Unsure of fee for subdivision- may owe more after John review

Office Use Only
Fee Paid 135.00 Ck# 1014 Date Approved _____ Permit Number _____
Public Hearing: YES NO Agent Approval: YES NO

RECEIVED
APR 17 2024
Walkin

TOWN OF EAST HAMPTON
INLAND WETLANDS & WATERCOURSES AGENCY

Date: 4/16/24

1. Name of Applicant* Lakewood Estates Email: Wayne@Randci.com
Phone Numbers: Home _____, Business 860-267-6623, Cell 860-982-4720
Home Address: Street _____ Town _____ State/Zip _____
Business Address: Street 244 Middletown Ave Town E Hampton State/Zip CT. 06424
* All applications MUST list contact phone numbers. If the applicant is a Limited Liability Corporation or a Corporation, provide the managing member's or responsible corporate officer's name, address, and telephone number.

2. Name of Property Owner (if different from Applicant): _____ Phone _____
Address: Street _____ Town _____ State/Zip _____
As the legal owner of the property listed on this application I hereby consent to the proposed activities. I hereby authorize the members and agents of the Agency to inspect the subject land, at reasonable times, during the pendency of the application and for the life of the permit.
Printed Name: Wayne Rand, Signature: _____, Date: 4/16/24

3. Provide the applicant's interest in the land. _____

4. Site Location and Description: Assessor's Map 03A, Block 44, Lot 23
Address: Street _____ Town _____ State/Zip _____
Note: It is the applicant's responsibility to provide the correct site address, map, block, and lot number for the legal notice.
Provide a description of the land in sufficient detail to allow identification of the inland wetlands and watercourses, the area(s) (in acres or square feet) of wetlands or watercourses to be disturbed, soil type(s), and wetland vegetation.
Area of Wetland to be disturbed: 0 acres or sq. ft.
Area of Watercourse to be disturbed 0 acres or sq. ft. 200'
Area of Upland Review Area to be disturbed: 1/2 acres or sq. ft.(Area within 100' of wetland)
TOTAL AREA OF DISTURBANCE 0 **acres or sq. ft.**
Will fill be needed on site? Yes No If yes, how much fill is needed? _____ cubic yards
The property contains (circle one or more)
WETLANDS, BROOK, RIVER, INTERMITTANT STREAM, VERNAL POOL, SWAMP, OTHER _____
Description of soil types on site: _____
Description of wetland vegetation: _
Name of Soil Scientist and date of survey: Jim Sippenley

5. Attach a written narrative of the purpose and description of the proposed activity and proposed erosion and sedimentation controls, best management practices, and mitigation measures which may be considered as a condition of issuing a permit for the proposed regulated activity including but not limited to; measures to: (1) prevent or minimize pollution or other environmental damage, (2) maintain or enhance existing environmental quality, or (3) in the following order of priority: restore, enhance or create productive wetland or watercourse resources. Depending on the complexity of the project, include the following: sequence of operations, drainage computations with pre and post construction runoff quantities and runoff rates, plans clearly showing the drainage areas corresponding to the drainage computations, existing wetland inventory and functional assessment, soils report, construction plans signed by a certified soils scientist, licensed surveyor, and licensed professional engineer. Include a construction schedule, impacts to vegetation, and pictures that clearly show the existing conditions of all areas to be disturbed and/or cleared of vegetation.
6. Provide information of all alternatives considered. List all alternatives which would cause less or no environmental impact to wetlands or watercourses and state why the alternative as set forth in the application was chosen. All such alternatives shall be diagramed on a site plan or drawing.

Office Use Only

Project# IW-24-008
Address: Lakewood Rd Rear
MBL: 03A/44/23

Minimum Requirements for Submission of Application to Inland Wetlands and Watercourses Agency

This form must be submitted with your application

Please check all that are being submitted:

- ✓ Completed Application Form (4 Pages)
- ✓ Fee Paid
- ✓ Site Plan (Showing project location, extent of wetlands, dimensions, etc) – PDF & 4 Copies of 11 x 17s
- ✓ PDF & 4 CopiesProject Narrative – PDF & 4 Copies of 11 x 17s
- ✓ Soils Report (As Required)
- ✓ Stormwater Report (As Required)
- ✓ Completed Application Checklist (Page 3 of Application)
- ✓ Schedule a Site Visit with Planning & Zoning Official at time of Application

Date of Site Visit: _____

I certify that this application is complete:

Signature of Applicant: _____ **Date:** 4/16/24

The Agency reserves the right to add additional requirements in accordance with the Regulations.

Only Complete Application Packages Will Be Accepted

03A-44-23A
AQUARION WATER CO OF
600 LINDLEY ST
BRIDGEPORT, CT 06606

03A-44-C-94
BB + G HOLDINGS LLC
10 PINE ST
PLAINVILLE, CT 06062

18-44-23G-4
DOBLE DEEPAK & LANDANI
57 HIGHLAND TER
EAST HAMPTON, CT 06424

03A-44-C-102
GOKEY JASON A
27 LAKEWOOD RD
EAST HAMPTON, CT 06424

18-44-23G-6
IANNONE MATTHEW
59 HIGHLAND TER
EAST HAMPTON, CT 06424

03A-44-C-101
NANE CORRADO +
29 LAKEWOOD DR
EAST HAMPTON, CT 06424

18-44-23GRD-OS1
SKYLINE ESTATES LLC
244 MIDDLETOWN AVE
EAST HAMPTON, CT 06424

03A-44-C-104
STRONG TIMOTHY A
PO BOX 353
MARLBOROUGH, CT 06447

03A-44-C-109
TRAINO ANNA
15 LAKEWOOD RD
EAST HAMPTON, CT 06424

03A-44-C-110
BARTHELL TAYLOR F
13 LAKEWOOD RD
EAST HAMPTON, CT 06424

03A-44-C-97
BURKE MICHAEL M
35 LAKEWOOD RD
EAST HAMPTON, CT 06424

03A-44-C-95
ENGELBERT KEITH
39 LAKEWOOD RD
EAST HAMPTON, CT 06424

18-44-23G-1A
HEBERT MATTHEW
53 HIGHLAND TER
EAST HAMPTON, CT 06424

03A-44-C-99
JACKSON JACQUELINE
PO BX 312
EAST HAMPTON, CT 06424

03A-44-C-107
PERKINS ROSALIE +
74 DIVIDEND RD
ROCKY HILL, CT 06067

18-44-23G-2
SKYLINE ESTATES LLC
244 MIDDLETOWN AVE
EAST HAMPTON, CT 06424

03A-44-C-114
SZYMASZEK JOHN J + NANCY
5 LAKEWOOD RD
EAST HAMPTON, CT 06424

03A-44-C-98
US BANK TRUST NA TR/F
3701 REGENT BLVD SUITE 200
IRVING, TX 75063

03A-44-23
BB + G HOLDINGS LLC
10 PINE ST
PLAINVILLE, CT 06062

03A-44-C-96
CATALINA PAMELA MAE +
37 LAKEWOOD RD
EAST HAMPTON, CT 06424

24-44-18
ENGSTROM ALFRED J + SUN
11170 CHAMBERS COURT
WOODSTOCK, MD 21163

03A-44-C-103
HOULE CYNTHIA
25 LAKEWOOD RD
EAST HAMPTON, CT 06424

03A-44-C-112
MURPHY RICHARD M
9 LAKEWOOD RD
EAST HAMPTON, CT 06424

18-44-23G-1
ROMAN MIGUEL A
51 HIGHLAND TER
EAST HAMPTON, CT 06424

03A-44-25-1
STOCKBURGER JOEL
35 OLA AVE
EAST HAMPTON, CT 06424

03A-44-C-106
TOZZI PAOLO
21 LAKEWOOD RD
EAST HAMPTON, CT 06424

Attach plans showing all alternatives considered. yes

7. Attach a site plan showing the proposed activity and existing and proposed conditions in relation to wetlands and watercourses and identifying any further activities associated with, or reasonably related to, the proposed regulated activity which are made inevitable by the proposed regulated activity and which may have an impact on wetlands or watercourses. Include a colored grading plan showing areas to be filled (green) and areas to be excavated (brown) that clearly shows existing and proposed contours and proposed limits of disturbance.

8. Attach the names and mailing addresses of adjacent landowners. Attach additional sheets if necessary.
Name SEE ATTACHED Address _____
Name _____ Address _____
Name _____ Address _____

9. Attach a completed DEEP reporting form.
The Agency shall revise or correct the information provided by the applicant and submit the form to the Commissioner of Environmental Protection in accordance with section 22a-39-14 of the Regulations of Connecticut State Agencies.

10. Attach the appropriate filing fee based on the fee schedule in Section 19 of the regulations.
Fee: _ (Make check payable to "The Town of East Hampton")

11. Name of Erosion Control Agent (Person Responsible for Compliance): WAYNE RAND
Phone Numbers: Home _____, Business _____, Cell 860 982 4720 Address: Street _____ Town _____
State/Zip 06479

12. Are you aware of any wetland violations (past or present) on this property? YES (NO)
If yes, explain _____

13. Are you aware of any vernal pools located on or adjacent (within 500')to the property? YES (NO)

14. For projects that do not fall under the ACOE Category 1 general permit – Have you contacted the Army Corps of Engineers? YES (NO)

15. . Is this project within a public water supply aquifer protection area or a public water supply watershed area? (YES) NO
If so, have you notified the Commissioner of the Connecticut Department of Public Health and the East Hampton WPCA? (YES) NO
(Proof of notification must be submitted with your application.)

16. PUBLIC HEARINGS ONLY. The applicant must provide proof of mailing notices to the abutters prior to the hearing date.

17. ***As the applicant I am familiar with all the information provided in the application and I am aware of the penalties for obtaining a permit through deception or through inaccurate or misleading information.***
Printed name: Wayne Rand, Signature: _____, Date: 4/16/24
Please Note: You or a representative must attend the Inland Wetlands meeting to present you application.

SECTION 19
APPLICATION FEES

19.5 Fee Schedule. Application fees will be based on the following schedule:

DEEP fee required by C.G.S. 22a-27j will be added to the base fee	$60.00
19.5.1 Application Fee plus fee from Schedule A	
19.5.1.1 Residential Uses.	$75.00 Plus
*Each additional lot with regulated activities.	*Plus $50.00/lot
19.5.1.2 Commercial/Industrial/Other Uses.	$400.00
19.5.2 Approval by Authorized Agent	
19.5.2.1 Residential	$60.00
19.5.2.2 Commercial	$75.00
19.5.3 Public Hearing Fee	
19.5.3.1 Single Residential	$100.00
19.5.3.2 Subdivision	$400.00
19.5.3.2 Commercial, Industrial, Other	$400.00
19.5.4 Complex Application Fee	(Actual Cost)

The Inland Wetland Agency may charge an additional fee sufficient to cover the cost of reviewing and acting on complex applications. Such fee may include, but not be limited to, the cost of retaining experts, to advise, review, and report on issues requiring such experts. The Agency shall estimate the complex application fee, which shall be paid pursuant to section 19 of these regulations within 10 days of the applicant's receipt or notice of such estimate. Any portion of the complex application fee in excess of the actual cost shall be refunded to the applicant no later than 30 days after publication of the Agency's decision.

19.5.5 Permitted and Nonregulated Uses:	
19.5.5.1 Permitted Uses as of Right	$25.00
19.5.5.2 Nonregulated	$0.00
19.5.6 Regulation Amendment Petitions	$150.00
(Does not include Notices or Regulation Advisories from DEEP.)	
19.5.6.1 Map Amendment Petitions	$50.00
Plus fee from Schedule B	
19.5.7 Modification of Previous Approval	
19.5.7.1 Residential	$ 25.00
19.5.7.2 Subdivision	$ 50.00
19.5.7.3 Commercial/Industrial/Other	$ 75.00
19.5.8 Renewal of Previous Approval	$50.00

19.5.9 SCHEDULE A. For the purposes of calculating the permit application fee, the area in schedule A is the total area of wetlands and watercourses and upland review area upon which a regulated activity is proposed.

SQUARE FEET OF AREA	
19.5.9.1 Less than 1,000	$0.00
19.5.9.2 1,000 to 5,000	$200.00
19.5.9.3 More than 5,000	$400.00

19.5.10 SCHEDULE B. For the purposed of calculating the map amendment petition fee, the linear feet in schedule B is the total length of wetlands and watercourses boundary subject to the proposed boundary change.

LINEAR FEET	
19.5.10.1 Less than 500	$0.00
19.5.10.2 500 to 1,000	$100.00
19.5.10.3 More than 1,000	$200.00

Town of East Hampton
INLAND WETLANDS WATERCOURSE AGENCY
2024 Meeting Dates
1 Community Drive
Town Hall Council Chambers
6:30 p.m.

Meeting Date:	Deadline:
January 31, 2024	January 17, 2024
February 28, 2024	February 14, 2024
March 27, 2024	March 13, 2024
April 24, 2024	April 10, 2024
May 29, 2024	May 15, 2024
June 26, 2024	June 12, 2024
July 31, 2024	July 17, 2024
August 28, 2024	August 14, 2024
September 25, 2024	September 11, 2024
October 30, 2024	October 16, 2024
November 20, 2024	November 6, 2024
December 18, 2024	December 4, 2024
January 29, 2025	January 15, 2025

CHECKLIST FOR A COMPLETE APPLICATION

- ❑ A narrative of the purpose and description and methodology of all proposed activities;
- ❑ Alternatives considered by the applicant, reasons for leaving less than a 10' buffer between clearing and the wetlands. Such alternatives to be diagrammed on a site plan or drawing and submitted to the commission as part of the application;
- ❑ Names and mailing addresses of abutting property owners;
- ❑ Three copies of approximately l"=40' scale plans
- ❑ Locations of existing and proposed land uses
- ❑ Locations of existing and proposed buildings
- ❑ Locations of existing and proposed subsurface sewage disposal systems, and test hole descriptions
- ❑ Existing and proposed topographical and man-made features including roads and driveways, on and adjacent to the site. Include a colored grading plan showing areas to be filled (green) and areas to be excavated (brown) that clearly shows existing and proposed contours and proposed limits of disturbance.
- ❑ Location and diagrams of proposed erosion control structures
- ❑ Pictures of existing conditions clearly showing all areas to be disturbed, and/or cleared of vegetation.
- ❑ Assessor map, block and lot number
- ❑ Key or inset map
- ❑ North arrow
- ❑ Flood zone classification and delineation
- ❑ Use of wetland and watercourse markers where appropriate.
- ❑ Soil types classification and boundary delineation (flagged and numbered boundary), Soil Scientist's original signature and certification on plans
- ❑ Soil Scientist's (or other wetland scientist) report on the function of the wetlands
- ❑ Watercourse channel location and flow direction, where appropriate
- ❑ 100 ft. regulated area depicted on plans
- ❑ Conservation easements where appropriate
- ❑ A detailed erosion and sediment control plan which meets requirements set forth in the most recent revision of the *Connecticut Guidelines for Soil Erosion and Sediment Control*, published by the Connecticut Council on Soil and Water Conservation, including:
- ❑ Location of areas to be stripped of vegetation and other unprotected areas
- ❑ Schedule of operations including starting and completion dates for major development phases
- ❑ Seeding, sodding, or re-vegetation plans for all unprotected or un-vegetated areas
- ❑ Location and design of structural sediment control measures
- ❑ Timing of planned sediment control measures
- ❑ Use of wetland and watercourse markers
- ❑ Proper certification on the application documents and plans

In the case of filling in wetlands, watercourses, or regulated upland areas, the following items are necessary:

- ❑ Area to be filled
- ❑ Volume of requested fill
- ❑ Finished slopes of filled areas
- ❑ Containment and stabilization measures
- ❑ Proposed finished contours
- ❑ Evaluation of the effect of filling the wetlands with respect to storage volume and its impact downstream showing before and after development flows, and the evaluation of storm water detention including the existing need for flood control downstream

Other required items:

- ❑ Proof of adjoining Town notification, where required;
- ❑ All application fees required by Section 19 of these regulations;
- ❑ A written narrative detailing how the effects of the applicant's proposed activities upon wetlands and watercourses shall be mitigated.
- ❑ A written description of any and all future plans which may be linked to the activities proposed in the current application.
- ❑ Address the potential to enhance the current buffer area.
- ❑ Review drainage information with Town Engineering
- ❑ Mailing requirements for abutters (public hearing only)

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

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Commissioner of Public Health
Street and Apt. No., or PO Box No.
Connecticut Dept of Health
City, State, ZIP+4®
410 Capitol Ave. Hartford, CT 06134

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

USPS TRACKING #

9590 9402 5591 9274 1841 19

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

United States
Postal Service

• Sender: Please print your name, address, and ZIP+4® in this box•

Lakewood Estates LLC
244 Middletown Ave
Eastampton, CT 06424

Lakewood Estates LLC.
244 Middletown Ave.
Eastern, CT. 06424

Commissioner of Public Health
Connecticut Department of Public Health
410 Capitol Avenue
Hartford, CT. 06134

ATT: Manisha Juthani, MD.

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Commissioner of Public Health
Connecticut Dept of Health
410 Capitol Ave.
Hartford, CT. 06134

9590 9402 5591 9274 1841 19

2. Article Number *(Transfer from service label)*

7019 1640 0001 6655 8380

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

Town of East Hampton
Land Use Department
1 Community Dr., East Hampton, CT. 06424
(860) 267-7450

RECEIVED
MAY 6 2024

Inquiry/Complaint Form

Date Received:_____ Complaint #:_____

Violator Information

Location: _____ Map#:_____ Block#:_____ Lot#: _____

Property Owner: _____

Mailing Address: _____

Telephone (H):_____ (W):_____ (C): _____

Complainant Information

May 6, 2024

Name: Pamela Catalina Telephone (H): – (C): 860-463-0517

Address: 37 Lakewood Rd Email: psalm23pam@msn.com

Signature: Pamela Catalena

Complaint/Inquiry: For the First time in 28 years I now have a stream of water Flowing From the Adjacent property west between my property and #39 next door. I Flows strongly between our propertys across my driveway. I now have efflorescence on my concrete → over Please

Location on Property Where Violation is Occurring: Behind and in between my house #37 and #39. Across my driveway, end of my driveway

☐ Photograph Attached

This section is to be completed by Planning and Zoning Staff.

Refer to: ☐ Zoning ☐ Wetlands ☐ Building ☐ Blight ☐ Health

Pending / Recent Applications: _____

Special Permits/ Exceptions:_____

Inspector:_____ Inspection Date: _____

Inspection Notes: _____

THIS FORM MUST BE COMPLETED IN ITS ENTIRETY.
SIGNED COMPLAINTS TAKE PRIORTY OVER ANONYMOUS COMPLAINTS.
THIS FORM IS SUBJECT TO THE FREEDOM OF INFORMATION ACT.
PERSONAL INFORMATION SUCH AS PHONE NUMBERS AND EMAIL ADDRESS WILL BE REDACTED.
DO NOT ENTER PROPERTY ILLEGALLY IN ORDER TO OBTAIN PHOTOGRAPHS.

In my garage and my Furnace room for the first time ever. I am very concered about my Foundation and water damage from this redirected flow of water.

I am a resident of East Hampton since 1996. I purchased my home in 1999. 28 years I have never seen this issue before.

I am writing today in hopes that this issue of redireted water flow can be addressed. Not sure if the tree removal behind my house is a direct result of new water. But seems to be related and I think can be remedied. I know the town is addressing this concern Re: the development behind my house and I greatly appreciate your attention to this problem. It is also a concern that the excess water run off and silt ~~Not to mention the problems~~ caused by the tree removal that is also effecting our precious lake health. be concidered.

Thank you for your attention to this issue.

Sincerly,

Pamela Catalina
37 Lakewood Rd.
East Hampton, CT 06424

Continued

May 6, 2024

One last concern I have is the milling that was done on Lakewood Rd. on the west side. I realize we had an ice issue down the entire road and the milling seemed to make that better however I would like to know if there is anything else that can be done to reduce the runoff.

My driveway is on an extream angle and enterns my driveway now my car bottoms out. Very difficult.

Thank you for your attention to this issue.

Pam Catalano
32 Lakewood R.
E. Hampton, CT
06424

PROJECT DESIGN REPORT

"Lake Overlook Estates"

Lakewood Road – Rear
M 03A/ B 44/ L 23
East Hampton, Connecticut

Applicant/ Owner:
Lakewood Estates, LLC
244 Middletown Avenue
East Hampton, CT 06424

Prepared By:
Robert V. Baltramaitis, P.E.
27 Tammy Hill Road
Wallingford, CT 06492
(203) 915-8301
baltro@aol.com

April 17, 2024

PROJECT SUMMARY

The Applicant, Lakewood Estates, LLC, proposes to develop their property at Lakewood Road - Rear in East Hampton, Connecticut. The property is located along Lakewood Road with a 100-foot wide access way located approximately 1,200 feet from the intersection with Lake Drive. The parcel is 38.0 acres in size and slopes easterly and southeasterly towards Lakewood Road.

The applicant proposes to develop the property as an "Open Space Residential Subdivision" with eleven (11) building lots. The project will provide 7.7 acres of open space with this initial phase. A 13.87 acre parcel at the end of the proposed cul-de-sac roadway will remain for potential future development. The concept of the "Open Space Residential Subdivision" was preferred over a conventional subdivision by the East Hampton Planning and Zoning Commission at their meeting on February 7, 2024 during a pre-application discussion.

The proposed development will be served by a 700-foot long, 24-foot wide paved roadway with an adjacent 4-foot wide pedestrian sidewalk. These improvements will be constructed per Town of East Hampton standards and turned over to the Town as public improvements. Utilities to the site will come from Lakewood Road. Power and communications will come from the existing overhead lines along the west ide of Lakewood Road although they will be installed underground in the project area. Water will be provided from Aquarion Water Company of Connecticut and sanitary sewer will connect to the public system maintained by the East Hampton Water Pollution Control Authority.

A detailed Sediment & Erosion Control Plan has been developed to mitigate the short-term impacts of the development during construction. Overall, the S&E plan and the permanent storm water management system provide excellent protection and enhancement of storm water quality during and after construction.

A review of FEMA Flood Insurance Rate Map No. 09007C0135G, August 8, 2008, suggests that the site and immediate vicinity does NOT contain any flood hazard areas. Based on field reconnaissance and soil survey by James Sipperly, Certified Soil Scientist, there are no regulated wetlands or watercourses on the subject property.

DRAINAGE ANALYSIS

Hydraflow Hydrographs® (HH) software was used to generate computer models of the pre- and post-development scenarios. HH utilizes the methodologies set forth in the Technical Release No. 55 (TR-55) and Technical Release No. 20 (TR-20) computer model, originally developed by the Soil Conservation Service (SCS) now called the Natural Resources Conservation Service (NRCS). The HH software predicts runoff rates based upon several factors including land use, hydrologic soil type, vegetative cover, watershed area, time of concentration rainfall data and the attenuation effects due to ponds and structures. The SCS data is attached.

The site is presently undeveloped and entirely wooded. Presently, under *pre-development conditions*, the entire site drains overland from just below Highland Terrace easterly and southeasterly towards Lakewood Road. For analysis purposes, the pre-development drainage area is 25.4 acres and is broken down into three separate areas for analysis purposes. The area labeled 'ex-da-1' is 13.6 acres and drains to the southeast portion of the site. The area labeled as 'ex-da-2' is 10.1 acres drains to the middle part of the eastern boundary in the vicinity of the existing pump station. A third area labeled 'ex-da-3' is 1.7 acres and drains to the northeasterly portion of the site. While the site is slightly larger than the drainage study area, those areas are not being developed and do not drain towards Lakewood Road.

Under *post-development conditions*, the existing drainage areas will be altered. Proposed drainage area 1 (PR-DA-1) draining to the southeasterly portion of the site will be reduced in area from 13.6 acres to 7.1 acres. This area will see some site coverage alterations with development of portions of Lot #8 and Lot #9. Proposed drainage area 3 (PR-DA-3) will remain at 1.7 acres and see some alterations with the development of Lot #1.

The remaining area, drainage area 2 (PR-DA-2) will increase in size from 10.1 to 16.6 acres and see the bulk of the alterations. This drainage area is further broken down into PR-DA-2A consisting of 15.9 acres which drains to the proposed storm water management basin. A series of swales and storm pipe will collect runoff from the back sides of Lot #10, Lot #11 and Lot #12. This has been done intentionally so that the vast majority of storm water runoff is directed to and treated by the proposed storm water basin serving the site. This will help control peak runoff rates and enhance storm water quality. The remaining 0.7 acres is labeled as PR-DA-2B and is beyond the catchment area serving the detention basin and drains to the existing storm sewer system in Lakewood Road.

Based on existing land coverage in the sub watersheds and the underlying soils, as identified in the Soil Survey of New London County, Connecticut, runoff curve numbers (CN) were developed for each drainage area for existing and post-development conditions. The following runoff coefficients were used based on the hydrologic classification of area soils which are of hydrologic class 'B':

Land Cover	**CN**
Roofs	98
Pavements	98
Grass (Fair)	69
Grass (Good)	61
Woods (Fair)	60

Drainage areas for pre- and post-development scenarios were developed and are shown on the attached maps WS-1 and WS-2.

The times-of-concentration (Tc) were determined for both the pre- and post-development conditions using the SCS Lag Method given parameters of the watershed affecting overland flow, gutter flow, channel flow and pipe flow, where applicable. Given the impervious nature of

post development area 2B, a minimum time-of-concentration (Tc) of 5 minutes was utilized. Hydrographs were developed using SCS TR-55 methodology to ascertain flow rates and volumes, utilizing NOAA 14 published rainfall values. The associated 24-hour rainfall totals utilized are 3.38", 5.18", 6.30", 7.13" and 8.04" for the 2-, 10-, 25-, 50- and 100-year storms, respectively.

Not surprisingly, the developed site is anticipated to increase the peak runoff flow rates from the site. To mitigate this impact, a surface detention basin is proposed at the bottom reach of drainage area PR-DA-2A. This basin will have a sediment forebay and is designed as a dry basin; with the lowest outlet orifice invert matching that of the basin floor. Based on the proposed contours and configuration, the following table summarizes the stage/ storage relationship:

Stage (ft)	Elevation (ft)	Contour Area (sq. ft.)	Total Storage (cu. ft.)
0	532	8,500	0
1	533	10,110	9,292
2	534	11,830	20,250
3	535	13,610	32,958
4	536	15,650	47,531
5	537	17,475	64,038
6	538	19,900	82,710
7	539	24,000	104,626

The native soil classification is Charlton-Chatfield Complex which are well drained fine sandy loams and gravelly fine sandy loams with a Hydrologic classification of 'B'. Based on the physical properties of the sub-surface soils indicated by the Middlesex County Soil Survey, a conservative infiltration rate of 3 inches per hour was utilized. While this system will lose some nominal storm water volume to infiltration, the discharges are primarily controlled by the proposed outlet control structure. The system will ultimately discharge into the existing storm drainage system within Lakewood Road.

The following table summarizes the overall site runoff for pre-, post-developed (without detention), and post-developed (with detention) conditions for the design storms:

Storm	**Pre-Developed**	**Post-Developed (no mitigation)**	**Post-Developed (w/ infiltration)**
2-year	6.0 cfs	9.3 cfs	4.6 cfs
10-year	22.9 cfs	31.3 cfs	14.9 cfs
25-year	36.3 cfs	47.6 cfs	22.5 cfs
50-year	47.1 cfs	60.6 cfs	29.1 cfs
100-year	59.5 cfs	75.5 cfs	35.7 cfs

As summarized above and in the calculations contained in the Appendix, with provision of the proposed storm water management basin, the post-development peak runoff flows will be effectively reduced to BELOW pre-development levels. Drainage calculations are attached.

STORM WATER QUALITY

Several storm water quality measures or Best Management Practices (BMP's) have been incorporated into the storm water management system to maintain storm water quality both during construction and after permanent vegetation has been established. Storm water quality measures have been implemented in accordance with the CT DEEP Stormwater Quality Manual (2004).

The first line defense along the water treatment train is the catch basins themselves. Catch basins will be constructed with 2-foot deep sumps to trap coarse sediments. Before final discharge, storm water collected from the proposed paved areas will pass through structural water quality enhancement units (oil/ grit separator). Storm water from the roof areas will be collected and discharged separately into U/G infiltration systems to increase the effectiveness of the structural units. Clean rooftop water will recharge the ground water table. After treatment by the units, storm water will enter a sediment forebay of the detention basin to provide extended contact time with vegetation, an important measure to remove heavy metals and other pollutants.

SEDIMENT & EROSION CONTROL

A detailed Sediment & Erosion Control Plan has been developed to mitigate the short-term impacts of the development during construction. The S&E Control Plan includes descriptive specifications concerning land grading, topsoil application, temporary vegetative cover, permanent vegetative cover, vegetative cover selection, mulching and erosion checks. Details have been provided for all erosion controls with corresponding labels on the Sediment & Erosion Control Plan. All sediment and erosion controls are intended to be in full compliance with the Connecticut Guidelines for Soil Erosion and Sediment Control Manual, 2000, DEP Bulletin 34.

Geotextile sediment fence is proposed at the down-gradient limits of all construction activity. Along critical areas, the silt fence will be backed-up by staked haybales. A Temporary Sediment Basin is proposed to collect runoff from the site during construction and allow particles to settle out. Check dams will be provided, as necessary. An anti-tracking apron will be installed at the project entrances.

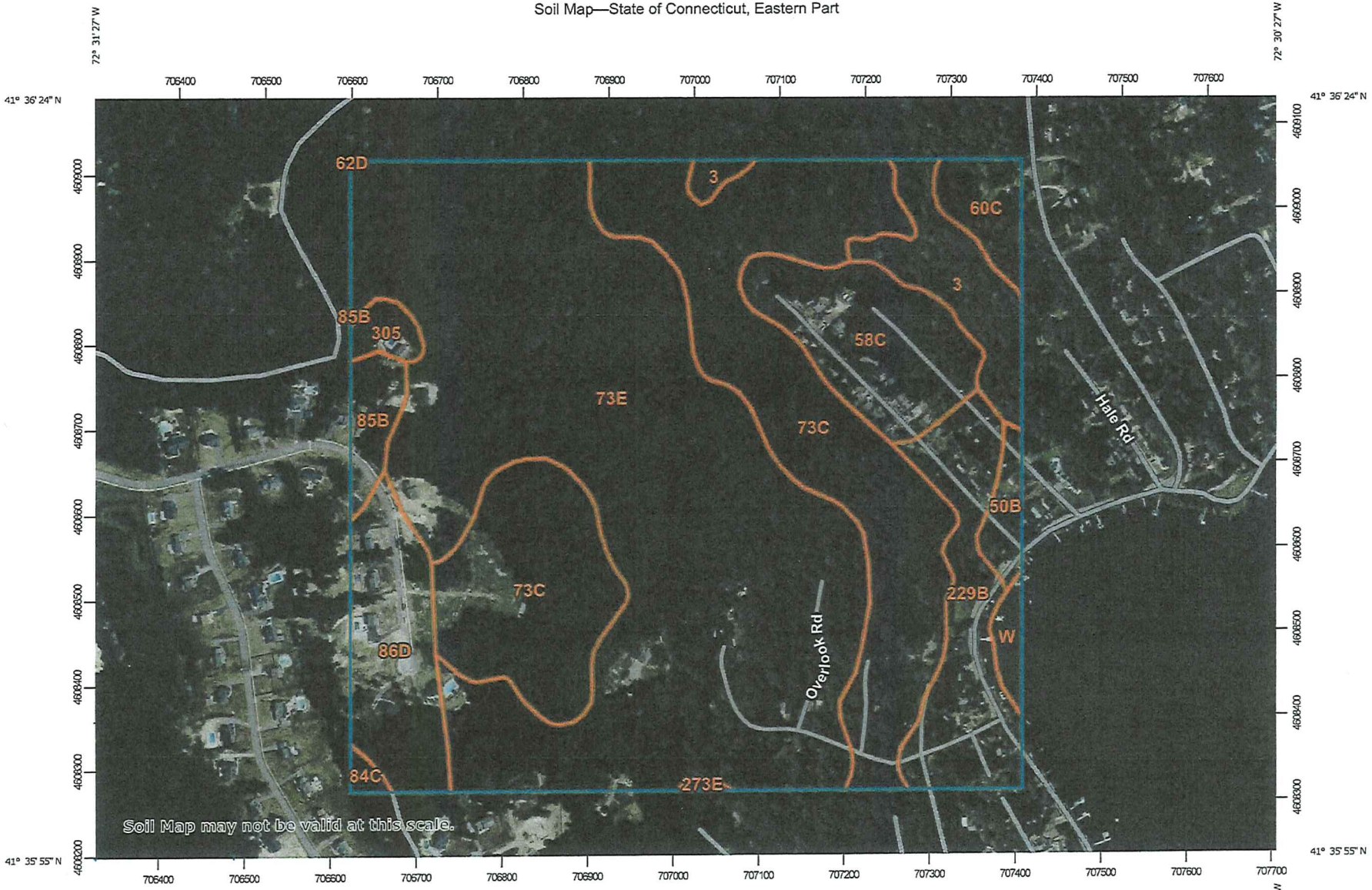
Overall, the S&E plan and the permanent storm water management system provide excellent protection and enhancement of storm water quality during and after construction.

APPENDIX

"Lake Overlook Estates"

Lakewood Road
East Hampton, Connecticut

Soil Map—State of Connecticut, Eastern Part



Map Scale: 1:6,300 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	6.1	4.2%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	1.6	1.1%
58C	Gloucester gravelly sandy loam, 8 to 15 percent slopes, very stony	9.1	6.3%
60C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes	2.6	1.8%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	0.0	0.0%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	37.0	25.5%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	66.3	45.8%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	0.4	0.3%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	2.2	1.5%
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	8.1	5.6%
229B	Agawam-Urban land complex, 0 to 8 percent slopes	9.2	6.3%
273E	Urban land-Charlton-Chatfield complex, rocky, 15 to 45 percent slopes	0.2	0.1%
305	Udorthents-Pits complex, gravelly	1.2	0.8%
W	Water	1.0	0.7%
Totals for Area of Interest		**144.8**	**100.0%**

NOAA Atlas 14, Volume 10, Version 3
Location name: Town of East Hampton, Connecticut, USA*
Latitude: 41.5811°, Longitude: -72.4811°
Elevation: 490 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

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

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.334 (0.259-0.421)	0.405 (0.314-0.511)	0.521 (0.402-0.659)	0.617 (0.474-0.784)	0.750 (0.558-0.994)	0.850 (0.619-1.15)	0.954 (0.677-1.34)	1.07 (0.720-1.53)	1.24 (0.803-1.83)	1.38 (0.872-2.07)
10-min	0.474 (0.367-0.596)	0.574 (0.445-0.724)	0.738 (0.569-0.933)	0.874 (0.670-1.11)	1.06 (0.790-1.41)	1.20 (0.878-1.63)	1.35 (0.958-1.89)	1.52 (1.02-2.17)	1.76 (1.14-2.59)	1.95 (1.24-2.94)
15-min	0.557 (0.432-0.702)	0.676 (0.523-0.851)	0.870 (0.670-1.10)	1.03 (0.791-1.31)	1.25 (0.930-1.66)	1.42 (1.03-1.92)	1.59 (1.13-2.23)	1.79 (1.20-2.55)	2.07 (1.34-3.05)	2.30 (1.45-3.46)
30-min	0.761 (0.590-0.958)	0.923 (0.714-1.16)	1.19 (0.916-1.50)	1.40 (1.08-1.78)	1.71 (1.27-2.26)	1.93 (1.41-2.61)	2.17 (1.54-3.04)	2.44 (1.64-3.48)	2.82 (1.83-4.16)	3.13 (1.98-4.71)
60-min	0.965 (0.748-1.22)	1.17 (0.905-1.47)	1.50 (1.16-1.90)	1.78 (1.37-2.26)	2.16 (1.61-2.86)	2.45 (1.78-3.31)	2.75 (1.95-3.85)	3.09 (2.08-4.41)	3.57 (2.31-5.27)	3.97 (2.51-5.97)
2-hr	1.27 (0.994-1.59)	1.53 (1.19-1.91)	1.95 (1.52-2.45)	2.30 (1.78-2.90)	2.78 (2.08-3.66)	3.14 (2.31-4.22)	3.52 (2.52-4.91)	3.96 (2.68-5.62)	4.62 (3.00-6.76)	5.17 (3.28-7.71)
3-hr	1.48 (1.16-1.85)	1.78 (1.40-2.22)	2.26 (1.77-2.83)	2.66 (2.07-3.34)	3.21 (2.42-4.22)	3.62 (2.68-4.86)	4.06 (2.92-5.65)	4.58 (3.10-6.46)	5.36 (3.49-7.80)	6.01 (3.82-8.92)
6-hr	1.90 (1.50-2.35)	2.27 (1.80-2.82)	2.89 (2.28-3.59)	3.40 (2.66-4.24)	4.10 (3.11-5.35)	4.62 (3.44-6.16)	5.18 (3.75-7.17)	5.85 (3.98-8.19)	6.86 (4.48-9.91)	7.72 (4.92-11.4)
12-hr	2.36 (1.88-2.90)	2.84 (2.26-3.49)	3.63 (2.88-4.47)	4.28 (3.38-5.30)	5.17 (3.96-6.70)	5.84 (4.38-7.72)	6.56 (4.78-9.00)	7.41 (5.06-10.3)	8.70 (5.70-12.5)	9.79 (6.27-14.3)
24-hr	2.78 (2.24-3.39)	3.38 (2.72-4.13)	4.36 (3.50-5.34)	5.16 (4.12-6.38)	6.30 (4.86-8.12)	7.13 (5.39-9.38)	8.04 (5.91-11.0)	9.13 (6.26-12.6)	10.8 (7.11-15.4)	12.2 (7.86-17.7)
2-day	3.12 (2.53-3.78)	3.85 (3.12-4.66)	5.04 (4.07-6.13)	6.03 (4.84-7.36)	7.39 (5.74-9.47)	8.38 (6.39-11.0)	9.48 (7.05-13.0)	10.9 (7.48-14.9)	13.0 (8.60-18.4)	14.9 (9.62-21.4)
3-day	3.38 (2.76-4.08)	4.18 (3.41-5.05)	5.49 (4.46-6.65)	6.57 (5.30-8.00)	8.06 (6.30-10.3)	9.15 (7.01-12.0)	10.4 (7.73-14.1)	11.9 (8.20-16.2)	14.3 (9.46-20.1)	16.4 (10.6-23.4)
4-day	3.63 (2.97-4.37)	4.48 (3.66-5.39)	5.86 (4.78-7.08)	7.02 (5.68-8.51)	8.60 (6.74-10.9)	9.76 (7.50-12.7)	11.0 (8.26-15.0)	12.7 (8.75-17.2)	15.2 (10.1-21.3)	17.5 (11.3-24.8)
7-day	4.31 (3.56-5.16)	5.26 (4.33-6.30)	6.81 (5.59-8.18)	8.10 (6.60-9.77)	9.87 (7.78-12.5)	11.2 (8.62-14.4)	12.6 (9.45-16.9)	14.4 (9.98-19.4)	17.2 (11.4-23.8)	19.6 (12.7-27.7)
10-day	5.00 (4.14-5.96)	6.01 (4.97-7.16)	7.65 (6.30-9.15)	9.01 (7.37-10.8)	10.9 (8.60-13.7)	12.3 (9.48-15.7)	13.8 (10.3-18.3)	15.6 (10.9-20.9)	18.5 (12.3-25.5)	20.9 (13.6-29.3)
20-day	7.17 (5.99-8.48)	8.25 (6.88-9.77)	10.0 (8.32-11.9)	11.5 (9.48-13.7)	13.5 (10.7-16.7)	15.0 (11.6-18.9)	16.6 (12.4-21.6)	18.4 (12.9-24.4)	21.0 (14.1-28.7)	23.1 (15.0-32.2)
30-day	9.00 (7.56-10.6)	10.1 (8.49-11.9)	11.9 (9.98-14.1)	13.5 (11.2-16.0)	15.6 (12.4-19.1)	17.1 (13.3-21.4)	18.8 (14.0-24.1)	20.5 (14.4-27.0)	22.8 (15.3-31.0)	24.6 (16.1-34.1)
45-day	11.3 (9.53-13.2)	12.5 (10.5-14.6)	14.3 (12.0-16.9)	15.9 (13.3-18.8)	18.1 (14.5-22.0)	19.8 (15.4-24.5)	21.4 (15.9-27.2)	23.0 (16.3-30.2)	25.1 (16.9-33.9)	26.6 (17.4-36.6)
60-day	13.2 (11.2-15.4)	14.4 (12.2-16.9)	16.4 (13.8-19.2)	18.0 (15.1-21.2)	20.2 (16.2-24.5)	22.0 (17.1-27.0)	23.7 (17.6-29.8)	25.2 (17.9-32.9)	27.1 (18.3-36.4)	28.4 (18.5-38.9)

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

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

Please refer to NOAA Atlas 14 document for more information.

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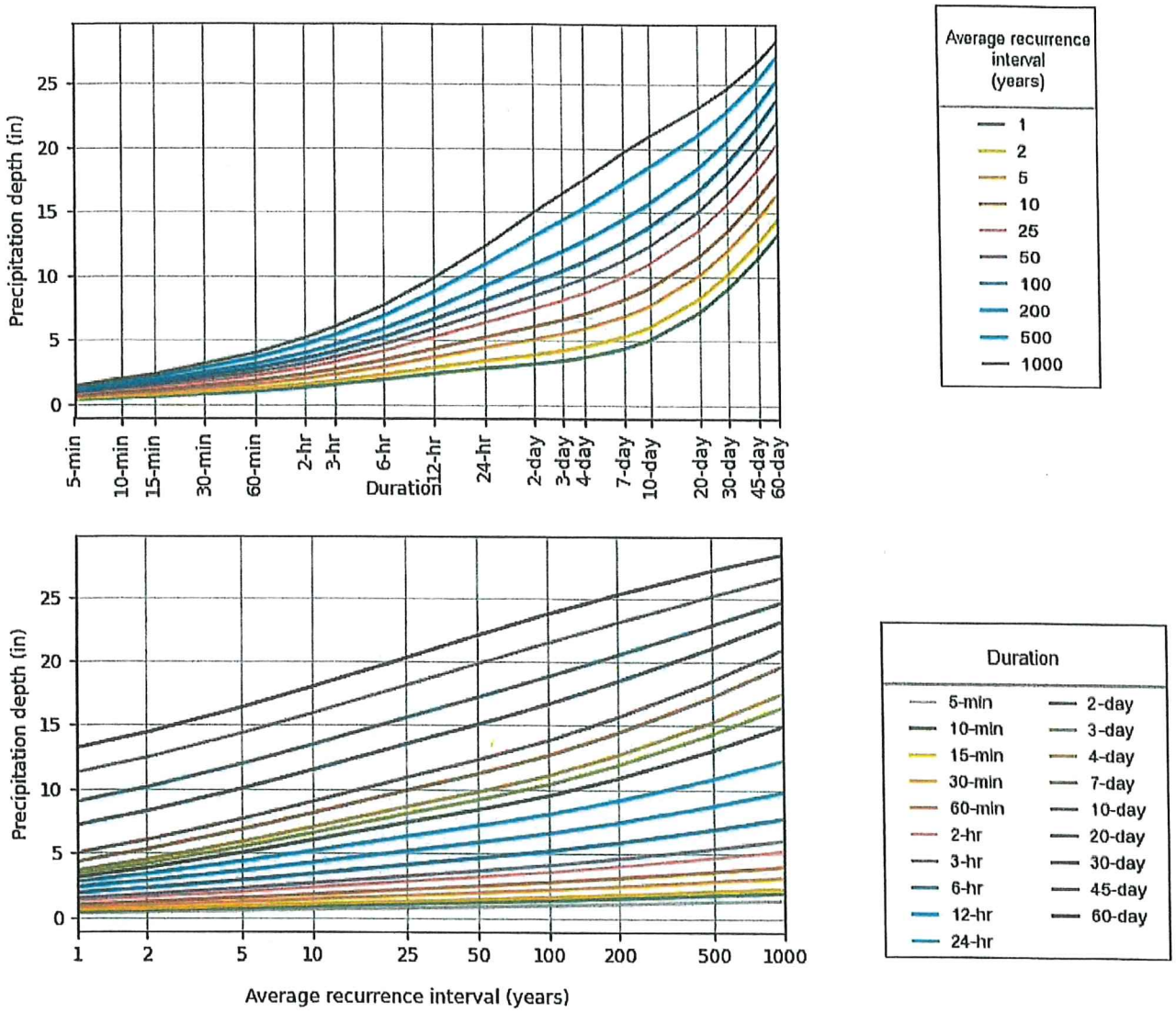
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 41.5811°, Longitude: -72.4811°



NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Fri Aug 18 20:28:12 2023

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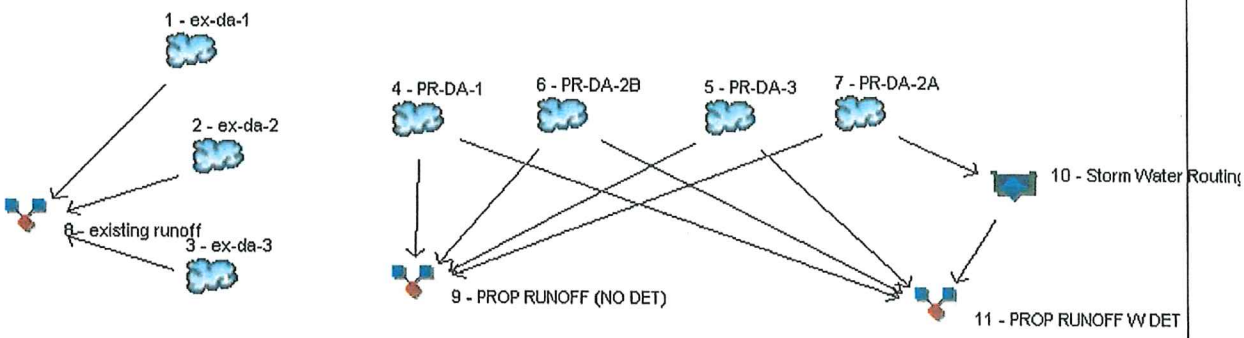
Maps & aerials

Small scale terrain

Watershed Model Schematic

Hydraflow Hydrographs by Intelisolve v9.02



Legend

Hyd.	Origin	Description
1	SCS Runoff	ex-da-1
2	SCS Runoff	ex-da-2
3	SCS Runoff	ex-da-3
4	SCS Runoff	PR-DA-1
5	SCS Runoff	PR-DA-3
6	SCS Runoff	PR-DA-2B
7	SCS Runoff	PR-DA-2A
8	Combine	existing runoff
9	Combine	PROP RUNOFF (NO DET)
10	Reservoir	Storm Water Routing
11	Combine	PROP RUNOFF W DET

Hydrograph Return Period Recap

Hydraflow Hydrographs by Intellisolve v9.02

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	-------	-------	3.327	-------	-------	12.60	19.91	25.76	32.60	ex-da-1
2	SCS Runoff	-------	-------	2.365	-------	-------	8.968	14.15	18.34	23.15	ex-da-2
3	SCS Runoff	-------	-------	0.520	-------	-------	2.097	3.326	4.310	5.444	ex-da-3
4	SCS Runoff	-------	-------	1.957	-------	-------	7.002	10.90	14.03	17.65	PR-DA-1
5	SCS Runoff	-------	-------	0.582	-------	-------	1.881	2.854	3.635	4.527	PR-DA-3
6	SCS Runoff	-------	-------	0.490	-------	-------	1.426	2.098	2.623	3.217	PR-DA-2B
7	SCS Runoff	-------	-------	7.164	-------	-------	23.03	34.73	43.95	54.46	PR-DA-2A
8	Combine	1, 2, 3,	-------	6.001	-------	-------	22.95	36.35	47.08	59.48	existing runoff
9	Combine	4, 5, 6, 7,	-------	9.333	-------	-------	31.29	47.61	60.60	75.52	PROP RUNOFF (NO DET)
10	Reservoir	7	-------	2.822	-------	-------	9.165	12.86	15.79	18.27	Storm Water Routing
11	Combine	4, 5, 6, 10	-------	4.624	-------	-------	14.87	22.53	29.15	35.71	PROP RUNOFF W DET

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.02

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	32.60	2	738	163,448	----	------	------	ex-da-1
2	SCS Runoff	23.15	2	742	123,311	----	------	------	ex-da-2
3	SCS Runoff	5.444	2	730	20,431	----	------	------	ex-da-3
4	SCS Runoff	17.65	2	738	88,167	----	------	------	PR-DA-1
5	SCS Runoff	4.527	2	738	22,477	----	------	------	PR-DA-3
6	SCS Runoff	3.217	2	724	9,625	----	------	------	PR-DA-2B
7	SCS Runoff	54.46	2	732	220,085	----	------	------	PR-DA-2A
8	Combine	59.48	2	738	307,190	1, 2, 3,	------	------	existing runoff
9	Combine	75.52	2	732	340,353	4, 5, 6, 7,	------	------	PROP RUNOFF (NO DET)
10	Reservoir	18.27	2	754	190,503	7	537.53	73,792	Storm Water Routing
11	Combine	35.71	2	740	304,003	4, 5, 6, 10	------	------	PROP RUNOFF W DET

Hydrograph Report

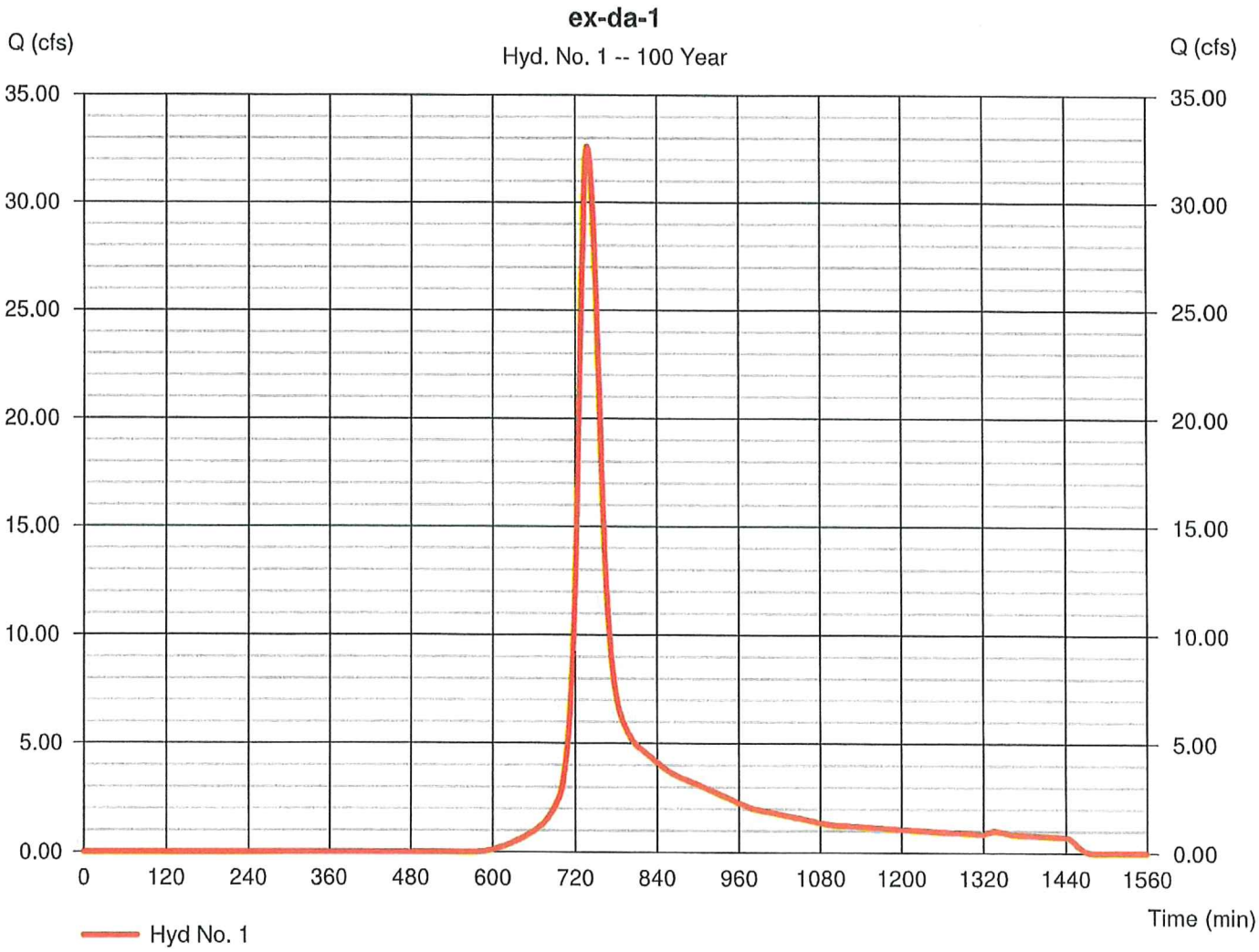
Hydraflow Hydrographs by Intelisolve v9.02

Tuesday, Apr 16, 2024

Hyd. No. 1

ex-da-1

Hydrograph type	= SCS Runoff	Peak discharge	= 32.60 cfs
Storm frequency	= 100 yrs	Time to peak	= 738 min
Time interval	= 2 min	Hyd. volume	= 163,448 cuft
Drainage area	= 13.600 ac	Curve number	= 60
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.50 min
Total precip.	= 8.04 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 1

ex-da-1

Description	A	B	C	Totals
Sheet Flow				
Manning's n-value	= 0.400	0.011	0.011	
Flow length (ft)	= 300.0	0.0	0.0	
Two-year 24-hr precip. (in)	= 3.38	0.00	0.00	
Land slope (%)	= 15.00	0.00	0.00	
Travel Time (min)	**= 22.47** +	**0.00** +	**0.00** =	**22.47**
Shallow Concentrated Flow				
Flow length (ft)	= 1125.00	0.00	0.00	
Watercourse slope (%)	= 15.00	0.00	0.00	
Surface description	= Unpaved	Paved	Paved	
Average velocity (ft/s)	= 6.25	0.00	0.00	
Travel Time (min)	**= 3.00** +	**0.00** +	**0.00** =	**3.00**
Channel Flow				
X sectional flow area (sqft)	= 0.00	0.00	0.00	
Wetted perimeter (ft)	= 0.00	0.00	0.00	
Channel slope (%)	= 0.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	= 0.00	0.00	0.00	
Flow length (ft)	= 0.0	0.0	0.0	
Travel Time (min)	**= 0.00** +	**0.00** +	**0.00** =	**0.00**

Total Travel Time, Tc ..... **25.50 min**

Hydrograph Report

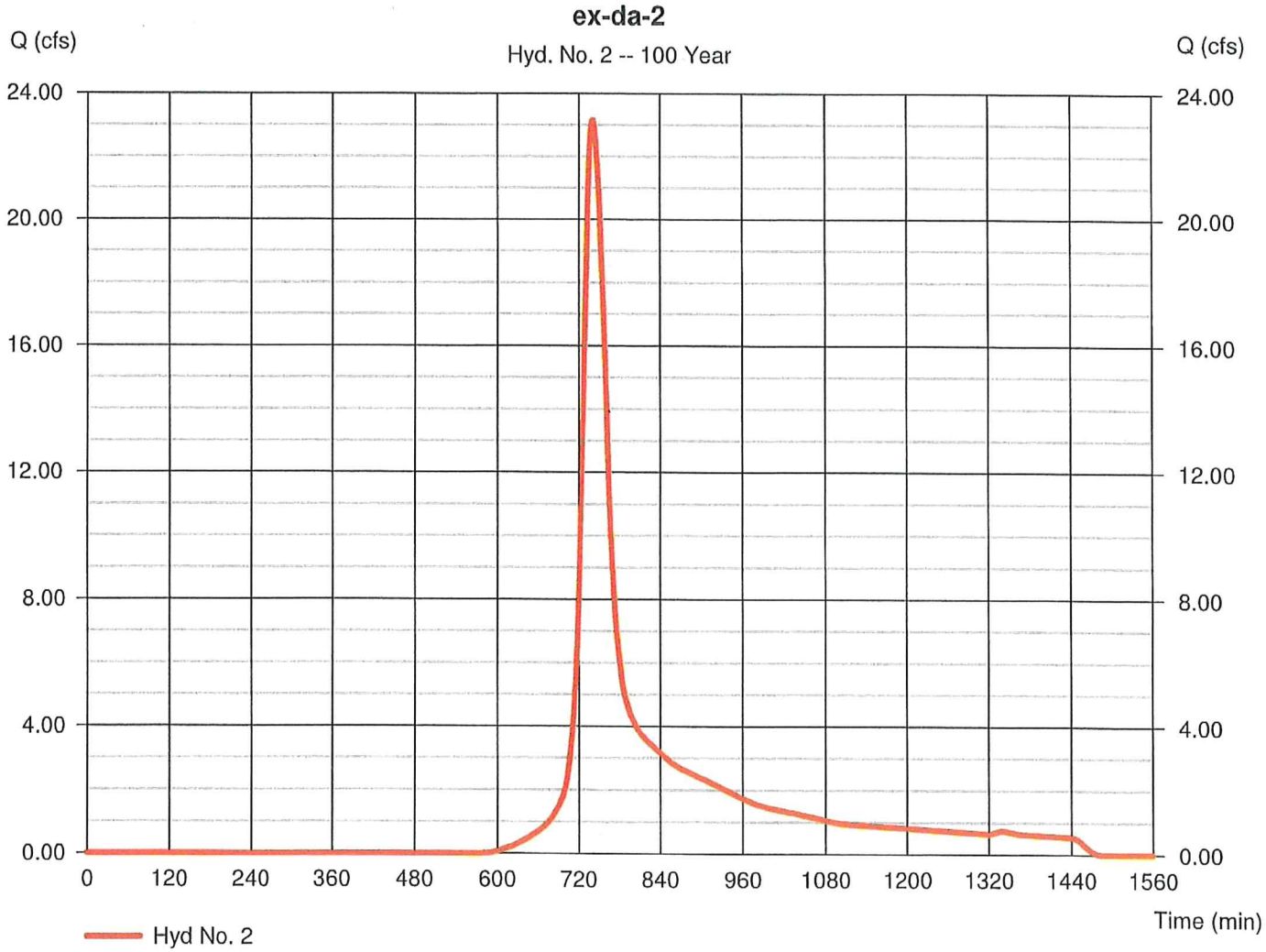
Hydraflow Hydrographs by Intelisolve v9.02

Tuesday, Apr 16, 2024

Hyd. No. 2

ex-da-2

Hydrograph type	= SCS Runoff	Peak discharge	= 23.15 cfs
Storm frequency	= 100 yrs	Time to peak	= 742 min
Time interval	= 2 min	Hyd. volume	= 123,311 cuft
Drainage area	= 10.100 ac	Curve number	= 60
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 27.10 min
Total precip.	= 8.04 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 2

ex-da-2

Description	A	B	C	Totals
Sheet Flow				
Manning's n-value	= 0.400	0.011	0.011	
Flow length (ft)	= 300.0	0.0	0.0	
Two-year 24-hr precip. (in)	= 3.38	0.00	0.00	
Land slope (%)	= 12.70	0.00	0.00	
Travel Time (min)	**= 24.02**	**+ 0.00**	**+ 0.00**	**= 24.02**
Shallow Concentrated Flow				
Flow length (ft)	= 1070.00	0.00	0.00	
Watercourse slope (%)	= 12.70	0.00	0.00	
Surface description	= Unpaved	Paved	Paved	
Average velocity (ft/s)	= 5.75	0.00	0.00	
Travel Time (min)	**= 3.10**	**+ 0.00**	**+ 0.00**	**= 3.10**
Channel Flow				
X sectional flow area (sqft)	= 0.00	0.00	0.00	
Wetted perimeter (ft)	= 0.00	0.00	0.00	
Channel slope (%)	= 0.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	= 0.00	0.00	0.00	
Flow length (ft)	= 0.0	0.0	0.0	
Travel Time (min)	**= 0.00**	**+ 0.00**	**+ 0.00**	**= 0.00**

Total Travel Time, Tc ..... 27.10 min

Hydrograph Report

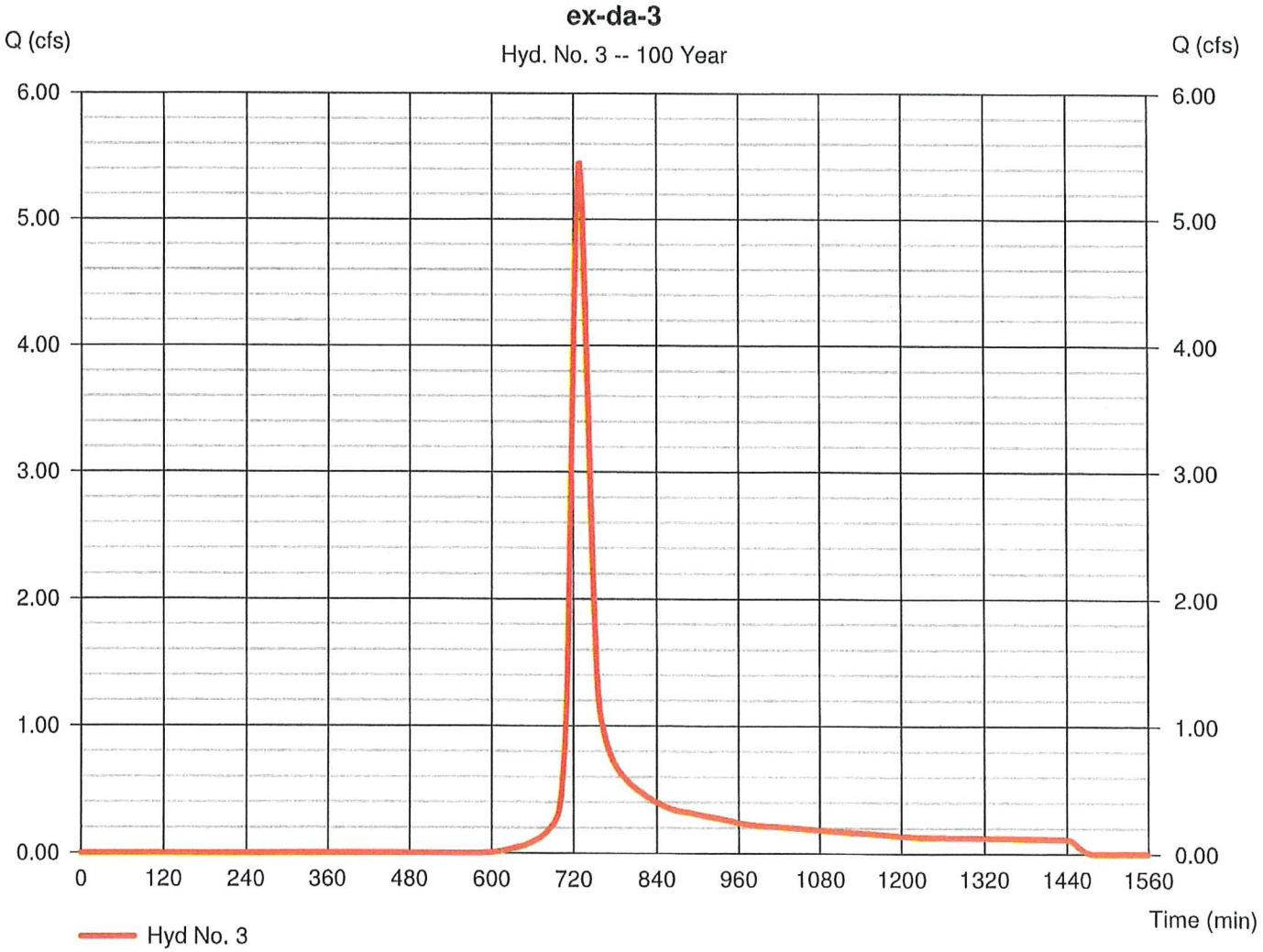
Hydraflow Hydrographs by Intelisolve v9.02

Tuesday, Apr 16, 2024

Hyd. No. 3

ex-da-3

Hydrograph type	= SCS Runoff	Peak discharge	= 5.444 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 20,431 cuft
Drainage area	= 1.700 ac	Curve number	= 60
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.70 min
Total precip.	= 8.04 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 3

ex-da-3

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 300.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.38		0.00		0.00		
Land slope (%)	= 14.50		0.00		0.00		
Travel Time (min)	**= 22.78**	**+**	**0.00**	**+**	**0.00**	**=**	**22.78**
Shallow Concentrated Flow							
Flow length (ft)	= 350.00		0.00		0.00		
Watercourse slope (%)	= 14.50		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	= 6.14		0.00		0.00		
Travel Time (min)	**= 0.95**	**+**	**0.00**	**+**	**0.00**	**=**	**0.95**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	= 0.00		0.00		0.00		
Flow length (ft)	= 0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... **23.70 min**

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

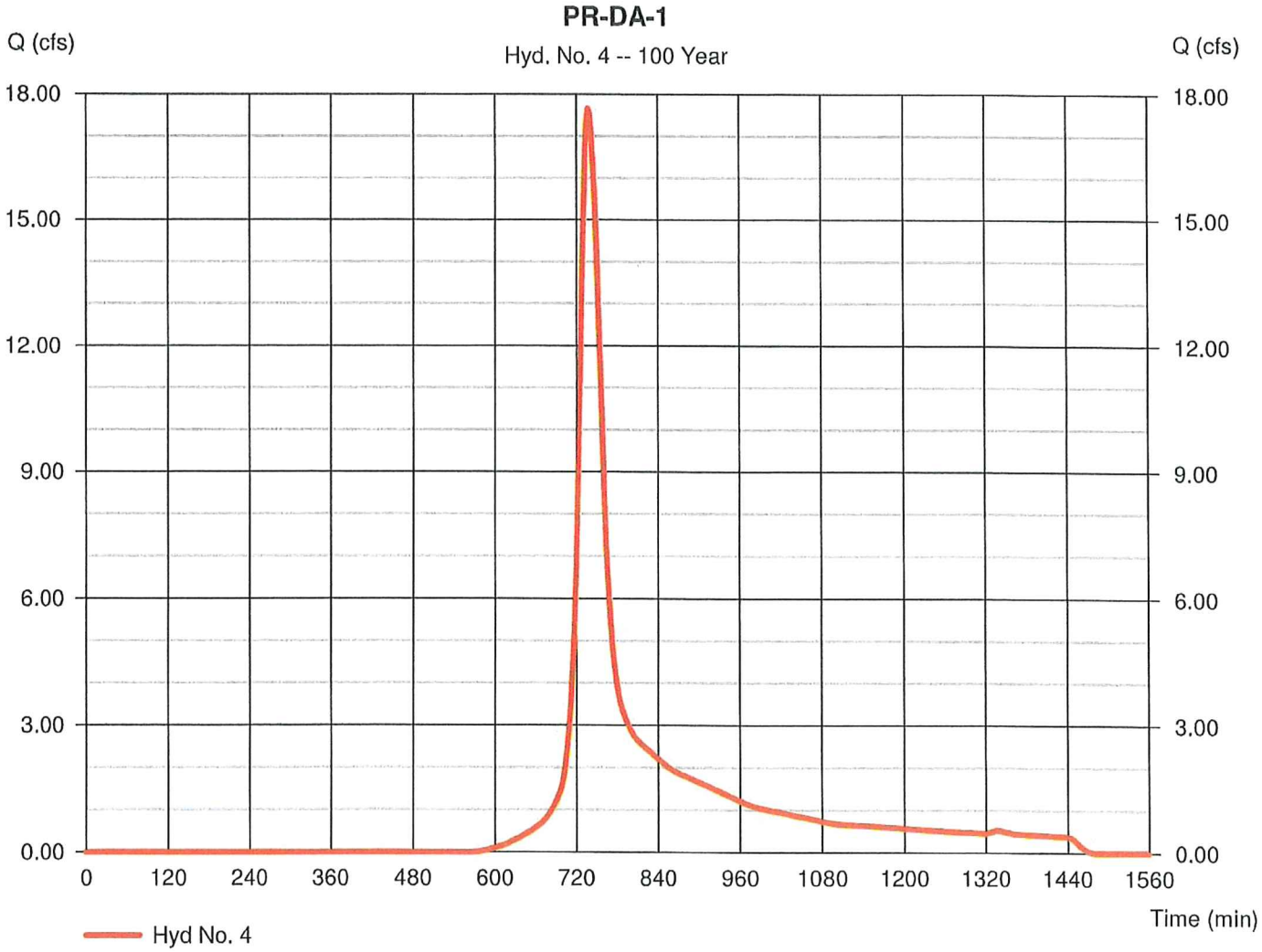
Tuesday, Apr 16, 2024

Hyd. No. 4

PR-DA-1

Hydrograph type	= SCS Runoff	Peak discharge	= 17.65 cfs
Storm frequency	= 100 yrs	Time to peak	= 738 min
Time interval	= 2 min	Hyd. volume	= 88,167 cuft
Drainage area	= 7.100 ac	Curve number	= 61*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.50 min
Total precip.	= 8.04 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(5.900 x 60) + (0.200 x 98) + (1.000 x 61)] / 7.100



TR55 Tc Worksheet

Hyd. No. 4

PR-DA-1

Description	A	B	C	Totals
Sheet Flow				
Manning's n-value	= 0.400	0.011	0.011	
Flow length (ft)	= 300.0	0.0	0.0	
Two-year 24-hr precip. (in)	= 3.38	0.00	0.00	
Land slope (%)	= 15.00	0.00	0.00	
Travel Time (min)	**= 22.47**	**+ 0.00**	**+ 0.00**	**= 22.47**
Shallow Concentrated Flow				
Flow length (ft)	= 1125.00	0.00	0.00	
Watercourse slope (%)	= 15.00	0.00	0.00	
Surface description	= Unpaved	Paved	Paved	
Average velocity (ft/s)	= 6.25	0.00	0.00	
Travel Time (min)	**= 3.00**	**+ 0.00**	**+ 0.00**	**= 3.00**
Channel Flow				
X sectional flow area (sqft)	= 0.00	0.00	0.00	
Wetted perimeter (ft)	= 0.00	0.00	0.00	
Channel slope (%)	= 0.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	= 0.00	0.00	0.00	
Flow length (ft)	= 0.0	0.0	0.0	
Travel Time (min)	**= 0.00**	**+ 0.00**	**+ 0.00**	**= 0.00**

Total Travel Time, Tc ..... 25.50 min

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

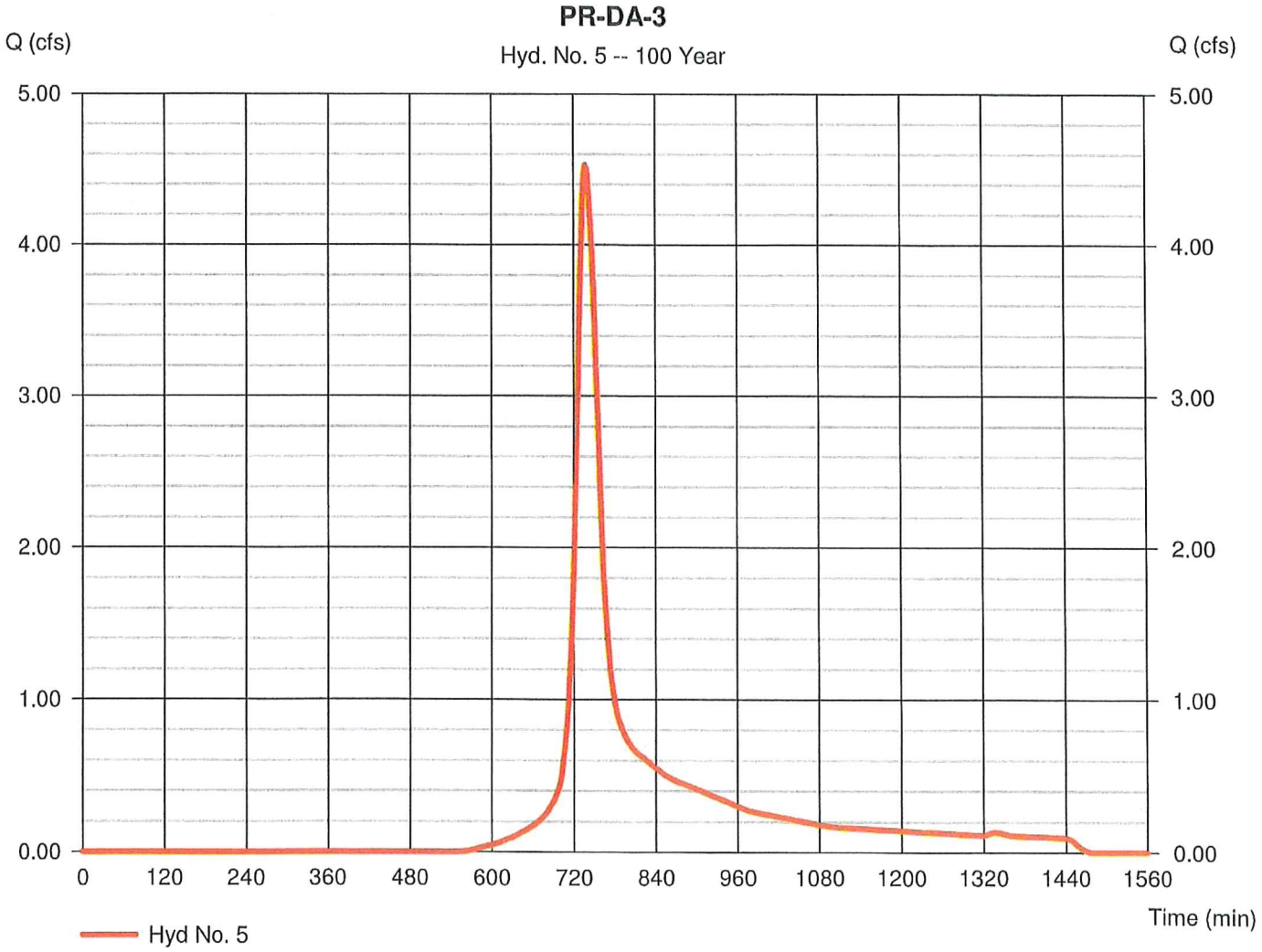
Tuesday, Apr 16, 2024

Hyd. No. 5

PR-DA-3

Hydrograph type	= SCS Runoff	Peak discharge	= 4.527 cfs
Storm frequency	= 100 yrs	Time to peak	= 738 min
Time interval	= 2 min	Hyd. volume	= 22,477 cuft
Drainage area	= 1.700 ac	Curve number	= 63*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.70 min
Total precip.	= 8.04 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.100 x 60) + (0.100 x 98) + (0.500 x 61)] / 1.700



TR55 Tc Worksheet

Hyd. No. 5

PR-DA-3

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 300.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.38		0.00		0.00		
Land slope (%)	= 14.50		0.00		0.00		
Travel Time (min)	**= 22.78**	**+**	**0.00**	**+**	**0.00**	**=**	**22.78**
Shallow Concentrated Flow							
Flow length (ft)	= 350.00		0.00		0.00		
Watercourse slope (%)	= 14.50		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	= 6.14		0.00		0.00		
Travel Time (min)	**= 0.95**	**+**	**0.00**	**+**	**0.00**	**=**	**0.95**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	= 0.00		0.00		0.00		
Flow length (ft)	= 0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 23.70 min

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

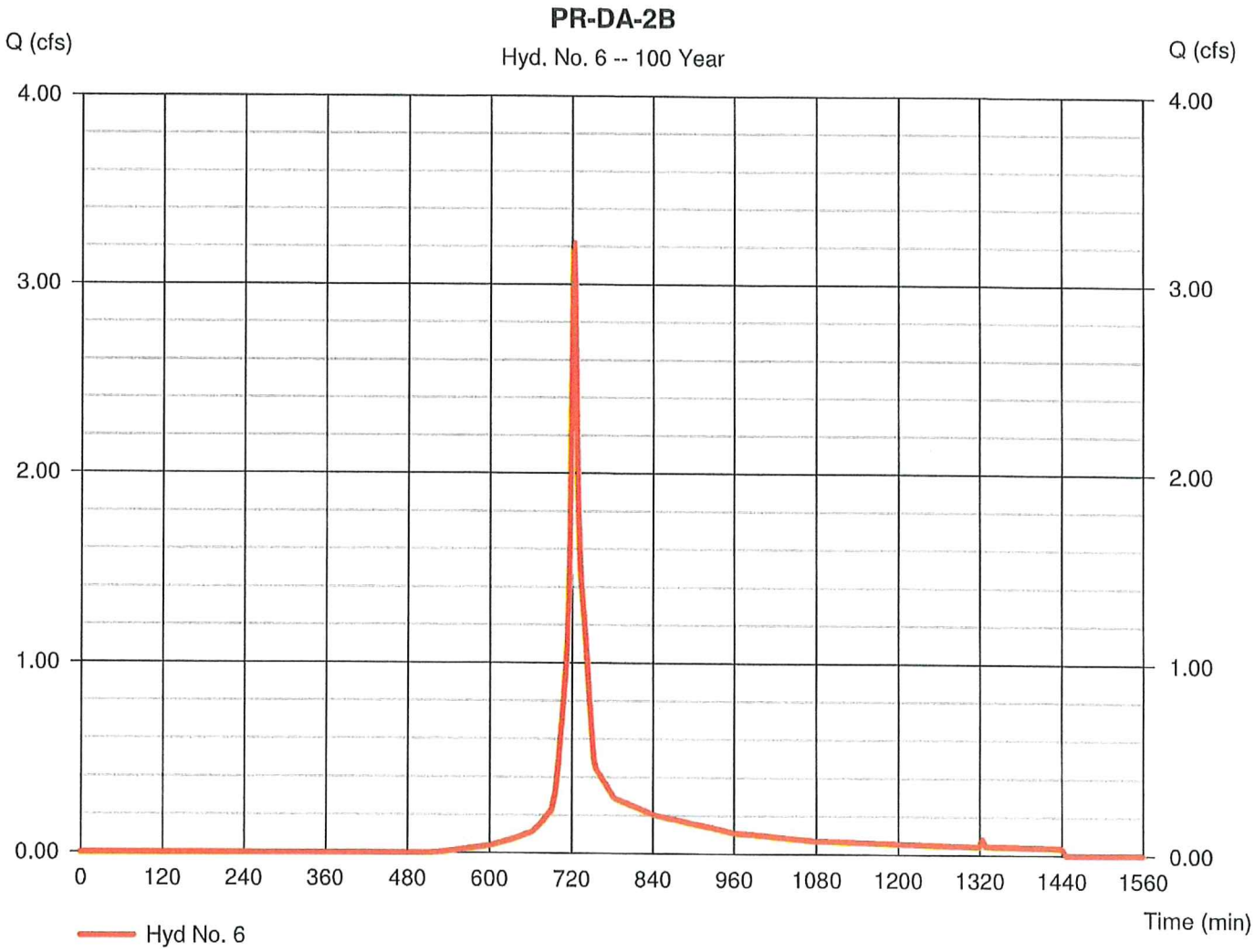
Tuesday, Apr 16, 2024

Hyd. No. 6

PR-DA-2B

Hydrograph type	= SCS Runoff	Peak discharge	= 3.217 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 9,625 cuft
Drainage area	= 0.700 ac	Curve number	= 66*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.04 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.100 x 98) + (0.300 x 61) + (0.300 x 60)] / 0.700



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

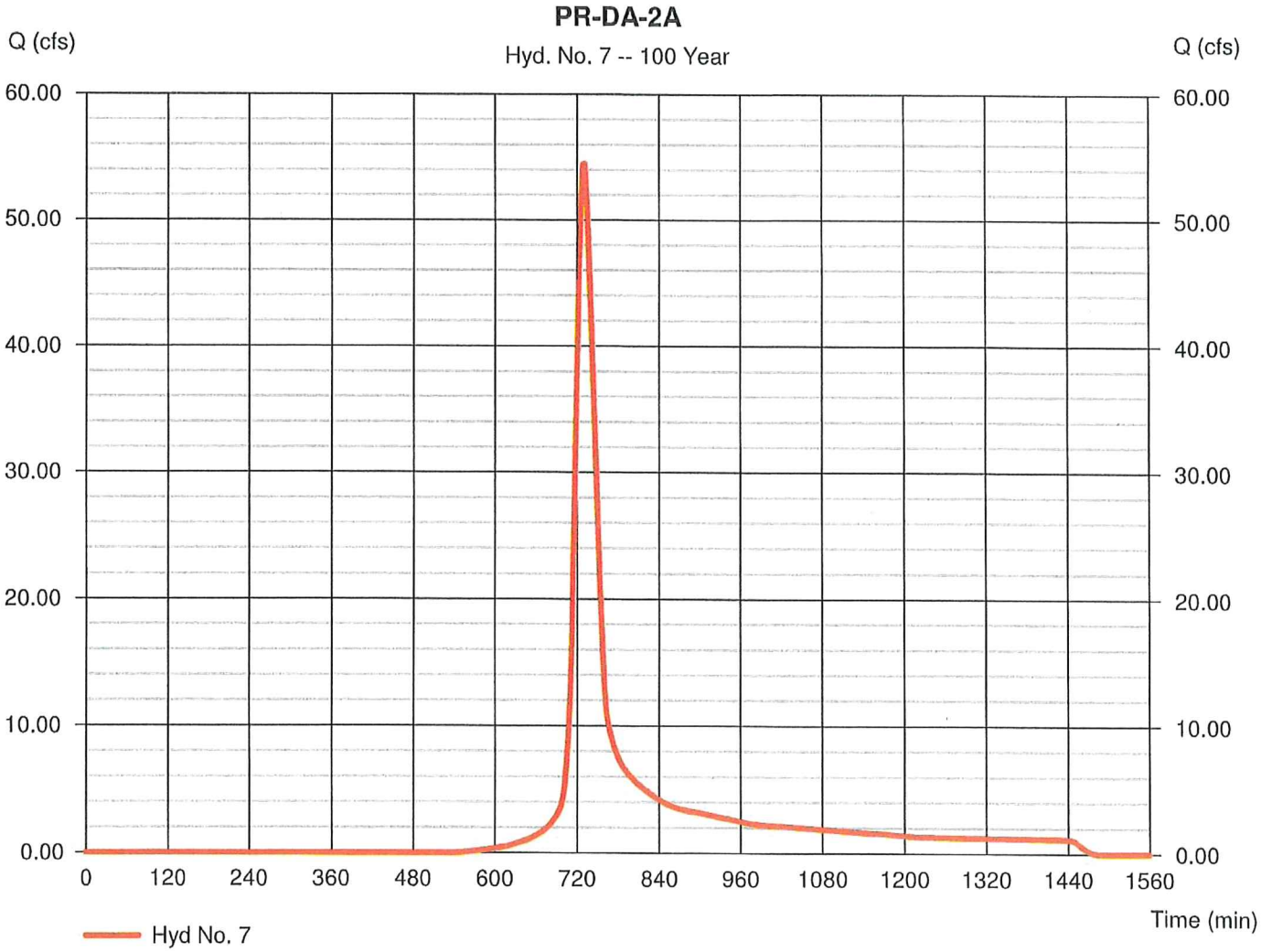
Tuesday, Apr 16, 2024

Hyd. No. 7

PR-DA-2A

Hydrograph type	= SCS Runoff	Peak discharge	= 54.46 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 220,085 cuft
Drainage area	= 15.900 ac	Curve number	= 64*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 27.20 min
Total precip.	= 8.04 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.600 x 98) + (4.500 x 61) + (9.800 x 60)] / 15.900



TR55 Tc Worksheet

Hyd. No. 7

PR-DA-2A

Description	A	B	C	Totals
Sheet Flow				
Manning's n-value	= 0.400	0.011	0.011	
Flow length (ft)	= 300.0	0.0	0.0	
Two-year 24-hr precip. (in)	= 3.38	0.00	0.00	
Land slope (%)	= 12.70	0.00	0.00	
Travel Time (min)	**= 24.02**	**+ 0.00**	**+ 0.00**	**= 24.02**
Shallow Concentrated Flow				
Flow length (ft)	= 540.00	370.00	50.00	
Watercourse slope (%)	= 12.70	10.00	1.00	
Surface description	= Unpaved	Paved	Unpaved	
Average velocity (ft/s)	= 5.75	6.43	1.61	
Travel Time (min)	**= 1.57**	**+ 0.96**	**+ 0.52**	**= 3.04**
Channel Flow				
X sectional flow area (sqft)	= 2.40	0.00	0.00	
Wetted perimeter (ft)	= 3.90	0.00	0.00	
Channel slope (%)	= 2.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	= 10.15	0.00	0.00	
Flow length (ft)	= 110.0	0.0	0.0	
Travel Time (min)	**= 0.18**	**+ 0.00**	**+ 0.00**	**= 0.18**

Total Travel Time, Tc ..... 27.20 min

Hydrograph Report

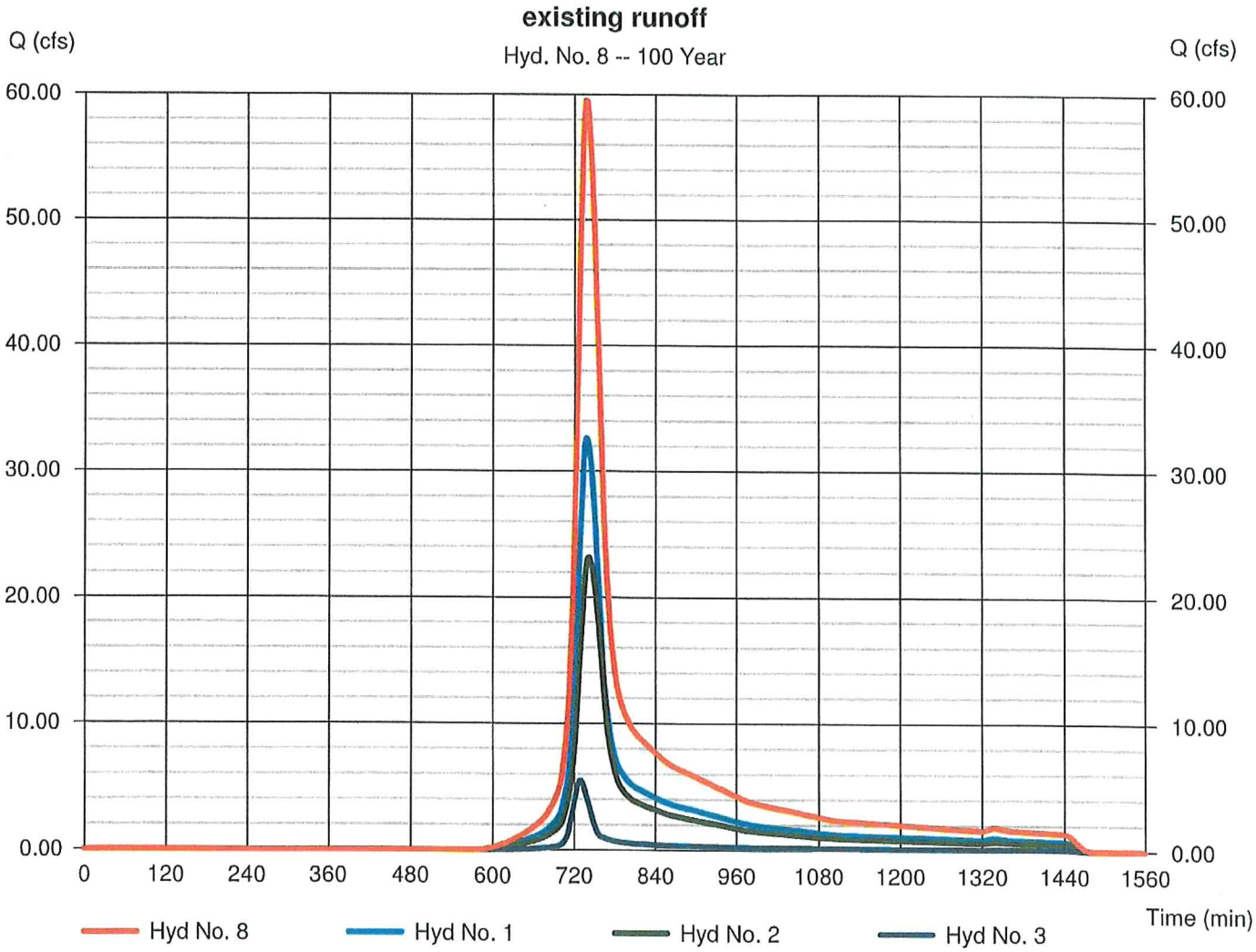
Hydraflow Hydrographs by Intelisolve v9.02

Tuesday, Apr 16, 2024

Hyd. No. 8

existing runoff

Hydrograph type	= Combine	Peak discharge	= 59.48 cfs
Storm frequency	= 100 yrs	Time to peak	= 738 min
Time interval	= 2 min	Hyd. volume	= 307,190 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 25.400 ac

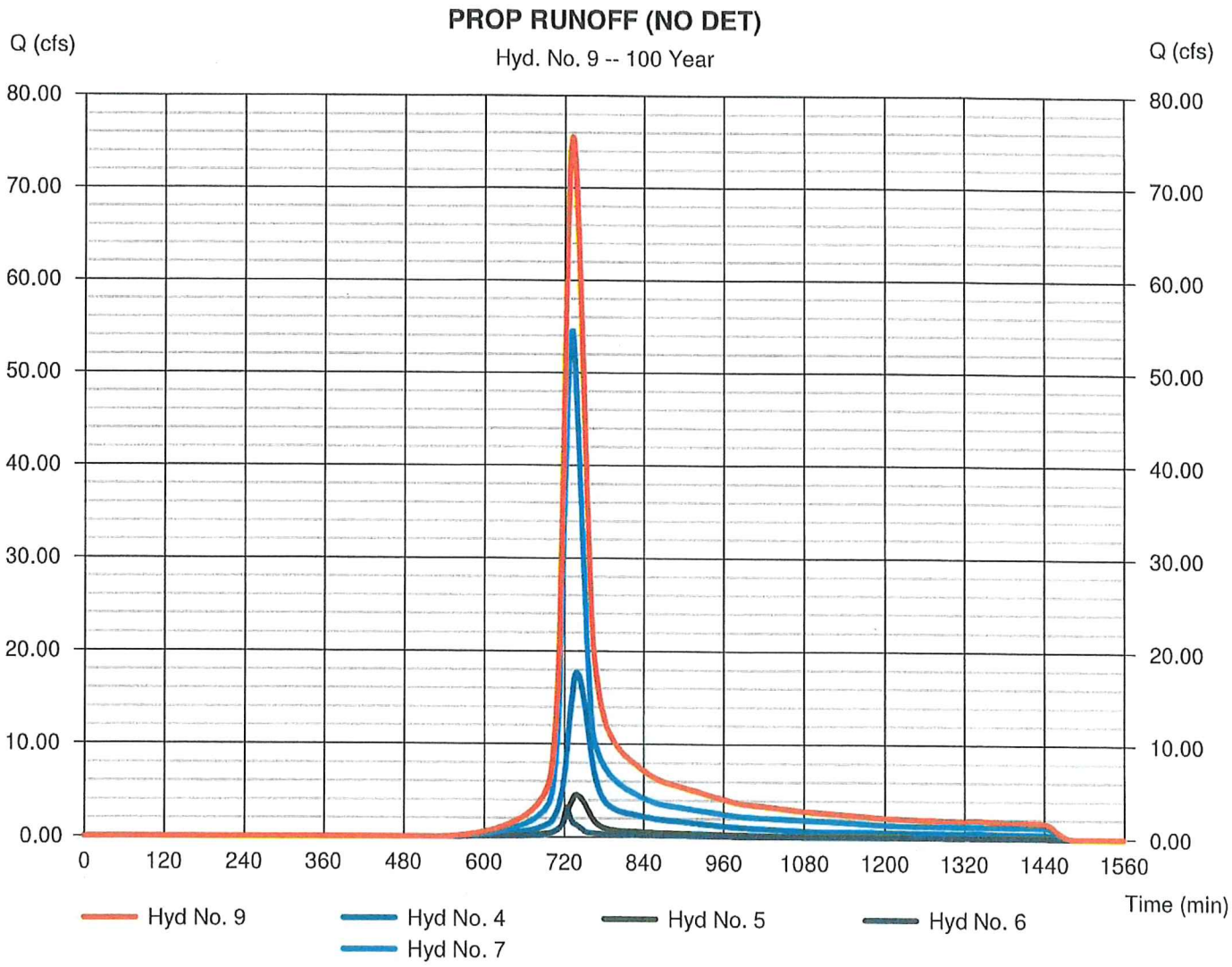


Hydrograph Report

Hyd. No. 9

PROP RUNOFF (NO DET)

Hydrograph type	= Combine	Peak discharge	= 75.52 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 340,353 cuft
Inflow hyds.	= 4, 5, 6, 7	Contrib. drain. area	= 25.400 ac



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

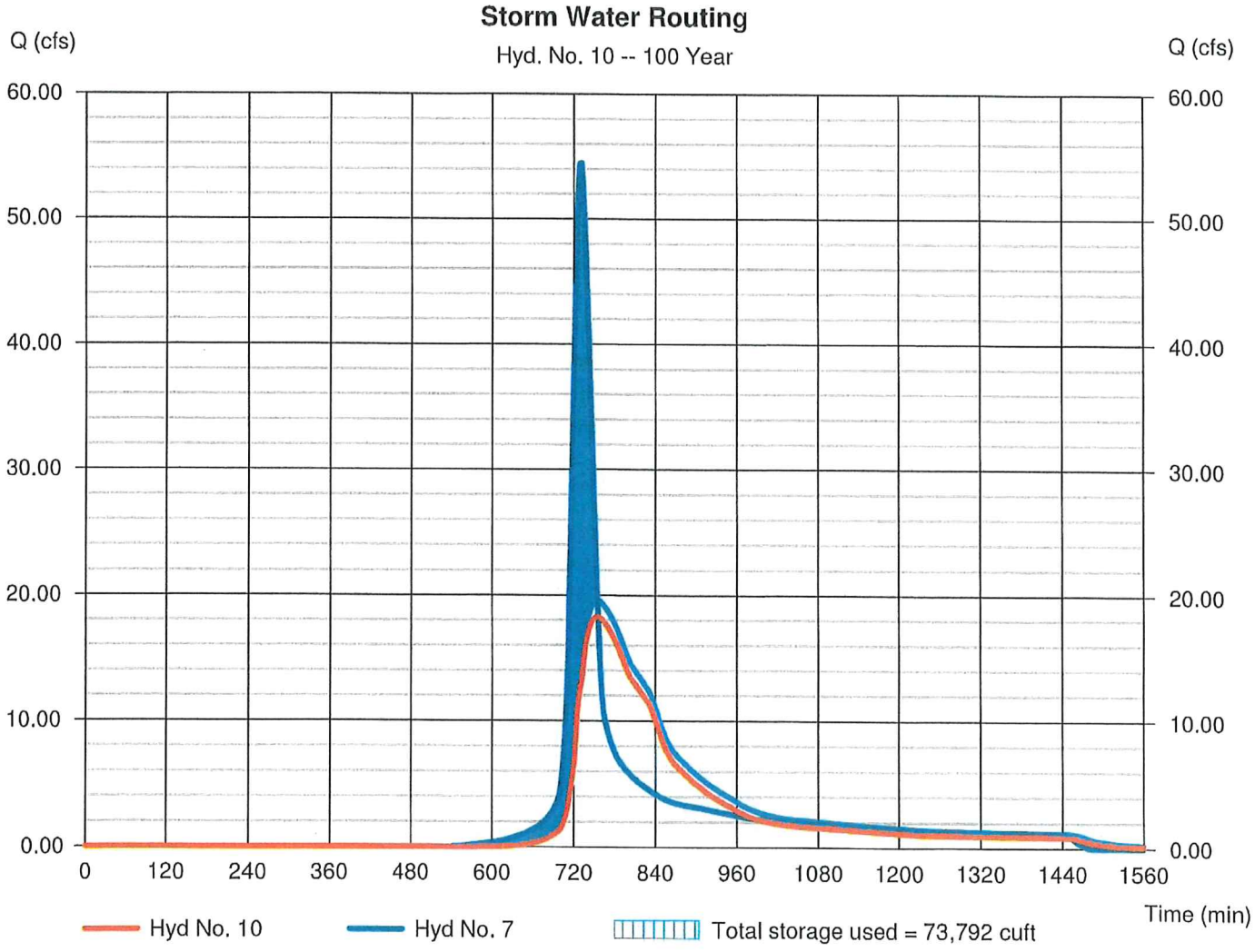
Tuesday, Apr 16, 2024

Hyd. No. 10

Storm Water Routing

Hydrograph type	= Reservoir	Peak discharge	= 18.27 cfs
Storm frequency	= 100 yrs	Time to peak	= 754 min
Time interval	= 2 min	Hyd. volume	= 190,503 cuft
Inflow hyd. No.	= 7 - PR-DA-2A	Max. Elevation	= 537.53 ft
Reservoir name	= DETENTION BASIN	Max. Storage	= 73,792 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond No. 1 - DETENTION BASIN

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 532.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	532.00	8,500	0	0
1.00	533.00	10,110	9,292	9,292
2.00	534.00	11,830	10,958	20,250
3.00	535.00	13,610	12,708	32,958
4.00	536.00	15,560	14,573	47,531
5.00	537.00	17,475	16,507	64,038
6.00	538.00	19,900	18,673	82,710
7.00	539.00	24,000	21,916	104,626

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	12.00	12.00	0.00
Span (in)	= 18.00	12.00	12.00	0.00
No. Barrels	= 1	2	2	0
Invert El. (ft)	= 532.00	532.00	534.00	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	Yes	No

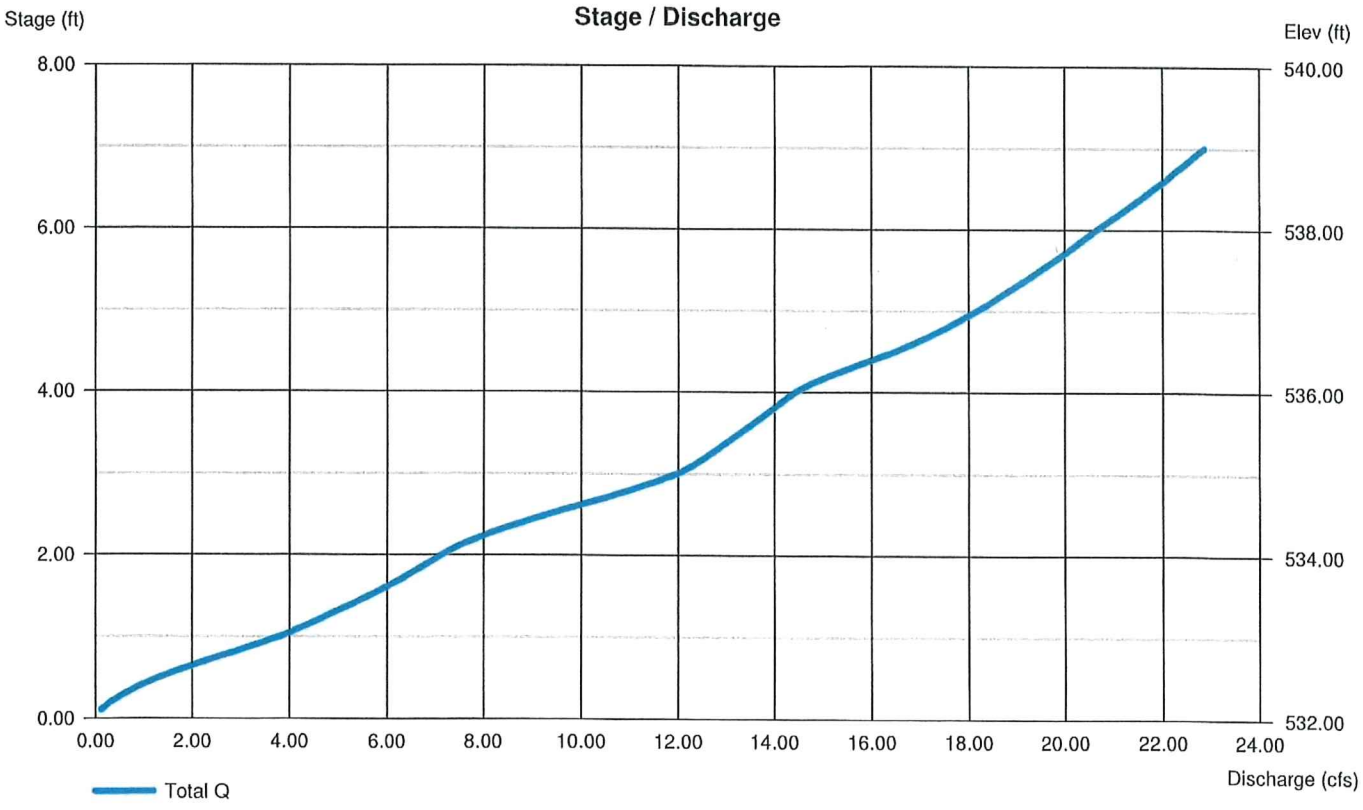
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	10.00	0.00	0.00
Crest El. (ft)	= 536.00	538.00	0.00	0.00
Weir Coeff.	= 3.33	2.60	3.33	3.33
Weir Type	= Rect	Broad	---	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 3.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet and outlet control. Weir risers are checked for orifice conditions.



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

Tuesday, Apr 16, 2024

Hyd. No. 11

PROP RUNOFF W DET

Hydrograph type	= Combine	Peak discharge	= 35.71 cfs
Storm frequency	= 100 yrs	Time to peak	= 740 min
Time interval	= 2 min	Hyd. volume	= 304,003 cuft
Inflow hyds.	= 4, 5, 6, 10	Contrib. drain. area	= 9.500 ac