Bryant Development and Review Committee Meeting

Boswell Municipal Complex - City Hall Conference Room

210 SW 3rd Street

Date: April 30, 2026 - **Time:** 9:00 AM

Call to Order

Old Business

New Business

1. 500 Prickett Road - Rezoning from C-2 to PUD

Hope Consulting - Requesting Recomendation for Rezoning

- 1035-APP-02.pdf
- 1035-PLN-01.pdf

2. Zyair Estates Subdivision - Hilltop Road - Preliminary Plat - (Formerly named Hilltop Manor Subdivision)

Richardson Engineering - Requesting Recommendation for Approval of Preliminary Plat

- 1022-PLN-03r.pdf
- 1022-SLC-01.pdf
- 1022-DRN-03.pdf
- 1022-RSP-02.pdf

3. 711 W. Commerce Dr - Building Addition

Craig Betts - Requesting Discussion on Building Addition

- 1028-PLN-02.pdf
- 1028-PLN-01.pdf
- 1028-EXISTING-01.pdf

4. Ashely Furniture - 3020 Market Place Ave - Commercial Plat

GarNat Engineering - Requesting Recommendation For Approval of Commercial Subdivision Plat

- 1040-PLT-01.pdf

5. Hurricane Heights Subdivision - Replat Lots 5R, 8R, 9R

Rasburry - Requesting Recommendation for Approval of Replat of 4 lots into 3

- 1041-PLT-01.pdf

Staff Approved

Permit Report

Adjournments

City of Bryant, Arkansas
Community Development
210 SW 3rd Street Bryant, AR 72022
501-943-0943

Rezoning Application

Applicants are advised to read the Amendments section of Bryant Zoning Code prior to completing and signing this form. The Zoning Code is available at www.cityofbryant.com under the Planning and Community Development tab.

Date: April 22, 2026

Applicant or Designee:

Name Jonathan Hope
Address 129 N Main St, Benton
Phone 501-315-2626
Email Address jonathanlhope@gmail.com

Property Owner (If different from Applicant):

Name Joel Green - Heritage Homes
Address 12585 Samples Rd, Benton
Phone 501-804-7655
Email Address heritage.homes@gmail.com

Property Information:

Address 500 Prickett Rd, Bryant, AR 72022
Parcel Number 840-14856-000, 840-14849-002, 840-14257-001
Existing Zoning Classification RE, C2, & C2
Requested Zoning Classification PUD
Legal Description (If Acreage or Metes and Bounds description, please attach in a legible typed format)
T01S, R14W, Sec 28 PT E/2, NE NE Instrument Number 2023-015874

Application Submission Checklist:

- ☐ Letter stating request of zoning change from (Current Zoning) to (Requested Zoning) and to be placed on the Planning Commission Agenda
- ☐ Completed Rezoning Application
- ☐ Rezoning Application Fee ($40 fee for lot and black descriptions or $125 for acreage or metes and bound descriptions)
- ☐ If someone, other than the owner, will be handling the zoning process, we will require a

letter from the owner of said property, giving him or her authority to do so.

☐ Recent surveyed plat of the property including vicinity map

Additional Requirements:

*Items below **must be completed before the public hearing can occur**. Failure to provide notices in the following manners shall require delay of the public hearing until notice has been properly made.*

☐ Publication: Public Notice shall be published by the applicant at least one (1) time fifteen (15) days prior to the public hearing at which the rezoning application will be heard. Once published please provide a proof of publication to the Community Development office. (Sample notice attached below)

☐ Posting of Property: The city shall provide signs to post on the property involved for the fifteen (15) consecutive days leading up to Public hearing. One (1) sign is required for every two hundred (200) feet of street frontage.

☐ Notification of adjacent landowners: Applicant shall attempt to inform by certified letter, return receipt requested, all owners of land within three hundred (300) feet of any boundary of the subject property of the public hearing. (Sample letter attached below)

☐ Certified list of property owners, all return receipts, and a copy of the notice shall be provided to the Community Development Department at least five (5) days prior to the public hearing.

Note: that this is not an exhaustive guideline regarding the Conditional Use Permit Process. Additional information is available in the Bryant Zoning Ordinance.

READ CAREFULLY BEFORE SIGNING

I _____, do hereby certify that all information contained within this application is true and correct. I further certify that the owner of the property authorizes this proposed application. I understand that I must comply with all City Codes that pertain to this project and that it is my responsibility to obtain all necessary permits as needed.

NOTICE OF PUBLIC HEARING

A public hearing will be held on Monday, _____ at 6:00 P.M. at the Bryant City Office Complex, 210 Southwest 3rd Street, City of Bryant, Saline County, for the purpose of public comment on a conditional use request at the site of _____(address).

A legal description of this property can be obtained by contacting the Bryant Department of Community Development.

Rick Johnson
Chairman Board of Zoning Adjustment
City of Bryant

This notice is to be run in the legal notices section of the Saline Courier no less than 15 days prior to the public hearing.

SAMPLE LETTER

Date
Name
Address

RE: Rezoning Petition

The property located at _____ is being considered for rezoning from _____ to _____. The property is more particularly described as follows:

INSERT LEGAL DESCRIPTION OF PROPERTY

An application has been filed with the City of Bryant Planning Commission to rezone the property. As part of this process, a public hearing will be held on Monday _____, 2021 at 6:00 PM in the Boswell Community Center Courtroom, 210 SW 3rd Street, Bryant, AR 72022.
Public comments will be accepted at that time regarding this rezoning. Since you own property within 300 feet of the property in consideration, you have been sent this letter via certified mail as required by city ordinance.
Should you have any questions regarding this matter you may contact the City of Bryant at 501-943-0857 or by contacting me at _____.

Thank you for your consideration in this matter.

Sincerely,

Your Signature

Your Name

HOPE CONSULTING

129 North Main Street, Benton, Arkansas 72015
(t) 501-315-2626 (e) www.HopeConsulting.com

April 22, 2026

Colton Leonard
City of Bryant
210 SW 3rd Street
Bryant, AR 72022

RE : Rezone Petition – Parcel #840-14856-000, 840-14849-002, & 840-14257-001

Colton,

On behalf of our client, Hope Consulting is formally requesting the City of Bryant Staff and Planning Commission begin the review and approval process for the Rezone of this property. These parcels, located at 500 Prickett Road, Bryant, AR 72022 are currently zoned R-E and C-2. Our client, Heritage Homes, is requesting to rezone it to PUD. We would like to be included in the May 11th Planning Commission Meeting. Please feel free to contact me with any questions, concerns, or if I can be of any further assistance.

Sincerely,

Jonathan Hope
Hope Consulting

HOPE CONSULTING
129 North Main Street, Benton, Arkansas 72015
(t) 501-315-2626 (e) www.HopeConsulting.com

HOPE CONSULTING

129 North Main Street, Benton, Arkansas 72015
(t) 501-315-2626 (e) www.HopeConsulting.com

April 15, 2026

Colton Leonard
City of Bryant
210 SW 3rd Street
Bryant, AR 72022

RE: Authorization Letter – Pricket Road, Bryant, AR 72022
(Parcel # 840-14856-000, 840-14849-002, & 840-14257-001)

Colton,

I, Joel Green , hereby authorize Hope Consulting, Inc. to act on my behalf for the Rezone Process of our property located on Prickett Road, Bryant, AR. Thank you in advance for your assistance with this matter. Should you require further information, I can be reached at the contact details below.

E-Mail: heritage.homes@ymail.com Phone: 501-804-7655

Sincerely,

Joel Green

Signature

4-23-26

Date

OWNERSHIP/ZONE SEARCH

Date: March 24, 2026
File Number: 26-021499-050
Prepared For: Hope Consulting

Lenders Title Company has searched the records of the Real Estate Records of Saline County, Arkansas to determine the apparent ownership of property within 300 feet of the perimeter of the following described property as of March 16, 2026 at 8:00 am

Tract 2 from provided survey: (newly revised description taken from the boundary survey prepared by Adam W. Whitlow, with Quattlebaum Surveying, LLC, dated 06/20/2018)

A part of the NE ¼ of Section 28, T-1-S, R-14-W, Bryant, Saline County, Arkansas, being more particularly described as follows: BEGINNING at a found 1½" pipe at the Northeast Corner of said Section 28; thence S02°52'41"W a distance of 49.92 feet to a found pipe (capped PS #1215); thence N88°51'17"W a distance of 79.88 feet to a found ½" rebar; thence S02°19'00"W a distance of 100.90 feet to a set "X" in concrete; thence S89°24'48"E a distance of 79.35 feet to a found "X" in concrete; thence S02°36'29"W a distance of 195.99 feet to a found 1" pipe; thence S02°45'17"W a distance of 141.30 feet to a found 1" pipe; thence S02°51'25"W a distance of 139.43 feet to a found 1" pipe; thence S02°56'01"W a distance of 39.43 feet to a found 2" pipe; thence N88°45'34"W a distance of 99.34 feet to a found 1" pipe; thence S03°10'48"W a distance of 280.81 feet to a found ½" rebar; thence N87°05'52"W a distance of 57.93 feet to a found ½" rebar (capped PS #1215); thence N02°46'03"E a distance of 254.85 feet to a found ½" rebar (capped PS #1215); thence N87°22'20"W a distance of 140.62 feet to a found ½" rebar (capped PS #1215); thence N02°47'28"E a distance of 683.94 feet to a found 2" pipe on the North line of Section 28; thence along said North line, S89°21'08"E a distance of 299.42 feet to the point of beginning, containing 4.84 Acres, more or less, as shown on survey by PS #1737. Subject to all existing easements for roads or other purposes.

Tract 3 from provided survey:

Part of the Northeast Quarter, Section 28, Township 1 South, Range 14 West, Bryant, Saline County, Arkansas, more particularly described as follows: Commencing at a 3/8" iron pipe at the Northeast corner of said Northeast Quarter; thence South 02 degrees 41 minutes 51 seconds West for 666.37 feet to a 1" pipe and the point of beginning; thence South 02 degrees 41 minutes 51 seconds West for 283.75 feet to an iron pipe and cap; thence North 87 degrees 09 minutes 05 seconds West for 101.40 feet to a 1/2" rebar; thence North 03 degrees 07 minutes 01 seconds East for 280.88 feet to a 1" iron pipe; thence South 86 degrees 48 minutes 19 seconds East for 99.38 feet to the point of beginning.

Following is a list of apparent owners of property within 300 feet of the perimeter of the above described property as reflected by the records of the Real Estate Records of Saline County, Arkansas:

SVCN 1 LLC
255 WASHINGTON St. TWO NEWTON PLACE SUITE 300
NEWTON MA 02458

JASSO ALEX
2110 N REYNOLDS Rd.
BRYANT, AR 72022

BELT HOLDINGS LLC
4405 CATSKILL Ave.
BENTON, AR 72019

EDPROP DEVELOPEMENT CO LLC
128 LEE 316
MARIANNA, AR 72360

WOLFPACK LLC
301 ROYA Ln.
BRYANT, AR 72022

JUMPER KUHLMANN PROPERTIES LLC
325 LANDMARK LANE
BENTON, AR 72019

NEW B B & T LLC
205 ROYA Ln.
BRYANT, AR 72022-2563

LLOYD ROYA & JAMES
234 HIGH MEADOW LOOP
HOT SPRINGS, AR 71901

BRYANT CHAMBER OF COMMERCE
PO BOX 261
BRYANT, AR 72089-0261

CHINESE ON THE GO REST
107 ROYA Ln.
BRYANT, AR 72022-2579

BAULING CHRISTIAN
1400 OLD COUNTRY Rd. STE 301

WESTBURY, NY 11590

BAULING CHRISTIAN
1400 OLD COUNTRY Rd. STE 301
WESTBURY, NY 11590

CAPLE EVANS M
909 N HALL Ave.
FAYETTEVILLE, AR 72701

HAMILTON HOLDINGS LLC
366 STATELINE Rd. W
SOUTHAVEN, MS 38671

SONIC DRIVE-IN (HWY 5)
4100 CORPORATE CENTER Dr. STE 220
SPRINGDALE, AR 72761

HB SEMINOLE LLC
701 SPOTTIS WOODE LANE
CLEARWATER, FL 33756

LAUGHLIN GARY H
509 MILLS PARK ROAD
BRYANT, AR 72022

O'REILLY AUTO PARTS #756
ATTN RYAN LLC
PO BOX 9167
SPRINGFIELD, MO 65801-9167

1905 REYNOLDS Rd. LLC
PO BOX 13985
MAUMELLE, AR 72113

HUNTER JOHN E & DANITA D
726 WOODY Dr.
ALEXANDER, AR 72002

EMA PROPERTIES LLC
6732 HILO Ave.
BENTON, AR 72019

GASPER CIPRIANO AVILLA
PO BOX 241910

LITTLE ROCK, AR 72223

SWANK PROPERTIES LLC
500 LORA Dr.
BRYANT, AR 72022

POSH PROPERTIES LLC
11014 DOGWOOD Cv.
LITTLE ROCK, AR 72210

RIVERO JOANNA
205 ETHEL Dr.
BRYANT, AR 72022

FRASER KEVIN L & KARA D
10085 SALINA SPRINGS Dr.
BENTON, AR 72019

FRASER KEVIN L & KARA D
10085 SALINA SPRINGS Dr.
BENTON, AR 72019

STOTT SKYLYR W & COURTNEY E
1721 SMITHERS
BENTON, AR 72015

PARKER JIMMY L & ASHLEY S
7523 SHORELINE Blvd.
BENTON, AR 72019

BUNTEN ANDREW D & LEIGH A
6528 WESTMINSTER
BENTON, AR 72019

CHAMBERS CHRISTY
603 PRICKETT ROAD
BRYANT, AR 72022

GREEN FRANK G & JULIA A
703 PRICKETT Rd.
BRYANT, AR 72022

GOLDEN DARRYL & CHERYL D
600 PRICKETT Rd.
BRYANT, AR 72022

BARRIENTOS JOSE RAMIRO
14502 ALEXANDER Rd.
ALEXANDER, AR 72002

CLEGHORN TRUST
800 PRICKETT Rd.
BRYANT, AR 72022

PDC 39 LIMITED
15825 CANTRELL Rd.
LITTLE ROCK, AR 72223

NORTHGATE LIMITED PARTNERSHIP
15825 CANTRELL Rd.
LITTLE ROCK, AR 72223

This Ownership/Zone Search is intended for the exclusive use of the addressee for informational purposes only. Lenders Title Company is not expressing or attempting to express an opinion as to the validity of the title to the above described property or property noted as being within 300 feet thereof (collectively referred to as "the property"), the accuracy of the addresses, nor as to the validity of any interests or encumbrances, both recorded and unrecorded, that pertain to the property. While Lenders Title Company believes that the information stated above is accurate, no assurances are made nor is any liability assumed by Lenders Title Company for any incorrect information stated herein or omitted herefrom. For assurances as to the title to the property, addressee should obtain a title insurance commitment/policy.

Sincerely,

Lenders Title Company
Arkansas License No. IA-82
By: Ryan T. Harrell
Title Agent License Number: 16170328

HOPE CONSULTING
129 North Main Street, Benton, Arkansas 72015
(t) 501-315-2626 (e) www.HopeConsulting.com

April 22, 2026

RE : Rezone Petition – Parcel #840-14856-000, 840-14849-002, & 840-14257-001
500 Prickett Road, Bryant, AR 72022

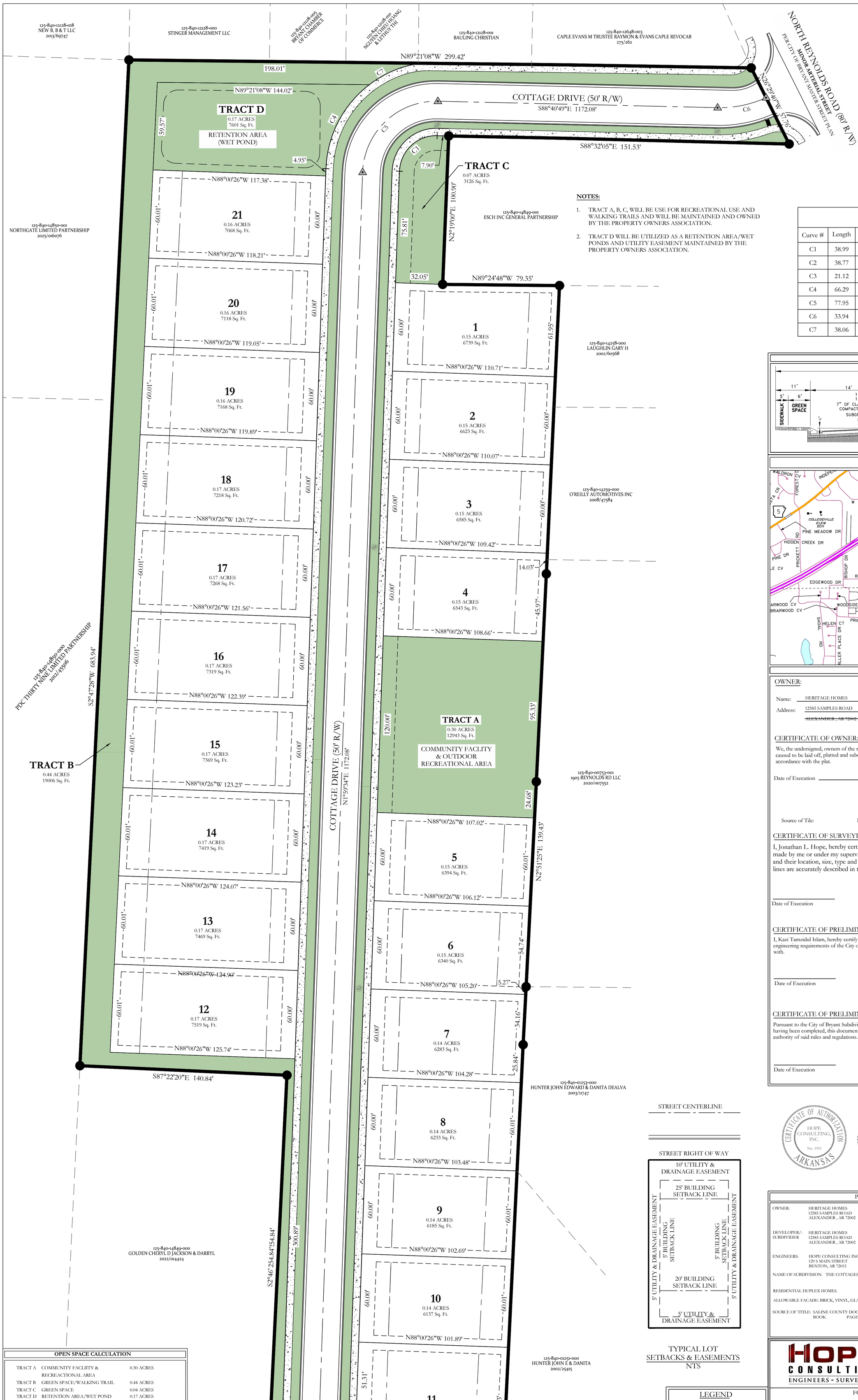
To whom it may concern,

Hope Consulting is formally requesting the City of Bryant Staff and Planning Commission begin the review and approval process for the Rezone of the property listed above. These parcels, located at 500 Prickett Road, Bryant, AR 72022 are currently zoned R-E and C-2. Our client, Heritage Homes, is requesting to rezone it to PUD. The Planning Commission meeting will be held on May 11th, 2026 at 6:00 PM at the Boswell Municipal Complex (City Hall) located at 210 SW Third Street, Bryant, AR 72022. Attendance is not required. Please feel free to contact us at 501-315-2626 if you have any questions.

Sincerely,

Jonathan Hope
Hope Consulting

HOPE CONSULTING
129 North Main Street, Benton, Arkansas 72015
(t) 501-315-2626 (e) www.HopeConsulting.com



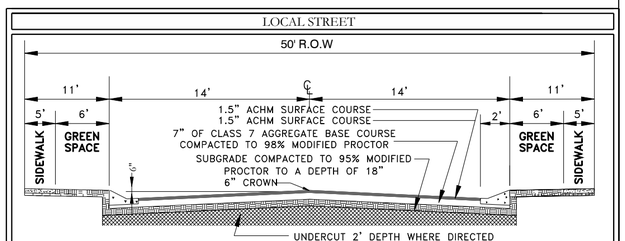
NOTES:

1. TRACT A, B, C, WILL BE USE FOR RECREATIONAL USE AND WALKING TRAILS AND WILL BE MAINTAINED AND OWNED BY THE PROPERTY OWNERS ASSOCIATION.
2. TRACT D WILL BE UTILIZED AS A RETENTION AREA/WET PONDS AND UTILITY EASEMENT MAINTAINED BY THE PROPERTY OWNERS ASSOCIATION.

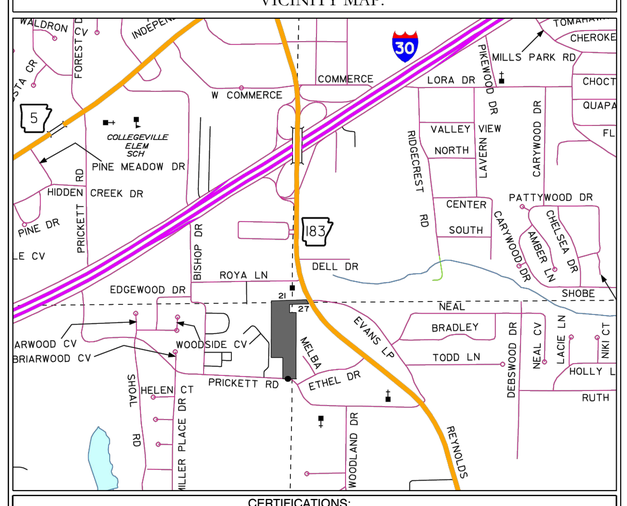
Curve Table

Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	38.99	25.00	89.36	N46° 40' 26"E	35.16
C2	38.77	25.00	88.86	N42° 26' 23"W	35.00
C3	21.12	25.00	48.40	N26° 11' 30"E	20.50
C4	66.29	75.00	50.64	N27° 18' 46"E	64.15
C5	77.95	50.00	89.33	N46° 39' 22"E	70.29
C6	33.94	75.00	25.93	N78° 21' 15"E	33.65
C7	38.06	75.00	29.07	N67° 10' 10"E	37.65

LOCAL STREET



VICINITY MAP:



CERTIFICATIONS:

OWNER:

Name: HERITAGE HOMES
Address: 12585 SAMPLES ROAD
~~ALEXANDER , AR 72002~~

DEVELOPER:

Name: HERITAGE HOMES
Address: 12585 SAMPLES ROAD
~~ALEXANDER , AR 72002~~

CERTIFICATE OF OWNER:

We, the undersigned, owners of the real estate shown and described herein do hereby certify that we have caused to be laid off, platted and subdivided, and to hereby lay off, plat and subdivide said real estate in accordance with the plat.

Date of Execution _____ Name: HERITAGE HOMES
Address: 12585 SAMPLES ROAD
ALEXANDER , AR 72002

Source of Tile: D.R. BOOK _____ PAGE _____

CERTIFICATE OF SURVEYING ACCURACY:

I, Jonathan L. Hope, hereby certify that this plat correctly represents a boundary survey made by me or under my supervision; that all monuments shown hereon actually exist and their location, size, type and material are correctly shown; and that all interior lot lines are accurately described in terms of length and direction of the property sides.

Date of Execution

Jonathan L. Hope
Registered Professional
Land Surveyor No. 1762 Arkansas

CERTIFICATE OF PRELIMINARY ENGINEERING ACCURACY:

I, Kazi Tamzidul Islam, hereby certify that this plat correctly represents a plan made by me, and that the engineering requirements of the City of Bryant Subdivision Rules and Regulations have been complied with.

Date of Execution

Kazi Tamzidul Islam
Registered Professional Engineer
Arkansas No. 20876

CERTIFICATE OF PRELIMINARY PLAT APPROVAL:

Pursuant to the City of Bryant Subdivision Rules and Regulations, and all of the conditions of approval having been completed, this document is hereby accepted. This certificate is hereby executed under the authority of said rules and regulations.

Date of Execution

Lance Penfield
Bryant Planning Commission

OPEN SPACE CALCULATION

TRACT A	COMMUNITY FACLITY & RECREACTIONAL AREA	0.30 ACRES
TRACT B	GREEN SPACE/WALKING TRAIL	0.44 ACRES
TRACT C	GREEN SPACE	0.04 ACRES
TRACT D	RETENTION AREA/WET POND	0.17 ACRES
	GREEN SPACE BETWEEN BOC & SIDEWALK	0.32 ACRES
	TOTAL	1.27 ACRES OR 22.44%

RESIDENTIAL DENSITY CALCULATIONS

HOUSING UNITS	41 UNITS
TOTAL DEVELOPABLE AREA	4.90 ACRES
TOTAL COMMON USABLE OPEN SPACE	1.27 ACRES
RESIDENTIAL DENSITY	41/4.90=8.37 DUA

LEGEND

- (P) – No Parking Sign
- – Stop Sign
- – Street light
- – Fire Hydrant
- – Computed point
- – Found monument
- ⊙ – Set #4 RB/Plas. Cap (SIP)
- (D) -- Deeded
- (M) -- Measured
- (P) -- Platted

STREET CENTERLINE

STREET RIGHT OF WAY

TYPICAL LOT
SETBACKS & EASEMENTS
NTS

CERTIFICATE OF AUTHORIZATION HOPE CONSULTING, INC. No. 1931 ARKANSAS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER NO. 20876 KAZI TAMZIDUL ISLAM

REGISTERED STATE OF ARKANSAS NO. 1762 SIGNATURE JONATHAN L. HOPE PROFESSIONAL LAND SURVEYOR

PROPERTY SPECIFICATIONS:

OWNER: HERITAGE HOMES
12585 SAMPLES ROAD
ALEXANDER , AR 72002

DEVELOPER/: HERITAGE HOMES
SUBDIVIDER 12585 SAMPLES ROAD
ALEXANDER , AR 72002

ENGINEERS: HOPE CONSULTING INC.
129 S MAIN STREET
BENTON, AR 72015

NAME OF SUBDIVISION: THE COTTAGES OF BRYANT

RESIDENTIAL DUPLEX HOMES.

ALLOWABLE FACADE: BRICK, VINYL, GLASS & WOOD

SOURCE OF TITLE: SALINE COUNTY DOCUMENT
BOOK PAGE

MIN. LOT SIZE:
NUMBER OF LOTS: 21

EXISTING ZONING: R-E (RESIDENTIAL-NO SEWER)
PROPOSED ZONING: PLANNED UNIT DEVELOPMENT

SOURCE OF WATER: CITY OF BRYANT
SOURCE OF SEWER: CITY OF BRYANT
SOURCE OF ELECTRIC: FIRST ELECTRIC COOP
SOURCE OF GAS: CENTERPOINT ENERGY

BUILDING SETBACKS:
FRONT - 25' OR AS SHOWN
REAR - 20' OR AS SHOWN
SIDE - 5' OR AS SHOWN

EASEMENTS: UTILITY & DRAINAGE (D.E. & U.E.)
FRONT - 10' OR AS SHOWN
REAR - 10' OR AS SHOWN
SIDE - 5' OR AS SHOWN

STREET RIGHT OF WAYS: 50' OR AS SHOWN
STREET WIDTH: 28' BOC TO BOC
LOT CORNERS: SET 1/2" REBAR WITH CAP

HOPE CONSULTING
ENGINEERS - SURVEYORS
117 S. Market Street,
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
HERITAGE HOMES, LLC

PLANNED UNIT DEVELOPMENT (PUD)
THE COTTAGES OF BRYANT

A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS.

DATE: 04-22-2026	C.A.D. BY: B.JOHNSON	DRAWING NUMBER:	
REVISED:	CHECKED BY:	26-0288	
SHEET:	SCALE: 1" = 30'		

500 | | | 0 | | | | 1762

K:\Land Projects 2\044 Subdivisions\2026\26-0288 Heritage Homes - Prickett Rd\26-0288-01-19-26_zzcover.dwg

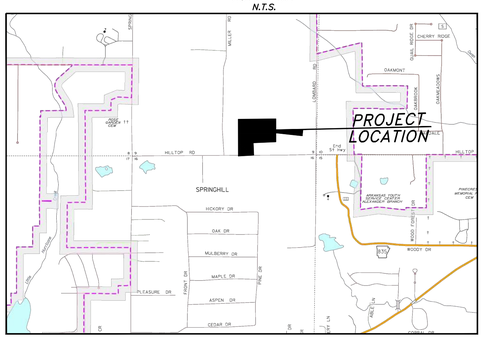
DETAILED PLANS:

ZYAIR ESTATES SUBDIVISION

PART OF THE SOUTHWEST $\frac{1}{4}$ OF THE SOUTHEAST $\frac{1}{4}$, SECTION 9, T-1-S, R-14-W
SALINE COUNTY, ARKANSAS

3/3/2026
REV:4/22/2026

VICINITY MAP
N.T.S.



Prepared By:

RICHARDSON ENGINEERING
Planning ▪ Engineering ▪ Development Consulting
325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225

PREPARED FOR:

EMINENT CONSTRUCTION
1100 HILLFARM ROAD
BRYANT, AR 72022

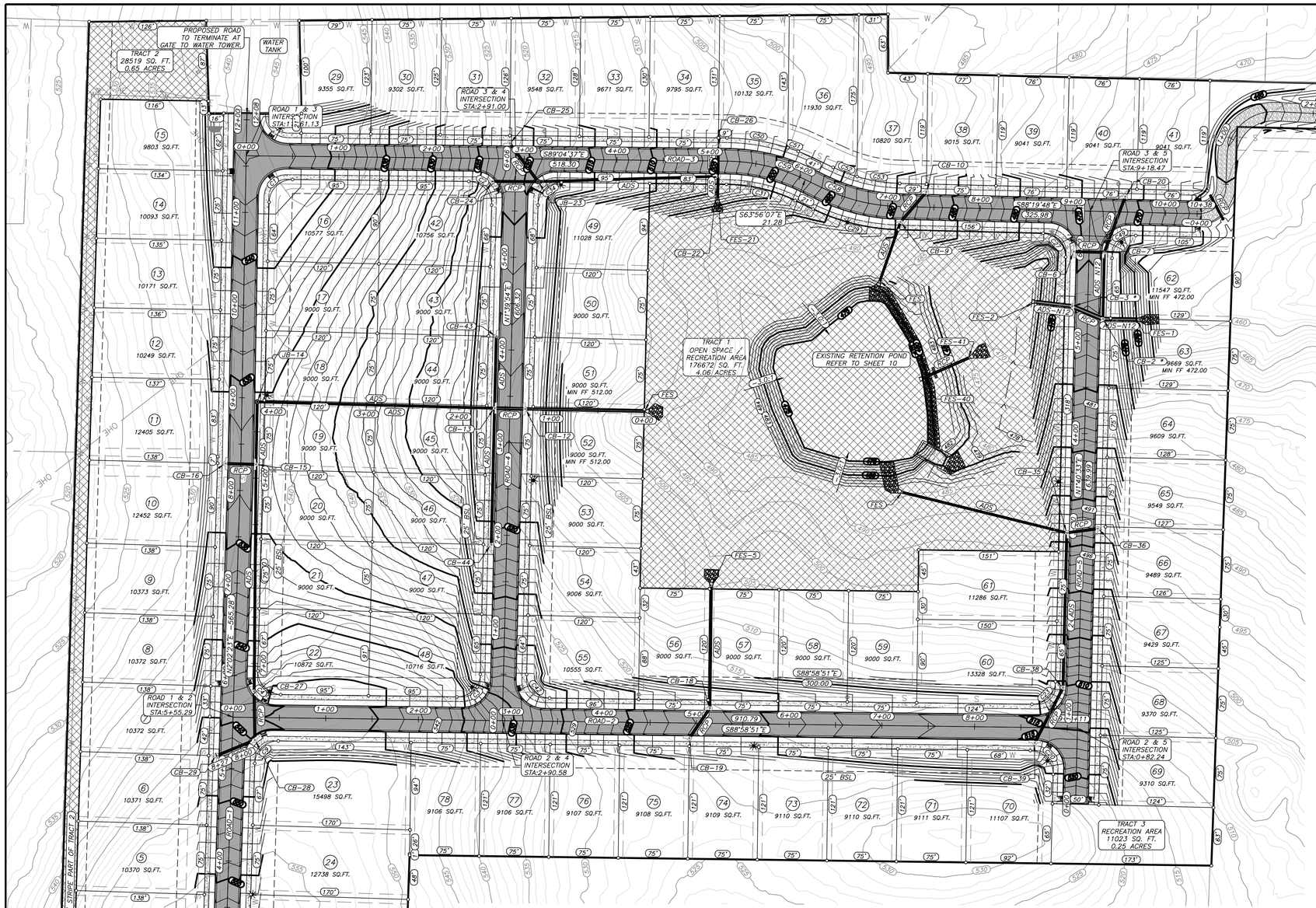
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14266
ERIC RYAN RICHARDSON

PRE-CONSTRUCTION COPY -

PLANS FOR BIDDING PURPOSES. QUANTITIES TO BE VERIFIED PRIOR TO CONSTRUCTION. CONTRACTOR TO VERIFY GRADES WITH ENGINEER PRIOR TO CONSTRUCTION.

INDEX OF SHEETS

Cover Sheet	1
Street & Drainage Plan	2
Street Plan/Profile	3-9
Detention Pond Grading	10
Utility Plan	11
Sewer Plan/Profile	12-18
Erosion Control	19-19B
Misc. Details	20-24
Street signs & lights plan	25



Curve Table				
Curve #	Length	Radius	Chord Direction	Chord Length
C1	38.95	25.00	N46° 17' 39"E	35.13
C2	39.59	25.00	S43° 42' 21"E	35.58
C3	38.99	25.00	S46° 20' 32"W	35.16
C4	39.55	25.00	N43° 39' 28"W	35.55
C5	29.22	25.00	N54° 51' 34"W	552.73
C6	9.92	25.00	N8° 57' 03"W	552.13
C7	24.33	25.00	N76° 48' 41"E	23.78
C8	54.32	225.00	N6° 27' E	54.07
C9	23.92	25.00	N16° 48' E	23.04
C20	39.56	25.00	N73° 21' 26"E	35.61
C23	38.98	25.00	N46° 17' 39"E	35.13
C27	39.57	25.00	N43° 42' 21"E	35.58
C29	95.80	225.00	N76° 07' 58"W	95.08
C31	76.79	175.00	N76° 30' 22"W	76.18
C34	38.95	25.00	S46° 17' 39"W	35.13
C42	39.55	25.00	S43° 39' 28"E	35.55
C49	39.27	25.00	N46° 40' 22"E	35.35
C50	66.72	225.00	S80° 33' 00"E	66.48
C51	11.82	225.00	S70° 32' 58"E	11.82
C52	27.81	175.00	S68° 29' 17"E	27.78

Curve Table				
Curve #	Length	Radius	Chord Direction	Chord Length
C53	46.70	175.00	S80° 41' 07"E	46.56
C54	42.16	175.00	S8° 56' 27"W	42.06
C55	56.44	225.00	S8° 39' 24"W	56.29
C56	38.28	25.00	S45° 20' 12"W	34.65
C58	85.15	200.00	S76° 07' 58"E	84.51
C59	87.76	200.00	S76° 30' 22"E	87.06
C64	50.17	200.00	S8° 39' 24"W	50.03
C65	48.18	200.00	S8° 56' 27"W	48.06

NOTES:
1) 6 CONCRETE SLAB 3500 PSI WITH 5-8% ENTRAINMENT.
2) 4x30 TURNDOWNS ON ALL SIDES.
3) #4 REBAR ON 12" CENTERS TO TIE ALL OF THE SLABS AND TURNDOWNS TOGETHER.
4) SAW CUT ZONE CONTROL JOINTS LONGITUDINALLY DOWN THE CENTER OF THE SPILLWAY TO FIGHT SLEDDAGE.
5) SAW CUT ZONE CONTROL JOINTS SHALL BE PLACED IN THE SPILLWAY PERPENDICULAR TO THE POND LEVEE. CUT CONTROL JOINTS IN THE CONCRETE ON THE FRONT AND BACK SLOPES OF THE SPILLWAY IN SAME LOCATION (CENTERED) AND PERPENDICULAR TO THE POND LEVEE. CONTROL JOINTS TO BE 1/3rd DEEP.

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SURVEYOR
SOUTHPOINT SURVEYING
P.O. BOX 400
SHERIDAN, AR
501-837-2342

DEVELOPERS
EMINENT CONSTRUCTION
1100 HILLFARM ROAD
BRYANT, AR 72022

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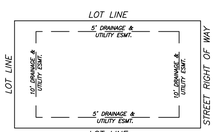


TYPICAL LOT EASEMENTS

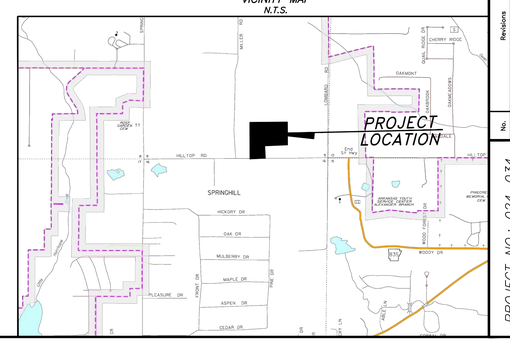
LEGEND
- STOP SIGN
- STREET NAME SIGN
- TRAFFIC SIGN
- STREET LIGHT
- ADA APPROVED HANDICAP RAMP

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14266
ERIC RYAN RICHARDSON

LEGEND
- G — GAS LINE
- T — TELEPHONE LINE
- S — SANITARY SEWER
- X — FENCE
- W — WATER LINE
- STORM DRAIN
- DITCH OR SWALE
- OHE — POWER LINE (OVERHEAD)
- PROPOSED WATER METER BOX
- EXISTING MANHOLE
- PROPOSED MANHOLE
- LIGHT POLE
- GATE VALVE
- BLOW-OFF
- FIRE HYDRANT
- * ADA RAMP
- CURB INLET
- FES
- POWER POLE

GRAPHIC SCALE
60 0 60 120 180
(IN FEET)
1 inch = 60 ft.

VICINITY MAP
N.T.S.



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CERTIFICATE OF AUTHORIZATION
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No. 2519
ARKANSAS

OVERALL STREET AND DRAINAGE PLAN
ZYAIR ESTATES
SUBDIVISION
HILLTOP ROAD
BRYANT, ARKANSAS

Prepared For:
EMINENT CONSTRUCTIONS

No.	Revisions	Date
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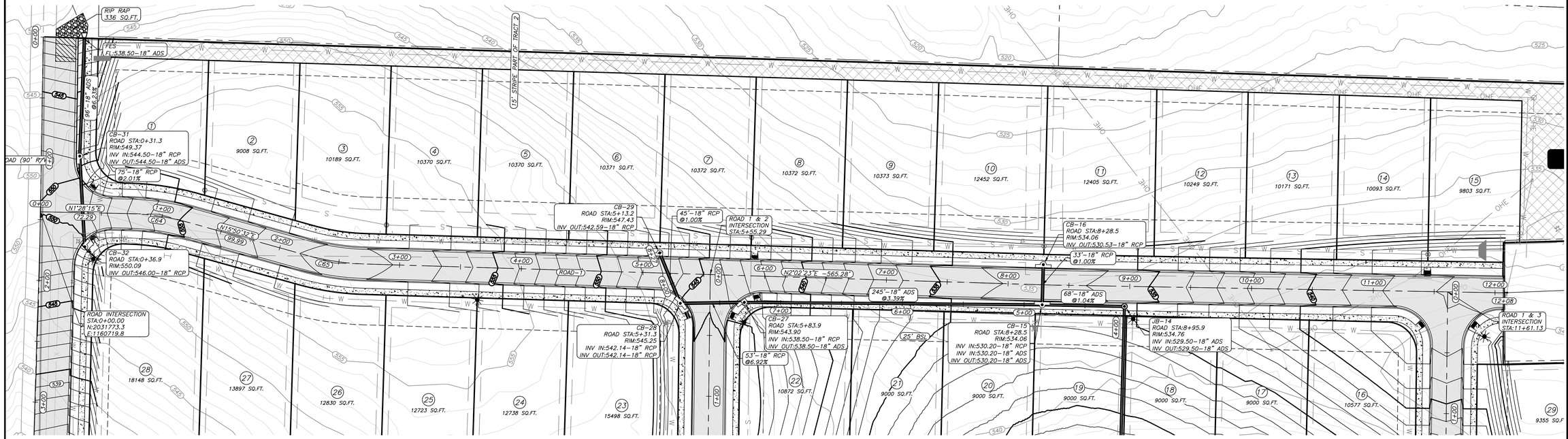

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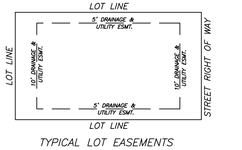

LEGEND

- STOP SIGN
- STREET NAME SIGN
- TRAFFIC SIGN
- STREET LIGHT
- ADA APPROVED HANDICAP RAMP

LEGEND

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- T — TELEPHONE LINE
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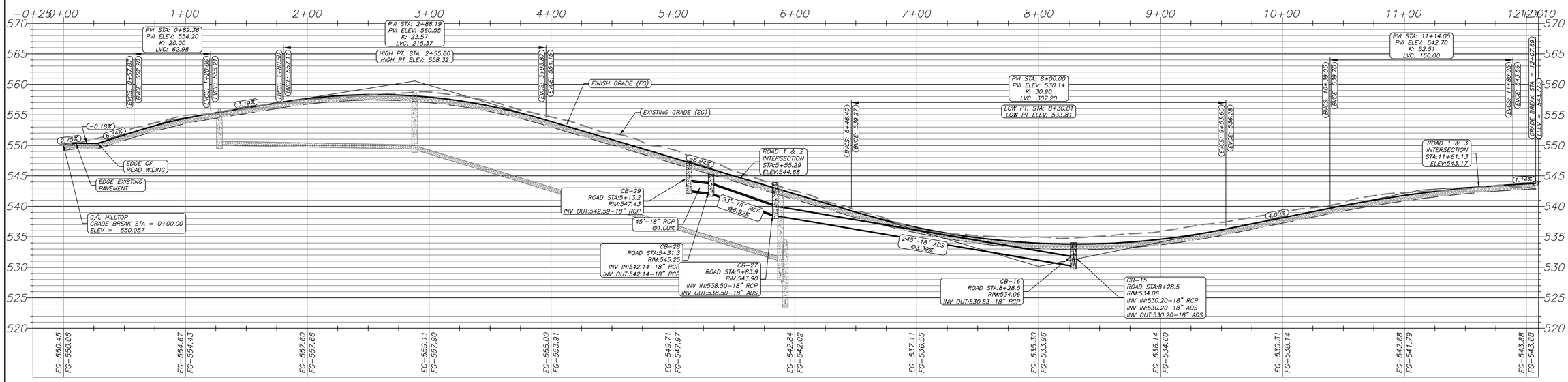
- BLOW-OFF
- FES
- LIGHT POLE
- FIRE HYDRANT
- POWER POLE

GRAPHIC SCALE

40 0 40 80 120

(IN FEET)
1 inch = 40 ft.

ROAD-1 PROFILE



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ROAD 1 PLAN & PROFILE
ZYAIR ESTATES
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HILLTOP ROAD
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Prepared For: EMINENT CONSTRUCTIONS

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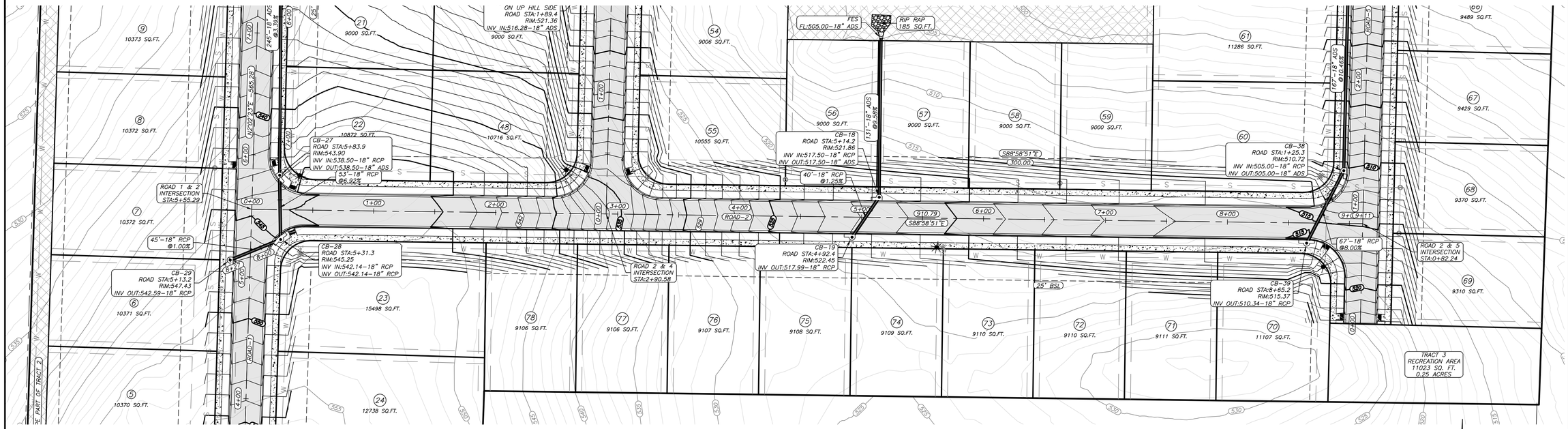
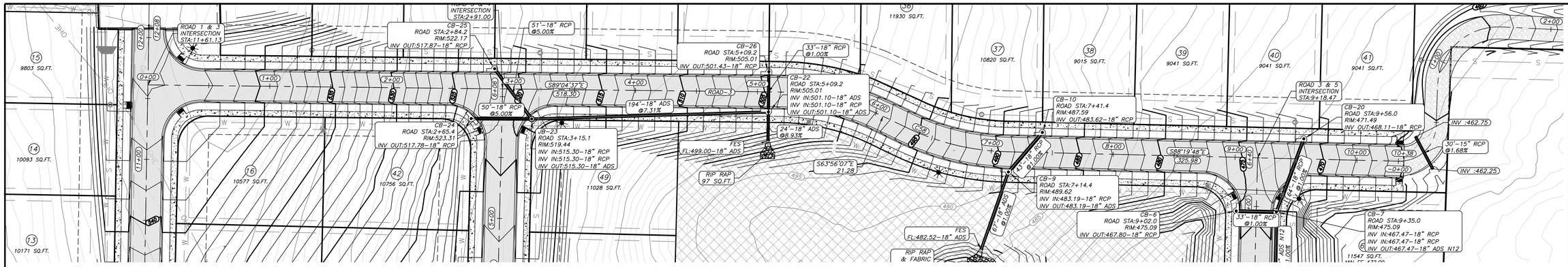

ON UP HILL SIDE
ROAD STA:1+89.4
RIM:521.36
INV IN:516.28–18" ADS
FES
FL:505.00–18" ADS
RIP RAP
185 SQ.FT.
CB–27
ROAD STA:5+83.9
RIM:543.90
INV IN:538.50–18" RCP
INV OUT:538.50–18" ADS
53'–18" RCP
@6.92%
CB–28
ROAD STA:5+31.3
RIM:545.25
INV IN:542.14–18" RCP
INV OUT:542.14–18" RCP
CB–29
ROAD STA:5+13.2
RIM:547.4
INV OUT:542.59–18" RCP
45'–18" RCP
@1.00%
ROAD 1 & 2
INTERSECTION
STA:5+55.29
CB–18
ROAD STA:5+14.2
RIM:521.86
INV IN:517.50–18" RCP
INV OUT:517.50–18" ADS
40'–18" RCP
@1.25%
CB–19
ROAD STA:4+92.4
RIM:522.45
INV OUT:517.99–18" RCP
ROAD 2 & 4
INTERSECTION
STA:2+90.58
CB–38
ROAD STA:1+25.3
RIM:510.72
INV IN:505.00–18" RCP
INV OUT:505.00–18" ADS
67'–18" RCP
@8.00%
CB–39
ROAD STA:8+65.2
RIM:515.37
INV OUT:510.34–18" RCP
ROAD 2 & 5
INTERSECTION
STA:0+82.24
TRACT 3
RECREATION AREA
11023 SQ. FT.
0.25 ACRES
25' BSL
S88°58'51"E
300.00'
910.79
S88°58'51"E
ROAD–2
ROAD–5
9 (+09+11)
9 (+09+11)
9 (+09+11)



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P.O. BOX 400
SHERIDAN, AR
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DEVELOPERS
EMINENT CONSTRUCTION
1100 HILLFARM ROAD
BRYANT, AR 72022

LEGEND

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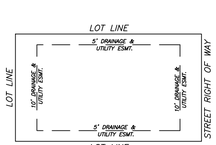
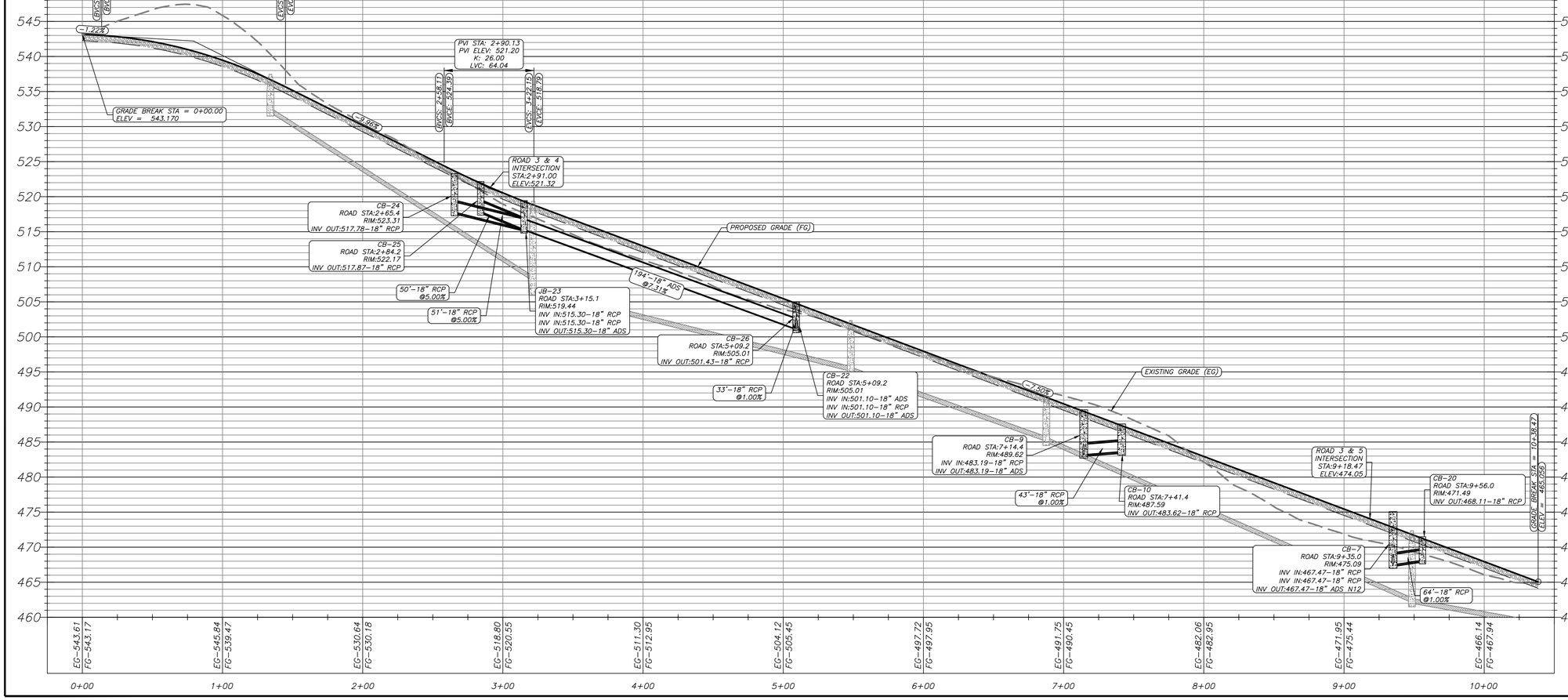


TYPICAL LOT EASEMENTS

ROAD-3 PROFILE

Station



LEGEND

STOP SIGN
STREET NAME SIGN
TRAFFIC SIGN
STREET LIGHT
ADA APPROVED HANDICAP RAMP

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ROAD 3 PLAN & PROFILE
ZYAIR ESTATES
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HILLTOP ROAD
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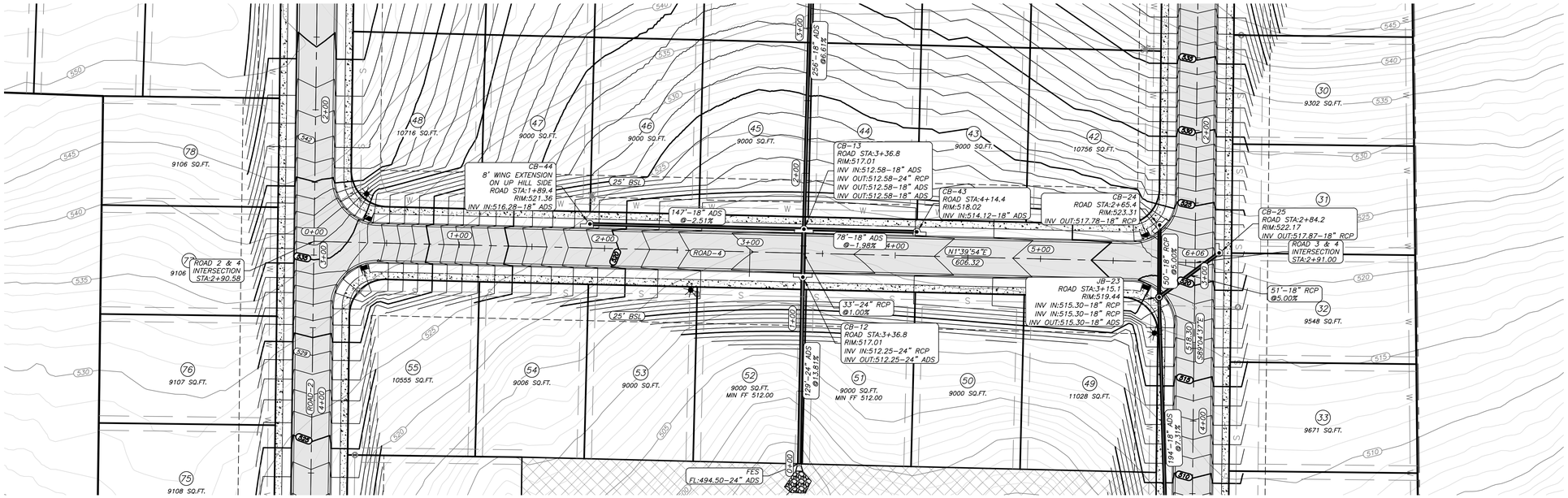

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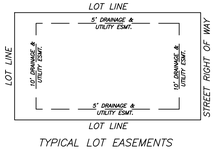

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GRAPHIC SCALE

40 0 40 80 120

(IN FEET)
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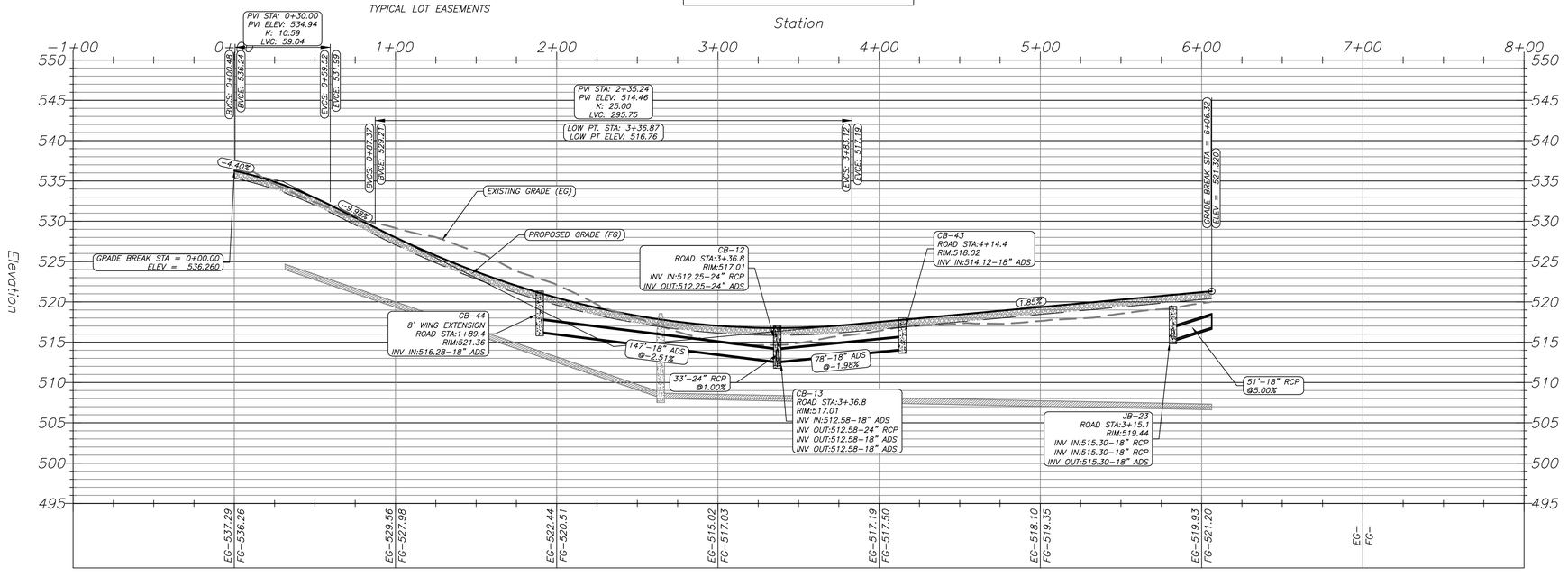
ROAD-4 PROFILE



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ROAD 4 PLAN & PROFILE
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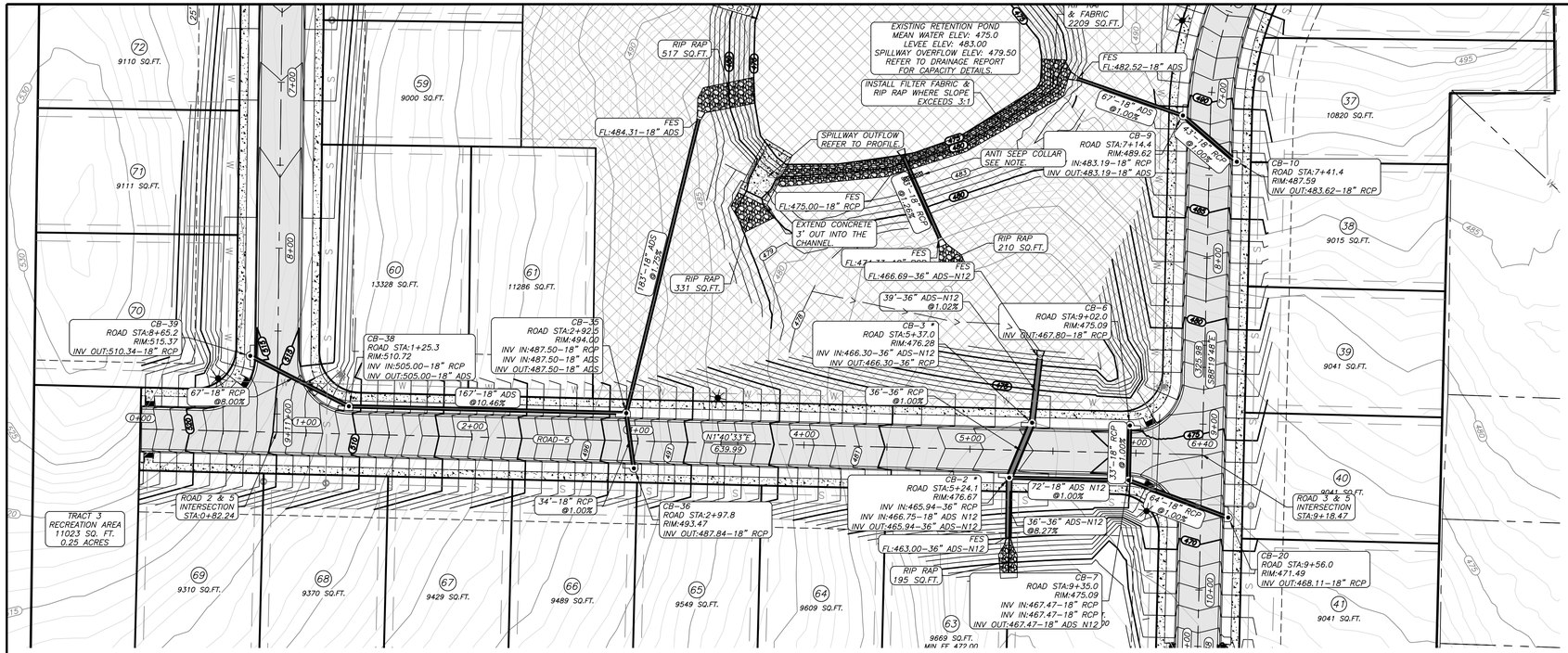
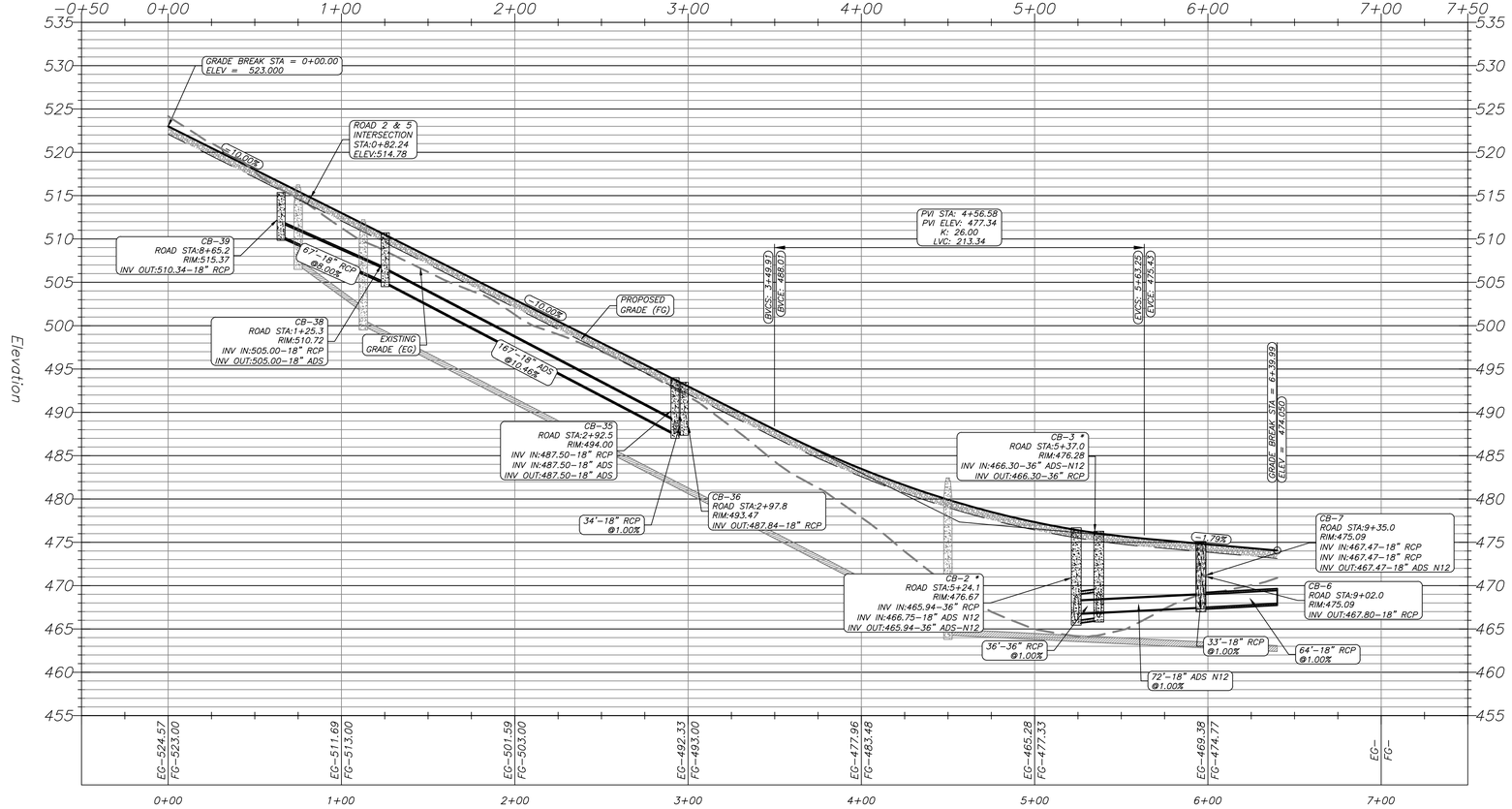


ROAD–5 PROFILE



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* ALL DRAINAGE PIPING TO BE SIZED TO EFFECTIVELY HANDLE A 10–YEAR RAIN EVENT.
* ALL DRAINAGE EASEMENTS SHALL CONVEY FLOWS FROM THE 100–YEAR RAIN EVENT.
* (*) DENOTES 5' INNER DIAMETER BARREL, (**) DENOTES 6' INNER DIAMETER BARREL, AND ALL OTHERS ARE 4' INSIDE DIAMETER FOR CURB INLETS AND JUNCTION BOXES.
* ALL DRAINAGE EASEMENTS BETWEEN LOTS ARE 10' UNLESS OTHERWISE NOTED.

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BENTON, AR. 72015
PHONE NO. (501) 315–7225
PROJECT REPRESENTATIVE:
ERIC RICHARDSON, P.E.

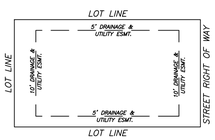
SURVEYOR
SOUTHPOINT SURVEYING
P.O. BOX 400
SHERIDAN, AR
501–837–2342

DEVELOPERS
EMINENT CONSTRUCTION
1100 HILLFARM ROAD
BRYANT, AR 72022

GRAPHIC SCALE

40 0 40 80 120

(IN FEET)
1 inch = 40 ft.



TYPICAL LOT EASEMENTS

LEGEND

- STOP SIGN
- STREET NAME SIGN
- TRAFFIC SIGN
- STREET LIGHT
- ADA APPROVED HANDICAP RAMP

LEGEND

- G — GAS LINE
- T — TELEPHONE LINE
- S — SANITARY SEWER
- X — FENCE
- W — WATER LINE
- STORM DRAIN
- DITCH OR SWALE
- OHE — POWER LINE (OVERHEAD)
- PROPOSED WATER METER BOX
- EXISTING MANHOLE
- PROPOSED MANHOLE
- LIGHT POLE
- GATE VALVE
- BLOW–OFF
- FIRE HYDRANT
- CURB INLET
- FES
- POWER POLE

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CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
ARKANSAS

ROAD 5 PLAN & PROFILE
ZYAIR ESTATES
SUBDIVISION
HILLTOP ROAD
BRYANT, ARKANSAS

Prepared For:
EMINENT CONSTRUCTIONS

No.	Revisions	Date
1	AS PER CITY COMMENTS	4/7/2026
2	CITY COMMENTS 4/15/26	4/22/2026

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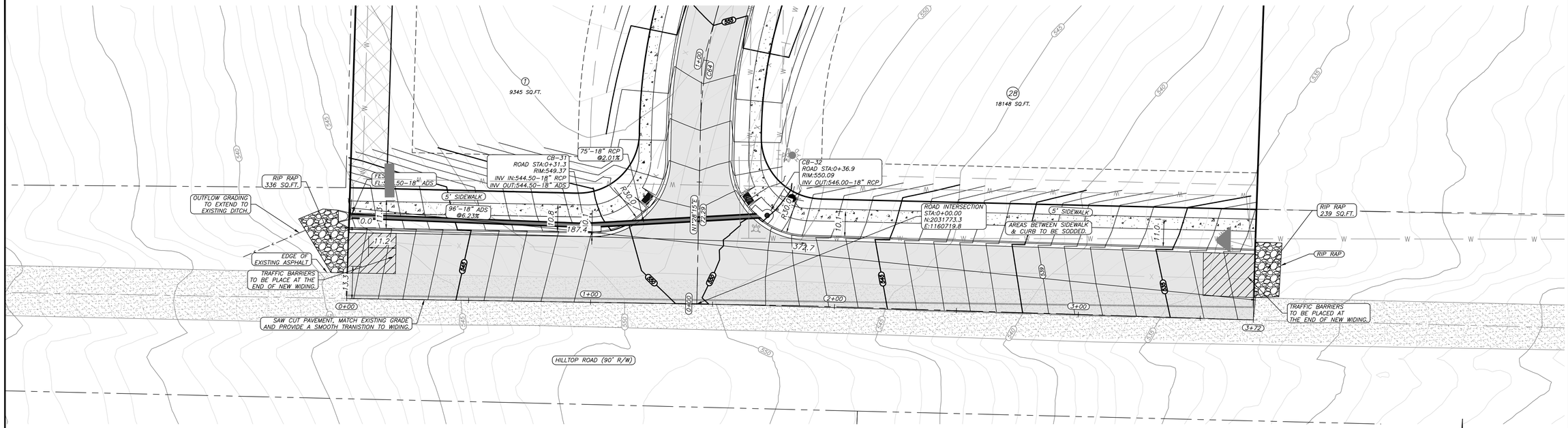

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501-837-2342

DEVELOPERS
EMINENT CONSTRUCTION
1100 HILLFARM ROAD
BRYANT, AR 72022

GRAPHIC SCALE

20 0 20 40 60

(IN FEET)
1 inch = 20 ft.

LEGEND

- STOP SIGN
- STREET NAME SIGN
- TRAFFIC SIGN
- STREET LIGHT
- ADA APPROVED HANDICAP RAMP

LEGEND

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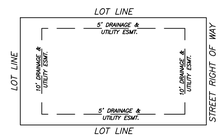
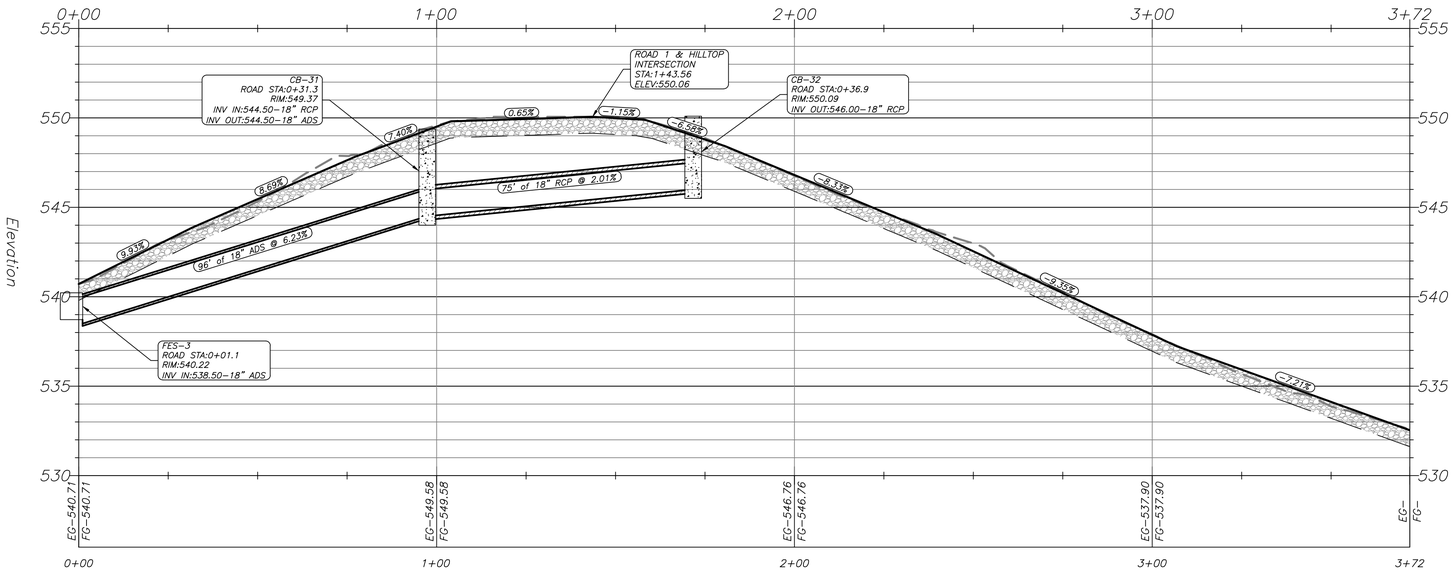
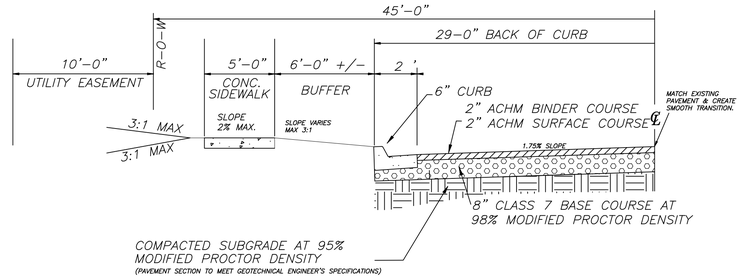


TYPICAL LOT EASEMENTS

HILLTOP ROAD PROFILE





TYPICAL ROAD CROSS SECTION (HALF STREET)
N.T.S.

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HILLTOP RD WIDING PLAN & PROFILE
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BRYANT, ARKANSAS

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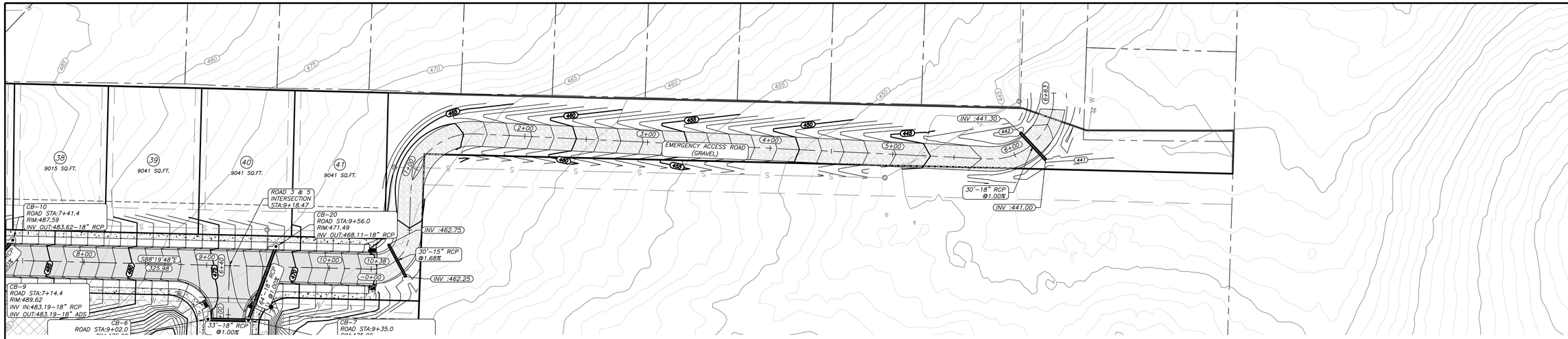

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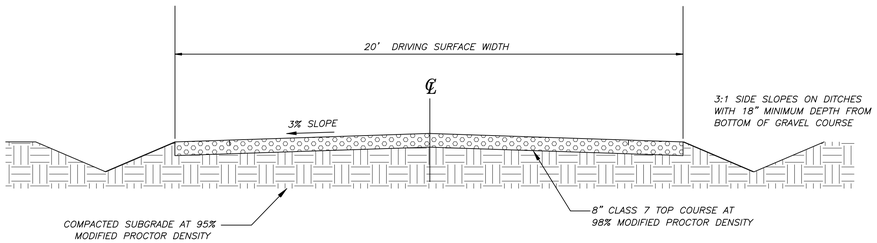
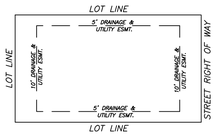


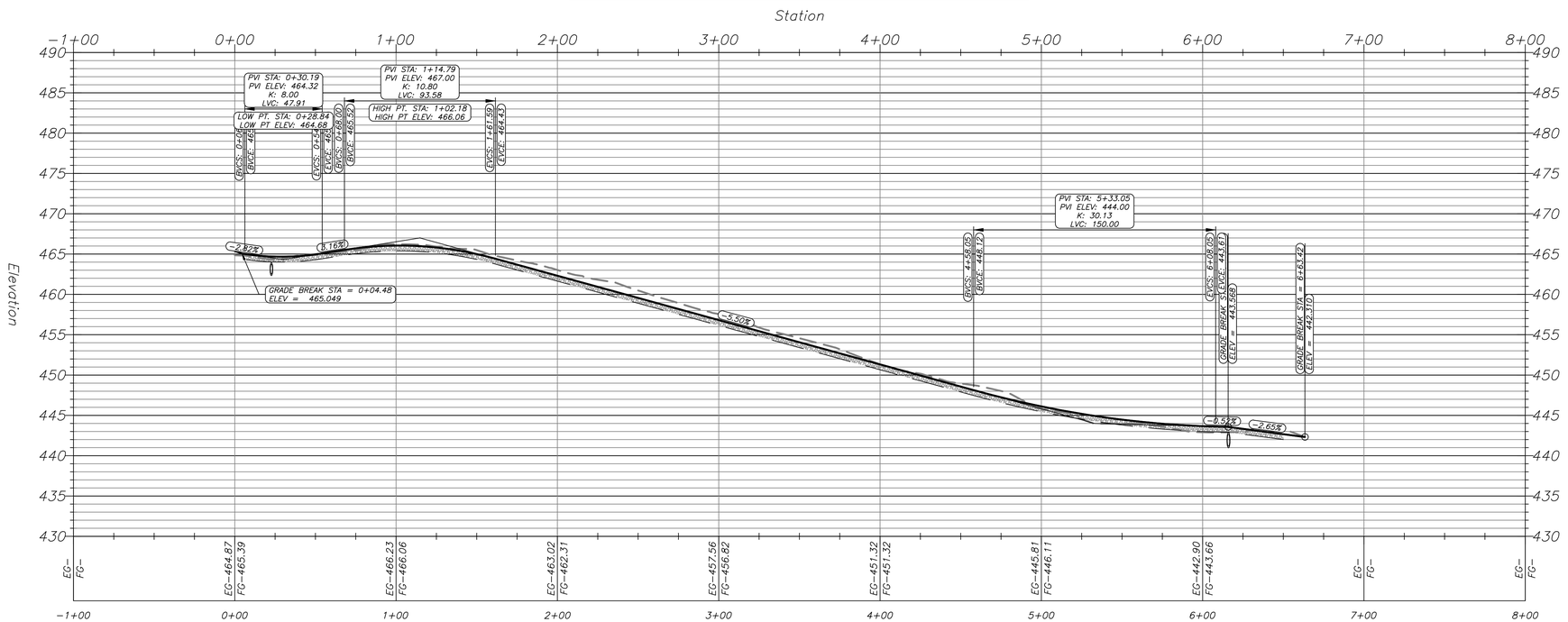
TYPICAL ACCESS ROAD CROSS SECTION
N.T.S.

NOTE:
1. ROADWAY SHALL MEET CITY OF BRYANT SPECIFICATIONS
2. STREETS AND DRAINAGE TO BE MAINTAINED BY BRYANT ROAD DEPARTMENT
3. ROAD SHALL MEET STATE FIRE CODE REQUIREMENTS.



TYPICAL LOT EASEMENTS

EMERGENCY ACCESS ROAD PROFILE



LEGEND

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STREET LIGHT
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DEVELOPERS
EMINENT CONSTRUCTION
1100 HILLFARM ROAD
BRYANT, AR 72022

GRAPHIC SCALE
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(IN FEET)
1 inch = 40 ft.

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ARKANSAS

EMERGENCY ACCESS ROAD P/P
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HILLTOP ROAD
BRYANT, ARKANSAS

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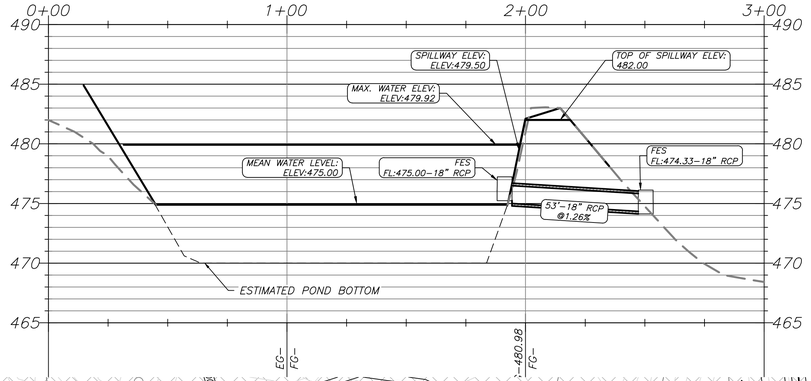
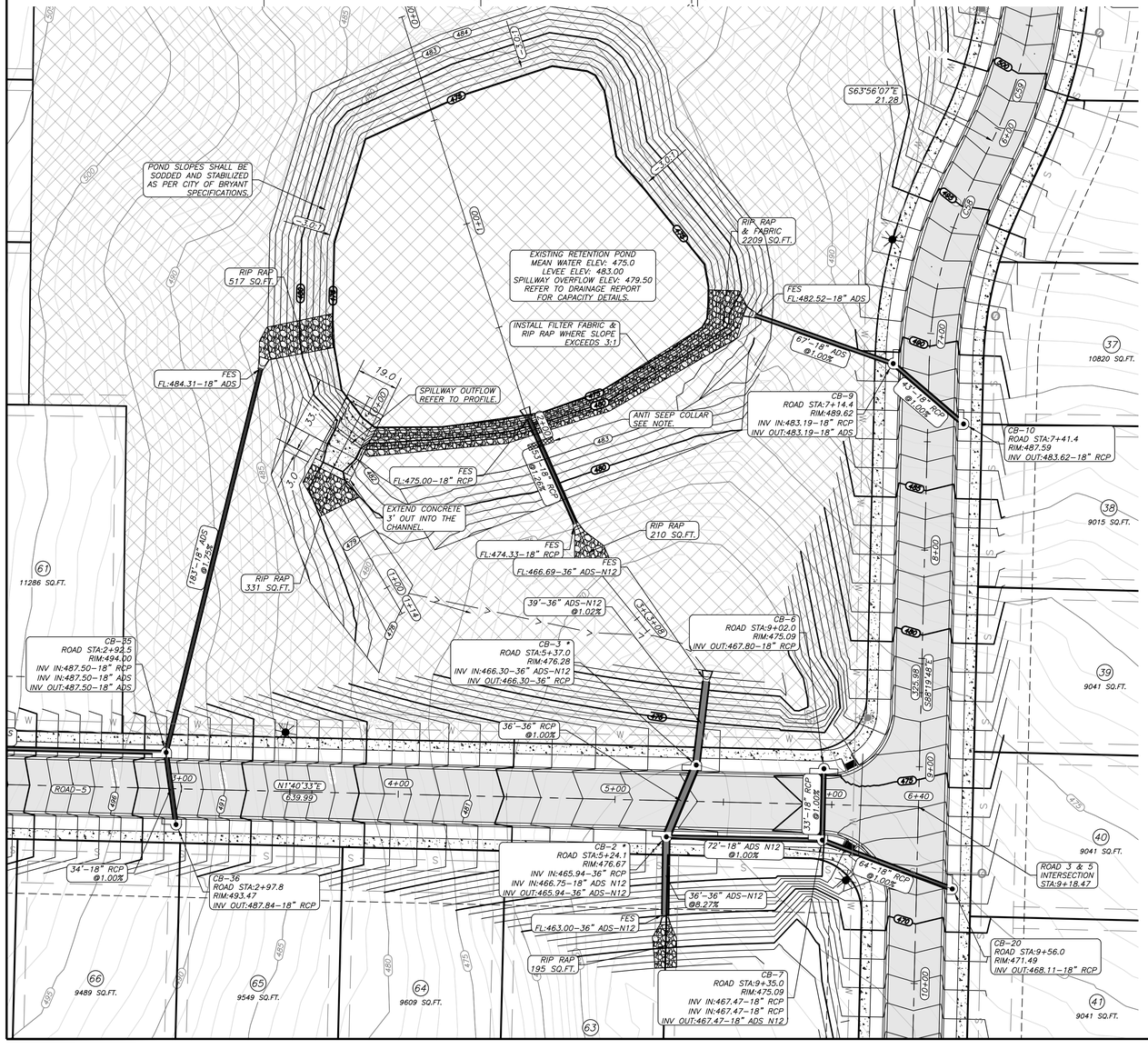
RETENTION POND PROFILE





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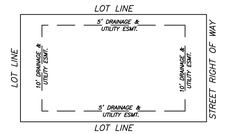

TYPICAL LOT EASEMENTS

ANTI SEEP COLLAR NOTE:
ANTI SEEP COLLAR SHALL CONSIST OF QUALIFIED CLAY MATERIAL PACKED AROUND THE PIPE TO CREATE A BARRIER TO PREVENT WATER PASSING ON THE OUTSIDE OF PIPE. CLAY TO EXTEND 4' BEYOND THE PIPE IN ALL DIRECTIONS AND 2' THICK MIN.

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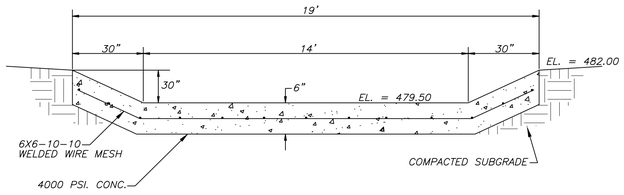


SPILLWAY DETAIL
N.T.S.

NOTES:
1) 6" CONCRETE SLAB 3500 PSI WITH 3-5% ENTRAINMENT.
2) 2'-0" TURNDOWN ON ALL SIDES.
3) #4 REBAR ON 12" CENTERS TO TIE ALL OF THE SLABS AND TURNDOWNS TOGETHER.
4) 2'-0" DEEP KEYWAY LONGITUDINALLY DOWN THE CENTER OF THE SPILLWAY TO FIGHT SEEPAGE.
5) SAW CUT ONE CONTROL JOINT CENTERED IN THE SPILLWAY PERPENDICULAR TO THE POND LEVEE. CUT CONTROL JOINTS IN THE CONCRETE ON THE FRONT AND BACK SLOPES OF THE SPILLWAY IN SAME LOCATION (CENTERED AND PERPENDICULAR TO THE POND LEVEE). CONTROL JOINTS TO BE 0'-2" DEEP.

$Q = C\ L\ H^{3/2}$
$C = 2.8$
$L = 14$
$H = 2.5$

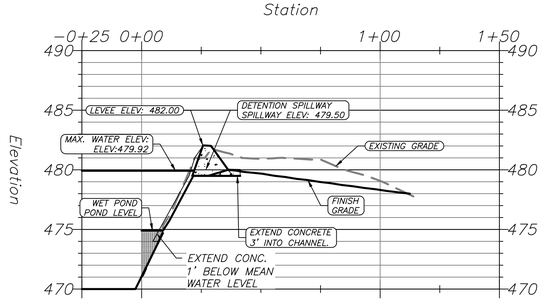
$Q = (2.8)(14)(2.5)^{3/2} = 154.95$ CFS

*ASSUMING THAT 50% OF THE WEIR IS BLOCKED

$Q = 154.95/2 = 77.48$ CFS $> Q_{100}$ INTO POND = 69.92 CFS

* SPILLWAY CONCRETE TO EXTEND TO 1'-0" BELOW MEAN WATER ELEVATION.

SPILLWAY OUTFLOW PROFILE



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RETENTION OUTFLOW PLAN & PROFILE
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SUBDIVISION
HILLTOP ROAD
BRYANT, ARKANSAS

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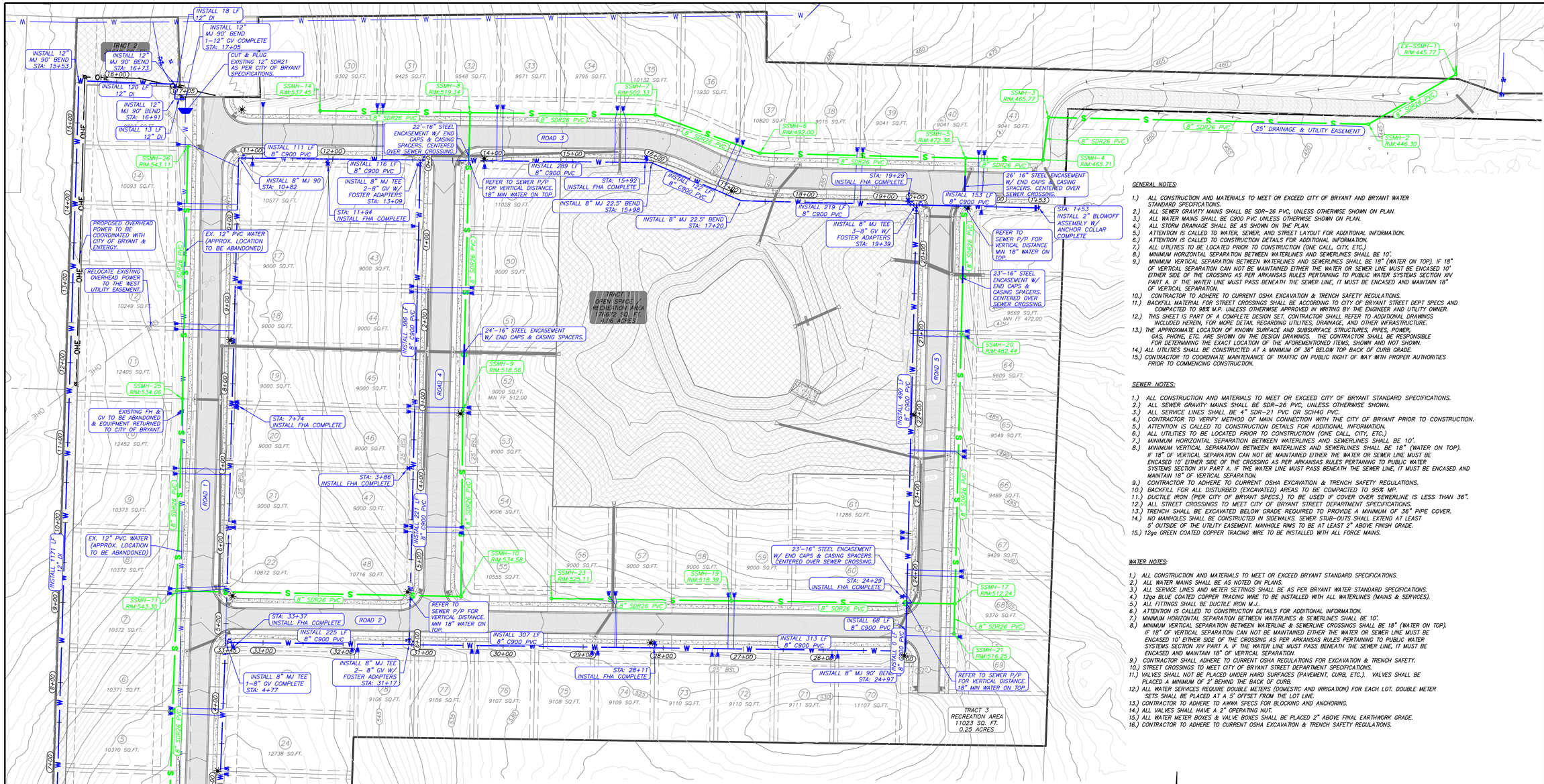

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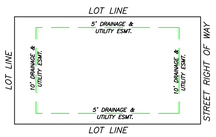

TYPICAL LOT EASEMENTS

* CONTRACTOR WILL COORDINATE WITH THE CITY OF BRYANT AS TO THE SCHEDULE FOR THE RELOCATION OF EXISTING 12" WATER LINE.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14266
ERIC RYAN RICHARDSON

LEGEND

G	GAS LINE
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S	SANITARY SEWER
X	FENCE
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GV	GATE VALVE
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GENERAL NOTES:

1.) ALL CONSTRUCTION AND MATERIALS TO MEET OR EXCEED CITY OF BRYANT AND BRYANT WATER STANDARD SPECIFICATIONS.
2.) ALL SEWER GRAVITY MAINS SHALL BE SDR-26 PVC, UNLESS OTHERWISE SHOWN ON PLAN.
3.) ALL WATER MAINS SHALL BE C900 PVC UNLESS OTHERWISE SHOWN ON PLAN.
4.) ALL STORM DRAINAGE SHALL BE AS SHOWN ON THE PLAN.
5.) ATTENTION IS CALLED TO WATER, SEWER, AND STREET LAYOUT FOR ADDITIONAL INFORMATION.
6.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
7.) ALL UTILITIES TO BE LOCATED PRIOR TO CONSTRUCTION (ONE CALL, CITY, ETC.)
8.) MINIMUM HORIZONTAL SEPARATION BETWEEN WATERLINES AND SEWERLINES SHALL BE 10'.
9.) MINIMUM VERTICAL SEPARATION BETWEEN WATERLINES AND SEWERLINES SHALL BE 18" (WATER ON TOP). IF 18" OF VERTICAL SEPARATION CAN NOT BE MAINTAINED EITHER THE WATER OR SEWER LINE MUST BE ENCASED 10' EITHER SIDE OF THE CROSSING AS PER ARKANSAS RULES PERTAINING TO PUBLIC WATER SYSTEMS SECTION XIV PART A. IF THE WATER LINE MUST PASS BENEATH THE SEWER LINE, IT MUST BE ENCASED AND MAINTAIN 18" OF VERTICAL SEPARATION.
10.) CONTRACTOR TO ADHERE TO CURRENT OSHA EXCAVATION & TRENCH SAFETY REGULATIONS.
11.) BACKFILL MATERIAL FOR STREET CROSSINGS SHALL BE ACCORDING TO CITY OF BRYANT STREET DEPT SPECS AND COMPACTED TO 98% M.P. UNLESS OTHERWISE APPROVED IN WRITING BY THE ENGINEER AND UTILITY OWNER.
12.) THIS SHEET IS PART OF A COMPLETE DESIGN SET. CONTRACTOR SHALL REFER TO ADDITIONAL DRAWINGS INCLUDED HEREIN, FOR MORE DETAIL REGARDING UTILITIES, DRAINAGE, AND OTHER INFRASTRUCTURE.
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9.) CONTRACTOR TO ADHERE TO CURRENT OSHA EXCAVATION & TRENCH SAFETY REGULATIONS.
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14.) NO MANHOLES SHALL BE CONSTRUCTED IN SIDEWALKS. SEWER STUB-OUTS SHALL EXTEND AT LEAST 5' OUTSIDE OF THE UTILITY EASEMENT. MANHOLE RIMS TO BE AT LEAST 2" ABOVE FINISH GRADE.
15.) 12ga GREEN COATED COPPER TRACING WIRE TO BE INSTALLED WITH ALL FORCE MAINS.

WATER NOTES:

1.) ALL CONSTRUCTION AND MATERIALS TO MEET OR EXCEED BRYANT STANDARD SPECIFICATIONS.
2.) ALL WATER MAINS SHALL BE AS NOTED ON PLANS.
3.) ALL SERVICE LINES AND METER SETTINGS SHALL BE AS PER BRYANT WATER STANDARD SPECIFICATIONS.
4.) 12ga BLUE COATED COPPER TRACING WIRE TO BE INSTALLED WITH ALL WATERLINES (MAINS & SERVICES).
5.) ALL FITTINGS SHALL BE DUCTILE IRON M.J.
6.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
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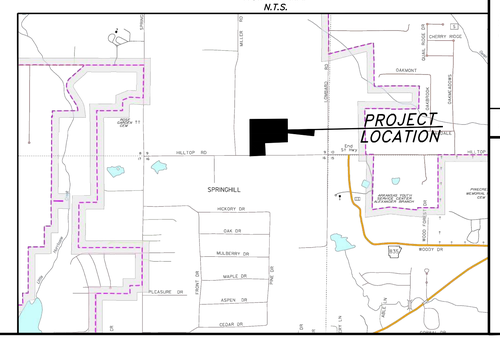
11.) VALVES SHALL NOT BE PLACED UNDER HARD SURFACES (PAVEMENT, CURB, ETC.). VALVES SHALL BE PLACED A MINIMUM OF 2' BEHIND THE BACK OF CURB.
12.) ALL WATER SERVICES REQUIRE DOUBLE METERS (DOMESTIC AND IRRIGATION) FOR EACH LOT. DOUBLE METER SETS SHALL BE PLACED AT A 5' OFFSET FROM THE LOT LINE.
13.) CONTRACTOR TO ADHERE TO AWWA SPECS FOR BLOCKING AND ANCHORING.
14.) ALL VALVES SHALL HAVE A 2" OPERATING NUT.
15.) ALL WATER METER BOXES & VALVE BOXES SHALL BE PLACED 2" ABOVE FINAL EARTHWORK GRADE.
16.) CONTRACTOR TO ADHERE TO CURRENT OSHA EXCAVATION & TRENCH SAFETY REGULATIONS.

GRAPHIC SCALE
60 0 60 120 180
(IN FEET)
1 inch = 60 ft.

VICINITY MAP
N.T.S.



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ARKANSAS

OVERALL UTILITY PLAN
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HILLTOP ROAD
BRYANT, ARKANSAS

Prepared For:
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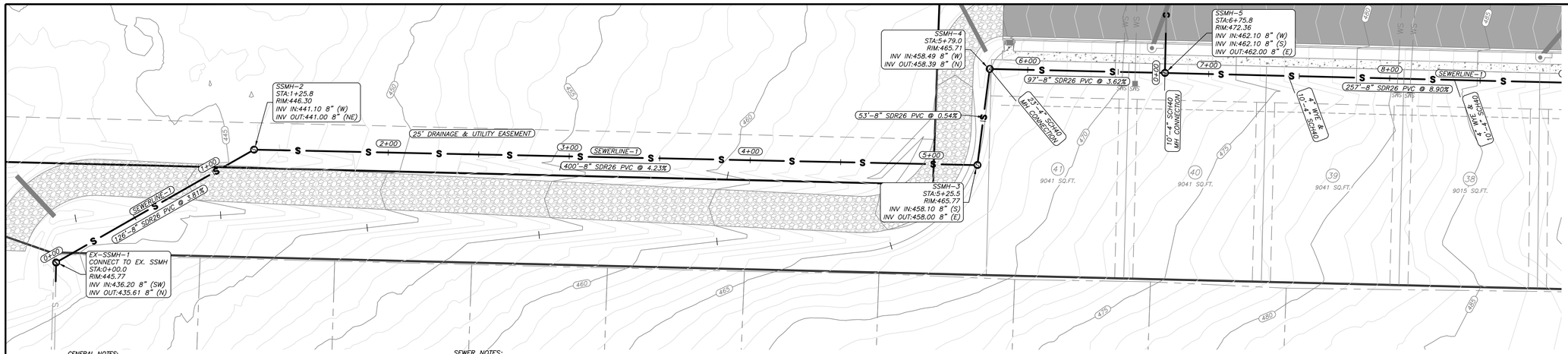

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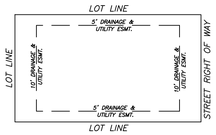


TYPICAL LOT EASEMENTS

LEGEND

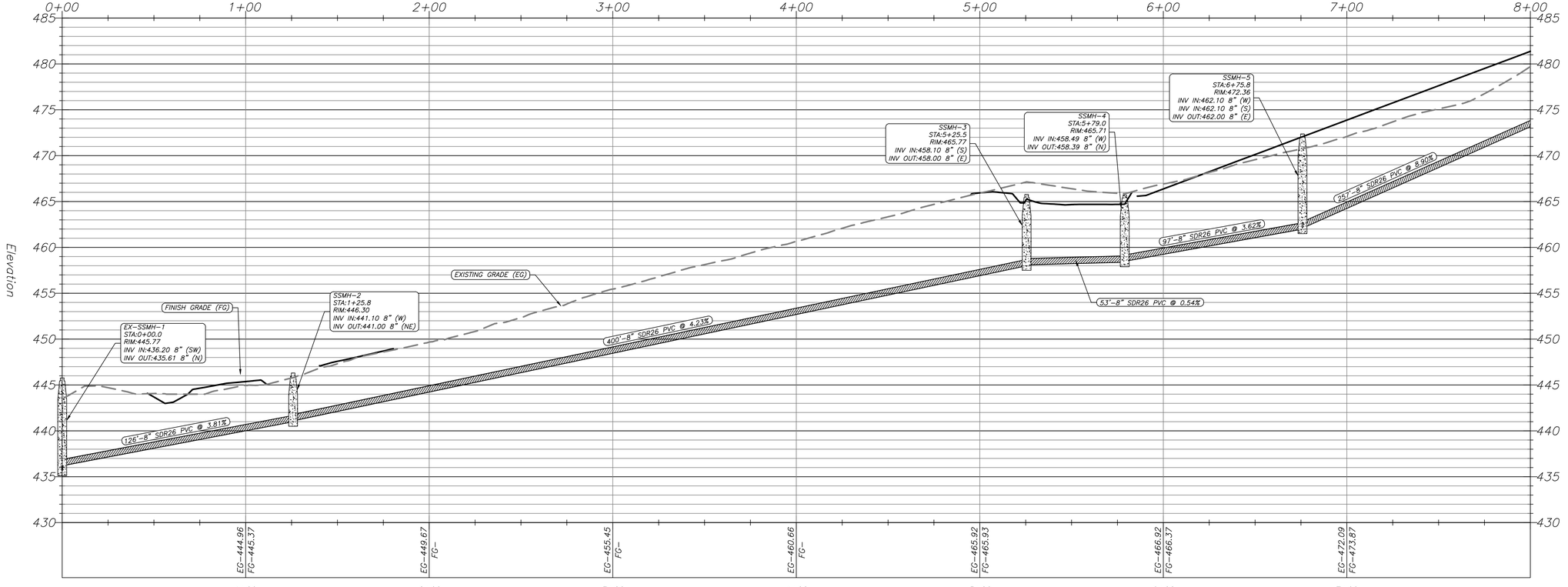
G	GAS LINE
T	TELEPHONE LINE
S	SANITARY SEWER
X	FENCE
W	WATER LINE
	STORM DRAIN
> >	DITCH OR SWALE
OHE	POWER LINE (OVERHEAD)
SMS	PROPOSED WATER METER BOX
EXISTING MANHOLE	GATE VALVE
PROPOSED MANHOLE	BLOW-OFF
LIGHT POLE	FIRE HYDRANT
CURB INLET	
FES	
POWER POLE	

GRAPHIC SCALE

30 0 30 60 90

(IN FEET)
1 inch = 30 ft.

SEWERLINE-1 PROFILE



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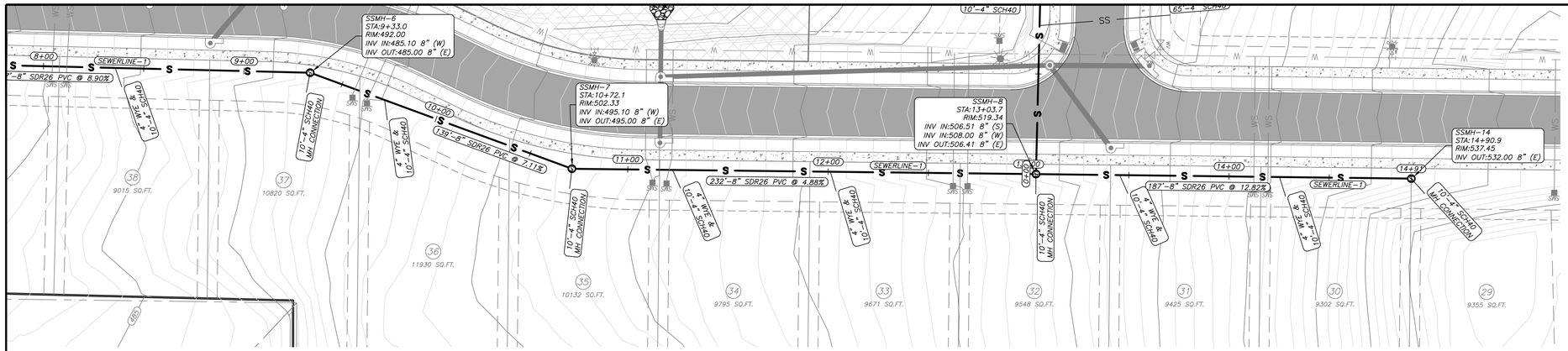

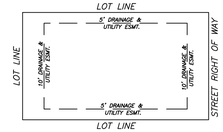

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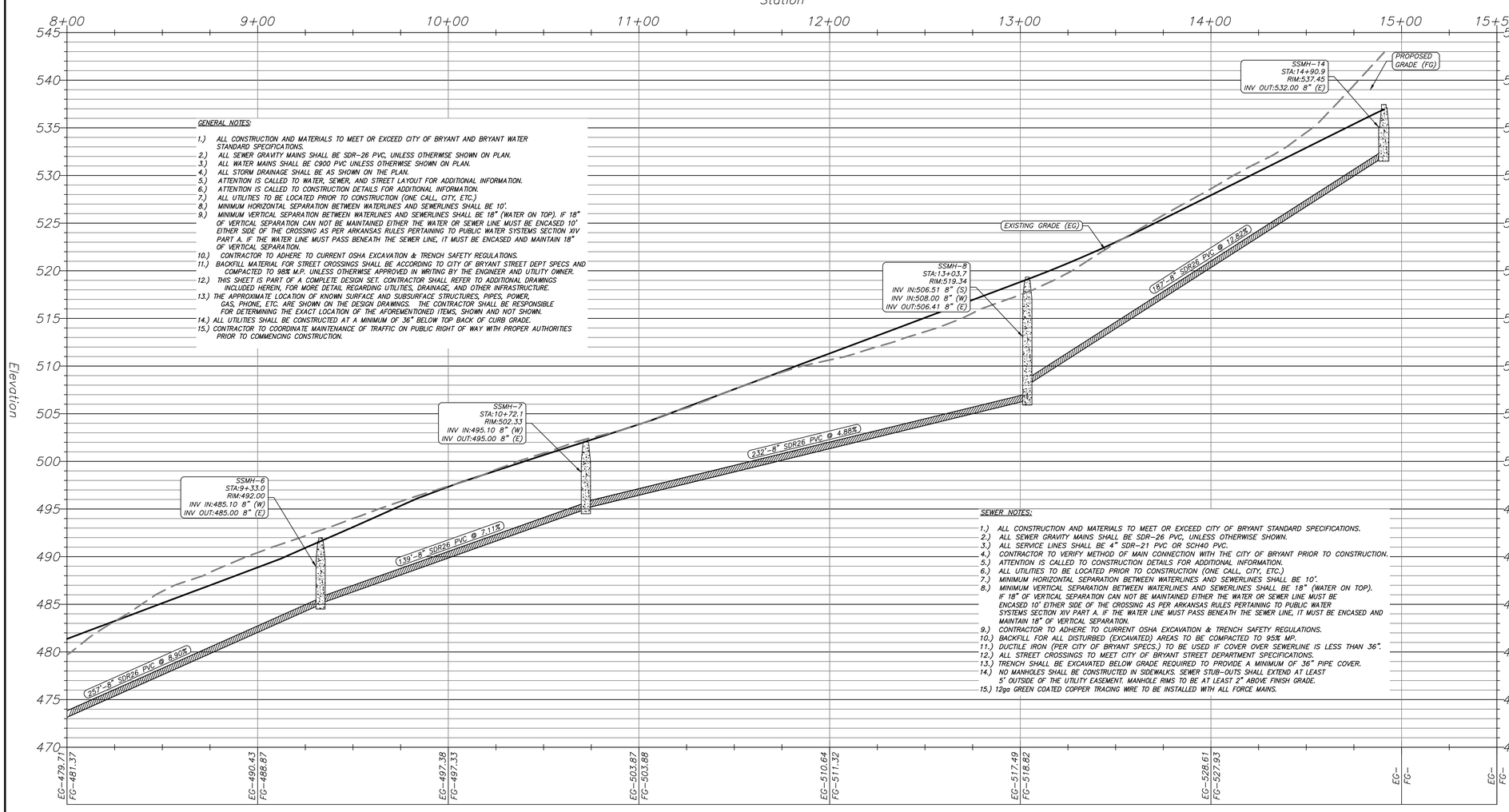

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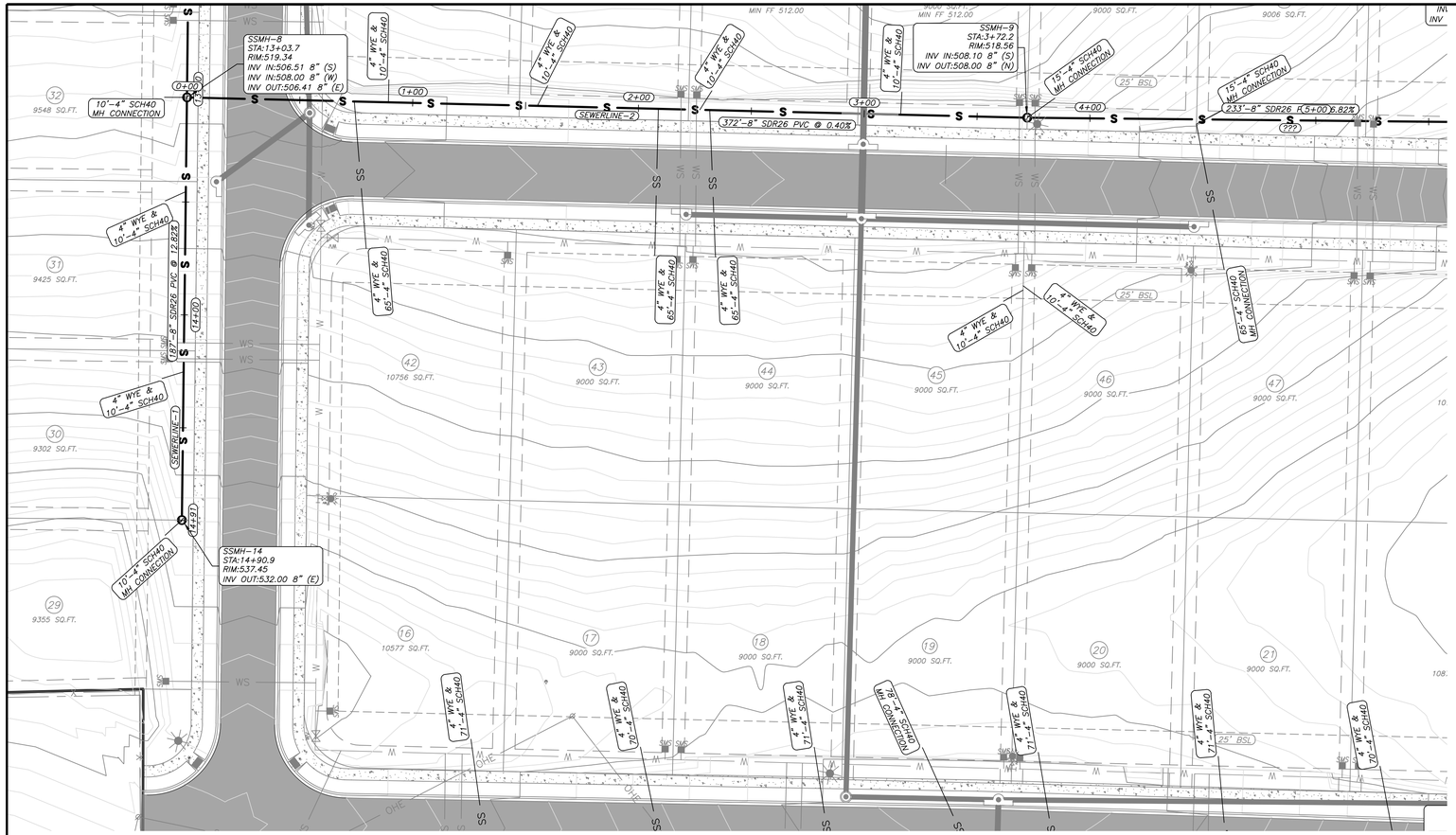
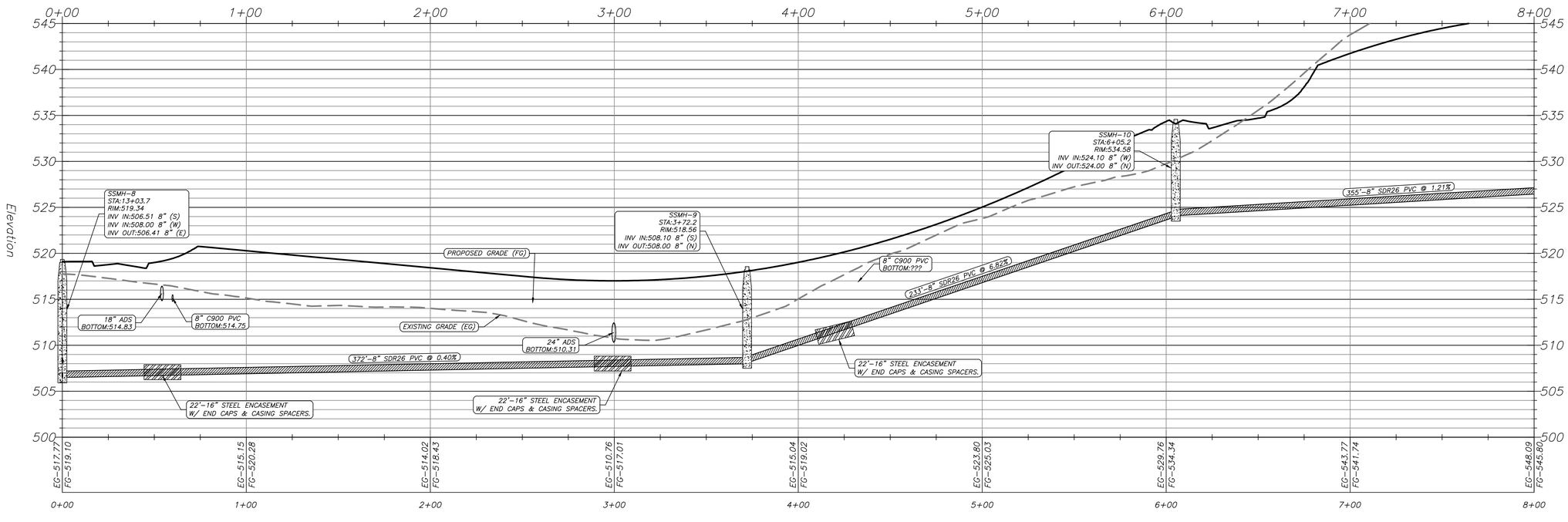


SEWERLINE-2 PROFILE



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GRAPHIC SCALE

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1 inch = 30 ft.

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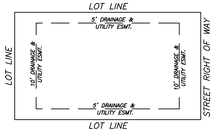
BENTON, AR. 72015
PHONE NO. (501) 315-7225
PROJECT REPRESENTATIVE:
ERIC RICHARDSON, P.E.

SURVEYOR
SOUTHPOINT SURVEYING
P.O. BOX 400
SHERIDAN, AR
501-837-2342

DEVELOPERS
EMINENT CONSTRUCTION
1100 HILLFARM ROAD
BRYANT, AR 72022



TYPICAL LOT EASEMENTS

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Planning • Engineering • Development Consulting
325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225

CERTIFICATE OF AUTHORIZATION — Richardson Engineering, PLLC No. 2519 — STATE OF ARKANSAS

SEWER 2 P/P 0+00-8+00
ZYAIR ESTATES SUBDIVISION
HILLTOP ROAD
BRYANT, ARKANSAS

Prepared For: EMINENT CONSTRUCTIONS

No.	Revisions	Date
1	AS PER CITY COMMENTS	4/15/2026
2	CITY COMMENTS 4/15/26	4/22/2026

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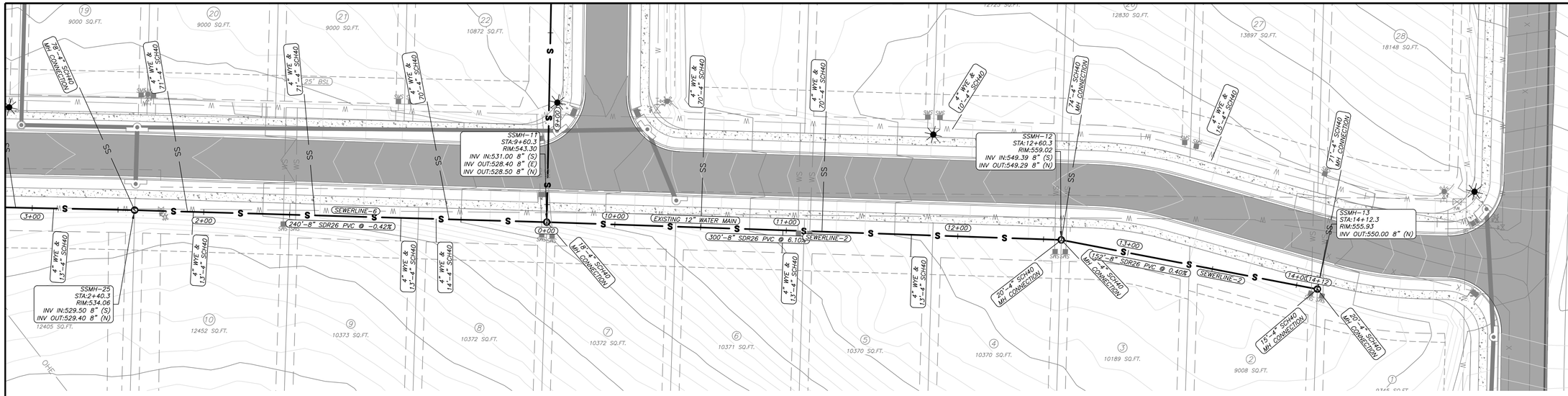

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Planning • Engineering • Development Consulting
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CERTIFICATE OF AUTHORIZATION
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No. 2519
ARKANSAS

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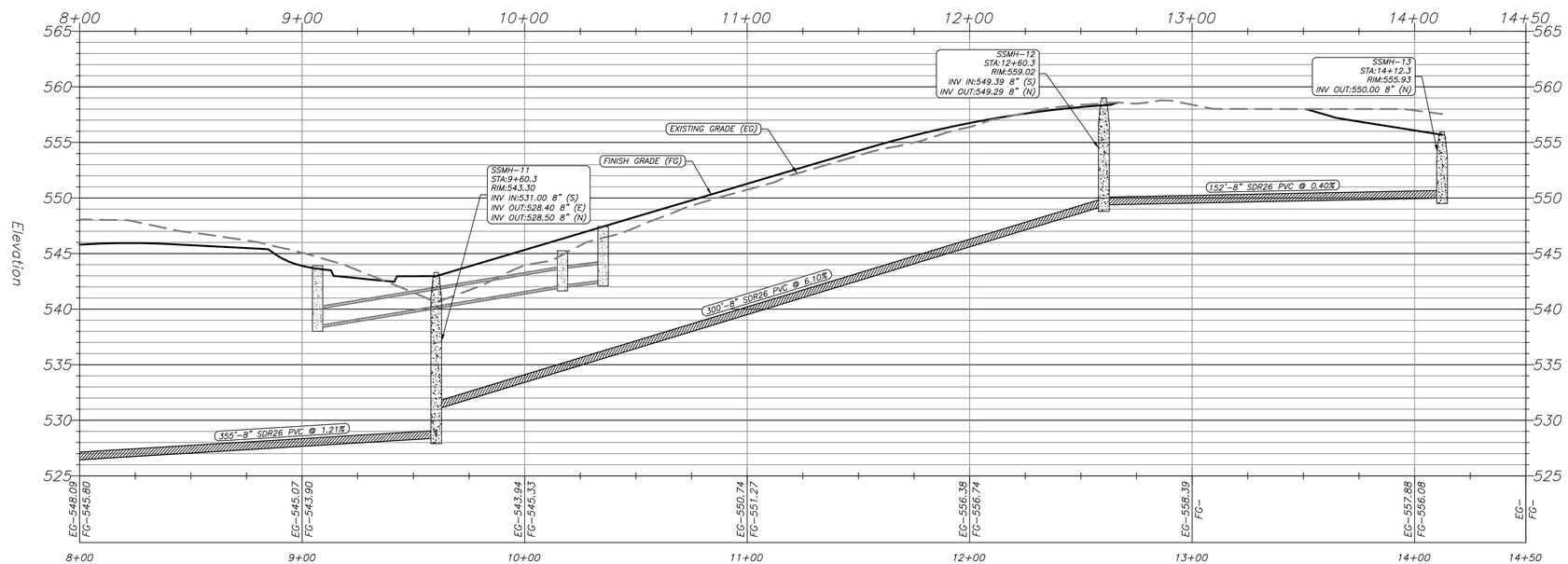
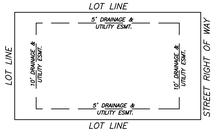
SEWERLINE-2 PROFILE





TYPICAL LOT EASEMENTS

SEWER 2 P/P 8+00-END
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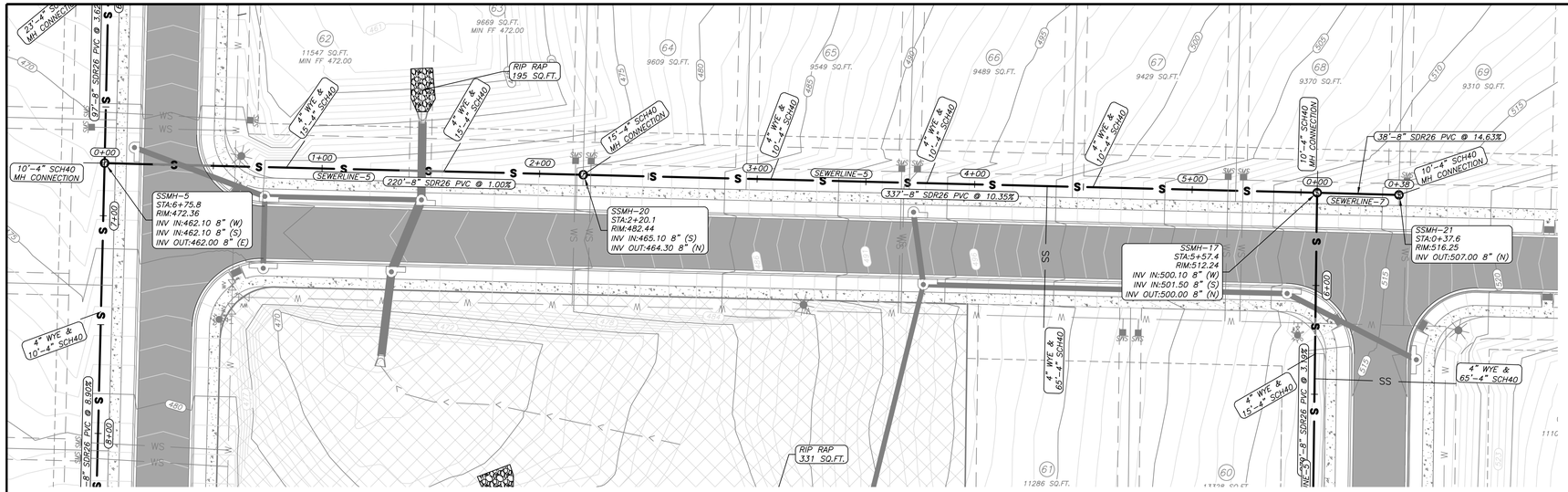

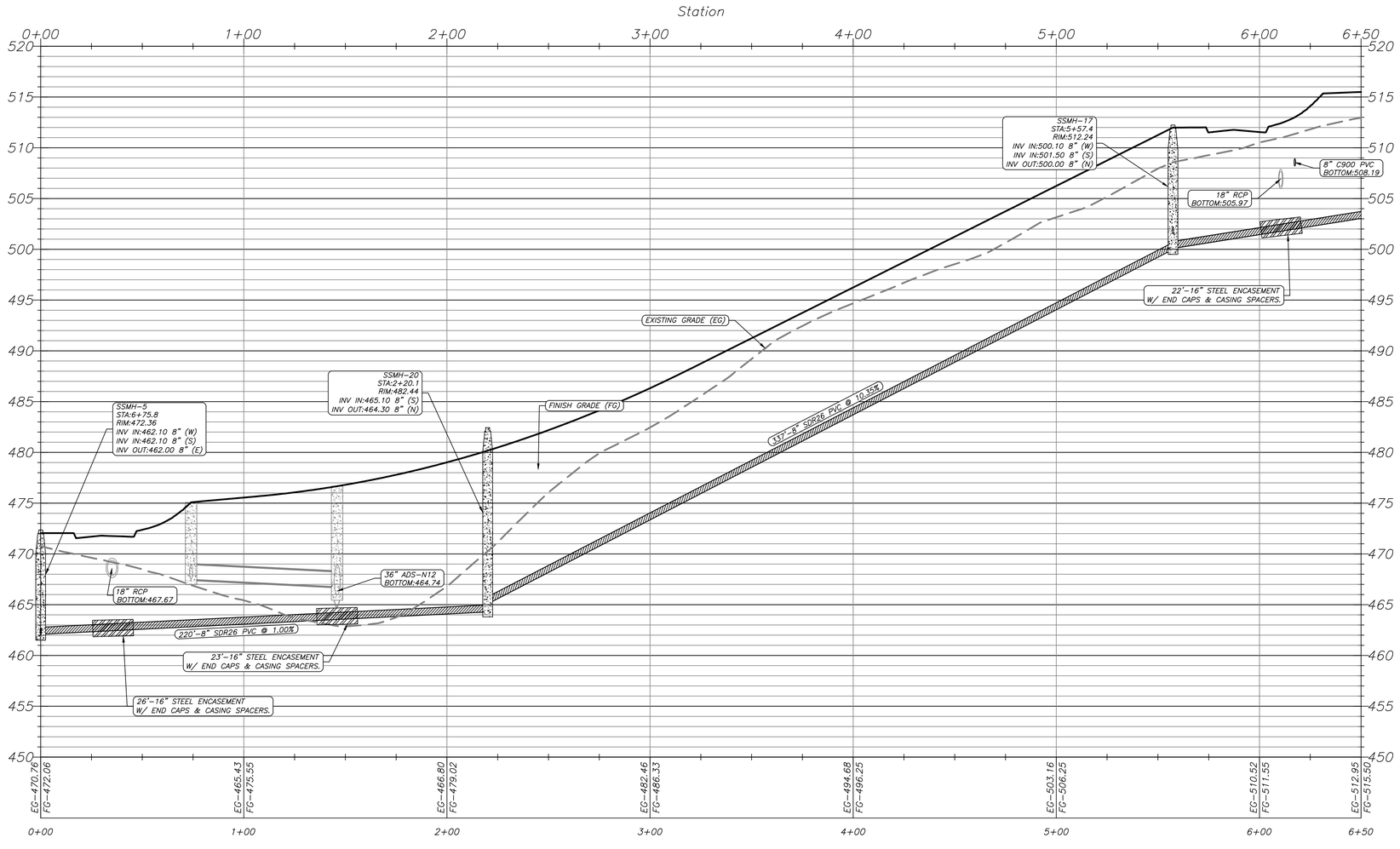

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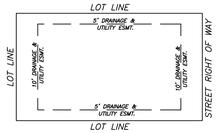

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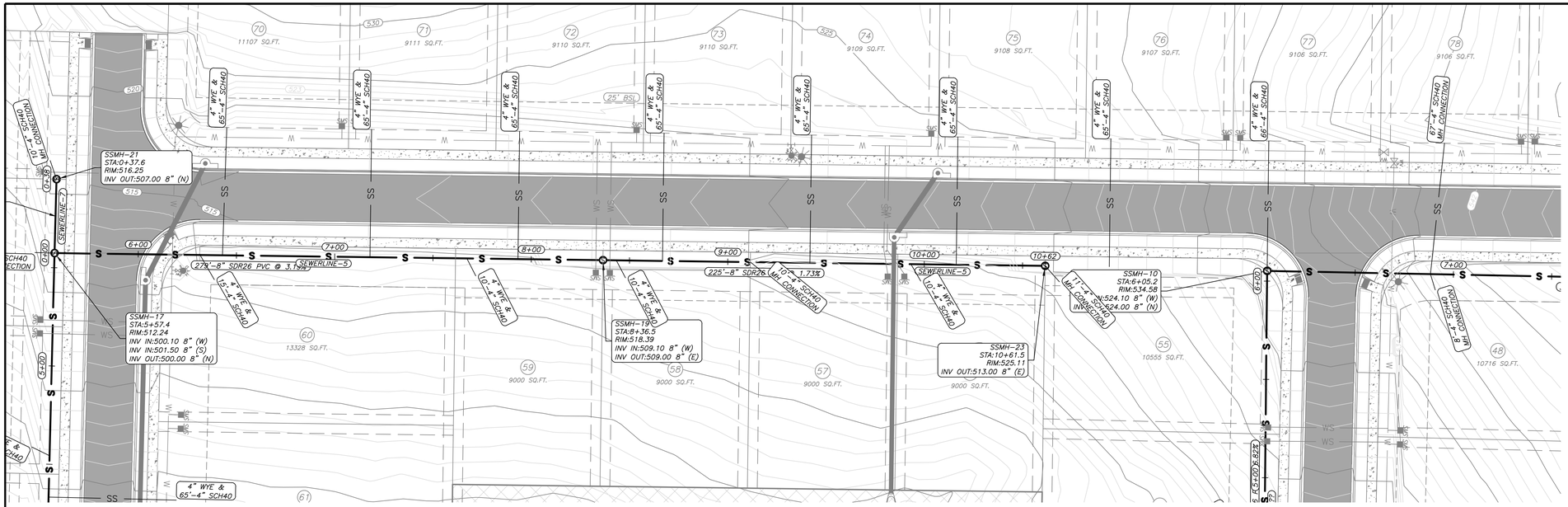
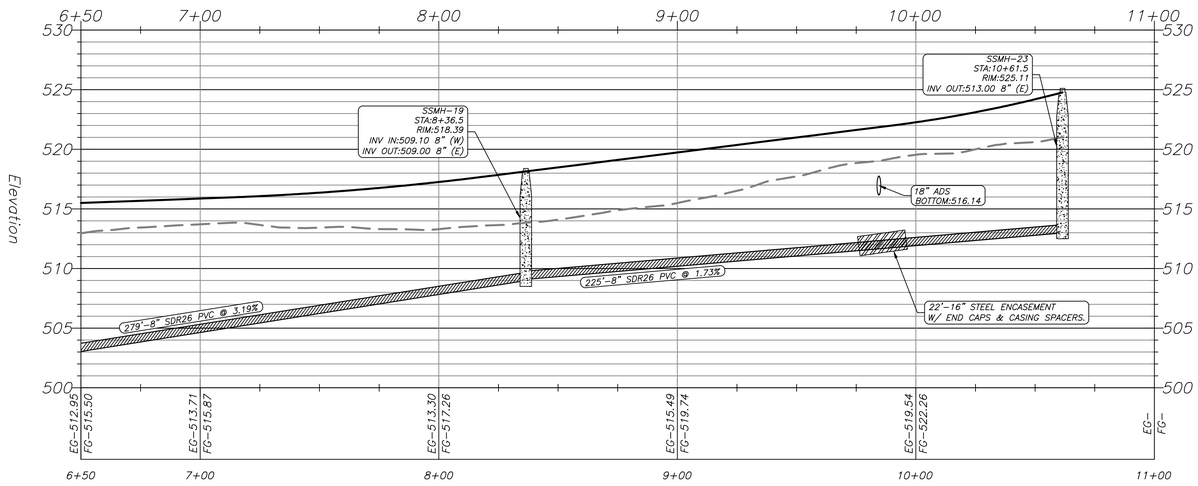


SEWERLINE-5 PROFILE



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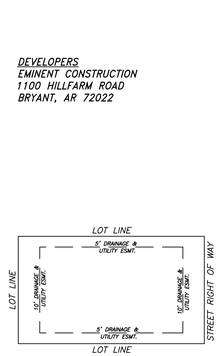

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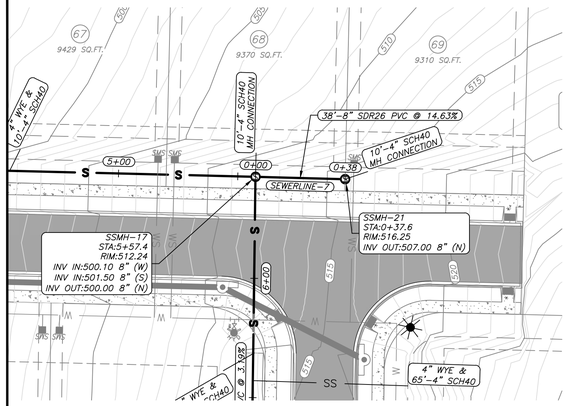
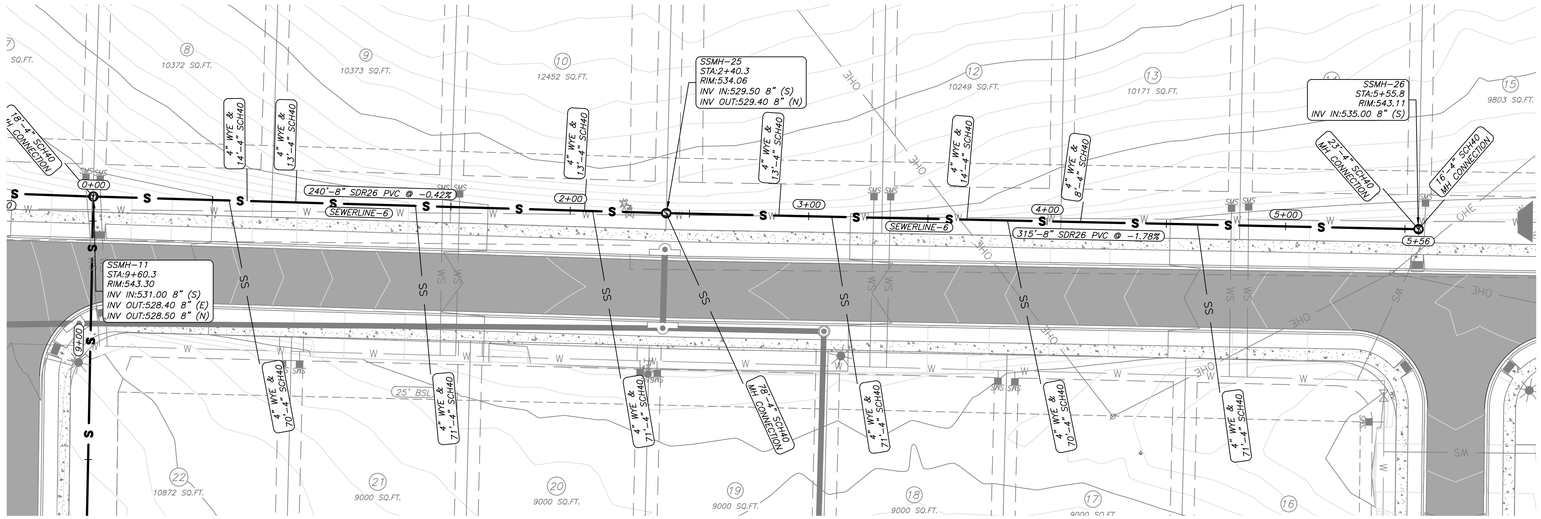
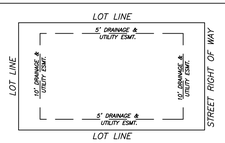




SEWERLINE-7 PROFILE

SEWERLINE-6 PROFILE



TYPICAL LOT EASEMENTS

LEGEND

- G — GAS LINE
- T — TELEPHONE LINE
- S — SANITARY SEWER
- X — FENCE
- W — WATER LINE
- STORM DRAIN
- DITCH OR SWALE
- OHE — POWER LINE (OVERHEAD)
- SWS — PROPOSED WATER METER BOX
- EXISTING MANHOLE
- PROPOSED MANHOLE
- LIGHT POLE
- GV — GATE VALVE
- BLOW-OFF
- FIRE HYDRANT
- CURB INLET
- FES
- POWER POLE

GENERAL NOTES:

1.) ALL CONSTRUCTION AND MATERIALS TO MEET OR EXCEED CITY OF BRYANT AND BRYANT WATER STANDARD SPECIFICATIONS.
2.) ALL SEWER GRAVITY MAINS SHALL BE SDR-26 PVC, UNLESS OTHERWISE SHOWN ON PLAN.
3.) ALL WATER MAINS SHALL BE C900 PVC UNLESS OTHERWISE SHOWN ON PLAN.
4.) ALL STORM DRAINAGE SHALL BE AS SHOWN ON THE PLAN.
5.) ATTENTION IS CALLED TO WATER, SEWER, AND STREET LAYOUT FOR ADDITIONAL INFORMATION.
6.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
7.) ALL UTILITIES TO BE LOCATED PRIOR TO CONSTRUCTION (ONE CALL, CITY, ETC.)
8.) MINIMUM HORIZONTAL SEPARATION BETWEEN WATERLINES AND SEWERLINES SHALL BE 10'.
9.) MINIMUM VERTICAL SEPARATION BETWEEN WATERLINES AND SEWERLINES SHALL BE 18" (WATER ON TOP). IF 18" OF VERTICAL SEPARATION CAN NOT BE MAINTAINED EITHER THE WATER OR SEWER LINE MUST BE ENCASED 10' EITHER SIDE OF THE CROSSING AS PER ARKANSAS RULES PERTAINING TO PUBLIC WATER SYSTEMS SECTION XIV PART A. IF THE WATER LINE MUST PASS BENEATH THE SEWER LINE, IT MUST BE ENCASED AND MAINTAIN 18" OF VERTICAL SEPARATION.
10.) CONTRACTOR TO ADHERE TO CURRENT OSHA EXCAVATION & TRENCH SAFETY REGULATIONS.
11.) BACKFILL MATERIAL FOR STREET CROSSINGS SHALL BE ACCORDING TO CITY OF BRYANT STREET DEPT SPECS AND COMPACTED TO 98% M.P. UNLESS OTHERWISE APPROVED IN WRITING BY THE ENGINEER AND UTILITY OWNER.
12.) THIS SHEET IS PART OF A COMPLETE DESIGN SET. CONTRACTOR SHALL REFER TO ADDITIONAL DRAWINGS INCLUDED HEREIN, FOR MORE DETAIL REGARDING UTILITIES, DRAINAGE, AND OTHER INFRASTRUCTURE.
13.) THE APPROXIMATE LOCATION OF KNOWN SURFACE AND SUBSURFACE STRUCTURES, PIPES, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE DESIGN DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF THE AFOREMENTIONED ITEMS, SHOWN AND NOT SHOWN.
14.) ALL UTILITIES SHALL BE CONSTRUCTED AT A MINIMUM OF 36" BELOW TOP BACK OF CURB GRADE.
15.) CONTRACTOR TO COORDINATE MAINTENANCE OF TRAFFIC ON PUBLIC RIGHT OF WAY WITH PROPER AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION.

SEWER NOTES:

1.) ALL CONSTRUCTION AND MATERIALS TO MEET OR EXCEED CITY OF BRYANT STANDARD SPECIFICATIONS.
2.) ALL SEWER GRAVITY MAINS SHALL BE SDR-26 PVC, UNLESS OTHERWISE SHOWN.
3.) ALL SERVICE LINES SHALL BE 4" SDR-21 PVC OR SCH40 PVC.
4.) CONTRACTOR TO VERIFY METHOD OF MAIN CONNECTION WITH THE CITY OF BRYANT PRIOR TO CONSTRUCTION.
5.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
6.) ALL UTILITIES TO BE LOCATED PRIOR TO CONSTRUCTION (ONE CALL, CITY, ETC.)
7.) MINIMUM HORIZONTAL SEPARATION BETWEEN WATERLINES AND SEWERLINES SHALL BE 10'.
8.) MINIMUM VERTICAL SEPARATION BETWEEN WATERLINES AND SEWERLINES SHALL BE 18" (WATER ON TOP). IF 18" OF VERTICAL SEPARATION CAN NOT BE MAINTAINED EITHER THE WATER OR SEWER LINE MUST BE ENCASED 10' EITHER SIDE OF THE CROSSING AS PER ARKANSAS RULES PERTAINING TO PUBLIC WATER SYSTEMS SECTION XIV PART A. IF THE WATER LINE MUST PASS BENEATH THE SEWER LINE, IT MUST BE ENCASED AND MAINTAIN 18" OF VERTICAL SEPARATION.
9.) CONTRACTOR TO ADHERE TO CURRENT OSHA EXCAVATION & TRENCH SAFETY REGULATIONS.
10.) BACKFILL FOR ALL DISTURBED (EXCAVATED) AREAS TO BE COMPACTED TO 95% MP.
11.) DUCTILE IRON (PER CITY OF BRYANT SPECS.) TO BE USED IF COVER OVER SEWERLINE IS LESS THAN 36".
12.) ALL STREET CROSSINGS TO MEET CITY OF BRYANT STREET DEPARTMENT SPECIFICATIONS.
13.) TRENCH SHALL BE EXCAVATED BELOW GRADE REQUIRED TO PROVIDE A MINIMUM OF 36" PIPE COVER.
14.) NO MANHOLES SHALL BE CONSTRUCTED IN SIDEWALKS. SEWER STUB-OUTS SHALL EXTEND AT LEAST 5' OUTSIDE OF THE UTILITY EASEMENT. MANHOLE RIMS TO BE AT LEAST 2" ABOVE FINISH GRADE.
15.) 12ga GREEN COATED COPPER TRACING WIRE TO BE INSTALLED WITH ALL FORCE MAINS.

ENGINEER
RICHARDSON ENGINEERING, PLLC
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BENTON, AR. 72015
PHONE NO. (501) 315-7225
PROJECT REPRESENTATIVE:
ERIC RICHARDSON, P.E.

SURVEYOR
SOUTHPOINT SURVEYING
P.O. BOX 400
SHERIDAN, AR
501-837-2342

DEVELOPERS
EMINENT CONSTRUCTION
1100 HILLFARM ROAD
BRYANT, AR 72022

GRAPHIC SCALE
30 0 30 60 90
(IN FEET)
1 inch = 30 ft.

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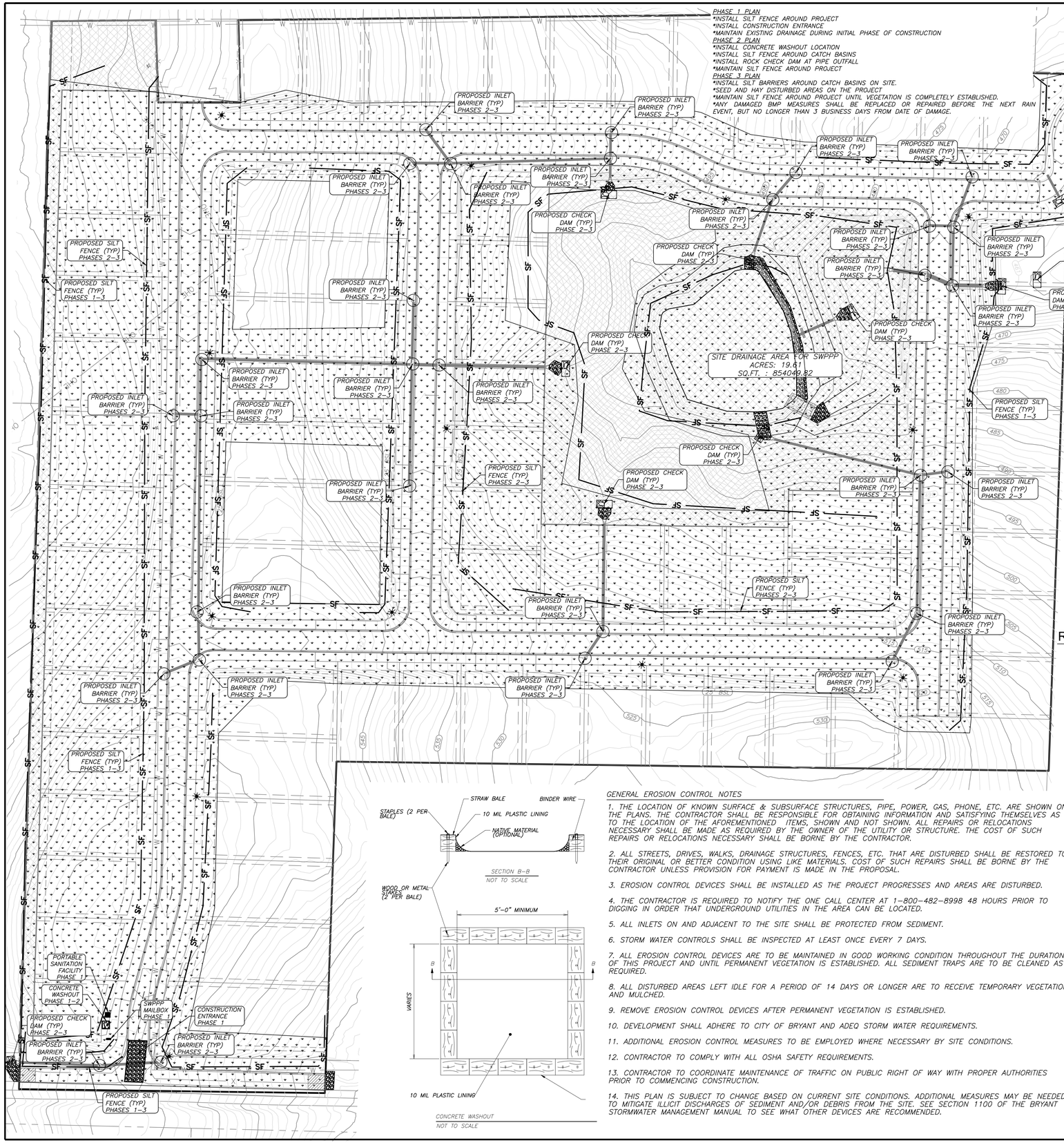
CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
ARKANSAS

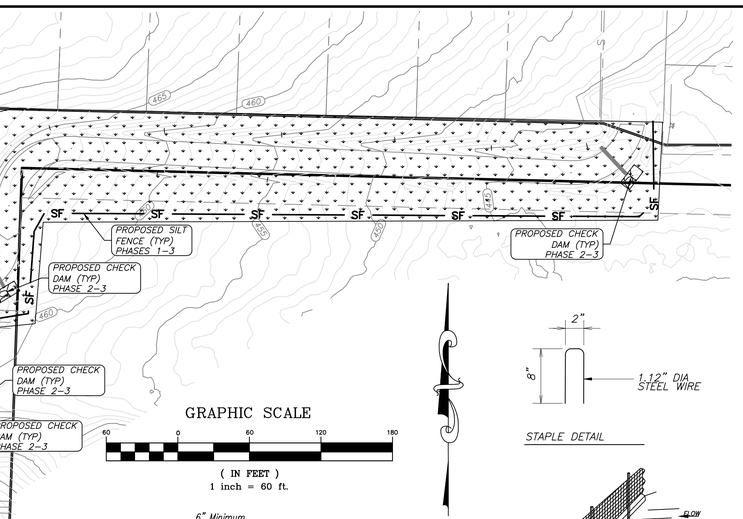
SEWER 6 & 7 P/P
ZYAIR ESTATES
SUBDIVISION
HILLTOP ROAD
BRYANT, ARKANSAS

Prepared For: EMINENT CONSTRUCTIONS

No.	Revisions	Date
1	AS PER CITY COMMENTS	4/17/2026
2	CITY COMMENTS 4/15/26	4/22/2026

PROJECT NO.: 024-034
Date: 3/3/2026
REV:4/22/2026
Scale: 1" = 30'
Sheet: 18 of 25





NOTES:
1. FOR USE IN SMALL CHANNELS WITH DRAINAGE AREAS OF 50 ACRES OR LESS.
2. MUST BE USED IN CONJUNCTION WITH OTHER APPROPRIATE SEDIMENT CONTROL MEASURES.
3. USE BELOW CULVERT INSTALLATIONS, DAM CONSTRUCTION, OR ANY PROJECT THAT MAY INVOLVE GRADING ACTIVITY DIRECTLY IN A STREAM.
4. NOT INTENDED TO SUBSTANTIALLY IMPOUND WATER.
5. USE AT THE UPSTREAM END OF PONDS OR LAKES.
6. EDGES SHOULD NOT BE HIGHER THAN THE CHANNEL BANKS.
7. CENTER SHOULD BE AT LEAST 6 INCHES LOWER THAN THE OUTER EDGES OF THE DAM AT THE CHANNEL BANKS.
8. HEIGHT SHOULD NOT EXCEED ELEVATION OF UPSTREAM PROPERTY LINE.
9. SIDE SLOPES SHOULD BE 2:1 OR FLATTER.
10. TOP WIDTH SHOULD BE GREATER THAN 6 FEET.
11. EXTEND COMPLETELY ACROSS THE CHANNEL AND SECURELY TIE INTO BOTH CHANNEL BANKS
12. REQUIRES PERIODIC INSPECTION AND MAINTENANCE.
13. SEDIMENT REMOVED WHEN IT REACHES ONE-HALF OF THE ORIGINAL DAM HEIGHT

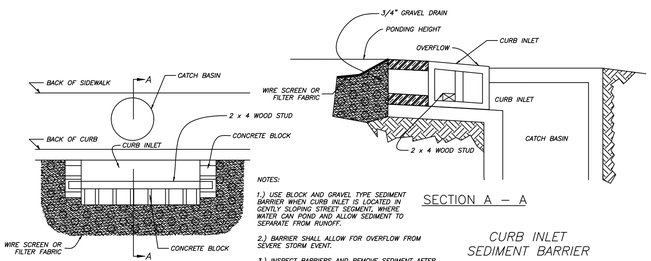
ROCK DAM

NOT TO SCALE

NOTE:
1.) INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2.) REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3.) SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE

* **ALL SILT FENCE SHALL BE WIRE MESH REINFORCED. AS PER CITY OF BRYANT SPECS.**



PLAN VIEW

NOTES:
1.) USE BLOCK AND GRAVEL TYPE SEDIMENT BARRIER WHEN CURB INLET IS LOCATED IN GENTLY SLOPING STREET SEGMENT, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2.) BARRIER SHALL ALLOW FOR OVERFLOW FROM SEVERE STORM EVENT.
3.) INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

SECTION A – A

CURB INLET SEDIMENT BARRIER

GENERAL EROSION CONTROL NOTES

1. THE LOCATION OF KNOWN SURFACE & SUBSURFACE STRUCTURES, PIPE, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INFORMATION AND SATISFYING THEMSELVES AS TO THE LOCATION OF THE AFOREMENTIONED ITEMS, SHOWN AND NOT SHOWN. ALL REPAIRS OR RELOCATIONS NECESSARY SHALL BE MADE AS REQUIRED BY THE OWNER OF THE UTILITY OR STRUCTURE. THE COST OF SUCH REPAIRS OR RELOCATIONS NECESSARY SHALL BE BORNE BY THE CONTRACTOR.
2. ALL STREETS, DRIVES, WALKS, DRAINAGE STRUCTURES, FENCES, ETC. THAT ARE DISTURBED SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION USING LIKE MATERIALS. COST OF SUCH REPAIRS SHALL BE BORNE BY THE CONTRACTOR UNLESS PROVISION FOR PAYMENT IS MADE IN THE PROPOSAL.
3. EROSION CONTROL DEVICES SHALL BE INSTALLED AS THE PROJECT PROGRESSES AND AREAS ARE DISTURBED.
4. THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING IN ORDER THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
5. ALL INLETS ON AND ADJACENT TO THE SITE SHALL BE PROTECTED FROM SEDIMENT.
6. STORM WATER CONTROLS SHALL BE INSPECTED AT LEAST ONCE EVERY 7 DAYS.
7. ALL EROSION CONTROL DEVICES ARE TO BE MAINTAINED IN GOOD WORKING CONDITION THROUGHOUT THE DURATION OF THIS PROJECT AND UNTIL PERMANENT VEGETATION IS ESTABLISHED. ALL SEDIMENT TRAPS ARE TO BE CLEANED AS REQUIRED.
8. ALL DISTURBED AREAS LEFT IDLE FOR A PERIOD OF 14 DAYS OR LONGER ARE TO RECEIVE TEMPORARY VEGETATION AND MULCHED.
9. REMOVE EROSION CONTROL DEVICES AFTER PERMANENT VEGETATION IS ESTABLISHED.
10. DEVELOPMENT SHALL ADHERE TO CITY OF BRYANT AND ADEQ STORM WATER REQUIREMENTS.
11. ADDITIONAL EROSION CONTROL MEASURES TO BE EMPLOYED WHERE NECESSARY BY SITE CONDITIONS.
12. CONTRACTOR TO COMPLY WITH ALL OSHA SAFETY REQUIREMENTS.
13. CONTRACTOR TO COORDINATE MAINTENANCE OF TRAFFIC ON PUBLIC RIGHT OF WAY WITH PROPER AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION.
14. THIS PLAN IS SUBJECT TO CHANGE BASED ON CURRENT SITE CONDITIONS. ADDITIONAL MEASURES MAY BE NEEDED TO MITIGATE ILLICIT DISCHARGES OF SEDIMENT AND/OR DEBRIS FROM THE SITE. SEE SECTION 1100 OF THE BRYANT STORMWATER MANAGEMENT MANUAL TO SEE WHAT OTHER DEVICES ARE RECOMMENDED.

SWPPP NOTES:

1.) DEVELOPMENT SHALL ADHERE TO CITY OF BRYANT AND ADEQ STORMWATER REQUIREMENTS.
2.) SEDIMENT BARRIERS SHALL BE CONSTRUCTED AT EACH INLET UNTIL GRADING IS COMPLETE AND TOP SOIL IS STABILIZED.
3.) A SILT FENCE AND STRAW BALE DIKE SHALL BE PLACED AT POTENTIAL LOCATIONS OF HEAVY EROSION.
4.) TEMPORARY STRAW BALE DIKES ARE TO BE CONSTRUCTED NOT TO POND WATER ON ADJACENT PROPERTY.
5.) ROCK DIKE CHECK DAMS TO BE CONSTRUCTED TO MEET ADEQ REQUIREMENTS WHEN USED IN LIEU OF STRAW BALE DIKES.
6.) ALL TEMPORARY EROSION CONTROLS SHALL BE MAINTAINED UNTIL ALL CONSTRUCTION IS COMPLETE AND PERMANENT GROUND COVER HAS BEEN ESTABLISHED.
7.) ONE OF THE FOLLOWING GROUND COVER METHODS SHALL BE USED AT AREAS OF CLEARING OTHER THAN FUTURE PAVEMENT SURFACES.

STRAW OR HAY-LOOSE	2.0 TONS/ACRE
STRAW OR HAY-TIED, ANCHORED, OR TACKED	1.5 TONS/ACRE

8.) SOIL EXPOSED FOR MORE THAN 14 DAYS WITH NO CONSTRUCTION ACTIVITY SHALL BE SEEDED OR REEMITTED.
9.) CONSTRUCTION ENTRANCES/EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF MUD ON TO PUBLIC RIGHT-OF-WAY.
10.) ADDITIONAL EROSION CONTROL MEASURES TO BE EMPLOYED WHERE NECESSARY BY SITE CONDITIONS.
11.) CONTRACTOR SHALL USE "BEST MANAGEMENT PRACTICES" (BMP'S) WHEN IMPLEMENTING AND MAINTAINING SEDIMENT AND RUN-OFF CONTROLS.

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Richardson Engineering, PLLC
No. 2519
ARKANSAS

EROSION CONTROL PLAN
7 YEAR ESTATES SUBDIVISION
HILLTOP ROAD
BRYANT, ARKANSAS

Prepared For:
EMINENT CONSTRUCTIONS

No.	Revisions	Date
1	AS PER CITY COMMENTS 4/15/26	4/17/2026
2	CITY COMMENTS 4/15/26	4/22/2026

PROJECT NO.: 024-034
Date: 3/3/2026 4/22/2026
Scale: 1" = 60'
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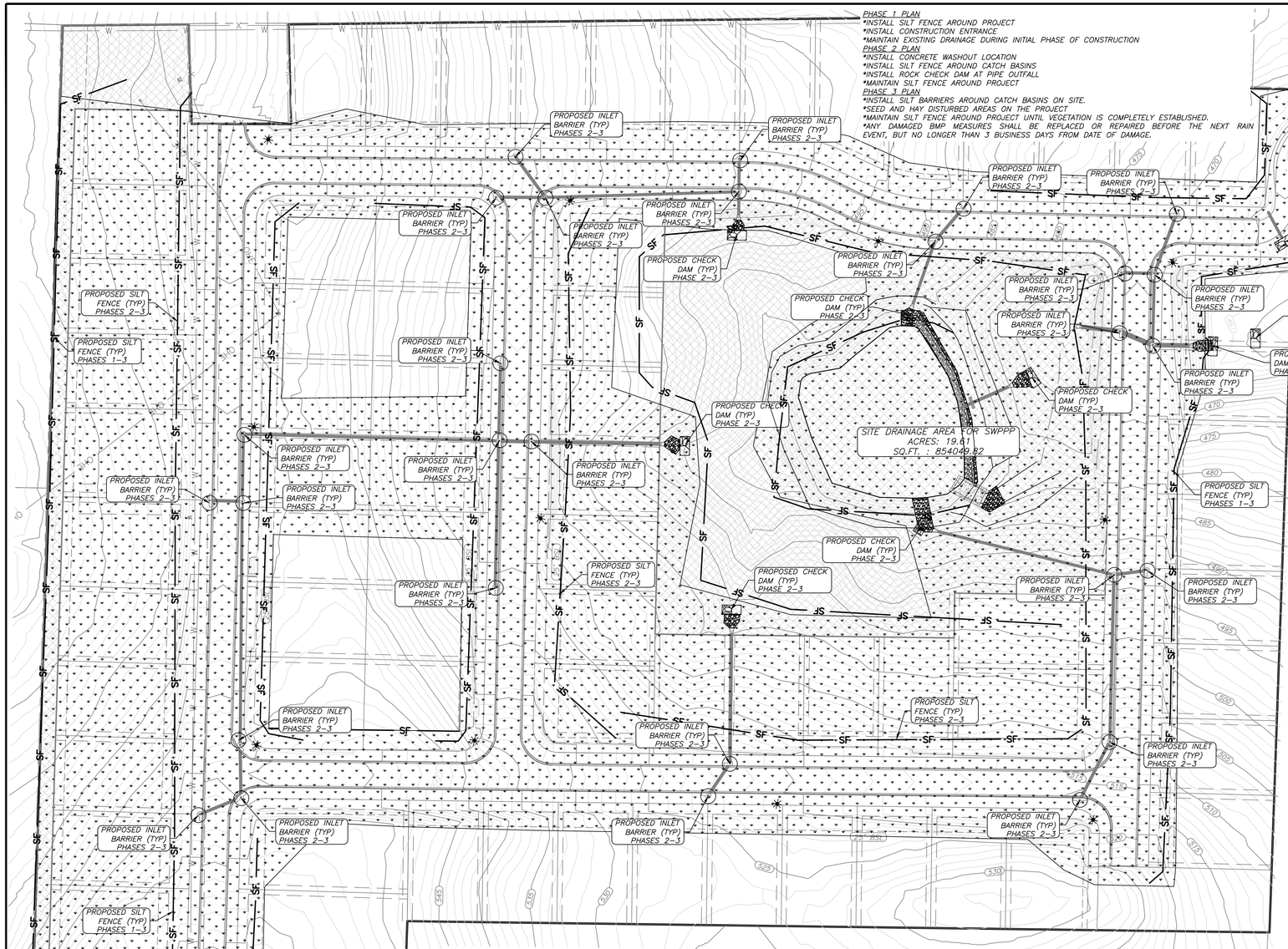
PHASE 1 PLAN
*INSTALL SILT FENCE AROUND PROJECT
*INSTALL CONSTRUCTION ENTRANCE
*MAINTAIN EXISTING DRAINAGE DURING INITIAL PHASE OF CONSTRUCTION
PHASE 2 PLAN
*INSTALL CONCRETE WASHOUT LOCATION
*INSTALL SILT FENCE AROUND CATCH BASINS
*INSTALL ROCK CHECK DAM AT PIPE OUTFALL
*MAINTAIN SILT FENCE AROUND PROJECT
PHASE 3 PLAN
*INSTALL SILT BARRIERS AROUND CATCH BASINS ON SITE.
*SEED AND HAY DISTURBED AREAS ON THE PROJECT
*MAINTAIN SILT FENCE AROUND PROJECT UNTIL VEGETATION IS COMPLETELY ESTABLISHED.
*ANY DAMAGED BMP MEASURES SHALL BE REPLACED OR REPAIRED BEFORE THE NEXT RAIN EVENT, BUT NO LONGER THAN 3 BUSINESS DAYS FROM DATE OF DAMAGE.



GRAPHIC SCALE

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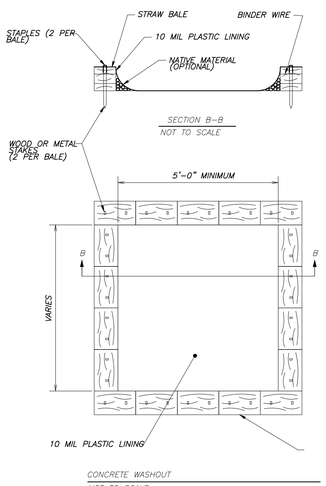
(IN FEET)
1 inch = 60 ft.



EROSION CONTROL MAINTENANCE & INSPECTION NOTES

1. THE LOCATION OF KNOWN SURFACE & SUBSURFACE STRUCTURES, PIPE, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INFORMATION AND SATISFYING THEMSELVES AS TO THE LOCATION OF THE AFOREMENTIONED ITEMS, SHOWN AND NOT SHOWN. ALL REPAIRS OR RELOCATIONS NECESSARY SHALL BE MADE AS REQUIRED BY THE OWNER OF THE UTILITY OR STRUCTURE. THE COST OF SUCH REPAIRS OR RELOCATIONS NECESSARY SHALL BE BORNE BY THE CONTRACTOR.

2. ALL STREETS, DRIVES, WALKS, DRAINAGE STRUCTURES, FENCES, ETC. THAT ARE DISTURBED SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION USING LIKE MATERIALS. COST OF SUCH REPAIRS SHALL BE BORNE BY THE CONTRACTOR UNLESS PROVISION FOR PAYMENT IS MADE IN THE PROPOSAL.

3. EROSION CONTROL DEVICES SHALL BE INSTALLED AS THE PROJECT PROGRESSES AND AREAS ARE DISTURBED.

4. THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING IN ORDER THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.

5. ALL INLETS ON AND ADJACENT TO THE SITE SHALL BE PROTECTED FROM SEDIMENT.

6. STORM WATER CONTROLS SHALL BE INSPECTED AT LEAST ONCE EVERY 7 DAYS.

7. ALL EROSION CONTROL DEVICES ARE TO BE MAINTAINED IN GOOD WORKING CONDITION THROUGHOUT THE DURATION OF THIS PROJECT AND UNTIL PERMANENT VEGETATION IS ESTABLISHED. ALL SEDIMENT TRAPS ARE TO BE CLEANED AS REQUIRED.

8. ALL DISTURBED AREAS LEFT IDLE FOR A PERIOD OF 14 DAYS OR LONGER ARE TO RECEIVE TEMPORARY VEGETATION AND MULCHED.

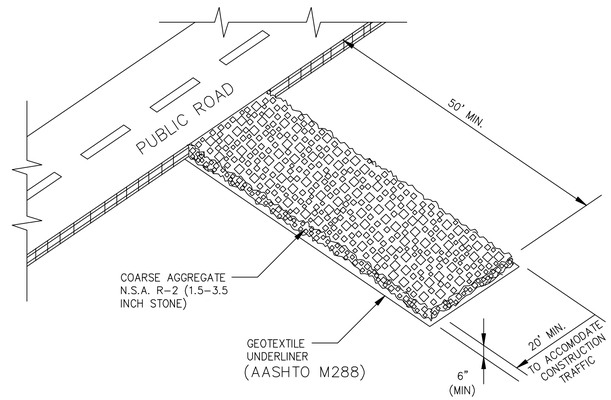
9. REMOVE EROSION CONTROL DEVICES AFTER PERMANENT VEGETATION IS ESTABLISHED.

10. DEVELOPMENT SHALL ADHERE TO CITY OF BRYANT AND ADEQ STORM WATER REQUIREMENTS.

11. ADDITIONAL EROSION CONTROL MEASURES TO BE EMPLOYED WHERE NECESSARY BY SITE CONDITIONS.

12. CONTRACTOR TO COMPLY WITH ALL OSHA SAFETY REQUIREMENTS.

1. LOCATE STONE STABILIZED PAD AT ANY POINT WHERE VEHICULAR TRAFFIC WILL BE LEAVING THE CONSTRUCTION SITE ONTO A PUBLIC RIGHT-OF-WAY, STREET, ALLEY, SIDEWALK, OR PARKING AREA OR ANY OTHER AREA WHERE THERE IS A TRANSITION FROM BARE SOIL TO A PAVED AREA.
2. WIDTH – 20'-0 MINIMUM BUT NOT LESS THAN FULL WIDTH OF ALL POINTS OF VEHICULAR EGRESS. LENGTH – 50'-0 MINUMUM
3. MAINTAIN THE EXIT TO PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS– OF–WAY. PROVIDE PERIODIC TOP DRESSING WITH 1.5 – 3.5" STONE, AS CONDITIONS DEMAND. IMMEDIATELY REMOVE ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLE OR SITE ONTO ROADWAY OR INTO STORM DRAINS. CLEAN TIRES AND WHEELS TO REMOVE MUD PRIOR TO ENTRANCE ON TO PUBLIC RIGHTS-OF-WAY.
4. WHEN WASHING IS REQUIRED, DO SO ON AREAS STABILIZED WITH CRUSHED STONE DRAINING INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.



CONSTRUCTION EXIT

NOT TO SCALE

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Prepared For:
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PROJECT NO.: 024-034
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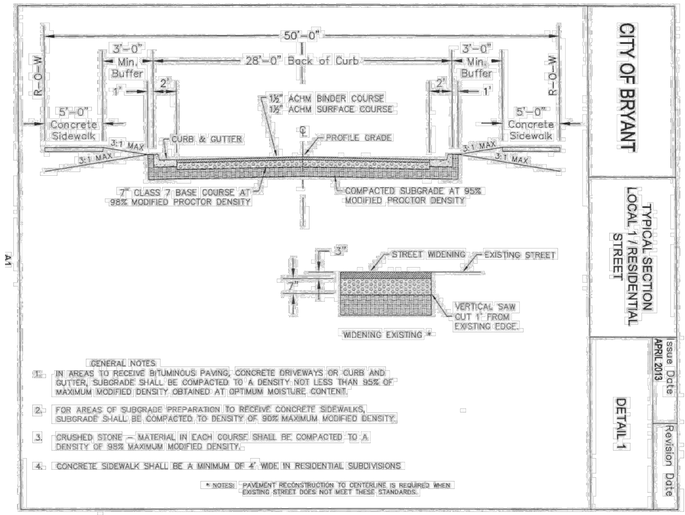


CITY OF BRYANT

TYPICAL SECTION LOCAL / RESIDENTIAL STREET

Issue Date APRIL 2013

Revision Date

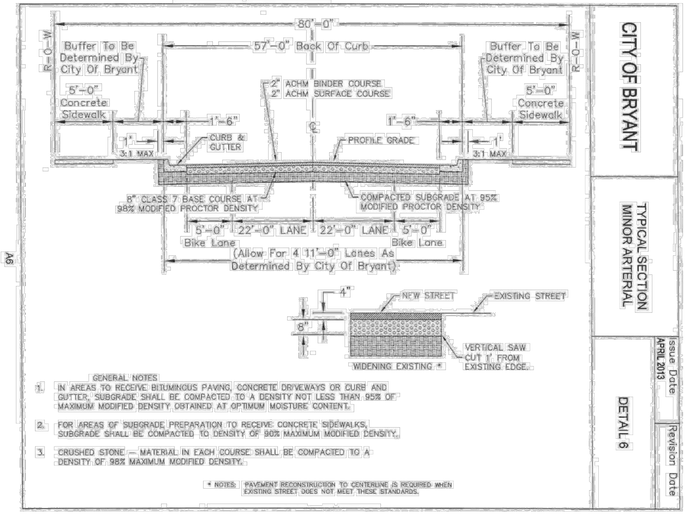
DETAIL 1

A7

GENERAL NOTES

1. IN AREAS TO RECEIVE BITUMINOUS PAVING, CONCRETE DRIVEWAYS OR CURB AND GUTTER, SUBGRADE SHALL BE COMPACTED TO A DENSITY NOT LESS THAN 95% OF MAXIMUM MODIFIED DENSITY OBTAINED AT OPTIMUM MOISTURE CONTENT.
2. FOR AREAS OF SUBGRADE PREPARATION TO RECEIVE CONCRETE SIDEWALKS, SUBGRADE SHALL BE COMPACTED TO DENSITY OF 90% MAXIMUM MODIFIED DENSITY.
3. CRUSHED STONE – MATERIAL IN EACH COURSE SHALL BE COMPACTED TO A DENSITY OF 98% MAXIMUM MODIFIED DENSITY.
4. CONCRETE SIDEWALK SHALL BE A MINIMUM OF 4' WIDE IN RESIDENTIAL SUBDIVISIONS

* NOTES: PAVEMENT RECONSTRUCTION TO CENTERLINE IS REQUIRED WHEN EXISTING STREET DOES NOT MEET THESE STANDARDS.



CITY OF BRYANT

TYPICAL SECTION MINOR ARTERIAL

Issue Date APRIL 2013

Revision Date

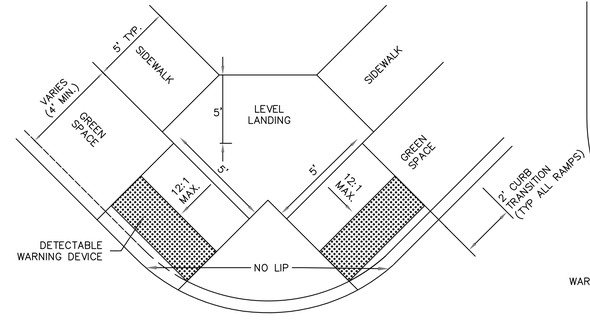
DETAIL 6

A6

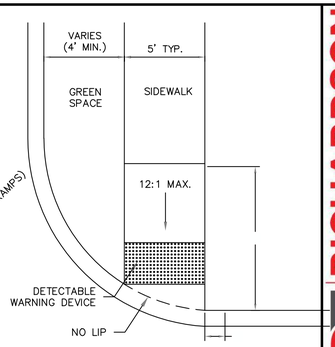
GENERAL NOTES

1. IN AREAS TO RECEIVE BITUMINOUS PAVING, CONCRETE DRIVEWAYS OR CURB AND GUTTER, SUBGRADE SHALL BE COMPACTED TO A DENSITY NOT LESS THAN 95% OF MAXIMUM MODIFIED DENSITY OBTAINED AT OPTIMUM MOISTURE CONTENT.
2. FOR AREAS OF SUBGRADE PREPARATION TO RECEIVE CONCRETE SIDEWALKS, SUBGRADE SHALL BE COMPACTED TO DENSITY OF 90% MAXIMUM MODIFIED DENSITY.
3. CRUSHED STONE – MATERIAL IN EACH COURSE SHALL BE COMPACTED TO A DENSITY OF 98% MAXIMUM MODIFIED DENSITY.

* NOTES: PAVEMENT RECONSTRUCTION TO CENTERLINE IS REQUIRED WHEN EXISTING STREET DOES NOT MEET THESE STANDARDS.



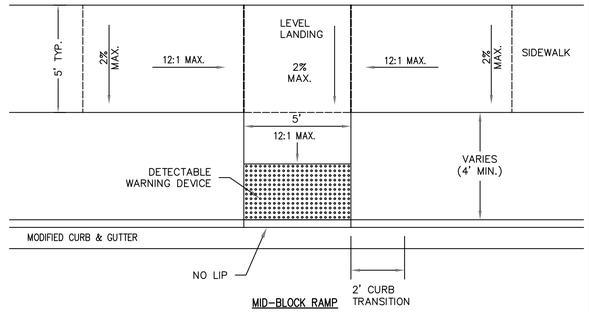
TYPE 1 RAMP



TYPE 2 RAMP

NOTES:

1) THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1.
2) THE NORMAL GUTTER SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
3) THE MINIMUM THICKNESS FOR THE RAMP, WALK, & LANDING SHALL BE 4".
4) DETECTABLE WARNING DEVICES SHALL BE PLACED AT THE LOCATIONS WHERE RAMPS CROSS A CURB.



MID-BLOCK RAMP

HANDICAP RAMP DETAILS

NOT TO SCALE

CITY OF BRYANT

TYPICAL SECTION DRAINAGE AND UTILITY CUT BACKFILL ON STREET UNDER CONSTRUCTION

Issue Date APRIL 2013

Revision Date

DETAIL 8

Note: This Backfill Procedure Shall Be Utilized For All Trenches Excavated In Area To Be Paved.

A8

CITY OF BRYANT

TYPICAL SECTION ASPHALT PAVEMENT REPAIR ON EXISTING STREET

Issue Date APRIL 2013

Revision Date

DETAIL 9

A9

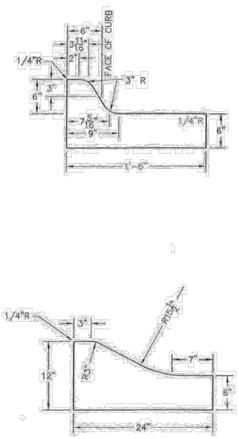
CITY OF BRYANT

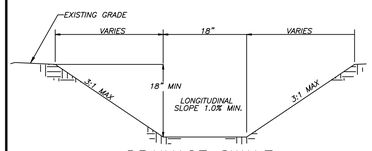
CURB & GUTTER SECTIONS

Issue Date APRIL 2013

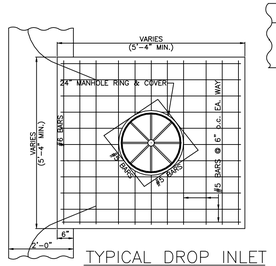
Revision Date

DETAIL 7

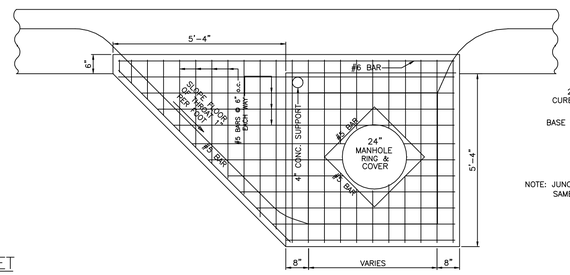




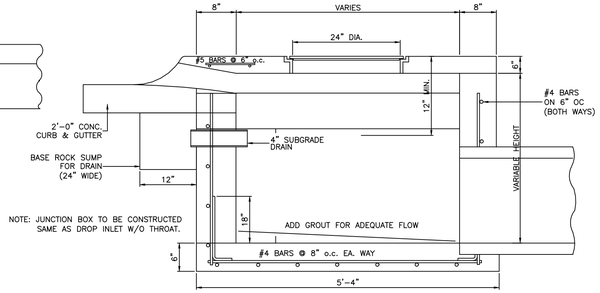
DRAINAGE SWALE
N.T.S.



TYPICAL DROP INLET PLAN

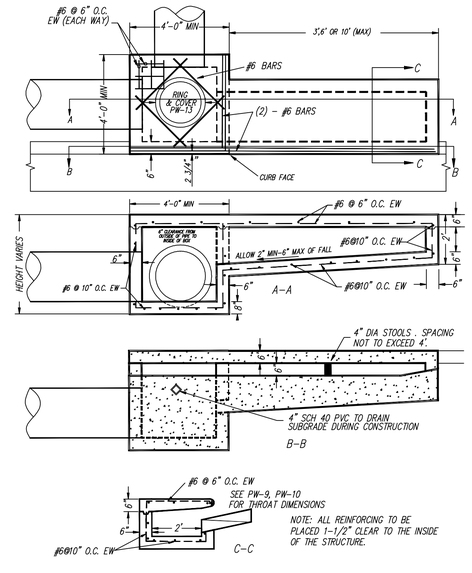


DETAIL – DROP INLET WITH EXTENDED THROAT



NOTE: JUNCTION BOX TO BE CONSTRUCTED SAME AS DROP INLET W/O THROAT.

TYPICAL DROP INLET – POURED IN PLACE ELEVATION



NOTE: ALL REINFORCING TO BE PLACED 1-1/2" CLEAR TO THE INSIDE OF THE STRUCTURE.

CURB INLET W/ THROAT EXTENSIONS

NOT TO SCALE

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Planning • Engineering • Development Consulting
325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225

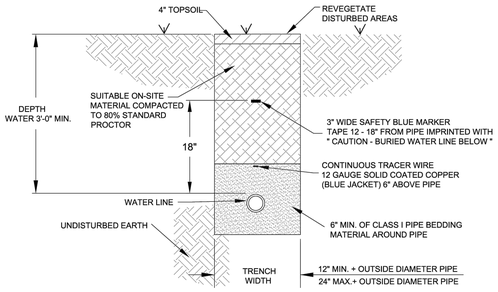
CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
ARKANSAS

MISC. DETAILS
ZYAIR ESTATES
SUBDIVISION
HILLTOP ROAD
BRYANT, ARKANSAS

EMINENT CONSTRUCTIONS
Prepared For:

No.	Revisions	Date
1	AS PER CITY COMMENTS 4/15/26	4/21/2026
2	CITY COMMENTS	4/23/2026

PROJECT NO.: 024-034
Date: 3/3/2026
4/22/2026
Scale: NTS
Sheet: 20 of 25



NOTES:

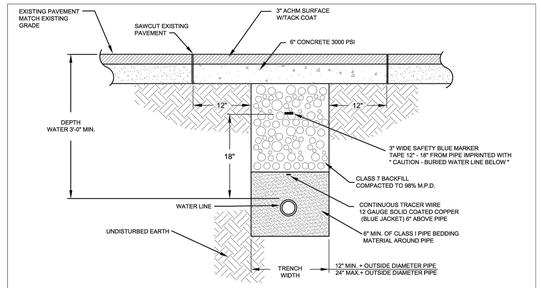
1. ALL VALVES, BENDS, ETC. SHALL BE RESTRAINED.
2. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING WATER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE WATER SYSTEM.
3. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH ALL OSHA REGULATIONS (29 CFR CH.XVII, SUBPART B)
4. TRENCH SHALL BE EXCAVATED BELOW GRADE REQUIRED TO PROVIDE A MINIMUM 36" OF PIPE COVER.
5. MAXIMUM PIPE COVER SHALL BE 60" UNDER NORMAL CONDITIONS. COVER GREATER THAN 60" MAY BE ALLOWED FOR SHORT DISTANCES WHERE REQUIRED BY FIELD CONDITIONS. NO HYDRANT SHALL BE ALLOWED WHERE LINES ARE GREATER THAN 60" DEEP.

WATER MAIN TRENCH

(NON-PAVED AREA)

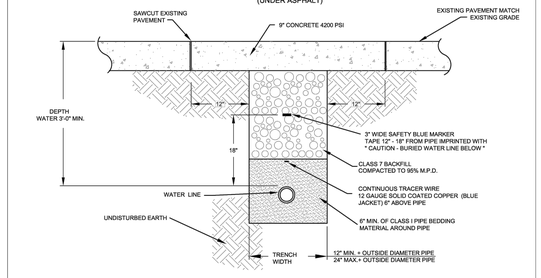
CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE: **WATER DETAILS** | DATE: APRIL 2015 REVISED | SHEET: W1
DESCRIPTION: **WATER MAIN TRENCH (NON-PAVED AREA)**
DRAWN BY: | CHECKED BY: | FILE: W1-Water Trench (Non-Paved Area).dwg



WATER MAIN TRENCH

(UNDER ASPHALT)



WATER MAIN TRENCH

(UNDER CONCRETE)

NOTES:

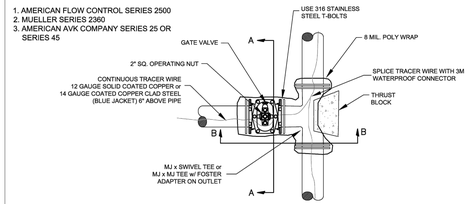
1. ALL VALVES, BENDS, ETC. SHALL BE RESTRAINED.
2. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING WATER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE WATER SYSTEM.
3. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH ALL OSHA REGULATIONS (29 CFR CH.XVII, SUBPART B)
4. TRENCH SHALL BE EXCAVATED BELOW GRADE REQUIRED TO PROVIDE A MINIMUM 36" OF PIPE COVER.
5. MAXIMUM PIPE COVER SHALL BE 60" UNDER NORMAL CONDITIONS. COVER GREATER THAN 60" MAY BE ALLOWED FOR SHORT DISTANCES WHERE REQUIRED BY FIELD CONDITIONS. NO HYDRANT SHALL BE ALLOWED WHERE LINES ARE GREATER THAN 60" DEEP.

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

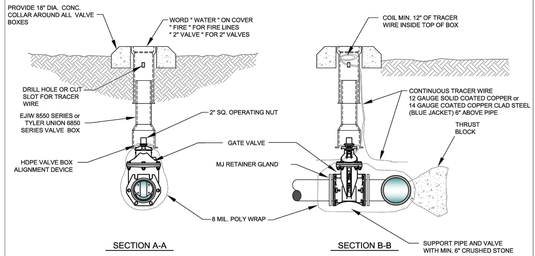
TITLE: **WATER DETAILS** | DATE: APRIL 2015 REVISED | SHEET: W2
DESCRIPTION: **WATER MAIN TRENCH (UNDER PAVEMENT)**
DRAWN BY: | CHECKED BY: | FILE: W2-Water Trench (Under Pavement).dwg

PERMITTED VALVES

1. AMERICAN FLOW CONTROL SERIES 2500
2. MUELLER SERIES 2360
3. AMERICAN AVK COMPANY SERIES 25 OR SERIES 45



PLAN



SECTION A-A SECTION B-B

NOTES:

1. ALL VALVES SHALL BE SECURELY ANCHORED TO THE TEE.
2. ALL HARDWARE SHALL BE 316 STAINLESS STEEL.
3. IF DEPTH OF BURY EXCEEDS 4 FT., A VALVE STEM EXTENSION SHALL BE REQUIRED. THE VALVE STEM EXTENSION NUT SHALL BE WITHIN 24-INCHES TO 12-INCHES OF THE FINISHED SURFACE.

GATE VALVE DETAIL

2" - 12"

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WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

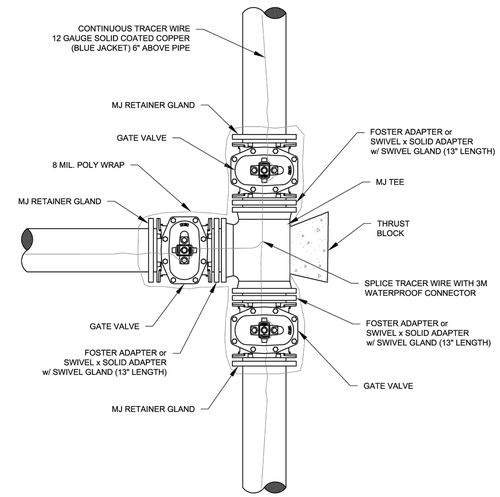
TITLE: **WATER DETAILS** | DATE: APRIL 2015 REVISED | SHEET: W4
DESCRIPTION: **GATE VALVE**
DRAWN BY: | CHECKED BY: | FILE: W4-Gate Valve.dwg

PERMITTED VALVES

1. AMERICAN FLOW CONTROL SERIES 2500
2. MUELLER SERIES 2360
3. AMERICAN AVK COMPANY SERIES 25 OR SERIES 45

NOTES:

1. ALL VALVES SHALL BE SECURELY ANCHORED TO THE TEE.
2. ALL HARDWARE SHALL BE 316 STAINLESS STEEL.
3. IF DEPTH OF BURY EXCEEDS 4 FT., A VALVE STEM EXTENSION SHALL BE REQUIRED. THE VALVE STEM EXTENSION NUT SHALL BE WITHIN 24-INCHES TO 12-INCHES OF THE FINISHED SURFACE.



3-WAY GATE VALVE DETAIL

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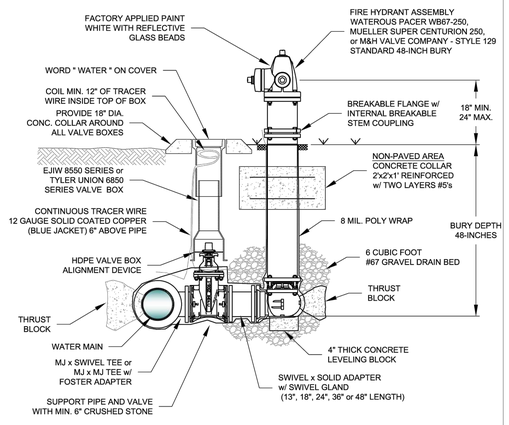
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE: **WATER DETAILS** | DATE: APRIL 2015 REVISED | SHEET: W5
DESCRIPTION: **3-WAY GATE VALVES**
DRAWN BY: | CHECKED BY: | FILE: W5-3-Way Gate Valves.dwg

NOTES:

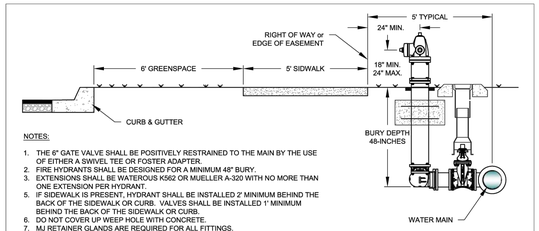
1. THE 6" GATE VALVE SHALL BE POSITIVELY RESTRAINED TO THE MAIN BY THE USE OF EITHER A SWIVEL TEE OR FOSTER ADAPTER.
2. FIRE HYDRANTS SHALL BE DESIGNED FOR A MINIMUM 48" BURY.
3. BURY LINE OF HYDRANT SHALL BE NO LESS THAN THE PROPOSED FINISHED ELEVATION OF BACK OF CURB, OR SIDEWALK, WHICHEVER IS GREATER.
4. EXTENSIONS SHALL BE WATEROUS K562 OR MUELLER A-320 WITH NO MORE THAN ONE EXTENSION PER HYDRANT.
5. IF SIDEWALK IS PRESENT, HYDRANT SHALL BE INSTALLED 2' MINIMUM BEHIND THE BACK OF THE SIDEWALK OR CURB. VALVES SHALL BE INSTALLED 1' MINIMUM BEHIND THE BACK OF THE SIDEWALK OR CURB.
6. DO NOT COVER UP WEEP HOLE WITH CONCRETE.
7. MJ RETAINER GLANDS ARE REQUIRED FOR ALL FITTINGS.
8. 6" DUCTILE IRON PIPE IS REQUIRED FOR ALL FIRE HYDRANT LEADS GREATER THAN 48-INCHES FROM THE MAIN VALVE.
9. AN ADDITIONAL GUARDIAN VALVE IS REQUIRED FOR ALL FIRE HYDRANT LEADS GREATER THAN 30 FEET IN LENGTH.



FIRE HYDRANT & VALVE CONNECTION

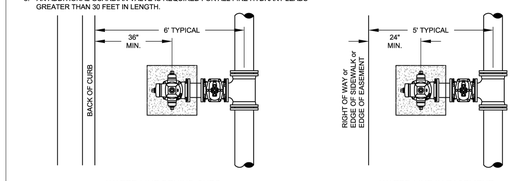
CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE: **WATER DETAILS** | DATE: APRIL 2015 REVISED | SHEET: W8
DESCRIPTION: **FIRE HYDRANT AND VALVE CONNECTION**
DRAWN BY: | CHECKED BY: | FILE: W8-Fire Hydrant and Valve.dwg



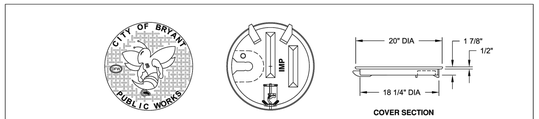
NOTES:

1. THE 6" GATE VALVE SHALL BE POSITIVELY RESTRAINED TO THE MAIN BY THE USE OF EITHER A SWIVEL TEE OR FOSTER ADAPTER.
2. FIRE HYDRANTS SHALL BE DESIGNED FOR A MINIMUM 48" BURY.
3. EXTENSIONS SHALL BE WATEROUS K562 OR MUELLER A-320 WITH NO MORE THAN ONE EXTENSION PER HYDRANT.
5. IF SIDEWALK IS PRESENT, HYDRANT SHALL BE INSTALLED 2' MINIMUM BEHIND THE BACK OF THE SIDEWALK OR CURB. VALVES SHALL BE INSTALLED 1' MINIMUM BEHIND THE BACK OF THE SIDEWALK OR CURB.
6. DO NOT COVER UP WEEP HOLE WITH CONCRETE.
7. MJ RETAINER GLANDS ARE REQUIRED FOR ALL FITTINGS.
7. 6" DUCTILE IRON PIPE IS REQUIRED FOR ALL FIRE HYDRANT LEADS GREATER THAN 48-INCHES FROM THE MAIN VALVE.
8. AN ADDITIONAL GUARDIAN VALVE IS REQUIRED FOR ALL FIRE HYDRANT LEADS GREATER THAN 30 FEET IN LENGTH.

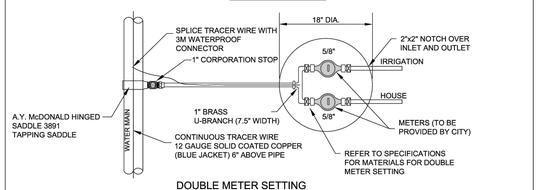


CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE: **WATER DETAILS** | DATE: APRIL 2015 REVISED | SHEET: W9
DESCRIPTION: **FIRE HYDRANT PLACEMENT**
DRAWN BY: | CHECKED BY: | FILE: W9-Fire Hydrant Placement.dwg

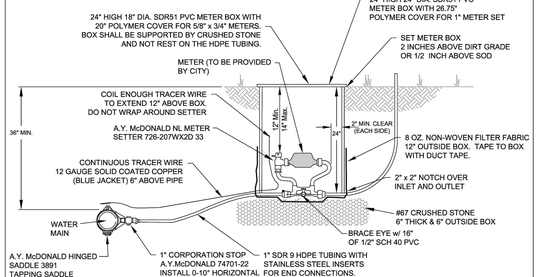


WATER METER LID



DOUBLE METER SETTING

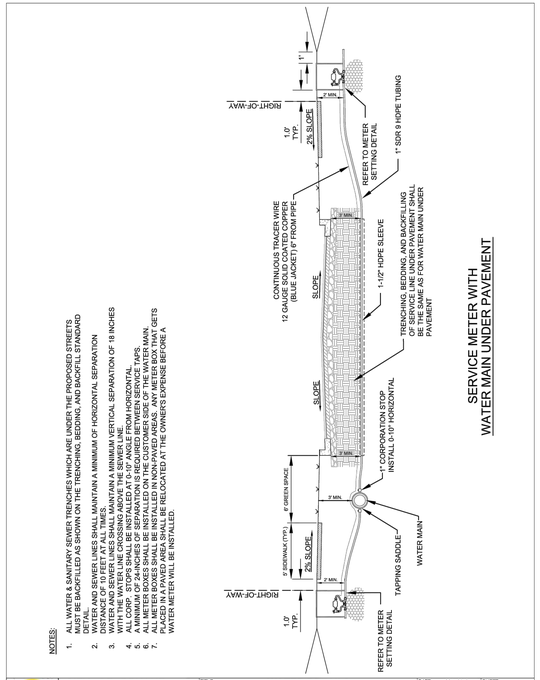
ONLY FOR 1 LOT



SINGLE METER SETTING

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE: **WATER DETAILS** | DATE: APRIL 2015 REVISED | SHEET: W10
DESCRIPTION: **METER SETTINGS**
DRAWN BY: | CHECKED BY: | FILE: W10-Meter Settings.dwg



NOTES:

1. ALL WATER & SANITARY SEWER TRENCHES WHICH ARE UNDER THE PROPOSED STREETS OR TO BE BACKFILLED AS SHOWN ON THE TRENCHING, BEDDING, AND BACKFILL STANDARD DETAIL.
2. WATER AND SEWER LINES SHALL MAINTAIN A MINIMUM OF HORIZONTAL SEPARATION OF 18 INCHES WITH THE WATER LINE CROSSING ABOVE THE SEWER LINE.
3. WATER AND SEWER LINES SHALL MAINTAIN A MINIMUM VERTICAL SEPARATION OF 18 INCHES WITH THE WATER LINE CROSSING ABOVE THE SEWER LINE.
4. A MINIMUM OF 24-INCHES OF SEPARATION IS REQUIRED BETWEEN SERVICE TAPS.
5. ALL METER BOXES SHALL BE INSTALLED IN NON-PAVED AREAS. ANY METER BOX THAT GETS PLACED IN A PAVED AREA SHALL BE RELOCATED AT THE OWNER'S EXPENSE BEFORE A WATER METER WILL BE INSTALLED.

SERVICE METER WITH WATER MAIN UNDER PAVEMENT

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE: **WATER DETAILS** | DATE: APRIL 2015 REVISED | SHEET: W11
DESCRIPTION: **METER SERVICE LINE UNDER PAVEMENT**
DRAWN BY: | CHECKED BY: | FILE: W11-Meter Service Line Under Pavement.dwg

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Planning • Engineering • Development Consulting
325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225

CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
ARKANSAS

MISC. DETAILS
ZYAIR ESTATES SUBDIVISION
HILLTOP ROAD
BRYANT, ARKANSAS

EMINENT CONSTRUCTIONS

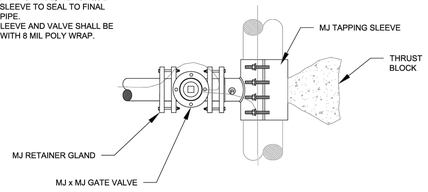
No.	Revisions	Date
1	AS PER CITY COMMENTS	4/7/2026
2	CITY COMMENTS 4/15/26	4/22/2026

Prepared For:

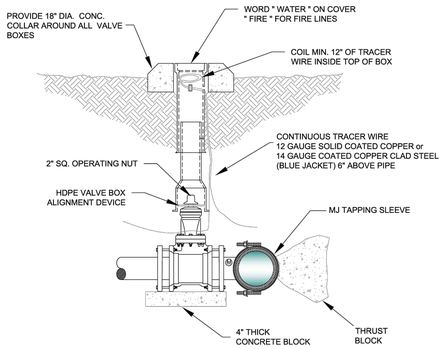
PROJECT NO.: 024-034
Date: 3/3/2026 4/22/2026
Scale: NTS
Sheet: 21 of 25

NOTES:

1. TAPPING SLEEVE SHALL BE SMITH-BLAIR 662 OR FORD FAST.
2. AFTER THE TAP IS MADE, RE-TORQUE BOLTS ON SLEEVE TO SEAL TO FINAL SHAPE OF PIPE.
3. TAPPING SLEEVE AND VALVE SHALL BE WRAPPED WITH 8 MIL POLY WRAP.



PLAN VIEW

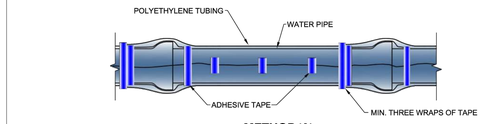


PROFILE VIEW

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

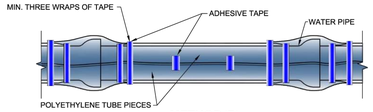
TITLE: **WATER DETAILS**
DESCRIPTION: **TAPPING SLEEVE AND VALVE**
DRAWN BY: CHECKED BY: FILE: W13-Tapping Sleeve and Valve.dwg

DATE: APRIL 2015 REVISED
SHEET: **W13**



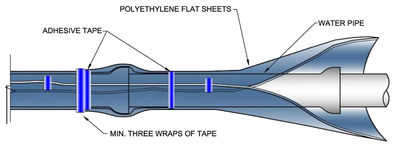
METHOD 'A'

METHOD 'A' USES ONE LENGTH OF POLYETHYLENE TUBE, OVERLAPPED AT THE JOINTS A MINIMUM OF 2 FEET.



METHOD 'B'

METHOD 'B' USES SEPARATE PIECES OF POLYETHYLENE TUBE FOR THE BARREL OF THE PIPE AND THE JOINTS. SHORT PIECES SHALL BE APPROXIMATELY 6" LONG AND OVERLAP BARREL SECTION BY A MINIMUM OF 2 FEET.



METHOD 'C'

METHOD 'C' - USED FOR PIPE-SHAPED AND ODD- SHAPED APPURTENANCES SUCH AS BENDS, REDUCERS, OFFSETS, VALVES, TEES, ETC.

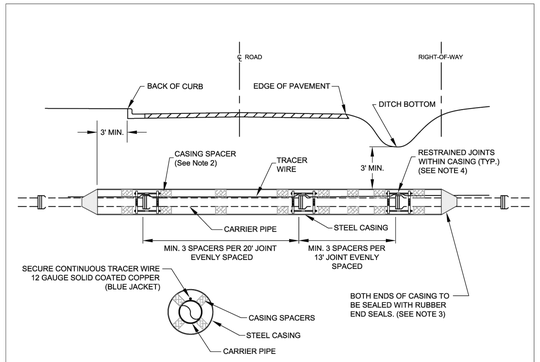
ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE POLY WRAPPED.

THE ANSI/AWWA C105/A21.5 STANDARD OUTLINES THREE METHODS OF INSTALLING POLYETHYLENE ENCASEMENT/ SLEEVING.

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE: **WATER DETAILS**
DESCRIPTION: **POLYETHYLENE PROTECTION MATERIAL**
DRAWN BY: CHECKED BY: FILE: W14-Poly Wrap.dwg

DATE: APRIL 2015 REVISED
SHEET: **W14**



NOTES:

1. STEEL CASING SHALL BE CONSTRUCTED OF SPIRAL OR STRAIGHT WELDED STEEL WITH A MINIMUM DIAMETER AND THICKNESS AS SHOWN BELOW (SEE TABLE).
2. PROVIDE CASING SPACERS BY CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATERWORKS MFG. CO., OR APPROVED EQUAL.
3. PROVIDE END SEALS BY CASCADE MODEL CCES AS MANUFACTURED BY CASCADE WATERWORKS MFG. CO., OR APPROVED EQUAL.
4. WHERE ENCASEMENTS ARE GREATER THAN 25 FEET IN LENGTH, SELF-RESTRAINING GASKETS OR BELL RESTRAINTS SHALL BE USED FOR ALL JOINTS INSIDE THE ENCASEMENT PIPE AND FOR THE FIRST JOINT IN EACH DIRECTION OUTSIDE THE ENCASEMENT PIPE.
5. BELL RESTRAINTS FOR PVC SHALL BE SERIES1900 RESTRAINT HARNESS AND BELL RESTRAINTS FOR DIP SHALL BE SERIES 1700 RESTRAINT HARNESS BY EBAA IRON INC., OR APPROVED EQUAL.
6. DIRECT BURY STEEL ENCASEMENT SHALL BE POLY WRAPPED.
7. JACK AND BORE STEEL ENCASEMENT SHALL HAVE 178 HP MAGNESIUM ANODES CAD WELDED TO THE END OF THE ENCASEMENT PIPE.

CARRIER AND CASING SIZES

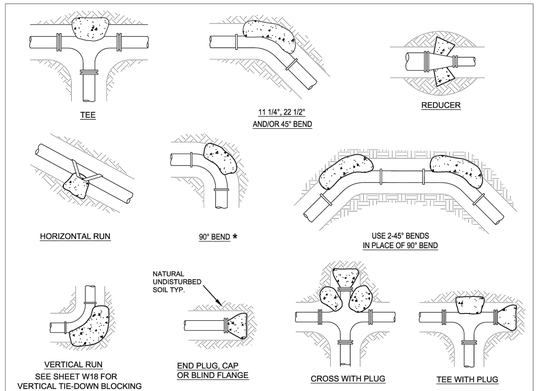
CARRIER (ID)	2"	3"	4"	6"	8	10"	12"
CASING (ID)	5"	6"	8"	12"	16"	20"	24"
CASING WALL THICKNESS	0.250	0.250	0.250	0.250	0.250	0.250	0.375
CARRIER (ID)	14" - 16"	18" - 20"	24"	30"	36"	42"	48"
CASING (ID)	30"	36"	42"	48"	54"	60"	72"
CASING WALL THICKNESS	0.375	0.500	0.625	0.625	0.625	0.625	0.750

STEEL ENCASEMENT

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE: **WATER DETAILS**
DESCRIPTION: **STEEL ENCASEMENT**
DRAWN BY: CHECKED BY: FILE: W15-Steel Encasement.dwg

DATE: APRIL 2015 REVISED
SHEET: **W15**



THRUST BLOCK SCHEDULE

(2000 PSF SOIL, 200 PSI WATER PRESSURE, 100 PSI WATER HAMMER)

FITTING SIZE	PLUG TEE OR CAP	BEND ANGLE 90° *	45°	22 1/2°	11 1/4°	FITTING SIZE	BEND ANGLE 90° *	45°	22 1/2°	11 1/4°	W/O DAMM	EMBED MENT
	BEARING AREA OF THRUST BLOCKS IN SQ. FT. (HORIZONTAL BENDS)						VOLUME OF THRUST BLOCK IN CU. FEET (VERTICAL BENDS)					
2, 3, & 4	1.9	2.7	1.4	0.7	0.4	2, 3, & 4	35.5	19.2	9.8	4.9	50"	30"
6	5.6	7.9	4.3	2.2	1.1	6	105.8	57.2	29.2	14.7	70"	30"
8	9.6	13.6	7.4	3.8	1.9	8	181.9	98.5	50.2	25.2	75"	30"
12	20.5	29.0	15.7	8.0	4.0	12	387.1	209.5	106.8	53.7	1.0"	30"
16	35.7	50.4	27.3	13.9	7.0	16	672.8	364.0	185.6	93.2	1.0"	36"
18	44.5	63.4	34.3	17.5	18.8	18	844.7	457.2	233.1	117.1	1.0"	36"
24	78.4	110.9	60.0	30.6	15.4	24	1478.7	800.3	408.0	205.0	1.5"	36"

* 90 DEGREE BENDS SHALL ONLY BE USED ON A BY-EXCEPTION BASIS, AND MUST EACH BE SPECIFICALLY APPROVED BY CITY.

THRUST BLOCK NOTES:

1. CONCRETE FOR THRUST BLOCKS - CLASS A CONCRETE SHALL DEVELOP NOT LESS THAN 3000 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS AND BE PLACED AGAINST UNDISTURBED SOIL.
2. ALL BENDS, BOTH HORIZONTAL AND VERTICAL, SHALL BE BACKED WITH CONCRETE. VERTICAL BENDS SHALL BE PLACED ON CONCRETE PADS WHERE BENDS TURN UP, OR LOADED WHERE BENDS TURN DOWN.
3. WRAP PIPE JOINTS IN 8 MIL "POLYETHLENE" BEFORE PLACING CONCRETE.
4. BEARING AREA SHOWN IN TABLE, IS BASED UPON A 2000 LB/SF. SOIL BEARING, AND UPON A PIPELINE PRESSURE OF 200 psi. PLUS 100 psi. WATER HAMMER. AREAS SHOWN SHALL BE ADJUSTED, SHOULD FIELD CONDITIONS VARY.
5. MJ RESTRAINTS ARE REQUIRED FOR ALL FITTINGS.
6. USE LONG-RADIUS FITTINGS WHEREVER POSSIBLE.
7. ALL BOLTS FOR FITTINGS SHALL BE 316 STAINLESS STEEL.
8. ALL DUCTILE IRON FITTINGS SHALL BE FUSION-BONDED EPOXY COATED INSIDE AND OUTSIDE IN ACCORDANCE WITH ANSI/AWWA C116/A21.16.
9. UNIT WEIGHT OF CONCRETE FOR VERTICAL THRUST BLOCKS IS 150 LBS/CU. FT.

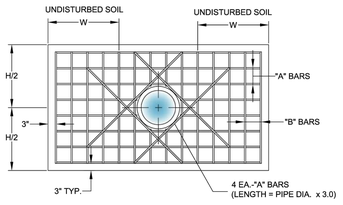
THRUST BLOCKING

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE: **WATER DETAILS**
DESCRIPTION: **THRUST BLOCKING**
DRAWN BY: CHECKED BY: FILE: W16-Thrust Blocking.dwg

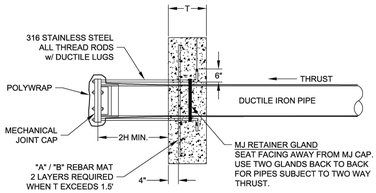
DATE: APRIL 2015 REVISED
SHEET: **W16**

ANCHOR COLLAR SCHEDULE					
PIPE SIZE	* MINIMUM DIMENSIONS * W	H	T	REINFORCING BARS "A" BARS	"B" BARS
6"	1.5'	2.0'	1.0'	#5 @ 6"	#6 @ 6"
8"	2.0'	2.5'	1.0'	#5 @ 6"	#6 @ 6"
12"	2.5'	4.0'	1.5'	#6 @ 6"	#6 @ 6"
16"	3.5'	5.0'	1.5'	#5 @ 6"	#6 @ 6"
20"	5.0'	5.5'	2.0'	#6 @ 6"	#6 @ 6"
24"	6.5'	6.0'	2.0'	#7 @ 6"	#7 @ 10"



NOTES:

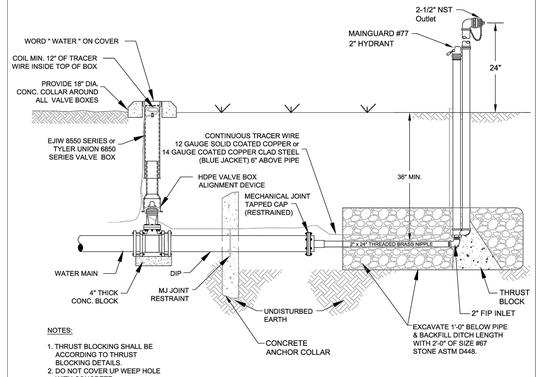
1. DESIGN PRESSURE IS 200 PSI PLUS 100 PSI SURGE AND 2,000 PSI SOIL BEARING.
2. ALL DIMENSIONS ARE MINIMUM REQUIREMENTS. ACTUAL FIELD CONDITIONS MAY REQUIRE LARGER DIMENSIONS.
3. ALL RETAINER GLANDS SHALL BE MEGA-LUG BY EBAA IRON.



CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE: **WATER DETAILS**
DESCRIPTION: **ANCHOR COLLAR**
DRAWN BY: CHECKED BY: FILE: W18-Anchor Collar.dwg

DATE: APRIL 2015 REVISED
SHEET: **W18**



NOTES:

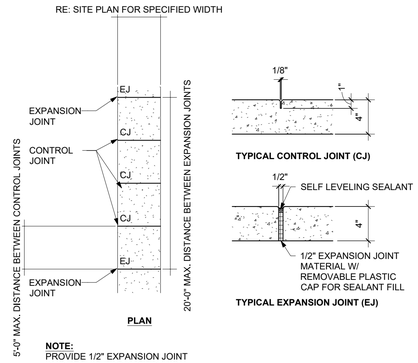
1. THRUST BLOCKING SHALL BE ACCORDING TO THRUST BLOCKING DETAILS.
2. DO NOT COVER UP WEEP HOLE WITH CONCRETE.

BLOW-OFF ASSEMBLY

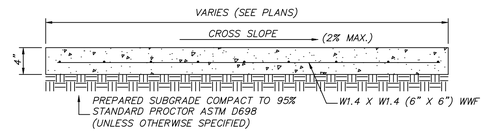
CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE: **WATER DETAILS**
DESCRIPTION: **BLOW-OFF ASSEMBLY**
DRAWN BY: CHECKED BY: FILE: W19-Blow-off Assembly.dwg

DATE: APRIL 2015 REVISED
SHEET: **W19**



NOTE:
PROVIDE 1/2" EXPANSION JOINT AND SEALANT AS NOTED AND WHERE SIDEWALK ABUTS STRUCTURES OR OTHER SIDEWALKS.

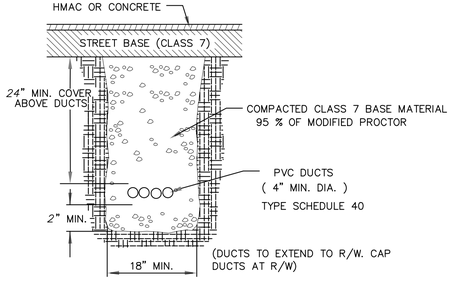


CONCRETE SIDEWALK SPECIFICATIONS

NTS

* NOTES:

1. PORTLAND CEMENT CONCRETE 3000 PSI. MIN.
2. USE W1.4 X W1.4 (6" X 6") WWF SHEET REINFORCEMENT. CUT ½ THE WIRES AT CONTROL JOINTS.
3. CONCRETE TO CONTAIN 3-5% AIR ENTRAINMENT.
4. FINISH TO BE LIGHT BROOM FINISH.
5. DETECTABLE WARNING DEVICES TO BE INSTALLED AT RAMPS PER ADA REQUIREMENTS.
6. MAX CROSS SLOPE 2%. MAX LONGITUDINAL SLOPE 1:12.
7. CONTROL JOINTS PER CONC. WALK CONTROL JOINT DETAIL.



TYPICAL SECTION
4" UTILITY DUCTS

NOT TO SCALE

RICHARDSON ENGINEERING
Planning • Engineering • Development Consulting
325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225

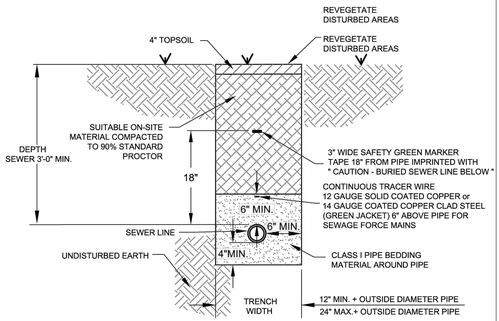
Richardson Engineering, PLLC No. 2519 CERTIFICATE OF AUTHORIZATION ARKANSAS

MISC. DETAILS
ZYAIR ESTATES
SUBDIVISION
HILLTOP ROAD
BRYANT, ARKANSAS

Prepared For: EMINENT CONSTRUCTIONS

No.	Revisions	Date
1	AS PER CITY COMMENTS	4/7/2026
2	CITY COMMENTS 4/15/26	4/22/2026

PROJECT NO.: 024-034
Date: 3/3/2026
Date: 4/22/2026
Scale: NTS
Sheet: 22 of 25



NOTES:

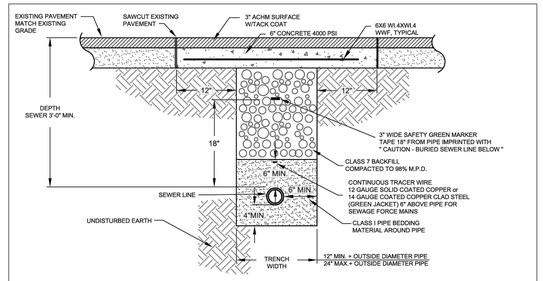
1. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING SEWER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE SEWER SYSTEM.
2. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH ALL OSHA REGULATIONS (29 CFR CH.XVII, SUBPART B)
3. TRENCH SHALL BE EXCAVATED BELOW GRADE REQUIRED TO PROVIDE A MINIMUM 36" OF PIPE COVER.

SEWER TRENCH

(NON-PAVED AREA)

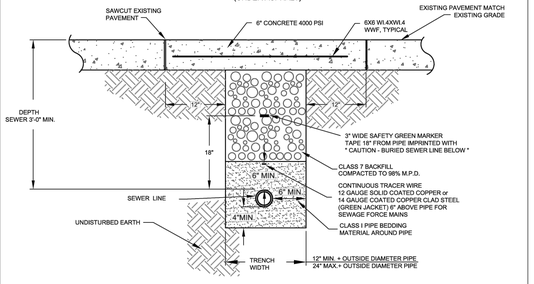
CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0488

TITLE: **SEWER DETAILS** | DATE: APRIL 2015 | SHEET: S1
DESCRIPTION: **SEWER TRENCH (NON-PAVED AREA)** | REVISED: -----
DRAWN BY: | CHECKED BY: | FILE: S1--Sewer Trench (Non-Paved Area).dwg



SEWER TRENCH

(UNDER ASPHALT)



SEWER TRENCH

(UNDER CONCRETE)

NOTES:

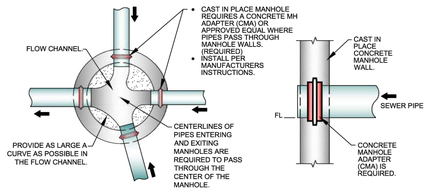
1. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING SEWER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE SEWER SYSTEM.
2. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH ALL OSHA REGULATIONS (29 CFR CH.XVII, SUBPART B)
3. TRENCH SHALL BE EXCAVATED BELOW GRADE REQUIRED TO PROVIDE A MINIMUM 36" OF PIPE COVER.

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0488

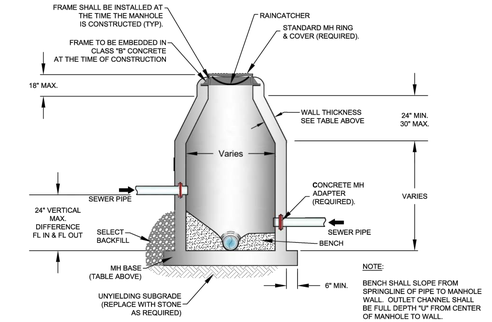
TITLE: **SEWER DETAILS** | DATE: APRIL 2015 | SHEET: S2
DESCRIPTION: **SEWER TRENCH (UNDER PAVEMENT)** | REVISED: -----
DRAWN BY: | CHECKED BY: | FILE: S2--Sewer Trench (Under Pavement).dwg

Inside Diameter of Manhole	Minimum Wall Thickness	Base Thickness	Minimum Ring & Cover Size
4' DIA	6"	6"	24" (< or Equal to 24" Pipes)
5' DIA	8"	8"	
6' DIA	8"	12"	36" (> 24" Pipes)

MANHOLE INFORMATION TABLE



- CAST IN PLACE MANHOLE REQUIRES A CONCRETE MH ADAPTER (CMA) OR APPROVED EQUAL WHERE PIPES PASS THROUGH MANHOLE WALLS. (REQUIRED)
- INSTALL PER MANUFACTURERS INSTRUCTIONS.



NOTE:
BENCH SHALL SLOPE FROM SPRINGLINE OF PIPE TO MANHOLE WALL. OUTLET CHANNEL SHALL BE FULL DEPTH "U" FROM CENTER OF MANHOLE TO WALL.

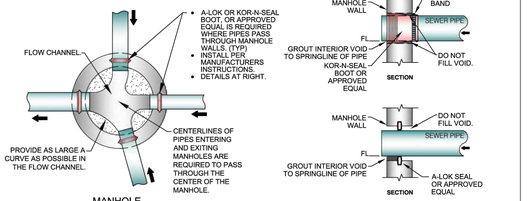
CAST-IN-PLACE MANHOLE

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0488

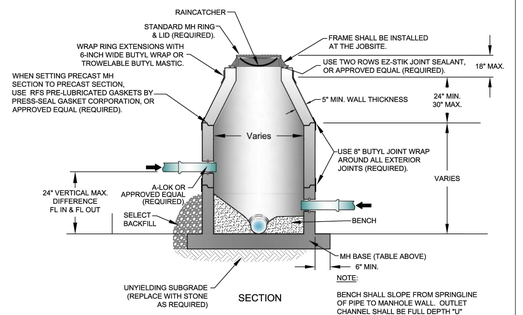
TITLE: **SEWER DETAILS** | DATE: APRIL 2015 | SHEET: S4
DESCRIPTION: **CAST-IN-PLACE MANHOLE** | REVISED: -----
DRAWN BY: | CHECKED BY: | FILE: S4--Cast In Place Manhole.dwg

Inside Diameter of Manhole	Minimum Wall Thickness	Base Thickness	Minimum Ring & Cover Size
4' DIA	5"	6"	24" (< or Equal to 24" Pipes)
5' DIA	7"	8"	
6' DIA	7"	8"	36" (> 24" Pipes)

MANHOLE INFORMATION TABLE



- A-LOK OR KOR-N-SEAL BOOT, OR APPROVED EQUAL IS REQUIRED WHERE PIPES PASS THROUGH MANHOLE WALLS. (TYP).
- INSTALL PER MANUFACTURERS INSTRUCTIONS.
- DETAILS AT RIGHT.



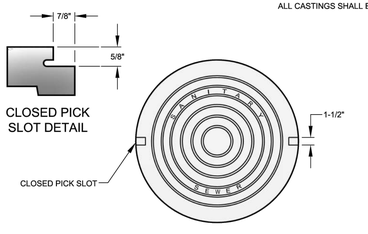
NOTE:
BENCH SHALL SLOPE FROM SPRINGLINE OF PIPE TO MANHOLE WALL. OUTLET CHANNEL SHALL BE FULL DEPTH "U" FROM CENTER OF MANHOLE TO WALL.

PRECAST MANHOLE

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0488

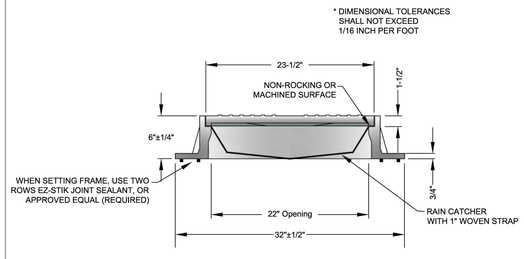
TITLE: **SEWER DETAILS** | DATE: APRIL 2015 | SHEET: S5
DESCRIPTION: **PRECAST MANHOLE** | REVISED: -----
DRAWN BY: | CHECKED BY: | FILE: S5--Precast Manhole.dwg

ALL CASTINGS SHALL BE "MADE IN USA"



COVER DETAIL

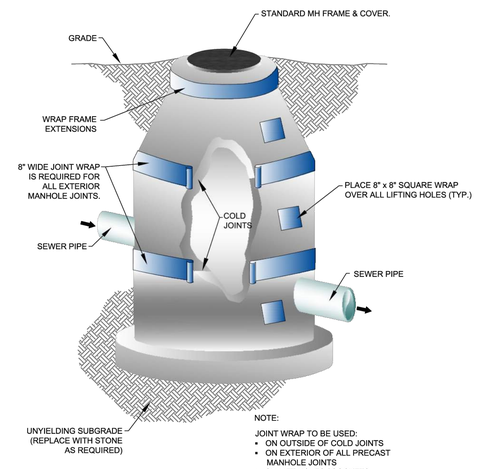
1. MINIMUM WEIGHT OF RING: 100 POUNDS
2. MINIMUM WEIGHT OF COVER: 110 POUNDS
3. COVERS ARE FURNISHED WITH TWO CLOSED PICK SLOTS.
4. CASTINGS SHALL BE "MADE IN USA"



FRAME AND COVER DETAIL

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0488

TITLE: **SEWER DETAILS** | DATE: APRIL 2015 | SHEET: S6
DESCRIPTION: **MANHOLE FRAME AND COVER** | REVISED: -----
DRAWN BY: | CHECKED BY: | FILE: S6--Manhole Frame and Cover.dwg



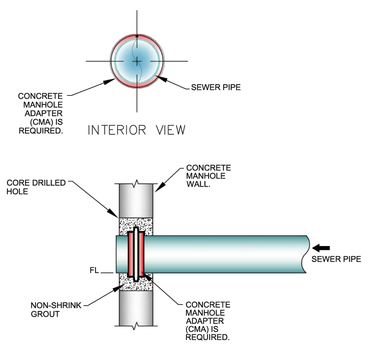
NOTE:
JOINT WRAP TO BE USED:
- ON OUTSIDE OF COLD JOINTS
- ON EXTERIOR OF ALL PRECAST MANHOLE JOINTS
- ON LIFT HOLES / SOCKETS

MANHOLE JOINT WRAP

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0488

TITLE: **SEWER DETAILS** | DATE: APRIL 2015 | SHEET: S9
DESCRIPTION: **MANHOLE JOINT WRAP** | REVISED: -----
DRAWN BY: | CHECKED BY: | FILE: S9--Manhole Joint Wrap.dwg

THE INSTALLATION SHALL BE DYE TESTED FOR ACCEPTANCE.



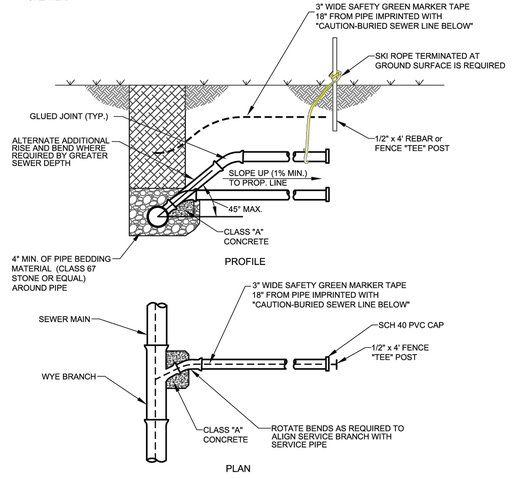
MANHOLE CORING DETAILS

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0488

TITLE: **SEWER DETAILS** | DATE: APRIL 2015 | SHEET: S11
DESCRIPTION: **MANHOLE CORING** | REVISED: -----
DRAWN BY: | CHECKED BY: | FILE: S11--Manhole Coring.dwg

NOTES:

1. MODIFIED RISER LATERAL SHALL BE USED WHEN DEPTH OF COVER EXCEEDS 7'-0"
2. PLACE CLASS "A" CONCRETE UNDER EACH WYE BRANCH TO PREVENT CRACKING OR TWISTING UNDER EARTH LOADS.
3. SERVICE LATERAL STUBS SHALL TERMINATE AT LEAST 2 FEET INSIDE THE PROPERTY LINE BUT IN NO CASE SHALL THE SERVICE LATERAL STUB TERMINATE AT A DISTANCE LESS THAN 8 FEET FROM THE SANITARY SEWER MAIN.
4. BURY A 1/2" x 4' STEEL TEE FENCE POST AT END OF SERVICE LATERAL STUB AND BACKFILL TO FINISHED GRADE OF PROPERTY.
5. 4" DUCTILE IRON PIPE, LINED FOR SANITARY SEWER AND 4" DUCTILE IRON M.J. FITTINGS, LINED FOR SANITARY SEWER, SHALL BE INSTALLED FOR SERVICES BURIED AT DEPTHS OF 14 FEET AND GREATER.



SEWER SERVICE LATERAL

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0488

TITLE: **SEWER DETAILS** | DATE: APRIL 2015 | SHEET: S15
DESCRIPTION: **SEWER SERVICE LATERAL** | REVISED: -----
DRAWN BY: | CHECKED BY: | FILE: S15--Sewer Service Lateral.dwg

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Planning • Engineering • Development Consulting
325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225

CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
ARKANSAS

MISC. DETAILS
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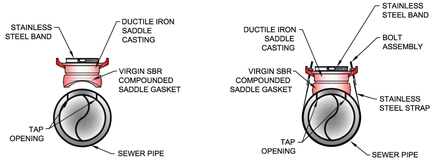
SUBDIVISION
HILLTOP ROAD
BRYANT, ARKANSAS

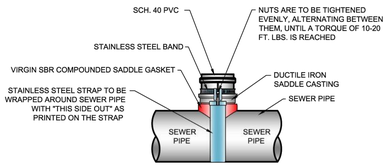
EMINENT CONSTRUCTIONS

Prepared For:

No.	Revisions	Date
1	AS PER CITY COMMENTS 4/15/26	4/17/2026
2	CITY COMMENTS	4/22/2026

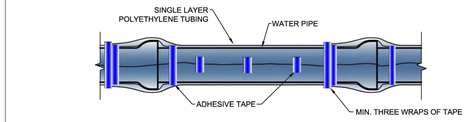
PROJECT NO.: 024-034
Date: 3/3/2026 4/22/2026
Scale: NTS
Sheet: 23 of 25





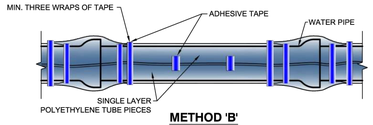
SEWER SERVICE SADDLE

CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0468	TITLE: **SEWER DETAILS**		DATE: APRIL 2015 REVISED --- --- --- --- ---	SHEET: **S17**
	DESCRIPTION: **SEWER SERVICE SADDLE**			
	DRAWN BY:	CHECKED BY:	FILE: S17-Sewer Service Saddle.dwg	



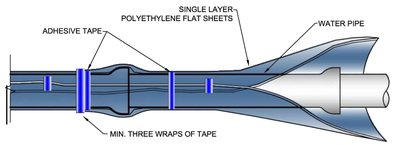
METHOD 'A'

METHOD 'A' USES ONE LENGTH OF POLYETHYLENE TUBE, OVERLAPPED AT THE JOINTS A MINIMUM OF 2 FEET.



METHOD 'B'

METHOD 'B' USES SEPARATE PIECES OF POLYETHYLENE TUBE FOR THE BARREL OF THE PIPE AND THE JOINTS. SHORT PIECES SHALL BE APPROXIMATELY 6' LONG AND OVERLAP BARREL SECTION BY A MINIMUM OF 2 FEET.



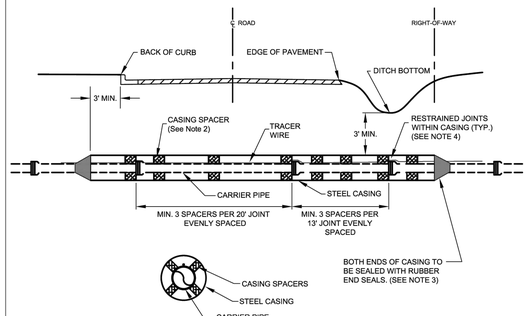
METHOD 'C'

METHOD 'C' - USED FOR PIPE-SHAPED AND ODD- SHAPED APPURTENANCES SUCH AS BENDS, REDUCERS, OFFSETS, VALVES, TEES, ETC.

ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE POLY WRAPPED.

THE ANSI/AWWA C105/A21.5 STANDARD OUTLINES THREE METHODS OF INSTALLING POLYETHYLENE ENCASEMENT/ SLEEVING.

CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0468	TITLE: **SEWER DETAILS**		DATE: APRIL 2015 REVISED --- --- --- --- ---	SHEET: **S20**
	DESCRIPTION: **POLYETHYLENE PROTECTION MATERIAL**			
	DRAWN BY:	CHECKED BY:	FILE: S20-Poly Wrap.dwg	



NOTES:

1. STEEL CASING SHALL BE CONSTRUCTED OF SPIRAL OR STRAIGHT WELDED STEEL WITH A MINIMUM DIAMETER AND THICKNESS AS SHOWN BELOW (SEE TABLE).
2. PROVIDE CASING SPACERS BY CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATERWORKS MFG. CO., OR APPROVED EQUAL, MINIMUM 12-INCHES WIDE.
3. PROVIDE END SEALS BY CASCADE MODEL CCES AS MANUFACTURED BY CASCADE WATERWORKS MFG. CO., OR APPROVED EQUAL.
4. ONE CASING SPACER SHALL BE PLACED AT THE INSERTION STOP LINE TO RESIST OVER INSERTION.
5. ALL FORCE MAINS SHALL BE FULLY RESTRAINED WHERE ENCASEMENTS ARE GREATER THAN 25 FEET IN LENGTH, SELF-RESTRAINING GASKETS OR BELL RESTRAINTS SHALL BE USED FOR ALL JOINTS INSIDE THE ENCASEMENT PIPE AND FOR THE FIRST JOINT IN EACH DIRECTION OUTSIDE THE ENCASEMENT PIPE.
6. DIRECT BURY STEEL ENCASEMENT SHALL BE POLY WRAPPED.

CARRIER AND CASING SIZES

CARRIER (ID)	2"	3"	4"	6"	8	10"	12"
CASING (ID)	5"	6"	8"	12"	16"	20"	24"
CASING WALL THICKNESS	0.250	0.250	0.250	0.250	0.250	0.250	0.375
CARRIER (ID)	14" - 16"	18" - 20"	24"	30"	36"	42"	48"
CASING (ID)	30"	36"	42"	48"	54"	60"	72"
CASING WALL THICKNESS	0.375	0.500	0.625	0.625	0.625	0.625	0.750

STEEL ENCASEMENT

CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0468	TITLE: **SEWER DETAILS**		DATE: APRIL 2015 REVISED --- --- --- --- ---	SHEET: **S21**
	DESCRIPTION: **STEEL ENCASEMENT**			
	DRAWN BY:	CHECKED BY:	FILE: S21-Steel Encasement.dwg	

RICHARDSON ENGINEERING
Planning • Engineering • Development Consulting
325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225

CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
ARKANSAS

MISC. DETAILS
ZYAIR ESTATES
SUBDIVISION
HILLTOP ROAD
BRYANT, ARKANSAS

Prepared For:
EMINENT CONSTRUCTIONS

No.	Revisions	Date
1	AS PER CITY COMMENTS	4/7/2026
2	CITY COMMENTS 4/15/26	4/22/2026

PROJECT NO.: 024-034
Scale: NTS
Date: 3/3/2026
4/22/2026
Sheet: 24 of 25

TRACT 2
28519 SQ. FT.
0.65 ACRES

TRACT 1
OPEN SPACE
RECREATION AREA
176672 SQ. FT.
4.06 ACRES

TRACT 3
RECREATION AREA
11023 SQ. FT.
0.25 ACRES

| | | |

RICHARDSON ENGINEERING
Planning ▪ Engineering ▪ Development Consulting

325 West South Street
Benton, AR 72015
(501) 315-7225

PROJECT 024-034 ZYAIR ESTATES (HILLTOP MANOR) DATE 4-8-26

SOIL LOSS CALCULATIONS

INITIAL SOIL LOSS CALCULATION (NO CONTROLS)

$A = 300 (K)(LS)(C)(P)$

K = 0.32 (SCS CLASSIFICATION MAP)
LS = 2.9 (L = 1000 @ 7.0%)
C = 1 (NO Controls)
P = 1 (NO controls)

$A = 300(.32)(2.9)(1)(1) = 278.4$ Tons/Ac/yr > 5 ∴ CONTROLS ARE REQ'D

SOIL LOSS CALCULATION (W/ CONTROLS)

$A = 300(K)(LS)(C)(P)$

K = .32 (SCS CLASSIFICATION MAP)
LS = .97 (1000' @ 7%)
C = .06 (2 TONS HAY/SEED/AC.)
P = 0.50

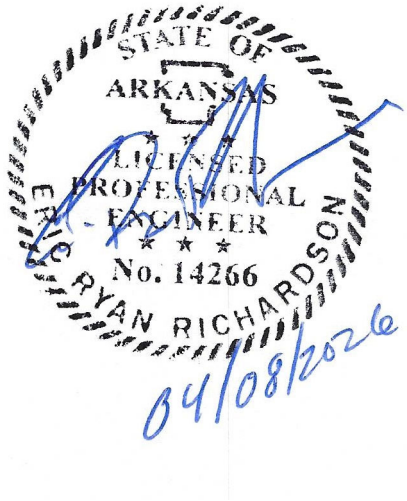
$A = (300)(.32)(.97)(.06)(.5) = 2.77$ tons/ac/yr < 5 ✓

Drainage Report

For

Hilltop Manor Subdivision

Bryant, Saline County, Arkansas



April 8, 2026

Prepared by:

RICHARDSON ENGINEERING, PLLC

325 W. South St.
Benton, AR 72015
501-315-7225

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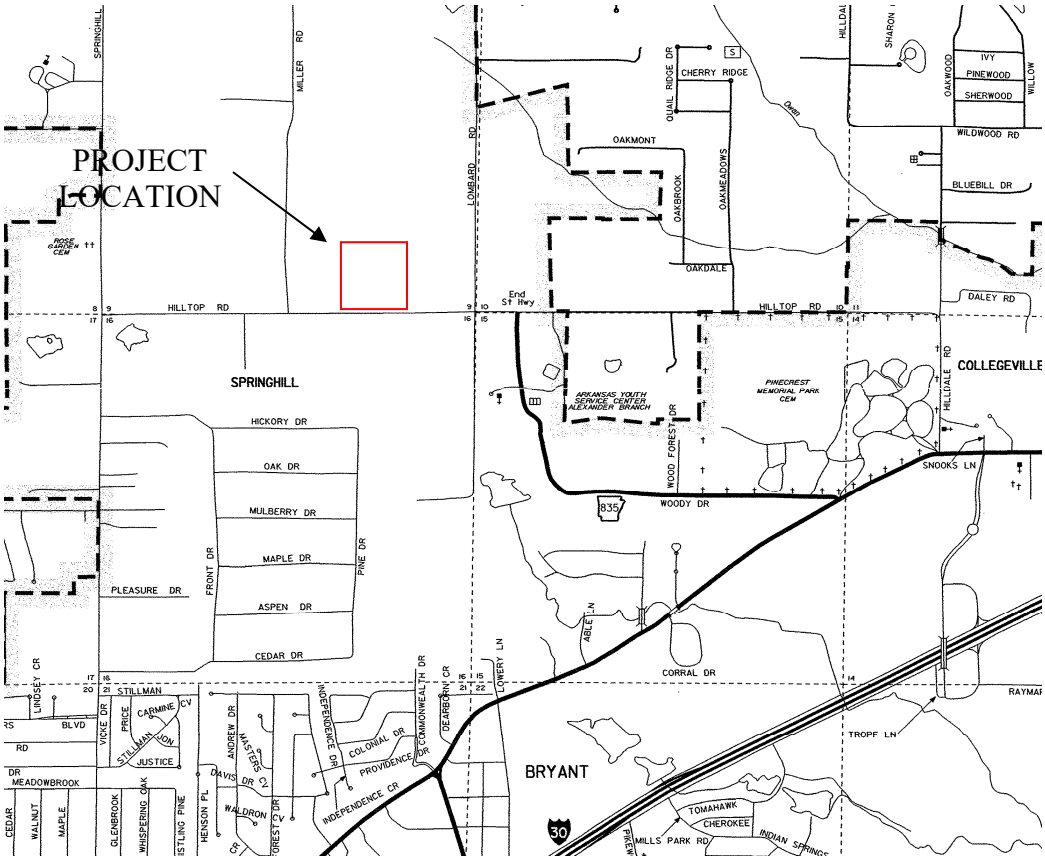
Project Owner Information

Eminent Construction
1100 Hillfarm Road
Bryant, AR 72022

Project Location and Description

The project is located on North side of the Hilltop, part of the Southwest Quater of the Southeast Quarter, Section 9, Township 1-S, Range 14-W, Saline County, Arkansas.



Vicinity Map – N.T.S

This project is a proposed Residential Subdivision, consisting of 78 lots, located in the City of Bryant, Saline County.

Site Drainage

Pre-Development

The pre-developed runoff for the site flows to the East and West. The on-site drainage basins have been broken down into six separate basins that discharge water off-site. Drainage Basins A, B, and C discharge water to the West, Basin D, E and F discharge water to the East. The pre-development drainage basin delineation can be found in the appendix of this report.

The pre-development on-site runoff condition is undeveloped/woods.

Post-Development

The site drainage starts on the Western side of the project and flows to the East and West. The drainage is sheet flows across the lots and roads and is intercepted by the proposed storm sewer system and is discharged into a proposed detention basin on the Eastern side of the proposed development.

The City of Bryant Drainage Manual utilized different C values for each storm event. The C value for the 100-year design storm was utilized for all storm events for the drainage analysis for this site.

The minimum required volume of the detention basin was found by comparing the pre-development rational method hydrograph for the area that the detention pond is being discharged, to the post-development modified rational method hydrograph for the area that the detention basin is receiving using the Hydrology Studio program. The minimum required volume was found to be 42,611 CF for the 100-year storm event. In order to meet the City of Bryants Stormwater Manual detention requirements, the detention pond has to be sized with at least a 25% factory of safety; therefore, the minimum size of the detention pond is 53,264 CF.

Post-Development Basin A, B, and C consist of the lots on the Western border and off-site areas. Post-development Basins A, B, and C all discharge to the West of the proposed development. Post Development Basin D consists of the back half of the lots on the north line as well as off-site areas. Basin D discharges to Phase 2 of the Lombard Heights subdivision. The proposed detention basin will utilize a culvert/weir discharge structure. Post-Development Basin “E-1” is the drainage basin that discharges water into the proposed detention basin. Post-development drainage basin “E-1” consists of the majority of the storm drain system for the proposed development as well as the detention pond area. Post-Development Basin E-2 consists of the remaining storm drain system that does not get discharged into the proposed detention pond as well as off-site areas. Basin E-1 and E-2 discharge to the East. Post-Development Basin F consists of the back half of lots on the South line and off-site areas. Basin F discharges to the East. Basins A, B, C, D, E-2, and F are not routed through the detention basin, so they were calculated by themselves. A delineation for the drainage basins that were used in Hydrology Studio (for

the overall site drainage basins), as well as a delineation of the basins that were used in Storm and Sanitary Analysis (on-site storm inlets) can be seen in the appendix of this report.

The post-development on-site runoff conditions changed from undeveloped/woods to single family residential development.

Runoff Summary's

Overall Project Site Area: 29.16 Acres

Pre- Development Drainage Basin Information

Overall Pre-Development Drainage Basin Study Area: 71.08 Acres

Drainage Basins	Drainage Area (Ac)	C Value	Time of Concentration (min)
Basin A	3.20	0.62	11
Basin B	14.74	0.52	15
Basin C	6.84	0.55	11
Basin D	2.95	0.50	8
Basin E-1	11.20	0.50	12
Basin E-2	18.96	0.52	13
Basin F	13.19	0.53	17

Design Storm	Basin A (cfs)	Basin B (cfs)	Basin C (cfs)	Basin D (cfs)
2-yr	8.53	28.63	16.17	7.32
10-yr	11.43	38.41	21.67	9.80
25-yr	13.13	44.15	24.90	11.26
50-yr	14.36	48.29	27.23	12.31
100-yr	15.60	52.42	29.57	13.38

Design Storm	Basin E-1 (cfs)	Basin E-2 (cfs)	Basin F (cfs)
2-yr	23.14	39.29	24.68
10-yr	31.02	52.69	33.12
25-yr	35.65	60.55	38.07
50-yr	38.98	66.22	41.64
100-yr	42.33	71.90	45.20

Overall Site Post- Development Drainage Basin Information

Overall Post-Development Drainage Study Area: 71.08 Acres

Drainage Basins	Drainage Area (Ac)	C Value	Time of Concentration (min)
Basin A	3.53	0.66	14
Basin B	12.45	0.56	18
Basin C	6.75	0.57	11
Basin D	2.59	0.56	8
Basin E-1	16.23	0.66	17
Basin E-2	17.53	0.56	13
Basin F	12.00	0.56	16

Design Storm	Basin A (cfs)	Basin B (cfs)	Basin C (cfs)	Basin D (cfs)
2-yr	8.98	23.98	16.54	7.20
10-yr	12.04	32.19	22.16	9.64
25-yr	13.84	37.00	25.47	11.08
50-yr	15.14	40.48	27.85	12.11
100-yr	16.43	43.93	30.24	13.15

Design Storm	Basin E-1 (cfs)	Basin E-2 (cfs)	Basin F (cfs)
2-yr	37.81	39.12	24.38
10-yr	50.74	52.46	32.71
25-yr	58.33	60.29	37.60
50-yr	63.81	65.94	41.13
100-yr	69.26	71.59	44.65

Basin A

Pre-Development Drainage Study Area = 3.20
Post-Development Drainage Study Area = 3.53
Existing Condition runoff Coefficient: C = 0.62
Proposed runoff Coefficient: C = 0.66
Tc Undeveloped = 11 Minutes (TR55 Method)
Tc Developed = 14 Minutes (TR55 Method)

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)	Difference (cfs)
2-yr	8.53	8.98	+0.45
10-yr	11.43	12.04	+0.61
25-yr	13.13	13.84	+0.71
50-yr	14.36	15.14	+0.78
100-yr	15.60	16.43	+0.83

Basin B

Pre-Development Drainage Study Area = 14.7
Post-Development Drainage Study Area = 12.45
Existing Condition runoff Coefficient: C = 0.52
Proposed runoff Coefficient: C = 0.56
Tc Undeveloped = 15 Minutes (TR55 Method)
Tc Developed = 18 Minutes (TR55 Method)

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)	Difference (cfs)
2-yr	28.63	23.98	-4.65
10-yr	38.41	32.19	-6.22
25-yr	44.15	37.00	-7.15
50-yr	48.29	40.48	-7.81
100-yr	52.42	43.93	-8.49

Basin C

Pre-Development Drainage Study Area = 6.84
Post-Development Drainage Study Area = 6.75
Existing Condition runoff Coefficient: C = 0.55
Proposed runoff Coefficient: C = 0.57
Tc Undeveloped = 11 Minutes (TR55 Method)
Tc Developed = 11 Minutes (TR55 Method)

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)	Difference (cfs)
2-yr	16.17	16.54	+0.37
10-yr	21.67	22.16	+0.49
25-yr	24.90	25.47	+0.57
50-yr	27.23	27.85	+0.62
100-yr	29.57	30.24	+0.67

Basin D

Pre-Development Drainage Study Area = 2.95
Post-Development Drainage Study Area = 2.59
Existing Condition runoff Coefficient: C = 0.50
Proposed runoff Coefficient: C = 0.56
Tc Undeveloped = 8 Minutes (TR55 Method)
Tc Developed = 8 Minutes (TR55 Method)

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)	Difference (cfs)
2-yr	7.32	7.20	-0.12
10-yr	9.80	9.64	-0.16
25-yr	11.26	11.08	-0.18
50-yr	12.31	12.11	-0.20
100-yr	13.38	13.15	-0.23

Basin E

Pre-Development Drainage Study Area = 30.16
Post-Development Drainage Study Area = 33.76
Existing Condition runoff Coefficient: C = 0.50/0.52
Proposed runoff Coefficient: C = 0.66/0.56
Tc Undeveloped = 12/13 Minutes (TR55 Method)
Tc Developed = 17/13 Minutes (TR55 Method)
Detention Basin Required Volume: 42,611 CF
Detention Basin Volume: 177,357 CF
Maximum Storage: 92,311 CF
Discharge Structure: Culvert/Weir

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)	Post-Development w/ Detention Flow Rate (cfs)	Maximum Water Elevation in Pond (ft)
2-yr	61.27	69.48	39.66	477.15
10-yr	82.16	93.21	53.39	477.88
25-yr	94.42	107.1	61.49	478.31
50-yr	103.3	117.2	67.36	478.63
100-yr	112.1	127.2	73.24	478.93

Should the culvert get 100 percent blocked and the water can only be discharged from the pond over the top of the overflow weir structure, the maximum water elevation in the pond reaches 479.92. The water elevations for the other design storms can be seen in the appendix.

Basin F

Pre-Development Drainage Study Area = 13.19
Post-Development Drainage Study Area = 12.00
Existing Condition runoff Coefficient: C = 0.53
Proposed runoff Coefficient: C = 0.56
Tc Undeveloped = 17 Minutes (TR55 Method)
Tc Developed = 16 Minutes (TR55 Method)

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)	Difference (cfs)
2-yr	24.68	24.38	-0.30
10-yr	33.12	32.71	-0.41
25-yr	38.07	37.60	-0.47
50-yr	41.64	41.13	-0.51
100-yr	45.20	44.65	-0.55

Recommendations/Summary

The proposed drainage improvements include a storm sewer system and a detention basin on the Eastern side of the project. The proposed detention basin releases the post development runoff at a lower rate than the pre-development condition.

Appendices

Runoff Coefficient Calculations
Time of Concentration Calculation
NRCS Soil Report
NOAA Atlas 14 Data
Site Drainage Basin Map
Overflow Wier Blockage Calculation
SSA Design Layout
Storm System Design (SSA)
Detention Pond Storage Estimate
Culvert Blockage Simulation
Pond and Post Development Hydrographs (Hydrology Studio)

Runoff Coefficient Calculations

Pre-Development Basin A			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Impervious	0.2	0.95	0.19
Residential (1/2 ac or larger)	2.09	0.65	1.3585
Undeveloped	0.39	0.5	0.195
Ditches	0.52	0.49	0.2548
TOTAL AREA / SUM	**3.2**		**1.9983**
Weighted C	**0.62**		

Pre-Development Basin B			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Impervious	0.19	0.95	0.1805
Residential (1/2 ac or larger)	0.29	0.65	0.1885
Undeveloped	14.26	0.5	7.13
TOTAL AREA / SUM	**14.74**		**7.499**
Weighted C	**0.51**		
Basin CFS			

Pre-Development Basin C			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Impervious	0.1	0.95	0.095
Residential (1/2 ac or larger)	1.66	0.65	1.079
Commercial (WT)	0.23	0.8	0.184
Undeveloped	4.85	0.5	2.425
TOTAL AREA / SUM	**6.84**		**3.783**
Weighted C	**0.55**		

Pre-Development Basin D			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Undeveloped	2.95	0.5	1.475

TOTAL AREA / SUM	**2.95**		**1.475**
Weighted C	**0.50**		

Pre-Development Basin E-1			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Undeveloped	11.2	0.5	5.6
TOTAL AREA / SUM	**11.2**		**5.6**
Weighted C	**0.50**		

Pre-Development Basin E-2			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Single Family Res.	1.2	0.7	0.84
Residential (1/2 ac or larger)	1	0.65	0.65
Undeveloped	16.76	0.5	8.38
TOTAL AREA / SUM	**18.96**		**9.87**
Weighted C	**0.52**		

Pre-Development Basin F			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Impervious	0.35	0.95	0.3325
Residential (1/2 ac or larger)	1.62	0.65	1.053
Undeveloped	11.22	0.5	5.61
TOTAL AREA / SUM	**13.19**		**6.9955**
Weighted C	**0.53**		

Pre-Development Basin G			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Residential (1/2 ac or larger)	0.1	0.65	0.065
Undeveloped	0.16	0.5	0.08
TOTAL AREA / SUM	**0.26**		**0.145**
Weighted C	**0.56**		
TOTAL AREA / SUM	**0.82**		**0.145**
Weighted C	**0.18**		

Pre-Development Basin H			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Residential (1/2 ac or larger)	1.59	0.65	1.0335
Undeveloped	0	0.5	0
TOTAL AREA / SUM	**1.59**		**1.0335**
Weighted C	**0.65**		

Post-Development Basin A			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Impervious	0.28	0.95	0.266
Residential (1/2 ac or larger)	2.09	0.65	1.3585
Single Family	0.68	0.7	0.476
Ditches	0.48	0.49	0.2352
TOTAL AREA / SUM	**3.53**		**2.3357**
Weighted C	**0.66**		

Post-Development Basin B			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Impervious	0.19	0.95	0.1805
Residential (1/2 ac or larger)	0.29	0.65	0.1885
Single Family	3.33	0.7	2.331
Undeveloped	8.64	0.5	4.32
TOTAL AREA / SUM	**12.45**		**7.02**
Weighted C	**0.56**		

Post-Development Basin C			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Impervious	0.1	0.95	0.095
Residential (1/2 ac or larger)	1.66	0.65	1.079
Single Family	0.44	0.7	0.308
Commercial (WT)	0.23	0.8	0.184
Undeveloped	4.32	0.5	2.16
TOTAL AREA / SUM	**6.75**		**3.826**
Weighted C	**0.57**		

Post-Development Basin D			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Single Family	0.73	0.7	0.511
Undeveloped	1.86	0.5	0.93

TOTAL AREA / SUM	**2.59**		**1.441**
Weighted C	**0.56**		

Post-Development Basin E-1			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Single Family	13.3	0.7	9.31
Undeveloped	2.93	0.5	1.465

TOTAL AREA / SUM	**16.23**		**10.775**
Weighted C	**0.66**		

Post-Development Basin E-2			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Single Family	4.52	0.7	3.164
Residential (1/2 ac or larger)	1	0.65	0.65
Undeveloped	11.69	0.5	5.845
Gravel	0.32	0.65	0.208

TOTAL AREA / SUM	**17.53**		**9.867**
Weighted C	**0.56**		

Post-Development Basin F			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Impervious	0.47	0.95	0.4465
Single Family	1.6	0.7	1.12
Residential (1/2 ac or larger)	1.62	0.65	1.053
Undeveloped	8.31	0.5	4.155

TOTAL AREA / SUM	**12**		**6.7745**
Weighted C	**0.56**		

Post-Development Basin G			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Impervious	0.03	0.95	0.0285
Single Family	0.13	0.7	0.091
Undeveloped	0.1	0.5	0.05
TOTAL AREA / SUM	**0.26**		**0.1695**
Weighted C	**0.65**		
TOTAL AREA / SUM	**1.01**		**0.2195**
Weighted C	**0.22**		

Post-Development Basin H			
Land Use	**Area (ac)**	**C Value**	**Area × C**
Impervious	0.09	0.95	0.0855
Single Family	1.59	0.7	1.113
Undeveloped	0	0.5	0
TOTAL AREA / SUM	**1.68**		**1.1985**
Weighted C	**0.71**		

Runoff Coefficients

Land Use Types	Frequency 10	25	100
Business			
Central Business District	0.9	0.93	0.95
Commercial Area	.85 (.70-.95)*	0.9	0.95
Neighborhood Area	.70 (.50-.75)	0.75	0.8
Residential			
Single Family	.50 (.30-.60)	0.6	0.7
Multi-Unit (Detached)	.60 (.40-.65)	0.65	0.75
Multi-Unit (Attached)	.70 (.60-.75)	0.75	0.8
½ Acre Lots or Larger	.40 (.25-.50)	0.45	0.65
Apartments	.70 (.50-.80)	0.75	0.8
Industrial			
Light Areas	.80 (.50-.85)	0.82	0.85
Heavy Areas	.85 (.60-.90)	0.87	0.9
Miscellaneous			
Parks and Cemeteries	.30 (.10-.40)	0.4	0.6
Playgrounds	.35 (.20-.40)	0.5	0.7
Schools and Churches	.60 (.50-.75)	0.65	0.75
Railroad Yards	.50 (.30-.60)	0.6	0.7
Offsite Flow Analysis (When Land Use Not Defined)	.55 (.45-.65)	0.67	0.7

*NOTE: The range of runoff coefficients is based on soil type. The low value is for sandy soils, while the high value is for clay soils. The given runoff coefficient outside the parenthesis is to be used for design, unless the Engineer of Record receives approval from the City Engineer for another value located within the given coefficient range.

Source: City of Little Rock Stormwater Management & Drainage Design Manual

TABLE 400-1 Runoff Coefficients for Surface Types

Character of Surface	Return Period					
	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Developed						
Asphaltic	0.73	0.77	0.81	0.86	0.90	0.95
Concrete/Roof	0.75	0.80	0.83	0.88	0.92	0.97
Grass Areas (Lawns, Parks, etc.)						
Poor Condition (grass cover less than 50 percent of the area)						
Flat, 0-2%	0.32	0.34	0.37	0.40	0.44	0.47
Average, 2-7%	0.37	0.40	0.43	0.46	0.49	0.53
Steep, Over 7%	0.40	0.43	0.45	0.49	0.52	0.55
Fair Condition (grass cover on 50 to 75 percent of the area)						
Flat, 0-2%	0.25	0.28	0.30	0.34	0.37	0.41
Average, 2-7%	0.33	0.36	0.38	0.42	0.45	0.49
Steep, Over 7%	0.37	0.40	0.42	0.46	0.49	0.53
Good Condition (grass cover larger than 75 percent of the area)						
Flat, 0-2%	0.21	0.23	0.25	0.29	0.32	0.36
Average, 2-7%	0.29	0.32	0.35	0.39	0.42	0.46
Steep, Over 7%	0.34	0.37	0.40	0.44	0.47	0.51
Undeveloped						
Cultivated Land						
Flat, 0-2%	0.31	0.34	0.36	0.40	0.43	0.47
Average, 2-7%	0.35	0.38	0.41	0.44	0.48	0.51
Steep, Over 7%	0.39	0.42	0.44	0.48	0.51	0.54
Pasture/Range						
Flat, 0-2%	0.25	0.28	0.30	0.34	0.37	0.41
Average, 2-7%	0.33	0.36	0.38	0.42	0.45	0.49
Steep, Over 7%	0.37	0.40	0.42	0.46	0.49	0.53
Forest/Woodlands						
Flat, 0-2%	0.22	0.25	0.28	0.31	0.35	0.39
Average, 2-7%	0.31	0.34	0.36	0.40	0.43	0.47
Steep, Over 7%	0.35	0.39	0.41	0.45	0.48	0.52

Source: Rossmiller, R.L. "The Raional Formula Revisited."
County of Austin Drainage Criteria Manual

TABLE 400-2

Runoff Coefficients for Rational Method Composite Analysis

Land Use Types	Frequency 10	25	100
Undeveloped Areas			
Historic Flow Analysis, Greenbelts			
Agricultural, Natural Vegetation			
Clay Soil			
Flat, 2%	0.3	0.33	0.37
Average, 2-7%	0.4	0.44	0.5
Steep, 7%	0.5	0.55	0.62
Sandy Soil			
Flat, 2%	0.12	0.13	0.15
Average, 2-7%	0.2	0.22	0.25
Steep, 7%	0.3	0.33	0.37
Streets			
Paved	0.9	0.92	0.95
Gravel	0.35	0.5	0.65
Miscellaneous			
Drives and Walks	0.9	0.91	0.92
Roofs	0.9	0.92	0.95
Lawns			
Clay Soil			
Flat, 2%	0.18	0.2	0.25
Average, 2-7%	0.22	0.28	0.35
Steep, 7%	0.35	0.45	0.6
Sandy Soil			
Flat, 2%	0.1	0.25	0.4
Average, 2-7%	0.15	0.3	0.45
Steep, 7%	0.2	0.35	0.5

Source: City of Little Rock Stormwater Management & Drainage Design Manual

The design engineer shall use the preceding values as a rule of thumb. Areas not conforming to the preceding descriptions will be evaluated by calculating a composite runoff coefficient. Areas will be evaluated based upon the ultimate development for the area under consideration.

Time of Concentration

RICHARDSON ENGINEERING
Planning ▪ Engineering ▪ Development Consulting

325 West South Street
Benton, AR 72015
(501) 315-7225

(1/1)

PROJECT 024-034 T_c CALCULATIONS DATE 03/04/2026

POST-DEV BASIN "E-1"

SUB CB-28 T_c = 15.08 MIN

PIPE-22 => $\frac{L}{(V)(60)} = \frac{58}{(8.73)(60)}$ = 0.11 MIN

PIPE-21 => $\frac{237}{(4.4)(60)}$ = 0.89 MIN

PIPE-11 => $\frac{70}{(7.8)(60)}$ = 0.15 MIN

PIPE 10 => $\frac{256}{(7.38)(60)}$ = 0.58 MIN

PIPE 9 => $\frac{33}{(9.67)(60)}$ = 0.057 MIN

T_c = 17.43 MIN

PIPE 8 => $\frac{130}{(22.75)(60)}$ = 0.095 MIN

FES → POND

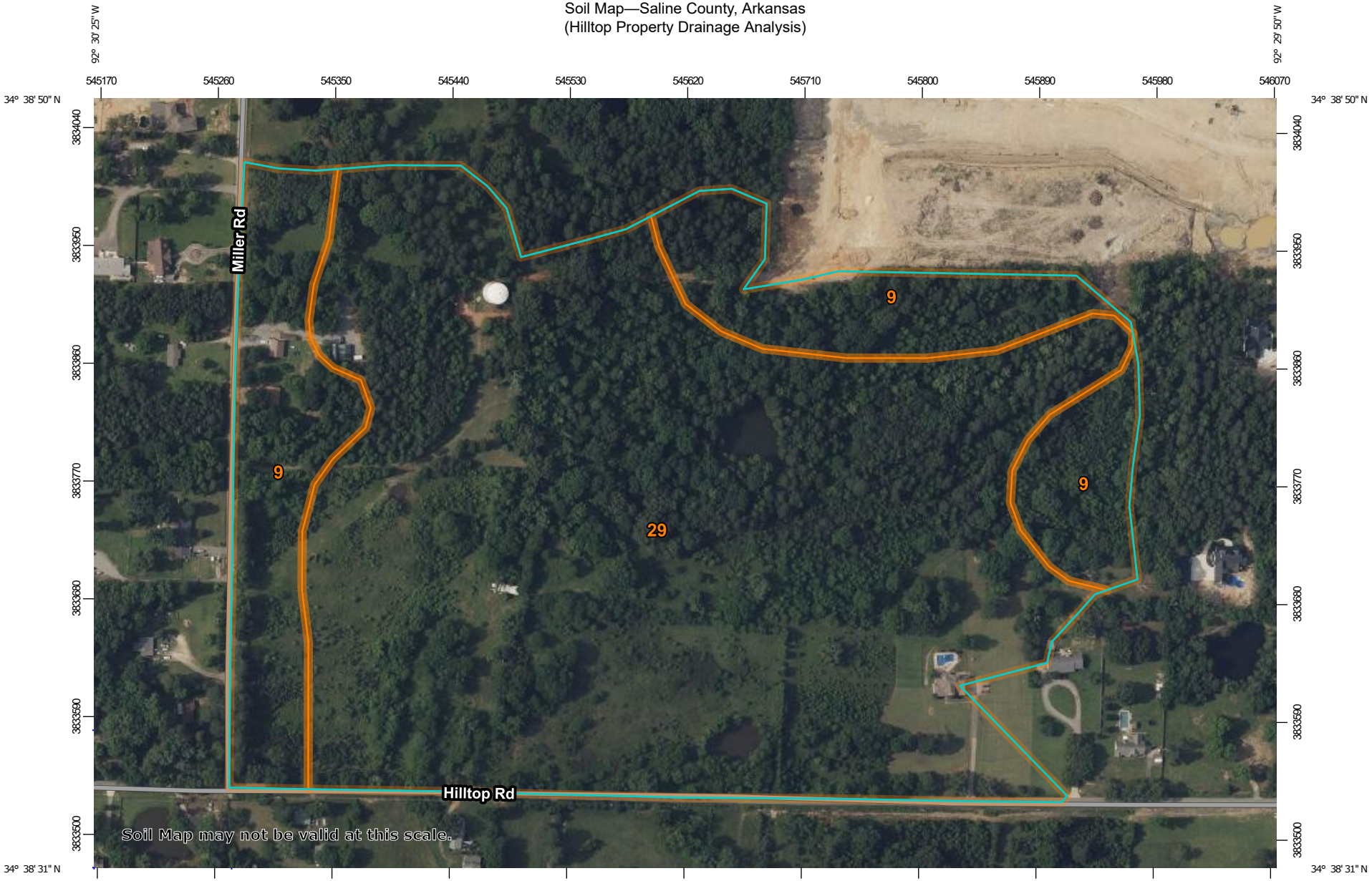
∴ L = 153 FT $S = \frac{492 - 475}{153} = 0.1111$ => 11.11%

$V = 16.1345\,(S)^{0.5} = 16.1345\,(0.1111)^{0.5} = 5.38$ FT/S

$T = 153 \div (5.38 \times 60) = 0.47$ MIN

NRCS Soil Report

Soil Map—Saline County, Arkansas
(Hilltop Property Drainage Analysis)



Map Scale: 1:4,150 if printed on A landscape (11" x 8.5") sheet.

N

0 50 100 200 300 Meters

0 200 400 800 1200 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

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

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: Saline County, Arkansas
Survey Area Data: Version 22, Sep 10, 2025

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

Date(s) aerial images were photographed: May 1, 2022—May 29, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
9	Carnasaw-Townley association, undulating	16.2	22.7%
29	Tiak silt loam, 3 to 8 percent slopes	54.9	77.3%
Totals for Area of Interest		**71.1**	**100.0%**

Saline County, Arkansas

9—Carnasaw-Townley association, undulating

Map Unit Setting

National map unit symbol: m073
Landscape: Hills
Elevation: 500 to 1,800 feet
Mean annual precipitation: 44 to 61 inches
Mean annual air temperature: 49 to 74 degrees F
Frost-free period: 185 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Carnasaw and similar soils: 50 percent
Townley and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carnasaw

Setting

Landscape: Hills
Landform: Hills
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Clayey residuum weathered from acid shale

Typical profile

A - 0 to 3 inches: gravelly silt loam
Bt1 - 3 to 6 inches: silty clay loam
Bt2 - 6 to 40 inches: clay
Cr - 40 to 72 inches: bedrock

Properties and qualities

Slope: 3 to 12 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C

Ecological site: F119XY006AR - Clayey Upland
Hydric soil rating: No

Description of Townley

Setting

Landscape: Hills
Landform: Hills
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale over clayey residuum weathered from sandstone and shale

Typical profile

A - 0 to 6 inches: silt loam
Bt1 - 6 to 23 inches: silty clay
Bt2 - 23 to 25 inches: silty clay
Cr - 25 to 29 inches: bedrock

Properties and qualities

Slope: 3 to 12 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: F119XY006AR - Clayey Upland
Hydric soil rating: No

Minor Components

Pirum

Percent of map unit: 15 percent
Landscape: Hills
Ecological site: F119XY007AR - Loamy Upland
Hydric soil rating: No

Data Source Information

Soil Survey Area: Saline County, Arkansas
Survey Area Data: Version 22, Sep 10, 2025

Saline County, Arkansas

29—Tiak silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: m06q
Landscape: Coastal plains
Elevation: 70 to 570 feet
Mean annual precipitation: 44 to 61 inches
Mean annual air temperature: 49 to 74 degrees F
Frost-free period: 185 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Tiak

Setting

Landscape: Coastal plains
Landform: Interfluves
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy and clayey marine deposits

Typical profile

A - 0 to 7 inches: silt loam
E - 7 to 9 inches: loam
Bt1 - 9 to 32 inches: clay
Bt2 - 32 to 72 inches: clay

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Ecological site: F133BY002TX - Seasonally Wet Upland

Hydric soil rating: No

Data Source Information

Soil Survey Area: Saline County, Arkansas
Survey Area Data: Version 22, Sep 10, 2025

NOAA Atlas 14 Data

NOAA Atlas 14, Volume 9, Version 2
Location name: Bryant, Arkansas, USA*
Latitude: 34.6452°, Longitude: -92.5032°
Elevation: 527 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

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	**0.452** (0.366-0.553)	**0.512** (0.414-0.627)	**0.607** (0.490-0.746)	**0.684** (0.549-0.844)	**0.786** (0.608-0.994)	**0.861** (0.652-1.11)	**0.934** (0.684-1.23)	**1.01** (0.707-1.36)	**1.10** (0.741-1.53)	**1.16** (0.768-1.66)
10-min	**0.661** (0.536-0.810)	**0.749** (0.607-0.918)	**0.889** (0.717-1.09)	**1.00** (0.803-1.24)	**1.15** (0.890-1.46)	**1.26** (0.955-1.62)	**1.37** (1.00-1.80)	**1.47** (1.04-2.00)	**1.60** (1.09-2.24)	**1.70** (1.12-2.42)
15-min	**0.806** (0.654-0.988)	**0.914** (0.740-1.12)	**1.08** (0.875-1.33)	**1.22** (0.980-1.51)	**1.40** (1.08-1.77)	**1.54** (1.16-1.98)	**1.67** (1.22-2.20)	**1.80** (1.26-2.44)	**1.96** (1.32-2.73)	**2.07** (1.37-2.96)
30-min	**1.20** (0.972-1.47)	**1.36** (1.10-1.67)	**1.62** (1.31-2.00)	**1.83** (1.47-2.26)	**2.11** (1.63-2.66)	**2.31** (1.75-2.96)	**2.50** (1.83-3.30)	**2.69** (1.89-3.65)	**2.93** (1.98-4.09)	**3.10** (2.05-4.42)
60-min	**1.60** (1.30-1.96)	**1.82** (1.47-2.23)	**2.16** (1.74-2.65)	**2.44** (1.95-3.00)	**2.81** (2.17-3.56)	**3.09** (2.34-3.97)	**3.36** (2.46-4.44)	**3.63** (2.56-4.93)	**3.98** (2.70-5.57)	**4.24** (2.80-6.05)
2-hr	**2.01** (1.64-2.44)	**2.27** (1.85-2.76)	**2.69** (2.19-3.28)	**3.04** (2.46-3.72)	**3.51** (2.74-4.42)	**3.87** (2.95-4.95)	**4.22** (3.12-5.54)	**4.58** (3.24-6.18)	**5.04** (3.44-7.00)	**5.38** (3.58-7.62)
3-hr	**2.26** (1.86-2.74)	**2.55** (2.09-3.09)	**3.03** (2.48-3.68)	**3.43** (2.79-4.19)	**3.99** (3.13-5.01)	**4.42** (3.39-5.64)	**4.85** (3.60-6.35)	**5.29** (3.77-7.13)	**5.88** (4.03-8.15)	**6.33** (4.22-8.93)
6-hr	**2.71** (2.24-3.26)	**3.08** (2.55-3.70)	**3.70** (3.05-4.46)	**4.24** (3.47-5.13)	**5.00** (3.97-6.27)	**5.61** (4.35-7.14)	**6.23** (4.67-8.14)	**6.89** (4.95-9.24)	**7.78** (5.37-10.7)	**8.47** (5.69-11.9)
12-hr	**3.20** (2.67-3.81)	**3.68** (3.07-4.40)	**4.52** (3.75-5.40)	**5.25** (4.33-6.30)	**6.30** (5.05-7.87)	**7.15** (5.59-9.06)	**8.04** (6.07-10.5)	**8.98** (6.50-12.0)	**10.3** (7.16-14.1)	**11.3** (7.65-15.8)
24-hr	**3.75** (3.15-4.44)	**4.35** (3.66-5.15)	**5.39** (4.51-6.40)	**6.30** (5.25-7.52)	**7.64** (6.18-9.50)	**8.74** (6.89-11.0)	**9.89** (7.53-12.8)	**11.1** (8.11-14.8)	**12.8** (8.99-17.5)	**14.2** (9.65-19.6)
2-day	**4.40** (3.73-5.16)	**5.07** (4.30-5.96)	**6.24** (5.27-7.35)	**7.28** (6.11-8.62)	**8.81** (7.18-10.9)	**10.1** (8.00-12.6)	**11.4** (8.73-14.6)	**12.8** (9.40-16.9)	**14.7** (10.4-20.0)	**16.3** (11.2-22.4)
3-day	**4.81** (4.10-5.62)	**5.54** (4.71-6.47)	**6.78** (5.75-7.95)	**7.87** (6.64-9.27)	**9.46** (7.75-11.6)	**10.8** (8.59-13.4)	**12.1** (9.33-15.5)	**13.6** (10.0-17.8)	**15.6** (11.0-21.0)	**17.2** (11.8-23.5)
4-day	**5.14** (4.39-5.98)	**5.90** (5.04-6.87)	**7.20** (6.12-8.41)	**8.33** (7.04-9.78)	**9.97** (8.18-12.2)	**11.3** (9.03-14.0)	**12.7** (9.78-16.1)	**14.1** (10.4-18.5)	**16.1** (11.5-21.7)	**17.7** (12.2-24.2)
7-day	**5.96** (5.13-6.89)	**6.79** (5.84-7.86)	**8.20** (7.02-9.52)	**9.41** (8.01-11.0)	**11.1** (9.18-13.5)	**12.5** (10.1-15.4)	**13.9** (10.8-17.6)	**15.4** (11.5-20.0)	**17.5** (12.5-23.4)	**19.1** (13.2-25.9)
10-day	**6.74** (5.82-7.76)	**7.61** (6.57-8.77)	**9.07** (7.80-10.5)	**10.3** (8.82-12.0)	**12.1** (9.99-14.5)	**13.5** (10.9-16.5)	**14.9** (11.6-18.7)	**16.4** (12.2-21.2)	**18.4** (13.2-24.5)	**20.0** (13.9-27.0)
20-day	**9.13** (7.96-10.4)	**10.1** (8.78-11.5)	**11.6** (10.1-13.4)	**12.9** (11.2-14.9)	**14.8** (12.3-17.5)	**16.2** (13.1-19.5)	**17.6** (13.8-21.8)	**19.0** (14.3-24.3)	**20.9** (15.1-27.6)	**22.4** (15.7-30.1)
30-day	**11.1** (9.71-12.6)	**12.2** (10.7-13.9)	**14.0** (12.2-15.9)	**15.4** (13.4-17.7)	**17.4** (14.6-20.6)	**18.9** (15.5-22.7)	**20.4** (16.1-25.2)	**21.9** (16.5-27.9)	**23.9** (17.3-31.3)	**25.4** (17.8-33.9)
45-day	**13.4** (11.8-15.2)	**14.9** (13.1-16.8)	**17.1** (15.0-19.5)	**18.9** (16.5-21.6)	**21.4** (17.9-25.1)	**23.2** (19.0-27.7)	**25.0** (19.7-30.6)	**26.7** (20.2-33.7)	**28.9** (20.9-37.7)	**30.5** (21.5-40.6)
60-day	**15.3** (13.6-17.3)	**17.1** (15.1-19.3)	**20.0** (17.5-22.6)	**22.2** (19.4-25.3)	**25.2** (21.2-29.4)	**27.4** (22.5-32.5)	**29.5** (23.3-36.0)	**31.5** (23.9-39.7)	**34.1** (24.8-44.2)	**35.9** (25.4-47.7)

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

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

Please refer to NOAA Atlas 14 document for more information.

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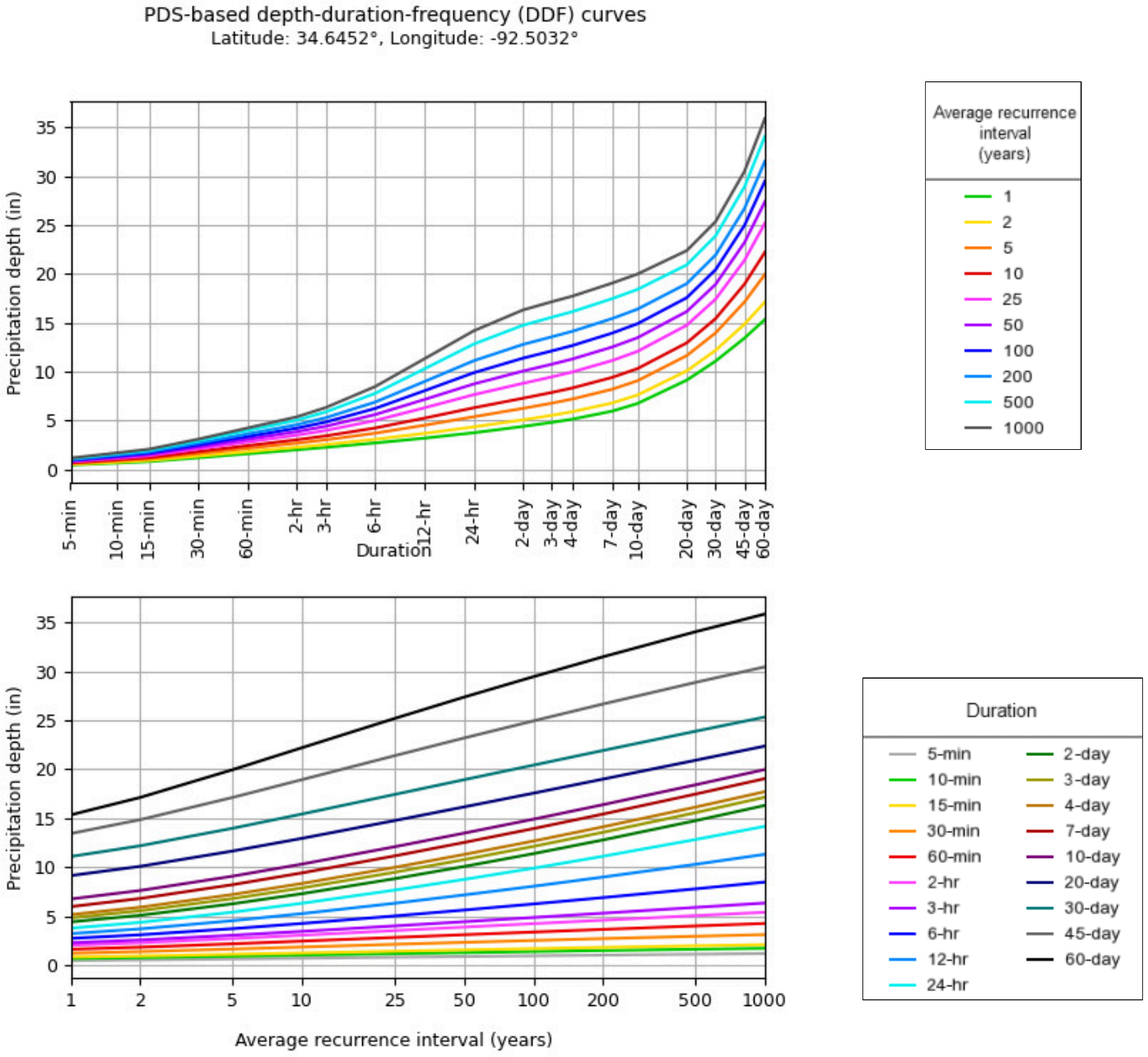
PF graphical



NOAA Atlas 14, Volume 9, Version 2

Created (GMT): Tue Mar 3 15:12:54 2026

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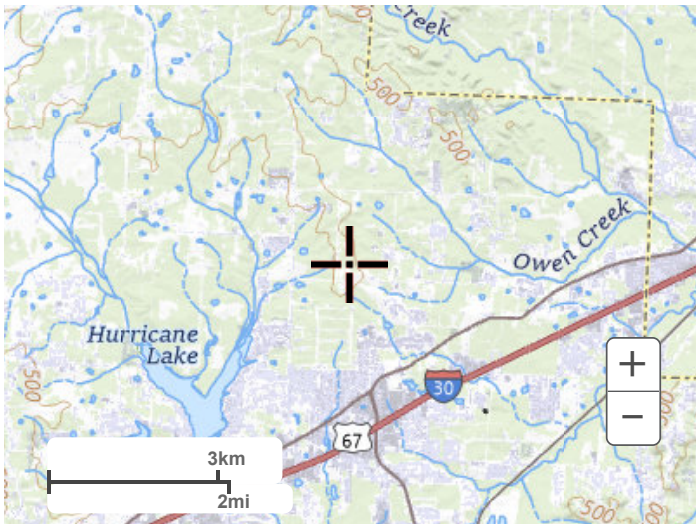
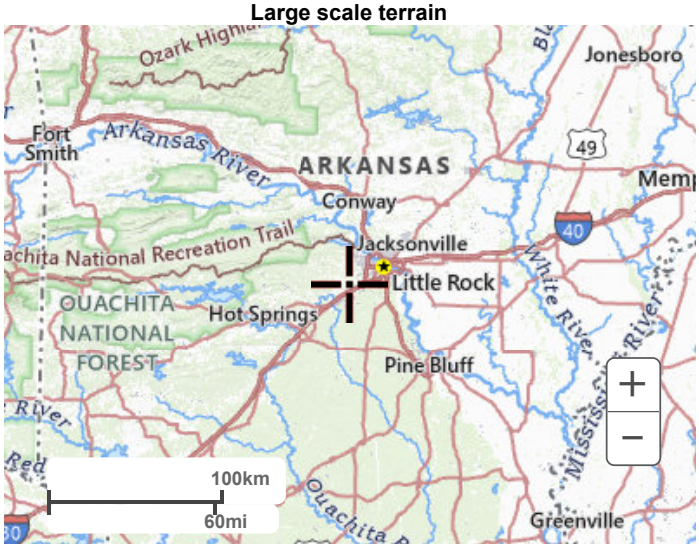
Maps & aerials

Small scale terrain



Large scale terrain



Large scale map

Large scale aerial

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

Disclaimer

NOAA Atlas 14, Volume 9, Version 2
Location name: Bryant, Arkansas, USA*
Latitude: 34.6452°, Longitude: -92.5032°
Elevation: 527 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

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

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**5.42** (4.39-6.64)	**6.14** (4.97-7.52)	**7.28** (5.88-8.95)	**8.21** (6.59-10.1)	**9.43** (7.30-11.9)	**10.3** (7.82-13.3)	**11.2** (8.21-14.8)	**12.1** (8.48-16.4)	**13.2** (8.89-18.4)	**13.9** (9.22-19.9)
10-min	**3.97** (3.22-4.86)	**4.49** (3.64-5.51)	**5.33** (4.30-6.55)	**6.01** (4.82-7.42)	**6.90** (5.34-8.73)	**7.57** (5.73-9.73)	**8.21** (6.01-10.8)	**8.84** (6.21-12.0)	**9.63** (6.52-13.4)	**10.2** (6.74-14.6)
15-min	**3.22** (2.62-3.95)	**3.66** (2.96-4.48)	**4.34** (3.50-5.33)	**4.88** (3.92-6.03)	**5.61** (4.34-7.10)	**6.15** (4.66-7.91)	**6.67** (4.88-8.80)	**7.18** (5.05-9.74)	**7.83** (5.30-10.9)	**8.30** (5.48-11.8)
30-min	**2.40** (1.94-2.94)	**2.73** (2.21-3.34)	**3.25** (2.62-3.99)	**3.66** (2.94-4.52)	**4.21** (3.25-5.32)	**4.62** (3.49-5.93)	**5.01** (3.66-6.59)	**5.38** (3.78-7.30)	**5.86** (3.96-8.17)	**6.20** (4.10-8.84)
60-min	**1.60** (1.30-1.96)	**1.82** (1.47-2.23)	**2.16** (1.74-2.65)	**2.44** (1.95-3.00)	**2.81** (2.17-3.56)	**3.09** (2.34-3.97)	**3.36** (2.46-4.44)	**3.63** (2.56-4.93)	**3.98** (2.70-5.57)	**4.24** (2.80-6.05)
2-hr	**1.00** (0.820-1.22)	**1.13** (0.926-1.38)	**1.35** (1.09-1.64)	**1.52** (1.23-1.86)	**1.75** (1.37-2.21)	**1.93** (1.48-2.47)	**2.11** (1.56-2.77)	**2.29** (1.62-3.09)	**2.52** (1.72-3.50)	**2.69** (1.79-3.81)
3-hr	**0.752** (0.618-0.910)	**0.849** (0.696-1.03)	**1.01** (0.824-1.22)	**1.14** (0.928-1.39)	**1.33** (1.04-1.67)	**1.47** (1.13-1.88)	**1.62** (1.20-2.12)	**1.76** (1.26-2.37)	**1.96** (1.34-2.72)	**2.11** (1.41-2.97)
6-hr	**0.452** (0.374-0.543)	**0.514** (0.425-0.618)	**0.618** (0.509-0.745)	**0.708** (0.579-0.857)	**0.835** (0.663-1.05)	**0.936** (0.726-1.19)	**1.04** (0.779-1.36)	**1.15** (0.825-1.54)	**1.30** (0.896-1.79)	**1.41** (0.950-1.98)
12-hr	**0.265** (0.221-0.316)	**0.305** (0.254-0.364)	**0.375** (0.311-0.448)	**0.435** (0.359-0.523)	**0.522** (0.419-0.653)	**0.593** (0.464-0.752)	**0.667** (0.504-0.867)	**0.745** (0.539-0.996)	**0.853** (0.594-1.17)	**0.938** (0.635-1.31)
24-hr	**0.156** (0.131-0.184)	**0.181** (0.152-0.214)	**0.224** (0.187-0.266)	**0.262** (0.218-0.313)	**0.318** (0.257-0.395)	**0.364** (0.287-0.458)	**0.412** (0.313-0.532)	**0.463** (0.337-0.615)	**0.534** (0.374-0.730)	**0.590** (0.402-0.817)
2-day	**0.091** (0.077-0.107)	**0.105** (0.089-0.124)	**0.130** (0.109-0.153)	**0.151** (0.127-0.179)	**0.183** (0.149-0.226)	**0.209** (0.166-0.262)	**0.237** (0.181-0.304)	**0.266** (0.195-0.351)	**0.307** (0.216-0.417)	**0.339** (0.232-0.466)
3-day	**0.066** (0.056-0.078)	**0.076** (0.065-0.089)	**0.094** (0.079-0.110)	**0.109** (0.092-0.128)	**0.131** (0.107-0.161)	**0.149** (0.119-0.185)	**0.168** (0.129-0.214)	**0.188** (0.138-0.247)	**0.216** (0.153-0.292)	**0.238** (0.163-0.326)
4-day	**0.053** (0.045-0.062)	**0.061** (0.052-0.071)	**0.074** (0.063-0.087)	**0.086** (0.073-0.101)	**0.103** (0.085-0.126)	**0.117** (0.094-0.145)	**0.131** (0.101-0.167)	**0.147** (0.108-0.192)	**0.168** (0.119-0.226)	**0.184** (0.127-0.251)
7-day	**0.035** (0.030-0.041)	**0.040** (0.034-0.046)	**0.048** (0.041-0.056)	**0.056** (0.047-0.065)	**0.066** (0.054-0.080)	**0.074** (0.059-0.091)	**0.082** (0.064-0.104)	**0.091** (0.068-0.119)	**0.103** (0.074-0.139)	**0.113** (0.078-0.153)
10-day	**0.028** (0.024-0.032)	**0.031** (0.027-0.036)	**0.037** (0.032-0.043)	**0.042** (0.036-0.049)	**0.050** (0.041-0.060)	**0.056** (0.045-0.068)	**0.062** (0.048-0.077)	**0.068** (0.050-0.088)	**0.076** (0.054-0.102)	**0.083** (0.057-0.112)
20-day	**0.019** (0.016-0.021)	**0.021** (0.018-0.024)	**0.024** (0.021-0.027)	**0.026** (0.023-0.031)	**0.030** (0.025-0.036)	**0.033** (0.027-0.040)	**0.036** (0.028-0.045)	**0.039** (0.029-0.050)	**0.043** (0.031-0.057)	**0.046** (0.032-0.062)
30-day	**0.015** (0.013-0.017)	**0.016** (0.014-0.019)	**0.019** (0.016-0.022)	**0.021** (0.018-0.024)	**0.024** (0.020-0.028)	**0.026** (0.021-0.031)	**0.028** (0.022-0.034)	**0.030** (0.022-0.038)	**0.033** (0.023-0.043)	**0.035** (0.024-0.047)
45-day	**0.012** (0.010-0.014)	**0.013** (0.012-0.015)	**0.015** (0.013-0.018)	**0.017** (0.015-0.020)	**0.019** (0.016-0.023)	**0.021** (0.017-0.025)	**0.023** (0.018-0.028)	**0.024** (0.018-0.031)	**0.026** (0.019-0.034)	**0.028** (0.019-0.037)
60-day	**0.010** (0.009-0.012)	**0.011** (0.010-0.013)	**0.013** (0.012-0.015)	**0.015** (0.013-0.017)	**0.017** (0.014-0.020)	**0.019** (0.015-0.022)	**0.020** (0.016-0.024)	**0.021** (0.016-0.027)	**0.023** (0.017-0.030)	**0.024** (0.017-0.033)

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

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

Please refer to NOAA Atlas 14 document for more information.

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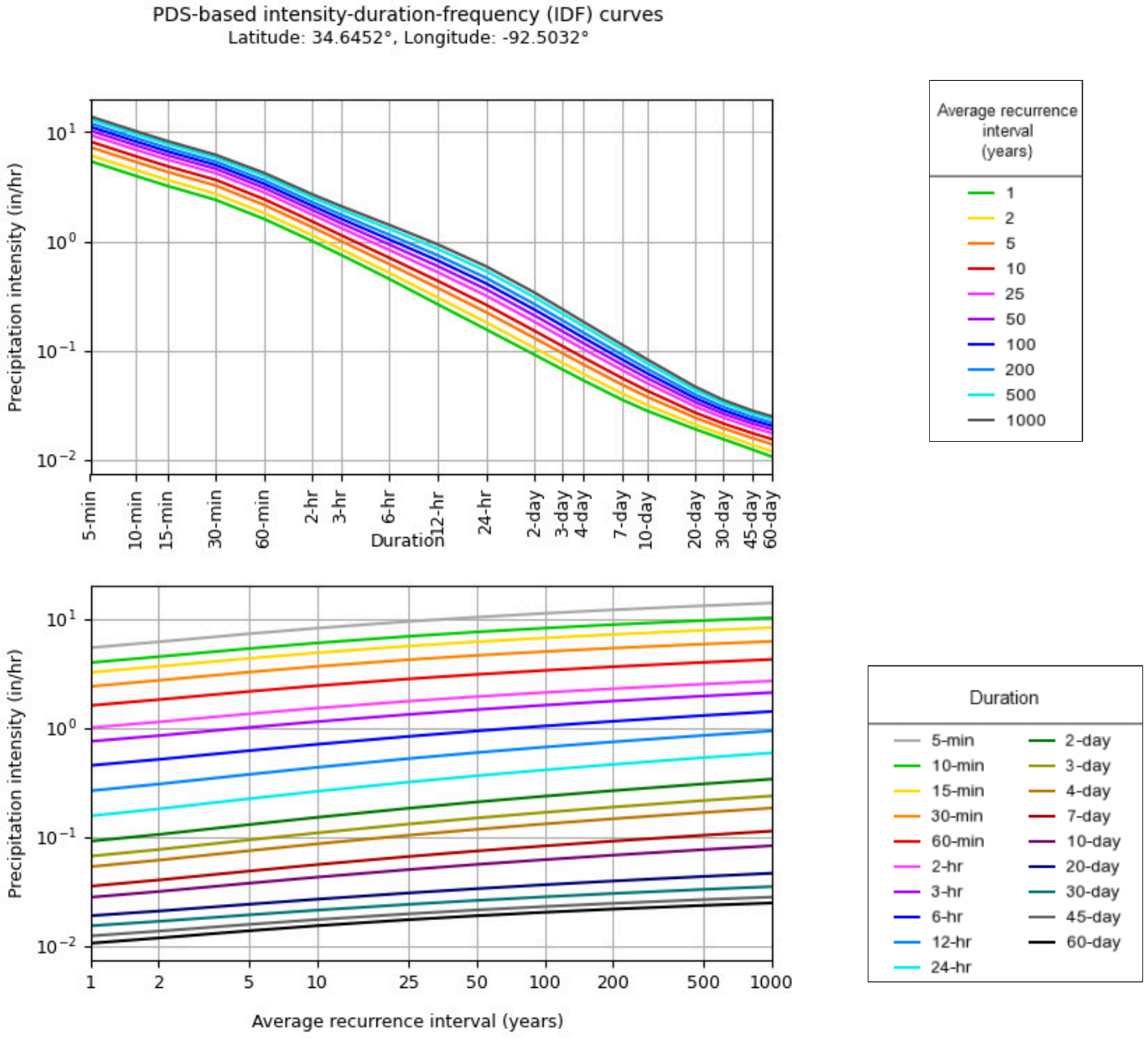
PF graphical



NOAA Atlas 14, Volume 9, Version 2

Created (GMT): Tue Mar 3 15:14:13 2026

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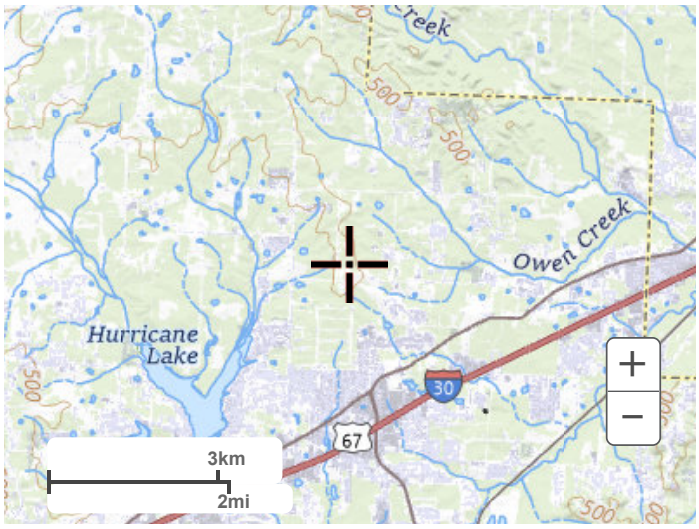
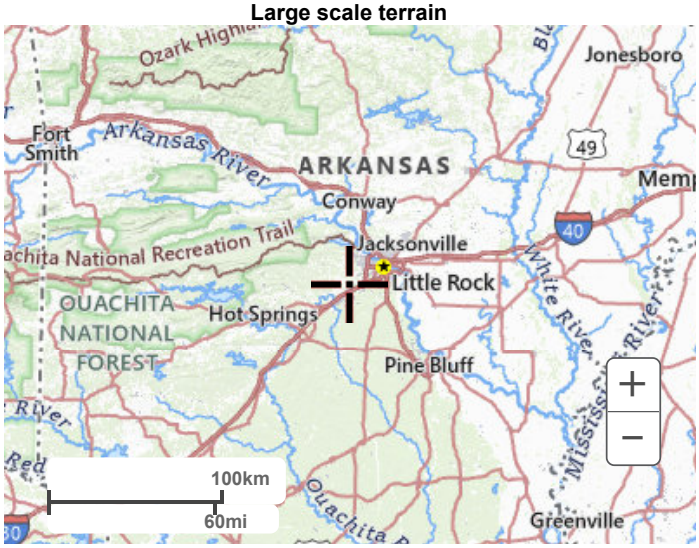
Maps & aerials

Small scale terrain



Large scale terrain



Large scale map

Large scale aerial

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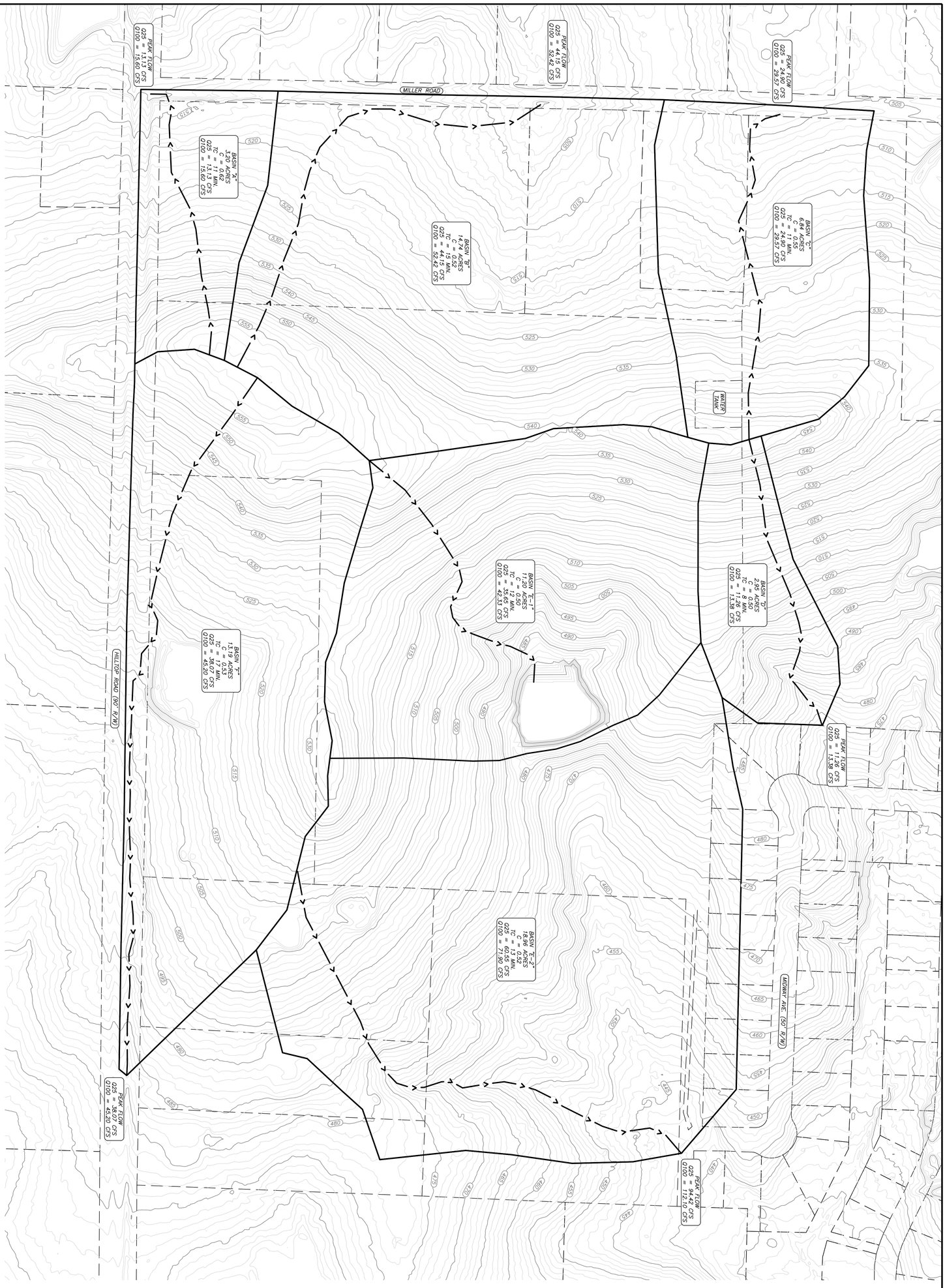
US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Site Drainage Basin Maps



GRAPHIC SCALE
(IN FEET)
1 inch = 100 ft

PROJECT NO.:	024-034
Scale:	1" = 100'
Date:	03/04/2026
Sheet:	1 of 3

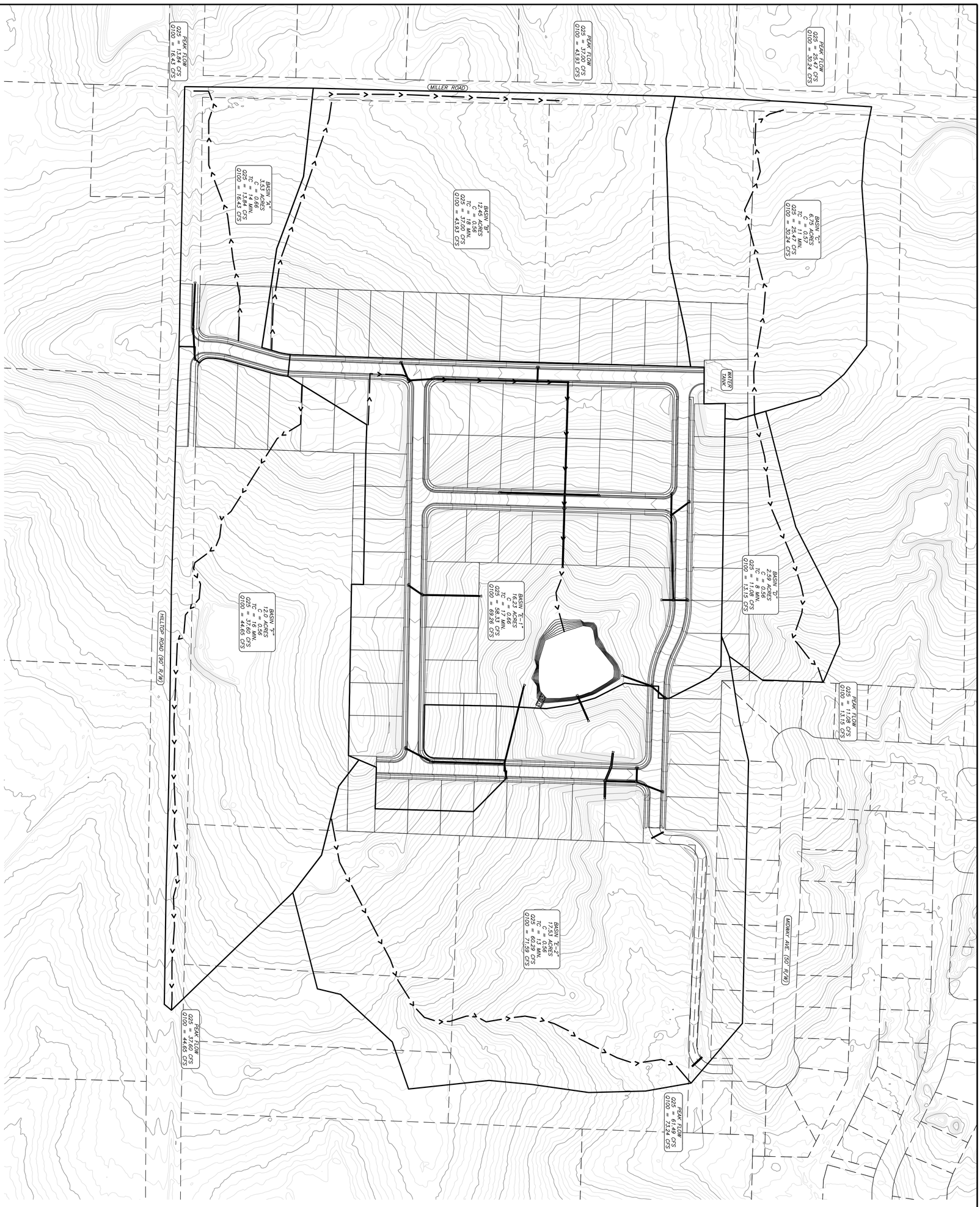
No.	Revisions	Date

Prepared For:
EMINENT CONSTRUCTIONS

PRE-DEVELOPMENT DRAINAGE BASIN MAP
HILLTOP PROPERTY - R2
75' LOTS
HILLTOP ROAD
BRYANT, ARKANSAS

CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
ARKANSAS

RICHARDSON ENGINEERING
Planning • Engineering • Development Consulting
325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225



GRAPHIC SCALE

(IN FEET)

1 inch = 100 ft

PROJECT NO.: 024-034		
Scale: 1" = 100'	Date: 03/04/2026	
Sheet: 2 of 3		

No.	Revisions	Date

Prepared For:

EMINENT CONSTRUCTIONS

POST-DEVELOPMENT DRAINAGE BASIN MAP

HILLTOP PROPERTY – R2

75' LOTS

HILLTOP ROAD

BRYANT, ARKANSAS

CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
ARKANSAS

RICHARDSON ENGINEERING
Planning • Engineering • Development Consulting
325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225

WATER TANK

SUB CB-25
AREA: 0.51 AC
C=0.70
TC=8.26 MIN.

SUB CB-26
AREA: 0.49 AC
C=0.70
TC=15.87 MIN.

SUB CB-10
AREA: 0.58 AC
C=0.70
TC=15.90 MIN.

SUB PIPE 36
AREA: 1.59 AC
C=0.72
TC=10.56 MIN.

SUB CB-20
AREA: 0.62 AC
C=0.70
TC=17.06 MIN.

SUB PIPE 35
AREA: 0.36 AC
C=0.71
TC=2.36 MIN.

SUB CB-24
AREA: 0.27 AC
C=0.70
TC=5.02 MIN.

SUB CB-43
AREA: 0.71 AC
C=0.70
TC=7.89 MIN.

SUB CB-22
AREA: 0.14 AC
C=0.70
TC=3.36 MIN.

SUB CB-9
AREA: 0.12 AC
C=0.70
TC=3.46 MIN.

SUB CB-6
AREA: 0.16 AC
C=0.70
TC=3.48 MIN.

SUB CB-7
AREA: 0.04 AC
C=0.70
TC=3.47 MIN.

SUB CB-16
AREA: 0.42 AC
C=0.70
TC=3.93 MIN.

SUB CB-13
AREA: 1.03 AC
C=0.70
TC=7.97 MIN.

SUB CB-15
AREA: 1.21 AC
C=0.70
TC=10.77 MIN.

SUB CB-3
AREA: 0.14 AC
C=0.70
TC=3.84 MIN.

SUB CB-2
AREA: 0.38 AC
C=0.70
TC=14.99 MIN.

SUB FES-2
AREA: 1.58 AC
C=0.56
TC=8.33 MIN.

SUB CB-44
AREA: 0.72 AC
C=0.70
TC=8.40 MIN.

SUB CB-12
AREA: 0.32 AC
C=0.70
TC=4.14 MIN.

SUB CB-35
AREA: 0.10 AC
C=0.70
TC=3.30 MIN.

SUB CB-18
AREA: 0.12 AC
C=0.70
TC=3.59 MIN.

SUB CB-38
AREA: 0.24 AC
C=0.70
TC=5.73 MIN.

SUB CB-36
AREA: 0.58 AC
C=0.70
TC=14.71 MIN.

SUB CB-27
AREA: 0.10 AC
C=0.70
TC=6.13 MIN.

SUB CB-19
AREA: 1.00 AC
C=0.70
TC=12.96 MIN.

SUB CB-39
AREA: 1.39 AC
C=0.70
TC=19.18 MIN.

SUB CB-28
AREA: 0.67 AC
C=0.70
TC=15.08 MIN.

SUB CB-29
AREA: 0.15 AC
C=0.70
TC=3.73 MIN.

SUB CB-31
AREA: 0.17 AC
C=0.70
TC=3.90 MIN.

SUB CB-32
AREA: 0.13 AC
C=0.70
TC=3.80 MIN.

GRAPHIC SCALE

60 0 60 120 180

(IN FEET)
1 inch = 60 ft.

RICHARDSON ENGINEERING
Planning • Engineering • Development Consulting
325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225

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Richardson Engineering, PLLC
No. 2519
ARKANSAS

POST-DEVELOPMENT DRAINAGE BASIN MAP
HILLTOP PROPERTY – R2
75' LOTS
HILLTOP ROAD
BRYANT, ARKANSAS

EMINENT CONSTRUCTIONS

Prepared For:

No.	Revisions	Date

PROJECT NO.: 024-034
Date: 03/04/2026
Scale: 1" = 60'
Sheet: 3 of 3

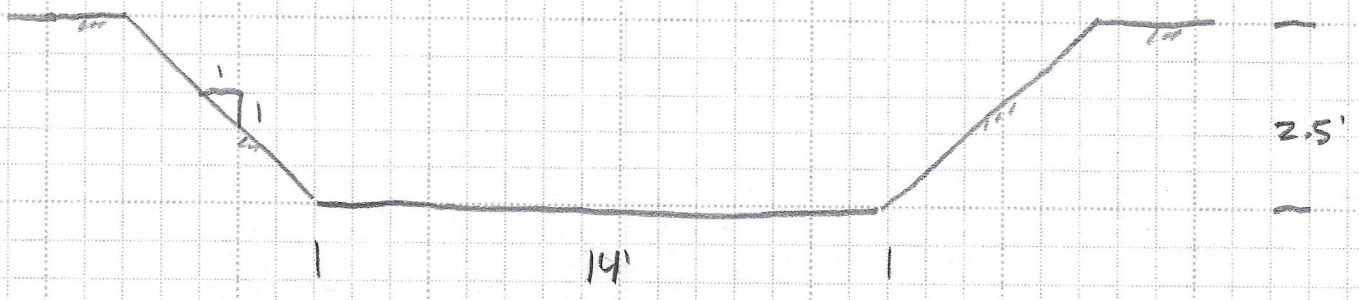
Overflow Wier Blockage Calculation

RICHARDSON ENGINEERING
Planning ▪ Engineering ▪ Development Consulting

325 West South Street
Benton, AR 72015
(501) 315-7225

(1/1)

PROJECT 024-034 OVER FLOW WEIR CALCULATION DATE 03/04/2026



$Q = C\,L\,H^{3/2}$

$C = 2.8$

$L = 14'$

$H = 2.5'$

$Q = (2.8)(14)(2.5)^{3/2} = 154.95$ CFS

∴ ASSUMING THAT 50% OF THE WEIR IS BLOCKED

$Q = \frac{154.95}{2} = 77.48$ CFS > Q_{100} INTO POND = 69.92 CFS ✓

SSA Design Layout

Storm System Design (SSA)

2 Year Design Storm

Project Description

File Name	Hilltop Drainage Analysis 4-8-26.SPF

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins	31
Nodes	46
Junctions	5
Outfalls	13
Flow Diversions	0
Inlets	28
Storage Nodes	0
Links	54
Channels	21
Pipes	33
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period	2 year(s)

Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-CB-10	0.58	0.7000	0.94	0.66	0.38	1.45	0 00:15:54
2	Sub-CB-12	0.32	0.7000	0.51	0.36	0.11	1.37	0 00:05:00
3	Sub-CB-13	1.03	0.7000	0.66	0.46	0.47	3.56	0 00:07:58
4	Sub-CB-15	1.21	0.7000	0.77	0.54	0.65	3.63	0 00:10:46
5	Sub-CB-16	0.42	0.7000	0.51	0.36	0.15	1.80	0 00:05:00
6	Sub-CB-18	0.12	0.7000	0.51	0.36	0.04	0.53	0 00:05:00
7	Sub-CB-19	1.00	0.7000	0.85	0.60	0.59	2.74	0 00:12:57
8	Sub-CB-2	0.38	0.7000	0.92	0.64	0.24	0.97	0 00:14:59
9	Sub-CB-20	0.62	0.7000	0.98	0.69	0.42	1.50	0 00:17:03
10	Sub-CB-22	0.14	0.7000	0.51	0.36	0.05	0.60	0 00:05:00
11	Sub-CB-24	0.27	0.7000	0.51	0.36	0.10	1.16	0 00:05:01
12	Sub-CB-25	0.51	0.7000	0.67	0.47	0.24	1.73	0 00:08:15
13	Sub-CB-26	0.49	0.7000	0.94	0.66	0.32	1.23	0 00:15:52
14	Sub-CB-27	0.10	0.7000	0.58	0.40	0.04	0.38	0 00:06:07
15	Sub-CB-28	0.67	0.7000	0.91	0.64	0.43	1.71	0 00:15:04
16	Sub-CB-29	0.15	0.7000	0.51	0.36	0.05	0.63	0 00:05:00
17	Sub-CB-3	0.14	0.7000	0.51	0.36	0.05	0.61	0 00:05:00
18	Sub-CB-31	0.17	0.7000	0.51	0.36	0.06	0.75	0 00:05:00
19	Sub-CB-32	0.13	0.7000	0.51	0.36	0.05	0.56	0 00:05:00
20	Sub-CB-35	0.10	0.7000	0.51	0.36	0.04	0.43	0 00:05:00
21	Sub-CB-36	0.58	0.7000	0.90	0.63	0.37	1.51	0 00:14:42
22	Sub-CB-38	0.24	0.7000	0.55	0.38	0.09	0.98	0 00:05:43
23	Sub-CB-39	1.39	0.7000	1.05	0.74	1.02	3.20	0 00:19:10
24	Sub-CB-43	0.71	0.7000	0.65	0.45	0.32	2.47	0 00:07:53
25	Sub-CB-44	0.72	0.7000	0.67	0.47	0.34	2.43	0 00:08:24
26	Sub-CB-6	0.16	0.7000	0.51	0.36	0.06	0.71	0 00:05:00
27	Sub-CB-7	0.04	0.7000	0.51	0.36	0.01	0.18	0 00:05:00
28	Sub-CB-9	0.36	0.7000	0.51	0.36	0.13	1.55	0 00:05:00
29	Sub-FES-2	1.58	0.5600	0.67	0.38	0.60	4.29	0 00:08:19
30	SUB-PIPE-35	0.36	0.7200	0.51	0.37	0.13	1.60	0 00:05:00
31	SUB-PIPE-36	1.26	0.7200	0.76	0.55	0.69	3.92	0 00:10:33

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)
1	FES-2	Junction	466.60	469.78	466.60	469.78	0.00	19.47	468.35	0.00	1.43
2	IN-PIPE-35	Junction	462.75	464.00	462.75	464.00	0.00	1.59	463.18	0.00	1.07
3	IN-PIPE36	Junction	441.30	442.80	441.30	442.80	0.00	3.92	442.17	0.00	0.71
4	JB-14	Junction	529.50	534.76	529.50	535.50	0.00	5.29	529.93	0.00	4.83
5	JB-23	Junction	515.30	519.44	515.30	519.20	10.00	2.03	515.56	0.00	3.88
6	OFFSITE-1	Outfall	540.30					0.03	540.33		
7	OFFSITE-2	Outfall	532.10					0.00	532.11		
8	OFFSITE-25	Outfall	464.82					0.00	464.82		
9	OFFSITE-26	Outfall	464.82					0.18	464.90		
10	OU-PIPE-36	Outfall	441.00					3.91	441.65		
11	Out-FES-1	Outfall	463.00					21.43	463.65		
12	Out-FES-11	Outfall	492.00					11.68	492.47		
13	Out-FES-17	Outfall	505.00					2.27	505.26		
14	Out-FES-21	Outfall	499.00					3.05	499.30		
15	Out-FES-3	Outfall	538.50					1.24	538.71		
16	Out-FES-34	Outfall	484.31					4.00	484.84		
17	Out-FES-8	Outfall	482.52					1.79	482.92		
18	OUT-PIPE-35	Outfall	462.25					1.59	462.62		

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak D Total D F
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)	
1	SDPIPE-1	Pipe	CB-2	Out-FES-1	35.55	465.94	463.00	8.2700	36.000	0.0120	21.43	207.79	0.10	13.86	0.81	
2	SDPIPE-10	Pipe	JB-14	CB-13	256.10	529.50	512.58	6.6100	18.000	0.0120	5.28	29.25	0.18	5.99	0.87	
3	SDPIPE-11	Pipe	CB-15	JB-14	67.57	530.20	529.50	1.0400	18.000	0.0120	5.29	11.59	0.46	7.08	0.66	
4	SDPIPE-12	Pipe	CB-16	CB-15	33.01	530.53	530.20	1.0000	18.000	0.0130	0.69	10.49	0.07	1.74	0.72	
5	SDPIPE-13	Pipe	CB-18	Out-FES-17	130.50	517.50	505.00	9.5800	18.000	0.0120	2.27	35.22	0.06	10.80	0.26	
6	SDPIPE-14	Pipe	CB-19	CB-18	39.55	517.99	517.50	1.2500	18.000	0.0130	2.28	11.74	0.19	5.82	0.41	
7	SDPIPE-15	Pipe	CB-20	CB-7	64.04	468.11	467.47	1.0000	18.000	0.0130	1.45	10.50	0.14	3.74	0.41	
8	SDPIPE-16	Pipe	CB-22	Out-FES-21	23.51	501.10	499.00	8.9300	18.000	0.0120	3.05	34.01	0.09	9.81	0.35	
9	SDPIPE-17	Pipe	JB-23	CB-22	194.21	515.30	501.00	7.3600	18.000	0.0120	2.02	30.77	0.07	7.19	0.33	
10	SDPIPE-18	Pipe	CB-24	JB-23	49.41	517.78	515.30	5.0200	18.000	0.0130	1.05	23.53	0.04	5.70	0.24	
11	SDPIPE-19	Pipe	CB-25	JB-23	51.31	517.87	515.30	5.0100	18.000	0.0130	1.38	23.51	0.06	6.89	0.26	
12	SDPIPE-2	Pipe	CB-3	CB-2	35.82	466.30	465.94	1.0000	36.000	0.0130	19.64	66.70	0.29	6.64	1.31	
13	SDPIPE-20	Pipe	CB-26	CB-22	33.00	501.43	501.10	1.0000	18.000	0.0120	1.13	11.38	0.10	4.39	0.37	
14	SDPIPE-21	Pipe	CB-27	CB-15	239.80	538.50	530.20	3.4600	18.000	0.0120	1.69	21.17	0.08	3.65	0.57	
15	SDPIPE-22	Pipe	CB-28	CB-27	57.68	542.14	538.50	6.3100	18.000	0.0130	1.70	26.39	0.06	7.46	0.28	
16	SDPIPE-23	Pipe	CB-29	CB-28	44.75	542.59	542.14	1.0100	18.000	0.0130	0.62	10.53	0.06	3.27	0.25	
17	SDPIPE-25	Pipe	CB-32	CB-31	74.63	546.00	544.50	2.0100	18.000	0.0130	0.55	14.89	0.04	3.57	0.21	
18	SDPIPE-27	Pipe	CB-35	Out-FES-34	182.53	487.50	484.31	1.7500	18.000	0.0120	4.00	15.03	0.27	6.84	0.55	
19	SDPIPE-28	Pipe	CB-36	CB-35	33.55	487.84	487.50	1.0000	18.000	0.0130	1.27	10.50	0.12	3.12	0.46	
20	SDPIPE-29	Pipe	CB-38	CB-35	167.22	505.00	487.50	10.4700	18.000	0.0120	3.08	36.81	0.08	7.34	0.43	
21	SDPIPE-3	Pipe	FES-2	CB-3	30.36	466.60	466.30	1.0000	36.000	0.0120	20.72	71.83	0.29	7.93	1.60	
22	SDPIPE-30	Pipe	CB-39	CB-38	66.71	510.34	505.00	8.0000	18.000	0.0130	3.08	29.71	0.10	10.67	0.33	
23	SDPIPE-32	Pipe	CB-31	Out-FES-3	96.89	544.50	538.50	6.1900	18.000	0.0120	1.24	28.32	0.04	7.77	0.22	
24	SDPIPE-33	Pipe	CB-43	CB-13	77.61	514.12	512.58	1.9800	18.000	0.0150	2.46	12.82	0.19	3.46	0.87	
25	SDPIPE-34	Pipe	Inlet-CB-44	CB-13	147.34	516.28	512.58	2.5100	18.000	0.0150	2.16	14.43	0.15	3.23	0.85	
26	SDPIPE-4	Pipe	CB-7	CB-2	71.93	467.47	466.75	1.0000	18.000	0.0120	1.45	11.38	0.13	4.10	0.38	
27	SDPIPE-5	Pipe	CB-6	CB-7	33.00	467.80	467.47	1.0000	18.000	0.0130	0.46	10.50	0.04	1.98	0.28	
28	SDPIPE-6	Pipe	CB-9	Out-FES-8	67.57	483.19	482.52	1.0000	18.000	0.0120	1.79	11.37	0.16	4.31	0.43	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak D Total D F
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)	
46	L-SDPIPE-27	Channel	CB-35	CB-3	245.69	494.00	476.28	7.2100	3.960	0.0150	0.00	6.79	0.00	0.00	0.00	
47	L-SDPIPE-28	Channel	CB-36	CB-2	228.18	493.47	476.67	7.3600	3.960	0.0150	0.24	6.86	0.03	2.98	0.06	
48	L-SDPIPE-29	Channel	CB-38	CB-35	172.07	510.72	494.00	9.7200	3.960	0.0150	0.02	7.88	0.00	1.75	0.02	
49	L-SDPIPE-32	Channel	CB-31	OFFSITE-1	98.13	549.76	540.30	9.6400	6.000	0.0150	0.03	28.64	0.00	2.05	0.02	
50	L-SDPIPE-33	Channel	CB-43	CB-13	78.91	518.02	517.01	1.2800	3.960	0.0320	0.00	2.86	0.00	0.00	0.17	
51	L-SDPIPE-34	Channel	Inlet-CB-44	CB-13	149.42	521.36	517.01	2.9100	3.960	0.0320	0.22	4.31	0.05	0.22	0.22	
52	L-SDPIPE-4	Channel	CB-7	OFFSITE-25	129.78	475.09	464.82	7.9100	3.960	0.0320	0.00	7.11	0.00	0.00	0.00	
53	L-SDPIPE-6	Channel	CB-9	CB-6	214.12	489.62	475.09	6.7900	3.960	0.0150	0.18	6.59	0.03	0.54	0.13	
54	L-SDPIPE-7	Channel	CB-10	CB-20	216.57	487.59	471.49	7.4300	3.960	0.0150	0.16	6.90	0.02	1.23	0.08	

Inlet Summary

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft²)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max C Sp during
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.62	487.59	483.62	N/A	1.54	1.34	0.19	87.40	8.50	
2	CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.25	517.01	512.25	10.00	1.36	N/A	N/A	N/A	8.50	
3	CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.58	517.01	512.58	10.00	3.72	N/A	N/A	N/A	8.50	
4	CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.20	534.06	530.20	10.00	3.63	N/A	N/A	N/A	8.50	
5	CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.53	534.06	530.53	10.00	1.79	N/A	N/A	N/A	8.50	
6	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.50	521.86	517.50	N/A	0.53	0.53	0.00	100.00	8.50	
7	CB-19	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.99	522.45	517.99	N/A	2.74	2.28	0.46	83.25	8.50	
8	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	465.94	476.67	465.94	N/A	1.20	1.20	0.00	100.00	8.50	
9	CB-20	FHWA HEC-22 GENERIC	N/A	On Grade	1	468.11	471.49	468.11	N/A	1.63	1.40	0.23	85.80	8.50	
10	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.10	505.01	501.10	N/A	0.60	0.60	0.00	100.00	8.50	
11	CB-24	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.78	523.31	517.77	N/A	1.16	1.06	0.10	91.65	8.50	
12	CB-25	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.87	522.17	515.81	N/A	1.73	1.39	0.34	80.28	8.50	
13	CB-26	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.43	505.01	501.43	N/A	1.23	1.15	0.08	93.36	8.50	
14	CB-27	FHWA HEC-22 GENERIC	N/A	On Grade	1	538.50	543.67	538.50	N/A	0.38	0.38	0.00	100.00	8.50	
15	CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	542.14	545.67	542.20	10.00	1.71	N/A	N/A	N/A	8.50	
16	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	542.59	547.43	542.65	N/A	0.63	0.63	0.00	100.00	8.50	
17	CB-3	FHWA HEC-22 GENERIC	N/A	On Grade	1	466.30	476.28	466.30	N/A	0.60	0.60	0.00	100.00	8.50	
18	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	544.50	N/A	0.74	0.74	0.01	99.03	8.50	
19	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.70	546.00	N/A	0.56	0.56	0.00	100.00	8.50	
20	CB-35	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.50	494.00	487.50	N/A	0.43	0.43	0.00	100.00	8.50	
21	CB-36	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.84	493.47	487.84	N/A	1.51	1.27	0.24	84.23	8.50	
22	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	505.00	510.72	505.00	N/A	0.97	0.93	0.04	95.57	8.50	
23	CB-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	510.34	515.37	510.34	10.00	3.23	N/A	N/A	N/A	8.50	
24	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.12	518.02	514.12	N/A	2.46	2.46	0.00	100.00	8.50	
25	CB-6	FHWA HEC-22 GENERIC	N/A	On Sag	1	467.80	475.09	467.80	10.00	0.87	N/A	N/A	N/A	8.50	
26	CB-7	FHWA HEC-22 GENERIC	N/A	On Grade	1	467.47	475.09	467.47	N/A	0.18	0.18	0.00	100.00	8.50	
27	CB-9	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.19	489.62	483.19	N/A	1.55	1.35	0.20	87.17	8.50	
28	Inlet-CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	516.28	521.36	516.28	N/A	2.43	2.18	0.24	89.92	8.50	

Subbasin Hydrology

Subbasin : Sub-CB-10

Input Data

Area (ac) 0.58
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.7
Composite Area & Weighted Runoff Coeff.	0.58		0.7

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99996647	0	0
Slope (%) :	1.25	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	15.21	0	0

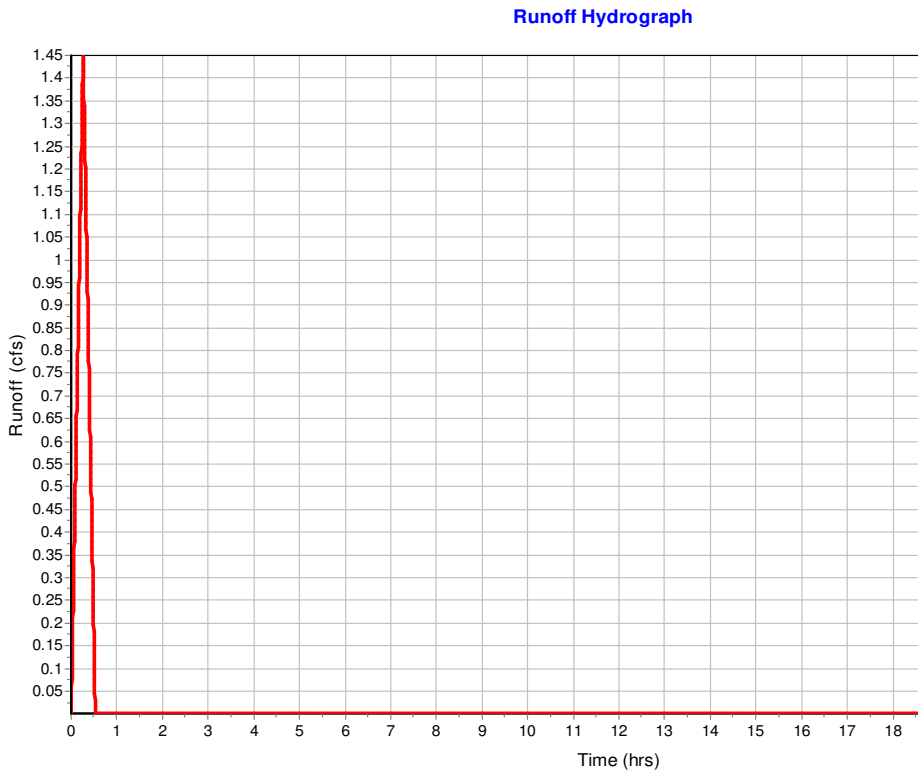
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	229.3185963	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.69	0	0

Total TOC (min) 15.90

Subbasin Runoff Results

Total Rainfall (in)	0.94
Total Runoff (in)	0.66
Peak Runoff (cfs)	1.45
Rainfall Intensity	3.571
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:54

Subbasin : Sub-CB-10



Subbasin : Sub-CB-12

Input Data

Area (ac)	0.32
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.7
Composite Area & Weighted Runoff Coeff.	0.32		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

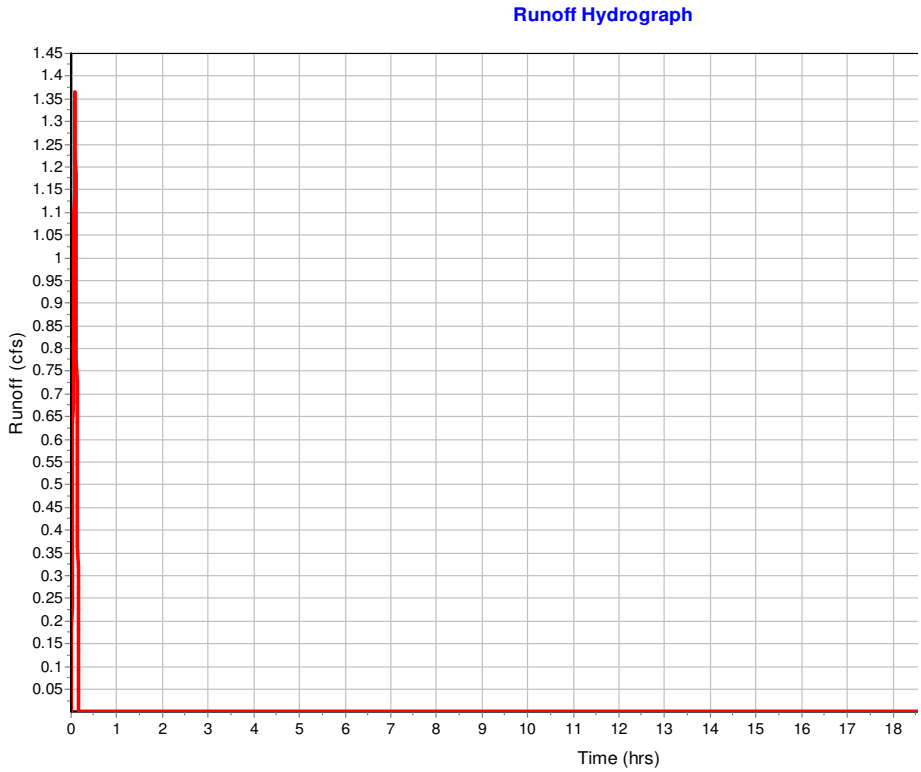
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	219.5273657	0	0
Slope (%) :	1.99	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	2.87	0	0
Computed Flow Time (min) :	1.28	0	0

Total TOC (min) 4.14

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.37
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:04:08

Subbasin : Sub-CB-12



Subbasin : Sub-CB-13

Input Data

Area (ac)	1.03
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.03	-	0.7
Composite Area & Weighted Runoff Coeff.	1.03		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	11.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.27	0	0

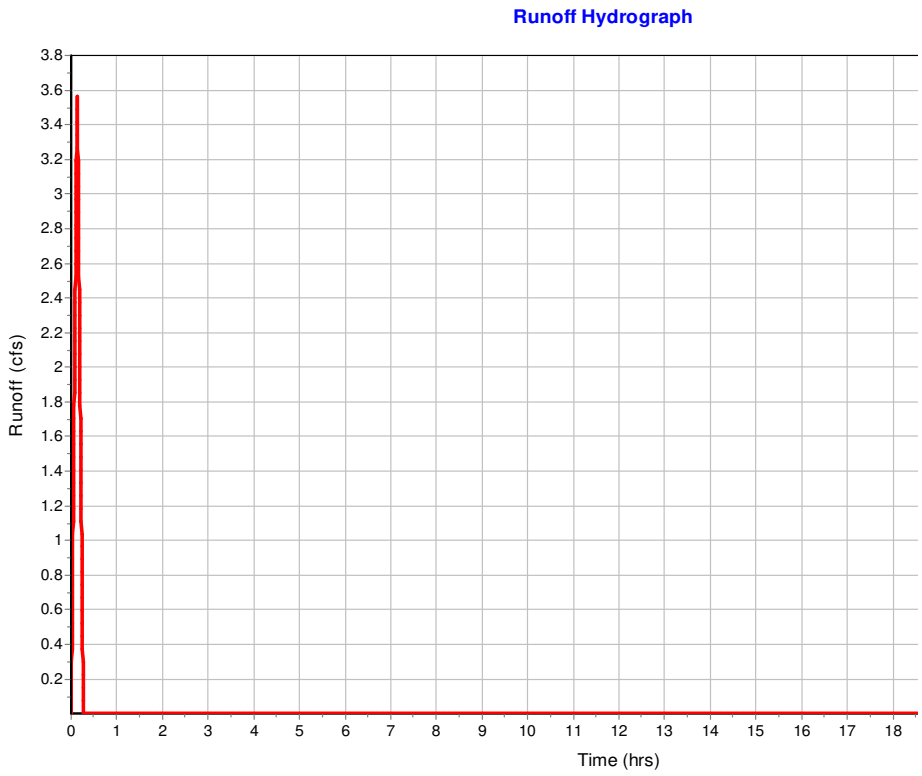
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	93	71.4	0
Slope (%) :	11.5	1.99	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	5.47	2.87	0
Computed Flow Time (min) :	0.28	0.41	0

Total TOC (min) 7.97

Subbasin Runoff Results

Total Rainfall (in)	0.66
Total Runoff (in)	0.46
Peak Runoff (cfs)	3.56
Rainfall Intensity	4.939
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:07:58

Subbasin : Sub-CB-13



Subbasin : Sub-CB-15

Input Data

Area (ac)	1.21
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.21	-	0.7
Composite Area & Weighted Runoff Coeff.	1.21		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.16	0	0
Computed Flow Time (min) :	10.14	0	0

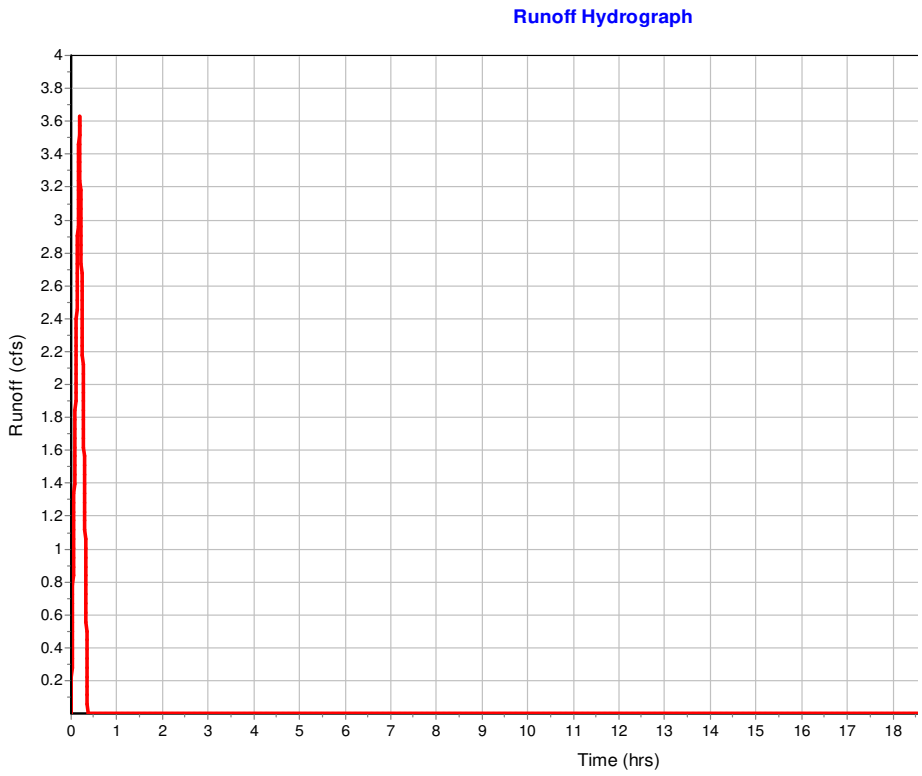
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	12.98144373	156.302	0
Slope (%) :	2	5.74	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	4.87	0
Computed Flow Time (min) :	0.09	0.53	0

Total TOC (min) 10.77

Subbasin Runoff Results

Total Rainfall (in)	0.77
Total Runoff (in)	0.54
Peak Runoff (cfs)	3.63
Rainfall Intensity	4.282
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:10:46

Subbasin : Sub-CB-15



Subbasin : Sub-CB-16

Input Data

Area (ac)	0.42
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	-	0.7
Composite Area & Weighted Runoff Coeff.	0.42		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.01720552	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

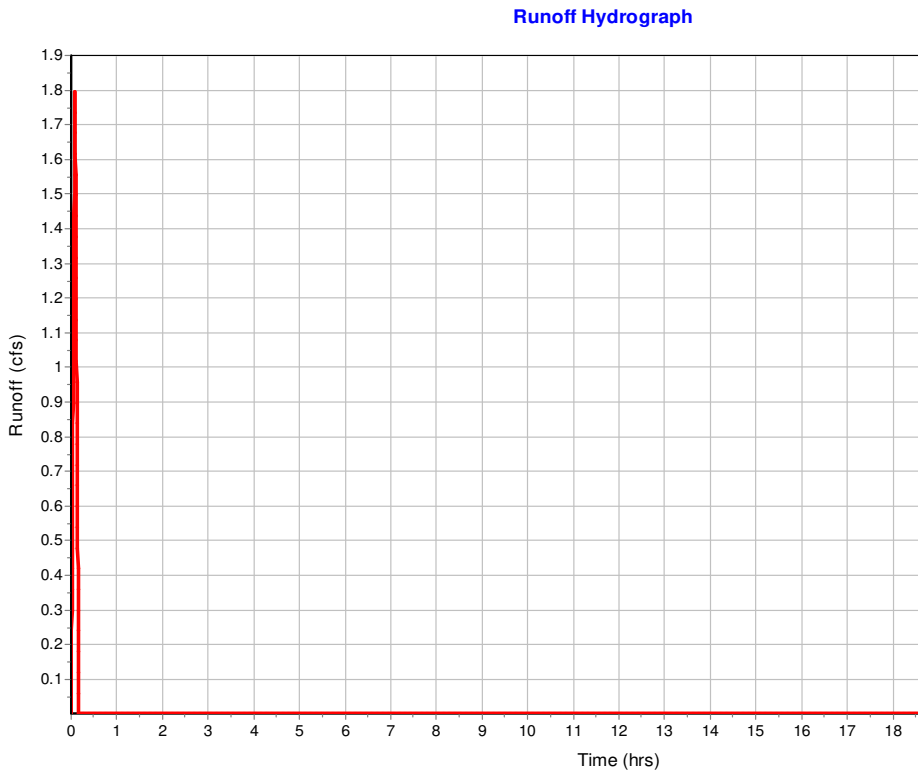
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	310.5319881	0	0
Slope (%) :	5.74	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.87	0	0
Computed Flow Time (min) :	1.06	0	0

Total TOC (min) 3.93

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.8
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:56

Subbasin : Sub-CB-16



Subbasin : Sub-CB-18

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.7
Composite Area & Weighted Runoff Coeff.	0.12		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.10752092	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.88	0	0

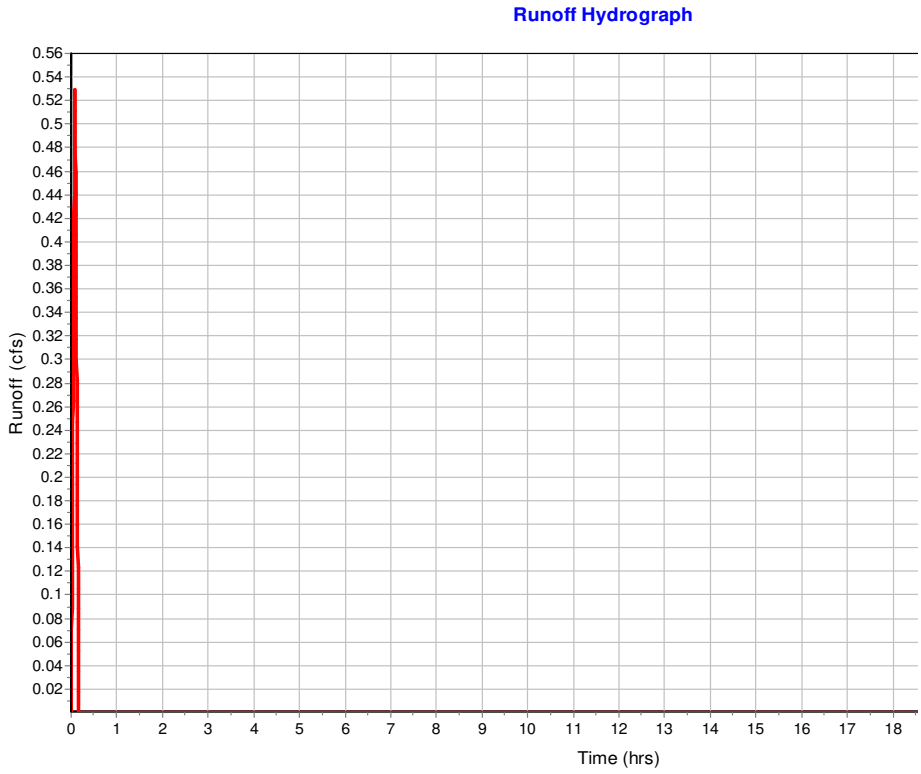
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	71.43477489	102.308	0
Slope (%) :	11.86	2.45	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	7	3.18	0
Computed Flow Time (min) :	0.17	0.54	0

Total TOC (min) 3.59

Subbasin Runoff Results

Total Rainfall (in) 0.51
Total Runoff (in) 0.36
Peak Runoff (cfs) 0.53
Rainfall Intensity 6.16
Weighted Runoff Coefficient 0.7
Time of Concentration (days hh:mm:ss) 0 00:03:35

Subbasin : Sub-CB-18



Subbasin : Sub-CB-19

Input Data

Area (ac) 1
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1	-	0.7
Composite Area & Weighted Runoff Coeff.	1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100.0031436	0	0
Slope (%) :	3.4	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.14	0	0
Computed Flow Time (min) :	11.83	0	0

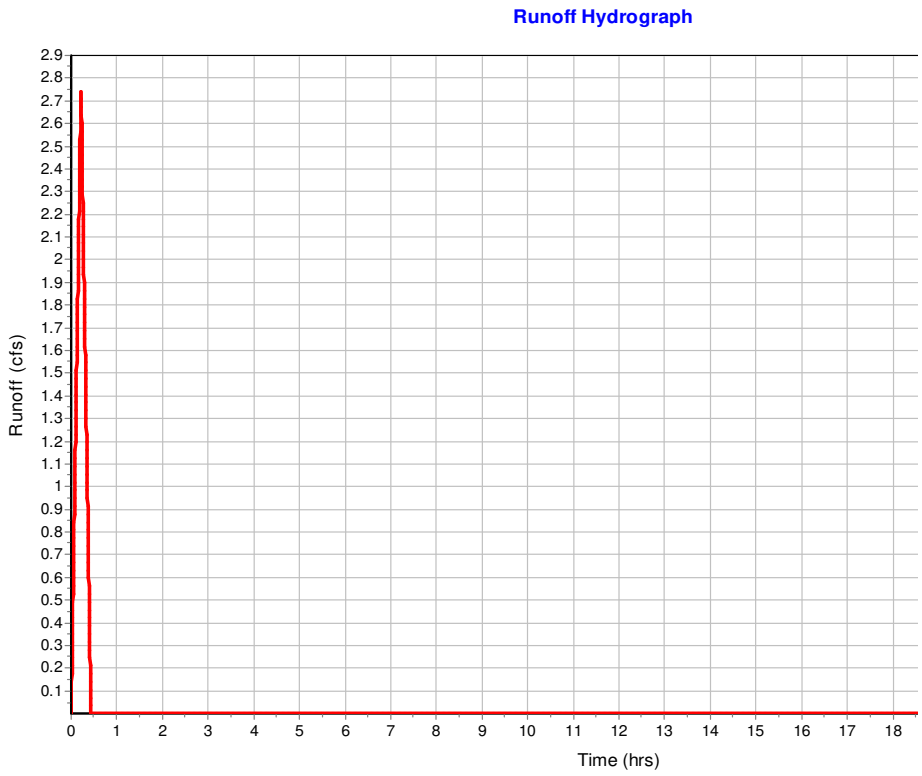
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	6.07922878	278.905	79.9642
Slope (%) :	2	11.86	2.45
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	7	3.18
Computed Flow Time (min) :	0.04	0.66	0.42

Total TOC (min) 12.96

Subbasin Runoff Results

Total Rainfall (in) 0.85
Total Runoff (in) 0.6
Peak Runoff (cfs) 2.74
Rainfall Intensity 3.923
Weighted Runoff Coefficient 0.7
Time of Concentration (days hh:mm:ss) 0 00:12:58

Subbasin : Sub-CB-19



Subbasin : Sub-CB-2

Input Data

Area (ac)	0.38
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.38	-	0.7
Composite Area & Weighted Runoff Coeff.	0.38		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	83	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	14.14	0	0

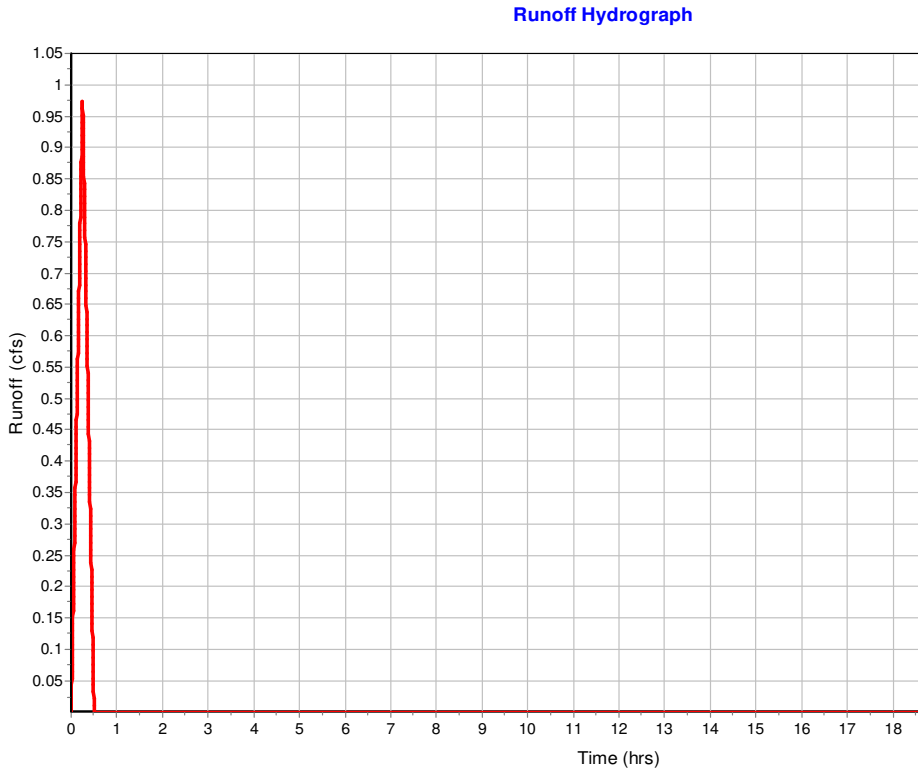
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	175.3484305	45.5292	0
Slope (%) :	10.46	0.85	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	1.87	0
Computed Flow Time (min) :	0.44	0.4	0

Total TOC (min) 14.99

Subbasin Runoff Results

Total Rainfall (in)	0.92
Total Runoff (in)	0.64
Peak Runoff (cfs)	0.97
Rainfall Intensity	3.661
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:14:59

Subbasin : Sub-CB-2



Subbasin : Sub-CB-20

Input Data

Area (ac)	0.62
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.62	-	0.7
Composite Area & Weighted Runoff Coeff.	0.62		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	99.99258294	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	16.41	0	0

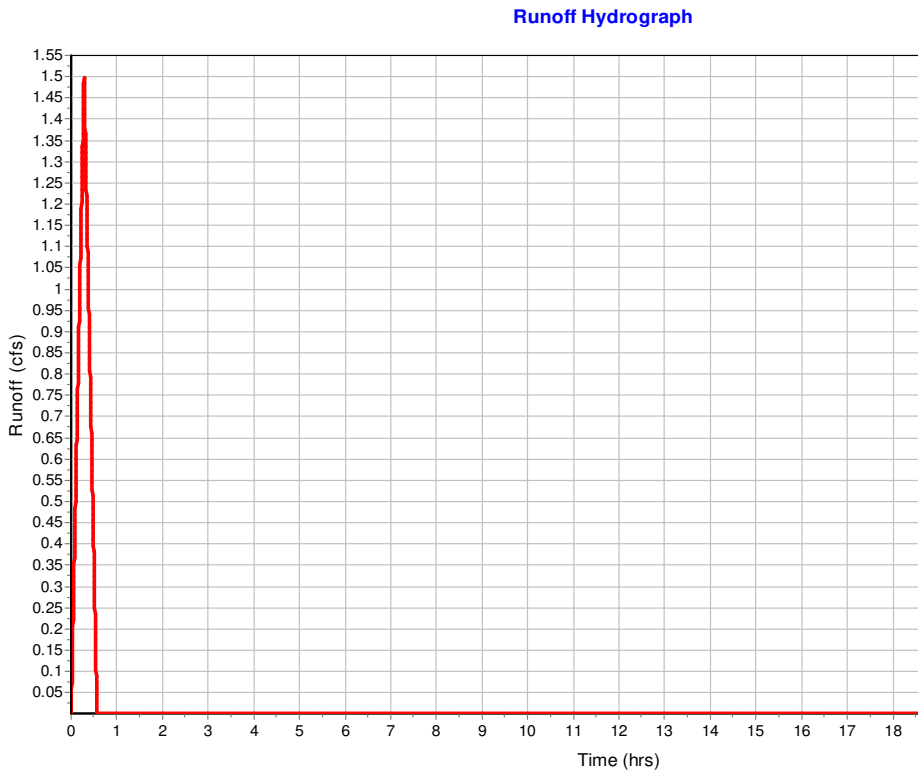
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3.00743724	208.662	0
Slope (%) :	2	7.49	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	5.56	0
Computed Flow Time (min) :	0.02	0.63	0

Total TOC (min) 17.06

Subbasin Runoff Results

Total Rainfall (in)	0.98
Total Runoff (in)	0.69
Peak Runoff (cfs)	1.5
Rainfall Intensity	3.466
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:17:04

Subbasin : Sub-CB-20



Subbasin : Sub-CB-22

Input Data

Area (ac)	0.14
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.14	-	0.7
Composite Area & Weighted Runoff Coeff.	0.14		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99981258	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

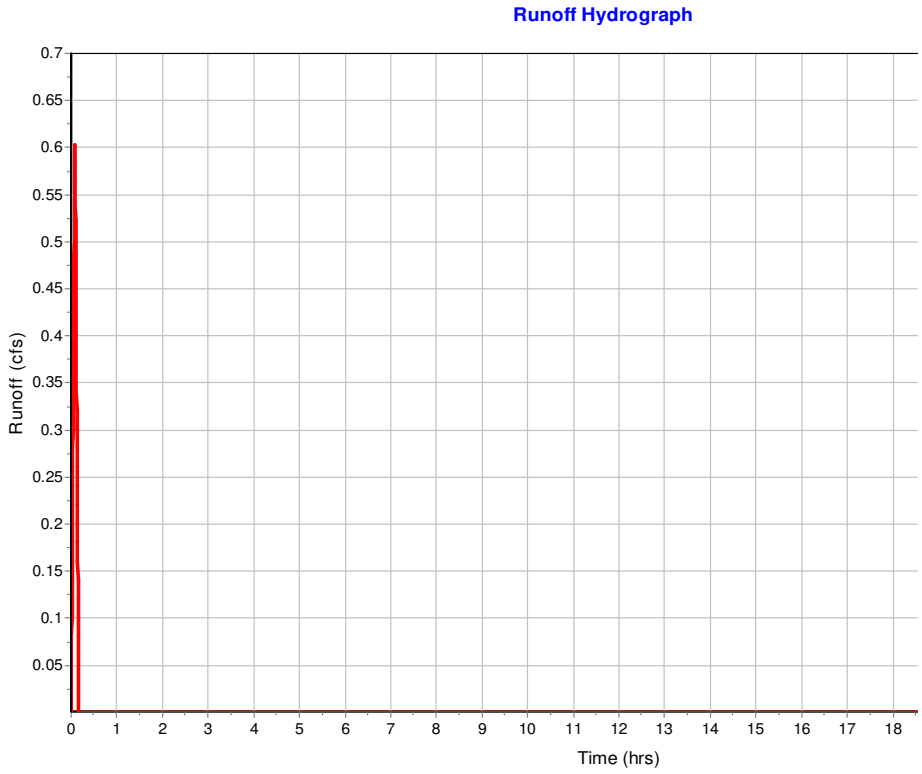
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	167.0428132	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.5	0	0

Total TOC (min) 3.36

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.6
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:22

Subbasin : Sub-CB-22



Subbasin : Sub-CB-24

Input Data

Area (ac)	0.27
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.27	-	0.7
Composite Area & Weighted Runoff Coeff.	0.27		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	37.99958613	0	0
Slope (%) :	6.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.15	0	0
Computed Flow Time (min) :	4.21	0	0

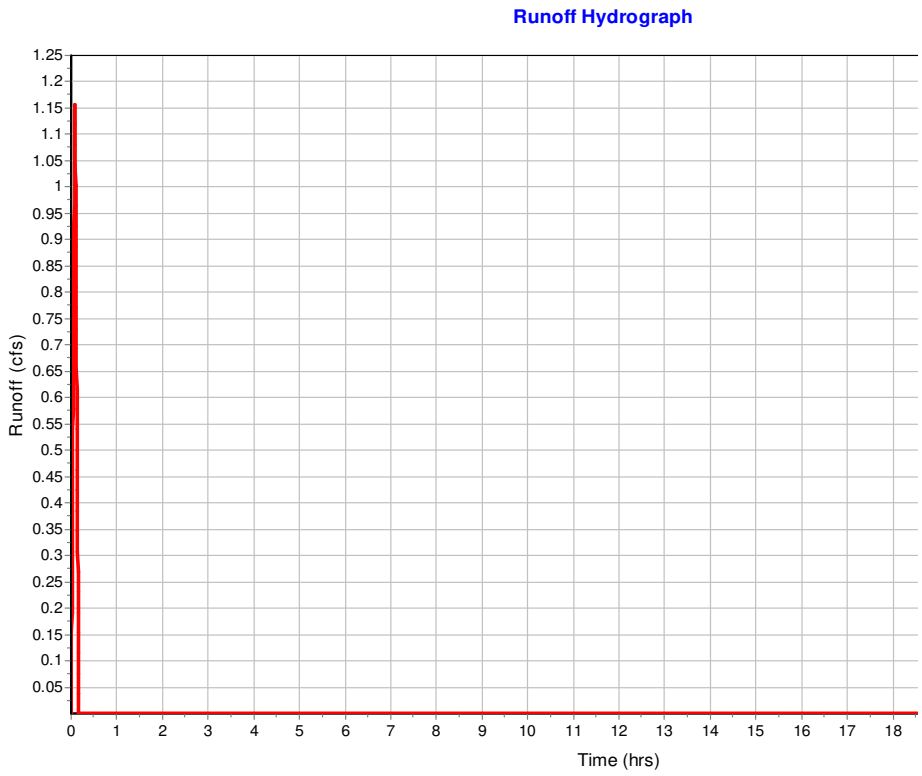
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	28.98355088	187.48	0
Slope (%) :	0.51	10.41	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.45	6.56	0
Computed Flow Time (min) :	0.33	0.48	0

Total TOC (min) 5.02

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.16
Rainfall Intensity	6.148
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:05:01

Subbasin : Sub-CB-24



Subbasin : Sub-CB-25

Input Data

Area (ac)	0.51
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.51	-	0.7
Composite Area & Weighted Runoff Coeff.	0.51		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99999586	0	0
Slope (%) :	7.25	0	0
2 yr, 24 hr Rainfall (in) :	4.32	0	0
Velocity (ft/sec) :	0.18	0	0
Computed Flow Time (min) :	7.56	0	0

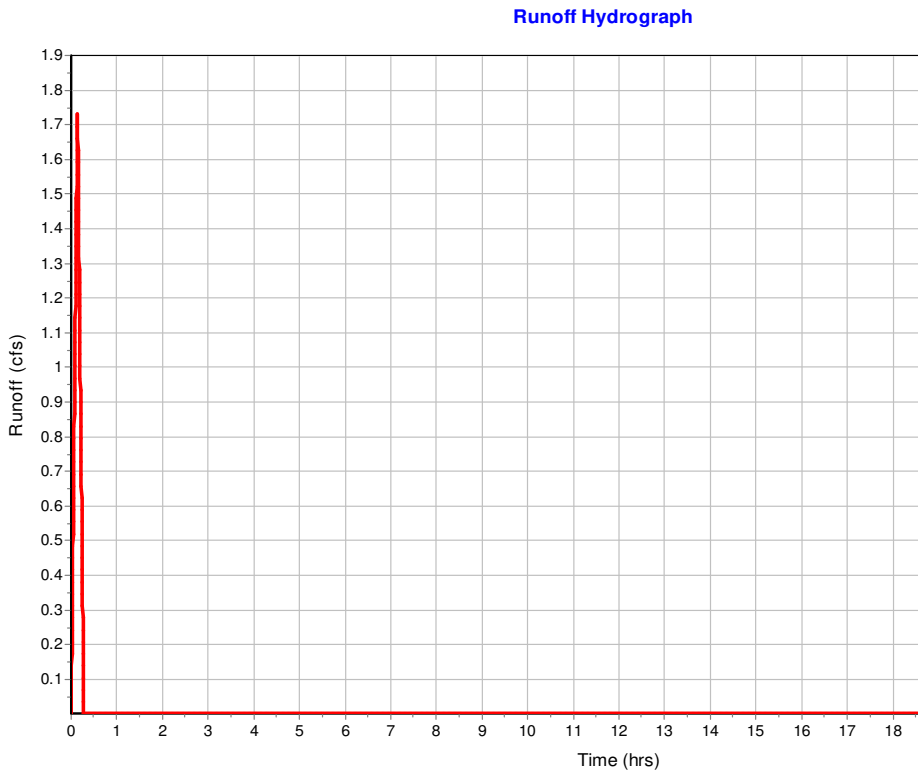
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	16.12667612	203.96	0
Slope (%) :	0.51	10.41	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.45	6.56	0
Computed Flow Time (min) :	0.19	0.52	0

Total TOC (min) 8.26

Subbasin Runoff Results

Total Rainfall (in)	0.67
Total Runoff (in)	0.47
Peak Runoff (cfs)	1.73
Rainfall Intensity	4.856
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:08:16

Subbasin : Sub-CB-25



Subbasin : Sub-CB-26

Input Data

Area (ac)	0.49
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.49	-	0.7
Composite Area & Weighted Runoff Coeff.	0.49		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99998121	0	0
Slope (%) :	1.25	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	15.21	0	0

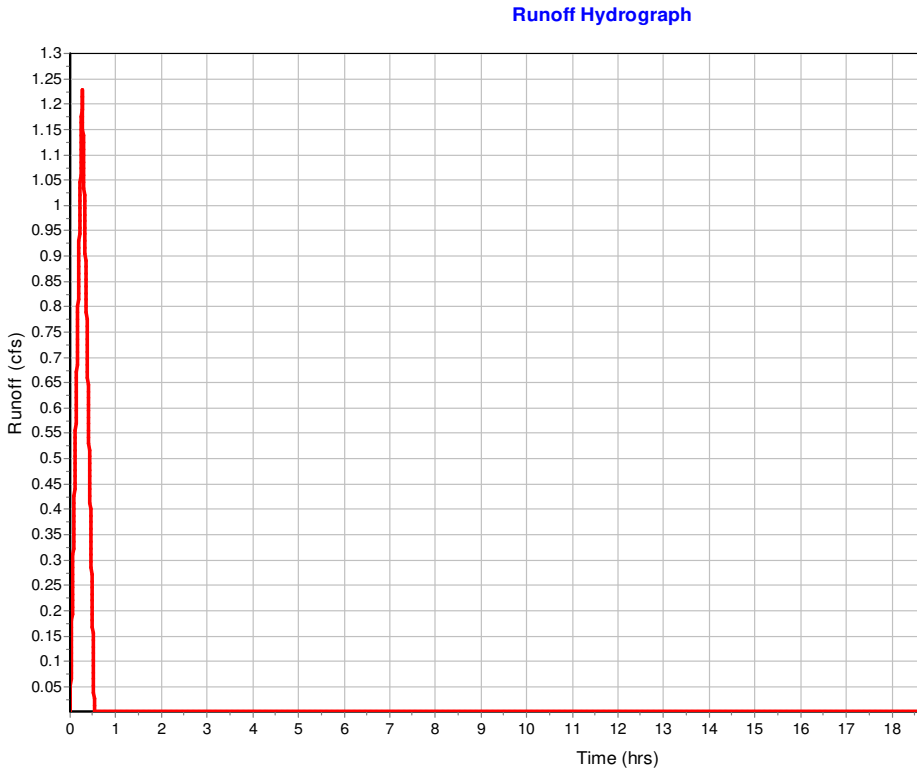
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	221.0918618	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.66	0	0

Total TOC (min) 15.87

Subbasin Runoff Results

Total Rainfall (in)	0.94
Total Runoff (in)	0.66
Peak Runoff (cfs)	1.23
Rainfall Intensity	3.574
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:52

Subbasin : Sub-CB-26



Subbasin : Sub-CB-27

Input Data

Area (ac)	0.1
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.1	-	0.7
Composite Area & Weighted Runoff Coeff.	0.1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	21.13547973	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.06	0	0
Computed Flow Time (min) :	5.57	0	0

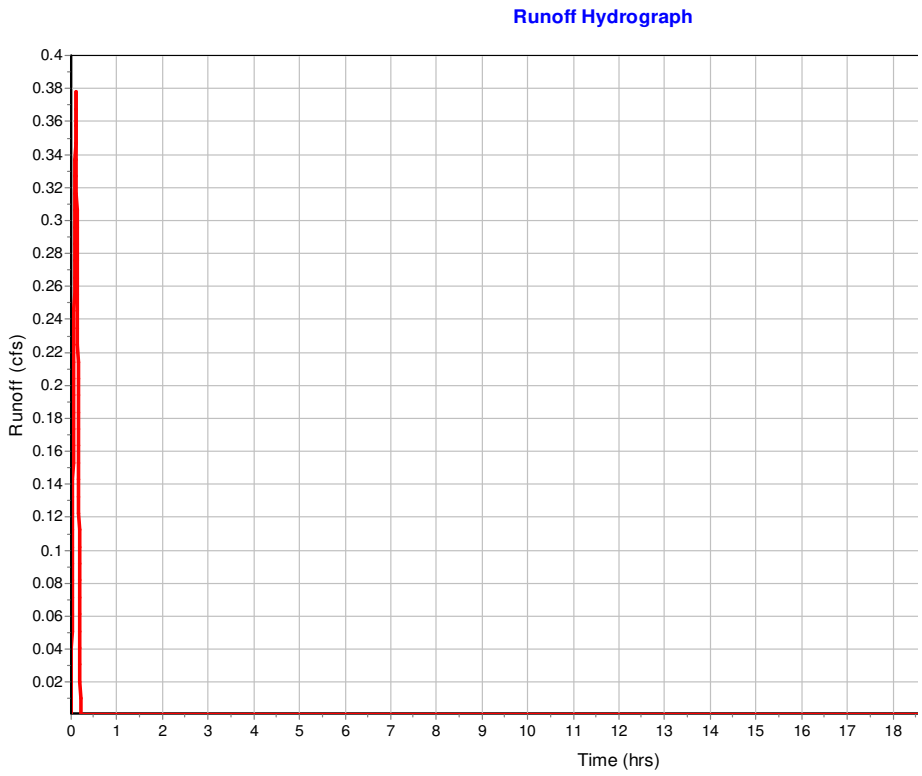
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	117.1502173	0	0
Slope (%) :	2.92	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.47	0	0
Computed Flow Time (min) :	0.56	0	0

Total TOC (min) 6.13

Subbasin Runoff Results

Total Rainfall (in)	0.58
Total Runoff (in)	0.4
Peak Runoff (cfs)	0.38
Rainfall Intensity	5.593
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:06:08

Subbasin : Sub-CB-27



Subbasin : Sub-CB-28

Input Data

Area (ac)	0.67
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.67	-	0.7
Composite Area & Weighted Runoff Coeff.	0.67		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.11	0	0
Computed Flow Time (min) :	14.63	0	0

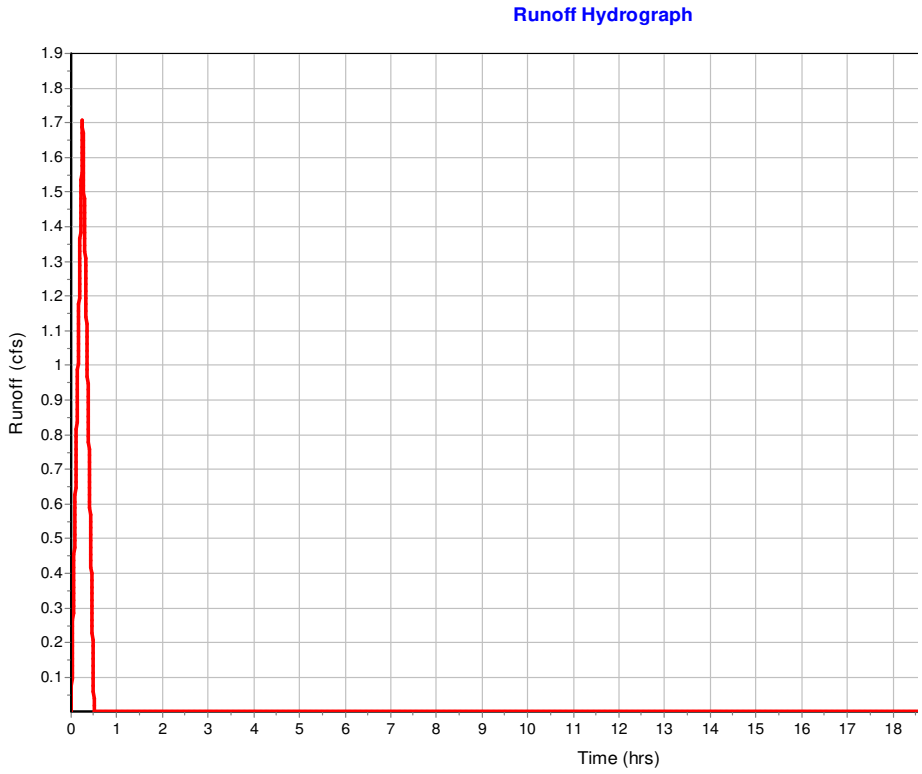
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	17.02372996	94.092	0
Slope (%) :	2	5.74	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	4.87	0
Computed Flow Time (min) :	0.12	0.32	0

Total TOC (min) 15.08

Subbasin Runoff Results

Total Rainfall (in)	0.91
Total Runoff (in)	0.64
Peak Runoff (cfs)	1.71
Rainfall Intensity	3.652
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:05

Subbasin : Sub-CB-28



Subbasin : Sub-CB-29

Input Data

Area (ac)	0.15
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.7
Composite Area & Weighted Runoff Coeff.	0.15		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

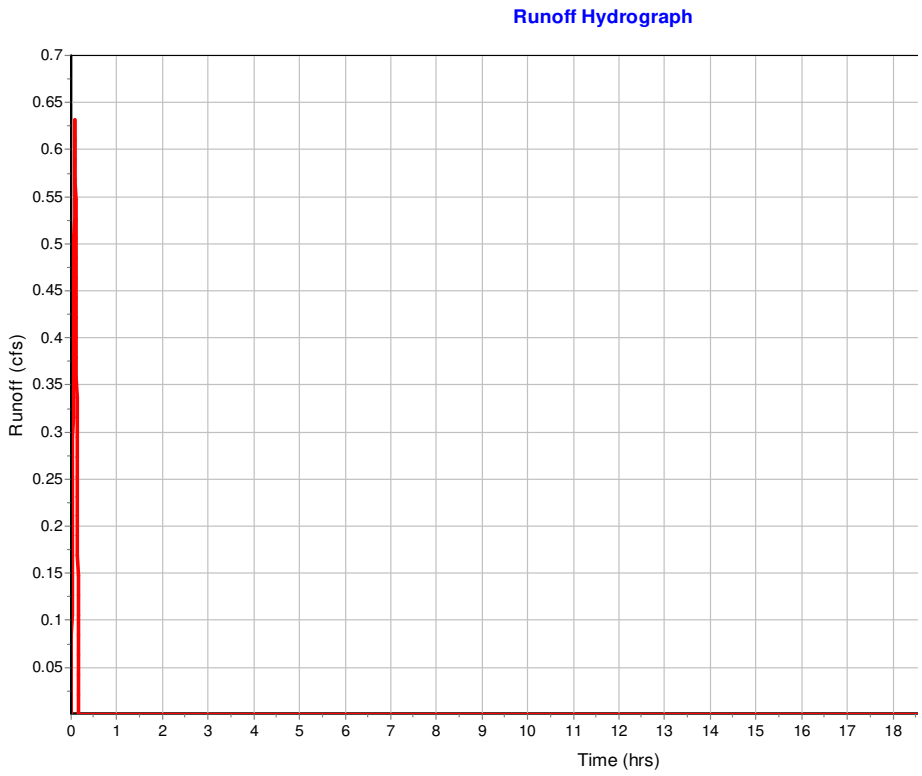
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	253.6223323	0	0
Slope (%) :	5.74	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.87	0	0
Computed Flow Time (min) :	0.87	0	0

Total TOC (min) 3.73

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.63
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:44

Subbasin : Sub-CB-29



Subbasin : Sub-CB-3

Input Data

Area (ac)	0.14
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.14	-	0.7
Composite Area & Weighted Runoff Coeff.	0.14		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

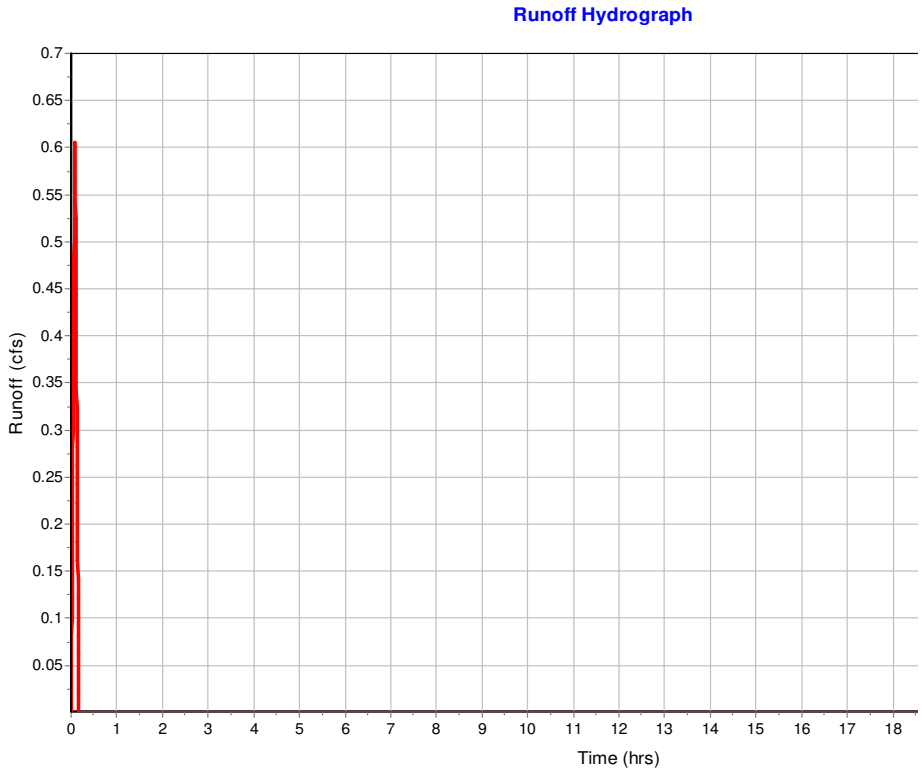
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	181.26423	58.411	0
Slope (%) :	10.46	0.85	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	1.87	0
Computed Flow Time (min) :	0.46	0.52	0

Total TOC (min) 3.84

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.61
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:50

Subbasin : Sub-CB-3



Subbasin : Sub-CB-31

Input Data

Area (ac)	0.17
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.7
Composite Area & Weighted Runoff Coeff.	0.17		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

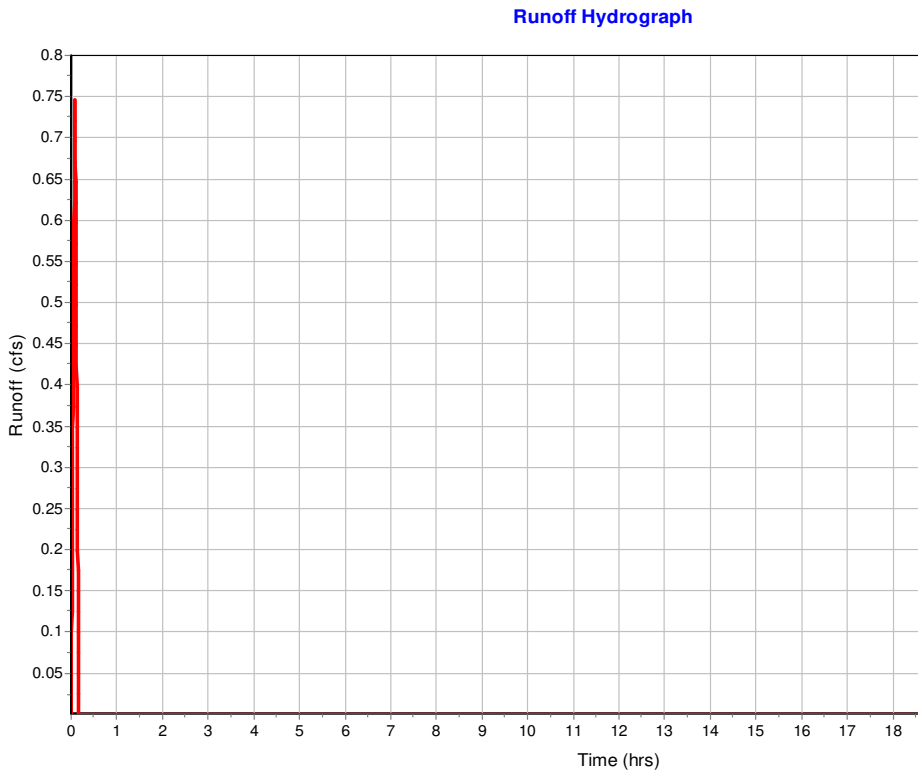
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	166.3763112	83.655	0
Slope (%) :	3.19	6.34	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.63	5.12	0
Computed Flow Time (min) :	0.76	0.27	0

Total TOC (min) 3.90

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.75
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:54

Subbasin : Sub-CB-31



Subbasin : Sub-CB-32

Input Data

Area (ac)	0.13
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.13	-	0.7
Composite Area & Weighted Runoff Coeff.	0.13		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

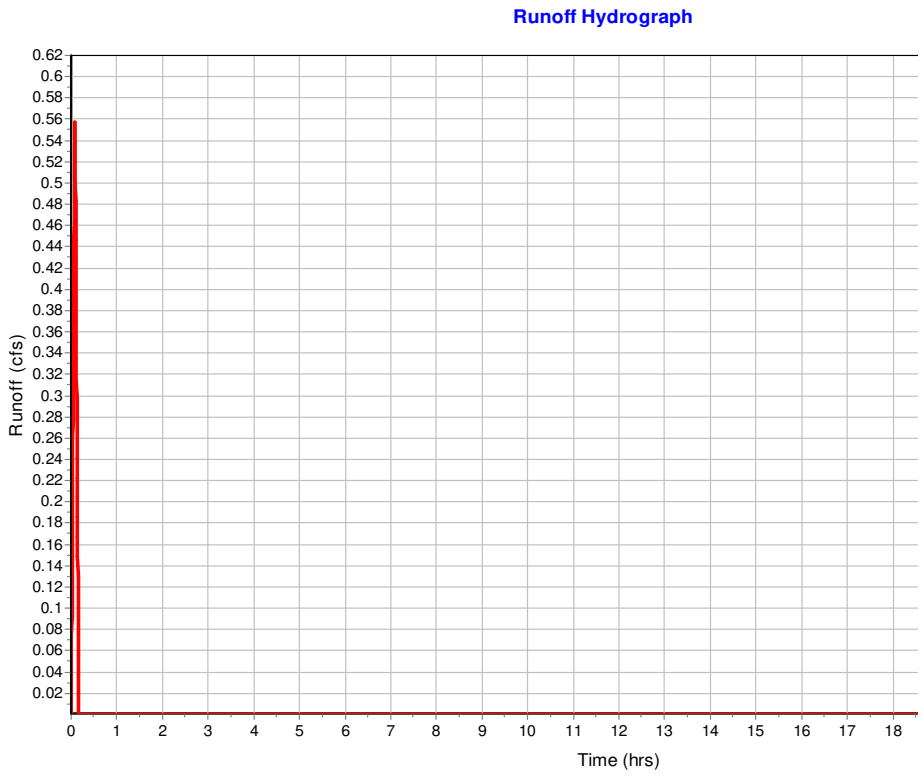
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	167.2624187	52.704	0
Slope (%) :	3.19	6.34	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.63	5.12	0
Computed Flow Time (min) :	0.77	0.17	0

Total TOC (min) 3.80

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.56
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:48

Subbasin : Sub-CB-32



Subbasin : Sub-CB-35

Input Data

Area (ac)	0.1
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.1	-	0.7
Composite Area & Weighted Runoff Coeff.	0.1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

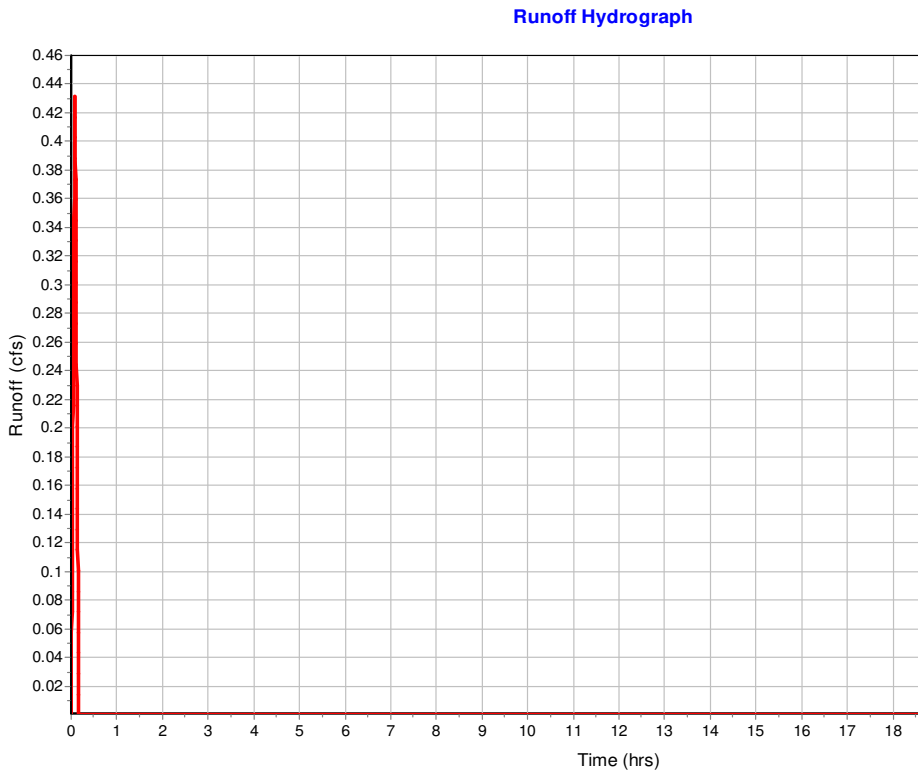
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	159.59	0	0
Slope (%) :	10.46	0	0
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	6.57	0	0
Computed Flow Time (min) :	0.4	0	0

Total TOC (min) 3.27

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.43
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:16

Subbasin : Sub-CB-35



Subbasin : Sub-CB-36

Input Data

Area (ac)	0.58
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.7
Composite Area & Weighted Runoff Coeff.	0.58		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	83	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	14.14	0	0

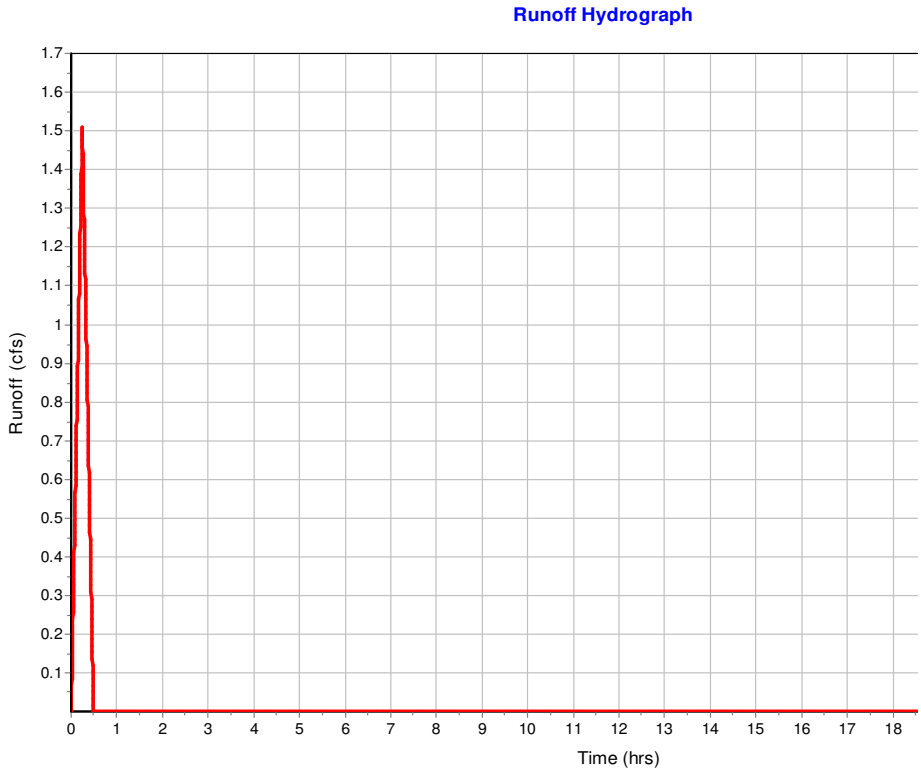
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	224.201193	0	0
Slope (%) :	10.46	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	0	0
Computed Flow Time (min) :	0.57	0	0

Total TOC (min) 14.71

Subbasin Runoff Results

Total Rainfall (in)	0.9
Total Runoff (in)	0.63
Peak Runoff (cfs)	1.51
Rainfall Intensity	3.694
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:14:43

Subbasin : Sub-CB-36



Subbasin : Sub-CB-38

Input Data

Area (ac)	0.24
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.24	-	0.7
Composite Area & Weighted Runoff Coeff.	0.24		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.00000002	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

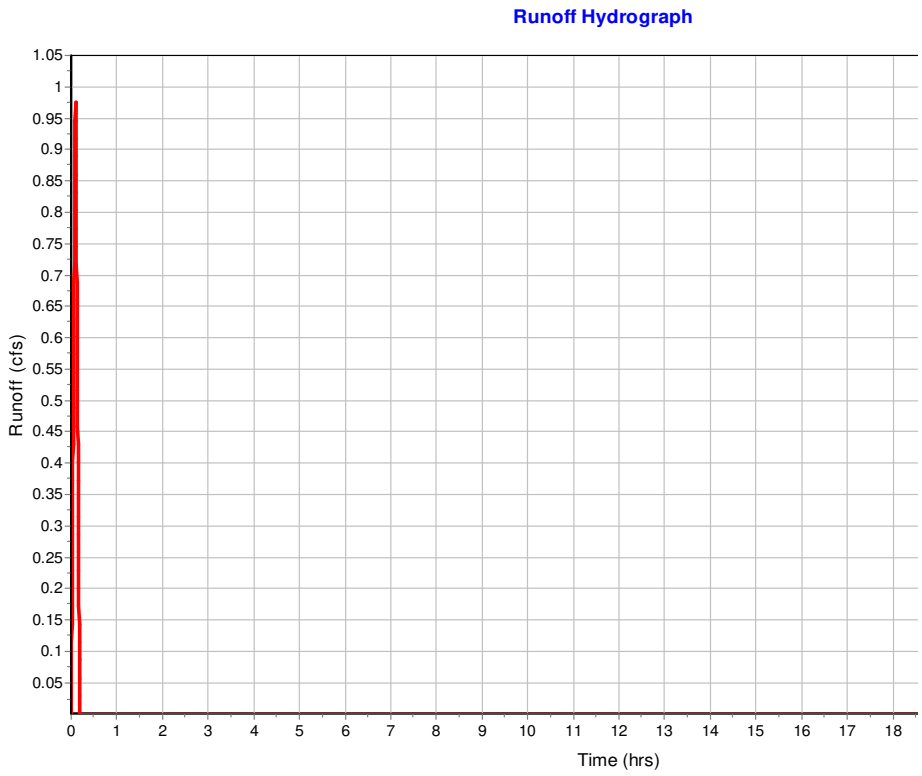
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	214.8866153	184.11	0
Slope (%) :	2.45	0.75	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.18	1.76	0
Computed Flow Time (min) :	1.13	1.74	0

Total TOC (min) 5.73

Subbasin Runoff Results

Total Rainfall (in)	0.55
Total Runoff (in)	0.38
Peak Runoff (cfs)	0.98
Rainfall Intensity	5.775
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:05:44

Subbasin : Sub-CB-38



Subbasin : Sub-CB-39

Input Data

Area (ac)	1.39
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.39	-	0.7
Composite Area & Weighted Runoff Coeff.	1.39		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	99.98923348	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	16.41	0	0

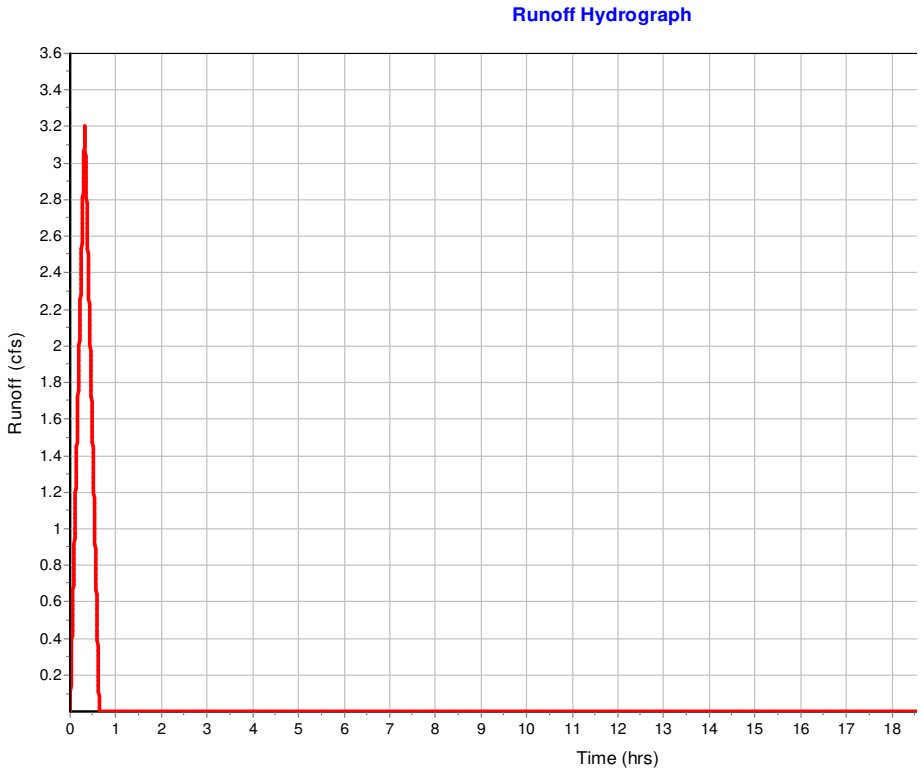
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	34.45719772	233.52	132.7
Slope (%) :	1.5	2.45	0.75
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	1.98	3.18	1.76
Computed Flow Time (min) :	0.29	1.22	1.26

Total TOC (min) 19.18

Subbasin Runoff Results

Total Rainfall (in)	1.05
Total Runoff (in)	0.74
Peak Runoff (cfs)	3.2
Rainfall Intensity	3.299
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:19:11

Subbasin : Sub-CB-39



Subbasin : Sub-CB-43

Input Data

Area (ac)	0.71
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.71	-	0.7
Composite Area & Weighted Runoff Coeff.	0.71		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	12	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.15	0	0

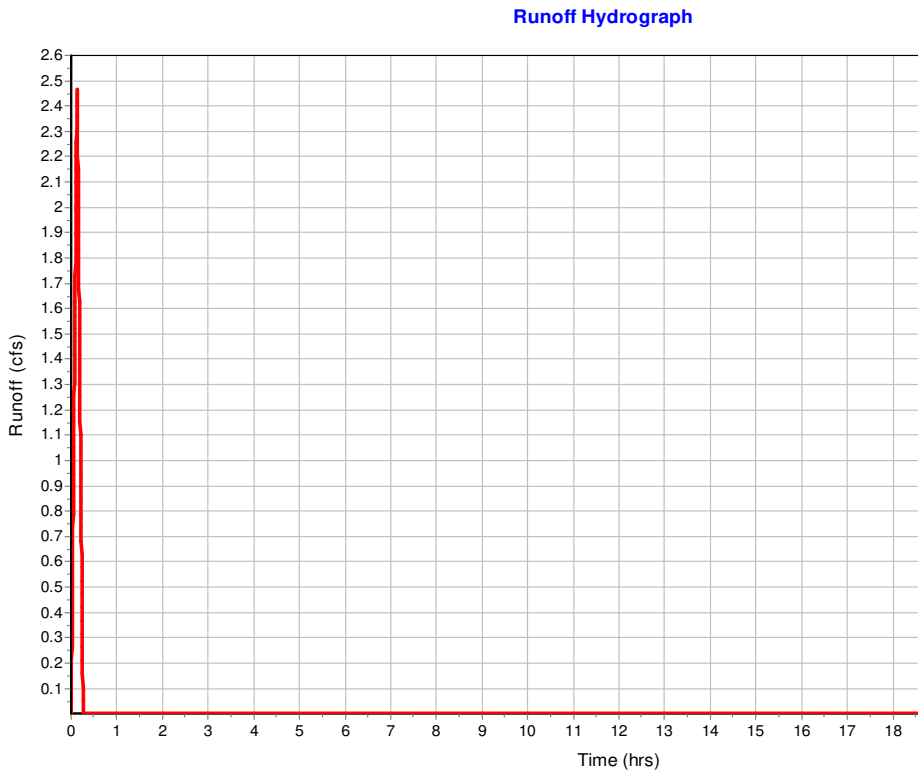
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	93	77.84	0
Slope (%) :	10.75	1.99	0
Surface Type :	Unpaved	Paved	Unpaved
Velocity (ft/sec) :	5.29	2.87	0
Computed Flow Time (min) :	0.29	0.45	0

Total TOC (min) 7.89

Subbasin Runoff Results

Total Rainfall (in)	0.65
Total Runoff (in)	0.45
Peak Runoff (cfs)	2.47
Rainfall Intensity	4.963
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:07:53

Subbasin : Sub-CB-43



Subbasin : Sub-CB-44

Input Data

Area (ac)	0.72
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.72	-	0.7
Composite Area & Weighted Runoff Coeff.	0.72		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	9	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.21	0	0
Computed Flow Time (min) :	8.02	0	0

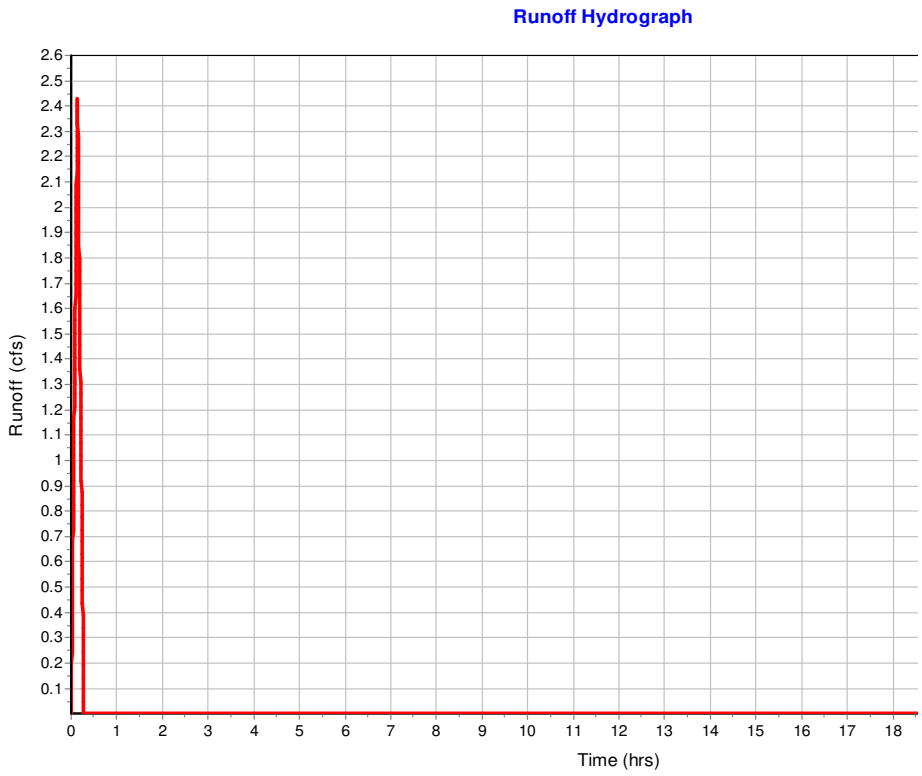
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	78.42	77.02	0
Slope (%) :	16.7	11.38	0
Surface Type :	Unpaved	Paved	Unpaved
Velocity (ft/sec) :	6.59	6.86	0
Computed Flow Time (min) :	0.2	0.19	0

Total TOC (min) 8.40

Subbasin Runoff Results

Total Rainfall (in)	0.67
Total Runoff (in)	0.47
Peak Runoff (cfs)	2.43
Rainfall Intensity	4.817
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:08:24

Subbasin : Sub-CB-44



Subbasin : Sub-CB-6

Input Data

Area (ac)	0.16
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.7
Composite Area & Weighted Runoff Coeff.	0.16		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

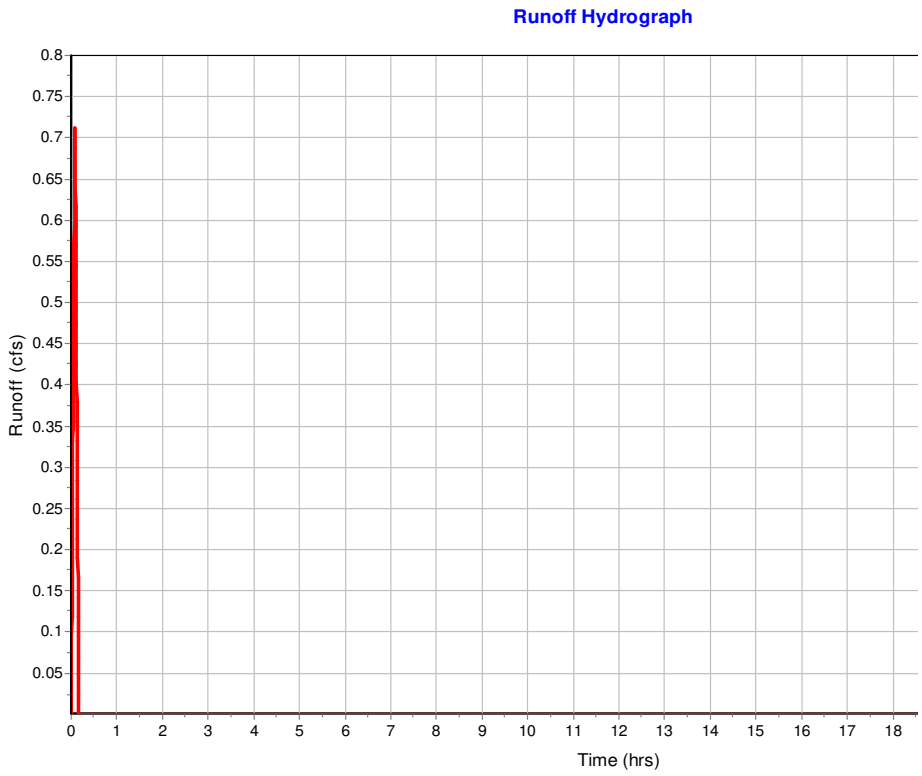
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	207.9606416	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.62	0	0

Total TOC (min) 3.48

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.71
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:29

Subbasin : Sub-CB-6



Subbasin : Sub-CB-7

Input Data

Area (ac)	0.04
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.04	-	0.7
Composite Area & Weighted Runoff Coeff.	0.04		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99999999	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

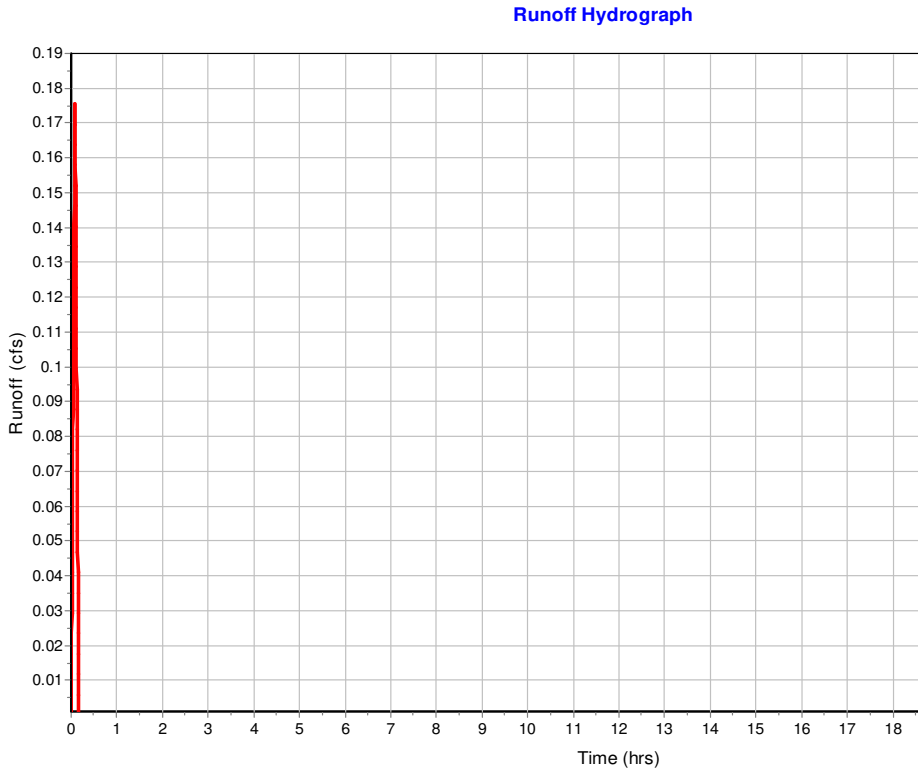
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	68.39700153	0	0
Slope (%) :	0.85	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.87	0	0
Computed Flow Time (min) :	0.61	0	0

Total TOC (min) 3.47

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.18
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:28

Subbasin : Sub-CB-7



Subbasin : Sub-CB-9

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.7
Composite Area & Weighted Runoff Coeff.	0.12		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99999519	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

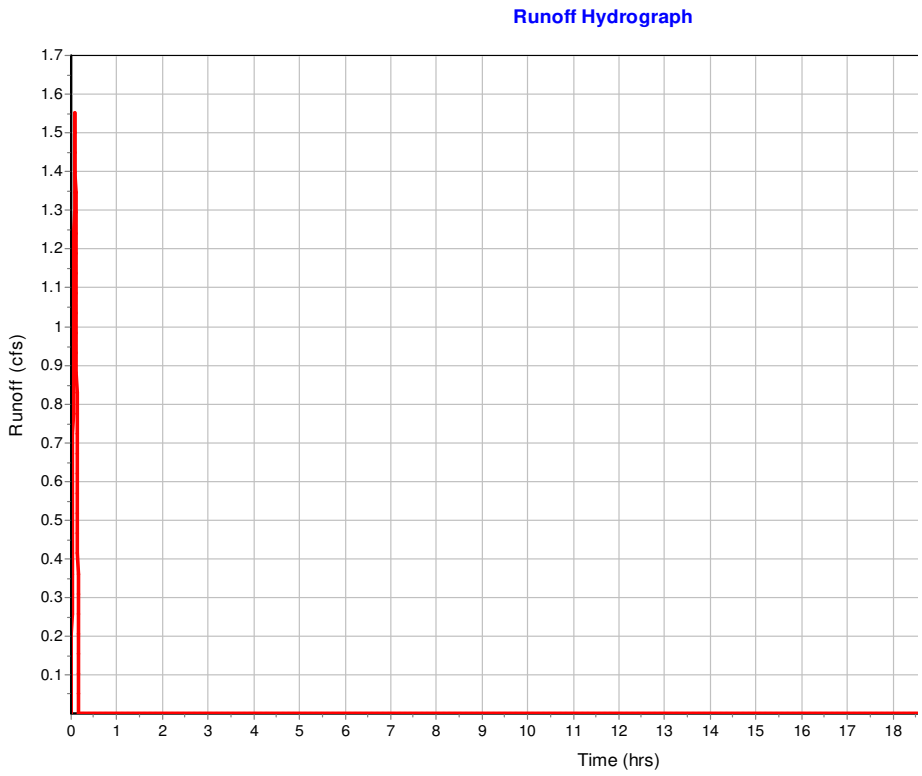
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	199.7947467	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.6	0	0

Total TOC (min) 3.46

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.55
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:28

Subbasin : Sub-CB-9



Subbasin : Sub-FES-2

Input Data

Area (ac)	1.58
Weighted Runoff Coefficient	0.56

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.58	-	0.56
Composite Area & Weighted Runoff Coeff.	1.58		0.56

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	12	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.15	0	0

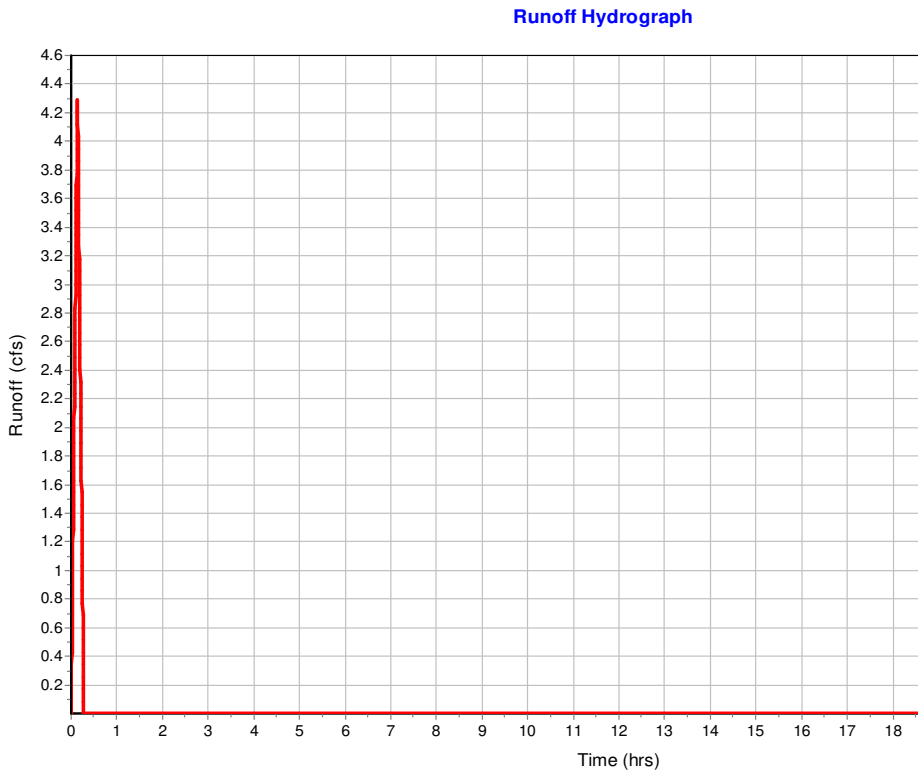
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	363.3701089	0	0
Slope (%) :	10	0	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	5.1	0	0
Computed Flow Time (min) :	1.19	0	0

Total TOC (min) 8.33

Subbasin Runoff Results

Total Rainfall (in)	0.67
Total Runoff (in)	0.38
Peak Runoff (cfs)	4.29
Rainfall Intensity	4.837
Weighted Runoff Coefficient	0.56
Time of Concentration (days hh:mm:ss)	0 00:08:20

Subbasin : Sub-FES-2



Subbasin : SUB-PIPE-35

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.72

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.36	-	0.72
Composite Area & Weighted Runoff Coeff.	0.36		0.72

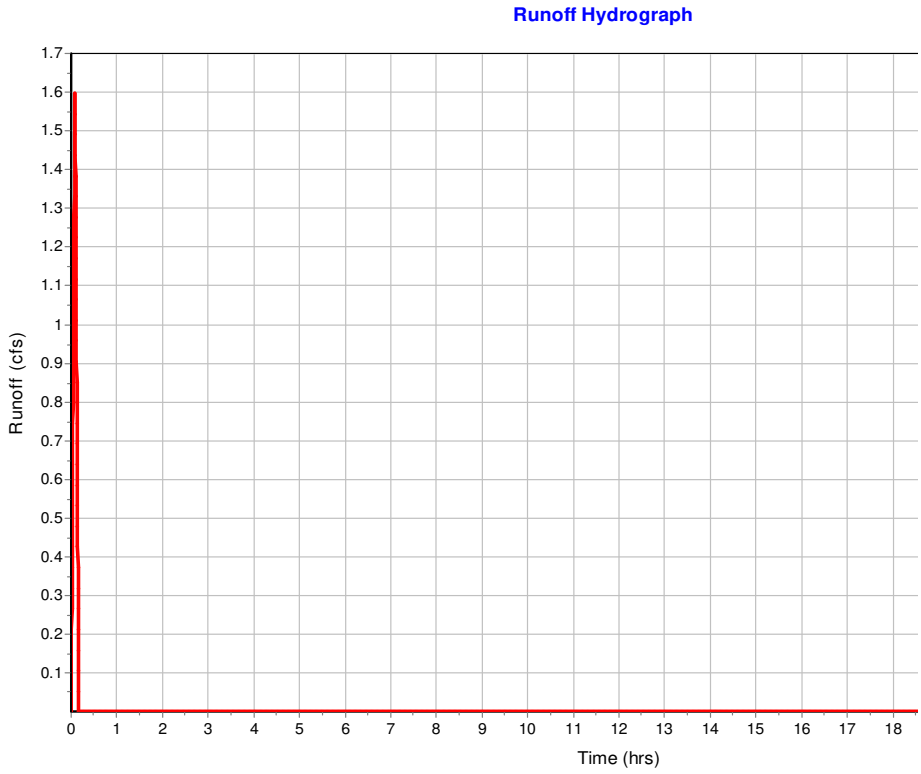
Time of Concentration

User-Defined TOC override (minutes): 2.36

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.37
Peak Runoff (cfs)	1.6
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.72
Time of Concentration (days hh:mm:ss)	0 00:02:22

Subbasin : SUB-PIPE-35



Subbasin : SUB-PIPE-36

Input Data

Area (ac)	1.26
Weighted Runoff Coefficient	0.72

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.26	-	0.72
Composite Area & Weighted Runoff Coeff.	1.26		0.72

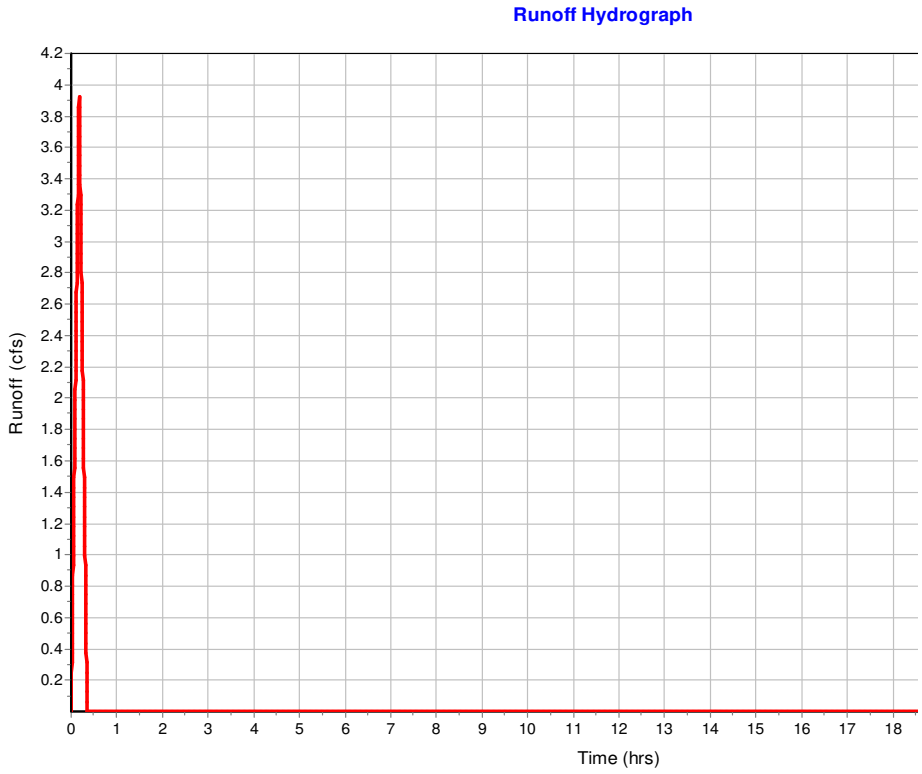
Time of Concentration

User-Defined TOC override (minutes): 10.56

Subbasin Runoff Results

Total Rainfall (in)	0.76
Total Runoff (in)	0.55
Peak Runoff (cfs)	3.92
Rainfall Intensity	4.322
Weighted Runoff Coefficient	0.72
Time of Concentration (days hh:mm:ss)	0 00:10:34

Subbasin : SUB-PIPE-36



Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	FES-2	466.60	469.78	3.18	466.60	0.00	469.78	0.00	0.00	2.15
2	IN-PIPE-35	462.75	464.00	1.25	462.75	0.00	464.00	0.00	0.00	0.00
3	IN-PIPE36	441.30	442.80	1.50	441.30	0.00	442.80	0.00	0.00	0.00
4	JB-14	529.50	534.76	5.26	529.50	0.00	535.50	0.74	0.00	45.12
5	JB-23	515.30	519.44	4.14	515.30	0.00	519.20	-0.24	10.00	31.68

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	T Fl Occu (days h
1	FES-2	19.47	19.47	468.35	1.75	0.00	1.43	468.04	1.44	0 00:00	0
2	IN-PIPE-35	1.59	1.59	463.18	0.43	0.00	1.07	462.75	0.00	0 00:05	0
3	IN-PIPE36	3.92	3.92	442.17	0.87	0.00	0.71	441.39	0.09	0 00:10	0
4	JB-14	5.29	0.00	529.93	0.43	0.00	4.83	529.51	0.01	0 00:12	0
5	JB-23	2.03	0.00	515.56	0.26	0.00	3.88	515.30	0.00	0 00:05	0

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	E
1	L-SDPIPE-1	73.15	476.67	10.73	475.09	7.62	1.58	2.1600	User-Defined	0.330	14.000	0.0150	
2	L-SDPIPE-13	403.61	521.86	4.36	510.72	5.72	11.14	2.7600	User-Defined	0.330	14.000	0.0150	
3	L-SDPIPE-14	373.89	522.45	4.46	515.37	5.03	7.08	1.8900	User-Defined	0.330	14.000	0.0150	
4	L-SDPIPE-15	83.27	471.49	3.38	464.82	0.00	6.67	8.0100	User-Defined	0.330	14.000	0.0150	
5	L-SDPIPE-16	206.62	505.01	3.91	489.62	6.43	15.39	7.4500	User-Defined	0.330	14.000	0.0150	
6	L-SDPIPE-18	170.54	523.17	5.39	517.57	3.45	5.60	3.2800	User-Defined	0.330	14.000	0.0150	
7	L-SDPIPE-19	227.29	522.18	4.31	505.01	3.58	17.17	7.5500	User-Defined	0.330	14.000	0.0150	
8	L-SDPIPE-2	62.02	476.28	9.98	475.09	7.29	1.19	1.9200	User-Defined	0.330	14.000	0.0150	
9	L-SDPIPE-20	233.87	505.01	3.58	487.59	3.97	17.42	7.4500	User-Defined	0.330	14.000	0.0150	
10	L-SDPIPE-21	241.61	543.67	5.17	534.06	3.86	9.61	3.9800	User-Defined	0.330	14.000	0.0150	
11	L-SDPIPE-23	316.61	547.43	4.84	534.06	3.53	13.37	4.2200	User-Defined	0.500	26.000	0.0150	
12	L-SDPIPE-25	202.83	549.70	3.70	532.10	0.00	17.60	8.6800	User-Defined	0.500	26.000	0.0150	
13	L-SDPIPE-27	245.69	494.00	6.50	476.28	9.98	17.72	7.2100	User-Defined	0.330	14.000	0.0150	
14	L-SDPIPE-28	228.18	493.47	5.63	476.67	10.73	16.80	7.3600	User-Defined	0.330	14.000	0.0150	
15	L-SDPIPE-29	172.07	510.72	5.72	494.00	6.50	16.72	9.7200	User-Defined	0.330	14.000	0.0150	
16	L-SDPIPE-32	98.13	549.76	5.26	540.30	0.00	9.46	9.6400	User-Defined	0.500	26.000	0.0150	
17	L-SDPIPE-33	78.91	518.02	3.90	517.01	4.43	1.01	1.2800	User-Defined	0.330	14.000	0.0320	
18	L-SDPIPE-34	149.42	521.36	5.08	517.01	4.43	4.35	2.9100	User-Defined	0.330	14.000	0.0320	
19	L-SDPIPE-4	129.78	475.09	7.62	464.82	0.00	10.27	7.9100	User-Defined	0.330	14.000	0.0320	
20	L-SDPIPE-6	214.12	489.62	6.43	475.09	7.29	14.53	6.7900	User-Defined	0.330	14.000	0.0150	
21	L-SDPIPE-7	216.57	487.59	3.97	471.49	3.38	16.10	7.4300	User-Defined	0.330	14.000	0.0150	

Channel Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Fr Nu
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	L-SDPIPE-1	0.00	0 00:00	3.72	0.00	0.00		0.00	0.00	0.00	
2	L-SDPIPE-13	0.00	0 00:00	4.20	0.00	0.00		0.02	0.06	0.00	
3	L-SDPIPE-14	0.46	0 00:13	3.48	0.13	0.37	16.84	0.24	0.73	0.00	
4	L-SDPIPE-15	0.18	0 00:17	7.16	0.02	1.66	0.84	0.08	0.24	0.00	
5	L-SDPIPE-16	0.00	0 00:06	6.90	0.00	0.00		0.04	0.12	0.00	
6	L-SDPIPE-18	0.11	0 00:05	4.64	0.02	6.32	0.45	0.07	0.21	0.00	
7	L-SDPIPE-19	0.34	0 00:08	6.95	0.05	2.95	1.28	0.07	0.22	0.00	
8	L-SDPIPE-2	0.00	0 00:00	3.50	0.00	0.00		0.10	0.29	0.00	
9	L-SDPIPE-20	0.09	0 00:16	6.90	0.01	0.82	4.75	0.07	0.21	0.00	
10	L-SDPIPE-21	0.00	0 00:00	5.04	0.00	0.00		0.17	0.50	0.00	
11	L-SDPIPE-23	0.00	0 00:06	19.36	0.00	0.00		0.15	0.30	0.00	
12	L-SDPIPE-25	0.00	0 00:05	27.75	0.00	0.00		0.01	0.02	0.00	
13	L-SDPIPE-27	0.00	0 00:00	6.79	0.00	0.00		0.00	0.00	0.00	
14	L-SDPIPE-28	0.24	0 00:14	6.86	0.03	2.98	1.28	0.06	0.18	0.00	
15	L-SDPIPE-29	0.02	0 00:07	7.88	0.00	1.75	1.64	0.02	0.06	0.00	
16	L-SDPIPE-32	0.03	0 00:05	28.64	0.00	2.05	0.80	0.02	0.05	0.00	
17	L-SDPIPE-33	0.00	0 00:00	2.86	0.00	0.00		0.17	0.50	0.00	
18	L-SDPIPE-34	0.22	0 00:08	4.31	0.05	0.22	11.32	0.22	0.66	0.00	
19	L-SDPIPE-4	0.00	0 00:00	7.11	0.00	0.00		0.00	0.00	0.00	
20	L-SDPIPE-6	0.18	0 00:05	6.59	0.03	0.54	6.61	0.13	0.39	0.00	
21	L-SDPIPE-7	0.16	0 00:16	6.90	0.02	1.23	2.93	0.08	0.23	0.00	

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness
1	SDPIPE-1	35.55	465.94	0.00	463.00	0.00	2.94	8.2700	CIRCULAR	36.000	36.000	0.0120
2	SDPIPE-10	256.10	529.50	0.00	512.58	0.00	16.92	6.6100	CIRCULAR	18.000	18.000	0.0120
3	SDPIPE-11	67.57	530.20	0.00	529.50	0.00	0.70	1.0400	CIRCULAR	18.000	18.000	0.0120
4	SDPIPE-12	33.01	530.53	0.00	530.20	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0130
5	SDPIPE-13	130.50	517.50	0.00	505.00	0.00	12.50	9.5800	CIRCULAR	18.000	18.000	0.0120
6	SDPIPE-14	39.55	517.99	0.00	517.50	0.00	0.49	1.2500	CIRCULAR	18.000	18.000	0.0130
7	SDPIPE-15	64.04	468.11	0.00	467.47	0.00	0.64	1.0000	CIRCULAR	18.000	18.000	0.0130
8	SDPIPE-16	23.51	501.10	0.00	499.00	0.00	2.10	8.9300	CIRCULAR	18.000	18.000	0.0120
9	SDPIPE-17	194.21	515.30	0.00	501.00	-0.10	14.30	7.3600	CIRCULAR	18.000	18.000	0.0120
10	SDPIPE-18	49.41	517.78	0.00	515.30	0.00	2.48	5.0200	CIRCULAR	18.000	18.000	0.0130
11	SDPIPE-19	51.31	517.87	0.00	515.30	0.00	2.57	5.0100	CIRCULAR	18.000	18.000	0.0130
12	SDPIPE-2	35.82	466.30	0.00	465.94	0.00	0.36	1.0000	CIRCULAR	36.000	36.000	0.0130
13	SDPIPE-20	33.00	501.43	0.00	501.10	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0120
14	SDPIPE-21	239.80	538.50	0.00	530.20	0.00	8.30	3.4600	CIRCULAR	18.000	18.000	0.0120
15	SDPIPE-22	57.68	542.14	0.00	538.50	0.00	3.64	6.3100	CIRCULAR	18.000	18.000	0.0130
16	SDPIPE-23	44.75	542.59	0.00	542.14	0.00	0.45	1.0100	CIRCULAR	18.000	18.000	0.0130
17	SDPIPE-25	74.63	546.00	0.00	544.50	0.00	1.50	2.0100	CIRCULAR	18.000	18.000	0.0130
18	SDPIPE-27	182.53	487.50	0.00	484.31	0.00	3.19	1.7500	CIRCULAR	18.000	18.000	0.0120
19	SDPIPE-28	33.55	487.84	0.00	487.50	0.00	0.34	1.0000	CIRCULAR	18.000	18.000	0.0130
20	SDPIPE-29	167.22	505.00	0.00	487.50	0.00	17.50	10.4700	CIRCULAR	18.000	18.000	0.0120
21	SDPIPE-3	30.36	466.60	0.00	466.30	0.00	0.30	1.0000	CIRCULAR	36.000	36.000	0.0120
22	SDPIPE-30	66.71	510.34	0.00	505.00	0.00	5.34	8.0000	CIRCULAR	18.000	18.000	0.0130
23	SDPIPE-32	96.89	544.50	0.00	538.50	0.00	6.00	6.1900	CIRCULAR	18.000	18.000	0.0120
24	SDPIPE-33	77.61	514.12	0.00	512.58	0.00	1.54	1.9800	CIRCULAR	18.000	18.000	0.0150
25	SDPIPE-34	147.34	516.28	0.00	512.58	0.00	3.70	2.5100	CIRCULAR	18.000	18.000	0.0150
26	SDPIPE-4	71.93	467.47	0.00	466.75	0.81	0.72	1.0000	CIRCULAR	18.000	18.000	0.0120
27	SDPIPE-5	33.00	467.80	0.00	467.47	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0130
28	SDPIPE-6	67.57	483.19	0.00	482.52	0.00	0.67	1.0000	CIRCULAR	18.000	18.000	0.0120
29	SDPIPE-7	42.68	483.62	0.00	483.19	0.00	0.43	1.0000	CIRCULAR	18.000	18.000	0.0130
30	SDPIPE-8	130.97	512.25	0.00	492.00	0.00	20.25	15.4600	CIRCULAR	24.000	24.000	0.0120
31	SDPIPE-9	33.02	512.58	0.00	512.25	0.00	0.33	1.0000	CIRCULAR	24.000	24.000	0.0130
32	SPIPE-35	30.19	462.75	0.00	462.25	0.00	0.50	1.6600	CIRCULAR	18.000	18.000	0.0150
33	SPIPE-36	31.09	441.38	0.08	441.00	0.00	0.38	1.2200	CIRCULAR	18.000	18.000	0.0150

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Fro Num
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	SDPIPE-1	21.43	0 00:08	207.79	0.10	13.86	0.04	0.81	0.27	0.00	
2	SDPIPE-10	5.28	0 00:12	29.25	0.18	5.99	0.71	0.87	0.58	0.00	
3	SDPIPE-11	5.29	0 00:12	11.59	0.46	7.08	0.16	0.66	0.44	0.00	
4	SDPIPE-12	0.69	0 00:07	10.49	0.07	1.74	0.32	0.72	0.48	0.00	
5	SDPIPE-13	2.27	0 00:13	35.22	0.06	10.80	0.20	0.26	0.18	0.00	
6	SDPIPE-14	2.28	0 00:13	11.74	0.19	5.82	0.11	0.41	0.27	0.00	
7	SDPIPE-15	1.45	0 00:17	10.50	0.14	3.74	0.29	0.41	0.27	0.00	
8	SDPIPE-16	3.05	0 00:06	34.01	0.09	9.81	0.04	0.35	0.23	0.00	
9	SDPIPE-17	2.02	0 00:05	30.77	0.07	7.19	0.45	0.33	0.22	0.00	
10	SDPIPE-18	1.05	0 00:05	23.53	0.04	5.70	0.14	0.24	0.16	0.00	
11	SDPIPE-19	1.38	0 00:08	23.51	0.06	6.89	0.12	0.26	0.17	0.00	
12	SDPIPE-2	19.64	0 00:08	66.70	0.29	6.64	0.09	1.31	0.44	0.00	
13	SDPIPE-20	1.13	0 00:16	11.38	0.10	4.39	0.13	0.37	0.25	0.00	
14	SDPIPE-21	1.69	0 00:15	21.17	0.08	3.65	1.09	0.57	0.38	0.00	
15	SDPIPE-22	1.70	0 00:15	26.39	0.06	7.46	0.13	0.28	0.19	0.00	
16	SDPIPE-23	0.62	0 00:05	10.53	0.06	3.27	0.23	0.25	0.16	0.00	
17	SDPIPE-25	0.55	0 00:05	14.89	0.04	3.57	0.35	0.21	0.14	0.00	
18	SDPIPE-27	4.00	0 00:20	15.03	0.27	6.84	0.44	0.55	0.37	0.00	
19	SDPIPE-28	1.27	0 00:14	10.50	0.12	3.12	0.18	0.46	0.31	0.00	
20	SDPIPE-29	3.08	0 00:20	36.81	0.08	7.34	0.38	0.43	0.29	0.00	
21	SDPIPE-3	20.72	0 00:00	71.83	0.29	7.93	0.06	1.60	0.53	0.00	
22	SDPIPE-30	3.08	0 00:20	29.71	0.10	10.67	0.10	0.33	0.22	0.00	
23	SDPIPE-32	1.24	0 00:05	28.32	0.04	7.77	0.21	0.22	0.15	0.00	
24	SDPIPE-33	2.46	0 00:08	12.82	0.19	3.46	0.37	0.87	0.58	0.00	
25	SDPIPE-34	2.16	0 00:08	14.43	0.15	3.23	0.76	0.85	0.57	0.00	
26	SDPIPE-4	1.45	0 00:17	11.38	0.13	4.10	0.29	0.38	0.25	0.00	
27	SDPIPE-5	0.46	0 00:07	10.50	0.04	1.98	0.28	0.28	0.19	0.00	
28	SDPIPE-6	1.79	0 00:05	11.37	0.16	4.31	0.26	0.43	0.29	0.00	
29	SDPIPE-7	1.37	0 00:16	10.50	0.13	3.58	0.20	0.40	0.27	0.00	
30	SDPIPE-8	11.68	0 00:09	96.37	0.12	19.32	0.11	0.49	0.25	0.00	
31	SDPIPE-9	11.53	0 00:09	22.62	0.51	8.12	0.07	0.93	0.46	0.00	
32	SPIPE-35	1.59	0 00:05	11.72	0.14	4.18	0.12	0.40	0.27	0.00	
33	SPIPE-36	3.91	0 00:10	10.06	0.39	4.67	0.11	0.72	0.48	0.00	

Inlet Input

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Ini Wa De
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.62	487.59	3.97	483.62	0
2	CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.25	517.01	4.76	512.25	0
3	CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.58	517.01	4.43	512.58	0
4	CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.20	534.06	3.86	530.20	0
5	CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.53	534.06	3.53	530.53	0
6	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.50	521.86	4.36	517.50	0
7	CB-19	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.99	522.45	4.46	517.99	0
8	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	465.94	476.67	10.73	465.94	0
9	CB-20	FHWA HEC-22 GENERIC	N/A	On Grade	1	468.11	471.49	3.38	468.11	0
10	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.10	505.01	3.91	501.10	0
11	CB-24	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.78	523.31	5.53	517.77	-0
12	CB-25	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.87	522.17	4.30	515.81	-2
13	CB-26	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.43	505.01	3.58	501.43	0
14	CB-27	FHWA HEC-22 GENERIC	N/A	On Grade	1	538.50	543.67	5.17	538.50	0
15	CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	542.14	545.67	3.53	542.20	0
16	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	542.59	547.43	4.84	542.65	0
17	CB-3	FHWA HEC-22 GENERIC	N/A	On Grade	1	466.30	476.28	9.98	466.30	0
18	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	4.87	544.50	0
19	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.70	3.70	546.00	0
20	CB-35	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.50	494.00	6.50	487.50	0
21	CB-36	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.84	493.47	5.63	487.84	0
22	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	505.00	510.72	5.72	505.00	0
23	CB-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	510.34	515.37	5.03	510.34	0
24	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.12	518.02	3.90	514.12	0
25	CB-6	FHWA HEC-22 GENERIC	N/A	On Sag	1	467.80	475.09	7.29	467.80	0
26	CB-7	FHWA HEC-22 GENERIC	N/A	On Grade	1	467.47	475.09	7.62	467.47	0
27	CB-9	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.19	489.62	6.43	483.19	0
28	Inlet-CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	516.28	521.36	5.08	516.28	0

Roadway & Gutter Input

SN	Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1	CB-10	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
2	CB-12	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
3	CB-13	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
4	CB-15	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
5	CB-16	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
6	CB-18	0.0245	0.0258	0.0150	0.0200	1.00	0.1312	8.50
7	CB-19	0.0245	0.0258	0.0150	0.0200	1.00	0.1312	8.50
8	CB-2	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
9	CB-20	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
10	CB-22	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
11	CB-24	0.1033	0.0258	0.0150	0.0200	1.00	0.1312	8.50
12	CB-25	0.1041	0.0258	0.0150	0.0200	1.00	0.1312	8.50
13	CB-26	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
14	CB-27	0.0574	0.0258	0.0150	0.0200	1.00	0.1312	8.50
15	CB-28	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
16	CB-29	0.0574	0.0258	0.0150	0.0200	1.00	0.1312	8.50
17	CB-3	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
18	CB-31	0.0721	0.0200	0.0150	0.0200	1.50	0.1312	8.50
19	CB-32	0.0809	0.0258	0.0150	0.0200	1.00	0.1312	8.50
20	CB-35	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
21	CB-36	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
22	CB-38	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
23	CB-39	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
24	CB-43	0.0199	0.0258	0.0150	0.0200	1.00	0.1312	8.50
25	CB-6	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
26	CB-7	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
27	CB-9	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
28	Inlet-CB-44	0.1138	0.0258	0.0150	0.0200	1.00	0.1312	8.50

Inlet Results

SN	Element ID	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Max Depth Occurrence (days hh:mm)	F \
1	CB-10	1.54	1.45	1.34	0.19	87.40	4.89	487.71	0.12	0 00:16	
2	CB-12	1.36	1.36	N/A	N/A	N/A	4.37	517.29	0.28	0 00:09	
3	CB-13	3.72	3.56	N/A	N/A	N/A	8.53	517.40	0.39	0 00:09	
4	CB-15	3.63	3.63	N/A	N/A	N/A	8.38	534.44	0.38	0 00:12	
5	CB-16	1.79	1.79	N/A	N/A	N/A	5.24	534.36	0.30	0 00:12	
6	CB-18	0.53	0.53	0.53	0.00	100.00	4.05	521.96	0.10	0 00:13	
7	CB-19	2.74	2.74	2.28	0.46	83.25	7.45	522.64	0.19	0 00:13	
8	CB-2	1.20	0.97	1.20	0.00	100.00	6.67	476.84	0.17	0 00:08	
9	CB-20	1.63	1.50	1.40	0.23	85.80	4.99	471.61	0.12	0 00:17	
10	CB-22	0.60	0.60	0.60	0.00	100.00	3.45	505.09	0.08	0 00:06	
11	CB-24	1.16	1.16	1.06	0.10	91.65	4.15	523.41	0.10	0 00:05	
12	CB-25	1.73	1.73	1.39	0.34	80.28	4.80	522.29	0.12	0 00:08	
13	CB-26	1.23	1.23	1.15	0.08	93.36	4.48	505.12	0.11	0 00:16	
14	CB-27	0.38	0.38	0.38	0.00	100.00	3.07	543.74	0.07	0 00:15	
15	CB-28	1.71	1.71	N/A	N/A	N/A	5.07	545.97	0.30	0 00:15	
16	CB-29	0.63	0.63	0.63	0.00	100.00	3.71	547.52	0.09	0 00:05	
17	CB-3	0.60	0.60	0.60	0.00	100.00	5.18	476.41	0.13	0 00:08	
18	CB-31	0.74	0.74	0.74	0.01	99.03	4.36	549.46	0.09	0 00:05	
19	CB-32	0.56	0.56	0.56	0.00	100.00	3.32	549.78	0.08	0 00:05	
20	CB-35	0.43	0.43	0.43	0.00	100.00	2.89	494.07	0.07	0 00:20	
21	CB-36	1.51	1.51	1.27	0.24	84.23	4.56	493.58	0.11	0 00:14	
22	CB-38	0.97	0.97	0.93	0.04	95.57	3.88	510.81	0.09	0 00:20	
23	CB-39	3.23	3.20	N/A	N/A	N/A	7.77	515.74	0.37	0 00:20	
24	CB-43	2.46	2.46	2.46	0.00	100.00	7.44	518.21	0.19	0 00:08	
25	CB-6	0.87	0.71	N/A	N/A	N/A	3.25	475.34	0.25	0 00:07	
26	CB-7	0.18	0.18	0.18	0.00	100.00	3.27	475.17	0.08	0 00:17	
27	CB-9	1.55	1.55	1.35	0.20	87.17	4.91	489.74	0.12	0 00:05	
28	Inlet-CB-44	2.43	2.43	2.18	0.24	89.92	5.34	521.49	0.13	0 00:08	

10 Year Design Storm

Project Description

File Name	Hilltop Drainage Analysis 4-8-26.SPF

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins	31
Nodes	46
Junctions	5
Outfalls	13
Flow Diversions	0
Inlets	28
Storage Nodes	0
Links	54
Channels	21
Pipes	33
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period	10 year(s)

Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-CB-10	0.58	0.7000	0.94	0.66	0.38	1.45	0 00:15:54
2	Sub-CB-12	0.32	0.7000	0.51	0.36	0.11	1.37	0 00:05:00
3	Sub-CB-13	1.03	0.7000	0.66	0.46	0.47	3.56	0 00:07:58
4	Sub-CB-15	1.21	0.7000	0.77	0.54	0.65	3.63	0 00:10:46
5	Sub-CB-16	0.42	0.7000	0.51	0.36	0.15	1.80	0 00:05:00
6	Sub-CB-18	0.12	0.7000	0.51	0.36	0.04	0.53	0 00:05:00
7	Sub-CB-19	1.00	0.7000	0.85	0.60	0.59	2.74	0 00:12:57
8	Sub-CB-2	0.38	0.7000	0.92	0.64	0.24	0.97	0 00:14:59
9	Sub-CB-20	0.62	0.7000	0.98	0.69	0.42	1.50	0 00:17:03
10	Sub-CB-22	0.14	0.7000	0.51	0.36	0.05	0.60	0 00:05:00
11	Sub-CB-24	0.27	0.7000	0.51	0.36	0.10	1.16	0 00:05:01
12	Sub-CB-25	0.51	0.7000	0.67	0.47	0.24	1.73	0 00:08:15
13	Sub-CB-26	0.49	0.7000	0.94	0.66	0.32	1.23	0 00:15:52
14	Sub-CB-27	0.10	0.7000	0.58	0.40	0.04	0.38	0 00:06:07
15	Sub-CB-28	0.67	0.7000	0.91	0.64	0.43	1.71	0 00:15:04
16	Sub-CB-29	0.15	0.7000	0.51	0.36	0.05	0.63	0 00:05:00
17	Sub-CB-3	0.14	0.7000	0.51	0.36	0.05	0.61	0 00:05:00
18	Sub-CB-31	0.17	0.7000	0.51	0.36	0.06	0.75	0 00:05:00
19	Sub-CB-32	0.13	0.7000	0.51	0.36	0.05	0.56	0 00:05:00
20	Sub-CB-35	0.10	0.7000	0.51	0.36	0.04	0.43	0 00:05:00
21	Sub-CB-36	0.58	0.7000	0.90	0.63	0.37	1.51	0 00:14:42
22	Sub-CB-38	0.24	0.7000	0.55	0.38	0.09	0.98	0 00:05:43
23	Sub-CB-39	1.39	0.7000	1.05	0.74	1.02	3.20	0 00:19:10
24	Sub-CB-43	0.71	0.7000	0.65	0.45	0.32	2.47	0 00:07:53
25	Sub-CB-44	0.72	0.7000	0.67	0.47	0.34	2.43	0 00:08:24
26	Sub-CB-6	0.16	0.7000	0.51	0.36	0.06	0.71	0 00:05:00
27	Sub-CB-7	0.04	0.7000	0.51	0.36	0.01	0.18	0 00:05:00
28	Sub-CB-9	0.36	0.7000	0.51	0.36	0.13	1.55	0 00:05:00
29	Sub-FES-2	1.58	0.5600	0.67	0.38	0.60	4.29	0 00:08:19
30	SUB-PIPE-35	0.36	0.7200	0.51	0.37	0.13	1.60	0 00:05:00
31	SUB-PIPE-36	1.26	0.7200	0.76	0.55	0.69	3.92	0 00:10:33

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)
1	FES-2	Junction	466.60	469.78	466.60	469.78	0.00	19.47	468.35	0.00	1.43
2	IN-PIPE-35	Junction	462.75	464.00	462.75	464.00	0.00	1.59	463.18	0.00	1.07
3	IN-PIPE36	Junction	441.30	442.80	441.30	442.80	0.00	3.92	442.17	0.00	0.71
4	JB-14	Junction	529.50	534.76	529.50	535.50	0.00	5.29	529.93	0.00	4.83
5	JB-23	Junction	515.30	519.44	515.30	519.20	10.00	2.03	515.56	0.00	3.88
6	OFFSITE-1	Outfall	540.30					0.03	540.33		
7	OFFSITE-2	Outfall	532.10					0.00	532.11		
8	OFFSITE-25	Outfall	464.82					0.00	464.82		
9	OFFSITE-26	Outfall	464.82					0.18	464.90		
10	OU-PIPE-36	Outfall	441.00					3.91	441.65		
11	Out-FES-1	Outfall	463.00					21.43	463.65		
12	Out-FES-11	Outfall	492.00					11.68	492.47		
13	Out-FES-17	Outfall	505.00					2.27	505.26		
14	Out-FES-21	Outfall	499.00					3.05	499.30		
15	Out-FES-3	Outfall	538.50					1.24	538.71		
16	Out-FES-34	Outfall	484.31					4.00	484.84		
17	Out-FES-8	Outfall	482.52					1.79	482.92		
18	OUT-PIPE-35	Outfall	462.25					1.59	462.62		

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak D Total D F
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)	
1	SDPIPE-1	Pipe	CB-2	Out-FES-1	35.55	465.94	463.00	8.2700	36.000	0.0120	21.43	207.79	0.10	13.86	0.81	
2	SDPIPE-10	Pipe	JB-14	CB-13	256.10	529.50	512.58	6.6100	18.000	0.0120	5.28	29.25	0.18	5.99	0.87	
3	SDPIPE-11	Pipe	CB-15	JB-14	67.57	530.20	529.50	1.0400	18.000	0.0120	5.29	11.59	0.46	7.08	0.66	
4	SDPIPE-12	Pipe	CB-16	CB-15	33.01	530.53	530.20	1.0000	18.000	0.0130	0.69	10.49	0.07	1.74	0.72	
5	SDPIPE-13	Pipe	CB-18	Out-FES-17	130.50	517.50	505.00	9.5800	18.000	0.0120	2.27	35.22	0.06	10.80	0.26	
6	SDPIPE-14	Pipe	CB-19	CB-18	39.55	517.99	517.50	1.2500	18.000	0.0130	2.28	11.74	0.19	5.82	0.41	
7	SDPIPE-15	Pipe	CB-20	CB-7	64.04	468.11	467.47	1.0000	18.000	0.0130	1.45	10.50	0.14	3.74	0.41	
8	SDPIPE-16	Pipe	CB-22	Out-FES-21	23.51	501.10	499.00	8.9300	18.000	0.0120	3.05	34.01	0.09	9.81	0.35	
9	SDPIPE-17	Pipe	JB-23	CB-22	194.21	515.30	501.00	7.3600	18.000	0.0120	2.02	30.77	0.07	7.19	0.33	
10	SDPIPE-18	Pipe	CB-24	JB-23	49.41	517.78	515.30	5.0200	18.000	0.0130	1.05	23.53	0.04	5.70	0.24	
11	SDPIPE-19	Pipe	CB-25	JB-23	51.31	517.87	515.30	5.0100	18.000	0.0130	1.38	23.51	0.06	6.89	0.26	
12	SDPIPE-2	Pipe	CB-3	CB-2	35.82	466.30	465.94	1.0000	36.000	0.0130	19.64	66.70	0.29	6.64	1.31	
13	SDPIPE-20	Pipe	CB-26	CB-22	33.00	501.43	501.10	1.0000	18.000	0.0120	1.13	11.38	0.10	4.39	0.37	
14	SDPIPE-21	Pipe	CB-27	CB-15	239.80	538.50	530.20	3.4600	18.000	0.0120	1.69	21.17	0.08	3.65	0.57	
15	SDPIPE-22	Pipe	CB-28	CB-27	57.68	542.14	538.50	6.3100	18.000	0.0130	1.70	26.39	0.06	7.46	0.28	
16	SDPIPE-23	Pipe	CB-29	CB-28	44.75	542.59	542.14	1.0100	18.000	0.0130	0.62	10.53	0.06	3.27	0.25	
17	SDPIPE-25	Pipe	CB-32	CB-31	74.63	546.00	544.50	2.0100	18.000	0.0130	0.55	14.89	0.04	3.57	0.21	
18	SDPIPE-27	Pipe	CB-35	Out-FES-34	182.53	487.50	484.31	1.7500	18.000	0.0120	4.00	15.03	0.27	6.84	0.55	
19	SDPIPE-28	Pipe	CB-36	CB-35	33.55	487.84	487.50	1.0000	18.000	0.0130	1.27	10.50	0.12	3.12	0.46	
20	SDPIPE-29	Pipe	CB-38	CB-35	167.22	505.00	487.50	10.4700	18.000	0.0120	3.08	36.81	0.08	7.34	0.43	
21	SDPIPE-3	Pipe	FES-2	CB-3	30.36	466.60	466.30	1.0000	36.000	0.0120	20.72	71.83	0.29	7.93	1.60	
22	SDPIPE-30	Pipe	CB-39	CB-38	66.71	510.34	505.00	8.0000	18.000	0.0130	3.08	29.71	0.10	10.67	0.33	
23	SDPIPE-32	Pipe	CB-31	Out-FES-3	96.89	544.50	538.50	6.1900	18.000	0.0120	1.24	28.32	0.04	7.77	0.22	
24	SDPIPE-33	Pipe	CB-43	CB-13	77.61	514.12	512.58	1.9800	18.000	0.0150	2.46	12.82	0.19	3.46	0.87	
25	SDPIPE-34	Pipe	Inlet-CB-44	CB-13	147.34	516.28	512.58	2.5100	18.000	0.0150	2.16	14.43	0.15	3.23	0.85	
26	SDPIPE-4	Pipe	CB-7	CB-2	71.93	467.47	466.75	1.0000	18.000	0.0120	1.45	11.38	0.13	4.10	0.38	
27	SDPIPE-5	Pipe	CB-6	CB-7	33.00	467.80	467.47	1.0000	18.000	0.0130	0.46	10.50	0.04	1.98	0.28	
28	SDPIPE-6	Pipe	CB-9	Out-FES-8	67.57	483.19	482.52	1.0000	18.000	0.0120	1.79	11.37	0.16	4.31	0.43	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak D Total D F
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)	
46	L-SDPIPE-27	Channel	CB-35	CB-3	245.69	494.00	476.28	7.2100	3.960	0.0150	0.00	6.79	0.00	0.00	0.00	
47	L-SDPIPE-28	Channel	CB-36	CB-2	228.18	493.47	476.67	7.3600	3.960	0.0150	0.24	6.86	0.03	2.98	0.06	
48	L-SDPIPE-29	Channel	CB-38	CB-35	172.07	510.72	494.00	9.7200	3.960	0.0150	0.02	7.88	0.00	1.75	0.02	
49	L-SDPIPE-32	Channel	CB-31	OFFSITE-1	98.13	549.76	540.30	9.6400	6.000	0.0150	0.03	28.64	0.00	2.05	0.02	
50	L-SDPIPE-33	Channel	CB-43	CB-13	78.91	518.02	517.01	1.2800	3.960	0.0320	0.00	2.86	0.00	0.00	0.17	
51	L-SDPIPE-34	Channel	Inlet-CB-44	CB-13	149.42	521.36	517.01	2.9100	3.960	0.0320	0.22	4.31	0.05	0.22	0.22	
52	L-SDPIPE-4	Channel	CB-7	OFFSITE-25	129.78	475.09	464.82	7.9100	3.960	0.0320	0.00	7.11	0.00	0.00	0.00	
53	L-SDPIPE-6	Channel	CB-9	CB-6	214.12	489.62	475.09	6.7900	3.960	0.0150	0.18	6.59	0.03	0.54	0.13	
54	L-SDPIPE-7	Channel	CB-10	CB-20	216.57	487.59	471.49	7.4300	3.960	0.0150	0.16	6.90	0.02	1.23	0.08	

Inlet Summary

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft²)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max C Sp during
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.62	487.59	483.62	N/A	1.54	1.34	0.19	87.40	8.50	
2	CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.25	517.01	512.25	10.00	1.36	N/A	N/A	N/A	8.50	
3	CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.58	517.01	512.58	10.00	3.72	N/A	N/A	N/A	8.50	
4	CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.20	534.06	530.20	10.00	3.63	N/A	N/A	N/A	8.50	
5	CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.53	534.06	530.53	10.00	1.79	N/A	N/A	N/A	8.50	
6	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.50	521.86	517.50	N/A	0.53	0.53	0.00	100.00	8.50	
7	CB-19	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.99	522.45	517.99	N/A	2.74	2.28	0.46	83.25	8.50	
8	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	465.94	476.67	465.94	N/A	1.20	1.20	0.00	100.00	8.50	
9	CB-20	FHWA HEC-22 GENERIC	N/A	On Grade	1	468.11	471.49	468.11	N/A	1.63	1.40	0.23	85.80	8.50	
10	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.10	505.01	501.10	N/A	0.60	0.60	0.00	100.00	8.50	
11	CB-24	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.78	523.31	517.77	N/A	1.16	1.06	0.10	91.65	8.50	
12	CB-25	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.87	522.17	515.81	N/A	1.73	1.39	0.34	80.28	8.50	
13	CB-26	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.43	505.01	501.43	N/A	1.23	1.15	0.08	93.36	8.50	
14	CB-27	FHWA HEC-22 GENERIC	N/A	On Grade	1	538.50	543.67	538.50	N/A	0.38	0.38	0.00	100.00	8.50	
15	CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	542.14	545.67	542.20	10.00	1.71	N/A	N/A	N/A	8.50	
16	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	542.59	547.43	542.65	N/A	0.63	0.63	0.00	100.00	8.50	
17	CB-3	FHWA HEC-22 GENERIC	N/A	On Grade	1	466.30	476.28	466.30	N/A	0.60	0.60	0.00	100.00	8.50	
18	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	544.50	N/A	0.74	0.74	0.01	99.03	8.50	
19	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.70	546.00	N/A	0.56	0.56	0.00	100.00	8.50	
20	CB-35	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.50	494.00	487.50	N/A	0.43	0.43	0.00	100.00	8.50	
21	CB-36	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.84	493.47	487.84	N/A	1.51	1.27	0.24	84.23	8.50	
22	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	505.00	510.72	505.00	N/A	0.97	0.93	0.04	95.57	8.50	
23	CB-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	510.34	515.37	510.34	10.00	3.23	N/A	N/A	N/A	8.50	
24	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.12	518.02	514.12	N/A	2.46	2.46	0.00	100.00	8.50	
25	CB-6	FHWA HEC-22 GENERIC	N/A	On Sag	1	467.80	475.09	467.80	10.00	0.87	N/A	N/A	N/A	8.50	
26	CB-7	FHWA HEC-22 GENERIC	N/A	On Grade	1	467.47	475.09	467.47	N/A	0.18	0.18	0.00	100.00	8.50	
27	CB-9	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.19	489.62	483.19	N/A	1.55	1.35	0.20	87.17	8.50	
28	Inlet-CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	516.28	521.36	516.28	N/A	2.43	2.18	0.24	89.92	8.50	

Subbasin Hydrology

Subbasin : Sub-CB-10

Input Data

Area (ac) 0.58
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.7
Composite Area & Weighted Runoff Coeff.	0.58		0.7

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99996647	0	0
Slope (%) :	1.25	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	15.21	0	0

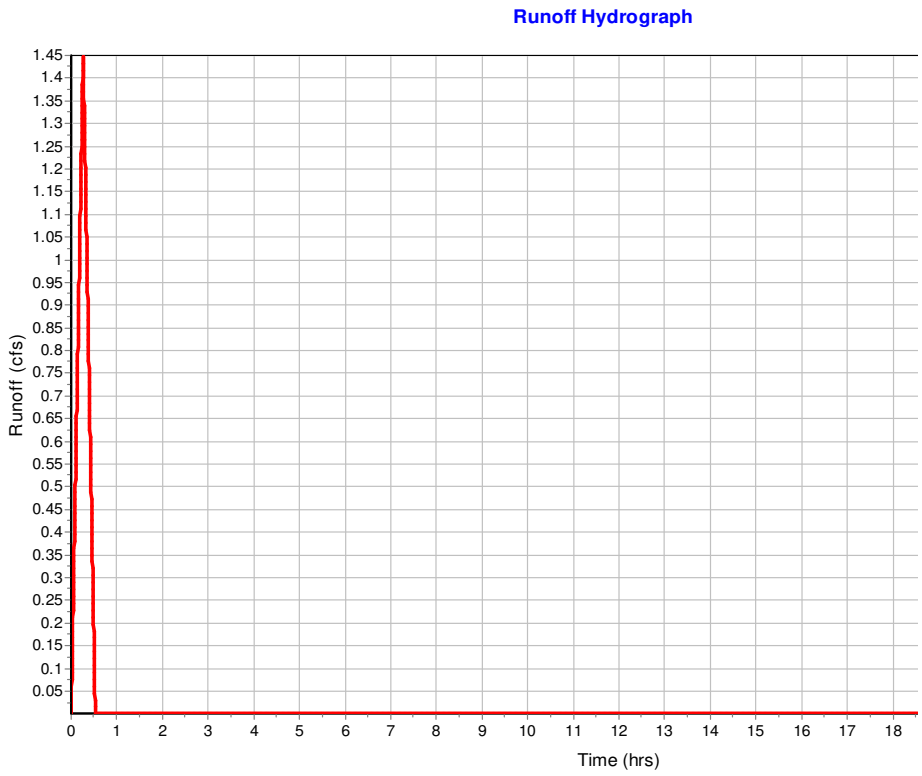
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	229.3185963	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.69	0	0

Total TOC (min) 15.90

Subbasin Runoff Results

Total Rainfall (in)	0.94
Total Runoff (in)	0.66
Peak Runoff (cfs)	1.45
Rainfall Intensity	3.571
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:54

Subbasin : Sub-CB-10



Subbasin : Sub-CB-12

Input Data

Area (ac)	0.32
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.7
Composite Area & Weighted Runoff Coeff.	0.32		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

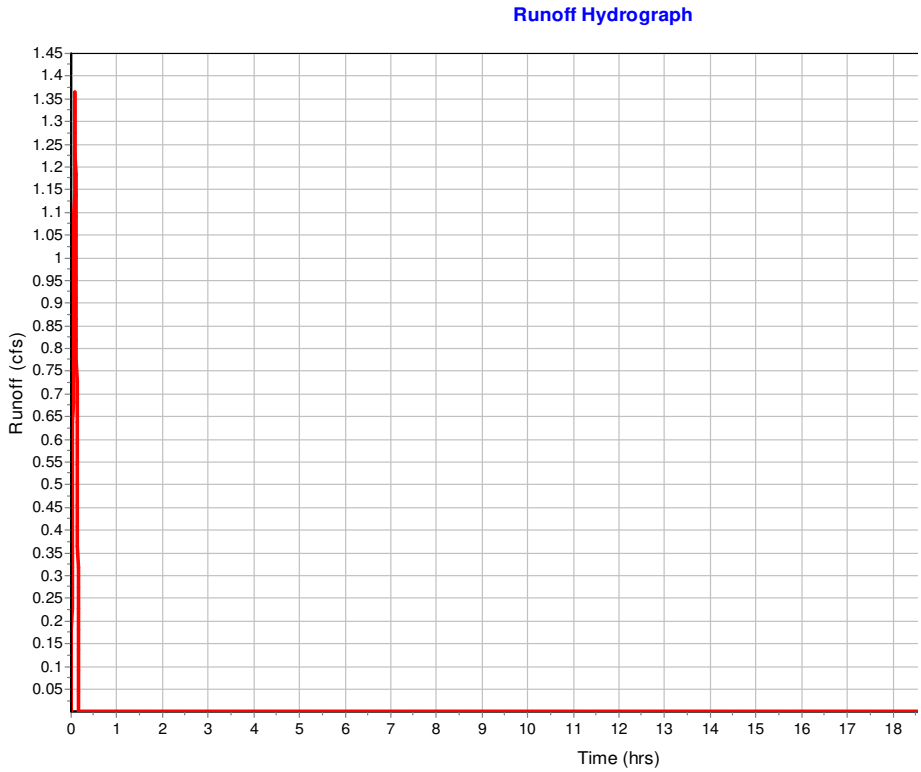
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	219.5273657	0	0
Slope (%) :	1.99	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	2.87	0	0
Computed Flow Time (min) :	1.28	0	0

Total TOC (min) 4.14

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.37
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:04:08

Subbasin : Sub-CB-12



Subbasin : Sub-CB-13

Input Data

Area (ac)	1.03
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.03	-	0.7
Composite Area & Weighted Runoff Coeff.	1.03		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	11.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.27	0	0

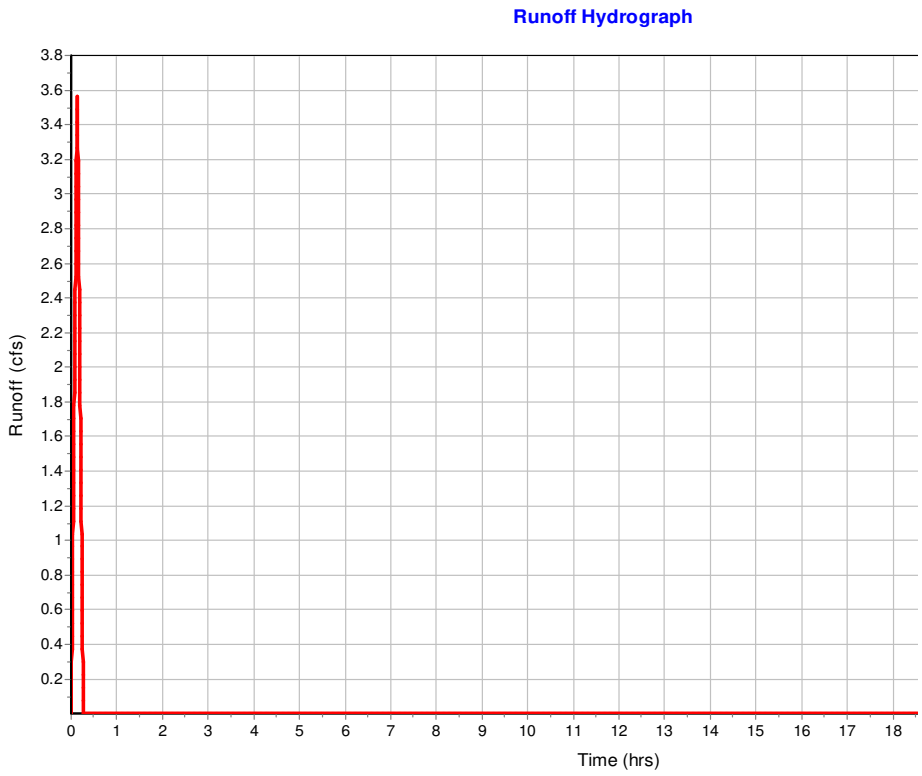
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	93	71.4	0
Slope (%) :	11.5	1.99	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	5.47	2.87	0
Computed Flow Time (min) :	0.28	0.41	0

Total TOC (min) 7.97

Subbasin Runoff Results

Total Rainfall (in)	0.66
Total Runoff (in)	0.46
Peak Runoff (cfs)	3.56
Rainfall Intensity	4.939
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:07:58

Subbasin : Sub-CB-13



Subbasin : Sub-CB-15

Input Data

Area (ac)	1.21
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.21	-	0.7
Composite Area & Weighted Runoff Coeff.	1.21		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.16	0	0
Computed Flow Time (min) :	10.14	0	0

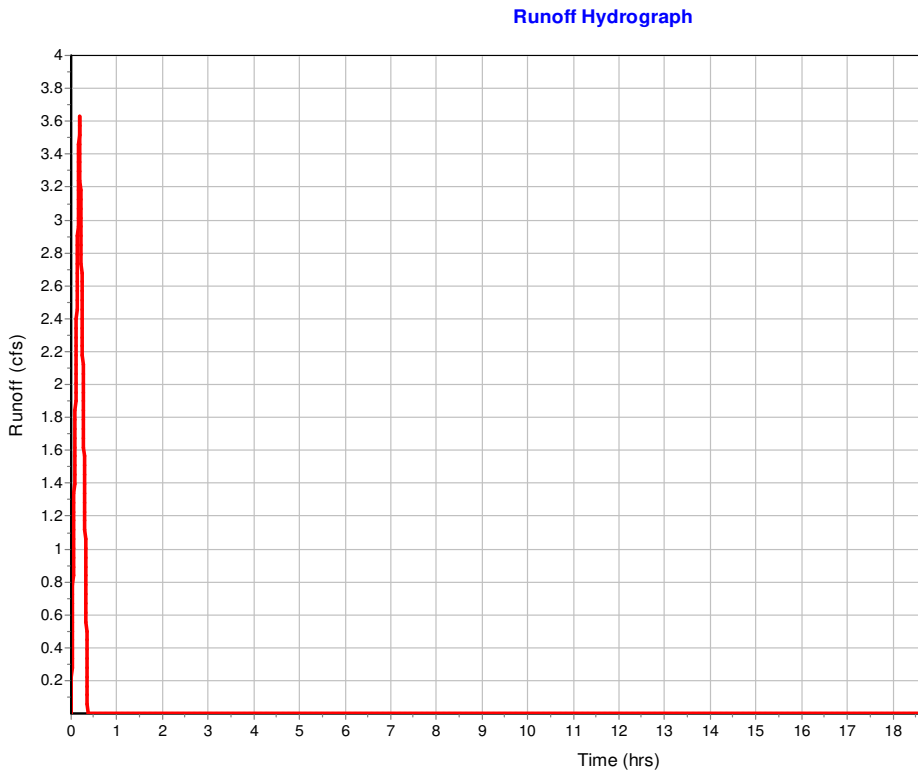
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	12.98144373	156.302	0
Slope (%) :	2	5.74	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	4.87	0
Computed Flow Time (min) :	0.09	0.53	0

Total TOC (min) 10.77

Subbasin Runoff Results

Total Rainfall (in)	0.77
Total Runoff (in)	0.54
Peak Runoff (cfs)	3.63
Rainfall Intensity	4.282
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:10:46

Subbasin : Sub-CB-15



Subbasin : Sub-CB-16

Input Data

Area (ac)	0.42
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	-	0.7
Composite Area & Weighted Runoff Coeff.	0.42		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.01720552	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

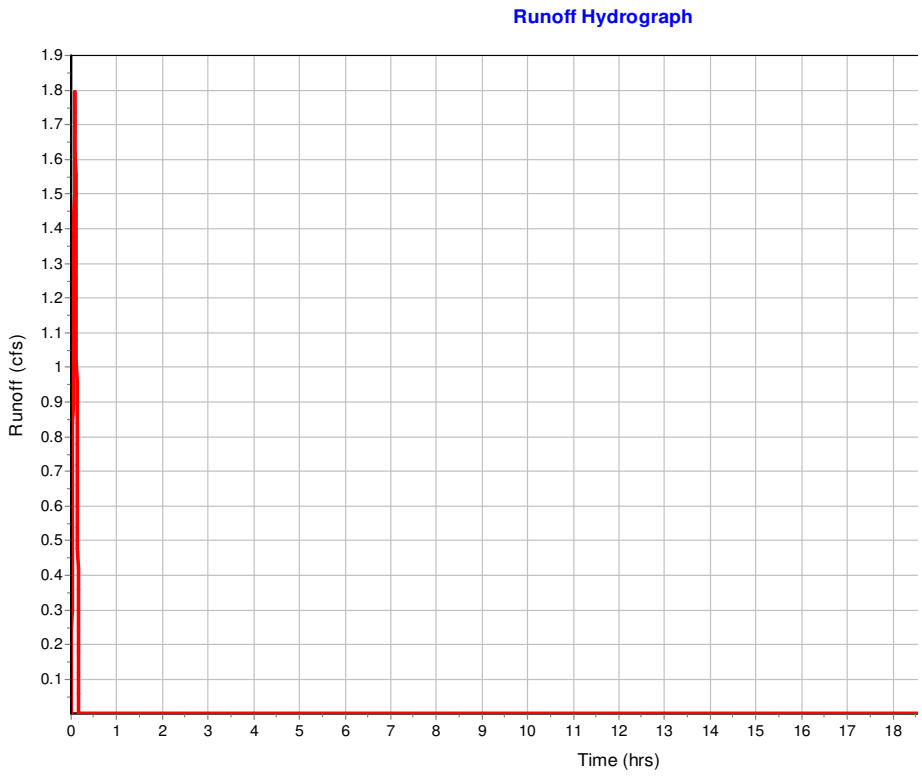
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	310.5319881	0	0
Slope (%) :	5.74	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.87	0	0
Computed Flow Time (min) :	1.06	0	0

Total TOC (min) 3.93

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.8
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:56

Subbasin : Sub-CB-16



Subbasin : Sub-CB-18

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.7
Composite Area & Weighted Runoff Coeff.	0.12		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.10752092	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.88	0	0

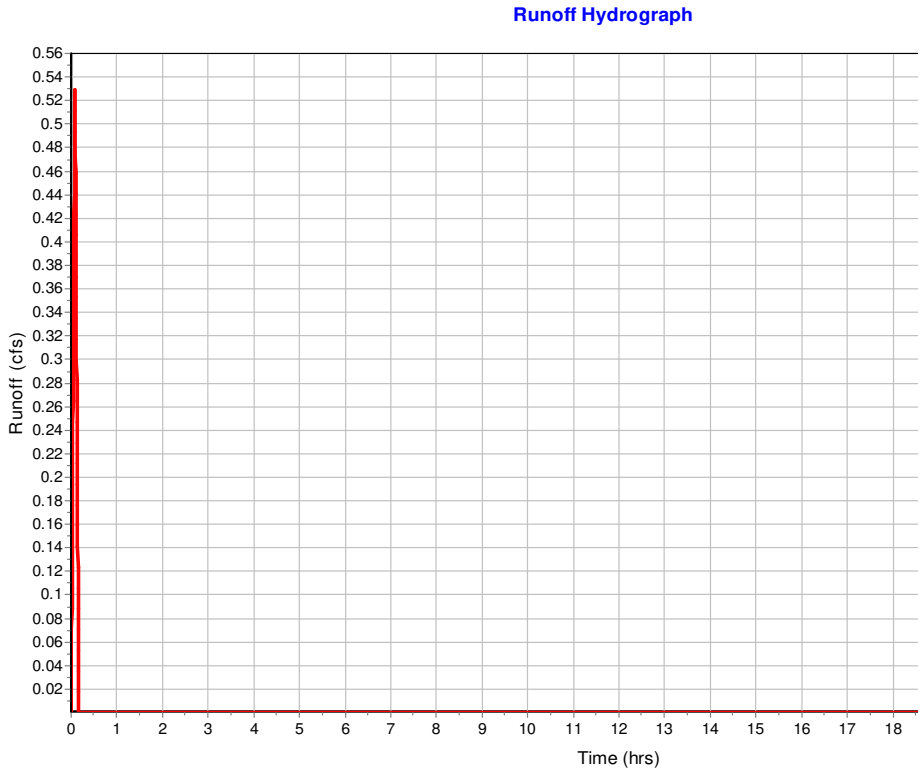
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	71.43477489	102.308	0
Slope (%) :	11.86	2.45	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	7	3.18	0
Computed Flow Time (min) :	0.17	0.54	0

Total TOC (min) 3.59

Subbasin Runoff Results

Total Rainfall (in) 0.51
Total Runoff (in) 0.36
Peak Runoff (cfs) 0.53
Rainfall Intensity 6.16
Weighted Runoff Coefficient 0.7
Time of Concentration (days hh:mm:ss) 0 00:03:35

Subbasin : Sub-CB-18



Subbasin : Sub-CB-19

Input Data

Area (ac) 1
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1	-	0.7
Composite Area & Weighted Runoff Coeff.	1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100.0031436	0	0
Slope (%) :	3.4	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.14	0	0
Computed Flow Time (min) :	11.83	0	0

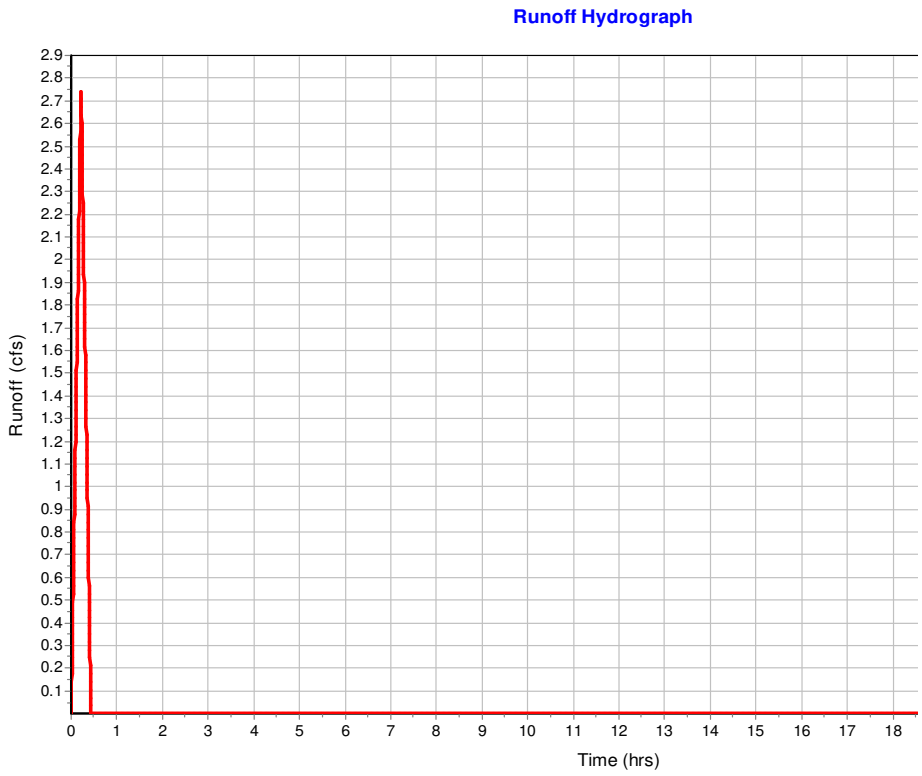
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	6.07922878	278.905	79.9642
Slope (%) :	2	11.86	2.45
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	7	3.18
Computed Flow Time (min) :	0.04	0.66	0.42

Total TOC (min) 12.96

Subbasin Runoff Results

Total Rainfall (in) 0.85
Total Runoff (in) 0.6
Peak Runoff (cfs) 2.74
Rainfall Intensity 3.923
Weighted Runoff Coefficient 0.7
Time of Concentration (days hh:mm:ss) 0 00:12:58

Subbasin : Sub-CB-19



Subbasin : Sub-CB-2

Input Data

Area (ac)	0.38
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.38	-	0.7
Composite Area & Weighted Runoff Coeff.	0.38		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	83	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	14.14	0	0

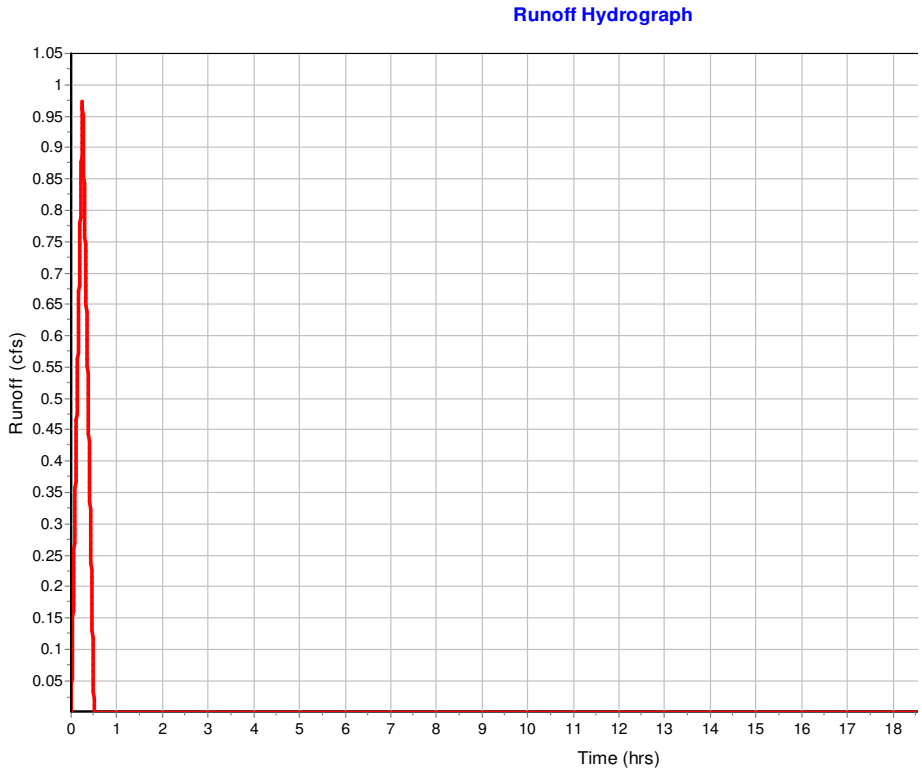
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	175.3484305	45.5292	0
Slope (%) :	10.46	0.85	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	1.87	0
Computed Flow Time (min) :	0.44	0.4	0

Total TOC (min) 14.99

Subbasin Runoff Results

Total Rainfall (in)	0.92
Total Runoff (in)	0.64
Peak Runoff (cfs)	0.97
Rainfall Intensity	3.661
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:14:59

Subbasin : Sub-CB-2



Subbasin : Sub-CB-20

Input Data

Area (ac)	0.62
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.62	-	0.7
Composite Area & Weighted Runoff Coeff.	0.62		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	99.99258294	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	16.41	0	0

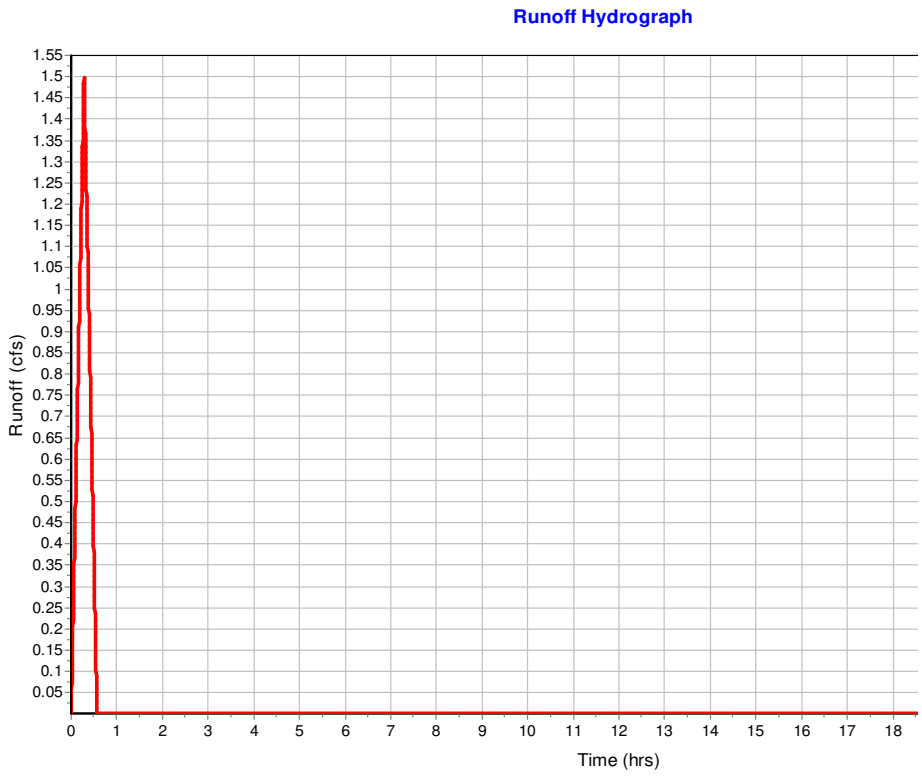
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3.00743724	208.662	0
Slope (%) :	2	7.49	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	5.56	0
Computed Flow Time (min) :	0.02	0.63	0

Total TOC (min) 17.06

Subbasin Runoff Results

Total Rainfall (in)	0.98
Total Runoff (in)	0.69
Peak Runoff (cfs)	1.5
Rainfall Intensity	3.466
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:17:04

Subbasin : Sub-CB-20



Subbasin : Sub-CB-22

Input Data

Area (ac)	0.14
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.14	-	0.7
Composite Area & Weighted Runoff Coeff.	0.14		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99981258	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

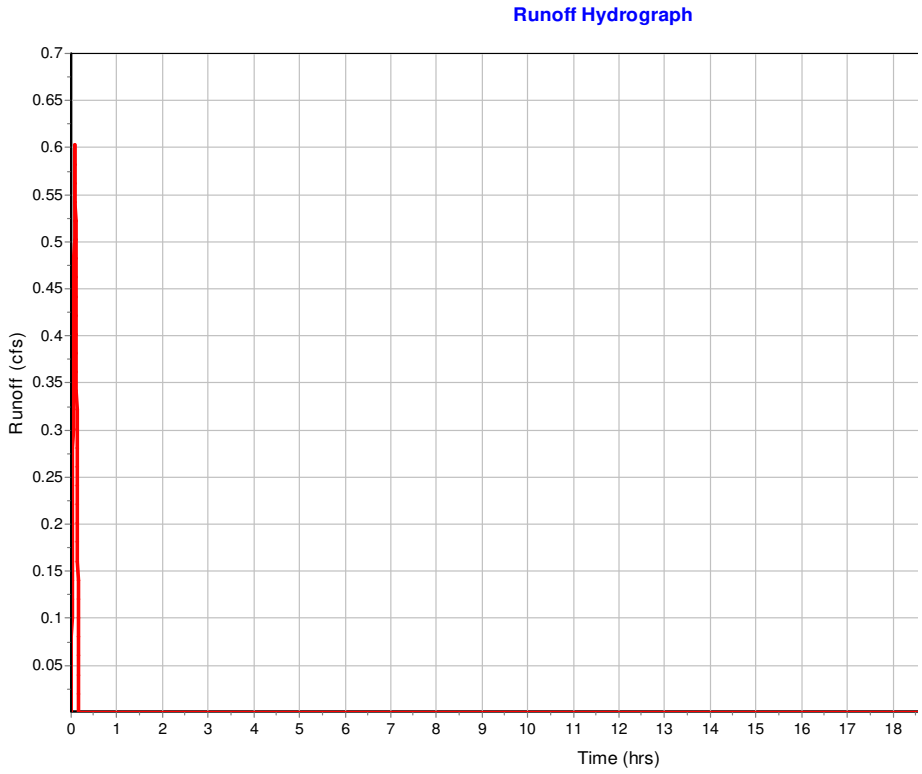
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	167.0428132	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.5	0	0

Total TOC (min) 3.36

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.6
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:22

Subbasin : Sub-CB-22



Subbasin : Sub-CB-24

Input Data

Area (ac)	0.27
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.27	-	0.7
Composite Area & Weighted Runoff Coeff.	0.27		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	37.99958613	0	0
Slope (%) :	6.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.15	0	0
Computed Flow Time (min) :	4.21	0	0

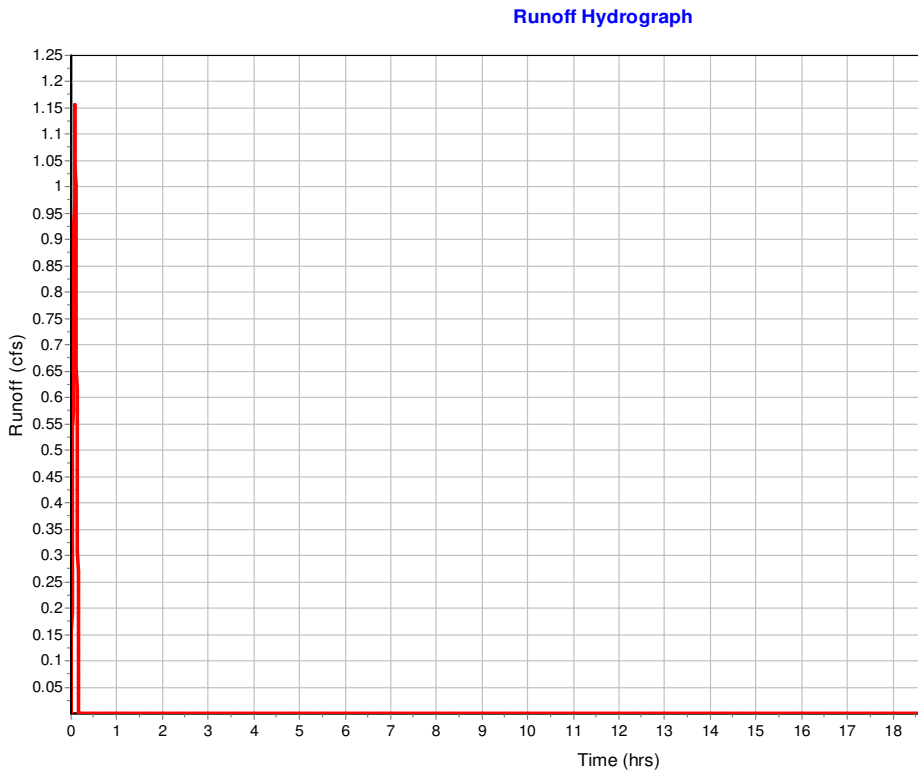
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	28.98355088	187.48	0
Slope (%) :	0.51	10.41	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.45	6.56	0
Computed Flow Time (min) :	0.33	0.48	0

Total TOC (min) 5.02

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.16
Rainfall Intensity	6.148
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:05:01

Subbasin : Sub-CB-24



Subbasin : Sub-CB-25

Input Data

Area (ac)	0.51
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.51	-	0.7
Composite Area & Weighted Runoff Coeff.	0.51		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99999586	0	0
Slope (%) :	7.25	0	0
2 yr, 24 hr Rainfall (in) :	4.32	0	0
Velocity (ft/sec) :	0.18	0	0
Computed Flow Time (min) :	7.56	0	0

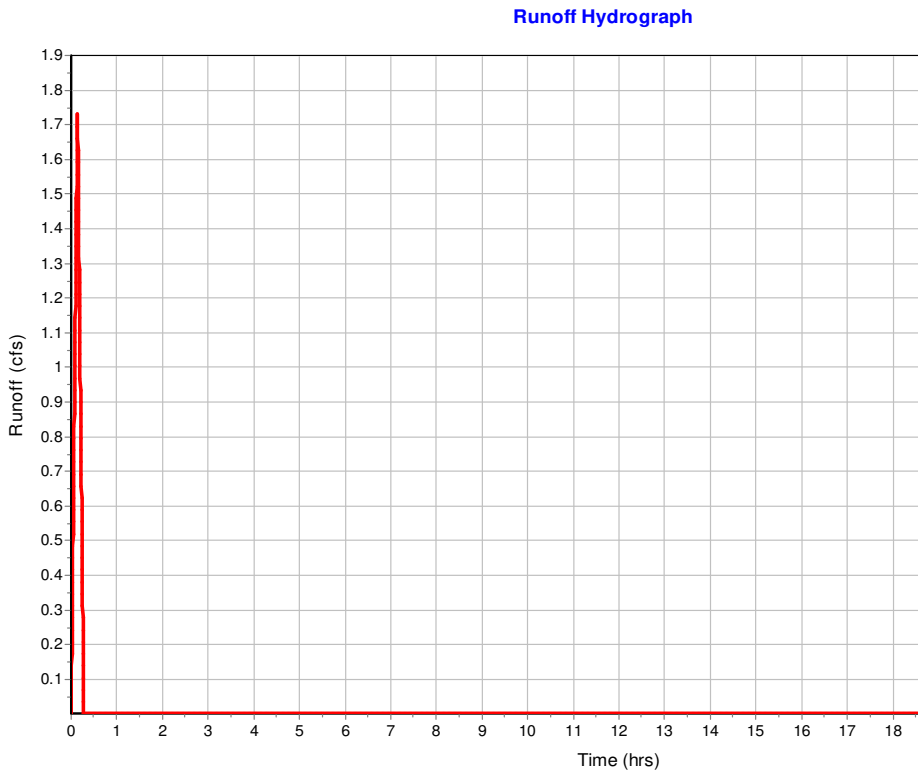
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	16.12667612	203.96	0
Slope (%) :	0.51	10.41	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.45	6.56	0
Computed Flow Time (min) :	0.19	0.52	0

Total TOC (min) 8.26

Subbasin Runoff Results

Total Rainfall (in)	0.67
Total Runoff (in)	0.47
Peak Runoff (cfs)	1.73
Rainfall Intensity	4.856
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:08:16

Subbasin : Sub-CB-25



Subbasin : Sub-CB-26

Input Data

Area (ac)	0.49
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.49	-	0.7
Composite Area & Weighted Runoff Coeff.	0.49		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99998121	0	0
Slope (%) :	1.25	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	15.21	0	0

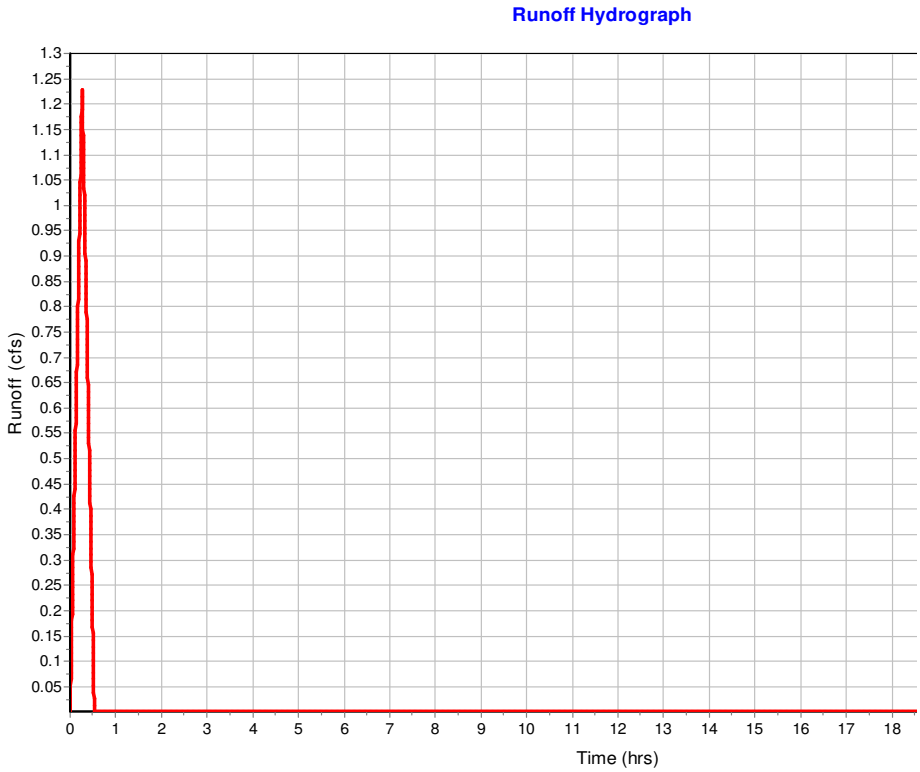
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	221.0918618	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.66	0	0

Total TOC (min) 15.87

Subbasin Runoff Results

Total Rainfall (in)	0.94
Total Runoff (in)	0.66
Peak Runoff (cfs)	1.23
Rainfall Intensity	3.574
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:52

Subbasin : Sub-CB-26



Subbasin : Sub-CB-27

Input Data

Area (ac)	0.1
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.1	-	0.7
Composite Area & Weighted Runoff Coeff.	0.1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	21.13547973	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.06	0	0
Computed Flow Time (min) :	5.57	0	0

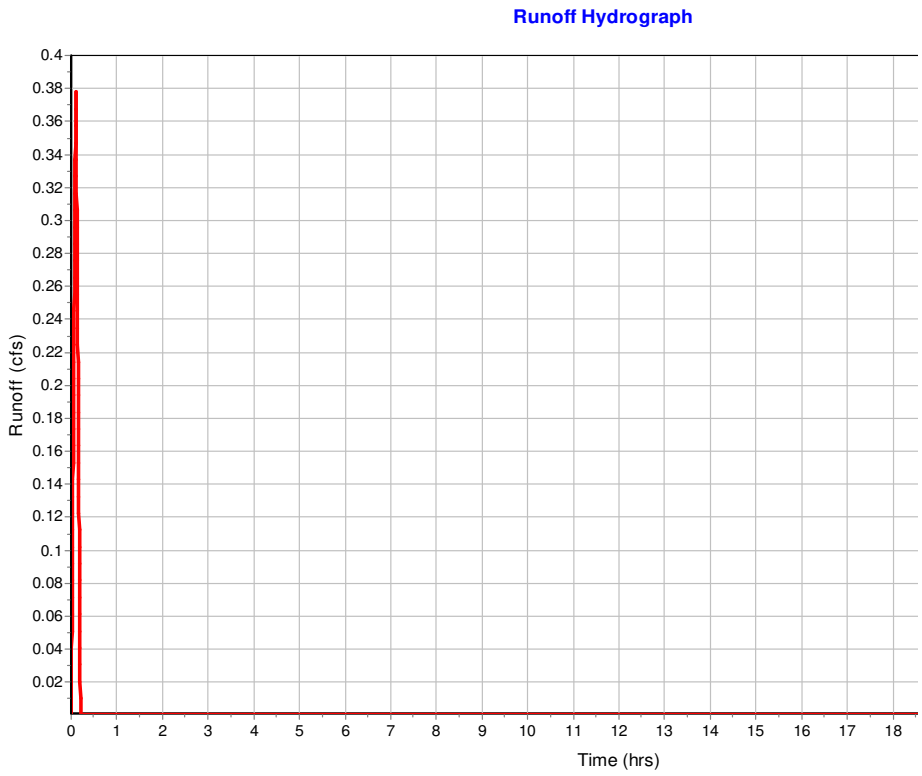
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	117.1502173	0	0
Slope (%) :	2.92	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.47	0	0
Computed Flow Time (min) :	0.56	0	0

Total TOC (min) 6.13

Subbasin Runoff Results

Total Rainfall (in)	0.58
Total Runoff (in)	0.4
Peak Runoff (cfs)	0.38
Rainfall Intensity	5.593
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:06:08

Subbasin : Sub-CB-27



Subbasin : Sub-CB-28

Input Data

Area (ac)	0.67
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.67	-	0.7
Composite Area & Weighted Runoff Coeff.	0.67		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.11	0	0
Computed Flow Time (min) :	14.63	0	0

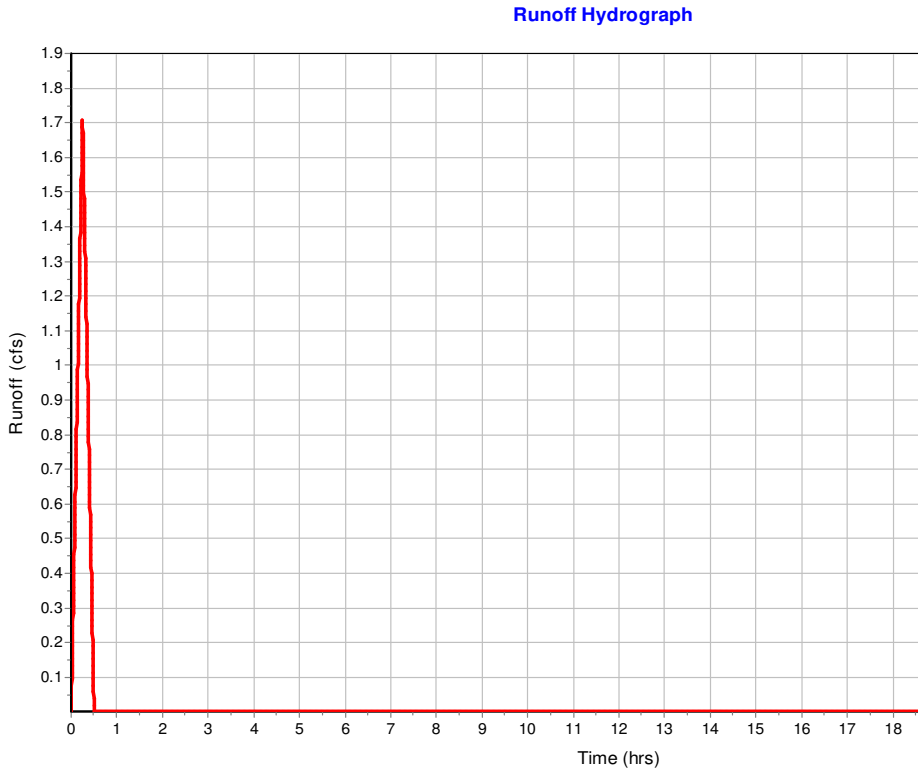
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	17.02372996	94.092	0
Slope (%) :	2	5.74	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	4.87	0
Computed Flow Time (min) :	0.12	0.32	0

Total TOC (min) 15.08

Subbasin Runoff Results

Total Rainfall (in)	0.91
Total Runoff (in)	0.64
Peak Runoff (cfs)	1.71
Rainfall Intensity	3.652
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:05

Subbasin : Sub-CB-28



Subbasin : Sub-CB-29

Input Data

Area (ac)	0.15
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.7
Composite Area & Weighted Runoff Coeff.	0.15		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

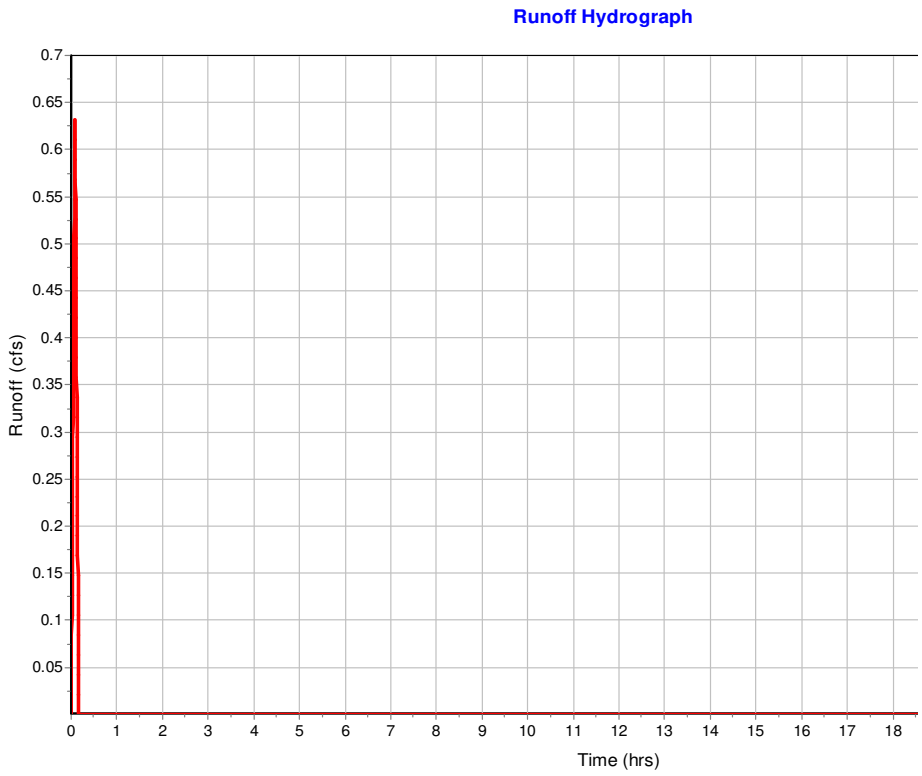
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	253.6223323	0	0
Slope (%) :	5.74	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.87	0	0
Computed Flow Time (min) :	0.87	0	0

Total TOC (min) 3.73

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.63
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:44

Subbasin : Sub-CB-29



Subbasin : Sub-CB-3

Input Data

Area (ac)	0.14
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.14	-	0.7
Composite Area & Weighted Runoff Coeff.	0.14		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

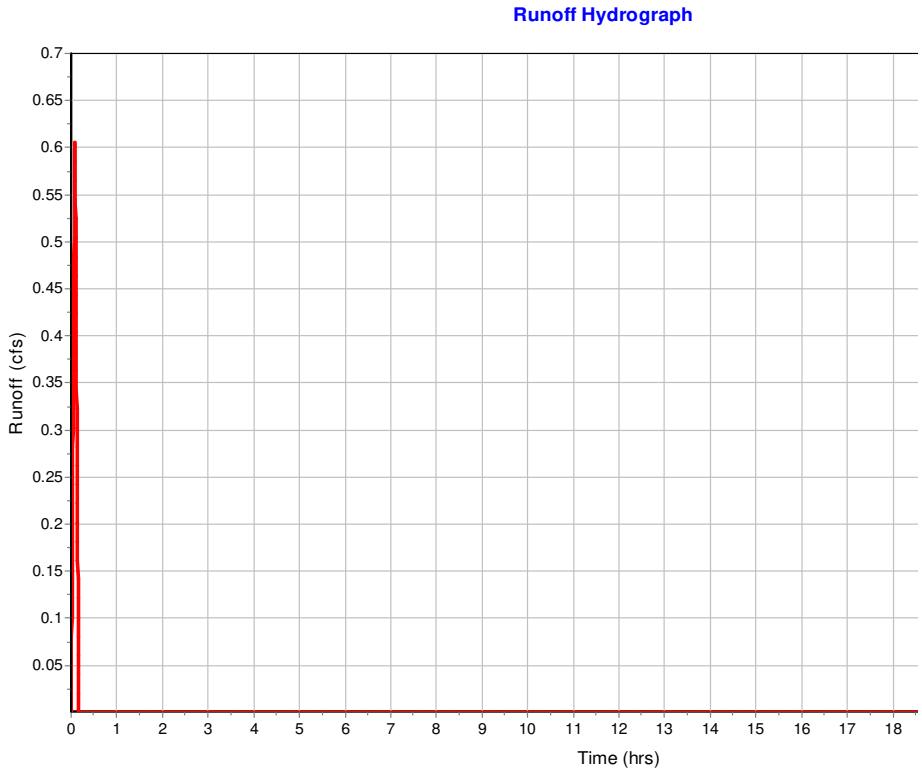
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	181.26423	58.411	0
Slope (%) :	10.46	0.85	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	1.87	0
Computed Flow Time (min) :	0.46	0.52	0

Total TOC (min) 3.84

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.61
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:50

Subbasin : Sub-CB-3



Subbasin : Sub-CB-31

Input Data

Area (ac)	0.17
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.7
Composite Area & Weighted Runoff Coeff.	0.17		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

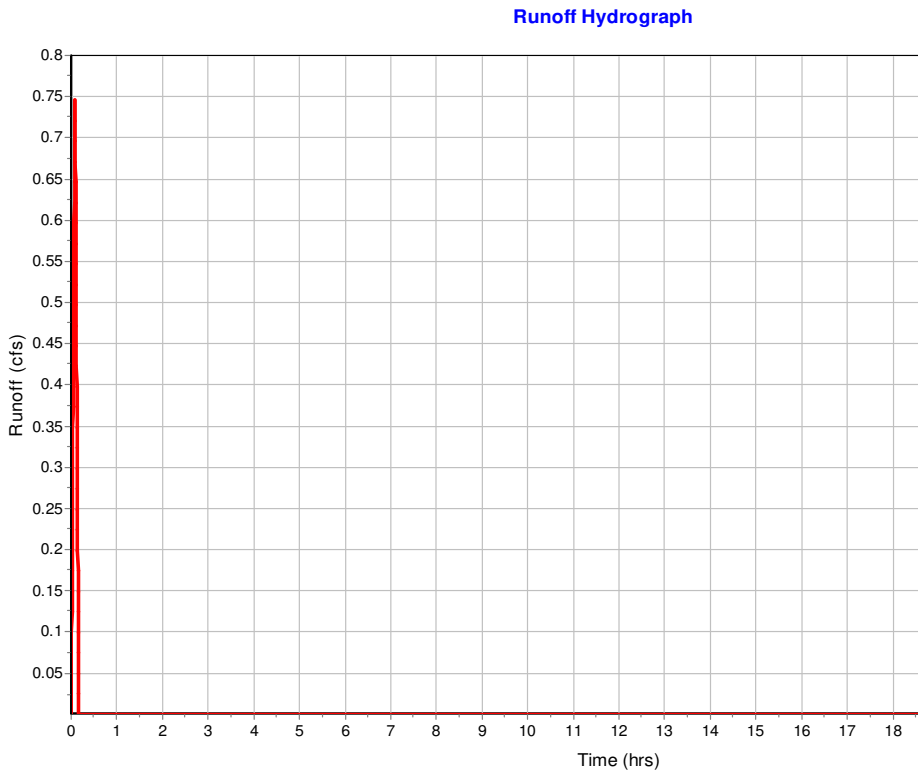
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	166.3763112	83.655	0
Slope (%) :	3.19	6.34	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.63	5.12	0
Computed Flow Time (min) :	0.76	0.27	0

Total TOC (min) 3.90

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.75
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:54

Subbasin : Sub-CB-31



Subbasin : Sub-CB-32

Input Data

Area (ac)	0.13
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.13	-	0.7
Composite Area & Weighted Runoff Coeff.	0.13		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

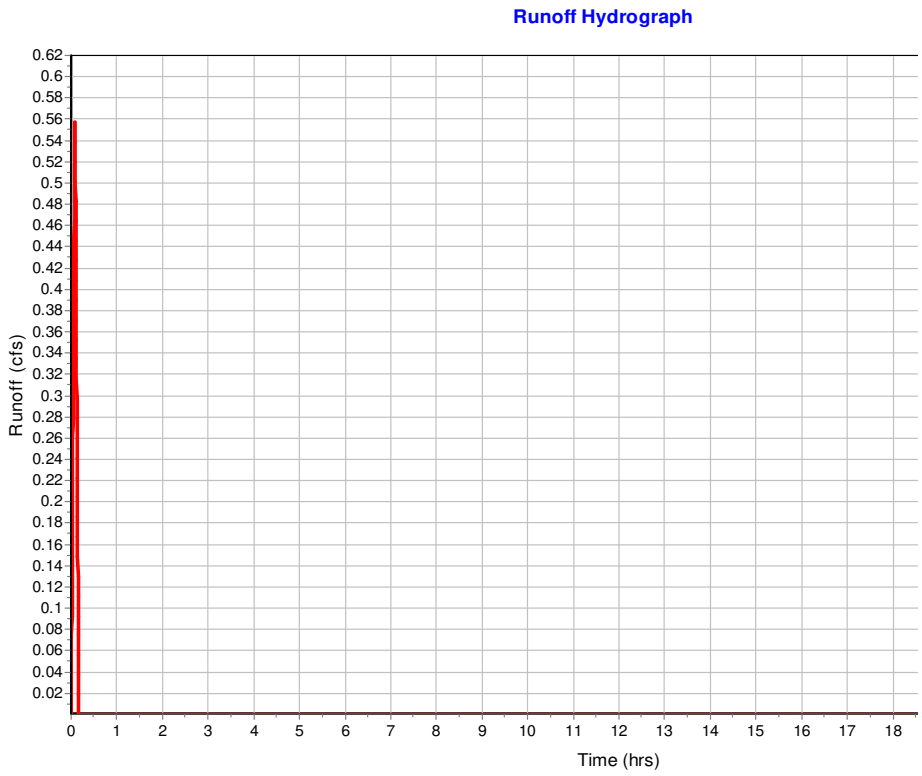
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	167.2624187	52.704	0
Slope (%) :	3.19	6.34	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.63	5.12	0
Computed Flow Time (min) :	0.77	0.17	0

Total TOC (min) 3.80

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.56
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:48

Subbasin : Sub-CB-32



Subbasin : Sub-CB-35

Input Data

Area (ac)	0.1
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.1	-	0.7
Composite Area & Weighted Runoff Coeff.	0.1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

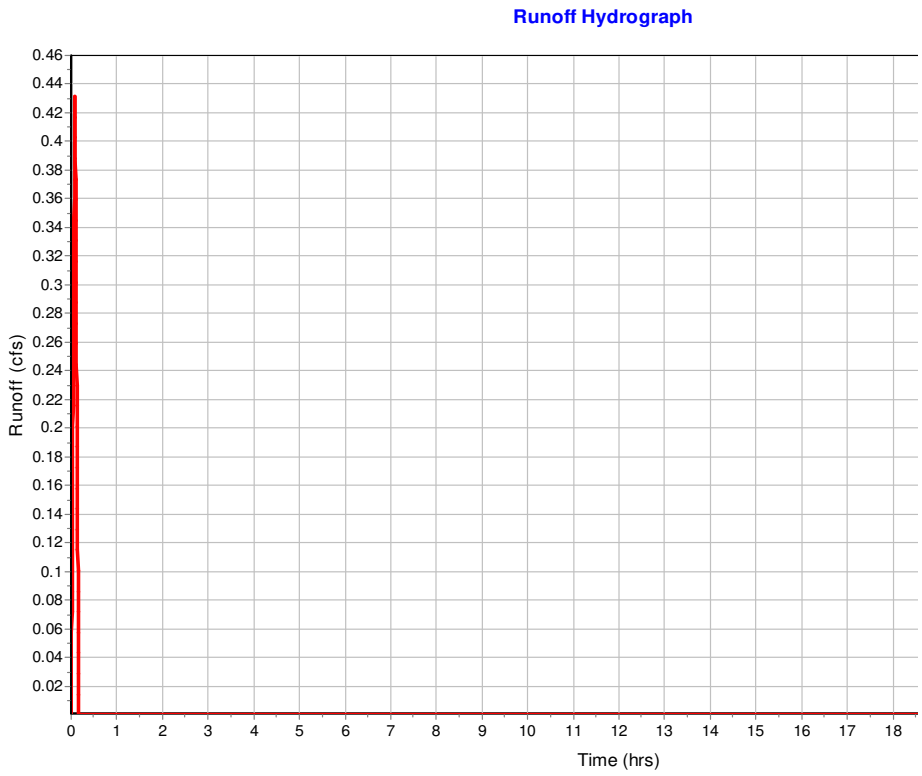
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	159.59	0	0
Slope (%) :	10.46	0	0
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	6.57	0	0
Computed Flow Time (min) :	0.4	0	0

Total TOC (min) 3.27

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.43
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:16

Subbasin : Sub-CB-35



Subbasin : Sub-CB-36

Input Data

Area (ac)	0.58
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.7
Composite Area & Weighted Runoff Coeff.	0.58		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	83	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	14.14	0	0

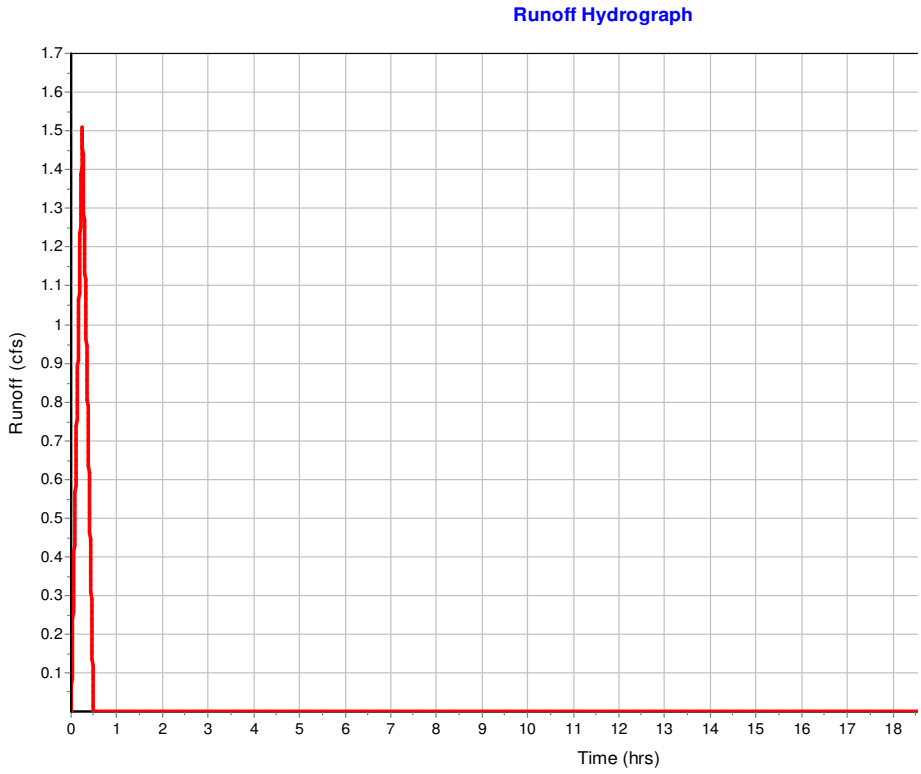
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	224.201193	0	0
Slope (%) :	10.46	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	0	0
Computed Flow Time (min) :	0.57	0	0

Total TOC (min) 14.71

Subbasin Runoff Results

Total Rainfall (in)	0.9
Total Runoff (in)	0.63
Peak Runoff (cfs)	1.51
Rainfall Intensity	3.694
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:14:43

Subbasin : Sub-CB-36



Subbasin : Sub-CB-38

Input Data

Area (ac)	0.24
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.24	-	0.7
Composite Area & Weighted Runoff Coeff.	0.24		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.00000002	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

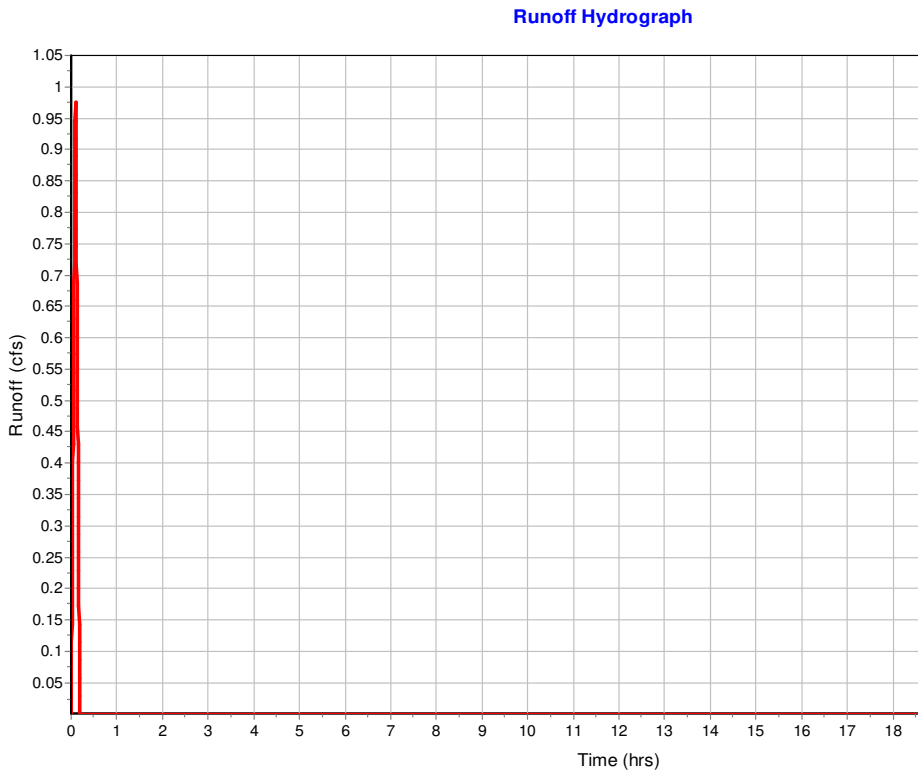
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	214.8866153	184.11	0
Slope (%) :	2.45	0.75	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.18	1.76	0
Computed Flow Time (min) :	1.13	1.74	0

Total TOC (min) 5.73

Subbasin Runoff Results

Total Rainfall (in)	0.55
Total Runoff (in)	0.38
Peak Runoff (cfs)	0.98
Rainfall Intensity	5.775
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:05:44

Subbasin : Sub-CB-38



Subbasin : Sub-CB-39

Input Data

Area (ac)	1.39
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.39	-	0.7
Composite Area & Weighted Runoff Coeff.	1.39		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	99.98923348	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	16.41	0	0

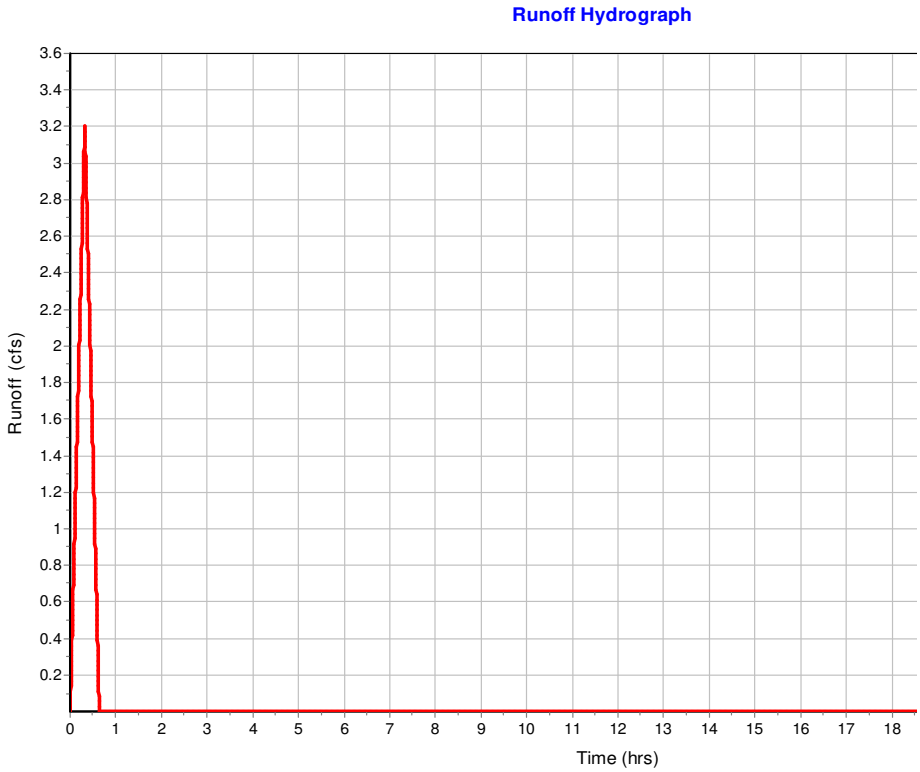
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	34.45719772	233.52	132.7
Slope (%) :	1.5	2.45	0.75
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	1.98	3.18	1.76
Computed Flow Time (min) :	0.29	1.22	1.26

Total TOC (min) 19.18

Subbasin Runoff Results

Total Rainfall (in)	1.05
Total Runoff (in)	0.74
Peak Runoff (cfs)	3.2
Rainfall Intensity	3.299
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:19:11

Subbasin : Sub-CB-39



Subbasin : Sub-CB-43

Input Data

Area (ac)	0.71
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.71	-	0.7
Composite Area & Weighted Runoff Coeff.	0.71		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	12	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.15	0	0

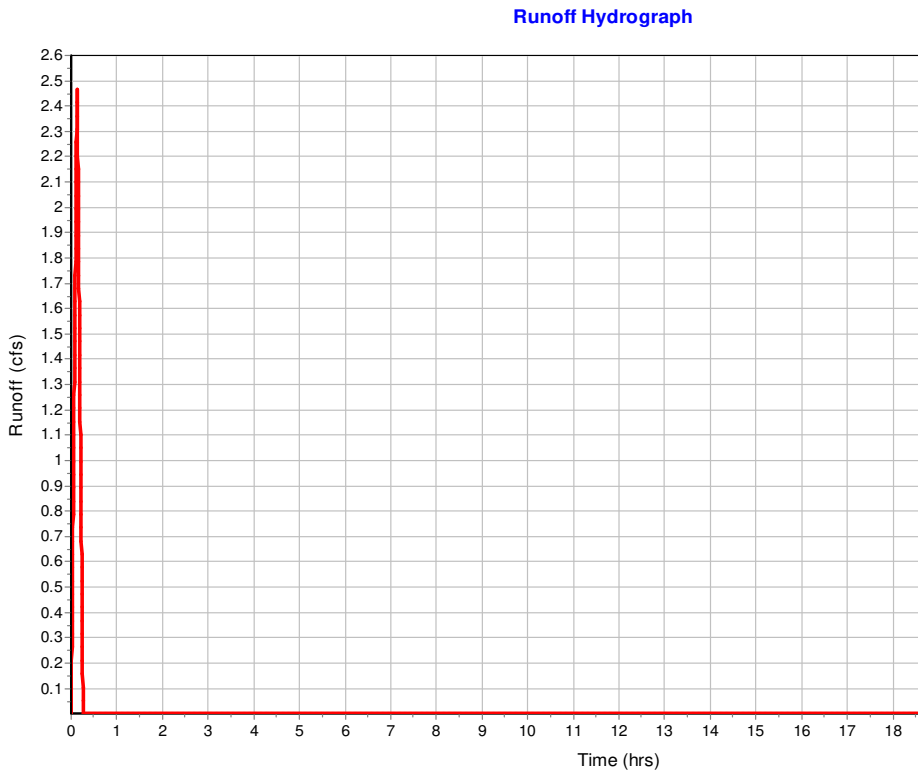
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	93	77.84	0
Slope (%) :	10.75	1.99	0
Surface Type :	Unpaved	Paved	Unpaved
Velocity (ft/sec) :	5.29	2.87	0
Computed Flow Time (min) :	0.29	0.45	0

Total TOC (min) 7.89

Subbasin Runoff Results

Total Rainfall (in)	0.65
Total Runoff (in)	0.45
Peak Runoff (cfs)	2.47
Rainfall Intensity	4.963
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:07:53

Subbasin : Sub-CB-43



Subbasin : Sub-CB-44

Input Data

Area (ac)	0.72
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.72	-	0.7
Composite Area & Weighted Runoff Coeff.	0.72		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	9	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.21	0	0
Computed Flow Time (min) :	8.02	0	0

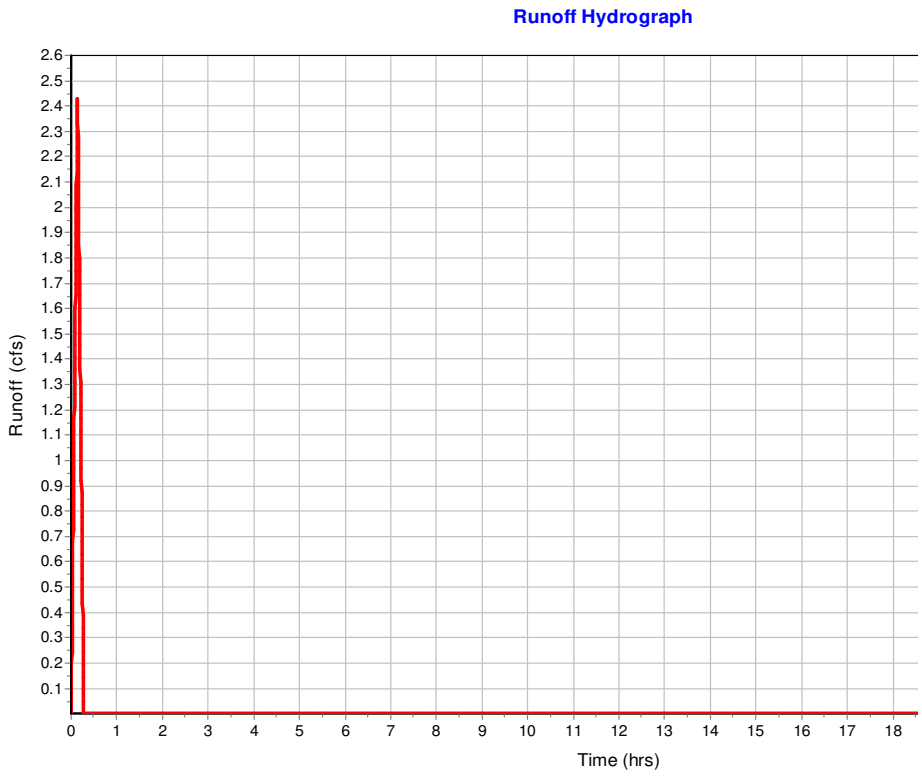
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	78.42	77.02	0
Slope (%) :	16.7	11.38	0
Surface Type :	Unpaved	Paved	Unpaved
Velocity (ft/sec) :	6.59	6.86	0
Computed Flow Time (min) :	0.2	0.19	0

Total TOC (min) 8.40

Subbasin Runoff Results

Total Rainfall (in)	0.67
Total Runoff (in)	0.47
Peak Runoff (cfs)	2.43
Rainfall Intensity	4.817
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:08:24

Subbasin : Sub-CB-44



Subbasin : Sub-CB-6

Input Data

Area (ac)	0.16
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.7
Composite Area & Weighted Runoff Coeff.	0.16		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

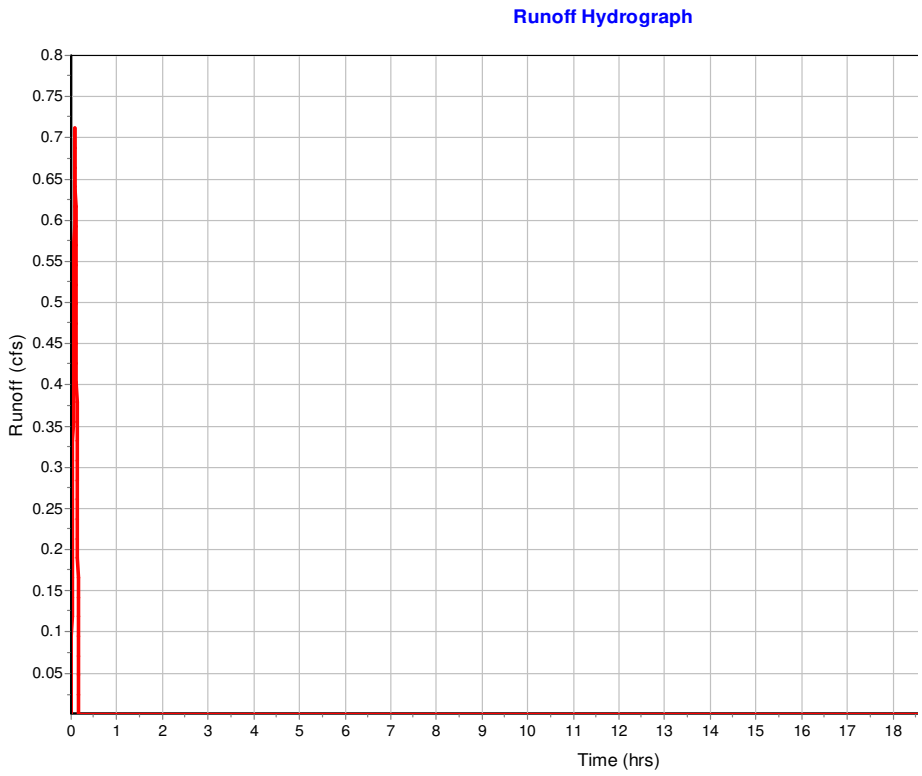
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	207.9606416	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.62	0	0

Total TOC (min) 3.48

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.71
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:29

Subbasin : Sub-CB-6



Subbasin : Sub-CB-7

Input Data

Area (ac)	0.04
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.04	-	0.7
Composite Area & Weighted Runoff Coeff.	0.04		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99999999	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

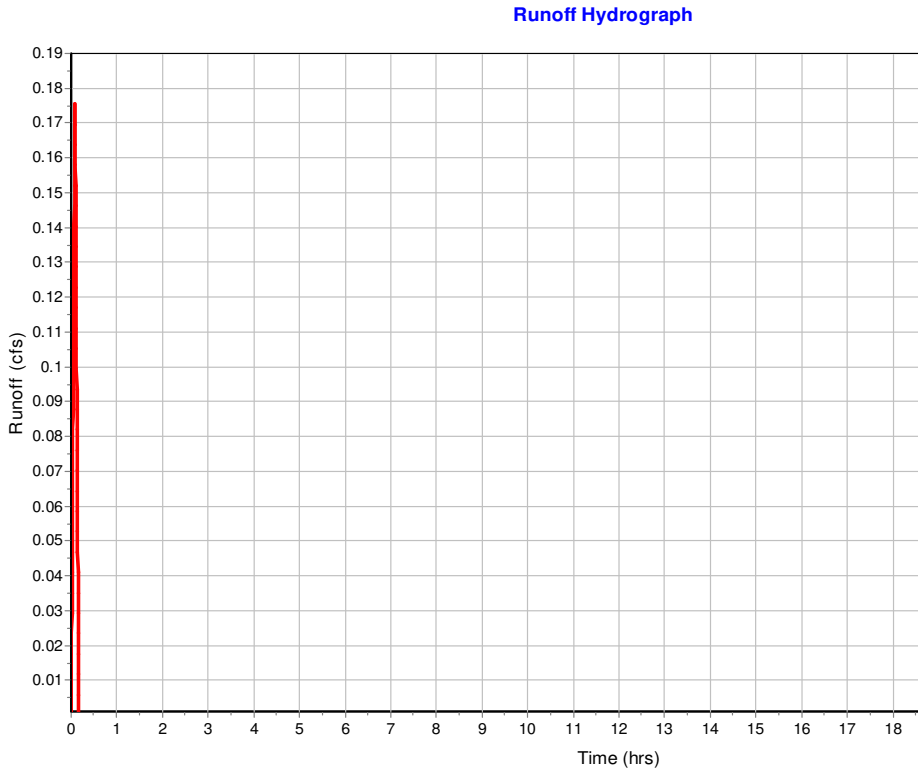
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	68.39700153	0	0
Slope (%) :	0.85	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.87	0	0
Computed Flow Time (min) :	0.61	0	0

Total TOC (min) 3.47

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.18
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:28

Subbasin : Sub-CB-7



Subbasin : Sub-CB-9

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.7
Composite Area & Weighted Runoff Coeff.	0.12		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99999519	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

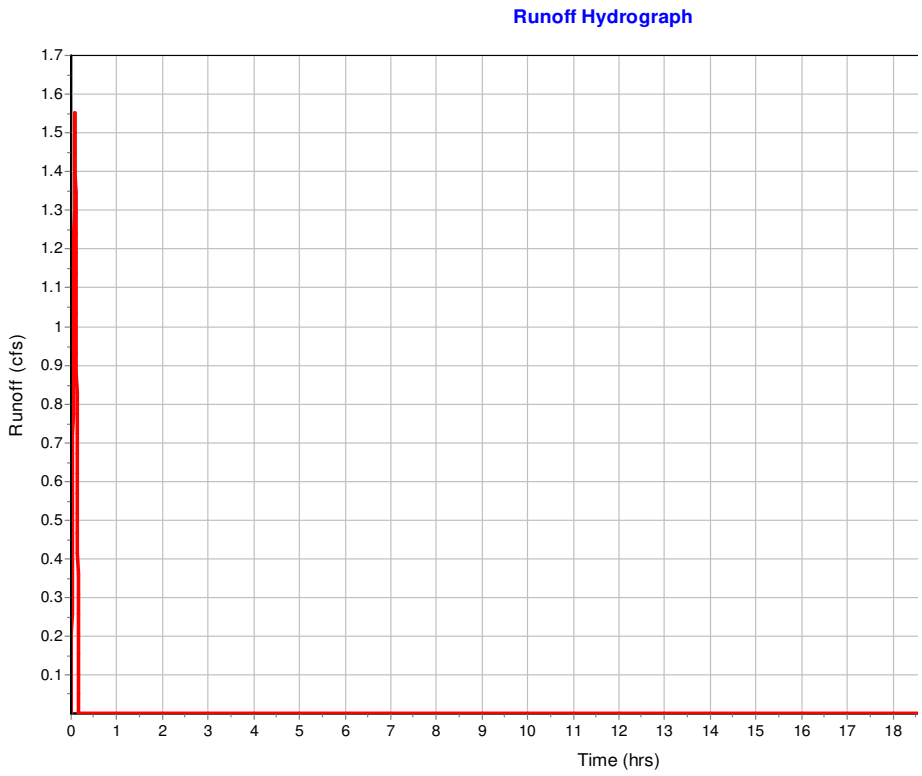
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	199.7947467	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.6	0	0

Total TOC (min) 3.46

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.55
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:28

Subbasin : Sub-CB-9



Subbasin : Sub-FES-2

Input Data

Area (ac)	1.58
Weighted Runoff Coefficient	0.56

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.58	-	0.56
Composite Area & Weighted Runoff Coeff.	1.58		0.56

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	12	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.15	0	0

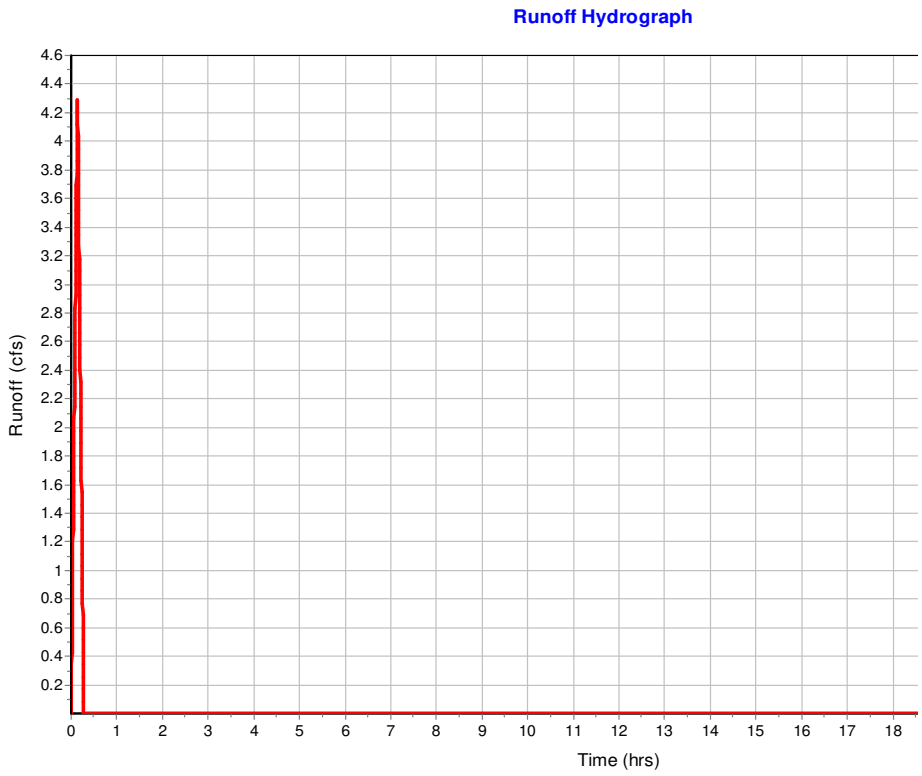
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	363.3701089	0	0
Slope (%) :	10	0	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	5.1	0	0
Computed Flow Time (min) :	1.19	0	0

Total TOC (min) 8.33

Subbasin Runoff Results

Total Rainfall (in)	0.67
Total Runoff (in)	0.38
Peak Runoff (cfs)	4.29
Rainfall Intensity	4.837
Weighted Runoff Coefficient	0.56
Time of Concentration (days hh:mm:ss)	0 00:08:20

Subbasin : Sub-FES-2



Subbasin : SUB-PIPE-35

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.72

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.36	-	0.72
Composite Area & Weighted Runoff Coeff.	0.36		0.72

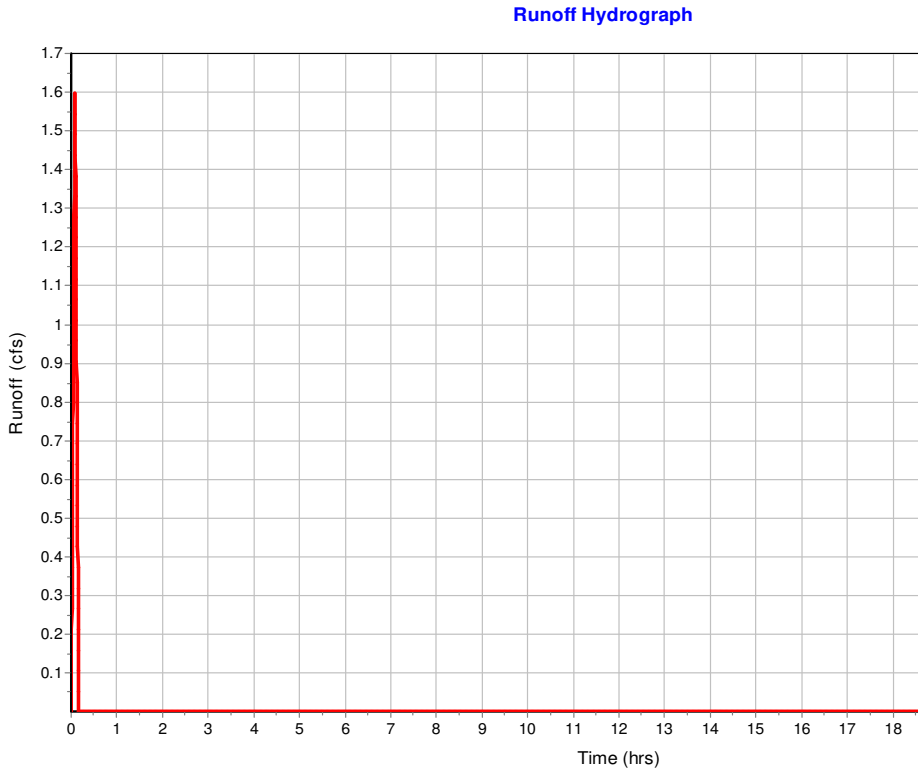
Time of Concentration

User-Defined TOC override (minutes): 2.36

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.37
Peak Runoff (cfs)	1.6
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.72
Time of Concentration (days hh:mm:ss)	0 00:02:22

Subbasin : SUB-PIPE-35



Subbasin : SUB-PIPE-36

Input Data

Area (ac)	1.26
Weighted Runoff Coefficient	0.72

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.26	-	0.72
Composite Area & Weighted Runoff Coeff.	1.26		0.72

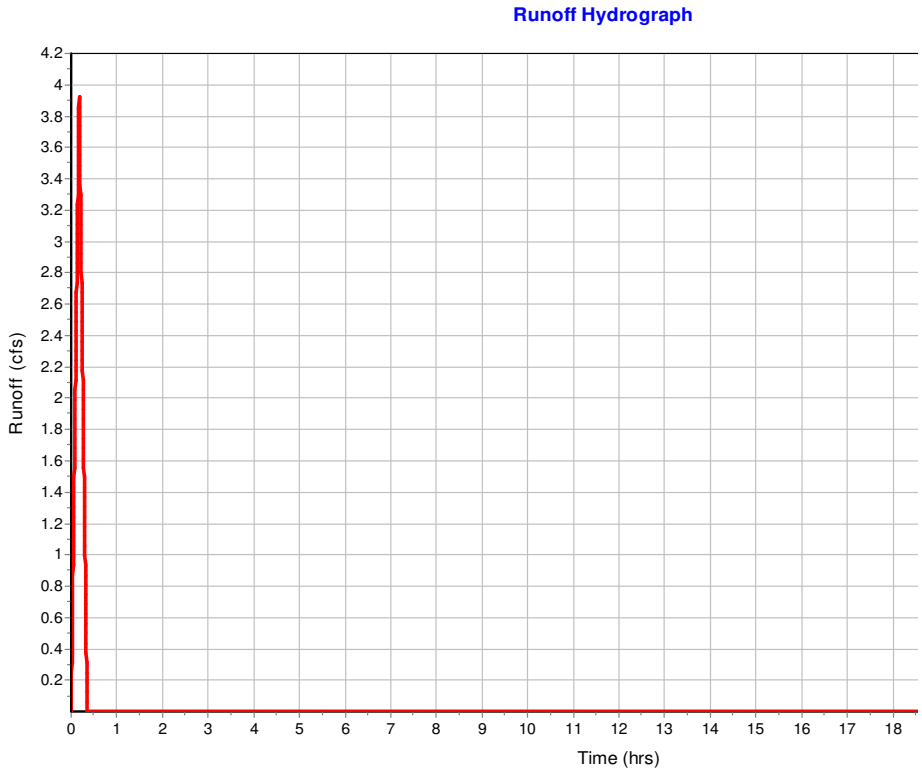
Time of Concentration

User-Defined TOC override (minutes): 10.56

Subbasin Runoff Results

Total Rainfall (in)	0.76
Total Runoff (in)	0.55
Peak Runoff (cfs)	3.92
Rainfall Intensity	4.322
Weighted Runoff Coefficient	0.72
Time of Concentration (days hh:mm:ss)	0 00:10:34

Subbasin : SUB-PIPE-36



Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	FES-2	466.60	469.78	3.18	466.60	0.00	469.78	0.00	0.00	2.15
2	IN-PIPE-35	462.75	464.00	1.25	462.75	0.00	464.00	0.00	0.00	0.00
3	IN-PIPE36	441.30	442.80	1.50	441.30	0.00	442.80	0.00	0.00	0.00
4	JB-14	529.50	534.76	5.26	529.50	0.00	535.50	0.74	0.00	45.12
5	JB-23	515.30	519.44	4.14	515.30	0.00	519.20	-0.24	10.00	31.68

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	T Fl Occu (days h
1	FES-2	19.47	19.47	468.35	1.75	0.00	1.43	468.04	1.44	0 00:00	0
2	IN-PIPE-35	1.59	1.59	463.18	0.43	0.00	1.07	462.75	0.00	0 00:05	0
3	IN-PIPE36	3.92	3.92	442.17	0.87	0.00	0.71	441.39	0.09	0 00:10	0
4	JB-14	5.29	0.00	529.93	0.43	0.00	4.83	529.51	0.01	0 00:12	0
5	JB-23	2.03	0.00	515.56	0.26	0.00	3.88	515.30	0.00	0 00:05	0

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	E
1	L-SDPIPE-1	73.15	476.67	10.73	475.09	7.62	1.58	2.1600	User-Defined	0.330	14.000	0.0150	
2	L-SDPIPE-13	403.61	521.86	4.36	510.72	5.72	11.14	2.7600	User-Defined	0.330	14.000	0.0150	
3	L-SDPIPE-14	373.89	522.45	4.46	515.37	5.03	7.08	1.8900	User-Defined	0.330	14.000	0.0150	
4	L-SDPIPE-15	83.27	471.49	3.38	464.82	0.00	6.67	8.0100	User-Defined	0.330	14.000	0.0150	
5	L-SDPIPE-16	206.62	505.01	3.91	489.62	6.43	15.39	7.4500	User-Defined	0.330	14.000	0.0150	
6	L-SDPIPE-18	170.54	523.17	5.39	517.57	3.45	5.60	3.2800	User-Defined	0.330	14.000	0.0150	
7	L-SDPIPE-19	227.29	522.18	4.31	505.01	3.58	17.17	7.5500	User-Defined	0.330	14.000	0.0150	
8	L-SDPIPE-2	62.02	476.28	9.98	475.09	7.29	1.19	1.9200	User-Defined	0.330	14.000	0.0150	
9	L-SDPIPE-20	233.87	505.01	3.58	487.59	3.97	17.42	7.4500	User-Defined	0.330	14.000	0.0150	
10	L-SDPIPE-21	241.61	543.67	5.17	534.06	3.86	9.61	3.9800	User-Defined	0.330	14.000	0.0150	
11	L-SDPIPE-23	316.61	547.43	4.84	534.06	3.53	13.37	4.2200	User-Defined	0.500	26.000	0.0150	
12	L-SDPIPE-25	202.83	549.70	3.70	532.10	0.00	17.60	8.6800	User-Defined	0.500	26.000	0.0150	
13	L-SDPIPE-27	245.69	494.00	6.50	476.28	9.98	17.72	7.2100	User-Defined	0.330	14.000	0.0150	
14	L-SDPIPE-28	228.18	493.47	5.63	476.67	10.73	16.80	7.3600	User-Defined	0.330	14.000	0.0150	
15	L-SDPIPE-29	172.07	510.72	5.72	494.00	6.50	16.72	9.7200	User-Defined	0.330	14.000	0.0150	
16	L-SDPIPE-32	98.13	549.76	5.26	540.30	0.00	9.46	9.6400	User-Defined	0.500	26.000	0.0150	
17	L-SDPIPE-33	78.91	518.02	3.90	517.01	4.43	1.01	1.2800	User-Defined	0.330	14.000	0.0320	
18	L-SDPIPE-34	149.42	521.36	5.08	517.01	4.43	4.35	2.9100	User-Defined	0.330	14.000	0.0320	
19	L-SDPIPE-4	129.78	475.09	7.62	464.82	0.00	10.27	7.9100	User-Defined	0.330	14.000	0.0320	
20	L-SDPIPE-6	214.12	489.62	6.43	475.09	7.29	14.53	6.7900	User-Defined	0.330	14.000	0.0150	
21	L-SDPIPE-7	216.57	487.59	3.97	471.49	3.38	16.10	7.4300	User-Defined	0.330	14.000	0.0150	

Channel Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Fr Nu
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	L-SDPIPE-1	0.00	0 00:00	3.72	0.00	0.00		0.00	0.00	0.00	
2	L-SDPIPE-13	0.00	0 00:00	4.20	0.00	0.00		0.02	0.06	0.00	
3	L-SDPIPE-14	0.46	0 00:13	3.48	0.13	0.37	16.84	0.24	0.73	0.00	
4	L-SDPIPE-15	0.18	0 00:17	7.16	0.02	1.66	0.84	0.08	0.24	0.00	
5	L-SDPIPE-16	0.00	0 00:06	6.90	0.00	0.00		0.04	0.12	0.00	
6	L-SDPIPE-18	0.11	0 00:05	4.64	0.02	6.32	0.45	0.07	0.21	0.00	
7	L-SDPIPE-19	0.34	0 00:08	6.95	0.05	2.95	1.28	0.07	0.22	0.00	
8	L-SDPIPE-2	0.00	0 00:00	3.50	0.00	0.00		0.10	0.29	0.00	
9	L-SDPIPE-20	0.09	0 00:16	6.90	0.01	0.82	4.75	0.07	0.21	0.00	
10	L-SDPIPE-21	0.00	0 00:00	5.04	0.00	0.00		0.17	0.50	0.00	
11	L-SDPIPE-23	0.00	0 00:06	19.36	0.00	0.00		0.15	0.30	0.00	
12	L-SDPIPE-25	0.00	0 00:05	27.75	0.00	0.00		0.01	0.02	0.00	
13	L-SDPIPE-27	0.00	0 00:00	6.79	0.00	0.00		0.00	0.00	0.00	
14	L-SDPIPE-28	0.24	0 00:14	6.86	0.03	2.98	1.28	0.06	0.18	0.00	
15	L-SDPIPE-29	0.02	0 00:07	7.88	0.00	1.75	1.64	0.02	0.06	0.00	
16	L-SDPIPE-32	0.03	0 00:05	28.64	0.00	2.05	0.80	0.02	0.05	0.00	
17	L-SDPIPE-33	0.00	0 00:00	2.86	0.00	0.00		0.17	0.50	0.00	
18	L-SDPIPE-34	0.22	0 00:08	4.31	0.05	0.22	11.32	0.22	0.66	0.00	
19	L-SDPIPE-4	0.00	0 00:00	7.11	0.00	0.00		0.00	0.00	0.00	
20	L-SDPIPE-6	0.18	0 00:05	6.59	0.03	0.54	6.61	0.13	0.39	0.00	
21	L-SDPIPE-7	0.16	0 00:16	6.90	0.02	1.23	2.93	0.08	0.23	0.00	

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness
1	SDPIPE-1	35.55	465.94	0.00	463.00	0.00	2.94	8.2700	CIRCULAR	36.000	36.000	0.0120
2	SDPIPE-10	256.10	529.50	0.00	512.58	0.00	16.92	6.6100	CIRCULAR	18.000	18.000	0.0120
3	SDPIPE-11	67.57	530.20	0.00	529.50	0.00	0.70	1.0400	CIRCULAR	18.000	18.000	0.0120
4	SDPIPE-12	33.01	530.53	0.00	530.20	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0130
5	SDPIPE-13	130.50	517.50	0.00	505.00	0.00	12.50	9.5800	CIRCULAR	18.000	18.000	0.0120
6	SDPIPE-14	39.55	517.99	0.00	517.50	0.00	0.49	1.2500	CIRCULAR	18.000	18.000	0.0130
7	SDPIPE-15	64.04	468.11	0.00	467.47	0.00	0.64	1.0000	CIRCULAR	18.000	18.000	0.0130
8	SDPIPE-16	23.51	501.10	0.00	499.00	0.00	2.10	8.9300	CIRCULAR	18.000	18.000	0.0120
9	SDPIPE-17	194.21	515.30	0.00	501.00	-0.10	14.30	7.3600	CIRCULAR	18.000	18.000	0.0120
10	SDPIPE-18	49.41	517.78	0.00	515.30	0.00	2.48	5.0200	CIRCULAR	18.000	18.000	0.0130
11	SDPIPE-19	51.31	517.87	0.00	515.30	0.00	2.57	5.0100	CIRCULAR	18.000	18.000	0.0130
12	SDPIPE-2	35.82	466.30	0.00	465.94	0.00	0.36	1.0000	CIRCULAR	36.000	36.000	0.0130
13	SDPIPE-20	33.00	501.43	0.00	501.10	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0120
14	SDPIPE-21	239.80	538.50	0.00	530.20	0.00	8.30	3.4600	CIRCULAR	18.000	18.000	0.0120
15	SDPIPE-22	57.68	542.14	0.00	538.50	0.00	3.64	6.3100	CIRCULAR	18.000	18.000	0.0130
16	SDPIPE-23	44.75	542.59	0.00	542.14	0.00	0.45	1.0100	CIRCULAR	18.000	18.000	0.0130
17	SDPIPE-25	74.63	546.00	0.00	544.50	0.00	1.50	2.0100	CIRCULAR	18.000	18.000	0.0130
18	SDPIPE-27	182.53	487.50	0.00	484.31	0.00	3.19	1.7500	CIRCULAR	18.000	18.000	0.0120
19	SDPIPE-28	33.55	487.84	0.00	487.50	0.00	0.34	1.0000	CIRCULAR	18.000	18.000	0.0130
20	SDPIPE-29	167.22	505.00	0.00	487.50	0.00	17.50	10.4700	CIRCULAR	18.000	18.000	0.0120
21	SDPIPE-3	30.36	466.60	0.00	466.30	0.00	0.30	1.0000	CIRCULAR	36.000	36.000	0.0120
22	SDPIPE-30	66.71	510.34	0.00	505.00	0.00	5.34	8.0000	CIRCULAR	18.000	18.000	0.0130
23	SDPIPE-32	96.89	544.50	0.00	538.50	0.00	6.00	6.1900	CIRCULAR	18.000	18.000	0.0120
24	SDPIPE-33	77.61	514.12	0.00	512.58	0.00	1.54	1.9800	CIRCULAR	18.000	18.000	0.0150
25	SDPIPE-34	147.34	516.28	0.00	512.58	0.00	3.70	2.5100	CIRCULAR	18.000	18.000	0.0150
26	SDPIPE-4	71.93	467.47	0.00	466.75	0.81	0.72	1.0000	CIRCULAR	18.000	18.000	0.0120
27	SDPIPE-5	33.00	467.80	0.00	467.47	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0130
28	SDPIPE-6	67.57	483.19	0.00	482.52	0.00	0.67	1.0000	CIRCULAR	18.000	18.000	0.0120
29	SDPIPE-7	42.68	483.62	0.00	483.19	0.00	0.43	1.0000	CIRCULAR	18.000	18.000	0.0130
30	SDPIPE-8	130.97	512.25	0.00	492.00	0.00	20.25	15.4600	CIRCULAR	24.000	24.000	0.0120
31	SDPIPE-9	33.02	512.58	0.00	512.25	0.00	0.33	1.0000	CIRCULAR	24.000	24.000	0.0130
32	SPIPE-35	30.19	462.75	0.00	462.25	0.00	0.50	1.6600	CIRCULAR	18.000	18.000	0.0150
33	SPIPE-36	31.09	441.38	0.08	441.00	0.00	0.38	1.2200	CIRCULAR	18.000	18.000	0.0150

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Fro Num
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	SDPIPE-1	21.43	0 00:08	207.79	0.10	13.86	0.04	0.81	0.27	0.00	
2	SDPIPE-10	5.28	0 00:12	29.25	0.18	5.99	0.71	0.87	0.58	0.00	
3	SDPIPE-11	5.29	0 00:12	11.59	0.46	7.08	0.16	0.66	0.44	0.00	
4	SDPIPE-12	0.69	0 00:07	10.49	0.07	1.74	0.32	0.72	0.48	0.00	
5	SDPIPE-13	2.27	0 00:13	35.22	0.06	10.80	0.20	0.26	0.18	0.00	
6	SDPIPE-14	2.28	0 00:13	11.74	0.19	5.82	0.11	0.41	0.27	0.00	
7	SDPIPE-15	1.45	0 00:17	10.50	0.14	3.74	0.29	0.41	0.27	0.00	
8	SDPIPE-16	3.05	0 00:06	34.01	0.09	9.81	0.04	0.35	0.23	0.00	
9	SDPIPE-17	2.02	0 00:05	30.77	0.07	7.19	0.45	0.33	0.22	0.00	
10	SDPIPE-18	1.05	0 00:05	23.53	0.04	5.70	0.14	0.24	0.16	0.00	
11	SDPIPE-19	1.38	0 00:08	23.51	0.06	6.89	0.12	0.26	0.17	0.00	
12	SDPIPE-2	19.64	0 00:08	66.70	0.29	6.64	0.09	1.31	0.44	0.00	
13	SDPIPE-20	1.13	0 00:16	11.38	0.10	4.39	0.13	0.37	0.25	0.00	
14	SDPIPE-21	1.69	0 00:15	21.17	0.08	3.65	1.09	0.57	0.38	0.00	
15	SDPIPE-22	1.70	0 00:15	26.39	0.06	7.46	0.13	0.28	0.19	0.00	
16	SDPIPE-23	0.62	0 00:05	10.53	0.06	3.27	0.23	0.25	0.16	0.00	
17	SDPIPE-25	0.55	0 00:05	14.89	0.04	3.57	0.35	0.21	0.14	0.00	
18	SDPIPE-27	4.00	0 00:20	15.03	0.27	6.84	0.44	0.55	0.37	0.00	
19	SDPIPE-28	1.27	0 00:14	10.50	0.12	3.12	0.18	0.46	0.31	0.00	
20	SDPIPE-29	3.08	0 00:20	36.81	0.08	7.34	0.38	0.43	0.29	0.00	
21	SDPIPE-3	20.72	0 00:00	71.83	0.29	7.93	0.06	1.60	0.53	0.00	
22	SDPIPE-30	3.08	0 00:20	29.71	0.10	10.67	0.10	0.33	0.22	0.00	
23	SDPIPE-32	1.24	0 00:05	28.32	0.04	7.77	0.21	0.22	0.15	0.00	
24	SDPIPE-33	2.46	0 00:08	12.82	0.19	3.46	0.37	0.87	0.58	0.00	
25	SDPIPE-34	2.16	0 00:08	14.43	0.15	3.23	0.76	0.85	0.57	0.00	
26	SDPIPE-4	1.45	0 00:17	11.38	0.13	4.10	0.29	0.38	0.25	0.00	
27	SDPIPE-5	0.46	0 00:07	10.50	0.04	1.98	0.28	0.28	0.19	0.00	
28	SDPIPE-6	1.79	0 00:05	11.37	0.16	4.31	0.26	0.43	0.29	0.00	
29	SDPIPE-7	1.37	0 00:16	10.50	0.13	3.58	0.20	0.40	0.27	0.00	
30	SDPIPE-8	11.68	0 00:09	96.37	0.12	19.32	0.11	0.49	0.25	0.00	
31	SDPIPE-9	11.53	0 00:09	22.62	0.51	8.12	0.07	0.93	0.46	0.00	
32	SPIPE-35	1.59	0 00:05	11.72	0.14	4.18	0.12	0.40	0.27	0.00	
33	SPIPE-36	3.91	0 00:10	10.06	0.39	4.67	0.11	0.72	0.48	0.00	

Inlet Input

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Ini Wa De
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.62	487.59	3.97	483.62	0
2	CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.25	517.01	4.76	512.25	0
3	CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.58	517.01	4.43	512.58	0
4	CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.20	534.06	3.86	530.20	0
5	CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.53	534.06	3.53	530.53	0
6	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.50	521.86	4.36	517.50	0
7	CB-19	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.99	522.45	4.46	517.99	0
8	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	465.94	476.67	10.73	465.94	0
9	CB-20	FHWA HEC-22 GENERIC	N/A	On Grade	1	468.11	471.49	3.38	468.11	0
10	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.10	505.01	3.91	501.10	0
11	CB-24	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.78	523.31	5.53	517.77	-0
12	CB-25	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.87	522.17	4.30	515.81	-2
13	CB-26	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.43	505.01	3.58	501.43	0
14	CB-27	FHWA HEC-22 GENERIC	N/A	On Grade	1	538.50	543.67	5.17	538.50	0
15	CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	542.14	545.67	3.53	542.20	0
16	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	542.59	547.43	4.84	542.65	0
17	CB-3	FHWA HEC-22 GENERIC	N/A	On Grade	1	466.30	476.28	9.98	466.30	0
18	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	4.87	544.50	0
19	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.70	3.70	546.00	0
20	CB-35	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.50	494.00	6.50	487.50	0
21	CB-36	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.84	493.47	5.63	487.84	0
22	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	505.00	510.72	5.72	505.00	0
23	CB-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	510.34	515.37	5.03	510.34	0
24	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.12	518.02	3.90	514.12	0
25	CB-6	FHWA HEC-22 GENERIC	N/A	On Sag	1	467.80	475.09	7.29	467.80	0
26	CB-7	FHWA HEC-22 GENERIC	N/A	On Grade	1	467.47	475.09	7.62	467.47	0
27	CB-9	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.19	489.62	6.43	483.19	0
28	Inlet-CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	516.28	521.36	5.08	516.28	0

Roadway & Gutter Input

SN	Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1	CB-10	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
2	CB-12	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
3	CB-13	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
4	CB-15	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
5	CB-16	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
6	CB-18	0.0245	0.0258	0.0150	0.0200	1.00	0.1312	8.50
7	CB-19	0.0245	0.0258	0.0150	0.0200	1.00	0.1312	8.50
8	CB-2	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
9	CB-20	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
10	CB-22	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
11	CB-24	0.1033	0.0258	0.0150	0.0200	1.00	0.1312	8.50
12	CB-25	0.1041	0.0258	0.0150	0.0200	1.00	0.1312	8.50
13	CB-26	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
14	CB-27	0.0574	0.0258	0.0150	0.0200	1.00	0.1312	8.50
15	CB-28	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
16	CB-29	0.0574	0.0258	0.0150	0.0200	1.00	0.1312	8.50
17	CB-3	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
18	CB-31	0.0721	0.0200	0.0150	0.0200	1.50	0.1312	8.50
19	CB-32	0.0809	0.0258	0.0150	0.0200	1.00	0.1312	8.50
20	CB-35	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
21	CB-36	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
22	CB-38	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
23	CB-39	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
24	CB-43	0.0199	0.0258	0.0150	0.0200	1.00	0.1312	8.50
25	CB-6	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
26	CB-7	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
27	CB-9	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
28	Inlet-CB-44	0.1138	0.0258	0.0150	0.0200	1.00	0.1312	8.50

Inlet Results

SN	Element ID	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Max Depth Occurrence (days hh:mm)	F \
1	CB-10	1.54	1.45	1.34	0.19	87.40	4.89	487.71	0.12	0 00:16	
2	CB-12	1.36	1.36	N/A	N/A	N/A	4.37	517.29	0.28	0 00:09	
3	CB-13	3.72	3.56	N/A	N/A	N/A	8.53	517.40	0.39	0 00:09	
4	CB-15	3.63	3.63	N/A	N/A	N/A	8.38	534.44	0.38	0 00:12	
5	CB-16	1.79	1.79	N/A	N/A	N/A	5.24	534.36	0.30	0 00:12	
6	CB-18	0.53	0.53	0.53	0.00	100.00	4.05	521.96	0.10	0 00:13	
7	CB-19	2.74	2.74	2.28	0.46	83.25	7.45	522.64	0.19	0 00:13	
8	CB-2	1.20	0.97	1.20	0.00	100.00	6.67	476.84	0.17	0 00:08	
9	CB-20	1.63	1.50	1.40	0.23	85.80	4.99	471.61	0.12	0 00:17	
10	CB-22	0.60	0.60	0.60	0.00	100.00	3.45	505.09	0.08	0 00:06	
11	CB-24	1.16	1.16	1.06	0.10	91.65	4.15	523.41	0.10	0 00:05	
12	CB-25	1.73	1.73	1.39	0.34	80.28	4.80	522.29	0.12	0 00:08	
13	CB-26	1.23	1.23	1.15	0.08	93.36	4.48	505.12	0.11	0 00:16	
14	CB-27	0.38	0.38	0.38	0.00	100.00	3.07	543.74	0.07	0 00:15	
15	CB-28	1.71	1.71	N/A	N/A	N/A	5.07	545.97	0.30	0 00:15	
16	CB-29	0.63	0.63	0.63	0.00	100.00	3.71	547.52	0.09	0 00:05	
17	CB-3	0.60	0.60	0.60	0.00	100.00	5.18	476.41	0.13	0 00:08	
18	CB-31	0.74	0.74	0.74	0.01	99.03	4.36	549.46	0.09	0 00:05	
19	CB-32	0.56	0.56	0.56	0.00	100.00	3.32	549.78	0.08	0 00:05	
20	CB-35	0.43	0.43	0.43	0.00	100.00	2.89	494.07	0.07	0 00:20	
21	CB-36	1.51	1.51	1.27	0.24	84.23	4.56	493.58	0.11	0 00:14	
22	CB-38	0.97	0.97	0.93	0.04	95.57	3.88	510.81	0.09	0 00:20	
23	CB-39	3.23	3.20	N/A	N/A	N/A	7.77	515.74	0.37	0 00:20	
24	CB-43	2.46	2.46	2.46	0.00	100.00	7.44	518.21	0.19	0 00:08	
25	CB-6	0.87	0.71	N/A	N/A	N/A	3.25	475.34	0.25	0 00:07	
26	CB-7	0.18	0.18	0.18	0.00	100.00	3.27	475.17	0.08	0 00:17	
27	CB-9	1.55	1.55	1.35	0.20	87.17	4.91	489.74	0.12	0 00:05	
28	Inlet-CB-44	2.43	2.43	2.18	0.24	89.92	5.34	521.49	0.13	0 00:08	

25 Year Design Storm

Project Description

File Name	Hilltop Drainage Analysis 4-8-26.SPF

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins	31
Nodes	46
Junctions	5
Outfalls	13
Flow Diversions	0
Inlets	28
Storage Nodes	0
Links	54
Channels	21
Pipes	33
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period	25 year(s)

Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-CB-10	0.58	0.7000	0.94	0.66	0.38	1.45	0 00:15:54
2	Sub-CB-12	0.32	0.7000	0.51	0.36	0.11	1.37	0 00:05:00
3	Sub-CB-13	1.03	0.7000	0.66	0.46	0.47	3.56	0 00:07:58
4	Sub-CB-15	1.21	0.7000	0.77	0.54	0.65	3.63	0 00:10:46
5	Sub-CB-16	0.42	0.7000	0.51	0.36	0.15	1.80	0 00:05:00
6	Sub-CB-18	0.12	0.7000	0.51	0.36	0.04	0.53	0 00:05:00
7	Sub-CB-19	1.00	0.7000	0.85	0.60	0.59	2.74	0 00:12:57
8	Sub-CB-2	0.38	0.7000	0.92	0.64	0.24	0.97	0 00:14:59
9	Sub-CB-20	0.62	0.7000	0.98	0.69	0.42	1.50	0 00:17:03
10	Sub-CB-22	0.14	0.7000	0.51	0.36	0.05	0.60	0 00:05:00
11	Sub-CB-24	0.27	0.7000	0.51	0.36	0.10	1.16	0 00:05:01
12	Sub-CB-25	0.51	0.7000	0.67	0.47	0.24	1.73	0 00:08:15
13	Sub-CB-26	0.49	0.7000	0.94	0.66	0.32	1.23	0 00:15:52
14	Sub-CB-27	0.10	0.7000	0.58	0.40	0.04	0.38	0 00:06:07
15	Sub-CB-28	0.67	0.7000	0.91	0.64	0.43	1.71	0 00:15:04
16	Sub-CB-29	0.15	0.7000	0.51	0.36	0.05	0.63	0 00:05:00
17	Sub-CB-3	0.14	0.7000	0.51	0.36	0.05	0.61	0 00:05:00
18	Sub-CB-31	0.17	0.7000	0.51	0.36	0.06	0.75	0 00:05:00
19	Sub-CB-32	0.13	0.7000	0.51	0.36	0.05	0.56	0 00:05:00
20	Sub-CB-35	0.10	0.7000	0.51	0.36	0.04	0.43	0 00:05:00
21	Sub-CB-36	0.58	0.7000	0.90	0.63	0.37	1.51	0 00:14:42
22	Sub-CB-38	0.24	0.7000	0.55	0.38	0.09	0.98	0 00:05:43
23	Sub-CB-39	1.39	0.7000	1.05	0.74	1.02	3.20	0 00:19:10
24	Sub-CB-43	0.71	0.7000	0.65	0.45	0.32	2.47	0 00:07:53
25	Sub-CB-44	0.72	0.7000	0.67	0.47	0.34	2.43	0 00:08:24
26	Sub-CB-6	0.16	0.7000	0.51	0.36	0.06	0.71	0 00:05:00
27	Sub-CB-7	0.04	0.7000	0.51	0.36	0.01	0.18	0 00:05:00
28	Sub-CB-9	0.36	0.7000	0.51	0.36	0.13	1.55	0 00:05:00
29	Sub-FES-2	1.58	0.5600	0.67	0.38	0.60	4.29	0 00:08:19
30	SUB-PIPE-35	0.36	0.7200	0.51	0.37	0.13	1.60	0 00:05:00
31	SUB-PIPE-36	1.26	0.7200	0.76	0.55	0.69	3.92	0 00:10:33

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)
1	FES-2	Junction	466.60	469.78	466.60	469.78	0.00	19.47	468.35	0.00	1.43
2	IN-PIPE-35	Junction	462.75	464.00	462.75	464.00	0.00	1.59	463.18	0.00	1.07
3	IN-PIPE36	Junction	441.30	442.80	441.30	442.80	0.00	3.92	442.17	0.00	0.71
4	JB-14	Junction	529.50	534.76	529.50	535.50	0.00	5.29	529.93	0.00	4.83
5	JB-23	Junction	515.30	519.44	515.30	519.20	10.00	2.03	515.56	0.00	3.88
6	OFFSITE-1	Outfall	540.30					0.03	540.33		
7	OFFSITE-2	Outfall	532.10					0.00	532.11		
8	OFFSITE-25	Outfall	464.82					0.00	464.82		
9	OFFSITE-26	Outfall	464.82					0.18	464.90		
10	OU-PIPE-36	Outfall	441.00					3.91	441.65		
11	Out-FES-1	Outfall	463.00					21.43	463.65		
12	Out-FES-11	Outfall	492.00					11.68	492.47		
13	Out-FES-17	Outfall	505.00					2.27	505.26		
14	Out-FES-21	Outfall	499.00					3.05	499.30		
15	Out-FES-3	Outfall	538.50					1.24	538.71		
16	Out-FES-34	Outfall	484.31					4.00	484.84		
17	Out-FES-8	Outfall	482.52					1.79	482.92		
18	OUT-PIPE-35	Outfall	462.25					1.59	462.62		

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak D Total D F
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)	
1	SDPIPE-1	Pipe	CB-2	Out-FES-1	35.55	465.94	463.00	8.2700	36.000	0.0120	21.43	207.79	0.10	13.86	0.81	
2	SDPIPE-10	Pipe	JB-14	CB-13	256.10	529.50	512.58	6.6100	18.000	0.0120	5.28	29.25	0.18	5.99	0.87	
3	SDPIPE-11	Pipe	CB-15	JB-14	67.57	530.20	529.50	1.0400	18.000	0.0120	5.29	11.59	0.46	7.08	0.66	
4	SDPIPE-12	Pipe	CB-16	CB-15	33.01	530.53	530.20	1.0000	18.000	0.0130	0.69	10.49	0.07	1.74	0.72	
5	SDPIPE-13	Pipe	CB-18	Out-FES-17	130.50	517.50	505.00	9.5800	18.000	0.0120	2.27	35.22	0.06	10.80	0.26	
6	SDPIPE-14	Pipe	CB-19	CB-18	39.55	517.99	517.50	1.2500	18.000	0.0130	2.28	11.74	0.19	5.82	0.41	
7	SDPIPE-15	Pipe	CB-20	CB-7	64.04	468.11	467.47	1.0000	18.000	0.0130	1.45	10.50	0.14	3.74	0.41	
8	SDPIPE-16	Pipe	CB-22	Out-FES-21	23.51	501.10	499.00	8.9300	18.000	0.0120	3.05	34.01	0.09	9.81	0.35	
9	SDPIPE-17	Pipe	JB-23	CB-22	194.21	515.30	501.00	7.3600	18.000	0.0120	2.02	30.77	0.07	7.19	0.33	
10	SDPIPE-18	Pipe	CB-24	JB-23	49.41	517.78	515.30	5.0200	18.000	0.0130	1.05	23.53	0.04	5.70	0.24	
11	SDPIPE-19	Pipe	CB-25	JB-23	51.31	517.87	515.30	5.0100	18.000	0.0130	1.38	23.51	0.06	6.89	0.26	
12	SDPIPE-2	Pipe	CB-3	CB-2	35.82	466.30	465.94	1.0000	36.000	0.0130	19.64	66.70	0.29	6.64	1.31	
13	SDPIPE-20	Pipe	CB-26	CB-22	33.00	501.43	501.10	1.0000	18.000	0.0120	1.13	11.38	0.10	4.39	0.37	
14	SDPIPE-21	Pipe	CB-27	CB-15	239.80	538.50	530.20	3.4600	18.000	0.0120	1.69	21.17	0.08	3.65	0.57	
15	SDPIPE-22	Pipe	CB-28	CB-27	57.68	542.14	538.50	6.3100	18.000	0.0130	1.70	26.39	0.06	7.46	0.28	
16	SDPIPE-23	Pipe	CB-29	CB-28	44.75	542.59	542.14	1.0100	18.000	0.0130	0.62	10.53	0.06	3.27	0.25	
17	SDPIPE-25	Pipe	CB-32	CB-31	74.63	546.00	544.50	2.0100	18.000	0.0130	0.55	14.89	0.04	3.57	0.21	
18	SDPIPE-27	Pipe	CB-35	Out-FES-34	182.53	487.50	484.31	1.7500	18.000	0.0120	4.00	15.03	0.27	6.84	0.55	
19	SDPIPE-28	Pipe	CB-36	CB-35	33.55	487.84	487.50	1.0000	18.000	0.0130	1.27	10.50	0.12	3.12	0.46	
20	SDPIPE-29	Pipe	CB-38	CB-35	167.22	505.00	487.50	10.4700	18.000	0.0120	3.08	36.81	0.08	7.34	0.43	
21	SDPIPE-3	Pipe	FES-2	CB-3	30.36	466.60	466.30	1.0000	36.000	0.0120	20.72	71.83	0.29	7.93	1.60	
22	SDPIPE-30	Pipe	CB-39	CB-38	66.71	510.34	505.00	8.0000	18.000	0.0130	3.08	29.71	0.10	10.67	0.33	
23	SDPIPE-32	Pipe	CB-31	Out-FES-3	96.89	544.50	538.50	6.1900	18.000	0.0120	1.24	28.32	0.04	7.77	0.22	
24	SDPIPE-33	Pipe	CB-43	CB-13	77.61	514.12	512.58	1.9800	18.000	0.0150	2.46	12.82	0.19	3.46	0.87	
25	SDPIPE-34	Pipe	Inlet-CB-44	CB-13	147.34	516.28	512.58	2.5100	18.000	0.0150	2.16	14.43	0.15	3.23	0.85	
26	SDPIPE-4	Pipe	CB-7	CB-2	71.93	467.47	466.75	1.0000	18.000	0.0120	1.45	11.38	0.13	4.10	0.38	
27	SDPIPE-5	Pipe	CB-6	CB-7	33.00	467.80	467.47	1.0000	18.000	0.0130	0.46	10.50	0.04	1.98	0.28	
28	SDPIPE-6	Pipe	CB-9	Out-FES-8	67.57	483.19	482.52	1.0000	18.000	0.0120	1.79	11.37	0.16	4.31	0.43	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak D Total D F
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)	
46	L-SDPIPE-27	Channel	CB-35	CB-3	245.69	494.00	476.28	7.2100	3.960	0.0150	0.00	6.79	0.00	0.00	0.00	
47	L-SDPIPE-28	Channel	CB-36	CB-2	228.18	493.47	476.67	7.3600	3.960	0.0150	0.24	6.86	0.03	2.98	0.06	
48	L-SDPIPE-29	Channel	CB-38	CB-35	172.07	510.72	494.00	9.7200	3.960	0.0150	0.02	7.88	0.00	1.75	0.02	
49	L-SDPIPE-32	Channel	CB-31	OFFSITE-1	98.13	549.76	540.30	9.6400	6.000	0.0150	0.03	28.64	0.00	2.05	0.02	
50	L-SDPIPE-33	Channel	CB-43	CB-13	78.91	518.02	517.01	1.2800	3.960	0.0320	0.00	2.86	0.00	0.00	0.17	
51	L-SDPIPE-34	Channel	Inlet-CB-44	CB-13	149.42	521.36	517.01	2.9100	3.960	0.0320	0.22	4.31	0.05	0.22	0.22	
52	L-SDPIPE-4	Channel	CB-7	OFFSITE-25	129.78	475.09	464.82	7.9100	3.960	0.0320	0.00	7.11	0.00	0.00	0.00	
53	L-SDPIPE-6	Channel	CB-9	CB-6	214.12	489.62	475.09	6.7900	3.960	0.0150	0.18	6.59	0.03	0.54	0.13	
54	L-SDPIPE-7	Channel	CB-10	CB-20	216.57	487.59	471.49	7.4300	3.960	0.0150	0.16	6.90	0.02	1.23	0.08	

Inlet Summary

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft²)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max C Sp during
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.62	487.59	483.62	N/A	1.54	1.34	0.19	87.40	8.50	
2	CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.25	517.01	512.25	10.00	1.36	N/A	N/A	N/A	8.50	
3	CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.58	517.01	512.58	10.00	3.72	N/A	N/A	N/A	8.50	
4	CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.20	534.06	530.20	10.00	3.63	N/A	N/A	N/A	8.50	
5	CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.53	534.06	530.53	10.00	1.79	N/A	N/A	N/A	8.50	
6	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.50	521.86	517.50	N/A	0.53	0.53	0.00	100.00	8.50	
7	CB-19	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.99	522.45	517.99	N/A	2.74	2.28	0.46	83.25	8.50	
8	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	465.94	476.67	465.94	N/A	1.20	1.20	0.00	100.00	8.50	
9	CB-20	FHWA HEC-22 GENERIC	N/A	On Grade	1	468.11	471.49	468.11	N/A	1.63	1.40	0.23	85.80	8.50	
10	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.10	505.01	501.10	N/A	0.60	0.60	0.00	100.00	8.50	
11	CB-24	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.78	523.31	517.77	N/A	1.16	1.06	0.10	91.65	8.50	
12	CB-25	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.87	522.17	515.81	N/A	1.73	1.39	0.34	80.28	8.50	
13	CB-26	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.43	505.01	501.43	N/A	1.23	1.15	0.08	93.36	8.50	
14	CB-27	FHWA HEC-22 GENERIC	N/A	On Grade	1	538.50	543.67	538.50	N/A	0.38	0.38	0.00	100.00	8.50	
15	CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	542.14	545.67	542.20	10.00	1.71	N/A	N/A	N/A	8.50	
16	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	542.59	547.43	542.65	N/A	0.63	0.63	0.00	100.00	8.50	
17	CB-3	FHWA HEC-22 GENERIC	N/A	On Grade	1	466.30	476.28	466.30	N/A	0.60	0.60	0.00	100.00	8.50	
18	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	544.50	N/A	0.74	0.74	0.01	99.03	8.50	
19	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.70	546.00	N/A	0.56	0.56	0.00	100.00	8.50	
20	CB-35	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.50	494.00	487.50	N/A	0.43	0.43	0.00	100.00	8.50	
21	CB-36	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.84	493.47	487.84	N/A	1.51	1.27	0.24	84.23	8.50	
22	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	505.00	510.72	505.00	N/A	0.97	0.93	0.04	95.57	8.50	
23	CB-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	510.34	515.37	510.34	10.00	3.23	N/A	N/A	N/A	8.50	
24	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.12	518.02	514.12	N/A	2.46	2.46	0.00	100.00	8.50	
25	CB-6	FHWA HEC-22 GENERIC	N/A	On Sag	1	467.80	475.09	467.80	10.00	0.87	N/A	N/A	N/A	8.50	
26	CB-7	FHWA HEC-22 GENERIC	N/A	On Grade	1	467.47	475.09	467.47	N/A	0.18	0.18	0.00	100.00	8.50	
27	CB-9	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.19	489.62	483.19	N/A	1.55	1.35	0.20	87.17	8.50	
28	Inlet-CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	516.28	521.36	516.28	N/A	2.43	2.18	0.24	89.92	8.50	

Subbasin Hydrology

Subbasin : Sub-CB-10

Input Data

Area (ac) 0.58
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.7
Composite Area & Weighted Runoff Coeff.	0.58		0.7

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99996647	0	0
Slope (%) :	1.25	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	15.21	0	0

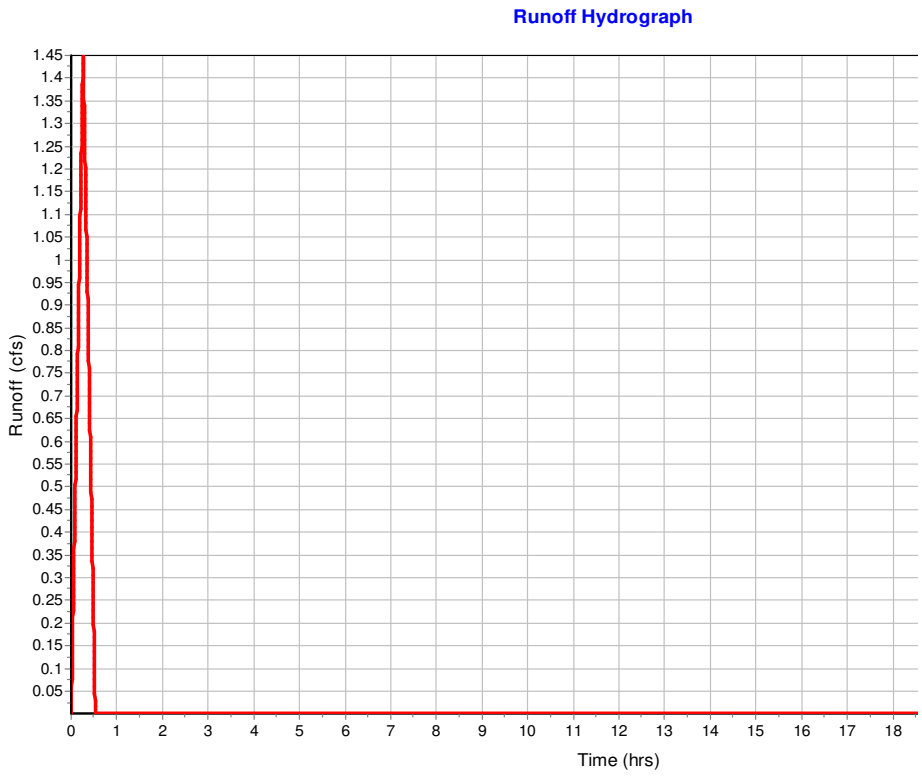
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	229.3185963	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.69	0	0

Total TOC (min) 15.90

Subbasin Runoff Results

Total Rainfall (in)	0.94
Total Runoff (in)	0.66
Peak Runoff (cfs)	1.45
Rainfall Intensity	3.571
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:54

Subbasin : Sub-CB-10



Subbasin : Sub-CB-12

Input Data

Area (ac)	0.32
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.7
Composite Area & Weighted Runoff Coeff.	0.32		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

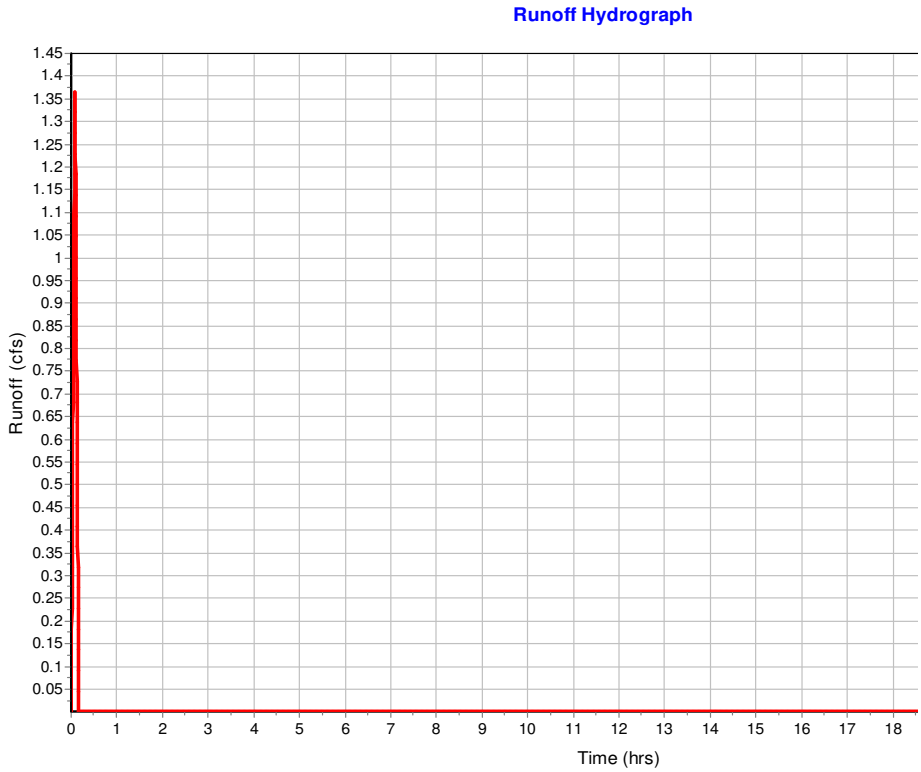
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	219.5273657	0	0
Slope (%) :	1.99	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	2.87	0	0
Computed Flow Time (min) :	1.28	0	0

Total TOC (min) 4.14

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.37
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:04:08

Subbasin : Sub-CB-12



Subbasin : Sub-CB-13

Input Data

Area (ac)	1.03
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.03	-	0.7
Composite Area & Weighted Runoff Coeff.	1.03		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	11.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.27	0	0

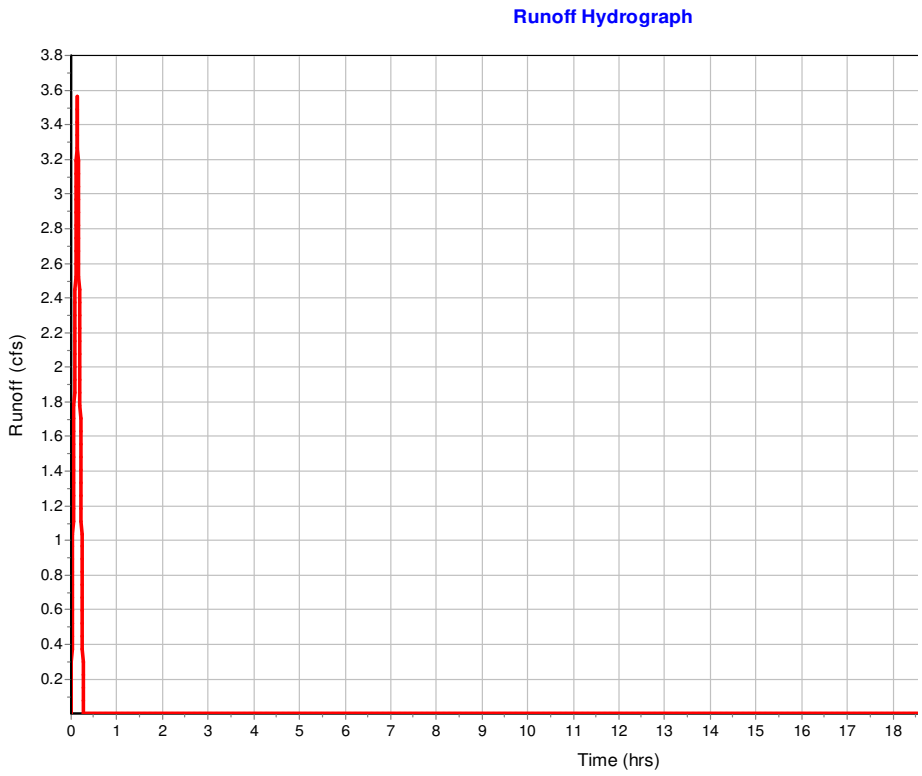
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	93	71.4	0
Slope (%) :	11.5	1.99	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	5.47	2.87	0
Computed Flow Time (min) :	0.28	0.41	0

Total TOC (min) 7.97

Subbasin Runoff Results

Total Rainfall (in)	0.66
Total Runoff (in)	0.46
Peak Runoff (cfs)	3.56
Rainfall Intensity	4.939
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:07:58

Subbasin : Sub-CB-13



Subbasin : Sub-CB-15

Input Data

Area (ac)	1.21
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.21	-	0.7
Composite Area & Weighted Runoff Coeff.	1.21		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.16	0	0
Computed Flow Time (min) :	10.14	0	0

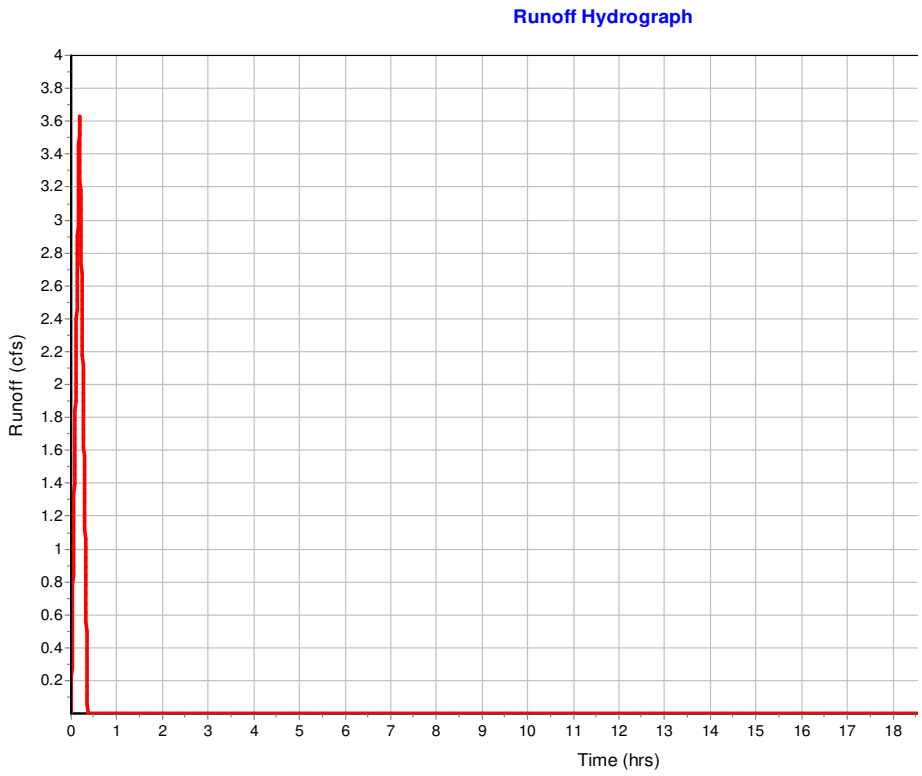
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	12.98144373	156.302	0
Slope (%) :	2	5.74	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	4.87	0
Computed Flow Time (min) :	0.09	0.53	0

Total TOC (min) 10.77

Subbasin Runoff Results

Total Rainfall (in)	0.77
Total Runoff (in)	0.54
Peak Runoff (cfs)	3.63
Rainfall Intensity	4.282
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:10:46

Subbasin : Sub-CB-15



Subbasin : Sub-CB-16

Input Data

Area (ac)	0.42
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	-	0.7
Composite Area & Weighted Runoff Coeff.	0.42		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.01720552	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

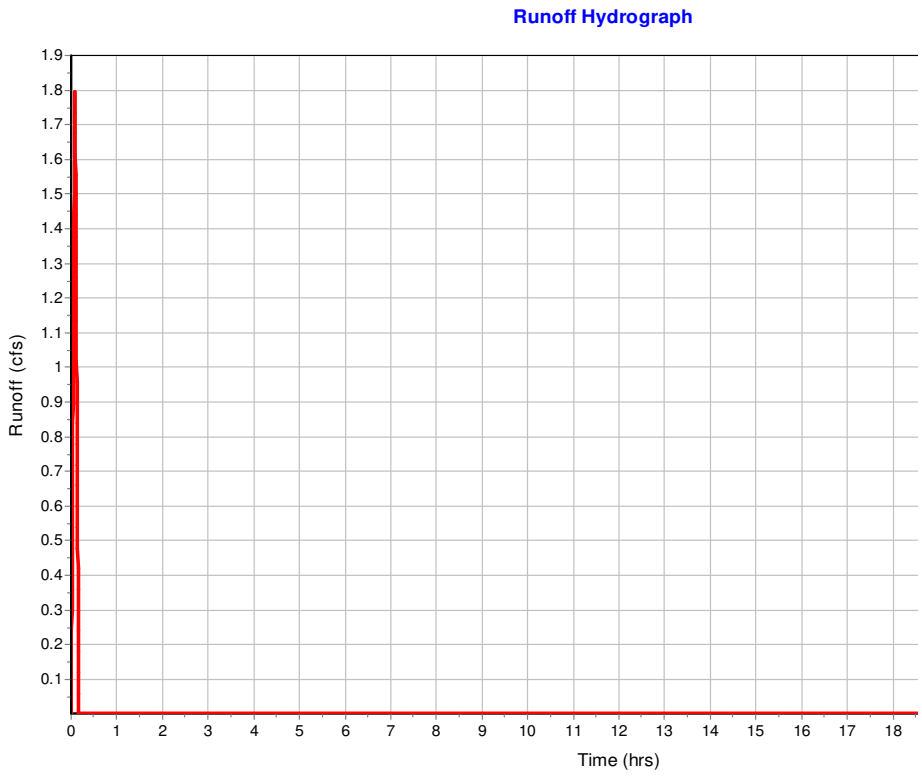
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	310.5319881	0	0
Slope (%) :	5.74	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.87	0	0
Computed Flow Time (min) :	1.06	0	0

Total TOC (min) 3.93

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.8
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:56

Subbasin : Sub-CB-16



Subbasin : Sub-CB-18

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.7
Composite Area & Weighted Runoff Coeff.	0.12		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.10752092	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.88	0	0

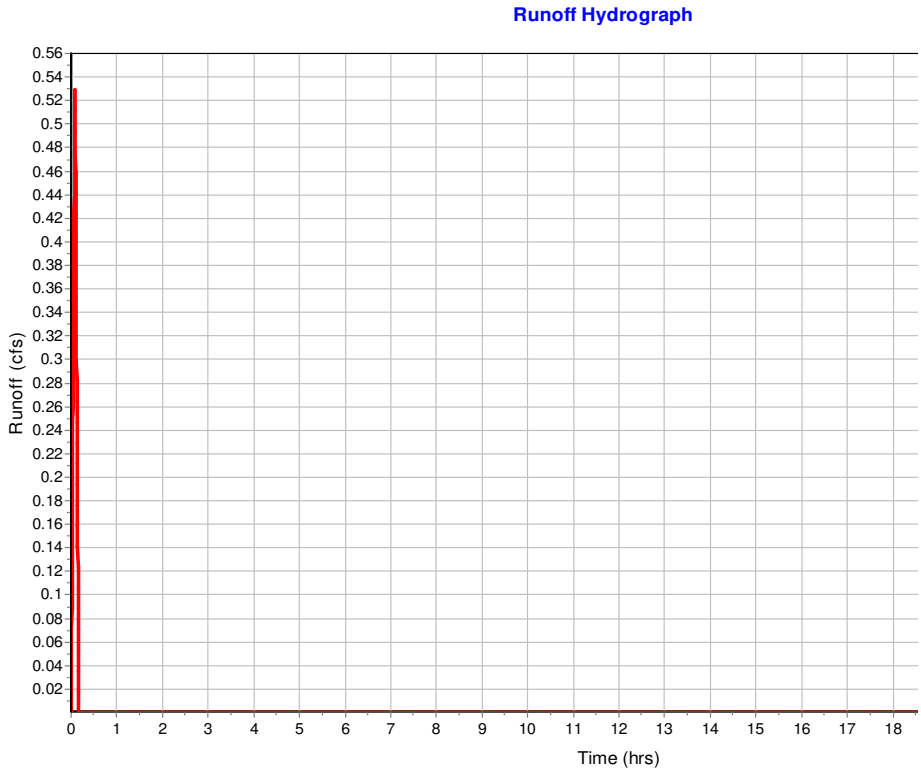
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	71.43477489	102.308	0
Slope (%) :	11.86	2.45	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	7	3.18	0
Computed Flow Time (min) :	0.17	0.54	0

Total TOC (min) 3.59

Subbasin Runoff Results

Total Rainfall (in) 0.51
Total Runoff (in) 0.36
Peak Runoff (cfs) 0.53
Rainfall Intensity 6.16
Weighted Runoff Coefficient 0.7
Time of Concentration (days hh:mm:ss) 0 00:03:35

Subbasin : Sub-CB-18



Subbasin : Sub-CB-19

Input Data

Area (ac) 1
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1	-	0.7
Composite Area & Weighted Runoff Coeff.	1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100.0031436	0	0
Slope (%) :	3.4	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.14	0	0
Computed Flow Time (min) :	11.83	0	0

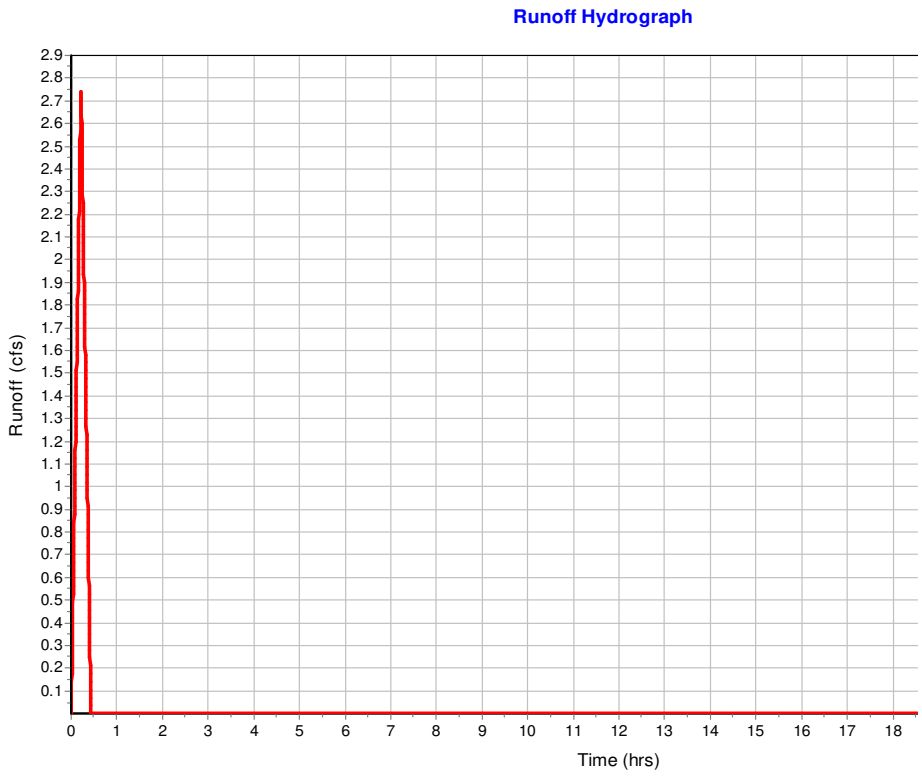
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	6.07922878	278.905	79.9642
Slope (%) :	2	11.86	2.45
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	7	3.18
Computed Flow Time (min) :	0.04	0.66	0.42

Total TOC (min) 12.96

Subbasin Runoff Results

Total Rainfall (in) 0.85
Total Runoff (in) 0.6
Peak Runoff (cfs) 2.74
Rainfall Intensity 3.923
Weighted Runoff Coefficient 0.7
Time of Concentration (days hh:mm:ss) 0 00:12:58

Subbasin : Sub-CB-19



Subbasin : Sub-CB-2

Input Data

Area (ac)	0.38
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.38	-	0.7
Composite Area & Weighted Runoff Coeff.	0.38		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	83	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	14.14	0	0

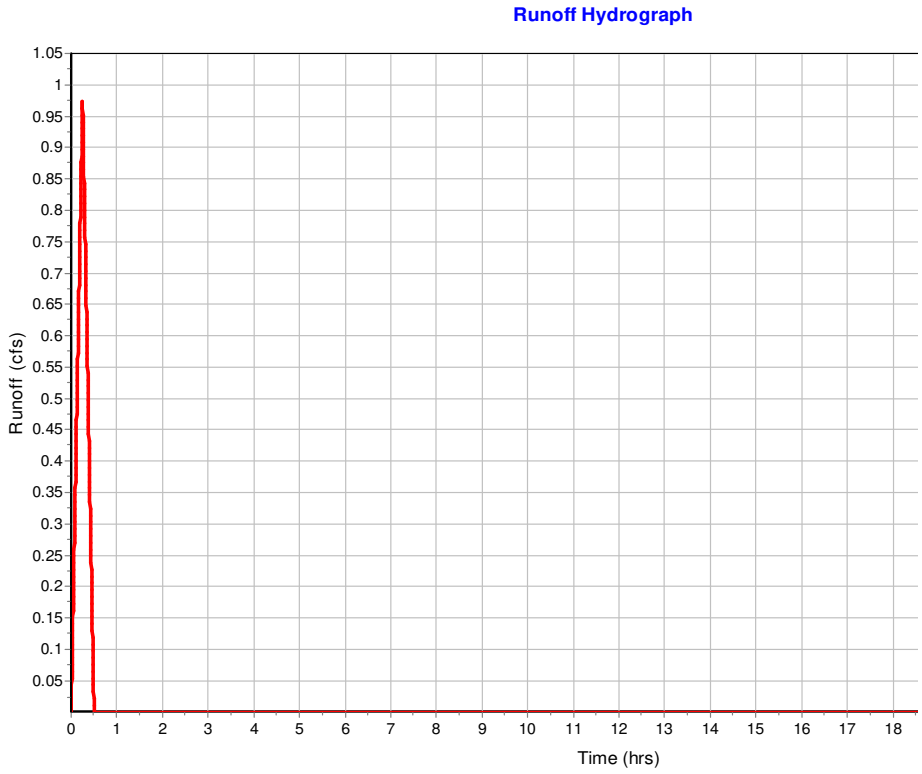
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	175.3484305	45.5292	0
Slope (%) :	10.46	0.85	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	1.87	0
Computed Flow Time (min) :	0.44	0.4	0

Total TOC (min) 14.99

Subbasin Runoff Results

Total Rainfall (in)	0.92
Total Runoff (in)	0.64
Peak Runoff (cfs)	0.97
Rainfall Intensity	3.661
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:14:59

Subbasin : Sub-CB-2



Subbasin : Sub-CB-20

Input Data

Area (ac)	0.62
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.62	-	0.7
Composite Area & Weighted Runoff Coeff.	0.62		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	99.99258294	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	16.41	0	0

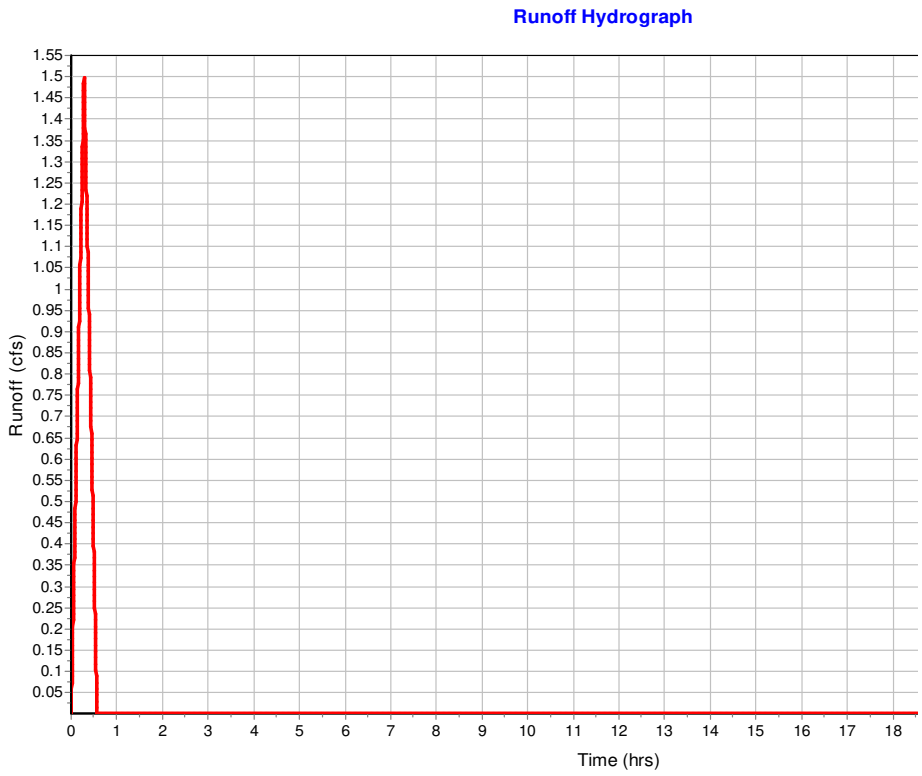
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3.00743724	208.662	0
Slope (%) :	2	7.49	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	5.56	0
Computed Flow Time (min) :	0.02	0.63	0

Total TOC (min) 17.06

Subbasin Runoff Results

Total Rainfall (in)	0.98
Total Runoff (in)	0.69
Peak Runoff (cfs)	1.5
Rainfall Intensity	3.466
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:17:04

Subbasin : Sub-CB-20



Subbasin : Sub-CB-22

Input Data

Area (ac)	0.14
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.14	-	0.7
Composite Area & Weighted Runoff Coeff.	0.14		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99981258	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

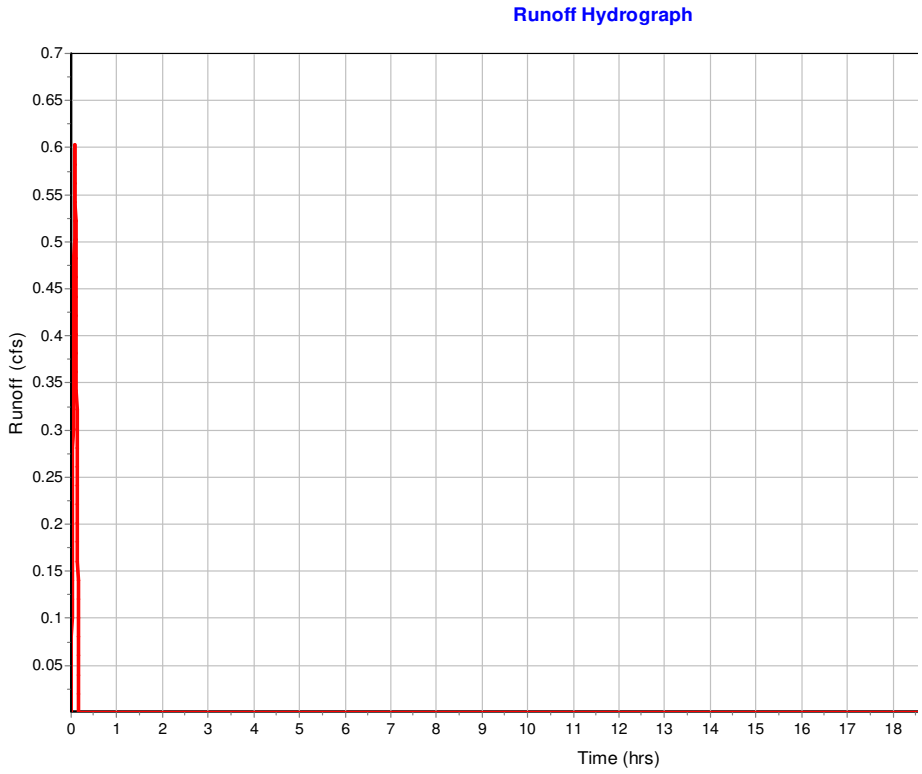
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	167.0428132	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.5	0	0

Total TOC (min) 3.36

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.6
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:22

Subbasin : Sub-CB-22



Subbasin : Sub-CB-24

Input Data

Area (ac)	0.27
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.27	-	0.7
Composite Area & Weighted Runoff Coeff.	0.27		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	37.99958613	0	0
Slope (%) :	6.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.15	0	0
Computed Flow Time (min) :	4.21	0	0

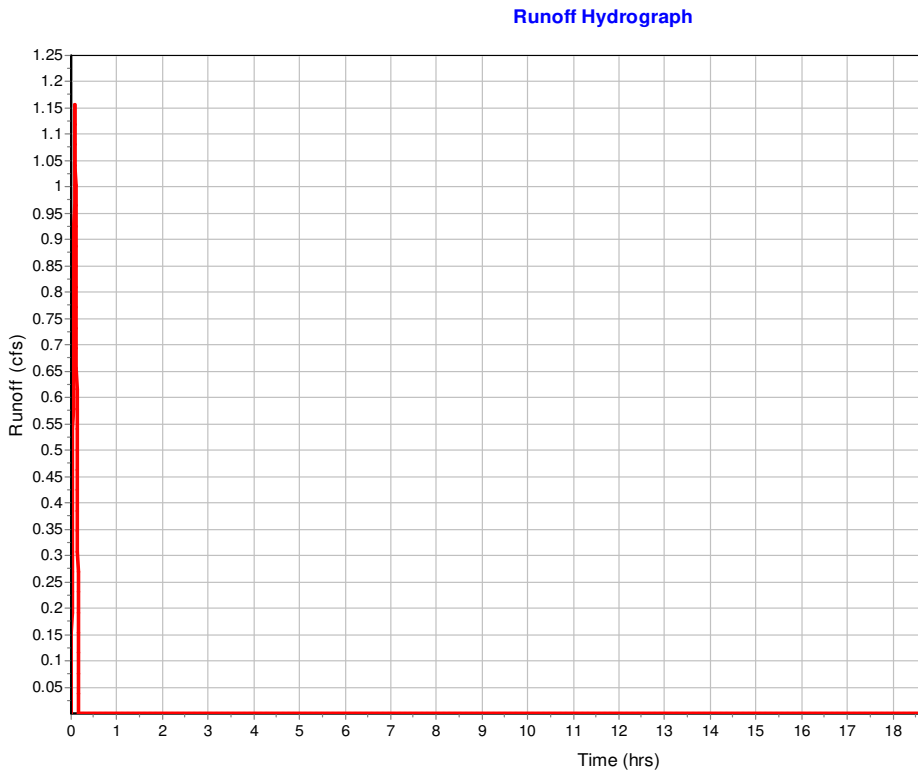
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	28.98355088	187.48	0
Slope (%) :	0.51	10.41	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.45	6.56	0
Computed Flow Time (min) :	0.33	0.48	0

Total TOC (min) 5.02

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.16
Rainfall Intensity	6.148
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:05:01

Subbasin : Sub-CB-24



Subbasin : Sub-CB-25

Input Data

Area (ac)	0.51
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.51	-	0.7
Composite Area & Weighted Runoff Coeff.	0.51		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99999586	0	0
Slope (%) :	7.25	0	0
2 yr, 24 hr Rainfall (in) :	4.32	0	0
Velocity (ft/sec) :	0.18	0	0
Computed Flow Time (min) :	7.56	0	0

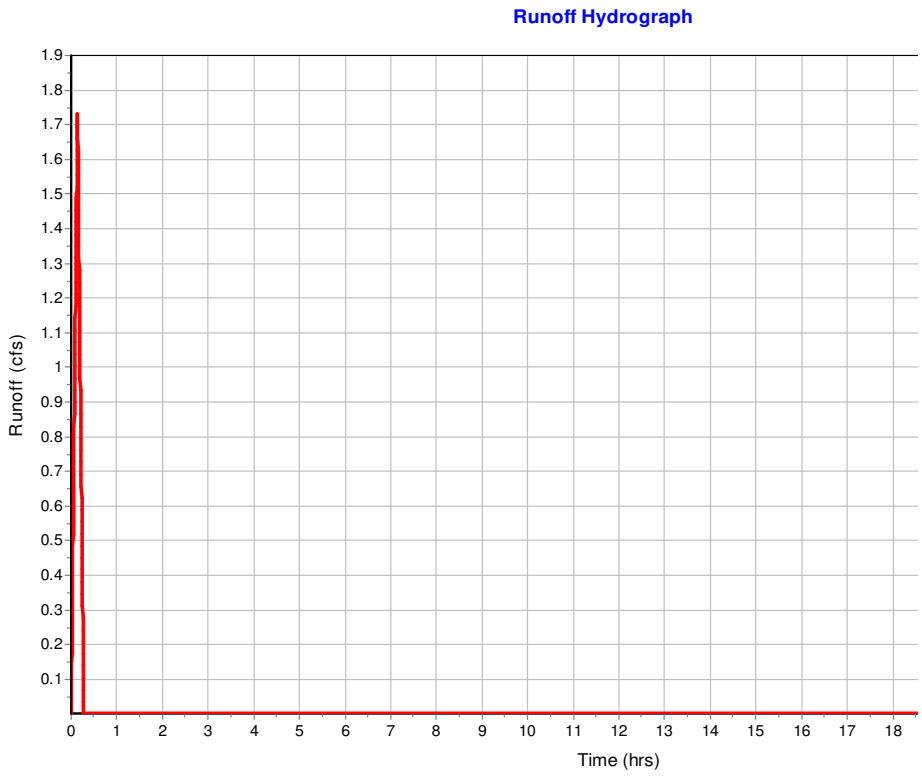
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	16.12667612	203.96	0
Slope (%) :	0.51	10.41	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.45	6.56	0
Computed Flow Time (min) :	0.19	0.52	0

Total TOC (min) 8.26

Subbasin Runoff Results

Total Rainfall (in)	0.67
Total Runoff (in)	0.47
Peak Runoff (cfs)	1.73
Rainfall Intensity	4.856
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:08:16

Subbasin : Sub-CB-25



Subbasin : Sub-CB-26

Input Data

Area (ac)	0.49
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.49	-	0.7
Composite Area & Weighted Runoff Coeff.	0.49		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99998121	0	0
Slope (%) :	1.25	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	15.21	0	0

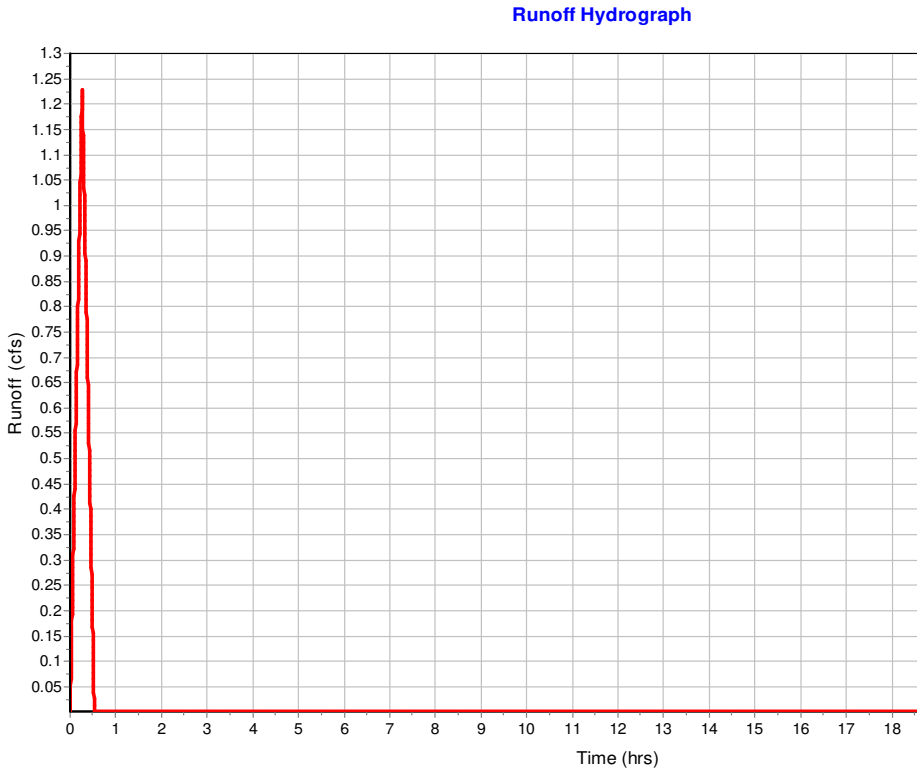
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	221.0918618	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.66	0	0

Total TOC (min) 15.87

Subbasin Runoff Results

Total Rainfall (in)	0.94
Total Runoff (in)	0.66
Peak Runoff (cfs)	1.23
Rainfall Intensity	3.574
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:52

Subbasin : Sub-CB-26



Subbasin : Sub-CB-27

Input Data

Area (ac)	0.1
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.1	-	0.7
Composite Area & Weighted Runoff Coeff.	0.1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	21.13547973	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.06	0	0
Computed Flow Time (min) :	5.57	0	0

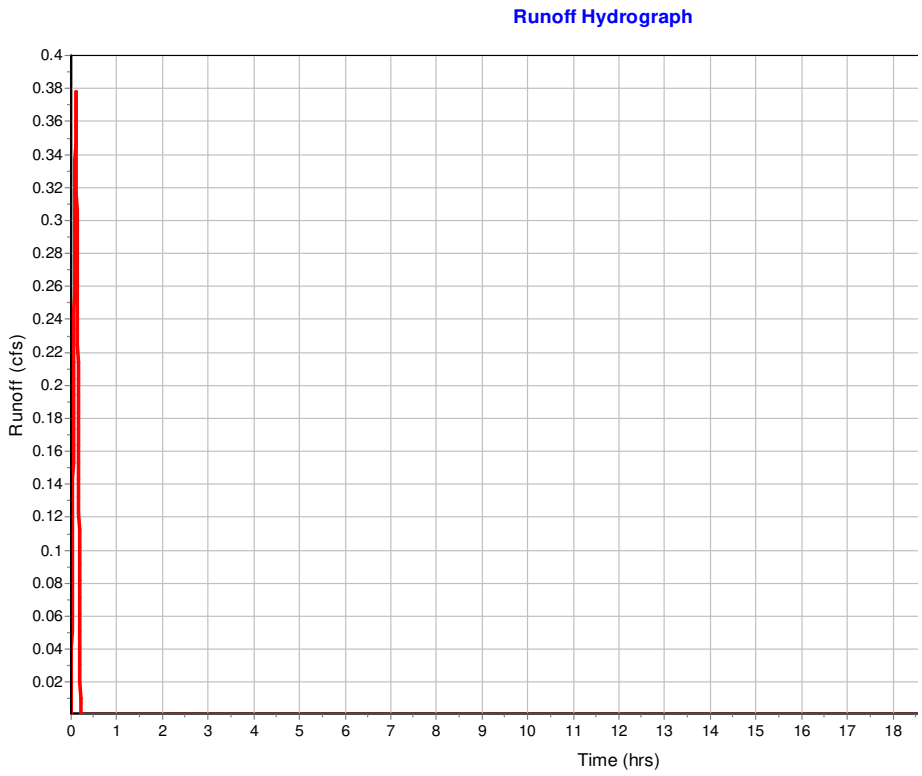
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	117.1502173	0	0
Slope (%) :	2.92	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.47	0	0
Computed Flow Time (min) :	0.56	0	0

Total TOC (min) 6.13

Subbasin Runoff Results

Total Rainfall (in)	0.58
Total Runoff (in)	0.4
Peak Runoff (cfs)	0.38
Rainfall Intensity	5.593
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:06:08

Subbasin : Sub-CB-27



Subbasin : Sub-CB-28

Input Data

Area (ac)	0.67
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.67	-	0.7
Composite Area & Weighted Runoff Coeff.	0.67		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.11	0	0
Computed Flow Time (min) :	14.63	0	0

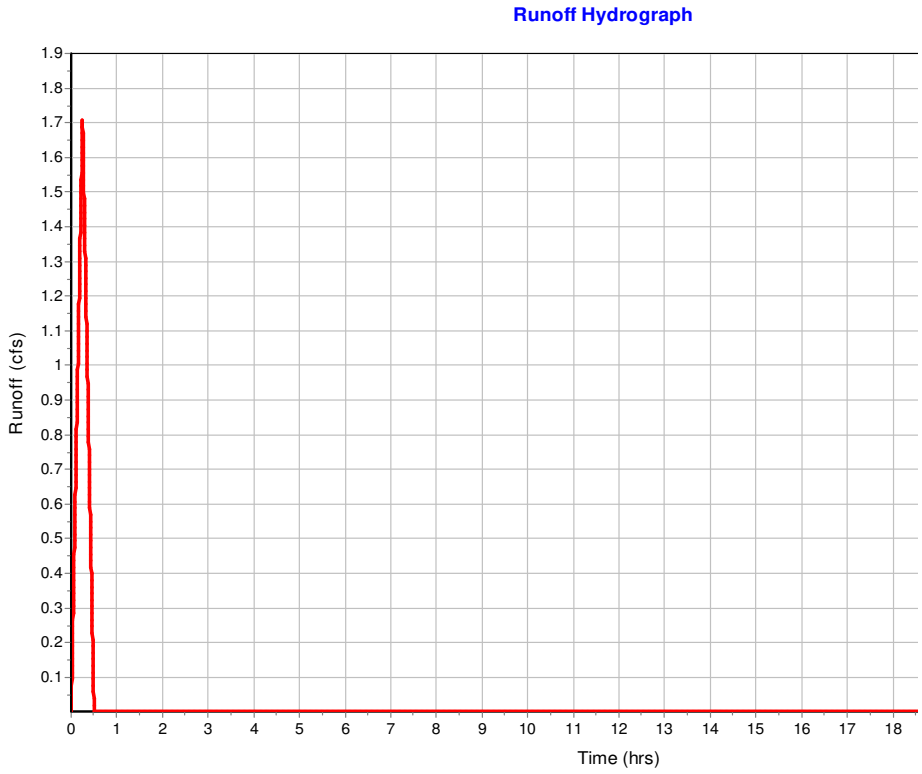
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	17.02372996	94.092	0
Slope (%) :	2	5.74	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	4.87	0
Computed Flow Time (min) :	0.12	0.32	0

Total TOC (min) 15.08

Subbasin Runoff Results

Total Rainfall (in)	0.91
Total Runoff (in)	0.64
Peak Runoff (cfs)	1.71
Rainfall Intensity	3.652
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:05

Subbasin : Sub-CB-28



Subbasin : Sub-CB-29

Input Data

Area (ac)	0.15
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.7
Composite Area & Weighted Runoff Coeff.	0.15		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

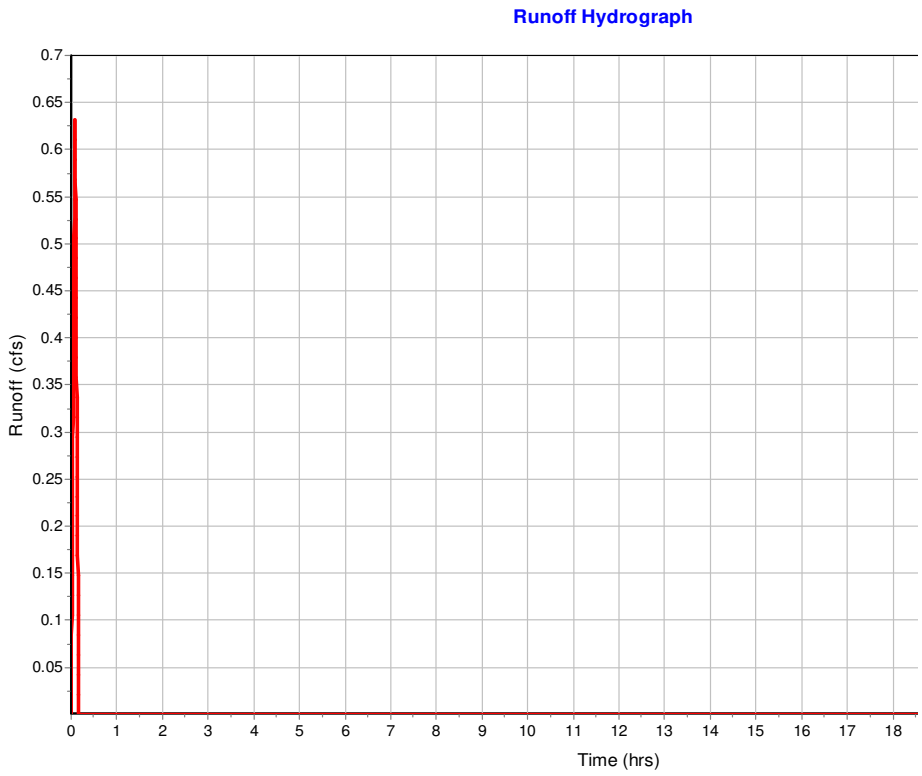
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	253.6223323	0	0
Slope (%) :	5.74	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.87	0	0
Computed Flow Time (min) :	0.87	0	0

Total TOC (min) 3.73

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.63
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:44

Subbasin : Sub-CB-29



Subbasin : Sub-CB-3

Input Data

Area (ac)	0.14
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.14	-	0.7
Composite Area & Weighted Runoff Coeff.	0.14		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

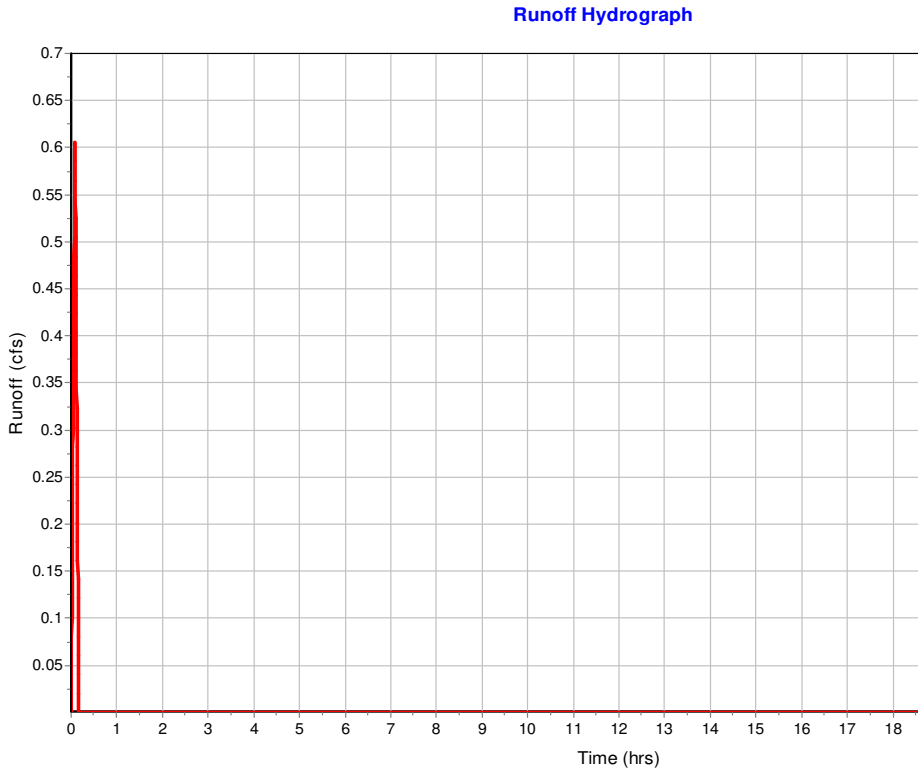
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	181.26423	58.411	0
Slope (%) :	10.46	0.85	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	1.87	0
Computed Flow Time (min) :	0.46	0.52	0

Total TOC (min) 3.84

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.61
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:50

Subbasin : Sub-CB-3



Subbasin : Sub-CB-31

Input Data

Area (ac)	0.17
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.7
Composite Area & Weighted Runoff Coeff.	0.17		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

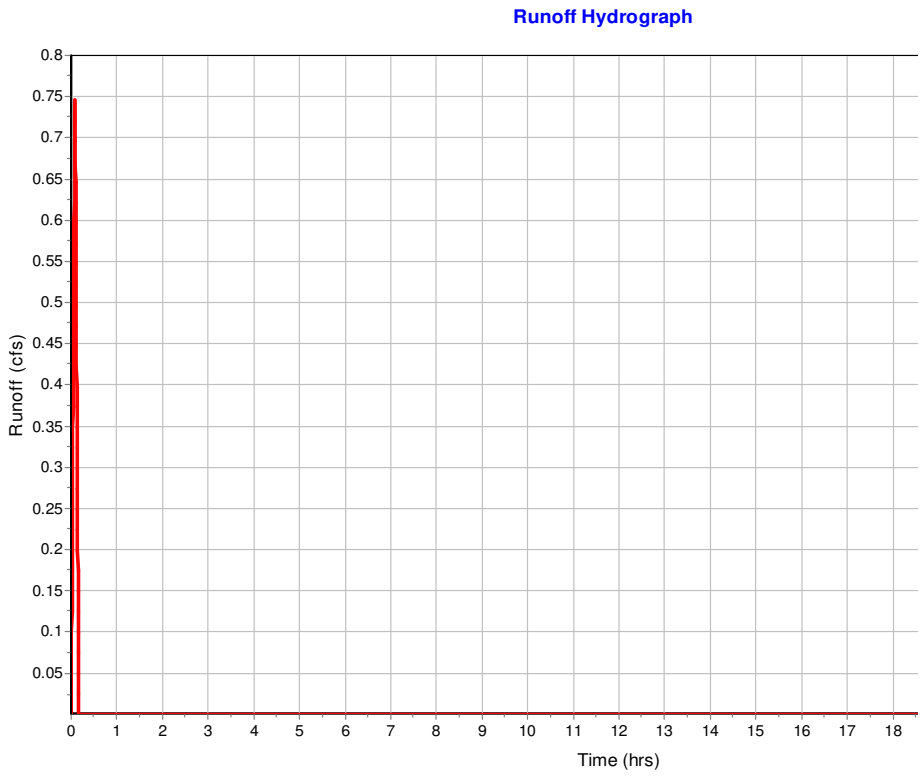
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	166.3763112	83.655	0
Slope (%) :	3.19	6.34	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.63	5.12	0
Computed Flow Time (min) :	0.76	0.27	0

Total TOC (min) 3.90

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.75
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:54

Subbasin : Sub-CB-31



Subbasin : Sub-CB-32

Input Data

Area (ac)	0.13
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.13	-	0.7
Composite Area & Weighted Runoff Coeff.	0.13		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

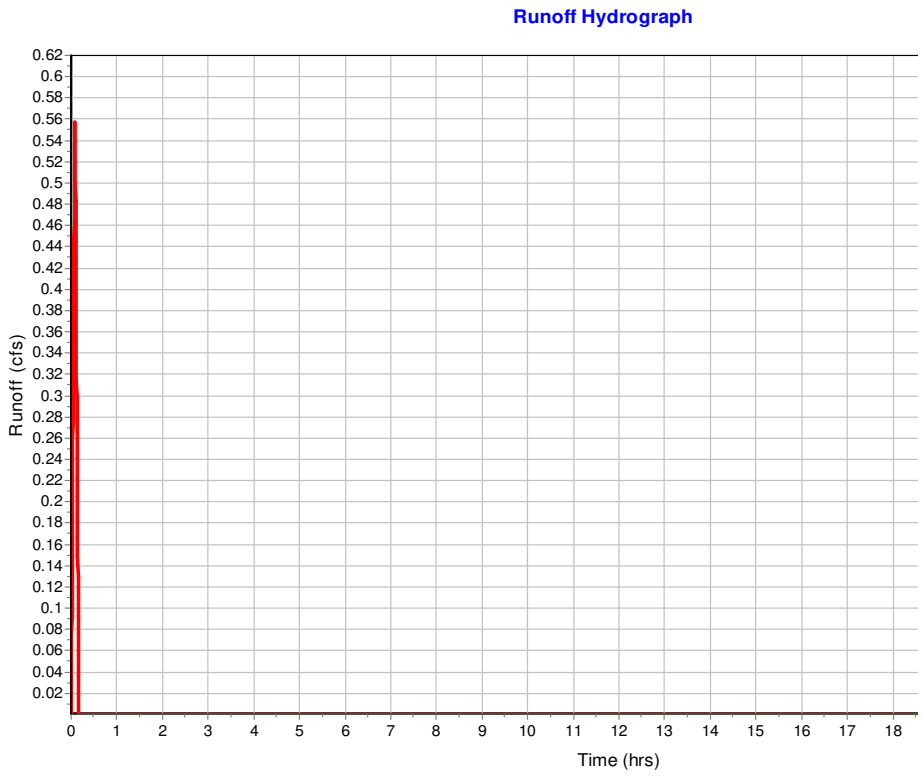
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	167.2624187	52.704	0
Slope (%) :	3.19	6.34	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.63	5.12	0
Computed Flow Time (min) :	0.77	0.17	0

Total TOC (min) 3.80

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.56
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:48

Subbasin : Sub-CB-32



Subbasin : Sub-CB-35

Input Data

Area (ac)	0.1
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.1	-	0.7
Composite Area & Weighted Runoff Coeff.	0.1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

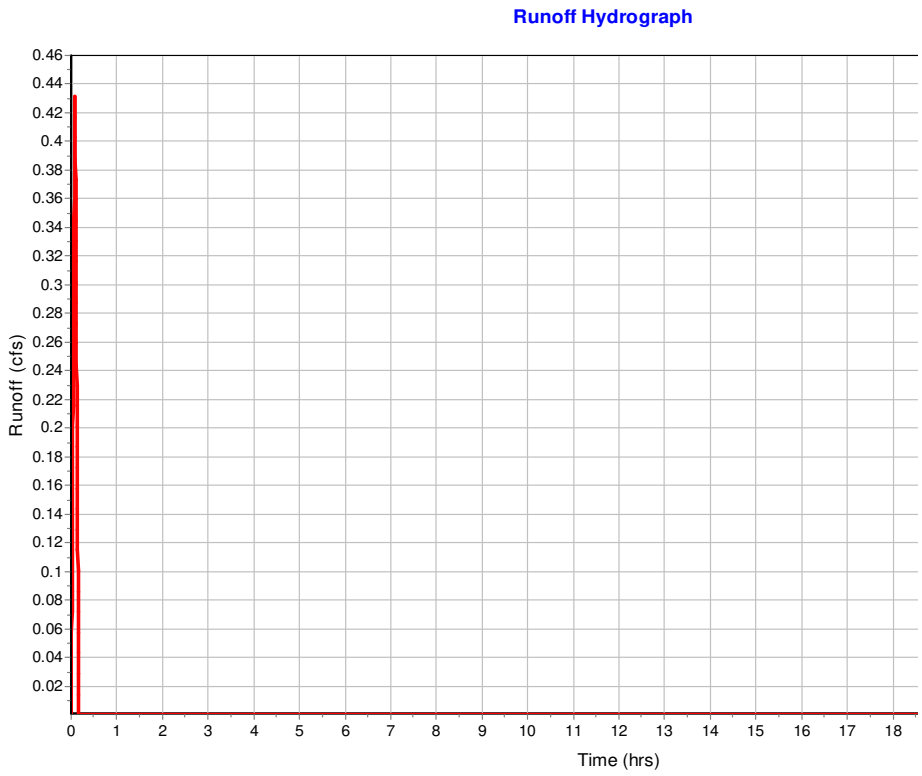
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	159.59	0	0
Slope (%) :	10.46	0	0
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	6.57	0	0
Computed Flow Time (min) :	0.4	0	0

Total TOC (min) 3.27

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.43
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:16

Subbasin : Sub-CB-35



Subbasin : Sub-CB-36

Input Data

Area (ac)	0.58
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.7
Composite Area & Weighted Runoff Coeff.	0.58		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	83	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	14.14	0	0

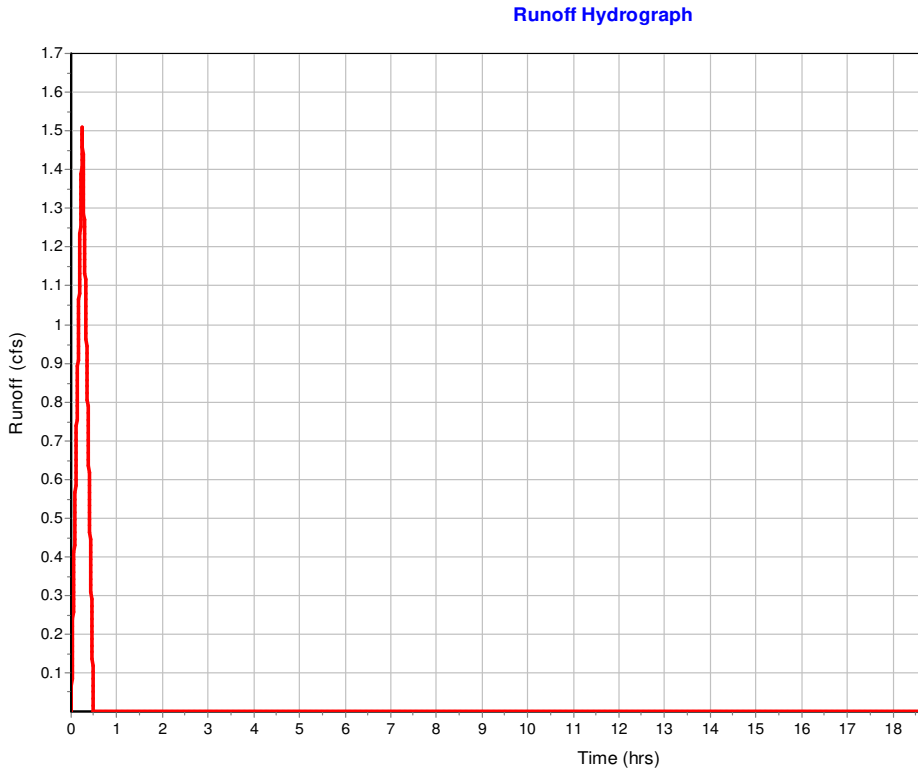
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	224.201193	0	0
Slope (%) :	10.46	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	0	0
Computed Flow Time (min) :	0.57	0	0

Total TOC (min) 14.71

Subbasin Runoff Results

Total Rainfall (in)	0.9
Total Runoff (in)	0.63
Peak Runoff (cfs)	1.51
Rainfall Intensity	3.694
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:14:43

Subbasin : Sub-CB-36



Subbasin : Sub-CB-38

Input Data

Area (ac)	0.24
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.24	-	0.7
Composite Area & Weighted Runoff Coeff.	0.24		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.00000002	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

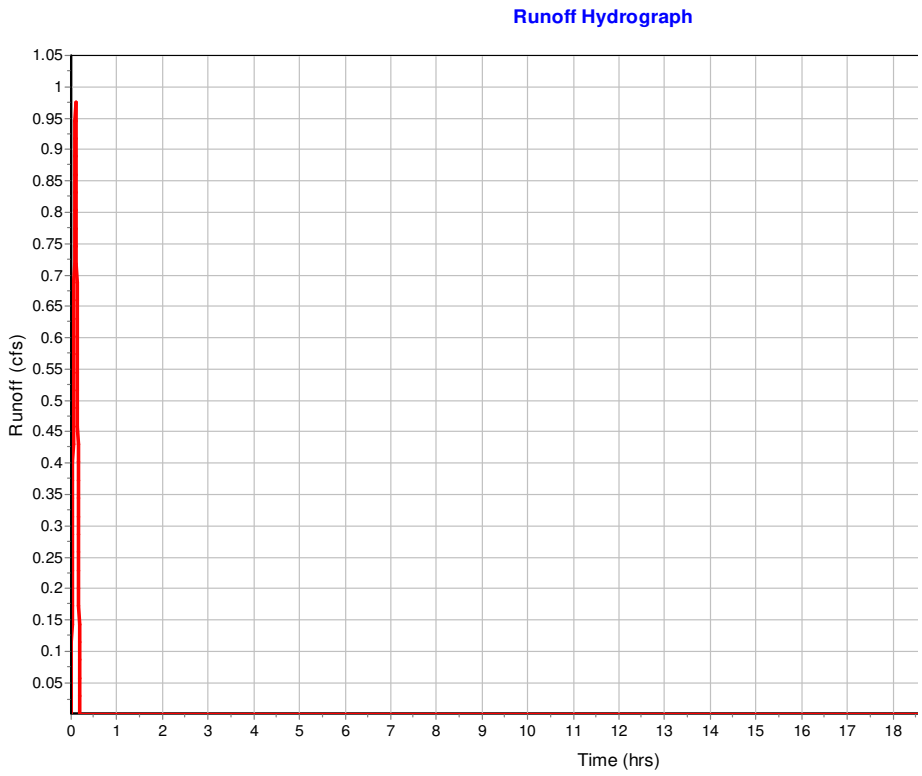
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	214.8866153	184.11	0
Slope (%) :	2.45	0.75	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.18	1.76	0
Computed Flow Time (min) :	1.13	1.74	0

Total TOC (min) 5.73

Subbasin Runoff Results

Total Rainfall (in)	0.55
Total Runoff (in)	0.38
Peak Runoff (cfs)	0.98
Rainfall Intensity	5.775
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:05:44

Subbasin : Sub-CB-38



Subbasin : Sub-CB-39

Input Data

Area (ac)	1.39
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.39	-	0.7
Composite Area & Weighted Runoff Coeff.	1.39		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	99.98923348	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	16.41	0	0

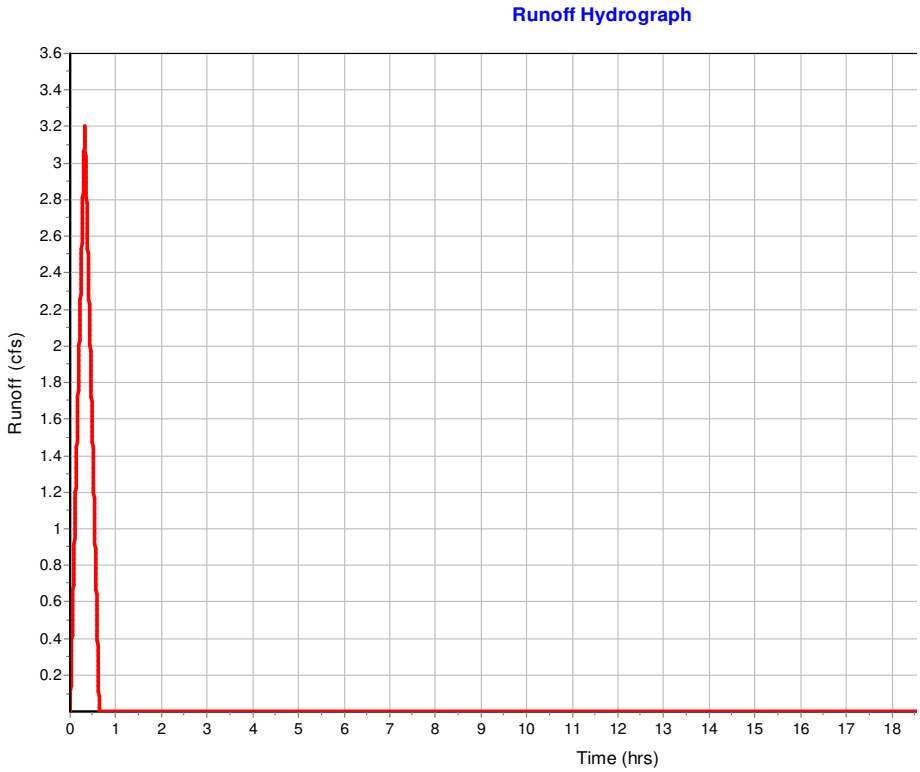
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	34.45719772	233.52	132.7
Slope (%) :	1.5	2.45	0.75
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	1.98	3.18	1.76
Computed Flow Time (min) :	0.29	1.22	1.26

Total TOC (min) 19.18

Subbasin Runoff Results

Total Rainfall (in)	1.05
Total Runoff (in)	0.74
Peak Runoff (cfs)	3.2
Rainfall Intensity	3.299
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:19:11

Subbasin : Sub-CB-39



Subbasin : Sub-CB-43

Input Data

Area (ac)	0.71
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.71	-	0.7
Composite Area & Weighted Runoff Coeff.	0.71		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	12	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.15	0	0

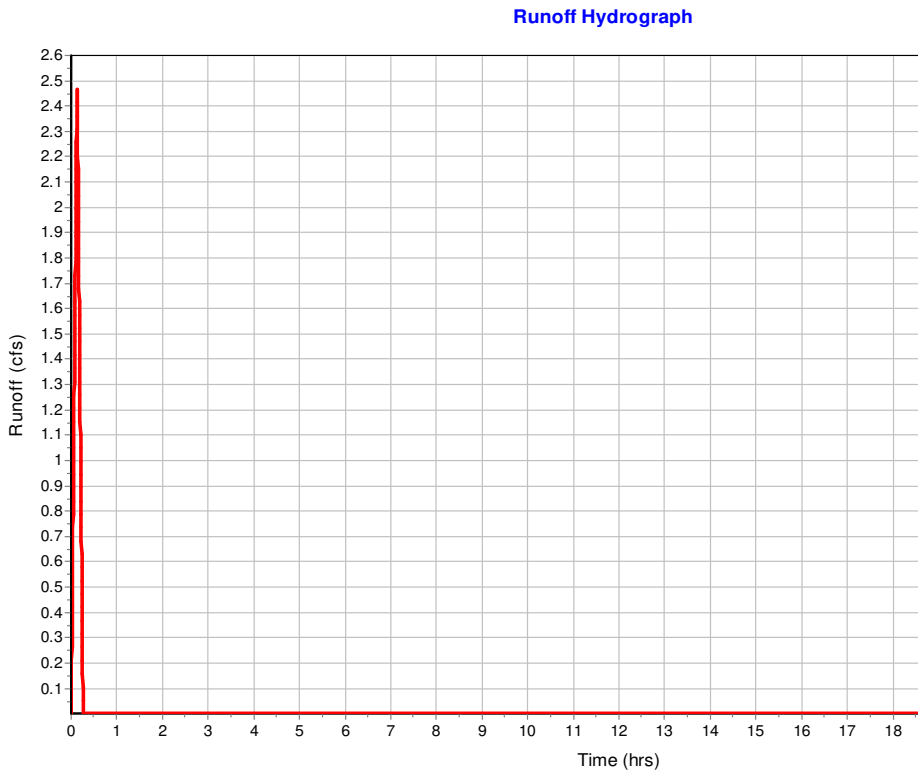
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	93	77.84	0
Slope (%) :	10.75	1.99	0
Surface Type :	Unpaved	Paved	Unpaved
Velocity (ft/sec) :	5.29	2.87	0
Computed Flow Time (min) :	0.29	0.45	0

Total TOC (min) 7.89

Subbasin Runoff Results

Total Rainfall (in)	0.65
Total Runoff (in)	0.45
Peak Runoff (cfs)	2.47
Rainfall Intensity	4.963
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:07:53

Subbasin : Sub-CB-43



Subbasin : Sub-CB-44

Input Data

Area (ac)	0.72
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.72	-	0.7
Composite Area & Weighted Runoff Coeff.	0.72		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	9	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.21	0	0
Computed Flow Time (min) :	8.02	0	0

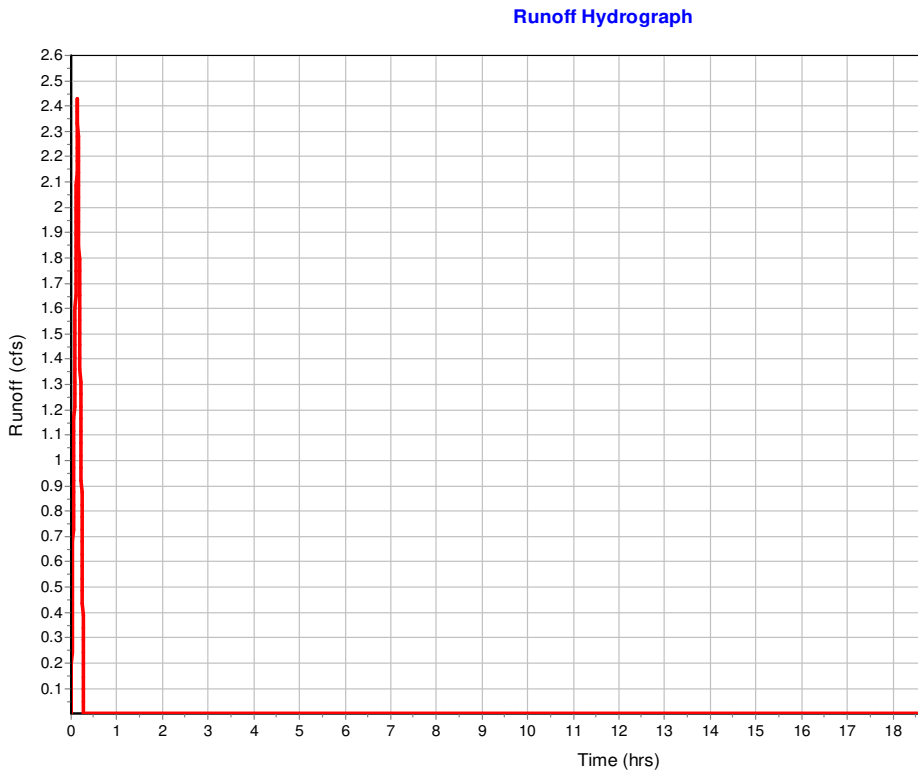
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	78.42	77.02	0
Slope (%) :	16.7	11.38	0
Surface Type :	Unpaved	Paved	Unpaved
Velocity (ft/sec) :	6.59	6.86	0
Computed Flow Time (min) :	0.2	0.19	0

Total TOC (min) 8.40

Subbasin Runoff Results

Total Rainfall (in)	0.67
Total Runoff (in)	0.47
Peak Runoff (cfs)	2.43
Rainfall Intensity	4.817
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:08:24

Subbasin : Sub-CB-44



Subbasin : Sub-CB-6

Input Data

Area (ac)	0.16
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.7
Composite Area & Weighted Runoff Coeff.	0.16		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

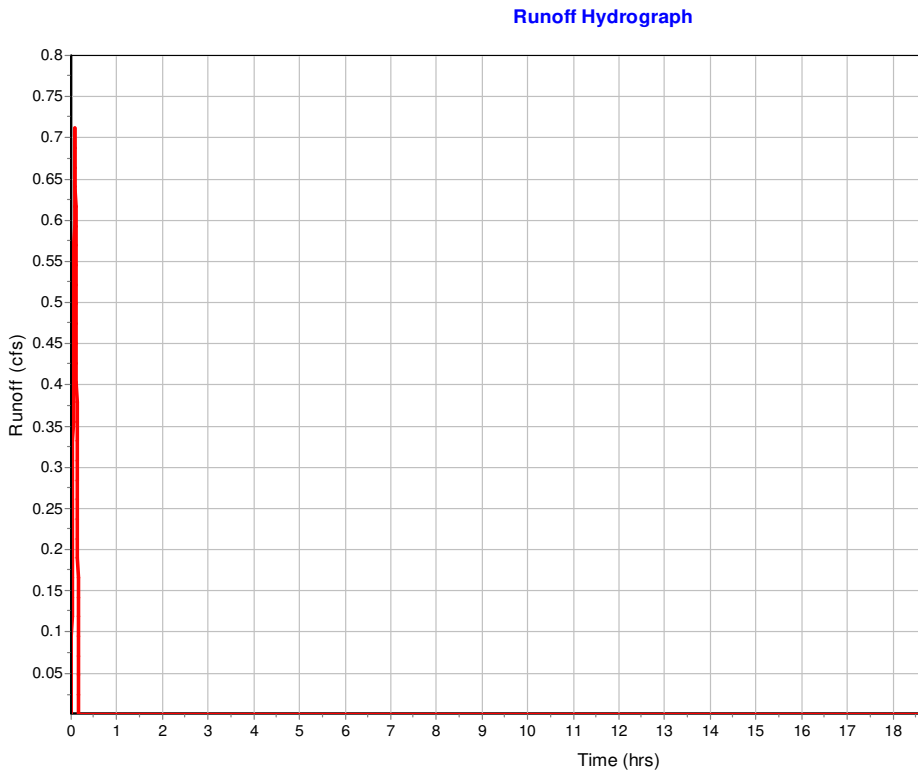
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	207.9606416	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.62	0	0

Total TOC (min) 3.48

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.71
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:29

Subbasin : Sub-CB-6



Subbasin : Sub-CB-7

Input Data

Area (ac)	0.04
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.04	-	0.7
Composite Area & Weighted Runoff Coeff.	0.04		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99999999	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

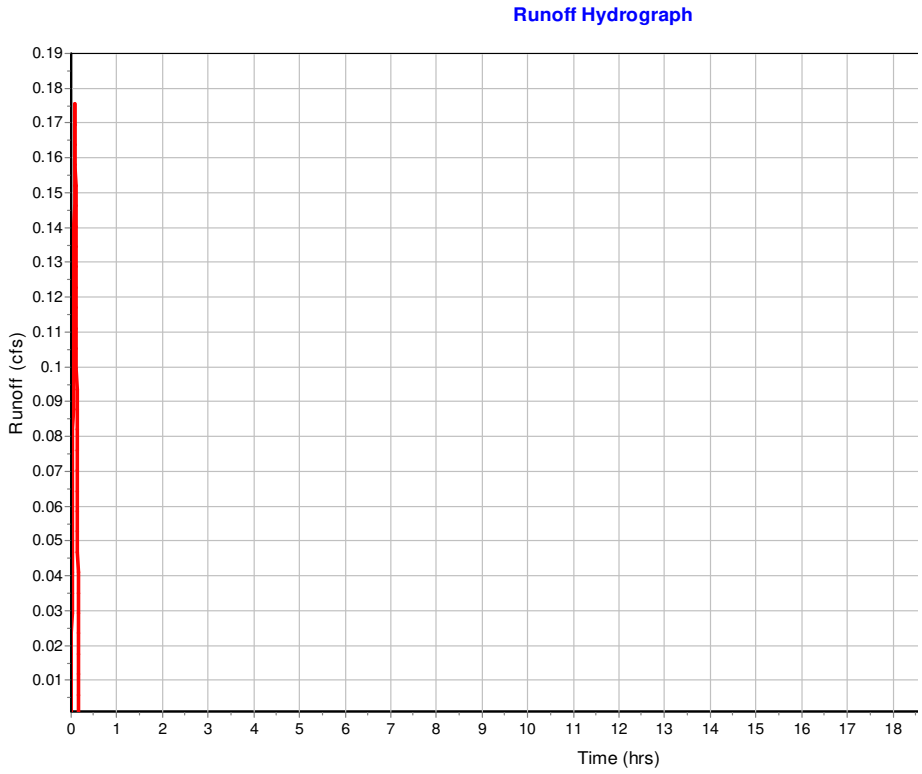
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	68.39700153	0	0
Slope (%) :	0.85	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.87	0	0
Computed Flow Time (min) :	0.61	0	0

Total TOC (min) 3.47

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.18
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:28

Subbasin : Sub-CB-7



Subbasin : Sub-CB-9

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.7
Composite Area & Weighted Runoff Coeff.	0.12		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99999519	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

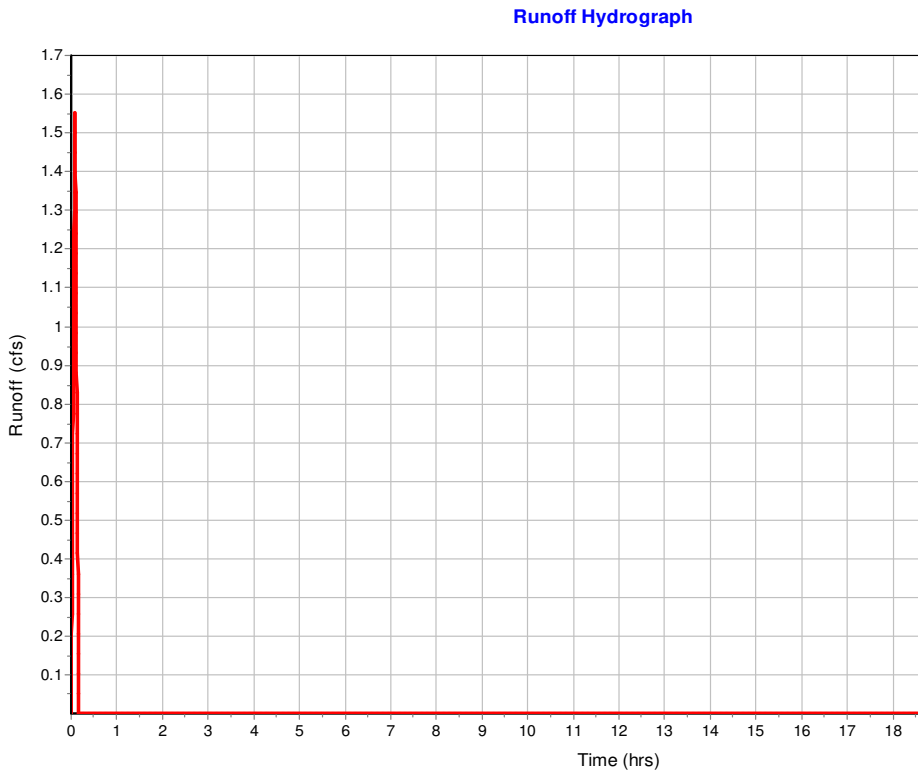
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	199.7947467	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.6	0	0

Total TOC (min) 3.46

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.55
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:28

Subbasin : Sub-CB-9



Subbasin : Sub-FES-2

Input Data

Area (ac)	1.58
Weighted Runoff Coefficient	0.56

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.58	-	0.56
Composite Area & Weighted Runoff Coeff.	1.58		0.56

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	12	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.15	0	0

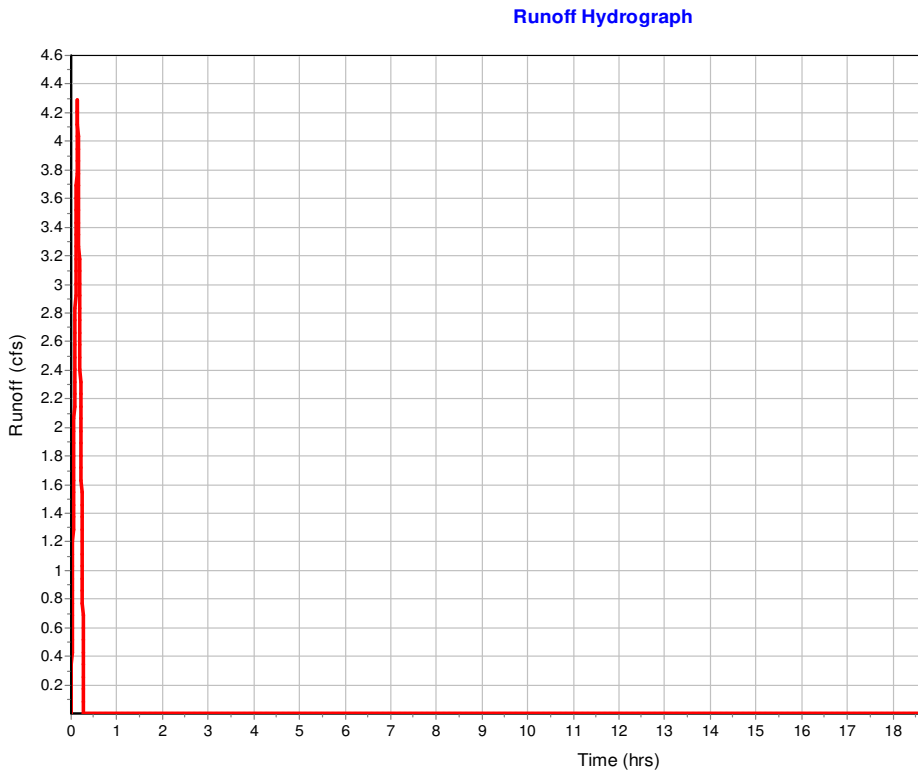
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	363.3701089	0	0
Slope (%) :	10	0	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	5.1	0	0
Computed Flow Time (min) :	1.19	0	0

Total TOC (min) 8.33

Subbasin Runoff Results

Total Rainfall (in)	0.67
Total Runoff (in)	0.38
Peak Runoff (cfs)	4.29
Rainfall Intensity	4.837
Weighted Runoff Coefficient	0.56
Time of Concentration (days hh:mm:ss)	0 00:08:20

Subbasin : Sub-FES-2



Subbasin : SUB-PIPE-35

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.72

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.36	-	0.72
Composite Area & Weighted Runoff Coeff.	0.36		0.72

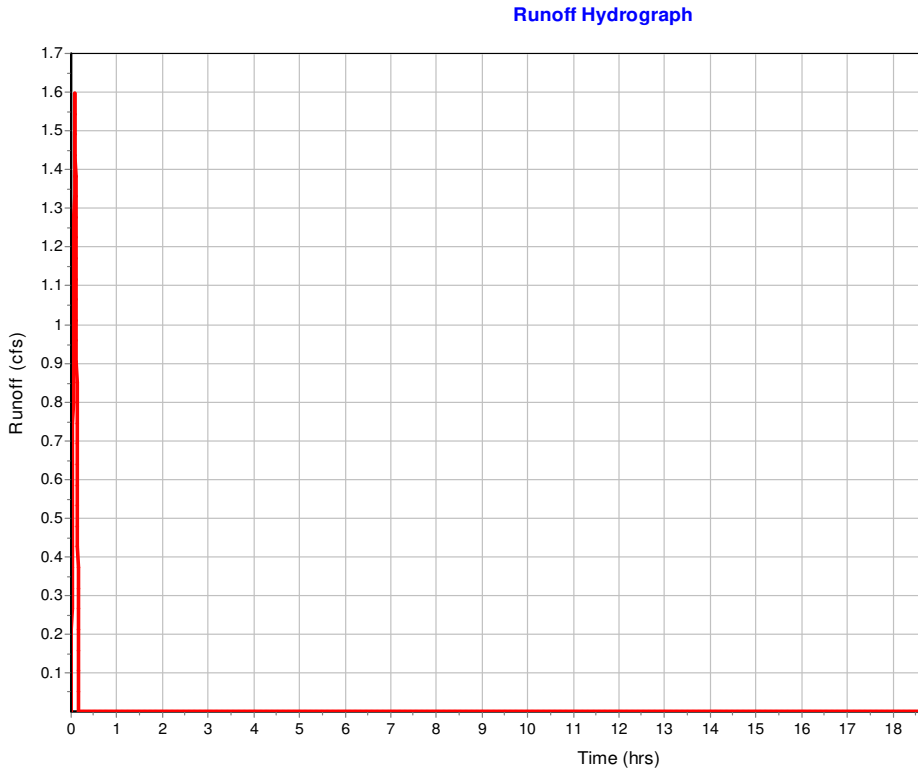
Time of Concentration

User-Defined TOC override (minutes): 2.36

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.37
Peak Runoff (cfs)	1.6
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.72
Time of Concentration (days hh:mm:ss)	0 00:02:22

Subbasin : SUB-PIPE-35



Subbasin : SUB-PIPE-36

Input Data

Area (ac)	1.26
Weighted Runoff Coefficient	0.72

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.26	-	0.72
Composite Area & Weighted Runoff Coeff.	1.26		0.72

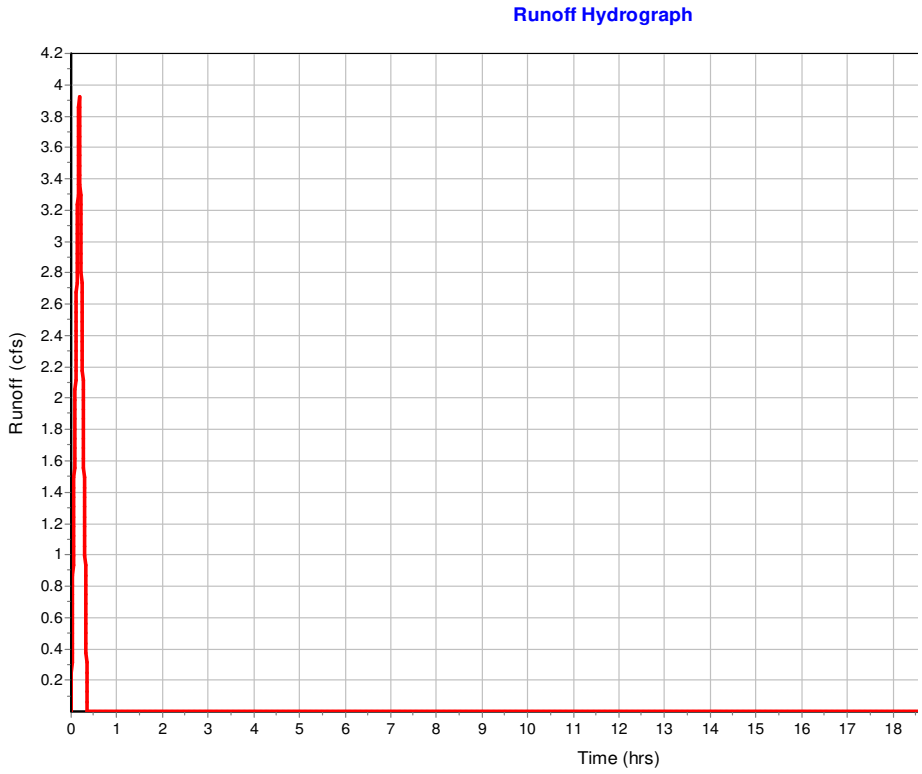
Time of Concentration

User-Defined TOC override (minutes): 10.56

Subbasin Runoff Results

Total Rainfall (in)	0.76
Total Runoff (in)	0.55
Peak Runoff (cfs)	3.92
Rainfall Intensity	4.322
Weighted Runoff Coefficient	0.72
Time of Concentration (days hh:mm:ss)	0 00:10:34

Subbasin : SUB-PIPE-36



Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	FES-2	466.60	469.78	3.18	466.60	0.00	469.78	0.00	0.00	2.15
2	IN-PIPE-35	462.75	464.00	1.25	462.75	0.00	464.00	0.00	0.00	0.00
3	IN-PIPE36	441.30	442.80	1.50	441.30	0.00	442.80	0.00	0.00	0.00
4	JB-14	529.50	534.76	5.26	529.50	0.00	535.50	0.74	0.00	45.12
5	JB-23	515.30	519.44	4.14	515.30	0.00	519.20	-0.24	10.00	31.68

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	T Fl Occu (days h
1	FES-2	19.47	19.47	468.35	1.75	0.00	1.43	468.04	1.44	0 00:00	0
2	IN-PIPE-35	1.59	1.59	463.18	0.43	0.00	1.07	462.75	0.00	0 00:05	0
3	IN-PIPE36	3.92	3.92	442.17	0.87	0.00	0.71	441.39	0.09	0 00:10	0
4	JB-14	5.29	0.00	529.93	0.43	0.00	4.83	529.51	0.01	0 00:12	0
5	JB-23	2.03	0.00	515.56	0.26	0.00	3.88	515.30	0.00	0 00:05	0

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	E
1	L-SDPIPE-1	73.15	476.67	10.73	475.09	7.62	1.58	2.1600	User-Defined	0.330	14.000	0.0150	
2	L-SDPIPE-13	403.61	521.86	4.36	510.72	5.72	11.14	2.7600	User-Defined	0.330	14.000	0.0150	
3	L-SDPIPE-14	373.89	522.45	4.46	515.37	5.03	7.08	1.8900	User-Defined	0.330	14.000	0.0150	
4	L-SDPIPE-15	83.27	471.49	3.38	464.82	0.00	6.67	8.0100	User-Defined	0.330	14.000	0.0150	
5	L-SDPIPE-16	206.62	505.01	3.91	489.62	6.43	15.39	7.4500	User-Defined	0.330	14.000	0.0150	
6	L-SDPIPE-18	170.54	523.17	5.39	517.57	3.45	5.60	3.2800	User-Defined	0.330	14.000	0.0150	
7	L-SDPIPE-19	227.29	522.18	4.31	505.01	3.58	17.17	7.5500	User-Defined	0.330	14.000	0.0150	
8	L-SDPIPE-2	62.02	476.28	9.98	475.09	7.29	1.19	1.9200	User-Defined	0.330	14.000	0.0150	
9	L-SDPIPE-20	233.87	505.01	3.58	487.59	3.97	17.42	7.4500	User-Defined	0.330	14.000	0.0150	
10	L-SDPIPE-21	241.61	543.67	5.17	534.06	3.86	9.61	3.9800	User-Defined	0.330	14.000	0.0150	
11	L-SDPIPE-23	316.61	547.43	4.84	534.06	3.53	13.37	4.2200	User-Defined	0.500	26.000	0.0150	
12	L-SDPIPE-25	202.83	549.70	3.70	532.10	0.00	17.60	8.6800	User-Defined	0.500	26.000	0.0150	
13	L-SDPIPE-27	245.69	494.00	6.50	476.28	9.98	17.72	7.2100	User-Defined	0.330	14.000	0.0150	
14	L-SDPIPE-28	228.18	493.47	5.63	476.67	10.73	16.80	7.3600	User-Defined	0.330	14.000	0.0150	
15	L-SDPIPE-29	172.07	510.72	5.72	494.00	6.50	16.72	9.7200	User-Defined	0.330	14.000	0.0150	
16	L-SDPIPE-32	98.13	549.76	5.26	540.30	0.00	9.46	9.6400	User-Defined	0.500	26.000	0.0150	
17	L-SDPIPE-33	78.91	518.02	3.90	517.01	4.43	1.01	1.2800	User-Defined	0.330	14.000	0.0320	
18	L-SDPIPE-34	149.42	521.36	5.08	517.01	4.43	4.35	2.9100	User-Defined	0.330	14.000	0.0320	
19	L-SDPIPE-4	129.78	475.09	7.62	464.82	0.00	10.27	7.9100	User-Defined	0.330	14.000	0.0320	
20	L-SDPIPE-6	214.12	489.62	6.43	475.09	7.29	14.53	6.7900	User-Defined	0.330	14.000	0.0150	
21	L-SDPIPE-7	216.57	487.59	3.97	471.49	3.38	16.10	7.4300	User-Defined	0.330	14.000	0.0150	

Channel Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Fr Nu
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	L-SDPIPE-1	0.00	0 00:00	3.72	0.00	0.00		0.00	0.00	0.00	
2	L-SDPIPE-13	0.00	0 00:00	4.20	0.00	0.00		0.02	0.06	0.00	
3	L-SDPIPE-14	0.46	0 00:13	3.48	0.13	0.37	16.84	0.24	0.73	0.00	
4	L-SDPIPE-15	0.18	0 00:17	7.16	0.02	1.66	0.84	0.08	0.24	0.00	
5	L-SDPIPE-16	0.00	0 00:06	6.90	0.00	0.00		0.04	0.12	0.00	
6	L-SDPIPE-18	0.11	0 00:05	4.64	0.02	6.32	0.45	0.07	0.21	0.00	
7	L-SDPIPE-19	0.34	0 00:08	6.95	0.05	2.95	1.28	0.07	0.22	0.00	
8	L-SDPIPE-2	0.00	0 00:00	3.50	0.00	0.00		0.10	0.29	0.00	
9	L-SDPIPE-20	0.09	0 00:16	6.90	0.01	0.82	4.75	0.07	0.21	0.00	
10	L-SDPIPE-21	0.00	0 00:00	5.04	0.00	0.00		0.17	0.50	0.00	
11	L-SDPIPE-23	0.00	0 00:06	19.36	0.00	0.00		0.15	0.30	0.00	
12	L-SDPIPE-25	0.00	0 00:05	27.75	0.00	0.00		0.01	0.02	0.00	
13	L-SDPIPE-27	0.00	0 00:00	6.79	0.00	0.00		0.00	0.00	0.00	
14	L-SDPIPE-28	0.24	0 00:14	6.86	0.03	2.98	1.28	0.06	0.18	0.00	
15	L-SDPIPE-29	0.02	0 00:07	7.88	0.00	1.75	1.64	0.02	0.06	0.00	
16	L-SDPIPE-32	0.03	0 00:05	28.64	0.00	2.05	0.80	0.02	0.05	0.00	
17	L-SDPIPE-33	0.00	0 00:00	2.86	0.00	0.00		0.17	0.50	0.00	
18	L-SDPIPE-34	0.22	0 00:08	4.31	0.05	0.22	11.32	0.22	0.66	0.00	
19	L-SDPIPE-4	0.00	0 00:00	7.11	0.00	0.00		0.00	0.00	0.00	
20	L-SDPIPE-6	0.18	0 00:05	6.59	0.03	0.54	6.61	0.13	0.39	0.00	
21	L-SDPIPE-7	0.16	0 00:16	6.90	0.02	1.23	2.93	0.08	0.23	0.00	

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness
1	SDPIPE-1	35.55	465.94	0.00	463.00	0.00	2.94	8.2700	CIRCULAR	36.000	36.000	0.0120
2	SDPIPE-10	256.10	529.50	0.00	512.58	0.00	16.92	6.6100	CIRCULAR	18.000	18.000	0.0120
3	SDPIPE-11	67.57	530.20	0.00	529.50	0.00	0.70	1.0400	CIRCULAR	18.000	18.000	0.0120
4	SDPIPE-12	33.01	530.53	0.00	530.20	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0130
5	SDPIPE-13	130.50	517.50	0.00	505.00	0.00	12.50	9.5800	CIRCULAR	18.000	18.000	0.0120
6	SDPIPE-14	39.55	517.99	0.00	517.50	0.00	0.49	1.2500	CIRCULAR	18.000	18.000	0.0130
7	SDPIPE-15	64.04	468.11	0.00	467.47	0.00	0.64	1.0000	CIRCULAR	18.000	18.000	0.0130
8	SDPIPE-16	23.51	501.10	0.00	499.00	0.00	2.10	8.9300	CIRCULAR	18.000	18.000	0.0120
9	SDPIPE-17	194.21	515.30	0.00	501.00	-0.10	14.30	7.3600	CIRCULAR	18.000	18.000	0.0120
10	SDPIPE-18	49.41	517.78	0.00	515.30	0.00	2.48	5.0200	CIRCULAR	18.000	18.000	0.0130
11	SDPIPE-19	51.31	517.87	0.00	515.30	0.00	2.57	5.0100	CIRCULAR	18.000	18.000	0.0130
12	SDPIPE-2	35.82	466.30	0.00	465.94	0.00	0.36	1.0000	CIRCULAR	36.000	36.000	0.0130
13	SDPIPE-20	33.00	501.43	0.00	501.10	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0120
14	SDPIPE-21	239.80	538.50	0.00	530.20	0.00	8.30	3.4600	CIRCULAR	18.000	18.000	0.0120
15	SDPIPE-22	57.68	542.14	0.00	538.50	0.00	3.64	6.3100	CIRCULAR	18.000	18.000	0.0130
16	SDPIPE-23	44.75	542.59	0.00	542.14	0.00	0.45	1.0100	CIRCULAR	18.000	18.000	0.0130
17	SDPIPE-25	74.63	546.00	0.00	544.50	0.00	1.50	2.0100	CIRCULAR	18.000	18.000	0.0130
18	SDPIPE-27	182.53	487.50	0.00	484.31	0.00	3.19	1.7500	CIRCULAR	18.000	18.000	0.0120
19	SDPIPE-28	33.55	487.84	0.00	487.50	0.00	0.34	1.0000	CIRCULAR	18.000	18.000	0.0130
20	SDPIPE-29	167.22	505.00	0.00	487.50	0.00	17.50	10.4700	CIRCULAR	18.000	18.000	0.0120
21	SDPIPE-3	30.36	466.60	0.00	466.30	0.00	0.30	1.0000	CIRCULAR	36.000	36.000	0.0120
22	SDPIPE-30	66.71	510.34	0.00	505.00	0.00	5.34	8.0000	CIRCULAR	18.000	18.000	0.0130
23	SDPIPE-32	96.89	544.50	0.00	538.50	0.00	6.00	6.1900	CIRCULAR	18.000	18.000	0.0120
24	SDPIPE-33	77.61	514.12	0.00	512.58	0.00	1.54	1.9800	CIRCULAR	18.000	18.000	0.0150
25	SDPIPE-34	147.34	516.28	0.00	512.58	0.00	3.70	2.5100	CIRCULAR	18.000	18.000	0.0150
26	SDPIPE-4	71.93	467.47	0.00	466.75	0.81	0.72	1.0000	CIRCULAR	18.000	18.000	0.0120
27	SDPIPE-5	33.00	467.80	0.00	467.47	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0130
28	SDPIPE-6	67.57	483.19	0.00	482.52	0.00	0.67	1.0000	CIRCULAR	18.000	18.000	0.0120
29	SDPIPE-7	42.68	483.62	0.00	483.19	0.00	0.43	1.0000	CIRCULAR	18.000	18.000	0.0130
30	SDPIPE-8	130.97	512.25	0.00	492.00	0.00	20.25	15.4600	CIRCULAR	24.000	24.000	0.0120
31	SDPIPE-9	33.02	512.58	0.00	512.25	0.00	0.33	1.0000	CIRCULAR	24.000	24.000	0.0130
32	SPIPE-35	30.19	462.75	0.00	462.25	0.00	0.50	1.6600	CIRCULAR	18.000	18.000	0.0150
33	SPIPE-36	31.09	441.38	0.08	441.00	0.00	0.38	1.2200	CIRCULAR	18.000	18.000	0.0150

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Fro Num
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	SDPIPE-1	21.43	0 00:08	207.79	0.10	13.86	0.04	0.81	0.27	0.00	
2	SDPIPE-10	5.28	0 00:12	29.25	0.18	5.99	0.71	0.87	0.58	0.00	
3	SDPIPE-11	5.29	0 00:12	11.59	0.46	7.08	0.16	0.66	0.44	0.00	
4	SDPIPE-12	0.69	0 00:07	10.49	0.07	1.74	0.32	0.72	0.48	0.00	
5	SDPIPE-13	2.27	0 00:13	35.22	0.06	10.80	0.20	0.26	0.18	0.00	
6	SDPIPE-14	2.28	0 00:13	11.74	0.19	5.82	0.11	0.41	0.27	0.00	
7	SDPIPE-15	1.45	0 00:17	10.50	0.14	3.74	0.29	0.41	0.27	0.00	
8	SDPIPE-16	3.05	0 00:06	34.01	0.09	9.81	0.04	0.35	0.23	0.00	
9	SDPIPE-17	2.02	0 00:05	30.77	0.07	7.19	0.45	0.33	0.22	0.00	
10	SDPIPE-18	1.05	0 00:05	23.53	0.04	5.70	0.14	0.24	0.16	0.00	
11	SDPIPE-19	1.38	0 00:08	23.51	0.06	6.89	0.12	0.26	0.17	0.00	
12	SDPIPE-2	19.64	0 00:08	66.70	0.29	6.64	0.09	1.31	0.44	0.00	
13	SDPIPE-20	1.13	0 00:16	11.38	0.10	4.39	0.13	0.37	0.25	0.00	
14	SDPIPE-21	1.69	0 00:15	21.17	0.08	3.65	1.09	0.57	0.38	0.00	
15	SDPIPE-22	1.70	0 00:15	26.39	0.06	7.46	0.13	0.28	0.19	0.00	
16	SDPIPE-23	0.62	0 00:05	10.53	0.06	3.27	0.23	0.25	0.16	0.00	
17	SDPIPE-25	0.55	0 00:05	14.89	0.04	3.57	0.35	0.21	0.14	0.00	
18	SDPIPE-27	4.00	0 00:20	15.03	0.27	6.84	0.44	0.55	0.37	0.00	
19	SDPIPE-28	1.27	0 00:14	10.50	0.12	3.12	0.18	0.46	0.31	0.00	
20	SDPIPE-29	3.08	0 00:20	36.81	0.08	7.34	0.38	0.43	0.29	0.00	
21	SDPIPE-3	20.72	0 00:00	71.83	0.29	7.93	0.06	1.60	0.53	0.00	
22	SDPIPE-30	3.08	0 00:20	29.71	0.10	10.67	0.10	0.33	0.22	0.00	
23	SDPIPE-32	1.24	0 00:05	28.32	0.04	7.77	0.21	0.22	0.15	0.00	
24	SDPIPE-33	2.46	0 00:08	12.82	0.19	3.46	0.37	0.87	0.58	0.00	
25	SDPIPE-34	2.16	0 00:08	14.43	0.15	3.23	0.76	0.85	0.57	0.00	
26	SDPIPE-4	1.45	0 00:17	11.38	0.13	4.10	0.29	0.38	0.25	0.00	
27	SDPIPE-5	0.46	0 00:07	10.50	0.04	1.98	0.28	0.28	0.19	0.00	
28	SDPIPE-6	1.79	0 00:05	11.37	0.16	4.31	0.26	0.43	0.29	0.00	
29	SDPIPE-7	1.37	0 00:16	10.50	0.13	3.58	0.20	0.40	0.27	0.00	
30	SDPIPE-8	11.68	0 00:09	96.37	0.12	19.32	0.11	0.49	0.25	0.00	
31	SDPIPE-9	11.53	0 00:09	22.62	0.51	8.12	0.07	0.93	0.46	0.00	
32	SPIPE-35	1.59	0 00:05	11.72	0.14	4.18	0.12	0.40	0.27	0.00	
33	SPIPE-36	3.91	0 00:10	10.06	0.39	4.67	0.11	0.72	0.48	0.00	

Inlet Input

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Ini Wa De
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.62	487.59	3.97	483.62	0
2	CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.25	517.01	4.76	512.25	0
3	CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.58	517.01	4.43	512.58	0
4	CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.20	534.06	3.86	530.20	0
5	CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.53	534.06	3.53	530.53	0
6	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.50	521.86	4.36	517.50	0
7	CB-19	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.99	522.45	4.46	517.99	0
8	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	465.94	476.67	10.73	465.94	0
9	CB-20	FHWA HEC-22 GENERIC	N/A	On Grade	1	468.11	471.49	3.38	468.11	0
10	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.10	505.01	3.91	501.10	0
11	CB-24	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.78	523.31	5.53	517.77	-0
12	CB-25	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.87	522.17	4.30	515.81	-2
13	CB-26	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.43	505.01	3.58	501.43	0
14	CB-27	FHWA HEC-22 GENERIC	N/A	On Grade	1	538.50	543.67	5.17	538.50	0
15	CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	542.14	545.67	3.53	542.20	0
16	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	542.59	547.43	4.84	542.65	0
17	CB-3	FHWA HEC-22 GENERIC	N/A	On Grade	1	466.30	476.28	9.98	466.30	0
18	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	4.87	544.50	0
19	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.70	3.70	546.00	0
20	CB-35	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.50	494.00	6.50	487.50	0
21	CB-36	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.84	493.47	5.63	487.84	0
22	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	505.00	510.72	5.72	505.00	0
23	CB-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	510.34	515.37	5.03	510.34	0
24	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.12	518.02	3.90	514.12	0
25	CB-6	FHWA HEC-22 GENERIC	N/A	On Sag	1	467.80	475.09	7.29	467.80	0
26	CB-7	FHWA HEC-22 GENERIC	N/A	On Grade	1	467.47	475.09	7.62	467.47	0
27	CB-9	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.19	489.62	6.43	483.19	0
28	Inlet-CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	516.28	521.36	5.08	516.28	0

Roadway & Gutter Input

SN	Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1	CB-10	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
2	CB-12	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
3	CB-13	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
4	CB-15	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
5	CB-16	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
6	CB-18	0.0245	0.0258	0.0150	0.0200	1.00	0.1312	8.50
7	CB-19	0.0245	0.0258	0.0150	0.0200	1.00	0.1312	8.50
8	CB-2	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
9	CB-20	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
10	CB-22	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
11	CB-24	0.1033	0.0258	0.0150	0.0200	1.00	0.1312	8.50
12	CB-25	0.1041	0.0258	0.0150	0.0200	1.00	0.1312	8.50
13	CB-26	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
14	CB-27	0.0574	0.0258	0.0150	0.0200	1.00	0.1312	8.50
15	CB-28	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
16	CB-29	0.0574	0.0258	0.0150	0.0200	1.00	0.1312	8.50
17	CB-3	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
18	CB-31	0.0721	0.0200	0.0150	0.0200	1.50	0.1312	8.50
19	CB-32	0.0809	0.0258	0.0150	0.0200	1.00	0.1312	8.50
20	CB-35	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
21	CB-36	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
22	CB-38	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
23	CB-39	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
24	CB-43	0.0199	0.0258	0.0150	0.0200	1.00	0.1312	8.50
25	CB-6	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
26	CB-7	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
27	CB-9	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
28	Inlet-CB-44	0.1138	0.0258	0.0150	0.0200	1.00	0.1312	8.50

Inlet Results

SN	Element ID	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Max Depth Occurrence (days hh:mm)	F \
1	CB-10	1.54	1.45	1.34	0.19	87.40	4.89	487.71	0.12	0 00:16	
2	CB-12	1.36	1.36	N/A	N/A	N/A	4.37	517.29	0.28	0 00:09	
3	CB-13	3.72	3.56	N/A	N/A	N/A	8.53	517.40	0.39	0 00:09	
4	CB-15	3.63	3.63	N/A	N/A	N/A	8.38	534.44	0.38	0 00:12	
5	CB-16	1.79	1.79	N/A	N/A	N/A	5.24	534.36	0.30	0 00:12	
6	CB-18	0.53	0.53	0.53	0.00	100.00	4.05	521.96	0.10	0 00:13	
7	CB-19	2.74	2.74	2.28	0.46	83.25	7.45	522.64	0.19	0 00:13	
8	CB-2	1.20	0.97	1.20	0.00	100.00	6.67	476.84	0.17	0 00:08	
9	CB-20	1.63	1.50	1.40	0.23	85.80	4.99	471.61	0.12	0 00:17	
10	CB-22	0.60	0.60	0.60	0.00	100.00	3.45	505.09	0.08	0 00:06	
11	CB-24	1.16	1.16	1.06	0.10	91.65	4.15	523.41	0.10	0 00:05	
12	CB-25	1.73	1.73	1.39	0.34	80.28	4.80	522.29	0.12	0 00:08	
13	CB-26	1.23	1.23	1.15	0.08	93.36	4.48	505.12	0.11	0 00:16	
14	CB-27	0.38	0.38	0.38	0.00	100.00	3.07	543.74	0.07	0 00:15	
15	CB-28	1.71	1.71	N/A	N/A	N/A	5.07	545.97	0.30	0 00:15	
16	CB-29	0.63	0.63	0.63	0.00	100.00	3.71	547.52	0.09	0 00:05	
17	CB-3	0.60	0.60	0.60	0.00	100.00	5.18	476.41	0.13	0 00:08	
18	CB-31	0.74	0.74	0.74	0.01	99.03	4.36	549.46	0.09	0 00:05	
19	CB-32	0.56	0.56	0.56	0.00	100.00	3.32	549.78	0.08	0 00:05	
20	CB-35	0.43	0.43	0.43	0.00	100.00	2.89	494.07	0.07	0 00:20	
21	CB-36	1.51	1.51	1.27	0.24	84.23	4.56	493.58	0.11	0 00:14	
22	CB-38	0.97	0.97	0.93	0.04	95.57	3.88	510.81	0.09	0 00:20	
23	CB-39	3.23	3.20	N/A	N/A	N/A	7.77	515.74	0.37	0 00:20	
24	CB-43	2.46	2.46	2.46	0.00	100.00	7.44	518.21	0.19	0 00:08	
25	CB-6	0.87	0.71	N/A	N/A	N/A	3.25	475.34	0.25	0 00:07	
26	CB-7	0.18	0.18	0.18	0.00	100.00	3.27	475.17	0.08	0 00:17	
27	CB-9	1.55	1.55	1.35	0.20	87.17	4.91	489.74	0.12	0 00:05	
28	Inlet-CB-44	2.43	2.43	2.18	0.24	89.92	5.34	521.49	0.13	0 00:08	

50 Year Design Storm

Project Description

File Name	Hilltop Drainage Analysis 4-8-26.SPF

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins	31
Nodes	46
Junctions	5
Outfalls	13
Flow Diversions	0
Inlets	28
Storage Nodes	0
Links	54
Channels	21
Pipes	33
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period	50 year(s)

Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-CB-10	0.58	0.7000	0.94	0.66	0.38	1.45	0 00:15:54
2	Sub-CB-12	0.32	0.7000	0.51	0.36	0.11	1.37	0 00:05:00
3	Sub-CB-13	1.03	0.7000	0.66	0.46	0.47	3.56	0 00:07:58
4	Sub-CB-15	1.21	0.7000	0.77	0.54	0.65	3.63	0 00:10:46
5	Sub-CB-16	0.42	0.7000	0.51	0.36	0.15	1.80	0 00:05:00
6	Sub-CB-18	0.12	0.7000	0.51	0.36	0.04	0.53	0 00:05:00
7	Sub-CB-19	1.00	0.7000	0.85	0.60	0.59	2.74	0 00:12:57
8	Sub-CB-2	0.38	0.7000	0.92	0.64	0.24	0.97	0 00:14:59
9	Sub-CB-20	0.62	0.7000	0.98	0.69	0.42	1.50	0 00:17:03
10	Sub-CB-22	0.14	0.7000	0.51	0.36	0.05	0.60	0 00:05:00
11	Sub-CB-24	0.27	0.7000	0.51	0.36	0.10	1.16	0 00:05:01
12	Sub-CB-25	0.51	0.7000	0.67	0.47	0.24	1.73	0 00:08:15
13	Sub-CB-26	0.49	0.7000	0.94	0.66	0.32	1.23	0 00:15:52
14	Sub-CB-27	0.10	0.7000	0.58	0.40	0.04	0.38	0 00:06:07
15	Sub-CB-28	0.67	0.7000	0.91	0.64	0.43	1.71	0 00:15:04
16	Sub-CB-29	0.15	0.7000	0.51	0.36	0.05	0.63	0 00:05:00
17	Sub-CB-3	0.14	0.7000	0.51	0.36	0.05	0.61	0 00:05:00
18	Sub-CB-31	0.17	0.7000	0.51	0.36	0.06	0.75	0 00:05:00
19	Sub-CB-32	0.13	0.7000	0.51	0.36	0.05	0.56	0 00:05:00
20	Sub-CB-35	0.10	0.7000	0.51	0.36	0.04	0.43	0 00:05:00
21	Sub-CB-36	0.58	0.7000	0.90	0.63	0.37	1.51	0 00:14:42
22	Sub-CB-38	0.24	0.7000	0.55	0.38	0.09	0.98	0 00:05:43
23	Sub-CB-39	1.39	0.7000	1.05	0.74	1.02	3.20	0 00:19:10
24	Sub-CB-43	0.71	0.7000	0.65	0.45	0.32	2.47	0 00:07:53
25	Sub-CB-44	0.72	0.7000	0.67	0.47	0.34	2.43	0 00:08:24
26	Sub-CB-6	0.16	0.7000	0.51	0.36	0.06	0.71	0 00:05:00
27	Sub-CB-7	0.04	0.7000	0.51	0.36	0.01	0.18	0 00:05:00
28	Sub-CB-9	0.36	0.7000	0.51	0.36	0.13	1.55	0 00:05:00
29	Sub-FES-2	1.58	0.5600	0.67	0.38	0.60	4.29	0 00:08:19
30	SUB-PIPE-35	0.36	0.7200	0.51	0.37	0.13	1.60	0 00:05:00
31	SUB-PIPE-36	1.26	0.7200	0.76	0.55	0.69	3.92	0 00:10:33

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)
1	FES-2	Junction	466.60	469.78	466.60	469.78	0.00	19.47	468.35	0.00	1.43
2	IN-PIPE-35	Junction	462.75	464.00	462.75	464.00	0.00	1.59	463.18	0.00	1.07
3	IN-PIPE36	Junction	441.30	442.80	441.30	442.80	0.00	3.92	442.17	0.00	0.71
4	JB-14	Junction	529.50	534.76	529.50	535.50	0.00	5.29	529.93	0.00	4.83
5	JB-23	Junction	515.30	519.44	515.30	519.20	10.00	2.03	515.56	0.00	3.88
6	OFFSITE-1	Outfall	540.30					0.03	540.33		
7	OFFSITE-2	Outfall	532.10					0.00	532.11		
8	OFFSITE-25	Outfall	464.82					0.00	464.82		
9	OFFSITE-26	Outfall	464.82					0.18	464.90		
10	OU-PIPE-36	Outfall	441.00					3.91	441.65		
11	Out-FES-1	Outfall	463.00					21.43	463.65		
12	Out-FES-11	Outfall	492.00					11.68	492.47		
13	Out-FES-17	Outfall	505.00					2.27	505.26		
14	Out-FES-21	Outfall	499.00					3.05	499.30		
15	Out-FES-3	Outfall	538.50					1.24	538.71		
16	Out-FES-34	Outfall	484.31					4.00	484.84		
17	Out-FES-8	Outfall	482.52					1.79	482.92		
18	OUT-PIPE-35	Outfall	462.25					1.59	462.62		

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak D Total D F
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)	
1	SDPIPE-1	Pipe	CB-2	Out-FES-1	35.55	465.94	463.00	8.2700	36.000	0.0120	21.43	207.79	0.10	13.86	0.81	
2	SDPIPE-10	Pipe	JB-14	CB-13	256.10	529.50	512.58	6.6100	18.000	0.0120	5.28	29.25	0.18	5.99	0.87	
3	SDPIPE-11	Pipe	CB-15	JB-14	67.57	530.20	529.50	1.0400	18.000	0.0120	5.29	11.59	0.46	7.08	0.66	
4	SDPIPE-12	Pipe	CB-16	CB-15	33.01	530.53	530.20	1.0000	18.000	0.0130	0.69	10.49	0.07	1.74	0.72	
5	SDPIPE-13	Pipe	CB-18	Out-FES-17	130.50	517.50	505.00	9.5800	18.000	0.0120	2.27	35.22	0.06	10.80	0.26	
6	SDPIPE-14	Pipe	CB-19	CB-18	39.55	517.99	517.50	1.2500	18.000	0.0130	2.28	11.74	0.19	5.82	0.41	
7	SDPIPE-15	Pipe	CB-20	CB-7	64.04	468.11	467.47	1.0000	18.000	0.0130	1.45	10.50	0.14	3.74	0.41	
8	SDPIPE-16	Pipe	CB-22	Out-FES-21	23.51	501.10	499.00	8.9300	18.000	0.0120	3.05	34.01	0.09	9.81	0.35	
9	SDPIPE-17	Pipe	JB-23	CB-22	194.21	515.30	501.00	7.3600	18.000	0.0120	2.02	30.77	0.07	7.19	0.33	
10	SDPIPE-18	Pipe	CB-24	JB-23	49.41	517.78	515.30	5.0200	18.000	0.0130	1.05	23.53	0.04	5.70	0.24	
11	SDPIPE-19	Pipe	CB-25	JB-23	51.31	517.87	515.30	5.0100	18.000	0.0130	1.38	23.51	0.06	6.89	0.26	
12	SDPIPE-2	Pipe	CB-3	CB-2	35.82	466.30	465.94	1.0000	36.000	0.0130	19.64	66.70	0.29	6.64	1.31	
13	SDPIPE-20	Pipe	CB-26	CB-22	33.00	501.43	501.10	1.0000	18.000	0.0120	1.13	11.38	0.10	4.39	0.37	
14	SDPIPE-21	Pipe	CB-27	CB-15	239.80	538.50	530.20	3.4600	18.000	0.0120	1.69	21.17	0.08	3.65	0.57	
15	SDPIPE-22	Pipe	CB-28	CB-27	57.68	542.14	538.50	6.3100	18.000	0.0130	1.70	26.39	0.06	7.46	0.28	
16	SDPIPE-23	Pipe	CB-29	CB-28	44.75	542.59	542.14	1.0100	18.000	0.0130	0.62	10.53	0.06	3.27	0.25	
17	SDPIPE-25	Pipe	CB-32	CB-31	74.63	546.00	544.50	2.0100	18.000	0.0130	0.55	14.89	0.04	3.57	0.21	
18	SDPIPE-27	Pipe	CB-35	Out-FES-34	182.53	487.50	484.31	1.7500	18.000	0.0120	4.00	15.03	0.27	6.84	0.55	
19	SDPIPE-28	Pipe	CB-36	CB-35	33.55	487.84	487.50	1.0000	18.000	0.0130	1.27	10.50	0.12	3.12	0.46	
20	SDPIPE-29	Pipe	CB-38	CB-35	167.22	505.00	487.50	10.4700	18.000	0.0120	3.08	36.81	0.08	7.34	0.43	
21	SDPIPE-3	Pipe	FES-2	CB-3	30.36	466.60	466.30	1.0000	36.000	0.0120	20.72	71.83	0.29	7.93	1.60	
22	SDPIPE-30	Pipe	CB-39	CB-38	66.71	510.34	505.00	8.0000	18.000	0.0130	3.08	29.71	0.10	10.67	0.33	
23	SDPIPE-32	Pipe	CB-31	Out-FES-3	96.89	544.50	538.50	6.1900	18.000	0.0120	1.24	28.32	0.04	7.77	0.22	
24	SDPIPE-33	Pipe	CB-43	CB-13	77.61	514.12	512.58	1.9800	18.000	0.0150	2.46	12.82	0.19	3.46	0.87	
25	SDPIPE-34	Pipe	Inlet-CB-44	CB-13	147.34	516.28	512.58	2.5100	18.000	0.0150	2.16	14.43	0.15	3.23	0.85	
26	SDPIPE-4	Pipe	CB-7	CB-2	71.93	467.47	466.75	1.0000	18.000	0.0120	1.45	11.38	0.13	4.10	0.38	
27	SDPIPE-5	Pipe	CB-6	CB-7	33.00	467.80	467.47	1.0000	18.000	0.0130	0.46	10.50	0.04	1.98	0.28	
28	SDPIPE-6	Pipe	CB-9	Out-FES-8	67.57	483.19	482.52	1.0000	18.000	0.0120	1.79	11.37	0.16	4.31	0.43	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak D Total D F
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)	
46	L-SDPIPE-27	Channel	CB-35	CB-3	245.69	494.00	476.28	7.2100	3.960	0.0150	0.00	6.79	0.00	0.00	0.00	
47	L-SDPIPE-28	Channel	CB-36	CB-2	228.18	493.47	476.67	7.3600	3.960	0.0150	0.24	6.86	0.03	2.98	0.06	
48	L-SDPIPE-29	Channel	CB-38	CB-35	172.07	510.72	494.00	9.7200	3.960	0.0150	0.02	7.88	0.00	1.75	0.02	
49	L-SDPIPE-32	Channel	CB-31	OFFSITE-1	98.13	549.76	540.30	9.6400	6.000	0.0150	0.03	28.64	0.00	2.05	0.02	
50	L-SDPIPE-33	Channel	CB-43	CB-13	78.91	518.02	517.01	1.2800	3.960	0.0320	0.00	2.86	0.00	0.00	0.17	
51	L-SDPIPE-34	Channel	Inlet-CB-44	CB-13	149.42	521.36	517.01	2.9100	3.960	0.0320	0.22	4.31	0.05	0.22	0.22	
52	L-SDPIPE-4	Channel	CB-7	OFFSITE-25	129.78	475.09	464.82	7.9100	3.960	0.0320	0.00	7.11	0.00	0.00	0.00	
53	L-SDPIPE-6	Channel	CB-9	CB-6	214.12	489.62	475.09	6.7900	3.960	0.0150	0.18	6.59	0.03	0.54	0.13	
54	L-SDPIPE-7	Channel	CB-10	CB-20	216.57	487.59	471.49	7.4300	3.960	0.0150	0.16	6.90	0.02	1.23	0.08	

Inlet Summary

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft²)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max C Sp during
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.62	487.59	483.62	N/A	1.54	1.34	0.19	87.40	8.50	
2	CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.25	517.01	512.25	10.00	1.36	N/A	N/A	N/A	8.50	
3	CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.58	517.01	512.58	10.00	3.72	N/A	N/A	N/A	8.50	
4	CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.20	534.06	530.20	10.00	3.63	N/A	N/A	N/A	8.50	
5	CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.53	534.06	530.53	10.00	1.79	N/A	N/A	N/A	8.50	
6	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.50	521.86	517.50	N/A	0.53	0.53	0.00	100.00	8.50	
7	CB-19	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.99	522.45	517.99	N/A	2.74	2.28	0.46	83.25	8.50	
8	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	465.94	476.67	465.94	N/A	1.20	1.20	0.00	100.00	8.50	
9	CB-20	FHWA HEC-22 GENERIC	N/A	On Grade	1	468.11	471.49	468.11	N/A	1.63	1.40	0.23	85.80	8.50	
10	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.10	505.01	501.10	N/A	0.60	0.60	0.00	100.00	8.50	
11	CB-24	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.78	523.31	517.77	N/A	1.16	1.06	0.10	91.65	8.50	
12	CB-25	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.87	522.17	515.81	N/A	1.73	1.39	0.34	80.28	8.50	
13	CB-26	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.43	505.01	501.43	N/A	1.23	1.15	0.08	93.36	8.50	
14	CB-27	FHWA HEC-22 GENERIC	N/A	On Grade	1	538.50	543.67	538.50	N/A	0.38	0.38	0.00	100.00	8.50	
15	CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	542.14	545.67	542.20	10.00	1.71	N/A	N/A	N/A	8.50	
16	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	542.59	547.43	542.65	N/A	0.63	0.63	0.00	100.00	8.50	
17	CB-3	FHWA HEC-22 GENERIC	N/A	On Grade	1	466.30	476.28	466.30	N/A	0.60	0.60	0.00	100.00	8.50	
18	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	544.50	N/A	0.74	0.74	0.01	99.03	8.50	
19	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.70	546.00	N/A	0.56	0.56	0.00	100.00	8.50	
20	CB-35	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.50	494.00	487.50	N/A	0.43	0.43	0.00	100.00	8.50	
21	CB-36	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.84	493.47	487.84	N/A	1.51	1.27	0.24	84.23	8.50	
22	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	505.00	510.72	505.00	N/A	0.97	0.93	0.04	95.57	8.50	
23	CB-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	510.34	515.37	510.34	10.00	3.23	N/A	N/A	N/A	8.50	
24	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.12	518.02	514.12	N/A	2.46	2.46	0.00	100.00	8.50	
25	CB-6	FHWA HEC-22 GENERIC	N/A	On Sag	1	467.80	475.09	467.80	10.00	0.87	N/A	N/A	N/A	8.50	
26	CB-7	FHWA HEC-22 GENERIC	N/A	On Grade	1	467.47	475.09	467.47	N/A	0.18	0.18	0.00	100.00	8.50	
27	CB-9	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.19	489.62	483.19	N/A	1.55	1.35	0.20	87.17	8.50	
28	Inlet-CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	516.28	521.36	516.28	N/A	2.43	2.18	0.24	89.92	8.50	

Subbasin Hydrology

Subbasin : Sub-CB-10

Input Data

Area (ac) 0.58
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.7
Composite Area & Weighted Runoff Coeff.	0.58		0.7

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99996647	0	0
Slope (%) :	1.25	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	15.21	0	0

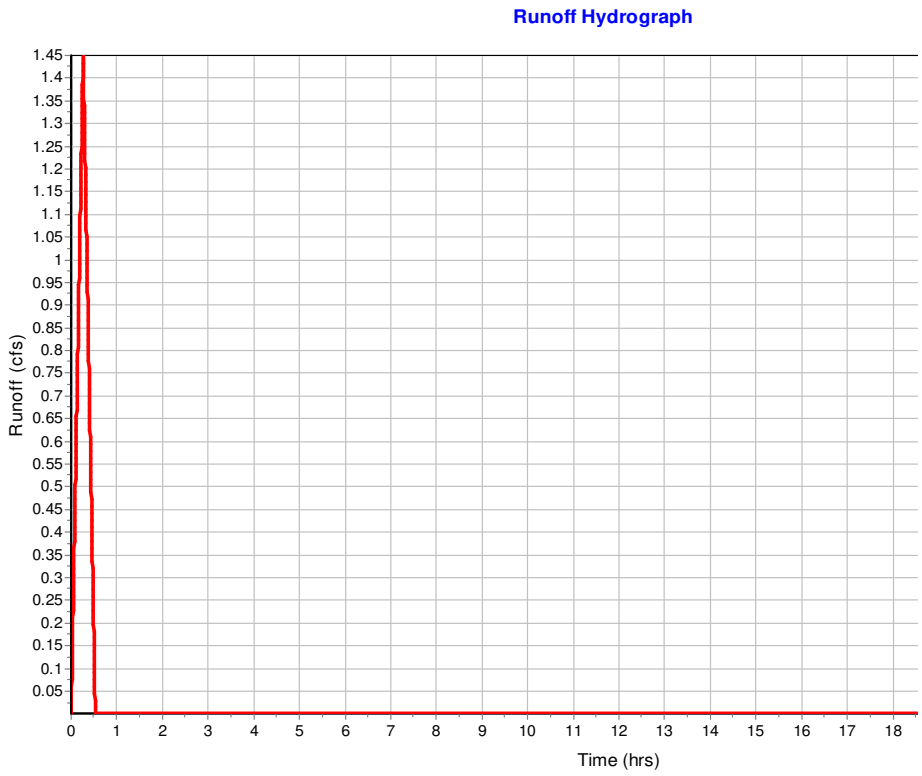
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	229.3185963	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.69	0	0

Total TOC (min) 15.90

Subbasin Runoff Results

Total Rainfall (in)	0.94
Total Runoff (in)	0.66
Peak Runoff (cfs)	1.45
Rainfall Intensity	3.571
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:54

Subbasin : Sub-CB-10



Subbasin : Sub-CB-12

Input Data

Area (ac)	0.32
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.7
Composite Area & Weighted Runoff Coeff.	0.32		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

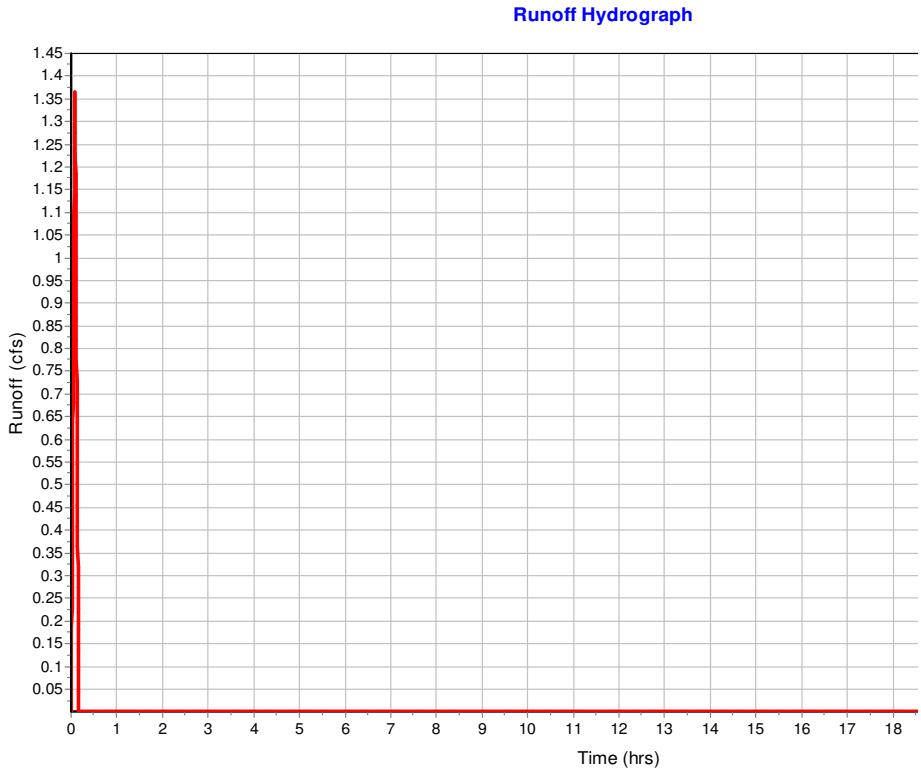
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	219.5273657	0	0
Slope (%) :	1.99	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	2.87	0	0
Computed Flow Time (min) :	1.28	0	0

Total TOC (min) 4.14

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.37
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:04:08

Subbasin : Sub-CB-12



Subbasin : Sub-CB-13

Input Data

Area (ac)	1.03
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.03	-	0.7
Composite Area & Weighted Runoff Coeff.	1.03		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	11.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.27	0	0

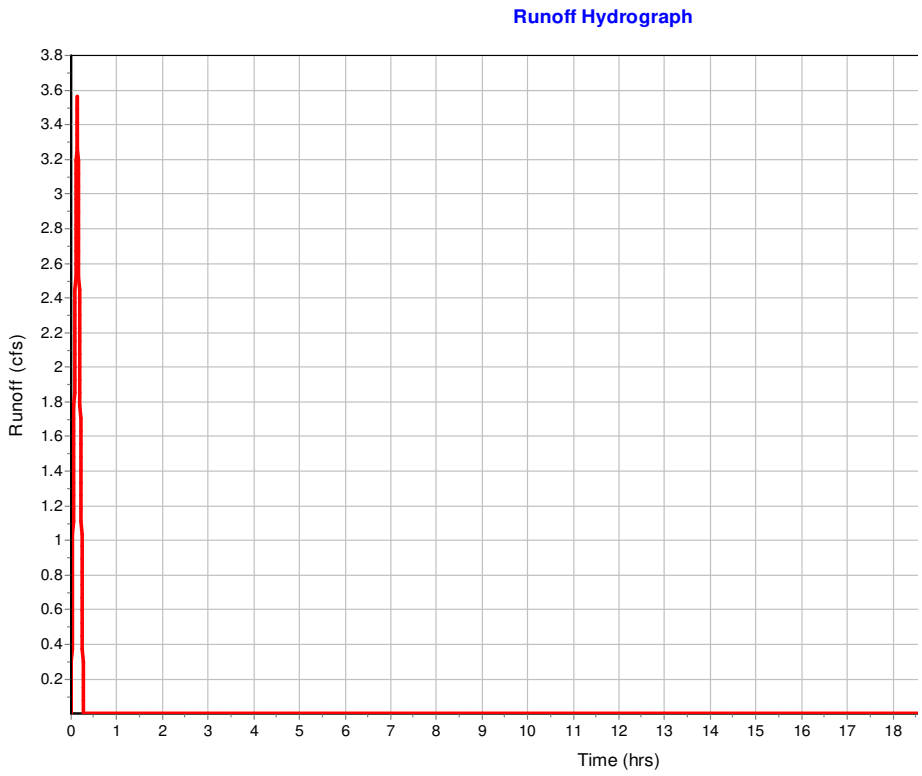
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	93	71.4	0
Slope (%) :	11.5	1.99	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	5.47	2.87	0
Computed Flow Time (min) :	0.28	0.41	0

Total TOC (min) 7.97

Subbasin Runoff Results

Total Rainfall (in)	0.66
Total Runoff (in)	0.46
Peak Runoff (cfs)	3.56
Rainfall Intensity	4.939
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:07:58

Subbasin : Sub-CB-13



Subbasin : Sub-CB-15

Input Data

Area (ac)	1.21
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.21	-	0.7
Composite Area & Weighted Runoff Coeff.	1.21		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.16	0	0
Computed Flow Time (min) :	10.14	0	0

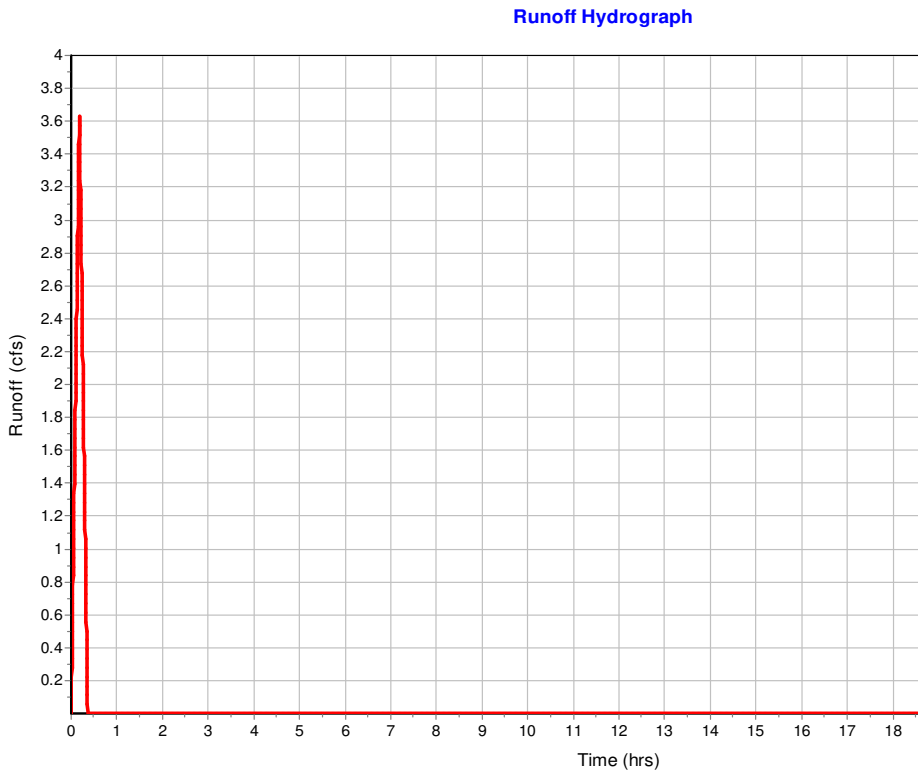
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	12.98144373	156.302	0
Slope (%) :	2	5.74	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	4.87	0
Computed Flow Time (min) :	0.09	0.53	0

Total TOC (min) 10.77

Subbasin Runoff Results

Total Rainfall (in)	0.77
Total Runoff (in)	0.54
Peak Runoff (cfs)	3.63
Rainfall Intensity	4.282
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:10:46

Subbasin : Sub-CB-15



Subbasin : Sub-CB-16

Input Data

Area (ac)	0.42
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	-	0.7
Composite Area & Weighted Runoff Coeff.	0.42		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.01720552	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

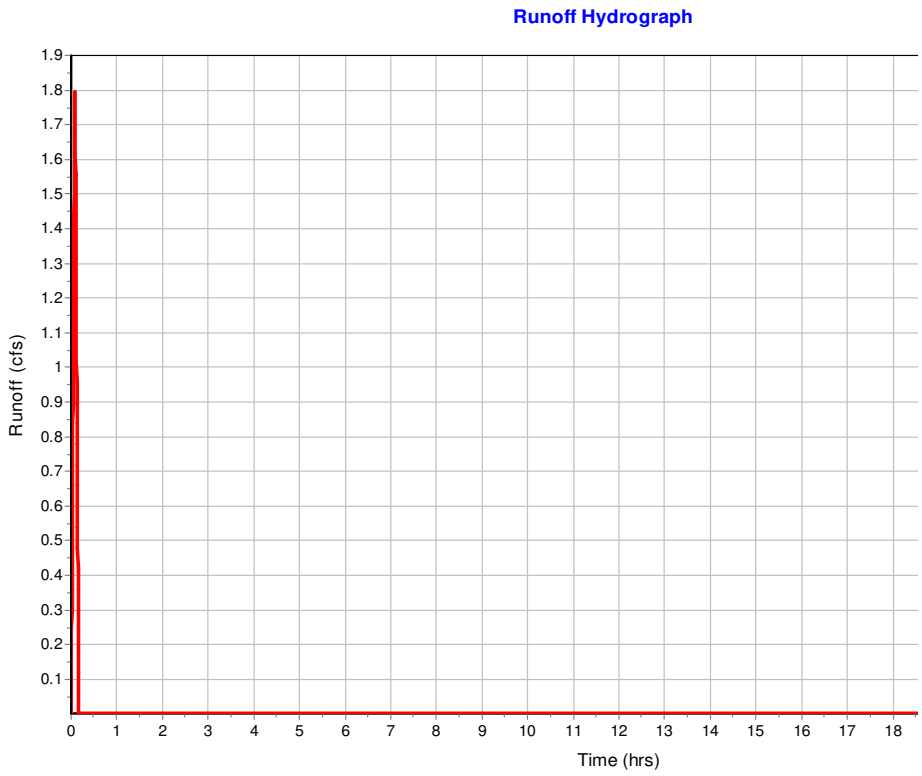
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	310.5319881	0	0
Slope (%) :	5.74	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.87	0	0
Computed Flow Time (min) :	1.06	0	0

Total TOC (min) 3.93

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.8
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:56

Subbasin : Sub-CB-16



Subbasin : Sub-CB-18

Input Data

Area (ac) 0.12
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.7
Composite Area & Weighted Runoff Coeff.	0.12		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.10752092	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.88	0	0

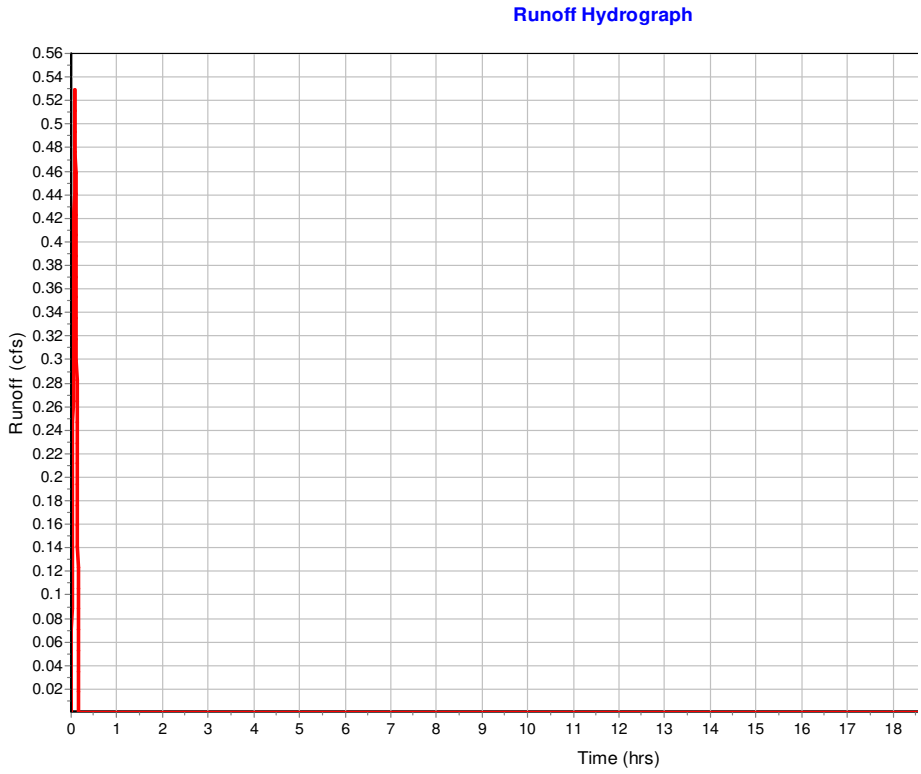
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	71.43477489	102.308	0
Slope (%) :	11.86	2.45	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	7	3.18	0
Computed Flow Time (min) :	0.17	0.54	0

Total TOC (min) 3.59

Subbasin Runoff Results

Total Rainfall (in) 0.51
Total Runoff (in) 0.36
Peak Runoff (cfs) 0.53
Rainfall Intensity 6.16
Weighted Runoff Coefficient 0.7
Time of Concentration (days hh:mm:ss) 0 00:03:35

Subbasin : Sub-CB-18



Subbasin : Sub-CB-19

Input Data

Area (ac) 1
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1	-	0.7
Composite Area & Weighted Runoff Coeff.	1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100.0031436	0	0
Slope (%) :	3.4	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.14	0	0
Computed Flow Time (min) :	11.83	0	0

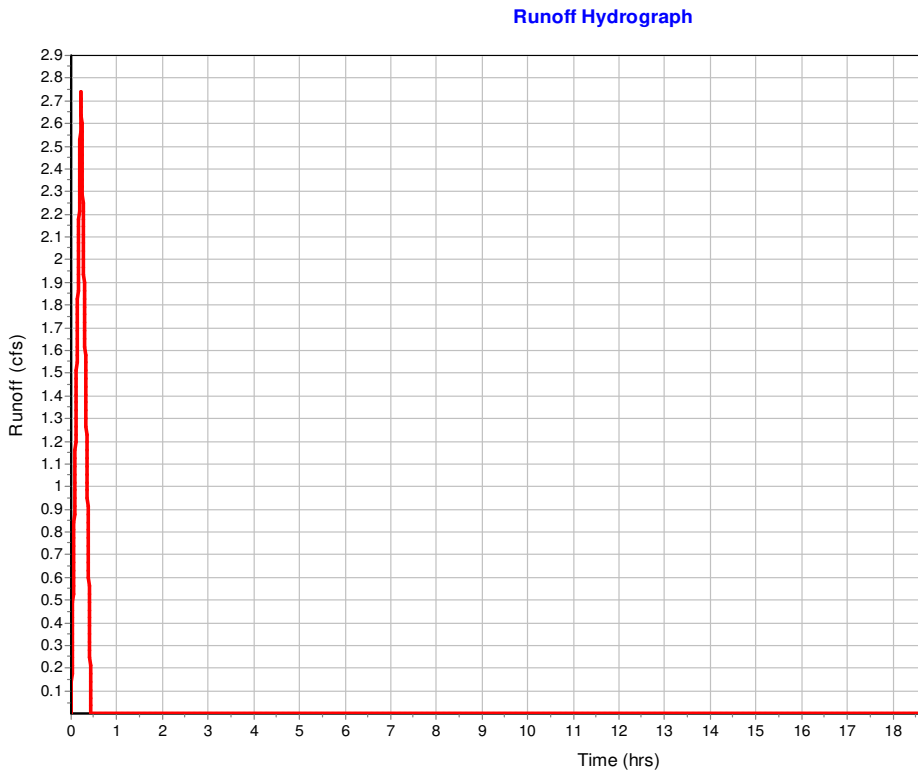
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	6.07922878	278.905	79.9642
Slope (%) :	2	11.86	2.45
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	7	3.18
Computed Flow Time (min) :	0.04	0.66	0.42

Total TOC (min) 12.96

Subbasin Runoff Results

Total Rainfall (in) 0.85
Total Runoff (in) 0.6
Peak Runoff (cfs) 2.74
Rainfall Intensity 3.923
Weighted Runoff Coefficient 0.7
Time of Concentration (days hh:mm:ss) 0 00:12:58

Subbasin : Sub-CB-19



Subbasin : Sub-CB-2

Input Data

Area (ac)	0.38
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.38	-	0.7
Composite Area & Weighted Runoff Coeff.	0.38		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	83	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	14.14	0	0

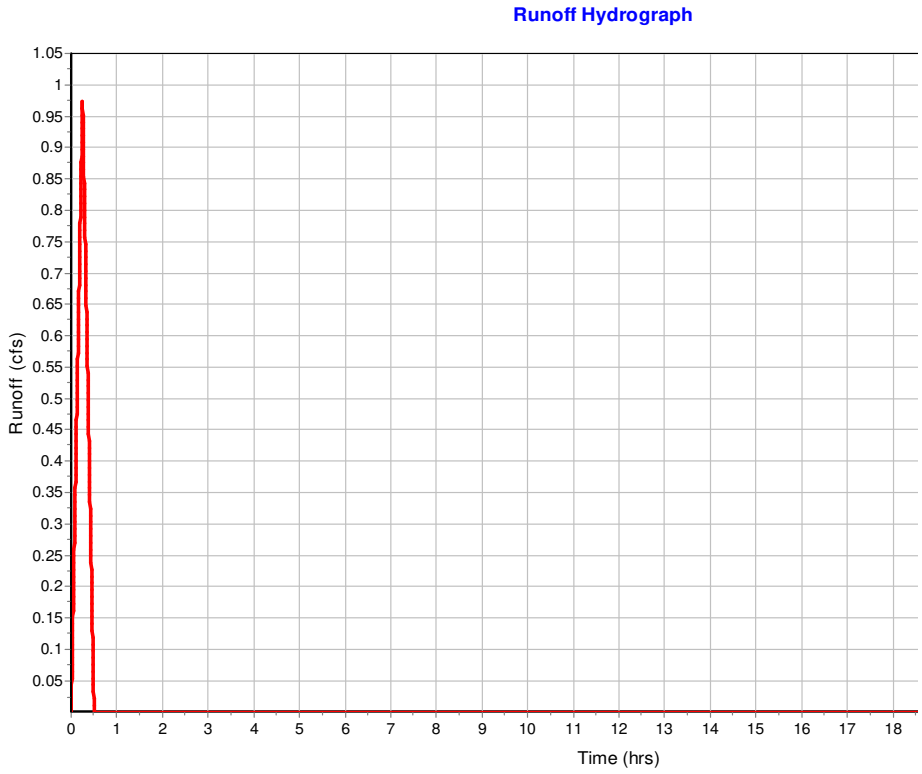
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	175.3484305	45.5292	0
Slope (%) :	10.46	0.85	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	1.87	0
Computed Flow Time (min) :	0.44	0.4	0

Total TOC (min) 14.99

Subbasin Runoff Results

Total Rainfall (in)	0.92
Total Runoff (in)	0.64
Peak Runoff (cfs)	0.97
Rainfall Intensity	3.661
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:14:59

Subbasin : Sub-CB-2



Subbasin : Sub-CB-20

Input Data

Area (ac)	0.62
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.62	-	0.7
Composite Area & Weighted Runoff Coeff.	0.62		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	99.99258294	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	16.41	0	0

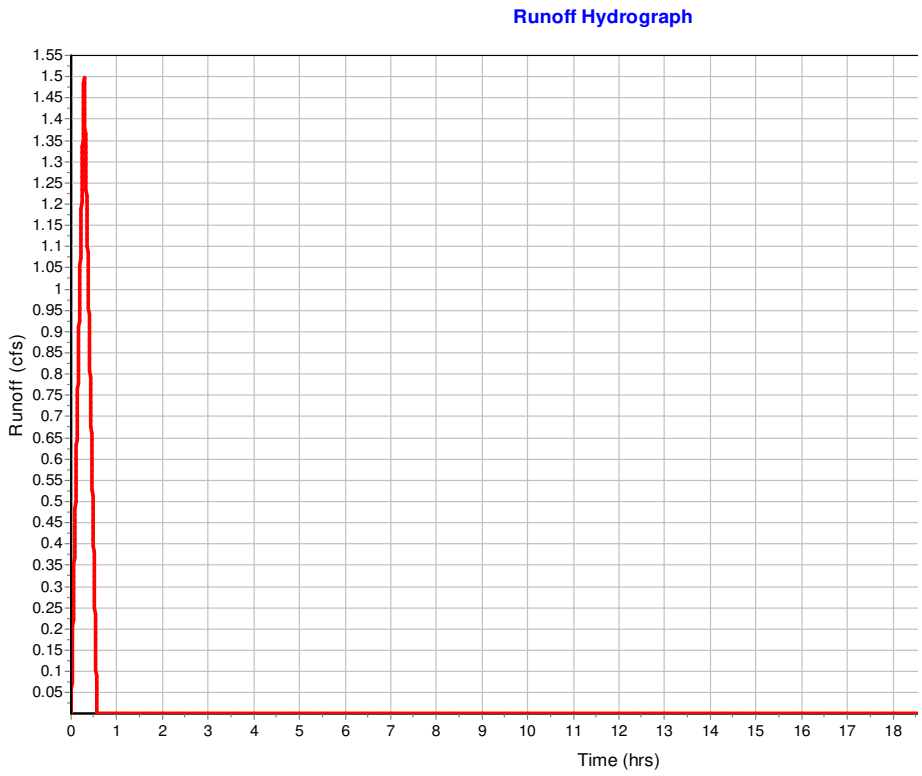
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3.00743724	208.662	0
Slope (%) :	2	7.49	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	5.56	0
Computed Flow Time (min) :	0.02	0.63	0

Total TOC (min) 17.06

Subbasin Runoff Results

Total Rainfall (in)	0.98
Total Runoff (in)	0.69
Peak Runoff (cfs)	1.5
Rainfall Intensity	3.466
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:17:04

Subbasin : Sub-CB-20



Subbasin : Sub-CB-22

Input Data

Area (ac)	0.14
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.14	-	0.7
Composite Area & Weighted Runoff Coeff.	0.14		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99981258	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

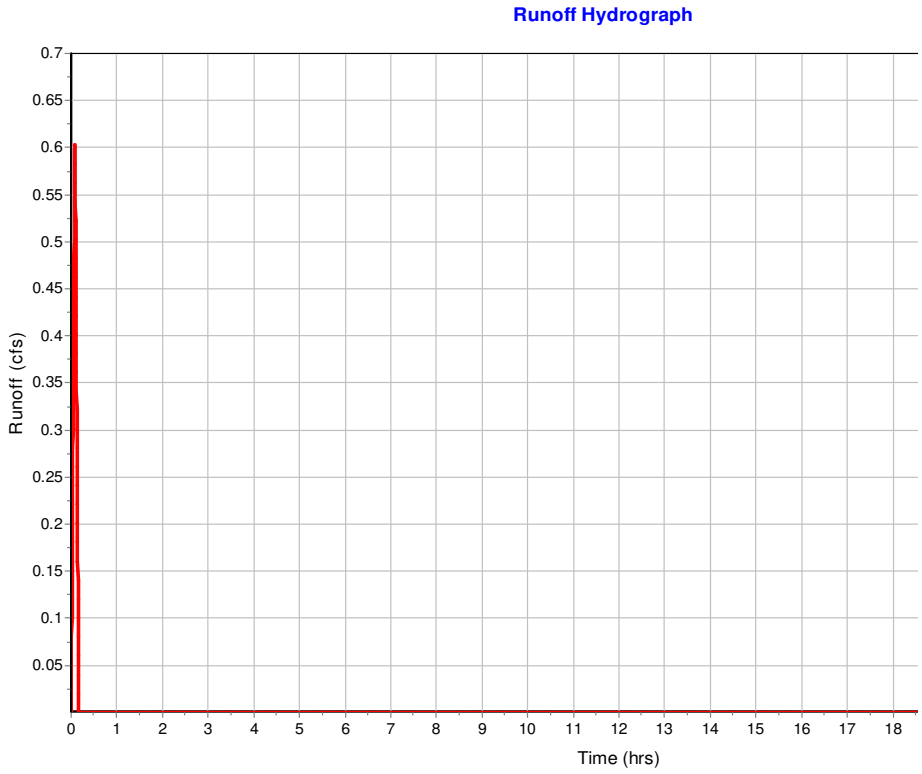
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	167.0428132	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.5	0	0

Total TOC (min) 3.36

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.6
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:22

Subbasin : Sub-CB-22



Subbasin : Sub-CB-24

Input Data

Area (ac)	0.27
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.27	-	0.7
Composite Area & Weighted Runoff Coeff.	0.27		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	37.99958613	0	0
Slope (%) :	6.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.15	0	0
Computed Flow Time (min) :	4.21	0	0

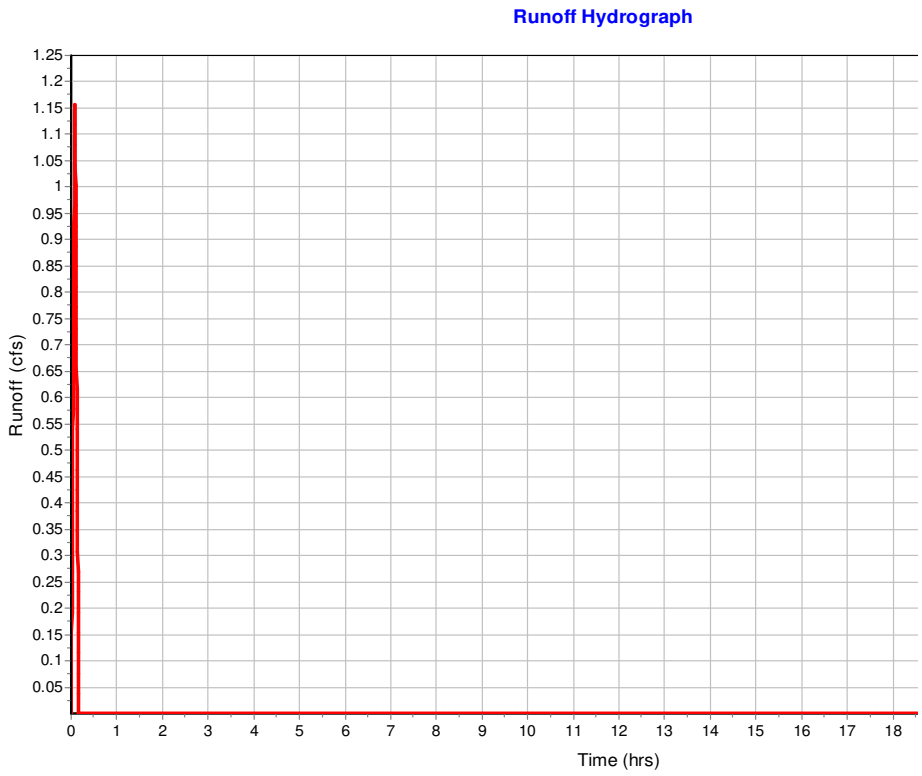
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	28.98355088	187.48	0
Slope (%) :	0.51	10.41	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.45	6.56	0
Computed Flow Time (min) :	0.33	0.48	0

Total TOC (min) 5.02

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.16
Rainfall Intensity	6.148
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:05:01

Subbasin : Sub-CB-24



Subbasin : Sub-CB-25

Input Data

Area (ac)	0.51
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.51	-	0.7
Composite Area & Weighted Runoff Coeff.	0.51		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99999586	0	0
Slope (%) :	7.25	0	0
2 yr, 24 hr Rainfall (in) :	4.32	0	0
Velocity (ft/sec) :	0.18	0	0
Computed Flow Time (min) :	7.56	0	0

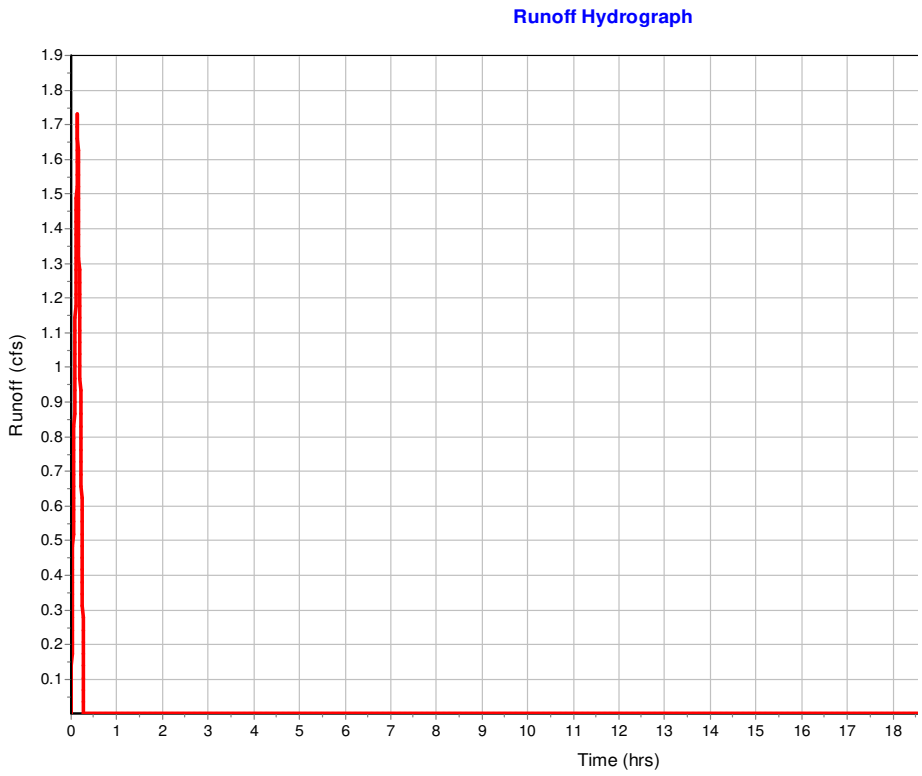
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	16.12667612	203.96	0
Slope (%) :	0.51	10.41	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.45	6.56	0
Computed Flow Time (min) :	0.19	0.52	0

Total TOC (min) 8.26

Subbasin Runoff Results

Total Rainfall (in)	0.67
Total Runoff (in)	0.47
Peak Runoff (cfs)	1.73
Rainfall Intensity	4.856
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:08:16

Subbasin : Sub-CB-25



Subbasin : Sub-CB-26

Input Data

Area (ac)	0.49
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.49	-	0.7
Composite Area & Weighted Runoff Coeff.	0.49		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99998121	0	0
Slope (%) :	1.25	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	15.21	0	0

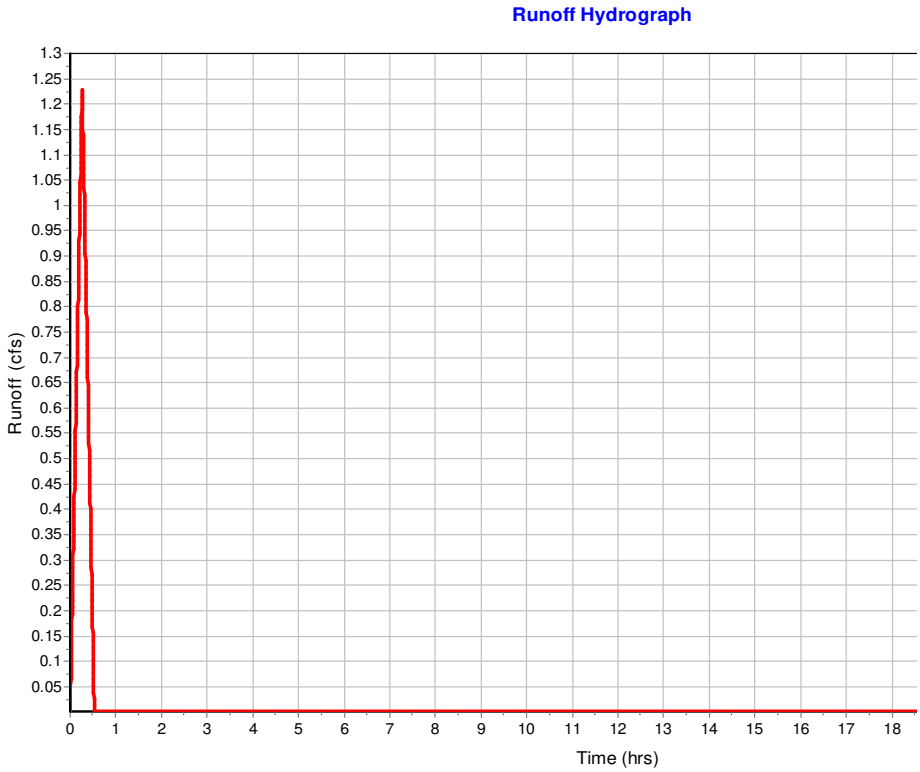
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	221.0918618	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.66	0	0

Total TOC (min) 15.87

Subbasin Runoff Results

Total Rainfall (in)	0.94
Total Runoff (in)	0.66
Peak Runoff (cfs)	1.23
Rainfall Intensity	3.574
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:52

Subbasin : Sub-CB-26



Subbasin : Sub-CB-27

Input Data

Area (ac)	0.1
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.1	-	0.7
Composite Area & Weighted Runoff Coeff.	0.1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	21.13547973	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.06	0	0
Computed Flow Time (min) :	5.57	0	0

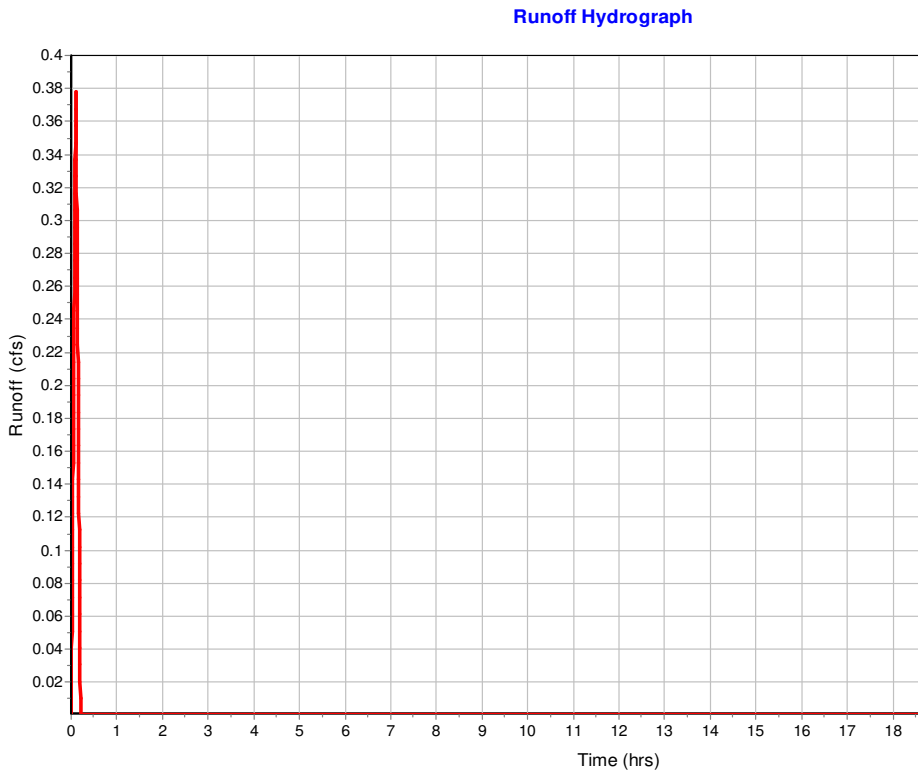
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	117.1502173	0	0
Slope (%) :	2.92	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.47	0	0
Computed Flow Time (min) :	0.56	0	0

Total TOC (min) 6.13

Subbasin Runoff Results

Total Rainfall (in)	0.58
Total Runoff (in)	0.4
Peak Runoff (cfs)	0.38
Rainfall Intensity	5.593
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:06:08

Subbasin : Sub-CB-27



Subbasin : Sub-CB-28

Input Data

Area (ac)	0.67
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.67	-	0.7
Composite Area & Weighted Runoff Coeff.	0.67		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.11	0	0
Computed Flow Time (min) :	14.63	0	0

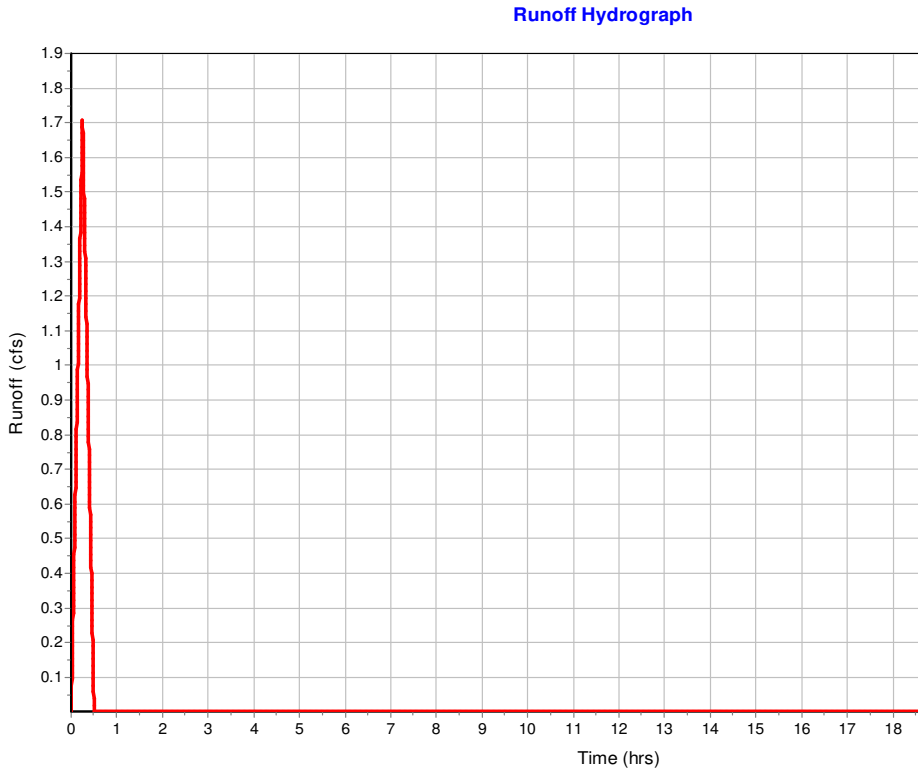
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	17.02372996	94.092	0
Slope (%) :	2	5.74	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	4.87	0
Computed Flow Time (min) :	0.12	0.32	0

Total TOC (min) 15.08

Subbasin Runoff Results

Total Rainfall (in)	0.91
Total Runoff (in)	0.64
Peak Runoff (cfs)	1.71
Rainfall Intensity	3.652
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:05

Subbasin : Sub-CB-28



Subbasin : Sub-CB-29

Input Data

Area (ac)	0.15
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.7
Composite Area & Weighted Runoff Coeff.	0.15		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

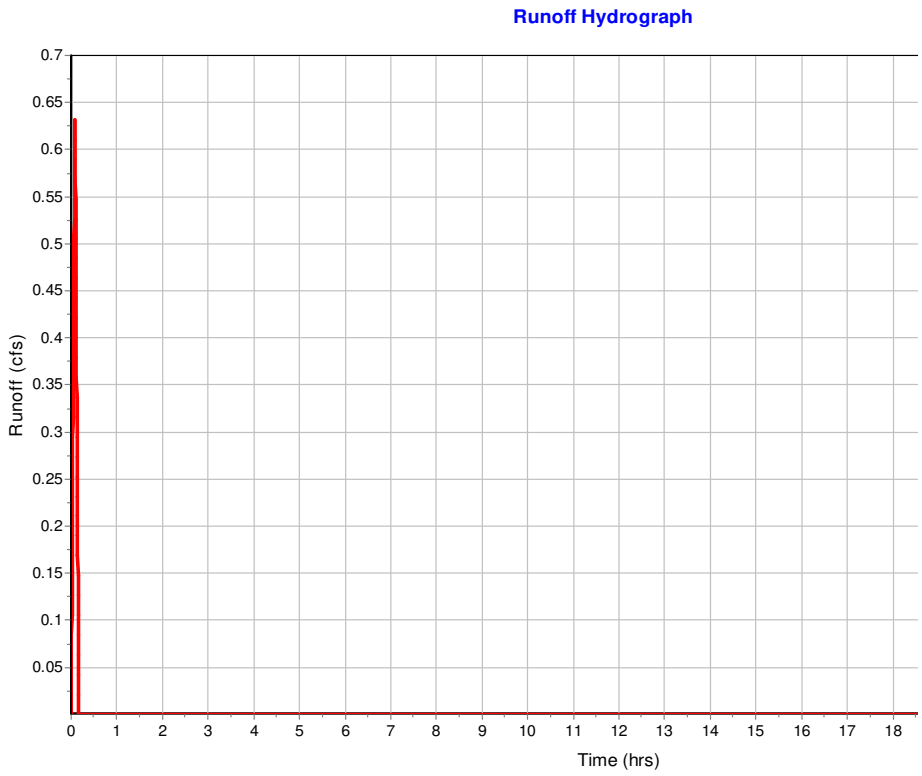
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	253.6223323	0	0
Slope (%) :	5.74	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.87	0	0
Computed Flow Time (min) :	0.87	0	0

Total TOC (min) 3.73

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.63
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:44

Subbasin : Sub-CB-29



Subbasin : Sub-CB-3

Input Data

Area (ac)	0.14
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.14	-	0.7
Composite Area & Weighted Runoff Coeff.	0.14		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

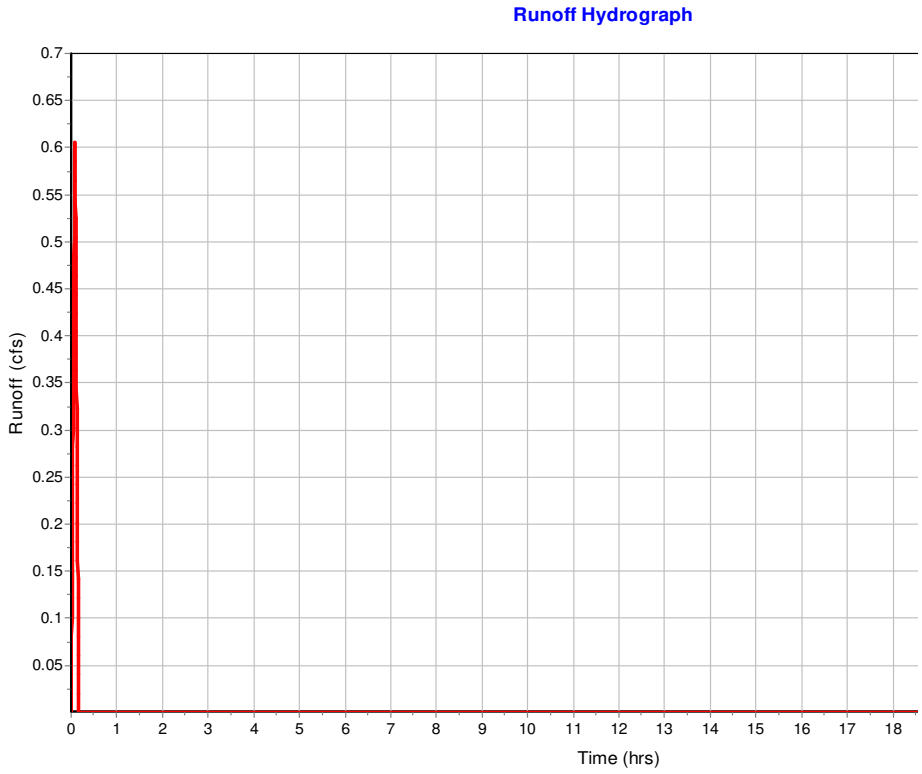
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	181.26423	58.411	0
Slope (%) :	10.46	0.85	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	1.87	0
Computed Flow Time (min) :	0.46	0.52	0

Total TOC (min) 3.84

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.61
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:50

Subbasin : Sub-CB-3



Subbasin : Sub-CB-31

Input Data

Area (ac)	0.17
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.7
Composite Area & Weighted Runoff Coeff.	0.17		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

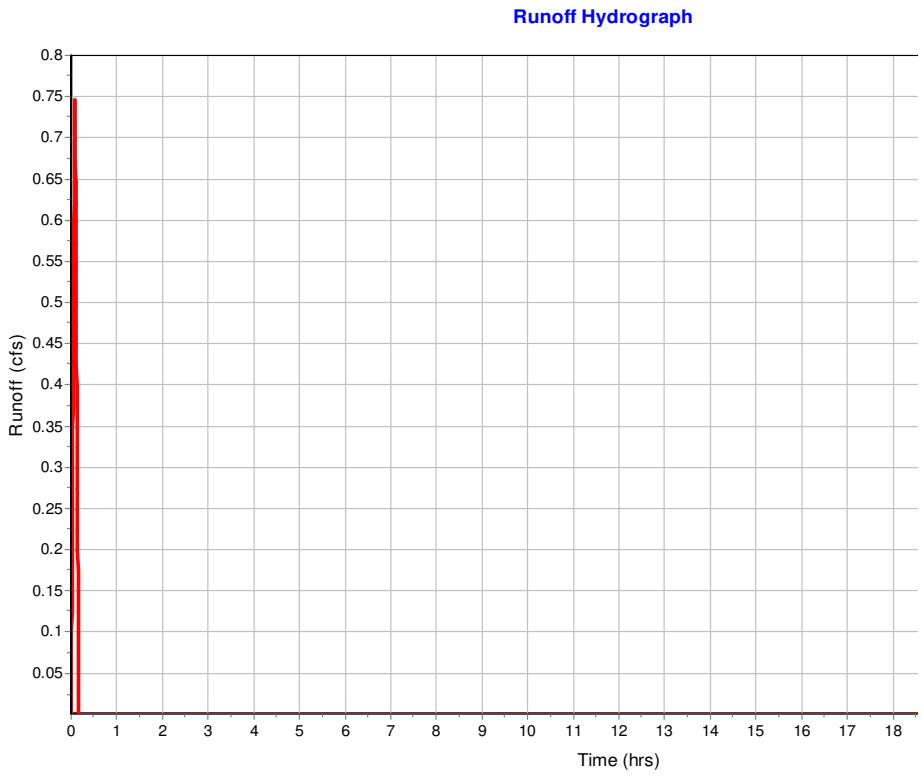
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	166.3763112	83.655	0
Slope (%) :	3.19	6.34	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.63	5.12	0
Computed Flow Time (min) :	0.76	0.27	0

Total TOC (min) 3.90

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.75
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:54

Subbasin : Sub-CB-31



Subbasin : Sub-CB-32

Input Data

Area (ac)	0.13
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.13	-	0.7
Composite Area & Weighted Runoff Coeff.	0.13		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

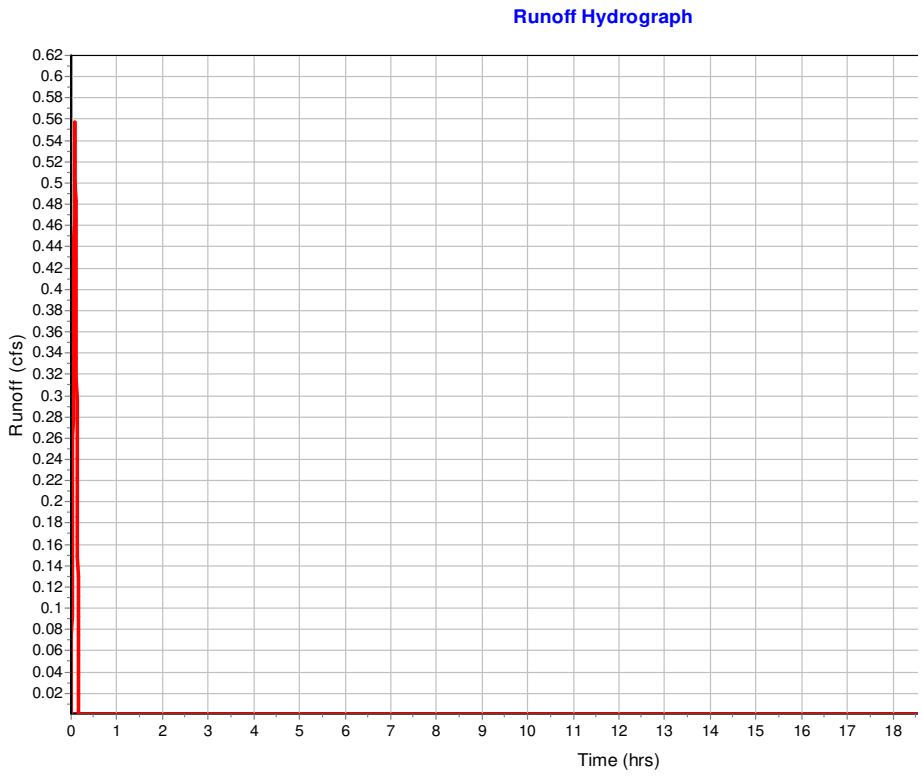
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	167.2624187	52.704	0
Slope (%) :	3.19	6.34	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.63	5.12	0
Computed Flow Time (min) :	0.77	0.17	0

Total TOC (min) 3.80

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.56
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:48

Subbasin : Sub-CB-32



Subbasin : Sub-CB-35

Input Data

Area (ac)	0.1
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.1	-	0.7
Composite Area & Weighted Runoff Coeff.	0.1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

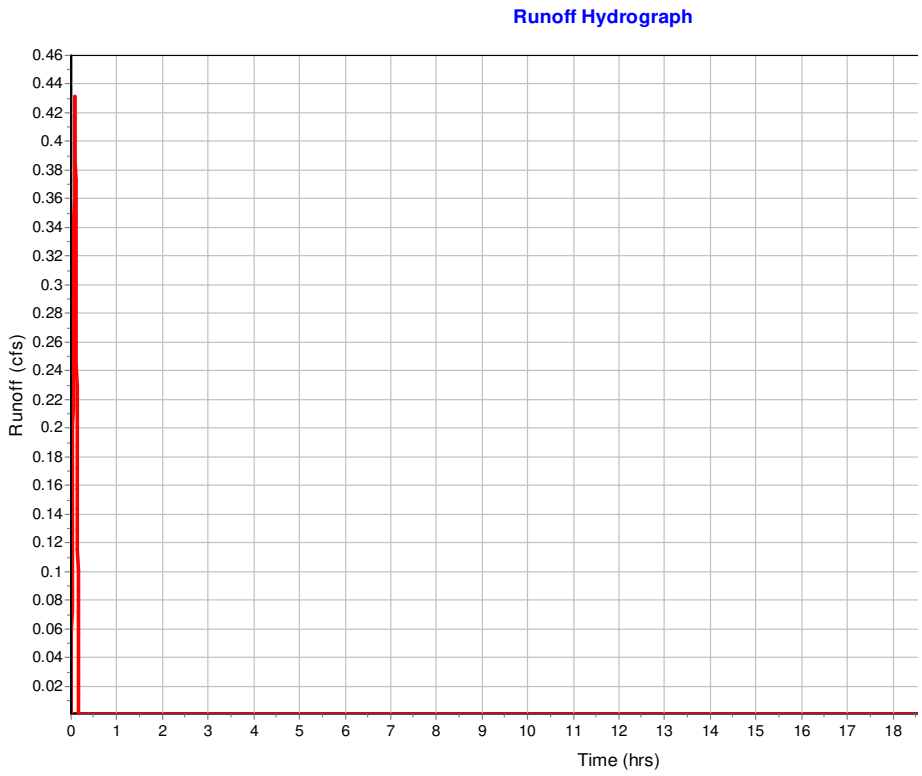
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	159.59	0	0
Slope (%) :	10.46	0	0
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	6.57	0	0
Computed Flow Time (min) :	0.4	0	0

Total TOC (min) 3.27

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.43
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:16

Subbasin : Sub-CB-35



Subbasin : Sub-CB-36

Input Data

Area (ac)	0.58
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.7
Composite Area & Weighted Runoff Coeff.	0.58		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	83	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	14.14	0	0

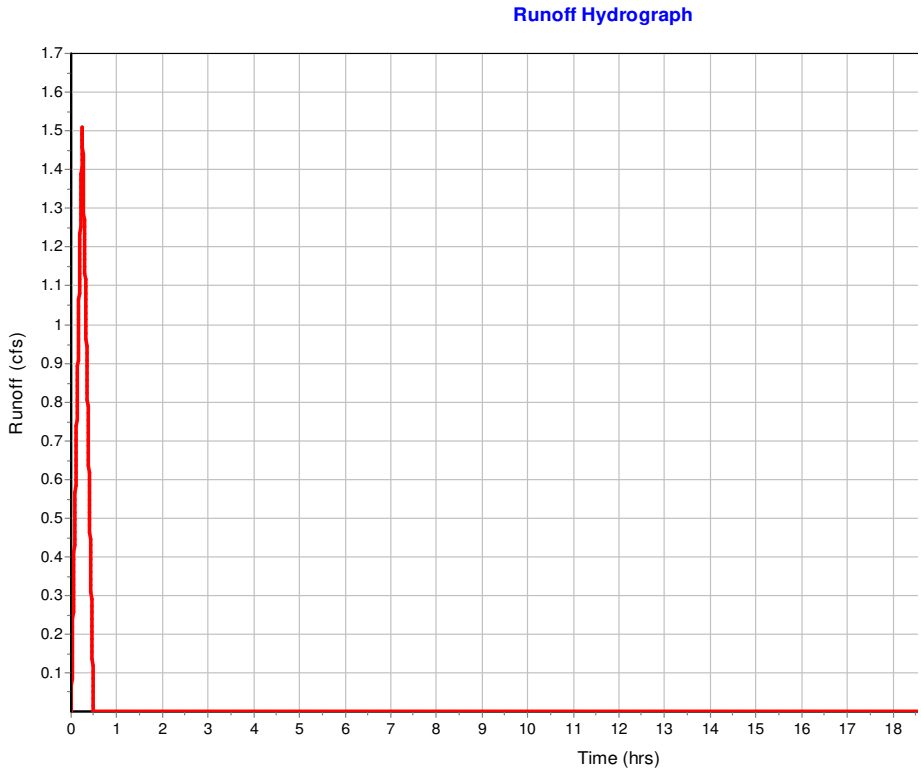
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	224.201193	0	0
Slope (%) :	10.46	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	0	0
Computed Flow Time (min) :	0.57	0	0

Total TOC (min) 14.71

Subbasin Runoff Results

Total Rainfall (in)	0.9
Total Runoff (in)	0.63
Peak Runoff (cfs)	1.51
Rainfall Intensity	3.694
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:14:43

Subbasin : Sub-CB-36



Subbasin : Sub-CB-38

Input Data

Area (ac)	0.24
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.24	-	0.7
Composite Area & Weighted Runoff Coeff.	0.24		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.00000002	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

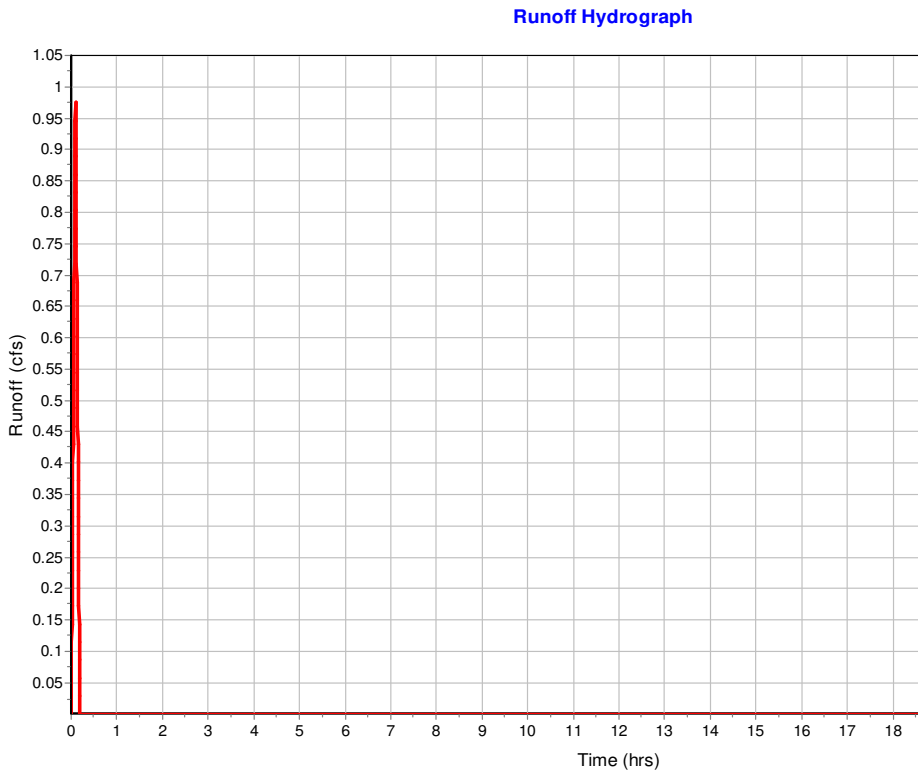
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	214.8866153	184.11	0
Slope (%) :	2.45	0.75	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.18	1.76	0
Computed Flow Time (min) :	1.13	1.74	0

Total TOC (min) 5.73

Subbasin Runoff Results

Total Rainfall (in)	0.55
Total Runoff (in)	0.38
Peak Runoff (cfs)	0.98
Rainfall Intensity	5.775
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:05:44

Subbasin : Sub-CB-38



Subbasin : Sub-CB-39

Input Data

Area (ac)	1.39
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.39	-	0.7
Composite Area & Weighted Runoff Coeff.	1.39		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	99.98923348	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	16.41	0	0

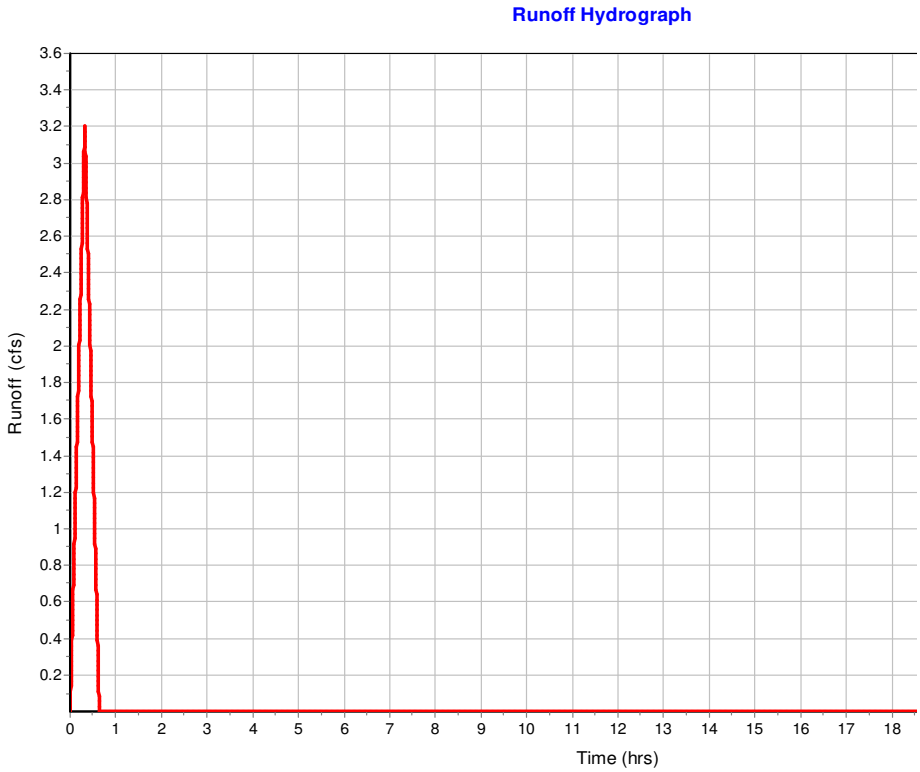
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	34.45719772	233.52	132.7
Slope (%) :	1.5	2.45	0.75
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	1.98	3.18	1.76
Computed Flow Time (min) :	0.29	1.22	1.26

Total TOC (min) 19.18

Subbasin Runoff Results

Total Rainfall (in)	1.05
Total Runoff (in)	0.74
Peak Runoff (cfs)	3.2
Rainfall Intensity	3.299
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:19:11

Subbasin : Sub-CB-39



Subbasin : Sub-CB-43

Input Data

Area (ac)	0.71
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.71	-	0.7
Composite Area & Weighted Runoff Coeff.	0.71		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	12	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.15	0	0

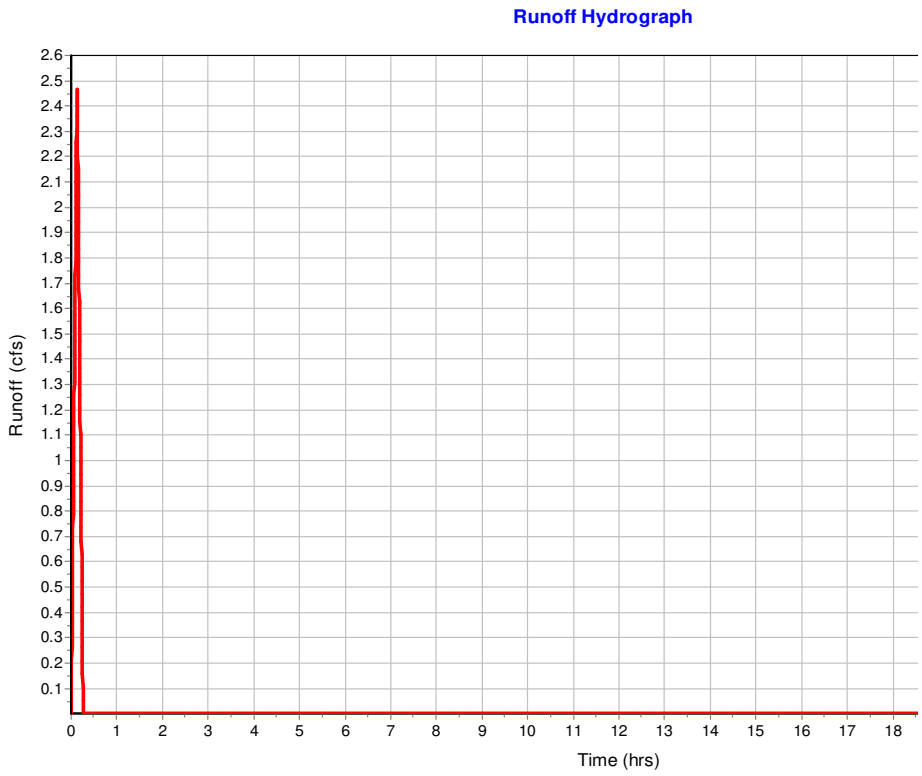
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	93	77.84	0
Slope (%) :	10.75	1.99	0
Surface Type :	Unpaved	Paved	Unpaved
Velocity (ft/sec) :	5.29	2.87	0
Computed Flow Time (min) :	0.29	0.45	0

Total TOC (min) 7.89

Subbasin Runoff Results

Total Rainfall (in)	0.65
Total Runoff (in)	0.45
Peak Runoff (cfs)	2.47
Rainfall Intensity	4.963
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:07:53

Subbasin : Sub-CB-43



Subbasin : Sub-CB-44

Input Data

Area (ac)	0.72
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.72	-	0.7
Composite Area & Weighted Runoff Coeff.	0.72		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	9	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.21	0	0
Computed Flow Time (min) :	8.02	0	0

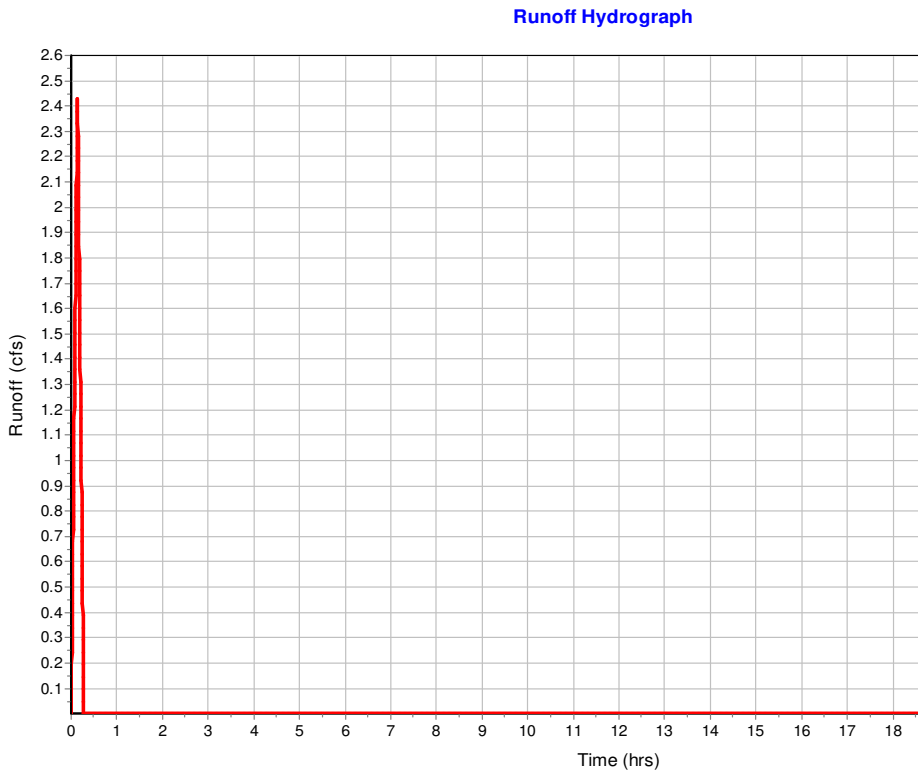
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	78.42	77.02	0
Slope (%) :	16.7	11.38	0
Surface Type :	Unpaved	Paved	Unpaved
Velocity (ft/sec) :	6.59	6.86	0
Computed Flow Time (min) :	0.2	0.19	0

Total TOC (min) 8.40

Subbasin Runoff Results

Total Rainfall (in)	0.67
Total Runoff (in)	0.47
Peak Runoff (cfs)	2.43
Rainfall Intensity	4.817
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:08:24

Subbasin : Sub-CB-44



Subbasin : Sub-CB-6

Input Data

Area (ac)	0.16
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.7
Composite Area & Weighted Runoff Coeff.	0.16		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

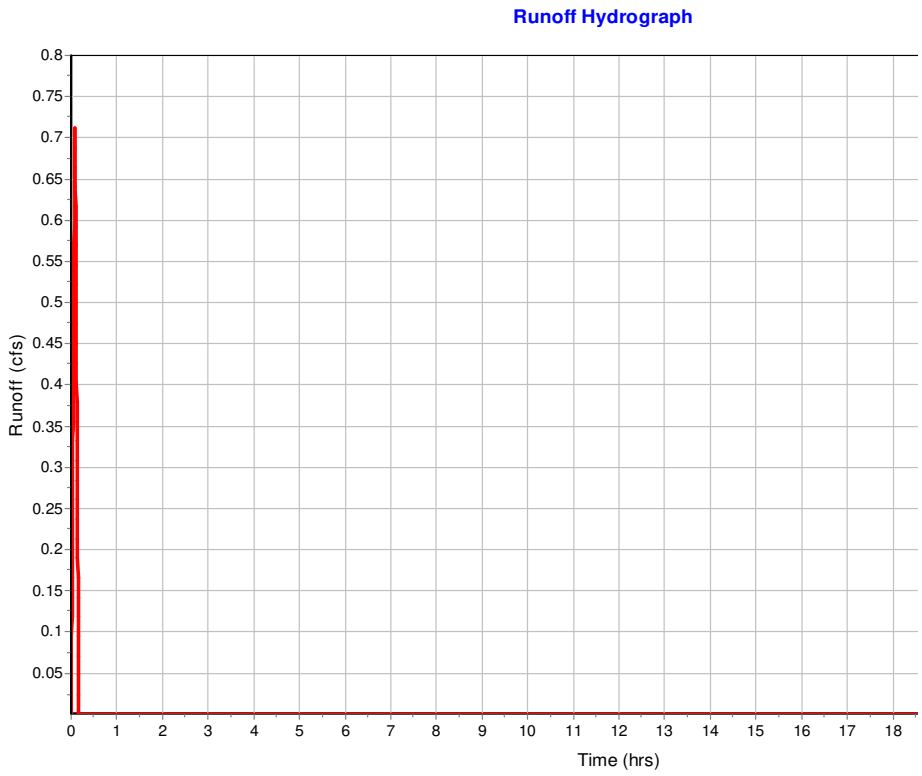
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	207.9606416	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.62	0	0

Total TOC (min) 3.48

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.71
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:29

Subbasin : Sub-CB-6



Subbasin : Sub-CB-7

Input Data

Area (ac)	0.04
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.04	-	0.7
Composite Area & Weighted Runoff Coeff.	0.04		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99999999	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

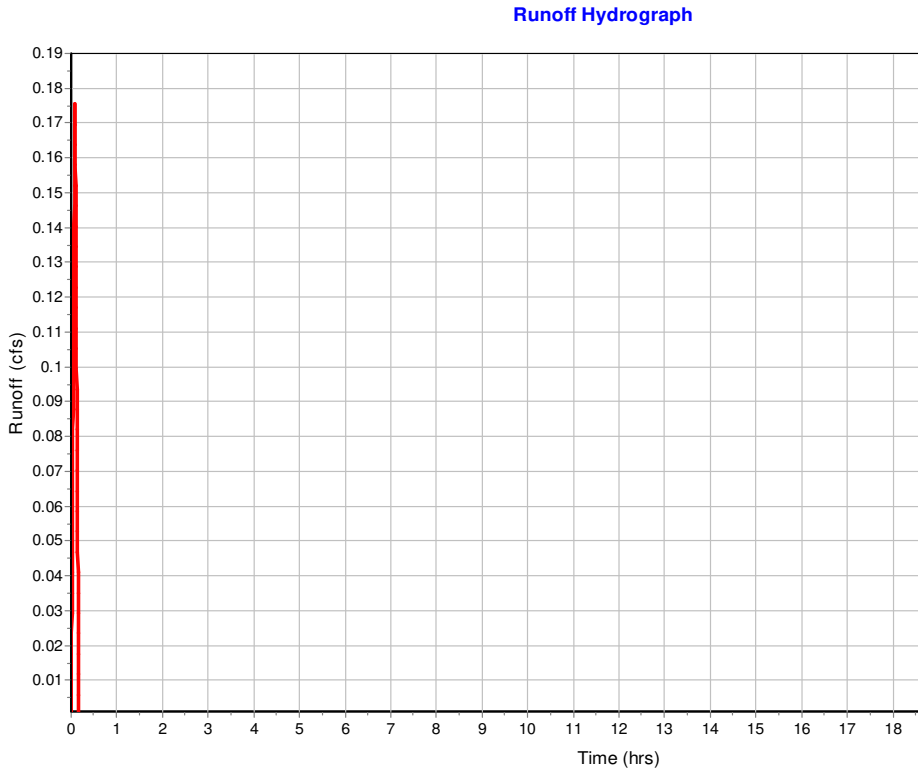
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	68.39700153	0	0
Slope (%) :	0.85	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.87	0	0
Computed Flow Time (min) :	0.61	0	0

Total TOC (min) 3.47

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	0.18
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:28

Subbasin : Sub-CB-7



Subbasin : Sub-CB-9

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.7
Composite Area & Weighted Runoff Coeff.	0.12		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99999519	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

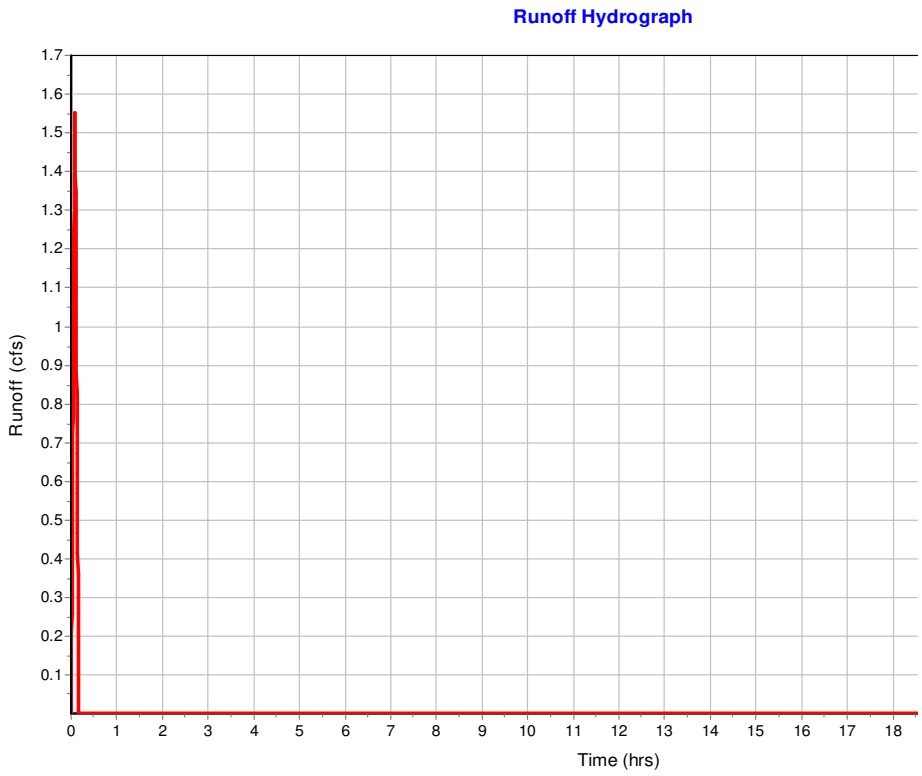
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	199.7947467	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.6	0	0

Total TOC (min) 3.46

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.36
Peak Runoff (cfs)	1.55
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:28

Subbasin : Sub-CB-9



Subbasin : Sub-FES-2

Input Data

Area (ac)	1.58
Weighted Runoff Coefficient	0.56

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.58	-	0.56
Composite Area & Weighted Runoff Coeff.	1.58		0.56

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	12	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.15	0	0

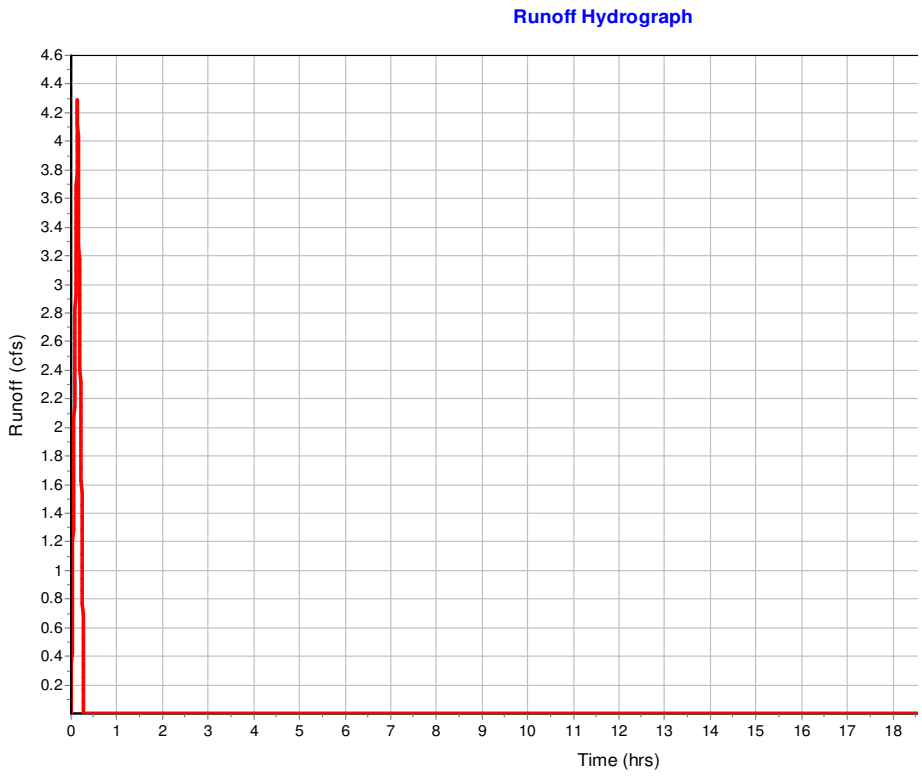
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	363.3701089	0	0
Slope (%) :	10	0	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	5.1	0	0
Computed Flow Time (min) :	1.19	0	0

Total TOC (min) 8.33

Subbasin Runoff Results

Total Rainfall (in)	0.67
Total Runoff (in)	0.38
Peak Runoff (cfs)	4.29
Rainfall Intensity	4.837
Weighted Runoff Coefficient	0.56
Time of Concentration (days hh:mm:ss)	0 00:08:20

Subbasin : Sub-FES-2



Subbasin : SUB-PIPE-35

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.72

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.36	-	0.72
Composite Area & Weighted Runoff Coeff.	0.36		0.72

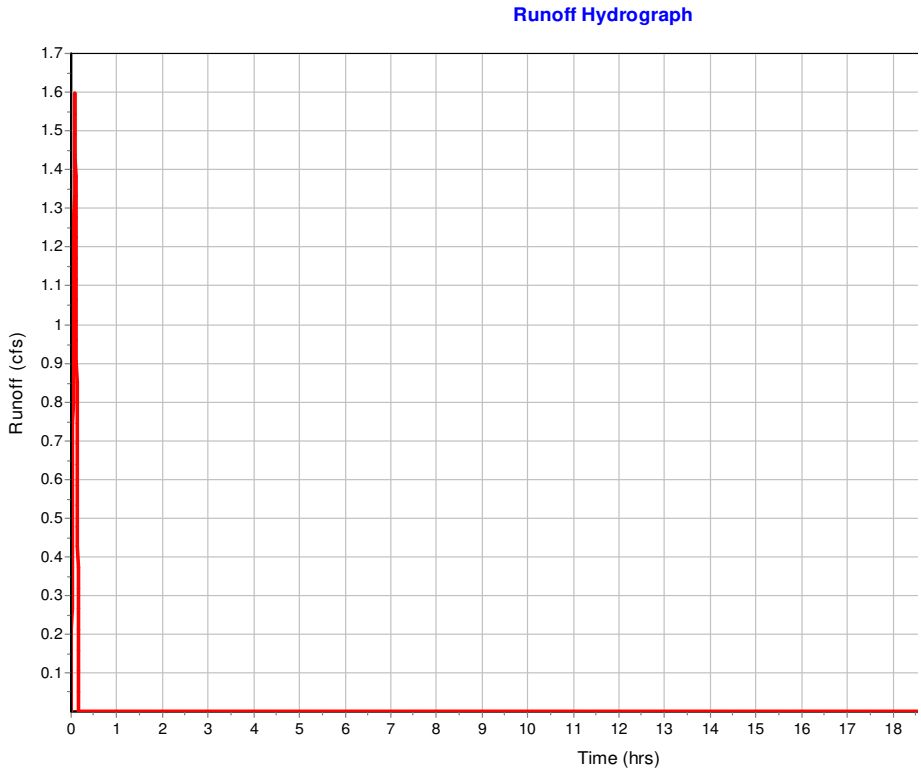
Time of Concentration

User-Defined TOC override (minutes): 2.36

Subbasin Runoff Results

Total Rainfall (in)	0.51
Total Runoff (in)	0.37
Peak Runoff (cfs)	1.6
Rainfall Intensity	6.16
Weighted Runoff Coefficient	0.72
Time of Concentration (days hh:mm:ss)	0 00:02:22

Subbasin : SUB-PIPE-35



Subbasin : SUB-PIPE-36

Input Data

Area (ac)	1.26
Weighted Runoff Coefficient	0.72

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.26	-	0.72
Composite Area & Weighted Runoff Coeff.	1.26		0.72

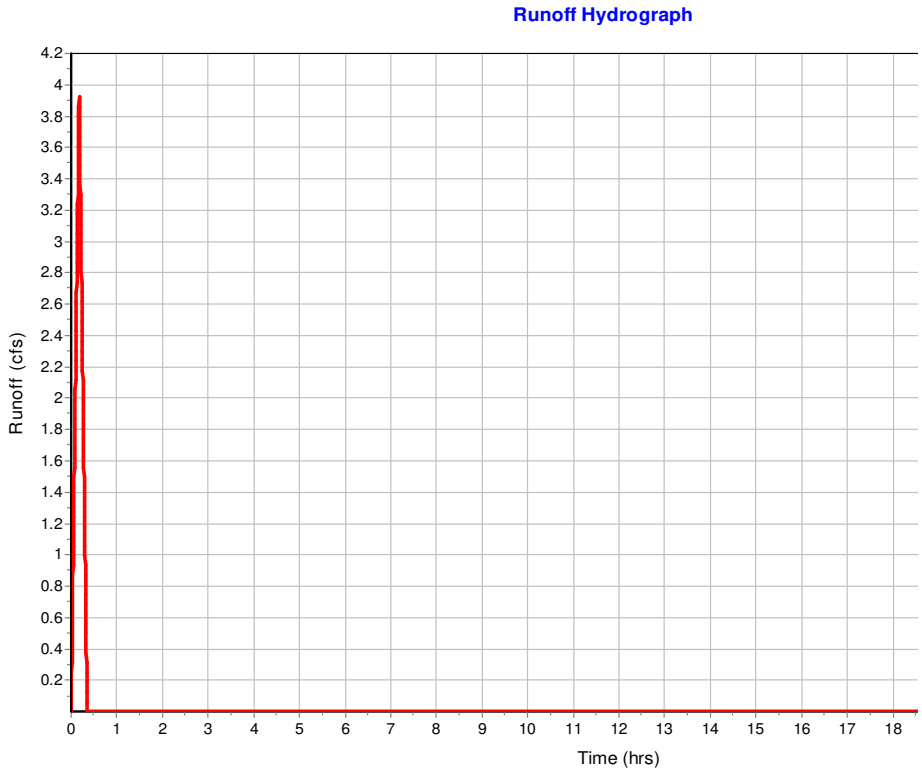
Time of Concentration

User-Defined TOC override (minutes): 10.56

Subbasin Runoff Results

Total Rainfall (in)	0.76
Total Runoff (in)	0.55
Peak Runoff (cfs)	3.92
Rainfall Intensity	4.322
Weighted Runoff Coefficient	0.72
Time of Concentration (days hh:mm:ss)	0 00:10:34

Subbasin : SUB-PIPE-36



Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	FES-2	466.60	469.78	3.18	466.60	0.00	469.78	0.00	0.00	2.15
2	IN-PIPE-35	462.75	464.00	1.25	462.75	0.00	464.00	0.00	0.00	0.00
3	IN-PIPE36	441.30	442.80	1.50	441.30	0.00	442.80	0.00	0.00	0.00
4	JB-14	529.50	534.76	5.26	529.50	0.00	535.50	0.74	0.00	45.12
5	JB-23	515.30	519.44	4.14	515.30	0.00	519.20	-0.24	10.00	31.68

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	T Fl Occu (days h
1	FES-2	19.47	19.47	468.35	1.75	0.00	1.43	468.04	1.44	0 00:00	0
2	IN-PIPE-35	1.59	1.59	463.18	0.43	0.00	1.07	462.75	0.00	0 00:05	0
3	IN-PIPE36	3.92	3.92	442.17	0.87	0.00	0.71	441.39	0.09	0 00:10	0
4	JB-14	5.29	0.00	529.93	0.43	0.00	4.83	529.51	0.01	0 00:12	0
5	JB-23	2.03	0.00	515.56	0.26	0.00	3.88	515.30	0.00	0 00:05	0

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	E
1	L-SDPIPE-1	73.15	476.67	10.73	475.09	7.62	1.58	2.1600	User-Defined	0.330	14.000	0.0150	
2	L-SDPIPE-13	403.61	521.86	4.36	510.72	5.72	11.14	2.7600	User-Defined	0.330	14.000	0.0150	
3	L-SDPIPE-14	373.89	522.45	4.46	515.37	5.03	7.08	1.8900	User-Defined	0.330	14.000	0.0150	
4	L-SDPIPE-15	83.27	471.49	3.38	464.82	0.00	6.67	8.0100	User-Defined	0.330	14.000	0.0150	
5	L-SDPIPE-16	206.62	505.01	3.91	489.62	6.43	15.39	7.4500	User-Defined	0.330	14.000	0.0150	
6	L-SDPIPE-18	170.54	523.17	5.39	517.57	3.45	5.60	3.2800	User-Defined	0.330	14.000	0.0150	
7	L-SDPIPE-19	227.29	522.18	4.31	505.01	3.58	17.17	7.5500	User-Defined	0.330	14.000	0.0150	
8	L-SDPIPE-2	62.02	476.28	9.98	475.09	7.29	1.19	1.9200	User-Defined	0.330	14.000	0.0150	
9	L-SDPIPE-20	233.87	505.01	3.58	487.59	3.97	17.42	7.4500	User-Defined	0.330	14.000	0.0150	
10	L-SDPIPE-21	241.61	543.67	5.17	534.06	3.86	9.61	3.9800	User-Defined	0.330	14.000	0.0150	
11	L-SDPIPE-23	316.61	547.43	4.84	534.06	3.53	13.37	4.2200	User-Defined	0.500	26.000	0.0150	
12	L-SDPIPE-25	202.83	549.70	3.70	532.10	0.00	17.60	8.6800	User-Defined	0.500	26.000	0.0150	
13	L-SDPIPE-27	245.69	494.00	6.50	476.28	9.98	17.72	7.2100	User-Defined	0.330	14.000	0.0150	
14	L-SDPIPE-28	228.18	493.47	5.63	476.67	10.73	16.80	7.3600	User-Defined	0.330	14.000	0.0150	
15	L-SDPIPE-29	172.07	510.72	5.72	494.00	6.50	16.72	9.7200	User-Defined	0.330	14.000	0.0150	
16	L-SDPIPE-32	98.13	549.76	5.26	540.30	0.00	9.46	9.6400	User-Defined	0.500	26.000	0.0150	
17	L-SDPIPE-33	78.91	518.02	3.90	517.01	4.43	1.01	1.2800	User-Defined	0.330	14.000	0.0320	
18	L-SDPIPE-34	149.42	521.36	5.08	517.01	4.43	4.35	2.9100	User-Defined	0.330	14.000	0.0320	
19	L-SDPIPE-4	129.78	475.09	7.62	464.82	0.00	10.27	7.9100	User-Defined	0.330	14.000	0.0320	
20	L-SDPIPE-6	214.12	489.62	6.43	475.09	7.29	14.53	6.7900	User-Defined	0.330	14.000	0.0150	
21	L-SDPIPE-7	216.57	487.59	3.97	471.49	3.38	16.10	7.4300	User-Defined	0.330	14.000	0.0150	

Channel Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Fr Nu
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	L-SDPIPE-1	0.00	0 00:00	3.72	0.00	0.00		0.00	0.00	0.00	
2	L-SDPIPE-13	0.00	0 00:00	4.20	0.00	0.00		0.02	0.06	0.00	
3	L-SDPIPE-14	0.46	0 00:13	3.48	0.13	0.37	16.84	0.24	0.73	0.00	
4	L-SDPIPE-15	0.18	0 00:17	7.16	0.02	1.66	0.84	0.08	0.24	0.00	
5	L-SDPIPE-16	0.00	0 00:06	6.90	0.00	0.00		0.04	0.12	0.00	
6	L-SDPIPE-18	0.11	0 00:05	4.64	0.02	6.32	0.45	0.07	0.21	0.00	
7	L-SDPIPE-19	0.34	0 00:08	6.95	0.05	2.95	1.28	0.07	0.22	0.00	
8	L-SDPIPE-2	0.00	0 00:00	3.50	0.00	0.00		0.10	0.29	0.00	
9	L-SDPIPE-20	0.09	0 00:16	6.90	0.01	0.82	4.75	0.07	0.21	0.00	
10	L-SDPIPE-21	0.00	0 00:00	5.04	0.00	0.00		0.17	0.50	0.00	
11	L-SDPIPE-23	0.00	0 00:06	19.36	0.00	0.00		0.15	0.30	0.00	
12	L-SDPIPE-25	0.00	0 00:05	27.75	0.00	0.00		0.01	0.02	0.00	
13	L-SDPIPE-27	0.00	0 00:00	6.79	0.00	0.00		0.00	0.00	0.00	
14	L-SDPIPE-28	0.24	0 00:14	6.86	0.03	2.98	1.28	0.06	0.18	0.00	
15	L-SDPIPE-29	0.02	0 00:07	7.88	0.00	1.75	1.64	0.02	0.06	0.00	
16	L-SDPIPE-32	0.03	0 00:05	28.64	0.00	2.05	0.80	0.02	0.05	0.00	
17	L-SDPIPE-33	0.00	0 00:00	2.86	0.00	0.00		0.17	0.50	0.00	
18	L-SDPIPE-34	0.22	0 00:08	4.31	0.05	0.22	11.32	0.22	0.66	0.00	
19	L-SDPIPE-4	0.00	0 00:00	7.11	0.00	0.00		0.00	0.00	0.00	
20	L-SDPIPE-6	0.18	0 00:05	6.59	0.03	0.54	6.61	0.13	0.39	0.00	
21	L-SDPIPE-7	0.16	0 00:16	6.90	0.02	1.23	2.93	0.08	0.23	0.00	

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness
1	SDPIPE-1	35.55	465.94	0.00	463.00	0.00	2.94	8.2700	CIRCULAR	36.000	36.000	0.0120
2	SDPIPE-10	256.10	529.50	0.00	512.58	0.00	16.92	6.6100	CIRCULAR	18.000	18.000	0.0120
3	SDPIPE-11	67.57	530.20	0.00	529.50	0.00	0.70	1.0400	CIRCULAR	18.000	18.000	0.0120
4	SDPIPE-12	33.01	530.53	0.00	530.20	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0130
5	SDPIPE-13	130.50	517.50	0.00	505.00	0.00	12.50	9.5800	CIRCULAR	18.000	18.000	0.0120
6	SDPIPE-14	39.55	517.99	0.00	517.50	0.00	0.49	1.2500	CIRCULAR	18.000	18.000	0.0130
7	SDPIPE-15	64.04	468.11	0.00	467.47	0.00	0.64	1.0000	CIRCULAR	18.000	18.000	0.0130
8	SDPIPE-16	23.51	501.10	0.00	499.00	0.00	2.10	8.9300	CIRCULAR	18.000	18.000	0.0120
9	SDPIPE-17	194.21	515.30	0.00	501.00	-0.10	14.30	7.3600	CIRCULAR	18.000	18.000	0.0120
10	SDPIPE-18	49.41	517.78	0.00	515.30	0.00	2.48	5.0200	CIRCULAR	18.000	18.000	0.0130
11	SDPIPE-19	51.31	517.87	0.00	515.30	0.00	2.57	5.0100	CIRCULAR	18.000	18.000	0.0130
12	SDPIPE-2	35.82	466.30	0.00	465.94	0.00	0.36	1.0000	CIRCULAR	36.000	36.000	0.0130
13	SDPIPE-20	33.00	501.43	0.00	501.10	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0120
14	SDPIPE-21	239.80	538.50	0.00	530.20	0.00	8.30	3.4600	CIRCULAR	18.000	18.000	0.0120
15	SDPIPE-22	57.68	542.14	0.00	538.50	0.00	3.64	6.3100	CIRCULAR	18.000	18.000	0.0130
16	SDPIPE-23	44.75	542.59	0.00	542.14	0.00	0.45	1.0100	CIRCULAR	18.000	18.000	0.0130
17	SDPIPE-25	74.63	546.00	0.00	544.50	0.00	1.50	2.0100	CIRCULAR	18.000	18.000	0.0130
18	SDPIPE-27	182.53	487.50	0.00	484.31	0.00	3.19	1.7500	CIRCULAR	18.000	18.000	0.0120
19	SDPIPE-28	33.55	487.84	0.00	487.50	0.00	0.34	1.0000	CIRCULAR	18.000	18.000	0.0130
20	SDPIPE-29	167.22	505.00	0.00	487.50	0.00	17.50	10.4700	CIRCULAR	18.000	18.000	0.0120
21	SDPIPE-3	30.36	466.60	0.00	466.30	0.00	0.30	1.0000	CIRCULAR	36.000	36.000	0.0120
22	SDPIPE-30	66.71	510.34	0.00	505.00	0.00	5.34	8.0000	CIRCULAR	18.000	18.000	0.0130
23	SDPIPE-32	96.89	544.50	0.00	538.50	0.00	6.00	6.1900	CIRCULAR	18.000	18.000	0.0120
24	SDPIPE-33	77.61	514.12	0.00	512.58	0.00	1.54	1.9800	CIRCULAR	18.000	18.000	0.0150
25	SDPIPE-34	147.34	516.28	0.00	512.58	0.00	3.70	2.5100	CIRCULAR	18.000	18.000	0.0150
26	SDPIPE-4	71.93	467.47	0.00	466.75	0.81	0.72	1.0000	CIRCULAR	18.000	18.000	0.0120
27	SDPIPE-5	33.00	467.80	0.00	467.47	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0130
28	SDPIPE-6	67.57	483.19	0.00	482.52	0.00	0.67	1.0000	CIRCULAR	18.000	18.000	0.0120
29	SDPIPE-7	42.68	483.62	0.00	483.19	0.00	0.43	1.0000	CIRCULAR	18.000	18.000	0.0130
30	SDPIPE-8	130.97	512.25	0.00	492.00	0.00	20.25	15.4600	CIRCULAR	24.000	24.000	0.0120
31	SDPIPE-9	33.02	512.58	0.00	512.25	0.00	0.33	1.0000	CIRCULAR	24.000	24.000	0.0130
32	SPIPE-35	30.19	462.75	0.00	462.25	0.00	0.50	1.6600	CIRCULAR	18.000	18.000	0.0150
33	SPIPE-36	31.09	441.38	0.08	441.00	0.00	0.38	1.2200	CIRCULAR	18.000	18.000	0.0150

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Fro Num
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	SDPIPE-1	21.43	0 00:08	207.79	0.10	13.86	0.04	0.81	0.27	0.00	
2	SDPIPE-10	5.28	0 00:12	29.25	0.18	5.99	0.71	0.87	0.58	0.00	
3	SDPIPE-11	5.29	0 00:12	11.59	0.46	7.08	0.16	0.66	0.44	0.00	
4	SDPIPE-12	0.69	0 00:07	10.49	0.07	1.74	0.32	0.72	0.48	0.00	
5	SDPIPE-13	2.27	0 00:13	35.22	0.06	10.80	0.20	0.26	0.18	0.00	
6	SDPIPE-14	2.28	0 00:13	11.74	0.19	5.82	0.11	0.41	0.27	0.00	
7	SDPIPE-15	1.45	0 00:17	10.50	0.14	3.74	0.29	0.41	0.27	0.00	
8	SDPIPE-16	3.05	0 00:06	34.01	0.09	9.81	0.04	0.35	0.23	0.00	
9	SDPIPE-17	2.02	0 00:05	30.77	0.07	7.19	0.45	0.33	0.22	0.00	
10	SDPIPE-18	1.05	0 00:05	23.53	0.04	5.70	0.14	0.24	0.16	0.00	
11	SDPIPE-19	1.38	0 00:08	23.51	0.06	6.89	0.12	0.26	0.17	0.00	
12	SDPIPE-2	19.64	0 00:08	66.70	0.29	6.64	0.09	1.31	0.44	0.00	
13	SDPIPE-20	1.13	0 00:16	11.38	0.10	4.39	0.13	0.37	0.25	0.00	
14	SDPIPE-21	1.69	0 00:15	21.17	0.08	3.65	1.09	0.57	0.38	0.00	
15	SDPIPE-22	1.70	0 00:15	26.39	0.06	7.46	0.13	0.28	0.19	0.00	
16	SDPIPE-23	0.62	0 00:05	10.53	0.06	3.27	0.23	0.25	0.16	0.00	
17	SDPIPE-25	0.55	0 00:05	14.89	0.04	3.57	0.35	0.21	0.14	0.00	
18	SDPIPE-27	4.00	0 00:20	15.03	0.27	6.84	0.44	0.55	0.37	0.00	
19	SDPIPE-28	1.27	0 00:14	10.50	0.12	3.12	0.18	0.46	0.31	0.00	
20	SDPIPE-29	3.08	0 00:20	36.81	0.08	7.34	0.38	0.43	0.29	0.00	
21	SDPIPE-3	20.72	0 00:00	71.83	0.29	7.93	0.06	1.60	0.53	0.00	
22	SDPIPE-30	3.08	0 00:20	29.71	0.10	10.67	0.10	0.33	0.22	0.00	
23	SDPIPE-32	1.24	0 00:05	28.32	0.04	7.77	0.21	0.22	0.15	0.00	
24	SDPIPE-33	2.46	0 00:08	12.82	0.19	3.46	0.37	0.87	0.58	0.00	
25	SDPIPE-34	2.16	0 00:08	14.43	0.15	3.23	0.76	0.85	0.57	0.00	
26	SDPIPE-4	1.45	0 00:17	11.38	0.13	4.10	0.29	0.38	0.25	0.00	
27	SDPIPE-5	0.46	0 00:07	10.50	0.04	1.98	0.28	0.28	0.19	0.00	
28	SDPIPE-6	1.79	0 00:05	11.37	0.16	4.31	0.26	0.43	0.29	0.00	
29	SDPIPE-7	1.37	0 00:16	10.50	0.13	3.58	0.20	0.40	0.27	0.00	
30	SDPIPE-8	11.68	0 00:09	96.37	0.12	19.32	0.11	0.49	0.25	0.00	
31	SDPIPE-9	11.53	0 00:09	22.62	0.51	8.12	0.07	0.93	0.46	0.00	
32	SPIPE-35	1.59	0 00:05	11.72	0.14	4.18	0.12	0.40	0.27	0.00	
33	SPIPE-36	3.91	0 00:10	10.06	0.39	4.67	0.11	0.72	0.48	0.00	

Inlet Input

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Ini Wa De
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.62	487.59	3.97	483.62	0
2	CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.25	517.01	4.76	512.25	0
3	CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.58	517.01	4.43	512.58	0
4	CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.20	534.06	3.86	530.20	0
5	CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.53	534.06	3.53	530.53	0
6	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.50	521.86	4.36	517.50	0
7	CB-19	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.99	522.45	4.46	517.99	0
8	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	465.94	476.67	10.73	465.94	0
9	CB-20	FHWA HEC-22 GENERIC	N/A	On Grade	1	468.11	471.49	3.38	468.11	0
10	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.10	505.01	3.91	501.10	0
11	CB-24	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.78	523.31	5.53	517.77	-0
12	CB-25	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.87	522.17	4.30	515.81	-2
13	CB-26	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.43	505.01	3.58	501.43	0
14	CB-27	FHWA HEC-22 GENERIC	N/A	On Grade	1	538.50	543.67	5.17	538.50	0
15	CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	542.14	545.67	3.53	542.20	0
16	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	542.59	547.43	4.84	542.65	0
17	CB-3	FHWA HEC-22 GENERIC	N/A	On Grade	1	466.30	476.28	9.98	466.30	0
18	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	4.87	544.50	0
19	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.70	3.70	546.00	0
20	CB-35	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.50	494.00	6.50	487.50	0
21	CB-36	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.84	493.47	5.63	487.84	0
22	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	505.00	510.72	5.72	505.00	0
23	CB-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	510.34	515.37	5.03	510.34	0
24	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.12	518.02	3.90	514.12	0
25	CB-6	FHWA HEC-22 GENERIC	N/A	On Sag	1	467.80	475.09	7.29	467.80	0
26	CB-7	FHWA HEC-22 GENERIC	N/A	On Grade	1	467.47	475.09	7.62	467.47	0
27	CB-9	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.19	489.62	6.43	483.19	0
28	Inlet-CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	516.28	521.36	5.08	516.28	0

Roadway & Gutter Input

SN	Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1	CB-10	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
2	CB-12	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
3	CB-13	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
4	CB-15	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
5	CB-16	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
6	CB-18	0.0245	0.0258	0.0150	0.0200	1.00	0.1312	8.50
7	CB-19	0.0245	0.0258	0.0150	0.0200	1.00	0.1312	8.50
8	CB-2	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
9	CB-20	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
10	CB-22	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
11	CB-24	0.1033	0.0258	0.0150	0.0200	1.00	0.1312	8.50
12	CB-25	0.1041	0.0258	0.0150	0.0200	1.00	0.1312	8.50
13	CB-26	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
14	CB-27	0.0574	0.0258	0.0150	0.0200	1.00	0.1312	8.50
15	CB-28	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
16	CB-29	0.0574	0.0258	0.0150	0.0200	1.00	0.1312	8.50
17	CB-3	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
18	CB-31	0.0721	0.0200	0.0150	0.0200	1.50	0.1312	8.50
19	CB-32	0.0809	0.0258	0.0150	0.0200	1.00	0.1312	8.50
20	CB-35	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
21	CB-36	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
22	CB-38	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
23	CB-39	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
24	CB-43	0.0199	0.0258	0.0150	0.0200	1.00	0.1312	8.50
25	CB-6	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
26	CB-7	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
27	CB-9	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
28	Inlet-CB-44	0.1138	0.0258	0.0150	0.0200	1.00	0.1312	8.50

Inlet Results

SN	Element ID	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Max Depth Occurrence (days hh:mm)	F \
1	CB-10	1.54	1.45	1.34	0.19	87.40	4.89	487.71	0.12	0 00:16	
2	CB-12	1.36	1.36	N/A	N/A	N/A	4.37	517.29	0.28	0 00:09	
3	CB-13	3.72	3.56	N/A	N/A	N/A	8.53	517.40	0.39	0 00:09	
4	CB-15	3.63	3.63	N/A	N/A	N/A	8.38	534.44	0.38	0 00:12	
5	CB-16	1.79	1.79	N/A	N/A	N/A	5.24	534.36	0.30	0 00:12	
6	CB-18	0.53	0.53	0.53	0.00	100.00	4.05	521.96	0.10	0 00:13	
7	CB-19	2.74	2.74	2.28	0.46	83.25	7.45	522.64	0.19	0 00:13	
8	CB-2	1.20	0.97	1.20	0.00	100.00	6.67	476.84	0.17	0 00:08	
9	CB-20	1.63	1.50	1.40	0.23	85.80	4.99	471.61	0.12	0 00:17	
10	CB-22	0.60	0.60	0.60	0.00	100.00	3.45	505.09	0.08	0 00:06	
11	CB-24	1.16	1.16	1.06	0.10	91.65	4.15	523.41	0.10	0 00:05	
12	CB-25	1.73	1.73	1.39	0.34	80.28	4.80	522.29	0.12	0 00:08	
13	CB-26	1.23	1.23	1.15	0.08	93.36	4.48	505.12	0.11	0 00:16	
14	CB-27	0.38	0.38	0.38	0.00	100.00	3.07	543.74	0.07	0 00:15	
15	CB-28	1.71	1.71	N/A	N/A	N/A	5.07	545.97	0.30	0 00:15	
16	CB-29	0.63	0.63	0.63	0.00	100.00	3.71	547.52	0.09	0 00:05	
17	CB-3	0.60	0.60	0.60	0.00	100.00	5.18	476.41	0.13	0 00:08	
18	CB-31	0.74	0.74	0.74	0.01	99.03	4.36	549.46	0.09	0 00:05	
19	CB-32	0.56	0.56	0.56	0.00	100.00	3.32	549.78	0.08	0 00:05	
20	CB-35	0.43	0.43	0.43	0.00	100.00	2.89	494.07	0.07	0 00:20	
21	CB-36	1.51	1.51	1.27	0.24	84.23	4.56	493.58	0.11	0 00:14	
22	CB-38	0.97	0.97	0.93	0.04	95.57	3.88	510.81	0.09	0 00:20	
23	CB-39	3.23	3.20	N/A	N/A	N/A	7.77	515.74	0.37	0 00:20	
24	CB-43	2.46	2.46	2.46	0.00	100.00	7.44	518.21	0.19	0 00:08	
25	CB-6	0.87	0.71	N/A	N/A	N/A	3.25	475.34	0.25	0 00:07	
26	CB-7	0.18	0.18	0.18	0.00	100.00	3.27	475.17	0.08	0 00:17	
27	CB-9	1.55	1.55	1.35	0.20	87.17	4.91	489.74	0.12	0 00:05	
28	Inlet-CB-44	2.43	2.43	2.18	0.24	89.92	5.34	521.49	0.13	0 00:08	

100 Year Design Storm

Project Description

File Name	Hilltop Drainage Analysis 4-8-26.SPF

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins	31
Nodes	46
Junctions	5
Outfalls	13
Flow Diversions	0
Inlets	28
Storage Nodes	0
Links	54
Channels	21
Pipes	33
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period	100 year(s)

Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-CB-10	0.58	0.7000	1.72	1.21	0.70	2.65	0 00:15:54
2	Sub-CB-12	0.32	0.7000	0.93	0.65	0.21	2.48	0 00:05:00
3	Sub-CB-13	1.03	0.7000	1.20	0.84	0.87	6.49	0 00:07:58
4	Sub-CB-15	1.21	0.7000	1.41	0.99	1.20	6.62	0 00:10:46
5	Sub-CB-16	0.42	0.7000	0.93	0.65	0.27	3.27	0 00:05:00
6	Sub-CB-18	0.12	0.7000	0.93	0.65	0.08	0.96	0 00:05:00
7	Sub-CB-19	1.00	0.7000	1.55	1.09	1.09	5.01	0 00:12:57
8	Sub-CB-2	0.38	0.7000	1.67	1.17	0.44	1.78	0 00:14:59
9	Sub-CB-20	0.62	0.7000	1.80	1.26	0.78	2.74	0 00:17:03
10	Sub-CB-22	0.14	0.7000	0.93	0.65	0.09	1.10	0 00:05:00
11	Sub-CB-24	0.27	0.7000	0.93	0.65	0.18	2.11	0 00:05:01
12	Sub-CB-25	0.51	0.7000	1.23	0.86	0.44	3.15	0 00:08:15
13	Sub-CB-26	0.49	0.7000	1.72	1.21	0.59	2.25	0 00:15:52
14	Sub-CB-27	0.10	0.7000	1.05	0.73	0.07	0.69	0 00:06:07
15	Sub-CB-28	0.67	0.7000	1.67	1.17	0.78	3.12	0 00:15:04
16	Sub-CB-29	0.15	0.7000	0.93	0.65	0.10	1.15	0 00:05:00
17	Sub-CB-3	0.14	0.7000	0.93	0.65	0.09	1.10	0 00:05:00
18	Sub-CB-31	0.17	0.7000	0.93	0.65	0.11	1.36	0 00:05:00
19	Sub-CB-32	0.13	0.7000	0.93	0.65	0.08	1.01	0 00:05:00
20	Sub-CB-35	0.10	0.7000	0.93	0.65	0.07	0.78	0 00:05:00
21	Sub-CB-36	0.58	0.7000	1.65	1.16	0.67	2.76	0 00:14:42
22	Sub-CB-38	0.24	0.7000	0.99	0.70	0.17	1.77	0 00:05:43
23	Sub-CB-39	1.39	0.7000	1.93	1.35	1.87	5.86	0 00:19:10
24	Sub-CB-43	0.71	0.7000	1.18	0.83	0.59	4.49	0 00:07:53
25	Sub-CB-44	0.72	0.7000	1.22	0.85	0.61	4.43	0 00:08:24
26	Sub-CB-6	0.16	0.7000	0.93	0.65	0.11	1.29	0 00:05:00
27	Sub-CB-7	0.04	0.7000	0.93	0.65	0.03	0.32	0 00:05:00
28	Sub-CB-9	0.36	0.7000	0.93	0.65	0.24	2.82	0 00:05:00
29	Sub-FES-2	1.58	0.5600	1.22	0.69	1.09	7.82	0 00:08:19
30	SUB-PIPE-35	0.36	0.7200	0.93	0.67	0.24	2.90	0 00:05:00
31	SUB-PIPE-36	1.26	0.7200	1.38	0.99	1.25	7.16	0 00:10:33

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)
1	FES-2	Junction	466.60	469.78	466.60	469.78	0.00	23.00	468.51	0.00	1.27
2	IN-PIPE-35	Junction	462.75	464.00	462.75	464.00	0.00	2.90	463.36	0.00	0.89
3	IN-PIPE36	Junction	441.30	442.80	441.30	442.80	0.00	7.15	442.59	0.00	0.29
4	JB-14	Junction	529.50	534.76	529.50	535.50	0.00	9.58	530.09	0.00	4.67
5	JB-23	Junction	515.30	519.44	515.30	519.20	10.00	3.04	515.62	0.00	3.82
6	OFFSITE-1	Outfall	540.30					0.20	540.37		
7	OFFSITE-2	Outfall	532.10					0.03	532.13		
8	OFFSITE-25	Outfall	464.82					0.00	464.82		
9	OFFSITE-26	Outfall	464.82					0.82	464.96		
10	OU-PIPE-36	Outfall	441.00					7.13	441.93		
11	Out-FES-1	Outfall	463.00					26.81	463.73		
12	Out-FES-11	Outfall	492.00					22.96	492.66		
13	Out-FES-17	Outfall	505.00					3.27	505.31		
14	Out-FES-21	Outfall	499.00					5.35	499.40		
15	Out-FES-3	Outfall	538.50					2.10	538.78		
16	Out-FES-34	Outfall	484.31					7.59	485.07		
17	Out-FES-8	Outfall	482.52					2.76	483.02		
18	OUT-PIPE-35	Outfall	462.25					2.89	462.76		

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak D Total D F
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)	
1	SDPIPE-1	Pipe	CB-2	Out-FES-1	35.55	465.94	463.00	8.2700	36.000	0.0120	26.81	207.79	0.13	14.35	0.93	
2	SDPIPE-10	Pipe	JB-14	CB-13	256.10	529.50	512.58	6.6100	18.000	0.0120	9.58	29.25	0.33	7.38	1.05	
3	SDPIPE-11	Pipe	CB-15	JB-14	67.57	530.20	529.50	1.0400	18.000	0.0120	9.58	11.59	0.83	7.85	0.98	
4	SDPIPE-12	Pipe	CB-16	CB-15	33.01	530.53	530.20	1.0000	18.000	0.0130	1.15	10.49	0.11	1.86	1.21	
5	SDPIPE-13	Pipe	CB-18	Out-FES-17	130.50	517.50	505.00	9.5800	18.000	0.0120	3.27	35.22	0.09	11.98	0.32	
6	SDPIPE-14	Pipe	CB-19	CB-18	39.55	517.99	517.50	1.2500	18.000	0.0130	3.27	11.74	0.28	6.32	0.50	
7	SDPIPE-15	Pipe	CB-20	CB-7	64.04	468.11	467.47	1.0000	18.000	0.0130	2.60	10.50	0.25	4.07	0.59	
8	SDPIPE-16	Pipe	CB-22	Out-FES-21	23.51	501.10	499.00	8.9300	18.000	0.0120	5.35	34.01	0.16	10.86	0.48	
9	SDPIPE-17	Pipe	JB-23	CB-22	194.21	515.30	501.00	7.3600	18.000	0.0120	3.03	30.77	0.10	7.30	0.44	
10	SDPIPE-18	Pipe	CB-24	JB-23	49.41	517.78	515.30	5.0200	18.000	0.0130	1.56	23.53	0.07	6.31	0.30	
11	SDPIPE-19	Pipe	CB-25	JB-23	51.31	517.87	515.30	5.0100	18.000	0.0130	1.97	23.51	0.08	7.62	0.31	
12	SDPIPE-2	Pipe	CB-3	CB-2	35.82	466.30	465.94	1.0000	36.000	0.0130	23.32	66.70	0.35	6.93	1.44	
13	SDPIPE-20	Pipe	CB-26	CB-22	33.00	501.43	501.10	1.0000	18.000	0.0120	2.21	11.38	0.19	4.82	0.56	
14	SDPIPE-21	Pipe	CB-27	CB-15	239.80	538.50	530.20	3.4600	18.000	0.0120	3.09	21.17	0.15	4.42	0.86	
15	SDPIPE-22	Pipe	CB-28	CB-27	57.68	542.14	538.50	6.3100	18.000	0.0130	3.11	26.39	0.12	8.69	0.38	
16	SDPIPE-23	Pipe	CB-29	CB-28	44.75	542.59	542.14	1.0100	18.000	0.0130	1.10	10.53	0.10	3.70	0.34	
17	SDPIPE-25	Pipe	CB-32	CB-31	74.63	546.00	544.50	2.0100	18.000	0.0130	0.97	14.89	0.07	4.20	0.28	
18	SDPIPE-27	Pipe	CB-35	Out-FES-34	182.53	487.50	484.31	1.7500	18.000	0.0120	7.59	15.03	0.50	7.93	0.80	
19	SDPIPE-28	Pipe	CB-36	CB-35	33.55	487.84	487.50	1.0000	18.000	0.0130	1.82	10.50	0.17	2.86	0.69	
20	SDPIPE-29	Pipe	CB-38	CB-35	167.22	505.00	487.50	10.4700	18.000	0.0120	6.15	36.81	0.17	8.74	0.63	
21	SDPIPE-3	Pipe	FES-2	CB-3	30.36	466.60	466.30	1.0000	36.000	0.0120	22.99	71.83	0.32	7.93	1.78	
22	SDPIPE-30	Pipe	CB-39	CB-38	66.71	510.34	505.00	8.0000	18.000	0.0130	6.15	29.71	0.21	12.56	0.48	
23	SDPIPE-32	Pipe	CB-31	Out-FES-3	96.89	544.50	538.50	6.1900	18.000	0.0120	2.10	28.32	0.07	8.96	0.29	
24	SDPIPE-33	Pipe	CB-43	CB-13	77.61	514.12	512.58	1.9800	18.000	0.0150	4.04	12.82	0.31	4.01	1.25	
25	SDPIPE-34	Pipe	Inlet-CB-44	CB-13	147.34	516.28	512.58	2.5100	18.000	0.0150	3.17	14.43	0.22	3.76	0.99	
26	SDPIPE-4	Pipe	CB-7	CB-2	71.93	467.47	466.75	1.0000	18.000	0.0120	2.85	11.38	0.25	4.84	0.55	
27	SDPIPE-5	Pipe	CB-6	CB-7	33.00	467.80	467.47	1.0000	18.000	0.0130	0.80	10.50	0.08	2.15	0.42	
28	SDPIPE-6	Pipe	CB-9	Out-FES-8	67.57	483.19	482.52	1.0000	18.000	0.0120	2.76	11.37	0.24	4.78	0.54	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak D Total D F
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)	
46	L-SDPIPE-27	Channel	CB-35	CB-3	245.69	494.00	476.28	7.2100	3.960	0.0150	0.00	6.79	0.00	0.00	0.01	
47	L-SDPIPE-28	Channel	CB-36	CB-2	228.18	493.47	476.67	7.3600	3.960	0.0150	1.02	6.86	0.15	4.13	0.15	
48	L-SDPIPE-29	Channel	CB-38	CB-35	172.07	510.72	494.00	9.7200	3.960	0.0150	0.33	7.88	0.04	3.21	0.07	
49	L-SDPIPE-32	Channel	CB-31	OFFSITE-1	98.13	549.76	540.30	9.6400	6.000	0.0150	0.20	28.64	0.01	2.24	0.07	
50	L-SDPIPE-33	Channel	CB-43	CB-13	78.91	518.02	517.01	1.2800	3.960	0.0320	0.36	2.86	0.13	0.30	0.24	
51	L-SDPIPE-34	Channel	Inlet-CB-44	CB-13	149.42	521.36	517.01	2.9100	3.960	0.0320	1.20	4.31	0.28	0.81	0.27	
52	L-SDPIPE-4	Channel	CB-7	OFFSITE-25	129.78	475.09	464.82	7.9100	3.960	0.0320	0.00	7.11	0.00	0.00	0.00	
53	L-SDPIPE-6	Channel	CB-9	CB-6	214.12	489.62	475.09	6.7900	3.960	0.0150	0.84	6.59	0.13	0.92	0.22	
54	L-SDPIPE-7	Channel	CB-10	CB-20	216.57	487.59	471.49	7.4300	3.960	0.0150	0.76	6.90	0.11	1.80	0.14	

Inlet Summary

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft²)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max C Sp during
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.62	487.59	483.62	N/A	3.18	2.10	1.08	66.02	8.50	
2	CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.25	517.01	512.25	10.00	2.48	N/A	N/A	N/A	8.50	
3	CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.58	517.01	512.58	10.00	7.94	N/A	N/A	N/A	8.50	
4	CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.20	534.06	530.20	10.00	6.62	N/A	N/A	N/A	8.50	
5	CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.53	534.06	530.53	10.00	3.28	N/A	N/A	N/A	8.50	
6	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.50	521.86	517.50	N/A	0.96	0.96	0.00	100.00	8.50	
7	CB-19	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.99	522.45	517.99	N/A	5.01	3.27	1.73	65.39	8.50	
8	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	465.94	476.67	465.94	N/A	2.77	2.61	0.16	94.09	8.50	
9	CB-20	FHWA HEC-22 GENERIC	N/A	On Grade	1	468.11	471.49	468.11	N/A	3.39	2.18	1.21	64.21	8.50	
10	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.10	505.01	501.10	N/A	1.09	1.05	0.04	95.92	8.50	
11	CB-24	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.78	523.31	517.77	N/A	2.10	1.57	0.54	74.48	8.50	
12	CB-25	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.87	522.17	515.81	N/A	3.15	1.97	1.18	62.63	8.50	
13	CB-26	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.43	505.01	501.43	N/A	2.37	1.77	0.60	74.78	8.50	
14	CB-27	FHWA HEC-22 GENERIC	N/A	On Grade	1	538.50	543.67	538.50	N/A	0.69	0.69	0.00	100.00	8.50	
15	CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	542.14	545.67	542.20	10.00	3.12	N/A	N/A	N/A	8.50	
16	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	542.59	547.43	542.65	N/A	1.15	1.11	0.03	97.01	8.50	
17	CB-3	FHWA HEC-22 GENERIC	N/A	On Grade	1	466.30	476.28	466.30	N/A	1.10	1.10	0.00	100.00	8.50	
18	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	544.50	N/A	1.35	1.16	0.19	85.78	8.50	
19	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.70	546.00	N/A	1.01	0.98	0.03	96.82	8.50	
20	CB-35	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.50	494.00	487.50	N/A	0.98	0.93	0.05	95.37	8.50	
21	CB-36	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.84	493.47	487.84	N/A	2.76	1.83	0.93	66.42	8.50	
22	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	505.00	510.72	505.00	N/A	1.77	1.41	0.36	79.52	8.50	
23	CB-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	510.34	515.37	510.34	10.00	6.29	N/A	N/A	N/A	8.50	
24	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.12	518.02	514.12	N/A	4.49	4.11	0.38	91.44	8.50	
25	CB-6	FHWA HEC-22 GENERIC	N/A	On Sag	1	467.80	475.09	467.80	10.00	2.12	N/A	N/A	N/A	8.50	
26	CB-7	FHWA HEC-22 GENERIC	N/A	On Grade	1	467.47	475.09	467.47	N/A	0.32	0.32	0.00	100.00	8.50	
27	CB-9	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.19	489.62	483.19	N/A	2.82	1.96	0.86	69.56	8.50	
28	Inlet-CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	516.28	521.36	516.28	N/A	4.42	3.20	1.23	72.29	8.50	

Subbasin Hydrology

Subbasin : Sub-CB-10

Input Data

Area (ac) 0.58
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.7
Composite Area & Weighted Runoff Coeff.	0.58		0.7

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99996647	0	0
Slope (%) :	1.25	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	15.21	0	0

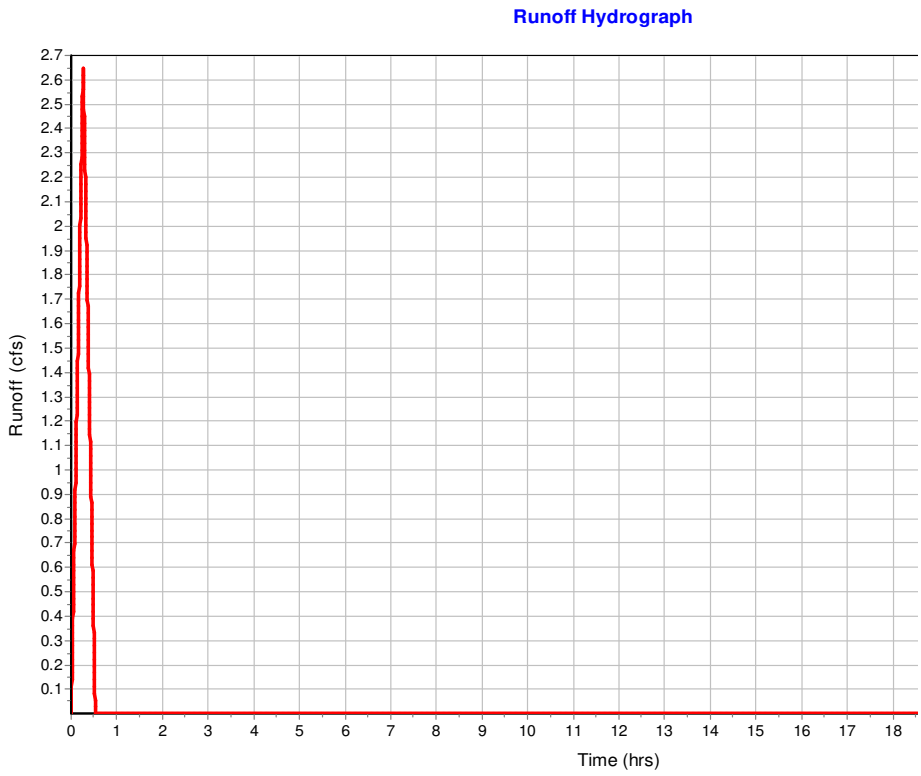
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	229.3185963	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.69	0	0

Total TOC (min) 15.90

Subbasin Runoff Results

Total Rainfall (in)	1.72
Total Runoff (in)	1.21
Peak Runoff (cfs)	2.65
Rainfall Intensity	6.529
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:54

Subbasin : Sub-CB-10



Subbasin : Sub-CB-12

Input Data

Area (ac)	0.32
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.32	-	0.7
Composite Area & Weighted Runoff Coeff.	0.32		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

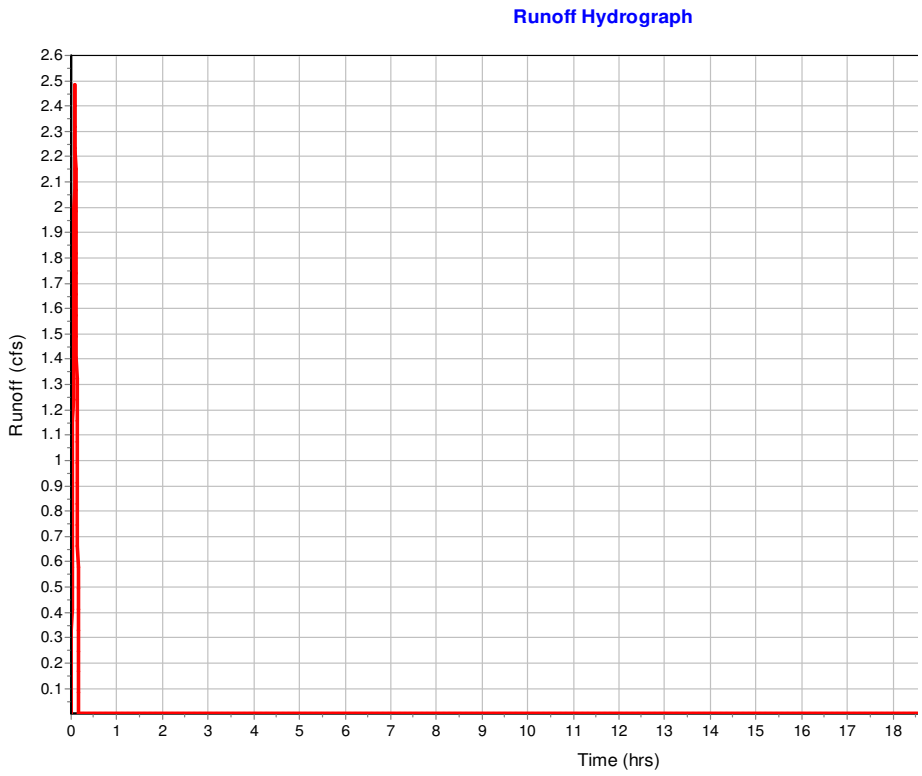
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	219.5273657	0	0
Slope (%) :	1.99	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	2.87	0	0
Computed Flow Time (min) :	1.28	0	0

Total TOC (min) 4.14

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	2.48
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:04:08

Subbasin : Sub-CB-12



Subbasin : Sub-CB-13

Input Data

Area (ac)	1.03
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.03	-	0.7
Composite Area & Weighted Runoff Coeff.	1.03		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	11.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.27	0	0

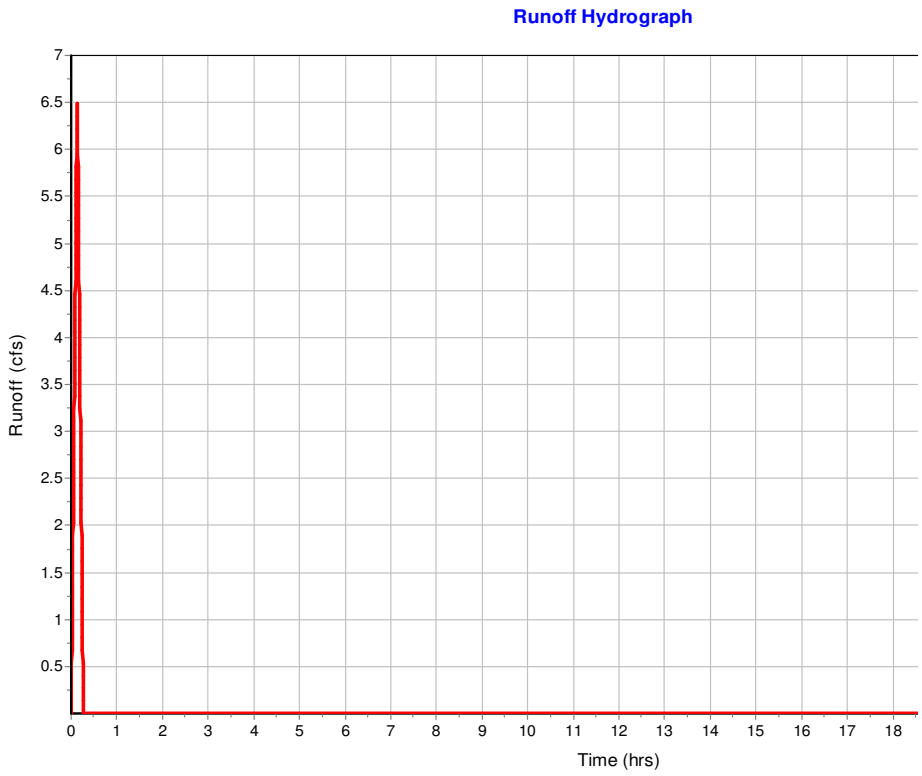
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	93	71.4	0
Slope (%) :	11.5	1.99	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	5.47	2.87	0
Computed Flow Time (min) :	0.28	0.41	0

Total TOC (min) 7.97

Subbasin Runoff Results

Total Rainfall (in)	1.2
Total Runoff (in)	0.84
Peak Runoff (cfs)	6.49
Rainfall Intensity	9
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:07:58

Subbasin : Sub-CB-13



Subbasin : Sub-CB-15

Input Data

Area (ac)	1.21
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.21	-	0.7
Composite Area & Weighted Runoff Coeff.	1.21		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.16	0	0
Computed Flow Time (min) :	10.14	0	0

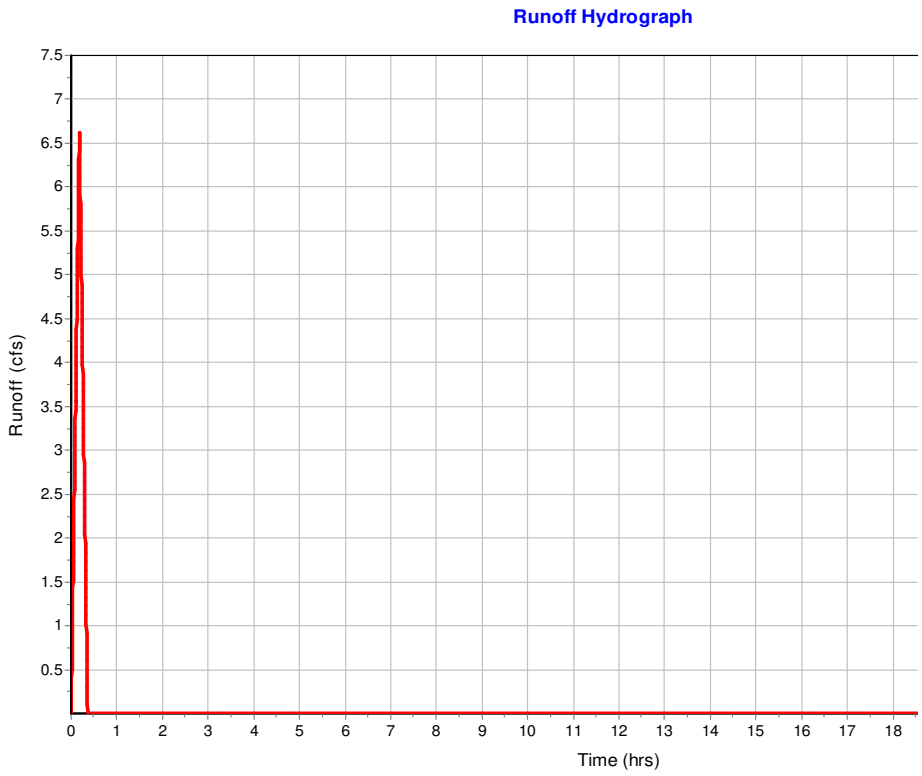
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	12.98144373	156.302	0
Slope (%) :	2	5.74	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	4.87	0
Computed Flow Time (min) :	0.09	0.53	0

Total TOC (min) 10.77

Subbasin Runoff Results

Total Rainfall (in)	1.41
Total Runoff (in)	0.99
Peak Runoff (cfs)	6.62
Rainfall Intensity	7.815
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:10:46

Subbasin : Sub-CB-15



Subbasin : Sub-CB-16

Input Data

Area (ac)	0.42
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	-	0.7
Composite Area & Weighted Runoff Coeff.	0.42		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.01720552	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

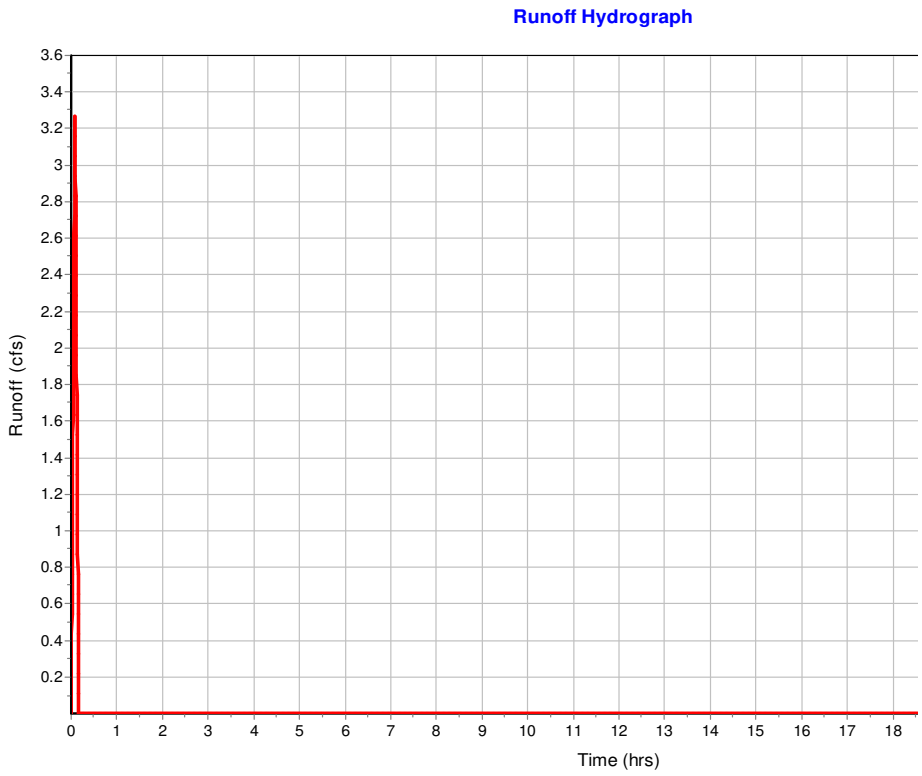
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	310.5319881	0	0
Slope (%) :	5.74	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.87	0	0
Computed Flow Time (min) :	1.06	0	0

Total TOC (min) 3.93

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	3.27
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:56

Subbasin : Sub-CB-16



Subbasin : Sub-CB-18

Input Data

Area (ac)	0.12
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.7
Composite Area & Weighted Runoff Coeff.	0.12		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.10752092	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.88	0	0

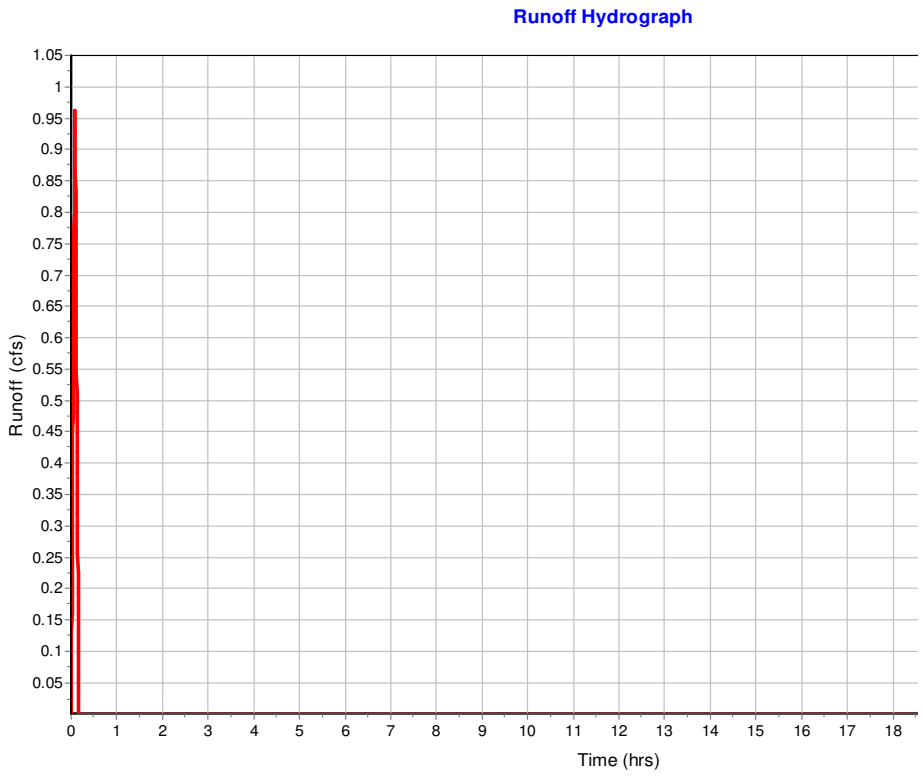
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	71.43477489	102.308	0
Slope (%) :	11.86	2.45	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	7	3.18	0
Computed Flow Time (min) :	0.17	0.54	0

Total TOC (min) 3.59

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	0.96
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:35

Subbasin : Sub-CB-18



Subbasin : Sub-CB-19

Input Data

Area (ac) 1
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1	-	0.7
Composite Area & Weighted Runoff Coeff.	1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100.0031436	0	0
Slope (%) :	3.4	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.14	0	0
Computed Flow Time (min) :	11.83	0	0

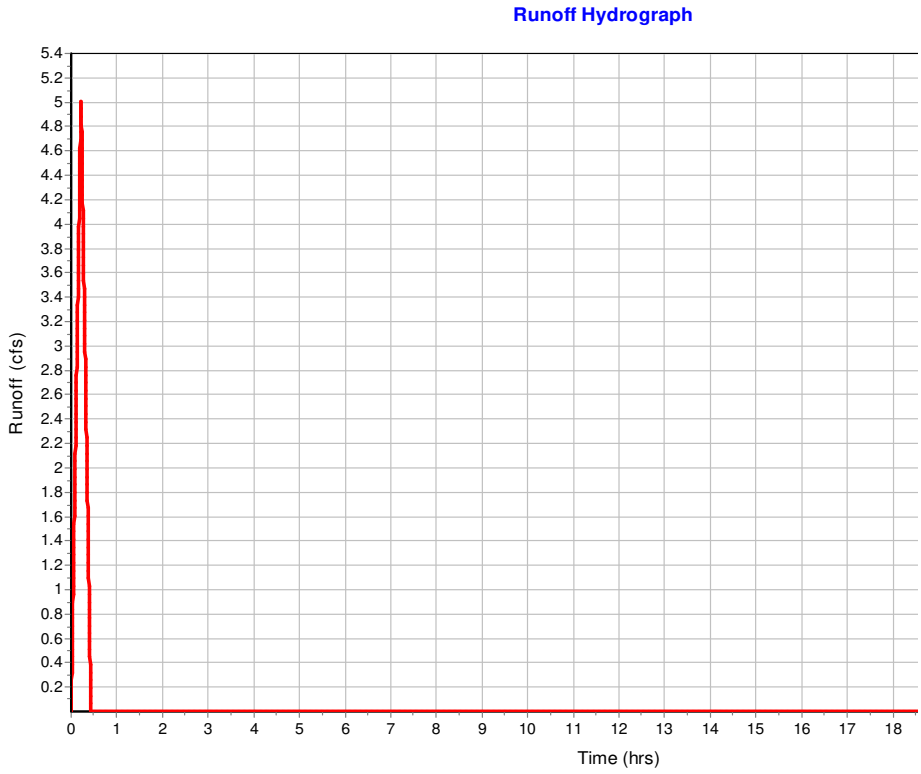
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	6.07922878	278.905	79.9642
Slope (%) :	2	11.86	2.45
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	7	3.18
Computed Flow Time (min) :	0.04	0.66	0.42

Total TOC (min) 12.96

Subbasin Runoff Results

Total Rainfall (in) 1.55
Total Runoff (in) 1.09
Peak Runoff (cfs) 5.01
Rainfall Intensity 7.165
Weighted Runoff Coefficient 0.7
Time of Concentration (days hh:mm:ss) 0 00:12:58

Subbasin : Sub-CB-19



Subbasin : Sub-CB-2

Input Data

Area (ac)	0.38
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.38	-	0.7
Composite Area & Weighted Runoff Coeff.	0.38		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	83	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	14.14	0	0

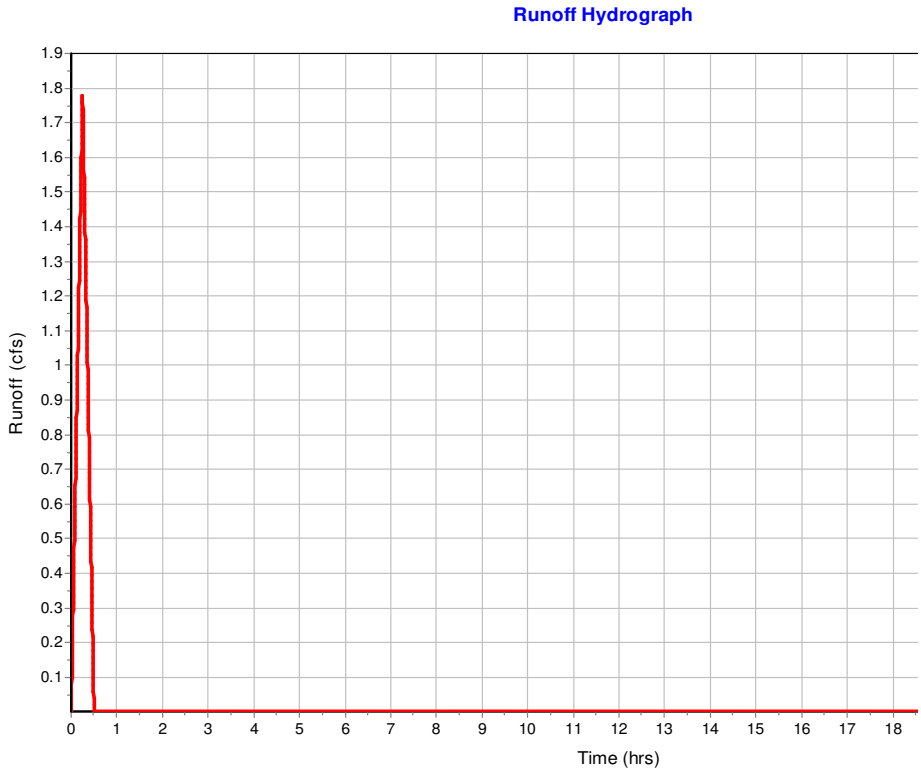
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	175.3484305	45.5292	0
Slope (%) :	10.46	0.85	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	1.87	0
Computed Flow Time (min) :	0.44	0.4	0

Total TOC (min) 14.99

Subbasin Runoff Results

Total Rainfall (in)	1.67
Total Runoff (in)	1.17
Peak Runoff (cfs)	1.78
Rainfall Intensity	6.692
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:14:59

Subbasin : Sub-CB-2



Subbasin : Sub-CB-20

Input Data

Area (ac)	0.62
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.62	-	0.7
Composite Area & Weighted Runoff Coeff.	0.62		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	99.99258294	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	16.41	0	0

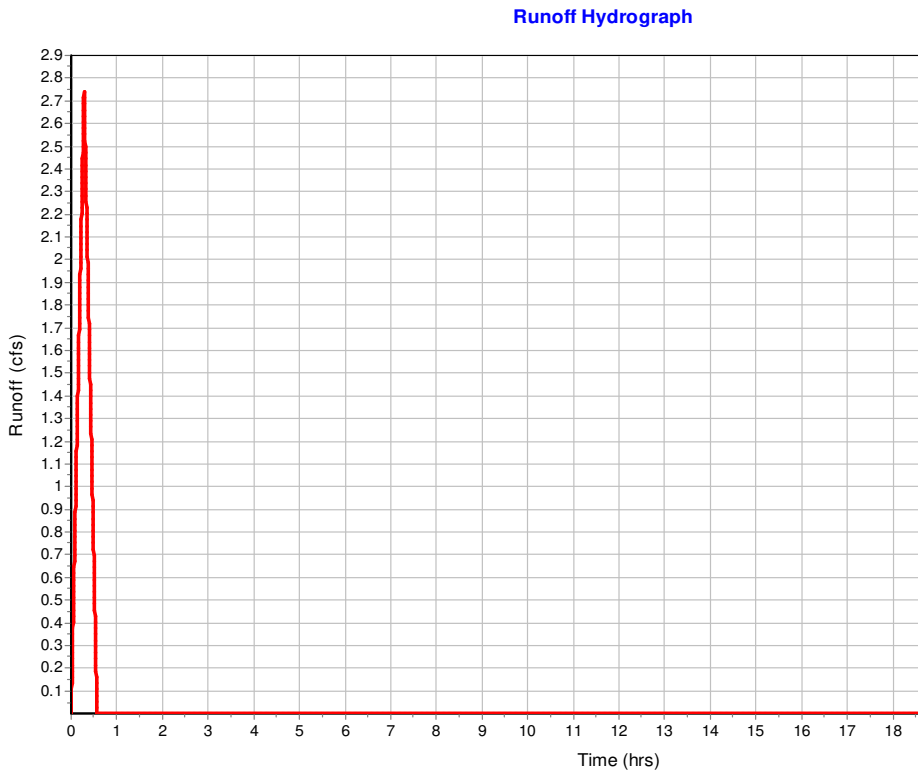
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3.00743724	208.662	0
Slope (%) :	2	7.49	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	5.56	0
Computed Flow Time (min) :	0.02	0.63	0

Total TOC (min) 17.06

Subbasin Runoff Results

Total Rainfall (in)	1.8
Total Runoff (in)	1.26
Peak Runoff (cfs)	2.74
Rainfall Intensity	6.34
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:17:04

Subbasin : Sub-CB-20



Subbasin : Sub-CB-22

Input Data

Area (ac)	0.14
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.14	-	0.7
Composite Area & Weighted Runoff Coeff.	0.14		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99981258	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

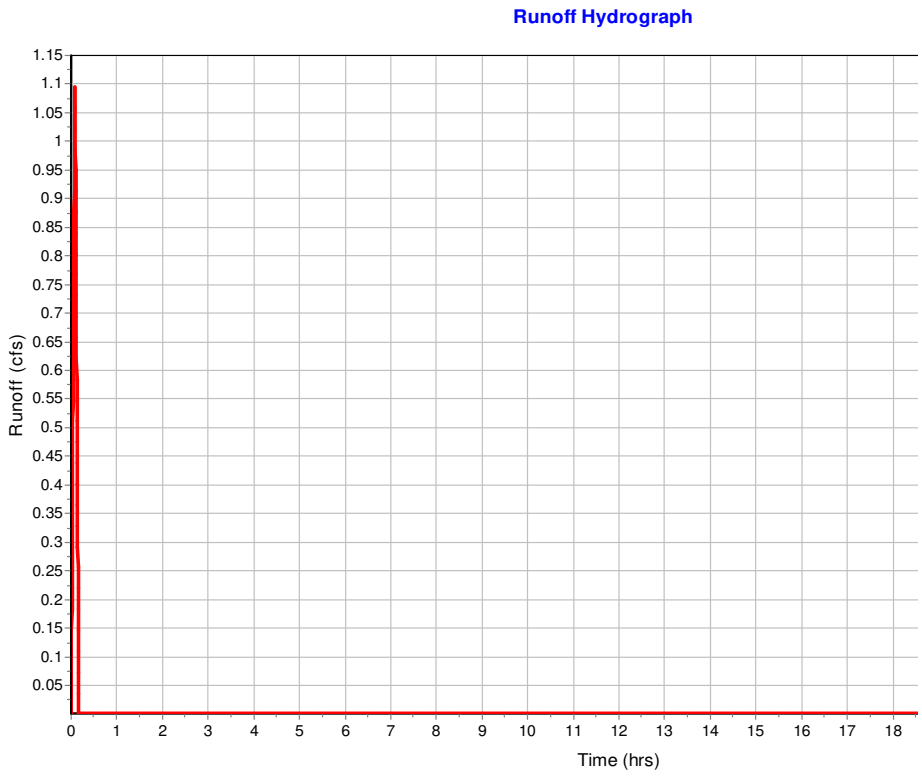
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	167.0428132	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.5	0	0

Total TOC (min) 3.36

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	1.1
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:22

Subbasin : Sub-CB-22



Subbasin : Sub-CB-24

Input Data

Area (ac)	0.27
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.27	-	0.7
Composite Area & Weighted Runoff Coeff.	0.27		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	37.99958613	0	0
Slope (%) :	6.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.15	0	0
Computed Flow Time (min) :	4.21	0	0

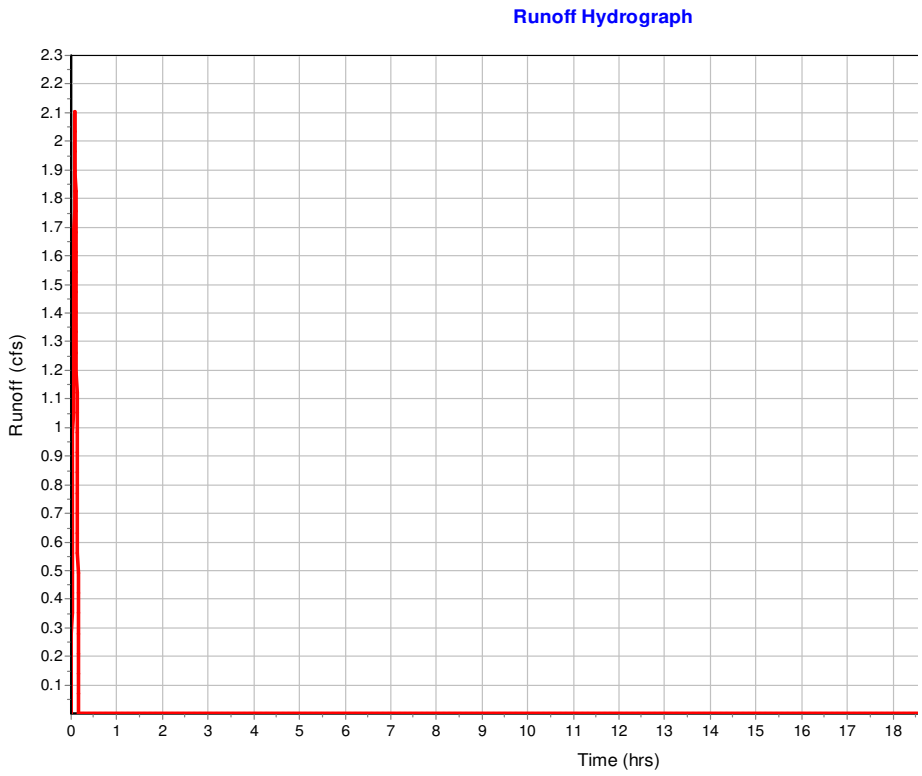
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	28.98355088	187.48	0
Slope (%) :	0.51	10.41	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.45	6.56	0
Computed Flow Time (min) :	0.33	0.48	0

Total TOC (min) 5.02

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	2.11
Rainfall Intensity	11.179
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:05:01

Subbasin : Sub-CB-24



Subbasin : Sub-CB-25

Input Data

Area (ac)	0.51
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.51	-	0.7
Composite Area & Weighted Runoff Coeff.	0.51		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99999586	0	0
Slope (%) :	7.25	0	0
2 yr, 24 hr Rainfall (in) :	4.32	0	0
Velocity (ft/sec) :	0.18	0	0
Computed Flow Time (min) :	7.56	0	0

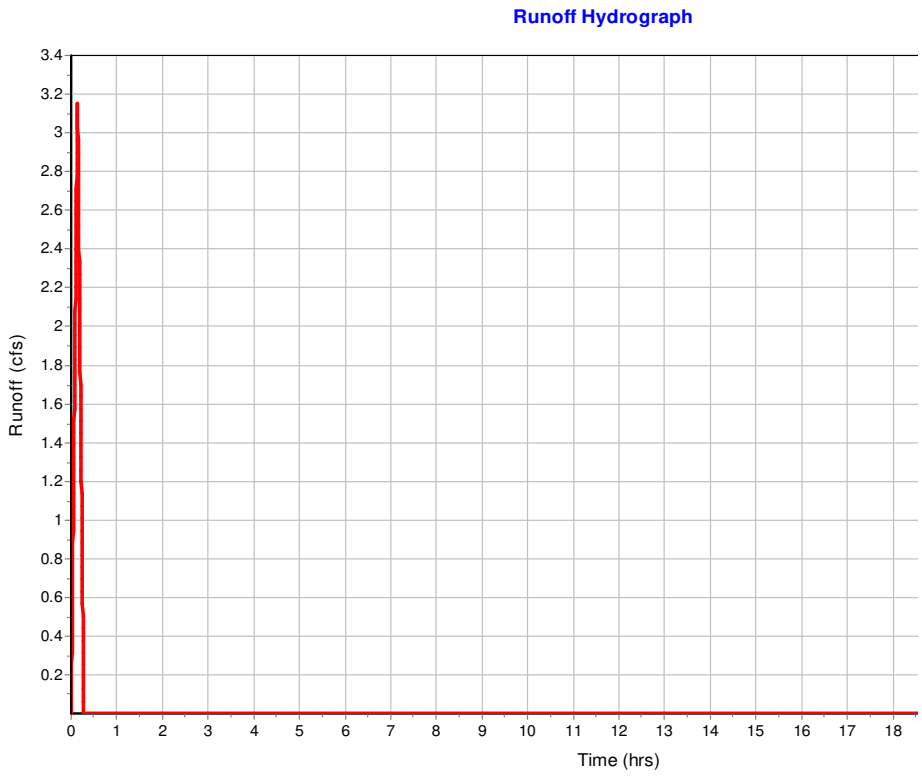
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	16.12667612	203.96	0
Slope (%) :	0.51	10.41	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.45	6.56	0
Computed Flow Time (min) :	0.19	0.52	0

Total TOC (min) 8.26

Subbasin Runoff Results

Total Rainfall (in)	1.23
Total Runoff (in)	0.86
Peak Runoff (cfs)	3.15
Rainfall Intensity	8.85
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:08:16

Subbasin : Sub-CB-25



Subbasin : Sub-CB-26

Input Data

Area (ac)	0.49
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.49	-	0.7
Composite Area & Weighted Runoff Coeff.	0.49		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	82.99998121	0	0
Slope (%) :	1.25	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.09	0	0
Computed Flow Time (min) :	15.21	0	0

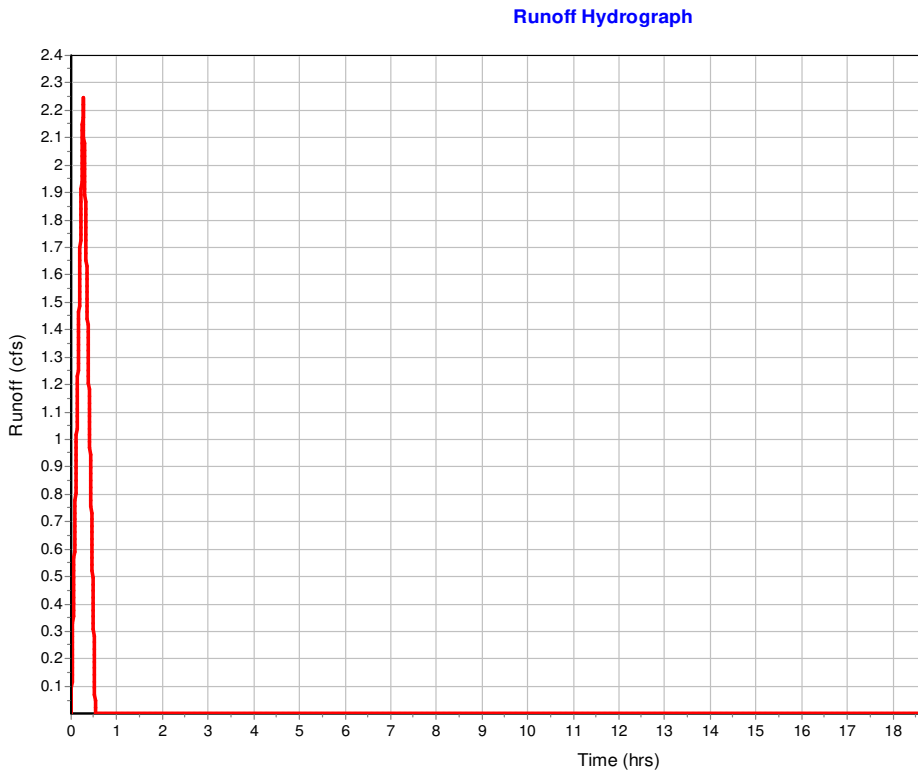
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	221.0918618	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.66	0	0

Total TOC (min) 15.87

Subbasin Runoff Results

Total Rainfall (in)	1.72
Total Runoff (in)	1.21
Peak Runoff (cfs)	2.25
Rainfall Intensity	6.534
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:52

Subbasin : Sub-CB-26



Subbasin : Sub-CB-27

Input Data

Area (ac)	0.1
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.1	-	0.7
Composite Area & Weighted Runoff Coeff.	0.1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	21.13547973	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.06	0	0
Computed Flow Time (min) :	5.57	0	0

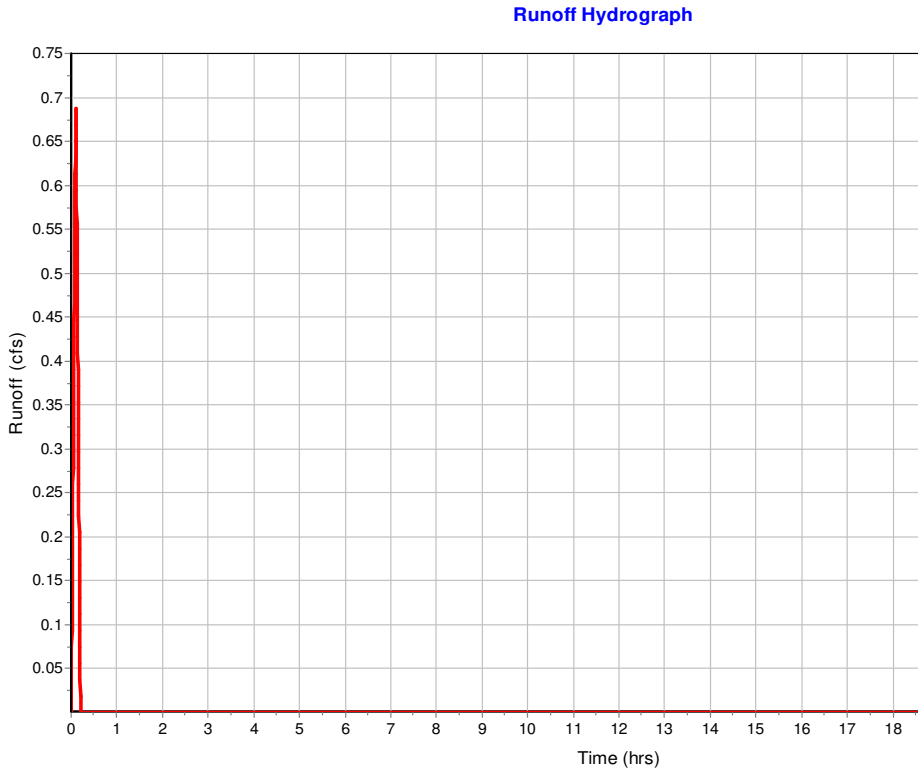
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	117.1502173	0	0
Slope (%) :	2.92	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.47	0	0
Computed Flow Time (min) :	0.56	0	0

Total TOC (min) 6.13

Subbasin Runoff Results

Total Rainfall (in)	1.05
Total Runoff (in)	0.73
Peak Runoff (cfs)	0.69
Rainfall Intensity	10.179
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:06:08

Subbasin : Sub-CB-27



Subbasin : Sub-CB-28

Input Data

Area (ac)	0.67
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.67	-	0.7
Composite Area & Weighted Runoff Coeff.	0.67		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.11	0	0
Computed Flow Time (min) :	14.63	0	0

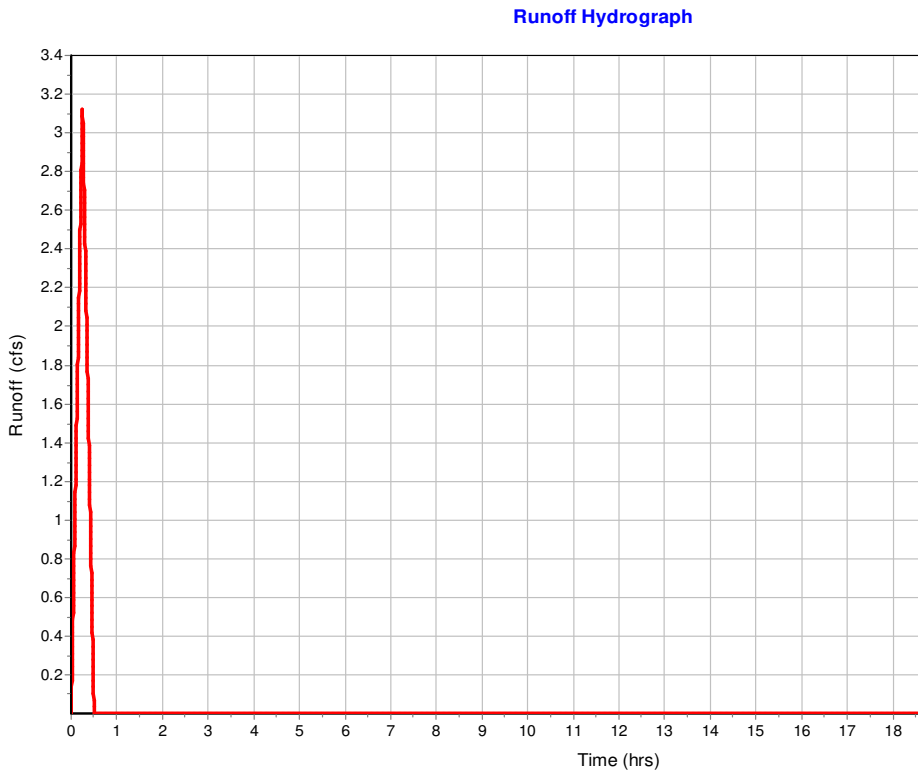
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	17.02372996	94.092	0
Slope (%) :	2	5.74	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	2.28	4.87	0
Computed Flow Time (min) :	0.12	0.32	0

Total TOC (min) 15.08

Subbasin Runoff Results

Total Rainfall (in)	1.67
Total Runoff (in)	1.17
Peak Runoff (cfs)	3.12
Rainfall Intensity	6.675
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:15:05

Subbasin : Sub-CB-28



Subbasin : Sub-CB-29

Input Data

Area (ac)	0.15
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.15	-	0.7
Composite Area & Weighted Runoff Coeff.	0.15		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

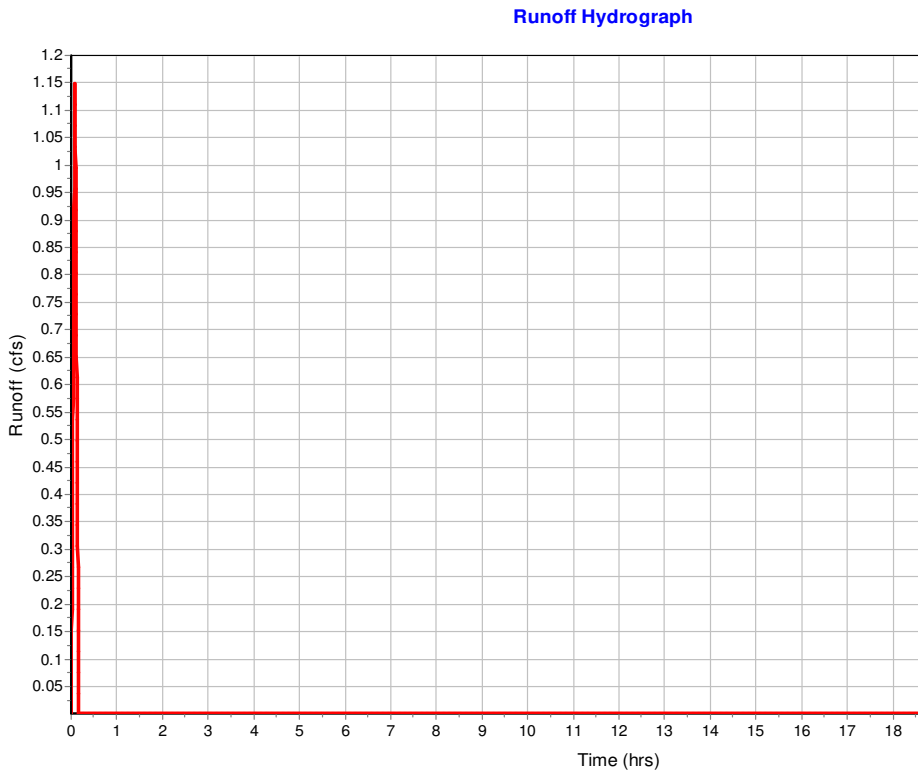
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	253.6223323	0	0
Slope (%) :	5.74	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	4.87	0	0
Computed Flow Time (min) :	0.87	0	0

Total TOC (min) 3.73

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	1.15
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:44

Subbasin : Sub-CB-29



Subbasin : Sub-CB-3

Input Data

Area (ac)	0.14
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.14	-	0.7
Composite Area & Weighted Runoff Coeff.	0.14		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

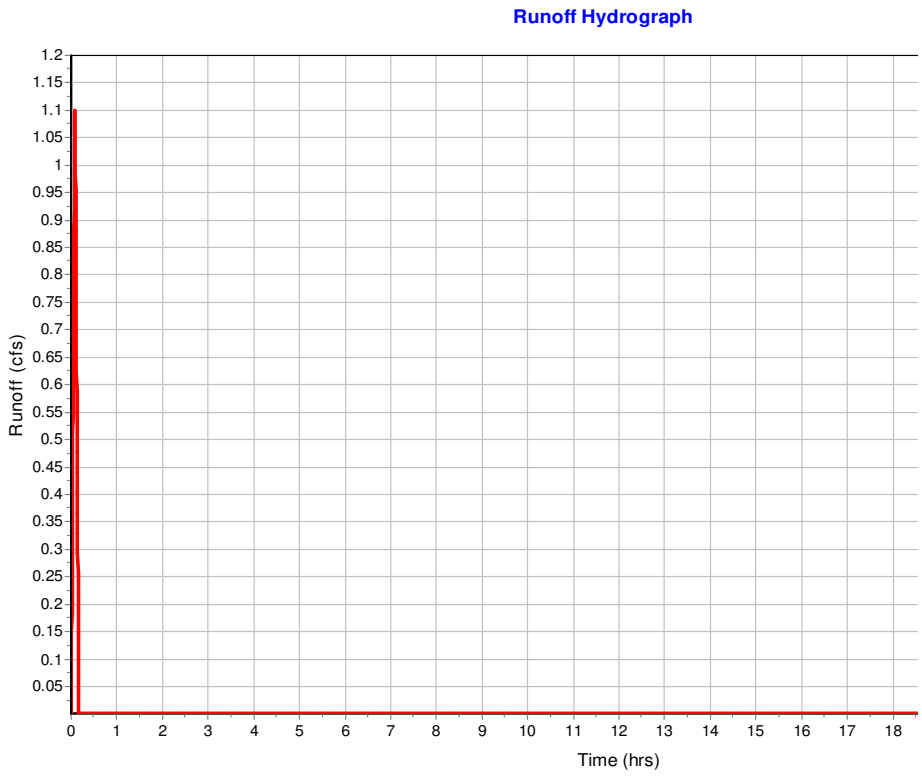
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	181.26423	58.411	0
Slope (%) :	10.46	0.85	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	1.87	0
Computed Flow Time (min) :	0.46	0.52	0

Total TOC (min) 3.84

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	1.1
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:50

Subbasin : Sub-CB-3



Subbasin : Sub-CB-31

Input Data

Area (ac)	0.17
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.17	-	0.7
Composite Area & Weighted Runoff Coeff.	0.17		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

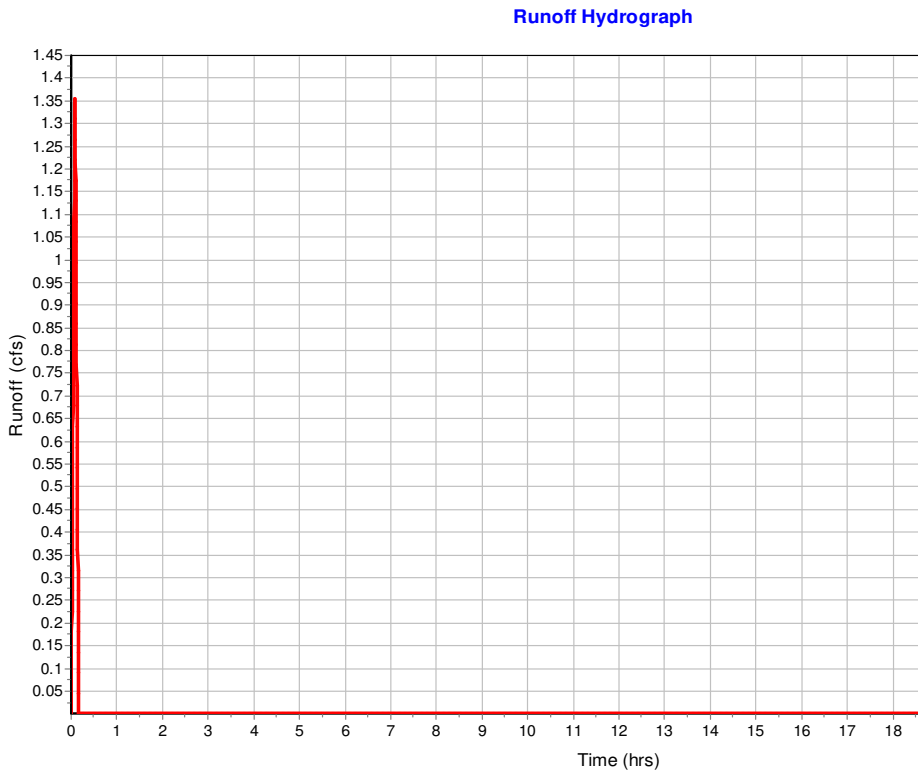
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	166.3763112	83.655	0
Slope (%) :	3.19	6.34	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.63	5.12	0
Computed Flow Time (min) :	0.76	0.27	0

Total TOC (min) 3.90

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	1.36
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:54

Subbasin : Sub-CB-31



Subbasin : Sub-CB-32

Input Data

Area (ac)	0.13
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.13	-	0.7
Composite Area & Weighted Runoff Coeff.	0.13		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

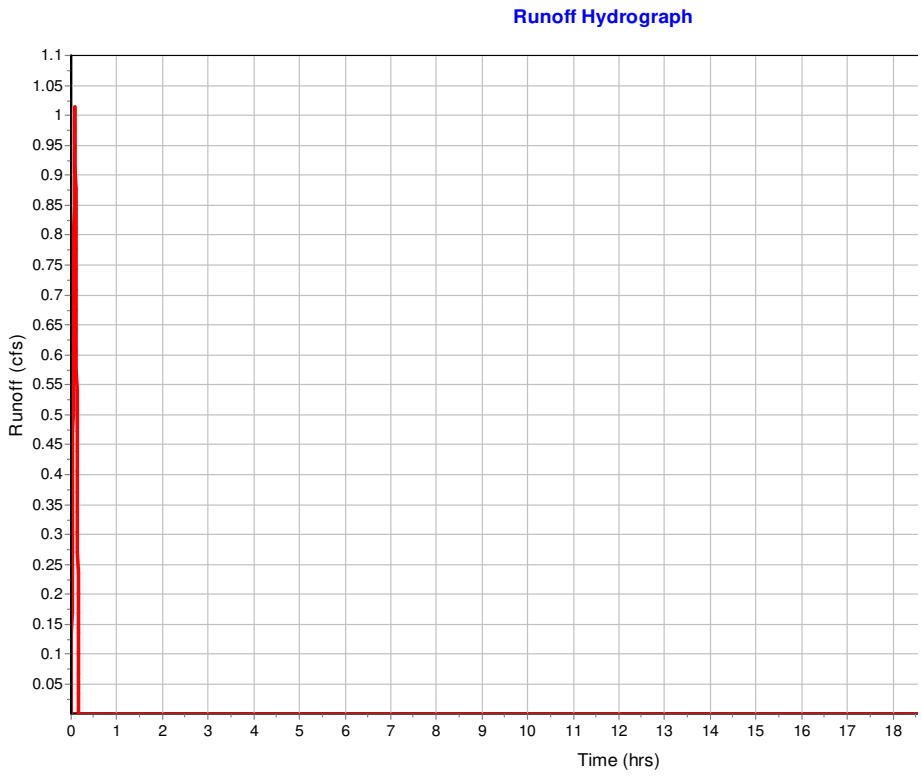
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	167.2624187	52.704	0
Slope (%) :	3.19	6.34	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.63	5.12	0
Computed Flow Time (min) :	0.77	0.17	0

Total TOC (min) 3.80

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	1.01
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:48

Subbasin : Sub-CB-32



Subbasin : Sub-CB-35

Input Data

Area (ac)	0.1
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.1	-	0.7
Composite Area & Weighted Runoff Coeff.	0.1		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

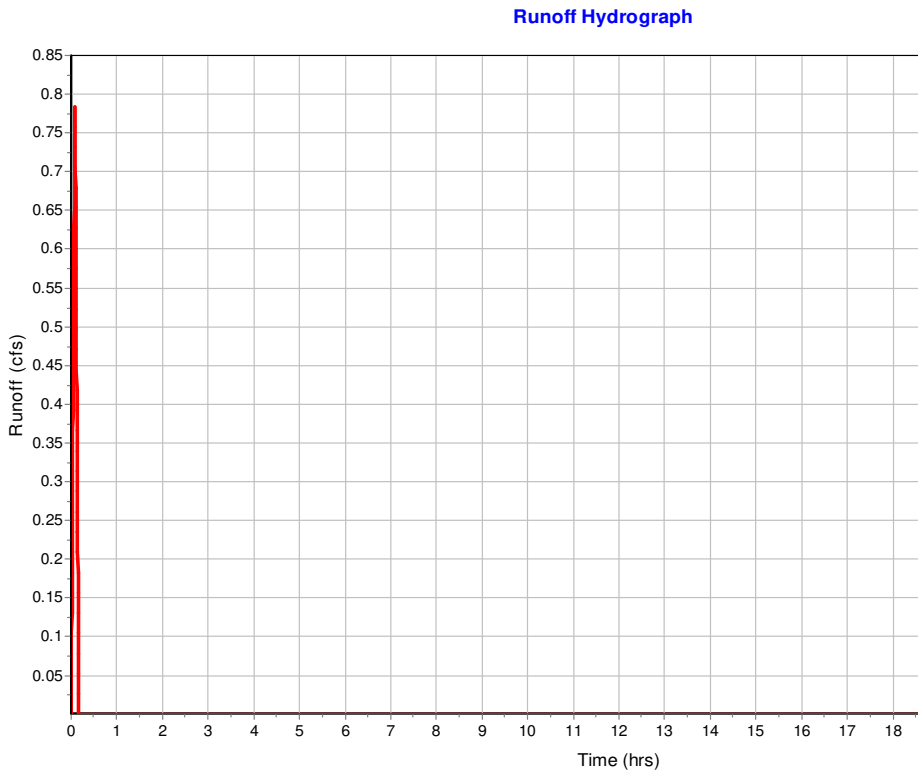
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	159.59	0	0
Slope (%) :	10.46	0	0
Surface Type :	Paved	Unpaved	Unpaved
Velocity (ft/sec) :	6.57	0	0
Computed Flow Time (min) :	0.4	0	0

Total TOC (min) 3.27

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	0.78
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:16

Subbasin : Sub-CB-35



Subbasin : Sub-CB-36

Input Data

Area (ac)	0.58
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.58	-	0.7
Composite Area & Weighted Runoff Coeff.	0.58		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	83	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	14.14	0	0

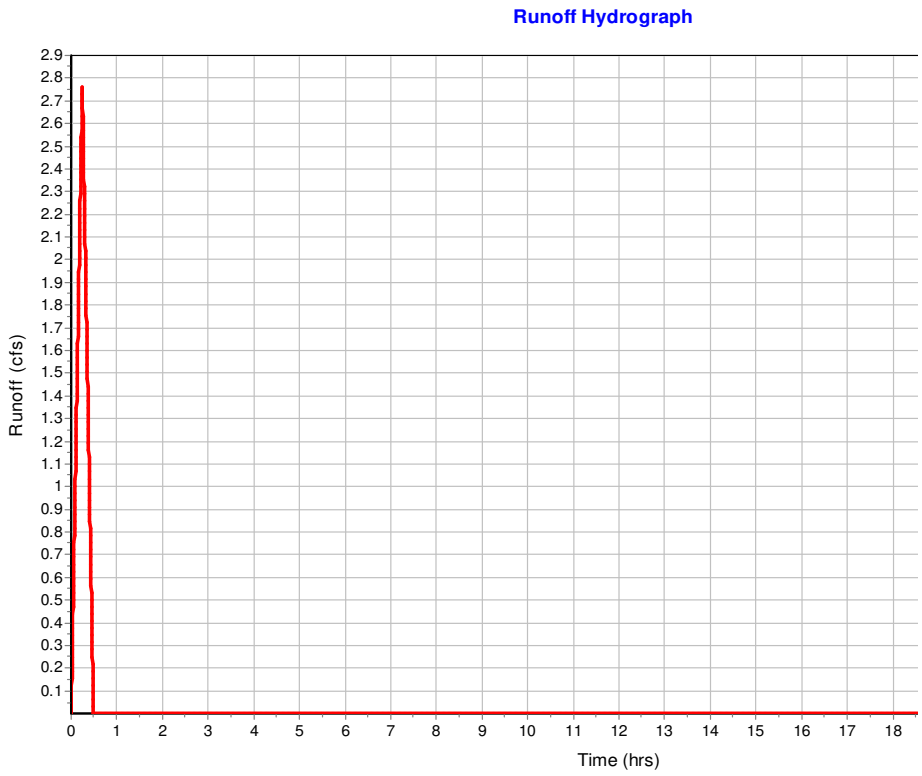
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	224.201193	0	0
Slope (%) :	10.46	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	6.57	0	0
Computed Flow Time (min) :	0.57	0	0

Total TOC (min) 14.71

Subbasin Runoff Results

Total Rainfall (in)	1.65
Total Runoff (in)	1.16
Peak Runoff (cfs)	2.76
Rainfall Intensity	6.752
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:14:43

Subbasin : Sub-CB-36



Subbasin : Sub-CB-38

Input Data

Area (ac)	0.24
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.24	-	0.7
Composite Area & Weighted Runoff Coeff.	0.24		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13.00000002	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

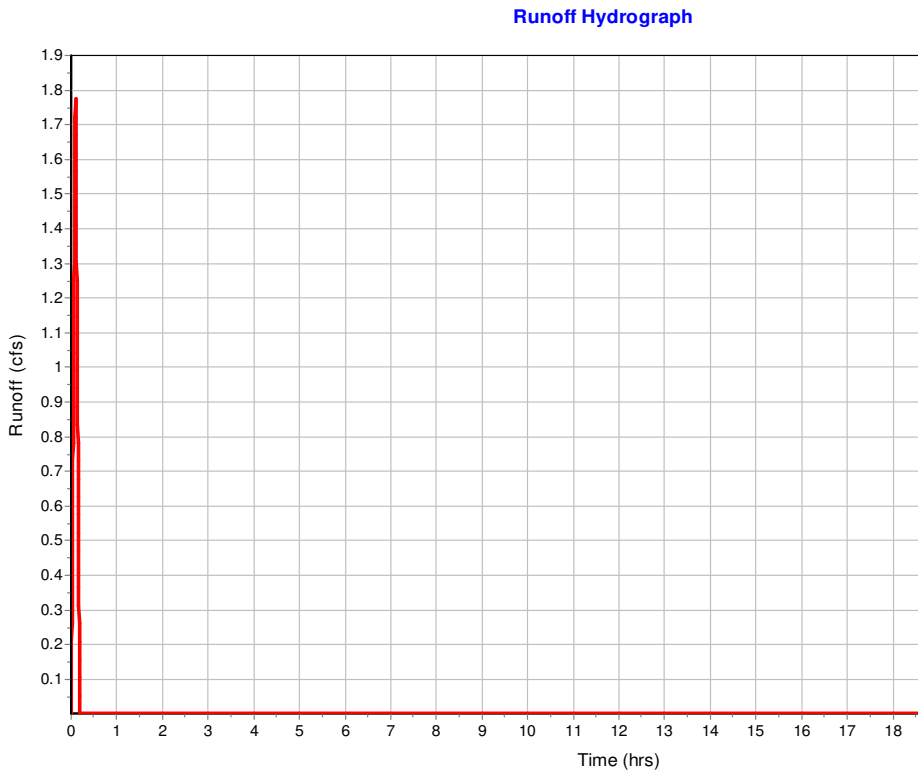
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	214.8866153	184.11	0
Slope (%) :	2.45	0.75	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	3.18	1.76	0
Computed Flow Time (min) :	1.13	1.74	0

Total TOC (min) 5.73

Subbasin Runoff Results

Total Rainfall (in)	0.99
Total Runoff (in)	0.7
Peak Runoff (cfs)	1.77
Rainfall Intensity	10.506
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:05:44

Subbasin : Sub-CB-38



Subbasin : Sub-CB-39

Input Data

Area (ac)	1.39
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.39	-	0.7
Composite Area & Weighted Runoff Coeff.	1.39		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	99.98923348	0	0
Slope (%) :	1.5	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	16.41	0	0

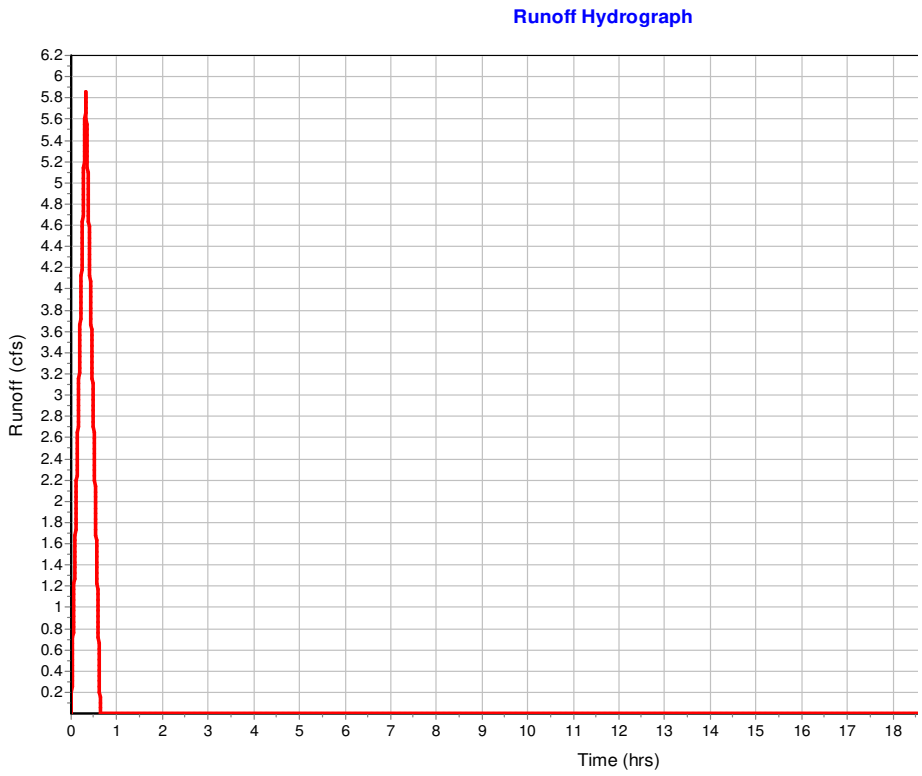
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	34.45719772	233.52	132.7
Slope (%) :	1.5	2.45	0.75
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	1.98	3.18	1.76
Computed Flow Time (min) :	0.29	1.22	1.26

Total TOC (min) 19.18

Subbasin Runoff Results

Total Rainfall (in)	1.93
Total Runoff (in)	1.35
Peak Runoff (cfs)	5.86
Rainfall Intensity	6.038
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:19:11

Subbasin : Sub-CB-39



Subbasin : Sub-CB-43

Input Data

Area (ac)	0.71
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.71	-	0.7
Composite Area & Weighted Runoff Coeff.	0.71		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	12	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.15	0	0

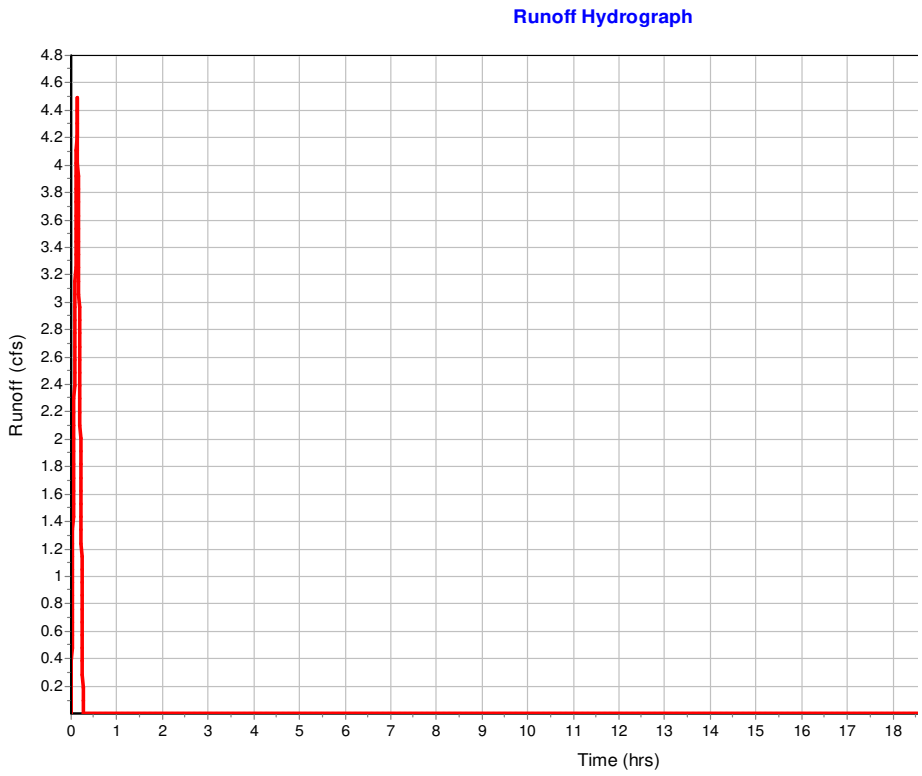
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	93	77.84	0
Slope (%) :	10.75	1.99	0
Surface Type :	Unpaved	Paved	Unpaved
Velocity (ft/sec) :	5.29	2.87	0
Computed Flow Time (min) :	0.29	0.45	0

Total TOC (min) 7.89

Subbasin Runoff Results

Total Rainfall (in)	1.18
Total Runoff (in)	0.83
Peak Runoff (cfs)	4.49
Rainfall Intensity	9.043
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:07:53

Subbasin : Sub-CB-43



Subbasin : Sub-CB-44

Input Data

Area (ac)	0.72
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.72	-	0.7
Composite Area & Weighted Runoff Coeff.	0.72		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	9	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.21	0	0
Computed Flow Time (min) :	8.02	0	0

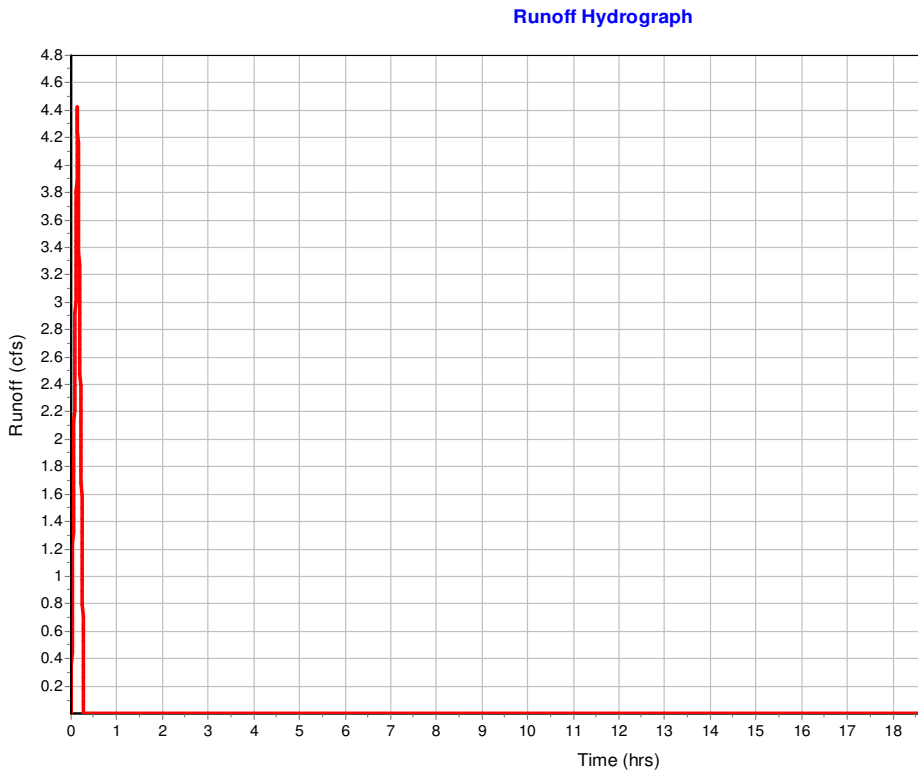
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	78.42	77.02	0
Slope (%) :	16.7	11.38	0
Surface Type :	Unpaved	Paved	Unpaved
Velocity (ft/sec) :	6.59	6.86	0
Computed Flow Time (min) :	0.2	0.19	0

Total TOC (min) 8.40

Subbasin Runoff Results

Total Rainfall (in)	1.22
Total Runoff (in)	0.85
Peak Runoff (cfs)	4.43
Rainfall Intensity	8.781
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:08:24

Subbasin : Sub-CB-44



Subbasin : Sub-CB-6

Input Data

Area (ac)	0.16
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.16	-	0.7
Composite Area & Weighted Runoff Coeff.	0.16		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	13	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

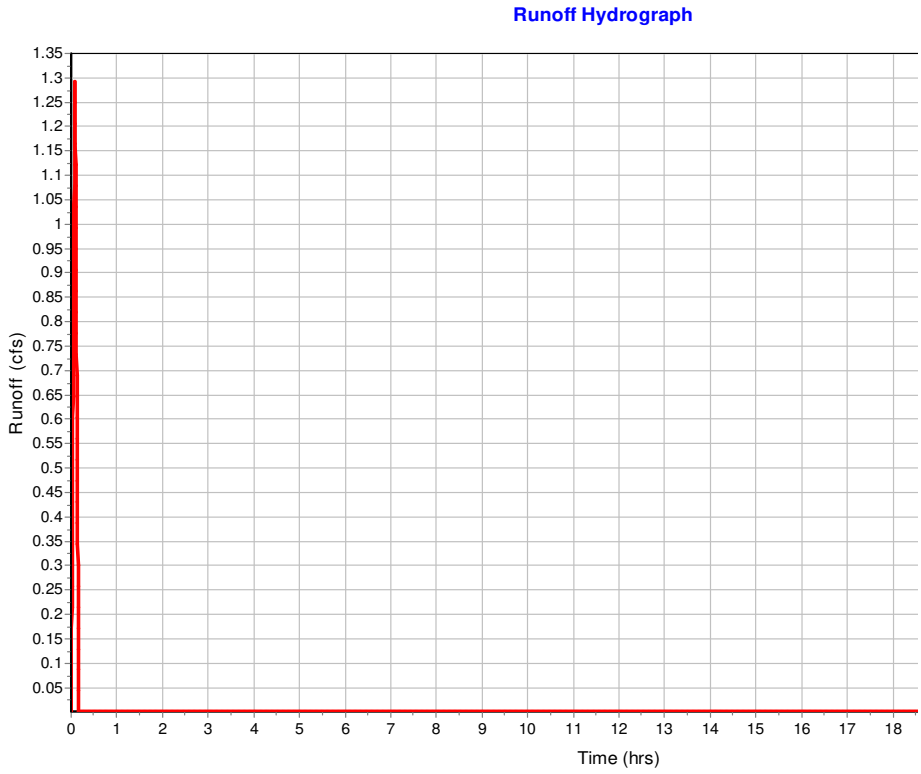
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	207.9606416	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.62	0	0

Total TOC (min) 3.48

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	1.29
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:29

Subbasin : Sub-CB-6



Subbasin : Sub-CB-7

Input Data

Area (ac)	0.04
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.04	-	0.7
Composite Area & Weighted Runoff Coeff.	0.04		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99999999	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

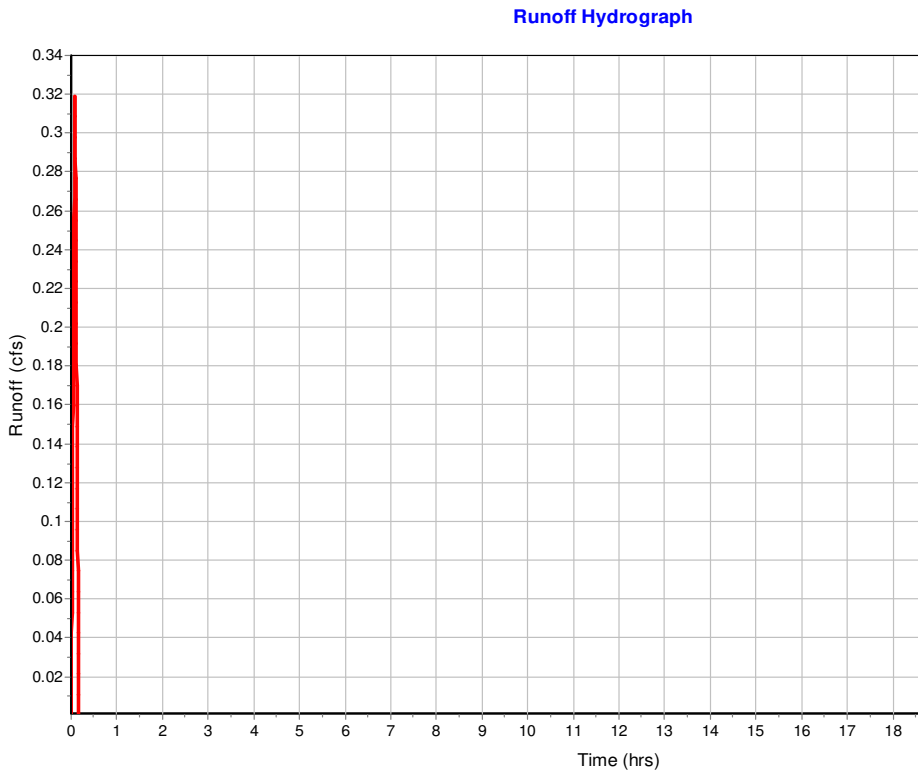
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	68.39700153	0	0
Slope (%) :	0.85	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	1.87	0	0
Computed Flow Time (min) :	0.61	0	0

Total TOC (min) 3.47

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	0.32
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:28

Subbasin : Sub-CB-7



Subbasin : Sub-CB-9

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.7

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.12	-	0.7
Composite Area & Weighted Runoff Coeff.	0.12		0.7

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	12.99999519	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.08	0	0
Computed Flow Time (min) :	2.86	0	0

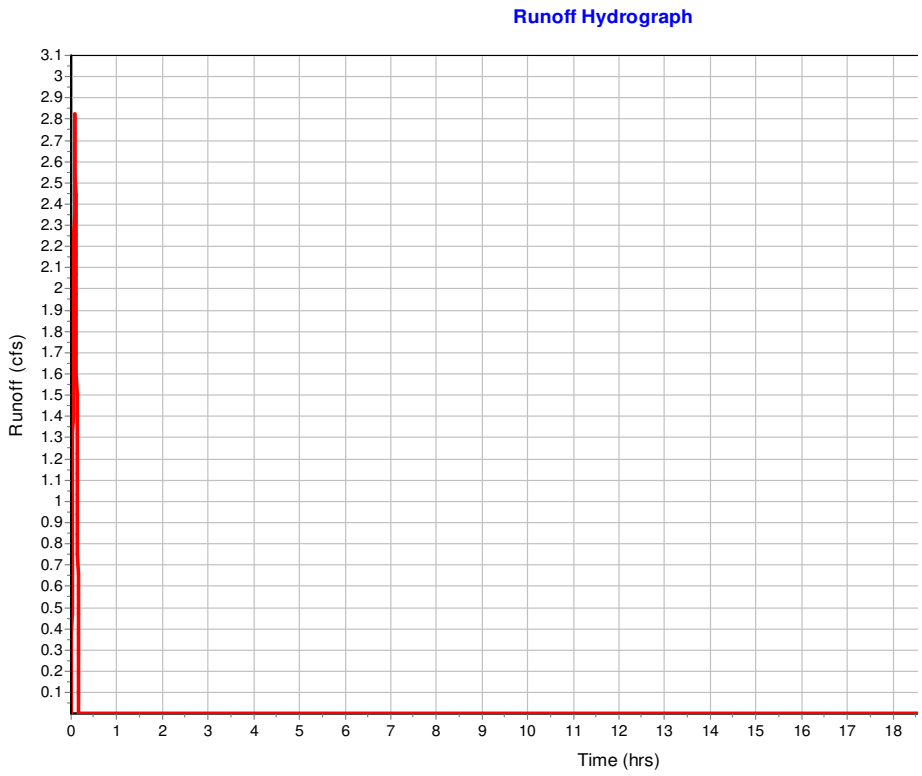
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	199.7947467	0	0
Slope (%) :	7.49	0	0
Surface Type :	Paved	Paved	Paved
Velocity (ft/sec) :	5.56	0	0
Computed Flow Time (min) :	0.6	0	0

Total TOC (min) 3.46

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.65
Peak Runoff (cfs)	2.82
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.7
Time of Concentration (days hh:mm:ss)	0 00:03:28

Subbasin : Sub-CB-9



Subbasin : Sub-FES-2

Input Data

Area (ac)	1.58
Weighted Runoff Coefficient	0.56

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.58	-	0.56
Composite Area & Weighted Runoff Coeff.	1.58		0.56

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	12	0	0
2 yr, 24 hr Rainfall (in) :	4.35	0	0
Velocity (ft/sec) :	0.23	0	0
Computed Flow Time (min) :	7.15	0	0

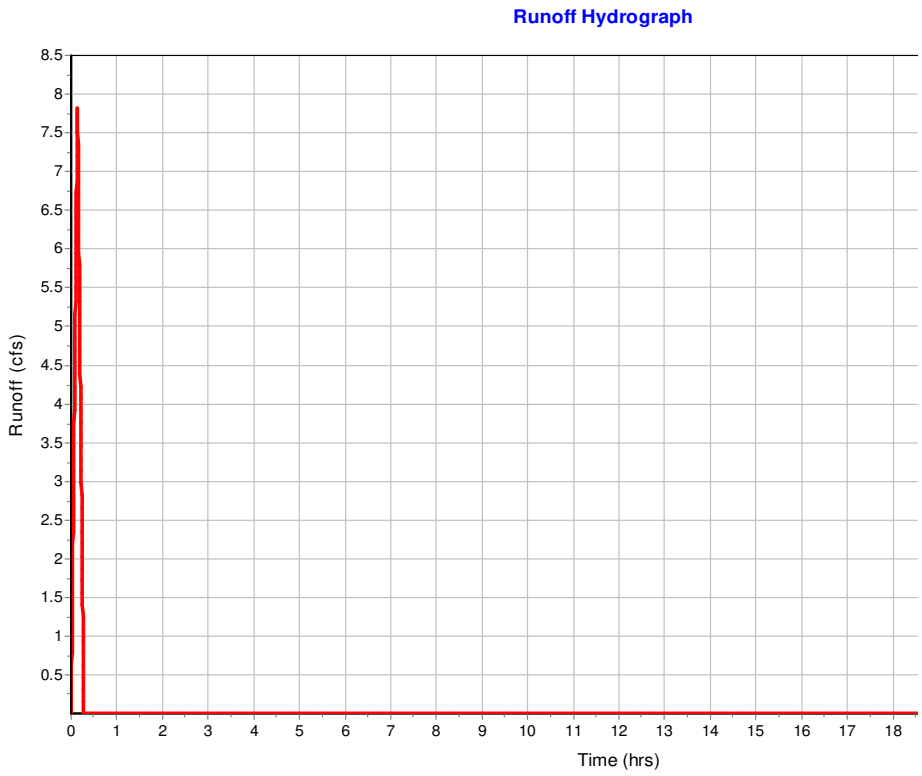
Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	363.3701089	0	0
Slope (%) :	10	0	0
Surface Type :	Unpaved	Paved	Paved
Velocity (ft/sec) :	5.1	0	0
Computed Flow Time (min) :	1.19	0	0

Total TOC (min) 8.33

Subbasin Runoff Results

Total Rainfall (in)	1.22
Total Runoff (in)	0.69
Peak Runoff (cfs)	7.82
Rainfall Intensity	8.815
Weighted Runoff Coefficient	0.56
Time of Concentration (days hh:mm:ss)	0 00:08:20

Subbasin : Sub-FES-2



Subbasin : SUB-PIPE-35

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.72

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.36	-	0.72
Composite Area & Weighted Runoff Coeff.	0.36		0.72

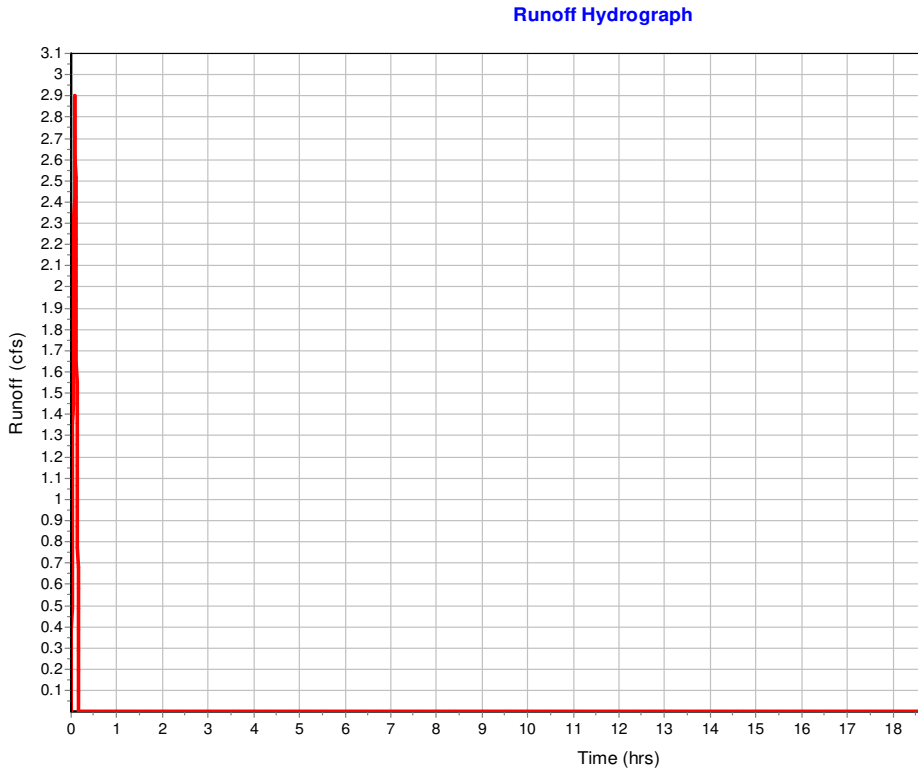
Time of Concentration

User-Defined TOC override (minutes): 2.36

Subbasin Runoff Results

Total Rainfall (in)	0.93
Total Runoff (in)	0.67
Peak Runoff (cfs)	2.9
Rainfall Intensity	11.2
Weighted Runoff Coefficient	0.72
Time of Concentration (days hh:mm:ss)	0 00:02:22

Subbasin : SUB-PIPE-35



Subbasin : SUB-PIPE-36

Input Data

Area (ac)	1.26
Weighted Runoff Coefficient	0.72

Runoff Coefficient

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.26	-	0.72
Composite Area & Weighted Runoff Coeff.	1.26		0.72

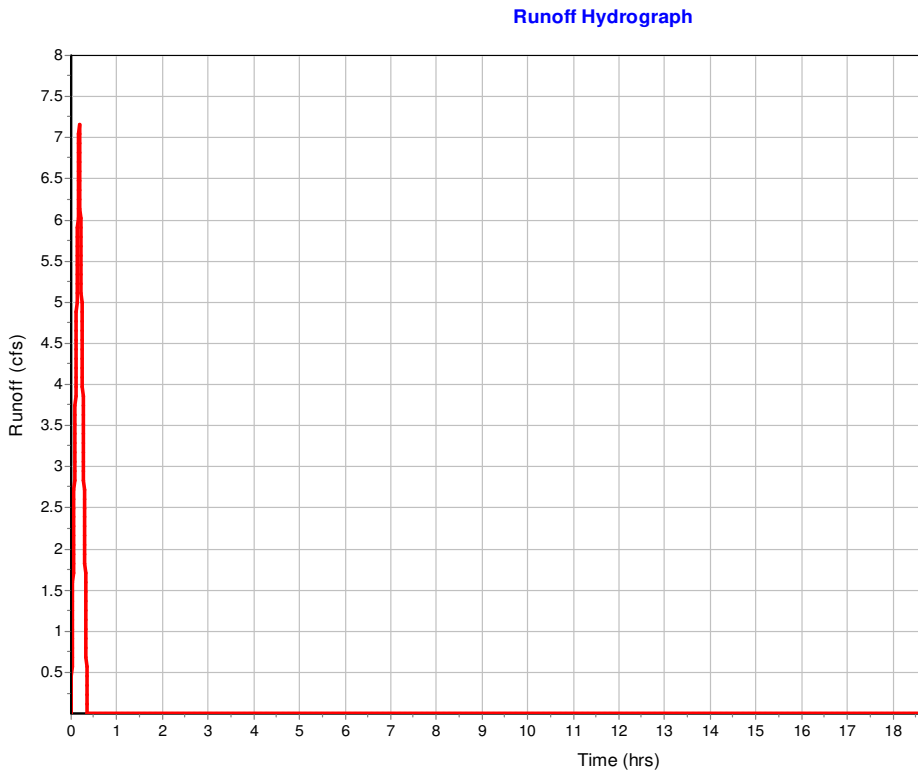
Time of Concentration

User-Defined TOC override (minutes): 10.56

Subbasin Runoff Results

Total Rainfall (in)	1.38
Total Runoff (in)	0.99
Peak Runoff (cfs)	7.16
Rainfall Intensity	7.887
Weighted Runoff Coefficient	0.72
Time of Concentration (days hh:mm:ss)	0 00:10:34

Subbasin : SUB-PIPE-36



Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	FES-2	466.60	469.78	3.18	466.60	0.00	469.78	0.00	0.00	2.15
2	IN-PIPE-35	462.75	464.00	1.25	462.75	0.00	464.00	0.00	0.00	0.00
3	IN-PIPE36	441.30	442.80	1.50	441.30	0.00	442.80	0.00	0.00	0.00
4	JB-14	529.50	534.76	5.26	529.50	0.00	535.50	0.74	0.00	45.12
5	JB-23	515.30	519.44	4.14	515.30	0.00	519.20	-0.24	10.00	31.68

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	T Fl Occu (days h
1	FES-2	23.00	23.00	468.51	1.91	0.00	1.27	468.04	1.44	0 00:08	0
2	IN-PIPE-35	2.90	2.90	463.36	0.61	0.00	0.89	462.75	0.00	0 00:05	0
3	IN-PIPE36	7.15	7.15	442.59	1.29	0.00	0.29	441.39	0.09	0 00:10	0
4	JB-14	9.58	0.00	530.09	0.59	0.00	4.67	529.51	0.01	0 00:12	0
5	JB-23	3.04	0.00	515.62	0.32	0.00	3.82	515.30	0.00	0 00:05	0

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	E
1	L-SDPIPE-1	73.15	476.67	10.73	475.09	7.62	1.58	2.1600	User-Defined	0.330	14.000	0.0150	
2	L-SDPIPE-13	403.61	521.86	4.36	510.72	5.72	11.14	2.7600	User-Defined	0.330	14.000	0.0150	
3	L-SDPIPE-14	373.89	522.45	4.46	515.37	5.03	7.08	1.8900	User-Defined	0.330	14.000	0.0150	
4	L-SDPIPE-15	83.27	471.49	3.38	464.82	0.00	6.67	8.0100	User-Defined	0.330	14.000	0.0150	
5	L-SDPIPE-16	206.62	505.01	3.91	489.62	6.43	15.39	7.4500	User-Defined	0.330	14.000	0.0150	
6	L-SDPIPE-18	170.54	523.17	5.39	517.57	3.45	5.60	3.2800	User-Defined	0.330	14.000	0.0150	
7	L-SDPIPE-19	227.29	522.18	4.31	505.01	3.58	17.17	7.5500	User-Defined	0.330	14.000	0.0150	
8	L-SDPIPE-2	62.02	476.28	9.98	475.09	7.29	1.19	1.9200	User-Defined	0.330	14.000	0.0150	
9	L-SDPIPE-20	233.87	505.01	3.58	487.59	3.97	17.42	7.4500	User-Defined	0.330	14.000	0.0150	
10	L-SDPIPE-21	241.61	543.67	5.17	534.06	3.86	9.61	3.9800	User-Defined	0.330	14.000	0.0150	
11	L-SDPIPE-23	316.61	547.43	4.84	534.06	3.53	13.37	4.2200	User-Defined	0.500	26.000	0.0150	
12	L-SDPIPE-25	202.83	549.70	3.70	532.10	0.00	17.60	8.6800	User-Defined	0.500	26.000	0.0150	
13	L-SDPIPE-27	245.69	494.00	6.50	476.28	9.98	17.72	7.2100	User-Defined	0.330	14.000	0.0150	
14	L-SDPIPE-28	228.18	493.47	5.63	476.67	10.73	16.80	7.3600	User-Defined	0.330	14.000	0.0150	
15	L-SDPIPE-29	172.07	510.72	5.72	494.00	6.50	16.72	9.7200	User-Defined	0.330	14.000	0.0150	
16	L-SDPIPE-32	98.13	549.76	5.26	540.30	0.00	9.46	9.6400	User-Defined	0.500	26.000	0.0150	
17	L-SDPIPE-33	78.91	518.02	3.90	517.01	4.43	1.01	1.2800	User-Defined	0.330	14.000	0.0320	
18	L-SDPIPE-34	149.42	521.36	5.08	517.01	4.43	4.35	2.9100	User-Defined	0.330	14.000	0.0320	
19	L-SDPIPE-4	129.78	475.09	7.62	464.82	0.00	10.27	7.9100	User-Defined	0.330	14.000	0.0320	
20	L-SDPIPE-6	214.12	489.62	6.43	475.09	7.29	14.53	6.7900	User-Defined	0.330	14.000	0.0150	
21	L-SDPIPE-7	216.57	487.59	3.97	471.49	3.38	16.10	7.4300	User-Defined	0.330	14.000	0.0150	

Channel Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	I N
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	L-SDPIPE-1	0.00	0 00:17	3.72	0.00	0.00		0.00	0.01	0.00	
2	L-SDPIPE-13	0.00	0 00:00	4.20	0.00	0.00		0.06	0.19	0.00	
3	L-SDPIPE-14	1.73	0 00:13	3.48	0.50	0.97	6.42	0.29	0.88	0.00	
4	L-SDPIPE-15	0.82	0 00:17	7.16	0.11	1.85	0.75	0.14	0.43	0.00	
5	L-SDPIPE-16	0.01	0 00:07	6.90	0.00	0.38	9.06	0.08	0.25	0.00	
6	L-SDPIPE-18	0.54	0 00:05	4.64	0.12	8.19	0.35	0.14	0.42	0.00	
7	L-SDPIPE-19	1.18	0 00:08	6.95	0.17	3.24	1.17	0.13	0.40	0.00	
8	L-SDPIPE-2	0.00	0 00:00	3.50	0.00	0.00		0.17	0.50	0.00	
9	L-SDPIPE-20	0.53	0 00:16	6.90	0.08	1.39	2.80	0.13	0.40	0.00	
10	L-SDPIPE-21	0.00	0 00:08	5.04	0.00	0.00		0.17	0.50	0.00	
11	L-SDPIPE-23	0.03	0 00:05	19.36	0.00	0.03	175.89	0.23	0.45	0.00	
12	L-SDPIPE-25	0.03	0 00:05	27.75	0.00	1.87	1.81	0.03	0.06	0.00	
13	L-SDPIPE-27	0.00	0 00:06	6.79	0.00	0.00		0.01	0.02	0.00	
14	L-SDPIPE-28	1.02	0 00:14	6.86	0.15	4.13	0.92	0.15	0.46	0.00	
15	L-SDPIPE-29	0.33	0 00:06	7.88	0.04	3.21	0.89	0.07	0.20	0.00	
16	L-SDPIPE-32	0.20	0 00:05	28.64	0.01	2.24	0.73	0.07	0.14	0.00	
17	L-SDPIPE-33	0.36	0 00:08	2.86	0.13	0.30	4.38	0.24	0.73	0.00	
18	L-SDPIPE-34	1.20	0 00:08	4.31	0.28	0.81	3.07	0.27	0.81	0.00	
19	L-SDPIPE-4	0.00	0 00:00	7.11	0.00	0.00		0.00	0.00	0.00	
20	L-SDPIPE-6	0.84	0 00:05	6.59	0.13	0.92	3.88	0.22	0.67	0.00	
21	L-SDPIPE-7	0.76	0 00:16	6.90	0.11	1.80	2.01	0.14	0.42	0.00	

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness
1	SDPIPE-1	35.55	465.94	0.00	463.00	0.00	2.94	8.2700	CIRCULAR	36.000	36.000	0.0120
2	SDPIPE-10	256.10	529.50	0.00	512.58	0.00	16.92	6.6100	CIRCULAR	18.000	18.000	0.0120
3	SDPIPE-11	67.57	530.20	0.00	529.50	0.00	0.70	1.0400	CIRCULAR	18.000	18.000	0.0120
4	SDPIPE-12	33.01	530.53	0.00	530.20	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0130
5	SDPIPE-13	130.50	517.50	0.00	505.00	0.00	12.50	9.5800	CIRCULAR	18.000	18.000	0.0120
6	SDPIPE-14	39.55	517.99	0.00	517.50	0.00	0.49	1.2500	CIRCULAR	18.000	18.000	0.0130
7	SDPIPE-15	64.04	468.11	0.00	467.47	0.00	0.64	1.0000	CIRCULAR	18.000	18.000	0.0130
8	SDPIPE-16	23.51	501.10	0.00	499.00	0.00	2.10	8.9300	CIRCULAR	18.000	18.000	0.0120
9	SDPIPE-17	194.21	515.30	0.00	501.00	-0.10	14.30	7.3600	CIRCULAR	18.000	18.000	0.0120
10	SDPIPE-18	49.41	517.78	0.00	515.30	0.00	2.48	5.0200	CIRCULAR	18.000	18.000	0.0130
11	SDPIPE-19	51.31	517.87	0.00	515.30	0.00	2.57	5.0100	CIRCULAR	18.000	18.000	0.0130
12	SDPIPE-2	35.82	466.30	0.00	465.94	0.00	0.36	1.0000	CIRCULAR	36.000	36.000	0.0130
13	SDPIPE-20	33.00	501.43	0.00	501.10	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0120
14	SDPIPE-21	239.80	538.50	0.00	530.20	0.00	8.30	3.4600	CIRCULAR	18.000	18.000	0.0120
15	SDPIPE-22	57.68	542.14	0.00	538.50	0.00	3.64	6.3100	CIRCULAR	18.000	18.000	0.0130
16	SDPIPE-23	44.75	542.59	0.00	542.14	0.00	0.45	1.0100	CIRCULAR	18.000	18.000	0.0130
17	SDPIPE-25	74.63	546.00	0.00	544.50	0.00	1.50	2.0100	CIRCULAR	18.000	18.000	0.0130
18	SDPIPE-27	182.53	487.50	0.00	484.31	0.00	3.19	1.7500	CIRCULAR	18.000	18.000	0.0120
19	SDPIPE-28	33.55	487.84	0.00	487.50	0.00	0.34	1.0000	CIRCULAR	18.000	18.000	0.0130
20	SDPIPE-29	167.22	505.00	0.00	487.50	0.00	17.50	10.4700	CIRCULAR	18.000	18.000	0.0120
21	SDPIPE-3	30.36	466.60	0.00	466.30	0.00	0.30	1.0000	CIRCULAR	36.000	36.000	0.0120
22	SDPIPE-30	66.71	510.34	0.00	505.00	0.00	5.34	8.0000	CIRCULAR	18.000	18.000	0.0130
23	SDPIPE-32	96.89	544.50	0.00	538.50	0.00	6.00	6.1900	CIRCULAR	18.000	18.000	0.0120
24	SDPIPE-33	77.61	514.12	0.00	512.58	0.00	1.54	1.9800	CIRCULAR	18.000	18.000	0.0150
25	SDPIPE-34	147.34	516.28	0.00	512.58	0.00	3.70	2.5100	CIRCULAR	18.000	18.000	0.0150
26	SDPIPE-4	71.93	467.47	0.00	466.75	0.81	0.72	1.0000	CIRCULAR	18.000	18.000	0.0120
27	SDPIPE-5	33.00	467.80	0.00	467.47	0.00	0.33	1.0000	CIRCULAR	18.000	18.000	0.0130
28	SDPIPE-6	67.57	483.19	0.00	482.52	0.00	0.67	1.0000	CIRCULAR	18.000	18.000	0.0120
29	SDPIPE-7	42.68	483.62	0.00	483.19	0.00	0.43	1.0000	CIRCULAR	18.000	18.000	0.0130
30	SDPIPE-8	130.97	512.25	0.00	492.00	0.00	20.25	15.4600	CIRCULAR	24.000	24.000	0.0120
31	SDPIPE-9	33.02	512.58	0.00	512.25	0.00	0.33	1.0000	CIRCULAR	24.000	24.000	0.0130
32	SPIPE-35	30.19	462.75	0.00	462.25	0.00	0.50	1.6600	CIRCULAR	18.000	18.000	0.0150
33	SPIPE-36	31.09	441.38	0.08	441.00	0.00	0.38	1.2200	CIRCULAR	18.000	18.000	0.0150

Pipe Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Fro Num
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	SDPIPE-1	26.81	0 00:08	207.79	0.13	14.35	0.04	0.93	0.31	0.00	
2	SDPIPE-10	9.58	0 00:12	29.25	0.33	7.38	0.58	1.05	0.70	0.00	
3	SDPIPE-11	9.58	0 00:12	11.59	0.83	7.85	0.14	0.98	0.65	0.00	
4	SDPIPE-12	1.15	0 00:08	10.49	0.11	1.86	0.30	1.21	0.80	0.00	
5	SDPIPE-13	3.27	0 00:13	35.22	0.09	11.98	0.18	0.32	0.21	0.00	
6	SDPIPE-14	3.27	0 00:13	11.74	0.28	6.32	0.10	0.50	0.33	0.00	
7	SDPIPE-15	2.60	0 00:16	10.50	0.25	4.07	0.26	0.59	0.39	0.00	
8	SDPIPE-16	5.35	0 00:07	34.01	0.16	10.86	0.04	0.48	0.32	0.00	
9	SDPIPE-17	3.03	0 00:05	30.77	0.10	7.30	0.44	0.44	0.29	0.00	
10	SDPIPE-18	1.56	0 00:05	23.53	0.07	6.31	0.13	0.30	0.20	0.00	
11	SDPIPE-19	1.97	0 00:08	23.51	0.08	7.62	0.11	0.31	0.21	0.00	
12	SDPIPE-2	23.32	0 00:08	66.70	0.35	6.93	0.09	1.44	0.48	0.00	
13	SDPIPE-20	2.21	0 00:08	11.38	0.19	4.82	0.11	0.56	0.38	0.00	
14	SDPIPE-21	3.09	0 00:15	21.17	0.15	4.42	0.90	0.86	0.57	0.00	
15	SDPIPE-22	3.11	0 00:15	26.39	0.12	8.69	0.11	0.38	0.26	0.00	
16	SDPIPE-23	1.10	0 00:05	10.53	0.10	3.70	0.20	0.34	0.22	0.00	
17	SDPIPE-25	0.97	0 00:05	14.89	0.07	4.20	0.30	0.28	0.19	0.00	
18	SDPIPE-27	7.59	0 00:19	15.03	0.50	7.93	0.38	0.80	0.53	0.00	
19	SDPIPE-28	1.82	0 00:14	10.50	0.17	2.86	0.20	0.69	0.46	0.00	
20	SDPIPE-29	6.15	0 00:19	36.81	0.17	8.74	0.32	0.63	0.42	0.00	
21	SDPIPE-3	22.99	0 00:08	71.83	0.32	7.93	0.06	1.78	0.59	0.00	
22	SDPIPE-30	6.15	0 00:19	29.71	0.21	12.56	0.09	0.48	0.32	0.00	
23	SDPIPE-32	2.10	0 00:05	28.32	0.07	8.96	0.18	0.29	0.19	0.00	
24	SDPIPE-33	4.04	0 00:07	12.82	0.31	4.01	0.32	1.25	0.84	0.00	
25	SDPIPE-34	3.17	0 00:08	14.43	0.22	3.76	0.65	0.99	0.66	0.00	
26	SDPIPE-4	2.85	0 00:16	11.38	0.25	4.84	0.25	0.55	0.37	0.00	
27	SDPIPE-5	0.80	0 00:07	10.50	0.08	2.15	0.26	0.42	0.28	0.00	
28	SDPIPE-6	2.76	0 00:05	11.37	0.24	4.78	0.24	0.54	0.36	0.00	
29	SDPIPE-7	2.41	0 00:16	10.50	0.23	4.01	0.18	0.56	0.37	0.00	
30	SDPIPE-8	22.96	0 00:09	96.37	0.24	22.72	0.10	0.72	0.36	0.00	
31	SDPIPE-9	22.38	0 00:09	22.62	0.99	9.66	0.06	1.38	0.69	0.00	
32	SPIPE-35	2.89	0 00:05	11.72	0.25	4.82	0.10	0.56	0.37	0.00	
33	SPIPE-36	7.13	0 00:10	10.06	0.71	5.30	0.10	1.07	0.71	0.00	

Inlet Input

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Ini Wa De
1	CB-10	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.62	487.59	3.97	483.62	0
2	CB-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.25	517.01	4.76	512.25	0
3	CB-13	FHWA HEC-22 GENERIC	N/A	On Sag	1	512.58	517.01	4.43	512.58	0
4	CB-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.20	534.06	3.86	530.20	0
5	CB-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	530.53	534.06	3.53	530.53	0
6	CB-18	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.50	521.86	4.36	517.50	0
7	CB-19	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.99	522.45	4.46	517.99	0
8	CB-2	FHWA HEC-22 GENERIC	N/A	On Grade	1	465.94	476.67	10.73	465.94	0
9	CB-20	FHWA HEC-22 GENERIC	N/A	On Grade	1	468.11	471.49	3.38	468.11	0
10	CB-22	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.10	505.01	3.91	501.10	0
11	CB-24	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.78	523.31	5.53	517.77	-0
12	CB-25	FHWA HEC-22 GENERIC	N/A	On Grade	1	517.87	522.17	4.30	515.81	-2
13	CB-26	FHWA HEC-22 GENERIC	N/A	On Grade	1	501.43	505.01	3.58	501.43	0
14	CB-27	FHWA HEC-22 GENERIC	N/A	On Grade	1	538.50	543.67	5.17	538.50	0
15	CB-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	542.14	545.67	3.53	542.20	0
16	CB-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	542.59	547.43	4.84	542.65	0
17	CB-3	FHWA HEC-22 GENERIC	N/A	On Grade	1	466.30	476.28	9.98	466.30	0
18	CB-31	FHWA HEC-22 GENERIC	N/A	On Grade	1	544.50	549.37	4.87	544.50	0
19	CB-32	FHWA HEC-22 GENERIC	N/A	On Grade	1	546.00	549.70	3.70	546.00	0
20	CB-35	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.50	494.00	6.50	487.50	0
21	CB-36	FHWA HEC-22 GENERIC	N/A	On Grade	1	487.84	493.47	5.63	487.84	0
22	CB-38	FHWA HEC-22 GENERIC	N/A	On Grade	1	505.00	510.72	5.72	505.00	0
23	CB-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	510.34	515.37	5.03	510.34	0
24	CB-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	514.12	518.02	3.90	514.12	0
25	CB-6	FHWA HEC-22 GENERIC	N/A	On Sag	1	467.80	475.09	7.29	467.80	0
26	CB-7	FHWA HEC-22 GENERIC	N/A	On Grade	1	467.47	475.09	7.62	467.47	0
27	CB-9	FHWA HEC-22 GENERIC	N/A	On Grade	1	483.19	489.62	6.43	483.19	0
28	Inlet-CB-44	FHWA HEC-22 GENERIC	N/A	On Grade	1	516.28	521.36	5.08	516.28	0

Roadway & Gutter Input

SN	Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1	CB-10	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
2	CB-12	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
3	CB-13	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
4	CB-15	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
5	CB-16	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
6	CB-18	0.0245	0.0258	0.0150	0.0200	1.00	0.1312	8.50
7	CB-19	0.0245	0.0258	0.0150	0.0200	1.00	0.1312	8.50
8	CB-2	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
9	CB-20	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
10	CB-22	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
11	CB-24	0.1033	0.0258	0.0150	0.0200	1.00	0.1312	8.50
12	CB-25	0.1041	0.0258	0.0150	0.0200	1.00	0.1312	8.50
13	CB-26	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
14	CB-27	0.0574	0.0258	0.0150	0.0200	1.00	0.1312	8.50
15	CB-28	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
16	CB-29	0.0574	0.0258	0.0150	0.0200	1.00	0.1312	8.50
17	CB-3	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
18	CB-31	0.0721	0.0200	0.0150	0.0200	1.50	0.1312	8.50
19	CB-32	0.0809	0.0258	0.0150	0.0200	1.00	0.1312	8.50
20	CB-35	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
21	CB-36	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
22	CB-38	0.1046	0.0258	0.0150	0.0200	1.00	0.1312	8.50
23	CB-39	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
24	CB-43	0.0199	0.0258	0.0150	0.0200	1.00	0.1312	8.50
25	CB-6	N/A	0.0258	0.0150	0.0200	1.00	0.1312	8.50
26	CB-7	0.0085	0.0258	0.0150	0.0200	1.00	0.1312	8.50
27	CB-9	0.0749	0.0258	0.0150	0.0200	1.00	0.1312	8.50
28	Inlet-CB-44	0.1138	0.0258	0.0150	0.0200	1.00	0.1312	8.50

Inlet Results

SN	Element ID	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Max Depth Occurrence (days hh:mm)	F \
1	CB-10	3.18	2.64	2.10	1.08	66.02	6.39	487.75	0.16	0 00:16	
2	CB-12	2.48	2.48	N/A	N/A	N/A	6.50	517.34	0.33	0 00:09	
3	CB-13	7.94	6.48	N/A	N/A	N/A	14.14	517.54	0.53	0 00:09	
4	CB-15	6.62	6.62	N/A	N/A	N/A	12.52	534.55	0.49	0 00:12	
5	CB-16	3.28	3.26	N/A	N/A	N/A	7.84	534.43	0.37	0 00:12	
6	CB-18	0.96	0.96	0.96	0.00	100.00	5.03	521.98	0.12	0 00:13	
7	CB-19	5.01	5.01	3.27	1.73	65.39	9.31	522.68	0.23	0 00:13	
8	CB-2	2.77	1.78	2.61	0.16	94.09	9.08	476.90	0.23	0 00:08	
9	CB-20	3.39	2.74	2.18	1.21	64.21	6.53	471.65	0.16	0 00:16	
10	CB-22	1.09	1.09	1.05	0.04	95.92	4.31	505.12	0.11	0 00:07	
11	CB-24	2.10	2.10	1.57	0.54	74.48	5.18	523.44	0.13	0 00:05	
12	CB-25	3.15	3.15	1.97	1.18	62.63	5.99	522.32	0.15	0 00:08	
13	CB-26	2.37	2.24	1.77	0.60	74.78	5.71	505.15	0.14	0 00:08	
14	CB-27	0.69	0.69	0.69	0.00	100.00	3.80	543.76	0.09	0 00:15	
15	CB-28	3.12	3.12	N/A	N/A	N/A	7.58	546.03	0.36	0 00:15	
16	CB-29	1.15	1.15	1.11	0.03	97.01	4.61	547.54	0.11	0 00:05	
17	CB-3	1.10	1.10	1.10	0.00	100.00	6.45	476.44	0.16	0 00:08	
18	CB-31	1.35	1.35	1.16	0.19	85.78	5.44	549.48	0.11	0 00:05	
19	CB-32	1.01	1.01	0.98	0.03	96.82	4.14	549.80	0.10	0 00:05	
20	CB-35	0.98	0.78	0.93	0.05	95.37	3.90	494.09	0.09	0 00:19	
21	CB-36	2.76	2.76	1.83	0.93	66.42	5.69	493.61	0.14	0 00:14	
22	CB-38	1.77	1.77	1.41	0.36	79.52	4.83	510.84	0.12	0 00:19	
23	CB-39	6.29	5.86	N/A	N/A	N/A	12.10	515.85	0.48	0 00:19	
24	CB-43	4.49	4.49	4.11	0.38	91.44	9.30	518.25	0.23	0 00:09	
25	CB-6	2.12	1.29	N/A	N/A	N/A	5.87	475.41	0.32	0 00:07	
26	CB-7	0.32	0.32	0.32	0.00	100.00	4.08	475.19	0.10	0 00:16	
27	CB-9	2.82	2.82	1.96	0.86	69.56	6.10	489.77	0.15	0 00:05	
28	Inlet-CB-44	4.42	4.42	3.20	1.23	72.29	6.68	521.53	0.17	0 00:08	

Detention Pond Storage Estimate

Pond No. 1 : Hilltop Detention Pond

Pond Designer

Report | Help

Estimate Storage* > Create Pond > Add Outlet Structures

1-Yr | 2-Yr | 3-Yr | 5-Yr | 10-Yr | 25-Yr | 50-Yr | 100-Yr

Post-dev Hyd = 13 - Mod Rational - Post-Dev Basin "E

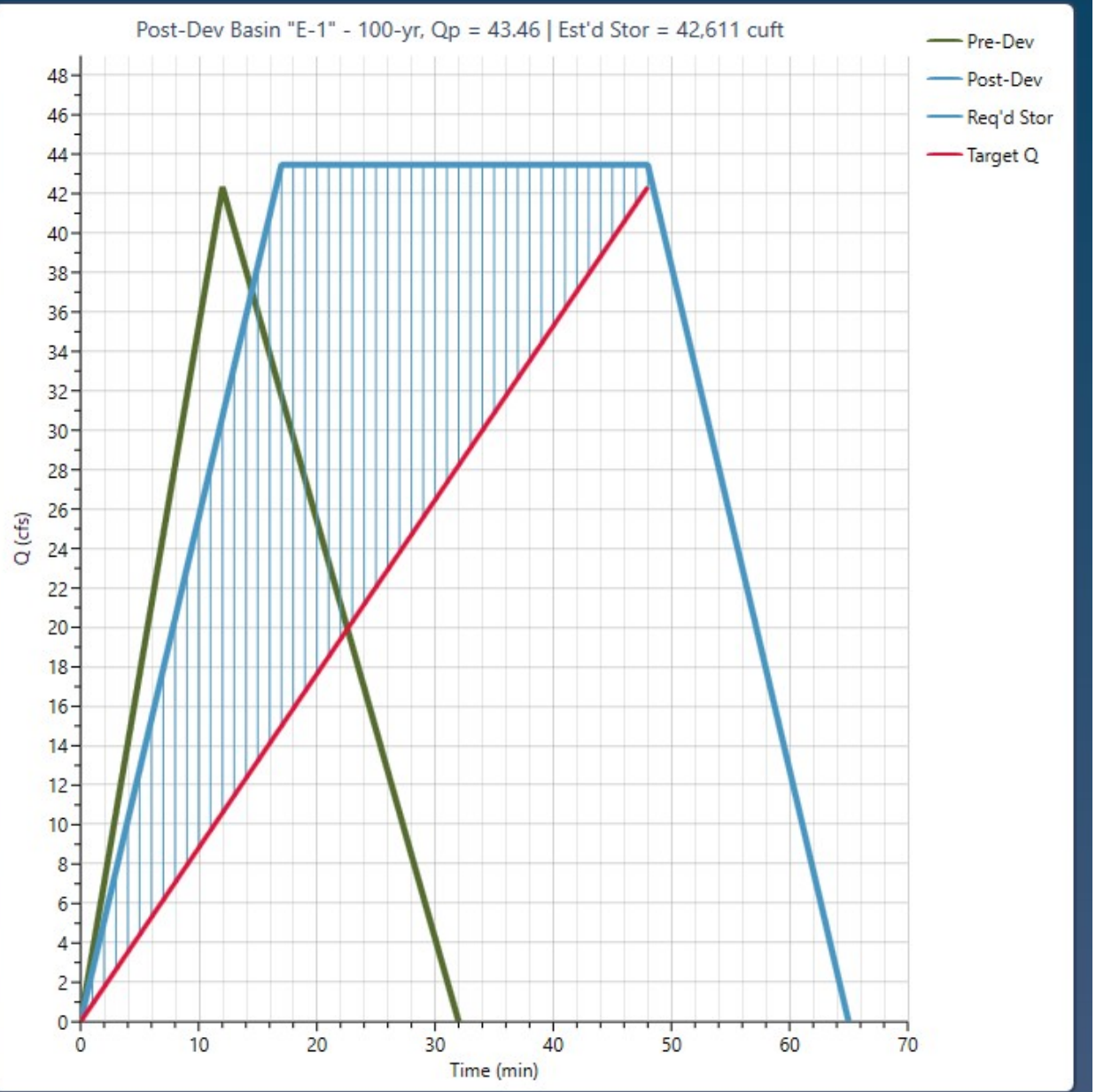
Pre-dev Hyd = 5 - Rational - Pre-Dev Basin "E-1"

Freq (Yr)	Vol Pre (cuft)	Vol Post (cuft)	Qp Post (cfs)	Q Targ (cfs)	Req Stor (cuft)
1					
2	22,242	68,090	23.64	23.14	22,967
3					
5					
10	29,819	91,663	31.83	31.02	31,174
25	34,268	105,431	36.61	35.65	35,913
50	37,472	115,494	40.10	38.98	39,483
100	40,692	125,154	43.46	42.33	42,611

Clear | Estimate Storage

	Extended Detention Storage (optional)	
Zone	Description	Volume (cuft)
1	WQv	
2	CPv	
3	Custom	
4	Custom	

Clear | Apply



*Estimate Storage Step is Optional

Always skip this step

Create Pond >

Culvert Blockage Simulation

Pond No. 1 : Hilltop Detention Pond

Pond Designer

Report | Help

Estimate Storage > Create Pond > **Add Outlet Structures**

Table | Structure | Plan / Profile | Stage vs. Q | Stage vs. Drain Time | Trial Route | Help | Flow Pat

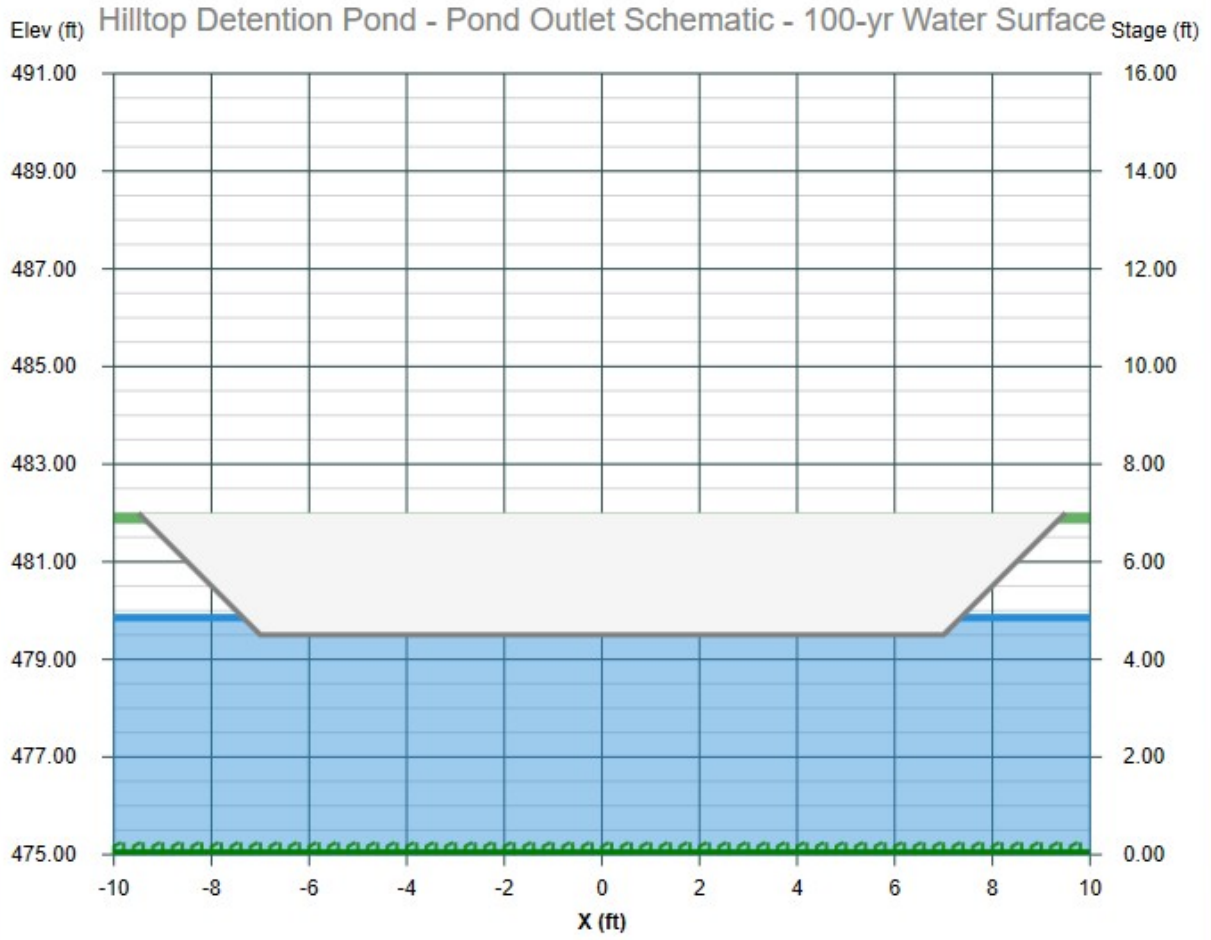
Culvert	Riser	Orifice	Weir
Exfiltration	User	Perf Riser	Tailwater

Primary Culvert	Input
Outlet Structure =	Culvert
Shape =	Circular
Diameter (in) =	18
No. Barrels =	1
Invert Elev. (ft) =	475.00
Orifice Coeff. (Co) =	0.6
Length (ft) =	57.00
Barrel Slope (%) =	1.17
N-Value (n) =	0.013
Restrictor (optional)	None
Active =	☐

Auto | Add/Update

Freq (Yr)	Q Targ (cfs)	Q Act (cfs)	Max Ele (ft)	Max Stor (cuft)
2	23.14	0.00	477.97	68,090
10	31.02	0.00	478.91	91,663
25	35.65	0.00	479.43	105,431
50	38.98	5.42	479.74	113,429
100	42.33	12.95	479.92	118,321

Auto Route | Trial Route



Numerical Output

X = 9.22 ft Y = 482.09 ft

< Create Pond | Finish

Pre and Post Development Hydrographs (Hydrology Studio)

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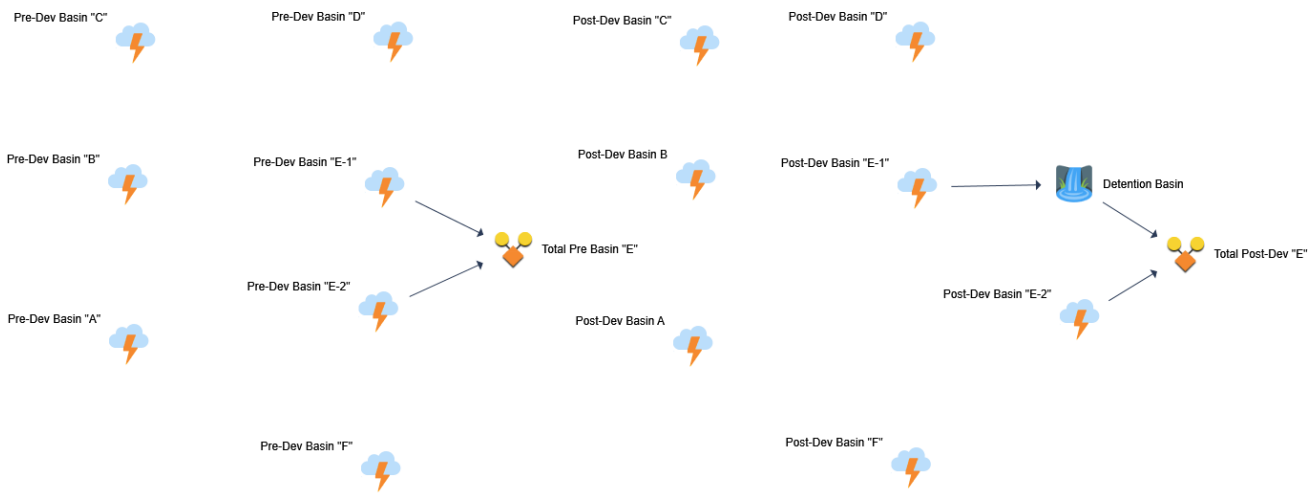
Hydrograph No. 17, Rational, Post-Dev Basin "F" 109

Basin Model

Hydrology Studio v 3.0.0.39

Project Name: Hilltop Subdivision
File: Detention Calculation 3-4-26.hys
03-04-2026



Hydrograph by Return Period

Hydrology Studio v 3.0.0.39

Project Name: Hilltop Subdivision
File: Detention Calculation 3-4-26.hys
03-04-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Outflow (cfs)							
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	Rational	Pre-Dev Basin "A"		8.527			11.43	13.13	14.36	15.60
2	Rational	Pre-Dev Basin "B"		28.63			38.41	44.15	48.29	52.42
3	Rational	Pre-Dev Basin "C"		16.17			21.67	24.90	27.23	29.57
4	Rational	Pre-Dev Basin "D"		7.322			9.804	11.26	12.31	13.38
5	Rational	Pre-Dev Basin "E-1"		23.14			31.02	35.65	38.98	42.33
6	Rational	Pre-Dev Basin "E-2"		39.29			52.69	60.55	66.22	71.90
7	Junction	Total Pre Basin "E"		61.27			82.16	94.42	103.3	112.1
8	Rational	Pre-Dev Basin "F"		24.68			33.12	38.07	41.64	45.20
9	Rational	Post-Dev Basin A		8.979			12.04	13.84	15.14	16.43
10	Rational	Post-Dev Basin B		23.98			32.19	37.00	40.48	43.93
11	Rational	Post-Dev Basin "C"		16.54			22.16	25.47	27.85	30.24
12	Rational	Post-Dev Basin "D"		7.200			9.641	11.08	12.11	13.15
13	Mod Rational	Post-Dev Basin "E-1"		23.64			31.83	36.61	40.10	43.46
14	Pond Route	Detention Basin		10.07			12.42	13.61	14.43	15.18
15	Rational	Post-Dev Basin "E-2"		39.12			52.46	60.29	65.94	71.59
16	Junction	Total Post-Dev "E"		39.66			53.39	61.49	67.36	73.24
17	Rational	Post-Dev Basin "F"		24.38			32.71	37.60	41.13	44.65

Hydrograph 2-yr Summary

Hydrology Studio v 3.0.0.39

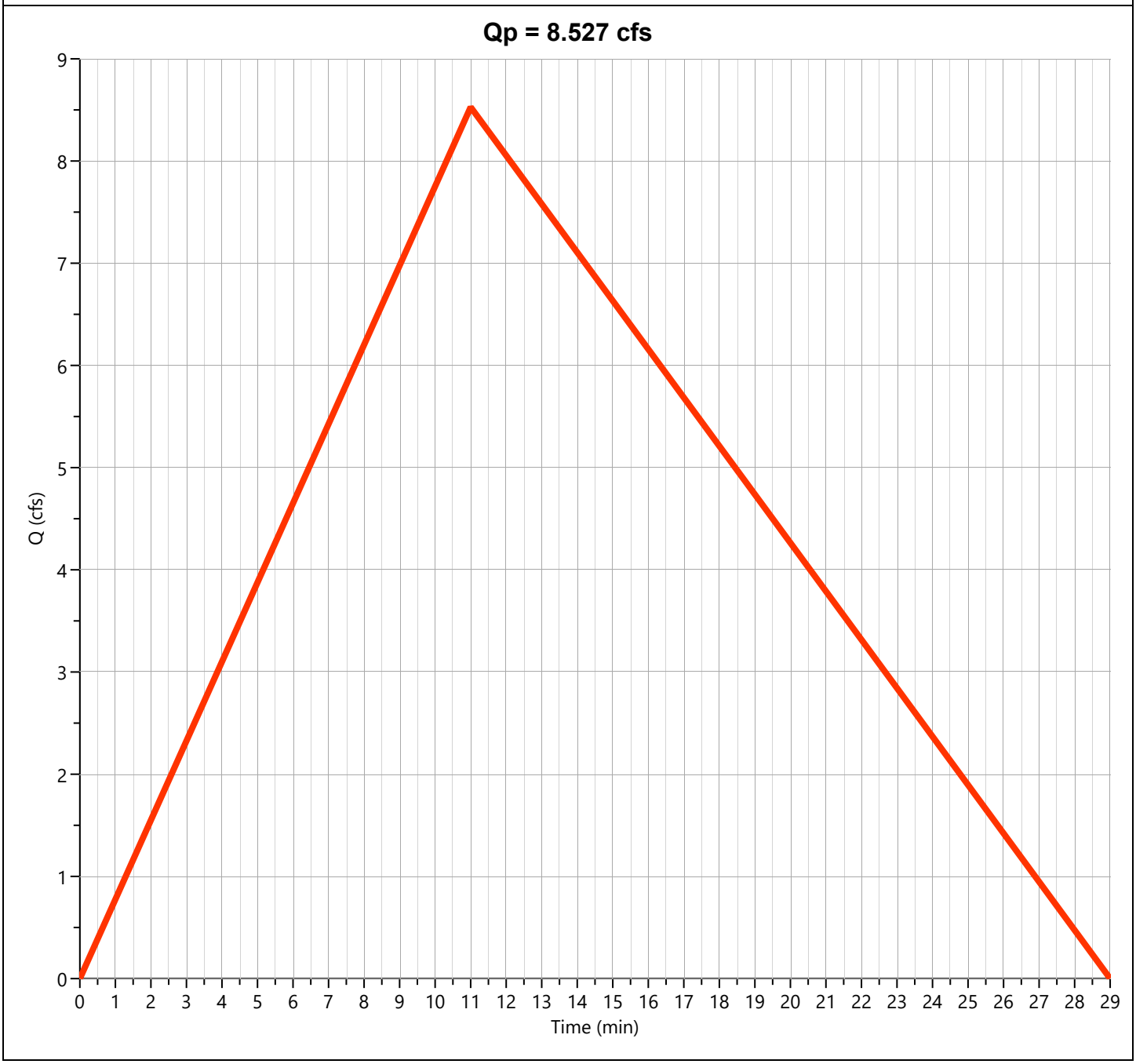
Project Name: Hilltop Subdivision
File: Detention Calculation 3-4-26.hys
03-04-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre-Dev Basin "A"	8.527	0.18	7,513	----		
2	Rational	Pre-Dev Basin "B"	28.63	0.25	34,400	----		
3	Rational	Pre-Dev Basin "C"	16.17	0.18	14,247	----		
4	Rational	Pre-Dev Basin "D"	7.322	0.13	4,692	----		
5	Rational	Pre-Dev Basin "E-1"	23.14	0.20	22,242	----		
6	Rational	Pre-Dev Basin "E-2"	39.29	0.22	40,914	----		
7	Junction	Total Pre Basin "E"	61.27	0.22	62,291	5, 6		
8	Rational	Pre-Dev Basin "F"	24.68	0.28	33,601	----		
9	Rational	Post-Dev Basin A	8.979	0.23	10,069	----		
10	Rational	Post-Dev Basin B	23.98	0.30	34,576	----		
11	Rational	Post-Dev Basin "C"	16.54	0.18	14,570	----		
12	Rational	Post-Dev Basin "D"	7.200	0.13	4,614	----		
13	Mod Rational	Post-Dev Basin "E-1"	23.64	0.28	68,090	----		
14	Pond Route	Detention Basin	10.07	0.97	68,005	13	477.15	48,434
15	Rational	Post-Dev Basin "E-2"	39.12	0.22	40,738	----		
16	Junction	Total Post-Dev "E"	39.66	0.22	107,909	14, 15		
17	Rational	Post-Dev Basin "F"	24.38	0.27	31,245	----		

Pre-Dev Basin "A"

Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 8.527 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 7,513 cuft
Drainage Area	= 3.2 ac	Runoff Coeff.	= 0.62
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Tc by TR55 Worksheet

Hydrology Studio v 3.0.0.39

03-04-2026

Pre-Dev Basin "A"
Rational

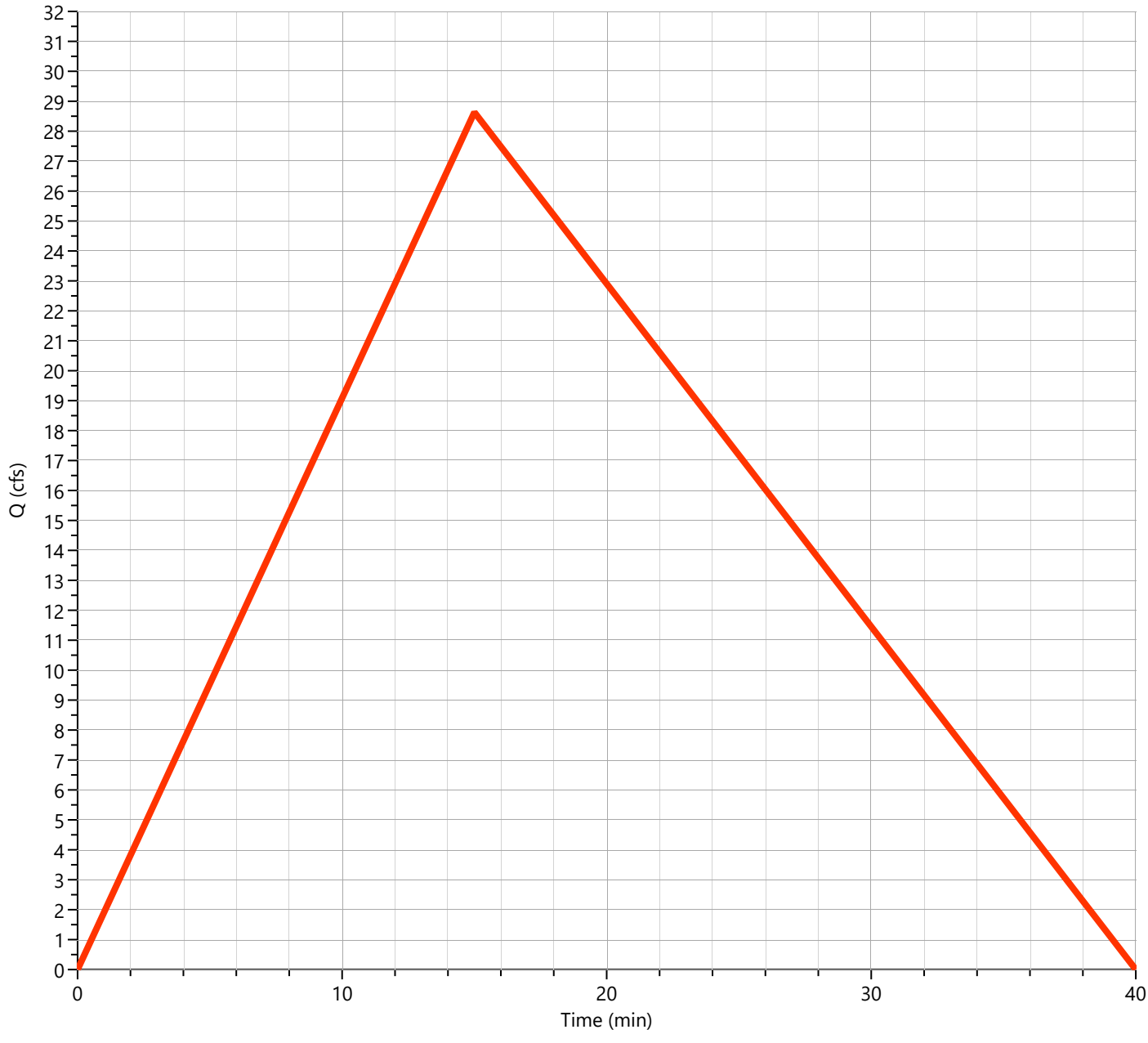
Hyd. No. 1

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	6			
Travel Time (min)	**9.43**	**0.00**	**0.00**	**9.43**
Shallow Concentrated Flow				
Flow Length (ft)	509			
Watercourse Slope (%)	8.35	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.66			
Travel Time (min)	**1.82**	**0.00**	**0.00**	**1.82**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**11 min**

Pre-Dev Basin "B"

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 28.63 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 34,400 cuft
Drainage Area	= 14.74 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.74 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "B"
Rational

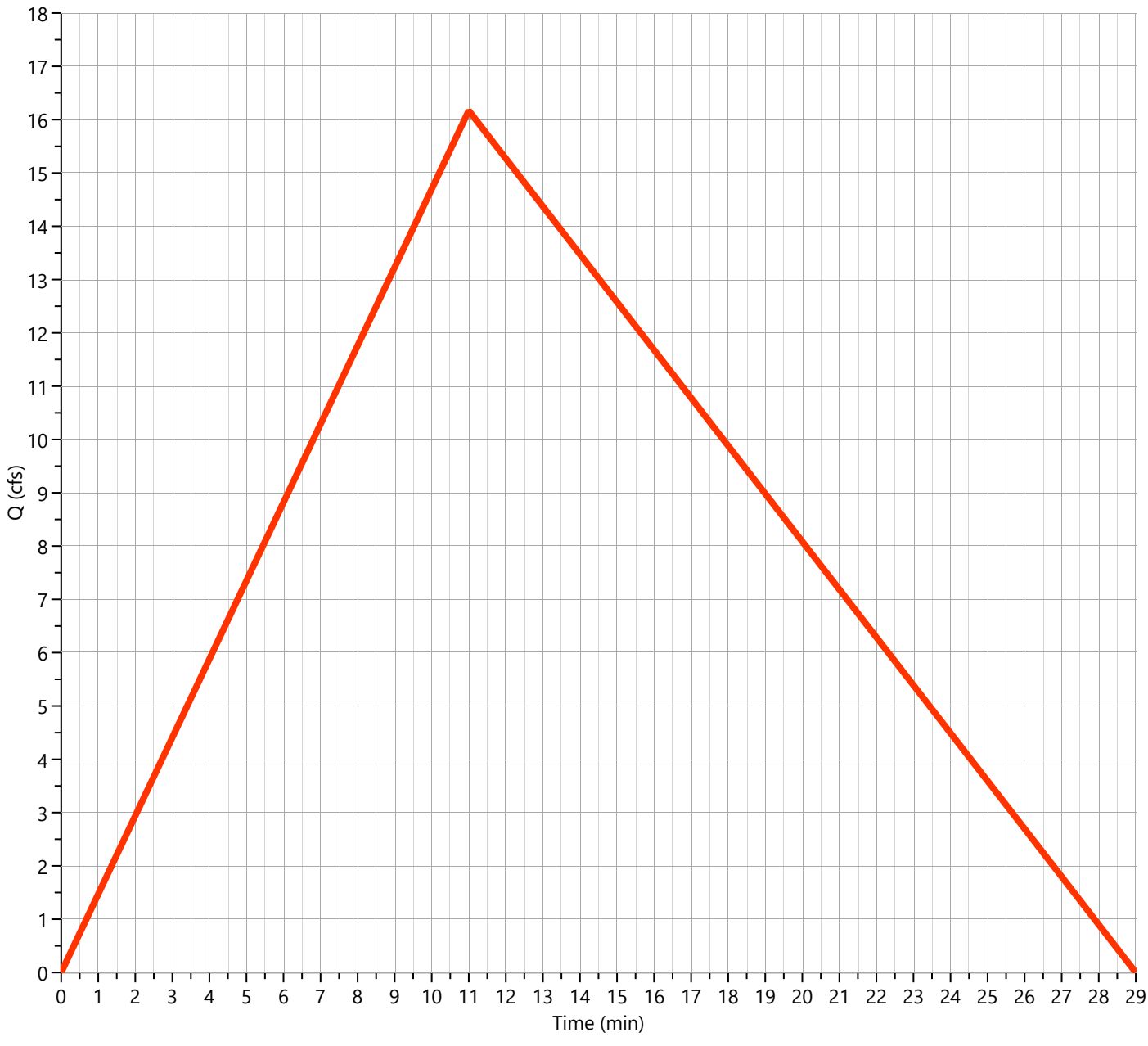
Hyd. No. 2

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	4			
Travel Time (min)	**11.09**	**0.00**	**0.00**	**11.09**
Shallow Concentrated Flow				
Flow Length (ft)	926			
Watercourse Slope (%)	5.90	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.92			
Travel Time (min)	**3.94**	**0.00**	**0.00**	**3.94**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**15 min**

Pre-Dev Basin "C"

Hyd. No. 3

Hydrograph Type	= Rational	Peak Flow	= 16.17 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 14,247 cuft
Drainage Area	= 6.84 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "C"
Rational

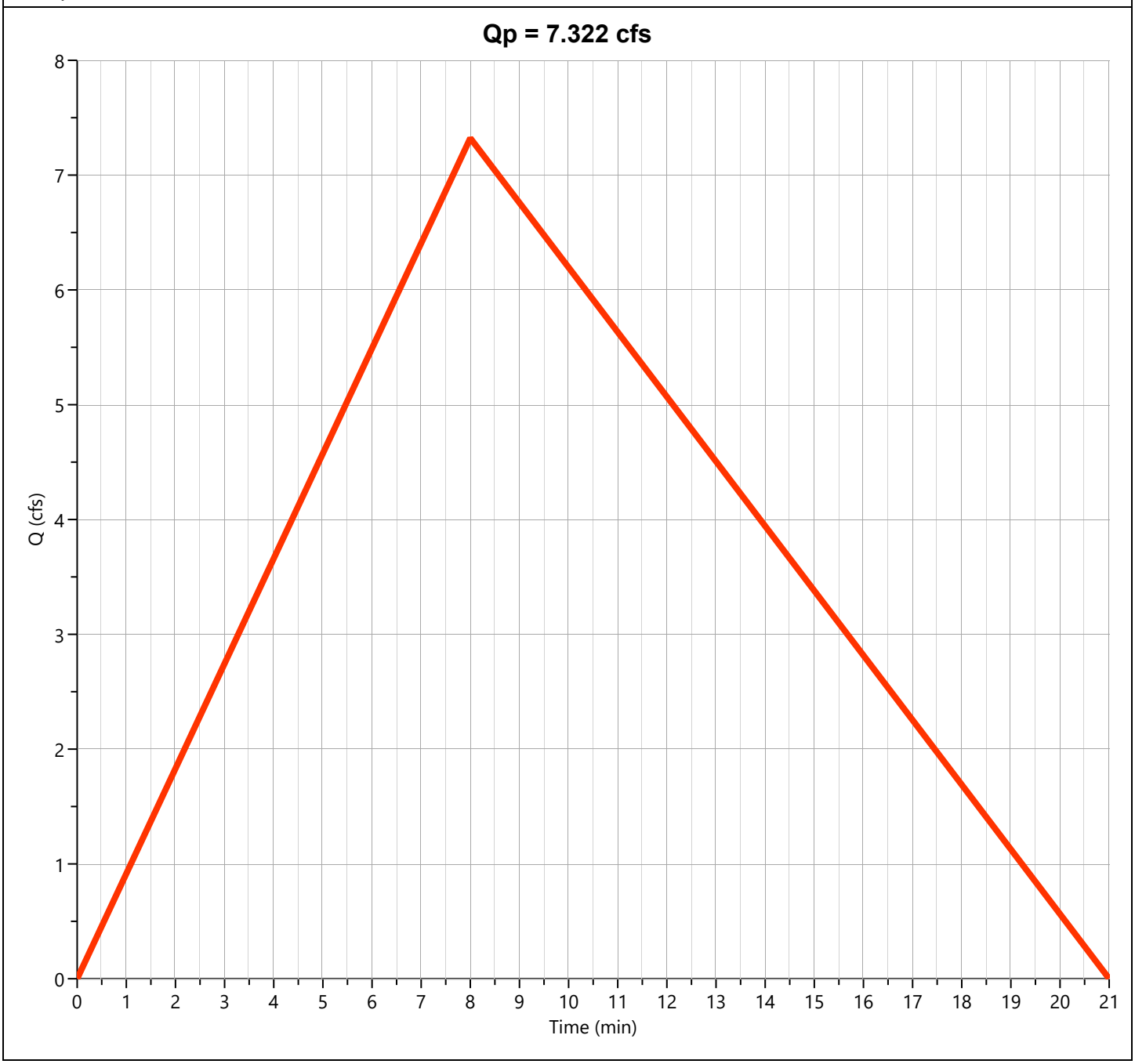
Hyd. No. 3

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	8			
Travel Time (min)	**8.40**	**0.00**	**0.00**	**8.40**
Shallow Concentrated Flow				
Flow Length (ft)	654	71		
Watercourse Slope (%)	5.68	6.20	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.85	5.06		
Travel Time (min)	**2.83**	**0.23**	**0.00**	**3.07**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**11 min**

Pre-Dev Basin "D"

Hyd. No. 4

Hydrograph Type	= Rational	Peak Flow	= 7.322 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 4,692 cuft
Drainage Area	= 2.95 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.96 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "D"
Rational

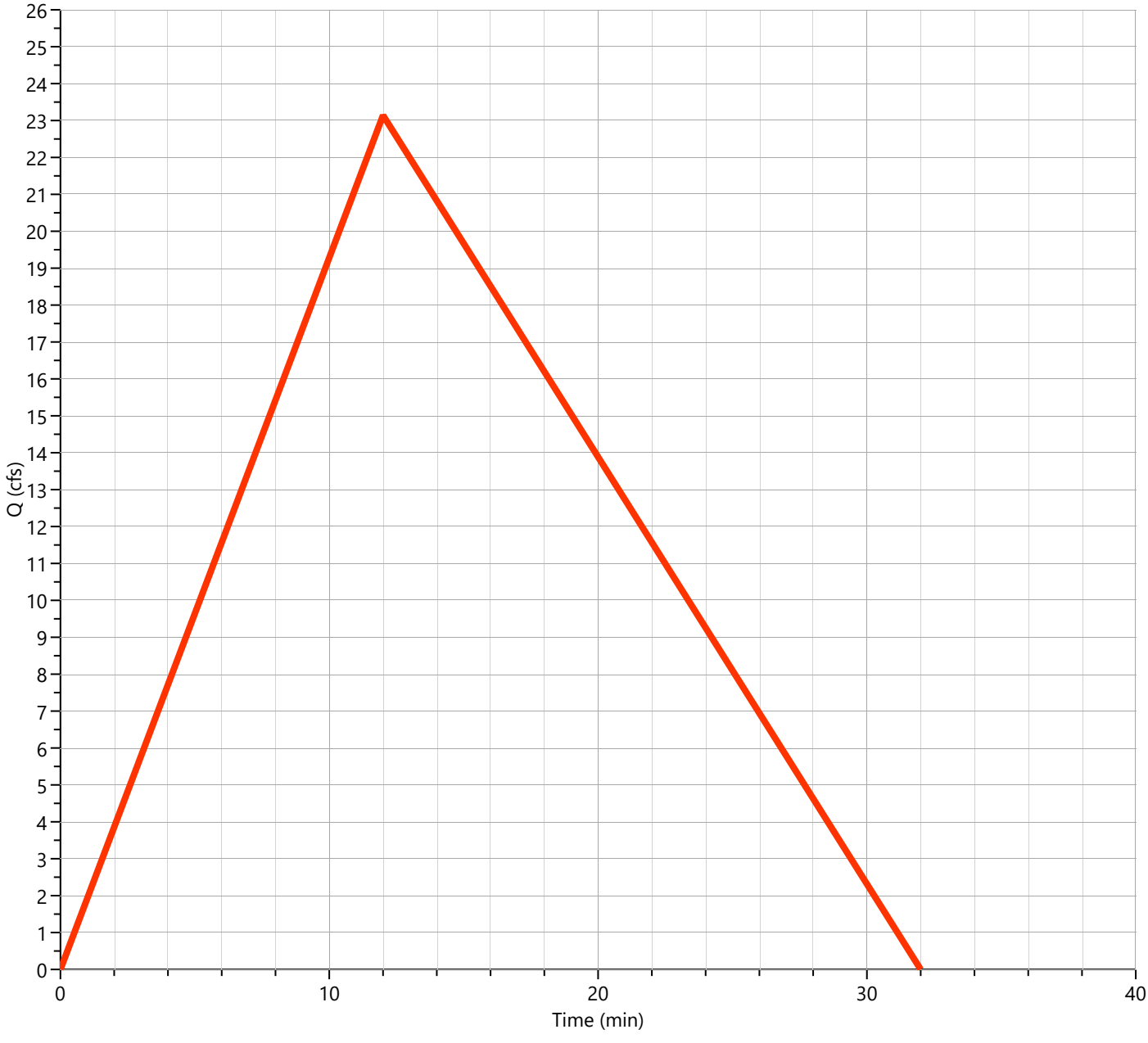
Hyd. No. 4

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	14			
Travel Time (min)	**6.72**	**0.00**	**0.00**	**6.72**
Shallow Concentrated Flow				
Flow Length (ft)	554			
Watercourse Slope (%)	11.00	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	5.35			
Travel Time (min)	**1.73**	**0.00**	**0.00**	**1.73**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**8 min**

Pre-Dev Basin "E-1"

Hyd. No. 5

Hydrograph Type	= Rational	Peak Flow	= 23.14 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 22,242 cuft
Drainage Area	= 11.2 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.13 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E-1"
Rational

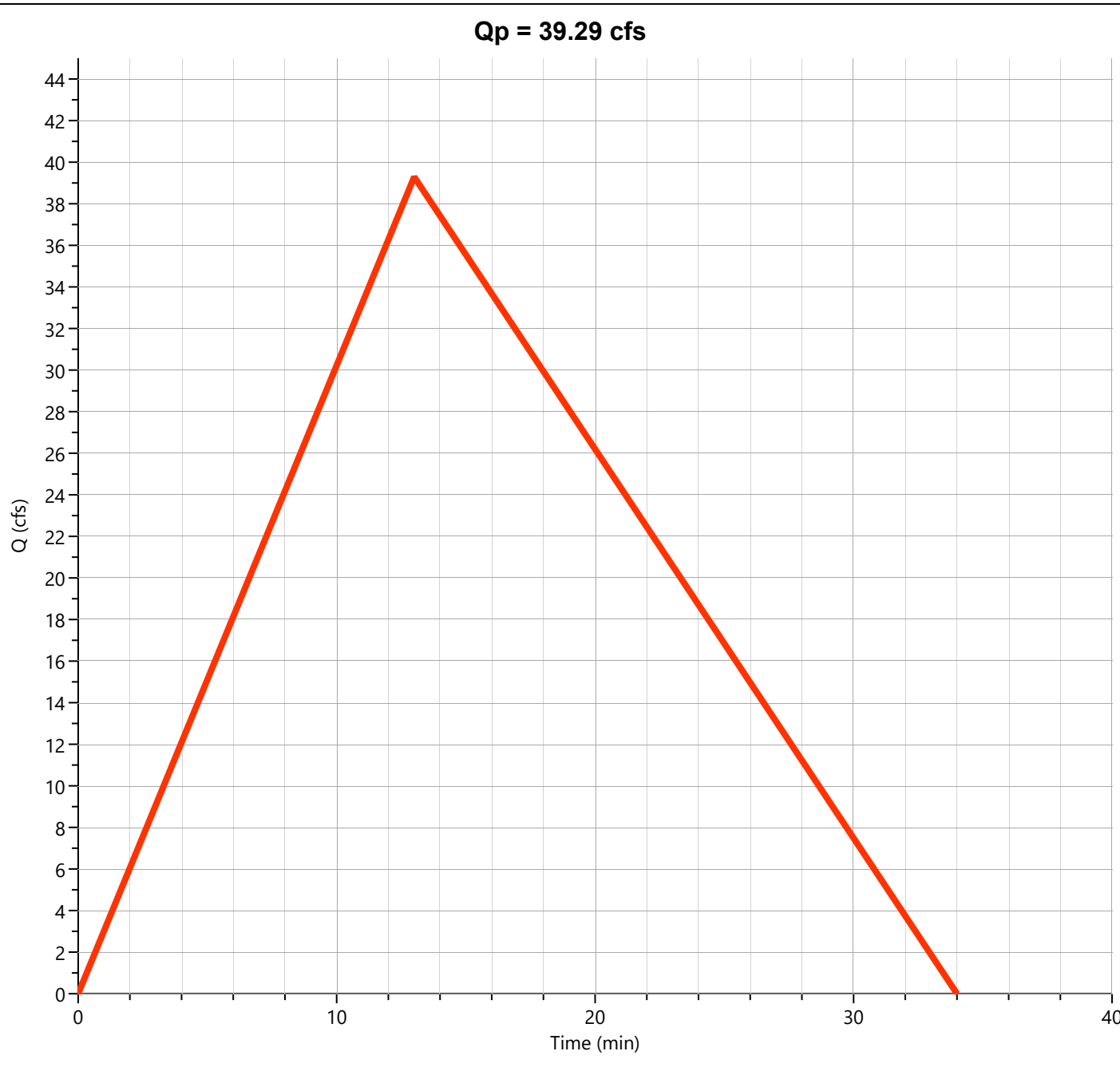
Hyd. No. 5

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	5			
Travel Time (min)	**10.14**	**0.00**	**0.00**	**10.14**
Shallow Concentrated Flow				
Flow Length (ft)	565			
Watercourse Slope (%)	13.00	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	5.82			
Travel Time (min)	**1.62**	**0.00**	**0.00**	**1.62**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**12 min**

Pre-Dev Basin "E-2"

Hyd. No. 6

Hydrograph Type	= Rational	Peak Flow	= 39.29 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 40,914 cuft
Drainage Area	= 18.96 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.99 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E-2"
Rational

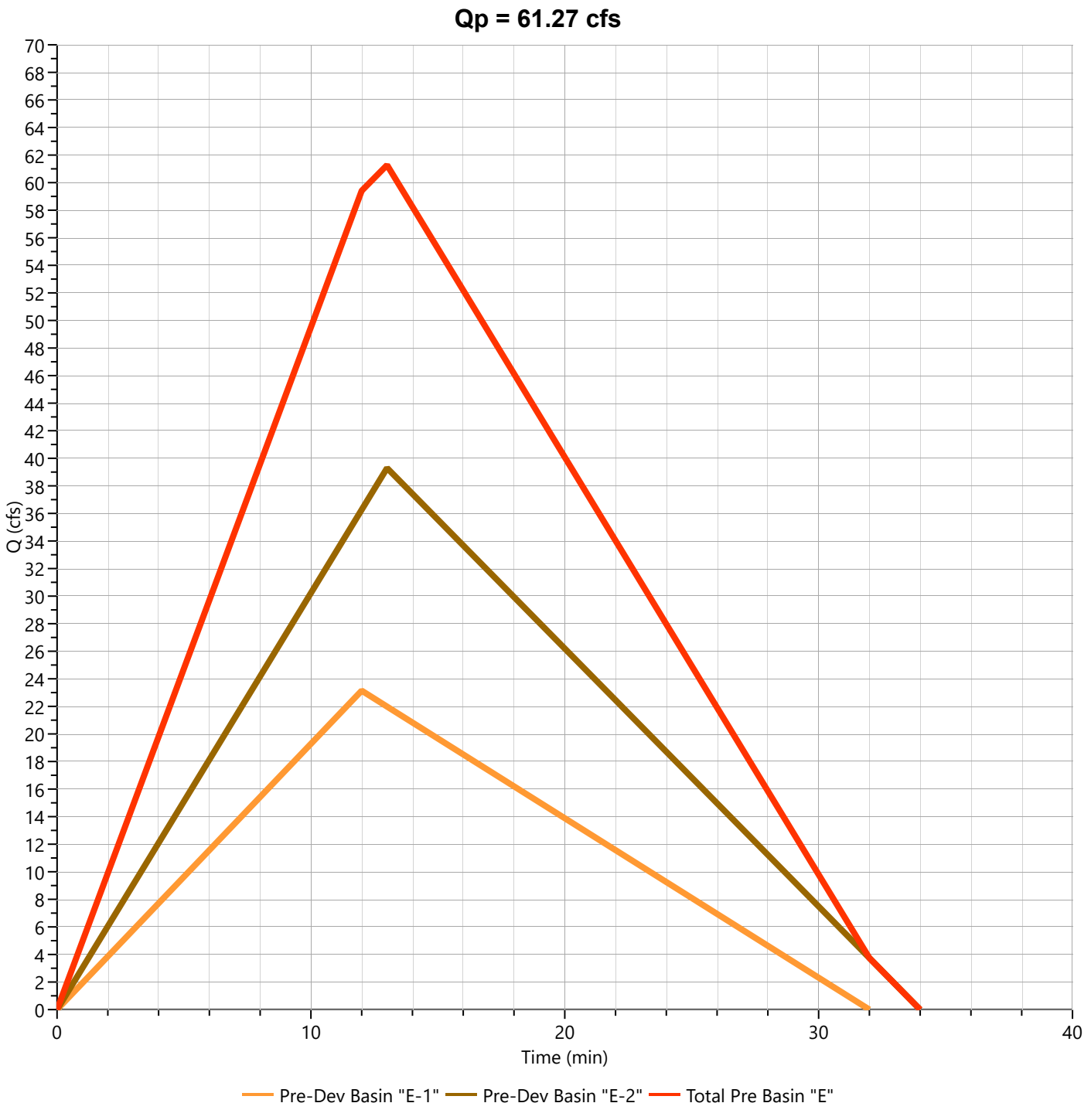
Hyd. No. 6

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	7.25			
Travel Time (min)	**8.74**	**0.00**	**0.00**	**8.74**
Shallow Concentrated Flow				
Flow Length (ft)	1070			
Watercourse Slope (%)	6.23	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.03			
Travel Time (min)	**4.43**	**0.00**	**0.00**	**4.43**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**13 min**

Total Pre Basin "E"

Hyd. No. 7

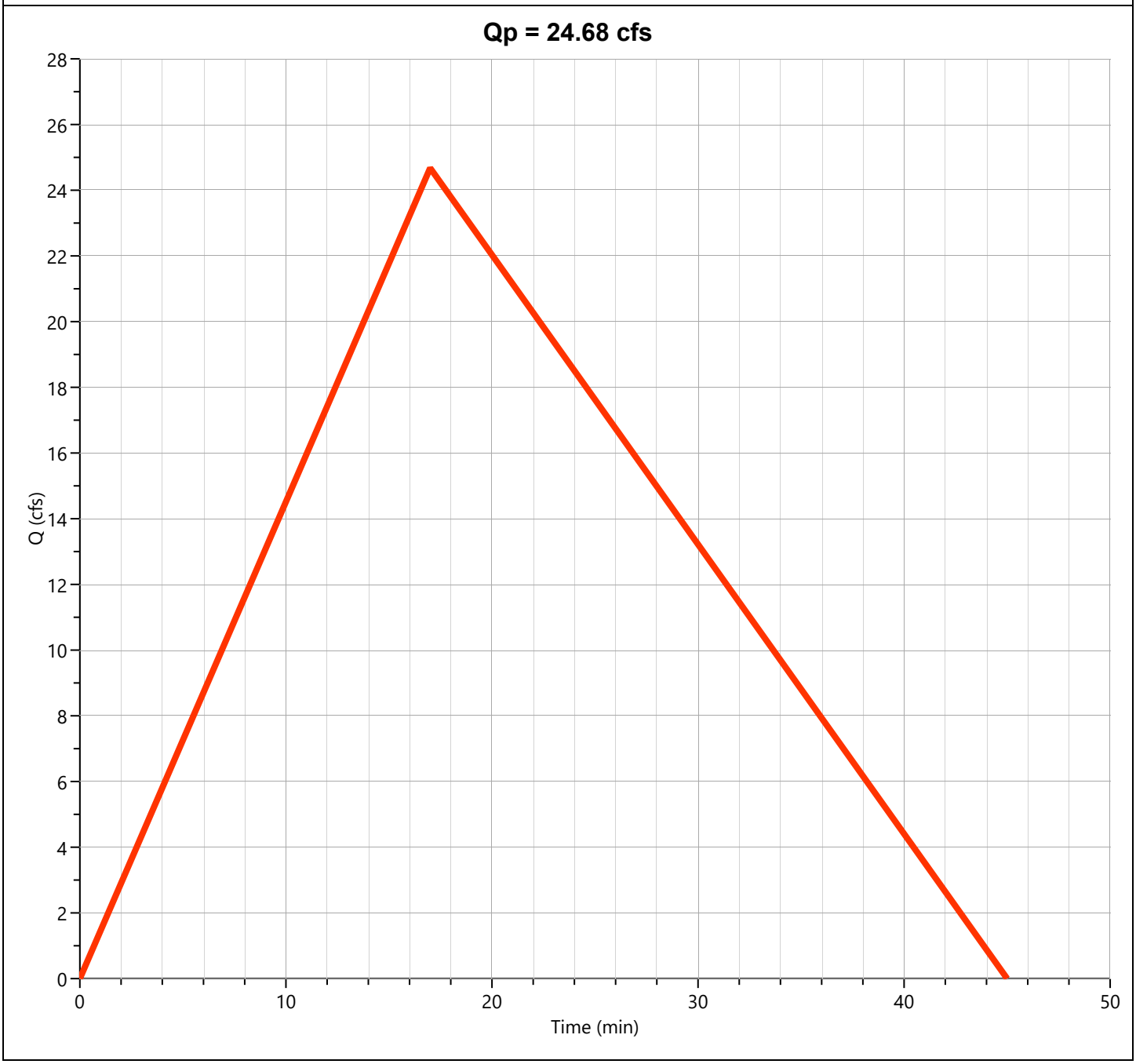
Hydrograph Type	= Junction	Peak Flow	= 61.27 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 62,291 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 30.16 ac



Pre-Dev Basin "F"

Hyd. No. 8

Hydrograph Type	= Rational	Peak Flow	= 24.68 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 33,601 cuft
Drainage Area	= 13.19 ac	Runoff Coeff.	= 0.53
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.53 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "F"
Rational

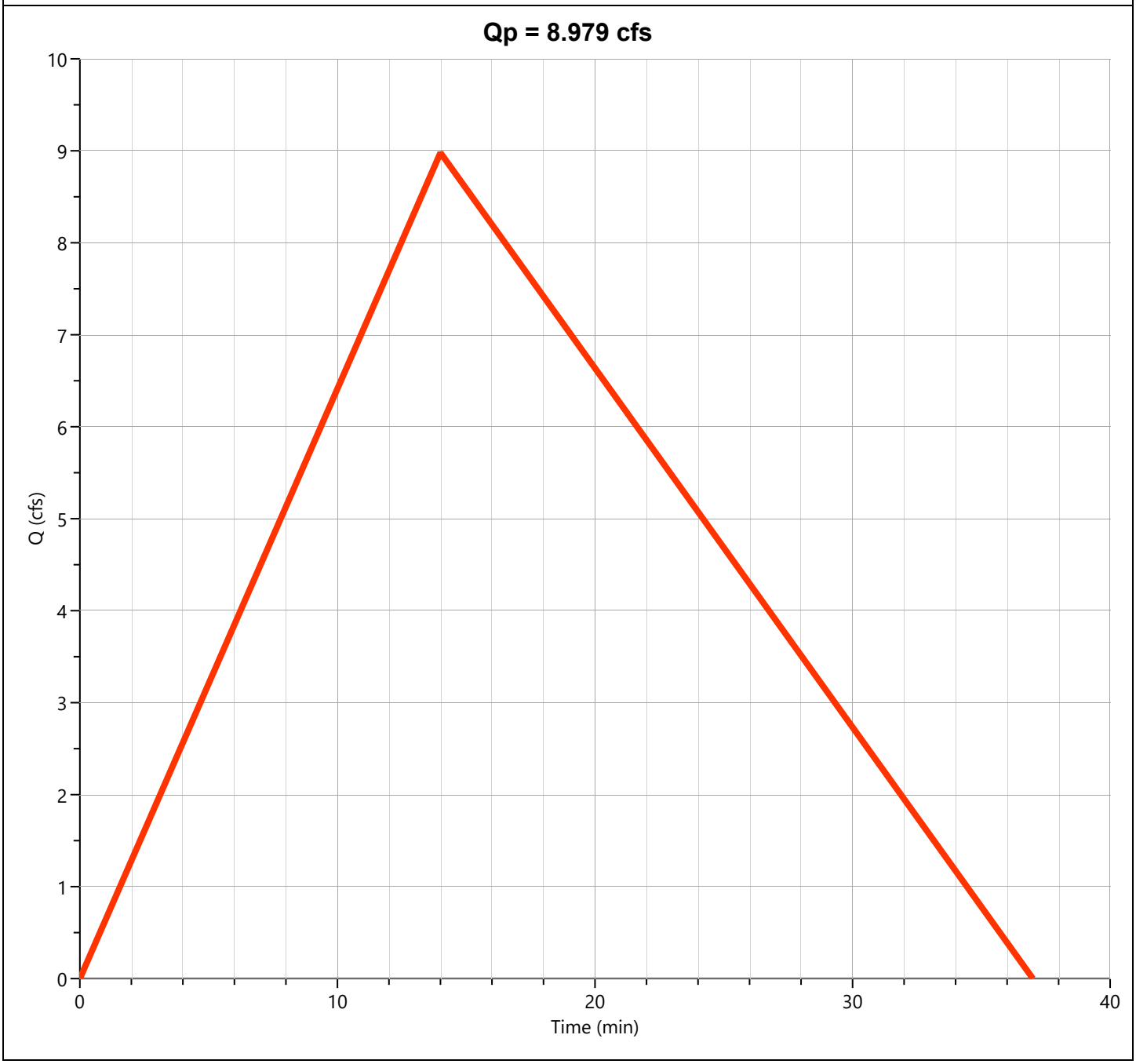
Hyd. No. 8

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	5			
Travel Time (min)	**10.14**	**0.00**	**0.00**	**10.14**
Shallow Concentrated Flow				
Flow Length (ft)	1477			
Watercourse Slope (%)	4.90	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.57			
Travel Time (min)	**6.89**	**0.00**	**0.00**	**6.89**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**17 min**

Post-Dev Basin A

Hyd. No. 9

Hydrograph Type	= Rational	Peak Flow	= 8.979 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.23 hrs
Time Interval	= 1 min	Runoff Volume	= 10,069 cuft
Drainage Area	= 3.53 ac	Runoff Coeff.	= 0.66
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 14.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.85 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin A
Rational

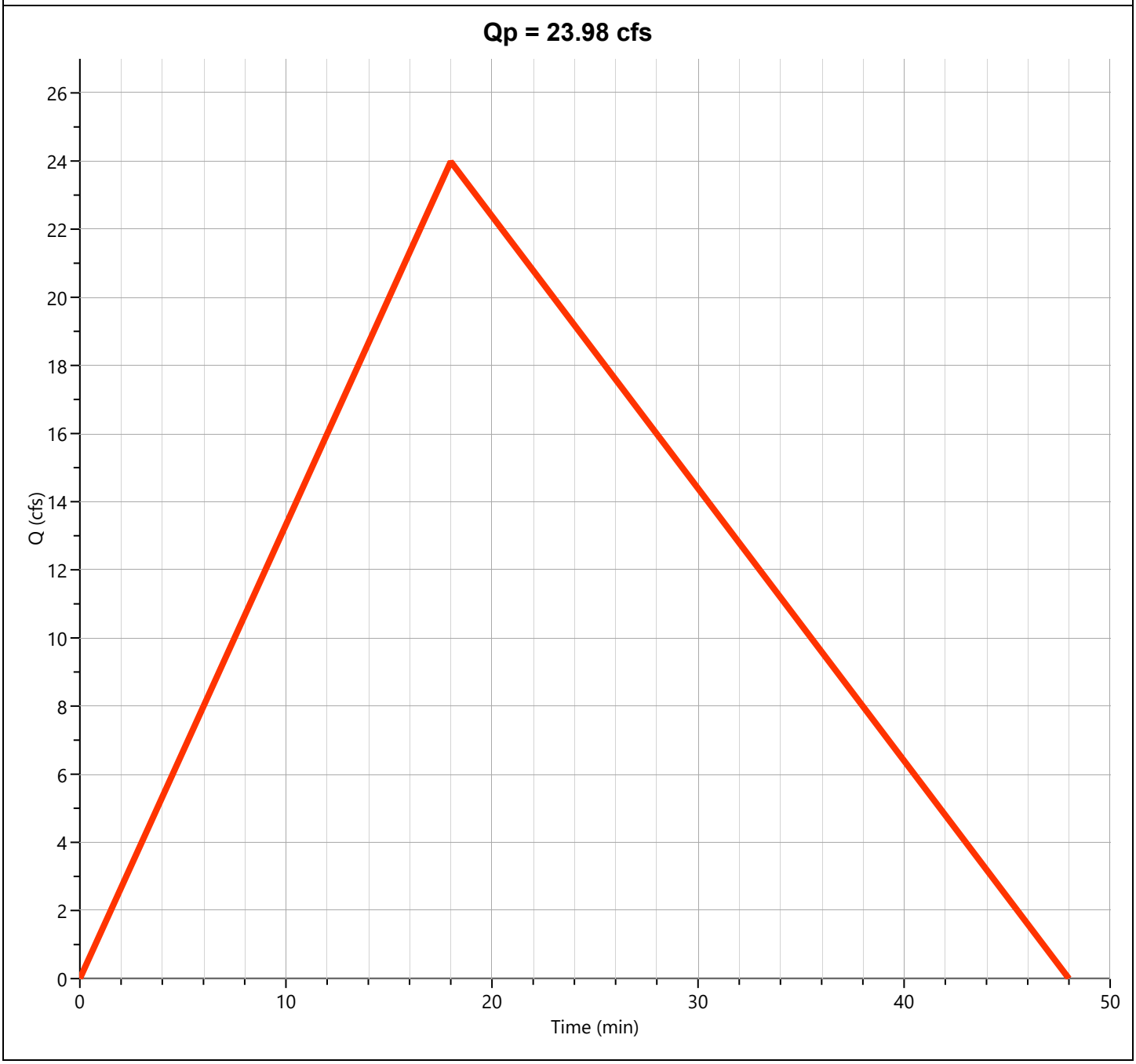
Hyd. No. 9

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	3			
Travel Time (min)	**12.44**	**0.00**	**0.00**	**12.44**
Shallow Concentrated Flow				
Flow Length (ft)	519			
Watercourse Slope (%)	8.38	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.67			
Travel Time (min)	**1.85**	**0.00**	**0.00**	**1.85**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**14 min**

Post-Dev Basin B

Hyd. No. 10

Hydrograph Type	= Rational	Peak Flow	= 23.98 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.30 hrs
Time Interval	= 1 min	Runoff Volume	= 34,576 cuft
Drainage Area	= 12.45 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.44 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin B
Rational

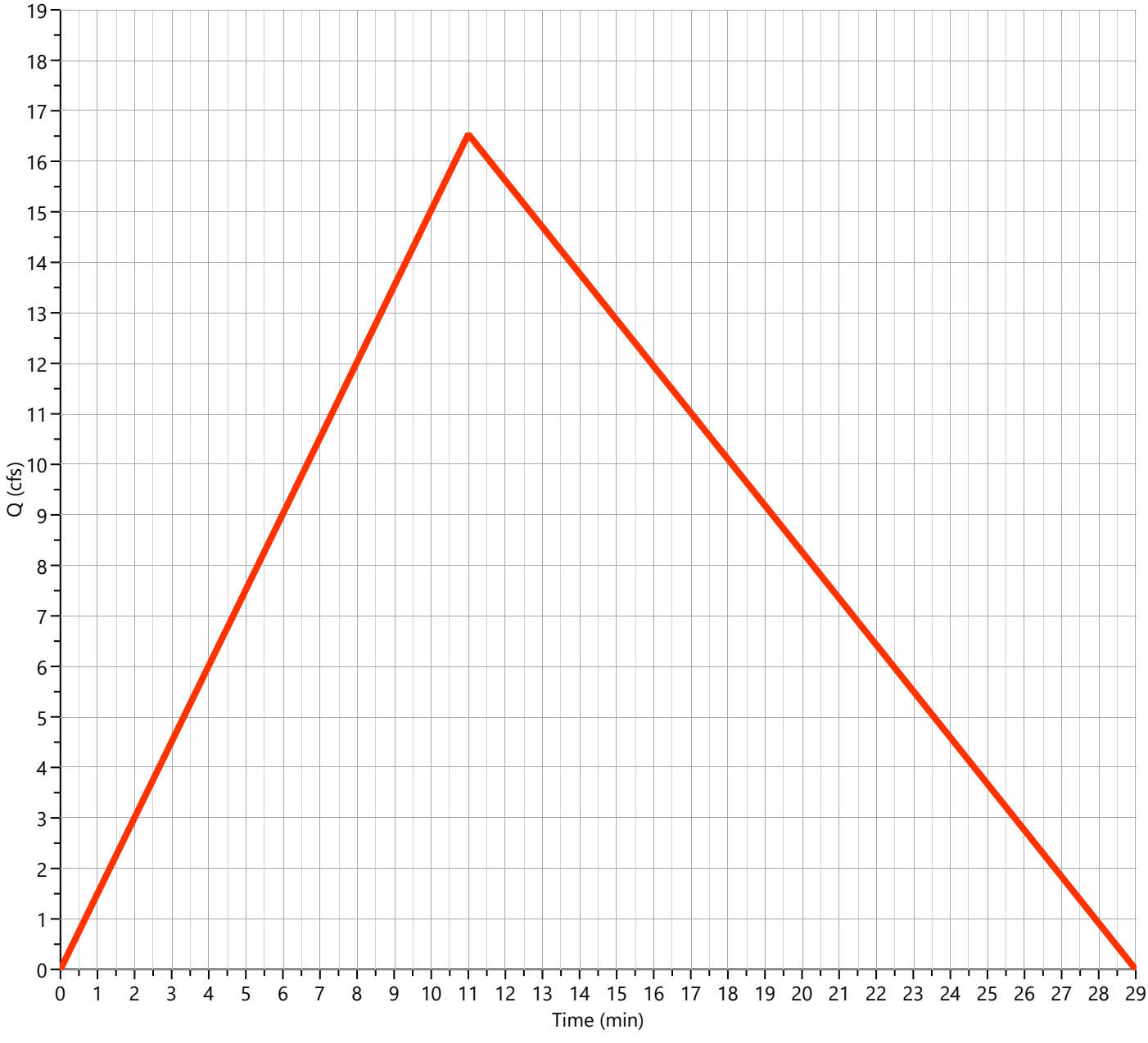
Hyd. No. 10

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	2.5			
Travel Time (min)	**13.38**	**0.00**	**0.00**	**13.38**
Shallow Concentrated Flow				
Flow Length (ft)	1025			
Watercourse Slope (%)	5.49	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.78			
Travel Time (min)	**4.52**	**0.00**	**0.00**	**4.52**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**18 min**

Post-Dev Basin "C"

Hyd. No. 11

Hydrograph Type	= Rational	Peak Flow	= 16.54 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 14,570 cuft
Drainage Area	= 6.75 ac	Runoff Coeff.	= 0.57
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "C"
Rational

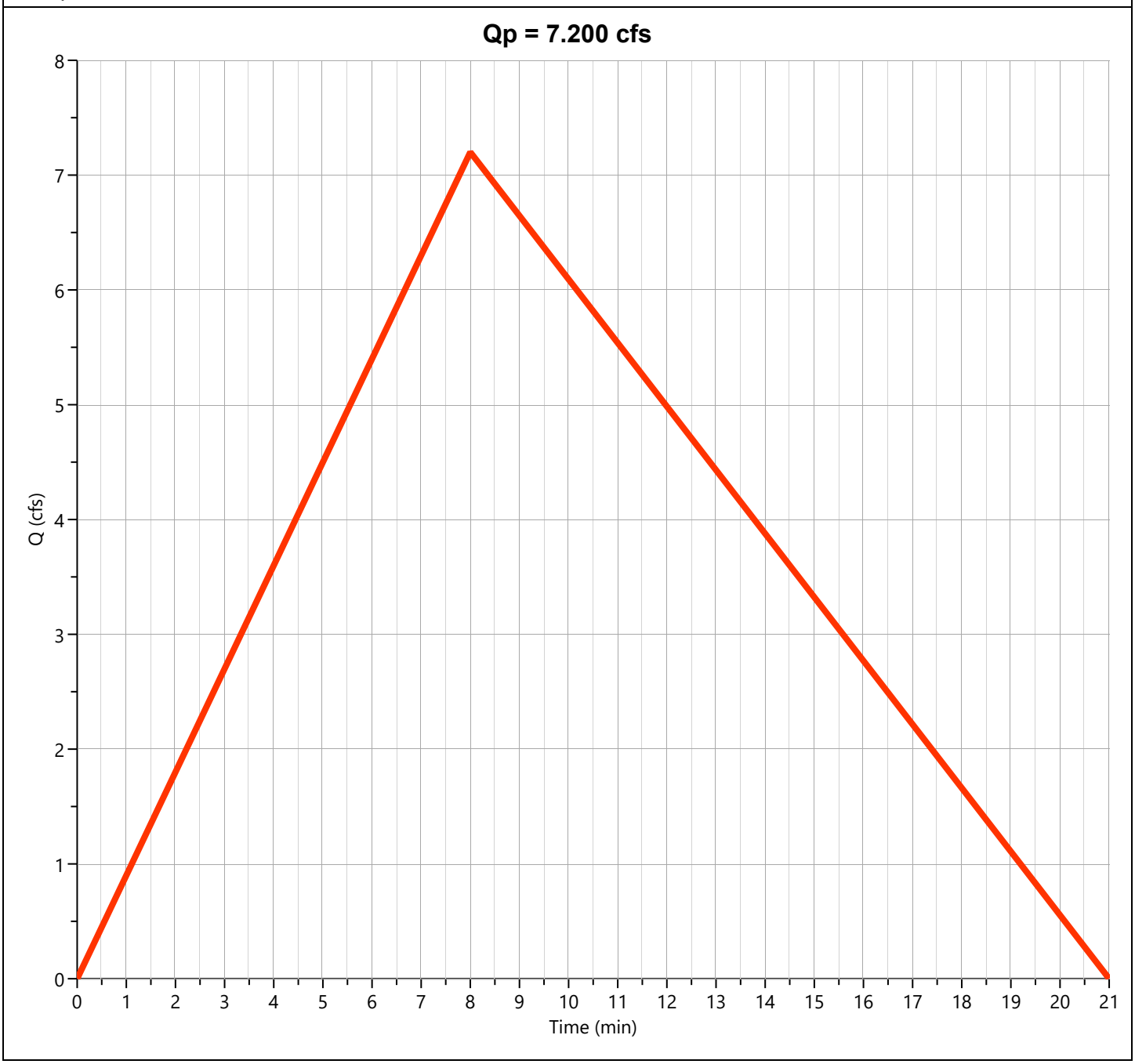
Hyd. No. 11

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	8			
Travel Time (min)	**8.40**	**0.00**	**0.00**	**8.40**
Shallow Concentrated Flow				
Flow Length (ft)	654			
Watercourse Slope (%)	5.68	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.85			
Travel Time (min)	**2.83**	**0.00**	**0.00**	**2.83**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**11 min**

Post-Dev Basin "D"

Hyd. No. 12

Hydrograph Type	= Rational	Peak Flow	= 7.200 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 4,614 cuft
Drainage Area	= 2.59 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.96 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "D"
Rational

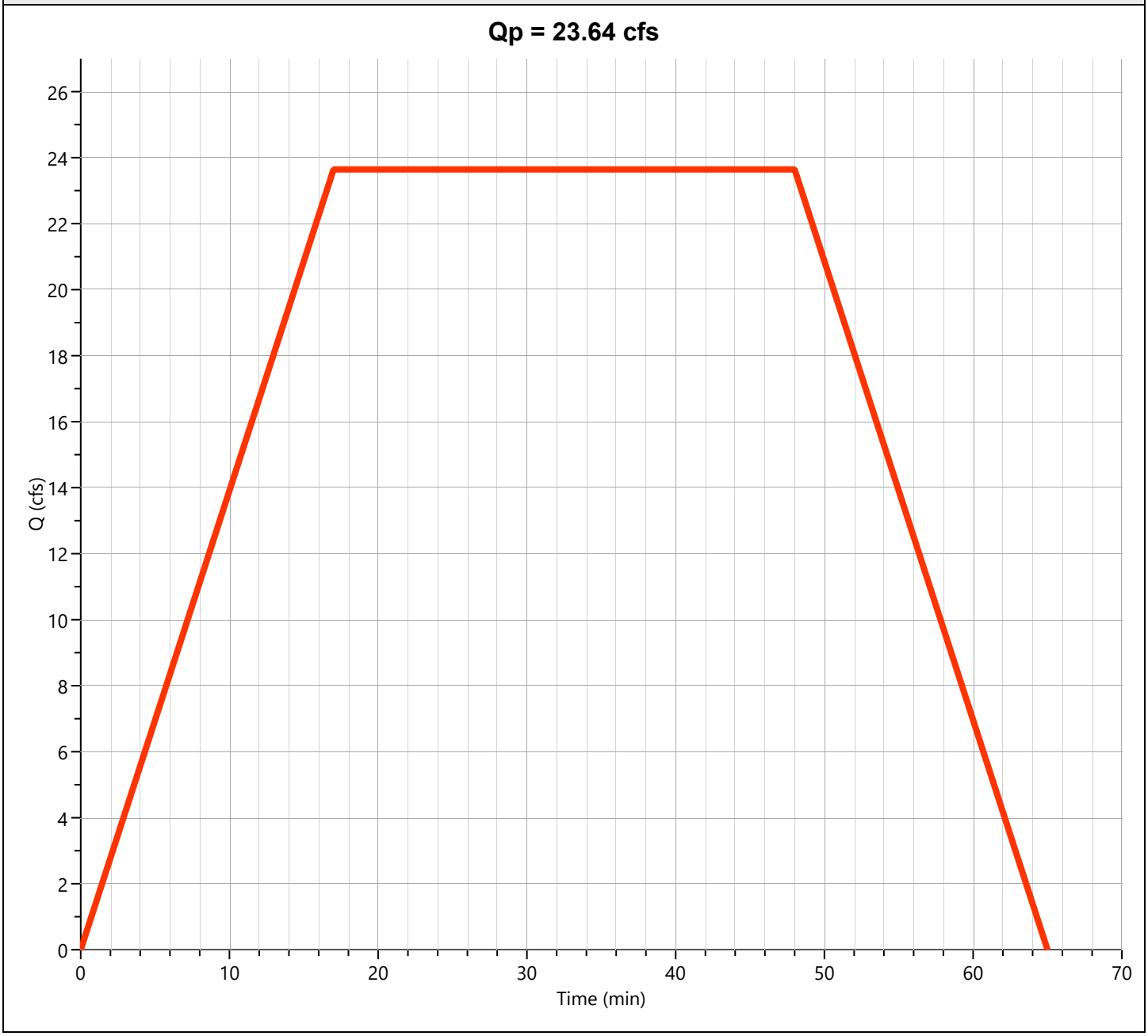
Hyd. No. 12

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	14			
Travel Time (min)	**6.72**	**0.00**	**0.00**	**6.72**
Shallow Concentrated Flow				
Flow Length (ft)	554			
Watercourse Slope (%)	11.00	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	5.35			
Travel Time (min)	**1.73**	**0.00**	**0.00**	**1.73**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**8 min**

Post-Dev Basin "E-1"

Hyd. No. 13

Hydrograph Type	= Mod Rational	Peak Flow	= 23.64 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 68,090 cuft
Drainage Area	= 16.23 ac	Runoff Coeff.	= 0.66
Tc Method	= User	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 2.21 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 2.82 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft



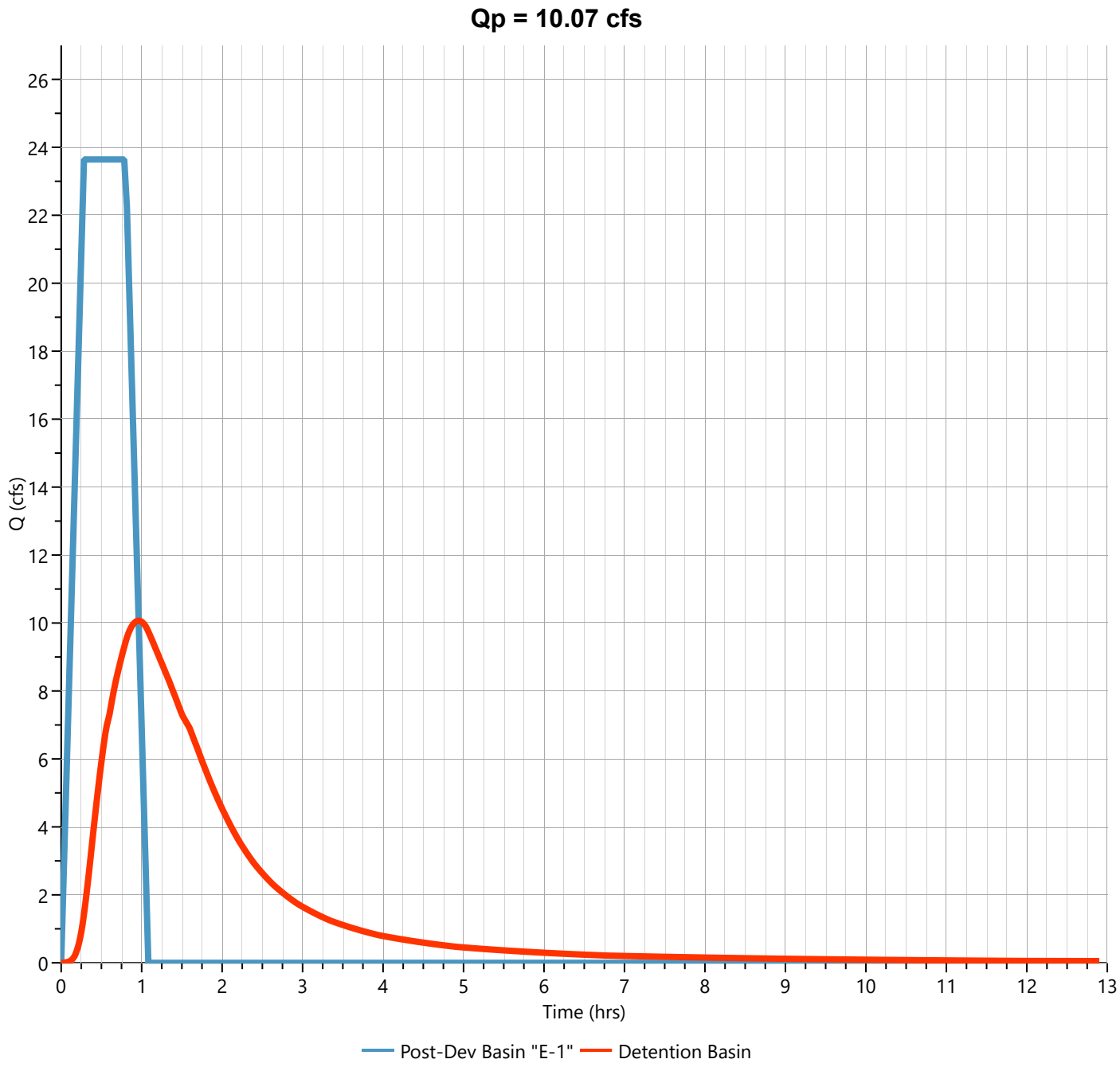
Detention Basin

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 10.07 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.97 hrs
Time Interval	= 1 min	Hydrograph Volume	= 68,005 cuft
Inflow Hydrograph	= 13 - Post-Dev Basin "E-1"	Max. Elevation	= 477.15 ft
Pond Name	= Hilltop Detention Pond	Max. Storage	= 48,434 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 1.35 hrs



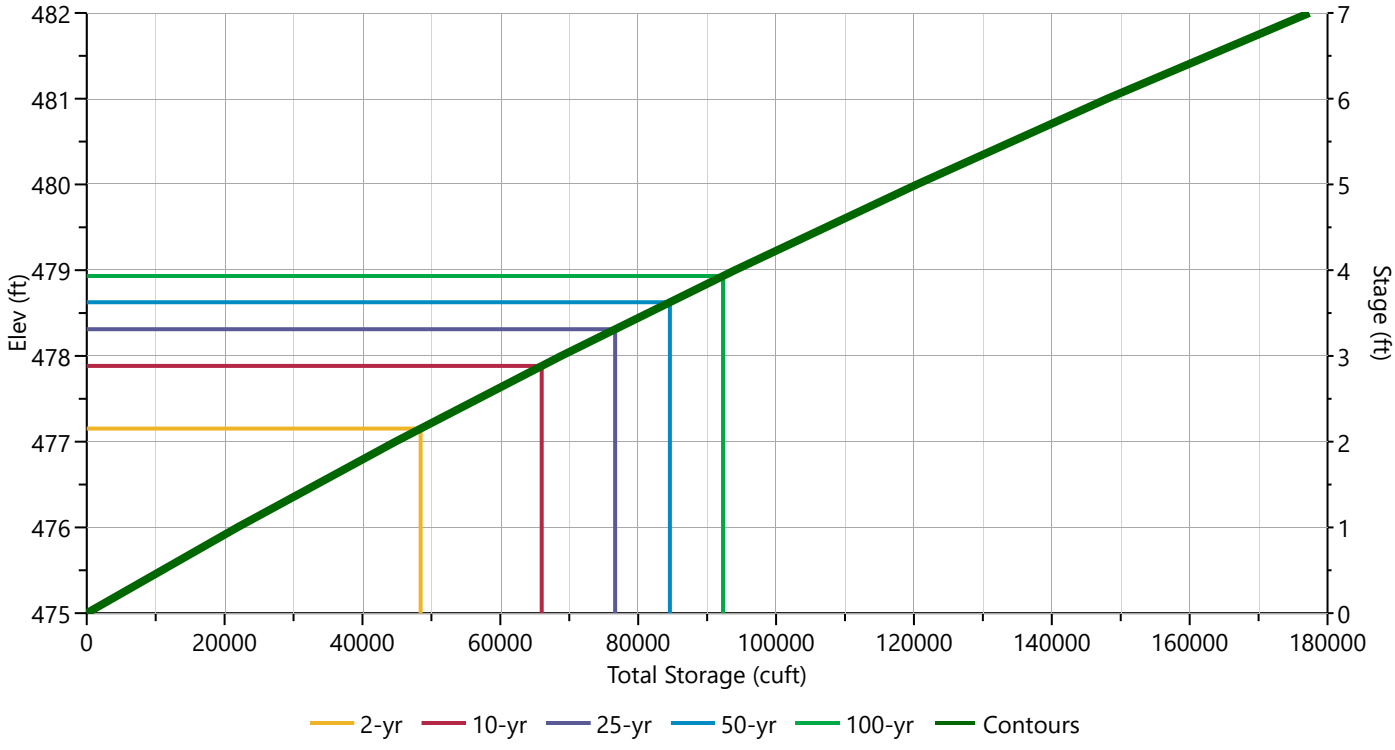
Hilltop Detention Pond

Stage-Storage

User Defined Contours	
Description	**Input**
Bottom Elevation, ft	475.00
Voids (%)	100.00
Volume Calc	Ave End Area

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
0.00	475.00	21,307	0.000	0.000
1.00	476.00	22,378	21,843	21,843
2.00	477.00	23,482	22,930	44,773
3.00	478.00	24,620	24,051	68,824
4.00	479.00	25,790	25,205	94,029
5.00	480.00	26,995	26,393	120,421
6.00	481.00	28,232	27,614	148,035
7.00	482.00	30,413	29,323	177,357

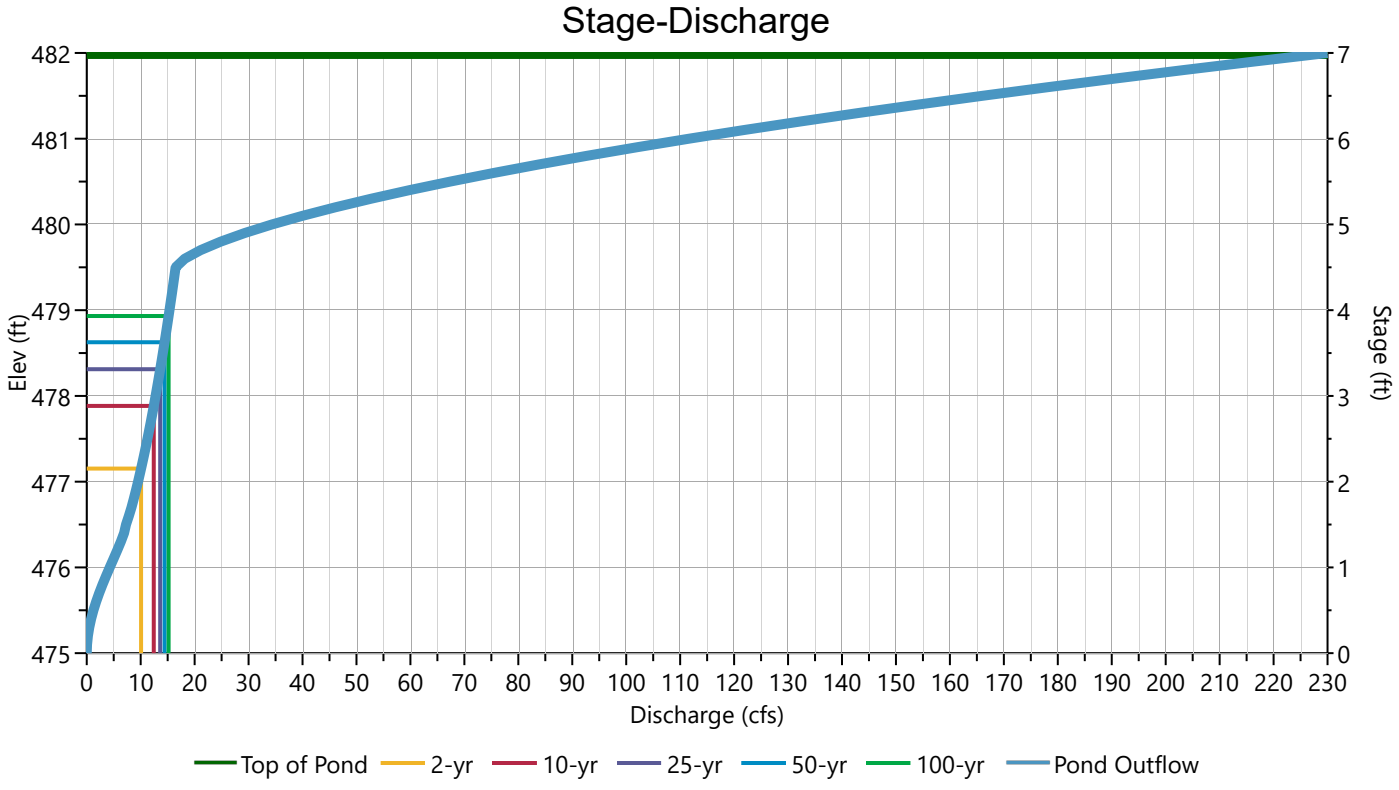


Hilltop Detention Pond

Stage-Discharge

Culvert / Orifices	Cir Culvert	Orifice			Perforated Riser	
		1	2	3		
Rise, in	18				Hole Diameter, in	
Span, in	18				No. holes	
No. Barrels	1				Invert Elevation, ft	
Invert Elevation, ft	475.00				Height, ft	
Orifice Coefficient, Co	0.60				Orifice Coefficient, Co	
Length, ft	57					
Barrel Slope, %	1.17					
N-Value, n	0.013					
Weirs	**Riser**	**Weir**			**Ancillary**	
		1 (i)	2	3		
Shape / Type		Broad Crested			Exfiltration, in/hr	
Crest Elevation, ft		479.5				
Crest Length, ft		14				
Angle, deg		45 (1:1)				
Weir Coefficient, Cw		3.3				

m = Flows through Culvert, i = Independent



Hilltop Detention Pond

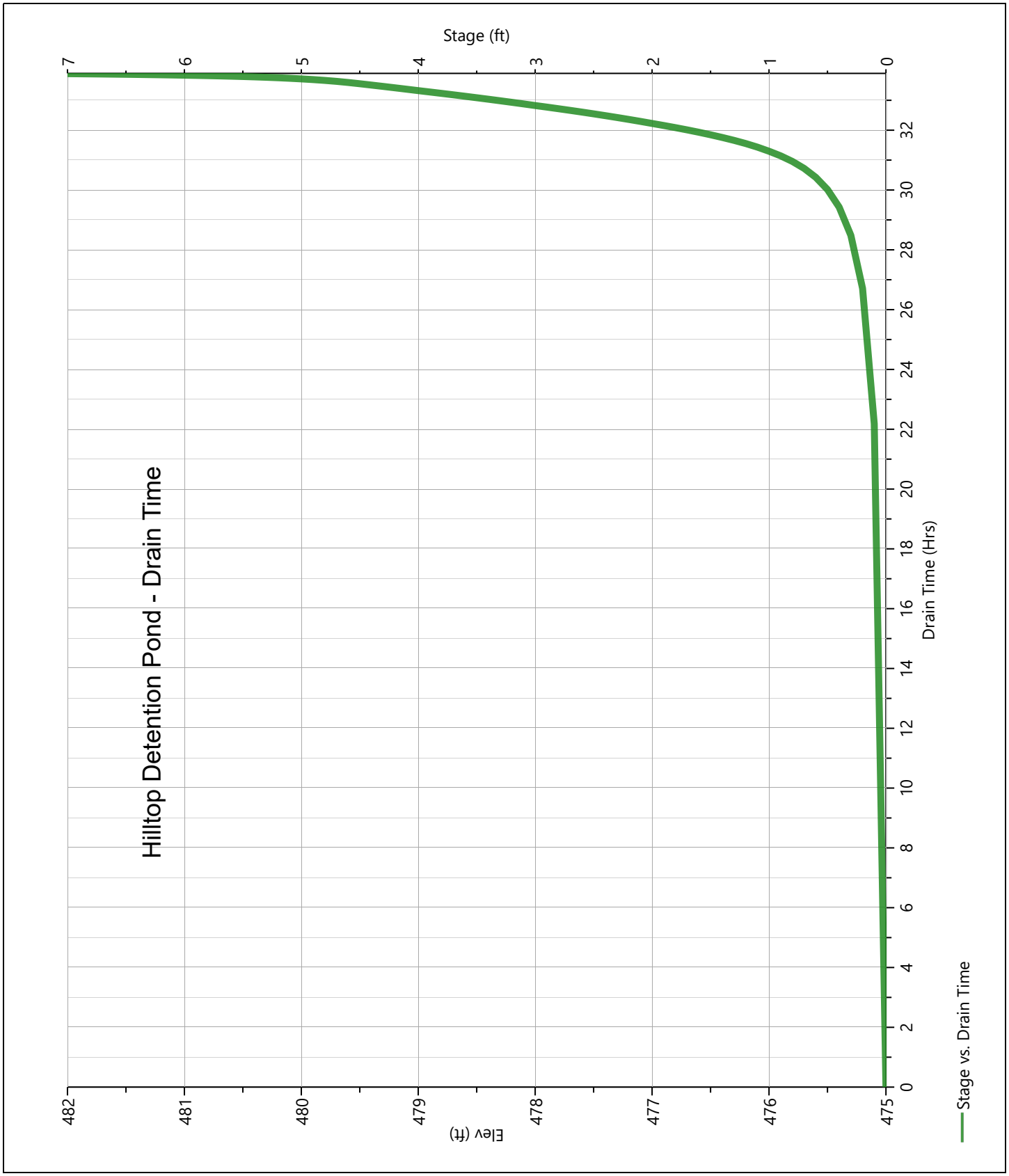
Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	475.00	0.000	0.000					0.000						0.000
1.00	476.00	21,843	4.265 ic					0.000						4.265
2.00	477.00	44,773	9.512 ic					0.000						9.512
3.00	478.00	68,824	12.76 ic					0.000						12.76
4.00	479.00	94,029	15.34 ic					0.000						15.34
5.00	480.00	120,421	17.54 ic					16.80						34.34
6.00	481.00	148,035	19.49 ic					92.15						111.6
7.00	482.00	177,357	21.27 ic					208.7						230.0

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

Hilltop Detention Pond

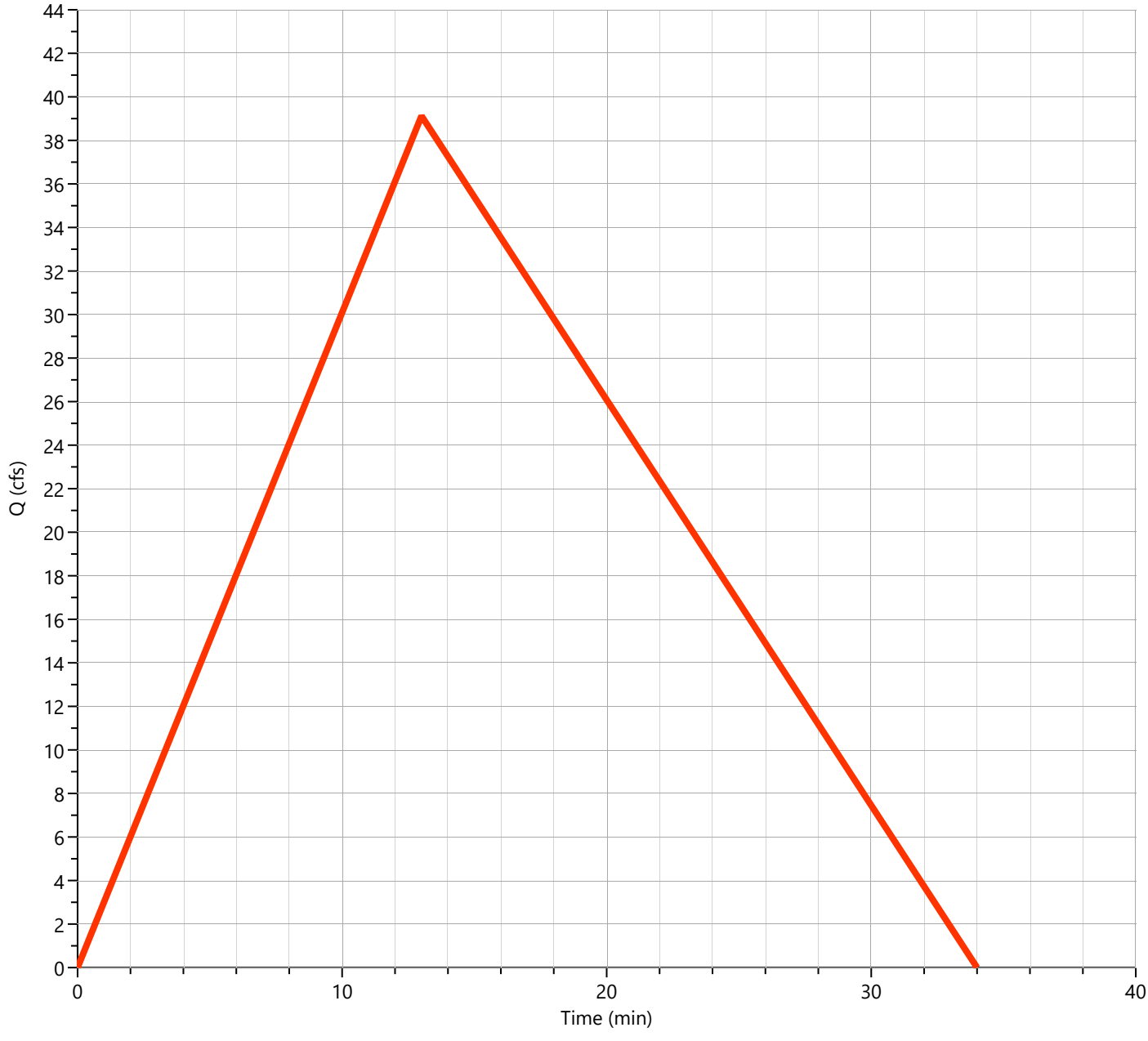
Pond Drawdown



Post-Dev Basin "E-2"

Hyd. No. 15

Hydrograph Type	= Rational	Peak Flow	= 39.12 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 40,738 cuft
Drainage Area	= 17.53 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.99 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "E-2"
Rational

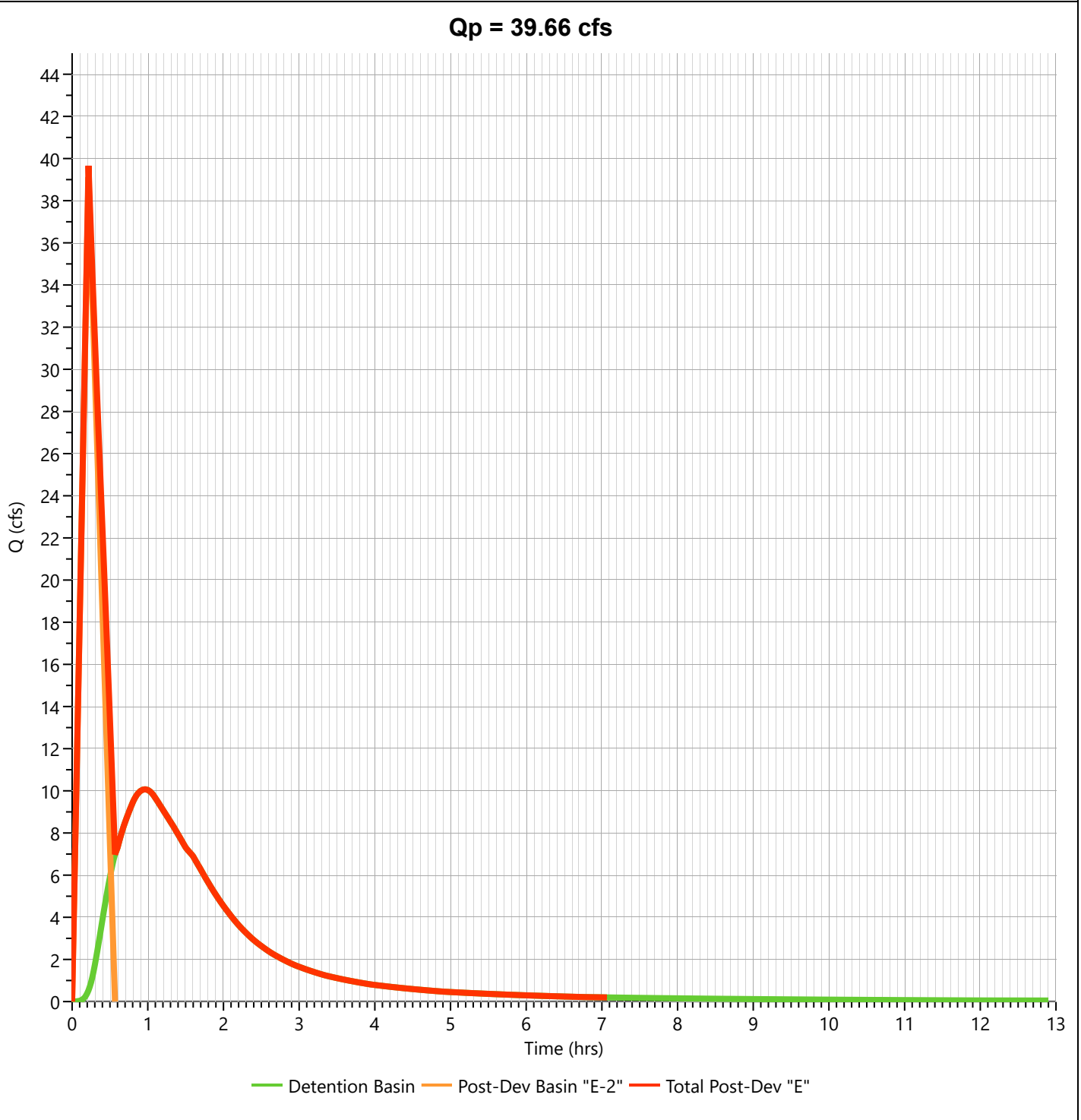
Hyd. No. 15

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	7.25			
Travel Time (min)	**8.74**	**0.00**	**0.00**	**8.74**
Shallow Concentrated Flow				
Flow Length (ft)	1070			
Watercourse Slope (%)	6.23	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.03			
Travel Time (min)	**4.43**	**0.00**	**0.00**	**4.43**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**13 min**

Total Post-Dev "E"

Hyd. No. 16

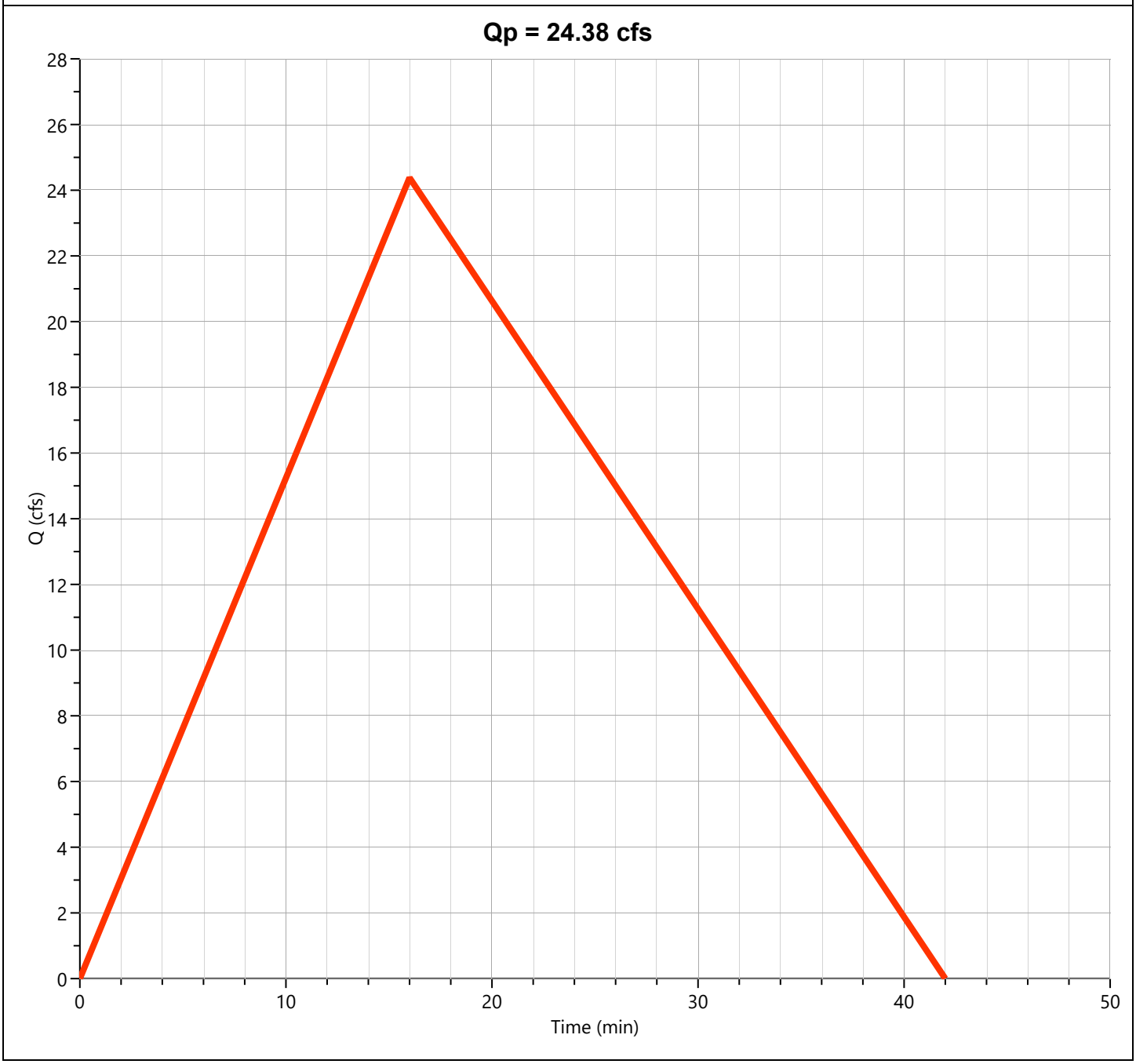
Hydrograph Type	= Junction	Peak Flow	= 39.66 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 107,909 cuft
Inflow Hydrographs	= 15	Total Contrib. Area	= 17.53 ac



Post-Dev Basin "F"

Hyd. No. 17

Hydrograph Type	= Rational	Peak Flow	= 24.38 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 31,245 cuft
Drainage Area	= 12.0 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.63 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "F"
Rational

Hyd. No. 17

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.35	2.28	2.28	
Land Slope (%)	6			
Travel Time (min)	**9.43**	**0.00**	**0.00**	**9.43**
Shallow Concentrated Flow				
Flow Length (ft)	1449			
Watercourse Slope (%)	4.90	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.57			
Travel Time (min)	**6.76**	**0.00**	**0.00**	**6.76**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**16 min**

Hydrograph 10-yr Summary

Hydrology Studio v 3.0.0.39

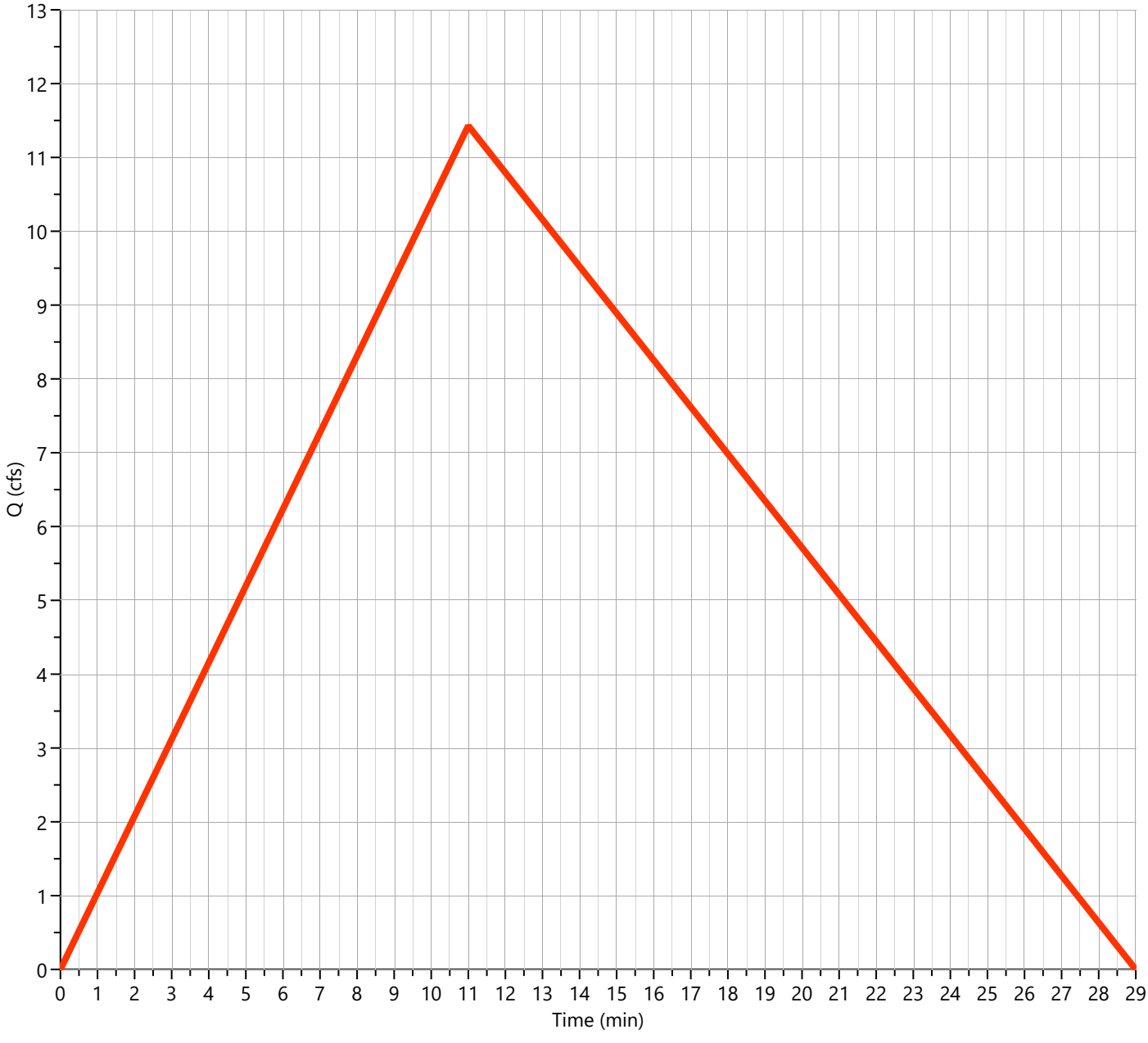
Project Name: Hilltop Subdivision
File: Detention Calculation 3-4-26.hys
03-04-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre-Dev Basin "A"	11.43	0.18	10,070	----		
2	Rational	Pre-Dev Basin "B"	38.41	0.25	46,149	----		
3	Rational	Pre-Dev Basin "C"	21.67	0.18	19,095	----		
4	Rational	Pre-Dev Basin "D"	9.804	0.13	6,283	----		
5	Rational	Pre-Dev Basin "E-1"	31.02	0.20	29,819	----		
6	Rational	Pre-Dev Basin "E-2"	52.69	0.22	54,864	----		
7	Junction	Total Pre Basin "E"	82.16	0.22	83,523	5, 6		
8	Rational	Pre-Dev Basin "F"	33.12	0.28	45,094	----		
9	Rational	Post-Dev Basin A	12.04	0.23	13,505	----		
10	Rational	Post-Dev Basin B	32.19	0.30	46,411	----		
11	Rational	Post-Dev Basin "C"	22.16	0.18	19,529	----		
12	Rational	Post-Dev Basin "D"	9.641	0.13	6,178	----		
13	Mod Rational	Post-Dev Basin "E-1"	31.83	0.28	91,663	----		
14	Pond Route	Detention Basin	12.42	0.97	91,575	13	477.88	66,000
15	Rational	Post-Dev Basin "E-2"	52.46	0.22	54,628	----		
16	Junction	Total Post-Dev "E"	53.39	0.22	145,085	14, 15		
17	Rational	Post-Dev Basin "F"	32.71	0.27	41,924	----		

Pre-Dev Basin "A"

Hyd. No. 1

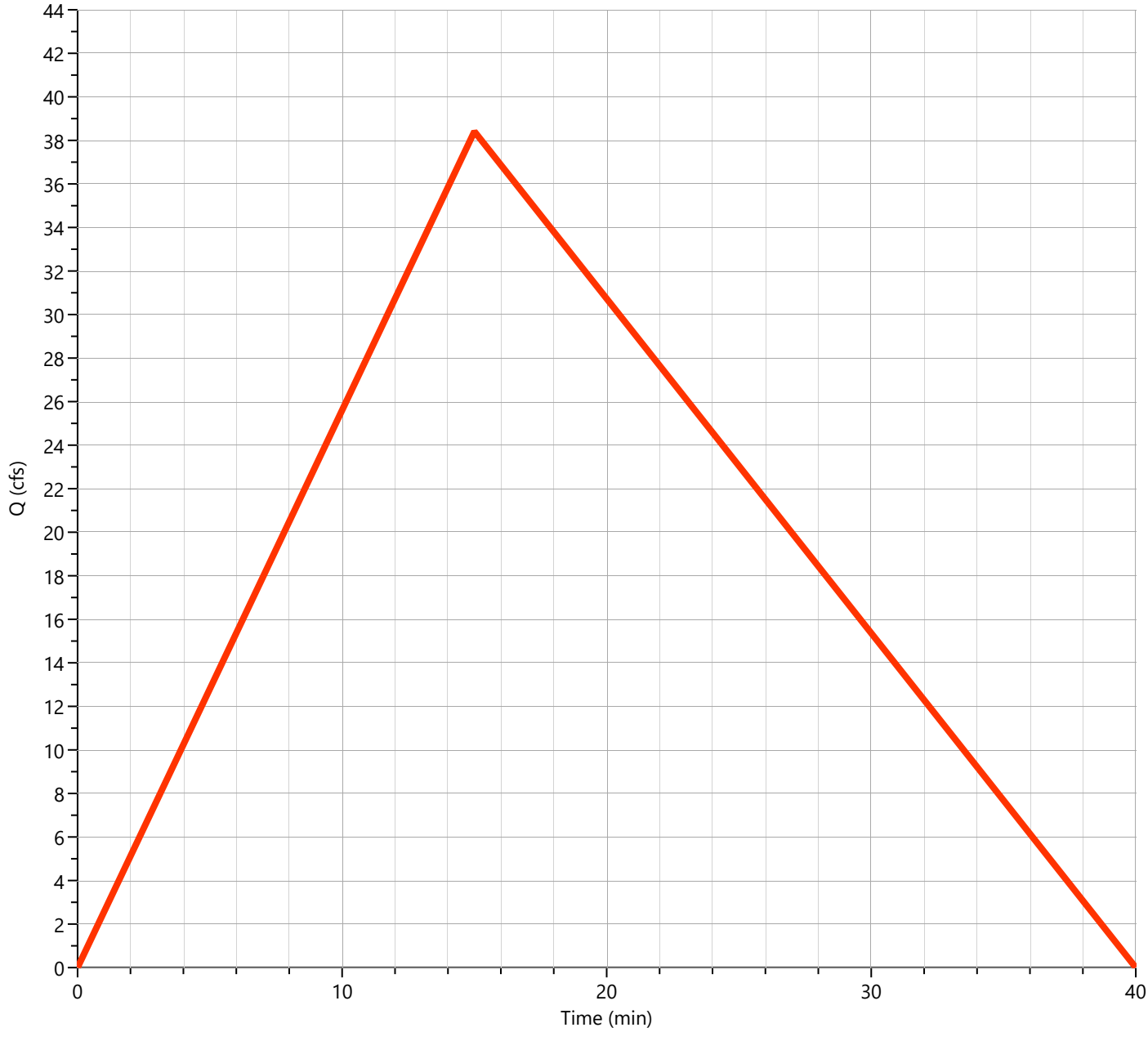
Hydrograph Type	= Rational	Peak Flow	= 11.43 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 10,070 cuft
Drainage Area	= 3.2 ac	Runoff Coeff.	= 0.62
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.76 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "B"

Hyd. No. 2

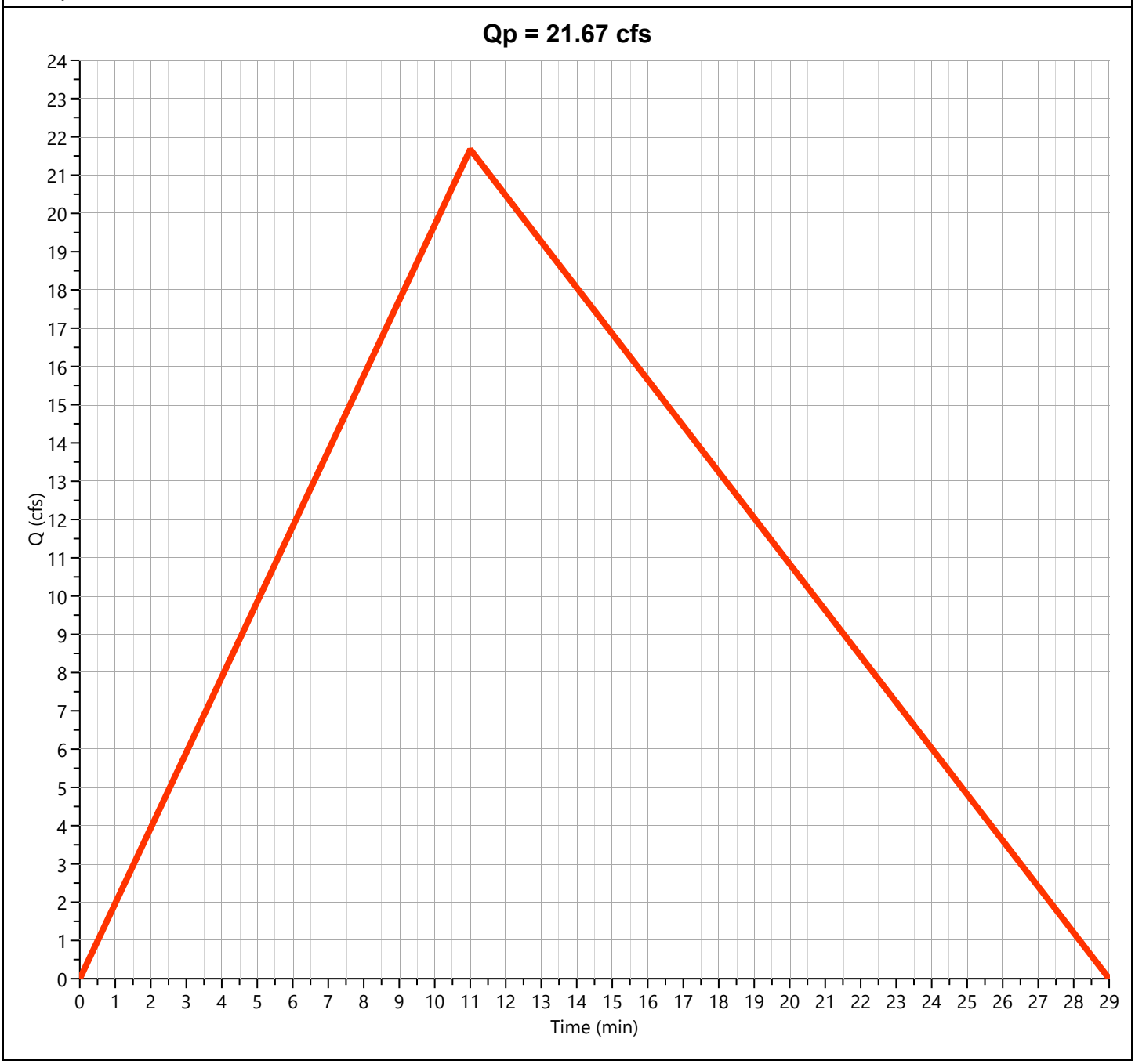
Hydrograph Type	= Rational	Peak Flow	= 38.41 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 46,149 cuft
Drainage Area	= 14.74 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.01 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "C"

Hyd. No. 3

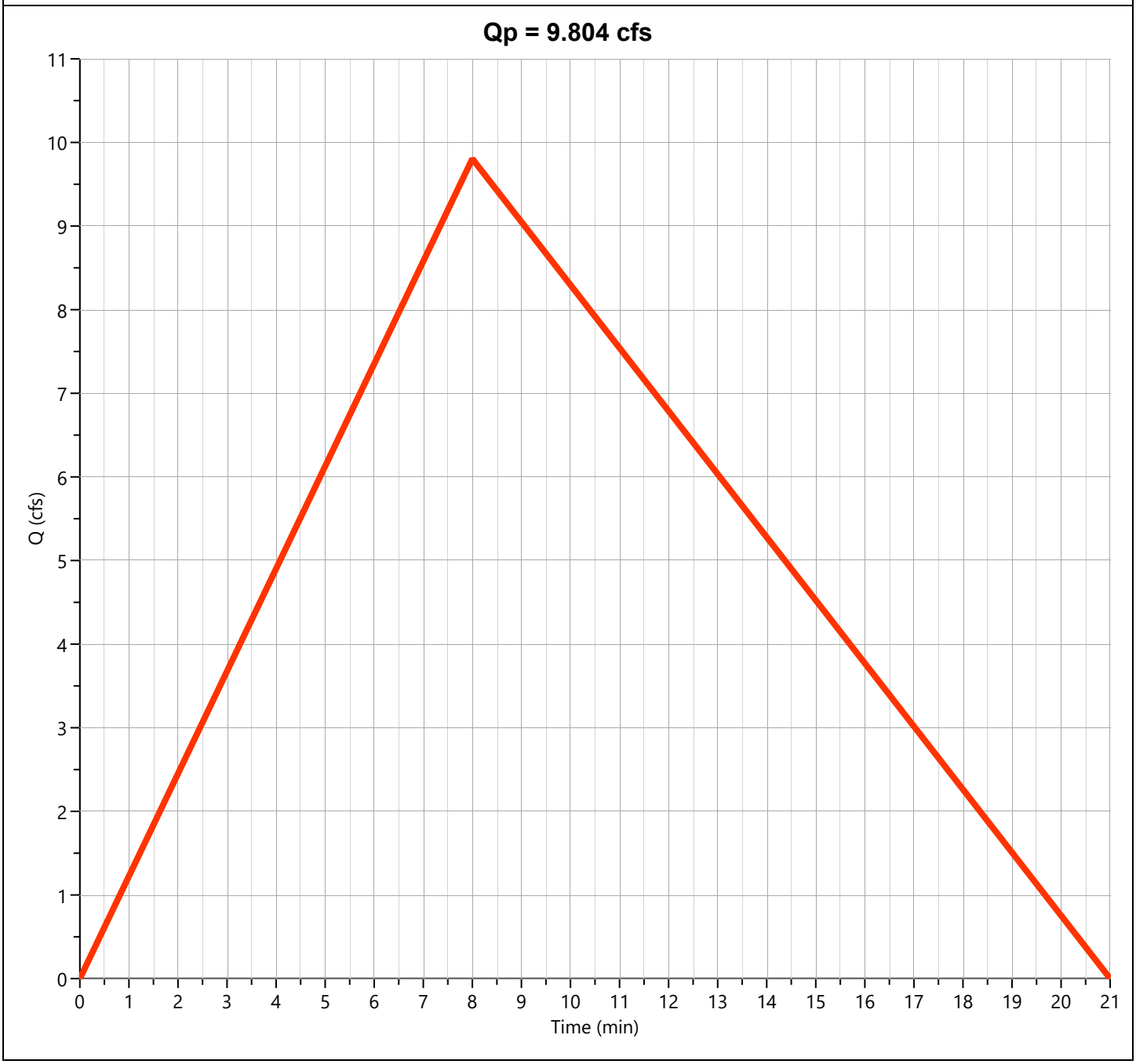
Hydrograph Type	= Rational	Peak Flow	= 21.67 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 19,095 cuft
Drainage Area	= 6.84 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.76 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "D"

Hyd. No. 4

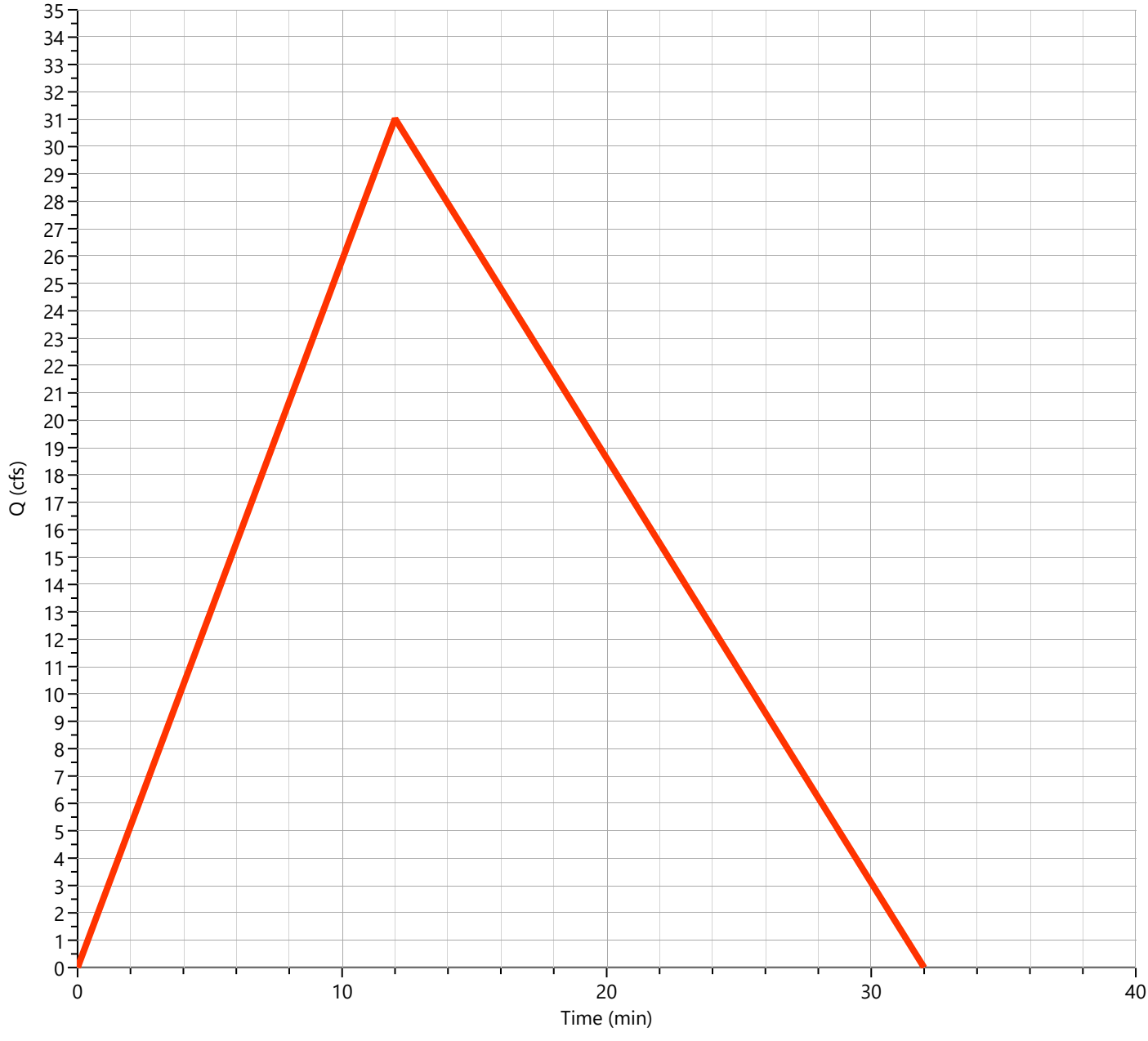
Hydrograph Type	= Rational	Peak Flow	= 9.804 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 6,283 cuft
Drainage Area	= 2.95 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.65 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E-1"

Hyd. No. 5

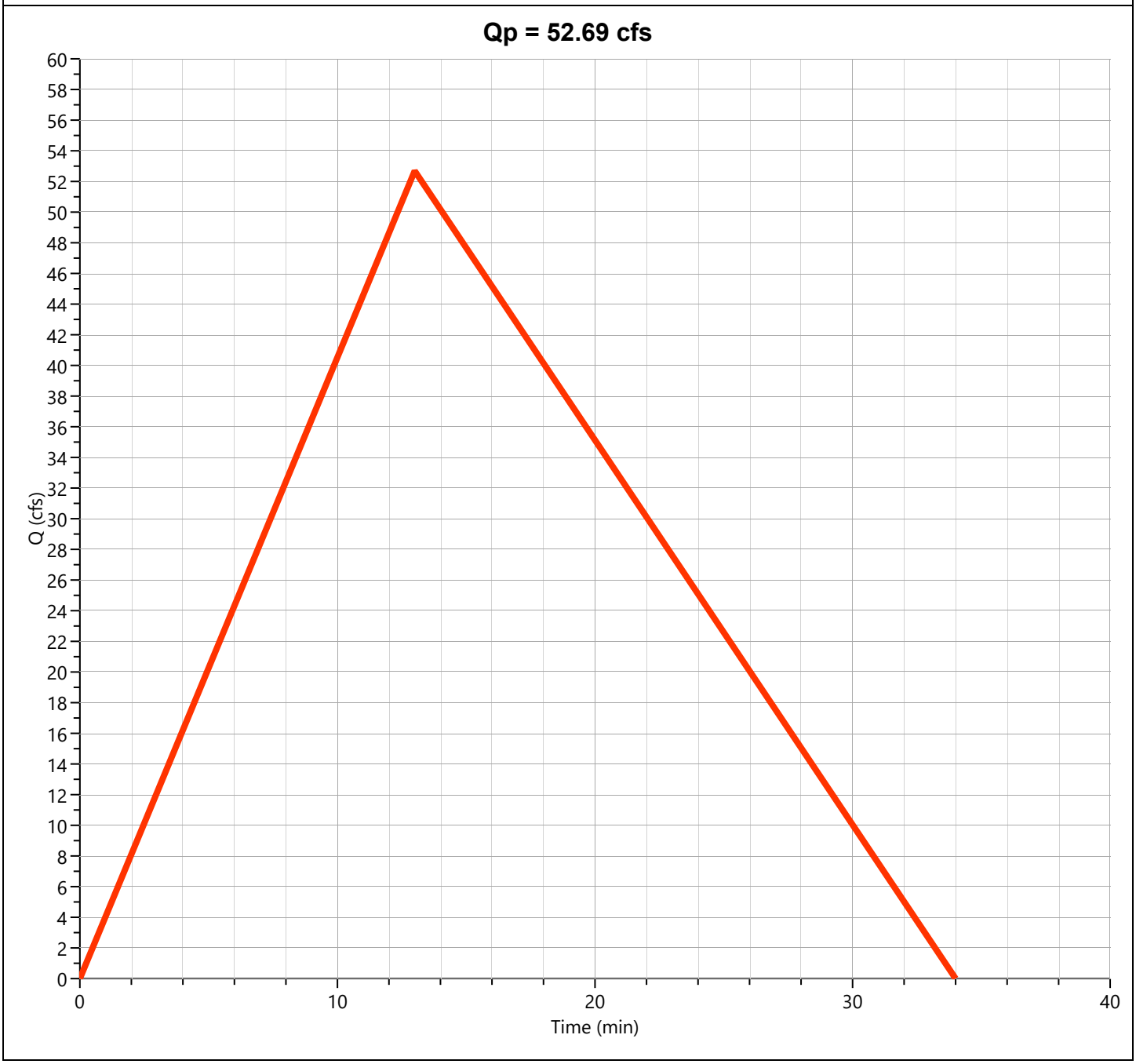
Hydrograph Type	= Rational	Peak Flow	= 31.02 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 29,819 cuft
Drainage Area	= 11.2 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.54 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E-2"

Hyd. No. 6

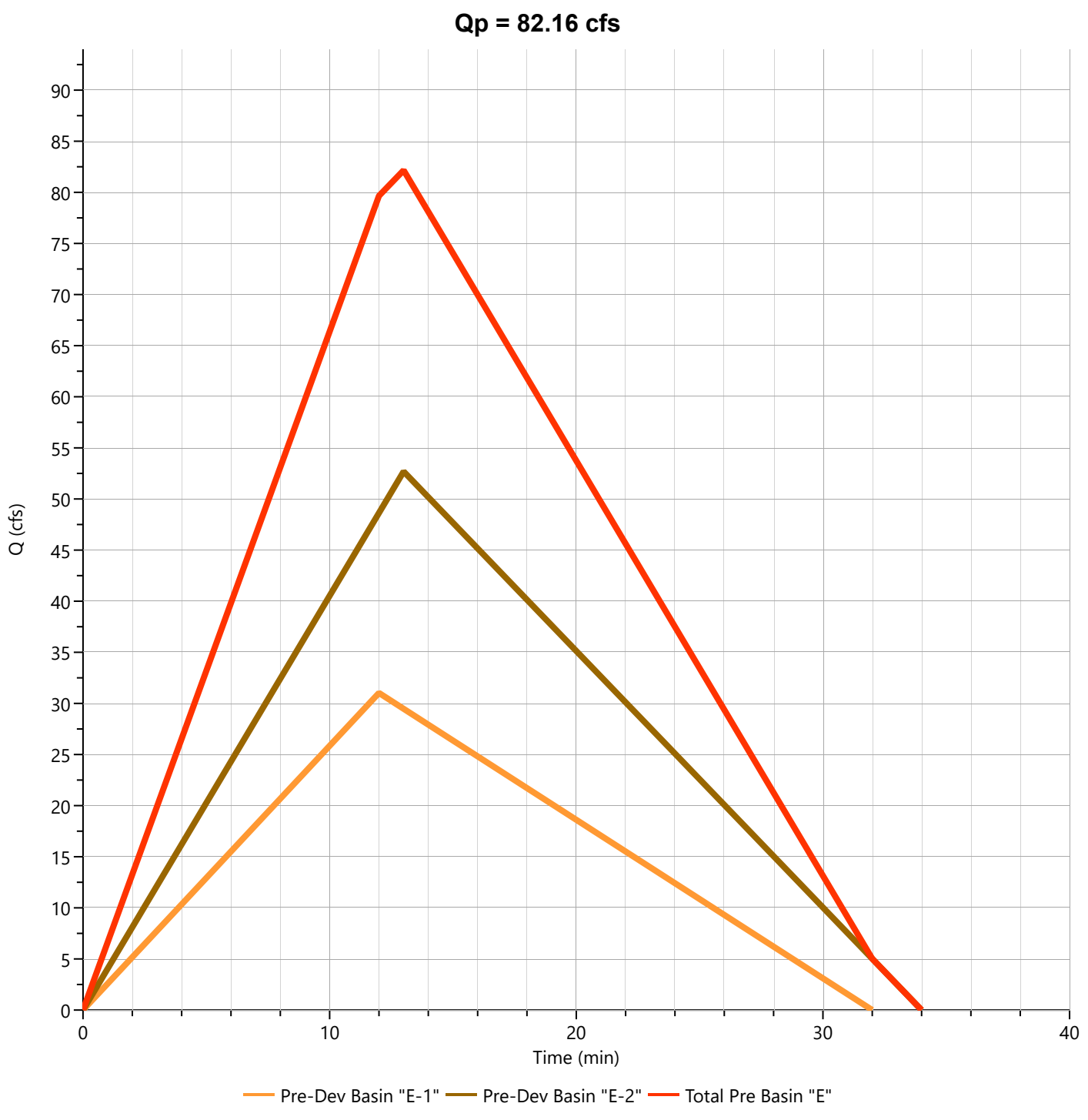
Hydrograph Type	= Rational	Peak Flow	= 52.69 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 54,864 cuft
Drainage Area	= 18.96 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.34 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Pre Basin "E"

Hyd. No. 7

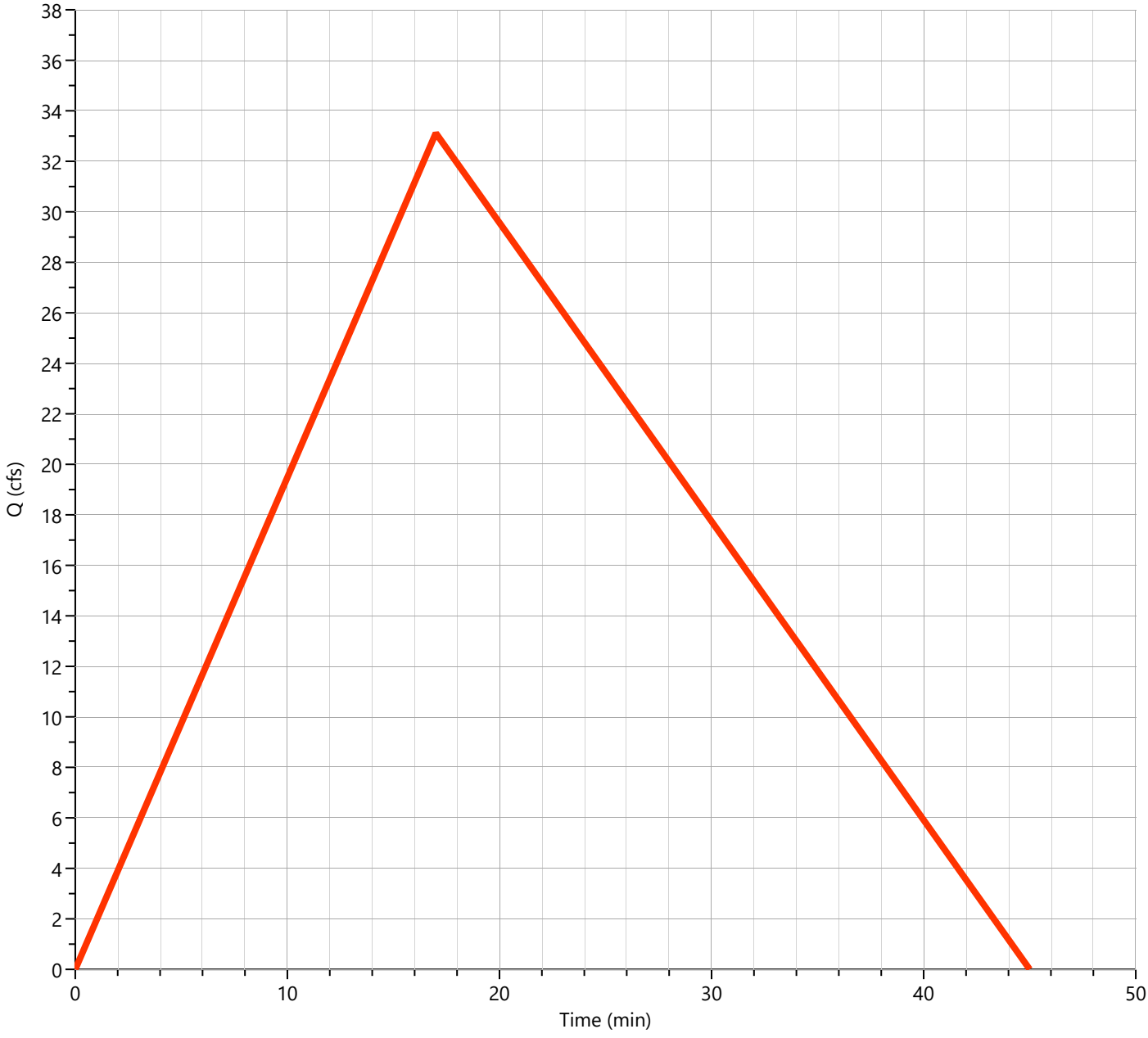
Hydrograph Type	= Junction	Peak Flow	= 82.16 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 83,523 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 30.16 ac



Pre-Dev Basin "F"

Hyd. No. 8

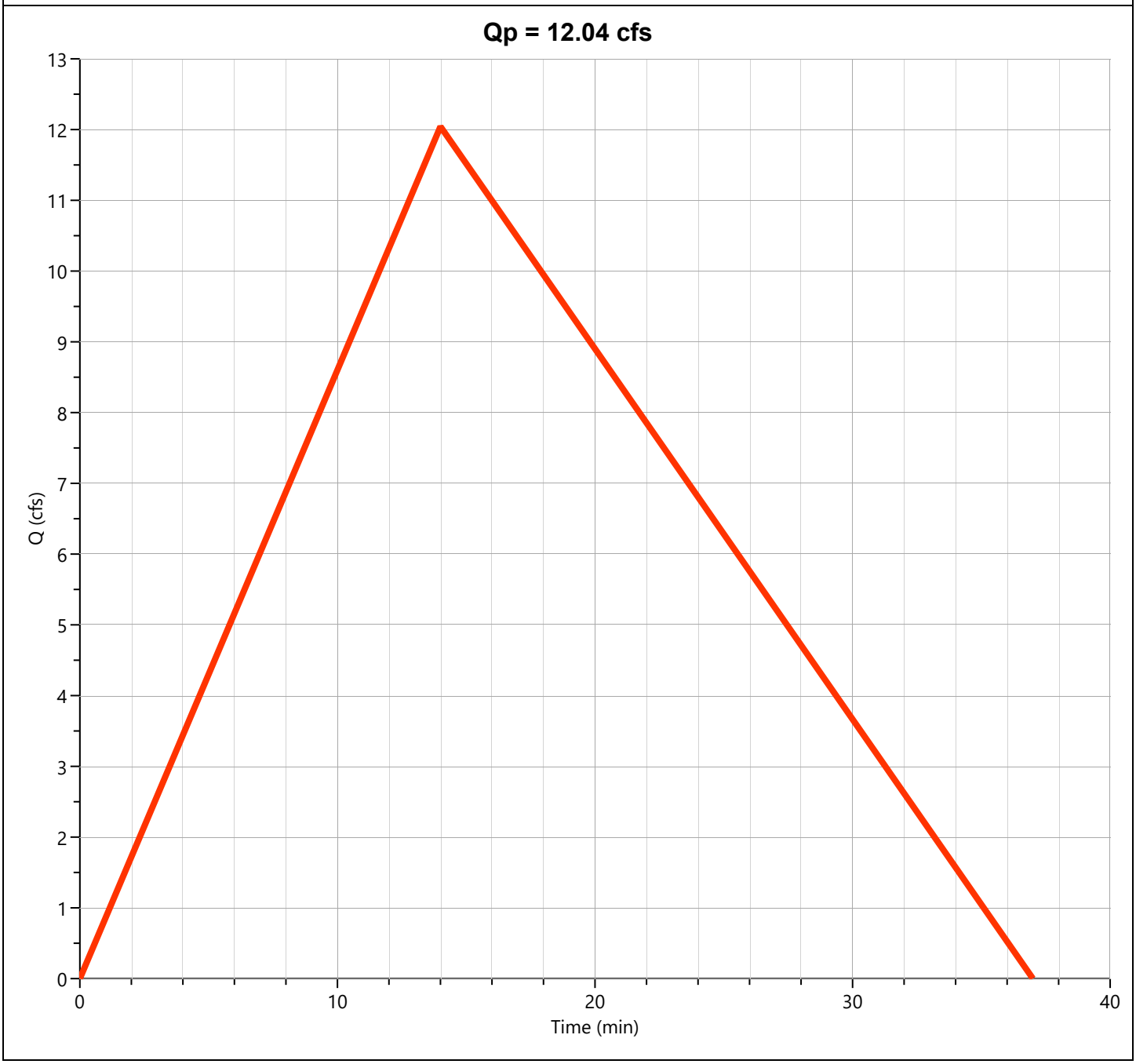
Hydrograph Type	= Rational	Peak Flow	= 33.12 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 45,094 cuft
Drainage Area	= 13.19 ac	Runoff Coeff.	= 0.53
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.74 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin A

Hyd. No. 9

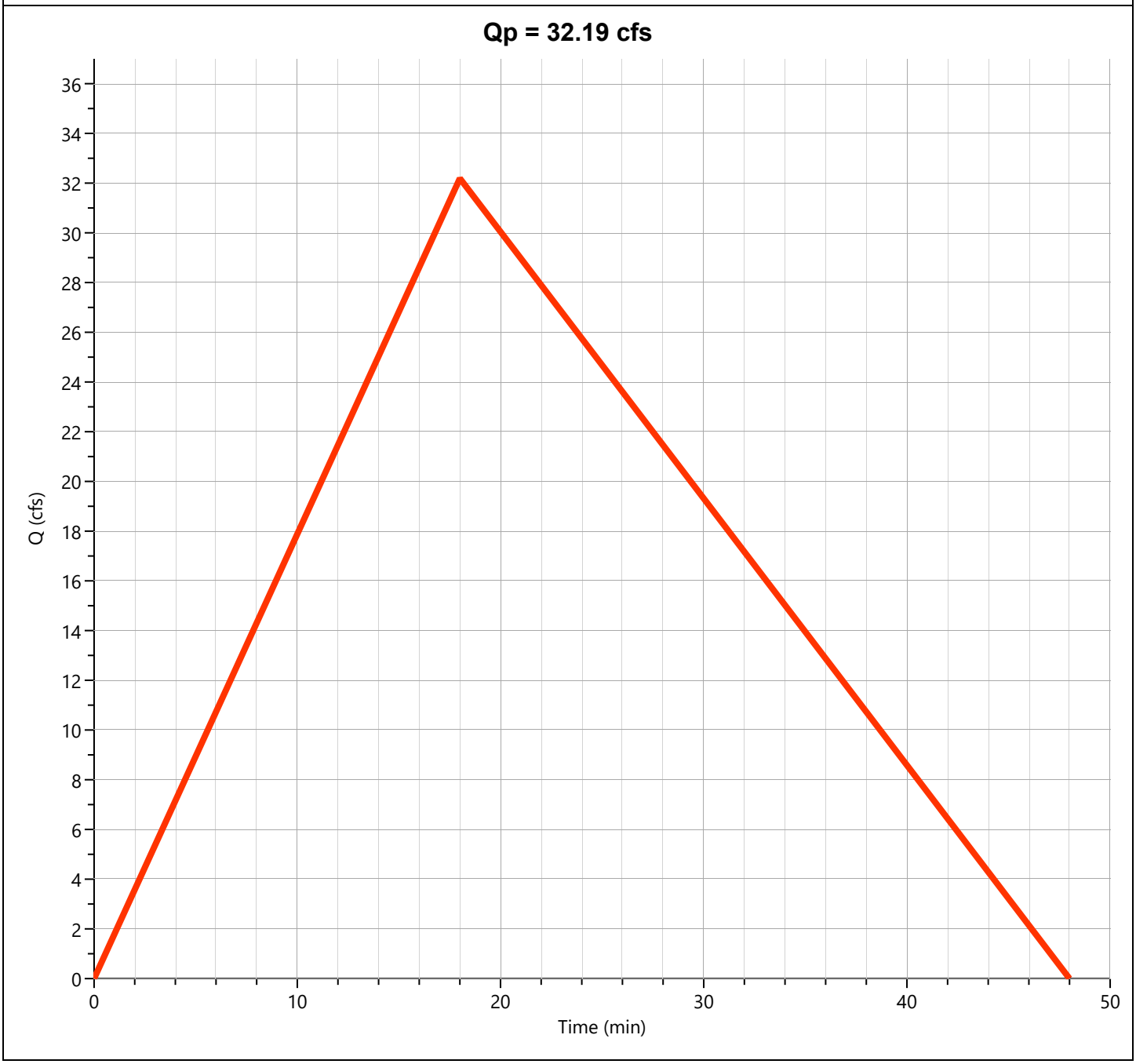
Hydrograph Type	= Rational	Peak Flow	= 12.04 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.23 hrs
Time Interval	= 1 min	Runoff Volume	= 13,505 cuft
Drainage Area	= 3.53 ac	Runoff Coeff.	= 0.66
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 14.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.17 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin B

Hyd. No. 10

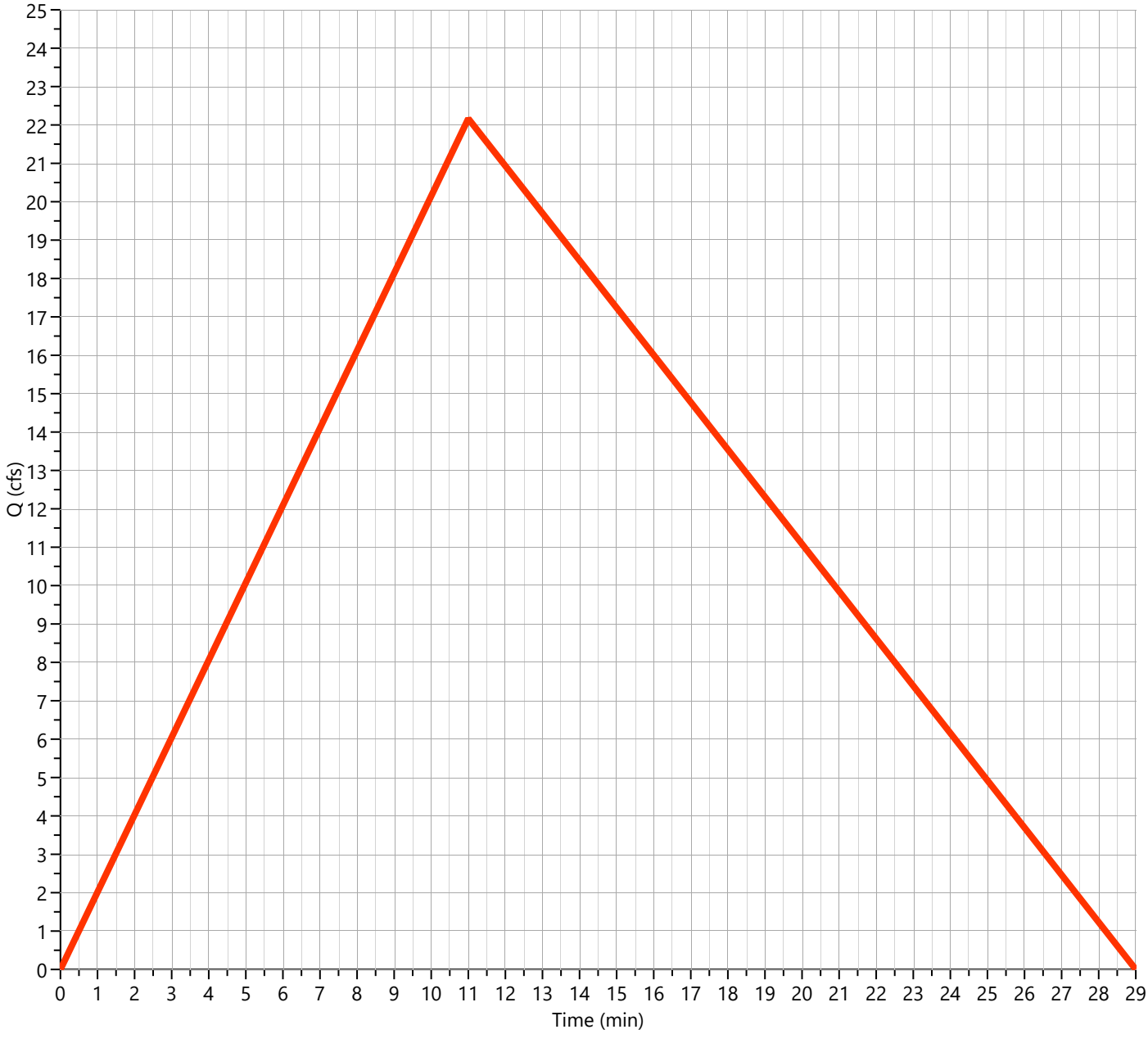
Hydrograph Type	= Rational	Peak Flow	= 32.19 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.30 hrs
Time Interval	= 1 min	Runoff Volume	= 46,411 cuft
Drainage Area	= 12.45 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.62 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "C"

Hyd. No. 11

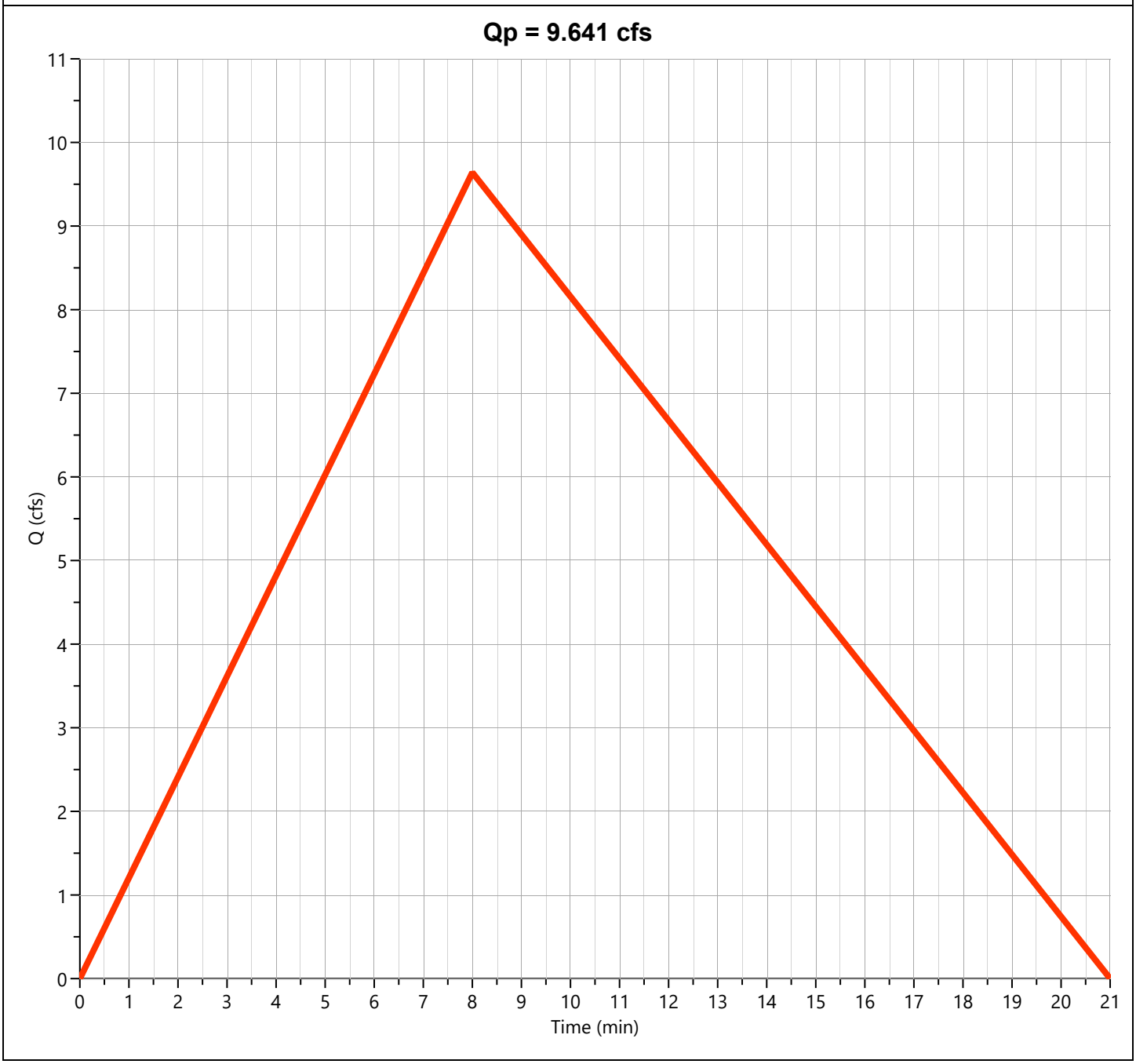
Hydrograph Type	= Rational	Peak Flow	= 22.16 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 19,529 cuft
Drainage Area	= 6.75 ac	Runoff Coeff.	= 0.57
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.76 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "D"

Hyd. No. 12

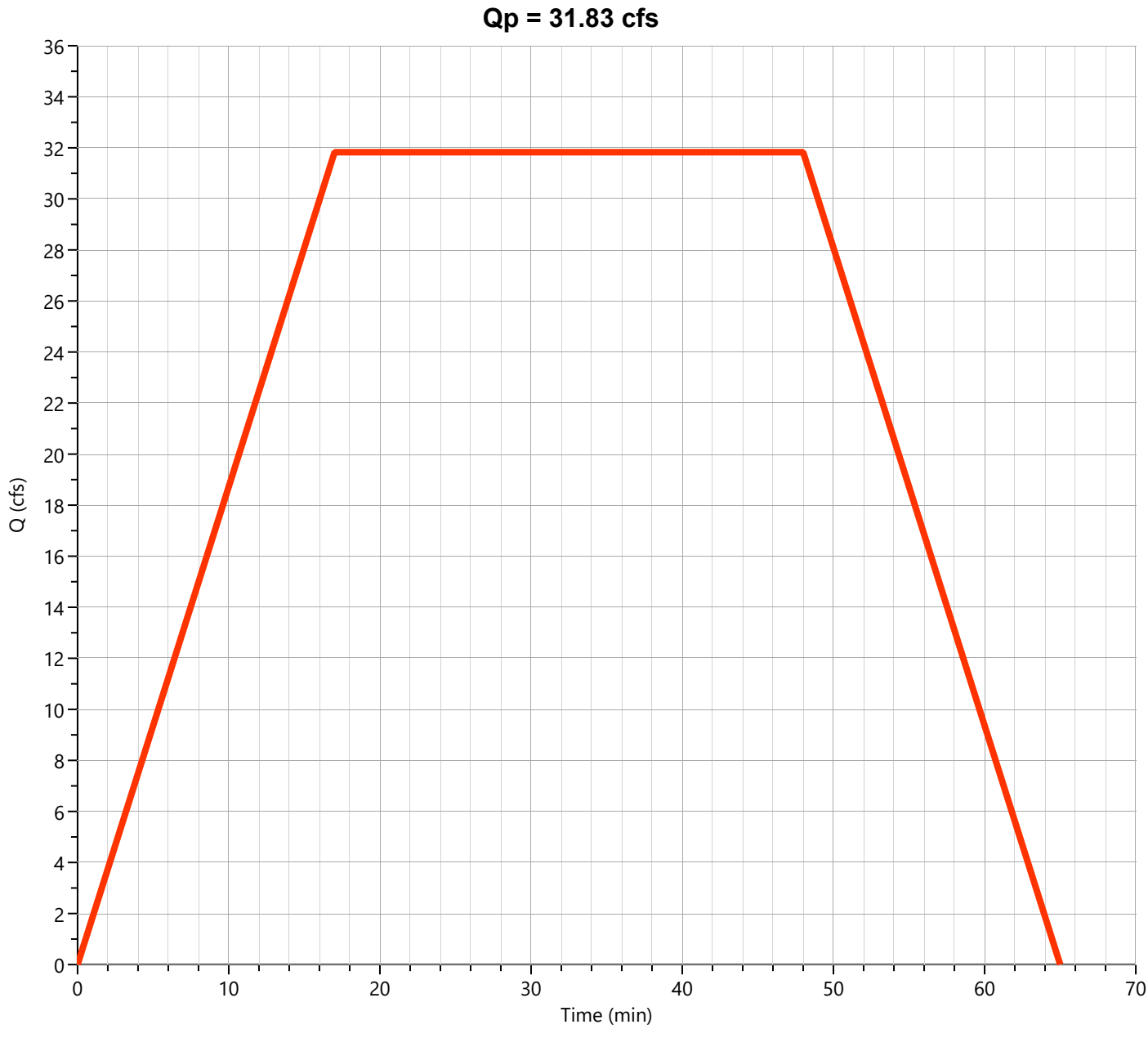
Hydrograph Type	= Rational	Peak Flow	= 9.641 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 6,178 cuft
Drainage Area	= 2.59 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.65 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "E-1"

Hyd. No. 13

Hydrograph Type	= Mod Rational	Peak Flow	= 31.83 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 91,663 cuft
Drainage Area	= 16.23 ac	Runoff Coeff.	= 0.66
Tc Method	= User	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 2.97 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 2.82 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft



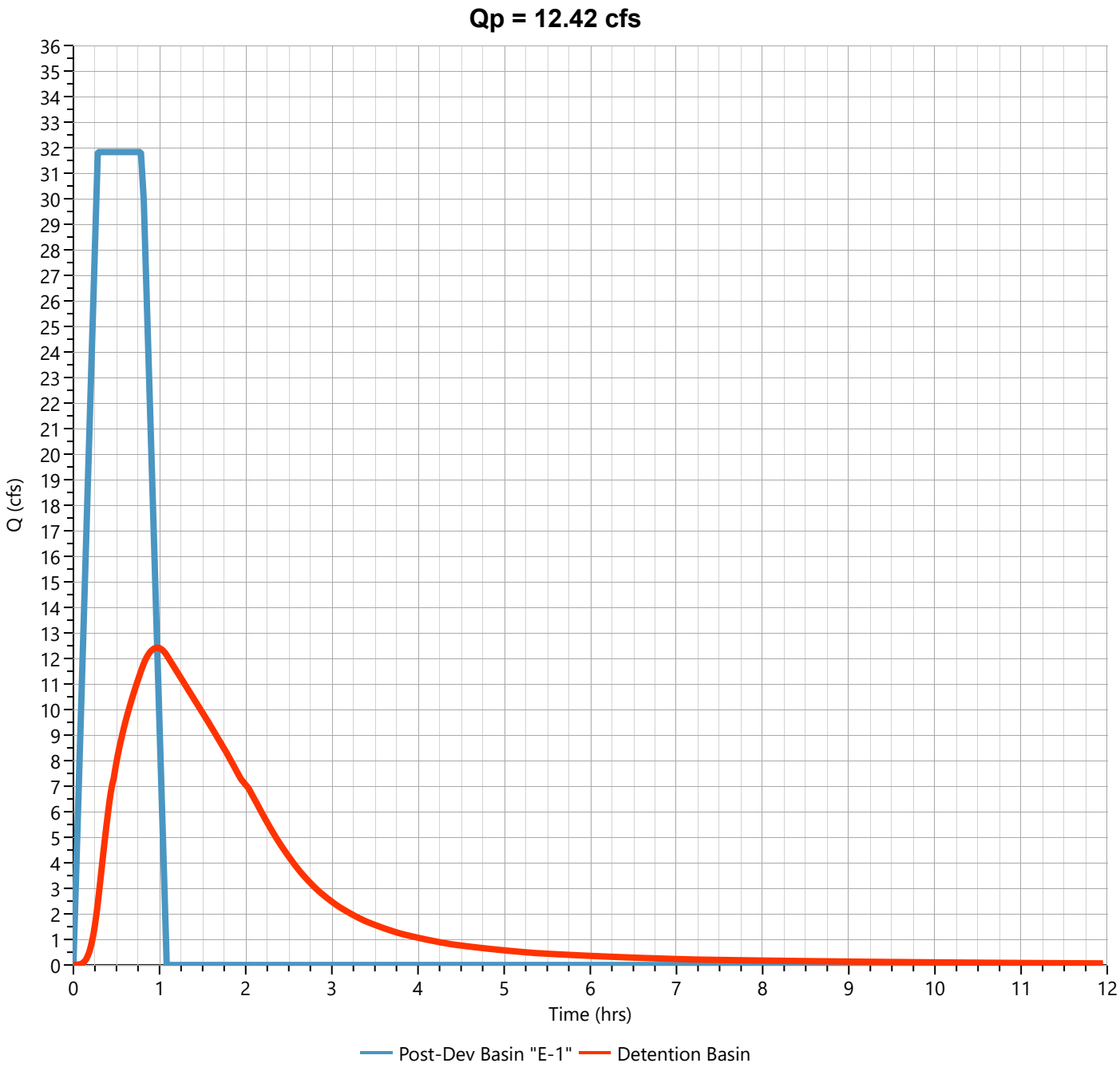
Detention Basin

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 12.42 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.97 hrs
Time Interval	= 1 min	Hydrograph Volume	= 91,575 cuft
Inflow Hydrograph	= 13 - Post-Dev Basin "E-1"	Max. Elevation	= 477.88 ft
Pond Name	= Hilltop Detention Pond	Max. Storage	= 66,000 cuft

Pond Routing by Storage Indication Method

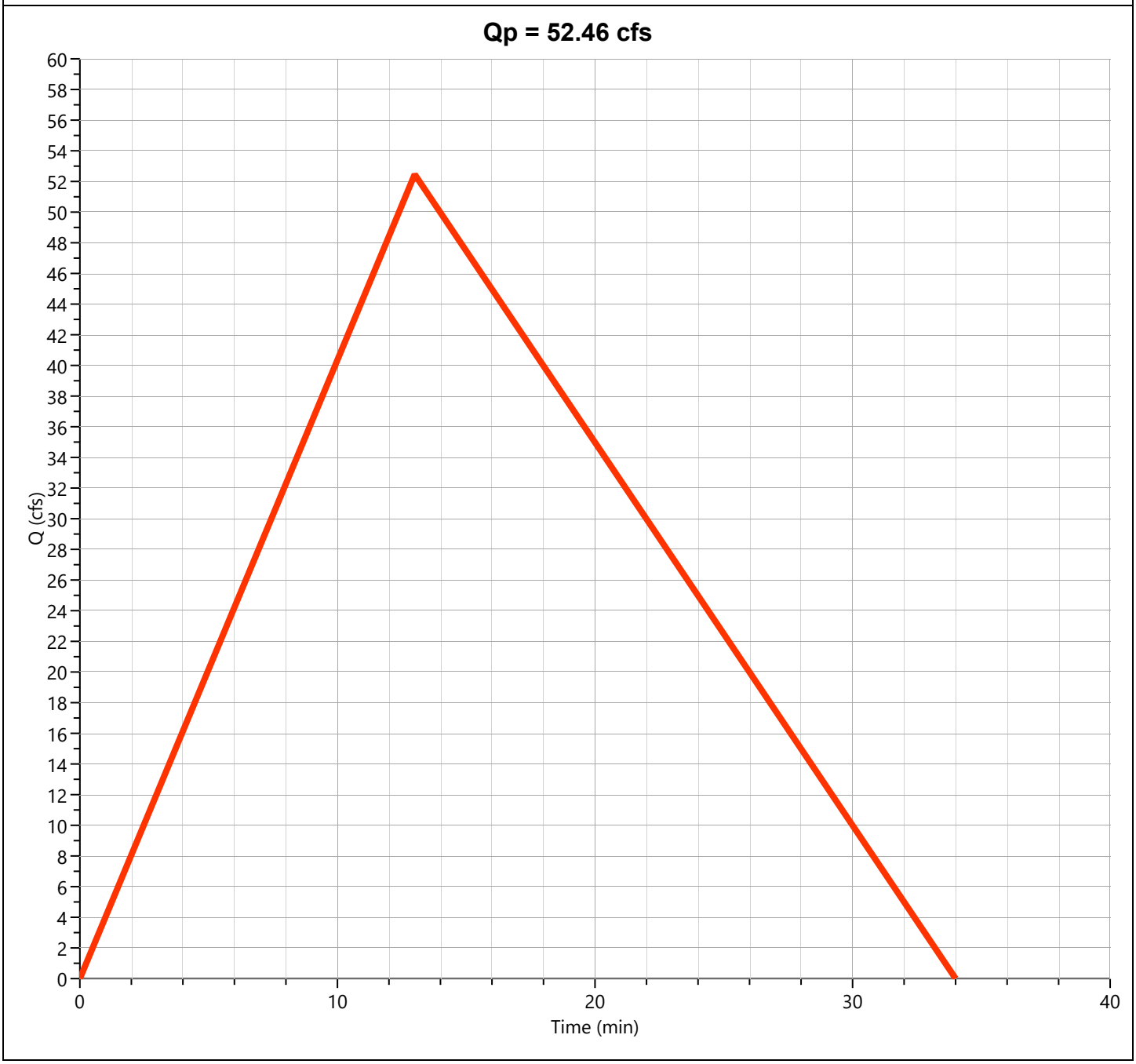
Center of mass detention time = 1.34 hrs



Post-Dev Basin "E-2"

Hyd. No. 15

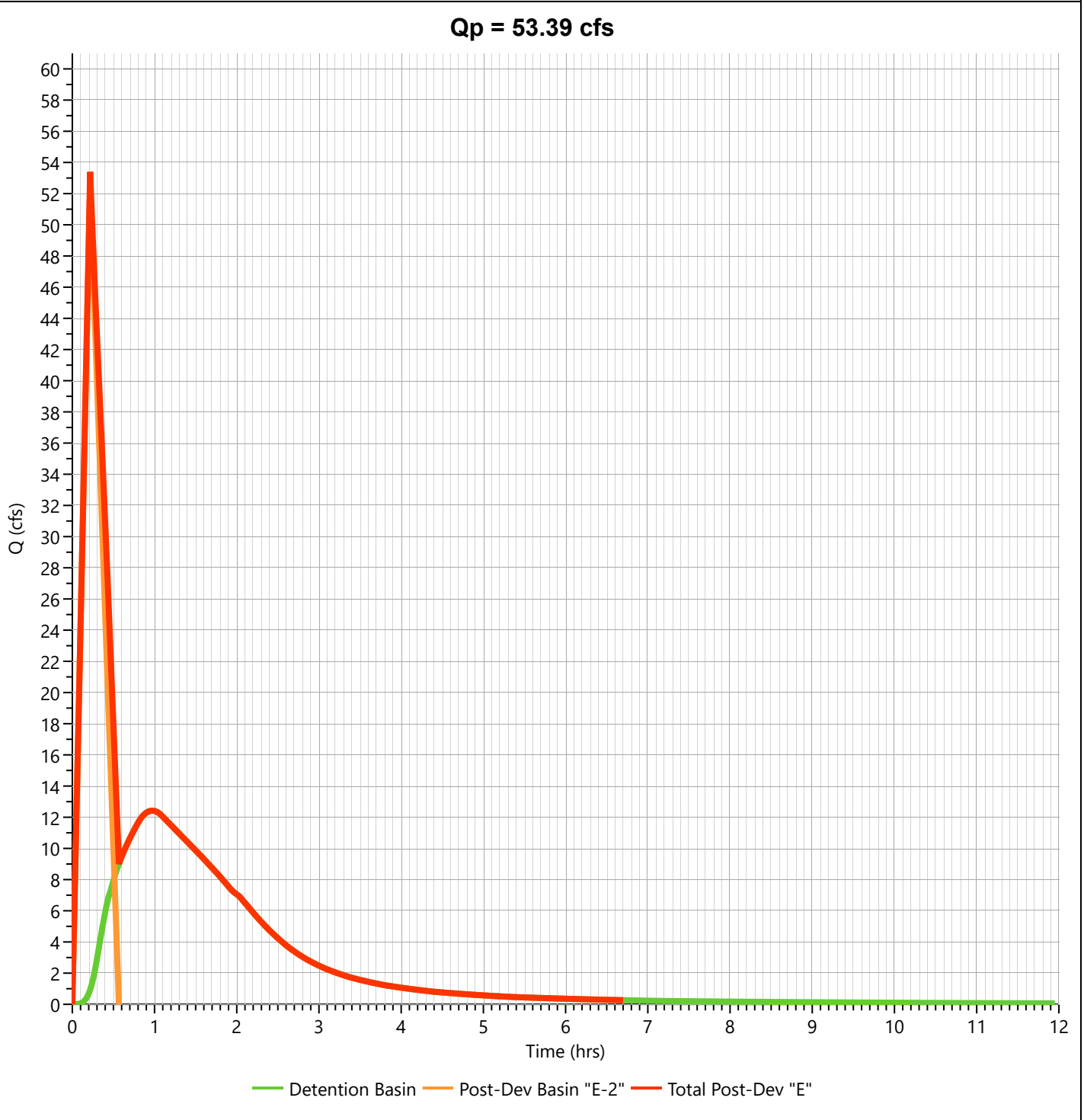
Hydrograph Type	= Rational	Peak Flow	= 52.46 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 54,628 cuft
Drainage Area	= 17.53 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.34 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Post-Dev "E"

Hyd. No. 16

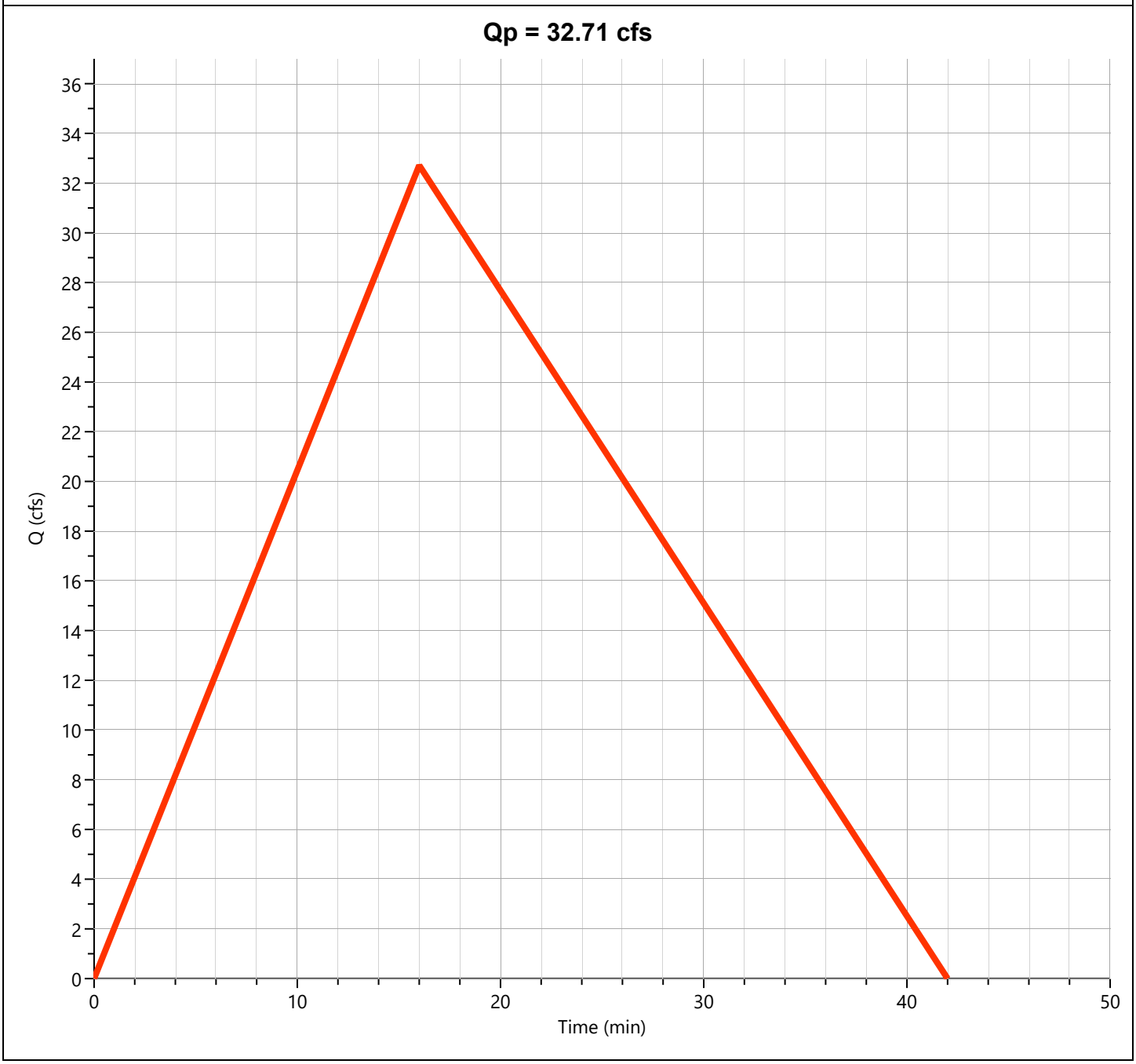
Hydrograph Type	= Junction	Peak Flow	= 53.39 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 145,085 cuft
Inflow Hydrographs	= 15	Total Contrib. Area	= 17.53 ac



Post-Dev Basin "F"

Hyd. No. 17

Hydrograph Type	= Rational	Peak Flow	= 32.71 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 41,924 cuft
Drainage Area	= 12.0 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.87 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph 25-yr Summary

Hydrology Studio v 3.0.0.39

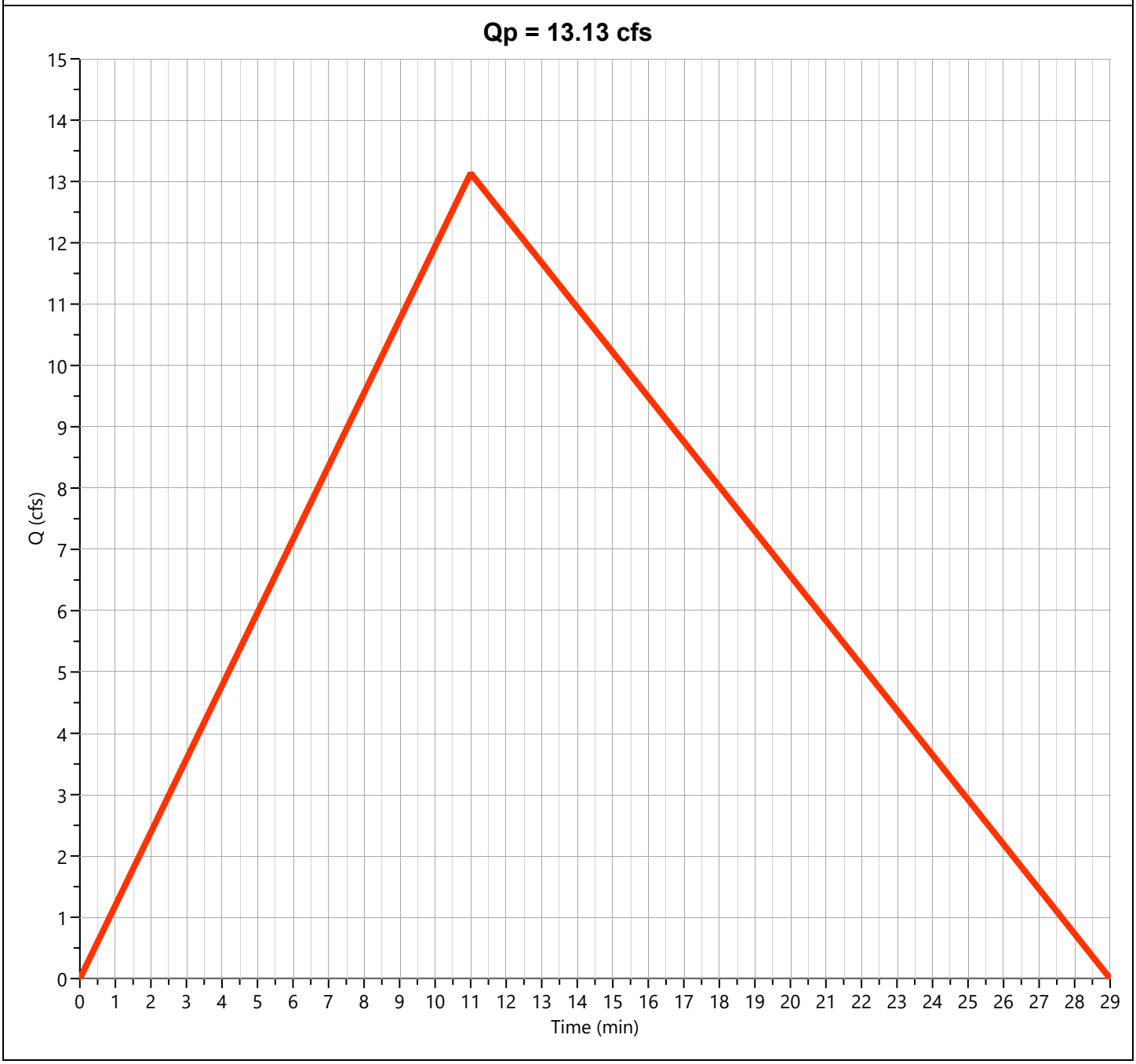
Project Name: Hilltop Subdivision
File: Detention Calculation 3-4-26.hys
03-04-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre-Dev Basin "A"	13.13	0.18	11,572	----		
2	Rational	Pre-Dev Basin "B"	44.15	0.25	53,043	----		
3	Rational	Pre-Dev Basin "C"	24.90	0.18	21,943	----		
4	Rational	Pre-Dev Basin "D"	11.26	0.13	7,218	----		
5	Rational	Pre-Dev Basin "E-1"	35.65	0.20	34,268	----		
6	Rational	Pre-Dev Basin "E-2"	60.55	0.22	63,053	----		
7	Junction	Total Pre Basin "E"	94.42	0.22	95,989	5, 6		
8	Rational	Pre-Dev Basin "F"	38.07	0.28	51,833	----		
9	Rational	Post-Dev Basin A	13.84	0.23	15,521	----		
10	Rational	Post-Dev Basin B	37.00	0.30	53,350	----		
11	Rational	Post-Dev Basin "C"	25.47	0.18	22,441	----		
12	Rational	Post-Dev Basin "D"	11.08	0.13	7,098	----		
13	Mod Rational	Post-Dev Basin "E-1"	36.61	0.28	105,431	----		
14	Pond Route	Detention Basin	13.61	0.98	105,341	13	478.31	76,654
15	Rational	Post-Dev Basin "E-2"	60.29	0.22	62,782	----		
16	Junction	Total Post-Dev "E"	61.49	0.22	166,838	14, 15		
17	Rational	Post-Dev Basin "F"	37.60	0.27	48,189	----		

Pre-Dev Basin "A"

Hyd. No. 1

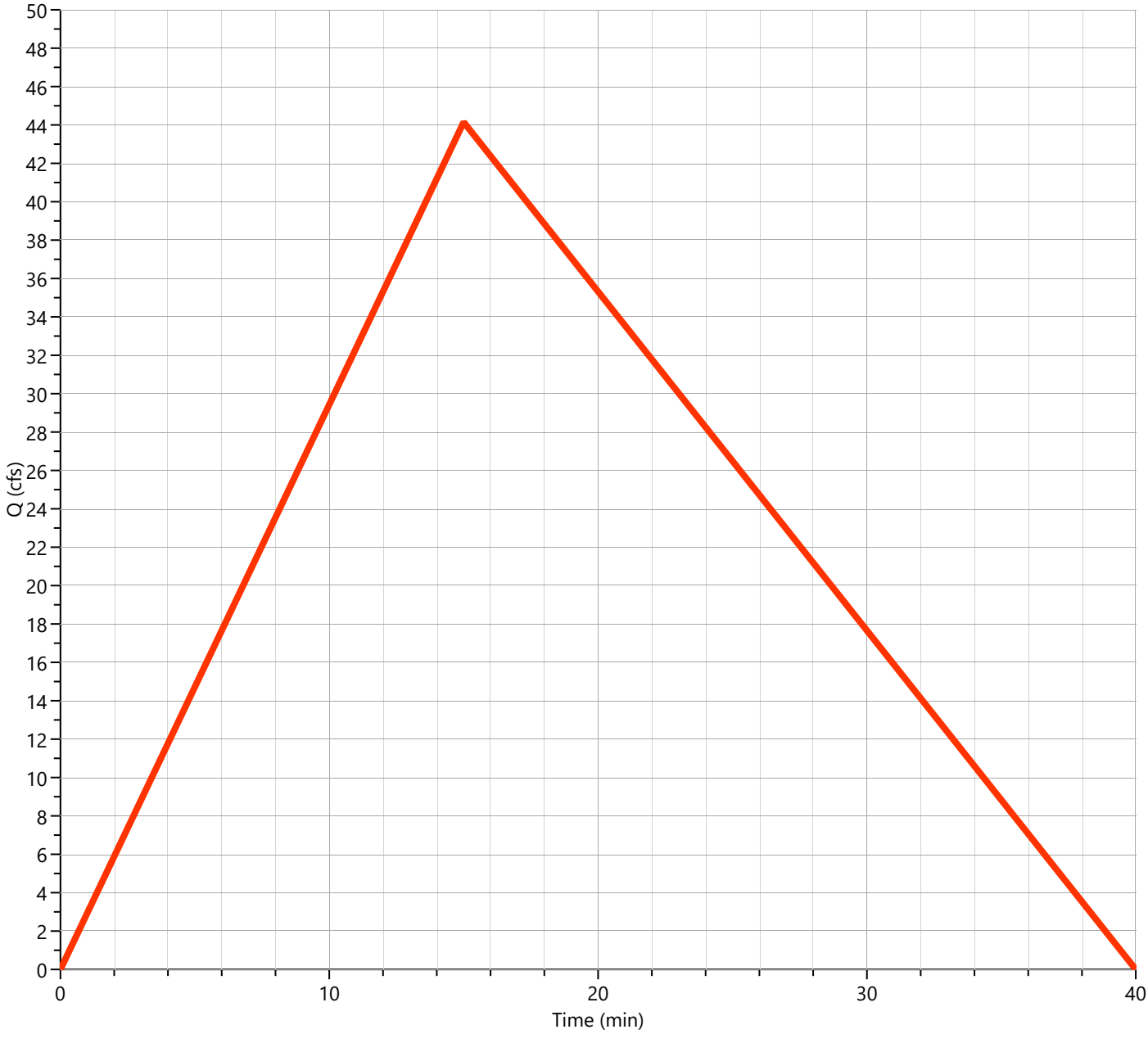
Hydrograph Type	= Rational	Peak Flow	= 13.13 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 11,572 cuft
Drainage Area	= 3.2 ac	Runoff Coeff.	= 0.62
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.62 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "B"

Hyd. No. 2

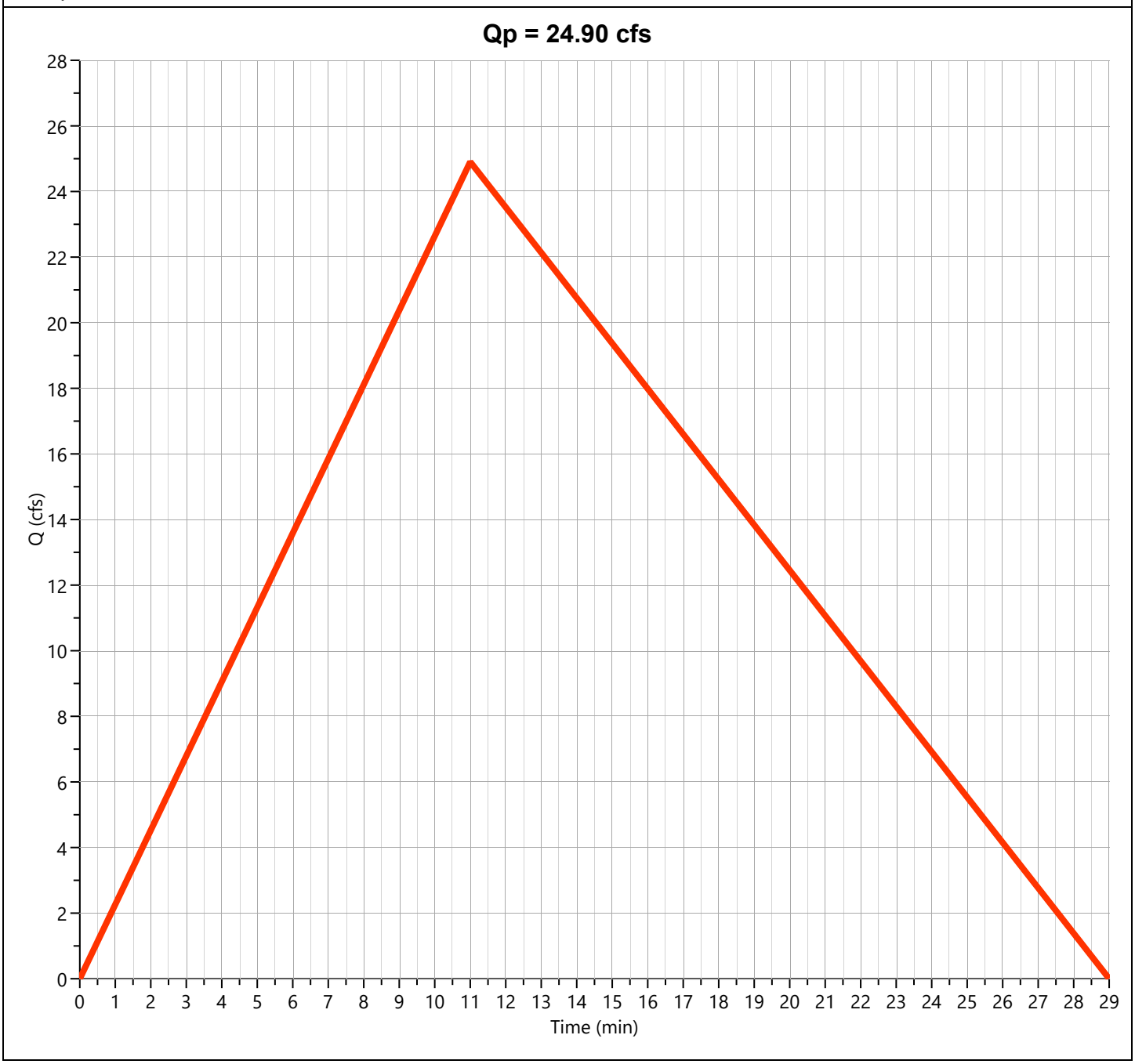
Hydrograph Type	= Rational	Peak Flow	= 44.15 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 53,043 cuft
Drainage Area	= 14.74 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.76 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "C"

Hyd. No. 3

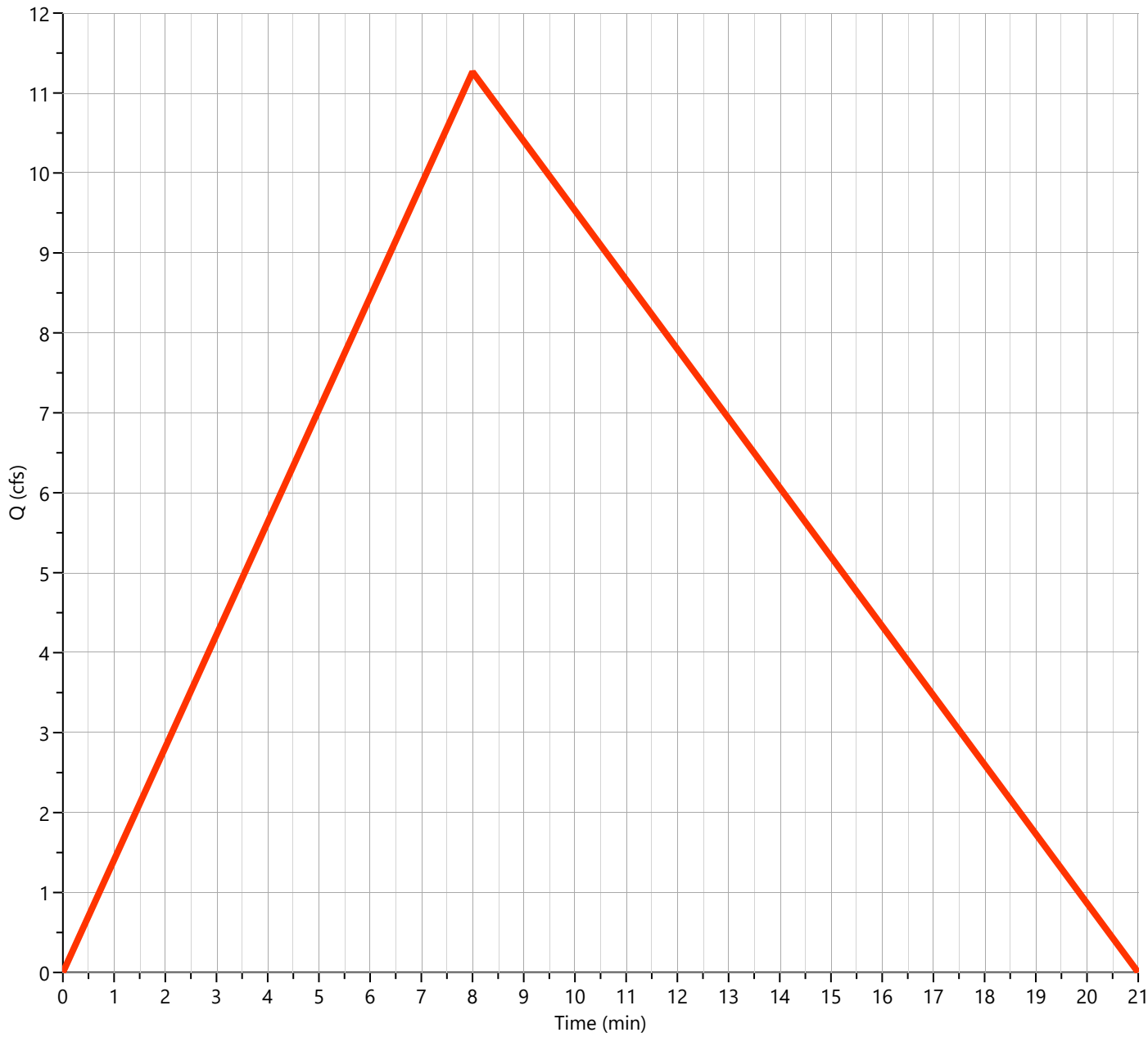
Hydrograph Type	= Rational	Peak Flow	= 24.90 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 21,943 cuft
Drainage Area	= 6.84 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.62 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "D"

Hyd. No. 4

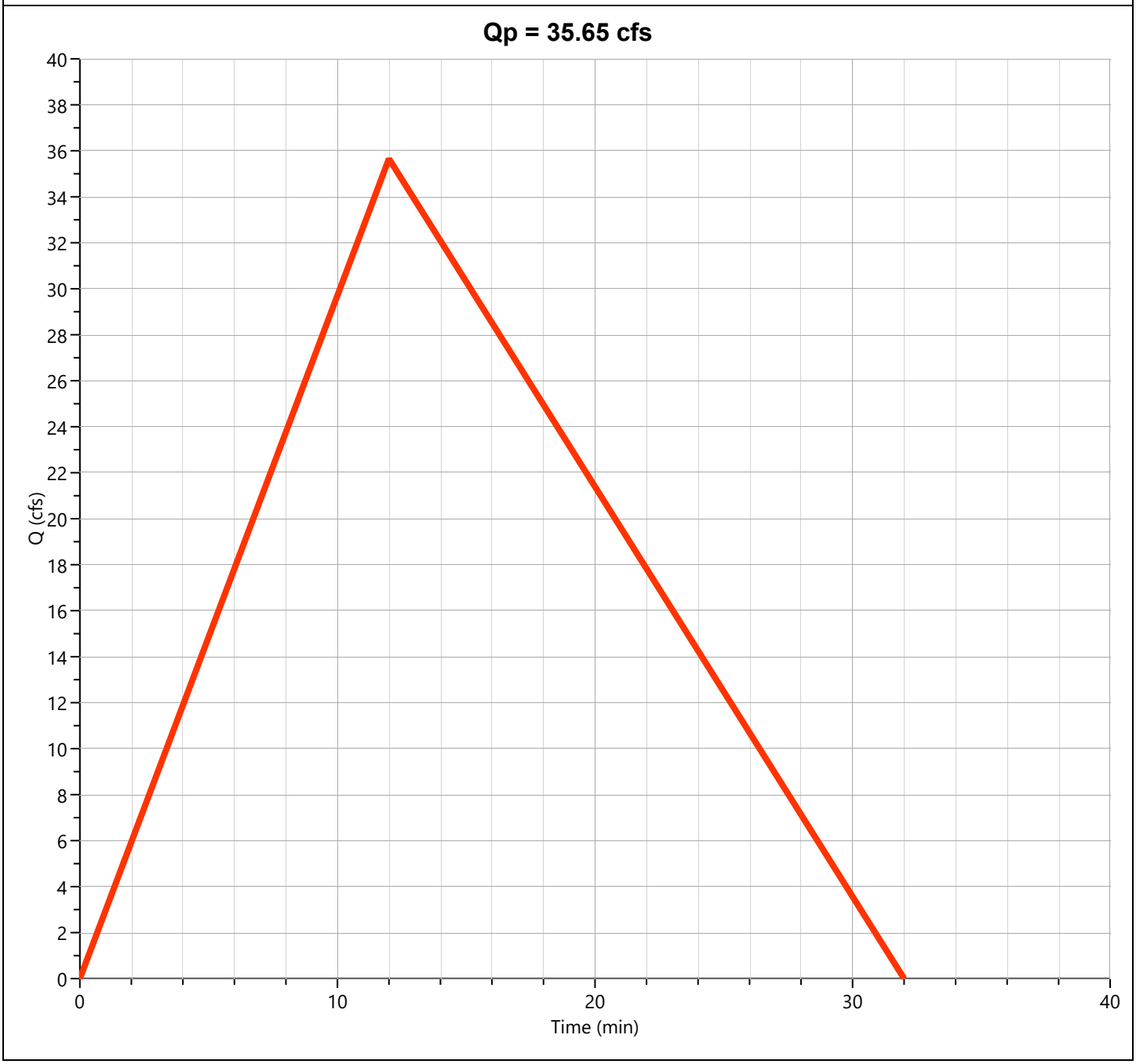
Hydrograph Type	= Rational	Peak Flow	= 11.26 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 7,218 cuft
Drainage Area	= 2.95 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.64 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E-1"

Hyd. No. 5

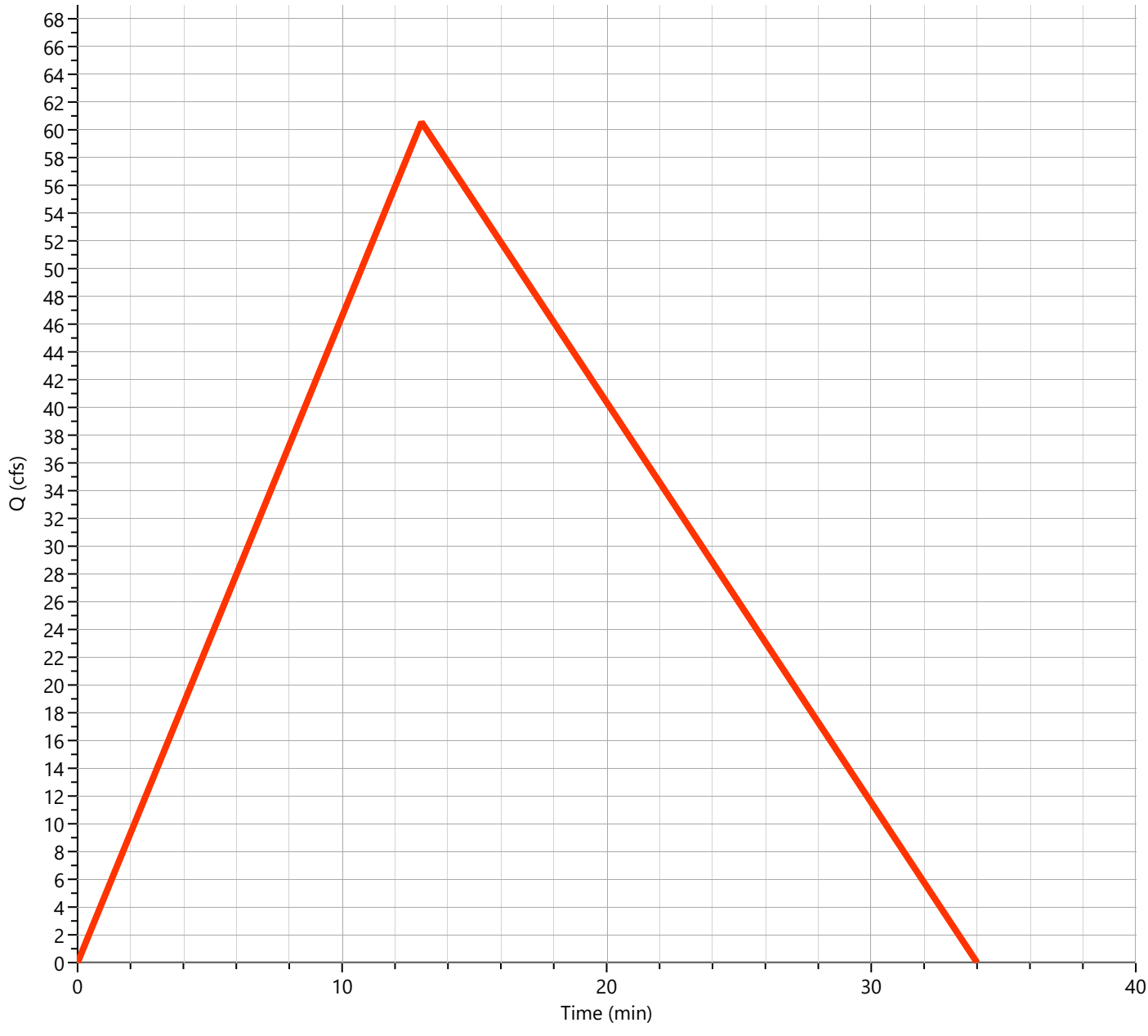
Hydrograph Type	= Rational	Peak Flow	= 35.65 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 34,268 cuft
Drainage Area	= 11.2 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.37 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E-2"

Hyd. No. 6

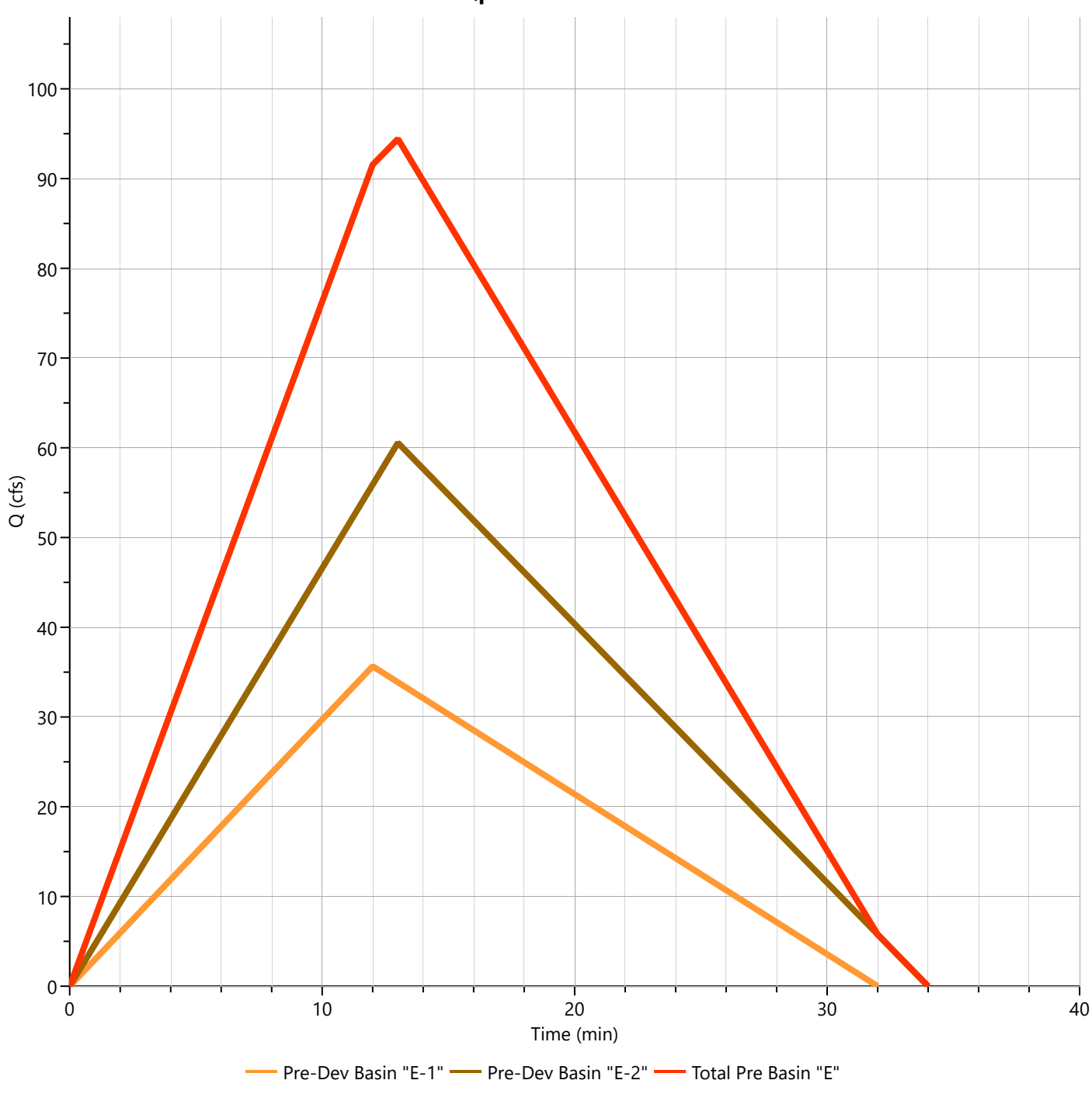
Hydrograph Type	= Rational	Peak Flow	= 60.55 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 63,053 cuft
Drainage Area	= 18.96 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.14 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Pre Basin "E"

Hyd. No. 7

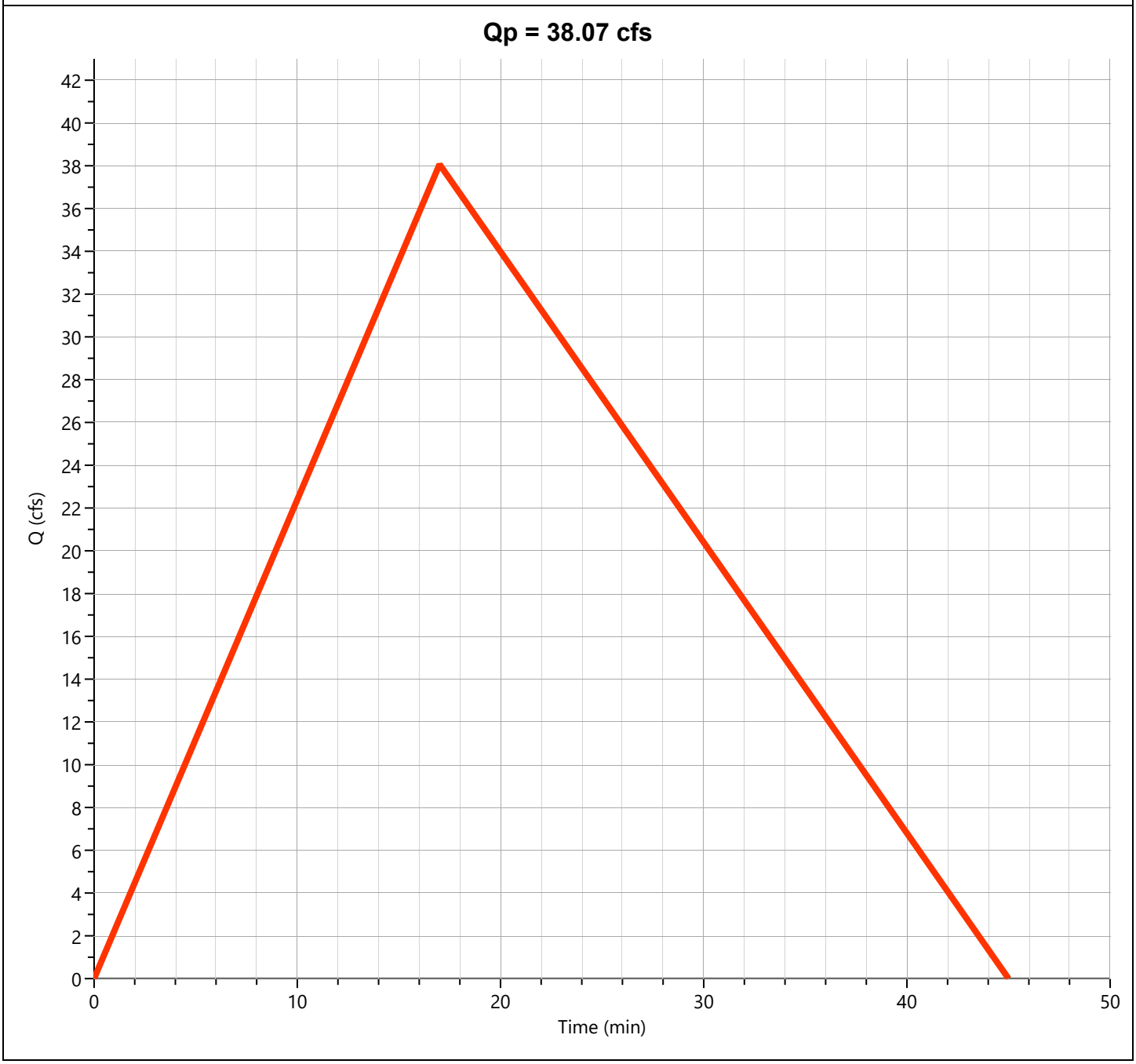
Hydrograph Type	= Junction	Peak Flow	= 94.42 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 95,989 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 30.16 ac



Pre-Dev Basin "F"

Hyd. No. 8

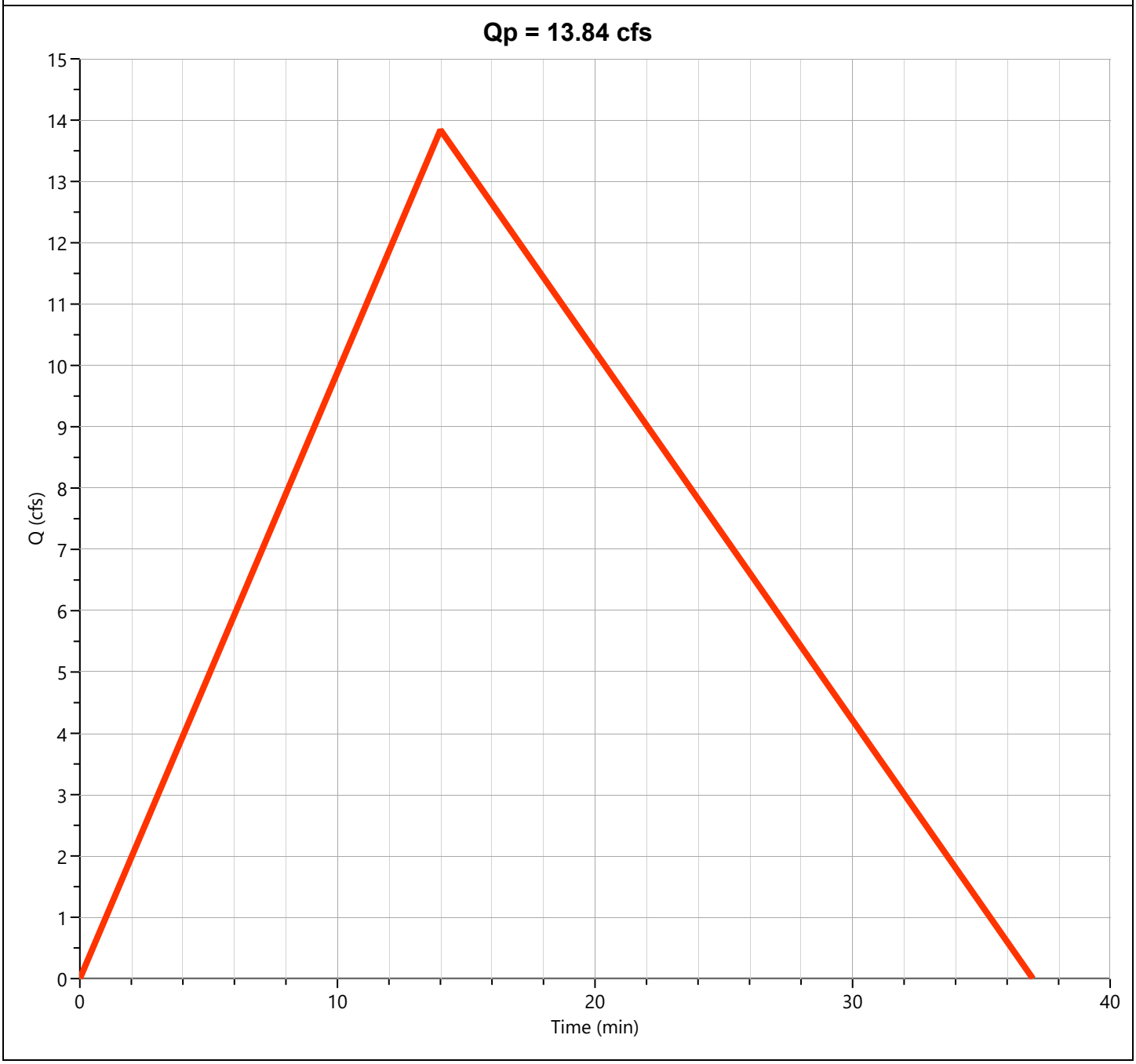
Hydrograph Type	= Rational	Peak Flow	= 38.07 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 51,833 cuft
Drainage Area	= 13.19 ac	Runoff Coeff.	= 0.53
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.45 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin A

Hyd. No. 9

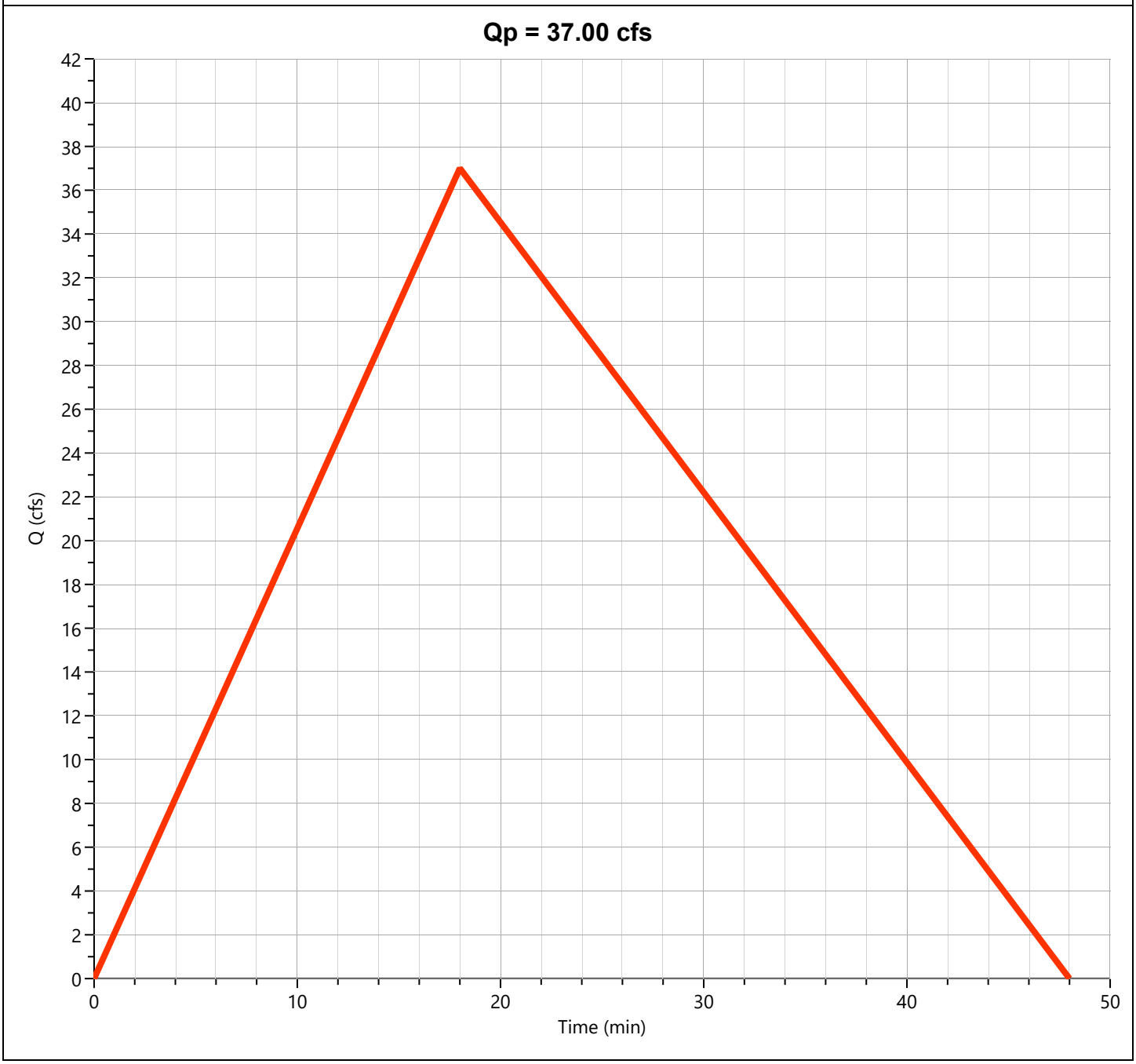
Hydrograph Type	= Rational	Peak Flow	= 13.84 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.23 hrs
Time Interval	= 1 min	Runoff Volume	= 15,521 cuft
Drainage Area	= 3.53 ac	Runoff Coeff.	= 0.66
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 14.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.94 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin B

Hyd. No. 10

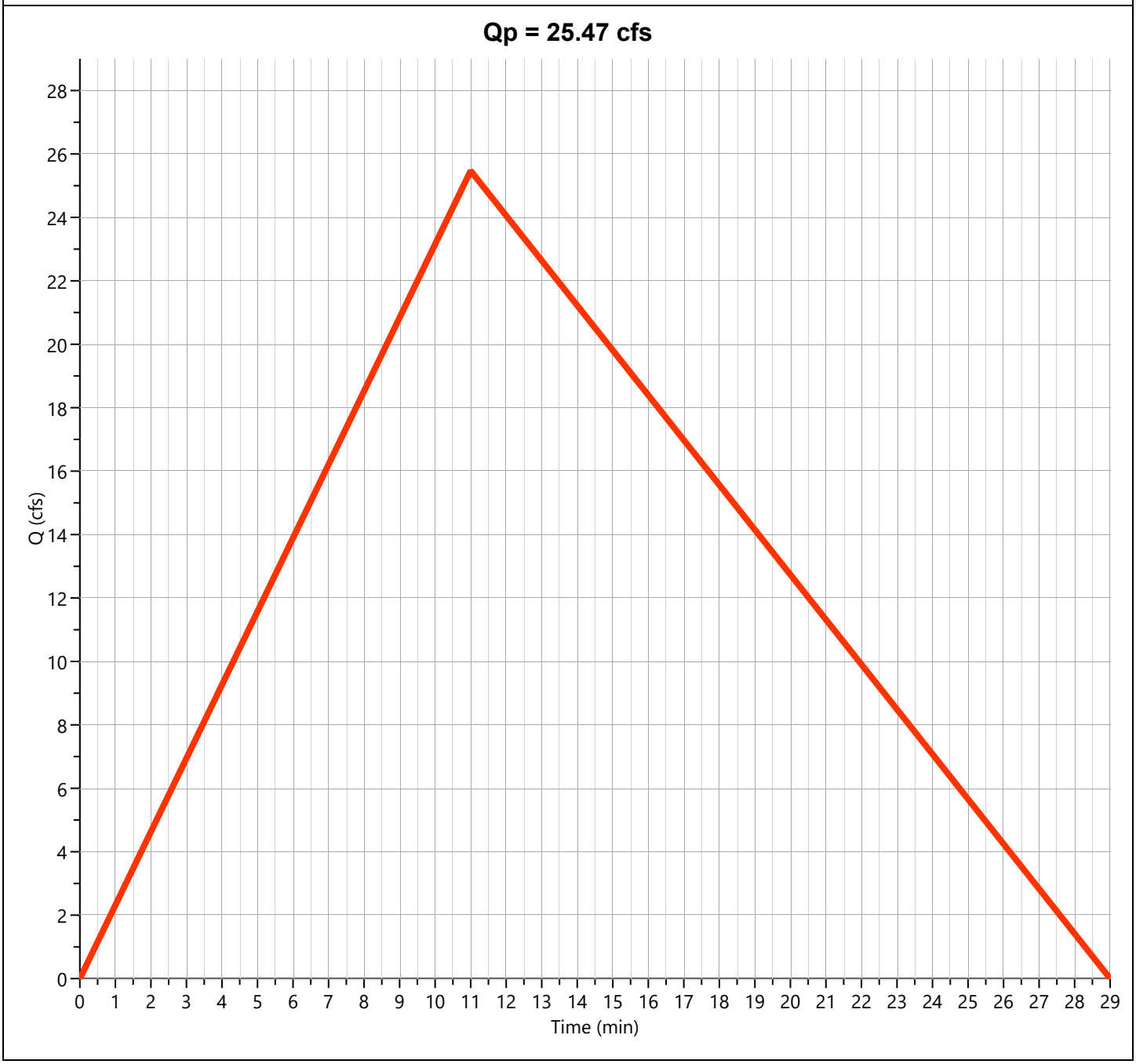
Hydrograph Type	= Rational	Peak Flow	= 37.00 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.30 hrs
Time Interval	= 1 min	Runoff Volume	= 53,350 cuft
Drainage Area	= 12.45 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.31 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "C"

Hyd. No. 11

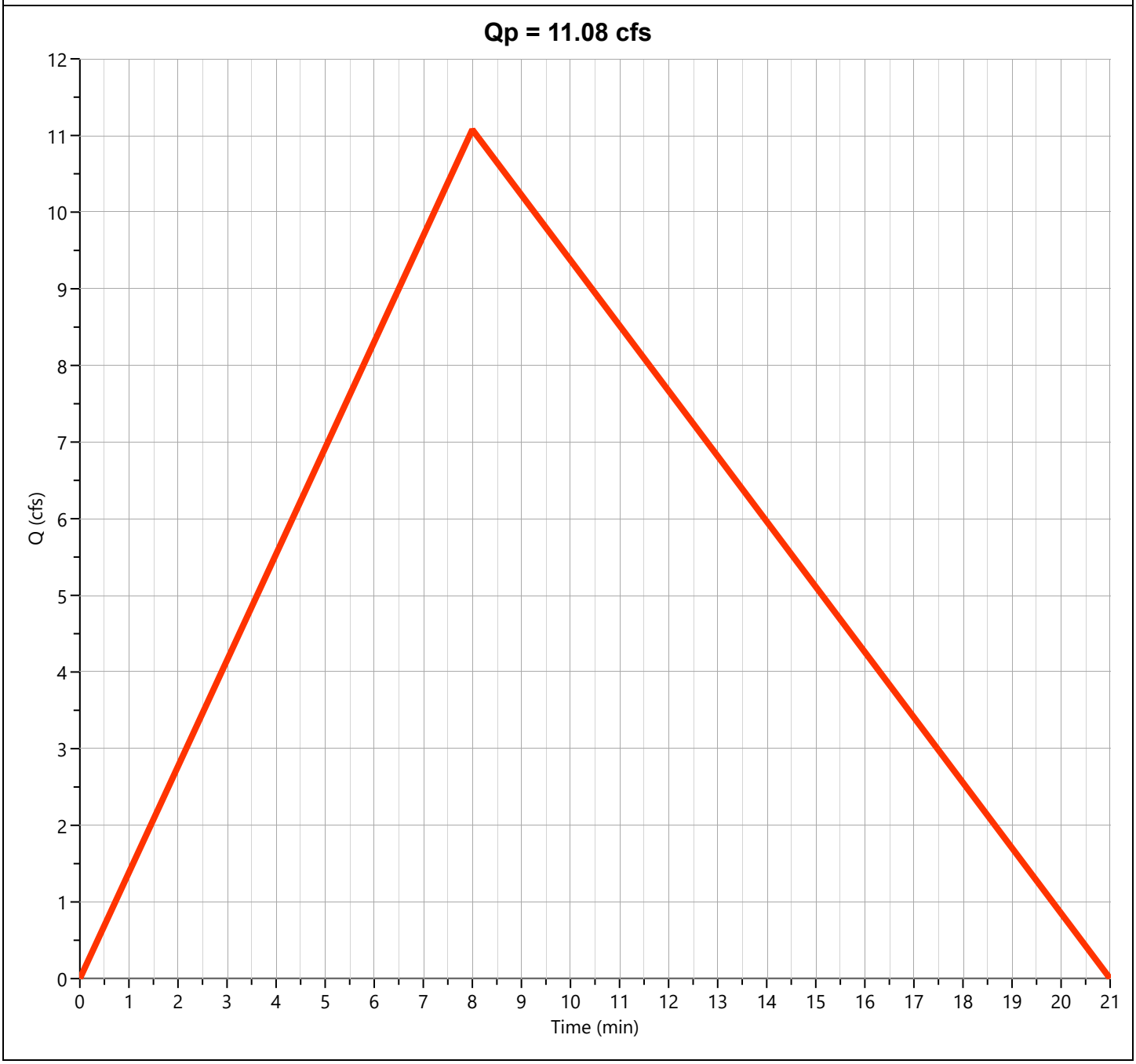
Hydrograph Type	= Rational	Peak Flow	= 25.47 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 22,441 cuft
Drainage Area	= 6.75 ac	Runoff Coeff.	= 0.57
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.62 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "D"

Hyd. No. 12

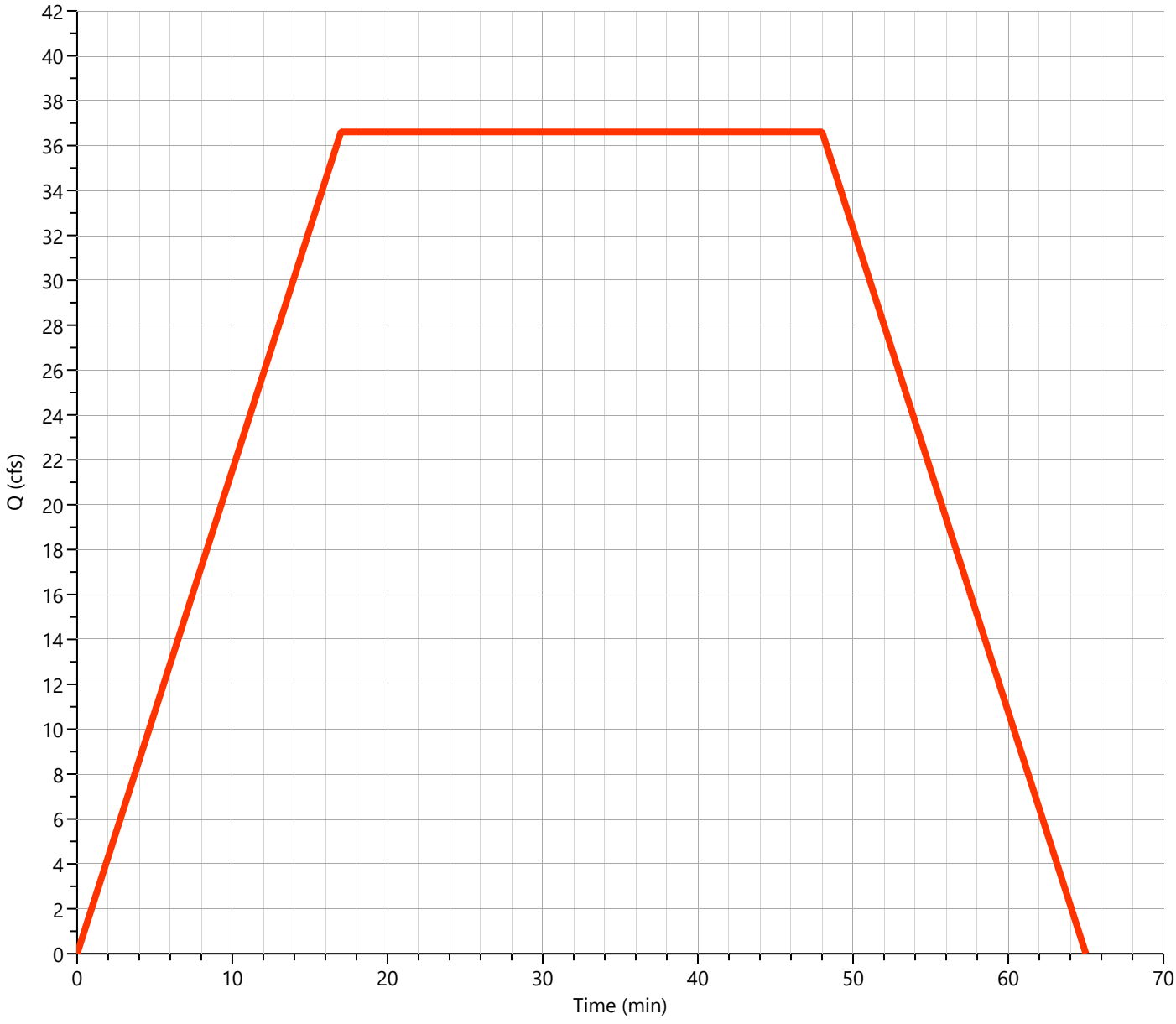
Hydrograph Type	= Rational	Peak Flow	= 11.08 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 7,098 cuft
Drainage Area	= 2.59 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.64 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "E-1"

Hyd. No. 13

Hydrograph Type	= Mod Rational	Peak Flow	= 36.61 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 105,431 cuft
Drainage Area	= 16.23 ac	Runoff Coeff.	= 0.66
Tc Method	= User	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.42 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 2.82 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft



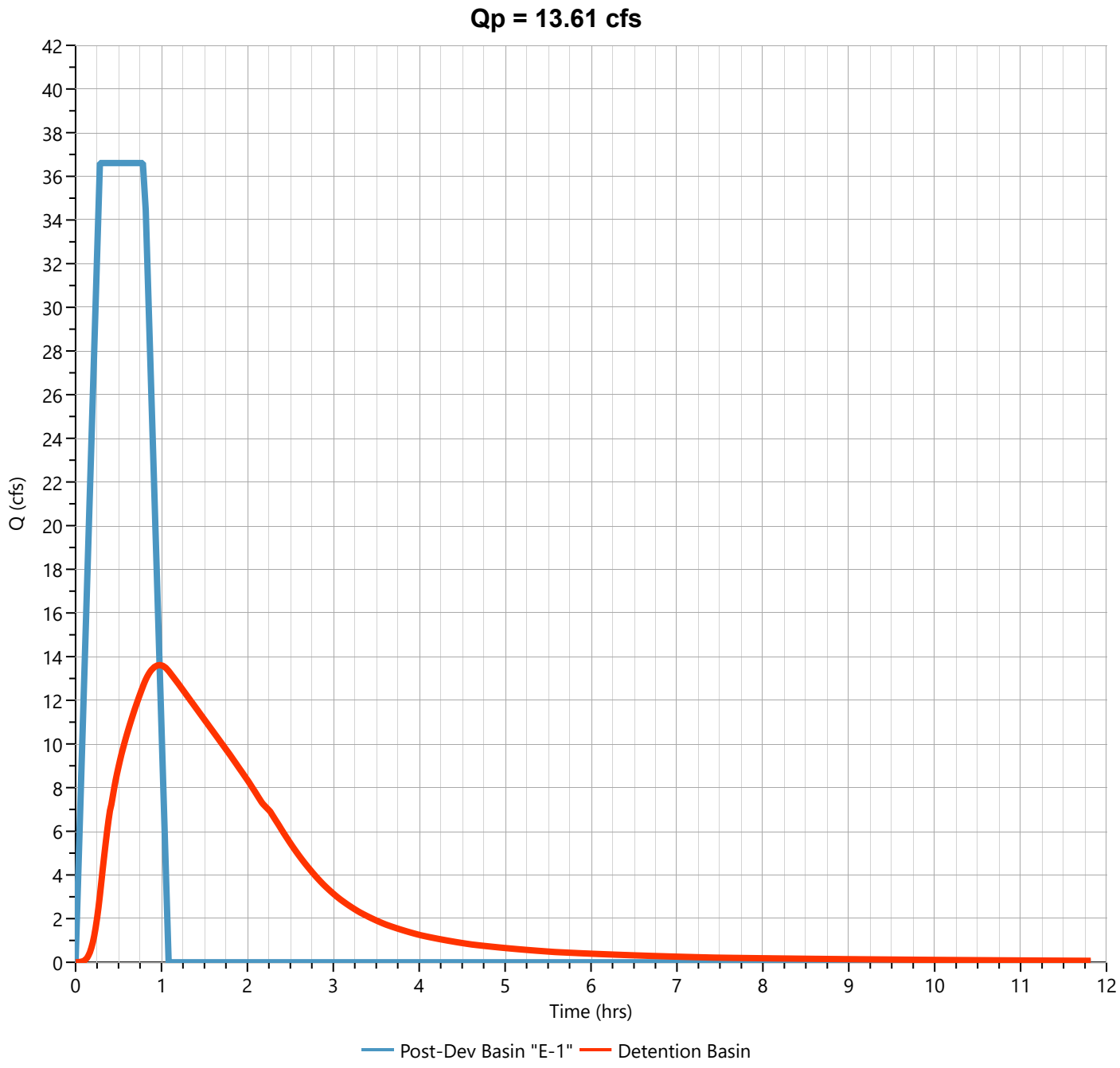
Detention Basin

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 13.61 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.98 hrs
Time Interval	= 1 min	Hydrograph Volume	= 105,341 cuft
Inflow Hydrograph	= 13 - Post-Dev Basin "E-1"	Max. Elevation	= 478.31 ft
Pond Name	= Hilltop Detention Pond	Max. Storage	= 76,654 cuft

Pond Routing by Storage Indication Method

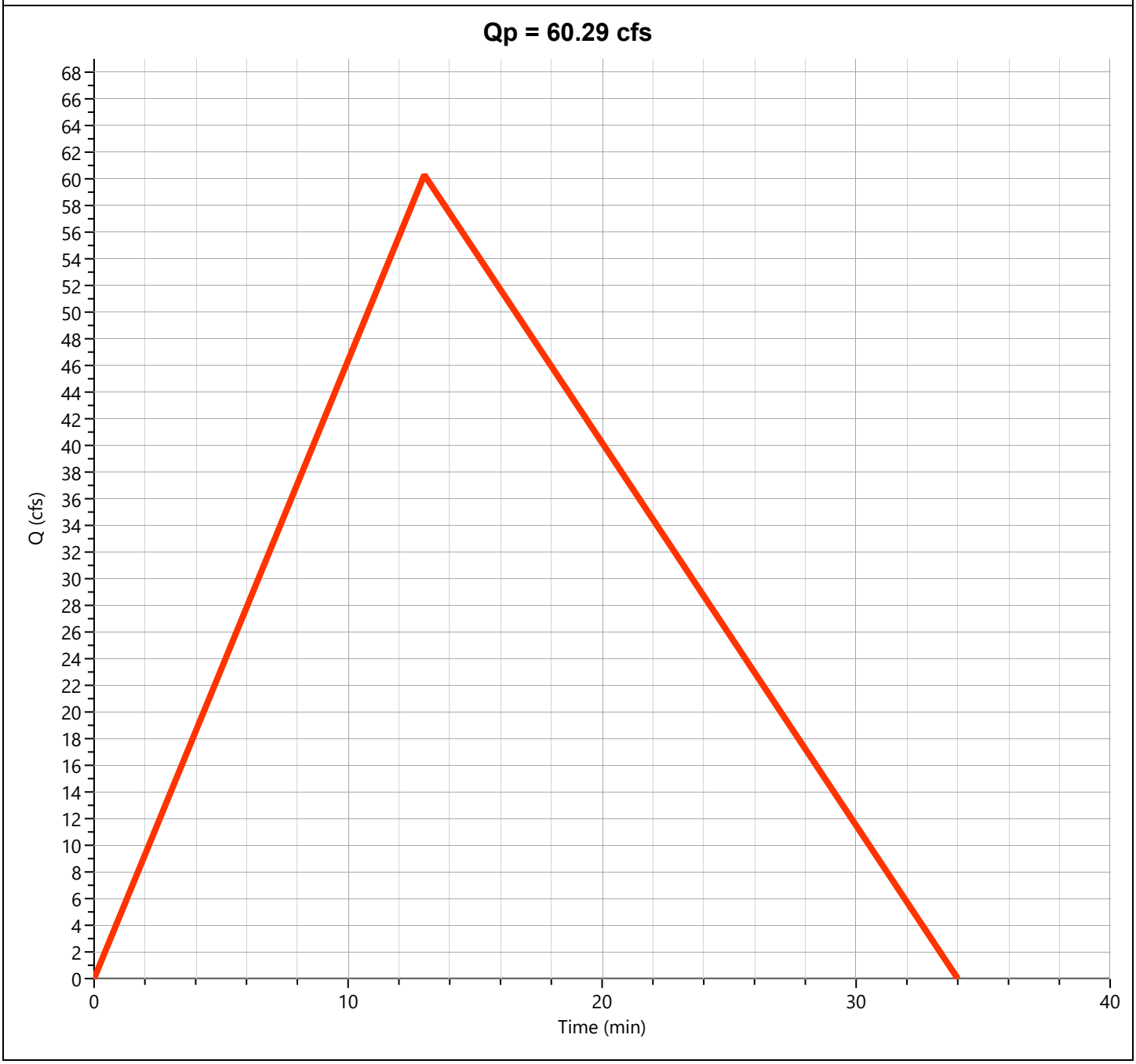
Center of mass detention time = 1.35 hrs



Post-Dev Basin "E-2"

Hyd. No. 15

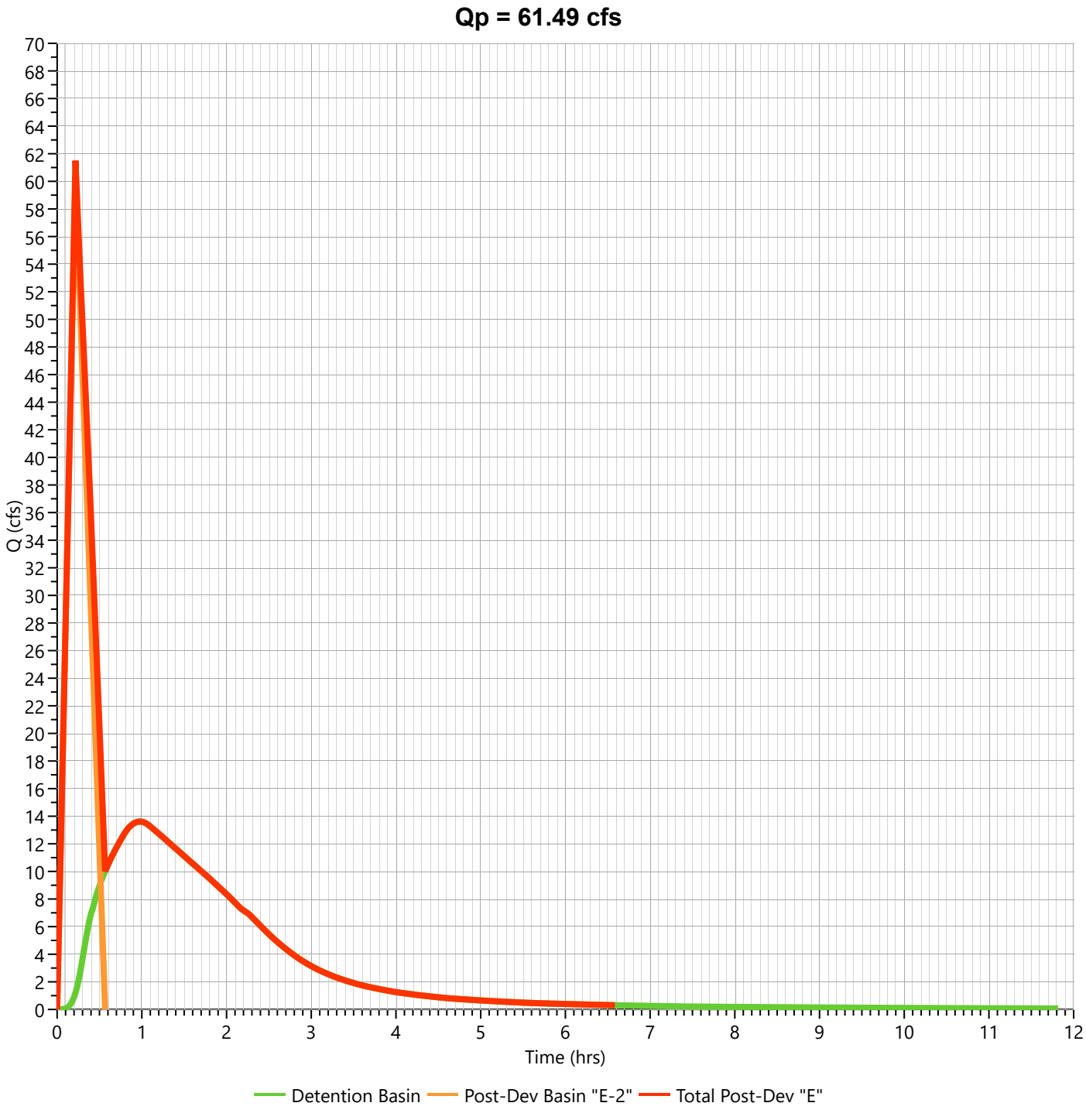
Hydrograph Type	= Rational	Peak Flow	= 60.29 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 62,782 cuft
Drainage Area	= 17.53 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.14 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Post-Dev "E"

Hyd. No. 16

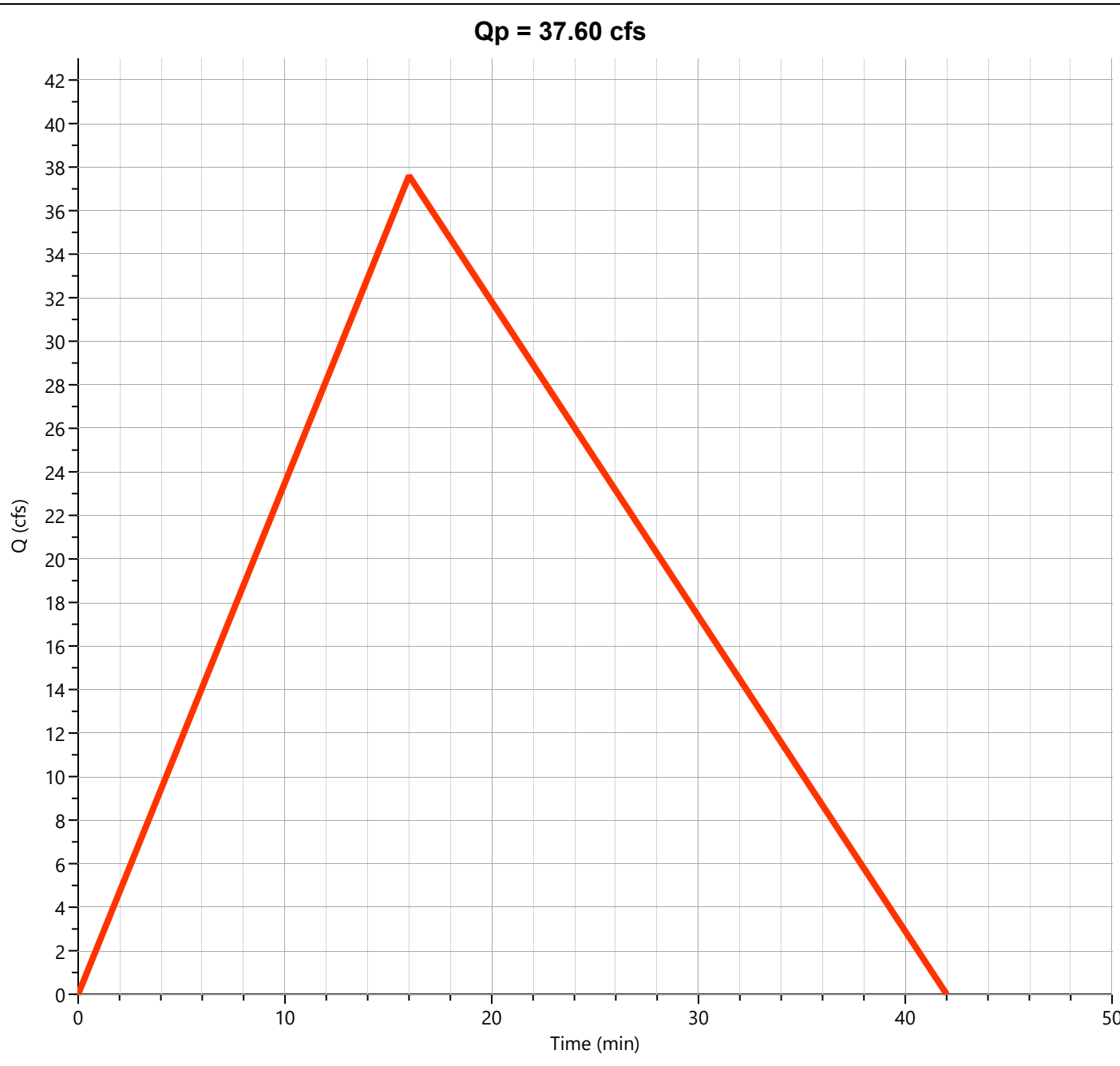
Hydrograph Type	= Junction	Peak Flow	= 61.49 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 166,838 cuft
Inflow Hydrographs	= 15	Total Contrib. Area	= 17.53 ac



Post-Dev Basin "F"

Hyd. No. 17

Hydrograph Type	= Rational	Peak Flow	= 37.60 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 48,189 cuft
Drainage Area	= 12.0 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.60 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph 50-yr Summary

Hydrology Studio v 3.0.0.39

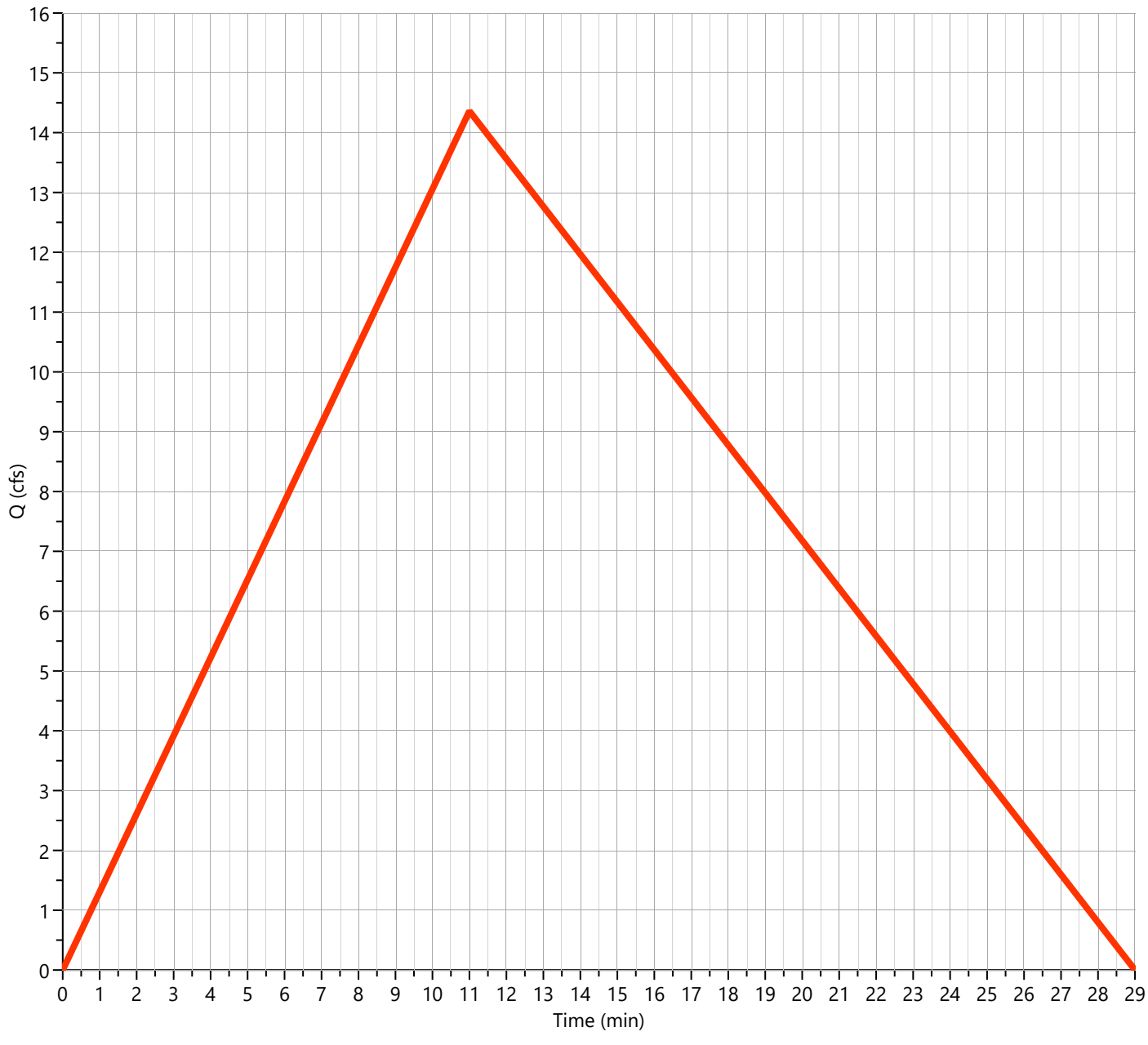
Project Name: Hilltop Subdivision
File: Detention Calculation 3-4-26.hys
03-04-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre-Dev Basin "A"	14.36	0.18	12,653	----		
2	Rational	Pre-Dev Basin "B"	48.29	0.25	58,019	----		
3	Rational	Pre-Dev Basin "C"	27.23	0.18	23,992	----		
4	Rational	Pre-Dev Basin "D"	12.31	0.13	7,889	----		
5	Rational	Pre-Dev Basin "E-1"	38.98	0.20	37,472	----		
6	Rational	Pre-Dev Basin "E-2"	66.22	0.22	68,955	----		
7	Junction	Total Pre Basin "E"	103.3	0.22	104,970	5, 6		
8	Rational	Pre-Dev Basin "F"	41.64	0.28	56,705	----		
9	Rational	Post-Dev Basin A	15.14	0.23	16,976	----		
10	Rational	Post-Dev Basin B	40.48	0.30	58,368	----		
11	Rational	Post-Dev Basin "C"	27.85	0.18	24,537	----		
12	Rational	Post-Dev Basin "D"	12.11	0.13	7,757	----		
13	Mod Rational	Post-Dev Basin "E-1"	40.10	0.28	115,494	----		
14	Pond Route	Detention Basin	14.43	0.98	115,403	13	478.63	84,597
15	Rational	Post-Dev Basin "E-2"	65.94	0.22	68,659	----		
16	Junction	Total Post-Dev "E"	67.36	0.22	182,657	14, 15		
17	Rational	Post-Dev Basin "F"	41.13	0.27	52,714	----		

Pre-Dev Basin "A"

Hyd. No. 1

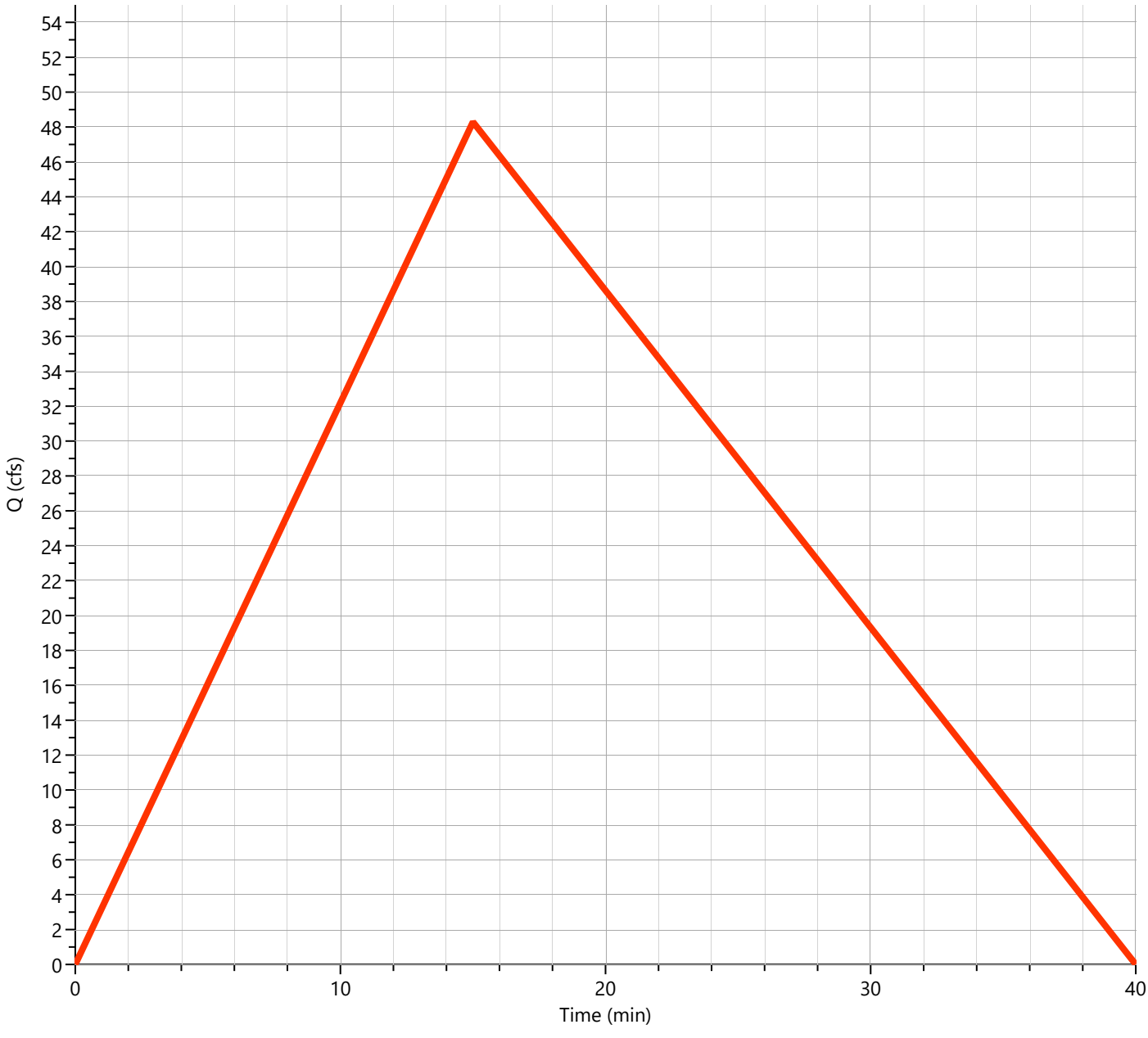
Hydrograph Type	= Rational	Peak Flow	= 14.36 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 12,653 cuft
Drainage Area	= 3.2 ac	Runoff Coeff.	= 0.62
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.24 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "B"

Hyd. No. 2

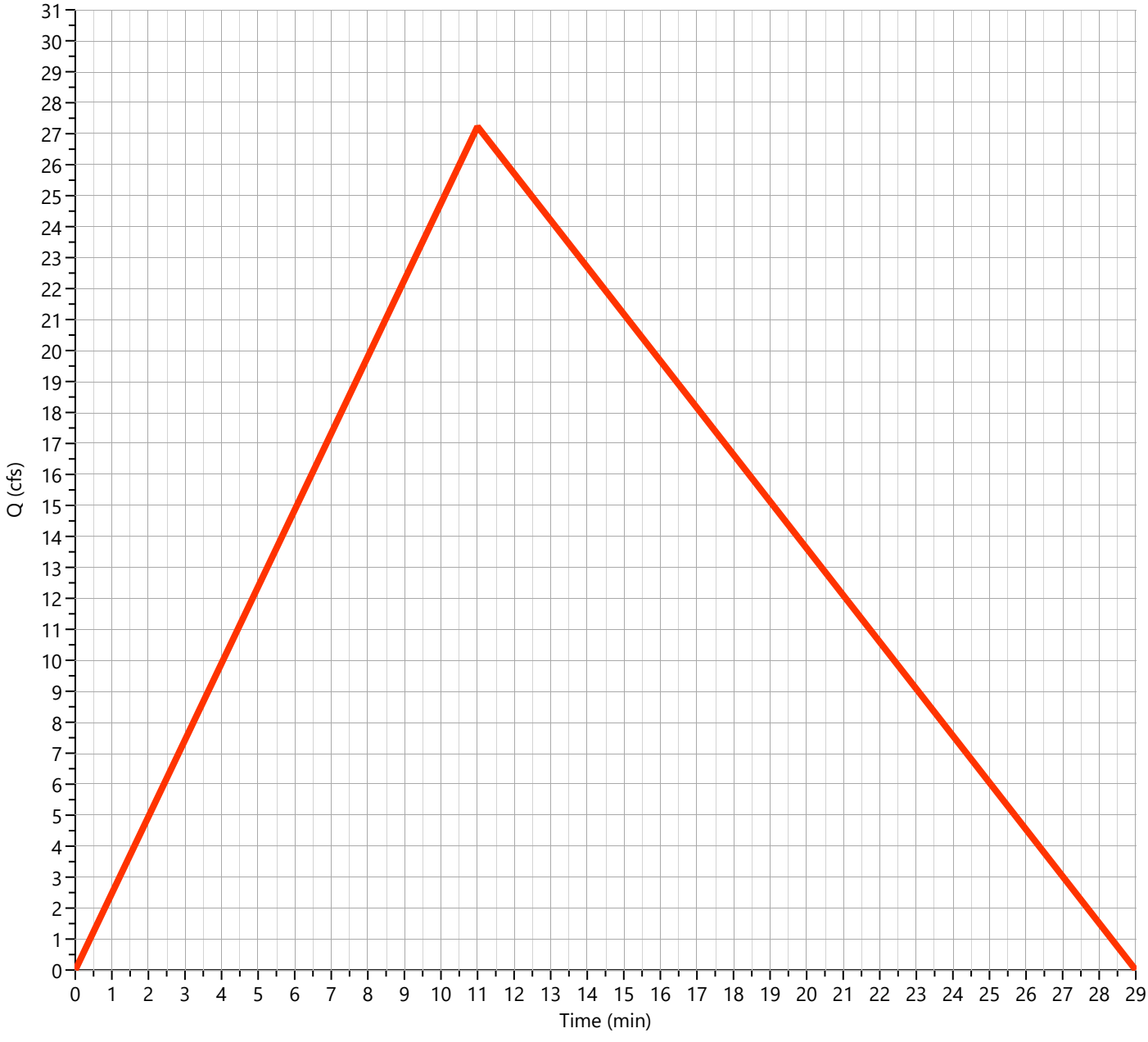
Hydrograph Type	= Rational	Peak Flow	= 48.29 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 58,019 cuft
Drainage Area	= 14.74 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "C"

Hyd. No. 3

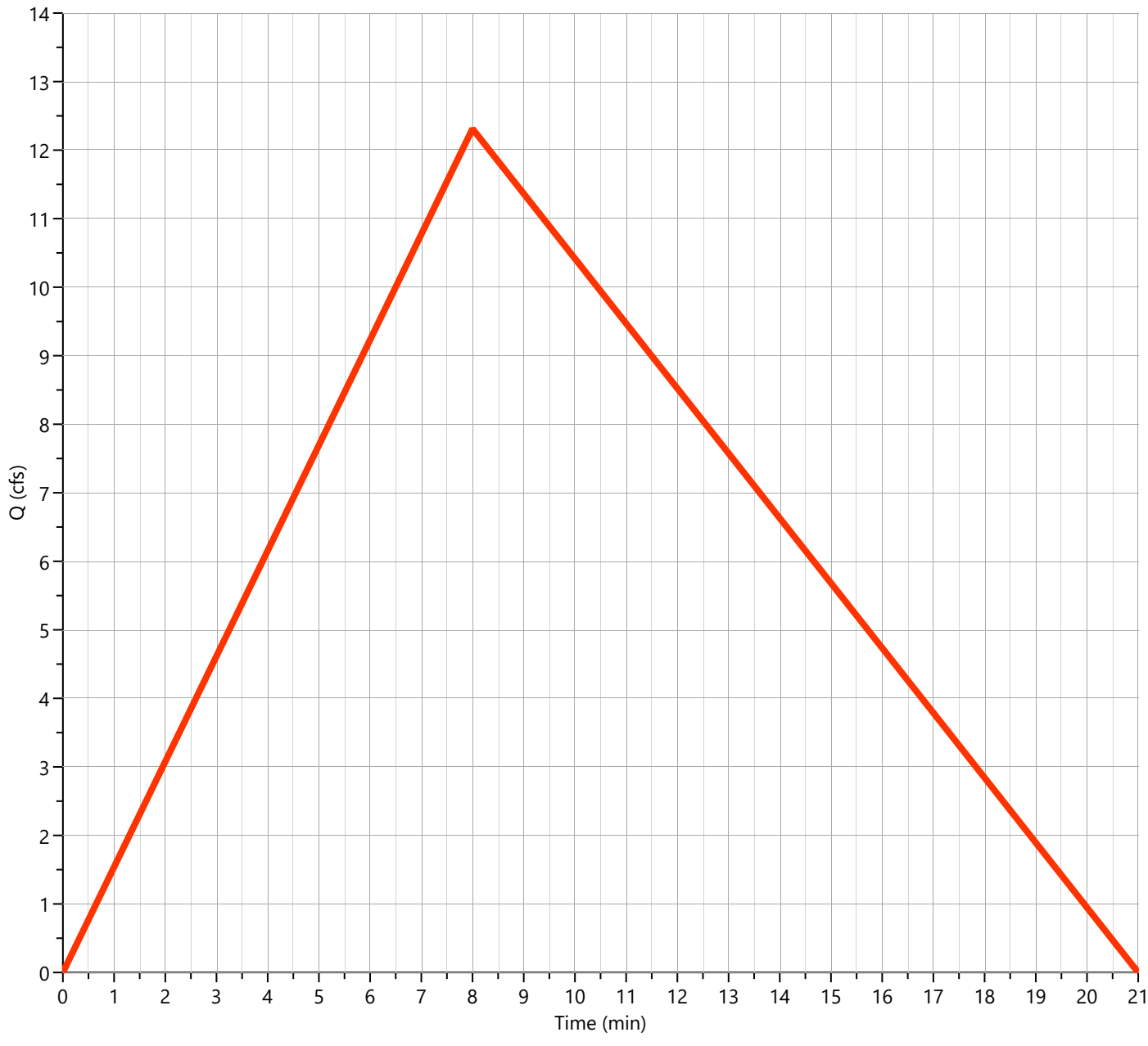
Hydrograph Type	= Rational	Peak Flow	= 27.23 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 23,992 cuft
Drainage Area	= 6.84 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.24 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "D"

Hyd. No. 4

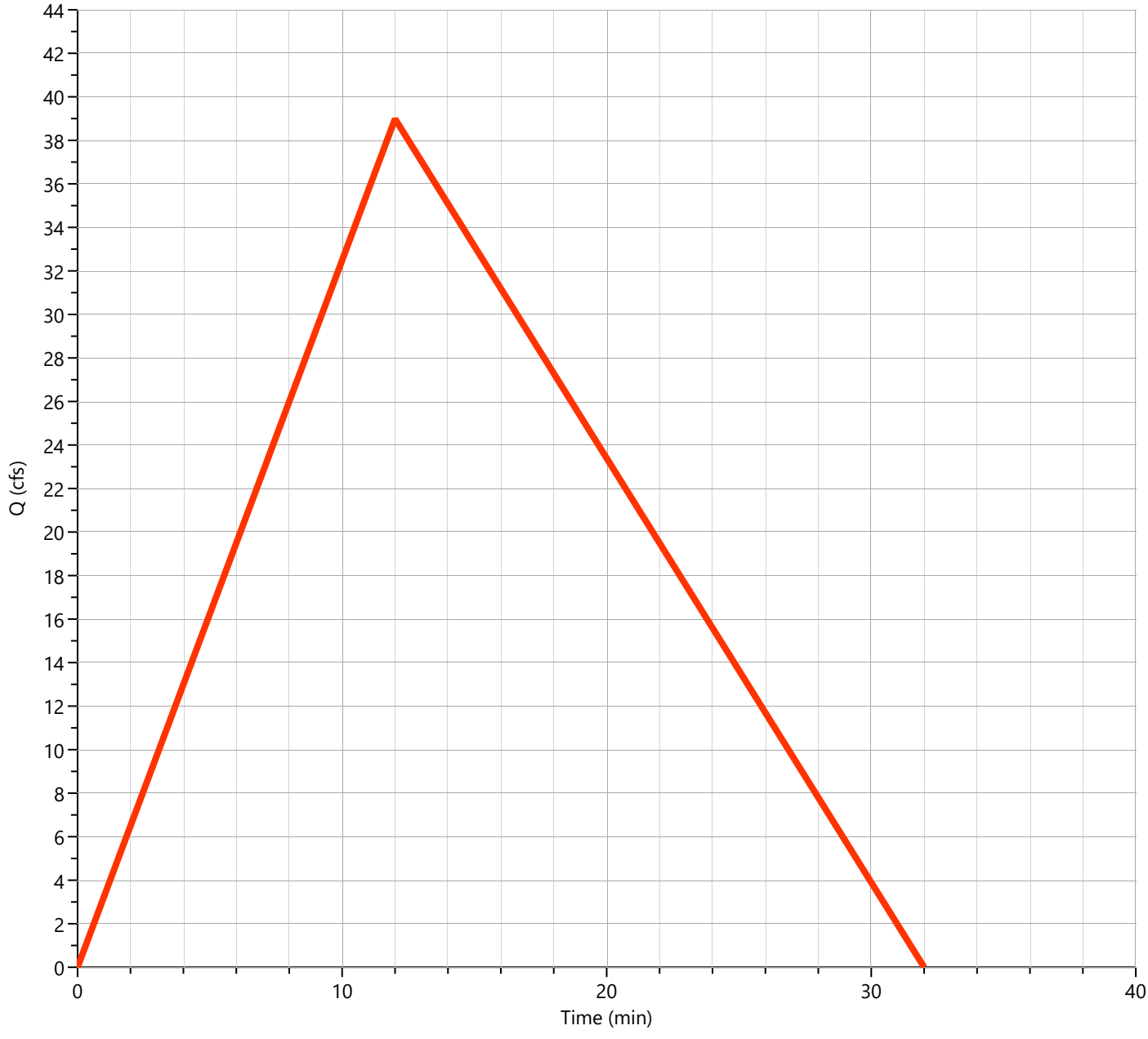
Hydrograph Type	= Rational	Peak Flow	= 12.31 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 7,889 cuft
Drainage Area	= 2.95 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.35 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E-1"

Hyd. No. 5

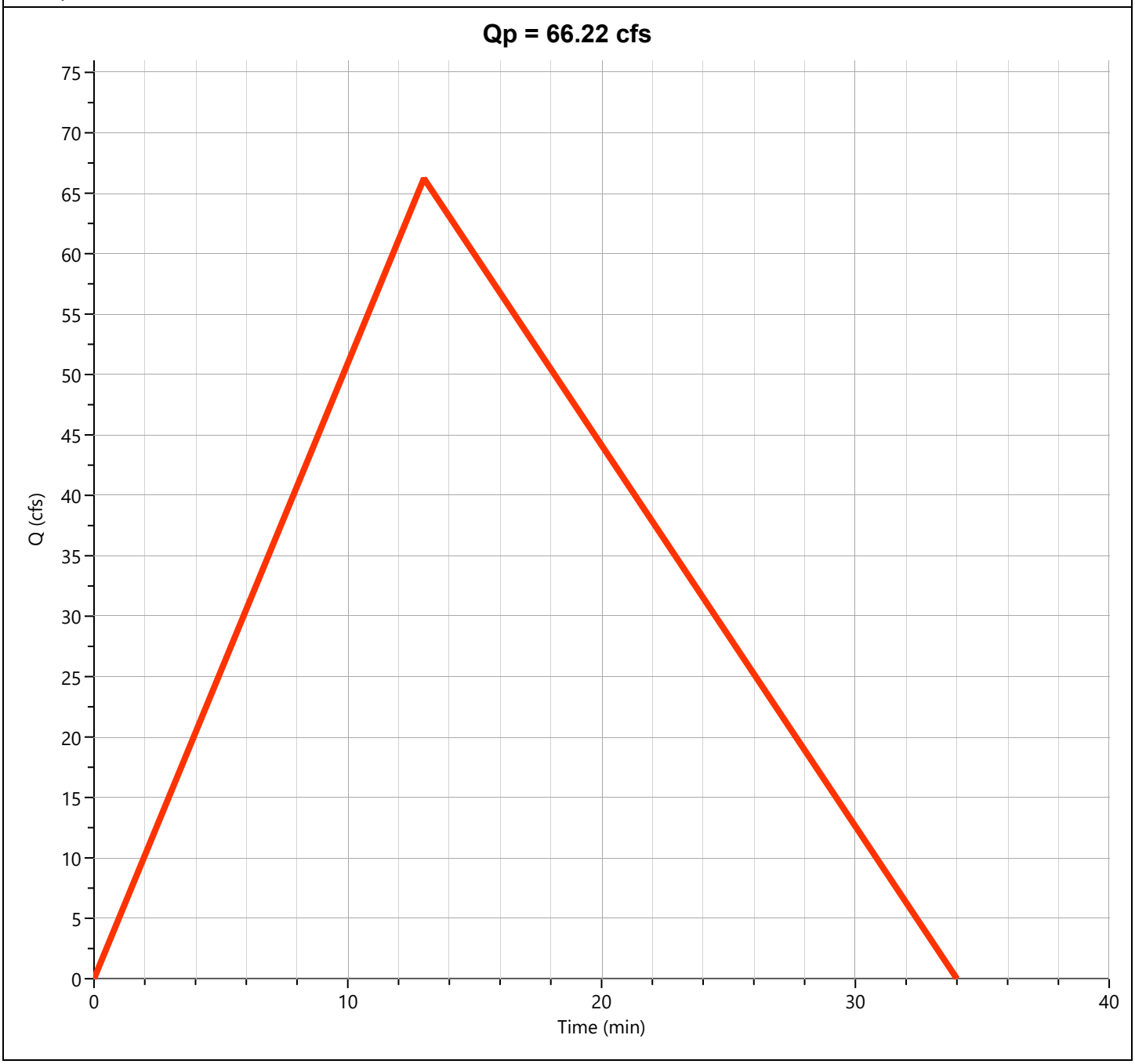
Hydrograph Type	= Rational	Peak Flow	= 38.98 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 37,472 cuft
Drainage Area	= 11.2 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.96 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E-2"

Hyd. No. 6

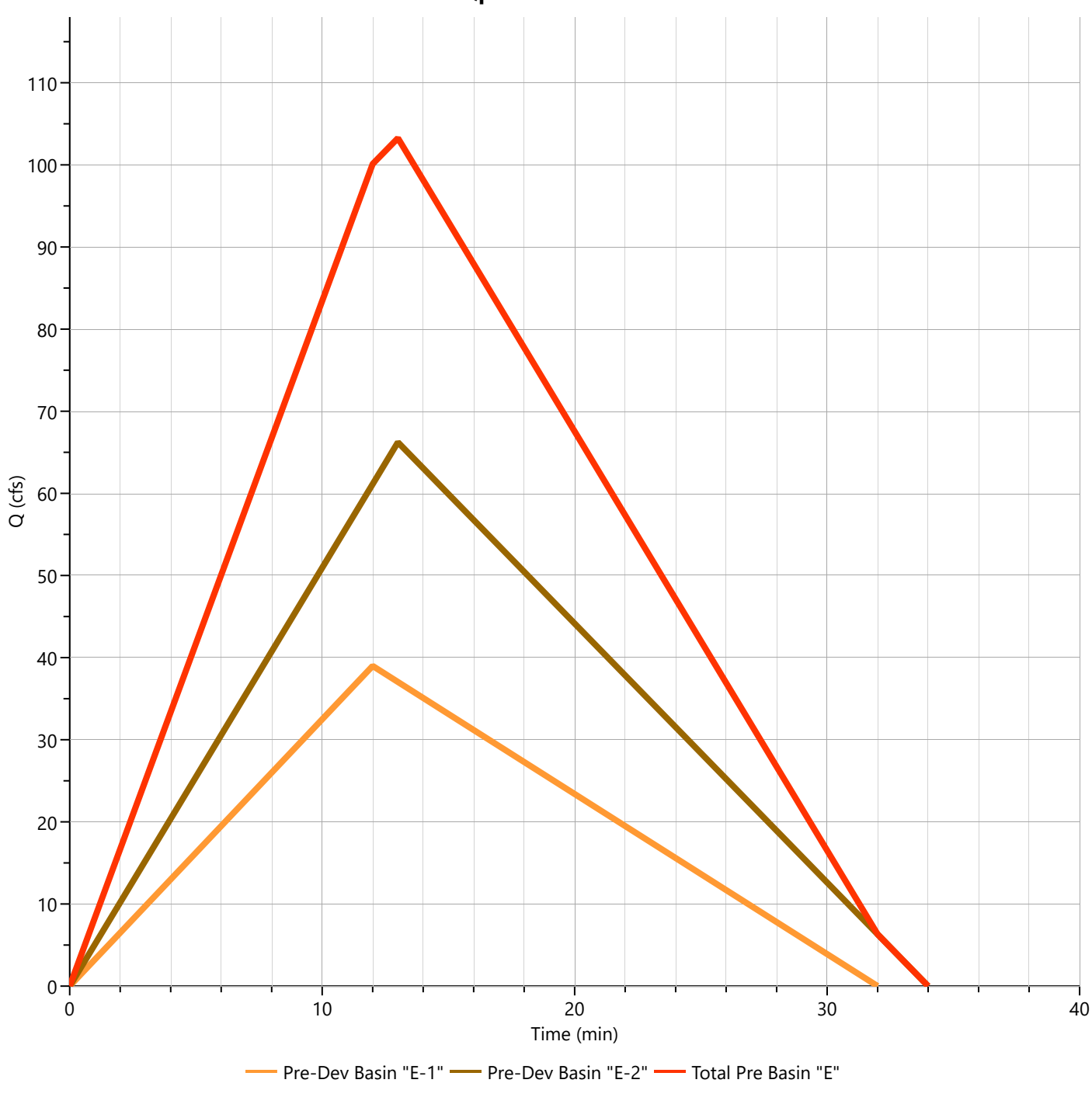
Hydrograph Type	= Rational	Peak Flow	= 66.22 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 68,955 cuft
Drainage Area	= 18.96 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.72 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Pre Basin "E"

Hyd. No. 7

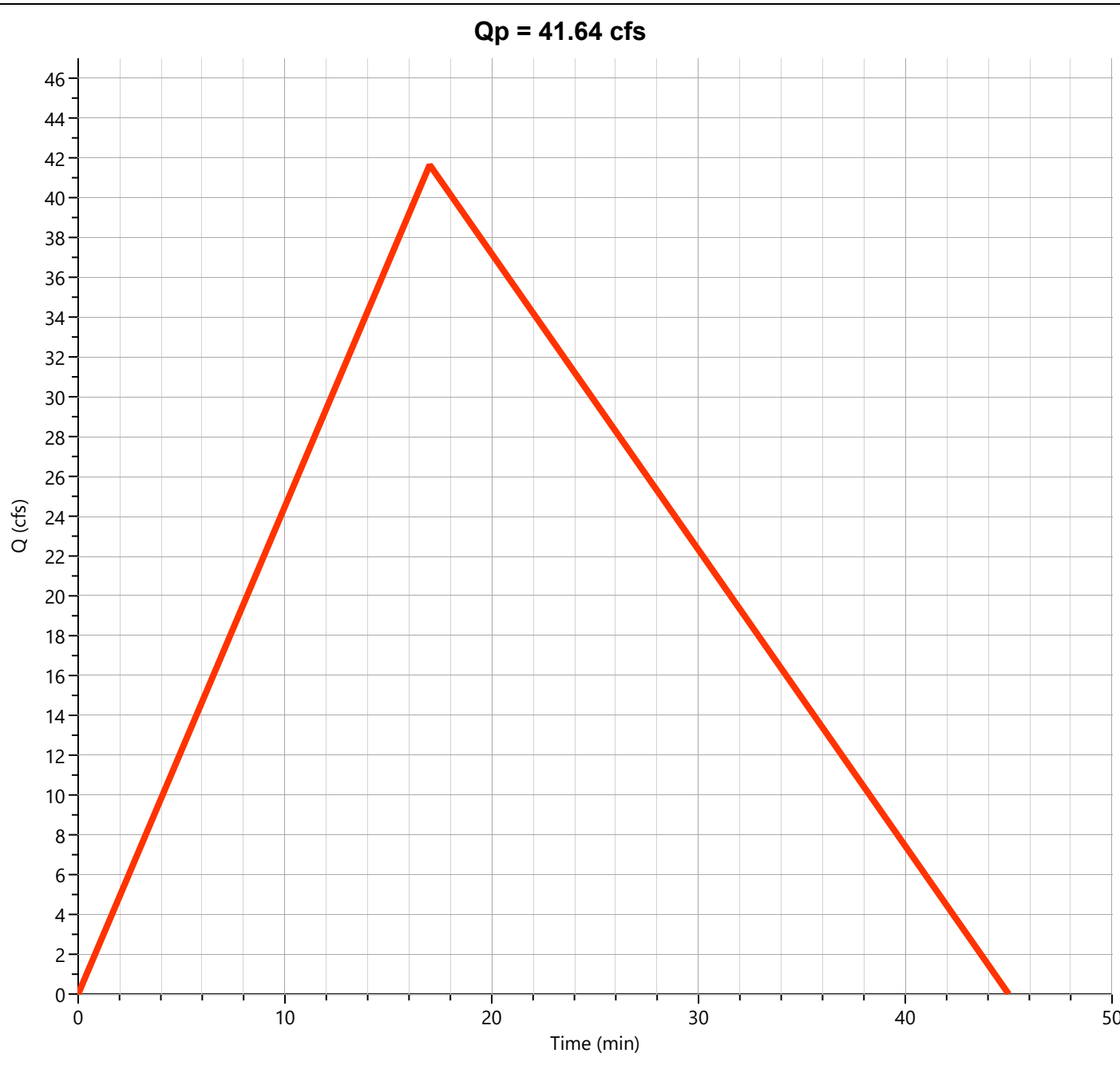
Hydrograph Type	= Junction	Peak Flow	= 103.3 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 104,970 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 30.16 ac



Pre-Dev Basin "F"

Hyd. No. 8

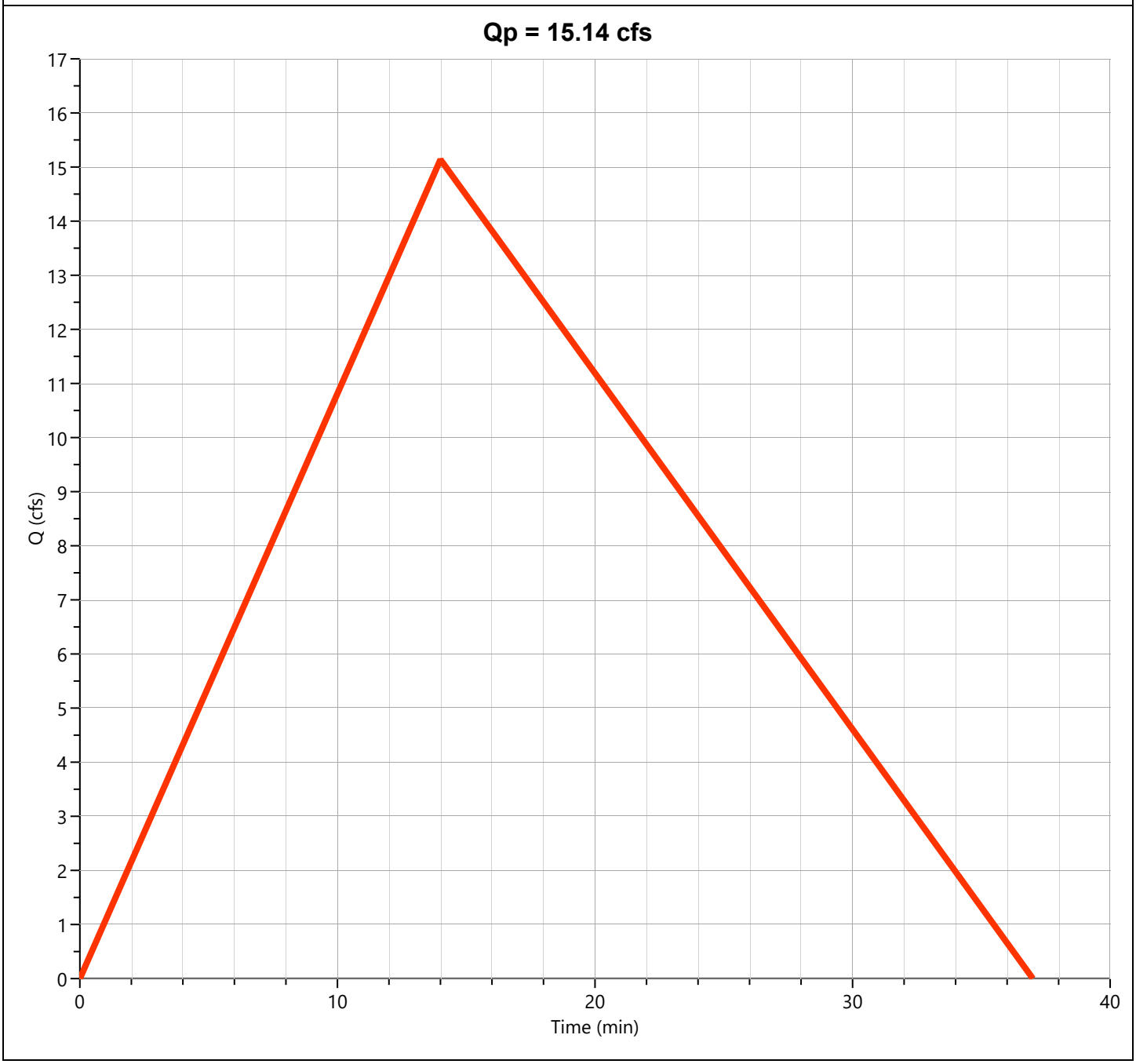
Hydrograph Type	= Rational	Peak Flow	= 41.64 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 56,705 cuft
Drainage Area	= 13.19 ac	Runoff Coeff.	= 0.53
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.96 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin A

Hyd. No. 9

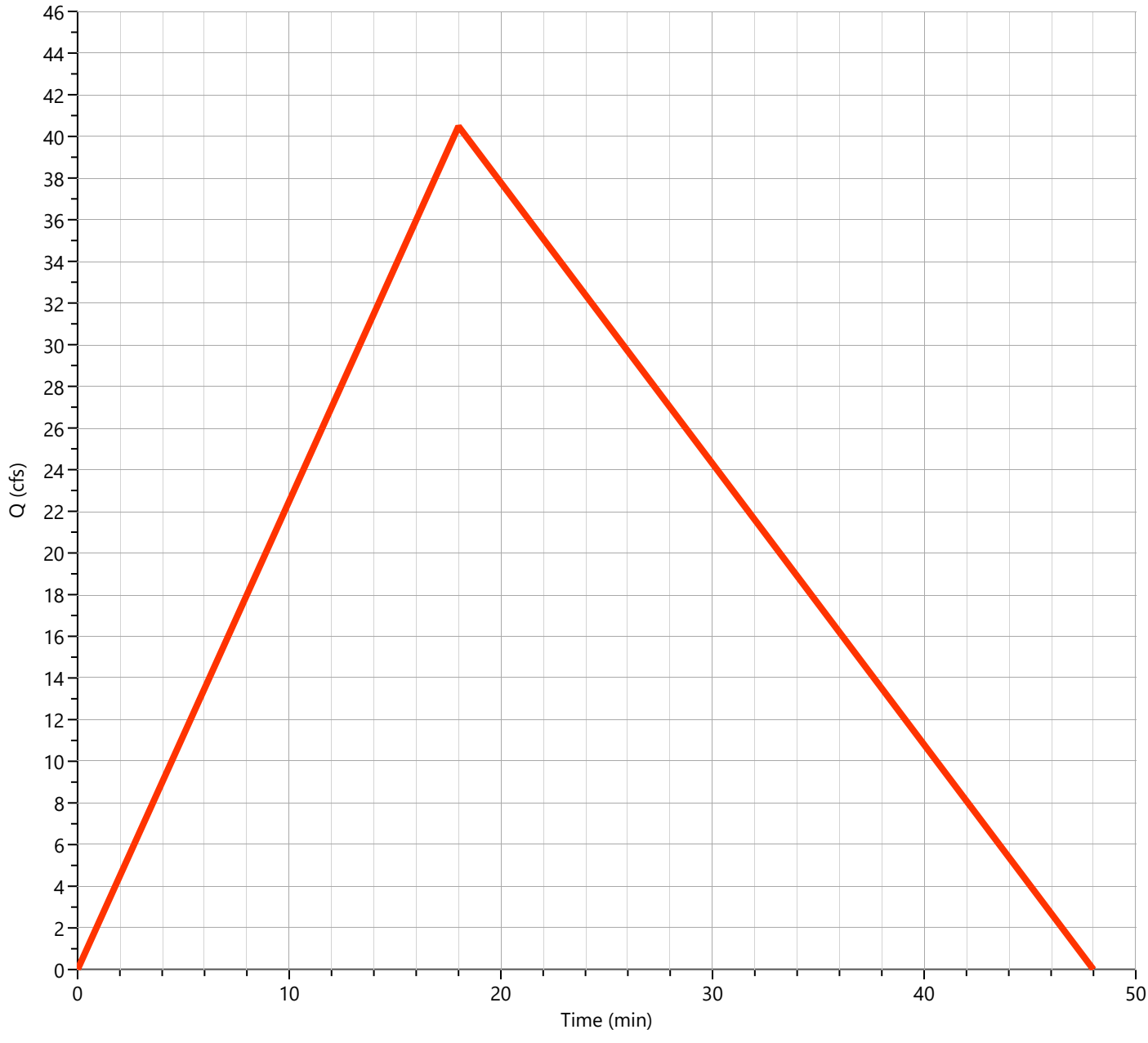
Hydrograph Type	= Rational	Peak Flow	= 15.14 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.23 hrs
Time Interval	= 1 min	Runoff Volume	= 16,976 cuft
Drainage Area	= 3.53 ac	Runoff Coeff.	= 0.66
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 14.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.50 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin B

Hyd. No. 10

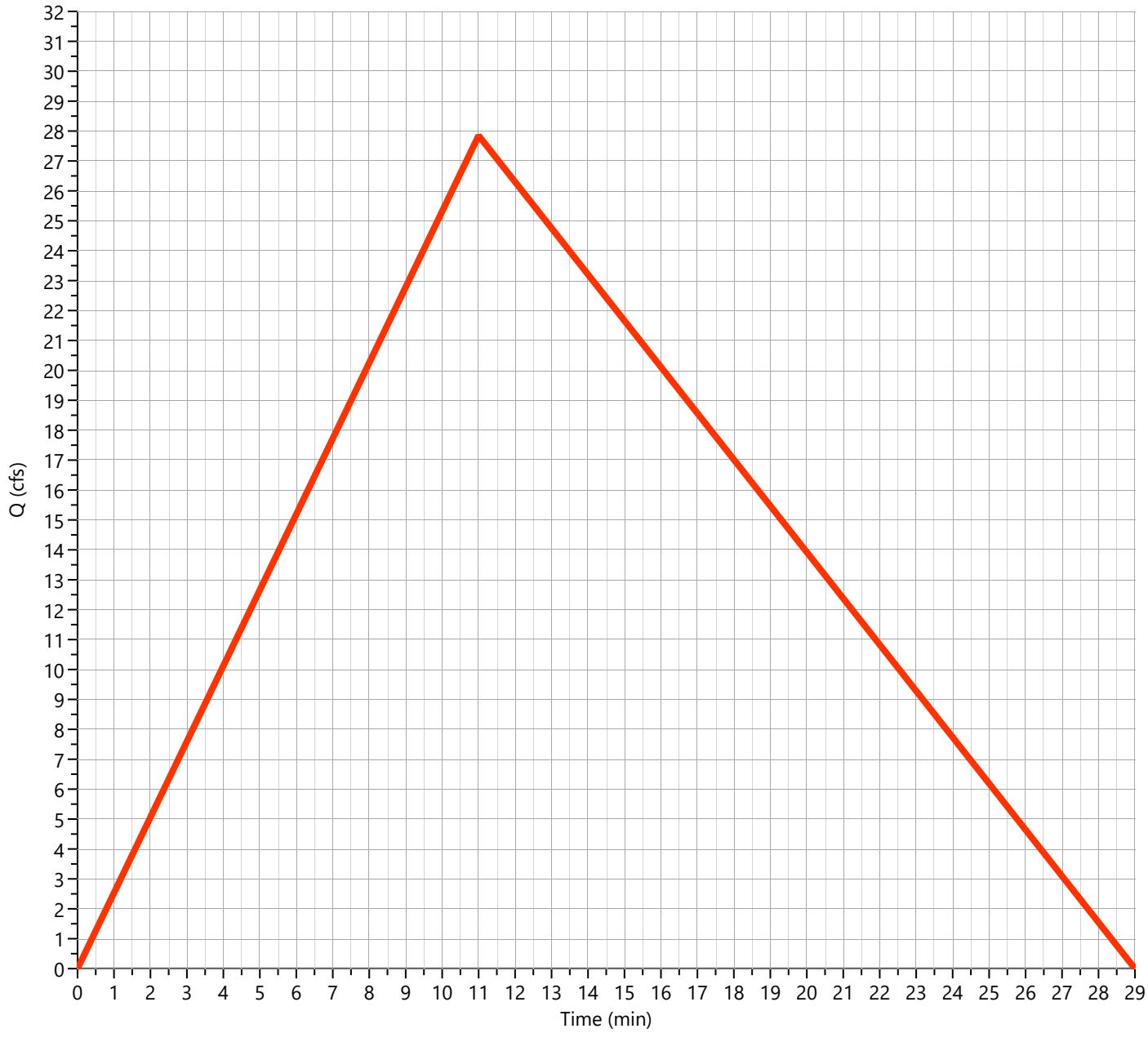
Hydrograph Type	= Rational	Peak Flow	= 40.48 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.30 hrs
Time Interval	= 1 min	Runoff Volume	= 58,368 cuft
Drainage Area	= 12.45 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.81 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "C"

Hyd. No. 11

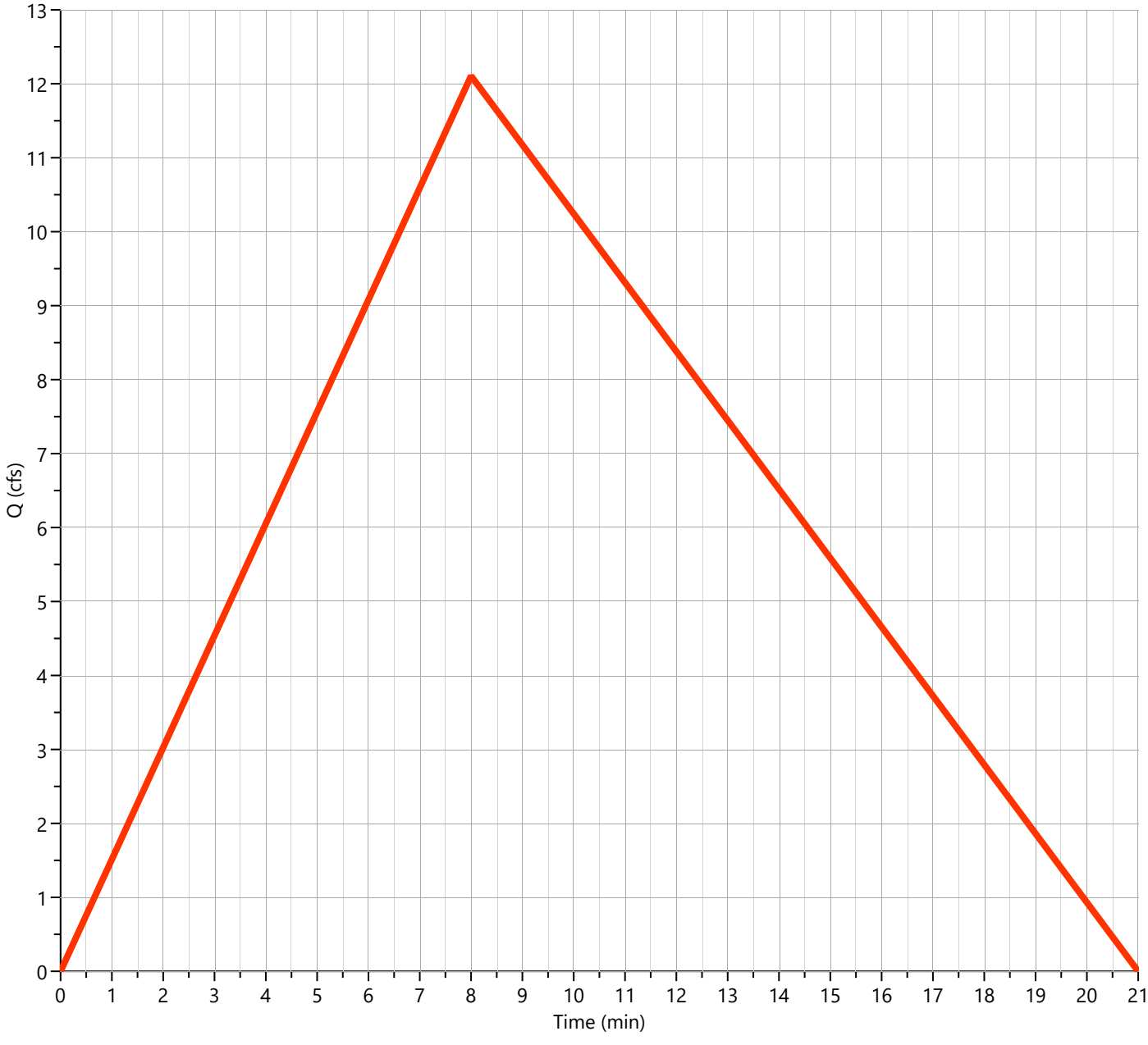
Hydrograph Type	= Rational	Peak Flow	= 27.85 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 24,537 cuft
Drainage Area	= 6.75 ac	Runoff Coeff.	= 0.57
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.24 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "D"

Hyd. No. 12

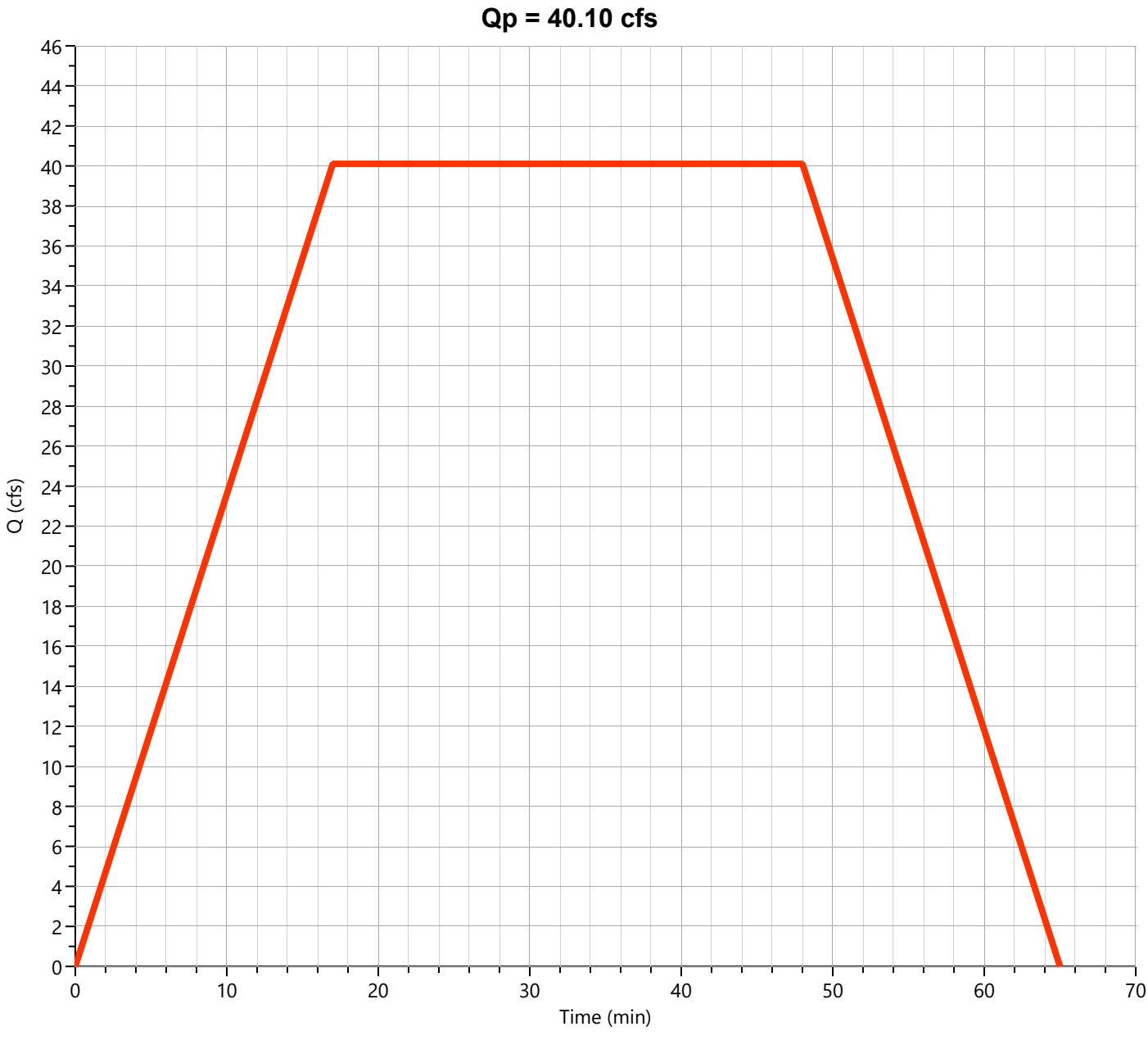
Hydrograph Type	= Rational	Peak Flow	= 12.11 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 7,757 cuft
Drainage Area	= 2.59 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.35 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "E-1"

Hyd. No. 13

Hydrograph Type	= Mod Rational	Peak Flow	= 40.10 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 115,494 cuft
Drainage Area	= 16.23 ac	Runoff Coeff.	= 0.66
Tc Method	= User	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.74 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 2.82 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft



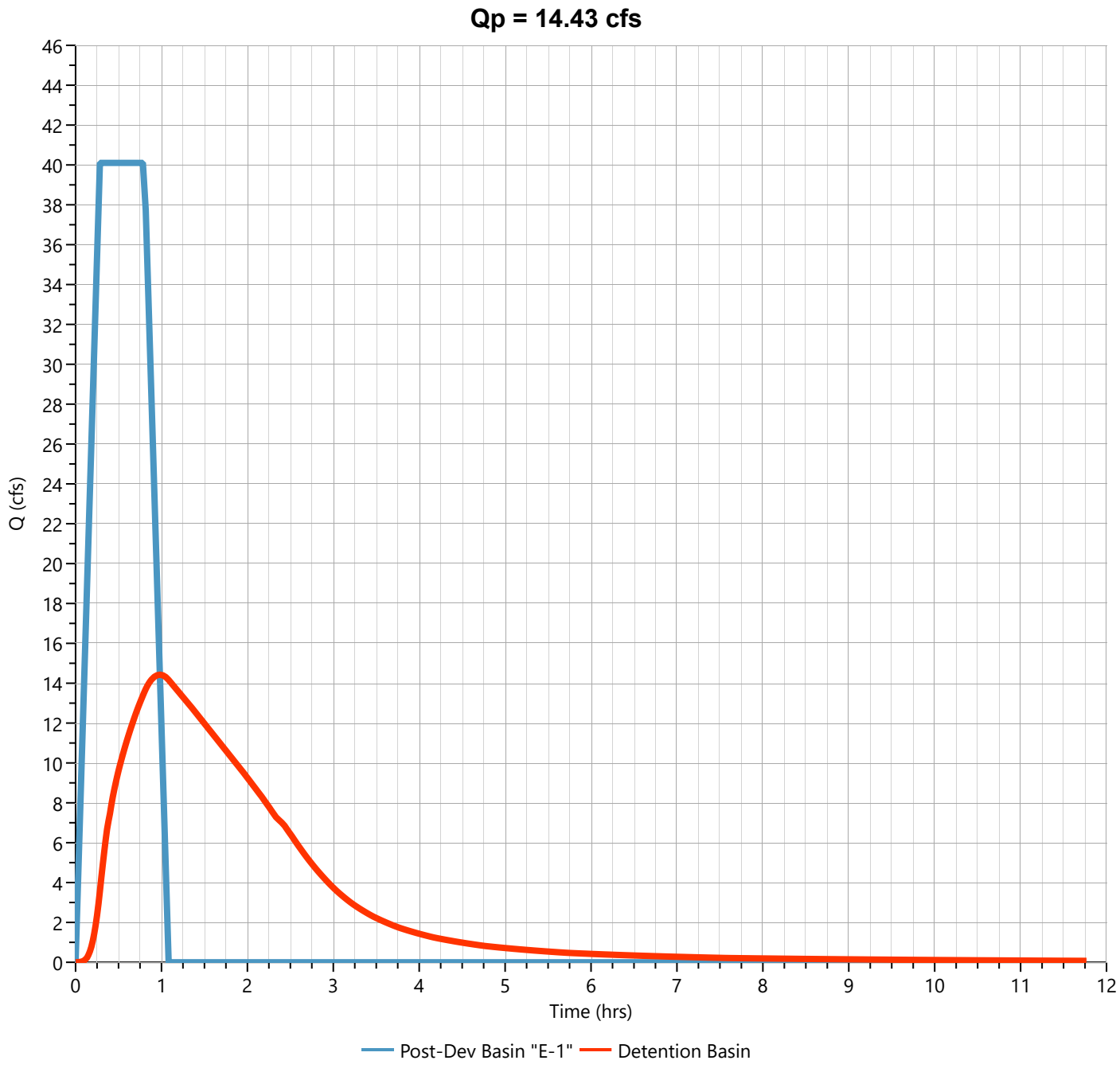
Detention Basin

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 14.43 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.98 hrs
Time Interval	= 1 min	Hydrograph Volume	= 115,403 cuft
Inflow Hydrograph	= 13 - Post-Dev Basin "E-1"	Max. Elevation	= 478.63 ft
Pond Name	= Hilltop Detention Pond	Max. Storage	= 84,597 cuft

Pond Routing by Storage Indication Method

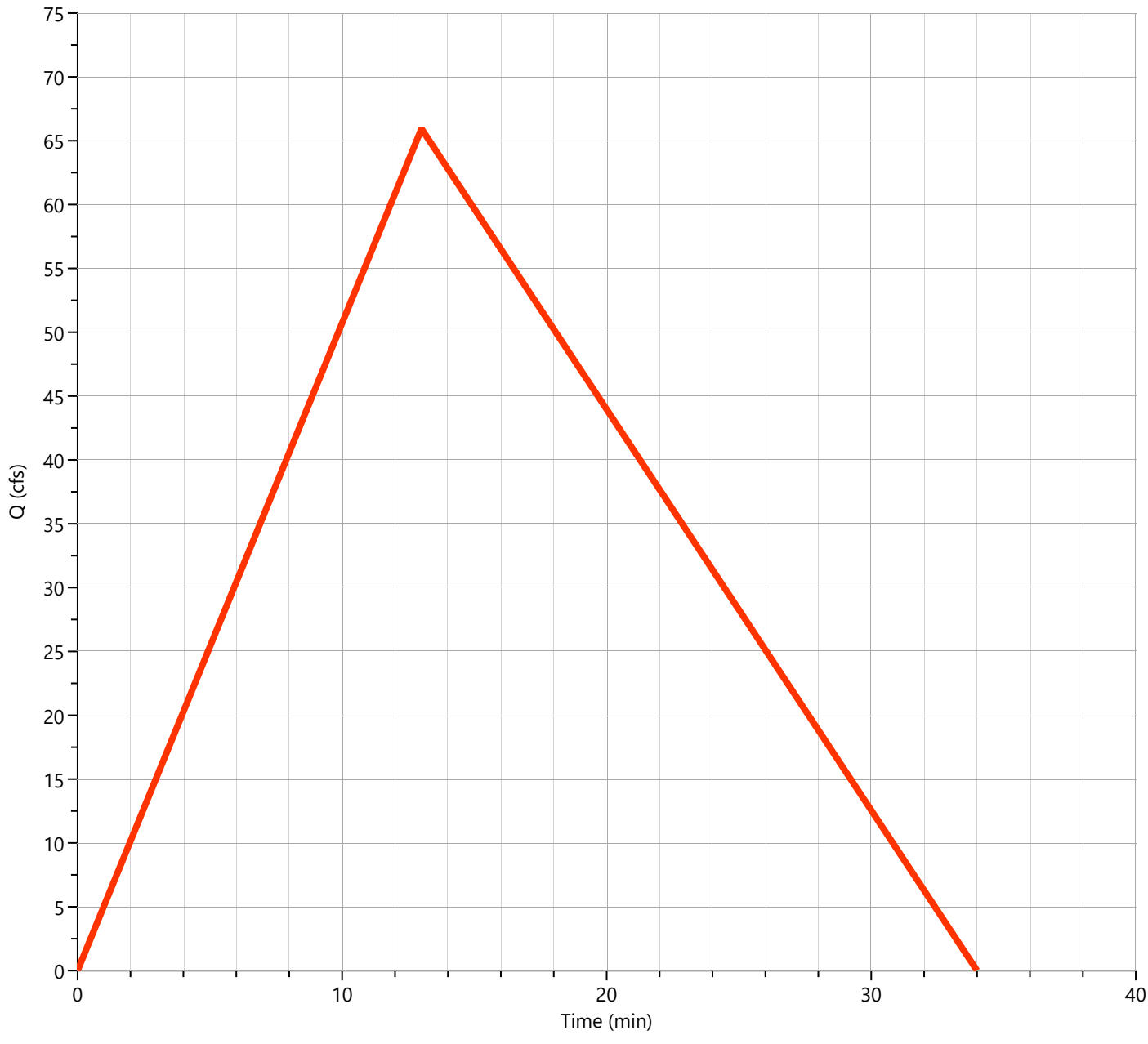
Center of mass detention time = 1.37 hrs



Post-Dev Basin "E-2"

Hyd. No. 15

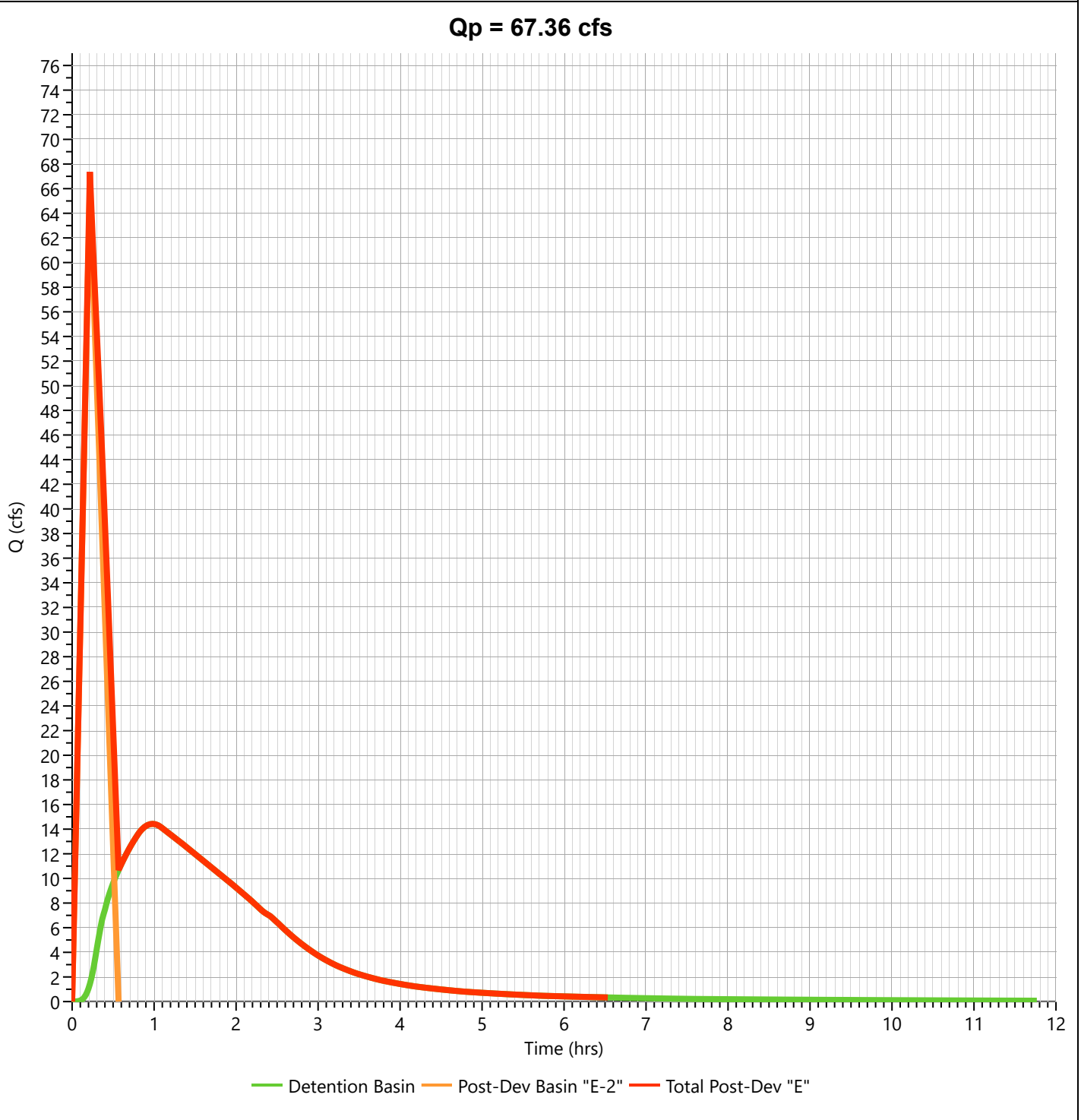
Hydrograph Type	= Rational	Peak Flow	= 65.94 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 68,659 cuft
Drainage Area	= 17.53 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.72 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Post-Dev "E"

Hyd. No. 16

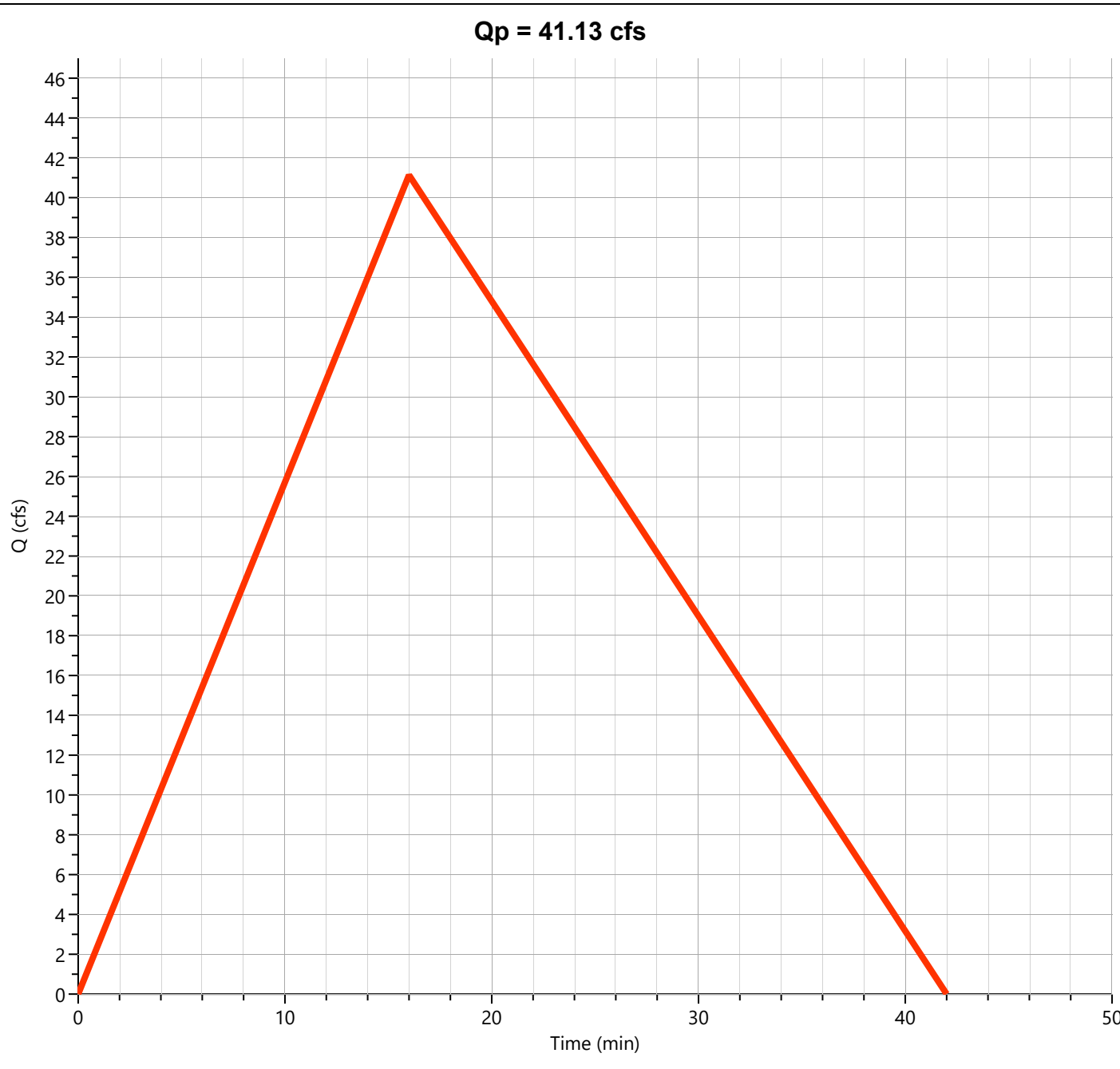
Hydrograph Type	= Junction	Peak Flow	= 67.36 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 182,657 cuft
Inflow Hydrographs	= 15	Total Contrib. Area	= 17.53 ac



Post-Dev Basin "F"

Hyd. No. 17

Hydrograph Type	= Rational	Peak Flow	= 41.13 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 52,714 cuft
Drainage Area	= 12.0 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.12 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Hydrograph 100-yr Summary

Hydrology Studio v 3.0.0.39

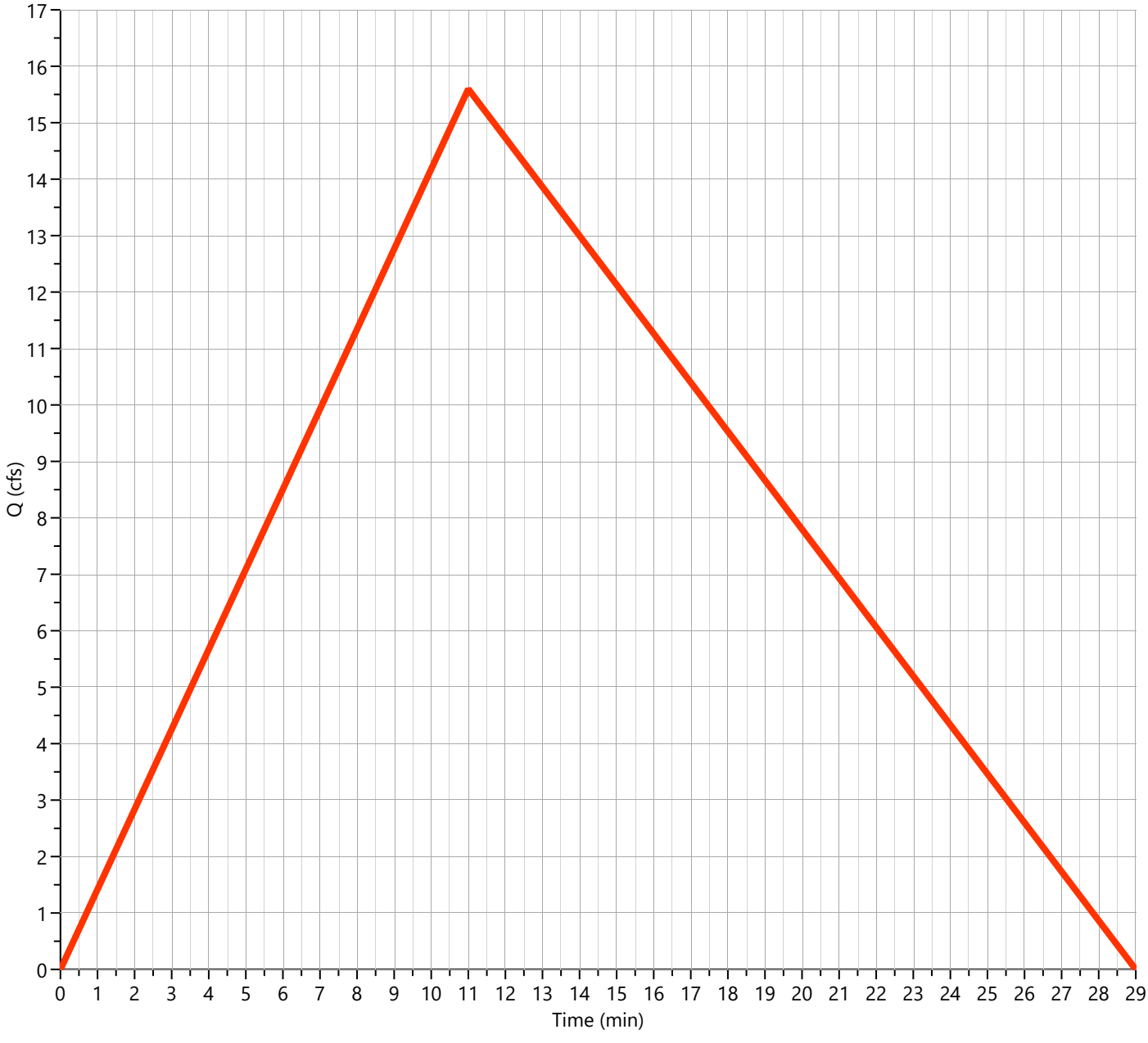
Project Name: Hilltop Subdivision
File: Detention Calculation 3-4-26.hys
03-04-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre-Dev Basin "A"	15.60	0.18	13,742	----		
2	Rational	Pre-Dev Basin "B"	52.42	0.25	62,983	----		
3	Rational	Pre-Dev Basin "C"	29.57	0.18	26,057	----		
4	Rational	Pre-Dev Basin "D"	13.38	0.13	8,572	----		
5	Rational	Pre-Dev Basin "E-1"	42.33	0.20	40,692	----		
6	Rational	Pre-Dev Basin "E-2"	71.90	0.22	74,872	----		
7	Junction	Total Pre Basin "E"	112.1	0.22	113,981	5, 6		
8	Rational	Pre-Dev Basin "F"	45.20	0.28	61,545	----		
9	Rational	Post-Dev Basin A	16.43	0.23	18,430	----		
10	Rational	Post-Dev Basin B	43.93	0.30	63,344	----		
11	Rational	Post-Dev Basin "C"	30.24	0.18	26,649	----		
12	Rational	Post-Dev Basin "D"	13.15	0.13	8,429	----		
13	Mod Rational	Post-Dev Basin "E-1"	43.46	0.28	125,154	----		
14	Pond Route	Detention Basin	15.18	0.98	125,061	13	478.93	92,311
15	Rational	Post-Dev Basin "E-2"	71.59	0.22	74,550	----		
16	Junction	Total Post-Dev "E"	73.24	0.22	198,086	14, 15		
17	Rational	Post-Dev Basin "F"	44.65	0.27	57,218	----		

Pre-Dev Basin "A"

Hyd. No. 1

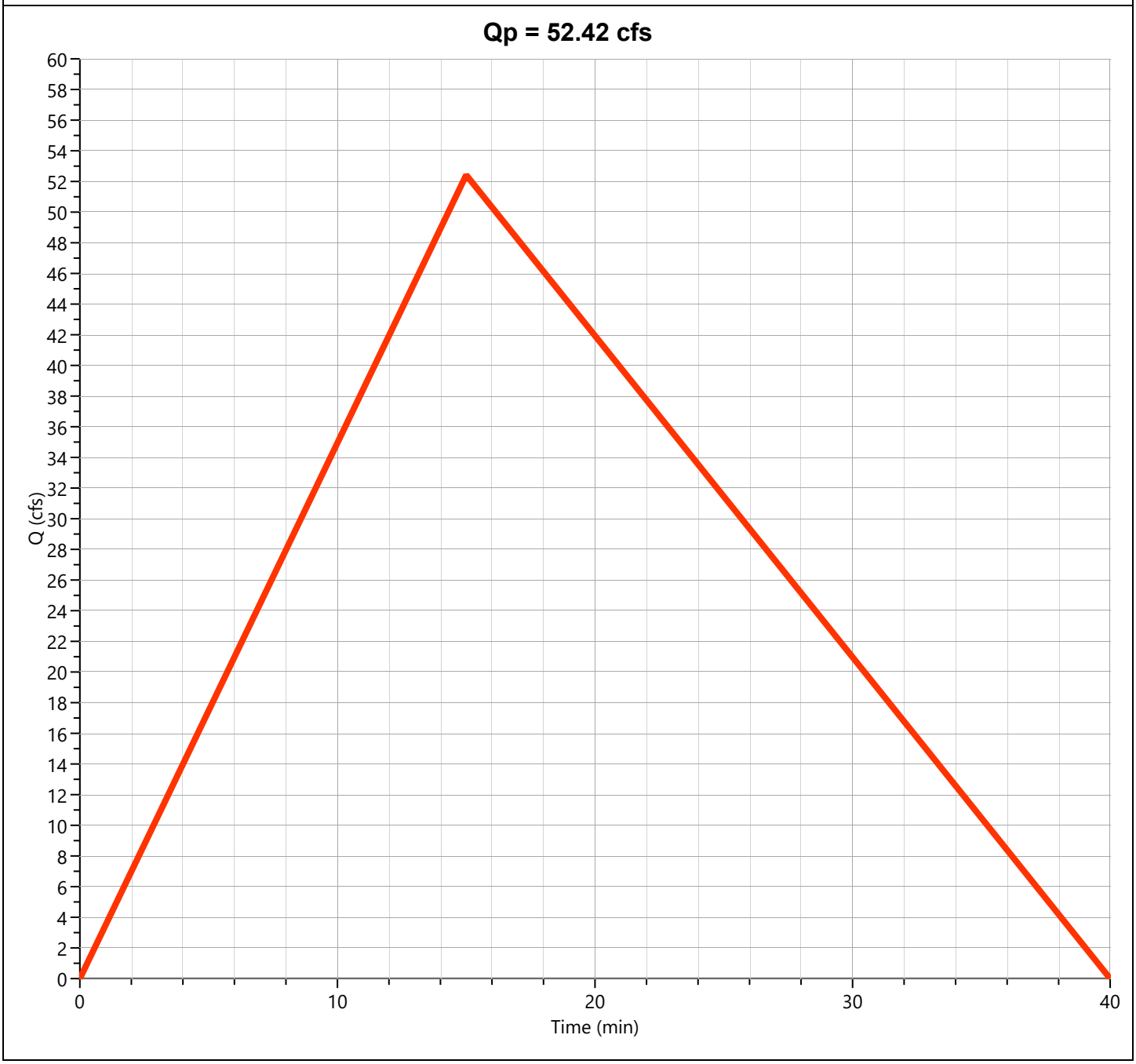
Hydrograph Type	= Rational	Peak Flow	= 15.60 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 13,742 cuft
Drainage Area	= 3.2 ac	Runoff Coeff.	= 0.62
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.86 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "B"

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 52.42 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.25 hrs
Time Interval	= 1 min	Runoff Volume	= 62,983 cuft
Drainage Area	= 14.74 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 15.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.84 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "C"

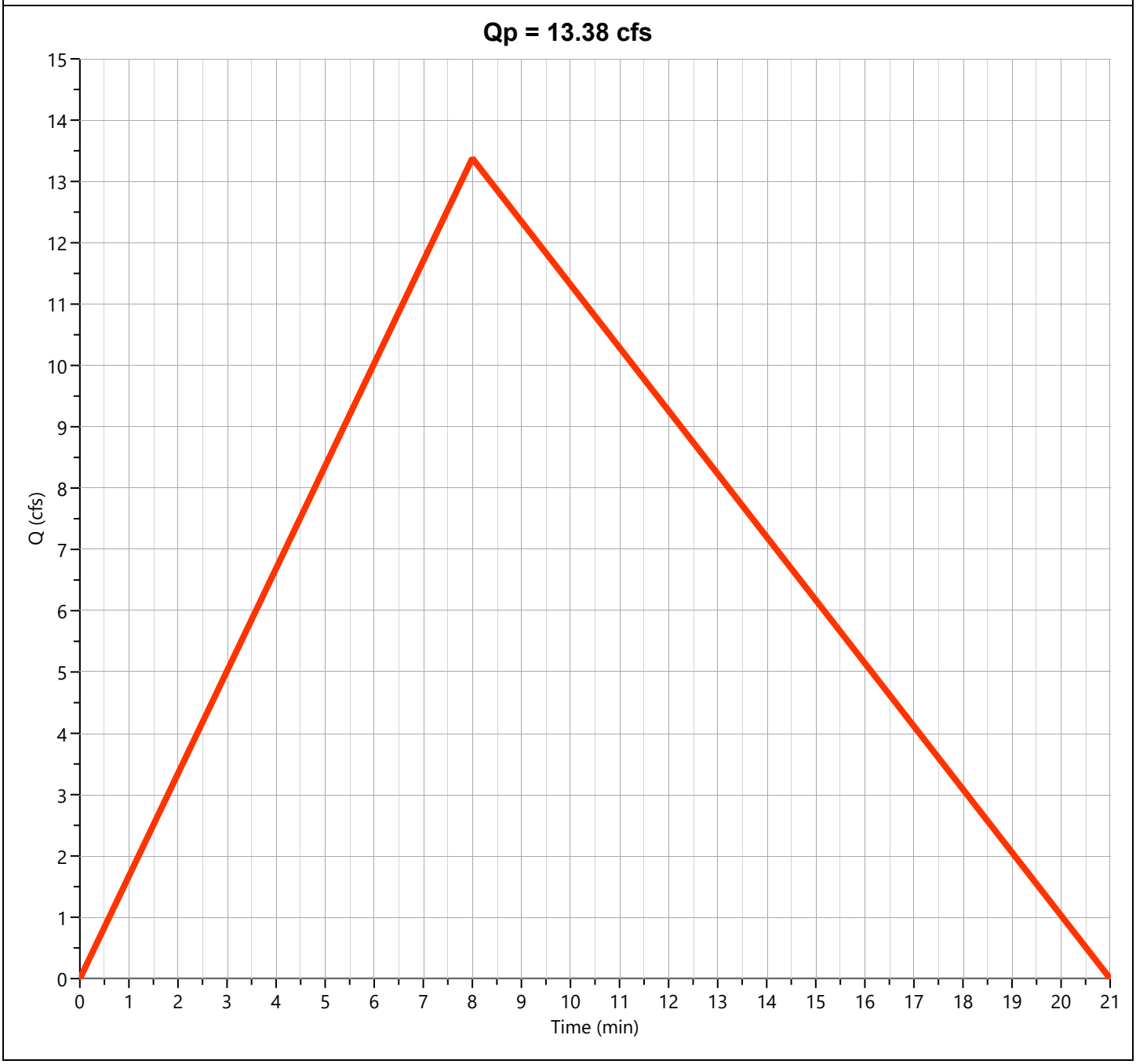
Hyd. No. 3

Hydrograph Type	= Rational	Peak Flow	= 29.57 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 26,057 cuft
Drainage Area	= 6.84 ac	Runoff Coeff.	= 0.55
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.86 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67

Pre-Dev Basin "D"

Hyd. No. 4

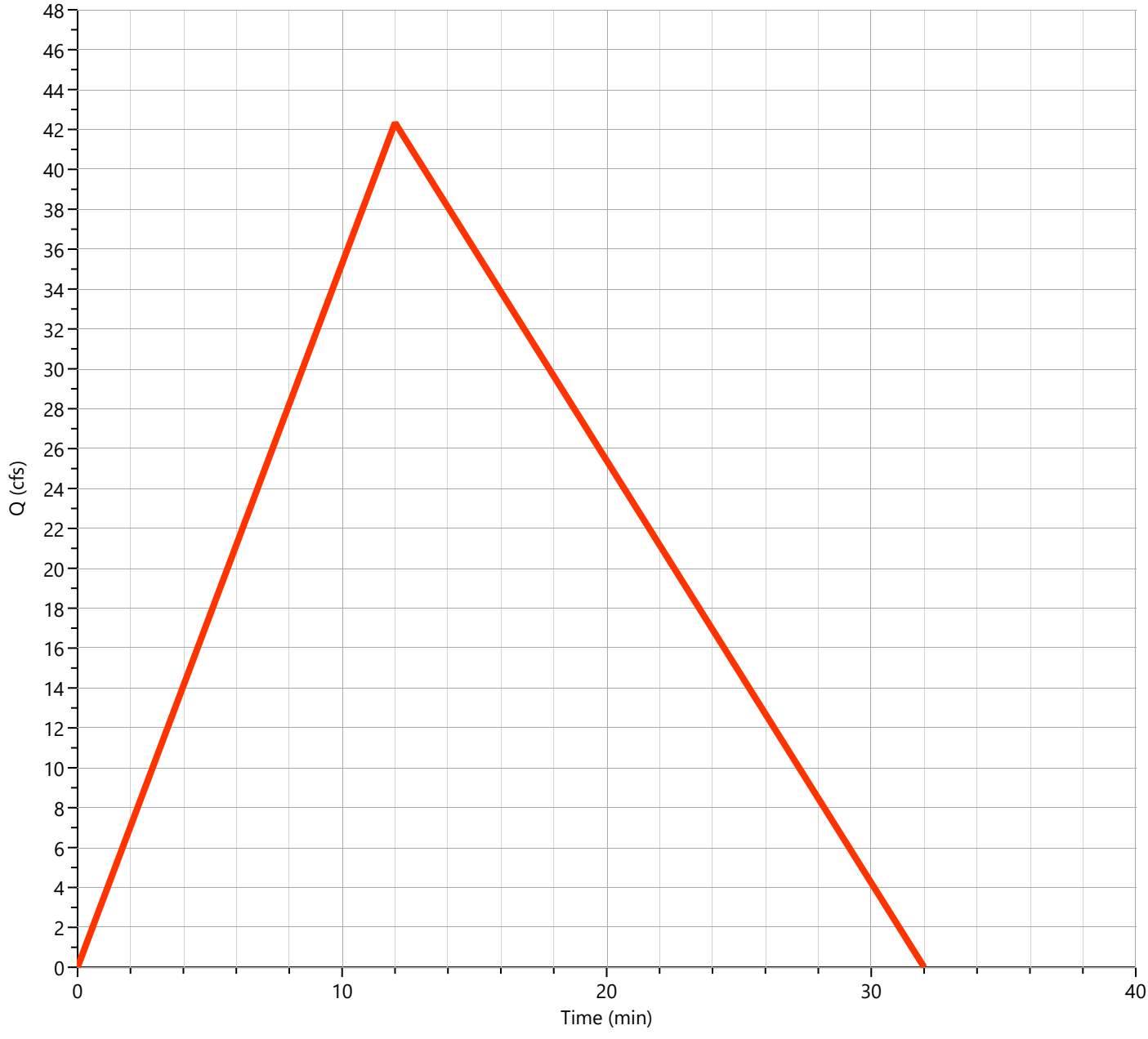
Hydrograph Type	= Rational	Peak Flow	= 13.38 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 8,572 cuft
Drainage Area	= 2.95 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 9.07 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E-1"

Hyd. No. 5

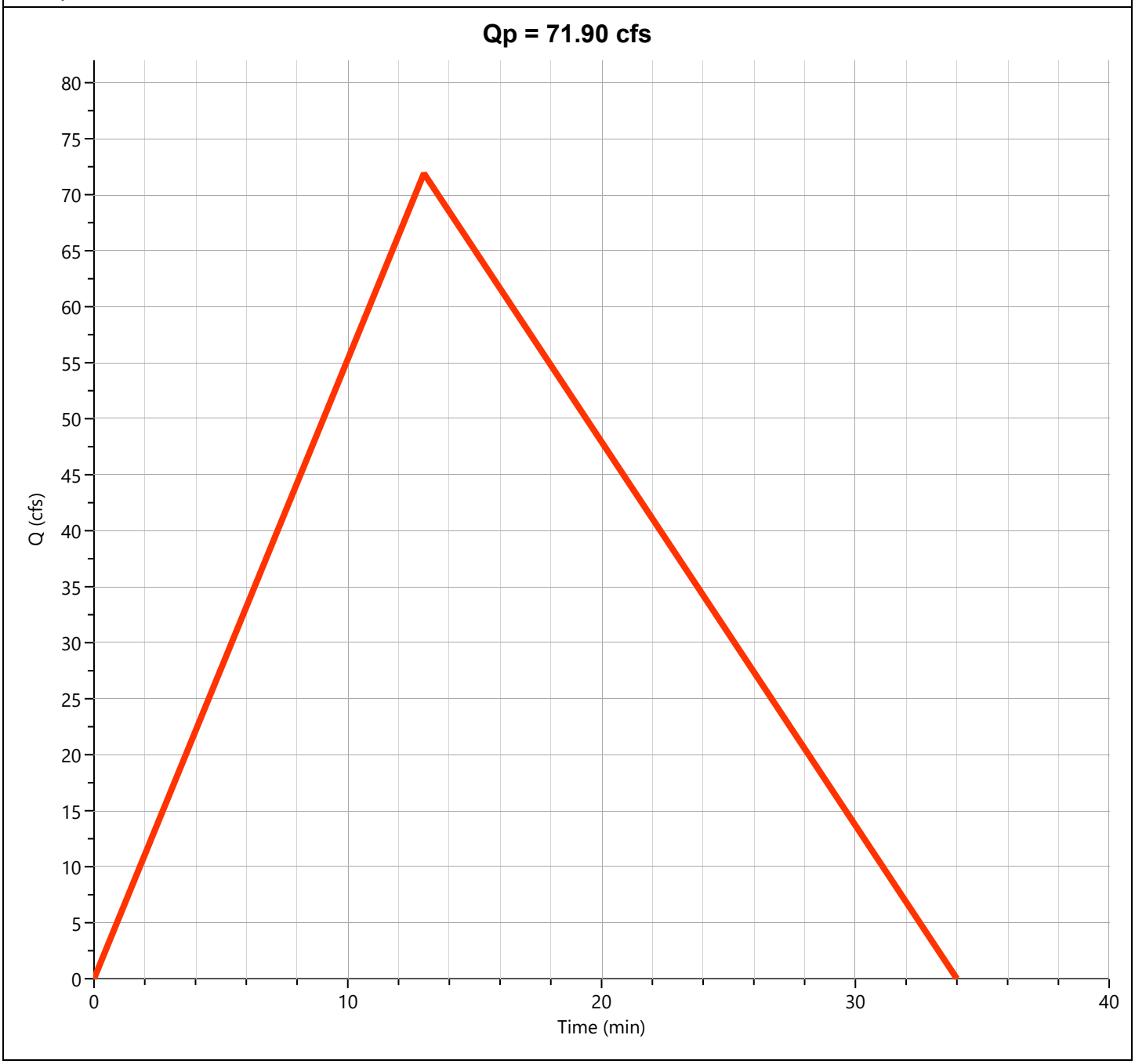
Hydrograph Type	= Rational	Peak Flow	= 42.33 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 40,692 cuft
Drainage Area	= 11.2 ac	Runoff Coeff.	= 0.50
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.56 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E-2"

Hyd. No. 6

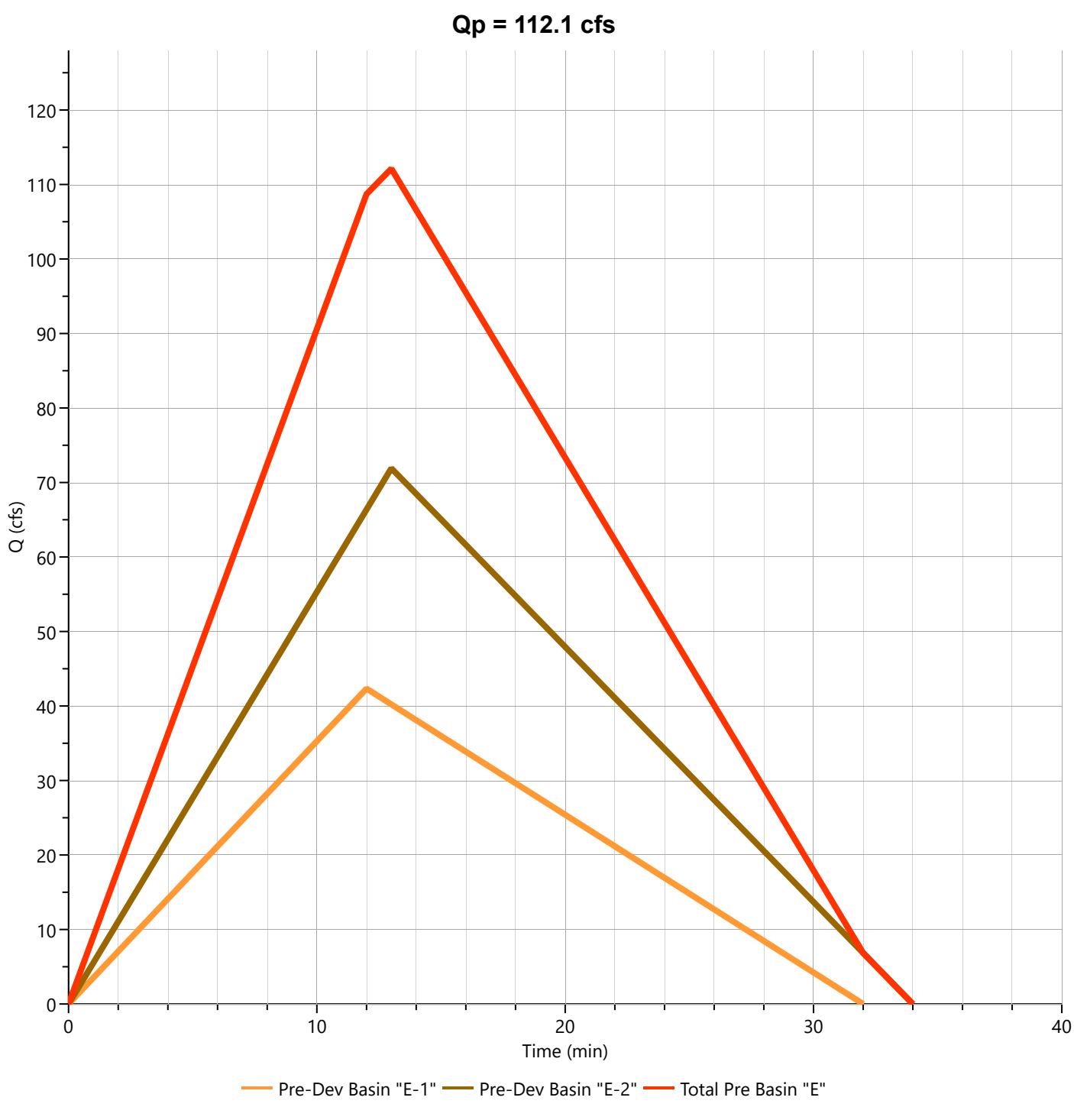
Hydrograph Type	= Rational	Peak Flow	= 71.90 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 74,872 cuft
Drainage Area	= 18.96 ac	Runoff Coeff.	= 0.52
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.29 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Pre Basin "E"

Hyd. No. 7

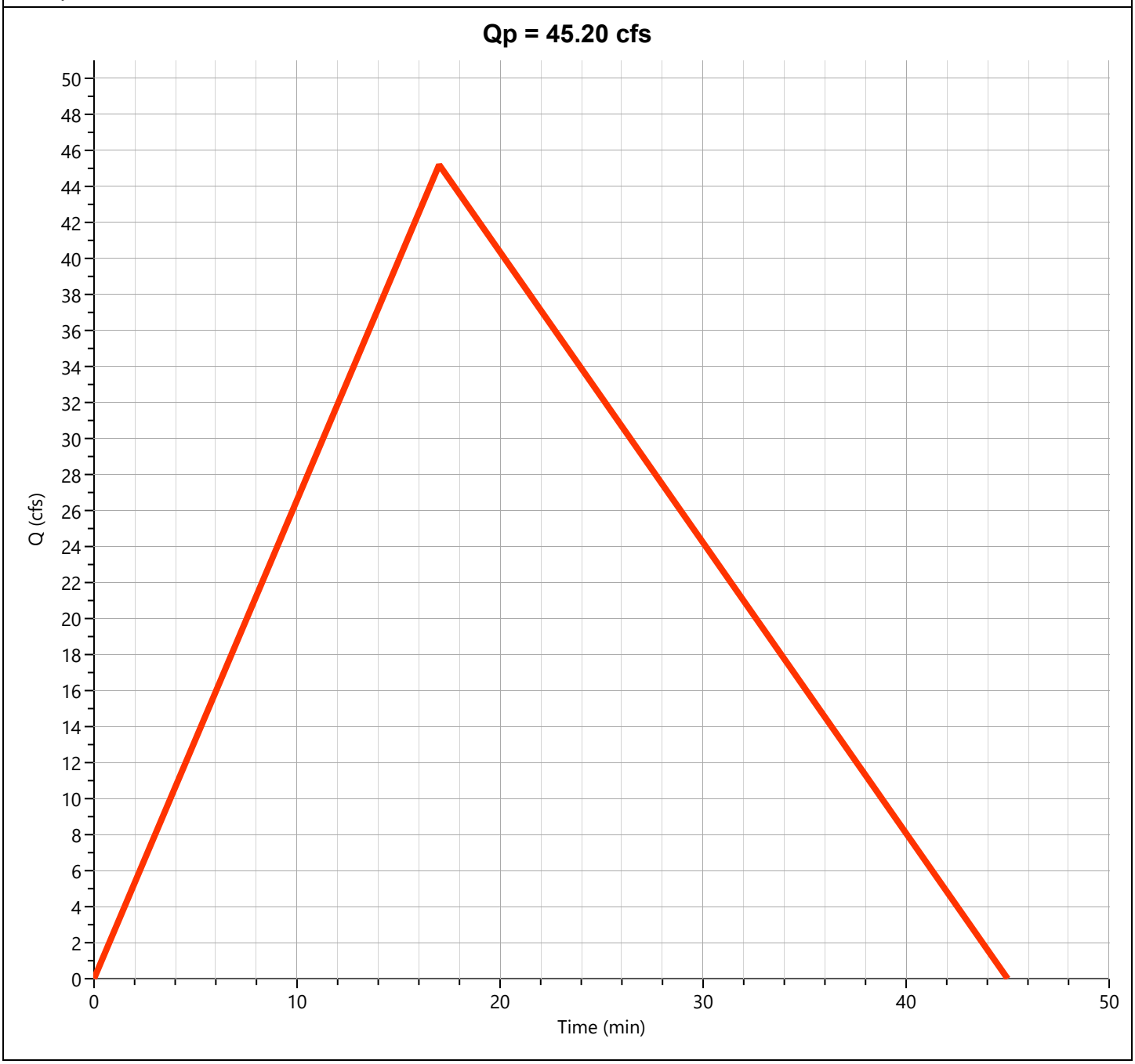
Hydrograph Type	= Junction	Peak Flow	= 112.1 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 113,981 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 30.16 ac



Pre-Dev Basin "F"

Hyd. No. 8

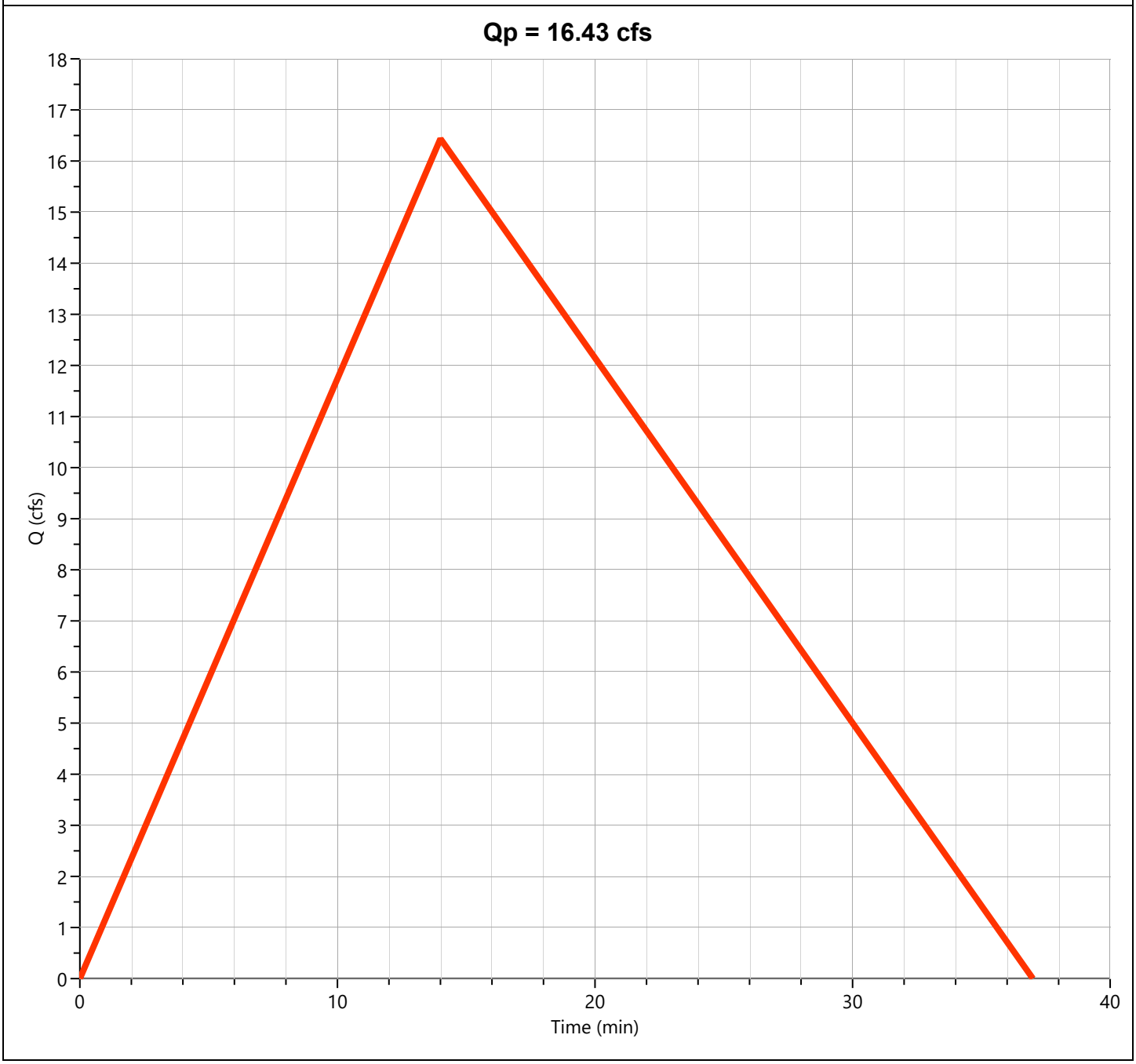
Hydrograph Type	= Rational	Peak Flow	= 45.20 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 61,545 cuft
Drainage Area	= 13.19 ac	Runoff Coeff.	= 0.53
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.47 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin A

Hyd. No. 9

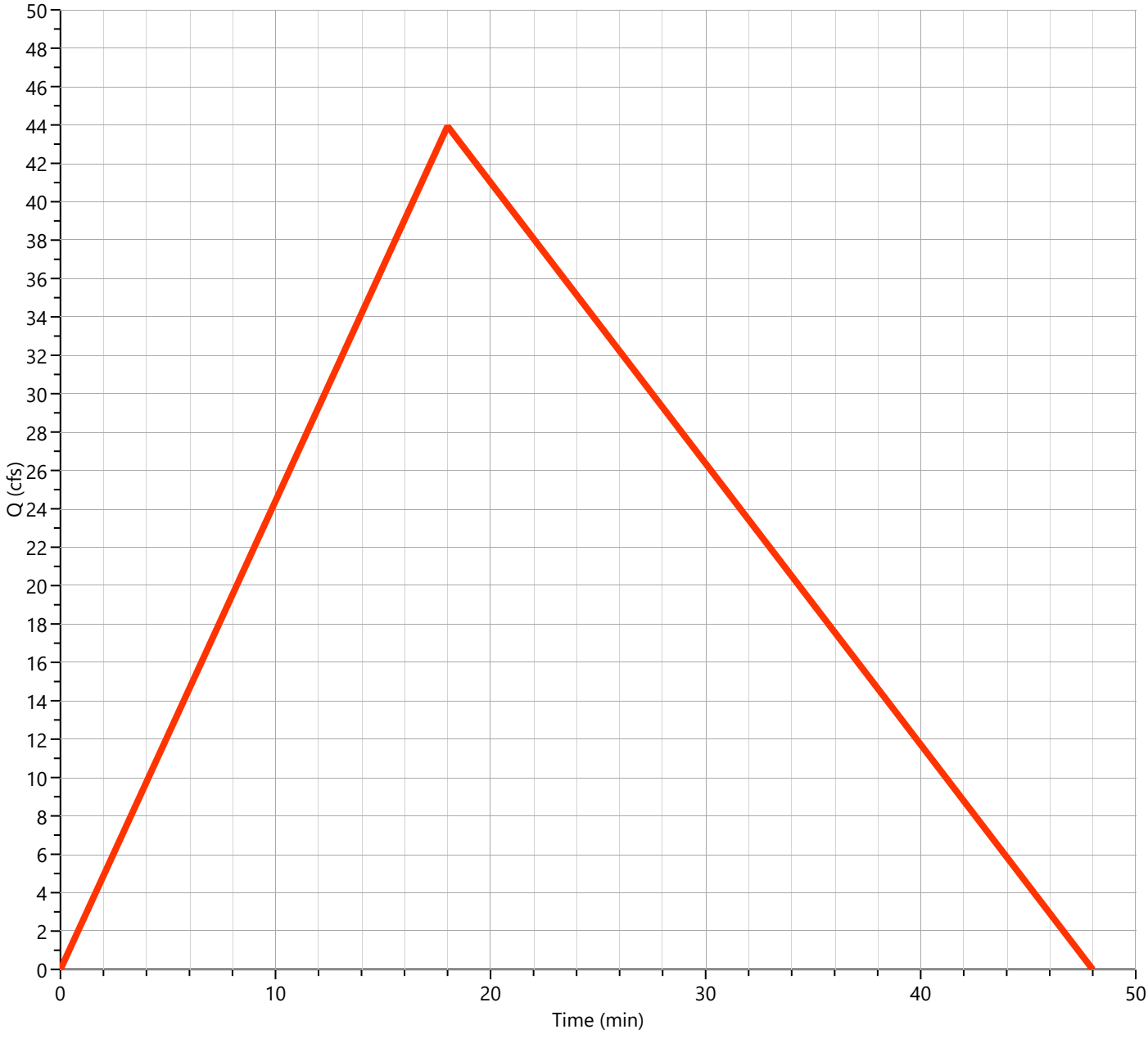
Hydrograph Type	= Rational	Peak Flow	= 16.43 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.23 hrs
Time Interval	= 1 min	Runoff Volume	= 18,430 cuft
Drainage Area	= 3.53 ac	Runoff Coeff.	= 0.66
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 14.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.05 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin B

Hyd. No. 10

Hydrograph Type	= Rational	Peak Flow	= 43.93 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.30 hrs
Time Interval	= 1 min	Runoff Volume	= 63,344 cuft
Drainage Area	= 12.45 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "C"

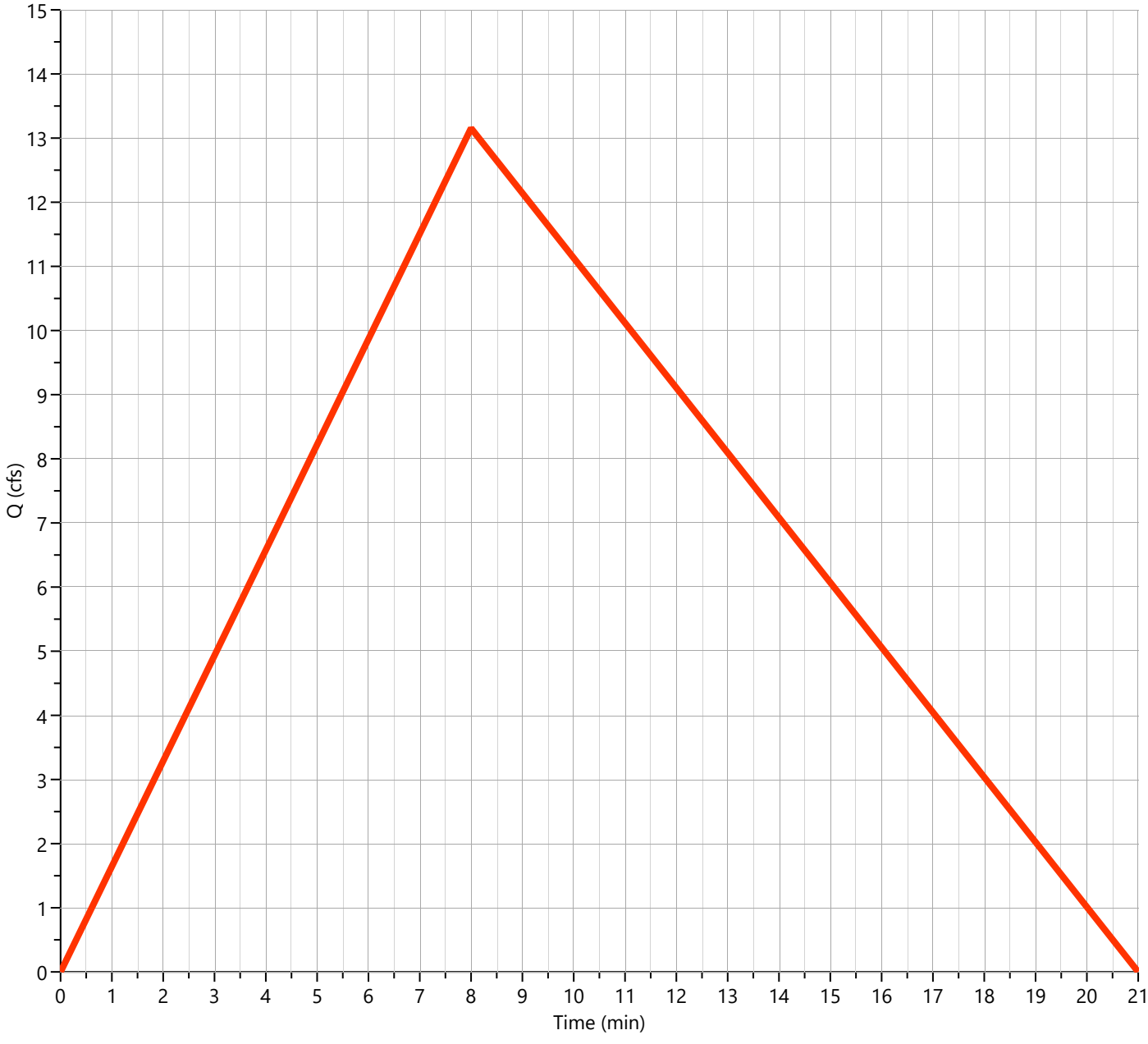
Hyd. No. 11

Hydrograph Type	= Rational	Peak Flow	= 30.24 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Runoff Volume	= 26,649 cuft
Drainage Area	= 6.75 ac	Runoff Coeff.	= 0.57
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.86 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67

Post-Dev Basin "D"

Hyd. No. 12

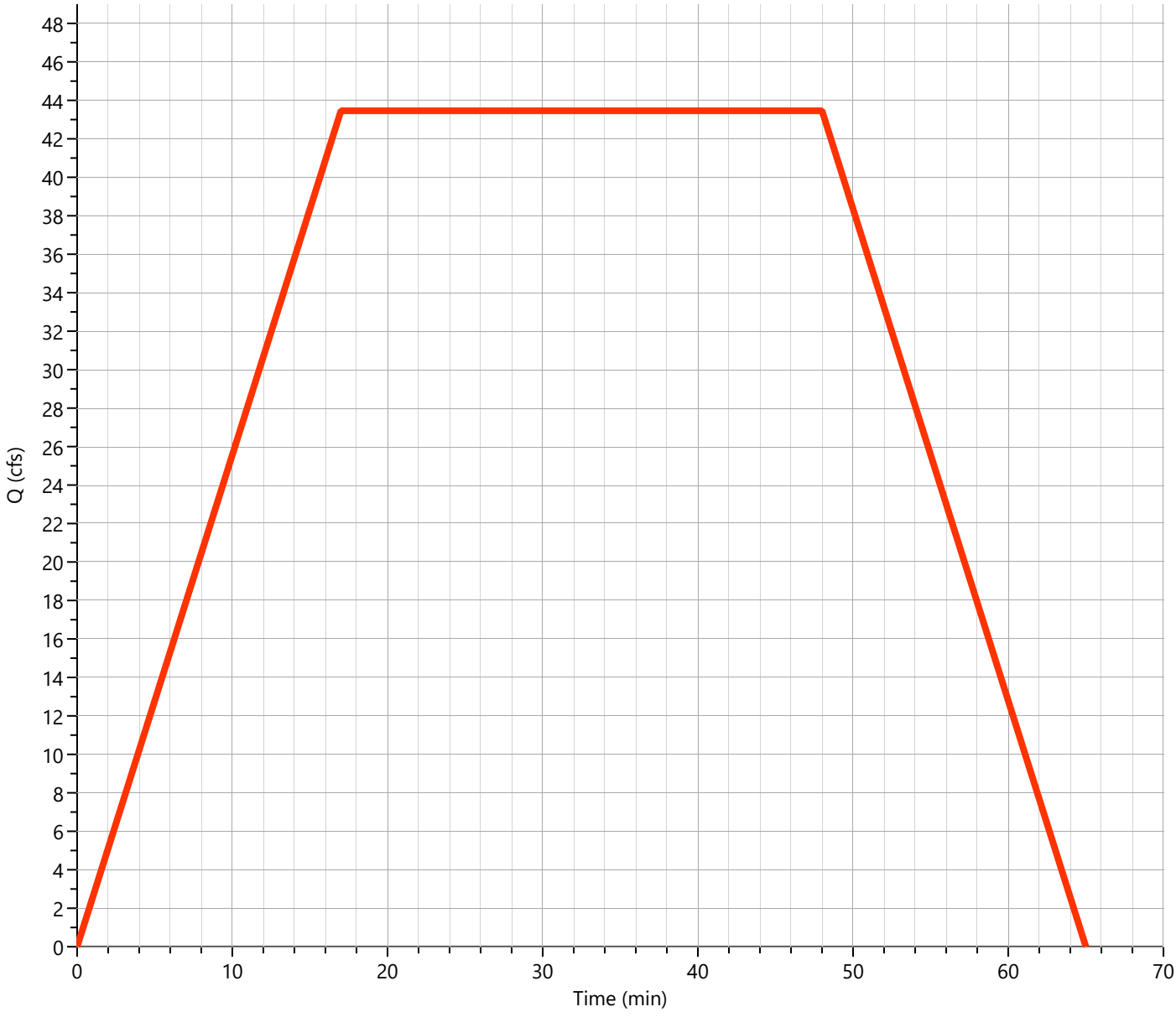
Hydrograph Type	= Rational	Peak Flow	= 13.15 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.13 hrs
Time Interval	= 1 min	Runoff Volume	= 8,429 cuft
Drainage Area	= 2.59 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 8.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 9.07 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "E-1"

Hyd. No. 13

Hydrograph Type	= Mod Rational	Peak Flow	= 43.46 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.28 hrs
Time Interval	= 1 min	Runoff Volume	= 125,154 cuft
Drainage Area	= 16.23 ac	Runoff Coeff.	= 0.66
Tc Method	= User	Time of Conc. (Tc)	= 17.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.06 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 2.82 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft



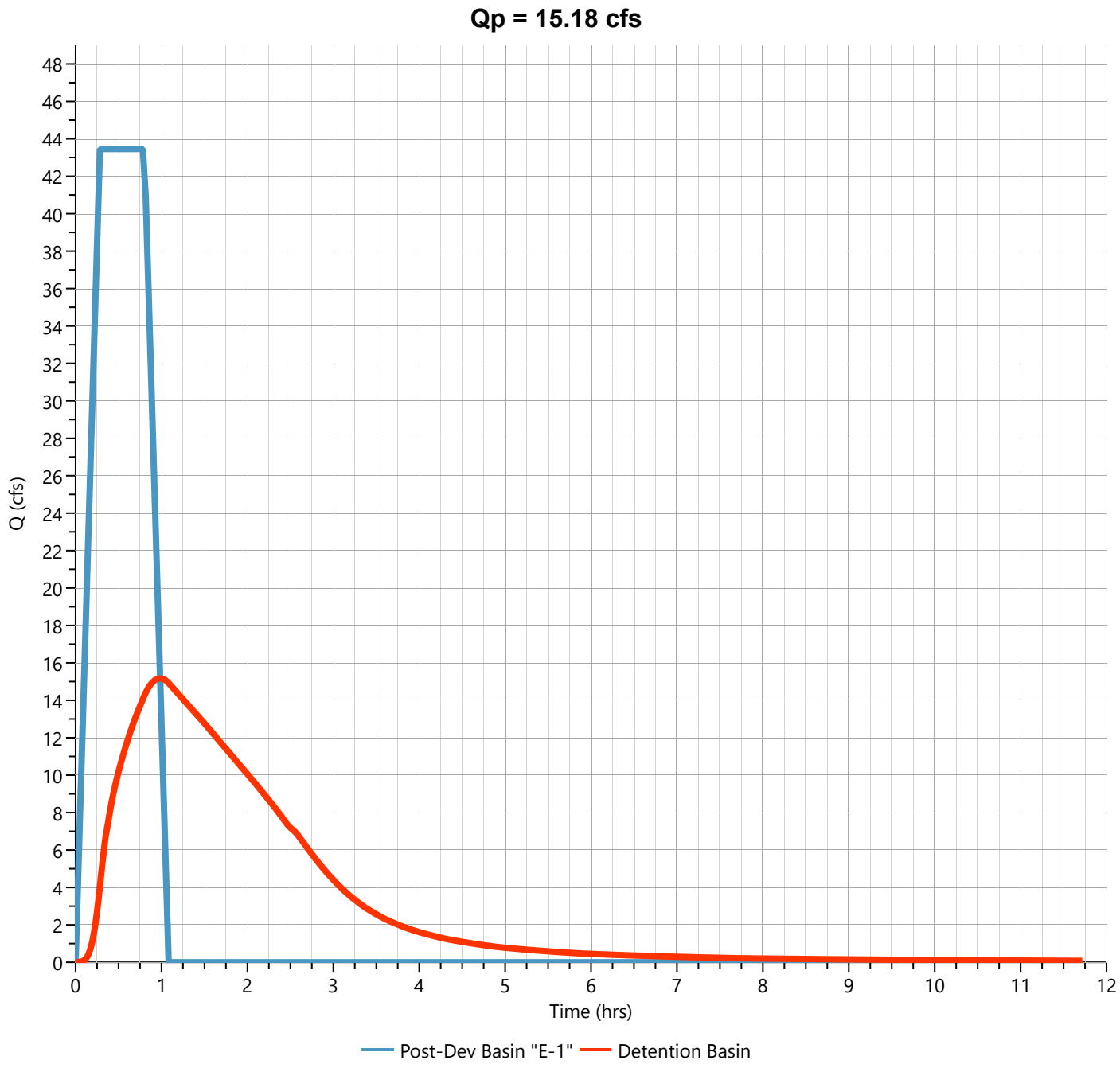
Detention Basin

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 15.18 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.98 hrs
Time Interval	= 1 min	Hydrograph Volume	= 125,061 cuft
Inflow Hydrograph	= 13 - Post-Dev Basin "E-1"	Max. Elevation	= 478.93 ft
Pond Name	= Hilltop Detention Pond	Max. Storage	= 92,311 cuft

Pond Routing by Storage Indication Method

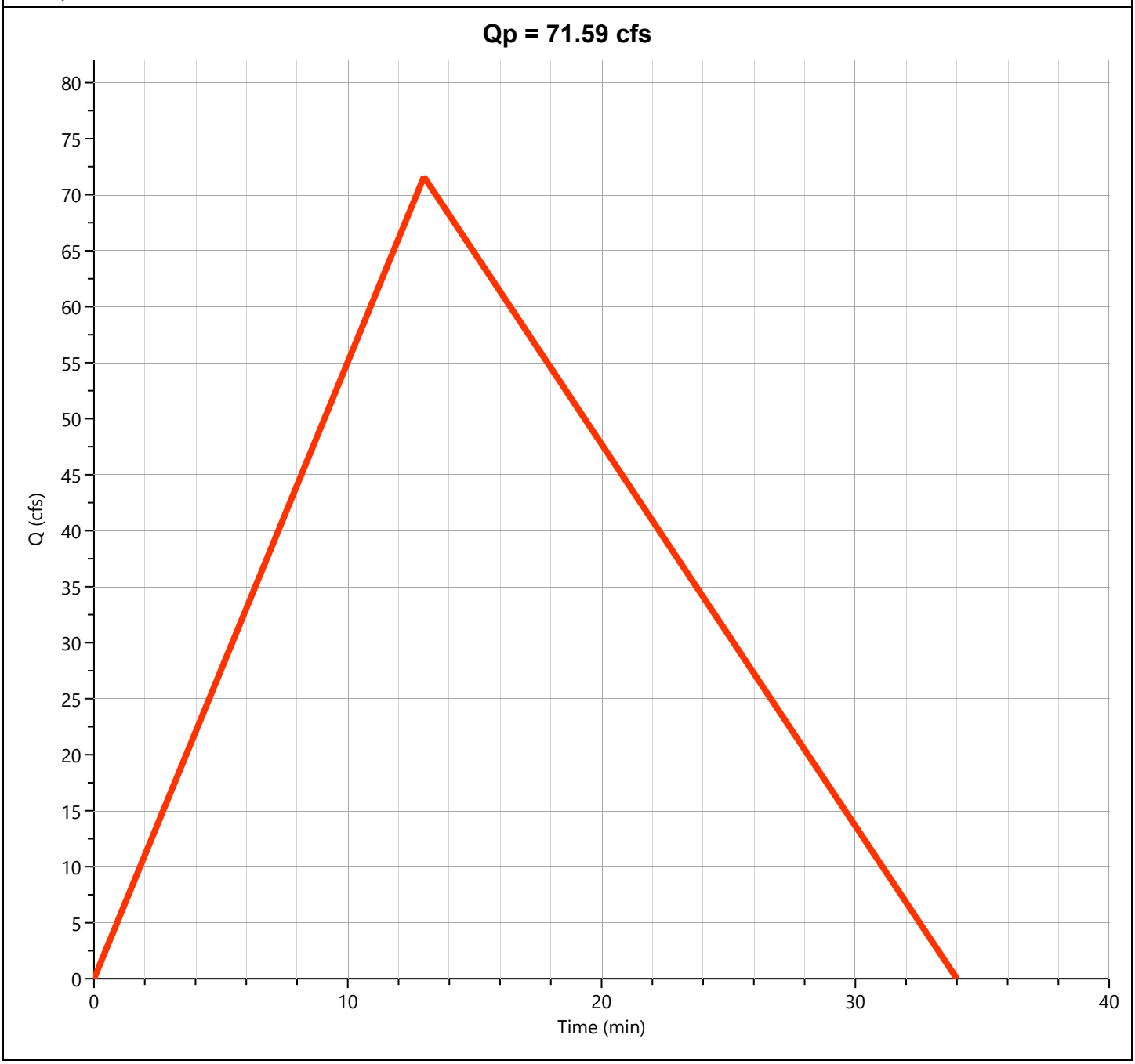
Center of mass detention time = 1.39 hrs



Post-Dev Basin "E-2"

Hyd. No. 15

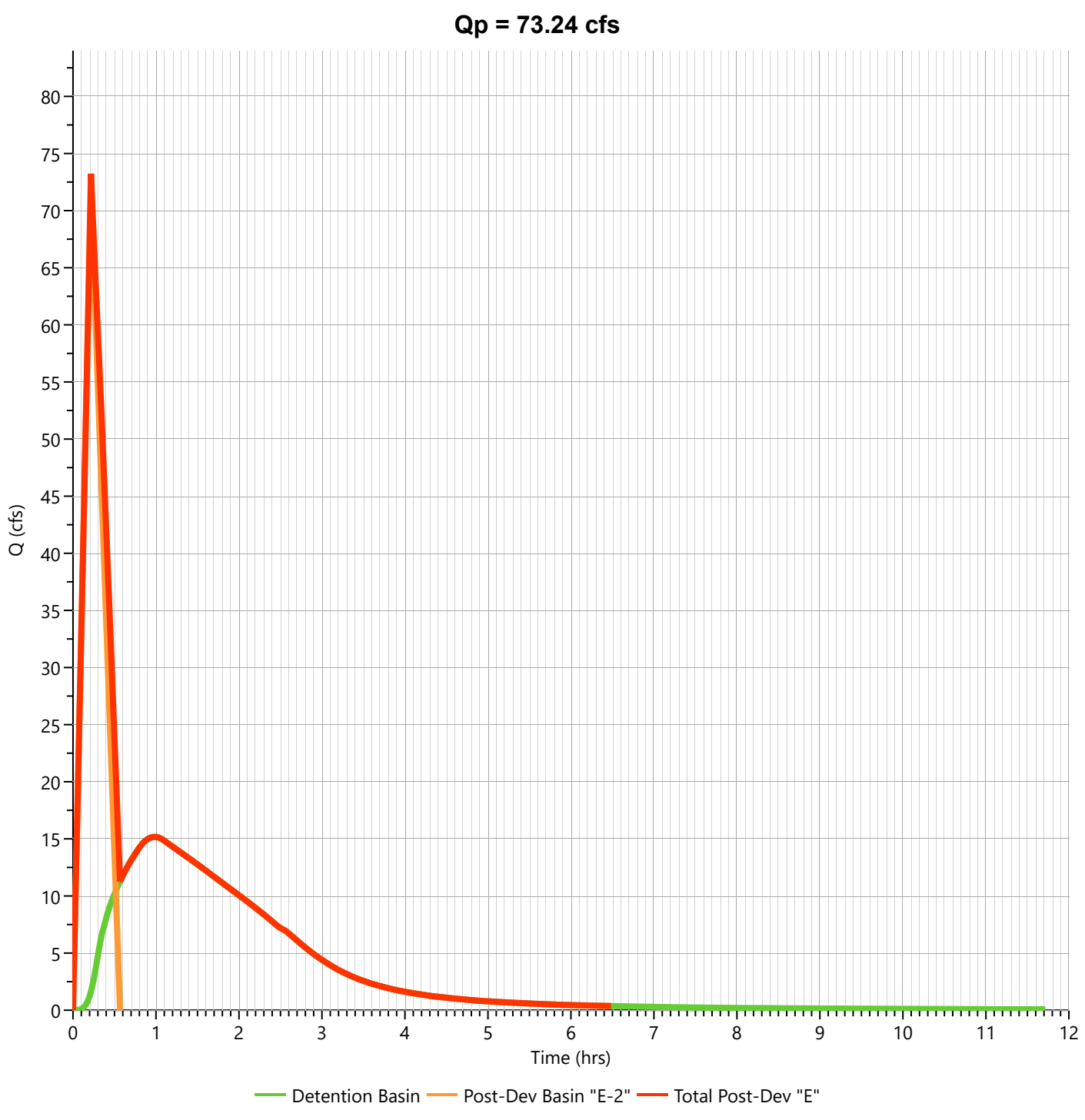
Hydrograph Type	= Rational	Peak Flow	= 71.59 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 74,550 cuft
Drainage Area	= 17.53 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.29 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Post-Dev "E"

Hyd. No. 16

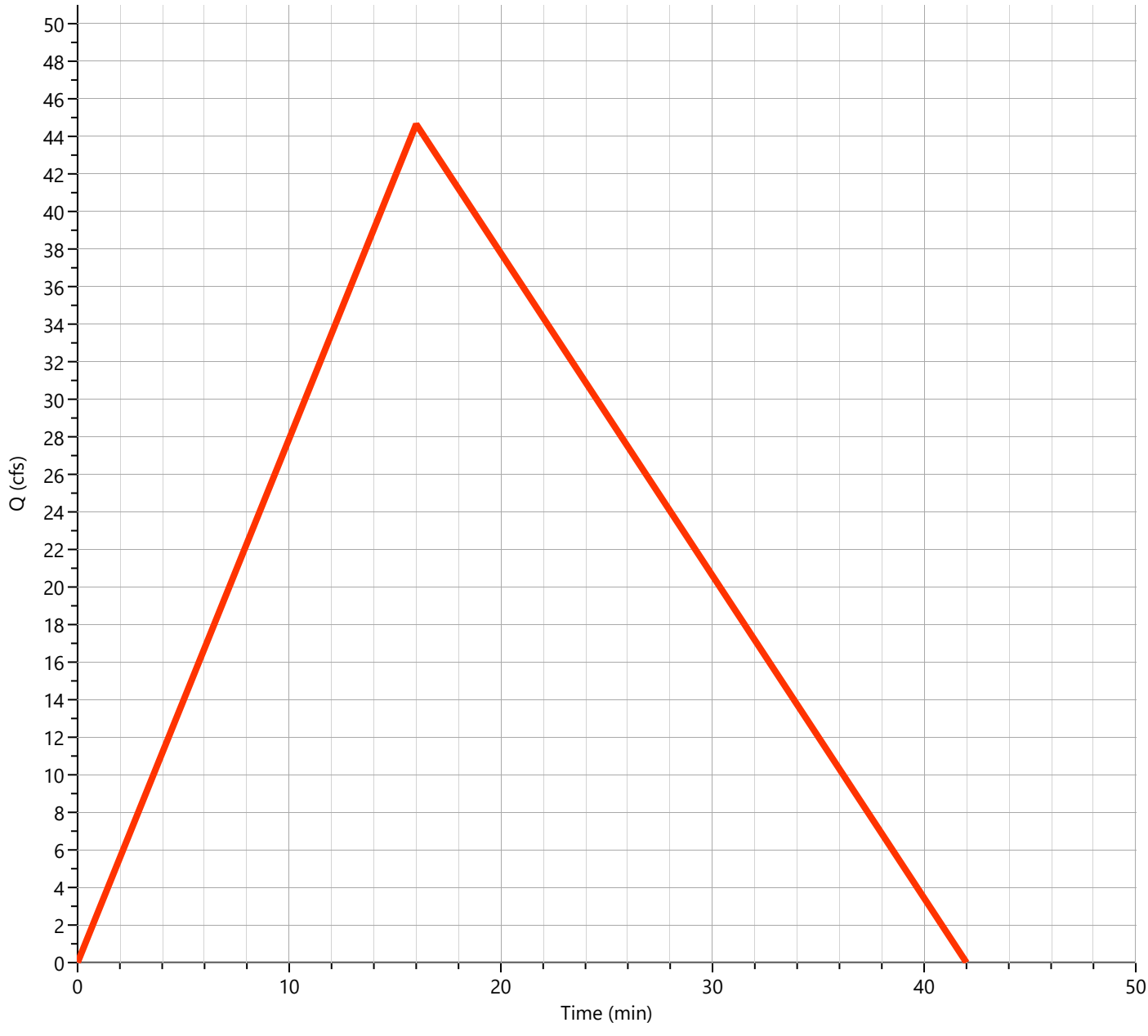
Hydrograph Type	= Junction	Peak Flow	= 73.24 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 198,086 cuft
Inflow Hydrographs	= 15	Total Contrib. Area	= 17.53 ac



Post-Dev Basin "F"

Hyd. No. 17

Hydrograph Type	= Rational	Peak Flow	= 44.65 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 57,218 cuft
Drainage Area	= 12.0 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.64 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



DEVELOPMENT REVIEW COMMITTEE
STAFF COMMENTS
04/15/2026

1. **Zyair Estates Subdivision - Hilltop Road-** Preliminary Plat - (Formerly named Hilltop Manor)

Utilities

1. 2026/04/16 - The sanitary sewer shown on drawing 14 between Manhole SSMH-9 and SSMH-12 is greater than 10-feet deep in places. Re-route this line so that it is not between houses. Due to the lot sizes there will not be enough room to maintain or repair this line. Please refer to revised drawings.
2. The 12 inch water main being relocated requires a 15 foot un-obstructed easement per section 1100-4 -1.11 of Bryant minimum specifications. Please refer to the dedicated easement on the revised drawings.
3. Discuss north end of 12" relocation and Salem water Users water line. Valves to be field located and shown on plans. Contractor to coordinate with Salem Water Users prior to construction.
4. At station 0+00 Discuss replacing the 90 with a Tee and valve for future relocation. Please refer to revised utility drawings.
5. Any gravity sewer constructed outside the street right of way requires a minimum 20 foot easement up to 10 feet deep per section 1200-7 -1.08 parts 1,2,3,4,5. Agreed. Please refer to revised utility drawings and routing.
6. Sewer main should be no more than 5% slope. Sewer mains that require more than 5% slope should be an outside drop into the man hole. Requesting discussion on this item as the design currently meets ten states standards.
7. Sanitary sewer shall not run between homes. Please refer to revised drawings.

Streets

a. 2026/04/16 - Add MUTCD signs east of the entrance to the site at the required distances. Requesting details for this item.

Engineering

1. General Comments
2. Drawings 3 thru 7 of 24 - Road Plan & Profiles

i. 2026/04/16 Flared end section detail needed. This will be per Scurlock or Hanson Products. We will request from precast manufacturer.

3. Drawing 8 of 24 - Hilltop Road Widening (check spelling) Plan & Profile
   ~~a.~~ 2026/04/16 - Show Storm pipe along Hilltop in the profile. Please refer to revised drawings.
   ~~b.~~ 2026/04/16 - Extend tapers beyond each end of the half-street widening. Use AASHTO guidelines for determining the length of the taper based upon the design speed and offset from the existing edge of pavement on Hilltop Road. Terminate curb & gutter at the property lines. Discussion requested for this item.
4. Drawing 10 of 24 - Detention Outflow Plan and Profile
   i. 2026/04/16 - Add a control structure on the upstream end of the outfall pipe from the pond. A pipe with a flared end section is not a control structure. Open to discussing a weir or box option rather than a simple culvert for the normal discharge.
   ~~b.~~ Slopes in the basin must not exceed 3-ft horizontal to 1-ft vertical (Section 1000.5.3.)
      i. 2026/04/16 - The grades shown on this plan appear to be steeper than 3-ft horizontal to 1-ft vertical. The design slopes everywhere but the existing levee are at a 3:1. We didn't want to disturb the natural levee. A note has been added to the plans to add filter fabric and rip rap to the existing levee.
   ~~c.~~ Label the high water elevation in the basin (must be a minimum of 2-ft below any adjacent structure, and must have a minimum of 1-ft of freeboard).
      i. 2026/04/16 - The high water elevation in the basin has not been shown on the plan as requested. Please refer to the revised drawings.
   ~~d.~~ Provide scour protection from the flared end sections to the bottom of the pond. Provide details of the scour protection to be provided for each discharge point into the pond.
      i. 2026/04/16 - Show open channel design to carry water from the outfall from the pond to the culvert under Road -5. This area was intended to allow the flow to dispurse in a semi-concentrated manor to the receiving pipe on an emergency basis.

ii. 2026/04/16 - response noted. provide notes on the spillway detail concerning the joint types and spacings, air entrainment, and erosion prevention around the edges of the concrete spillway. Show 4-inch minimum compacted aggregate base course under the concrete spillway. Construction notes have been added. We would prefer not to add gravel due to potential seepage. Instead, native material will be compacted to appropriate density and waterstop poured with slab.

iii. 2026/04/16 - show a toe-downs on the upstream and downstream ends of the overflow spillway. Provide details. Refer to revised drawings. Turndowns will be 24".

iv. 2026/04/16 - Add greater detail on the overflow spillway (plan view, elevation view, etc). Please refer to revised drawings.

~~e.~~ Minimize pond leakage around any penetrating pipes.

i. 2026/04/16 - response noted. Show location of seep collars on the profile for the outfall. Also, provide a detail of the seep collar.

~~f.~~ What landscaping is going to be used around the pond / park area (See Section 1000.6)?

i. 2026/04/16 - response noted. Provide a detailed landscaping plan for the entire subdivision. Noted.

~~g.~~ What safety measures are to be provided for the pond area (See Section 1000.7)? Since this is designated as a park area, a detailed plan showing what safety measures are planned for that area.

i. 2026/04/16 - response noted. However, safety measures must meet City of Bryant standards for the retention basin. Noted.

ii. 2026/04/16 - Submit a detailed plan of the park area which meets City of Bryant standards. This will be discussed with the Developer in regard to actual provisions.

iii. 2026/04/16 - where is Tract 2? Please refer to revised drawings.

~~h.~~ 2026/04/16 - Has the bottom of this basin been verified? It is estimated based on the existing surrounding topography and contour elevations.

5. Drawing 19 of 24 - Erosion Control Plan
    1. Show material specifications for silt fence, wire mesh, etc.
    2. All materials to meet the City of Bryant specifications.
        a. 2026/04/16 Show construction entrance detail. Please refer to revised drawings.

~~ii.~~ Are there any sedimentation traps planned? Not as of today. However should field conditions warrant the implementation of sediment traps outside of the additional retention pond storage, they will be added at that time.

~~iii.~~ If it is the intent to use the pond as a sedimentation basin a proper filtration system should be installed at the basin outfall. If it is the intent to build the outfall structure the structure must be protected with silt fencing and other materials as deemed necessary to reduce the release of sediment laden water downstream. Noted. The additional volume in the retention pond will serve as a sediment basin. This volume will be reinstated prior to project completion.

1. 2026/04/16 - show the location of sedimentation basins at each location where there will be discharge from 10-acres or more. Provide calculations for proper sizing of each basin. Noted.

1. Maximum grade is 10%. Road-3 Profile shows grade as 10.41%. Road 4 Profile shows 10.90%. Road Profile 5 shows 10.465. [D103.2]

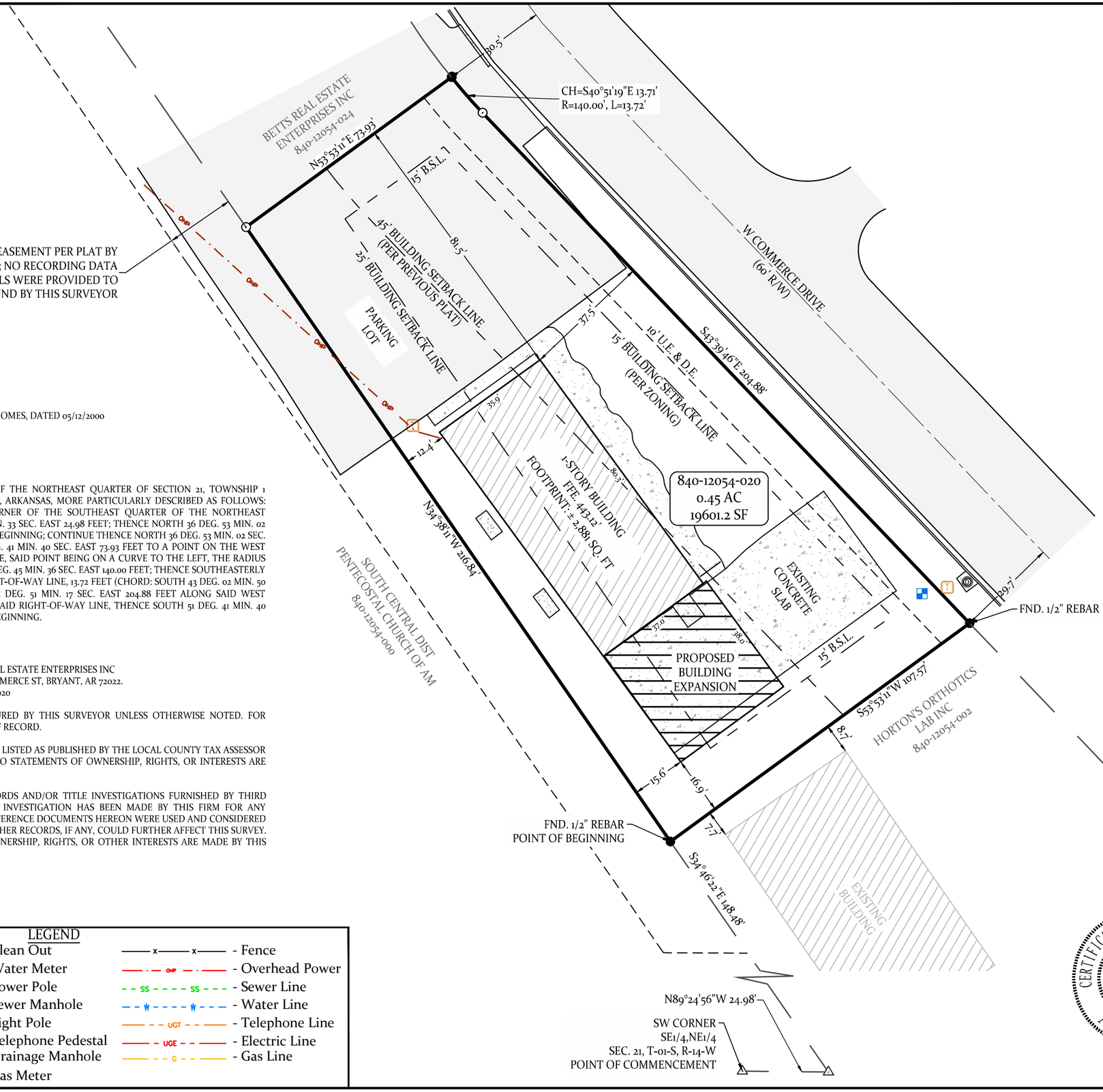
Please refer to revised drawings.Fire apparatus access roads, including gravel road, must be capable of supporting the imposed load of a fire apparatus weighing up to 75,000 lbs. [D102.1] Please refer to revised drawings.

2. Am I missing the hydrants on the plat? Please refer to revised drawings.

26-0228
Drawing No.

BASIS OF BEARINGS:
GRID NORTH, ARK SPCS (NAD83),
SOUTH ZONE (0302), PER GNSS OBS.

20' INGRESS/EGRESS EASEMENT PER PLAT BY HOPE (SEE NOTES); NO RECORDING DATA OR SPECIFIC DETAILS WERE PROVIDED TO OR FOUND BY THIS SURVEYOR



REFERENCE DOCUMENTS CITED
RECORDED SURVEY PLATS BY:
WILLIAM HOPE (PS #128), FOR EVERHART HOMES, DATED 05/12/2000

RECORD PROPERTY DESCRIPTION
SALINE COUNTY INSTRUMENT 2001-52014.

THAT PORTION OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER; THENCE NORTH 88 DEG. 23 MIN. 33 SEC. EAST 24.98 FEET; THENCE NORTH 36 DEG. 53 MIN. 02 SEC. WEST 148.48 FEET TO THE POINT OF BEGINNING; CONTINUE THENCE NORTH 36 DEG. 53 MIN. 02 SEC. WEST 216.84 FEET; THENCE NORTH 51 DEG. 41 MIN. 40 SEC. EAST 73.93 FEET TO A POINT ON THE WEST RIGHT-OF-WAY LINE OF COMMERCE DRIVE, SAID POINT BEING ON A CURVE TO THE LEFT, THE RADIUS POINT OF SAID CURVE BEING NORTH 49 DEG. 45 MIN. 36 SEC. EAST 140.00 FEET; THENCE SOUTHEASTERLY ALONG SAID CURVE AND SAID WEST RIGHT-OF-WAY LINE, 13.72 FEET (CHORD: SOUTH 43 DEG. 02 MIN. 50 SEC. EAST 13.71 FEET); THENCE SOUTH 45 DEG. 51 MIN. 17 SEC. EAST 204.88 FEET ALONG SAID WEST RIGHT-OF-WAY LINE; DEPARTING FROM SAID RIGHT-OF-WAY LINE, THENCE SOUTH 51 DEG. 41 MIN. 40 SEC. WEST 107.36 FEET TO THE POINT OF BEGINNING.

SURVEY DETAILS AND NOTES

OWNER OF RECORD:	BETTS REAL ESTATE ENTERPRISES INC
PHYSICAL ADDRESS:	711 W COMMERCE ST, BRYANT, AR 72022.
COUNTY PARCEL TAX ID:	840-12054-020

ALL DIMENSIONS LISTED ARE AS MEASURED BY THIS SURVEYOR UNLESS OTHERWISE NOTED. FOR RECORD DIMENSIONS SEE DOCUMENTS OF RECORD.

OWNERSHIP INFORMATION, IF SHOWN, IS LISTED AS PUBLISHED BY THE LOCAL COUNTY TAX ASSESSOR AND IS LISTED FOR REFERENCE ONLY. NO STATEMENTS OF OWNERSHIP, RIGHTS, OR INTERESTS ARE MADE.

THIS SURVEY IS BASED ON PUBLIC RECORDS AND/OR TITLE INVESTIGATIONS FURNISHED BY THIRD PARTIES. NO INDEPENDENT SEARCH OR INVESTIGATION HAS BEEN MADE BY THIS FIRM FOR ANY RECORDS, PUBLIC OR PRIVATE. LISTED REFERENCE DOCUMENTS HEREON WERE USED AND CONSIDERED AS A PART OF THIS SURVEY; HOWEVER OTHER RECORDS, IF ANY, COULD FURTHER AFFECT THIS SURVEY. NO STATEMENT OR GUARANTEES OF OWNERSHIP, RIGHTS, OR OTHER INTERESTS ARE MADE BY THIS SURVEY PLAT.

LEGEND

- ◔ - PLSS Aliquot Corner
- ● - Fnd. Corner Monument
- ⊙ - Set 1/2" Rebar/Cap (1664)
- △ - Computed Point
- (M)- As Measured
- (P)- Per Deed or Plat Records
- ESMT - Easement
- B.S.L. - Building Setback Lines
- CO - Clean Out
- WM - Water Meter
- PP - Power Pole
- SMH - Sewer Manhole
- LP - Light Pole
- T - Telephone Pedestal
- D - Drainage Manhole
- GM - Gas Meter
- x——x—— - Fence
- OHP - Overhead Power
- SS - Sewer Line
- W - Water Line
- UGT - Telephone Line
- UGE - Electric Line
- G - Gas Line

811 Know what's below. Call before you dig.

LEGEND
- ●⊙ Found Monument
- △ Set 1/2" Rebar #1664
- (M) Computed Point Location
- (R/D/P) Measured by Surveyor
- B.S.L. Record/Deed/Plat Measurements
- U.E./D.E. Building Setback Line Restriction
- Utility/Drainage Easement
- Property Boundary Line
- Fence Lines
- Centerlines
- Parcel Lines/Misc Lines

30' 15' 0' 30'

Drawn By: NCD/JET Checked:

GENERAL DISCLAIMER
This survey is for the exclusive use and benefit of parties shown hereon. Use or duplication of this document by any other parties is prohibited and voids said document.
This survey is based on public records and/or title investigations furnished by third parties. No independent search or investigation has been made by this firm for any records, public or private. Listed reference documents hereon were used and considered as a part of this survey; however other records, if any, could further affect this survey. No statement or guarantees of ownership, rights, or other interests are made by this survey plat.

FLOOD STATEMENT
No portion of the property described hereon lies within the 100 year flood plain, according to the Flood Insurance Rate Map, panel # 05125C0360E dated: 06/05/2020

HOPE CONSULTING
ENGINEERS - SURVEYORS
129 North Main Street
Benton, Arkansas 72015
office: (501) 315-2626
fax: (501) 315-0024
HopeConsulting.com

For the Exclusive Use and Benefit of:
Craig Betts

Address 711 W Commerce Street
Bryant, Arkansas, 72022.

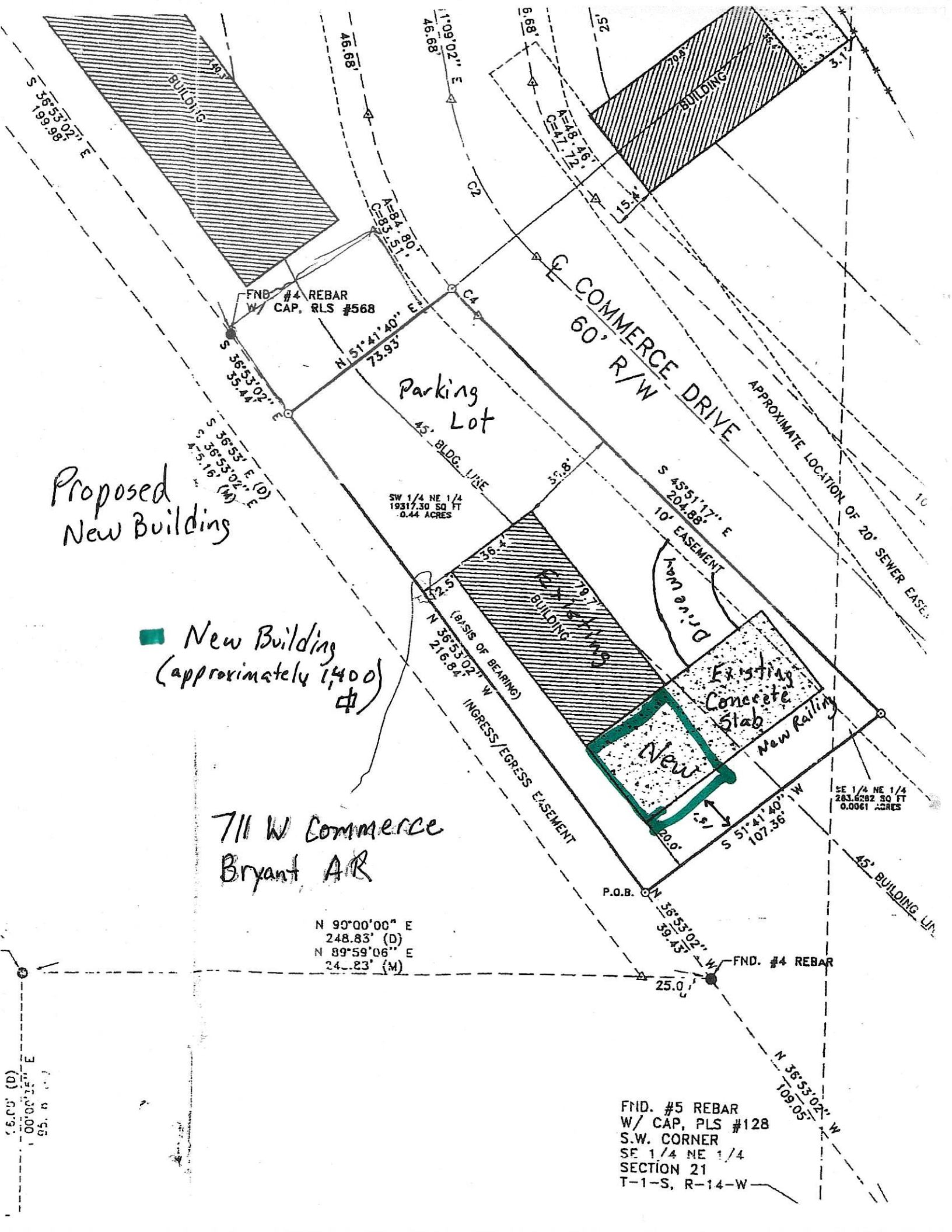
Date 4/10/2026

500	01S	14W	0	21	100	62	1664

CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1931
ARKANSAS

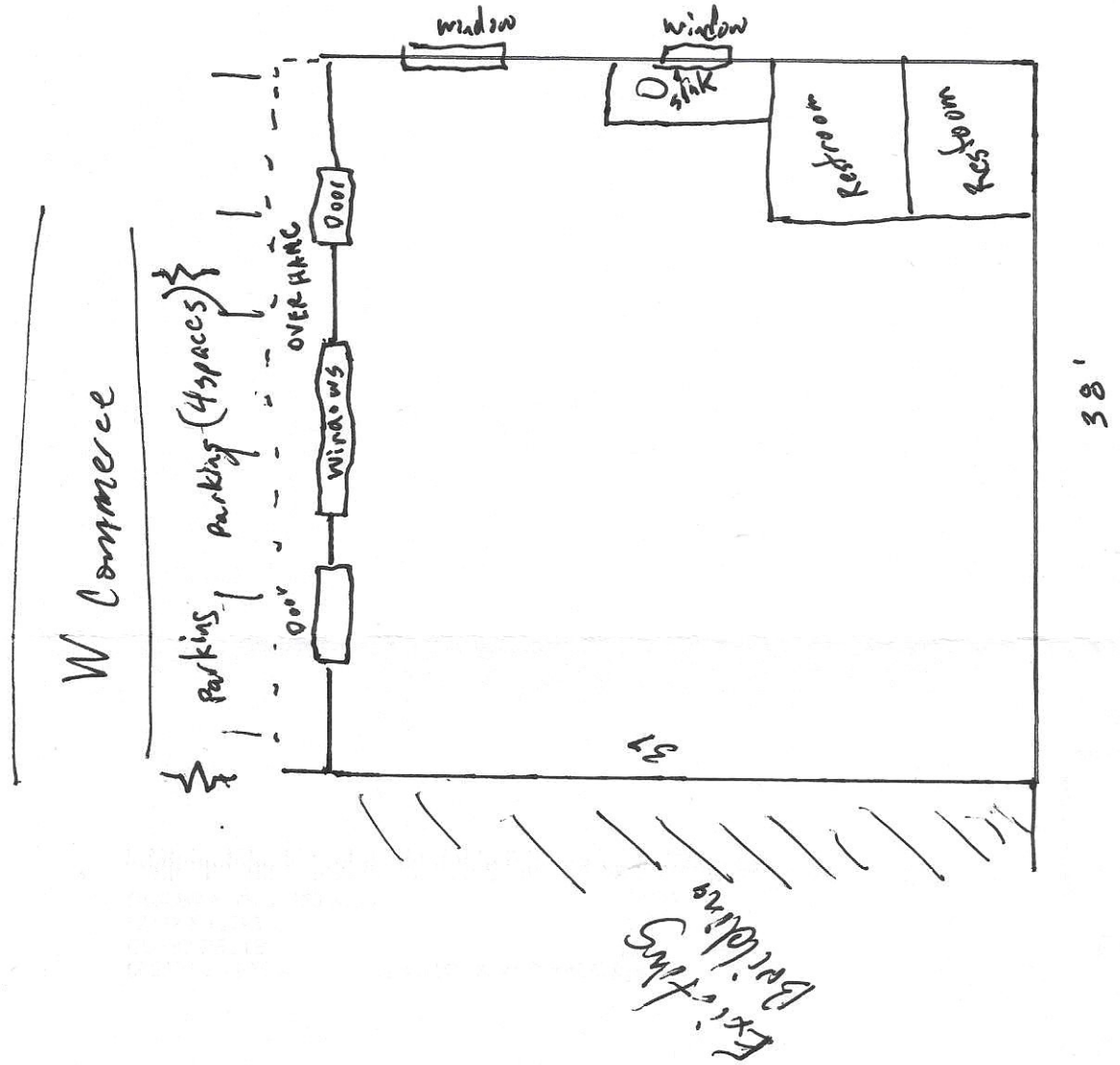
REGISTERED
STATE OF ARKANSAS
No. 1664
SIGNATURE
4/10/26
WILLIAM CORBITT R. SHOFNER
PROFESSIONAL LAND SURVEYOR

K:\Land Projects 2004\Surveys\2026\26-0228 Survey & Site Plan TinS, RoW, Str 711 W Commerce, Bryant\SURVEY\DWG\26-0228 711 W Commerce St, Bryant.dwg | Plotted: 4/14/2026 9:31 AM | ©2026 Hope Consulting, Inc.

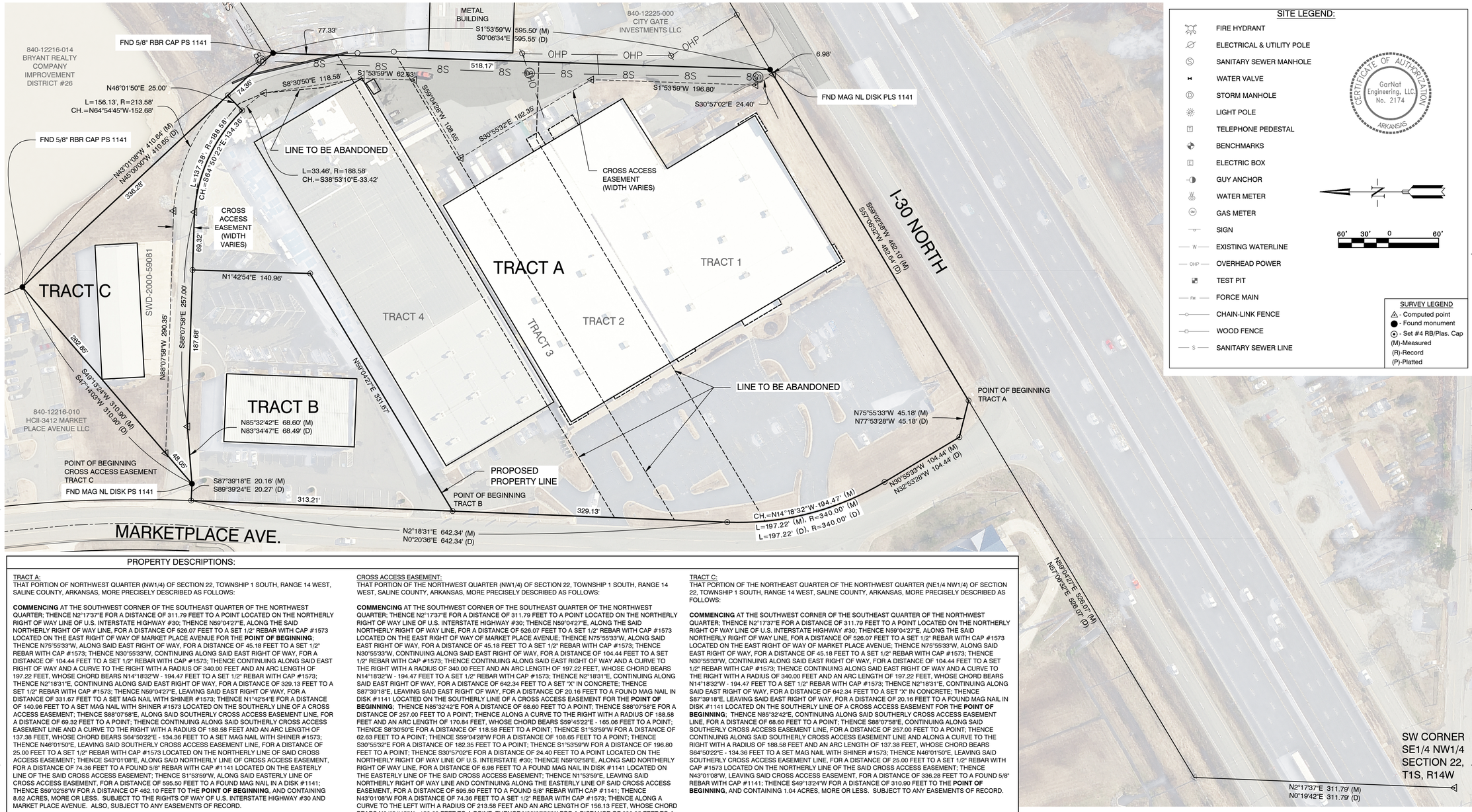

Proposed New Building
New Building (approximately 1,400 sq ft)
711 W Commerce
Bryant AR
℄ COMMERCE DRIVE
60' R/W
Parking Lot
45' BLDG. LINE
BUILDING
EXISTING BUILDING
Drive way
10' EASEMENT
INGRESS/EGRESS EASEMENT
APPROXIMATE LOCATION OF 20' SEWER EASE
Existing Concrete Slab
New
New Railing
FND #4 REBAR W/ CAP, RLS #568
FND. #4 REBAR
FND. #5 REBAR W/ CAP, PLS #128 S.W. CORNER SE 1/4 NE 1/4 SECTION 21 T-1-S, R-14-W
P.O.B.
SW 1/4 NE 1/4 19317.30 SQ FT 0.44 ACRES
SE 1/4 NE 1/4 283.6282 SQ FT 0.0061 ACRES
S 36°53'02" E 199.98'
N 51°41'40" E 73.93'
S 36°53'02" E 35.44'
S 36°53' E (D) S 36°53'02" E (M) 45.16' (M)
S 45°51'17" E 204.88'
N 36°53'02" W 216.84' (BASIS OF BEARING)
S 51°41'40" W 107.36'
N 36°53'02" W 39.43'
N 36°53'02" W 109.05'
N 90°00'00" E 248.83' (D)
N 89°59'06" E 24..83' (M)
A=84.80' C=83.51'
A=48.46' C=47.72'
C2
C4
46.68'
46.68'
1°09'02" E
149.7'
70.8'
35.4'
3.1'
15.4'
25'
6.68'
36.4'
35.8'
20.0'
15.1'
25.0'

Building Addition

711 W. Commerce
Bryant, AR



Contact: Craig Betts
501-425-8904



SITE LEGEND:

- FIRE HYDRANT
- ELECTRICAL & UTILITY POLE
- SANITARY SEWER MANHOLE
- WATER VALVE
- STORM MANHOLE
- LIGHT POLE
- TELEPHONE PEDESTAL
- BENCHMARKS
- ELECTRIC BOX
- GUY ANCHOR
- WATER METER
- GAS METER
- SIGN
- EXISTING WATERLINE
- OVERHEAD POWER
- TEST PIT
- FORCE MAIN
- CHAIN-LINK FENCE
- WOOD FENCE
- SANITARY SEWER LINE

CERTIFICATE OF AUTHORIZATION — GarNat Engineering, LLC No. 2174 — ARKANSAS

N

60' 30' 0 60'

SURVEY LEGEND

- Computed point
- Found monument
- Set #4 RB/Plas. Cap

(M)-Measured
(R)-Record
(P)-Platted

PROPERTY DESCRIPTIONS:

TRACT A:
THAT PORTION OF NORTHWEST QUARTER (NW1/4) OF SECTION 22, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, MORE PRECISELY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER; THENCE N2°17'37"E FOR A DISTANCE OF 311.79 FEET TO A POINT LOCATED ON THE NORTHERLY RIGHT OF WAY LINE OF U.S. INTERSTATE HIGHWAY #30; THENCE N59°04'27"E, ALONG THE SAID NORTHERLY RIGHT OF WAY LINE, FOR A DISTANCE OF 526.07 FEET TO A SET 1/2" REBAR WITH CAP #1573 LOCATED ON THE EAST RIGHT OF WAY OF MARKET PLACE AVENUE FOR THE **POINT OF BEGINNING**; THENCE N75°55'33"W, ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 45.18 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE N30°55'33"W, CONTINUING ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 104.44 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE CONTINUING ALONG SAID EAST RIGHT OF WAY AND A CURVE TO THE RIGHT WITH A RADIUS OF 340.00 FEET AND AN ARC LENGTH OF 197.22 FEET, WHOSE CHORD BEARS N14°18'32"W - 194.47 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE N2°18'31"E, CONTINUING ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 329.13 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE N59°04'27"E, LEAVING SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 331.67 FEET TO A SET MAG NAIL WITH SHINER #1573; THENCE N1°42'54"E FOR A DISTANCE OF 140.96 FEET TO A SET MAG NAIL WITH SHINER #1573 LOCATED ON THE SOUTHERLY LINE OF A CROSS ACCESS EASEMENT; THENCE S88°07'58"E, ALONG SAID SOUTHERLY CROSS ACCESS EASEMENT LINE, FOR A DISTANCE OF 69.32 FEET TO A POINT; THENCE CONTINUING ALONG SAID SOUTHERLY CROSS ACCESS EASEMENT LINE AND A CURVE TO THE RIGHT WITH A RADIUS OF 188.58 FEET AND AN ARC LENGTH OF 137.38 FEET, WHOSE CHORD BEARS S64°50'22"E - 134.36 FEET TO A SET MAG NAIL WITH SHINER #1573; THENCE N46°01'50"E, LEAVING SAID SOUTHERLY CROSS ACCESS EASEMENT LINE, FOR A DISTANCE OF 25.00 FEET TO A SET 1/2" REBAR WITH CAP #1573 LOCATED ON THE NORTHERLY LINE OF SAID CROSS ACCESS EASEMENT; THENCE S43°01'08"E, ALONG SAID NORTHERLY LINE OF CROSS ACCESS EASEMENT, FOR A DISTANCE OF 74.36 FEET TO A FOUND 5/8" REBAR WITH CAP #1141 LOCATED ON THE EASTERLY LINE OF THE SAID CROSS ACCESS EASEMENT; THENCE S1°53'59"W, ALONG SAID EASTERLY LINE OF CROSS ACCESS EASEMENT, FOR A DISTANCE OF 595.50 FEET TO A FOUND MAG NAIL IN A DISK #1141; THENCE S59°02'58"W FOR A DISTANCE OF 462.10 FEET TO THE **POINT OF BEGINNING**, AND CONTAINING 8.62 ACRES, MORE OR LESS. SUBJECT TO THE RIGHTS OF WAY OF U.S. INTERSTATE HIGHWAY #30 AND MARKET PLACE AVENUE. ALSO, SUBJECT TO ANY EASEMENTS OF RECORD.

TRACT B:
THAT PORTION OF THE NORTHWEST QUARTER (NW1/4) OF SECTION 22, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, MORE PRECISELY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER; THENCE N2°17'37"E FOR A DISTANCE OF 311.79 FEET TO A POINT LOCATED ON THE NORTHERLY RIGHT OF WAY LINE OF U.S. INTERSTATE HIGHWAY #30; THENCE N59°04'27"E, ALONG THE SAID NORTHERLY RIGHT OF WAY LINE, FOR A DISTANCE OF 526.07 FEET TO A SET 1/2" REBAR WITH CAP #1573 LOCATED ON THE EAST RIGHT OF WAY OF MARKET PLACE AVENUE; THENCE N75°55'33"W, ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 45.18 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE N30°55'33"W, CONTINUING ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 104.44 FEET TO A SET 1/2" REBAR WITH CAP #1573 AND A CURVE TO THE RIGHT WITH A RADIUS OF 340.00 FEET AND AN ARC LENGTH OF 197.22 FEET, WHOSE CHORD BEARS N14°18'32"W - 194.47 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE N2°18'31"E, CONTINUING ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 329.13 FEET TO A SET 1/2" REBAR WITH CAP #1573 FOR THE **POINT OF BEGINNING**; THENCE N2°18'31"E, CONTINUING ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 313.21 FEET TO A SET "X" IN CONCRETE; THENCE S87°39'18"E, LEAVING SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 20.16 FEET TO A FOUND MAG NAIL IN DISK #1141 LOCATED ON THE SOUTHERLY LINE OF A CROSS ACCESS EASEMENT; THENCE N85°32'42"E, CONTINUING ALONG SAID SOUTHERLY CROSS ACCESS EASEMENT LINE, FOR A DISTANCE OF 68.60 FEET TO A POINT; THENCE S88°07'58"E, CONTINUING ALONG SAID SOUTHERLY CROSS ACCESS EASEMENT LINE, FOR A DISTANCE OF 187.68 FEET TO A SET MAG NAIL WITH SHINER #1573; THENCE S1°42'54"W, LEAVING SAID SOUTHERLY CROSS ACCESS EASEMENT LINE, FOR A DISTANCE OF 140.96 FEET TO A SET MAG NAIL WITH SHINER #1573; THENCE S59°04'27"W FOR A DISTANCE OF 331.67 FEET TO THE **POINT OF BEGINNING**, AND CONTAINING 1.46 ACRES, MORE OR LESS. SUBJECT TO THE RIGHT OF WAY OF MARKET PLACE AVENUE. ALSO, SUBJECT TO ANY EASEMENTS OF RECORD.

CROSS ACCESS EASEMENT:
THAT PORTION OF THE NORTHWEST QUARTER (NW1/4) OF SECTION 22, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, MORE PRECISELY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER; THENCE N2°17'37"E FOR A DISTANCE OF 311.79 FEET TO A POINT LOCATED ON THE NORTHERLY RIGHT OF WAY LINE OF U.S. INTERSTATE HIGHWAY #30; THENCE N59°04'27"E, ALONG THE SAID NORTHERLY RIGHT OF WAY LINE, FOR A DISTANCE OF 526.07 FEET TO A SET 1/2" REBAR WITH CAP #1573 LOCATED ON THE EAST RIGHT OF WAY OF MARKET PLACE AVENUE; THENCE N75°55'33"W, ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 45.18 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE N30°55'33"W, CONTINUING ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 104.44 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE CONTINUING ALONG SAID EAST RIGHT OF WAY AND A CURVE TO THE RIGHT WITH A RADIUS OF 340.00 FEET AND AN ARC LENGTH OF 197.22 FEET, WHOSE CHORD BEARS N14°18'32"W - 194.47 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE N2°18'31"E, CONTINUING ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 642.34 FEET TO A SET "X" IN CONCRETE; THENCE S87°39'18"E, LEAVING SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 20.16 FEET TO A FOUND MAG NAIL IN DISK #1141 LOCATED ON THE SOUTHERLY LINE OF A CROSS ACCESS EASEMENT FOR THE **POINT OF BEGINNING**; THENCE N85°32'42"E FOR A DISTANCE OF 68.60 FEET TO A POINT; THENCE S88°07'58"E FOR A DISTANCE OF 257.00 FEET TO A POINT; THENCE ALONG A CURVE TO THE RIGHT WITH A RADIUS OF 188.58 FEET AND AN ARC LENGTH OF 170.84 FEET, WHOSE CHORD BEARS S59°45'22"E - 165.06 FEET TO A POINT; THENCE S8°30'50"E FOR A DISTANCE OF 118.58 FEET TO A POINT; THENCE S1°53'59"W FOR A DISTANCE OF 62.63 FEET TO A POINT; THENCE S59°04'28"W FOR A DISTANCE OF 108.65 FEET TO A POINT; THENCE S30°55'32"E FOR A DISTANCE OF 182.35 FEET TO A POINT; THENCE S1°53'59"W FOR A DISTANCE OF 196.80 FEET TO A POINT; THENCE S30°57'02"E FOR A DISTANCE OF 24.40 FEET TO A POINT LOCATED ON THE NORTHERLY RIGHT OF WAY LINE OF U.S. INTERSTATE #30; THENCE N59°02'58"E, ALONG SAID NORTHERLY RIGHT OF WAY LINE, FOR A DISTANCE OF 6.98 FEET TO A FOUND MAG NAIL IN DISK #1141 LOCATED ON THE EASTERLY LINE OF THE SAID CROSS ACCESS EASEMENT; THENCE N1°53'59"E, LEAVING SAID NORTHERLY RIGHT OF WAY LINE AND CONTINUING ALONG THE EASTERLY LINE OF SAID CROSS ACCESS EASEMENT, FOR A DISTANCE OF 595.50 FEET TO A FOUND 5/8" REBAR WITH CAP #1141; THENCE N43°01'08"W FOR A DISTANCE OF 74.36 FEET TO A 1/2" REBAR WITH CAP #1573; THENCE ALONG A CURVE TO THE LEFT WITH A RADIUS OF 213.58 FEET AND AN ARC LENGTH OF 156.13 FEET, WHOSE CHORD BEARS N64°54'45"W - 152.68 FEET TO A POINT; THENCE N88°07'58"W FOR A DISTANCE OF 290.35 FEET TO A POINT; THENCE S49°13'24"W FOR A DISTANCE OF 48.05 FEET TO THE **POINT OF BEGINNING**, AND CONTAINING 0.86 ACRES, MORE OR LESS. SUBJECT TO ANY EASEMENTS OF RECORD.

TRACT C:
THAT PORTION OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER (NE1/4 NW1/4) OF SECTION 22, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, MORE PRECISELY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER; THENCE N2°17'37"E FOR A DISTANCE OF 311.79 FEET TO A POINT LOCATED ON THE NORTHERLY RIGHT OF WAY LINE OF U.S. INTERSTATE HIGHWAY #30; THENCE N59°04'27"E, ALONG THE SAID NORTHERLY RIGHT OF WAY LINE, FOR A DISTANCE OF 526.07 FEET TO A SET 1/2" REBAR WITH CAP #1573 LOCATED ON THE EAST RIGHT OF WAY OF MARKET PLACE AVENUE; THENCE N75°55'33"W, ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 45.18 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE N30°55'33"W, CONTINUING ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 104.44 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE CONTINUING ALONG SAID EAST RIGHT OF WAY AND A CURVE TO THE RIGHT WITH A RADIUS OF 340.00 FEET AND AN ARC LENGTH OF 197.22 FEET, WHOSE CHORD BEARS N14°18'32"W - 194.47 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE N2°18'31"E, CONTINUING ALONG SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 642.34 FEET TO A SET "X" IN CONCRETE; THENCE S87°39'18"E, LEAVING SAID EAST RIGHT OF WAY, FOR A DISTANCE OF 20.16 FEET TO A FOUND MAG NAIL IN DISK #1141 LOCATED ON THE SOUTHERLY LINE OF A CROSS ACCESS EASEMENT FOR THE **POINT OF BEGINNING**; THENCE N85°32'42"E, CONTINUING ALONG SAID SOUTHERLY CROSS ACCESS EASEMENT LINE, FOR A DISTANCE OF 68.60 FEET TO A POINT; THENCE S88°07'58"E, CONTINUING ALONG SAID SOUTHERLY CROSS ACCESS EASEMENT LINE, FOR A DISTANCE OF 257.00 FEET TO A POINT; THENCE CONTINUING ALONG SAID SOUTHERLY CROSS ACCESS EASEMENT LINE AND ALONG A CURVE TO THE RIGHT WITH A RADIUS OF 188.58 FEET AND AN ARC LENGTH OF 137.38 FEET, WHOSE CHORD BEARS S64°50'22"E - 134.36 FEET TO A SET MAG NAIL WITH SHINER #1573; THENCE N46°01'50"E, LEAVING SAID SOUTHERLY CROSS ACCESS EASEMENT LINE, FOR A DISTANCE OF 25.00 FEET TO A SET 1/2" REBAR WITH CAP #1573 LOCATED ON THE NORTHERLY LINE OF THE SAID CROSS ACCESS EASEMENT; THENCE N43°01'08"E, LEAVING SAID CROSS ACCESS EASEMENT, FOR A DISTANCE OF 336.28 FEET TO A FOUND 5/8" REBAR WITH CAP #1573 LOCATED ON THE NORTHERLY LINE OF THE SAID CROSS ACCESS EASEMENT; THENCE S49°13'24"W FOR A DISTANCE OF 310.90 FEET TO THE **POINT OF BEGINNING**, AND CONTAINING 1.04 ACRES, MORE OR LESS. SUBJECT TO ANY EASEMENTS OF RECORD.

DOCUMENTS USED:

- SPECIAL WARRANTY DEED BOOK 2000 PAGE 59081
- WARRANTY DEED BOOK 2011 PAGE 035620

SURVEY PLAT CODE:
500-01S-14W-0-22-400-62-1573

BASIS OF BEARINGS:

BENCHMARK(S) PROVIDED ARE REBAR AND COORDINATES ON BENCHMARKS ARE NORTH AMERICAN DATUM 1983, ARKANSAS SOUTH ZONE, US SURVEY FEET, GRID COORDINATES AND ELEVATIONS ARE NAVD 1988. COORDINATES AND ELEVATIONS WERE ESTABLISHED USING GPS AND WERE PROCESSED USING THE NATIONAL GEODETIC SURVEY'S "ONLINE POSITIONING USER SERVICE" (OPUS).

CERTIFICATIONS:

BY AFFIXING MY SEAL AND SIGNATURE, I GEORGE P. WOODEN, PS NO.1573, HEREBY CERTIFY THAT THIS DRAWING CORRECTLY DEPICTS A SURVEY COMPILED UNDER MY SUPERVISION ON FEBRUARY 28, 2026.

THIS SURVEY WAS BASED ON LEGAL DESCRIPTIONS AND TITLE WORK FURNISHED BY OTHERS AND DOES NOT REPRESENT A TITLE SEARCH.

THIS PROPERTY IS NOT LOCATED IN THE 100 YEAR FLOOD PLAIN. THE PROPERTY SHOWN ON THIS PLAT IS LOCATED IN ZONE "X" OF THE F.E.M.A. MAP PANELS 05125C0240E AND 05125C0380E EFFECTIVE DATE JUNE 5, 2020.

BY	REVISION	DATE

GNE — Designing our client's success

GarNat Engineering, LLC
3825 Mt Carmel Road
Bryant, AR 72022
P.O. Box 116
Benton, AR 72018
Ph. (501) 408-4650
garnatengineering@gmail.com

ASHLEY FURNITURE STORE
FERGUSON PROPERTIES
MANAGEMENT LLC
CITY OF BRYANT
SALINE COUNTY, ARKANSAS

REGISTERED PROFESSIONAL SURVEYOR — STATE OF ARKANSAS — NO. 1573 — SIGNATURE — GEORGE P. WOODEN

4-9-26

CONTENTS:
TRACT LINE ADJUSTMENT

PROJECT NO: 26029

DATE: APRIL 9, 2026

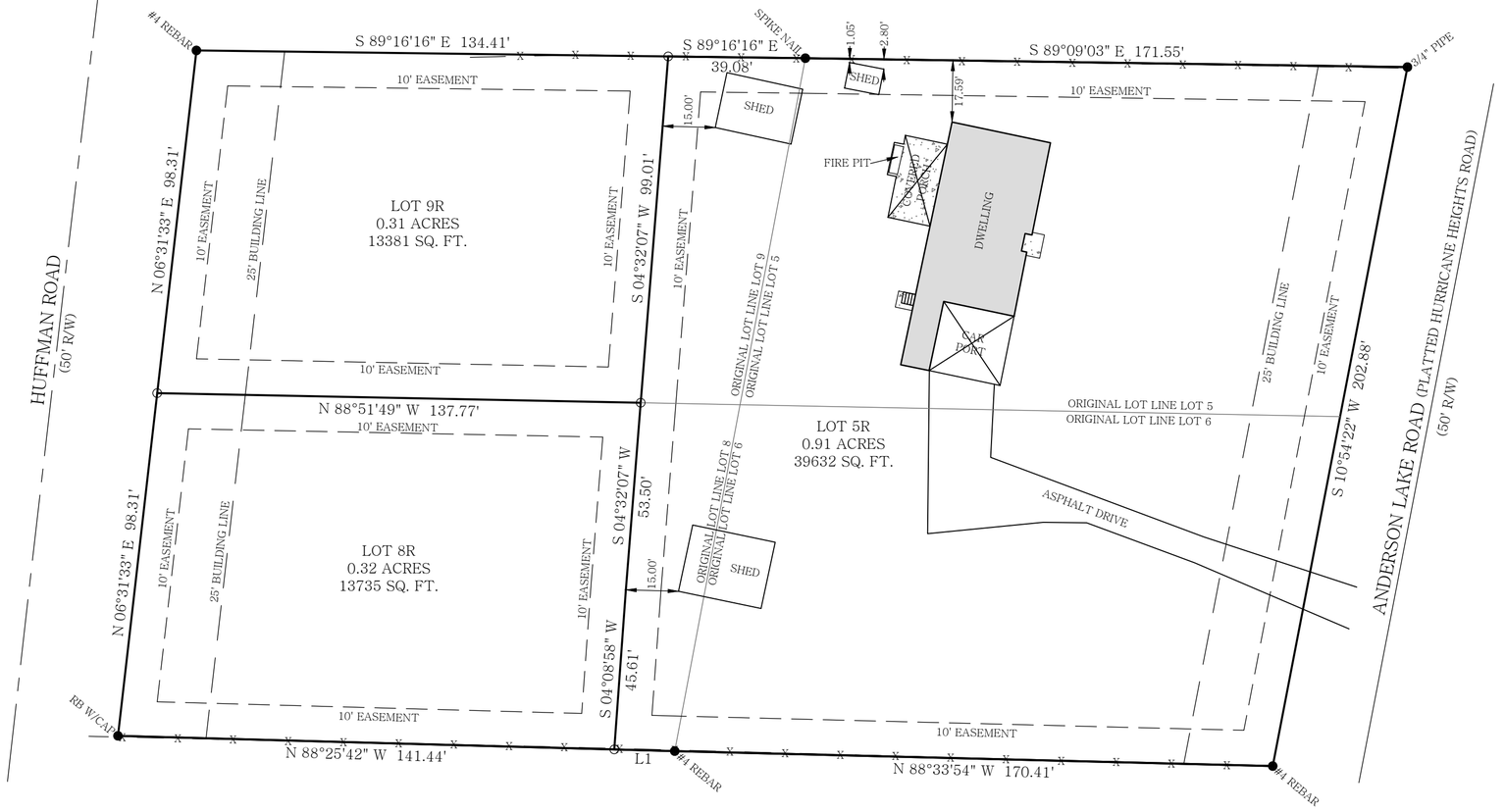
SHEET NO: V1.0

© Projects\2026 Projects\2026 Ashley Store Tract Split Ferguson Property\Drawings\GNE\Survey\2026 Ashley Furniture Marketplace Avenue — GNE.dwg

LOT 5R, LOT 8R, AND LOT 9R, HURRICANE HEIGHTS SUBDIVISION, TO THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS BEING A REPLAT OF LOT 5, LOT 6, LOT 8 AND LOT 9, HURRICANE HEIGHTS SUBDIVISION, TO THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

VICINITY MAP
(NTS)

THE BEARING SYSTEM IS BASED ON GRID NORTH PER GPS OBSERVATION



LINE TABLE CHART

LINE	BEARING	DISTANCE
L1	N 88°25'42" W	17.23'

Certificate of Recording

This document, number _____ filed for record _____, 20_____

in Plat Book _____, page _____.

Circuit Clerk _____

For Bill of Assurance see:
Deed Record Book _____, Page _____.

Certificate of Surveying Accuracy

I, James Aaron Rasburry, hereby certify that this plat correctly represents a survey and a plan made by me, or under my supervision; that all monuments shown hereon actually exist and their locations, size, type, and material are correctly shown; and that all requirements of the city of Bryant Subdivision Rules and Regulations have been fully complied with.

Date of Execution:_____

_____
Registered Land Surveyor
No. 1506, Arkansas

Certificate of Final Plat Approval

Pursuant to the City of Bryant Subdivision Rules and Regulations, this document was given approval by the Bryant Planning Commission at a meeting held _____, 2022. All of the document is hereby accepted, and this certificate executed under the authority of said rules and regulations.

_____ _____
Date of Execution Bryant Planning Commission

Certificate of Owner

We, the undersigned, owners of the real estate shown and described herein do hereby certify that we laid off, platted and subdivided, and do hereby lay off, plat and subdivide said real estate in accordance with the within plat.

_____
Date of Execution

NAME: BRENDA JO AND JAMES ALLAN LEWIS
ADDRESS: 9701 RAYMOND ROAD, ALEXANDER, AR. 72002

Sign _____

Sign _____

Source of Title DOCUMENT NUMBER 2026-003978

BY GRAPHIC PLOTTING ONLY
THE DESCRIBED PROPERTY
DOES NOT LIE WITHIN A FLOOD
PRONE AREA.

SOURCE: FEMA
PANEL NO.: 05125C0360E
DATE: 6-5-2020

LEGEND
- FOUND MONUMENT
- SET #5 REBAR/CAP #1506
- COMPUTED POINT
- CONTROLLING CORNER
- FENCE

30 0 30 60
Scale: 1" = 30'

I hereby certify that the above plat represents a survey made by me or under my supervision on this day. No independent search for easements, covenants, encumbrances, or any other facts which an accurate title search may disclose was performed.

CERTIFICATE OF AUTHORIZATION
RASBURRY SURVEYING, LLC
NO. 2267
ARKANSAS

RASBURRY SURVEYING

308 W. South Street
Benton, AR 72015
Office/Fax: (501) 860-6893
E-Mail: aaron@razsurvey.com

LOT 5R, LOT 8R, AND LOT 9R, HURRICANE HEIGHTS SUBDIVISION, TO THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS BEING A REPLAT OF LOT 5, LOT 6, LOT 8 AND LOT 9, HURRICANE HEIGHTS SUBDIVISION, TO THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

FIELDWORK DATE:4-1-26
PLAT DATE:4-02-26
DRAWN BY: DCR
FILE: C:\DRAWINGS\HURRICANE HEIGHTS\LOTS 5, 6, 8, & 9 REPLAT
JOB#: 26-090
CHECKED BY: JAR

REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF ARKANSAS
NO. 1506
SIGNATURE
JAMES A. RASBURRY