BZA Packet

December 19, 2022

Hello All,

Enclosed please find your packet for the meeting of December 19, 2022.

We have:

- 1 carryover
- 4 new cases

If you receive any citizen inquiries regarding these cases the proposed plans may be viewed by going to:
www.mtnbrook.org
- Calendar (upper right corner)
- Board of Zoning Adjustment (December 19, 2022)
- Meeting Information (for agenda) and Supporting Documents (to view proposed plans and/or survey select link associated with the case number*)*

If you have any questions about the cases please don't hesitate to give me a call at 802-3811 or send me an email at slatent@mtnbrook.org …

Looking forward to seeing you on Monday!

Tyler

MEETING AGENDA
CITY OF MOUNTAIN BROOK
BOARD OF ZONING ADJUSTMENT
December 19, 2022
PRE-MEETING: 4:30 P.M.
REGULAR MEETING: 5:00 P.M.

MEETING TO BE HELD IN PERSON AT CITY HALL AND VIRTUALLY USING ZOOM VIDEO CONFERENCING
(ACCESS INSTRUCTIONS ON MEETING WEBPAGE)

NOTICE

Any variance which is granted today expires and becomes null and void one year from today unless construction is begun in less than one year from today on the project for which the variance is granted. If construction will not be started within one year from today, the applicant may come back in 11 months and ask for a six-month extension, which the Board normally grants.

Any variance which is granted, regardless of the generality of the language of the motion granting the variance, must be construed in connection with, and limited by, the request of the applicant, including all diagrams, plats, pictures and surveys submitted to this Board before and during the public hearing on the variance application.

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1. Approval of Minutes: November 21, 2022

2. **Case A-22-29: Andrew and Tiffany Linn,** property owners, request variances from the terms of the Zoning Regulations to allow a retaining wall to be up to 10 feet in height in the front yard (Michael Lane) in lieu of the maximum allowed wall height of 4 feet. **401 Michael Lane** ***(Carried-over from the October 17, 2022 and November 21, 2022 meetings.)***

3. **Case A-22-31: Mr. and Mrs. Elliott Mills,** property owners, request variances from the terms of the Zoning Regulations to allow a new single family dwelling to be 30.5 feet from the front property line (Pine Haven Drive), 20 feet from the rear property line (south), and to allow a detached accessory structure (garage) to be 20 feet from the rear property line, all in lieu of the required 35 feet. -**2929 Pine Haven Drive**

4. **Case A-22-32: Mr. and Mrs. Harlan Prater,** property owners, request variances from the terms of the Zoning Regulations to allow alterations to a detached accessory structure (garage) to be 6 feet 6 inches from the rear property line (north) in lieu of the required 35 feet; 7 feet from the side property line (west) in lieu of the required 12.5 feet; and to allow the building area to be 35.4 percent in lieu of the maximum allowed of 35 percent. **-3750 East Fairway Drive**

5. **Case A-22-33: Mac and Kit Fairley,** property owners, request variances from the terms of the Zoning Regulations to allow a covered rear deck to be 23 feet from the rear property line (east) in lieu of the required 35 feet. -**3305 Montevallo Road**

6. **Case A-22-34: Maruerite Gray Morris,** property owner, requests a variance from the terms of the Zoning Regulations to allow additions to an existing single family dwelling to be 12 feet 2 inches feet from the rear property line (north) in lieu of the required 40 feet. -**2109 Montevallo Road**

7. Next Meeting: **Tuesday, January 17, 2023**

8. Adjournment

Variance Application - Part I

Project Data

Address of Subject Property 401 MICHAEL LANE

Zoning Classification RESIDENTIAL

Name of Property Owner(s) ANDREW AND TIFFANY LINN

Phone Number 205-837-8306 Email ALinn@southlandtransportation group.com

Name of Surveyor JACKINS BUTLER ADAMS INC.

Phone Number 205-870-3390 Email bbsurv@bellsouth.net

Name of Architect (if applicable) SMELCER DESIGN

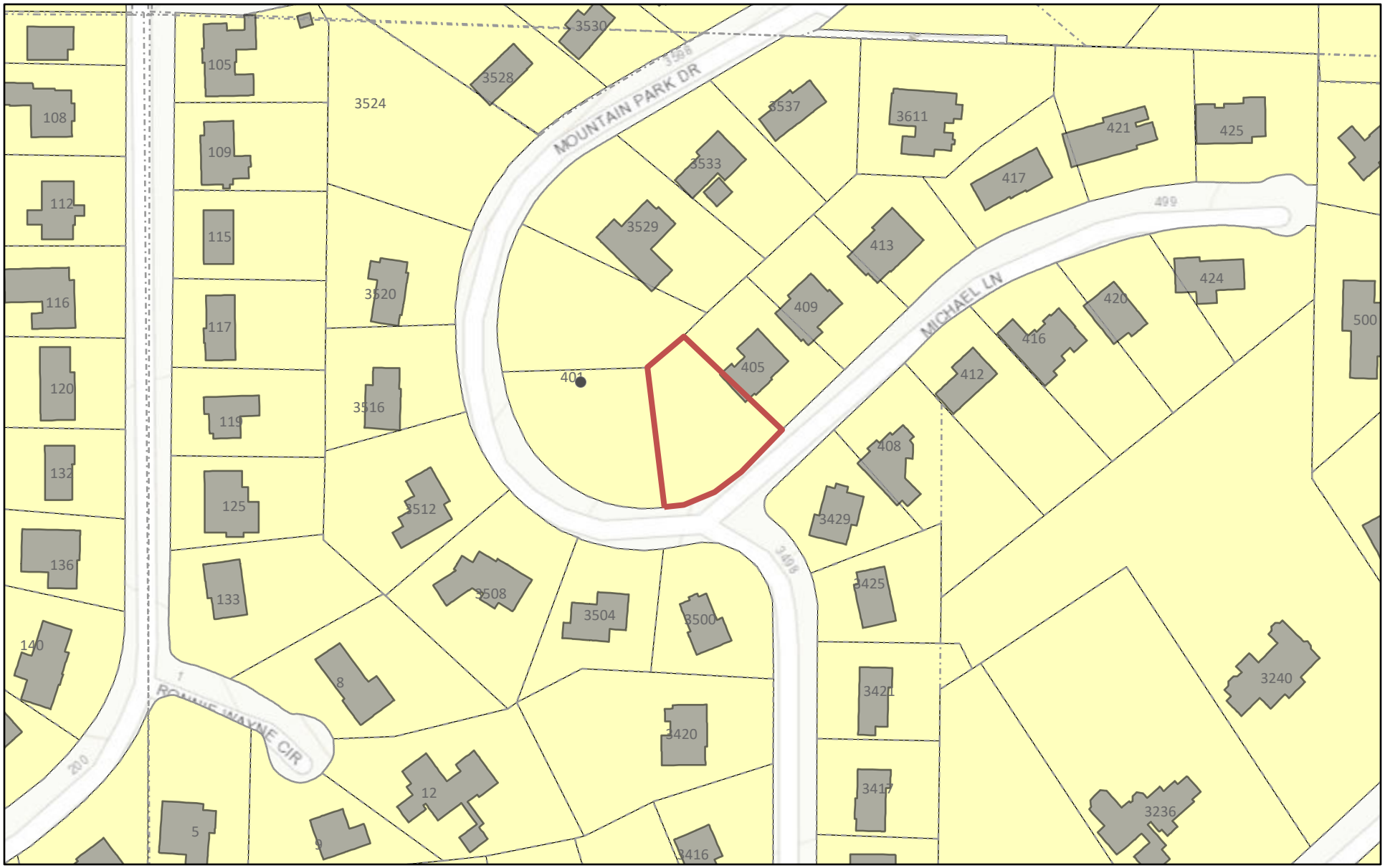
Phone Number 205-229-3835 Email DJSMELCER@YAHOO.COM

☒ Property owner or representative agent must be present at hearing

Please **fill in only applicable** project information (relating directly to the variance request(s):

	Zoning Code Requirement	Existing Development	Proposed Development
Lot Area (sf)			
Lot Width (ft)			
Front Setback (ft) *primary*	40 FT		
Front Setback (ft) *secondary*			
Right Side Setback			
Left Side Setback			
Right Side Setback (ft): For non-conforming narrow lots in Res-B or Res-C: Less than 22' high → 22' high or greater →			
Left Side Setback (ft): For non-conforming narrow lots in Res-B or Res-C: Less than 22' high → 22' high or greater →			
Rear Setback (ft)			
Lot Coverage (%)			
Building Height (ft)			
Other			
Other			

A-22-29 Zoning



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Building Footprints 2020vl

Lot Lines

Tax_Parcels 2021

Residence A District

1:2,257

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

JeffCoAL, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, USDA

ArcGIS Web AppBuilder

A-22-29 Aerial

10/12/2022, 1:33:39 PM

Aerial 2021

Red: Band_1

Green: Band_2

Blue: Band_3

1:2,257

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

Jefferson County Department of Information Technology , JeffCoAL, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, USDA

ArcGIS Web AppBuilder

Report to the Board of Zoning Adjustment

A-22-29

Petition Summary
Request to allow a retaining wall to be up to 10 feet in height in the front yard (Michael Lane) in lieu of the maximum allowed wall height of 4 feet.

Background
During an erosion control maintenance inspection of this construction site in August 2022, the wall in question was first noted by the city's Inspections Department. This wall was not a part of the permit submittal for construction, and to date no plan has been submitted to the city's Building Official related to the wall. The city has no documentation or engineered drawings for this structure.

Scope of Work
The scope of work for this site entails a proposed new single family dwelling with a front retaining wall.

Variance Request for Retaining Wall Height in Front Yard
Nexus: The applicant stated that the slope of the lot made the retaining wall necessary to facilitate the front drive access and to create a usable functional front yards. While it appears true that there is a grade change from the back to the front of the property, it seems as though the desire to create a functional front yard is driving the request for the variance more so than the need for driveway access.

It is anticipated that an approval of such variance:

a. Could be detrimental to the streetscape (due to the massing and height)

Impervious Area
The proposal is in compliance with the allowable impervious surface area.

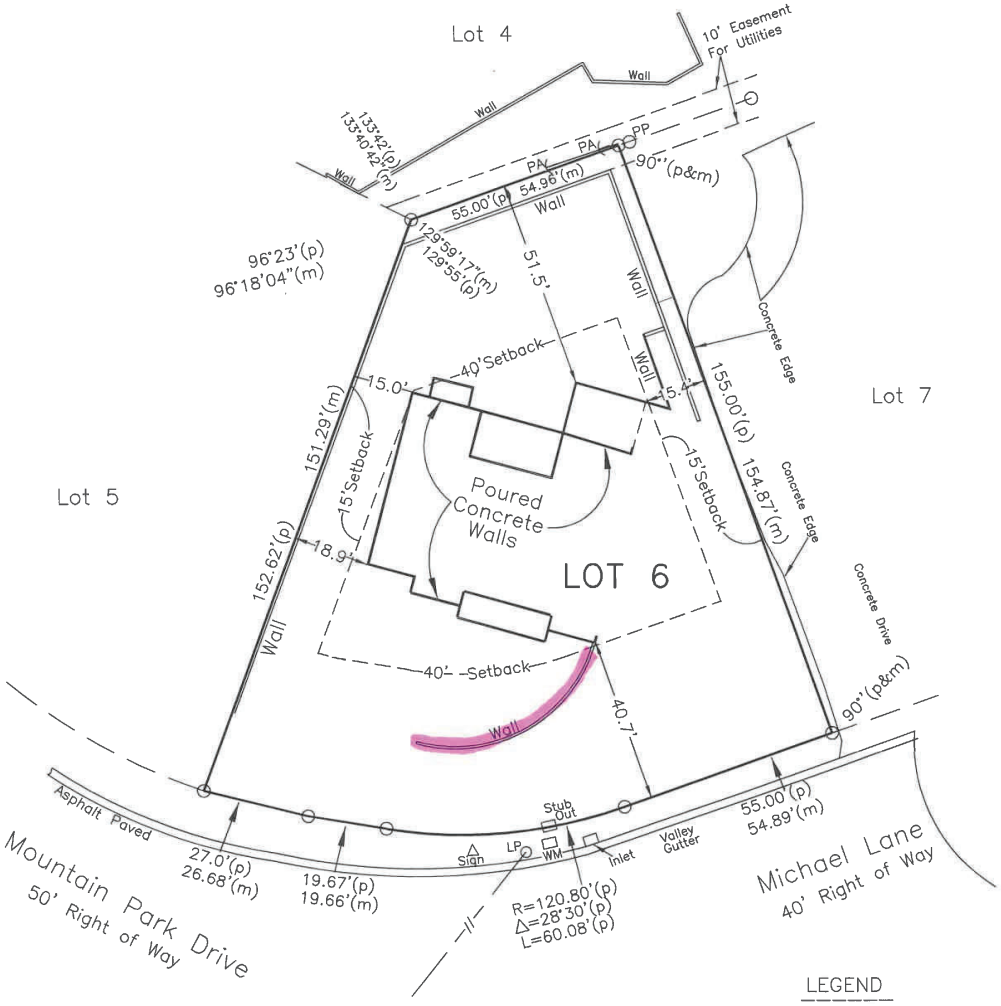
Subject Property and Surrounding Land Uses
The property contains a single-family dwelling, and is surrounded by same.

Affected Regulation
The proposal is in compliance with the allowable impervious surface area.

Appends
LOCATION: 401 Michael Lane

ZONING DISTRICT: Residence A District

OWNERS: Andrew and Tiffany Linn



LEGEND

○	PP	POWER POLE
○	LP	LIGHT POLE
□	WM	WATER METER
□	AC	AIR CONDITIONER
---// ---		OVERHEAD POWER
-x-	FEN	FENCE
100x3		SPOT ELEVATION
(p)		PLAT DIMENSION
(m)		MEASURED DIMENSION

FOUNDATION SURVEY

Notes:

1. Date of Field Work = October 8, 2021;
2. Area of Lot 6 = 0.38 Acres
3. Site is Zoned Residence A District, per Mountain Brook Zoning Map; Setbacks: Front=40'; Rear=40'; Side=15'; Maximum Building Area = 25 percent of Total Area;
4. Date of Foundation Survey = July 19, 2022;

CERTIFICATE

I hereby state that all parts of this survey and drawing have been completed in accordance with the Standards of Practice for Land Surveying in the State of Alabama to the best of my knowledge, information, and belief.

July 21, 2022
Date

Rowland Jackins, Ala. PLS No. 18399

ALABAMA REGISTERED No.18399 PROFESSIONAL LAND SURVEYOR G.ROWLAND JACKINS

FOUNDATION SURVEY

Lot 6, Donna Lynn Estates
Mapbook 38, Page 8, Judge of Probate Office,
Jefferson County, Alabama
Scale: 1 Inch = 30 Feet July, 2022

0 30 60 90

JACKINS, BUTLER & ADAMS, INC.
SURVEYING-GEOLOGY
3430 INDEPENDENCE DRIVE, SUITE 30
BIRMINGHAM, ALABAMA 35209
(205) 870-3390

S-1337/21-AAA2 Dwg. 1


Tyvek
HomeWrap


STOP
SLATE BARGANIER
BUILDING
Your Vision. Our Partnership.
slatebarganier.com
Tyvek
HomeWrap


MAINLINE
HEATING & AIR CONDITIONING, INC.
(205)684-4751
Tyvek
HomeWrap

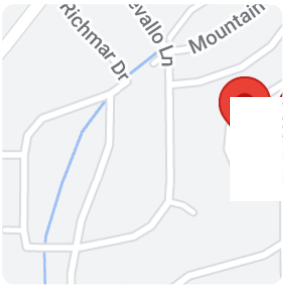
Google Maps 401 Michael Ln

Image capture: Mar 2022 © 2022 Google

Mountain Brook, Alabama

Google

Street View - Mar 2022



A-22-29

Thursday, September 22, 2022

Dear Board of Zoning Adjustment,

Due to the hardships imposed by the shape and topographic nature of our lot, we are requesting your approval of a retaining wall that exceeds the height restriction of 4ft. Said retaining wall is necessary to ensure access to our front door from our driveway, to accommodate handicap accessibility and also to create a useable and functional front yard. We appreciate your consideration.

Sincerely,
Andrew and Tiffany Linn
Homeowners
401 Michael Lane
Mountain Brook, AL 35213

Variance Application
Part II

Required Findings (Sec. 129-455 of the Zoning Ordinance)

To aid staff in determining that the required hardship findings can be made in this particular case, please answer the following questions with regard to your request. **These findings must be made by the Board of Zoning Adjustment in order for a variance to be granted** (please attach a separate sheet if necessary).

What special circumstances or conditions, applying to the building or land in question, are peculiar to such building or land, and do not apply generally to other buildings or land in the vicinity (including size, shape, topographv. location or surroundings)?

DUE TO THE SEVERE SLOPE OF THE LOT A RETAINING WALL TALLER THAN 4 FEET IS REQUIRED TO FASCILITATE THE FRONT DRIVE WAY ACCESS TO THE FRONT PARKING PAD AND TO CREATE A USABLE AND FUNCTIONABLE FRONT YARD.

Was the condition from which relief is sought a result of action by the applicant? (i.e., *self-imposed hardship* such as: "...converted existing garage to living space and am now seeking a variance to construct a new garage in a required setback...")

NO.

How would the granting of this variance be consistent with the purpose and intent of the Zoning Regulations?

IT WOULD ALLOW A RETAINING WALL TO BE BUILT FOR A DRIVEWAY AND USABLE FRONT YARD.

October 13, 2022

City of Mountain Brook
Dana Hazen
Director of Planning, Building and Sustainability
56 Church Street
Mountain Brook, AL 35213

Dear Ms. Hazen,

I am writing regarding the notice for the following appeal: Case A-22-29: Andrew and Tiffany Linn, property owners, request variances from the terms of the Zoning Regulations to allow a retaining wall to be up to 10 feet in height in the front yard (Michael Lane) in lieu of the maximum allowed wall height of 4 feet. 401 Michael Lane.

I will be in Denver on business at the time of the hearing, therefore I am writing to you so that my letter can be submitted for discussion in my absence.

My home is directly across the street from this residence. As you are aware, the land on which the residence sits was split into three separate parcels. There are now three *very large* homes sitting where one moderately sized home used to be. Overbuilding on this land has created much water runoff.

My main concern is that a retaining wall that diverts more water off the Linn's property will continue to affect our house (and our neighbors downstream, whose garages take on water during rainfall). The water coming from the Linn's property has caused significant damage to our home, as erosion is shifting it. This is evident in our daughter's newly renovated bathroom via cracking grout as well as our sidewalk sinking 6 inches and shifting since construction began.

The infrastructure simply cannot handle all the water and debris runoff now that the sites were cleared and built upon. This may need to be addressed with the city, as updated drainage has not occurred since the land has been altered.

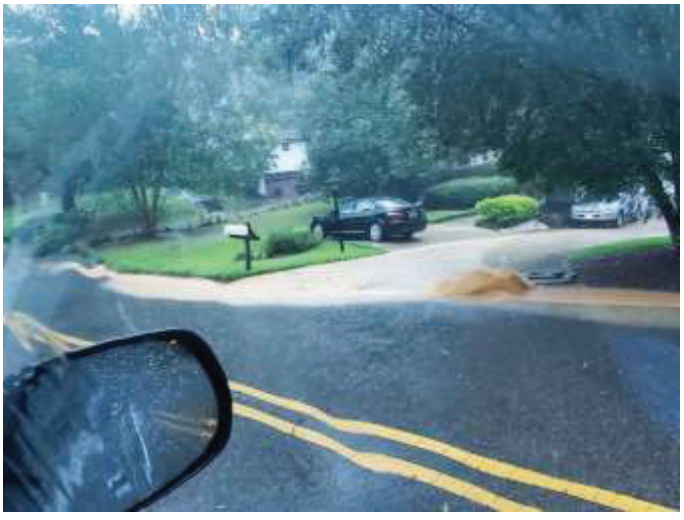
Based on our observation, the retaining wall (*WHICH ALREADY EXISTS*) could be brough into height conformity by cutting it down to 2 ft off grade and adding steps to the front door for the difference of height. Steps to a front door are a common solution for grade issues. If cutting the wall and adding steps cannot be achieved the wall should be removed and another option considered, as the base of the wall stands 15 ft-20 ft off street level to 30 ft at the top, creating a very uninviting façade. This creates a fortress effect, which is not fitting for the neighborhood. It's simply a horrible sight from street view.

I have included pictures for your review.

Respectfully,

Nicole Boomhover
3500 Mountain Park Drive

CC: Sam Gaston
Glenn Merchant



SCOPE OF WORK

Proposal for Professional Services Related to
401 MICHAEL LANE DRAINAGE PLAN
SLATE BARGANIER BUILDING

November 29, 2021

☐ **DRAFT** ☒ **FINAL**

Project Objectives:

Slate Barganier Building (Client) office is located at 3121 Blue lake Drive, Vestavia, AL 35243 and requiring a drainage evaluation and remediation of lot 401 Michael Lane. Client wishes to engage InSite Engineering, LLC ("InSite") to evaluate pre-development and post-development flows and provide remediation solutions. A preliminary site visit by InSite revealed an increase in impervious area is causing an increase of storm water runoff and will have to be addressed to be in compliance with the City of Mountain Brook Drainage Ordinance.

At this time, InSite believes that it is possible to remedy the problem by conducting an evaluation of post-development flows and compare them to the pre-development flows. With this information a detention facility can be designed to accommodate this increase in flow from the site and hold to achieve a peak discharge amount that is equal to or less than the pre-development condition.

Work: **Work Engagement**

Under the terms of this agreement, InSite will execute the following Scope of Work:

1. Evaluate the size and placement of all storm-related appurtenances to the home;
2. Determine expected stormwater flows during rain events;
3. Design appropriate drainage remedies for the control of post development runoff and satisfy the drainage ordinance of the City of Mountain Brook; and
4. Propose remedies in a set of engineering drawings suitable for permit approval and construction.

Under the terms of this agreement, the Client agrees to provide InSite Engineering LLC with all necessary information related to the Scope of Work. The following Key Assumptions will govern each engagement unless otherwise agreed between the Client and InSite Engineering LLC

Key Assumptions:

1. Unless specifically requested, InSite Engineering LLC will not be responsible for any geotechnical investigations, or evaluation of structural integrity of any existing building, building appurtenance, or physical structure already in place.
2. The Client may request additional services within the overall scope of services offered by InSite Engineering LLC, and such services will be provided with prior authorization under the terms and conditions stated herein.
3. Nothing in this contract shall exclude the Client from seeking services from other firms or individuals.
4. Final work product shall be agreed by the Client and InSite Engineering LLC and billed upon completion.

Key Staff Hours: *Sr. Professional Engineer – 10 hrs*

Project Engineer – 10 hrs

Expected Completion Date: Within one week of engagement.

Deliverable: Drainage evaluation calculations and details of detention facility.

Project Engineering Fee

Cost:

To avoid misunderstanding, cost for each individual engagement will be pre-authorized by the Client based on the needs and scope of each individual engagement based on InSite Engineering LLC hourly rates. No deviations from the Scope of Work will be made without prior written consent from the Client. *Authorized* work will be billed on a time and materials basis at InSite rates included herein upon completion of each engagement.

Project Cost: $2,500.00

Billed As:

- ☒ Lump Sum
- ☐ Not-to-Exceed Budget
- ☐ Cost Plus Fixed Fee
- ☐ Periodic Time and Materials Progress Payment

Professional and Technical Services

The following classifications and associated unit rates are general and will be used as guidelines for the services of professional disciplines offered. Legal preparation and testimony are billed at two times these rates. Rates are subject to be updated once annually.

Classification	Rate/Hour
Principal Engineer	*$150.00*
Sr. Professional Engineer	*$125.00*
Professional Engineer	*$100.00*
Engineer Intern	*$85.00*
GIS/IT Engineer	*$125.00*
GIS/IT Technician	*$90.00*
Sr. Civil Designer	*$115.00*
Civil Designer	*$90.00*
CADD Technician	*$65.00*
Administrative/Clerical	*$50.00*
Resident Project Representative	*$60.00*
Student Intern	*$50.00*

Reimbursable Expenses	Rate/Hour
Automobile Travel	*Current IRS Rate*
Other travel and subsistence expenses	*Cost +15%*
Subconsultant Services	*Cost + 15%*
Agency Review Fees	*Cost + 15%*
Outside Printing and Plotting Fees	*Cost + 15%*
Other Reimbursable Expenses	*Cost + 15%*

In-House Printing and Plotting Fees:	
24” x 36” Black and White Prints/Plots	*$2.00/sheet*
12” x 18” Black and White Prints/Plots	*$1.00/sheet*
8.5” x 11” Black and White Prints/Plots	*$0.10/page*
24” x 36” Color Prints/Plots	*$16.00/sheet*
12” x 18” Color Prints/Plots	*$8.00/sheet*
8.5” x 11” Color Prints/Plots	*$0.45/page*
Large Format Scanning	*$3.25/sheet*
Small Format Scanning	*$1.00/page*

Effective January 1, 2021
(Replaces Schedule of Fees dated January 1, 2019)

WORK ORDER

DATE ORDERED November 29, 2021 **JOB NO.** _____

CLIENT	Slate Barganier Builders	DESCRIPTION OF PROJECT
ADDRESS	3121 Blue Lake Drive	City of Mountain Brook Drainage Ordinance Evaluation and remediation at 401 Michael Lane
	Vestavia, AL 35243	

☐ SURVEYING	☒ ENGINEERING	☐ DRAFTING
☐ Boundary ☐ Description ☐ Topographic ☐ Utility ☐ As Built ☐ Title Plat ☐ Construction Staking ☐ Other: _	☐ Engineering Report ☐ Grant Application ☒ Design ☐ Construction Plans ☐ Specifications ☐ Subdivision — Preliminary ☐ Subdivision — Final Plat ☐ Other: Drainage Calculations	☐ Boundary Map ☐ Title Plat ☐ Plot Plan ☒ Topographic Map ☐ Utility Map ☐ Construction Plans ☐ Subdivision Plat ☐ Other: _

REMARKS

- **All work to be completed according to Scope of Work attached dated November 29, 2021**
- **No changes in scope will be made without prior written consent from the Client.**
- **InSite Engineering LLC will initiate this project upon of receipt of written authorization to proceed. Planned completion dates for specific task will be agreed in writing between the Client and InSite Engineering LLC**
- **This project will be conducted under the terms and conditions indicated by the checked box below.**
  - ☒ **InSite Engineering LLC general terms and conditions attached.**
  - ☐ **Specific Contract between the Client and InSite Engineering LLC dated _____ .**
  - ☐ **Client Purchase Order Number _____ , dated _____ .**
- **This work order should be signed by an authorized representative for the Client. Formal authorization in the form of this signed agreement must be received prior to commencing work.**
- **By signing this Work Order, The Client agrees and accepts the terms of this written agreement as contractually binding between The Client and InSite Engineering LLC**
- **This written agreement constitutes the whole agreement between The Client and InSite Engineering LLC and not other conditions, written or otherwise, other than those stated herein apply.**
- **Payment is due upon completion of the agreed work and receipt of invoice or, if the project is ongoing, due monthly upon receipt of invoice. If work is not completed due to no fault of InSite Engineering LLC payment will be due for services to date. In the event of payment not being made and a lawyer is employed, the Client will be liable for any and all legal fees necessary for debt collection.**

Authorized By:

Slate Barganier Building

Signature _____

Name _____

Title _____

Date _____

InSite Approval By:

Signature _____

Name Matt S. Golab, P.E.

Title Sr. Project Engineer

Date November 29, 2021

WORK ORDER

TERMS AND CONDITIONS

1. References herein to "InSite" refer to InSite Engineering LLC, "Client" shall mean **Community Services Programs of West Alabama, Inc. (Tuscaloosa, Alabama).** References herein to "Project" mean the project as defined in InSite written Scope of Work or proposal to the Client. Any proposal submitted by InSite for the performance of a proposed Project shall be firm for a period of sixty (60) days. Upon the expiration of such period, InSite reserves the right to modify the proposed basis of payment and fees to allow for changing costs and to adjust the time of performance to confirm to changing work loads.

2. Unless InSite's proposal provides otherwise, the proposed fees constitute InSite's estimate of the probable cost required to complete the proposed Project. The estimated probable cost identified in InSite's proposal shall not be deemed to be either a guaranteed maximum or "guaranteed not-to-exceed" amount with respect to the cost of performing the Project identified in any such proposal. However, in performing any Project, InSite will not proceed to expend more than the amount identified as the estimated probable cost in InSite's proposal without the Client's prior approval.

3. Cost and schedule commitments contained in InSite's proposal shall be subject to renegotiation for unreasonable delays caused by the Client's failure to provide specified facilities or information or for delays caused by unpredictable occurrences such as fires, floods, strikes, riots, unavailability of labor or materials or services, process shutdown, acts of God or of the public enemy, or acts of regulations of any governmental agency. Work stoppage or interruption caused by any of the above may result in additional cost (requiring a change in scope) beyond that identified in InSite's proposal for performance of the Project, entitling InSite to an adjustment to the cost and schedule.

4. Payment. Where the method of payment for InSite's services is on a time-and-material or cost reimbursable basis, the following commercial terms shall apply:

a. The minimum time segment for charging of field work is four (4) hours. For work done at any of InSite's offices, the minimum time segment for charging is one-half hour. There is no premium charge for overtime.

b. Where any agreement is based on the salary cost of specific individuals, normal and customary salary increases will become effective immediately upon InSite authorization and will be reflected in the next invoice submitted to the Client.

c. Expenses properly chargeable to the Project shall include: travel and living expenses of InSite personnel on business connected with the project; shipping costs; reproduction and bindery costs at InSite's standard rates; equipment rental charges; professional, analytical and technical subcontractors and advisors retained in connection with the Project; identifiable drafting and stenographic supplies; and expendable materials and supplies purchased specifically for the Project. A 15 percent handling and administrative charge will be added to all third party Project expenses. In lieu of all other itemized telephone and facsimile communication charges, and computer support, a telecommunications charge/computer support charge of five percent of the amount of InSite labor charges reflected on each invoice MAY be billed to defray these costs. If the services covered by any InSite proposal are subject to local or state taxes or fees, such additional costs will be charged to the Project and reimbursed by the Client.

5. Invoices. Invoices will be submitted on a monthly basis payable upon receipt. Unpaid balances shall be subject to interest at the rate of 1.5 percent per month or the maximum permissible under state law, whichever is less, starting 30 days from the invoice date. Payments received will be applied first to any unpaid fees. In addition, InSite may, after giving seven (7) days written notice, suspend services under any agreement without liability until all past due accounts (including fees and accrued interest) have been paid. Timely payment is a substantial condition of Client's performance of any agreement between InSite and Client. In the event InSite must take legal action to be paid for its services and prevails, all collection and legal costs associated with such action shall be reimbursed by the Client.

6. Except as provided in Paragraph 5, any agreement may be terminated in whole or in part in writing by either party in the event of substantial or material failure by the other party to fulfill its obligations under such agreement through no fault of the terminating party, provided that no such termination shall be effective unless the other party is given 1) not less than ten (10) calendar days written notice of intent to terminate and 2) an opportunity for consultation with the terminating party prior to the effective date of such termination. A final invoice will be calculated on the first or fifteenth of the month (whichever comes first) following the effective date of termination.

a. Where the method of payment is based on a "lump sum" the final invoice will be based on the percentage of the work completed up to the effective date of termination.

b. Where the method of payment is based on time and materials, the final invoice will be based on reimbursement for all services and expenses associated with the Project up to the effective date of termination.

c. Where the method of payment is based on cost plus a fixed fee, the final invoice will be based on reimbursement for all costs up to the effective date of termination and a pro-rata share of the fixed fee.

d. Where the method of payment is based upon a payment schedule, a payment schedule will be attached to and made part of these terms as "Exhibit A – Periodic Payment Schedule" and signed by all parties to this agreement.

For each of the above methods of preparing the final invoice, there shall be an additional charge for Project closeout equal to three percent of all Project billings up to the effective date of termination. This closeout charge shall not be considered a penalty, but represents an allowance for recovery of costs for demobilization and reassignment of personnel and equipment on short notice.

7. Right-of-Entry. Client agrees to grant InSite the right to:

a. Enter or access any and all property necessary as required to complete the Scope of Work;

b. Perform the engineering services described in the Scope of Work;

c. Cut or remove any vegetation necessary and remove any other objects interfering with the completion or progression of the Project; and

d. Assign without notice this agreement or any part thereof as InSite shall deem necessary for the completion of the Project.

8. Insurance. Client agrees that InSite's liability for professional negligent acts, errors, or omissions under this agreement shall be limited to the amount of the fee charged, unless an additional fee of 5% of the liability amount desired by the Client to be paid to InSite. Additional liability insurance amounts requested by the Client will be attached to and made part of these terms as "Exhibit B – Additional Liability Insurance" and signed by all parties to this agreement.

9. Indemnification

a. InSite shall indemnify and hold harmless the Client, its directors, officers, employees, and agents from and against all liability, claims, suits, losses, damages, costs and demands, including reasonable legal expenses and attorney's fees connected therewith, on account of personal injury, including death, or property damage, sustained by any person or entity not a party to any agreement between InSite and Client and arising out of or connected with the performance of such agreement, to the extent such injury, death or damage is caused by the sole or contributory negligence or willful misconduct of InSite or its subcontractors or their respective employees, officers and agents; provided that such injury, death or damage is not occasioned by the sole negligence of Client or its contractors or their respective employees, officers and agents; and provided further, that InSite's liability under this indemnity provision shall be limited to and not exceed the insurance coverages and associated limits of liability which InSite is required to secure pursuant to Paragraph 7, hereof; and provided further, that InSite's obligation hereunder shall not exceed to indemnification or holding harmless of a party indemnified hereunder for any claims of loss of profits or any other indirect, special, incidental or consequential damages of any nature whatsoever.

b. Client shall indemnify and hold harmless InSite and its directors, officers, employees, and agents from and against all liability, claims, suits, losses, damages, costs and demands, including reasonable legal expenses and attorney's fees connected therewith, on account of personal injury, including death, or property damage, sustained by any person or entity not a party to any agreement between

TERMS AND CONDITIONS

InSite and Client and arising out of or connected with the performance of such agreement, to the extent such injury, death or damage is caused by the sole or contributory negligence or willful misconduct of Client or its contractors or their respective employees, officers and agents; provided that such injury, death or damage is not occasioned by the sole negligence of InSite or its subcontractors or their respective employees, officers and agents; and provided further, that Client's obligation hereunder shall not extend to indemnification or holding harmless of a party indemnified hereunder for any claims of loss of profits or any other indirect, special, incidental or consequential damages of any nature whatsoever.

c. The provisions of this Paragraph 8 shall survive the completion of the Project or the expiration, cancellation or termination of any agreement between InSite and Client.

10. Standard of Care

a. While performing services under any agreement, InSite shall exercise that degree of care and skill ordinarily exercised under similar circumstances by members of the civil engineering and consulting profession performing the kind of services to be performed thereunder and practicing in the same or similar locality at the same time and that the proper venue for litigation of any cause or action hereto shall be that court of jurisdiction in Tuscaloosa County, Alabama.

b. Client agrees that InSite shall not be responsible or liable in any way for the conduct, work, or damages or resulting loss incurred by any action by any sub-contractor(s) associated with this Project.

b. Except for the express promise set forth in subparagraph a., above, regarding InSite's standard of care, InSite neither makes, nor offers, nor shall InSite be liable to Client for any express or implied warranties with respect to the performance of InSite's services. Estimates of cost, approvals, recommendations, opinions, and decisions by InSite are made on the basis of InSite's experience, qualifications, and professional judgment and are not guaranteed. InSite shall not be regarded as a guarantor with respect to any work product provided to Client. THE IMPLIED WARRANTIES OF MECHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY WAIVED BY CLIENT.

c. InSite agrees to reperform and correct at its expense any work or services performed by InSite which fails to conform to the standard of care that InSite has accepted pursuant to subparagraph a., above.

d. In no event shall InSite and InSite's officers, directors, employees, agents and independent professional consultants, and any of them, be liable to Client and/or anyone claiming by, through or under Client, including Client's insurers, for any lost, delayed, or diminished profits, revenues, or opportunities; losses by reason of shutdown or inability to utilize or complete work at the site of the Project; or any other incidental, special, indirect, or consequential damages of any kind or nature whatsoever resulting from InSite's performance or failure to perform services pursuant to any agreement.

e. InSite and InSite's officers, directors, employees, agents and independent professional consultants, and any of them, shall not be liable to Client and/or anyone claiming by, through or under Client, including Client's insurers, nor shall InSite be liable to indemnify Client pursuant to Paragraph 8, hereof, in an amount which exceeds (i) the total compensation value to InSite of the Project, if the claims of Client or Client's insurers against InSite are not covered by the insurance coverages and associated limits of liability which InSite is required to maintain pursuant to Paragraph 7 hereof or (ii) the liability amount specified in Paragraph 7, if the claims of Client or Client's insurers against InSite are covered by the insurance coverages and associated limits of liability which InSite is required to maintain pursuant to Paragraph 7 hereof. The Client hereby forever releases InSite and its officers, principals, employees and agents from any liability for losses or damages sustained and incurred by the Client in excess of such amount.

f. As used in Paragraph 9, the term "liable" or "liability" means liability of any kind, whether in contract (including breach of warranty), in tort (including negligence, whether of InSite or others), in strict liability, for indemnity, or otherwise, for any and all injuries, claims, losses, expenses or damages whatsoever arising out of or in any way related to InSite's services from any cause or causes whatsoever, including but not limited to the negligence, errors, omissions, strict liability or breach of contract of InSite and/or InSite's officers, directors, employees, agents and independent professional consultants, or any of them. The provisions of this Paragraph 9 providing for limitations of and protections against InSite's liability shall survive the completion of the Project or the expiration, cancellation, or termination of any agreement between InSite and Client, and such provisions shall apply to the full extent permitted by law.

11. Client agrees that InSite has authority to use its name as a Client and a general description of the Project as a reference for other prospective Clients. All original papers and documents and all work products and copies thereof, produced as a result of this agreement, shall remain the property of InSite and may be used by InSite without prior consent of the Client.

12. If InSite personnel are called or subpoenaed for depositions, examination, or court appearances in any dispute arising out of the Project, InSite shall be reimbursed on a time and material basis in accordance with InSite's then current, standard billing rates for such matters, including all out-of-pocket costs incurred in connection with such matters.

13. If any of these General Terms and Conditions shall be finally determined to be invalid or unenforceable in whole or in part, the remaining provisions hereof shall remain in full force and effect and be binding upon the parties. The parties agree to reform the contract between them to replace any such invalid or unenforceable provision with a valid and enforceable provision that comes as close as possible to the intention of the stricken provision.

14. Once the Client has signified its acceptance of InSite's proposal, the express terms of InSite's proposal to Client and these General Terms and Conditions shall constitute the complete and exclusive statement of the terms of the agreement between the parties and are intended as a final expression of the terms of such agreement for the proposed work and will supersede all prior and contemporaneous agreements, representations or conditions, express or implied, oral or written. No provision of InSite's proposal or these General Terms and Conditions may be waived, altered, or modified in any manner, unless the same shall be set forth in writing and signed by a duly authorized officer of InSite. Client may use its standard business forms (such as purchase orders) to administer any agreement between InSite and Client, but use of such forms shall be for convenience purposes only, and any typed provision in conflict with the terms of InSite's proposal or these General Terms and Conditions and all pre-printed terms and conditions contained in or on such forms shall be deemed stricken and null and void.

December 6, 2021

Mr. Glen Merchant, Building Official
The City of Mountain Brook
56 Church Street
Mountain Brook, Alabama 35213

Subject: **401 MICHAEL LANE**
SUBMITTAL OF DRAINAGE PLAN AND CALCULATIONS
SLATE BARGANIER BUILDING
InSite Project No. 21146.00

Dear Mr. Merchant:

At the request of the Slate Barganier Building, InSite Engineering conducted an analysis of the storm water impact of the development of the lot located at 401 Michael Lane. The goal of this analysis is to use the data generated to evaluate the increase, if any, of storm water as created by the proposed residential dwelling and the associated increase of impervious surface. Additionally, a plan for the capturing and detaining any increased runoff generated, to a point that would match or decrease the flow from the site on all required storm-return periods as required by the City of Mountain Brook would be developed. The associated plan and detail for this plan would be designed and included.

METHODOLOGY

The basin was analyzed using the SCS Method. The SCS Method is an imperical method of rainfall abstraction based on the potential for the soil to absorb a certain amount of moisture and is commonly used and widely accepted method of determining peak flows for a given watershed. Natural Resources Conservation Service (NRCS) maps were used to determine the soils in the area and are attached to this report. It is necessary to determine the soil type, and absorption qualities, to classify the soils into groups. The group that a soil is classified into has a direct correspondence to the determining of the Curve Number used in the SCS Method Calculations. Slate Barganier provided InSite Engineering with topography, on one foot contour intervals, to allow for a more detailed determination of slope in the watershed. The slope is another critical factor in the determination of the Curve Number for the soil and/or other impervious improvements. This allowed for more accurate approximations of time of concentrations and Curve Number adjustments. USGS Quadrangle maps were also utilized in the development of the basin and the corresponding sub-basins.

Once all the information required to develop the watershed was gathered, the calculations were performed on the basin. During the evaluation of the basin, sub-basins were developed to determine flows more accurately from areas of the site. These sub-basins were then routed to the outfall point for the basin. A peak flow at the outfall point was determined on all storm return periods. For this evaluation, the storm return periods that were analyzed, and included in this report, were the 2, 5, 10, 25, 50, and 100 year storm return periods.

Upon completion of the watershed analysis, and the obtaining of a peak flow for the storm return periods, the site and proposed grading were evaluated to determine options for detaining the post-development flow at the given flow situation. Various programs were utilized to obtain performance curves, storage rates, free board, and associated storage criteria. The findings for both the basin analysis, including time of concentration calculations and the pipe performance evaluation are detailed below.

FINDINGS

The basin was analyzed and determined to encompass approximately 0.39 aces +/-. This was based on the topography provided by the Slate Barganier. Upon further examination the basin was then divided into 2 pre-development sub-basins and 5 post-development sub-basins. This was based on topography, travel path properties for the lot. The sub-basins are shown on maps in attached to this report.

The soils in this area were determined using the NRCS soil maps and were found to be “very poorly drained” for all the basins. This along with other references pushed all of the watershed into the SCS Soil Group D. The soil map and the listings of the soil in the area can be found attached to this report.

PRE-DEVELOPMENT SUB-BASINS

The pre-development sub-basins were evaluated, and flows were determined. The report generated can be found attached to this report. However, a summary of the two pre-development sub-basins are listed below:

Pre-Development Sub-Basin 1 is the southern portion of the site. This basin was determined, combined with sub-basin 2 and then a reach to the outfall location of the basin was utilized. This Sub-basin contained “very poorly drained” soils.

- Area = 0.09 acres
- Curve Number (CN):
  - 0.02 acres = CN of 85
  - 0.07 acres = CN of 84
  - Composite Curve Number = 84
- Time of Concentration = 2 minutes
- 25-year Storm Return = 0.544 cfs

Pre-Development Sub-Basin 2 is the northern portion of the site. This basin was determined, combined with sub-basin 2 and then a reach to the outfall location of the basin was utilized. This Sub-basin contained “very poorly drained” soils.

- Area = 0.30 acres
- Curve Number (CN):
  - 0.05 acres = CN of 83
  - 0.12 acres = CN of 86
  - 0.06 acres = CN of 98
  - Composite Curve Number = 88
- Time of Concentration = 3.7 minutes
- 25-year Storm Return = 2.468 cfs

Upon determination of the sub-basins, they were each combined and routed as necessary to model accurately the drainage patterns of the basin. This resulted in the determination of a peak

flow for all the storm return periods. The detailed summary of this can be found attached to this report. However, a summary of the peak flow at the outfall of the watershed is listed below:

2-year storm return period = 1.315 cfs
5-year storm return period = 1.683 cfs
10-year storm return period = 2.004 cfs
25-year storm return period = 2.468 cfs
50-year storm return period = 2.846 cfs
100-year storm return period = 3.239 cfs

POST-DEVELOPMENT SUB-BASINS

The post-development sub-basins were evaluated, and flows were determined. The report generated can be found attached to this report. However, a summary of the five post-development sub-basins are listed below:

Post-Development Sub-Basin 1
Area = 0.10 acres
Curve Number (CN):
0.02 acres = CN of 98
0.08 acres = CN of 83
Composite Curve Number = 84
Time of Concentration = 2 minutes
25-year Storm Return = 0.605 cfs

Post-Development Sub-Basin 2.
Area = 0.06 acres
Curve Number (CN):
0.04 acres = CN of 83
0.02 acres = CN of 98
Composite Curve Number = 88
Time of Concentration = 2.1 minutes
25-year Storm Return = 0.387 cfs

Post-Development Sub-Basin 3.
Area = 0.03 acres
Curve Number (CN):
0.01 acres = CN of 98
0.02 acres = CN of 85
Composite Curve Number = 89
Time of Concentration = 2 minutes
25-year Storm Return = 0.194 cfs

Post-Development Sub-Basin 4.

Area = 0.03 acres
Curve Number (CN):
0.02 acres = CN of 98
0.01 acres = CN of 85
Composite Curve Number = 94
Time of Concentration = 2 minutes
25-year Storm Return = 0.208 cfs

Post-Development Sub-Basin 5

Area = 0.17 acres
Curve Number (CN):
0.10 acres = CN of 98
0.02 acres = CN of 85
0.05 acres = CN of 86
Composite Curve Number = 93
Time of Concentration = 2.9 minutes
25-year Storm Return = 1.166 cfs

Upon determination of the sub-basins, they were each combined and routed as necessary to model accurately the drainage patterns of the basin. This resulted in the determination of a peak flow for all the storm return periods. The detailed summary of this can be found attached to this report. However, a summary of the peak flow at the outfall of the watershed is listed below:

2-year storm return period = 1.411 cfs
5-year storm return period = 1.778 cfs
10-year storm return period = 2.097 cfs
25-year storm return period = 2.559 cfs
50-year storm return period = 2.935 cfs
100-year storm return period = 3.326 cfs

REQUIRED DETENTION AREAS

Upon completion of the analysis, it was determined that the proposed residential site plan caused an increase in storm water runoff on all storm return periods. The basins were then evaluated and routed to create detention within the site to achieve reduction of the runoff amounts to that equal to or less than the pre-development conditions. To achieve these results for this site, two detention areas were required to achieve the necessary reduction in flows. These two areas are referred to as the upper detention area and the lower detention area. These areas will be utilized to detain the flow to a point that the peak flow for all storm return periods will be less than or equal to the pre-development flows.

Both detention areas are utilizing six-inch drop pipes to achieve the necessary reduction in peak flow amounts. These structures and locations are detailed on the drainage plan drawing as attached to this report. These detention areas will tie to proposed storm sewer that is being installed as part of the lot development and is detailed on the attached drawings as well. Performance of both of the detention areas are detailed in the attached hydraulic analysis, however, a summary of the peak outflows for the lot when utilizing are listed below along with the pre-development peak flow for comparison.

Storm Return Period	Pre-Development Flow (CFS)	Post-Development Flow (CFS)
2	1.315	1.316
5	1.683	1.631
10	2.004	1.844
25	2.468	2.125
50	2.846	2.356
100	3.239	2.602

CONCLUSIONS

The proposed development as originally arranged created an increase of peak flow from storm water runoff on all the storm return periods. Upon evaluation, it was determined that there was a need for detention to control this peak flow increase. Based on site topography, and the proposed grading for the residential development, a plan was designed that generated a post-development peak flow that was either reduced or matched the pre-development peak flow for this basin. This design includes the utilization of two (2) detention areas that are detailed in the attached documentation.

It is in my opinion that the development of 401 Michael Lane will have no adverse effects on downstream drainage if the project is constructed in accordance with the plans and details prepared by our firm for the grading and detention. However, construction of this site will be at the discretion of the owner and I, as engineer, will have no direct supervision of the construction process.

The function of either existing improvements, existing downstream conditions, on this site or prior improvements to other adjacent upstream or downstream properties may pose adverse effects downstream. The purpose of this development, as proposed, will not necessarily cure pre-existing off site adverse conditions.

We appreciate the opportunity to be of service to the City of Mountain Brook. If you have any questions or need any additional information, please give us a call at (205) 733-9696.

Sincerely,

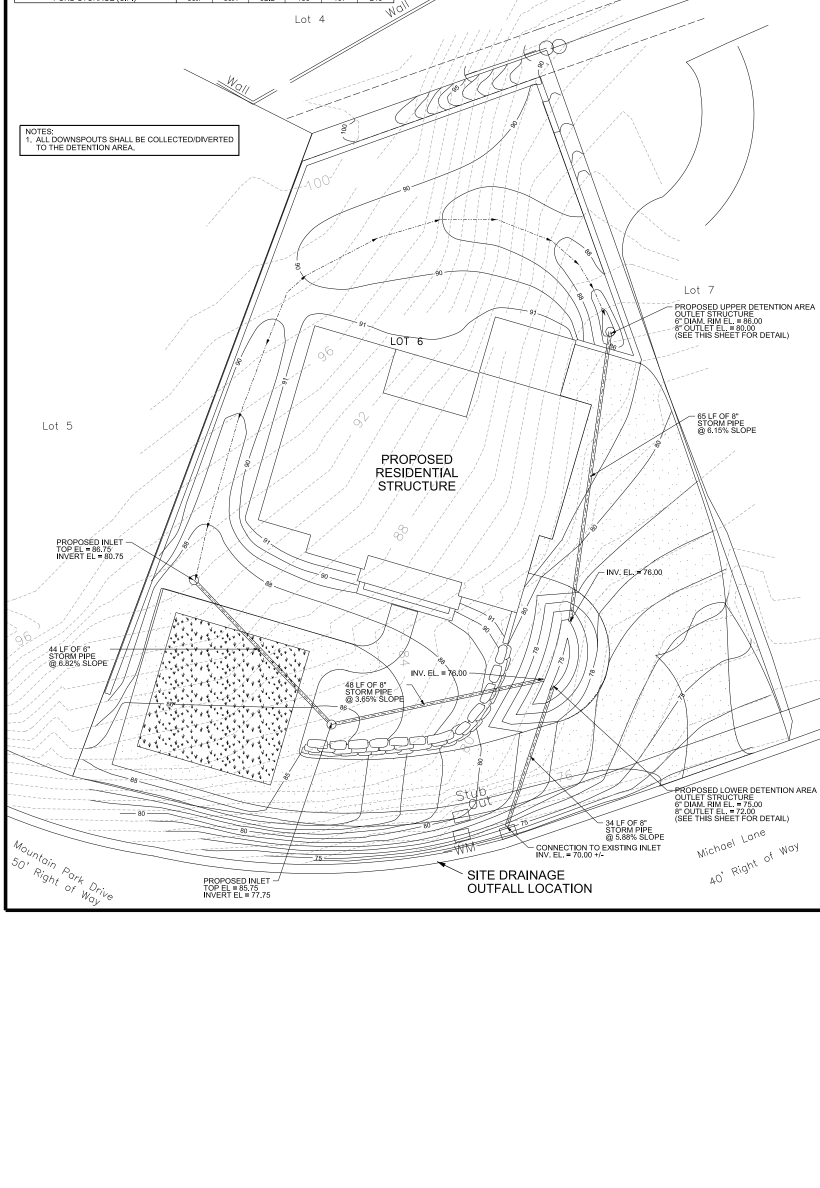
InSite Engineering, LLC

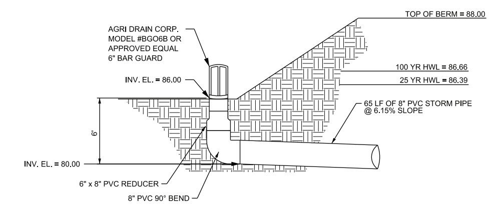
Matt S. Golab, P.E.

Copy: InSite File 21005.00/7.4

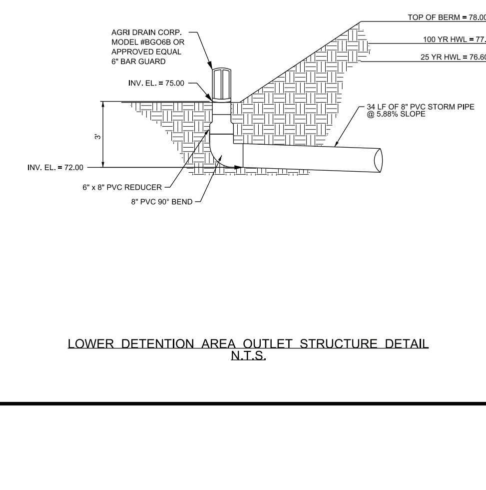
STORM WATER ANALYSIS						
PRE CONSTRUCTION DRAINAGE AREA	0.39 AC					
POST CONSTRUCTION DRAINAGE AREA	0.39 AC					
UPPER POND DRAINAGE AREA	0.10 AC					
LOWER POND DRAINAGE AREA	0.22 AC					
BYPASS AREA	0.17 AC					
DESIGN YEAR	2 YR	5 YR	10 YR	25 YR	50 YR	100 YR
PRE CONSTRUCTION FLOWRATE (C.F.S)	1.315	1.683	2.004	2.468	2.846	3.239
POST CONSTRUCTIO FLOWRATE (C.F.S.) (COMBINED POND AND BYPASS DISCHARGE)	1.316	1.631	1.844	2.125	2.356	2.602
HIGHWATER ELEVATION	75.69	76.04	76.28	76.60	76.94	77.2
POND STORAGE (C.F.)	36.7	59.4	92.2	138	187	245

NOTES:
1. ALL DOWNSPOUTS SHALL BE COLLECTED/DIVERTED TO THE DETENTION AREA.





UPPER DETENTION AREA OUTLET STRUCTURE DETAIL
N.T.S.



LOWER DETENTION AREA OUTLET STRUCTURE DETAIL
N.T.S.

INSITE
ENGINEERING
5800 FELDSPAR WAY
HOOVER, ALABAMA 35244
OFFICE (205) 733-9696
www.insiteengineering.org

CIVIL / GIS
INFRASTRUCTURE
ENVIRONMENTAL
PLANNING
COMMERCIAL
RESIDENTIAL

CONSTRUCTION PLANS FOR:

401 MICHAEL LANE DRAINAGE PLAN

MOUNTAIN BROOOK, ALABAMA

PROJECT INFO:
INSITE JOB No. 211146.00
PLOTTED: 12/06/21

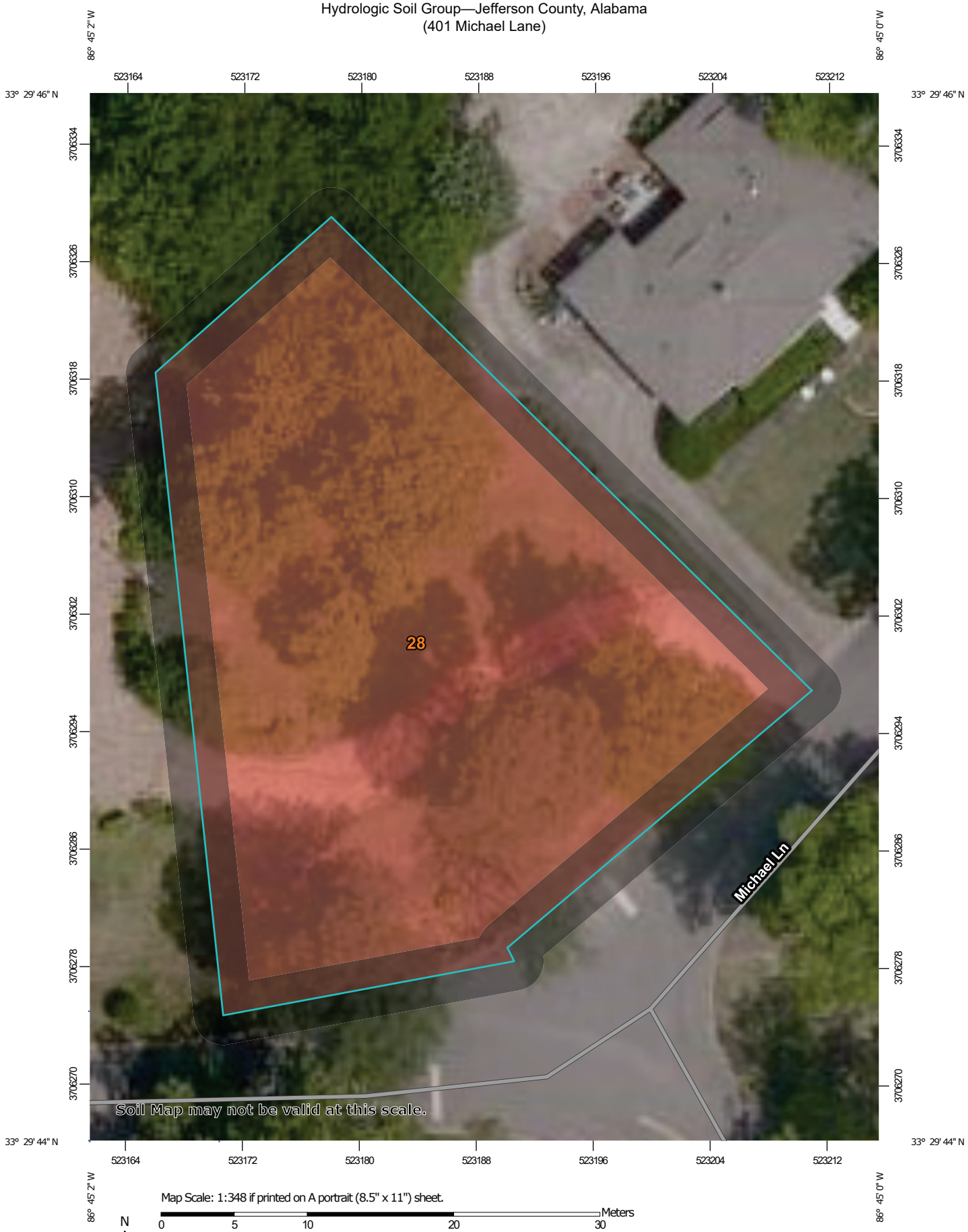
12/06/21

THIS SHEET CONTAINS:
SITE DRAINAGE PLAN

SCALE: 1"= 10'
SHEET 1 OF 1

DR-1

Hydrologic Soil Group—Jefferson County, Alabama
(401 Michael Lane)



Map Scale: 1:348 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 5 10 20 30

Feet: 0 15 30 60 90

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Jefferson County, Alabama
Survey Area Data: Version 14, Sep 15, 2021

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

Date(s) aerial images were photographed: Apr 23, 2019—Jul 9, 2019

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
28	Montevallo-Nauvoo-Urban land complex, 10 to 40 percent slopes	D	0.4	100.0%
Totals for Area of Interest			**0.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

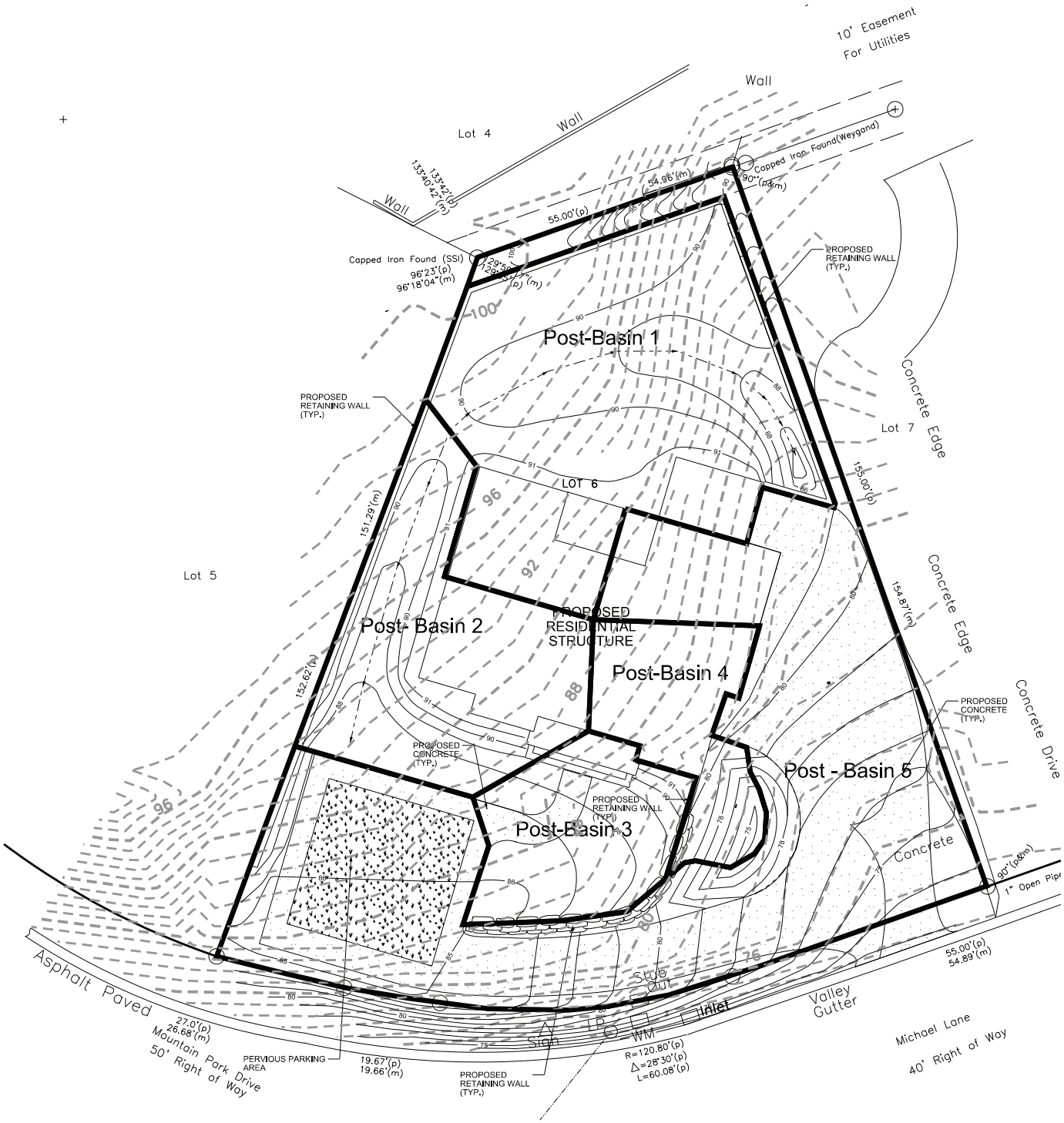
Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Pre-Development Basins

Post-Development Basins



401 Michael Lane Tc Calculations

PRE BASINS

2-year RF 4.1

Description	SF				SCF					SCF					SCF					SCF					DF-2			DF-2					
	n	Lf	S, ft/ft	T, hrs	Lf	S, ft/ft	k	V	T, hrs	Lf	S, ft/ft	k	V	T, hrs	Lf	S, ft/ft	k	V	T, hrs	Lf	S, ft/ft	k	V	T, hrs	Lf	V	T, hrs	Lf	V	T, hrs	Tc, hrs	Tc, min	Lag, hrs
Pre Basin 1 to Outfall	0.13	24	0.199	0.02	50	0.20	10.07	4.49	0.00	9	0.52	10.07	7.27	0.00	0	0.00	4.9869	0.30	0.00	0	0.01	14.9930	1.78	0.00	0	2.00	0.00	0	5.00	0.00	0.02	1.19	0.01
Pre Basin 2 to Outfall	0.40	22	0.09	0.05	29	0.44	10.07	6.70	0.00	142	0.11	14.993	4.95	0.01	0	0.00	4.9869	0.30	0.00	0	0.01	14.9930	1.78	0.00	0	2.00	0.00	0	5.00	0.00	0.06	3.67	0.04

SF Table

0.011	Smoth Sufrace
0.05	Fallow (no residye)
	Cultivated
0.06	Residue Cover < 20%
0.17	Residue Cover >20%
	Grass
0.15	Short grass, prairie
0.24	Dense grasses
0.41	Bermudagrass
0.13	Range (natural)
	Woods
0.4	Light underbrush
0.8	Dense underbrush

POST BASINS

2-year RF 4.1

Description	SF				SCF					SCF					SCF					SCF					DF-2			DF-2					
	n	Lf	S, ft/ft	T, hrs	Lf	S, ft/ft	k	V	T, hrs	Lf	S, ft/ft	k	V	T, hrs	Lf	S, ft/ft	k	V	T, hrs	Lf	S, ft/ft	k	V	T, hrs	Lf	V	T, hrs	Lf	V	T, hrs	Tc, hrs	Tc, min	Lag, hrs
Post Basin 1 to Detention	0.01	31	0.2	0.00	23	0.01	20.308	2.03	0.00	16	0.08	14.993	4.11	0.00	81	0.02	14.9930	2.35	0.01	0	0.01	14.9930	1.78	0.00	0	2.00	0.00	0	5.00	0.00	0.02	0.99	0.01
Post Basin 2 to Detention	0.24	13	0.04	0.03	60	0.05	14.993	3.45	0.00	0	0.08	14.993	4.11	0.00	0	0.02	14.9930	2.35	0.00	0	0.01	14.9930	1.78	0.00	0	2.00	0.00	0	5.00	0.00	0.04	2.11	0.02
Post Basin 3 to Detention	0.24	18	0.119	0.03	30	0.12	14.993	5.17	0.00	0	0.08	14.993	4.11	0.00	0	0.02	14.9930	2.35	0.00	0	0.01	14.9930	1.78	0.00	0	2.00	0.00	0	5.00	0.00	0.03	1.66	0.02
Post Basin 4 to Detention	0.01	31	0.2	0.00	23	0.01	20.308	2.03	0.00	10	0.33	14.993	8.61	0.00	0	0.02	14.9930	2.35	0.00	0	0.01	14.9930	1.78	0.00	0	2.00	0.00	0	5.00	0.00	0.01	0.38	0.00
Post Basin 5 to Outfall	0.24	22	0.068	0.04	111	0.17	14.993	6.12	0.01	83	0.09	20.308	6.11	0.00	0	0.02	14.9930	2.35	0.00	0	0.01	14.9930	1.78	0.00	0	2.00	0.00	0	5.00	0.00	0.05	2.85	0.03

SCF Table

k	Description
2.4934	Forest w/ heavy ground litter
4.9869	Woodland
6.9882	Short grass pasture
8.9895	Cultivated short row
10.007	Nearly bare & untilled
14.993	Grassed
16.109	Unpaved
20.308	Paved

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401MichaelBasins.gpw

Hydraflow Hydrographs by Intelisolve v9.1

Monday, Dec 6, 2021

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Hydrograph Return Period Recap

Hydraflow Hydrographs by Intelisolve v9.1

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	SCS Runoff	-------	-------	0.277	-------	0.362	0.436	0.544	0.633	0.725	Pre-Development Basin 1
2	SCS Runoff	-------	-------	1.049	-------	1.336	1.586	1.948	2.242	2.548	Pre-Development Basin 2
3	Combine	1, 2	-------	1.315	-------	1.683	2.004	2.468	2.846	3.239	Total Pre-Devlopment Flow to Outfall
5	SCS Runoff	-------	-------	0.307	-------	0.402	0.484	0.605	0.703	0.805	Post-Development Basin 1
6	Reservoir	5	-------	0.301	-------	0.393	0.467	0.516	0.595	0.671	Upper Detention
7	SCS Runoff	-------	-------	0.209	-------	0.266	0.316	0.387	0.446	0.506	Post-Development Basin 2
8	SCS Runoff	-------	-------	0.104	-------	0.133	0.158	0.194	0.223	0.253	Post-Development Basin 3
9	SCS Runoff	-------	-------	0.121	-------	0.148	0.173	0.208	0.236	0.266	Pre-Development Basin 4
10	Combine	6, 7, 8, 9	-------	0.731	-------	0.937	1.113	1.254	1.448	1.639	Total Flow to Lower Detention
11	Reservoir	10	-------	0.683	-------	0.844	0.933	1.045	1.153	1.225	401 Michael Performanc
12	SCS Runoff	-------	-------	0.670	-------	0.829	0.967	1.166	1.327	1.496	Post-Development Basin 5
13	Combine	5, 7, 8, 9, 12	-------	1.411	-------	1.778	2.097	2.559	2.935	3.326	Total flow undetained
14	Combine	11, 12,	-------	1.316	-------	1.631	1.844	2.125	2.356	2.602	Total Post Flow to Outfall

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.277	1	722	753	----	------	------	Pre-Development Basin 1
2	SCS Runoff	1.049	1	723	3,073	----	------	------	Pre-Development Basin 2
3	Combine	1.315	1	723	3,826	1, 2	------	------	Total Pre-Devlopment Flow to Outfall
5	SCS Runoff	0.307	1	722	837	----	------	------	Post-Development Basin 1
6	Reservoir	0.301	1	723	837	5	86.15	18.1	Upper Detention
7	SCS Runoff	0.209	1	722	576	----	------	------	Post-Development Basin 2
8	SCS Runoff	0.104	1	722	288	----	------	------	Post-Development Basin 3
9	SCS Runoff	0.121	1	722	349	----	------	------	Pre-Development Basin 4
10	Combine	0.731	1	722	2,051	6, 7, 8, 9	------	------	Total Flow to Lower Detention
11	Reservoir	0.683	1	724	2,051	10	75.69	36.7	401 Michael Performanc
12	SCS Runoff	0.670	1	722	1,919	----	------	------	Post-Development Basin 5
13	Combine	1.411	1	722	3,970	5, 7, 8, 9, 12	------	------	Total flow undetained
14	Combine	1.316	1	723	3,970	11, 12,	------	------	Total Post Flow to Outfall

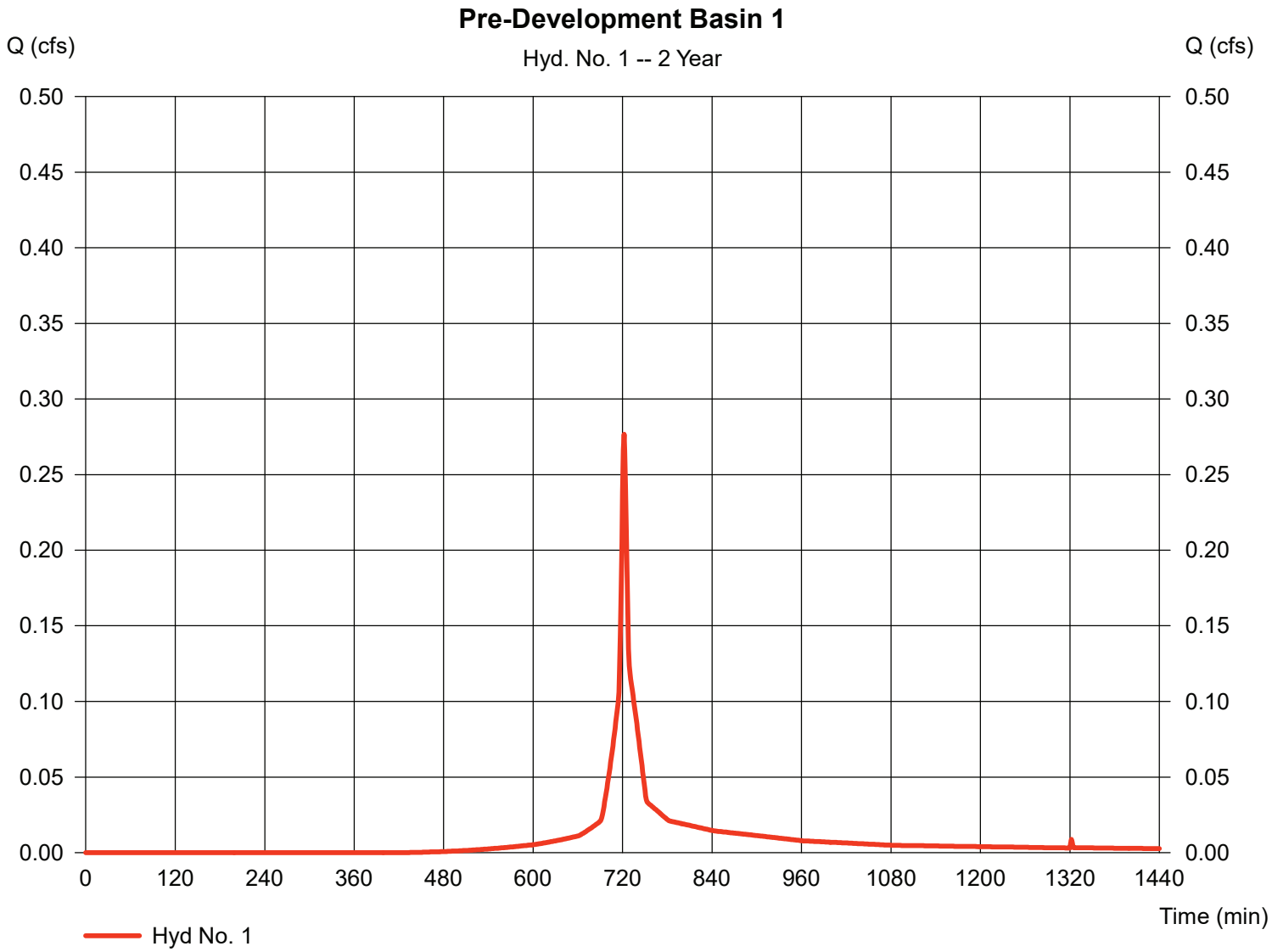
Hydrograph Report

Hyd. No. 1

Pre-Development Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.277 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	753 cuft
Drainage area	=	0.090 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	4.10 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 85) + (0.070 x 84)] / 0.090



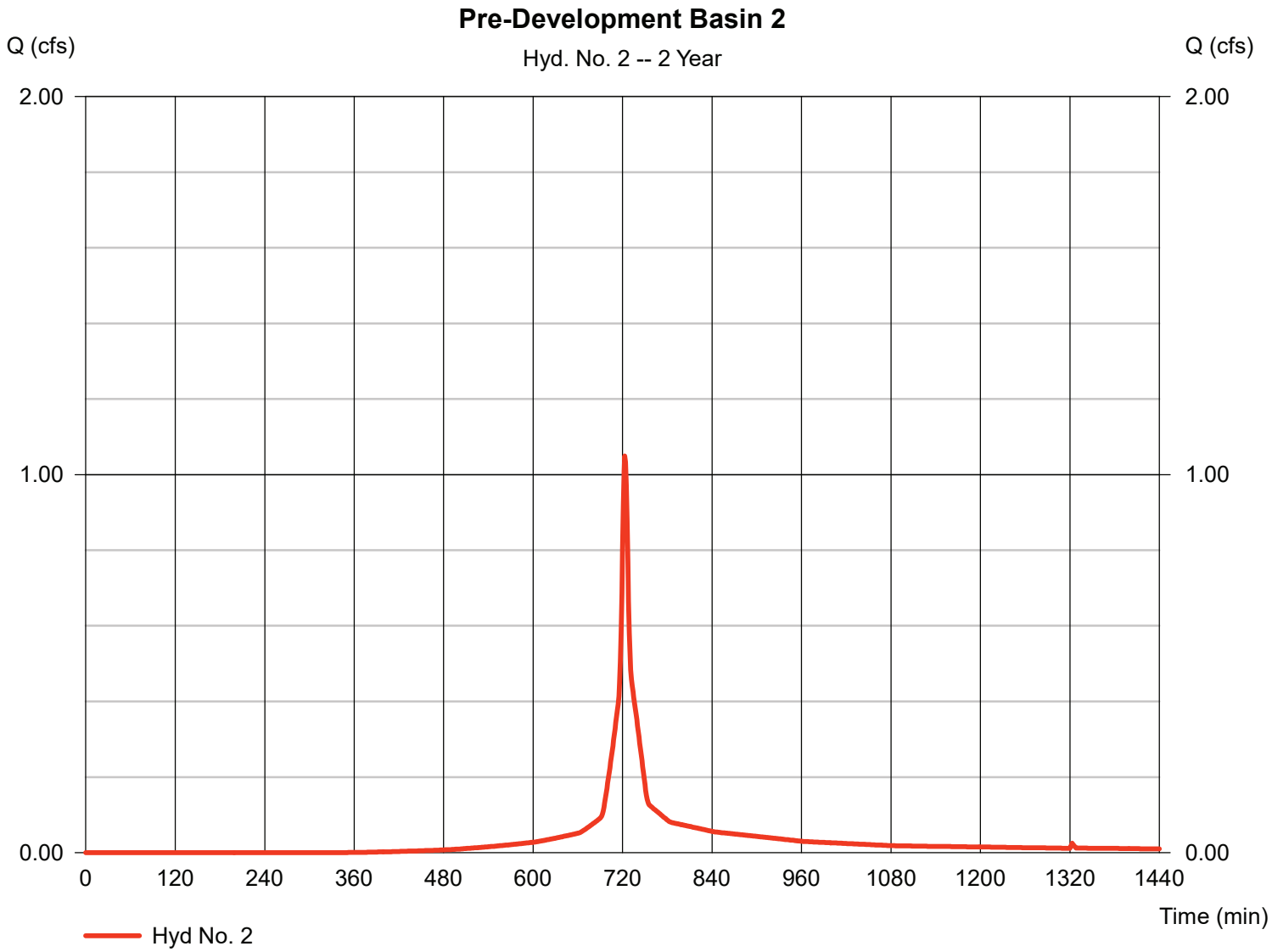
Hydrograph Report

Hyd. No. 2

Pre-Development Basin 2

Hydrograph type	= SCS Runoff	Peak discharge	= 1.049 cfs
Storm frequency	= 2 yrs	Time to peak	= 723 min
Time interval	= 1 min	Hyd. volume	= 3,073 cuft
Drainage area	= 0.300 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 3.70 min
Total precip.	= 4.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.054 x 83) + (0.123 x 86) + (0.057 x 98) + (0.064 x 85)] / 0.300

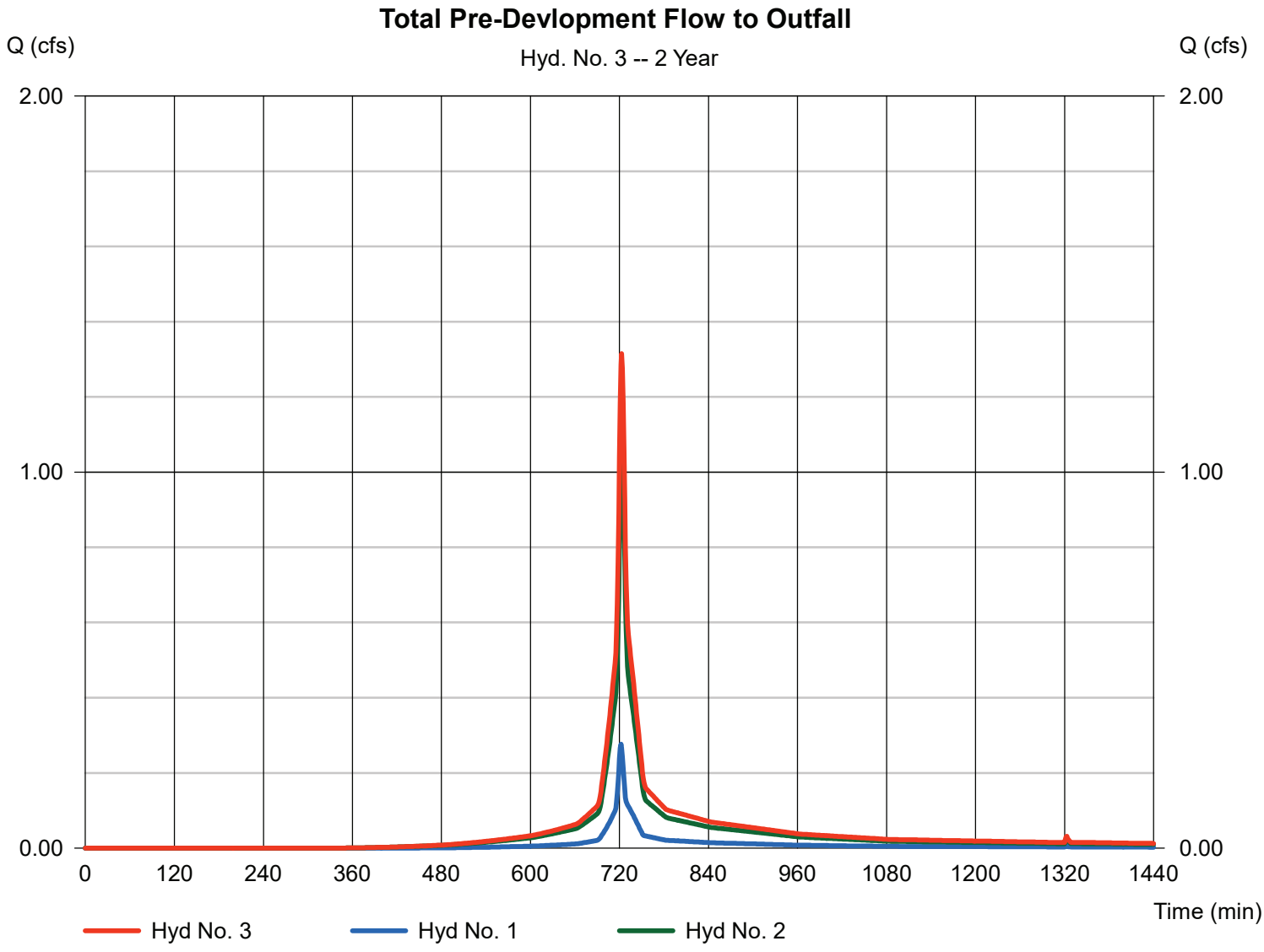


Hydrograph Report

Hyd. No. 3

Total Pre-Devlopment Flow to Outfall

Hydrograph type	= Combine	Peak discharge	= 1.315 cfs
Storm frequency	= 2 yrs	Time to peak	= 723 min
Time interval	= 1 min	Hyd. volume	= 3,826 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 0.390 ac



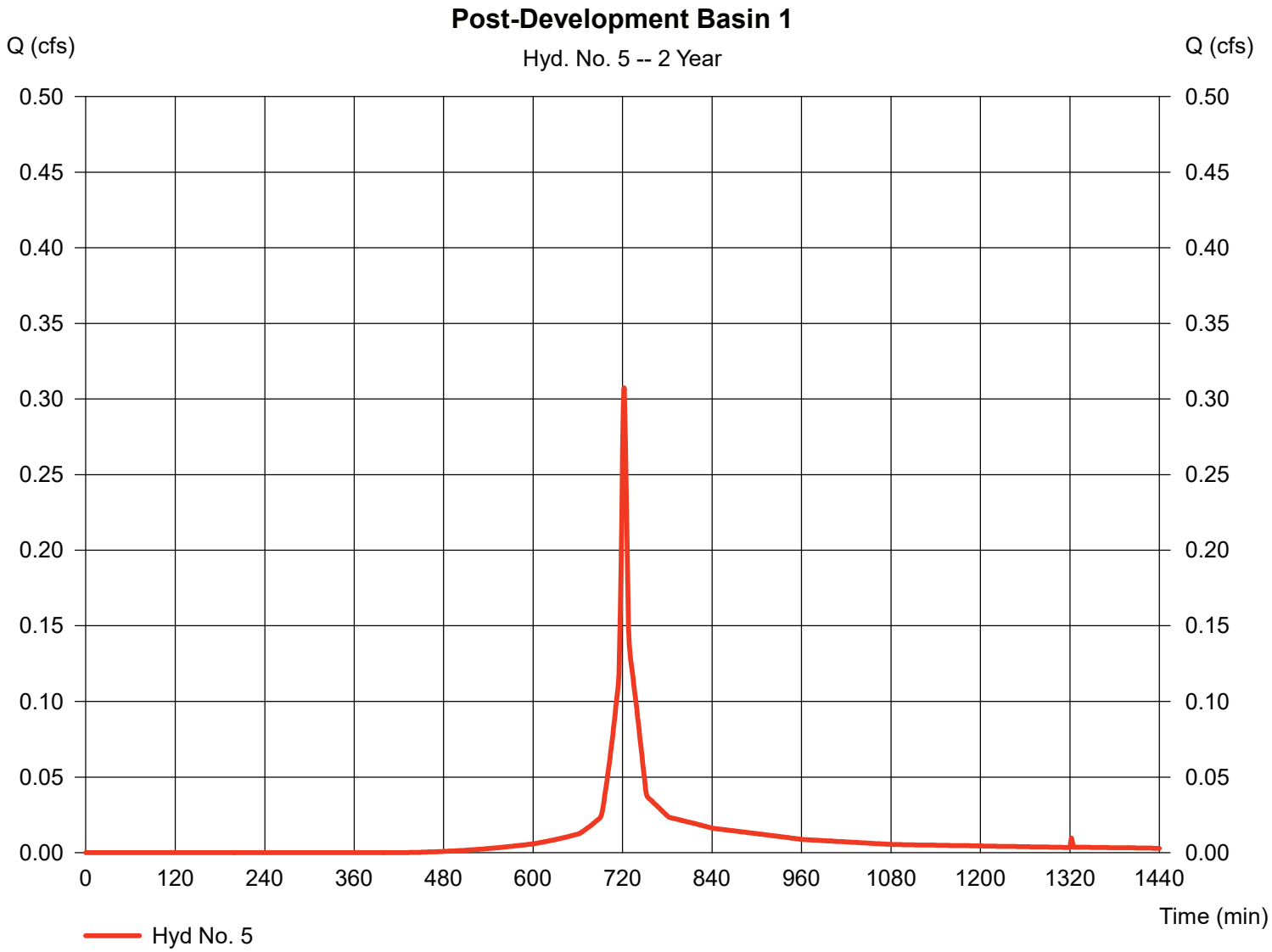
Hydrograph Report

Hyd. No. 5

Post-Development Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.307 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	837 cuft
Drainage area	=	0.100 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	4.10 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 98) + (0.020 x 83) + (0.060 x 80)] / 0.100



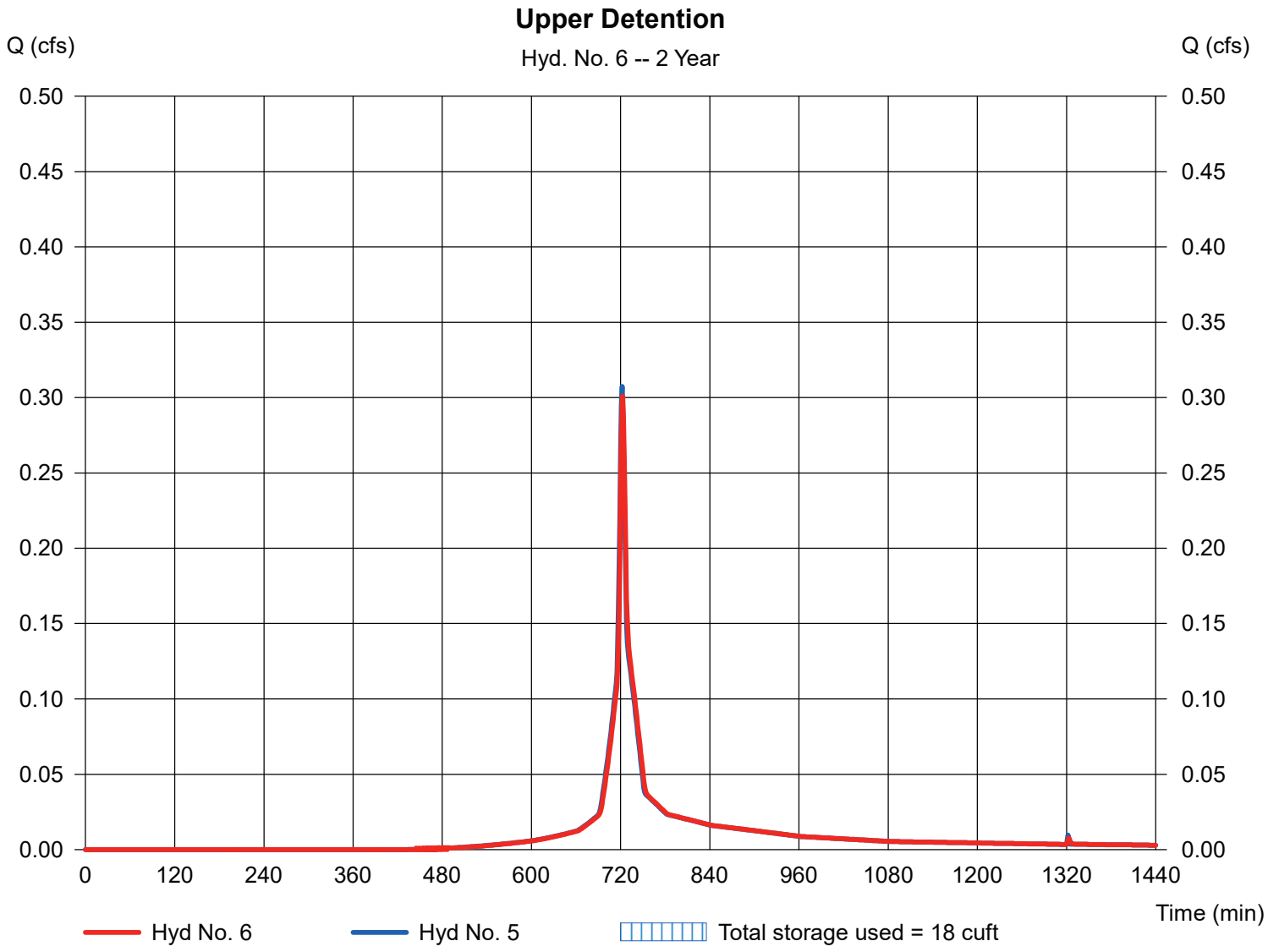
Hydrograph Report

Hyd. No. 6

Upper Detention

Hydrograph type	=	Reservoir	Peak discharge	=	0.301 cfs
Storm frequency	=	2 yrs	Time to peak	=	723 min
Time interval	=	1 min	Hyd. volume	=	837 cuft
Inflow hyd. No.	=	5 - Post-Development Basin 1	Max. Elevation	=	86.15 ft
Reservoir name	=	401 Upper Detention	Max. Storage	=	18 cuft

Storage Indication method used.



Pond Report

Pond No. 2 - 401 Upper Detention

Pond Data

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 86.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	86.00	90	0	0
1.00	87.00	160	125	125
2.00	88.00	330	245	370

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 80.00	0.00	0.00	0.00
Length (ft)	= 50.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 1.57	0.00	0.00	0.00
Crest El. (ft)	= 86.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	No	No	No

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

TW Elev. (ft) = 0.00

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	86.00	0.00	---	---	---	0.00	---	---	---	---	---	0.00
1.00	125	87.00	3.46 oc	---	---	---	0.83 ic	---	---	---	---	---	0.83
2.00	370	88.00	3.46 oc	---	---	---	1.17 ic	---	---	---	---	---	1.17

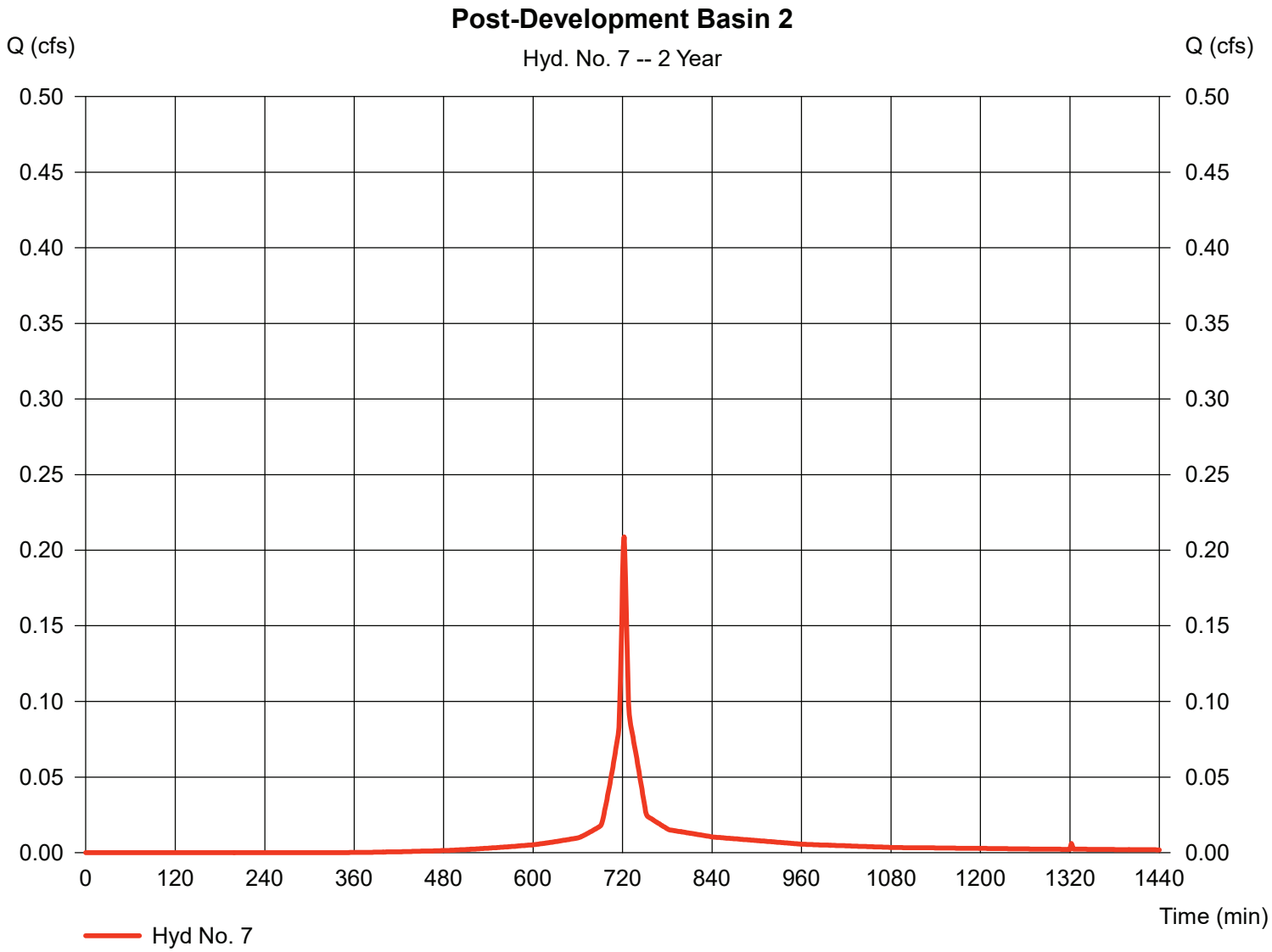
Hydrograph Report

Hyd. No. 7

Post-Development Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.209 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	576 cuft
Drainage area	=	0.060 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.11 min
Total precip.	=	4.10 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.037 x 83) + (0.020 x 98)] / 0.060



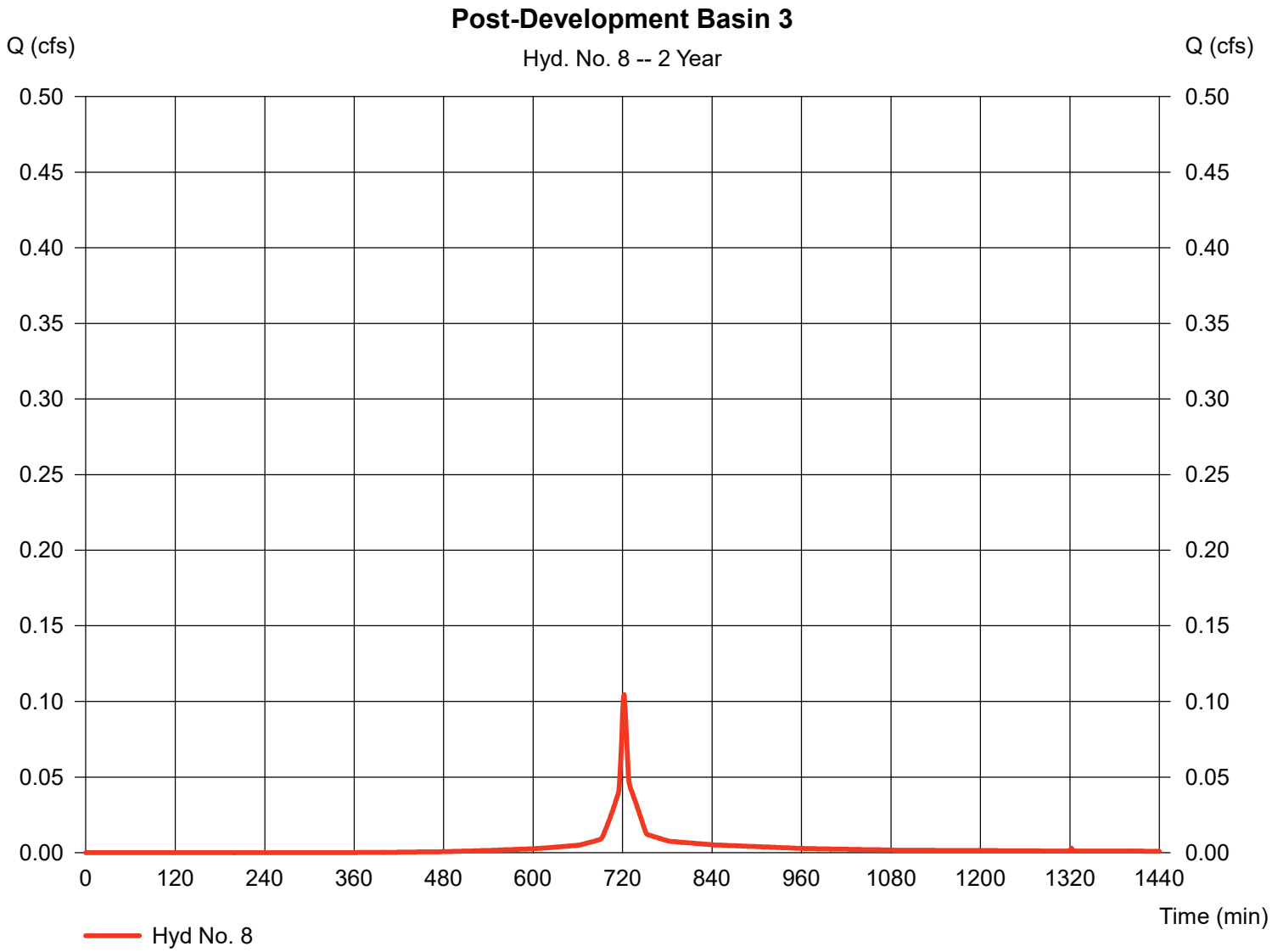
Hydrograph Report

Hyd. No. 8

Post-Development Basin 3

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.104 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	288 cuft
Drainage area	=	0.030 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	4.10 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.007 x 98) + (0.023 x 85)] / 0.030



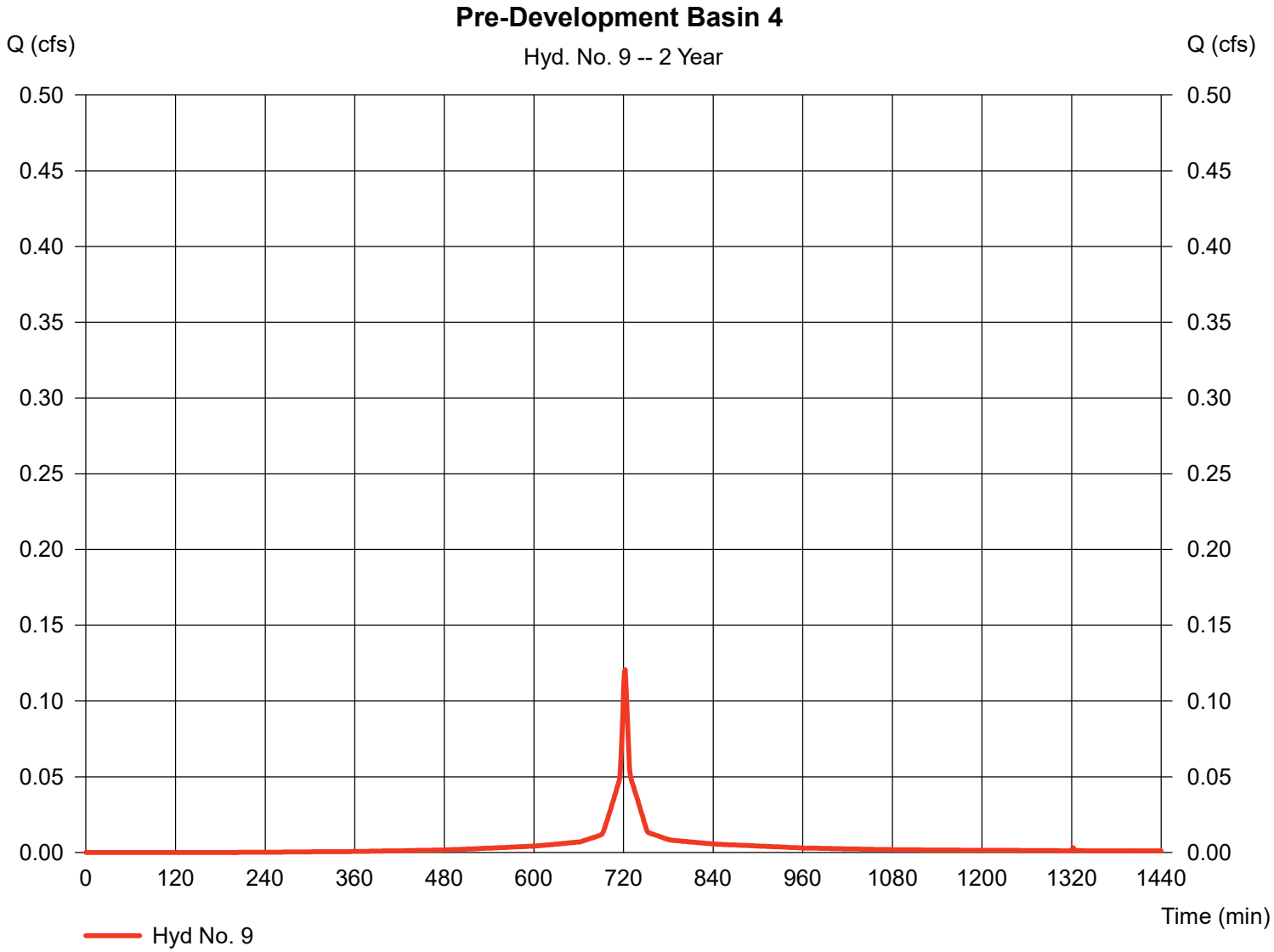
Hydrograph Report

Hyd. No. 9

Pre-Development Basin 4

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.121 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	349 cuft
Drainage area	=	0.030 ac	Curve number	=	94*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	4.10 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 98) + (0.010 x 85)] / 0.030

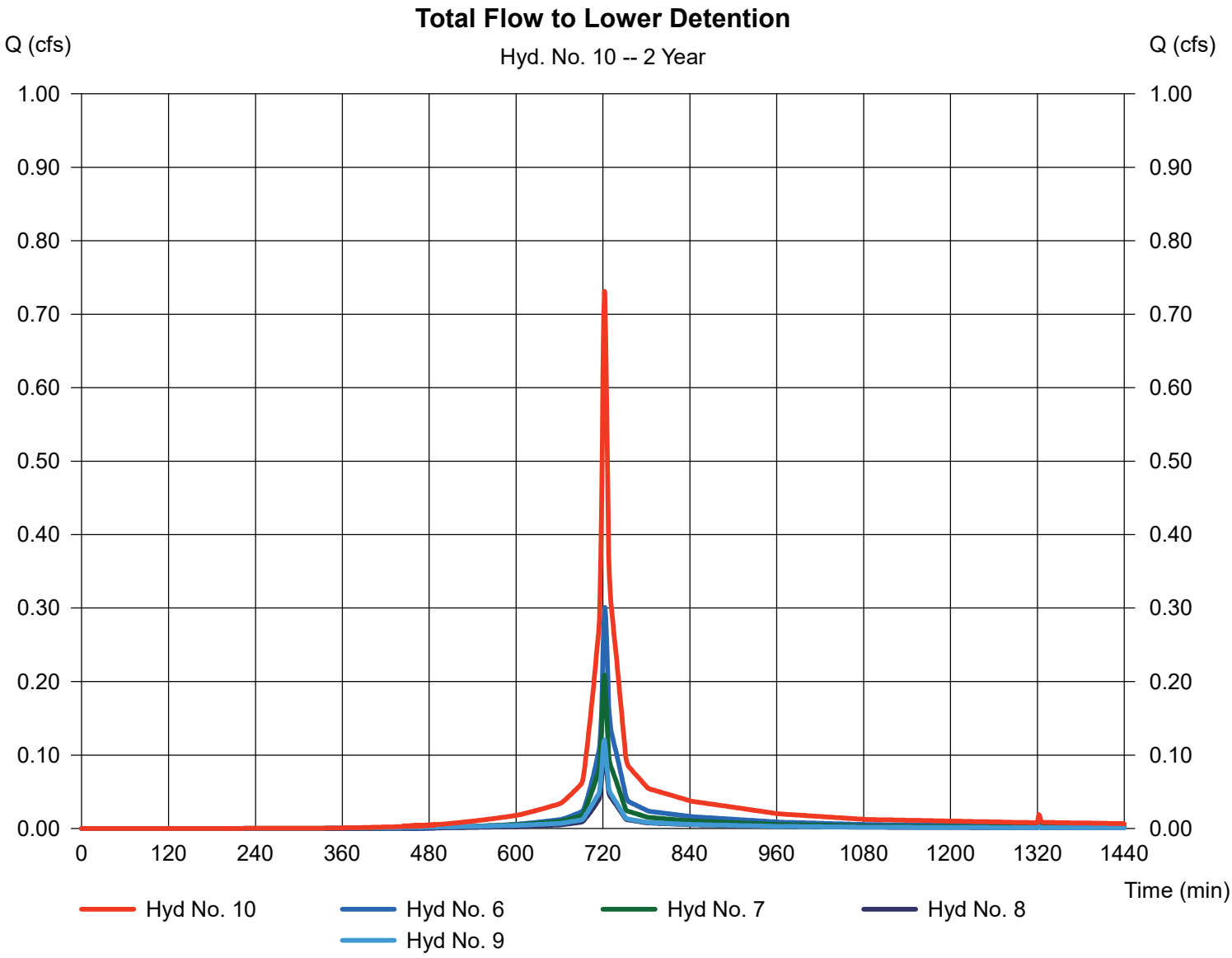


Hydrograph Report

Hyd. No. 10

Total Flow to Lower Detention

Hydrograph type	= Combine	Peak discharge	= 0.731 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 2,051 cuft
Inflow hyds.	= 6, 7, 8, 9	Contrib. drain. area	= 0.120 ac



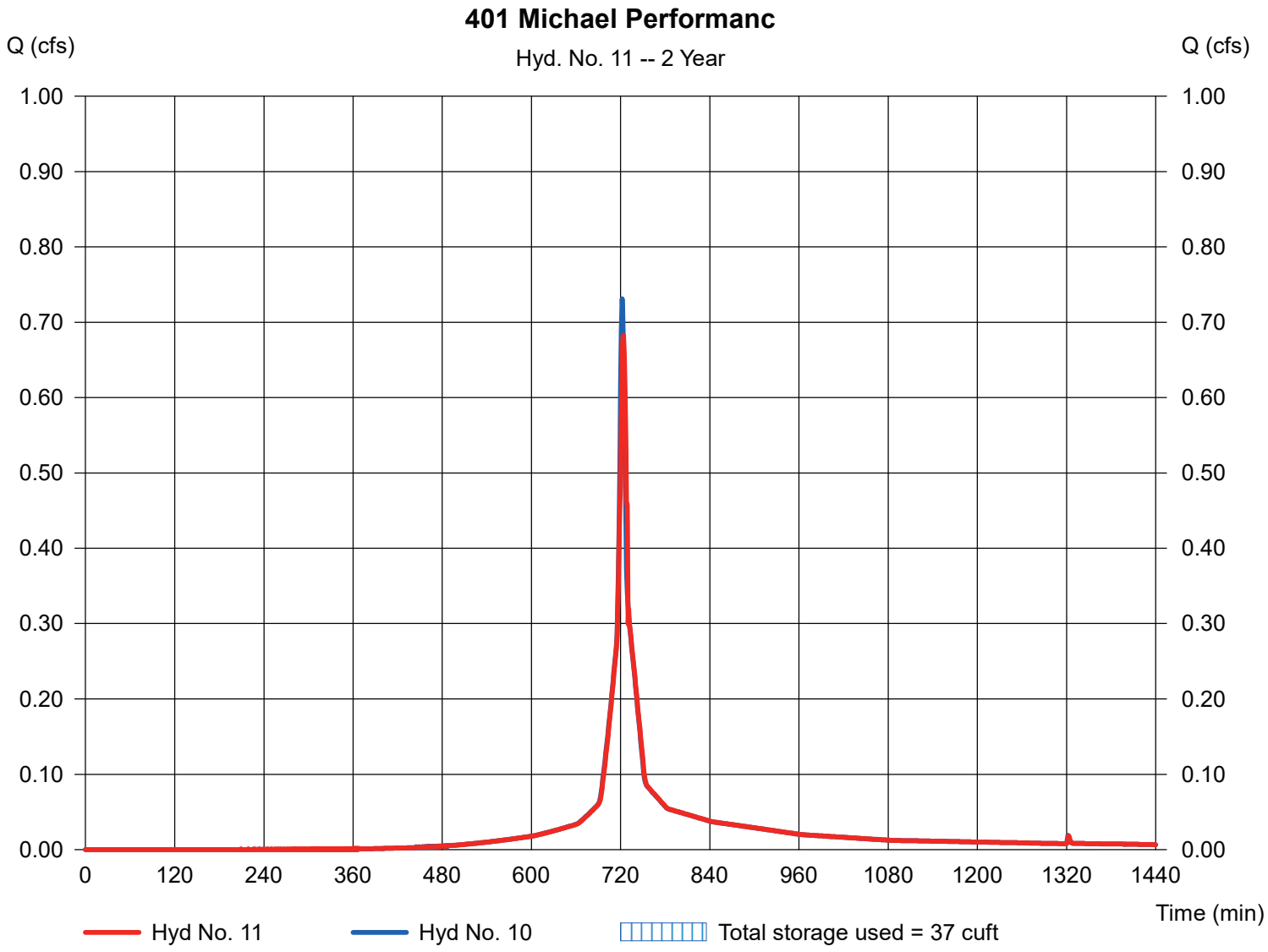
Hydrograph Report

Hyd. No. 11

401 Michael Performanc

Hydrograph type	=	Reservoir	Peak discharge	=	0.683 cfs
Storm frequency	=	2 yrs	Time to peak	=	724 min
Time interval	=	1 min	Hyd. volume	=	2,051 cuft
Inflow hyd. No.	=	10 - Total Flow to Lower Detention	Max. Elevation	=	75.69 ft
Reservoir name	=	401 Michael Detention	Max. Storage	=	37 cuft

Storage Indication method used.



Pond No. 1 - 401 Michael Detention

Pond Data

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 75.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	75.00	20	0	0
1.00	76.00	88	54	54
2.00	77.00	196	142	196
3.00	78.00	322	259	455

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	Inactive	0.00	Inactive
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	1	0	1
Invert El. (ft)	= 72.00	0.00	0.00	0.00
Length (ft)	= 100.00	0.00	0.00	0.00
Slope (%)	= 10.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 1.57	0.00	0.00	0.00
Crest El. (ft)	= 75.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	75.00	0.00	---	---	---	0.00	---	---	---	---	---	0.00
1.00	54	76.00	2.74 ic	---	---	---	0.83 ic	---	---	---	---	---	0.83
2.00	196	77.00	2.74 ic	---	---	---	1.17 ic	---	---	---	---	---	1.17
3.00	455	78.00	2.74 ic	---	---	---	1.43 ic	---	---	---	---	---	1.43

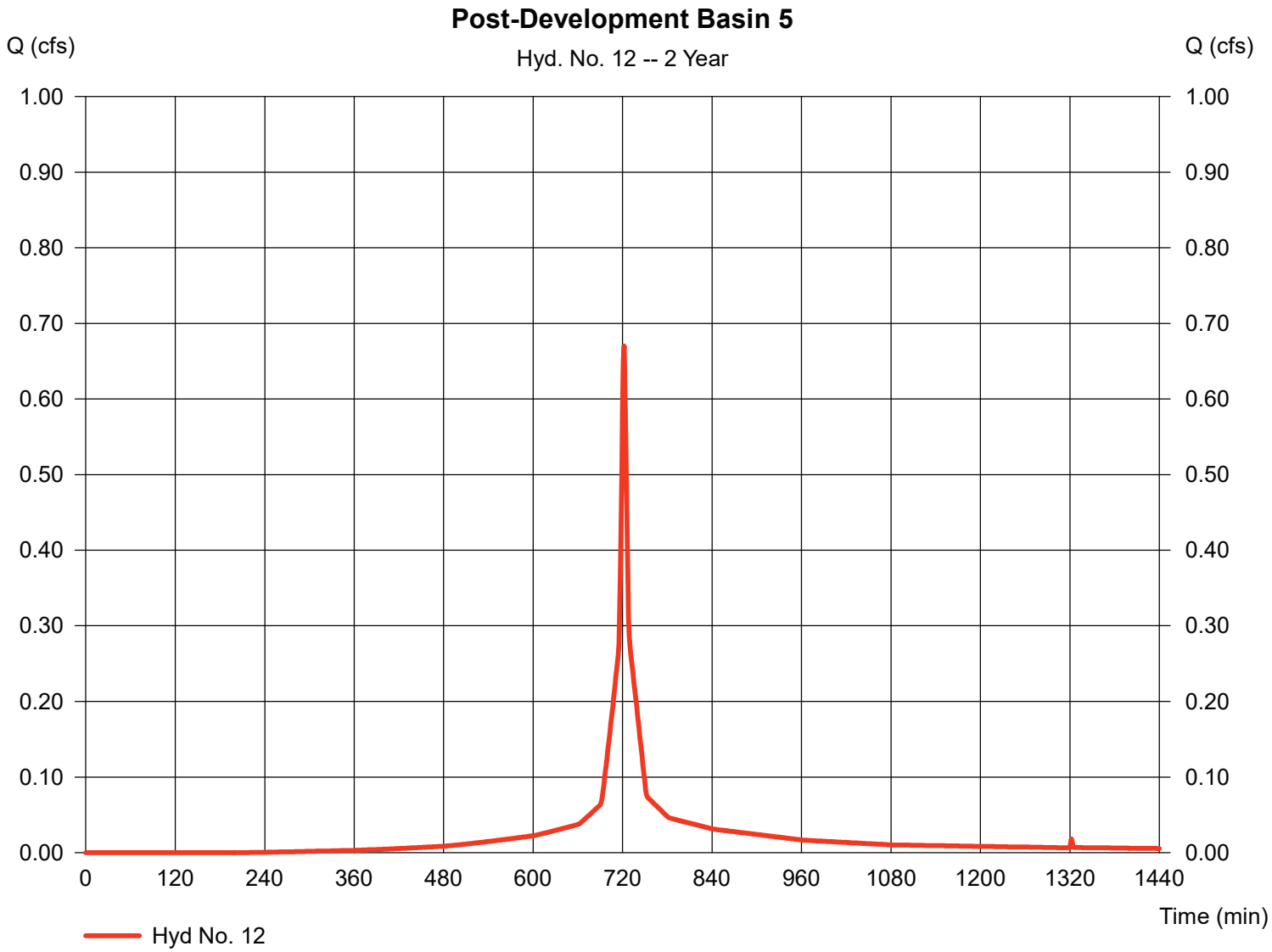
Hydrograph Report

Hyd. No. 12

Post-Development Basin 5

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.670 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	1,919 cuft
Drainage area	=	0.170 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.90 min
Total precip.	=	4.10 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.100 x 98) + (0.020 x 85) + (0.050 x 86)] / 0.170

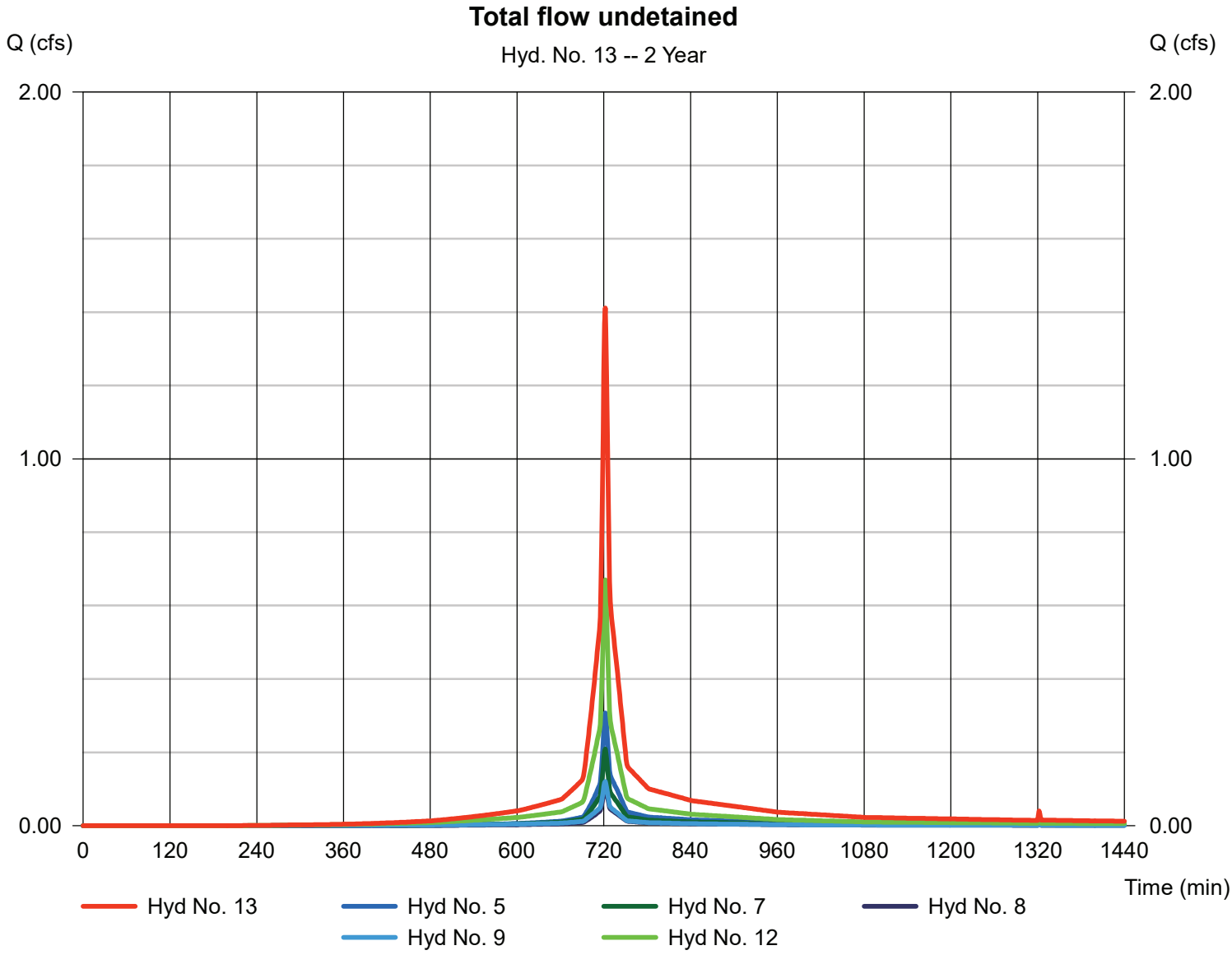


Hydrograph Report

Hyd. No. 13

Total flow undetained

Hydrograph type	= Combine	Peak discharge	= 1.411 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 3,970 cuft
Inflow hyds.	= 5, 7, 8, 9, 12	Contrib. drain. area	= 0.390 ac

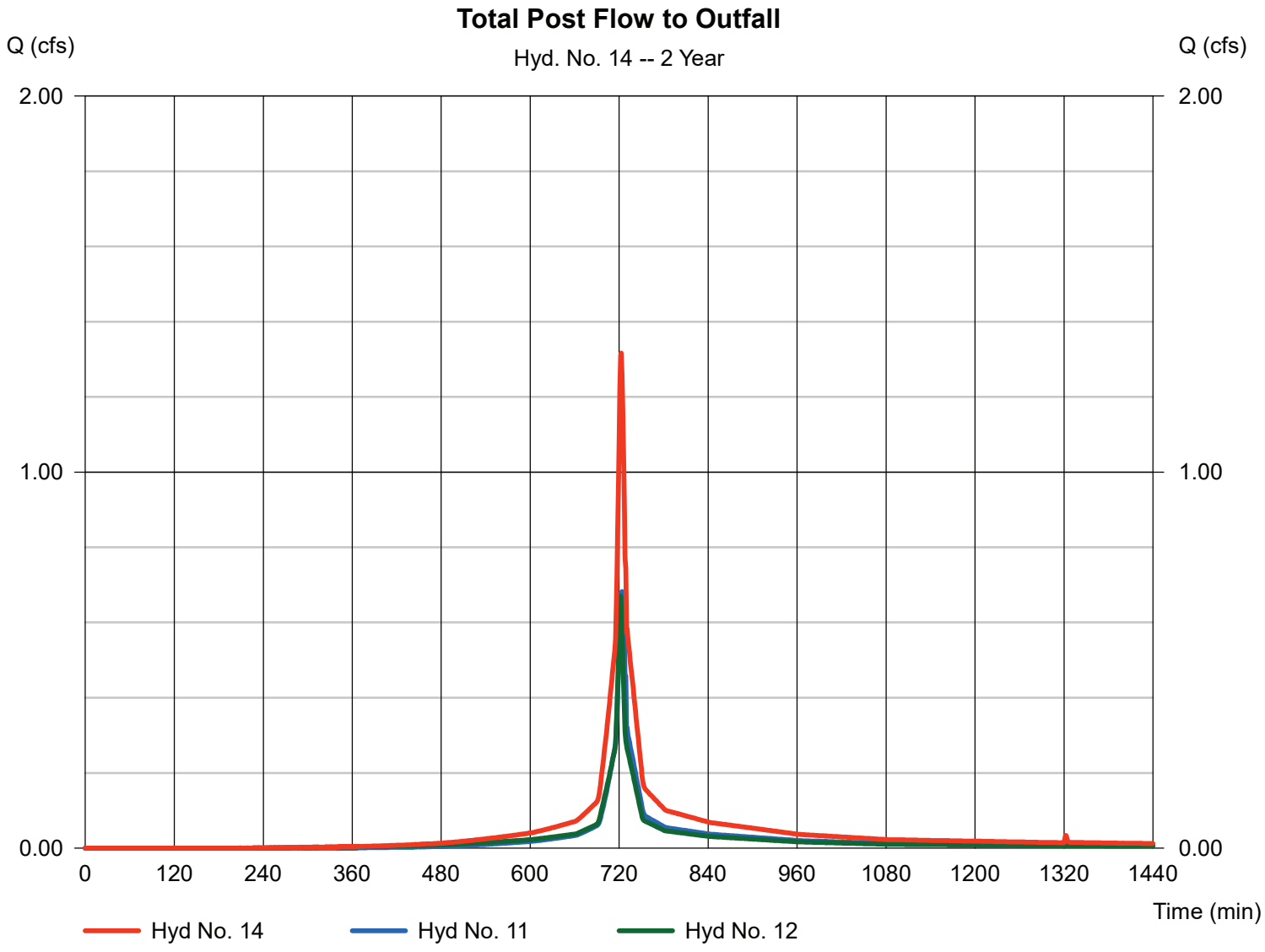


Hydrograph Report

Hyd. No. 14

Total Post Flow to Outfall

Hydrograph type	= Combine	Peak discharge	= 1.316 cfs
Storm frequency	= 2 yrs	Time to peak	= 723 min
Time interval	= 1 min	Hyd. volume	= 3,970 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 0.170 ac



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.362	1	722	990	----	------	------	Pre-Development Basin 1
2	SCS Runoff	1.336	1	723	3,954	----	------	------	Pre-Development Basin 2
3	Combine	1.683	1	723	4,945	1, 2	------	------	Total Pre-Devlopment Flow to Outfall
5	SCS Runoff	0.402	1	722	1,101	----	------	------	Post-Development Basin 1
6	Reservoir	0.393	1	723	1,100	5	86.18	21.9	Upper Detention
7	SCS Runoff	0.266	1	722	741	----	------	------	Post-Development Basin 2
8	SCS Runoff	0.133	1	722	371	----	------	------	Post-Development Basin 3
9	SCS Runoff	0.148	1	722	436	----	------	------	Pre-Development Basin 4
10	Combine	0.937	1	722	2,648	6, 7, 8, 9	------	------	Total Flow to Lower Detention
11	Reservoir	0.844	1	724	2,648	10	76.04	59.4	401 Michael Performanc
12	SCS Runoff	0.829	1	722	2,406	----	------	------	Post-Development Basin 5
13	Combine	1.778	1	722	5,054	5, 7, 8, 9, 12	------	------	Total flow undetained
14	Combine	1.631	1	722	5,054	11, 12,	------	------	Total Post Flow to Outfall

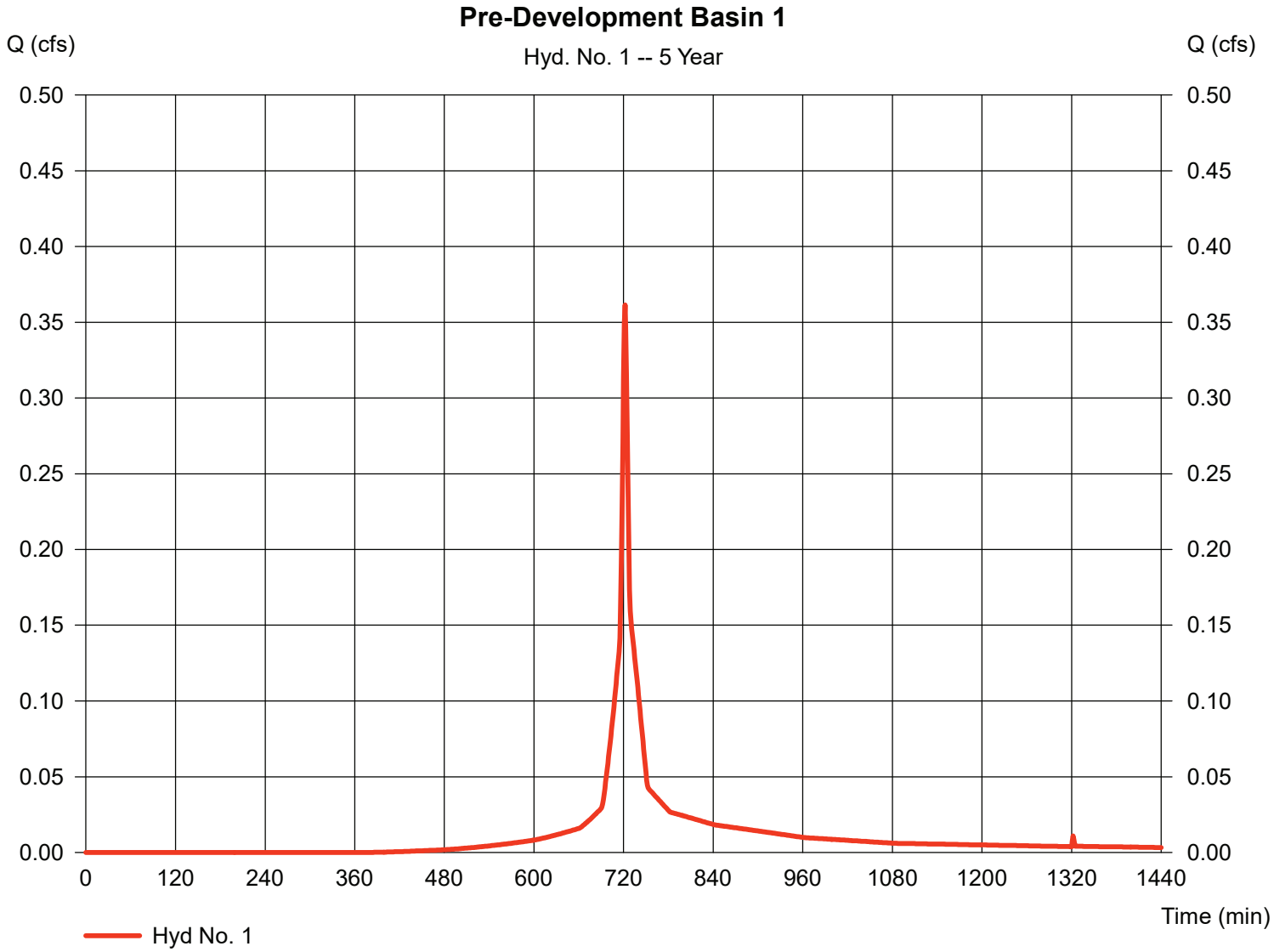
Hydrograph Report

Hyd. No. 1

Pre-Development Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.362 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	990 cuft
Drainage area	=	0.090 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	4.96 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 85) + (0.070 x 84)] / 0.090



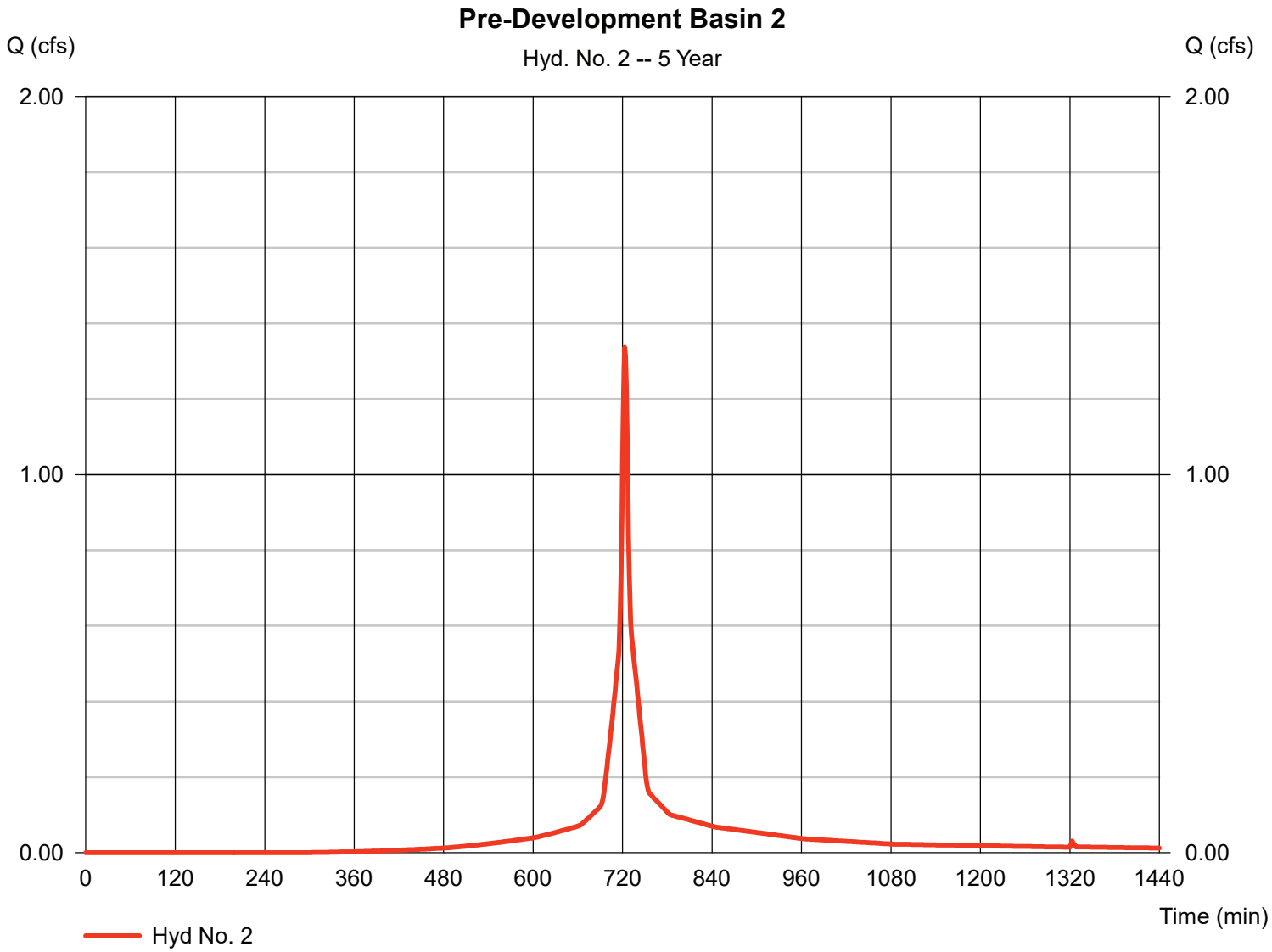
Hydrograph Report

Hyd. No. 2

Pre-Development Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.336 cfs
Storm frequency	=	5 yrs	Time to peak	=	723 min
Time interval	=	1 min	Hyd. volume	=	3,954 cuft
Drainage area	=	0.300 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	3.70 min
Total precip.	=	4.96 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.054 x 83) + (0.123 x 86) + (0.057 x 98) + (0.064 x 85)] / 0.300

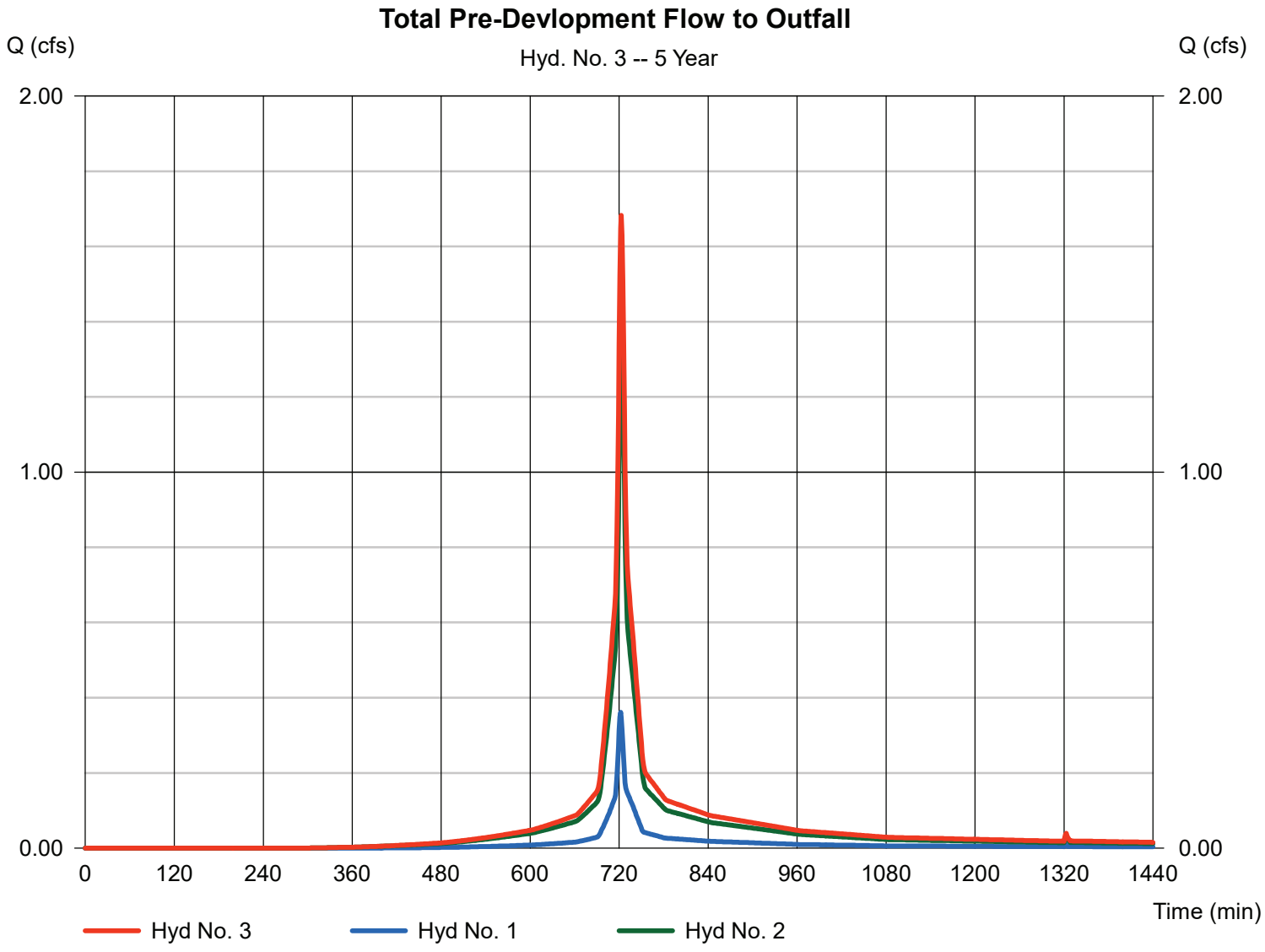


Hydrograph Report

Hyd. No. 3

Total Pre-Devlopment Flow to Outfall

Hydrograph type	= Combine	Peak discharge	= 1.683 cfs
Storm frequency	= 5 yrs	Time to peak	= 723 min
Time interval	= 1 min	Hyd. volume	= 4,945 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 0.390 ac



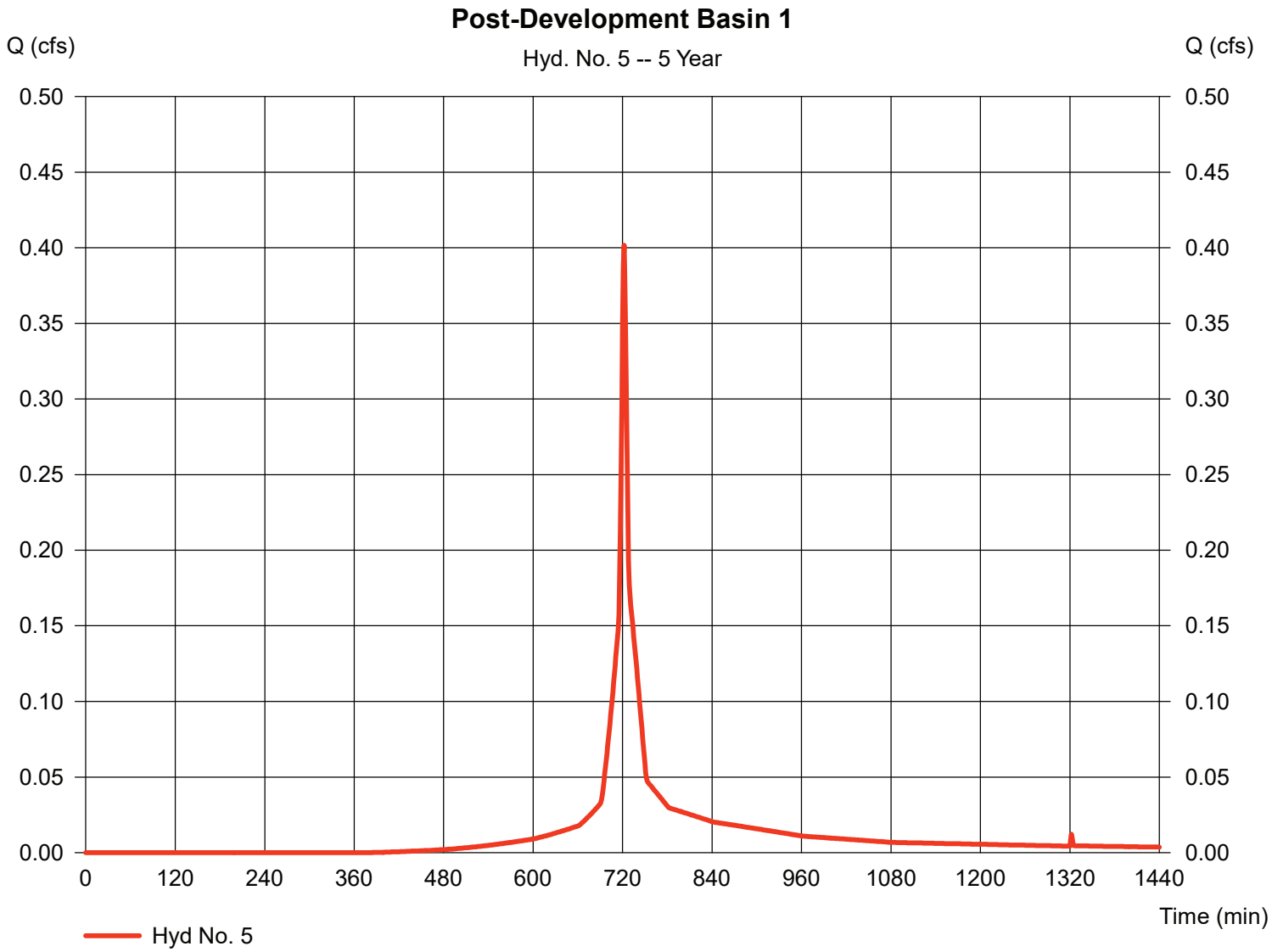
Hydrograph Report

Hyd. No. 5

Post-Development Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.402 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	1,101 cuft
Drainage area	=	0.100 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	4.96 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 98) + (0.020 x 83) + (0.060 x 80)] / 0.100



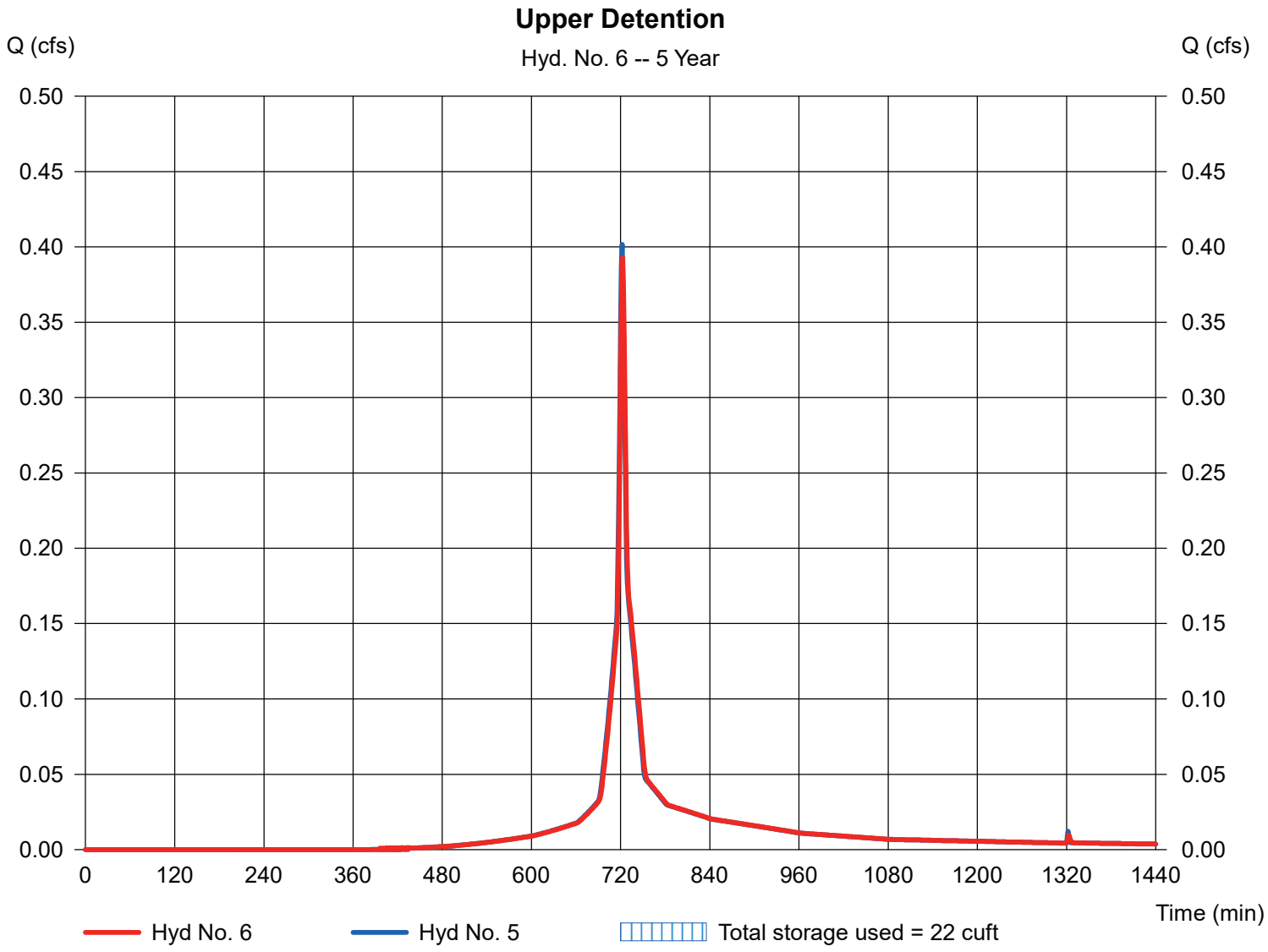
Hydrograph Report

Hyd. No. 6

Upper Detention

Hydrograph type	=	Reservoir	Peak discharge	=	0.393 cfs
Storm frequency	=	5 yrs	Time to peak	=	723 min
Time interval	=	1 min	Hyd. volume	=	1,100 cuft
Inflow hyd. No.	=	5 - Post-Development Basin 1	Max. Elevation	=	86.18 ft
Reservoir name	=	401 Upper Detention	Max. Storage	=	22 cuft

Storage Indication method used.



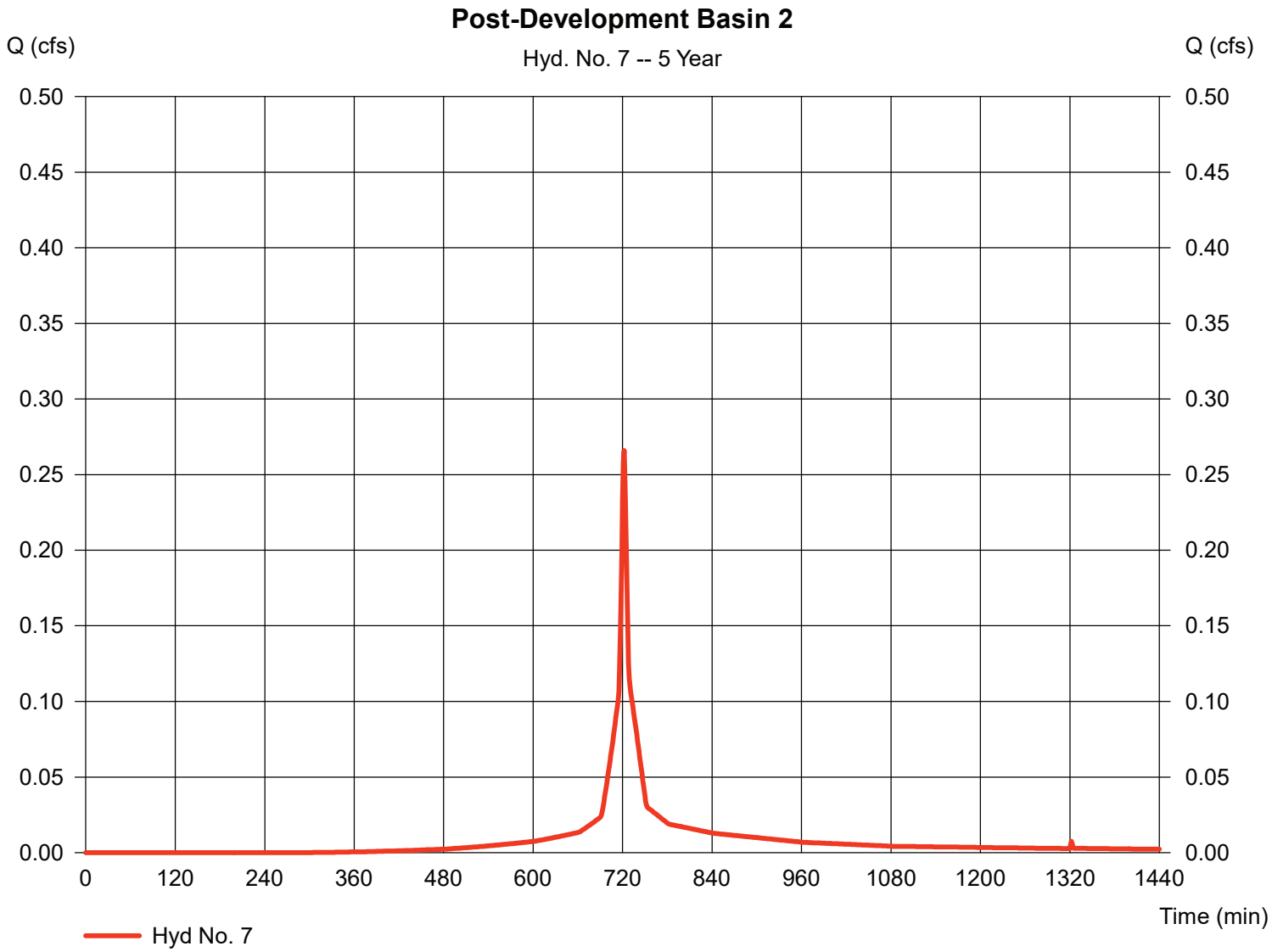
Hydrograph Report

Hyd. No. 7

Post-Development Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.266 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	741 cuft
Drainage area	=	0.060 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.11 min
Total precip.	=	4.96 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.037 x 83) + (0.020 x 98)] / 0.060



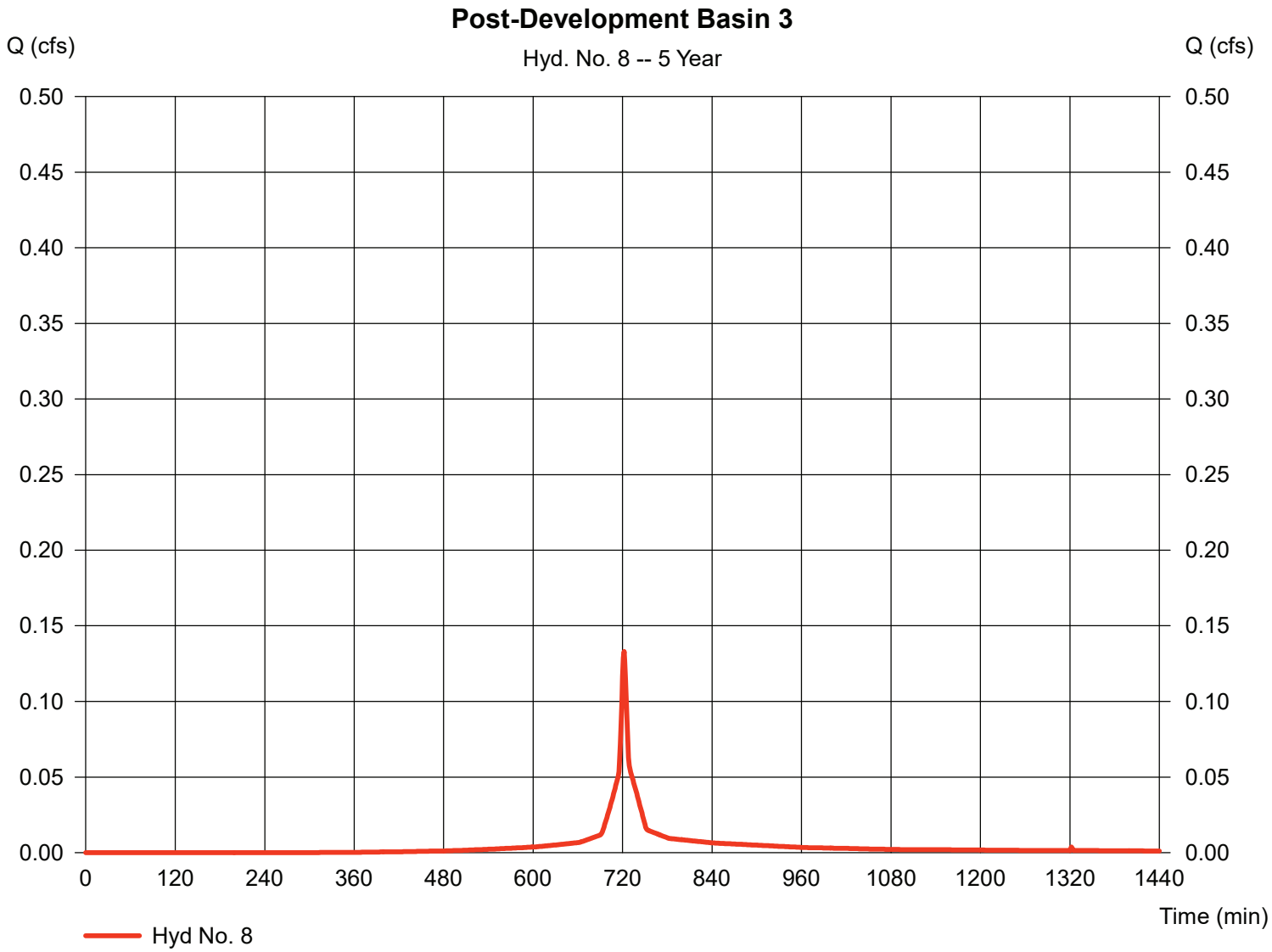
Hydrograph Report

Hyd. No. 8

Post-Development Basin 3

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.133 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	371 cuft
Drainage area	=	0.030 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	4.96 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.007 x 98) + (0.023 x 85)] / 0.030



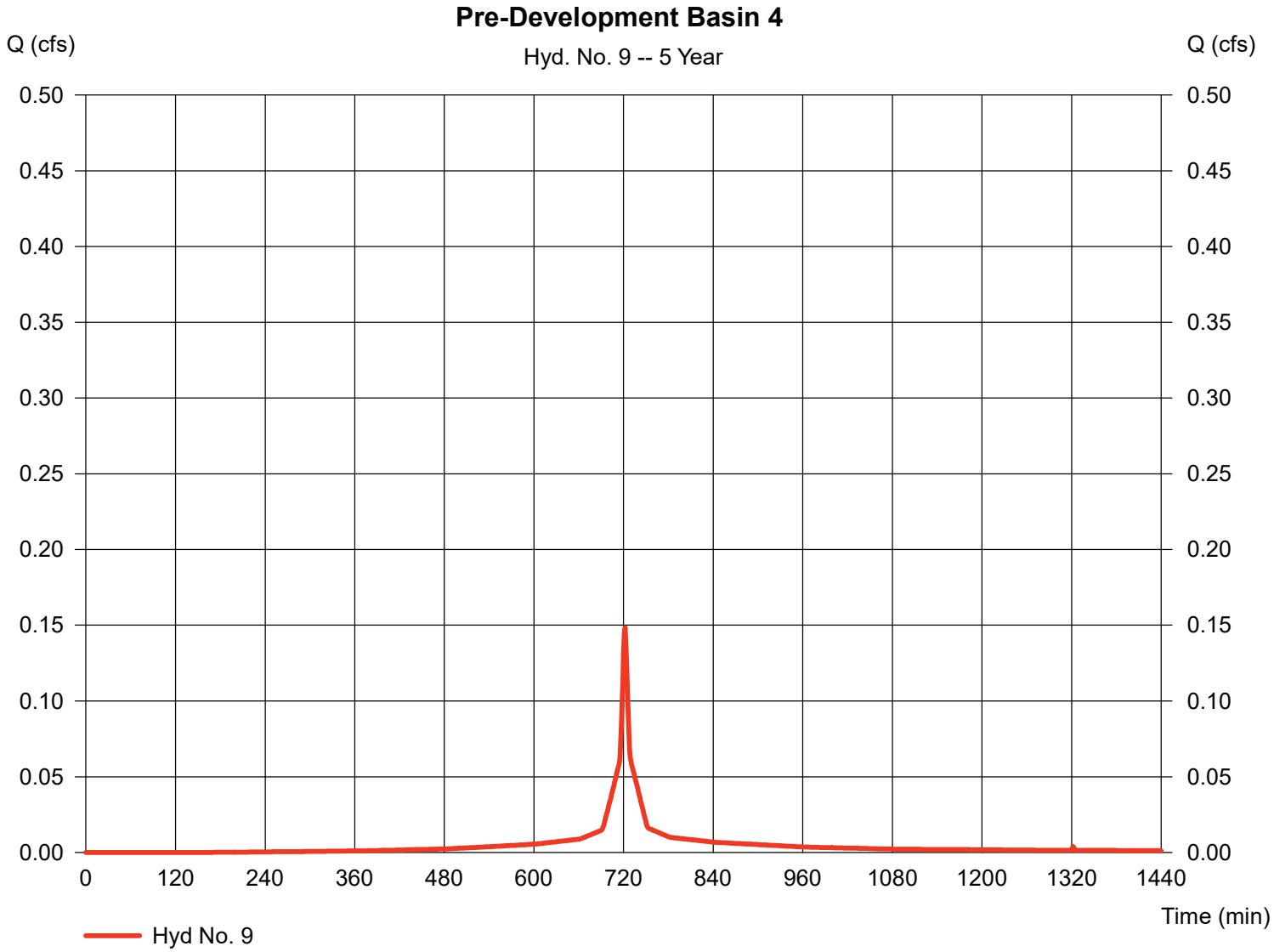
Hydrograph Report

Hyd. No. 9

Pre-Development Basin 4

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.148 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	436 cuft
Drainage area	=	0.030 ac	Curve number	=	94*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	4.96 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 98) + (0.010 x 85)] / 0.030

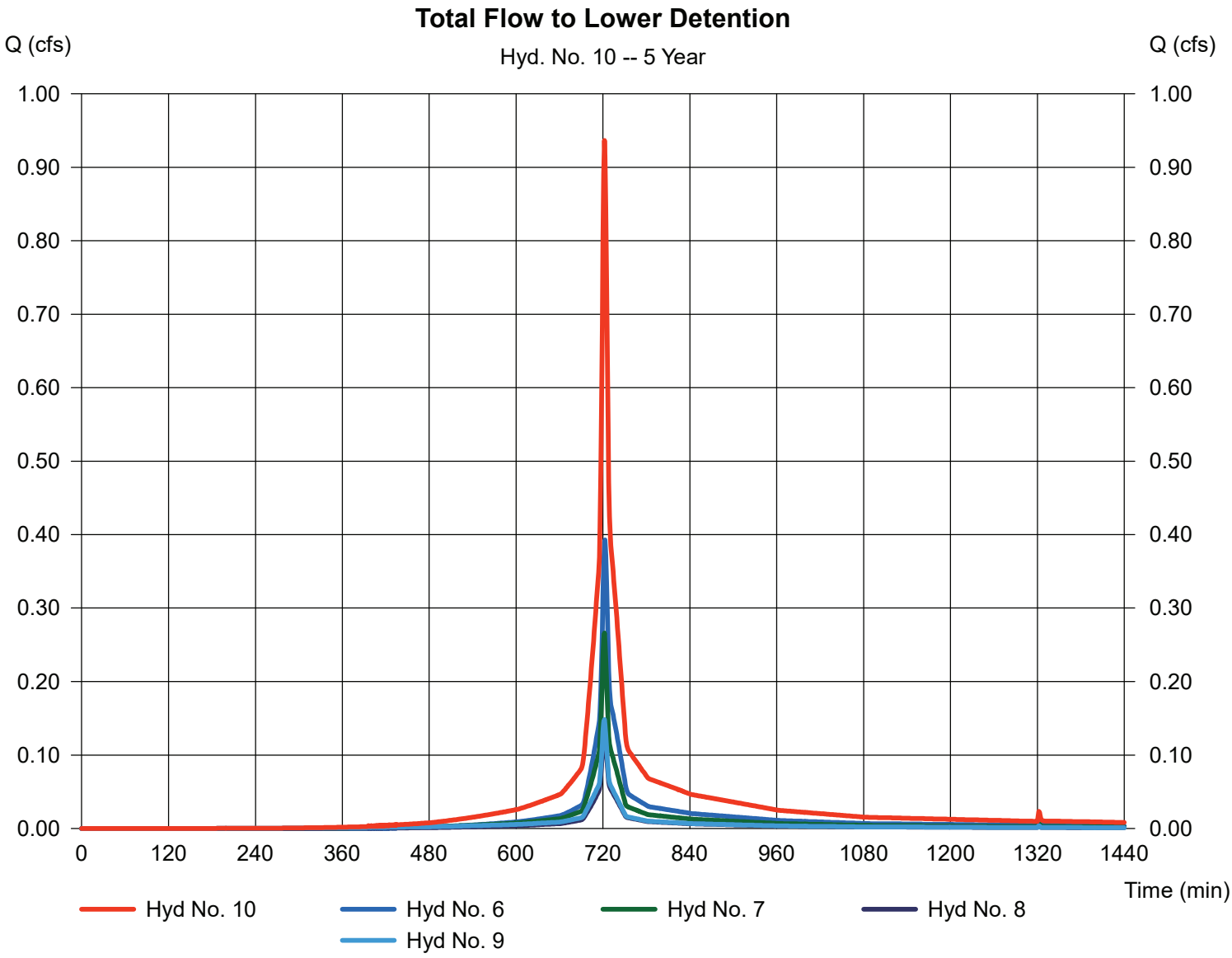


Hydrograph Report

Hyd. No. 10

Total Flow to Lower Detention

Hydrograph type	= Combine	Peak discharge	= 0.937 cfs
Storm frequency	= 5 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 2,648 cuft
Inflow hyds.	= 6, 7, 8, 9	Contrib. drain. area	= 0.120 ac



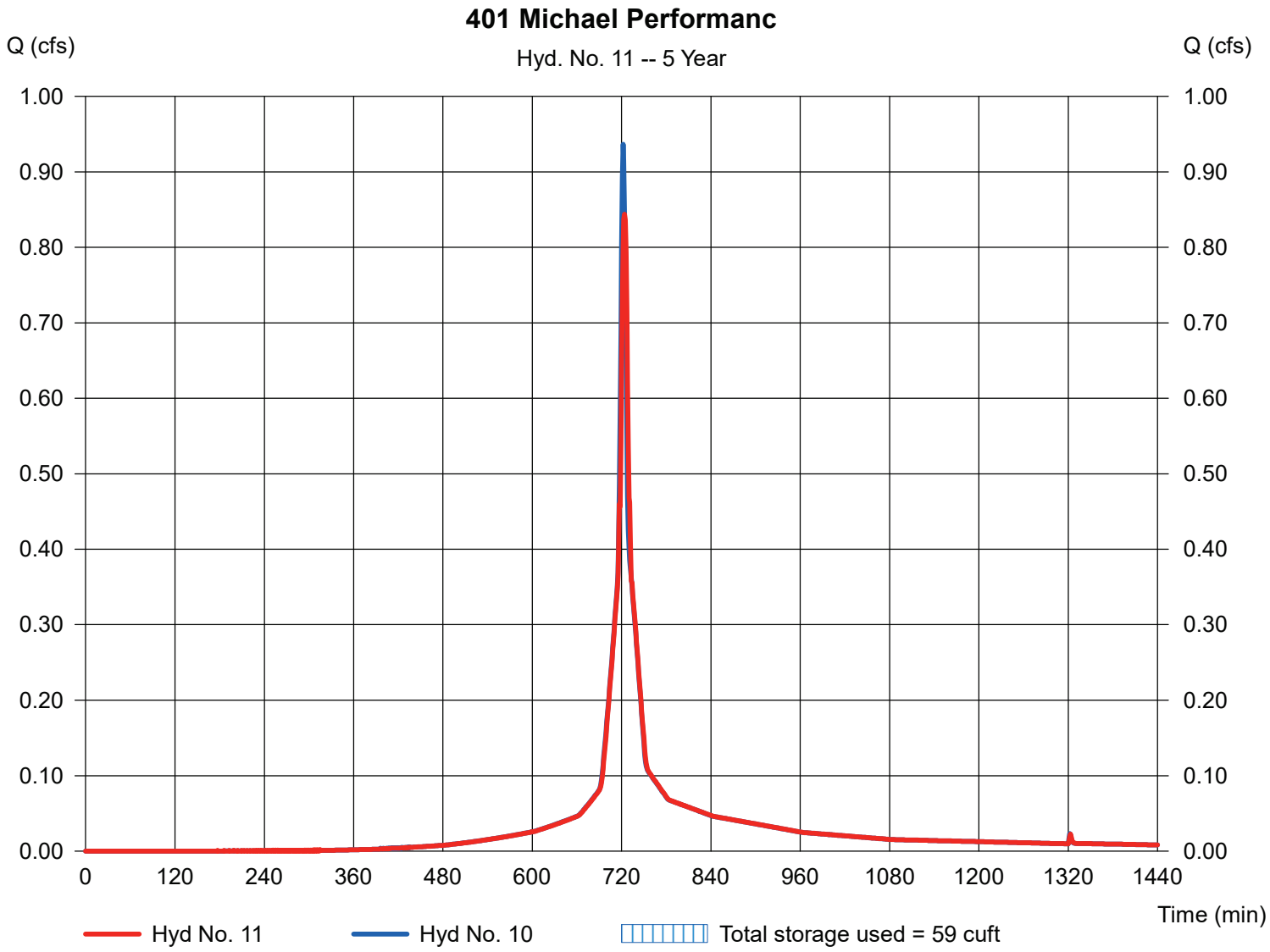
Hydrograph Report

Hyd. No. 11

401 Michael Performanc

Hydrograph type	=	Reservoir	Peak discharge	=	0.844 cfs
Storm frequency	=	5 yrs	Time to peak	=	724 min
Time interval	=	1 min	Hyd. volume	=	2,648 cuft
Inflow hyd. No.	=	10 - Total Flow to Lower Detention	Max. Elevation	=	76.04 ft
Reservoir name	=	401 Michael Detention	Max. Storage	=	59 cuft

Storage Indication method used.



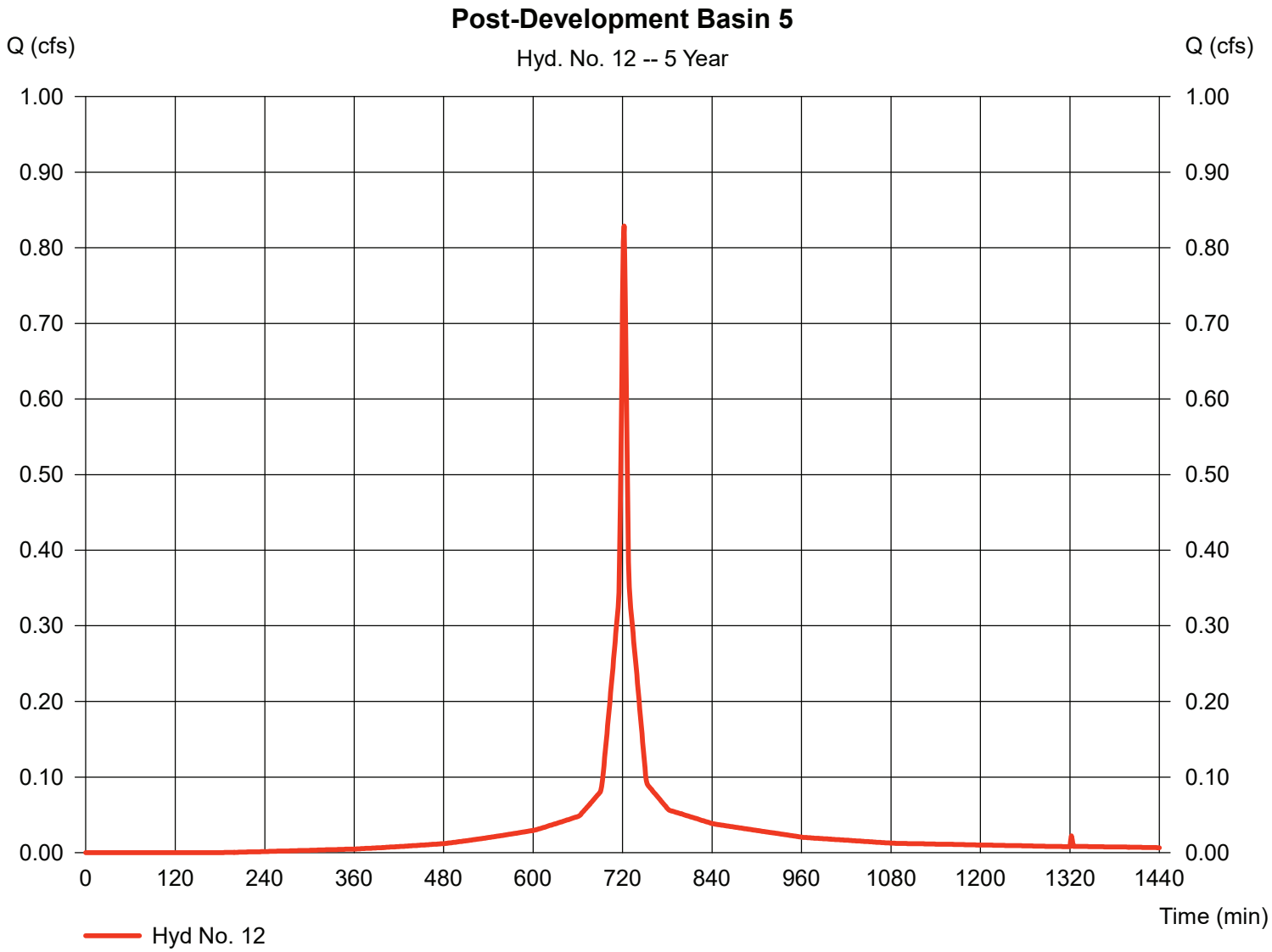
Hydrograph Report

Hyd. No. 12

Post-Development Basin 5

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.829 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	2,406 cuft
Drainage area	=	0.170 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.90 min
Total precip.	=	4.96 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.100 x 98) + (0.020 x 85) + (0.050 x 86)] / 0.170

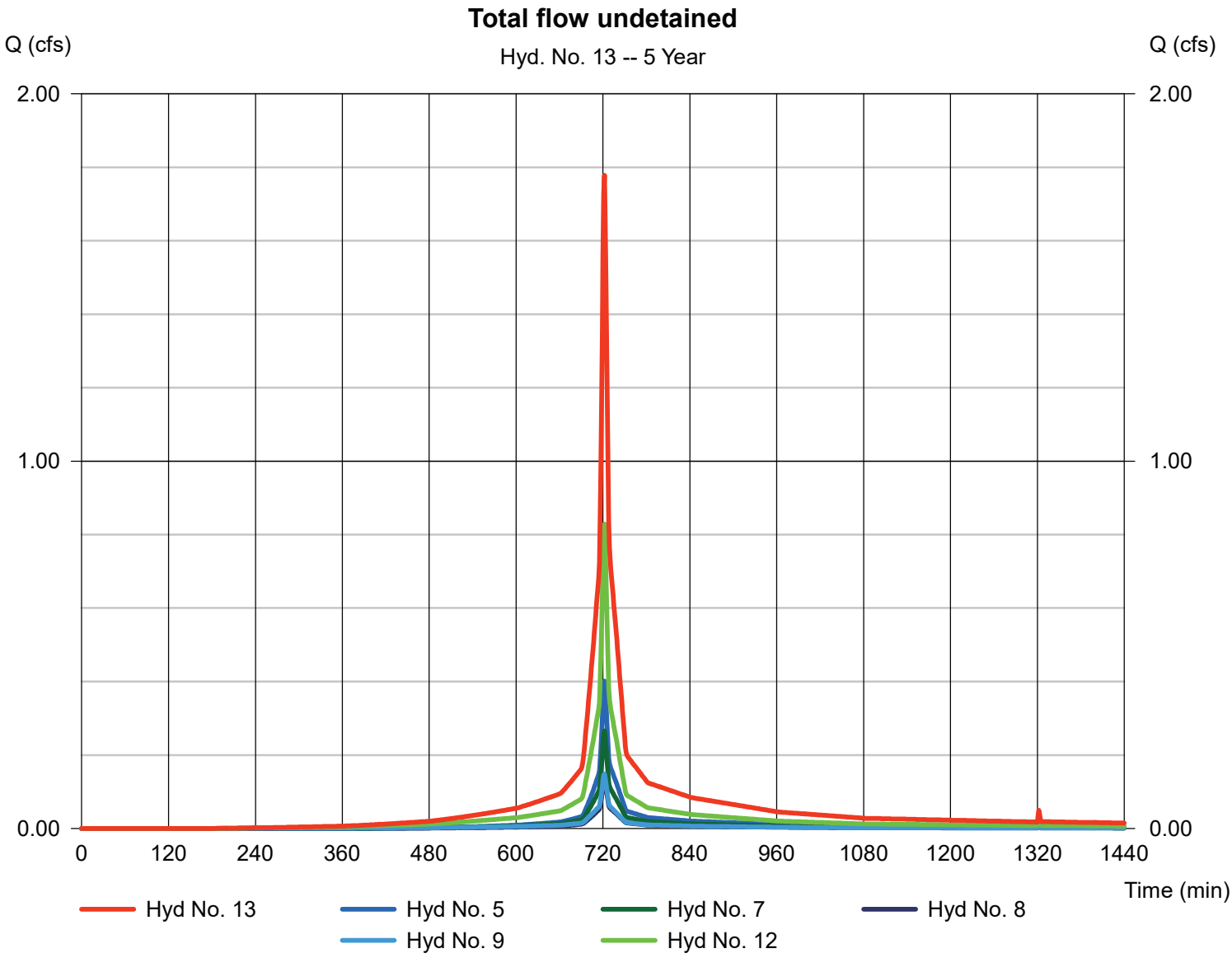


Hydrograph Report

Hyd. No. 13

Total flow undetained

Hydrograph type	=	Combine	Peak discharge	=	1.778 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	5,054 cuft
Inflow hyds.	=	5, 7, 8, 9, 12	Contrib. drain. area	=	0.390 ac

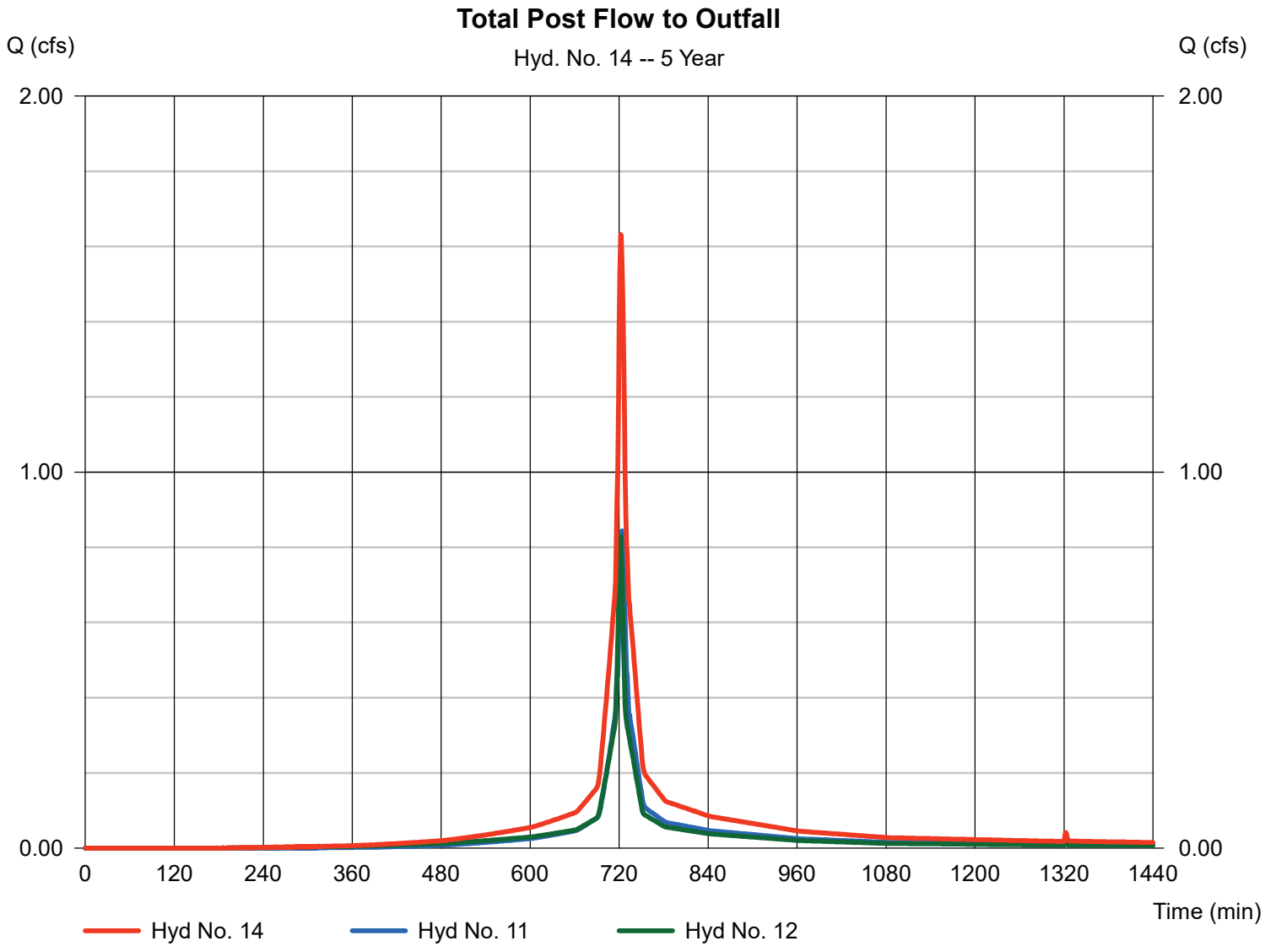


Hydrograph Report

Hyd. No. 14

Total Post Flow to Outfall

Hydrograph type	= Combine	Peak discharge	= 1.631 cfs
Storm frequency	= 5 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 5,054 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 0.170 ac



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.436	1	722	1,202	----	------	------	Pre-Development Basin 1
2	SCS Runoff	1.586	1	723	4,734	----	------	------	Pre-Development Basin 2
3	Combine	2.004	1	723	5,936	1, 2	------	------	Total Pre-Devlopment Flow to Outfall
5	SCS Runoff	0.484	1	722	1,336	----	------	------	Post-Development Basin 1
6	Reservoir	0.467	1	722	1,336	5	86.21	25.6	Upper Detention
7	SCS Runoff	0.316	1	722	888	----	------	------	Post-Development Basin 2
8	SCS Runoff	0.158	1	722	444	----	------	------	Post-Development Basin 3
9	SCS Runoff	0.173	1	722	511	----	------	------	Pre-Development Basin 4
10	Combine	1.113	1	722	3,179	6, 7, 8, 9	------	------	Total Flow to Lower Detention
11	Reservoir	0.933	1	725	3,179	10	76.28	92.2	401 Michael Performanc
12	SCS Runoff	0.967	1	722	2,833	----	------	------	Post-Development Basin 5
13	Combine	2.097	1	722	6,012	5, 7, 8, 9, 12	------	------	Total flow undetained
14	Combine	1.844	1	722	6,012	11, 12,	------	------	Total Post Flow to Outfall

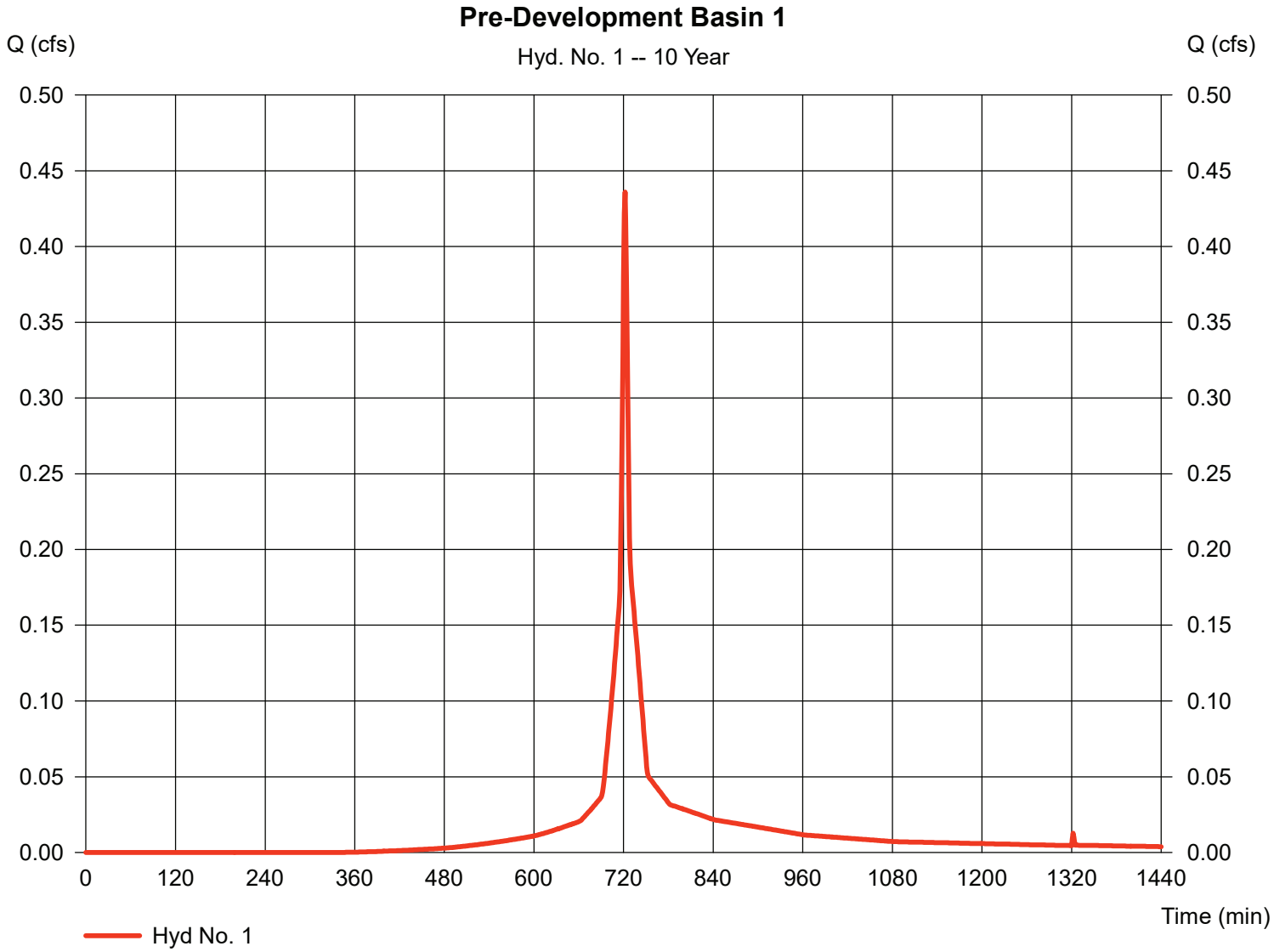
Hydrograph Report

Hyd. No. 1

Pre-Development Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.436 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	1,202 cuft
Drainage area	=	0.090 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	5.71 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 85) + (0.070 x 84)] / 0.090



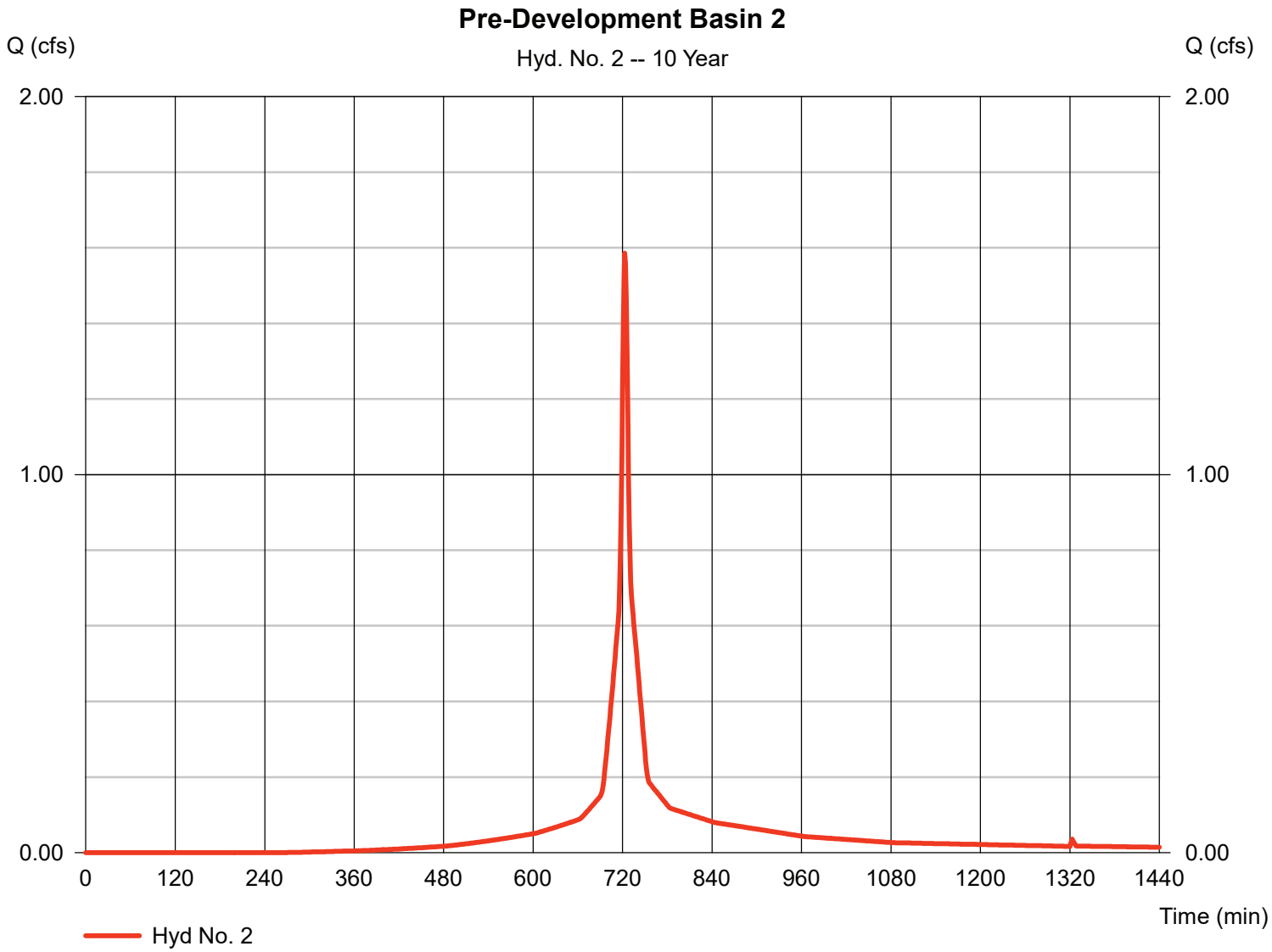
Hydrograph Report

Hyd. No. 2

Pre-Development Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.586 cfs
Storm frequency	=	10 yrs	Time to peak	=	723 min
Time interval	=	1 min	Hyd. volume	=	4,734 cuft
Drainage area	=	0.300 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	3.70 min
Total precip.	=	5.71 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.054 x 83) + (0.123 x 86) + (0.057 x 98) + (0.064 x 85)] / 0.300

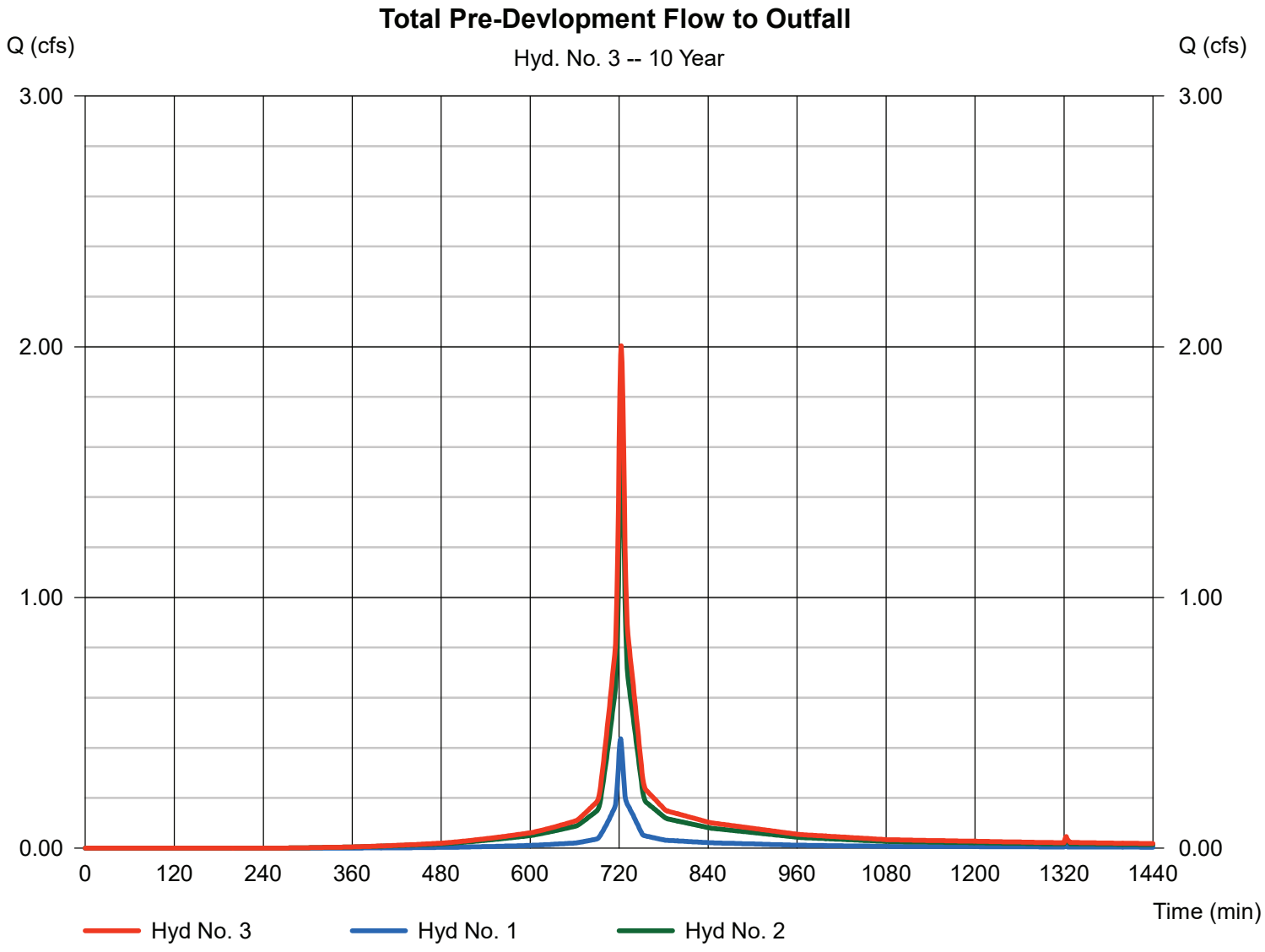


Hydrograph Report

Hyd. No. 3

Total Pre-Devlopment Flow to Outfall

Hydrograph type	= Combine	Peak discharge	= 2.004 cfs
Storm frequency	= 10 yrs	Time to peak	= 723 min
Time interval	= 1 min	Hyd. volume	= 5,936 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 0.390 ac



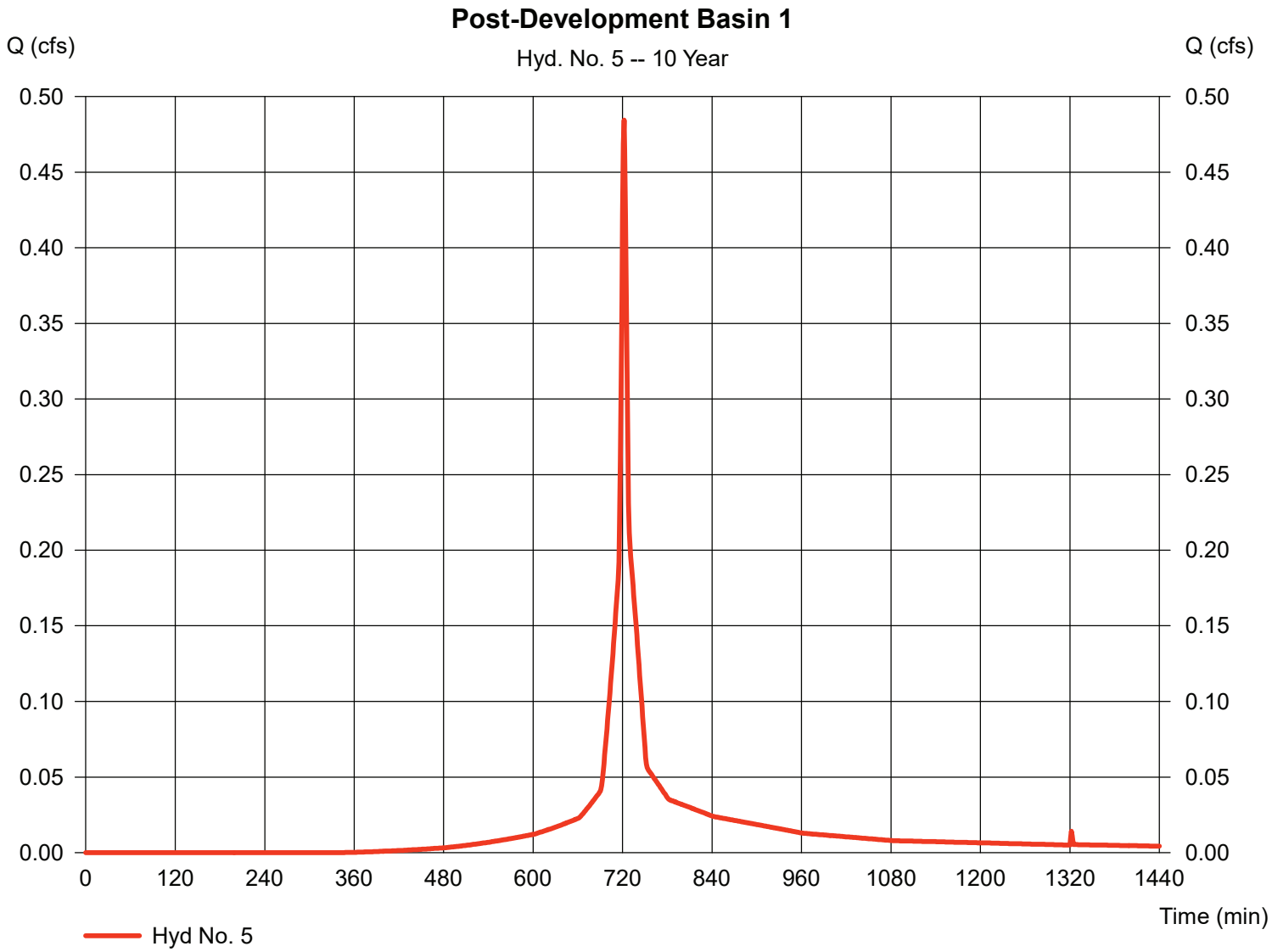
Hydrograph Report

Hyd. No. 5

Post-Development Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.484 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	1,336 cuft
Drainage area	=	0.100 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	5.71 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 98) + (0.020 x 83) + (0.060 x 80)] / 0.100



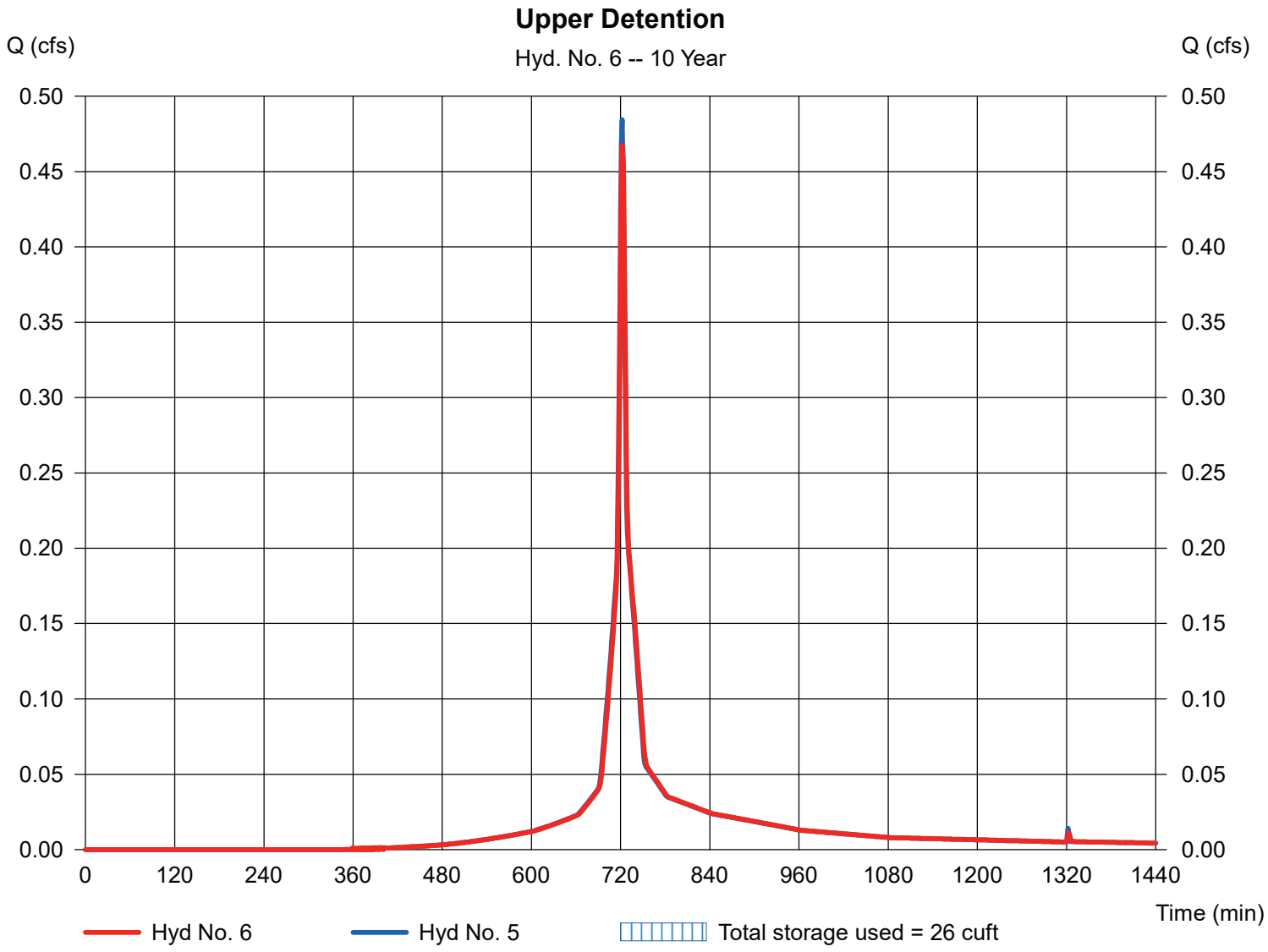
Hydrograph Report

Hyd. No. 6

Upper Detention

Hydrograph type	=	Reservoir	Peak discharge	=	0.467 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	1,336 cuft
Inflow hyd. No.	=	5 - Post-Development Basin 1	Max. Elevation	=	86.21 ft
Reservoir name	=	401 Upper Detention	Max. Storage	=	26 cuft

Storage Indication method used.



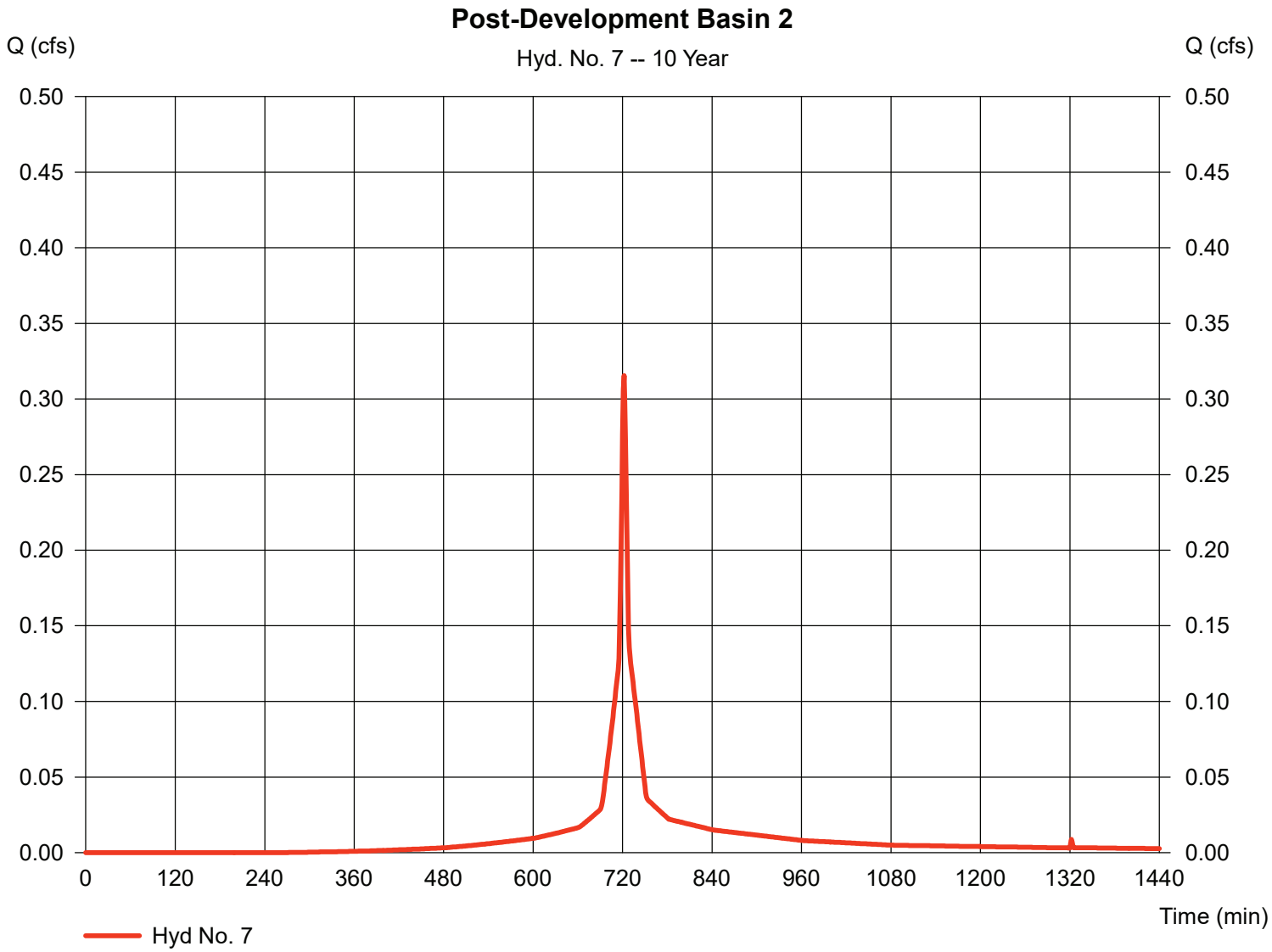
Hydrograph Report

Hyd. No. 7

Post-Development Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.316 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	888 cuft
Drainage area	=	0.060 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.11 min
Total precip.	=	5.71 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.037 x 83) + (0.020 x 98)] / 0.060



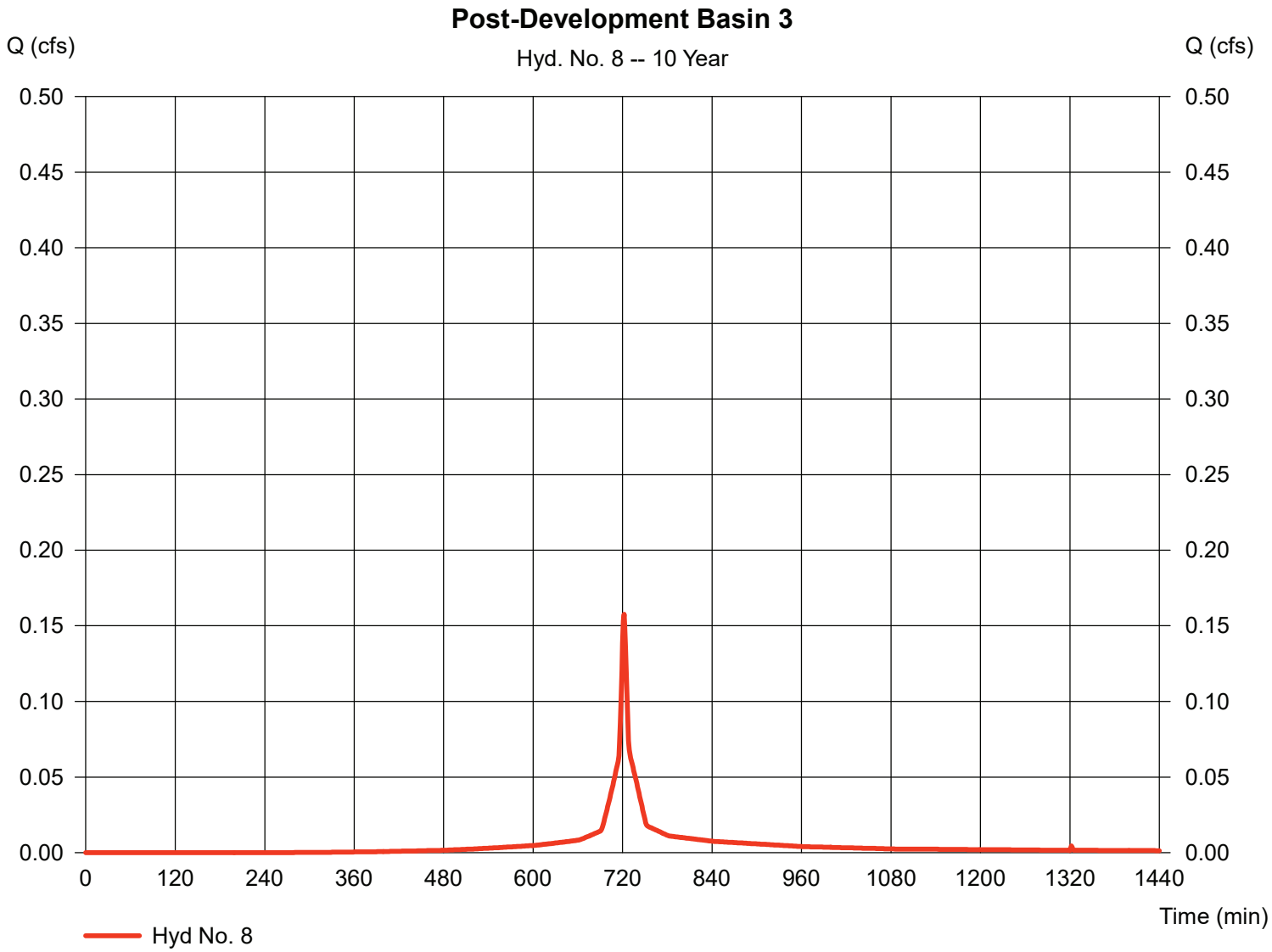
Hydrograph Report

Hyd. No. 8

Post-Development Basin 3

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.158 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	444 cuft
Drainage area	=	0.030 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	5.71 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.007 x 98) + (0.023 x 85)] / 0.030



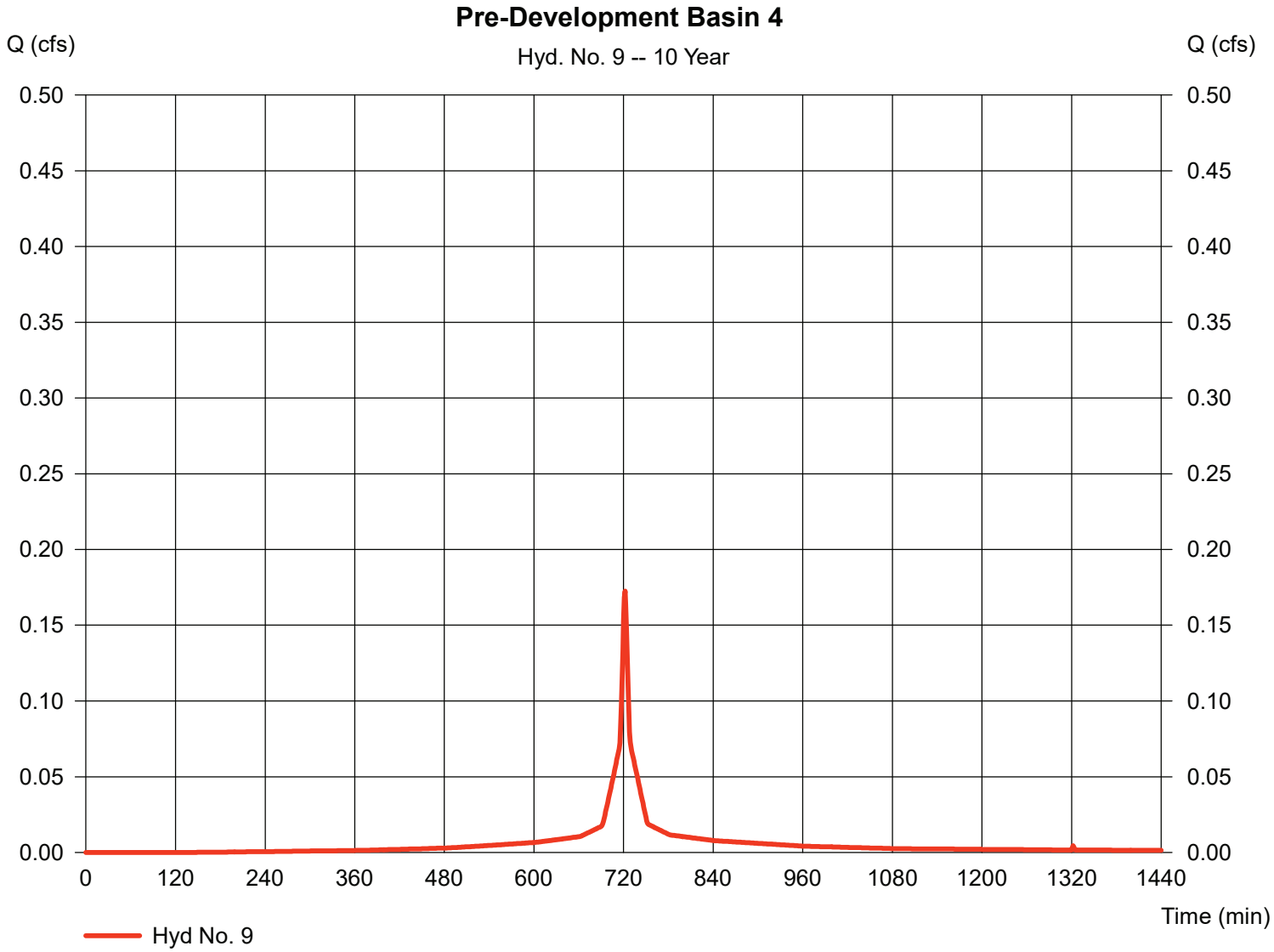
Hydrograph Report

Hyd. No. 9

Pre-Development Basin 4

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.173 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	511 cuft
Drainage area	=	0.030 ac	Curve number	=	94*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	5.71 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 98) + (0.010 x 85)] / 0.030

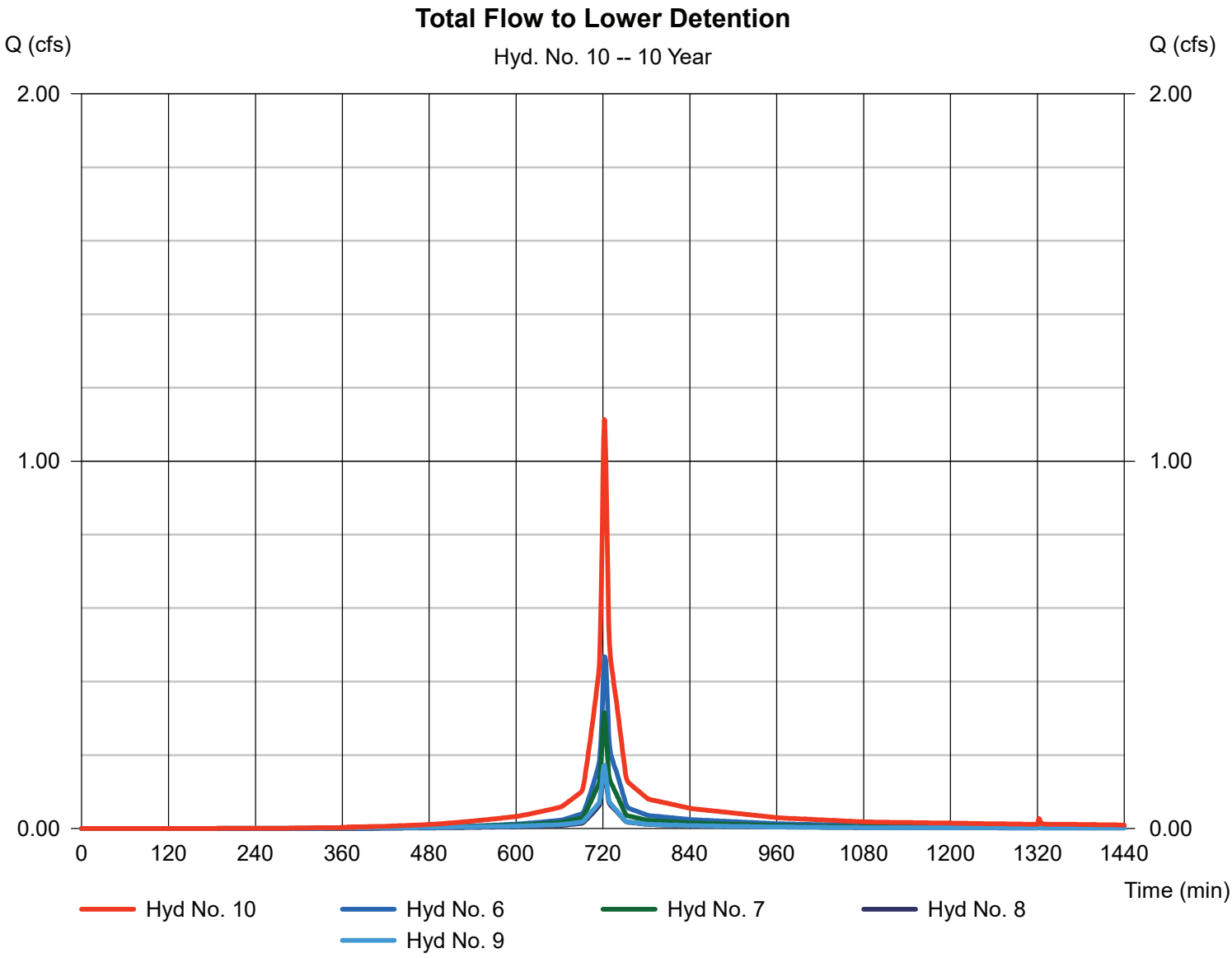


Hydrograph Report

Hyd. No. 10

Total Flow to Lower Detention

Hydrograph type	= Combine	Peak discharge	= 1.113 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 3,179 cuft
Inflow hyds.	= 6, 7, 8, 9	Contrib. drain. area	= 0.120 ac



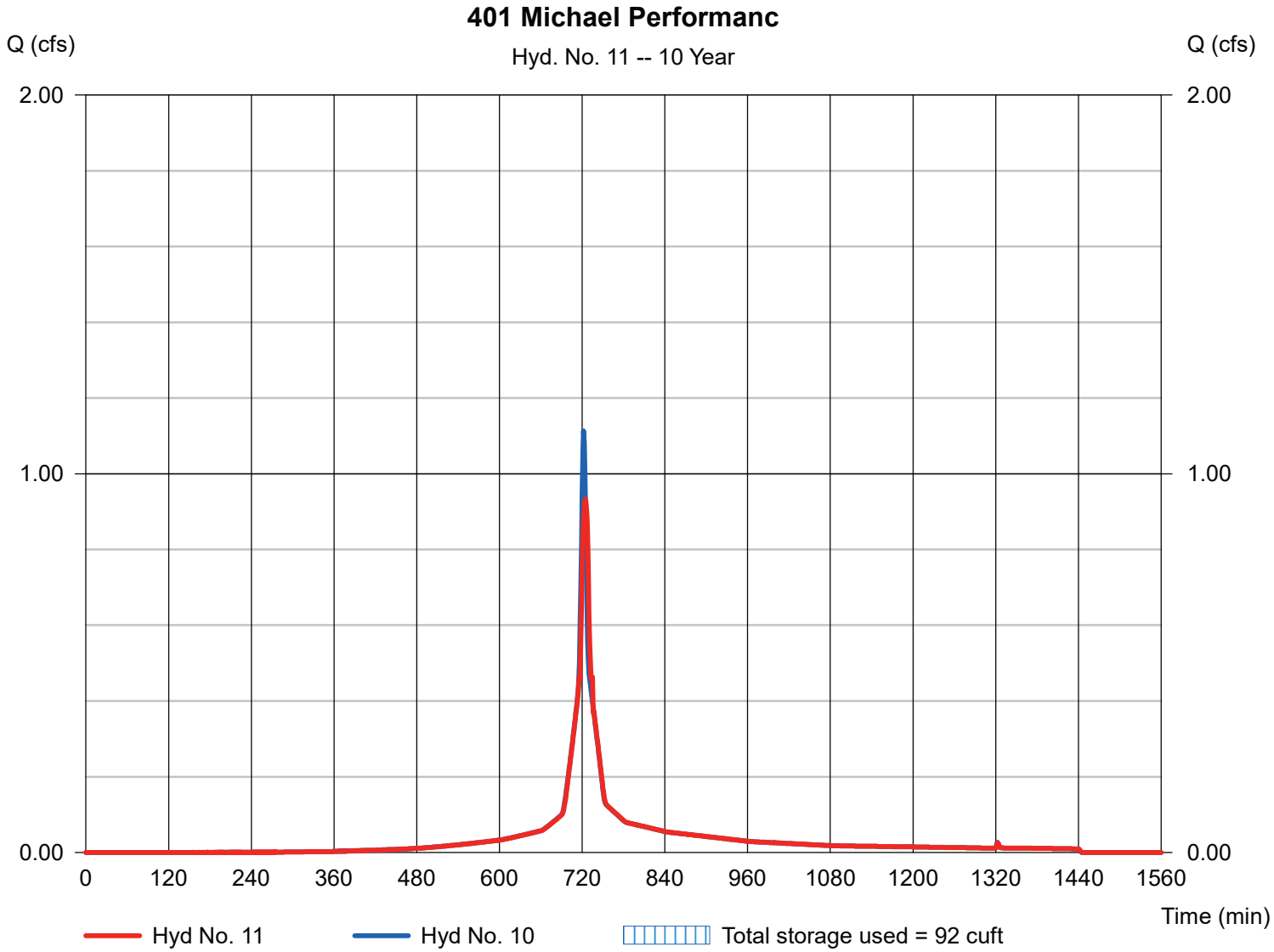
Hydrograph Report

Hyd. No. 11

401 Michael Performanc

Hydrograph type	=	Reservoir	Peak discharge	=	0.933 cfs
Storm frequency	=	10 yrs	Time to peak	=	725 min
Time interval	=	1 min	Hyd. volume	=	3,179 cuft
Inflow hyd. No.	=	10 - Total Flow to Lower Detention	Max. Elevation	=	76.28 ft
Reservoir name	=	401 Michael Detention	Max. Storage	=	92 cuft

Storage Indication method used.



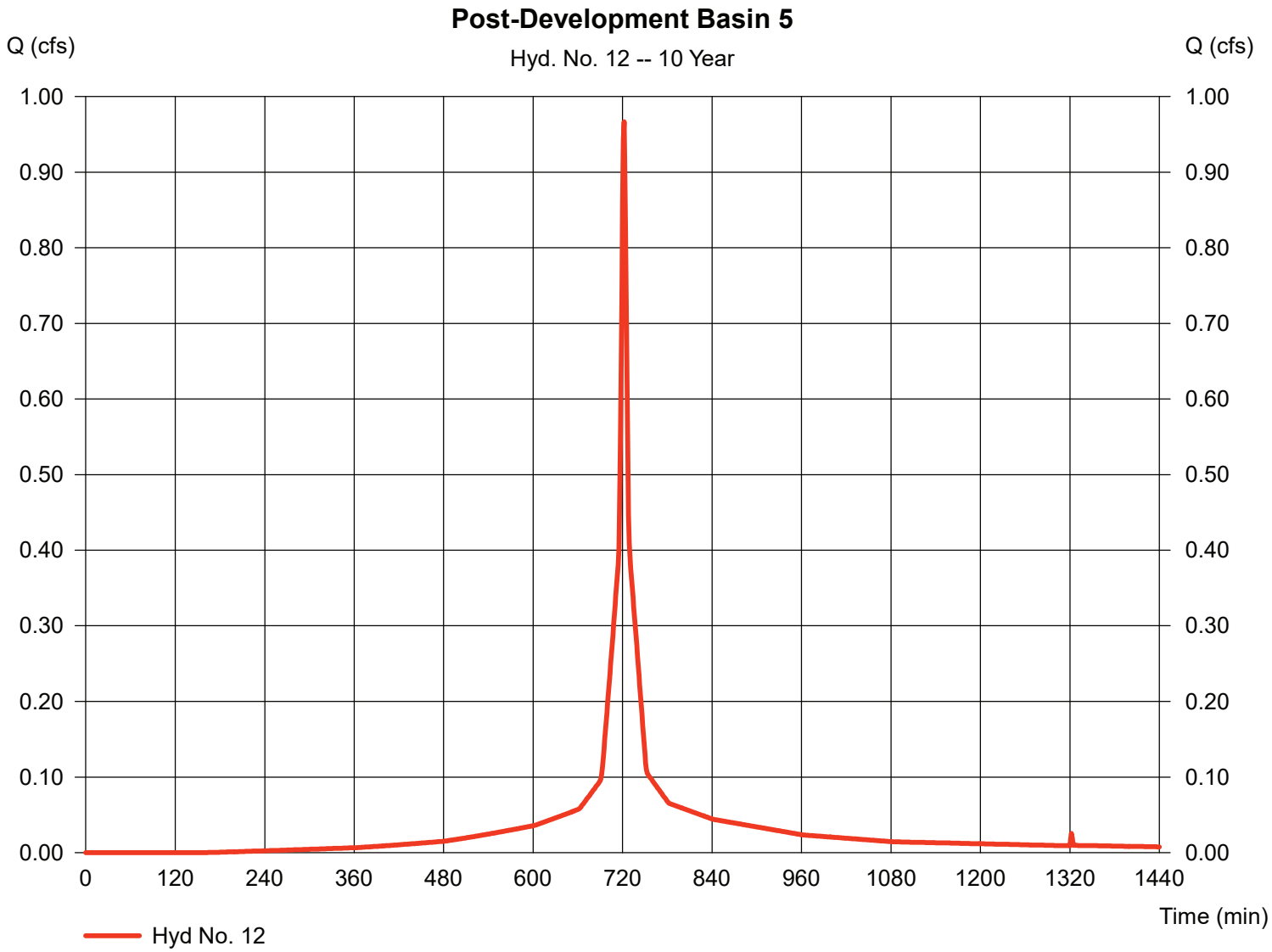
Hydrograph Report

Hyd. No. 12

Post-Development Basin 5

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.967 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	2,833 cuft
Drainage area	=	0.170 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.90 min
Total precip.	=	5.71 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.100 x 98) + (0.020 x 85) + (0.050 x 86)] / 0.170

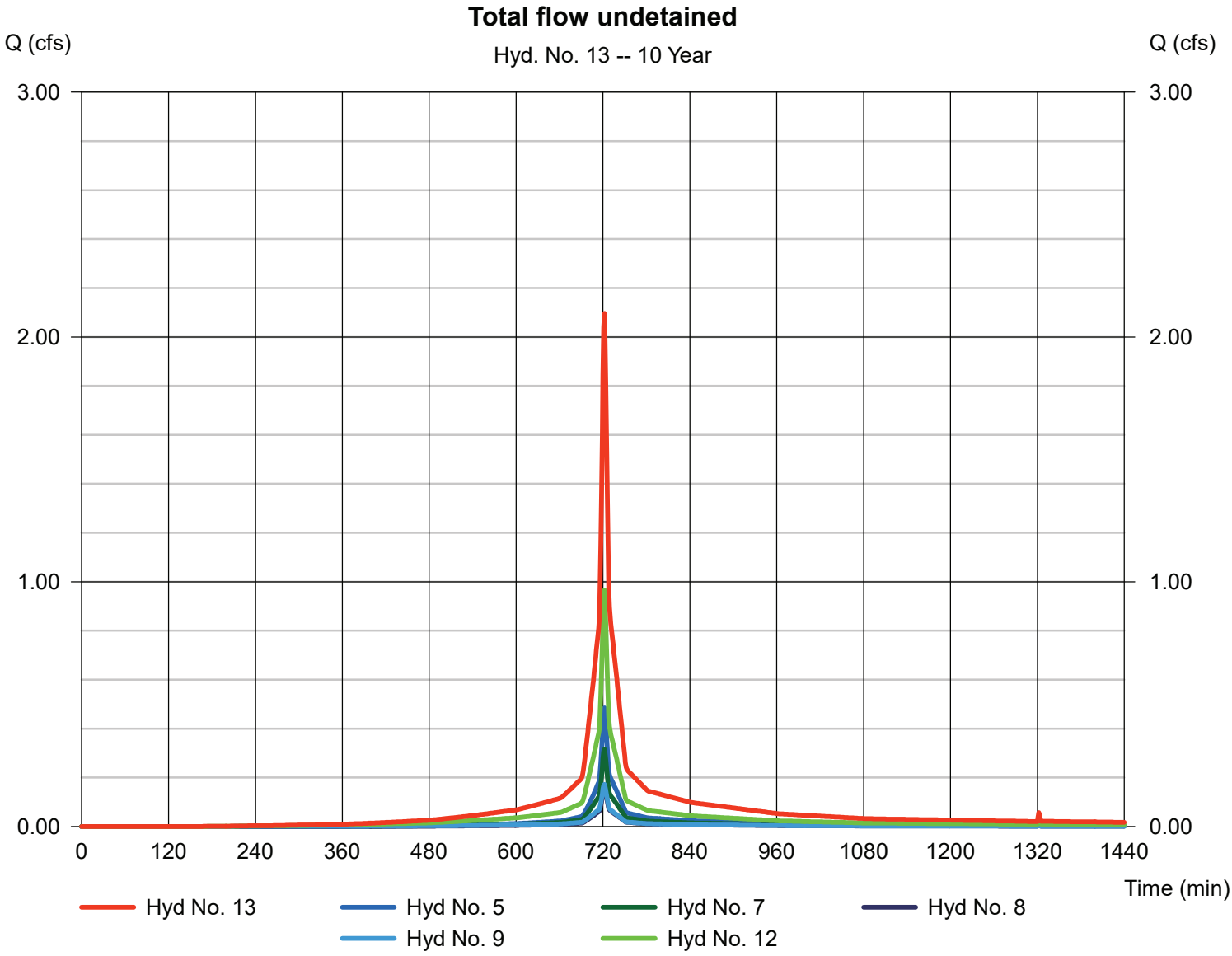


Hydrograph Report

Hyd. No. 13

Total flow undetained

Hydrograph type	= Combine	Peak discharge	= 2.097 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 6,012 cuft
Inflow hyds.	= 5, 7, 8, 9, 12	Contrib. drain. area	= 0.390 ac

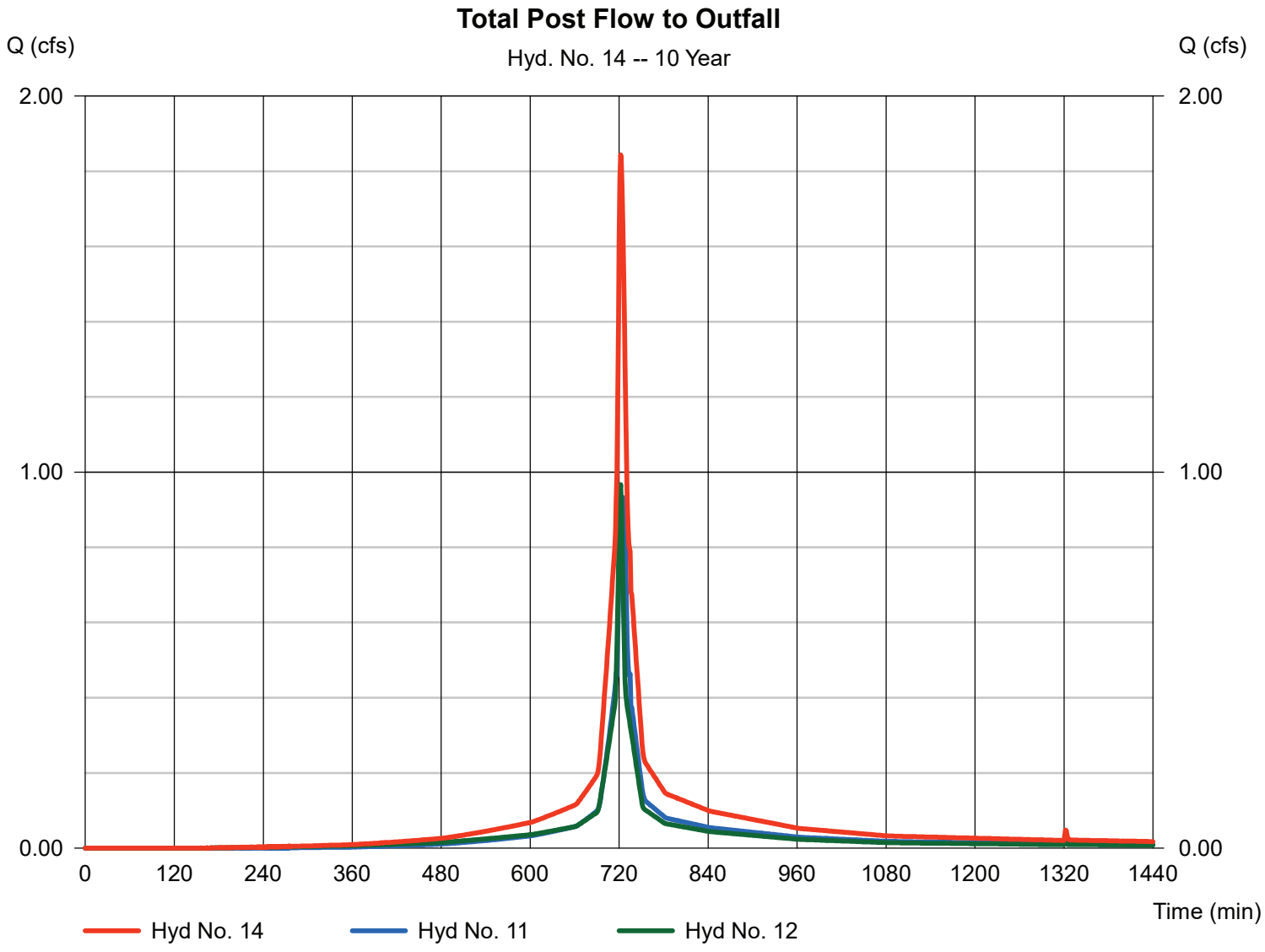


Hydrograph Report

Hyd. No. 14

Total Post Flow to Outfall

Hydrograph type	= Combine	Peak discharge	= 1.844 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 6,012 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 0.170 ac



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.544	1	722	1,516	----	------	------	Pre-Development Basin 1
2	SCS Runoff	1.948	1	723	5,880	----	------	------	Pre-Development Basin 2
3	Combine	2.468	1	723	7,396	1, 2	------	------	Total Pre-Devlopment Flow to Outfall
5	SCS Runoff	0.605	1	722	1,685	----	------	------	Post-Development Basin 1
6	Reservoir	0.516	1	724	1,685	5	86.39	48.6	Upper Detention
7	SCS Runoff	0.387	1	722	1,102	----	------	------	Post-Development Basin 2
8	SCS Runoff	0.194	1	722	551	----	------	------	Post-Development Basin 3
9	SCS Runoff	0.208	1	722	622	----	------	------	Pre-Development Basin 4
10	Combine	1.254	1	722	3,960	6, 7, 8, 9	------	------	Total Flow to Lower Detention
11	Reservoir	1.045	1	725	3,960	10	76.60	138	401 Michael Performanc
12	SCS Runoff	1.166	1	722	3,456	----	------	------	Post-Development Basin 5
13	Combine	2.559	1	722	7,416	5, 7, 8, 9, 12	------	------	Total flow undetained
14	Combine	2.125	1	722	7,416	11, 12,	------	------	Total Post Flow to Outfall

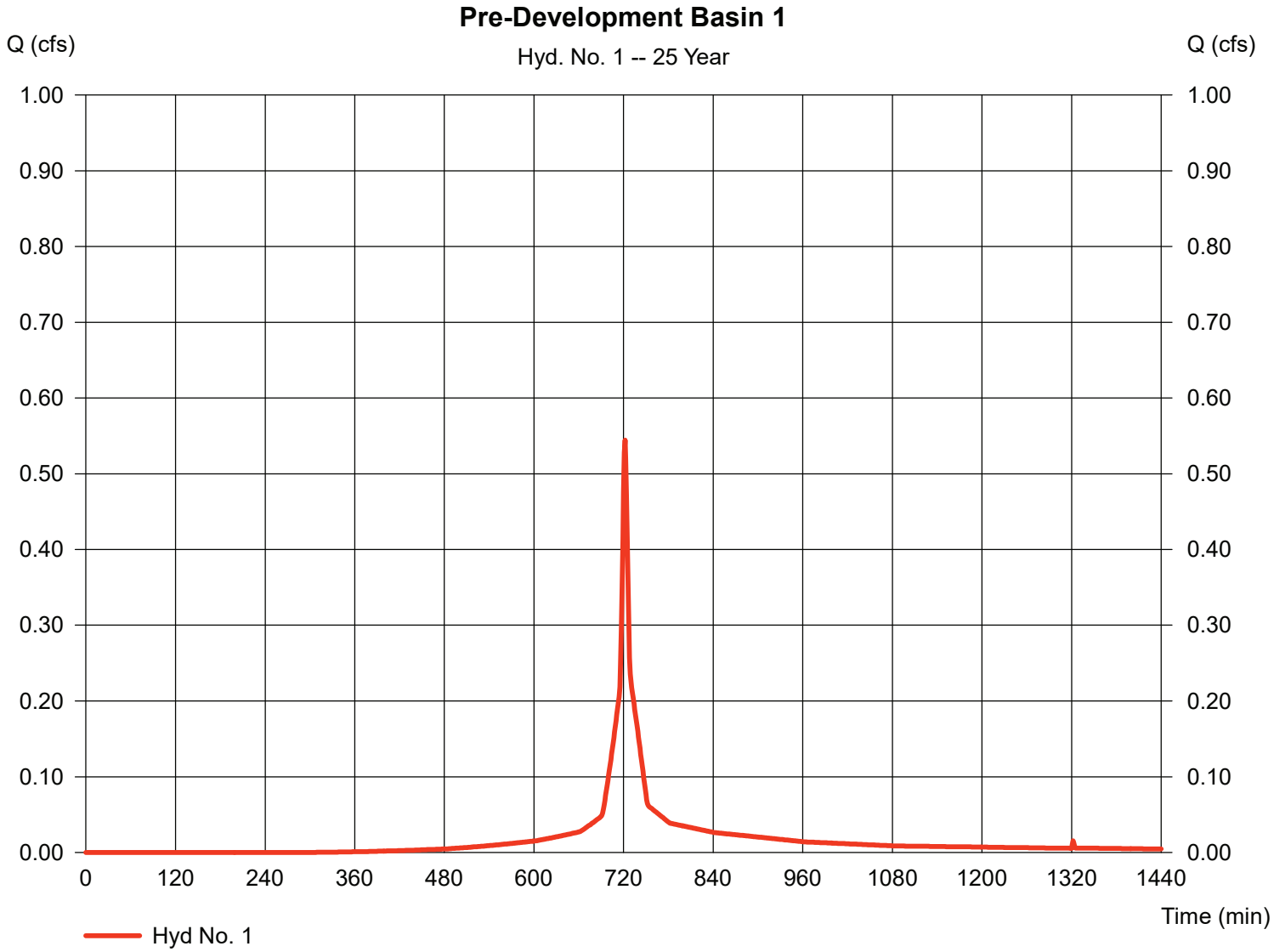
Hydrograph Report

Hyd. No. 1

Pre-Development Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.544 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	1,516 cuft
Drainage area	=	0.090 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	6.80 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 85) + (0.070 x 84)] / 0.090



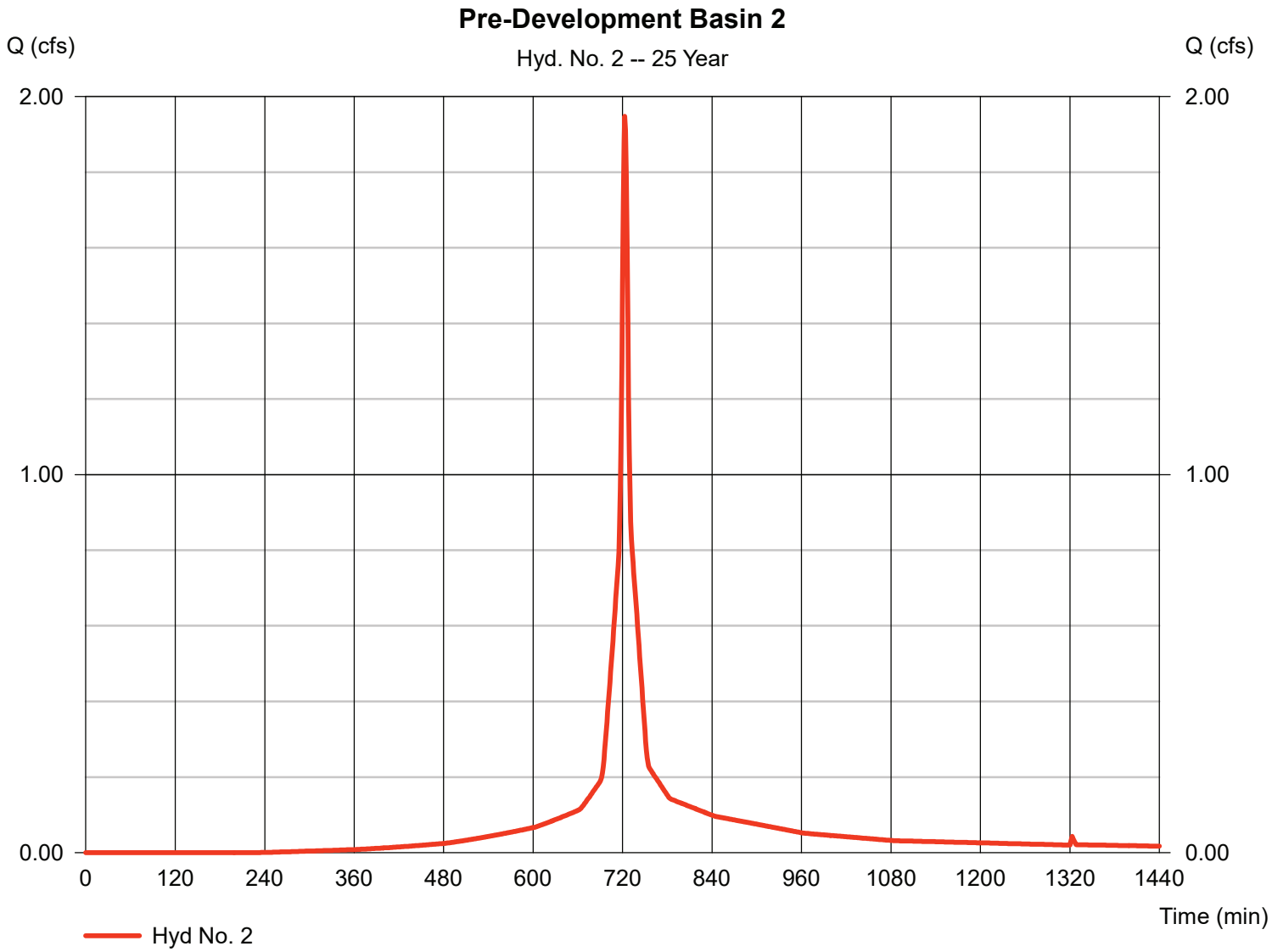
Hydrograph Report

Hyd. No. 2

Pre-Development Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.948 cfs
Storm frequency	=	25 yrs	Time to peak	=	723 min
Time interval	=	1 min	Hyd. volume	=	5,880 cuft
Drainage area	=	0.300 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	3.70 min
Total precip.	=	6.80 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.054 x 83) + (0.123 x 86) + (0.057 x 98) + (0.064 x 85)] / 0.300

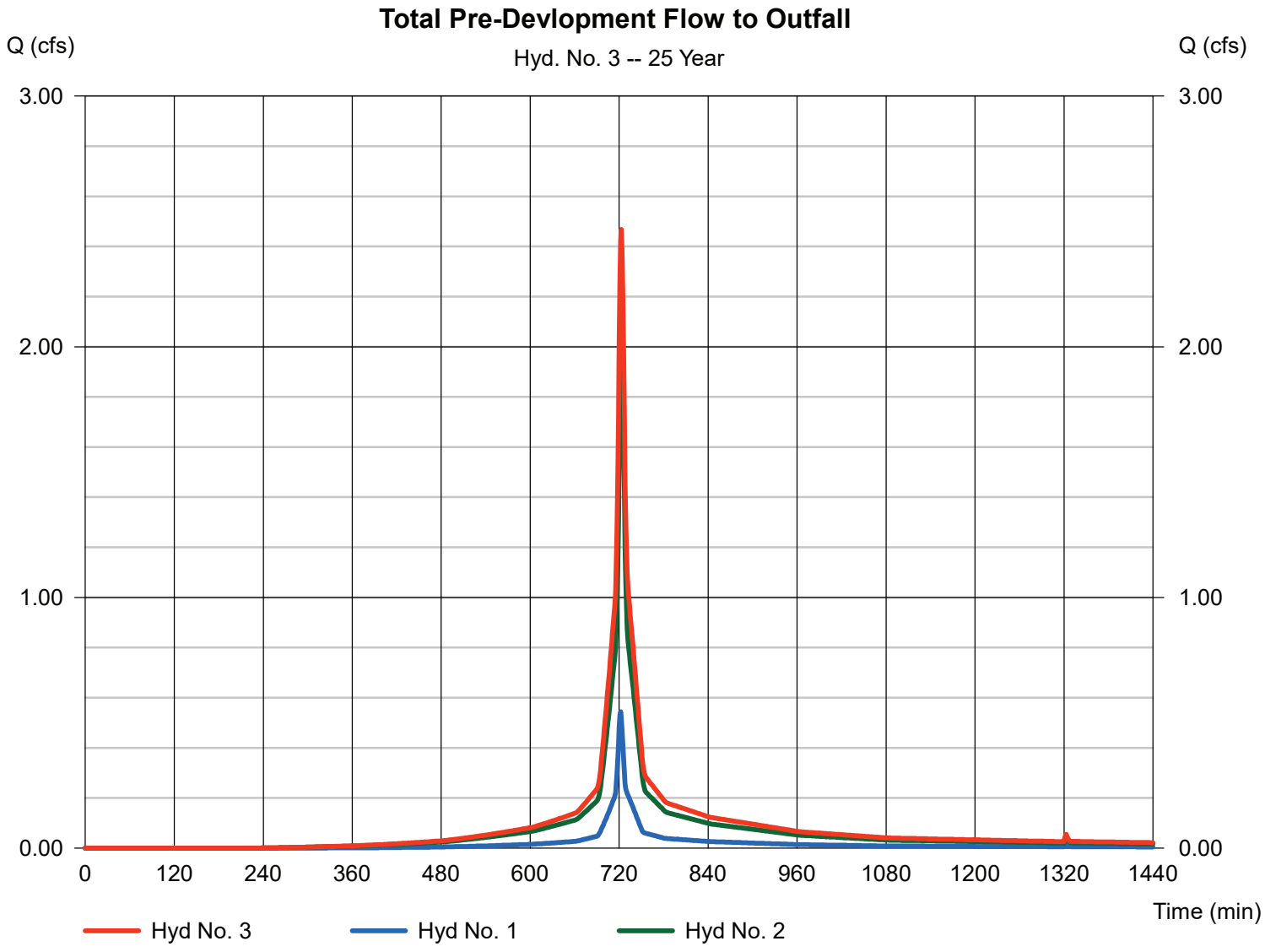


Hydrograph Report

Hyd. No. 3

Total Pre-Devlopment Flow to Outfall

Hydrograph type	= Combine	Peak discharge	= 2.468 cfs
Storm frequency	= 25 yrs	Time to peak	= 723 min
Time interval	= 1 min	Hyd. volume	= 7,396 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 0.390 ac



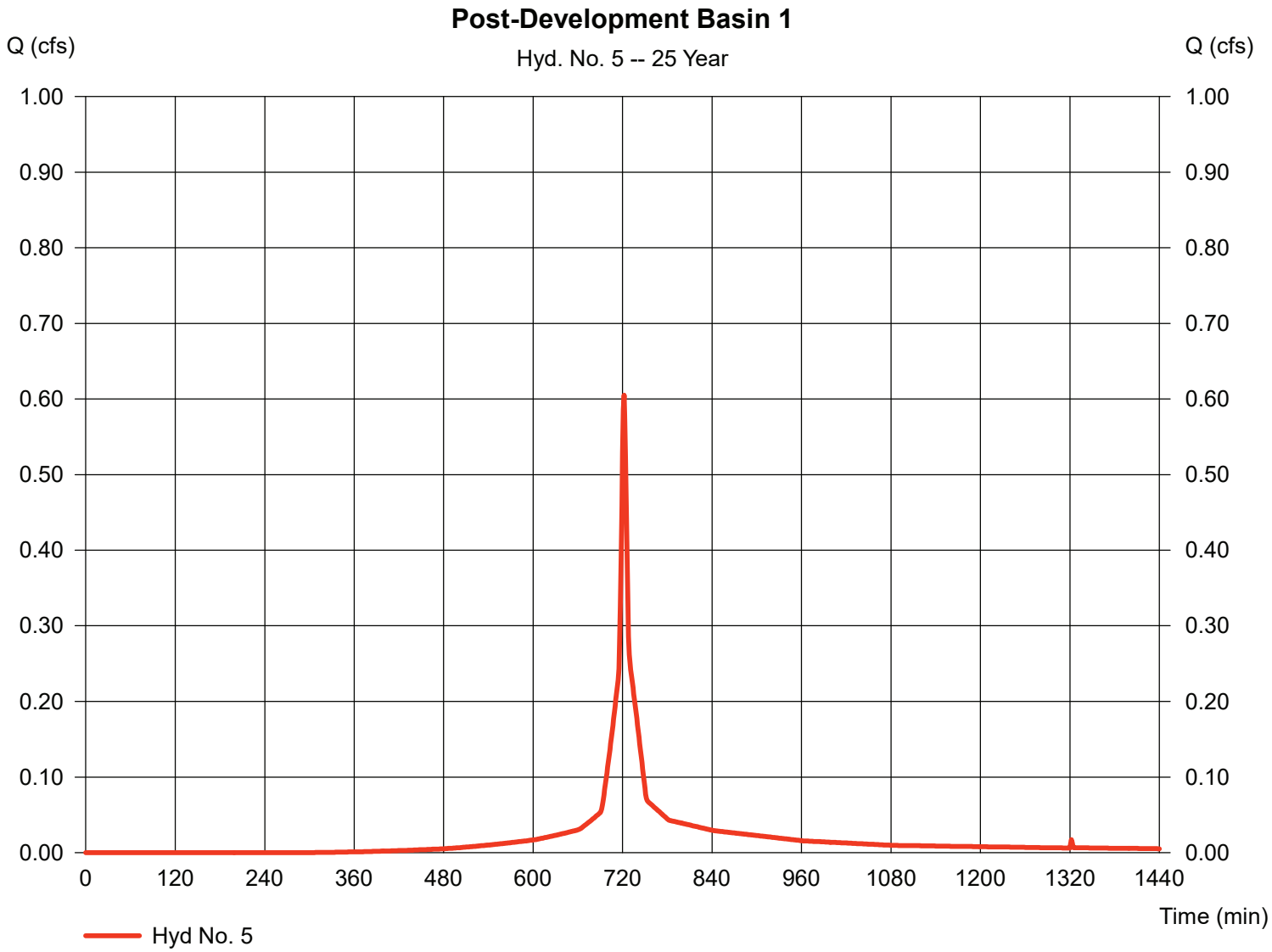
Hydrograph Report

Hyd. No. 5

Post-Development Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.605 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	1,685 cuft
Drainage area	=	0.100 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	6.80 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 98) + (0.020 x 83) + (0.060 x 80)] / 0.100



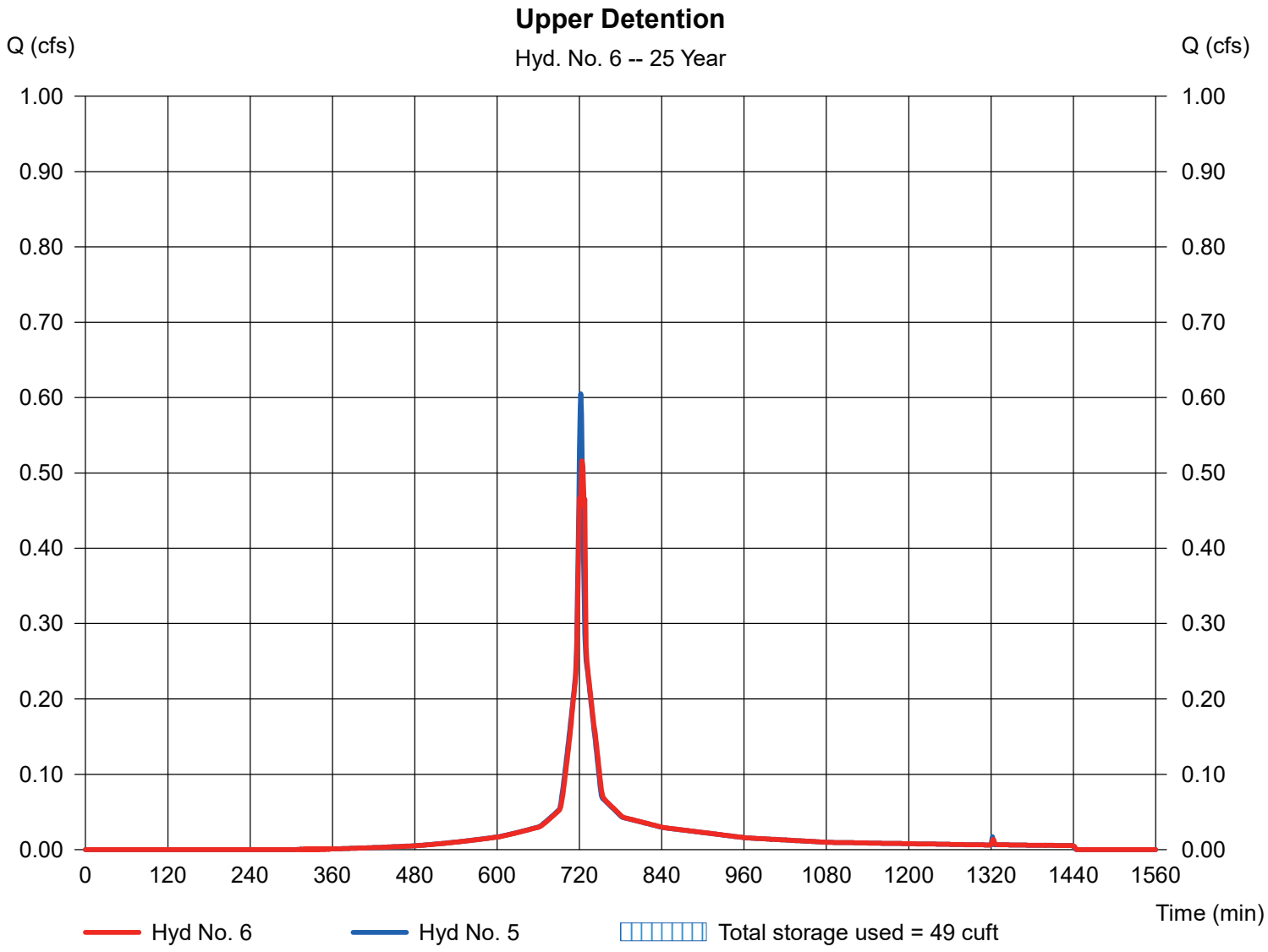
Hydrograph Report

Hyd. No. 6

Upper Detention

Hydrograph type	=	Reservoir	Peak discharge	=	0.516 cfs
Storm frequency	=	25 yrs	Time to peak	=	724 min
Time interval	=	1 min	Hyd. volume	=	1,685 cuft
Inflow hyd. No.	=	5 - Post-Development Basin 1	Max. Elevation	=	86.39 ft
Reservoir name	=	401 Upper Detention	Max. Storage	=	49 cuft

Storage Indication method used.



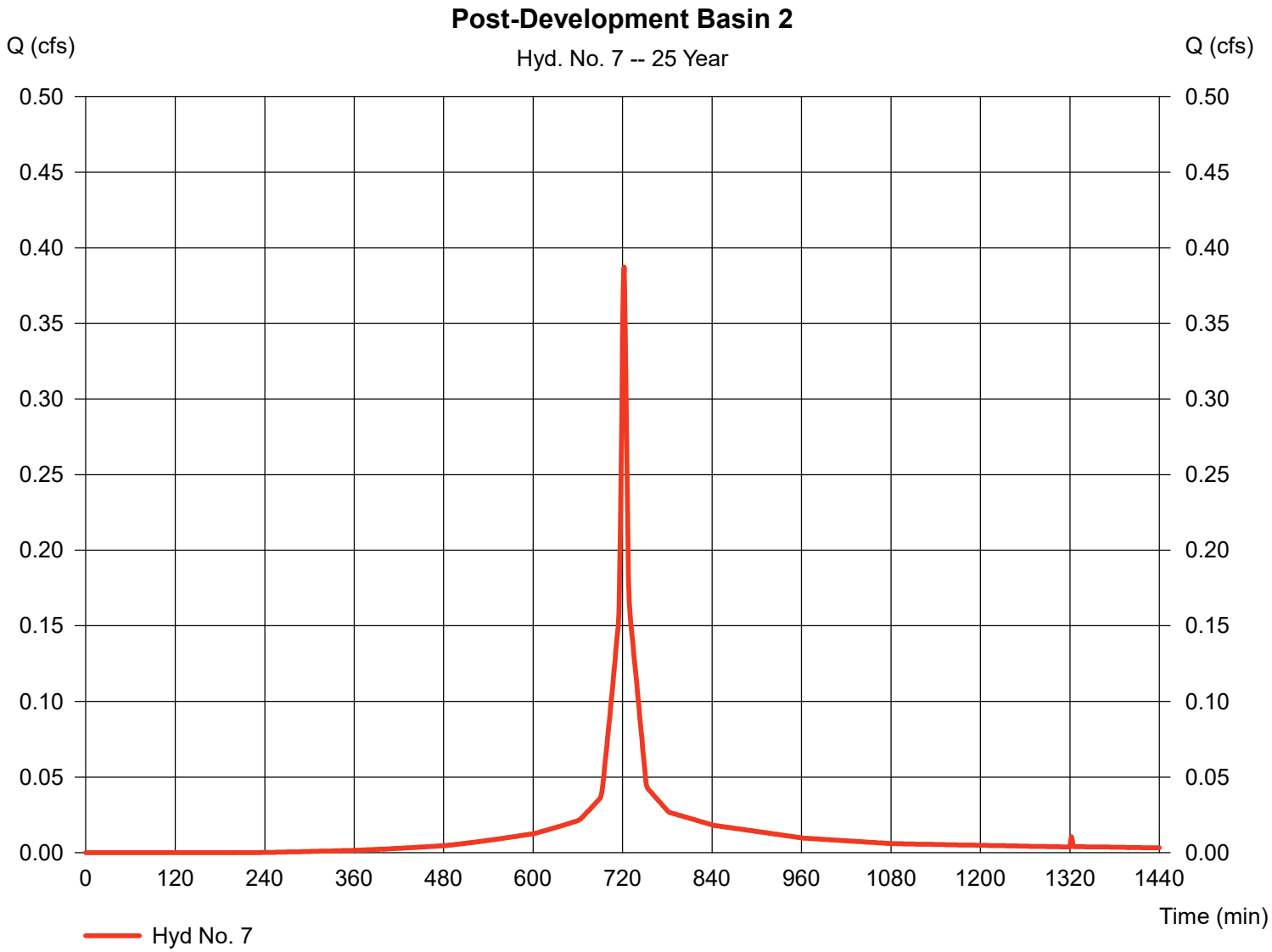
Hydrograph Report

Hyd. No. 7

Post-Development Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.387 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	1,102 cuft
Drainage area	=	0.060 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.11 min
Total precip.	=	6.80 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.037 x 83) + (0.020 x 98)] / 0.060



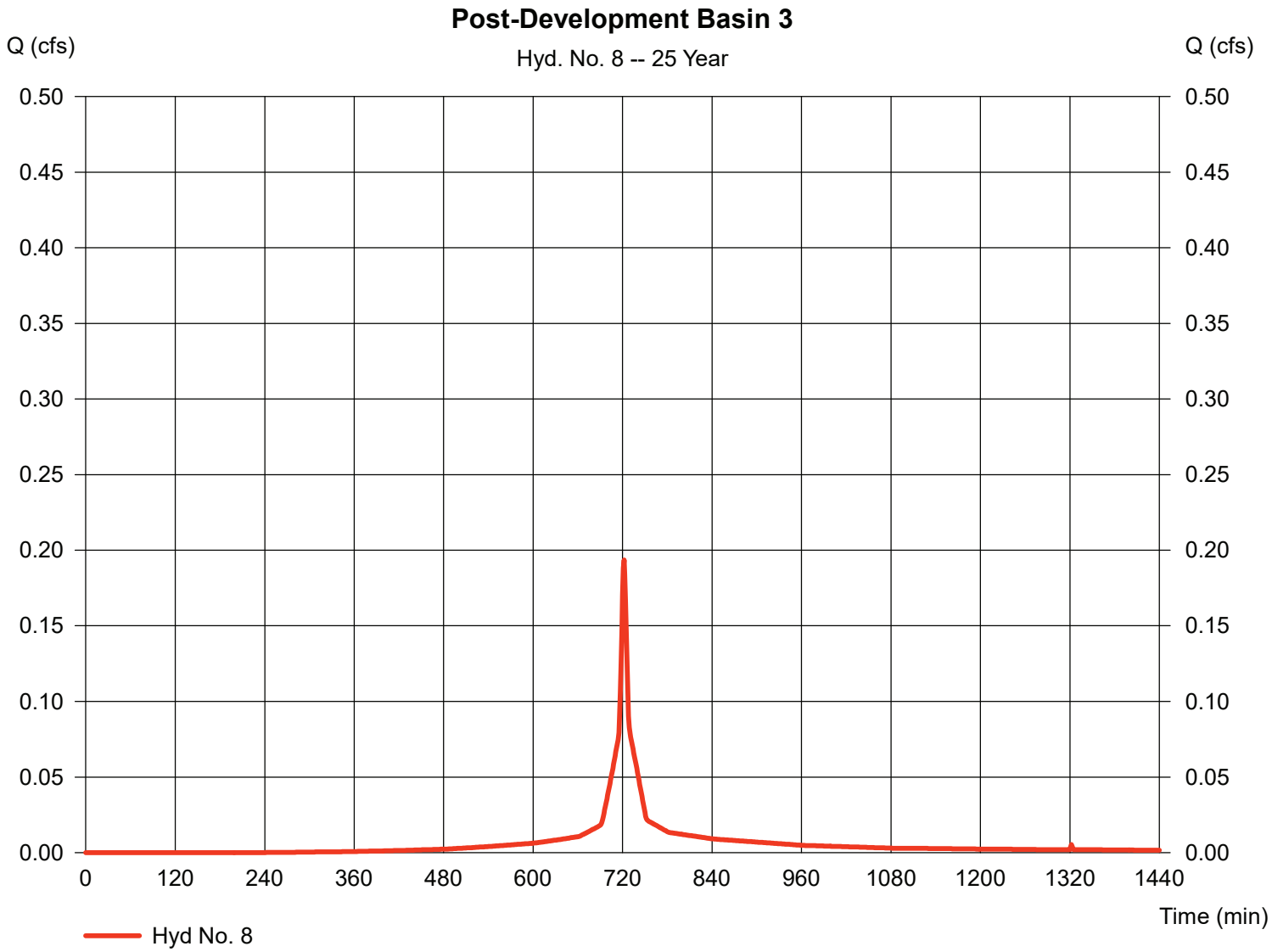
Hydrograph Report

Hyd. No. 8

Post-Development Basin 3

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.194 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	551 cuft
Drainage area	=	0.030 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	6.80 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.007 x 98) + (0.023 x 85)] / 0.030



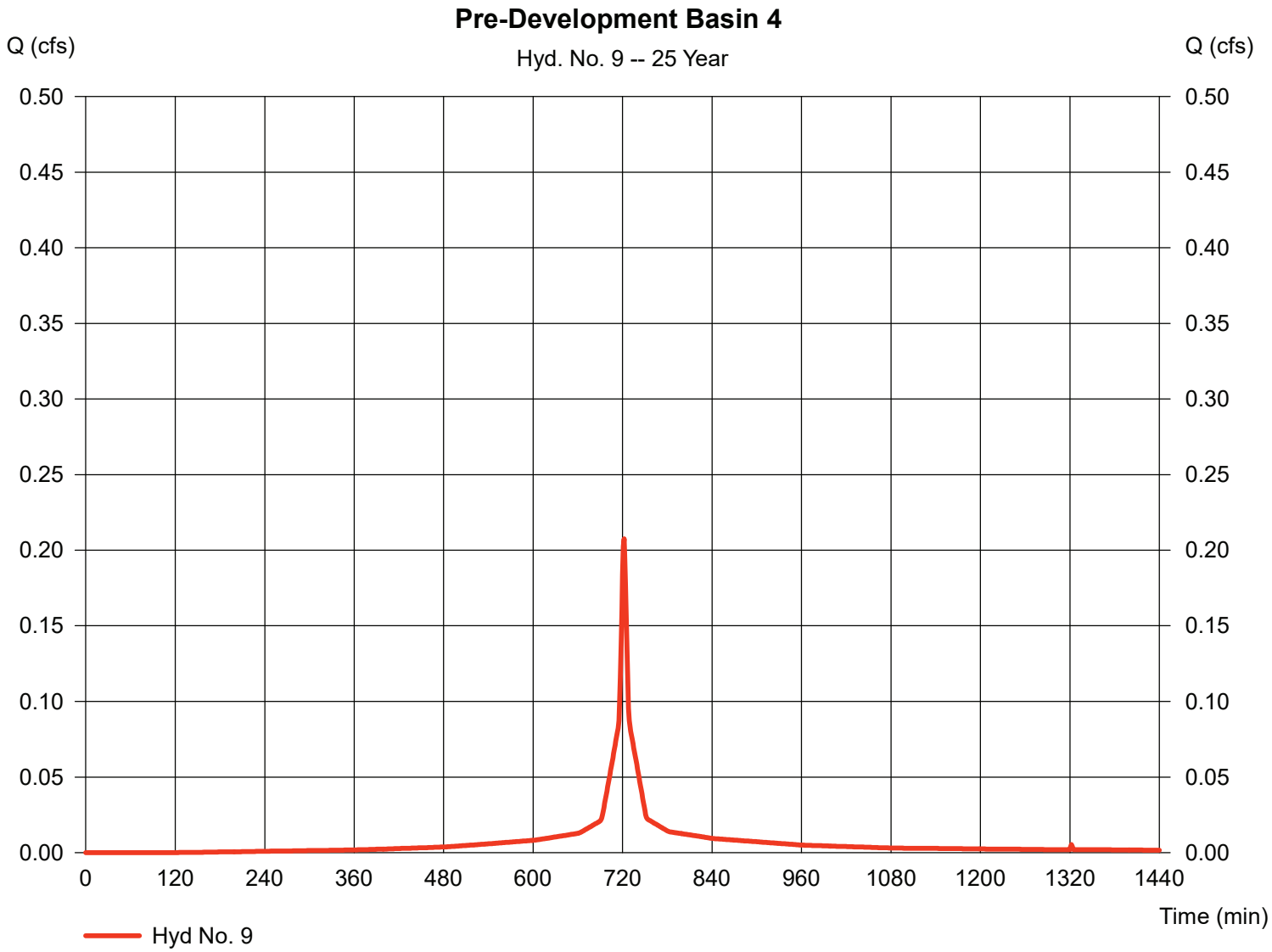
Hydrograph Report

Hyd. No. 9

Pre-Development Basin 4

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.208 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	622 cuft
Drainage area	=	0.030 ac	Curve number	=	94*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	6.80 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 98) + (0.010 x 85)] / 0.030

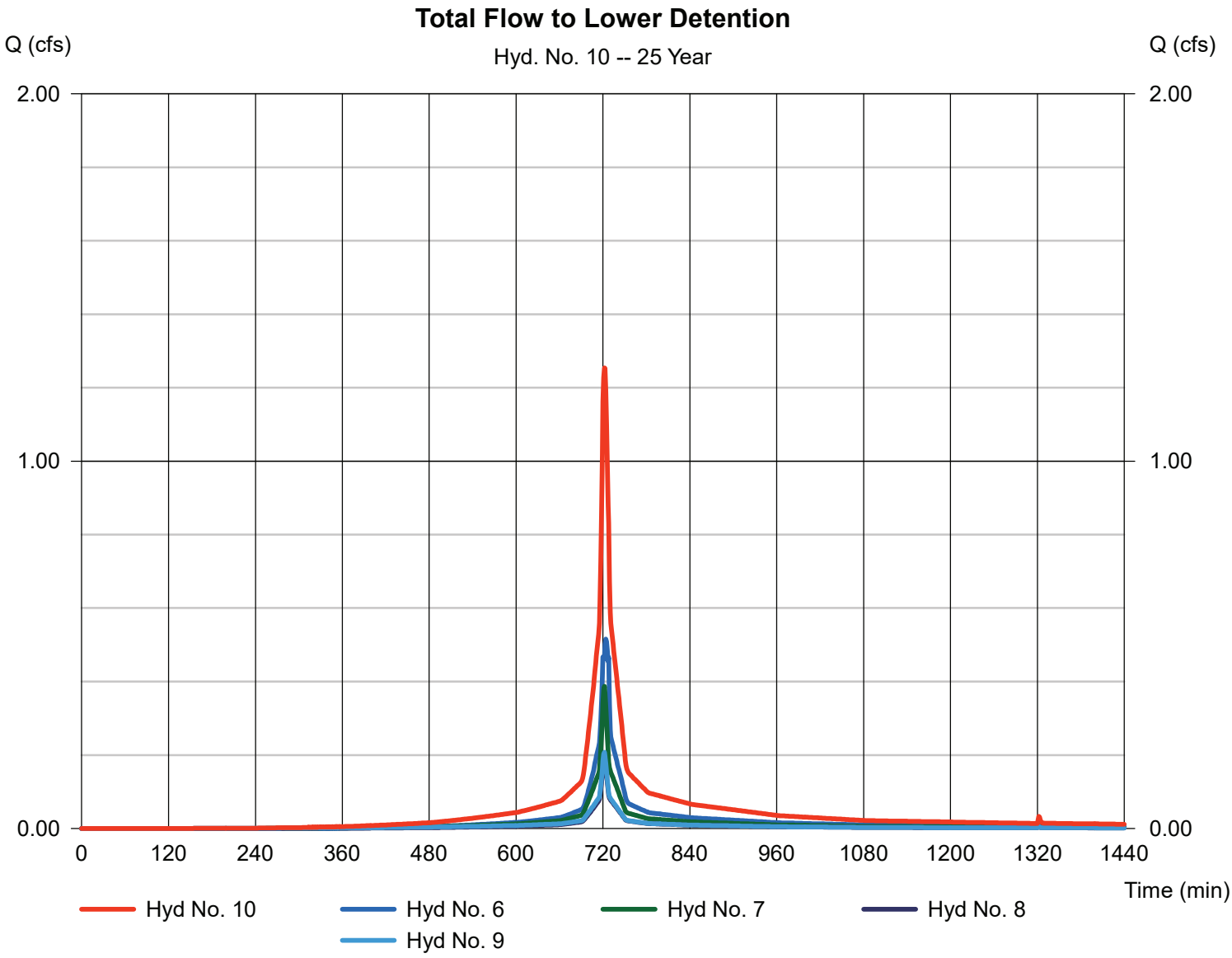


Hydrograph Report

Hyd. No. 10

Total Flow to Lower Detention

Hydrograph type	= Combine	Peak discharge	= 1.254 cfs
Storm frequency	= 25 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 3,960 cuft
Inflow hyds.	= 6, 7, 8, 9	Contrib. drain. area	= 0.120 ac



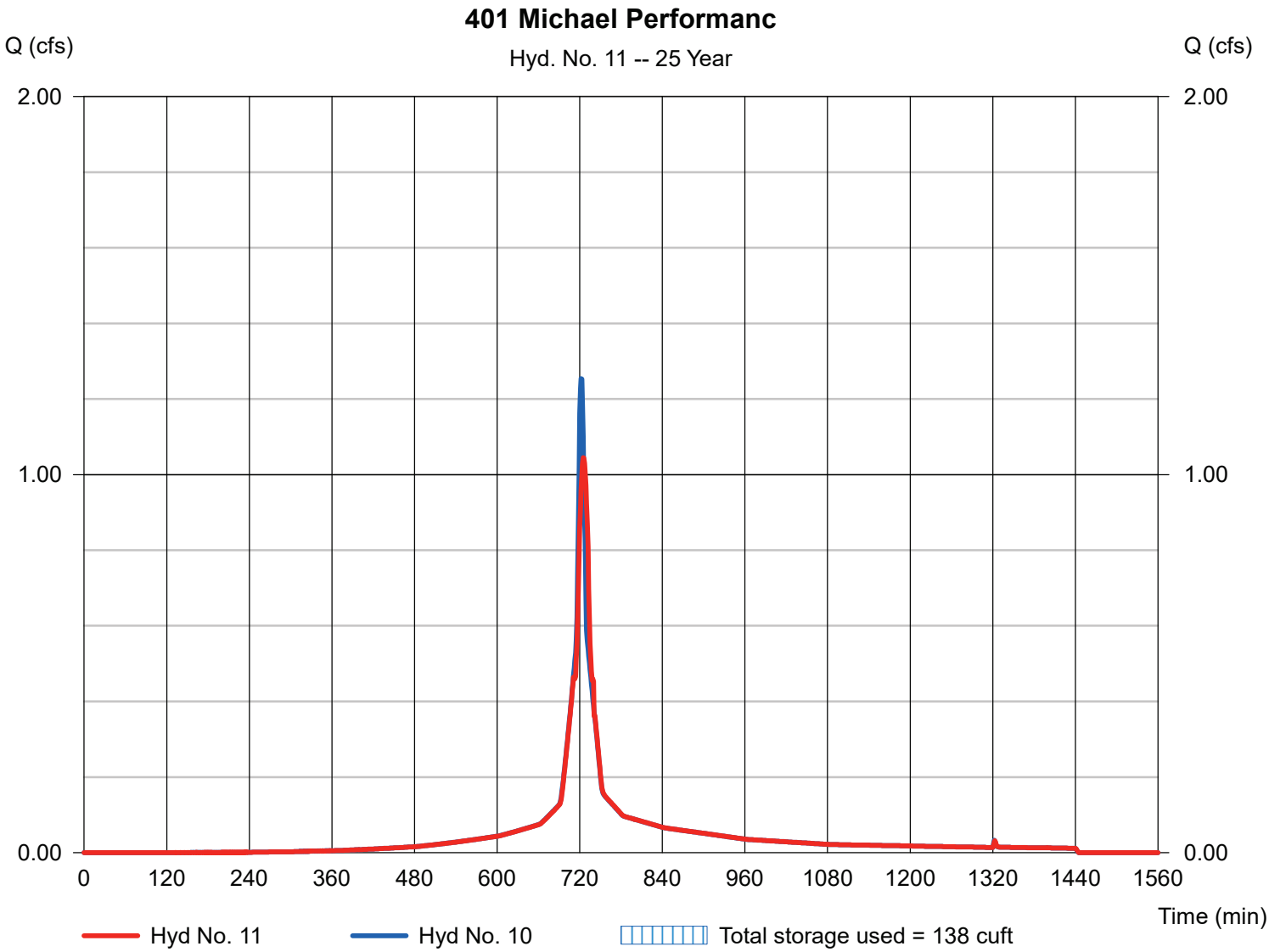
Hydrograph Report

Hyd. No. 11

401 Michael Performanc

Hydrograph type	=	Reservoir	Peak discharge	=	1.045 cfs
Storm frequency	=	25 yrs	Time to peak	=	725 min
Time interval	=	1 min	Hyd. volume	=	3,960 cuft
Inflow hyd. No.	=	10 - Total Flow to Lower Detention	Max. Elevation	=	76.60 ft
Reservoir name	=	401 Michael Detention	Max. Storage	=	138 cuft

Storage Indication method used.



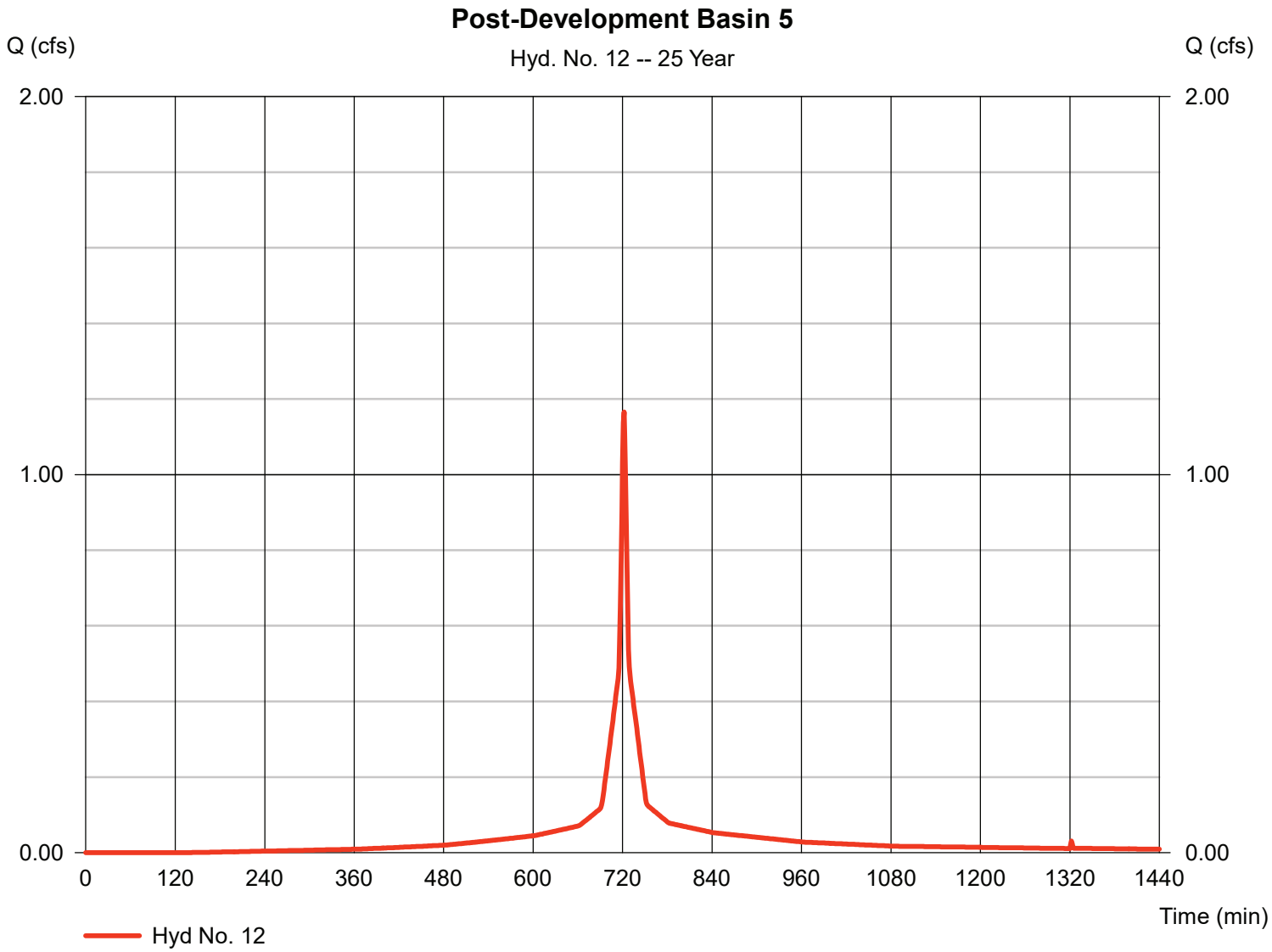
Hydrograph Report

Hyd. No. 12

Post-Development Basin 5

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.166 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	3,456 cuft
Drainage area	=	0.170 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.90 min
Total precip.	=	6.80 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.100 x 98) + (0.020 x 85) + (0.050 x 86)] / 0.170

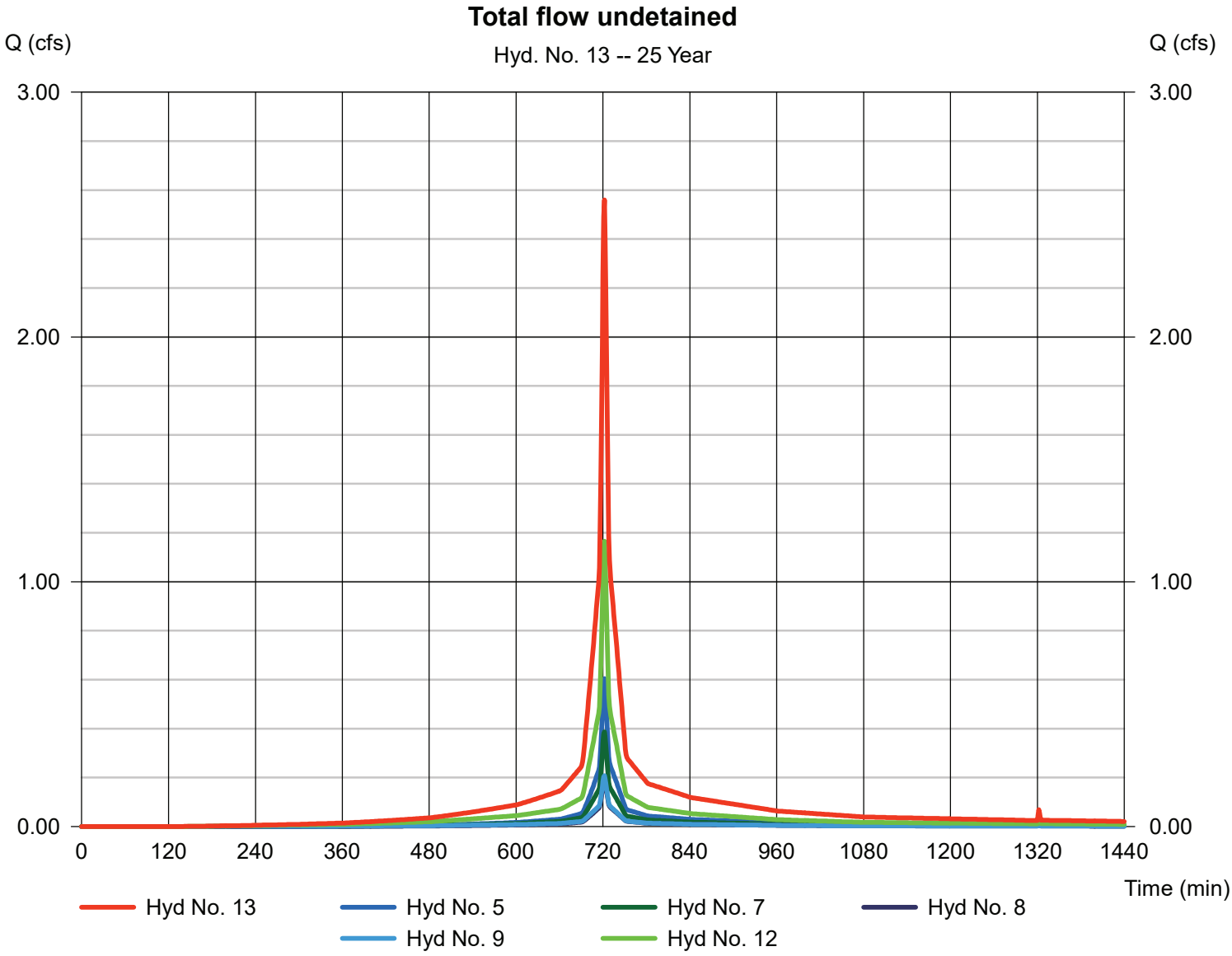


Hydrograph Report

Hyd. No. 13

Total flow undetained

Hydrograph type	=	Combine	Peak discharge	=	2.559 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	7,416 cuft
Inflow hyds.	=	5, 7, 8, 9, 12	Contrib. drain. area	=	0.390 ac

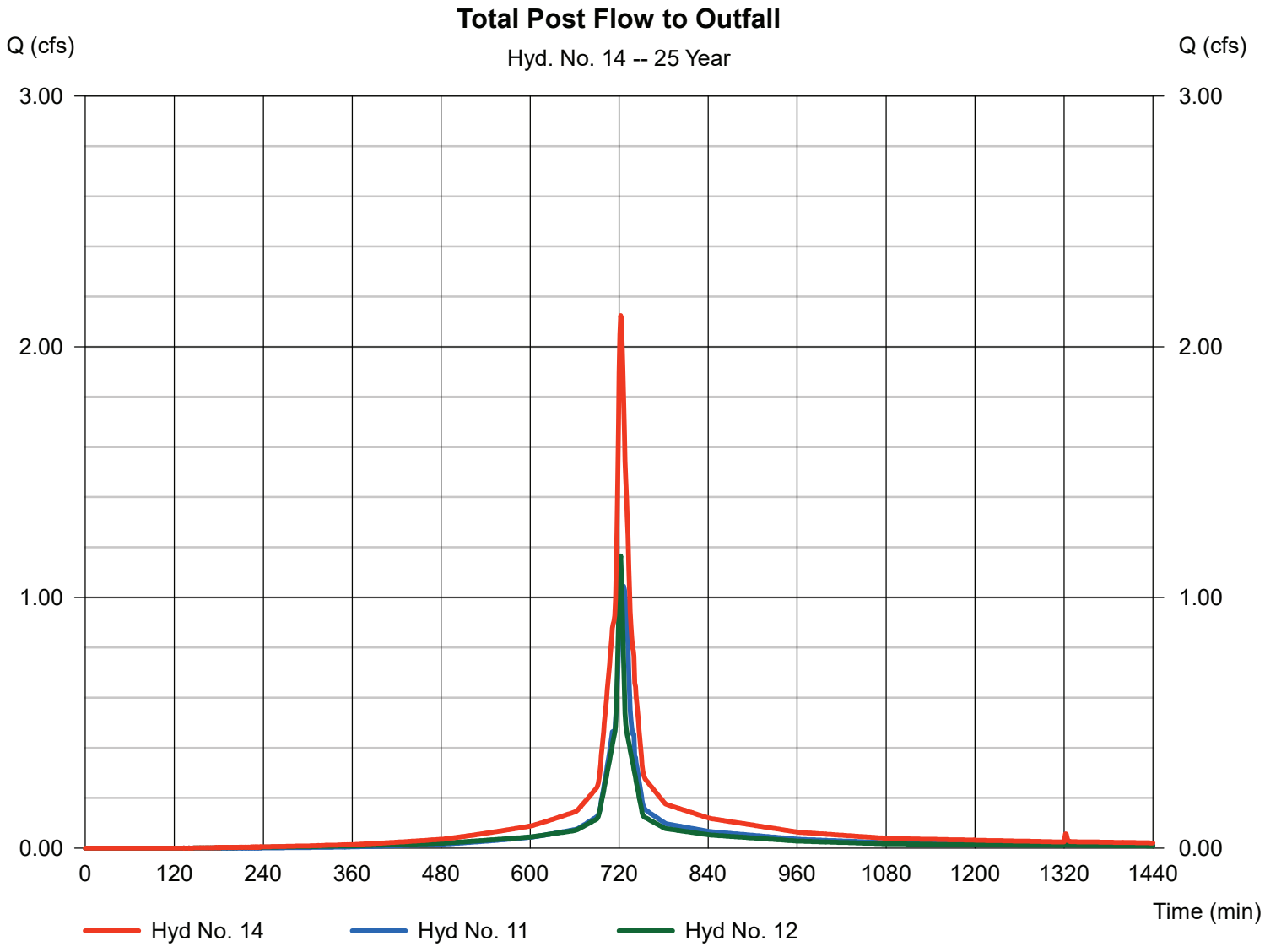


Hydrograph Report

Hyd. No. 14

Total Post Flow to Outfall

Hydrograph type	= Combine	Peak discharge	= 2.125 cfs
Storm frequency	= 25 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 7,416 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 0.170 ac



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.633	1	722	1,776	----	------	------	Pre-Development Basin 1
2	SCS Runoff	2.242	1	723	6,823	----	------	------	Pre-Development Basin 2
3	Combine	2.846	1	723	8,599	1, 2	------	------	Total Pre-Devlopment Flow to Outfall
5	SCS Runoff	0.703	1	722	1,973	----	------	------	Post-Development Basin 1
6	Reservoir	0.595	1	724	1,973	5	86.52	64.6	Upper Detention
7	SCS Runoff	0.446	1	722	1,279	----	------	------	Post-Development Basin 2
8	SCS Runoff	0.223	1	722	640	----	------	------	Post-Development Basin 3
9	SCS Runoff	0.236	1	722	712	----	------	------	Pre-Development Basin 4
10	Combine	1.448	1	722	4,604	6, 7, 8, 9	------	------	Total Flow to Lower Detention
11	Reservoir	1.153	1	726	4,604	10	76.94	187	401 Michael Performanc
12	SCS Runoff	1.327	1	722	3,966	----	------	------	Post-Development Basin 5
13	Combine	2.935	1	722	8,570	5, 7, 8, 9, 12	------	------	Total flow undetained
14	Combine	2.356	1	722	8,570	11, 12,	------	------	Total Post Flow to Outfall

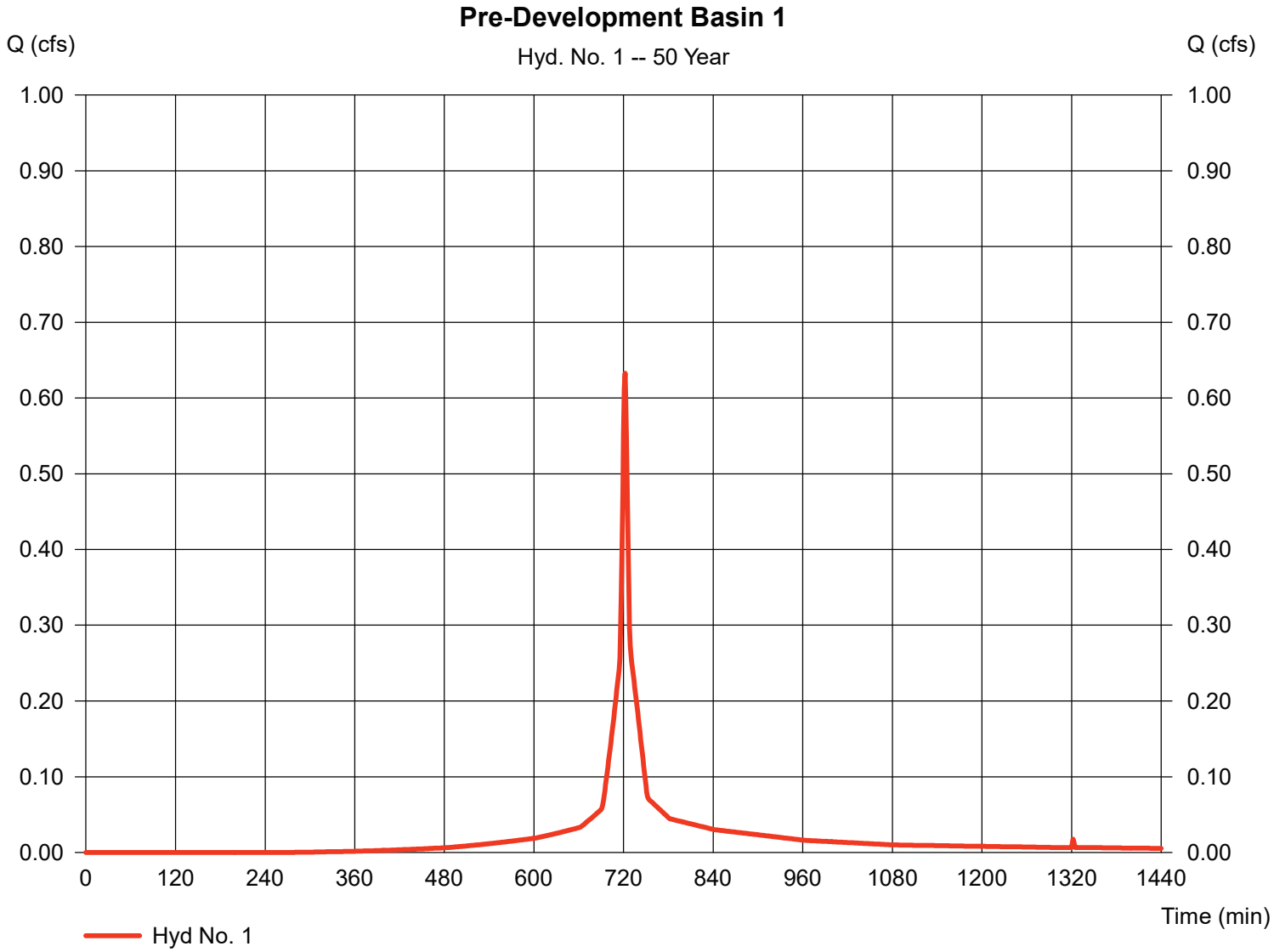
Hydrograph Report

Hyd. No. 1

Pre-Development Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.633 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	1,776 cuft
Drainage area	=	0.090 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	7.69 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 85) + (0.070 x 84)] / 0.090



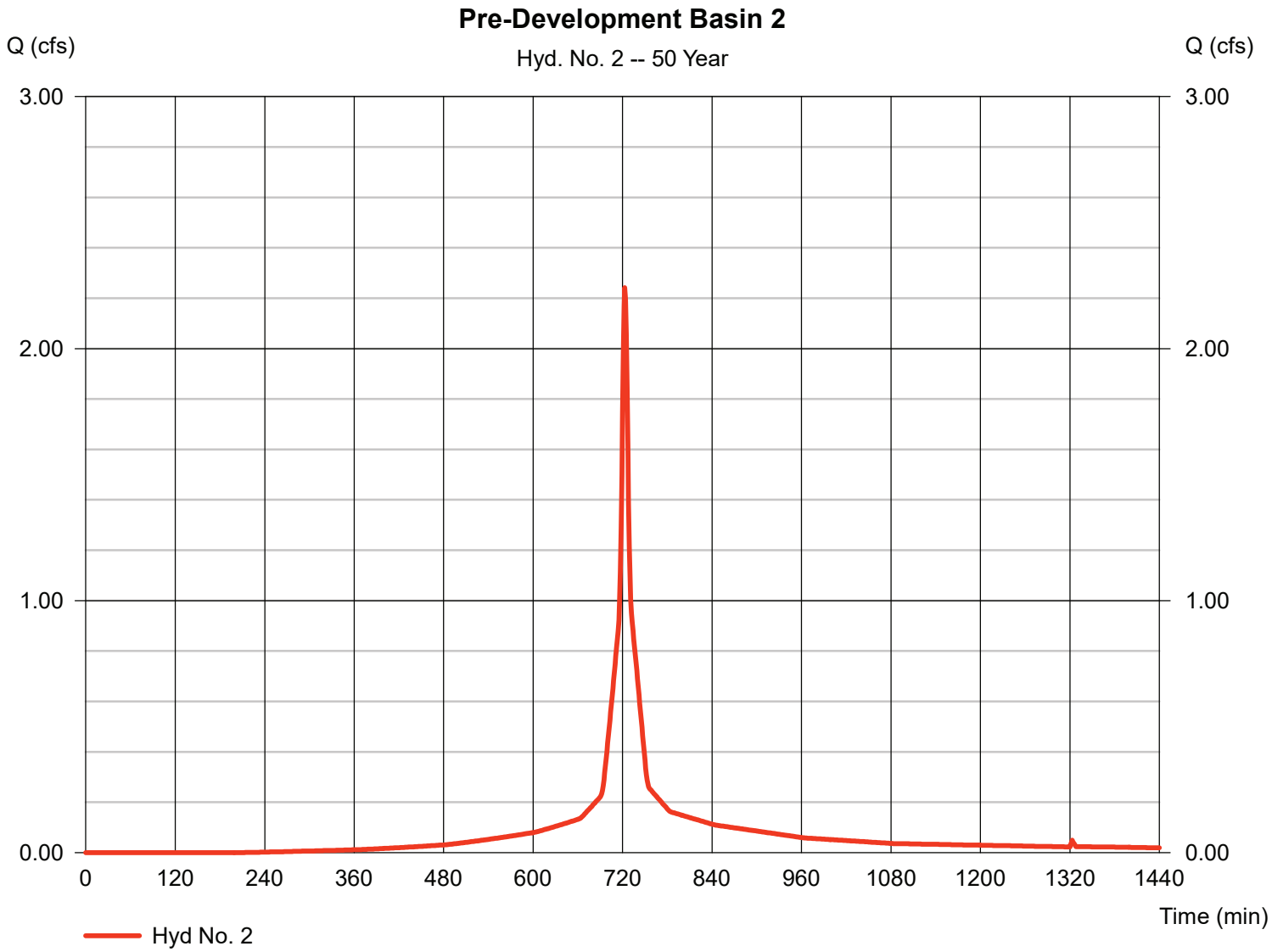
Hydrograph Report

Hyd. No. 2

Pre-Development Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.242 cfs
Storm frequency	=	50 yrs	Time to peak	=	723 min
Time interval	=	1 min	Hyd. volume	=	6,823 cuft
Drainage area	=	0.300 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	3.70 min
Total precip.	=	7.69 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.054 x 83) + (0.123 x 86) + (0.057 x 98) + (0.064 x 85)] / 0.300

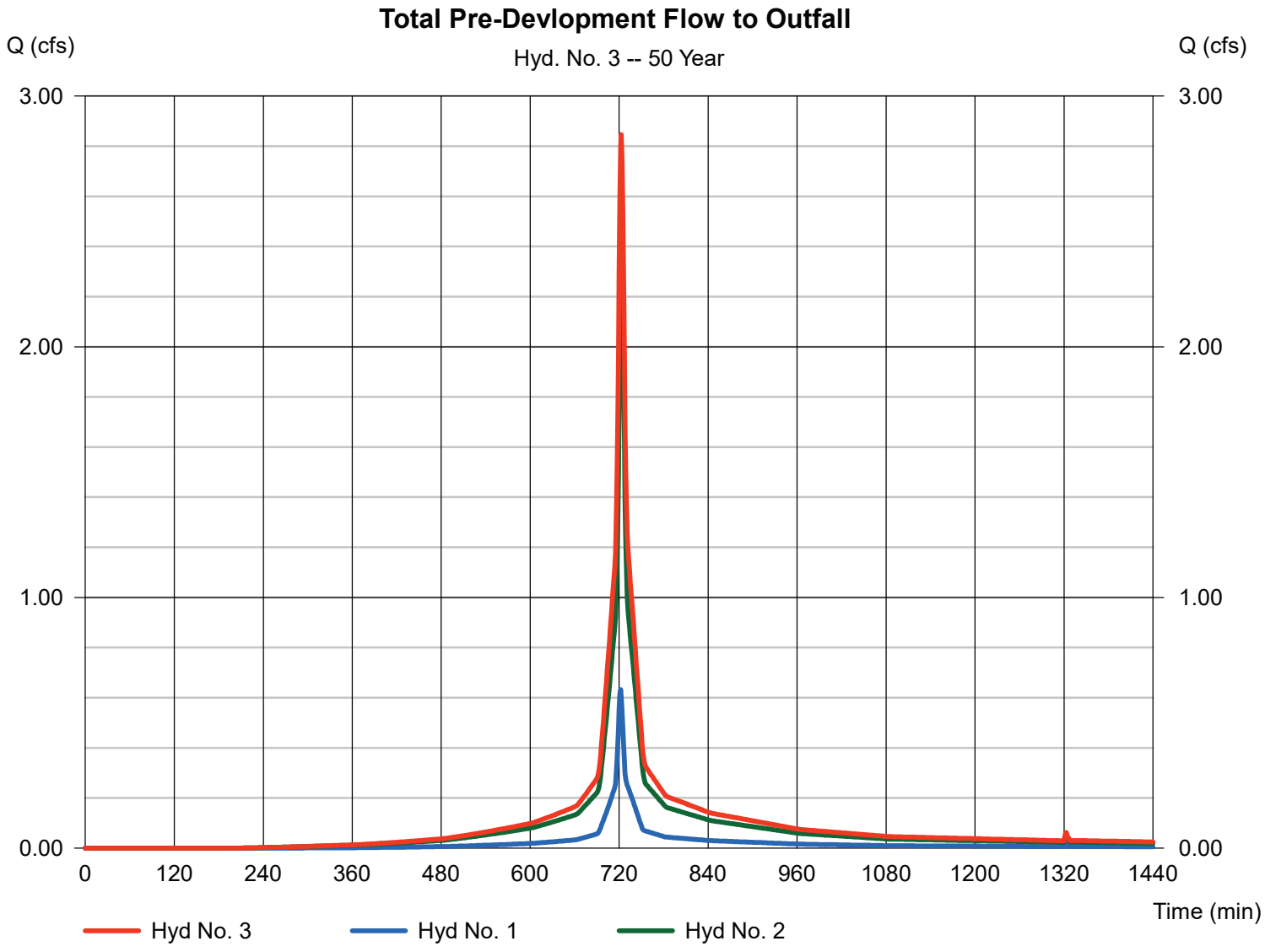


Hydrograph Report

Hyd. No. 3

Total Pre-Devlopment Flow to Outfall

Hydrograph type	= Combine	Peak discharge	= 2.846 cfs
Storm frequency	= 50 yrs	Time to peak	= 723 min
Time interval	= 1 min	Hyd. volume	= 8,599 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 0.390 ac



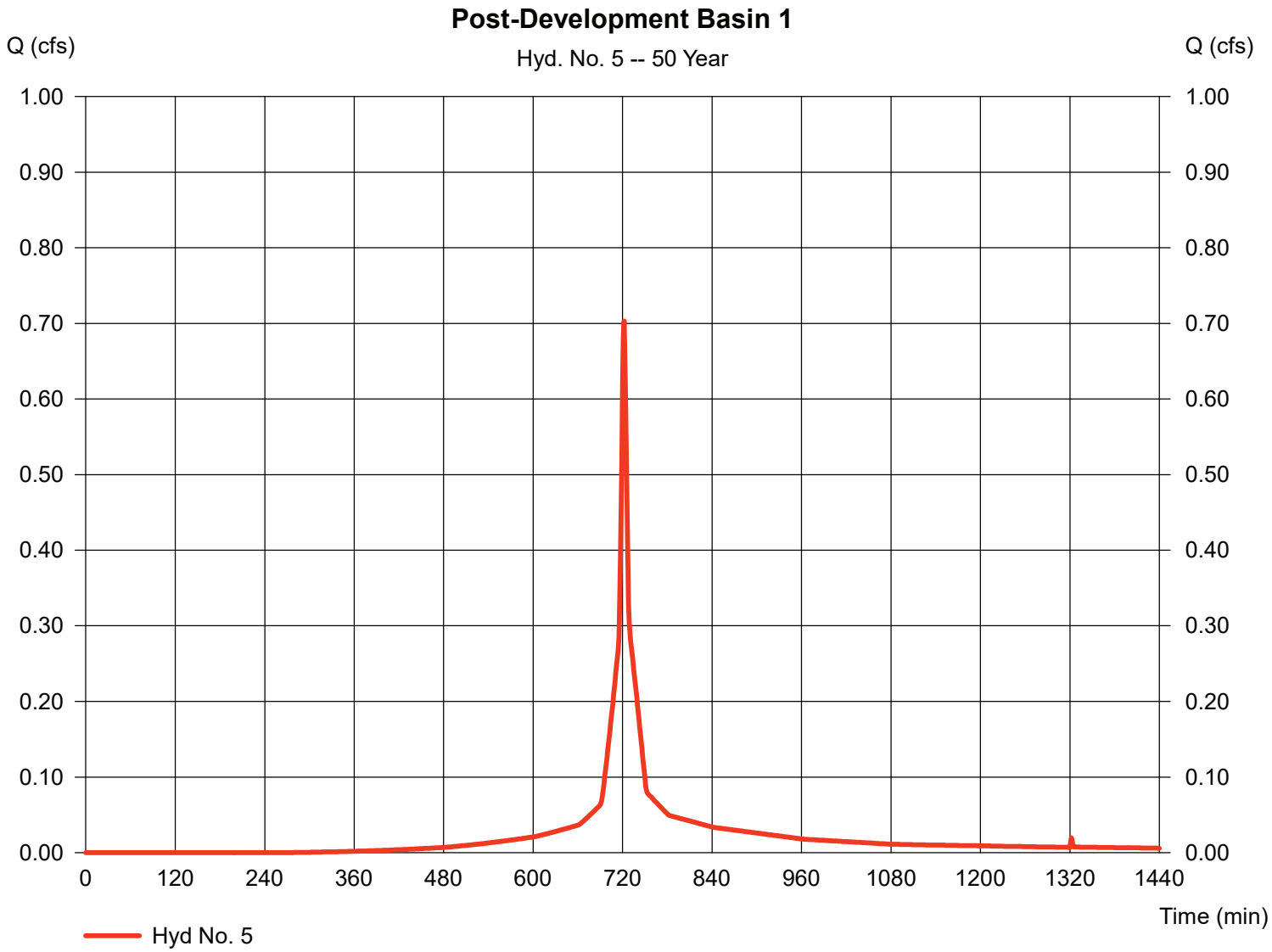
Hydrograph Report

Hyd. No. 5

Post-Development Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.703 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	1,973 cuft
Drainage area	=	0.100 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	7.69 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 98) + (0.020 x 83) + (0.060 x 80)] / 0.100



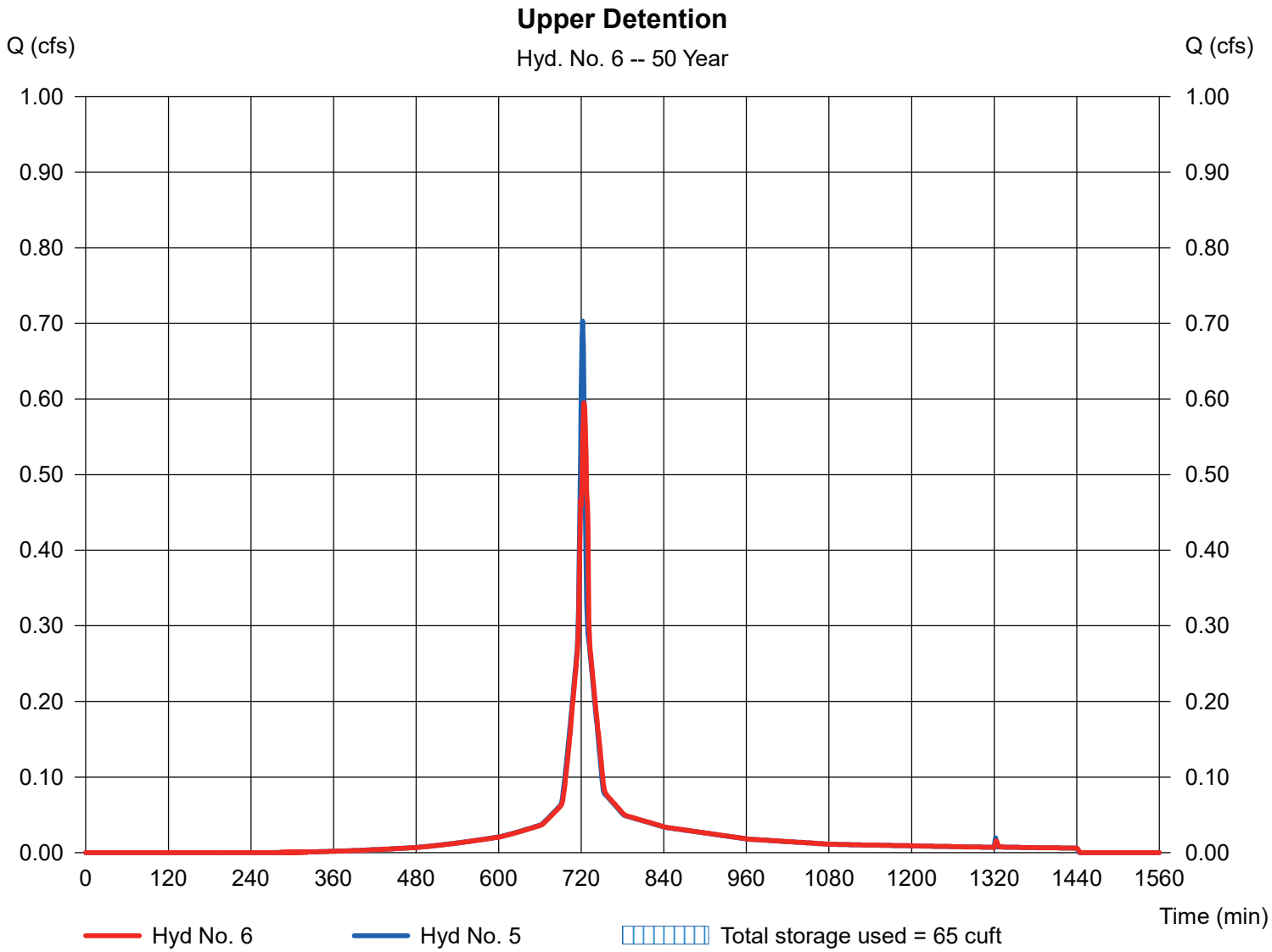
Hydrograph Report

Hyd. No. 6

Upper Detention

Hydrograph type	=	Reservoir	Peak discharge	=	0.595 cfs
Storm frequency	=	50 yrs	Time to peak	=	724 min
Time interval	=	1 min	Hyd. volume	=	1,973 cuft
Inflow hyd. No.	=	5 - Post-Development Basin 1	Max. Elevation	=	86.52 ft
Reservoir name	=	401 Upper Detention	Max. Storage	=	65 cuft

Storage Indication method used.



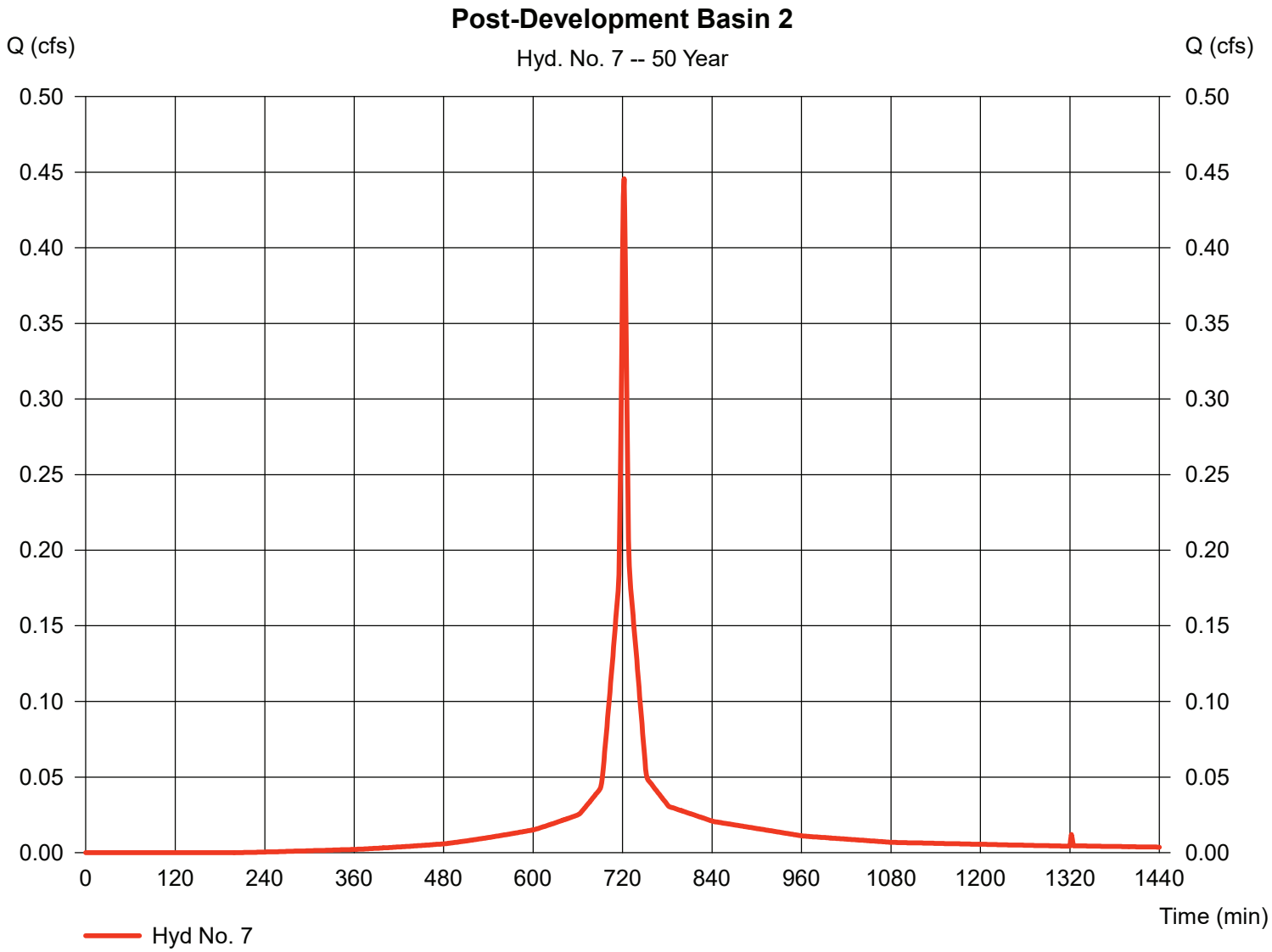
Hydrograph Report

Hyd. No. 7

Post-Development Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.446 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	1,279 cuft
Drainage area	=	0.060 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.11 min
Total precip.	=	7.69 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.037 x 83) + (0.020 x 98)] / 0.060



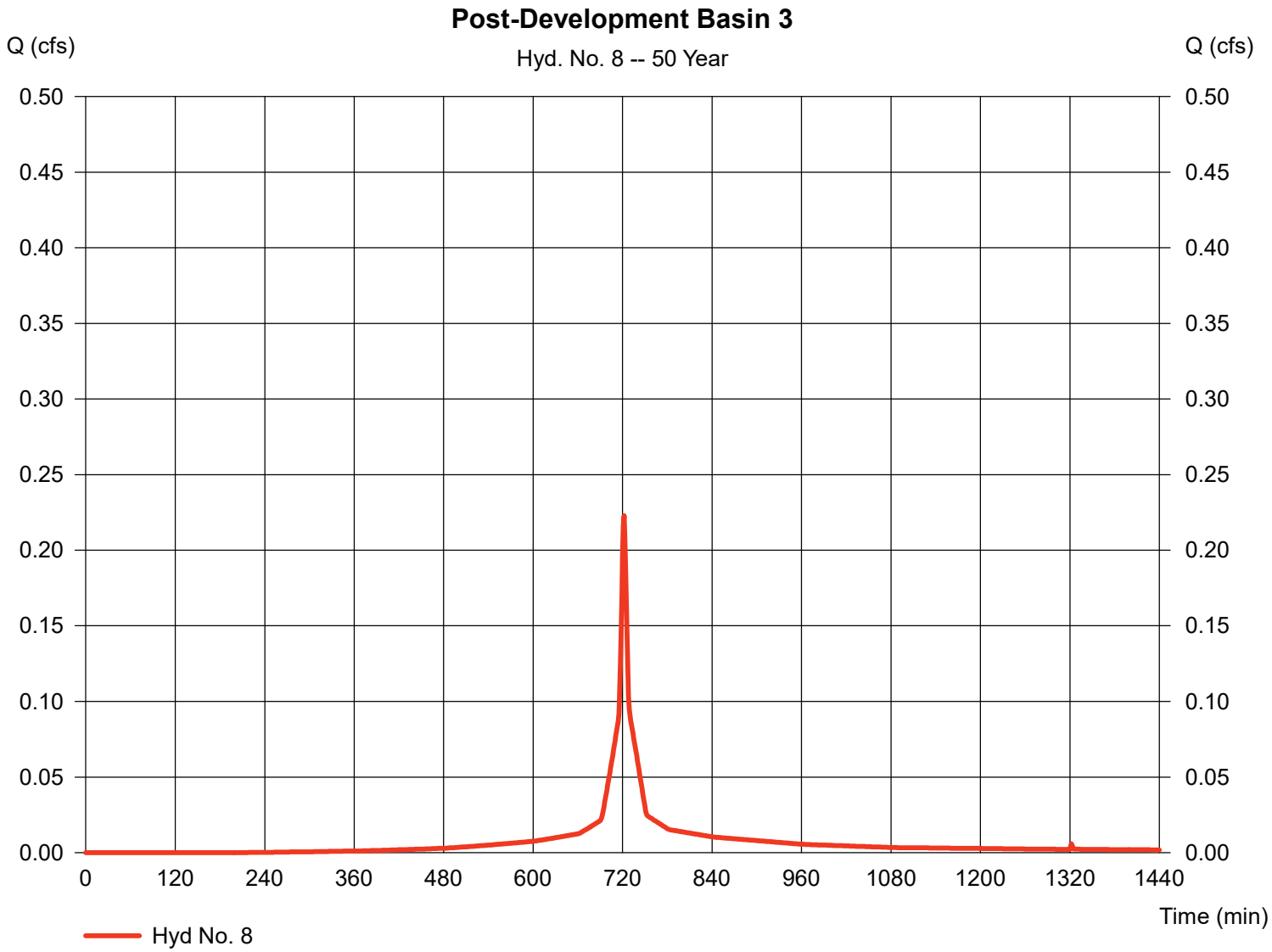
Hydrograph Report

Hyd. No. 8

Post-Development Basin 3

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.223 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	640 cuft
Drainage area	=	0.030 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	7.69 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.007 x 98) + (0.023 x 85)] / 0.030



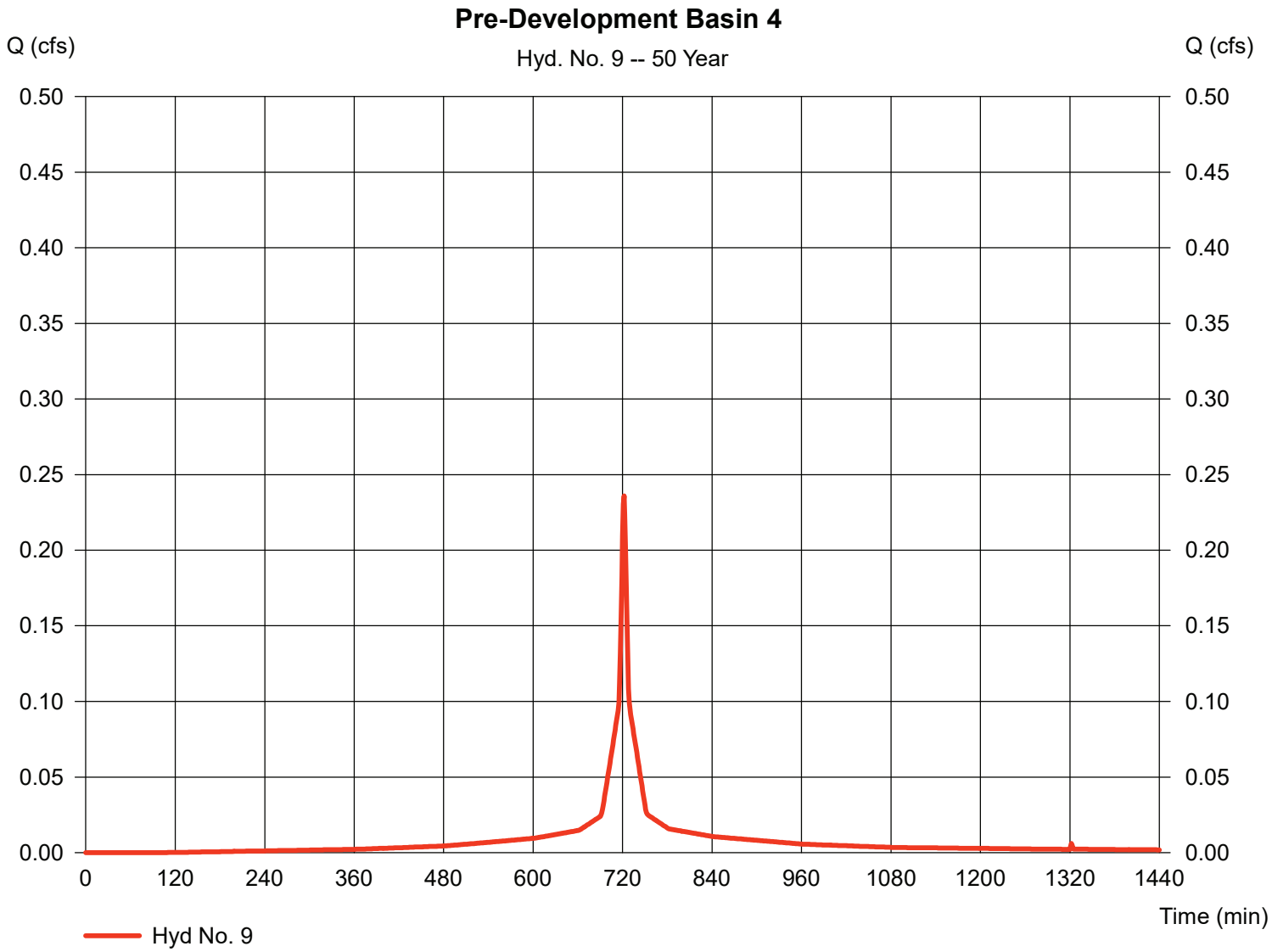
Hydrograph Report

Hyd. No. 9

Pre-Development Basin 4

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.236 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	712 cuft
Drainage area	=	0.030 ac	Curve number	=	94*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	7.69 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 98) + (0.010 x 85)] / 0.030

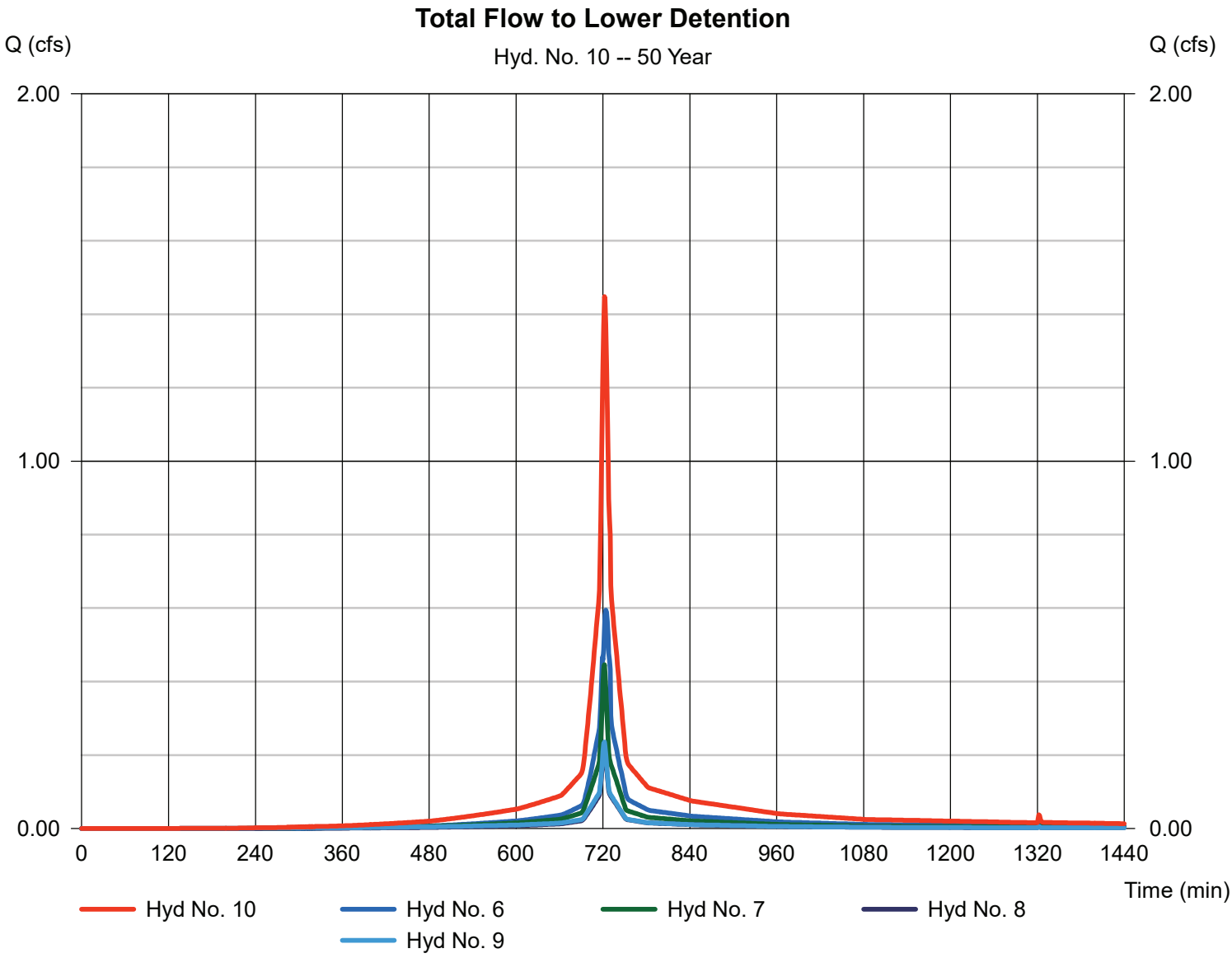


Hydrograph Report

Hyd. No. 10

Total Flow to Lower Detention

Hydrograph type	= Combine	Peak discharge	= 1.448 cfs
Storm frequency	= 50 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 4,604 cuft
Inflow hyds.	= 6, 7, 8, 9	Contrib. drain. area	= 0.120 ac



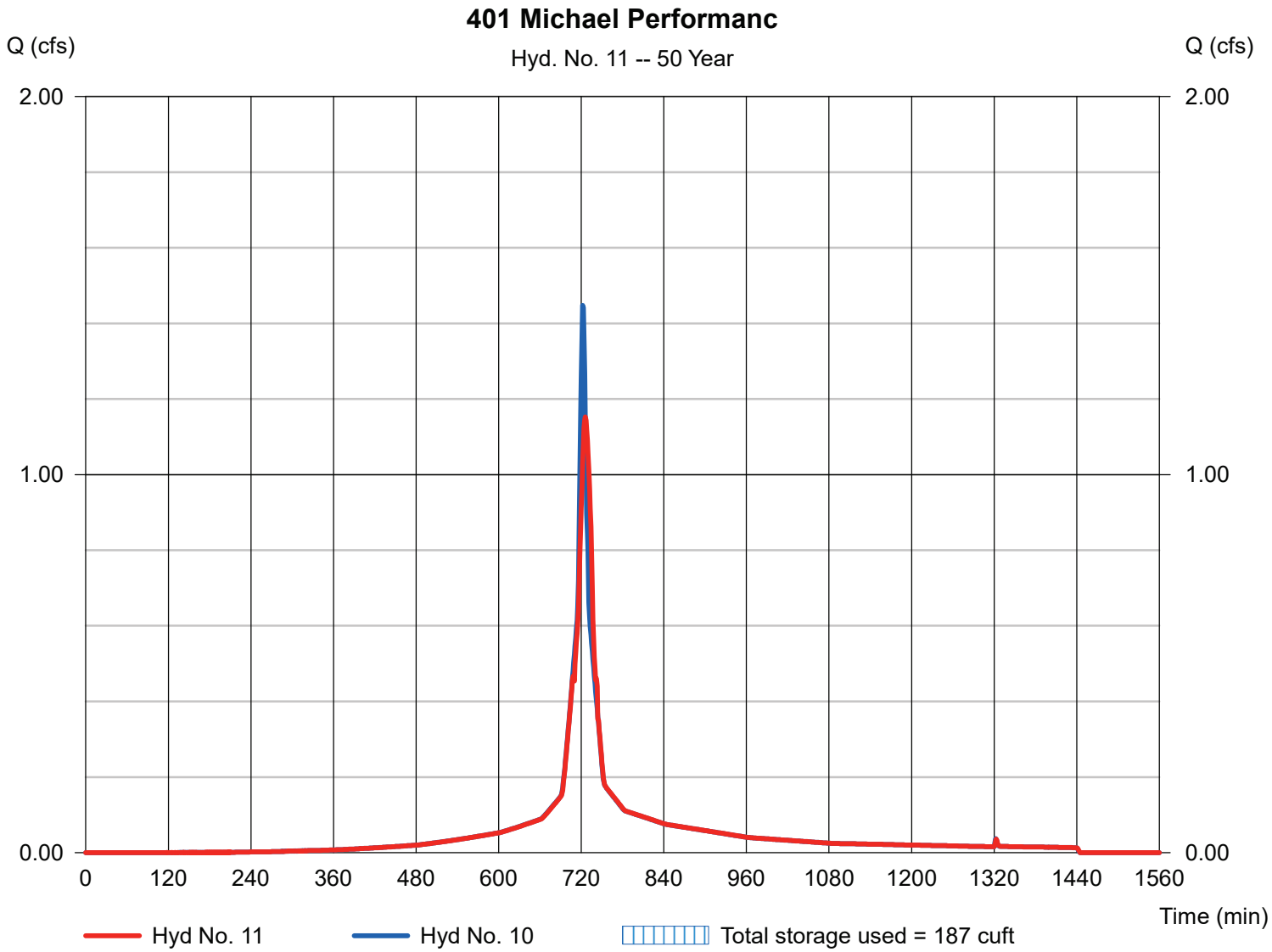
Hydrograph Report

Hyd. No. 11

401 Michael Performanc

Hydrograph type	=	Reservoir	Peak discharge	=	1.153 cfs
Storm frequency	=	50 yrs	Time to peak	=	726 min
Time interval	=	1 min	Hyd. volume	=	4,604 cuft
Inflow hyd. No.	=	10 - Total Flow to Lower Detention	Max. Elevation	=	76.94 ft
Reservoir name	=	401 Michael Detention	Max. Storage	=	187 cuft

Storage Indication method used.



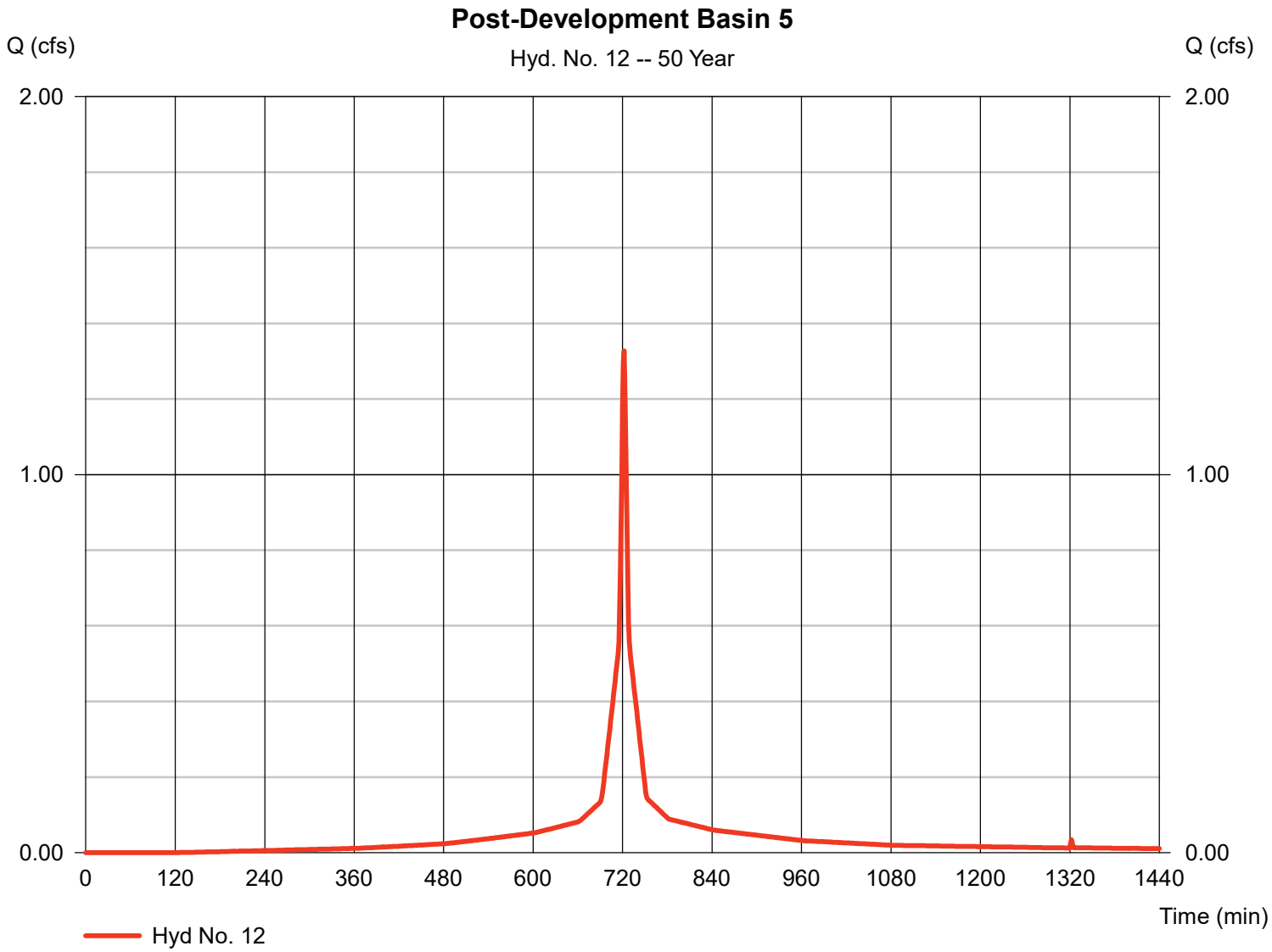
Hydrograph Report

Hyd. No. 12

Post-Development Basin 5

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.327 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	3,966 cuft
Drainage area	=	0.170 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.90 min
Total precip.	=	7.69 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.100 x 98) + (0.020 x 85) + (0.050 x 86)] / 0.170

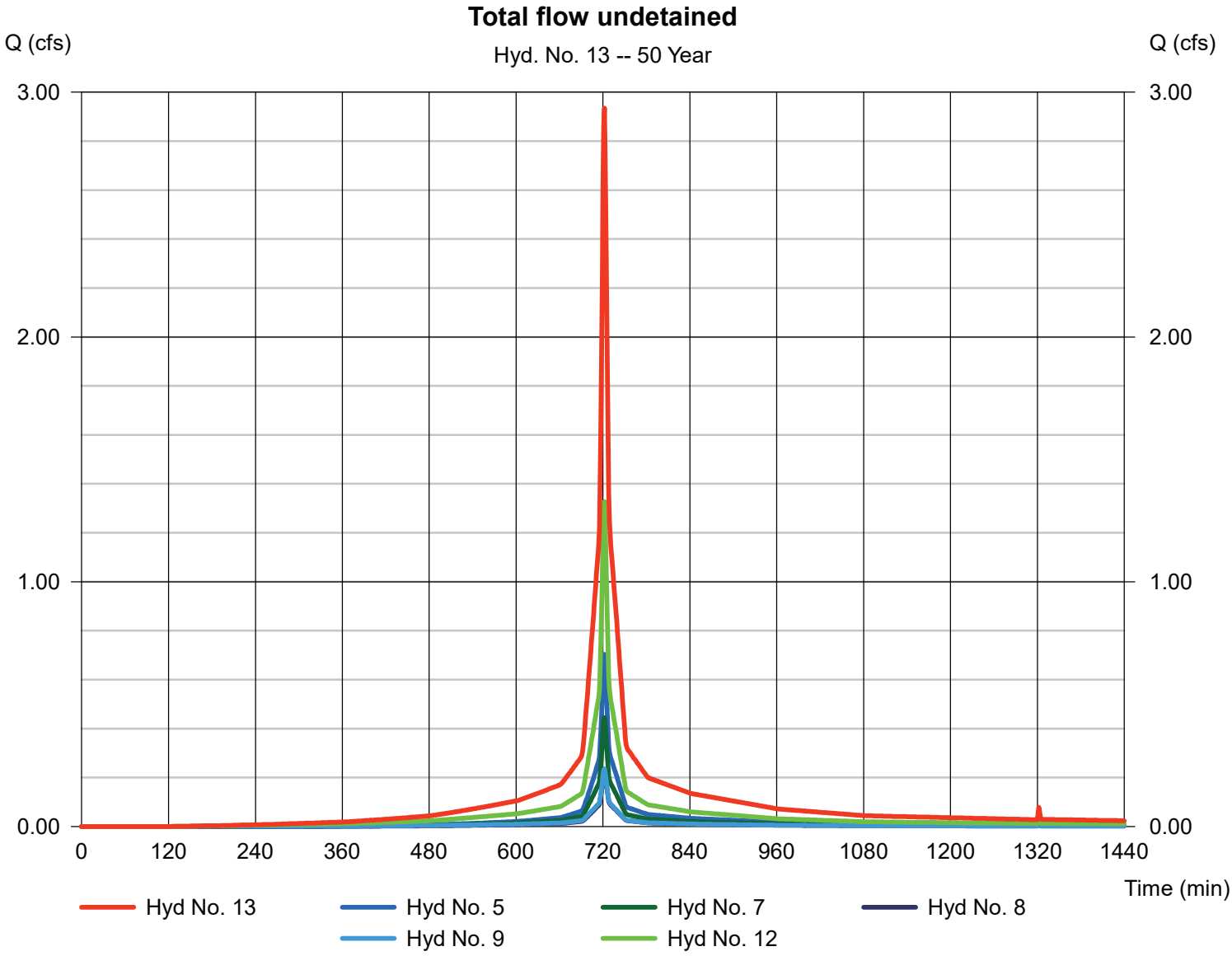


Hydrograph Report

Hyd. No. 13

Total flow undetained

Hydrograph type	=	Combine	Peak discharge	=	2.935 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	8,570 cuft
Inflow hyds.	=	5, 7, 8, 9, 12	Contrib. drain. area	=	0.390 ac

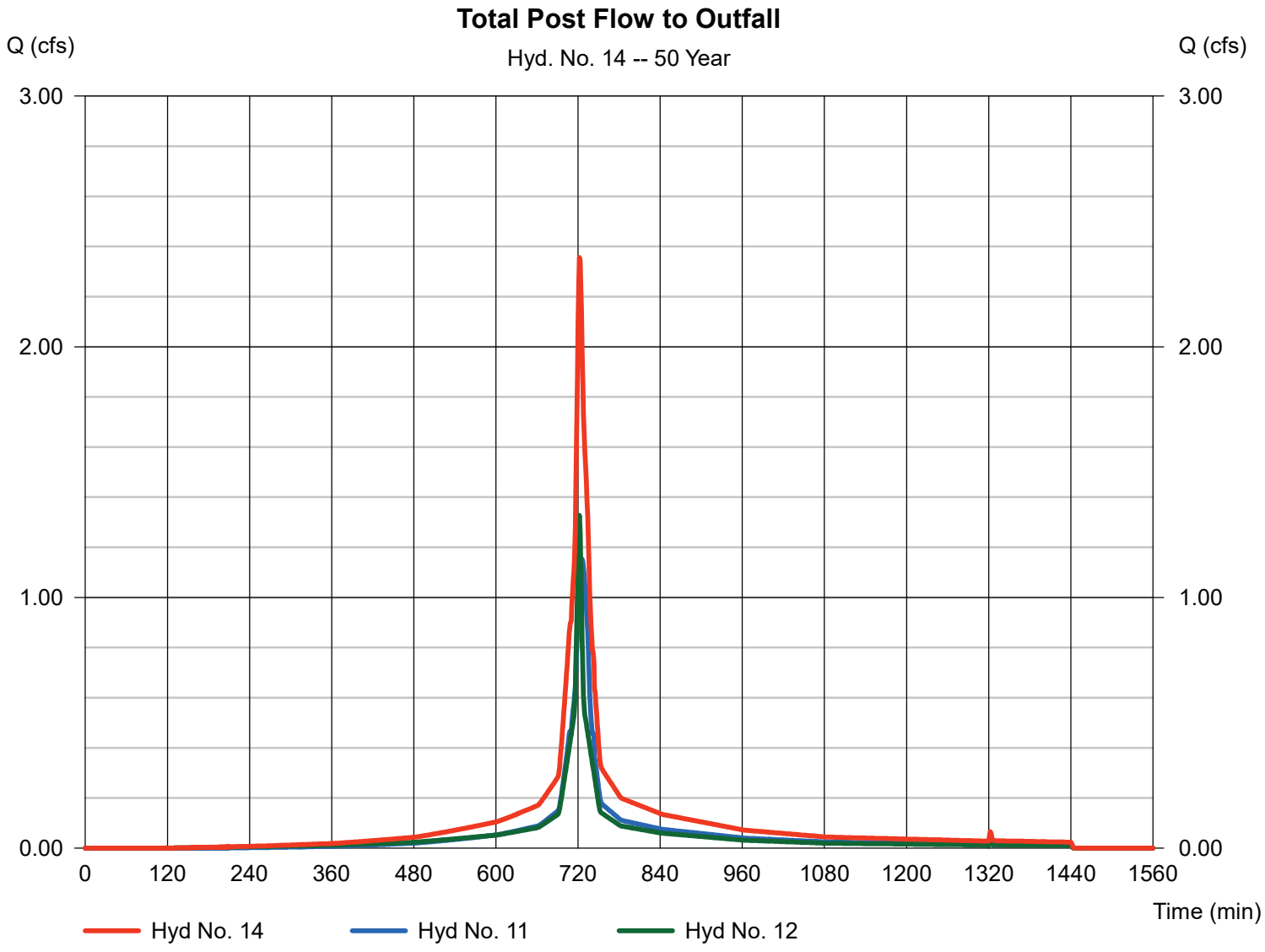


Hydrograph Report

Hyd. No. 14

Total Post Flow to Outfall

Hydrograph type	= Combine	Peak discharge	= 2.356 cfs
Storm frequency	= 50 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 8,570 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 0.170 ac



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.725	1	722	2,050	----	------	------	Pre-Development Basin 1
2	SCS Runoff	2.548	1	723	7,814	----	------	------	Pre-Development Basin 2
3	Combine	3.239	1	723	9,863	1, 2	------	------	Total Pre-Devlopment Flow to Outfall
5	SCS Runoff	0.805	1	722	2,277	----	------	------	Post-Development Basin 1
6	Reservoir	0.671	1	724	2,277	5	86.66	82.1	Upper Detention
7	SCS Runoff	0.506	1	722	1,465	----	------	------	Post-Development Basin 2
8	SCS Runoff	0.253	1	722	733	----	------	------	Post-Development Basin 3
9	SCS Runoff	0.266	1	722	806	----	------	------	Pre-Development Basin 4
10	Combine	1.639	1	722	5,281	6, 7, 8, 9	------	------	Total Flow to Lower Detention
11	Reservoir	1.225	1	726	5,281	10	77.20	245	401 Michael Performanc
12	SCS Runoff	1.496	1	722	4,500	----	------	------	Post-Development Basin 5
13	Combine	3.326	1	722	9,781	5, 7, 8, 9, 12	------	------	Total flow undetained
14	Combine	2.602	1	722	9,781	11, 12,	------	------	Total Post Flow to Outfall

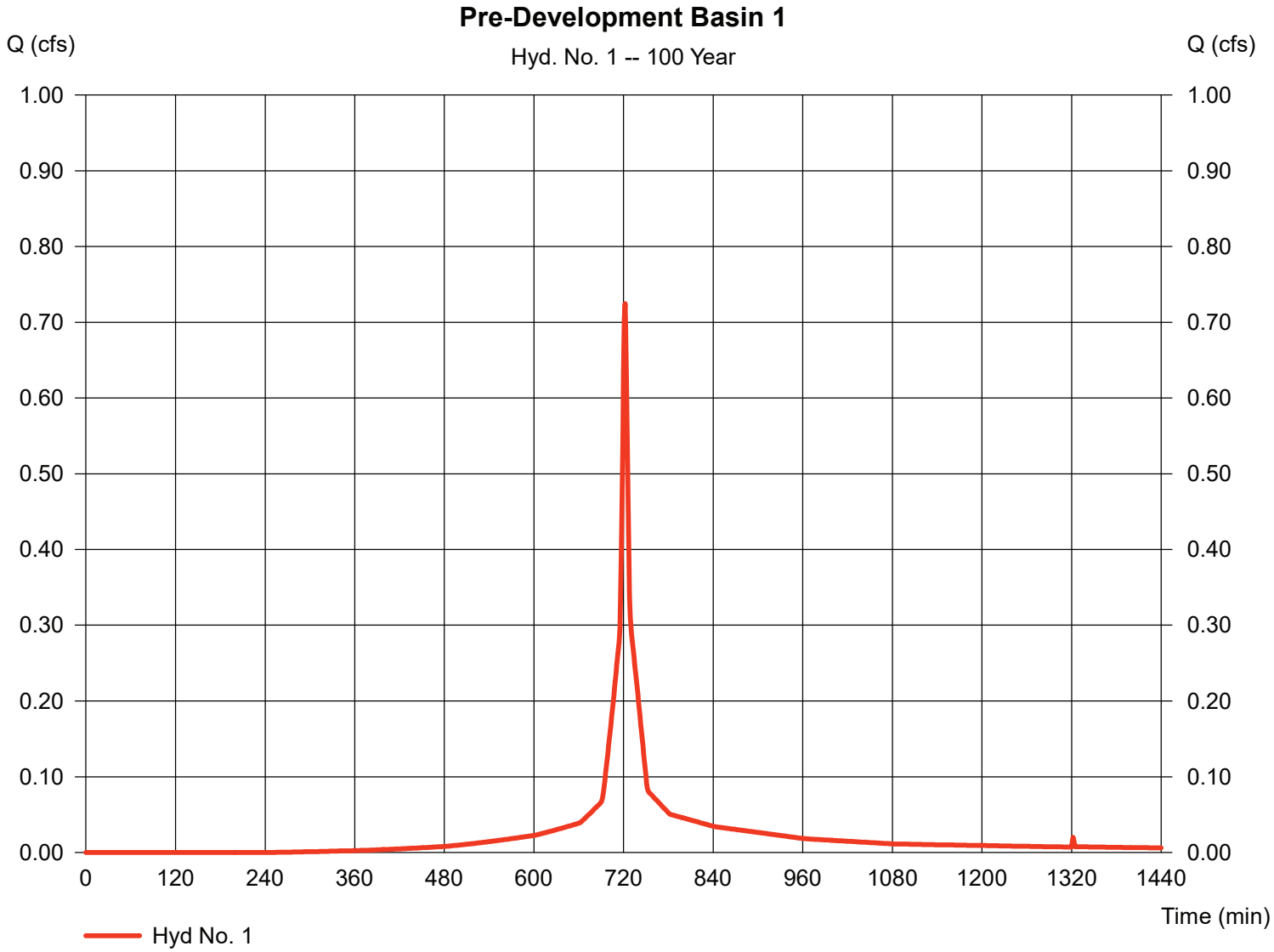
Hydrograph Report

Hyd. No. 1

Pre-Development Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.725 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	2,050 cuft
Drainage area	=	0.090 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	8.62 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 85) + (0.070 x 84)] / 0.090



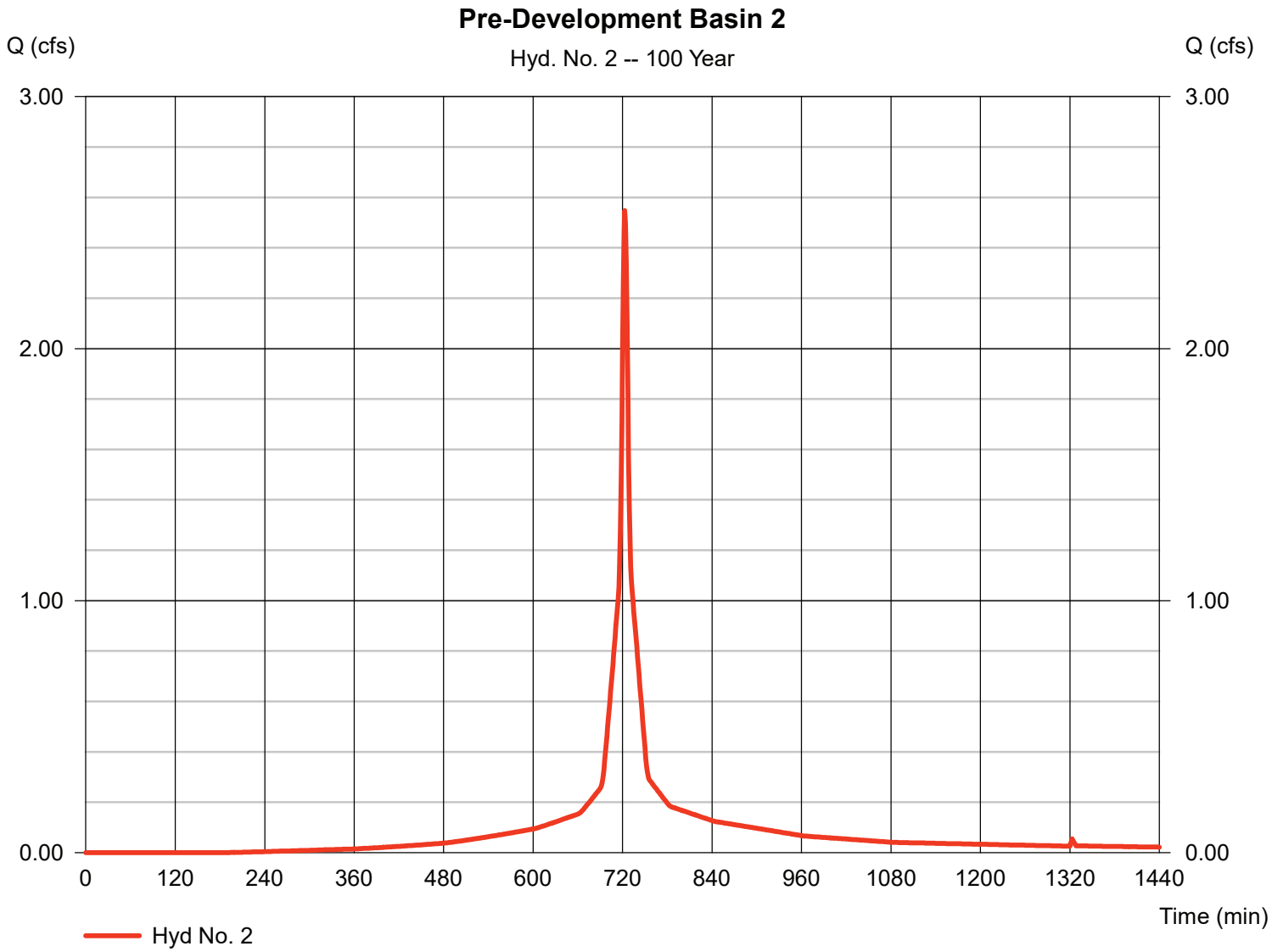
Hydrograph Report

Hyd. No. 2

Pre-Development Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.548 cfs
Storm frequency	=	100 yrs	Time to peak	=	723 min
Time interval	=	1 min	Hyd. volume	=	7,814 cuft
Drainage area	=	0.300 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	3.70 min
Total precip.	=	8.62 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.054 x 83) + (0.123 x 86) + (0.057 x 98) + (0.064 x 85)] / 0.300

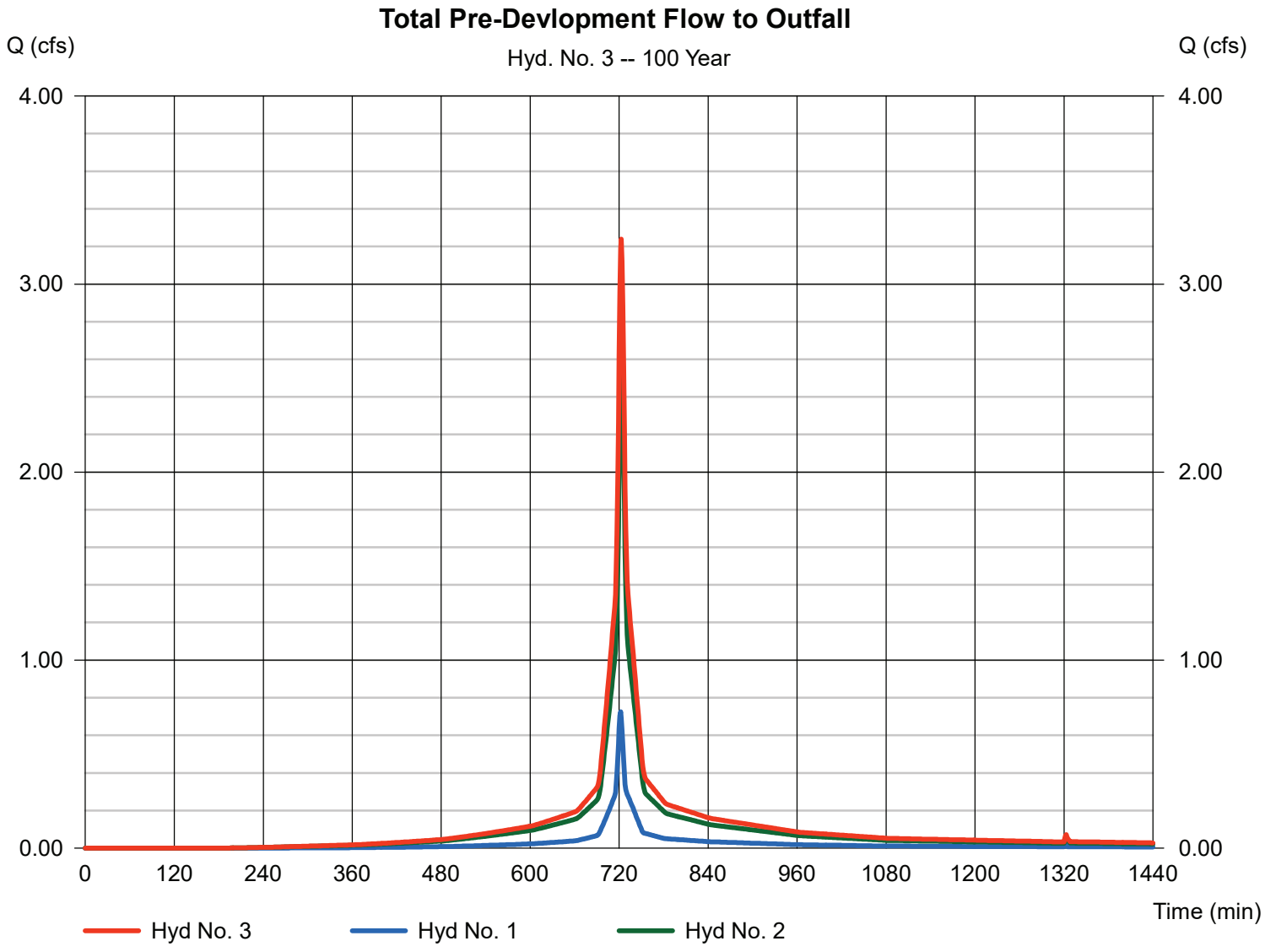


Hydrograph Report

Hyd. No. 3

Total Pre-Devlopment Flow to Outfall

Hydrograph type	= Combine	Peak discharge	= 3.239 cfs
Storm frequency	= 100 yrs	Time to peak	= 723 min
Time interval	= 1 min	Hyd. volume	= 9,863 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 0.390 ac



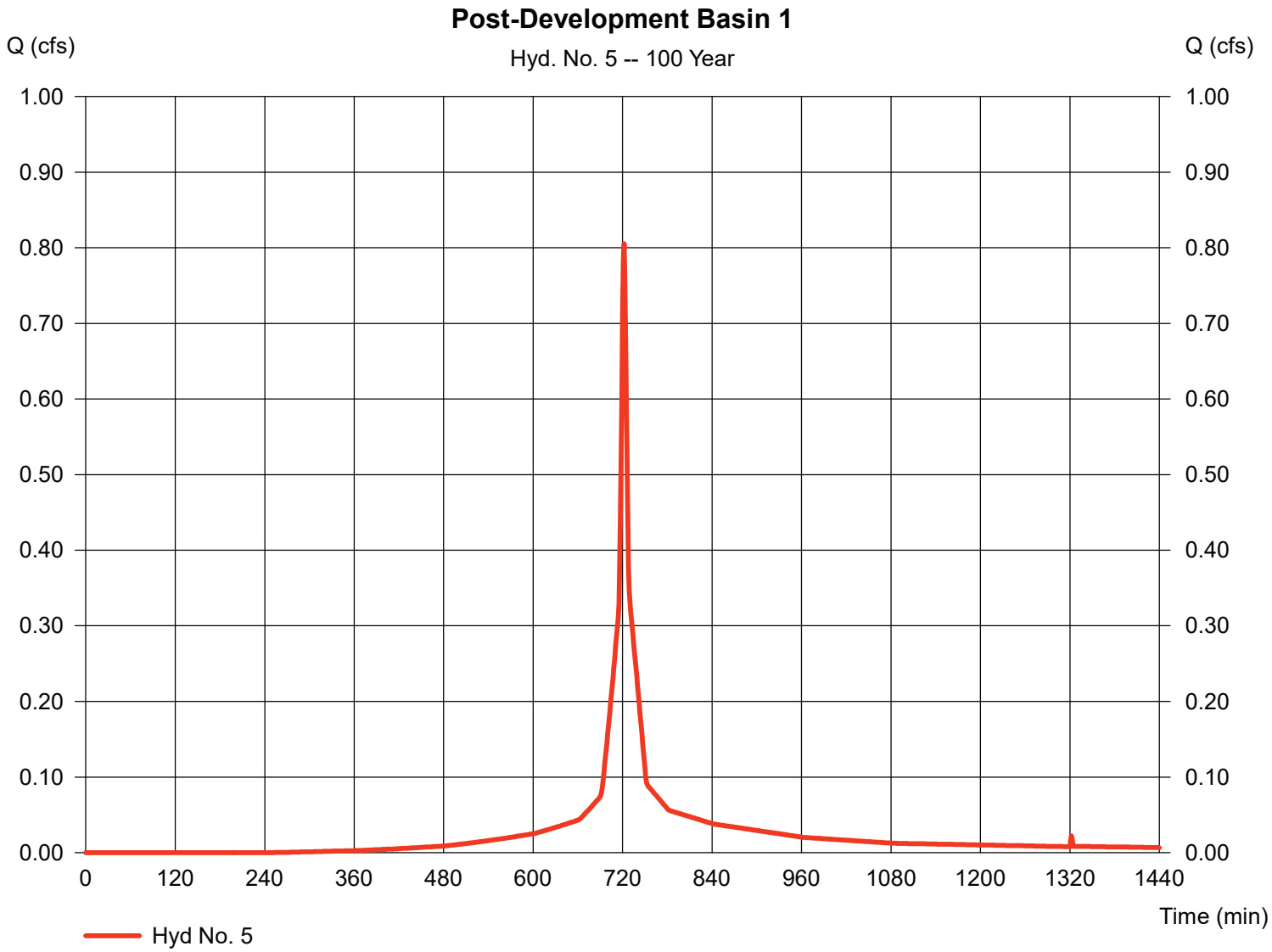
Hydrograph Report

Hyd. No. 5

Post-Development Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.805 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	2,277 cuft
Drainage area	=	0.100 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	8.62 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 98) + (0.020 x 83) + (0.060 x 80)] / 0.100



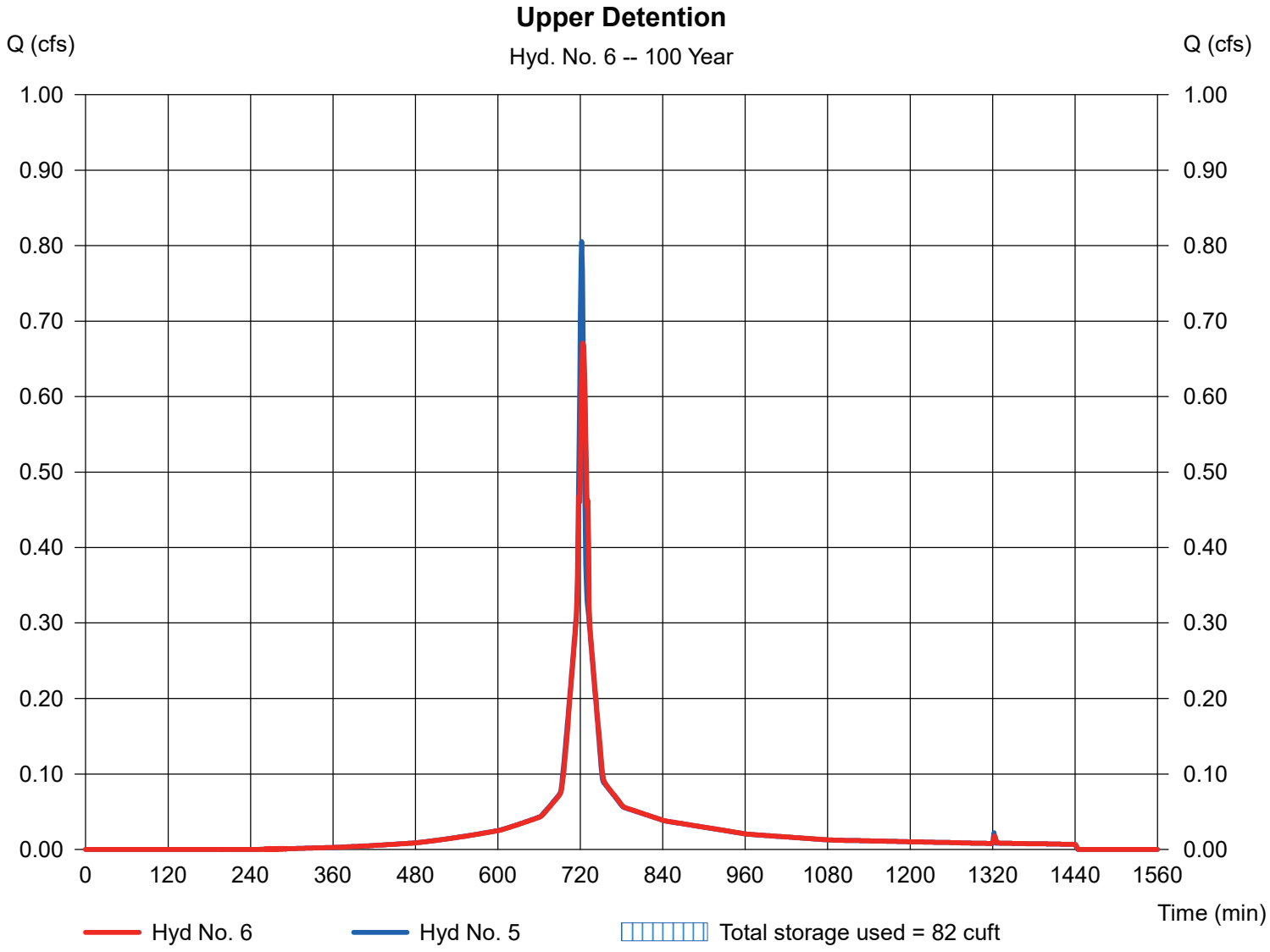
Hydrograph Report

Hyd. No. 6

Upper Detention

Hydrograph type	=	Reservoir	Peak discharge	=	0.671 cfs
Storm frequency	=	100 yrs	Time to peak	=	724 min
Time interval	=	1 min	Hyd. volume	=	2,277 cuft
Inflow hyd. No.	=	5 - Post-Development Basin 1	Max. Elevation	=	86.66 ft
Reservoir name	=	401 Upper Detention	Max. Storage	=	82 cuft

Storage Indication method used.



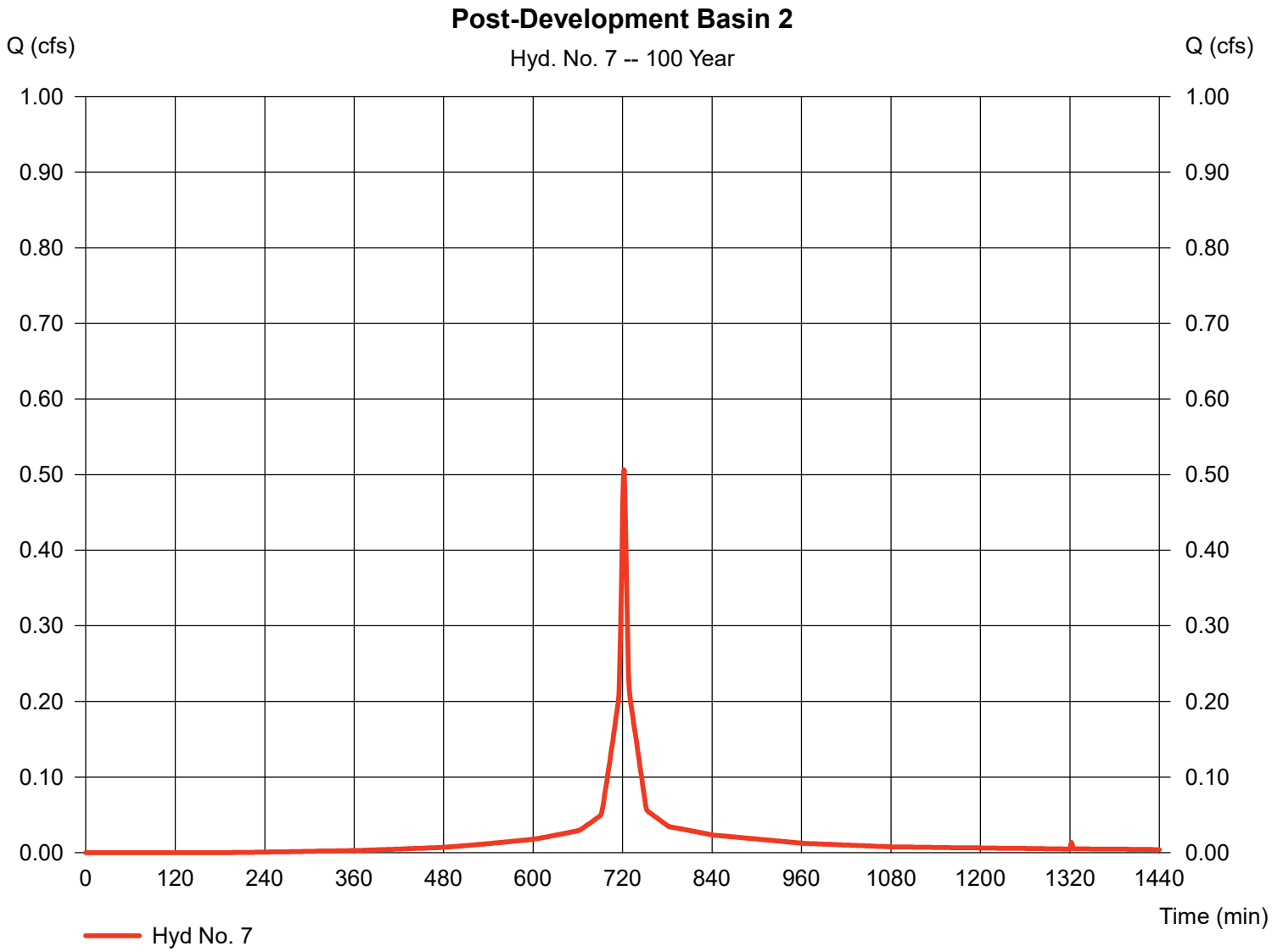
Hydrograph Report

Hyd. No. 7

Post-Development Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.506 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	1,465 cuft
Drainage area	=	0.060 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.11 min
Total precip.	=	8.62 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.037 x 83) + (0.020 x 98)] / 0.060



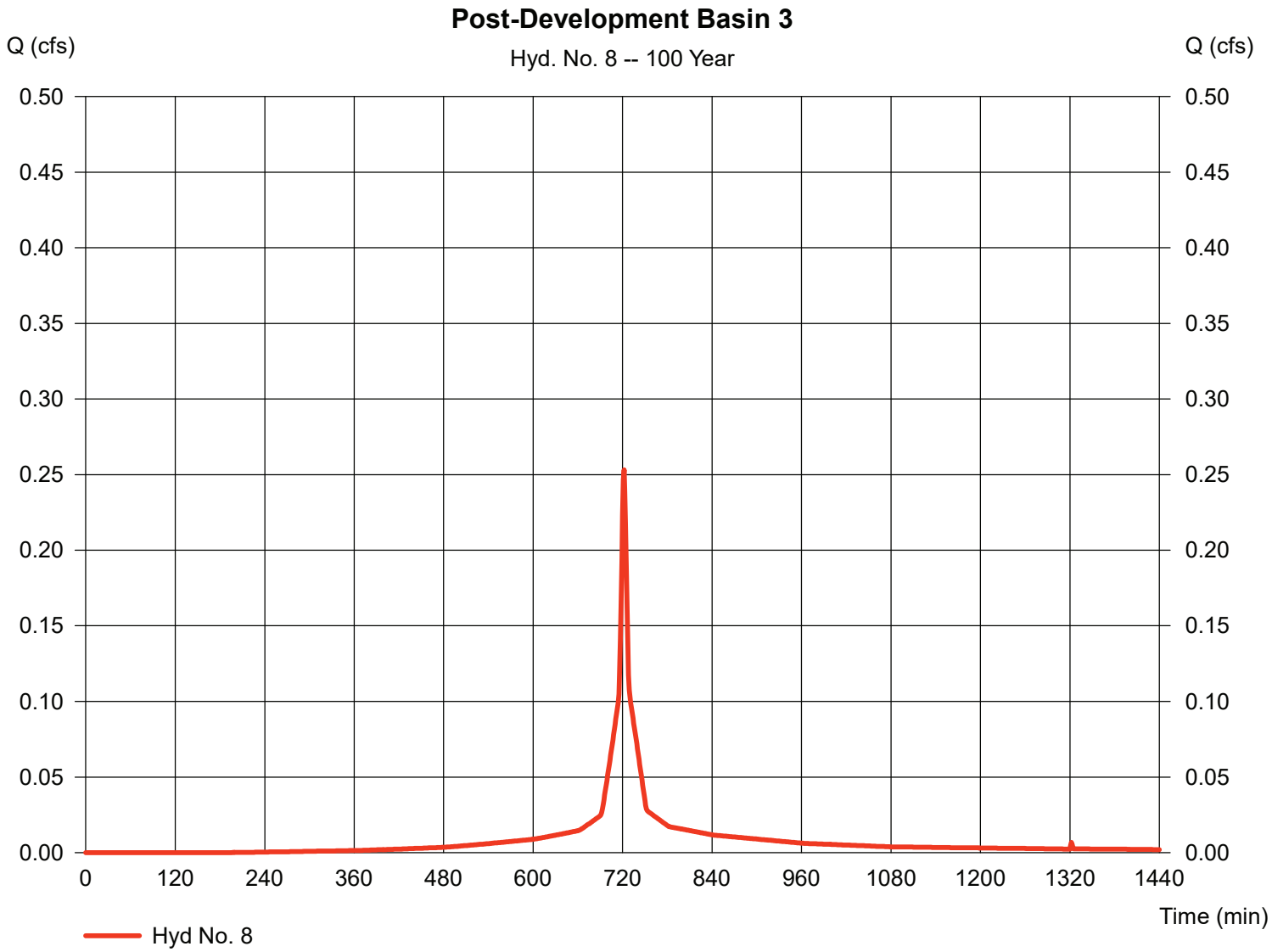
Hydrograph Report

Hyd. No. 8

Post-Development Basin 3

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.253 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	733 cuft
Drainage area	=	0.030 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	8.62 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.007 x 98) + (0.023 x 85)] / 0.030



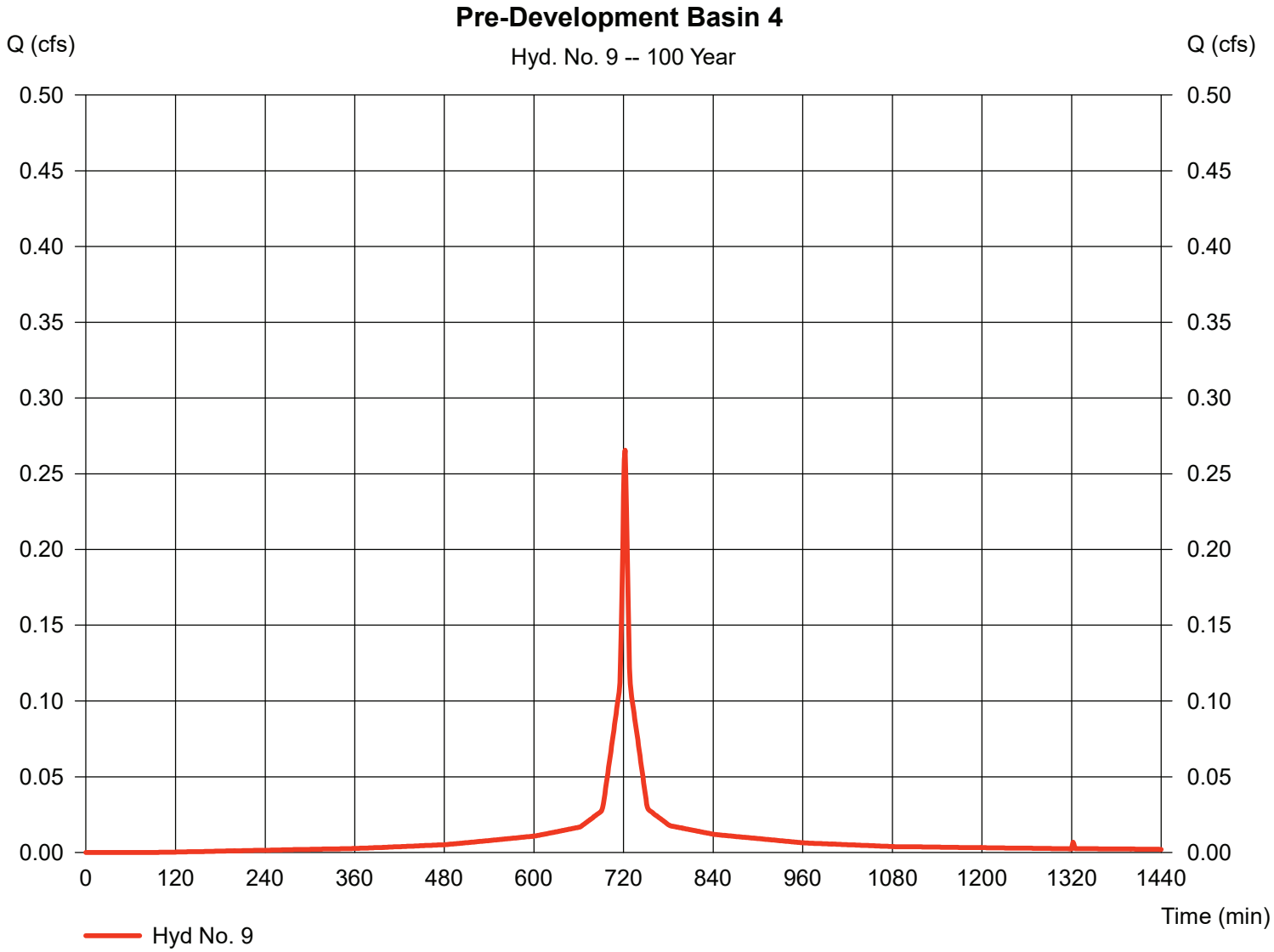
Hydrograph Report

Hyd. No. 9

Pre-Development Basin 4

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.266 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	806 cuft
Drainage area	=	0.030 ac	Curve number	=	94*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.00 min
Total precip.	=	8.62 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.020 x 98) + (0.010 x 85)] / 0.030

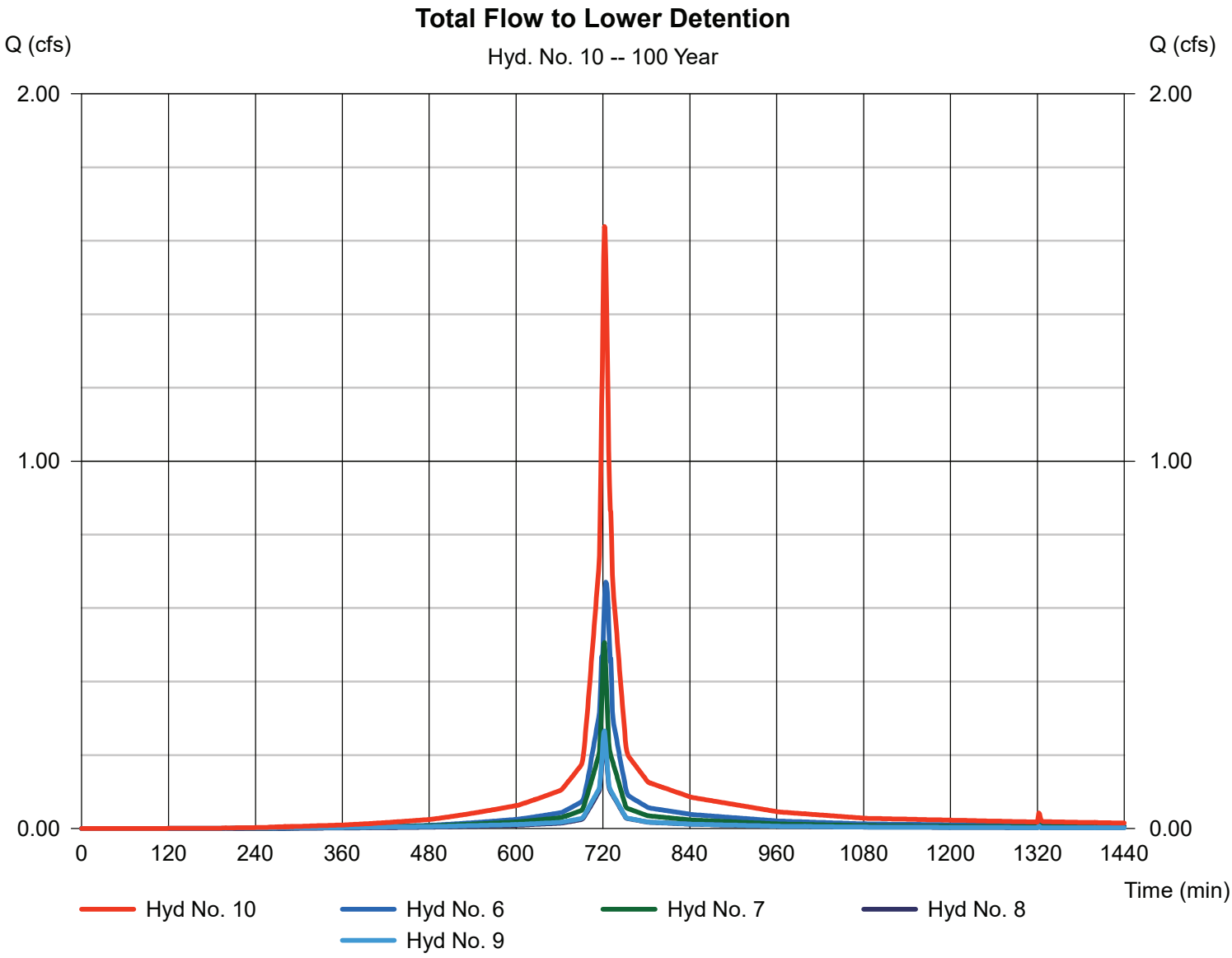


Hydrograph Report

Hyd. No. 10

Total Flow to Lower Detention

Hydrograph type	= Combine	Peak discharge	= 1.639 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 5,281 cuft
Inflow hyds.	= 6, 7, 8, 9	Contrib. drain. area	= 0.120 ac



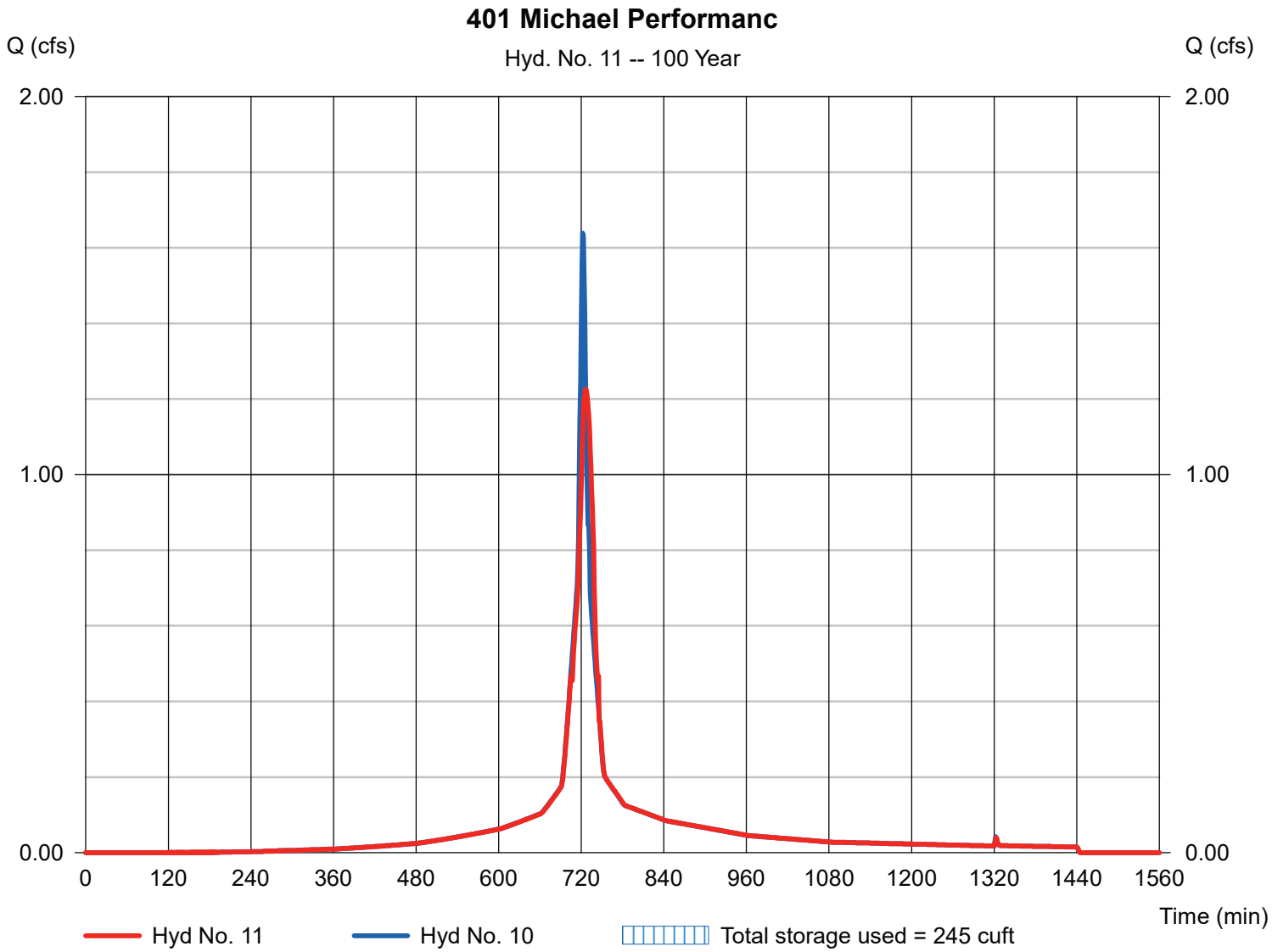
Hydrograph Report

Hyd. No. 11

401 Michael Performanc

Hydrograph type	=	Reservoir	Peak discharge	=	1.225 cfs
Storm frequency	=	100 yrs	Time to peak	=	726 min
Time interval	=	1 min	Hyd. volume	=	5,281 cuft
Inflow hyd. No.	=	10 - Total Flow to Lower Detention	Max. Elevation	=	77.20 ft
Reservoir name	=	401 Michael Detention	Max. Storage	=	245 cuft

Storage Indication method used.



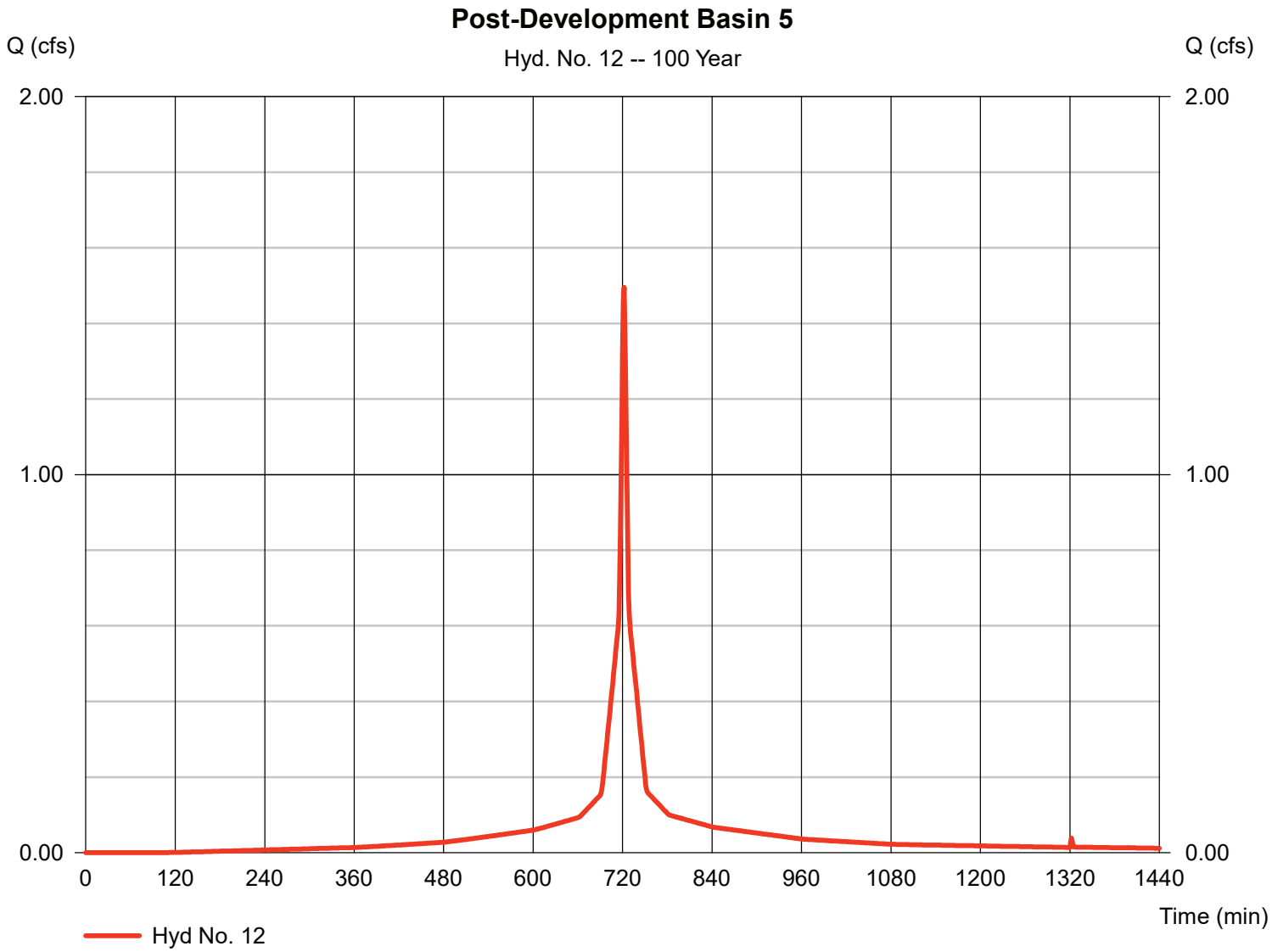
Hydrograph Report

Hyd. No. 12

Post-Development Basin 5

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.496 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	1 min	Hyd. volume	=	4,500 cuft
Drainage area	=	0.170 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	2.90 min
Total precip.	=	8.62 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.100 x 98) + (0.020 x 85) + (0.050 x 86)] / 0.170

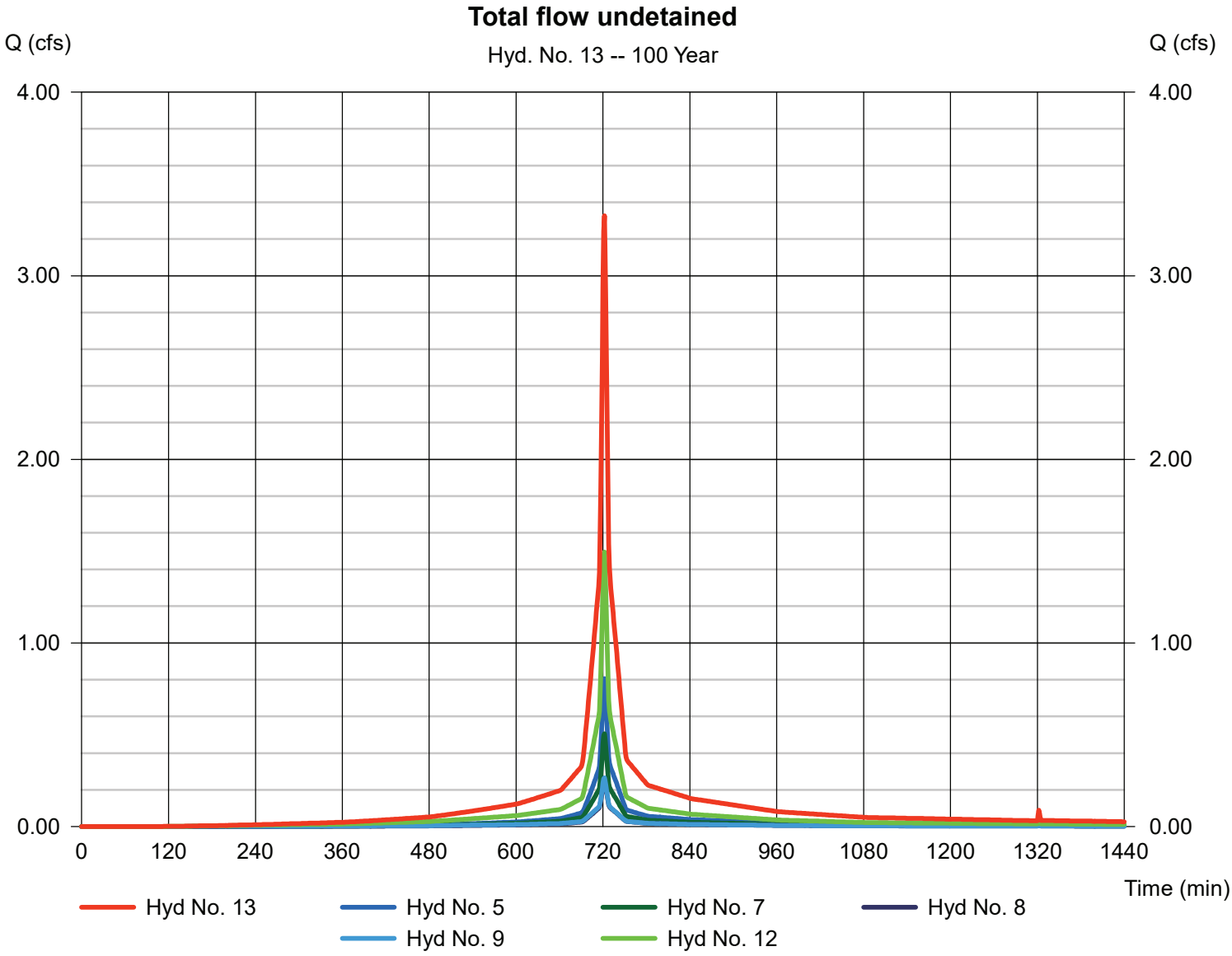


Hydrograph Report

Hyd. No. 13

Total flow undetained

Hydrograph type	= Combine	Peak discharge	= 3.326 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 9,781 cuft
Inflow hyds.	= 5, 7, 8, 9, 12	Contrib. drain. area	= 0.390 ac

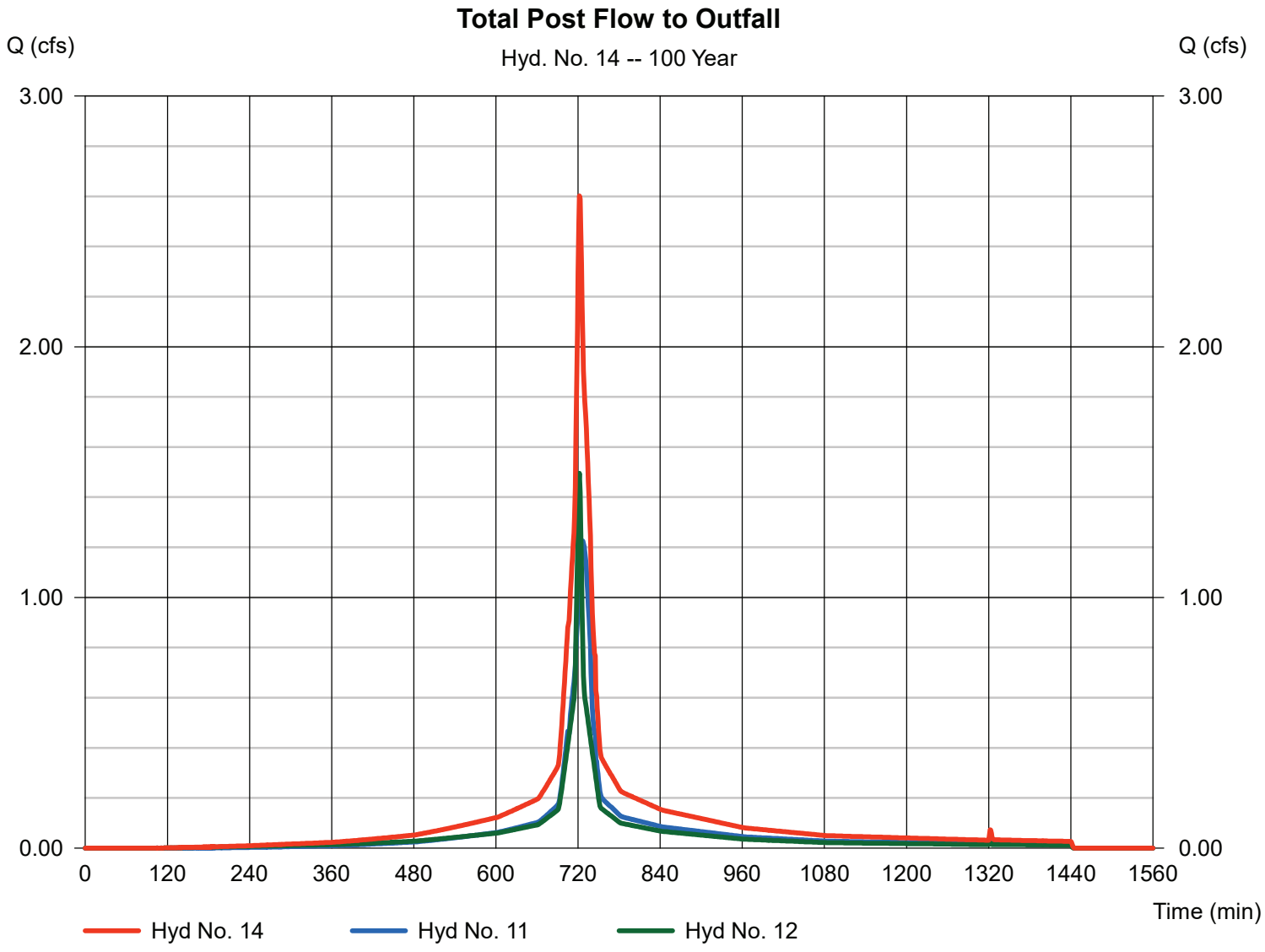


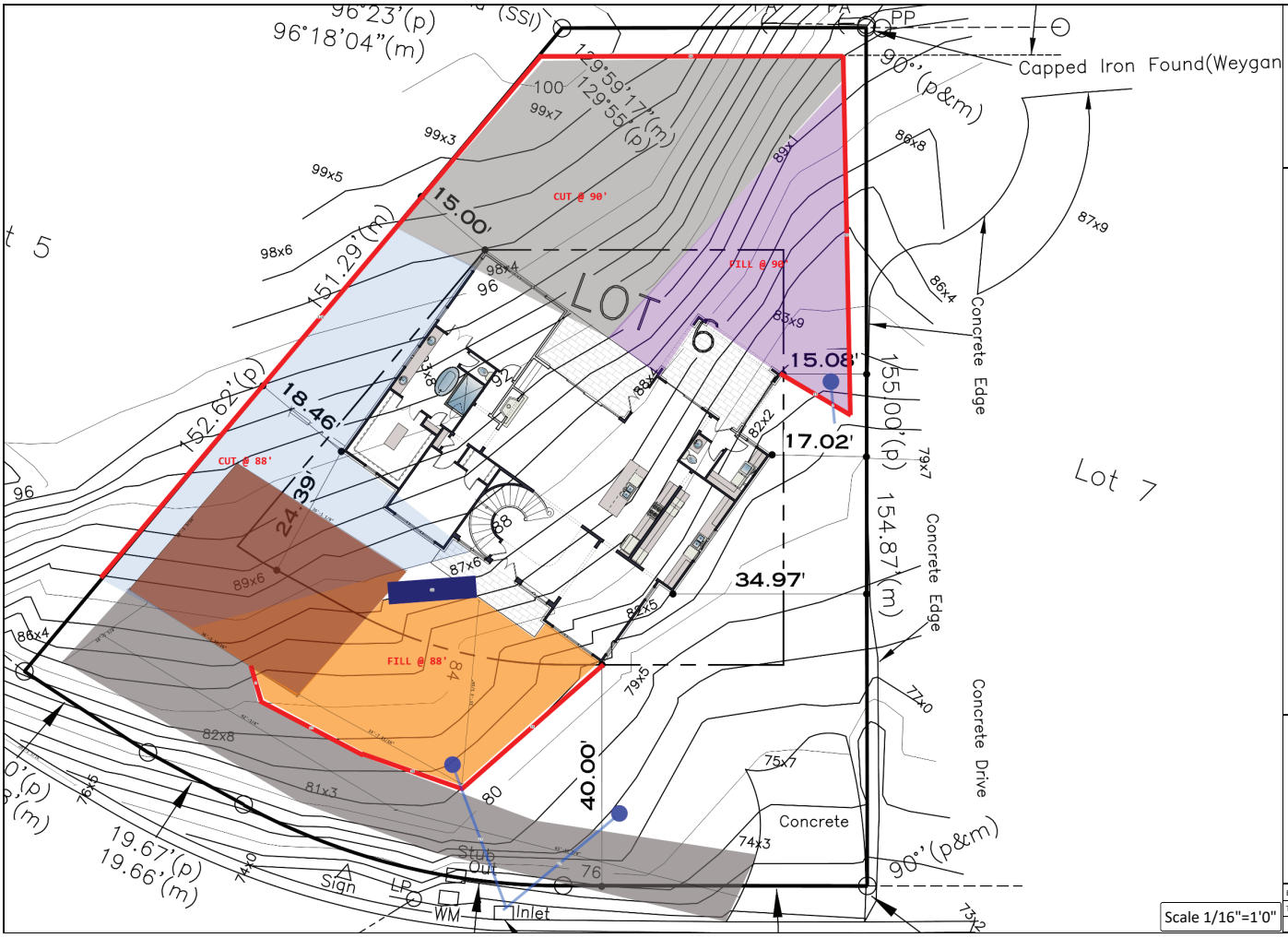
Hydrograph Report

Hyd. No. 14

Total Post Flow to Outfall

Hydrograph type	= Combine	Peak discharge	= 2.602 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 1 min	Hyd. volume	= 9,781 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 0.170 ac





Scale 1/16"=1'0"

Tiffany_Andrew Linn

GRADING PLAN

These placement plans for the products specified were based on the information provided to us. This service is solely intended for product selection purposes and is not intended to circumvent the need for a design professional as determined by the building codes. The designer of record and/or builder/ framer is responsible to ensure that all drawings are compatible with the overall project.

Estimator: **Estimator Name**

Tracking: **Tracking #**

Sheet 1 of 1

Variance Application - Part I

Project Data

Address of Subject Property 2929 Pine Haven Drive (Lots 133 & 134)

Zoning Classification Residence 'B'

Name of Property Owner(s) Mr. and Mrs. Elliott Mills

Phone Number (205) 915-6447 Email etwmills@gmail.com

Name of Surveyor Arrington Engineering/Jeff Arrington

Phone Number (205) 985-9315 Email jeff@arrintonengineering.com

Name of Architect (if applicable) Hank Long

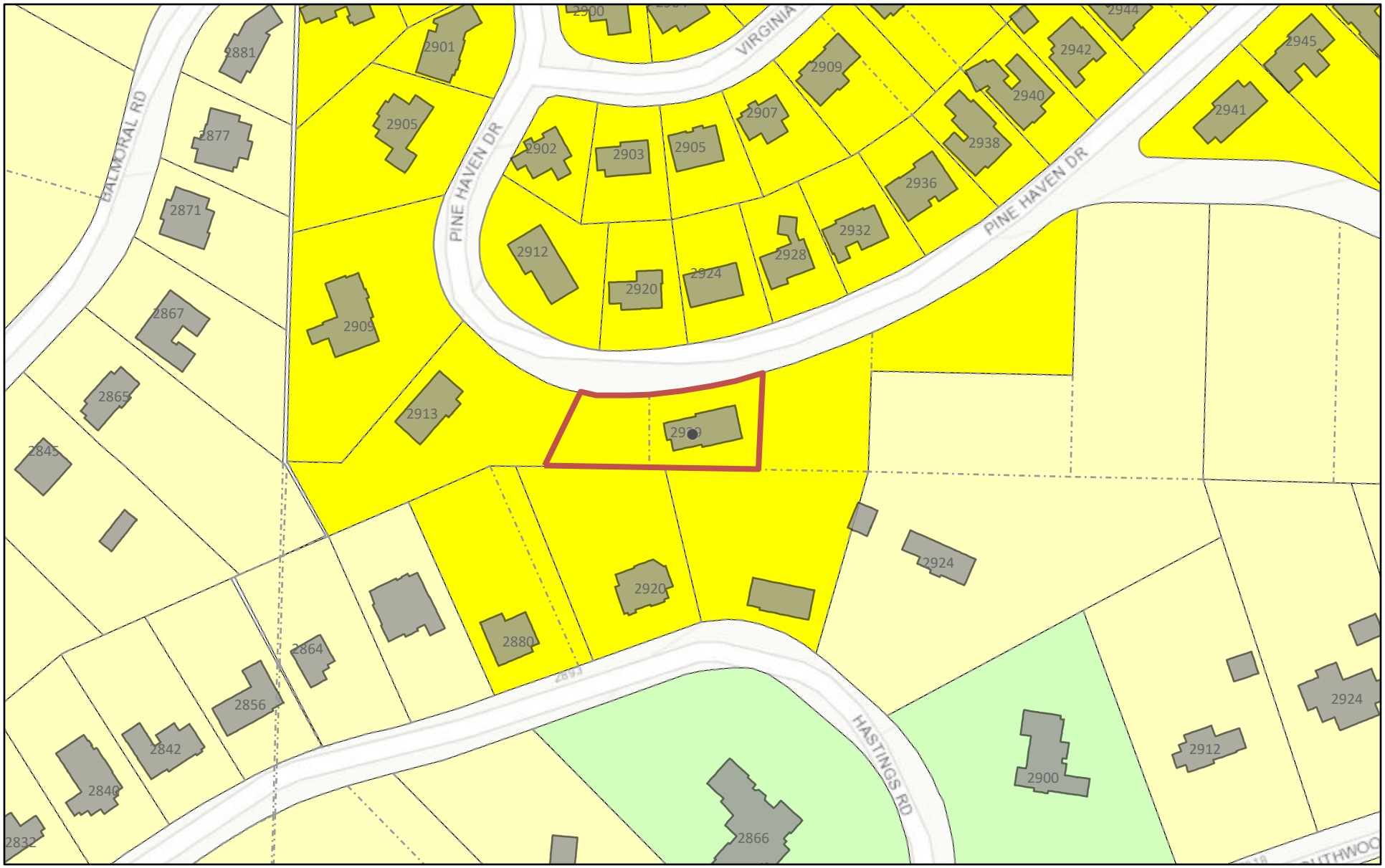
Phone Number (205) 323-4564 Email hanklong@bellsouth.net

☒ Property owner or representative agent must be present at hearing

Please **fill in only applicable** project information (relating directly to the variance request(s):

	Zoning Code Requirement	Existing Development	Proposed Development
Lot Area (sf)	10,000 sq. ft.	20,755+/-& 134) (Lots 133	20,755 sq. ft. +/-
Lot Width (ft)	75 feet	211 feet +/-	211 feet +/-
Front Setback (ft) *primary*	35 feet	N. A.	30.5 ft.
Front Setback (ft) *secondary*	N. A.	N. A.	N. A.
Right Side Setback	12-1/2 feet	N. A.	20.0 ft. (Garage)
Left Side Setback	12-1/2 feet	N. A.	44 ft. (Residence)
Right Side Setback (ft): For non-conforming narrow lots in Res-B or Res-C: Less than 22' high → 22' high or greater →	N. A.	N. A.	N. A.
Left Side Setback (ft): For non-conforming narrow lots in Res-B or Res-C: Less than 22' high → 22' high or greater →	N. A.	N. A.	N. A.
Rear Setback (ft)	35 feet	N. A.	20 feet
Lot Coverage (%)	35%	12% +/-	15% +/-
Building Height (ft)	35 feet	N. A.	34 feet
Other			
Other			

A-22-31 Zoning



12/6/2022, 1:52:08 PM

1:2,257

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

Building Footprints 2020vl

Lot Lines

Tax_Parcels 2021

Estate Residence District

Residence A District

Residence B District

A-22-31 Aerial

12/6/2022, 1:54:07 PM

Aerial 2021

Red: Band_1

Green: Band_2

Blue: Band_3

1:2,257

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

Jefferson County Department of Information Technology , JeffCoAL, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, USDA

ArcGIS Web AppBuilder

Report to the Board of Zoning Adjustment

A-22-31

Petition Summary
Request to allow a new single family dwelling to be 30.5 feet from the front property line (Pine Haven Drive), 20 feet from the rear property line (south) and to allow a detached accessory structure (garage to be 20 feet from the rear property line, all in lieu of the required 35 feet.

Background
On October 17, 2016, the Board of Zoning Adjustment granted variances to allow a new single family home to be 25 feet from the front property line and 17 feet in the rear.

The parcel currently contains two lots with a sanitary sewer easement running along the interior lot line. The proposed scope of work would place the dwelling on one lot and the accessory structure on the other. The applicant is aware that this would require a Planning Commission approval of a resurvey combining the two lots into one lot prior to permitting.

Scope of Work
The scope of work entails the construction of a new single family dwelling and detached accessory structure.

Variance Request for Front and Rear Setbacks
Nexus: The hardships in this case are the lot shape, depth, and topography which are reasonably related to the request. The lot is shallow. There is no other lot in the surrounding area that is similarly situated as it relates to depth. The center of the property is approximately 86 feet in depth. If both the front and rear setbacks are applied strictly, this would leave 16 feet of buildable depth for this Residence B lot. The property also slopes upward approximately 20 feet from front to back.

It is anticipated that an approval of such variance:

a. Will not affect the flow of light and air to adjacent properties (in that the adjacent properties to the rear are approximately 105 and 120 feet away from the subject location);
b. will not be detrimental to the streetscape (due to the fact that the streetscape is not consistent along this curved side of Pine Haven Road).

Impervious Area
The proposal is in compliance with the allowable impervious surface area.

Subject Property and Surrounding Land Uses

The property contains a single-family dwelling, and is surrounded by same.

Affected Regulation

Article IV, Section 129-52 Area and dimensional requirements

Appends

LOCATION: 2929 Pine Haven Drive

ZONING DISTRICT: Residence B District

OWNERS: Mr. and Mrs. Elliot Mills

A-22-31

BOUNDARY & TOPOGRAPHIC SURVEY

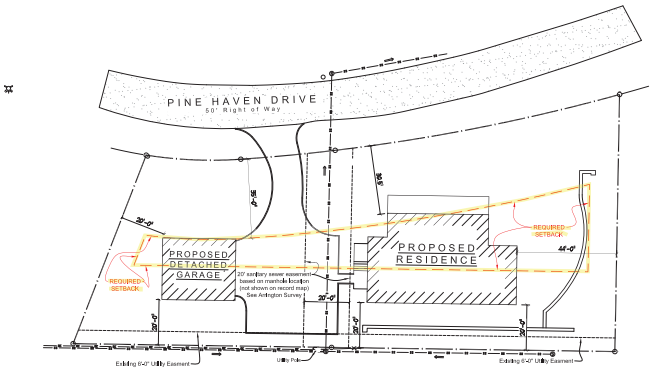
2929 PINE HAVEN DRIVE
MOUNTAIN BROOK, ALABAMA

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

L E G E N D

BENCHMARK	OVERHEAD ELECTRIC
EXISTING SPOT ELEVATION	WATER LINE
CONTROL POINT	GAS LINE
UTILITY POLE	CHAIN LINK FENCE
WATER METER	WOOD FENCE
GAS METER	MAJOR CONTOURS
CORNER MONUMENT	MINOR CONTOURS
AC	WALL
	ASPHALT
	CONCRETE
	GRAVEL
	BRICK
	COVERED WALK/CANOPY



PROPOSED SITE PLAN

SCALE : 1"=20'-0"

PROPOSED SITE PLAN DRAWN BY:
HENRY SPROTT LONG & ASSOCIATES, INC.
BASED ON ARRINGTON ENGINEERING SITE PLAN

Revisions

PRELIMINARY
NOT FOR CONSTRUCTION
11.2.22

A RESIDENCE FOR
MR. & MRS. ELLIOTT MILLS
MOUNTAIN BROOK, ALABAMA

Henry Sprott Long & Associates, Inc.
ARCHITECTS
3016 Clairmont Avenue Birmingham, Alabama
Phone 205-323-4554

Drawn by	Checked by	Date	Comm. No.
MAW	–	–.–.–	3600

Drawing Number S1 of –

A-22-31

BOUNDARY & TOPOGRAPHIC SURVEY
2929 PINE HAVEN DRIVE
MT. BROOK, AL.

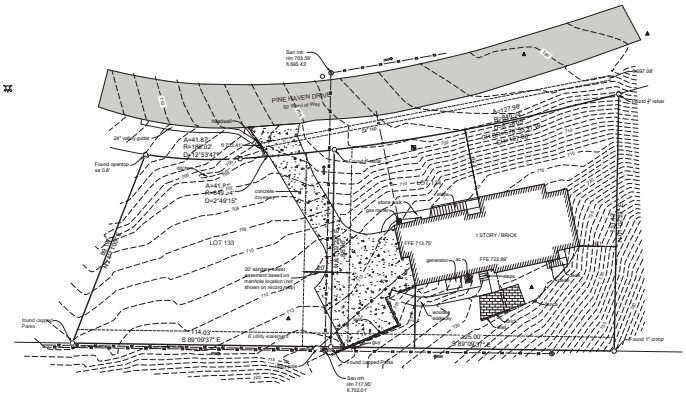
GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

(GRID OBSERVATION)

SURVEY CONTROL

THE BASIS OF BEARINGS AND OR COORDINATES SHOWN ON THIS SURVEY ARE BASED ON ALABAMA STATE PLANE WEST ZONE, GRID NORTH, NAD 83(2011) AND VERTICAL DATUM IS NAVD 88 (GEOID 12B) ELEVATION AND POSITION WAS OBTAINED FROM R.T.K OBSERVATION USING THE ALDOT CORS NETWORK AS CONTROL.



STATE OF ALABAMA
JEFFERSON COUNTY

I, Jeff D. Arrington, a registered Land Surveyor, certify that I have surveyed Lot 133 & 134, according to the survey of PINE CREST, as recorded in Map Volume 18, Page 64, in the office of the Judge of Probate JEFFERSON County, Alabama. That all parts of this survey and drawing have been completed in accordance with the current requirements of the Standards of Practice for Surveying in the State of Alabama to the best of my knowledge, information and belief; That there are no encroachments on said lot except as shown; That improvements are located as shown above. No Flood Zone Determination was requested or performed as part of this survey.

Jeff D. Arrington AL Reg. #18664
Arrington Engineering & Land Surveying, Inc.
2032 Valleydale Road, Birmingham, AL 35244
Phone: (205) 985-9315 (Fax 205-985-9385)

NOTES:
1. NO TITLE SEARCH OF THE PUBLIC RECORDS HAS BEEN PERFORMED BY THIS FIRM AND LANDS SHOWN HEREON WERE NOT ABSTRACTED FOR EASEMENTS AND/OR RIGHTS OF WAYS, RECORDED OR UNRECORDED. THE PARCEL SHOWN HEREON IS SUBJECT TO SETBACKS, EASEMENTS, ZONING, AND RESTRICTIONS THAT MAY BE FOUND IN THE PUBLIC RECORD OF SAID COUNTY.
2. ALL BEARINGS AND/OR ANGLES, AND DISTANCES ARE DEED AND ACTUAL UNLESS OTHERWISE NOTED. DEED=(D); MEASURED=(M); RECORD MAP/PLAT=(P); CALCULATED=(C).
3. UNDERGROUND PORTIONS OF FOUNDATIONS, FOOTINGS, OR OTHER UNDERGROUND STRUCTURES WERE NOT LOCATED UNLESS OTHERWISE NOTED.
4. THIS SURVEY IS VALID ONLY WITH AN ORIGINAL SIGNATURE AND A LEGIBLE SEAL.

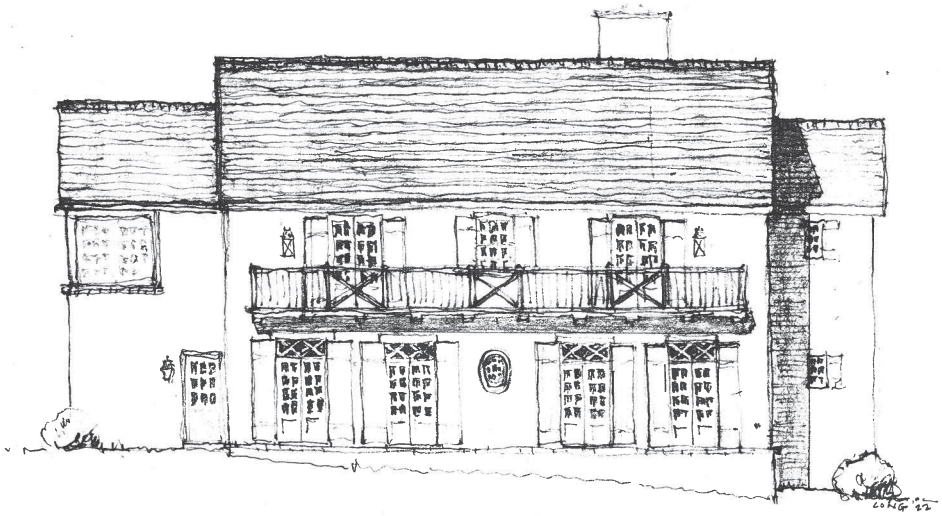
ARRINGTON ENGINEERING
Civil Engineers - Surveyors - Land Planners
Offices (205) 985-9315
Fax: (205) 985-9385
2032 Valleydale Road
Birmingham AL 35244

DRAWING TITLE	BOUNDARY SURVEY 2929 PINE HAVEN DRIVE MT. BROOK, AL.
LOCATION & DESCRIPTION	SEE ABOVE
DRAWN BY	JDA
CHECKED BY:	JDA
DATE:	10-13-2021
SCALE:	1" = 20'
PARTY CHIEF	JDA
PROJECT NO.:	78149
SHEET	1 OF 1

STATE OF ALABAMA REGISTERED #18664 PROFESSIONAL LAND SURVEYOR JEFF D. ARRINGTON

811 Know what's below. Call before you dig.
Call 2 working days before digging. It's the Law!

G:\2021 PROJECTS\78149 – 2929 Pine Haven Dr, Mtn Brook, AL\DWG\78149.dwg



Front / Street Elevation

scale - 1/8" = 1'-0"

7/7/22

Henry Sprott Long & Associates
ARCHITECTS

November 15, 2022

Board of Zoning Adjustments
The City of Mountain Brook
Post Office Box 13009
Mountain Brook, AL 35213

Attention: Tammy Reid via email

RE: A Proposed Residence for Mr. and Mrs. Elliott Mills
2929 Pine Haven Drive (Lots 133 and 134)

Ladies and Gentlemen:

This letter is submitted in accordance with the standards for request of a variance for construction in the City of Mountain Brook.

We are requesting a variance to allow construction of a new residence at 2929 Pine Haven Drive (Lots 133 & 134). Pending Board of Zoning Adjustments approval of this variance request, the Owner plans to combine Lot 133 and Lot 134 into one lot. Currently, both lots 133 and 134 are vacant although there was an existing non-confirming residence on Lot 134 until this past October when the residence was demolished. (See attached survey showing the previous non-conforming residence). In addition, a variance was issued by the Board of Zoning Adjustments on October 17, 2016 which would have allowed construction of a new residence on Lot 133 (See attached documents for BZA Case No. A-16-45). However, the proposed residence was never constructed. There is also a sewer line that bisects the property.

With the above information provided as a brief, recent history of Lots 133 and 134, the current Variance Request and accompanying information assumes that Lots 133 and 134 have been combined into one lot. The zoning for the lot is Residence 'B'. The proposed variance requests that the Front setback for the main residence be 30.5 feet (which was the Front setback for the previous non-conforming Residence on Lot 134) rather than the required 35.0 feet and that the Rear setback be 20.0 feet rather than the required 35.0 feet. The side setbacks will meet the zoning requirements.

There will also be a detached Accessory Building/Garage and Storage Building which will be 775 square feet (25.0 ft x 31.0 ft) and will be less than 25.0 feet tall. The accessory building shall be 35.00 feet from the Front property line, 20.0 feet from the Right property line and 20.0 feet from the Rear property line.

The required variance application forms, graphic explanation of the proposed residence, a check for $ 100.00 and list of adjacent property owners are included in this email. All information is submitted in preparation for the Board of Zoning Adjustments meeting on Monday, December 19, 2022.

Thank you for your consideration in this matter.

Sincerely,

HENRY SPROTT LONG & ASSOCIATES, INC.

Henry Sprott Long, Jr., President

HSLjr/bu

Enclosures

cc: Mr. and Mrs. Elliott Mills

Variance Application
Part II

Required Findings (Sec. 129-455 of the Zoning Ordinance)

To aid staff in determining that the required hardship findings can be made in this particular case, please answer the following questions with regard to your request. **These findings must be made by the Board of Zoning Adjustment in order for a variance to be granted** (please attach a separate sheet if necessary).

What special circumstances or conditions, applying to the building or land in question, are peculiar to such building or land, and do not apply generally to other buildings or land in the vicinity (including size, shape, topography, location or surroundings)?

See attached sheet.

Was the condition from which relief is sought a result of action by the applicant? (i.e., *self-imposed hardship* such as: "...converted existing garage to living space and am now seeking a variance to construct a new garage in a required setback...")

See attached sheet.

How would the granting of this variance be consistent with the purpose and intent of the Zoning Regulations?

See attached sheet.

Variance Application

Part II

1. The shallow depth of Lots 133 and 134 creates a hardship in that there is not adequate buildable area for a new house once the 35.0 Front and Rear setbacks are applied. The buildable area at the narrowest part on the west end of the lot is 11.0 and the widest part at the east end of the lot is about 35.0 but occurs within the portion of the lot that has topographical grade changes that are between 25% to 60% slope. Also, the shape and depth of the lot is not consistent with most of the other lots on Pine Haven Drive.

2. No.

3. The hardships created by the shape, shallow depth and steep topography of this lot and the granting of a variance based on the these hardships would allow construction of a new residence that would be compatible and consistent in size and scale with the other new houses that have recently been and are currently being built in the Pine Haven neighborhood.

A-16-45

STATE OF ALABAMA)
JEFFERSON COUNTY)

I, John S. Parks, a Professional Land Surveyor, do hereby certify that I have surveyed Lot 133, Pine Crest Survey, as recorded in Map Volume 18, page 64, in the office of the Judge of Probate Jefferson County, Alabama, that the building serving the premises is within the lines of same; that there are no encroachments on said lot except as shown; that improvements are located as shown above; that there are no rights-of-way, easements, or joint driveways over or across said land visible on the surface except as shown; that there are no visible electric or telephone wires (excluding wires which serve premises only) or structures or supports therefore, including poles, anchors and guy wires, on or over said premises except as shown; that I have contacted the Federal Emergency Management Agency Flood Hazard Boundary or Insurance Rate Map for this area and found that this property is located outside the 0.2% chance flood zone according to the information within the map or related study; and that the correct address is as follows: Pine Haven Drive, Birmingham, Alabama 35223, according to my survey of June 20, 2016.

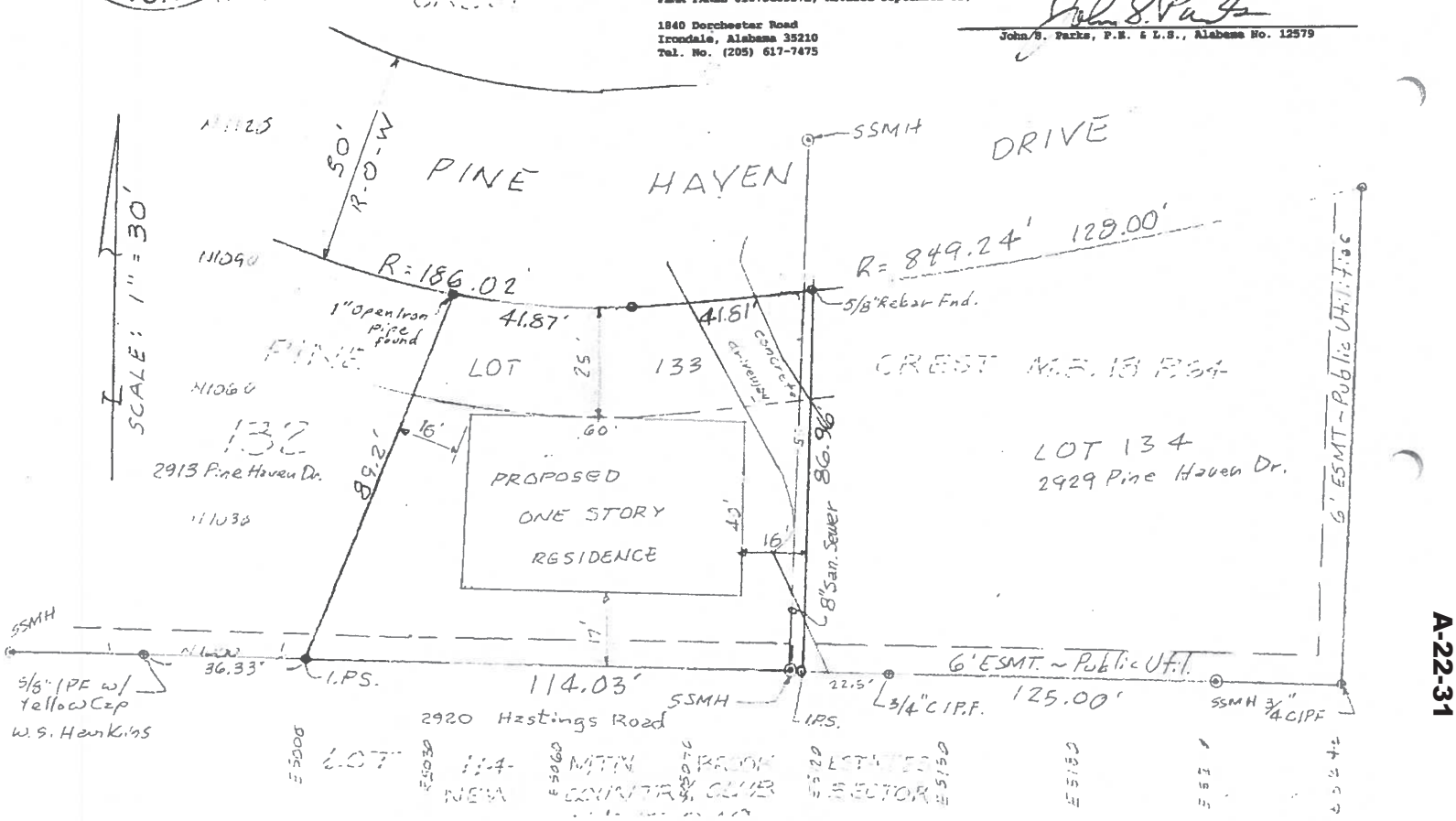
I hereby certify that all parts of this survey and drawing have been completed in accordance with the Standards of Practice for Surveying in the State of Alabama to my knowledge, information, and belief.

File No. 16-010 Owner(s): Donald L. Blumenthal
FEMA PANEL 01073C0557H, Revised September 03, 2010 ZONE X

1840 Dorchester Road
Irondale, Alabama 35210
Tel. No. (205) 617-7475

John S. Parks, P.E. & L.S., Alabama No. 12579

ALABAMA PROFESSIONAL ENGINEER AND LAND SURVEYOR
REGISTERED No. 12579
9/23/16
JOHN S. PARKS



A-22-31

A-16-45

CITY OF MOUNTAIN BROOK

Department of Planning, Building & Sustainability
56 Church Street
Mountain Brook, Alabama 35213
Telephone: 205.802.3810
www.mtnbrook.org

BOARD OF ZONING ADJUSTMENT
MEETING SUMMARY

Meeting Date:	October 17, 2016
Case Number:	A-16-45
Case Address:	2929 Pine Haven Drive
Property Owner(s):	Donald Blumenthal
Representative Agent:	John Parks jsparks39@gmail.com
Type Request:	The property owner requests variances from the terms of the Zoning Regulations to allow a new single family dwelling to be 25 feet from the front property line (Pine Haven Drive) and 17 feet from the rear property line (south), both in lieu of the required 35 feet. - **2929 Pine Haven Drive.**
Action Taken:	The Board of Zoning Adjustment approved the variance request as presented.

Dana O. Hazen

Dana O. Hazen, MPA, AICP
Director of Planning, Building and Sustainability

Variance Application - Part I

Project Data

Address of Subject Property 3750 East Fairway Drive

Zoning Classification Residence 'B'

Name of Property Owner(s) Mr. and Mrs. Harlan Prater

Phone Number (205) 915-3202 Email hprater@lightfootlaw.com

Name of Surveyor Arrington Engineering/Jeff Arrington

Phone Number (205) 985-9315 Email jeff@arringtonengineering.com

Name of Architect (if applicable) Hank Long

Phone Number (205) 323-4564 Email hanklong@bellsouth.net

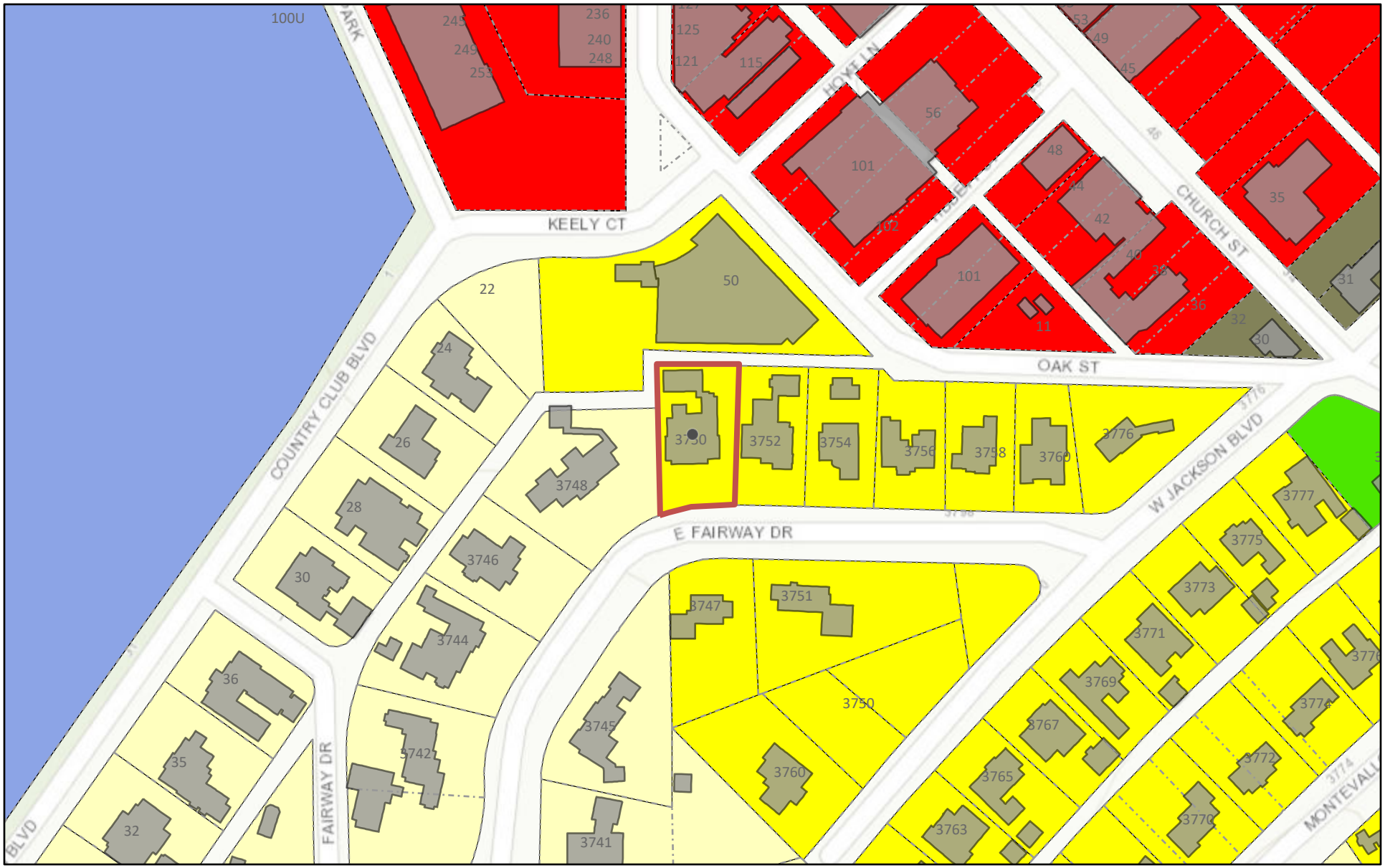
☐ Property owner or representative agent must be present at hearing

Please **fill in only applicable** project information (relating directly to the variance request(s):

	Zoning Code Requirement	Existing Development	Proposed Development
Lot Area (sf)	10,000 sq. ft.	13,655 sq. ft.+/-	13,655 sq. ft. +/-
Lot Width (ft)	75 feet	84 feet +/-	84 feet +/-
Front Setback (ft) *primary*	35 feet	43.7 +/-	43.7 feet +/-
Front Setback (ft) *secondary*	N.A.	N.A.	N.A.
Right Side Setback	12.5 feet	15.4 feet +/-	15.4 feet +/-
Left Side Setback	12.5 feet	7.0 feet +/-*	7.0 feet +/-*
Right Side Setback (ft): For non-conforming narrow lots in Res-B or Res-C: Less than 22' high ☐ 22' high or greater ☐	N.A.	N.A.	N. A.
Left Side Setback (ft): For non-conforming narrow lots in Res-B or Res-C: Less than 22' high ☐ 22' high or greater ☐	N. A.	N. A.	N. A.
Rear Setback (ft)	35 feet	5.5 feet +/-*	6.5 feet +/-*
Lot Coverage (%)	35%	37% +/-	35.4% +/-
Building Height (ft)	35 feet	29.0 feet +/-	18.0 feet +/-*
Other			
Other			

* Accessory Building/Detached Garage

A-22-32 Zoning



12/6/2022, 3:02:06 PM

Building Footprints 2020vl

Lot Lines

Tax_Parcels 2021

Local Business District

Professional District

Residence A District

Residence B District

Recreation District

1:2,257

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

JeffCoAL, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, USDA

ArcGIS Web AppBuilder

A-22-32 Aerial

12/6/2022, 3:12:45 PM

Aerial 2021

Red: Band_1

Green: Band_2

Blue: Band_3

1:2,257

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0 0.03 0.05 0.1 km

Jefferson County Department of Information Technology , JeffCoAL, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, USDA

ArcGIS Web AppBuilder

Report to the Board of Zoning Adjustment

A-22-32

Petition Summary
Request to allow alterations to a detached accessory structure (garage) to be 6 feet 6 inches from the rear property line (north) in lieu of the required 35 feet; 7 feet from the side property line (west) in lieu of the required 12.5 feet; and to allow the building area to be 35.4 percent in lieu of the maximum allowed of 35 percent.

Scope of Work
The scope of work entails alterations to an existing nonconforming detached accessory structure, reducing its square footage by approximately 30%, updating the roof to a pitched roof, and adding a breezeway connecting it to the principal structure.

Variance Request for Side and Rear Setbacks and Building Area
Nexus: The hardship in this case is the existing design constraint of the non-conforming detached accessory structure, which is reasonably related to the request. The existing structure is approximately 1,070 square feet in area and sits 5 feet 6 inches from the rear property line and 7 feet from the left side property line. The existing accessory structure combined, with the single family dwelling, maintains a total building area coverage of 37 percent.

The proposed alterations would reduce the footprint of the accessory structure from 1,070 square feet to 730 square feet (29.12 percent decrease). The rear setback of the structure would improve (from 5 feet 6 inches from the rear property line to 6 feet 6 inches) reducing the encroachment along the rear. The existing building area coverage of 37 percent would be reduced to 35.4 percent.

It is anticipated that an approval of such variance:

a. Is minor in nature (in that the proposed changes would reduce the non-conformity of the existing structure in both footprint and encroachment into the setback)

Impervious Area
The proposal is in compliance with the allowable impervious surface area.

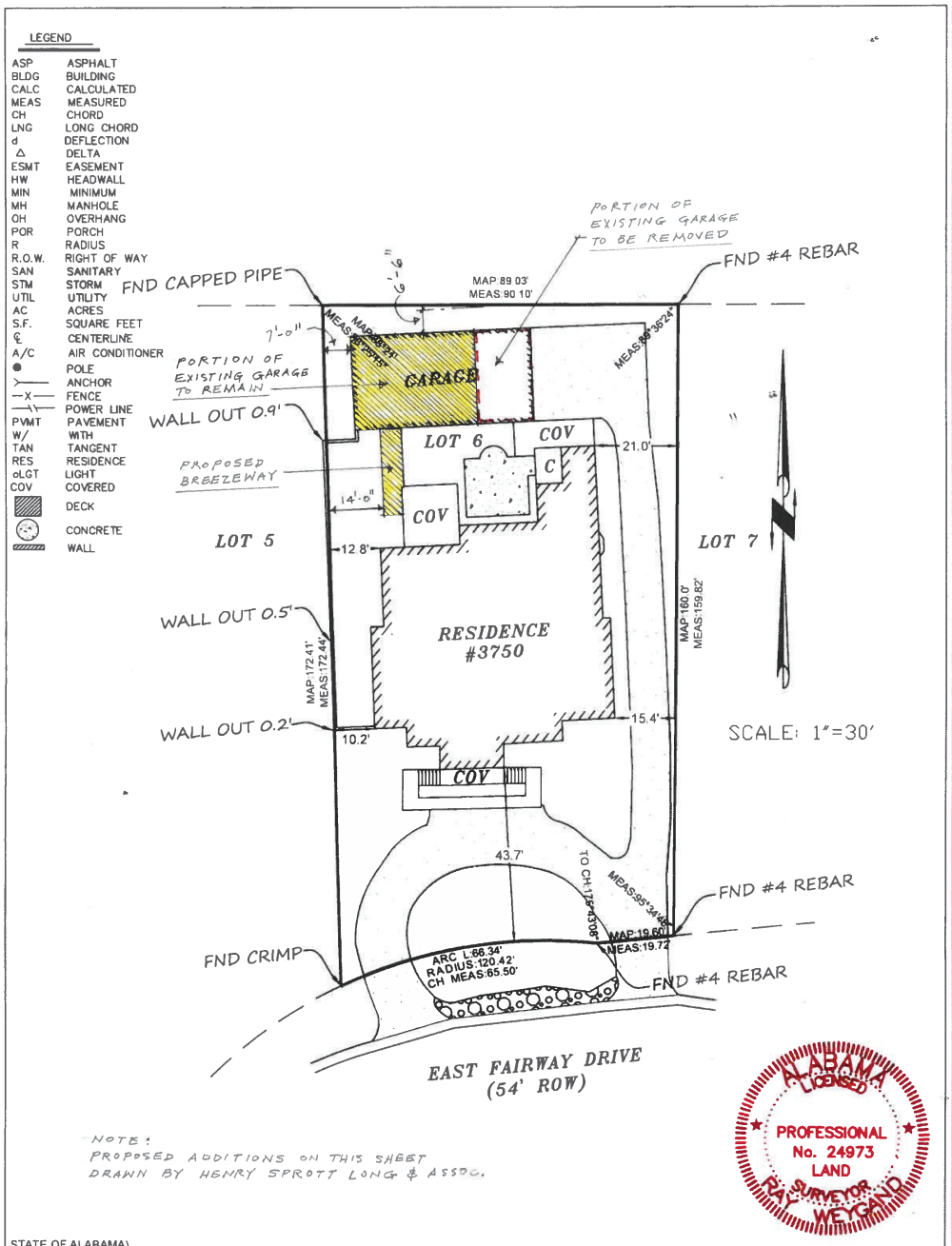
Subject Property and Surrounding Land Uses
The property contains a single-family dwelling, and is surrounded by same.

Affected Regulation
Article IV, Section 129-52 Area and dimensional requirements

Appends
LOCATION: 3750 East Fairway Drive

ZONING DISTRICT: Residence B District

OWNERS: Mr. and Mrs. Harlan Prater



NOTE:
PROPOSED ADDITIONS ON THIS SHEET
DRAWN BY HENRY SPROTT LONG & ASSOC.

ALABAMA LICENSED PROFESSIONAL No. 24973 LAND SURVEYOR RAY WEYGAND

STATE OF ALABAMA)
JEFFERSON COUNTY)

"PROPERTY BOUNDARY SURVEY"

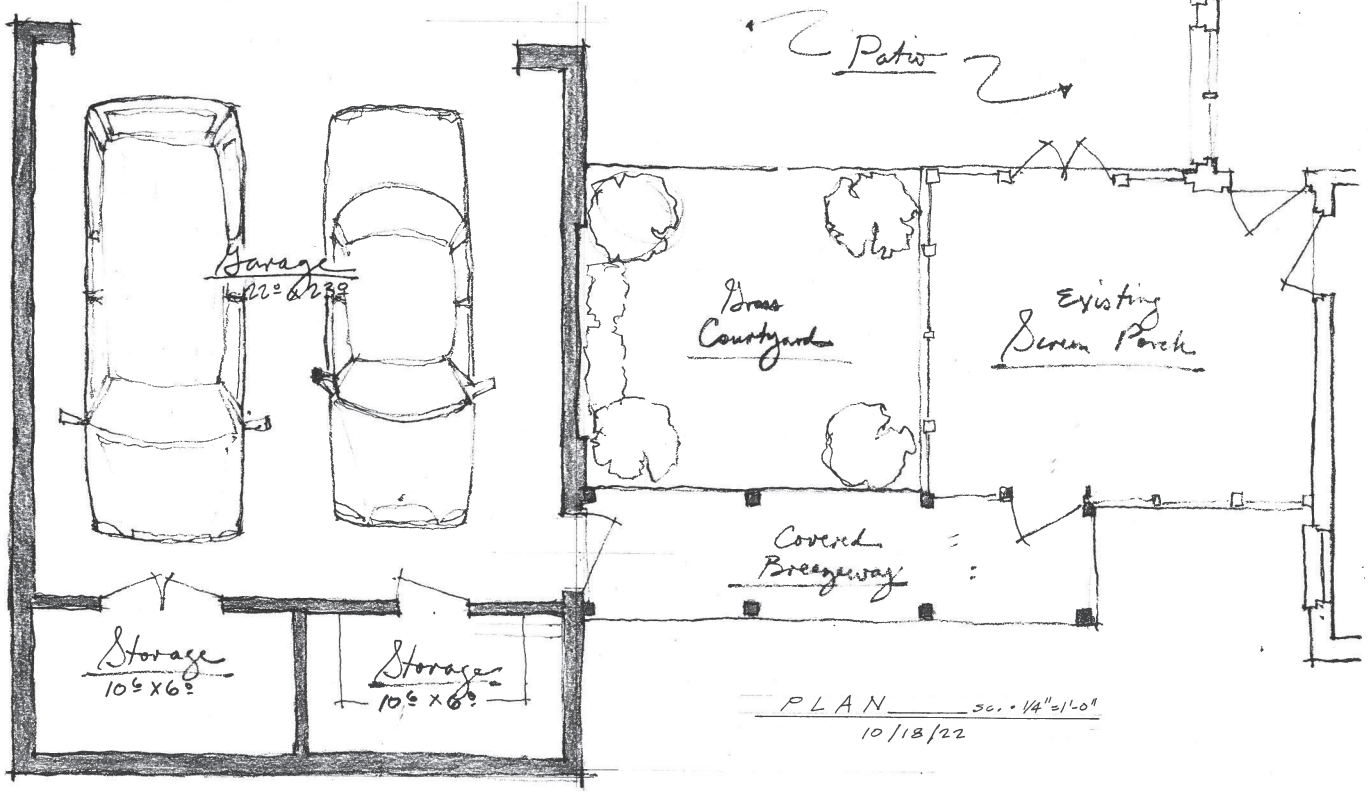
I, Ray Weygand, a Registered Land Surveyor, hereby certify to the purchaser of this property at this time, that I have surveyed Lot 6, BLOCK 1 SHEPHERDS ADDITION TO COUNTRY CLUB GARDENS, as recorded in Map Volume 25, Page 17, in the Office of the Judge of Probate, Jefferson County, Alabama. I hereby state that all parts of this survey and drawing have been completed in accordance with the current requirements of the Standards of Practice for Surveying in the State of Alabama to the best of my knowledge, information and belief; according to my survey of MAY 27, 2022. Survey invalid if not sealed in red.

Order No.: 20220946
Purchaser:
Address: 3750 EAST FAIRWAY DRIVE

Ray Weygand, Reg. L.S. #24973
169 Oxmoor Road Homewood, AL 35209
Phone: (205) 942-0086 Fax: (205) 942-0087

WEYGAND SURVEYORS

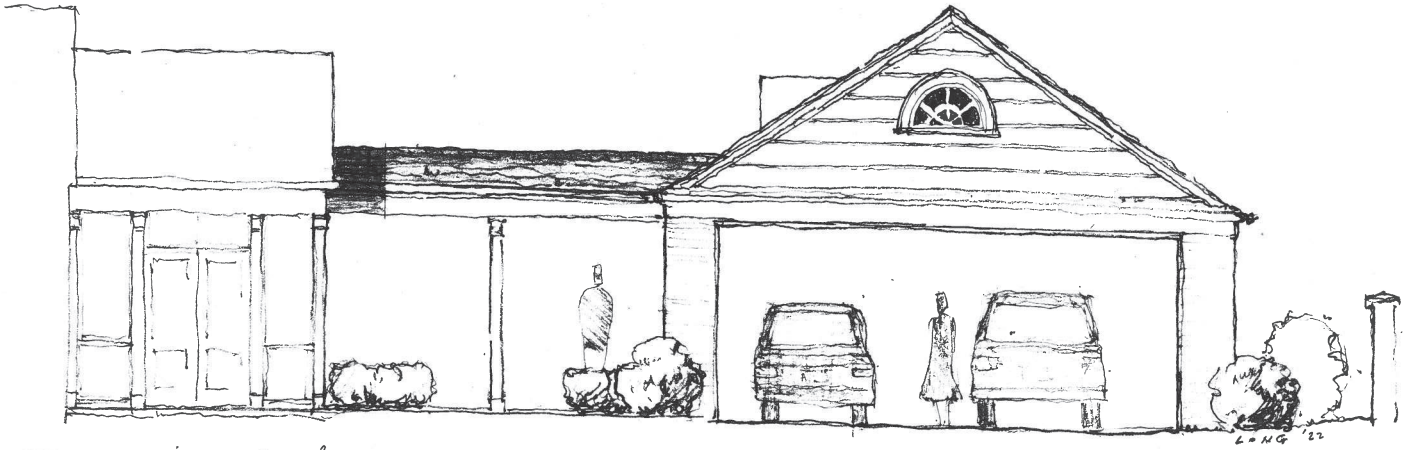
Note: (a) No title search of the public records has been performed by this firm and land shown hereon was not abstracted for easements and/or rights-of-way, recorded or unrecorded. The parcel shown hereon is subject to setbacks, easements, zoning, and restrictions that may be found in the public records of said county and/or city. (b) All bearings and/or angles, are deed/record map and actual unless otherwise noted. (c) Underground portions of foundations, footings, and/or other underground structures, utilities, cemeteries or burial sites were not located unless otherwise noted. (d) The shown north arrow is based on deed/record map. (e) This survey is not transferable. (f) Easements not shown on recorded map are not shown above.



PLAN ____ Sc. • 1/4"=1'-0"

10/18/22

HENRY SPROTT LONG & ASSOC. ARCHITECTS



Elevation As Seen From The Driveway
10/12/22

HENRY SPROTT LONG & ASSOC. ARCHITECTS

Henry Sprott Long & Associates
ARCHITECTS

November 15, 2022

Board of Zoning Adjustments
The City of Mountain Brook
Post Office Box 13009
Mountain Brook, AL 35213

Attention: Tammy Reid via email

RE: Proposed Alterations to an Accessory Building at 3750 East Fairway Dr.

Ladies and Gentlemen:

This letter is submitted in accordance with the standards for request of a variance for construction in the City of Mountain Brook.

We are requesting a variance for the existing non-conforming detached Accessory Building at 3750 East Fairway Drive. The existing detached garage is approximately 1070 square feet (45.5 ft x 23.5 ft) and is approximately 12'-0" tall. The existing detached garage is 5'-6"± from the rear property line and is 7'-0"± from the left property line. (See Attached Survey). We propose to demolish a portion of the existing structure leaving part of the existing structure with a footprint of 31.0 ft x 23.5 ft. The revised footprint will be approximately 6'-6"± from the rear property line and 7'-0"± from the left property line and the structure will be approximately 730 sq. ft. We propose to add a pitched roof to the renovated Garage that will match the slope of the roof on the existing Main House. The maximum height at the ridge will be 18.0 feet ±. We also propose to add a covered breezeway that will connect the Garage to the existing Screen Porch located at the rear of the Main House. The breezeway will be 6'-0" wide and will be 11'-0" tall at the ridge. The breezeway will be 14'-0" from the left property line.

The required variance application forms, graphic explanation of the proposed additions, a check for $ 100.00 to cover the hearing fee and list of adjacent property owners are included in this email. All information is submitted in preparation for the Board of Zoning Adjustments meeting on Monday, December 19, 2022.

Thank you for your consideration in this matter.

Sincerely,
HENRY SPROTT LONG & ASSOCIATES, INC.

Henry Sprott Long, Jr., President

HSLjr/bu

Enclosures

cc: Mr. and Mrs. Harlan Prater

Variance Application
Part II

Required Findings (Sec. 129-455 of the Zoning Ordinance)

To aid staff in determining that the required hardship findings can be made in this particular case, please answer the following questions with regard to your request. **These findings must be made by the Board of Zoning Adjustment in order for a variance to be granted** (please attach a separate sheet if necessary).

What special circumstances or conditions, applying to the building or land in question, are peculiar to such building or land, and do not apply generally to other buildings or land in the vicinity (including size, shape, topography, location or surroundings)?

See attached sheet.

Was the condition from which relief is sought a result of action by the applicant? (i.e., *self-imposed hardship* such as: "...converted existing garage to living space and am now seeking a variance to construct a new garage in a required setback...")

See attached sheet.

How would the granting of this variance be consistent with the purpose and intent of the Zoning Regulations?

See attached sheet.

Variance Application

Part II

1. The existing non-conforming detached Garage was built in the early 1990's and is approximately 1070 sq. ft. which exceeds the size allowed for an accessory building based on the current MB Building Code.

2. No.

3. We are proposing to decrease the size of the existing accessory building so that the square footage for the renovated structure will be 730 sq. ft. and more in line with the current MB Building Code. Also, the proposed alterations will reduce the non-conforming lot coverage by about 1.6%.

Variance Application - Part I

Project Data

Address of Subject Property 3305 Montevallo Rd Mt. Brook 35223

Zoning Classification Residential

Name of Property Owner(s) Mac + Kit Fairley

Phone Number (205) 913-1576 Email Macfairley@gmail.com

Name of Surveyor Weygand

Phone Number (205) 942-0086 Email

Name of ~~Architect~~ Agent (if applicable) N/A Roger Clark

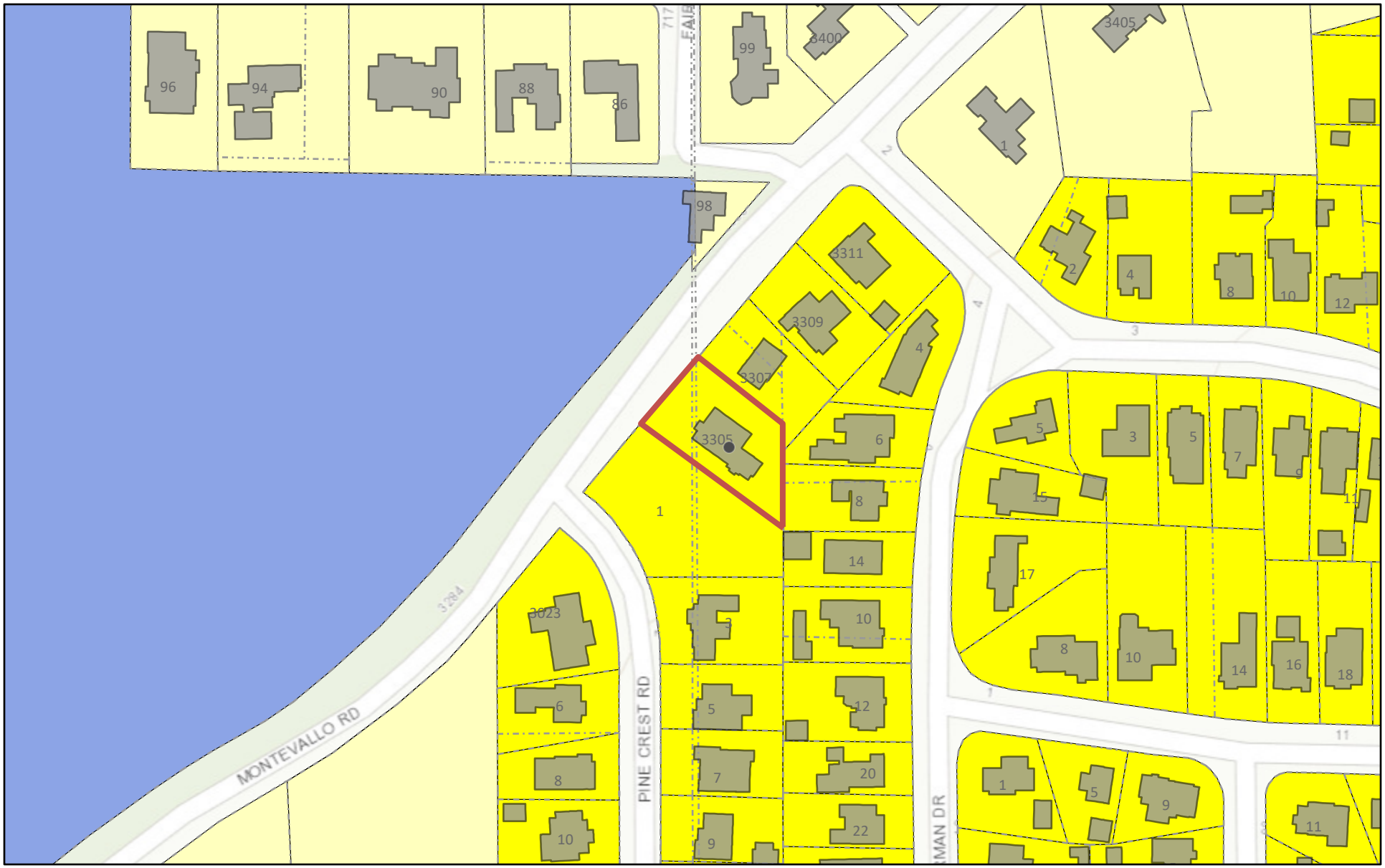
Phone Number (205) 616-2626 Email Pwhbroger@gmail.com

☒ Property owner or representative agent must be present at hearing

Please **fill in only applicable** project information (relating directly to the variance request(s):

	Zoning Code Requirement	Existing Development	Proposed Development
Lot Area (sf)			
Lot Width (ft)			
Front Setback (ft) *primary*			
Front Setback (ft) *secondary*			
Right Side Setback			
Left Side Setback			
Right Side Setback (ft): For non-conforming narrow lots in Res-B or Res-C: Less than 22' high → 22' high or greater →			
Left Side Setback (ft): For non-conforming narrow lots in Res-B or Res-C: Less than 22' high → 22' high or greater →			
Rear Setback (ft)	35'	23'	23' (From Property line)
Lot Coverage (%)			
Building Height (ft)			
Other			
Other			

A-22-33 Zoning



12/6/2022, 3:30:02 PM

Building Footprints 2020vl

Lot Lines

Tax_Parcels 2021

Residence A District

Residence B District

Rec-2

1:2,257

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

A-22-33 Aerial

12/6/2022, 3:31:27 PM

Aerial 2021

Red: Band_1

Green: Band_2

Blue: Band_3

1:2,257

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

Jefferson County Department of Information Technology , JeffCoAL, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, USDA

ArcGIS Web AppBuilder

Report to the Board of Zoning Adjustment

A-22-33

Petition Summary
Request to allow a covered rear deck to be 23 feet from the rear property line (east) in lieu of the required 35 feet.

Scope of Work
The scope of work entails the removal of a non-conforming covered rear porch and the construction of a new one in the same location. The applicant stated that the footings of the existing porch are inadequate and need to be replaced.

Variance Request for Rear Setback
Nexus: The hardships in this case are the existing design constraint of the house, the non-conforming rear porch, and the unusual angle of the rear property line. These hardships are reasonably related to the requested rebuild of the rear porch.

It is anticipated that an approval of such variance:

a. Is minor in nature (in that the request would replace the existing porch in the same footprint and not increase the encroachment from what exists now).

Impervious Area
The proposal is in compliance with the allowable impervious surface area.

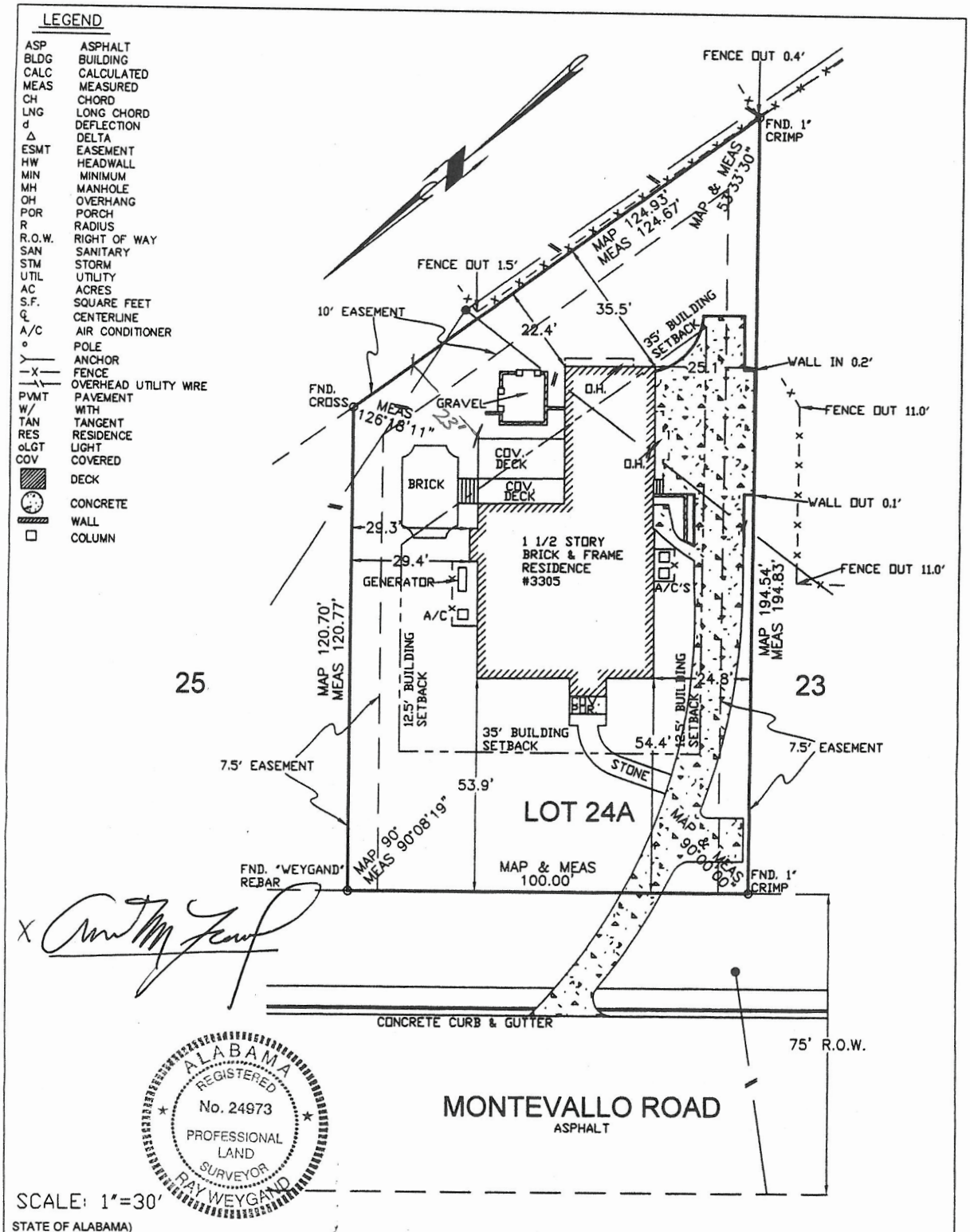
Subject Property and Surrounding Land Uses
The property contains a single-family dwelling, and is surrounded by same.

Affected Regulation
Article IV, Section 129-52 Area and dimensional requirements

Appends
LOCATION: 3305 Montevallo Road

ZONING DISTRICT: Residence B District

OWNERS: Mac and Kit Fairley



STATE OF ALABAMA)
JEFFERSON COUNTY)

"Closing Survey"

I, Ray Weygand, a Registered Land Surveyor, hereby certify to the purchaser of this property at this time, that I have surveyed Lot 24A, RESURVEY OF LOT 24 & PART OF LOT 25 SHADOW LAWN, as recorded in Map Volume 204, Page 1, in the Office of the Judge of Probate, Jefferson County, Alabama; that there are no rights-of-way, easements or joint driveways over or across said land visible on the surface except as shown; that there are no electric or telephone wires (excluding wires which serve the premises only) or structures or supports therefor, including poles, anchors and guy wires, (visible on the surface) on or over said premises except as shown; that there are no encroachments on said lot except as shown and that improvements are located as shown above. I hereby state that all parts of this survey and drawing have been completed in accordance with the current requirements of the Standards of Practice for Surveying in the State of Alabama to the best of my knowledge, information and belief; according to my survey of FEBRUARY 28, 2014.
Survey invalid if not sealed in red.

Order No.: 48443
Purchaser: Fairley & Samford
Address: 3305 Montevallo Road

Ray Weygand, Reg. L.S. #24973
169 Oxmoor Road Homewood, AL 35209
Phone: (205) 942-0086 Fax: (205) 942-0087

Note: (a) No title search of the public records has been performed by this firm and land shown hereon was not abstracted for easements and/or rights-of-way, recorded or unrecorded. The parcel shown hereon is subject to setbacks, easements, zoning, and restrictions that may be found in the public records of said county and/or city. (b) All bearings and/or angles, are deed/record map and actual unless otherwise noted. (c) Underground portions of foundations, footings, and/or other underground structures, utilities, cemeteries or burial sites were not located unless otherwise noted. We do not look for underground sewers or flip manhole covers. (d) The shown north arrow is based on deed/record map. (e) This survey is not transferable and is only good for 6 years and only good to the person/co. that pays for it at time of survey. (f) Easements not shown on record map are not shown above.

Variance Application
Part II

Required Findings (Sec. 129-455 of the Zoning Ordinance)

To aid staff in determining that the required hardship findings can be made in this particular case, please answer the following questions with regard to your request. **These findings must be made by the Board of Zoning Adjustment in order for a variance to be granted** (please attach a separate sheet if necessary).

What special circumstances or conditions, applying to the building or land in question, are peculiar to such building or land, and do not apply generally to other buildings or land in the vicinity (including size, shape, topography, location or surroundings)?

Unusual Angle of rear Lot Line

Existing Design Constraint of Non-conforming deck

Was the condition from which relief is sought a result of action by the applicant? (i.e., *self-imposed hardship* such as: "…converted existing garage to living space and am now seeking a variance to construct a new garage in a required setback…")

no

How would the granting of this variance be consistent with the purpose and intent of the Zoning Regulations?

- Does not impede flow of light or air to adjoining properties.
- Maintains setback for portion (encroaches by one corner)

Variance Application - Part I

Project Data

Address of Subject Property 2918 MONTEVALLO ROAD, MOUNTAIN BROOK, AL 35223

Zoning Classification RESIDENCE A

Name of Property Owner(s) MARUERITE GRAY MORRIS

Phone Number 205-746-3006 Email mhgray89@gmail.com

Name of Surveyor WEYGAND

Phone Number 205-942-0086 Email

Name of Architect (if applicable) SCOTT CARLISLE - CARLISLE MOORE ARCHITECTS

Phone Number 205-587-4868 Email SCOTT@CARLISLEMOOREARCHITECTS.COM

☒ Property owner or representative agent must be present at hearing

Please **fill in only applicable** project information (relating directly to the variance request(s):

	Zoning Code Requirement	Existing Development	Proposed Development
Lot Area (sf)			
Lot Width (ft)			
Front Setback (ft) *primary*			
Front Setback (ft) *secondary*			
Right Side Setback			
Left Side Setback			
Right Side Setback (ft): For non-conforming narrow lots in Res-B or Res-C: Less than 22' high → 22' high or greater →			
Left Side Setback (ft): For non-conforming narrow lots in Res-B or Res-C: Less than 22' high → 22' high or greater →			
Rear Setback (ft)	40'	22'-4"	12'-2"
Lot Coverage (%)			
Building Height (ft)			
Other			
Other			

Variance Application
Part II

Required Findings (Sec. 129-455 of the Zoning Ordinance)

To aid staff in determining that the required hardship findings can be made in this particular case, please answer the following questions with regard to your request. **These findings must be made by the Board of Zoning Adjustment in order for a variance to be granted** (please attach a separate sheet if necessary).

What special circumstances or conditions, applying to the building or land in question, are peculiar to such building or land, and do not apply generally to other buildings or land in the vicinity (including size, shape, topography, location or surroundings)?

The existing lot is from the 1940's, and the required rear setback for a Residence A lot is 40', which slices through the middle of the house. The lot is also a pie-shape lot which narrows dramatically on the righ side. The "de facto" setback, based on the furthest corner of the existing house is 22'-4"

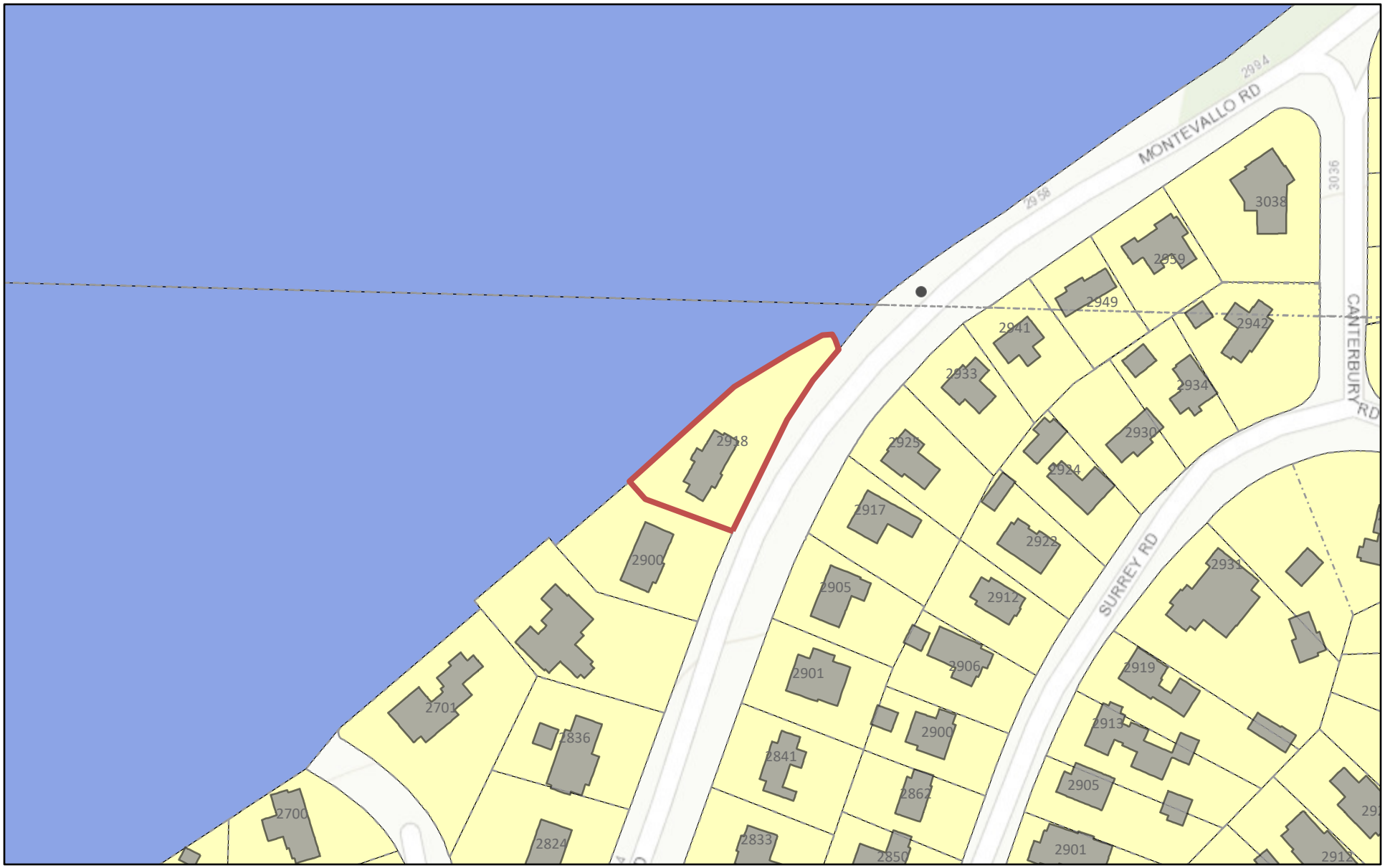
Was the condition from which relief is sought a result of action by the applicant? (i.e., *self-imposed hardship* such as: "…converted existing garage to living space and am now seeking a variance to construct a new garage in a required setback…")

No. This is an existing condition

How would the granting of this variance be consistent with the purpose and intent of the Zoning Regulations?

Due to the extemes of both the lot shape and location of required setback, providing relief from the code requirement would allow for the small rectilinear additions at the rear we are proposing.

A-22-34 Zoning



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Building Footprints 2020vl

Lot Lines

Tax_Parcels 2021

Residence A District

Rec-2

1:2,257

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

A-22-34 Aerial

12/6/2022, 3:49:11 PM

Aerial 2021

Red: Band_1

Green: Band_2

Blue: Band_3

1:2,257

0 0.01 0.03 0.06 mi

0 0.03 0.05 0.1 km

Report to the Board of Zoning Adjustment

A-22-34

Petition Summary
Request to allow additions to an existing single family dwelling to be 12 feet 2 inches feet from the rear property line (north) in lieu of the required 40 feet.

Scope of Work
The scope of work includes additions to a non-conforming single family dwelling.

Variance Request for Front and Rear Setbacks
Nexus: The hardships in this case are the lot shape and shallow depth, both of which are related to the request. The pie shaped lot is shallow in depth and narrows dramatically on the right side. The lack of lot depth severely constrains the buildable area, particularly on the east side.

It is anticipated that an approval of such variance:

a. Will not affect the flow of light and air to adjacent properties (in that the adjacent property to the rear is the Birmingham Country Club golf course and not a single family dwelling).

Impervious Area
The proposal is in compliance with the allowable impervious surface area.

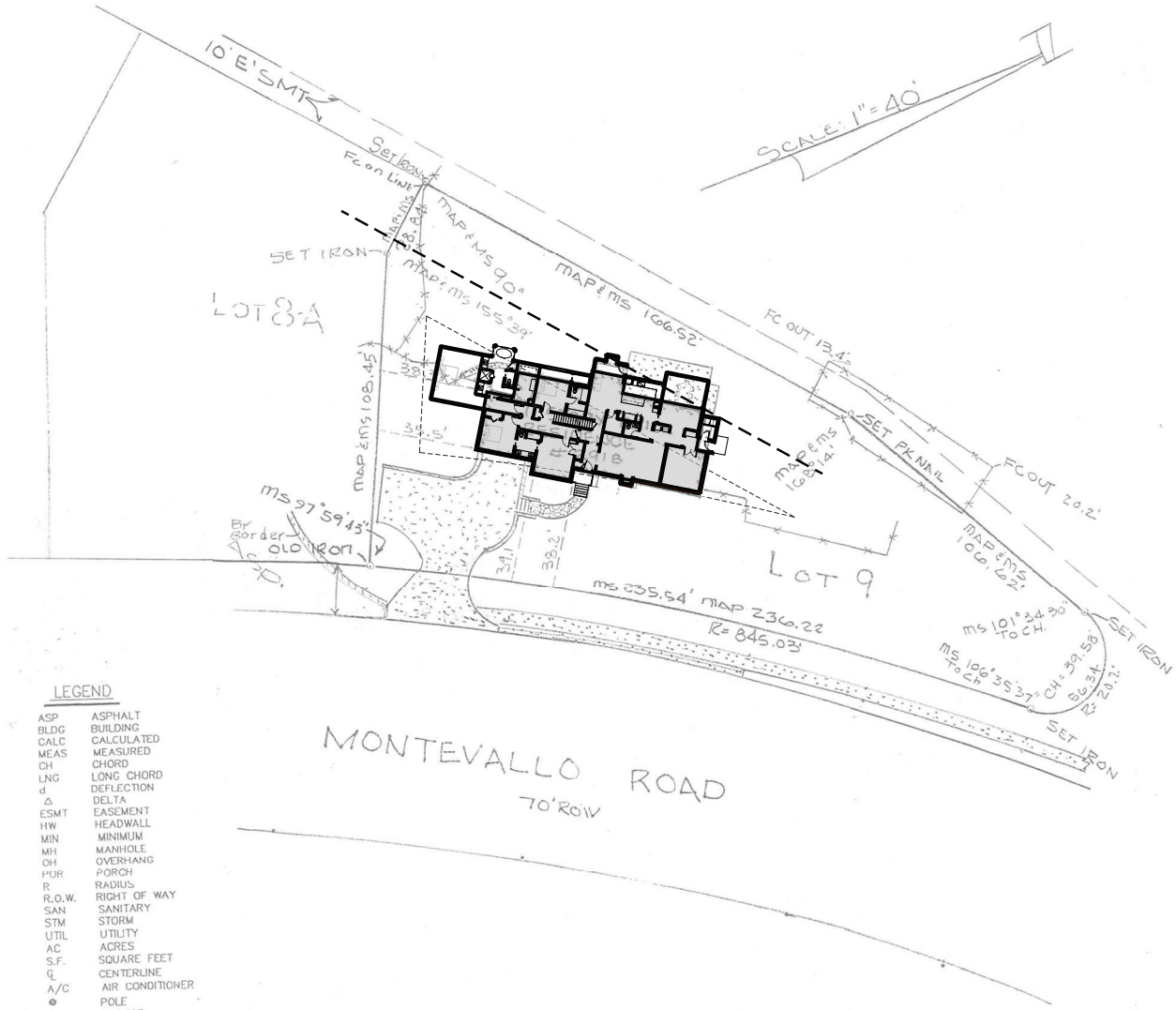
Subject Property and Surrounding Land Uses
The property contains a single-family dwelling, and is surrounded by same.

Affected Regulation
Article III, Section 129-31 Area and dimensional requirements

Appends
LOCATION: 2918 Montevallo Road

ZONING DISTRICT: Residence A District

OWNERS: Marguerite Gray Morris



LEGEND

ASP	ASPHALT
BLDG	BUILDING
CALC	CALCULATED
MEAS	MEASURED
CH	CHORD
LNG	LONG CHORD
d	DEFLECTION
Δ	DELTA
ESMT	EASEMENT
HW	HEADWALL
MIN	MINIMUM
MH	MANHOLE
OH	OVERHANG
POR	PORCH
R	RADIUS
R.O.W.	RIGHT OF WAY
SAN	SANITARY
STM	STORM
UTIL	UTILITY
AC	ACRES
S.F.	SQUARE FEET
℄	CENTERLINE
A/C	AIR CONDITIONER
	POLE
>——	ANCHOR
—X—	FENCE
—\/—	OVERHEAD UTILITY
PVMT	PAVEMENT
W/	WITH
TAN	TANGENT
RES	RESIDENCE
oLGT	LIGHT
COV	COVERED
	DECK
	CONCRETE
	WALL
	COLUMN

ALABAMA REGISTERED No. 24973 PROFESSIONAL LAND SURVEYOR RAY WEYGAND

STATE OF ALABAMA)
JEFFERSON COUNTY)

"Closing Survey"

I, Ray Weygand, a Registered Land Surveyor, hereby certify to the purchaser of this property at this time, that I have surveyed Lot 9, PARK IN THE PINES, as recorded in Map Volume 18, Page 76 in the Office of the Judge of Probate, Jefferson County, Alabama; that there are no rights-of-way, easements or joint driveways over or across said land visible on the surface except as shown; that there are no electric or telephone wires (excluding wires which serve the premises only) or structures or supports therefor, including poles, anchors and guy wires, (visible on the surface) on or over said premises except as shown; that there are no encroachments on said lot except as shown and that improvements are located as shown above. I hereby state that all parts of this survey and drawing have been completed in accordance with the current requirements of the Standards of Practice for Surveying in the State of Alabama to the best of my knowledge, information and belief; according to my survey of 8/27/15. Survey invalid if not sealed in red.

Order No.: 48944
Purchaser: GRAY
Address: 2918 MONTEVALLO ROAD

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169 Oxmoor Road Homewood, AL 35209
Phone: (205) 942-0086 Fax: (205) 942-0087
Copyright ©

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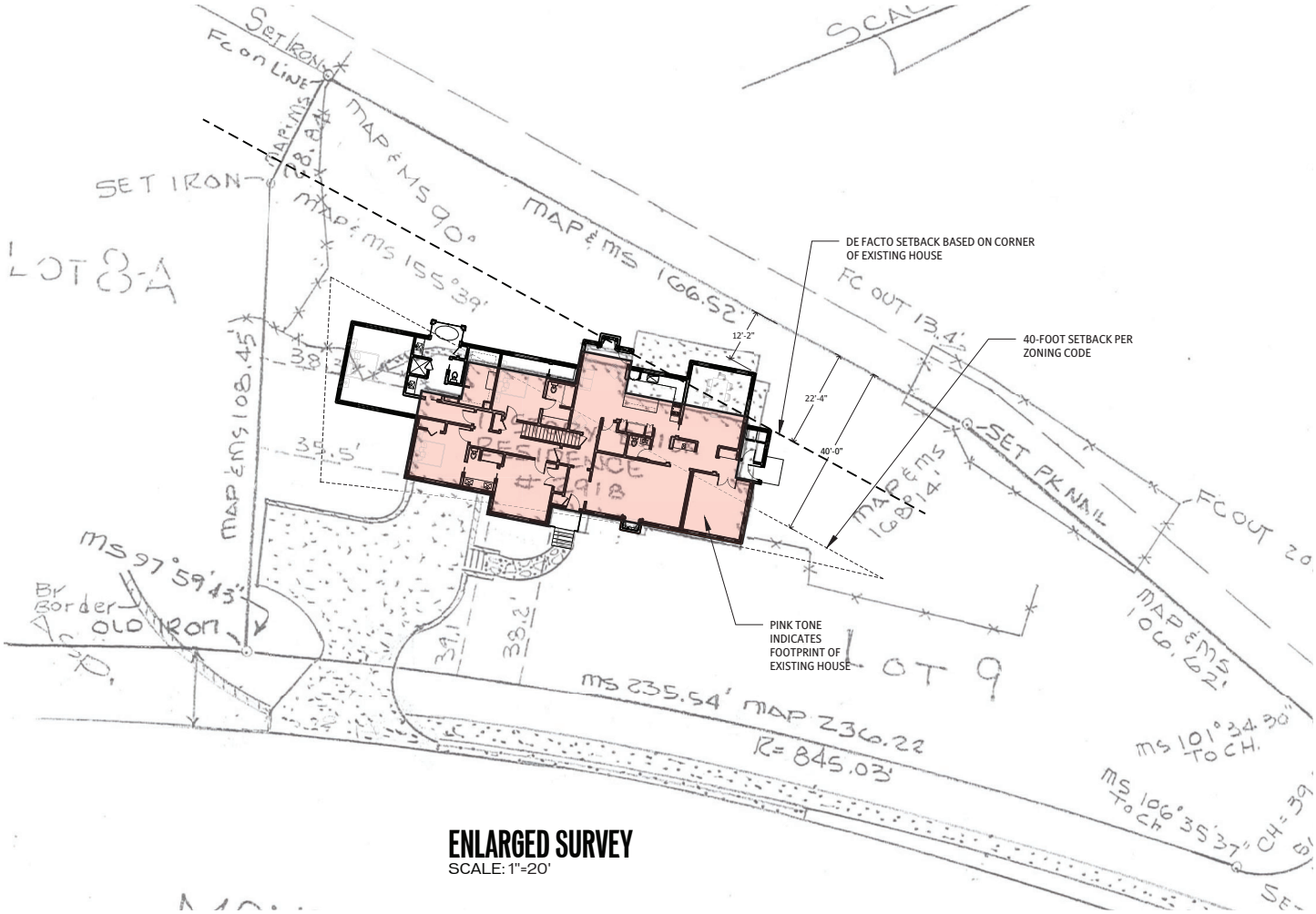
SURVEY
SCALE: 1"=40'



ENLARGED SURVEY

SCALE: 1"=20'

CARLISLE MOORE ARCHITECTS

MORRIS RESIDENCE

2918 MONTEVALLO ROAD, MOUNTAIN BROOK, AL 35223

VARIANCE DRAWING NO. 2

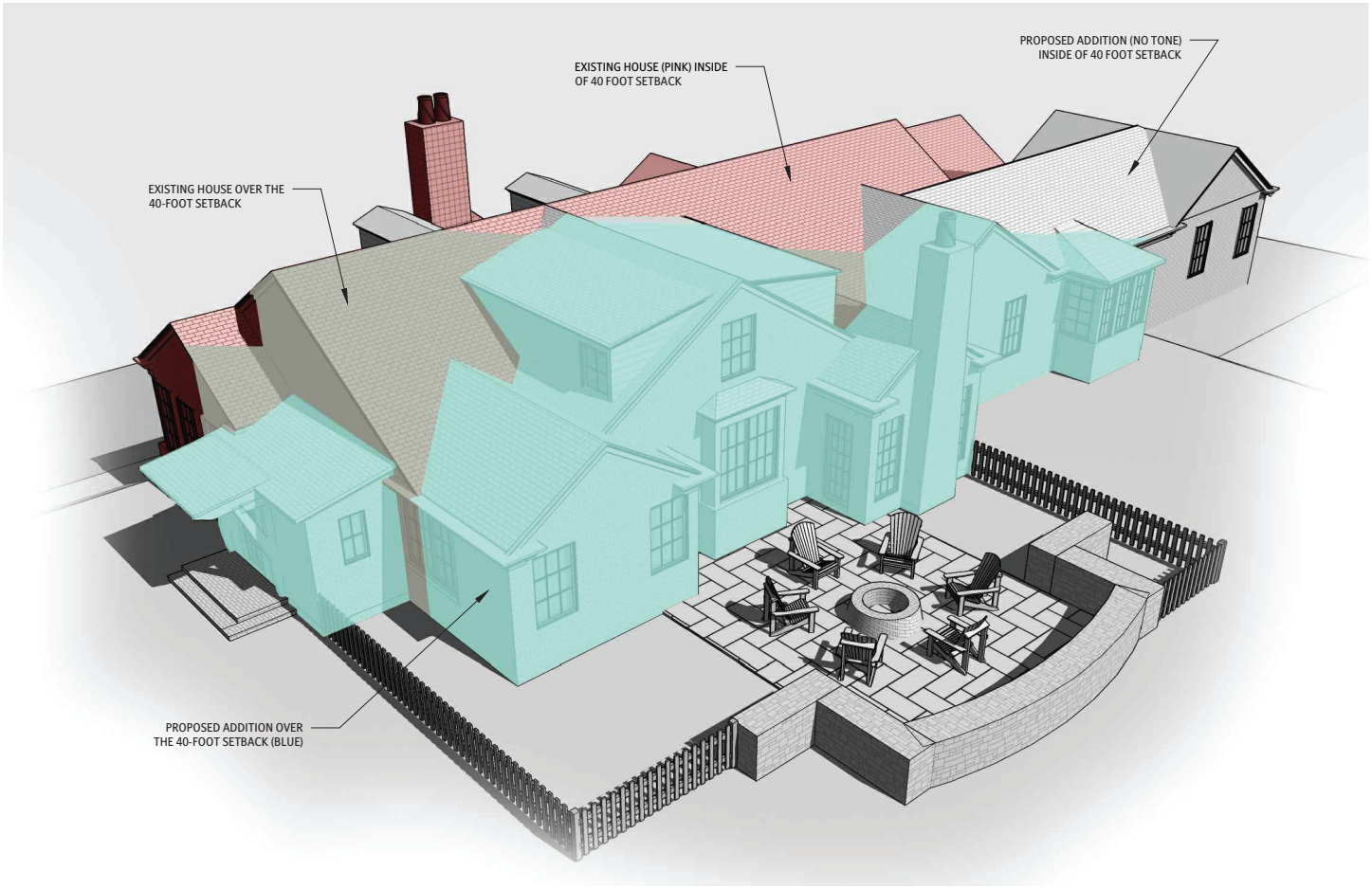
NOVEMBER 23, 2022

40 FOOT SETBACK

CARLISLE MOORE ARCHITECTS
carlislemoorearchitects.com

MORRIS RESIDENCE
2918 MONTEVALLO ROAD, MOUNTAIN BROOK, AL 35223

VARIANCE DRAWING NO. 3
NOVEMBER 23, 2022



40 FOOT SETBACK

CARLISLE MOORE ARCHITECTS

MORRIS RESIDENCE

2918 MONTEVALLO ROAD, MOUNTAIN BROOK, AL 35223

VARIANCE DRAWING NO. 4

NOVEMBER 23, 2022

"DE FACTO" SETBACK

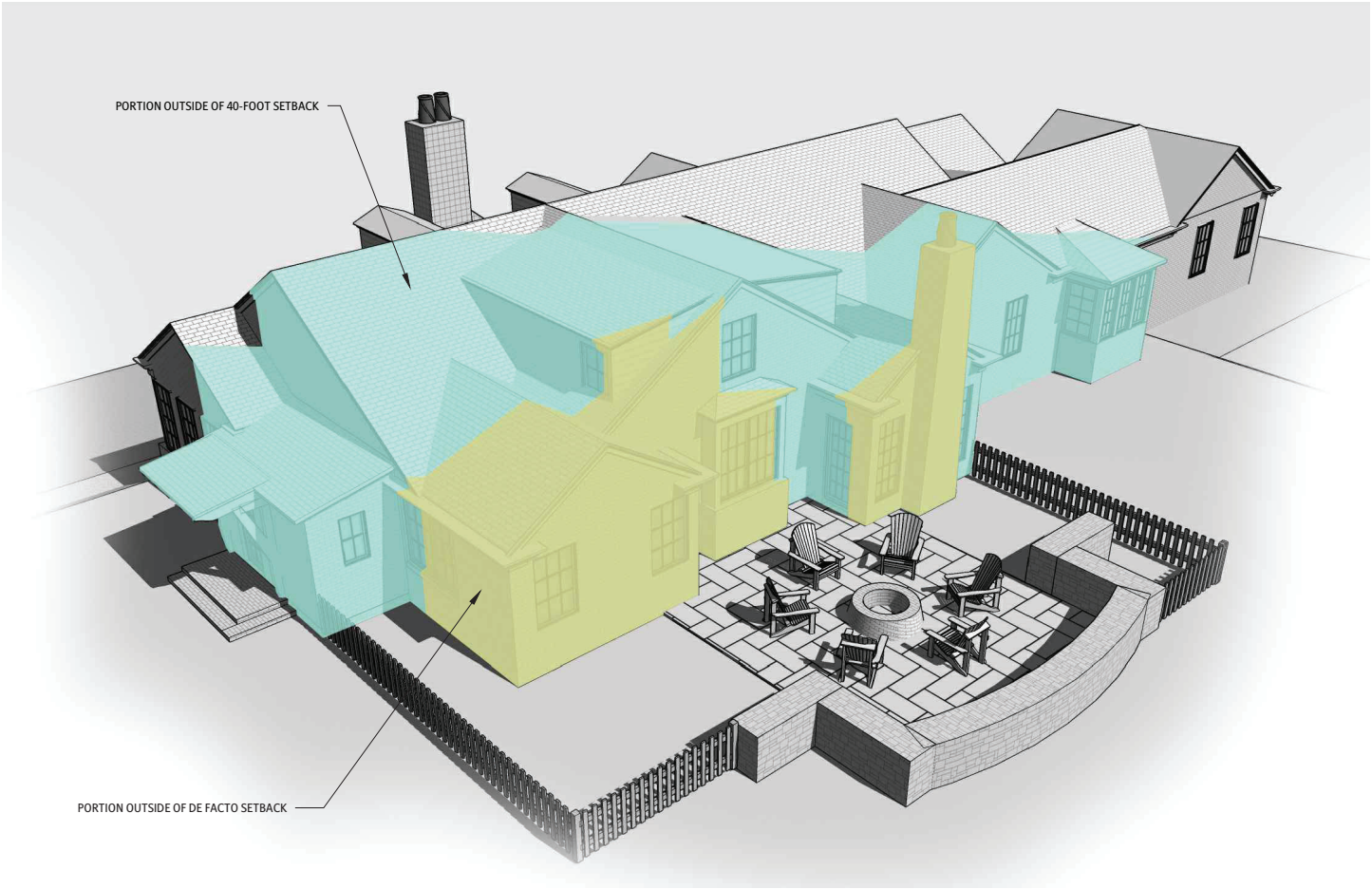
CARLISLE MOORE ARCHITECTS

MORRIS RESIDENCE

2918 MONTEVALLO ROAD, MOUNTAIN BROOK, AL 35223

VARIANCE DRAWING NO. 5

NOVEMBER 23, 2022



"DE FACTO" SETBACK COMPARED TO 40-FOOT SETBACK

CARLISLE MOORE ARCHITECTS

MORRIS RESIDENCE

2918 MONTEVALLO ROAD, MOUNTAIN BROOK, AL 35223

VARIANCE DRAWING NO. 6

NOVEMBER 23, 2022

ZONING VARIANCE

November 23, 2022

Board of Zoning Adjustment
56 Church Street
City of Mountain Brook
Mountain Brook, AL 35213

Re: 2918 Montevallo Road

CARLISLE
MOORE
ARCHITECTS

To The Board:

Thank you for considering our Zoning Variance. This project is an addition to the existing house at 2918 Mnntevallo Road. The existing house is from the 1940's and therefore the current setback at the rear (40') cuts through the middle of the house. This, along with the odd shape of the lot, are the hardships we are working with.

On the attached drawing, I have shown the current setback as well as what I am calling the "De Facto" setback which takes farthest corner of the existing house and extends it parallel with the property line. The distance from this lime to the rear property line is 22'-4".

While the additions to the house are modest, due to these hardships they would be impractical without a variance.

Regards

T. Scott Carlisle
For the Firm
Registration No. 5704

T SCOTT CARLISLE
(205)587 4868

BILL MOORE
(205)966-2554

2814 PETTICOAT LANE
MOUNTAIN BROOK, AL 35223

CARLISLEMOOREARCHITECTS.COM

Variance Application
Part II

Required Findings (Sec. 129-455 of the Zoning Ordinance)

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