

# Surface Water Management Report

*For*

## Inspiration at South Pointe

SEPTEMBER 17, 2021

*Prepared for:*

**ZIMMER DEVELOPMENT COMPANY**

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Appendix - ICPR MODEL

**PURPOSE**

The purpose of this application is to request an Environmental Resource Permit (ERP) for the Inspiration at South Pointe.

The vertical control datum for this project is North American Vertical Datum of 1988 (NAVD 88). Existing designs and permitting documents for areas surrounding this property referenced the National Geodetic Vertical Datum of 1929 (NGVD 29).

The conversion to NAVD 88 is:  $\text{NAVD 88} = \text{NGVD 29} - 1.18 \text{ ft.}$

**EXISTING CONDITIONS**

The project site is in Fort Myers, Lee County, Florida, approximately 0.5 miles east of the intersection of McGregor Blvd and College Pkwy, lying in Section 15, Township 45 South, Range 24 East.

The existing site is an agricultural parcel without permitted stormwater management facilities. The site is generally flat, with ground elevations ranging from 6 feet to 8 feet. Stormwater runoff sheetflows overland to the south, into the College Parkway Right-of-Way roadside ditch formally known as IDD Canal H-8. The roadside swale was previously permitted in ERP Nos. 87 00087-S and 36-02810-S to serve as both a detention area for College Parkway and a conveyance canal for upstream tributary areas, including the subject site. The calculations submitted in support of ERP App. No. 980424-17 demonstrated the downstream conveyance was designed for a peak flowrate of approximately 190 cfs (0.88 cfs/ac) for the 25-year, 3-day storm event, more than sufficient to convey the runoff from the proposed project.

To the north and west of the site lies the College Pointe development, permitted by ERP No. 36 03472-P to have a control elevation of 2.82 feet NAVD 88. The downstream control structure in the roadside swale College Parkway (IDD Canal H-8) has a permitted control elevation of 1.32 feet NAVD 88 (2.5 feet NGVD 29) and an as-built control elevation of 1.18 feet NAVD 88 (2.36 feet NGVD 29). Northeast of the site there is a restaurant with a standalone surface water management system with an apparent permitted control elevation of 4.82 feet NAVD 88 (ERP App. No. X000000464), based on WSWT elev of 6.0 feet, NGVD 29 and bottom of swales at elevation 7.0 feet, NGVD. There was no overflow structure in the permit plans. however, there is an inlet presumably at elevation 8.0 feet, NGVD 29 (6.8 feet NAVD 88).

The site is located within the Whiskey Creek watershed, as identified by the Florida Department of Environmental Protection (FDEP) Water Body Identification Number (WBID) 3240H. This watershed is not included in the comprehensive verified list of impaired water bodies.

The site is in the Whiskey Creek sub-watershed north of College Parkway, which was assigned a recommended unit runoff rate of 108 CSM in the 1991 Lee County Surface Water Management Plan by Johnson Engineering, Inc.

The site is currently in a FEMA Zone X as identified in the FEMA FIRM No. 12071C0417F with effective date of August 28, 2008. The preliminary FEMA FIRM dated June 28th, 2019, proposes to revise the flood zone at the site to Zone AE, with an elevation of 8 feet NAVD 88.

### **PROPOSED CONDITION**

The proposed project consists of construction of a mixed-use development that will include apartment buildings, an amenity area, outparcels, parking areas, and associated infrastructure. The proposed surface water management system will consist of a combination of wet pond and underground chambers.

Based on the surrounding control elevations, the control elevation for the proposed stormwater management system was set to elevation 4.5 feet NAVD 88.

There will be two outparcels, totaling 2.71 acres, that will not be developed as part of this application. Only minor grading and construction of perimeter berm will occur at present time. New applications will need to be submitted at the time of their future development and will have to address construction of pre-treatment areas, pre-treatment control structures and necessary revisions to the orifices in the outfall structure from the pond.

The ERP 36-02810-S will be modified to accommodate the work within the College Pkwy right-of-way (ROW) consisting of construction of a turn lane. A portion of the existing linear pond within the ROW will be replaced with pipe. Compensatory treatment for the turn lane and the loss of treatment volume within the ROW will be provided in the onsite surface water management system.

The following calculations demonstrate the proposed system provides the required treatment and attenuation. 50% additional treatment is provided.

**Land Use Breakdown**

|                    | Parcel     |      |            | College Pkwy | Total |
|--------------------|------------|------|------------|--------------|-------|
|                    | Apartments | Road | Outparcels |              |       |
| Building           | 2.40       | 0.00 | 0.00       | 0.00         | 2.40  |
| Impervious/Amenity | 4.33       | 0.77 | 0.00       | 0.21         | 5.31  |
| Pond               | 0.53       | 0.00 | 0.00       | 0.00         | 0.53  |
| Dry Detention      | 0.00       | 0.00 | 0.00       | 0.00         | 0.00  |
| Pervious           | 2.55       | 0.06 | 2.71       | 0.16         | 5.48  |
| Total              | 9.81       | 0.83 | 2.71       | 0.37         | 13.72 |

**Parcel Areas**

|                    | Routed to Pond | Not Routed to Pond | Total |
|--------------------|----------------|--------------------|-------|
| Building           | 2.40           | 0.00               | 2.40  |
| Impervious/Amenity | 4.71           | 0.39               | 5.10  |
| Pond               | 0.53           | 0.00               | 0.53  |
| Dry Detention      | 0.00           | 0.00               | 0.00  |
| Pervious           | 5.32           | 0.00               | 5.32  |
| Total              | 12.96          | 0.39               | 13.35 |

**College Parkway ROW Change in Areas**

|               | Existing | Proposed | Change |
|---------------|----------|----------|--------|
| Building      | 0.00     | 0.00     | 0.00   |
| Impervious    | 0.08     | 0.21     | 0.13   |
| Pond          | 0.08     | 0.00     | -0.08  |
| Dry Detention | 0.00     | 0.00     | 0.00   |
| Pervious      | 0.21     | 0.16     | -0.05  |
| Total         | 0.37     | 0.37     | 0.00   |

## Design Summary

|   |      |
|---|------|
| <b>Water Quality</b>                          |      |
| Control Elevation (ft)                        | 4.5  |
| Water Quality Volume required (ac-ft)         | 2.03 |
| Volume of Underground Storage (ac-ft)         | 1.14 |
| Water Quality Elevation (ft)                  | 6.6  |
| <b>5-Year, 1-Day Storm</b>                    |      |
| Rainfall (in)                                 | 5.5  |
| Peak Stage (ft)                               | 8.7  |
| Minimum Parking Elev.(ft)                     | 9.0  |
| <b>25-Year, 3-Day Storm</b>                   |      |
| Rainfall (in)                                 | 11.5 |
| Allowable Basin Discharge Rate * (CSM)        | 108  |
| Allowable Discharge (cfs)                     | 2.19 |
| Design Discharge (cfs)                        | 2.18 |
| Peak Stage (ft)                               | 10.0 |
| Minimum Berm Elevation (ft)                   | 10.3 |
| <b>100-Year, 3-Day Storm (Zero Discharge)</b> |      |
| Rainfall (in)                                 | 15.0 |
| FEMA Zone X (ft)                              | N/A  |
| Peak Stage (ft)                               | 10.7 |
| Minimum Building Finished Floor (ft)          | 10.8 |

Elevations Reference NAVD 88

\* Whiskey Creek watershed

## Surface Water Management Calculations

### Acreage Breakdown

|                    | Routed       | Not Routed  | Total for WQ | College Parkway<br>WQ Compensation |
|--------------------|--------------|-------------|--------------|------------------------------------|
| Building           | 2.40         | 0.00        | 2.40         |                                    |
| Impervious/Amenity | 4.71         | 0.39        | 5.10         | 0.13                               |
| Pond               | 0.53         | 0.00        | 0.53         | -0.08                              |
| Dry Detention      | 0.00         | 0.00        | 0.00         |                                    |
| Pervious           | 5.32         | 0.00        | 5.32         |                                    |
| <b>Total</b>       | <b>12.96</b> | <b>0.39</b> | <b>13.35</b> |                                    |

### Design Parameters:

|                                 |          |
|---------------------------------|----------|
| Control Elevation (ft, NAVD) =  | 4.50 ft  |
| Min Road Elevation (ft, NAVD) = | 9.00 ft  |
| Min Berm Elevation (ft, NAVD) = | 10.30 ft |
| Min FFE Elevation (ft, NAVD) =  | 10.80 ft |

### Water Quality Calculations:

#### First One Inch of Runoff from the Basin

|                            |            |
|----------------------------|------------|
| Total Site Area x 1 inch = | 1.11 ac-ft |
|----------------------------|------------|

#### 2.5 Inches times the Percent Impervious

|                                    |         |
|------------------------------------|---------|
| Site Area for Water Quality (SAWQ) |         |
| Total Site - (Lake + Roof) =       | 10.4 ac |

|                                      |          |
|--------------------------------------|----------|
| Imperv Area for Water Quality (IAWQ) |          |
| Impervious/Amenity                   | = 5.1 ac |

|  |     |
|--|-----|
| Percent Imperv for Water Quality Perv/Imperv Calculations (%IMP) |     |
| (IAWQ / SAWQ) x 100% =   | 49% |

|                             |        |
|-----------------------------|--------|
| 2.5 Inches x Percent Imperv |        |
| 2.5 Inches x %IMP =         | 1.2 in |

|  |            |
|--|------------|
| Volume Required to be Treated (ac-ft)                      |            |
| (2.5 Inches x %IMP) x (Total Site - Lake) x 1 ft./12 in. = | 1.31 ac-ft |

**Required Wet Detention :**

First inch of runoff = 1.11 ac-ft

2.5 times the percent impervious = 1.31 ac-ft

Treatment requirement for Onsite= 1.31 ac-ft

Compensatory Treatment for Offsite Areas:

Increased Impervious = 0.13 ac

Decreased Pond = 0.08 ac

Total = 0.21 ac

Additional Volume (2.5 inches x Total Offsite Change) = 0.04 ac-ft

Required Onsite Treatment + Compensatory for Offsite = 1.35 ac-ft

Wet Pond Storage = Treatment requirement + 50% = **2.03 ac-ft**

Note: Whiskey Creek watershed (WBID 3240H) is listed as impaired due to Dissolved Oxygen, and a causative pollutant has not been identified.

This volume will be provided in pond and underground storage. See Water Quality Volume table.

Treatment Elevation = 6.6 ft

**Soil Storage:**

Soil storage for the pervious areas has been calculated using the compacted water storage capability estimate by the Soil Conservation Service for the sandy material in South Florida Water Management District.

Average Site Grade = 7.00 ft

Depth to Water Table (Avg site grad - WSWT Elv.) = 2.5 ft

Soil Storage in pervious areas = 3.42 in

$$\text{Curve Number (CN)} = \frac{1000}{S + 10} = 75$$



**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).

## Sheet Flow:

|   |            |
|---|------------|
| Manning's Roughness Coef "n" =  | 0.41       |
| Flow Length "L" =   | 100 ft     |
| 2 Year 24 Hour Rainfall "P" =   | 5.0 in     |
| Hydraulic Grade Line Slope "s" =  | 0.01 ft/ft |
| Time = $0.007 \cdot (n \cdot L)^{0.8} / [(P)^{0.5} \cdot s^{0.4}] \cdot 60 =$ | 23.1 min   |

**System Bleed-down**

The following calculations indicate the discharge below water treatment elevation exceeds 0.5 inches in 24 hours. However, all bleed-down discharge occurs through a minimally-sized bleeder.

|   |                    |              |
|---|--------------------|--------------|
| 0.5 inch bleed down volume                      |                    |              |
| 0.5 in. x (total site for WQ - lake)            | 0.53 ac-ft         |              |
| Treatment Elevation =                           | 6.58 ft            |              |
| Total Vol Out at time of Treatment Elevation    | <b>10.57 ac-ft</b> |              |
| Time of treatment elevation                     | <b>120 hr</b>      |              |
| Time of treatment elevation + 24 hours          | 144 hr             |              |
| Total Vol Out at treatment elevation + 24 hours | <b>11.16 ac-ft</b> |              |
| Volume discharged in 24 hours                   | 0.59 ac-ft         | * 3" bleeder |

**Stage Storage Table**

| Above Ground        |              |              |              |              |              |
|---------------------|--------------|--------------|--------------|--------------|--------------|
|                     | Pond         | Dry Det      | Pervious     | Impervious   |              |
| Start Elev -->      | 4.5 ft       | 7.0 ft       | 8.7 ft       | 9.0 ft       |              |
| StartArea -->       | 0.53 ac      | 0.00 ac      | 0.00 ac      | 0.00 ac      |              |
| End Elev -->        | 10.3 ft      | 8.5 ft       | 10.7 ft      | 10.6 ft      |              |
| End Area -->        | 0.58 ac      | 0.00 ac      | 5.27 ac      | 4.71 ac      | Total Area   |
| Stage<br>(ft, NAVD) | Area<br>(ac) | Area<br>(ac) | Area<br>(ac) | Area<br>(ac) | Area<br>(ac) |
| 4.50                | 0.53         | 0.00         | 0.00         | 0.00         | 0.53         |
| 6.50                | 0.55         | 0.00         | 0.00         | 0.00         | 0.55         |
| 7.00                | 0.55         | 0.00         | 0.00         | 0.00         | 0.55         |
| 8.60                | 0.57         | 0.00         | 0.00         | 0.00         | 0.57         |
| 9.00                | 0.57         | 0.00         | 0.79         | 0.00         | 1.36         |
| 10.30               | 0.58         | 0.00         | 4.22         | 3.83         | 8.62         |
| 10.60               | 0.58         | 0.00         | 5.01         | 4.71         | 10.30        |
| 10.70               | 0.58         | 0.00         | 5.27         | 4.71         | 10.56        |
| 10.80               | 0.58         | 0.00         | 5.27         | 4.71         | 10.56        |

| Underground Chambers |                         |
|----------------------|-------------------------|
| Stage<br>(ft, NAVD)  | Total Volume<br>(ac-ft) |
| 4.50                 | 0                       |
| 5.00                 | 0.16                    |
| 5.25                 | 0.32                    |
| 5.50                 | 0.48                    |
| 6.00                 | 0.75                    |
| 6.58                 | 0.96                    |
| 7.17                 | 1.14                    |
| 7.18                 | 1.14                    |

\* Chamber System Layers:

| Layer                  | Thickness | Bottom Elev | Top Elev. |
|------------------------|-----------|-------------|-----------|
| Gravel Below Chambers: | 6 in      | 4.50 ft     | 5.00 ft   |
| Chambers:              | 16 in     | 5.00 ft     | 6.33 ft   |
| Gravel Above Chambers: | 10 in     | 6.33 ft     | 7.17 ft   |

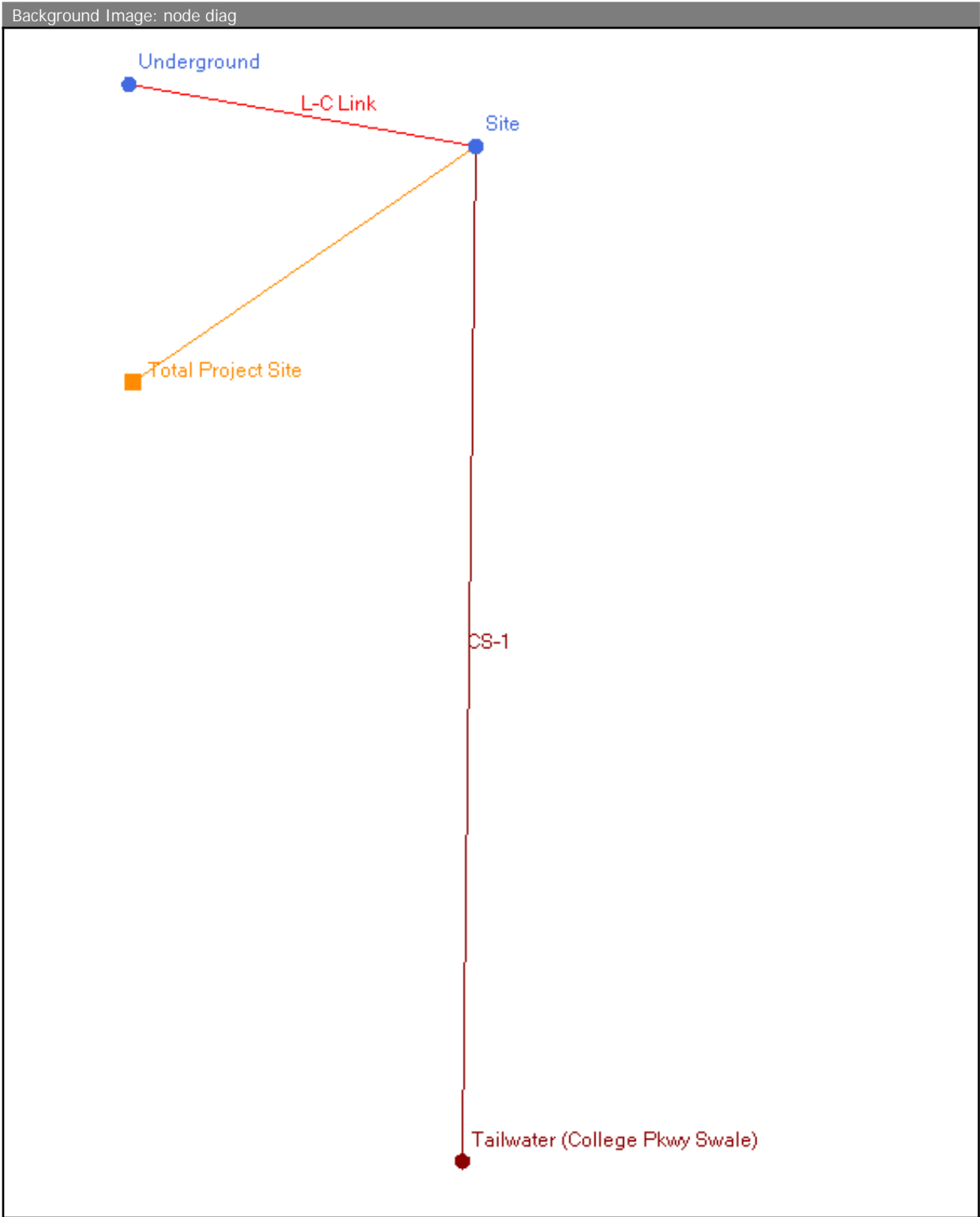
Total: 32 in

**Water Quality Volume**

| Pond                |              | Chambers          |                        |                        | Total Volume<br>(ac-ft) |
|---------------------|--------------|-------------------|------------------------|------------------------|-------------------------|
| Start Elev -->      | 4.5 ft       |                   |                        |                        |                         |
| StartArea -->       | 0.53 ac      |                   |                        |                        |                         |
| End Elev -->        | 10.3 ft      |                   |                        |                        |                         |
| End Area -->        | 0.60 ac      |                   |                        |                        |                         |
| Stage<br>(ft, NAVD) | Area<br>(ac) | Volume<br>(ac-ft) | Cum. Volume<br>(ac-ft) | Cum. Volume<br>(ac-ft) |                         |
| 4.50                | 0.53         | 0.00              | 0.00                   | 1.14                   | 0                       |
| 6.58                | 0.55         | 1.12              | 1.12                   | 0.96                   | 2.08                    |
| 7.17                | 0.55         | 0.32              | 1.44                   | 1.14                   | 2.59                    |
| 9.00                | 0.57         | 1.03              | 2.47                   | 1.14                   | 2.47                    |

<-- W.Q. Elev

## APPENDIX - ICPR MODEL



Manual Basin: Total Project Site

Scenario: Scenario1  
 Node: Site  
 Hydrograph Method: NRCS Unit Hydrograph  
 Infiltration Method: Curve Number  
 Time of Concentration: 23.0000 min  
 Max Allowable Q: 0.00 cfs  
 Time Shift: 0.0000 hr  
 Unit Hydrograph: UH256  
 Peaking Factor: 256.0  
 Area: 12.9600 ac

| Area [ac] | Land Cover Zone | Soil Zone | Rainfall Name | Crop Coefficient Zone | Reference ET Station |
|-----------|-----------------|-----------|---------------|-----------------------|----------------------|
| 2.4000    | Building        | A         |               |                       |                      |
| 4.7100    | Impervious      | A         |               |                       |                      |
| 0.5300    | Lake            | A         |               |                       |                      |
| 0.0000    | Dry Detention   | A         |               |                       |                      |
| 5.3200    | Pervious        | A         |               |                       |                      |

Comment:

Manual Basin Runoff Summary [Scenario1]

| Basin Name         | Sim Name | Max Flow [cfs] | Time to Max Flow [hrs] | Total Rainfall [in] | Total Runoff [in] | Area [ac] | Equivalent Curve Number | % Imperv | % DCIA |
|--------------------|----------|----------------|------------------------|---------------------|-------------------|-----------|-------------------------|----------|--------|
| Total Project Site | 005Y-24H | 31.17          | 12.1667                | 5.50                | 4.27              | 12.9600   | 89.2                    | 0.00     | 0.00   |
| Total Project Site | 025Y-72H | 45.06          | 60.1333                | 11.50               | 10.03             | 12.9600   | 88.2                    | 0.00     | 0.00   |
| Total Project Site | 100Y-72H | 59.75          | 60.1333                | 15.00               | 13.47             | 12.9600   | 88.0                    | 0.00     | 0.00   |

Curve Number: 1 [Set]

| Land Cover Zone | Soil Zone | Curve Number [dec] |
|-----------------|-----------|--------------------|
| Building        | A         | 98.0               |
| Dry Detention   | A         | 98.0               |
| Impervious      | A         | 98.0               |
| Lake            | A         | 98.0               |
| Pervious        | A         | 75.0               |

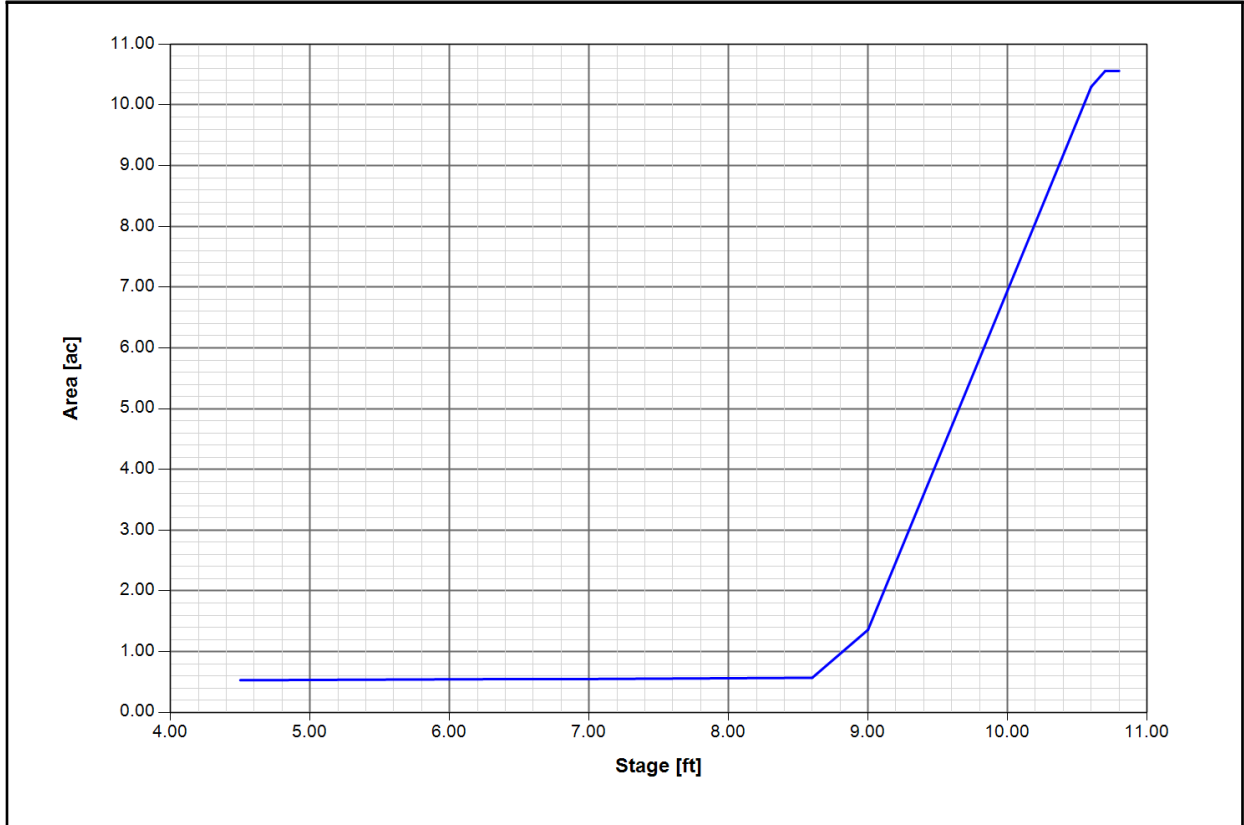
Node: Site

Scenario: Scenario1  
 Type: Stage/Area  
 Base Flow: 0.00 cfs  
 Initial Stage: 4.50 ft  
 Warning Stage: 10.80 ft

| Stage [ft] | Area [ac] | Area [ft2] |
|------------|-----------|------------|
| 4.50       | 0.5300    | 23087      |
| 6.50       | 0.5500    | 23958      |
| 7.00       | 0.5500    | 23958      |
| 8.60       | 0.5700    | 24829      |
| 9.00       | 1.3600    | 59242      |
| 10.30      | 8.6200    | 375487     |
| 10.60      | 10.3000   | 448668     |
| 10.70      | 10.5600   | 459994     |
| 10.80      | 10.5600   | 459994     |

Comment:

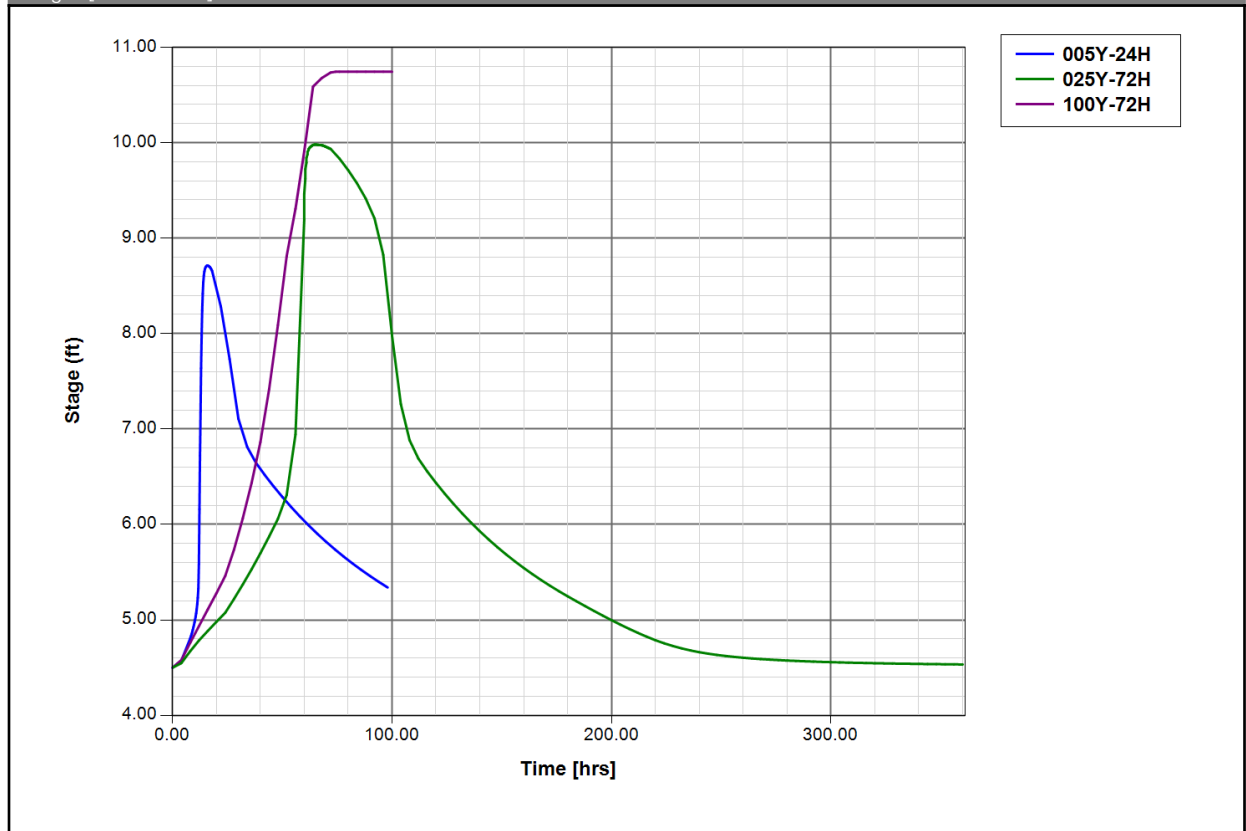
Node: Site Scenario: Scenario1



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] |
|-----------|----------|--------------------|----------------|--------------------------|------------------------|-------------------------|------------------------|
| Site      | 005Y-24H | 10.80              | 8.71           | 0.0010                   | 31.17                  | 14.59                   | 34478                  |
| Site      | 025Y-72H | 10.80              | 9.98           | 0.0010                   | 45.06                  | 2.16                    | 297606                 |
| Site      | 100Y-72H | 10.80              | 10.74          | 0.0010                   | 59.75                  | 0.49                    | 459994                 |

Stage [ Node: Site ]

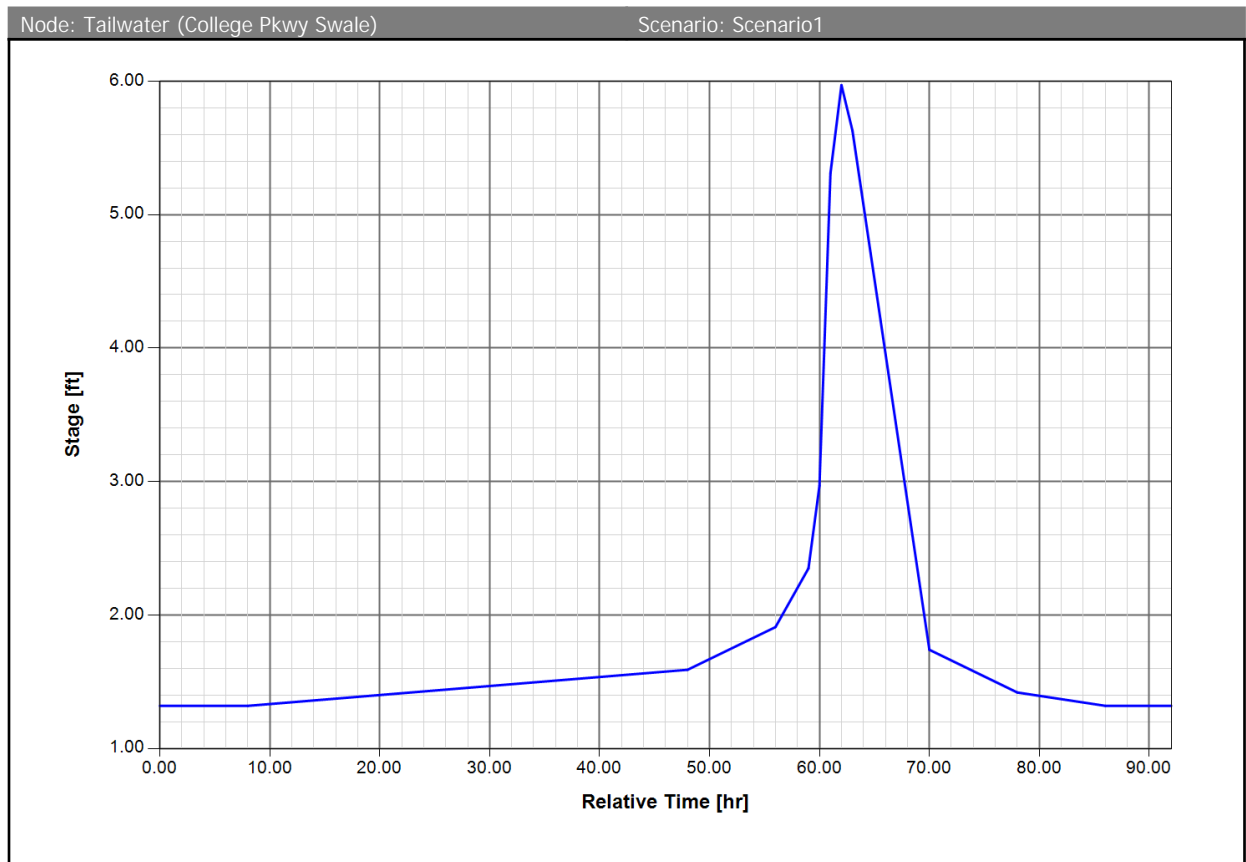


Node: Tailwater (College Pkwy Swale)

Scenario: Scenario1  
 Type: Time/Stage  
 Base Flow: 0.00 cfs  
 Initial Stage: 1.32 ft  
 Warning Stage: 6.00 ft  
 Boundary Stage: College Pkwy

| Year | Month | Day | Hour    | Stage [ft] |
|------|-------|-----|---------|------------|
| 0    | 0     | 0   | 0.0000  | 1.32       |
| 0    | 0     | 0   | 8.0000  | 1.32       |
| 0    | 0     | 0   | 48.0000 | 1.59       |
| 0    | 0     | 0   | 56.0000 | 1.91       |
| 0    | 0     | 0   | 59.0000 | 2.35       |
| 0    | 0     | 0   | 60.0000 | 2.97       |
| 0    | 0     | 0   | 61.0000 | 5.31       |
| 0    | 0     | 0   | 62.0000 | 5.97       |
| 0    | 0     | 0   | 63.0000 | 5.63       |
| 0    | 0     | 0   | 70.0000 | 1.74       |
| 0    | 0     | 0   | 78.0000 | 1.42       |
| 0    | 0     | 0   | 86.0000 | 1.32       |
| 0    | 0     | 0   | 92.0000 | 1.32       |

Comment:

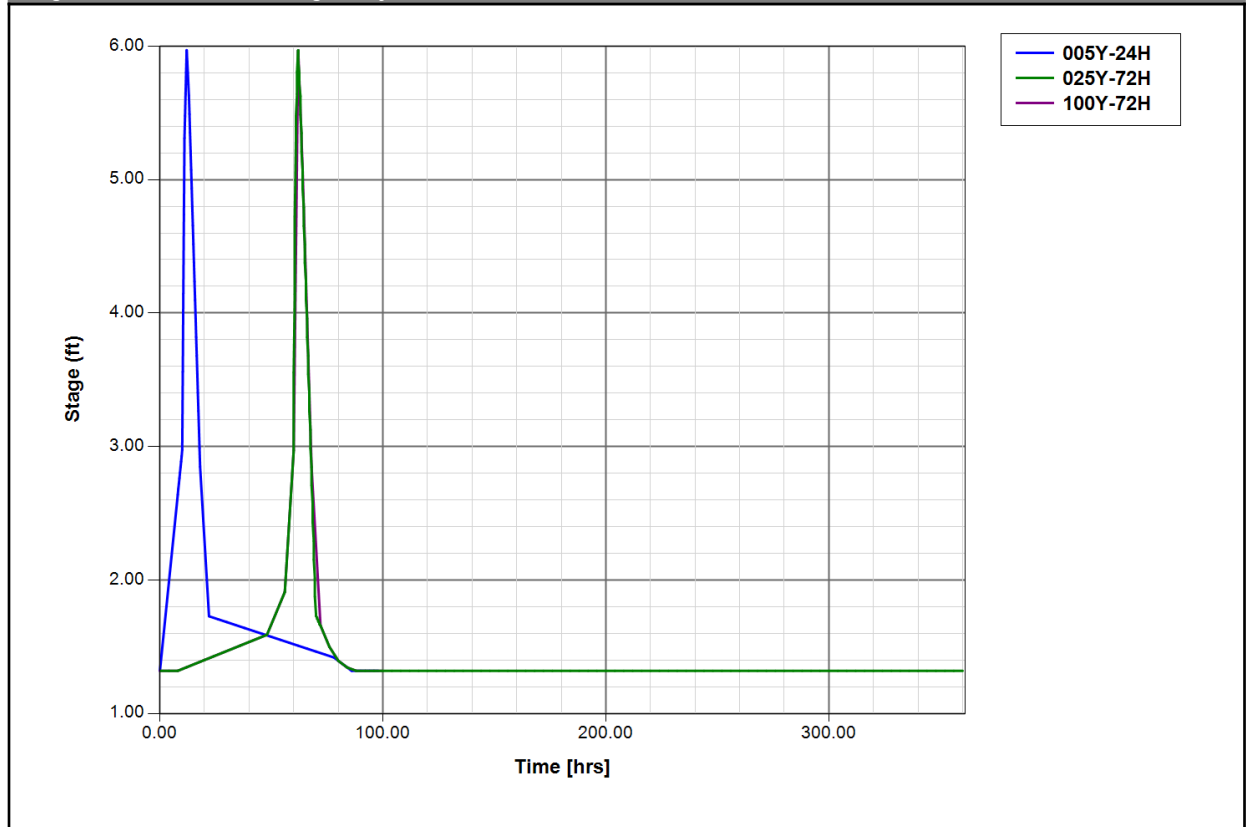




Node Max Conditions [Scenario1]

| 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] |
|--------------------------------|----------|--------------------|----------------|--------------------------|------------------------|-------------------------|------------------------|
| Tailwater (College Pkwy Swale) | 005Y-24H | 6.00               | 5.97           | 0.0195                   | 1.73                   | 0.16                    | 0                      |
| Tailwater (College Pkwy Swale) | 025Y-72H | 6.00               | 5.97           | 0.0052                   | 2.16                   | 0.00                    | 0                      |
| Tailwater (College Pkwy Swale) | 100Y-72H | 6.00               | 5.97           | 0.0064                   | 0.00                   | 0.00                    | 0                      |

Stage [ Node: Tailwater (College Pkwy Swale) ]



Node: Underground

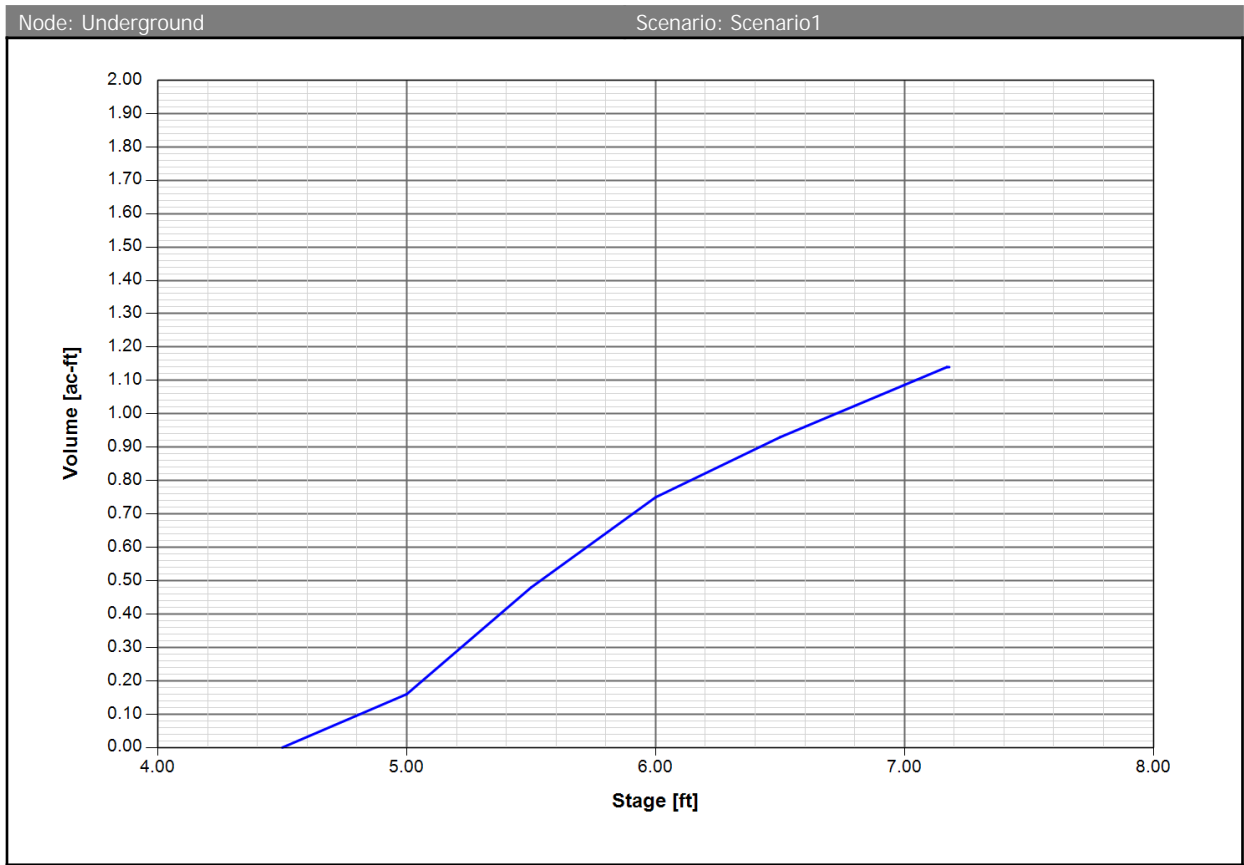
Scenario: Scenario1

Type: Stage/Volume

Base Flow: 0.00 cfs  
 Initial Stage: 4.50 ft  
 Warning Stage: 10.80 ft

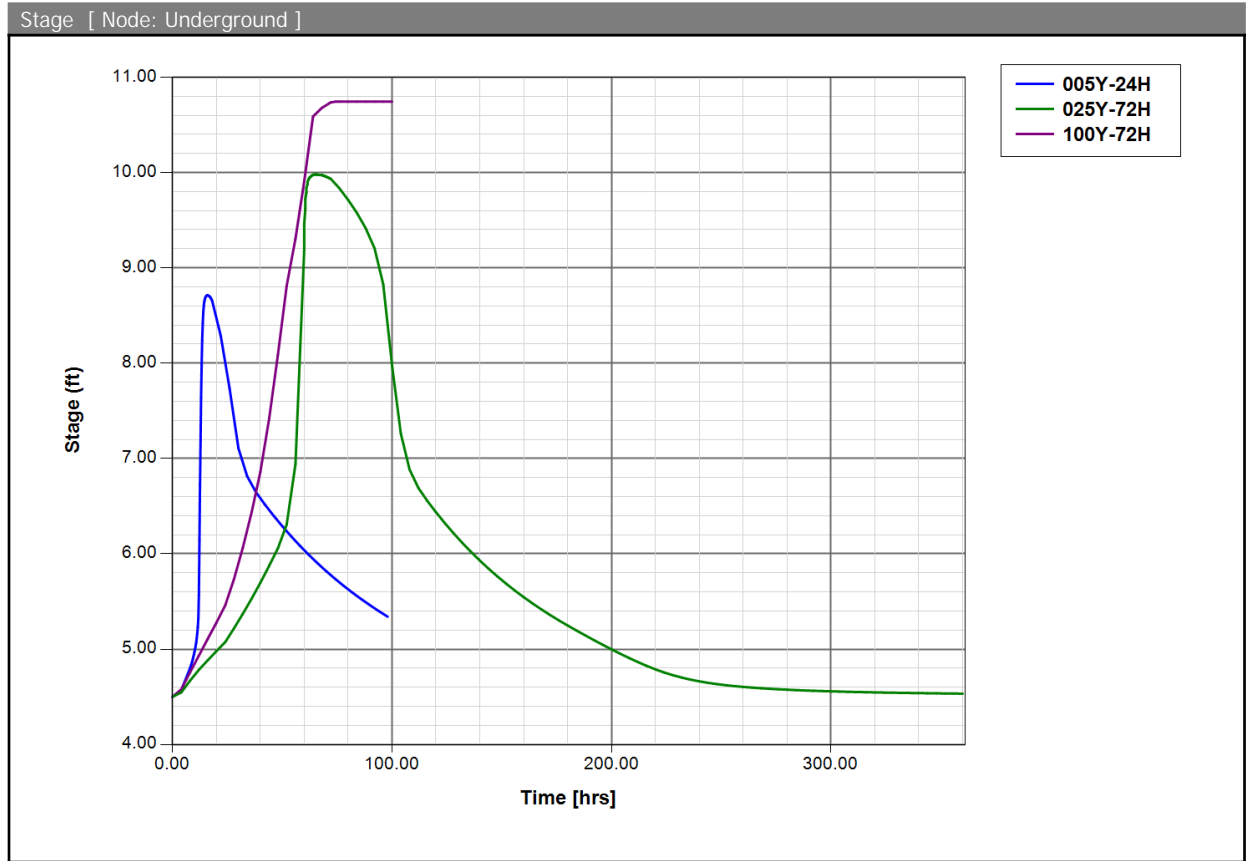
| Stage [ft] | Volume [ac-ft] | Volume [ft3] |
|------------|----------------|--------------|
| 4.50       | 0.00           | 0            |
| 5.00       | 0.16           | 6970         |
| 5.25       | 0.32           | 13939        |
| 5.50       | 0.48           | 20909        |
| 6.00       | 0.75           | 32670        |
| 6.50       | 0.93           | 40511        |
| 7.17       | 1.14           | 49658        |
| 7.18       | 1.14           | 49658        |

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] |
|-------------|----------|--------------------|----------------|--------------------------|------------------------|-------------------------|------------------------|
| Underground | 005Y-24H | 10.80              | 8.71           | 0.0010                   | 14.59                  | 0.21                    | 27879                  |
| Underground | 025Y-72H | 10.80              | 9.98           | -0.0010                  | 0.67                   | 0.21                    | 27879                  |
| Underground | 100Y-72H | 10.80              | 10.74          | 0.0010                   | 0.49                   | 0.04                    | 27878                  |



| Drop Structure Link: CS-1               | Upstream Pipe       | Downstream Pipe     |
|---|---------------------|---------------------|
| Scenario: Scenario1                     | Invert: 0.00 ft     | Invert: 0.00 ft     |
| From Node: Site                         | Manning's N: 0.0130 | Manning's N: 0.0130 |
| To Node: Tailwater (College Pkwy Swale) | Geometry: Circular  | Geometry: Circular  |
| Link Count: 1                           | Max Depth: 1.50 ft  | Max Depth: 1.50 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:           |
|   | Manning's N: 0.0000 | Manning's N: 0.0000 |

|                         |                     |                     |
|-------------------------|---------------------|---------------------|
| Damping: 0.0000 ft      | Top Clip            |                     |
| Length: 640.00 ft       | Default: 0.00 ft    | Default: 0.00 ft    |
| FHWA Code: 0            | Op Table:           | Op Table:           |
| Entr Loss Coef: 1.50    | Ref Node:           | Ref Node:           |
| Exit Loss Coef: 3.00    | Manning's N: 0.0000 | Manning's N: 0.0000 |
| 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: 0.0000 ft                | Ref Node:              |
| Weir Type: Sharp Crested Vertical | Top Clip               |
| Geometry Type: Circular           | Default: 0.00 ft       |
| Invert: 4.50 ft                   | Op Table:              |
| Control Elevation: 4.50 ft        | Ref Node:              |
| Max Depth: 0.25 ft                | Discharge Coefficients |
|                                   | Weir Default: 3.200    |
|                                   | Weir Table:            |
|                                   | Orifice Default: 0.600 |
|                                   | Orifice Table:         |

Weir Comment:

|                                   |                        |
|-----------------------------------|------------------------|
| Weir Component                    |                        |
| Weir: 2                           | Bottom Clip            |
| Weir Count: 1                     | Default: 0.00 ft       |
| Weir Flow Direction: Both         | Op Table:              |
| Damping: 0.0000 ft                | Ref Node:              |
| Weir Type: Sharp Crested Vertical | Top Clip               |
| Geometry Type: Rectangular        | Default: 0.00 ft       |
| Invert: 6.60 ft                   | Op Table:              |
| Control Elevation: 6.60 ft        | Ref Node:              |
| Max Depth: 0.38 ft                | Discharge Coefficients |
| Max Width: 0.50 ft                | Weir Default: 3.200    |
| Fillet: 0.00 ft                   | Weir Table:            |
|                                   | Orifice Default: 0.600 |
|                                   | Orifice Table:         |

Weir Comment:

Drop Structure Comment:

Link Min/Max Conditions [Scenario1]

| Link Name | Sim Name | Max Flow [cfs] | Min Flow [cfs] | Min/Max Delta Flow | Max Us Velocity [fps] | Max Ds Velocity [fps] | Max Avg Velocity [fps] |
|-----------|----------|----------------|----------------|--------------------|-----------------------|-----------------------|------------------------|
|           |          |                |                |                    |                       |                       |                        |

| Link Name      | Sim Name | Max Flow [cfs] | Min Flow [cfs] | Min/Max Delta Flow [cfs] | Max Us Velocity [fps] | Max Ds Velocity [fps] | Max Avg Velocity [fps] |
|----------------|----------|----------------|----------------|--------------------------|-----------------------|-----------------------|------------------------|
| CS-1 - Pipe    | 025Y-72H | 2.16           | 0.00           | 0.00                     | 0.00                  | 0.00                  | 0.00                   |
| CS-1 - Weir: 1 | 025Y-72H | 0.55           | 0.00           | 0.00                     | 0.00                  | 0.00                  | 0.00                   |
| CS-1 - Weir: 2 | 025Y-72H | 1.61           | 0.00           | 0.00                     | 8.60                  | 8.60                  | 8.60                   |

Simulation: 005Y-24H

Scenario: Scenario1  
 Run Date/Time: 9/17/2021 3:45:36 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   | 100.0000  |

|                       | Hydrology [sec] | Surface Hydraulics [sec] | Groundwater [sec] |
|-----------------------|-----------------|--------------------------|-------------------|
| Min Calculation Time: | 60.0000         | 0.1000                   | 900.0000          |
| Max Calculation Time: |                 | 30.0000                  |                   |

Output Time Increments

Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|------|-------|-----|-----------|----------------------|
| 0    | 0     | 0   | 0.0000    | 240.0000             |

Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|------|-------|-----|-----------|----------------------|
| 0    | 0     | 0   | 0.0000    | 240.0000             |
| 0    | 0     | 0   | 8.0000    | 15.0000              |
| 0    | 0     | 0   | 18.0000   | 240.0000             |

Groundwater

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|------|-------|-----|-----------|----------------------|
| 0    | 0     | 0   | 0.0000    | 60.0000              |

Restart File

Save Restart: False

Resources & Lookup Tables

| Resources               | Lookup Tables            |
|-------------------------|--------------------------|
| Rainfall Folder:        | Boundary Stage Set: 5-yr |
| Reference ET Folder:    | Extern Hydrograph Set:   |
| Unit Hydrograph Folder: | Curve Number Set: 1      |
|                         | Green-Ampt Set:          |
|                         | Vertical Layers Set:     |
|                         | Impervious Set: 1        |
|                         | Roughness Set:           |
|                         | Crop Coef Set:           |
|                         | Fillable Porosity Set:   |
|                         | Conductivity Set:        |
|                         | Leakage Set:             |

Tolerances & Options

|                                 |                                 |
|---------------------------------|---------------------------------|
| Time Marching: SAOR             | IA Recovery Time: 24.0000 hr    |
| Max Iterations: 6               | ET for Manual Basins: False     |
| Over-Relax Weight: 0.5 dec      |                                 |
| Fact:                           |                                 |
| dZ Tolerance: 0.0010 ft         | Smp/Man Basin Rain Opt: Global  |
|                                 | OF Region Rain Opt: Global      |
| Max dZ: 1.0000 ft               | Rainfall Name: ~SCSII-24        |
| Link Optimizer Tol: 0.0001 ft   | Rainfall Amount: 5.50 in        |
|                                 | Storm Duration: 24.0000 hr      |
| Edge Length Option: Automatic   |                                 |
| Dflt Damping (2D): 0.0050 ft    | Dflt Damping (1D): 0.0050 ft    |
| Min Node Srf Area (2D): 100 ft2 | Min Node Srf Area (1D): 100 ft2 |
|                                 | Energy Switch (1D): Energy      |
| Energy Switch (2D): Energy      |                                 |

Comment:

Simulation: 025Y-72H

Scenario: Scenario1  
 Run Date/Time: 9/17/2021 3:45:44 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 0 360.0000

|                       | Hydrology [sec] | Surface Hydraulics [sec] | Groundwater [sec] |
|-----------------------|-----------------|--------------------------|-------------------|
| Min Calculation Time: | 60.0000         | 0.1000                   | 900.0000          |
| Max Calculation Time: |                 | 30.0000                  |                   |

Output Time Increments

Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|------|-------|-----|-----------|----------------------|
| 0    | 0     | 0   | 0.0000    | 240.0000             |

Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|------|-------|-----|-----------|----------------------|
| 0    | 0     | 0   | 0.0000    | 240.0000             |
| 0    | 0     | 0   | 60.0000   | 15.0000              |
| 0    | 0     | 0   | 72.0000   | 240.0000             |

Groundwater

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|------|-------|-----|-----------|----------------------|
| 0    | 0     | 0   | 0.0000    | 480.0000             |

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:  
Reference ET Folder:  
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:  
Extern Hydrograph Set:  
Curve Number Set: 1  
  
Green-Ampt Set:  
Vertical Layers Set:  
Impervious Set: 1  
Roughness Set:  
Crop Coef Set:  
Fillable Porosity Set:  
Conductivity Set:  
Leakage Set:

Tolerances & Options

Time Marching: SAOR  
Max Iterations: 6  
Over-Relax Weight 0.5 dec

IA Recovery Time: 24.0000 hr  
ET for Manual Basins: False

|                     |           |                     |            |
|---------------------|-----------|---------------------|------------|
| Fact:               |           | Smp/Man Basin Rain  | Global     |
| dZ Tolerance:       | 0.0010 ft | Opt:                |            |
| Max dZ:             | 1.0000 ft | OF Region Rain Opt: | Global     |
| Link Optimizer Tol: | 0.0001 ft | Rainfall Name:      | ~SFWMD-72  |
| Edge Length Option: | Automatic | Rainfall Amount:    | 11.50 in   |
|                     |           | Storm Duration:     | 72.0000 hr |
| Dflt Damping (2D):  | 0.0050 ft | Dflt Damping (1D):  | 0.0050 ft  |
| Min Node Srf Area   | 100 ft2   | Min Node Srf Area   | 100 ft2    |
| (2D):               |           | (1D):               |            |
| Energy Switch (2D): | Energy    | Energy Switch (1D): | Energy     |

Comment:

Simulation: 100Y-72H

Scenario: Scenario1  
 Run Date/Time: 9/17/2021 3:45:12 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   | 100.0000  |

|                       | Hydrology [sec] | Surface Hydraulics [sec] | Groundwater [sec] |
|-----------------------|-----------------|--------------------------|-------------------|
| Min Calculation Time: | 60.0000         | 0.1000                   | 900.0000          |
| Max Calculation Time: |                 | 30.0000                  |                   |

Output Time Increments

Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|------|-------|-----|-----------|----------------------|
| 0    | 0     | 0   | 0.0000    | 240.0000             |

Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|------|-------|-----|-----------|----------------------|
| 0    | 0     | 0   | 0.0000    | 240.0000             |

Groundwater

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



| Year | Month | Day | Hour [hr] | Time Increment [min] |
|------|-------|-----|-----------|----------------------|
| 0    | 0     | 0   | 0.0000    | 480.0000             |

Restart File  
 Save Restart: False

Resources & Lookup Tables

Resources  
 Rainfall Folder:  
 Reference ET Folder:  
 Unit Hydrograph  
 Folder:

Lookup Tables  
 Boundary Stage Set:  
 Extern Hydrograph Set:  
 Curve Number Set: 1  
  
 Green-Ampt Set:  
 Vertical Layers Set:  
 Impervious Set: 1  
 Roughness Set:  
 Crop Coef Set:  
 Fillable Porosity Set:  
 Conductivity Set:  
 Leakage Set:

Tolerances & Options

|                               |                              |
|-------------------------------|------------------------------|
| Time Marching: SAOR           | IA Recovery Time: 24.0000 hr |
| Max Iterations: 6             | ET for Manual Basins: False  |
| Over-Relax Weight 0.5 dec     |                              |
| Fact:                         |                              |
| dZ Tolerance: 0.0010 ft       | Smp/Man Basin Rain Global    |
|                               | Opt:                         |
| Max dZ: 1.0000 ft             | OF Region Rain Opt: Global   |
| Link Optimizer Tol: 0.0001 ft | Rainfall Name: ~SFWMD-72     |
|                               | Rainfall Amount: 15.00 in    |
| Edge Length Option: Automatic | Storm Duration: 72.0000 hr   |
| Dflt Damping (2D): 0.0050 ft  | Dflt Damping (1D): 0.0050 ft |
| Min Node Srf Area 100 ft2     | Min Node Srf Area 100 ft2    |
| (2D):                         | (1D):                        |
| Energy Switch (2D): Energy    | Energy Switch (1D): Energy   |

Comment:

Boundary Stage: College Pkwy  
 Boundary Stage Set: 5-yr

| Year | Month | Day | Hour [hr] | Stage [ft] |
|------|-------|-----|-----------|------------|
| 0    | 0     | 0   | 0.0000    | 1.32       |

| Year | Month | Day | Hour [hr] | Stage [ft] |
|------|-------|-----|-----------|------------|
| 0    | 0     | 0   | 10.0000   | 2.97       |
| 0    | 0     | 0   | 11.0000   | 5.31       |
| 0    | 0     | 0   | 12.0000   | 5.97       |
| 0    | 0     | 0   | 13.0000   | 5.63       |
| 0    | 0     | 0   | 20.0000   | 1.74       |
| 0    | 0     | 0   | 78.0000   | 1.42       |
| 0    | 0     | 0   | 86.0000   | 1.32       |
| 0    | 0     | 0   | 92.0000   | 1.32       |

Comment: Same peak stage as 25-yr, 3-day storm but adjusted to peak at time = 12 hr