Proverbs 3:5-7

Blair A. Foley, P.E.
Civil Engineer / Development Consultant

# Engineering Report

For City of Marco Island

Project:

Marco Luxe
138 S. Barfield Dr.
Marco Island, FL 34145
S9/ T52S/ R26E

Owner:

Marco Luxe LLC
1083 N Collier Blvd., #340
Marco Island, FL 34145

Prepared by:

Blair Foley, PE

April 30, 2024

Blair A Foley

Digitally signed by Blair A Foley
Date: 2024.05.03 14:35:01 -04'00'

## Introduction

The project is +/- 1.64 acres located at 138-168 S. Barfield Dr. on Marco Island. The four lots are currently vacant and zoned C-3. The proposed development is 20 car storage units with the necessary water, sewer, and fire services. The site does not have a SFWMD ERP, so the storm water management system will be permitted through the FDEP 10-2 self-certification.

## Potable Water

The project will require a hot tap into the water main on the west or property side of S. Barfield Dr. that will provide water service to the potable, irrigation, and fire systems.

The proposed 1" potable meter size is based on the attached Collier County meter sizing attached in the appendix

Irrigation water will be provided by a separate irrigation meter.

## Fire Flow Requirements

FBC TYPE IIB, SPRINKLED

Building 1: 6,909 SF
Building 2: 13,991 SF
Building 3: 6,909 SF
Total 27,809 SF

According to NFPA Table 18.4.5.2.1 Fire Flow Requirement= 3,500 GPM FOR 3 HRS
75% Reduction Allowed for Sprinkled Buildings OR 1000 GPM Min = **1,000 GPM**

## Fire Equipment

The site is more than 300' long, so two fire hydrants are proposed, one at each entrance from S. Barfield Dr. An FDC and fire BFP assembly area shown within 50' of the south fire hydrant.

## Sewer

The site has existing property line cleanouts at each parcel. The flows from the three buildings will be combined into a 6" sewer lateral connected to an existing cleanout. The unused cleanouts will be capped at grade. Proposed flows are as shown below:

**Proposed Sewer Demand:**
Sewer District-South Barfield

According to FAC 64E-6.008:
Warehouse, Self-storage ($\leq$ 200 units) rate: 1 GPD/ unit

Total Average Daily Flow = 1 GPD x 20 units = 20 GPD

*Assume max peaking factor of 4.5*
Total Peak Hour Flow = 20 GPD x 4.5 = 90 GPD = 0.1 GPM

**6" SS Lateral Capacity:**
Maximum Capacity of 6" SS Lateral using Manning's Formula in a full pipe
n = 0.013 Roughness Coefficient
A = Wetted Area, $ft^2$
R = Hydraulic Radius, ft
S= slope, ft/ft

Q/max =(1.49/n) A $(R)^{2/3}$ $(S)^{½}$ /= (1.49/0.013) (0.20) $(0.13)^{2/3}(0.0104)^{1/2}$= 0.57 cfs = 255 GPM
The existing 6" SS lateral has sufficient capacity to handle the peak flow.

**Storm Water Management**

The existing site is 1.64 acres of vacant, cleared land. The proposed development has the following composition:

| **SITE SUMMARY TABLE** | | | | | |
|---|---|---|---|---|---|
| TOTAL SITE | | | 1.64 | AC | |
| **PROPOSED SITE SUMMARY** | | | | | |
| BUILDING FOOTPRINT | 27,900 | SF | 0.64 | AC | 39.1% |
| SIDEWALK/CONCRETE | 1,780 | SF | 0.04 | AC | 2.5% |
| PAVEMENT (VUA) | 18,900 | SF | 0.43 | AC | 26.5% |
| *IMPERVIOUS SUBTOTAL* | *48,580* | *SF* | *1.12* | *AC* | *68.0%* |
| | | | | | |
| ***OPEN SPACE:*** | | | | | |
| | | | | | |
| GREEN SPACE | 16,493 | SF | 0.38 | AC | 23.1% |
| DRY DETENTION | 6,365 | SF | 0.15 | AC | 8.9% |
| *PERVIOUS SUBTOTAL* | *22,858* | *SF* | *0.52* | *AC* | *32.0%* |
| | | | | | |
| TOTAL | 71,438 | SF | 1.64 | AC | 100% |

The water management system was designed for dry detention according to SFWMD requirements for water quantity and quality.

**Stormwater Quality-Volumetric Requirements**

In this case, the water quality is determined by 2.5" times the percentage of imperviousness. A reduction of 25% was allowed for dry detention, but an increase of 150% was used for discharge to impaired waters for the Rookery Bay watershed. The site design provides excess water quality volume. See the calculations below:

| WATER QUALITY DETENTION VOLUME REQUIRED | | |
|---|---|---|
| **Basin Area =** | 1.64 ac | |
| First one (1) inch of runoff over basin: | | |
| 1" *1.64 ac x 1'/12" = | **0.14** | ac ft |
| 2.5 Inches Times the Percentage of Imperviousness: | | |
| Site Area for Water Quality Treatment = Basin Area - Roof = | 1.00 | ac |
| Impervious Area for W.Q. Treatment = Site Area for W.Q. -Total Pervious Area = | 0.47 | ac |
| Percent Impervious = Impervious Area/Site Area = | 47.50 | % |
| Volume to be Treated = 2.5" x Percent Impervious x Basin Area = | **0.16** | ac ft |
| **2.5 Inches Times the Percentage of Imperviousness Governs:** | 0.162 | ac ft |
| 25% reduction for using Dry Detention = | **0.12** | ac ft |
| 150% increase for discharge to Impaired Waters = | **0.18** | ac ft |

| WATER QUALITY VOLUME PROVIDED | | | | | | |
|---|---|---|---|---|---|---|
| Pipe Storage | | | | | | |
| 251 | LF | 8 | in | Volume = | 88 | CF |
| 403 | LF | 15 | in | Volume = | 495 | CF |
| | | | | **Total Pipe Volume =** | **582** | **CF** |
| Swale Storage | | | | | | |
| | | | | Swale 1 Volume = | 3360 | CF |
| | | | | Swale 2 Volume = | 5820 | CF |
| | | | | Swale 3 Volume = | 3450 | CF |
| | | | | **Swale Volume from 2.2' to 5.2' =** | **12,630** | **CF** |
| | | | | **Total Volume =** | **13,212** | **CF** |
| | | | | | **0.30** | **AC FT** |
| *Water Quality Detention occurs at* | | | | 3.1' | FT | |

**Stormwater Quality-Flood Control**

ICPR was used to model the flood stages and discharge rates from the site before and after the proposed development.

**Pre Vs Post Development**

The 25-year, 72-hour storm event was used to compare the pre vs post-development storm events to ensure the post development discharge rate is less than the pre-development rate as shown in the results table below.

| STORMWATER QUALITY - ICPR FLOOD ROUTING RESULTS (PRE VS POST) | | | |
|---|---|---|---|
| **RAINFALL EVENT** | **RAINFALL** | **MAX. DISCHARGE** | |
| | in. | cfs | |
| | | PRE | POST |
| 25 Year, 72 Hour | 12.5 | 6.03 | 4.97 |

### Flood Routing Results

The following post-development flood routing results were used to establish the site design conditions.

| STORMWATER QUALITY - ICPR FLOOD ROUTING RESULTS | | | |
|---|---|---|---|
| **RAINFALL EVENT** | **RAINFALL** | **MAX STAGE** | **MAX. DISCHARGE** |
| | in. | ft., NAVD | cfs |
| 10 Year, 24 Hour | 7.2 | 4.15 | 0.40 |
| 25 Year, 72 Hour | 12.5 | 4.61 | 4.97 |
| 100 Year, 72 Hour | 16 | 7.12 | ZERO |

FEMA BFE (FT-NAVD) ZONE AE = 10.0’ NAVD

### Proposed Design Conditions

- Min. parking lot elevation (≥10 Year, 24 Hour) = 4.15’ NAVD (alley parking)
- Min. road elevation (≥ 25 Year, 72 Hour) = 5.70’ NAVD
- Min. perimeter berm (≥ 25 Year, 72 Hour) = 4.70’ NAVD
- Min. finished floor elevation (≥ 100 Year, 72 Hour or BFE +1) = 8.75’ NAVD with dry flood proofing to 11.17’ NAVD
- Control elevation/WSWT = 1.20’ NAVD

### Control Structure

The control structure is located in the north swale (Swale #1) and connects to a drainage structure in the ROW of S Barfield Dr. A detail is shown on the civil site plans.

Control Structure Discharge:

3” Bleeder Inv. El. = 1.20’ NAVD
Grate El. = 4.2’ NAVD

The ICPR modeling is available in the appendix.

## VERIFY STORM PIPE SIZES - SEE ATTACHED BASIN MAP

I. **Given: Rational Formula Calculation**

*Use Detention EL for Conservative Estimate in Lieu of Pipe End.*

Q = CIA =0.85(3.9)A

| | | | | |
|---|---|---|---|---|
| Basin 1 | A = | 0.03 | Q = | 0.09 cfs |
| Basin 2 | A = | 0.03 | Q = | 0.09 cfs |
| Basin 3 | A = | 0.03 | Q = | 0.09 cfs |
| Basin 4 | A = | 0.18 | Q = | 0.59 cfs |
| Basin 5 | A = | 0.19 | Q = | 0.62 cfs |
| Basin 6 | A = | 0.03 | Q = | 0.09 cfs |
| Basin 7 | A = | 0.18 | Q = | 0.59 cfs |
| Basin 8 | A = | 0.19 | Q = | 0.62 cfs |
| Basin 9 | A = | 0.03 | Q = | 0.09 cfs |
| Basin 10 | A = | 0.03 | Q = | 0.09 cfs |
| Basin 11 | A = | 0.03 | Q = | 0.09 cfs |
| Basin 12 | A = | 0.03 | Q = | 0.09 cfs |

II. **Calculate Head Loss:**

| FT | IN | | FT | |
|---|---|---|---|---|
| 54 | 8 | HL = | 0.002 | $Q_{Basin\ 1}$ |
| 48 | 8 | HL = | 0.007 | $Q_{Basin\ 1\ \&\ 2}$ |
| 21 | 8 | HL = | 0.006 | $Q_{Basin\ 1\text{-}3}$ |
| | | TOTAL HEAD LOSS = | 0.015 | |

Pipe End/Det. Elevations = 2.2 + 0.02 = 2.22

| | | | | |
|---|---|---|---|---|
| 57 | 15 | HL = | 0.003 | $Q_{basin\ 4}$ CB4 TO CB5 |
| 50 | 15 | HL = | 0.011 | $Q_{Basin\ 4\&5}$ CB5 to CB6 |
| 33 | 15 | HL = | 0.004 | 1/2 $Q_{basin\ 4\text{-}6}$ CB6 to MES3 |
| 47 | 15 | HL = | 0.006 | 1/2 $Q_{basin\ 4\text{-}6}$ CB6 to MES4 |
| | | TOTAL HEAD LOSS = | 0.024 | |

Pipe End/Det. Elevations = 2.2 + 0.03 = 2.22

| | | | | |
|---|---|---|---|---|
| 57 | 15 | HL = | 0.003 | $Q_{basin\ 7}$ CB1 to CB2 |
| 50 | 15 | HL = | 0.011 | $Q_{Basin\ 7\&8}$ CB2 to CB3 |
| 49 | 15 | HL = | 0.006 | 1/2 $Q_{basin\ 7\text{-}9}$ CB3 to MES1 |
| 60 | 15 | HL = | 0.007 | 1/2 $Q_{basin\ 7\text{-}9}$ CB3 to MES2 |
| | | TOTAL HEAD LOSS = | 0.027 | |

Pipe End/Det. Elevations = 2.2 + 0.03 = 2.23

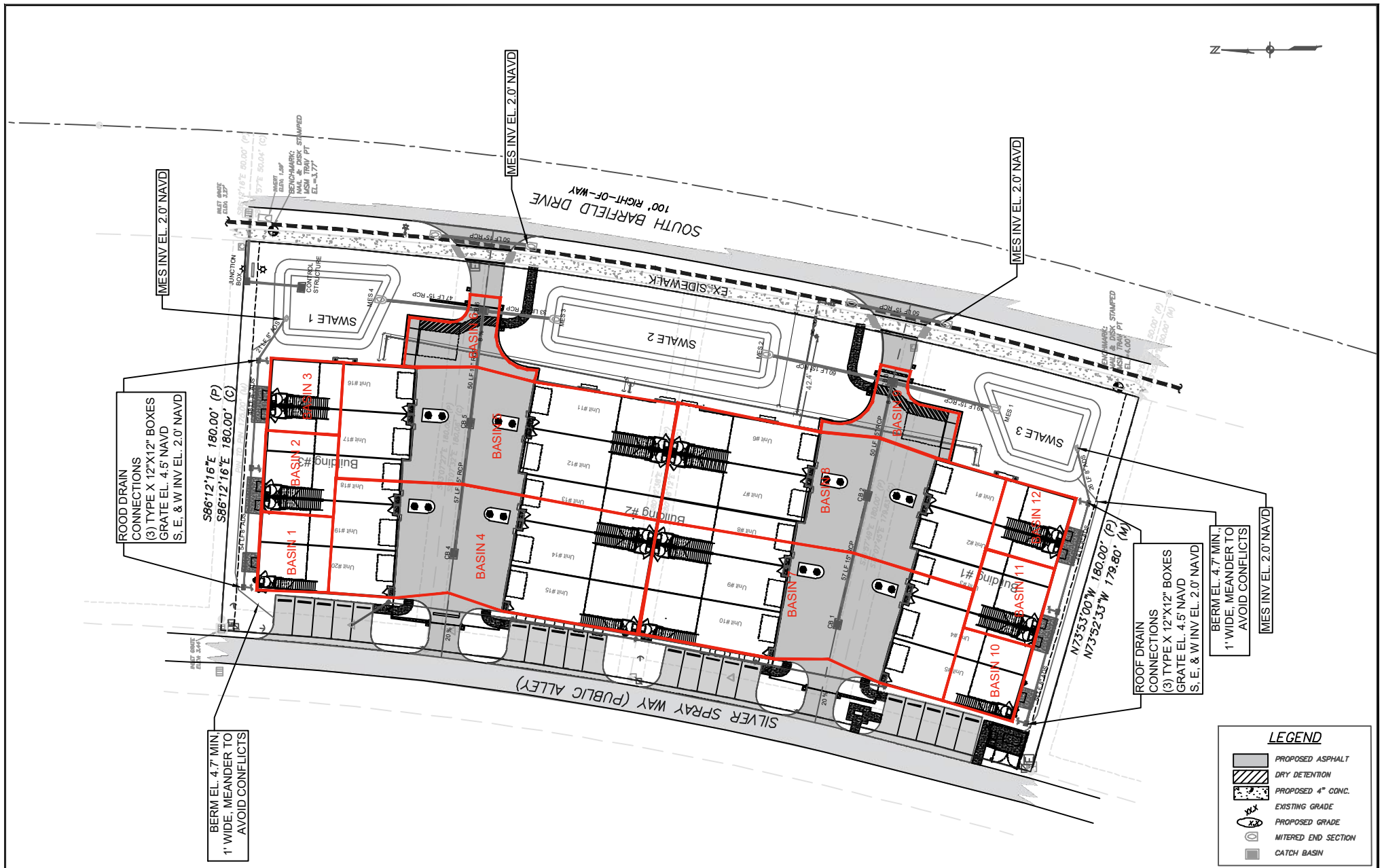
| | | | | |
|---|---|---|---|---|
| 54 | 8 | HL = | 0.002 | $Q_{Basin\ 10}$ |
| 48 | 8 | HL = | 0.007 | $Q_{Basin\ 10\ \&\ 11}$ |
| 26 | 8 | HL = | 0.008 | $Q_{Basin\ 10\text{-}12}$ |

TOTAL HEAD LOSS = 0.016

Pipe End/Det. Elevations = 2.2 + 0.02 = 2.22

III. **Conclusion:**

The minimum proposed grate elevation is 5.70' which is still well above the highest stage shown above, 2.23 ft NAVD, therefore the Grate Elevations are OK.




| | | | | |
|---|---|---|---|---|
| DESIGN BAF | | NOT VALID FOR CONSTRUCTION UNLESS SIGNED IN THIS BLOCK | Blair A. Foley, P.E., LLC<br>Civil Engineer / Development Consultant<br>120 Edgemere Way South - Naples, Fl. 34105<br>Phone (239) 263-1222 Cell (239) 289-4900 Fax (239) 263-0472 E-mail fols000@aol.com | CLIENT: MARCO LUXE LLC<br>MARCO LUXE<br>Collier County, Florida | SITE PLAN | CERT. NO. |
| DRAWN AOM | | | | | | SCALE NTS |
| CHECKED BAF | | | | | | DATE 4/9/2024 |
| D.E. | NO. DATE REVISION APPD BY | | | | | SHT 3 OF 7 |

Node Max Conditions [Scenario1]

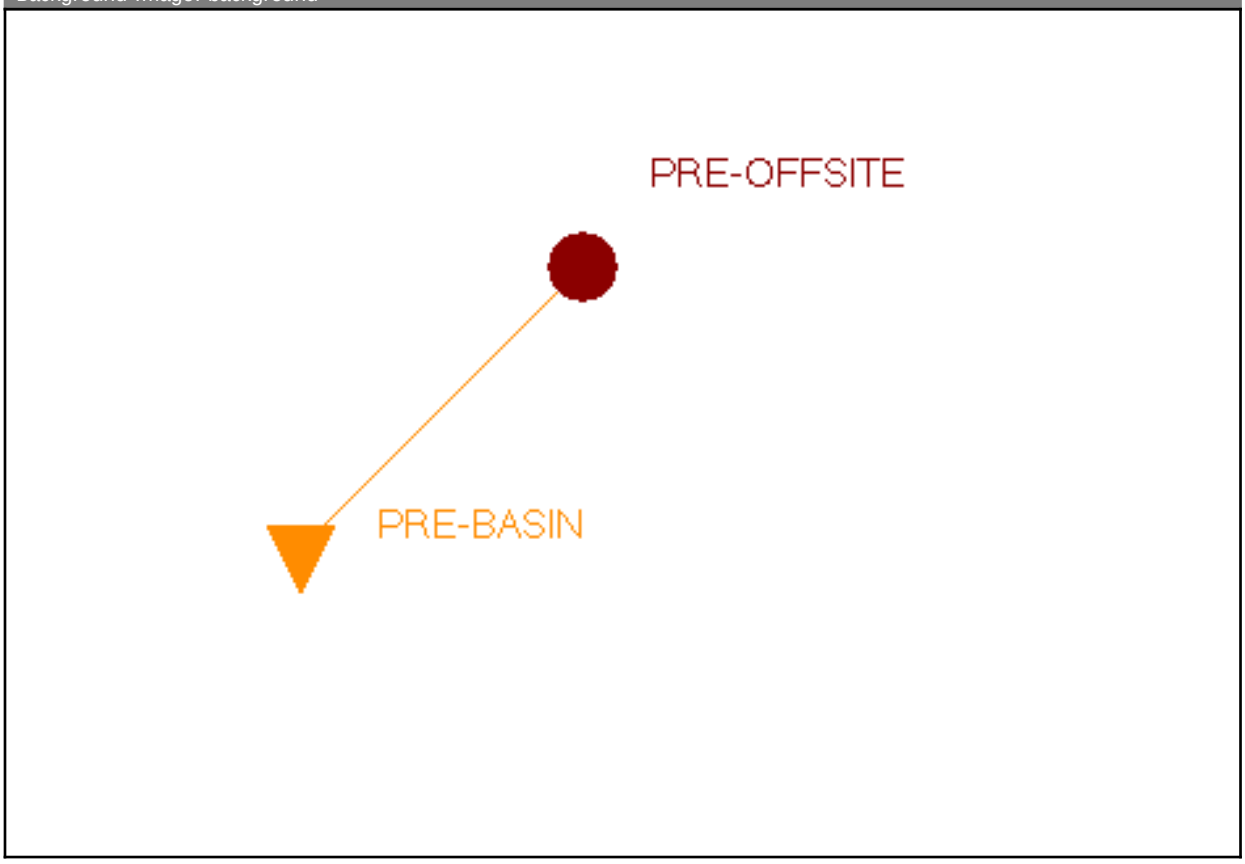
| Node Name | Sim Name | Warning Stage [ft] | Max Stage [ft] | Min/Max Delta Stage [ft] | Max Total Inflow [cfs] | Max Total Outflow [cfs] | Max Surface Area [ft2] |
|---|---|---|---|---|---|---|---|
| PRE-OFFSITE | 025Y-72H | 7.00 | 1.20 | 0.0000 | 6.03 | 0.00 | 0 |

Simple Basin: PRE-BASIN

| | |
|---|---|
| Scenario: | Scenario1 |
| Node: | PRE-OFFSITE |
| Hydrograph Method: | NRCS Unit Hydrograph |
| Infiltration Method: | Curve Number |
| Time of Concentration: | 15.0000 min |
| Max Allowable Q: | 0.00 cfs |
| Time Shift: | 0.0000 hr |
| Unit Hydrograph: | UH256 |
| Peaking Factor: | 256.0 |
| Area: | 1.6400 ac |
| Curve Number: | 69.0 |
| % Impervious: | 0.00 |
| % DCIA: | 0.00 |
| % Direct: | 0.00 |
| Rainfall Name: | |

Comment:

Background Image: background




Simulation: 025Y-72H

| | |
|---|---|
| Scenario: | Scenario1 |
| Run Date/Time: | 4/29/2024 4:47:21 PM |
| Program Version: | ICPR4 4.07.08 |

General

| Run Mode: | Normal | | | |
|---|---|---|---|---|
| | Year | Month | Day | Hour [hr] |
| Start Time: | 0 | 0 | 0 | 0.0000 |
| End Time: | 0 | 0 | 0 | 72.0000 |

| | Hydrology [sec] | Surface Hydraulics [sec] |
|---|---|---|
| Min Calculation Time: | 60.0000 | 0.1000 |
| Max Calculation Time: | | 30.0000 |

Output Time Increments

## Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

## Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

## Restart File

Save Restart: False

## Resources & Lookup Tables

### Resources

Rainfall Folder:

Unit Hydrograph Folder:

### Lookup Tables

Boundary Stage Set:
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 Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~SFWMD-72
Rainfall Amount: 11.50 in
Storm Duration: 72.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

CURVE NUMBER AND RUNOFF-Post

Project: Marco Luxe
Location: 138 S Barfield Dr., Marco Island, FL

Description: Post-Developed conditions

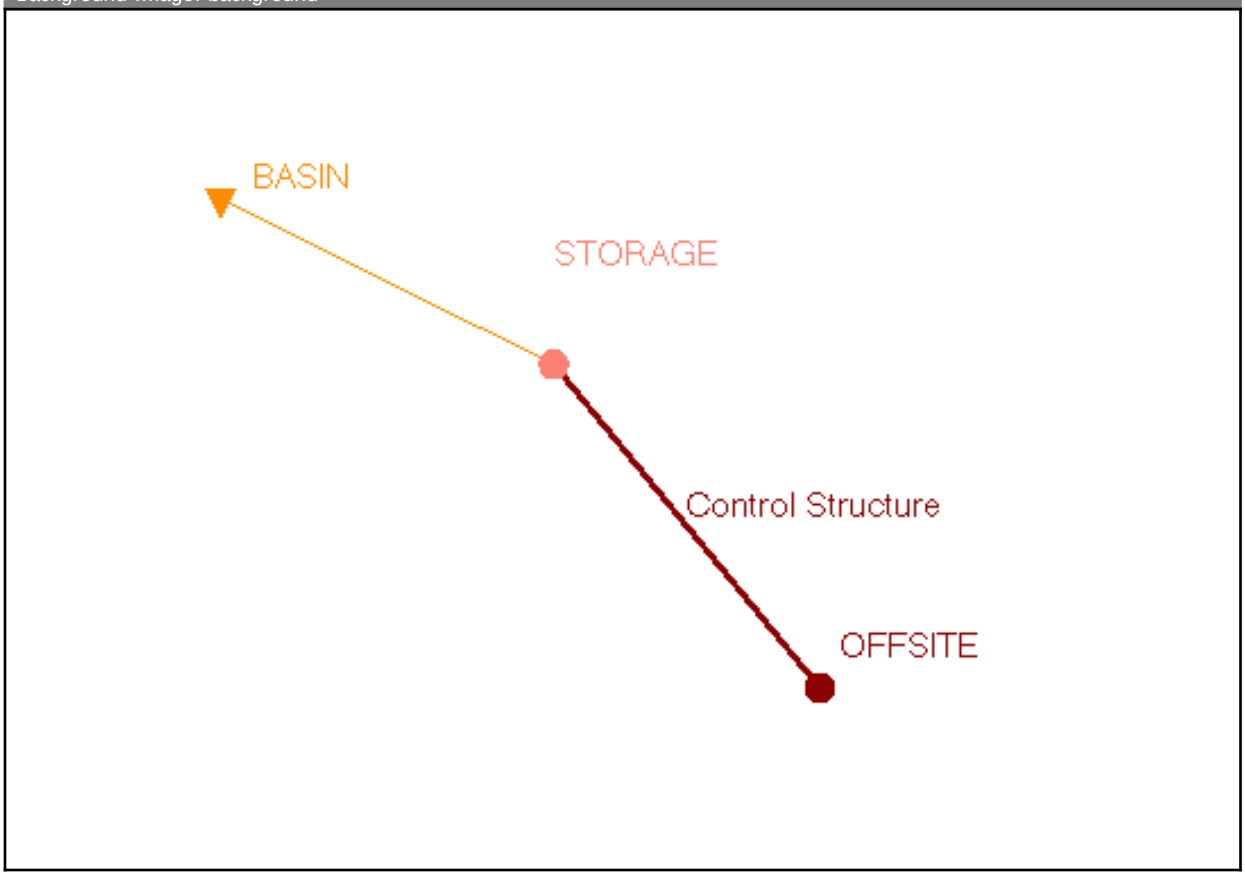
| Soil Name and Hydrologic Group (appendix A) | Cover Description | CN Table 2-2 | Area Acres | Product CNxarea |
|---|---|---|---|---|
| | Pavement/sidewalks | 98 | 0.480 | 47.04 |
| | Roof | 98 | 0.640 | 62.72 |
| A, Fair | Pervious | 49 | 0.520 | 25.48 |
| | | | | |
| | | Total: | 1.64 | 135.24 |

CN(weighted) $\frac{\text{total product}}{\text{total area}} = \frac{135.24}{1.64} = 82.46$ Use CN = 82

Node Max Conditions [Scenario1]

| Node Name | Sim Name | Warning Stage [ft] | Max Stage [ft] | Min/Max Delta Stage [ft] | Max Total Inflow [cfs] | Max Total Outflow [cfs] | Max Surface Area [ft2] |
|---|---|---|---|---|---|---|---|
| STORAGE | 010Y-24H | 10.00 | 4.15 | 0.0010 | 0.98 | 0.40 | 6606 |
| STORAGE | 025Y-72H | 10.00 | 4.61 | 0.0010 | 7.50 | 4.97 | 11124 |

Background Image: background




Node: STORAGE

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.20 ft
Warning Stage: 10.00 ft

| Stage [ft] | Area [ac] | Area [ft2] |
|---|---|---|
| 1.20 | 0.0020 | 87 |
| 2.20 | 0.0735 | 3200 |
| 3.20 | 0.1079 | 4700 |
| 4.20 | 0.1538 | 6700 |
| 5.70 | 0.5247 | 22858 |
| 8.75 | 1.0064 | 43840 |
| 10.75 | 1.0064 | 43840 |

Comment:

| Drop Structure Link: Control Structure | | Upstream Pipe | | Downstream Pipe | |
|---|---|---|---|---|---|
| Scenario: | Scenario1 | Invert: | 0.50 ft | Invert: | 0.50 ft |
| From Node: | STORAGE | Manning's N: | 0.0120 | Manning's N: | 0.0120 |
| To Node: | OFFSITE | Geometry: Circular | | Geometry: Circular | |
| Link Count: | 1 | Max Depth: | 1.25 ft | Max Depth: | 1.25 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: | 0.0000 ft | Manning's N: | 0.0000 | Manning's N: | 0.0000 |
| Length: | 52.00 ft | Top Clip | | | |
| FHWA Code: | 1 | Default: | 0.00 ft | Default: | 0.00 ft |
| Entr Loss Coef: | 0.50 | Op Table: | | Op Table: | |
| Exit Loss Coef: | 1.00 | Ref Node: | | Ref Node: | |
| Bend Loss Coef: | 0.00 | Manning's N: | 0.0000 | Manning's N: | 0.0000 |
| Bend Location: | 0.00 dec | | | | |
| Energy Switch: | Energy | | | | |

Pipe Comment:

| Weir Component | | Bottom Clip | |
|---|---|---|---|
| Weir: | 1 | Default: | 0.00 ft |
| Weir Count: | 1 | Op Table: | |
| Weir Flow Direction: | Both | Ref Node: | |
| Damping: | 0.0000 ft | Top Clip | |
| Weir Type: | Sharp Crested Vertical | Default: | 0.00 ft |
| Geometry Type: | Circular | Op Table: | |
| Invert: | 1.20 ft | Ref Node: | |
| Control Elevation: | 1.20 ft | Discharge Coefficients | |
| Max Depth: | 0.25 ft | Weir Default: | 3.200 |
| | | Weir Table: | |
| | | Orifice Default: | 0.600 |
| | | Orifice Table: | |

Weir Comment:

Weir Component

| | |
|---|---|
| Weir: | 2 |
| Weir Count: | 1 |
| Weir Flow Direction: | Both |
| Damping: | 0.0000 ft |
| Weir Type: | Horizontal |
| Geometry Type: | Rectangular |
| Invert: | 4.20 ft |
| Control Elevation: | 1.20 ft |
| Max Depth: | 0.25 ft |
| Max Width: | 6.00 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: | 3.200 |
| Weir Table: | |
| Orifice Default: | 0.600 |
| Orifice Table: | |

Weir Comment:

Drop Structure Comment:

## Simulation: 010Y-24H

| | |
|---|---|
| Scenario: | Scenario1 |
| Run Date/Time: | 4/30/2024 1:33:59 PM |
| Program Version: | ICPR4 4.07.08 |

### General

Run Mode: Normal

| | Year | Month | Day | Hour [hr] |
|---|---|---|---|---|
| Start Time: | 0 | 0 | 0 | 0.0000 |
| End Time: | 0 | 0 | 0 | 24.0000 |

| | Hydrology [sec] | Surface Hydraulics [sec] |
|---|---|---|
| Min Calculation Time: | 60.0000 | 0.1000 |
| Max Calculation Time: | | 30.0000 |

### Output Time Increments

#### Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

#### Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

## Restart File

Save Restart: False

## Resources & Lookup Tables

### Resources

Rainfall Folder:

Unit Hydrograph Folder:

### Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

## Tolerances & Options

| | | | |
|---|---|---|---|
| Time Marching: | SAOR | IA Recovery Time: | 24.0000 hr |
| Max Iterations: | 6 | | |
| Over-Relax Weight Fact: | 0.5 dec | | |
| dZ Tolerance: | 0.0010 ft | Smp/Man Basin Rain Opt: | Global |
| Max dZ: | 1.0000 ft | | |
| Link Optimizer Tol: | 0.0001 ft | Rainfall Name: | ~FDOT-24 |
| | | Rainfall Amount: | 7.20 in |
| Edge Length Option: | Automatic | Storm Duration: | 24.0000 hr |
| | | Dflt Damping (1D): | 0.0050 ft |
| | | Min Node Srf Area (1D): | 100 ft2 |
| | | Energy Switch (1D): | Energy |

Comment:

## Simulation: 025Y-72H

Scenario: Scenario1
Run Date/Time: 4/30/2024 1:34:04 PM
Program Version: ICPR4 4.07.08

## General

Run Mode: Normal

| | Year | Month | Day | Hour [hr] |
|---|---|---|---|---|
| Start Time: | 0 | 0 | 0 | 0.0000 |
| End Time: | 0 | 0 | 0 | 72.0000 |

| Hydrology [sec] | Surface Hydraulics |
|---|---|

| | | [sec] |
|---|---|---|
| Min Calculation Time: | 60.0000 | 0.1000 |
| Max Calculation Time: | | 30.0000 |

## Output Time Increments

### Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

### Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

### Restart File

Save Restart: False

## Resources & Lookup Tables

### Resources

Rainfall Folder:

Unit Hydrograph Folder:

### Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

## Tolerances & Options

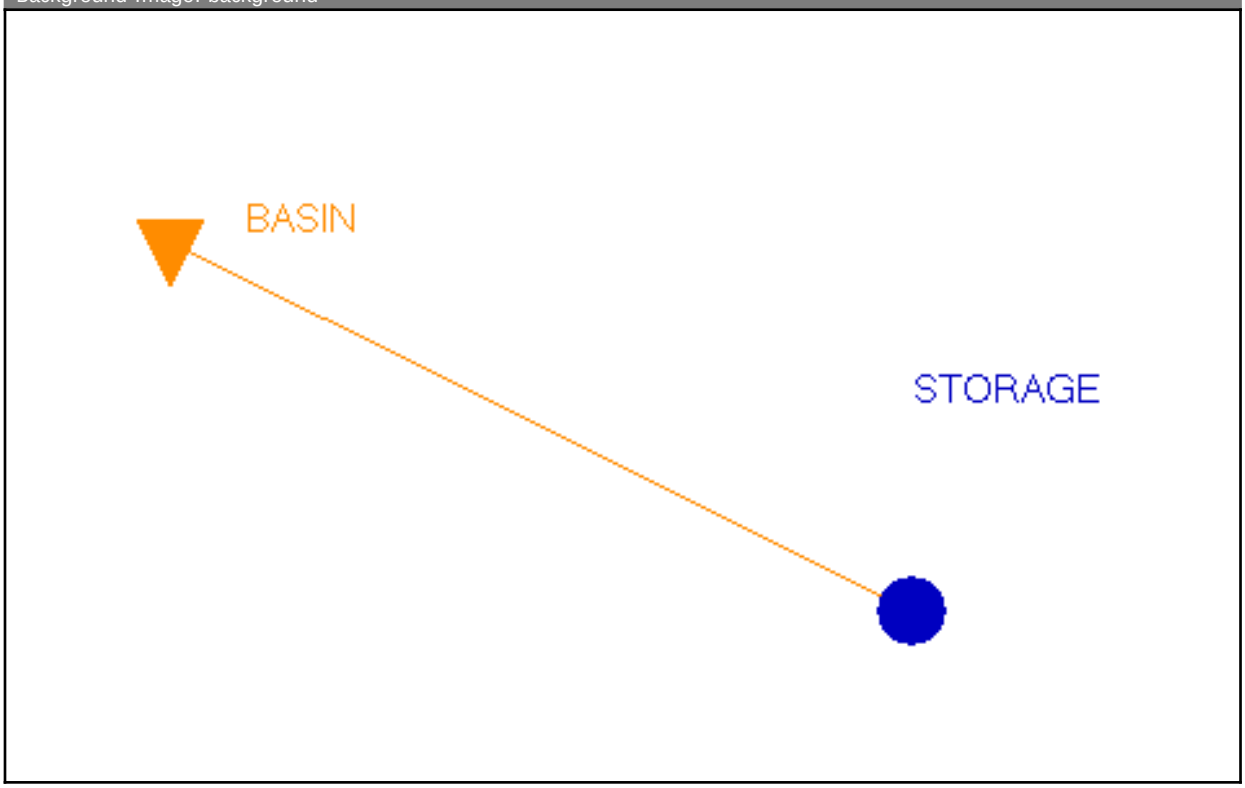
| | | | |
|---|---|---|---|
| Time Marching: | SAOR | IA Recovery Time: | 24.0000 hr |
| Max Iterations: | 6 | | |
| Over-Relax Weight Fact: | 0.5 dec | | |
| dZ Tolerance: | 0.0010 ft | Smp/Man Basin Rain Opt: | Global |
| Max dZ: | 1.0000 ft | | |
| Link Optimizer Tol: | 0.0001 ft | Rainfall Name: | ~SFWMD-72 |
| | | Rainfall Amount: | 12.50 in |
| Edge Length Option: | Automatic | Storm Duration: | 72.0000 hr |
| | | Dflt Damping (1D): | 0.0050 ft |
| | | Min Node Srf Area (1D): | 100 ft2 |
| | | Energy Switch (1D): | Energy |

Comment:

Node Max Conditions [Scenario1]

| Node Name | Sim Name | Warning Stage [ft] | Max Stage [ft] | Min/Max Delta Stage [ft] | Max Total Inflow [cfs] | Max Total Outflow [cfs] | Max Surface Area [ft2] |
|---|---|---|---|---|---|---|---|
| STORAGE | 100Y-72HR | 10.00 | 7.12 | 0.0010 | 9.78 | 0.00 | 34197 |

Background Image: background




Simple Basin: BASIN

| | |
|---|---|
| Scenario: | Scenario1 |
| Node: | STORAGE |
| Hydrograph Method: | NRCS Unit Hydrograph |
| Infiltration Method: | Curve Number |
| Time of Concentration: | 15.0000 min |
| Max Allowable Q: | 0.00 cfs |
| Time Shift: | 0.0000 hr |
| Unit Hydrograph: | UH256 |
| Peaking Factor: | 256.0 |
| Area: | 1.6400 ac |
| Curve Number: | 82.0 |

% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

## Node: STORAGE

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.20 ft
Warning Stage: 10.00 ft

| Stage [ft] | Area [ac] | Area [ft2] |
|---|---|---|
| 1.20 | 0.0020 | 87 |
| 2.20 | 0.0730 | 3180 |
| 3.20 | 0.1080 | 4704 |
| 4.20 | 0.1540 | 6708 |
| 5.20 | 0.5250 | 22869 |
| 8.75 | 1.0060 | 43821 |
| 10.75 | 1.0060 | 43821 |

Comment:

## Simulation: 100Y-72HR

Scenario: Scenario1
Run Date/Time: 4/30/2024 1:45:07 PM
Program Version: ICPR4 4.07.08

### General

Run Mode: Normal

| | Year | Month | Day | Hour [hr] |
|---|---|---|---|---|
| Start Time: | 0 | 0 | 0 | 0.0000 |
| End Time: | 0 | 0 | 0 | 72.0000 |

| | Hydrology [sec] | Surface Hydraulics [sec] |
|---|---|---|
| Min Calculation Time: | 60.0000 | 0.1000 |
| Max Calculation Time: | | 30.0000 |

### Output Time Increments

### Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

## Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

## Restart File

Save Restart: False

## Resources & Lookup Tables

### Resources

Rainfall Folder:

Unit Hydrograph Folder:

### Lookup Tables

Boundary Stage Set:
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 Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~SFWMD-72
Rainfall Amount: 16.00 in
Storm Duration: 72.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment: