

**DRAINAGE CALCULATIONS
FOR
Webster Street Grading Plan**

In cooperation with:

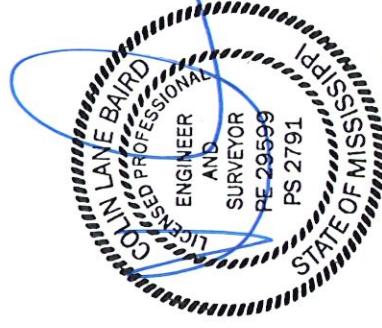
Trifecta

Analysis and report prepared by:

Colin L. Baird, PE, PLS

Baird Engineering, Inc.
506 Jefferson Street
Clinton, MS 39056

Dated: September 1, 2026



9/1/26

INTRODUCTION

In response to the proposed construction of 2 new condominium buildings, along with a parking lots and drives along Webster Street in Bay St. Louis, Mississippi. It was requested that Baird Engineering, Inc. perform rainfall-runoff analyses of the site for both pre- and post-construction conditions.

The entire property that is being developed as a part of this plan is 0.91 acres in total. There is currently no building or parking areas on the subject parcel. The existing conditions of the property is open grass with a small amount of wooded area. The surface drainage currently runs off to the north and south of the property towards a ditch respectively.

The proposed improvements are shown on the grading plan by Baird Engineering, Inc.

ANALYSES

Hydrologic analyses for the site were performed in which pre- and post-construction conditions were examined. The Rational Method for computing runoff was used.

Pre north pond



Post north pond



Post north pond

Hydrograph by Return Period

Hydrology Studio v 3.0.0.44

File: 5181 (north pond).hys
09-01-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Outflow (cfs)							
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	Rational	Pre north pond					1.257	1.471		1.786
2	Rational	Post north pond					4.523	5.285		6.407
3	Pond Route	Post north pond					1.324	1.378		1.457

Hydrograph 10-yr Summary

Hydrology Studio v 3.0.0.44

File: 5181 (north pond).hys
09-01-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre north pond	1.257	0.33	1,508	---		
2	Rational	Post north pond	4.523	0.10	1,628	---		
3	Pond Route	Post north pond	1.324	0.17	1,628	2	16.22	1,006

Hydrograph Report

Hydrology Studio v 3.0.0.44

File: 5181 (north pond).hys
09-01-2026

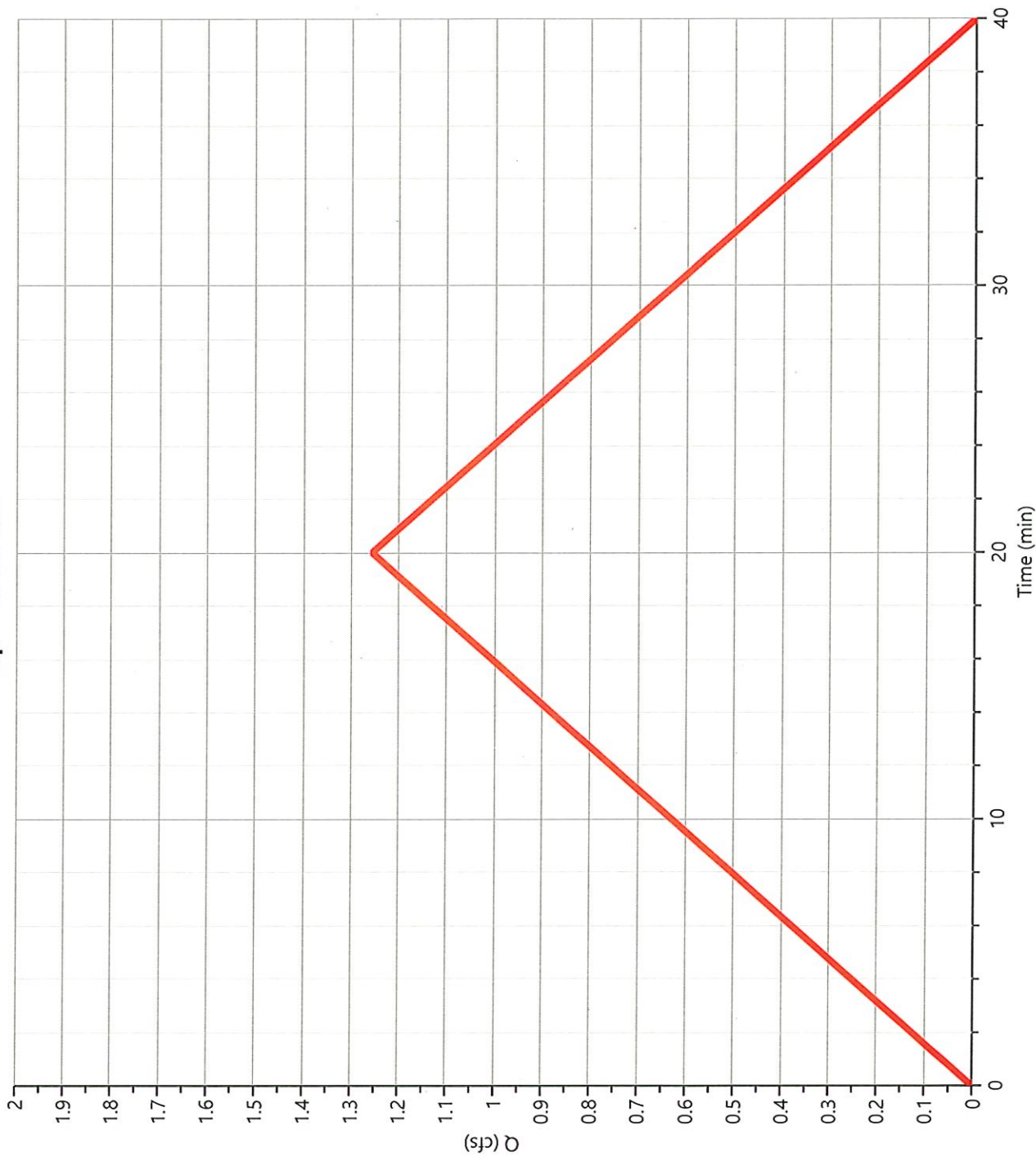
Pre north pond

Hyd. No. 1

Hydrograph Type = Rational
Storm Frequency = 10-yr
Time Interval = 1 min
Drainage Area = 0.51 ac
Tc Method = User
IDF Curve = GulfportMS.idf
Freq. Corr. Factor = 1.00

Peak Flow = 1.257 cfs
Time to Peak = 0.33 hrs
Runoff Volume = 1,508 cuft
Runoff Coeff. = 0.40
Time of Conc. (Tc) = 20.0 min
Intensity = 6.16 in/hr
Asc/Rec Limb Factors = 1/1

Qp = 1.257 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.44

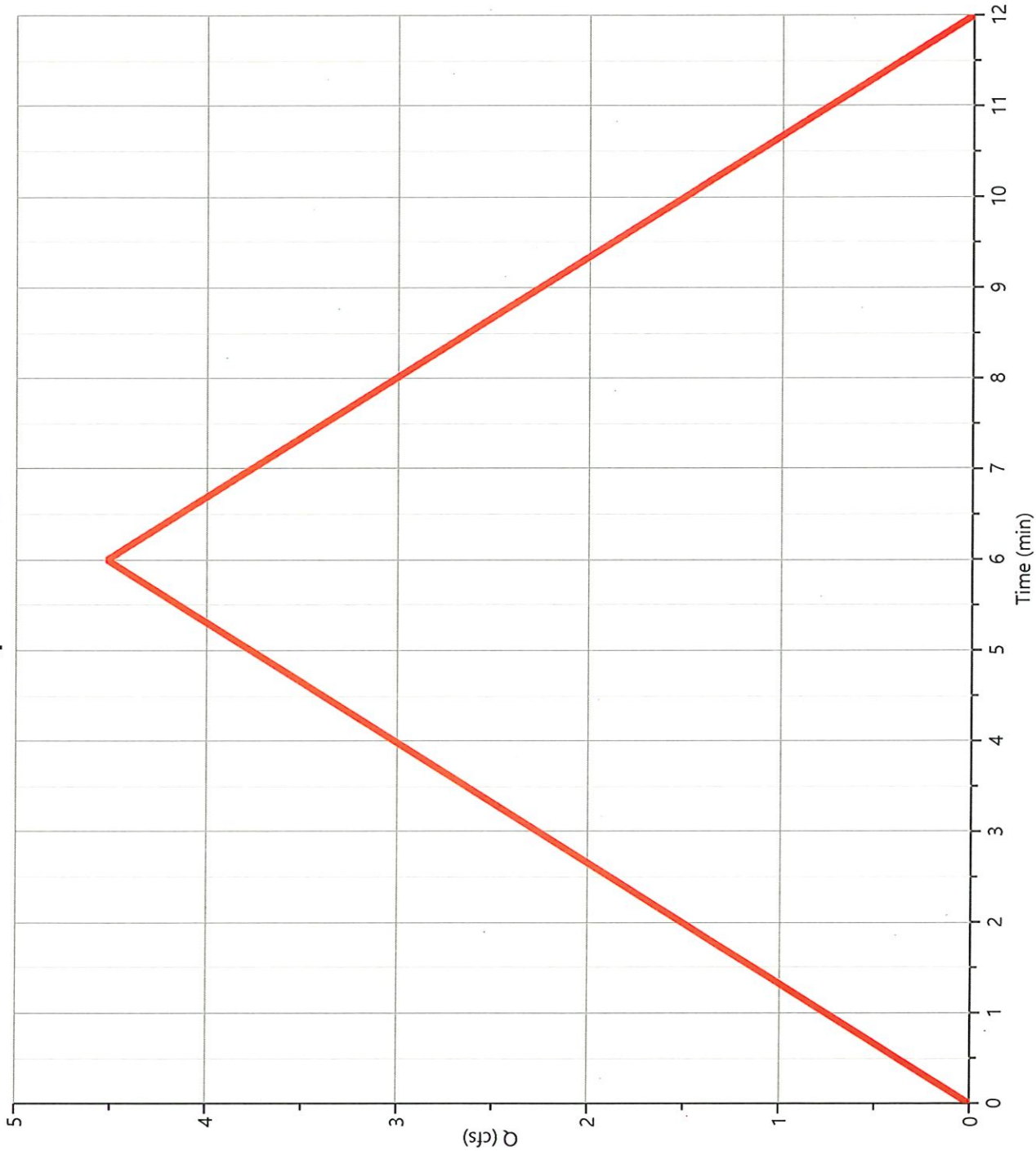
File: 5181 (north pond).hys
09-01-2026

Post north pond

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 4.523 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 1,628 cuft
Drainage Area	= 0.51 ac	Runoff Coeff.	= 0.85
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= GulfportMS.idf	Intensity	= 10.43 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1

Qp = 4.523 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.44

File: 5181 (north pond).hys
09-01-2026

Post north pond

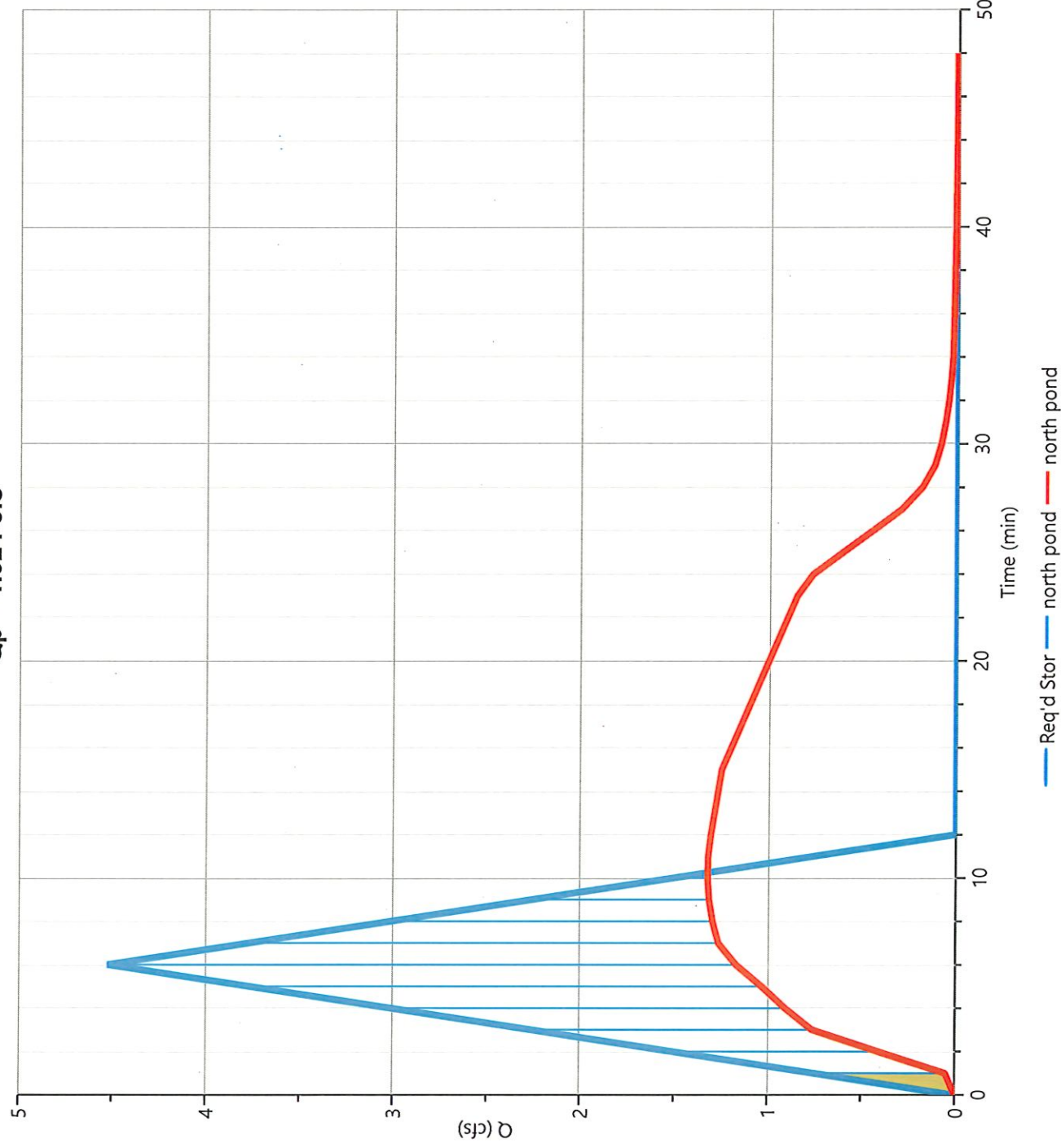
Hyd. No. 3

Hydrograph Type	= Pond Route	Peak Flow	= 1,324 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,628 cuft
Inflow Hydrograph	= 2 - north pond	Max. Elevation	= 16.22 ft
Pond Name	= north pond	Max. Storage	= 1,006 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 8 min

Qp = 1,324 cfs



Pond Report

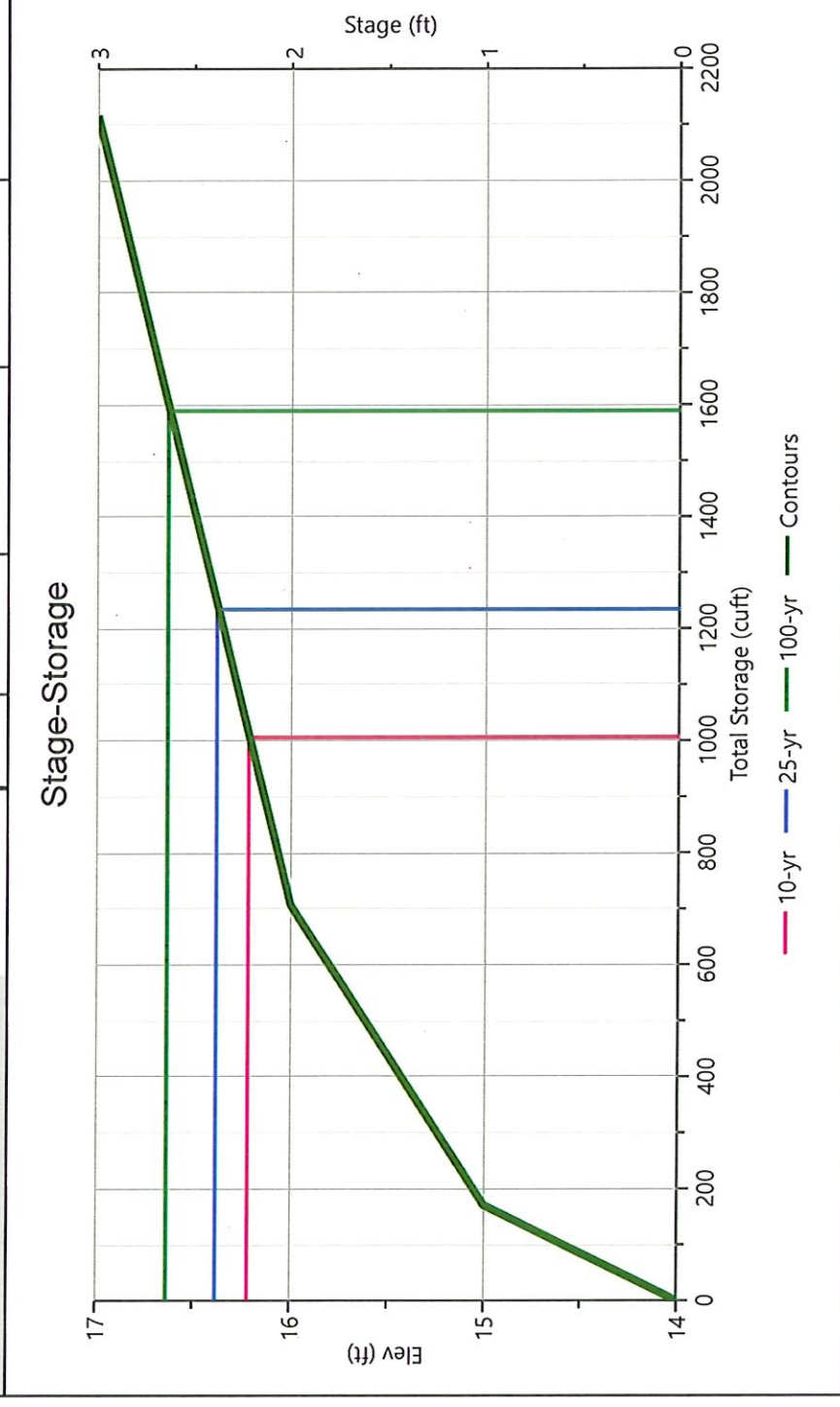
File: 5181 (north pond).hys

Hydrology Studio v 3.0.0.44

09-01-2026

north pond

Stage-Storage

[illegible]

Pond Report

File: 5181 (north pond).hys

Hydrology Studio v 3.0.0.44

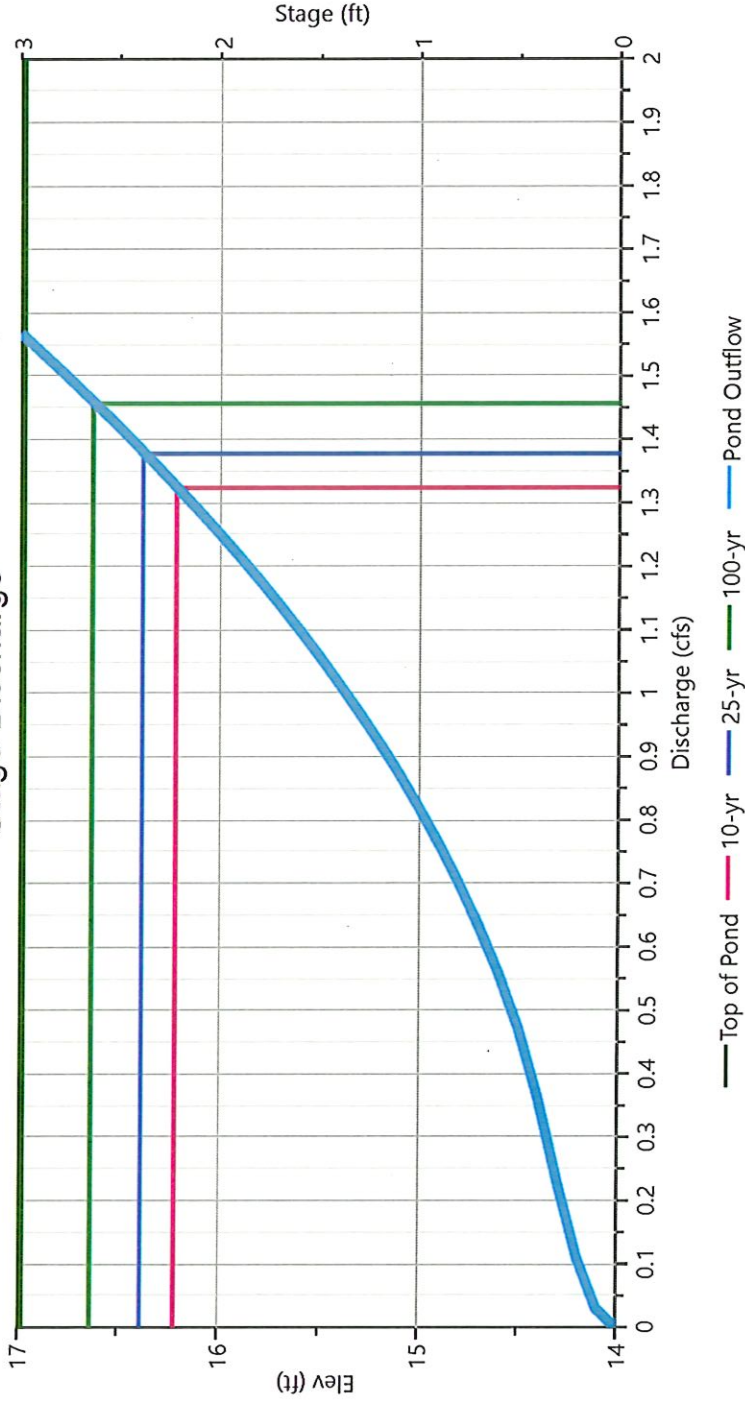
09-01-2026

north pond

Stage-Discharge

Culvert / Orifices		Cir Culvert	Orifice			Perforated Riser
			1	2	3	
Rise, in		6				
Span, in		6				
No. Barrels		1				
Invert Elevation, ft		14.00				Hole Diameter, in
Orifice Coefficient, Co		0.60				No. holes
Length, ft		15				Invert Elevation, ft
Barrel Slope, %		1.7				Height, ft
N-Value, n		0.013				Orifice Coefficient, Co
Weirs		Riser	Weir			Ancillary
			1	2	3	
Shape / Type						
Crest Elevation, ft						
Crest Length, ft						
Angle, deg						Exfiltration, in/hr
Weir Coefficient, Cw						

Stage-Discharge



Pond Report

File: 5181 (north pond).hys

Hydrology Studio v 3.0.0.44

09-01-2026

north 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	14.00	0.000	0.000											0.000
1.00	15.00	171	0.819 ic											0.819
2.00	16.00	708	1.251 ic											1.251
3.00	17.00	2,117	1.568 ic											1.568

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

Pond Report

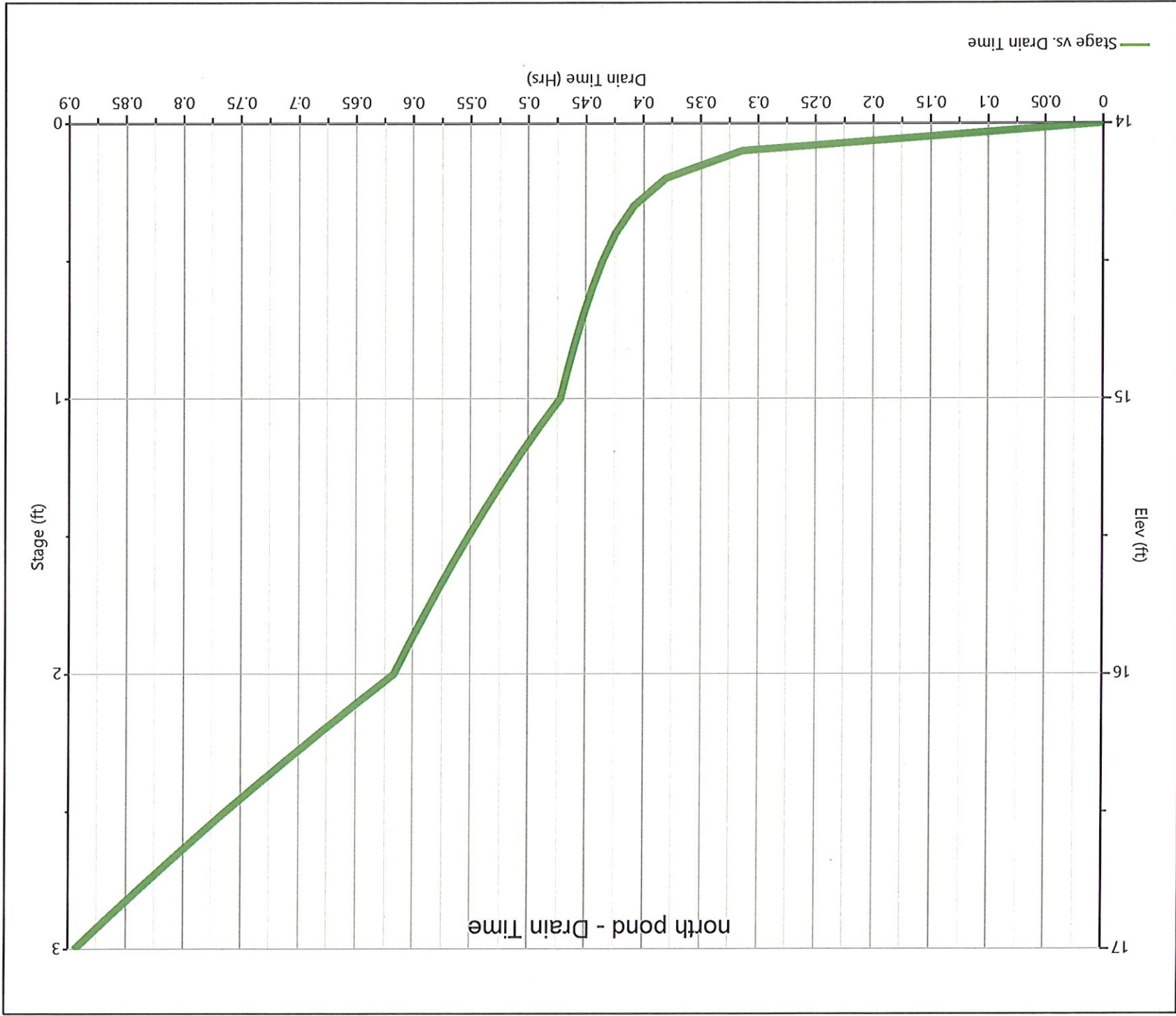
File: 5181 (north pond).hys

Hydrology Studio v 3.0.0.44

09-01-2026

north pond

Pond Drawdown



Hydrograph 25-yr Summary

Hydrology Studio v 3.0.0.44

File: 5181 (north pond).hys
09-01-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre north pond	1.471	0.33	1,765	-----		
2	Rational	Post north pond	5.285	0.10	1,902	-----		
3	Pond Route	Post north pond	1.378	0.17	1,902	2	16.38	1,234

Hydrograph Report

Hydrology Studio v 3.0.0.44

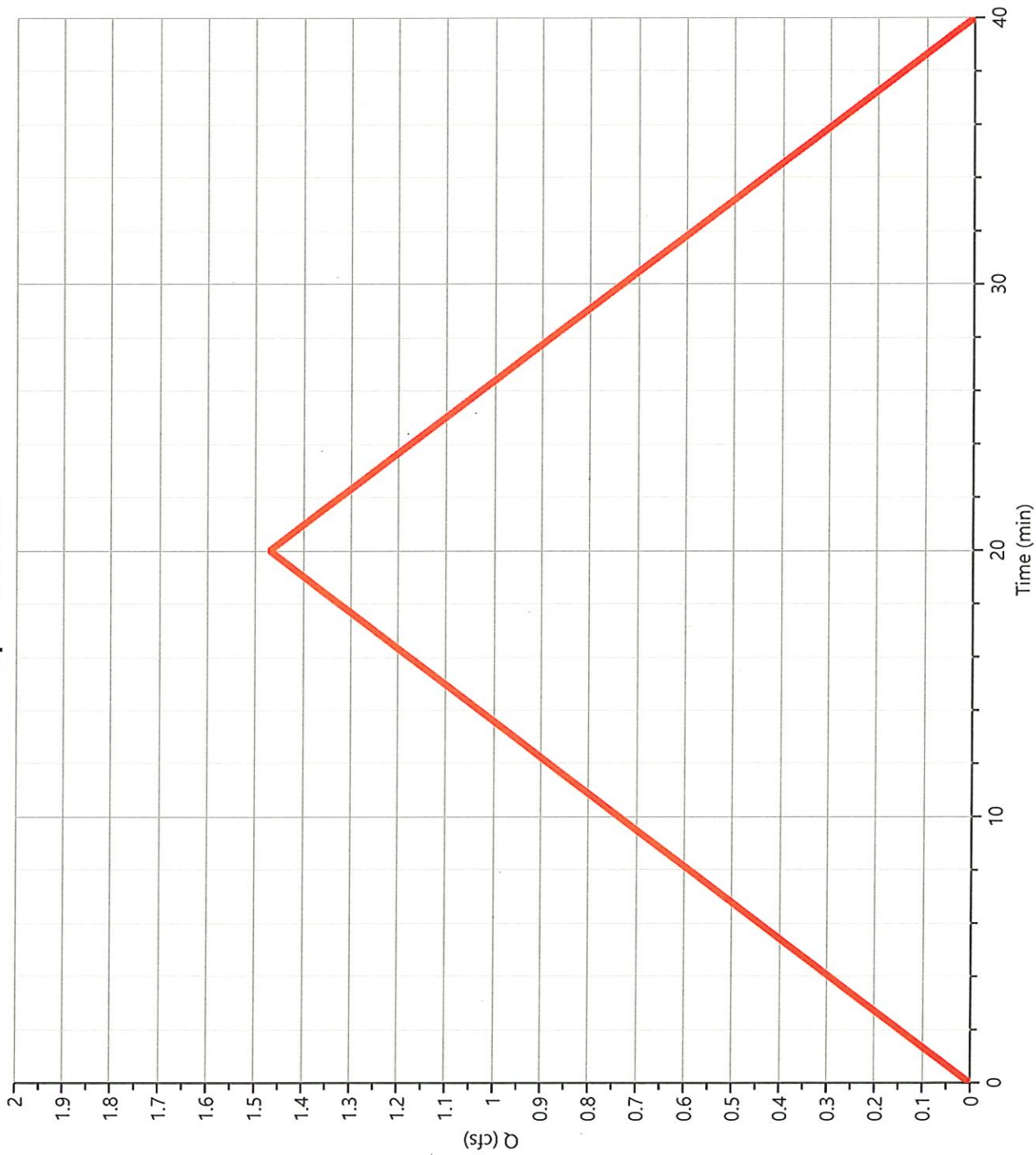
File: 5181 (north pond).hys
09-01-2026

Pre north pond

Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 1.471 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.33 hrs
Time Interval	= 1 min	Runoff Volume	= 1,765 cuft
Drainage Area	= 0.51 ac	Runoff Coeff.	= 0.40
Tc Method	= User	Time of Conc. (Tc)	= 20.0 min
IDF Curve	= GulfportMS.idf	Intensity	= 7.21 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1

Qp = 1.471 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.44

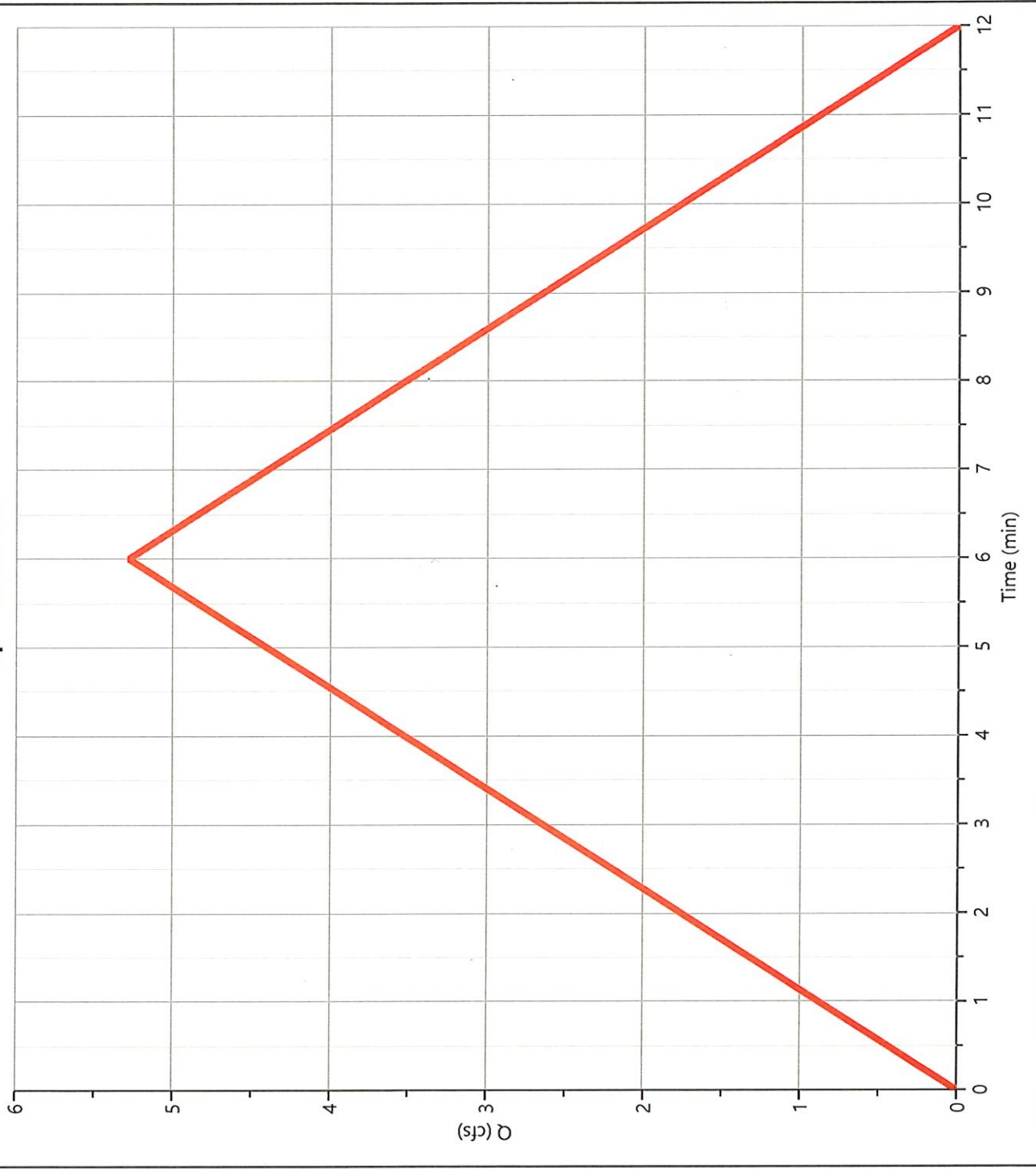
File: 5181 (north pond).hys
09-01-2026

Post north pond

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 5.285 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 1,902 cuft
Drainage Area	= 0.51 ac	Runoff Coeff.	= 0.85
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= GulfportMS.idf	Intensity	= 12.19 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1

Qp = 5.285 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.44

File: 5181 (north pond).hys
09-01-2026

Post north pond

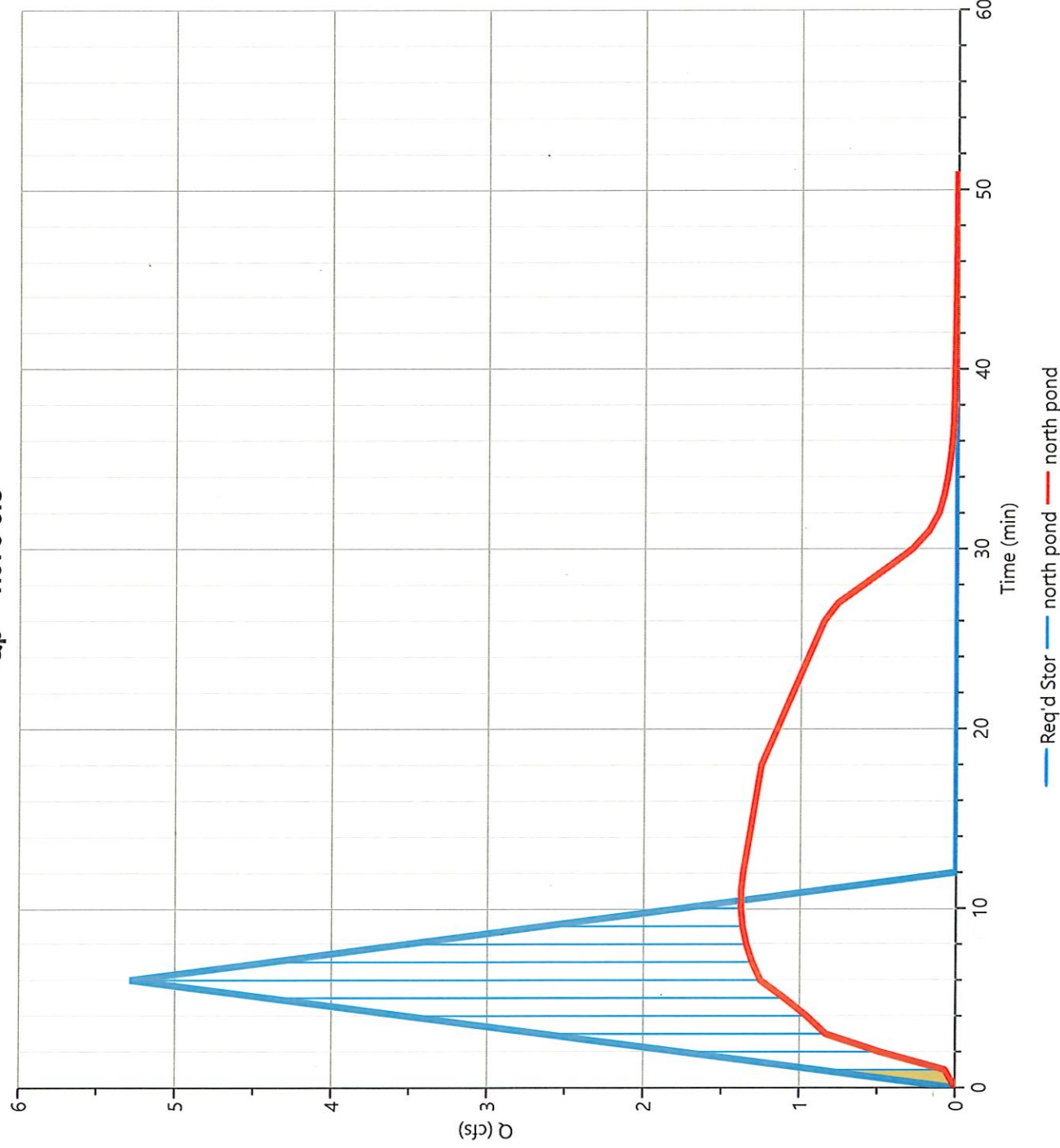
Hyd. No. 3

Hydrograph Type	= Pond Route	Peak Flow	= 1.378 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,902 cuft
Inflow Hydrograph	= 2 - north pond	Max. Elevation	= 16.38 ft
Pond Name	= north pond	Max. Storage	= 1,234 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 9 min

Qp = 1.378 cfs



Hydrograph 100-yr Summary

Hydrology Studio v 3.0.0.44

File: 5181 (north pond).hys
09-01-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre north pond	1,786	0.33	2,143	----		
2	Rational	Post north pond	6,407	0.10	2,307	----		
3	Pond Route	Post north pond	1,457	0.18	2,306	2	16.63	1,589

Hydrograph Report

Hydrology Studio v 3.0.0.44

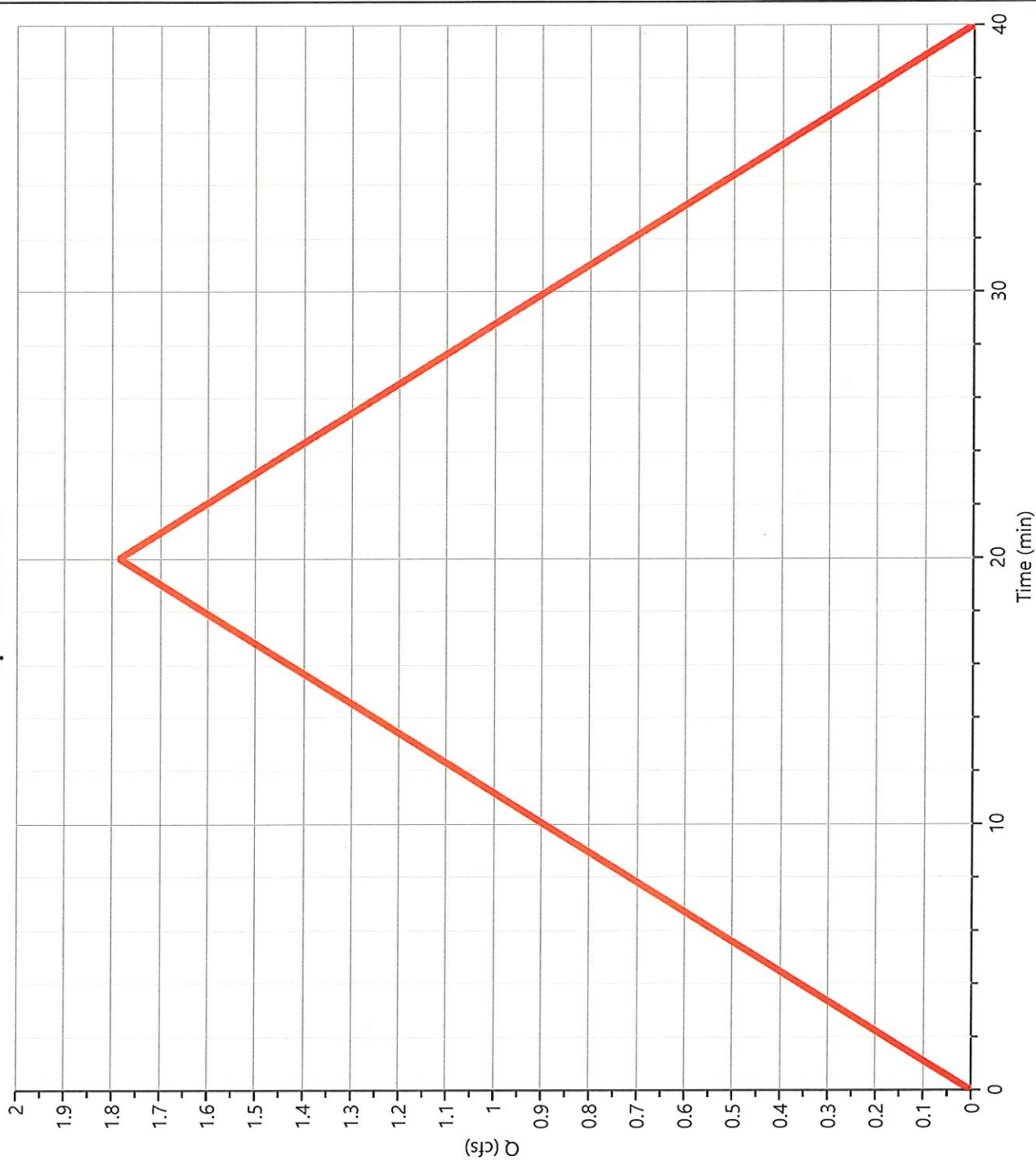
File: 5181 (north pond).hys
09-01-2026

Pre north pond

Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 1.786 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.33 hrs
Time Interval	= 1 min	Runoff Volume	= 2,143 cuft
Drainage Area	= 0.51 ac	Runoff Coeff.	= 0.40
Tc Method	= User	Time of Conc. (Tc)	= 20.0 min
IDF Curve	= GulfportMS.idf	Intensity	= 8.76 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1

Qp = 1.786 cfs



Hydrograph Report

Hydrology Studio v3.0.0.44

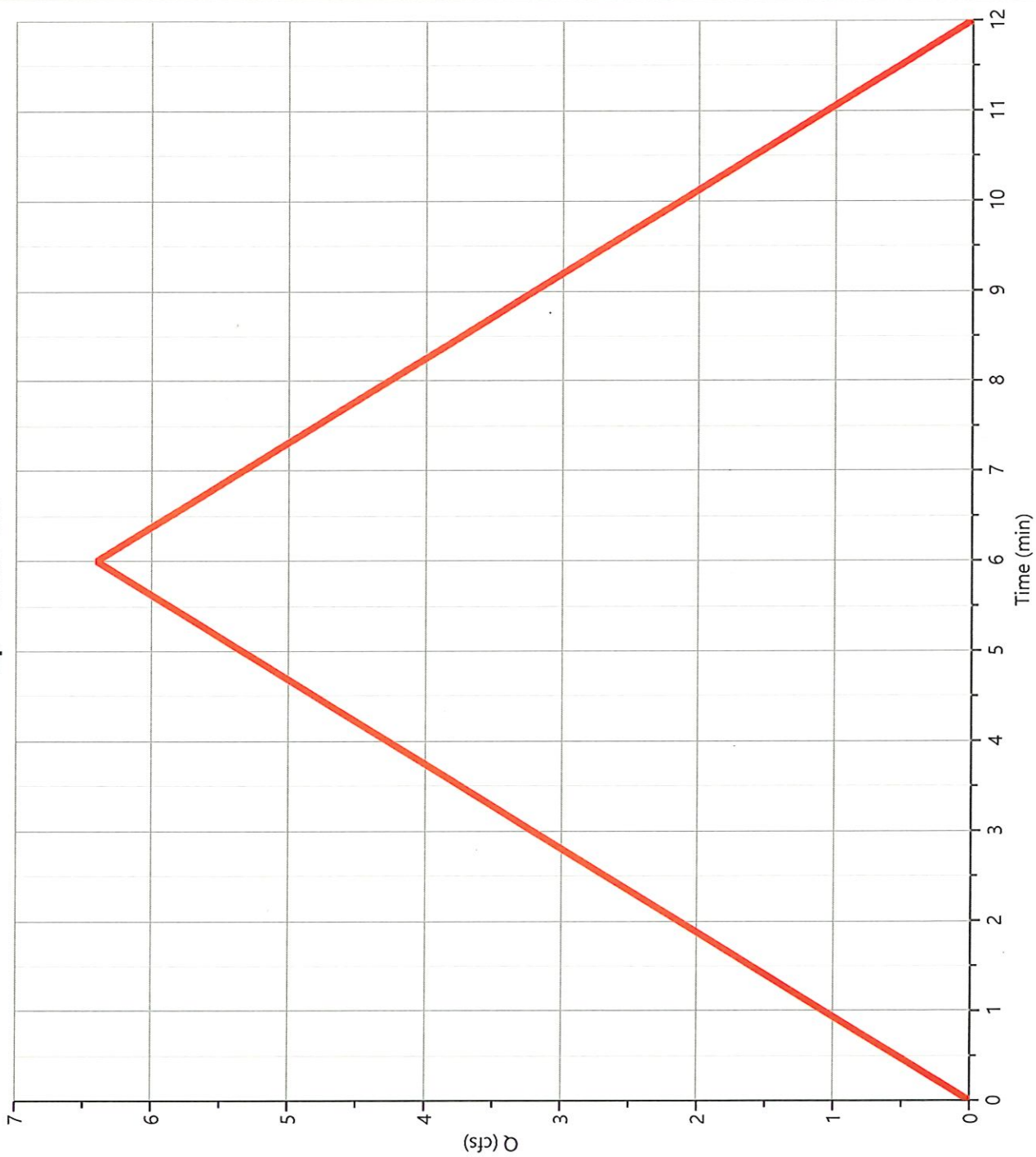
File: 5181 (north pond).hys
09-01-2026

Post north pond

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 6.407 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 2,307 cuft
Drainage Area	= 0.51 ac	Runoff Coeff.	= 0.85
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= GulfportMS.idf	Intensity	= 14.78 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1

Qp = 6.407 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.44

File: 5181 (north pond).hys
09-01-2026

Post north pond

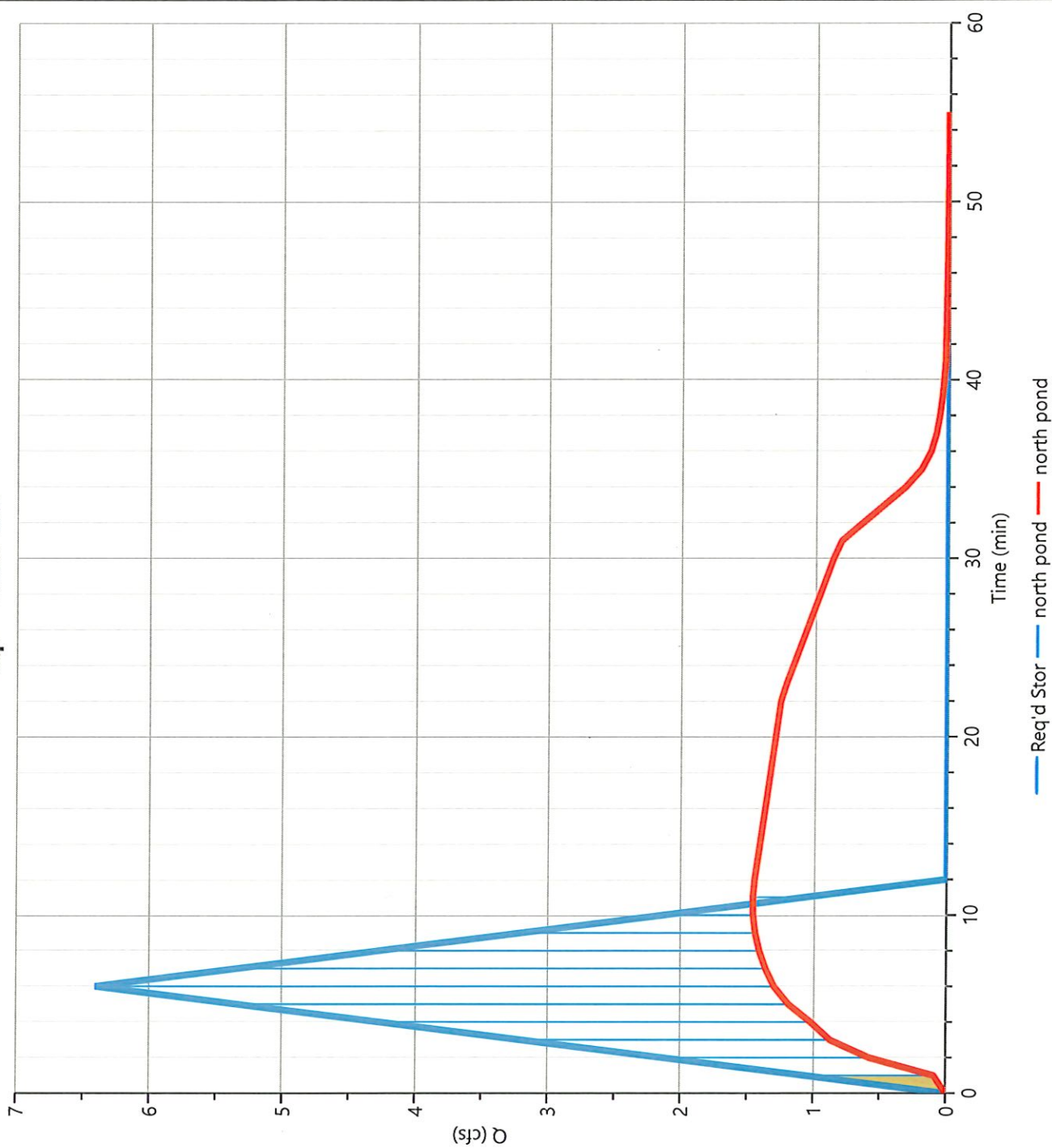
Hyd. No. 3

Hydrograph Type	= Pond Route	Peak Flow	= 1,457 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Hydrograph Volume	= 2,306 cuft
Inflow Hydrograph	= 2 - north pond	Max. Elevation	= 16.63 ft
Pond Name	= north pond	Max. Storage	= 1,589 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 11 min

Qp = 1,457 cfs



IDF Report

Hydrology Studio v 3.0.0.44

IDF filename: GulfportMS.idf

09-01-2026

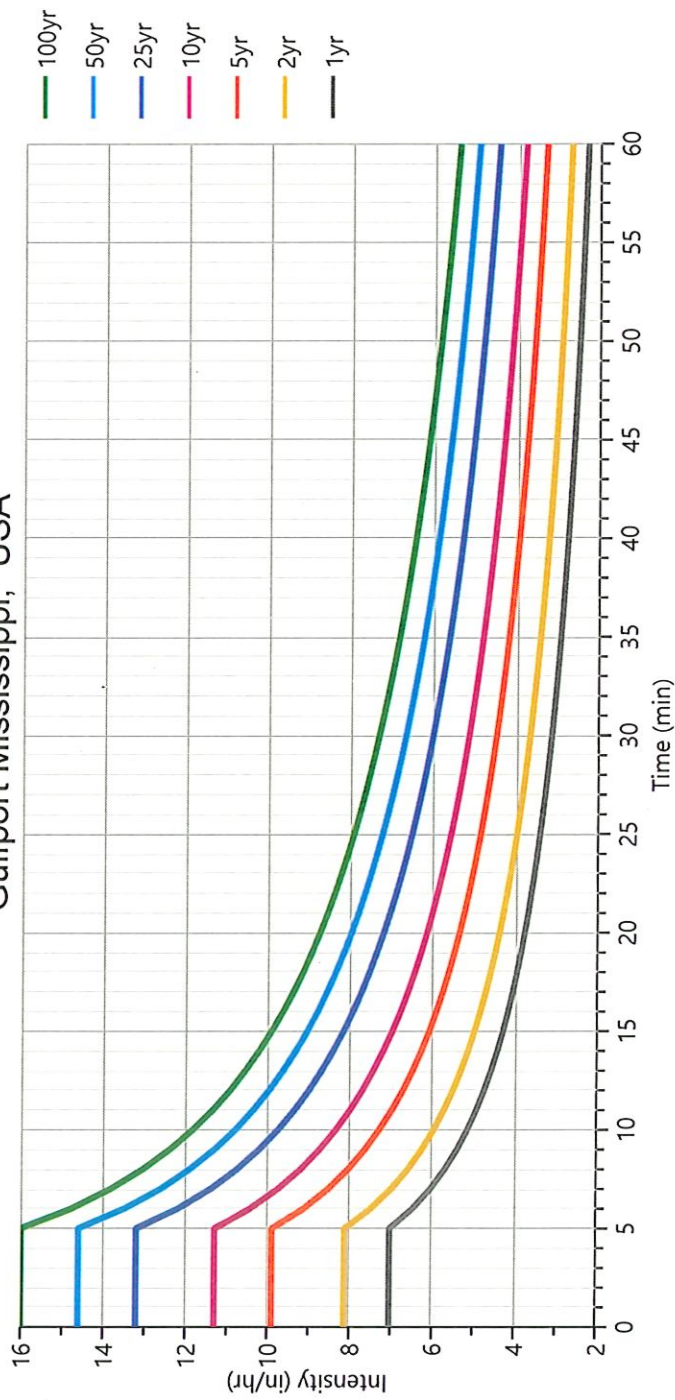
Equation Coefficients	Intensity = B / (Tc + D)^E (in/hr)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
B	14.4585	16.5711	0.0000	20.1025	22.8490	26.6417	29.3907	32.2187
D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.4480	0.4432	0.0000	0.4407	0.4375	0.4363	0.4347	0.4349

Minimum Tc = 5 minutes

Tc (min)	Intensity Values (in/hr)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Cf	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5	7.03	8.12	0	9.89	11.30	13.20	14.60	16.00
10	5.15	5.97	0	7.29	8.34	9.75	10.80	11.84
15	4.30	4.99	0	6.09	6.99	8.17	9.06	9.92
20	3.78	4.39	0	5.37	6.16	7.21	7.99	8.76
25	3.42	3.98	0	4.87	5.59	6.54	7.25	7.95
30	3.15	3.67	0	4.49	5.16	6.04	6.70	7.34
35	2.94	3.43	0	4.20	4.82	5.65	6.27	6.86
40	2.77	3.23	0	3.96	4.55	5.33	5.91	6.48
45	2.63	3.07	0	3.76	4.32	5.06	5.62	6.15
50	2.51	2.93	0	3.58	4.13	4.83	5.37	5.88
55	2.40	2.81	0	3.44	3.96	4.64	5.15	5.64
60	2.31	2.70	0	3.31	3.81	4.46	4.96	5.43

Cf = Correction Factor applied to Rational Method runoff coefficient.

Gulfport Mississippi, USA



Precipitation Report

Precipitation filename: GulfportMS.pcp

Hydrology Studio v 3.0.0.44 (Rainfall totals in Inches)

09-01-2026

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active									
SCS Storms									
SCS 6hr		3.62	4.18	0	5.18	6.08	7.42	8.54	9.74
Type I, 24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Type IA, 24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Type II, 24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Type II FL, 24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Type III, 24-hr	✓	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Synthetic Storms									
> IDF-Based Synthetic Storms									
1-hr		2.31	2.70	0	3.31	3.81	4.46	4.96	5.43
2-hr		3.39	3.97	0	4.87	5.63	6.60	7.33	8.03
3-hr		4.23	4.98	0	6.12	7.07	8.29	9.22	10.10
6-hr		6.21	7.32	0	9.01	10.44	12.25	13.65	14.95
12-hr		9.10	10.77	0	13.28	15.42	18.11	20.20	22.11
24-hr		13.34	15.84	0	19.57	22.77	26.77	29.88	32.71
Huff Distribution									
> 1st Quartile (0 to 6 hrs)									
1-hr		2.12	2.46	0	3.00	3.46	4.11	4.61	5.12
2-hr		2.67	3.08	0	3.76	4.35	5.20	5.87	6.57
3-hr		3.01	3.46	0	4.23	4.92	5.93	6.77	7.64
6-hr		3.62	4.18	0	5.18	6.08	7.42	8.54	9.74
Huff Distribution									
8-hr		0	0	0	0	0	0	0	0
12-hr		4.24	5.00	0	6.31	7.48	9.21	10.60	12.10
Huff Distribution									
18-hr		0	0	0	0	0	0	0	0
24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Custom Storms									
> Custom Storm Distributions									
My Custom Storm 1		0	0	0	0	0	0	0	0
My Custom Storm 2		0	0	0	0	0	0	0	0
My Custom Storm 3		0	0	0	0	0	0	0	0
My Custom Storm 4		0	0	0	0	0	0	0	0
My Custom Storm 5		0	0	0	0	0	0	0	0
My Custom Storm 6		0	0	0	0	0	0	0	0
My Custom Storm 7		0	0	0	0	0	0	0	0
My Custom Storm 8		0	0	0	0	0	0	0	0
My Custom Storm 9		0	0	0	0	0	0	0	0
My Custom Storm 10		0	0	0	0	0	0	0	0

Precipitation Report Cont'd

Precipitation filename: GulfportMS.pcp

Rainfall totals in Inches

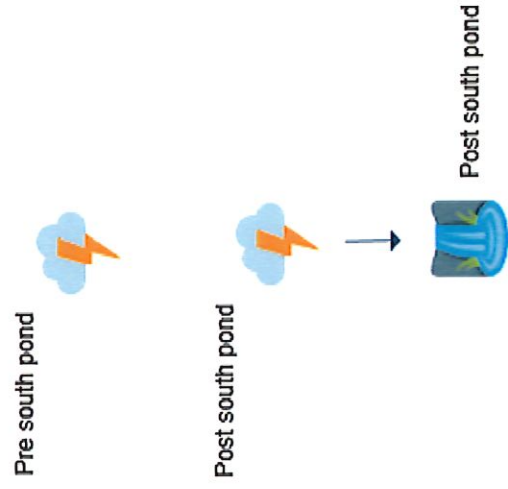
09-01-2026

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active						✓	✓		✓
Huff Indiana	> Indianapolis								
30-min		1.58	1.83	0	2.25	2.58	3.02	3.35	3.67
1-hr		2.12	2.46	0	3.00	3.46	4.11	4.61	5.12
2-hr		2.67	3.08	0	3.76	4.35	5.20	5.87	6.57
3-hr		3.01	3.46	0	4.23	4.92	5.93	6.77	7.64
6-hr		3.62	4.18	0	5.18	6.08	7.42	8.54	9.74
12-hr		4.24	5.00	0	6.31	7.48	9.21	10.60	12.10
24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Huff Indiana	> Evansville								
30-min		1.58	1.83	0	2.25	2.58	3.02	3.35	3.67
1-hr		2.12	2.46	0	3.00	3.46	4.11	4.61	5.12
2-hr		2.67	3.08	0	3.76	4.35	5.20	5.87	6.57
3-hr		3.01	3.46	0	4.23	4.92	5.93	6.77	7.64
6-hr		3.62	4.18	0	5.18	6.08	7.42	8.54	9.74
12-hr		4.24	5.00	0	6.31	7.48	9.21	10.60	12.10
24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Huff Indiana	> Fort Wayne								
30-min		1.58	1.83	0	2.25	2.58	3.02	3.35	3.67
1-hr		2.12	2.46	0	3.00	3.46	4.11	4.61	5.12
2-hr		2.67	3.08	0	3.76	4.35	5.20	5.87	6.57
3-hr		3.01	3.46	0	4.23	4.92	5.93	6.77	7.64
6-hr		3.62	4.18	0	5.18	6.08	7.42	8.54	9.74
12-hr		4.24	5.00	0	6.31	7.48	9.21	10.60	12.10
24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Huff Indiana	> South Bend								
30-min		1.58	1.83	0	2.25	2.58	3.02	3.35	3.67
1-hr		2.12	2.46	0	3.00	3.46	4.11	4.61	5.12
2-hr		2.67	3.08	0	3.76	4.35	5.20	5.87	6.57
3-hr		3.01	3.46	0	4.23	4.92	5.93	6.77	7.64
6-hr		3.62	4.18	0	5.18	6.08	7.42	8.54	9.74
12-hr		4.24	5.00	0	6.31	7.48	9.21	10.60	12.10
24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40

Precipitation filename: GulfportMS.pcp

09-01-2026

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active						✓	✓		✓
NRCS Storms	> NRCS Dimensionless Storms								
NRCS MSE1, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NRCS MSE2, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NRCS MSE3, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NRCS MSE4, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NRCS MSE5, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NRCS MSE6, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NOAA-A, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NOAA-B, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NOAA-C, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NOAA-D, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NRCC-A, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NRCC-B, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NRCC-C, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
NRCC-D, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
CA-1, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
CA-2, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
CA-3, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
CA-4, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
CA-5, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
CA-6, 24-hr	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40	
FDOT Storms	> Florida DOT Storms								
FDOT, 1-hr	0	2.14	2.36	2.58	2.92	3.35	3.66	3.95	
FDOT, 2-hr	0	2.70	3.00	3.26	3.69	4.24	4.64	5.00	
FDOT, 4-hr	0	3.28	3.76	4.00	4.80	5.50	6.20	6.80	
FDOT, 8-hr	0	3.76	4.32	4.80	5.60	6.20	7.20	8.00	
FDOT, 24-hr	0	4.28	4.75	5.21	6.11	7.53	8.78	10.20	
FDOT, 72-hr	0	5.44	6.10	6.74	7.98	9.92	11.60	13.40	
SFWMD, 72-hr	0	5.44	6.10	6.74	7.98	9.92	11.60	13.40	
Austin Storms	> Austin Frequency Storms								
Austin Zone 1, 24-hr	0	4.14	0	5.51	6.84	8.90	10.69	12.80	
Austin Zone 2, 24-hr	0	4.06	0	5.38	6.65	8.59	10.28	12.23	



Hydrograph by Return Period

Hydrology Studio v 3.0.0.44

File: 5181 (south pond).hys
09-01-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Outflow (cfs)							
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	Rational	Pre south pond					0.986	1.153		1.401
2	Rational	Post south pond					3.547	4.145		5.025
3	Pond Route	Post south pond					0.899	0.982		1.095

Hydrograph 10-yr Summary

Hydrology Studio v 3.0.0.44

File: 5181 (south pond).hys
09-01-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre south pond	0.986	0.33	1,183	---		
2	Rational	Post south pond	3.547	0.10	1,277	---		
3	Pond Route	Post south pond	0.899	0.17	1,274	2	10.16	936

Hydrograph Report

Hydrology Studio v 3.0.0.44

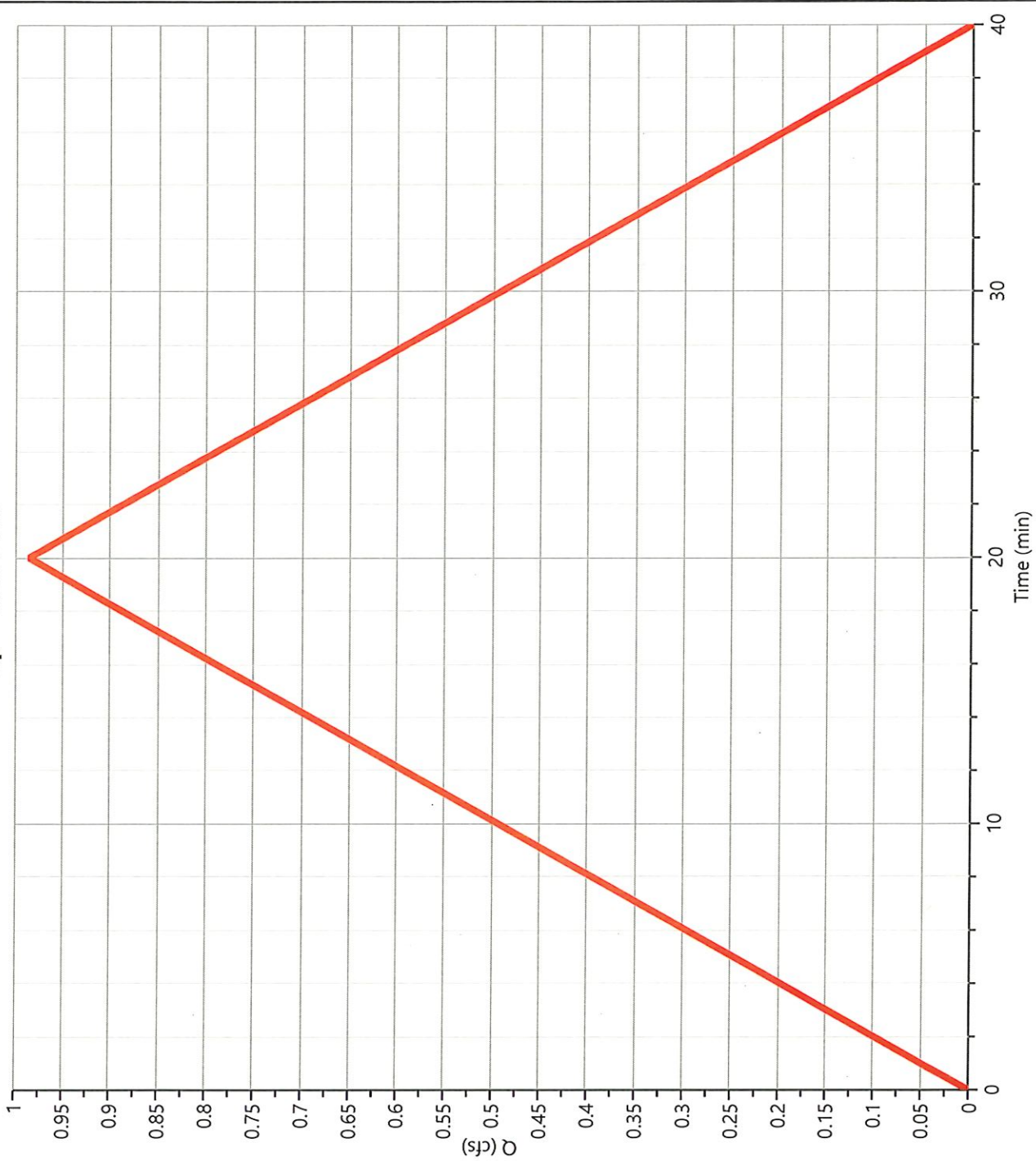
File: 5181 (south pond).hys
09-01-2026

Pre south pond

Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 0.986 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.33 hrs
Time Interval	= 1 min	Runoff Volume	= 1,183 cuft
Drainage Area	= 0.4 ac	Runoff Coeff.	= 0.40
Tc Method	= User	Time of Conc. (Tc)	= 20.0 min
IDF Curve	= GulfportMS.idf	Intensity	= 6.16 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1

Qp = 0.986 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.44

File: 5181 (south pond).hys
09-01-2026

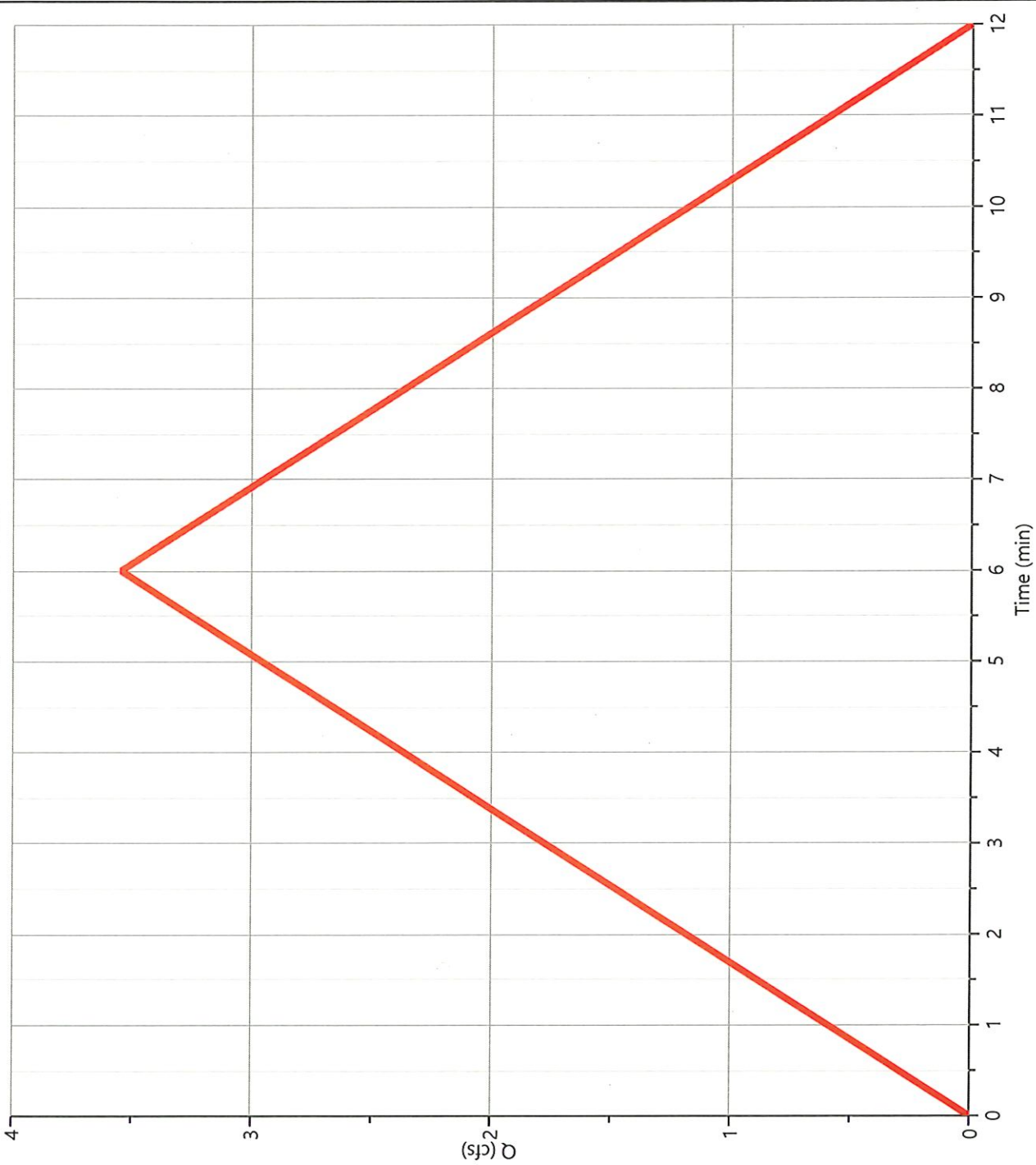
Post south pond

Hyd. No. 2

Hydrograph Type = Rational
Storm Frequency = 10-yr
Time Interval = 1 min
Drainage Area = 0.4 ac
Tc Method = User
IDF Curve = GulfportMS.idf
Freq. Corr. Factor = 1.00

Peak Flow = 3.547 cfs
Time to Peak = 0.10 hrs
Runoff Volume = 1,277 cuft
Runoff Coeff. = 0.85
Time of Conc. (Tc) = 6.0 min
Intensity = 10.43 in/hr
Asc/Rec Limb Factors = 1/1

Qp = 3.547 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.44

File: 5181 (south pond).hys
09-01-2026

Post south pond

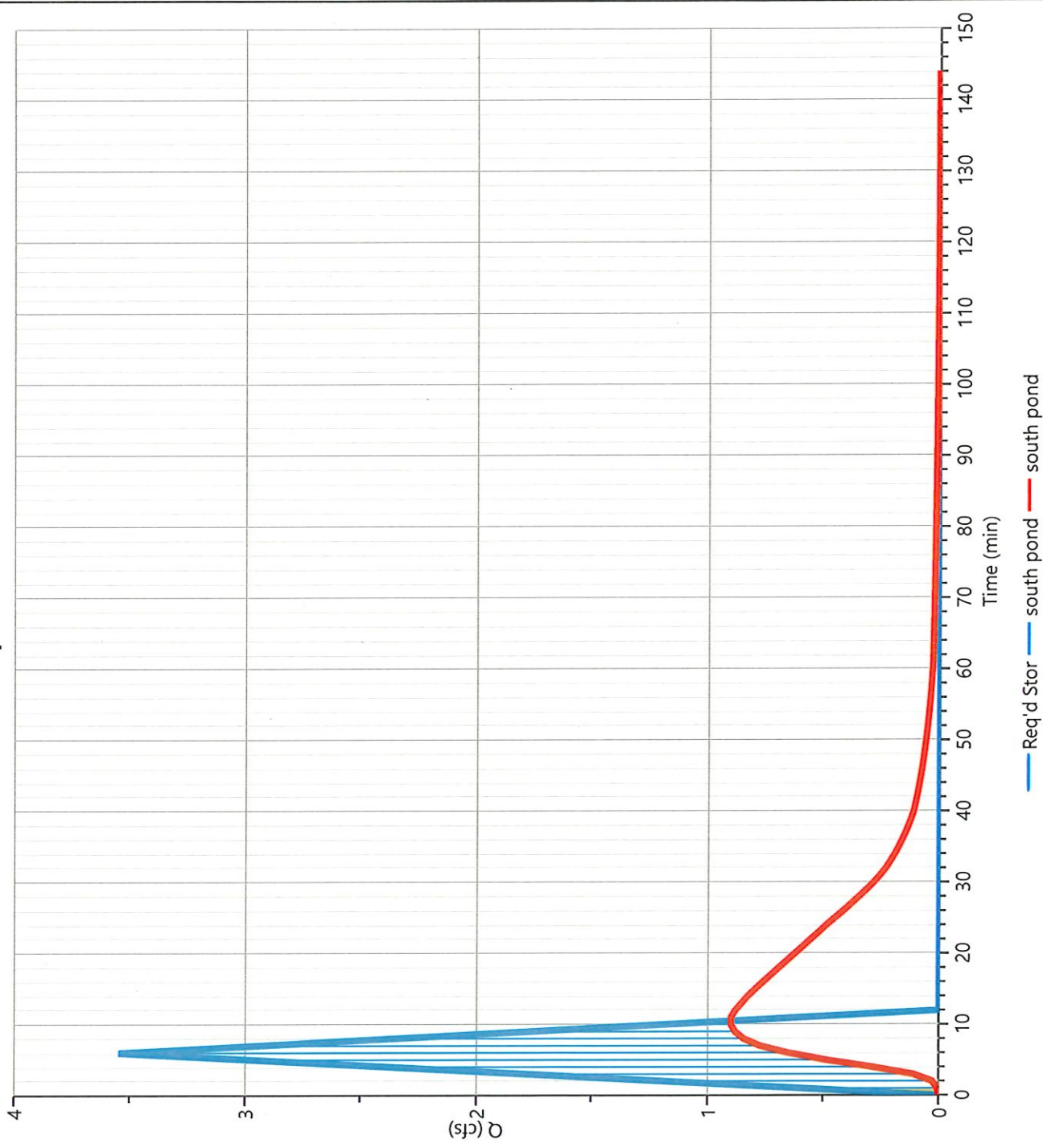
Hyd. No. 3

Hydrograph Type	= Pond Route	Peak Flow	= 0.899 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,274 cuft
Inflow Hydrograph	= 2 - south pond	Max. Elevation	= 10.16 ft
Pond Name	= south pond	Max. Storage	= 936 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 16 min

Qp = 0.899 cfs



Pond Report

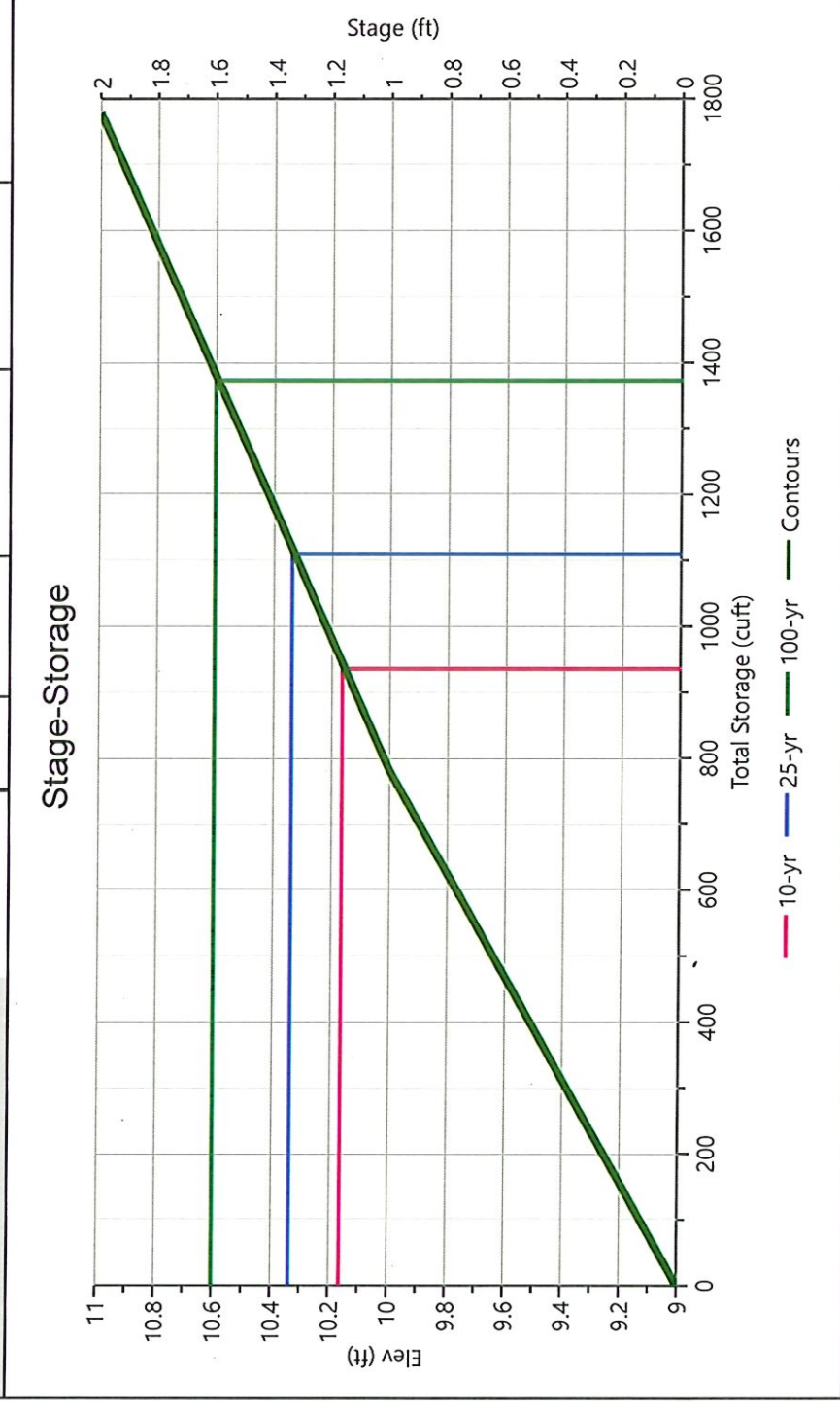
File: 5181 (south pond).hys

Hydrology Studio v 3.0.0.44

09-01-2026

south pond

Stage-Storage

[illegible]

Pond Report

Hydrology Studio v 3.0.0.44

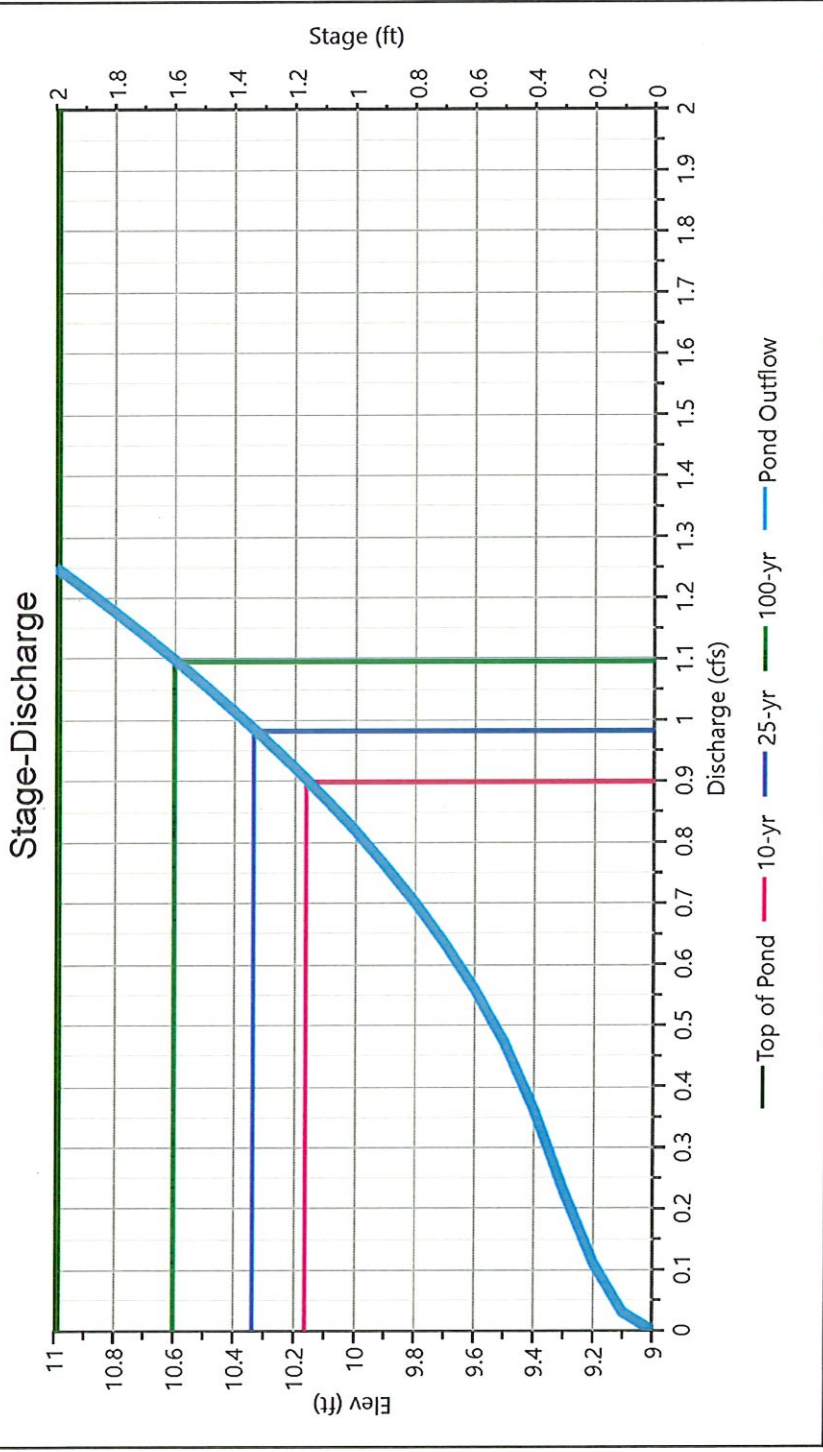
File: 5181 (south pond).hys

09-01-2026

south pond

Stage-Discharge

Culvert / Orifices		Cir Culvert		Orifice			Perforated Riser
				1	2	3	
Rise, in		6					
Span, in		6					
No. Barrels		1					
Invert Elevation, ft		9.00					
Orifice Coefficient, Co		0.60					
Length, ft		15					
Barrel Slope, %		3.33					
N-Value, n		0.013					
Weirs		Riser		Weir			Ancillary
Shape / Type				1	2	3	
Crest Elevation, ft							
Crest Length, ft							
Angle, deg							
Weir Coefficient, Cw							
							Exfiltration, in/hr



Pond Report

File: 5181 (south pond).hys

Hydrology Studio v 3.0.0.44

09-01-2026

south 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	9.00	0.000	0.000											0.000
1.00	10.00	782	0.819 ic											0.819
2.00	11.00	1,780	1.251 ic											1.251

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

Pond Report

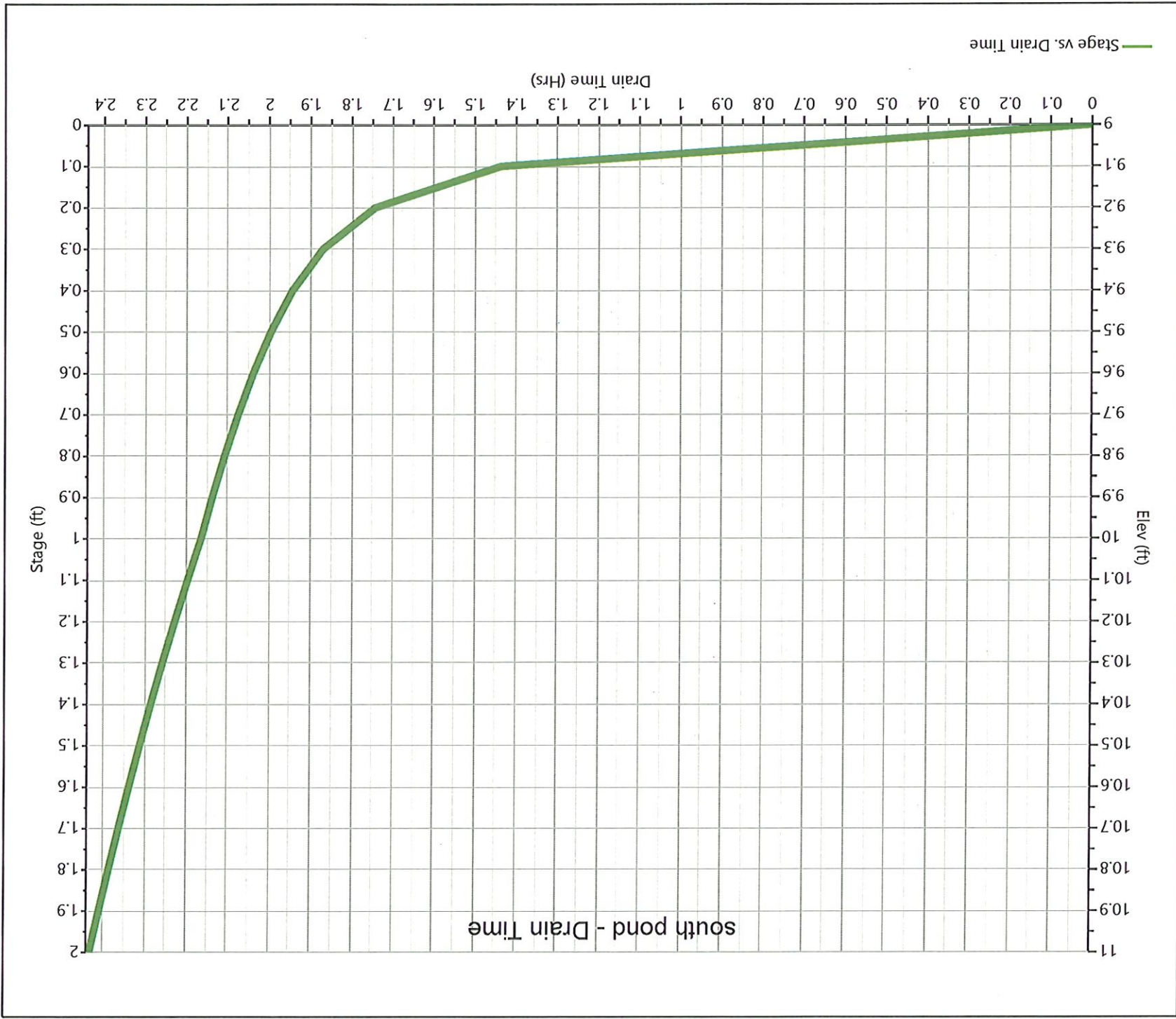
File: 5181 (south pond).hys

Hydrology Studio v 3.0.0.44

09-01-2026

south pond

Pond Drawdown



Hydrograph 25-yr Summary

Hydrology Studio V 3.0.0.44

File: 5181 (south_pond).hys
09-01-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre south pond	1.153	0.33	1,384	---		
2	Rational	Post south pond	4.145	0.10	1,492	---		
3	Pond Route	Post south pond	0.982	0.18	1,490	2	10.34	1,110

Hydrograph Report

Hydrology Studio v 3.0.0.44

File: 5181 (south pond).hys
09-01-2026

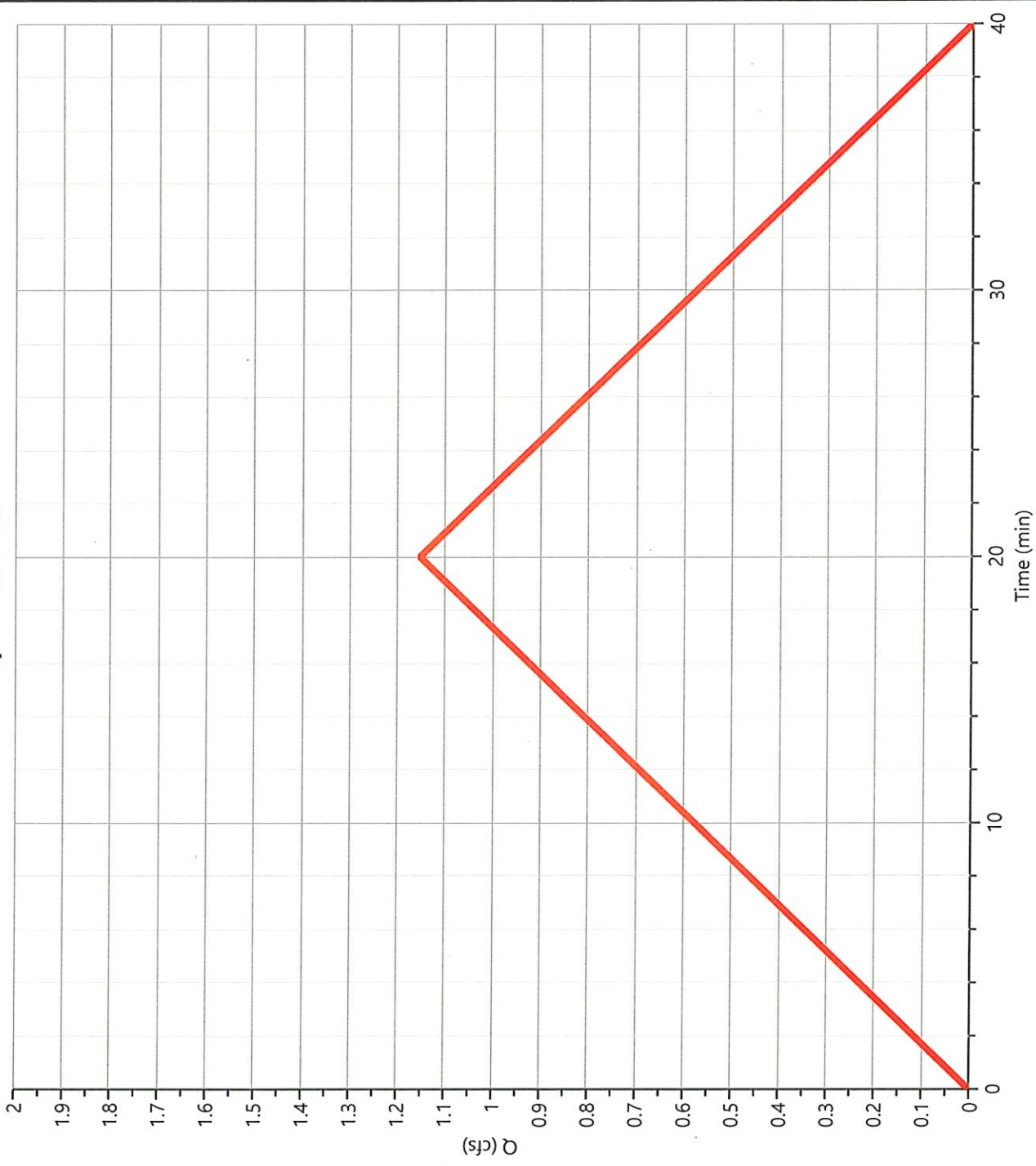
Pre south pond

Hyd. No. 1

Hydrograph Type = Rational
Storm Frequency = 25-yr
Time Interval = 1 min
Drainage Area = 0.4 ac
Tc Method = User
IDF Curve = GulfportMS.idf
Freq. Corr. Factor = 1.00

Peak Flow = 1.153 cfs
Time to Peak = 0.33 hrs
Runoff Volume = 1,384 cuft
Runoff Coeff. = 0.40
Time of Conc. (Tc) = 20.0 min
Intensity = 7.21 in/hr
Asc/Rec Limb Factors = 1/1

Qp = 1.153 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.44

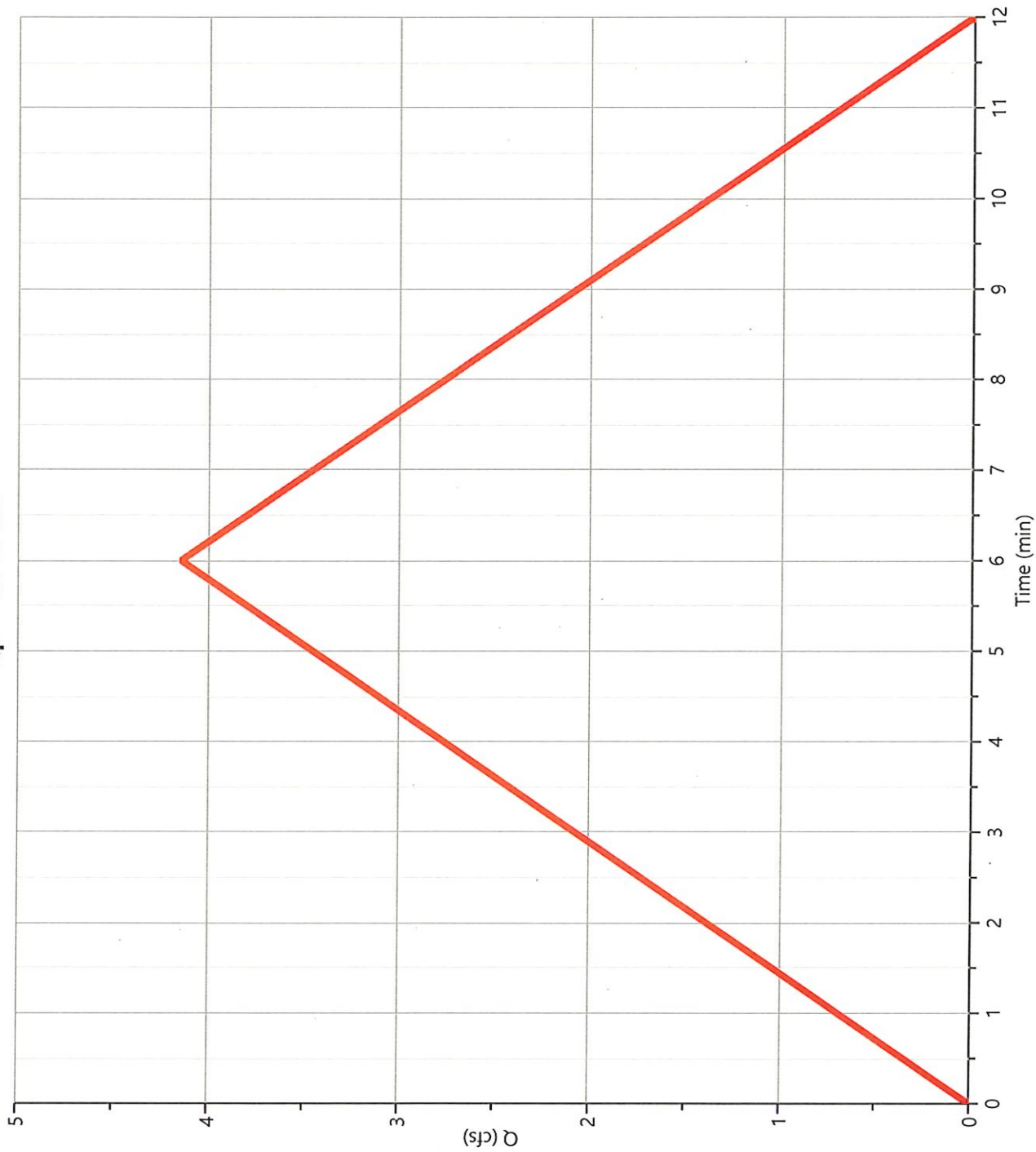
File: 5181 (south pond).hys
09-01-2026

Post south pond

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 4.145 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 1,492 cuft
Drainage Area	= 0.4 ac	Runoff Coeff.	= 0.85
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= GulfportMS.idf	Intensity	= 12.19 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1

Qp = 4.145 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.44

File: 5181 (south pond).hys
09-01-2026

Post south pond

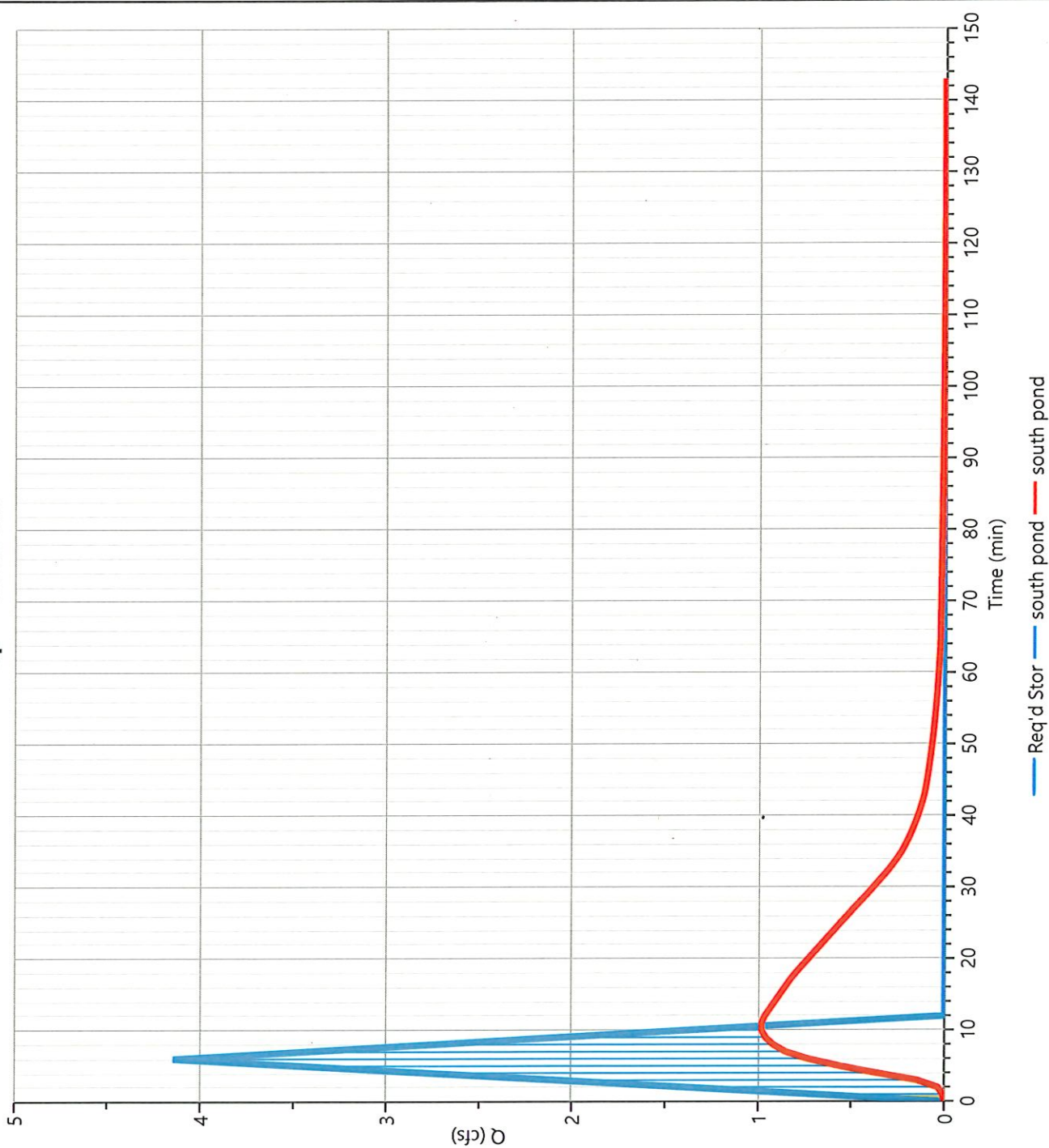
Hyd. No. 3

Hydrograph Type	= Pond Route	Peak Flow	= 0.982 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,490 cuft
Inflow Hydrograph	= 2 - south pond	Max. Elevation	= 10.34 ft
Pond Name	= south pond	Max. Storage	= 1,110 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 16 min

Qp = 0.982 cfs



Hydrograph 100-yr Summary

Hydrology Studio v 3.0.0.44

File: 5181 (south pond).hys
09-01-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre south pond	1,401	0.33	1,681	----		
2	Rational	Post south pond	5,025	0.10	1,809	----		
3	Pond Route	Post south pond	1,095	0.18	1,807	2	10.60	1,373

Hydrograph Report

Hydrology Studio v 3.0.0.44

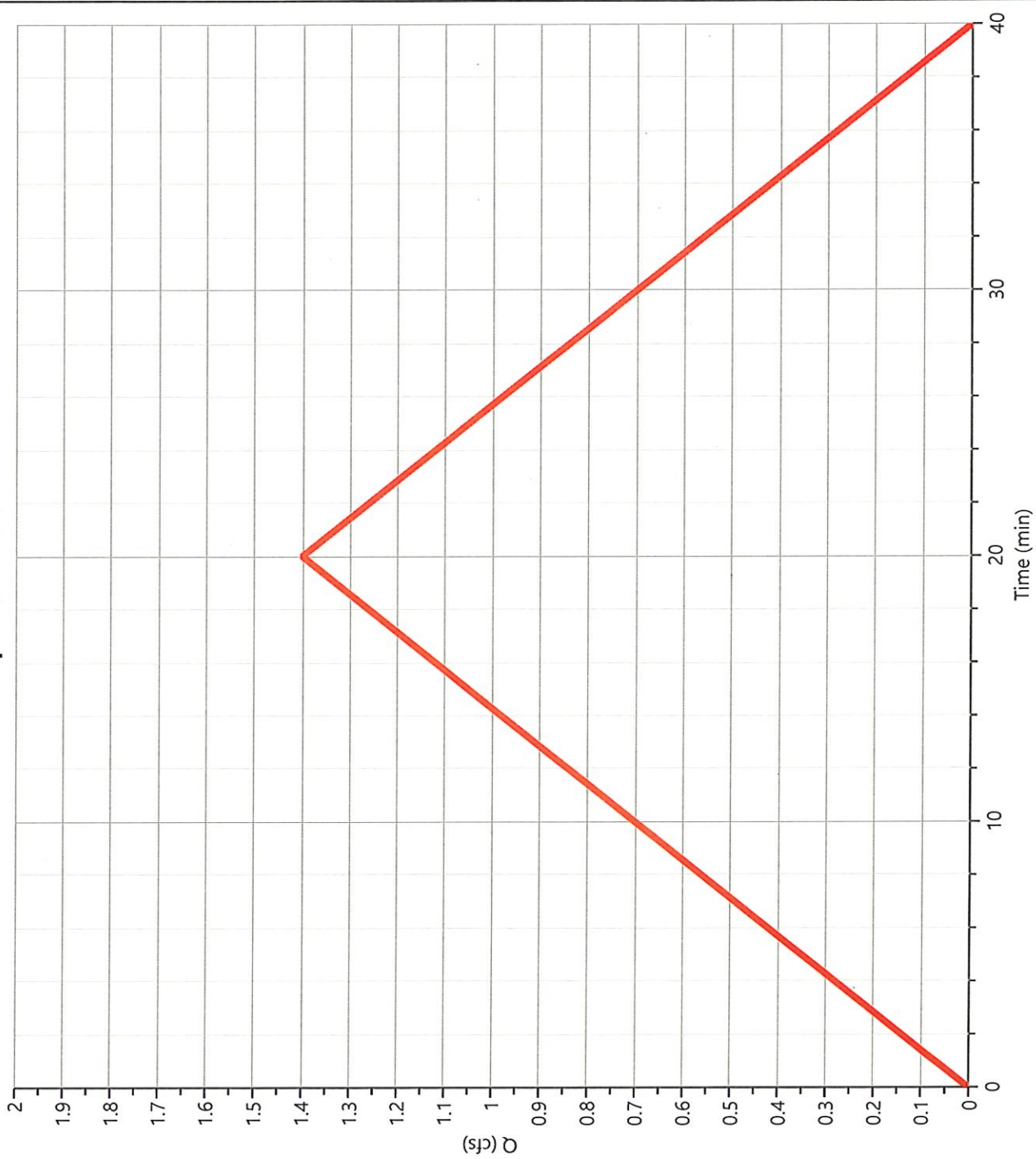
File: 5181 (south pond).hys
09-01-2026

Pre south pond

Hyd. No. 1

Hydrograph Type	= Rational	Peak Flow	= 1,401 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.33 hrs
Time Interval	= 1 min	Runoff Volume	= 1,681 cuft
Drainage Area	= 0.4 ac	Runoff Coeff.	= 0.40
Tc Method	= User	Time of Conc. (Tc)	= 20.0 min
IDF Curve	= GulfportMS.idf	Intensity	= 8.76 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1

Qp = 1,401 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.44

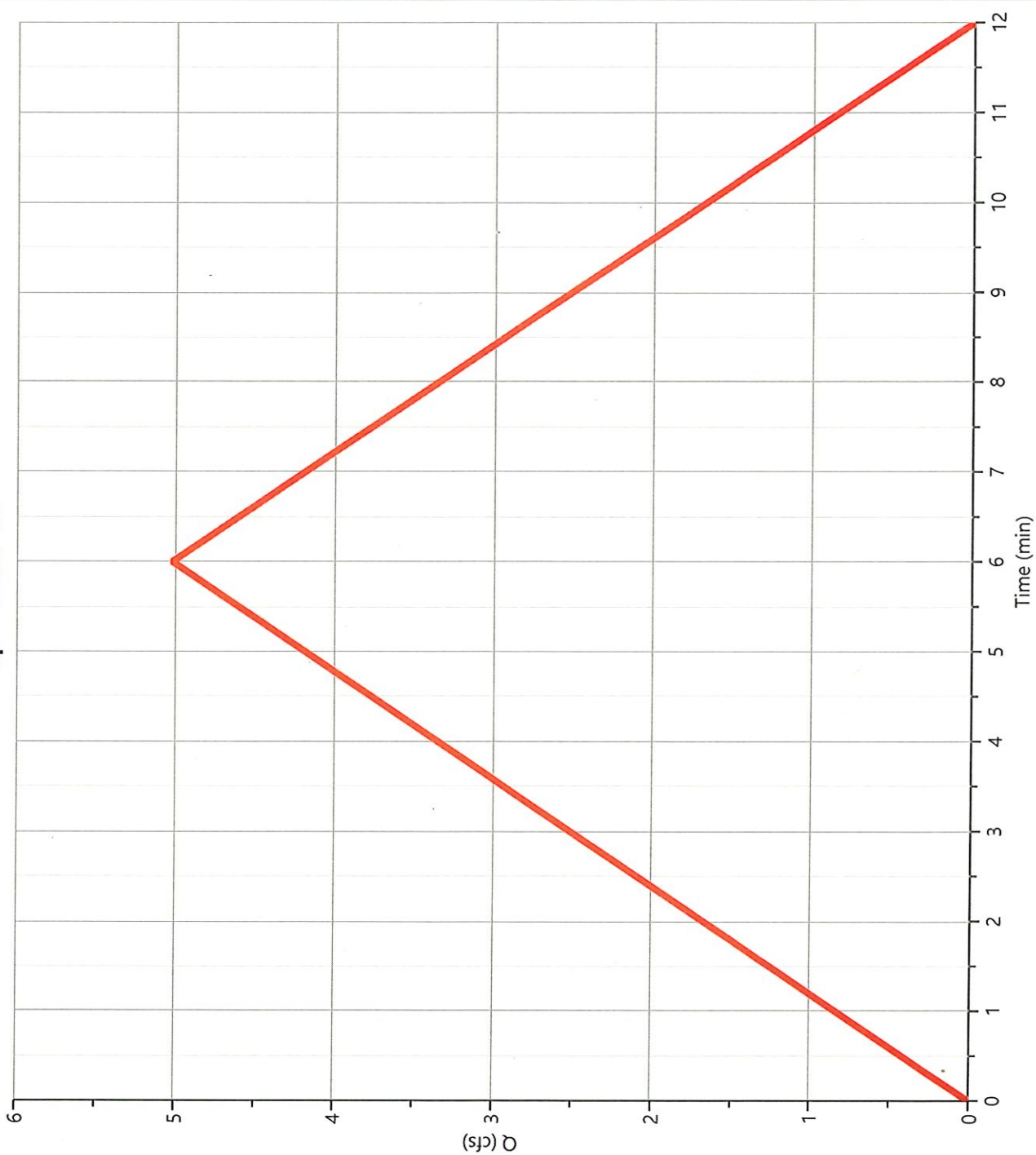
File: 5181 (south pond).hys
09-01-2026

Post south pond

Hyd. No. 2

Hydrograph Type	= Rational	Peak Flow	= 5.025 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 1,809 cuft
Drainage Area	= 0.4 ac	Runoff Coeff.	= 0.85
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= GulfportMS.idf	Intensity	= 14.78 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	= 1/1

Qp = 5.025 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.44

File: 5181 (south pond).hys
09-01-2026

Post south pond

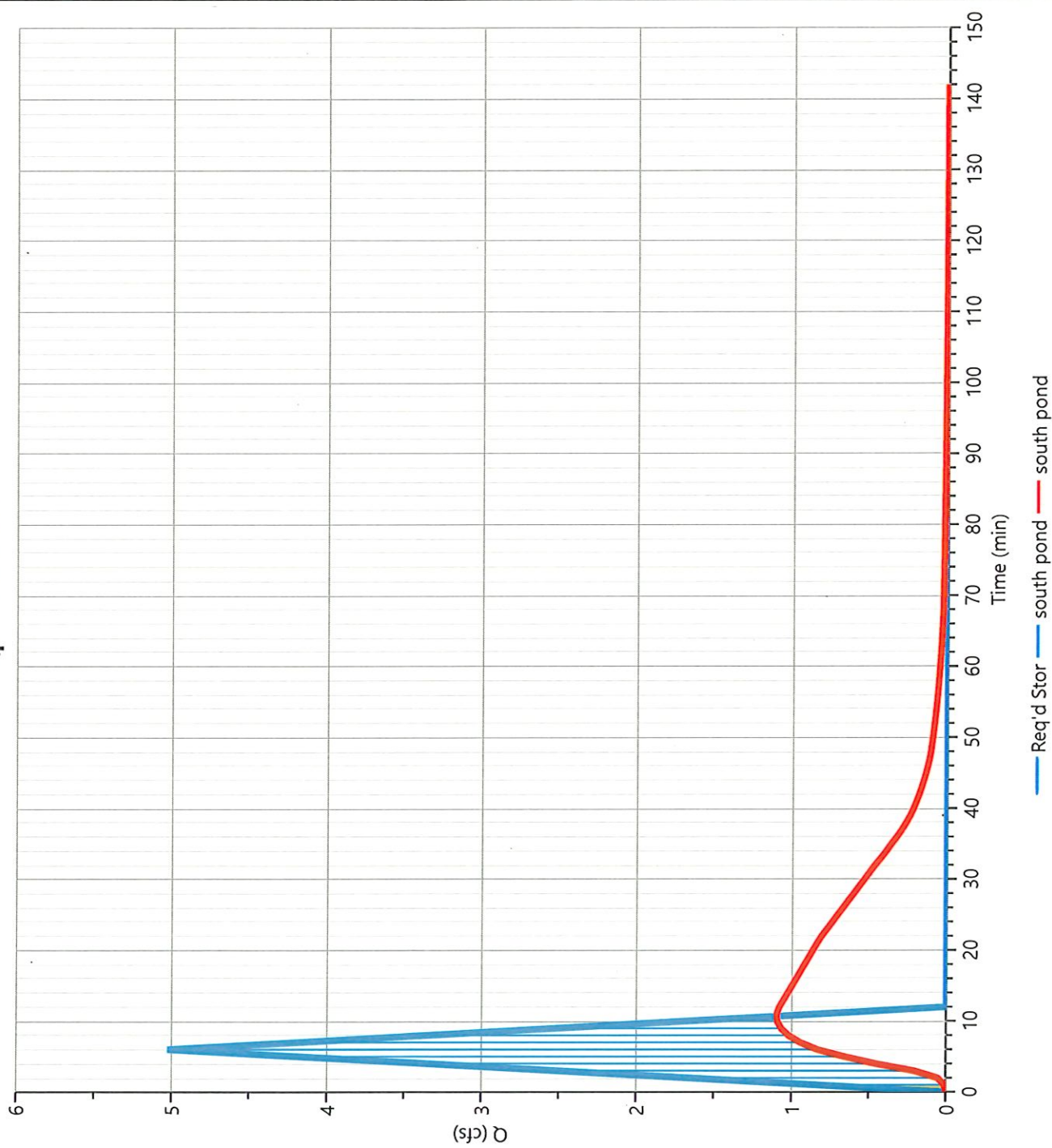
Hyd. No. 3

Hydrograph Type	= Pond Route	Peak Flow	= 1.095 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.18 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,807 cuft
Inflow Hydrograph	= 2 - south pond	Max. Elevation	= 10.60 ft
Pond Name	= south pond	Max. Storage	= 1,373 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 17 min

Qp = 1.095 cfs



IDF Report

Hydrology Studio v 3.0.0.44

IDF filename: GulfportMS.idf

09-01-2026

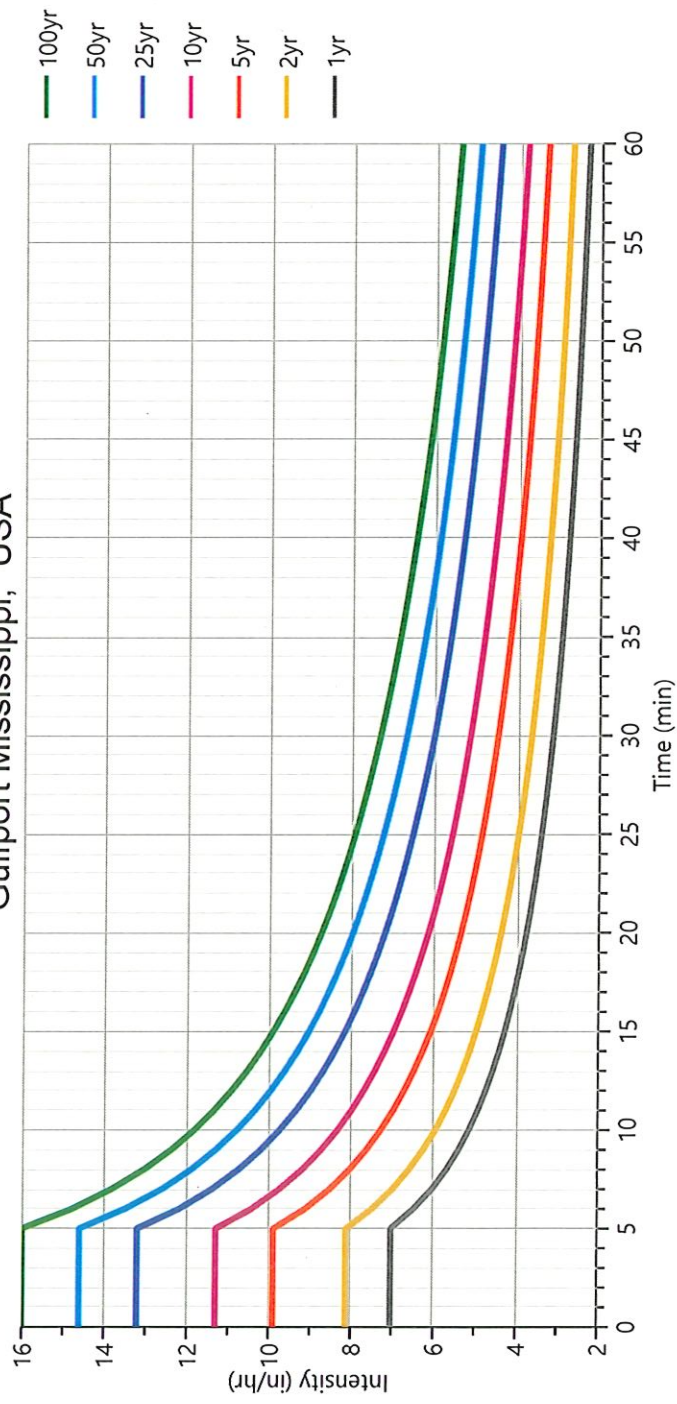
Equation Coefficients	Intensity = B / (Tc + D)^E (in/hr)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
B	14.4585	16.5711	0.0000	20.1025	22.8490	26.6417	29.3907	32.2187
D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.4480	0.4432	0.0000	0.4407	0.4375	0.4363	0.4347	0.4349

Minimum Tc = 5 minutes

Tc (min)	Intensity Values (in/hr)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Cf	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5	7.03	8.12	0	9.89	11.30	13.20	14.60	16.00
10	5.15	5.97	0	7.29	8.34	9.75	10.80	11.84
15	4.30	4.99	0	6.09	6.99	8.17	9.06	9.92
20	3.78	4.39	0	5.37	6.16	7.21	7.99	8.76
25	3.42	3.98	0	4.87	5.59	6.54	7.25	7.95
30	3.15	3.67	0	4.49	5.16	6.04	6.70	7.34
35	2.94	3.43	0	4.20	4.82	5.65	6.27	6.86
40	2.77	3.23	0	3.96	4.55	5.33	5.91	6.48
45	2.63	3.07	0	3.76	4.32	5.06	5.62	6.15
50	2.51	2.93	0	3.58	4.13	4.83	5.37	5.88
55	2.40	2.81	0	3.44	3.96	4.64	5.15	5.64
60	2.31	2.70	0	3.31	3.81	4.46	4.96	5.43

Cf = Correction Factor applied to Rational Method runoff coefficient.

Gulfport Mississippi, USA



Precipitation Report

Precipitation filename: GulfportMS.pcp

Hydrology Studio v 3.0.0.44 (Rainfall totals in Inches)

09-01-2026

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active						✓	✓		✓
SCS Storms									
SCS 6hr		3.62	4.18	0	5.18	6.08	7.42	8.54	9.74
Type I, 24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Type IA, 24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Type II, 24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Type II FL, 24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Type III, 24-hr	✓	4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Synthetic Storms									
> IDF-Based Synthetic Storms									
1-hr		2.31	2.70	0	3.31	3.81	4.46	4.96	5.43
2-hr		3.39	3.97	0	4.87	5.63	6.60	7.33	8.03
3-hr		4.23	4.98	0	6.12	7.07	8.29	9.22	10.10
6-hr		6.21	7.32	0	9.01	10.44	12.25	13.65	14.95
12-hr		9.10	10.77	0	13.28	15.42	18.11	20.20	22.11
24-hr		13.34	15.84	0	19.57	22.77	26.77	29.88	32.71
Huff Distribution									
> 1st Quartile (0 to 6 hrs)									
1-hr		2.12	2.46	0	3.00	3.46	4.11	4.61	5.12
2-hr		2.67	3.08	0	3.76	4.35	5.20	5.87	6.57
3-hr		3.01	3.46	0	4.23	4.92	5.93	6.77	7.64
6-hr		3.62	4.18	0	5.18	6.08	7.42	8.54	9.74
Huff Distribution									
> 2nd Quartile (>6 to 12 hrs)									
8-hr		0	0	0	0	0	0	0	0
12-hr		4.24	5.00	0	6.31	7.48	9.21	10.60	12.10
Huff Distribution									
> 3rd Quartile (>12 to 24 hrs)									
18-hr		0	0	0	0	0	0	0	0
24-hr		4.92	5.85	0	7.47	8.89	11.00	12.70	14.40
Custom Storms									
> Custom Storm Distributions									
My Custom Storm 1		0	0	0	0	0	0	0	0
My Custom Storm 2		0	0	0	0	0	0	0	0
My Custom Storm 3		0	0	0	0	0	0	0	0
My Custom Storm 4		0	0	0	0	0	0	0	0
My Custom Storm 5		0	0	0	0	0	0	0	0
My Custom Storm 6		0	0	0	0	0	0	0	0
My Custom Storm 7		0	0	0	0	0	0	0	0
My Custom Storm 8		0	0	0	0	0	0	0	0
My Custom Storm 9		0	0	0	0	0	0	0	0
My Custom Storm 10		0	0	0	0	0	0	0	0

Precipitation filename: GulfportMS.pcp

09-01-2026

[illegible]

Precipitation filename: GulfportMS.pcp

09-01-2026

[illegible]

Project Name: Enter Project Name..

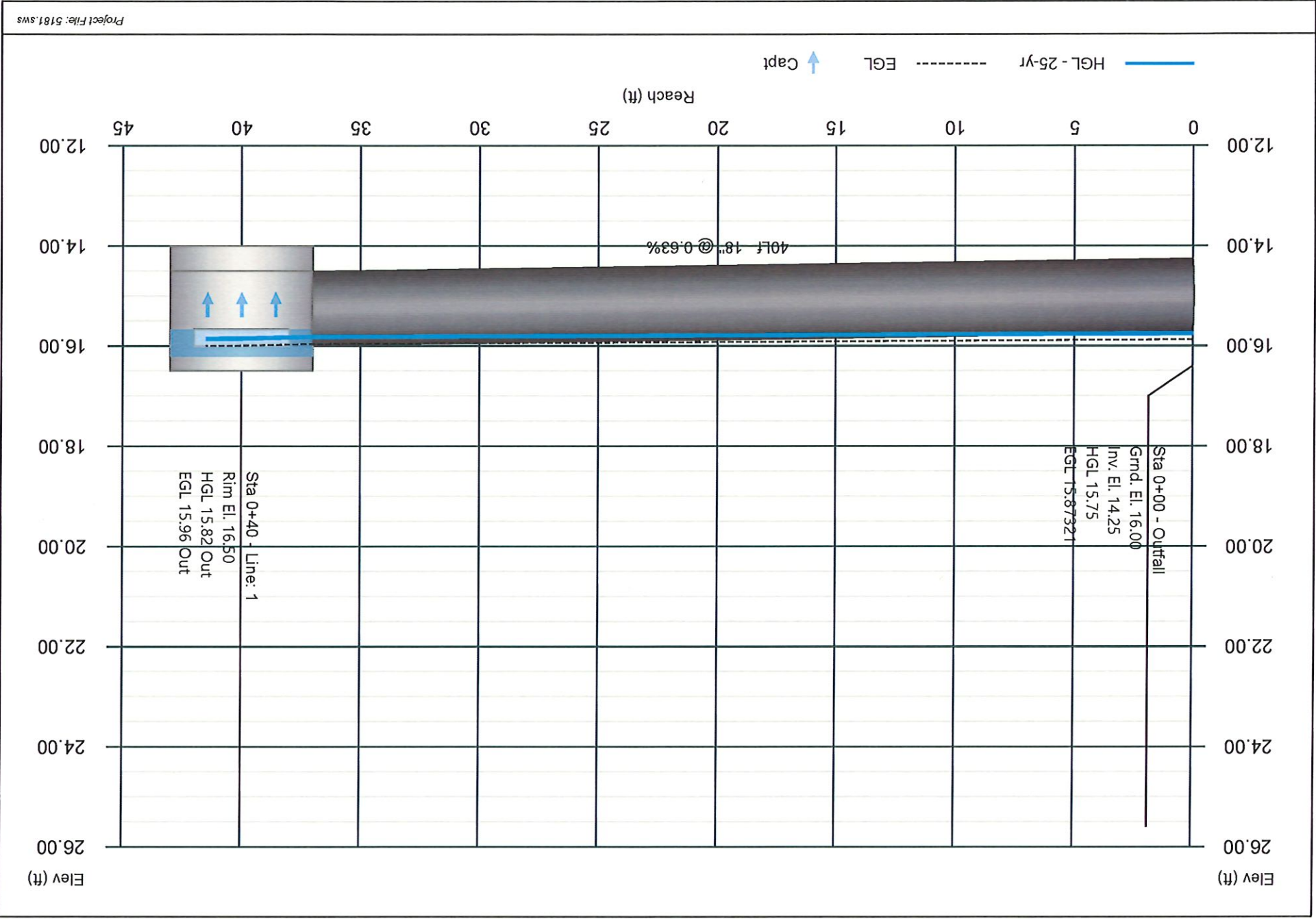
Stormwater Studio 2026 v 3.0.0.42

9707-10-60

Notes: IDF File = GulfportMS.idf, Return Period = 25-yrs.																						
Line ID	Length (ft)	Drng Area		Rational (C)	C x A		Tc	Inlet (min)	Syst (min)	Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev (ft)	Line No	
		Incr (ac)	Total (ac)		Incr	Total								Up (ft)	Dn (ft)	Up (ft)	Dn (ft)					
1	40.00	0.510	0.510	0.80	0.41	0.41	6.00	6.0	6.0	12.19	4.97	8.30	2.92	18	0.63	14.50	14.25	15.82	15.75	16.50	1	
2	12.00	0.200	0.200	0.80	0.16	0.16		6.0	6.0	12.19	1.95	10.28		3.25	12	8.33	11.00	10.00	11.59	11.00	13.00	2
3	60.00	0.200	0.200	0.80	0.16	0.16		6.0	6.0	12.19	1.95	6.50		3.25	12	3.33	12.00	10.00	12.59	11.00	13.00	3

Project File: 5181.sws

Line 1 - 1



Line 2 - 2

