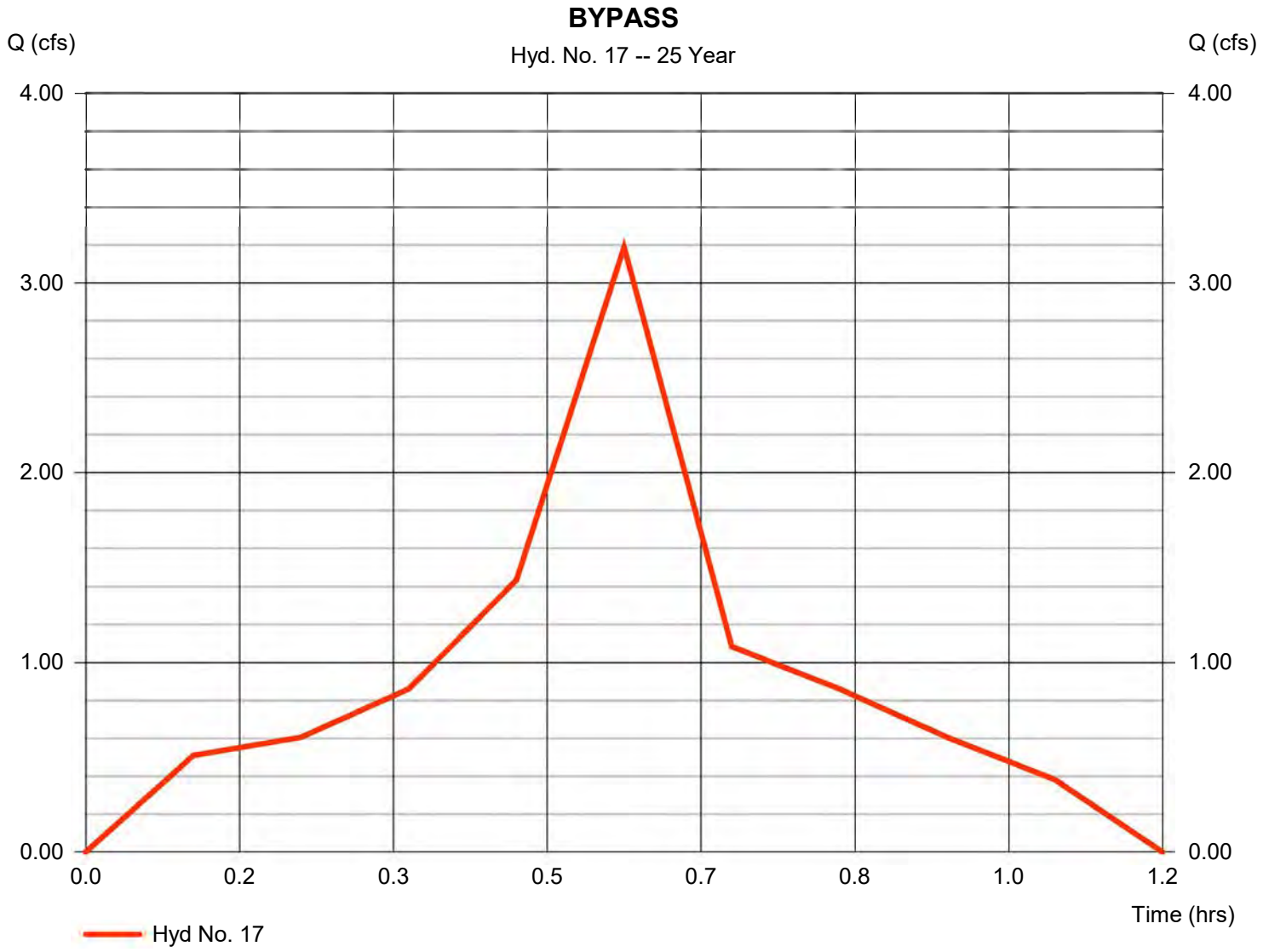
Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	345.00	0.00	---	---	---	---	---	---	---	---	---	0.000
0.05	8	345.05	0.00	---	---	---	---	---	---	---	---	---	0.000
0.10	16	345.10	0.00	---	---	---	---	---	---	---	---	---	0.000
0.15	24	345.15	0.00	---	---	---	---	---	---	---	---	---	0.000
0.20	32	345.20	0.00	---	---	---	---	---	---	---	---	---	0.000
0.25	40	345.25	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	47	345.30	0.00	---	---	---	---	---	---	---	---	---	0.000
0.35	55	345.35	0.00	---	---	---	---	---	---	---	---	---	0.000
0.40	63	345.40	0.00	---	---	---	---	---	---	---	---	---	0.000
0.45	71	345.45	0.00	---	---	---	---	---	---	---	---	---	0.000
0.50	79	345.50	0.00	---	---	---	---	---	---	---	---	---	0.000
0.55	87	345.55	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	95	345.60	0.00	---	---	---	---	---	---	---	---	---	0.000
0.65	103	345.65	0.00	---	---	---	---	---	---	---	---	---	0.000
0.70	111	345.70	0.00	---	---	---	---	---	---	---	---	---	0.000
0.75	119	345.75	0.00	---	---	---	---	---	---	---	---	---	0.000
0.80	126	345.80	0.00	---	---	---	---	---	---	---	---	---	0.000
0.85	134	345.85	0.00	---	---	---	---	---	---	---	---	---	0.000
0.90	142	345.90	0.00	---	---	---	---	---	---	---	---	---	0.000
0.95	150	345.95	0.00	---	---	---	---	---	---	---	---	---	0.000
1.00	158	346.00	0.00	---	---	---	---	---	---	---	---	---	0.000
1.05	166	346.05	0.00	---	---	---	---	---	---	---	---	---	0.000
1.10	174	346.10	0.00	---	---	---	---	---	---	---	---	---	0.000
1.15	182	346.15	0.00	---	---	---	---	---	---	---	---	---	0.000
1.20	190	346.20	0.00 ic	---	---	---	---	---	---	---	---	---	0.002
1.25	198	346.25	0.02 ic	---	---	---	---	---	---	---	---	---	0.016
1.30	205	346.30	0.04 ic	---	---	---	---	---	---	---	---	---	0.039
1.35	213	346.35	0.07 ic	---	---	---	---	---	---	---	---	---	0.069
1.40	221	346.40	0.10 ic	---	---	---	---	---	---	---	---	---	0.105
1.45	229	346.45	0.14 ic	---	---	---	---	---	---	---	---	---	0.141
1.50	237	346.50	0.17 ic	---	---	---	---	---	---	---	---	---	0.170

Hydrograph Report

Hyd. No. 17

BYPASS

Hydrograph type	=	Dekalb	Peak discharge	=	3.188 cfs
Storm frequency	=	25 yrs	Time to peak	=	0.58 hrs
Time interval	=	1 min	Hyd. volume	=	4,004 cuft
Drainage area	=	0.801 ac	Runoff coeff.	=	0.6
Intensity	=	6.634 in/hr	Tc by User	=	7.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a



Hydrograph Summary Report

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

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Dekalb	4.906	1	50	8,801	------	------	------	PRE DA POI 1 (storms 25-100 yr)
3	Dekalb	0.804	1	25	721	------	------	------	BASIN 1
4	Dekalb	0.900	1	25	807	------	------	------	BASIN 2
5	Dekalb	0.642	1	25	576	------	------	------	BASIN 3
6	Dekalb	0.545	1	25	489	------	------	------	BASIN 4
7	Dekalb	0.412	1	25	370	------	------	------	BASIN 6
8	Dekalb	0.310	1	25	278	------	------	------	BASIN 7A
9	Dekalb	0.179	1	25	161	------	------	------	BASIN 7B
10	Reservoir	0.000	1	n/a	0	3	332.48	721	BASIN 1
11	Reservoir	0.000	1	n/a	0	4	335.66	807	BASIN 2
12	Reservoir	0.000	1	n/a	0	5	336.65	576	BASIN 3
13	Reservoir	0.000	1	n/a	0	6	339.77	489	BASIN 4
14	Reservoir	0.000	1	n/a	0	7	338.88	370	BASIN 6
15	Reservoir	0.000	1	n/a	0	8	347.32	278	BASIN 7A
16	Reservoir	0.000	1	n/a	0	9	346.02	161	BASIN 7B
17	Dekalb	3.429	1	35	4,306	------	------	------	BYPASS

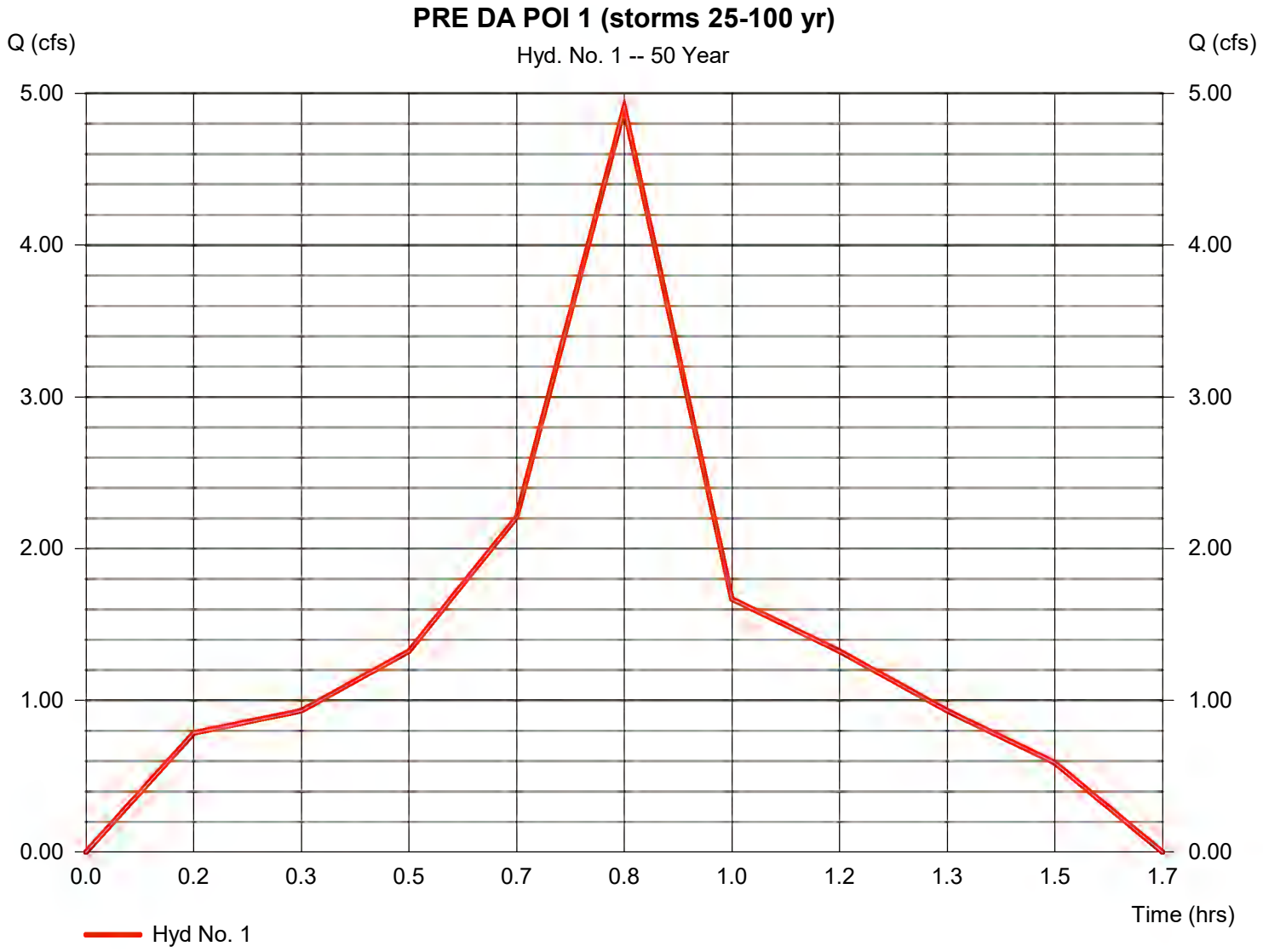
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Friday, 11 / 15 / 2024

Hyd. No. 1

PRE DA POI 1 (storms 25-100 yr)

Hydrograph type	= Dekalb	Peak discharge	= 4.906 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.83 hrs
Time interval	= 1 min	Hyd. volume	= 8,801 cuft
Drainage area	= 1.480 ac	Runoff coeff.	= 0.52
Intensity	= 6.375 in/hr	Tc by User	= 10.00 min
IDF Curve	= Abington Rainfall.IDF	Asc/Rec limb fact	= n/a

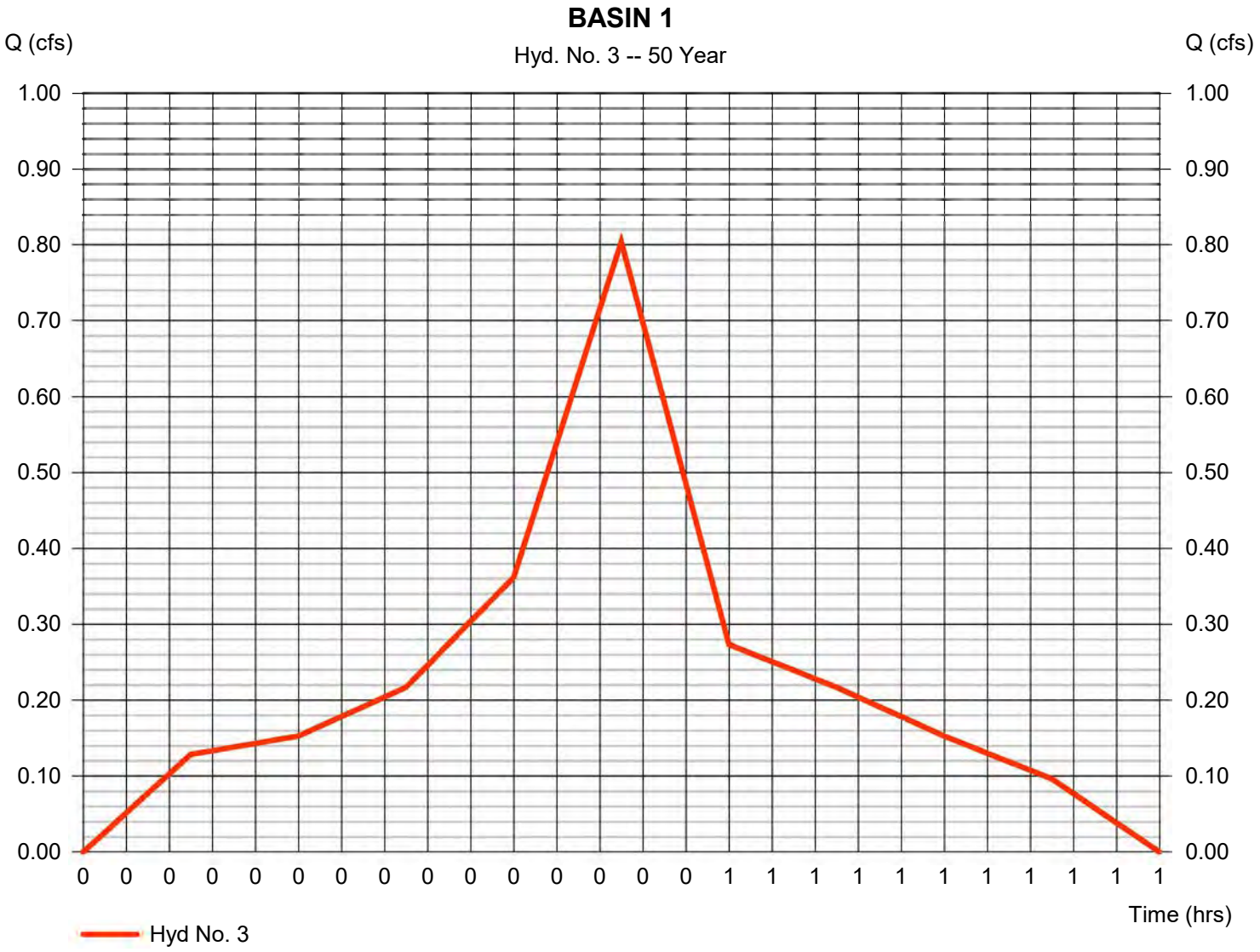


Hydrograph Report

Hyd. No. 3

BASIN 1

Hydrograph type	=	Dekalb	Peak discharge	=	0.804 cfs
Storm frequency	=	50 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	721 cuft
Drainage area	=	0.159 ac	Runoff coeff.	=	0.65
Intensity	=	7.780 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

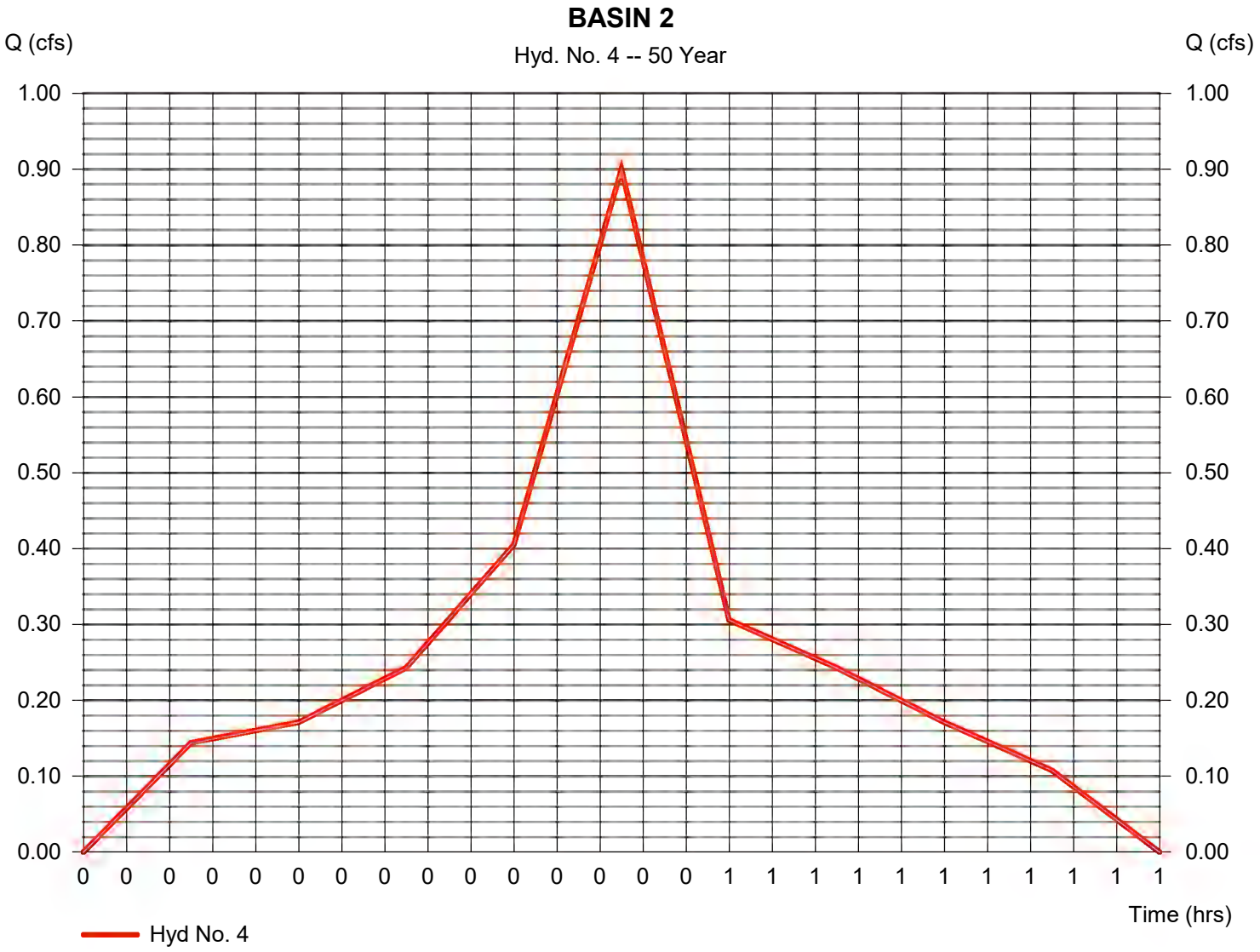


Hydrograph Report

Hyd. No. 4

BASIN 2

Hydrograph type	=	Dekalb	Peak discharge	=	0.900 cfs
Storm frequency	=	50 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	807 cuft
Drainage area	=	0.178 ac	Runoff coeff.	=	0.65
Intensity	=	7.780 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

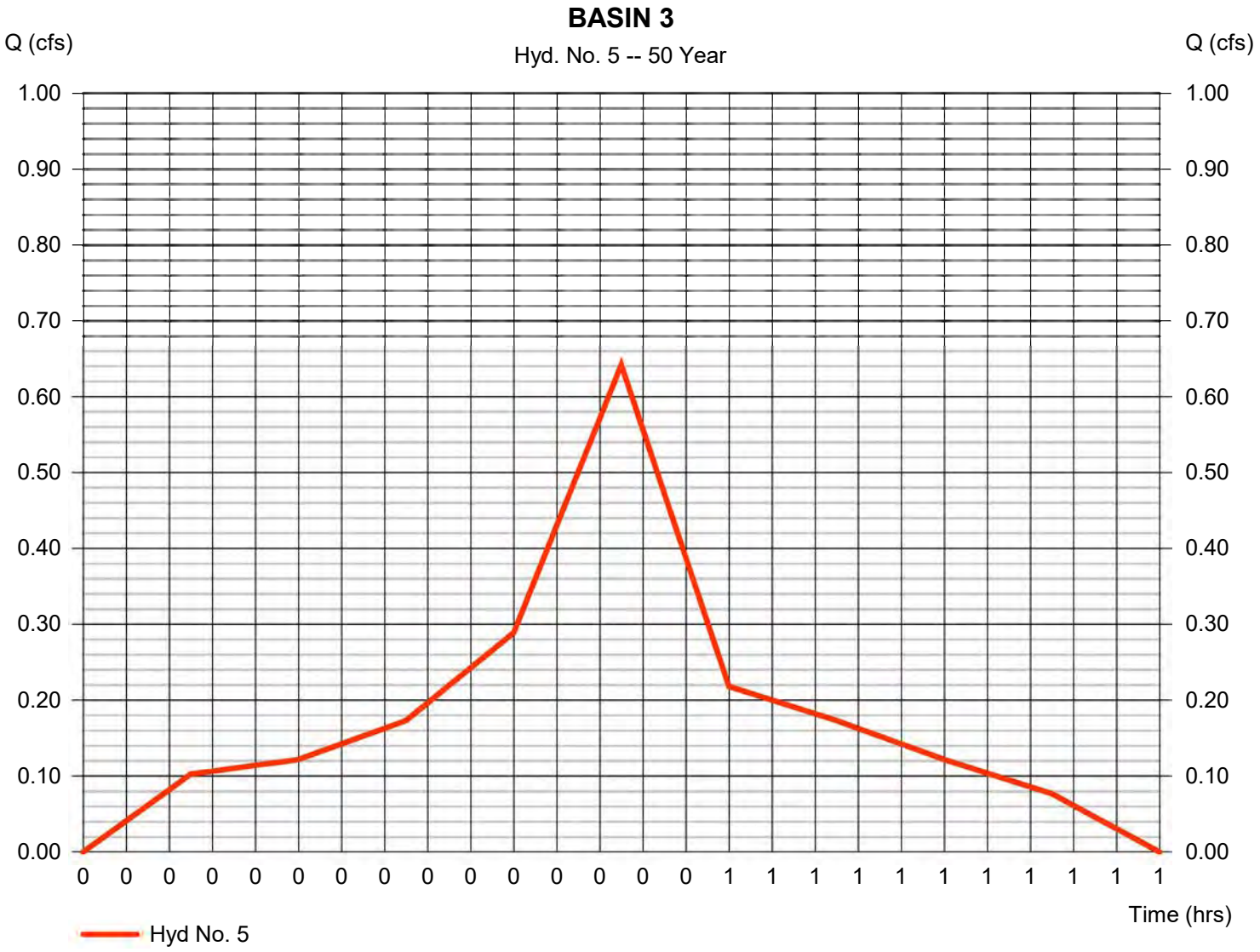


Hydrograph Report

Hyd. No. 5

BASIN 3

Hydrograph type	=	Dekalb	Peak discharge	=	0.642 cfs
Storm frequency	=	50 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	576 cuft
Drainage area	=	0.125 ac	Runoff coeff.	=	0.66
Intensity	=	7.780 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

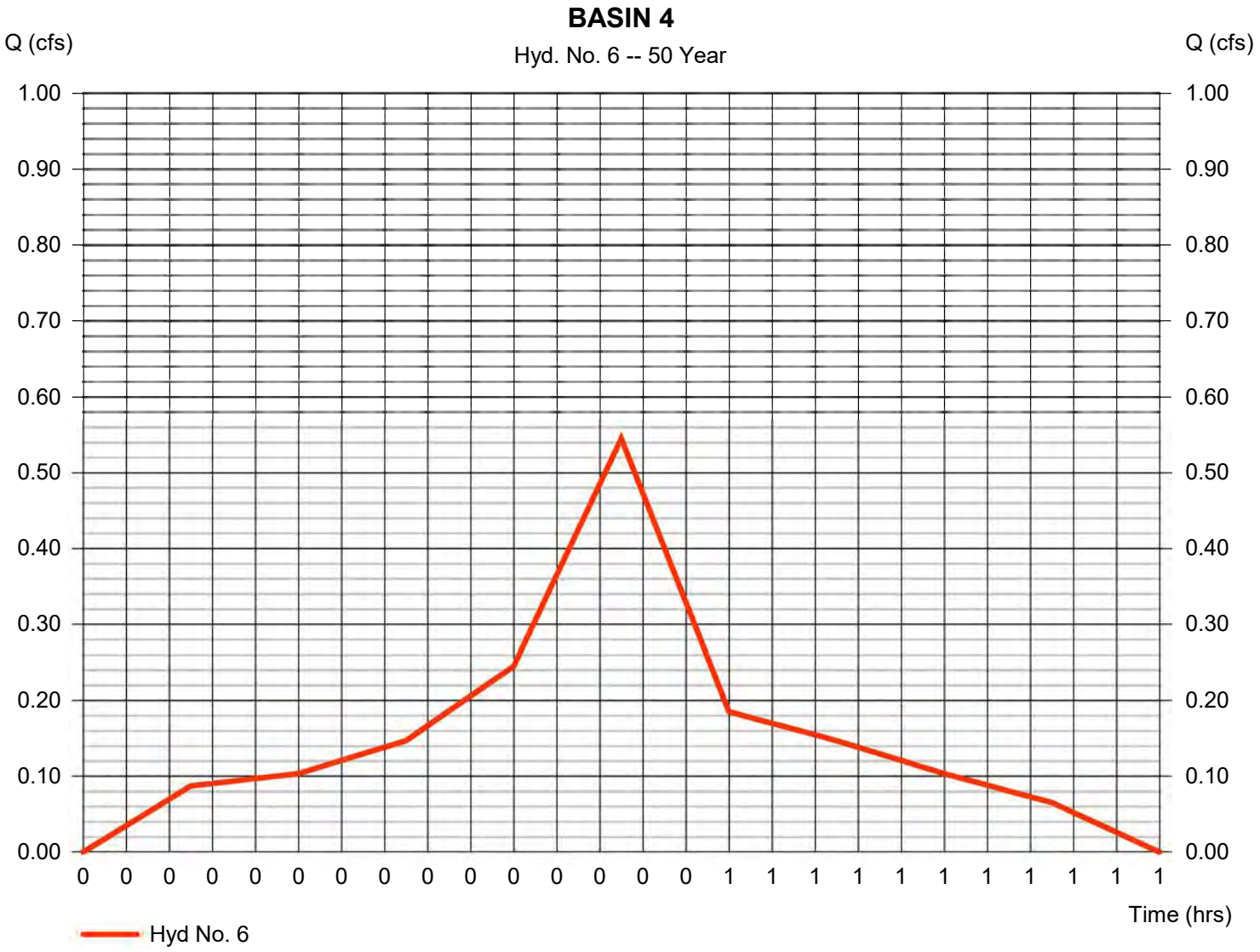


Hydrograph Report

Hyd. No. 6

BASIN 4

Hydrograph type	=	Dekalb	Peak discharge	=	0.545 cfs
Storm frequency	=	50 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	489 cuft
Drainage area	=	0.091 ac	Runoff coeff.	=	0.77
Intensity	=	7.780 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

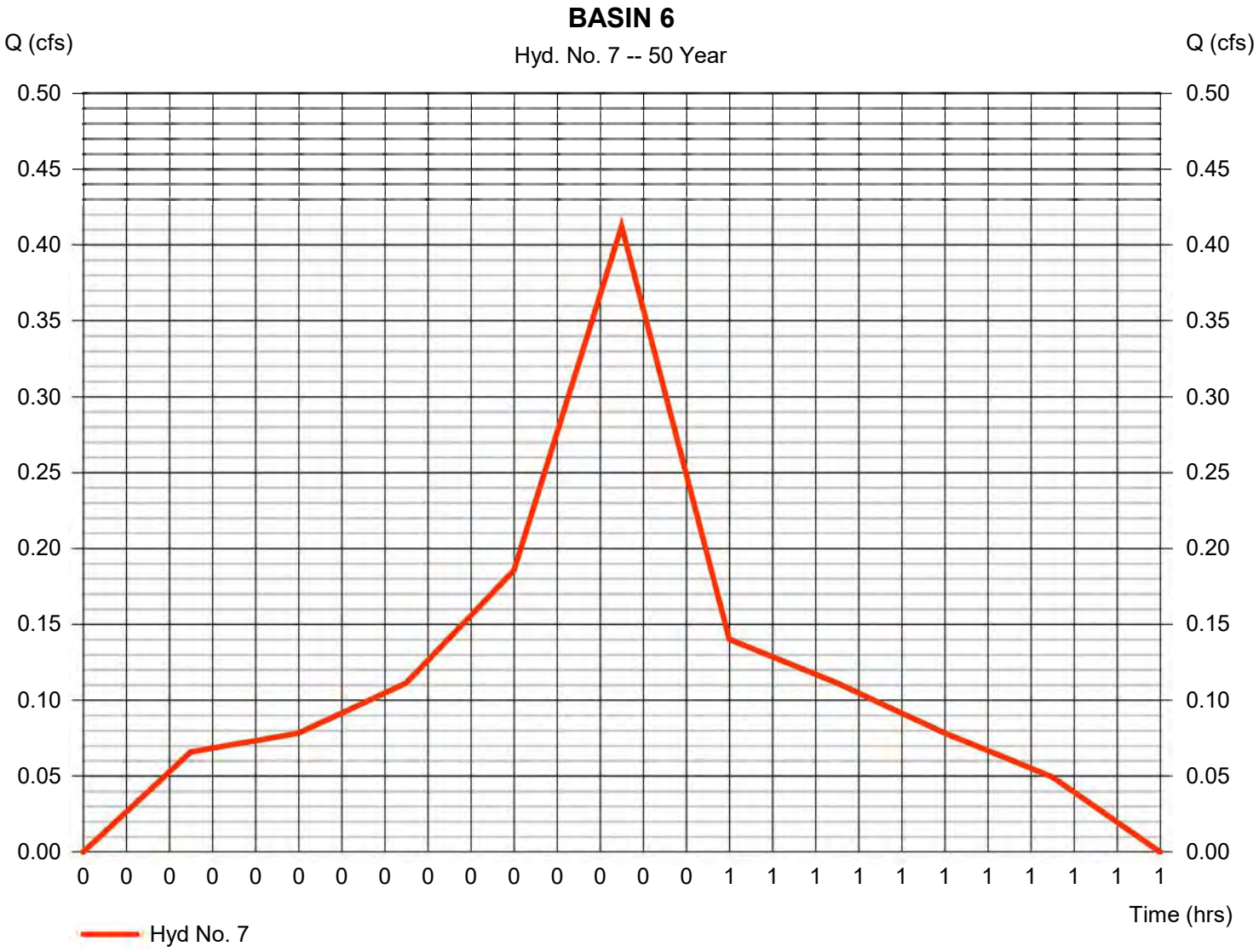


Hydrograph Report

Hyd. No. 7

BASIN 6

Hydrograph type	=	Dekalb	Peak discharge	=	0.412 cfs
Storm frequency	=	50 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	370 cuft
Drainage area	=	0.057 ac	Runoff coeff.	=	0.93
Intensity	=	7.780 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

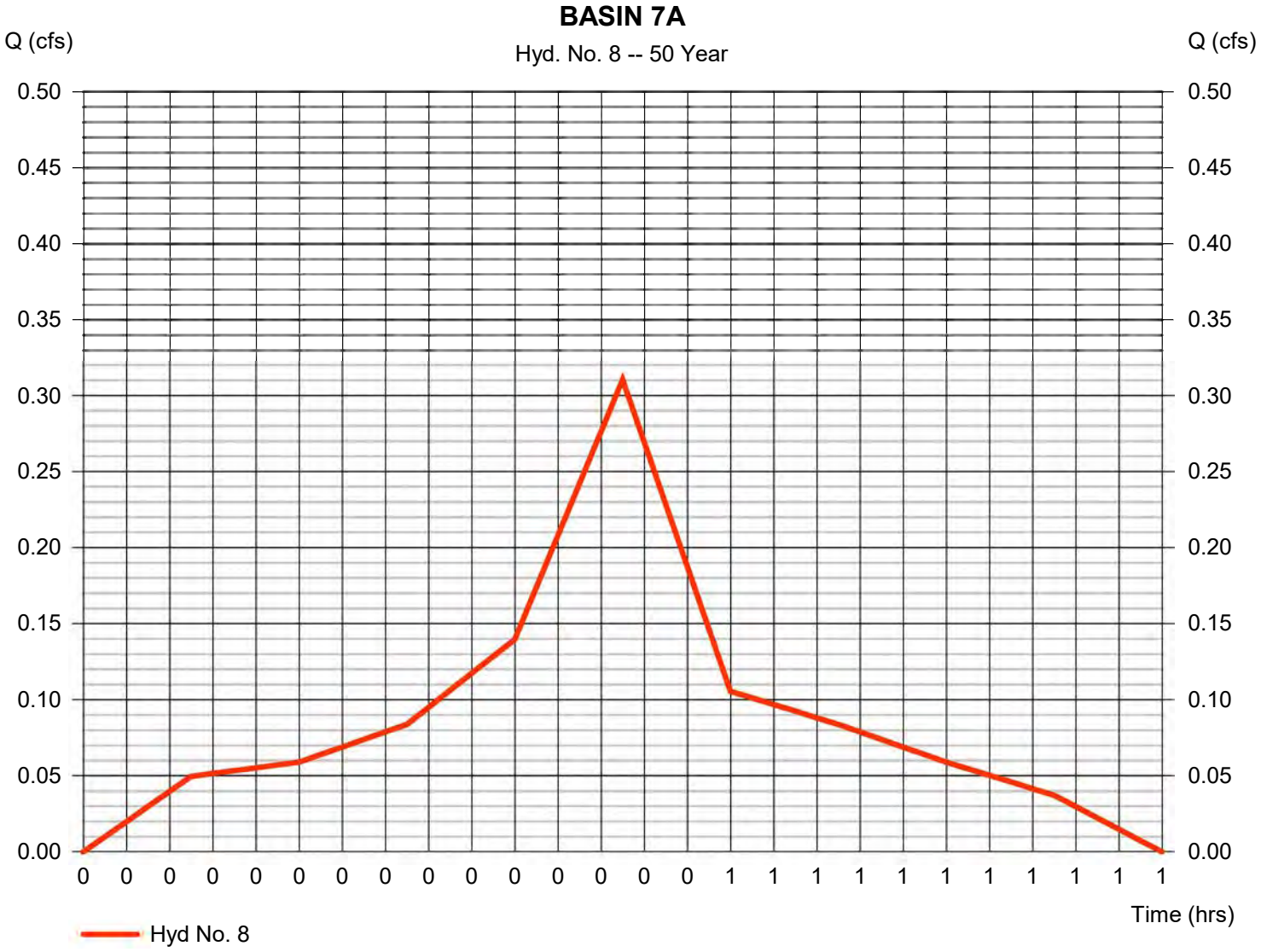


Hydrograph Report

Hyd. No. 8

BASIN 7A

Hydrograph type	=	Dekalb	Peak discharge	=	0.310 cfs
Storm frequency	=	50 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	278 cuft
Drainage area	=	0.042 ac	Runoff coeff.	=	0.95
Intensity	=	7.780 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

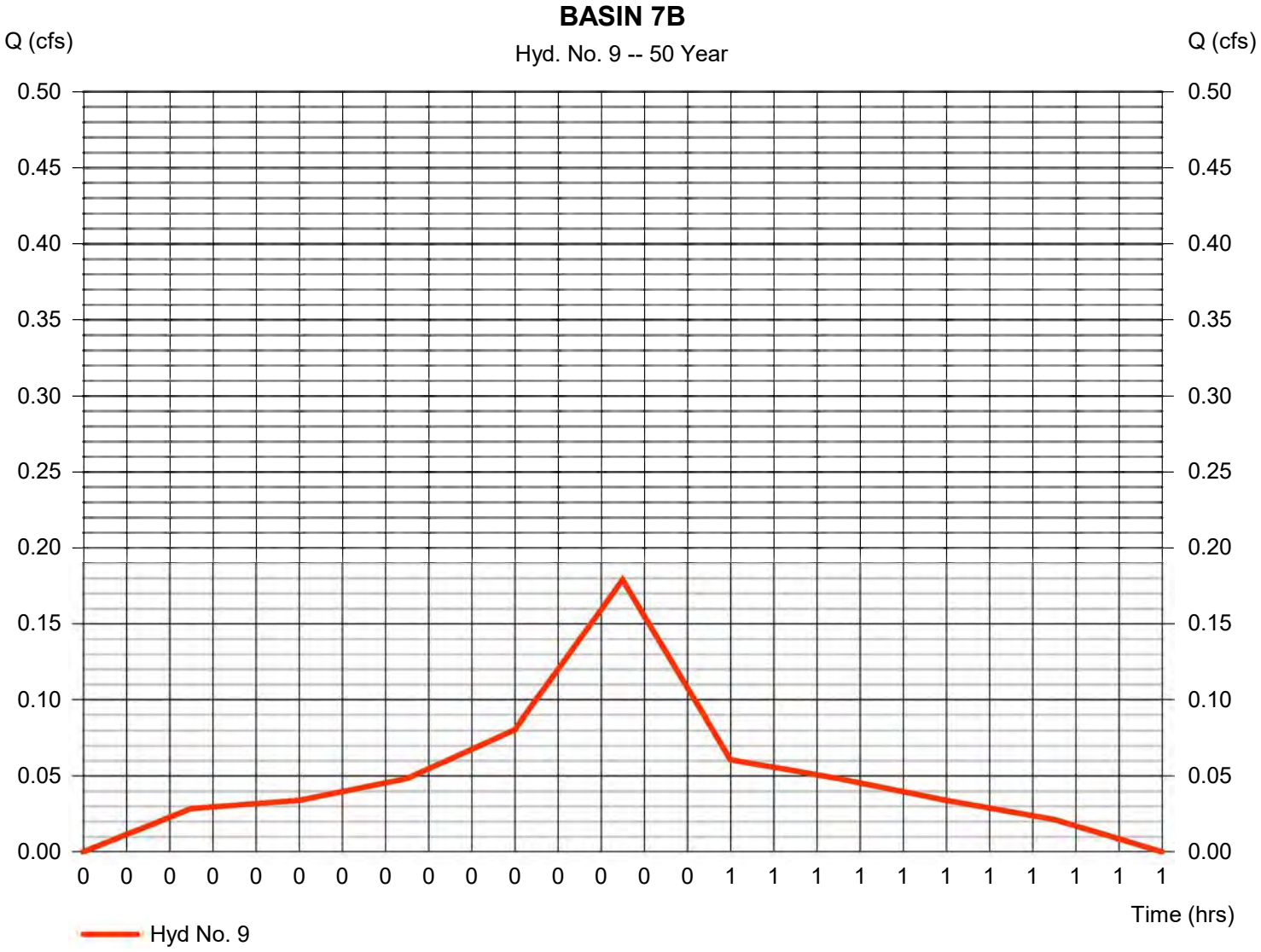


Hydrograph Report

Hyd. No. 9

BASIN 7B

Hydrograph type	=	Dekalb	Peak discharge	=	0.179 cfs
Storm frequency	=	50 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	161 cuft
Drainage area	=	0.025 ac	Runoff coeff.	=	0.92
Intensity	=	7.780 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a



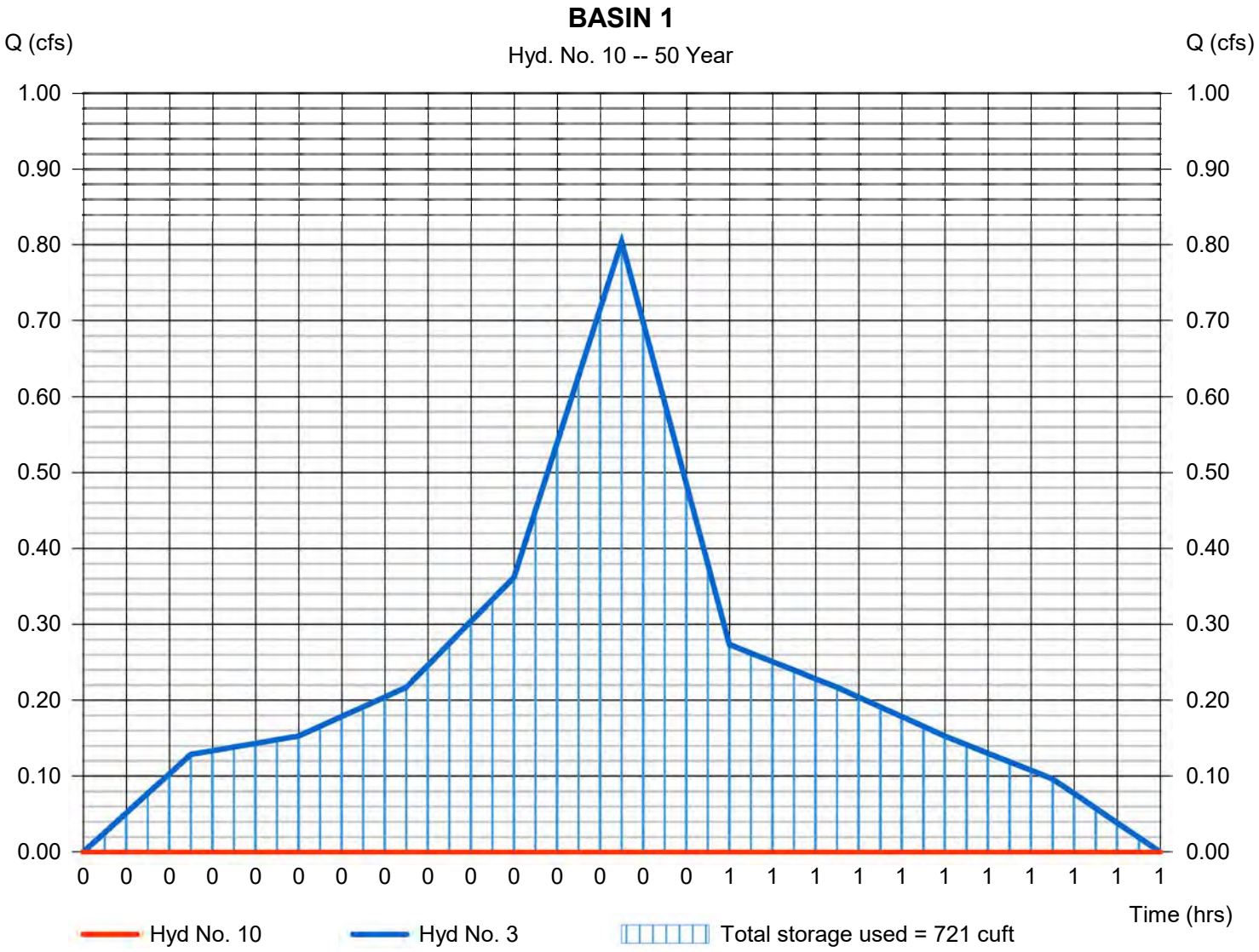
Hydrograph Report

Hyd. No. 10

BASIN 1

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	50 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	3 - BASIN 1	Max. Elevation	=	332.48 ft
Reservoir name	=	Basin 1	Max. Storage	=	721 cuft

Storage Indication method used.



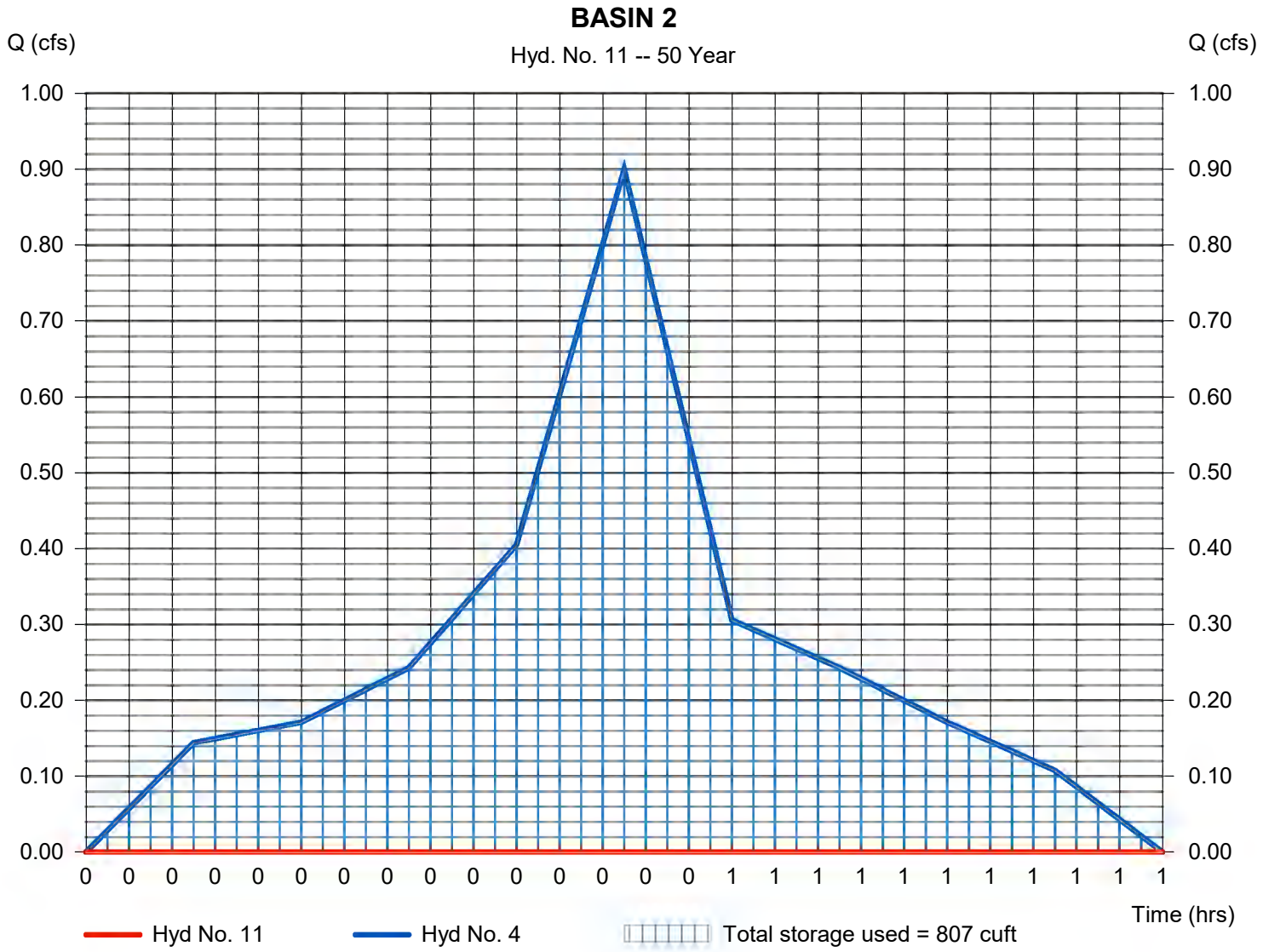
Hydrograph Report

Hyd. No. 11

BASIN 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	50 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	4 - BASIN 2	Max. Elevation	=	335.66 ft
Reservoir name	=	Basin 2	Max. Storage	=	807 cuft

Storage Indication method used.



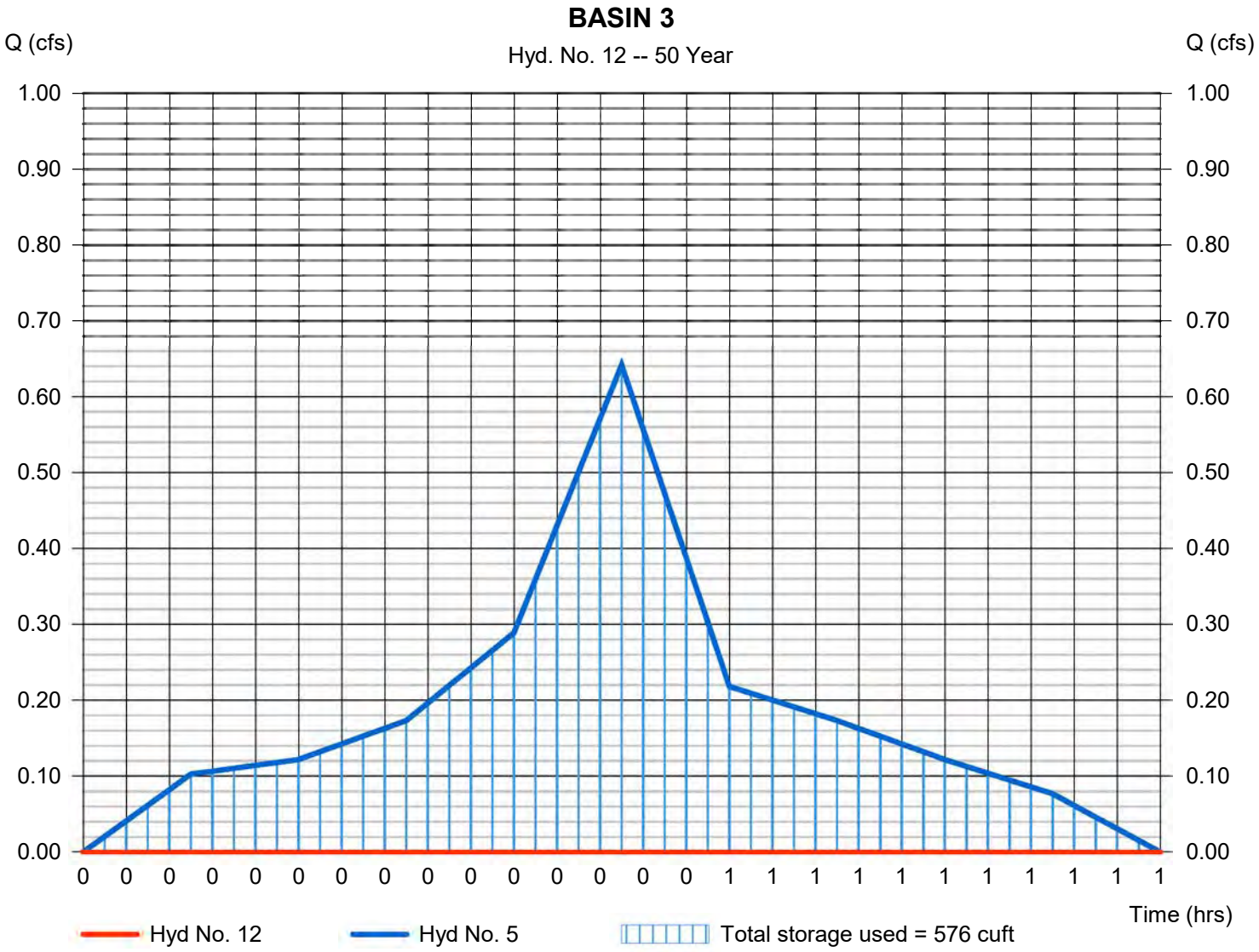
Hydrograph Report

Hyd. No. 12

BASIN 3

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	50 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	5 - BASIN 3	Max. Elevation	=	336.65 ft
Reservoir name	=	Basin 3	Max. Storage	=	576 cuft

Storage Indication method used.



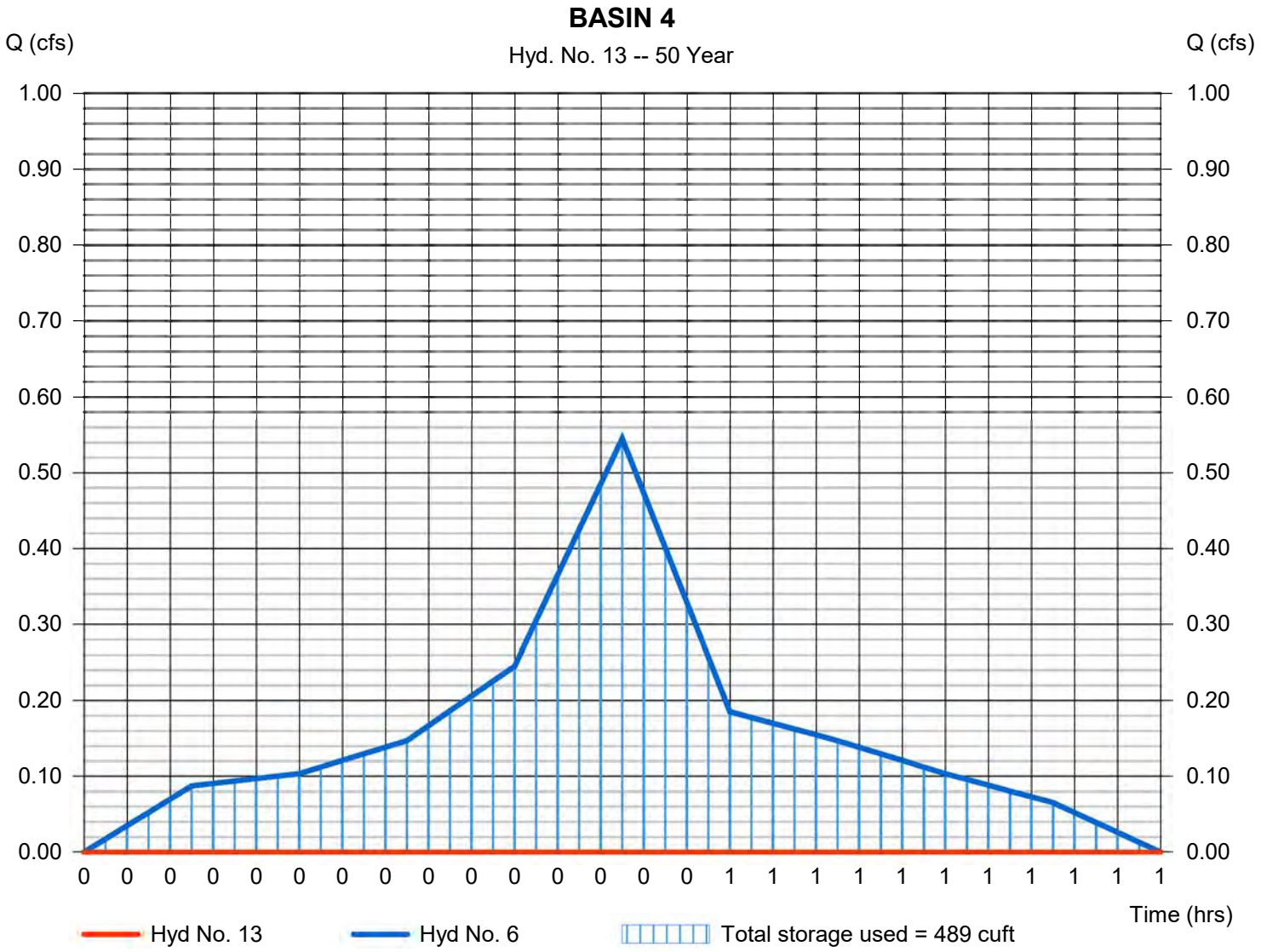
Hydrograph Report

Hyd. No. 13

BASIN 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	50 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	6 - BASIN 4	Max. Elevation	=	339.77 ft
Reservoir name	=	Basin 4	Max. Storage	=	489 cuft

Storage Indication method used.



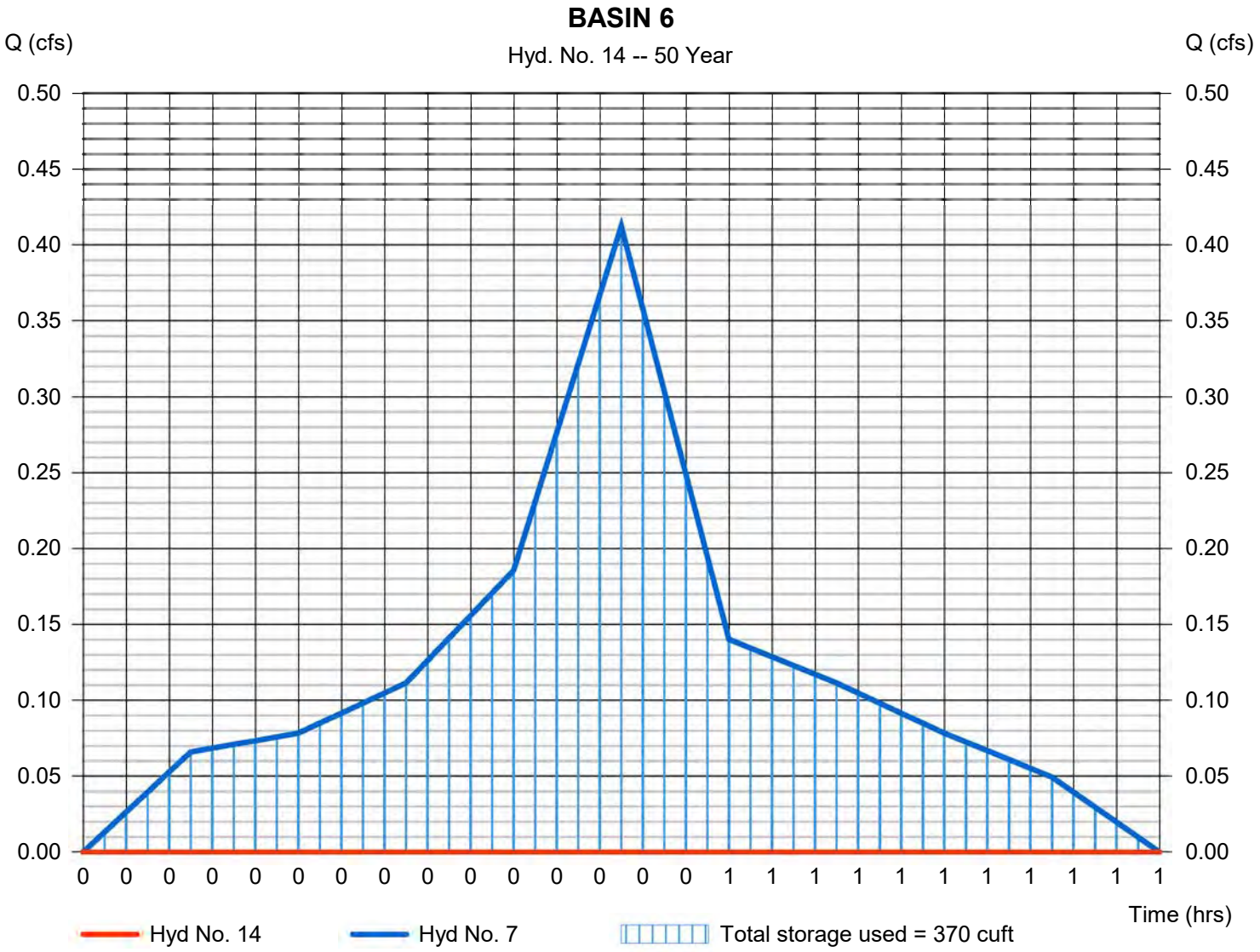
Hydrograph Report

Hyd. No. 14

BASIN 6

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	50 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	7 - BASIN 6	Max. Elevation	=	338.88 ft
Reservoir name	=	Basin 6	Max. Storage	=	370 cuft

Storage Indication method used.



Hydrograph Report

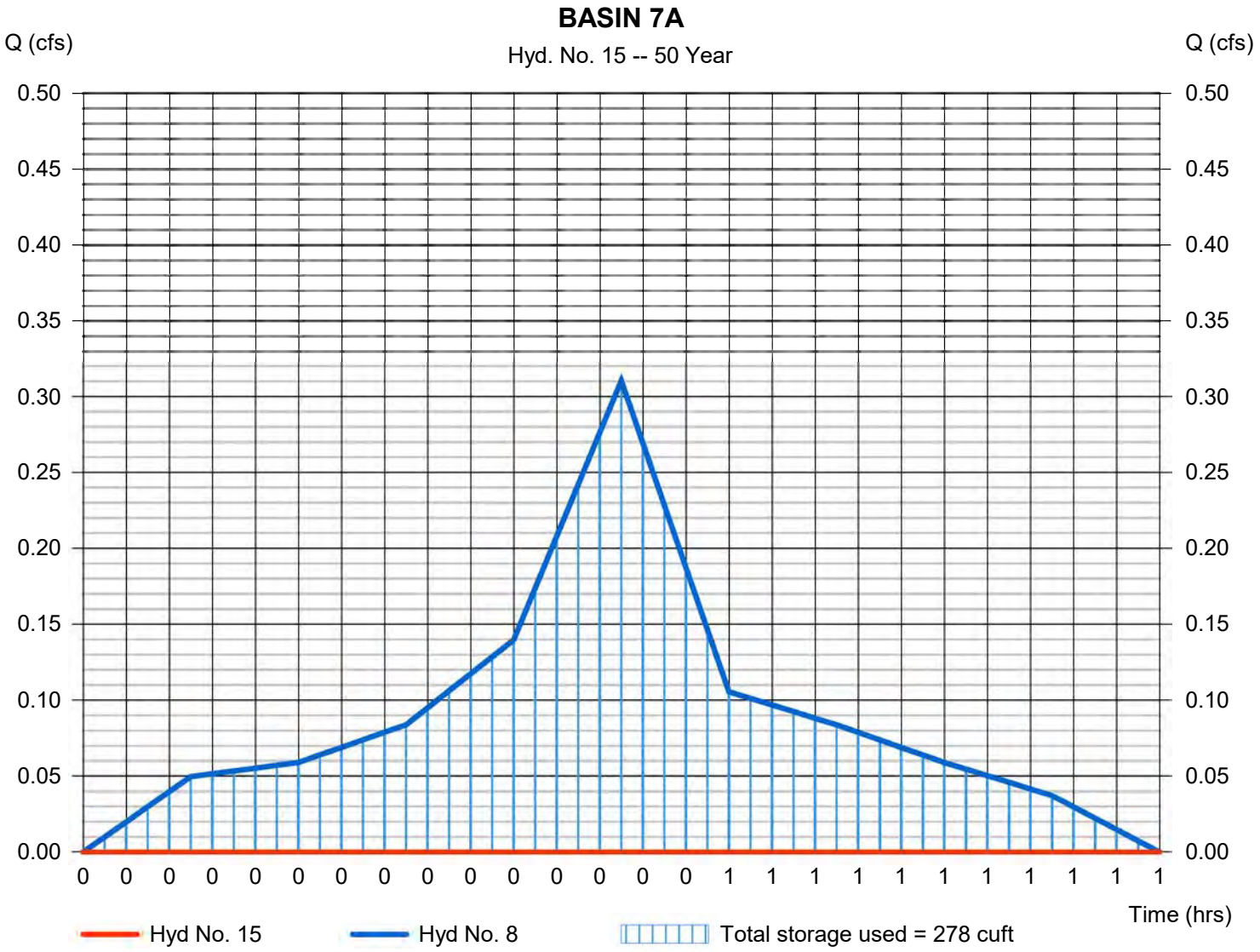
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Friday, 11 / 15 / 2024

Hyd. No. 15

BASIN 7A

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	50 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	8 - BASIN 7A	Max. Elevation	=	347.32 ft
Reservoir name	=	Basin 7A	Max. Storage	=	278 cuft

Storage Indication method used.



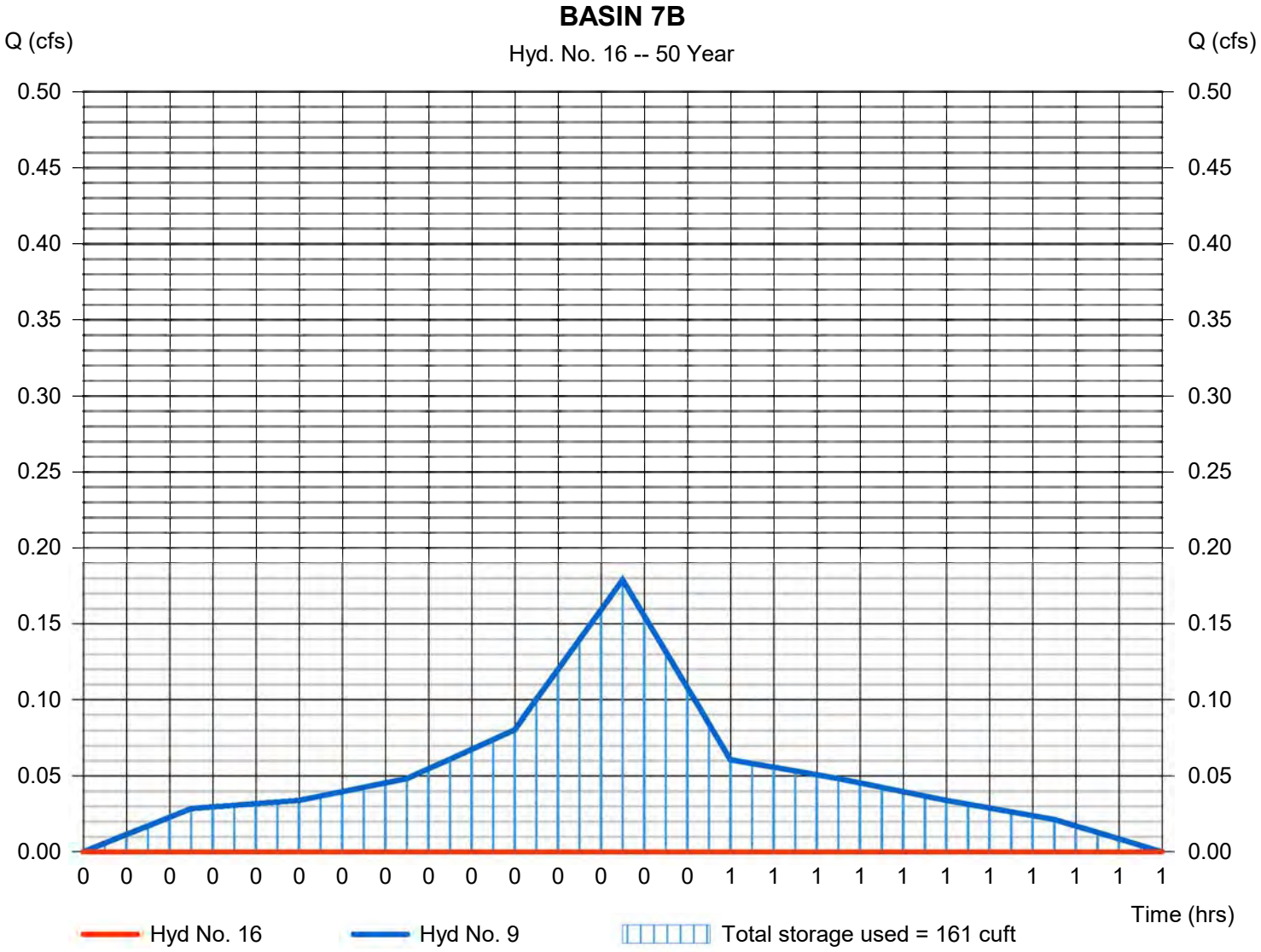
Hydrograph Report

Hyd. No. 16

BASIN 7B

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	50 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	9 - BASIN 7B	Max. Elevation	=	346.02 ft
Reservoir name	=	Basin 7B	Max. Storage	=	161 cuft

Storage Indication method used.

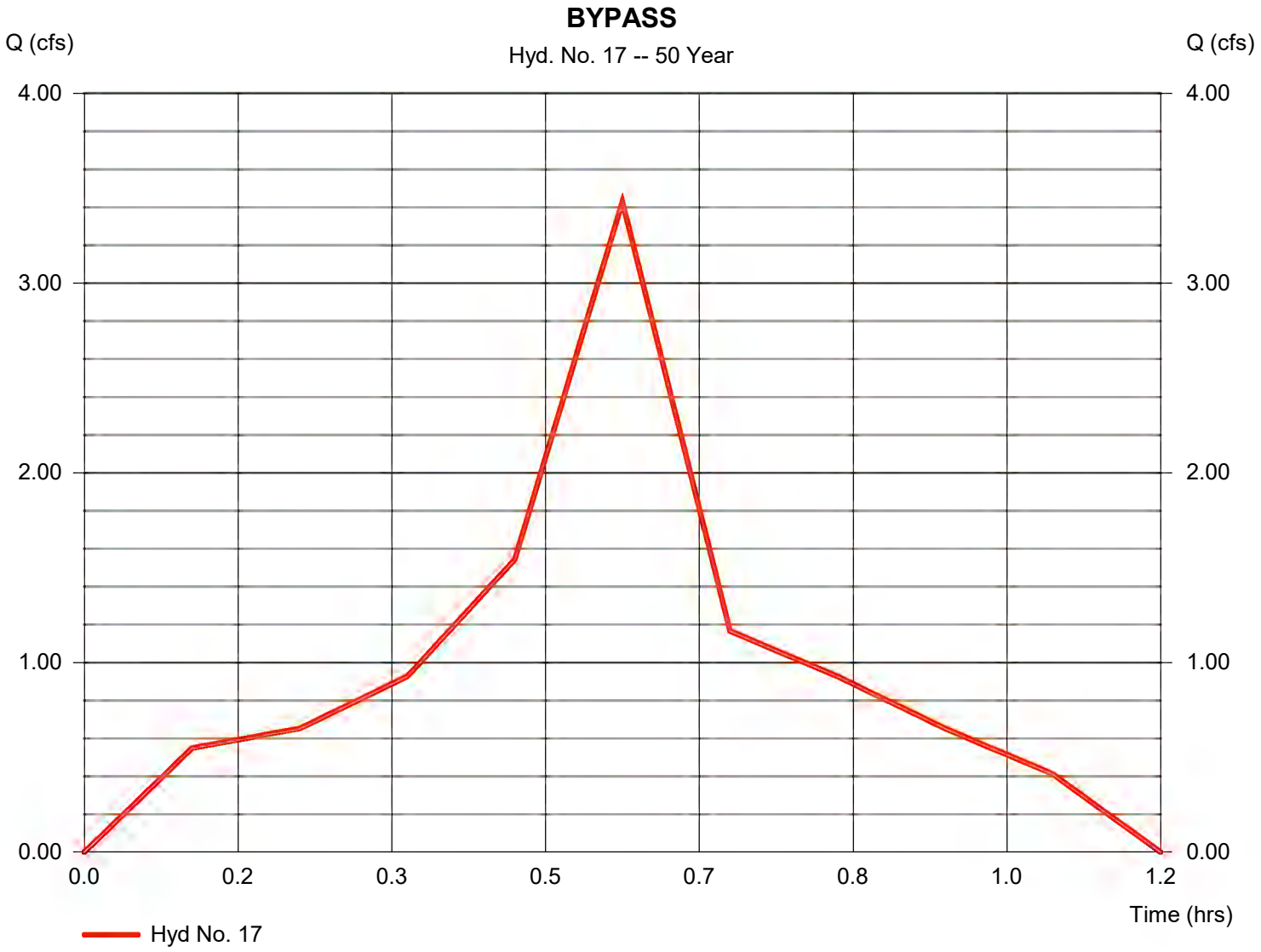


Hydrograph Report

Hyd. No. 17

BYPASS

Hydrograph type	=	Dekalb	Peak discharge	=	3.429 cfs
Storm frequency	=	50 yrs	Time to peak	=	0.58 hrs
Time interval	=	1 min	Hyd. volume	=	4,306 cuft
Drainage area	=	0.801 ac	Runoff coeff.	=	0.6
Intensity	=	7.134 in/hr	Tc by User	=	7.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a



Hydrograph Summary Report

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

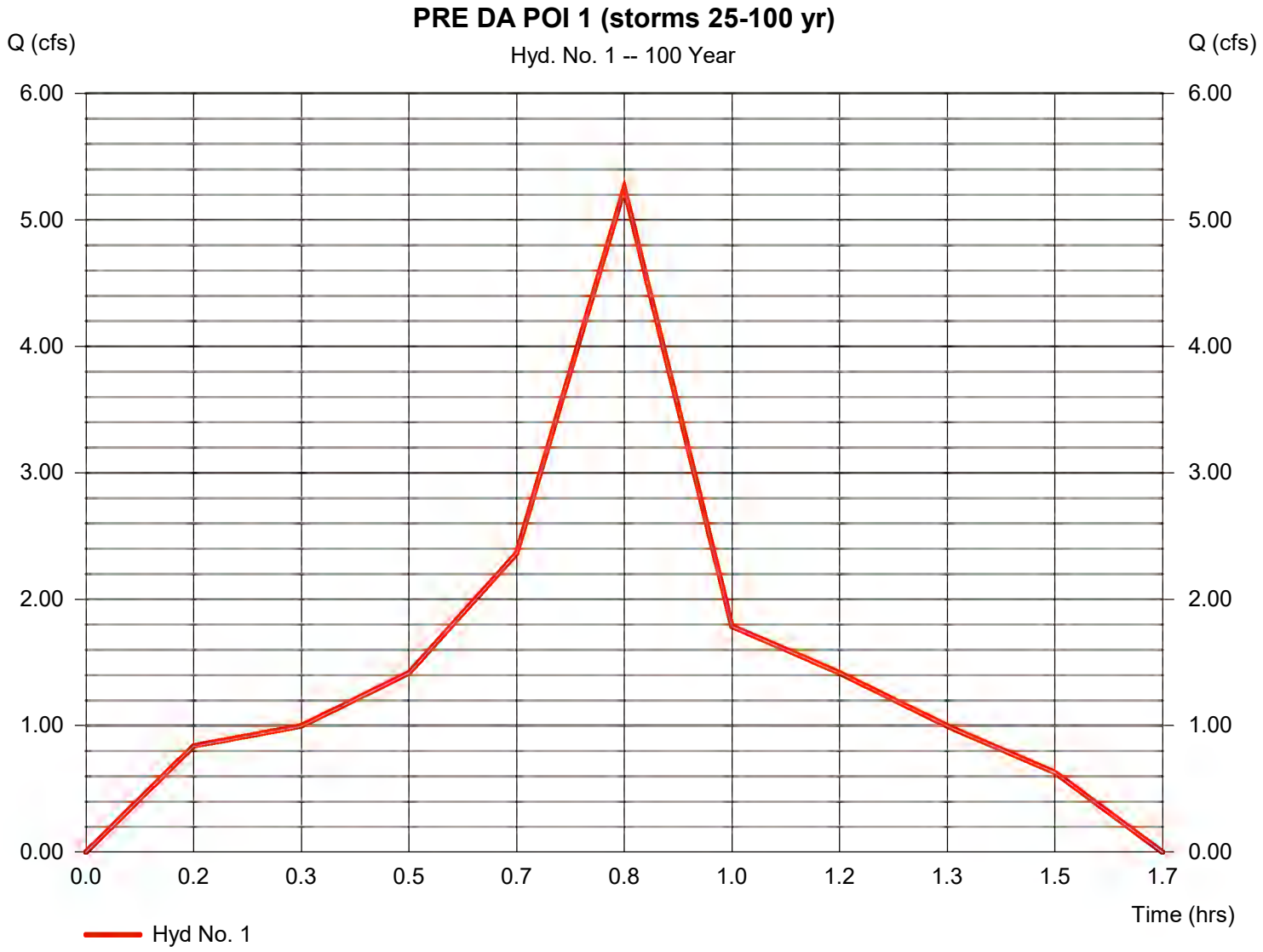
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Dekalb	5.251	1	50	9,421	------	------	------	PRE DA POI 1 (storms 25-100 yr)
3	Dekalb	0.860	1	25	771	------	------	------	BASIN 1
4	Dekalb	0.962	1	25	863	------	------	------	BASIN 2
5	Dekalb	0.686	1	25	616	------	------	------	BASIN 3
6	Dekalb	0.583	1	25	523	------	------	------	BASIN 4
7	Dekalb	0.441	1	25	396	------	------	------	BASIN 6
8	Dekalb	0.332	1	25	298	------	------	------	BASIN 7A
9	Dekalb	0.191	1	25	172	------	------	------	BASIN 7B
10	Reservoir	0.000	1	n/a	0	3	332.70	771	BASIN 1
11	Reservoir	0.000	1	n/a	0	4	335.82	863	BASIN 2
12	Reservoir	0.000	1	n/a	0	5	336.84	616	BASIN 3
13	Reservoir	0.000	1	n/a	0	6	339.86	523	BASIN 4
14	Reservoir	0.000	1	n/a	0	7	338.98	396	BASIN 6
15	Reservoir	0.000	1	n/a	0	8	347.48	298	BASIN 7A
16	Reservoir	0.000	1	n/a	0	9	346.09	172	BASIN 7B
17	Dekalb	3.666	1	35	4,604	------	------	------	BYPASS

Hydrograph Report

Hyd. No. 1

PRE DA POI 1 (storms 25-100 yr)

Hydrograph type	= Dekalb	Peak discharge	= 5.251 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.83 hrs
Time interval	= 1 min	Hyd. volume	= 9,421 cuft
Drainage area	= 1.480 ac	Runoff coeff.	= 0.52
Intensity	= 6.823 in/hr	Tc by User	= 10.00 min
IDF Curve	= Abington Rainfall.IDF	Asc/Rec limb fact	= n/a

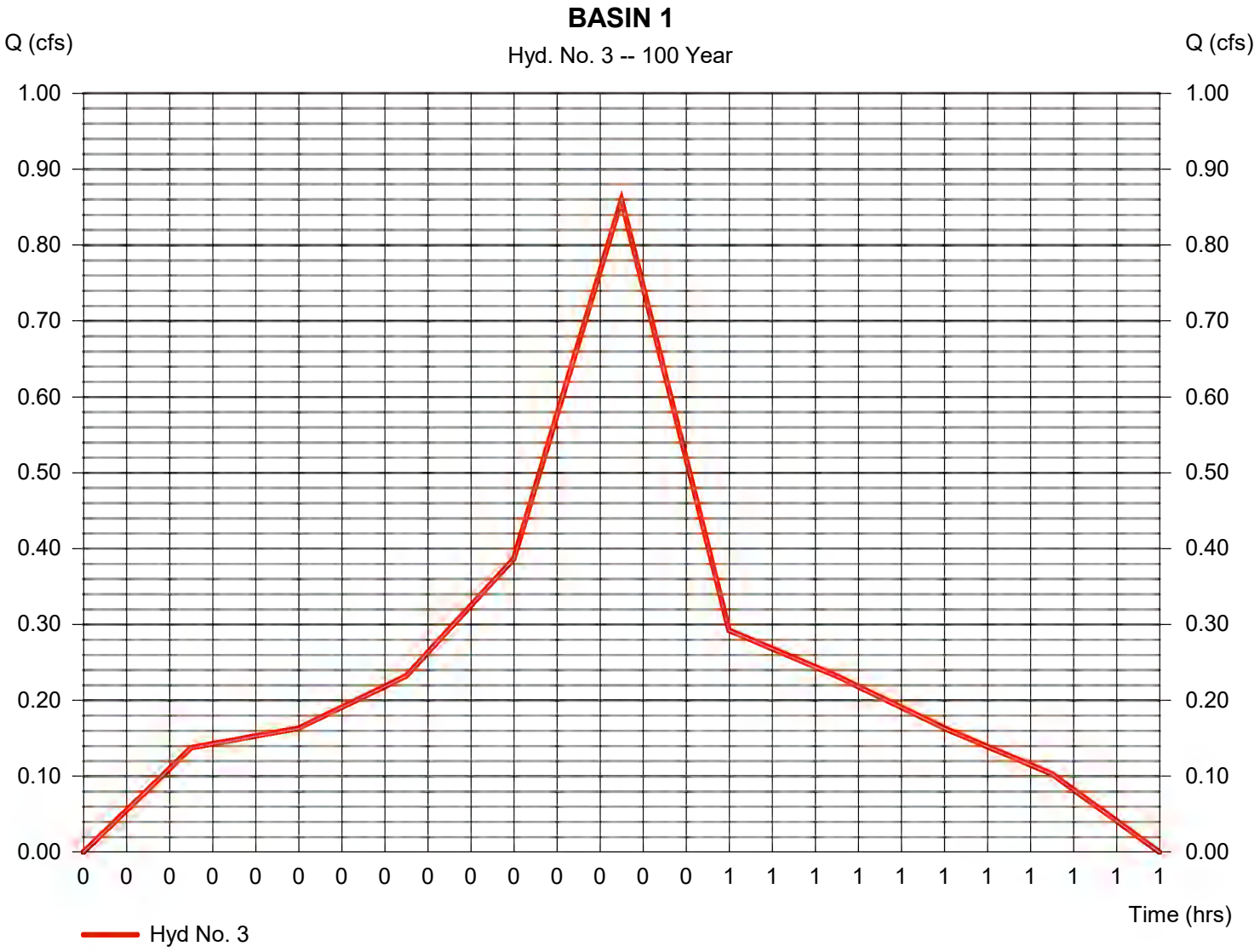


Hydrograph Report

Hyd. No. 3

BASIN 1

Hydrograph type	=	Dekalb	Peak discharge	=	0.860 cfs
Storm frequency	=	100 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	771 cuft
Drainage area	=	0.159 ac	Runoff coeff.	=	0.65
Intensity	=	8.318 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

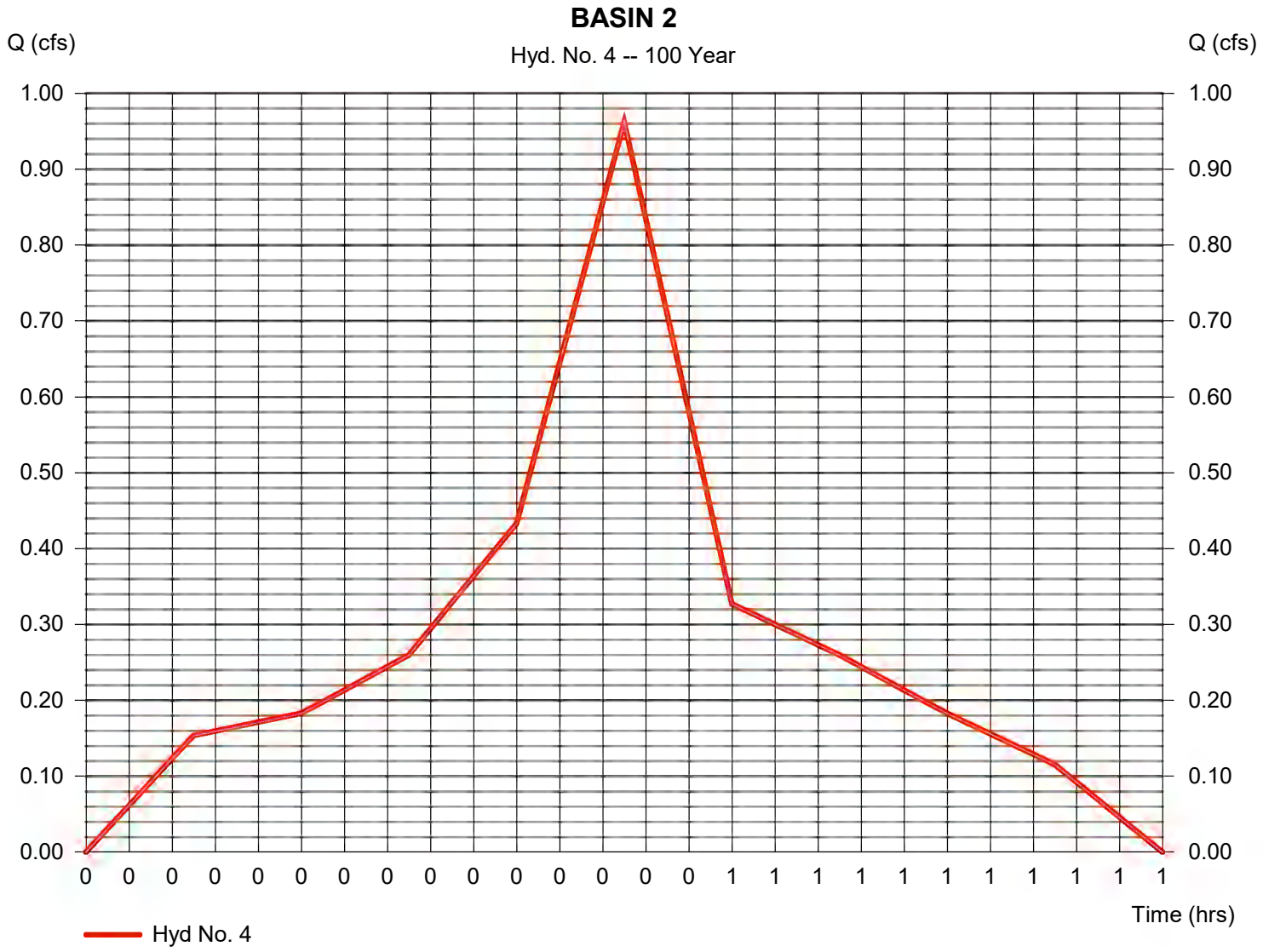


Hydrograph Report

Hyd. No. 4

BASIN 2

Hydrograph type	=	Dekalb	Peak discharge	=	0.962 cfs
Storm frequency	=	100 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	863 cuft
Drainage area	=	0.178 ac	Runoff coeff.	=	0.65
Intensity	=	8.318 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

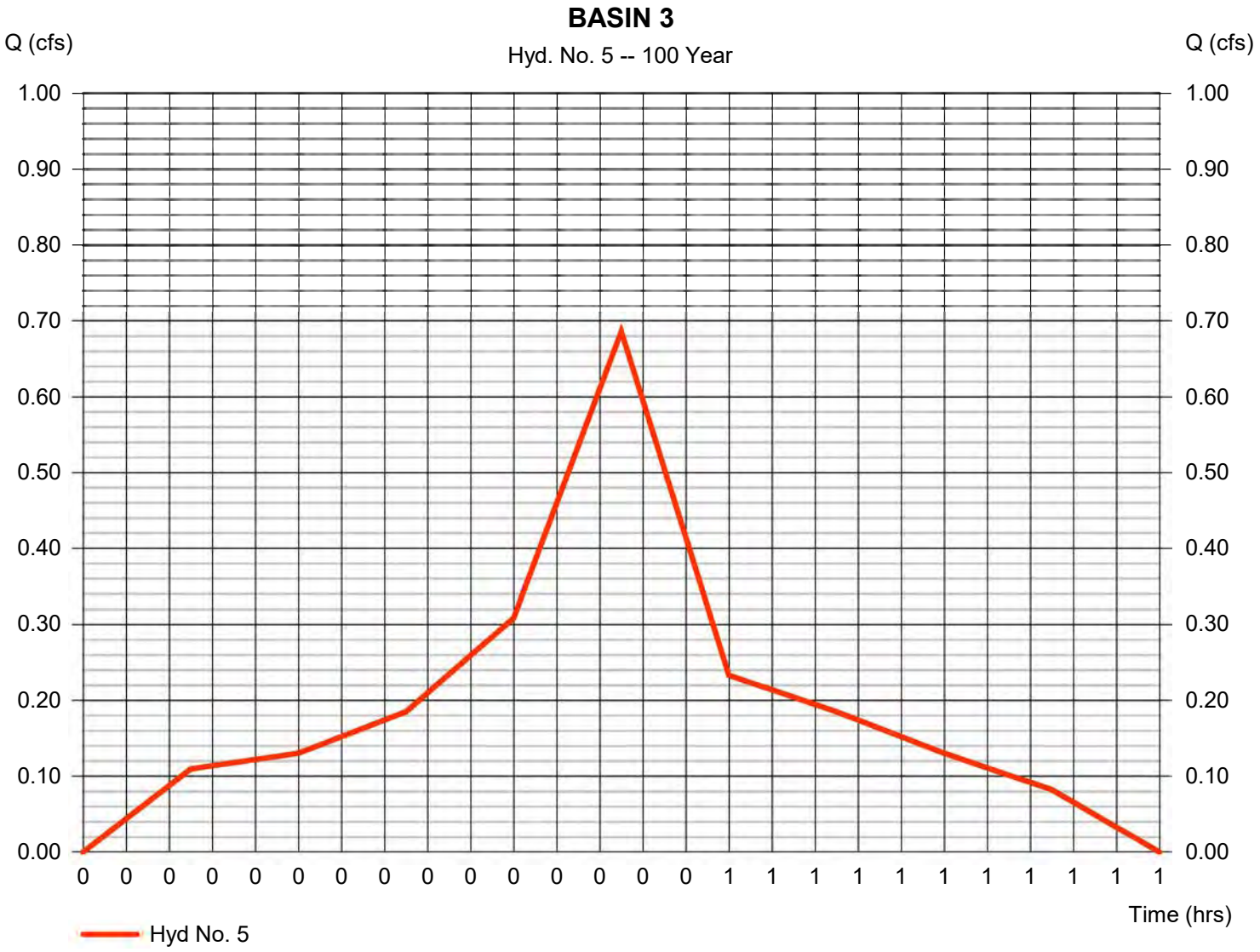


Hydrograph Report

Hyd. No. 5

BASIN 3

Hydrograph type	=	Dekalb	Peak discharge	=	0.686 cfs
Storm frequency	=	100 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	616 cuft
Drainage area	=	0.125 ac	Runoff coeff.	=	0.66
Intensity	=	8.318 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

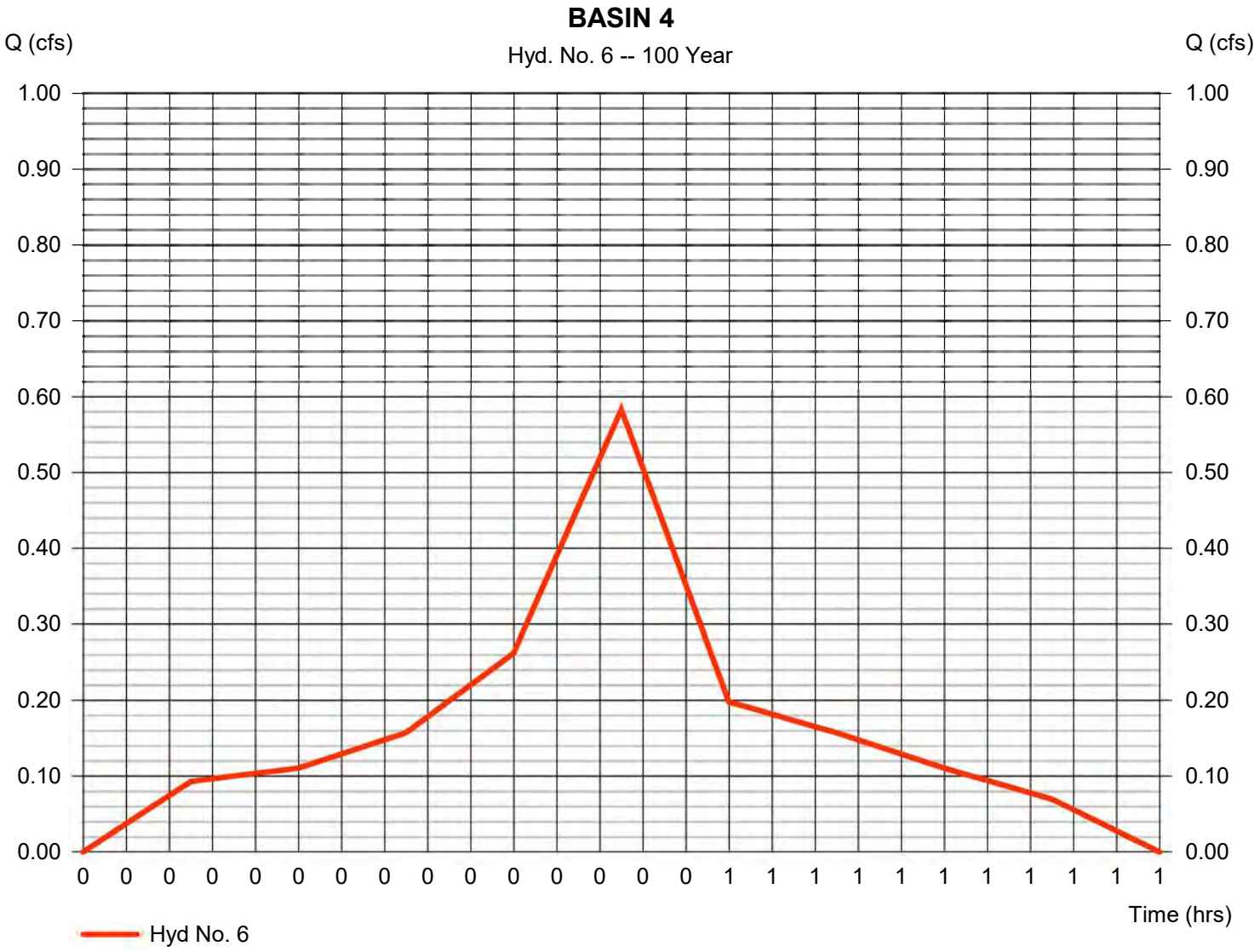


Hydrograph Report

Hyd. No. 6

BASIN 4

Hydrograph type	=	Dekalb	Peak discharge	=	0.583 cfs
Storm frequency	=	100 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	523 cuft
Drainage area	=	0.091 ac	Runoff coeff.	=	0.77
Intensity	=	8.318 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

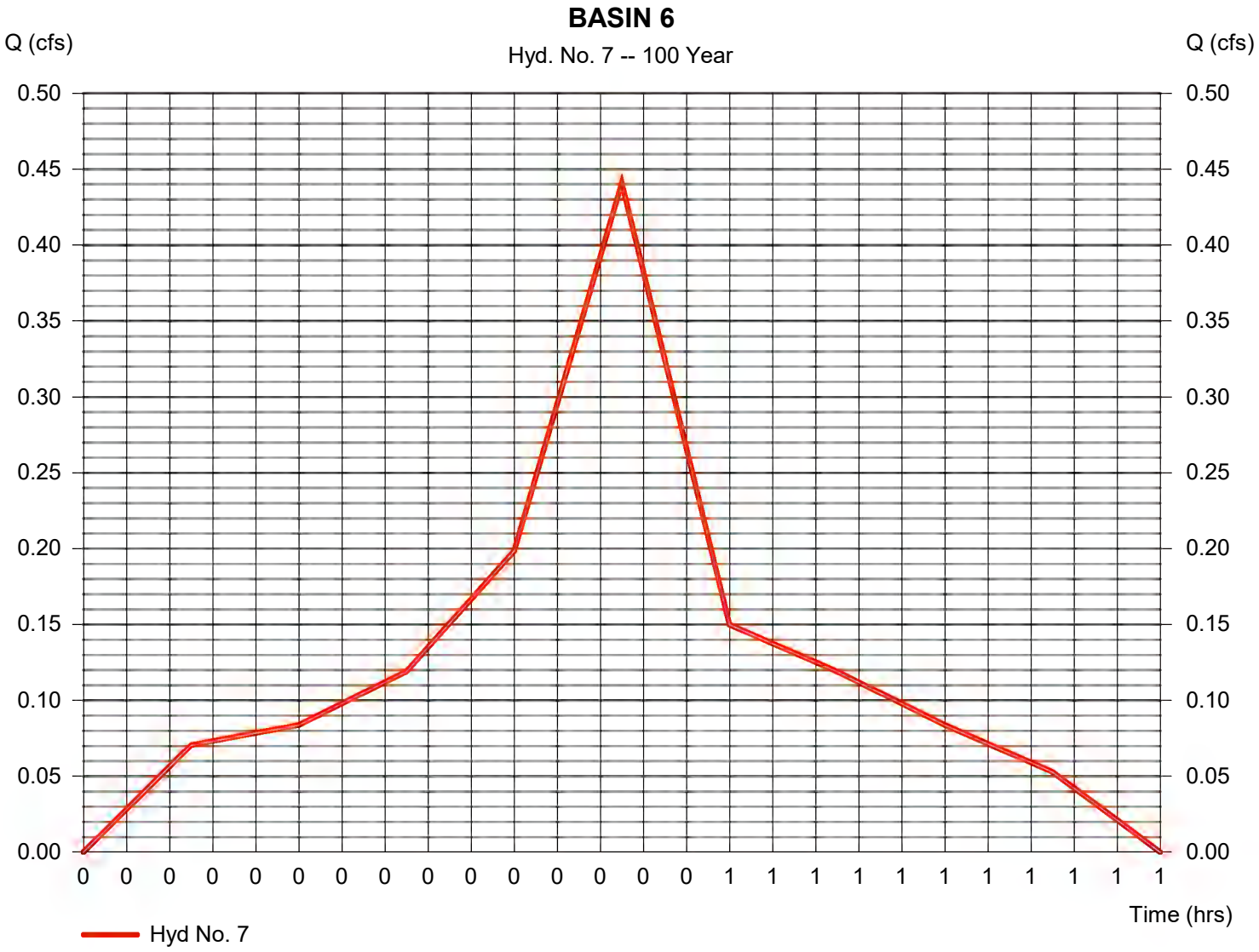


Hydrograph Report

Hyd. No. 7

BASIN 6

Hydrograph type	=	Dekalb	Peak discharge	=	0.441 cfs
Storm frequency	=	100 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	396 cuft
Drainage area	=	0.057 ac	Runoff coeff.	=	0.93
Intensity	=	8.318 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

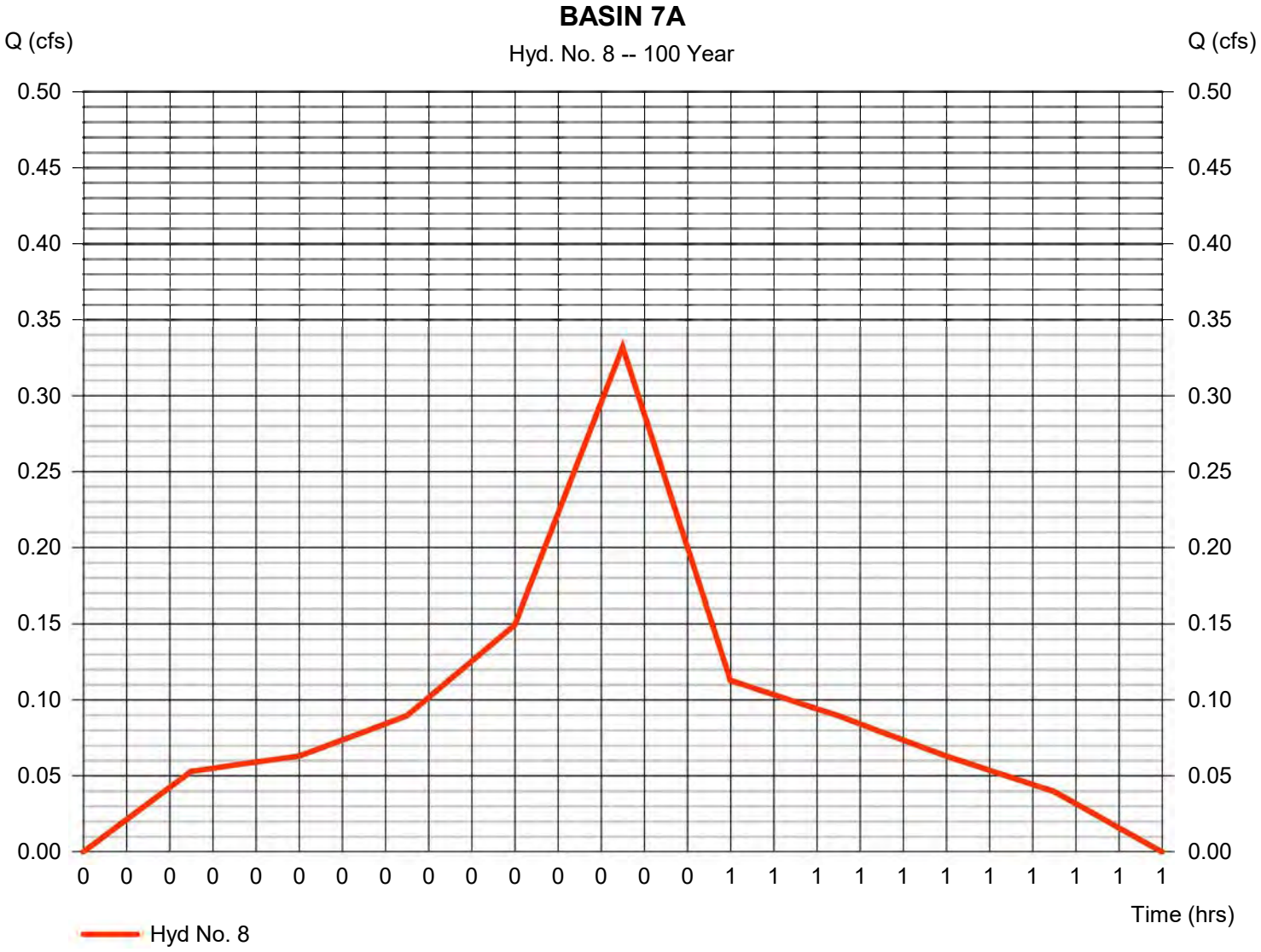


Hydrograph Report

Hyd. No. 8

BASIN 7A

Hydrograph type	=	Dekalb	Peak discharge	=	0.332 cfs
Storm frequency	=	100 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	298 cuft
Drainage area	=	0.042 ac	Runoff coeff.	=	0.95
Intensity	=	8.318 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a

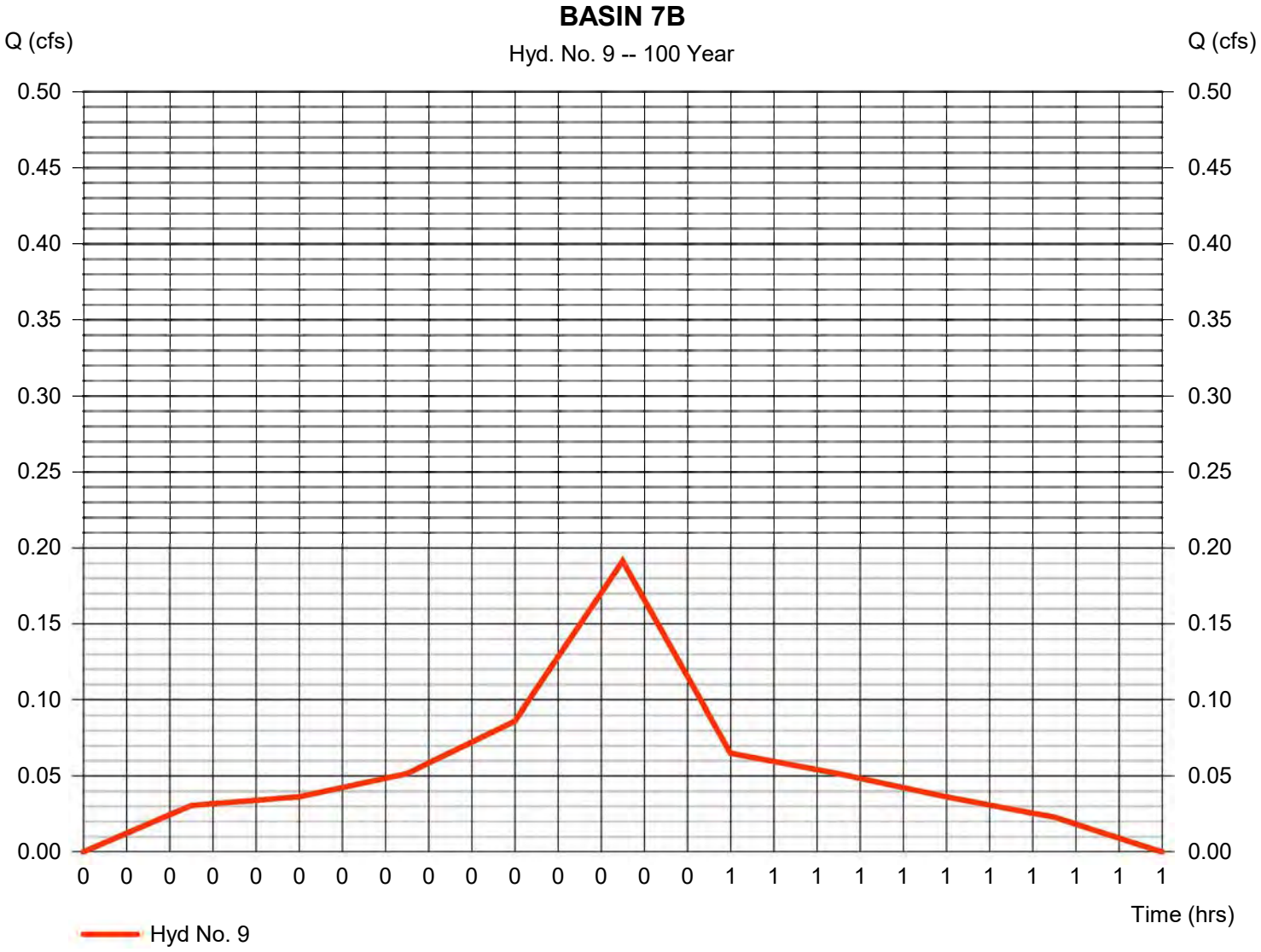


Hydrograph Report

Hyd. No. 9

BASIN 7B

Hydrograph type	=	Dekalb	Peak discharge	=	0.191 cfs
Storm frequency	=	100 yrs	Time to peak	=	0.42 hrs
Time interval	=	1 min	Hyd. volume	=	172 cuft
Drainage area	=	0.025 ac	Runoff coeff.	=	0.92
Intensity	=	8.318 in/hr	Tc by User	=	5.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a



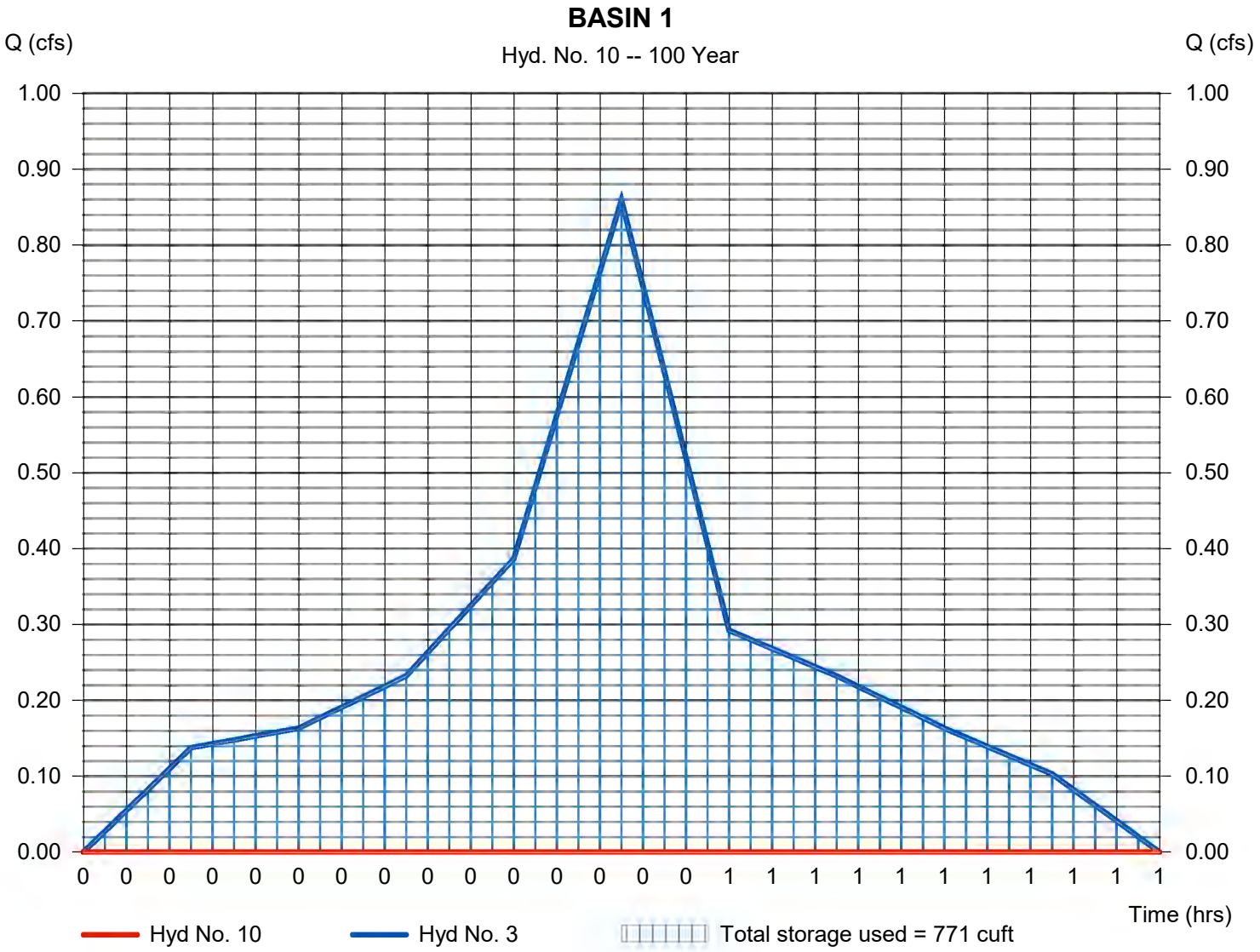
Hydrograph Report

Hyd. No. 10

BASIN 1

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	100 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	3 - BASIN 1	Max. Elevation	=	332.70 ft
Reservoir name	=	Basin 1	Max. Storage	=	771 cuft

Storage Indication method used.



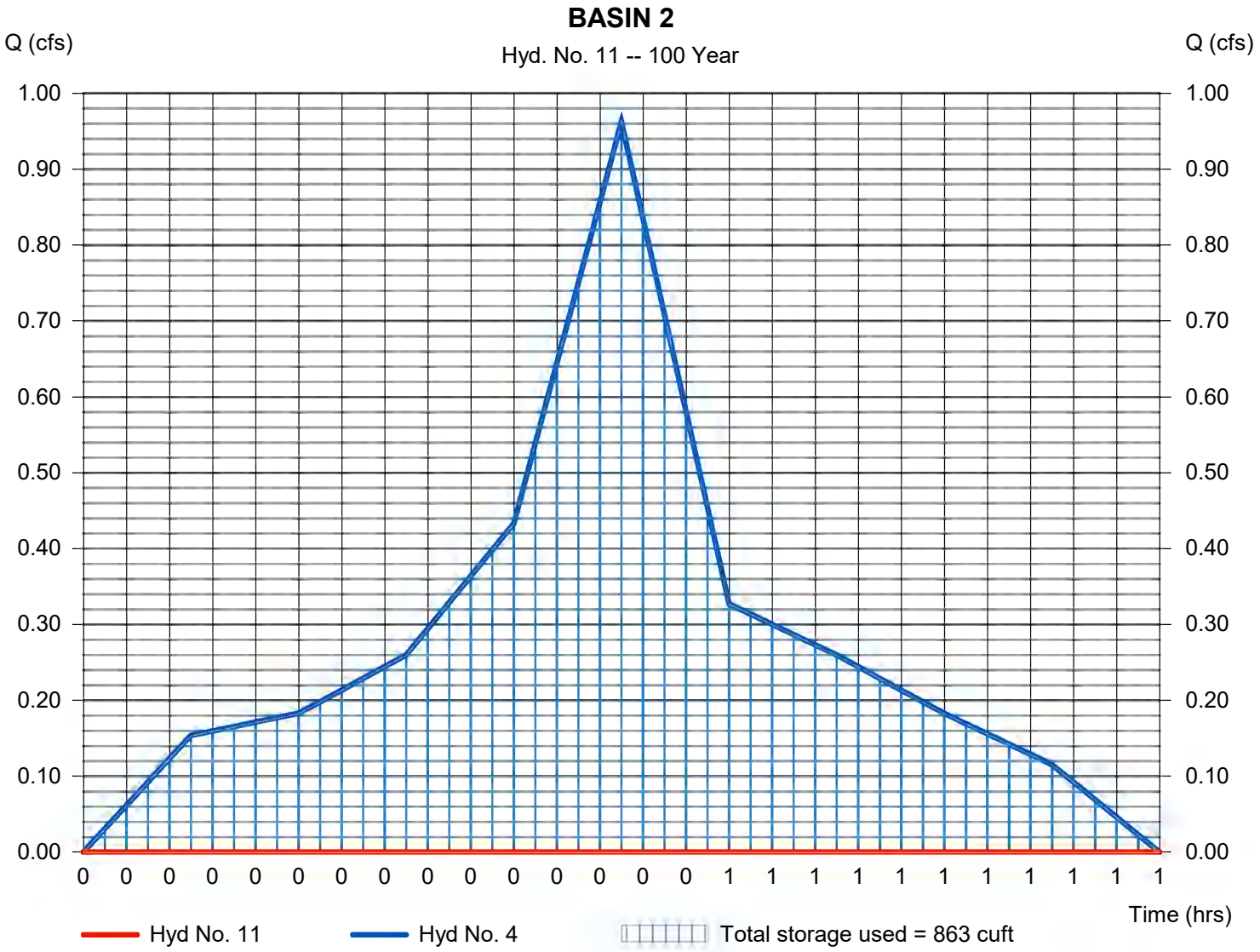
Hydrograph Report

Hyd. No. 11

BASIN 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	100 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	4 - BASIN 2	Max. Elevation	=	335.82 ft
Reservoir name	=	Basin 2	Max. Storage	=	863 cuft

Storage Indication method used.



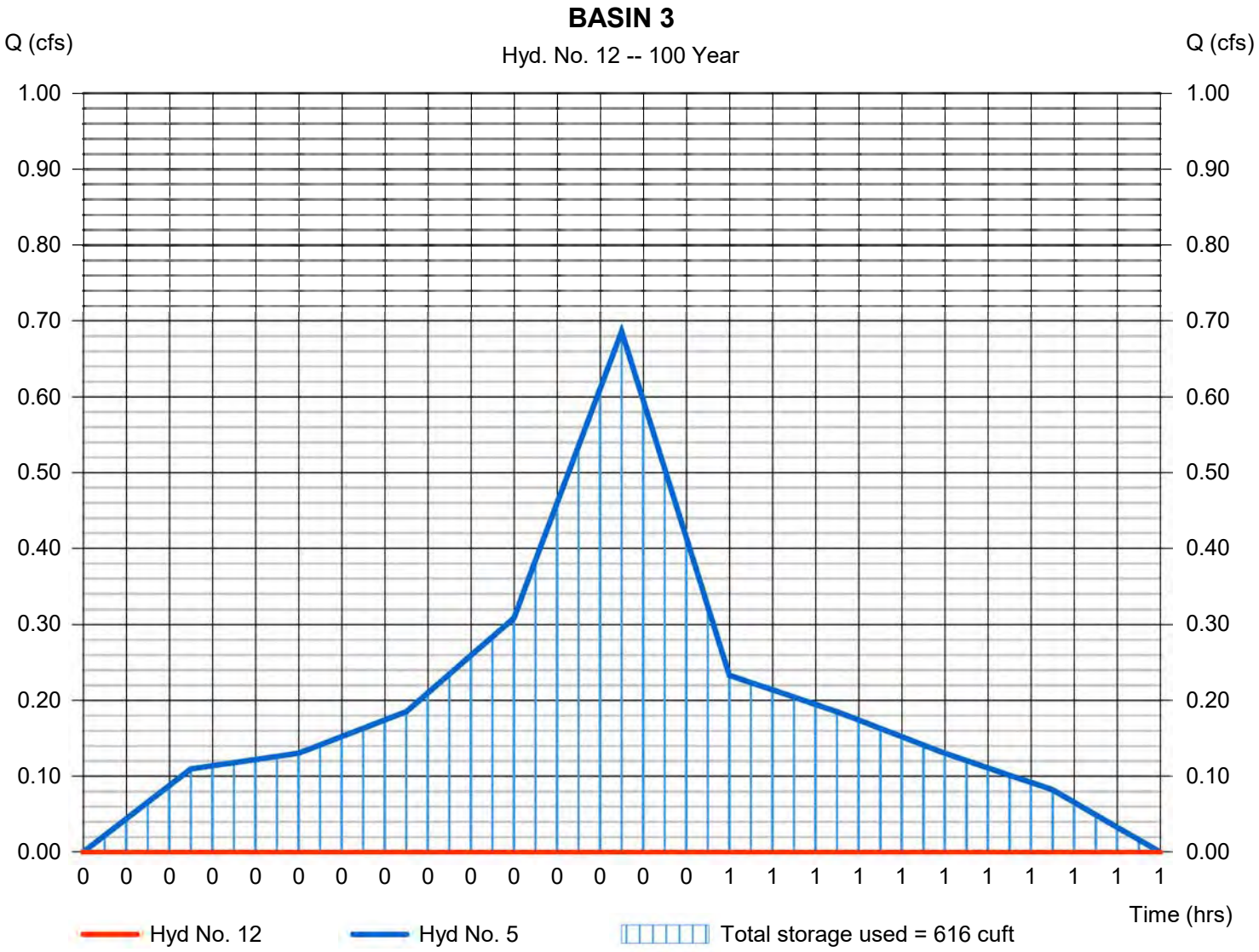
Hydrograph Report

Hyd. No. 12

BASIN 3

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 5 - BASIN 3	Max. Elevation	= 336.84 ft
Reservoir name	= Basin 3	Max. Storage	= 616 cuft

Storage Indication method used.



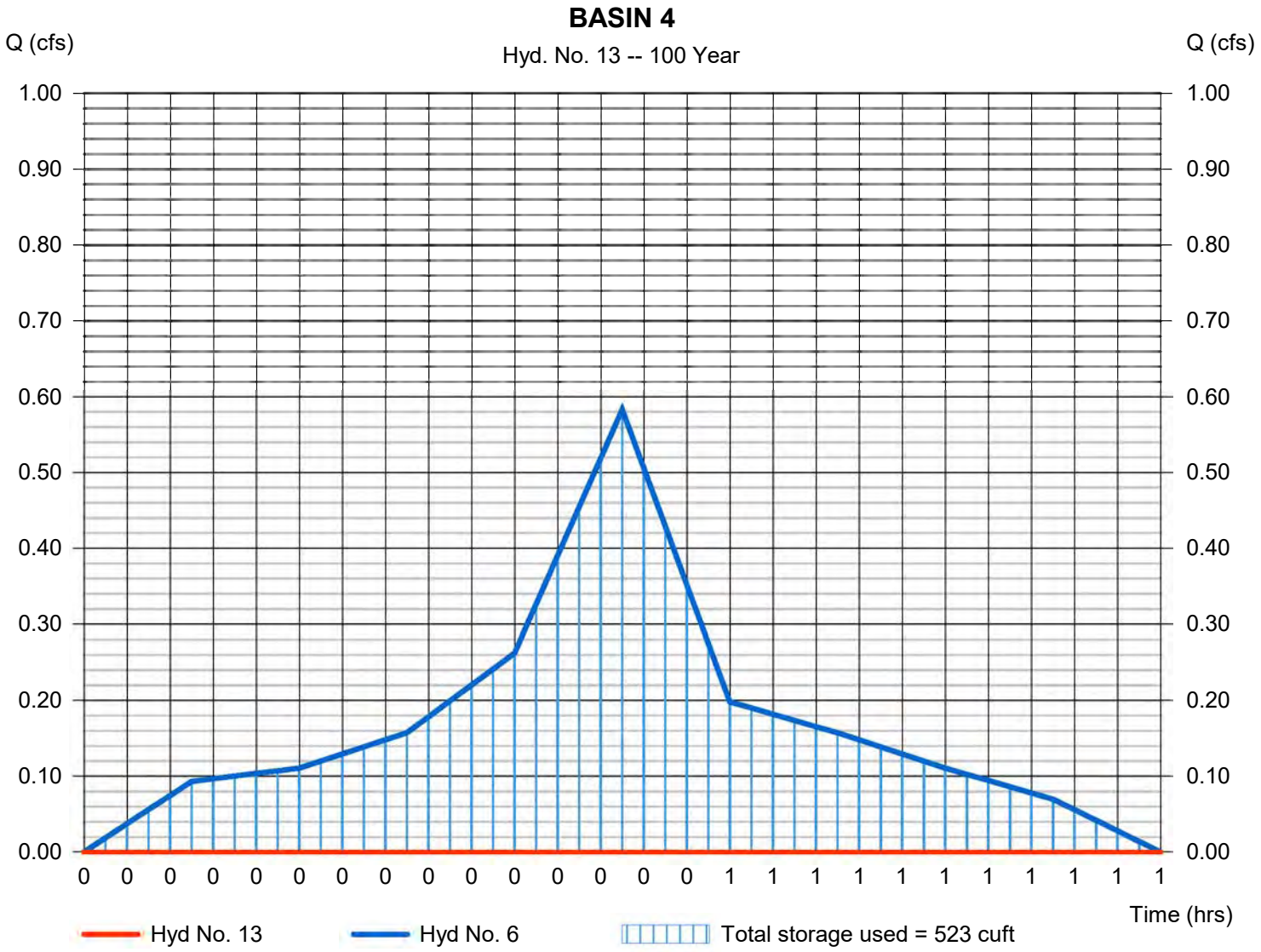
Hydrograph Report

Hyd. No. 13

BASIN 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	100 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	6 - BASIN 4	Max. Elevation	=	339.86 ft
Reservoir name	=	Basin 4	Max. Storage	=	523 cuft

Storage Indication method used.



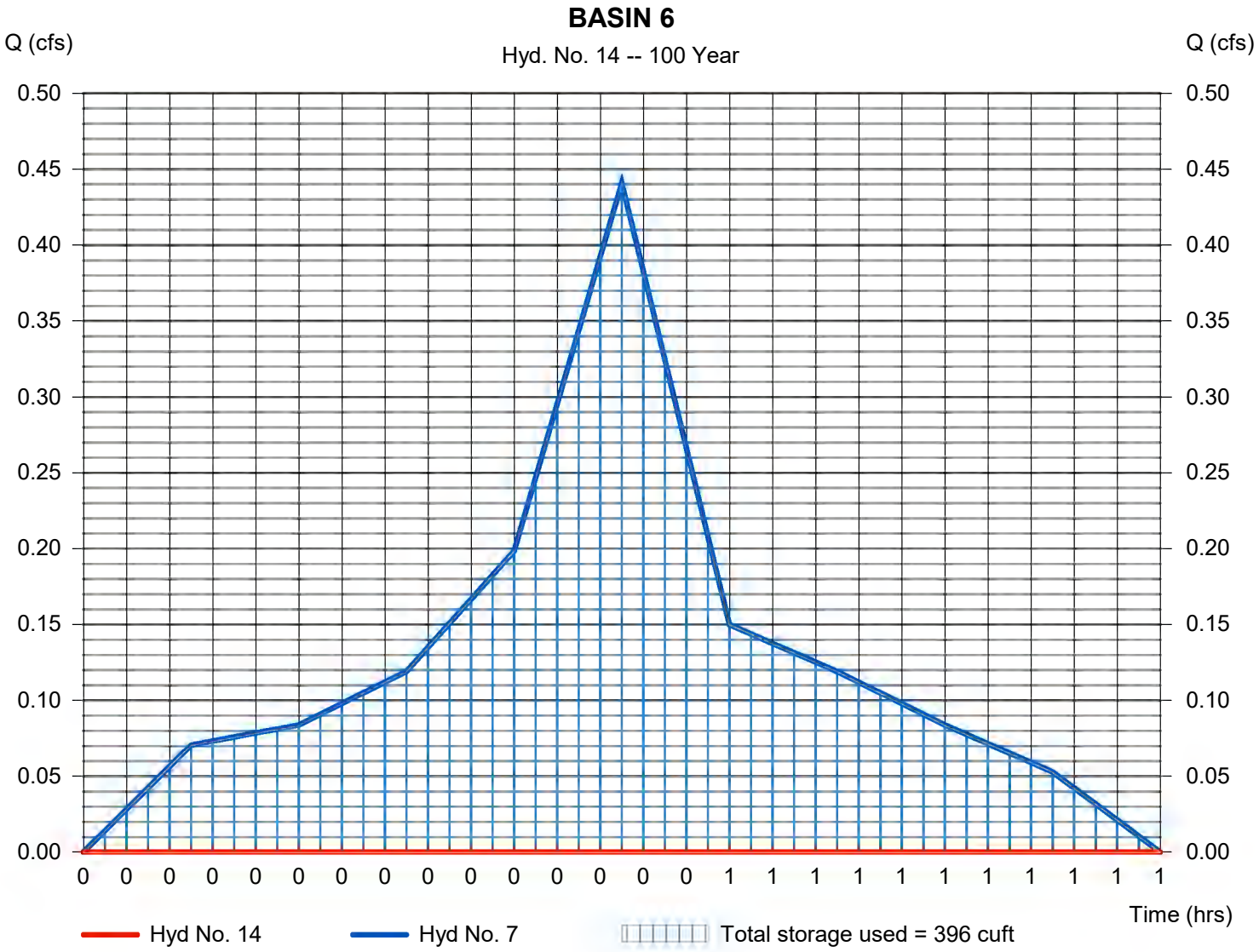
Hydrograph Report

Hyd. No. 14

BASIN 6

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	100 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	7 - BASIN 6	Max. Elevation	=	338.98 ft
Reservoir name	=	Basin 6	Max. Storage	=	396 cuft

Storage Indication method used.



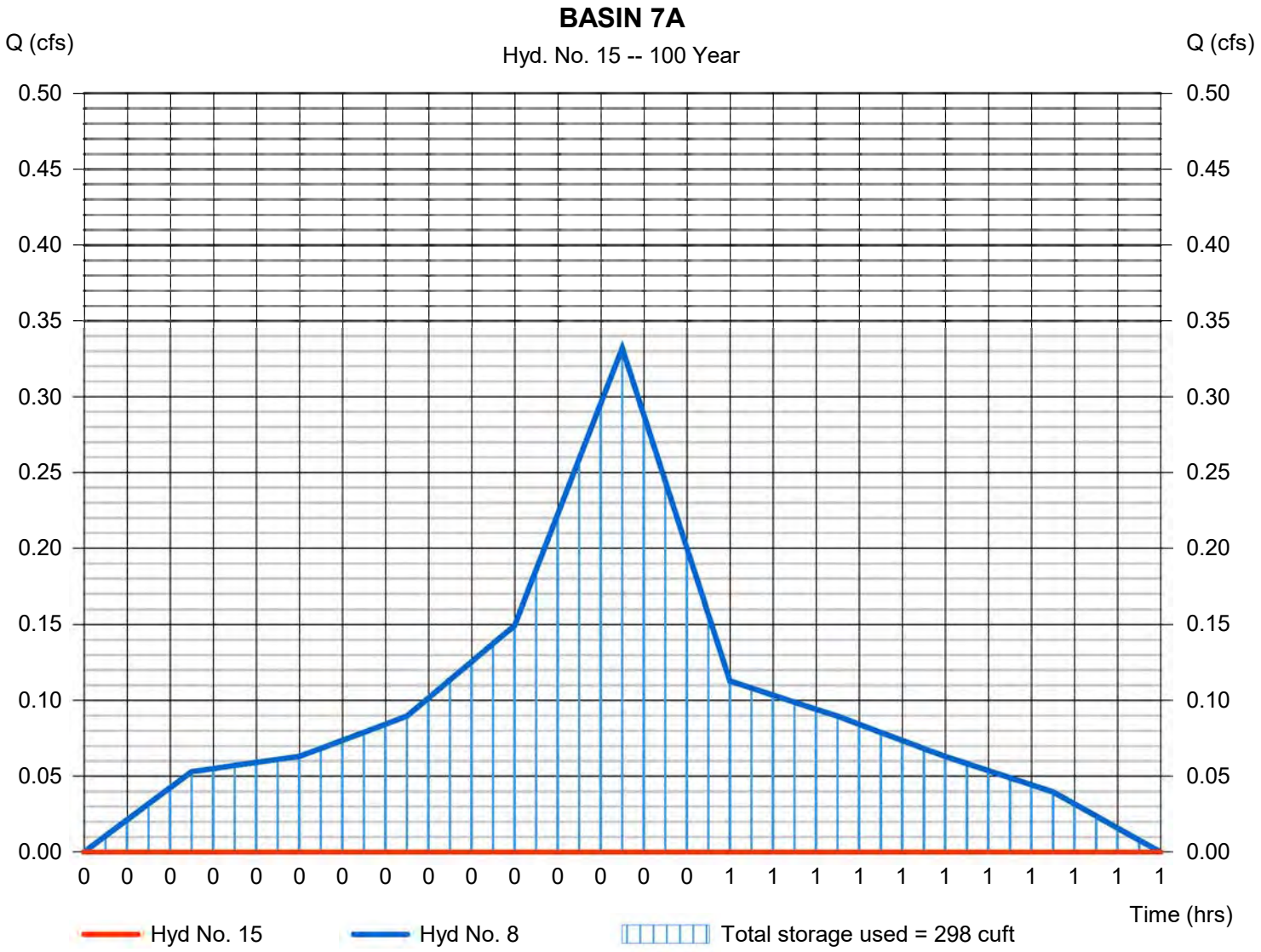
Hydrograph Report

Hyd. No. 15

BASIN 7A

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	100 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	8 - BASIN 7A	Max. Elevation	=	347.48 ft
Reservoir name	=	Basin 7A	Max. Storage	=	298 cuft

Storage Indication method used.



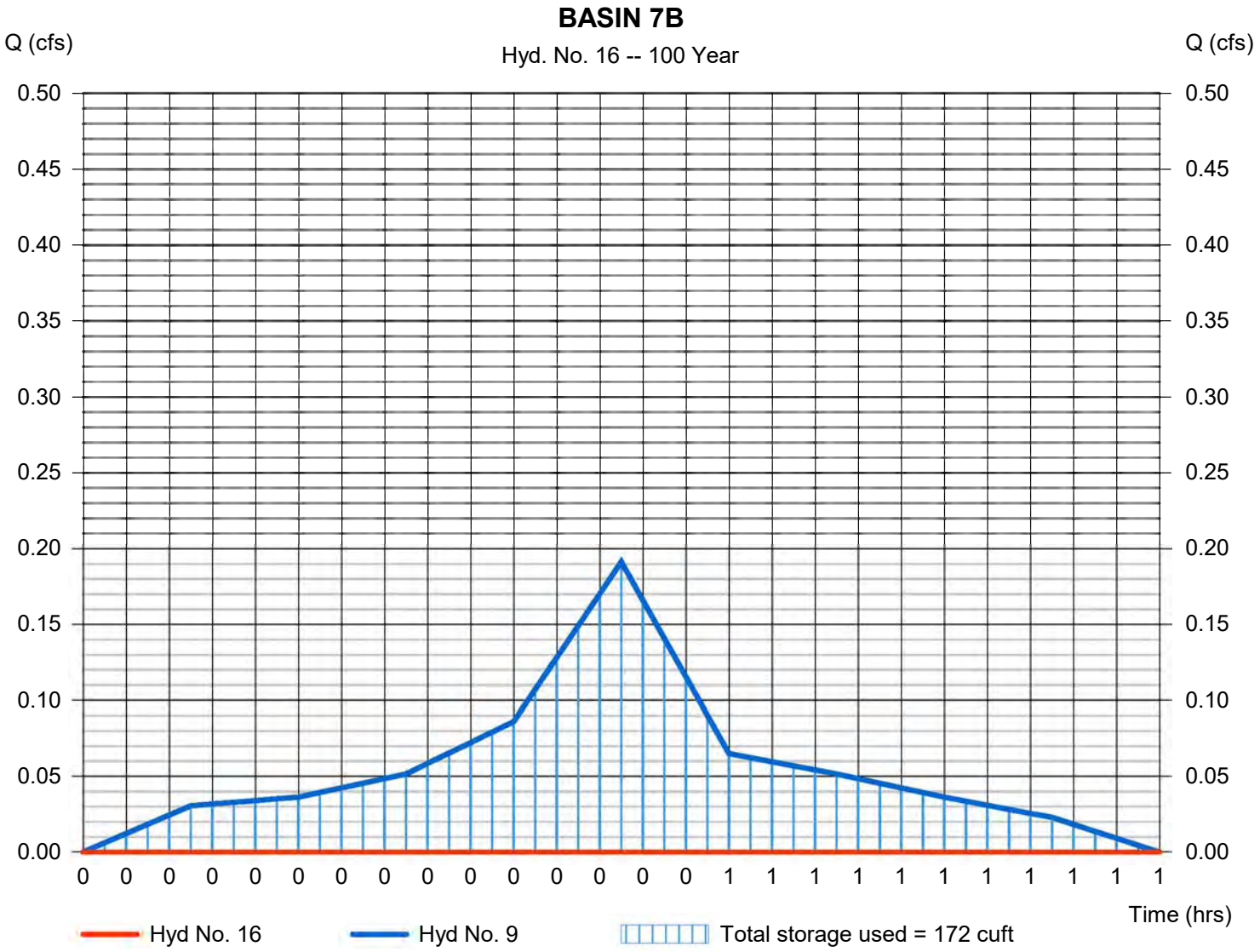
Hydrograph Report

Hyd. No. 16

BASIN 7B

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 9 - BASIN 7B	Max. Elevation	= 346.09 ft
Reservoir name	= Basin 7B	Max. Storage	= 172 cuft

Storage Indication method used.

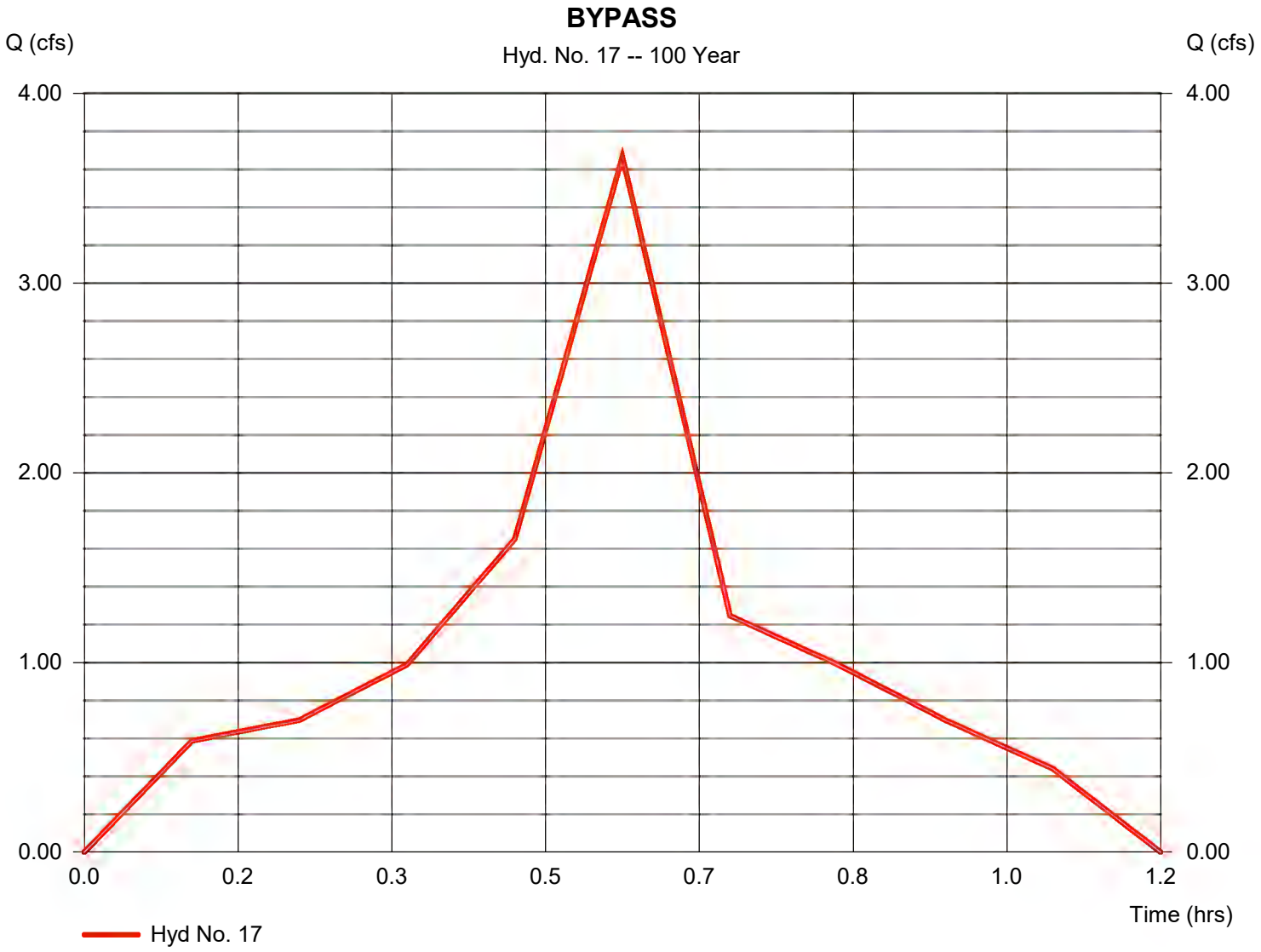


Hydrograph Report

Hyd. No. 17

BYPASS

Hydrograph type	=	Dekalb	Peak discharge	=	3.666 cfs
Storm frequency	=	100 yrs	Time to peak	=	0.58 hrs
Time interval	=	1 min	Hyd. volume	=	4,604 cuft
Drainage area	=	0.801 ac	Runoff coeff.	=	0.6
Intensity	=	7.629 in/hr	Tc by User	=	7.00 min
IDF Curve	=	Abington Rainfall.IDF	Asc/Rec limb fact	=	n/a



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	51.6066	12.5000	0.8820	--------
2	61.7637	12.8000	0.8782	--------
3	0.0000	0.0000	0.0000	--------
5	63.8911	12.7000	0.8340	--------
10	62.8636	12.2000	0.7999	--------
25	58.2993	11.3000	0.7476	--------
50	51.5586	10.1000	0.6966	--------
100	47.5005	9.2000	0.6567	--------

File name: Abington Rainfall.IDF

Intensity = B / (Tc + D)^E

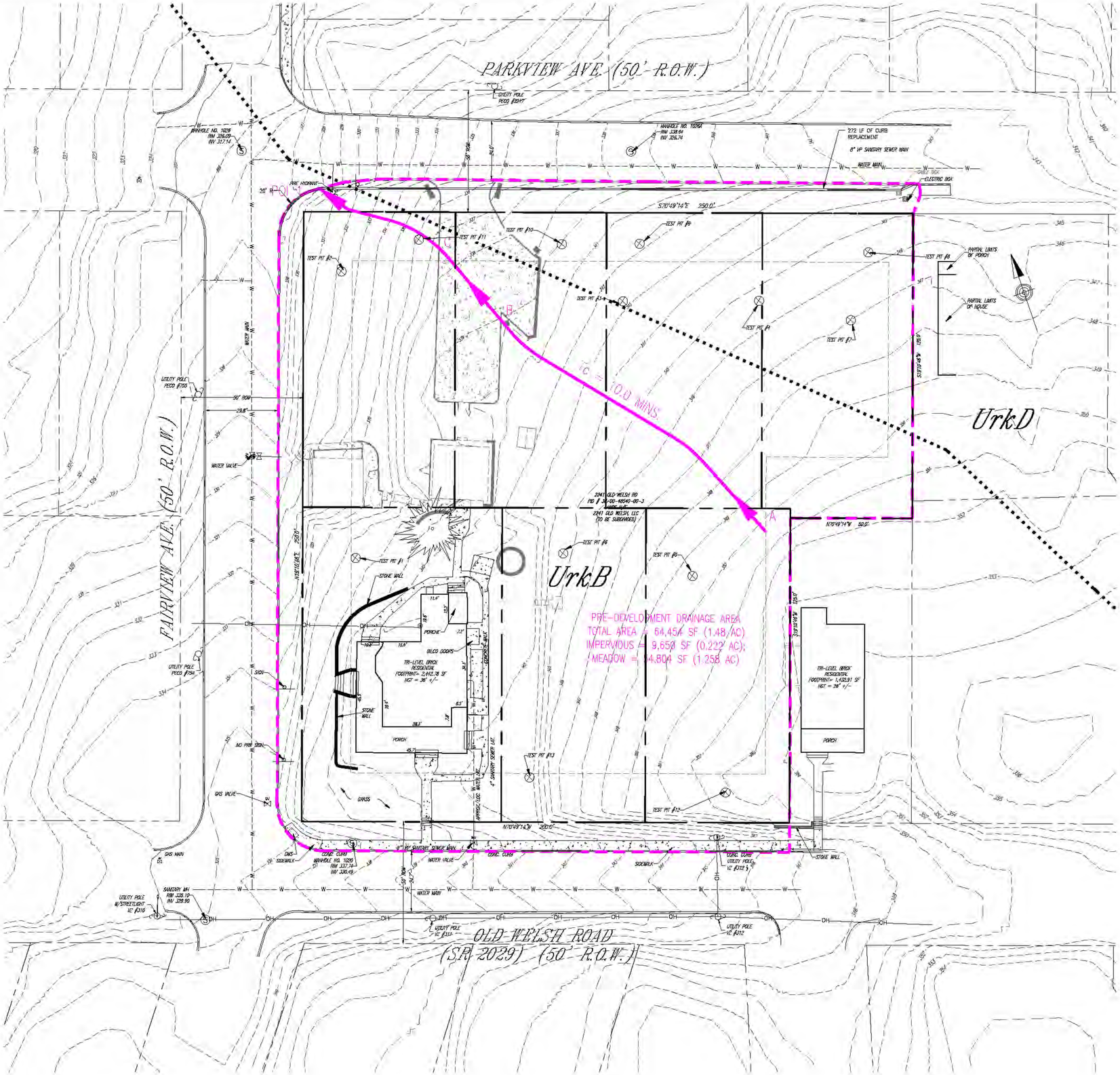
Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	4.13	3.31	2.77	2.39	2.11	1.89	1.71	1.57	1.45	1.35	1.26	1.18
2	4.93	3.96	3.33	2.88	2.54	2.28	2.07	1.90	1.75	1.63	1.52	1.43
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	5.82	4.73	4.00	3.49	3.10	2.79	2.54	2.34	2.17	2.03	1.90	1.79
10	6.46	5.27	4.48	3.91	3.48	3.15	2.88	2.66	2.47	2.31	2.17	2.05
25	7.23	5.92	5.06	4.44	3.98	3.61	3.31	3.07	2.86	2.69	2.53	2.40
50	7.78	6.37	5.46	4.81	4.32	3.94	3.63	3.37	3.16	2.97	2.81	2.67
100	8.32	6.82	5.86	5.18	4.67	4.27	3.95	3.68	3.45	3.26	3.09	2.94

Tc = time in minutes. Values may exceed 60.

Precip. file name: P:_Projects\2016\16-0205\Engineering\Rev-3\Site's SCS #s.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.67	3.21	0.00	4.03	4.70	5.68	6.50	7.38
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appendix



LEGEND & ABBREVIATIONS

- PROPERTY BOUNDARY
- ADJOINER BOUNDARY
- N/A — BUILDING SETBACK LINE
- 95 — EXISTING CONTOUR
- x 95 — EXISTING SPOT ELEVATION
- EXISTING FENCE
- OH — EXISTING OVERHEAD WIRE
- G — APPROXIMATE GAS LINE
- W — APPROXIMATE WATER LINE
- C — APPROXIMATE TELCO LINE
- E — APPROXIMATE ELECTRIC LINE
- S — APPROXIMATE SANITARY LINE
- EXISTING CURB
- EXISTING DEPRESSED CURB (DC)
- EXISTING SIGN
- EXISTING UTILITY POLE (UP)
- S — SANITARY MANHOLE
- C — COMMUNICATION MANHOLE
- E — ELECTRIC MANHOLE
- W — WATER MANHOLE
- STORM INLET
- GM — GAS METER
- WM — WATER METER
- E — ELECTRIC VAULT
- GV — GAS VALVE
- WV — WATER VALVE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

CLIENT DATA

Cornerstone
Consulting Engineers & Design Services, Inc.
213 West Main Street, Lansdale, PA 19446
Phone: 215-362-2600 Fax: 215-362-8400
WWW.CORNERSTONENET.COM
Philadelphia Region 215-362-2600
Lehigh Valley Region 610-820-8200
Pocono Region 570-839-1770

REVISIONS

NO.	BY	DESCRIPTION	DATE
1	RL	REVISED PER TWP REVIEWS	7/26/2024
2	RL	REVISED PER CLIENT COMMENTS	11/14/2024
3	EMB	REVISED PER MCCD AND FINAL REVIEW	1/16/2025

PENNSYLVANIA ONE CALL SYSTEM, INC.
925 Irwin Run Road
West Mifflin, Pennsylvania
15122 - 1078

811

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776

J.B. ANDERSON
PROFESSIONAL ENGINEER
DELAWARE LICENSE No. PE13438
PENNSYLVANIA LICENSE No. PE085516
MARYLAND LICENSE No. 29313
NEW JERSEY LICENSE No. 24GE04520400
VIRGINIA LICENSE No. 0402 045725
FLORIDA LICENSE No. 75184
NEW YORK LICENSE No. 093667-1

PROJECT LOCATION

FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC

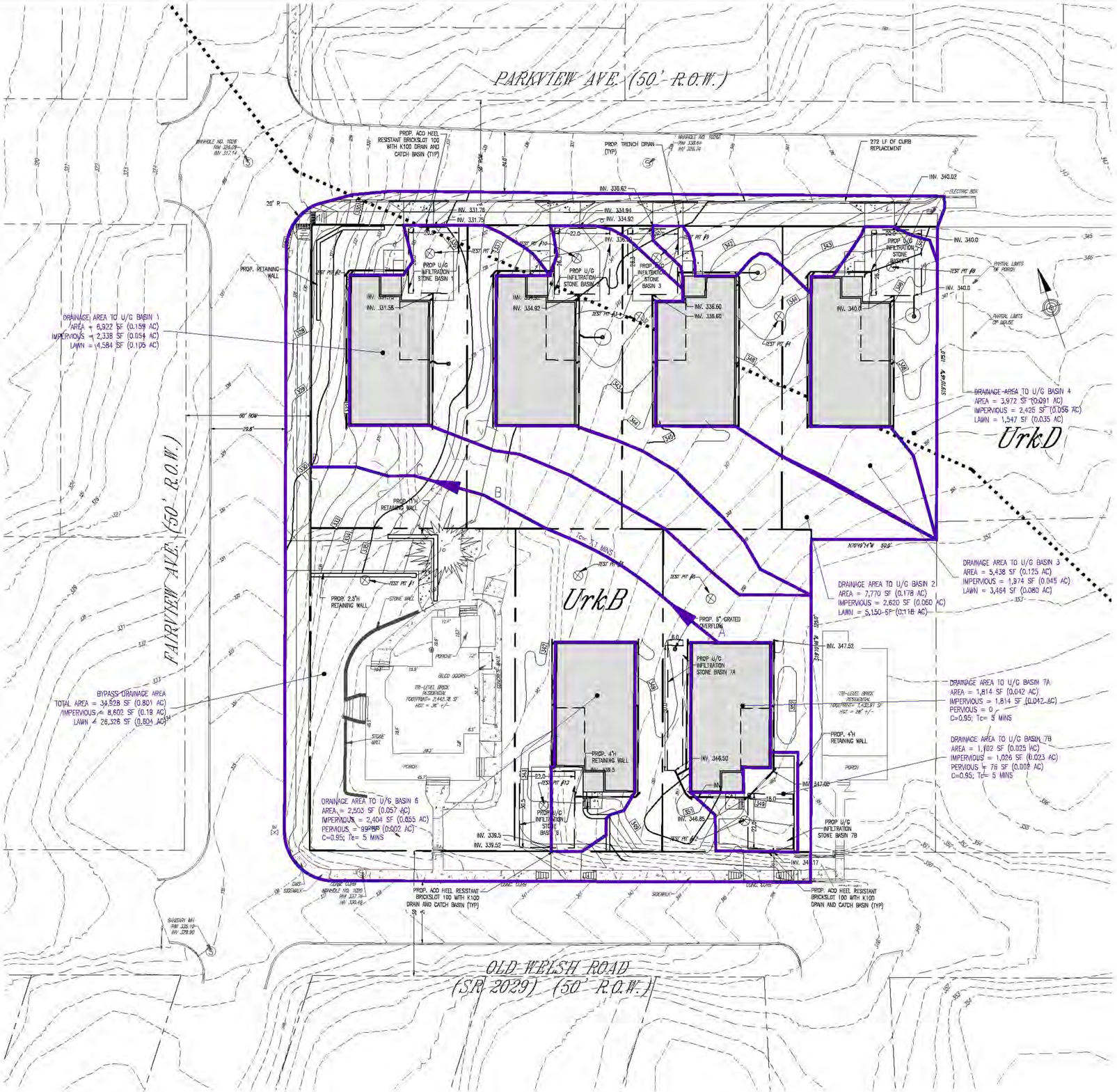
TITLE

PRE-DEVELOPMENT DRAINAGE AREA PLAN

PROJ. #	23-0548	DATE:	03/7/2024
CAD ID.	23-0548	DRN BY	RL
SCALE	AS NOTED	CHK BY	BA

SHEET 1 OF 2

REVISION 3



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REVISIONS

NO.	BY	DESCRIPTION	DATE
1	RL	REVISED PER TWP REVIEWS	7/26/2024
2	EMR	REVISED PER CLIENT COMMENTS	11/14/2024
3	DJB	REVISED PER SCCD AND PENNDOT REVIEWS	1/16/2025

PENNSYLVANIA ONE CALL SYSTEM, INC.
925 Irwin Run Road
West Mifflin, Pennsylvania
15122 - 1079

811

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776

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VIRGINIA LICENSE No. 0402 045725
ILLINOIS LICENSE No. 71184
NEW YORK LICENSE No. 093667-1

PROJECT LOCATION

FINAL MAJOR SUBDIVISION AND LAND DEVELOPMENT
LD-24-01
7 LOT SUBDIVISION
2241 OLD WELSH ROAD
OLD WELSH ROAD, FAIRVIEW AVENUE, & PARKVIEW AVENUE
ABINGTON TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA, 19090
PREPARED FOR:
2241 OLD WELSH, LLC

TITLE

POST-DEVELOPMENT DRAINAGE AREA PLAN

PROJ. #	23-0548	DATE	03/7/2024
CAD ID.	23-0548	DRN BY	RL
SCALE	AS NOTED	CHK BY	BA

SHEET 2 OF 2

REVISION 3

MONTGOMERY COUNTY
CONSERVATION DISTRICT
143 Level Road • Collegeville, PA 19426-3313 • 610-489-4506 • Fax: 610-489-9795
www.montgomeryconservation.org

February 7, 2025

David Sharrow
2241 Old Welsh, LLC
712 Canterbury Lane
Horsham, PA 19044

Subject: 2241 Old Welsh Rd Subdivision
MCCD Project ID # 8257902
Abington Township, Montgomery County, PA

Dear Mr. Sharrow,

The Montgomery County Conservation District (MCCD) has reviewed the above referenced application/NOI and has identified the following technical deficiencies. The Pennsylvania Erosion and Sediment Pollution Control Program Manual and the Pennsylvania Stormwater Best Management Practices Manual include information that will aid you in responding to some of the deficiencies listed below. The deficiencies are based on applicable laws and regulations, and the guidance sets forth the DEP's established means of satisfying the applicable regulatory and statutory requirements.

Earth Disturbance Threshold: Form 3800-PM-BCW0405a, Rev. 10/2024, PAG-02 NOI Instructions. "Other than agricultural plowing and tilling, animal heavy use areas, timber harvesting, oil and gas, and road maintenance activities, DEP considers earth disturbances exceeding 0.99 acre as needing NPDES permit coverage due to the likelihood that actual earth disturbance during construction will meet or exceed the one-acre threshold for a permit under 25 Pa. Code § 102.5. For example, proposed earth disturbances of 0.999, 0.995 and 0.991 acre will be rounded up to one acre and a permit would be required. Disturbances of 0.99 acre and smaller would not require a permit, unless part of a portion, part, or stage of a larger common plan of development or sale or otherwise required by DEP in accordance with federal regulations."

-In reviewing the square footage of the proposed Limit of Disturbance, it appears the Total Planned Area of Disturbance is over the 0.991-acre threshold for a non- NPDES permit and over 43560 sq ft that are in an acre. Please review the planned disturbance area to ensure construction operations can properly take place in less than 0.991 acres, otherwise a PAG-02 General Permit may be required.

102.4(b)(5)(i) "The existing topographic features of the project site and the immediate surrounding area."

1. Please provide match lines for adjoining maps (page 397 of the E&SPC Manual). Missing contour lines. Would like to see areas outside of LOD. Which way is water flowing off property? Helps determine exact receiving waters. Site is situated at top of 2 or 3 potential receiving waters.
2. Indicate the type and extent of vegetative cover on the plan map(s) (page 357 of the E&SPC Manual). All existing improvements (e.g. roads, buildings, and utilities) should be shown on the plan map(s) (pages 357 & 398 of the E&SPC Manual).
3. Sufficient surrounding area should be shown on the plan map(s) to identify tributary drainage areas and receiving water courses. Where these features are beyond the coverage of the plan maps, they may be identified on the location map(s) (page 398 of the E&SPC Manual). Please provide a location map that conforms to the standards on page 397 of the E&SPC Manual.

102.4(b)(5)(ii) "The types, depth, slope, locations and limitations of the soils."

1. Please indicate where the soil boundaries and types are located on the plans. Use limitations of the soils pertinent to the proposed project as described in Item 2 on page 2 of the E&SPC Manual are available on plans as is the description of how the identified soil use limitations have been addressed by the site design and/or E&S Plan (page 2 of the E&SPC Manual).

2. Legible photocopy of the NRCS soil map with site outline has not been provided.

102.4(b)(5)(iii) "The characteristics of the earth disturbance activity, including the past, present, and proposed land uses and the proposed alteration to the project site."

1. Describe the past, present, and proposed land uses for the site as described in Item 3 on page 2 of the E&SPC Manual.
2. Please provide an overall map of the proposed site showing how adjoining maps fit together as described on page 397 of the E&SPC Manual.
3. Please provide locations of all existing features such as trees and out buildings. – From aerial maps, garages and other buildings along with trees can be observed. Will these be part of the demolition or remain? Will tress be removed or remain, and how will they be protected?
4. The legend of mapping symbols is not complete. Omitted information includes, but is not limited to, proposed/existing tree line and proposed/existing curb.

102.4(b)(5)(iv) "The volume and rate of runoff from the project area and its upstream watershed area."

1. Show the offsite drainage area used to size (*indicate BMP*) on the USGS location map(s) as described on page 398 of the E&SPC Manual.

102.4(b)(5)(v) "The location of waters of the Commonwealth which may receive runoff within or from the project site and their classification pursuant to Chapter 93 of this title."

1. Show all existing surface waters (streams, wetlands, ponds, etc.) on the plan map(s) as described in Item 5 of pages 3 and 4 and on page 398 of the E&SPC Manual. Please place an arrow on the USGS map indicating direction of flow towards receiving waters.

2. Indicate the existing/designated uses of the receiving streams as described in Item 5 on pages 3 and 4 of the E&SPC Manual. The specific creek receiving the potential runoff is not designated, nor is the labeling of **Impaired**, which all surrounding potential receiving creeks are: Sandy Run, Terwood Run, or Round Meadow Run. Judging by the topography, the flow looks more likely towards Sandy Run.

3. Impaired receiving waters require ABACT measures for erosion and sediment control. As such, alterations to accommodation will need to be made for Rock Construction Entrance and Pumped Water Filter Bag details.

102.4(b)(5)(vi) "A narrative description of the location and type of perimeter and on site BMPs used before, during, and after the earth disturbance activity."

1. Provide a brief description in the narrative of the proposed E&S BMPs to be used on this site (Item 6 on page 4 of the E&SPC Manual).
2. The narrative does not adequately discuss BMPs used after the earth disturbance activity. The use of permanent stabilization without adequate Stormwater management BMPs does not satisfy this requirement.

102.4(b)(5)(vii) "A sequence of BMP installation and removal in relation to the scheduling of earth disturbance activities, prior to, during and after earth disturbance activities".

1. The sequence should specify that no more than 15,000 square feet of disturbed area reach final grade before initiating seeding and mulching operations (page 262 of the E&SPC Manual).
2. Construction Sequence #9 should mention the need for stabilization upon reaching final grade.

3. The sequence should specify that cessation of activity for 4 days or longer requires temporary stabilization (page 260 of the E&SPC Manual).
4. There is a drawing for the J-hook on sheet 9 of 16 and mention of a 24" CFS J-hook in two places the Northeast section of the project property, though the CFS placement does not indicate a J-hook. Is there a plan for a J-hook or CFS sediment trap?

§102.4 (b)(5)(viii) "Supporting calculations and measurements"

1. Please provide Standard Worksheets #1 for Compost Filter Sock.

102.4(b)(5)(ix) "Plan Drawings"

Inlets/Inlet Protection

1. How will runoff enter inlets prior to the surrounding area reaching final grade?
2. The use of inlet protection to keep sediment out of the underground infiltration bed is unreliable and highly discouraged. Inlet protection also clogs quickly and requires extensive maintenance. It is recommended that the inlet protection be removed from all inlets that drain to a basin or trap. A temporary blockage of the piping within the infiltration BMP is recommended. The use of CFS or compost berm around inlet may be a beneficial alternative.
3. Curb-type inlet protection for C-type inlets in road are provided on plan details sheet 9 of 16, though there are no street inlets designated on Erosion and Sediment Control sheets. Details are also aligned for street placement for M-type, not grass as indicated in plans.
4. The use of mastic or equivalent is recommended in all inlets located within grass areas and PCSM BMP areas to prevent soil from washing into the storm sewer or infiltration area through unsealed joints in the inlet box and top.

Silt Fence / Compost Socks

1. The ends of the proposed compost filter sock (CFS) do not point sufficiently upslope to create adequate pooling of runoff for the settling of sediment and to prevent end-around flows. For example, 18" CFS should be pointed upslope at least 30" upslope in elevation difference to ensure that the CFS will create an adequate pooling area for the sediment to settle out of solution.
2. Silt fence/compost socks cannot be placed in areas of concentrated flows.
3. The gravelly soils and/or tree roots may prevent the proper installation and backfill of silt fence. Alternative products such as compost socks or berms should be explored.
4. CFS is not shown exactly parallel to existing contours in some areas. Maximum deviation from level grade should be 1%, and not extend for more than 25 ft.
5. Silt fence should be placed at least 8' from the toe of fill slopes.
6. The CFS is shown within areas of proposed grading/disturbance and the proposed infiltration basins and driveways. CFS must be located outside of the proposed disturbance areas and outlet to stabile areas.
7. The CFS drawing details are not the Standard Construction Detail #4-1 as labeled. Is the drawing provided an alteration to convey the idea of a diversion or sediment trap constructed form CFS?

§102.4 (b)(5)(x) Maintenance program

1. Specify time frames for the required maintenance to be performed. This should vary depending upon the BMP and type of maintenance to be performed (page 5 of the E&SPC Manual).
2. Provide site stabilization and repair parameters and directions for areas disturbed during maintenance activities (page 5 of the E&SPC Manual).

§102.4 (b)(5)(xi) Recycling or disposal of materials

1. Identify the construction wastes related to the E&S BMPs that to be recycled or disposed (page 6 of the E&SPC Manual). – Demolition of existing building.
2. Concrete washout (CW) cannot be within 50' of storm drains, open ditches, or surface waters. Pg 57, E&S manual. After measuring distance of the CW locations in relation to the proposed inlets to infiltration stone basins, it appears that there is only a distance of 25'-30' between the two. From these measurements, the CW will need to be relocated. For ease of access for Concrete truck deliveries and clean-out, it may be easier to keep CW stations near the Rock Construction Entrances or close to road

Miscellaneous

1. Existing buildings (house) outside of LOD in Northeastern corner of property is not represented to scale.
2. In the Application for Chapter 102 Review form, please provide the additional four (4) numbers at the end of the zip code for all addresses.
3. Please note that post construction stormwater management was not part of this review.
4. In the Application for Chapter 102 Review form, please provide more specific and complete receiving Waters information.
5. Please note that a resubmission fee is necessary. Please refer to the MCCD E&S Plan Review Application for further information.

Only resubmissions that address all of the above deficiencies will be reviewed. Resubmission must include 2 full sets of plans, accompanying narratives and specifications. A transmittal letter indicating where in the drawings or narratives each of the following comments is addressed or additional plan revisions/corrections are proposed should be provided with your resubmission. If a complete transmittal letter is not provided, your submittal may be returned. **Please note that a resubmission fee is necessary. Please refer to the MCCD E&S Plan Review Application for further information.**

The applicant shall have 60 calendar days from the date of this letter to provide the information necessary to complete the application, or MCCD will consider the application to be withdrawn by the applicant. If you choose to resubmit your application after it has been withdrawn, you will need to submit a new complete application package along with the appropriate review fee. If you have any questions, you may contact Heather A. Irwin at 610-489-4506, ext. 13.

Sincerely,

Heather A Irwin

Heather A. Irwin
Resource Conservationist
Montgomery County Conservation District

Cc: Cornerstone Consulting Engineers & Design Services, Inc., John B. Anderson
Abington Township
Montgomery County Planning Commission
File

Pennsylvania
Department of Environmental Protection

SENT VIA ELECTRONIC MAIL ONLY

January 2, 2025

Mr. George Wrigley, Director
Abington Wastewater Utilities Department
1176 Old York Road
Abington, PA 19001

Re: Act 537, Application for Exemption
2241 Old Welsh Road Subdivision
DEP Code No. 1-46001-263-E
Abington Township
Montgomery County

Dear Mr. Wrigley:

The Department of Environmental Protection (DEP) has received the above referenced subdivision plan. This letter confirms DEP's determination that the above referenced project is exempt from the requirement to revise the Official Plan for new land development. This determination is based in part on municipal and other sign-offs. The proposed development is located at 2241 Old Welsh Road in Abington Township, Montgomery County on Tax Parcel 30-00-48540-00-3.

The project proposes a 7-lot residential subdivision (1 existing dwelling unit and 6 proposed dwelling units) on 1.29 acres.

The project will be connected to the Abington Township collection system and will generate 1,590 gallons of sewage per day to be treated at the Abington Township Wastewater Treatment Facility.

Two of the new dwellings will connect to public sewer in Old Welsh Road and the remaining four proposed dwellings will connect to the public sewer in Parkview Avenue.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board
Rachel Carson State Office Building, Second Floor
400 Market Street
P.O. Box 8457
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800-654-5984.

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

A Notice of Appeal form and the Board's rules of practice and procedure may be obtained online at www.ehb.pa.gov or by contacting the Secretary to the Board at 717-787-3483. The Notice of Appeal form and the Board's rules are also available in braille and on audiotape from the Secretary to the Board.

IMPORTANT LEGAL RIGHTS ARE AT STAKE. YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD AT 717-787-3483 FOR MORE INFORMATION. YOU DO NOT NEED A LAWYER TO FILE A NOTICE OF APPEAL WITH THE BOARD.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

If you have any questions or concerns, please contact me at 484.250.5186 or at SteRittenh@pa.gov and refer to the project name and DEP Code No. as referenced above.

Sincerely,

Stefanie Rittenhouse-Loughery
Sewage Planning Specialist 2
Clean Water

cc: Montgomery County Health Department
Montgomery County Planning Commission
Montgomery County Conservation District
Abington Township
2241 Old Welsh, LLC
Planning Section

May 14, 2025

ABINT130037

Mr. Christopher S. Christman, Township Manager
Abington Township
1176 Old York Road
Abington, PA 19001

RE: LD-24-01 - 2241 Old Welsh Road
PARID: 30-00-48540-00-3/ TMID: 30125 004
Final Major Subdivision & Land Development Plans Review (1st Submission)

Dear Mr. Christman,

We have received a copy of the "Final Major Subdivision & Land Development Plans" consisting of seventeen (17) sheets dated March 7, 2024, last revised April 4, 2025, as well as a PCSM Report dated March 7, 2024, last revised November 15, 2024; as prepared by Cornerstone Consulting Engineers & Design Services, Inc., located at 213 West Main Street, Lansdale, PA, for the above referenced project on behalf of the Applicant David Sharrow. The Application was deemed complete on March 13, 2024.

Under the prior and current plans submission, the Applicant is proposing to demolish the existing detached garage, gazebo, stone walls, and rear concrete driveway on the site, and subdivide the existing previously consolidated 56,250 SF (or approx. 1.29-acre) lot into seven (7) new lots as follows:

- Lots 1 through 4 – will consist of a 7,542.40 SF to 7,737.01 SF lots facing Parkview Avenue. Lot 1 will consist of a 7,542.20 SF corner lot fronting Parkview Avenue and Fairview Avenue with the remaining Lots 2 to 4 as interior lots fronting Parkview Avenue. A new 1,814 SF single-family detached dwelling is proposed on each lot with the main entrance to the dwellings facing Parkview Avenue. A 214 SF porch and an attached 200 SF front facing garage, 12-ft wide driveway, and driveway apron is proposed fronting Parkview Avenue.
- Lot 5 – will consist of a 10,545.51 SF corner lot fronting Old Welsh Road and Fairview Avenue. Lot 5 will comprise the existing single-family detached dwelling to remain. No new garage is proposed for Lot 5. A new porous asphalt driveway off of Fairview Avenue, retaining walls, and a rear concrete walkway between the house and new porous asphalt driveway are proposed on the site.
- Lots 6 and 7 – will consist of a 7,603.17 SF and 7,627.98 SF lot, respectively. These interior lots will be fronting Old Welsh Road. Both lots will be improved with a new 1,814 SF single-family detached dwelling, a 214 SF porch, an attached 200 SF front facing garage, 12-ft wide driveway, driveway apron facing Old Welsh Road, and retaining walls.

Each new single-family detached dwelling will have a proposed asphalt driveway to accommodate two (2) off-street parking spaces. In addition, roadway widening, street lighting, new curbing, sidewalk, ADA Ramps, walkways, landscaping, and stormwater management facilities are proposed under this land development submission. Each new single-family dwelling will be serviced by public water and sewer service.

This project is located within the R4 – Residential High Density Zoning District. The site is a triple-frontage lot fronted by Parkview Avenue to the north; Fairview Avenue to the west; Old Welsh Road (SR 2029) to the south; and residential properties zoned within the R4 – High Density Residential Zoning District to the east.

In accordance with the FEMA, Flood Insurance Rate Map (FIRM) Panel No. 42091C0313G, effective March 2, 2016, the tract is identified to be primarily located within Zone X primarily located within Zone X, an area outside the 0.2% chance flood and minimal flood hazard. Therefore, based on the FEMA FIRM determination, this site is not located within the Floodplain Conservation District, and is therefore not subject to the floodplain regulations of the Floodplain Conservation District. In addition, per the Abington Township Riparian Corridor Analysis Map, Figure 15.2, this parcel is not located within and intersecting the Riparian Corridor; and is not subject to the regulations of the Riparian Corridor Conservation District.

There are existing precautionary (slopes of 15% to 25%) and prohibited (slopes of 25% and up) steep slopes on the site as shown on the Existing Conditions Plan (Sheet 2). However, these existing steep slopes on the site do not span five contiguous 10-foot contour intervals; and therefore, the site is not located within the Steep Slope Conservation Overlay District, and the site is not subject to the Steep Slope Conservation Overlay District requirements.

WAIVERS GRANTED

The Applicant was granted the following waivers by the Abington Township Board of Commissioners at their regularly scheduled meeting held on January 9, 2025 in accordance with Resolution 25-002 for Preliminary LD plans approval:

1. **§142-408.B.(1) – Stream Bank Erosion Requirements** – A waiver from the requirement to utilize the SCS Type II distribution.

2. **§146-11.B.(7) – Existing Conditions Plan** – A waiver from the requirement to show the existing utilities within 400 linear feet of the site.

3. **§146-38 – Streetlighting** – A waiver from the requirement to install street lighting along each street frontage.

4. **§146-43.C.(3).(a) – Erosion and Sediment Control** – A waiver to permit the proposed grading due to existing on-site grades; the area of slopes of 15% or steeper has been minimized to the greatest extent possible.

The following documents have been reviewed:

Title	Sheet	Dated	Revised
Land Development Plans			
Site and Subdivision Plan	1 of 17	03/07/24	04/04/25
Existing Conditions Plan	2 of 17	03/07/24	04/04/25
Aerial Plan	3 of 17	03/07/24	04/04/25
Property Identification Plan	4 of 17	03/07/24	04/04/25
Grading Plan	5 of 17	03/07/24	04/04/25
Utility Plan	6 of 17	03/07/24	04/04/25
Stormwater Plan	7 of 17	03/07/24	04/04/25
Erosion and Sedimentation Control Plan Stage 1	8 of 17	03/07/24	04/04/25
Erosion and Sedimentation Control Plan Stage 2	9 of 17	03/07/24	04/04/25
Erosion and Sedimentation Control Notes	10 of 17	03/07/24	04/04/25
Erosion and Sedimentation Control Details	11 of 17	03/07/24	04/04/25
Site Details	12 of 17	03/07/24	04/04/25
Site Details	13 of 17	03/07/24	04/04/25
Site Details	14 of 17	03/07/24	04/04/25

Landscape Plan	16 of 17	03/07/24	04/04/25
PCSM Plan	17 of 17	03/07/24	04/04/25
Stormwater Management			
Post Construction Stormwater Management Report	260 pages	03/07/24	11/15/24
Preliminary Stormwater Infiltration Report	27 pages	06/12/24	—

We have performed a review of the above referenced plans for compliance with the Zoning Ordinance (Chapter 162); Subdivision and Land Development Ordinance (Chapter 146); and Stormwater Management Ordinance (Chapter 142) and our previous review letter dated December 2, 2024. We offer the following outstanding comments for your consideration:

CHAPTER 146
SUBDIVISION & LAND DEVELOPMENT COMMENTS

32. ***Per §146-11.D.(7) – Grading Plans*** *– The grading plans shall show the delineation of the limits of work areas and the portions to remain undisturbed.*

    The total limit of disturbance area shall be delineated and called out on the Grading Plan (Sheet 4).

    The Applicant delineated the limit of disturbance and called out the total area of the proposed disturbance on Grading Plan (Sheet 5). Based on the Grading Plan, the total area of the proposed disturbance is 43,286 SF (0.99 Acres), which is very close to but still under the 1-acre threshold limit where typically an NPDES permit is not required; however, the Applicant shall confirm with the Montgomery County Conservation District (MCCD) due to the limit of disturbance being very close to the 1-acre threshold limit.

    A letter of adequacy from MCCD dated and received on May 13, 2025 was received.

Based on our review of the revised plans provided, our prior review comments have been adequately addressed. The Applicant shall provide the legal descriptions and easements and public improvements construction escrow for review and approval.

We have received the following documents/permits/reviews:

- Aqua Will Serve Letter (September 5, 2023)
- Abington Wastewater Sanitary Sewer Availability Letter (October 5, 2023)
- Infiltration Report (October 31, 2023)
- Application for Sewage Facilities Planning Module Mailer (March 5, 2024)
- Application for SALDO Review (March 6, 2024)
- PCSM Report (March 7, 2024)
- MCPC Request for Review (March 7, 2024)
- Sewer Review (April 5, 2024; September 3, 2024 via email; May 5, 2025)
- Fire Review (April 8, 2024; September 6, 2024 via email; May 13, 2025)
- TPD Traffic Review (April 12, 2024; September 10, 2024 via email; May 14, 2025 via email)
- STC Review (April 15, 2024; May 14, 2025 via email)
- MCPC Review (May 17, 2024)
- Waiver Request Letter (September 24, 2024, last revised January 2, 2025)
- MCCD Review (February 7, 2025; May 13, 2025)

We have not received the following documents/permits/reviews:

- EAC Review
- Financial Escrow
- LD Agreements

- Stormwater BMP O&M Agreement
- Legal Descriptions & Exhibits of all lots/easements/dedications

SUMMARY

We recommend Final Major Subdivision and Land Development Plans approval conditioned that the Applicant provide the legal descriptions and easements and public improvements construction escrow for review and approval and address the outstanding sewer review comments.

If you have any questions or comments with this submittal, please do not hesitate to contact me.

Sincerely,

PENNONI ASSOCIATES INC.

Khaled R. Hassan, PE
Township Engineer

cc: Terry Castorina, Administration & Grants Manager
Ashley McIlvaine, Assistant Township Manager & Assistant CAO

U:\ACCOUNTS\ABINT\ABINT130037 - LD-24-01-2241 OLD WELSH ROAD SUBDIVISION\ADMIN\6 - PLAN REVIEWS\FINAL LD\FINAL 1ST SUBMISSION\FR01051425 2241OLDWELSHROAD.DOCX

John Rockwell Hosbach Jr., RCA, ACF,* CUCF *Urban Forester

Natural Resource Consultants – Silviculture - Planners – Forensic Arborist

P: (610) 731-7969 Email: John@Rockwellurbanforestry.com

Website - https://rockwellurbanforestry.com

From: John Kennedy comcast <jjkennedy9@comcast.net>
Sent: Wednesday, May 14, 2025 1:52 PM
To: Allison A. Lee <aalee@Pennoni.com>
Cc: John Hosbach <john@rockwellurbanforestry.com>; Patricia Gallagher <patriciagallagher831@gmail.com>
Subject: Re: Allison A. Lee shared the folder "LD-24-01 - 2241 Old Welsh Rd Final Major SD & LD" with you

Hello Allison,

The Shade Tree Commission met last night at our regular meeting and reviewed our letter of recommendations against the final plans for LD-24-01 - 2241 Old Welsh Rd. We appreciate that our recommendations were incorporated. The only remaining item is compliance with #4 - the following best practices for protecting the existing trees during construction. See excerpt below:

'The STC recognizes the proximity of the existing trees to be retained and the construction of the homes. The STC emphasizes the importance of following BMP relating to tree protection during construction. For reference: Best Management Practices - Managing Trees During Construction, Third Edition (2023). The STC further recommends pre-construction and periodic inspections by a qualified arborist to ensure proper protection of these trees.'

Since submitting that request, John Hosbach has been retained as the Township Arborist. I have copied him on this email.

We are not aware of a process in place whereby the arborist is engaged to inspect this construction site. So, bringing this to your attention so that the appropriate folks in the township can be made aware and can initiate this step to make this happen timely and correctly.

Please feel free to reach out with any questions.

Thank you
John Kennedy
Shade Tree Commission co-chair
215-680-5545

On Apr 24, 2025, at 3:08 PM, Allison A. Lee <aalee@Pennoni.com> wrote:

MONTGOMERY COUNTY
BOARD OF COMMISSIONERS

JAMILA H. WINDER, CHAIR
NEIL K. MAKHIJA, VICE CHAIR
THOMAS DIBELLO, COMMISSIONER

WWW.MONTGOMERYCOUNTYPA.GOV

MONTGOMERY COUNTY
PLANNING COMMISSION

MONTGOMERY COUNTY • PO BOX 311
NORRISTOWN, PA 19404-0311

610-278-3722
PLANNING@MONTGOMERYCOUNTYPA.GOV

SCOTT FRANCE, AICP
EXECUTIVE DIRECTOR

May 17, 2024

Mr. Rich Manfredi, Manager
Abington Township
1176 Old York Road
Abington, Pennsylvania 19001-3713

Re: MCPC #24-0068-001
Plan Name: 2241 Old Welsh Rd
(6 units on 7 lots comprising 1.05 acres; density 6.7: units per acre)
Situate: Fairview Avenue at Parkview Avenue
Abington Township

Dear Mr. Manfredi:

We have reviewed the above-referenced subdivision and land development in accordance with Section 502 of Act 247, "The Pennsylvania Municipalities Planning Code," as you requested on March 20, 2024. We forward this letter as a report of our review.

BACKGROUND

2241 Old Welsh, LLC, the applicant, has submitted a subdivision and land development plan to subdivide one lot into seven. The applicant would construct a new single-family home on six lots while retaining the existing, three-story brick single-family detached home on the seventh lot. The applicant also proposes construction of a subsurface detention basin on each of the lots with new homes. The tract is located in the R4 High Density Residential zoning district. The site is served by public water and sewer. The plan is dated March 7, 2024.

COMPREHENSIVE PLAN COMPLIANCE

The proposed improvements are generally consistent with *MONTCO 2040: A Shared Vision, The Montgomery County Comprehensive Plan*. The plan's future land use map shows the site located in the Regional Mixed Use Center future land use area. Much of this area includes the Willow Grove Park Mall; as such, single-family detached homes are considered to be a secondary use here.

The proposed land development is shown located in the "High Density Residential future land use area of the 2007 Abington Comprehensive Plan and is consistent with that plan.

RECOMMENDATION

The Montgomery County Planning Commission (MCPC) generally supports the applicant's proposal, however, in the course of our review we have identified the following issues that the applicant and township may wish to consider prior to final plan approval. Our comments are as follows:

REVIEW COMMENTS

BUILDING DESIGN

A. Garage – When a garage is front-loaded, as proposed, it shall be set back at least ten feet from the front façade of the house [§162-2103].
B. Architectural Plans – Tentative front, side, and rear architectural plans are required. Architectural plans for the front, but not the side or rear, were provided [§146-11].

LANDSCAPING

A. Street Trees

1. There is a conflict between a gas line and the location of the proposed street trees on Fairview Avenue.
2. The street trees proposed to be planted are of the species chionanthus virginicus ("white fringetree"). This species is not typically used as a street tree; among other things, it is not drought-tolerant and is best grown multi-stemmed.
3. We recommend that variety be used in the street tree species selection for hardiness and visual interest (white fringetree is the only species proposed).

B. Foundation Landscaping – Building foundation landscaping shall be provided between (a) the foundations of principal buildings' facades and (b) sidewalks, access drives, or parking areas. A minimum of 25% of the linear area (parallel to the building wall) shall be landscaped with ornamental or evergreen trees and shrubs [§162-2403.D]. It appears that this requirement is not shown on the plans.

TRANSPORTATION

A. Cartway – The minimum required cartway width for residential streets is 30 feet. Parkview Avenue is proposed to remain 24 feet wide [§146-24].

STEEP SLOPES

A. Disturbance – The plan indicates there are both precautionary and prohibitive steep slopes on the tract. Some of these slopes would be disturbed, including but not limited to the one for the home proposed

for Lot 1. The applicant should ensure that the proposed plan conforms to the provisions of the steep slope conservation district [Zoning's Article XVI].

STORMWATER MANAGEMENT

A. Pervious Pavement - The pervious pavement should have an operating and maintenance plan to prevent siltation.
B. Subsurface Basins – We recommend that the homeowner be allowed to ensure the proper functioning of the underground basins, or allow the township to inspect them. The applicant should ensure that the future homeowners understand what is required of them for their maintenance.
C. Driveway – The applicant should ensure that driveways are not used for heavy vehicles during construction, to prevent compaction of soils prior to establishment of the subsurface infiltration basins.

RECREATION FACILITIES

A. Plan – A recreational facilities plan shall be provided, or, when deemed acceptable by the applicant, a statement for the provision of a contribution of fees in lieu of such facilities [§146-11.J]. Six proposed dwelling units require 13% of the total gross area to be provided for recreation and open space purposes.

OTHER PLAN INFORMATION

A. General Requirements [§146-10] – The tract boundary shall be shown as a heavy, solid line.
B. Sight Distance – The plan notes "231' required sight dist." under an arrow pointing toward the dead end on Parkview Avenue. How did the applicant calculate this?
C. Landscape Architect - The landscaping plan shall be prepared by a registered landscape architect; it was prepared by a registered professional engineer [§146-11].

CONCLUSION

We wish to reiterate that MCPC generally supports the applicant's proposal but we believe that our suggested revisions will better achieve the township's planning objectives for residential development.

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

Should the governing body approve a final plat of this proposal, the applicant must present the plan to our office for seal and signature prior to recording with the Recorder of Deeds office. A paper copy bearing the municipal seal and signature of approval must be supplied for our files.

Please print the assigned MCPC number (*#24-0068-001*) on any plans submitted for final recording.

Sincerely,

Mike Narcowich, AICP
Community Planning Assistant Manager II
610.278.5238 – michael.narcowich@montgomerycountypa.gov

c: 2241 Old Welsh, LLC, Applicant
David Sharrow, Applicant's Representative
Scott Burton, PennDOT
Fran Hanney, PennDOT
Michael P. Clarke, Esq., Rudolph Clarke, LLC, Township Solicitor
Khaled R. Hassan, P.E., Pennoni, Township Engineer

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

ATTACHMENT A

2241 Old Welsh Road
MCPC#240068001

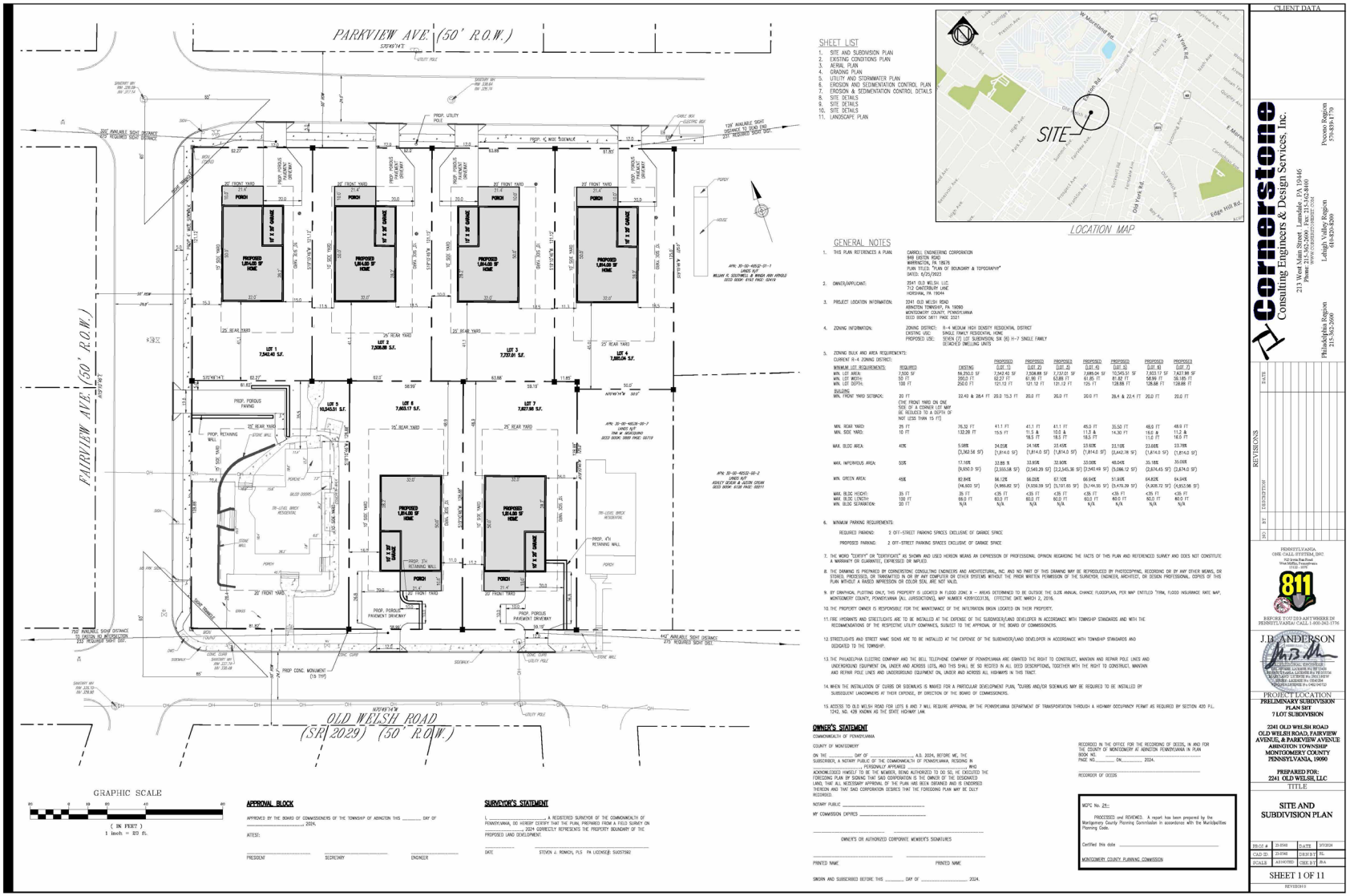
Montgomery County Planning Commission

0 50 100 200 Feet

N

Montgomery County Courthouse - Planning Commission
PO Box 311 Norristown PA 19404-0311
(p) 610 278-3722 (f) 610 278-3941
www.montcopa.org/plancom
Aerial photography provided by Nearmap

ATTACHMENT B



Cornerstone Consulting
Engineers & Design Services, Inc.

213 West Main Street Lansdale, PA
Tel 610.820.8200 ◆ Fax 610.820.3706

Leesburg - VA ◆ Orlando - FL
New York - NY ◆ Dallas - TX
Lansdale - PA

1176 N. Irving Street . Allentown, PA
Tel 610.820.8200 ◆ Fax 610.820.3706

January 2, 2025
VIA: Electronic Mail

Township of Abington
1176 Old York Road
Abington, PA 19001

Attn: Mr. Richard Manfredi,
Township Manager

RE: LD-24-01
Subdivision and Land Development Application
Waiver Request
2241 Old Welsh Road
Abington, PA 19090

Dear Mr. Manfredi,

As a part of the Subdivision and Land Development plan submission package, please accept this letter as a formal waiver request for the above referenced project. Our office, on behalf of the applicant, 2241 Old Welsh, LLC, respectfully requests the following waivers from the Board of Commissioners.

WAIVERS REQUESTED:

1. *142-408. B. (1) – Stream bank Erosion Requirements. In addition to the control of water quality volume (in order to minimize the impact of stormwater runoff on downstream stream bank erosion), the primary requirement is to design a BMP to detain the proposed conditions two-year, twenty-four-hour storm event to the existing conditions one-year flow using the SCS Type II distribution. Additionally, provisions shall be made (such as adding a small orifice at the bottom of the outlet structure or a sand filter) so that the proposed conditions one-year, twenty-four-hour storm event takes at least 24 hours to drain from the facility from a point when the maximum volume of water from the one-year, twenty-four-hour storm event is captured (i.e., the maximum water surface elevation is achieved in the facility). Release of water can begin at the start of the storm (i.e., the invert of the water volume control or [or water quality] orifice is at the invert of the facility).*

   A waiver is requested to utilize the Rational Method in the design of the stormwater management system in lieu of the SCS Type II distribution. The infiltration galleries were designed to infiltrate the increased volume of stormwater up to and including the 100 year storm. In addition, the site is approximately 1.29 acres and the total drainage area is 1.48 acres. The Rational Method is more suitable for estimating runoff in small drainage areas.

2. *Section 146-11.B.(7) – Existing Conditions Plan. The location, size and ownership of all underground and above ground public or private utilities, on the site and within 400 feet of any portion of the site, including waterlines, sanitary sewer lines, storm sewer lines, electric lines, telephone lines, gas mains, fire hydrants and streetlights.*

A waiver is requested to permit the application without showing the existing utilities within 400 linear feet of the site. The utilities immediately surrounding the site are shown in the plan set and an aerial of the surrounding area within 400 feet is provided on sheet 3.

3. *Section 146-38 – Streetlighting. Streetlighting shall be installed along each street in each subdivision and along each street front abutting a public street in each land development by the subdivider/land developer and at the expense of the subdivider/land developer.*

   A waiver is requested for the requirement to install street lighting along each street frontage. There are existing street lights located at the intersection of Fairview Ave / Parkview Ave and at Fairview Ave / Old Welsh Road. Due to the residential nature of the area and that there are existing street lights at the intersections, additional lighting does not seem necessary. As an alternative, the applicant will agree to install post lights at the end of the driveways for lots 1 through 4.

4. *Section 146-43.C.(3)(a) – Excavation and Fills. Cut and fill slopes shall not be 15% or steeper, except as approved by the Township Zoning Hearing Board. The Township Engineer may require the use of retaining walls, cribbing or other measures necessary to stabilize slopes which are either cut into or filled.*

   A waiver is requested to permit the proposed grading due to the existing grades of the site. The area of slopes of 15% or steeper has been minimized to the greatest extent possible. The use of retaining walls have been shown in the grading design to mitigate the areas of steep slope.

It is the developer's intent to comply with all Township requirements. However, it is their opinion that strict conformance with the noted ordinance sections above would create unnecessary impacts to the proposed development of the site.

Should you have any questions or wish to discuss the project, please feel free to contact our office at your convenience.

Sincerely,
Cornerstone Consulting
Engineers & Design Services, Inc.

John Anderson, P.E.
Principal/Partner

BOARD OF COMMISSIONERS WORKING SESSION

AGENDA ITEM

June 12, 2025

DATE

AGENDA ITEM NUMBER

Administration

DEPARTMENT

FISCAL IMPACT
Cost > $10,000
Yes ☐ No ☐

PUBLIC BID REQUIRED
Cost > $20,100
Yes ☐ No ☐

AGENDA ITEM:

Non-Conforming Lot Discussion

EXECUTIVE SUMMARY:

The Abington Township Zoning Hearing Board has requested that the Abington Board of Commissioners consider amending the Township Zoning Ordinance, Article 19, Section 1908 Expansion of or Construction on a Nonconforming Lot, to eliminate the need for Township property owners, residents, and business owners to seek a Special Exception, from the Zoning Hearing Board, for the stated provision in this section and allow the conformance of this section to be determine by Township staff.

PREVIOUS BOARD ACTIONS:

n/a

RECOMMENDED BOARD ACTIONS:

Discuss an Ordinance amending the Code of the Township of Abington at Part II [General Legislation], Chapter 162 [Zoning], Article XIX [Nonconforming Uses, Structures, Lots and Signs] by amending and

restating Section 1908 [Expansion of or Construction on a Nonconforming Lot] to revise provisions for special exceptions. *(Ms. Gallagher)*

ABINGTON TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

ORDINANCE NO. ____

AN ORDINANCE OF THE TOWNSHIP OF ABINGTON, MONTGOMERY COUNTY, PENNSYLVANIA, AMENDING THE CODE OF THE TOWNSHIP OF ABINGTON AT PART II [GENERAL LEGISLATION], CHAPTER 162 [ZONING], ARTICLE XIX [NONCONFORMING USES, STRUCTURES, LOTS AND SIGNS] BY AMENDING AND RESTATING SECTION 1908 [EXPANSION OF OR CONSTRUCTION ON A NONCONFORMING LOT] TO REVISE PROVISIONS FOR SPECIAL EXCEPTIONS

CERTIFICATION

I, CHRISTOPHER S. CHRISTMAN, BEING DULY SWORN ACCORDING TO LAW, DEPOSE AND SAY THAT I AM THE TOWNSHIP MANAGER IN ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA AND THAT ATTACHED HERETO IS A TRUE AND COMPLETE CORRECT COPY OF ORDINANCE NO. _____.

_____
Christopher S. Christman, Township Manager
_____, 2025

ENACTED: _____

ABINGTON TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

ORDINANCE NO. ____

AN ORDINANCE OF THE TOWNSHIP OF ABINGTON, MONTGOMERY COUNTY, PENNSYLVANIA, AMENDING THE CODE OF THE TOWNSHIP OF ABINGTON AT PART II [GENERAL LEGISLATION], CHAPTER 162 [ZONING], ARTICLE XIX [NONCONFORMING USES, STRUCTURES, LOTS AND SIGNS] BY AMENDING AND RESTATING SECTION 1908 [EXPANSION OF OR CONSTRUCTION ON A NONCONFORMING LOT] TO REVISE PROVISIONS FOR SPECIAL EXCEPTIONS

WHEREAS, The Board of Commissioners of Abington Township is duly empowered by the First Class Township Code, 53 P.S. § 55101, *et seq.*, to enact certain regulations relating to the public health, safety welfare of the residents of Abington Township;

WHEREAS, The Board of Commissioners of Abington Township has adopted a comprehensive zoning ordinance, known as The Revised Abington Township Zoning Ordinance, as amended, in accordance with the provisions of Article VI of the Pennsylvania Municipalities Planning Code, 53 P.S. § 10101, et seq., which is intended to provide for the orderly development and redevelopment of Abington Township;

WHEREAS, the First Class Township Code and Pennsylvania Municipalities Planning Code, *supra*, authorize the Board of Commissioners to make, amend and adopt amendments to The Revised Abington Township Zoning Ordinance, as amended, that are consistent with the Constitution and laws of the Commonwealth that it deems necessary for the proper management and control of the Township and the best interests of its residents; and

WHEREAS, the Board of Commissioners of Abington Township has determined that certain amendments to The Revised Abington Township Zoning Ordinance, as amended, are required for the orderly administration of the laws of Abington Township; and

WHEREAS, the Board of Commissioners has determined that the Code of the Township of Abington should be amended to refine the provisions for special exception approval for expansion of or construction on a nonconforming lot for the maintenance of peace, good government, health and welfare of the Township and its residents.

*****

NOW, THEREFORE, BE IT HEREBY ORDAINED AND ENACTED by the Board of Commissioners of Abington Township that the Township's Code is amended as follows:

SECTION 1. **Amendment to Chapter 162 [Zoning], Article XIX [Nonconforming Uses, Structures, Lots and Signs], Section 1908 [Expansion of or Construction on a Nonconforming Lot] to refine the provisions for special exception approval.**

The Code of the Township of Abington, Part II [General Legislation], Chapter 162 [Zoning], Article XIX [Nonconforming Uses, Structures, Lots and Signs], Section 1908 [Expansion of or Construction on a Nonconforming Lot] is hereby restated and amended to delete the struck-through language (~~example~~) and add the underlined language (example) as follows:

Section 1908. EXPANSION OF OR CONSTRUCTION ON A NONCONFORMING LOT:

A building may be altered or erected on any nonconforming lot which was lawfully in existence at the time of adoption of this Ordinance, in single and separate ownership, provided ~~a special exception is authorized by the Township Zoning Hearing Board in accordance with the provisions of this Ordinance. In considering a special exception, the Zoning Hearing Board may impose the following additional requirements~~:

A. That the use of the nonconforming lot shall be required to conform to the permitted uses within the district in which the nonconforming lot lies.

B. That the general area and applicable dimensional yard/setback, coverage, building, density, parking and open space regulations as specified within this Ordinance for conforming uses and structures in the district in which the nonconforming lot lies shall be applied to the nonconforming lot.

SECTION 2. **Repeal and Ratification.**

All ordinances or parts of ordinances inconsistent herewith or in conflict with any of the specific terms enacted hereby, to the extent of said inconsistencies or conflicts, are hereby specifically repealed. Any other terms and provisions of the Township's Code unaffected by this Ordinance are hereby reaffirmed and ratified.

SECTION 3. **Severability.**

Should any section, paragraph, sentence, clause, or phrase in this Ordinance be declared unconstitutional or invalid for any reason, the remainder of the Ordinance shall not be affected thereby and shall remain in full force and affect, and for this reason the provisions of this Ordinance shall be severable.

SECTION 4. **Effective Date.**

This Ordinance shall become effective immediately.

*****

ORDAINED AND ENACTED this _____ day of _____ 2025, by the Board of Commissioners of the Township of Abington.

TOWNSHIP OF ABINGTON
BOARD OF COMMISSIONERS

_____
THOMAS HECKER
President

[Seal]

Attested by:

_____
Christopher S. Christman
Township Manager & Secretary

ABINGTON TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

ORDINANCE NO. ____

AN ORDINANCE OF THE TOWNSHIP OF ABINGTON, MONTGOMERY COUNTY, PENNSYLVANIA, AMENDING THE CODE OF THE TOWNSHIP OF ABINGTON AT PART II [GENERAL LEGISLATION], CHAPTER 162 [ZONING], AT ARTICLE II [DEFINITIONS], ARTICLE XXI [USE REGULATIONS], ARTICLE XXIII [PARKING AND TRANSPORTATION], AND THE COMPREHENSIVE USE MATRIX TO INCORPORATE PROVISIONS FOR THE C-39 [MEDICAL MARIJUANA DISPENSARY] AND D-18 [MEDICAL MARIJUANA GROWER/PROCESSOR] USES

DRAFT

CERTIFICATION

I, CHRISTOPHER S. CHRISTMAN, BEING DULY SWORN ACCORDING TO LAW, DEPOSE AND SAY THAT I AM THE TOWNSHIP MANAGER IN ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA AND THAT ATTACHED HERETO IS A TRUE AND COMPLETE CORRECT COPY OF ORDINANCE NO. _____.

_____
Christopher S. Christman, Township Manager
_____, 2025

ENACTED: _____

ABINGTON TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

ORDINANCE NO. ____

AN ORDINANCE OF THE TOWNSHIP OF ABINGTON, MONTGOMERY COUNTY, PENNSYLVANIA, AMENDING THE CODE OF THE TOWNSHIP OF ABINGTON AT PART II [GENERAL LEGISLATION], CHAPTER 162 [ZONING], AT ARTICLE II [DEFINITIONS], ARTICLE XXI [USE REGULATIONS], ARTICLE XXIII [PARKING AND TRANSPORTATION], AND THE COMPREHENSIVE USE MATRIX TO INCORPORATE PROVISIONS FOR THE C-39 [MEDICAL MARIJUANA DISPENSARY] AND D-18 [MEDICAL MARIJUANA GROWER/PROCESSOR] USES

WHEREAS, The Board of Commissioners of Abington Township is duly empowered by the First Class Township Code, 53 P.S. § 55101, *et seq.*, to enact certain regulations relating to the public health, safety welfare of the residents of Abington Township;

WHEREAS, The Board of Commissioners of Abington Township has adopted a comprehensive zoning ordinance, known as The Revised Abington Township Zoning Ordinance, as amended, in accordance with the provisions of Article VI of the Pennsylvania Municipalities Planning Code, 53 P.S. § 10101, et seq., which is intended to provide for the orderly development and redevelopment of Abington Township;

WHEREAS, the First Class Township Code and Pennsylvania Municipalities Planning Code, *supra*, authorize the Board of Commissioners to make, amend and adopt amendments to The Revised Abington Township Zoning Ordinance, as amended, that are consistent with the Constitution and laws of the Commonwealth that it deems necessary for the proper management and control of the Township and the best interests of its residents; and

WHEREAS, the Board of Commissioners of Abington Township has determined that certain amendments to The Revised Abington Township Zoning Ordinance, as amended, are required for the orderly administration of the laws of Abington Township; and

WHEREAS, the Board of Commissioners has determined that the Code of the Township of Abington should be amended where the C-39 [Medical Marijuana Dispensary] and D-18 [Medical Marijuana Grower/Processor] Uses are provided within Abington Township for the maintenance of peace, good government, health and welfare of the Township and its residents.

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NOW, THEREFORE, BE IT HEREBY ORDAINED AND ENACTED by the Board of Commissioners of Abington Township that the Township's Code is amended as follows:

SECTION 1. **Amendment to Chapter 162 [Zoning], Article II [Definitions], Section 201 [Specific Definitions] to provide definitions.**

The Code of the Township of Abington, Part II [General Legislation], Chapter 162 [Zoning], Article II [Definitions], Section 201 [Specific Definitions] is hereby restated and amended to add the following definitions:

Department of Health: The Department of Health of the Commonwealth of Pennsylvania.

Medical Marijuana Act: Act 16 of 2016, 35 P.S. § 10231.101 *et seq*.

SECTION 2. **Amendment to Chapter 162 [Zoning], Article XXI [Use Regulations], Section 2103.C [Retail & Service Uses] to provide for the Medical Marijuana Dispensary use.**

The Code of the Township of Abington, Part II [General Legislation], Chapter 162 [Zoning], Article XXI [Use Regulations], Section 2103.C [Retail & Service Uses] is hereby restated and amended to add Use C-39 [Medical Marijuana Dispensary], as follows:

C-39: Medical Marijuana Dispensary.

A person, including a natural person, corporation, partnership, association, trust, or other entity, or any combination thereof, which is registered by the Department of Health under the Medical Marijuana Act to dispense medical marijuana. The term does not include a Health Care Medical Marijuana Organization under Chapter 19 of the Medical Marijuana Act. A Medical Marijuana Dispensary shall be permitted, where indicated in the Use Matrix, subject to the specific criteria listed below:

1. A Medical Marijuana Dispensary shall provide proof of registration with the Department of Health or proof that registration has been sought and is pending approval, and shall at all times maintain a valid, accurate, and up-to-date registration with the Department of Health. Should registration be denied or revoked at any time, any Township approval shall immediately become void. A Medical Marijuana Dispensary may not operate on the same site as a

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facility used for growing and processing medical marijuana.

2. A Medical Marijuana Dispensary shall at all times operate in compliance with all Department of Health regulations pertaining to such facilities.

3. A Medical Marijuana Dispensary shall not be operated or maintained on a parcel within 1,000 feet, measured by a straight line in all directions, without regard to intervening structures or object, from the nearest point on the property line of a parcel containing a public, private or parochial school, or child day-care center, as defined and regulated by the Pennsylvania Department of Health

4. A Medical Marijuana Dispensary must operate entirely within an indoor, enclosed, and secure facility. No exterior sales and no sidewalk displays shall be permitted. No drive-thru services shall be permitted. The use cannot be advertised on radio or television.

5. A Medical Marijuana Dispensary shall be limited to the hours of operation not earlier than 9:00 a.m. and not later than 9:00 p.m.

6. A Medical Marijuana Dispensary shall submit a disposal plan to be reviewed and approved by the Township. Medical marijuana remnants and by-products shall be disposed of according to an approved plan and shall not be placed within an exterior refuse container.

7. There shall be no emission of dust, fumes, vapors or odors which can be seen, smelled or otherwise perceived from beyond the lot line for the property where the Medical Marijuana Dispensary is located.

8. No one under the age of eighteen (18) shall be permitted in a Medical Marijuana Dispensary, unless accompanied by a caregiver as required under Section 506 of the Medical Marijuana Act.

9. No use of medical marijuana shall be permitted on the premises of a Medical Marijuana Dispensary.

10. A Medical Marijuana Dispensary shall submit a security plan to the Township, which plan shall be subject to the review and approval of the Township

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Police Department and demonstrate how it will maintain effective security and control. The security plan shall specify the type and manner of 24-hour security, tracking, recordkeeping, record retention, and surveillance system to be utilized in the facility as required by Section 1102 of the Medical Marijuana Act and as supplemented by regulations promulgated by the Department of Health pursuant to the Medical Marijuana Act.

SECTION 3. **Amendment to Chapter 162 [Zoning], Article XXI [Use Regulations], Section 2103.D [Industrial Uses] to provide for the Medical Marijuana Grower/Processor use.**

The Code of the Township of Abington, Part II [General Legislation], Chapter 162 [Zoning], Article XXI [Use Regulations], Section 2103.D [Industrial Uses] is hereby restated and amended to add Use D-18 [Medical Marijuana Grower/Processor], as follows:

D-18: Medical Marijuana Grower/Processor.

A person, including a natural person, corporation, partnership, association, trust, or other entity, or any combination thereof, which is registered by the Department of Health under the Medical Marijuana Act to dispense medical marijuana. The term does not include a Health Care Medical Marijuana Organization under Chapter 19 of the Medical Marijuana Act. A Medical Marijuana Grower/Processor shall be permitted, where indicated in the Use Matrix, subject to the specific criteria listed below:

1. A Medical Marijuana Grower/Processor shall provide proof of registration with the Department of Health or proof that registration has been sought and is pending approval, and shall at all times maintain a valid, accurate, and up-to-date registration with the Department of Health. Should registration be denied or revoked at any time, any Township approval shall immediately become void.

2. A Medical Marijuana Grower/Processor shall at all times operate in compliance with all Department of Health regulations pertaining to such facilities.

3. A Medical Marijuana Grower/Processor must be located on a lot containing not less than two (2) acres.

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4. A Medical Marijuana Grower/Processor shall not be operated or maintained on a parcel within 1,000 feet, measured by a straight line in all directions, without regard to intervening structures or object, from the nearest point on the property line of a parcel containing a public, private or parochial school, or child day-care center, as defined and regulated by the Pennsylvania Department of Health.

5. A Medical Marijuana Grower/Processor must operate entirely within an indoor, enclosed, and secure facility. No exterior sales and no sidewalk displays shall be permitted. No drive-thru services shall be permitted. The use cannot be advertised on radio or television.

6. A Medical Marijuana Grower/Processor shall be limited to the hours of operation not earlier than 9:00 a.m. and not later than 9:00 p.m.

7. A Medical Marijuana Grower/Processor shall submit a disposal plan to be reviewed and approved by the Township. Medical marijuana remnants and by-products shall be disposed of according to an approved plan and shall not be placed within an exterior refuse container.

8. There shall be no emission of dust, fumes, vapors or odors which can be seen, smelled or otherwise perceived from beyond the lot line for the property where the Medical Marijuana Grower/Processor is located.

9. No one under the age of eighteen (18) shall be permitted in a Medical Marijuana Grower/Processor, unless accompanied by a caregiver as required under Section 506 of the Medical Marijuana Act.

10. No use of medical marijuana shall be permitted on the premises of a Medical Marijuana Grower/Processor.

11. A Medical Marijuana Grower/Processor shall submit a security plan to the Township, which plan shall be subject to the review and approval of the Township Police Department and demonstrate how it will maintain effective security and control. The security plan shall specify the type and manner of 24-hour security, tracking, recordkeeping, record retention, and surveillance system to be utilized in the facility as

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required by Section 1102 of the Medical Marijuana Act and as supplemented by regulations promulgated by the Department of Health pursuant to the Medical Marijuana Act.

12. Fencing. Each Medical Marijuana Grower/Processor use shall be completely enclosed by a fence having a minimum height of six (6) feet. The Board of Commissioners may, by Conditional Use approval, require a greater fence height when deemed by the Board to be necessary for the protection of public health and safety.

SECTION 4. **Amendment to Chapter 162 [Zoning], Comprehensive Use Matrix to add the designations for Use C-39 in the MS-H, MS-L, MS-VC, and BC Zoning Districts.**

The Code of the Township of Abington, Part II [General Legislation], Chapter 162 [Zoning], Comprehensive Use Matrix Appendix is hereby restated and amended to add the designation of Use C-39 [Medical Marijuana Dispensary] with a designation of "Y", corresponding to "By Right" for the columns labeled as "BC: Lots <1 Ac," "BC: Abington Towne Center," "BC: Foxcroft," "BC: Huntingdon Valley," "BC: Noble," "BC: Willow Grove Park," "MS-H," "MS-L," and "MS-VC," corresponding to each of the six (6) Business Center Districts, and the Main Street – High-Density/Intensity District, Main Street – Low-Density/Intensity District, and the Main Street – Village Center District respectively.

SECTION 5. **Amendment to Chapter 162 [Zoning], Comprehensive Use Matrix to add the designations for Use D-18 in the SI-G and SI-W Zoning Districts.**

The Code of the Township of Abington, Part II [General Legislation], Chapter 162 [Zoning], Comprehensive Use Matrix Appendix is hereby restated and amended to add the designation of Use D-18 [Medical Marijuana Grower/Processor] with a designation of "CU", corresponding to "Conditional Use" for the columns labeled as "SI-G" and "SI-W," corresponding to the Suburban Industrial District-Glenside and Suburban Industrial District-Willow Grove respectively.

SECTION 6. **Amendment to Chapter 162 [Zoning], Article XXIII [Parking and Transportation], Section 2304 [Parking Use Requirements], Subsection C [Commercial Land Uses] to add parking requirements for Use C-39.**

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The Code of the Township of Abington, Part II [General Legislation], Chapter 162 [Zoning], Article XXIII [Parking and Transportation], Section 2304 [Parking Use Requirements], Subsection C [Commercial Land Uses], is hereby restated and amended to add the following use and requirements:

38. Use C-39: Medical Marijuana Dispensary: One (1) off-street parking space per 200 square feet of gross leasable floor area.

SECTION 7. **Amendment to Chapter 162 [Zoning], Article XXIII [Parking and Transportation], Section 2304 [Parking Use Requirements], Subsection D [Industrial Uses] to add parking requirements for Use D-18.**

The Code of the Township of Abington, Part II [General Legislation], Chapter 162 [Zoning], Article XXIII [Parking and Transportation], Section 2304 [Parking Use Requirements], Subsection D [Industrial Uses], is hereby restated and to delete the struck-through language (~~example~~) and add the underlined language (example) as follows:

D. **Industrial Uses:**

1. Industrial Uses Not Otherwise Listed Herein: 1 parking space for every 1,000 square feet of gross leasable floor area devoted to industrial use, including storage area; plus 1 parking space for every 300 square feet of gross leasable floor area.

2. Use D-18: Medical Marijuana Grower/Processor: One (1) off-street parking space per 500 square feet of gross floor area devoted to the manufacturing area, storage area and utility area, plus one (1) off-street parking space for every 300 square feet of gross floor area devoted to sales or office area.

SECTION 8. **Repeal and Ratification.**

All ordinances or parts of ordinances inconsistent herewith or in conflict with any of the specific terms enacted hereby, to the extent of said inconsistencies or conflicts, are hereby specifically repealed. Any other terms and provisions of the Township's Code unaffected by this Ordinance are hereby reaffirmed and ratified.

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SECTION 9. **Severability.**

Should any section, paragraph, sentence, clause, or phrase in this Ordinance be declared unconstitutional or invalid for any reason, the remainder of the Ordinance shall not be affected thereby and shall remain in full force and affect, and for this reason the provisions of this Ordinance shall be severable.

SECTION 10. **Effective Date.**

This Ordinance shall become effective immediately.

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ORDAINED AND ENACTED this _____ day of _____ 2025, by the Board of Commissioners of the Township of Abington.

TOWNSHIP OF ABINGTON
BOARD OF COMMISSIONERS

_____
THOMAS HECKER
President

[Seal]

Attested by:

_____
CHRISTOPHER S. CHRISTMAN
Township Manager & Secretary

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BOARD OF COMMISSIONERS WORKING SESSION

AGENDA ITEM

June 12, 2025

DATE

AGENDA ITEM NUMBER

Administration

DEPARTMENT

FISCAL IMPACT
Cost > $10,000
Yes ☐ No ☐

PUBLIC BID REQUIRED
Cost > $20,100
Yes ☐ No ☐

AGENDA ITEM:

Pet Shop Sale Ordinance

EXECUTIVE SUMMARY:

n/a

PREVIOUS BOARD ACTIONS:

n/a

RECOMMENDED BOARD ACTIONS:

Discuss an Ordinance amending the Code of the Township of Abington at Part II [General Legislation], Chapter 58 [Animals], to add a new Article, Article VII [Sale of Dogs and Cats]. *(Ms. Gallagher)*

ABINGTON TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

ORDINANCE NO. ____

AN ORDINANCE OF THE TOWNSHIP OF ABINGTON, MONTGOMERY COUNTY, PENNSYLVANIA, AMENDING THE CODE OF THE TOWNSHIP OF ABINGTON AT PART II [GENERAL LEGISLATION], CHAPTER 58 [ANIMALS], TO ADD A NEW ARTICLE, ARTICLE VII [SALE OF DOGS AND CATS]

CERTIFICATION

I, CHRISTOPHER S. CHRISTMAN, BEING DULY SWORN ACCORDING TO LAW, DEPOSE AND SAY THAT I AM THE TOWNSHIP MANAGER IN ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA AND THAT ATTACHED HERETO IS A TRUE AND COMPLETE CORRECT COPY OF ORDINANCE NO. _____.

_____

Christopher S. Christman, Township Manager

_____, 2025

ENACTED: _____

ABINGTON TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

ORDINANCE NO. ____

AN ORDINANCE OF THE TOWNSHIP OF ABINGTON, MONTGOMERY COUNTY, PENNSYLVANIA, AMENDING THE CODE OF THE TOWNSHIP OF ABINGTON AT PART II [GENERAL LEGISLATION], CHAPTER 58 [ANIMALS], TO ADD A NEW ARTICLE, ARTICLE VII [SALE OF DOGS AND CATS]

WHEREAS, the Township of Abington is a Township of the First Class, duly organized and existing pursuant to the applicable laws of the Commonwealth of Pennsylvania; and

WHEREAS, pursuant to section 1502.44 of the First-Class Township Code of the Commonwealth of Pennsylvania, 53 P.S. § 56579.20, the Board of Commissioners has the authority to enact and amend provisions of the Abington Township Code ("Code") at any time it deems necessary for the health, safety, morals, general welfare, cleanliness, beauty, convenience and comfort of the Township and the inhabitants thereof; and

WHEREAS, in accordance with the First-Class Township Code of Pennsylvania,53 P.S. §§, et. seq., the Township is vested with various corporate powers, including but not limited to the adoption and enactment of such ordinances and regulations necessary for the proper care, management, and control of the Township; and

WHEREAS, a significant number of dogs and cats sold at pet stores come from large scale, commercial breeding facilities where the health and welfare of the animals are not adequately provided for ("puppy mills" and "kitten mills" respectively). According to the Humane Society of the United States, it is estimated that 10,000 puppy mills produce more than 2,400,000 puppies a year in the United States and that most pet store dogs and cats come from puppy mills and kitten mills; and

WHEREAS, the documented abuses endemic to puppy and kitten mills include over-breeding; in-breeding; minimal to non-existent veterinary care; lack of adequate and nutritious food, water and shelter; lack of socialization; lack of adequate space; and lack of adequate exercise; and

WHEREAS, current Federal, Commonwealth, and local regulations do not properly address the retail sale of dogs and cats born at puppy and kitten mills; and

WHEREAS, prohibiting the retail sale of dogs and cats is likely to decrease the demand for animals bred at puppy and kitten mills, and is likely to increase demand for animals from animal shelter and rescue organizations; and

WHEREAS, across the country, thousands of independent pet stores as well as large chains operate profitably with a business model focused on the sale of pet services and supplies, and not on the sale of dogs and cats. Many of these stores collaborate with animal shelters and rescue organizations to offer space and support for showcasing adoptable homeless pets on their premises; and

WHEREAS, prohibiting the retail sale of puppies and kittens will likely reduce pet overpopulation and thus the burden of shelters and rescues and financial costs on local taxpayers; and

WHEREAS, prohibiting the retail sale of puppies and kittens will limit the instance in which residents fall victim to predatory financing with excessively high-interest rates in order to afford the high cost of pet store puppies; and

WHEREAS, this Ordinance will not affect the consumers' ability to obtain a dog or cat of their choice directly from a breed-specific rescue organization or a shelter, or from a hobby breeder where the consumer can see directly the conditions in which the dogs or cats are bred, or can confer directly; and

WHEREAS, the Board of Commissioners of the Township of Abington has determined that Chapter 58 – [Animals], should be amended to add Article VII, "Sale of Dogs and Cats"- which will be enacted for the health, safety, morals, general welfare, cleanliness, beauty convenience, and comfort of the Township and the inhabitants thereof.

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NOW THEREFORE, the Board of Commissioners of the Township of Abington does hereby **ENACT** and **ORDAIN** as follows:

SECTION 1. Amendment to Chapter 58 [Animals], to add a new article, Article VII [Sale of Dogs and Cats].

The Code of the Township of Abington, Part II [General Legislation], Chapter 58 [Animals], is hereby amended to add Article VII [Sale of Dogs and Cats], as follows:

§ 201. Definitions.

As used in this Part, the following terms have the meaning indicated, unless a different meaning clearly applies from the context:

"Sell" means to exchange for consideration, barter, trade, lease, or otherwise transfer.

"Offer for sale" means to display or proffer for acceptance.

"Animal shelter" means either:

1) A facility maintained or operated by a non-profit organization incorporated under the law of any state and exempt from federal taxation under Section 501(c)(3) of the federal Internal Revenue Code, as amended, and whose principal purpose is the prevention of cruelty to animals and whose principal activity is to rescue sick, injured, abused, neglected, unwanted, abandoned, orphaned, lost, or displaced animals and to adopt them to good, permanent homes; or

2) A facility maintained, operated by, or under contract with a political subdivision of any state for the impoundment and care of seized, stray, homeless, abandoned, unwanted, or surrendered animals.

"Animal rescue organization" means a non-profit organization incorporated under the law of any state and exempt from federal taxation under Section 501(c)(3) of the federal Internal Revenue Code, as amended, and whose principal purpose is the prevention of cruelty to animals and whose principal activity is to rescue sick, injured, abused, neglected, unwanted, abandoned, orphaned, lost, or displaced animals and to adopt them to good permanent homes. "Animal rescue organization" shall not include any entity that breeds animals or that (1) is located on the same premises as; (2) has any personnel in common with; (3) obtains, in exchange for payment or any other form of compensation, dogs, or cats from; or (4) facilitates the sale of dogs or cats obtained from a person that breeds animals.

"Cat" means any member of the species *Felis catus*.

"Dog" means any member of the species *Canis familiaris*.

"Retail pet store" means a commercial establishment that sells or offers for sale animals on its premises. "Retail pet store" shall not include an animal shelter, an animal rescue organization, or an individual selling only animals that the individual has bred and raised.

§ 202. Prohibition of the Sale of Dogs and Cats.

1) It shall be unlawful for a retail pet store, as defined in this section, to sell, offer for sale, deliver, barter, auction, or transfer a dog or cat.

2) Nothing in this Section shall be construed to prohibit a retail pet store from providing space to either an animal shelter or to an animal rescue organization, whether such shelter or organization is located within or outside the Commonwealth of Pennsylvania, for the purposes of displaying dogs or cats available for adoption.

3) In the event that an animal shelter or animal rescue organization is determined by the Township of Abington to be substantially out of compliance with animal welfare standards, laws or regulations, the retail pet store displaying dogs and cats available for adoption will be precluded from offering animals from said organization until the organization's compliance is remediated to the satisfaction of the Township of Abington.

4) This Section shall not apply to the display, sale, offer for sale, delivery, bartering, auction, giving away, or transfer of dogs and cats from the premises on which they were bred and reared.

§ 203. Violation and Penalty.

1) A retail pet store that sells or offers for sale a dog or cat in violation of Section 202 commits a violation punishable by a fine of $600. Each separate act of unlawful sale or offer for sale of any dog or cat shall constitute a separate and distinct offense.

2) The Police Department of the Township of Abington shall be empowered to enforce any and all parts of this Article VII upon notification of such violation.

SECTION 2. Repeal and Ratification.

All ordinances or parts of ordinances inconsistent herewith or in conflict with any of the specific terms enacted hereby, to the extent of said inconsistencies or conflicts, are hereby specifically repealed. Any other terms and provisions of the Township's Code unaffected by this Ordinance are hereby reaffirmed and ratified.

SECTION 3. Severability.

Should any section, paragraph, sentence, clause, or phrase in this Ordinance be declared unconstitutional or invalid for any reason, the remainder

of the Ordinance shall not be affected thereby and shall remain in full force and affect, and for this reason the provisions of this Ordinance shall be severable.

SECTION 4. Effective Date.

All provisions of this Ordinance shall be in force and effect five (5) days after the approval and adoption

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ORDAINED AND ENACTED this _____ day of _____ 2025, by the Board of Commissioners of the Township of Abington

TOWNSHIP OF ABINGTON
BOARD OF COMMISSIONERS

_____
THOMAS HECKER
President

[Seal]

Attested by:

_____
Christopher S. Christman
Township Manager & Secretary