
Fort Myers Brewing Company

Surface Water Management System Report - REV02

July 05, 2022

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Project Description:

Fort Myers Brewing Company is a Mixed-Use Planned Development (MPD) approximately 20.64± total acres. The proposed project is composed of 11.30± acres of commercial development with a stormwater management system and 1.04± acres of offsite Right-of-Way improvements via turn lanes on Commerce Lakes Drive and Daniels Parkway (included in the stormwater management calculations as compensating water quality). The project boundary for the Storm Water Management calculations is approximately 11.30 acres that will consist of three (3) sub-basins. It will contain commercial development totaling 45,875± SF (with 13,491± SF future development) with required parking, a stormwater management lake and dry pre-treatment areas. The project is generally located within Sections 17 & 18, Township 45, Range 26 East, in unincorporated Lee County, Florida and is in the Six Mile Cypress Watershed.

The project is bounded to the south by Daniels Parkway, to the north by commercial development, to the west by undeveloped land and Commerce Lakes Drive, and to the east by undeveloped land.

General Site Information

Existing Conditions

The project site is undeveloped, containing vegetation and approximately 13.03± acres of existing wetlands (see attached environmental report). There has been no development of any previously permitted stormwater management facilities within the project boundary.

The project outfalls through the existing wetland to the east and then across Daniels Parkway to the existing stormwater management system. The project will ultimately flow through existing flow-ways and culverts to the Six Mile Cypress Watershed with the ultimate out fall as the Estero Bay.

Project SFWMD Permitting History

2005: Neighboring Development (Permit #36-00678-S-16)

Intelliflex is a commercial development consisting of three commercial buildings to be used for office space and warehouse storage. It is located on the north side of the project boundary and was permitted in 2005. This project and its proposed stormwater management system is constructed and operational.

Post-Development Surface Water Management System

Surface Water Management System Summary

Rainfall information used to model the storm events are based on the information provided in Appendix C: Isohyetal Maps of the SFWMD ERP Information Manual IV. A summary of the rainfall amount for each storm event can be seen in Table 1 below and the Isohyetal Maps can be referenced in Appendix C below.

Table 1: Storm Events

Storm Event	Rainfall Amount
5 Year 24 Hr.	5.50 inches
10 Year 24 Hr.	6.60 inches
25 Year 72 Hr.	11.00 inches
100 Year 72 Hr.	14.00 inches

Minimum centerlines of the road, perimeter berm, and finished floor elevation elevations have been determined and the finished floor elevation is based on the 100-year, zero discharge, peak stage. These values have been determined and summarized in Table 2 below.

Table 2: Basin 1 Summary

Basin	Initial Stage (ft-NAVD)	5-YR Peak Stage (ft-NAVD)	10-YR Peak Stage (ft-NAVD)	25-YR Peak Stage (ft-NAVD)	100-YR Peak Stage (ft-NAVD)	Min Rd./ Parking Elevation (ft-NAVD)	Min Perimeter Berm Elevation (ft-NAVD)	Min Finished Floor Elevation (ft-NAVD)
FMBC	23.55	25.99	26.22	26.90	27.26	26.00	27.00	27.30

Outfall Summary

The proposed outfall location is through the existing wetland via a proposed 30" RCP with an allowable discharge of 37.10 csm, over the project area of ± 20.64 acres which equates to 1.20 cfs, as outlined by the South Florida Water Management ERP Manual (Figure 109 and Sheet 20). The anticipated design peak discharge from the 25-year, 3-day storm event is 0.39 cfs through a 3" bleeder. Thus, the post development peak discharge is lower than the allowable discharge of 1.20 cfs and the minimum 3" bleeder size required per Section 5.2 of the Environmental Resource Permit Applicant's Handbook Volume II is being used.

Table 3: Control Structure Discharge Rates

Location	Developed Area (AC)	Project Area (AC)	Allowable Discharge (cfs)	25- Year Peak Design Discharge (cfs)
FMBC	± 11.30	± 20.64	1.20	0.39

Control Elevation Determination

A Control Elevation of 23.55 (ft-NAVD) for the projects' storm water management system was determined by evaluating historic water line elevations and existing wetland elevations, in addition to comparing to the previously approved surrounding ERP for Intelliflex (Permit No. 36-00678-S-16) neighboring the project boundary to the north. (All elevations given in this report and plans have been converted to NAVD-88 (NGVD - 29 minus 1.18 feet).

Water Quality

Water quality treatment is based on the governing condition of the first one inch of runoff from the contributing basins with an additional 50% water quality volume added as a BMP. Dry detention pre-treatment allows for a reduction in the required treatment volume after the 50% addition. The project site

is located within the Six Mile Cypress Watershed, which is not listed as being impaired under any conditions. Therefore, no nutrient calculations are being required for this project. However, nutrient calculations have been provided, please see attached. Table 5 below displays a summary of the water quality information.

Table 4: Water Quality Summary

Basin	Water Quality Volume Required (ac-ft)	Water Quality Volume + 50% additional (ac-ft)	Water Quality Volume + 50% additional – Required Dry Pre-Treatment (ac-ft)	Water Quality Volume provided (ac-ft)	Water Quality Elevation (ft-NAVD)
FMBC	1.38	2.07	1.69	2.21	25.05

All post-development stormwater run-off will be routed through dry pre-treatment areas and then into a stormwater management lake containing outfall structure designed to provide the required water quality detention on a basin wide basis per the SFWMD handbook. Please refer to the water management calculations in Appendix A of this report for calculations demonstrating the project will provide the required stormwater treatment prior to discharging into the existing wetland and taken offsite.

Tailwater Determination

The tailwater for this application/project was obtained from historic water line elevations within the existing wetland and culverts and compared to the neighboring ERPs of Intelliflex (Permit #36-00678-S-16). All elevations given in this report and plans have been converted to NAVD-88 (NGVD - 29 minus 1.18 feet).

The tailwater curve was estimated using the SCS dimensionless unit hydrograph and mass curve ratio. The tailwater timing calculations are provided on (Page 12) of Appendix A: Water Management Calculations.

Pre vs Post Development Nutrient Loading

Pre-development vs Post-development Nutrient loading calculations are included in a separate report. Please refer to Nutrient Loading Report.

Floodplain Considerations

According to FEMA Flood Insurance Rate Map (FIRM) Community Panel Number 12071C0475F the entirety of the subject property is located within FEMA flood Zone X with no base flood elevation determined. The land use changes from the pre-development to post-development condition contemplated in this ERP application will have no adverse impacts to the historical flood plain and have been previously contemplated in the original conceptual approval and subsequent modifications.

Conclusion

The attached storm water management calculations demonstrate the proposed project is consistent with SFWMD water quality and attenuation standards.

Appendix A: Water Management Calculations

FORT MYERS BREWING COMPANY LAND USE SUMMARY

Basin Land Use Summary								
Sub-Basin	A-1 ²	A-2 ²	A-3 ³	Daniels Parkway ¹	Commerce Lakes Drive ¹	Conservation/Upland Area ⁴	Total	Percent Basin Total
Fort Myers Brewing Company	6.49 ac	2.67 ac	2.14 ac	----	----	9.34 ac	20.64 ac	95.20%
Impervious	4.39 ac	1.40 ac	0.19 ac	----	----	----	5.98 ac	27.58%
<i>Building</i>	<i>0.74 ac</i>	<i>0.26 ac</i>	----	----	----	----	<i>1.00 ac</i>	<i>4.61%</i>
<i>Roads/Parking/Sidewalk</i>	<i>3.65 ac</i>	<i>1.14 ac</i>	<i>0.19 ac</i>	----	----	----	<i>4.98 ac</i>	<i>22.97%</i>
Lake	----	----	1.15 ac	----	----	----	1.15 ac	5.30%
Dry Detention (Bottom)	0.36 ac	0.09 ac	----	----	----	----	0.45 ac	2.08%
Pervious	1.74 ac	1.18 ac	0.80 ac	----	----	9.34 ac	3.72 ac	17.16%
Off-site Area¹⁰	----	----	----	0.91 ac	0.13 ac	----	1.04 ac	4.80%
Impervious	----	----	----	0.91 ac	0.13 ac	----	1.04 ac	4.80%
<i>Building</i>	----	----	----	----	----	----	----	<i>0.00%</i>
<i>Roads/Parking/Sidewalk</i>	----	----	----	<i>0.91 ac</i>	<i>0.13 ac</i>	----	<i>1.04 ac</i>	<i>4.80%</i>
Lake	----	----	----	----	----	----	----	<i>0.00%</i>
Dry Detention	----	----	----	----	----	----	----	<i>0.00%</i>
Pervious	----	----	----	----	----	----	----	<i>0.00%</i>
Preserve	----	----	----	----	----	----	----	<i>0.00%</i>
Basin Total	6.49 ac	2.67 ac	2.14 ac	0.91 ac	0.13 ac	9.34 ac	21.68 ac	100.00%

Note:

- 1) The Daniels Parkway ROW & Commerce Lakes Drive ROW consists of the 1.04 acres off-site which is included in the SWM basin calculations.
- 2) Sub-Basins A-1 & A-2 consist of all portions of the project within the project boundary without the stormwater management lake (Lake A).
- 3) Sub-Basin A-3 consists of the storm water management lake (Lake A).
- 4) The Conservation/Upland Area consists of the 8.02 acres of wetlands/preserve in addition 1.32± acres of upland open space and is not included in the SWM basin calculations.

SURFACE WATER MANAGEMENT PARAMETERS

Water Quality	Fort Myers Brewing Company		
	Sub-Basin A-1	Sub-Basin A-2	Sub-Basin A-3
Control Elevation (ft)	23.55		
Water Quality Volume Required (ac-ft)	1.69		
Water Quality Volume Provided (ac-ft)	2.21		
Water Quality Elevation Required (ft)	25.02		
Water Quality Elevation Provided(ft)	25.05		
5 Year 1 Day Storm			
Rainfall (in)	5.50		
Peak Stage (ft)	25.99	25.89	25.88
Minimum Road/Parking Lot Elevation(ft)	26.00		
10 Year 1 Day Storm			
Rainfall (in)	6.60		
Peak Stage (ft)	26.21	26.21	26.21
Minimum Road/Parking Lot Elevation(ft)	26.30		
25 Year 3 Day Storm			
Rainfall (in)	11.00		
Allowable Peak Off-Site Discharge (csm)	37.10		
⁽¹⁾ Allowable Peak Off-Site Discharge (cfs)	1.20		
Design Peak Off-Site Discharge (cfs)	0.39		
Peak Stage (1st 25 Year 3 Day Storm) (ft)	26.90	26.90	26.90
Stage @ Hour 360	24.42	24.42	24.42
Peak Stage (2nd 25 Year 3 Day Storm) (ft)	26.94	26.93	26.93
Minimum Berm(ft)	27.00		
100 Year 3 Day Storm			
Rainfall (in)	14.00		
FEMA Zone	X	X	X
FEMA Elevation (ft)	N/A	N/A	N/A
Peak Stage(ft)	27.26		
Minimum Building Finished Floor (ft)	27.30		

1) This project will discharge into the existing wetland.

2) All elevations shown are in ft-NAVD88 (NGVD -1.18').

BASIN 1 WATER QUALITY CALCULATIONS

Acreage Breakdown:

Fort Myers Brewing Company	Area	Percent Total
Total	11.30 ac	100%
Building	1.00 ac	9%
Roads/Parking/Sidewalk	4.98 ac	44%
Lake	1.15 ac	10%
Dry Detention	0.45 ac	4%
Pervious	3.72 ac	33%

Compensating Water Quality

Area
Total
1.04 ac
Daniels Parkway
0.91 ac
Commerce Lakes Dr
0.13 ac

*Note the 1.04 acres of future Daniels Pkwy ROW & Commercial Lakes Dr ROW not included in stormwater management system.

Required Dry Pre-Treatment Volume

The proposed project will provide 0.5 inches of dry pre-treatment for all commercial lots within the Daniels Market Place project in accordance with Section 4.2.2(a) of the Environmental Resource Permit Applicants Handbook Volume II.

Sub-Basin A-1

Required Dry Pre-treatment (Sub-basin Area * 0.5 in) =	0.27 ac-ft
Dry Detention Area Provided	0.36 ac
Dry Detention Depth Required (Pre-treatment Required / Dry Detention Provided) =	0.75 ft
Elevation of Pre-treatment Control Structure (Required) =	25.40 ft
Dry Detention Depth Provided=	1.00 ft
Dry Detention Volume Provided=	0.39 ac-ft
Elevation of Pre-treatment Control Structure (Provided) =	25.55 ft

Sub-Basin A-2

Required Dry Pre-treatment (Sub-basin Area * 0.5 in) =	0.11 ac-ft
Dry Detention Area Provided	0.09 ac
Dry Detention Depth Required (Pre-treatment Required / Dry Detention Provided) =	1.24 ft
Elevation of Pre-treatment Control Structure (Required) =	25.80 ft
Dry Detention Depth Provided=	1.00 ft
Dry Detention Volume Provided=	0.25 ac-ft
Elevation of Pre-treatment Control Structure (Provided) =	25.55 ft

Water Quality Calculations:

First One Inch of Runoff from the Basin

(On-Site Area) x 1 inch =	0.94 ac-ft
(Offsite Impervious) x 1 inch =	0.09 ac-ft
Total First Inch of Runoff =	1.03 ac-ft

2.5 Inches times the Percent Impervious

Site Area for Water Quality Perv/Imperv Calculations (SAWQ)

BASIN 1 WATER QUALITY CALCULATIONS

(On-Site Area + Compensating Area) - (Building + Lake) =	10.19 ac
Imperv Area for Water Quality Perv/Imperv Calculations (IAWQ) (Road+parking+sidewalk+Compensating Area) =	6.02 ac
Percent Imperv for Water Quality Perv/Imperv Calculations (%IMP) (IAWQ / SAWQ) x 100% =	59.1%
2.5 Inches x Percent Imperv 2.5 Inches x %IMP =	1.48 in
Volume Required to be Treated Treatment x (On-Site Area + Compensating Area - Lake) x 1 ft./12 in. =	1.38 ac-ft

Required Treatment Volume

Treatment shall be provided for the greater of the first inch of runoff from the developed site plus the compensating area or the total runoff of 2.5 times the percent impervious.

First inch of runoff from the developed site =	1.03 ac-ft
2.5 Inches time the percent impervious =	1.38 ac-ft
Treatment Volume =	1.38 ac-ft
Additional 50% Treatment =	0.69 ac-ft
Minus Dry Pre-treatment=	0.38 ac-ft
Total Treatment Volume Required =	1.69 ac-ft

Wet Detention Treatment Elevation

Min water quality elevation = Total Treatment Volume / Lake Area

Control Elevation= 23.55 ft

Min WQ Elevation= 25.02 ft

Design Water Quality Elevation= 25.05 ft

Provided Water Quality Treatment Volume= 2.21 ac-ft

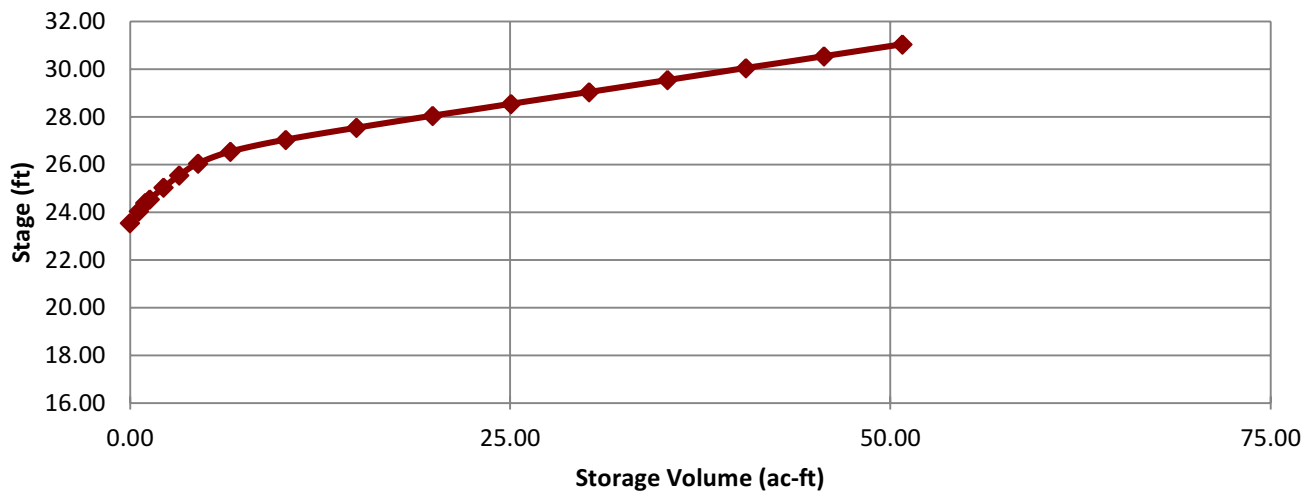
System Recovery:

The Stormwater Management system design utilizes the District's minimum 3" bleeder size.

BASIN 1 COMPOSITE STAGE STORAGE TABLE

Stage (ft NAVD)	Lake		Dry Detention		Pervious	Pavement	Total Area (ac)	Volume (ac-ft)	Cum. Volume (ac-ft)
	A = 1.15 ac	A = 0.35 ac	A = 0.45 ac	A = 0.38 ac	A = 2.99 ac	A = 4.98 ac			
	Bottom	Bank	Bottom	Bank					
Start Elv.	23.55	23.55	24.55	24.55	25.55	26.10			
End Elv.	23.55	27.55	24.55	25.55	28.00	27.10			
23.55	1.15	0.00	0.00	0.00	0.00	0.00	1.15	0.00	0.00
24.05	1.15	0.04	0.00	0.00	0.00	0.00	1.19	0.59	0.59
24.40	1.15	0.07	0.00	0.00	0.00	0.00	1.22	0.42	1.01
24.55	1.15	0.09	0.45	0.00	0.00	0.00	1.69	0.72	1.31
25.05	1.15	0.13	0.45	0.19	0.00	0.00	1.92	0.90	2.21
25.55	1.15	0.18	0.45	0.38	0.00	0.00	2.16	1.02	3.23
26.05	1.15	0.22	0.45	0.38	0.61	0.00	2.81	1.24	4.47
26.55	1.15	0.26	0.45	0.38	1.22	2.24	5.70	2.13	6.60
27.05	1.15	0.31	0.45	0.38	1.83	4.73	8.85	3.64	10.24
27.55	1.15	0.35	0.45	0.38	2.44	4.98	9.75	4.65	14.89
28.05	1.15	0.35	0.45	0.38	2.99	4.98	10.30	5.01	19.90
28.55	1.15	0.35	0.45	0.38	2.99	4.98	10.30	5.15	25.05
29.05	1.15	0.35	0.45	0.38	2.99	4.98	10.30	5.15	30.20
29.55	1.15	0.35	0.45	0.38	2.99	4.98	10.30	5.15	35.35
30.05	1.15	0.35	0.45	0.38	2.99	4.98	10.30	5.15	40.50
30.55	1.15	0.35	0.45	0.38	2.99	4.98	10.30	5.15	45.65
31.05	1.15	0.35	0.45	0.38	2.99	4.98	10.30	5.15	50.80
31.55	1.15	0.35	0.45	0.38	2.99	4.98	10.30	5.15	55.95

STAGE STORAGE GRAPH



SUB-BASIN A-1

Acreage Breakdown:

	<u>Area</u>	<u>Percent Total</u>
Total	6.49 ac	100%
Building	0.74 ac	11%
Roads/Parking/Sidewalk	3.65 ac	56%
Lake	----	0%
Dry Detention	0.36 ac	6%
Pervious	1.74 ac	27%

Wet Season Water Table Elevation =	23.55 ft
Min Roadway Parking Lot Elevation =	26.00 ft
Min Roadway Crown Elevation =	26.00 ft
Min Berm Elevation =	27.00 ft
Proposed Finished Floor Elevation =	27.30 ft

Soil Storage:

Soil storage for the site has been estimate using the compacted water storage capability estimate by the Soil Conservation Service for the sandy material in South Florida Water Management District, assuming a minimum curve number of 80.

Average Site Grade =	26.00 ft
Depth to Water Table (Avg site grad - WSWT Elv.) =	2.45 ft
Soil Storage in pervious areas =	3.26 in
Percent Pervious (pervious area / site area) =	27%
Site Soil Storage (% pervious * Soil Storage in pervious areas) =	0.87 in

SCS Curve Number:

Curve Number (CN)	=	$\frac{1000}{S + 10}$	=	92
Design CN =				92

Time of concentration:

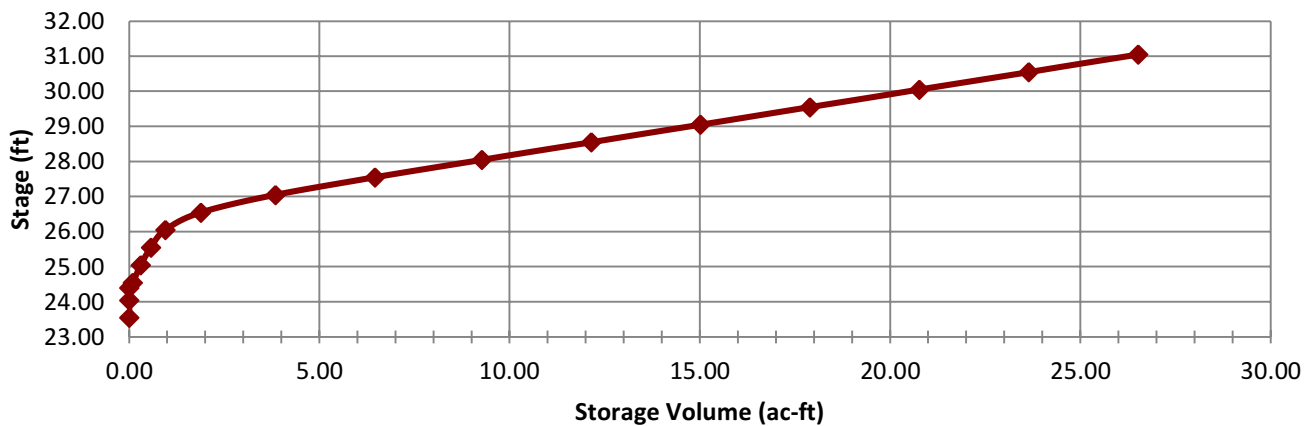
The following time of concentration calculations have been performed using the method outlined in the NRCS Urban Hydrology for Small Watersheds (TR-55)

Time of Concentration assumed to be 10 minutes.

SUB-BASIN A-1 STAGE STORAGE TABLE

Stage (ft NAVD)	Lake		Dry Detention		Pervious	Pavement	Total Area (ac)	Volume (ac-ft)	Cum. Volume (ac-ft)
	A = 0.00 ac	A = 0.00 ac	A = 0.36 ac	A = 0.24 ac	A = 1.50 ac	A = 3.65 ac			
	Surface	Bank	Bottom	Bank					
Start Elv.	23.55	23.55	24.55	24.55	25.55	26.10			
End Elv.	23.55	27.55	24.55	25.55	28.00	27.10			
23.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24.55	0.00	0.00	0.36	0.00	0.00	0.00	0.36	0.09	0.09
25.05	0.00	0.00	0.36	0.12	0.00	0.00	0.48	0.21	0.30
25.55	0.00	0.00	0.36	0.24	0.00	0.00	0.60	0.27	0.57
26.05	0.00	0.00	0.36	0.24	0.31	0.00	0.90	0.37	0.94
26.55	0.00	0.00	0.36	0.24	0.61	1.64	2.85	0.94	1.88
27.05	0.00	0.00	0.36	0.24	0.92	3.47	4.98	1.96	3.84
27.55	0.00	0.00	0.36	0.24	1.23	3.65	5.47	2.61	6.46
28.05	0.00	0.00	0.36	0.24	1.50	3.65	5.75	2.81	9.26
28.55	0.00	0.00	0.36	0.24	1.50	3.65	5.75	2.88	12.14
29.05	0.00	0.00	0.36	0.24	1.50	3.65	5.75	2.88	15.01
29.55	0.00	0.00	0.36	0.24	1.50	3.65	5.75	2.88	17.89
30.05	0.00	0.00	0.36	0.24	1.50	3.65	5.75	2.88	20.76
30.55	0.00	0.00	0.36	0.24	1.50	3.65	5.75	2.88	23.64
31.05	0.00	0.00	0.36	0.24	1.50	3.65	5.75	2.88	26.51
31.55	0.00	0.00	0.36	0.24	1.50	3.65	5.75	2.88	29.39

STAGE STORAGE GRAPH



SUB-BASIN A-2

Acreage Breakdown:

	<u>Area</u>	<u>Percent Total</u>
Total	2.67 ac	100%
Building	0.26 ac	10%
Roads/Parking/Sidewalk	1.14 ac	43%
Lake	----	0%
Dry Detention	0.09 ac	3%
Pervious	1.18 ac	44%

Wet Season Water Table Elevation =	23.55 ft
Min Roadway Parking Lot Elevation =	26.00 ft
Min Roadway Crown Elevation =	26.00 ft
Min Berm Elevation =	27.00 ft
Proposed Finished Floor Elevation =	27.30 ft

Soil Storage:

Soil storage for the site has been estimate using the compacted water storage capability estimate by the Soil Conservation Service for the sandy material in South Florida Water Management District, assuming a minimum curve number of 80.

Average Site Grade =	26.00 ft
Depth to Water Table (Avg site grad - WSWT Elv.) =	2.45 ft
Soil Storage in pervious areas =	3.26 in
Percent Pervious (pervious area / site area) =	44%
Site Soil Storage (% pervious * Soil Storage in pervious areas) =	1.44 in

SCS Curve Number:

Curve Number (CN)	=	$\frac{1000}{S + 10}$	=	87
				Design CN = 87

Time of concentration:

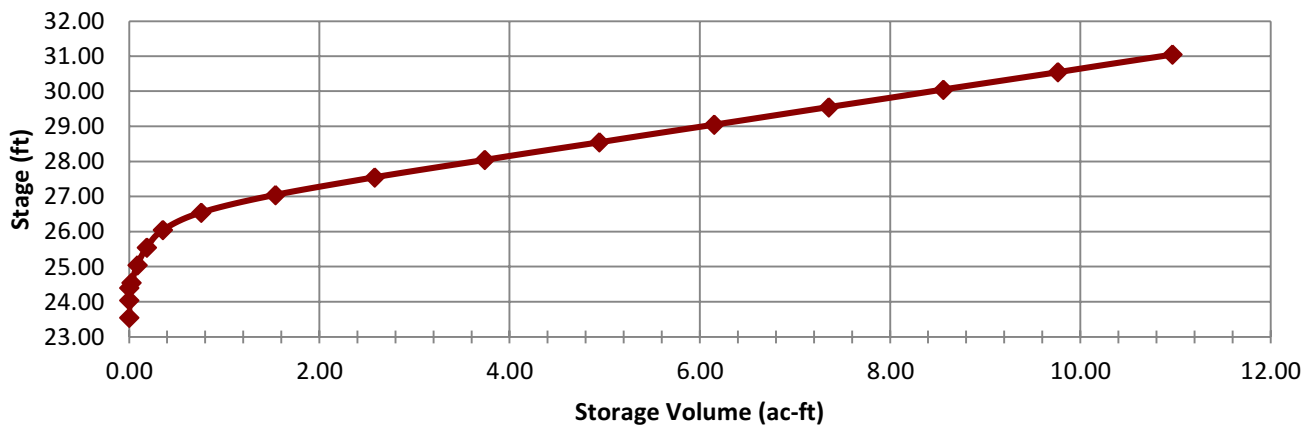
The following time of concentration calculations have been performed using the method outlined in the NRCS Urban Hydrology for Small Watersheds (TR-55)

Time of Concentration assumed to be 10 minutes.

SUB-BASIN A-2 STAGE STORAGE TABLE

Stage (ft NAVD)	Lake		Dry Detention		Pervious	Pavement	Total Area (ac)	Volume (ac-ft)	Cum. Volume (ac-ft)
	A = 0.00 ac	A = 0.00 ac	A = 0.09 ac	A = 0.14 ac	A = 1.04 ac	A = 1.14 ac			
	Surface	Bank	Bottom	Bank					
Start Elv.	23.55	23.55	24.55	24.55	25.55	26.10			
End Elv.	23.55	27.55	24.55	25.55	28.00	27.10			
23.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24.55	0.00	0.00	0.09	0.00	0.00	0.00	0.09	0.02	0.02
25.05	0.00	0.00	0.09	0.07	0.00	0.00	0.16	0.06	0.09
25.55	0.00	0.00	0.09	0.14	0.00	0.00	0.23	0.10	0.18
26.05	0.00	0.00	0.09	0.14	0.21	0.00	0.44	0.17	0.35
26.55	0.00	0.00	0.09	0.14	0.42	0.51	1.17	0.40	0.76
27.05	0.00	0.00	0.09	0.14	0.64	1.08	1.95	0.78	1.54
27.55	0.00	0.00	0.09	0.14	0.85	1.14	2.22	1.04	2.58
28.05	0.00	0.00	0.09	0.14	1.04	1.14	2.41	1.16	3.74
28.55	0.00	0.00	0.09	0.14	1.04	1.14	2.41	1.21	4.94
29.05	0.00	0.00	0.09	0.14	1.04	1.14	2.41	1.21	6.15
29.55	0.00	0.00	0.09	0.14	1.04	1.14	2.41	1.21	7.35
30.05	0.00	0.00	0.09	0.14	1.04	1.14	2.41	1.21	8.56
30.55	0.00	0.00	0.09	0.14	1.04	1.14	2.41	1.21	9.76
31.05	0.00	0.00	0.09	0.14	1.04	1.14	2.41	1.21	10.97
31.55	0.00	0.00	0.09	0.14	1.04	1.14	2.41	1.21	12.17

STAGE STORAGE GRAPH



SUB-BASIN A-3

Acreage Breakdown:

	<u>Area</u>	<u>Percent Total</u>
Total	2.14 ac	100%
Building	----	0%
Roads/Parking/Sidewalk	0.19 ac	9%
Lake	1.15 ac	54%
Dry Detention	----	0%
Pervious	0.80 ac	37%

Wet Season Water Table Elevation =	23.55 ft
Min Roadway Parking Lot Elevation =	26.00 ft
Min Roadway Crown Elevation =	26.00 ft
Min Berm Elevation =	27.00 ft
Proposed Finished Floor Elevation =	27.30 ft

Soil Storage:

Soil storage for the site has been estimate using the compacted water storage capability estimate by the Soil Conservation Service for the sandy material in South Florida Water Management District, assuming a minimum curve number of 80.

Average Site Grade =	26.00 ft
Depth to Water Table (Avg site grad - WSWT Elv.) =	2.45 ft
Soil Storage in pervious areas =	3.26 in
Percent Pervious (pervious area / site area) =	37%
Site Soil Storage (% pervious * Soil Storage in pervious areas) =	1.22 in

SCS Curve Number:

Curve Number (CN)	=	$\frac{1000}{S + 10}$	=	89
				Design CN = 89

Time of concentration:

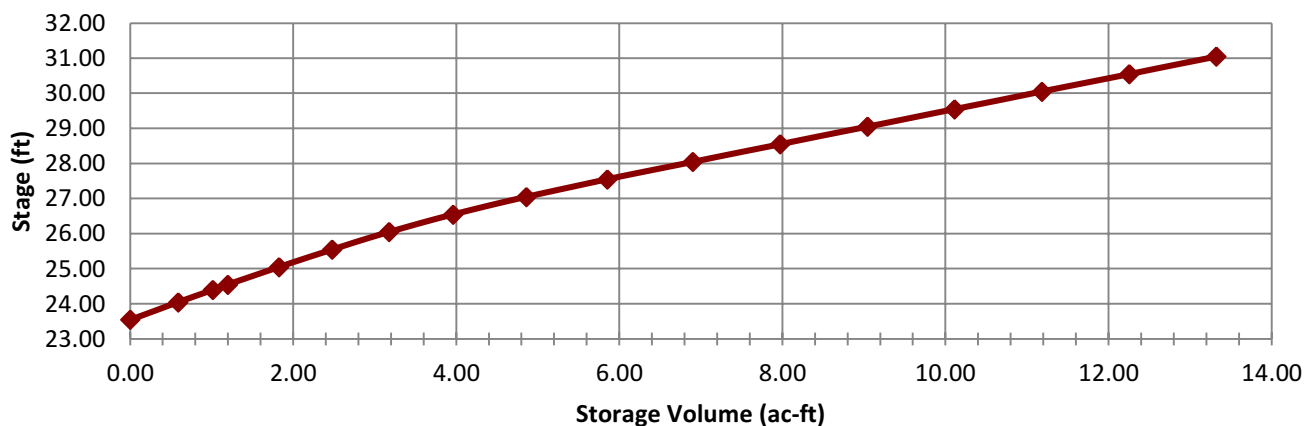
The following time of concentration calculations have been performed using the method outlined in the NRCS Urban Hydrology for Small Watersheds (TR-55)

Time of Concentration assumed to be 10 minutes.

SUB-BASIN A-3 STAGE STORAGE TABLE

Stage (ft NAVD)	Lake		Dry Detention		Pervious	Pavement	Total Area (ac)	Volume (ac-ft)	Cum. Volume (ac-ft)
	A = 1.15 ac	A = 0.35 ac	A = 0.00 ac	A = 0.00 ac	A = 0.45 ac	A = 0.19 ac			
	Surface	Bank	Bottom						
Start Elv.	23.55	23.55	24.55	24.55	25.55	26.10			
End Elv.	23.55	27.55	24.55	25.55	28.00	27.10			
23.55	1.15	0.00	0.00	0.00	0.00	0.00	1.15	0.00	0.00
24.05	1.15	0.04	0.00	0.00	0.00	0.00	1.19	0.59	0.59
24.40	1.15	0.07	0.00	0.00	0.00	0.00	1.22	0.42	1.01
24.55	1.15	0.09	0.00	0.00	0.00	0.00	1.24	0.61	1.19
25.05	1.15	0.13	0.00	0.00	0.00	0.00	1.28	0.63	1.82
25.55	1.15	0.18	0.00	0.00	0.00	0.00	1.33	0.65	2.48
26.05	1.15	0.22	0.00	0.00	0.09	0.00	1.46	0.70	3.17
26.55	1.15	0.26	0.00	0.00	0.18	0.09	1.68	0.79	3.96
27.05	1.15	0.31	0.00	0.00	0.27	0.18	1.91	0.90	4.86
27.55	1.15	0.35	0.00	0.00	0.37	0.19	2.06	0.99	5.85
28.05	1.15	0.35	0.00	0.00	0.45	0.19	2.14	1.05	6.90
28.55	1.15	0.35	0.00	0.00	0.45	0.19	2.14	1.07	7.97
29.05	1.15	0.35	0.00	0.00	0.45	0.19	2.14	1.07	9.04
29.55	1.15	0.35	0.00	0.00	0.45	0.19	2.14	1.07	10.11
30.05	1.15	0.35	0.00	0.00	0.45	0.19	2.14	1.07	11.18
30.55	1.15	0.35	0.00	0.00	0.45	0.19	2.14	1.07	12.25
31.05	1.15	0.35	0.00	0.00	0.45	0.19	2.14	1.07	13.32
31.55	1.15	0.35	0.00	0.00	0.45	0.19	2.14	1.07	14.39

STAGE STORAGE GRAPH



Tailwater

The project's tailwater elevation was estimated based upon historic waterline elevations within the existing wetlands and culverts neighboring this project and compared to neighboring ERP's of Intelliflex (#36-00678-S-16).

The timing of the project's tailwater was estimated using the SCE dimensionless unit hydrograph and mass curve ratio. The tailwater time and elevation are calculated below.

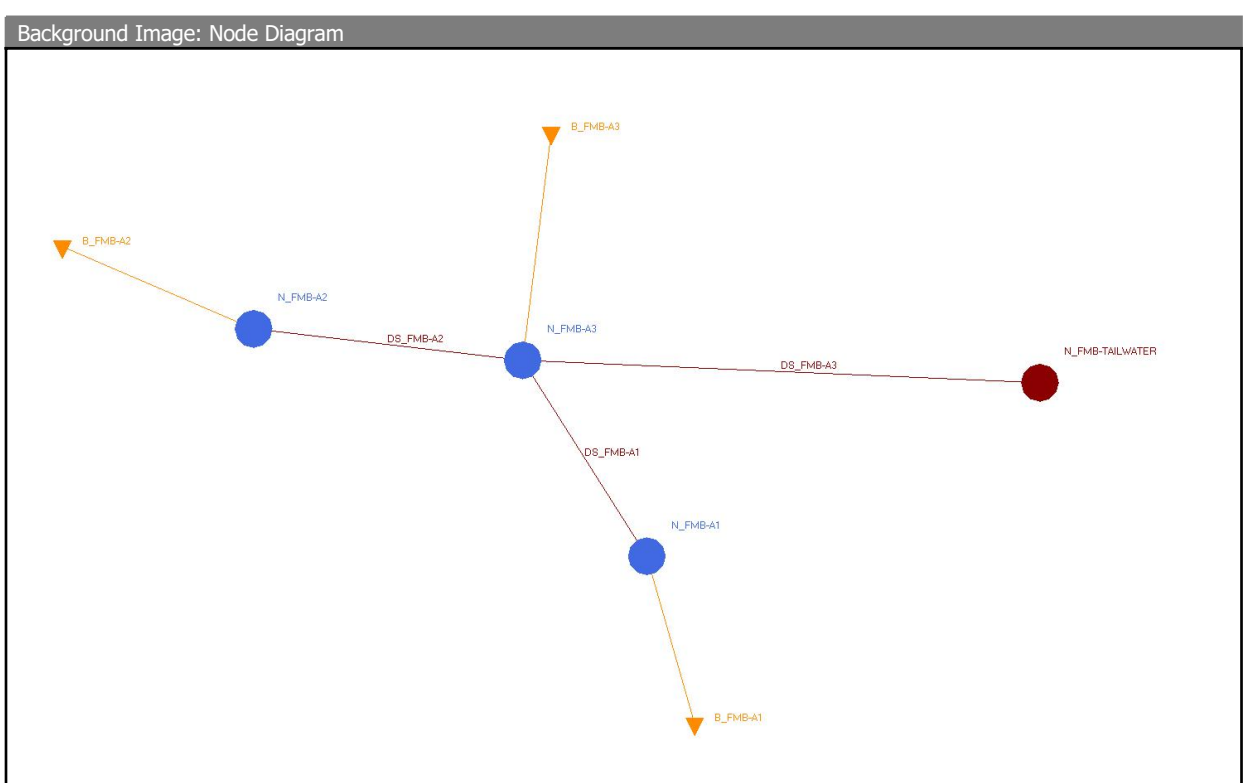
	5-year	25-year
Start Elv (ft, NAVD)	23.55	23.55
Peak Stage (ft, NAVD)	24.55	25.00
Peak Depth (ft)	1.00	1.45
Time of peak (hr)	18.00	68.00

Time Ratio (t/t _p)	Discharge/Stage Ratio (X/X _p)	5-Year		25-Year	
		Time (tp x Time Ratio)	Stage (Peak Stage x Stage Ratio)	Time (tp x Time Ratio)	Stage (Peak Stage x Stage Ratio)
0.0	0.000	0.00	23.55	0.00	23.55
0.1	0.030	1.80	23.58	6.80	23.59
0.2	0.100	3.60	23.65	13.60	23.70
0.3	0.190	5.40	23.74	20.40	23.83
0.4	0.310	7.20	23.86	27.20	24.00
0.5	0.470	9.00	24.02	34.00	24.23
0.6	0.660	10.80	24.21	40.80	24.51
0.7	0.820	12.60	24.37	47.60	24.74
0.8	0.930	14.40	24.48	54.40	24.90
0.9	0.990	16.20	24.54	61.20	24.99
1.0	1.000	18.00	24.55	68.00	25.00
1.1	0.990	19.80	24.54	74.80	24.99
1.2	0.930	21.60	24.48	81.60	24.90
1.3	0.860	23.40	24.41	88.40	24.80
1.4	0.780	25.20	24.33	95.20	24.68
1.5	0.680	27.00	24.23	102.00	24.54
1.6	0.560	28.80	24.11	108.80	24.36
1.7	0.460	30.60	24.01	115.60	24.22
1.8	0.390	32.40	23.94	122.40	24.12
1.9	0.330	34.20	23.88	129.20	24.03
2.0	0.280	36.00	23.83	136.00	23.96
2.2	0.207	39.60	23.76	149.60	23.85
2.4	0.147	43.20	23.70	163.20	23.76
2.6	0.107	46.80	23.66	176.80	23.71
2.8	0.077	50.40	23.63	190.40	23.66
3.0	0.055	54.00	23.61	204.00	23.63
3.2	0.040	57.60	23.59	217.60	23.61
3.4	0.029	61.20	23.58	231.20	23.59
3.6	0.021	64.80	23.57	244.80	23.58
3.8	0.015	68.40	23.57	258.40	23.57
4.0	0.011	72.00	23.56	272.00	23.57
4.5	0.005	81.00	23.56	306.00	23.56
5.0	0.000	90.00	23.55	340.00	23.55

Appendix B: ICPR Post Development Model Report

Appendix B - Table of Contents

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**25-YEAR
SIMULATION**

Simple Basin: B_FMB-A1

Scenario: DISCHAGE
Node: N_FMB-A1
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.00
Area: 6.49 ac
Curve Number: 92.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: B_FMB-A2

Scenario: DISCHAGE
Node: N_FMB-A2
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.00
Area: 2.67 ac
Curve Number: 87.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: B_FMB-A3

Scenario: DISCHAGE
Node: N_FMB-A3
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.00 cfs

Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.00
Area: 2.14 ac
Curve Number: 89.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Node: N_FMB-A1

Scenario: DISCHAGE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 23.55 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
23.55	0.00	0.00
24.05	0.00	0.00
24.40	0.00	0.00
24.55	0.36	15681.60
25.05	0.48	20908.80
25.55	0.60	26136.00
26.05	0.90	39204.00
26.55	2.85	124146.00
27.05	4.98	216928.80
27.55	5.47	238273.20
28.05	5.75	250470.00
28.55	5.75	250470.00
29.05	5.75	250470.00
29.55	5.75	250470.00
30.05	5.75	250470.00
30.55	5.75	250470.00
31.05	5.75	250470.00
31.55	5.75	250470.00

Comment:

Node: N_FMB-A2

Scenario: DISCHAGE
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 23.55 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
23.55	0.00	0.00
24.05	0.00	0.00
24.40	0.00	0.00
24.55	0.09	3920.40
25.05	0.16	6969.60
25.55	0.23	10018.80
26.05	0.44	19166.40
26.55	1.17	50965.20
27.05	1.95	84942.00
27.55	2.22	96703.20
28.05	2.41	104979.60
28.55	2.41	104979.60
29.05	2.41	104979.60
29.55	2.41	104979.60
30.05	2.41	104979.60
30.55	2.41	104979.60
31.05	2.41	104979.60
31.55	2.41	104979.60

Comment:

Node: N_FMB-A3

Scenario: DISCHAGE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 23.55 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
23.55	1.15	50094.00
24.05	1.19	51836.40
24.40	1.22	53143.20
24.55	1.24	54014.40
25.05	1.28	55756.80
25.55	1.33	57934.80
26.05	1.46	63597.60
26.55	1.68	73180.80
27.05	1.91	83199.60
27.55	2.06	89733.60
28.05	2.14	93218.40
28.55	2.14	93218.40
29.05	2.14	93218.40
29.55	2.14	93218.40

Stage [ft]	Area [ac]	Area [ft2]
30.05	2.14	93218.40
30.55	2.14	93218.40
31.05	2.14	93218.40
31.55	2.14	93218.40

Comment:

Node: N_FMB-TAILWATER

Scenario: DISCHAGE
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 23.55 ft
 Warning Stage: 0.00 ft
 Boundary Stage: N_FMB-TAILWATER

Comment:

Drop Structure Link: DS_FMB-A1		Upstream Pipe	Downstream Pipe
Scenario:	DISCHAGE	Invert: 19.00 ft	Invert: 16.70 ft
From Node:	N_FMB-A1	Manning's N: 0.01	Manning's N: 0.01
To Node:	N_FMB-A3	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 2.50 ft	Max Depth: 2.50 ft
Flow Direction:	Both	Bottom Clip	
Solution:	Combine	Default: 0.00 ft	Default: 0.00 ft
Increments:	0	Op Table:	Op Table:
Pipe Count:	1	Ref Node:	Ref Node:
Damping:	0.00 ft	Manning's N: 0.00	Manning's N: 0.00
Length:	134.00 ft	Top Clip	
FHWA Code:	0	Default: 0.00 ft	Default: 0.00 ft
Entr Loss Coef:	0.00	Op Table:	Op Table:
Exit Loss Coef:	1.00	Ref Node:	Ref Node:
Bend Loss Coef:	0.00	Manning's N: 0.00	Manning's N: 0.00
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Pipe Comment:

Weir Component	
Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.00 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Bottom Clip	
Default: 0.00 ft	
Op Table:	
Ref Node:	
Top Clip	
Default: 0.00 ft	

Invert: 23.55 ft
 Control Elevation: 23.55 ft
 Max Depth: 0.25 ft

Op Table:

Ref Node:

Discharge Coefficients

Weir Default: 3.20

Weir Table:

Orifice Default: 0.60

Orifice Table:

Weir Comment:

Weir Component

Weir: 2

Weir Count: 1

Weir Flow Direction: Both

Damping: 0.00 ft

Weir Type: Horizontal

Geometry Type: Rectangular

Invert: 25.55 ft

Control Elevation: 23.55 ft

Max Depth: 6.58 ft

Max Width: 3.00 ft

Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft

Op Table:

Ref Node:

Top Clip

Default: 0.00 ft

Op Table:

Ref Node:

Discharge Coefficients

Weir Default: 3.20

Weir Table:

Orifice Default: 0.60

Orifice Table:

Weir Comment:

Drop Structure Comment:

Drop Structure Link: DS_FMB-A2

Upstream Pipe

Downstream Pipe

Scenario: DISCHAGE

Invert: 19.00 ft

Invert: 16.70 ft

From Node: N_FMB-A2

Manning's N: 0.01

Manning's N: 0.01

To Node: N_FMB-A3

Geometry: Circular

Geometry: Circular

Link Count: 1

Max Depth: 2.50 ft

Max Depth: 2.50 ft

Flow Direction: Both

Bottom Clip

Solution: Combine

Default: 0.00 ft

Default: 0.00 ft

Increments: 0

Op Table:

Op Table:

Pipe Count: 1

Ref Node:

Ref Node:

Damping: 0.00 ft

Manning's N: 0.00

Manning's N: 0.00

Length: 65.00 ft

Top Clip

FHWA Code: 0

Default: 0.00 ft

Default: 0.00 ft

Entr Loss Coef: 0.00

Op Table:

Op Table:

Exit Loss Coef: 1.00

Ref Node:

Ref Node:

Bend Loss Coef: 0.00

Manning's N: 0.00

Manning's N: 0.00

Bend Location: 0.00 dec

Energy Switch: Energy

Pipe Comment:

Weir Component	
Weir: 1	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.00 ft	Ref Node:
Weir Type: Sharp Crested Vertical	Top Clip
Geometry Type: Circular	Default: 0.00 ft
Invert: 23.55 ft	Op Table:
Control Elevation: 23.55 ft	Ref Node:
Max Depth: 0.25 ft	Discharge Coefficients
	Weir Default: 3.20
	Weir Table:
	Orifice Default: 0.60
	Orifice Table:
Weir Comment:	

Weir Component	
Weir: 2	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.00 ft	Ref Node:
Weir Type: Horizontal	Top Clip
Geometry Type: Rectangular	Default: 0.00 ft
Invert: 25.55 ft	Op Table:
Control Elevation: 23.55 ft	Ref Node:
Max Depth: 4.00 ft	Discharge Coefficients
Max Width: 3.00 ft	Weir Default: 3.20
Fillet: 0.00 ft	Weir Table:
	Orifice Default: 0.60
	Orifice Table:
Weir Comment:	

Drop Structure Comment:

Drop Structure Link: DS_FMB-A3		Upstream Pipe	Downstream Pipe
Scenario: DISCHAGE		Invert: 19.00 ft	Invert: 19.00 ft
From Node: N_FMB-A3		Manning's N: 0.01	Manning's N: 0.01
To Node: N_FMB-TAILWATE		Geometry: Circular	Geometry: Circular
R		Max Depth: 2.50 ft	Max Depth: 2.50 ft
Link Count: 1		Bottom Clip	
Flow Direction: Both		Default: 0.00 ft	Default: 0.00 ft
Solution: Combine		Op Table:	Op Table:
Increments: 0		Ref Node:	Ref Node:
Pipe Count: 1		Manning's N: 0.00	Manning's N: 0.00
Damping: 0.00 ft		Top Clip	
Length: 68.00 ft		Default: 0.00 ft	Default: 0.00 ft
FHWA Code: 0		Op Table:	Op Table:

Entr Loss Coef: 0.00	Ref Node:	Ref Node:
Exit Loss Coef: 1.00	Manning's N: 0.00	Manning's N: 0.00
Bend Loss Coef: 0.00		
Bend Location: 0.00 dec		
Energy Switch: Energy		

Pipe Comment:

Weir Component	
Weir: 1	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.00 ft	Ref Node:
Weir Type: Sharp Crested Vertical	Top Clip
Geometry Type: Circular	Default: 0.00 ft
Invert: 23.55 ft	Op Table:
Control Elevation: 23.55 ft	Ref Node:
Max Depth: 0.25 ft	Discharge Coefficients
	Weir Default: 3.20
	Weir Table:
	Orifice Default: 0.60
	Orifice Table:

Weir Comment:

Drop Structure Comment:

Simulation: 10 YEAR 1 DAY

Scenario: DISCHAGE
Run Date/Time: 4/18/2022 2:22:24 PM
Program Version: ICPR4 4.07.08

General				
Run Mode:	Normal			
	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	80.00
	Hydrology [sec]	Surface Hydraulics [sec]		
Min Calculation Time:	30.00	0.50		
Max Calculation Time:		30.00		

Output Time Increments				
Hydrology				
Year	Month	Day	Hour [hr]	Time Increment [min]

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	120.00
0	0	0	10.00	15.00
0	0	0	30.00	120.00
0	0	0	80.00	120.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	120.00
0	0	0	10.00	15.00
0	0	0	30.00	120.00
0	0	0	80.00	120.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set: 5 YEAR

Extern Hydrograph Set:

Curve Number Set:

Green-Ampt Set:

Vertical Layers Set:

Impervious Set:

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight 0.50 dec

Fact:

dZ Tolerance: 0.00 ft

Max dZ: 1.00 ft

Link Optimizer Tol: 0.00 ft

Edge Length Option: Automatic

IA Recovery Time: 24.00 hr

Smp/Man Basin Rain Global
Opt:

Rainfall Name: ~SCSII-24

Rainfall Amount: 6.60 in

Storm Duration: 24.00 hr

Dflt Damping (1D): 0.01 ft

Min Node Srf Area 100.00 ft2

(1D):

Energy Switch (1D): Energy

Comment:

Simulation: 25 YEAR 3 DAY

Scenario: DISCHAGE
 Run Date/Time: 4/18/2022 2:23:10 PM
 Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	360.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.00	0.50
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	240.00
0	0	0	55.00	15.00
0	0	0	80.00	240.00
0	0	0	150.00	15.00
0	0	0	182.00	240.00
0	0	0	350.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	240.00
0	0	0	55.00	15.00
0	0	0	80.00	240.00
0	0	0	150.00	15.00
0	0	0	182.00	240.00
0	0	0	350.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set: 25 YEAR

Extern Hydrograph Set:

Curve Number Set:

Green-Ampt Set:

Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR	IA Recovery Time: 24.00 hr
Max Iterations: 6	
Over-Relax Weight 0.50 dec	
Fact:	
dZ Tolerance: 0.00 ft	Smp/Man Basin Rain Global
	Opt:
Max dZ: 1.00 ft	Rainfall Name: ~SFWMD-72
Link Optimizer Tol: 0.00 ft	Rainfall Amount: 11.00 in
	Storm Duration: 72.00 hr
Edge Length Option: Automatic	
	Dflt Damping (1D): 0.01 ft
	Min Node Srf Area 100.00 ft2
	(1D):
	Energy Switch (1D): Energy

Comment:

Simulation: 5 YEAR 1 DAY

Scenario: DISCHAGE
Run Date/Time: 4/18/2022 2:25:00 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	80.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.00	0.50
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	120.00
0	0	0	10.00	15.00

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	30.00	120.00
0	0	0	80.00	120.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	120.00
0	0	0	10.00	15.00
0	0	0	30.00	120.00
0	0	0	80.00	120.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set: 5 YEAR

Extern Hydrograph Set:

Curve Number Set:

Green-Ampt Set:

Vertical Layers Set:

Impervious Set:

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight 0.50 dec

Fact:

dZ Tolerance: 0.00 ft

Max dZ: 1.00 ft

Link Optimizer Tol: 0.00 ft

Edge Length Option: Automatic

IA Recovery Time: 24.00 hr

Smp/Man Basin Rain Global
Opt:

Rainfall Name: ~SCSII-24

Rainfall Amount: 5.50 in

Storm Duration: 24.00 hr

Dflt Damping (1D): 0.01 ft

Min Node Srf Area 100.00 ft2

(1D):

Energy Switch (1D): Energy

Comment:

1D Links - Max

1

Sim	Link Name	Maximum Flow Rate [cfs]	Time to Maximum Flow Rate [hrs]
25 YEAR 3 DAY	DS_FMB-A3	0.39	163.20

1D Nodes - Max

1

Sim	Node Name	Maximum Stage [ft]	Time to Maximum Stage [hrs]
10 YEAR 1 DAY	N_FMB-A1	26.21	24.20
10 YEAR 1 DAY	N_FMB-A2	26.21	24.22
10 YEAR 1 DAY	N_FMB-A3	26.21	24.26
25 YEAR 3 DAY	N_FMB-A1	26.90	72.33
25 YEAR 3 DAY	N_FMB-A2	26.90	72.32
25 YEAR 3 DAY	N_FMB-A3	26.90	72.35
5 YEAR 1 DAY	N_FMB-A1	25.99	12.20
5 YEAR 1 DAY	N_FMB-A2	25.89	24.20
5 YEAR 1 DAY	N_FMB-A3	25.88	24.26

**25-YEAR (BACK TO BACK)
SIMULATION**

Simple Basin: B_FMB-A1

Scenario: DISCHAGE
Node: N_FMB-A1
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.00
Area: 6.49 ac
Curve Number: 92.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: B_FMB-A2

Scenario: DISCHAGE
Node: N_FMB-A2
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.00
Area: 2.67 ac
Curve Number: 87.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: B_FMB-A3

Scenario: DISCHAGE
Node: N_FMB-A3
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.00 cfs

Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.00
Area: 2.14 ac
Curve Number: 89.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Node: N_FMB-A1

Scenario: DISCHAGE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 24.42 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
23.55	0.00	0.00
24.05	0.00	0.00
24.40	0.00	0.00
24.55	0.36	15681.60
25.05	0.48	20908.80
25.55	0.60	26136.00
26.05	0.90	39204.00
26.55	2.85	124146.00
27.05	4.98	216928.80
27.55	5.47	238273.20
28.05	5.75	250470.00
28.55	5.75	250470.00
29.05	5.75	250470.00
29.55	5.75	250470.00
30.05	5.75	250470.00
30.55	5.75	250470.00
31.05	5.75	250470.00
31.55	5.75	250470.00

Comment:

Node: N_FMB-A2

Scenario: DISCHAGE
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 24.42 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
23.55	0.00	0.00
24.05	0.00	0.00
24.40	0.00	0.00
24.55	0.09	3920.40
25.05	0.16	6969.60
25.55	0.23	10018.80
26.05	0.44	19166.40
26.55	1.17	50965.20
27.05	1.95	84942.00
27.55	2.22	96703.20
28.05	2.41	104979.60
28.55	2.41	104979.60
29.05	2.41	104979.60
29.55	2.41	104979.60
30.05	2.41	104979.60
30.55	2.41	104979.60
31.05	2.41	104979.60
31.55	2.41	104979.60

Comment:

Node: N_FMB-A3

Scenario: DISCHAGE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 24.42 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
23.55	1.15	50094.00
24.05	1.19	51836.40
24.40	1.22	53143.20
24.55	1.24	54014.40
25.05	1.28	55756.80
25.55	1.33	57934.80
26.05	1.46	63597.60
26.55	1.68	73180.80
27.05	1.91	83199.60
27.55	2.06	89733.60
28.05	2.14	93218.40
28.55	2.14	93218.40
29.05	2.14	93218.40
29.55	2.14	93218.40

Stage [ft]	Area [ac]	Area [ft2]
30.05	2.14	93218.40
30.55	2.14	93218.40
31.05	2.14	93218.40
31.55	2.14	93218.40

Comment:

Node: N_FMB-TAILWATER

Scenario: DISCHAGE
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 23.55 ft
 Warning Stage: 0.00 ft
 Boundary Stage: N_FMB-TAILWATER

Comment:

Drop Structure Link: DS_FMB-A1		Upstream Pipe	Downstream Pipe
Scenario:	DISCHAGE	Invert: 19.00 ft	Invert: 16.70 ft
From Node:	N_FMB-A1	Manning's N: 0.01	Manning's N: 0.01
To Node:	N_FMB-A3	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 2.50 ft	Max Depth: 2.50 ft
Flow Direction:	Both	Bottom Clip	
Solution:	Combine	Default: 0.00 ft	Default: 0.00 ft
Increments:	0	Op Table:	Op Table:
Pipe Count:	1	Ref Node:	Ref Node:
Damping:	0.00 ft	Manning's N: 0.00	Manning's N: 0.00
Length:	134.00 ft	Top Clip	
FHWA Code:	0	Default: 0.00 ft	Default: 0.00 ft
Entr Loss Coef:	0.00	Op Table:	Op Table:
Exit Loss Coef:	1.00	Ref Node:	Ref Node:
Bend Loss Coef:	0.00	Manning's N: 0.00	Manning's N: 0.00
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Pipe Comment:

Weir Component	
Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.00 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Bottom Clip	
Default: 0.00 ft	
Op Table:	
Ref Node:	
Top Clip	
Default: 0.00 ft	

Invert: 23.55 ft
 Control Elevation: 23.55 ft
 Max Depth: 0.25 ft

Op Table:

Ref Node:

Discharge Coefficients

Weir Default: 3.20

Weir Table:

Orifice Default: 0.60

Orifice Table:

Weir Comment:

Weir Component

Weir: 2

Weir Count: 1

Weir Flow Direction: Both

Damping: 0.00 ft

Weir Type: Horizontal

Geometry Type: Rectangular

Invert: 25.55 ft

Control Elevation: 23.55 ft

Max Depth: 6.58 ft

Max Width: 3.00 ft

Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft

Op Table:

Ref Node:

Top Clip

Default: 0.00 ft

Op Table:

Ref Node:

Discharge Coefficients

Weir Default: 3.20

Weir Table:

Orifice Default: 0.60

Orifice Table:

Weir Comment:

Drop Structure Comment:

Drop Structure Link: DS_FMB-A2

Upstream Pipe

Downstream Pipe

Scenario: DISCHAGE

Invert: 19.00 ft

Invert: 16.70 ft

From Node: N_FMB-A2

Manning's N: 0.01

Manning's N: 0.01

To Node: N_FMB-A3

Geometry: Circular

Geometry: Circular

Link Count: 1

Max Depth: 2.50 ft

Max Depth: 2.50 ft

Flow Direction: Both

Bottom Clip

Solution: Combine

Default: 0.00 ft

Default: 0.00 ft

Increments: 0

Op Table:

Op Table:

Pipe Count: 1

Ref Node:

Ref Node:

Damping: 0.00 ft

Manning's N: 0.00

Manning's N: 0.00

Length: 65.00 ft

Top Clip

FHWA Code: 0

Default: 0.00 ft

Default: 0.00 ft

Entr Loss Coef: 0.00

Op Table:

Op Table:

Exit Loss Coef: 1.00

Ref Node:

Ref Node:

Bend Loss Coef: 0.00

Manning's N: 0.00

Manning's N: 0.00

Bend Location: 0.00 dec

Energy Switch: Energy

Pipe Comment:

Weir Component	
Weir: 1	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.00 ft	Ref Node:
Weir Type: Sharp Crested Vertical	Top Clip
Geometry Type: Circular	Default: 0.00 ft
Invert: 23.55 ft	Op Table:
Control Elevation: 23.55 ft	Ref Node:
Max Depth: 0.25 ft	Discharge Coefficients
	Weir Default: 3.20
	Weir Table:
	Orifice Default: 0.60
	Orifice Table:
Weir Comment:	

Weir Component	
Weir: 2	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.00 ft	Ref Node:
Weir Type: Horizontal	Top Clip
Geometry Type: Rectangular	Default: 0.00 ft
Invert: 25.55 ft	Op Table:
Control Elevation: 23.55 ft	Ref Node:
Max Depth: 4.00 ft	Discharge Coefficients
Max Width: 3.00 ft	Weir Default: 3.20
Fillet: 0.00 ft	Weir Table:
	Orifice Default: 0.60
	Orifice Table:
Weir Comment:	

Drop Structure Comment:

Drop Structure Link: DS_FMB-A3		Upstream Pipe		Downstream Pipe	
Scenario:	DISCHAGE	Invert:	19.00 ft	Invert:	19.00 ft
From Node:	N_FMB-A3	Manning's N:	0.01	Manning's N:	0.01
To Node:	N_FMB-TAILWATE	Geometry: Circular		Geometry: Circular	
	R	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.00	Manning's N:	0.00
Damping:	0.00 ft	Top Clip			
Length:	68.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	

Entr Loss Coef: 0.00	Ref Node:	Ref Node:
Exit Loss Coef: 1.00	Manning's N: 0.00	Manning's N: 0.00
Bend Loss Coef: 0.00		
Bend Location: 0.00 dec		
Energy Switch: Energy		

Pipe Comment:

Weir Component	
Weir: 1	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.00 ft	Ref Node:
Weir Type: Sharp Crested Vertical	Top Clip
Geometry Type: Circular	Default: 0.00 ft
Invert: 23.55 ft	Op Table:
Control Elevation: 23.55 ft	Ref Node:
Max Depth: 0.25 ft	Discharge Coefficients
	Weir Default: 3.20
	Weir Table:
	Orifice Default: 0.60
	Orifice Table:

Weir Comment:

Drop Structure Comment:

Simulation: 10 YEAR 1 DAY

Scenario: DISCHAGE
Run Date/Time: 8/10/2021 11:55:11 AM
Program Version: ICPR4 4.07.08

General				
Run Mode:	Normal			
	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	80.00
	Hydrology [sec]	Surface Hydraulics [sec]		
Min Calculation Time:	30.00	0.50		
Max Calculation Time:		30.00		

Output Time Increments				
Hydrology				
Year	Month	Day	Hour [hr]	Time Increment [min]

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	120.00
0	0	0	10.00	15.00
0	0	0	30.00	120.00
0	0	0	80.00	120.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	120.00
0	0	0	10.00	15.00
0	0	0	30.00	120.00
0	0	0	80.00	120.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set: 5 YEAR

Extern Hydrograph Set:

Curve Number Set:

Green-Ampt Set:

Vertical Layers Set:

Impervious Set:

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight 0.50 dec

Fact:

dZ Tolerance: 0.00 ft

Max dZ: 1.00 ft

Link Optimizer Tol: 0.00 ft

Edge Length Option: Automatic

IA Recovery Time: 24.00 hr

Smp/Man Basin Rain Global
Opt:

Rainfall Name: ~SCSII-24

Rainfall Amount: 6.60 in

Storm Duration: 24.00 hr

Dflt Damping (1D): 0.01 ft

Min Node Srf Area 100.00 ft2

(1D):

Energy Switch (1D): Energy

Comment:

Simulation: 100 YEAR 3 DAY

Scenario: DISCHAGE
 Run Date/Time: 8/10/2021 11:55:12 AM
 Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	360.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.00	0.50
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	240.00
0	0	0	55.00	15.00
0	0	0	80.00	240.00
0	0	0	150.00	60.00
0	0	0	190.00	240.00
0	0	0	360.00	240.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	240.00
0	0	0	55.00	15.00
0	0	0	80.00	240.00
0	0	0	150.00	60.00
0	0	0	190.00	240.00
0	0	0	360.00	240.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set: 25 YEAR

Extern Hydrograph Set:

Curve Number Set:

Green-Ampt Set:

Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR	IA Recovery Time: 24.00 hr
Max Iterations: 6	
Over-Relax Weight 0.50 dec	
Fact:	
dZ Tolerance: 0.00 ft	Smp/Man Basin Rain Global
	Opt:
Max dZ: 1.00 ft	Rainfall Name: ~SFWMD-72
Link Optimizer Tol: 0.00 ft	Rainfall Amount: 14.00 in
	Storm Duration: 72.00 hr
Edge Length Option: Automatic	
	Dflt Damping (1D): 0.01 ft
	Min Node Srf Area 100.00 ft2
	(1D):
	Energy Switch (1D): Energy

Comment:

Simulation: 25 YEAR 3 DAY

Scenario: DISCHAGE
Run Date/Time: 4/18/2022 2:42:30 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	360.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.00	0.50
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	240.00
0	0	0	55.00	15.00

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	80.00	240.00
0	0	0	150.00	15.00
0	0	0	182.00	240.00
0	0	0	350.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	240.00
0	0	0	55.00	15.00
0	0	0	80.00	240.00
0	0	0	150.00	15.00
0	0	0	182.00	240.00
0	0	0	350.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set: 25 YEAR

Extern Hydrograph Set:

Curve Number Set:

Green-Ampt Set:

Vertical Layers Set:

Impervious Set:

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight 0.50 dec

Fact:

dZ Tolerance: 0.00 ft

Max dZ: 1.00 ft

Link Optimizer Tol: 0.00 ft

Edge Length Option: Automatic

IA Recovery Time: 24.00 hr

Smp/Man Basin Rain Global
Opt:

Rainfall Name: ~SFWMD-72

Rainfall Amount: 11.00 in

Storm Duration: 72.00 hr

Dflt Damping (1D): 0.01 ft

Min Node Srf Area 100.00 ft2

(1D):

Energy Switch (1D): Energy

Comment:

Simulation: 5 YEAR 1 DAY

Scenario: DISCHAGE
 Run Date/Time: 8/10/2021 11:55:18 AM
 Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	80.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.00	0.50
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	120.00
0	0	0	10.00	15.00
0	0	0	30.00	120.00
0	0	0	80.00	120.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	120.00
0	0	0	10.00	15.00
0	0	0	30.00	120.00
0	0	0	80.00	120.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set: 5 YEAR

Extern Hydrograph Set:

Curve Number Set:

Green-Ampt Set:

Vertical Layers Set:

Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight 0.50 dec
Fact:
dZ Tolerance: 0.00 ft

Max dZ: 1.00 ft
Link Optimizer Tol: 0.00 ft

Edge Length Option: Automatic

IA Recovery Time: 24.00 hr

Smp/Man Basin Rain Global
Opt:

Rainfall Name: ~SCSII-24
Rainfall Amount: 5.50 in
Storm Duration: 24.00 hr

Dflt Damping (1D): 0.01 ft
Min Node Srf Area 100.00 ft2
(1D):
Energy Switch (1D): Energy

Comment:

1D Links - Max

1

Sim	Link Name	Maximum Flow Rate [cfs]	Time to Maximum Flow Rate [hrs]
25 YEAR 3 DAY	DS_FMB-A3	0.39	163.20

1D Nodes - Max

1

Sim	Node Name	Maximum Stage [ft]	Time to Maximum Stage [hrs]
25 YEAR 3 DAY	N_FMB-A1	26.94	72.33
25 YEAR 3 DAY	N_FMB-A2	26.93	72.33
25 YEAR 3 DAY	N_FMB-A3	26.93	72.35

**100-YEAR
SIMULATION**

Simple Basin: B_FMB-A1

Scenario: DISCHAGE
Node: N_FMB-A1
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.00
Area: 6.49 ac
Curve Number: 92.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: B_FMB-A2

Scenario: DISCHAGE
Node: N_FMB-A2
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.00
Area: 2.67 ac
Curve Number: 87.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: B_FMB-A3

Scenario: DISCHAGE
Node: N_FMB-A3
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.00 cfs

Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.00
Area: 2.14 ac
Curve Number: 89.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Node: N_FMB-A1

Scenario: DISCHAGE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 23.55 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
23.55	0.00	0.00
24.05	0.00	0.00
24.40	0.00	0.00
24.55	0.36	15681.60
25.05	0.48	20908.80
25.55	0.60	26136.00
26.05	0.90	39204.00
26.55	2.85	124146.00
27.05	4.98	216928.80
27.55	5.47	238273.20
28.05	5.75	250470.00
28.55	5.75	250470.00
29.05	5.75	250470.00
29.55	5.75	250470.00
30.05	5.75	250470.00
30.55	5.75	250470.00
31.05	5.75	250470.00
31.55	5.75	250470.00

Comment:

Node: N_FMB-A2

Scenario: DISCHAGE
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 23.55 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
23.55	0.00	0.00
24.05	0.00	0.00
24.40	0.00	0.00
24.55	0.09	3920.40
25.05	0.16	6969.60
25.55	0.23	10018.80
26.05	0.44	19166.40
26.55	1.17	50965.20
27.05	1.95	84942.00
27.55	2.22	96703.20
28.05	2.41	104979.60
28.55	2.41	104979.60
29.05	2.41	104979.60
29.55	2.41	104979.60
30.05	2.41	104979.60
30.55	2.41	104979.60
31.05	2.41	104979.60
31.55	2.41	104979.60

Comment:

Node: N_FMB-A3

Scenario: DISCHAGE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 23.55 ft
Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
23.55	1.15	50094.00
24.05	1.19	51836.40
24.40	1.22	53143.20
24.55	1.24	54014.40
25.05	1.28	55756.80
25.55	1.33	57934.80
26.05	1.46	63597.60
26.55	1.68	73180.80
27.05	1.91	83199.60
27.55	2.06	89733.60
28.05	2.14	93218.40
28.55	2.14	93218.40
29.05	2.14	93218.40
29.55	2.14	93218.40

Stage [ft]	Area [ac]	Area [ft2]
30.05	2.14	93218.40
30.55	2.14	93218.40
31.05	2.14	93218.40
31.55	2.14	93218.40

Comment:

Node: N_FMB-TAILWATER

Scenario: DISCHAGE
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 23.55 ft
 Warning Stage: 0.00 ft
 Boundary Stage: N_FMB-TAILWATER

Comment:

Drop Structure Link: DS_FMB-A1		Upstream Pipe	Downstream Pipe
Scenario:	DISCHAGE	Invert: 19.00 ft	Invert: 16.70 ft
From Node:	N_FMB-A1	Manning's N: 0.01	Manning's N: 0.01
To Node:	N_FMB-A3	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 2.50 ft	Max Depth: 2.50 ft
Flow Direction:	Both	Bottom Clip	
Solution:	Combine	Default: 0.00 ft	Default: 0.00 ft
Increments:	0	Op Table:	Op Table:
Pipe Count:	1	Ref Node:	Ref Node:
Damping:	0.00 ft	Manning's N: 0.00	Manning's N: 0.00
Length:	134.00 ft	Top Clip	
FHWA Code:	0	Default: 0.00 ft	Default: 0.00 ft
Entr Loss Coef:	0.00	Op Table:	Op Table:
Exit Loss Coef:	1.00	Ref Node:	Ref Node:
Bend Loss Coef:	0.00	Manning's N: 0.00	Manning's N: 0.00
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Pipe Comment:

Weir Component	
Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.00 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Bottom Clip	
Default: 0.00 ft	
Op Table:	
Ref Node:	
Top Clip	
Default: 0.00 ft	

Invert: 23.55 ft
Control Elevation: 23.55 ft
Max Depth: 0.25 ft

Op Table:

Ref Node:

Discharge Coefficients

Weir Default: 3.20

Weir Table:

Orifice Default: 0.60

Orifice Table:

Weir Comment:

Weir Component

Weir: 2

Weir Count: 1

Weir Flow Direction: Both

Damping: 0.00 ft

Weir Type: Horizontal

Geometry Type: Rectangular

Invert: 25.55 ft

Control Elevation: 23.55 ft

Max Depth: 6.58 ft

Max Width: 3.00 ft

Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft

Op Table:

Ref Node:

Top Clip

Default: 0.00 ft

Op Table:

Ref Node:

Discharge Coefficients

Weir Default: 3.20

Weir Table:

Orifice Default: 0.60

Orifice Table:

Weir Comment:

Drop Structure Comment:

Drop Structure Link: DS_FMB-A2

Upstream Pipe

Downstream Pipe

Scenario: DISCHAGE

Invert: 19.00 ft

Invert: 16.70 ft

From Node: N_FMB-A2

Manning's N: 0.01

Manning's N: 0.01

To Node: N_FMB-A3

Geometry: Circular

Geometry: Circular

Link Count: 1

Max Depth: 2.50 ft

Max Depth: 2.50 ft

Flow Direction: Both

Bottom Clip

Solution: Combine

Default: 0.00 ft

Default: 0.00 ft

Increments: 0

Op Table:

Op Table:

Pipe Count: 1

Ref Node:

Ref Node:

Damping: 0.00 ft

Manning's N: 0.00

Manning's N: 0.00

Length: 65.00 ft

Top Clip

FHWA Code: 0

Default: 0.00 ft

Default: 0.00 ft

Entr Loss Coef: 0.00

Op Table:

Op Table:

Exit Loss Coef: 1.00

Ref Node:

Ref Node:

Bend Loss Coef: 0.00

Manning's N: 0.00

Manning's N: 0.00

Bend Location: 0.00 dec

Energy Switch: Energy

Pipe Comment:

Weir Component	
Weir: 1	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.00 ft	Ref Node:
Weir Type: Sharp Crested Vertical	Top Clip
Geometry Type: Circular	Default: 0.00 ft
Invert: 23.55 ft	Op Table:
Control Elevation: 23.55 ft	Ref Node:
Max Depth: 0.25 ft	Discharge Coefficients
	Weir Default: 3.20
	Weir Table:
	Orifice Default: 0.60
	Orifice Table:
Weir Comment:	

Weir Component	
Weir: 2	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.00 ft	Ref Node:
Weir Type: Horizontal	Top Clip
Geometry Type: Rectangular	Default: 0.00 ft
Invert: 25.55 ft	Op Table:
Control Elevation: 23.55 ft	Ref Node:
Max Depth: 4.00 ft	Discharge Coefficients
Max Width: 3.00 ft	Weir Default: 3.20
Fillet: 0.00 ft	Weir Table:
	Orifice Default: 0.60
	Orifice Table:
Weir Comment:	

Drop Structure Comment:

Drop Structure Link: DS_FMB-A3		Upstream Pipe	Downstream Pipe
Scenario: DISCHAGE		Invert: 19.00 ft	Invert: 19.00 ft
From Node: N_FMB-A3		Manning's N: 0.01	Manning's N: 0.01
To Node: N_FMB-TAILWATE		Geometry: Circular	Geometry: Circular
R		Max Depth: 2.50 ft	Max Depth: 2.50 ft
Link Count: 1		Bottom Clip	
Flow Direction: None		Default: 0.00 ft	Default: 0.00 ft
Solution: Combine		Op Table:	Op Table:
Increments: 0		Ref Node:	Ref Node:
Pipe Count: 1		Manning's N: 0.00	Manning's N: 0.00
Damping: 0.00 ft		Top Clip	
Length: 68.00 ft		Default: 0.00 ft	Default: 0.00 ft
FHWA Code: 0		Op Table:	Op Table:

Entr Loss Coef: 0.00	Ref Node:	Ref Node:
Exit Loss Coef: 1.00	Manning's N: 0.00	Manning's N: 0.00
Bend Loss Coef: 0.00		
Bend Location: 0.00 dec		
Energy Switch: Energy		

Pipe Comment:

Weir Component	
Weir: 1	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.00 ft	Ref Node:
Weir Type: Sharp Crested Vertical	Top Clip
Geometry Type: Circular	Default: 0.00 ft
Invert: 23.55 ft	Op Table:
Control Elevation: 23.55 ft	Ref Node:
Max Depth: 0.25 ft	Discharge Coefficients
	Weir Default: 3.20
	Weir Table:
	Orifice Default: 0.60
	Orifice Table:

Weir Comment:

Drop Structure Comment:

Simulation: 10 YEAR 1 DAY

Scenario: DISCHAGE
Run Date/Time: 3/10/2022 10:37:07 AM
Program Version: ICPR4 4.07.08

General				
Run Mode:	Normal			
	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	80.00
	Hydrology [sec]	Surface Hydraulics [sec]		
Min Calculation Time:	30.00	0.50		
Max Calculation Time:		30.00		

Output Time Increments				
Hydrology				
Year	Month	Day	Hour [hr]	Time Increment [min]

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	120.00
0	0	0	10.00	15.00
0	0	0	30.00	120.00
0	0	0	80.00	120.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	120.00
0	0	0	10.00	15.00
0	0	0	30.00	120.00
0	0	0	80.00	120.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set: 5 YEAR

Extern Hydrograph Set:

Curve Number Set:

Green-Ampt Set:

Vertical Layers Set:

Impervious Set:

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight 0.50 dec

Fact:

dZ Tolerance: 0.00 ft

Max dZ: 1.00 ft

Link Optimizer Tol: 0.00 ft

Edge Length Option: Automatic

IA Recovery Time: 24.00 hr

Smp/Man Basin Rain Global
Opt:

Rainfall Name: ~SCSII-24

Rainfall Amount: 6.60 in

Storm Duration: 24.00 hr

Dflt Damping (1D): 0.01 ft

Min Node Srf Area 100.00 ft2

(1D):

Energy Switch (1D): Energy

Comment:

Simulation: 100 YEAR 3 DAY

Scenario: DISCHAGE
 Run Date/Time: 4/18/2022 2:50:31 PM
 Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	360.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.00	0.50
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	240.00
0	0	0	55.00	15.00
0	0	0	80.00	240.00
0	0	0	150.00	60.00
0	0	0	190.00	240.00
0	0	0	360.00	240.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	240.00
0	0	0	55.00	15.00
0	0	0	80.00	240.00
0	0	0	150.00	60.00
0	0	0	190.00	240.00
0	0	0	360.00	240.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set: 25 YEAR

Extern Hydrograph Set:

Curve Number Set:

Green-Ampt Set:

Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR	IA Recovery Time: 24.00 hr
Max Iterations: 6	
Over-Relax Weight 0.50 dec	
Fact:	
dZ Tolerance: 0.00 ft	Smp/Man Basin Rain Global
	Opt:
Max dZ: 1.00 ft	Rainfall Name: ~SFWMD-72
Link Optimizer Tol: 0.00 ft	Rainfall Amount: 14.00 in
	Storm Duration: 72.00 hr
Edge Length Option: Automatic	
	Dflt Damping (1D): 0.01 ft
	Min Node Srf Area 100.00 ft2
	(1D):
	Energy Switch (1D): Energy

Comment:

Simulation: 25 YEAR 3 DAY

Scenario: DISCHAGE
Run Date/Time: 3/10/2022 10:37:34 AM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	360.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.00	0.50
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	240.00
0	0	0	55.00	15.00

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	80.00	240.00
0	0	0	150.00	15.00
0	0	0	182.00	240.00
0	0	0	350.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	240.00
0	0	0	55.00	15.00
0	0	0	80.00	240.00
0	0	0	150.00	15.00
0	0	0	182.00	240.00
0	0	0	350.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set: 25 YEAR

Extern Hydrograph Set:

Curve Number Set:

Green-Ampt Set:

Vertical Layers Set:

Impervious Set:

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight 0.50 dec

Fact:

dZ Tolerance: 0.00 ft

Max dZ: 1.00 ft

Link Optimizer Tol: 0.00 ft

Edge Length Option: Automatic

IA Recovery Time: 24.00 hr

Smp/Man Basin Rain Global
Opt:

Rainfall Name: ~SFWMD-72

Rainfall Amount: 11.00 in

Storm Duration: 72.00 hr

Dflt Damping (1D): 0.01 ft

Min Node Srf Area 100.00 ft2

(1D):

Energy Switch (1D): Energy

Comment:

Simulation: 5 YEAR 1 DAY

Scenario: DISCHAGE
 Run Date/Time: 3/10/2022 10:38:57 AM
 Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	80.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.00	0.50
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	120.00
0	0	0	10.00	15.00
0	0	0	30.00	120.00
0	0	0	80.00	120.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	120.00
0	0	0	10.00	15.00
0	0	0	30.00	120.00
0	0	0	80.00	120.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set: 5 YEAR
 Extern Hydrograph Set:
 Curve Number Set:

Green-Ampt Set:
 Vertical Layers Set:
 Impervious Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.00 hr
Max Iterations:	6		
Over-Relax Weight	0.50 dec		
Fact:			
dZ Tolerance:	0.00 ft	Smp/Man Basin Rain	Global
		Opt:	
Max dZ:	1.00 ft	Rainfall Name:	~SCSII-24
Link Optimizer Tol:	0.00 ft	Rainfall Amount:	5.50 in
		Storm Duration:	24.00 hr
Edge Length Option:	Automatic		
		Dflt Damping (1D):	0.01 ft
		Min Node Srf Area	100.00 ft2
		(1D):	
		Energy Switch (1D):	Energy

Comment:

1D Nodes - Max

1

Sim	Node Name	Maximum Stage [ft]	Time to Maximum Stage [hrs]
100 YEAR 3 DAY	N_FMB-A1	27.26	356.18
100 YEAR 3 DAY	N_FMB-A2	27.26	358.00
100 YEAR 3 DAY	N_FMB-A3	27.26	131.49

Appendix C: SFWMD Isohyetal Maps

ENVIRONMENTAL RESOURCE PERMIT APPLICANT'S HANDBOOK VOLUME II
Effective: MAY 22, 2016

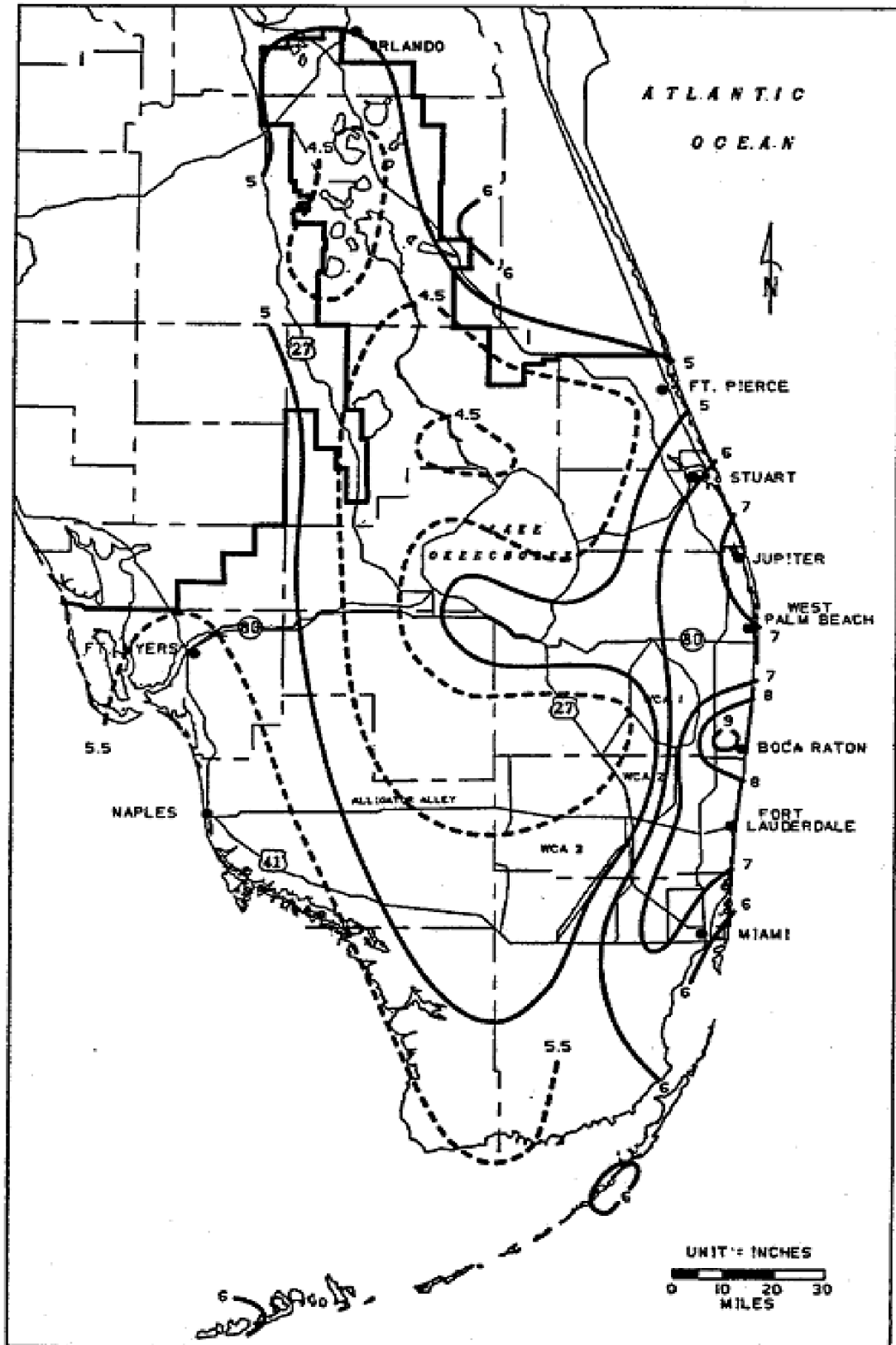


FIGURE C-3. 1-DAY RAINFALL: 5-YEAR RETURN PERIOD

ENVIRONMENTAL RESOURCE PERMIT APPLICANT'S HANDBOOK VOLUME II
Effective: MAY 22, 2016

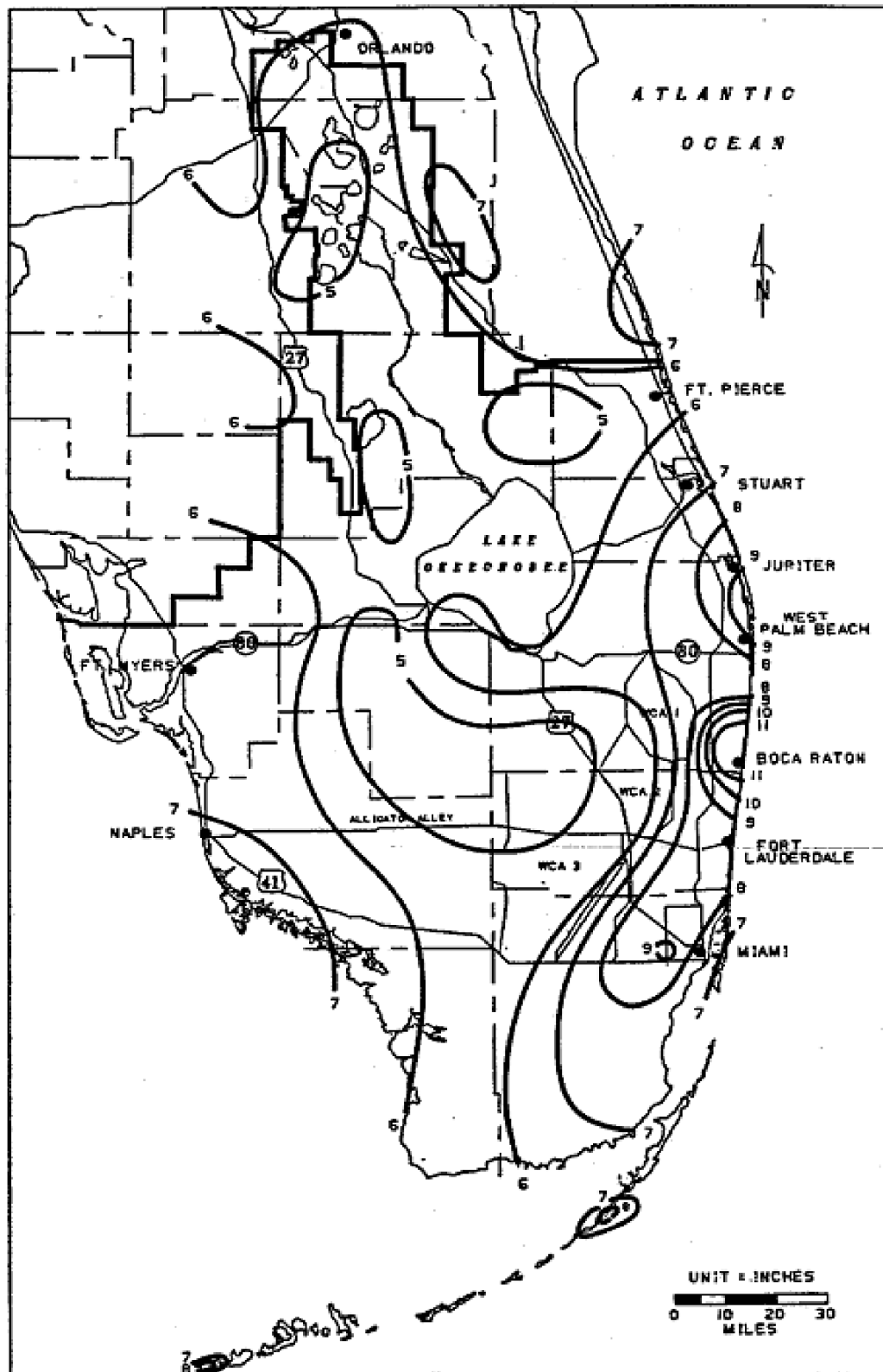


FIGURE C-4. 1-DAY RAINFALL: 10-YEAR RETURN PERIOD

ENVIRONMENTAL RESOURCE PERMIT APPLICANT'S HANDBOOK VOLUME II
Effective: MAY 22, 2016

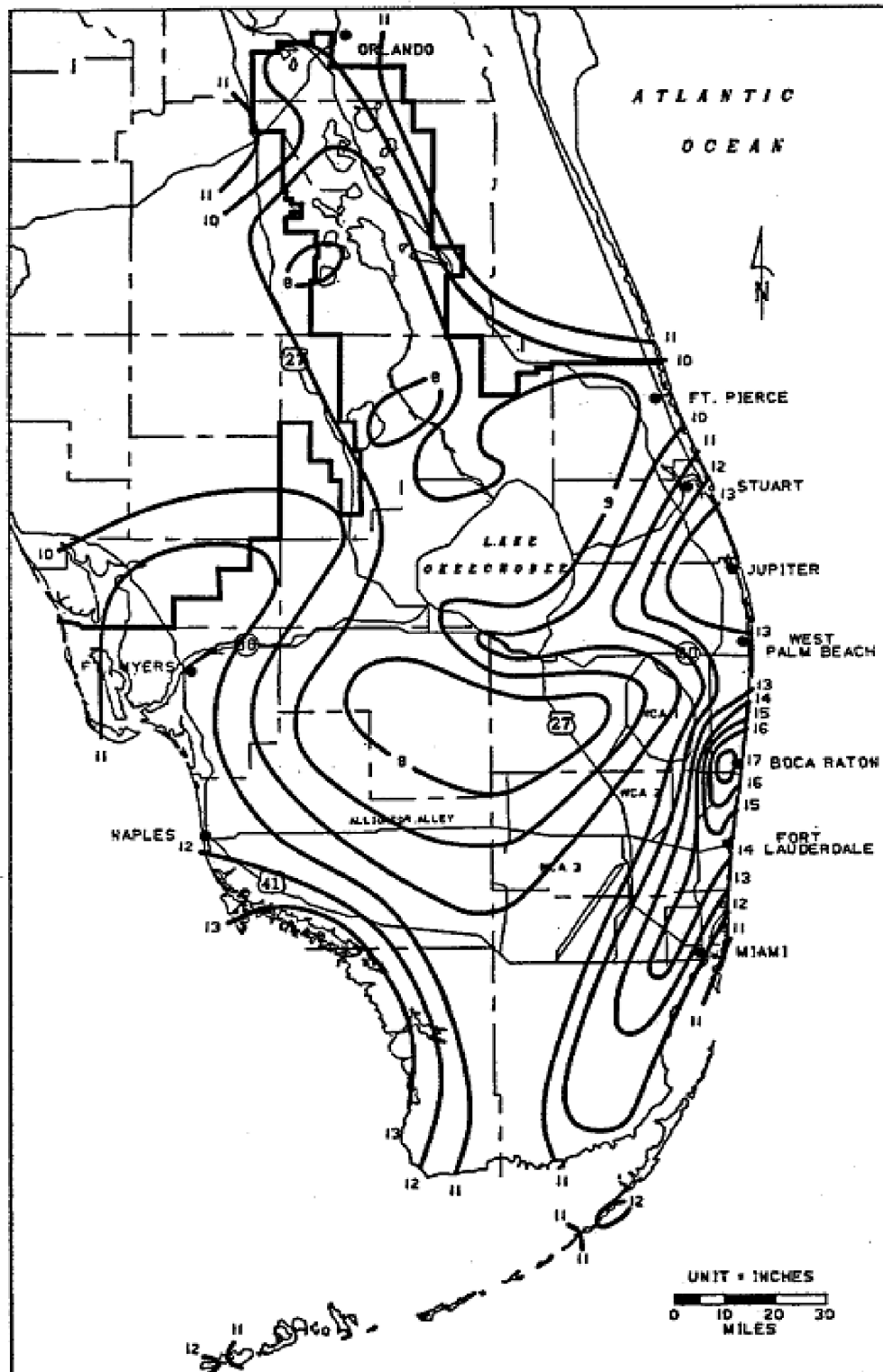


FIGURE C-8. 3-DAY RAINFALL: 25-YEAR RETURN PERIOD

ENVIRONMENTAL RESOURCE PERMIT APPLICANT'S HANDBOOK VOLUME II
Effective: MAY 22, 2016

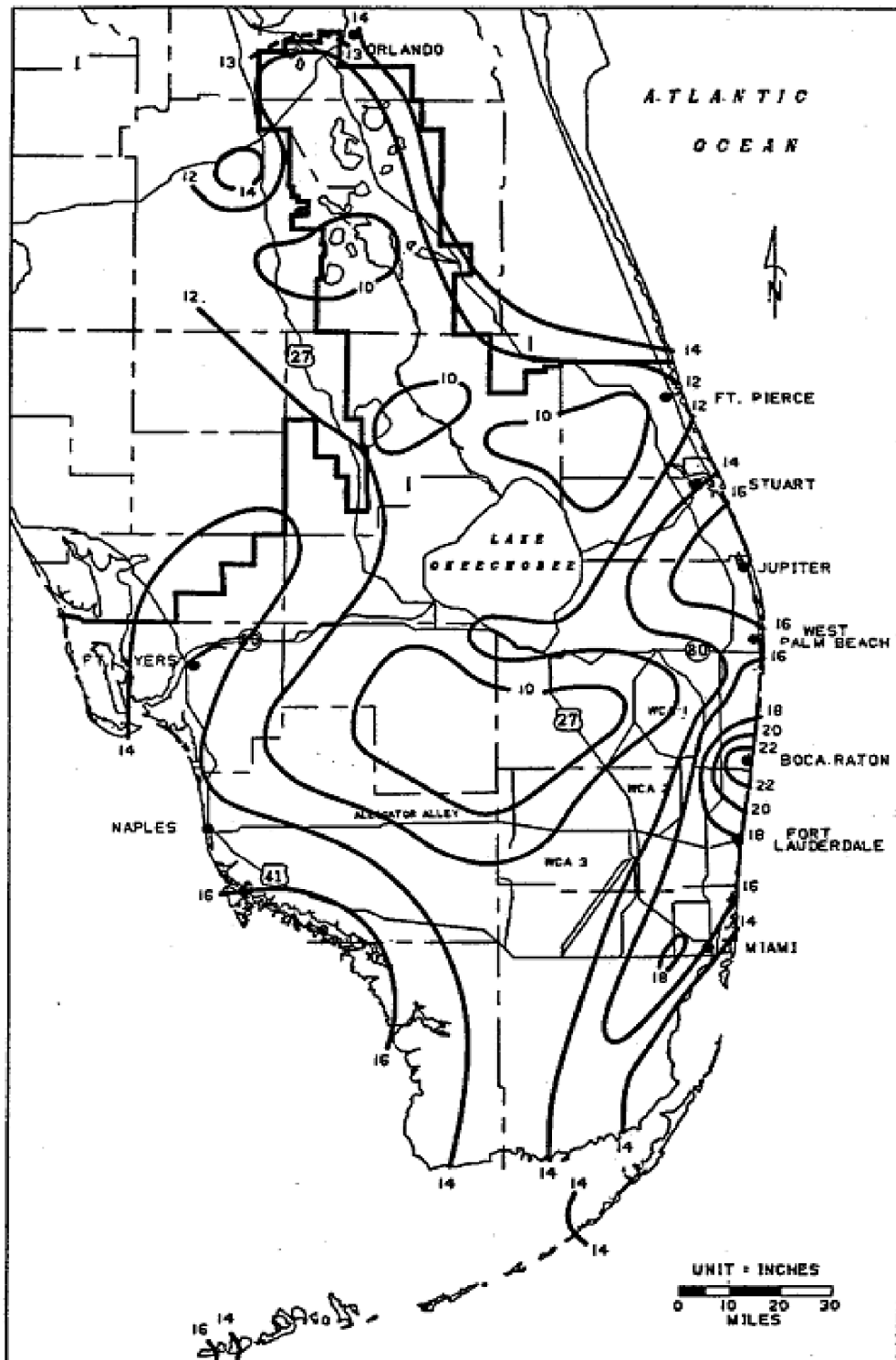


FIGURE C-9. 3-DAY RAINFALL: 100-YEAR RETURN PERIOD