Drainage Report

For

Jamey South Storage Building

Bryant, Saline County, Arkansas



May 21, 2025

Prepared by:

RICHARDSON ENGINEERING, PLLC

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

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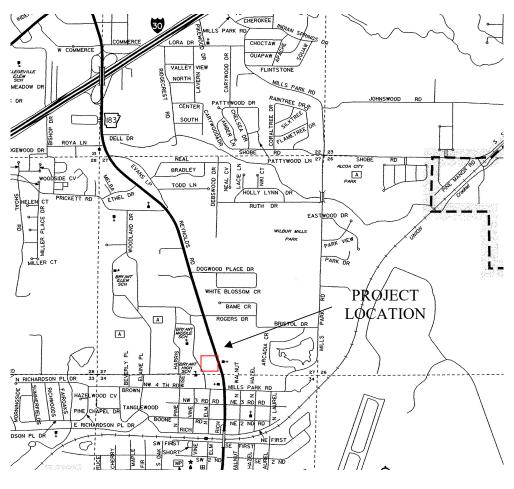
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Project Owner Information

Jamey South 515 N Reynolds Road Bryant, AR 72022

Project Location and Description

The project is located on West side of N Reynolds Road, part of the Southwest Quater of the Southeast Quarter, Section 27, Township 1-S, Range 14-W, Saline County, Arkansas.



Vicinity Map – N.T.S

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

Site Drainage

Pre-Development

The pre-developed runoff for the site flows to the west. The pre-development runoff condition consists of a mix of a small commercial development as well as a portion of undeveloped wooded property.

Post-Development

The site drainage starts on the East side of the project and flows to the West. The drainage is sheet flows across the proposed driving surface and is discharged into a proposed detention basin on the West side of the project. The proposed detention basin will utilize a culvert/weir discharge structure. Post-Development Basin A is the drainage basin that discharges water into the proposed detention basin and Post-Development Basin B are the grass tie back slopes from the proposed pavement to existing grade. This area is not routed through the detention basin, so it was calculated by itself. The post-development runoff conditions changed from developed/undeveloped to commercial development.

Runoff Summary

Basin Design Point

Development Drainage Study Area = 0.56 Ac Existing Condition runoff Coefficient: C = 0.61

Proposed runoff Coefficient: C = 0.95

Tc Undeveloped = 9 Minutes (TR55 Method)

Tc Developed = 5 Minutes

Detention Basin Required Volume: 1,685 CF

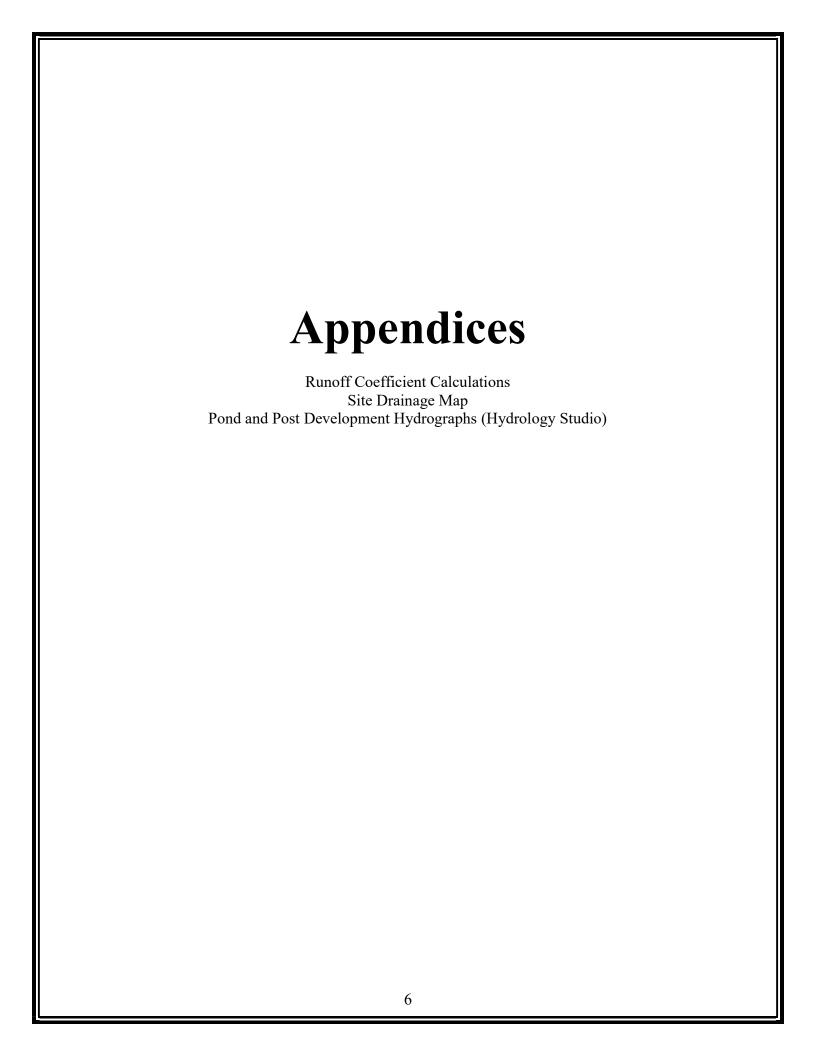
Detention Basin Volume: 1,924 CF

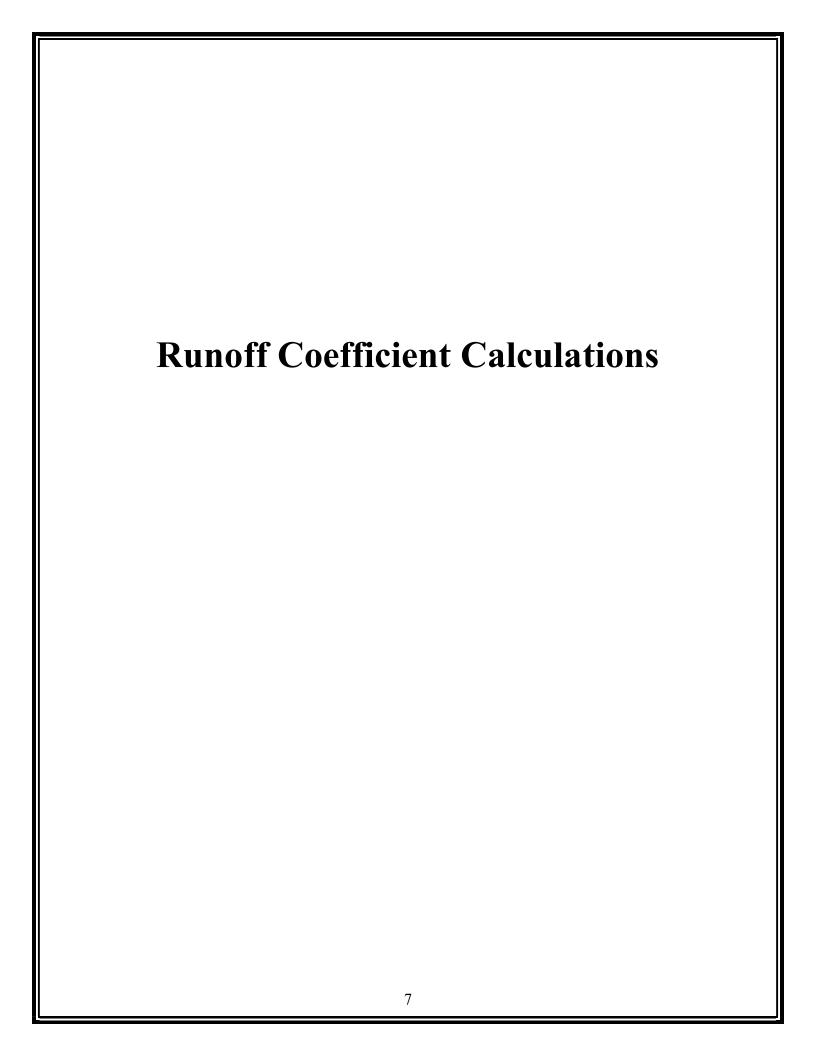
Maximum Storage: 785 CF

Discharge Structure: Riser/Culvert/Orifice

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)	Post-Development w/ Detention Flow Rate (cfs)
2-yr	1.61	3.27	1.56
10-yr	2.15	4.37	1.92
25-yr	2.47	5.02	2.09
50-yr	2.71	5.48	2.20
100-yr	2.94	5.96	2.32

Recommendations/Summary
The proposed drainage improvements include a small detention basin on the West side of the project. The proposed detention basin releases the post development runoff at a lower rate than the pre-development condition.



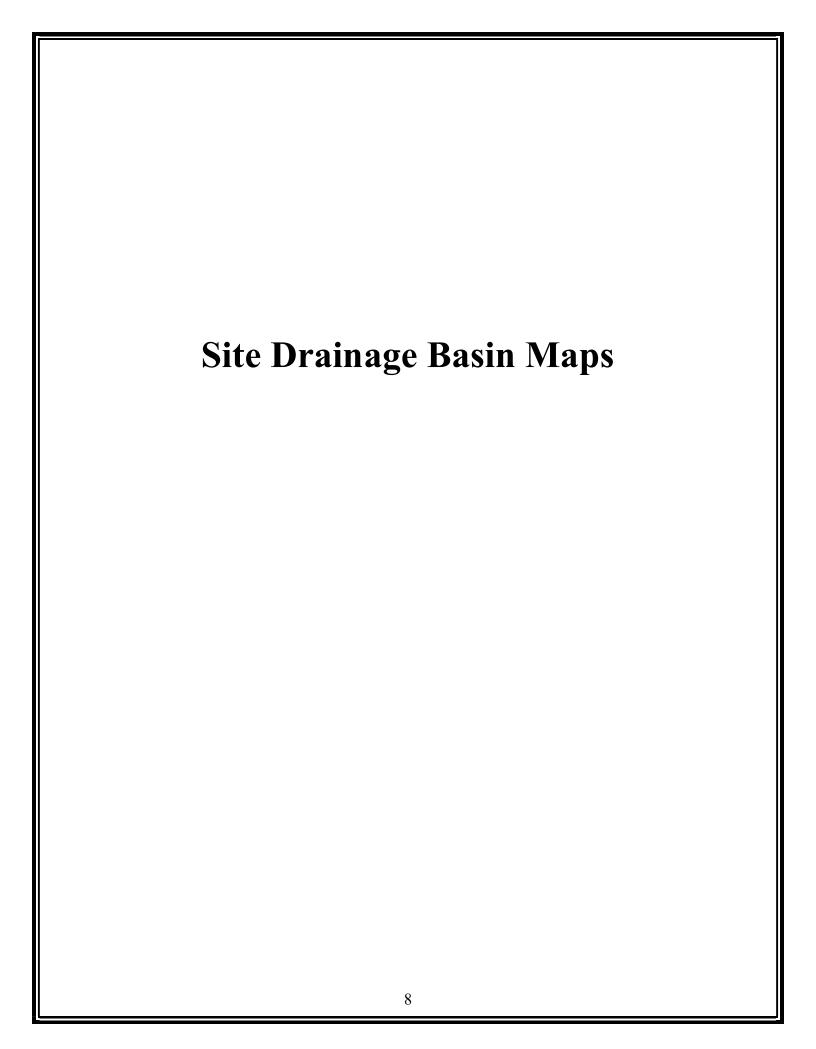


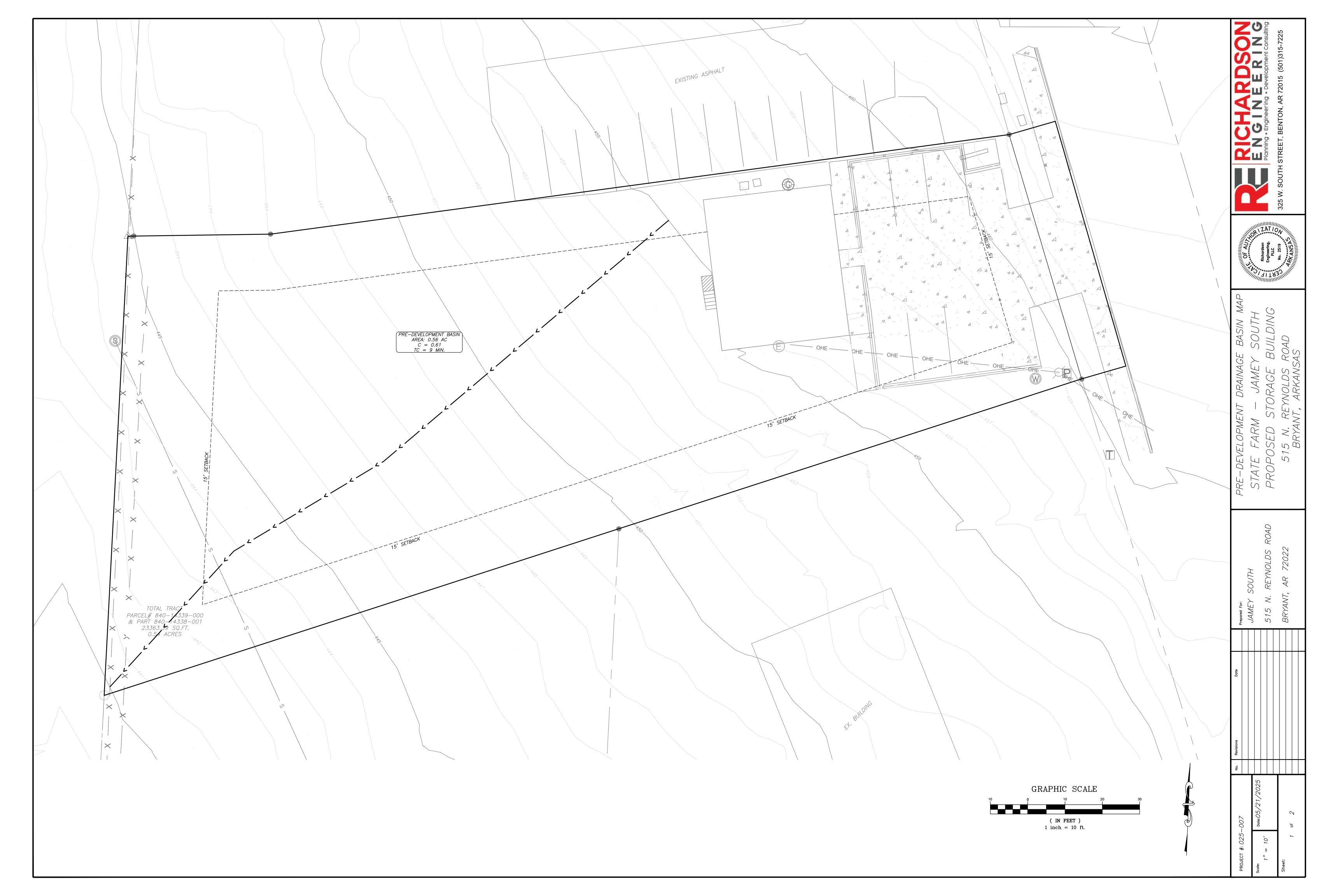


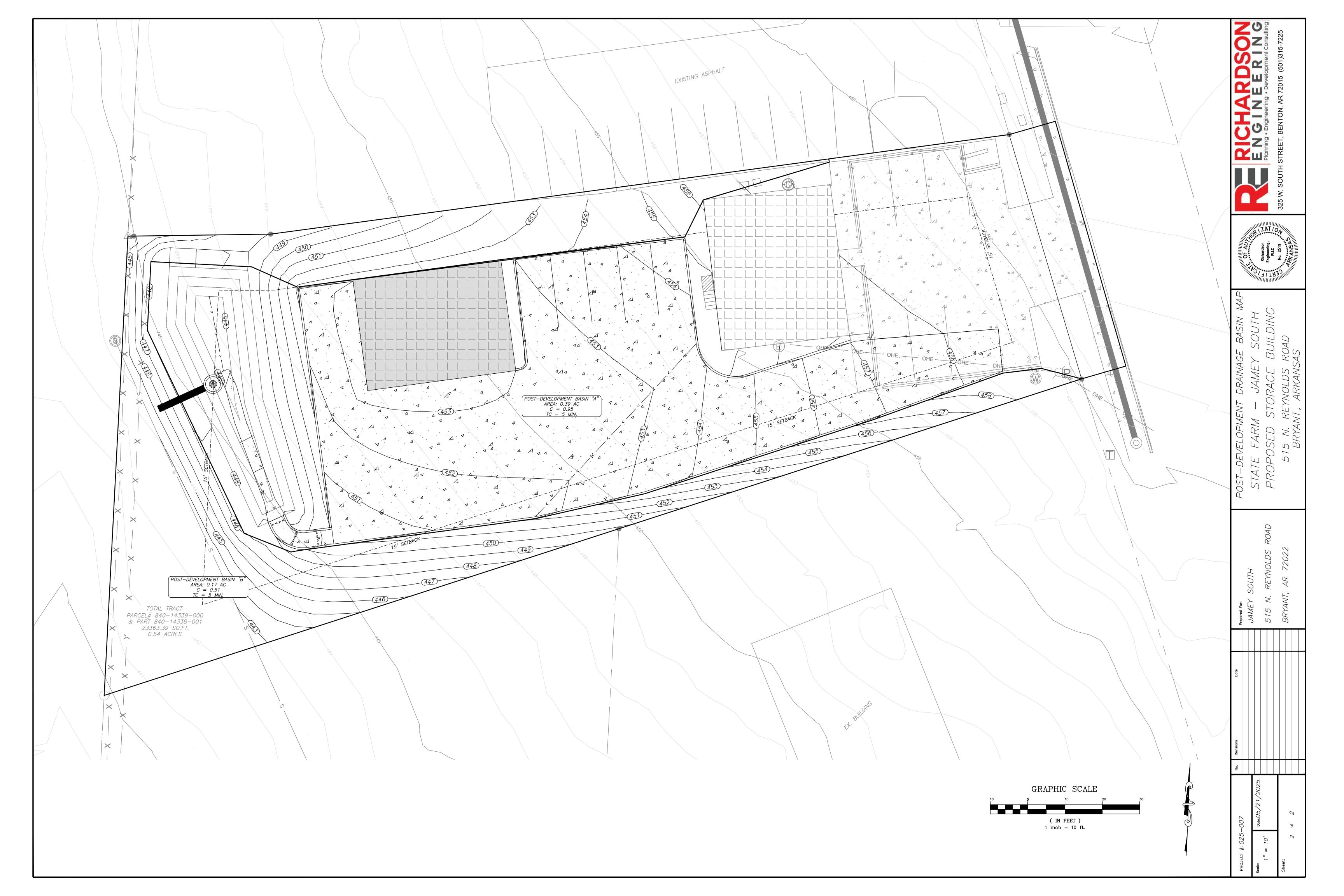
325 West South Street Benton, AR 72015 (501) 315-7225

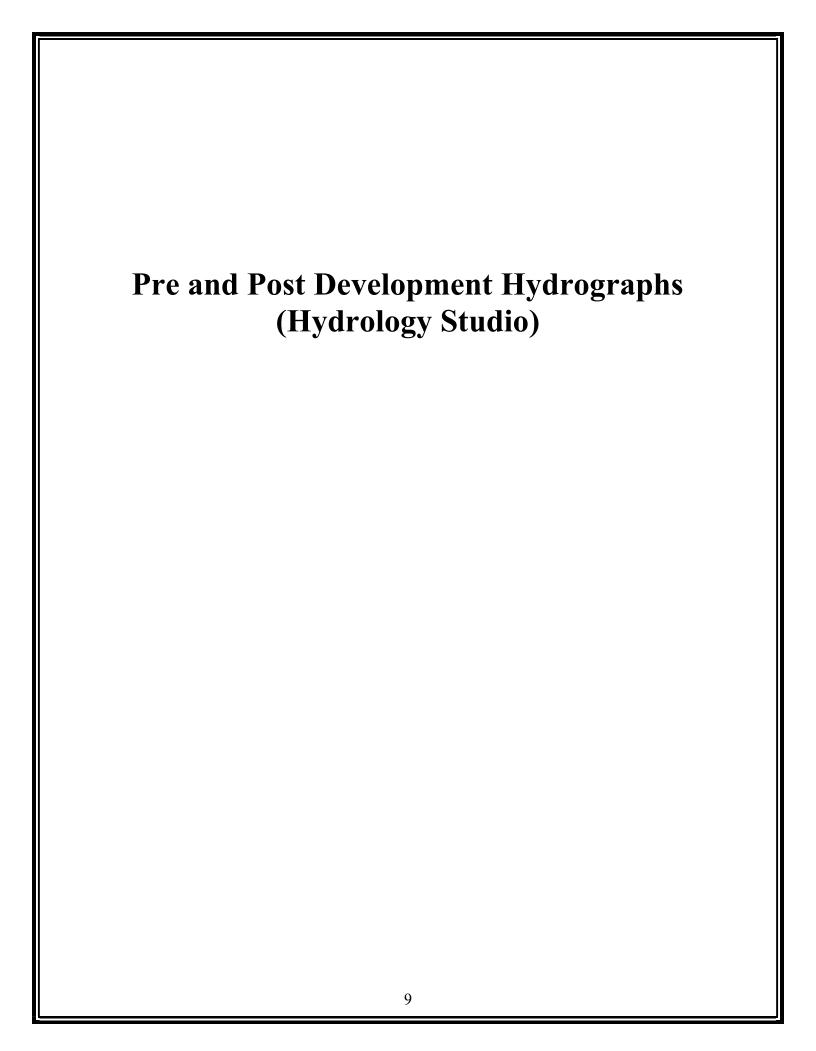
(1/1)

PROJECT 025-007 DRAINAGE CALCULATIONS DATE 05/02/2025 EXISTING (: DEVELOPEN: 0.16 C= 0.95 C= 0.47 UNDEVELOPED: 0.40 (AVERAGE 2-7%.
FOREST /WOODLANDS) C= (0.16)(0.95) + (0.40)(0.47) = 0.61 0.56 POST - DEU C = 0.95







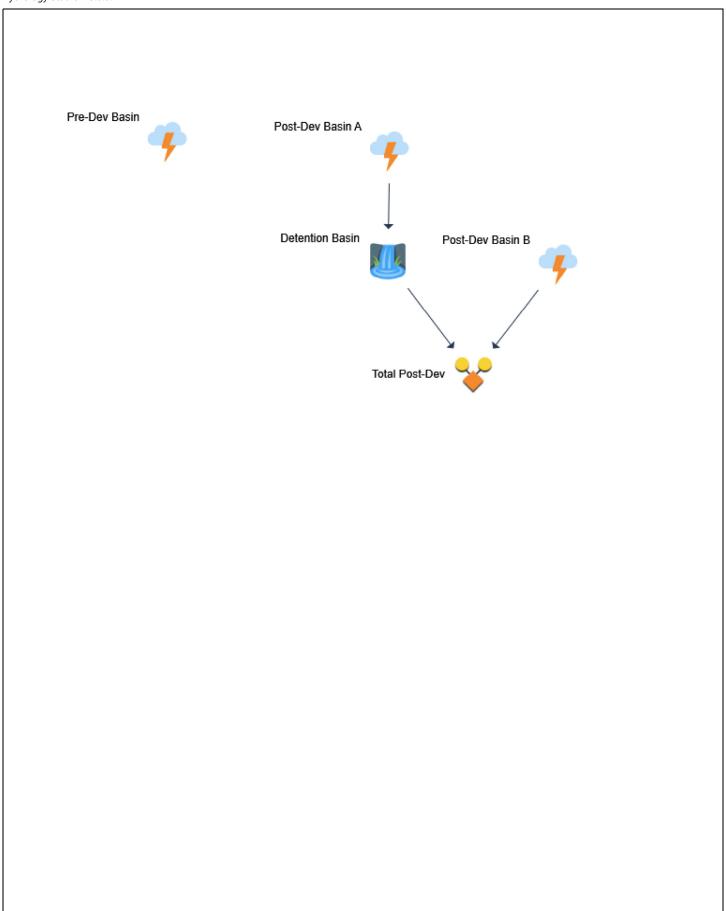


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Hydrograph by Return Period

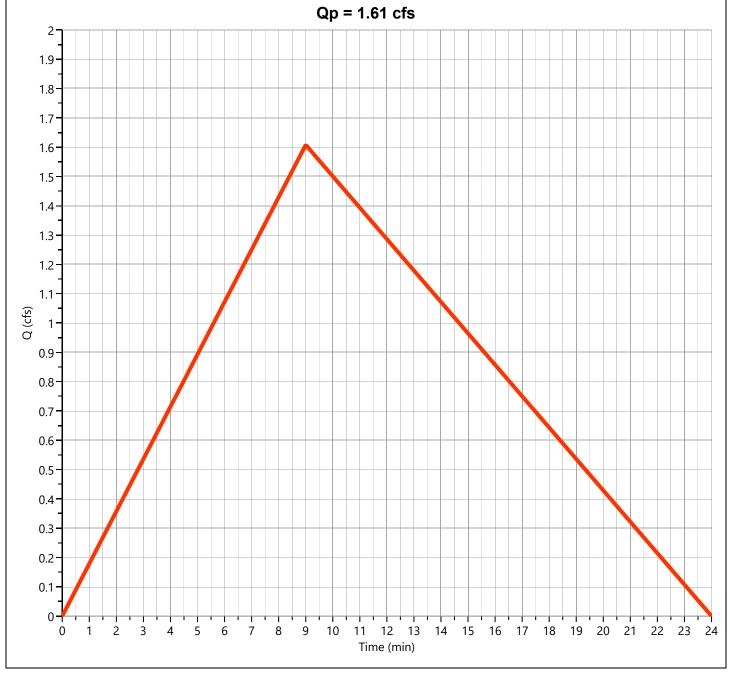
05-21-2025 Hydrology Studio v 3.0.0.27 Peak Outflow (cfs) Hyd. Hydrograph Hydrograph No. Type Name 1-yr 2-yr 3-yr 5-yr 10-yr 25-yr 50-yr 100-yr Rational Pre-Dev Basin 1.608 2.154 2.474 2.705 2.938 1 2 Mod Rational Post-Dev Basin A 1.663 2.228 2.560 2.798 3.040 Pond Route 3 **Detention Basin** 1.369 1.589 1.722 1.814 1.907 0.971 Post-Dev Basin B 0.532 0.712 0.818 0.893 4 Rational 5 Total Post-Dev 2.091 2.202 2.318 Junction 1.562 1.920

Hydrograph 2-yr Summary

łyd. ło.	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	1.608	0.15	1,159			
2	Mod Rational	Post-Dev Basin A	1.663	0.08	998			
3	Pond Route	Detention Basin	1.369	0.18	996	2	446.01	314
4	Rational	Post-Dev Basin B	0.532	0.08	213			
5	Junction	Total Post-Dev	1.562	0.15	1,204	3, 4		

Pre-Dev Basin Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 1.608 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 1,159 cuft
Drainage Area	= 0.56 ac	Runoff Coeff.	= 0.61
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 Factor	s = 1/1.67



Pre-Dev Basin Rational

Hyd. No. 1

Description	Segments					
Description	A	В	С	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 (%)	7.7					
Travel Time (min)	8.52	0.00	0.00	8.52		
Shallow Concentrated Flow						
Flow Length (ft)	95					
Watercourse Slope (%)	7.60	0.00	0.00			
Surface Description	Unpaved	Paved	Paved			
Average Velocity (ft/s)	4.45					
Travel Time (min)	0.36	0.00	0.00	0.36		
Channel Flow						
X-sectional Flow Area (sqft)						
Wetted Perimeter (ft)						
Channel Slope (%)						
	0.012	0.012	0.012			
Manning's n	0.013	0.013	0.013			
Velocity (ft/s) Flow Length (ft)						
Flow Length (it)						
Travel Time (min)	0.00	0.00	0.00	0.00		
Total Travel Time				9 min		

0.7

0.6

0.5

0.4

0.3

0.2

0.1

0-

Hydrology Studio v 3.0.0.27 05-21-2025

Post-Dev Basin A

Hyd. No. 2

14

15

Hydrograph Type	Type = Mod Rational Peak Flow		= 1.663 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 998 cuft
Drainage Area	= 0.39 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.49 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 2 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft
	Qp = 1.66 cfs		
2			
1.9			
1.8			
1.7			
1.6			
1.5			
4			
1.4			
1.3			
1.2			
1.1			
(§) 1-			
0.9			
4			
0.8			

5

6

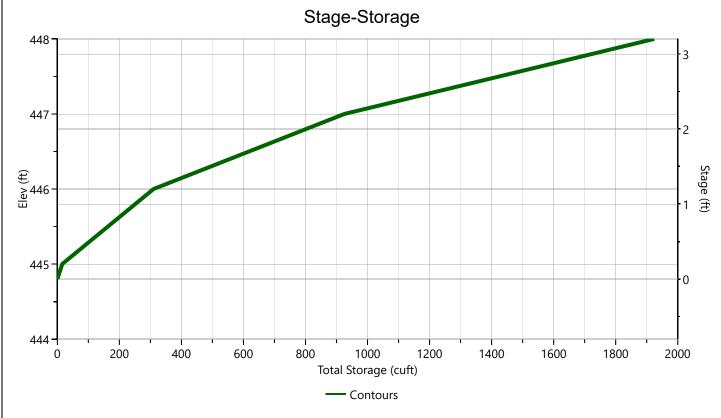
Detention Basin Hyd. No. 3

Hydrograph Type	= Pond Route	Peak Flow	= 1.369 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Hydrograph Volume	= 996 cuft
Inflow Hydrograph	= 2 - Post-Dev Basin A	Max. Elevation	= 446.01 ft
Pond Name	= Jamey South Detention Pond	Max. Storage	= 314 cuft
Pond Routing by Storage Inc	dication Method	Center of m	ass detention time = 3 mi
	Qp = 1.37 cfs		
2			
1.9			
1.8			
1.7			
-			
1.6			
1.5			
1.4			
1.3			
1.2			
1.1			
(c) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d			
0.9			
0.8			
0.7			
0.6			
0.5			
0.4			
0.3			
0.2			
0.1			
0			
0	10 Time (min)	20	3
		Detention Basin	

Jamey South Detention Pond

Stage-Storage

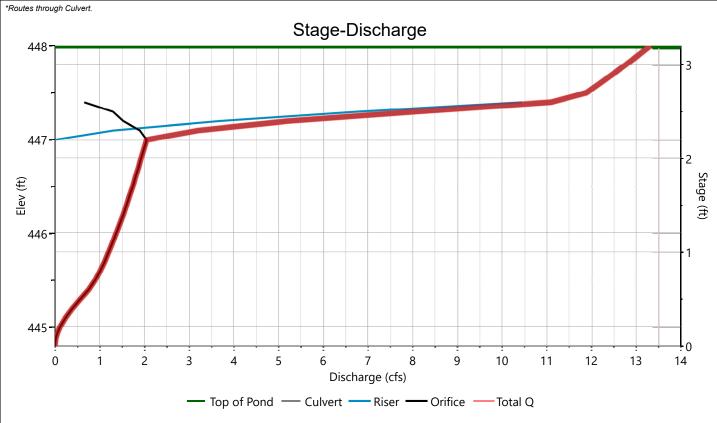
User Defined Conto	ırs	Stage / Storage Table				
Description	Input	Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
Bottom Elevation, ft	444.80					
Voids (%)	100.00	0.00 0.20	444.80 445.00	4 154	0.000 15.8	0.000 15.8
Volume Calc	Ave End Area	1.20	446.00	435	295	310
volune date	AVC ENGAICE	2.20	447.00	795	615	925
		3.20	448.00	1,203	999	1,924



Jamey South Detention Pond

Stage-Discharge

Culvent / Orifices	Culvent		Orifices		Ovifice Plats
Culvert / Orifices	Culvert	1*	2	3	Orifice Plate
Rise, in	18	8			Orifice Dia, in
Span, in	18	8			No. Orifices
No. Barrels	1	1			Invert Elevation, ft
Invert Elevation, ft	444.80	444.80			Height, ft
Orifice Coefficient, Co	0.60	0.60			Orifice Coefficient, Co
Length, ft	16				
Barrel Slope, %	1				
N-Value, n	0.012				
Weirs	Riser*		Weirs		Anaillana
vveirs	Kisei	1	2	3	Ancillary
Shape / Type	Circular				Exfiltration, in/hr
Crest Elevation, ft	447				
Crest Length, ft	12.5				
Angle, deg					
Weir Coefficient, Cw	3.3				



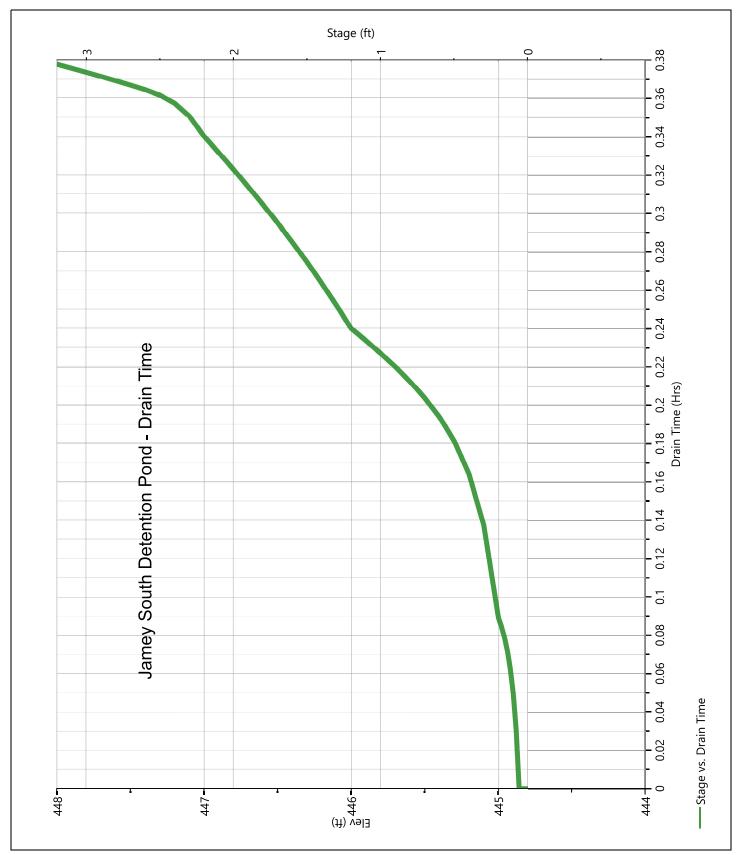
Jamey South Detention Pond

Stage-Storage-Discharge Summary

Stage Elev.		lev. Storage Culve	Storage Culvert Orifices, cfs	Riser	Riser Weirs, cfs		Pf Riser	Exfil User	Total					
(ft)	(ft)	(cuft)	(cfs)	1	2	3	(cfs)	1	2	3	(cfs)	(cfs)	(cfs)	(cfs)
0.00	444.80	0.000	0.000	0.000			0.000							0.000
0.20	445.00	15.8	0.108 ic	0.108			0.000							0.108
1.20	446.00	310	1.364 oc	1.364			0.000							1.364
2.20	447.00	925	2.048 oc	2.048			0.000							2.048
2.20 3.20	447.00	925	2.048 oc 13.32 ic	2.048			0.000							2.048

Jamey South Detention Pond

Pond Drawdown

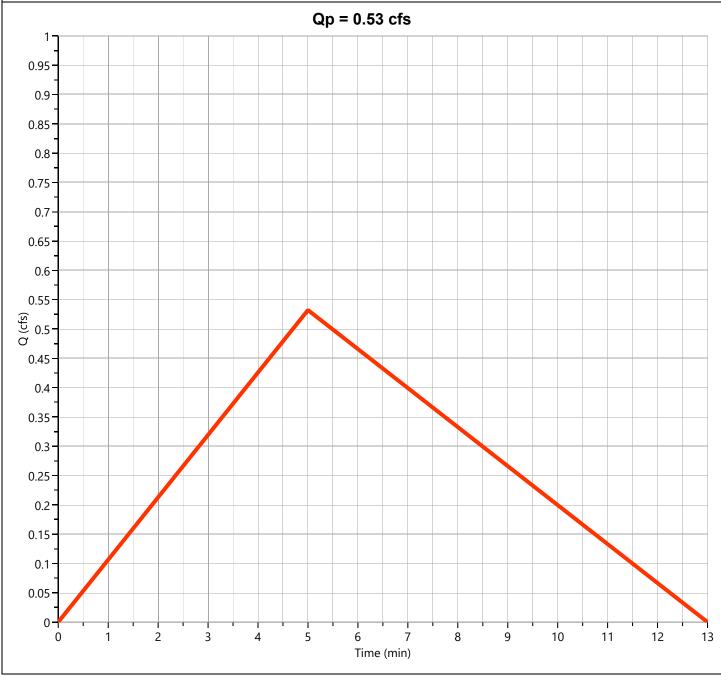


Hydrograph Report

Hydrology Studio v 3.0.0.27 05-21-2025

Post-Dev Basin B Hyd. No. 4

Hydrograph Type	= Rational	Peak Flow	= 0.532 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 213 cuft
Drainage Area	= 0.17 ac	Runoff Coeff.	= 0.51
Tc Method	= User	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	s = 1/1.67



Hydrograph Report

Hydrology Studio v 3.0.0.27 05-21-2025

Total Post-Dev Hyd. No. 5

Time Interval = 1 min Hydro	to Peak	
Total Qp = 1.56 cfs Qp =		= 0.15 hrs
Qp = 1.56 cfs 1.9 1.8 1.7 1.6 1.5 1.4 1.3 1.2 1.1 0.9 0.8 0.7 0.6 0.5 0.4 0.3	ograph Volume	= 1,204 cuft
1.9	Contrib. Area	= 0.17 ac
1.9- 1.8- 1.7- 1.6- 1.5- 1.4- 1.3- 1.2- 1.1- 0.9- 0.8- 0.7- 0.6- 0.5- 0.4- 0.3-		
1.8		
1.7- 1.6- 1.5- 1.4- 1.3- 1.2- 1.1- 0.9- 0.8- 0.7- 0.6- 0.5- 0.4- 0.3-		
1.6- 1.5- 1.4- 1.3- 1.2- 1.1- 0.9- 0.8- 0.7- 0.6- 0.5- 0.4- 0.3-		
1.5 1.4 1.3 1.2 1.1 0.9 0.8 0.7 0.6 0.5 0.4 0.3		
1.5 1.4 1.3 1.2 1.1 0.9 0.8 0.7 0.6 0.5 0.4 0.3		
1.4 1.3 1.2 1.1 0.9 0.8 0.7 0.6 0.5 0.4 0.3		
1.3 - 1.2 - 1.1 -		
1.2- 1.1- 1.1- 0.9- 0.8- 0.7- 0.6- 0.5- 0.4- 0.3-		
1.1- 0.9- 0.8- 0.7- 0.6- 0.5- 0.4- 0.3-		
0.9 - 0.8 - 0.7 - 0.6 - 0.5 - 0.4 - 0.3 - 0.3 - 0.3 - 0.3 - 0.3 - 0.5 - 0.3 - 0.5 - 0.3 - 0.5 -		
0.9 - 0.8 - 0.7 - 0.6 - 0.5 - 0.4 - 0.3 - 0.3 - 0.3 - 0.3 - 0.8 - 0.3 - 0.8 - 0.3 - 0.8 -		
0.9- 0.8- 0.7- 0.6- 0.5- 0.4- 0.3-		
0.8 -		
0.7 - 0.6 - 0.5 - 0.4 - 0.3 - 0.3 - 0.3 - 0.8 - 0.9 - 0		
0.6- 0.5- 0.4- 0.3-		
0.5 - 0.4 - 0.3 - 0.3 - 0.3 - 0.3 - 0.5 - 0		
0.4		
0.4		
0.3		
0.2		
0.1		
0		

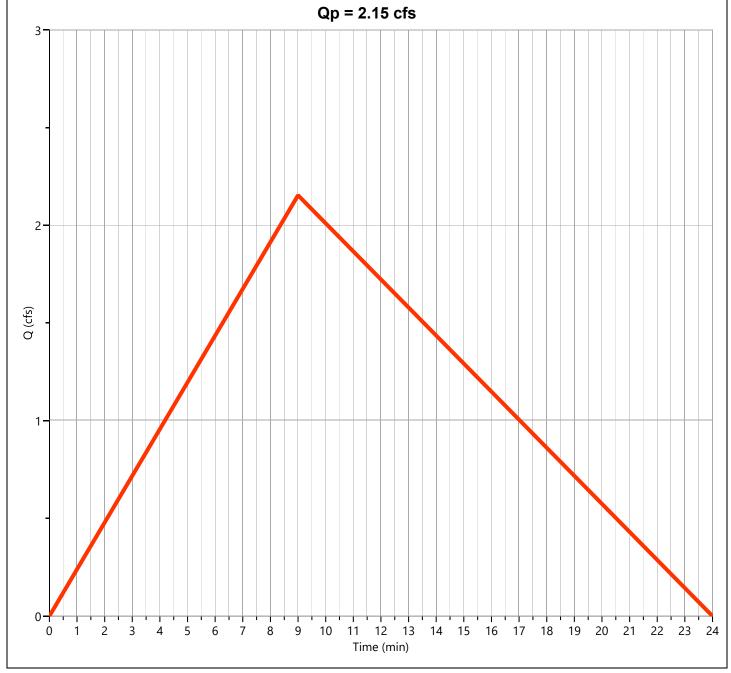
— Detention Basin — Post-Dev Basin B — Total Post-Dev

Hydrograph 10-yr Summary

05-21-2025 Hydrology Studio v 3.0.0.27 Hydrograph Volume Peak Time to Inflow Maximum Maximum Hyd. Hydrograph Hydrograph Flow Peak Hyd(s) Elevation Storage No. Type Name (hrs) (cuft) (cuft) (cfs) (ft) Rational Pre-Dev Basin 2.154 0.15 1,552 1 2 Mod Rational Post-Dev Basin A 2.228 0.08 1,337 Pond Route 0.18 3 **Detention Basin** 1.589 1,335 446.30 488 0.08 Post-Dev Basin B 0.712 285 4 Rational 1.920 0.12 5 Junction Total Post-Dev 1,613 3, 4

Pre-Dev Basin Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 2.154 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 1,552 cuft
Drainage Area	= 0.56 ac	Runoff Coeff.	= 0.61
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	s = 1/1.67



Post-Dev Basin A

Hyd. No. 2

Hydrograph Type	= Mod Rational	Peak Flow	= 2.228 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 1,337 cuft
Drainage Area	= 0.39 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.01 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 2 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft
	Qp = 2.23 cfs		
2- (SJ) O 1- 0 1 2	3 4 5 6 7 8 Time (min)	9 10 11 12	13 14 15

Detention Basin Hyd. No. 3

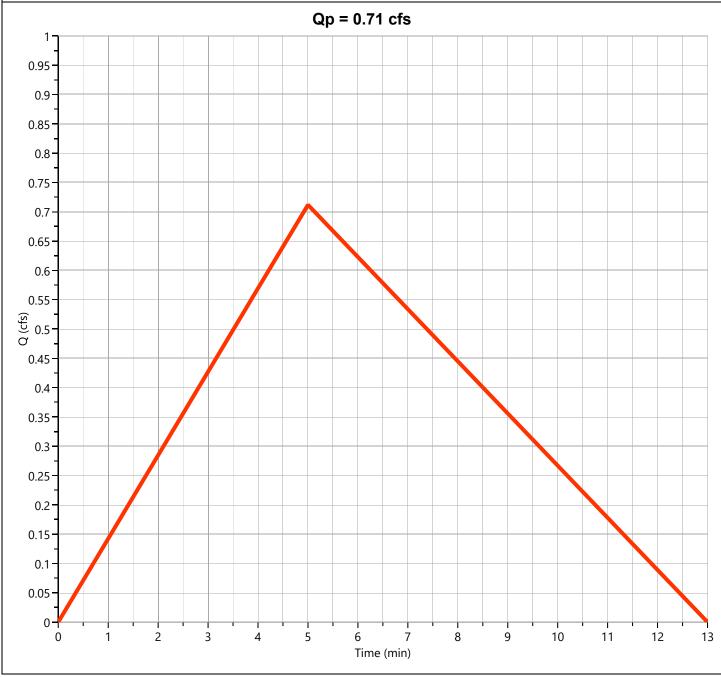
Time Interval Inflow Hydrograph	= 10-yr = 1 min	Time to Peak Hydrograph Volume	= 0.18 hrs
Inflow Hydrograph Pond Name		Hydrograph Volume	
Pond Name	0.0.40.0.4	riyarograpir volume	= 1,335 cuft
	= 2 - Post-Dev Basin A	Max. Elevation	= 446.30 ft
Pond Routing by Storage Indica	= Jamey South Detention Pond	Max. Storage	= 488 cuft
	ation Method	Center of m	ass detention time = 4 min
	Qp = 1.59 cfs		
3	-		
2 (\$\frac{1}{2}\)	10 20 Time (min)	30	40
		Detention Basin	

Hydrograph Report

Hydrology Studio v 3.0.0.27 05-21-2025

Post-Dev Basin B Hyd. No. 4

Hydrograph Type	= Rational	Peak Flow	= 0.712 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 285 cuft
Drainage Area	= 0.17 ac	Runoff Coeff.	= 0.51
Tc Method	= User	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 Factor	rs = 1/1.67



Total Post-Dev Hyd. No. 5

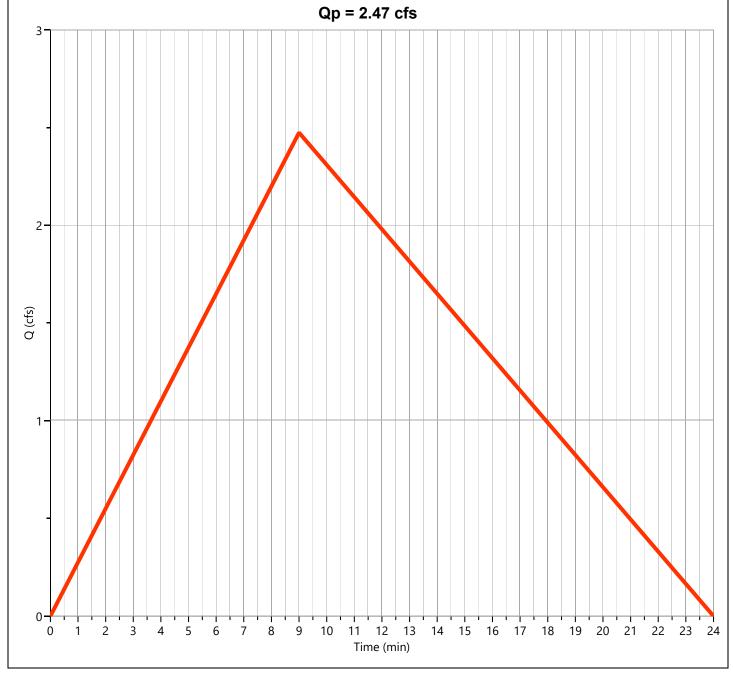
Hydrograph Type	= Junction	Peak Flow	= 1.920 cfs	
Storm Frequency	= 10-yr	Time to Peak	= 0.12 hrs	
Time Interval	= 1 min	Hydrograph Volume	= 1,613 cuft	
Inflow Hydrographs	= 3, 4	Total Contrib. Area	= 0.17 ac	
	Qp = 1.92 cfs			
2-				
1.9				
1.8				
-				
1.7-				
1.6				
1.5				
1.4				
1.3				
-				
1.2				
1.1				
O (cfs)				
0.9				
0.8				
0.7				
0.6				
0.5				
0.4				
0.3				
0.2				
0.1				
0				
	4 6 8 10 12 14 16 Time (min)	18 20 22 24	26 28 30	
	— Detention Basin — Post-Dev Basin	B — Total Post-Dev		

Hydrograph 25-yr Summary

05-21-2025 Hydrology Studio v 3.0.0.27 Hydrograph Volume Peak Time to Inflow Maximum Maximum Hyd. Hydrograph Hydrograph Flow Peak Hyd(s) Elevation Storage No. Type Name (hrs) (cuft) (cuft) (cfs) (ft) Rational Pre-Dev Basin 2.474 0.15 1,784 1 2 Mod Rational Post-Dev Basin A 2.560 0.08 1,536 Pond Route 0.20 3 **Detention Basin** 1.722 1,535 446.49 606 0.08 Post-Dev Basin B 0.818 327 4 Rational 2.091 0.10 5 Junction Total Post-Dev 1,853 3, 4

Pre-Dev Basin Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 2.474 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 1,784 cuft
Drainage Area	= 0.56 ac	Runoff Coeff.	= 0.61
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 Factor	s = 1/1.67



Post-Dev Basin A

Hyd. No. 2

Time Interval =		Time to Peak Runoff Volume	= 0.08 hrs
		Runoff Volume	
Drainage Area =	= 0.30 ac		= 1,536 cuft
	- 0.00 ac	Runoff Coeff.	= 0.95
Tc Method =	- User	Time of Conc. (Tc)	= 5.0 min
IDF Curve =	City of Bryant IDF Curve.idf	Intensity	= 6.91 in/hr
Freq. Corr. Factor =	= 1.00	Storm Duration	= 2 x Tc
Target Q =	= 0.000 cfs	Required Storage	= 0.000 cuft
	Qp = 2.56 cfs		
(SJD) O	3 4 5 6 7 8 9 Time (min)	10 11 12	13 14 15

Hydrology Studio v 3.0.0.27 05-21-2025

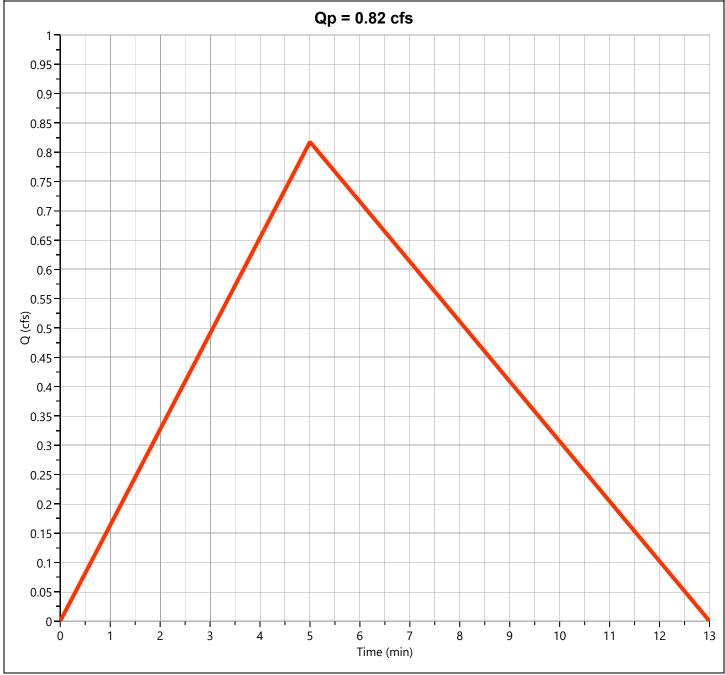
Detention Basin Hyd. No. 3

Hydrograph Type	= Pond Route	Peak Flow	= 1.722 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,535 cuft
Inflow Hydrograph	= 2 - Post-Dev Basin A	Max. Elevation	= 446.49 ft
Pond Name	= Jamey South Detention Pond	Max. Storage	= 606 cuft
Pond Routing by Storage Ind	lication Method	Center of m	ass detention time = 4 min
	Qp = 1.72 cfs		
3 7			
2 (sty) O 1	10 20 Time (min)	30	40
		Detention Basin	

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Post-Dev Basin B

Hydrograph Type	= Rational	Peak Flow	= 0.818 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 327 cuft
Drainage Area	= 0.17 ac	Runoff Coeff.	= 0.51
Tc Method	= User	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	s = 1/1.67



Total Post-Dev Hyd. No. 5

Hydrograph Type	= Junction	Peak Flow	= 2.091 cfs		
Storm Frequency	= 25-yr	Time to Peak	= 0.10 hrs		
Time Interval	= 1 min	Hydrograph Volume	= 1,853 cuft		
Inflow Hydrographs	= 3, 4	Total Contrib. Area	= 0.17 ac		
	Qp = 2.09 cfs				
2-					
(cts) O (
0 2 4	6 8 10 12 14 16 18 2 Time (min)	20 22 24 26	28 30 32		
	— Detention Basin — Post-Dev Basin B —	Total Post-Dev			

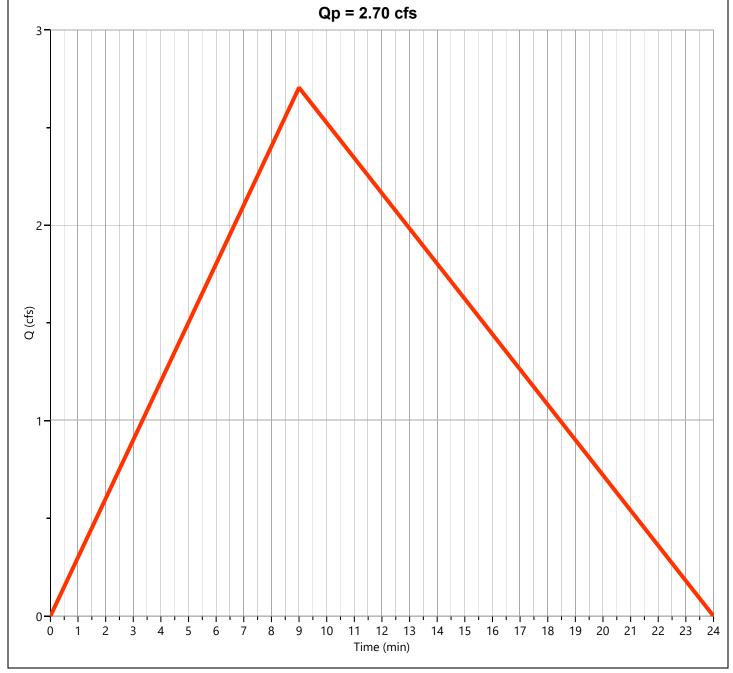
Hydrograph 50-yr Summary

05-21-2025 Hydrology Studio v 3.0.0.27 Hydrograph Volume Peak Time to Inflow Maximum Maximum Hyd. Hydrograph Hydrograph Flow Peak Hyd(s) Elevation Storage No. Type Name (hrs) (cuft) (cuft) (cfs) (ft) Rational Pre-Dev Basin 2.705 0.15 1,950 1 2 Mod Rational Post-Dev Basin A 2.798 0.08 1,679 Pond Route 0.20 694 3 **Detention Basin** 1.814 1,678 446.63 0.08 Post-Dev Basin B 0.893 358 4 Rational 2.202 0.10 2,026 5 Junction Total Post-Dev 3, 4

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Pre-Dev Basin Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 2.705 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 1,950 cuft
Drainage Area	= 0.56 ac	Runoff Coeff.	= 0.61
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 Factor	rs = 1/1.67



Post-Dev Basin A

Storm Frequency	Hydrograph Type =	Mod Rational	Peak Flow	= 2.798 cfs
Drainage Area = 0.39 ac	Storm Frequency =	= 50-yr	Time to Peak	= 0.08 hrs
Time of Conc. (Tc) = 5.0 min IDF Curve	Time Interval =	= 1 min	Runoff Volume	= 1,679 cuft
IDF Curve	Drainage Area =	= 0.39 ac	Runoff Coeff.	= 0.95
Freq. Corr. Factor = 1.00 Target Q = 0.000 cfs Qp = 2.80 cfs Qp = 2.80 cfs 1 2 1 1 1 1 1 1 1 1 1 1 1	Tc Method =	= User	Time of Conc. (Tc)	= 5.0 min
Target Q = 0.000 cfs Qp = 2.80 cfs Qp = 2.80 cfs 1 2 1 1 1 1 1 1 1 1 1 1 1	IDF Curve =	City of Bryant IDF Curve.idf	Intensity	= 7.55 in/hr
Qp = 2.80 cfs	Freq. Corr. Factor =	= 1.00	Storm Duration	= 2 x Tc
	Target Q =	= 0.000 cfs	Required Storage	= 0.000 cuft
		Qp = 2.80 cfs		
Time (min)	2- (s ₂) O		10 11 12	13 14 15

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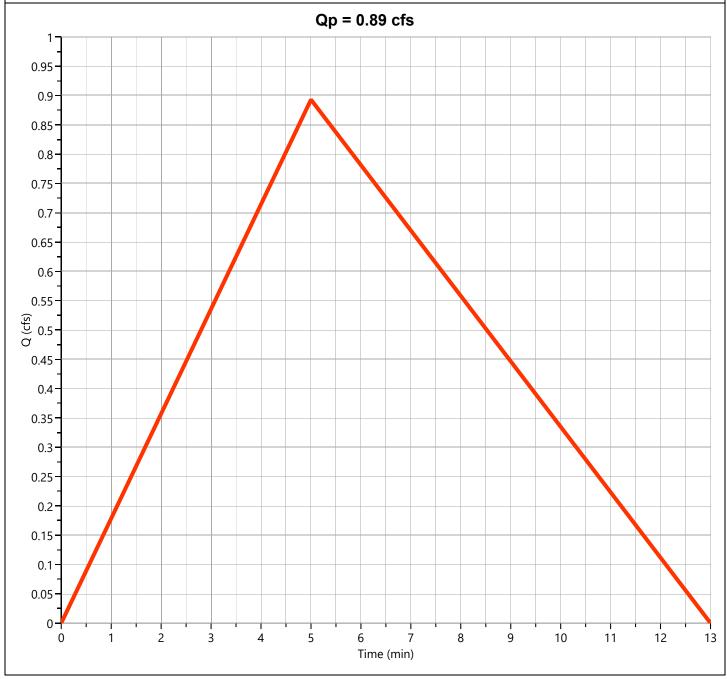
Detention Basin Hyd. No. 3

Hydrograph Type	= Pond Route	Peak Flow	= 1.814 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.20 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,678 cuft
Inflow Hydrograph	= 2 - Post-Dev Basin A	Max. Elevation	= 446.63 ft
Pond Name	= Jamey South Detention Pond	Max. Storage	= 694 cuft
Pond Routing by Storage Inc	dication Method	Center of m	nass detention time = 5 min
	Qp = 1.81 cfs		
2-			
(cts)			
0	10 20 Time (min)	30	40
		— Detention Basin	

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Post-Dev Basin B

Hydrograph Type	= Rational	Peak Flow	= 0.893 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 358 cuft
Drainage Area	= 0.17 ac	Runoff Coeff.	= 0.51
Tc Method	= User	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 Hyd. No. 5

Hydrograph Type	= Junction	Peak Flow	= 2.202 cfs			
Storm Frequency	= 50-yr	Time to Peak	= 0.10 hrs			
Time Interval	= 1 min	Hydrograph Volume	= 2,026 cuft			
Inflow Hydrographs	= 3, 4	Total Contrib. Area	= 0.17 ac			
Qp = 2.20 cfs						
2						
1 - 1 -						
0 2 4	6 8 10 12 14 16 18 20 Time (min)	22 24 26	28 30 32			
— Detention Basin — Post-Dev Basin B — Total Post-Dev						

Hydrograph 100-yr Summary Hydrology Studio v 3.0.0.27

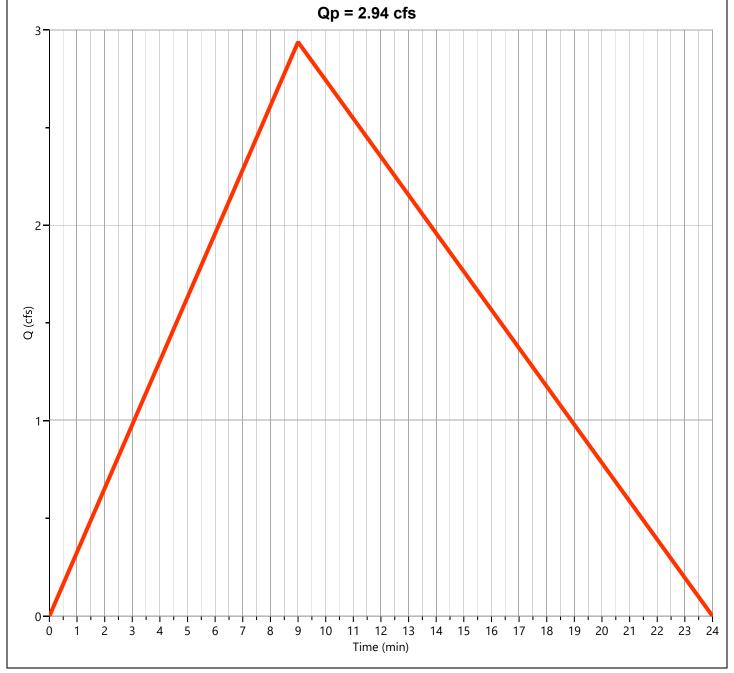
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Hydrograph No. Hydrograph Name Peak (Piow (Peak (Pro) Name Peak (Pro) Name	Hyd. No. Hydrograph Type Hydrograph Name Peak Flow (cfs) Time to Peak (hrs) Hydrograph Volume (cuft) Inflow Hyd(s) Maximum Elevation (ft) Maximum Storage (cuft) 1 Rational Pre-Dev Basin 2.938 0.15 2,118 2 Mod Rational Post-Dev Basin A 3.040 0.08 1,824 3 Pond Route Detention Basin 1.907 0.20 1,823 2 446.78 785 4 Rational Post-Dev Basin B 0.971 0.08 389	Hydrology St	udio v 3.0.0.27							05-21-2025
2 Mod Rational Post-Dev Basin A 3.040 0.08 1,824 </th <th>2 Mod Rational Post-Dev Basin A 3.040 0.08 1,824 3 Pond Route Detention Basin 1.907 0.20 1,823 2 446.78 785 4 Rational Post-Dev Basin B 0.971 0.08 389 </th> <th>Hyd.</th> <th>Hydrograph</th> <th></th> <th>Flow</th> <th>Peak</th> <th>Volume</th> <th></th> <th>Elevation</th> <th>Storage</th>	2 Mod Rational Post-Dev Basin A 3.040 0.08 1,824 3 Pond Route Detention Basin 1.907 0.20 1,823 2 446.78 785 4 Rational Post-Dev Basin B 0.971 0.08 389	Hyd.	Hydrograph		Flow	Peak	Volume		Elevation	Storage
3 Pond Route Detention Basin 1.907 0.20 1,823 2 446.78 785 4 Rational Post-Dev Basin B 0.971 0.08 389	3 Pond Route Detention Basin 1.907 0.20 1,823 2 446.78 785 4 Rational Post-Dev Basin B 0.971 0.08 389	1	Rational	Pre-Dev Basin	2.938	0.15	2,118			
4 Rational Post-Dev Basin B 0.971 0.08 389	4 Rational Post-Dev Basin B 0.971 0.08 389	2	Mod Rational	Post-Dev Basin A	3.040	0.08	1,824			
		3	Pond Route	Detention Basin	1.907	0.20	1,823	2	446.78	785
5 Junction Total Post-Dev 2.318 0.10 2.201 3, 4	5 Junction Total Post-Dev 2.318 0.10 2.201 3.4	4	Rational	Post-Dev Basin B	0.971	0.08	389			

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Pre-Dev Basin Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 2.938 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 2,118 cuft
Drainage Area	= 0.56 ac	Runoff Coeff.	= 0.61
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	s = 1/1.67



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Post-Dev Basin A

Hydrograph Type	= Mod Rational	Peak Flow	= 3.040 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 1,824 cuft
Drainage Area	= 0.39 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.20 in/hr
Freq. Corr. Factor	= 1.00	Storm Duration	= 2 x Tc
Target Q	= 0.000 cfs	Required Storage	= 0.000 cuft
	Qp = 3.04 cfs		
4			
3- (S ₂) O			
1-			
0 1 2	3 4 5 6 7 8 9 Time (min)	10 11 12	13 14 15

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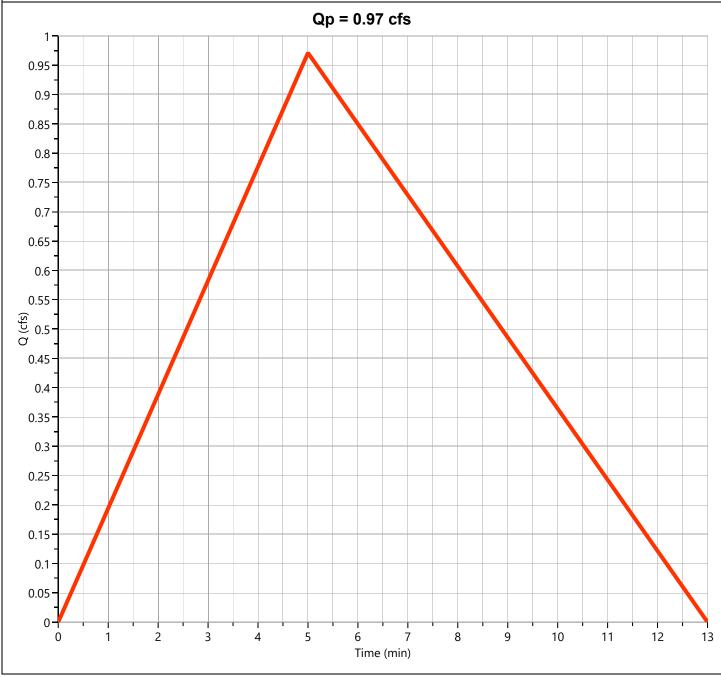
Detention Basin Hyd. No. 3

Hydrograph Type	= Pond Route		Peak Flow	= 1.907 cfs
Storm Frequency	= 100-yr		Time to Peak	= 0.20 hrs
Time Interval	= 1 min		Hydrograph Volume	= 1,823 cuft
Inflow Hydrograph	= 2 - Post-Dev Basin A		Max. Elevation	= 446.78 ft
Pond Name	= Jamey South Detention Po	nd	Max. Storage	= 785 cuft
Pond Routing by Storage Inc	dication Method		Center of m	ass detention time = 5 min
	Qı	o = 1.91 cfs		
4				
-				
3				
fs)				
(\$) 2				
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]/ /				
0	10	20	30	40
-	-	Time (min)		
		st-Dev Basin A — Det	ention Basin	
		35		

Hydrology Studio v 3.0.0.27 05-21-2025

Post-Dev Basin B Hyd. No. 4

Hydrograph Type	= Rational	Peak Flow	= 0.971 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 389 cuft
Drainage Area	= 0.17 ac	Runoff Coeff.	= 0.51
Tc Method	= User	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 Hyd. No. 5

Hydrograph Type	= Junction	Peak Flow	= 2.318 cfs		
Storm Frequency	= 100-yr	Time to Peak	= 0.10 hrs		
Time Interval	= 1 min	Hydrograph Volume	= 2,201 cuft		
Inflow Hydrographs	= 3, 4	Total Contrib. Area	= 0.17 ac		
Qp = 2.32 cfs					
(sb) O - 1	6 8 10 12 14 16 18 20	22 24 26 28	30 32 34		
Time (min)					
—— Detention Basin —— Post-Dev Basin B —— Total Post-Dev					