Bryant Development and Review Committee Meeting

Boswell Municipal Complex - City Hall Conference Room

210 SW 3rd Street

Date: November 13, 2025 - **Time:** 9:00 AM

Call to Order

Old Business

New Business

1. Villages at Magnolia Lane - PUD

Hope Consulting - Requesting Recommendation for Approval of PUD Zoning Plan

- 0985-TRS-01.pdf
- 0985-PLN-02.pdf

2. 25300 I-30 - Site Plan Addition

Hope Consulting - Requesting Rcommendation for Approval of Site Plan

- 1001-DRN-01.pdf
- 1001-PLN-01.pdf

3. Shoppes at Dogwood Springs - Phase 1 - 4707 Bryant Parkway

Richardson Engineering - Requesting Site Plan Approval

- 0998-SLC-01.pdf
- 0998-SWP-01.pdf
- 0998-NOC-01.pdf
- 0998-DRN-02.pdf
- 0998-PLN-02.pdf

4. 3492 Marketplace Ave - Site Plan

Bart Ferguson - Requesting Site Plan Approval

- 1002-PLN-01.pdf

5. Zoning Code Changes

Requesting Recomendation to Planning Commission regarding changes to Zoning Code

Staff Approved

6. Honey Baked Ham - 3213 Main St. Ste 2 - Sign Permit

Cuerden Signs - Requesting Sign Permit Approval - STAFF APPROVED

- HBH Sign Permit App1.pdf
- HBH Sign Permit App2.pdf

Permit Report

Adjournments

HOPE CONSULTING

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

Traffic Impact Analysis

The Villages at Magnolia Lane Subdivision

Boone Road and Mount Carmel Road
Bryant, Arkansas

Prepared by Arkansas Registered Professional Engineer Kazi Islam No. 20876

Prepared By:

November 5, 2025

COA Seal Here

Engineer Seal Here (signed)

11-05-2025

Traffic Impact Analysis

1.0 INTRODUCTION

We completed a traffic impact analysis (TIA) for the proposed residential subdivision development in Bryant, Arkansas. The analysis was requested to determine the effects the proposed development would have on the adjacent roadway network, including the intersection of Boone Road and Mount Carmel Road, and to provide recommendations for improvements that may be necessary to accommodate the additional traffic generated by the development while maintaining acceptable levels of service.

This TIA follows the guidelines outlined in the City of Bryant's Minimum Standard Specifications for Streets, which require a formal traffic study for developments expected to generate significant traffic volumes, such as this subdivision with 231 single-family homes. The analysis utilizes methodologies from the Highway Capacity Manual (HCM) 7th Edition for level of service (LOS) calculations and the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, for estimating site-generated trips.

2.0 BACKGROUND

2.1 PROPOSED DEVELOPMENT

The proposed development, known as The Villages at Magnolia Lane, is located at the intersection of Boone Road and Mount Carmel Road in Bryant, Arkansas, as shown in Figure 1. The subdivision encompasses approximately 65.32 acres and includes 231 single-family dwelling units, along with associated infrastructure such as internal roadways, detention areas, green spaces, and a park area totaling 12.35 acres (21.25% open space). The residential density is approximately 3.98 dwelling units per acre.

Access to the development is proposed via multiple points: primary access from Boone Road to the south and secondary access from Mount Carmel Road to the west. The internal roadway network consists of local streets (50' right-of-way) and a collector street (60' right-of-way) designed to City of Bryant standards. The site plan is shown in Figure 2. The development is expected to be built out over a 5-year horizon, with full occupancy by 2030.

2.2 ADJACENT ROADWAY NETWORK

The intersection of Boone Road and Mount Carmel Road is an unsignalized T-intersection, with Boone Road serving as the through street (east-west) and Mount Carmel Road as the north leg. Boone Road is classified as a collector street in the City of Bryant's Master Street Plan, downgraded from minor arterial in 2015. It is a two-lane undivided roadway with a posted speed limit of 35 mph, featuring shoulders and drainage ditches. The roadway has a typical width of 24 feet and carries approximately 5,000 vehicles per day (ADT) based on recent ARDOT counts.

Mount Carmel Road is classified as a local street, serving primarily residential traffic. It is a two-lane undivided roadway with a posted speed limit of 30 mph, approximately 20-22 feet wide, with grassy shoulders and sidewalks in some sections. Recent ARDOT counts indicate an ADT of 3,000 vehicles per day. Nearby land uses include residential subdivisions to the north and south, with commercial areas also to the north.

Historical traffic data from ARDOT shows stable volumes on Boone Road, with ADTs ranging from 4,500 in 2018 to 5,000 in 2023, indicating no significant growth. Similarly, Mount Carmel Road has maintained ADTs around 2,800-3,000 over the past five years. Truck percentages are low (less than 5%) on both roads, primarily consisting of local delivery vehicles.

3.0 EXISTING CONDITIONS

3.1 TRAFFIC VOLUMES

Existing traffic volumes were obtained from ARDOT's Average Daily Traffic (ADT) estimates and supplemented with assumed peak hour factors based on typical suburban patterns (8-10% of ADT for peak hours). For Boone Road, the ADT is 5,000 vehicles per day, with an estimated AM peak hour volume of 450 vehicles per hour (vph) and PM peak of 500 vph. Directional splits are approximately 50/50 east-west.
For Mount Carmel Road, the ADT is 3,000 vph, with AM peak of 270 vph and PM peak of 300 vph, primarily northbound in the AM and southbound in the PM due to commuter patterns toward Interstate 30. Turning movement counts at the intersection are estimated as follows (based on proportional distribution):

- AM Peak: 200 vph through on Boone (EB), 200 (WB); 50 left from Mt Carmel to Boone WB; 20 right to Boone EB.
- PM Peak: 250 vph through on Boone (EB), 250 (WB); 60 left from Mt Carmel; 40 right.

No recent turning movement counts were available, but these estimates are conservative for analysis purposes.

The following table summarizes the existing traffic conditions:

Time Period	Boone Rd (vpd/vph)	Mt. Carmel (vpd/vph)	Intersection LOS(Overall)	Minor Approach LOS (Mount Carmel)	Volume-to-Capacity Ratio (v/c)	Average Delay (sec/veh)
Daily (ADT)	5,000 vpd	3,000 vpd	N/A	N/A	N/A	N/A
AM Peak	450 vph	270 vph	B	C	0.65	12
PM Peak	500 vph	300 vph	C	D	0.72	18

3.2 LEVEL OF SERVICE ANALYSIS

Level of service (LOS) for the unsignalized intersection was calculated using HCM methodologies. Under existing conditions:

- The intersection operates at LOS B during AM peak (average delay 12 seconds per vehicle) and LOS C during PM peak (delay 18 seconds).
- The minor approach (Mount Carmel Road) experiences higher delays (LOS C AM, LOS D PM) due to gaps in Boone Road traffic.

No capacity issues are present, with volume-to-capacity (v/c) ratios below 0.75 for all movements.

4.0 TRIP GENERATION

Trip generation for the proposed 231 single-family detached homes (ITE Land Use Code 210) was estimated using the ITE Trip Generation Manual, 11th Edition. The rates are as follows:

- Weekday Daily: Average 9.43 trips per dwelling unit (DU)
- AM Peak Hour: Average 0.70 trips per DU (26% entering, 74% exiting)
- PM Peak Hour: Average 0.90 trips per DU (63% entering, 37% exiting)

For 231 DU:

- Daily Trips: 2,178
- AM Peak: 162 trips (42 entering, 120 exiting)
- PM Peak: 208 trips (131 entering, 77 exiting)

Table 1 summarizes the trip generation.

Table 1 - Trip Generation Summary

Land Use	ITE Code	Size	Daily Trips	AM Peak Trips	PM Peak Trips
Single Family Housing	210	231 DU	2,178	162 (42/120)	208 (131/77)

No pass-by or internal capture reductions were applied, as this is a residential development.

5.0 TRIP DISTRIBUTION AND ASSIGNMENT

Trips were distributed based on existing traffic patterns and regional connectivity:

- 60% to/from east on Boone Road (toward Reynolds Road and I-30)
- 30% to/from west on Boone Road (toward residential areas)
- 10% to/from north on Mount Carmel Road

Assigned turning movements at the study intersection:

- AM Entering: 25 left from Boone EB, 10 right from Boone WB, 7 from Mt Carmel.
- AM Exiting: 70 left to Boone WB, 40 right to Boone EB, 10 to Mt Carmel.
- Similar proportional assignment for PM.

6.0 FUTURE CONDITIONS

This section evaluates the future traffic conditions at the intersection of Boone Road and Mount Carmel Road, considering both background growth and the impact of the proposed Villages at Magnolia Lane Subdivision over a 5-year horizon to 2030

6.1 BACKGROUND GROWTH

A 1% annual growth rate was applied to existing volumes over a 5-year horizon (to 2030), based on historical ARDOT data showing minimal increases. This results in future no-build ADTs of 5,255 on Boone Road and 3,153 on Mount Carmel Road.

6.2 WITH DEVELOPMENT

- Future AM Peak: Intersection volumes increase by 162 vph, resulting in LOS C (delay 18 sec).
- Future PM Peak: Increase by 208 vph, LOS D (delay 23 sec).
- With future extension of asphalt a center two-way left-turn lane (TWLTL) for both street increase the over all capacity 10-12% as per HCM.

The minor approach on Mount Carmel experiences LOS D and overall LOS will still keep the same LOS grading with slight increase of intersection waiting time.

Time Period	Boone Rd (vpd/vph)	Mt. Carmel (vpd/vph)	Intersection LOS(Overall)	Minor Approach LOS (Mount Carmel)	Volume-to-Capacity Ratio (v/c)	Average Delay (sec/veh)
Daily (ADT)	7,433 vpd	3,471 vpd	N/A	N/A	N/A	N/A
AM Peak	595 vph	322 vph	B	C	0.75	18
PM Peak	677 vph	331 vph	C	D	0.82	23

7.0 ANALYSIS AND RECOMMENDATIONS

The development will add moderate traffic, but the intersection will be at acceptable traffic capacity. Peak PM 15 minutes will expect some queuing on Mt. Carmel. Peak AM will still be comfortable.

Recommendations:

- Install a left-turn lane on Boone Road eastbound at Mount Carmel Road (warrants met based on projected volumes >100 vph left turns).
- Consider signalization if volumes exceed MUTCD warrants (projected peak hour >750 vph on major, >150 on minor).
- Add signage and striping for improved safety.
- Maintain proper sight distances at intersection.

HOPE CONSULTING
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Figure 1:
Location Map (Aerial map showing site at Boone/Mt Carmel intersection)

Figure 2:
Site Plan (Plat showing site at Boone/Mt Carmel intersection)

OPEN SPACE CALCULATION		
TRACT A	PARK AREA	3.76 ACRES
TRACT B	RETENTION AREA/WET PONDS	0.82 ACRES
TRACT C	GREEN SPACE	0.24 ACRES
TRACT D	GREEN SPACE	0.39 ACRES
TRACT E	GREEN SPACE	0.39 ACRES
TRACT F	RETENTION AREA/WET PONDS	0.98 ACRES
TRACT G	RETENTION AREA/WET PONDS	0.82 ACRES
TRACT H	GREEN SPACE	0.32 ACRES
	GREEN SPACE BETWEEN BOC & SIDEWALK	4.63 ACRES
	TOTAL	12.35 ACRES OR 21.25%

RESIDENTIAL DENSITY CALCULATIONS	
HOUSING UNITS	231 UNITS
TOTAL DEVELOPABLE AREA	58.11 ACRES
TOTAL COMMON USABLE OPEN SPACE	12.35 ACRES
RESIDENTIAL DENSITY	231/58.11=3.98 DUA

N

BASIS OF BEARING:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

100 0 100
BAR SCALE: 1"=100'

AS-SURVEYED DESCRIPTION:

PART OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER (NE 1/4 NW 1/4) AND THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER (NW 1/2 NE 1/2) IN SECTION 32 AND THE SOUTH HALF OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER (SW 1/4 SE 1/4) IN SECTION 29, ALL IN TOWNSHIP 1 SOUTH, RANGE 14 WEST OF THE 5TH PRINCIPAL MERIDIAN, SALINE COUNTY, ARKANSAS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

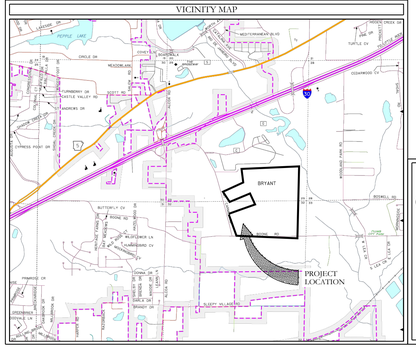
BEGINNING AT A SET 1/2" REBAR WITH ALUMINUM CAP BEING THE NE CORNER OF THE NW 1/4, NE 1/4 SECTION 29 AND 34.61 FEET NORTH OF A 4 X 4 CONCRETE POST;
THENCE, S 02° 57' 52" W, ALONG THE EAST LINE THEREOF, A DISTANCE OF 1285.53 TO A RAILROAD SPIKE FOUND AT THE SW CORNER OF THE NW 1/4 NE 1/4, SAID POINT BEING 8.11 FEET SOUTH OF AN EXISTING 1/2" REBAR;
THENCE, ALONG THE SOUTH LINE OF SAID NW 1/4 NE 1/4, N 88° 19' 44" W, A DISTANCE OF 1272.20 FEET TO AN EXISTING RAILROAD SPIKE FOUND AT THE SW CORNER OF THE NW 1/4 NE 1/4;
THENCE, ALONG THE SOUTH LINE OF THE NE 1/4 NW 1/4, N 88° 23' 01" W A DISTANCE OF 179.93 FEET TO A NAIL SET AT THE INTERSECTION OF SAID SOUTH LINE AND THE CENTERLINE OF MT. CARMEL ROAD;
THENCE, ALONG SAID CENTERLINE, N 09° 58' 11" W, A DISTANCE OF 97.38 FEET TO A POINT;
THENCE N 10° 02' 44" W, A DISTANCE OF 89.82 FEET TO A POINT;
THENCE, N 12° 47' 37" W, A DISTANCE OF 213.29 FEET TO A POINT;
THENCE, N 12° 18' 58" W, A DISTANCE OF 131.22 FEET TO A POINT;
THENCE, N 13° 06' 12" W, A DISTANCE OF 247.42 FEET TO AN EXISTING SPIKE;
THENCE, LEAVING SAID CENTERLINE, N 84° 33' 08" E, A DISTANCE OF 357.44 FEET TO A SET 1/2" REBAR (PS# 1121) POINT BEING ON THE WEST LINE OF THE NW 1/4, NE 1/4;
THENCE, N 05° 43' 37" E, A DISTANCE OF 294.27 FEET TO A 5/8" REBAR SET IN CONCRETE; THENCE, S 86° 18' 15" W, A DISTANCE OF 454.67 FEET TO A SPIKE FOUND IN THE CENTERLINE OF MT CARMEL ROAD;
THENCE, ALONG SAID CENTERLINE, N 12° 42' 57" W, A DISTANCE OF 262.83 FEET TO A SPIKE SET ON THE NORTH LINE OF THE NE 1/4 NW 1/4;
THENCE, ALONG SAID NORTH LINE, S 88° 22' 28" E, A DISTANCE OF 517.66 FEET TO A 1/2" REBAR WITH ALUMINUM CAP MARKING THE NW CORNER OF THE NW 1/4 NE 1/4;
THENCE, N 01° 22' 55" E, ALONG THE WEST LINE OF THE SW 1/4 OF THE SE 1/4 OF SAID SECTION 29, A DISTANCE OF 634.28 FEET TO AN EXISTING 4" ANGLE IRON;
THENCE, S 89° 23' 57" E, A DISTANCE OF 1306.74 FEET TO A SET 1/2" REBAR WITH AN ALUMINUM CAP ON THE EAST LINE OF THE SW 1/4 SE 1/4 SECTION 29;
THENCE, ALONG SAID EAST LINE, S 02° 39' 14" W, A DISTANCE OF 657.75 FEET TO THE **POINT OF BEGINNING** AND CONTAINING 65.32 ACRES (2,845,277 Sq Ft).

NOTE:

1. TRACT A, C, D, E, AND H WILL BE MAINTAINED AND OWNED BY THE PROPERTY OWNERS ASSOCIATION.

2. TRACT B, F AND G WILL BE UTILIZED AS A RETENTION AREA/WET PONDS AND UTILITY EASEMENTS MAINTAINED BY THE PROPERTY OWNERS ASSOCIATION.

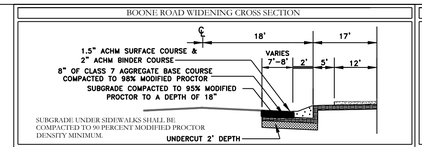
VICINITY MAP



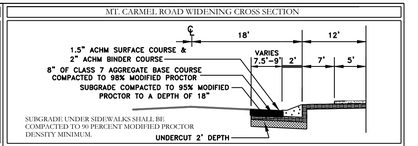
LEGEND

- (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

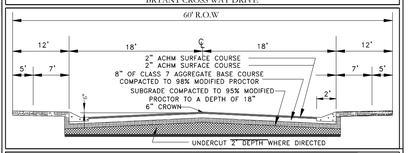
BOONE ROAD WIDENING CROSS SECTION



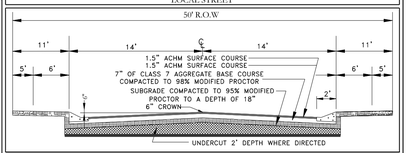
MT. CARMEL ROAD WIDENING CROSS SECTION



BRYANT CROSS WAY DRIVE



LOCAL STREET



CERTIFICATIONS:

OWNER:

Name: WIGGINS FAMILY REAL ESTATE HOLDINGS, LLC
Address: 17300 CHENAL PKWY, STE 105
LITTLE ROCK, AR 72223

DEVELOPER:

Name: WIGGINS FAMILY REAL ESTATE HOLDINGS, LLC
Address: 17300 CHENAL PKWY, STE 105
LITTLE ROCK, AR 72223

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: WIGGINS FAMILY REAL ESTATE HOLDINGS, LLC
Address: 17300 CHENAL PKWY, STE 105
LITTLE ROCK, AR 72223

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

PROPERTY SPECIFICATIONS:

OWNER: WIGGINS FAMILY REAL ESTATE HOLDINGS, LLC, 17300 CHENAL PKWY, STE 105, LITTLE ROCK, AR 72223

DEVELOPER/: SUBDIVIDER: WIGGINS FAMILY REAL ESTATE HOLDINGS, LLC, 17300 CHENAL PKWY, STE 105, LITTLE ROCK, AR 72223

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

NAME OF SUBDIVISION: THE VILLAGES AT MAGNOLIA LANE,

ZONING CLASSIFICATION: PUD

SOURCE OF TITLE: SALINE COUNTY DOCUMENT BOOK PAGE

MIN. LOT SIZE:
NUMBER OF LOTS: 231
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 - 25' OR AS SHOWN
SIDE - 8' 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
129 N. Main Street,
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
WIGGINS FAMILY REAL ESTATES HOLDINGS, LLC

PLANNED UNIT DEVELOPMENT
THE VILLAGES AT MAGNOLIA LANE
A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

DATE:	12/18/2023	C.A.D. BY: BJOHNSON		DRAWING NUMBER:
REVISED:	11/05/2025	CHECKED BY:		21-1175
		SCALE: 1"=100'		

500	1S	14W	0	17	330	62	1762

K:\LAND PROJECTS\ 2000\SUBDIVISION\2021\21-1175 PUD 12-20-23_1_1.DWF, 20X36MAP.DWG

PROPOSED COMMERCIAL

25300 I30 N

DRAINAGE REPORT

FOR
City of Bryant, Saline County, AR

November 2025

Vicinity Map

Owner & Developer: FINLEY & COMPANY

By:

HOPE CONSULTING
ENGINEERS - SURVEYORS

129 N. Main Street
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

TABLE OF CONTENTS

ITEM DESCRIPTION

1. Narrative & Summary
2. Pre Development Area & Calculation
3. Post Development Area & Calculation
4. Ditch Area & Calculation
5. North East Detention Pond
6. Hydrograph Summary Report
7. Precipitation Data of NOAA

Narrative & Summary

PROJECT TITLE

25300 I30 N COMMERCIAL

PROJECT PROPERTY OWNER

Stuart Finley

PROJECT LOCATION

Bryant, Saline County, AR

PROJECT DESCRIPTION

The proposed commercial development is at the city of Bryant, AR. Total development site area is 0.90 acres.

DRAINAGE ANALYSIS

On Site Drainage- Rational method was used to determine the existing and proposed flow from proposed site. There will be one detention pond to detain water from this development. Detailed drainage calculation considering the future expected development has been conducted to determine the required pond and culvert dimension. Summary of the calculation is below:

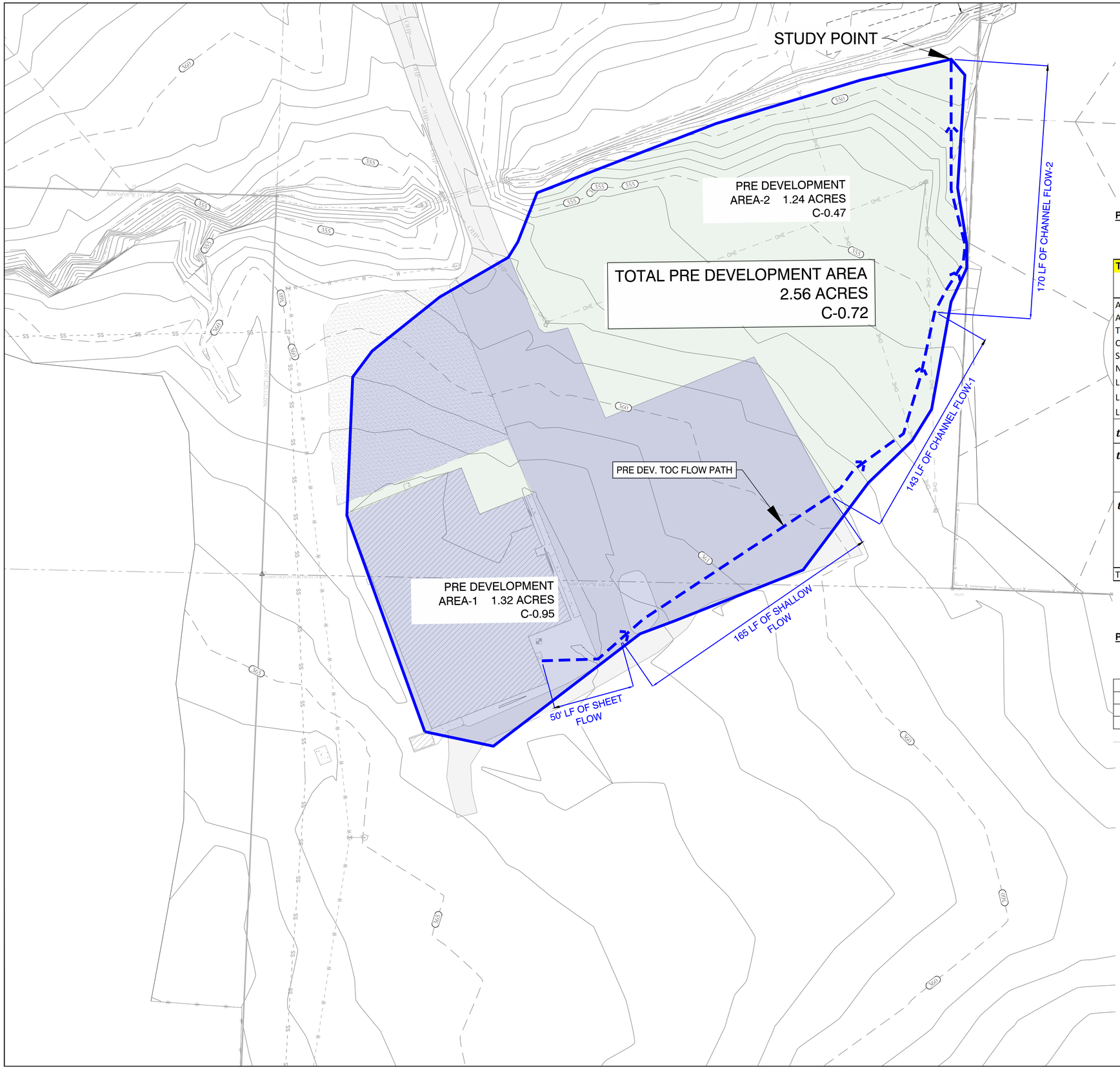
Detention Pond –North East Pond:

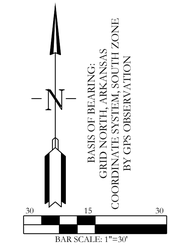
- Pond is situated on the north east side of the property.
- Pre-development area 2.56 acres.
- Post-development area 2.56 acres.
- Pre-development runoff coefficient 0.72.
- Post-development runoff coefficient 0.78.
- Pond has a bottom elevation of 351.00'.
- One 18" RCP with 0.72% slope is proposed for outflow culverts.

Peak flows for Pre and post development phase of onsite area have been tabulated below-

Period of time	Pre-development	Post-dev. Without detention	Post-dev. With detention
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	11.24	12.18	4.697
5-Year	13.34	14.45	5.052
10-Year	15.03	16.28	6.287
25-Year	17.25	18.68	7.520
50--Year	18.98	20.57	8.389
100-Year	20.42	22.12	9.706

CONCLUSION: From the onsite drainage calculation, it is seen that there is decrease in flow for all storm events due to the proposed pond.





VICINITY MAP:

PRE DEVELOPMENT TOC:

Time of Concentration, tc (min)

Area (ft2)	111672.9						
Area (Acre)	*2.56*						
Total Length, L (ft)	***528.0***						
Change in Elevation (ft)	16						
Slope, S (ft/ft)	*0.030*						
N (Coeff. Of roughness, Table 400-3)	0.020						
L_i (overland/sheet flow, ft)	50.0						
L_{scs}(shallow concentrated, ft)	165.0	Velocity, V (ft/sec)	Length, L (ft)	Height, h (ft)	Slope, S (ft/ft)	Mannings, n	Hydraulic Radius, R
$t_i = 0.83 \frac{(N L_i)^{0.467}}{S^{0.5}}$, (min)	*2.07*		50.0	1.0	*0.020*		
$t_{scs} = \frac{L_{scs}}{60\,V}$, (min) , paved V=20.3282(S^0.5)	*1.00*	*2.74*	165.0	3.0	*0.018*		
$t_{cs} = \frac{L_{cs}}{60\,V}$, (min)							
$V = \frac{1.49}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$ Channel flow-1	*1.00*	*2.37*	143.0	5.0	*0.035*	0.050	*0.278*
Channel flow-2	*0.68*	*4.17*	170.0	7.0	*0.041*	0.050	*0.573*
Total time of concentration, tc (min)	**4.76**						
USE	**5**						

PRE DEVELOPMENT RUNOFF COEFFICIENT

	Area (acer)	C 100 year	Corrected C 100 year
PRE DEV. AREA-1	1.32	0.95	1.254
PRE DEV. AREA-2	1.24	0.47	0.5828
Tot =	2.56		0.72

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

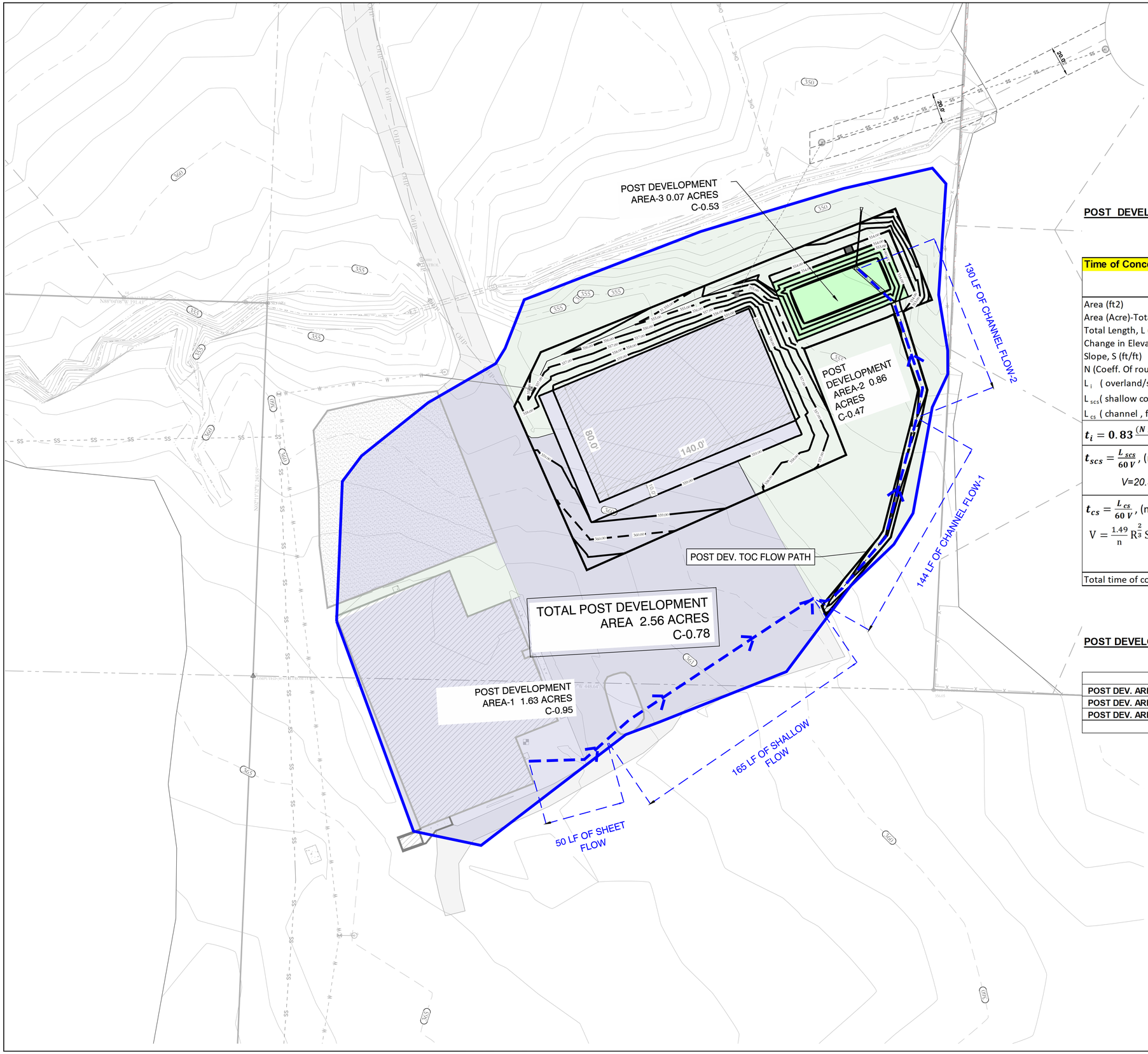
HOPE CONSULTING
ENGINEERS - SURVEYORS
129 N. Main Street,
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

25-1210 Comm./ 25300 I30 N
PRE DEVELOPMENT DRAINAGE EXHIBITION
A COMMERCIAL IN BRYANT CITY, SALINE COUNTY, ARKANSAS

DATE:	11/05/2025	C.A.D. BY:	DRAWING NUMBER:
REVISED:	##	CHECKED BY:	25-1210
SHEET:		SCALE: 1"=30'	

500	01S	14W	0	13	400	62	1664



VICINITY MAP:

POST DEVELOPMENT TOC:

Time of Concentration, tc (min)

Area (ft2)	111672.9						
Area (Acre)-Total	*2.56*						
Total Length, L (ft)	***489.0***						
Change in Elevation (ft)	13						
Slope, S (ft/ft)	*0.027*						
N (Coeff. Of roughness, Table 400-3)	0.020						
L_i (overland/sheet flow, ft)	*50.0*						
L_{scs}(shallow concentrated, ft)	*165.0*	Velocity, V	Length,	Height,	Slope,	Mannings,	Hydraulic
L_{cs} (channel , ft)	274.0	(ft/sec)	L (ft)	h (ft)	S (ft/ft)	n	Radius, R
$t_i = 0.83 \frac{(N L_i)^{0.467}}{S^{0.5}}$, (min)	*2.07*		50.0	1.0	*0.020*		
$t_{scs} = \frac{L_{scs}}{60 V}$, (min) , paved							
V=20.3282(S^0.5)	*1.00*	*2.74*	165.0	3.0	*0.018*		
$t_{cs} = \frac{L_{cs}}{60 V}$, (min)							
$V = \frac{1.49}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$ Channel flow-1	*0.96*	*2.49*	144.0	5.0	*0.035*	0.050	*0.300*
Channel flow-2	*0.60*	*3.61*	130.0	4.0	*0.031*	0.050	*0.573*
Total time of concentration, tc (min)	**4.64**						
USE	5						

POST DEVELOPMENT RUNOFF COEFFICIENT

	Area (acer)	C 25 year	Corrected C 100 year
POST DEV. AREA-1	1.63	0.95	1.55
POST DEV. AREA-2	0.86	0.47	0.4042
POST DEV. AREA-3	0.07	0.53	0.0371
Tot =	2.56		0.78

HOPE CONSULTING
ENGINEERS - SURVEYORS
129 N. Main Street,
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
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FOR USE AND BENEFIT OF:
STUART FINLEY

25-1210 Comm./ 25300 I30 N
POST DEVELOPMENT DRAINAGE EXHIBITION
A COMMERCIAL IN BRYANT CITY, SALINE COUNTY, ARKANSAS

DATE:	11/05/2025	C.A.D. BY:	DRAWING NUMBER:
REVISED:	##	CHECKED BY:	25-1210
SHEET:		SCALE: 1"=30'	

500	01S	14W	0	13	400	62	1664

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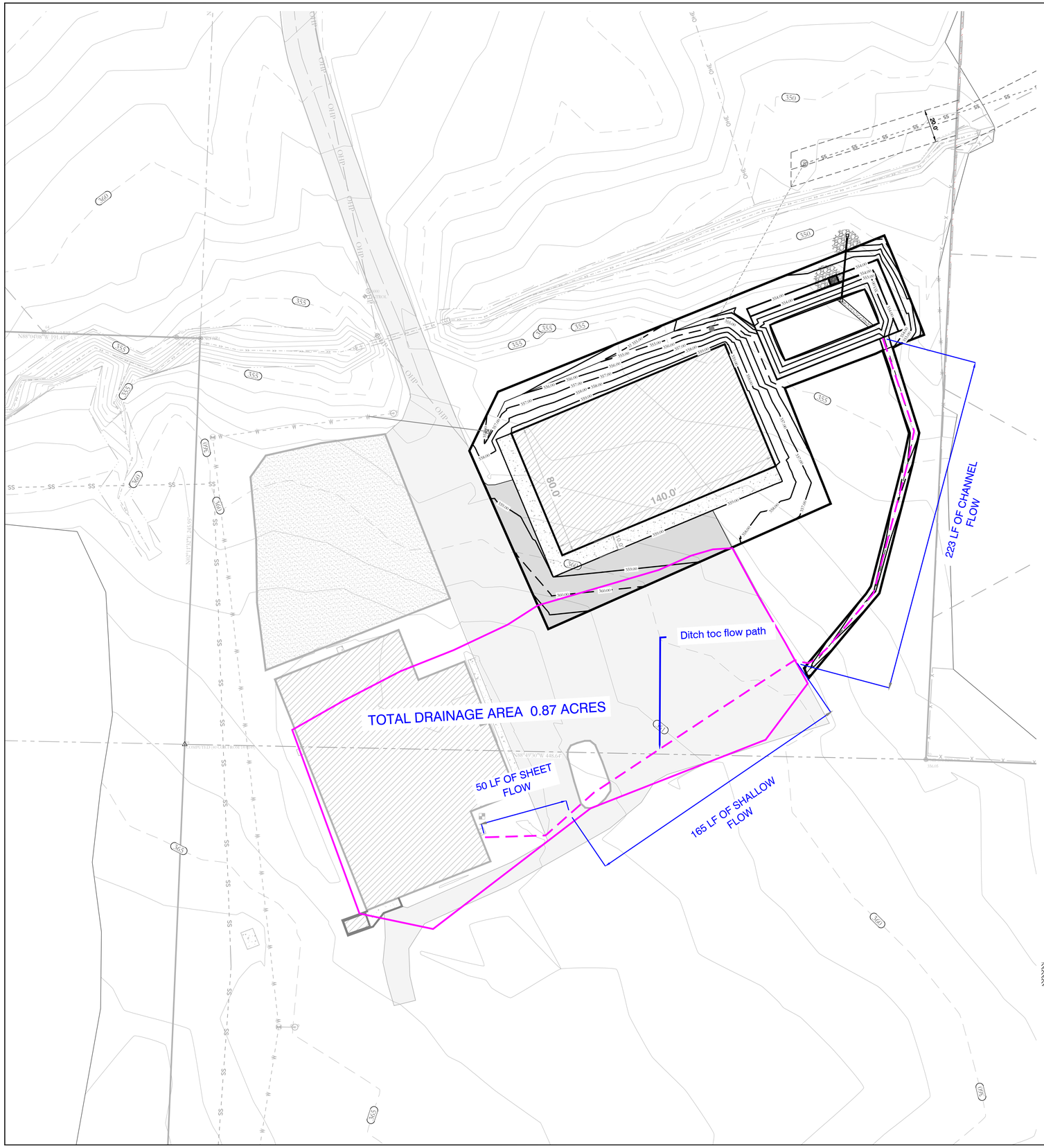
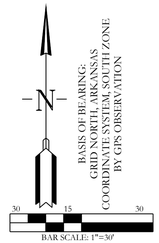
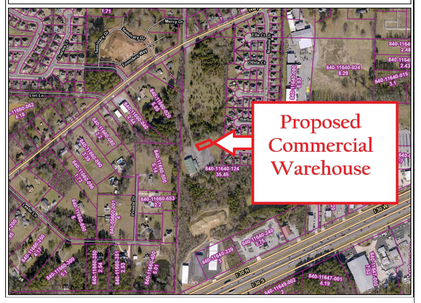
ARKANSAS





VICINITY MAP:



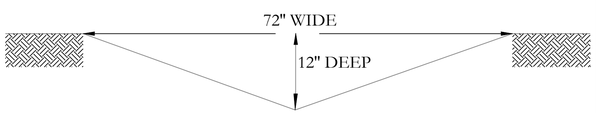
Ditch Size Calculation

Time of Concentration, tc (min)								
Area (ft2)	37737.2							
Area (Acre)	*0.87*							
Total Length, L (ft)	***438.0***							
Change in Elevation (ft)	10							
Gross Slope, S (ft/ft)	*0.023*							
N (Coeff. Of roughness, Table 400	*0.020*							
L_i (overland/sheet flow, ft)	50.0							
L_{scs}(shallow concentrated, ft)	165.0	Velocity, V (ft/sec)	Length, L (ft)	Height, h (ft)	Slope, S (ft/ft)	Mannings, n	Hydraulic Radius, R	
L_{cs} (channel , ft)	223.0							
$t_i = 0.83 \frac{(N L_i)^{0.467}}{S^{0.5}}$, (min)	*2.07*	-	50.0	1.0	*0.020*	0.020	-	
$t_{scs} = \frac{L_{scs}}{60\,V}$, (min) , paved								
V=20.3282(S^0.5)	*1.00*	*2.74*	165.0	3.0	*0.018*	-	-	
$t_{cs} = \frac{L_{cs}}{60\,V}$, (min)								
$V = \frac{1.49}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$ Ch1	*1.80*	*2.07*	223.0	6.0	*0.027*	0.050	*0.275*	
Total time of concentration, tc (m	**4.87**							
USE MIN	**5**							

Design Peak Runoff Rates, Qp (cfs)				
tc =	5.00	Runoff	Toal A	Q
	Intensity, I (in/hr)	Coefficient,		
100year	11.10	**0.950**	**0.87 acer**	**9.14**

Channel/ Ditch Dimension Calculation												
Total Length, L (ft)	***223.0***											
Total Change in Elevation (ft)	6											
Slope, S (ft/ft)	*0.027*											
Target Discharge, Q (ft^3/s)	***9.1***											
		Channel Dimenstion										
$Q = V A$		Velocity, V (ft/sec)	Bottom Width, (ft)	Depth, (ft)	Top Width, (ft)	Ch Side Slope 1:Z	Area, (ft^2)	Length, L (ft)	Elevation, h (ft)	Slope, S (ft/ft)	Mannings, n	Hydraulic Radius, R
$V = \frac{1.49}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$												
C Flow	*14.87*	*4.96*	0.00	1.00	*6.00*	3	*3.00*	223.0	6.0	*0.0269*	0.030	*0.474*
Discharge Capacity, Q =	**14.87**	ft^3/s										

Adequate size



DITCH SECTION

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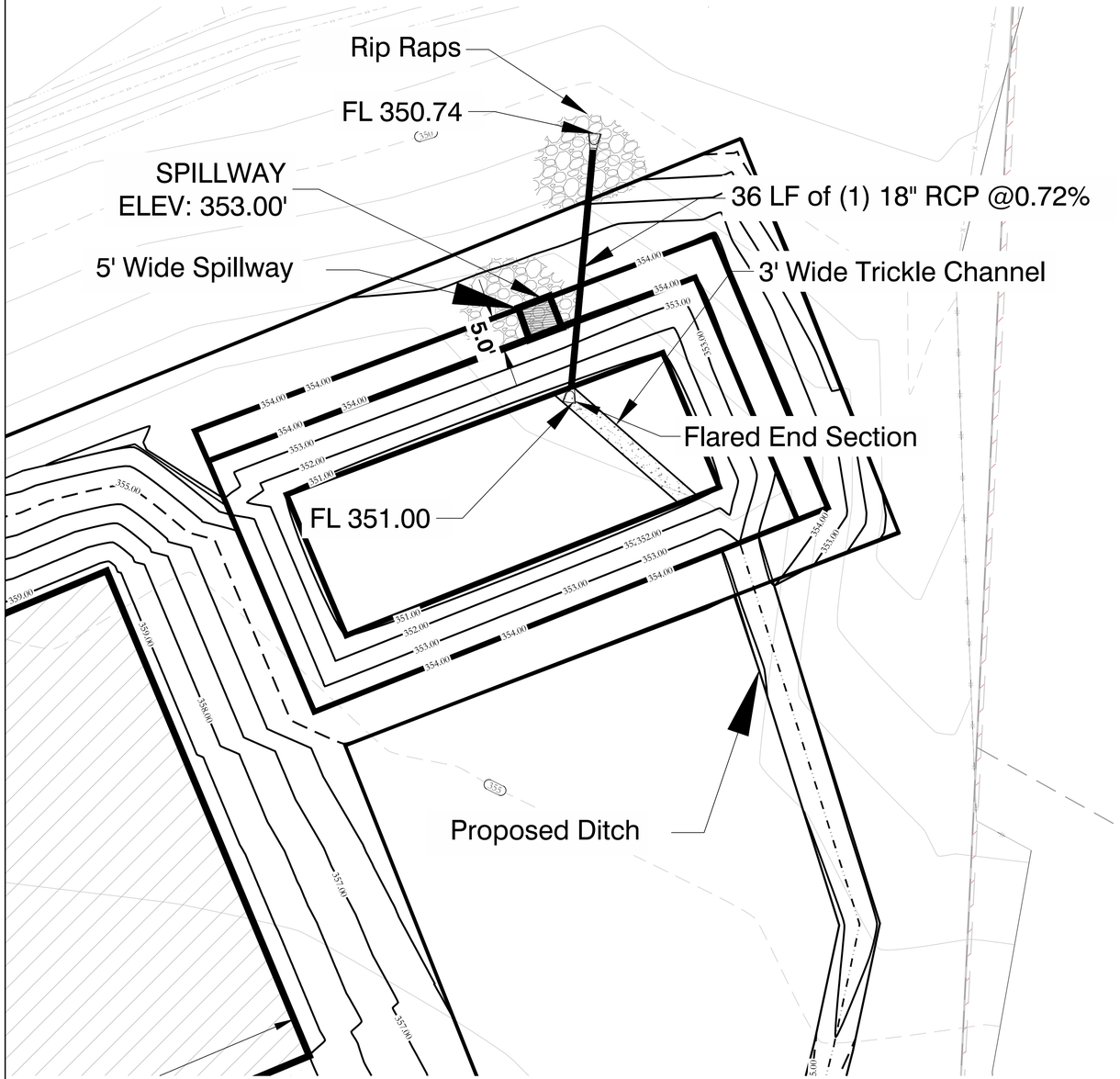
CERTIFICATE OF AUTHORIZATION HOPE CONSULTING, INC. No. 1931 ARKANSAS

FOR USE AND BENEFIT OF:
STUART FINLEY

25-1210 Comm./ 25300 I30 N
DITCH CALCULATION
A COMMERCIAL IN BRYANT CITY, SALINE COUNTY, ARKANSAS

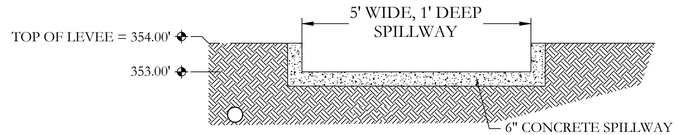
DATE:	11/05/2025	C.A.D. BY:	DRAWING NUMBER:
REVISED:	##	CHECKED BY:	25-1210
SHEET:		SCALE: 1"=30'	

500	01S	14W	0	13	400	62	1664

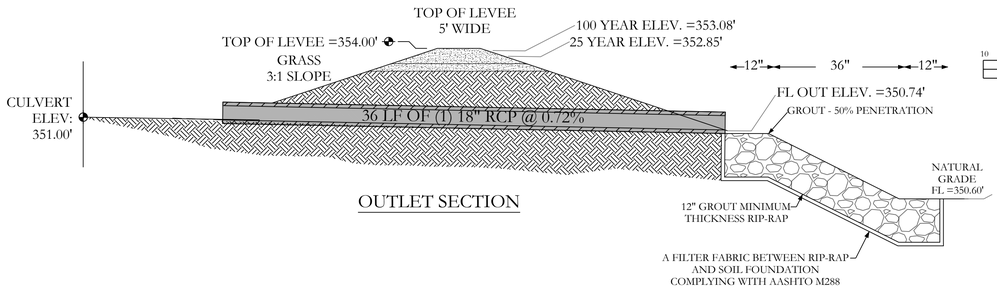


NORTH EAST DETENTION POND

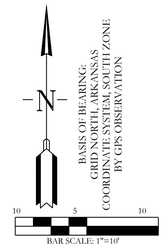
VICINITY MAP:



SPILLWAY END VIEW
NTS



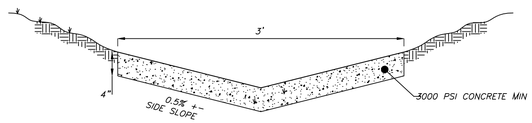
OUTLET SECTION



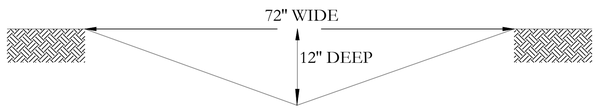
EARTHEN SLOPE NOTE:
EARTHEN DETENTION POND SLOPES ON BOTH THE INTERIOR AND EXTERIOR OF THE POND SHALL HAVE A MAXIMUM SLOPE OF 3:1.

NOTE:
1. DETENTION POND WILL BE REQUIRED TO BE STABILIZED WITH SOLID SOD/SEED STABILIZATION PER THE STORM WATER MANAGEMENT MANUAL.

2. DETENTION POND WILL HAVE A 5' WIDE LEVEE.



DETAIL (NTS)
TRICKLE CHANNEL SECTION



DITCH SECTION

DETENTION POND MAINTENANCE PLAN

Background
The Detention pond is located at the North East of the subjected property. It is designed to temporarily detain stormwater to meet water quantity criteria before discharging off the property.

Routine Maintenance
Routine maintenance will include but not be limited to:
-Moving of the bank slopes and area around the pond on a monthly basis during the growing season and as needed during the cooler months.

-The outlet pipe from the pond and other areas will be inspected monthly for debris which could inhibit the proper flow of discharge. Any debris will be removed immediately and disposed of or placed in a location to prevent future maintenance and to not cause impact up or downstream of the structure.

-Trash will be removed from around the pond to prevent entering the pond. Generally, the site should be kept free of loose trash which could be carried off site by wind or rain.

-Inspect the pond and outlet pipe for non-routine maintenance need.

Periodic or Non-Routine Maintenance
The routine inspection of the pond area and discharge pipe will identify needed repairs and non-routine maintenance. These items may include but not be limited to:

-Re-growth of trees on or around the pond bank. These should be cut and removed from the pond area.

-Sediment from the site may accumulate in the pond bottom and reduce the pond to below design volume requirements. The pond should be excavated if the pond bottom elevation reached a level that allows excessive aquatic growth or reduces the pond efficiency such, that the sediments are passing the discharge structure and release off site.

-Stabilization or re-grading of side slopes may be required periodically or after excessive rain events. Any disturbance of slopes should be reseeded or may require installation of erosion control materials until seeding can reestablish adequate grasses to prevent future erosion.

-Any other maintenance or repairs which would minimize other maintenance to the pond or outfall structures.

For questions or concerns about Tract "A", contact at (501)315-2626.

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811
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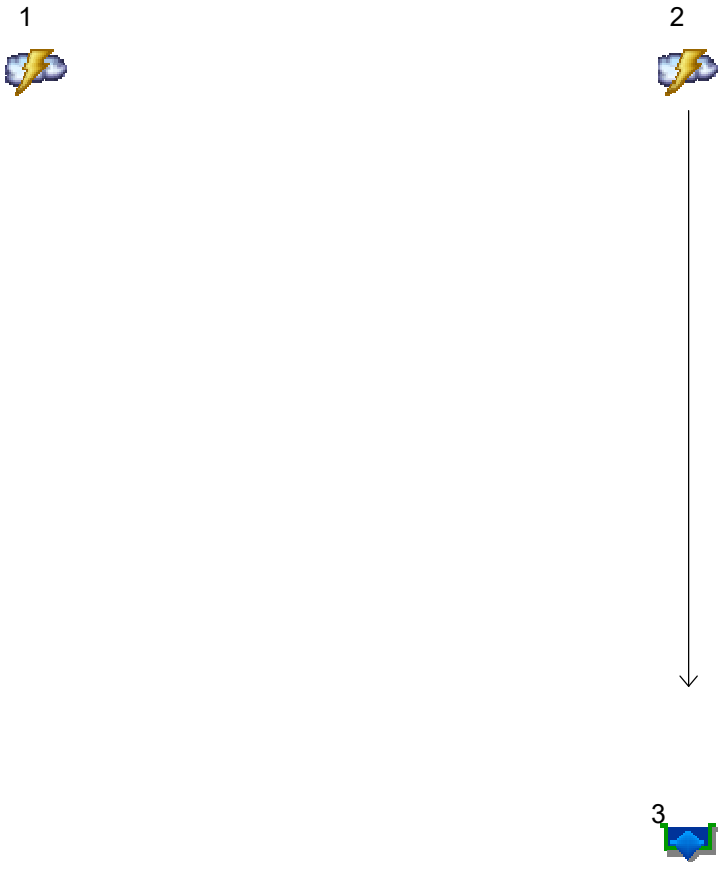
FOR USE AND BENEFIT OF:
STUART FINLEY

25-1210 Comm./ 25300 I30 N
NORTH EAST DETENTION POND
A COMMERCIAL IN BRYANT CITY, SALINE COUNTY, ARKANSAS

DATE:	11/05/2025	C.A.D. BY:				DRAWING NUMBER:	
REVISED:	##	CHECKED BY:				25-1210	
SHEET:	C-3.0	SCALE:	1"=10'				
500	01S	14W	0	13	400	62	1664

Hydrograph Summary Report
North East Detention Pond

Watershed Model Schematic



Legend

Hyd.	Origin	Description
1	Rational	Pre-Development
2	Rational	Dev. Generated Flow
3	Reservoir	Post Dev. Flow

Multi-Hydrograph Plot

Hyd. No. 1

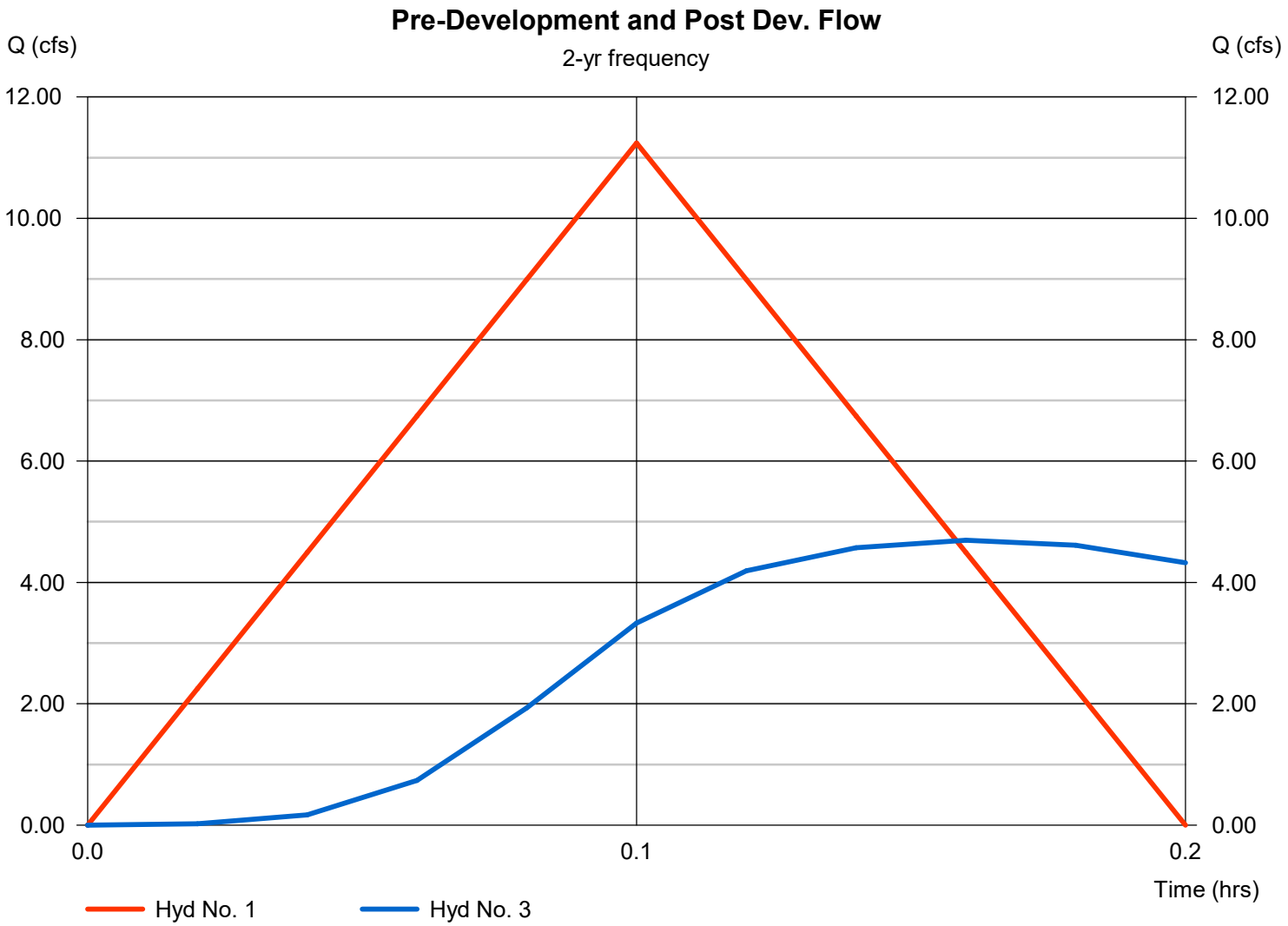
Pre-Development

Hydrograph type	=	Rational
Peak discharge	=	11.24 cfs
Time to peak	=	0.08 hrs
Hyd. Volume	=	3,372 cuft

Hyd. No. 3

Post Dev. Flow

Hydrograph type	=	Reservoir
Peak discharge	=	4.70 cfs
Time to peak	=	0.13 hrs
Hyd. Volume	=	3,650 cuft



Multi-Hydrograph Plot

Hyd. No. 1

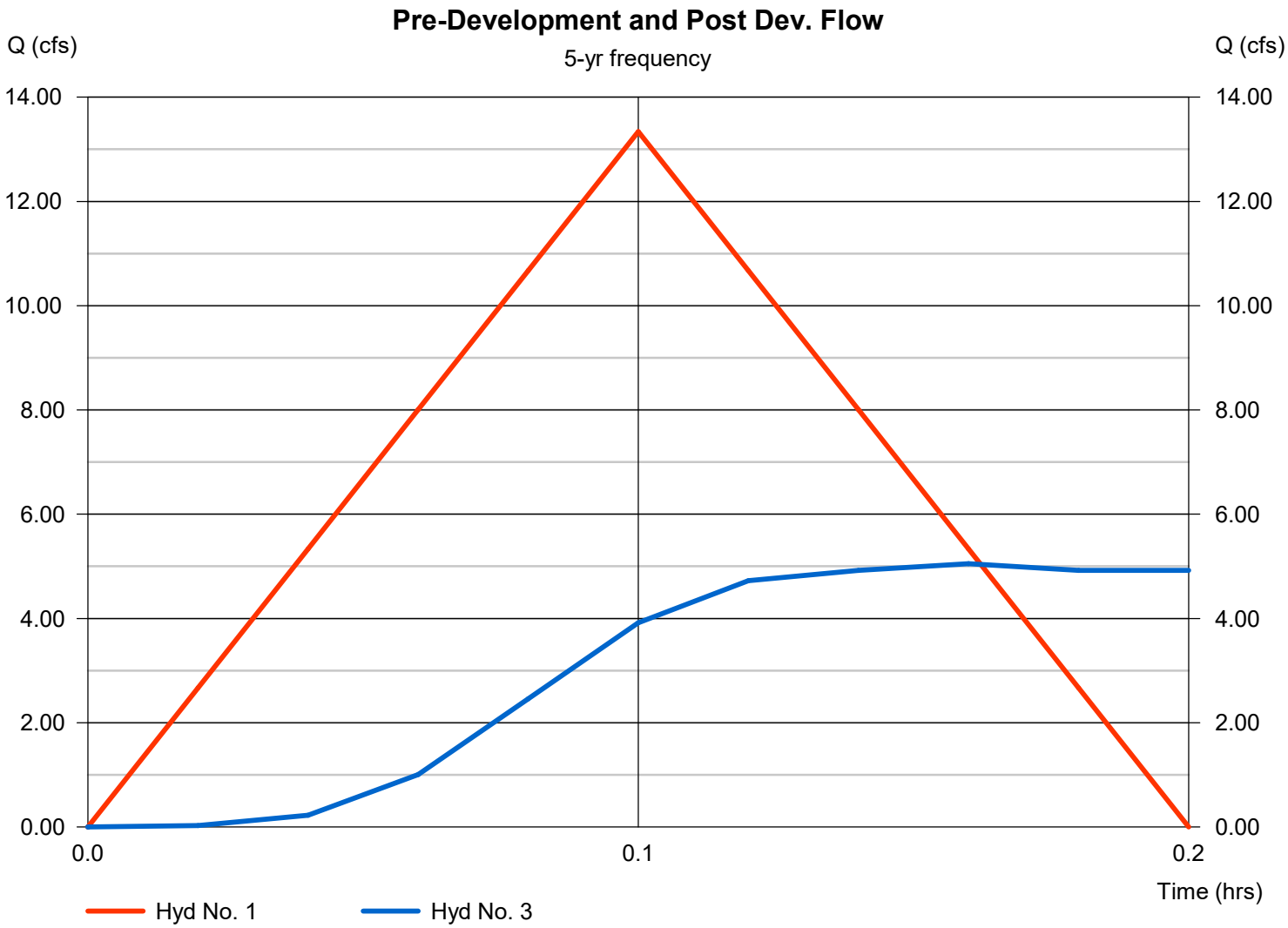
Pre-Development

Hydrograph type	=	Rational
Peak discharge	=	13.34 cfs
Time to peak	=	0.08 hrs
Hyd. Volume	=	4,002 cuft

Hyd. No. 3

Post Dev. Flow

Hydrograph type	=	Reservoir
Peak discharge	=	5.05 cfs
Time to peak	=	0.13 hrs
Hyd. Volume	=	4,332 cuft



Multi-Hydrograph Plot

Hyd. No. 1

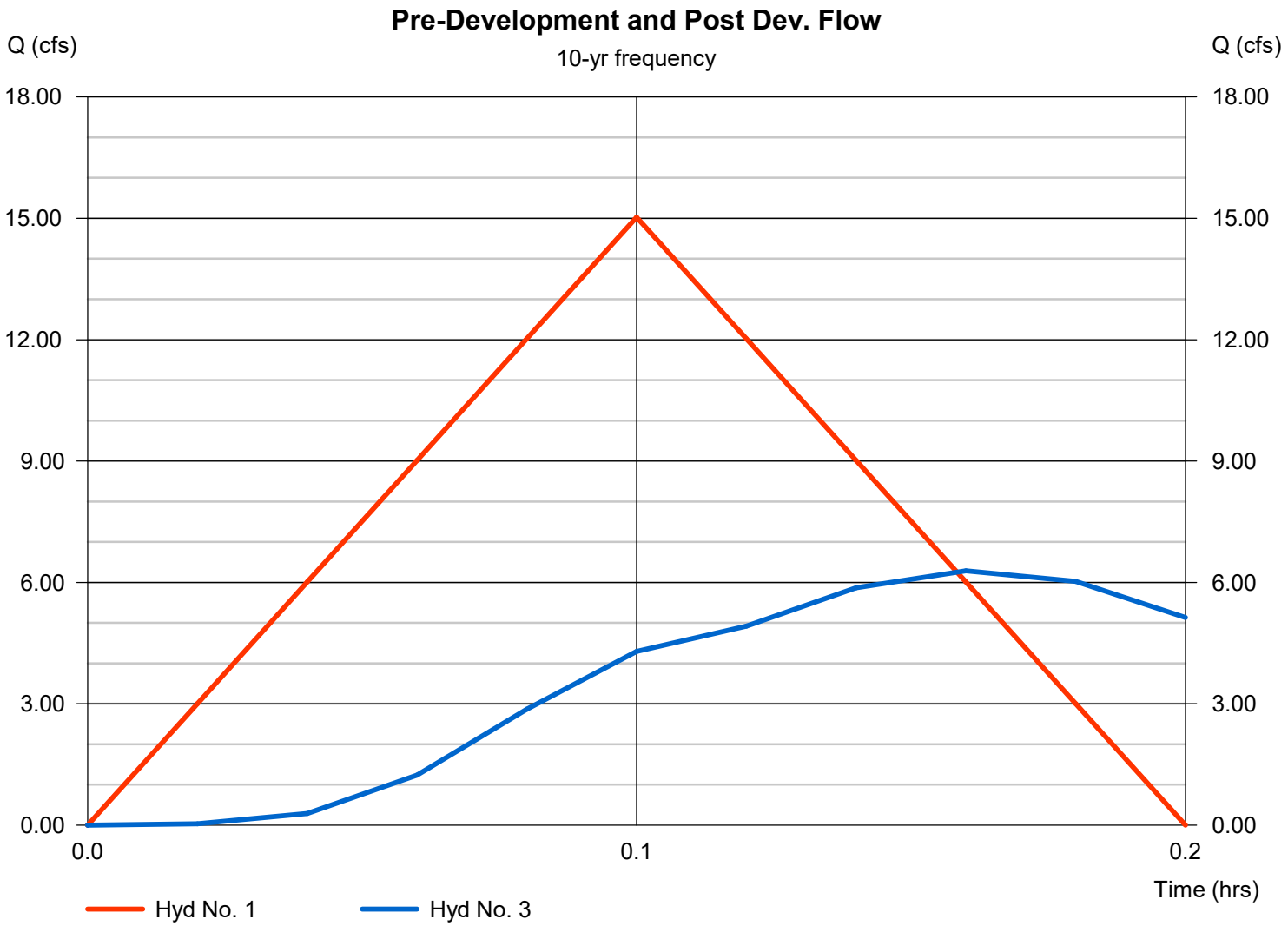
Pre-Development

Hydrograph type	=	Rational
Peak discharge	=	15.03 cfs
Time to peak	=	0.08 hrs
Hyd. Volume	=	4,508 cuft

Hyd. No. 3

Post Dev. Flow

Hydrograph type	=	Reservoir
Peak discharge	=	6.29 cfs
Time to peak	=	0.13 hrs
Hyd. Volume	=	4,881 cuft



Multi-Hydrograph Plot

Hyd. No. 1

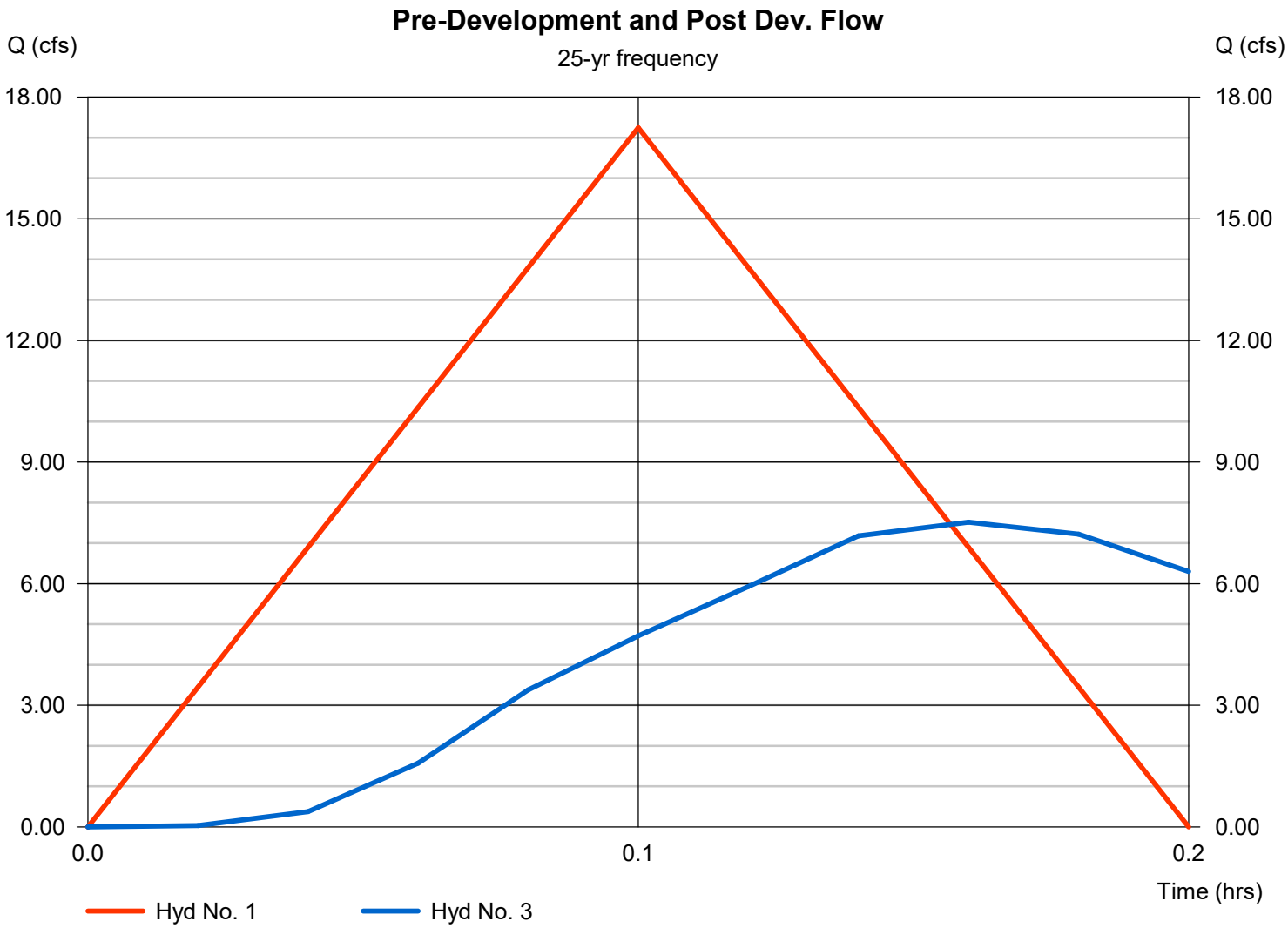
Pre-Development

Hydrograph type	=	Rational
Peak discharge	=	17.25 cfs
Time to peak	=	0.08 hrs
Hyd. Volume	=	5,174 cuft

Hyd. No. 3

Post Dev. Flow

Hydrograph type	=	Reservoir
Peak discharge	=	7.52 cfs
Time to peak	=	0.13 hrs
Hyd. Volume	=	5,602 cuft



Multi-Hydrograph Plot

Hyd. No. 1

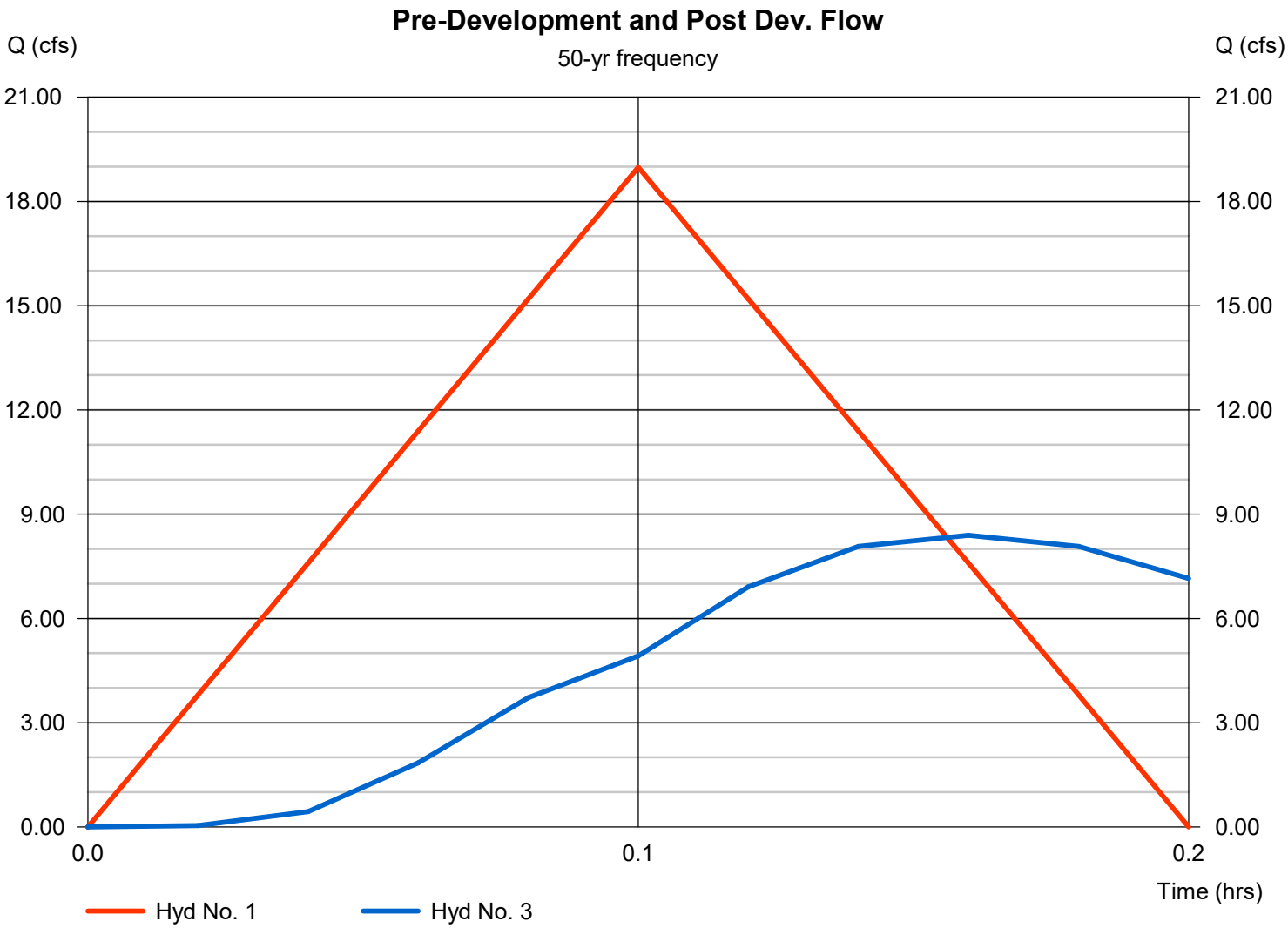
Pre-Development

Hydrograph type	=	Rational
Peak discharge	=	18.98 cfs
Time to peak	=	0.08 hrs
Hyd. Volume	=	5,695 cuft

Hyd. No. 3

Post Dev. Flow

Hydrograph type	=	Reservoir
Peak discharge	=	8.39 cfs
Time to peak	=	0.13 hrs
Hyd. Volume	=	6,167 cuft



Multi-Hydrograph Plot

Hyd. No. 1

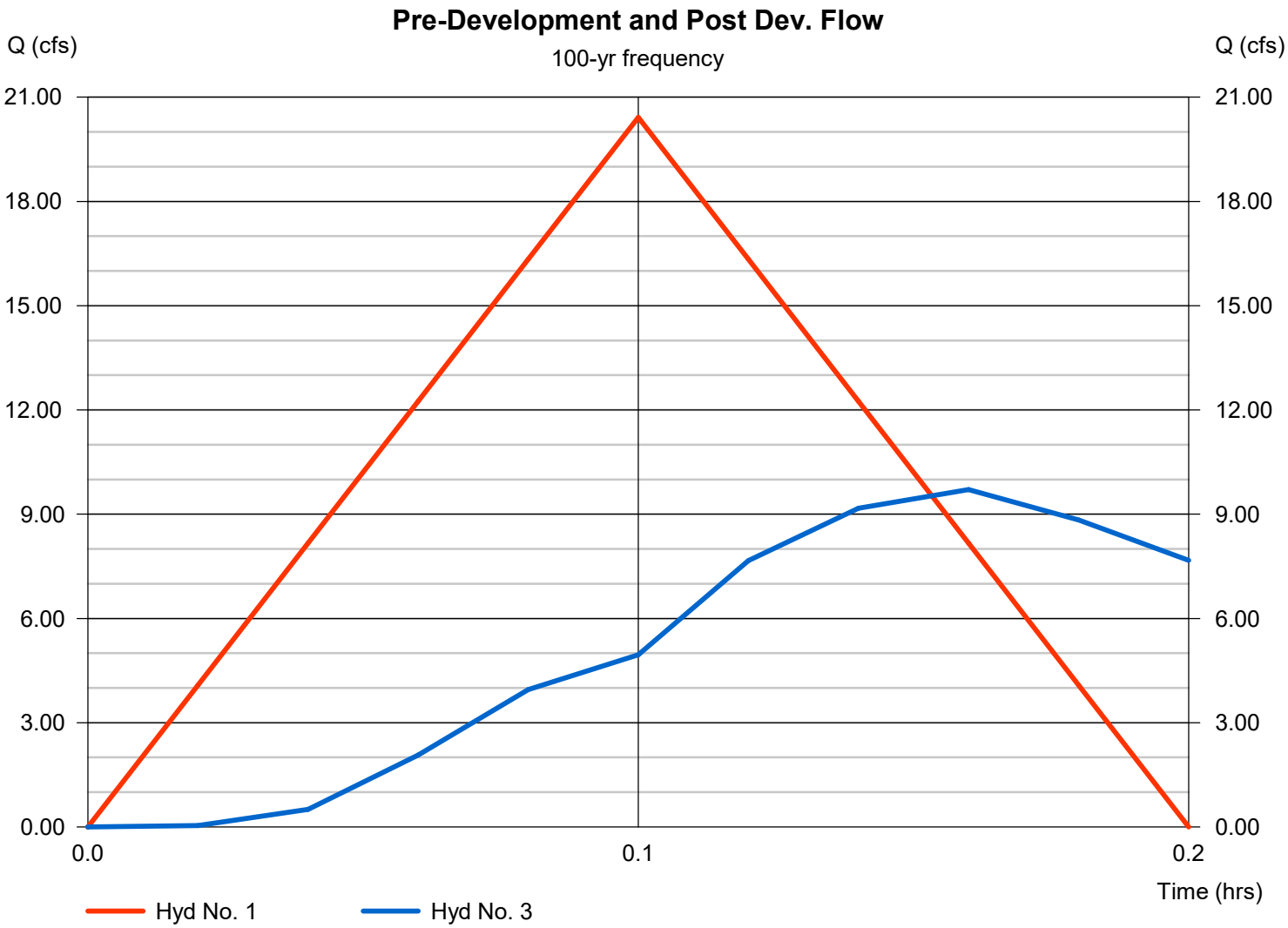
Pre-Development

Hydrograph type	=	Rational
Peak discharge	=	20.42 cfs
Time to peak	=	0.08 hrs
Hyd. Volume	=	6,126 cuft

Hyd. No. 3

Post Dev. Flow

Hydrograph type	=	Reservoir
Peak discharge	=	9.71 cfs
Time to peak	=	0.13 hrs
Hyd. Volume	=	6,633 cuft



Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	Rational	------	-------	11.24	-------	13.34	15.03	17.25	18.98	20.42	Pre-Development
2	Rational	------	-------	12.18	-------	14.45	16.28	18.68	20.57	22.12	Dev. Generated Flow
3	Reservoir	2	-------	4.697	-------	5.052	6.287	7.520	8.389	9.706	Post Dev. Flow

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	11.24	1	5	3,372	------	------	------	Pre-Development
2	Rational	12.18	1	5	3,653	------	------	------	Dev. Generated Flow
3	Reservoir	4.697	1	8	3,650	2	352.30	2,322	Post Dev. Flow

Hydrograph Report

Hyd. No. 1

Pre-Development

Hydrograph type	=	Rational	Peak discharge	=	11.24 cfs
Storm frequency	=	2 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	3,372 cuft
Drainage area	=	2.560 ac	Runoff coeff.	=	0.72*
Intensity	=	6.098 in/hr	Tc by User	=	5.00 min
IDF Curve	=	BRYANT.IDF	Asc/Rec limb fact	=	1/1

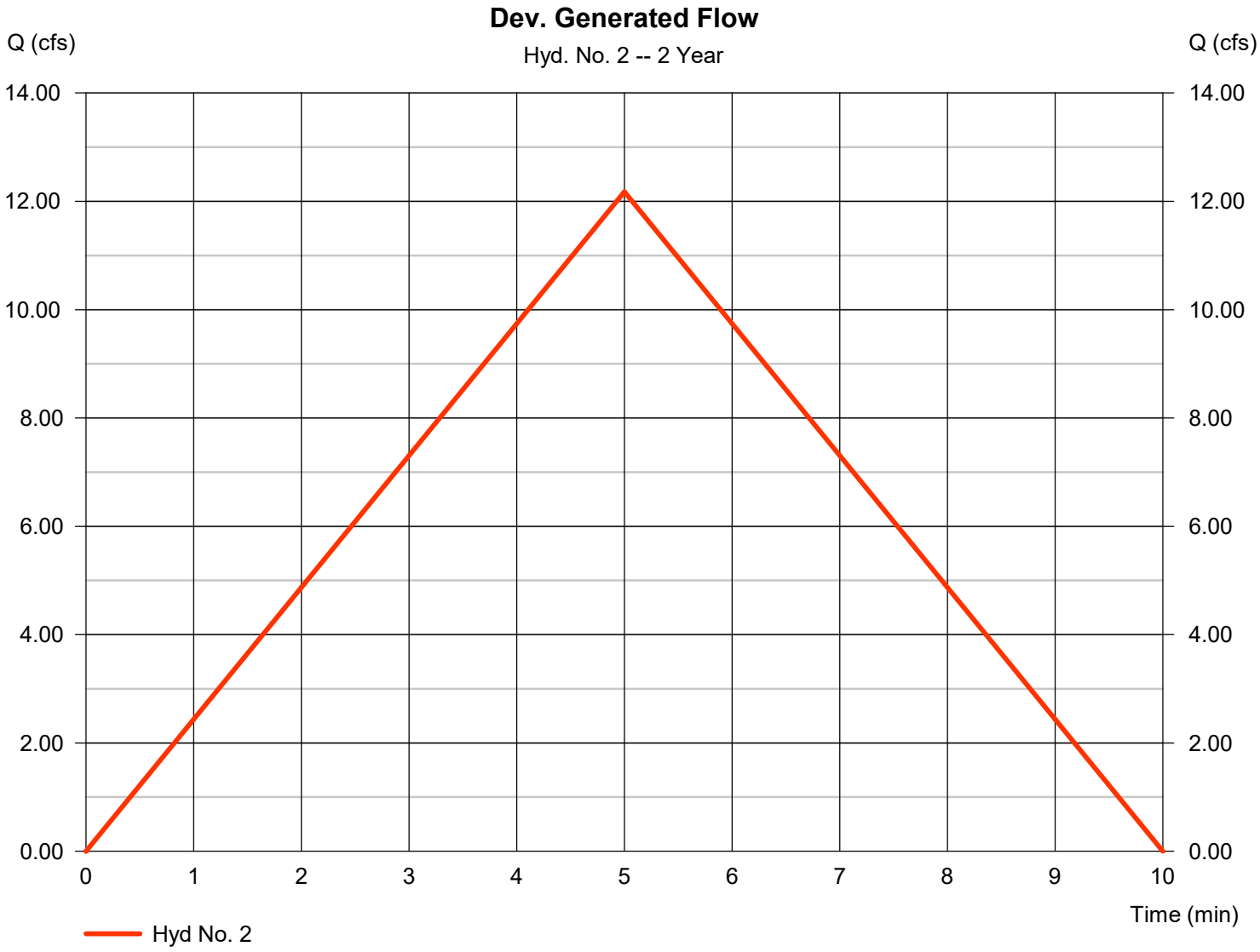
* Composite (Area/C) = [(11.990 x 0.44) + (4.630 x 0.90)] / 2.560

Hydrograph Report

Hyd. No. 2

Dev. Generated Flow

Hydrograph type	=	Rational	Peak discharge	=	12.18 cfs
Storm frequency	=	2 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	3,653 cuft
Drainage area	=	2.560 ac	Runoff coeff.	=	0.78
Intensity	=	6.098 in/hr	Tc by User	=	5.00 min
IDF Curve	=	BRYANT.IDF	Asc/Rec limb fact	=	1/1



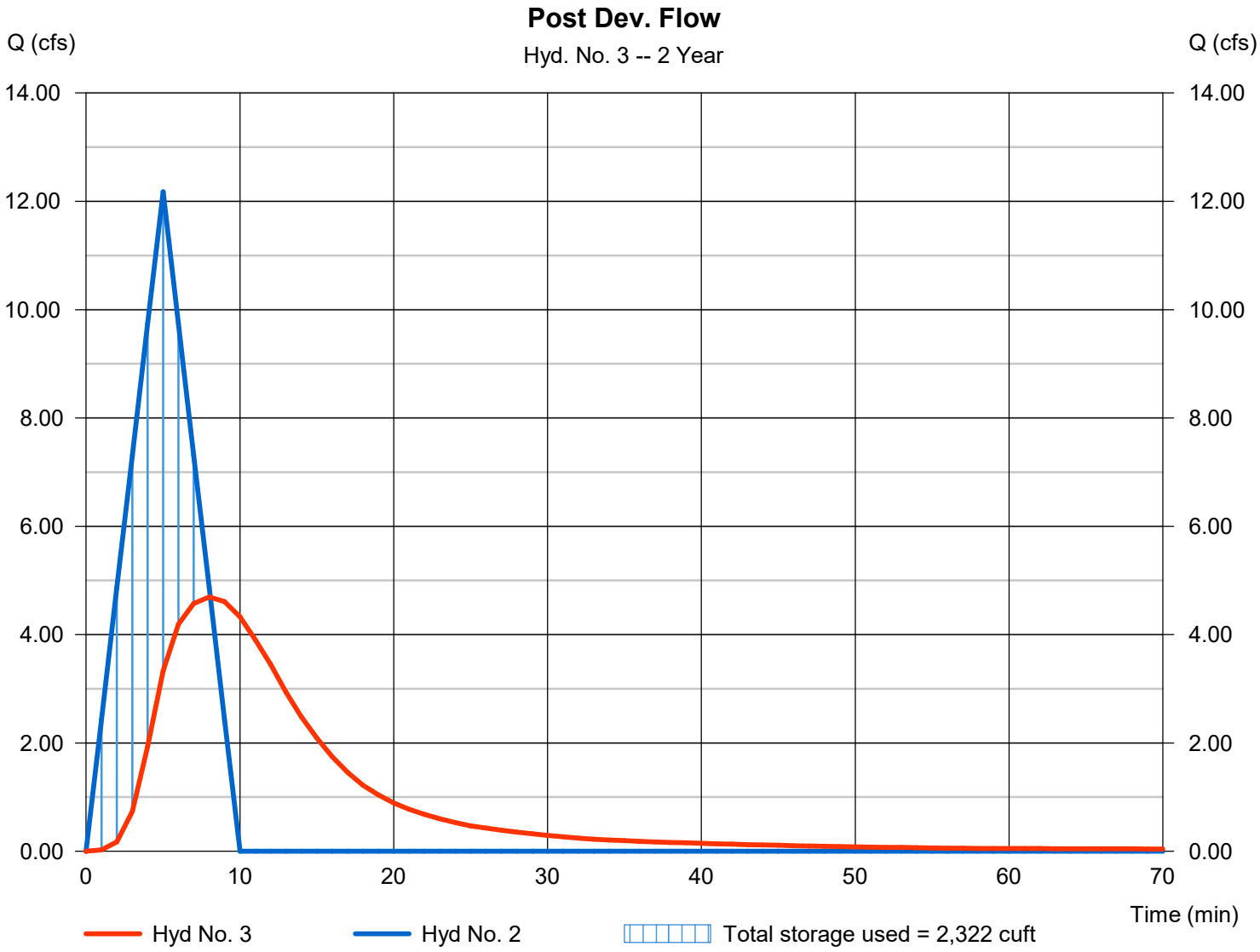
Hydrograph Report

Hyd. No. 3

Post Dev. Flow

Hydrograph type	=	Reservoir	Peak discharge	=	4.697 cfs
Storm frequency	=	2 yrs	Time to peak	=	8 min
Time interval	=	1 min	Hyd. volume	=	3,650 cuft
Inflow hyd. No.	=	2 - Dev. Generated Flow	Max. Elevation	=	352.30 ft
Reservoir name	=	detention	Max. Storage	=	2,322 cuft

Storage Indication method used.



Pond Report

Pond No. 1 - detention

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 351.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	351.00	1,390	0	0
1.00	352.00	1,930	1,652	1,652
2.00	353.00	2,542	2,229	3,881
3.00	354.00	3,225	2,876	6,758

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	Inactive	Inactive	0.00
Span (in)	= 18.00	0.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 351.00	0.00	0.00	0.00
Length (ft)	= 36.00	0.00	0.00	0.00
Slope (%)	= 0.72	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

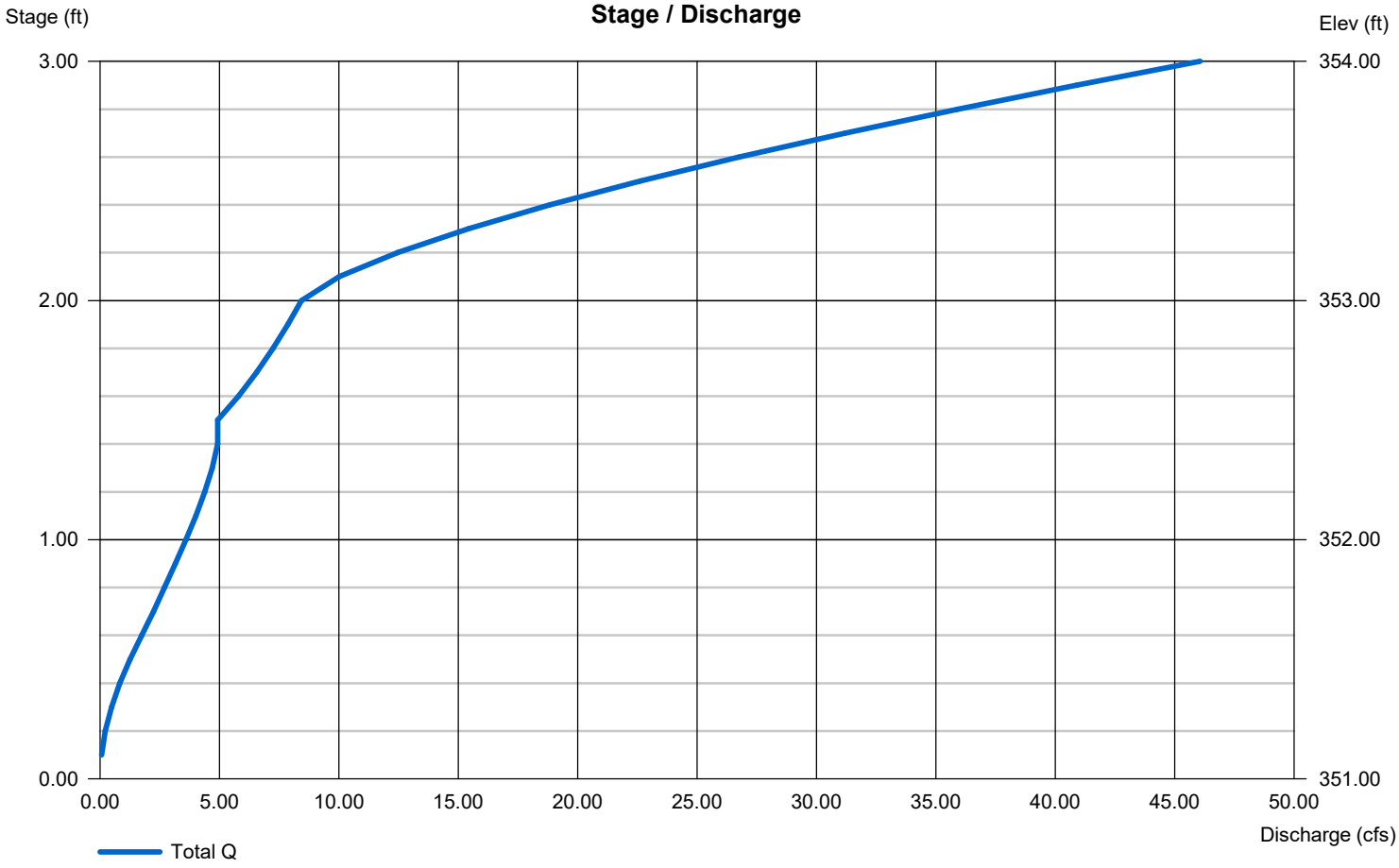
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 10.00	Inactive	Inactive	0.00
Crest El. (ft)	= 353.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	Rect	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

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



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	13.34	1	5	4,002	------	------	------	Pre-Development
2	Rational	14.45	1	5	4,335	------	------	------	Dev. Generated Flow
3	Reservoir	5.052	1	8	4,332	2	352.51	2,800	Post Dev. Flow

Hydrograph Report

Hyd. No. 1

Pre-Development

Hydrograph type	=	Rational	Peak discharge	=	13.34 cfs
Storm frequency	=	5 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	4,002 cuft
Drainage area	=	2.560 ac	Runoff coeff.	=	0.72*
Intensity	=	7.237 in/hr	Tc by User	=	5.00 min
IDF Curve	=	BRYANT.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(11.990 x 0.44) + (4.630 x 0.90)] / 2.560

Hydrograph Report

Hyd. No. 2

Dev. Generated Flow

Hydrograph type	=	Rational	Peak discharge	=	14.45 cfs
Storm frequency	=	5 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	4,335 cuft
Drainage area	=	2.560 ac	Runoff coeff.	=	0.78
Intensity	=	7.237 in/hr	Tc by User	=	5.00 min
IDF Curve	=	BRYANT.IDF	Asc/Rec limb fact	=	1/1

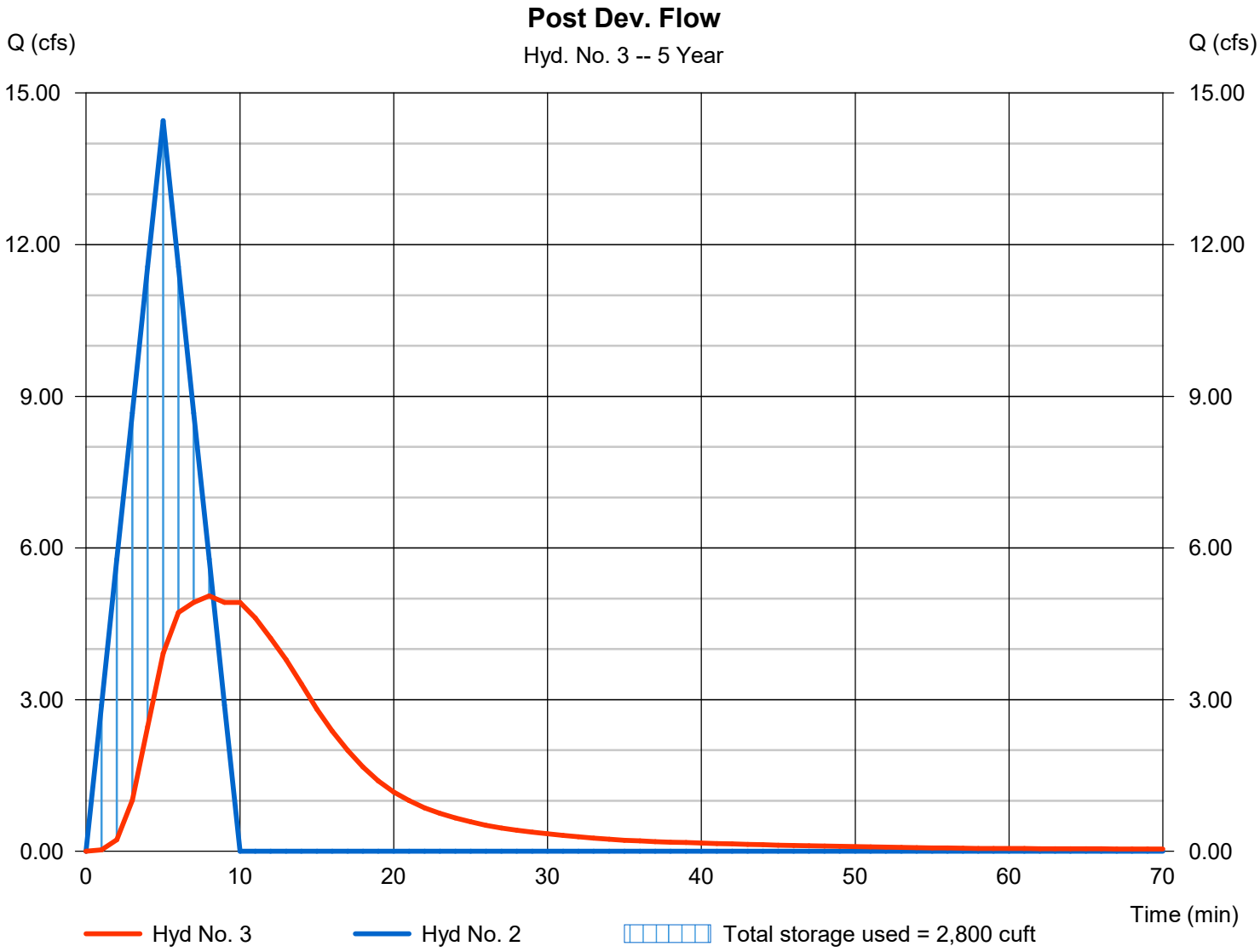
Hydrograph Report

Hyd. No. 3

Post Dev. Flow

Hydrograph type	=	Reservoir	Peak discharge	=	5.052 cfs
Storm frequency	=	5 yrs	Time to peak	=	8 min
Time interval	=	1 min	Hyd. volume	=	4,332 cuft
Inflow hyd. No.	=	2 - Dev. Generated Flow	Max. Elevation	=	352.51 ft
Reservoir name	=	detention	Max. Storage	=	2,800 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	15.03	1	5	4,508	------	------	------	Pre-Development
2	Rational	16.28	1	5	4,884	------	------	------	Dev. Generated Flow
3	Reservoir	6.287	1	8	4,881	2	352.66	3,134	Post Dev. Flow

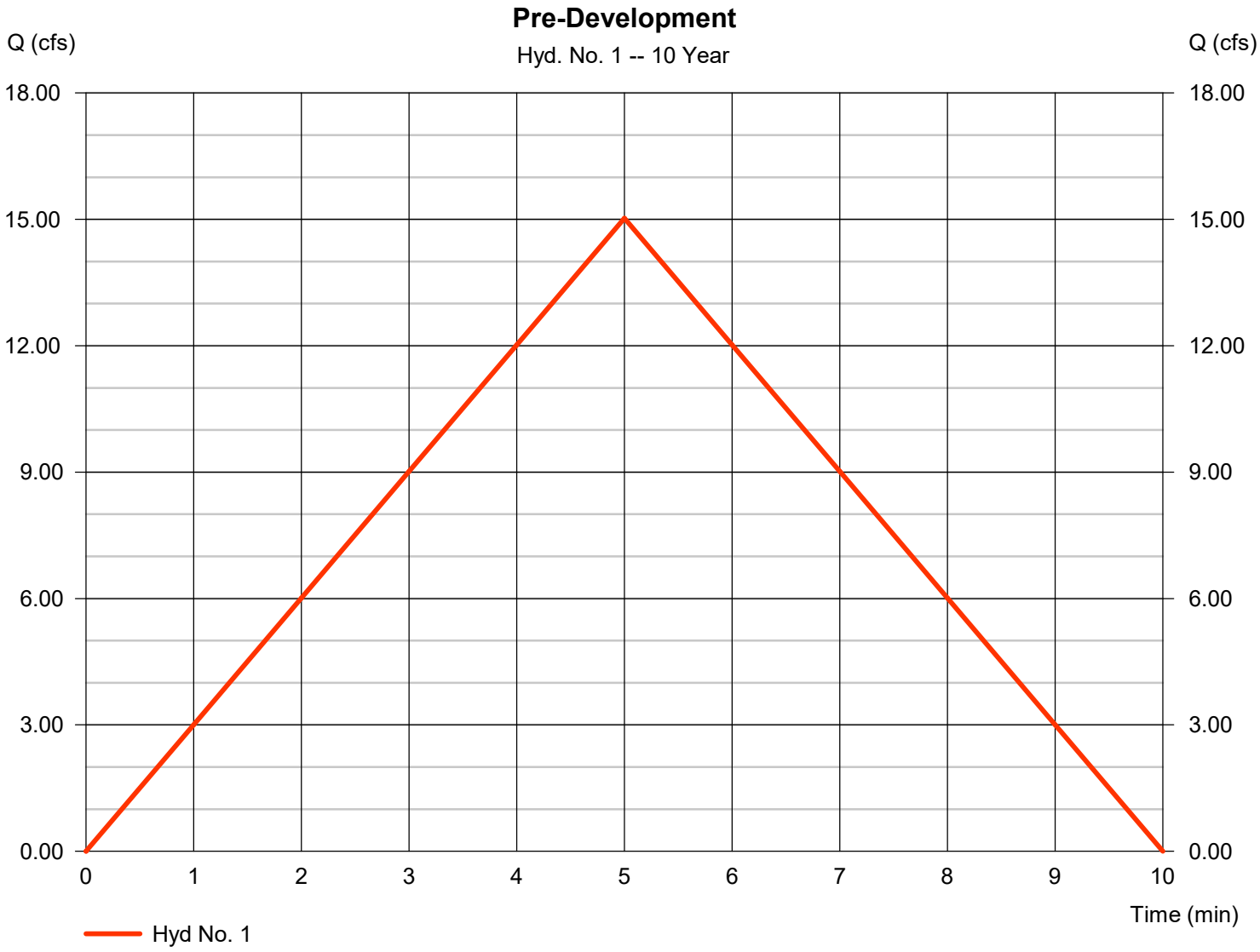
Hydrograph Report

Hyd. No. 1

Pre-Development

Hydrograph type	=	Rational	Peak discharge	=	15.03 cfs
Storm frequency	=	10 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	4,508 cuft
Drainage area	=	2.560 ac	Runoff coeff.	=	0.72*
Intensity	=	8.153 in/hr	Tc by User	=	5.00 min
IDF Curve	=	BRYANT.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(11.990 x 0.44) + (4.630 x 0.90)] / 2.560

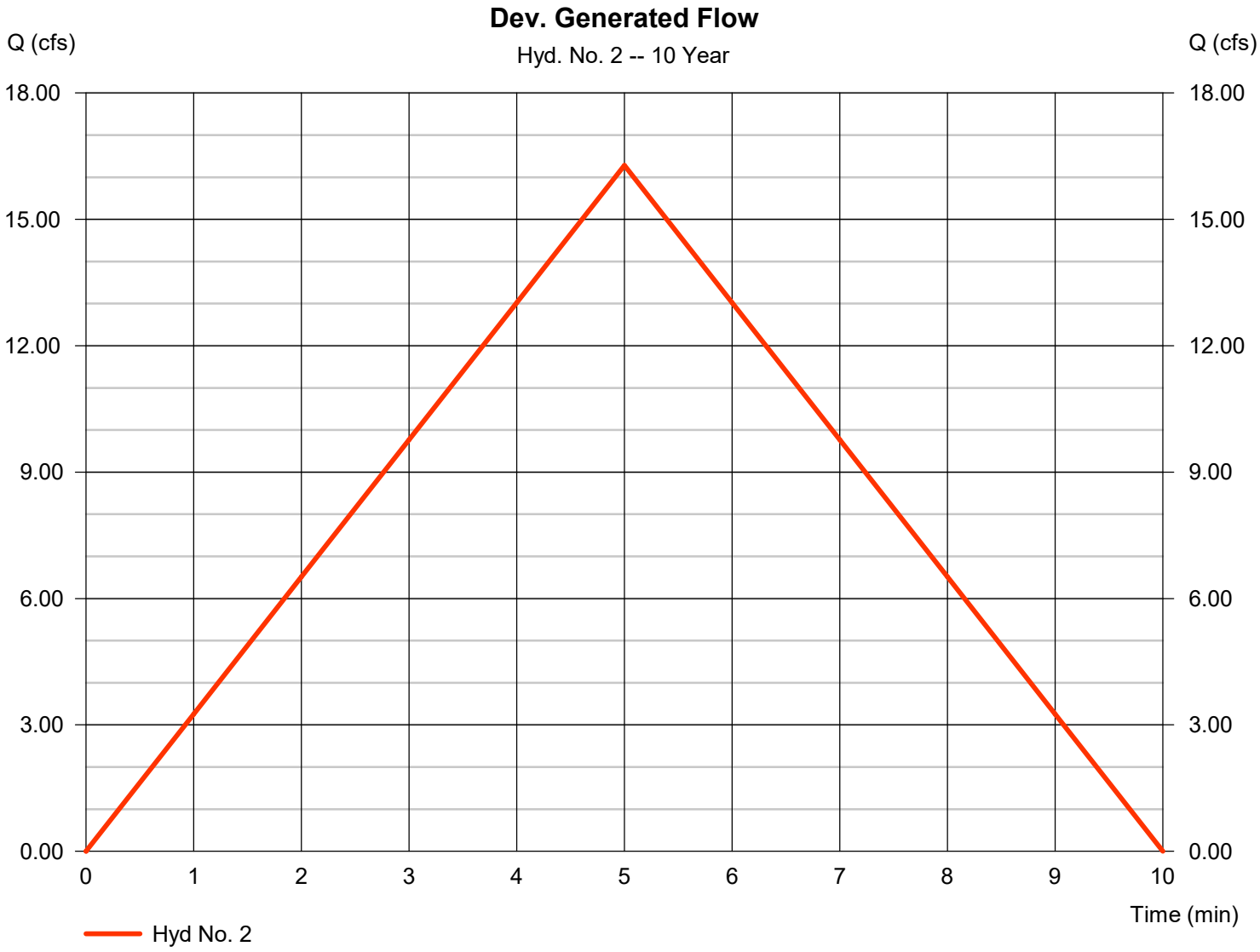


Hydrograph Report

Hyd. No. 2

Dev. Generated Flow

Hydrograph type	=	Rational	Peak discharge	=	16.28 cfs
Storm frequency	=	10 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	4,884 cuft
Drainage area	=	2.560 ac	Runoff coeff.	=	0.78
Intensity	=	8.153 in/hr	Tc by User	=	5.00 min
IDF Curve	=	BRYANT.IDF	Asc/Rec limb fact	=	1/1



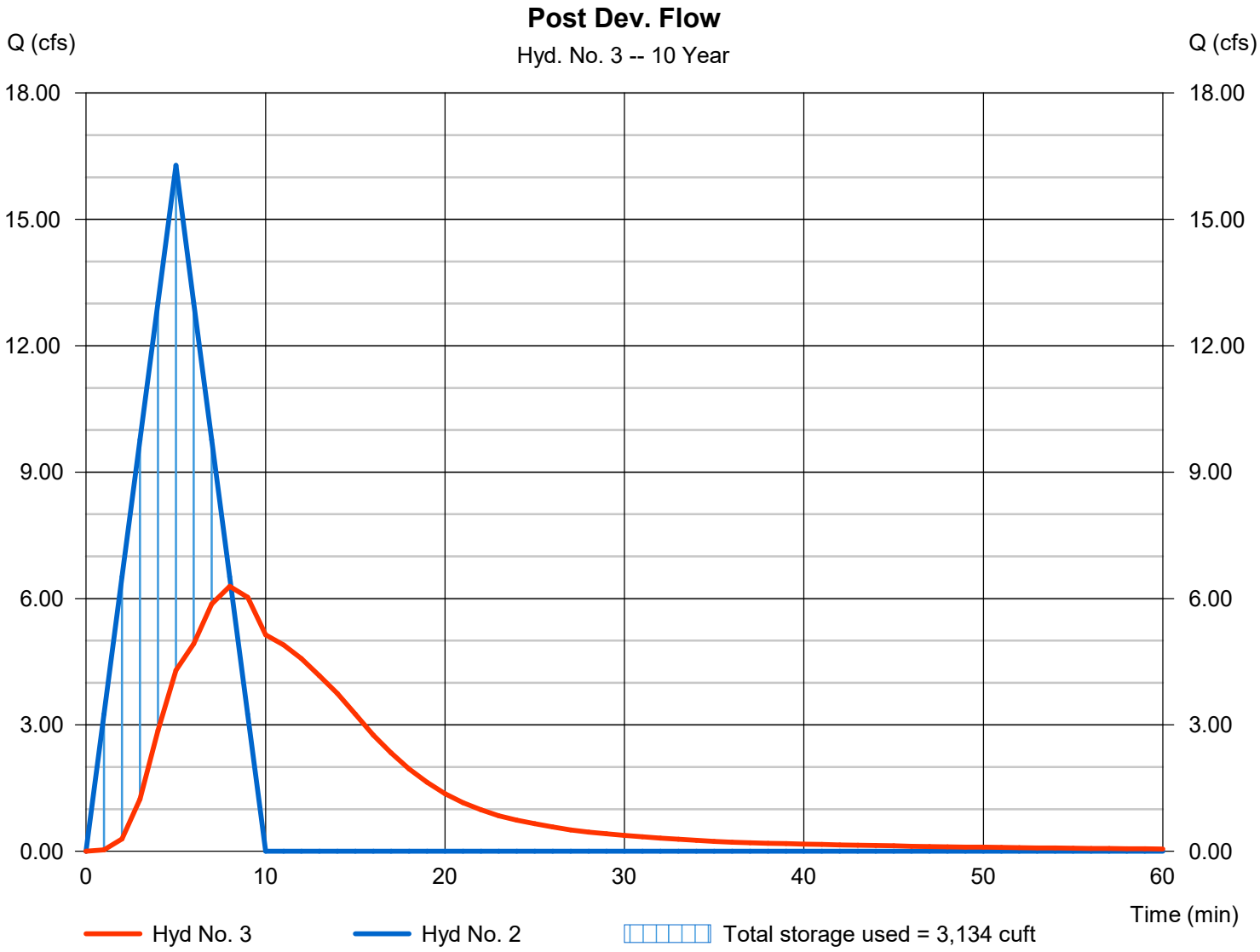
Hydrograph Report

Hyd. No. 3

Post Dev. Flow

Hydrograph type	=	Reservoir	Peak discharge	=	6.287 cfs
Storm frequency	=	10 yrs	Time to peak	=	8 min
Time interval	=	1 min	Hyd. volume	=	4,881 cuft
Inflow hyd. No.	=	2 - Dev. Generated Flow	Max. Elevation	=	352.66 ft
Reservoir name	=	detention	Max. Storage	=	3,134 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	17.25	1	5	5,174	------	------	------	Pre-Development
2	Rational	18.68	1	5	5,605	------	------	------	Dev. Generated Flow
3	Reservoir	7.520	1	8	5,602	2	352.85	3,539	Post Dev. Flow

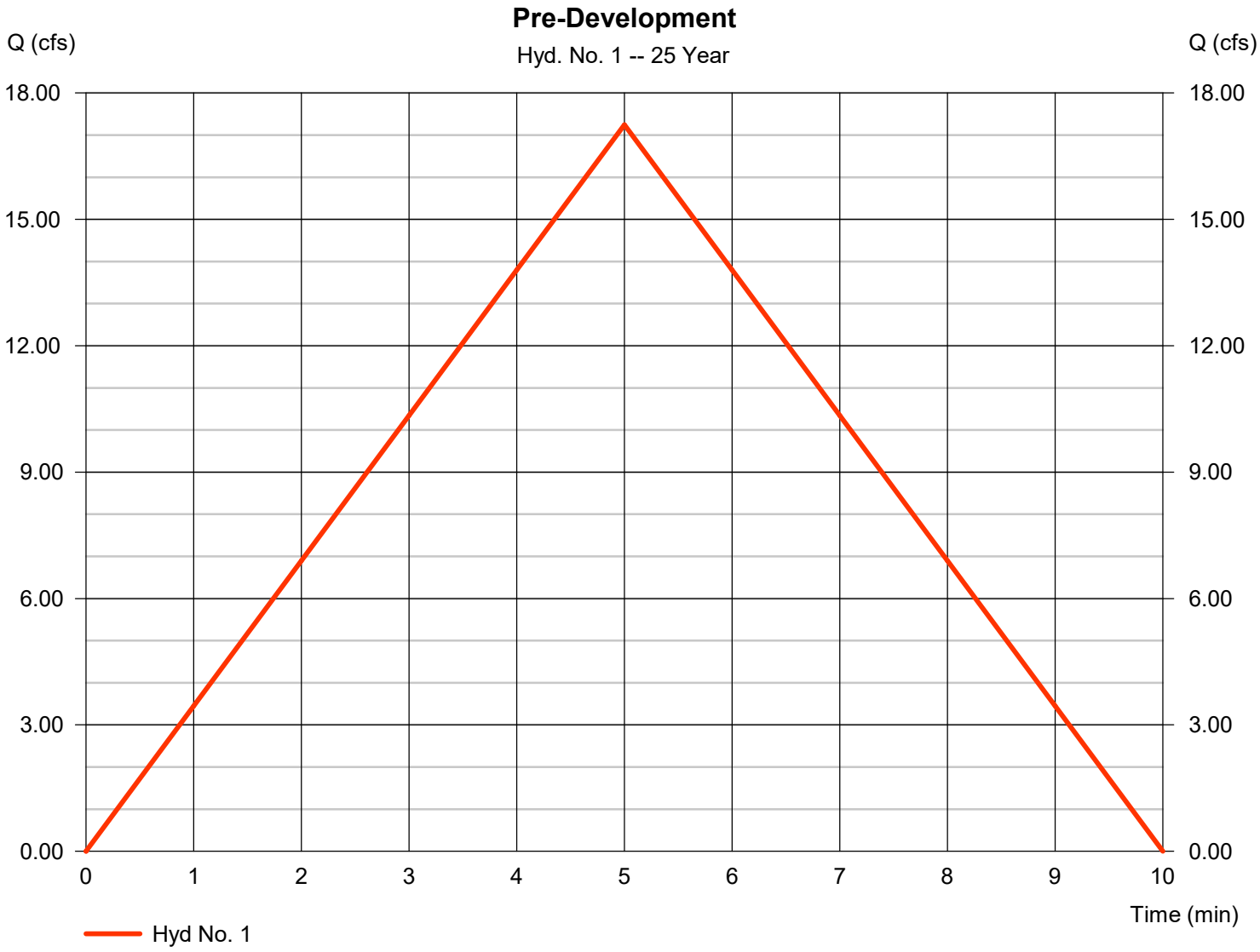
Hydrograph Report

Hyd. No. 1

Pre-Development

Hydrograph type	=	Rational	Peak discharge	=	17.25 cfs
Storm frequency	=	25 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	5,174 cuft
Drainage area	=	2.560 ac	Runoff coeff.	=	0.72*
Intensity	=	9.356 in/hr	Tc by User	=	5.00 min
IDF Curve	=	BRYANT.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(11.990 x 0.44) + (4.630 x 0.90)] / 2.560

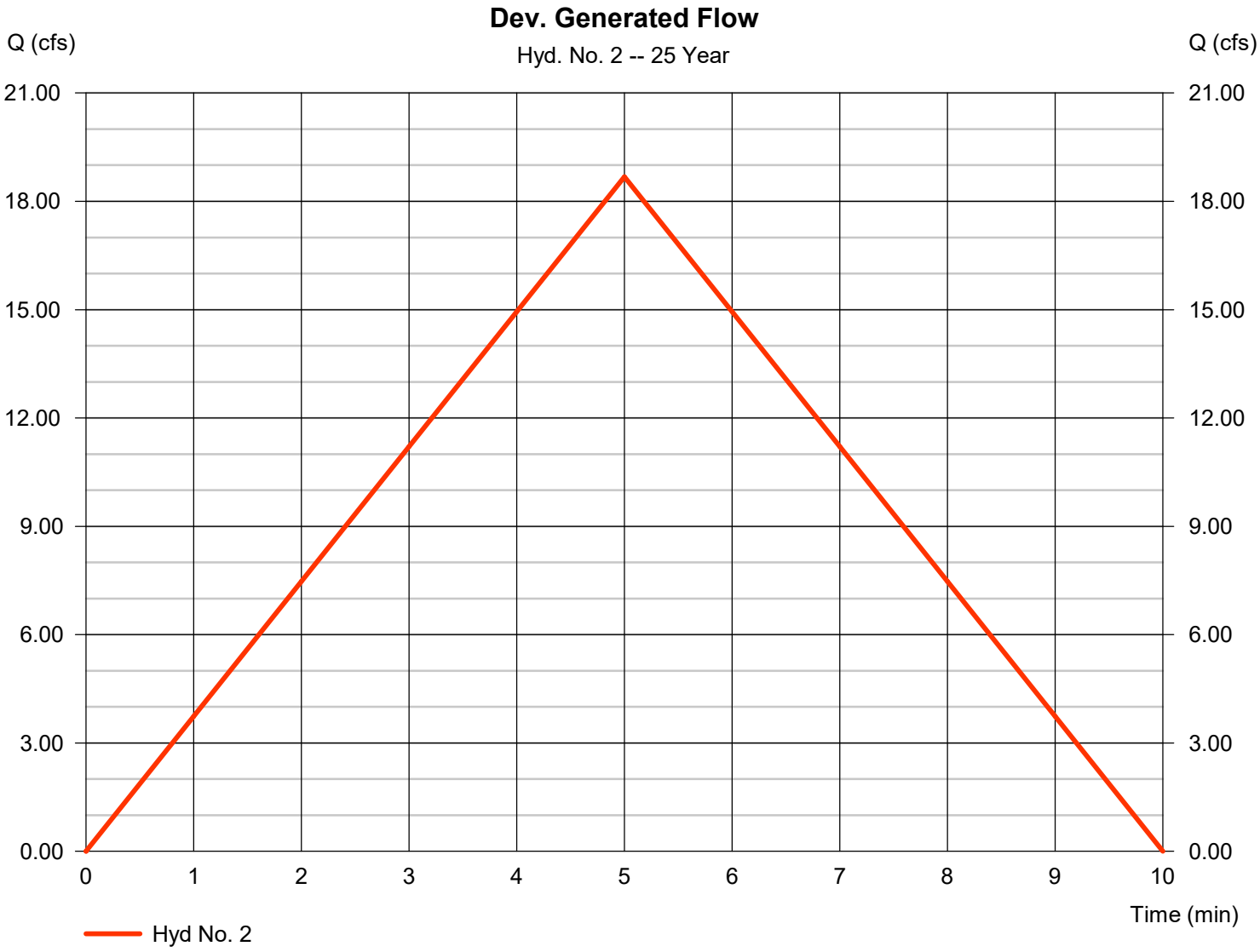


Hydrograph Report

Hyd. No. 2

Dev. Generated Flow

Hydrograph type	=	Rational	Peak discharge	=	18.68 cfs
Storm frequency	=	25 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	5,605 cuft
Drainage area	=	2.560 ac	Runoff coeff.	=	0.78
Intensity	=	9.356 in/hr	Tc by User	=	5.00 min
IDF Curve	=	BRYANT.IDF	Asc/Rec limb fact	=	1/1



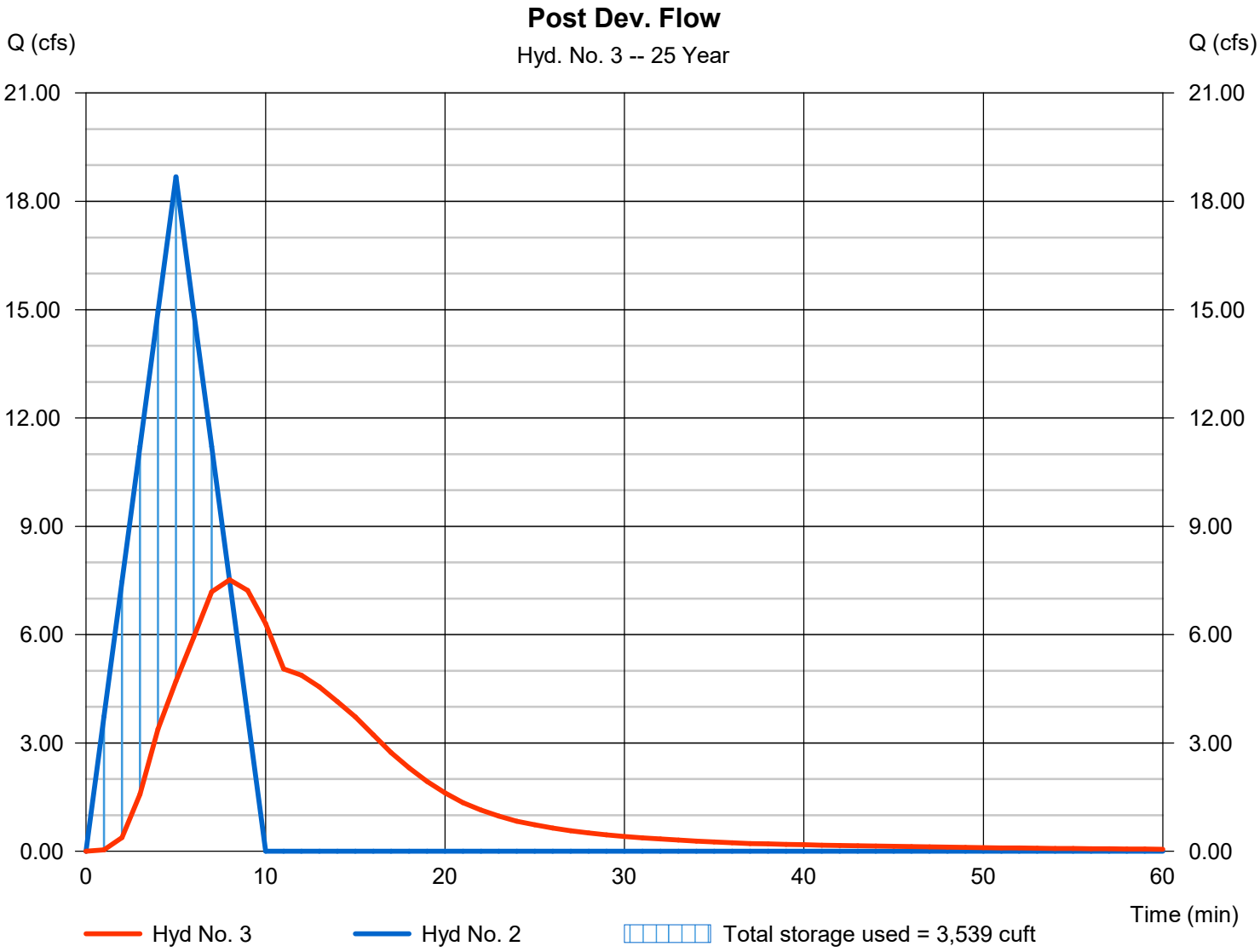
Hydrograph Report

Hyd. No. 3

Post Dev. Flow

Hydrograph type	=	Reservoir	Peak discharge	=	7.520 cfs
Storm frequency	=	25 yrs	Time to peak	=	8 min
Time interval	=	1 min	Hyd. volume	=	5,602 cuft
Inflow hyd. No.	=	2 - Dev. Generated Flow	Max. Elevation	=	352.85 ft
Reservoir name	=	detention	Max. Storage	=	3,539 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	18.98	1	5	5,695	------	------	------	Pre-Development
2	Rational	20.57	1	5	6,170	------	------	------	Dev. Generated Flow
3	Reservoir	8.389	1	8	6,167	2	352.99	3,867	Post Dev. Flow

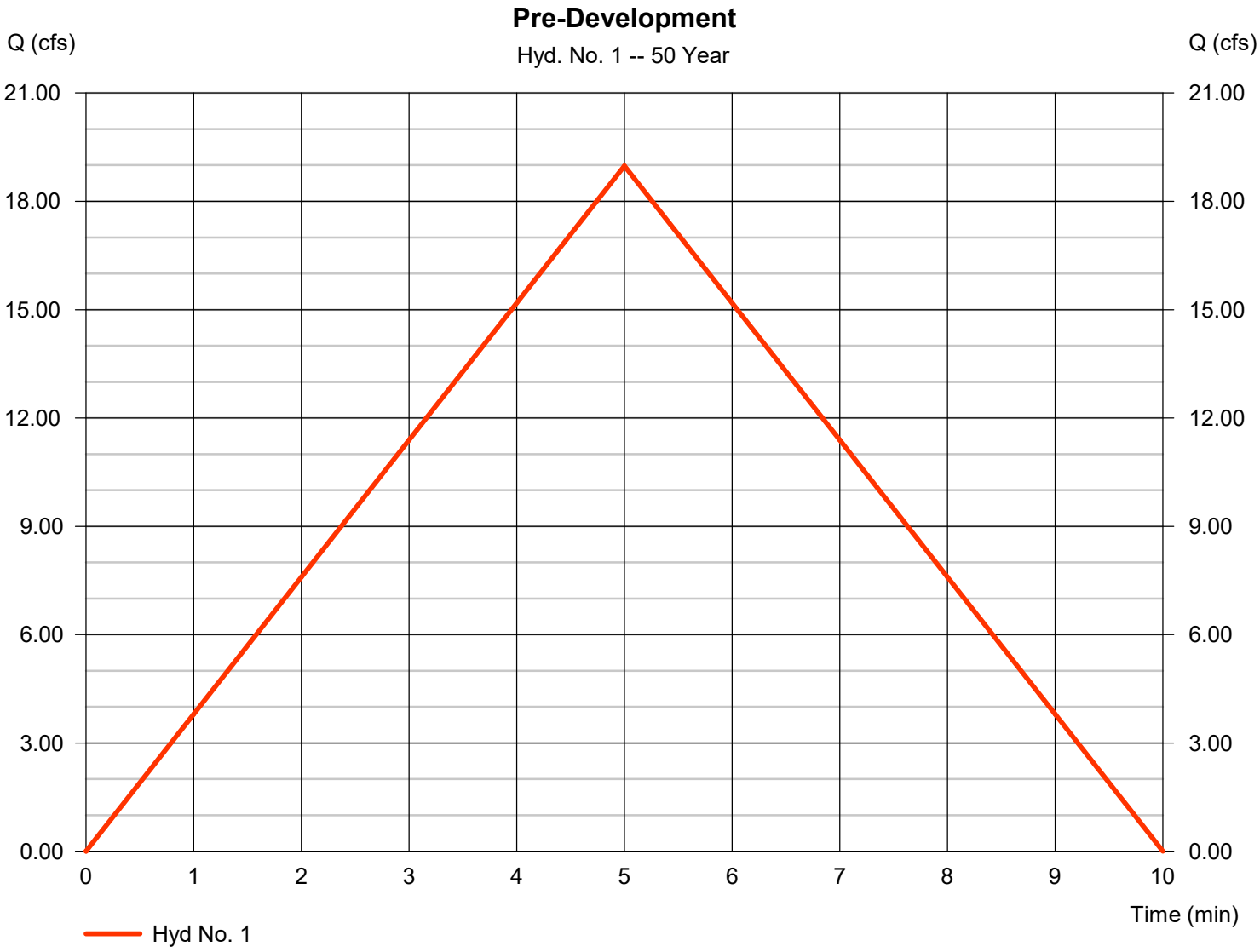
Hydrograph Report

Hyd. No. 1

Pre-Development

Hydrograph type	=	Rational	Peak discharge	=	18.98 cfs
Storm frequency	=	50 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	5,695 cuft
Drainage area	=	2.560 ac	Runoff coeff.	=	0.72*
Intensity	=	10.300 in/hr	Tc by User	=	5.00 min
IDF Curve	=	BRYANT.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(11.990 x 0.44) + (4.630 x 0.90)] / 2.560

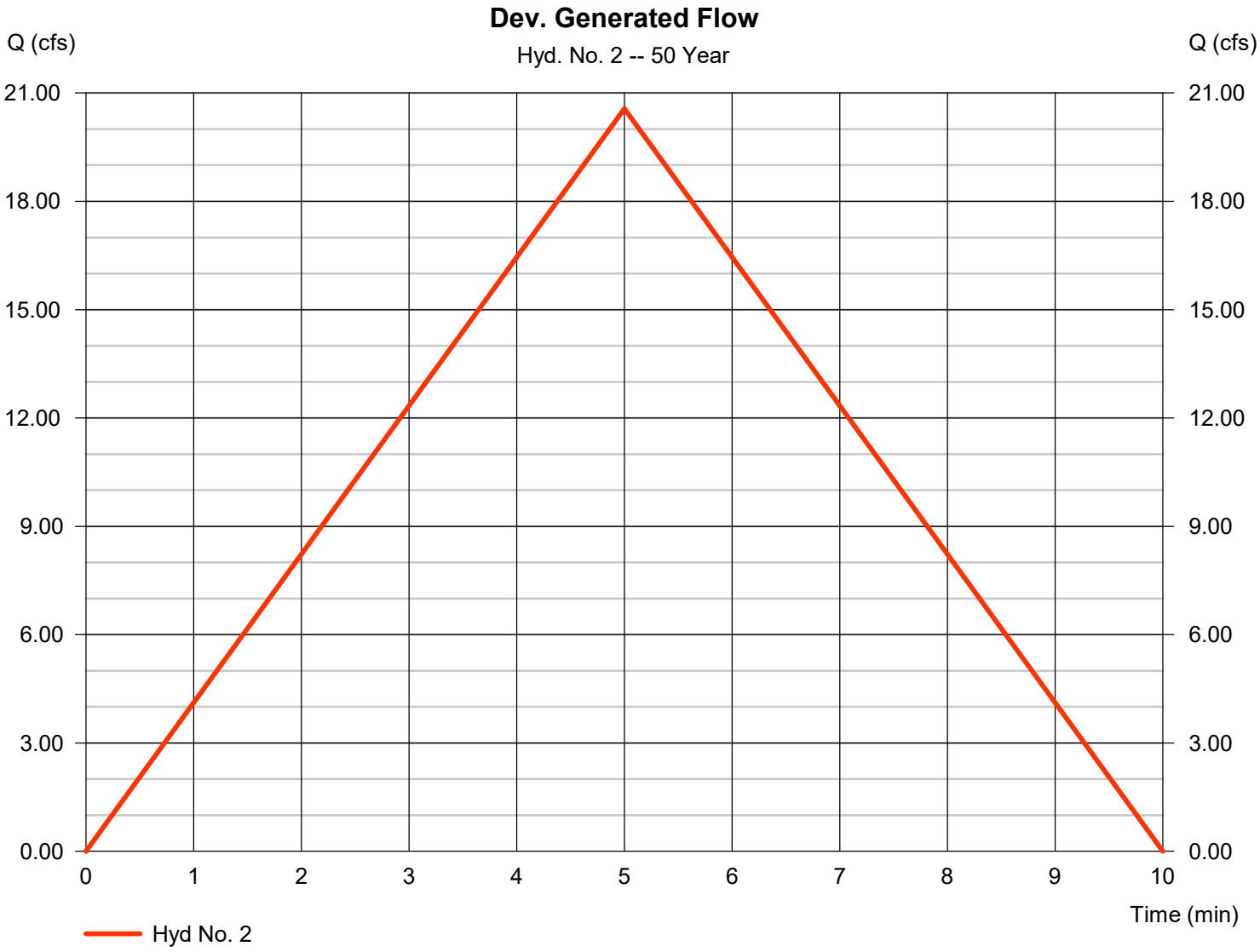


Hydrograph Report

Hyd. No. 2

Dev. Generated Flow

Hydrograph type	=	Rational	Peak discharge	=	20.57 cfs
Storm frequency	=	50 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	6,170 cuft
Drainage area	=	2.560 ac	Runoff coeff.	=	0.78
Intensity	=	10.300 in/hr	Tc by User	=	5.00 min
IDF Curve	=	BRYANT.IDF	Asc/Rec limb fact	=	1/1



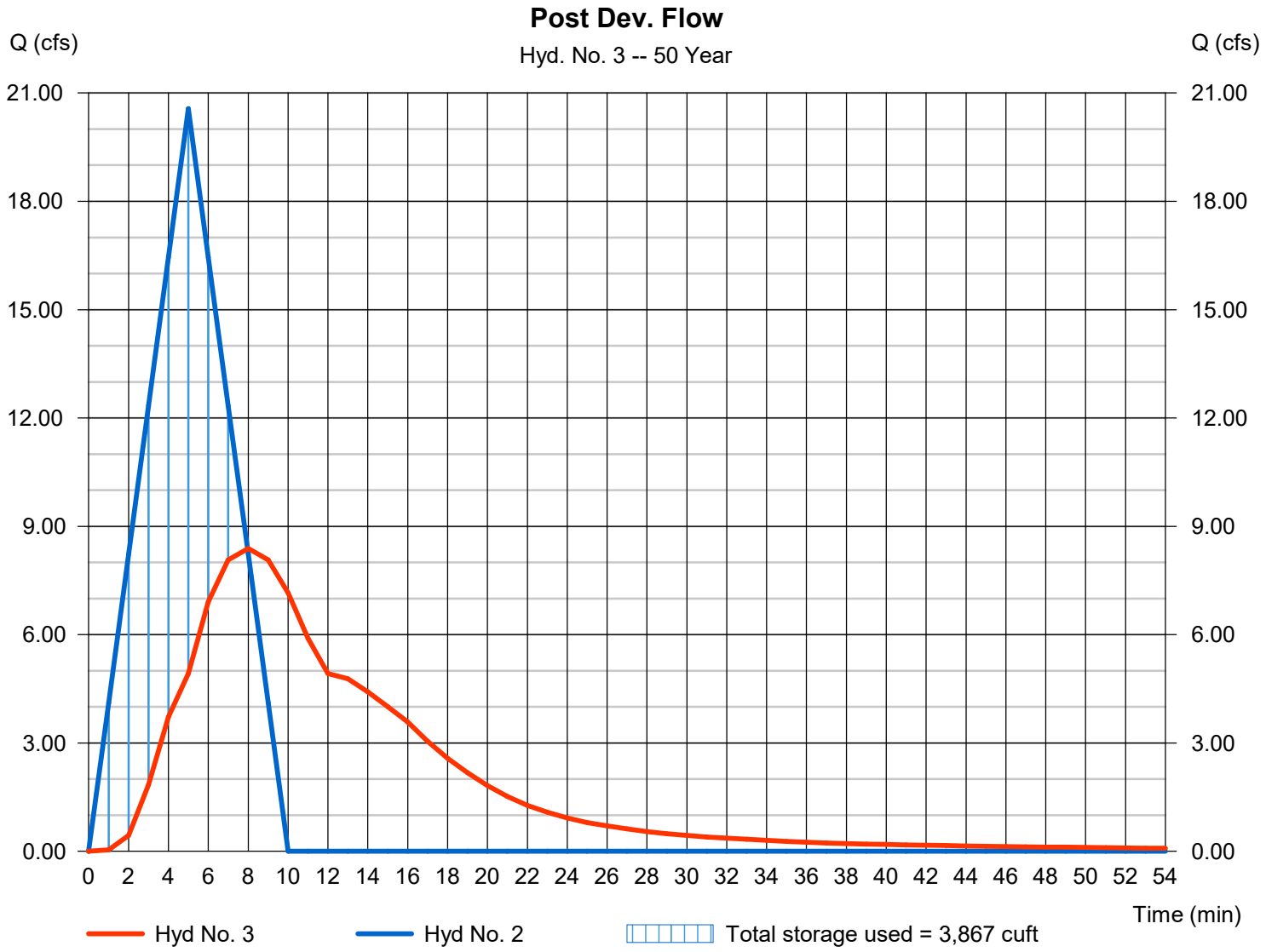
Hydrograph Report

Hyd. No. 3

Post Dev. Flow

Hydrograph type	=	Reservoir	Peak discharge	=	8.389 cfs
Storm frequency	=	50 yrs	Time to peak	=	8 min
Time interval	=	1 min	Hyd. volume	=	6,167 cuft
Inflow hyd. No.	=	2 - Dev. Generated Flow	Max. Elevation	=	352.99 ft
Reservoir name	=	detention	Max. Storage	=	3,867 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	20.42	1	5	6,126	------	------	------	Pre-Development
2	Rational	22.12	1	5	6,636	------	------	------	Dev. Generated Flow
3	Reservoir	9.706	1	8	6,633	2	353.08	4,113	Post Dev. Flow

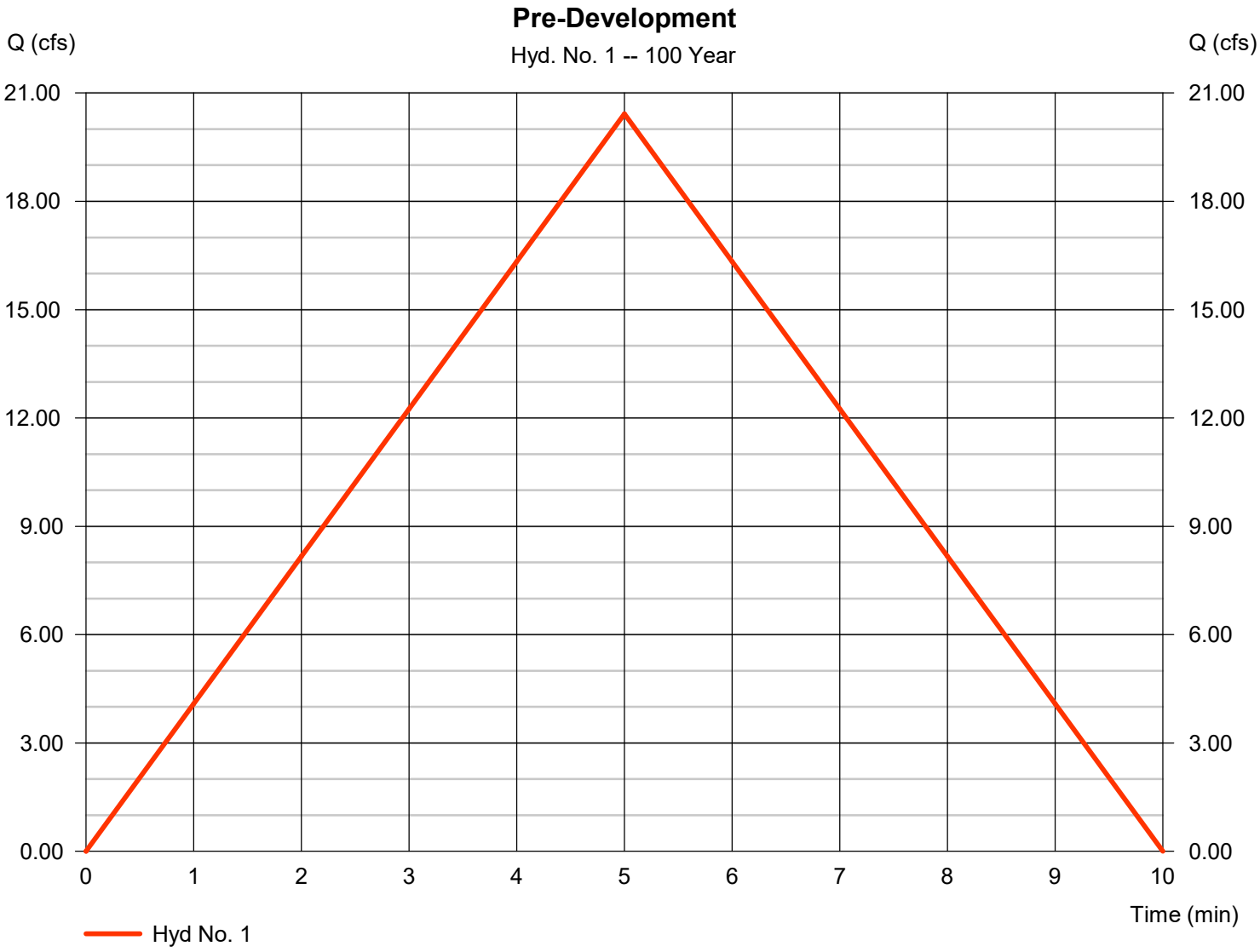
Hydrograph Report

Hyd. No. 1

Pre-Development

Hydrograph type	=	Rational	Peak discharge	=	20.42 cfs
Storm frequency	=	100 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	6,126 cuft
Drainage area	=	2.560 ac	Runoff coeff.	=	0.72*
Intensity	=	11.078 in/hr	Tc by User	=	5.00 min
IDF Curve	=	BRYANT.IDF	Asc/Rec limb fact	=	1/1

* Composite (Area/C) = [(11.990 x 0.44) + (4.630 x 0.90)] / 2.560

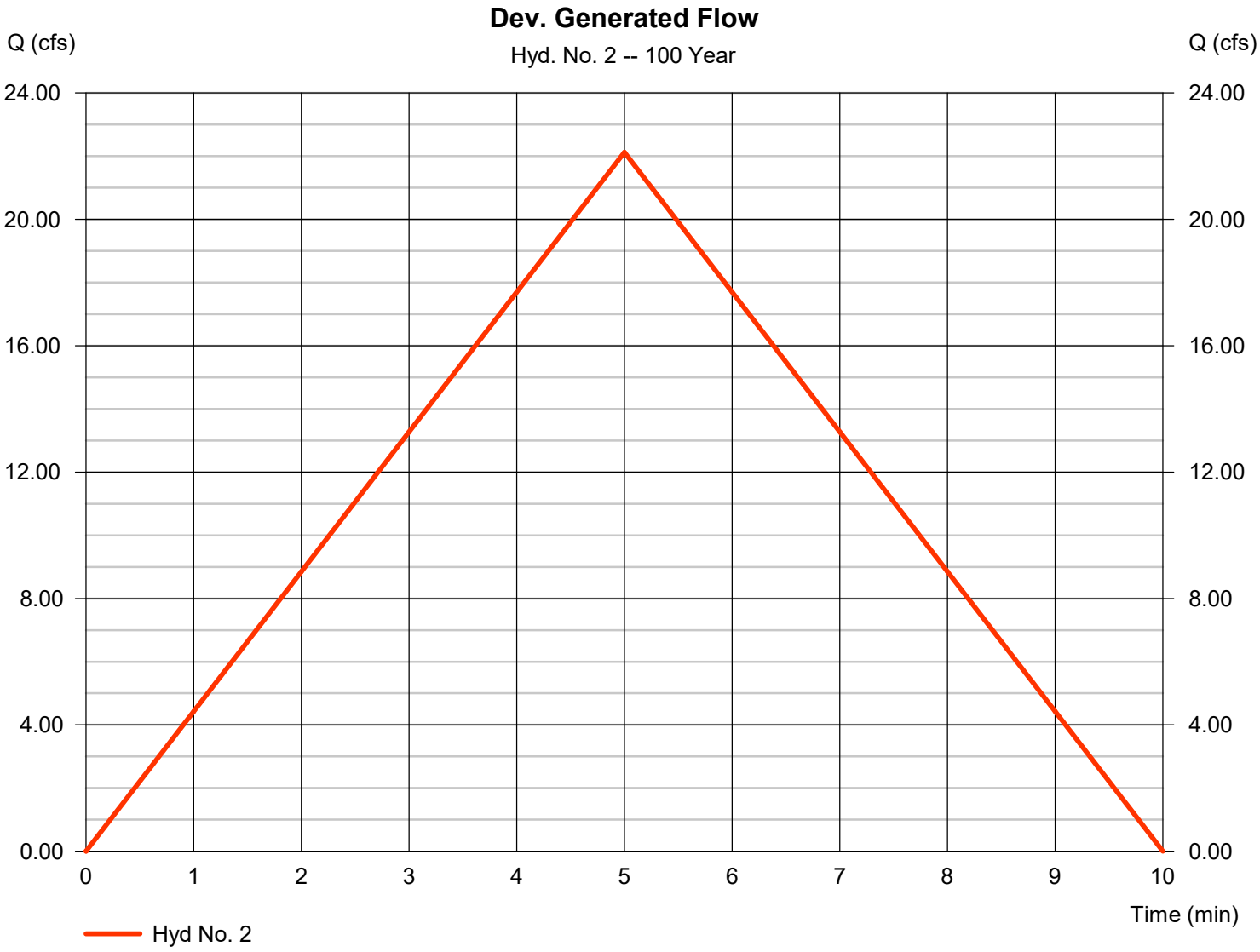


Hydrograph Report

Hyd. No. 2

Dev. Generated Flow

Hydrograph type	=	Rational	Peak discharge	=	22.12 cfs
Storm frequency	=	100 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	6,636 cuft
Drainage area	=	2.560 ac	Runoff coeff.	=	0.78
Intensity	=	11.078 in/hr	Tc by User	=	5.00 min
IDF Curve	=	BRYANT.IDF	Asc/Rec limb fact	=	1/1



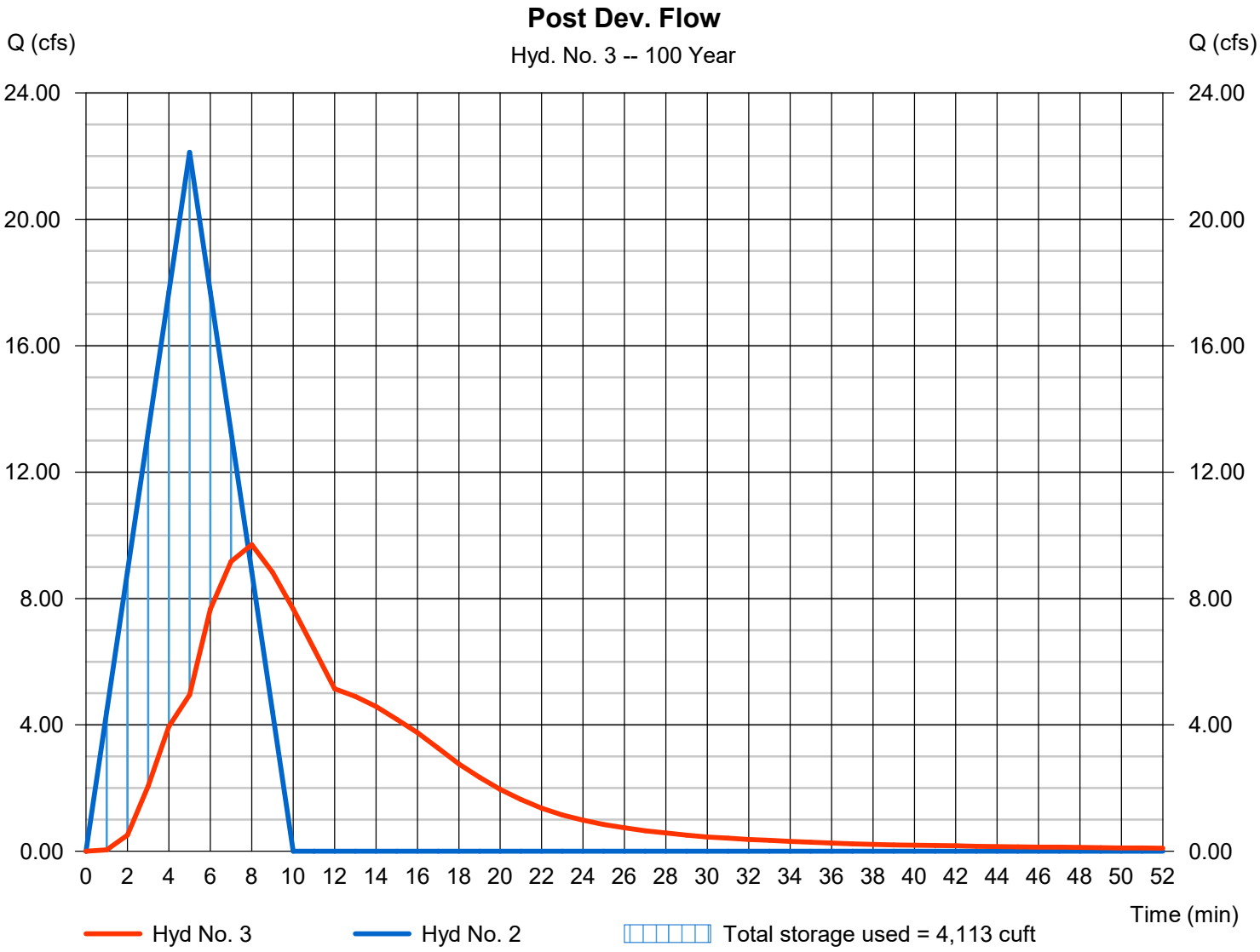
Hydrograph Report

Hyd. No. 3

Post Dev. Flow

Hydrograph type	=	Reservoir	Peak discharge	=	9.706 cfs
Storm frequency	=	100 yrs	Time to peak	=	8 min
Time interval	=	1 min	Hyd. volume	=	6,633 cuft
Inflow hyd. No.	=	2 - Dev. Generated Flow	Max. Elevation	=	353.08 ft
Reservoir name	=	detention	Max. Storage	=	4,113 cuft

Storage Indication method used.



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	23.7902	4.9000	0.6469	--------
2	29.4041	5.6000	0.6664	--------
3	0.0000	0.0000	0.0000	--------
5	34.6508	5.6000	0.6634	--------
10	39.6208	5.7000	0.6670	--------
25	45.2262	5.7000	0.6648	--------
50	46.6831	5.2000	0.6507	--------
100	48.6942	5.1000	0.6402	--------

File name: BRYANT.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	5.40	4.14	3.44	2.97	2.64	2.39	2.19	2.03	1.90	1.78	1.69	1.60
2	6.10	4.71	3.92	3.39	3.01	2.72	2.49	2.31	2.15	2.02	1.91	1.81
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	7.24	5.60	4.66	4.03	3.58	3.24	2.97	2.75	2.57	2.41	2.28	2.16
10	8.15	6.31	5.25	4.54	4.04	3.65	3.34	3.10	2.89	2.71	2.56	2.43
25	9.36	7.25	6.03	5.23	4.64	4.20	3.85	3.56	3.33	3.12	2.95	2.80
50	10.30	7.94	6.60	5.72	5.08	4.60	4.22	3.91	3.65	3.43	3.24	3.08
100	11.08	8.56	7.13	6.19	5.51	4.99	4.58	4.25	3.97	3.74	3.54	3.36

Tc = time in minutes. Values may exceed 60.

Precip. file name: C:\Documents and Settings\Will\Desktop\Fleming\fleming.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	3.50	0.00	0.00	4.80	5.40	0.00	6.70

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IDF Report 28

NOAA Atlas 14, Volume 9, Version 2
Location name: Bryant, Arkansas, USA*
Latitude: 34.6406°, Longitude: -92.4706°
Elevation: 388 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	**0.450** (0.363-0.553)	**0.510** (0.411-0.627)	**0.605** (0.486-0.745)	**0.681** (0.544-0.843)	**0.782** (0.603-0.990)	**0.858** (0.647-1.10)	**0.930** (0.679-1.22)	**1.00** (0.703-1.35)	**1.09** (0.738-1.51)	**1.16** (0.764-1.64)
10-min	**0.659** (0.532-0.809)	**0.746** (0.602-0.917)	**0.885** (0.711-1.09)	**0.997** (0.797-1.23)	**1.15** (0.883-1.45)	**1.26** (0.948-1.61)	**1.36** (0.995-1.79)	**1.47** (1.03-1.98)	**1.60** (1.08-2.22)	**1.69** (1.12-2.40)
15-min	**0.803** (0.648-0.987)	**0.910** (0.734-1.12)	**1.08** (0.867-1.33)	**1.22** (0.972-1.50)	**1.40** (1.08-1.77)	**1.53** (1.16-1.97)	**1.66** (1.21-2.18)	**1.79** (1.26-2.41)	**1.95** (1.32-2.70)	**2.06** (1.36-2.92)
30-min	**1.20** (0.966-1.47)	**1.36** (1.10-1.67)	**1.62** (1.30-2.00)	**1.83** (1.46-2.26)	**2.10** (1.62-2.66)	**2.30** (1.74-2.96)	**2.50** (1.82-3.28)	**2.68** (1.88-3.62)	**2.92** (1.97-4.05)	**3.09** (2.04-4.37)
60-min	**1.60** (1.29-1.97)	**1.81** (1.46-2.23)	**2.16** (1.73-2.66)	**2.43** (1.94-3.01)	**2.80** (2.16-3.55)	**3.08** (2.33-3.96)	**3.36** (2.45-4.42)	**3.63** (2.55-4.90)	**3.98** (2.69-5.52)	**4.23** (2.80-5.98)
2-hr	**2.01** (1.63-2.44)	**2.27** (1.84-2.77)	**2.69** (2.18-3.29)	**3.04** (2.45-3.73)	**3.51** (2.73-4.42)	**3.86** (2.94-4.94)	**4.22** (3.11-5.52)	**4.57** (3.23-6.14)	**5.03** (3.43-6.94)	**5.37** (3.57-7.55)
3-hr	**2.26** (1.85-2.74)	**2.55** (2.08-3.10)	**3.03** (2.47-3.69)	**3.43** (2.78-4.19)	**3.98** (3.12-5.01)	**4.41** (3.38-5.63)	**4.84** (3.59-6.32)	**5.28** (3.76-7.08)	**5.87** (4.02-8.08)	**6.31** (4.21-8.83)
6-hr	**2.71** (2.24-3.26)	**3.08** (2.54-3.71)	**3.70** (3.04-4.47)	**4.23** (3.46-5.13)	**4.99** (3.95-6.26)	**5.60** (4.33-7.10)	**6.22** (4.65-8.08)	**6.86** (4.92-9.16)	**7.75** (5.35-10.6)	**8.43** (5.67-11.7)
12-hr	**3.20** (2.66-3.81)	**3.68** (3.06-4.39)	**4.50** (3.73-5.39)	**5.23** (4.30-6.28)	**6.27** (5.02-7.83)	**7.12** (5.56-9.00)	**8.00** (6.03-10.4)	**8.93** (6.46-11.9)	**10.2** (7.11-14.0)	**11.2** (7.60-15.5)
24-hr	**3.74** (3.14-4.43)	**4.34** (3.64-5.14)	**5.36** (4.48-6.37)	**6.27** (5.21-7.48)	**7.60** (6.14-9.44)	**8.68** (6.84-10.9)	**9.83** (7.47-12.6)	**11.0** (8.05-14.6)	**12.7** (8.93-17.3)	**14.1** (9.59-19.3)
2-day	**4.38** (3.71-5.14)	**5.05** (4.27-5.94)	**6.22** (5.24-7.32)	**7.25** (6.07-8.57)	**8.76** (7.14-10.8)	**10.0** (7.94-12.5)	**11.3** (8.67-14.5)	**12.7** (9.34-16.7)	**14.7** (10.4-19.8)	**16.2** (11.1-22.1)
3-day	**4.80** (4.08-5.60)	**5.51** (4.69-6.45)	**6.75** (5.72-7.91)	**7.83** (6.60-9.22)	**9.42** (7.70-11.5)	**10.7** (8.54-13.3)	**12.1** (9.28-15.3)	**13.5** (9.95-17.6)	**15.5** (11.0-20.8)	**17.1** (11.7-23.2)
4-day	**5.12** (4.38-5.97)	**5.88** (5.02-6.85)	**7.17** (6.09-8.37)	**8.29** (7.01-9.73)	**9.91** (8.13-12.1)	**11.2** (8.98-13.9)	**12.6** (9.72-15.9)	**14.0** (10.4-18.3)	**16.0** (11.4-21.5)	**17.6** (12.2-23.9)
7-day	**5.94** (5.11-6.87)	**6.77** (5.82-7.83)	**8.16** (6.99-9.47)	**9.36** (7.97-10.9)	**11.1** (9.13-13.4)	**12.4** (10.0-15.2)	**13.9** (10.8-17.4)	**15.3** (11.4-19.8)	**17.3** (12.4-23.0)	**18.9** (13.1-25.5)
10-day	**6.72** (5.81-7.74)	**7.58** (6.55-8.74)	**9.03** (7.77-10.4)	**10.3** (8.77-11.9)	**12.0** (9.93-14.4)	**13.4** (10.8-16.3)	**14.8** (11.5-18.5)	**16.3** (12.1-20.9)	**18.3** (13.1-24.2)	**19.8** (13.8-26.6)
20-day	**9.11** (7.94-10.4)	**10.0** (8.75-11.5)	**11.6** (10.1-13.3)	**12.9** (11.1-14.8)	**14.7** (12.2-17.4)	**16.0** (13.1-19.3)	**17.4** (13.7-21.5)	**18.9** (14.2-24.0)	**20.7** (15.0-27.2)	**22.2** (15.6-29.6)
30-day	**11.1** (9.69-12.6)	**12.1** (10.6-13.8)	**13.9** (12.1-15.8)	**15.4** (13.3-17.6)	**17.3** (14.5-20.4)	**18.8** (15.4-22.5)	**20.3** (16.0-24.9)	**21.8** (16.4-27.5)	**23.7** (17.1-30.9)	**25.1** (17.7-33.4)
45-day	**13.4** (11.8-15.1)	**14.8** (13.0-16.7)	**17.0** (15.0-19.3)	**18.9** (16.4-21.5)	**21.3** (17.8-24.9)	**23.1** (18.9-27.4)	**24.8** (19.6-30.2)	**26.5** (20.0-33.3)	**28.7** (20.8-37.1)	**30.2** (21.4-40.0)
60-day	**15.3** (13.5-17.2)	**17.1** (15.1-19.2)	**19.9** (17.5-22.5)	**22.1** (19.4-25.1)	**25.1** (21.1-29.2)	**27.2** (22.4-32.2)	**29.3** (23.2-35.6)	**31.3** (23.7-39.2)	**33.8** (24.6-43.6)	**35.6** (25.2-47.0)

[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.

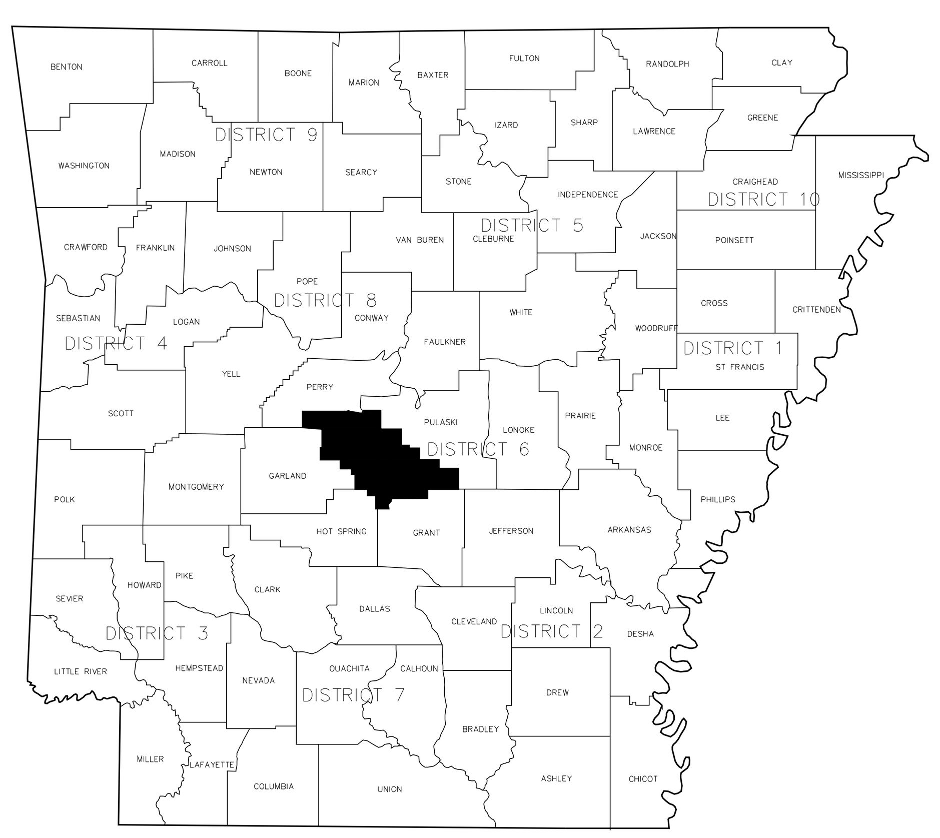
Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

CONSTRUCTION PLANS
25300 I30N COMMERCIAL
BRYANT, AR

VICINITY MAP



PREPARED BY:

HOPE CONSULTING
ENGINEERS - SURVEYORS

129 N. Main Street,
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

DRAWING INDEX

SHEET NO.	TITLE
C-1.0	SITE PLAN
C-2.0	UTILITY PLAN
C-2.1-2.2	BRYANT WATER UTILITIES
C-2.3-2.4	BRYANT SEWER UTILITIES
C-3.0	NORTH EAST DETENTION POND
C-4.0	EROSION CONTROL PLAN
C-5.0	GRADING PLAN

OWNER
STUART FINLEY
FINLEY & COMPANY
P.O. BOX 10, BRYANT, AR 72089

HOPE CONSULTING
ENGINEERS - SURVEYORS
129 N. Market Street,
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
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FOR USE AND BENEFIT OF:
STUART FINLEY

25300 I30 N COMMERCIAL
BRYANT , SALINE COUNTY, AR

DATE:	11/05/2025	C.A.D. BY:				DRAWING NUMBER: 25-1210	
REVISED:		CHECKED BY:					
SHEET:		SCALE:					
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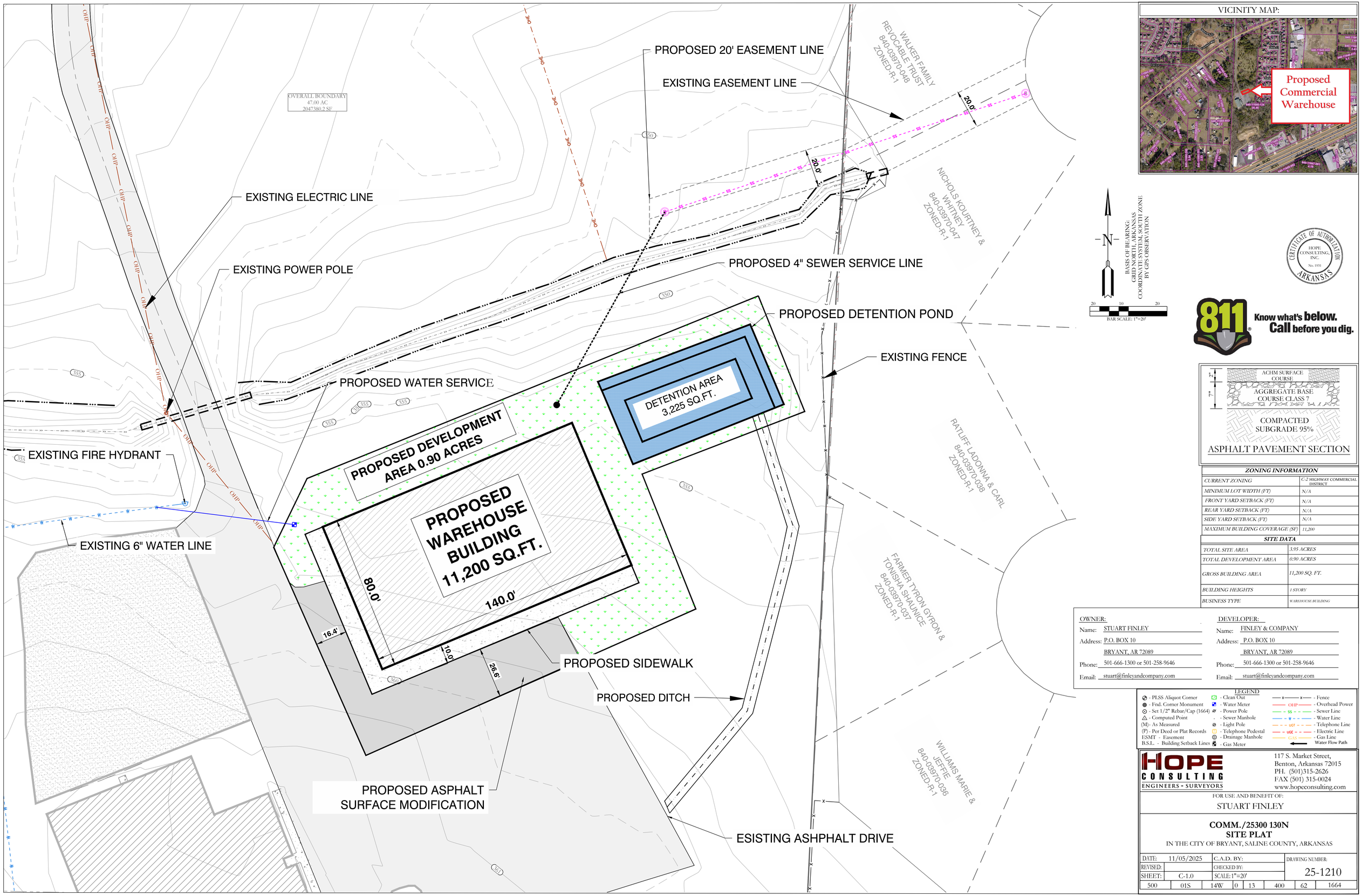


VICINITY MAP:

N

BASIS OF BEARINGS
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

20 10 20
BAR SCALE: 1"=20'

CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1934
ARKANSAS

811 Know what's below. Call before you dig.

ASPHALT PAVEMENT SECTION

ZONING INFORMATION	
CURRENT ZONING	C-2 HIGHWAY COMMERCIAL DISTRICT
MINIMUM LOT WIDTH (FT)	N/A
FRONT YARD SETBACK (FT)	N/A
REAR YARD SETBACK (FT)	N/A
SIDE YARD SETBACK (FT)	N/A
MAXIMUM BUILDING COVERAGE (SF)	11,200

SITE DATA	
TOTAL SITE AREA	3.95 ACRES
TOTAL DEVELOPMENT AREA	0.90 ACRES
GROSS BUILDING AREA	11,200 SQ. FT.
BUILDING HEIGHTS	1 STORY
BUSINESS TYPE	WAREHOUSE BUILDING

OWNER:
Name: STUART FINLEY
Address: P.O. BOX 10
BRYANT, AR 72089
Phone: 501-666-1300 or 501-258-9646
Email: stuart@finleyandcompany.com

DEVELOPER:
Name: FINLEY & COMPANY
Address: P.O. BOX 10
BRYANT, AR 72089
Phone: 501-666-1300 or 501-258-9646
Email: stuart@finleyandcompany.com

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
- Clean Out
- Water Meter
- Power Pole
- Sewer Manhole
- Light Pole
- Telephone Pedestal
- Drainage Manhole
- Gas Meter
- Fence
- Overhead Power
- Sewer Line
- Water Line
- Telephone Line
- Electric Line
- Gas Line
Water Flow Path

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

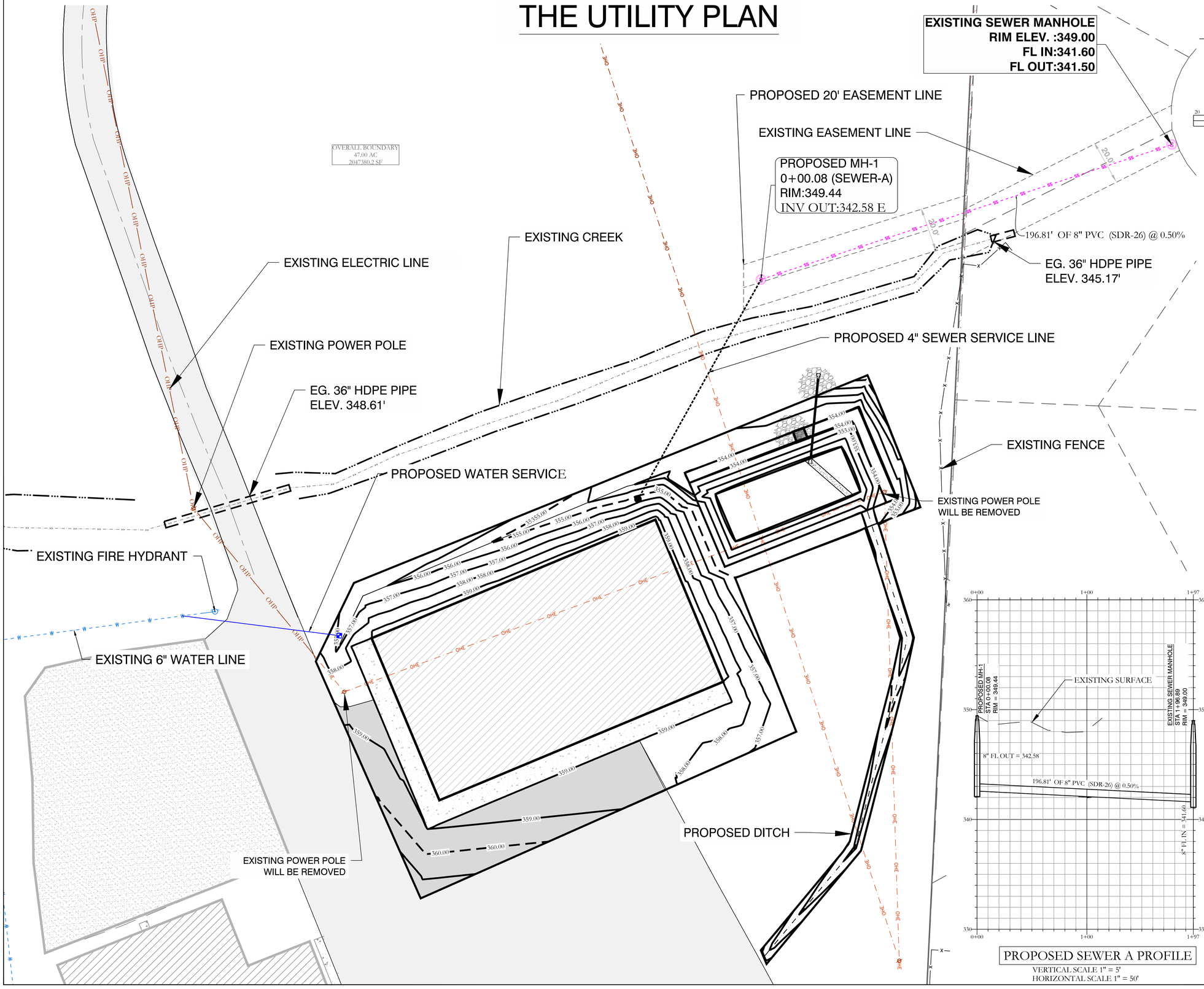
FOR USE AND BENEFIT OF:
STUART FINLEY

COMM./25300 130N
SITE PLAT
IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

DATE: 11/05/2025	C.A.D. BY:		DRAWING NUMBER:
REVISED:	CHECKED BY:		25-1210
SHEET: C-1.0	SCALE:1"=20'		

500	01S	14W	0	13	400	62	1664

THE UTILITY PLAN



VICINITY MAP:

WATER UTILITY NOTES:

- ALL WATER CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH BRYANT UTILITIES' "STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION FOR WATER LINES AND SEWER LINES" 2015 EDITION.
- ALL SERVICE CROSSINGS SHALL BE 1" DRISCO SERVICE LINE ENCASED IN A 2" PVC SLEEVE.

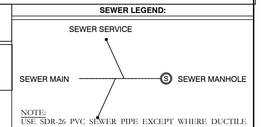
UTILITY NOTES:

- MINIMUM DEPTH OF ALL WATER SERVICE LINES FROM THE MAIN TO THE WATER METER SHALL BE 30-INCHES.
- FOR THE PROTECTION OF THE SANITARY SEWER LINES FROM DAMAGE CAUSED BY UTILITIES INSTALLED AFTER THE SANITARY SEWER HAS BEEN CONSTRUCTED, THE MINIMUM DEPTH TO CROWN OF ALL GRAVITY SANITARY SEWERS SHALL BE 30-INCHES FOR PVC, AND 24-INCHES FOR DUCTILE IRON.THE MINIMUM DEPTH TO CROWN OF ALL FORCE MAIN SANITARY SEWERS SHALL BE 30-INCHES.
- ALL WATER AND SEWER INFRASTRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF BRYANT SPECIFICATIONS "STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION FOR WATER LINES AND SEWER LINES" 2015 EDITION.
- EASEMENTS SHOWN ARE UTILITY EASEMENTS.
- PRIOR TO CONSTRUCTION PROVIDE APPROVAL LETTERS FROM HEALTH DEPARTMENT AND ALL UTILITIES SERVING THIS PROJECT.

WATER LEGEND:

SINGLE WATER METER

SEWER LEGEND:



NOTE:
USE SDR-26 PVC SEWER PIPE EXCEPT WHERE DUCTILE IRON PIPE REQUIRED FOR COVER. USE DUCTILE IRON PIPE WHERE 3' MINIMUM COVE CANNOT BE MAINTAINED.

CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL BURIED UTILITIES PRIOR TO CONSTRUCTION.

PROPOSED SEWER A PROFILE
VERTICAL SCALE 1" = 5'
HORIZONTAL SCALE 1" = 50'

811 Know what's **below.** **Call** before you dig.

HOPE CONSULTING, INC. No. 1031 CERTIFICATE OF AUTHORIZATION ARKANSAS

LEGEND

⊕ - PLSS Aliquot Corner	○ - Clean Out
⊕ - Fnd. Corner Monument	■ - Water Meter
⊙ - Set 1/2" Rebar/Cap (1664)	ø - Power Pole
△ - Computed Point	● - Sewer Manhole
(M)- As Measured	⊗ - Light Pole
(P) - Per Deed or Plat Records	▯ - Telephone Pedestal
ESMT - Easement	◎ - Drainage Manhole
B.S.L. - Building Setback Lines	■ - Gas Meter
x——x——x	- Fence
OHP	- Overhead Power
SS	- Sewer Line
W	- Water Line
UGT	- Telephone Line
UGE	- Electric Line
GAS	- Gas Line
←	Water Flow Path

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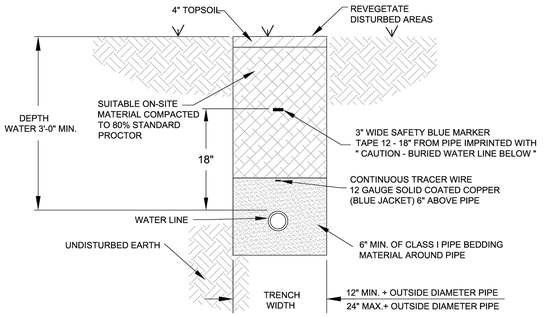
FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

COMM./25300 I30 N
UTILITY PLAN
A COMMERCIAL IN BRYANT CITY, SALINE COUNTY, ARKANSAS

DATE:	11/05/2025	C.A.D. BY:	DRAWING NUMBER:
REVISED:	##	CHECKED BY:	25-1210
SHEET:	C-2.0	SCALE: 1"=20'	

500	01S	14W	0	13	400	62	1664



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.

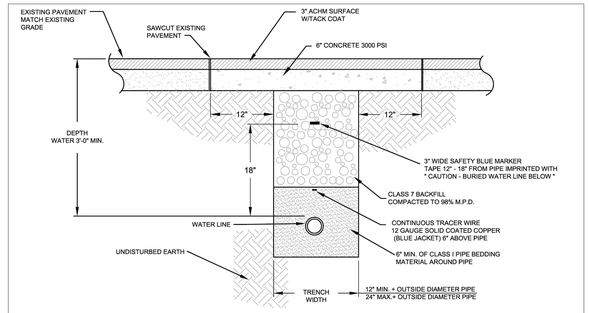
WATER MAIN TRENCH

(NON-PAVED AREA)

4/16/2015 11:49:51 AM

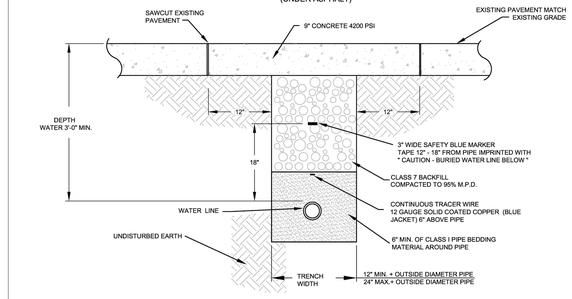
CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

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



WATER MAIN TRENCH

(UNDER ASPHALT)



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.

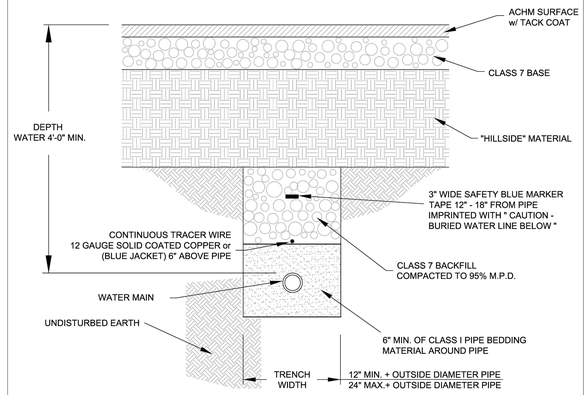
WATER MAIN TRENCH

(UNDER CONCRETE)

4/16/2015 11:45:26 AM

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

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



WATER MAIN INSTALLATION
PRIOR TO ROADWAY CONSTRUCTION

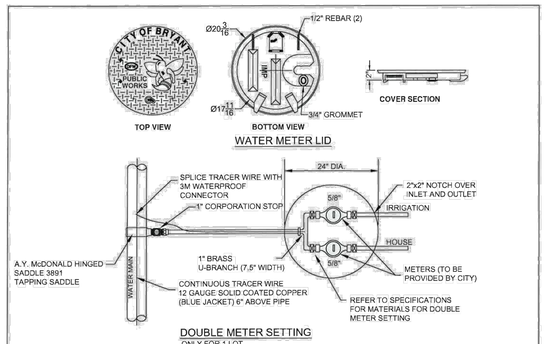
NOTES:

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.

4/16/2015 11:45:26 AM

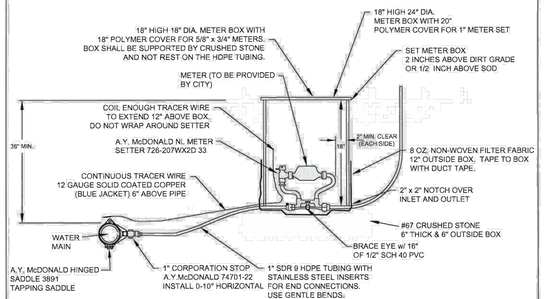
CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE: **WATER DETAILS**
DESCRIPTION: **WATER MAIN INSTALLATION PRIOR TO ROADWAY CONSTRUCTION**
DRAWN BY: CHECKED BY: FILE: W3-Water Main Installation Prior to Roadway Const.dwg
DATE: APRIL 2015 REVISED
SHEET: **W3**



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**
DESCRIPTION: **METER SETTINGS**
DRAWN BY: CHECKED BY: FILE: W10-Water Settings.dwg
DATE: APRIL 2015 REVISED
SHEET: **W10**

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

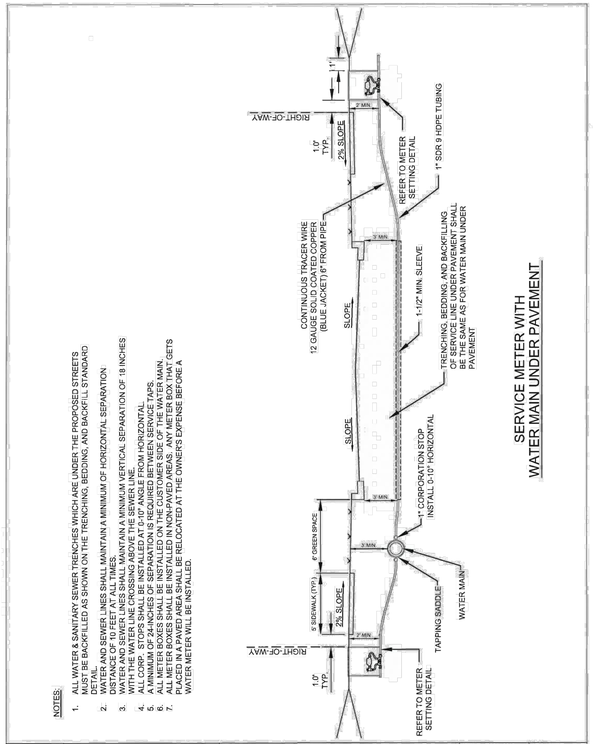
HOPE CONSULTING
ENGINEERS - SURVEYORS
129 N. Main Street,
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

COMM./25300 I30 N
BRYANT WATER UTILITIES
A COMMERCIAL IN BRYANT CITY, SALINE COUNTY, ARKANSAS

DATE:	11/05/2025	C.A.D. BY:	DRAWING NUMBER:
REVISED:	##	CHECKED BY:	25-1210
SHEET:	C-2.1	SCALE:	

500	01S	14W	0	13	400	62	1664

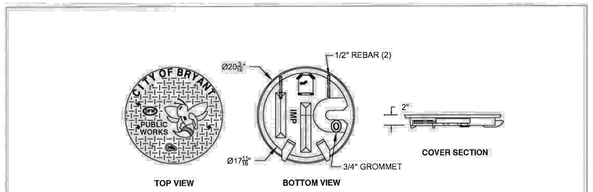


SERVICE METER WITH
WATER MAIN UNDER PAVEMENT

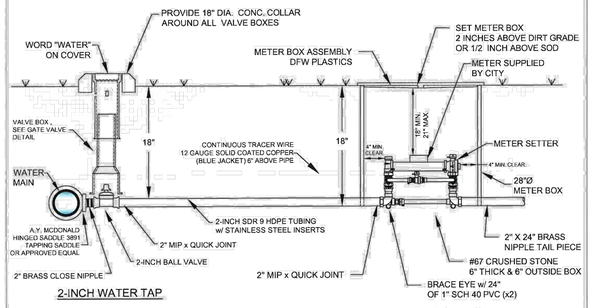
NOTES:

1. ALL WATER & SANITARY SEWER TRENCHES WHICH ARE UNDER THE PROPOSED STREETS MUST BE BACKFILLED AS SHOWN ON THE TRENCHING, BEDDING, AND BACKFILL STANDARD DETAIL.
2. WATER AND SEWER LINES SHALL MAINTAIN A MINIMUM OF HORIZONTAL SEPARATION DISTANCE OF 10 FEET AT ALL TIMES.
3. WATER AND SEWER LINES SHALL MAINTAIN A MINIMUM VERTICAL SEPARATION OF 18 INCHES WITH THE WATER LINE ABOVE THE SEWER LINE AT CROSSINGS.
4. ALL CORP. STOPS SHALL BE INSTALLED AT 0-10° ANGLE FROM HORIZONTAL.
5. A MINIMUM OF 24-INCHES OF SEPARATION IS REQUIRED BETWEEN SERVICE TAPS.
6. ALL METER BOXES SHALL BE INSTALLED IN THE RIGHT-OF-WAY OF THE MAIN.
7. 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.

CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0468	TITLE: **WATER DETAILS** DESCRIPTION: METER SERVICE LINE UNDER PAVEMENT DRAWN BY: CHECKED BY: FILE: W11-Meter Service Line Under Pavement.dwg	DATE: APRIL 2015 REVISED	SHEET: **W11**



WATER METER LID



2-INCH WATER TAP

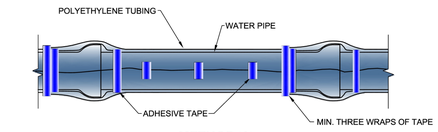
2-INCH METER SETTER

NOTES:

1. COORDINATE INSTALLATION AND CONFIGURATIONOF ALL 1-1/2" AND LARGER METER SETTINGS WITH THE CITY.
2. 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.
3. SUPPORT METER INSTALLATION WITH 1"x24" SCH40 PVC THROUGH EACH BRACE EYE.

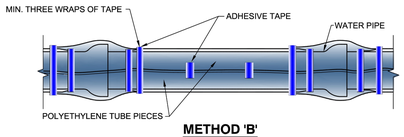
2" WATER SERVICE AND WATER METER

CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0468	TITLE: **WATER DETAILS** DESCRIPTION: 2" WATER METER DRAWN BY: CHECKED BY: FILE: W12-2 Inch Water Meter.dwg	DATE: APRIL 2015 REVISED	SHEET: **W12**



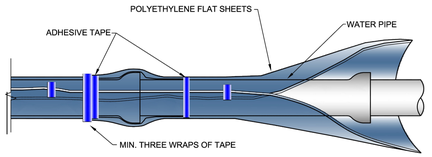
METHOD 'A'

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'

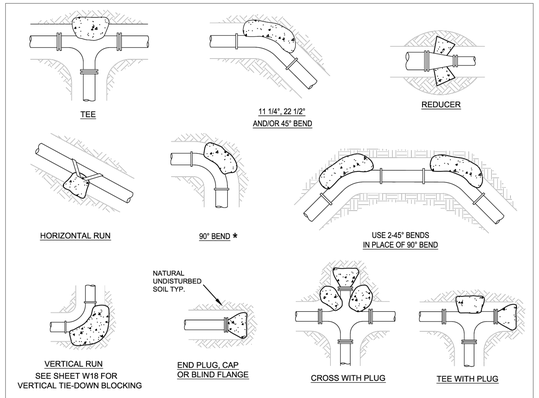
METHOD 'C' - USED FOR PIPE-SHAPED AND ODD- SHAPED APPURTENANCES SUCH AS BENDS, REDUCERS, OFFSETS, VALVES, TEES, ETC.

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**

4/24/2015 11:48:29 AM



THRUST BLOCK SCHEDULE

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

BEARING AREA OF THRUST BLOCKS IN SQ. FT. (HORIZONTAL BENDS)						VOLUME OF THRUST BLOCK IN CU. FEET (VERTICAL BENDS)						
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°	ROD DIAM.	EMBEDMENT
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	.75"	30"
8	9.6	13.8	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	209.9	106.8	53.7	1.0"	30"
16	35.7	50.4	27.3	13.9	7.0	16	672.6	364.0	185.6	93.2	1.0"	36"
18	44.8	63.4	34.3	17.5	15.8	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**

4/24/2015 11:48:57 AM

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

HOPE CONSULTING
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FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

COMM./25300 I30 N
BRYANT WATER UTILITIES
A COMMERCIAL IN BRYANT CITY, SALINE COUNTY, ARKANSAS

DATE:	11/05/2025	C.A.D. BY:	DRAWING NUMBER:
REVISED:	##	CHECKED BY:	25-1210
SHEET:	C-2.2	SCALE:	

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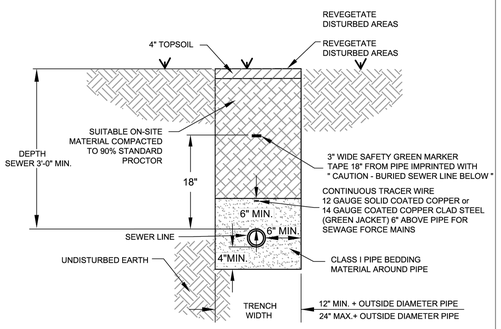


NOTES:

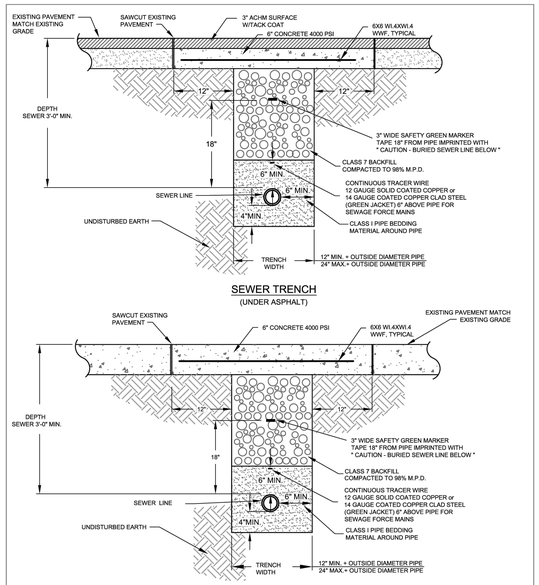
1. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING SEWER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE SEWER SYSTEM.
2. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH ALL OSHA REGULATIONS (29 CFR CH.XVII, SUBPART 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	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES	DESCRIPTION: SEWER TRENCH (NON-PAVED AREA)	REVISED ----- ----- ----- -----	S1
210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DRAWN BY: CHECKED BY: FILE: S1--Sewer Trench (Non-Paved Area).dwg		

4/16/2015 10:56:58 AM



SEWER TRENCH

(UNDER ASPHALT)

SEWER TRENCH

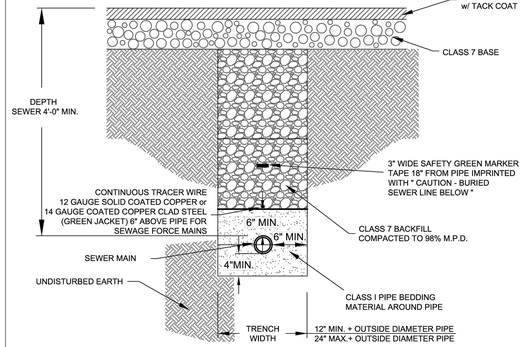
(UNDER CONCRETE)

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	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES	DESCRIPTION: SEWER TRENCH (UNDER PAVEMENT)	REVISED ----- ----- ----- -----	S2
210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DRAWN BY: CHECKED BY: FILE: S2--Sewer Trench (Under Pavement).dwg		

4/16/2015 10:56:11 AM



SEWER MAIN INSTALLATION PRIOR TO ROADWAY CONSTRUCTION

NOTES:

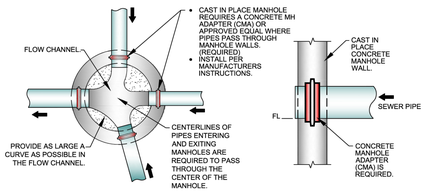
1. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING SEWER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE SEWER SYSTEM.
2. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH ALL OSHA REGULATIONS (29 CFR CH.XVII, SUBPART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

CITY OF BRYANT, AR	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES	DESCRIPTION: SEWER MAIN INSTALLATION PRIOR TO ROADWAY CONSTRUCTION	REVISED ----- ----- ----- -----	S3
210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DRAWN BY: CHECKED BY: FILE: S3--Sewer Main Installation Prior to Roadwy Const.dwg		

4/16/2015 10:56:18 AM

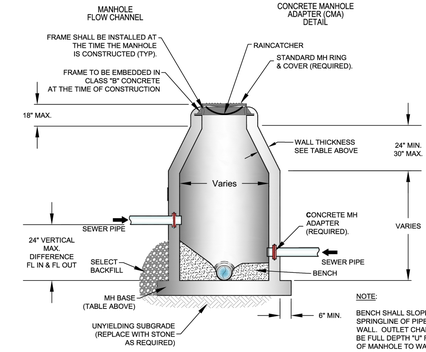
Inside Diameter of Manhole	Minimum Wall Thickness	Base Thickness	Minimum Ring & Cover Size
4' DIA	6"	6"	24" (< or Equal to 24" Pipes)
5' DIA	8"	8"	
6' DIA	8"	12"	36" (> 24" Pipes)

MANHOLE INFORMATION TABLE



MANHOLE FLOW CHANNEL

CONCRETE MANHOLE ADAPTER (CMA) DETAIL



NOTE:

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

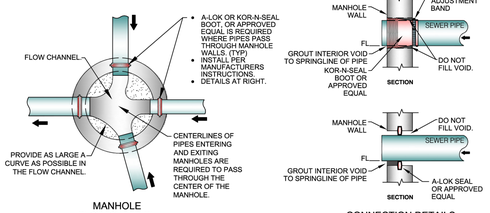
CAST-IN-PLACE MANHOLE

CITY OF BRYANT, AR	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES	DESCRIPTION: CAST-IN-PLACE MANHOLE	REVISED ----- ----- ----- -----	S4
210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DRAWN BY: CHECKED BY: FILE: S4--Cast In Place Manhole.dwg		

4/16/2015 10:59:22 AM

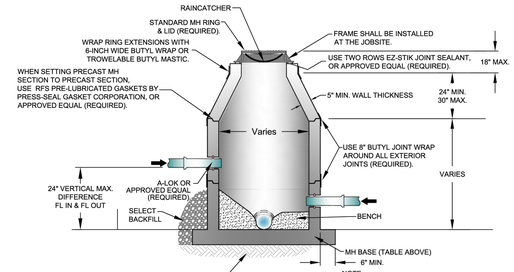
Inside Diameter of Manhole	Minimum Wall Thickness	Base Thickness	Minimum Ring & Cover Size
4' DIA	5"	6"	24" (< or Equal to 24" Pipes)
5' DIA	7"	8"	
6' DIA	7"	8"	36" (> 24" Pipes)

MANHOLE INFORMATION TABLE



MANHOLE FLOW CHANNEL

CONNECTION DETAILS



SECTION

NOTE:

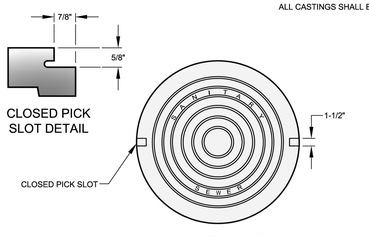
BENCH SHALL SLOPE FROM SPRINGLINE OF PIPE TO MANHOLE WALL. OUTLET CHANNEL SHALL BE FULL DEPTH "U" FROM CENTER OF MANHOLE TO WALL.

PRECAST MANHOLE

CITY OF BRYANT, AR	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES	DESCRIPTION: PRECAST MANHOLE	REVISED ----- ----- ----- -----	S5
210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DRAWN BY: CHECKED BY: FILE: S5--Precast Manhole.dwg		

4/16/2015 10:56:51 AM

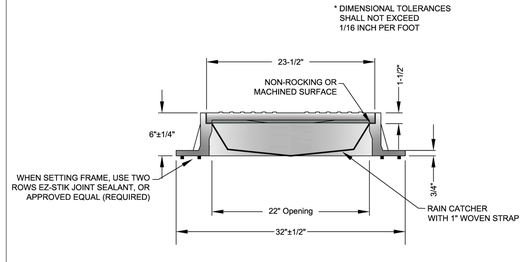
ALL CASTINGS SHALL BE "MADE IN USA"



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"

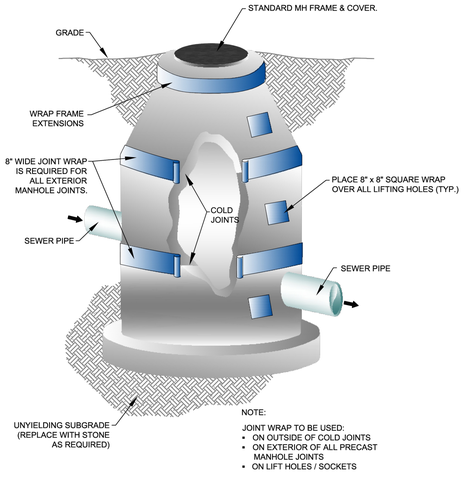
* DIMENSIONAL TOLERANCES SHALL NOT EXCEED 1/16 INCH PER FOOT



FRAME AND COVER DETAIL

CITY OF BRYANT, AR	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES	DESCRIPTION: MANHOLE FRAME AND COVER	REVISED ----- ----- ----- -----	S6
210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DRAWN BY: CHECKED BY: FILE: S6--Manhole Frame and Cover.dwg		

4/16/2015 10:57:09 AM



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	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES	DESCRIPTION: MANHOLE JOINT WRAP	REVISED ----- ----- ----- -----	S9
210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DRAWN BY: CHECKED BY: FILE: S9--Manhole Joint Wrap.dwg		

4/16/2015 10:57:09 AM

CERTIFICATE OF AUTHORIZATION — HOPE CONSULTING, INC. — No. 1091 — ARKANSAS

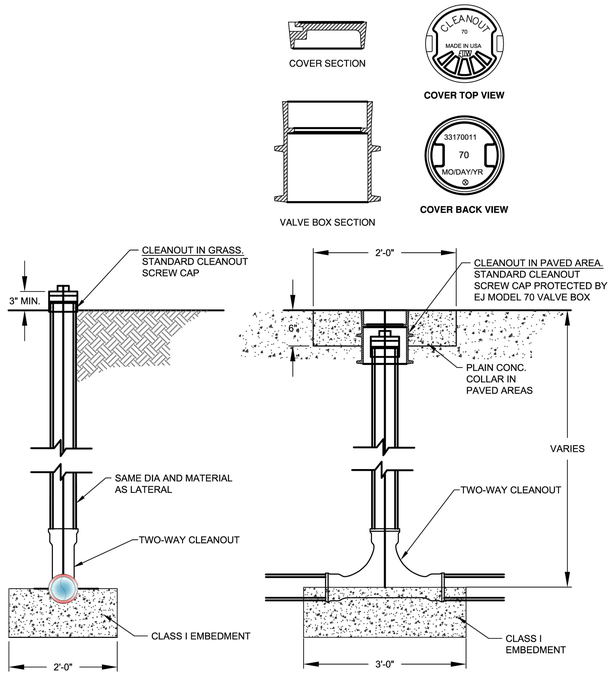
HOPE CONSULTING ENGINEERS - SURVEYORS
129 N. Main Street, Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

COMM./25300 130 N
BRYANT SEWER UTILITIES
A COMMERCIAL IN BRYANT CITY, SALINE COUNTY, ARKANSAS

DATE:	11/05/2025	C.A.D. BY:		DRAWING NUMBER:
REVISED:	##	CHECKED BY:		25-1210
SHEET:	C-2.3	SCALE:		

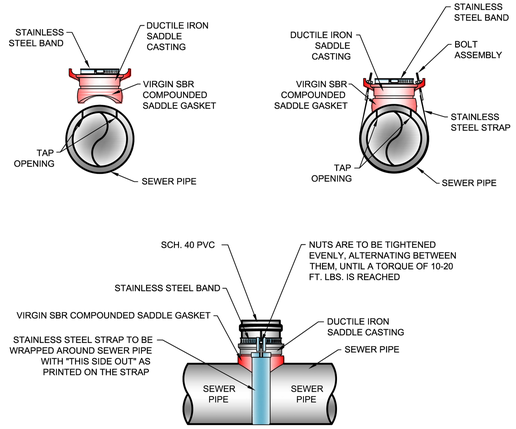
500	01S	14W	0	13	400	62	1664



TYPICAL CLEANOUT

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: **S16**
	DESCRIPTION: **SEWER SERVICE CLEANOUT**			
	DRAWN BY:	CHECKED BY:	FILE: S16-Sewer Service Cleanout.dwg	

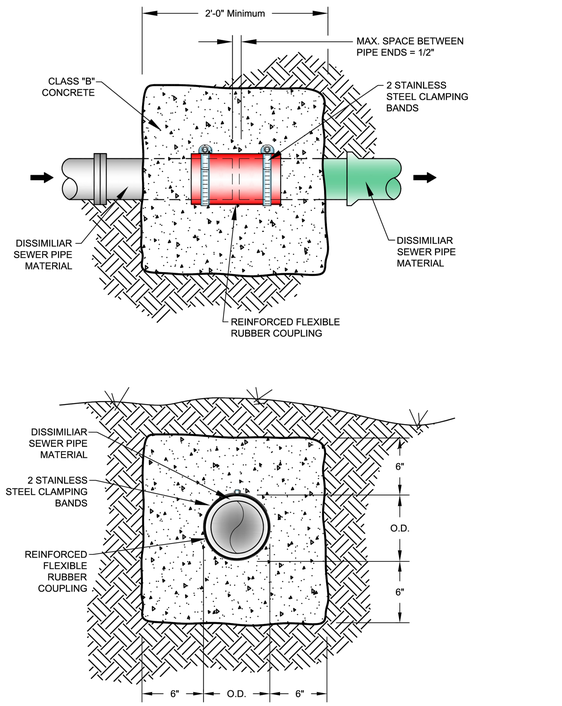
4/6/2015 10:58:13 AM



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	

4/6/2015 10:58:29 AM



REINFORCE FLEXIBLE COUPLING

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: **S18**
	DESCRIPTION: **REINFORCED FLEXIBLE COUPLING**			
	DRAWN BY:	CHECKED BY:	FILE: S18-Reinforced Flexible Coupling.dwg	

4/6/2015 10:58:39 AM

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

HOPE CONSULTING
ENGINEERS - SURVEYORS
129 N. Main Street,
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

COMM./25300 I30 N
BRYANT SEWER UTILITIES
A COMMERCIAL IN BRYANT CITY, SALINE COUNTY, ARKANSAS

DATE:	11/05/2025	C.A.D. BY:	DRAWING NUMBER: 25-1210
REVISED:	##	CHECKED BY:	
SHEET:	C-2.4	SCALE:	

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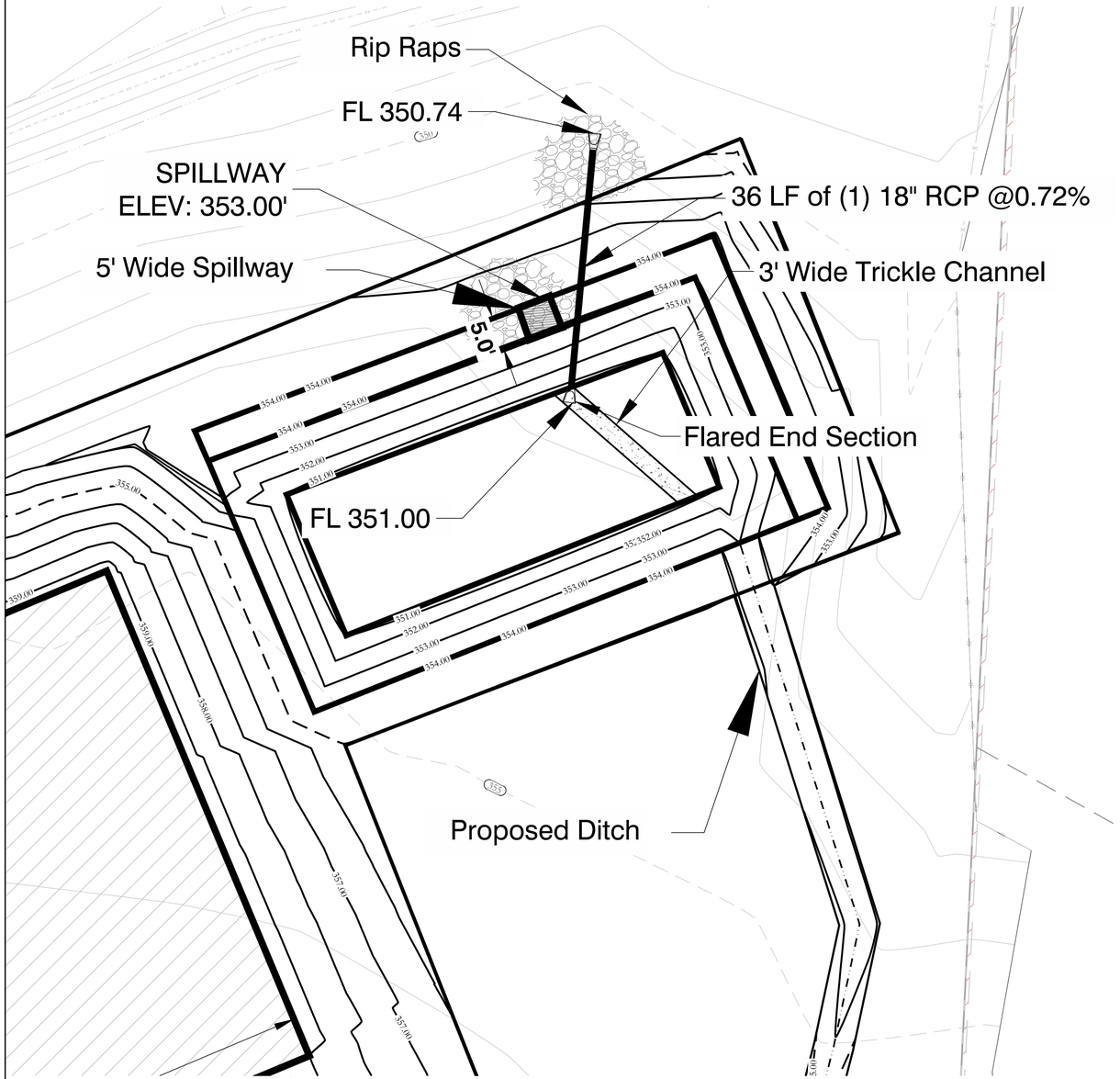
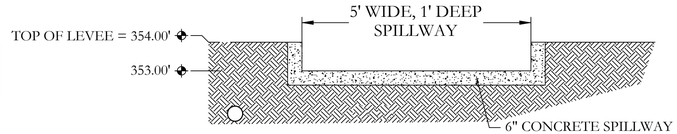
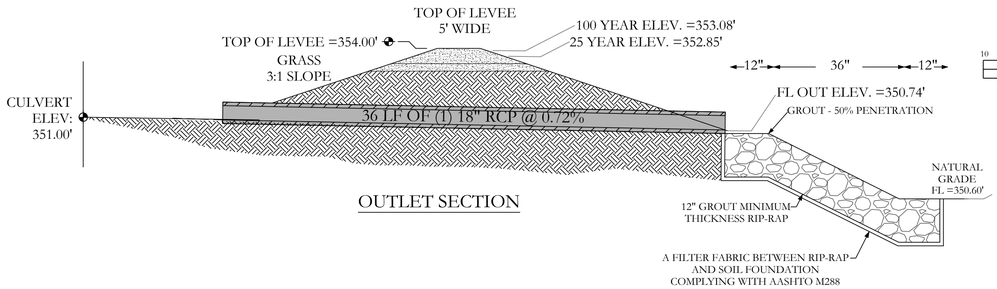


NORTH EAST DETENTION POND

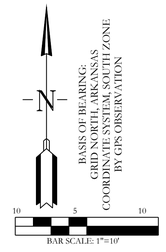
VICINITY MAP:



SPILLWAY END VIEW
NTS



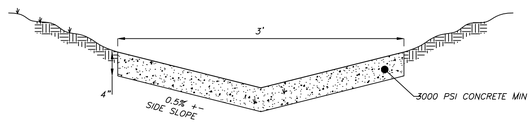
OUTLET SECTION



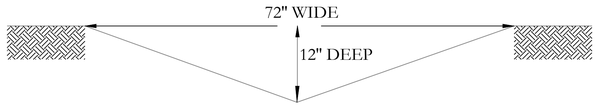
EARTHEN SLOPE NOTE:
EARTHEN DETENTION POND SLOPES ON BOTH THE INTERIOR AND EXTERIOR OF THE POND SHALL HAVE A MAXIMUM SLOPE OF 3:1.

NOTE:
1. DETENTION POND WILL BE REQUIRED TO BE STABILIZED WITH SOLID SOD/SEED STABILIZATION PER THE STORM WATER MANAGEMENT MANUAL.

2. DETENTION POND WILL HAVE A 5' WIDE LEVEE.



DETAIL (NTS)
TRICKLE CHANNEL SECTION



DITCH SECTION

DETENTION POND MAINTENANCE PLAN

Background
The Detention pond is located at the North East of the subjected property. It is designed to temporarily detain stormwater to meet water quantity criteria before discharging off the property.

Routine Maintenance
Routine maintenance will include but not be limited to:
-Moving of the bank slopes and area around the pond on a monthly basis during the growing season and as needed during the cooler months.

-The outlet pipe from the pond and other areas will be inspected monthly for debris which could inhibit the proper flow of discharge. Any debris will be removed immediately and disposed of or placed in a location to prevent future maintenance and to not cause impact up or downstream of the structure.

-Trash will be removed from around the pond to prevent entering the pond. Generally, the site should be kept free of loose trash which could be carried off site by wind or rain.

-Inspect the pond and outlet pipe for non-routine maintenance need.

Periodic or Non-Routine Maintenance
The routine inspection of the pond area and discharge pipe will identify needed repairs and non-routine maintenance. These items may include but not be limited to:

-Re-growth of trees on or around the pond bank. These should be cut and removed from the pond area.

-Sediment from the site may accumulate in the pond bottom and reduce the pond to below design volume requirements. The pond should be excavated if the pond bottom elevation reached a level that allows excessive aquatic growth or reduces the pond efficiency such, that the sediments are passing the discharge structure and release off site.

-Stabilization or re-grading of side slopes may be required periodically or after excessive rain events. Any disturbance of slopes should be reseeded or may require installation of erosion control materials until seeding can reestablish adequate grasses to prevent future erosion.

-Any other maintenance or repairs which would minimize other maintenance to the pond or outfall structures.

For questions or concerns about Tract "A", contact at (501)315-2626.

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No. 1931
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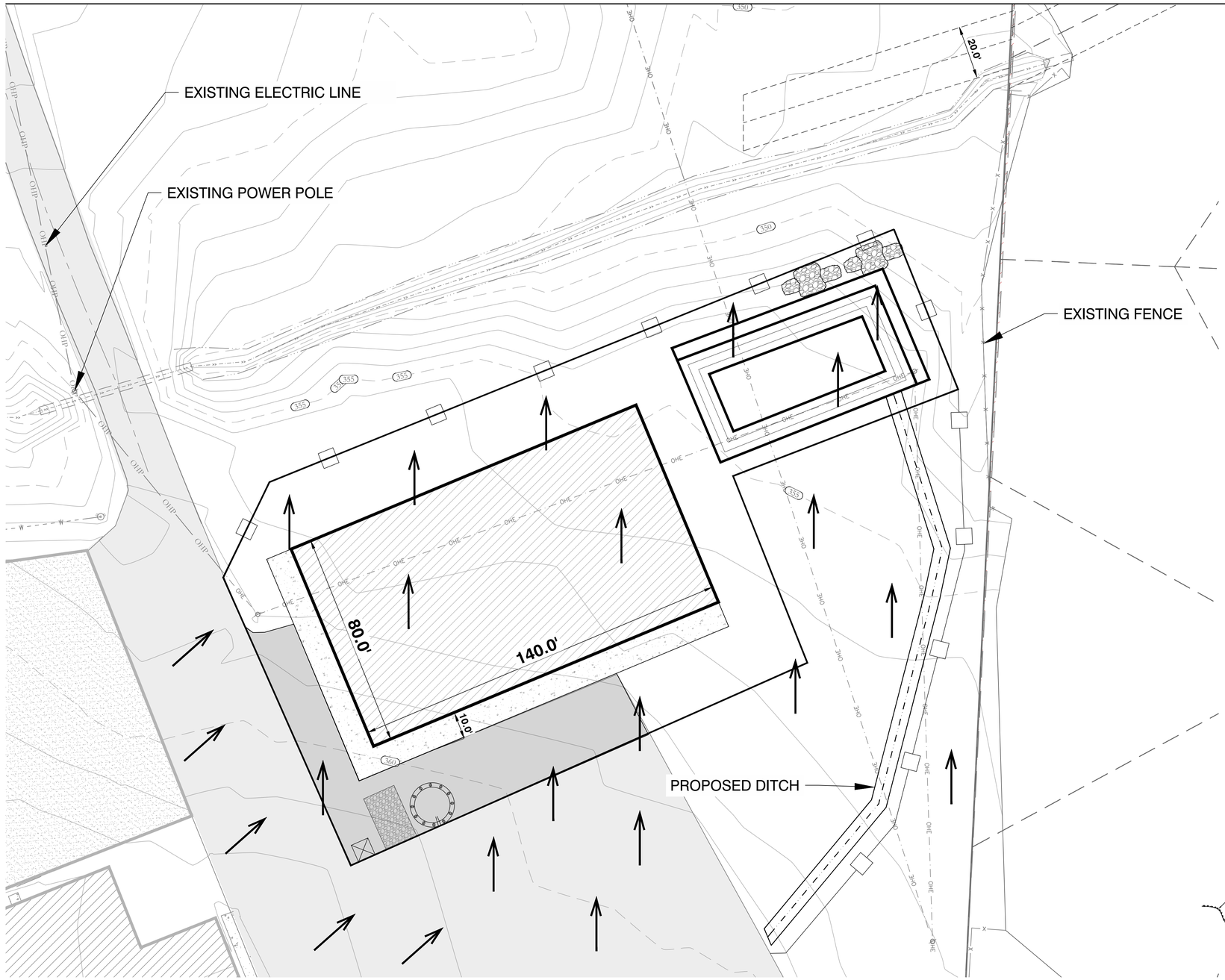
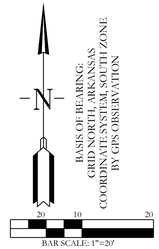
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

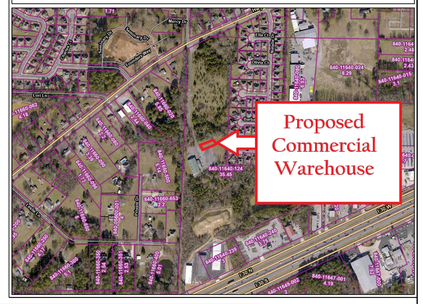
25-1210 Comm./ 25300 I30 N
NORTH EAST DETENTION POND
A COMMERCIAL IN BRYANT CITY, SALINE COUNTY, ARKANSAS

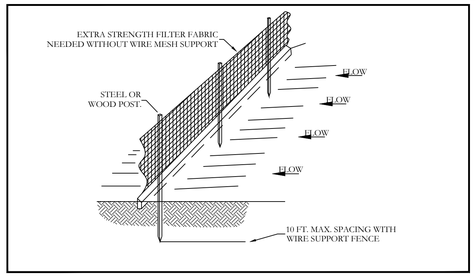
DATE:	11/05/2025	C.A.D. BY:				DRAWING NUMBER:	
REVISED:	##	CHECKED BY:				25-1210	
SHEET:	C-3.0	SCALE:	1"=10'				
500	01S	14W	0	13	400	62	1664

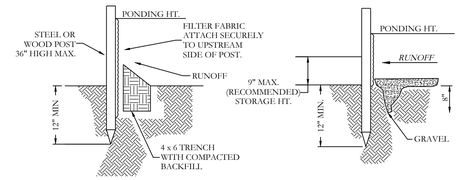




VICINITY MAP:







STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL

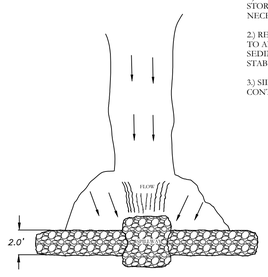
ALTERNATE DETAIL
TRENCH WITH GRAVEL

NOTE:
1.) INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.

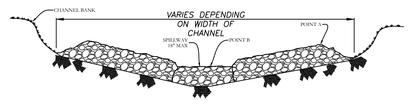
2.) REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

3.) SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE



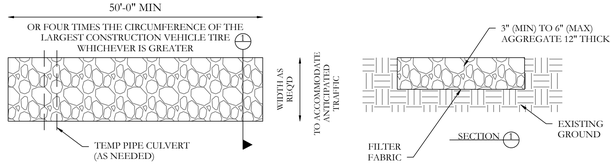
PLAN



VIEW LOOKING UPSTREAM

NOTES:
1.) POINT 'A' MUST BE HIGHER THAN POINT 'B' SPILLWAY HEIGHT.
2.) PLACE RIP-RAP IN BARRIER PERPENDICULAR TO THE FLOW WITH TIGHT GROUPING.
USE STRAW, ROCKS, OR FILTER FABRIC TO FILL ANY GAPS AND TAMP
BACKFILL MATERIAL TO PREVENT EROSION OR FLOW AROUND THE DAM.
3.) SPILLWAY HEIGHT SHALL NOT EXCEED 16" (4).
4.) INSPECT AFTER EACH SIGNIFICANT STORM, MAINTAIN AND REPAIR PROMPTLY.

RIP-RAP
CHECK DAM



STABILIZED CONSTRUCTION ENTRANCE
N.T.S

EROSION CONTROL NOTES

SOD OR SEED DETENTION AREA POST-CONSTRUCTION (IF APPLICABLE)

MAXIMUM SLOPE OF 3H:1V ON DETENTION POND LEVEES

CONTRACTOR MUST HAVE INLET PROTECTION MEASURES INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF DRAINAGE INLETS/STRUCTURES IS COMPLETE. SEDIMENT BARRIERS SHALL BE MAINTAINED THROUGHOUT AND INSPECTED THROUGHOUT CONSTRUCTION PROCESS UNTIL PROJECT IS COMPLETE

RIP RAP SEDIMENT BARRIERS SHALL BE USED AT ALL STORMWATER DISCHARGE POINTS SHOWN ON PLANS ASAP

CONTRACTOR SHOULD WORK WITH ENGINEER TO ESTABLISH EFFECTIVE AND EFFICIENT PLAN TO PREVENT SEDIMENT RUNOFF BY DETERMINING WHERE SILT FENCING OR OTHER TYPES OF CONTROLS ARE NECESSARY

SOME EROSION CONTROL MEASURES, SILT FENCING, OR CHECK DAMS MAY NOT BE NECESSARY DURING INITIAL ROW CLEARING BUT MAY BE NEEDED ONCE LOT CLEARING AND HOME BUILDING BEGINS

ERC LEGEND

SITE POSTING

DISTURBED AREA

CONC. WASHOUT DETENTION AREA

SILT FENCE

RIP RAP CHECK DAM

CONSTRUCTION ENTRANCE

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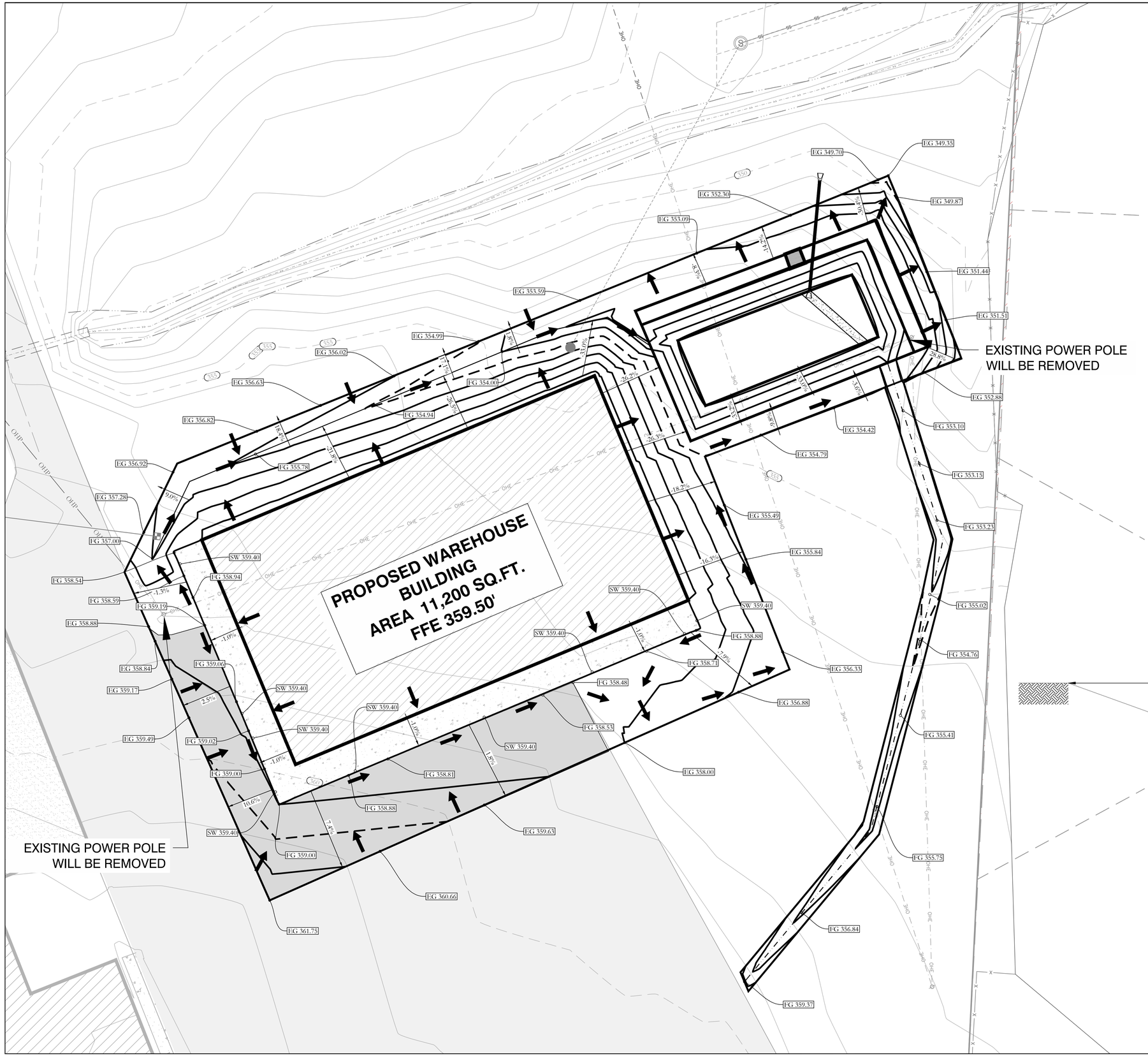
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

25-1210 Comm./ 25300 I30 N
EROSION CONTROL PLAN
A COMMERCIAL IN BRYANT CITY, SALINE COUNTY, ARKANSAS

DATE:	11/05/2025	C.A.D. BY:	DRAWING NUMBER:
REVISED:	##	CHECKED BY:	25-1210
SHEET:	C-4.0	SCALE: 1"=20'	

500	01S	14W	0	13	400	62	1664



N

BASIS OF BEARING:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

15 7.5 15

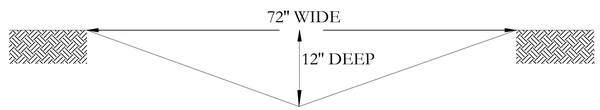
BAR SCALE: 1"=15'

VICINITY MAP:

GRADING PLAN NOTES

1. DESIGN CONTOURS SHOWN ARE FINISHED GRADE.
2. SPOT ELEVATIONS SHOWN ARE FINISHED GROUND,SIDEWALK ELEVATIONS, EXISTING GROUND.
3. CLEAR AND GRUB AREAS OF THE SITE WHERE CUT OR FILL IS TO OCCUR.
4. FILL SHALL BE COMPACTED TO AT LEAST 98% OF THE MATERIAL'S MAXIMUM STANDARD PROCTOR DRY DENSITY.
5. THE MOISTURE CONTENT OF FILL MATERIAL SHALL BE WITHIN THE RANGE OF 1% BELOW TO 3% ABOVE THE OPTIMUM MOISTURE CONTENT.
6. SUBGRADES SHALL BE PROOF-ROLLED WITH A LOADED DUMP TRUCK TO DETECT ZONES OF UNSUITABLE AND/OR EXCESSIVELY WET SOILS. IF PUMPING BEGINS, COMPACTION SHALL BE STOPPED IMMEDIATELY AND RESUMED ONLY WHEN THE MATERIAL IS SUFFICIENTLY DRY THAT PUMPING DOES NOT OCCUR.
7. ALL UNUSABLE SOILS SHALL BE USED ON SITE FOR FILL PURPOSES OUTSIDE THE AREAS OF BUILDING AND PAVEMENT CONSTRUCTION.
8. OWNER IS RECOMMENDED TO HAVE FENCE AROUND DETENTION POND.

Note: Detention pond will be built before construction



DITCH SECTION

ASPHALT PAVEMENT SECTION

LEGEND
FG = FINISHED GRADE
EG = EXISTING GRADE
SW = TOP OF SIDEWALK

LEGEND

- PLSS Aliquot Corner	- Clean Out	- Fence
- Fnd. Corner Monument	- Water Meter	- Overhead Power
- Set 1/2" Rebar/Cap (1664)	- Power Pole	- Sewer Line
- Computed Point	- Sewer Manhole	- Water Line
(M)- As Measured	- Light Pole	- Telephone Line
(P) - Per Deed or Plat Records	- Telephone Pedestal	- Electric Line
ESMT - Easement	- Drainage Manhole	- Gas Line
B.S.L. - Building Setback Lines	- Gas Meter	Water Flow Path

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25-1210 Comm./ 25300 I30 N
GRADING PLAN
A COMMERCIAL IN BRYANT CITY, SALINE COUNTY, ARKANSAS

DATE:	11/05/2025	C.A.D. BY:	DRAWING NUMBER:
REVISED:	##	CHECKED BY:	25-1210
SHEET:	C-5.0	SCALE: 1"=15'	

500	01S	14W	0	13	400	62	1664

RICHARDSON ENGINEERING
Planning ▪ Engineering ▪ Development Consulting

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

(1/1)

PROJECT 025-029 BRYANT PHARMACY SOIL LOSS DATE 11/07/2025

TOTAL AREA = 1.97 AC

$A = R * K * L * S * C * P$

∴ R = 300

K => SOIL IS TIAK SILT LOAM (3-8%)

TABLE 10-1 ∴ K = 0.32

L => USE SLOPE OF 8% AND SLOPE LENGTH OF 100'

∴ LS = 0.992

C = 0.12 FOR LOOSE HAY OR STRAW FOR 1-10%.

@ 2.0 TONS/ACRE

P = 0.5 FOR 3-8%

$A = (300)(0.32)(0.992)(0.12)(0.5) = 5.71 < 5$ K

EXCEEDS ALLOWABLE SOIL LOSS

USE A RAPID GROWING GRASS TO PROVIDE PERMANENT COVER (60% COVERAGE)

∴ C = 0.042 ∴ P = 1 (NO CONTROLS)

$A = (300)(0.32)(0.992)(0.042)(1)$

$= 4.0 > 5.0$ ✓

Stormwater Pollution Prevention Plan (SWPPP) for Construction Activity for Small Construction Sites

National Pollutant Discharge Elimination System (NPDES)
General Permit # ARR150000

Prepared for:

Shoppes at Dogwood Springs Phase 1

Date:

October 2025

Prepared by:

Richardson Engineering, PLLC
325 W South Street
Benton, AR 72015

Revised date: 10/20/2016

Project Name and Location: Shoppes at Dogwood Springs Phase 1, 4707 Bryant Parkway, Alexander, AR 72002
Property Parcel Number (*Optional*):
Operator Name and Address: Jon Martin, 5501 Lombard, Alexander, AR 72002

A. Site Description
   a. Project description, intended use after NOI is filed: Proposed Pharmacy Building and Parking Lot.
   b. Sequence of major activities which disturb soils: Install silt fencing, establish subgrade elevations, parking facilities, curb/gutter, and landscaping. Monitor disturbed areas while vegetation and stabilization is taking place.
   c. Total Area: 1.90 acres Disturbed Area: 1.90 acres

B. Responsible Parties
   Be sure to assign all SWPPP related activities to an individual or position; even if the specific individual is not yet known (i.e. contractor has not been chosen).

Individual/Company	Phone Number	Service Provided for SWPPP (i.e., Inspector, SWPPP revisions, Stabilization Activities, BMP Maintenance, etc.)
Richardson Engineering - Tristin Phillips	501-315-7225	Engineer
Richardson Engineering	501-315-7225	Engineer/SWPPP
Bascon General Contractors LLC	501-317-0446	Contractor/Install Maintain Erosion Control Measures
TBD	N/A	Inspector/SWPPP

C. Receiving Waters
   a. The following waterbody (or waterbodies) receives stormwater from this construction site: Drains Northeast to unnamed tributary of Owen Creek, thence into Owen Creek, thence into Fourche Creek, thence into Arkansas River
   b. Is the project located within the jurisdiction of an MS4? ■ Yes ☐ No
      i. If yes, Name of MS4: City of Bryant
   c. Ultimate Receiving Water:
      ☐ Red River ☐ White River
      ☐ Ouachita River ☐ St. Francis River
      ■ Arkansas River ☐ Mississippi River

D. Site Map Requirements (Attach Site Map):
   a. Pre-construction topographic view;

b. Direction of stormwater flow (i.e., use arrows to show which direction stormwater will flow) and approximate slopes anticipated after grading activities;
c. Delineate on the site map areas of soil disturbance and areas that will not be disturbed under the coverage of this permit;
d. Location of major structural and nonstructural controls identified in the plan;
e. Location of main construction entrance and exit;
f. Location where stabilization practices are expected to occur;
g. Locations of off-site materials, waste, borrow area, or equipment storage area;
h. Location of areas used for concrete wash-out;
i. Location of all surface water bodies (including wetlands) with associated natural buffer boundary lines. Identify floodplain and floodway boundaries, if available;
j. Locations where stormwater is discharged to a surface water and/or municipal separate storm sewer system if applicable,
k. Locations where stormwater is discharged off-site (should be continuously updated);
l. Areas where final stabilization has been accomplished and no further construction phase permit requirements apply;
m. A legend that identifies any erosion and sediment control measure symbols/labels used in the site map and/or detail sheet; and
n. Locations of any storm drain inlets on the site and in the immediate vicinity of the site.

E. Stormwater Controls
   a. Initial Site Stabilization, Erosion and Sediment Controls, and Best Management Practices:
      i. Initial Site Stabilization: Subgrade to be established. Silt fence to be installed to prevent sedimentation and runoff. Drainage to be installed. Utilities to be trenched and covered immediately. Vegetation to be established and soil stabilization closely monitored. After vegetation is established and site is stabilized, NOT to be submitted for approval.
      ii. Erosion and Sediment Controls: Construction Entrance/Exit, Silt Fence, seeding, additional efforts to stabilize disturbed areas where needed, i.e. filter socks, straw wattles, erosion control matting.
      iii. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the operator will replace or modify the control for site situations: ■ Yes ☐ No
           If No, explain: _____
           _____
      iv. Off-site accumulations of sediment will be removed at a frequency sufficient to minimize off-site impacts: ■ Yes ☐ No

If No, explain: _____

v. Sediment will be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%: ■ Yes ☐ No

If No, explain: _____

_____

vi. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges: ■ Yes ☐ No

If No, explain: _____

vii. Off-site material storage areas used solely by the permitted project are being covered by this SWPPP: ☐ Yes ■ No

If Yes, explain additional BMPs implemented at off-site material storage area: _____

_____

b. Stabilization Practices

i. Description and Schedule: Silt fence and construction entrance to be installed prior to clearing and grubbing of site. Subgrade to be established and additional BMPs to be installed as needed. Proposed construction to be completed and stabilization to be initiated. Stabilization to be monitored until complete. Submit NOT for approval.

ii. Are buffer areas required? ☐ Yes ■ No

If Yes, are buffer areas being used? ☐ Yes ☐ No

If No, explain why not: Due to the small size of the site, no buffer areas will be needed.

If Yes, describe natural buffer areas: _____

iii. A record of the dates when grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included with the plan. ■ Yes ☐ No

If No, explain: _____

_____

iv. Deadlines for stabilization:

1. Stabilization procedures will be initiated 14 days after construction activity temporarily ceases on a portion of the site.
2. Stabilization procedures will be initiated immediately in portions of the site where construction activities have permanently ceased.

c. Structural Practices

i. Describe any structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from

exposed areas of the site: N/A

ii. Describe Velocity Dissipation Devices: Silt fence and rock check dams.

iii. Sediment Basins:

Are 10 or more acres draining to a common point? ☐ Yes ■ No

Is a sediment basin included in the project? ☐ Yes ■ No

If Yes, what is the designed capacity for the storage?

☐ 3600 cubic feet per acre = : _____

or

☐ 10 year, 24 hour storm = : _____

☐ Other criteria were used to design basin: _____

_____

If No, explain why no sedimentation basin was included and describe required natural buffer areas and other controls implemented instead: Due to the small size of the site, it was determined that silt fence in combination with other BMPs will be sufficient to retain any sediment on site.

F. Other Controls

a. Solid materials, including building materials, shall be prevented from being discharged to Waters of the State: ■ Yes ☐ No

b. Off-site vehicle tracking of sediments and the generation of dust shall be minimized through the use of:

■ A stabilized construction entrance and exit

☐ Vehicle tire washing

☐ Other controls, describe: _____

c. Temporary Sanitary Facilities: On-site, portable facility.

d. Concrete Waste Area Provided:

■ Yes

☐ No. Concrete is used on the site, but no concrete washout is provided.

Explain why: _____

☐ N/A, no concrete will be used with this project

e. Fuel Storage Areas, Hazardous Waste Storage, and Truck Wash Areas: N/A

G. Non-Stormwater Discharges

a. The following allowable non-stormwater discharges comingled with stormwater are present or anticipated at the site:

☐ Fire-fighting activities;

☐ Fire hydrant flushings;

☐ Water used to wash vehicles (where detergents or other chemicals are not used) or control dust in accordance with Part II.A.4.H.2;

☐ Potable water sources including uncontaminated waterline flushings;

☐

☐

Landscape Irrigation;

Routine external building wash down which does not use detergents or other chemicals;

☐ Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents or other chemicals are not used;

☐ Uncontaminated air conditioning, compressor condensate (See Part I.B.12.C of the permit);,

☐ Uncontaminated springs, excavation dewatering and groundwater (See Part I.B.13.C of the permit);

☐ Foundation or footing drains where flows are not contaminated with process materials such as solvents (See Part I.B.13.C of the permit);

b. Describe any controls associated with non-stormwater discharges present at the site: N/A

H. Applicable State or Local Programs: The SWPPP will be updated as necessary to reflect any revisions to applicable federal, state, or local requirements that affect the stormwater controls implemented at the site. ■ Yes ☐ No

I. Inspections

a. Inspection frequency:

■ Every 7 calendar days

or

☐ At least once every 14 calendar days and within 24 hours of the end of a storm even 0.25 inches or greater (a rain gauge must be maintained on-site)

b. Inspections:

Completed inspection forms will be kept with the SWPPP.

■ ADEQ's inspection form will be used (See Appendix B)

or

☐ A form other than ADEQ's inspection form will be used and is attached (See inspection form requirements Part II.A.4.L.2)

c. Inspection records will be retained as part of the SWPPP for at least 3 years from the date of termination.

d. It is understood that the following sections describe waivers of site inspection requirements. All applicable documentation requirements will be followed in accordance with the referenced sections.

i. Winter Conditions (Part II.A.4.L.4)

ii. Adverse Weather Conditions (Part II.A.4.L.5)

J. Maintenance:

The following procedures to maintain vegetation, erosion and sediment control measures and other protective measures in good, effective operating condition will be followed: The SWPPP to be followed, control measures inspected and repaired as required.

Any necessary repairs will be completed, when practicable, before the next storm event, but not to exceed a period of 3 business days of discovery, or as otherwise directed by state or local officials.

K. Employee Training:

The following is a description of the training plan for personnel (including contractors and subcontractors) on this project: Contractors and Subcontractors for this project to be informed of the SWPPP, as well as procedures for the installation and inspection of erosion control measures and performing inspections thereof.
**Note, Formal training classes given by Universities or other third-party organizations are not required, but recommended for qualified trainers; the permittee is responsible for the content of the training being adequate for personnel to implement the requirements of the permit.

Certification

"I certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Responsible or Cognizant Official: _____

Title: _____ Date: _____

ARR150000 Inspection Form

Appendix A

Inspector Name: _____ Date of Inspection: _____

Inspector Title: _____

Date of Rainfall:_____ Duration of Rainfall: _____

Days Since Last Rain Event: _____days Rainfall Since Last Rain Event: _____inches

Description of any Discharges During Inspection: _____

Location of Discharges of Sediment/Other Pollutant (specify pollutant & location): _____

_____

Locations in Need of Additional BMPs: _____

Information on Location of Construction Activities

Location	Activity Begin Date	Activity Occuring Now (y/n)?	Activity Ceased Date	Stabilization Initiated Date	Stabilization Complete Date

Information on BMPs in Need of Maintenance

Location	In Working Order?	Maintenance Scheduled Date	Maintenance Completed Date	Maintenance to be Performed By

Changes required to the SWPPP: _____ Reasons for changes: _____

_____ _____

_____ _____

SWPPP changes completed (date): _____

"I certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accura te, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Responsible or Cognizant Official: _____ Date:_____

Title: _____

SITE WITH AUTOMATIC COVERAGE (LESS THAN 5 ACRES) CONSTRUCTION SITE NOTICE

FOR THE
Arkansas Department of Environmental Quality (ADEQ)
Storm Water Program

NPDES GENERAL PERMIT NO. ARR150000

The following information is posted in compliance with **Part I.B.8.A** of the ADEQ General Permit Number **ARR150000** for discharges of stormwater runoff from sites with automatic coverage. Additional information regarding the ADEQ stormwater program may be found on the internet at:

www.adeq.state.ar.us/water/branch_npdes/stormwater

Permit Number	ARR150000
Contact Name: Phone Number:	*Jon Martin* *501-847-3038*
Project Description (Name, Location, etc.): Start Date: End Date: Total Acres:	*Bryant Parkway Pharmacy, 4707 Bryant Parkway, Alexander, AR 72002* *12/01/2025* *06/01/2026* *1.90*
Location of Stormwater Pollution Prevention Plan:	*Mailbox on Site*

For Construction Sites Authorized under **Part I.B.6.A** (Automatic Coverage) the following certification must be completed:

I _____ (Typed or Printed Name of Person Completing this Certification) certify under penalty of law that I have read and understand the eligibility requirements for claiming an authorization under Part I.B.2. of the ADEQ General Permit Number ARR150000. A stormwater pollution prevention plan has been developed and implemented according to the requirements contained in Part II.A.2.B & D of the permit. I am aware there are significant penalties for providing false information or for conducted unauthorized discharges, including the possibility of fine and imprisonment for knowing violations.

_____ _____

Signature and Title Date

Drainage Report

For

Bryant Pharmacy

Bryant, Saline County, Arkansas

November 7, 2025

Prepared by:

RICHARDSON ENGINEERING, PLLC

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

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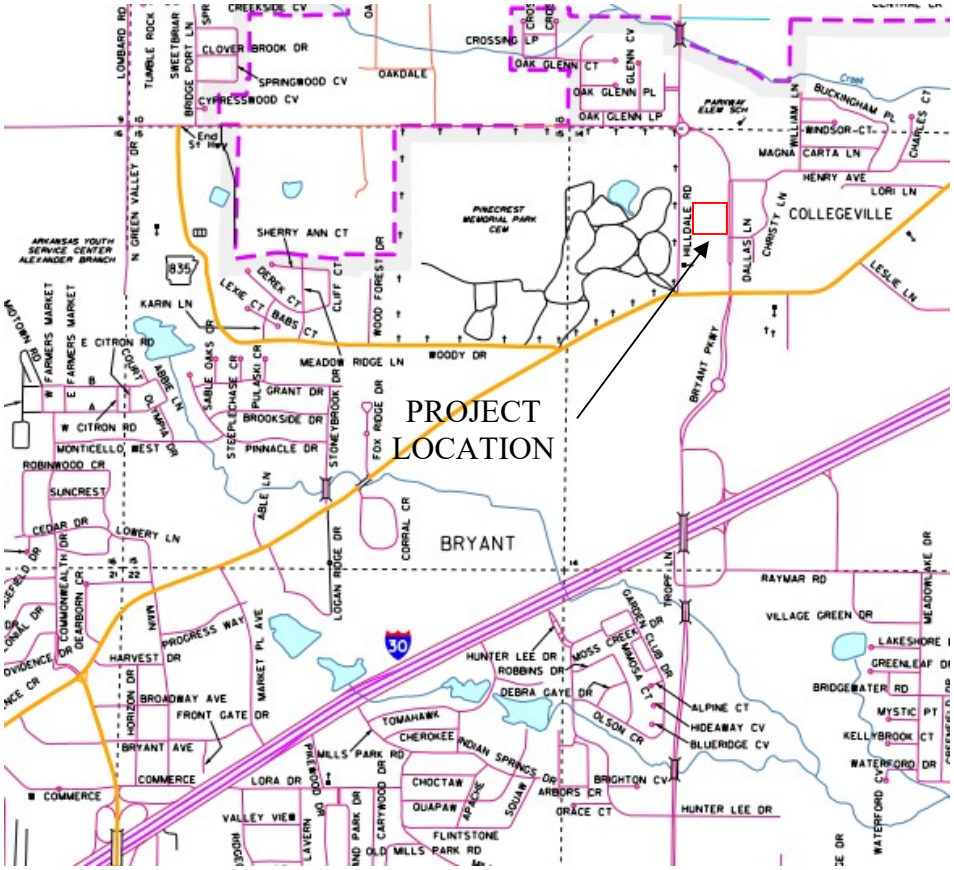
Project Owner Information

Jon Martin
5501 Lombard Road
Alexander, AR 72002

Project Location and Description

The project is located on West side of the Bryant Parkway, part of the Southeast Quater of the Northwest Quarter, Section 14, Township 1-S, Range 14-W, Saline County, Arkansas.



Vicinity Map – N.T.S

This project is a proposed Commercial Development, located in the City of Bryant, Saline County.

Site Drainage

Pre-Development

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

The pre-development runoff condition is undeveloped/woods.

Post-Development

The site drainage starts on the South side of the project and flows to the North. The drainage is sheet flows across the proposed parking lot and intercepted by the proposed storm sewer system and is discharged into a proposed detention basin on the Northwest corner of the project. There are also some small areas that discharge to the East and South from the site.

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 time of concentration values for the storm inlets on this site were manually inputted into the Storm and Sanitary Analysis program to be 5 minutes. The drainage basins for CB-1, CB-2, CB-3 and AD-4 primarily consist of impervious areas. Drainage basins in this case typically produce time of concentration values that are less than 5 minutes. Per the City of Bryant Drainage manual, the minimum time of concentration value is 5 minutes; therefore, a time of concentration value of 5 minutes was utilized to analyze the on-site storm system.

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 4,974 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 6,218 CF.

The proposed detention basin will utilize an orifice/riser/culvert discharge structure. Post-Development Basin “A” is the drainage basin that discharges water into the proposed detention basin. Post-development drainage basin “A” consists of all of the individual drainage basins for CB-1, CB-2, CB-3, AD-4, the proposed building areas for phase 2 (i.e. roof drains), and the detention pond area. Post-Development Basin B, C, and D

consist of the grass tie back slopes from the proposed pavement to existing grade and a small portion of the entrance drives that tie down to the existing grade on the Bryant Parkway. These areas are not routed through the detention basin, so they were calculated by themselves. The detention basin and post-development basin "B" will be discharged to the West, post-development basin "C" will be discharged to the East, and post-development basin "D" will be discharged to the South. 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 runoff conditions changed from undeveloped/woods to commercial development.

Runoff Summary's

Pre- Development Drainage Basin Information

Overall Site Area: 1.92 Acres

Drainage Basins	Drainage Area (Ac)	C Value	Time of Concentration (min)
Basin A	0.86	0.56	9
Basin B	0.31	0.56	7
Basin C	0.20	0.56	16
Basin D	0.34	0.56	12
Basin E	0.21	0.56	10

Design Storm	Basin A (cfs)	Basin B (cfs)	Basin C (cfs)	Basin D (cfs)	Basin E (cfs)
2-yr	2.27	2.21	0.41	0.79	0.53
10-yr	3.04	2.96	0.55	1.06	0.71
25-yr	3.49	3.41	0.63	1.21	0.81
50-yr	3.81	3.72	0.69	1.33	0.89
100-yr	4.14	4.04	0.74	1.44	0.97

Overall Post-Development Drainage Study Area: 1.97 Acres

Overall Site Post- Development Drainage Basin Information

Drainage Basins	Drainage Area (Ac)	C Value	Time of Concentration (min)
Basin A	1.50	0.95	5
Basin B	0.22	0.58	10
Basin C	0.237	0.68	5
Basin D	0.017	0.75	5

Design Storm	Basin A (cfs)	Basin B (cfs)	Basin C (cfs)	Basin D (cfs)
2-yr	8.75	0.57	0.99	0.08
10-yr	11.70	0.77	1.32	0.11
25-yr	13.44	0.88	1.52	0.12
50-yr	14.68	0.96	1.66	0.13
100-yr	15.96	1.05	1.81	0.14

On-Site Drainage Inlet Basin Information

Drainage Basins	Drainage Area (Ac)	C Value	Time of Concentration (min)
CB-1	0.36	0.95	5
CB-2	0.16	0.95	5
CB-3	0.30	0.95	5
AD-4	0.35	0.95	5

Design Storm	CB-1 (cfs)	CB-2 (cfs)	CB-3 (cfs)	AD-4 (cfs)
2-yr	2.09	0.91	1.77	2.02
10-yr	2.80	1.22	2.37	2.70
25-yr	3.22	1.40	2.72	3.10
50-yr	3.51	1.53	2.98	3.83
100-yr	3.82	1.67	3.24	3.68

Site Discharge to the West to Include Detention Basin

Overall Development Area = 1.92 Ac
Pre-Development Drainage Study Area = 1.17
Post-Development Drainage Study Area = 1.72
Existing Condition runoff Coefficient: C = 0.56
Proposed runoff Coefficient: C = 0.95/0.58
Tc Undeveloped = 9/7 Minutes (TR55 Method)
Tc Developed = 5/10 Minutes (TR55 Method)
Detention Basin Required Volume: 6,218 CF
Detention Basin Volume: 9,802 CF
Maximum Storage: 3,842 CF
Discharge Structure: Orifice/Riser/Culvert

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	4.08	9.04	4.00	420.71
10-yr	5.46	12.08	5.03	421.46
25-yr	6.28	13.88	5.52	421.94
50-yr	6.86	15.16	5.87	422.24
100-yr	7.45	16.48	6.15	422.55

Site Discharge to the East

Pre-Development Drainage Study Area = 0.55
Post-Development Drainage Study Area = 0.237
Existing Condition runoff Coefficient: C = 0.56
Proposed runoff Coefficient: C = 0.68
Tc Undeveloped = 12/10 Minutes (TR55 Method)
Tc Developed = 5 Minutes (TR55 Method)

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)
2-yr	1.25	0.99
10-yr	1.67	1.32
25-yr	1.92	1.52
50-yr	2.10	1.66
100-yr	2.28	1.81

Site Discharge to the South

Pre-Development Drainage Study Area = 0.20
Post-Development Drainage Study Area = 0.017
Existing Condition runoff Coefficient: C = 0.56
Proposed runoff Coefficient: C = 0.75
Tc Undeveloped = 16 Minutes (TR55 Method)
Tc Developed = 5 Minutes (TR55 Method)

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)
2-yr	0.41	0.078
10-yr	0.55	0.11
25-yr	0.63	0.12
50-yr	0.69	0.13
100-yr	0.74	0.14

Recommendations/Summary

The proposed drainage improvements include a storm sewer system and a detention basin on the Northwest corner 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
NRCS Soil Report
Site Drainage Map
Trickle Channel Velocity Calculation
Overflow Wier Blockage Calculation
SSA Design Layout
Storm System Design
Pond and Post Development Hydrographs (Hydrology Studio)

Runoff Coefficient Calculations

RICHARDSON ENGINEERING
Planning ▪ Engineering ▪ Development Consulting

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

(1/1)

PROJECT 025-029 DRAINAGE ANALYSIS DATE 09/04/2025

PRE-DEVELOPMENT

DRAINAGE AREA : 1.92 AC

CLAY SOIL

50% - 2%-7% C = 0.50

50% - >7% C = 0.62

$$C = \frac{(0.960)(0.5) + (0.960)(0.62)}{1.92}$$

$$= 0.56$$

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PROJECT 025-029 DRAINAGE ANALYSIS DATE 11/05/2025

POST-DEVELOPMENT

BASIN "A"

AREA = 1.5 ACRE

C = 0.95 "

BASIN "B"

AREA = 0.22 ACRE (9661 SF)

PERVIOUS: 8092 SF C=0.51 (GRASS - GOOD CONDITION > 7%)

IMPERVIOUS: 1569 SF C=0.95

$$C = \frac{(8092)(0.51) + (1569)(0.95)}{9661} = 0.58$$ "

BASIN "C"

AREA = 0.237 AC (10348 SF)

PERVIOUS: 6452 SF C=0.51

IMPERVIOUS: 3896 SF C=0.95

$$C = \frac{(6452)(0.51) + (3896)(0.95)}{10348} = 0.68$$ "

BASIN "D"

AREA = 0.017 ACRE (722 SF)

PERVIOUS: C=0.51

IMPERVIOUS: C=0.95

$$C = \frac{(322)(0.51) + (400)(0.95)}{722} = 0.75$$ "

NRCS Soil Report

Soil Map—Saline County, Arkansas

Map Scale: 1:748 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 10 20 40 60

Feet
0 35 70 140 210

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 21, Sep 10, 2024

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

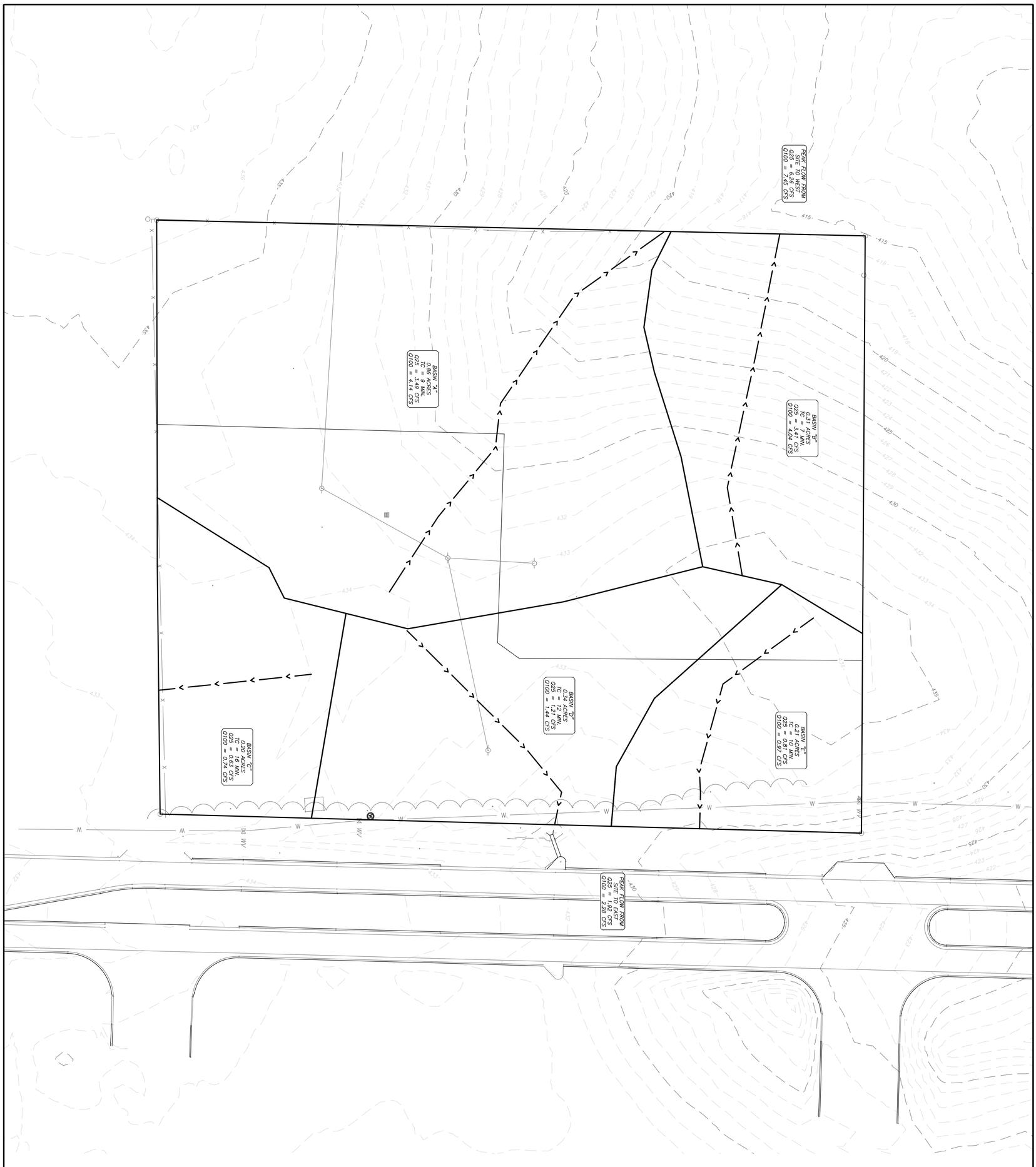
Date(s) aerial images were photographed: May 1, 2022—May 29, 2022

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
29	Tiak silt loam, 3 to 8 percent slopes	2.4	100.0%
Totals for Area of Interest		**2.4**	**100.0%**

Site Drainage Basin Maps



GRAPHIC SCALE

(IN FEET)

1 inch = 20 ft.

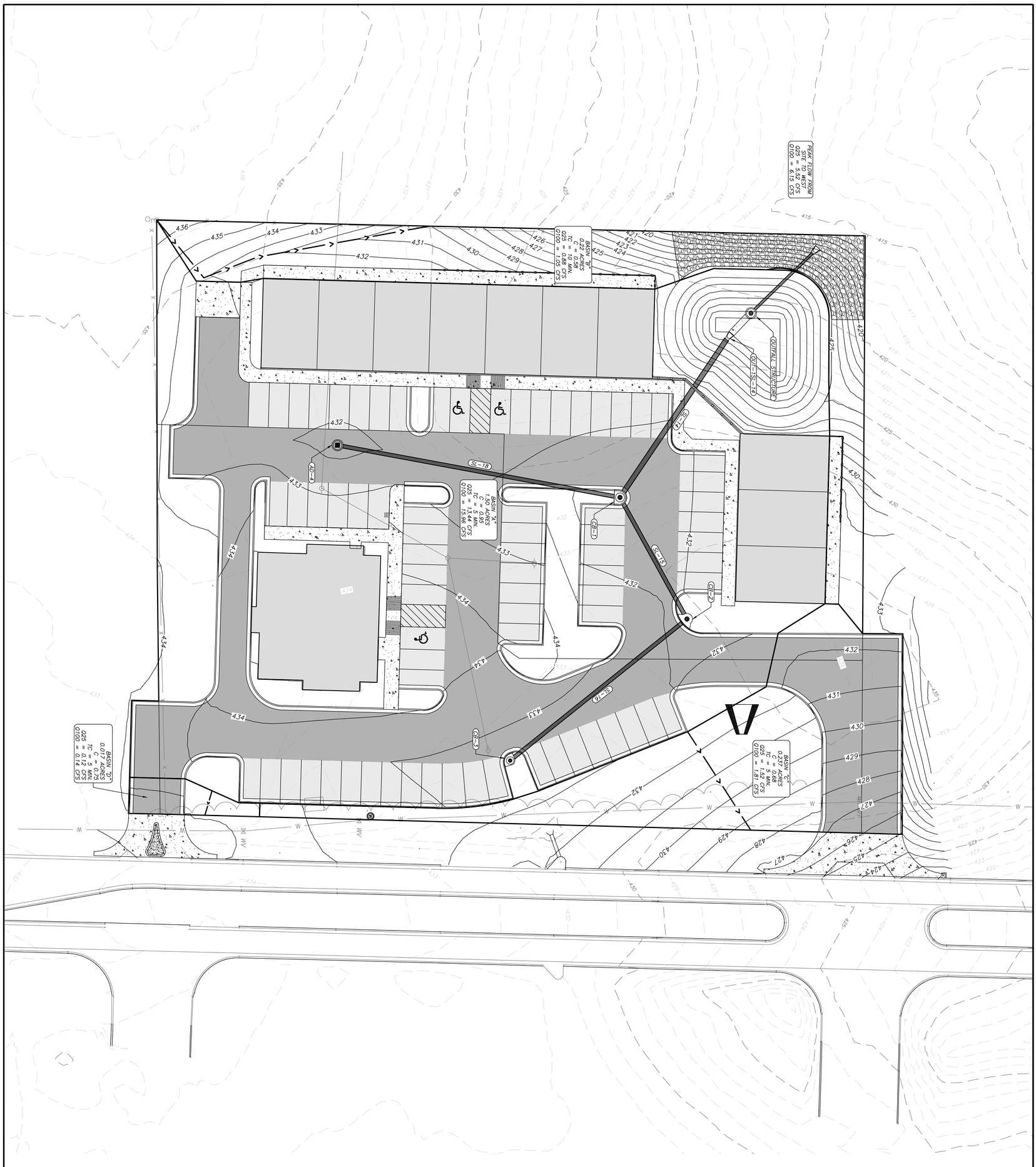
PROJECT #: 025-029	No.	Revisions	Date
Scale: 1" = 20'	Date: 11/07/2025		
Sheet: 1 of 3			

Prepared For:
JON MARTIN
5501 LOMBARD ROAD
ALEXANDER, AR 72002

PRE-DEVELOPMENT DRAINAGE BASIN MAP
SHOPPES AT DOGWOOD SPRINGS
RETAIL DEVELOPMENT
BRYANT PARKWAY
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 = 20 ft.

PROJECT #: 025-029	No.	Revisions	Date
Scale: 1" = 20'			
Date: 11/07/2025			
Sheet: 2 of 3			

Prepared For:

JON MARTIN
5501 LOMBARD ROAD
ALEXANDER, AR 72002

POST-DEVELOPMENT DRAINAGE BASIN MAP
SHOPPES AT DOGWOOD SPRINGS
RETAIL DEVELOPMENT
BRYANT PARKWAY
BRYANT, ARKANSAS

CERTIFICATE OF AUTHORIZATION
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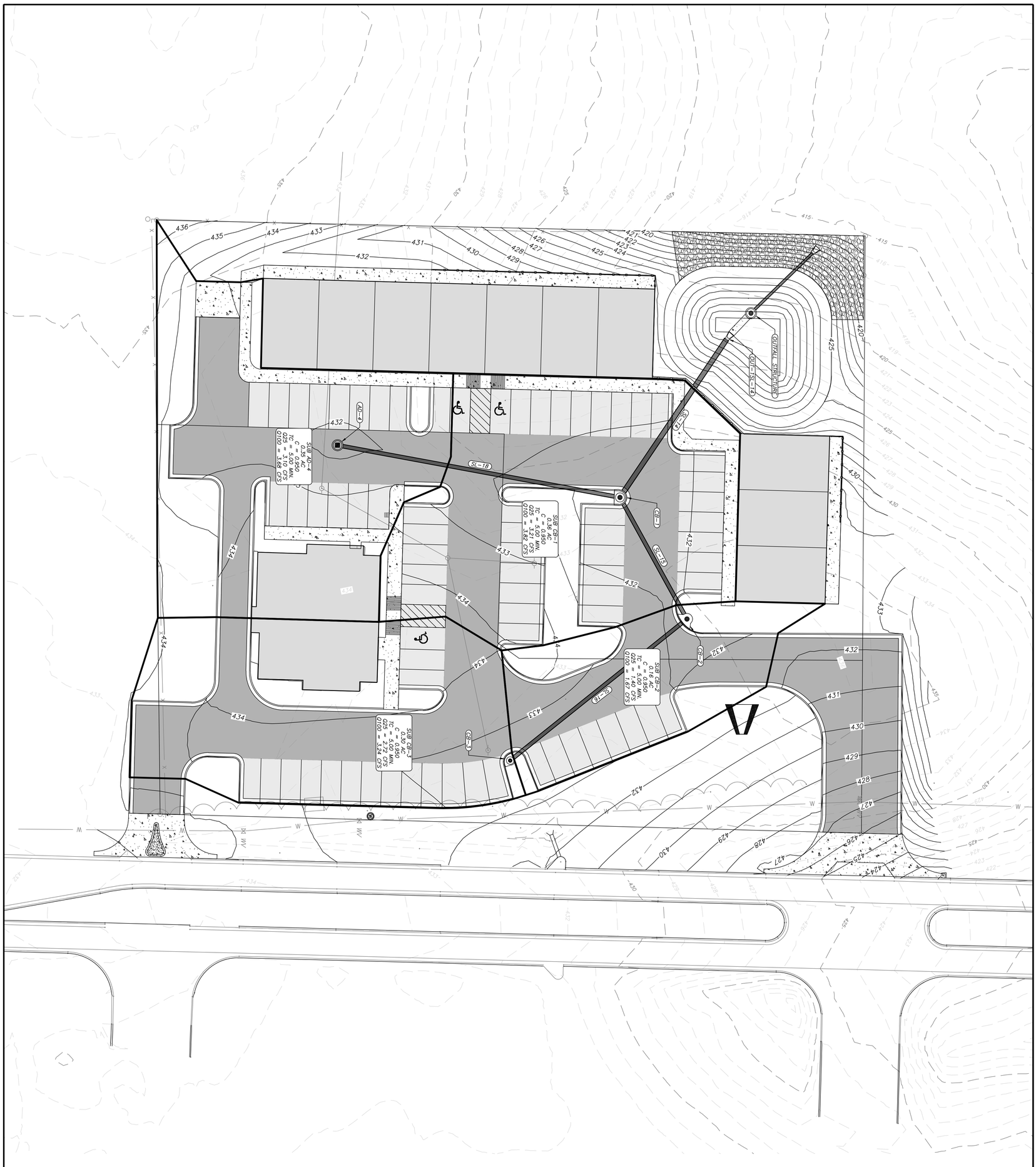

GRAPHIC SCALE

(IN FEET)

1 inch = 20 ft.

PROJECT #: 025-029	No.	Revisions	Date
Scale: 1" = 20'	Date: 11/07/2025		
Sheet: 3 of 3			

Prepared For:

JON MARTIN
5501 LOMBARD ROAD
ALEXANDER, AR 72002

POST-DEVELOPMENT DRAINAGE BASIN MAP
SHOPPES AT DOGWOOD SPRINGS
RETAIL DEVELOPMENT
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Trickle Channel Velocity Calculation

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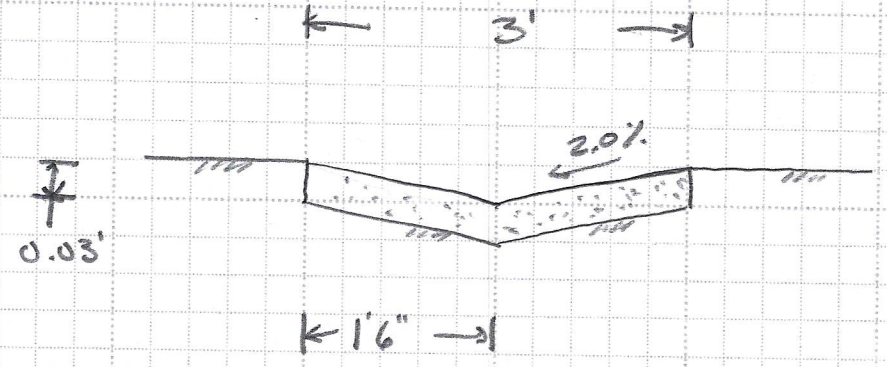
PROJECT 025-029 TRICKLE CHANNEL VELOCITY DATE 11/05/2025



$A = 0.045\ FT^2$ $S = \frac{0.2}{10} = 0.02$ FT/FT

$W_p = 0.16$ FT

$$Q = \left(\frac{1.49}{0.013}\right)(0.045)\left(\frac{0.045}{0.16}\right)^{2/3}(0.02)^{1/2}$$

$= 0.313$ CFS

$$V = \frac{Q}{A} = \frac{0.313}{0.045} = 6.95\ FT/S > 2\ FT/S \checkmark$$

Overflow Wier Blockage Calculation

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(501) 315-7225

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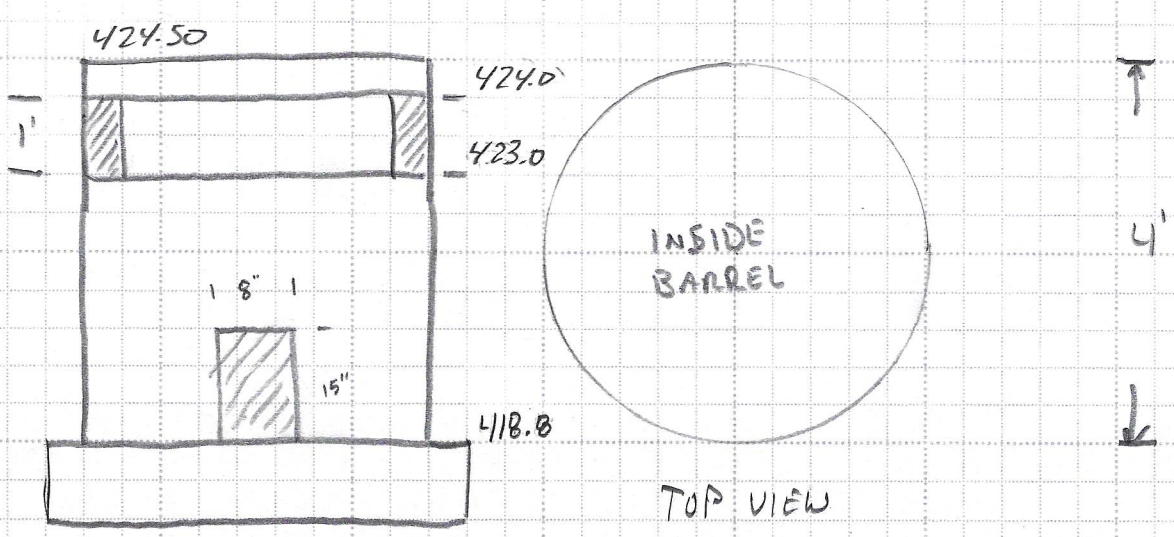
PROJECT 025-029 OVER FLOW RISER WEIR CALCULATION DATE 11/05/2025

RISER IS 4' I.D. ROUND BARREL



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

$C = 2.6$

$L = 2\pi R = (2)(\pi)(2) = 12.56'$

$H = 1.0'$

$Q = (2.6)(12.56)(1.0)^{3/2} = 32.65$ CFS

∴ ASSUMING THAT 50% OF THE WIER IS BLOCKED

$Q = \frac{32.65}{2} = 16.33$ CFS > Q_{100} WITH PAVED = 15.96 CFS ✓

SSA Design Layout

RICHARDSON ENGINEERING
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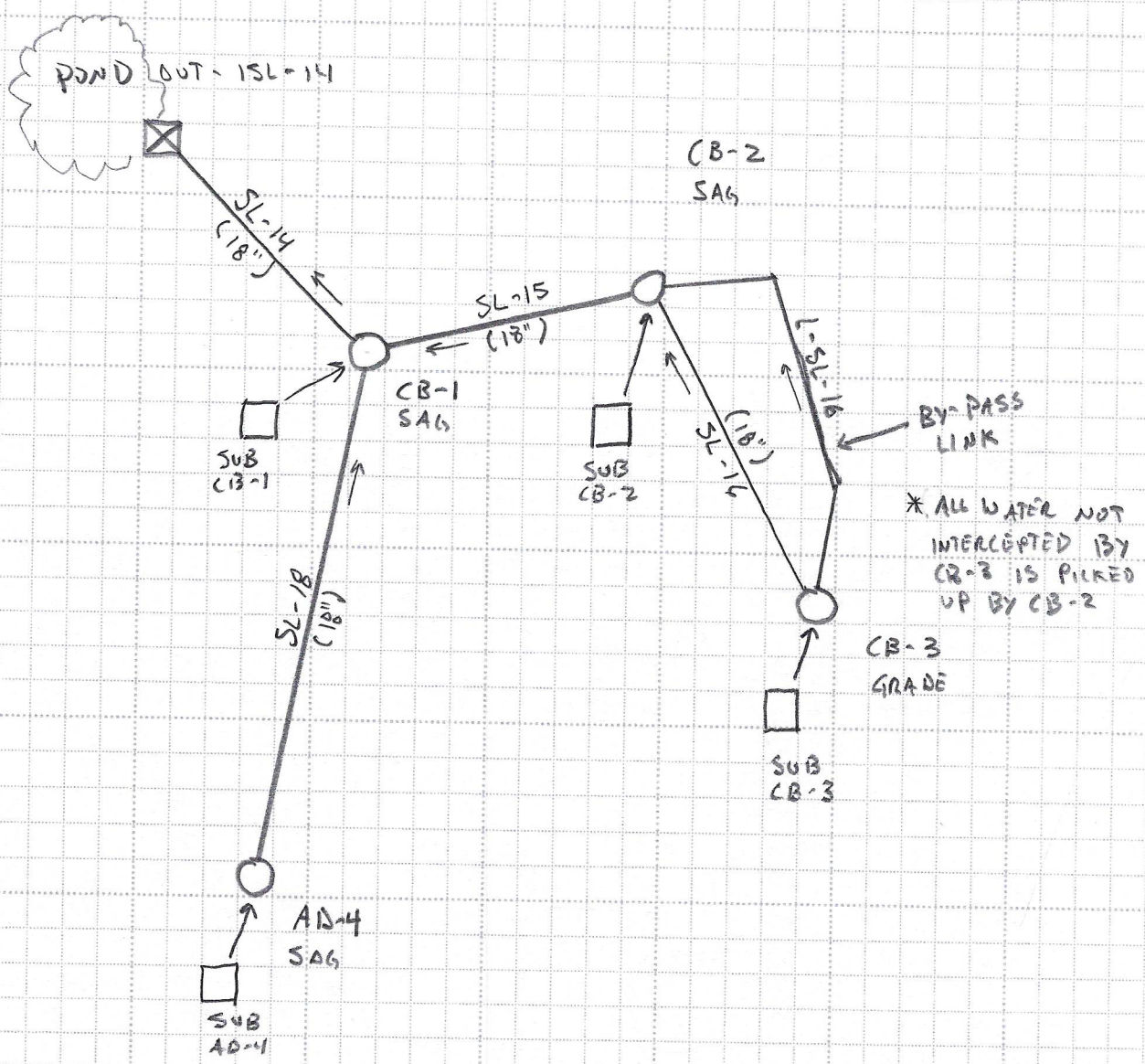
PROJECT 025-029 SSA DESIGN LAYOUT DATE 11/05/2025



Storm System Design (SSA)

2 Year Design Storm

Project Description

File Name	Bryant Pharmacy Drainage Analysis 11-7-25.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	Rational
Time of Concentration (TOC) Method	User-Defined
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

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	4
Nodes	5
Junctions	0
Outfalls	1
Flow Diversions	0
Inlets	4
Storage Nodes	0
Links	5
Channels	0
Pipes	5
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-AD-4	0.35	0.9500	0.51	0.49	0.17	2.02	0 00:05:00
2	Sub-CB-1	0.36	0.9500	0.51	0.49	0.17	2.09	0 00:05:00
3	Sub-CB-2	0.16	0.9500	0.51	0.49	0.08	0.91	0 00:05:00
4	Sub-CB-3	0.30	0.9500	0.51	0.49	0.15	1.77	0 00:05:00

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	Out-1SL - (14)	Outfall	419.00					6.66	419.58		

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 Flow Depth/ Total Depth Ratio	To Sur
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		
1	L-SL - (16)	Pipe	CB-3	CB-2	112.54	433.11	432.25	0.7600			0.07	0.00	0.00	0.00	0.00	0.00	
2	SL - (14)	Pipe	CB-1	Out-1SL - (14)	85.23	422.00	419.00	3.5200			6.66	21.35	0.31	10.71	0.58	0.38	
3	SL - (15)	Pipe	CB-2	CB-1	62.02	426.00	422.00	6.4500			2.65	28.90	0.09	10.23	0.31	0.20	
4	SL - (16)	Pipe	CB-3	CB-2	101.17	429.00	426.00	2.9700			1.69	19.60	0.09	9.23	0.30	0.20	
5	SL - (18)	Pipe	AD-4	CB-1	128.37	427.50	423.00	3.5100			1.99	21.31	0.09	8.25	0.31	0.21	

Inlet Summary

SN	Element ID	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft^2)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)
1	AD-4	On Sag	1	427.50	431.80	427.50	10.00	2.02	N/A	N/A	N/A	10.00	8.74	432.16
2	CB-1	On Sag	1	422.00	431.61	422.00	10.00	2.09	N/A	N/A	N/A	10.00	5.00	432.01
3	CB-2	On Sag	1	426.00	432.25	426.00	10.00	0.98	N/A	N/A	N/A	10.00	3.01	432.59
4	CB-3	On Grade	1	429.00	433.11	429.00	N/A	1.77	1.72	0.06	96.75	10.00	6.07	433.28

Subbasin Hydrology

Subbasin : Sub-AD-4

Input Data

Area (ac)	0.35
Weighted Runoff Coefficient	0.95

Subbasin : Sub-CB-1

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.95

Subbasin : Sub-CB-2

Input Data

Area (ac) 0.16
Weighted Runoff Coefficient 0.95

Subbasin : Sub-CB-3

Input Data

Area (ac) 0.3
Weighted Runoff Coefficient 0.95

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	Entr Lc
1	L-SL - (16)	112.54	433.11	4.11	432.25	6.25	0.86	0.7600	Dummy				
2	SL - (14)	85.23	422.00	0.00	419.00	0.00	3.00	3.5200	CIRCULAR				
3	SL - (15)	62.02	426.00	0.00	422.00	0.00	4.00	6.4500	CIRCULAR				
4	SL - (16)	101.17	429.00	0.00	426.00	0.00	3.00	2.9700	CIRCULAR				
5	SL - (18)	128.37	427.50	0.00	423.00	1.00	4.50	3.5100	CIRCULAR				

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	Frou Numb
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	L-SL - (16)	0.07	0 00:05	0.00	0.00	0.00		0.00	0.00	0.00	
2	SL - (14)	6.66	0 00:05	21.35	0.31	10.71	0.13	0.58	0.38	0.00	
3	SL - (15)	2.65	0 00:05	28.90	0.09	10.23	0.10	0.31	0.20	0.00	
4	SL - (16)	1.69	0 00:05	19.60	0.09	9.23	0.18	0.30	0.20	0.00	
5	SL - (18)	1.99	0 00:05	21.31	0.09	8.25	0.26	0.31	0.21	0.00	

Inlet Input

SN	Element ID	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)
1	AD-4	On Sag	1	427.50	431.80	4.30	427.50	0.00	10.00	0.00
2	CB-1	On Sag	1	422.00	431.61	9.61	422.00	0.00	10.00	0.00
3	CB-2	On Sag	1	426.00	432.25	6.25	426.00	0.00	10.00	0.00
4	CB-3	On Grade	1	429.00	433.11	4.11	429.00	0.00	N/A	0.00

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	AD-4	N/A	0.0300	0.0150	0.0300	1.50		

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)	T Floo Volu (ac
1	AD-4	2.02	2.02	N/A	N/A	N/A	8.74	432.16	0.36	0 00:05	0
2	CB-1	2.09	2.09	N/A	N/A	N/A	5.00	432.01	0.40	0 00:05	0
3	CB-2	0.98	0.91	N/A	N/A	N/A	3.01	432.59	0.34	0 00:05	0
4	CB-3	1.77	1.77	1.72	0.06	96.75	6.07	433.28	0.17	0 00:05	0

10 Year Design Storm

Project Description

File Name	Bryant Pharmacy Drainage Analysis 11-7-25.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	Rational
Time of Concentration (TOC) Method	User-Defined
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

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	4
Nodes	5
Junctions	0
Outfalls	1
Flow Diversions	0
Inlets	4
Storage Nodes	0
Links	5
Channels	0
Pipes	5
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-AD-4	0.35	0.9500	0.68	0.65	0.22	2.70	0 00:05:00
2	Sub-CB-1	0.36	0.9500	0.68	0.65	0.23	2.80	0 00:05:00
3	Sub-CB-2	0.16	0.9500	0.68	0.65	0.10	1.22	0 00:05:00
4	Sub-CB-3	0.30	0.9500	0.68	0.65	0.20	2.37	0 00:05:00

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	Out-1SL - (14)	Outfall	419.00					8.93	419.68		

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 Flow Depth/ Total Depth Ratio	To Sur
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		
1	L-SL - (16)	Pipe	CB-3	CB-2	112.54	433.11	432.25	0.7600			0.24	0.00	0.00	0.00	0.00	0.00	
2	SL - (14)	Pipe	CB-1	Out-1SL - (14)	85.23	422.00	419.00	3.5200			8.93	21.35	0.42	11.58	0.68	0.45	
3	SL - (15)	Pipe	CB-2	CB-1	62.02	426.00	422.00	6.4500			3.54	28.90	0.12	11.11	0.35	0.24	
4	SL - (16)	Pipe	CB-3	CB-2	101.17	429.00	426.00	2.9700			2.12	19.60	0.11	9.87	0.33	0.22	
5	SL - (18)	Pipe	AD-4	CB-1	128.37	427.50	423.00	3.5100			2.66	21.31	0.12	8.42	0.36	0.24	

Inlet Summary

SN	Element ID	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft^2)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)
1	AD-4	On Sag	1	427.50	431.80	427.50	10.00	2.70	N/A	N/A	N/A	10.00	10.40	432.21
2	CB-1	On Sag	1	422.00	431.61	422.00	10.00	2.80	N/A	N/A	N/A	10.00	6.07	432.04
3	CB-2	On Sag	1	426.00	432.25	426.00	10.00	1.46	N/A	N/A	N/A	10.00	3.92	432.62
4	CB-3	On Grade	1	429.00	433.11	429.00	N/A	2.37	2.14	0.23	90.25	10.00	6.72	433.30

Subbasin Hydrology

Subbasin : Sub-AD-4

Input Data

Area (ac)	0.35
Weighted Runoff Coefficient	0.95

Subbasin : Sub-CB-1

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.95

Subbasin : Sub-CB-2

Input Data

Area (ac) 0.16
Weighted Runoff Coefficient 0.95

Subbasin : Sub-CB-3

Input Data

Area (ac) 0.3
Weighted Runoff Coefficient 0.95

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	Entr Lc
1	L-SL - (16)	112.54	433.11	4.11	432.25	6.25	0.86	0.7600	Dummy				
2	SL - (14)	85.23	422.00	0.00	419.00	0.00	3.00	3.5200	CIRCULAR				
3	SL - (15)	62.02	426.00	0.00	422.00	0.00	4.00	6.4500	CIRCULAR				
4	SL - (16)	101.17	429.00	0.00	426.00	0.00	3.00	2.9700	CIRCULAR				
5	SL - (18)	128.37	427.50	0.00	423.00	1.00	4.50	3.5100	CIRCULAR				

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	Frou Numb
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	L-SL - (16)	0.24	0 00:05	0.00	0.00	0.00		0.00	0.00	0.00	
2	SL - (14)	8.93	0 00:05	21.35	0.42	11.58	0.12	0.68	0.45	0.00	
3	SL - (15)	3.54	0 00:05	28.90	0.12	11.11	0.09	0.35	0.24	0.00	
4	SL - (16)	2.12	0 00:05	19.60	0.11	9.87	0.17	0.33	0.22	0.00	
5	SL - (18)	2.66	0 00:05	21.31	0.12	8.42	0.25	0.36	0.24	0.00	

Inlet Input

SN	Element ID	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)
1	AD-4	On Sag	1	427.50	431.80	4.30	427.50	0.00	10.00	0.00
2	CB-1	On Sag	1	422.00	431.61	9.61	422.00	0.00	10.00	0.00
3	CB-2	On Sag	1	426.00	432.25	6.25	426.00	0.00	10.00	0.00
4	CB-3	On Grade	1	429.00	433.11	4.11	429.00	0.00	N/A	0.00

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	AD-4	N/A	0.0300	0.0150	0.0300	1.50		

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)	T Floo Volu (ac
1	AD-4	2.70	2.70	N/A	N/A	N/A	10.40	432.21	0.41	0 00:05	0
2	CB-1	2.80	2.80	N/A	N/A	N/A	6.07	432.04	0.43	0 00:05	0
3	CB-2	1.46	1.22	N/A	N/A	N/A	3.92	432.62	0.37	0 00:05	0
4	CB-3	2.37	2.37	2.14	0.23	90.25	6.72	433.30	0.19	0 00:05	0

25 Year Design Storm

Project Description

File Name	Bryant Pharmacy Drainage Analysis 11-7-25.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	Rational
Time of Concentration (TOC) Method	User-Defined
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

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	4
Nodes	5
Junctions	0
Outfalls	1
Flow Diversions	0
Inlets	4
Storage Nodes	0
Links	5
Channels	0
Pipes	5
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-AD-4	0.35	0.9500	0.79	0.75	0.26	3.10	0 00:05:00
2	Sub-CB-1	0.36	0.9500	0.79	0.75	0.27	3.22	0 00:05:00
3	Sub-CB-2	0.16	0.9500	0.79	0.75	0.12	1.40	0 00:05:00
4	Sub-CB-3	0.30	0.9500	0.79	0.75	0.23	2.72	0 00:05:00

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	Out-1SL - (14)	Outfall	419.00					10.24	419.73		

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 Flow Depth/ Total Depth Ratio	T Su
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		
1	L-SL - (16)	Pipe	CB-3	CB-2	112.54	433.11	432.25	0.7600			0.37	0.00	0.00	0.00	0.00	0.00	
2	SL - (14)	Pipe	CB-1	Out-1SL - (14)	85.23	422.00	419.00	3.5200			10.24	21.35	0.48	11.99	0.73	0.49	
3	SL - (15)	Pipe	CB-2	CB-1	62.02	426.00	422.00	6.4500			4.07	28.90	0.14	11.57	0.38	0.25	
4	SL - (16)	Pipe	CB-3	CB-2	101.17	429.00	426.00	2.9700			2.34	19.60	0.12	10.19	0.35	0.23	
5	SL - (18)	Pipe	AD-4	CB-1	128.37	427.50	423.00	3.5100			3.06	21.31	0.14	8.63	0.38	0.26	

Inlet Summary

SN	Element ID	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft^2)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)
1	AD-4	On Sag	1	427.50	431.80	427.50	10.00	3.10	N/A	N/A	N/A	10.00	11.31	432.24
2	CB-1	On Sag	1	422.00	431.61	422.00	10.00	3.22	N/A	N/A	N/A	10.00	6.66	432.06
3	CB-2	On Sag	1	426.00	432.25	426.00	10.00	1.77	N/A	N/A	N/A	10.00	4.47	432.64
4	CB-3	On Grade	1	429.00	433.11	429.00	N/A	2.72	2.36	0.37	86.54	10.00	7.08	433.31

Subbasin Hydrology

Subbasin : Sub-AD-4

Input Data

Area (ac)	0.35
Weighted Runoff Coefficient	0.95

Subbasin : Sub-CB-1

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.95

Subbasin : Sub-CB-2

Input Data

Area (ac) 0.16
Weighted Runoff Coefficient 0.95

Subbasin : Sub-CB-3

Input Data

Area (ac) 0.3
Weighted Runoff Coefficient 0.95

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	Entr Lc
1	L-SL - (16)	112.54	433.11	4.11	432.25	6.25	0.86	0.7600	Dummy				
2	SL - (14)	85.23	422.00	0.00	419.00	0.00	3.00	3.5200	CIRCULAR				
3	SL - (15)	62.02	426.00	0.00	422.00	0.00	4.00	6.4500	CIRCULAR				
4	SL - (16)	101.17	429.00	0.00	426.00	0.00	3.00	2.9700	CIRCULAR				
5	SL - (18)	128.37	427.50	0.00	423.00	1.00	4.50	3.5100	CIRCULAR				

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	L-SL - (16)	0.37	0 00:05	0.00	0.00	0.00		0.00	0.00	0.00	
2	SL - (14)	10.24	0 00:05	21.35	0.48	11.99	0.12	0.73	0.49	0.00	
3	SL - (15)	4.07	0 00:05	28.90	0.14	11.57	0.09	0.38	0.25	0.00	
4	SL - (16)	2.34	0 00:05	19.60	0.12	10.19	0.17	0.35	0.23	0.00	
5	SL - (18)	3.06	0 00:05	21.31	0.14	8.63	0.25	0.38	0.26	0.00	

Inlet Input

SN	Element ID	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)
1	AD-4	On Sag	1	427.50	431.80	4.30	427.50	0.00	10.00	0.00
2	CB-1	On Sag	1	422.00	431.61	9.61	422.00	0.00	10.00	0.00
3	CB-2	On Sag	1	426.00	432.25	6.25	426.00	0.00	10.00	0.00
4	CB-3	On Grade	1	429.00	433.11	4.11	429.00	0.00	N/A	0.00

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	AD-4	N/A	0.0300	0.0150	0.0300	1.50		

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)	T Floo Volu (ac
1	AD-4	3.10	3.10	N/A	N/A	N/A	11.31	432.24	0.44	0 00:05	0
2	CB-1	3.22	3.22	N/A	N/A	N/A	6.66	432.06	0.45	0 00:05	0
3	CB-2	1.77	1.40	N/A	N/A	N/A	4.47	432.64	0.38	0 00:05	0
4	CB-3	2.72	2.72	2.36	0.37	86.54	7.08	433.31	0.20	0 00:05	0

50 Year Design Storm

Project Description

File Name	Bryant Pharmacy Drainage Analysis 11-7-25.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	Rational
Time of Concentration (TOC) Method	User-Defined
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

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	4
Nodes	5
Junctions	0
Outfalls	1
Flow Diversions	0
Inlets	4
Storage Nodes	0
Links	5
Channels	0
Pipes	5
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-AD-4	0.35	0.9500	0.86	0.82	0.28	3.38	0 00:05:00
2	Sub-CB-1	0.36	0.9500	0.86	0.82	0.29	3.51	0 00:05:00
3	Sub-CB-2	0.16	0.9500	0.86	0.82	0.13	1.53	0 00:05:00
4	Sub-CB-3	0.30	0.9500	0.86	0.82	0.25	2.98	0 00:05:00

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	Out-1SL - (14)	Outfall	419.00					11.21	419.77		

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 Flow Depth/ Total Depth Ratio	T Su
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		
1	L-SL - (16)	Pipe	CB-3	CB-2	112.54	433.11	432.25	0.7600			0.47	0.00	0.00	0.00	0.00	0.00	
2	SL - (14)	Pipe	CB-1	Out-1SL - (14)	85.23	422.00	419.00	3.5200			11.21	21.35	0.53	12.26	0.77	0.51	
3	SL - (15)	Pipe	CB-2	CB-1	62.02	426.00	422.00	6.4500			4.45	28.90	0.15	11.88	0.40	0.27	
4	SL - (16)	Pipe	CB-3	CB-2	101.17	429.00	426.00	2.9700			2.48	19.60	0.13	10.41	0.36	0.24	
5	SL - (18)	Pipe	AD-4	CB-1	128.37	427.50	423.00	3.5100			3.34	21.31	0.16	8.85	0.40	0.27	

Inlet Summary

SN	Element ID	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft^2)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)
1	AD-4	On Sag	1	427.50	431.80	427.50	10.00	3.38	N/A	N/A	N/A	10.00	11.93	432.26
2	CB-1	On Sag	1	422.00	431.61	422.00	10.00	3.51	N/A	N/A	N/A	10.00	7.06	432.07
3	CB-2	On Sag	1	426.00	432.25	426.00	10.00	2.01	N/A	N/A	N/A	10.00	4.86	432.65
4	CB-3	On Grade	1	429.00	433.11	429.00	N/A	2.98	2.50	0.47	84.09	10.00	7.31	433.31

Subbasin Hydrology

Subbasin : Sub-AD-4

Input Data

Area (ac)	0.35
Weighted Runoff Coefficient	0.95

Subbasin : Sub-CB-1

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.95

Subbasin : Sub-CB-2

Input Data

Area (ac) 0.16
Weighted Runoff Coefficient 0.95

Subbasin : Sub-CB-3

Input Data

Area (ac) 0.3
Weighted Runoff Coefficient 0.95

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	Entr Lc
1	L-SL - (16)	112.54	433.11	4.11	432.25	6.25	0.86	0.7600	Dummy				
2	SL - (14)	85.23	422.00	0.00	419.00	0.00	3.00	3.5200	CIRCULAR				
3	SL - (15)	62.02	426.00	0.00	422.00	0.00	4.00	6.4500	CIRCULAR				
4	SL - (16)	101.17	429.00	0.00	426.00	0.00	3.00	2.9700	CIRCULAR				
5	SL - (18)	128.37	427.50	0.00	423.00	1.00	4.50	3.5100	CIRCULAR				

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	L-SL - (16)	0.47	0 00:05	0.00	0.00	0.00		0.00	0.00	0.00	
2	SL - (14)	11.21	0 00:05	21.35	0.53	12.26	0.12	0.77	0.51	0.00	
3	SL - (15)	4.45	0 00:05	28.90	0.15	11.88	0.09	0.40	0.27	0.00	
4	SL - (16)	2.48	0 00:05	19.60	0.13	10.41	0.16	0.36	0.24	0.00	
5	SL - (18)	3.34	0 00:05	21.31	0.16	8.85	0.24	0.40	0.27	0.00	

Inlet Input

SN	Element ID	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)
1	AD-4	On Sag	1	427.50	431.80	4.30	427.50	0.00	10.00	0.00
2	CB-1	On Sag	1	422.00	431.61	9.61	422.00	0.00	10.00	0.00
3	CB-2	On Sag	1	426.00	432.25	6.25	426.00	0.00	10.00	0.00
4	CB-3	On Grade	1	429.00	433.11	4.11	429.00	0.00	N/A	0.00

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	AD-4	N/A	0.0300	0.0150	0.0300	1.50		

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)	T Floo Volu (ac
1	AD-4	3.38	3.38	N/A	N/A	N/A	11.93	432.26	0.46	0 00:05	0
2	CB-1	3.51	3.51	N/A	N/A	N/A	7.06	432.07	0.46	0 00:05	0
3	CB-2	2.01	1.53	N/A	N/A	N/A	4.86	432.65	0.40	0 00:05	0
4	CB-3	2.98	2.98	2.50	0.47	84.09	7.31	433.31	0.20	0 00:05	0

100 Year Design Storm

Project Description

File Name	Bryant Pharmacy Drainage Analysis 11-7-25.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	Rational
Time of Concentration (TOC) Method	User-Defined
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

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	4
Nodes	5
Junctions	0
Outfalls	1
Flow Diversions	0
Inlets	4
Storage Nodes	0
Links	5
Channels	0
Pipes	5
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-AD-4	0.35	0.9500	0.93	0.89	0.31	3.68	0 00:05:00
2	Sub-CB-1	0.36	0.9500	0.93	0.89	0.32	3.82	0 00:05:00
3	Sub-CB-2	0.16	0.9500	0.93	0.89	0.14	1.67	0 00:05:00
4	Sub-CB-3	0.30	0.9500	0.93	0.89	0.27	3.24	0 00:05:00

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	Out-1SL - (14)	Outfall	419.00					12.19	419.81		

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 Flow Depth/ Total Depth Ratio	T Su
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		
1	L-SL - (16)	Pipe	CB-3	CB-2	112.54	433.11	432.25	0.7600			0.60	0.00	0.00	0.00	0.00	0.00	
2	SL - (14)	Pipe	CB-1	Out-1SL - (14)	85.23	422.00	419.00	3.5200			12.19	21.35	0.57	12.52	0.81	0.54	
3	SL - (15)	Pipe	CB-2	CB-1	62.02	426.00	422.00	6.4500			4.84	28.90	0.17	12.16	0.41	0.28	
4	SL - (16)	Pipe	CB-3	CB-2	101.17	429.00	426.00	2.9700			2.62	19.60	0.13	10.61	0.37	0.25	
5	SL - (18)	Pipe	AD-4	CB-1	128.37	427.50	423.00	3.5100			3.64	21.31	0.17	9.06	0.42	0.28	

Inlet Summary

SN	Element ID	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft^2)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)
1	AD-4	On Sag	1	427.50	431.80	427.50	10.00	3.68	N/A	N/A	N/A	10.00	12.56	432.28
2	CB-1	On Sag	1	422.00	431.61	422.00	10.00	3.82	N/A	N/A	N/A	10.00	7.47	432.08
3	CB-2	On Sag	1	426.00	432.25	426.00	10.00	2.26	N/A	N/A	N/A	10.00	5.26	432.66
4	CB-3	On Grade	1	429.00	433.11	429.00	N/A	3.24	2.64	0.59	81.70	10.00	7.54	433.32

Subbasin Hydrology

Subbasin : Sub-AD-4

Input Data

Area (ac)	0.35
Weighted Runoff Coefficient	0.95

Subbasin : Sub-CB-1

Input Data

Area (ac)	0.36
Weighted Runoff Coefficient	0.95

Subbasin : Sub-CB-2

Input Data

Area (ac) 0.16
Weighted Runoff Coefficient 0.95

Subbasin : Sub-CB-3

Input Data

Area (ac) 0.3
Weighted Runoff Coefficient 0.95

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	Entr Lc
1	L-SL - (16)	112.54	433.11	4.11	432.25	6.25	0.86	0.7600	Dummy				
2	SL - (14)	85.23	422.00	0.00	419.00	0.00	3.00	3.5200	CIRCULAR				
3	SL - (15)	62.02	426.00	0.00	422.00	0.00	4.00	6.4500	CIRCULAR				
4	SL - (16)	101.17	429.00	0.00	426.00	0.00	3.00	2.9700	CIRCULAR				
5	SL - (18)	128.37	427.50	0.00	423.00	1.00	4.50	3.5100	CIRCULAR				

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	L-SL - (16)	0.60	0 00:05	0.00	0.00	0.00		0.00	0.00	0.00	
2	SL - (14)	12.19	0 00:05	21.35	0.57	12.52	0.11	0.81	0.54	0.00	
3	SL - (15)	4.84	0 00:05	28.90	0.17	12.16	0.09	0.41	0.28	0.00	
4	SL - (16)	2.62	0 00:05	19.60	0.13	10.61	0.16	0.37	0.25	0.00	
5	SL - (18)	3.64	0 00:05	21.31	0.17	9.06	0.24	0.42	0.28	0.00	

Inlet Input

SN	Element ID	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)
1	AD-4	On Sag	1	427.50	431.80	4.30	427.50	0.00	10.00	0.00
2	CB-1	On Sag	1	422.00	431.61	9.61	422.00	0.00	10.00	0.00
3	CB-2	On Sag	1	426.00	432.25	6.25	426.00	0.00	10.00	0.00
4	CB-3	On Grade	1	429.00	433.11	4.11	429.00	0.00	N/A	0.00

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	AD-4	N/A	0.0300	0.0150	0.0300	1.50		

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)	T Floo Volu (ac
1	AD-4	3.68	3.68	N/A	N/A	N/A	12.56	432.28	0.48	0 00:05	0
2	CB-1	3.82	3.82	N/A	N/A	N/A	7.47	432.08	0.47	0 00:05	0
3	CB-2	2.26	1.67	N/A	N/A	N/A	5.26	432.66	0.41	0 00:05	0
4	CB-3	3.24	3.24	2.64	0.59	81.70	7.54	433.32	0.21	0 00:05	0

Pre and Post Development Hydrographs (Hydrology Studio)

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

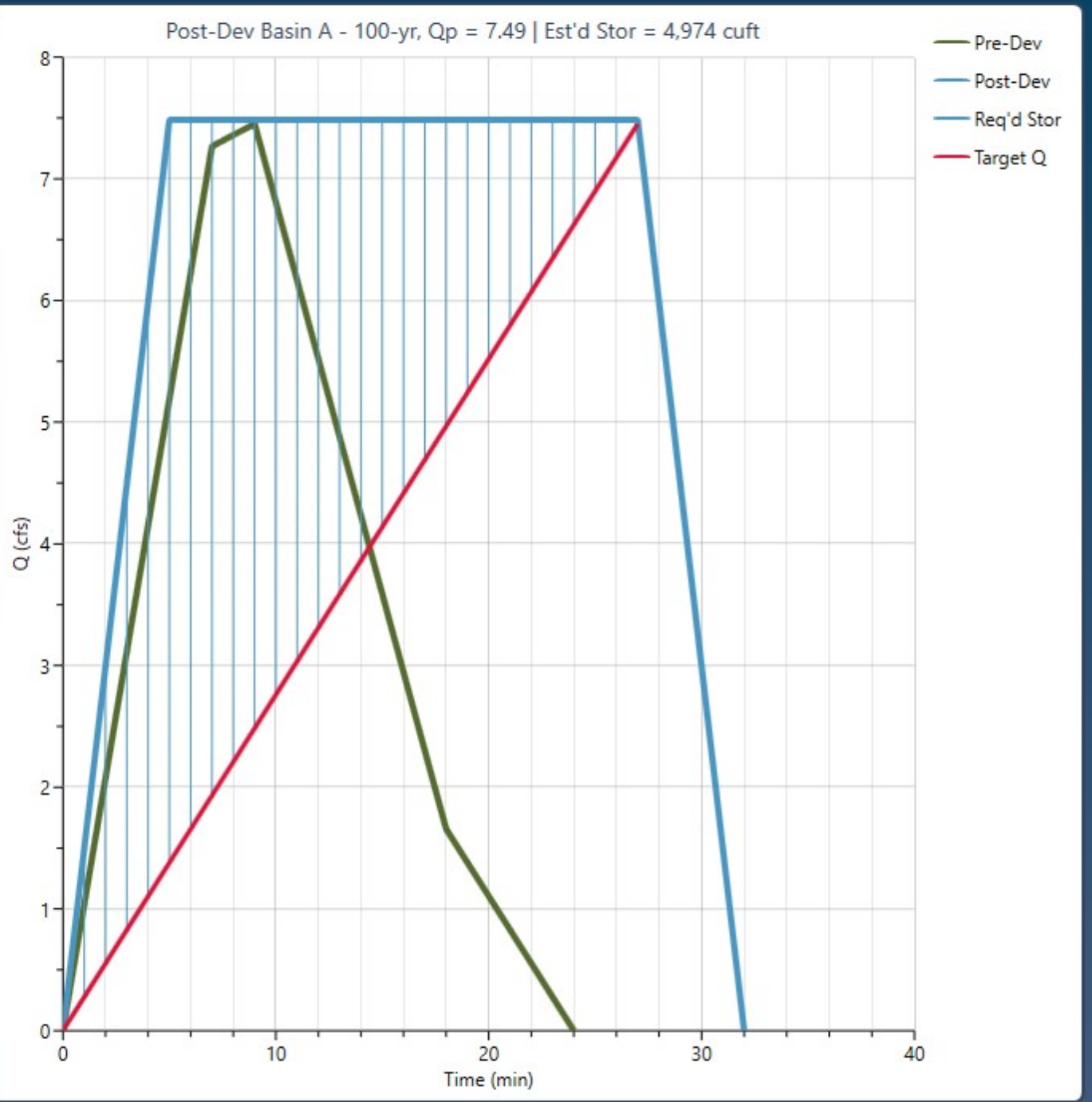
Post-dev Hyd = 8 - Mod Rational - Post-Dev Basin A

Pre-dev Hyd = 3 - Junction - Total Pre-Dev West

Freq (Yr)	Vol Pre (cuft)	Vol Post (cuft)	Qp Post (cfs)	Q Targ (cfs)	Req Stor (cuft)
1					
2	2,828	6,610	4.08	4.08	2,693
3					
5					
10	3,787	8,883	5.48	5.46	3,641
25	4,351	10,214	6.30	6.27	4,194
50	4,755	11,180	6.90	6.86	4,595
100	5,167	12,126	7.49	7.45	4,974

Clear Estimate Storage

	Extended Detention Storage (optional)	
Zone	Description	Volume (cuft)
1	WQv	
2	CPv	
3	Custom	
4	Custom	



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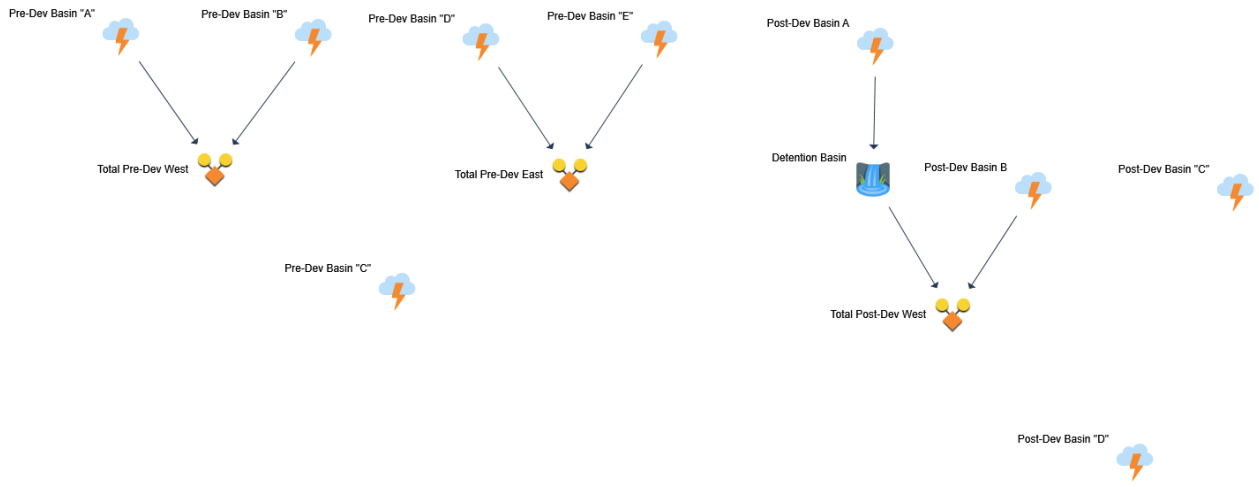
Basin Model

Hydrology Studio v 3.0.0.39

Project Name: Bryant Pharmacy
File: Detention Calculation 11-7-25.hys
11-07-2025



Hydrograph by Return Period

Hydrology Studio v 3.0.0.39

Project Name: Bryant Pharmacy
File: Detention Calculation 11-7-25.hys
11-07-2025

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"		2.267			3.036	3.489	3.813	4.143
2	Rational	Pre-Dev Basin "B"		2.215			2.964	3.406	3.721	4.044
3	Junction	Total Pre-Dev West		4.079			5.461	6.275	6.858	7.452
4	Rational	Pre-Dev Basin "C"		0.406			0.545	0.627	0.686	0.744
5	Rational	Pre-Dev Basin "D"		0.787			1.055	1.212	1.325	1.439
6	Rational	Pre-Dev Basin "E"		0.528			0.707	0.813	0.888	0.965
7	Junction	Total Pre-Dev East		1.249			1.673	1.923	2.103	2.284
8	Mod Rational	Post-Dev Basin A		4.080			5.483	6.305	6.901	7.485
9	Pond Route	Detention Basin		3.938			4.978	5.521	5.825	6.052
10	Rational	Post-Dev Basin B		0.573			0.767	0.882	0.964	1.047
11	Rational	Post-Dev Basin "C"		0.990			1.323	1.520	1.660	1.805
12	Junction	Total Post-Dev West		4.000			5.026	5.521	5.867	6.147
13	Rational	Post-Dev Basin "D"		0.078			0.105	0.120	0.131	0.143

Hydrograph 2-yr Summary

Hydrology Studio v 3.0.0.39

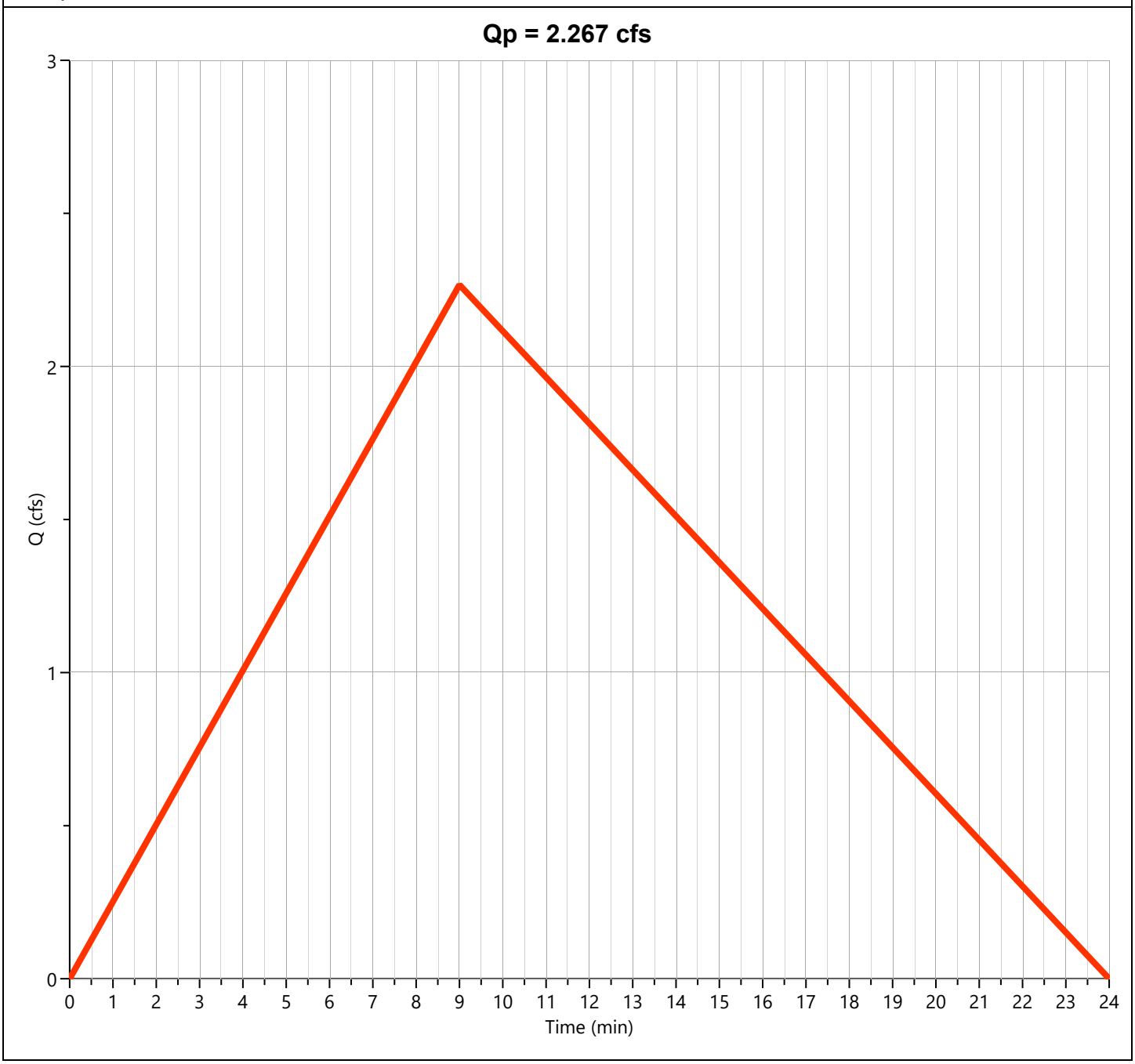
Project Name: Bryant Pharmacy
File: Detention Calculation 11-7-25.hys
11-07-2025

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"	2.267	0.15	1,634	----		
2	Rational	Pre-Dev Basin "B"	2.215	0.12	1,242	----		
3	Junction	Total Pre-Dev West	4.079	0.15	2,828	1, 2		
4	Rational	Pre-Dev Basin "C"	0.406	0.27	521	----		
5	Rational	Pre-Dev Basin "D"	0.787	0.20	756	----		
6	Rational	Pre-Dev Basin "E"	0.528	0.17	423	----		
7	Junction	Total Pre-Dev East	1.249	0.20	1,167	5, 6		
8	Mod Rational	Post-Dev Basin A	4.080	0.08	6,610	----		
9	Pond Route	Detention Basin	3.938	0.45	6,608	8	420.72	1,272
10	Rational	Post-Dev Basin B	0.573	0.17	459	----		
11	Rational	Post-Dev Basin "C"	0.990	0.08	396	----		
12	Junction	Total Post-Dev West	4.000	0.32	7,055	9, 10		
13	Rational	Post-Dev Basin "D"	0.078	0.03	12.5	----		

Pre-Dev Basin "A"

Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 2.267 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 1,634 cuft
Drainage Area	= 0.86 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 9.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.71 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "A"
Rational

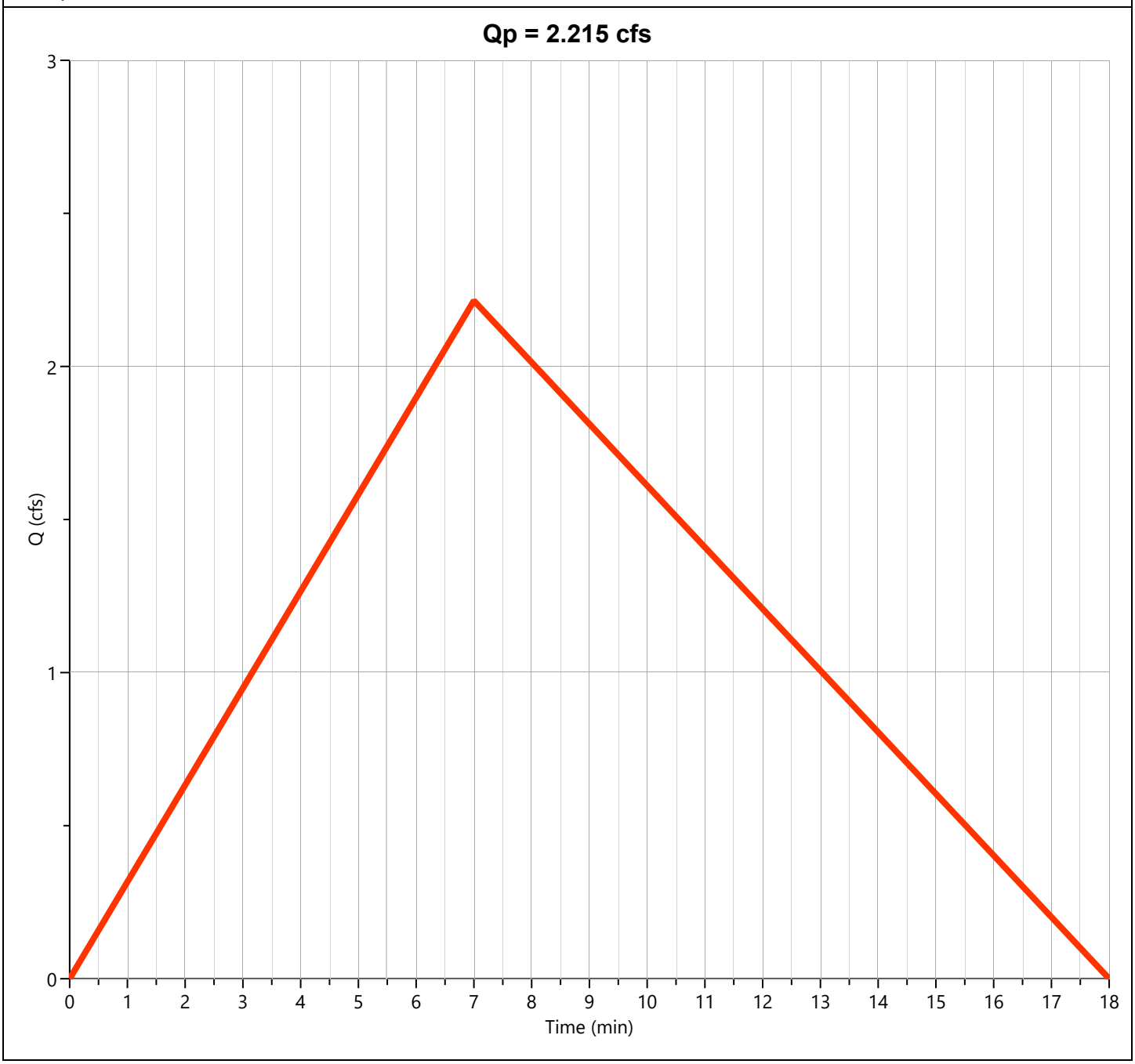
Hyd. No. 1

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)	4.36	2.28	2.28	
Land Slope (%)	7			
Travel Time (min)	**8.85**	**0.00**	**0.00**	**8.85**
Shallow Concentrated Flow				
Flow Length (ft)	107			
Watercourse Slope (%)	7.47	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.41			
Travel Time (min)	**0.40**	**0.00**	**0.00**	**0.40**
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				**9 min**

Pre-Dev Basin "B"

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 2.215 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.12 hrs
Time Interval	= 1 min	Runoff Volume	= 1,242 cuft
Drainage Area	= 0.75 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 7.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.27 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "B"
Rational

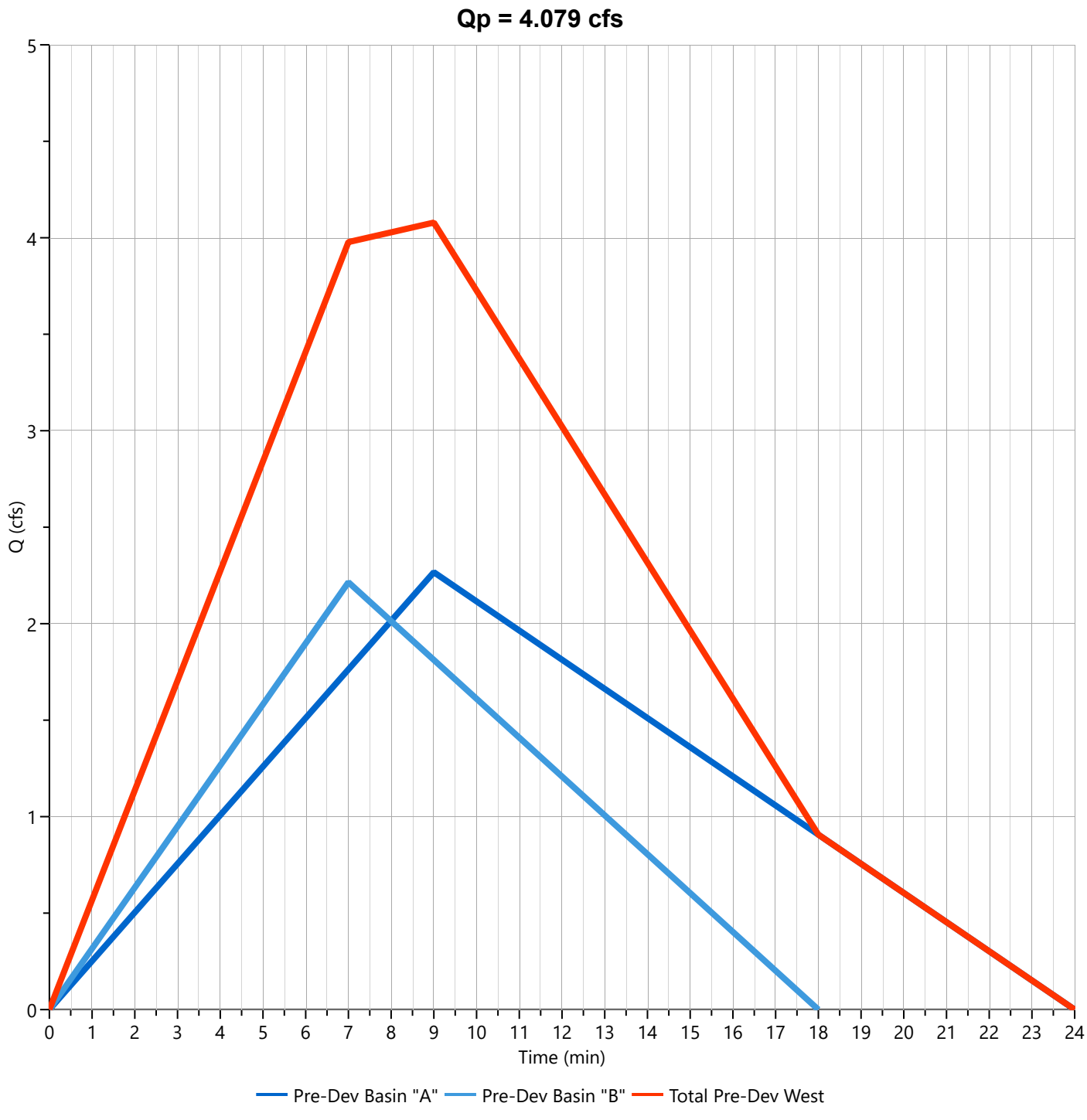
Hyd. No. 2

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)	4.36	2.28	2.28	
Land Slope (%)	11.75			
Travel Time (min)	**7.20**	**0.00**	**0.00**	**7.20**
Shallow Concentrated Flow				
Flow Length (ft)	55			
Watercourse Slope (%)	14.25	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	6.09			
Travel Time (min)	**0.15**	**0.00**	**0.00**	**0.15**
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				**7 min**

Total Pre-Dev West

Hyd. No. 3

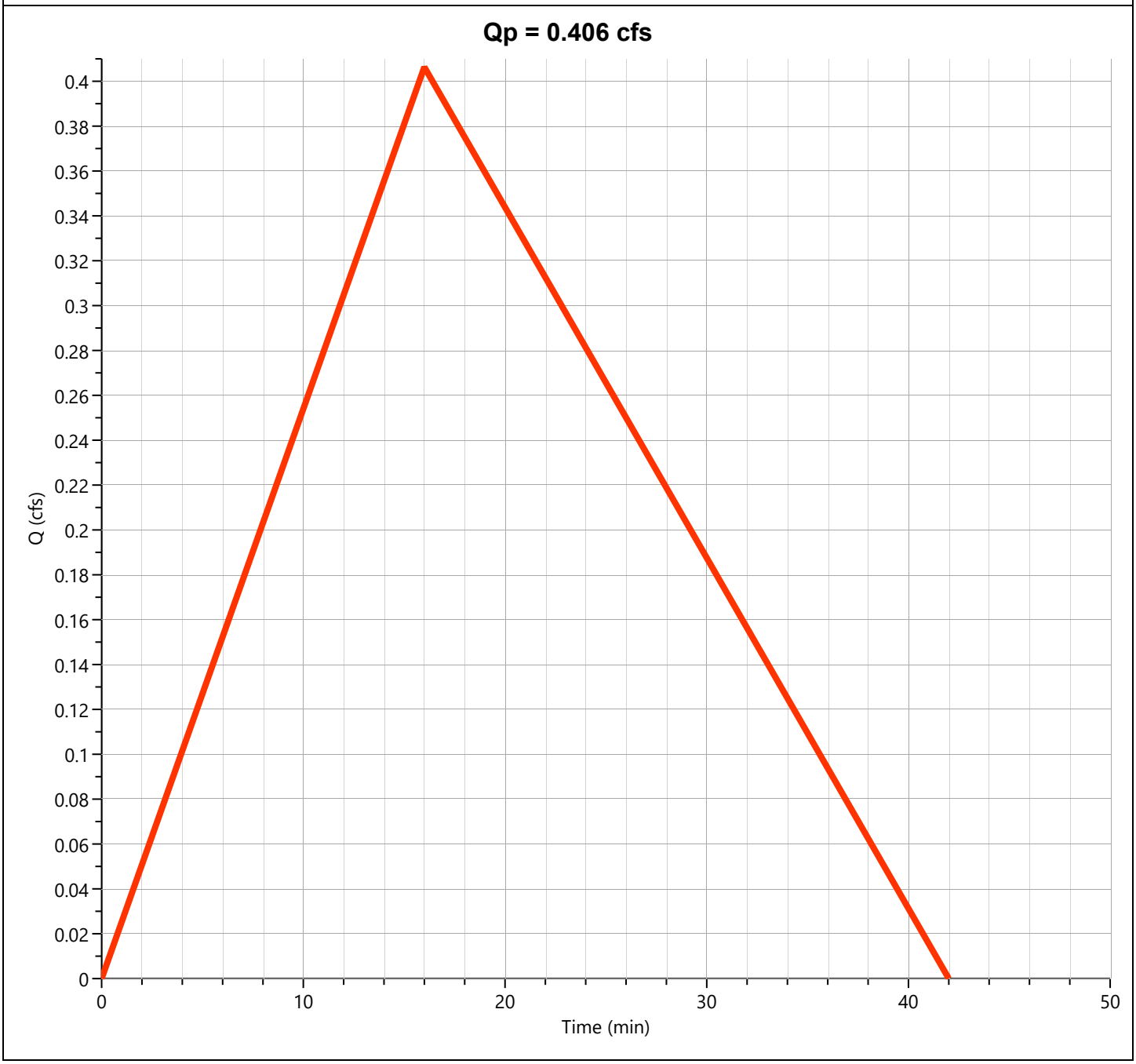
Hydrograph Type	= Junction	Peak Flow	= 4.079 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Hydrograph Volume	= 2,828 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 1.61 ac



Pre-Dev Basin "C"

Hyd. No. 4

Hydrograph Type	= Rational	Peak Flow	= 0.406 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 521 cuft
Drainage Area	= 0.2 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



Pre-Dev Basin "C"
Rational

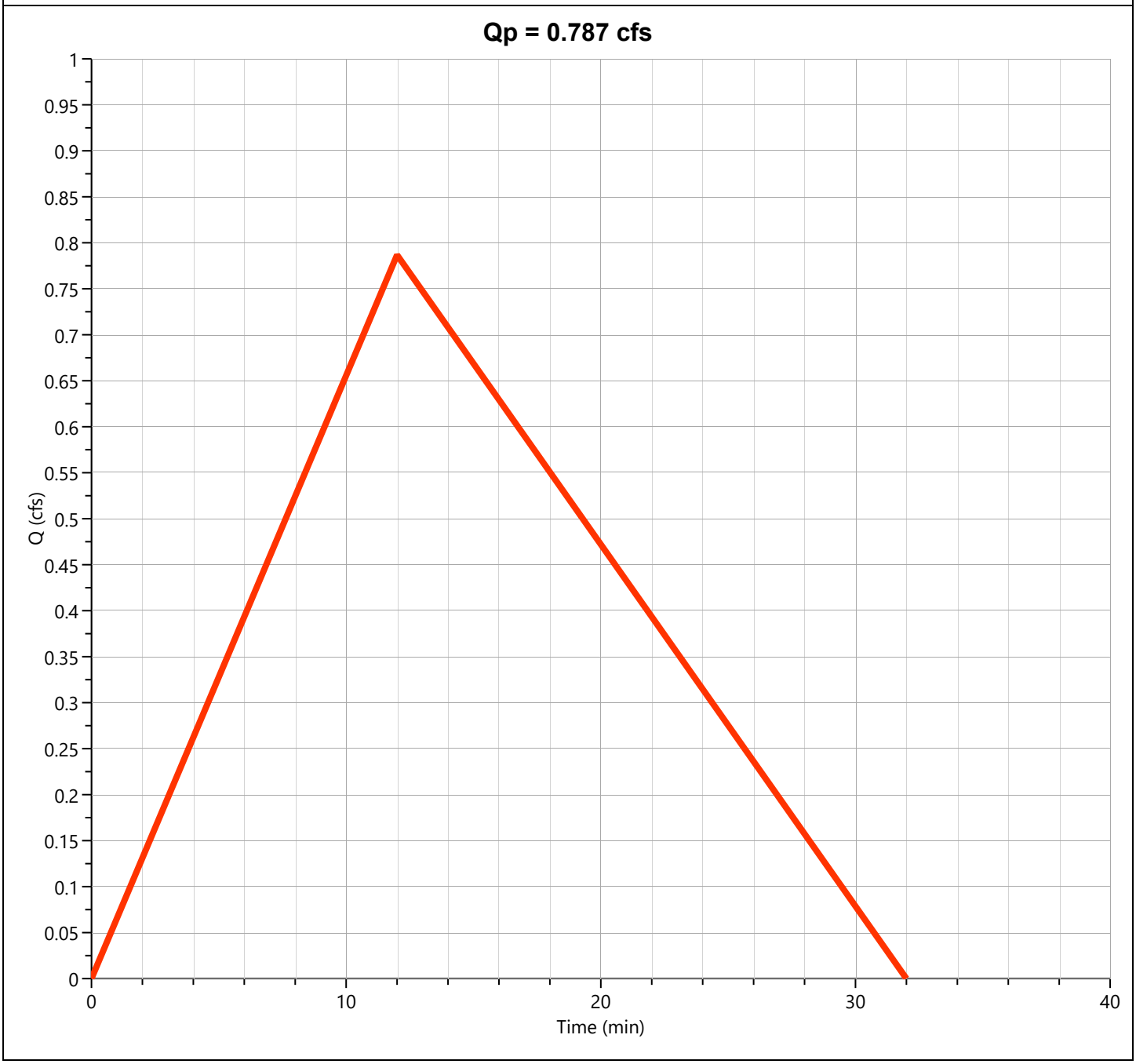
Hyd. No. 4

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	68			
2-yr, 24-hr Precip. (in)	4.36	2.28	2.28	
Land Slope (%)	.7			
Travel Time (min)	**16.34**	**0.00**	**0.00**	**16.34**
Shallow Concentrated Flow				
Flow Length (ft)				
Watercourse Slope (%)	0.00	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
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**

Pre-Dev Basin "D"

Hyd. No. 5

Hydrograph Type	= Rational	Peak Flow	= 0.787 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 756 cuft
Drainage Area	= 0.34 ac	Runoff Coeff.	= 0.56
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 "D"
Rational

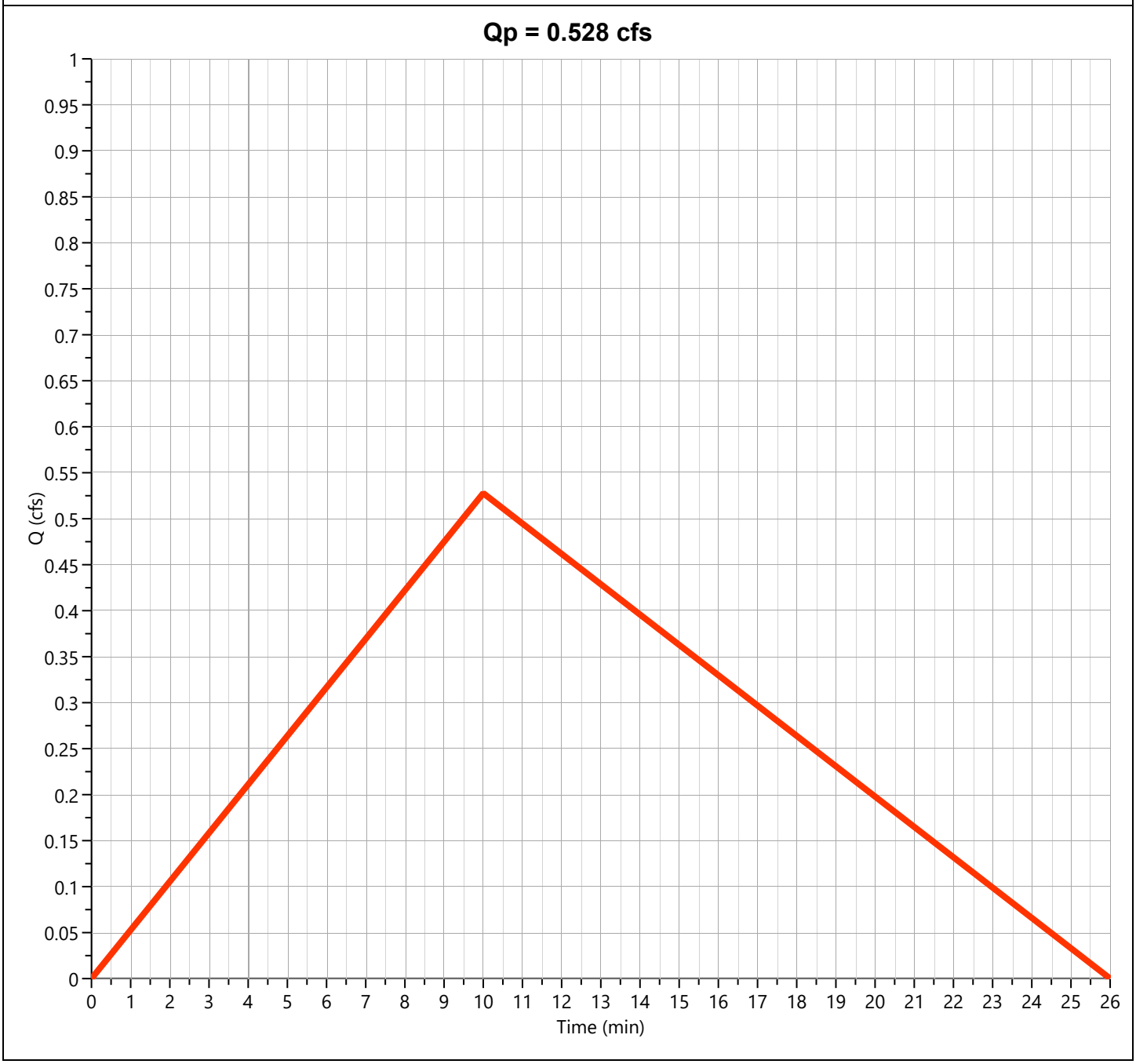
Hyd. No. 5

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)	4.36	2.28	2.28	
Land Slope (%)	3			
Travel Time (min)	**12.43**	**0.00**	**0.00**	**12.43**
Shallow Concentrated Flow				
Flow Length (ft)	14			
Watercourse Slope (%)	7.00	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.27			
Travel Time (min)	**0.05**	**0.00**	**0.00**	**0.05**
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"

Hyd. No. 6

Hydrograph Type	= Rational	Peak Flow	= 0.528 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 423 cuft
Drainage Area	= 0.21 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.49 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E"
Rational

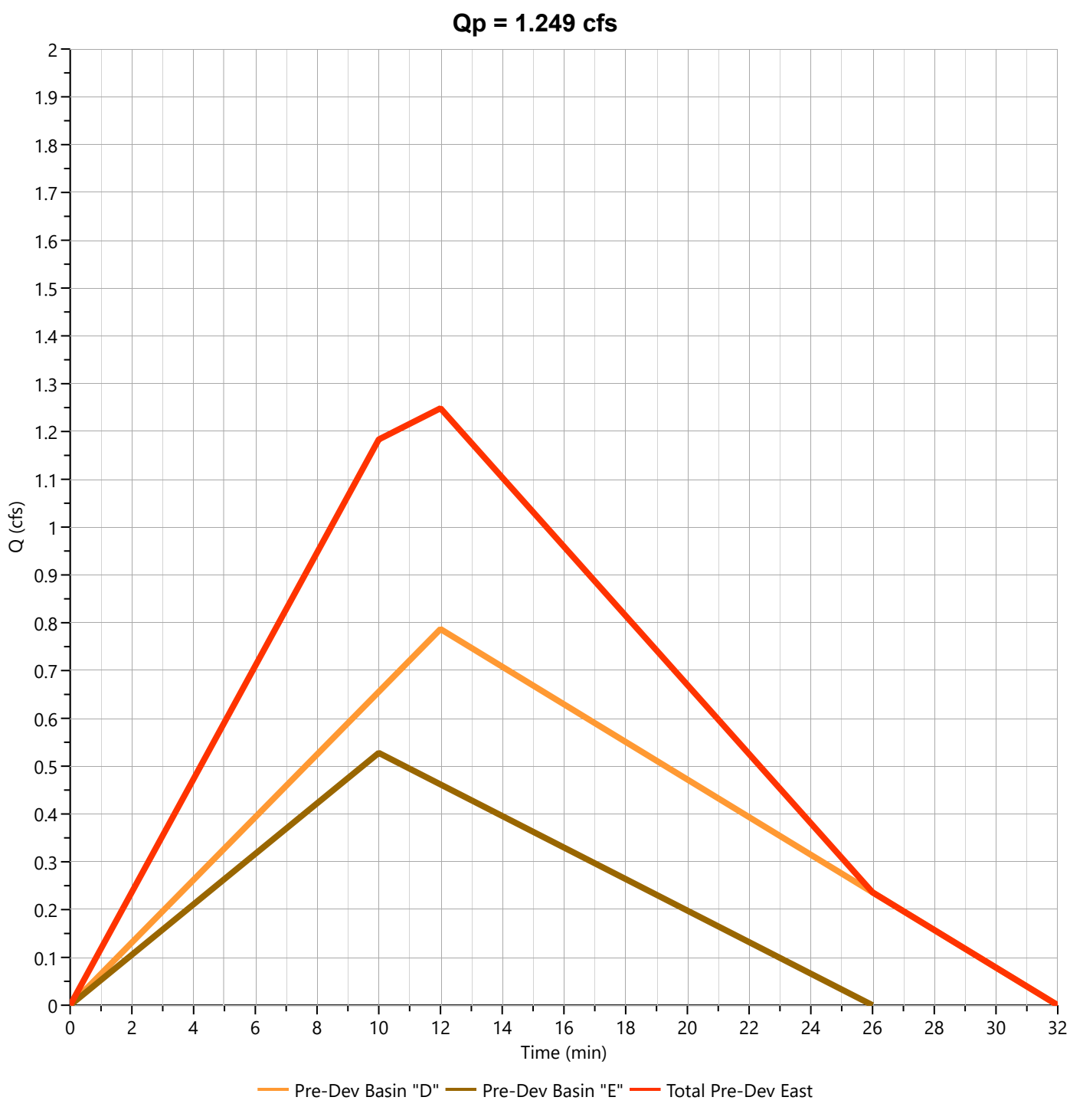
Hyd. No. 6

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)	4.36	2.28	2.28	
Land Slope (%)	5			
Travel Time (min)	**10.13**	**0.00**	**0.00**	**10.13**
Shallow Concentrated Flow				
Flow Length (ft)	16			
Watercourse Slope (%)	8.00	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.56			
Travel Time (min)	**0.06**	**0.00**	**0.00**	**0.06**
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				**10 min**

Total Pre-Dev East

Hyd. No. 7

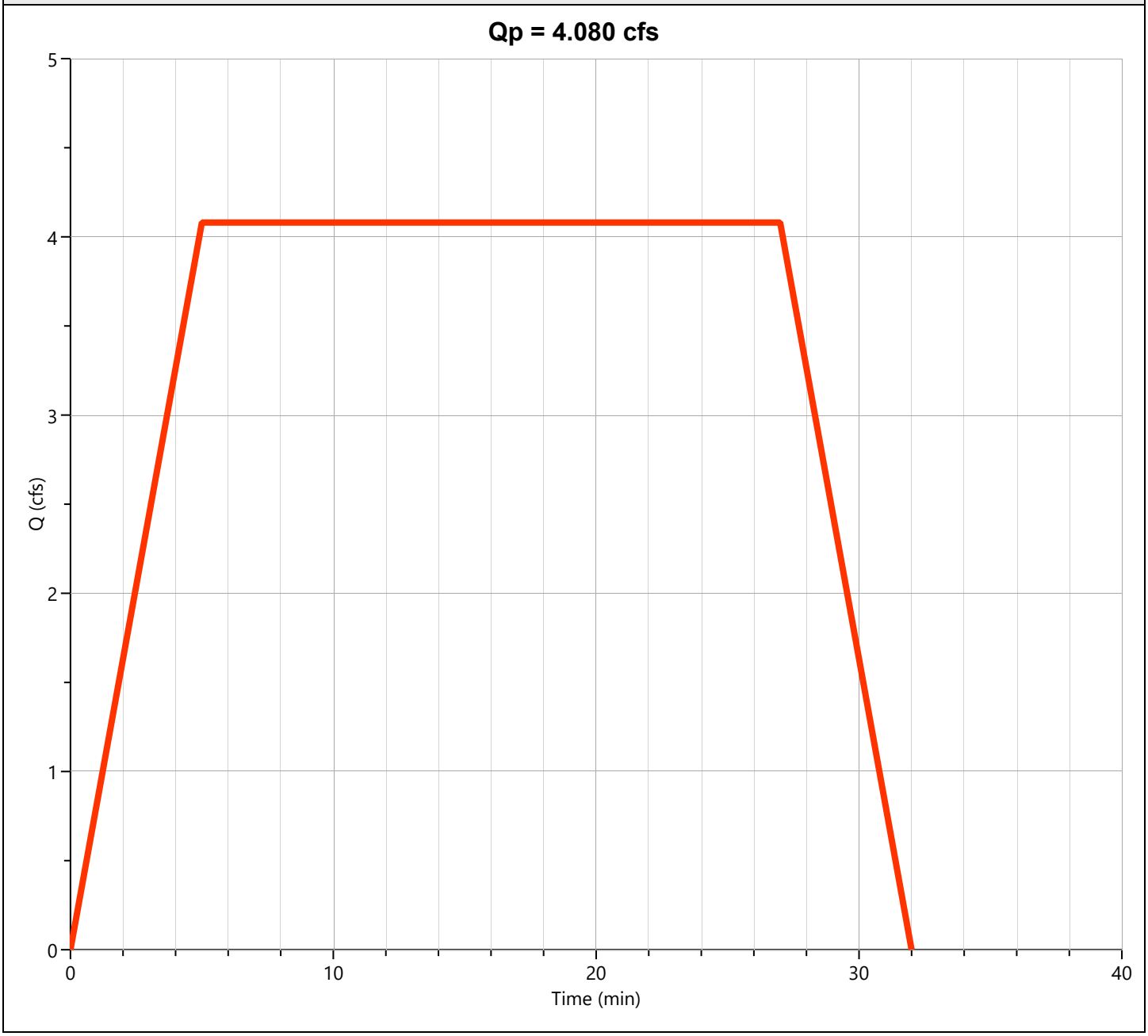
Hydrograph Type	= Junction	Peak Flow	= 1.249 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,167 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 0.55 ac



Post-Dev Basin A

Hyd. No. 8

Hydrograph Type	= Mod Rational	Peak Flow	= 4.080 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 6,610 cuft
Drainage Area	= 1.5 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 2.86 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 5.4 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft



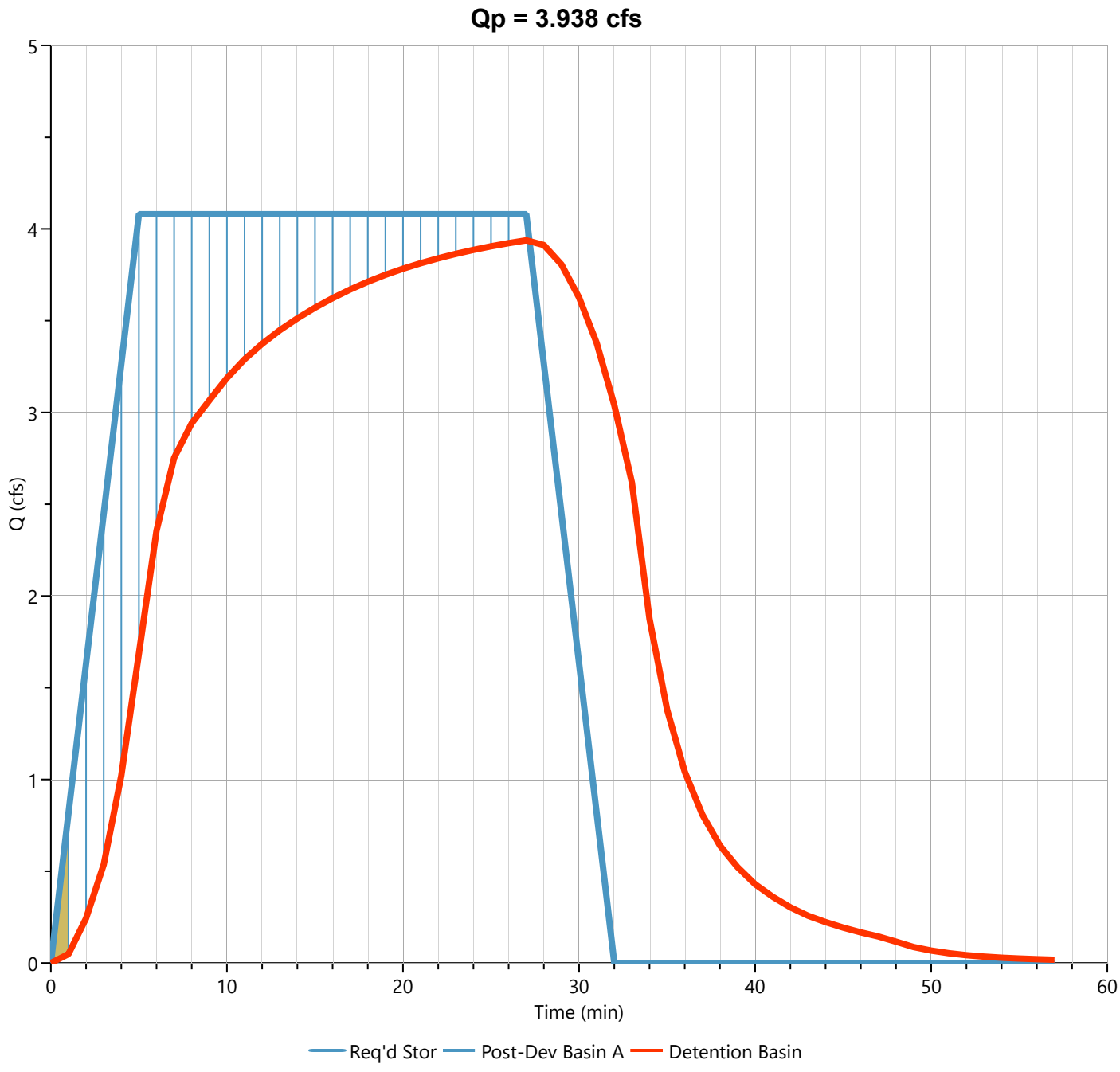
Detention Basin

Hyd. No. 9

Hydrograph Type	= Pond Route	Peak Flow	= 3.938 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.45 hrs
Time Interval	= 1 min	Hydrograph Volume	= 6,608 cuft
Inflow Hydrograph	= 8 - Post-Dev Basin A	Max. Elevation	= 420.72 ft
Pond Name	= Bryant Pharmacy Detention Pond	Max. Storage	= 1,272 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 5 min



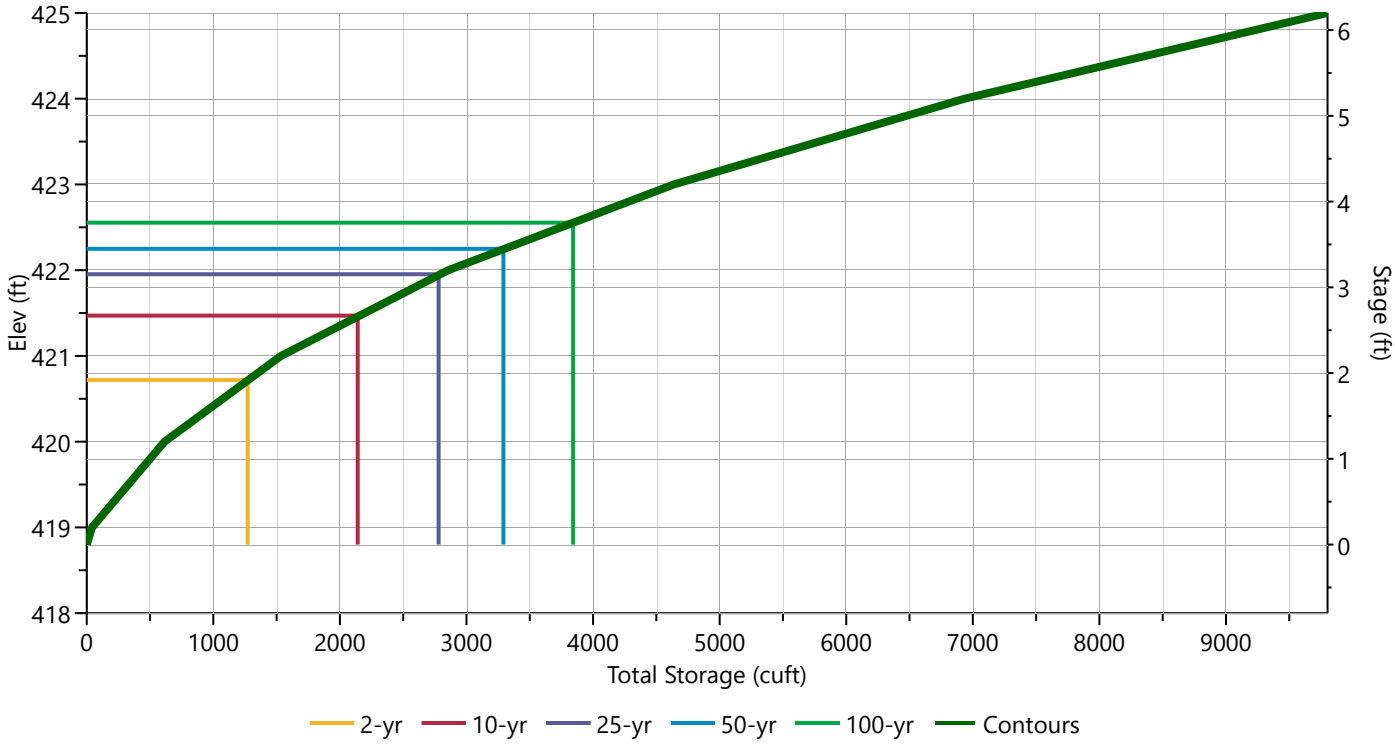
Bryant Pharmacy Detention Pond

Stage-Storage

User Defined Contours	
Description	**Input**
Bottom Elevation, ft	418.80
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	418.80	4	0.000	0.000
0.20	419.00	414	41.8	41.8
1.20	420.00	732	573	615
2.20	421.00	1,107	920	1,534
3.20	422.00	1,538	1,323	2,857
4.20	423.00	2,025	1,782	4,638
5.20	424.00	2,568	2,297	6,935
6.20	425.00	3,167	2,868	9,802

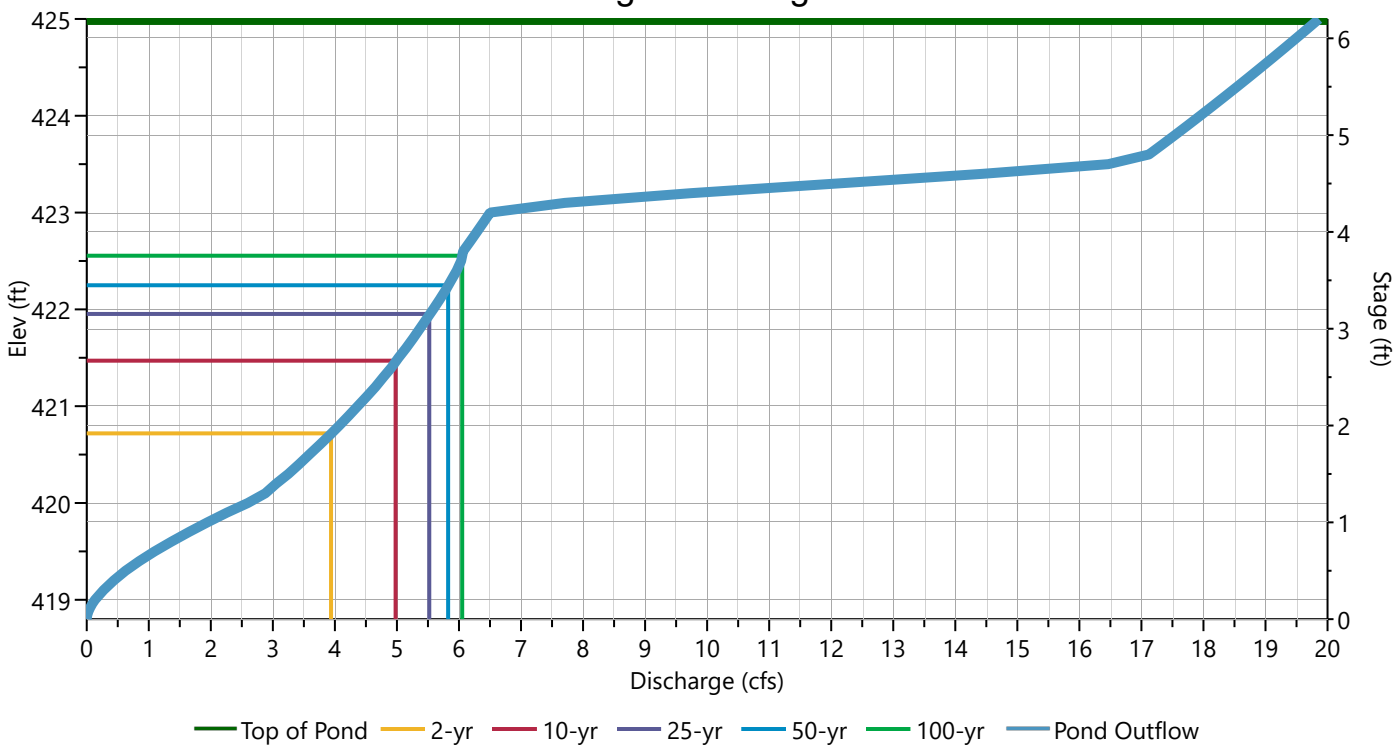


Bryant Pharmacy Detention Pond

Stage-Discharge

Culvert / Orifices	Cir Culvert	Orifice			Orifice Plate	
		1 (m)	2	3		
Rise, in	18	15			Orifice Dia, in	
Span, in	18	8			No. Orifices	
No. Barrels	1	1			Invert Elevation, ft	
Invert Elevation, ft	418.80	418.80			Height, ft	
Orifice Coefficient, Co	0.60	0.60			Orifice Coefficient, Co	
Length, ft	39					
Barrel Slope, %	1					
N-Value, n	0.013					
Weirs	**Riser**	**Weir**			**Ancillary**	
		1	2	3		
Shape / Type	Circular				Exfiltration, in/hr	
Crest Elevation, ft	423					
Crest Length, ft	12.56					
Angle, deg						
Weir Coefficient, Cw	3.3					

m = Flows through Culvert, i = Independent



Bryant Pharmacy Detention Pond

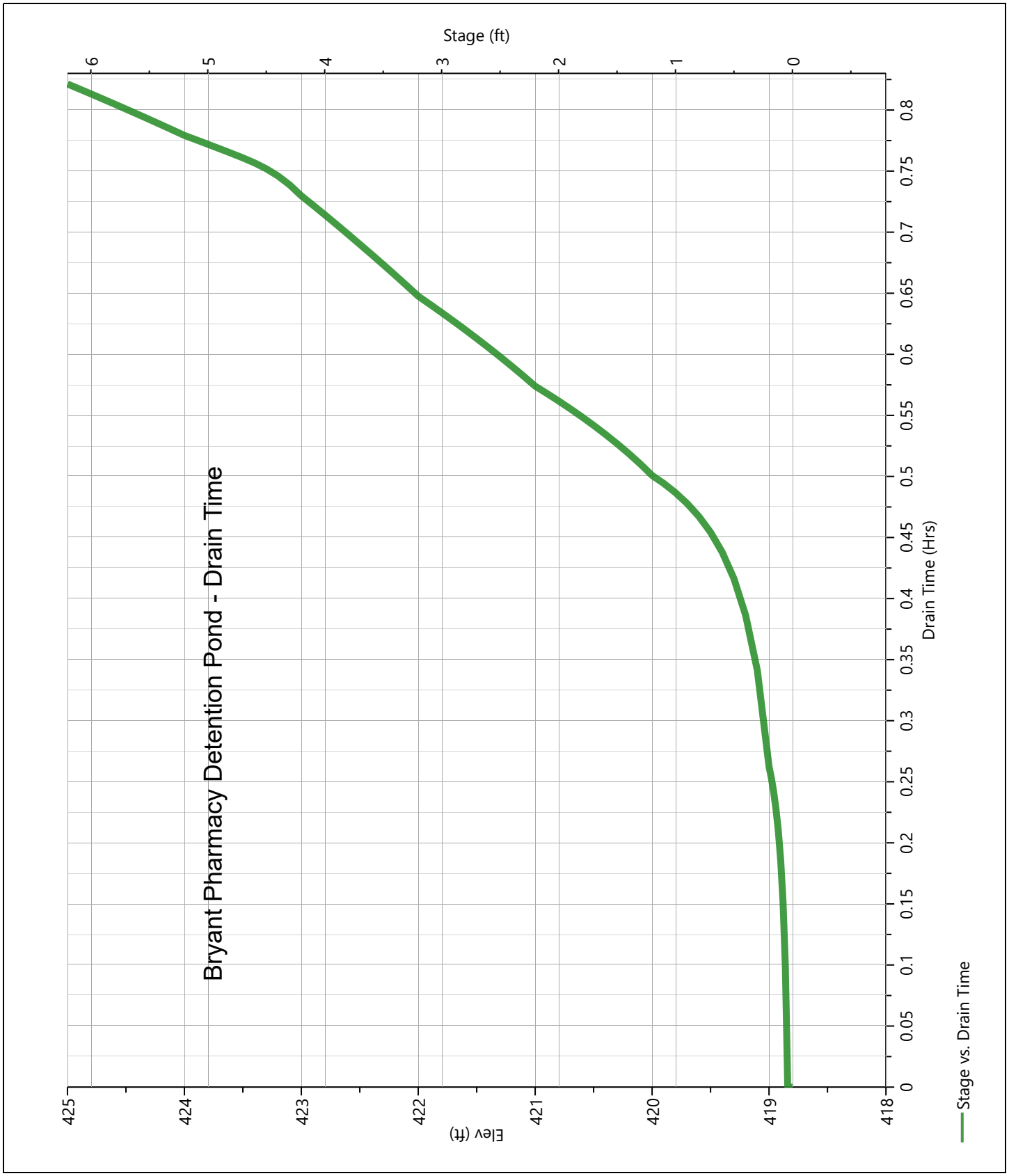
Stage-Storage-Discharge Summary

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	418.80	0.000	0.000	0.000			0.000							0.000
0.20	419.00	41.8	0.133 ic	0.133			0.000							0.133
1.20	420.00	615	2.597 ic	2.597			0.000							2.597
2.20	421.00	1,534	4.368 ic	4.368			0.000							4.368
3.20	422.00	2,857	5.584 oc	5.584			0.000							5.584
4.20	423.00	4,638	6.503 oc	6.503			0.000							6.503
5.20	424.00	6,935	17.95 ic	0.000			0.000							17.95
6.20	425.00	9,802	19.86 ic	0.000			0.000							19.86

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

Bryant Pharmacy Detention Pond

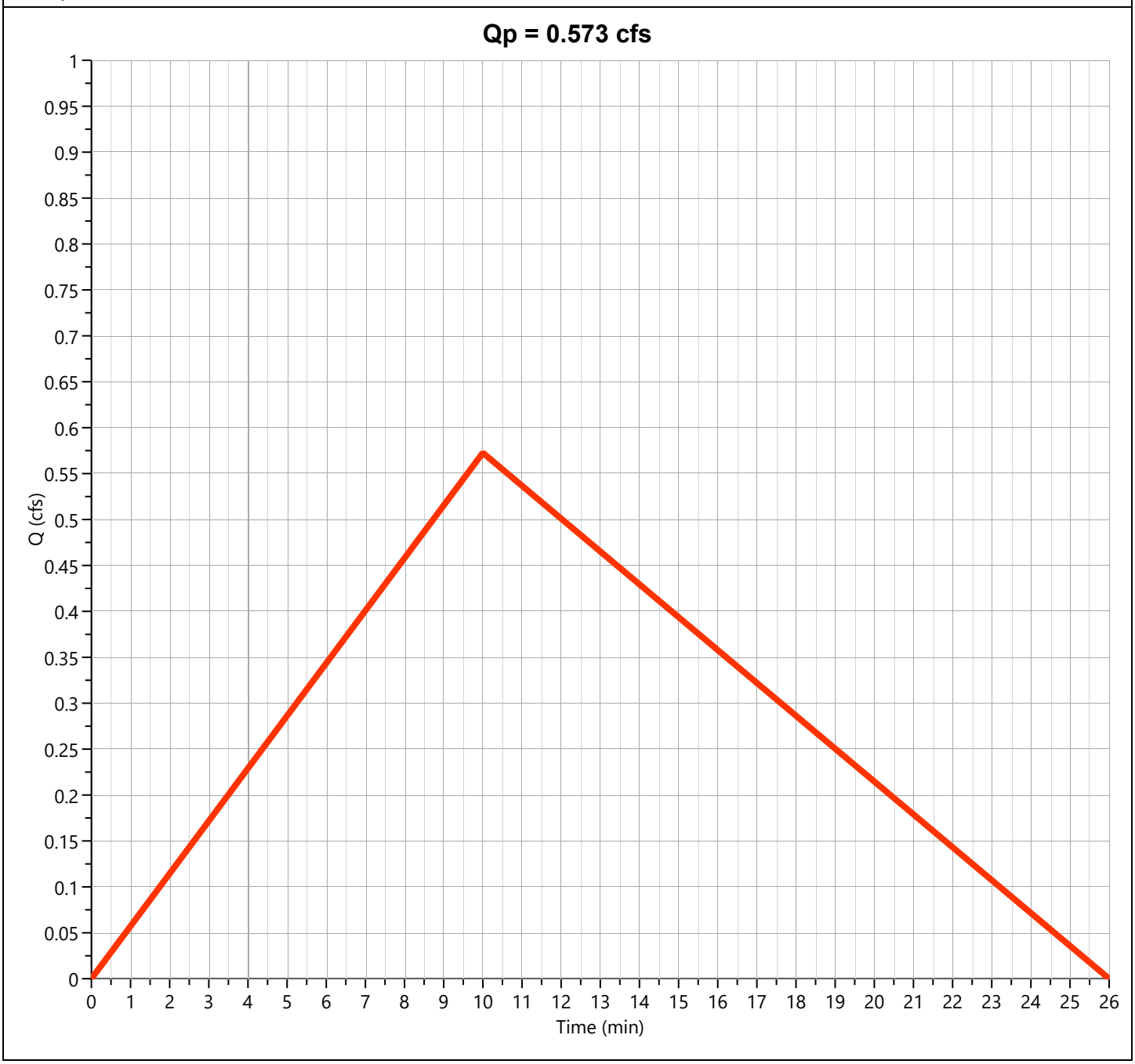
Pond Drawdown



Post-Dev Basin B

Hyd. No. 10

Hydrograph Type	= Rational	Peak Flow	= 0.573 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 459 cuft
Drainage Area	= 0.22 ac	Runoff Coeff.	= 0.58
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.49 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin B
Rational

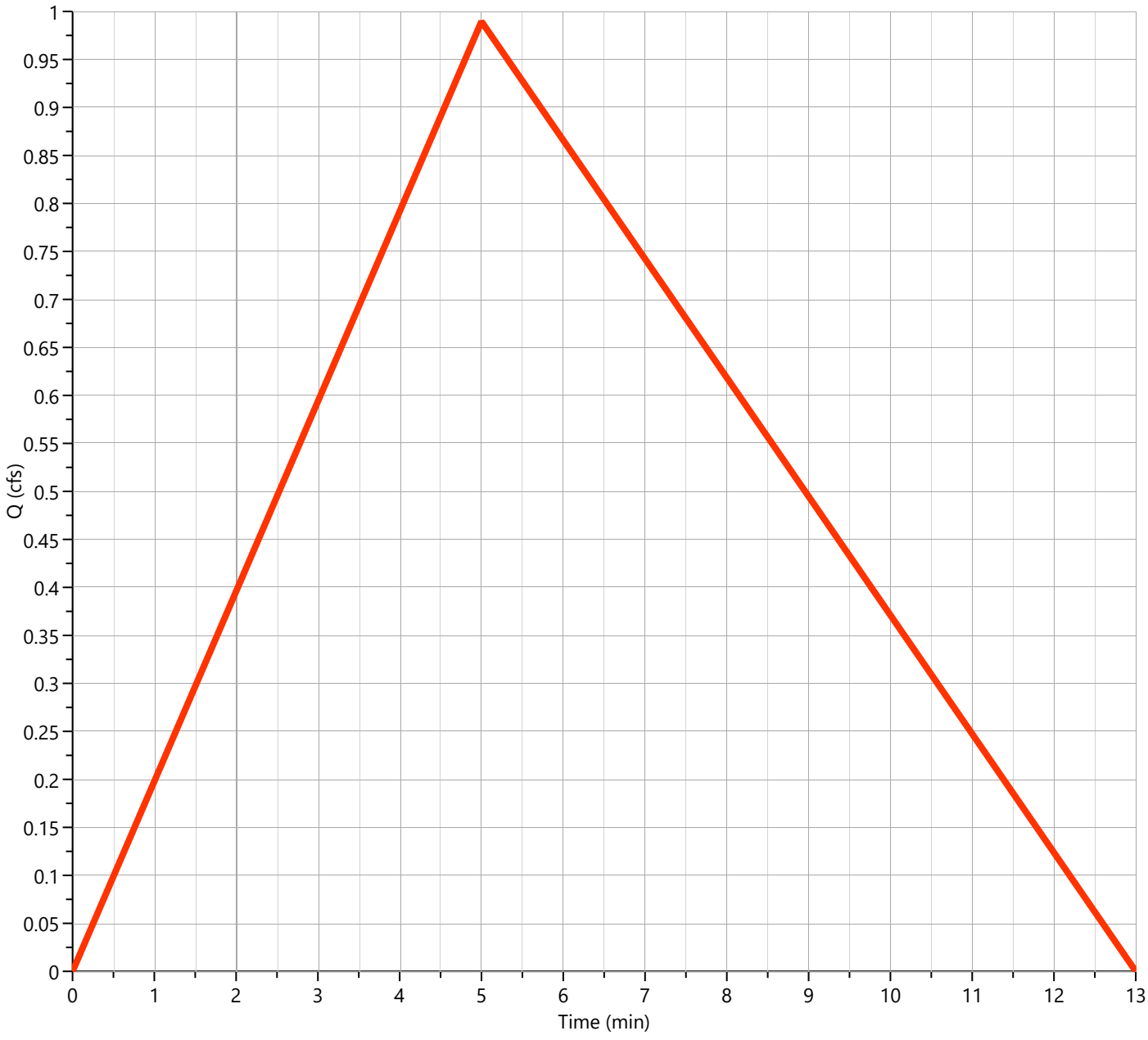
Hyd. No. 10

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)	4.36	2.28	2.28	
Land Slope (%)	5.17			
Travel Time (min)	**10.00**	**0.00**	**0.00**	**10.00**
Shallow Concentrated Flow				
Flow Length (ft)	37			
Watercourse Slope (%)	3.29	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	2.93			
Travel Time (min)	**0.21**	**0.00**	**0.00**	**0.21**
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				**10 min**

Post-Dev Basin "C"

Hyd. No. 11

Hydrograph Type	= Rational	Peak Flow	= 0.990 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 396 cuft
Drainage Area	= 0.237 ac	Runoff Coeff.	= 0.68
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 5.0 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



Post-Dev Basin "C"
Rational

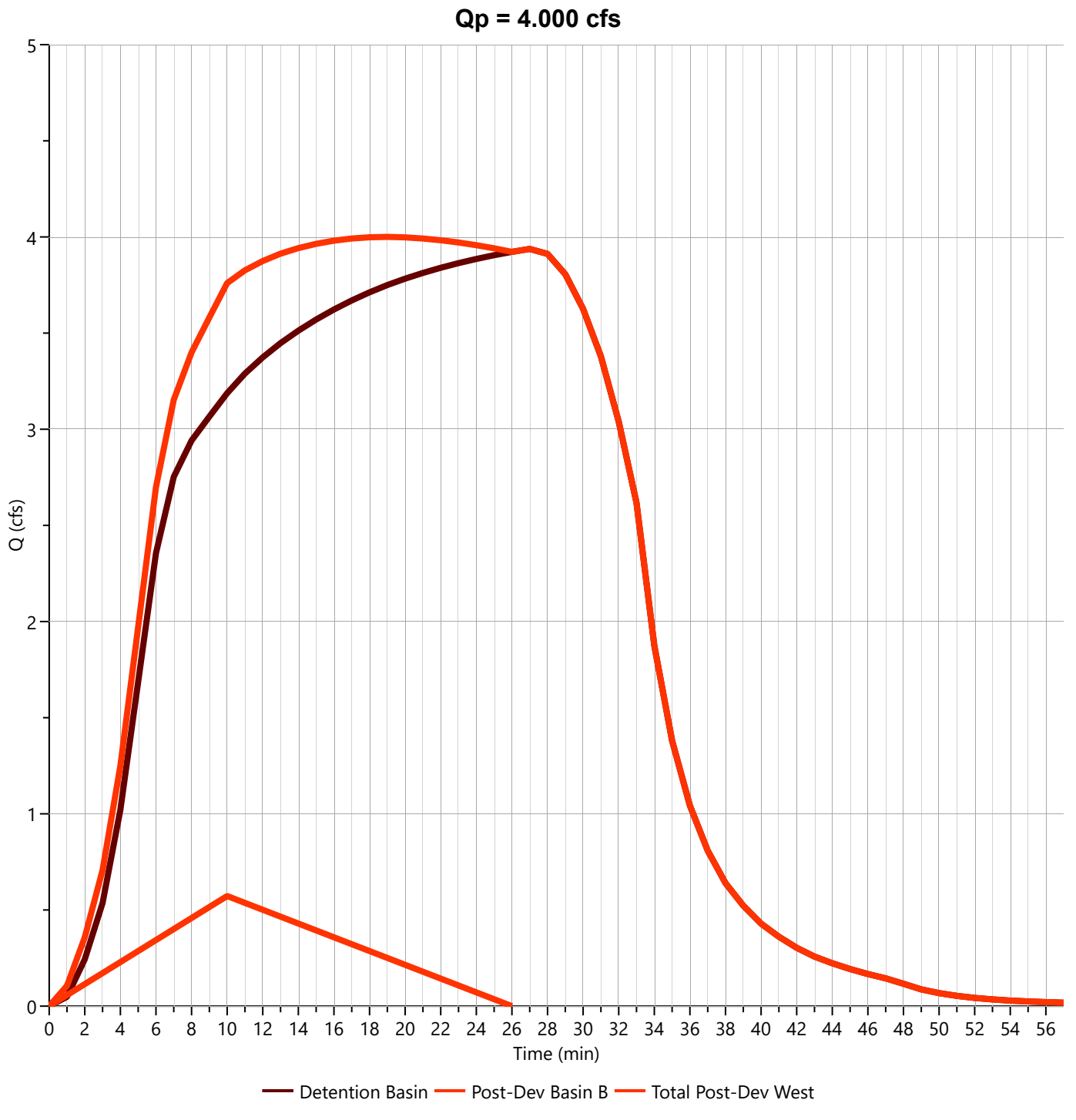
Hyd. No. 11

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	52			
2-yr, 24-hr Precip. (in)	4.36	2.28	2.28	
Land Slope (%)	8			
Travel Time (min)	**4.97**	**0.00**	**0.00**	**4.97**
Shallow Concentrated Flow				
Flow Length (ft)				
Watercourse Slope (%)	0.00	0.00	0.00	
Surface Description	Paved	Paved	Paved	
Average Velocity (ft/s)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
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				**5 min**

Total Post-Dev West

Hyd. No. 12

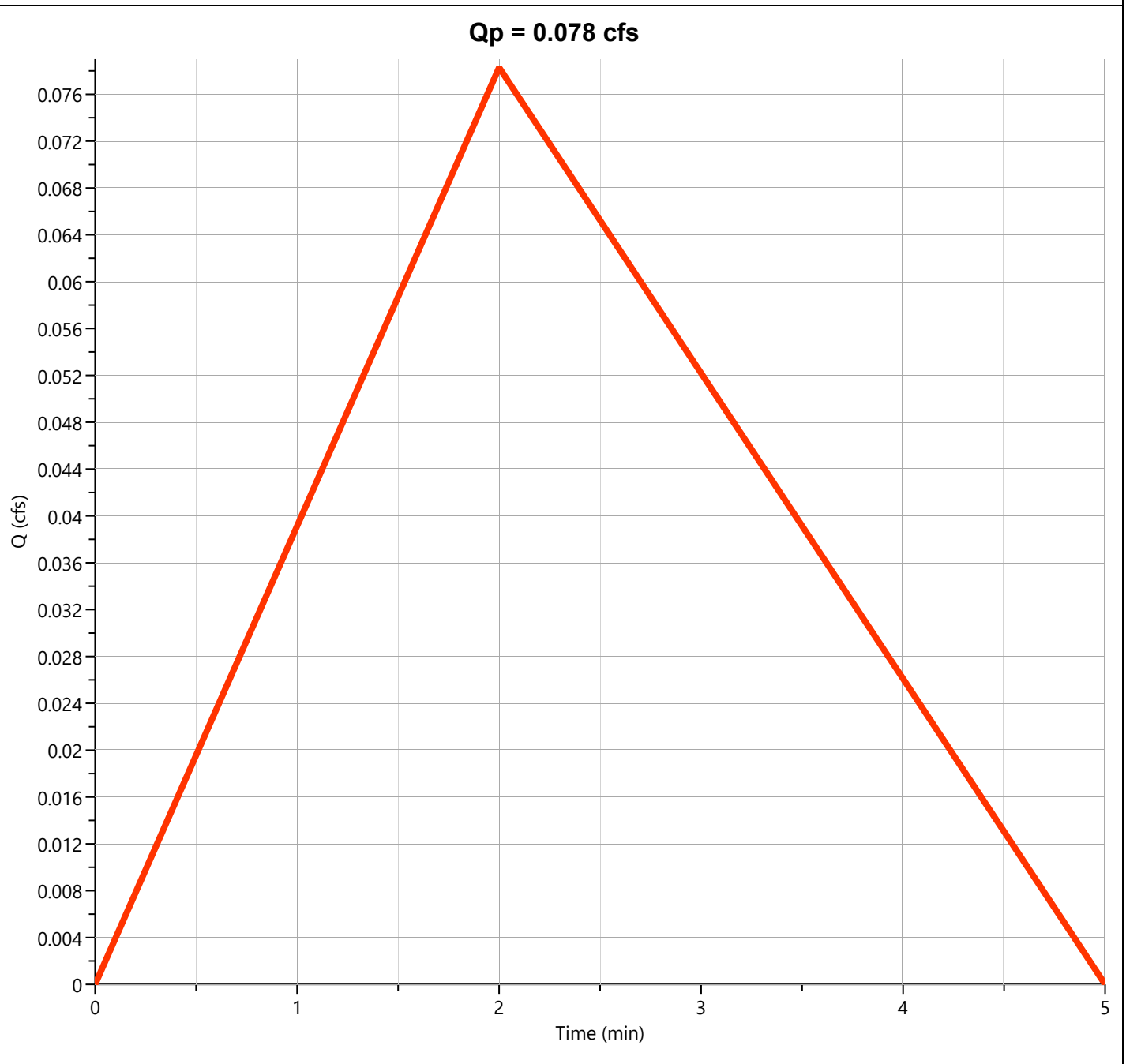
Hydrograph Type	= Junction	Peak Flow	= 4.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.32 hrs
Time Interval	= 1 min	Hydrograph Volume	= 7,055 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 0.22 ac



Post-Dev Basin "D"

Hyd. No. 13

Hydrograph Type	= Rational	Peak Flow	= 0.078 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.03 hrs
Time Interval	= 1 min	Runoff Volume	= 12.5 cuft
Drainage Area	= 0.017 ac	Runoff Coeff.	= 0.75
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 2.0 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



Post-Dev Basin "D"
Rational

Hyd. No. 13

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	11			
2-yr, 24-hr Precip. (in)	4.36	2.28	2.28	
Land Slope (%)	2			
Travel Time (min)	**2.50**	**0.00**	**0.00**	**2.50**
Shallow Concentrated Flow				
Flow Length (ft)				
Watercourse Slope (%)	0.00	0.00	0.00	
Surface Description	Paved	Paved	Paved	
Average Velocity (ft/s)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
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				**2 min**

Hydrograph 10-yr Summary

Hydrology Studio v 3.0.0.39

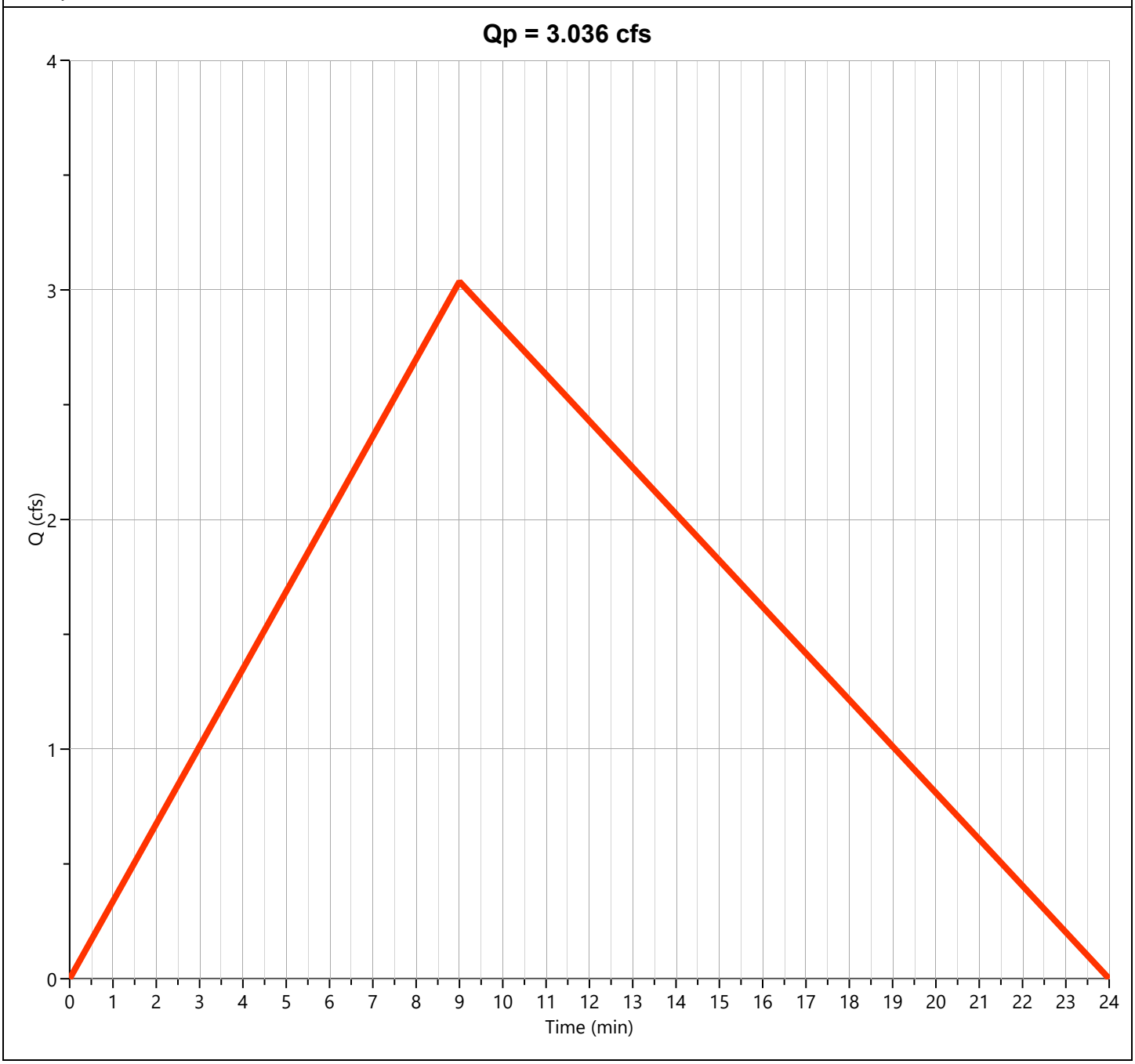
Project Name: Bryant Pharmacy
File: Detention Calculation 11-7-25.hys
11-07-2025

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"	3.036	0.15	2,189	----		
2	Rational	Pre-Dev Basin "B"	2.964	0.12	1,662	----		
3	Junction	Total Pre-Dev West	5.461	0.15	3,787	1, 2		
4	Rational	Pre-Dev Basin "C"	0.545	0.27	699	----		
5	Rational	Pre-Dev Basin "D"	1.055	0.20	1,014	----		
6	Rational	Pre-Dev Basin "E"	0.707	0.17	566	----		
7	Junction	Total Pre-Dev East	1.673	0.20	1,564	5, 6		
8	Mod Rational	Post-Dev Basin A	5.483	0.08	8,883	----		
9	Pond Route	Detention Basin	4.978	0.45	8,881	8	421.47	2,141
10	Rational	Post-Dev Basin B	0.767	0.17	615	----		
11	Rational	Post-Dev Basin "C"	1.323	0.08	530	----		
12	Junction	Total Post-Dev West	5.026	0.32	9,480	9, 10		
13	Rational	Post-Dev Basin "D"	0.105	0.03	16.8	----		

Pre-Dev Basin "A"

Hyd. No. 1

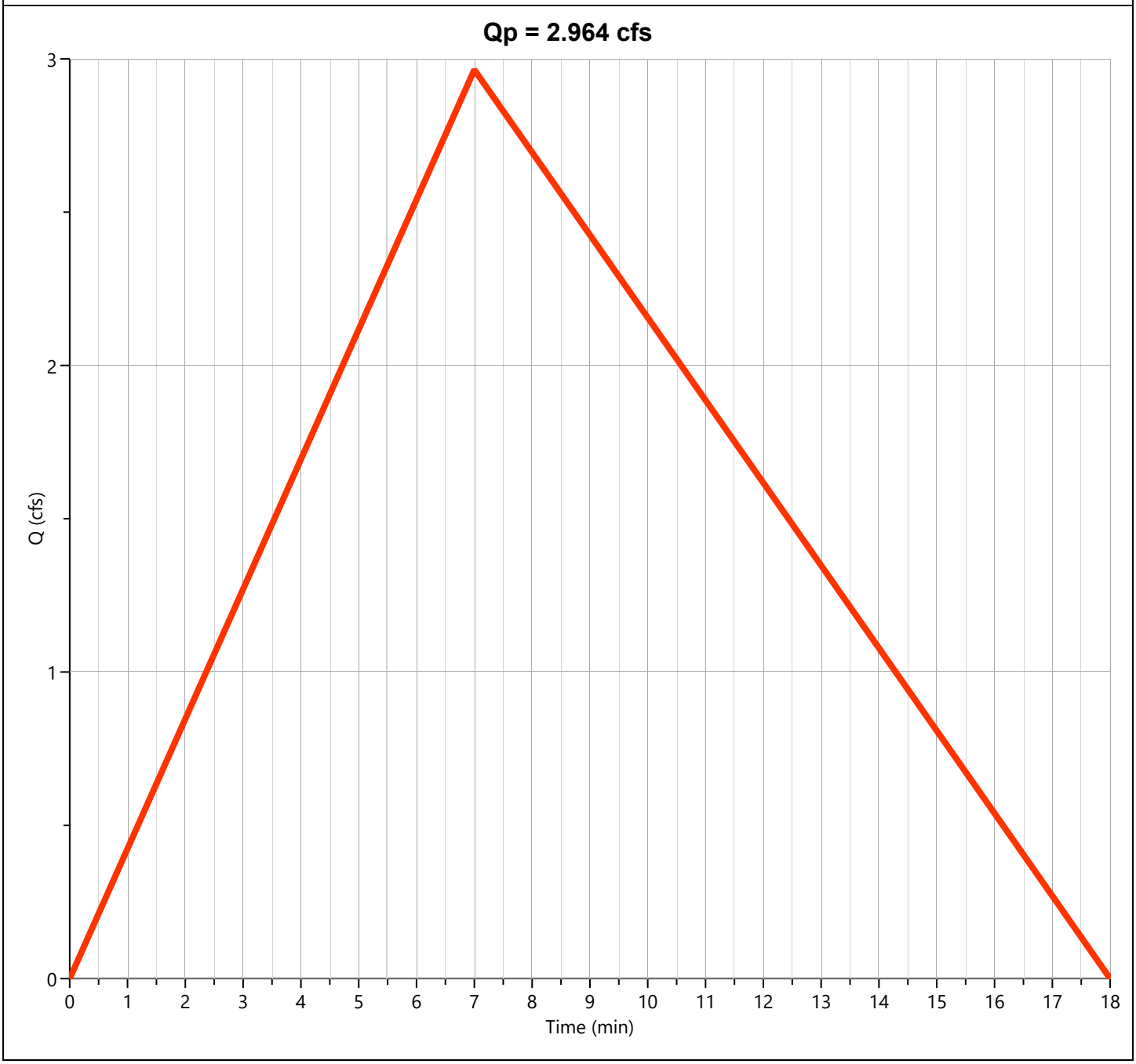
Hydrograph Type	= Rational	Peak Flow	= 3.036 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 2,189 cuft
Drainage Area	= 0.86 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 9.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "B"

Hyd. No. 2

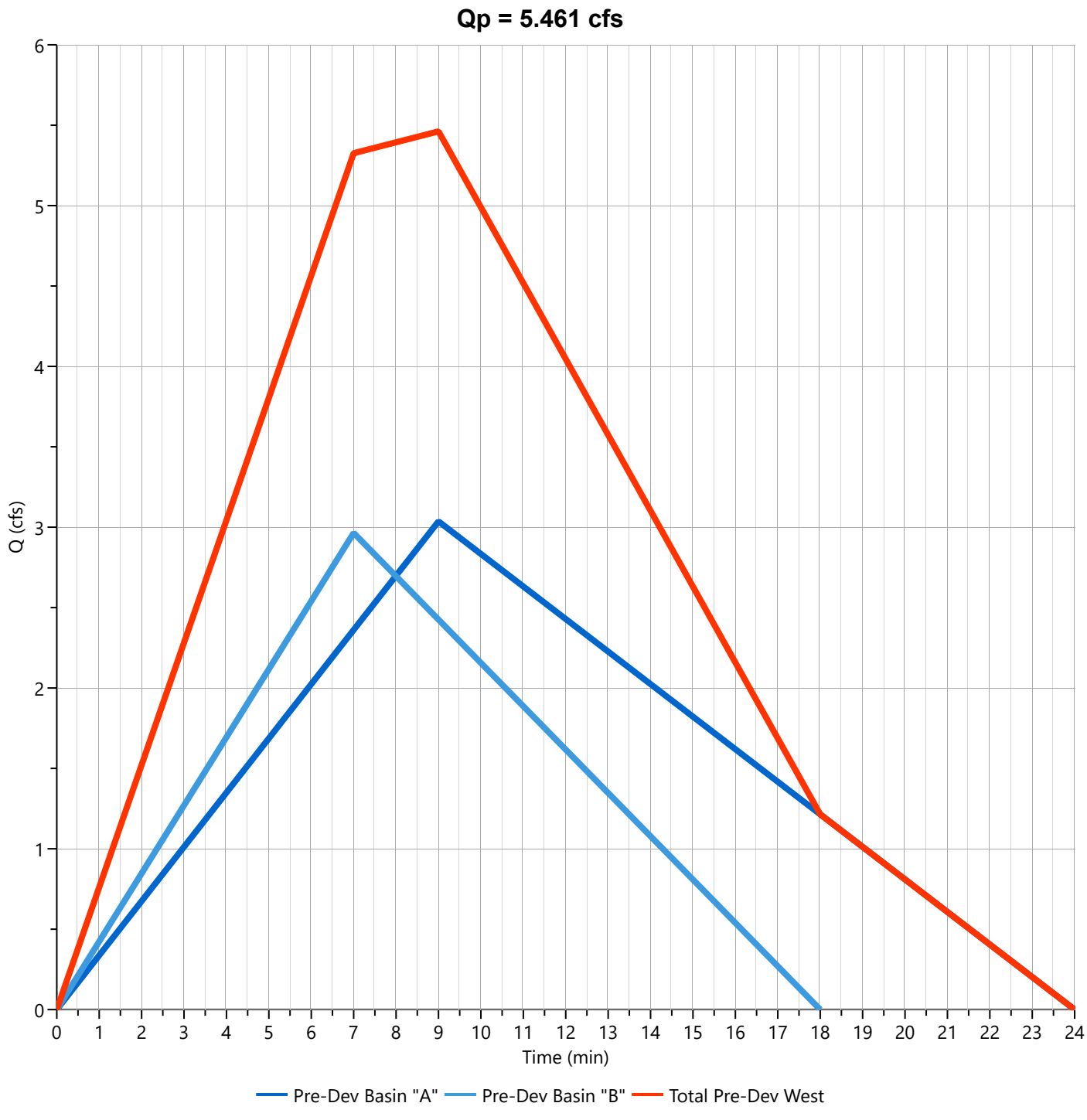
Hydrograph Type	= Rational	Peak Flow	= 2.964 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.12 hrs
Time Interval	= 1 min	Runoff Volume	= 1,662 cuft
Drainage Area	= 0.75 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 7.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.06 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Pre-Dev West

Hyd. No. 3

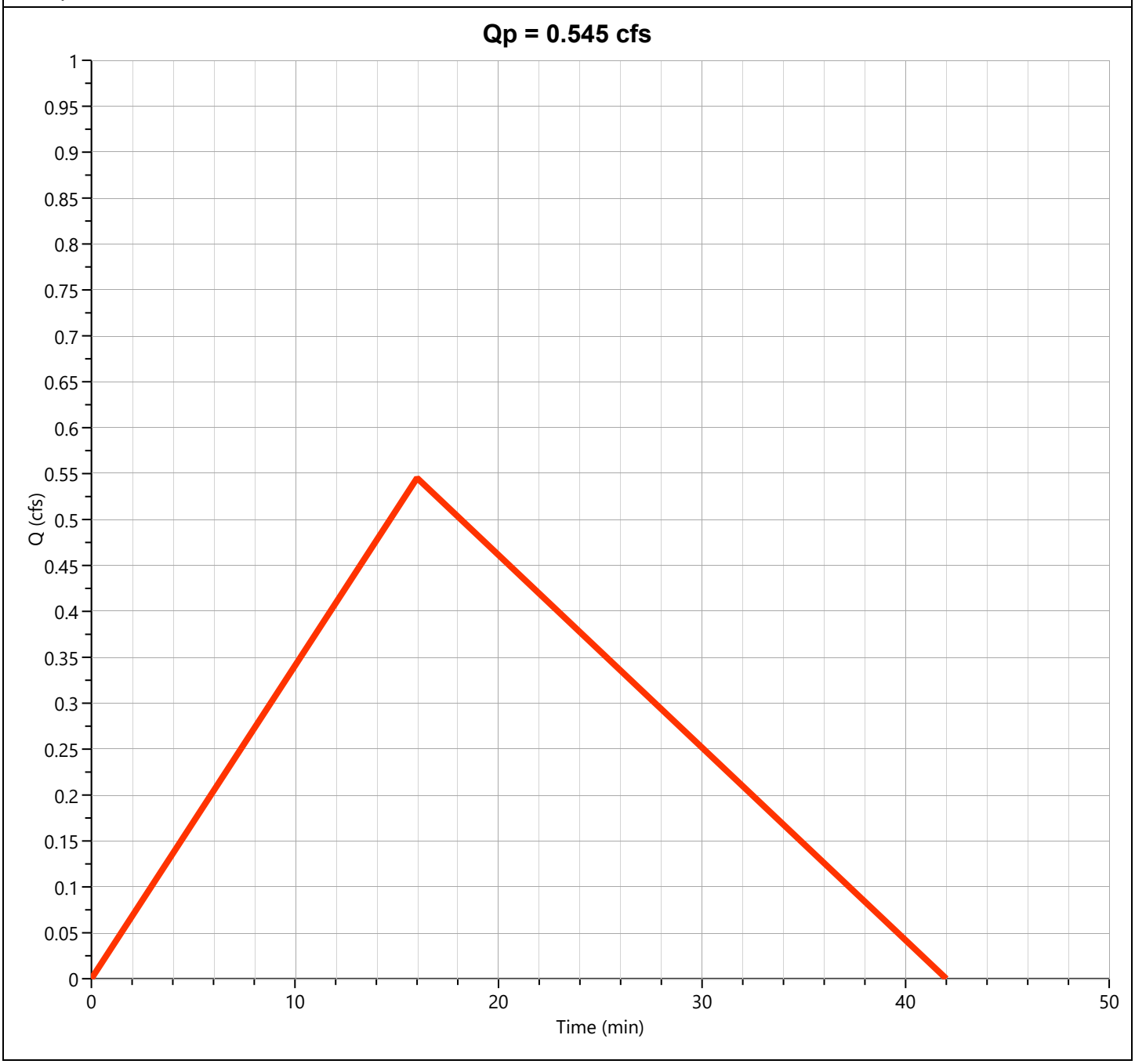
Hydrograph Type	= Junction	Peak Flow	= 5.461 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Hydrograph Volume	= 3,787 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 1.61 ac



Pre-Dev Basin "C"

Hyd. No. 4

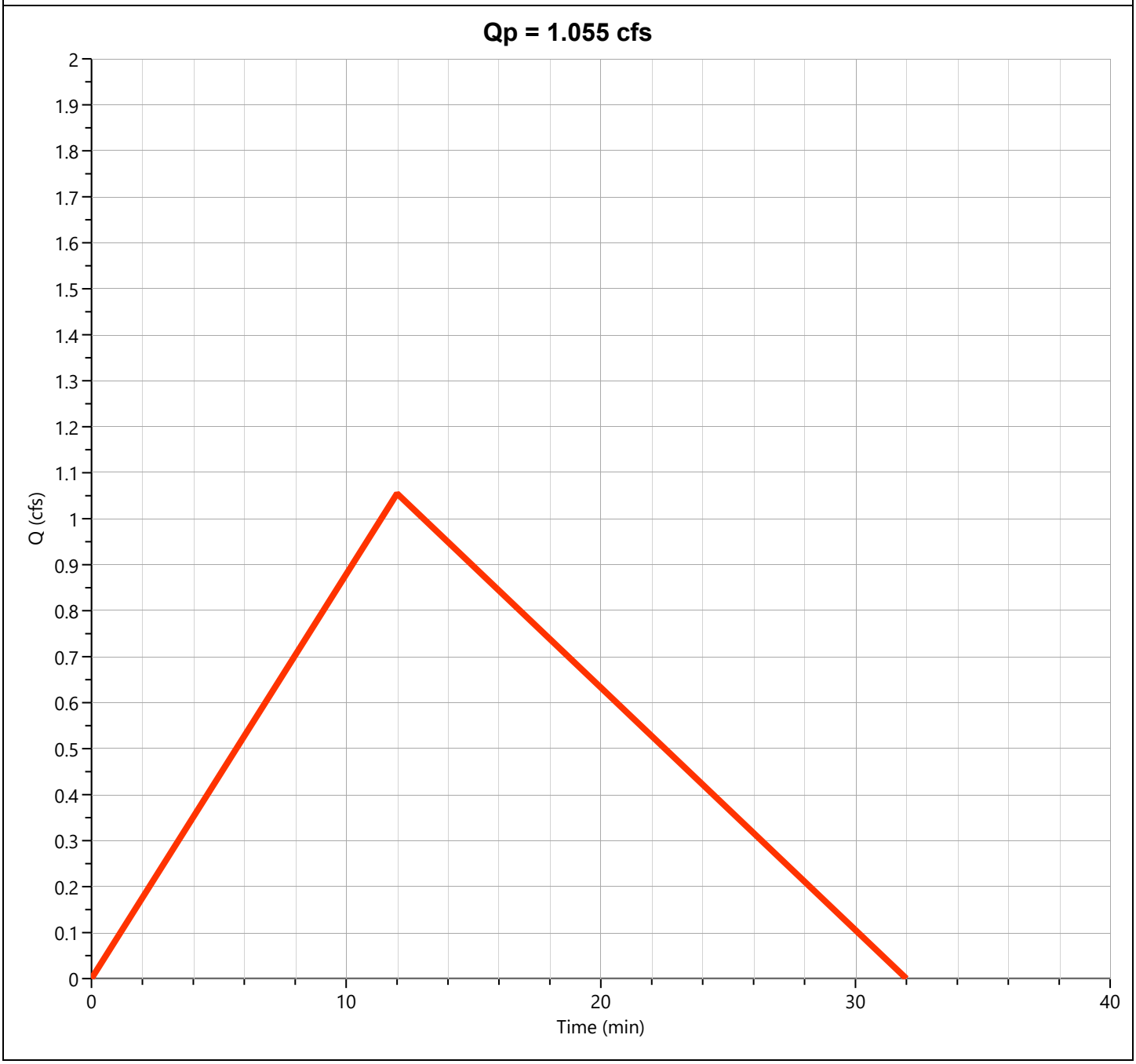
Hydrograph Type	= Rational	Peak Flow	= 0.545 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 699 cuft
Drainage Area	= 0.2 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.87 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "D"

Hyd. No. 5

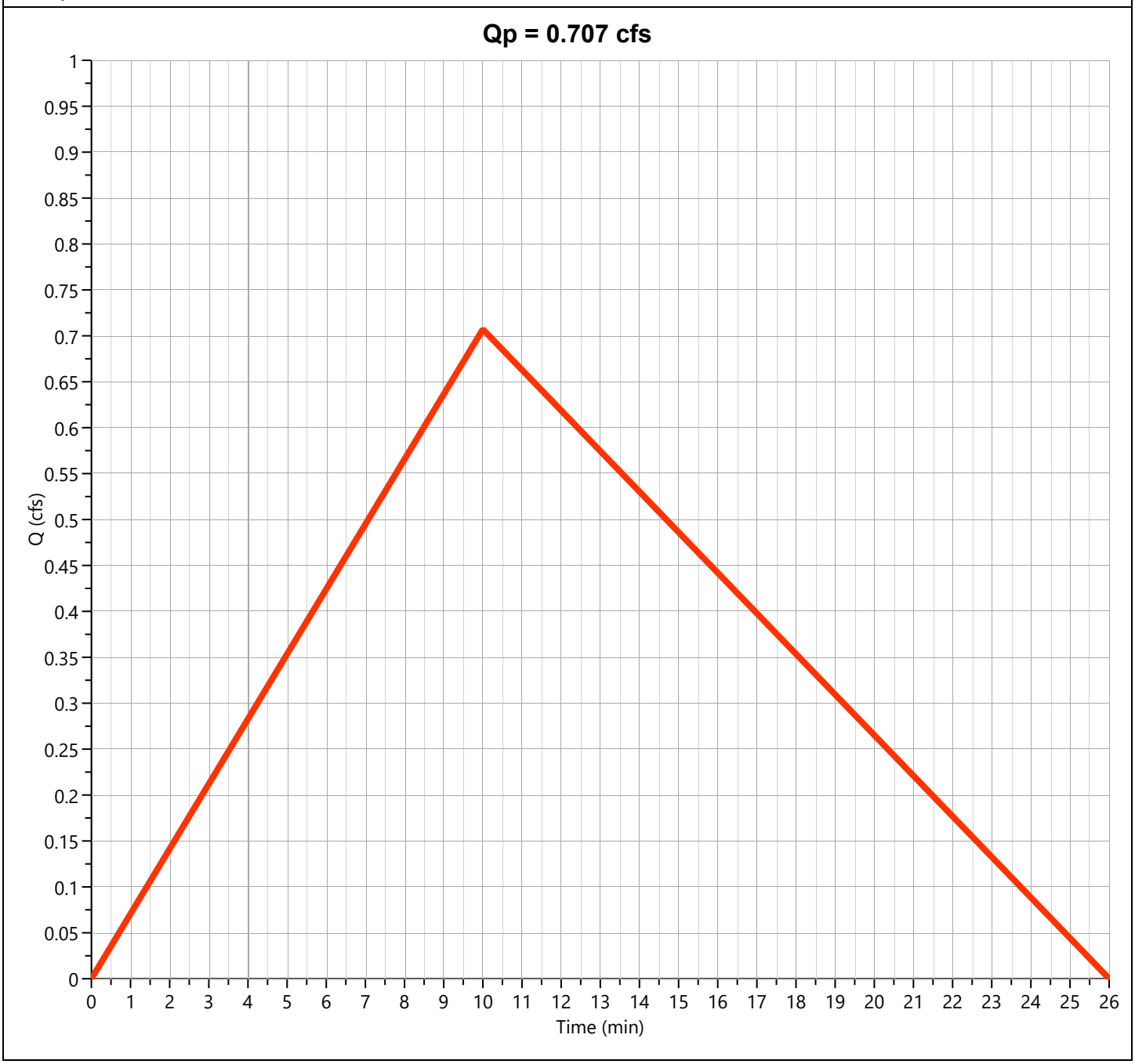
Hydrograph Type	= Rational	Peak Flow	= 1.055 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 1,014 cuft
Drainage Area	= 0.34 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.54 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E"

Hyd. No. 6

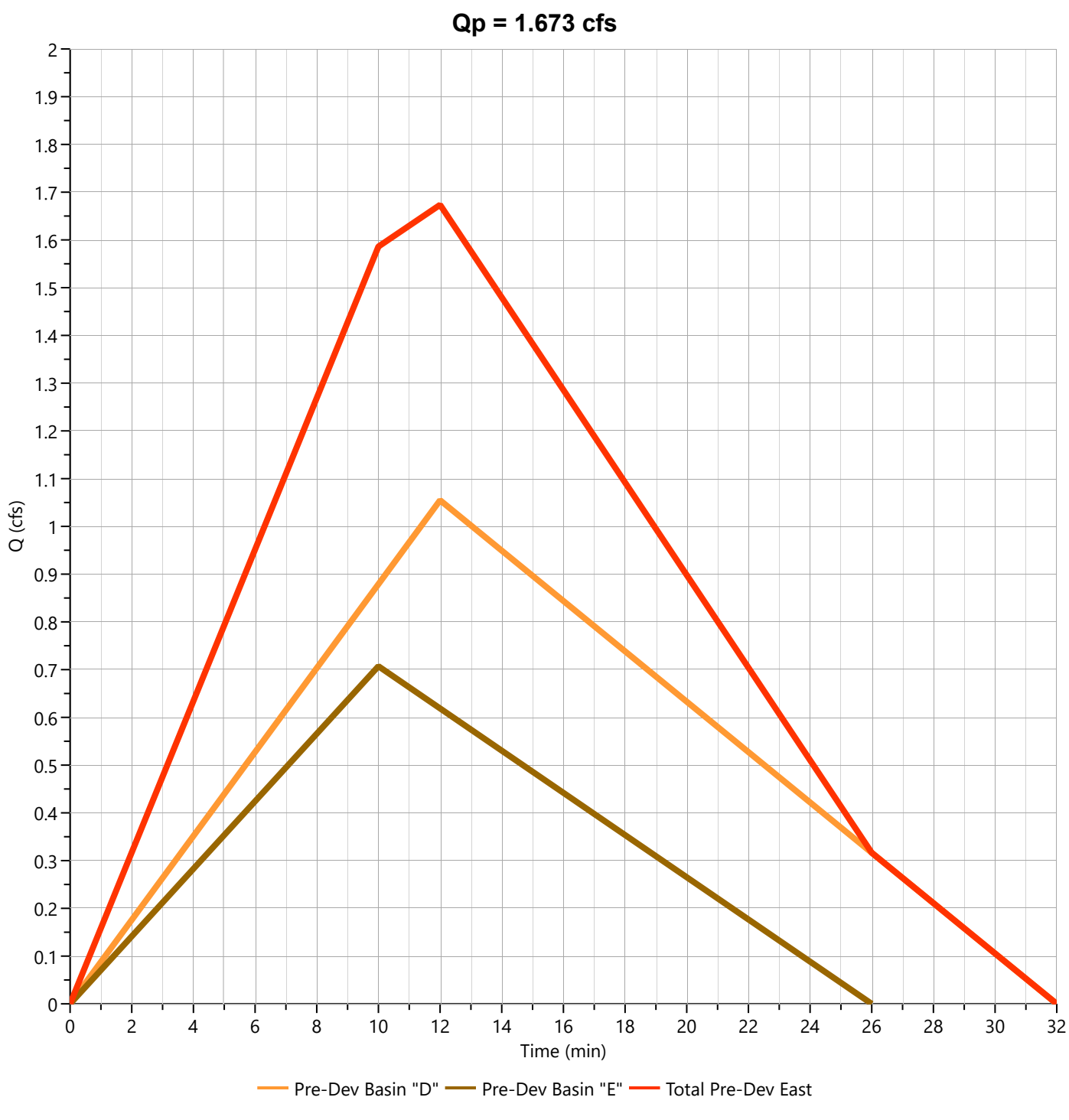
Hydrograph Type	= Rational	Peak Flow	= 0.707 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 566 cuft
Drainage Area	= 0.21 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.01 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Pre-Dev East

Hyd. No. 7

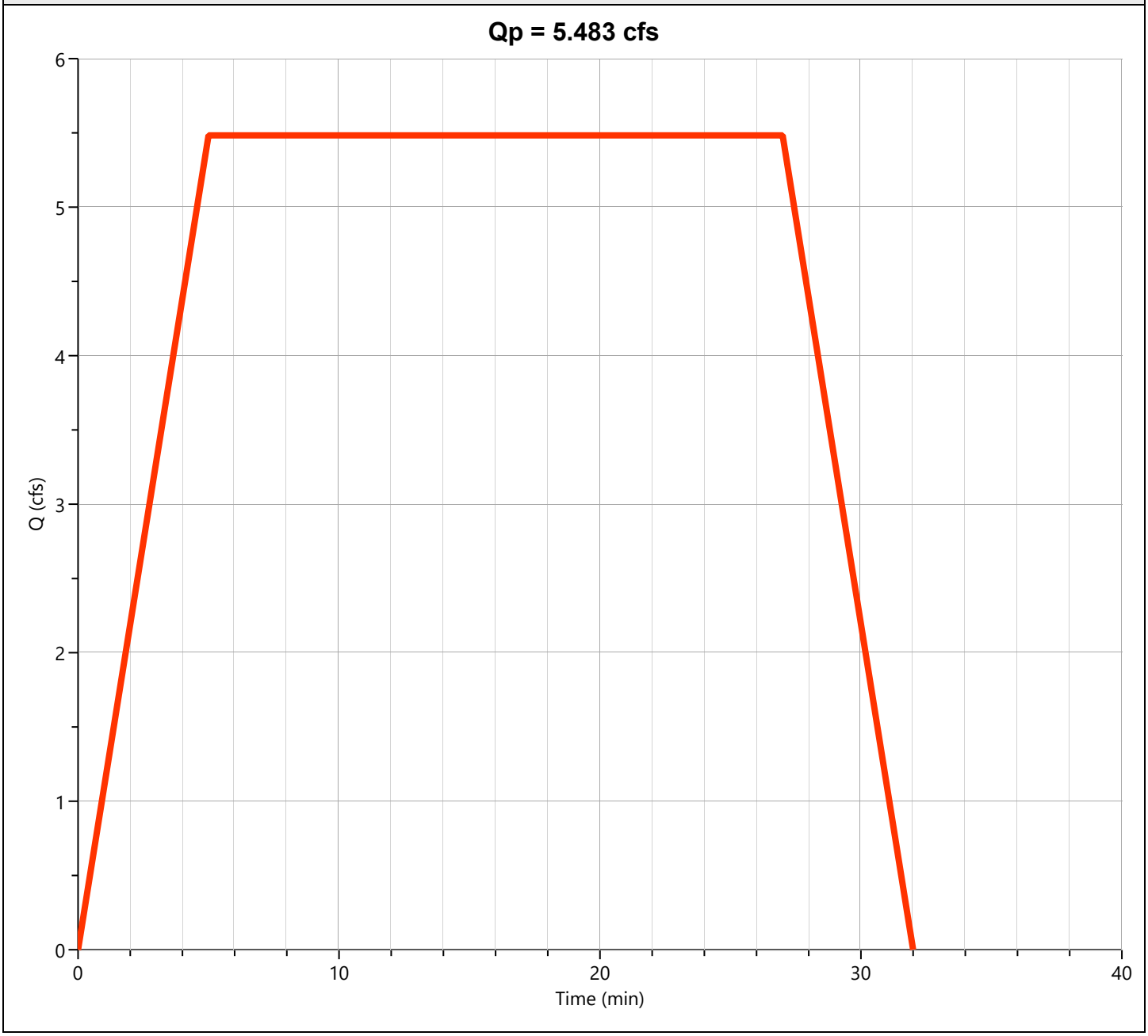
Hydrograph Type	= Junction	Peak Flow	= 1.673 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,564 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 0.55 ac



Post-Dev Basin A

Hyd. No. 8

Hydrograph Type	= Mod Rational	Peak Flow	= 5.483 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 8,883 cuft
Drainage Area	= 1.5 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.85 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 5.4 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft



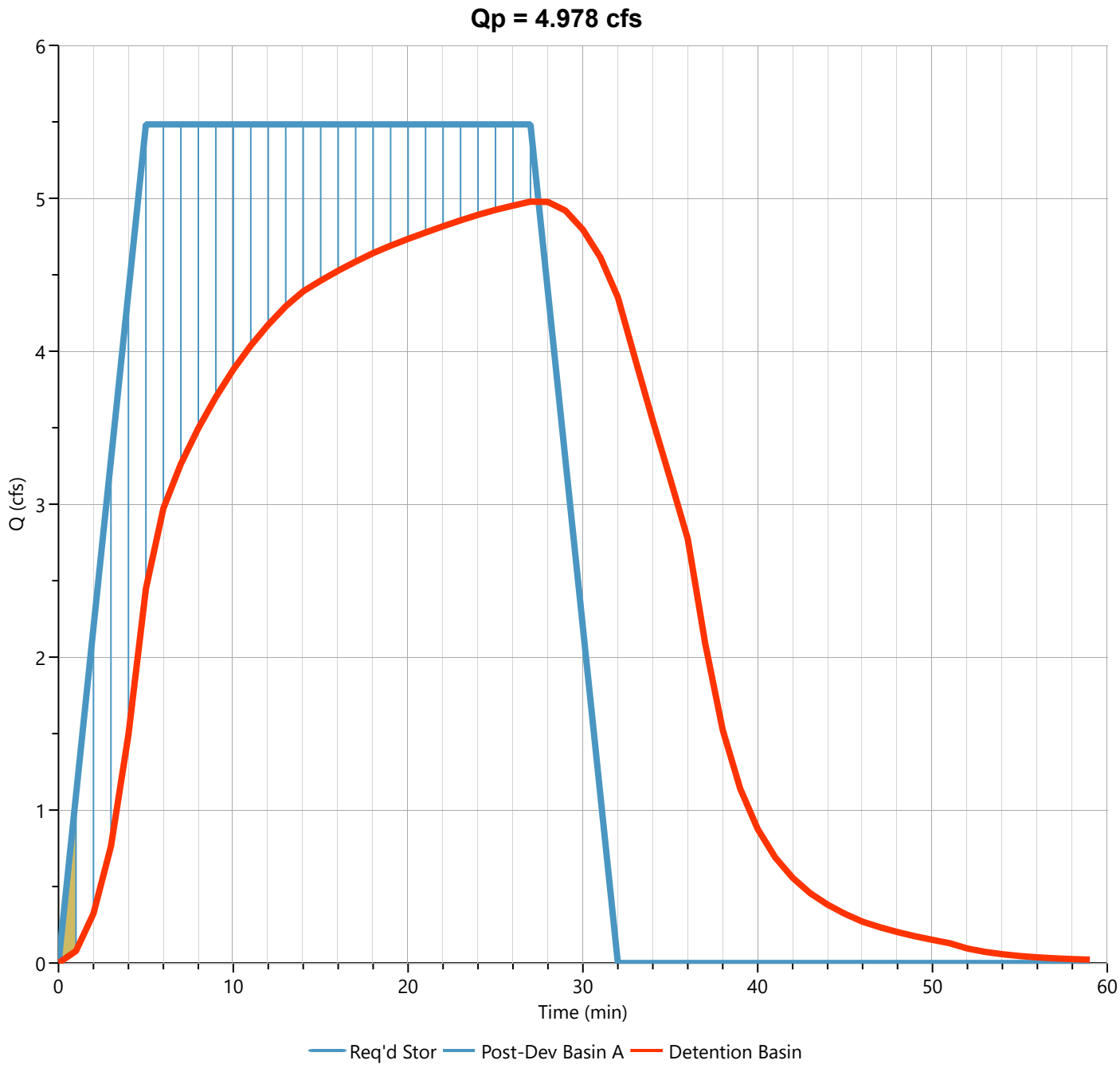
Detention Basin

Hyd. No. 9

Hydrograph Type	= Pond Route	Peak Flow	= 4.978 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.45 hrs
Time Interval	= 1 min	Hydrograph Volume	= 8,881 cuft
Inflow Hydrograph	= 8 - Post-Dev Basin A	Max. Elevation	= 421.47 ft
Pond Name	= Bryant Pharmacy Detention Pond	Max. Storage	= 2,141 cuft

Pond Routing by Storage Indication Method

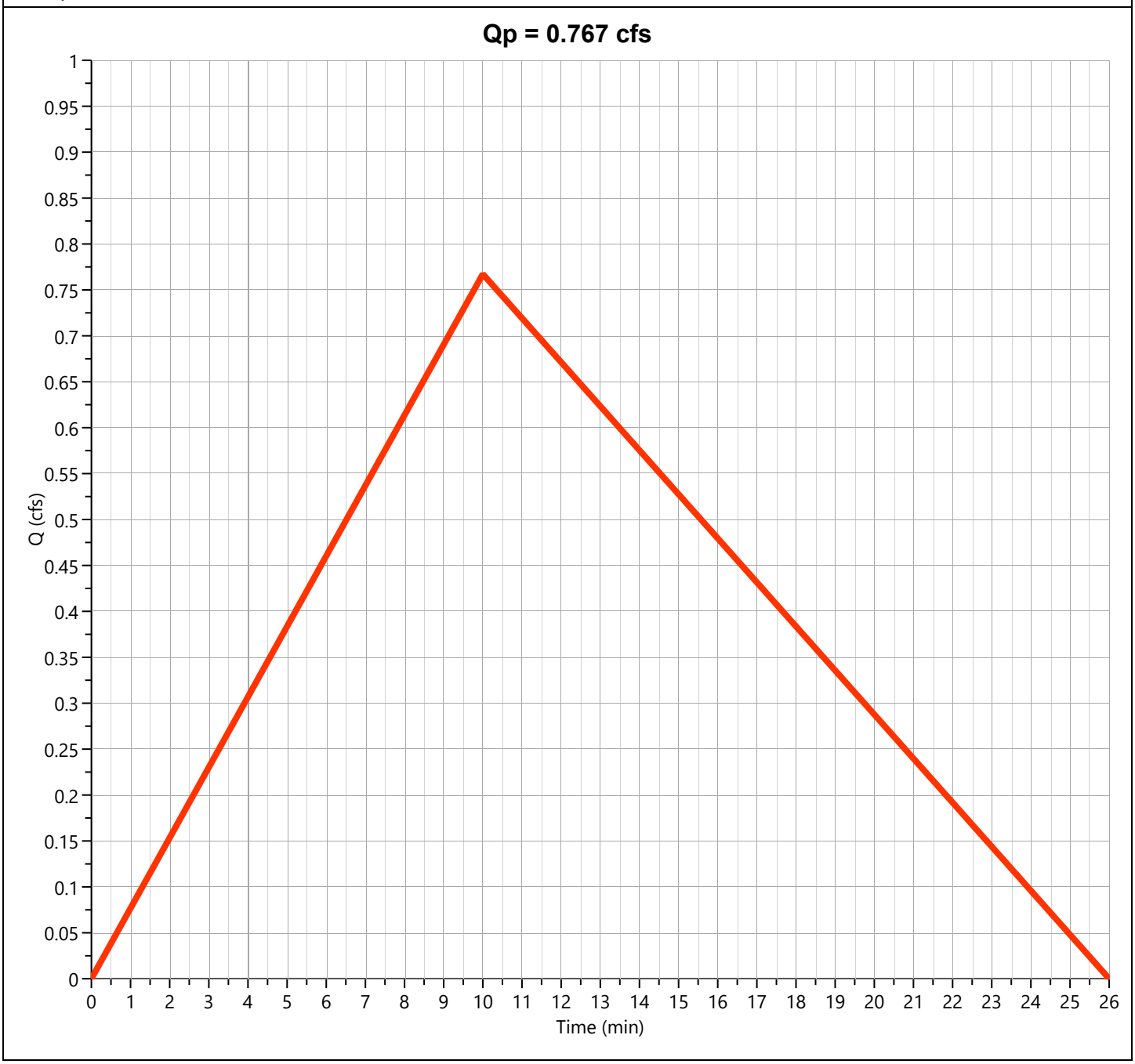
Center of mass detention time = 6 min



Post-Dev Basin B

Hyd. No. 10

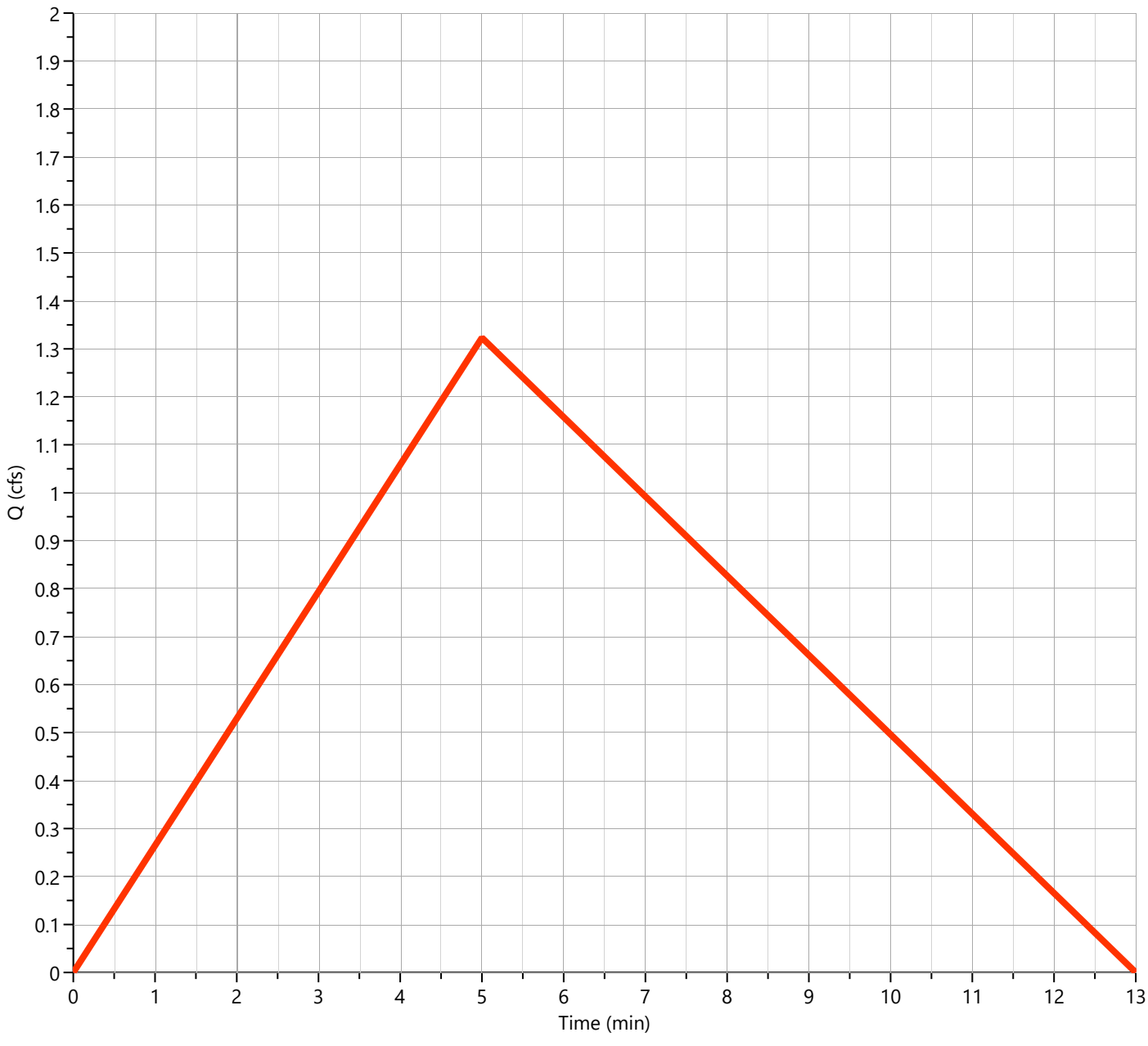
Hydrograph Type	= Rational	Peak Flow	= 0.767 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 615 cuft
Drainage Area	= 0.22 ac	Runoff Coeff.	= 0.58
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.01 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "C"

Hyd. No. 11

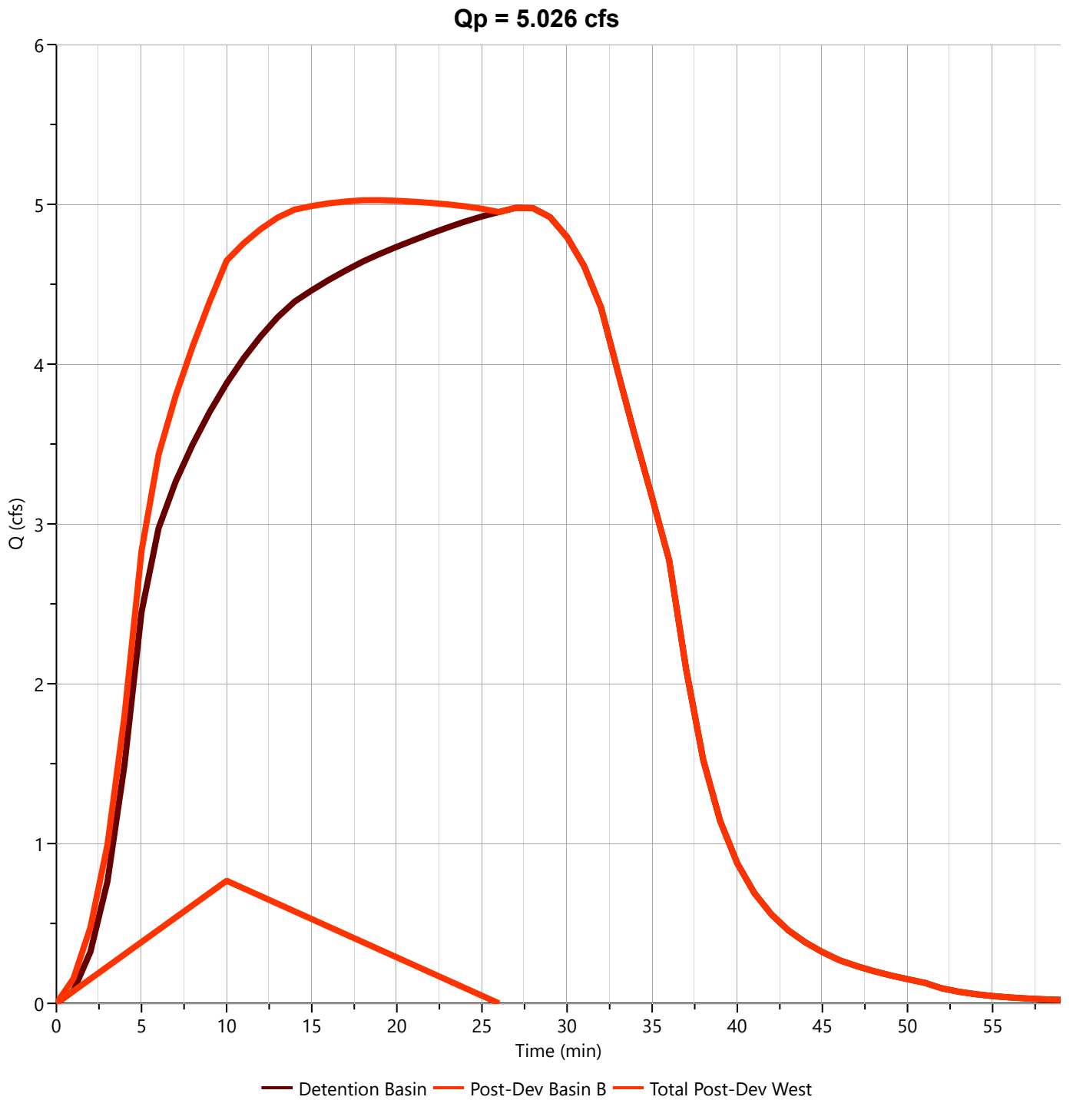
Hydrograph Type	= Rational	Peak Flow	= 1.323 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 530 cuft
Drainage Area	= 0.237 ac	Runoff Coeff.	= 0.68
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.21 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Post-Dev West

Hyd. No. 12

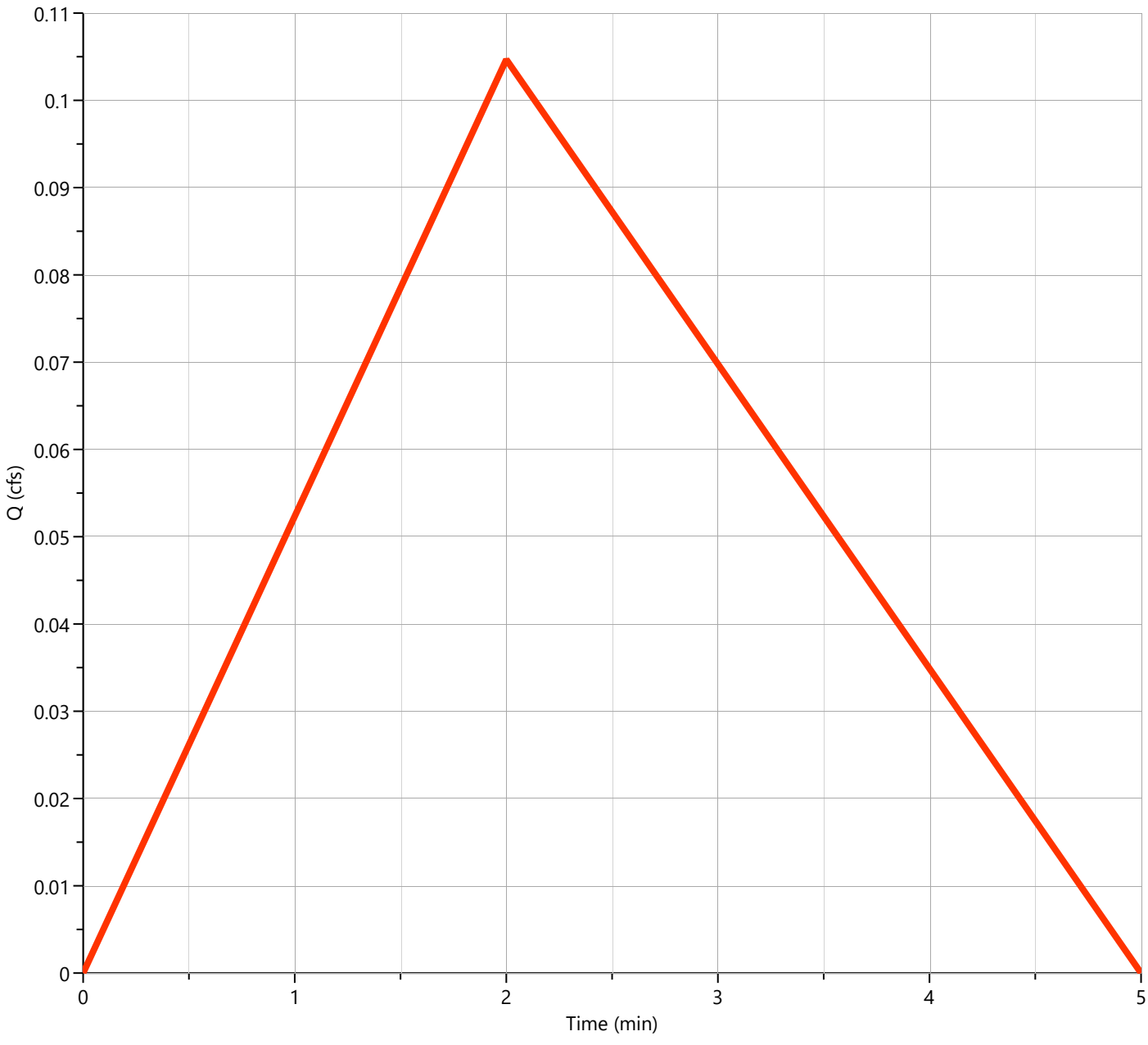
Hydrograph Type	= Junction	Peak Flow	= 5.026 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.32 hrs
Time Interval	= 1 min	Hydrograph Volume	= 9,480 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 0.22 ac



Post-Dev Basin "D"

Hyd. No. 13

Hydrograph Type	= Rational	Peak Flow	= 0.105 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.03 hrs
Time Interval	= 1 min	Runoff Volume	= 16.8 cuft
Drainage Area	= 0.017 ac	Runoff Coeff.	= 0.75
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 2.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.21 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

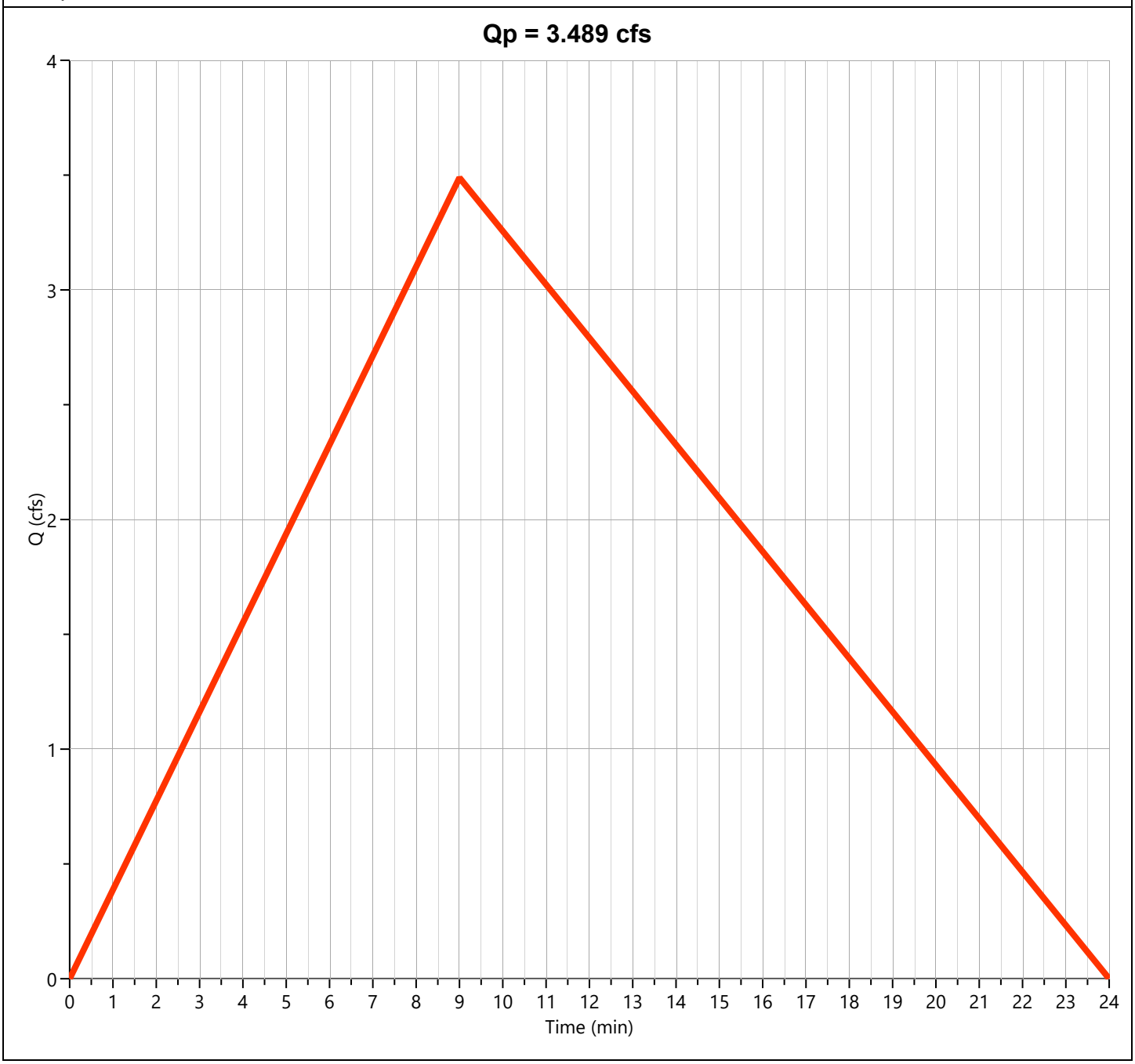
Project Name: Bryant Pharmacy
File: Detention Calculation 11-7-25.hys
11-07-2025

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"	3.489	0.15	2,515	----		
2	Rational	Pre-Dev Basin "B"	3.406	0.12	1,909	----		
3	Junction	Total Pre-Dev West	6.275	0.15	4,351	1, 2		
4	Rational	Pre-Dev Basin "C"	0.627	0.27	803	----		
5	Rational	Pre-Dev Basin "D"	1.212	0.20	1,165	----		
6	Rational	Pre-Dev Basin "E"	0.813	0.17	651	----		
7	Junction	Total Pre-Dev East	1.923	0.20	1,797	5, 6		
8	Mod Rational	Post-Dev Basin A	6.305	0.08	10,214	----		
9	Pond Route	Detention Basin	5.521	0.47	10,212	8	421.95	2,780
10	Rational	Post-Dev Basin B	0.882	0.17	706	----		
11	Rational	Post-Dev Basin "C"	1.520	0.08	609	----		
12	Junction	Total Post-Dev West	5.521	0.47	10,899	9, 10		
13	Rational	Post-Dev Basin "D"	0.120	0.03	19.3	----		

Pre-Dev Basin "A"

Hyd. No. 1

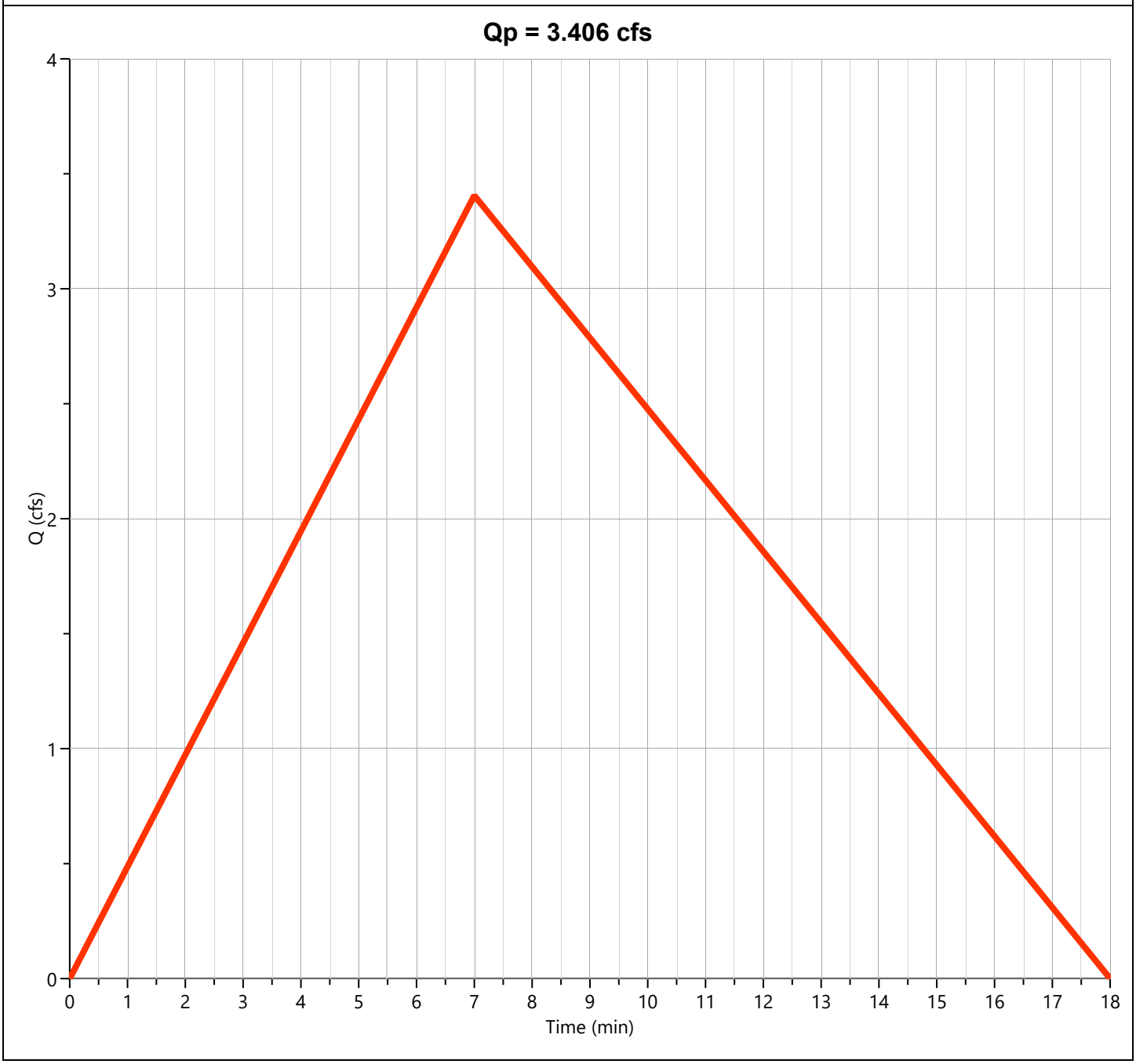
Hydrograph Type	= Rational	Peak Flow	= 3.489 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 2,515 cuft
Drainage Area	= 0.86 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 9.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.24 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "B"

Hyd. No. 2

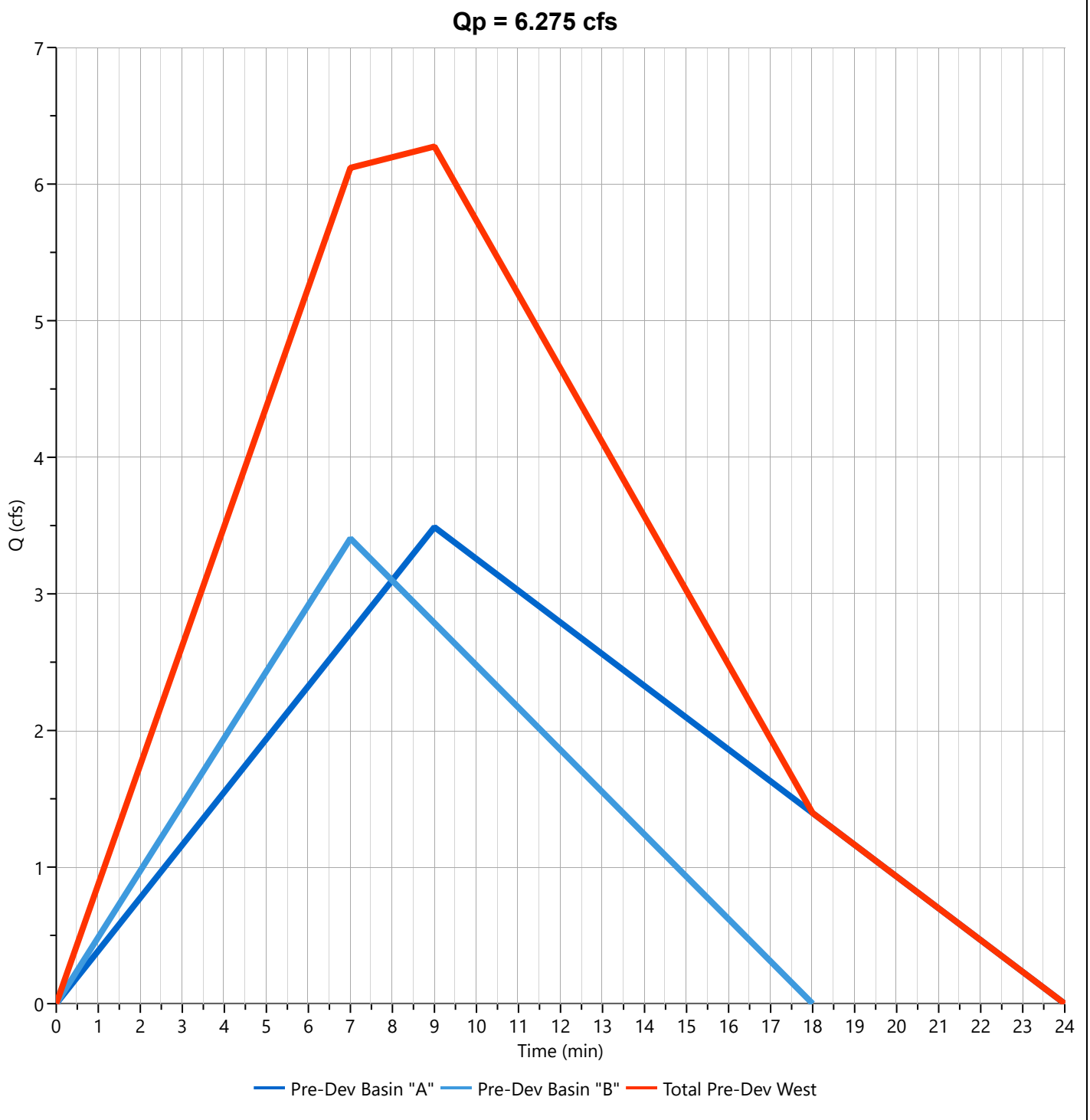
Hydrograph Type	= Rational	Peak Flow	= 3.406 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.12 hrs
Time Interval	= 1 min	Runoff Volume	= 1,909 cuft
Drainage Area	= 0.75 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 7.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.11 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Pre-Dev West

Hyd. No. 3

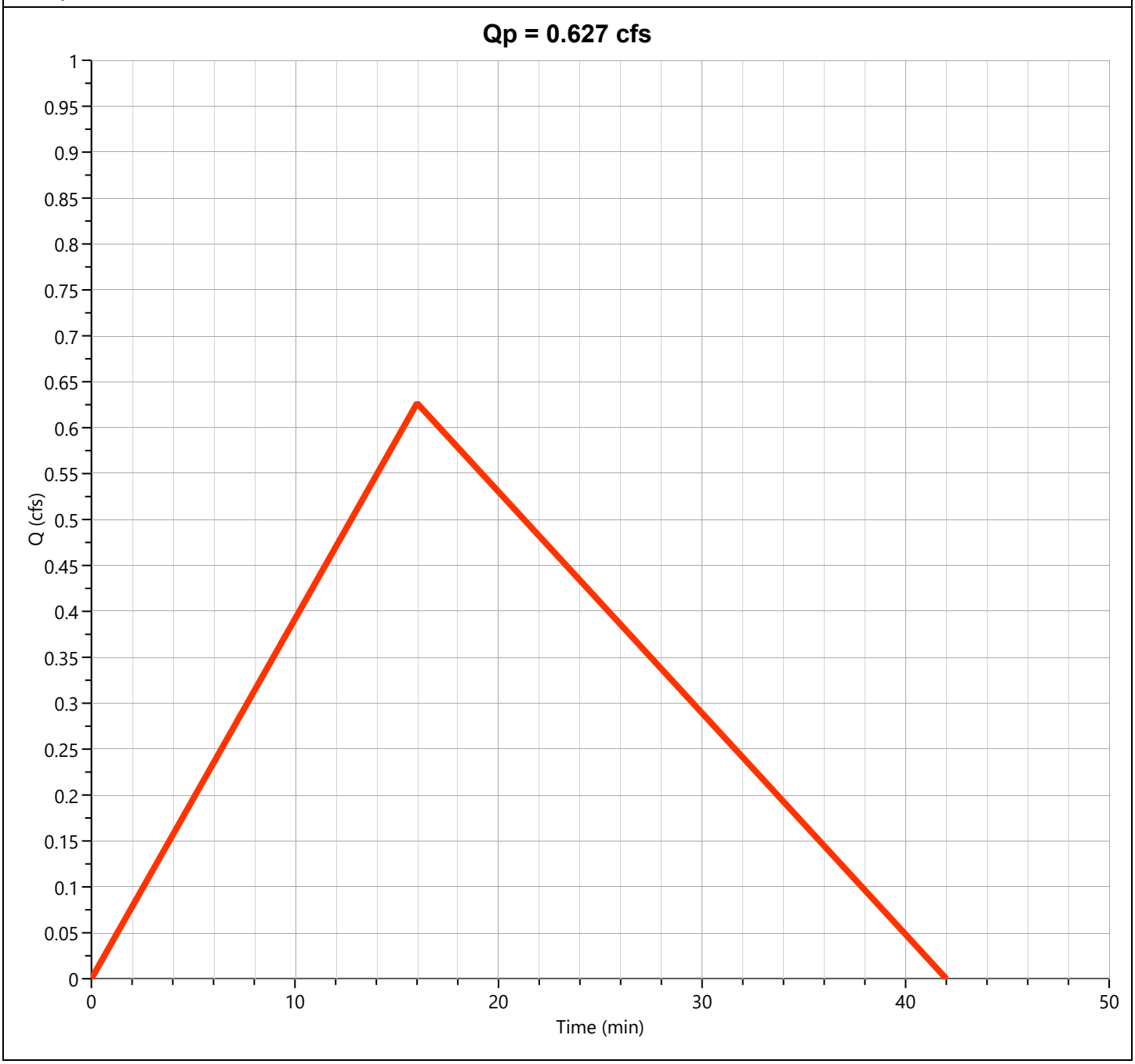
Hydrograph Type	= Junction	Peak Flow	= 6.275 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Hydrograph Volume	= 4,351 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 1.61 ac



Pre-Dev Basin "C"

Hyd. No. 4

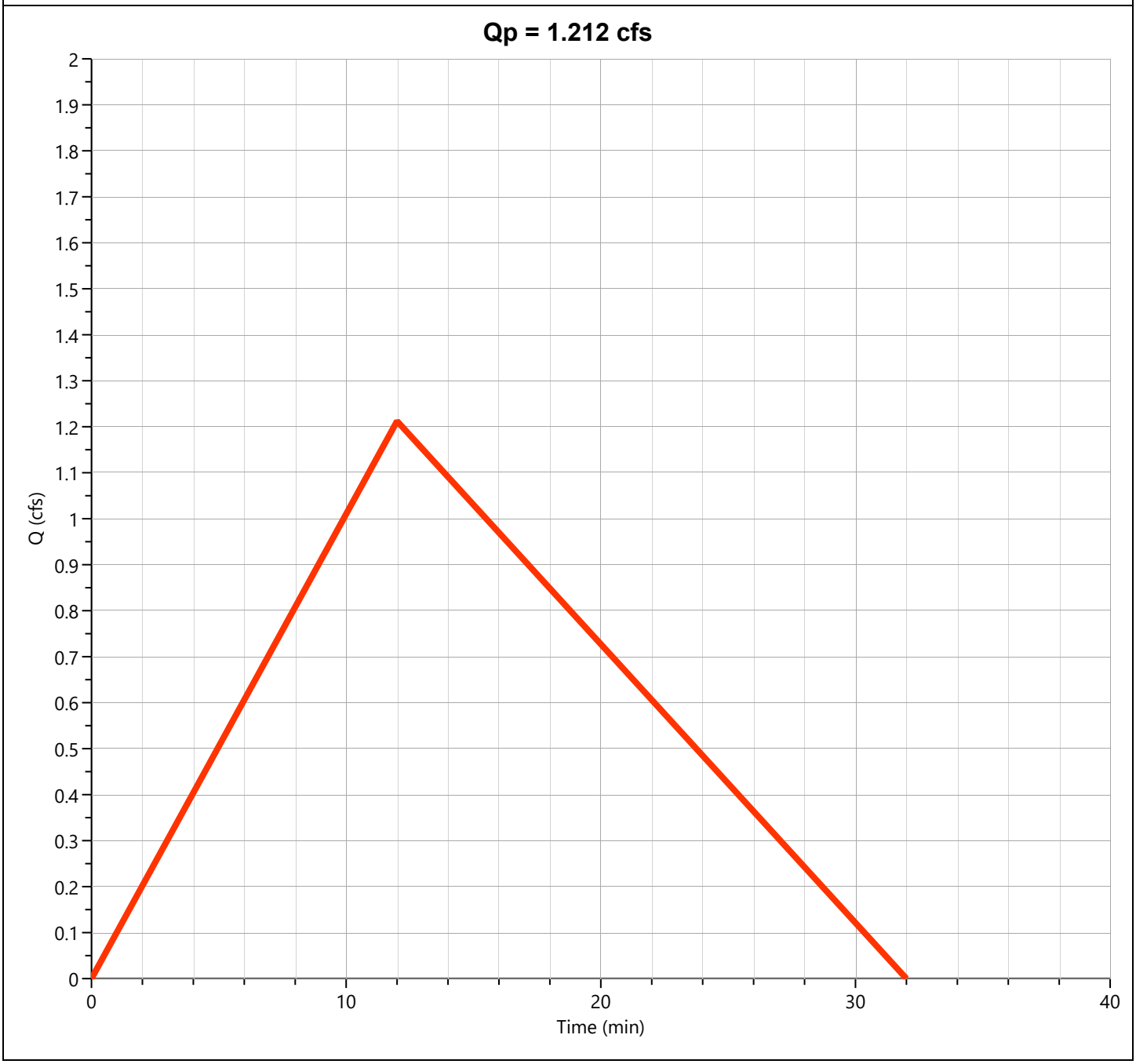
Hydrograph Type	= Rational	Peak Flow	= 0.627 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 803 cuft
Drainage Area	= 0.2 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.60 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "D"

Hyd. No. 5

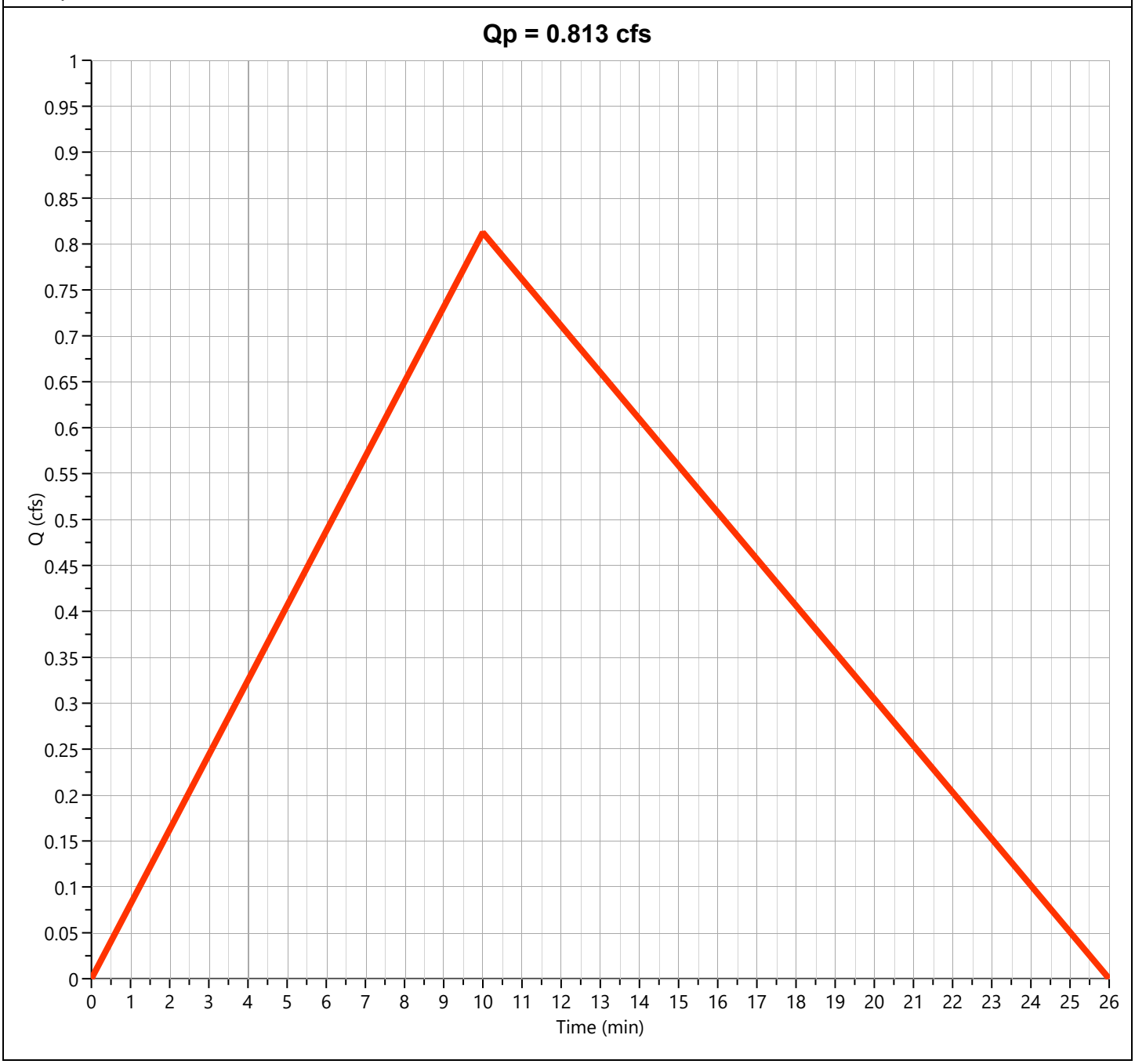
Hydrograph Type	= Rational	Peak Flow	= 1.212 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 1,165 cuft
Drainage Area	= 0.34 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.37 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E"

Hyd. No. 6

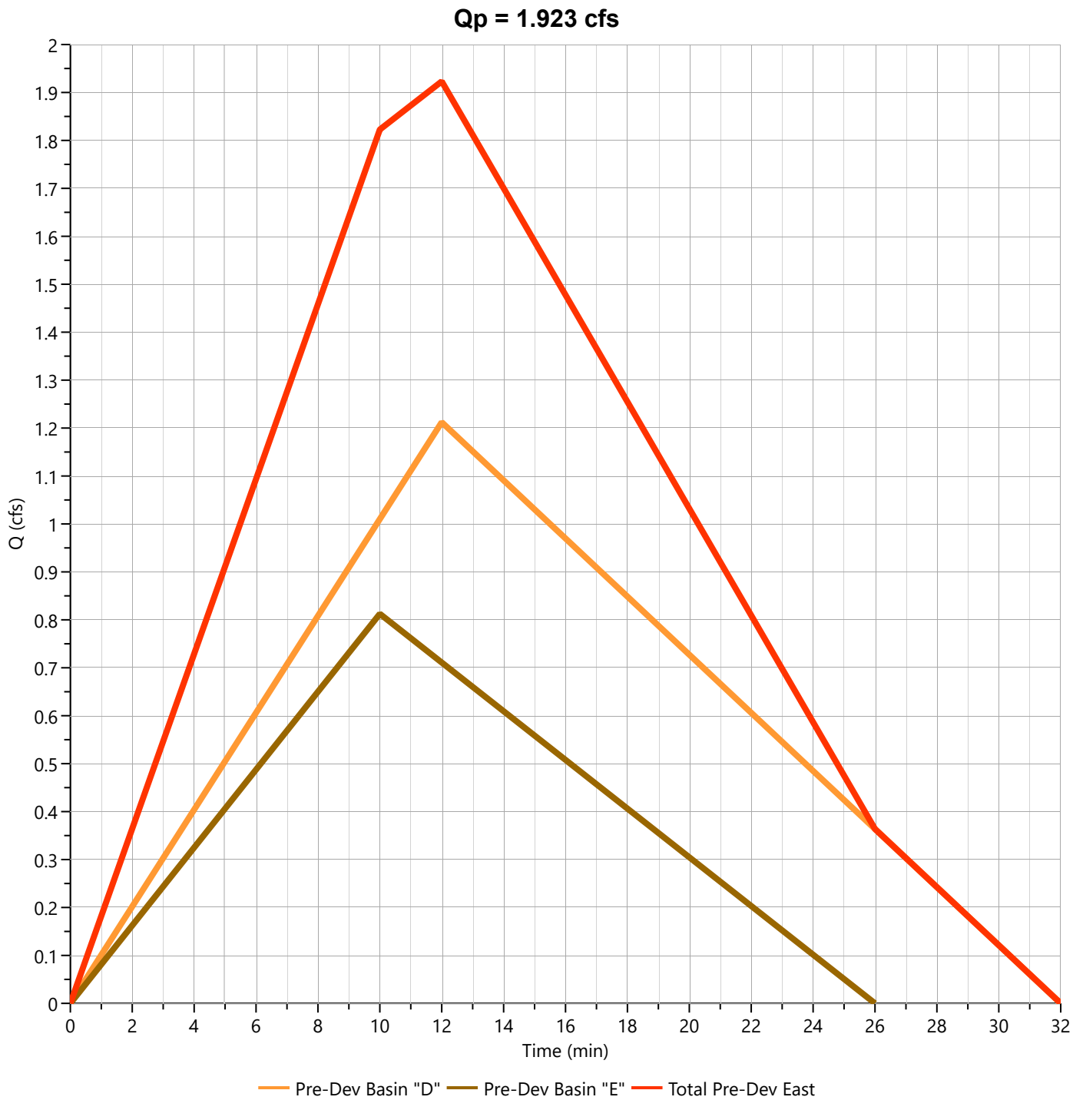
Hydrograph Type	= Rational	Peak Flow	= 0.813 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 651 cuft
Drainage Area	= 0.21 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.91 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Pre-Dev East

Hyd. No. 7

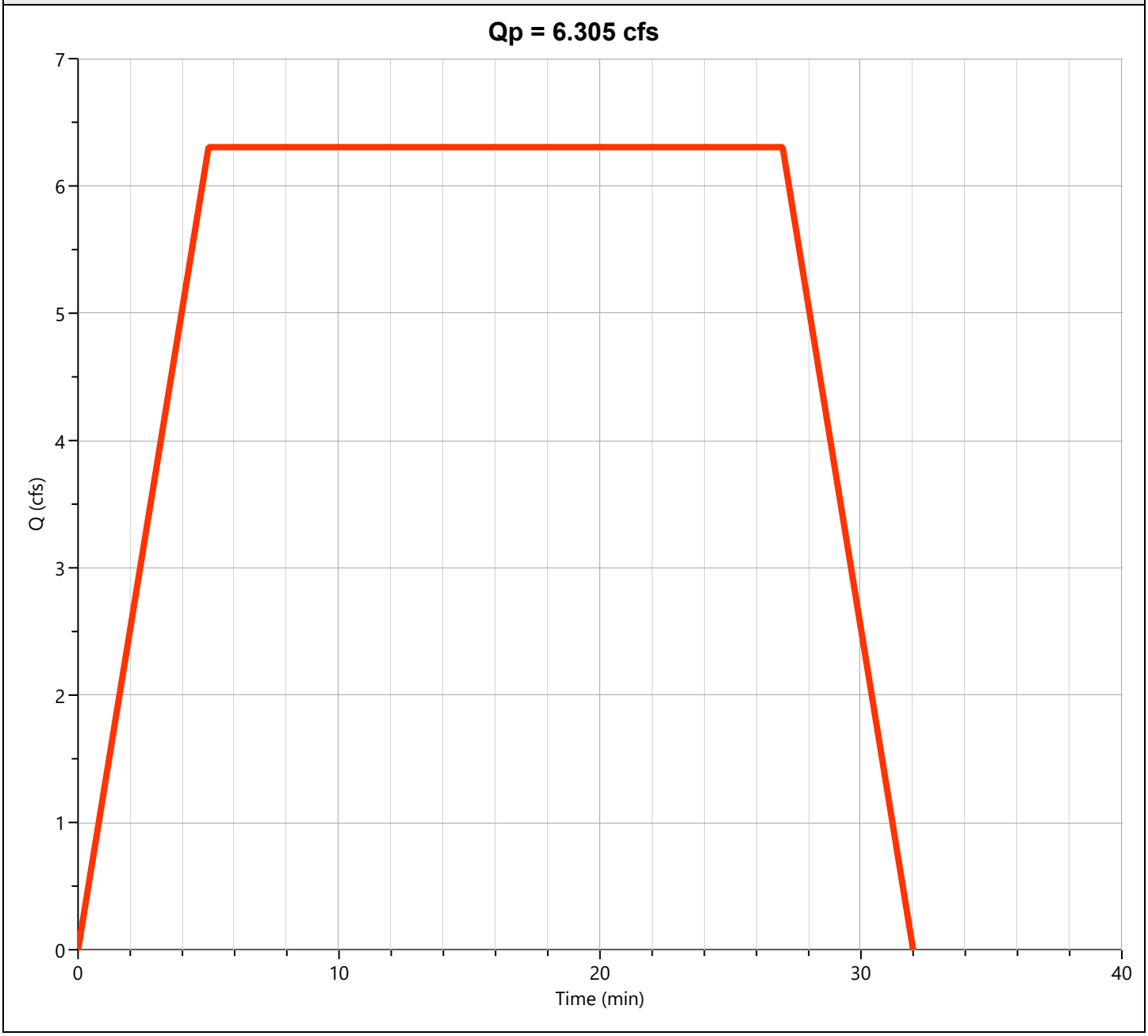
Hydrograph Type	= Junction	Peak Flow	= 1.923 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,797 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 0.55 ac



Post-Dev Basin A

Hyd. No. 8

Hydrograph Type	= Mod Rational	Peak Flow	= 6.305 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 10,214 cuft
Drainage Area	= 1.5 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.42 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 5.4 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft



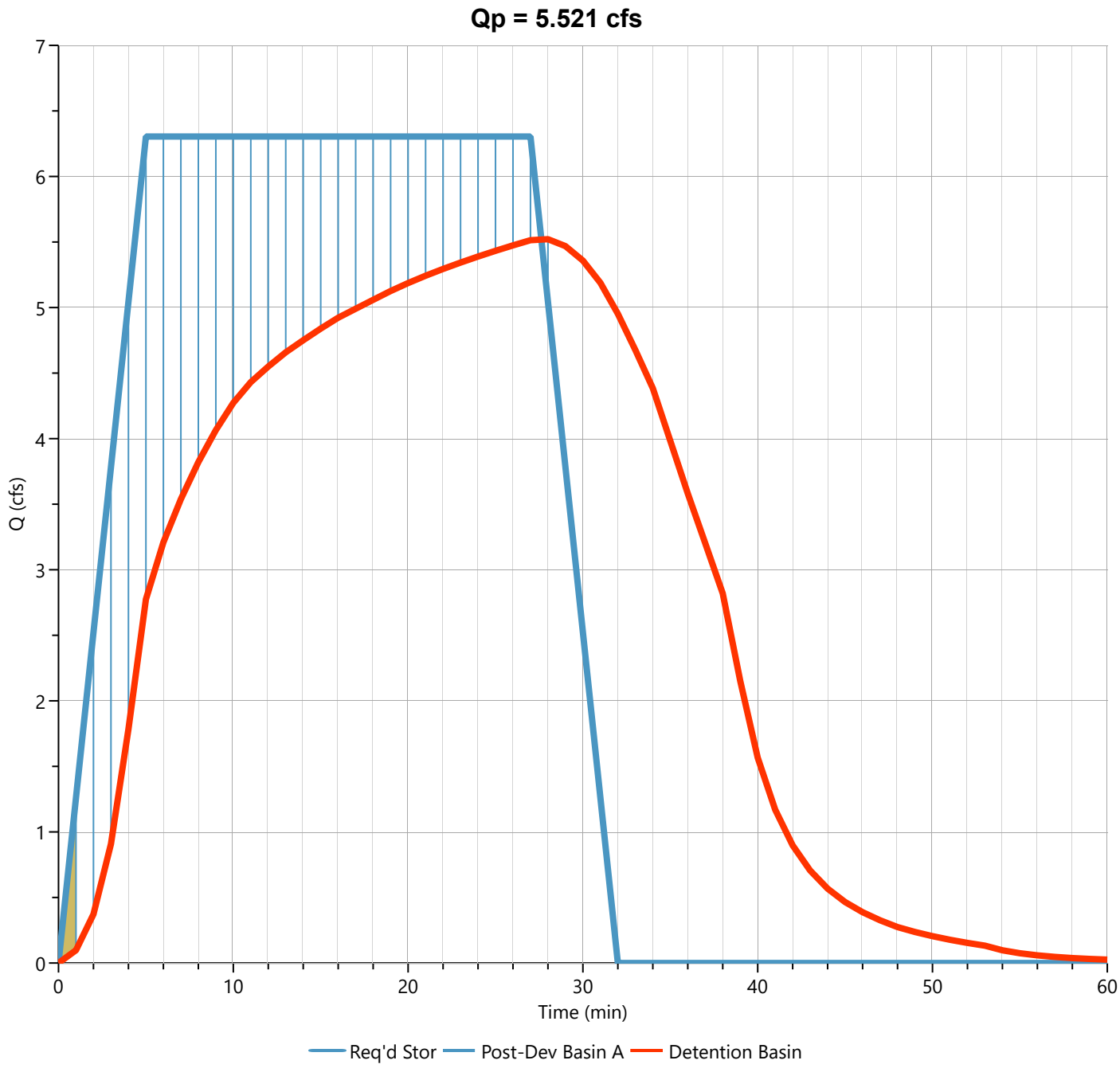
Detention Basin

Hyd. No. 9

Hydrograph Type	= Pond Route	Peak Flow	= 5.521 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.47 hrs
Time Interval	= 1 min	Hydrograph Volume	= 10,212 cuft
Inflow Hydrograph	= 8 - Post-Dev Basin A	Max. Elevation	= 421.95 ft
Pond Name	= Bryant Pharmacy Detention Pond	Max. Storage	= 2,780 cuft

Pond Routing by Storage Indication Method

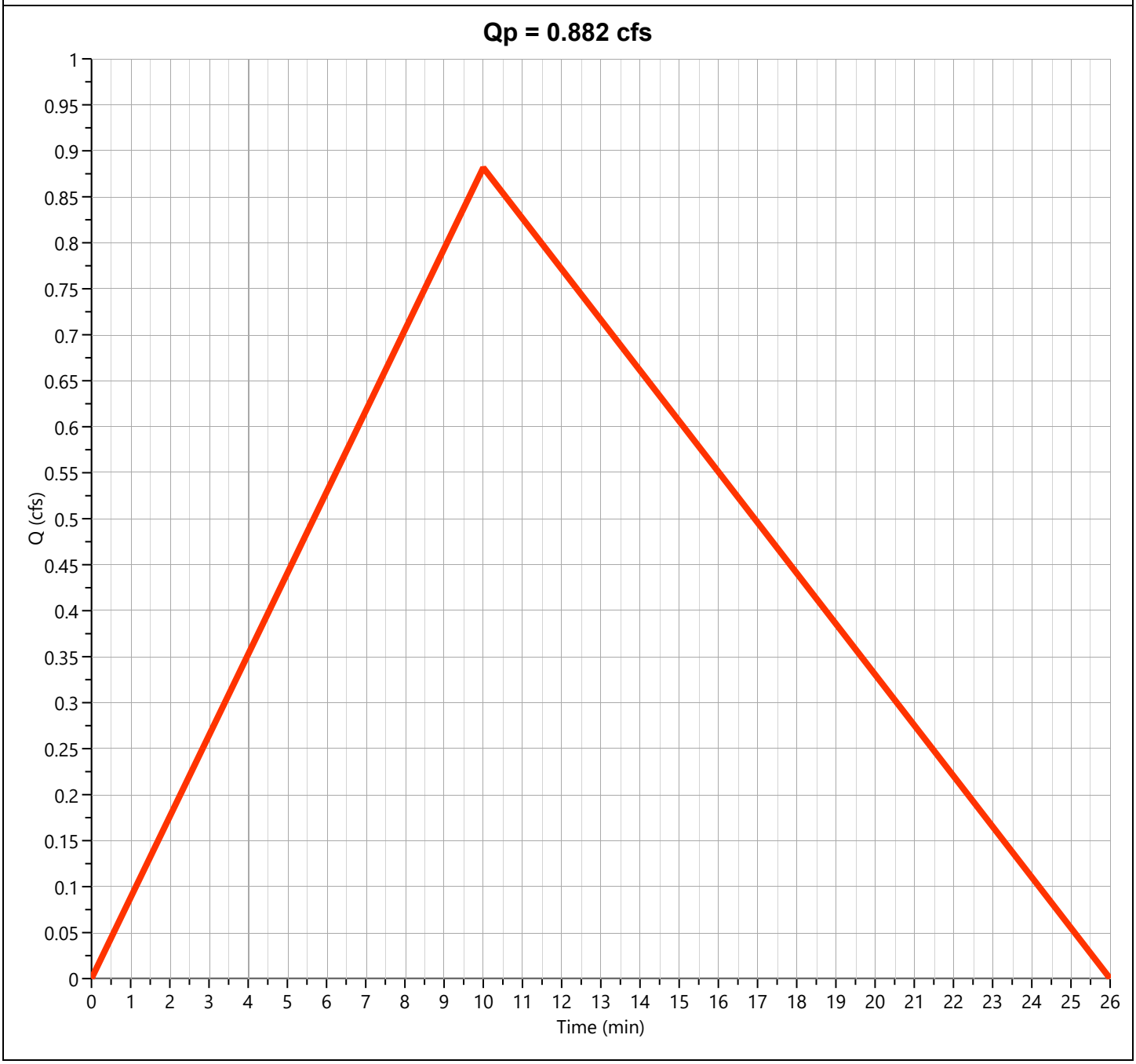
Center of mass detention time = 7 min



Post-Dev Basin B

Hyd. No. 10

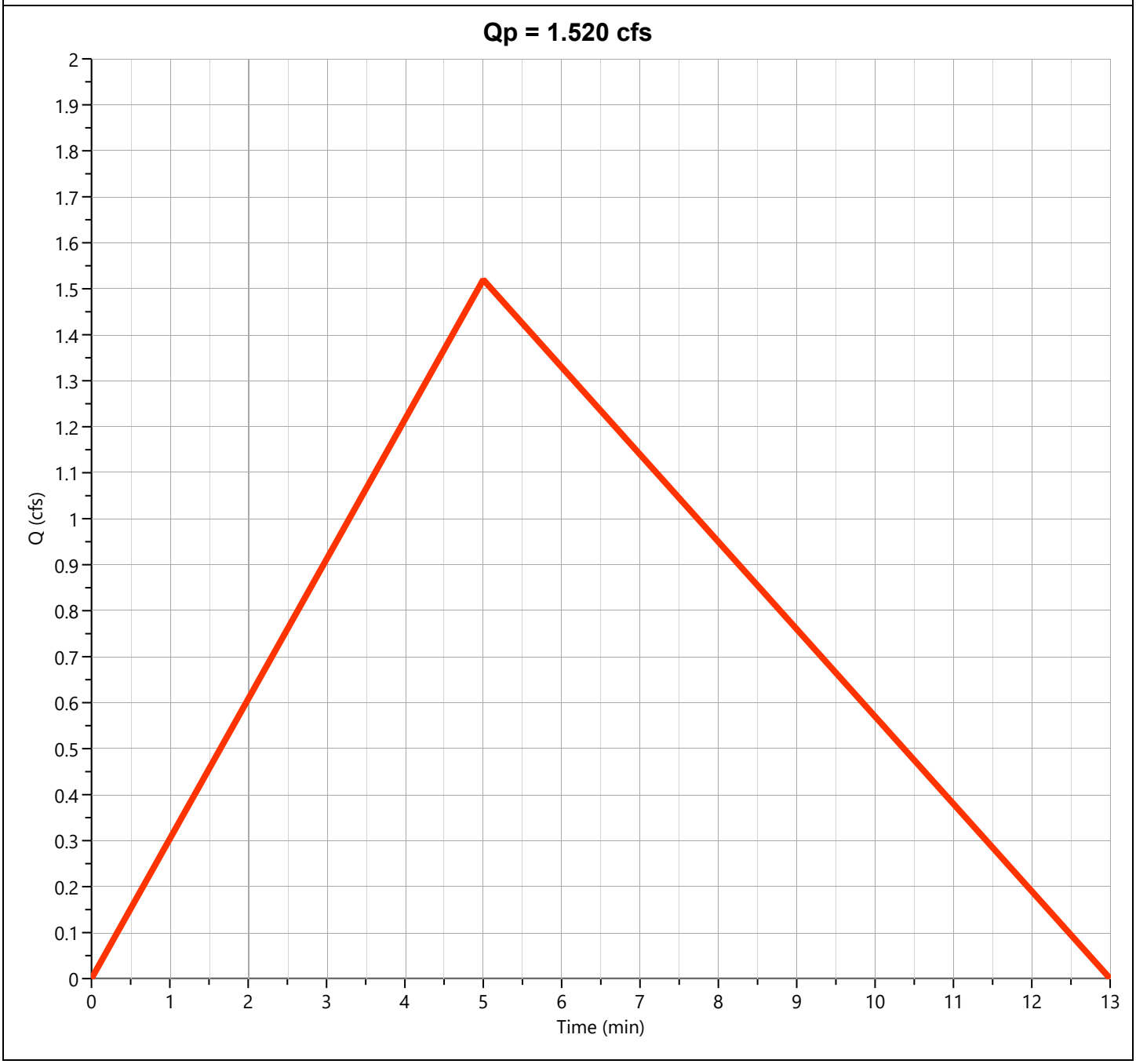
Hydrograph Type	= Rational	Peak Flow	= 0.882 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 706 cuft
Drainage Area	= 0.22 ac	Runoff Coeff.	= 0.58
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.91 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "C"

Hyd. No. 11

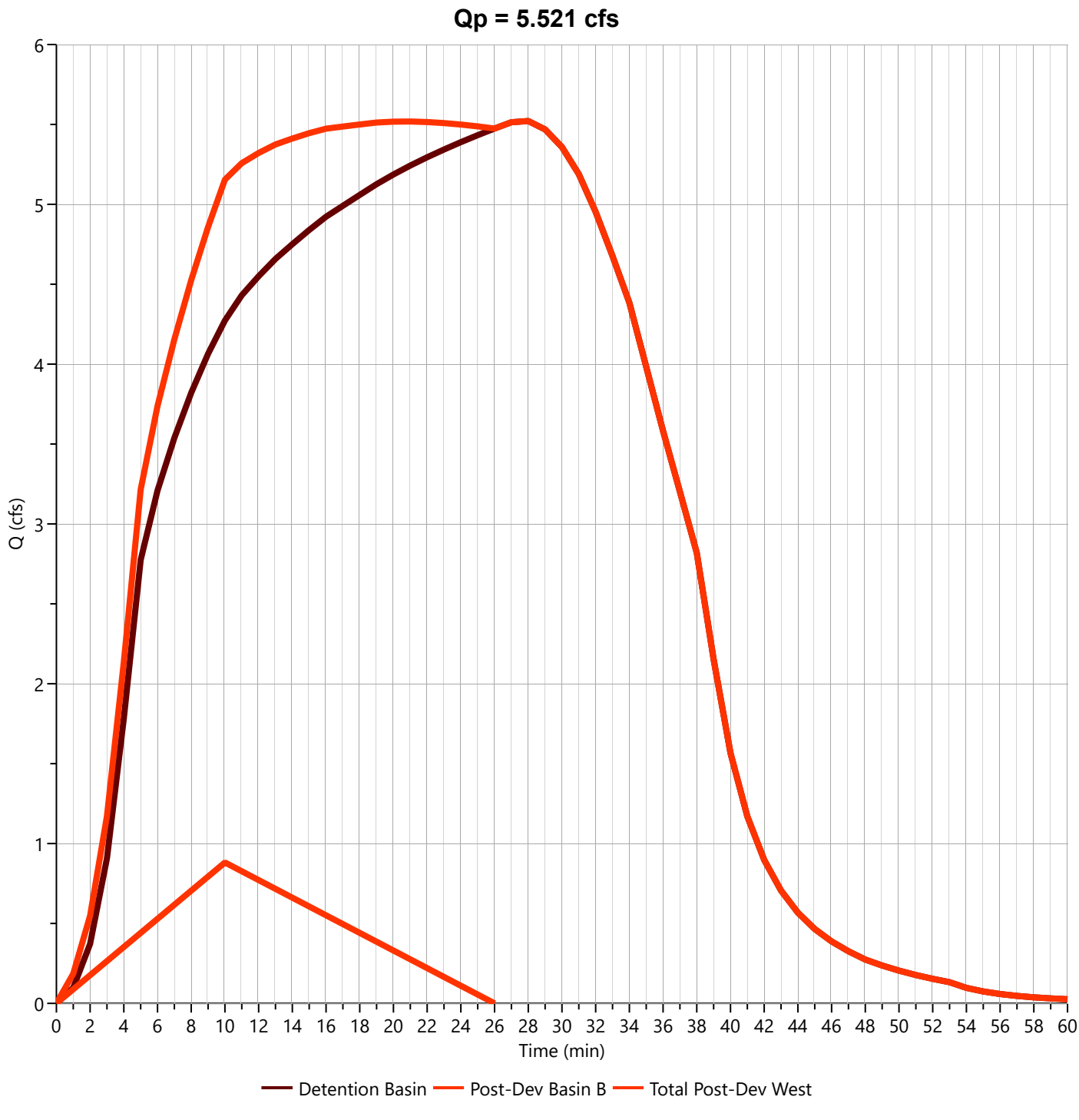
Hydrograph Type	= Rational	Peak Flow	= 1.520 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 609 cuft
Drainage Area	= 0.237 ac	Runoff Coeff.	= 0.68
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 9.43 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Post-Dev West

Hyd. No. 12

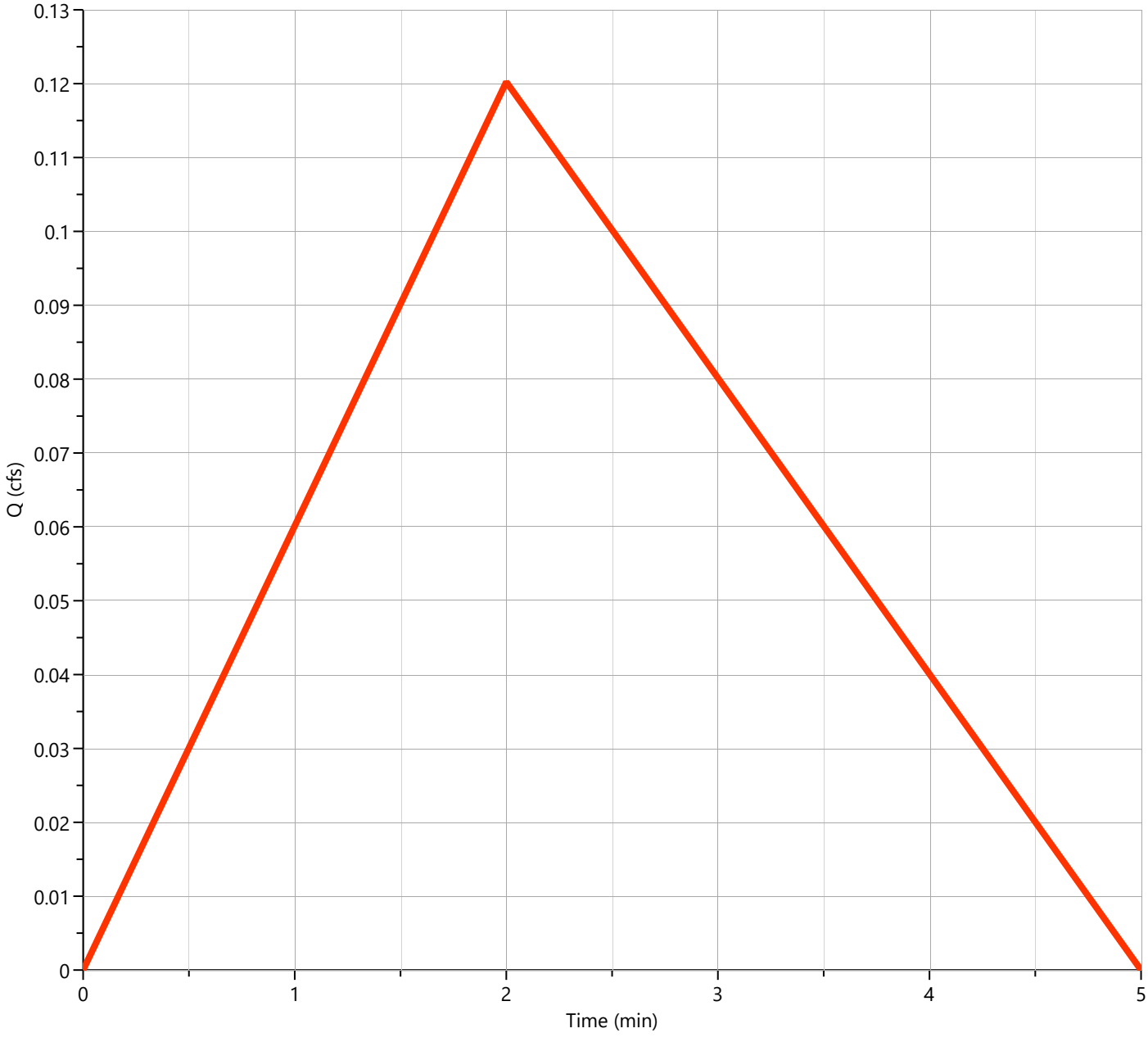
Hydrograph Type	= Junction	Peak Flow	= 5.521 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.47 hrs
Time Interval	= 1 min	Hydrograph Volume	= 10,899 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 0.22 ac



Post-Dev Basin "D"

Hyd. No. 13

Hydrograph Type	= Rational	Peak Flow	= 0.120 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.03 hrs
Time Interval	= 1 min	Runoff Volume	= 19.3 cuft
Drainage Area	= 0.017 ac	Runoff Coeff.	= 0.75
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 2.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 9.43 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

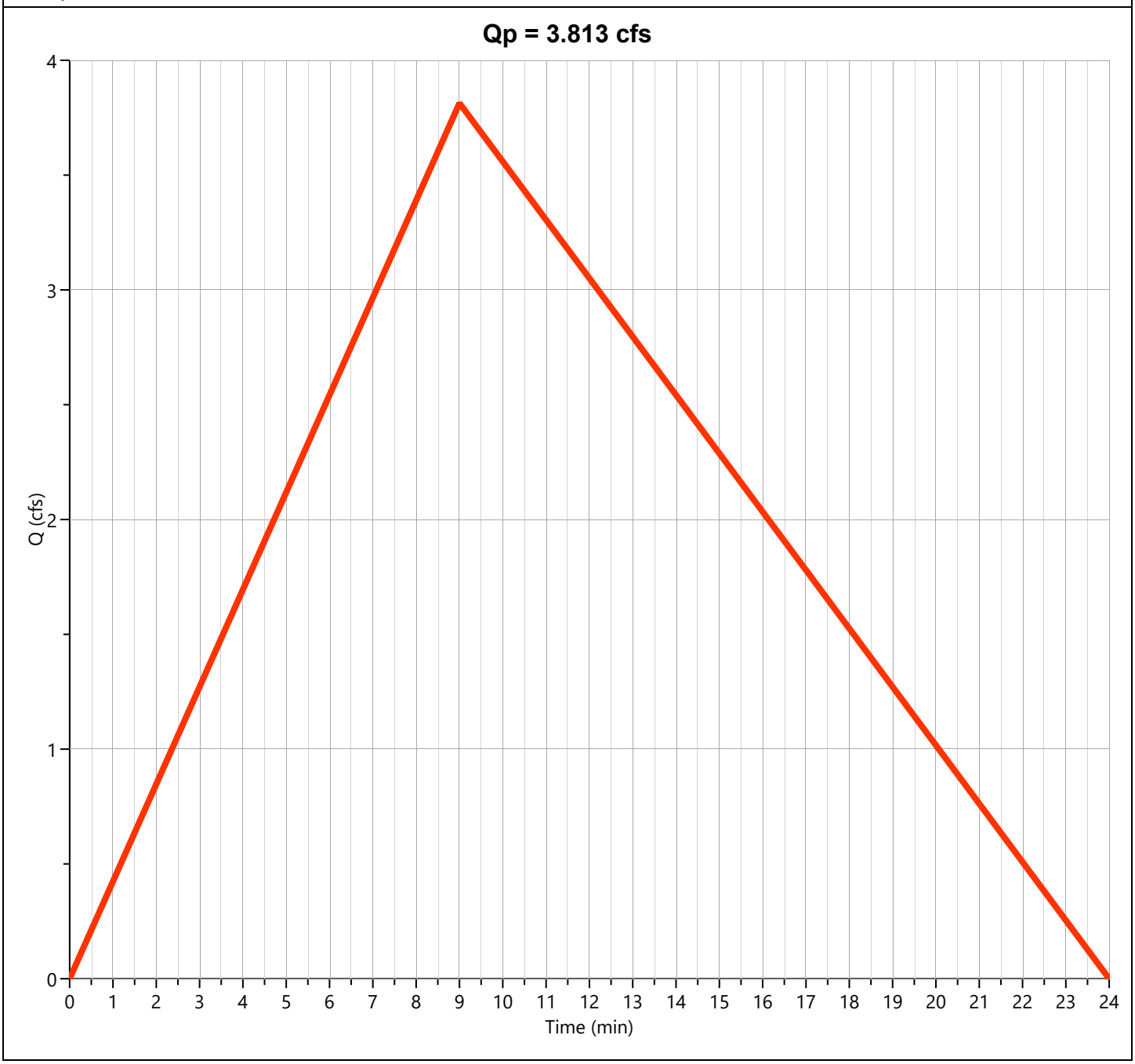
Project Name: Bryant Pharmacy
File: Detention Calculation 11-7-25.hys
11-07-2025

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"	3.813	0.15	2,749	----		
2	Rational	Pre-Dev Basin "B"	3.721	0.12	2,087	----		
3	Junction	Total Pre-Dev West	6.858	0.15	4,755	1, 2		
4	Rational	Pre-Dev Basin "C"	0.686	0.27	879	----		
5	Rational	Pre-Dev Basin "D"	1.325	0.20	1,274	----		
6	Rational	Pre-Dev Basin "E"	0.888	0.17	712	----		
7	Junction	Total Pre-Dev East	2.103	0.20	1,965	5, 6		
8	Mod Rational	Post-Dev Basin A	6.901	0.08	11,180	----		
9	Pond Route	Detention Basin	5.825	0.47	11,178	8	422.25	3,292
10	Rational	Post-Dev Basin B	0.964	0.17	772	----		
11	Rational	Post-Dev Basin "C"	1.660	0.08	665	----		
12	Junction	Total Post-Dev West	5.867	0.35	11,930	9, 10		
13	Rational	Post-Dev Basin "D"	0.131	0.03	21.0	----		

Pre-Dev Basin "A"

Hyd. No. 1

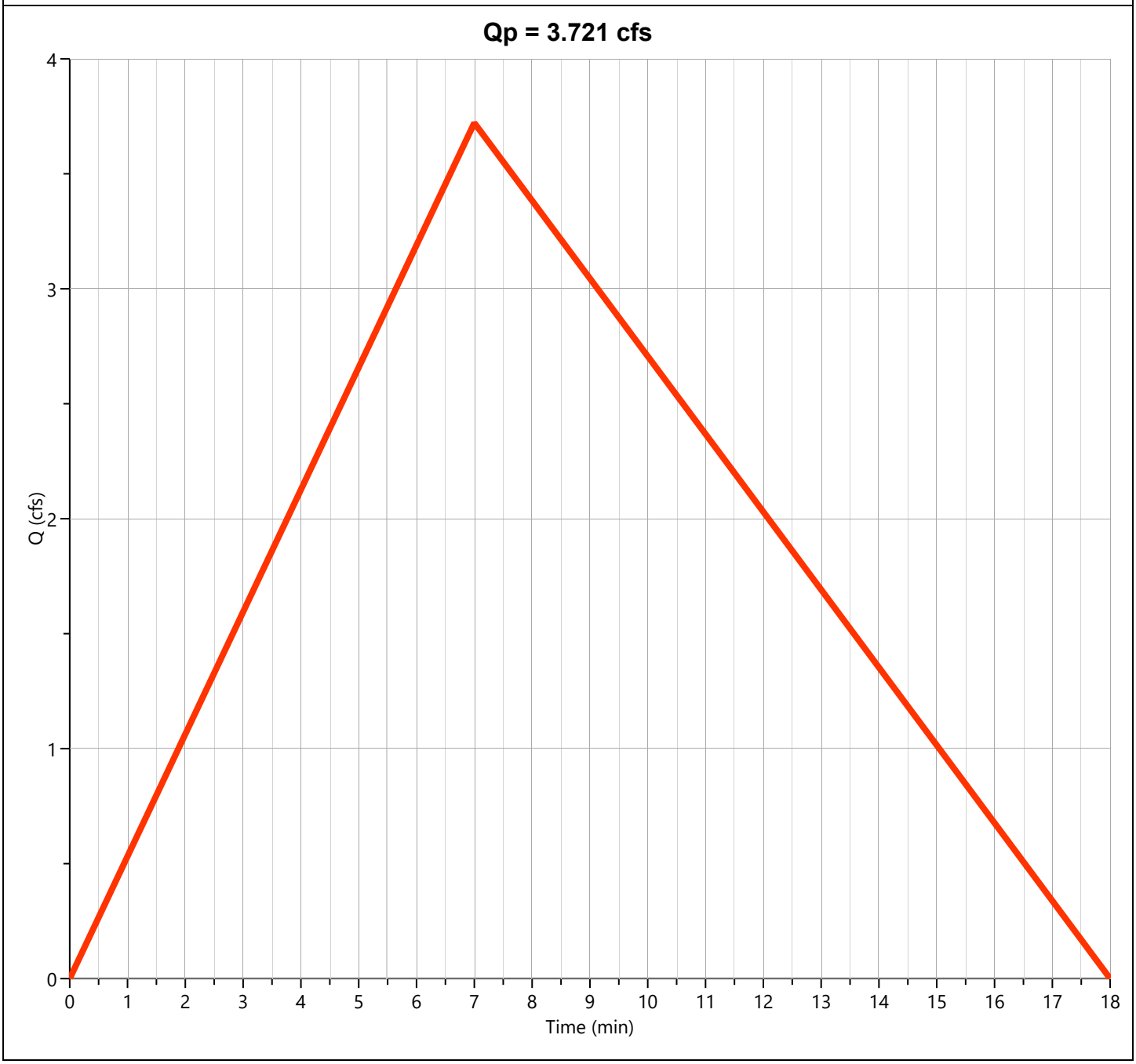
Hydrograph Type	= Rational	Peak Flow	= 3.813 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 2,749 cuft
Drainage Area	= 0.86 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 9.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.92 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "B"

Hyd. No. 2

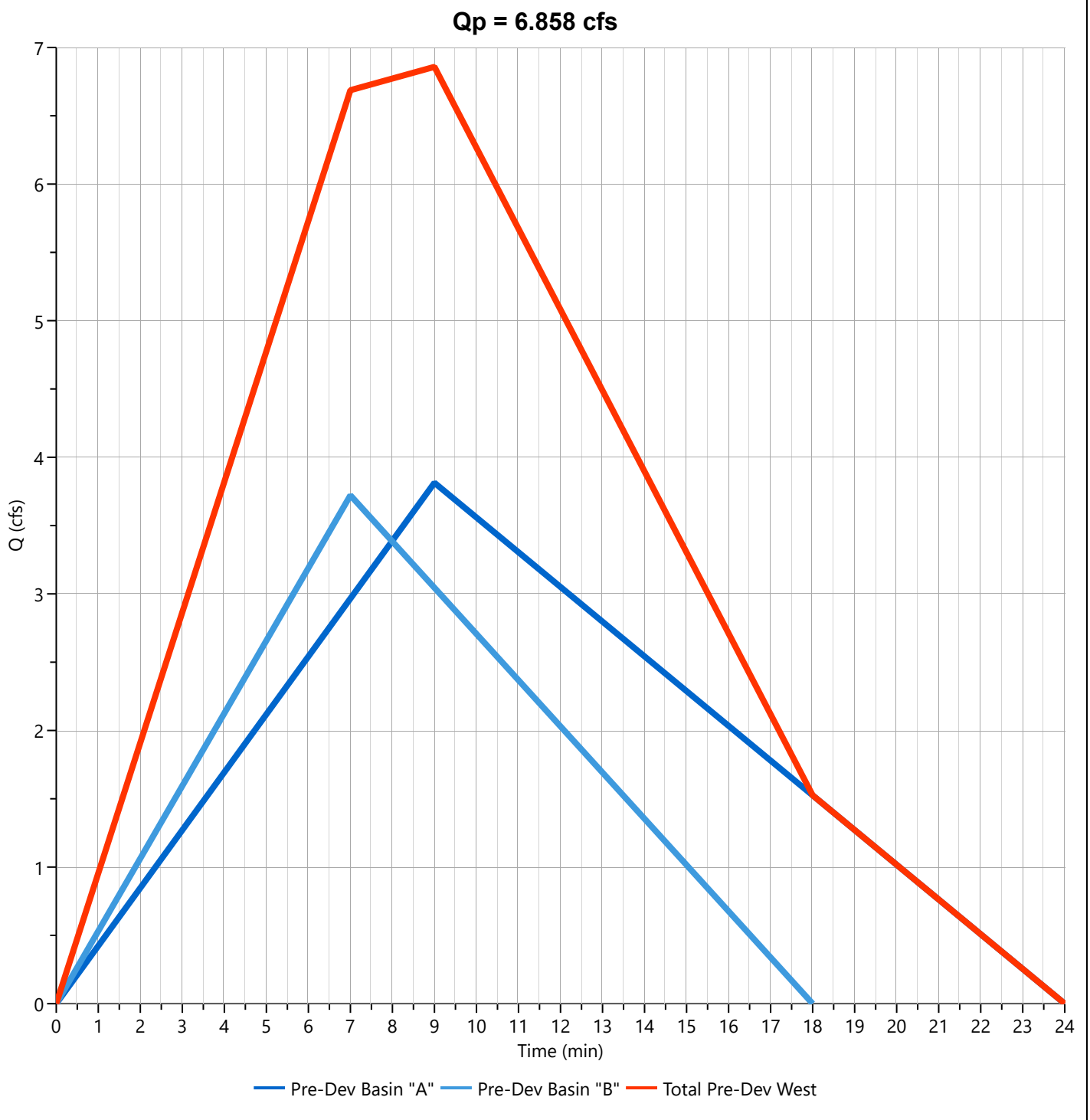
Hydrograph Type	= Rational	Peak Flow	= 3.721 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.12 hrs
Time Interval	= 1 min	Runoff Volume	= 2,087 cuft
Drainage Area	= 0.75 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 7.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.86 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Pre-Dev West

Hyd. No. 3

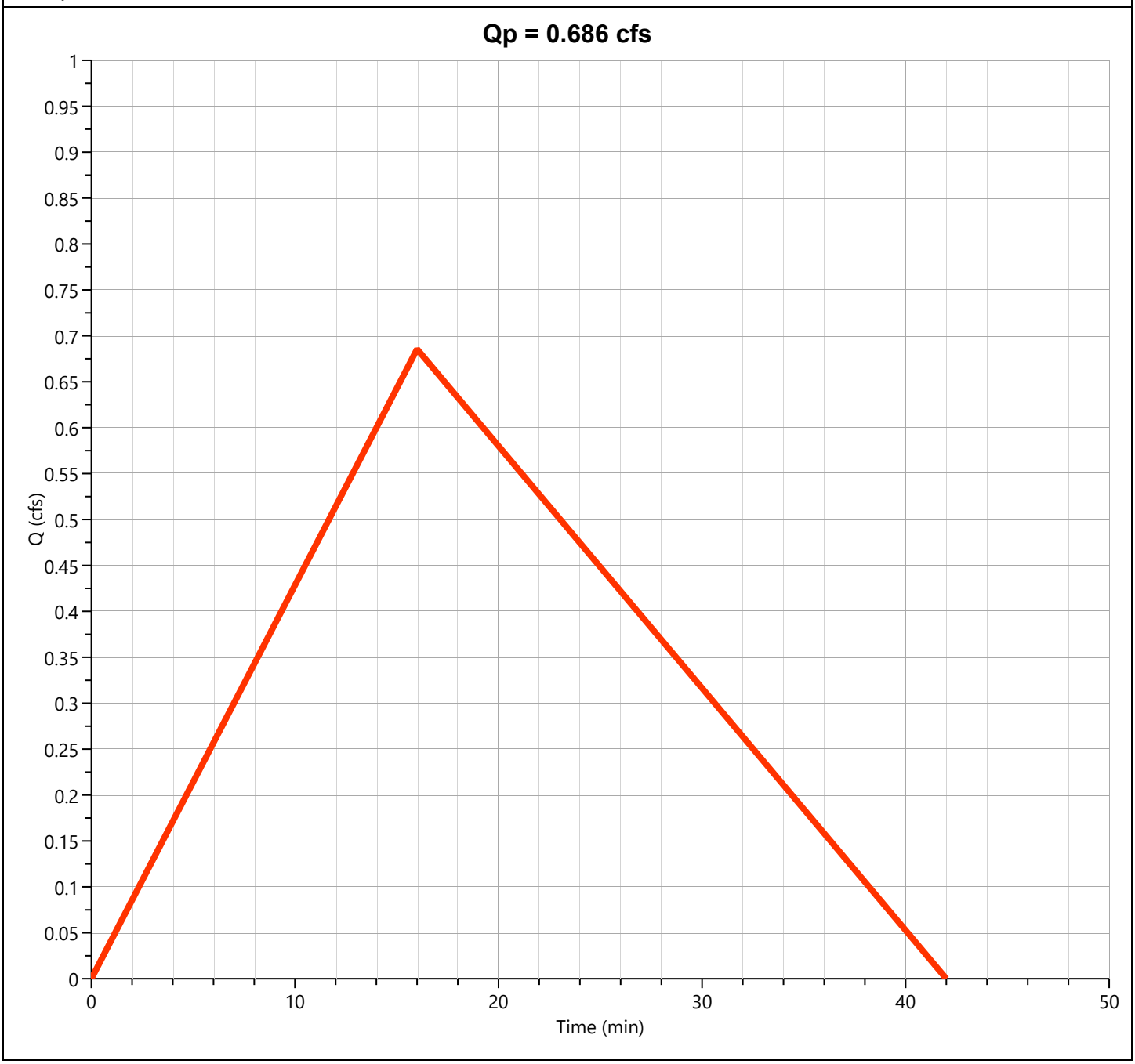
Hydrograph Type	= Junction	Peak Flow	= 6.858 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Hydrograph Volume	= 4,755 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 1.61 ac



Pre-Dev Basin "C"

Hyd. No. 4

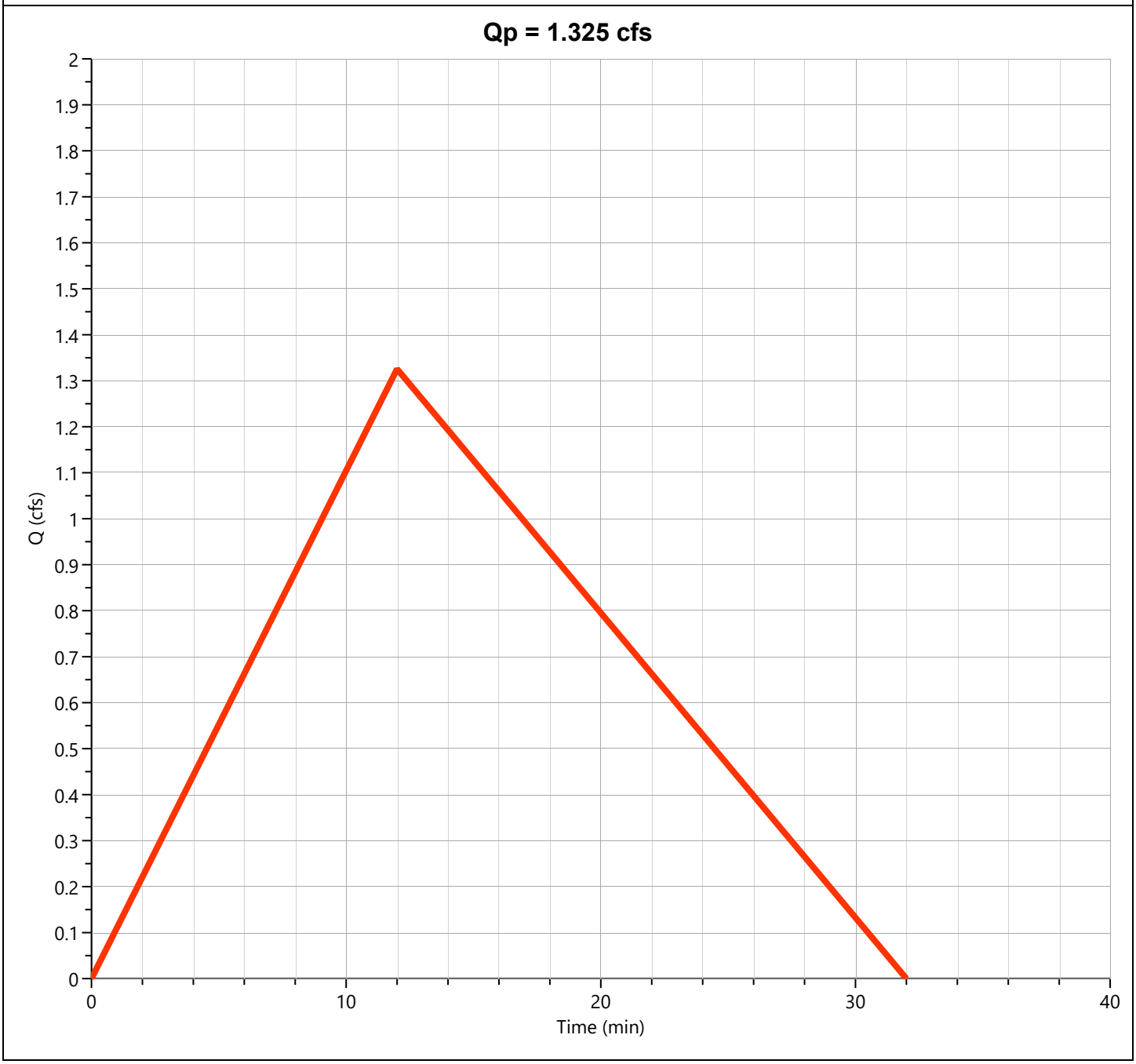
Hydrograph Type	= Rational	Peak Flow	= 0.686 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 879 cuft
Drainage Area	= 0.2 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.12 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "D"

Hyd. No. 5

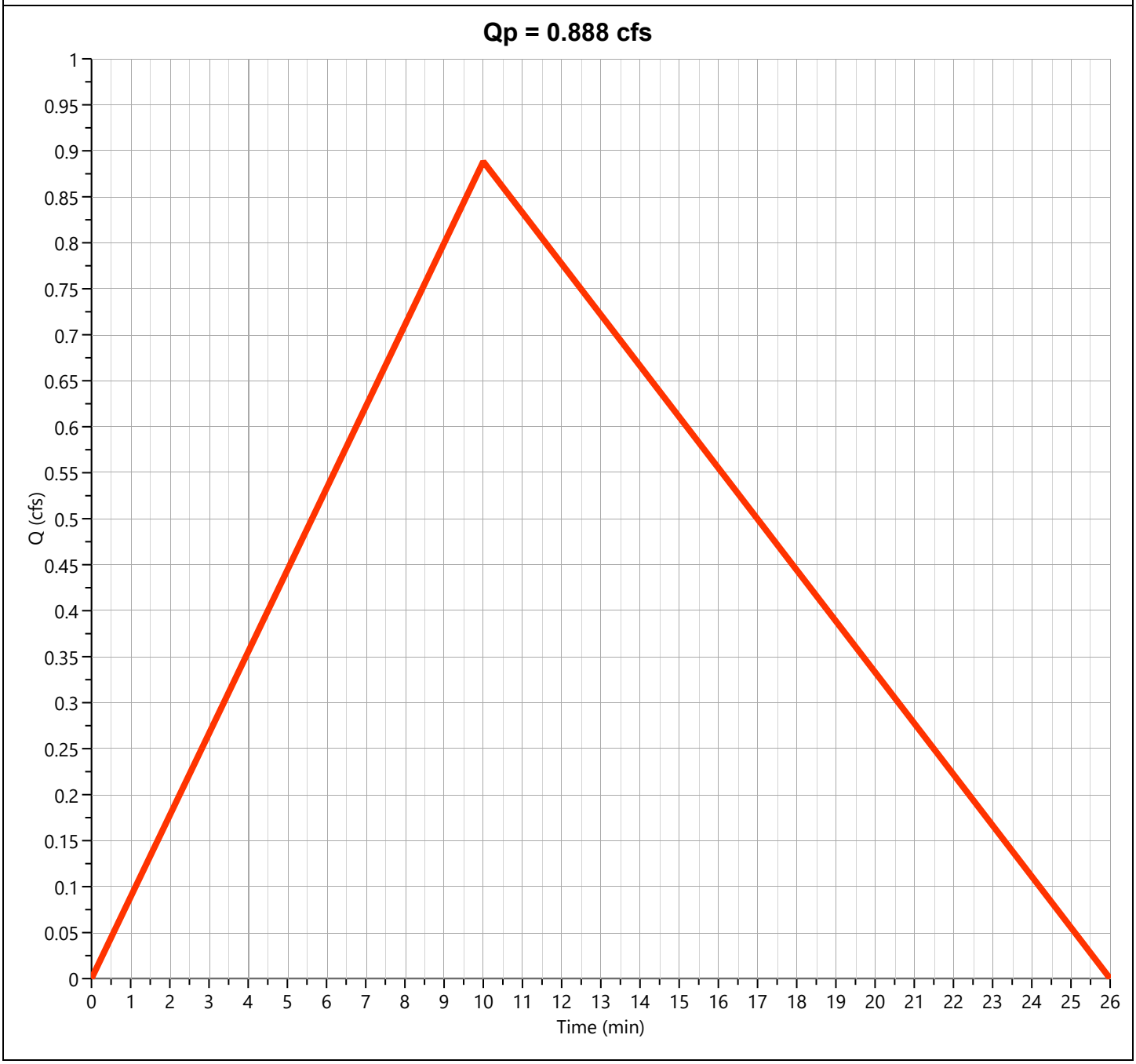
Hydrograph Type	= Rational	Peak Flow	= 1.325 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 1,274 cuft
Drainage Area	= 0.34 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.96 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E"

Hyd. No. 6

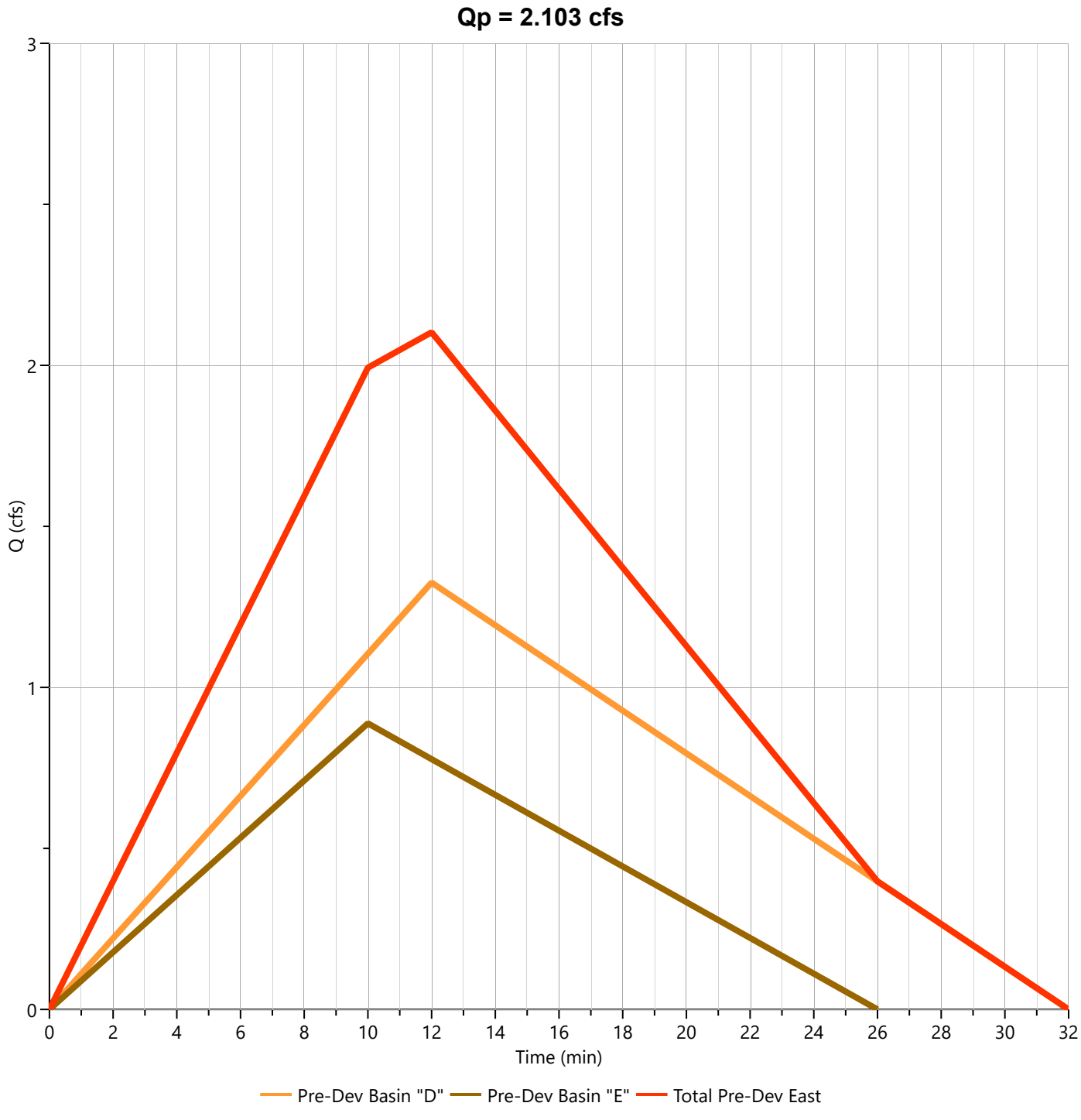
Hydrograph Type	= Rational	Peak Flow	= 0.888 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 712 cuft
Drainage Area	= 0.21 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.55 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Pre-Dev East

Hyd. No. 7

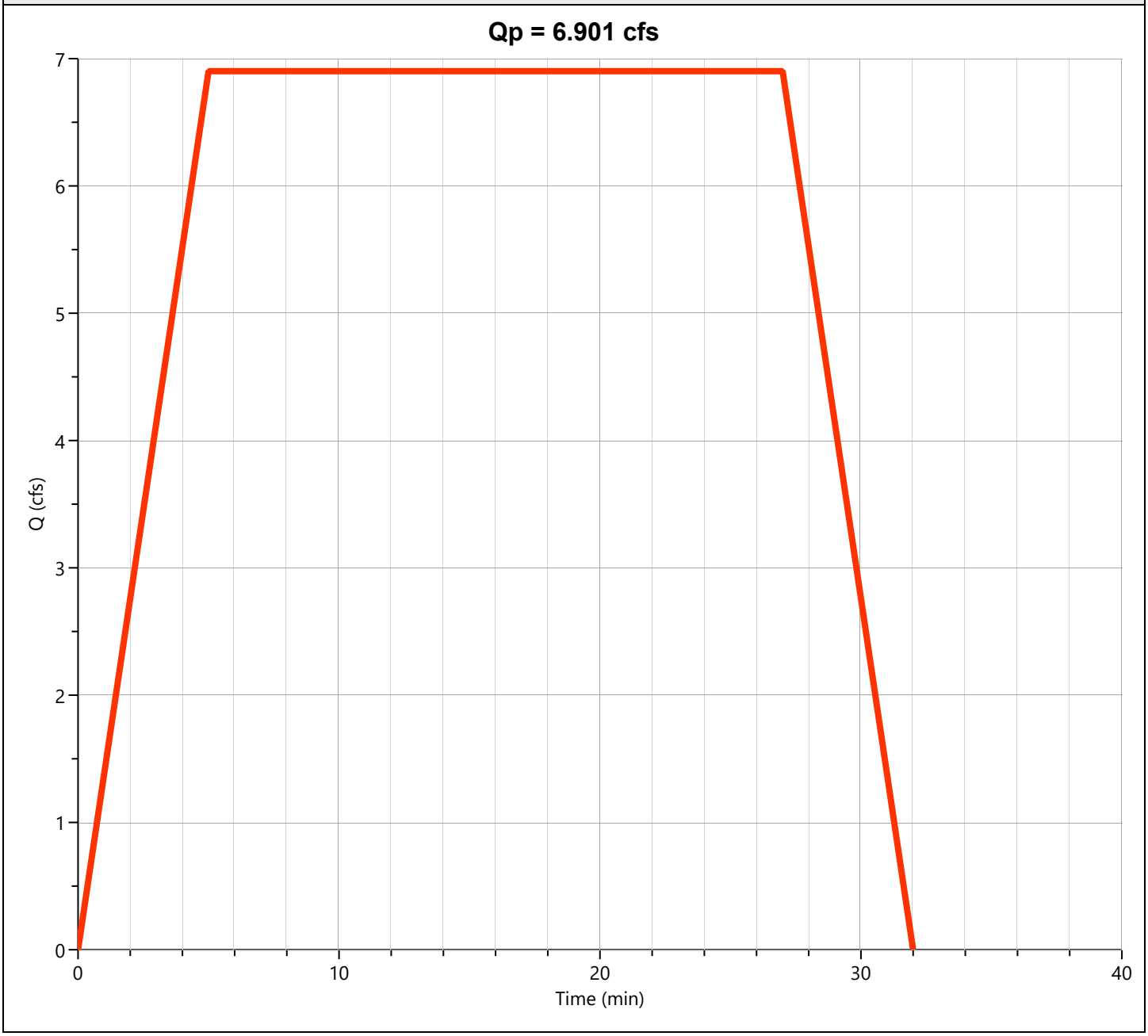
Hydrograph Type	= Junction	Peak Flow	= 2.103 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,965 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 0.55 ac



Post-Dev Basin A

Hyd. No. 8

Hydrograph Type	= Mod Rational	Peak Flow	= 6.901 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 11,180 cuft
Drainage Area	= 1.5 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.84 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 5.4 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft



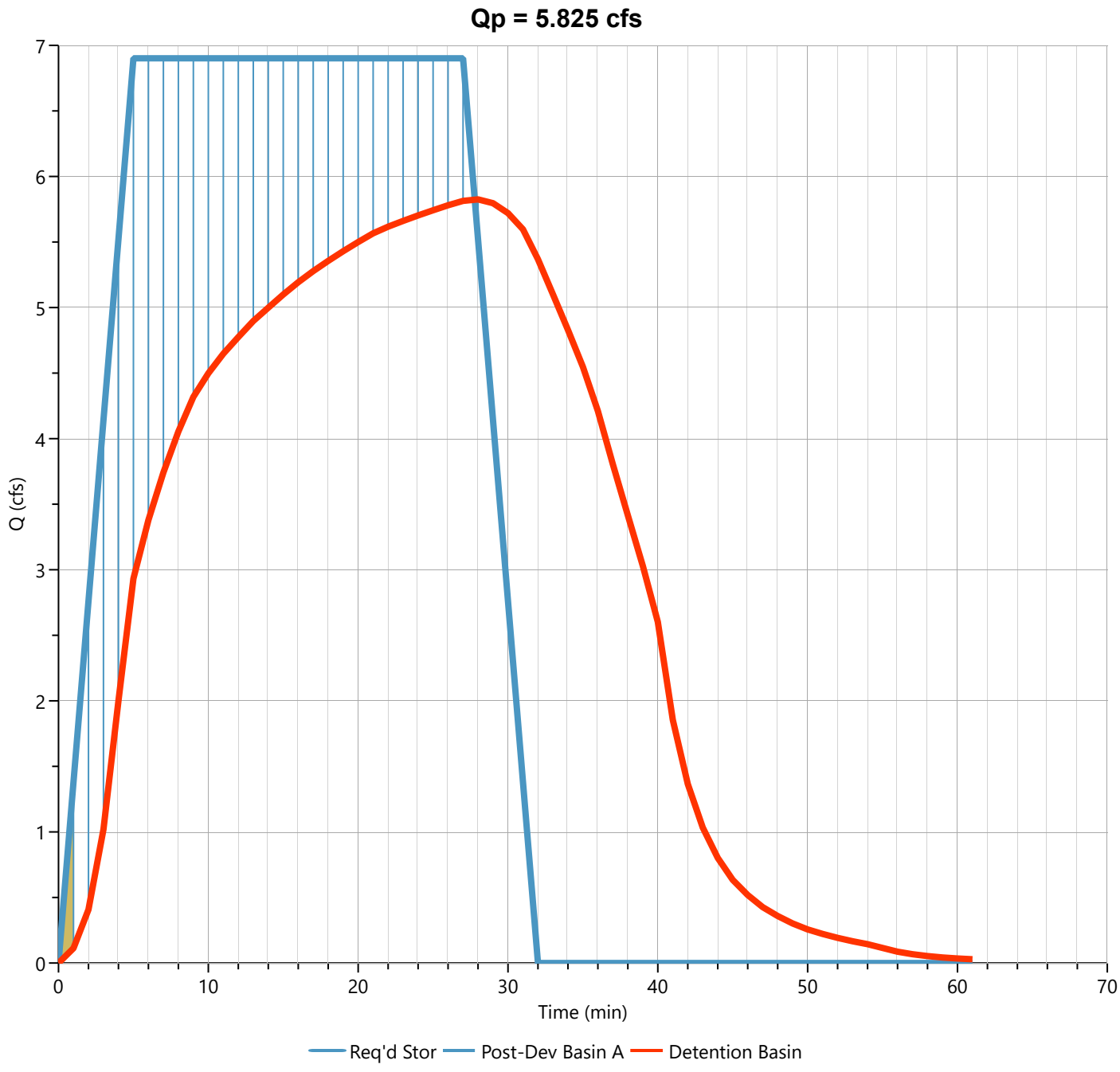
Detention Basin

Hyd. No. 9

Hydrograph Type	= Pond Route	Peak Flow	= 5.825 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.47 hrs
Time Interval	= 1 min	Hydrograph Volume	= 11,178 cuft
Inflow Hydrograph	= 8 - Post-Dev Basin A	Max. Elevation	= 422.25 ft
Pond Name	= Bryant Pharmacy Detention Pond	Max. Storage	= 3,292 cuft

Pond Routing by Storage Indication Method

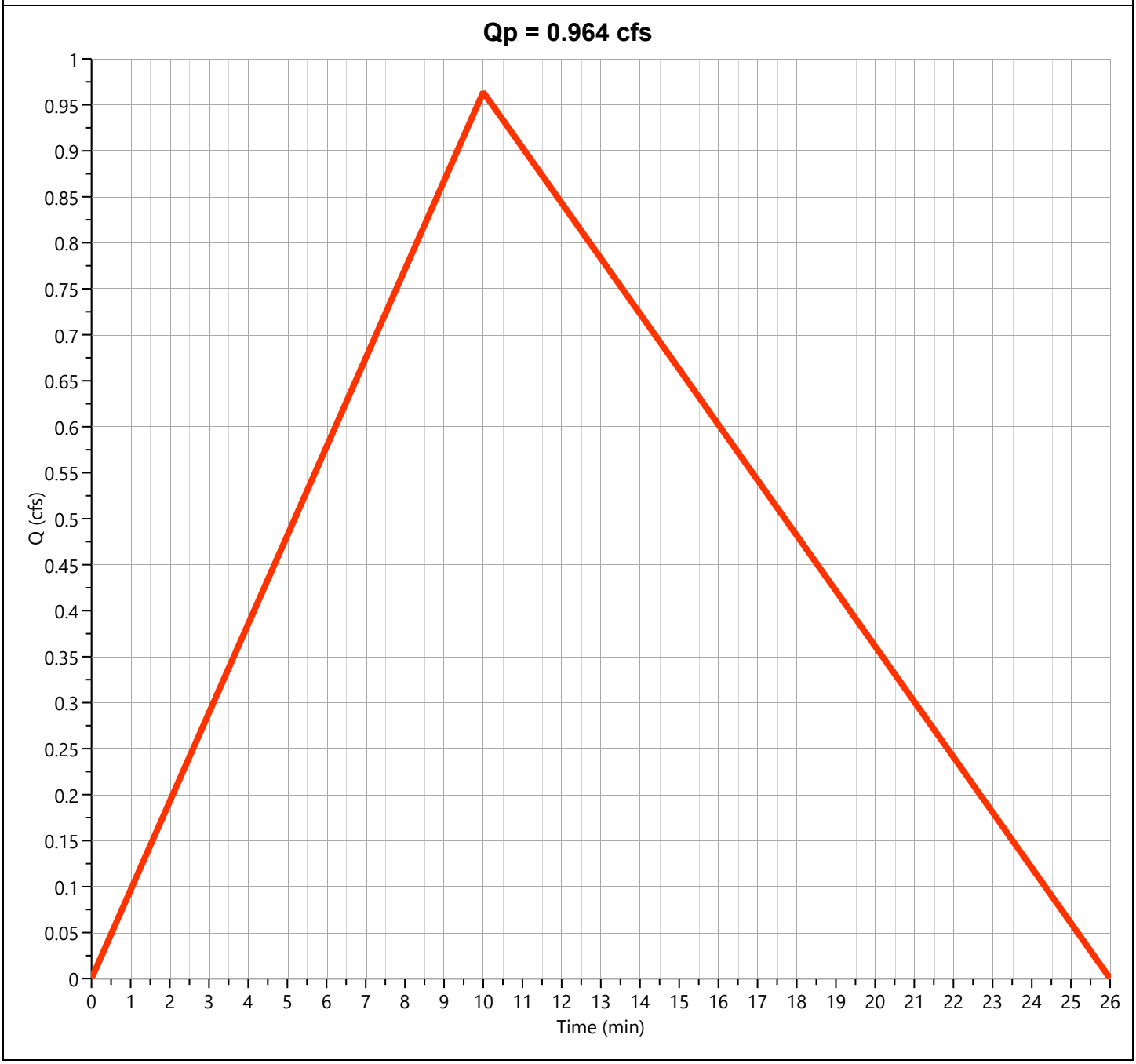
Center of mass detention time = 7 min



Post-Dev Basin B

Hyd. No. 10

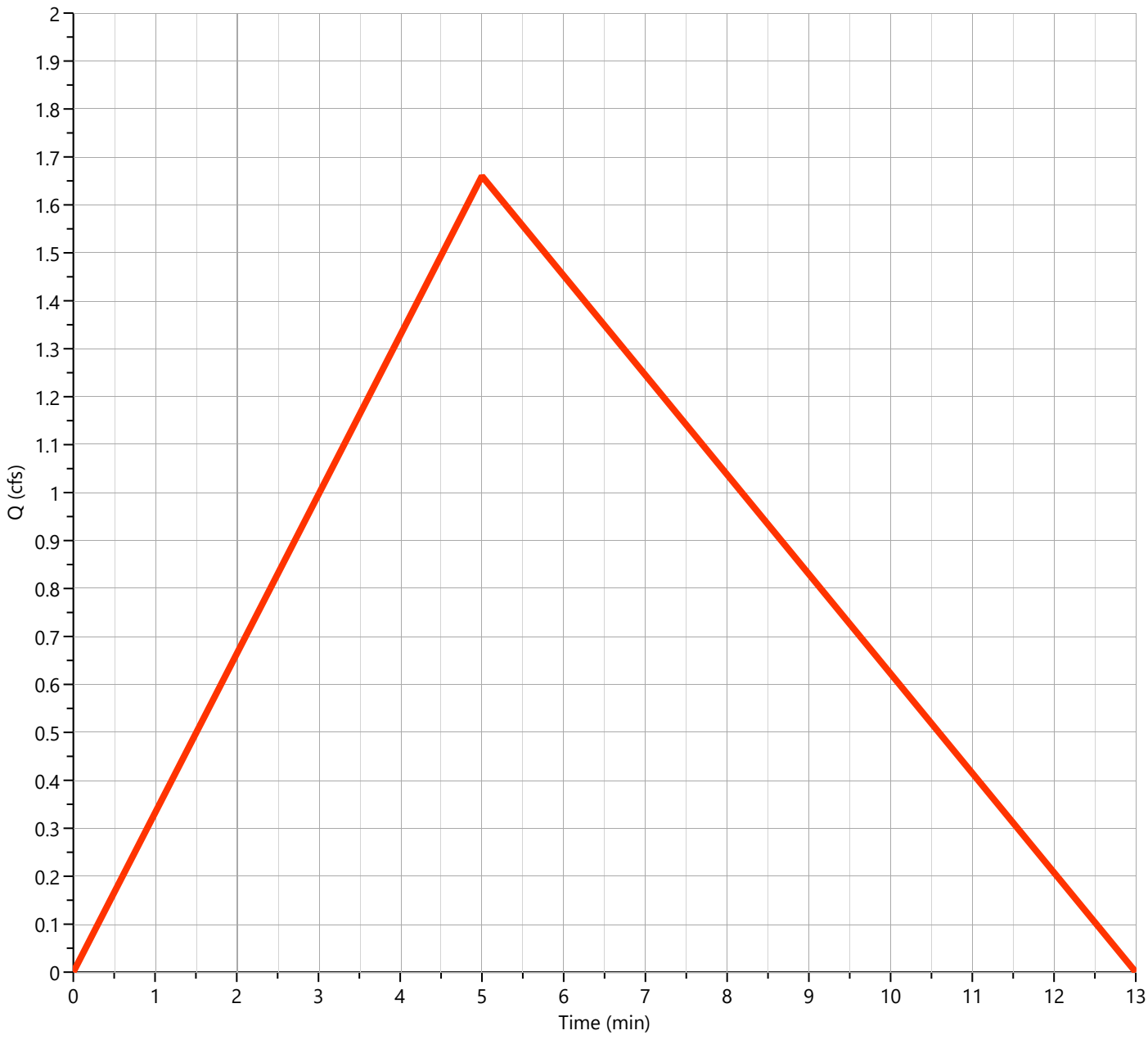
Hydrograph Type	= Rational	Peak Flow	= 0.964 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 772 cuft
Drainage Area	= 0.22 ac	Runoff Coeff.	= 0.58
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.55 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "C"

Hyd. No. 11

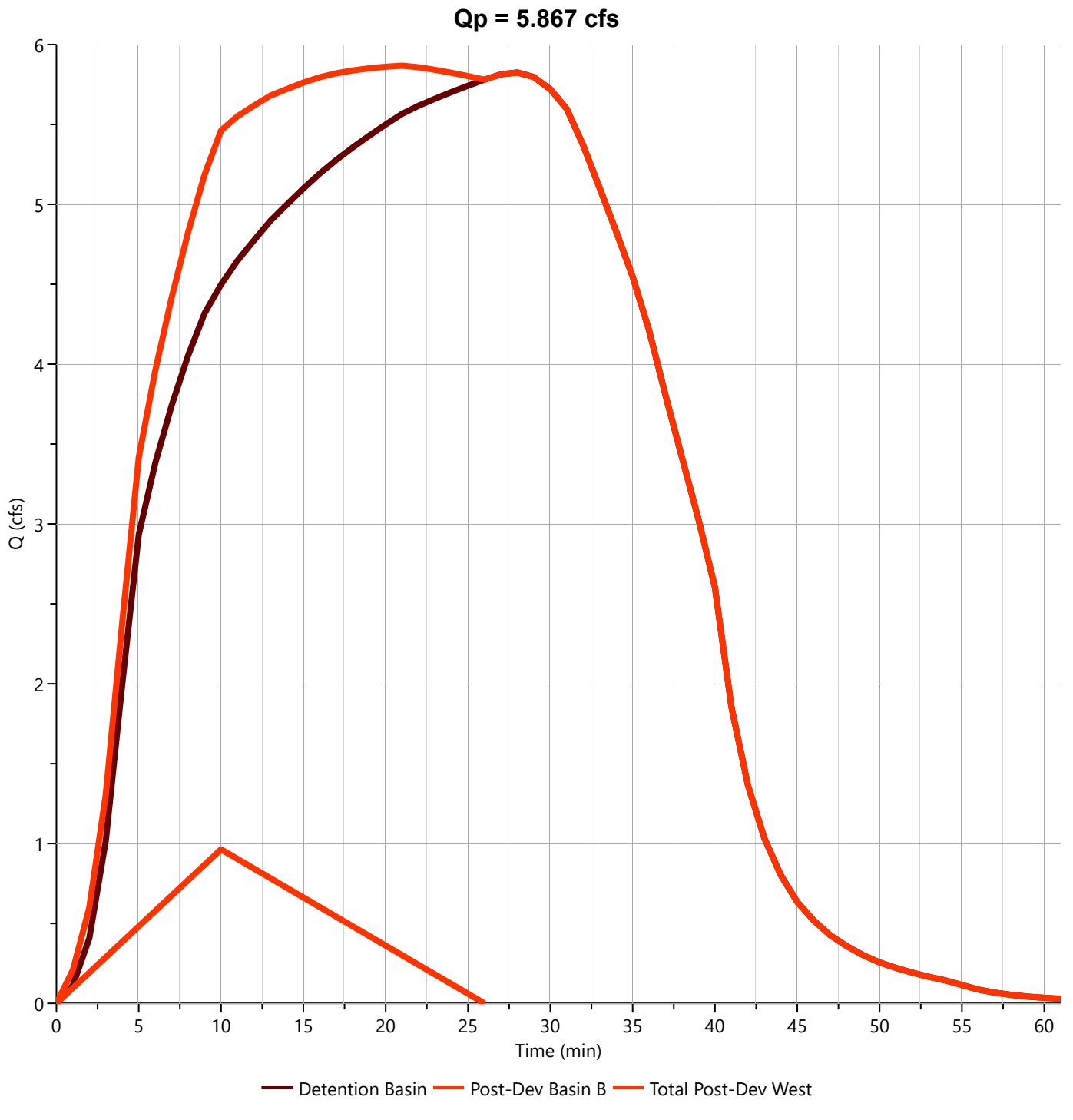
Hydrograph Type	= Rational	Peak Flow	= 1.660 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 665 cuft
Drainage Area	= 0.237 ac	Runoff Coeff.	= 0.68
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 10.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Post-Dev West

Hyd. No. 12

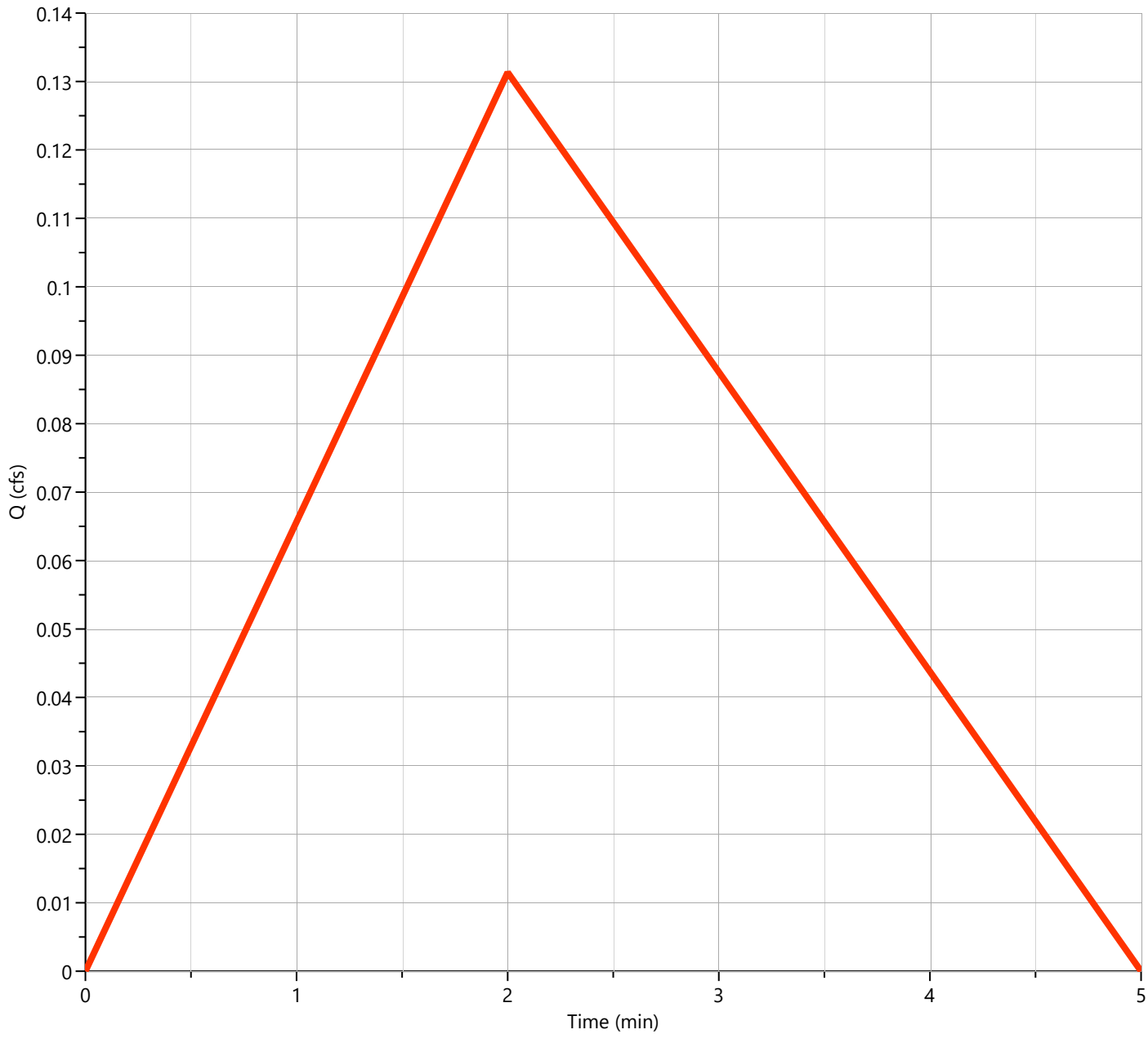
Hydrograph Type	= Junction	Peak Flow	= 5.867 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.35 hrs
Time Interval	= 1 min	Hydrograph Volume	= 11,930 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 0.22 ac



Post-Dev Basin "D"

Hyd. No. 13

Hydrograph Type	= Rational	Peak Flow	= 0.131 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.03 hrs
Time Interval	= 1 min	Runoff Volume	= 21.0 cuft
Drainage Area	= 0.017 ac	Runoff Coeff.	= 0.75
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 2.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 10.30 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

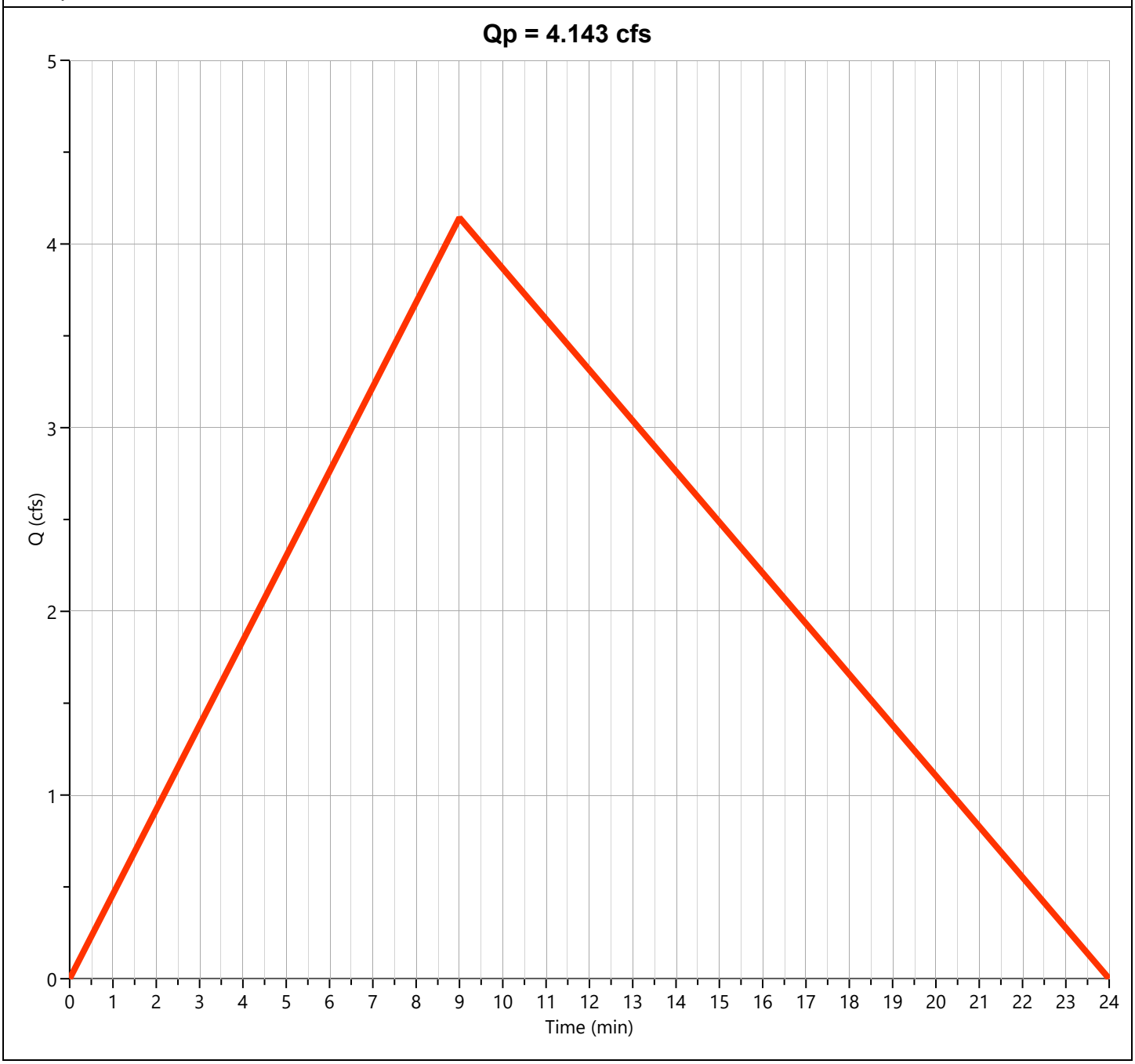
Project Name: Bryant Pharmacy
File: Detention Calculation 11-7-25.hys
11-07-2025

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"	4.143	0.15	2,987	----		
2	Rational	Pre-Dev Basin "B"	4.044	0.12	2,268	----		
3	Junction	Total Pre-Dev West	7.452	0.15	5,167	1, 2		
4	Rational	Pre-Dev Basin "C"	0.744	0.27	954	----		
5	Rational	Pre-Dev Basin "D"	1.439	0.20	1,384	----		
6	Rational	Pre-Dev Basin "E"	0.965	0.17	773	----		
7	Junction	Total Pre-Dev East	2.284	0.20	2,134	5, 6		
8	Mod Rational	Post-Dev Basin A	7.485	0.08	12,126	----		
9	Pond Route	Detention Basin	6.052	0.47	12,124	8	422.55	3,842
10	Rational	Post-Dev Basin B	1.047	0.17	839	----		
11	Rational	Post-Dev Basin "C"	1.805	0.08	723	----		
12	Junction	Total Post-Dev West	6.147	0.30	12,941	9, 10		
13	Rational	Post-Dev Basin "D"	0.143	0.03	22.9	----		

Pre-Dev Basin "A"

Hyd. No. 1

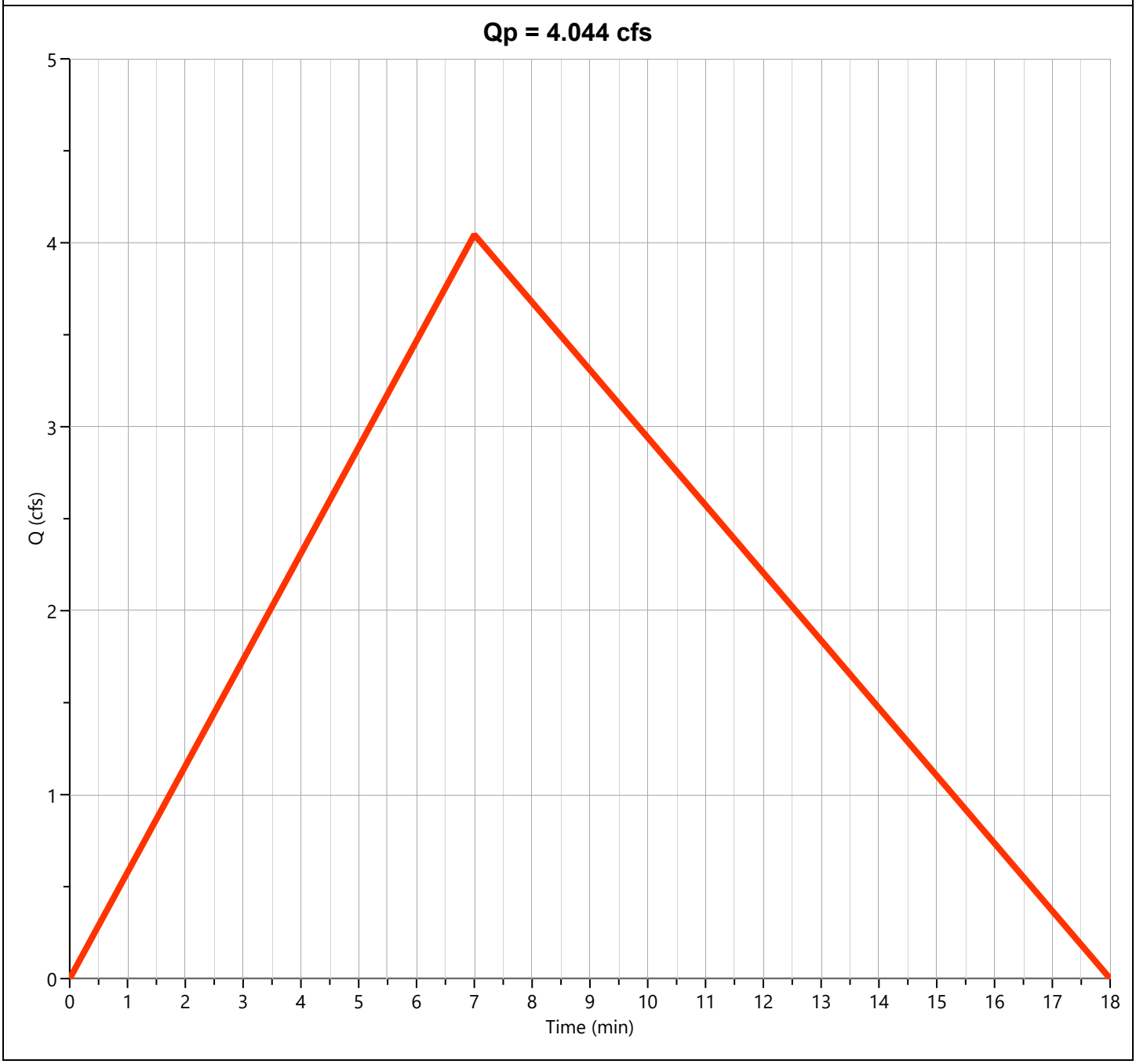
Hydrograph Type	= Rational	Peak Flow	= 4.143 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 2,987 cuft
Drainage Area	= 0.86 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 9.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.60 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "B"

Hyd. No. 2

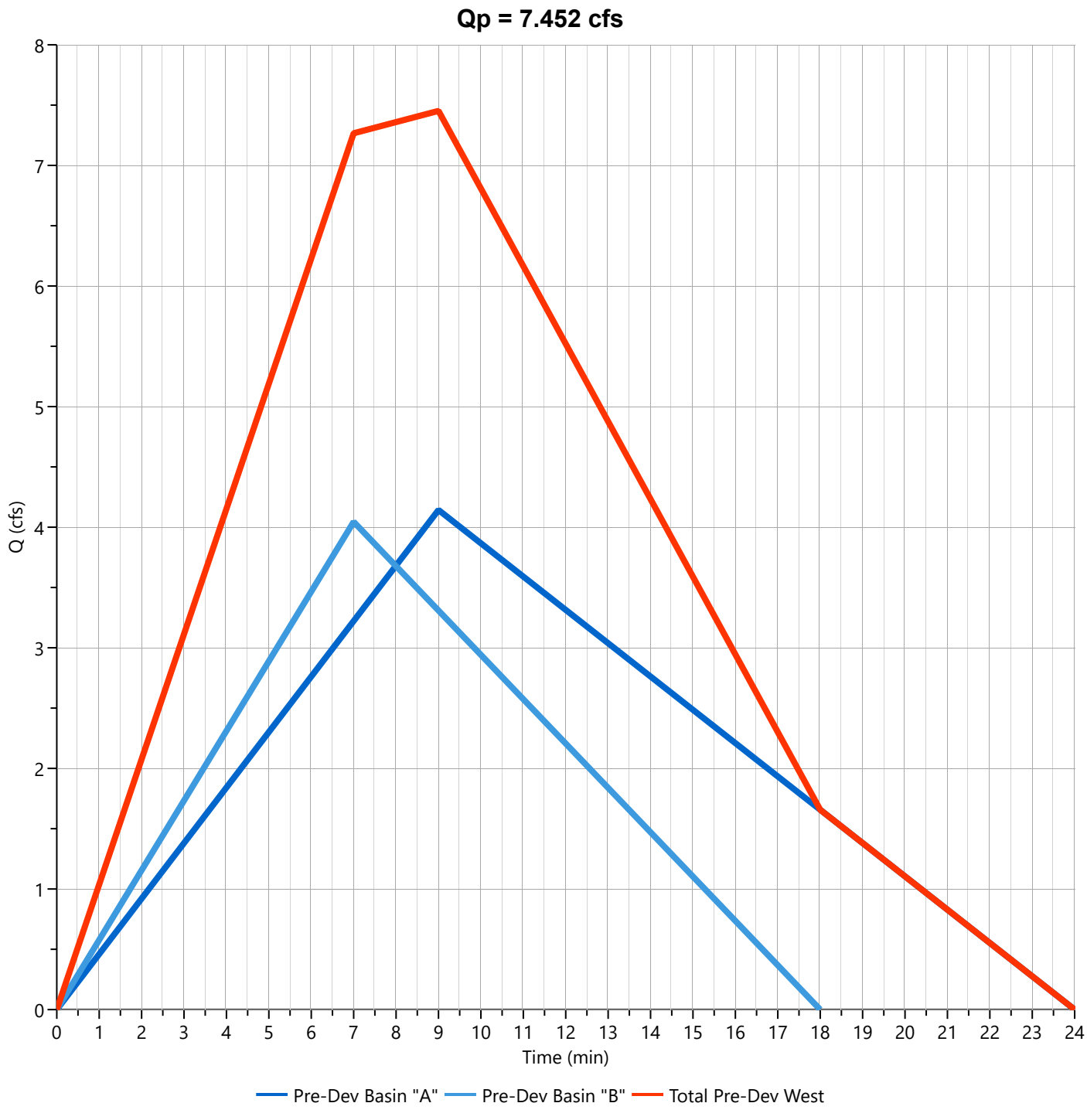
Hydrograph Type	= Rational	Peak Flow	= 4.044 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.12 hrs
Time Interval	= 1 min	Runoff Volume	= 2,268 cuft
Drainage Area	= 0.75 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 7.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 9.63 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Pre-Dev West

Hyd. No. 3

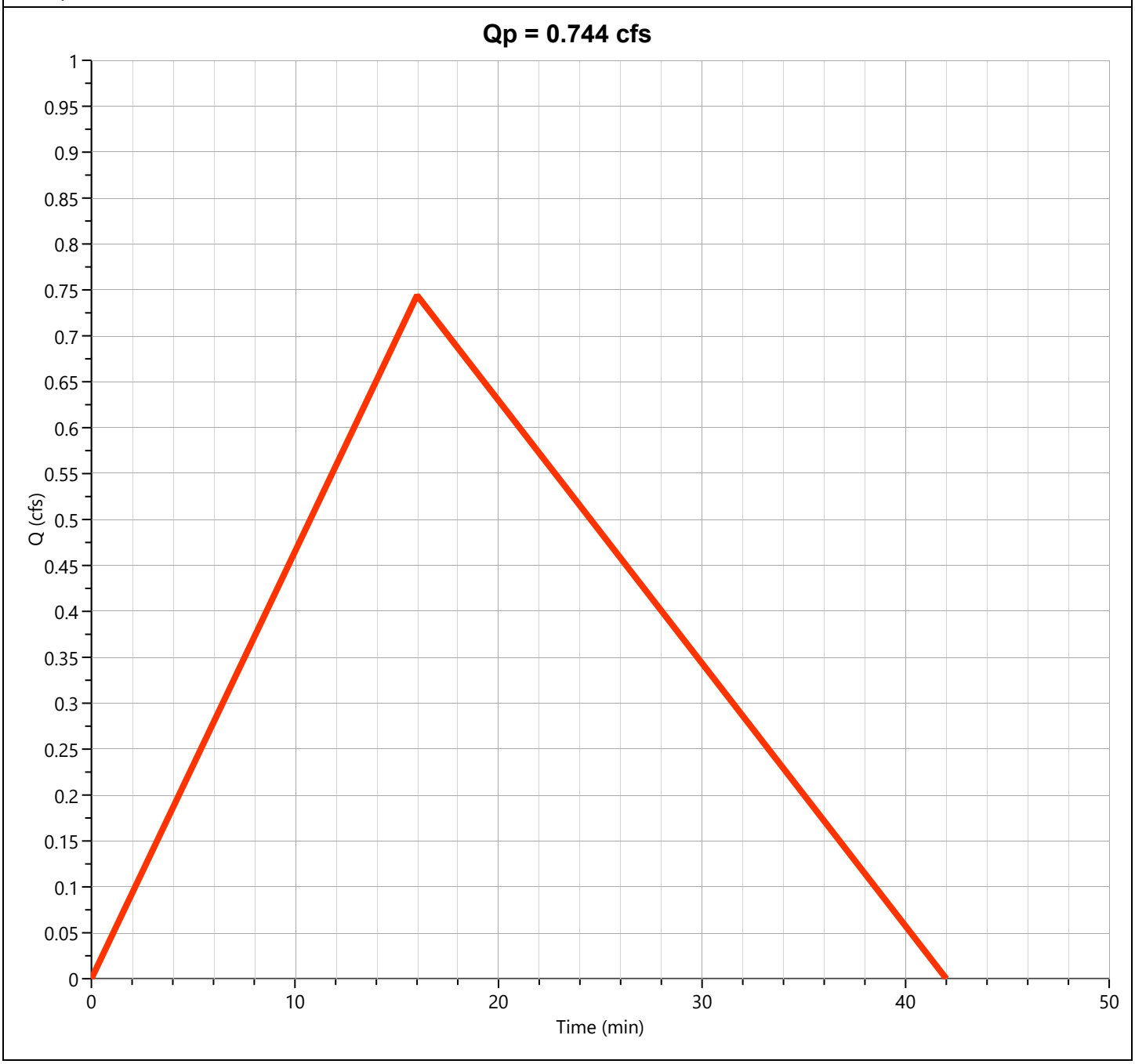
Hydrograph Type	= Junction	Peak Flow	= 7.452 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Hydrograph Volume	= 5,167 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 1.61 ac



Pre-Dev Basin "C"

Hyd. No. 4

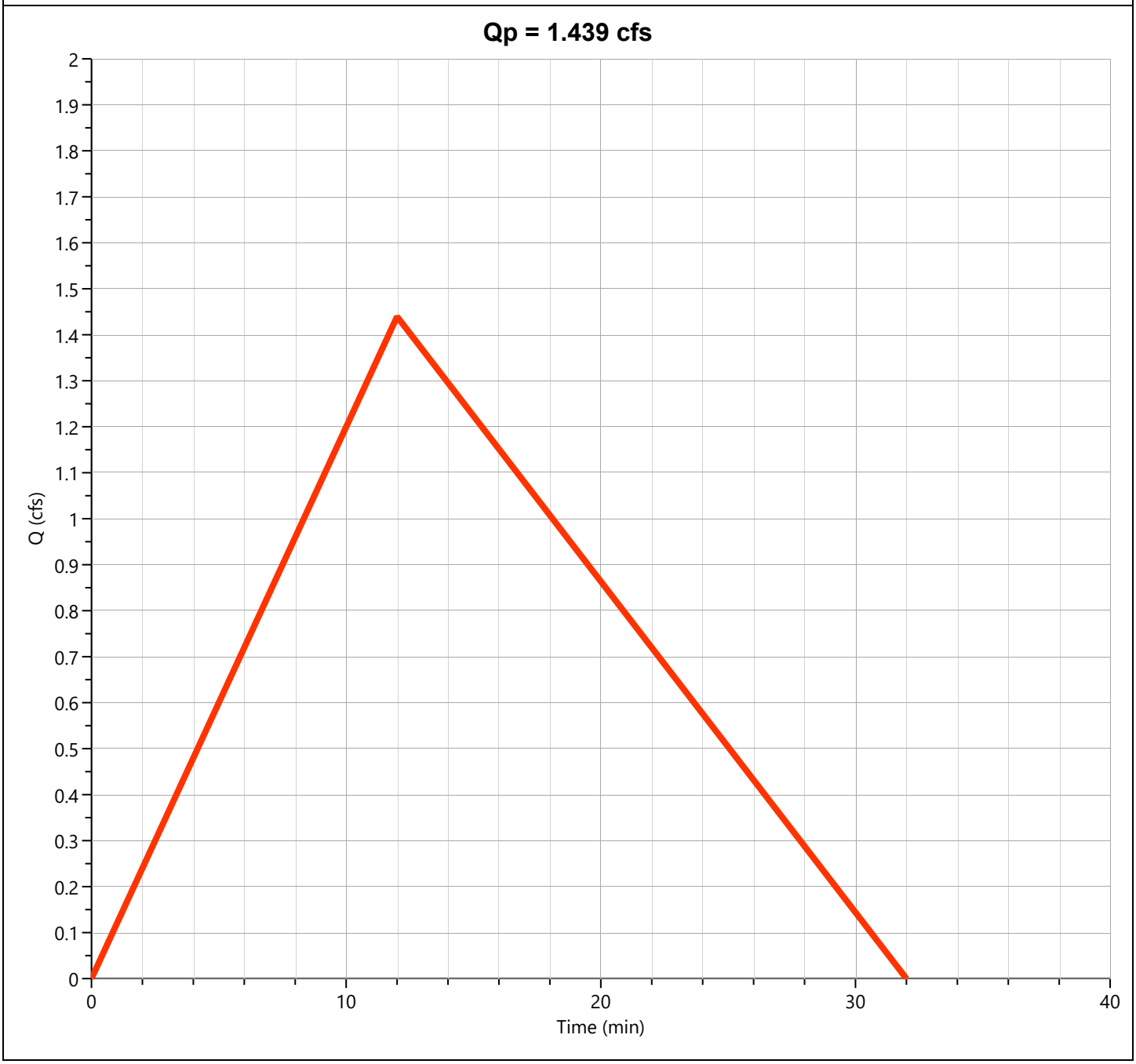
Hydrograph Type	= Rational	Peak Flow	= 0.744 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 954 cuft
Drainage Area	= 0.2 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.64 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "D"

Hyd. No. 5

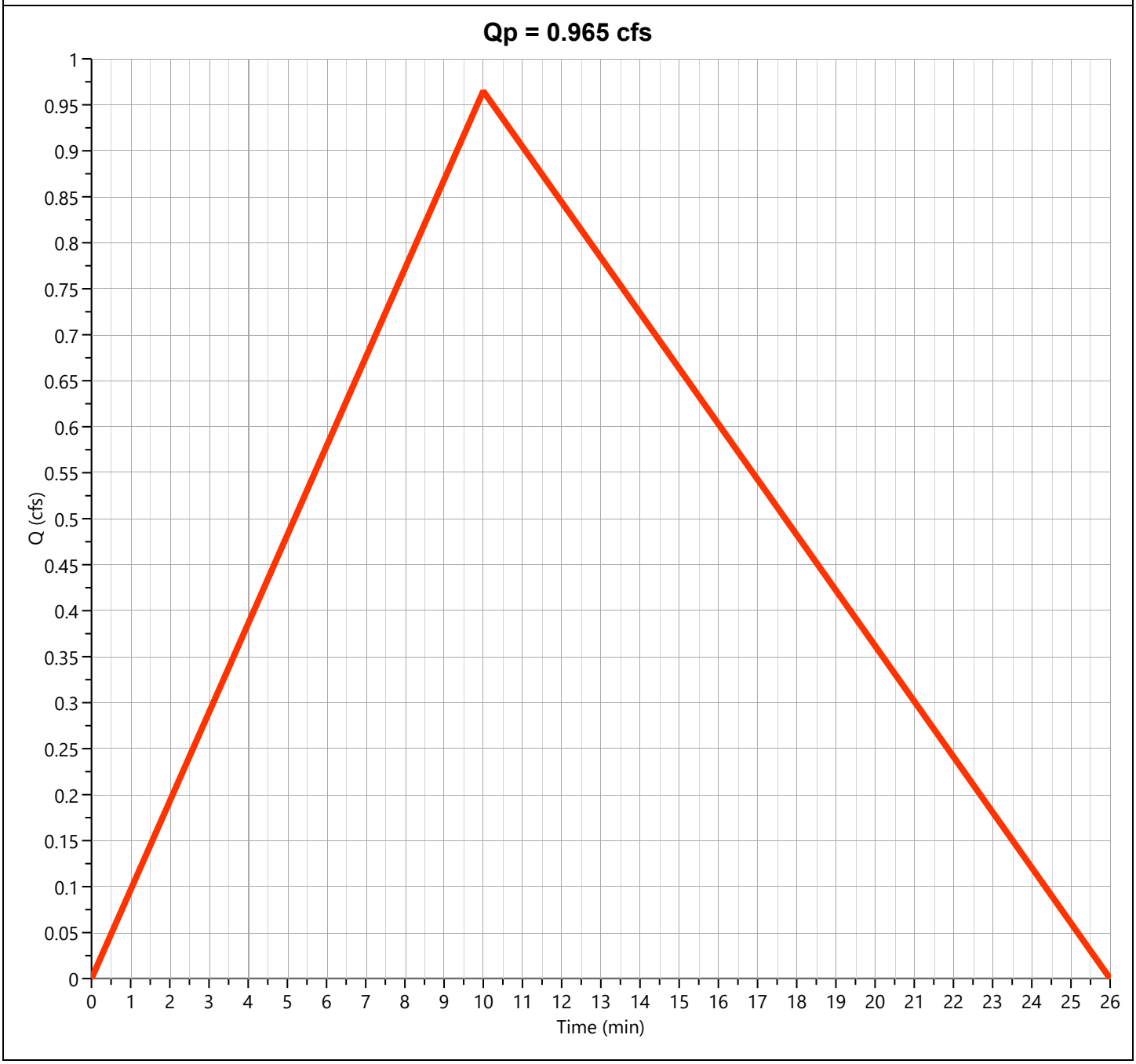
Hydrograph Type	= Rational	Peak Flow	= 1.439 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Runoff Volume	= 1,384 cuft
Drainage Area	= 0.34 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.56 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Pre-Dev Basin "E"

Hyd. No. 6

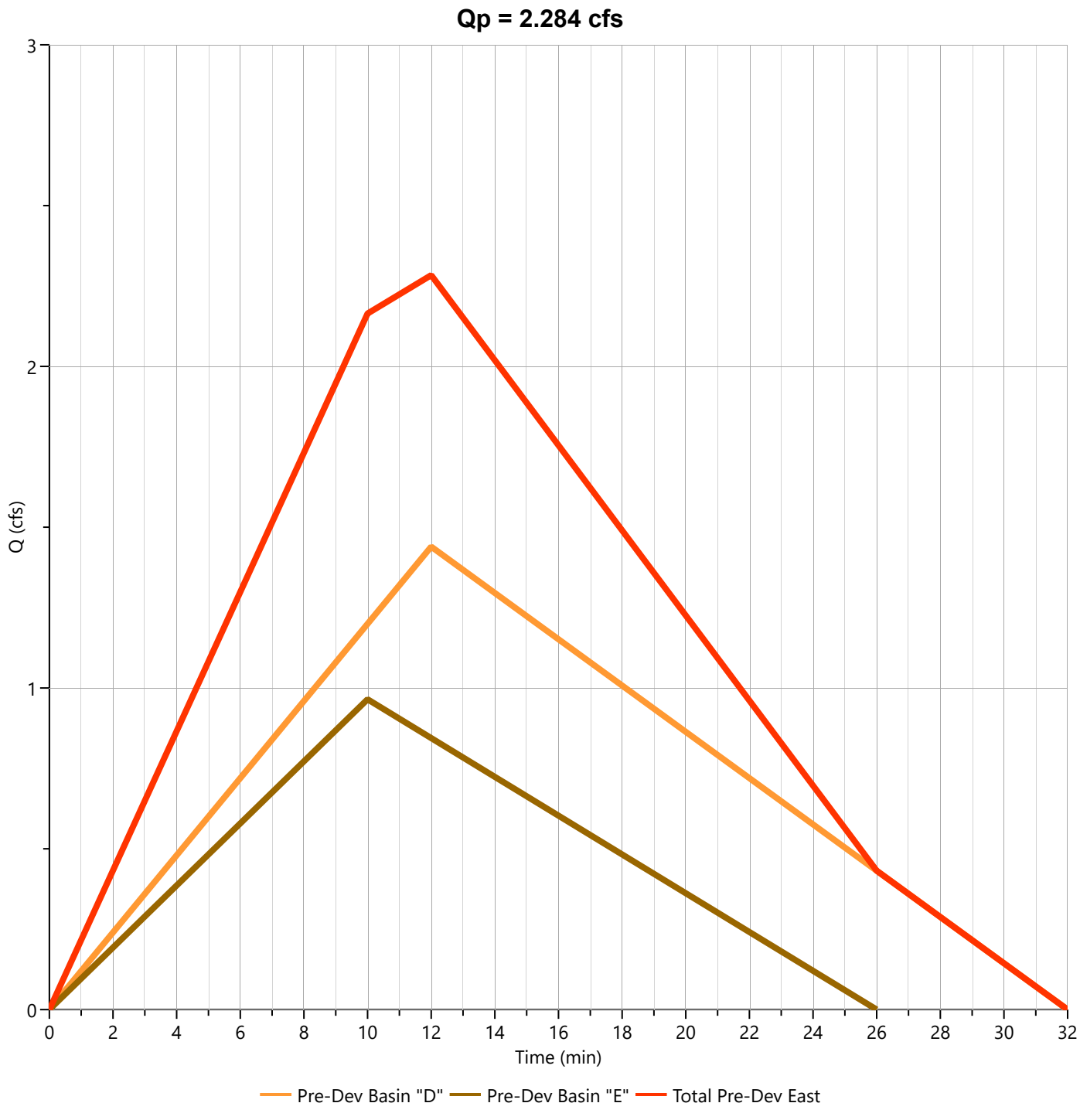
Hydrograph Type	= Rational	Peak Flow	= 0.965 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 773 cuft
Drainage Area	= 0.21 ac	Runoff Coeff.	= 0.56
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.20 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Pre-Dev East

Hyd. No. 7

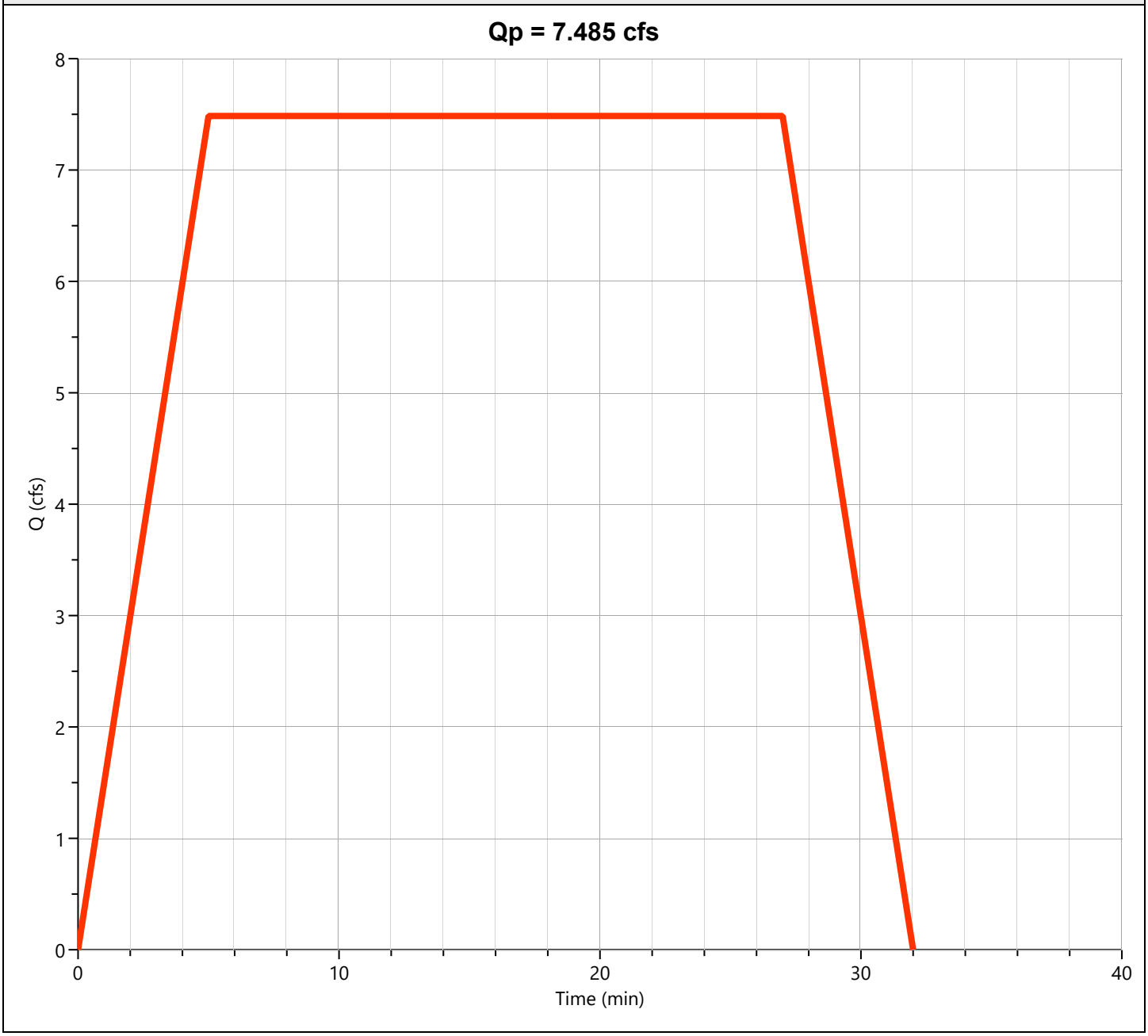
Hydrograph Type	= Junction	Peak Flow	= 2.284 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Hydrograph Volume	= 2,134 cuft
Inflow Hydrographs	= 5, 6	Total Contrib. Area	= 0.55 ac



Post-Dev Basin A

Hyd. No. 8

Hydrograph Type	= Mod Rational	Peak Flow	= 7.485 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 12,126 cuft
Drainage Area	= 1.5 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.25 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 5.4 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft



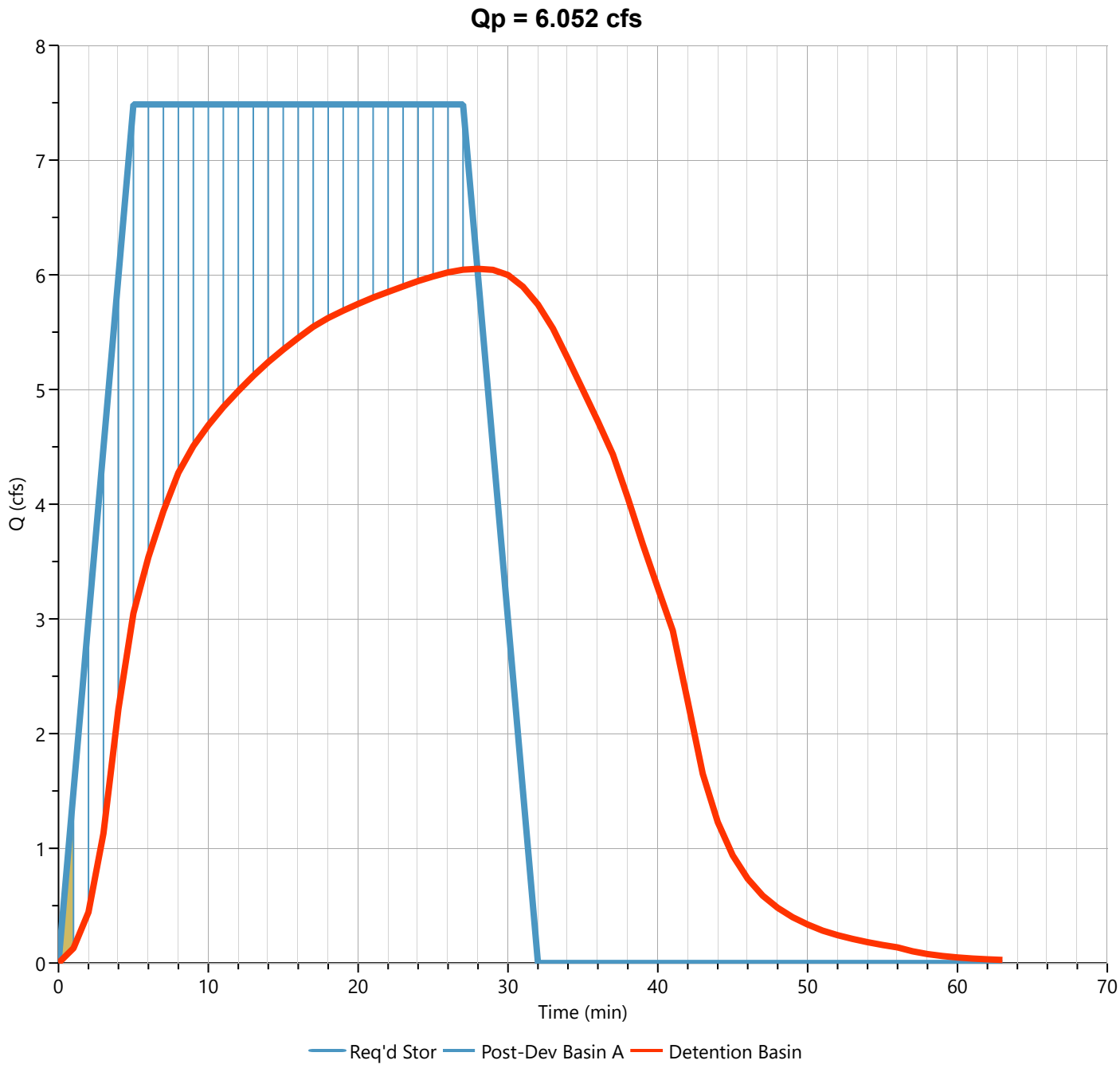
Detention Basin

Hyd. No. 9

Hydrograph Type	= Pond Route	Peak Flow	= 6.052 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.47 hrs
Time Interval	= 1 min	Hydrograph Volume	= 12,124 cuft
Inflow Hydrograph	= 8 - Post-Dev Basin A	Max. Elevation	= 422.55 ft
Pond Name	= Bryant Pharmacy Detention Pond	Max. Storage	= 3,842 cuft

Pond Routing by Storage Indication Method

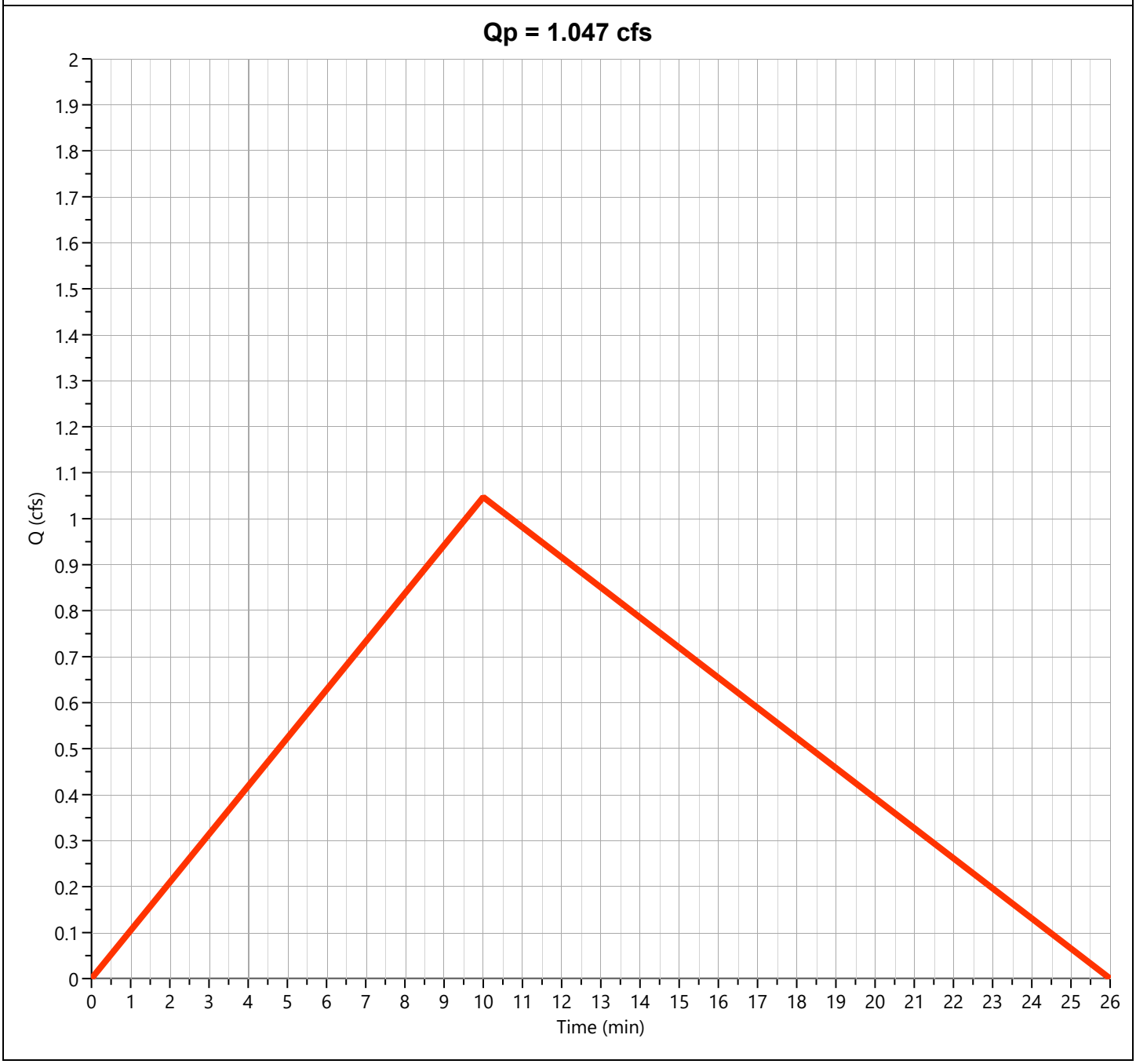
Center of mass detention time = 8 min



Post-Dev Basin B

Hyd. No. 10

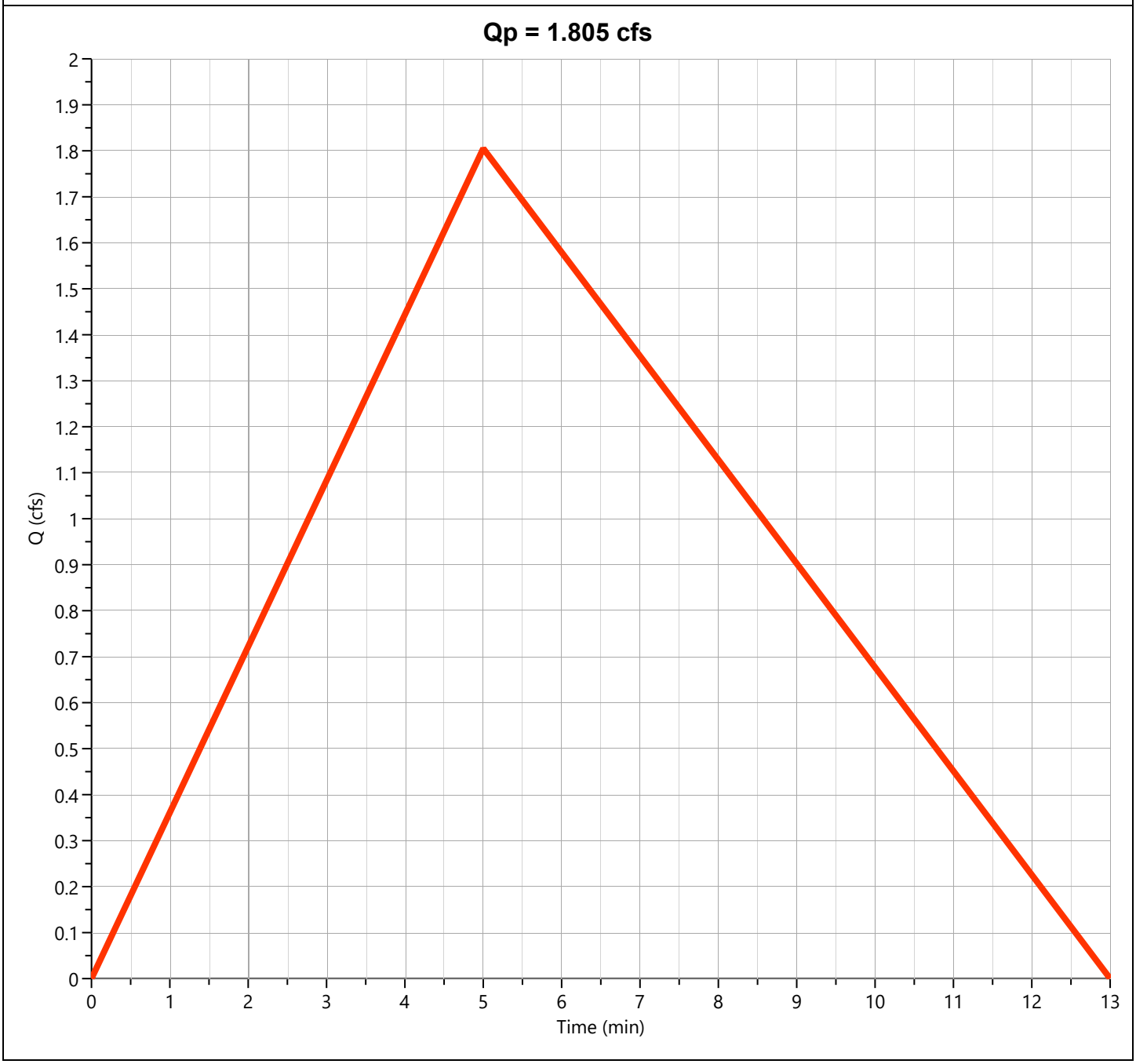
Hydrograph Type	= Rational	Peak Flow	= 1.047 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 839 cuft
Drainage Area	= 0.22 ac	Runoff Coeff.	= 0.58
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.20 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Post-Dev Basin "C"

Hyd. No. 11

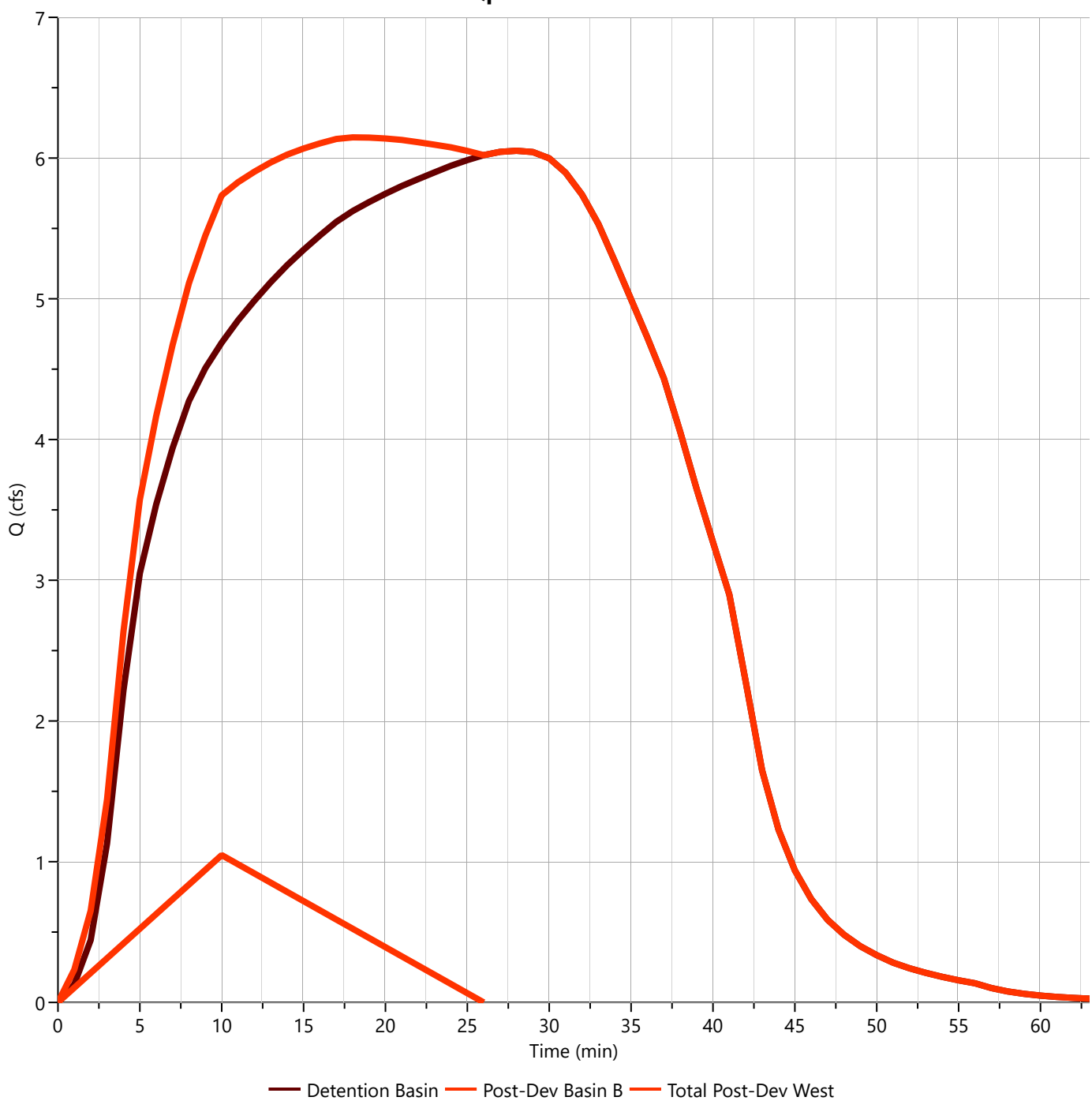
Hydrograph Type	= Rational	Peak Flow	= 1.805 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 723 cuft
Drainage Area	= 0.237 ac	Runoff Coeff.	= 0.68
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 11.20 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



Total Post-Dev West

Hyd. No. 12

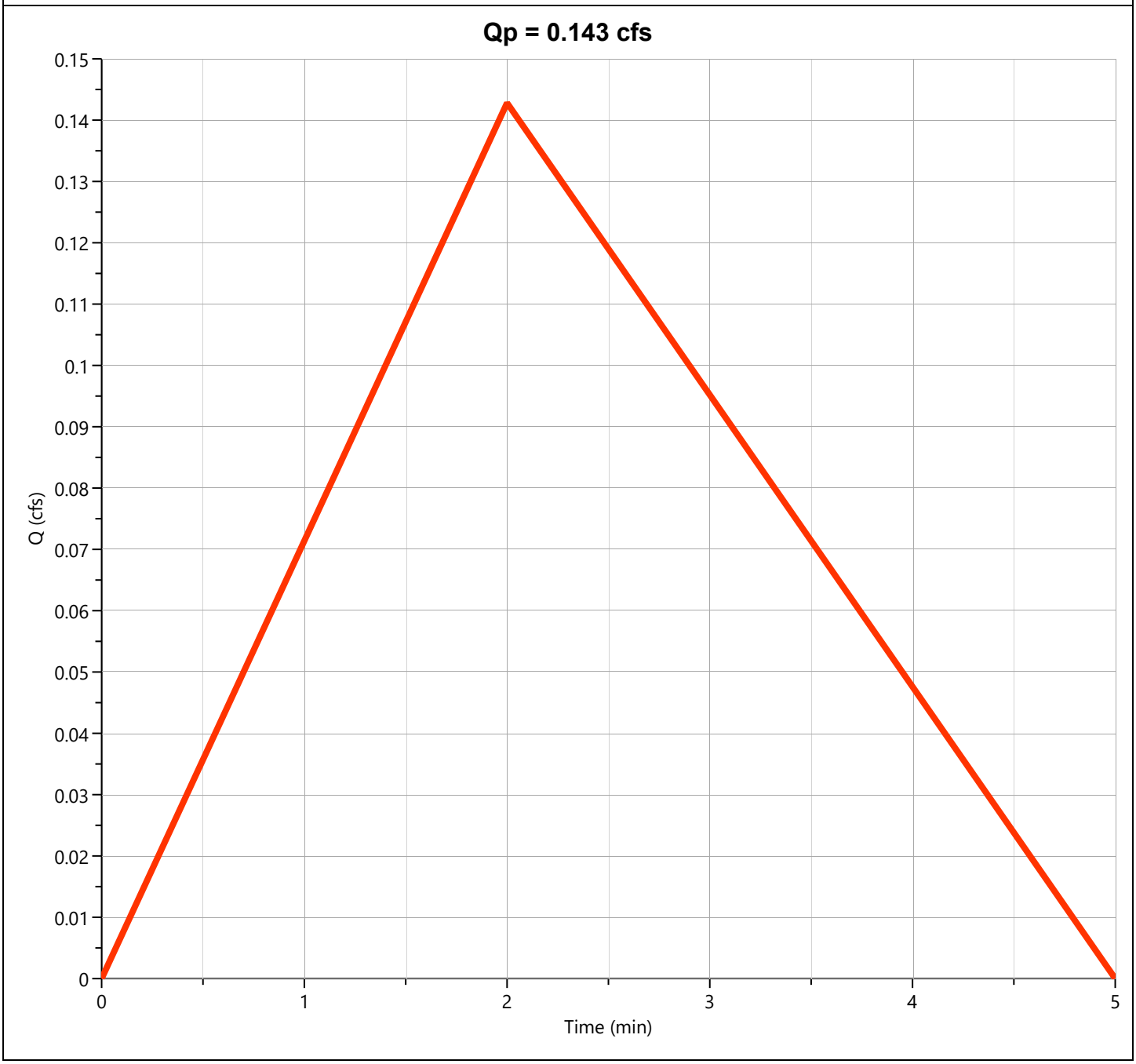
Hydrograph Type	= Junction	Peak Flow	= 6.147 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.30 hrs
Time Interval	= 1 min	Hydrograph Volume	= 12,941 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 0.22 ac



Post-Dev Basin "D"

Hyd. No. 13

Hydrograph Type	= Rational	Peak Flow	= 0.143 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.03 hrs
Time Interval	= 1 min	Runoff Volume	= 22.9 cuft
Drainage Area	= 0.017 ac	Runoff Coeff.	= 0.75
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 2.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 11.20 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1.67



DETAILED PLANS:

SHOPPES AT DOGWOOD SPRINGS

PHASE 1

BRYANT PARKWAY
BRYANT, ARKANSAS

LEGAL DESCRIPTION

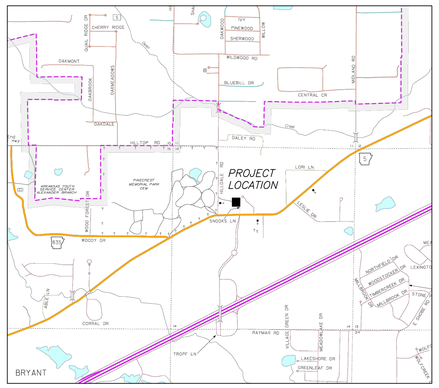
LOT 1 AND 2 OF THE SHOPPES AT DOGWOOD SPRINGS, A REPLAT OF ALL OF BLOCK 4, THE EAST HALF BLOCK 5, LOT 1 OF BLOCK 8, AND LOTS 1 AND 2 OF BLOCK 9, TOGETHER WITH A PORTION OF NORTHERN AVENUE, NORTH STREET, AND LIBERTY STREET ABANDONED RIGHT OF WAYS ADJACENT TO SAID BLOCKS, AS SHOWN ON THE PLAT OF THE TOWN OF COLLEGEVILLE, DATED JUNE 21, 1838.

10/20/2025
REV:11/5/2025

PREPARED FOR:

JON MARTIN

VICINITY MAP



Prepared By:

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 21954
TRISTIN SCOTT PHILLIPS

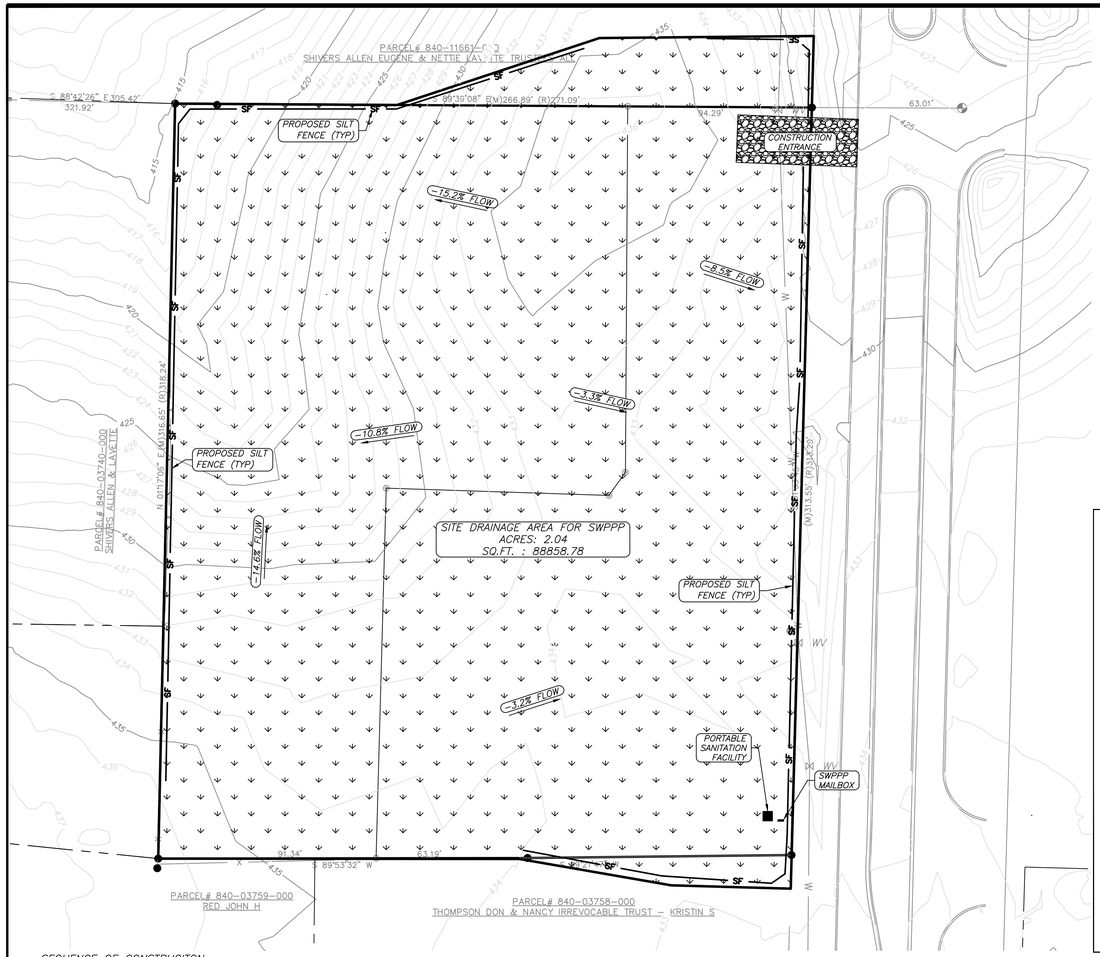
PRE-CONSTRUCTION COPY -

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

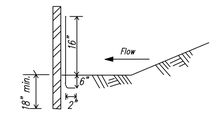
	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

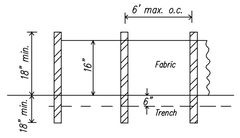
INDEX OF SHEETS

COVER SHEET	1
SWPPP	2-4
DEMOLITION PLAN	5
SITE PLAN	6
SITE DIMENSION PLAN	7
GRADING PLANS	8-9
UTILITY PLANS	10-11
DETAILS	12-15
LANDSCAPE PLAN	16
PHASE PLAN	17



PHASE 1 PLAN 2A:
*INSTALL SILT FENCE AROUND PROJECT
*INSTALL CONSTRUCTION ENTRANCE
*MAINTAIN EXISTING DRAINAGE SWALE DURING INITIAL PHASE OF CONSTRUCTION
PHASE 2 PLAN 2B:
*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 2C:
*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.

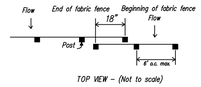




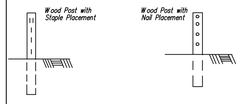
NOTE:
Use wood or steel posts

SF-A SILT FENCE (TYPE A)
NTS

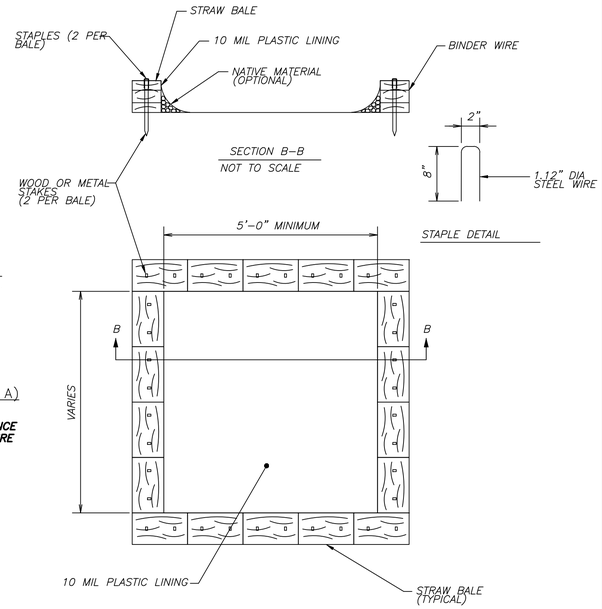
*** ALL SILT FENCE SHALL BE WIRE REINFORCED.**



OVERLAP AT FABRIC ENDS



FASTENERS FOR SILT FENCES



CONCRETE WASHOUT
NOT TO SCALE

Legend

- Property Boundary
- Surveyed lines
- RW — Road Right of Way
- T — Telephone
- FO — FO — Fiber Optic Line
- Road Center line
- X — Wire / Chainlink Fence
- S — Sanitary Sewer Main
- SS — Sanitary Sewer Service
- WS — Water Service Line
- W — Water Main
- UES — Underground Electric Service
- UGE — Underground Electric Primary
- OHE — Overhead Electric Primary
- G — Gas Main
- FM — FM — Force Sewer line
- SF — Silt Fence
- Water Meter Box
- Sanitary Sewer Manhole
- Storm Drainage Manhole
- Telephone Pedistal
- Guy Wire
- Light Pole
- Computed Corner
- Found Monument (Labeled)
- Utility Pole
- Gas Meter
- Sewer Service Cleanout

LEGEND
EXISTING CONTOURS
SF — PROPOSED SILT FENCE

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 2" - 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 WHEELS AND TIRES 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.

SEQUENCE OF CONSTRUCITON:
1.) INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2.) CONSTRUCT THE SILT FENCES ALONG THE PROJECT PERIMETER AS SHOWN ON EROSION CONTROL PLAN-A. ADDITIONAL SILT FENCE MAY BE REQUIRED IN LOCATION WITH POTENTIAL FOR HEAVY RUNOFF. CONTRACTOR SHALL NOT PROCEED UNTIL PLAN-A CONTROLS ARE IN PLACE. (REFER PLAN A)
3.) CLEAR AND GRUB SITE. (REFER PLAN A)
4.) BEGIN GRADING THE SITE (REFER TO PLAN A & B)
5.) START CONSTRUCTION OF BUILDING PADS AND STRUCTURES. (REFER TO PLAN B)
6.) TEMPORARILY STABILIZE DENUDED AREAS, SOIL EXPOSED FOR MORE THAN 14 DAYS WITH NO CONSTRUCTION ACTIVITY SHALL BE SEEDED OR REMITTED. ONE OF THE FOLLOWING GROUND COVER METHODS SHALL BE USED AT AREAS OF CLEARING OTHER THAN FUTURE PAVEMENT SURFACES. (REFER TO PLAN B)
STRAW OR HAY-LOOSE
2.0 TONS/ACRE
STRAW OR HAY-TIED, ANCHORED, OR TACKED
1.5 TONS/ACRE
7.) INSTALL UTILITIES, STORM DRAINAGE, CURB & GUTTER
8.) INSTALL INLET PROTECTIONS, CHECK DAMS AND ADDITIONAL SILT FENCES AS PER EROSION CONTROL PLAN-B.
9.) PREPARE SITE OF PAVING.
10.) PAVE SITE.
11.) COMPLETE GRADING OF SITE AND INSTALL PERMANENT SEEDING AND LANDSCAPING. INSTALL TEMPORARY CONTROLS AS SHOWN ON EROSION CONTROL PLAN C.
12.) AFTER SEEDING AND LANDSCAPING HAVE STABILIZED. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROLS. (REFER TO PLAN C)

SWPPP SPECIFIC NOTES:
1.) DEVELOPMENT SHALL ADHERE TO BRYANT AND ADEQ ARR150000 PERMIT STORMWATER REQUIREMENTS.
2.) SILT FENCE SHALL BE PLACED AS PER PLAN. ADDITIONAL SILT FENCE MAY BE REQUIRED IN LOCATION WITH POTENTIAL FOR HEAVY RUNOFF. CONTRACTOR SHALL INSPECT AND INSTALL AS REQUIRED TO INSURE RUNOFF IS CONTAINED.
4.) ROCK DIKE CHECK DAMS TO BE CONSTRUCTED TO MEET ADEQ REQUIREMENTS. LOCATIONS SHOWN ON PLAN. ADDITIONAL CHECK DAMS MAY BE REQUIRED.
5.) CONSTRUCTION ENTRANCES/EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF MUD ON TO PUBLIC RIGHT-OF-WAY.
6.) ADDITIONAL EROSION CONTROL MEASURES TO BE EMPLOYED WHERE NECESSARY BY SITE CONDITIONS.
7.) CONTRACTOR SHALL USE "BEST MANAGEMENT PRACTICES" (BMP'S) WHEN IMPLEMENTING AND MAINTAINING SEDIMENT AND RUN-OFF CONTROLS.

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. DEVELOPMENT SHALL ADHERE TO CITY OF BRYANT AND ADEQ ARR150000 PERMIT REQUIREMENTS.

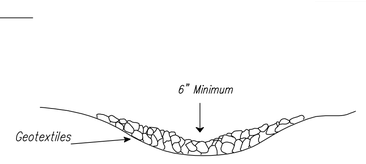
9. ADDITIONAL EROSION CONTROL MEASURES TO BE EMPLOYED WHERE NECESSARY BY SITE CONDITIONS.

10. CONTRACTOR TO COMPLY WITH ALL OSHA SAFETY REQUIREMENTS.

11. EXISTING VEGETATION SHALL BE PRESERVED IN ALL APPLICABLE AREAS.

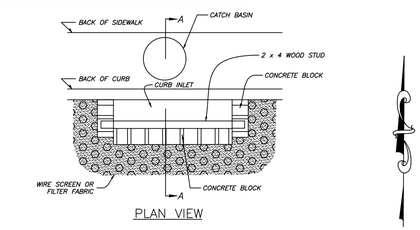
12. ALL DISTURBED AREAS LEFT IDLE FOR A PERIOD OF 14 DAYS OR LONGER ARE TO RECEIVE TEMPORARY VEGETATION AND MULCHED.

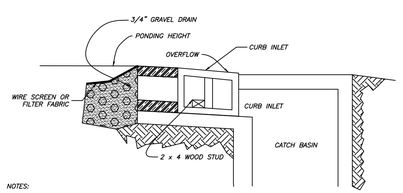
13. BMP's SHALL INCLUDE BUT NOT LIMITED TO: ROCK CHECK DAM, STRAW BALE CHECK DAM, SILT FENCE, STRAW, WADDLES, ETC.



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





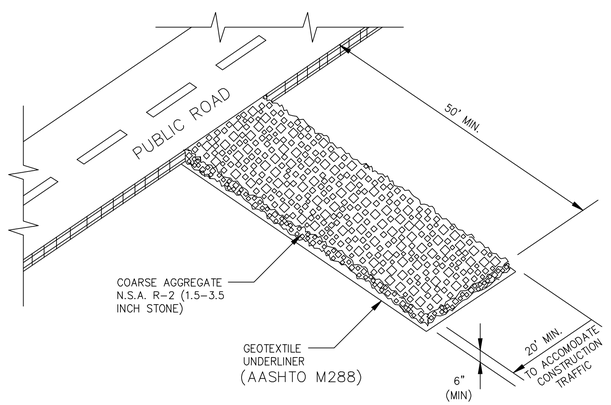
NOTES:
1.) USE BLOCK AND GRAVEL TYPE SEDIMENT BARRIER WHEN CURB INLET IS LOCATED IN GENTLY SLOPING STREET SEGMENT, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.

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.

CURB INLET
SEDIMENT BARRIER

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



CONSTRUCTION EXIT
NOT TO SCALE

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

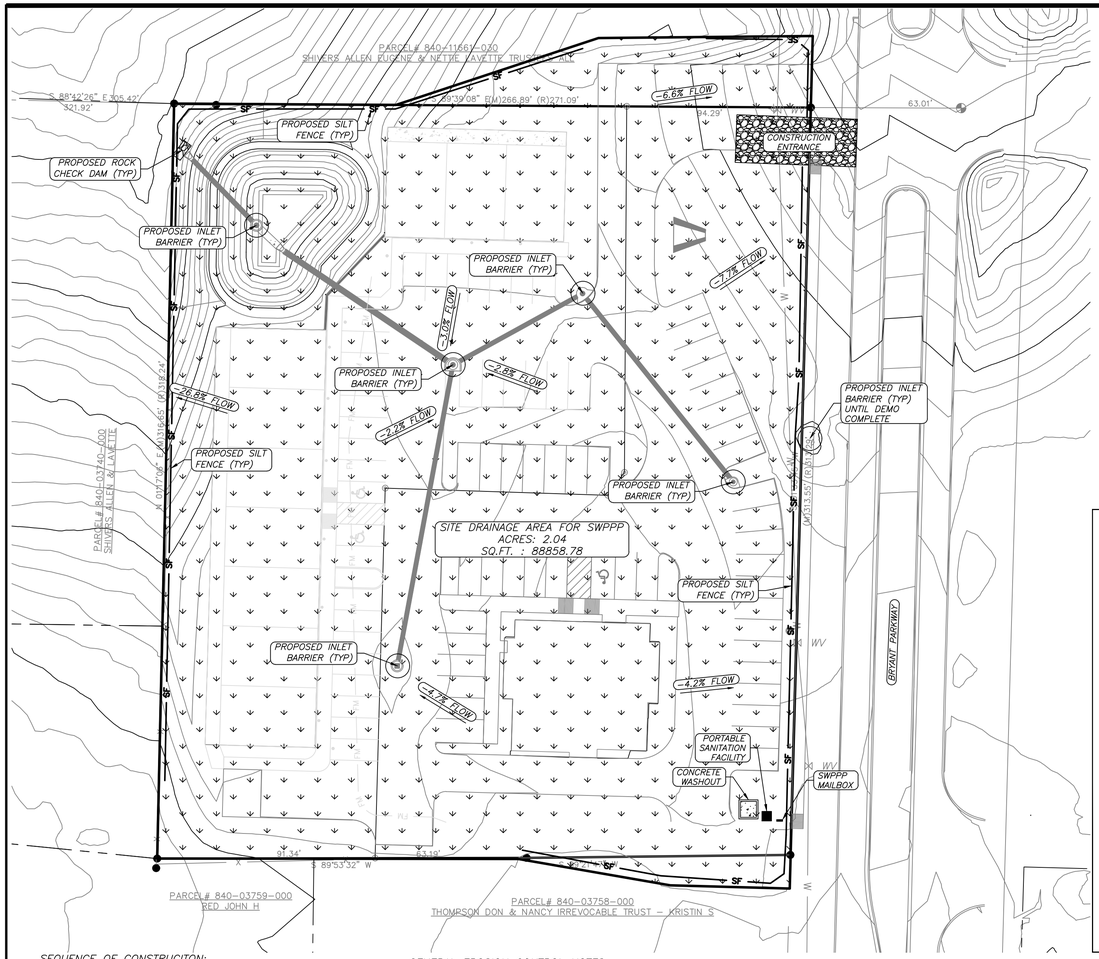
CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
STATE OF ARKANSAS

EROSION CONTROL PLAN-A
CLEARING, STRIPPING & ROUGH GRADING
SHOPPES AT DOGWOOD SPRINGS
BRYANT PARKWAY
BRYANT, ARKANSAS

Prepared For:
JON MARTIN

No.	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

PROJECT #: 025-029
Date: 10/20/2025
REV: 11/5/2025
Scale: 1" = 30'
Sheet: 2 of 17



PHASE 1 PLAN 2A:
**INSTALL SILT FENCE AROUND PROJECT*
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**MAINTAIN EXISTING DRAINAGE SWALE DURING INITIAL PHASE OF CONSTRUCTION*
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**INSTALL CONCRETE WASHOUT LOCATION*
**INSTALL SILT FENCE AROUND CATCH BASINS*
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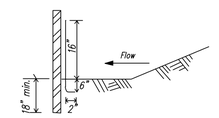
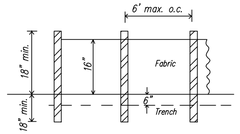
**SEED AND HAY DISTURBED AREAS ON THE PROJECT*
**MAINTAIN SILT FENCE AROUND PROJECT UNTIL VEGETATION IS COMPLETELY ESTABLISHED.*
**ANY DAMAGED BMP MEASURES SHALL BE REPLACED OR REPAIRED BEFORE THE NEXT RAIN EVENT, BUT NO LONGER THAN 3 BUSINESS DAYS FROM DATE OF DAMAGE.*



SIDE VIEW

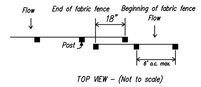


FRONT VIEW

NOTE:
Use wood or steel posts

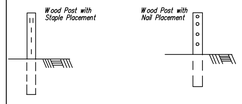
SF-A SILT FENCE (TYPE A)
NTS

*** ALL SILT FENCE SHALL BE WIRE REINFORCED.**



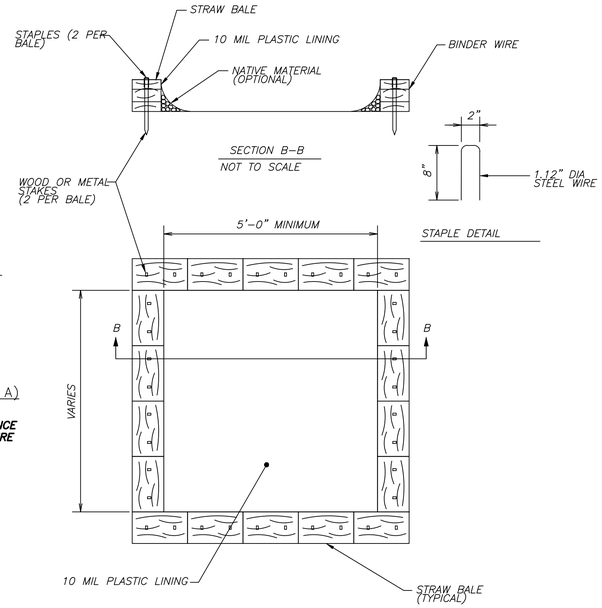
TOP VIEW - (Not to scale)

OVERLAP AT FABRIC ENDS



FRONT VIEWS

FASTENERS FOR SILT FENCES



CONCRETE WASHOUT
NOT TO SCALE

LEGEND

EXISTING CONTOURS

SF PROPOSED SILT FENCE

Legend

- Property Boundary
- Surveyed lines
- RW Road Right of Way
- T Telephone
- FO FO Fiber Optic Line
- Road Center line
- X Wire / Chainlink Fence
- S Sanitary Sewer Main
- SS Sanitary Sewer Service
- WS Water Service Line
- W Water Main
- UES Underground Electric Service
- UGE Underground Electric Primary
- OHE Overhead Electric Primary
- G Gas Main
- FM FM Force Sewer line
- SF Silt Fence
- Water Meter Box
- Sanitary Sewer Manhole
- Storm Drainage Manhole
- Telephone Pedistal
- Guy Wire
- Light Pole
- Computed Corner
- Found Monument (Labeled)
- Utility Pole
- Gas Meter
- Sewer Service Cleanout

SEQUENCE OF CONSTRUCITON:

1.) INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2.) CONSTRUCT THE SILT FENCES ALONG THE PROJECT PERIMETER AS SHOWN ON EROSION CONTROL PLAN–A. ADDITIONAL SILT FENCE MAY BE REQUIRED IN LOCATION WITH POTENTIAL FOR HEAVY RUNOFF. CONTRACTOR SHALL NOT PROCEED UNTIL PLAN–A CONTROLS ARE IN PLACE. (REFER PLAN A)
3.) CLEAR AND GRUB SITE. (REFER PLAN A)
4.) BEGIN GRADING THE SITE (REFER TO PLAN A & B)
5.) START CONSTRUCTION OF BUILDING PADS AND STRUCTURES. (REFER TO PLAN B)
6.) TEMPORARILY STABILIZE DENUDED AREAS, SOIL EXPOSED FOR MORE THAN 14 DAYS WITH NO CONSTRUCTION ACTIVITY SHALL BE SEEDED OR REMITTED. ONE OF THE FOLLOWING GROUND COVER METHODS SHALL BE USED AT AREAS OF CLEARING OTHER THAN FUTURE PAVEMENT SURFACES. (REFER TO PLAN B)
   STRAW OR HAY–LOOSE
   2.0 TONS/ACRE
   STRAW OR HAY–TIED, ANCHORED, OR TACKED
   1.5 TONS/ACRE
7.) INSTALL UTILITIES, STORM DRAINAGE, CURB & GUTTER
8.) INSTALL INLET PROTECTIONS, CHECK DAMS AND ADDITIONAL SILT FENCES AS PER EROSION CONTROL PLAN–B.
9.) PREPARE SITE OF PAVING.
10.) PAVE SITE.
11.) COMPLETE GRADING OF SITE AND INSTALL PERMANENT SEEDING AND LANDSCAPING. INSTALL TEMPORARY CONTROLS AS SHOWN ON EROSION CONTROL PLAN C.
12.) AFTER SEEDING AND LANDSCAPING HAVE STABILIZED. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROLS. (REFER TO PLAN C)

SWPPP SPECIFIC NOTES:

1.) DEVELOPMENT SHALL ADHERE TO BRYANT AND ADEQ ARR150000 PERMIT STORMWATER REQUIREMENTS.
2.) SILT FENCE SHALL BE PLACED AS PER PLAN. ADDITIONAL SILT FENCE MAY BE REQUIRED IN LOCATION WITH POTENTIAL FOR HEAVY RUNOFF. CONTRACTOR SHALL INSPECT AND INSTALL AS REQUIRED TO INSURE RUNOFF IS CONTAINED.
4.) ROCK DIKE CHECK DAMS TO BE CONSTRUCTED TO MEET ADEQ REQUIREMENTS. LOCATIONS SHOWN ON PLAN. ADDITIONAL CHECK DAMS MAY BE REQUIRED.
5.) CONSTRUCTION ENTRANCES/EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF MUD ON TO PUBLIC RIGHT–OF–WAY.
6.) ADDITIONAL EROSION CONTROL MEASURES TO BE EMPLOYED WHERE NECESSARY BY SITE CONDITIONS.
7.) CONTRACTOR SHALL USE "BEST MANAGEMENT PRACTICES" (BMP'S) WHEN IMPLEMENTING AND MAINTAINING SEDIMENT AND RUN–OFF CONTROLS.

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. DEVELOPMENT SHALL ADHERE TO CITY OF BRYANT AND ADEQ ARR150000 PERMIT REQUIREMENTS.

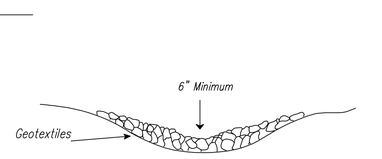
9. ADDITIONAL EROSION CONTROL MEASURES TO BE EMPLOYED WHERE NECESSARY BY SITE CONDITIONS.

10. CONTRACTOR TO COMPLY WITH ALL OSHA SAFETY REQUIREMENTS.

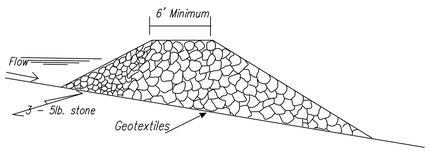
11. EXISTING VEGETATION SHALL BE PRESERVED IN ALL APPLICABLE AREAS.

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

13. BMP's SHALL INCLUDE BUT NOT LIMITED TO: ROCK CHECK DAM, STRAW BALE CHECK DAM, SILT FENCE, STRAW, WADDLES, ETC.



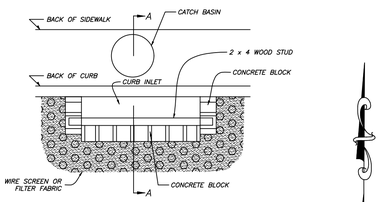
NOTE: Sediment Trap is to be cleaned out when volume becomes half full.



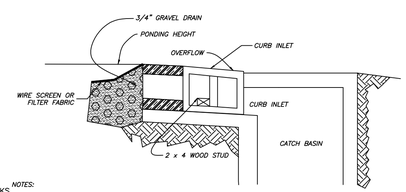
NOTES:
1. FOR USE IN SMALL CHANNELS WITH DRAINAGE AREAS OF 50 ACRES OR LESS.
2. MUST BE USED IN CONJUNCTION WITH OTHER APPROPRIATE SEDIMENT CONTROL MEASURES.
3. USE BELOW CULVERT INSTALLATIONS, DAM CONSTRUCTION, OR ANY PROJECT THAT MAY INVOLVE GRADING ACTIVITY DIRECTLY IN A STREAM.
4. NOT INTENDED TO 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



PLAN VIEW



SECTION A – A

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.

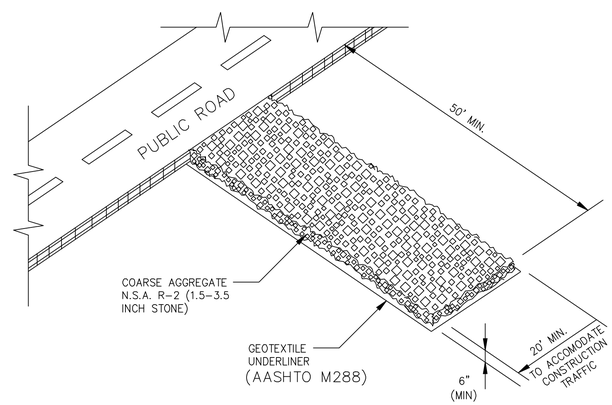
CURB INLET SEDIMENT BARRIER

GRAPHIC SCALE

30 0 30 60 90

(IN FEET)
1 inch = 30 ft.

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 2" – 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 WHEELS AND TIRES 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

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

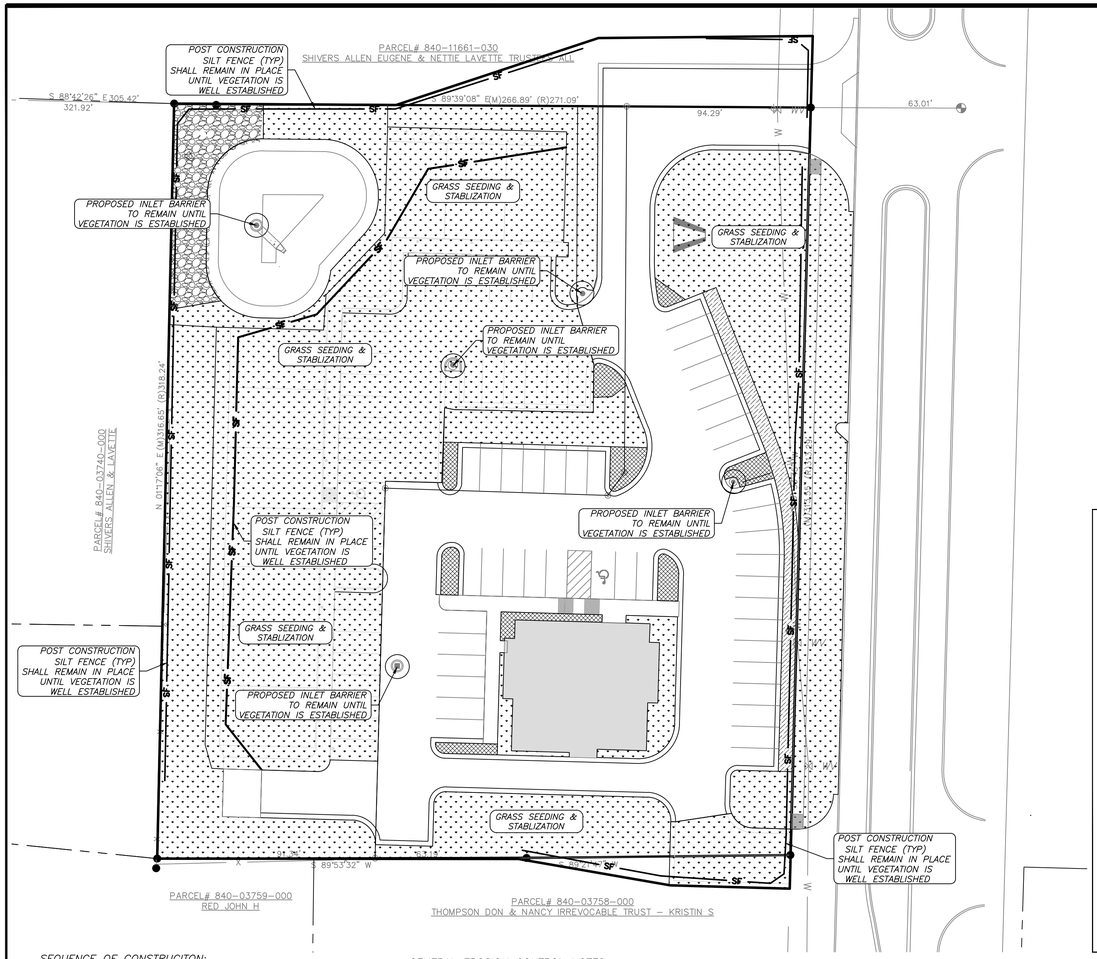
CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
ARKANSAS

EROSION CONTROL PLAN–B
INFRASTRUCTURE CONSTRUCTION
SHOPPES AT DOGWOOD SPRINGS
BRYANT PARKWAY
BRYANT, ARKANSAS

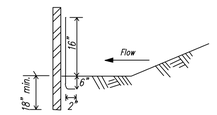
Prepared For: JON MARTIN

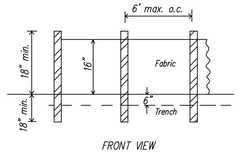
No.	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

PROJECT #: 025–029
Date: 10/20/2025 REV: 11/5/2025
Scale: 1" = 30'
Sheet: 3 of 17



PHASE 1 PLAN 2A:
**INSTALL SILT FENCE AROUND PROJECT*
**INSTALL CONSTRUCTION ENTRANCE*
**MAINTAIN EXISTING DRAINAGE SWALE DURING INITIAL PHASE OF CONSTRUCTION*
PHASE 2 PLAN 2B:
**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 2C:
**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.*

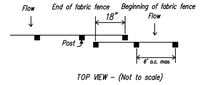




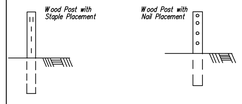
NOTE:
Use wood or steel posts

SF-A SILT FENCE (TYPE A)
NTS

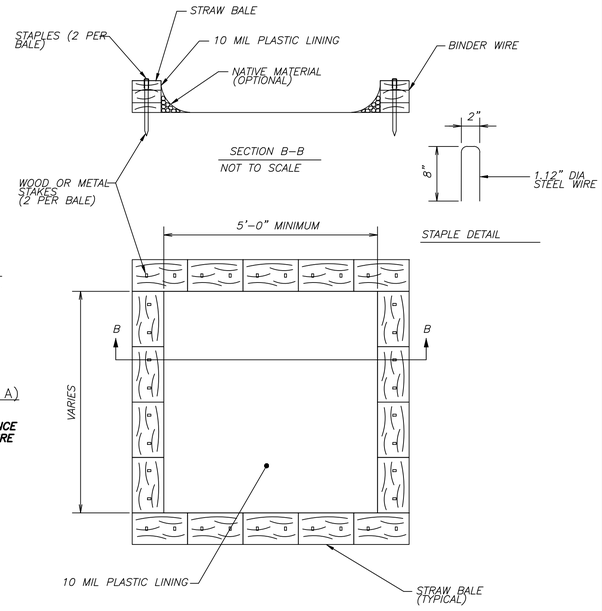
*** ALL SILT FENCE SHALL BE WIRE REINFORCED.**



OVERLAP AT FABRIC ENDS



FASTENERS FOR SILT FENCES



CONCRETE WASHOUT
NOT TO SCALE

Legend

- Property Boundary
- Surveyed lines
- RW — Road Right of Way
- T — Telephone
- FO — FO — Fiber Optic Line
- Road Center line
- X — Wire / Chainlink Fence
- S — Sanitary Sewer Main
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LEGEND

EXISTING CONTOURS

SF — PROPOSED SILT FENCE

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.
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3.) CLEAR AND GRUB SITE. (REFER PLAN A)
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9.) PREPARE SITE OF PAVING.
10.) PAVE SITE.
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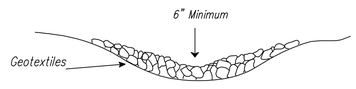

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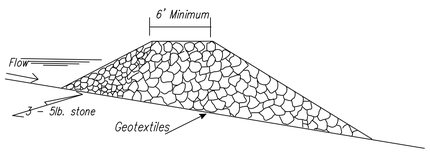

NOTES:
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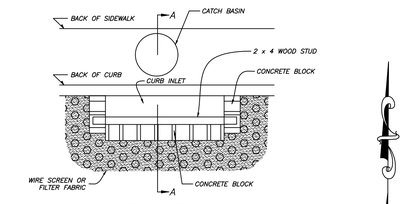
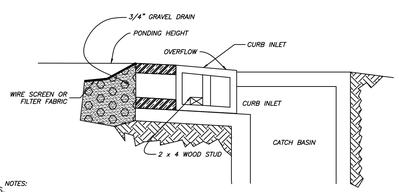
13. SEDIMENT REMOVED WHEN IT REACHES ONE-HALF OF THE ORIGINAL DAM HEIGHT

ROCK DAM
NOT TO SCALE

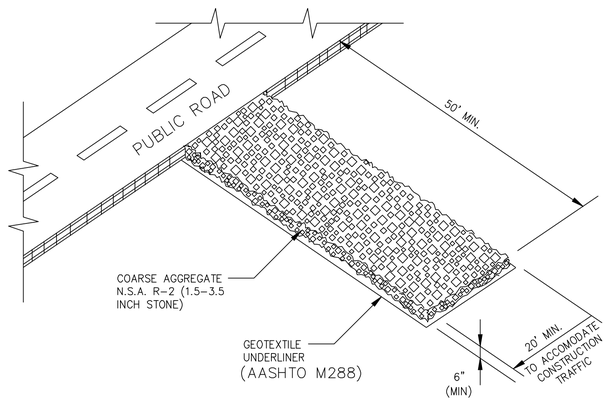




NOTES:
1.) USE BLOCK AND GRAVEL TYPE SEDIMENT BARRIER WHEN CURB INLET IS LOCATED IN GENTLY SLOPING STREET SEGMENT, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2.) BARRIER SHALL ALLOW FOR OVERFLOW FROM SEVERE STORM EVENT.
3.) INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT.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

CURB INLET SEDIMENT BARRIER

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



CONSTRUCTION EXIT

NOT TO SCALE

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

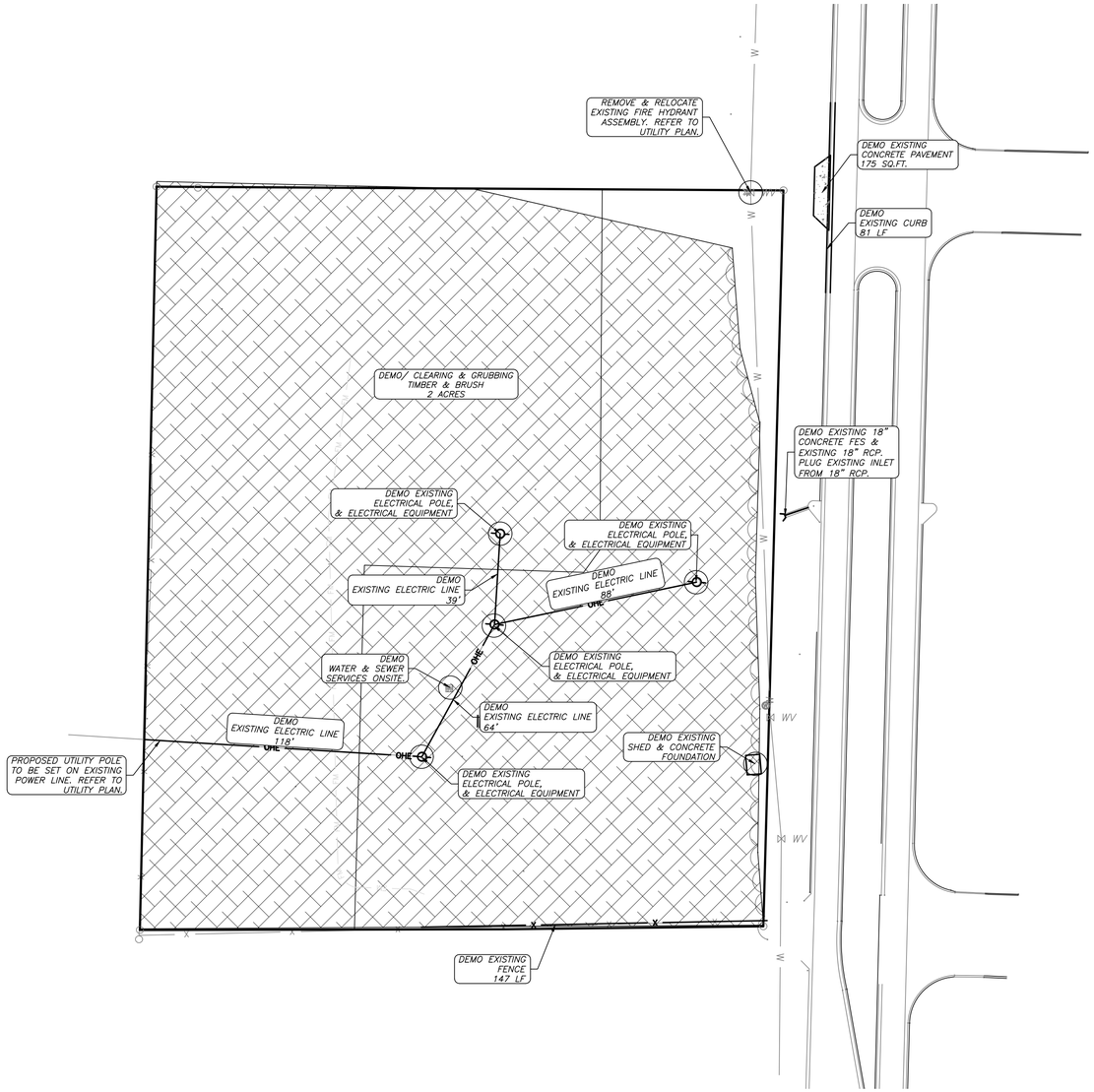
CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
STATE OF ARKANSAS

EROSION CONTROL PLAN-C
FINAL GRADING, SEEDING & LANDSCAPING
SHOPPES AT DOGWOOD SPRINGS
BRYANT PARKWAY
BRYANT, ARKANSAS

Prepared For:
JON MARTIN

No.	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

PROJECT #: 025-029
Date: 10/20/2025
REV:11/5/2025
Scale: 1" = 30'
Sheet: 4 of 17



GRAPHIC SCALE

30 0 30 60 90

(IN FEET)
1 inch = 30 ft.

GENERAL CONSTRUCTION NOTES

A. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR DAMAGES OCCURRING TO ANY PROPERTY DURING THE CONSTRUCTION OF THIS PROJECT. SAID CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT PROPERTY DAMAGE.

B. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL SOLELY AND COMPLETELY BE RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND WILL NOT BE LIMITED TO NORMAL WORKING HOURS.

C. ALL SITE AND UTILITY IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISION TO THE BRYANT STANDARD SPECIFICATIONS.

D. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

E. PRIOR TO INSTALLATION OF ANY UTILITIES, THE CONTRACTOR IS TO EXCAVATE, VERIFY, AND CALCULATE ALL CROSSINGS AND INFORM ANY IMPACTED UTILITY OWNERS OF ANY CONFLICTS PRIOR TO CONSTRUCTION.

F. CONSTRUCTION SHALL NOT START ON ANY WATER UTILITY TIE–INS UNTIL APPROVAL IS GIVEN BY BRYANT. CONTRACTOR SHALL NOT OPERATE ANY VALVE, HYDRANT, OR WATER UTILITY APPURTENANCE NOR SHALL HE ATTACH TO OR TAP ANY WATER UTILITY MAIN WITHOUT APPROVAL FROM BRYANT. THE CONTRACTOR SHALL BEAR THE COST AND CONSEQUENCE OF ANY DISRUPTION OF UTILITY OPERATION CAUSED BY CONSTRUCTION.

G. FIBER OPTIC CABLE ON AND/OR ADJACENT TO THIS SITE WERE NOT LOCATED BY THE SURVEY AND ARE NOT SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ANY FIBER OPTIC CABLES AT TO NEAR THIS SITE AND TAKE ALL NECESSARY AND REQUIRED PRECAUTIONS TO PROTECT ANY EXISTING FIBER OPTIC CABLES. CONTRACTORS SHALL COORDINATE ALL EFFORTS WITH OWNER OF FIBER OPTIC CABLES OR THEIR DESIGNATED REPRESENTATIVE.

H. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING "ONECALL" SERVICE TO MARK ALL UTILITIES PRIOR TO ANY DEMOLITION, EARTHWORK, OR UTILITY WORK ON THIS SITE.

I. ANY LAND CLEARING, CONSTRUCTION, OR DEVELOPMENT INVOLVING THE MOVEMENT OF MATERIALS, UTILITIES OR GROUND EXCAVATION SHALL BE IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN.

J. 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.

K. CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS, INCLUDING EXCAVATION & TRENCH SAFETY.

L. CONTRACTOR SHALL CONTACT THE CITY OF BRYANT STREET DEPARTMENT IN REGARD TO MAINTENANCE OF TRAFFIC PRIOR TO COMMENCEMENT OF WORK WITHIN STREET RIGHT OF WAY.

M. CONTRACTOR SHALL CONTACT CITY OF BRYANT PRIOR TO COMMENCEMENT OF UTILITY CONSTRUCTION OR TIE–INS.

811
Know what's **below.**
Call before you dig.

DEMO NOTES:
1) QUANTITATIVE AREAS ARE APPROXIMATE, TO BE VERIFIED BY THE DEMOLITION CONTRACTOR.

UTILITIES:

SANITARY SEWER:
BRYANT
WASTEWATER DEPARTMENT
210 SW 3RD ST.
BRYANT, AR 72022
(501) 943–0999

WATER:
BRYANT
WATER DEPARTMENT
210 SW 3RD ST.
BRYANT, AR 72022
(501) 943–0999

ELECTRIC:
ENTERGY
SIMMONS TOWER
425 W. CAPITOL AVE.
LITTLE ROCK, AR 72201
1(800) 368–3749

NATURAL GAS:
SUMMIT
400 WEST CAPITOL #600
LITTLE ROCK, ARKANSAS
888–498–0409

Legend

- Property Boundary
- Surveyed lines
- RW — Road Right of Way
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- FO — Fiber Optic Line
- Road Center line
- X — Wire / Chainlink Fence
- S — Sanitary Sewer Main
- SS — Sanitary Sewer Service
- WS — Water Service Line
- W — Water Main
- UES — Underground Electric Service
- UGE — Underground Electric Primary
- OHE — Overhead Electric Primary
- G — Gas Main
- FM — Force Sewer line
- SF — Silt Fence
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- Sanitary Sewer Manhole
- Storm Drainage Manhole
- Telephone Pedistal
- Guy Wire
- Light Pole
- Computed Corner
- Found Monument (Labeled)
- Utility Pole
- Gas Meter
- Sewer Service Cleanout

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

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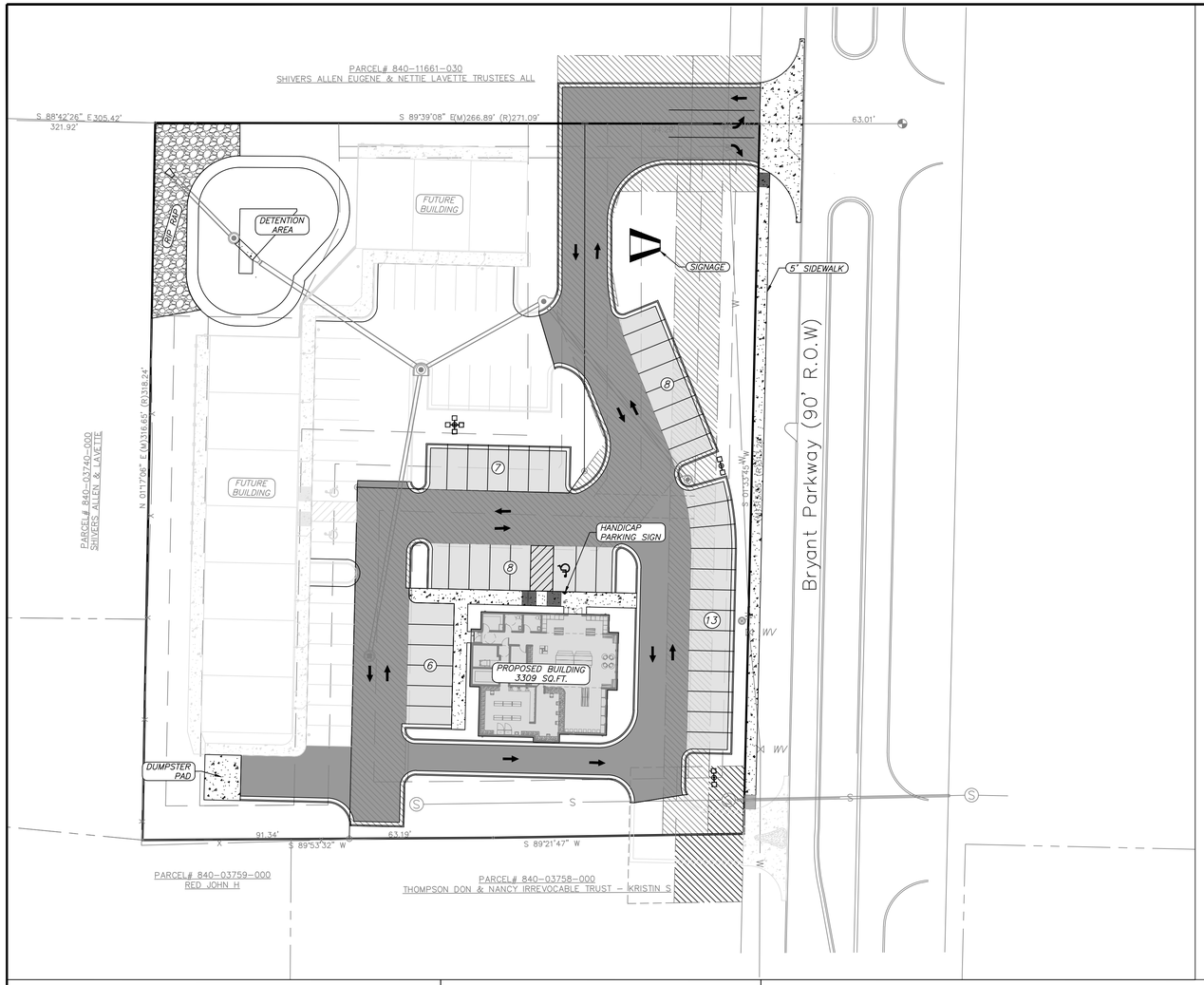
No. 2519
ARKANSAS

DEMOLITION PLAN
SHOPPES AT DOGWOOD SPRINGS
PHASE 1
BRYANT PARKWAY
BRYANT, ARKANSAS

Prepared For: JON MARTIN

No.	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/24/2025

PROJECT #: 025–029
Date: 10/20/2025 REV:11/5/2025
Scale: 1" = 30'
Sheet: 5 of 17



GENERAL NOTES:

1.) SURVEYING PROVIDED BY SOUTHPOINT SURVEYING LLC.
2.) PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS PLAN AND BASED ON GEOTECHNICAL ANALYSIS OF THE SOIL CONDITIONS.
3.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
4.) CONSTRUCTION SITE SHALL ADHERE TO BRYANT STORMWATER REQUIREMENTS, AND SHALL MEET ALL APPLICABLE ADEQ STANDARDS FOR EROSION CONTROL MEASURES.
5.) ALL UTILITIES TO BE LOCATED PRIOR TO CONSTRUCTION (ONE CALL, CITY, ETC.)
6.) CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION & TRENCH SAFETY.
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SITE NOTES

1.) PROJECT SITE AREA 1.925 ACRES (83,899 SQUARE FEET)
2.) PROJECT PROVIDES 42 PARKING SPACES.
3.) CURRENT ZONING: C2
4.) PROPOSED USE: PHARMACY
5.) BUILDING LINES TO BE NOTED ON SITE PLAN.
6.) PROPOSED LOCATIONS OF TRAFFIC CONTROL MARKERS ARE APPROXIMATE. ACTUAL LOCATION AND INSTALLATION MUST MEET MUTCD AND BRYANT ROAD DEPT. SPECS.
7.) CONTRACTOR SHALL INCLUDE IN BID THE COST FOR COMPACTION TESTS ON SUBGRADE & BASE. TEST TO BE CONDUCTED AS PER GEOTECHNICAL ENGINEERS SPECS.
8.) CONTRACTOR TO INCLUDE IN BID THE COST OF MATERIAL AND INSTALLATION OF STREET SIGNS & TRAFFIC CONTROL SIGNS.
9.) CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION & TRENCH SAFETY.
10.) NO PORTION OF THIS PROPERTY (AS SHOWN) IS IN THE 100 YEAR FLOOD HAZARD AREA. REFERENCE FIRM MAP 05125C024CE EFFECTIVE 6/5/2020
11.) REFER TO LANDSCAPING PLAN FOR REQUIREMENTS/LIGHTING PLAN TO BE VERIFIED W/OWNER. REVISIONS TO PLAN TO BE SUBMITTED TO CITY.
12.) IRRIGATION SYSTEMS TO BE DESIGNED BY OTHERS.
13.) THERE ARE NO EROSION PROBLEMS ON THE SITE OR KNOWN EROSION PROBLEMS WITHIN 300' DOWNSTREAM.
14.) THERE IS NO SURFACE EVIDENCE OF EXISTING OR ABANDONED WATER WELLS, SUMPS, CESSPOOLS, SPRING WATER IMPOUNDMENTS, AND UNDERGROUND STRUCTURES WITHIN THE PROJECT.
15.) PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH AHTD SPECIFICATIONS, AND BASED ON GEOTECHNICAL ANALYSIS OF THE SOIL CONDITIONS. CONTRACTOR SHALL INCLUDE IN BID THE COST FOR COMPACTION TESTS ON SUBGRADE & BASE. TEST TO BE CONDUCTED AS PER GEOTECHNICAL SPECS.
16.) ALL SITE LIGHTING IS TO BE LOW LEVEL AND DIRECTIONAL, SHIELDED DOWNWARD AND INTO THE SITE. DESIGNED BY OTHER AS PER CITY OF BRYANT REQUIREMENTS.

PROPERTY DESCRIPTION AS SURVEYED

LOT 1 AND 2 OF THE SHOPPES AT DOGWOOD SPRINGS, A REPLAT OF ALL OF BLOCK 4, THE EAST HALF BLOCK 5, LOT 1 OF BLOCK 8, AND LOTS 1 AND 2 OF BLOCK 9, TOGETHER WITH A PORTION OF NORTHERN AVENUE, NORTH STREET, AND LIBERTY STREET ABANDONED RIGHT OF WAYS ADJACENT TO SAID BLOCKS, AS SHOWN ON THE PLAT OF THE TOWN OF COLLEGEVILLE, DATED JUNE 21, 1838.

UTILITIES:

SANITARY SEWER:
BRYANT
WASTEWATER DEPARTMENT
210 SW 3RD ST.
BRYANT, AR 72022
(501) 943-0999

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ENGINEER
RICHARDSON ENGINEERING, PLLC
ADDRESS: 325 W.SOUTH ST.
BENTON, AR. 72015
PHONE NO. (501) 315-7225
PROJECT REPRESENTATIVE:
TRISTIN PHILLIPS, P.E.

SURVEYOR
SOUTHPOINT SURVEYING
P.O. BOX 400
SHERIDAN, AR 72150
(501)285-5958

DEVELOPERS
JON MARTIN

GRAPHIC SCALE

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

VICINITY MAP

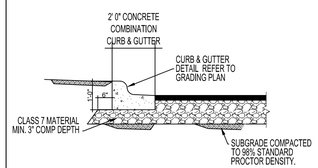
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 21954
TRISTIN SCOTT PHILLIPS

PAVEMENT SECTION

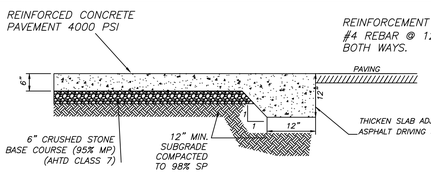
LIGHT DUTY SECTION TYPE "A" ASPHALT
- 3 INCHES SURFACE COURSE
- 8 INCHES CRUSHED STONE BASE COURSE (98% MP) (AHTD CLASS 7)
- 12" MIN SUBGRADE COMPACTED TO 98% STANDARD DENSITY (SUBGRADE MATERIAL AND THICKNESS SUBJECT TO GEOTECHNICAL ENGINEER'S RECOMMENDATIONS)

HEAVY DUTY SECTION TYPE "B" ASPHALT
- 1.5 INCHES HMAC SURFACE COURSE
- 2.5 INCHES BINDER COURSE
- 8 INCHES CRUSHED STONE BASE COURSE (98% MP) (AHTD CLASS 7)
- 12" MIN SUBGRADE COMPACTED TO 98% STANDARD DENSITY (SUBGRADE MATERIAL AND THICKNESS SUBJECT TO GEOTECHNICAL ENGINEER'S RECOMMENDATIONS)

* PAVEMENT SECTION SUBJECT TO GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.



TYPICAL CURB & GUTTER DETAIL
N.T.S.



DUMPSTER CONCRETE SECTION
NTS

* PAVEMENT SECTION & REINFORCEMENT AS PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

CONCRETE PAVEMENT NOTES:
1. CONCRETE TO BE 4000 PSI, SLUMP 4" +/- 1".
2. INSTALL 1" DIA. X 18" L SMOOTH DOWELS ON 18" CENTERS AT CONTROL JOINTS.
3. SAW CUT CONTROL JOINTS 15' MAX. EACH WAY AT A DEPTH OF 25% (¼" PER 1") OF CONCRETE SECTION THICKNESS.
4. AIR ENTRAINMENT 3-5%.
5. FINISH TO BE MEDIUM BROOM FINISH.
6. INSTALL EXPANSION JOINTS WHERE ABUTTING STRUCTURES AND AT A MAX. OF 200 LF OF PAVING. USE ¾" EXPANSION JOINT MATERIAL WHERE EXPANSION JOINTS ARE SPECIFIED. USE 1" DIA. X 18" L SMOOTH DOWELS ON 18" CENTERS IN EXPANSION JOINTS BETWEEN PAVEMENT SECTIONS.

Legend

- Property Boundary
- Surveyed lines
- RW — Road Right of Way
- T — Telephone
- FO — FO — FO — Fiber Optic Line
- G — Gas Line
- X — Wire / Chainlink Fence
- S — Sanitary Sewer
- W — Water Line
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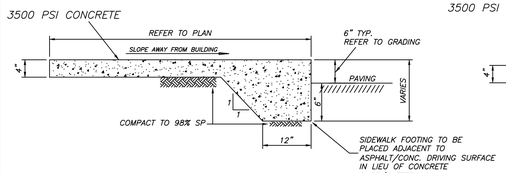
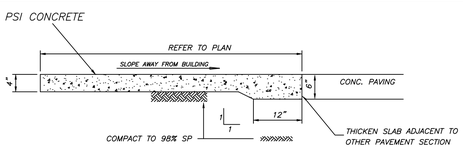
- Water Meter Box
- Sanitary Sewer Manhole
- Storm Drainage Manhole
- Telephone Pedistal
- Guy Wire
- Computed Corner
- Found Monument (Labeled)
- Utility Pole
- Light Pole
- PROPOSED CONCRETE
- PROPOSED HEAVEY DUTY ASPHALT, TYPE B
- PROPOSED LIGHT DUTY ASPHALT, TYPE A
- Gas Meter
- * APPROVED ADA SIDEWALK RAMP. REFER TO NOTES.

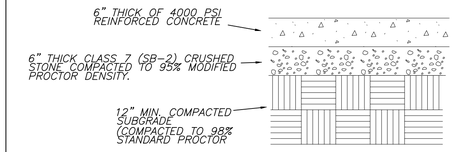


CONC. SIDEWALK - TYPE 'A'
NTS



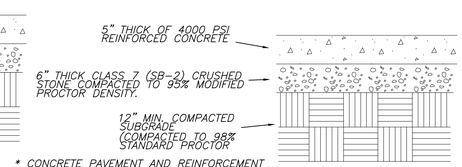
CONC. SIDEWALK - TYPE 'B'
NTS

* NOTES:
1. PORTLAND CEMENT CONCRETE 3500 PSI. MIN. MIX AS PER GEOTECHNICAL ENGINEERS RECOMMENDATIONS.
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 ON RAMPS 1:12 MAX. LONGITUDINAL SLOPE 5% ON SIDEWALKS.
7. CONTROL JOINTS PER CONC. WALK CONTROL JOINT DETAIL.



* CONCRETE PAVEMENT AND REINFORCEMENT TO BE VERIFIED PER ACI 330R-08-SPB AND SUBJECT TO GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

HEAVY DUTY CONCRETE PAVEMENT SECTION (OPTIONAL)
NTS



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LIGHT DUTY CONCRETE PAVEMENT SECTION (OPTIONAL)
NTS

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

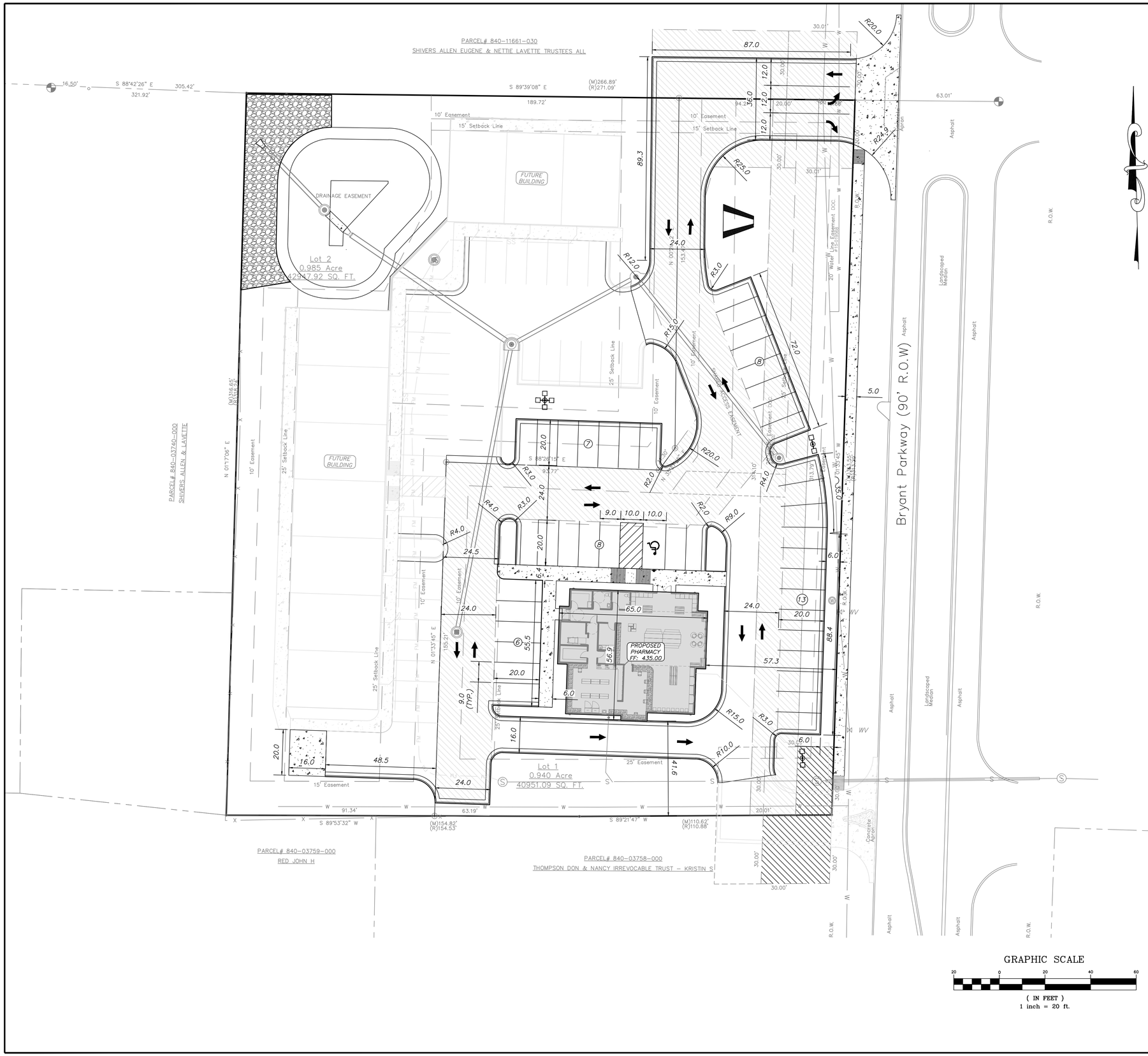
CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
ARKANSAS

OVERALL SITE PLAN
SHOPPES AT DOGWOOD SPRINGS
PHASE 1
BRYANT PARKWAY
BRYANT, ARKANSAS

Prepared For: JON MARTIN

No.	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

PROJECT #: 025-029
Date: 10/20/2025
REV: 11/5/2025
Scale: 1" = 30'
Sheet: 6 of 17



SITE NOTES

1.) PROJECT SITE AREA 1.925 ACRES (83,899 SQUARE FEET)
2.) PROJECT PROVIDES 42 PARKING SPACES.
3.) CURRENT ZONING: C2
4.) PROPOSED USE: PHARMACY
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11.) REFER TO LANDSCAPING PLAN FOR REQUIREMENTS/LIGHTING PLAN TO BE VERIFIED W/OWNER. REVISIONS TO PLAN TO BE SUBMITTED TO CITY.
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210 SW 3RD ST.
BRYANT, AR 72022
(501) 943-0999

WATER:
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ENGINEER
RICHARDSON ENGINEERING, PLLC
ADDRESS: 325 W.SOUTH ST.
BENTON, AR. 72015
PHONE NO. (501) 315-7225
PROJECT REPRESENTATIVE:
TRISTIN PHILLIPS, P.E.

SURVEYOR
SOUTHPOINT SURVEYING
P.O. BOX 400
SHERIDAN, AR 72150
(501)285-5958

DEVELOPERS
JON MARTIN

OWNER OF RECORD
PROSPER PROPERTIES LLC
612 W. COMMERCE ST, STE 2
BRYANT, AR 72022
SOURCE OF TITLE: 2020-020202

GENERAL NOTES:

1.) SURVEYING PROVIDED BY SOUTHPOINT SURVEYING LLC.
2.) PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS PLAN AND BASED ON GEOTECHNICAL ANALYSIS OF THE SOIL CONDITIONS.
3.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
4.) CONSTRUCTION SITE SHALL ADHERE TO BRYANT STORMWATER REQUIREMENTS, AND SHALL MEET ALL APPLICABLE ADEQ STANDARDS FOR EROSION CONTROL MEASURES.
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GRAPHIC SCALE
20 0 20 40 60
(IN FEET)
1 inch = 20 ft.

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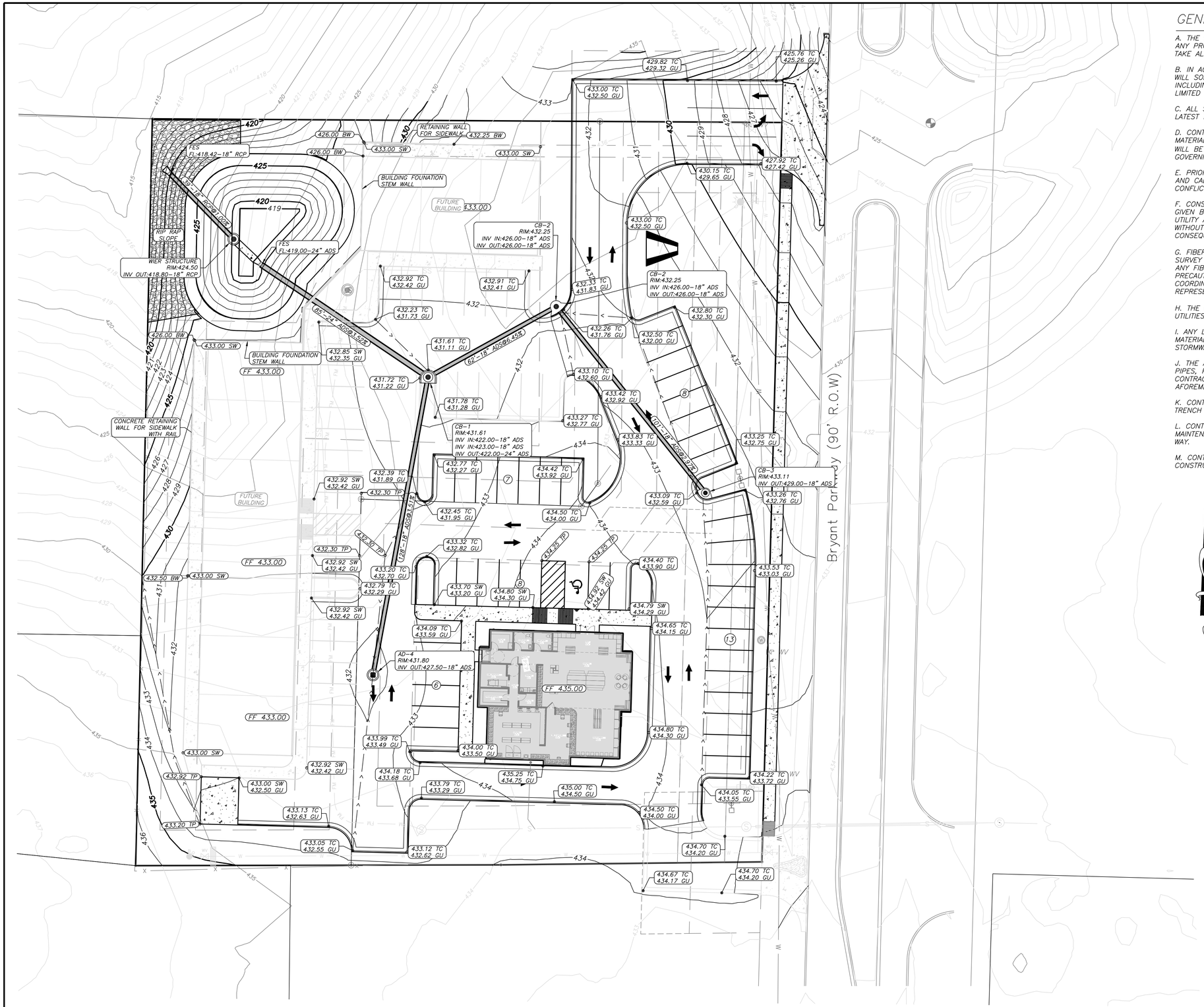
SITE DIMENSION PLAN
SHOPPES AT DOGWOOD SPRINGS
PHASE 1
BRYANT PARKWAY
BRYANT, ARKANSAS

Prepared For: JON MARTIN

No.	Revisions	Date
1.	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

PROJECT #: 025-029
Date: 10/20/2025 REV:11/5/2025
Scale: 1" = 20'
Sheet: 7 of 17



GRAPHIC SCALE

20 0 20 40 60

(IN FEET)
1 inch = 20 ft.

GENERAL CONSTRUCTION NOTES

A. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR DAMAGES OCCURRING TO ANY PROPERTY DURING THE CONSTRUCTION OF THIS PROJECT. SAID CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT PROPERTY DAMAGE.

B. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL SOLELY AND COMPLETELY BE RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND WILL NOT BE LIMITED TO NORMAL WORKING HOURS.

C. ALL SITE AND UTILITY IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISION TO THE BRYANT STANDARD SPECIFICATIONS.

D. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

E. PRIOR TO INSTALLATION OF ANY UTILITIES, THE CONTRACTOR IS TO EXCAVATE, VERIFY, AND CALCULATE ALL CROSSINGS AND INFORM ANY IMPACTED UTILITY OWNERS OF ANY CONFLICTS PRIOR TO CONSTRUCTION.

F. CONSTRUCTION SHALL NOT START ON ANY WATER UTILITY TIE-INS UNTIL APPROVAL IS GIVEN BY BRYANT. CONTRACTOR SHALL NOT OPERATE ANY VALVE, HYDRANT, OR WATER UTILITY APPURTENANCE NOR SHALL HE ATTACH TO OR TAP ANY WATER UTILITY MAIN WITHOUT APPROVAL FROM BRYANT. THE CONTRACTOR SHALL BEAR THE COST AND CONSEQUENCE OF ANY DISRUPTION OF UTILITY OPERATION CAUSED BY CONSTRUCTION.

G. FIBER OPTIC CABLE ON AND/OR ADJACENT TO THIS SITE WERE NOT LOCATED BY THE SURVEY AND ARE NOT SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ANY FIBER OPTIC CABLES AT TO NEAR THIS SITE AND TAKE ALL NECESSARY AND REQUIRED PRECAUTIONS TO PROTECT ANY EXISTING FIBER OPTIC CABLES. CONTRACTORS SHALL COORDINATE ALL EFFORTS WITH OWNER OF FIBER OPTIC CABLES OR THEIR DESIGNATED REPRESENTATIVE.

H. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING "ONECALL" SERVICE TO MARK ALL UTILITIES PRIOR TO ANY DEMOLITION, EARTHWORK, OR UTILITY WORK ON THIS SITE.

I. ANY LAND CLEARING, CONSTRUCTION, OR DEVELOPMENT INVOLVING THE MOVEMENT OF MATERIALS, UTILITIES OR GROUND EXCAVATION SHALL BE IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN.

J. 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.

K. CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS, INCLUDING EXCAVATION & TRENCH SAFETY.

L. CONTRACTOR SHALL CONTACT THE CITY OF BRYANT STREET DEPARTMENT IN REGARD TO MAINTENANCE OF TRAFFIC PRIOR TO COMMENCEMENT OF WORK WITHIN STREET RIGHT OF WAY.

M. CONTRACTOR SHALL CONTACT CITY OF BRYANT PRIOR TO COMMENCEMENT OF UTILITY CONSTRUCTION OR TIE-INS.

UTILITIES:

SANITARY SEWER:
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210 SW 3RD ST.
BRYANT, AR 72022
(501) 943-0999

WATER:
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WATER DEPARTMENT
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BRYANT, AR 72022
(501) 943-0999

ELECTRIC:
ENTERGY
SIMMONS TOWER
425 W. CAPITOL AVE.
LITTLE ROCK, AR 72201
1(800) 368-3749

NATURAL GAS:
SUMMIT
400 WEST CAPITOL #600
LITTLE ROCK, ARKANSAS
888-498-0409

ENGINEER
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BENTON, AR. 72015
PHONE NO. (501) 315-7225
PROJECT REPRESENTATIVE:
TRISTIN PHILLIPS, P.E.

SURVEYOR
SOUTHPOINT SURVEYING
P.O. BOX 400
SHERIDAN, AR 72150
(501)285-5958

DEVELOPERS
JON MARTIN

OWNER OF RECORD
PROSPER PROPERTIES LLC
612 W. COMMERCE ST, STE 2
BRYANT, AR 72022
SOURCE OF TITLE: 2020-020202

Legend

- Property Boundary
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- EXISTING CONTOUR

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CERTIFICATE OF AUTHORIZATION
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No. 2519
ARKANSAS

GRADING PLAN OVERALL
SHOPPES AT DOGWOOD SPRINGS
PHASE 1
BRYANT PARKWAY
BRYANT, ARKANSAS

Prepared For:
JON MARTIN

No.	Revisions	Date
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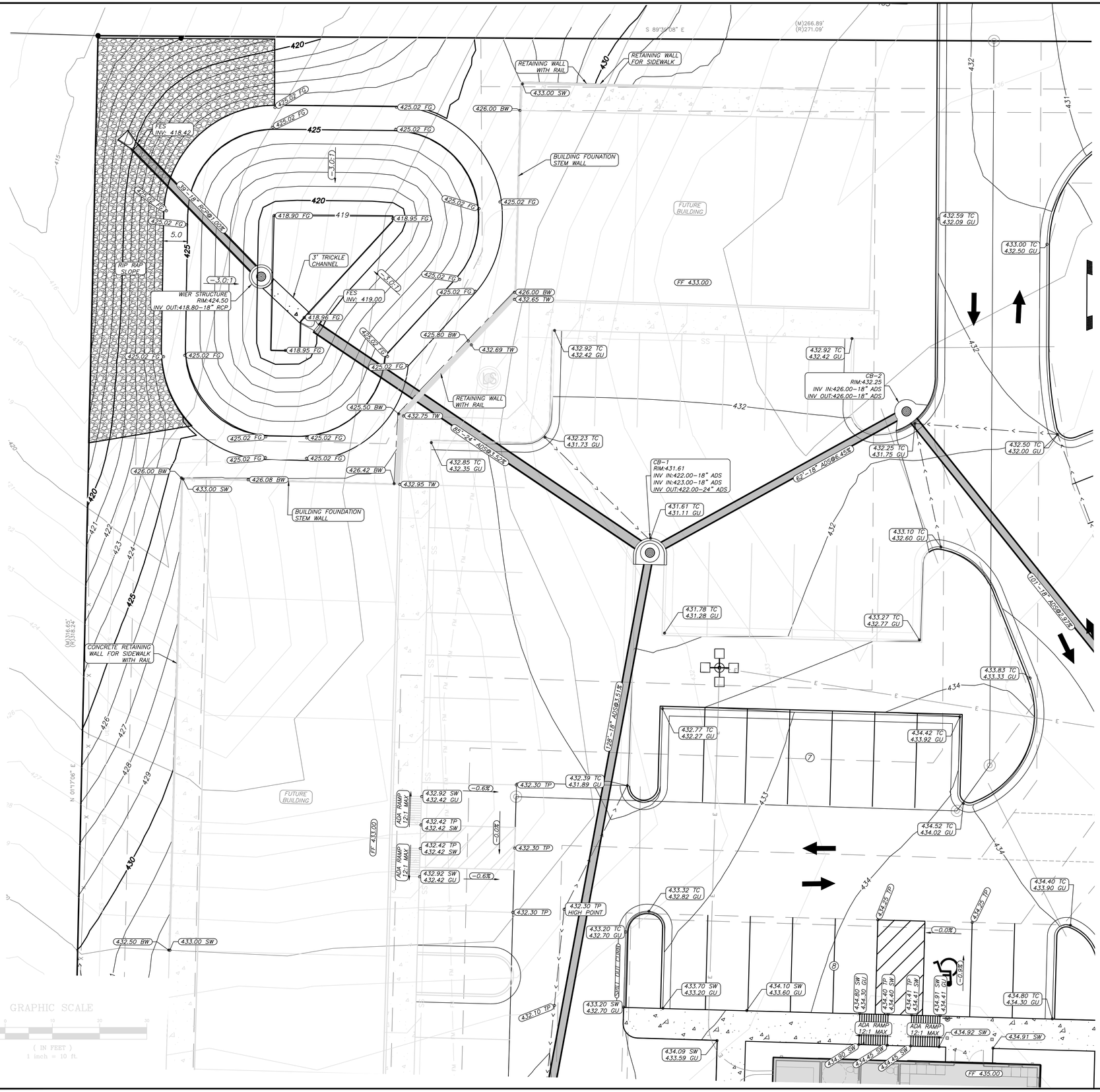

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CERTIFICATE OF AUTHORIZATION — Richardson Engineering, PLLC — No. 2519 — ARKANSAS

DETENTION GRADING PLAN
SHOPPES AT DOGWOOD SPRINGS
PHASE 1
BRYANT PARKWAY
BRYANT, ARKANSAS

Prepared For: JON MARTIN

No.	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

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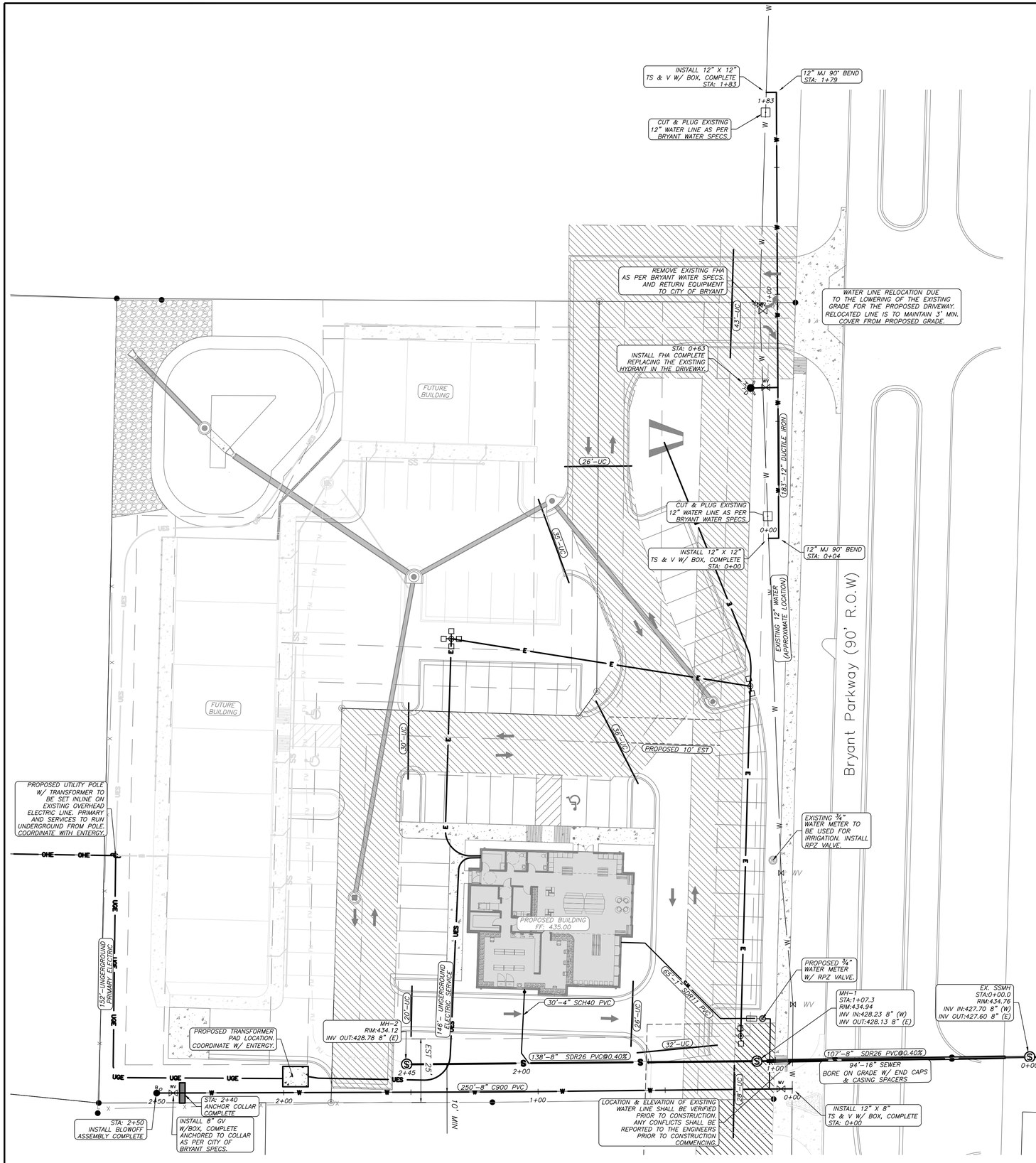

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GAS SERVICE NOTE:
GAS SERVICE FOR THIS PROJECT IS TO BE COORDINATED AND DESIGNED BY SUMMIT UTILITIES

CONDUIT NOTE - UC
4-4" PVC GENERAL CONDUITS

GRAPHIC SCALE
20 0 20 40 60
(IN FEET)
1 inch = 20 ft.

GENERAL NOTES:

1.) ALL CONSTRUCTION AND MATERIALS TO MEET OR EXCEED CITY OF BRYANT SPECIFICATIONS.
2.) ALL SEWER GRAVITY MAINS SHALL BE SDR-26 PVC, UNLESS OTHERWISE SHOWN ON PLAN.
3.) ALL WATER MAINS SHALL BE SDR21 PVC PIPE UNLESS OTHERWISE SHOWN ON PLAN.
4.) ATTENTION IS CALLED TO WATER, SEWER, AND STREET LAYOUT FOR ADDITIONAL INFORMATION.
5.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
6.) ALL UTILITIES TO BE LOCATED PRIOR TO CONSTRUCTION (ONE CALL, CITY, UTILITY OWNER, 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).
9.) CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION & TRENCH SAFETY.
10.) 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.
11.) 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.
12) CITY OF BRYANT MASTER SPECIFICATIONS APPLY.
13) CONTRACTOR SHALL CONTACT THE CITY OF BRYANT STREET DEPARTMENT IN REGARD TO MAINTENANCE OF TRAFFIC PRIOR TO COMMENCEMENT OF WORK WITHIN STREET RIGHT OF WAY.
14) CONTRACTOR SHALL CONTACT CITY OF BRYANT PRIOR TO COMMENCEMENT OF UTILITY CONSTRUCTION OR TIE-INS.

SEWER NOTES:

1.) ALL CONSTRUCTION AND MATERIALS TO MEET OR EXCEED CITY OF BRYANT SPECIFICATIONS.
2.) ALL SERVICE LINES SHALL BE 4" SDR-21 OR SCH 40 PVC OR AS SPECIFIED ON THE DESIGN DRAWINGS.
3.) CONTRACTOR TO VERIFY METHOD OF CONNECTION WITH THE UTILITY OWNER PRIOR TO CONSTRUCTION.
4) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
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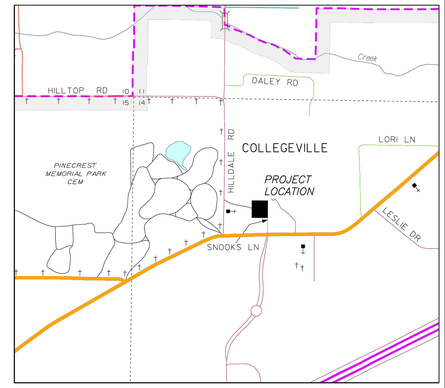
6) BACKFILL FOR ALL DISTURBED (EXCAVATED) AREAS SHALL BE IN ACCORDANCE WITH CITY OF BRYANT STANDARD SPECS.
7) A 2-WAY CLEANOUT WITH BACKFLOW PREVENTER SHALL BE INSTALLED WITHIN 5 FEET OF THE BUILDING. DIRECTIONALY, THE CLEANOUT MUST SWEEP AWAY FROM THE VALVE TO PREVENT DAMAGE TO THE BACKFLOW PREVENTER.

WATER NOTES:

1.) ALL CONSTRUCTION AND MATERIALS TO MEET OR EXCEED CITY OF BRYANT SPECIFICATIONS.
2.) ALL SERVICE LINES AND METER SETTINGS SHALL BE AS PER CITY OF BRYANT SPECS.
3.) 12ga BLUE COATED COPPER TRACING WIRE TO BE INSTALLED WITH ALL WATERLINES (MAINS & SERVICES).
4.) ALL FITTINGS SHALL BE DUCTILE IRON M.J. (WHERE AVAILABLE).
5.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
6.) MINIMUM SEPARATION BETWEEN WATERLINES & SEWERLINES SHALL BE 10'
7.) MINIMUM VERTICAL SEPARATION BETWEEN WATERLINE & SEWERLINE CROSSINGS SHALL BE 18" (WATER ON TOP).
8.) CONTRACTOR SHALL ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION & TRENCH SAFETY.
9.) STREET CROSSINGS TO MEET CITY OF BRYANT STREET DEPT SPECIFICATIONS.
10.) CONTRACTOR TO ADHERE TO AWWA SPECS FOR BLOCKING AND ANCHORING.
11.) ON-SITE FIRE HYDRANTS SHALL BE PER CITY OF BRYANT SPECIFICATIONS.

VICINITY MAP



Legend

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

OVERALL UTILITY PLAN
SHOPPES AT DOGWOOD SPRINGS
PHASE 1
BRYANT PARKWAY
BRYANT, ARKANSAS

Prepared For: JON MARTIN

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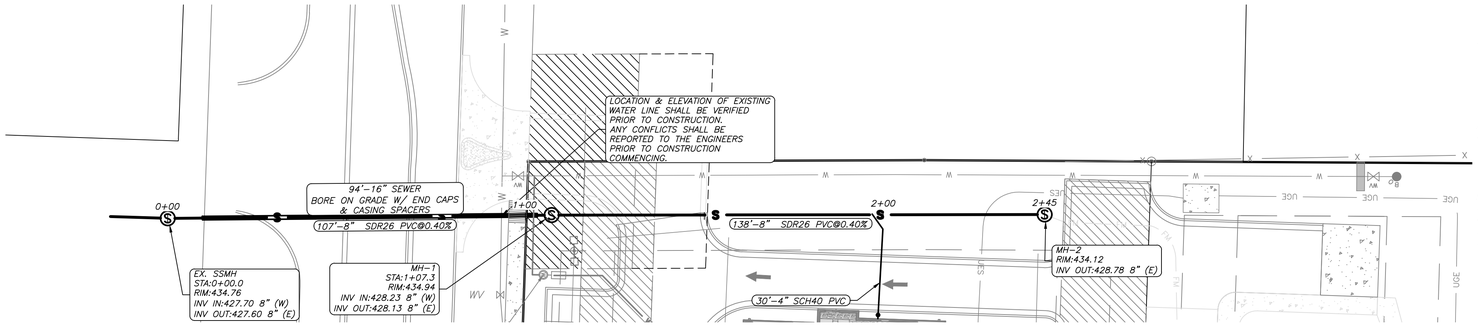
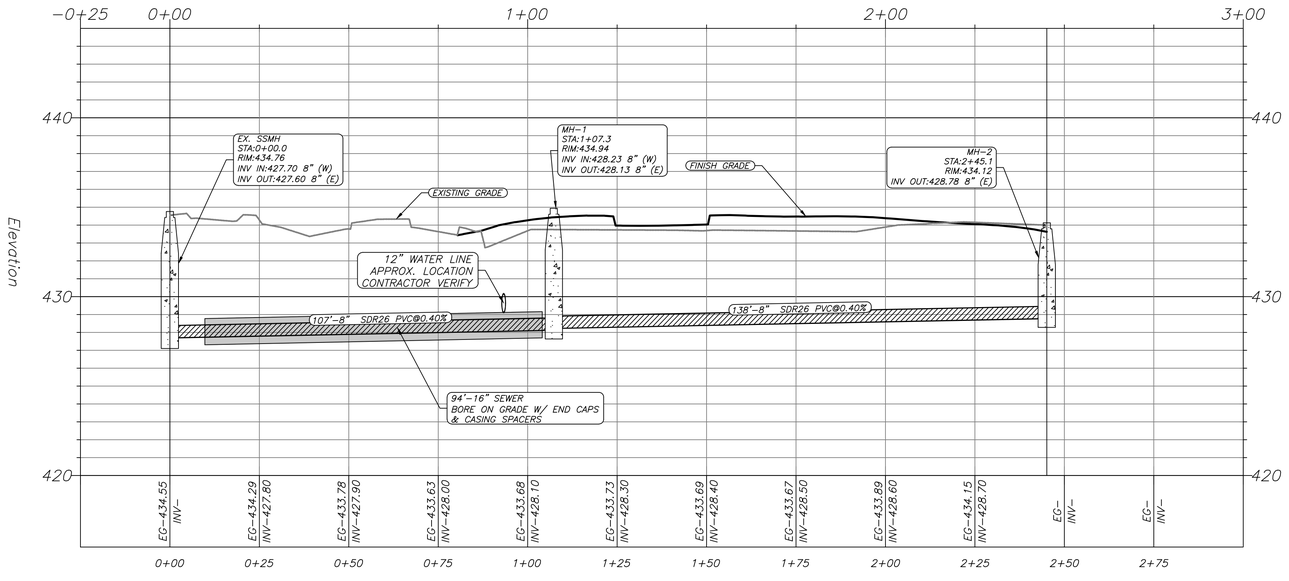


SEWER MAIN 1 PROFILE



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SEWER MAIN PLAN/PROFILE
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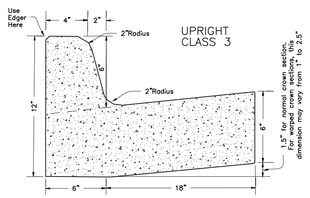
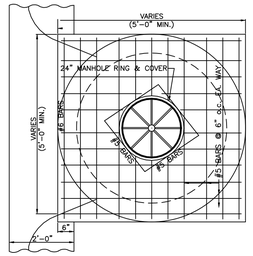
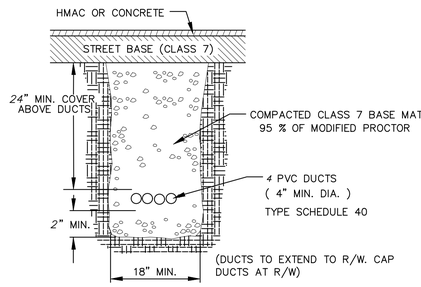
Sheet: 11 of 17

TYPICAL STREET/PARKING CURB SECTION





TYPICAL DROP INLET PLAN

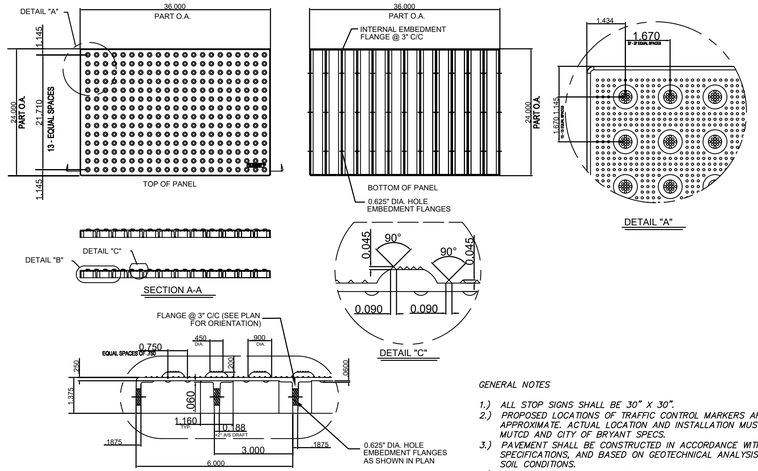


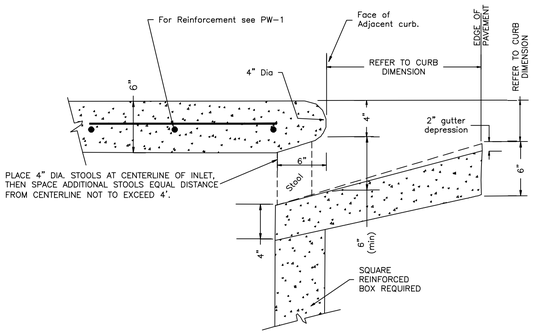
TYPICAL SECTION 4–4" UTILITY DUCTS

NOT TO SCALE

HANDICAP RAMP DETAILS

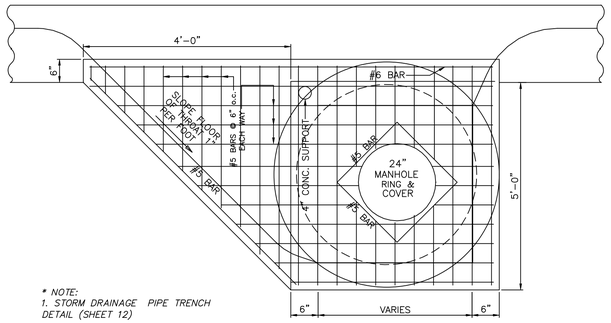
NOT TO SCALE





INLET THROAT BETWEEN STOOLS

NOTE: This detail is not to be used for inlets in curb radius. See PW-10 for detail of inlet top in curb radius.



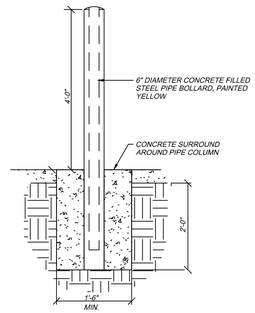
** NOTE:*
1. STORM DRAINAGE PIPE TRENCH DETAIL (SHEET 12)

DETAIL – DROP INLET WITH EXTENDED THROAT

THROAT OPENING (NOT IN RADIUS)

NOT TO SCALE

BOLLARD DETAIL



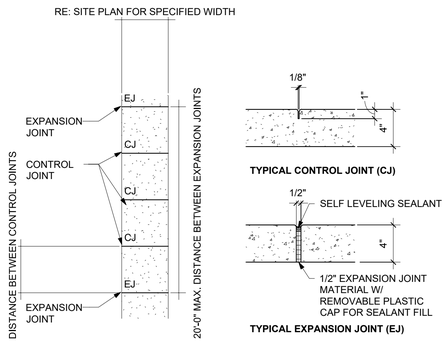
GENERAL NOTES

1.) *ALL STOP SIGNS SHALL BE 30" X 30".*
2.) *PROPOSED LOCATIONS OF TRAFFIC CONTROL MARKERS ARE APPROXIMATE. ACTUAL LOCATION AND INSTALLATION MUST MEET MUTCD AND CITY OF BRYANT SPECS.*
3.) *PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH ENGINEER'S SPECIFICATIONS, AND BASED ON GEOTECHNICAL ANALYSIS OF THE SOIL CONDITIONS.*
4.) *CONTRACTOR SHALL INCLUDE IN BID THE COST FOR COMPACTION TESTS ON SUBGRADE & BASE. TEST TO BE CONDUCTED AS PER CITY OF BRYANT STREET DEPARTMENT SPECIFICATIONS.*
5.) *CURB INLETS CONSTRUCTED SO THAT POOLING OF WATER DOES NOT OCCUR AT INTERSECTIONS.*
6.) *ALL STORM BOX LIDS SHALL BE PER CITY OF BRYANT SPECIFICATIONS.*
7.) *ALL SIDEWALKS AND CURB/GUTTER TO BE CONSTRUCTED PER CITY OF BRYANT SPECIFICATIONS.*
8.) *ALL SIDEWALKS TO MEET ADA REQUIREMENTS.*
9.) ** – INDICATES ADA APPROVED HANDICAP RAMP.*
10.) *DEVELOPMENT SHALL ADHERE TO CITY OF BRYANT STORMWATER REQUIREMENTS.*
11.) *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. ALL REPAIRS OR RELOCATIONS NECESSARY SHALL BE MADE AS REQUIRED BY THE UTILITY OR OWNER OF THE STRUCTURE. THE COST OF SAID REPAIRS OR RELOCATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.*

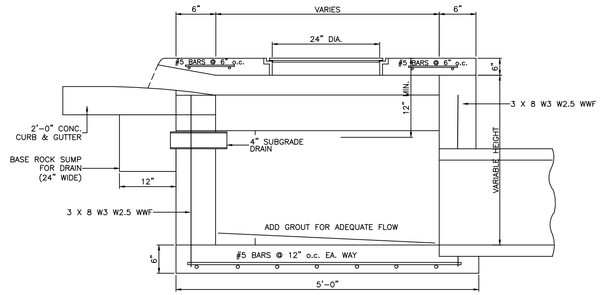
REFER TO CITY OF BRYANT, ARKANSAS PUBLIC WORKS STREET AND DRAINAGE STANDARD DETAILS FOR ADDITIONAL DETAILS AND INFORMATION.

CONC. WALK/CONCRETE SWALE CONTROL JOINT DETAILS

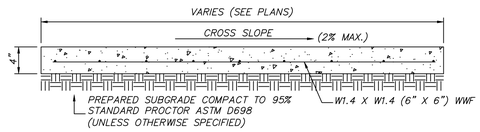
NTS



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



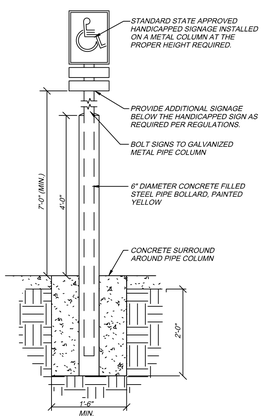
TYPICAL DROP INLET – POURED IN PLACE ELEVATION



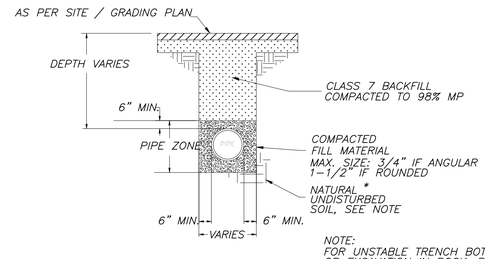
CONCRETE SIDEWALK SPECIFICATIONS

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.*



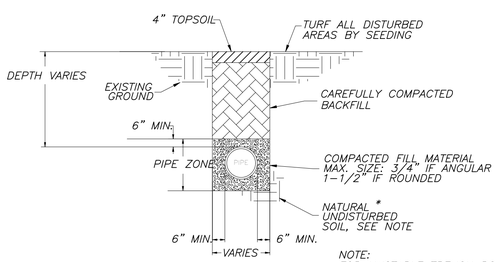
HANDICAP SIGN DETAIL



NOTE:
FOR UNSTABLE TRENCH BOTTOM OR EXCAVATION IN ROCK, REFER TO SPECIFICATIONS FOR APPROPRIATE PIPE BEDDING.

STORM DRAINAGE PIPE TRENCH (UNDER ASPHALT)

NTS



NOTE:
FOR UNSTABLE TRENCH BOTTOM OR EXCAVATION IN ROCK, REFER TO SPECIFICATIONS FOR APPROPRIATE PIPE BEDDING.

STORM DRAINAGE PIPE TRENCH (UNPAVED AREA)

NTS

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CERTIFICATE OF AUTHORIZATION ARKANSAS Richardson Engineering, PLLC No. 2519

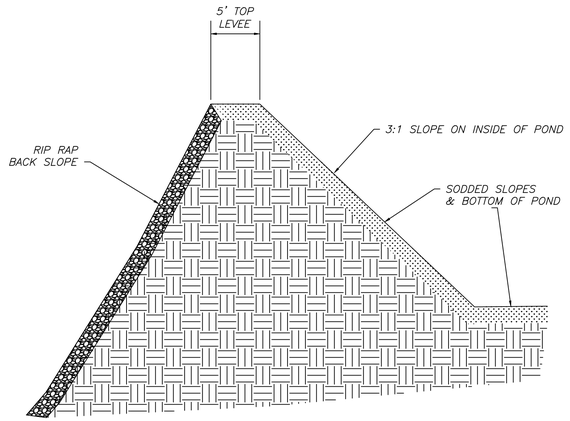
MISC. DETAILS
SHOPPES AT DOGWOOD SPRINGS
PHASE 1
BRYANT PARKWAY
BRYANT, ARKANSAS

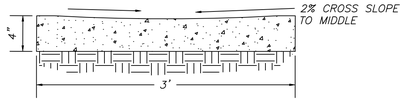
Prepared For: JON MARTIN

No.	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

PROJECT #: 025-029
Date: 10/20/2025 REV:11/5/2025
Scale:
Sheet: 12 of 17

DETENTION POND CROSS SECTION

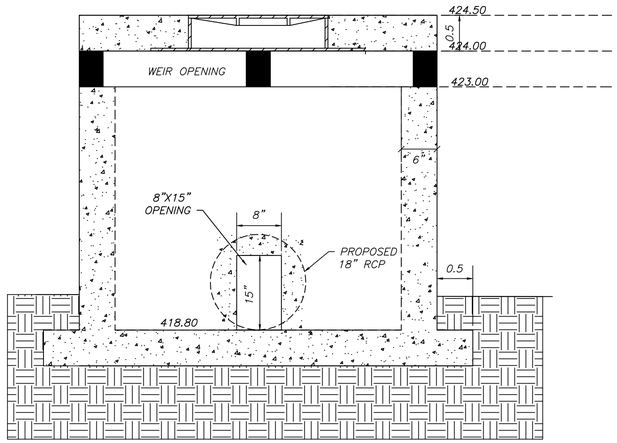




TYPICAL TRICKLE CHANNEL

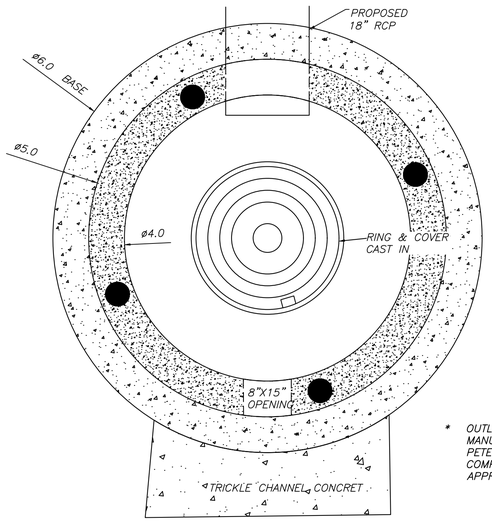
* NOTES:
1. PORTLAND CEMENT CONCRETE 3000 PSI. MIN.
2. USE W1.4 X W1.4 (6" X 6") WWF SHEET REINFORCEMENT. CUT ½ THE WIRES AT CONTROL JOINTS.
3. CONCRETE TO CONTAIN 3–5% AIR ENTRAINMENT.

FRONT VIEW



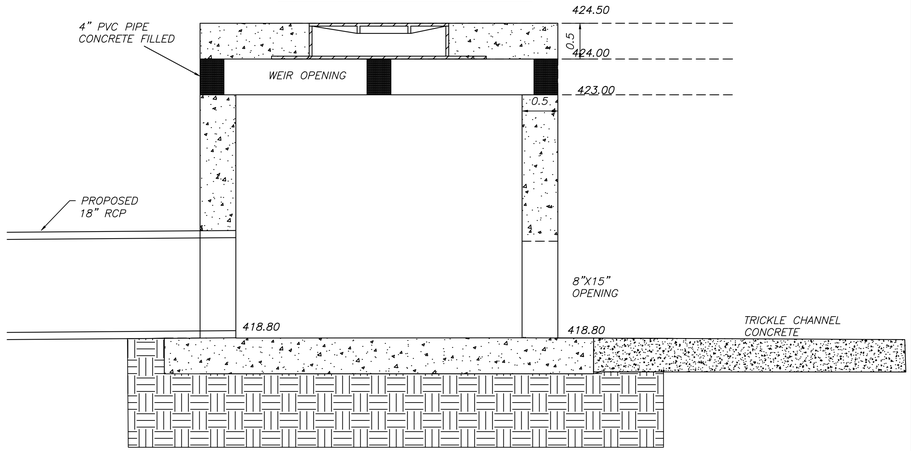
DETENTION POND OUTLET STRUCTURE

DETENTION POND
WEIR STRUCTURE TOP VIEW



* OUTLET STRUCTURE TO BE MANUFACTURED BY PETERSON CONCRETE TANK COMPANY, OR ENGINEER APPROVED EQUAL

DETENTION POND
WEIR STRUCTURE SIDE VIEW



REFER TO CITY OF BRYANT, ARKANSAS PUBLIC WORKS STREET AND DRAINAGE STANDARD DETAILS FOR ADDITIONAL DETAILS AND INFORMATION.

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ARKANSAS

MISC. DETAILS
SHOPPES AT DOGWOOD SPRINGS
PHASE 1
BRYANT PARKWAY
BRYANT, ARKANSAS

Prepared For:
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No.	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

PROJECT #: 025-029
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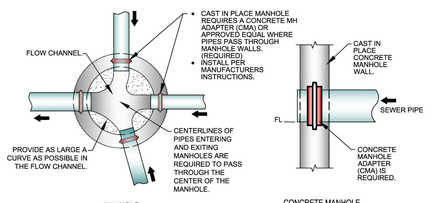
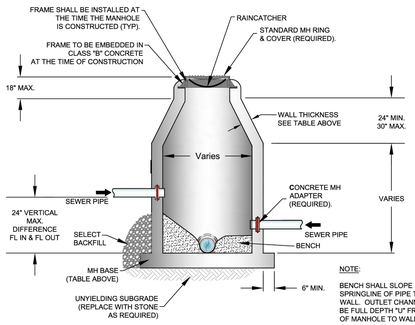
Inside Diameter of Manhole	Minimum Wall Thickness	Base Thickness	Minimum Ring & Cover Size
4' DIA	6"	6"	24" (< or Equal to 24" Pipes)
5' DIA	8"	8"	
6' DIA	8"	12"	36" (> 24" Pipes)

MANHOLE INFORMATION TABLE

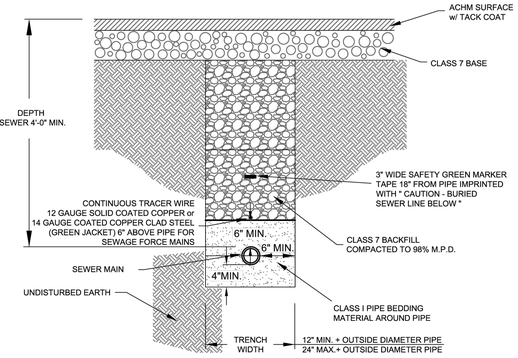




NOTE:
BENCH SHALL SLOPE FROM SPRINGLINE OF PIPE TO MANHOLE WALL. OUTLET CHANNEL SHALL BE FULL DEPTH "U" FROM CENTER OF MANHOLE TO WALL.

CAST-IN-PLACE MANHOLE

CITY OF BRYANT, AR	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DESCRIPTION: CAST-IN-PLACE MANHOLE	REVISED ----- ----- ----- -----	S4
	DRAWN BY: CHECKED BY: FILE: S4-Cast In Place Manhole.dwg	-----	

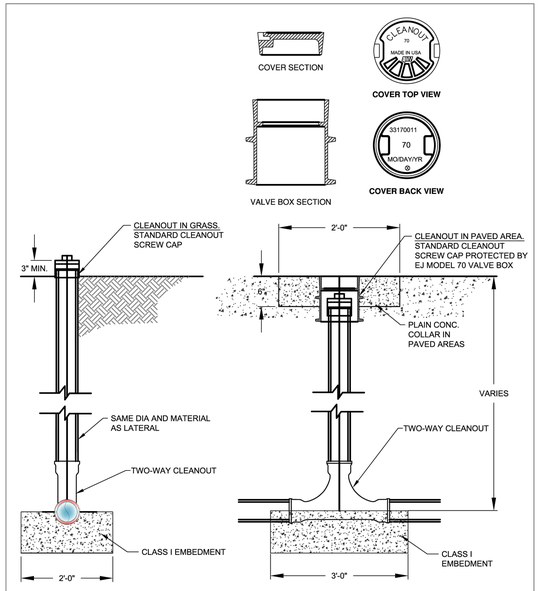


SEWER MAIN INSTALLATION
PRIOR TO ROADWAY CONSTRUCTION

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.

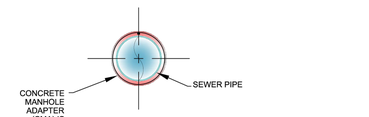
CITY OF BRYANT, AR	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DESCRIPTION: SEWER MAIN INSTALLATION PRIOR TO ROADWAY CONSTRUCTION	REVISED ----- ----- ----- -----	S3
	DRAWN BY: CHECKED BY: FILE: S3-Sewer Main Installation Prior to Roadway Const.dwg	-----	

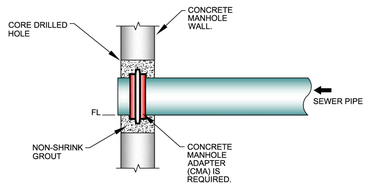


TYPICAL CLEANOUT

CITY OF BRYANT, AR	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DESCRIPTION: SEWER SERVICE CLEANOUT	REVISED ----- ----- ----- -----	S16
	DRAWN BY: CHECKED BY: FILE: S16-Sewer Service Cleanout.dwg	-----	

THE INSTALLATION SHALL BE DYE TESTED FOR ACCEPTANCE.





MANHOLE CORING DETAILS

CITY OF BRYANT, AR	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DESCRIPTION: MANHOLE CORING	REVISED ----- ----- ----- -----	S11
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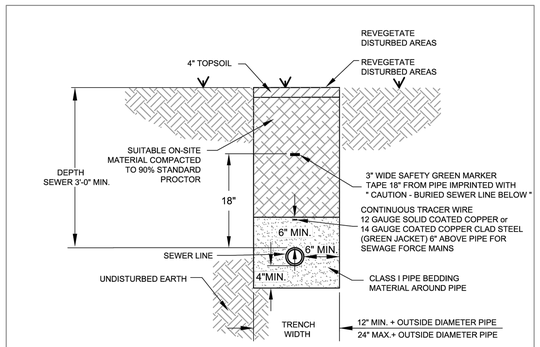
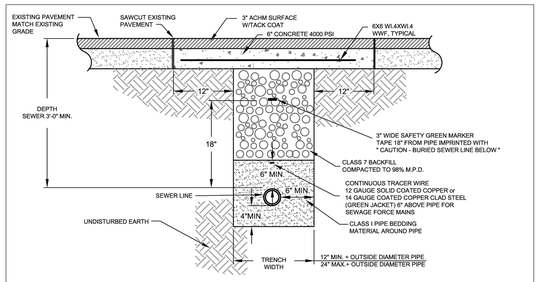


NOTES:

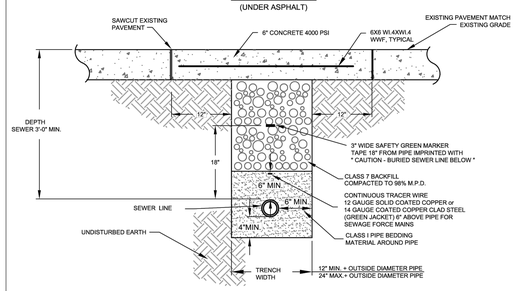
1. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING SEWER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE SEWER SYSTEM.
2. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH ALL OSHA REGULATIONS (29 CFR CH.XVII, SUBPART 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	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DESCRIPTION: SEWER TRENCH (NON-PAVED AREA)	REVISED ----- ----- ----- -----	S1
	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	TITLE: SEWER DETAILS	DATE: APRIL 2015	SHEET:
WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0488	DESCRIPTION: SEWER TRENCH (UNDER PAVEMENT)	REVISED ----- ----- ----- -----	S2
	DRAWN BY: CHECKED BY: FILE: S2-Sewer Trench (Under Pavement).dwg	-----	

SEWER NOTES:

1.) ALL CONSTRUCTION AND MATERIALS TO MEET OR EXCEED CITY OF BRYANT SPECIFICATIONS.
2.) ALL SERVICE LINES SHALL BE 4" SDR-21 OR SCH 40 PVC OR AS SPECIFIED ON THE DESIGN DRAWINGS.
3.) CONTRACTOR TO VERIFY METHOD OF CONNECTION WITH THE UTILITY OWNER PRIOR TO CONSTRUCTION.
4) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
5) CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION & TRENCH SAFETY.
6) BACKFILL FOR ALL DISTURBED (EXCAVATED) AREAS SHALL BE IN ACCORDANCE WITH CITY OF BRYANT STANDARD SPECS.
7) A 2-WAY CLEANOUT WITH BACKFLOW PREVENTER SHALL BE INSTALLED WITHIN 5 FEET OF THE BUILDING. DIRECTIONALY, THE CLEANOUT MUST SWEEP AWAY FROM THE VALVE TO PREVENT DAMAGE TO THE BACKFLOW PREVENTER.

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BRYANT PARKWAY
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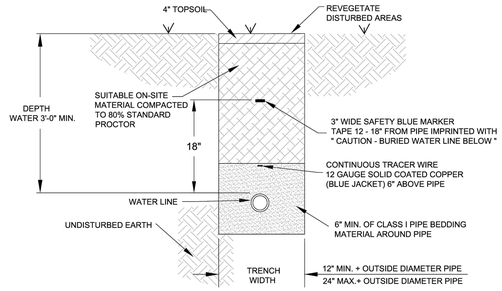
Prepared For: JON MARTIN

No.	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

PROJECT #: 025-029
Date: 10/20/2025
Scale: N.T.S.
Sheet: 14 of 17



NOTES:

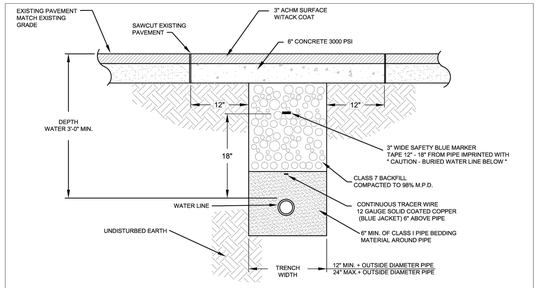
1. ALL VALVES, BENDS, ETC. SHALL BE RESTRAINED.
2. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING WATER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE WATER SYSTEM.
3. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH 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)

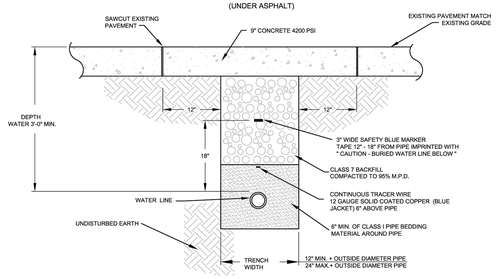
CITY OF BRYANT, AR — WATER UTILITIES, 210 S.W. 3rd. STREET, BRYANT, AR, PHONE: (501) 943-0468

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



WATER MAIN TRENCH

(UNDER ASPHALT)



WATER MAIN TRENCH

(UNDER CONCRETE)

NOTES:

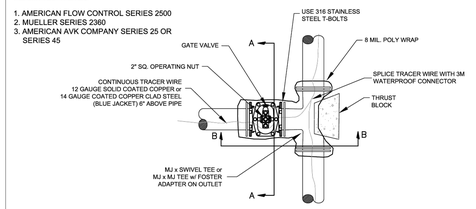
1. ALL VALVES, BENDS, ETC. SHALL BE RESTRAINED.
2. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING WATER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE WATER SYSTEM.
3. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH 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

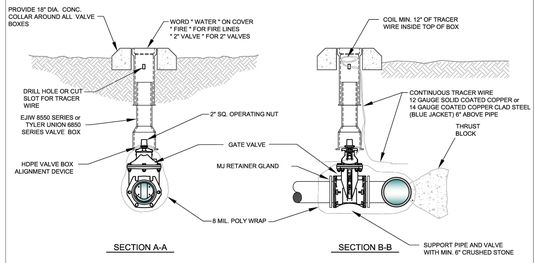
TITLE:	WATER DETAILS	DATE: APRIL 2015	SHEET:
DESCRIPTION:	WATER MAIN TRENCH (UNDER PAVEMENT)	REVISED ----- ----- ----- -----	W2
DRAWN BY:	CHECKED BY:	FILE: W2-Water Trench (Under Pavement).dwg	

PERMITTED VALVES

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



PLAN



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

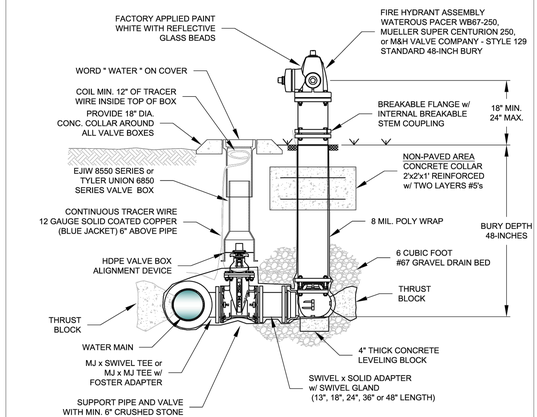
2" - 12"

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

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



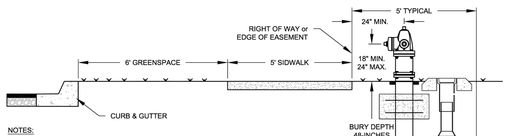
FIRE HYDRANT & VALVE CONNECTION

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

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

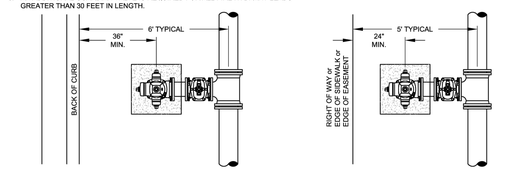
WATER NOTES:

1.) ALL CONSTRUCTION AND MATERIALS TO MEET OR EXCEED CITY OF BRYANT SPECIFICATIONS.
2.) ALL SERVICE LINES AND METER SETTINGS SHALL BE AS PER CITY OF BRYANT SPECS.
3.) 12ga BLUE COATED COPPER TRACING WIRE TO BE INSTALLED WITH ALL WATERLINES (MAINS & SERVICES).
4.) ALL FITTINGS SHALL BE DUCTILE IRON M.J. (WHERE AVAILABLE).
5.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
6.) MINIMUM SEPARATION BETWEEN WATERLINES & SEWERLINES SHALL BE 10'
7.) MINIMUM VERTICAL SEPARATION BETWEEN WATERLINE & SEWERLINE CROSSINGS SHALL BE 18" (WATER ON TOP).
8.) CONTRACTOR SHALL ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION & TRENCH SAFETY.
9.) STREET CROSSINGS TO MEET CITY OF BRYANT STREET DEPT SPECIFICATIONS.
10.) CONTRACTOR TO ADHERE TO AWWA SPECS FOR BLOCKING AND ANCHORING.
11.) ON-SITE FIRE HYDRANTS SHALL BE PER CITY OF BRYANT SPECIFICATIONS.



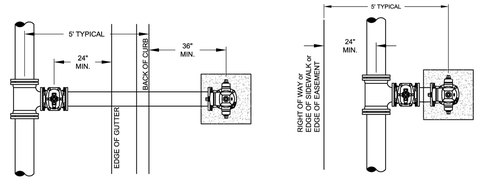
NOTES:

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.



WATER LINE BEHIND CURB — INSIDE ROW

WATER LINE IN EASEMENT — OUTSIDE ROW



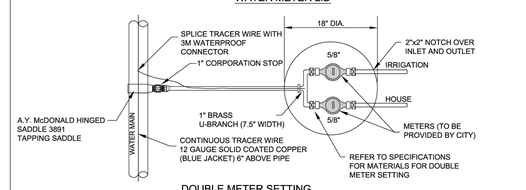
WATER LINE IN STREET — INSIDE ROW

WATER LINE IN EASEMENT — OUTSIDE ROW

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

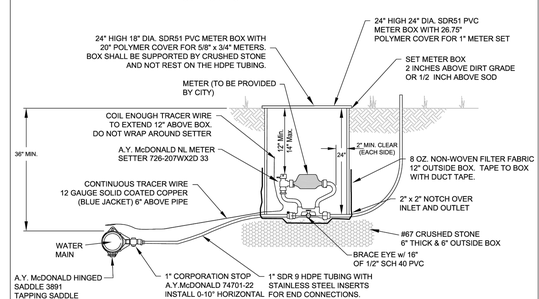
TITLE:	WATER DETAILS	DATE: APRIL 2015	SHEET:
DESCRIPTION:	FIRE HYDRANT PLACEMENT	REVISED ----- ----- ----- -----	W9
DRAWN BY:	CHECKED BY:	FILE: W9-Fire Hydrant Placement.dwg	

WATER METER LID



DOUBLE METER SETTING

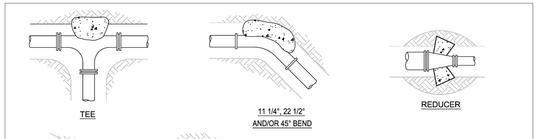
ONLY FOR 1 LOT

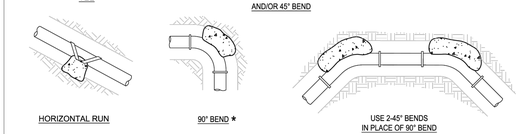


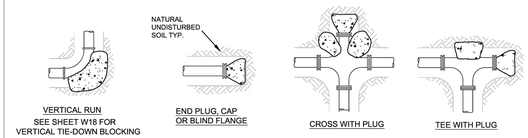
SINGLE METER SETTING

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

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







THRUST BLOCK SCHEDULE

(2000 PSF SOIL, 200 PSI WATER PRESSURE, 150 PSI WATER HAMMER)

FITTING SIZE	BEARING AREA OF THRUST BLOCKS IN SQ. FT. (HORIZONTAL BENDS) PLUG OR CAP	BEND ANGLE 90° *	45°	22 1/2°	11 1/4°	FITTING SIZE	VOLUME OF THRUST BLOCK IN CU. FEET (VERTICAL BENDS) BEND ANGLE 90° *	45°	22 1/2°	11 1/4°	ROD DIAM.	EMBED-MENT
2, 3, & 4	19.2	2.7	1.4	0.7	0.4	2, 3, & 4	35.5	19.2	9.8	4.9	.50"	30"
6	5.8	7.9	4.3	2.2	1.1	6	105.8	57.2	29.2	14.7	.75"	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	672.6	364.0	185.6	93.2	1.0"	36"
18	44.8	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

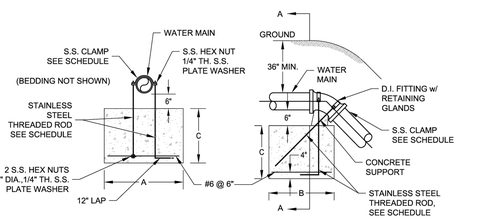
TITLE:	WATER DETAILS	DATE: APRIL 2015	SHEET:
DESCRIPTION:	THRUST BLOCKING	REVISED ----- ----- ----- -----	W16
DRAWN BY:	CHECKED BY:	FILE: W16-Thrust Blocking.dwg	

BLOCKING SCHEDULE

PIPE SIZE		BENDS 45°	22 1/2°	11 1/4°	ROD DIA.
8"	VOLUME REQ'D (CU. FT.)	98.5	50.2	25.2	3/4 IN.
	A (FT.)	5.00'	4.00'	3.00'	
	B (FT.)	4.00'	3.20'	2.80'	
	C (FT.)	5.00'	4.00'	3.00'	
	MIN. CLAMP (2 EA.)	3/8 IN. x 2 IN.			
12"	VOLUME REQ'D (CU. FT.)	209.5	106.8	53.7	3/4 IN.
	A (FT.)	6.00'	5.00'	4.00'	
	B (FT.)	6.00'	4.25'	3.50'	
	C (FT.)	6.00'	5.00'	4.00'	
	MIN. CLAMP (2 EA.)	1/2 IN. x 2 IN.			
18"	VOLUME REQ'D (CU. FT.)	457.2	233.1	117.1	1 IN.
	A (FT.)	8.00'	6.50'	5.00'	
	B (FT.)	7.25'	5.50'	4.75'	
	C (FT.)	8.00'	6.50'	5.00'	
	MIN. CLAMP (2 EA.)	5/8 IN. x 3 IN.			
24"	VOLUME REQ'D (CU. FT.)	800.3	408.0	205.0	1 1/4 IN.
	A (FT.)	9.50'	7.50'	6.00'	
	B (FT.)	9.00'	7.25'	5.75'	
	C (FT.)	9.50'	7.50'	6.00'	
	MIN. CLAMP (2 EA.)	5/8 IN. x 3 IN.			

VOLUME CALCULATED ON THE BASIS OF CONCRETE REACTING THRUST ON THE RESPECTIVE BENDS UNDER AN INTERNAL PRESSURE OF 250 PSI, 50 PSI SURGE AND THE WEIGHT OF CONCRETE IS 150 POUNDS PER CU. FT.

ALL FITTINGS SHALL BE MECHANICAL JOINTS WITH RETAINING GLANDS.
BEDDING NOT SHOWN



VERTICAL TIE-DOWN BLOCKING

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

TITLE:	WATER DETAILS	DATE: APRIL 2015	SHEET:
DESCRIPTION:	VERTICAL TIE-DOWN BLOCKING	REVISED ----- ----- ----- -----	W17
DRAWN BY:	CHECKED BY:	FILE: W17-Vertical Tie-Down Blocking.dwg	

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

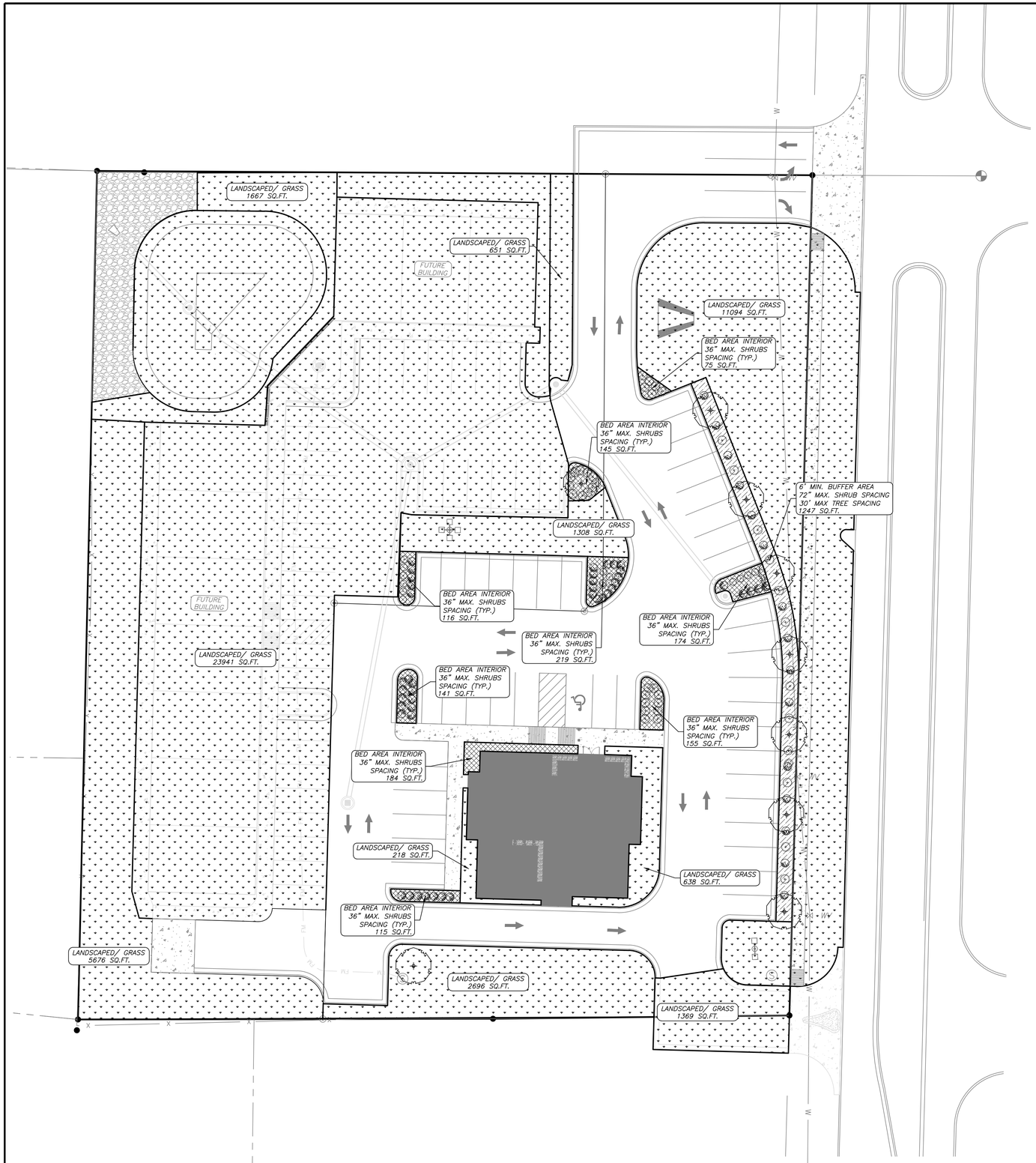
CERTIFICATE OF AUTHORIZATION — Richardson Engineering, PLLC — No. 2519 — STATE OF ARKANSAS

MISC. DETAILS
SHOPPES AT DOGWOOD SPRINGS
BRYANT PARKWAY
BRYANT, ARKANSAS

Prepared For: JON MARTIN

No.	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

PROJECT #: 025-029
Date: 10/20/2025
Scale: N.T.S.
Sheet: 15 of 17



LANDSCAPE NOTES:

1) LANDSCAPING SHALL MEET CITY OF BRYANT LANDSCAPING REQUIREMENTS.
2) SPACING FOR SHRUBS IN BEDS AS NOTED.
3) ALL SHRUB MATERIAL MUST BE EIGHTEEN (18) INCHES IN HEIGHT AT INSTALLATION
4) ALL TREES MUST BE 2" CALIPER AT THE TIME OF INSTALLATION
5) AN AUTOMATIC IRRIGATION SYSTEM SHALL BE PROVIDED FOR ALL NEW LANDSCAPE AREAS. THIS SYSTEM WILL PROVIDE 100% COVERAGE FOR LANDSCAPED AREAS.
6) SHRUBS USED FOR SCREENING SHALL BE EVERGREEN IN NATURE AND BE AT LEAST 30 INCHES TALL AT THE TIME OF PLANTING. SPACING SHALL BE CLOSE ENOUGH SO AS TO CREATE A SEAMLESS ROW OF HEDGING.

ACER PALMATUM– JAPANESE MAPLE (OR APPROVED EQUIVALENT)

ILEX CRENATA "COMPACTA" DWARF JAPANESE HOLLY (OR APPROVED EQUIVALENT)

ILEX CORNUTA "ROTUNDA" DWARF ROTUNDA HOLLY (OR APPROVED EQUIVALENT)

HYDRANGEA ARBORESCENS 'ANNABELLE' / ANNABELLE HYDRANGEA (OR APPROVED EQUIVALENT)

ACER SACCHARINUM – SILVER MAPLE (OR APPROVED EQUIVALENT)

PROPOSED BERMUDA GRASS IN SOD AREA

PROPOSED MULCH/BED AREA / INTERIOR LANDSCAPING

PROPOSED BUFFER AREAS

GRAPHIC SCALE

20 0 20 40 60

(IN FEET)
1 inch = 20 ft.

UTILITIES:

SANITARY SEWER:
BRYANT
WASTEWATER DEPARTMENT
210 SW 3RD ST.
BRYANT, AR 72022
(501) 943-0999

WATER:
BRYANT
WATER DEPARTMENT
210 SW 3RD ST.
BRYANT, AR 72022
(501) 943-0999

ELECTRIC:
ENTERGY
SIMMONS TOWER
425 W. CAPITOL AVE.
LITTLE ROCK, AR 72201
1(800) 368-3749

NATURAL GAS:
SUMMIT
400 WEST CAPITOL #600
LITTLE ROCK, ARKANSAS
888-498-0409

ENGINEER
RICHARDSON ENGINEERING, PLLC
ADDRESS: 325 W.SOUTH ST.
BENTON, AR. 72015
PHONE NO. (501) 315-7225
PROJECT REPRESENTATIVE:
TRISTIN PHILLIPS, P.E.

SURVEYOR
SOUTHPOINT SURVEYING
P.O. BOX 400
SHERIDAN, AR 72150
(501)285-5958

DEVELOPERS
JON MARTIN

OWNER OF RECORD
PROSPER PROPERTIES LLC
612 W. COMMERCE ST, STE 2
BRYANT, AR 72022
SOURCE OF TITLE: 2020-020202

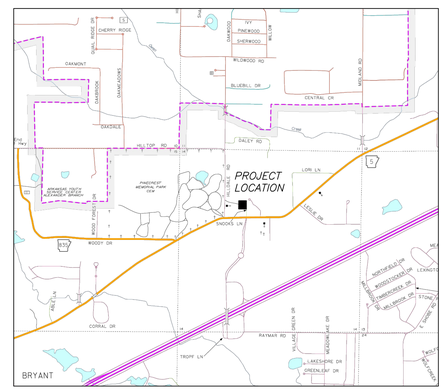
GENERAL NOTES:

1.) SURVEYING PROVIDED BY SOUTHPOINT SURVEYING LLC.
2.) PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS PLAN AND BASED ON GEOTECHNICAL ANALYSIS OF THE SOIL CONDITIONS.
3.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
4.) CONSTRUCTION SITE SHALL ADHERE TO BRYANT STORMWATER REQUIREMENTS, AND SHALL MEET ALL APPLICABLE ADEQ STANDARDS FOR EROSION CONTROL MEASURES.
5.) ALL UTILITIES TO BE LOCATED PRIOR TO CONSTRUCTION (ONE CALL, CITY, ETC.)
6.) CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION & TRENCH SAFETY.
7.) 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.

SITE NOTES

1.) PROJECT SITE AREA 1.925 ACRES (83,899 SQUARE FEET)
2.) PROJECT PROVIDES 42 PARKING SPACES.
3.) CURRENT ZONING: C2
4.) PROPOSED USE: PHARMACY
5.) BUILDING LINES TO BE NOTED ON SITE PLAN.
6.) PROPOSED LOCATIONS OF TRAFFIC CONTROL MARKERS ARE APPROXIMATE. ACTUAL LOCATION AND INSTALLATION MUST MEET MUTCD AND BRYANT ROAD DEPT. SPECS.
7.) CONTRACTOR SHALL INCLUDE IN BID THE COST FOR COMPACTION TESTS ON SUBGRADE & BASE. TEST TO BE CONDUCTED AS PER GEOTECHNICAL ENGINEERS SPECS.
8.) CONTRACTOR TO INCLUDE IN BID THE COST OF MATERIAL AND INSTALLATION OF STREET SIGNS & TRAFFIC CONTROL SIGNS.
9.) CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION & TRENCH SAFETY.
10.) NO PORTION OF THIS PROPERTY (AS SHOWN) IS IN THE 100 YEAR FLOOD HAZARD AREA. REFERENCE FIRM MAP 05125C0240E EFFECTIVE 6/5/2020
11.) REFER TO LANDSCAPING PLAN FOR REQUIREMENTS/LIGHTING PLAN TO BE VERIFIED W/OWNER. REVISIONS TO PLAN TO BE SUBMITTED TO CITY.
12.) IRRIGATION SYSTEMS TO BE DESIGNED BY OTHERS.
13.) THERE ARE NO EROSION PROBLEMS ON THE SITE OR KNOWN EROSION PROBLEMS WITHIN 300' DOWNSTREAM.
14.) THERE IS NO SURFACE EVIDENCE OF EXISTING OR ABANDONED WATER WELLS, SUMPS, CESSPOOLS, SPRING WATER IMPOUNDMENTS, AND UNDERGROUND STRUCTURES WITHIN THE PROJECT.
15.) PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH AHTD SPECIFICATIONS, AND BASED ON GEOTECHNICAL ANALYSIS OF THE SOIL CONDITIONS. CONTRACTOR SHALL INCLUDE IN BID THE COST FOR COMPACTION TESTS ON SUBGRADE & BASE. TEST TO BE CONDUCTED AS PER GEOTECHNICAL SPECS.
16.) ALL SITE LIGHTING IS TO BE LOW LEVEL AND DIRECTIONAL, SHIELDED DOWNWARD AND INTO THE SITE. DESIGNED BY OTHER AS PER CITY OF BRYANT REQUIREMENTS.

VICINITY MAP



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325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225

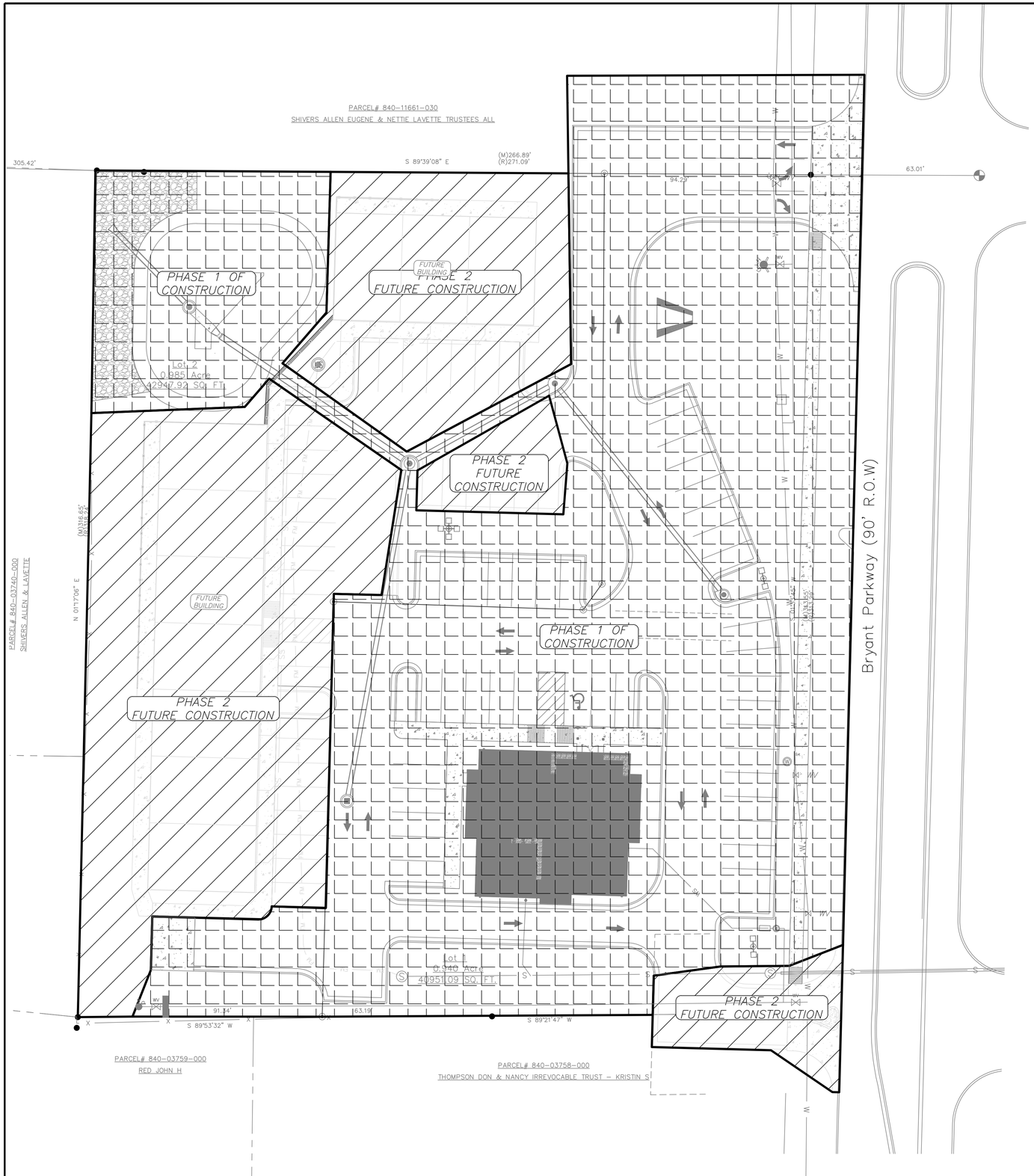
CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
ARKANSAS

LANDSCAPE PLAN
SHOPPES AT DOGWOOD SPRINGS
PHASE 1
BRYANT PARKWAY
BRYANT, ARKANSAS

Prepared For:
JON MARTIN

No.	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

PROJECT #: 025-029
Scale: 1" = 20'
Date: 10/20/2025
REV:11/5/2025
Sheet: 16 of 17



PHASE 1 OF CONSTRUCTION

PHASE 2 FUTURE CONSTRUCTION

GRAPHIC SCALE

20 0 20 40 60

(IN FEET)
1 inch = 20 ft.

UTILITIES:

SANITARY SEWER:
BRYANT
WASTEWATER DEPARTMENT
210 SW 3RD ST.
BRYANT, AR 72022
(501) 943-0999

WATER:
BRYANT
WATER DEPARTMENT
210 SW 3RD ST.
BRYANT, AR 72022
(501) 943-0999

ELECTRIC:
ENTERGY
SIMMONS TOWER
425 W. CAPITOL AVE.
LITTLE ROCK, AR 72201
1(800) 368-3749

NATURAL GAS:
SUMMIT
400 WEST CAPITOL #600
LITTLE ROCK, ARKANSAS
888-498-0409

ENGINEER
RICHARDSON ENGINEERING, PLLC
ADDRESS: 325 W.SOUTH ST.
BENTON, AR. 72015
PHONE NO. (501) 315-7225
PROJECT REPRESENTATIVE:
TRISTIN PHILLIPS, P.E.

SURVEYOR
SOUTHPOINT SURVEYING
P.O. BOX 400
SHERIDAN, AR 72150
(501)285-5958

DEVELOPERS
JON MARTIN

OWNER OF RECORD
PROSPER PROPERTIES LLC
612 W. COMMERCE ST, STE 2
BRYANT, AR 72022
SOURCE OF TITLE: 2020-020202

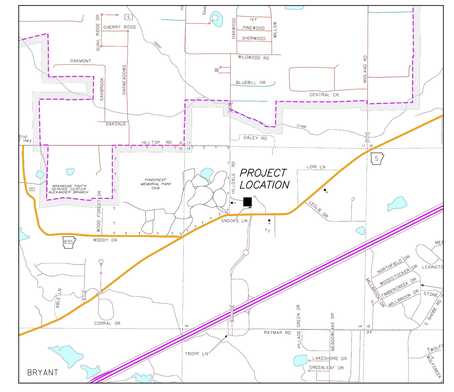
GENERAL NOTES:

1.) SURVEYING PROVIDED BY SOUTHPOINT SURVEYING LLC.
2.) PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS PLAN AND BASED ON GEOTECHNICAL ANALYSIS OF THE SOIL CONDITIONS.
3.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
4.) CONSTRUCTION SITE SHALL ADHERE TO BRYANT STORMWATER REQUIREMENTS, AND SHALL MEET ALL APPLICABLE ADEQ STANDARDS FOR EROSION CONTROL MEASURES.
5.) ALL UTILITIES TO BE LOCATED PRIOR TO CONSTRUCTION (ONE CALL, CITY, ETC.)
6.) CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION & TRENCH SAFETY.
7.) 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.

SITE NOTES

1.) PROJECT SITE AREA 1.925 ACRES (83,899 SQUARE FEET)
2.) PROJECT PROVIDES 42 PARKING SPACES.
3.) CURRENT ZONING: C2
4.) PROPOSED USE: PHARMACY
5.) BUILDING LINES TO BE NOTED ON SITE PLAN.
6.) PROPOSED LOCATIONS OF TRAFFIC CONTROL MARKERS ARE APPROXIMATE. ACTUAL LOCATION AND INSTALLATION MUST MEET MUTCD AND BRYANT ROAD DEPT. SPECS.
7.) CONTRACTOR SHALL INCLUDE IN BID THE COST FOR COMPACTION TESTS ON SUBGRADE & BASE. TEST TO BE CONDUCTED AS PER GEOTECHNICAL ENGINEERS SPECS.
8.) CONTRACTOR TO INCLUDE IN BID THE COST OF MATERIAL AND INSTALLATION OF STREET SIGNS & TRAFFIC CONTROL SIGNS.
9.) CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION & TRENCH SAFETY.
10.) NO PORTION OF THIS PROPERTY (AS SHOWN) IS IN THE 100 YEAR FLOOD HAZARD AREA. REFERENCE FIRM MAP 05125C0240E EFFECTIVE 6/5/2020
11.) REFER TO LANDSCAPING PLAN FOR REQUIREMENTS/LIGHTING PLAN TO BE VERIFIED W/OWNER. REVISIONS TO PLAN TO BE SUBMITTED TO CITY.
12.) IRRIGATION SYSTEMS TO BE DESIGNED BY OTHERS.
13.) THERE ARE NO EROSION PROBLEMS ON THE SITE OR KNOWN EROSION PROBLEMS WITHIN 300' DOWNSTREAM.
14.) THERE IS NO SURFACE EVIDENCE OF EXISTING OR ABANDONED WATER WELLS, SUMPS, CESSPOOLS, SPRING WATER IMPOUNDMENTS, AND UNDERGROUND STRUCTURES WITHIN THE PROJECT.
15.) PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH AHTD SPECIFICATIONS, AND BASED ON GEOTECHNICAL ANALYSIS OF THE SOIL CONDITIONS. CONTRACTOR SHALL INCLUDE IN BID THE COST FOR COMPACTION TESTS ON SUBGRADE & BASE. TEST TO BE CONDUCTED AS PER GEOTECHNICAL SPECS.
16.) ALL SITE LIGHTING IS TO BE LOW LEVEL AND DIRECTIONAL, SHIELDED DOWNWARD AND INTO THE SITE. DESIGNED BY OTHER AS PER CITY OF BRYANT REQUIREMENTS.

VICINITY MAP



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

PHASE MAP
SHOPPES AT DOGWOOD SPRINGS
PHASE 1
BRYANT PARKWAY
BRYANT, ARKANSAS

Prepared For:
JON MARTIN

No.	Revisions	Date
1	AS PER CITY OF BRYANT'S COMMENTS	11/5/2025

PROJECT #: 025-029
Scale: 1" = 20'
Date: 10/20/2025
REV:11/5/2025
Sheet: 17 of 17

GNE Designing our client's success

P.O. Box 116 — 3825 Mt Carmel Rd
Benton, AR 72018 — Bryant, AR 72022
Ph (501) 408-4650 — garnatengineering@gmail.com

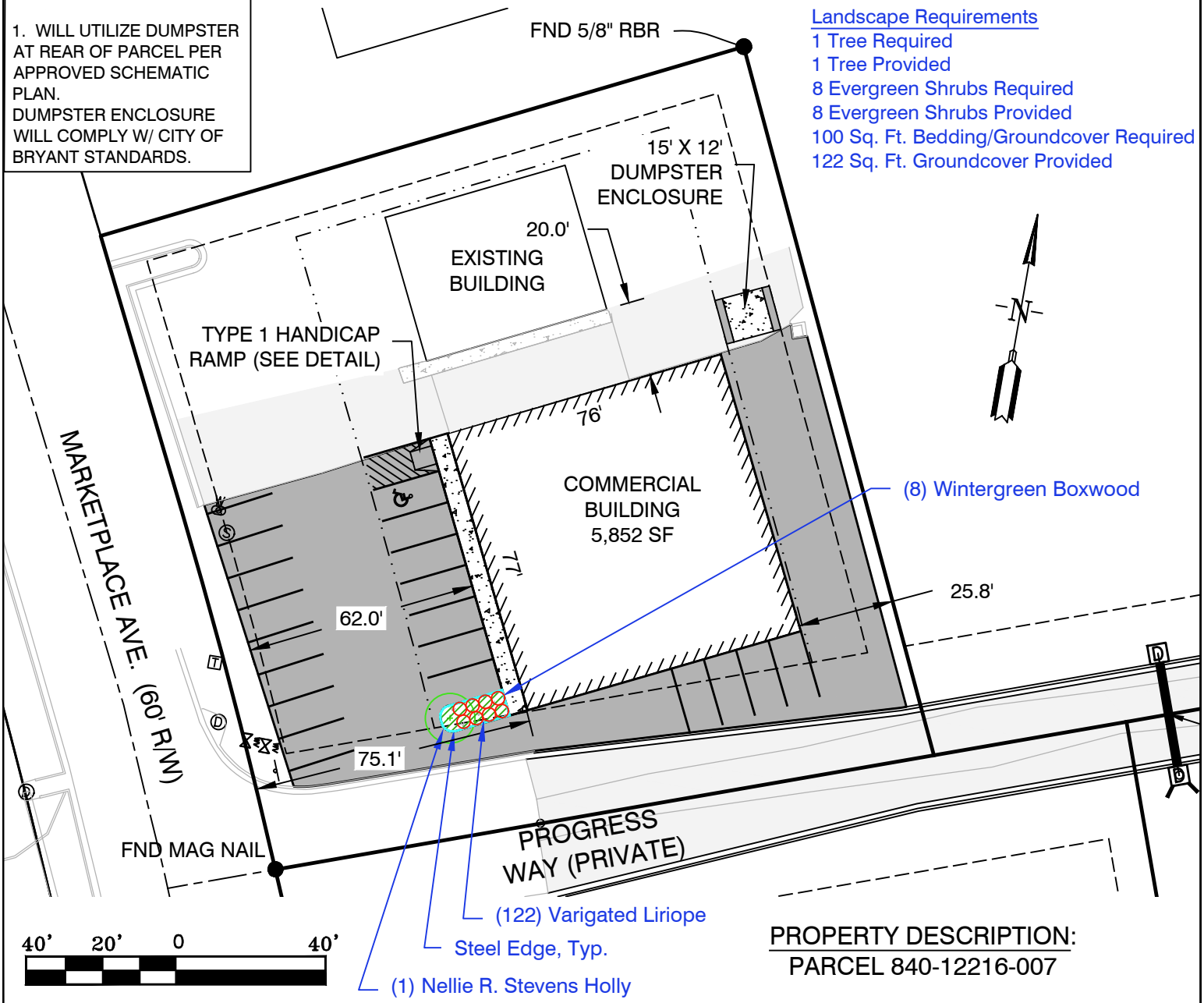
FOR EXCLUSIVE USE & BENEFIT OF:

Name: BART FERGUSON

LEGEND
- Computed point
- Found monument
- Set #4 RB/Plas. Cap
(M)-Measured
(R)-Record
(P)-Platted

NOTES:

1. WILL UTILIZE DUMPSTER AT REAR OF PARCEL PER APPROVED SCHEMATIC PLAN.
DUMPSTER ENCLOSURE WILL COMPLY W/ CITY OF BRYANT STANDARDS.



Landscape Requirements
1 Tree Required
1 Tree Provided
8 Evergreen Shrubs Required
8 Evergreen Shrubs Provided
100 Sq. Ft. Bedding/Groundcover Required
122 Sq. Ft. Groundcover Provided

(8) Wintergreen Boxwood
(122) Varigated Liriope
Steel Edge, Typ.
(1) Nellie R. Stevens Holly

PROPERTY DESCRIPTION:
PARCEL 840-12216-007

JOB NUMBER:

20022 MARKETPLACE EAST, PHASE 1

10/30/2025

PLOT PLAN

This Plot Plan depicts the lot as it appears on the subdivision final plat. This drawing does not represent an actual survey.

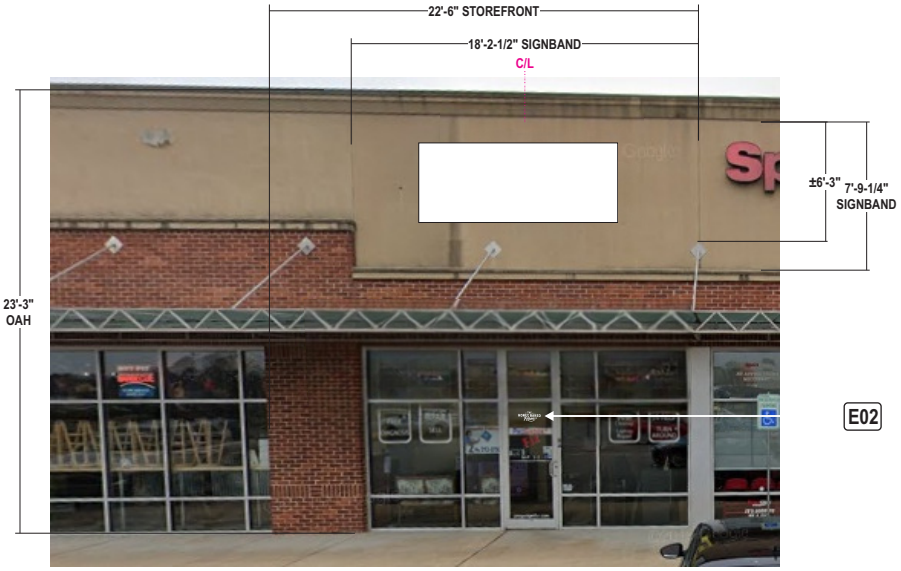
According the the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Saline County unincorporated areas, panel # 05125C0240E dated 06/05/2020, no portion , dated of the property described hereon does lie within the 100 year flood hazard boundary.

J:\Projects\2020 Projects\20022 Bart Ferguson – Marketplace East Subdivision\Drawings\DWGs\Design\20022 Marketplace East Subdivision Phase 1 – Corner–Building–Design – R2 – 102825.dwg

PROPOSED FRONT ELEVATION

Scale: 1/4"=1'-0"

EXISTING SIGN SF:	32.3
PROPOSED SIGN SF:	57.4



Stratus
onestratus.com
8959 Tyler Boulevard
Mentor, Ohio 44060
888.603.1569

CLIENT:

ADDRESS:
3213 MAIN STREET STE 2
BROADWAY CROSSING
BRYANT, AR 72022

PAGE NO.:
3

ORDER NUMBER:
1245621

SITE NUMBER:
1218

PROJECT NUMBER:
79782

PROJECT MANAGER:
ROBYN PHILLIPS

ELECTRONIC FILE NAME:
G:\ACCOUNTS\H\HONEYBAKED HAM\2025\AR\
1218_Bryant R2

Rev #	Req #	Date/Artist	Description	Rev #	Req #	Date/Artist	Description
Original	554434	08/23 /25 Z-SA					
Rev 1	556180	10/03/25 Z-MH	Removed option A				
Rev 2	556358	10/15/25 Z-SA	Updated sign				

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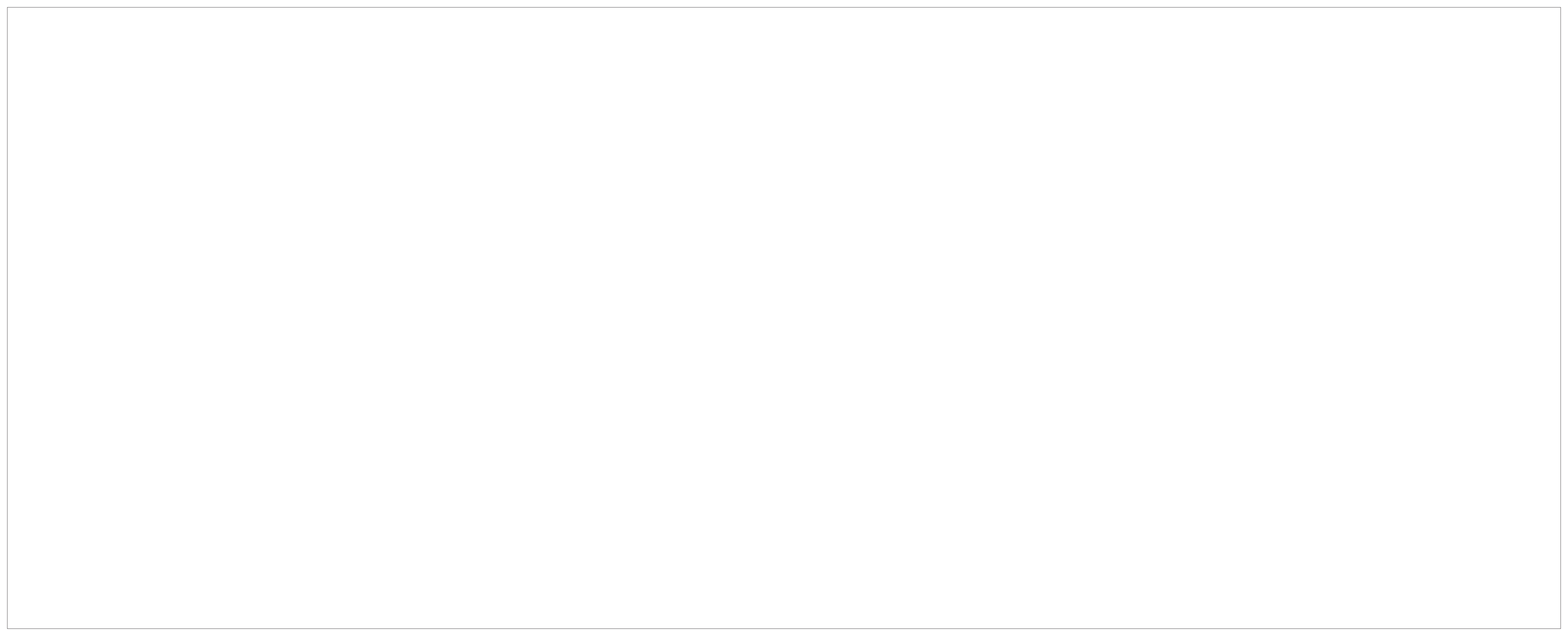
HONEYBAKED HAM| 16750013 | ROCKWALL, TX

E05 BANNER

48" X 120" O.D.



Stratus

REFER TO INDIVIDUAL SITE DRAWING FOR COMPLETE MANUFACTURING DETAILS

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WITHOUT PRIOR CONSENT OF STRATUS (outside of normal manufacturing requirements); If you find discrepancies, please contact your PM

JCH | 10/21/25| ROBYN PHILLIPS