STORMWATER MANAGEMENT REPORT

THE COUNTRY CLUB AT MUIRFIELD VILLAGE
8715 MUIRFIELD DRIVE
DUBLIN, FRANKLIN COUNTY, OHIO

AUGUST 2023

Prepared For:

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INTRODUCTION

This report serves as the Storm Water Management Report for the proposed patio addition at the County Club at Muirfield Village, Ohio. The project will construct an additional impervious area of 2,230 SF with a project area of approximately 0.22+/- acres located along the west face of the existing clubhouse. The project improvements will use the existing pond north of the project area to satisfy the City of Dublin water quantity and a post-construction BMP for the quality requirement.

METHODOLOGY

Verdantas utilized Autodesk's Storm and Sanitary Analysis (SSA) 2023 software for the calculations and analysis detailed herein. Autodesk Storm and Sanitary Analysis is a link-node based model that performs hydrology, hydraulic, and water quality analysis of storm water and wastewater drainage systems, including sewage treatment plants and water quality control devices. A link represents a hydraulic element (i.e., a pipe, channel, pump, standpipe, culvert, or weir) that transports flow and constituents. There are numerous different link element types supported by the software. A node can represent the junction of two or more links, a storm drain catch basin inlet, the location of a flow or pollutant input into the system, or a storage element (such as a detention pond, retention pond, settling pond, or lake).

Hydrology Modeling: NRCS (SCS) TR-55 has been utilized to perform the hydrology analysis for this project. This method was selected due to its ability to account for a 24-hour storm and can include the effects of attenuation and storage in the routing of storm water through the sewer system.

Hydraulic Modeling: A hydrodynamic model has been utilized to route runoff and external inflows through the drainage system network of pipes and storage/treatment units.. Hydrodynamic routing solves the complete St. Venant equations throughout the drainage network and includes modeling of backwater effects, flow reversal, surcharging, looped connections, pressure flow, and interconnected ponds. Flow can also be routed through a variety of different storage elements, such as detention ponds, settling ponds, and lakes.

PRE-DEVELOPMENT CONIDITONS

The site is located along the west side of Muirfield Drive. Currently, The Country Club At Muirfield Village consists of multiple multi-use buildings, a golf course, tennis facility, and an aquatics facility. The property is approximately 195 acres with the proposed development area being 0.22 Acres. The site has one watershed: North Fork Indian Run.

The existing area where the project is taking place has several existing yard drains which collect runoff from the existing building and pervious areas. The project area's existing storm system has two separate discharge locations, each handling approximately half of the existing runoff area. The northern portion discharges into the existing retention basin through an 8" clay pipe the southern portion is a series of roof drains that ultimately leads to a manhole to the south.

TABLE 1. PRE-DEVELOPMENT RUNOFF SUMMARY

Drainage Area = 1.03 Acres
CN = Curve Number = 87.17
Time of Concentration: 10 minutes

Storm Frequency	Rainfall	S	Ia	Runoff Volume	
(yr)	(in)	(1000/CN-10)	(0.2*S)	(in)	(Cu Ft)
1	2.20	1.472	0.294	1.08	4,020
2	2.63	1.472	0.294	1.43	5,357
5	3.24	1.472	0.294	1.96	7,344
10	3.74	1.472	0.294	2.41	9,027
25	4.44	1.472	0.294	3.06	11,439
50	5.02	1.472	0.294	3.60	13,473
100	5.63	1.472	0.294	4.18	15,636

POST-DEVELOPMENT CONIDITONS

The proposed project will construct the patio addition along the west face of the existing clubhouse. The site will drain into the existing pond north of the Project Area. This includes rerouting the southern portion of the project area that previously flowed to the south to discharge into the retention basin. The storm calculations for have been provided in Appendix D to depict the minimal impact which the improvements will have on the existing basin. Appendix E depicts the post-development tributary map. Table 2 below summarizes the Post Development, un-detained runoff calculations:

TABLE 2. POST-DEVELOPMENT RUNOFF SUMMARY

A = Drainage Area =	1.03 Acres	1 yr. Pre-Development Runoff (cf) =	4,020
CN = Curve Number =	88.49	1 yr. Post-Development Runoff (cf) =	4,342
		% Increase in runoff =	8%

Storm Frequency	Rainfall	S	Ia	Runoff Volume	
(yr)	(in)	(1000/CN-10)	(0.2*S)	(in)	(Cu Ft)
1	2.20	1.301	0.260	1.16	4,342
2	2.63	1.301	0.260	1.53	5,721
5	3.24	1.301	0.260	2.07	7,756
10	3.74	1.301	0.260	2.53	9,471
25	4.44	1.301	0.260	3.19	11,919
50	5.02	1.301	0.260	3.74	13,977
100	5.63	1.301	0.260	4.32	16,162

SSA MODEL DESIGN

The purpose of the SSA model is to demonstrate that the existing pond has adequate capacity to handle the increased runoff introduced by the proposed site improvements. After construction, an additional 1.03 acres will be tributary to the modeled storm network. Additionally, the model includes the two surrounding off-site tributary areas from the golf course and surrounding neighborhoods (18.63 Acres). The two off-site tributary areas discharged directly into the pond with a TC of 10 minutes within the model. The pond discharges out of an existing submerged outlet (Facility ID 12184) through a 21" gravity main (Facility ID 4089). The pond's elevation is controlled by the outlet invert of existing structure (Facility ID 4725) south of the pond.

When creating the model, data for the existing storm system was obtained from the field run topographic survey and supplemented with data available on Dubscovery. Field run topographic survey was utilized to determine the top of the pond and normal pool elevation. The pond is fed by an on-site well to maintain the water surface elevation +/- 3". The bottom of the pond is assumed to be the outlet elevation (Facility ID 12184).

QUANTITAIVE AND QUALITATIVE STORM WATER CONTROL

Water Quality

This site will utilize an alternative post-construction BMP (ADS Barracuda) to meet water quality requirements for the patio addition. The device is described as a vortex hydrodynamic separator designed to meet the TTS removal of 80% as stated in the current Ohio EPA General Permit for Stormwater Discharges Associated with Construction Activity (OH000006). This product offers several models to handle varying water quality flow rates. For this design, the S3 model was chosen which is rated to handle a maximum of 0.86 cfs for 80% TTS removal. See the below equation for the water quality flow rate.

$$WQF = C * i * A$$
$$WQF = water\ quality\ flow\ rate\ in\ cubic\ feet\ per\ second\ (cfs)$$
$$C = rational\ method\ runoff\ coefficient$$
$$i = intensity\ (in/hr)$$
$$A = area\ draining\ to\ the\ BMP\ (acres)$$

$$WQF = 1.00 * 1.85 * 0.337$$
$$WQF = 0.607\ cfs$$

Water Quantity

SSA calculations were provided to show the minimal impact the proposed improvements will have on the existing basin between pre and post conditions. The subbasin breakdown is provided on Table 3 & Table 4. And the stormwater management summary can be found on Table 5.

TABLE 3. PRE-DEVELOPMENT SUBBASIN AREA ALLOCATIONS

SUB-BASIN IDENTIFIER #	ON-SITE AREA (ACRE)	OFF-SITE AREA (ACRE)	TOTAL (ACRE)
Ex_Trib_Area_1	1.03	0	1.03
Ex_Trib_Area_2	3.45	5.57	9.02
Ex_Trib_Area_3	0.00	9.61	9.61
Total (Acre)	4.48	15.18	19.66

TABLE 4. POST-DEVELOPMENT SUBBASIN AREA ALLOCATIONS

SUB-BASIN IDENTIFIER #	ON-SITE AREA (ACRE)	OFF-SITE AREA (ACRE)	TOTAL (ACRE)
Ex_Trib_Area_1	0.64	0.00	0.64
Ex_Trib_Area_2	3.45	5.57	9.02
Ex_Trib_Area_3	0.00	9.61	9.61
Pr_Trib_Area_1A	0.09	0.00	0.09
Pr_Trib_Area_1B	0.17	0.00	0.17
Pr_Trib_Area_1C	0.08	0.00	0.08
Pr_Trib_Area_2	0.50	0.00	0.50
Total (Acre)	4.93	15.18	20.11

TABLE 5. STORMWATER MANAGEMENT SUMMARY

	1 Year	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Predeveloped Q	23.06	31.88	45.03	56.45	72.67	86.13	100.29
Postdeveloped Q	23.12	31.90	44.67	55.74	71.02	83.77	97.18
Allowable Release	0.00	0.00	0.00	0.00	0.00	0.00	0.42
Actual Release (Facility i.d. 4725)	0.00	0.00	0.00	0.00	0.00	0.00	0.39

1. Pre- & Post-developed Q represents the inflow into the existing basin. The allowable and actual release was determined from the existing structure (Facility ID 4725).

2. The Post-developed Q releases rate decreases from the Pre-developed Q starting at the 5 year storm due to the additional storage provided from the proposed storm network.

APPENDICES

APPENDIX A: SOILS INFORMATION

Map Scale: 1:2,900 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:12,000 to 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Delaware County, Ohio
Survey Area Data: Version 21, Sep 8, 2022

Soil Survey Area: Franklin County, Ohio
Survey Area Data: Version 21, Sep 8, 2022

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 4, 2014—Aug 27, 2014

MAP LEGEND

MAP INFORMATION

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
UdB	Udorthents, clayey-Urban land complex, undulating		13.8	63.5%
Subtotals for Soil Survey Area			**13.8**	**63.5%**
Totals for Area of Interest			**21.7**	**100.0%**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	3.2	14.7%
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	4.7	21.8%
Subtotals for Soil Survey Area			**7.9**	**36.5%**
Totals for Area of Interest			**21.7**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX B: PRE-DEVELOPMENT SSA OUTPUT

Project Description

File Name	18164_Pre Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	3
Nodes	5
Junctions	3
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	4
Channels	0
Pipes	3
Pumps	0
Orifices	0
Weirs	1
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	001 Year Storm	Cumulative	inches	Ohio	Franklin	1.00	2.20	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	1.03	484.00	87.17	2.20	1.08	1.11	1.54	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	2.20	0.71	6.78	9.17	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	2.20	1.00	9.05	12.53	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.00	957.00	0.00	11.00	0 00:00	0.00	0.00
2	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	1.53	958.12	0.00	7.91	0 00:00	0.00	0.00
3	4-Jun	Junction	0.00	6.00	0.00	6.00	0.00	0.00	0.00	0.00	6.00	0 00:00	0.00	0.00
4	Out-1	Outfall	956.97					0.00	956.97					
5	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	23.06	955.55				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.00	10.29	0.00	0.00	0.00	0.00	0.00	Calculated
2	Link-05	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	1.45	1.07	1.35	4.15	0.67	1.00	16.00	SURCHARGED
3	Outlet-02	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.00	24.78	0.00	0.00	0.88	0.50	0.00	Calculated
4	Weir-01	Weir	EX-CB	Stor-01		955.48	950.00				0.00							

Subbasin Hydrology

Subbasin : Ex_Trib_Area_1

Input Data

Area (ac)	1.03
Peak Rate Factor	484
Weighted Curve Number	87.17
Rain Gage ID	City_Of_Dublin

Composite Curve Number

32

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
> 75% grass cover, Good	0.62	D	80
Paved parking & roofs	0.41	D	98
Composite Area & Weighted CN	1.03		87.17

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

Total Rainfall (in)	2.2
Total Runoff (in)	1.08
Peak Runoff (cfs)	1.54
Weighted Curve Number	87.17
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Ex_Trib_Area_2

Input Data

Area (ac)	9.61
Peak Rate Factor	484
Weighted Curve Number	80.37
Rain Gage ID	City_Of_Dublin

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
> 75% grass cover, Good	9.41	D	80
Paved parking & roofs	0.2	D	98
Composite Area & Weighted CN	9.61		80.37

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

Total Rainfall (in)	2.2
Total Runoff (in)	0.71
Peak Runoff (cfs)	9.17
Weighted Curve Number	80.37
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : EX_Trib_Area_3

Input Data

Area (ac)	9.02
Peak Rate Factor	484
Weighted Curve Number	86
Rain Gage ID	City_Of_Dublin

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
1/3 acre lots, 30% impervious	9.02	D	86
Composite Area & Weighted CN	9.02		86

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

Total Rainfall (in)	2.2
Total Runoff (in)	1
Peak Runoff (cfs)	12.53
Weighted Curve Number	86
Time of Concentration (days hh:mm:ss)	0 00:10:00

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	0.00
2	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
3	4-Jun	0.00	6.00	6.00	0.00	0.00	6.00	0.00	0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.00	0.00	957.00	0.00	0.00	11.00	957.00	0.00	0 00:00	0 00:00	0.00	0.00
2	EX-CB	1.53	1.53	958.12	2.64	0.00	7.91	955.56	0.08	0 12:06	0 00:00	0.00	0.00
3	4-Jun	0.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00	0 00:00	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Outlet-02	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.00	0 00:00	10.29	0.00	0.00		0.00	0.00	0.00		Calculated
2	Link-05	1.45	0 12:06	1.07	1.35	4.15	0.57	0.67	1.00	16.00		SURCHARGED
3	Outlet-02	0.00	0 00:00	24.78	0.00	0.00		0.88	0.50	0.00		Calculated

Storage Nodes

Storage Node : Stor-01

Input Data

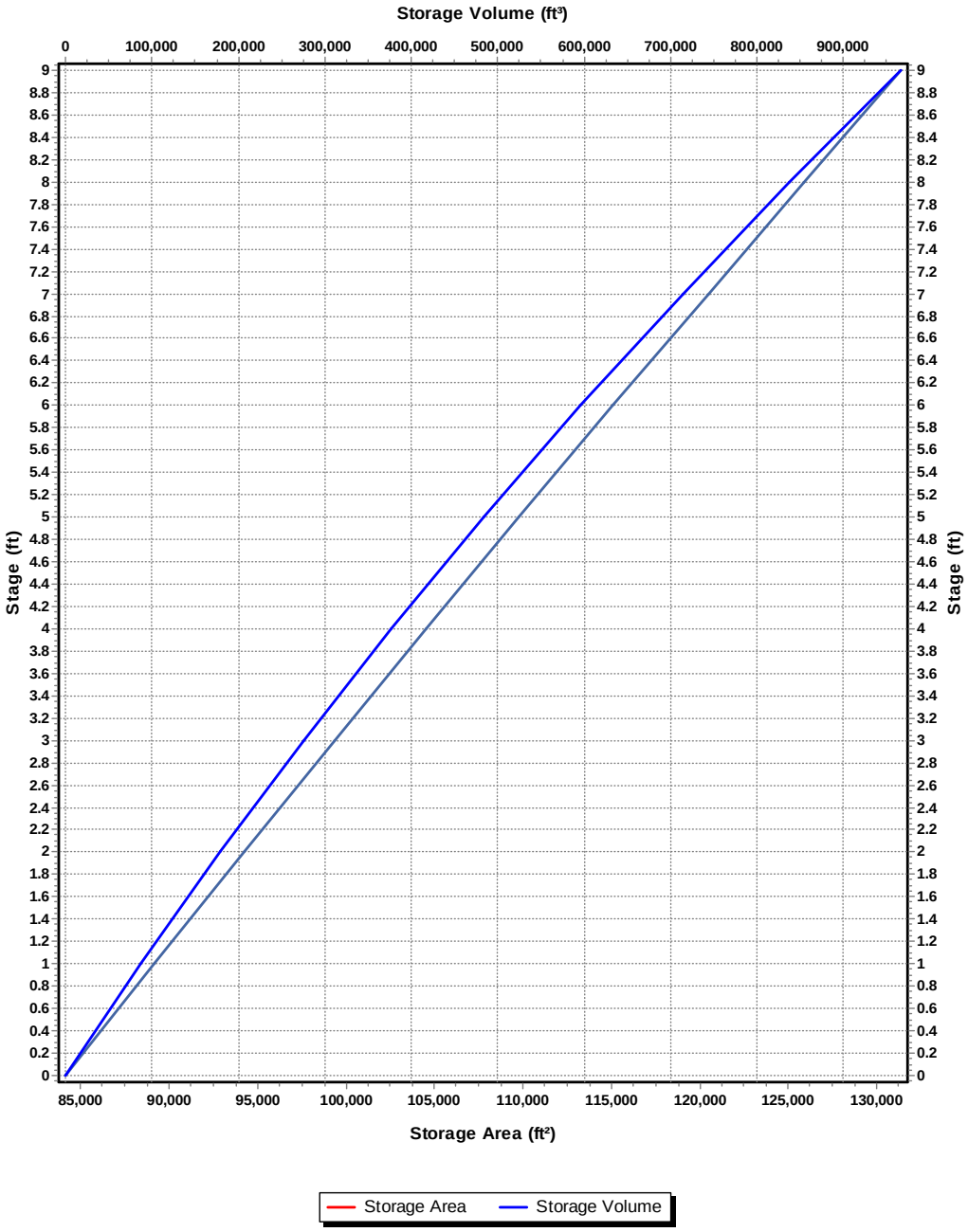
Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	23.06
Peak Lateral Inflow (cfs)	21.64
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	955.55
Max HGL Depth Attained (ft)	5.55
Average HGL Elevation Attained (ft)	955.23
Average HGL Depth Attained (ft)	5.23
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Project Description

File Name	18164_Pre Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	3
Nodes	5
Junctions	3
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	4
Channels	0
Pipes	3
Pumps	0
Orifices	0
Weirs	1
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	002 Year Storm	Cumulative	inches	Ohio	Franklin	2.00	2.63	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	1.03	484.00	87.17	2.63	1.43	1.48	2.05	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	2.63	1.00	9.61	13.20	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	2.63	1.35	12.18	16.88	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.00	957.00	0.00	11.00	0 00:00	0.00	0.00
2	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	2.04	960.31	0.00	5.72	0 00:00	0.00	0.00
3	4-Jun	Junction	0.00	6.00	0.00	6.00	0.00	0.00	0.00	0.00	6.00	0 00:00	0.00	0.00
4	Out-1	Outfall	956.97					0.00	956.97					
5	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	31.88	955.75				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.00	10.29	0.00	0.00	0.00	0.00	0.00	Calculated
2	Link-05	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	1.89	1.07	1.76	5.42	0.67	1.00	21.00	SURCHARGED
3	Outlet-02	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.00	24.78	0.00	0.00	0.88	0.50	0.00	Calculated
4	Weir-01	Weir	EX-CB	Stor-01		955.48	950.00				0.00							

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	0.00
2	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
3	4-Jun	0.00	6.00	6.00	0.00	0.00	6.00	0.00	0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.00	0.00	957.00	0.00	0.00	11.00	957.00	0.00	0 00:00	0 00:00	0.00	0.00
2	EX-CB	2.04	2.04	960.31	4.83	0.00	5.72	955.63	0.15	0 12:06	0 00:00	0.00	0.00
3	4-Jun	0.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00	0 00:00	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Outlet-02	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.00	0 00:00	10.29	0.00	0.00		0.00	0.00	0.00		Calculated
2	Link-05	1.89	0 12:06	1.07	1.76	5.42	0.43	0.67	1.00	21.00		SURCHARGED
3	Outlet-02	0.00	0 00:00	24.78	0.00	0.00		0.88	0.50	0.00		Calculated

Storage Nodes

Storage Node : Stor-01

Input Data

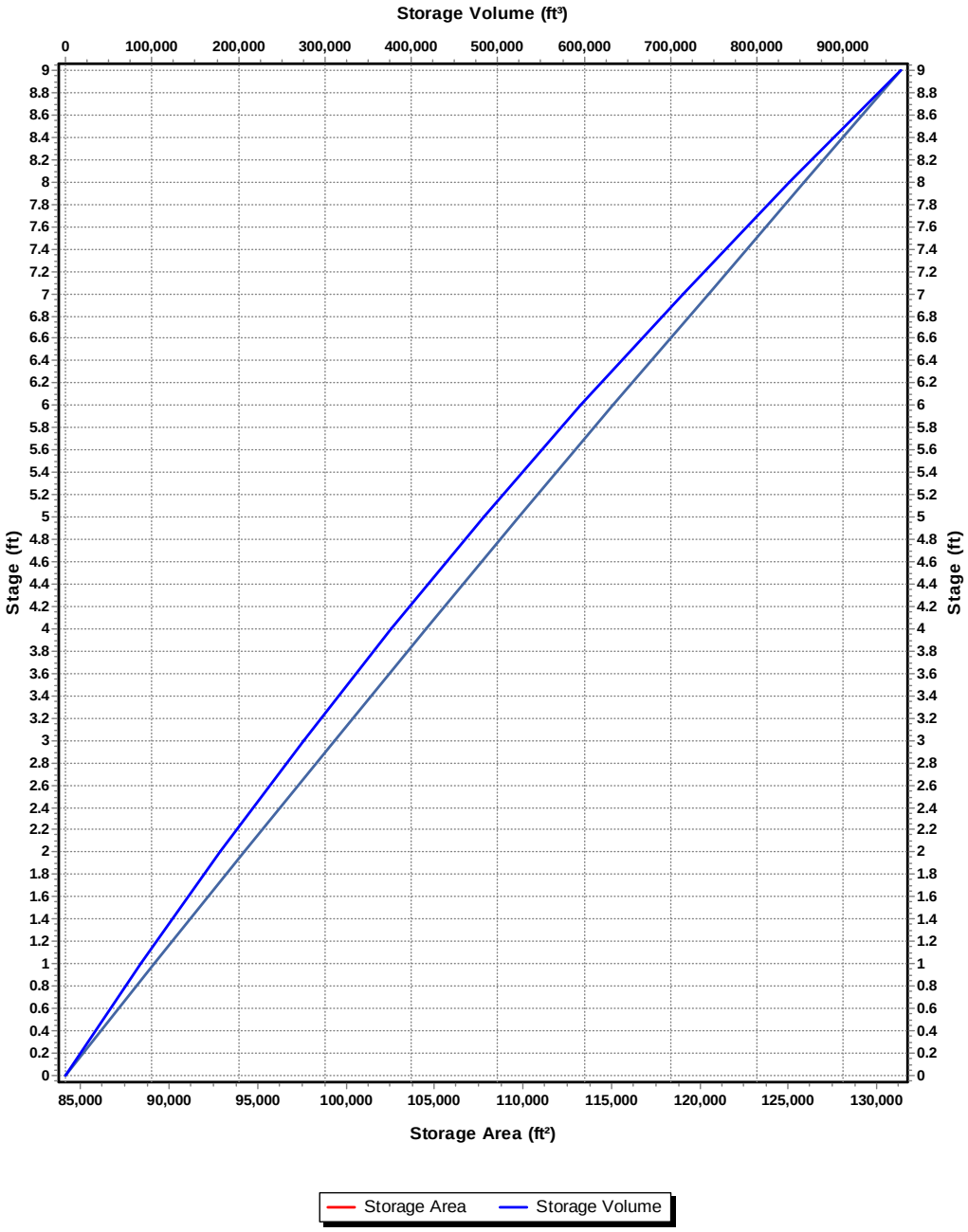
Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	31.88
Peak Lateral Inflow (cfs)	30.04
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	955.75
Max HGL Depth Attained (ft)	5.75
Average HGL Elevation Attained (ft)	955.31
Average HGL Depth Attained (ft)	5.31
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Project Description

File Name	18164_Pre Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	3
Nodes	5
Junctions	3
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	4
Channels	0
Pipes	3
Pumps	0
Orifices	0
Weirs	1
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	005 Year Storm	Cumulative	inches	Ohio	Franklin	5.00	3.24	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	1.03	484.00	87.17	3.24	1.96	2.02	2.79	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	3.24	1.46	14.01	19.39	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	3.24	1.87	16.87	23.31	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.00	957.00	0.00	11.00	0 00:00	0.00	0.00
2	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	2.77	964.38	0.00	1.65	0 00:00	0.00	0.00
3	4-Jun	Junction	0.00	6.00	0.00	6.00	0.00	0.00	0.00	0.00	6.00	0 00:00	0.00	0.00
4	Out-1	Outfall	956.97					0.00	956.97					
5	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	45.03	956.05				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.00	10.29	0.00	0.00	0.00	0.00	0.00	Calculated
2	Link-05	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	2.52	1.07	2.35	7.23	0.67	1.00	29.00	SURCHARGED
3	Outlet-02	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.00	24.78	0.00	0.00	0.88	0.50	0.00	Calculated
4	Weir-01	Weir	EX-CB	Stor-01		955.48	950.00				0.00							

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	0.00
2	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
3	4-Jun	0.00	6.00	6.00	0.00	0.00	6.00	0.00	0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.00	0.00	957.00	0.00	0.00	11.00	957.00	0.00	0 00:00	0 00:00	0.00	0.00
2	EX-CB	2.77	2.77	964.38	8.90	0.00	1.65	955.80	0.32	0 12:06	0 00:00	0.00	0.00
3	4-Jun	0.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00	0 00:00	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Outlet-02	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.00	0 00:00	10.29	0.00	0.00		0.00	0.00	0.00		Calculated
2	Link-05	2.52	0 12:06	1.07	2.35	7.23	0.33	0.67	1.00	29.00		SURCHARGED
3	Outlet-02	0.00	0 00:00	24.78	0.00	0.00		0.88	0.50	0.00		Calculated

Storage Nodes

Storage Node : Stor-01

Input Data

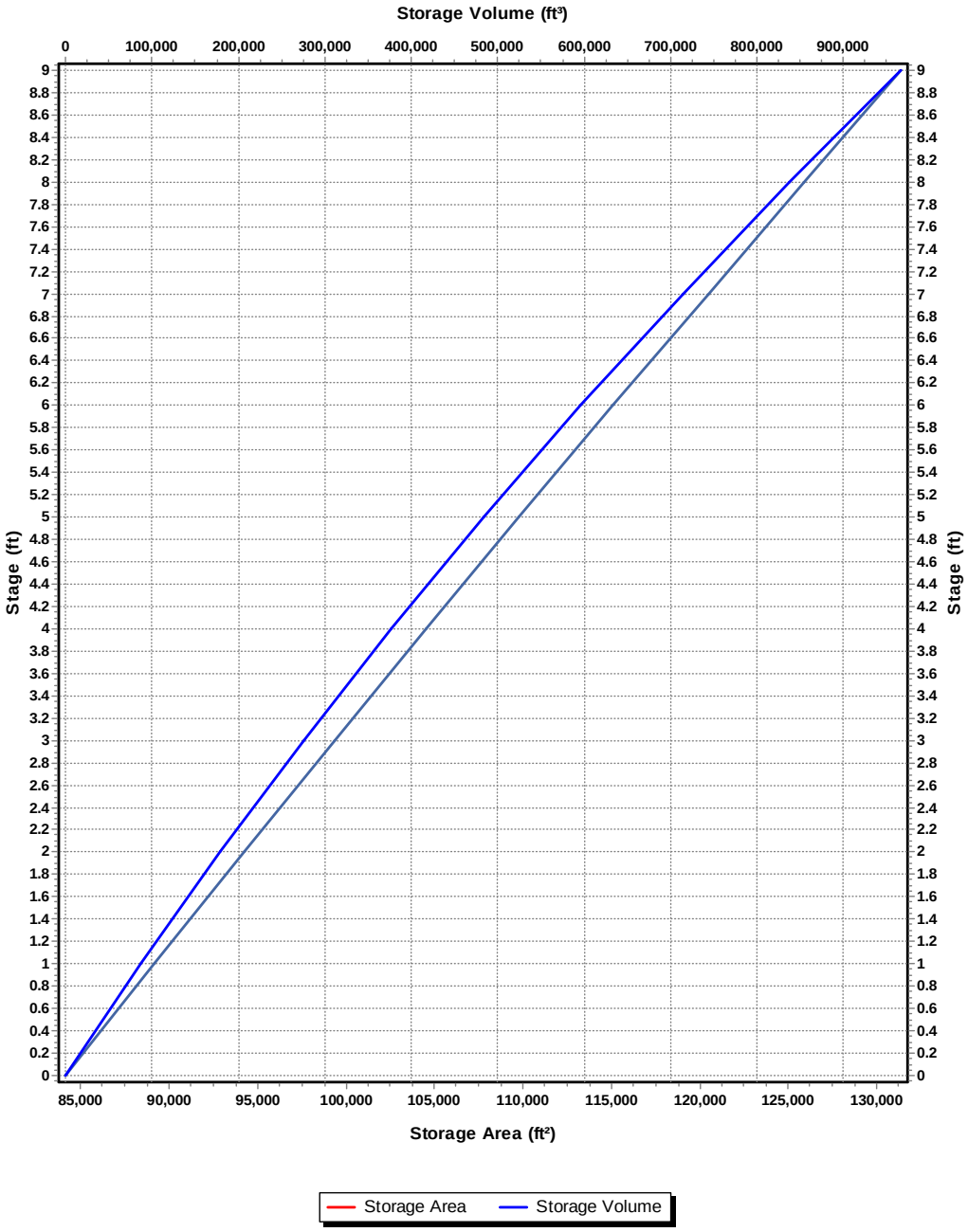
Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	45.03
Peak Lateral Inflow (cfs)	42.58
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	956.05
Max HGL Depth Attained (ft)	6.05
Average HGL Elevation Attained (ft)	955.45
Average HGL Depth Attained (ft)	5.45
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Project Description

File Name	18164_Pre Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	3
Nodes	5
Junctions	3
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	4
Channels	0
Pipes	3
Pumps	0
Orifices	0
Weirs	1
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	010 Year Storm	Cumulative	inches	Ohio	Franklin	10.00	3.74	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	1.03	484.00	87.17	3.74	2.41	2.49	3.41	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	3.74	1.86	17.85	24.74	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	3.74	2.31	20.85	28.70	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.00	957.00	0.00	11.00	0 00:00	0.00	0.00
2	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	3.38	965.05	0.00	0.98	0 00:00	0.00	0.00
3	4-Jun	Junction	0.00	6.00	0.00	6.00	0.00	0.00	0.00	0.00	6.00	0 00:00	0.00	0.00
4	Out-1	Outfall	956.97					0.00	956.97					
5	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	56.64	956.31				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.00	10.29	0.00	0.00	0.00	0.00	0.00	Calculated
2	Link-05	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	2.62	1.07	2.44	7.50	0.67	1.00	422.00	SURCHARGED
3	Outlet-02	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.00	24.78	0.00	0.00	0.88	0.50	0.00	Calculated
4	Weir-01	Weir	EX-CB	Stor-01		955.48	950.00				0.78							

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	0.00
2	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
3	4-Jun	0.00	6.00	6.00	0.00	0.00	6.00	0.00	0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.00	0.00	957.00	0.00	0.00	11.00	957.00	0.00	0 00:00	0 00:00	0.00	0.00
2	EX-CB	3.38	3.38	965.05	9.57	0.00	0.98	955.95	0.47	0 12:04	0 00:00	0.00	0.00
3	4-Jun	0.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00	0 00:00	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Outlet-02	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.00	0 00:00	10.29	0.00	0.00		0.00	0.00	0.00		Calculated
2	Link-05	2.62	0 12:02	1.07	2.44	7.50	0.31	0.67	1.00	422.00		SURCHARGED
3	Outlet-02	0.00	0 00:00	24.78	0.00	0.00		0.88	0.50	0.00		Calculated

Storage Nodes

Storage Node : Stor-01

Input Data

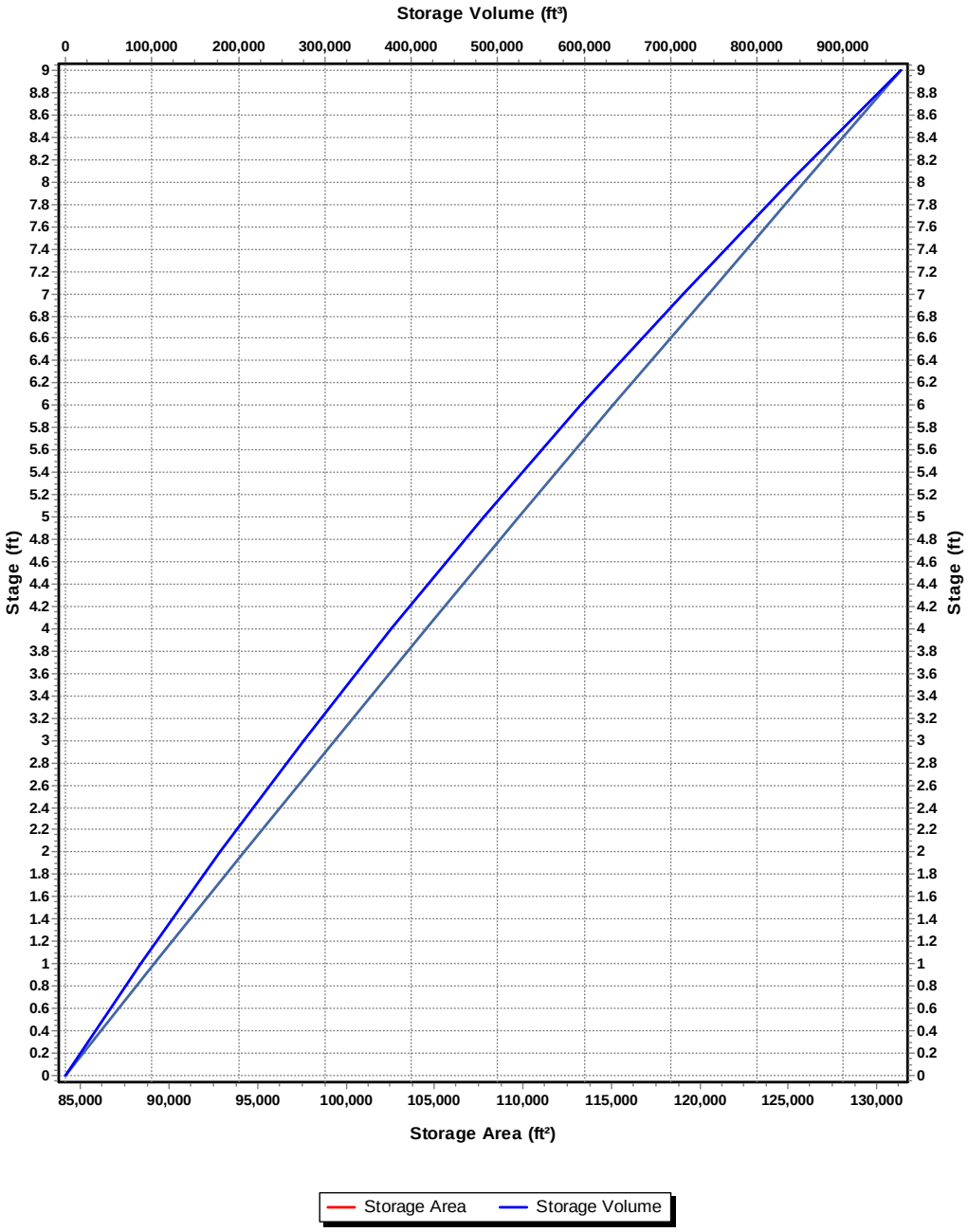
Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	56.64
Peak Lateral Inflow (cfs)	53.25
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	956.31
Max HGL Depth Attained (ft)	6.31
Average HGL Elevation Attained (ft)	955.56
Average HGL Depth Attained (ft)	5.56
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Project Description

File Name	18164_Pre Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	3
Nodes	5
Junctions	3
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	4
Channels	0
Pipes	3
Pumps	0
Orifices	0
Weirs	1
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	025 Year Storm	Cumulative	inches	Ohio	Franklin	25.00	4.44	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	1.03	484.00	87.17	4.44	3.06	3.15	4.29	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	4.44	2.44	23.47	32.51	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	4.44	2.95	26.59	36.34	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.00	957.00	0.00	11.00	0 00:00	0.00	0.00
2	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	4.24	965.06	0.00	0.97	0 00:00	0.00	0.00
3	4-Jun	Junction	0.00	6.00	0.00	6.00	0.00	0.00	0.00	0.00	6.00	0 00:00	0.00	0.00
4	Out-1	Outfall	956.97					0.00	956.97					
5	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	72.67	956.68				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.00	10.29	0.00	0.00	0.00	0.00	0.00	Calculated
2	Link-05	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	2.61	1.07	2.43	7.48	0.67	1.00	733.00	SURCHARGED
3	Outlet-02	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.00	24.78	0.00	0.00	0.88	0.50	0.00	Calculated
4	Weir-01	Weir	EX-CB	Stor-01		955.48	950.00				1.66							

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	0.00
2	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
3	4-Jun	0.00	6.00	6.00	0.00	0.00	6.00	0.00	0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.00	0.00	957.00	0.00	0.00	11.00	957.00	0.00	0 00:00	0 00:00	0.00	0.00
2	EX-CB	4.24	4.24	965.06	9.58	0.00	0.97	956.15	0.67	0 12:04	0 00:00	0.00	0.00
3	4-Jun	0.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00	0 00:00	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Outlet-02	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.00	0 00:00	10.29	0.00	0.00		0.00	0.00	0.00		Calculated
2	Link-05	2.61	0 11:59	1.07	2.43	7.48	0.31	0.67	1.00	733.00		SURCHARGED
3	Outlet-02	0.00	0 00:00	24.78	0.00	0.00		0.88	0.50	0.00		Calculated

Storage Nodes

Storage Node : Stor-01

Input Data

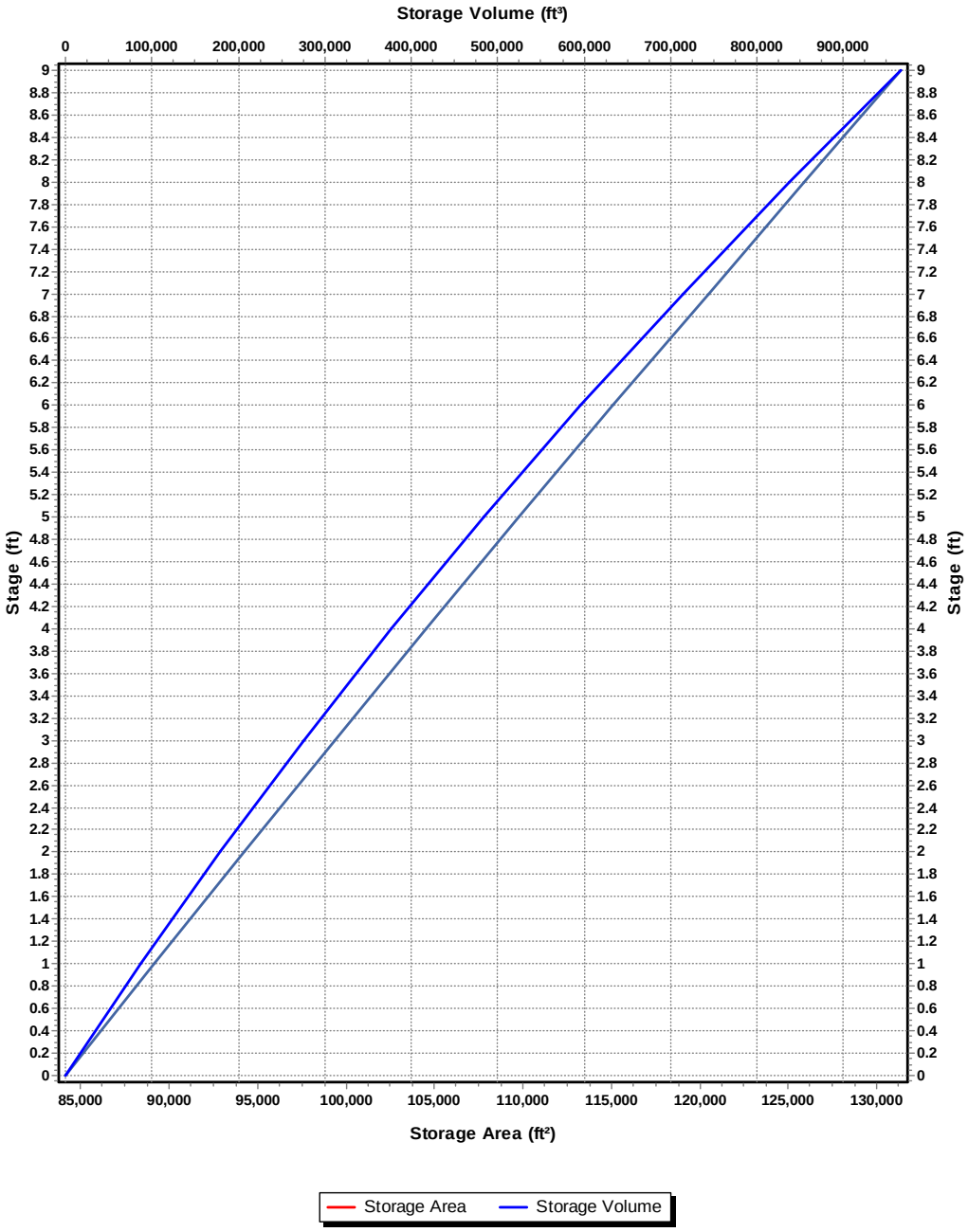
Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	72.67
Peak Lateral Inflow (cfs)	68.42
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	956.68
Max HGL Depth Attained (ft)	6.68
Average HGL Elevation Attained (ft)	955.73
Average HGL Depth Attained (ft)	5.73
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Project Description

File Name	18164_Pre Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	3
Nodes	5
Junctions	3
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	4
Channels	0
Pipes	3
Pumps	0
Orifices	0
Weirs	1
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	050 Year Storm	Cumulative	inches	Ohio	Franklin	50.00	5.02	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	1.03	484.00	87.17	5.02	3.60	3.71	5.02	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	5.02	2.94	28.29	39.09	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	5.02	3.49	31.44	42.71	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.00	957.00	0.00	11.00	0 00:00	0.00	0.00
2	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	4.96	965.07	0.00	0.96	0 00:00	0.00	0.00
3	4-Jun	Junction	0.00	6.00	0.00	6.00	0.00	0.00	0.00	0.00	6.00	0 00:00	0.00	0.00
4	Out-1	Outfall	956.97					0.00	956.97					
5	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	86.13	956.99				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.00	10.29	0.00	0.00	0.00	0.00	0.00	Calculated
2	Link-05	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	2.60	1.07	2.43	7.46	0.67	1.00	734.00	SURCHARGED
3	Outlet-02	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.00	24.78	0.00	0.00	0.88	0.50	0.00	Calculated
4	Weir-01	Weir	EX-CB	Stor-01		955.48	950.00				2.39							

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	0.00
2	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
3	4-Jun	0.00	6.00	6.00	0.00	0.00	6.00	0.00	0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.00	0.00	957.00	0.00	0.00	11.00	957.00	0.00	0 00:00	0 00:00	0.00	0.00
2	EX-CB	4.96	4.96	965.07	9.59	0.00	0.96	956.31	0.83	0 12:04	0 00:00	0.00	0.00
3	4-Jun	0.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00	0 00:00	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Outlet-02	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.00	0 00:00	10.29	0.00	0.00		0.00	0.00	0.00		Calculated
2	Link-05	2.60	0 11:57	1.07	2.43	7.46	0.32	0.67	1.00	734.00		SURCHARGED
3	Outlet-02	0.00	0 00:00	24.78	0.00	0.00		0.88	0.50	0.00		Calculated

Storage Nodes

Storage Node : Stor-01

Input Data

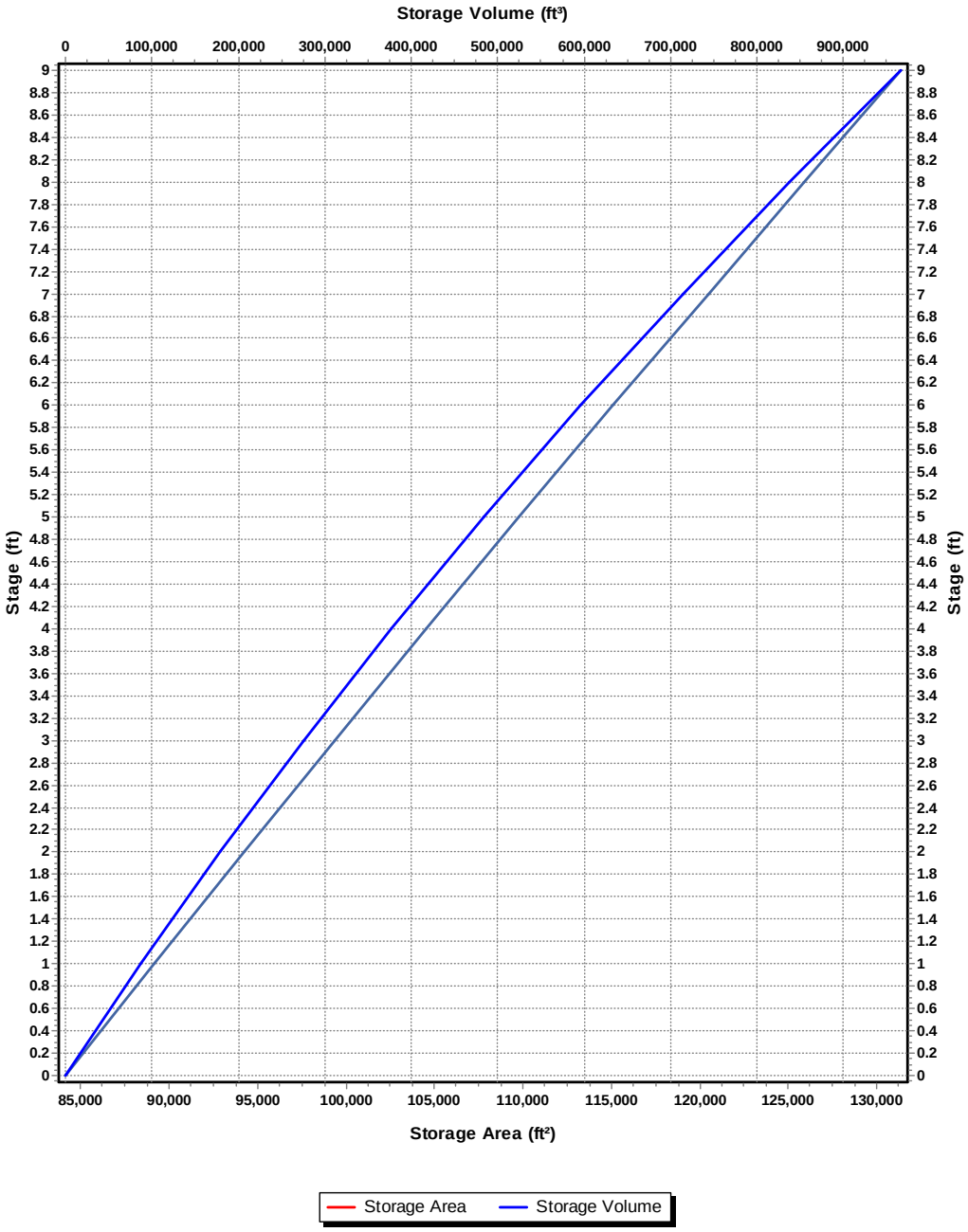
Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	86.13
Peak Lateral Inflow (cfs)	81.17
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	956.99
Max HGL Depth Attained (ft)	6.99
Average HGL Elevation Attained (ft)	955.87
Average HGL Depth Attained (ft)	5.87
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Project Description

File Name	18164_Pre Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	3
Nodes	5
Junctions	3
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	4
Channels	0
Pipes	3
Pumps	0
Orifices	0
Weirs	1
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	100 Year Storm	Cumulative	inches	Ohio	Franklin	100.00	5.63	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	1.03	484.00	87.17	5.63	4.18	4.31	5.78	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	5.63	3.49	33.50	46.13	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	5.63	4.06	36.61	49.42	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.42	957.26	0.00	10.74	0 00:00	0.00	0.00
2	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	5.70	965.07	0.00	0.96	0 00:00	0.00	0.00
3	4-Jun	Junction	0.00	6.00	0.00	6.00	0.00	0.00	0.00	0.00	6.00	0 00:00	0.00	0.00
4	Out-1	Outfall	956.97					0.42	957.14					
5	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	100.29	957.27				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.42	10.29	0.04	2.96	0.22	0.17	0.00	Calculated
2	Link-05	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	2.60	1.07	2.42	7.44	0.67	1.00	736.00	SURCHARGED
3	Outlet-02	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.42	24.78	0.02	0.29	1.00	0.57	0.00	Calculated
4	Weir-01	Weir	EX-CB	Stor-01		955.48	950.00				3.16							

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	0.00
2	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
3	4-Jun	0.00	6.00	6.00	0.00	0.00	6.00	0.00	0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.42	0.00	957.26	0.26	0.00	10.74	957.05	0.05	1 00:00	0 00:00	0.00	0.00
2	EX-CB	5.70	5.70	965.07	9.59	0.00	0.96	956.48	1.00	0 12:04	0 00:00	0.00	0.00
3	4-Jun	0.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00	0 00:00	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Outlet-02	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.42	1 00:00	10.29	0.04	2.96	0.01	0.22	0.17	0.00		Calculated
2	Link-05	2.60	0 11:56	1.07	2.42	7.44	0.32	0.67	1.00	736.00		SURCHARGED
3	Outlet-02	0.42	1 00:00	24.78	0.02	0.29	10.75	1.00	0.57	0.00		Calculated

Storage Nodes

Storage Node : Stor-01

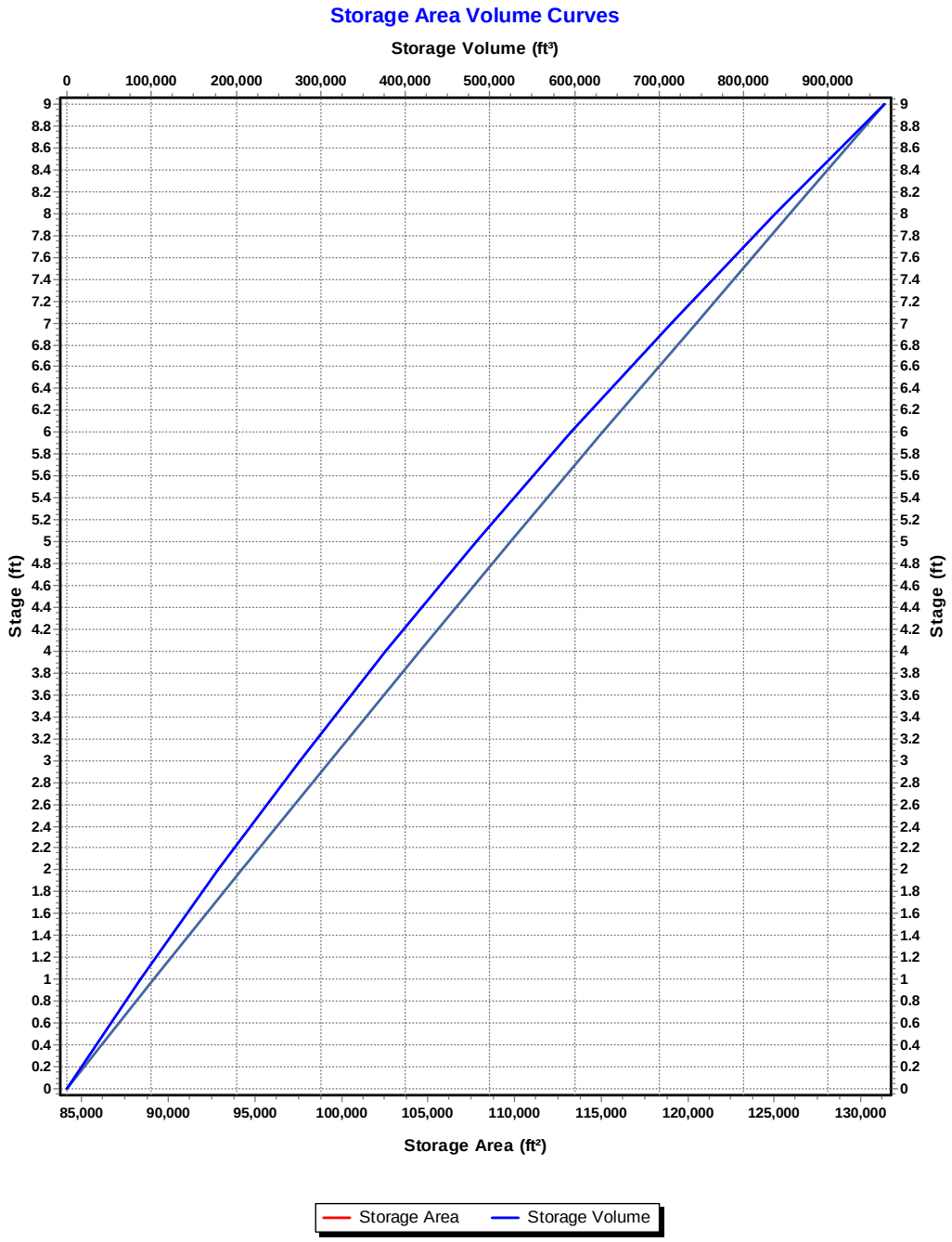
Input Data

Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	100.29
Peak Lateral Inflow (cfs)	94.59
Peak Outflow (cfs)	0.42
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	957.27
Max HGL Depth Attained (ft)	7.27
Average HGL Elevation Attained (ft)	956.02
Average HGL Depth Attained (ft)	6.02
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

APPENDIX C: PRE-DEVELOPMENT MAP

100' 0 100' 200'
DRAWING SCALE 1" = 100'

verdantas
PEOPLE FOCUSED FUTURE
6397 EMERALD PKWY, SUITE 200
DUBLIN, OH 43016
TEL: 614.793.8777
FAX: 614.360.0023

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT NO.
EJK	JPW	EJK	18164

No.	REVISION	CHK'D BY DATE

PRIVATE SITE IMPROVEMENT PLAN FOR
THE COUNTRY CLUB AT MURFIELD VILLAGE
WEST PATIO ADDITION
FRANKLIN COUNTY, DUBLIN, OHIO
APPENDIX C

APPLICATION NO.

DATE: 6/28/2023

SCALE:

SHEET:

z:\project files\ca-d2\country\cb\18164 - tccmv west patio addition\cad\exhibits\18164-pre trib map.dwg

APPENDIX D: POST-DEVELOPMENT SSA OUTPUT

Project Description

File Name	18164_Post Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	7
Nodes	10
Junctions	8
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	12
Channels	0
Pipes	9
Pumps	0
Orifices	0
Weirs	3
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	001 Year Storm	Cumulative	inches	Ohio	Franklin	1.00	2.20	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	0.64	484.00	88.68	2.20	1.17	0.75	1.04	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	2.20	0.71	6.78	9.17	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	2.20	1.00	9.05	12.53	0 00:10:00
4	Pr_Trib_Area_1A	0.09	484.00	80.00	2.20	0.69	0.06	0.08	0 00:10:00
5	Pr_Trib_Area_1B	0.17	484.00	90.27	2.20	1.28	0.22	0.31	0 00:10:00
6	Pr_Trib_Area_1C	0.08	484.00	98.00	2.20	1.96	0.15	0.19	0 00:10:00
7	Pr_Trib_Area_2	0.05	484.00	80.00	2.20	0.61	0.03	0.05	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.00	957.00	0.00	11.00	0 00:00	0.00	0.00
2	D1	Junction	959.64	965.84	959.64	965.84	0.00	0.60	960.04	0.00	5.80	0 00:00	0.00	0.00
3	D2	Junction	959.91	963.19	959.91	963.19	0.00	0.61	960.30	0.00	3.72	0 00:00	0.00	0.00
4	D3	Junction	960.22	963.38	960.22	964.23	610.00	0.56	960.59	0.00	3.74	0 00:00	0.00	0.00
5	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	1.62	958.52	0.00	7.51	0 00:00	0.00	0.00
6	8-Jun	Junction	960.28	979.19	960.28	979.19	0.00	0.48	960.69	0.00	18.50	0 00:00	0.00	0.00
7	9-Jun	Junction	961.15	979.19	961.15	979.19	0.00	0.19	961.33	0.00	17.86	0 00:00	0.00	0.00
8	12-Jun	Junction	960.54	979.19	960.54	979.19	0.00	0.31	960.93	0.00	18.26	0 00:00	0.00	0.00
9	Out-1	Outfall	956.97					0.00	956.97					
10	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	23.12	955.55				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.00	10.29	0.00	0.00	0.00	0.00	0.00	Calculated
2	Link-05	Pipe	D1	EX-CB	34.20	959.64	959.47	0.5000	12.000	0.0150	0.60	2.18	0.28	2.37	0.35	0.36	0.00	Calculated
3	Link-07	Pipe	D3	D2	61.09	960.22	959.91	0.5100	12.000	0.0150	0.56	2.20	0.25	2.07	0.37	0.38	0.00	Calculated
4	Link-08	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	1.54	1.07	1.43	4.41	0.67	1.00	18.00	SURCHARGED
5	Link-09	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.00	24.78	0.00	0.00	0.88	0.50	0.00	Calculated
6	Link-11	Pipe	D2	D1	53.76	959.91	959.64	0.5000	12.000	0.0150	0.60	2.19	0.28	2.11	0.39	0.39	0.00	Calculated
7	Link-14	Pipe	9-Jun	8-Jun	75.20	961.15	960.28	1.1600	8.000	0.0150	0.18	1.13	0.16	1.26	0.30	0.45	0.00	Calculated
8	Link-15	Pipe	8-Jun	D3	21.67	960.28	960.22	0.2800	12.000	0.0150	0.48	1.62	0.30	1.70	0.39	0.39	0.00	Calculated
9	Link-19	Pipe	12-Jun	8-Jun	114.90	960.54	960.22	0.2800	8.000	0.0150	0.30	0.50	0.60	1.38	0.40	0.60	0.00	Calculated
10	Weir-02	Weir	D3	D2		960.22	959.91				0.00							
11	Weir-03	Weir	D2	Stor-01		959.91	950.00				0.00							
12	Weir-05	Weir	EX-CB	Stor-01		955.48	950.00				0.00							

Subbasin Hydrology

Subbasin : Ex_Trib_Area_1

Input Data

Area (ac)	0.64
Peak Rate Factor	484
Weighted Curve Number	88.68
Rain Gage ID	City_Of_Dublin

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
> 75% grass cover, Good	0.33	D	80
Paved parking & roofs	0.31	D	98
Composite Area & Weighted CN	0.64		88.68

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

Total Rainfall (in)	2.2
Total Runoff (in)	1.17
Peak Runoff (cfs)	1.04
Weighted Curve Number	88.68
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Ex_Trib_Area_2

Input Data

Area (ac)	9.61
Peak Rate Factor	484
Weighted Curve Number	80.37
Rain Gage ID	City_Of_Dublin

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
> 75% grass cover, Good	9.41	D	80
Paved parking & roofs	0.2	D	98
Composite Area & Weighted CN	9.61		80.37

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

Total Rainfall (in)	2.2
Total Runoff (in)	0.71
Peak Runoff (cfs)	9.17
Weighted Curve Number	80.37
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : EX_Trib_Area_3

Input Data

Area (ac)	9.02
Peak Rate Factor	484
Weighted Curve Number	86
Rain Gage ID	City_Of_Dublin

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
1/3 acre lots, 30% impervious	9.02	D	86
Composite Area & Weighted CN	9.02		86

Time of Concentration

User-Defined TOC override (minutes): 10.00

Subbasin Runoff Results

Total Rainfall (in)	2.2
Total Runoff (in)	1
Peak Runoff (cfs)	12.53
Weighted Curve Number	86
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Pr_Trib_Area_1A

Input Data

Area (ac)	0.09
Peak Rate Factor	484
Weighted Curve Number	80
Rain Gage ID	City_Of_Dublin

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
> 75% grass cover, Good	0.09	D	80
Composite Area & Weighted CN	0.09		80

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

Total Rainfall (in)	2.2
Total Runoff (in)	0.69
Peak Runoff (cfs)	0.08
Weighted Curve Number	80
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Pr_Trib_Area_1B

Input Data

Area (ac)	0.17
Peak Rate Factor	484
Weighted Curve Number	90.27
Rain Gage ID	City_Of_Dublin

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.1	D	98
> 75% grass cover, Good	0.07	D	80
Composite Area & Weighted CN	0.17		90.27

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

Total Rainfall (in)	2.2
Total Runoff (in)	1.28
Peak Runoff (cfs)	0.31
Weighted Curve Number	90.27
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Pr_Trib_Area_1C

Input Data

Area (ac)	0.08
Peak Rate Factor	484
Weighted Curve Number	98
Rain Gage ID	City_Of_Dublin

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	0.08	D	98
Composite Area & Weighted CN	0.08		98

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

Total Rainfall (in)	2.2
Total Runoff (in)	1.96
Peak Runoff (cfs)	0.19
Weighted Curve Number	98
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Pr_Trib_Area_2

Input Data

Area (ac)	0.05
Peak Rate Factor	484
Weighted Curve Number	80
Rain Gage ID	City_Of_Dublin

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
> 75% grass cover, Good	0.05	D	80
Composite Area & Weighted CN	0.05		80

Time of Concentration

User-Defined TOC override (minutes): 10

Subbasin Runoff Results

Total Rainfall (in)	2.2
Total Runoff (in)	0.61
Peak Runoff (cfs)	0.05
Weighted Curve Number	80
Time of Concentration (days hh:mm:ss)	0 00:10:00

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	111.00
2	D1	959.64	965.84	6.20	959.64	0.00	965.84	0.00	0.00	62.40
3	D2	959.91	963.19	3.28	959.91	0.00	963.19	0.00	0.00	0.00
4	D3	960.22	963.38	3.16	960.22	0.00	964.23	0.85	610.00	0.00
5	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
6	8-Jun	960.28	979.19	18.91	960.28	0.00	979.19	0.00	0.00	214.92
7	9-Jun	961.15	979.19	18.04	961.15	0.00	979.19	0.00	0.00	208.48
8	12-Jun	960.54	979.19	18.65	960.54	0.00	979.19	0.00	0.00	215.80

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.00	0.00	957.00	0.00	0.00	11.00	957.00	0.00	0 00:00	0 00:00	0.00	0.00
2	D1	0.60	0.00	960.04	0.40	0.00	5.80	959.69	0.05	0 12:06	0 00:00	0.00	0.00
3	D2	0.61	0.05	960.30	0.39	0.00	3.72	959.96	0.05	0 12:06	0 00:00	0.00	0.00
4	D3	0.56	0.08	960.59	0.37	0.00	3.74	960.27	0.05	0 12:05	0 00:00	0.00	0.00
5	EX-CB	1.62	1.04	958.52	3.04	0.00	7.51	955.57	0.09	0 12:07	0 00:00	0.00	0.00
6	8-Jun	0.48	0.00	960.69	0.41	0.00	18.50	960.33	0.05	0 12:05	0 00:00	0.00	0.00
7	9-Jun	0.19	0.19	961.33	0.18	0.00	17.86	961.18	0.03	0 12:05	0 00:00	0.00	0.00
8	12-Jun	0.31	0.31	960.93	0.39	0.00	18.26	960.58	0.04	0 12:05	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	34.20	959.64	0.00	959.47	3.99	0.17	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Link-07	61.09	960.22	0.00	959.91	0.00	0.31	0.5100	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
4	Link-08	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
5	Link-09	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
6	Link-11	53.76	959.91	0.00	959.64	0.00	0.27	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
7	Link-14	75.20	961.15	0.00	960.28	0.00	0.87	1.1600	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
8	Link-15	21.67	960.28	0.00	960.22	0.00	0.06	0.2800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
9	Link-19	114.90	960.54	0.00	960.22	-0.06	0.32	0.2800	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.00	0 00:00	10.29	0.00	0.00		0.00	0.00	0.00		Calculated
2	Link-05	0.60	0 12:06	2.18	0.28	2.37	0.24	0.35	0.36	0.00		Calculated
3	Link-07	0.56	0 12:06	2.20	0.25	2.07	0.49	0.37	0.38	0.00		Calculated
4	Link-08	1.54	0 12:07	1.07	1.43	4.41	0.53	0.67	1.00	18.00		SURCHARGED
5	Link-09	0.00	0 00:00	24.78	0.00	0.00		0.88	0.50	0.00		Calculated
6	Link-11	0.60	0 12:06	2.19	0.28	2.11	0.42	0.39	0.39	0.00		Calculated
7	Link-14	0.18	0 12:05	1.13	0.16	1.26	0.99	0.30	0.45	0.00		Calculated
8	Link-15	0.48	0 12:05	1.62	0.30	1.70	0.21	0.39	0.39	0.00		Calculated
9	Link-19	0.30	0 12:05	0.50	0.60	1.38	1.39	0.40	0.60	0.00		Calculated

Storage Nodes

Storage Node : Stor-01

Input Data

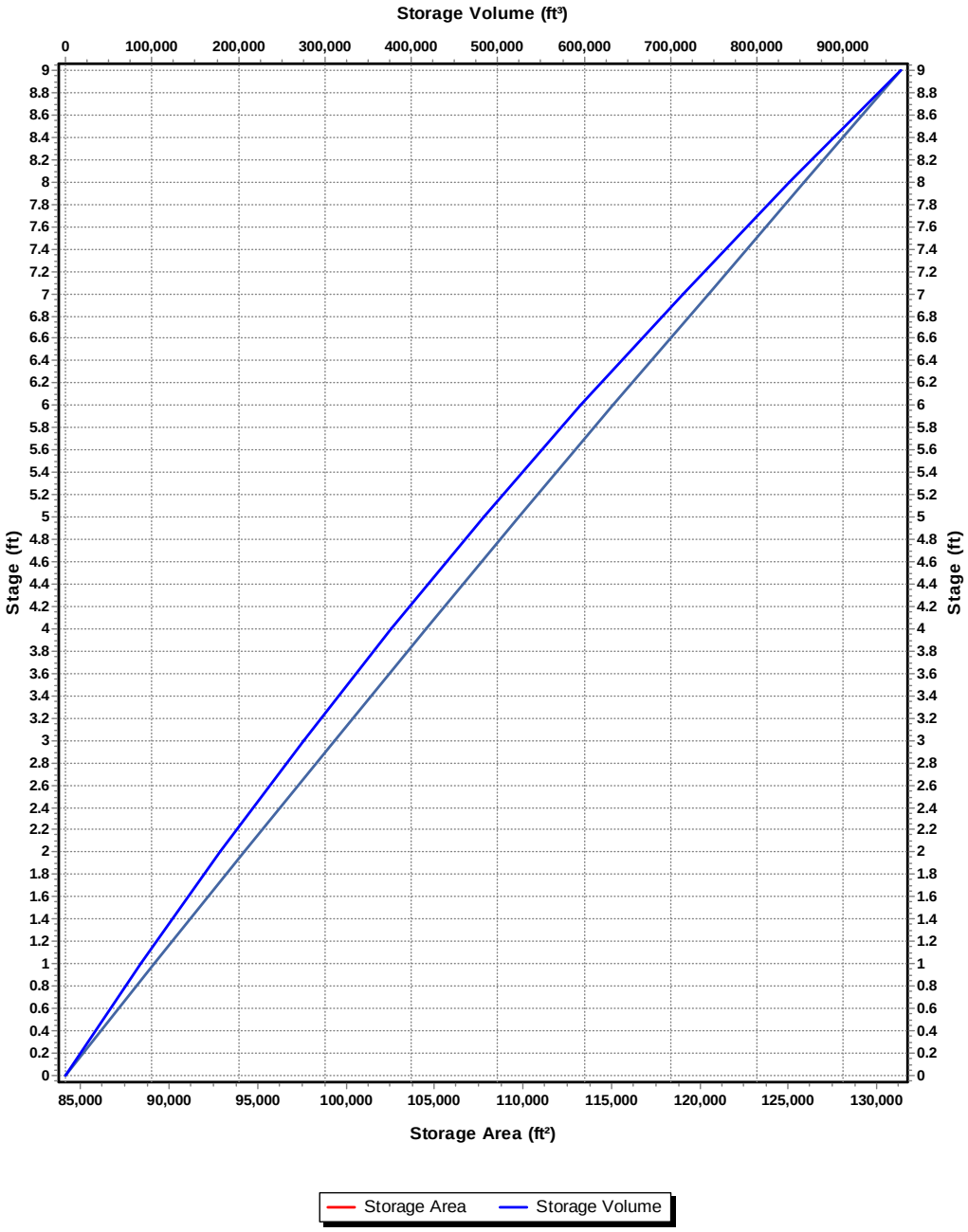
Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	23.12
Peak Lateral Inflow (cfs)	21.64
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	955.55
Max HGL Depth Attained (ft)	5.55
Average HGL Elevation Attained (ft)	955.23
Average HGL Depth Attained (ft)	5.23
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Project Description

File Name	18164_Post Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	7
Nodes	10
Junctions	8
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	12
Channels	0
Pipes	9
Pumps	0
Orifices	0
Weirs	3
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	002 Year Storm	Cumulative	inches	Ohio	Franklin	2.00	2.63	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	0.64	484.00	88.68	2.63	1.54	0.99	1.36	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	2.63	1.00	9.61	13.20	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	2.63	1.35	12.18	16.88	0 00:10:00
4	Pr_Trib_Area_1A	0.09	484.00	80.00	2.63	0.98	0.09	0.12	0 00:10:00
5	Pr_Trib_Area_1B	0.17	484.00	90.27	2.63	1.67	0.28	0.40	0 00:10:00
6	Pr_Trib_Area_1C	0.08	484.00	98.00	2.63	2.39	0.19	0.23	0 00:10:00
7	Pr_Trib_Area_2	0.05	484.00	80.00	2.63	0.97	0.05	0.07	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.00	957.00	0.00	11.00	0 00:00	0.00	0.00
2	D1	Junction	959.64	965.84	959.64	965.84	0.00	0.78	960.38	0.00	5.46	0 00:00	0.00	0.00
3	D2	Junction	959.91	963.19	959.91	963.19	0.00	0.79	960.44	0.00	3.58	0 00:00	0.00	0.00
4	D3	Junction	960.22	963.38	960.22	964.23	610.00	0.72	960.64	0.00	3.69	0 00:00	0.00	0.00
5	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	2.05	960.34	0.00	5.69	0 00:00	0.00	0.00
6	8-Jun	Junction	960.28	979.19	960.28	979.19	0.00	0.61	960.75	0.00	18.44	0 00:00	0.00	0.00
7	9-Jun	Junction	961.15	979.19	961.15	979.19	0.00	0.22	961.35	0.00	17.84	0 00:00	0.00	0.00
8	12-Jun	Junction	960.54	979.19	960.54	979.19	0.00	0.39	961.01	0.00	18.18	0 00:00	0.00	0.00
9	Out-1	Outfall	956.97					0.00	956.97					
10	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	31.90	955.76				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.00	10.29	0.00	0.00	0.00	0.00	0.00	Calculated
2	Link-05	Pipe	D1	EX-CB	34.20	959.64	959.47	0.5000	12.000	0.0150	0.79	2.18	0.36	2.48	0.74	0.80	0.00	Calculated
3	Link-07	Pipe	D3	D2	61.09	960.22	959.91	0.5100	12.000	0.0150	0.72	2.20	0.33	2.18	0.43	0.47	0.00	Calculated
4	Link-08	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	1.90	1.07	1.77	5.43	0.67	1.00	23.00	SURCHARGED
5	Link-09	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.00	24.78	0.00	0.00	0.88	0.50	0.00	Calculated
6	Link-11	Pipe	D2	D1	53.76	959.91	959.64	0.5000	12.000	0.0150	0.78	2.19	0.36	2.21	0.58	0.63	0.00	Calculated
7	Link-14	Pipe	9-Jun	8-Jun	75.20	961.15	960.28	1.1600	8.000	0.0150	0.22	1.13	0.20	1.29	0.34	0.51	0.00	Calculated
8	Link-15	Pipe	8-Jun	D3	21.67	960.28	960.22	0.2800	12.000	0.0150	0.60	1.62	0.37	1.78	0.45	0.45	0.00	Calculated
9	Link-19	Pipe	12-Jun	8-Jun	114.90	960.54	960.22	0.2800	8.000	0.0150	0.39	0.50	0.78	1.48	0.47	0.70	0.00	Calculated
10	Weir-02	Weir	D3	D2		960.22	959.91				0.00							
11	Weir-03	Weir	D2	Stor-01		959.91	950.00				0.00							
12	Weir-05	Weir	EX-CB	Stor-01		955.48	950.00				0.00							

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	111.00
2	D1	959.64	965.84	6.20	959.64	0.00	965.84	0.00	0.00	62.40
3	D2	959.91	963.19	3.28	959.91	0.00	963.19	0.00	0.00	0.00
4	D3	960.22	963.38	3.16	960.22	0.00	964.23	0.85	610.00	0.00
5	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
6	8-Jun	960.28	979.19	18.91	960.28	0.00	979.19	0.00	0.00	214.92
7	9-Jun	961.15	979.19	18.04	961.15	0.00	979.19	0.00	0.00	208.48
8	12-Jun	960.54	979.19	18.65	960.54	0.00	979.19	0.00	0.00	215.80

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.00	0.00	957.00	0.00	0.00	11.00	957.00	0.00	0 00:00	0 00:00	0.00	0.00
2	D1	0.78	0.00	960.38	0.74	0.00	5.46	959.70	0.06	0 12:08	0 00:00	0.00	0.00
3	D2	0.79	0.07	960.44	0.53	0.00	3.58	959.96	0.05	0 12:08	0 00:00	0.00	0.00
4	D3	0.72	0.12	960.64	0.42	0.00	3.69	960.27	0.05	0 12:05	0 00:00	0.00	0.00
5	EX-CB	2.05	1.36	960.34	4.86	0.00	5.69	955.64	0.16	0 12:08	0 00:00	0.00	0.00
6	8-Jun	0.61	0.00	960.75	0.47	0.00	18.44	960.34	0.06	0 12:05	0 00:00	0.00	0.00
7	9-Jun	0.22	0.22	961.35	0.20	0.00	17.84	961.18	0.03	0 12:05	0 00:00	0.00	0.00
8	12-Jun	0.39	0.39	961.01	0.47	0.00	18.18	960.59	0.05	0 12:05	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	34.20	959.64	0.00	959.47	3.99	0.17	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Link-07	61.09	960.22	0.00	959.91	0.00	0.31	0.5100	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
4	Link-08	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
5	Link-09	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
6	Link-11	53.76	959.91	0.00	959.64	0.00	0.27	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
7	Link-14	75.20	961.15	0.00	960.28	0.00	0.87	1.1600	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
8	Link-15	21.67	960.28	0.00	960.22	0.00	0.06	0.2800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
9	Link-19	114.90	960.54	0.00	960.22	-0.06	0.32	0.2800	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.00	0 00:00	10.29	0.00	0.00		0.00	0.00	0.00		Calculated
2	Link-05	0.79	0 12:10	2.18	0.36	2.48	0.23	0.74	0.80	0.00		Calculated
3	Link-07	0.72	0 12:06	2.20	0.33	2.18	0.47	0.43	0.47	0.00		Calculated
4	Link-08	1.90	0 12:07	1.07	1.77	5.43	0.43	0.67	1.00	23.00		SURCHARGED
5	Link-09	0.00	0 00:00	24.78	0.00	0.00		0.88	0.50	0.00		Calculated
6	Link-11	0.78	0 12:05	2.19	0.36	2.21	0.41	0.58	0.63	0.00		Calculated
7	Link-14	0.22	0 12:05	1.13	0.20	1.29	0.97	0.34	0.51	0.00		Calculated
8	Link-15	0.60	0 12:05	1.62	0.37	1.78	0.20	0.45	0.45	0.00		Calculated
9	Link-19	0.39	0 12:05	0.50	0.78	1.48	1.29	0.47	0.70	0.00		Calculated

Storage Nodes

Storage Node : Stor-01

Input Data

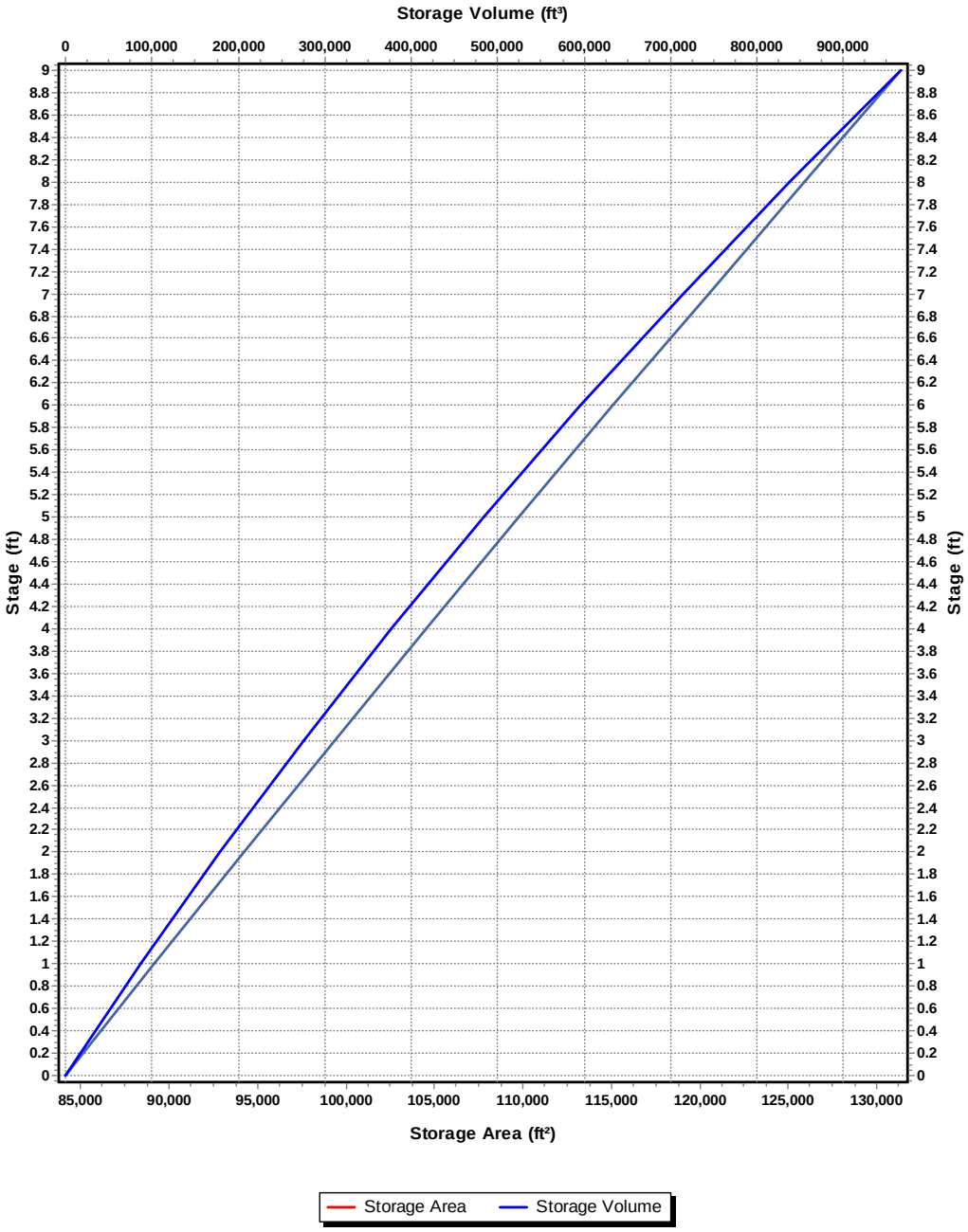
Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	31.9
Peak Lateral Inflow (cfs)	30.04
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	955.76
Max HGL Depth Attained (ft)	5.76
Average HGL Elevation Attained (ft)	955.32
Average HGL Depth Attained (ft)	5.32
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Project Description

File Name	18164_Post Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	7
Nodes	10
Junctions	8
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	12
Channels	0
Pipes	9
Pumps	0
Orifices	0
Weirs	3
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	005 Year Storm	Cumulative	inches	Ohio	Franklin	5.00	3.24	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	0.64	484.00	88.68	3.24	2.09	1.34	1.83	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	3.24	1.46	14.01	19.39	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	3.24	1.87	16.87	23.31	0 00:10:00
4	Pr_Trib_Area_1A	0.09	484.00	80.00	3.24	1.43	0.13	0.18	0 00:10:00
5	Pr_Trib_Area_1B	0.17	484.00	90.27	3.24	2.23	0.38	0.52	0 00:10:00
6	Pr_Trib_Area_1C	0.08	484.00	98.00	3.24	3.00	0.24	0.28	0 00:10:00
7	Pr_Trib_Area_2	0.05	484.00	80.00	3.24	1.42	0.07	0.10	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.00	957.00	0.00	11.00	0 00:00	0.00	0.00
2	D1	Junction	959.64	965.84	959.64	965.84	0.00	1.13	962.48	0.00	3.36	0 00:00	0.00	0.00
3	D2	Junction	959.91	963.19	959.91	963.19	0.00	0.94	962.53	0.00	1.49	0 00:00	0.00	0.00
4	D3	Junction	960.22	963.38	960.22	964.23	610.00	1.00	962.58	0.00	1.75	0 00:00	0.00	0.00
5	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	2.42	962.43	0.00	3.60	0 00:00	0.00	0.00
6	8-Jun	Junction	960.28	979.19	960.28	979.19	0.00	0.82	962.60	0.00	16.59	0 00:00	0.00	0.00
7	9-Jun	Junction	961.15	979.19	961.15	979.19	0.00	0.28	963.38	0.00	15.81	0 00:00	0.00	0.00
8	12-Jun	Junction	960.54	979.19	960.54	979.19	0.00	0.52	962.83	0.00	16.36	0 00:00	0.00	0.00
9	Out-1	Outfall	956.97					0.00	956.97					
10	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	44.67	956.06				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.00	10.29	0.00	0.00	0.00	0.00	0.00	Calculated
2	Link-05	Pipe	D1	EX-CB	34.20	959.64	959.47	0.5000	12.000	0.0150	1.21	2.18	0.56	2.57	1.00	1.00	15.00	SURCHARGED
3	Link-07	Pipe	D3	D2	61.09	960.22	959.91	0.5100	12.000	0.0150	0.90	2.20	0.41	2.23	1.00	1.00	11.00	SURCHARGED
4	Link-08	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	2.23	1.07	2.07	6.37	0.67	1.00	31.00	SURCHARGED
5	Link-09	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.00	24.78	0.00	0.00	0.88	0.50	0.00	Calculated
6	Link-11	Pipe	D2	D1	53.76	959.91	959.64	0.5000	12.000	0.0150	1.13	2.19	0.52	2.26	1.00	1.00	13.00	SURCHARGED
7	Link-14	Pipe	9-Jun	8-Jun	75.20	961.15	960.28	1.1600	8.000	0.0150	0.31	1.13	0.27	1.34	0.67	1.00	8.00	SURCHARGED
8	Link-15	Pipe	8-Jun	D3	21.67	960.28	960.22	0.2800	12.000	0.0150	0.83	1.62	0.51	1.86	1.00	1.00	11.00	SURCHARGED
9	Link-19	Pipe	12-Jun	8-Jun	114.90	960.54	960.22	0.2800	8.000	0.0150	0.55	0.50	1.10	1.57	0.67	1.00	12.00	SURCHARGED
10	Weir-02	Weir	D3	D2		960.22	959.91				0.00							
11	Weir-03	Weir	D2	Stor-01		959.91	950.00				0.00							
12	Weir-05	Weir	EX-CB	Stor-01		955.48	950.00				0.00							

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	111.00
2	D1	959.64	965.84	6.20	959.64	0.00	965.84	0.00	0.00	62.40
3	D2	959.91	963.19	3.28	959.91	0.00	963.19	0.00	0.00	0.00
4	D3	960.22	963.38	3.16	960.22	0.00	964.23	0.85	610.00	0.00
5	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
6	8-Jun	960.28	979.19	18.91	960.28	0.00	979.19	0.00	0.00	214.92
7	9-Jun	961.15	979.19	18.04	961.15	0.00	979.19	0.00	0.00	208.48
8	12-Jun	960.54	979.19	18.65	960.54	0.00	979.19	0.00	0.00	215.80

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.00	0.00	957.00	0.00	0.00	11.00	957.00	0.00	0 00:00	0 00:00	0.00	0.00
2	D1	1.13	0.00	962.48	2.84	0.00	3.36	959.73	0.09	0 12:09	0 00:00	0.00	0.00
3	D2	0.94	0.10	962.53	2.62	0.00	1.49	959.99	0.08	0 12:09	0 00:00	0.00	0.00
4	D3	1.00	0.18	962.58	2.36	0.00	1.75	960.29	0.07	0 12:09	0 00:00	0.00	0.00
5	EX-CB	2.42	1.82	962.43	6.95	0.00	3.60	955.81	0.33	0 12:09	0 00:00	0.00	0.00
6	8-Jun	0.82	0.00	962.60	2.32	0.00	16.59	960.36	0.08	0 12:09	0 00:00	0.00	0.00
7	9-Jun	0.28	0.28	963.38	2.23	0.00	15.81	961.19	0.04	0 12:05	0 00:00	0.00	0.00
8	12-Jun	0.52	0.52	962.83	2.29	0.00	16.36	960.61	0.07	0 12:03	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	34.20	959.64	0.00	959.47	3.99	0.17	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Link-07	61.09	960.22	0.00	959.91	0.00	0.31	0.5100	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
4	Link-08	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
5	Link-09	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
6	Link-11	53.76	959.91	0.00	959.64	0.00	0.27	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
7	Link-14	75.20	961.15	0.00	960.28	0.00	0.87	1.1600	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
8	Link-15	21.67	960.28	0.00	960.22	0.00	0.06	0.2800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
9	Link-19	114.90	960.54	0.00	960.22	-0.06	0.32	0.2800	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.00	0 00:00	10.29	0.00	0.00		0.00	0.00	0.00		Calculated
2	Link-05	1.21	0 12:16	2.18	0.56	2.57	0.22	1.00	1.00	15.00		SURCHARGED
3	Link-07	0.90	0 12:15	2.20	0.41	2.23	0.46	1.00	1.00	11.00		SURCHARGED
4	Link-08	2.23	0 12:09	1.07	2.07	6.37	0.37	0.67	1.00	31.00		SURCHARGED
5	Link-09	0.00	0 00:00	24.78	0.00	0.00		0.88	0.50	0.00		Calculated
6	Link-11	1.13	0 12:16	2.19	0.52	2.26	0.40	1.00	1.00	13.00		SURCHARGED
7	Link-14	0.31	0 12:14	1.13	0.27	1.34	0.94	0.67	1.00	8.00		SURCHARGED
8	Link-15	0.83	0 12:04	1.62	0.51	1.86	0.19	1.00	1.00	11.00		SURCHARGED
9	Link-19	0.55	0 12:03	0.50	1.10	1.57	1.22	0.67	1.00	12.00		SURCHARGED

Storage Nodes

Storage Node : Stor-01

Input Data

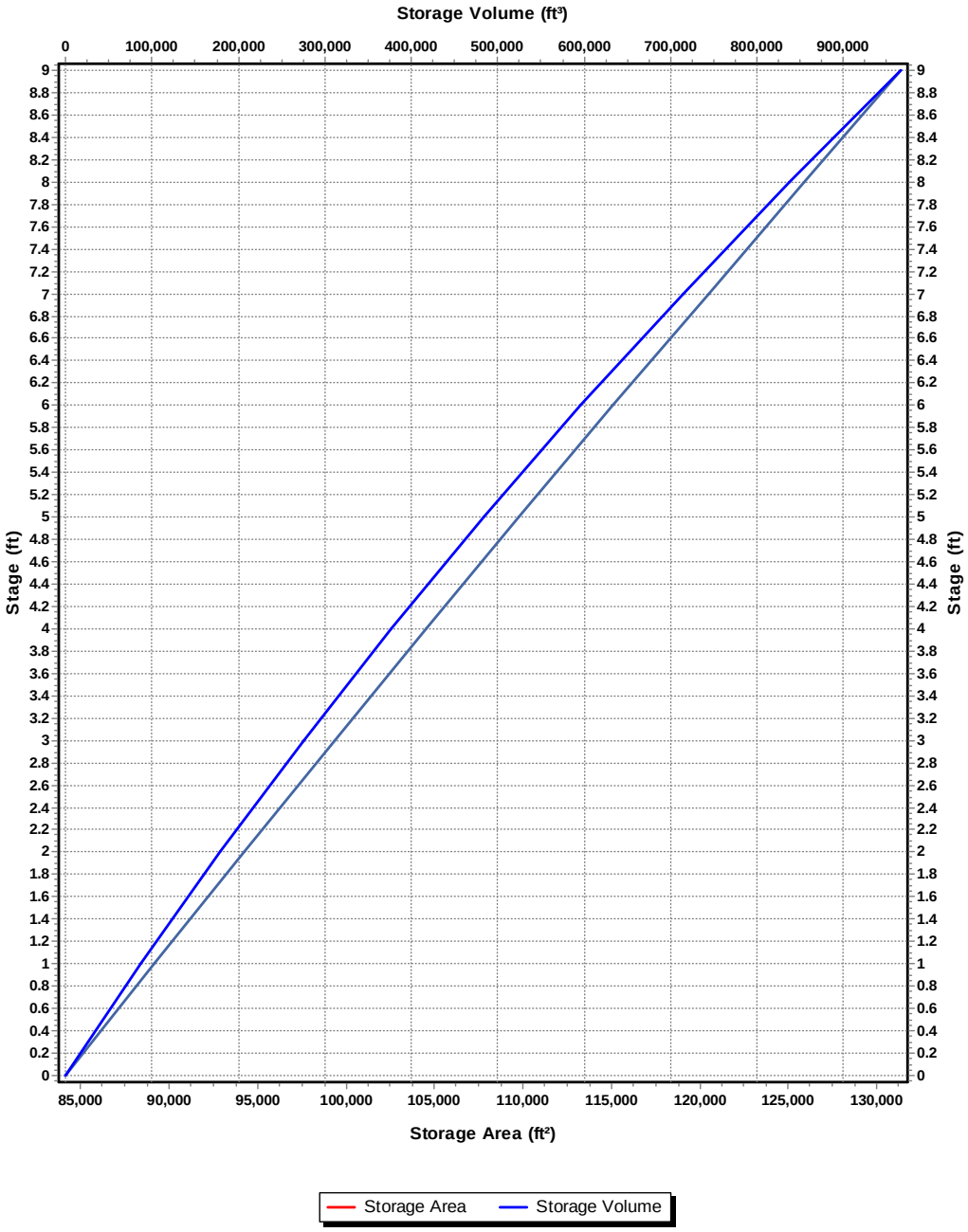
Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	44.67
Peak Lateral Inflow (cfs)	42.59
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	956.06
Max HGL Depth Attained (ft)	6.06
Average HGL Elevation Attained (ft)	955.45
Average HGL Depth Attained (ft)	5.45
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Project Description

File Name	18164_Post Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	7
Nodes	10
Junctions	8
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	12
Channels	0
Pipes	9
Pumps	0
Orifices	0
Weirs	3
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	010 Year Storm	Cumulative	inches	Ohio	Franklin	10.00	3.74	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	0.64	484.00	88.68	3.74	2.55	1.64	2.22	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	3.74	1.86	17.85	24.74	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	3.74	2.31	20.85	28.70	0 00:10:00
4	Pr_Trib_Area_1A	0.09	484.00	80.00	3.74	1.82	0.16	0.23	0 00:10:00
5	Pr_Trib_Area_1B	0.17	484.00	90.27	3.74	2.70	0.46	0.63	0 00:10:00
6	Pr_Trib_Area_1C	0.08	484.00	98.00	3.74	3.50	0.28	0.33	0 00:10:00
7	Pr_Trib_Area_2	0.05	484.00	80.00	3.74	1.82	0.09	0.13	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.00	957.00	0.00	11.00	0 00:00	0.00	0.00
2	D1	Junction	959.64	965.84	959.64	965.84	0.00	1.14	964.04	0.00	1.80	0 00:00	0.00	0.00
3	D2	Junction	959.91	963.19	959.91	963.19	0.00	1.29	964.02	0.00	0.00	0 12:06	0.03	4.00
4	D3	Junction	960.22	963.38	960.22	964.23	610.00	1.17	964.16	0.00	0.17	0 00:00	0.00	0.00
5	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	2.76	964.05	0.00	1.98	0 00:00	0.00	0.00
6	8-Jun	Junction	960.28	979.19	960.28	979.19	0.00	0.94	964.20	0.00	14.99	0 00:00	0.00	0.00
7	9-Jun	Junction	961.15	979.19	961.15	979.19	0.00	0.38	964.35	0.00	14.84	0 00:00	0.00	0.00
8	12-Jun	Junction	960.54	979.19	960.54	979.19	0.00	0.62	964.59	0.00	14.60	0 00:00	0.00	0.00
9	Out-1	Outfall	956.97					0.00	956.97					
10	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	55.74	956.32				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.00	10.29	0.00	0.00	0.00	0.00	0.00	Calculated
2	Link-05	Pipe	D1	EX-CB	34.20	959.64	959.47	0.5000	12.000	0.0150	1.23	2.18	0.57	2.56	1.00	1.00	20.00	SURCHARGED
3	Link-07	Pipe	D3	D2	61.09	960.22	959.91	0.5100	12.000	0.0150	1.17	2.20	0.53	2.23	1.00	1.00	17.00	SURCHARGED
4	Link-08	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	2.46	1.07	2.29	7.05	0.67	1.00	430.00	SURCHARGED
5	Link-09	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.00	24.78	0.00	0.00	0.88	0.50	0.00	Calculated
6	Link-11	Pipe	D2	D1	53.76	959.91	959.64	0.5000	12.000	0.0150	1.14	2.19	0.52	2.26	1.00	1.00	19.00	SURCHARGED
7	Link-14	Pipe	9-Jun	8-Jun	75.20	961.15	960.28	1.1600	8.000	0.0150	0.33	1.13	0.30	1.36	0.67	1.00	14.00	SURCHARGED
8	Link-15	Pipe	8-Jun	D3	21.67	960.28	960.22	0.2800	12.000	0.0150	0.95	1.62	0.58	1.86	1.00	1.00	17.00	SURCHARGED
9	Link-19	Pipe	12-Jun	8-Jun	114.90	960.54	960.22	0.2800	8.000	0.0150	0.62	0.50	1.25	1.78	0.67	1.00	18.00	SURCHARGED
10	Weir-02	Weir	D3	D2		960.22	959.91				0.00							
11	Weir-03	Weir	D2	Stor-01		959.91	950.00				0.15							
12	Weir-05	Weir	EX-CB	Stor-01		955.48	950.00				0.00							

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	111.00
2	D1	959.64	965.84	6.20	959.64	0.00	965.84	0.00	0.00	62.40
3	D2	959.91	963.19	3.28	959.91	0.00	963.19	0.00	0.00	0.00
4	D3	960.22	963.38	3.16	960.22	0.00	964.23	0.85	610.00	0.00
5	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
6	8-Jun	960.28	979.19	18.91	960.28	0.00	979.19	0.00	0.00	214.92
7	9-Jun	961.15	979.19	18.04	961.15	0.00	979.19	0.00	0.00	208.48
8	12-Jun	960.54	979.19	18.65	960.54	0.00	979.19	0.00	0.00	215.80

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.00	0.00	957.00	0.00	0.00	11.00	957.00	0.00	0 00:00	0 00:00	0.00	0.00
2	D1	1.14	0.00	964.04	4.40	0.00	1.80	959.75	0.11	0 12:06	0 00:00	0.00	0.00
3	D2	1.29	0.13	964.02	4.11	0.00	0.00	960.01	0.10	0 12:05	0 12:06	0.03	4.00
4	D3	1.17	0.23	964.16	3.94	0.00	0.17	960.32	0.10	0 12:06	0 00:00	0.00	0.00
5	EX-CB	2.76	2.20	964.05	8.57	0.00	1.98	955.96	0.48	0 12:06	0 00:00	0.00	0.00
6	8-Jun	0.94	0.00	964.20	3.92	0.00	14.99	960.38	0.10	0 12:06	0 00:00	0.00	0.00
7	9-Jun	0.38	0.32	964.35	3.20	0.00	14.84	961.21	0.06	0 12:02	0 00:00	0.00	0.00
8	12-Jun	0.62	0.62	964.59	4.05	0.00	14.60	960.63	0.09	0 12:06	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	34.20	959.64	0.00	959.47	3.99	0.17	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Link-07	61.09	960.22	0.00	959.91	0.00	0.31	0.5100	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
4	Link-08	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
5	Link-09	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
6	Link-11	53.76	959.91	0.00	959.64	0.00	0.27	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
7	Link-14	75.20	961.15	0.00	960.28	0.00	0.87	1.1600	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
8	Link-15	21.67	960.28	0.00	960.22	0.00	0.06	0.2800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
9	Link-19	114.90	960.54	0.00	960.22	-0.06	0.32	0.2800	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.00	0 00:00	10.29	0.00	0.00		0.00	0.00	0.00		Calculated
2	Link-05	1.23	0 12:19	2.18	0.57	2.56	0.22	1.00	1.00	20.00		SURCHARGED
3	Link-07	1.17	0 12:06	2.20	0.53	2.23	0.46	1.00	1.00	17.00		SURCHARGED
4	Link-08	2.46	0 12:06	1.07	2.29	7.05	0.33	0.67	1.00	430.00		SURCHARGED
5	Link-09	0.00	0 00:00	24.78	0.00	0.00		0.88	0.50	0.00		Calculated
6	Link-11	1.14	0 12:19	2.19	0.52	2.26	0.40	1.00	1.00	19.00		SURCHARGED
7	Link-14	0.33	0 12:02	1.13	0.30	1.36	0.92	0.67	1.00	14.00		SURCHARGED
8	Link-15	0.95	0 12:02	1.62	0.58	1.86	0.19	1.00	1.00	17.00		SURCHARGED
9	Link-19	0.62	0 12:04	0.50	1.25	1.78	1.08	0.67	1.00	18.00		SURCHARGED

Storage Nodes

Storage Node : Stor-01

Input Data

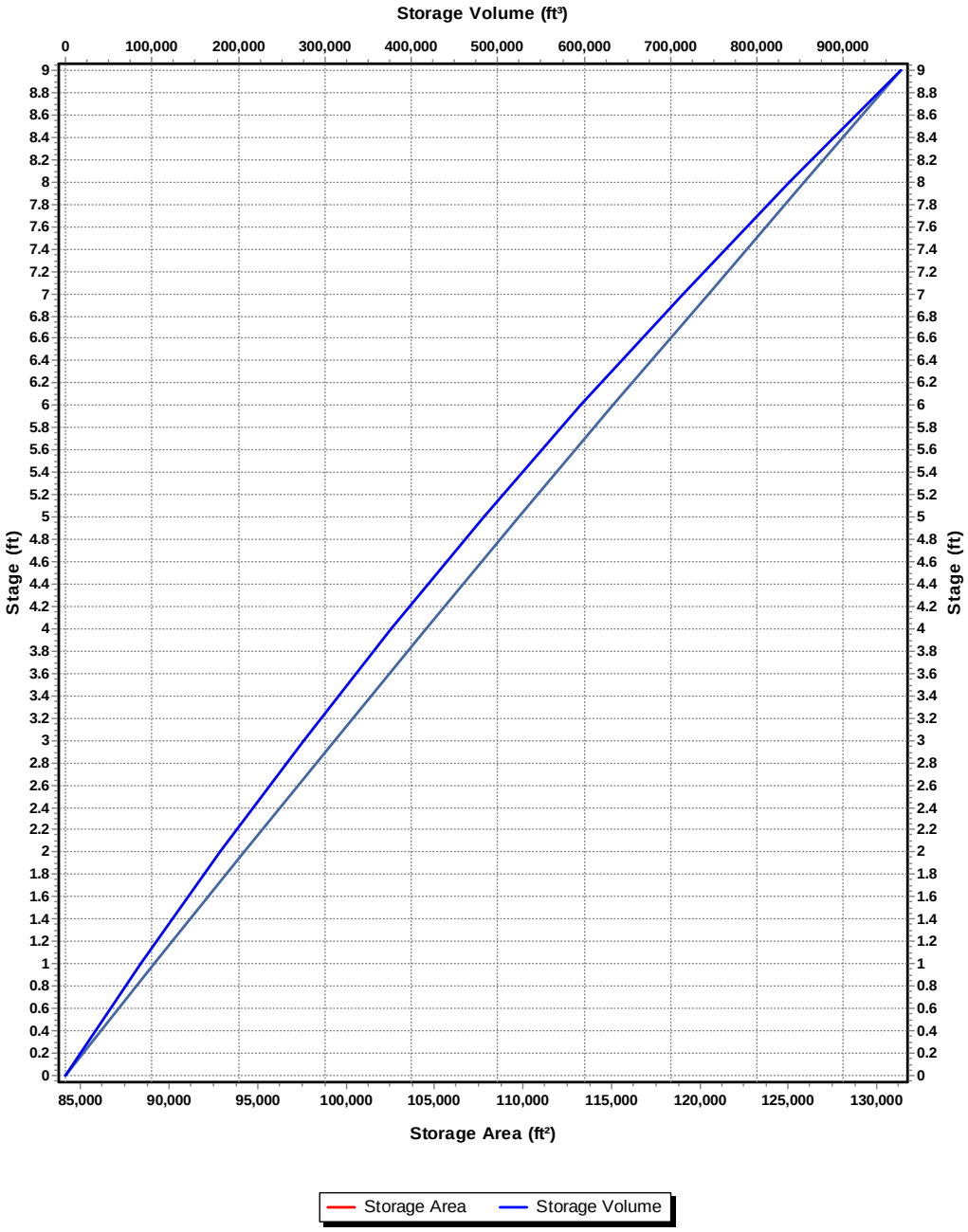
Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	55.74
Peak Lateral Inflow (cfs)	53.27
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	956.32
Max HGL Depth Attained (ft)	6.32
Average HGL Elevation Attained (ft)	955.56
Average HGL Depth Attained (ft)	5.56
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Project Description

File Name	18164_Post Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	7
Nodes	10
Junctions	8
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	12
Channels	0
Pipes	9
Pumps	0
Orifices	0
Weirs	3
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	025 Year Storm	Cumulative	inches	Ohio	Franklin	25.00	4.44	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	0.64	484.00	88.68	4.44	3.21	2.06	2.77	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	4.44	2.44	23.47	32.51	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	4.44	2.95	26.59	36.34	0 00:10:00
4	Pr_Trib_Area_1A	0.09	484.00	80.00	4.44	2.41	0.21	0.30	0 00:10:00
5	Pr_Trib_Area_1B	0.17	484.00	90.27	4.44	3.36	0.57	0.78	0 00:10:00
6	Pr_Trib_Area_1C	0.08	484.00	98.00	4.44	4.20	0.33	0.39	0 00:10:00
7	Pr_Trib_Area_2	0.05	484.00	80.00	4.44	2.40	0.12	0.17	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.00	957.00	0.00	11.00	0 00:00	0.00	0.00
2	D1	Junction	959.64	965.84	959.64	965.84	0.00	1.11	964.10	0.00	1.74	0 00:00	0.00	0.00
3	D2	Junction	959.91	963.19	959.91	963.19	0.00	2.05	964.02	0.00	0.00	0 12:02	0.19	10.00
4	D3	Junction	960.22	963.38	960.22	964.23	610.00	1.45	964.24	0.00	0.09	0 00:00	0.00	0.00
5	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	2.99	964.16	0.00	1.87	0 00:00	0.00	0.00
6	8-Jun	Junction	960.28	979.19	960.28	979.19	0.00	1.15	964.30	0.00	14.89	0 00:00	0.00	0.00
7	9-Jun	Junction	961.15	979.19	961.15	979.19	0.00	0.46	965.80	0.00	13.39	0 00:00	0.00	0.00
8	12-Jun	Junction	960.54	979.19	960.54	979.19	0.00	0.77	964.96	0.00	14.23	0 00:00	0.00	0.00
9	Out-1	Outfall	956.97					0.00	956.97					
10	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	71.02	956.68				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.00	10.29	0.00	0.00	0.00	0.00	0.00	Calculated
2	Link-05	Pipe	D1	EX-CB	34.20	959.64	959.47	0.5000	12.000	0.0150	1.17	2.18	0.54	2.50	1.00	1.00	24.00	SURCHARGED
3	Link-07	Pipe	D3	D2	61.09	960.22	959.91	0.5100	12.000	0.0150	1.46	2.20	0.67	2.22	1.00	1.00	21.00	SURCHARGED
4	Link-08	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	2.47	1.07	2.30	7.08	0.67	1.00	732.00	SURCHARGED
5	Link-09	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.00	24.78	0.00	0.00	0.88	0.50	0.00	Calculated
6	Link-11	Pipe	D2	D1	53.76	959.91	959.64	0.5000	12.000	0.0150	1.11	2.19	0.51	2.25	1.00	1.00	23.00	SURCHARGED
7	Link-14	Pipe	9-Jun	8-Jun	75.20	961.15	960.28	1.1600	8.000	0.0150	0.38	1.13	0.34	1.35	0.67	1.00	19.00	SURCHARGED
8	Link-15	Pipe	8-Jun	D3	21.67	960.28	960.22	0.2800	12.000	0.0150	1.15	1.62	0.71	1.85	1.00	1.00	21.00	SURCHARGED
9	Link-19	Pipe	12-Jun	8-Jun	114.90	960.54	960.22	0.2800	8.000	0.0150	0.77	0.50	1.54	2.19	0.67	1.00	22.00	SURCHARGED
10	Weir-02	Weir	D3	D2		960.22	959.91				0.00							
11	Weir-03	Weir	D2	Stor-01		959.91	950.00				0.15							
12	Weir-05	Weir	EX-CB	Stor-01		955.48	950.00				0.00							

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	111.00
2	D1	959.64	965.84	6.20	959.64	0.00	965.84	0.00	0.00	62.40
3	D2	959.91	963.19	3.28	959.91	0.00	963.19	0.00	0.00	0.00
4	D3	960.22	963.38	3.16	960.22	0.00	964.23	0.85	610.00	0.00
5	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
6	8-Jun	960.28	979.19	18.91	960.28	0.00	979.19	0.00	0.00	214.92
7	9-Jun	961.15	979.19	18.04	961.15	0.00	979.19	0.00	0.00	208.48
8	12-Jun	960.54	979.19	18.65	960.54	0.00	979.19	0.00	0.00	215.80

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.00	0.00	957.00	0.00	0.00	11.00	957.00	0.00	0 00:00	0 00:00	0.00	0.00
2	D1	1.11	0.00	964.10	4.46	0.00	1.74	959.77	0.13	0 12:02	0 00:00	0.00	0.00
3	D2	2.05	0.17	964.02	4.11	0.00	0.00	960.03	0.12	0 12:02	0 12:02	0.19	10.00
4	D3	1.45	0.30	964.24	4.02	0.00	0.09	960.34	0.12	0 12:02	0 00:00	0.00	0.00
5	EX-CB	2.99	2.73	964.16	8.68	0.00	1.87	956.15	0.67	0 12:02	0 00:00	0.00	0.00
6	8-Jun	1.15	0.00	964.30	4.02	0.00	14.89	960.40	0.12	0 12:02	0 00:00	0.00	0.00
7	9-Jun	0.46	0.38	965.80	4.65	0.00	13.39	961.22	0.07	0 11:59	0 00:00	0.00	0.00
8	12-Jun	0.77	0.77	964.96	4.42	0.00	14.23	960.65	0.11	0 12:04	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	34.20	959.64	0.00	959.47	3.99	0.17	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Link-07	61.09	960.22	0.00	959.91	0.00	0.31	0.5100	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
4	Link-08	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
5	Link-09	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
6	Link-11	53.76	959.91	0.00	959.64	0.00	0.27	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
7	Link-14	75.20	961.15	0.00	960.28	0.00	0.87	1.1600	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
8	Link-15	21.67	960.28	0.00	960.22	0.00	0.06	0.2800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
9	Link-19	114.90	960.54	0.00	960.22	-0.06	0.32	0.2800	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.00	0 00:00	10.29	0.00	0.00		0.00	0.00	0.00		Calculated
2	Link-05	1.17	0 12:21	2.18	0.54	2.50	0.23	1.00	1.00	24.00		SURCHARGED
3	Link-07	1.46	0 12:02	2.20	0.67	2.22	0.46	1.00	1.00	21.00		SURCHARGED
4	Link-08	2.47	0 12:02	1.07	2.30	7.08	0.33	0.67	1.00	732.00		SURCHARGED
5	Link-09	0.00	0 00:00	24.78	0.00	0.00		0.88	0.50	0.00		Calculated
6	Link-11	1.11	0 12:20	2.19	0.51	2.25	0.40	1.00	1.00	23.00		SURCHARGED
7	Link-14	0.38	0 12:05	1.13	0.34	1.35	0.93	0.67	1.00	19.00		SURCHARGED
8	Link-15	1.15	0 12:05	1.62	0.71	1.85	0.20	1.00	1.00	21.00		SURCHARGED
9	Link-19	0.77	0 12:05	0.50	1.54	2.19	0.87	0.67	1.00	22.00		SURCHARGED

Storage Nodes

Storage Node : Stor-01

Input Data

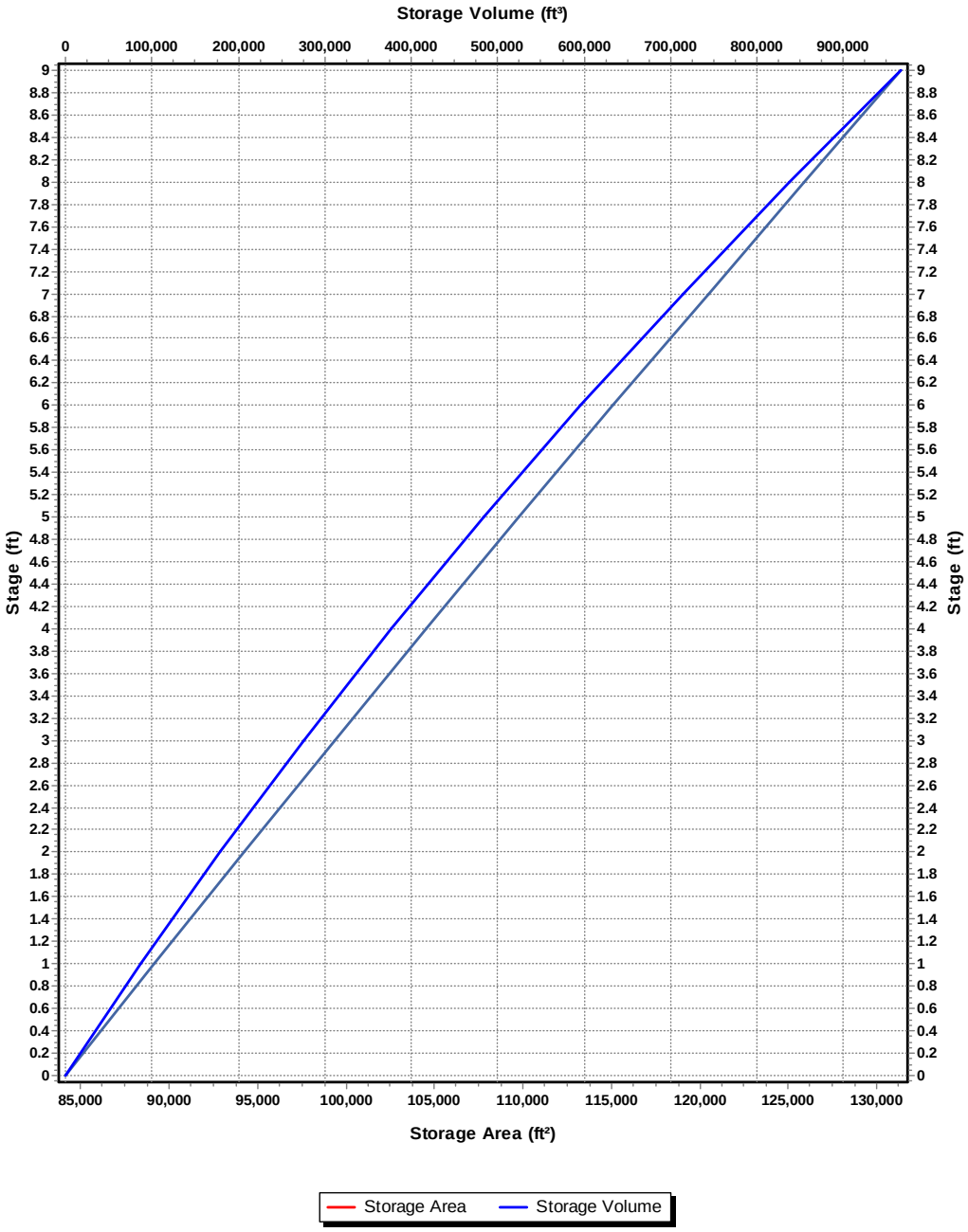
Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	71.02
Peak Lateral Inflow (cfs)	68.43
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	956.68
Max HGL Depth Attained (ft)	6.68
Average HGL Elevation Attained (ft)	955.73
Average HGL Depth Attained (ft)	5.73
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Project Description

File Name	18164_Post Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	7
Nodes	10
Junctions	8
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	12
Channels	0
Pipes	9
Pumps	0
Orifices	0
Weirs	3
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	050 Year Storm	Cumulative	inches	Ohio	Franklin	50.00	5.02	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	0.64	484.00	88.68	5.02	3.76	2.42	3.22	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	5.02	2.94	28.29	39.09	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	5.02	3.49	31.44	42.71	0 00:10:00
4	Pr_Trib_Area_1A	0.09	484.00	80.00	5.02	2.90	0.26	0.36	0 00:10:00
5	Pr_Trib_Area_1B	0.17	484.00	90.27	5.02	3.92	0.67	0.90	0 00:10:00
6	Pr_Trib_Area_1C	0.08	484.00	98.00	5.02	4.78	0.38	0.44	0 00:10:00
7	Pr_Trib_Area_2	0.05	484.00	80.00	5.02	2.90	0.14	0.21	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.00	957.00	0.00	11.00	0 00:00	0.00	0.00
2	D1	Junction	959.64	965.84	959.64	965.84	0.00	1.05	964.13	0.00	1.71	0 00:00	0.00	0.00
3	D2	Junction	959.91	963.19	959.91	963.19	0.00	2.62	964.02	0.00	0.00	0 12:05	0.36	13.00
4	D3	Junction	960.22	963.38	960.22	964.23	610.00	1.68	964.27	0.00	0.06	0 00:00	0.00	0.00
5	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	3.18	964.21	0.00	1.82	0 00:00	0.00	0.00
6	8-Jun	Junction	960.28	979.19	960.28	979.19	0.00	1.32	964.35	0.00	14.84	0 00:00	0.00	0.00
7	9-Jun	Junction	961.15	979.19	961.15	979.19	0.00	0.48	965.31	0.00	13.88	0 00:00	0.00	0.00
8	12-Jun	Junction	960.54	979.19	960.54	979.19	0.00	0.88	965.27	0.00	13.92	0 00:00	0.00	0.00
9	Out-1	Outfall	956.97					0.00	956.97					
10	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	83.77	956.98				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.00	10.29	0.00	0.00	0.00	0.00	0.00	Calculated
2	Link-05	Pipe	D1	EX-CB	34.20	959.64	959.47	0.5000	12.000	0.0150	1.11	2.18	0.51	2.47	1.00	1.00	27.00	SURCHARGED
3	Link-07	Pipe	D3	D2	61.09	960.22	959.91	0.5100	12.000	0.0150	1.64	2.20	0.75	2.21	1.00	1.00	24.00	SURCHARGED
4	Link-08	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	2.47	1.07	2.31	7.09	0.67	1.00	734.00	SURCHARGED
5	Link-09	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.00	24.78	0.00	0.00	0.88	0.50	0.00	Calculated
6	Link-11	Pipe	D2	D1	53.76	959.91	959.64	0.5000	12.000	0.0150	1.05	2.19	0.48	2.24	1.00	1.00	26.00	SURCHARGED
7	Link-14	Pipe	9-Jun	8-Jun	75.20	961.15	960.28	1.1600	8.000	0.0150	0.43	1.13	0.38	1.32	0.67	1.00	22.00	SURCHARGED
8	Link-15	Pipe	8-Jun	D3	21.67	960.28	960.22	0.2800	12.000	0.0150	1.32	1.62	0.81	1.83	1.00	1.00	24.00	SURCHARGED
9	Link-19	Pipe	12-Jun	8-Jun	114.90	960.54	960.22	0.2800	8.000	0.0150	0.88	0.50	1.78	2.54	0.67	1.00	25.00	SURCHARGED
10	Weir-02	Weir	D3	D2		960.22	959.91				0.08							
11	Weir-03	Weir	D2	Stor-01		959.91	950.00				0.15							
12	Weir-05	Weir	EX-CB	Stor-01		955.48	950.00				0.00							

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	111.00
2	D1	959.64	965.84	6.20	959.64	0.00	965.84	0.00	0.00	62.40
3	D2	959.91	963.19	3.28	959.91	0.00	963.19	0.00	0.00	0.00
4	D3	960.22	963.38	3.16	960.22	0.00	964.23	0.85	610.00	0.00
5	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
6	8-Jun	960.28	979.19	18.91	960.28	0.00	979.19	0.00	0.00	214.92
7	9-Jun	961.15	979.19	18.04	961.15	0.00	979.19	0.00	0.00	208.48
8	12-Jun	960.54	979.19	18.65	960.54	0.00	979.19	0.00	0.00	215.80

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.00	0.00	957.00	0.00	0.00	11.00	957.00	0.00	0 00:00	0 00:00	0.00	0.00
2	D1	1.05	0.00	964.13	4.49	0.00	1.71	959.79	0.15	0 12:00	0 00:00	0.00	0.00
3	D2	2.62	0.21	964.02	4.11	0.00	0.00	960.05	0.14	0 12:00	0 12:05	0.36	13.00
4	D3	1.68	0.36	964.27	4.05	0.00	0.06	960.35	0.13	0 12:00	0 00:00	0.00	0.00
5	EX-CB	3.18	3.18	964.21	8.73	0.00	1.82	956.31	0.83	0 12:00	0 00:00	0.00	0.00
6	8-Jun	1.32	0.00	964.35	4.07	0.00	14.84	960.42	0.14	0 12:05	0 00:00	0.00	0.00
7	9-Jun	0.48	0.43	965.31	4.16	0.00	13.88	961.23	0.08	0 11:57	0 00:00	0.00	0.00
8	12-Jun	0.88	0.88	965.27	4.73	0.00	13.92	960.67	0.13	0 12:05	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	34.20	959.64	0.00	959.47	3.99	0.17	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Link-07	61.09	960.22	0.00	959.91	0.00	0.31	0.5100	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
4	Link-08	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
5	Link-09	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
6	Link-11	53.76	959.91	0.00	959.64	0.00	0.27	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
7	Link-14	75.20	961.15	0.00	960.28	0.00	0.87	1.1600	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
8	Link-15	21.67	960.28	0.00	960.22	0.00	0.06	0.2800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
9	Link-19	114.90	960.54	0.00	960.22	-0.06	0.32	0.2800	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.00	0 00:00	10.29	0.00	0.00		0.00	0.00	0.00		Calculated
2	Link-05	1.11	0 12:23	2.18	0.51	2.47	0.23	1.00	1.00	27.00		SURCHARGED
3	Link-07	1.64	0 12:05	2.20	0.75	2.21	0.46	1.00	1.00	24.00		SURCHARGED
4	Link-08	2.47	0 12:00	1.07	2.31	7.09	0.33	0.67	1.00	734.00		SURCHARGED
5	Link-09	0.00	0 00:00	24.78	0.00	0.00		0.88	0.50	0.00		Calculated
6	Link-11	1.05	0 12:22	2.19	0.48	2.24	0.40	1.00	1.00	26.00		SURCHARGED
7	Link-14	0.43	0 12:05	1.13	0.38	1.32	0.95	0.67	1.00	22.00		SURCHARGED
8	Link-15	1.32	0 12:05	1.62	0.81	1.83	0.20	1.00	1.00	24.00		SURCHARGED
9	Link-19	0.88	0 12:05	0.50	1.78	2.54	0.75	0.67	1.00	25.00		SURCHARGED

Storage Nodes

Storage Node : Stor-01

Input Data

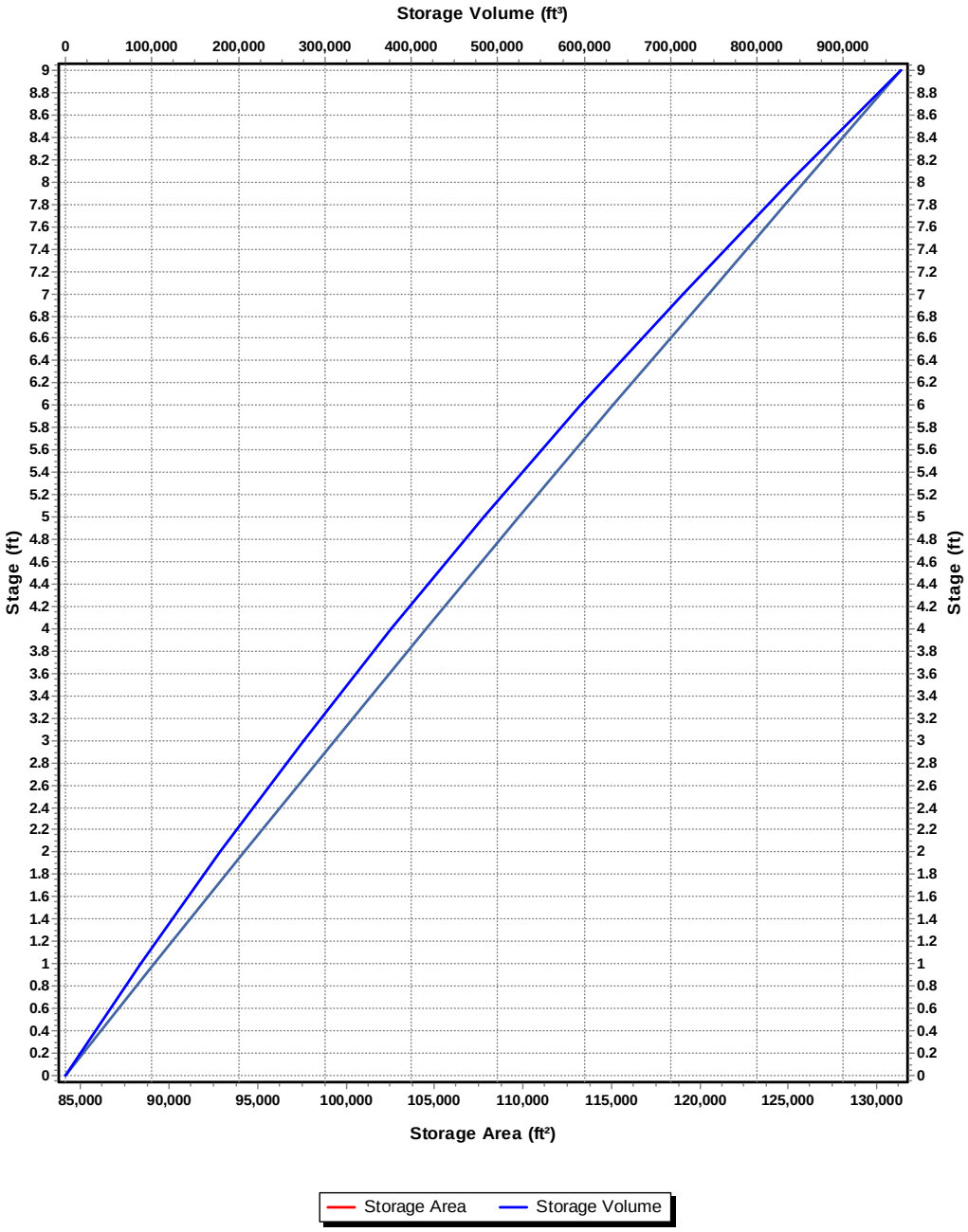
Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	83.77
Peak Lateral Inflow (cfs)	81.18
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	956.98
Max HGL Depth Attained (ft)	6.98
Average HGL Elevation Attained (ft)	955.87
Average HGL Depth Attained (ft)	5.87
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Project Description

File Name	18164_Post Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	7
Nodes	10
Junctions	8
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	1
Links	12
Channels	0
Pipes	9
Pumps	0
Orifices	0
Weirs	3
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	City_Of_Dublin	Time Series	100 Year Storm	Cumulative	inches	Ohio	Franklin	100.00	5.63	SCS Type II 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Ex_Trib_Area_1	0.64	484.00	88.68	5.63	4.34	2.79	3.70	0 00:10:00
2	Ex_Trib_Area_2	9.61	484.00	80.37	5.63	3.49	33.50	46.13	0 00:10:00
3	EX_Trib_Area_3	9.02	484.00	86.00	5.63	4.06	36.61	49.42	0 00:10:00
4	Pr_Trib_Area_1A	0.09	484.00	80.00	5.63	3.44	0.30	0.43	0 00:10:00
5	Pr_Trib_Area_1B	0.17	484.00	90.27	5.63	4.51	0.77	1.03	0 00:10:00
6	Pr_Trib_Area_1C	0.08	484.00	98.00	5.63	5.39	0.43	0.50	0 00:10:00
7	Pr_Trib_Area_2	0.05	484.00	80.00	5.63	3.43	0.17	0.24	0 00:10:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	Junction	957.00	968.00	957.00	968.00	0.00	0.40	957.25	0.00	10.75	0 00:00	0.00	0.00
2	D1	Junction	959.64	965.84	959.64	965.84	0.00	1.21	964.15	0.00	1.69	0 00:00	0.00	0.00
3	D2	Junction	959.91	963.19	959.91	963.19	0.00	3.36	964.02	0.00	0.00	0 12:05	0.55	16.00
4	D3	Junction	960.22	963.38	960.22	964.23	610.00	1.92	964.29	0.00	0.04	0 00:00	0.00	0.00
5	EX-CB	Junction	955.48	965.03	955.48	965.03	0.00	3.64	964.23	0.00	1.80	0 00:00	0.00	0.00
6	8-Jun	Junction	960.28	979.19	960.28	979.19	0.00	1.50	964.40	0.00	14.79	0 00:00	0.00	0.00
7	9-Jun	Junction	961.15	979.19	961.15	979.19	0.00	0.49	965.93	0.00	13.26	0 00:00	0.00	0.00
8	12-Jun	Junction	960.54	979.19	960.54	979.19	0.00	1.01	965.61	0.00	13.58	0 00:00	0.00	0.00
9	Out-1	Outfall	956.97					0.39	957.13					
10	Stor-01	Storage Node	950.00	959.00	955.00		131353.00	97.18	957.26				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-04	Pipe	4725	Out-1	1.00	957.00	956.97	3.3800	15.000	0.0150	0.39	10.29	0.04	2.92	0.21	0.17	0.00	Calculated
2	Link-05	Pipe	D1	EX-CB	34.20	959.64	959.47	0.5000	12.000	0.0150	1.21	2.18	0.55	2.46	1.00	1.00	31.00	SURCHARGED
3	Link-07	Pipe	D3	D2	61.09	960.22	959.91	0.5100	12.000	0.0150	1.75	2.20	0.79	2.22	1.00	1.00	27.00	SURCHARGED
4	Link-08	Pipe	EX-CB	Stor-01	141.00	955.48	954.00	1.0500	8.000	0.0150	2.47	1.07	2.30	7.07	0.67	1.00	736.00	SURCHARGED
5	Link-09	Pipe	Stor-01	4725	187.00	950.91	957.00	-3.2600	21.000	0.0150	0.40	24.78	0.02	0.28	1.00	0.57	0.00	Calculated
6	Link-11	Pipe	D2	D1	53.76	959.91	959.64	0.5000	12.000	0.0150	1.21	2.19	0.55	2.24	1.00	1.00	29.00	SURCHARGED
7	Link-14	Pipe	9-Jun	8-Jun	75.20	961.15	960.28	1.1600	8.000	0.0150	0.49	1.13	0.43	1.40	0.67	1.00	25.00	SURCHARGED
8	Link-15	Pipe	8-Jun	D3	21.67	960.28	960.22	0.2800	12.000	0.0150	1.50	1.62	0.92	1.91	1.00	1.00	27.00	SURCHARGED
9	Link-19	Pipe	12-Jun	8-Jun	114.90	960.54	960.22	0.2800	8.000	0.0150	1.01	0.50	2.03	2.90	0.67	1.00	28.00	SURCHARGED
10	Weir-02	Weir	D3	D2		960.22	959.91				0.18							
11	Weir-03	Weir	D2	Stor-01		959.91	950.00				0.15							
12	Weir-05	Weir	EX-CB	Stor-01		955.48	950.00				0.00							

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	4725	957.00	968.00	11.00	957.00	0.00	968.00	0.00	0.00	111.00
2	D1	959.64	965.84	6.20	959.64	0.00	965.84	0.00	0.00	62.40
3	D2	959.91	963.19	3.28	959.91	0.00	963.19	0.00	0.00	0.00
4	D3	960.22	963.38	3.16	960.22	0.00	964.23	0.85	610.00	0.00
5	EX-CB	955.48	965.03	9.55	955.48	0.00	965.03	0.00	0.00	0.00
6	8-Jun	960.28	979.19	18.91	960.28	0.00	979.19	0.00	0.00	214.92
7	9-Jun	961.15	979.19	18.04	961.15	0.00	979.19	0.00	0.00	208.48
8	12-Jun	960.54	979.19	18.65	960.54	0.00	979.19	0.00	0.00	215.80

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	4725	0.40	0.00	957.25	0.25	0.00	10.75	957.04	0.04	1 00:00	0 00:00	0.00	0.00
2	D1	1.21	0.00	964.15	4.51	0.00	1.69	959.80	0.16	0 11:58	0 00:00	0.00	0.00
3	D2	3.36	0.24	964.02	4.11	0.00	0.00	960.06	0.15	0 11:58	0 12:05	0.55	16.00
4	D3	1.92	0.42	964.29	4.07	0.00	0.04	960.36	0.14	0 12:05	0 00:00	0.00	0.00
5	EX-CB	3.64	3.64	964.23	8.75	0.00	1.80	956.47	0.99	0 11:58	0 00:00	0.00	0.00
6	8-Jun	1.50	0.00	964.40	4.12	0.00	14.79	960.43	0.15	0 12:05	0 00:00	0.00	0.00
7	9-Jun	0.49	0.49	965.93	4.78	0.00	13.26	961.24	0.09	0 11:56	0 00:00	0.00	0.00
8	12-Jun	1.01	1.01	965.61	5.07	0.00	13.58	960.68	0.14	0 12:05	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-04	1.00	957.00	0.00	956.97	0.00	0.03	3.3800	CIRCULAR	15.000	15.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
2	Link-05	34.20	959.64	0.00	959.47	3.99	0.17	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
3	Link-07	61.09	960.22	0.00	959.91	0.00	0.31	0.5100	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
4	Link-08	141.00	955.48	0.00	954.00	4.00	1.48	1.0500	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
5	Link-09	187.00	950.91	0.91	957.00	0.00	-6.09	-3.2600	CIRCULAR	21.000	21.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
6	Link-11	53.76	959.91	0.00	959.64	0.00	0.27	0.5000	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
7	Link-14	75.20	961.15	0.00	960.28	0.00	0.87	1.1600	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1
8	Link-15	21.67	960.28	0.00	960.22	0.00	0.06	0.2800	CIRCULAR	12.000	12.000	0.0150	0.5000	0.5000	0.0000	0.00	No	1
9	Link-19	114.90	960.54	0.00	960.22	-0.06	0.32	0.2800	CIRCULAR	8.040	8.040	0.0150	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-04	0.39	1 00:00	10.29	0.04	2.92	0.01	0.21	0.17	0.00		Calculated
2	Link-05	1.21	0 12:05	2.18	0.55	2.46	0.23	1.00	1.00	31.00		SURCHARGED
3	Link-07	1.75	0 12:05	2.20	0.79	2.22	0.46	1.00	1.00	27.00		SURCHARGED
4	Link-08	2.47	0 11:58	1.07	2.30	7.07	0.33	0.67	1.00	736.00		SURCHARGED
5	Link-09	0.40	1 00:00	24.78	0.02	0.28	11.13	1.00	0.57	0.00		Calculated
6	Link-11	1.21	0 12:05	2.19	0.55	2.24	0.40	1.00	1.00	29.00		SURCHARGED
7	Link-14	0.49	0 12:05	1.13	0.43	1.40	0.90	0.67	1.00	25.00		SURCHARGED
8	Link-15	1.50	0 12:05	1.62	0.92	1.91	0.19	1.00	1.00	27.00		SURCHARGED
9	Link-19	1.01	0 12:05	0.50	2.03	2.90	0.66	0.67	1.00	28.00		SURCHARGED

Storage Nodes

Storage Node : Stor-01

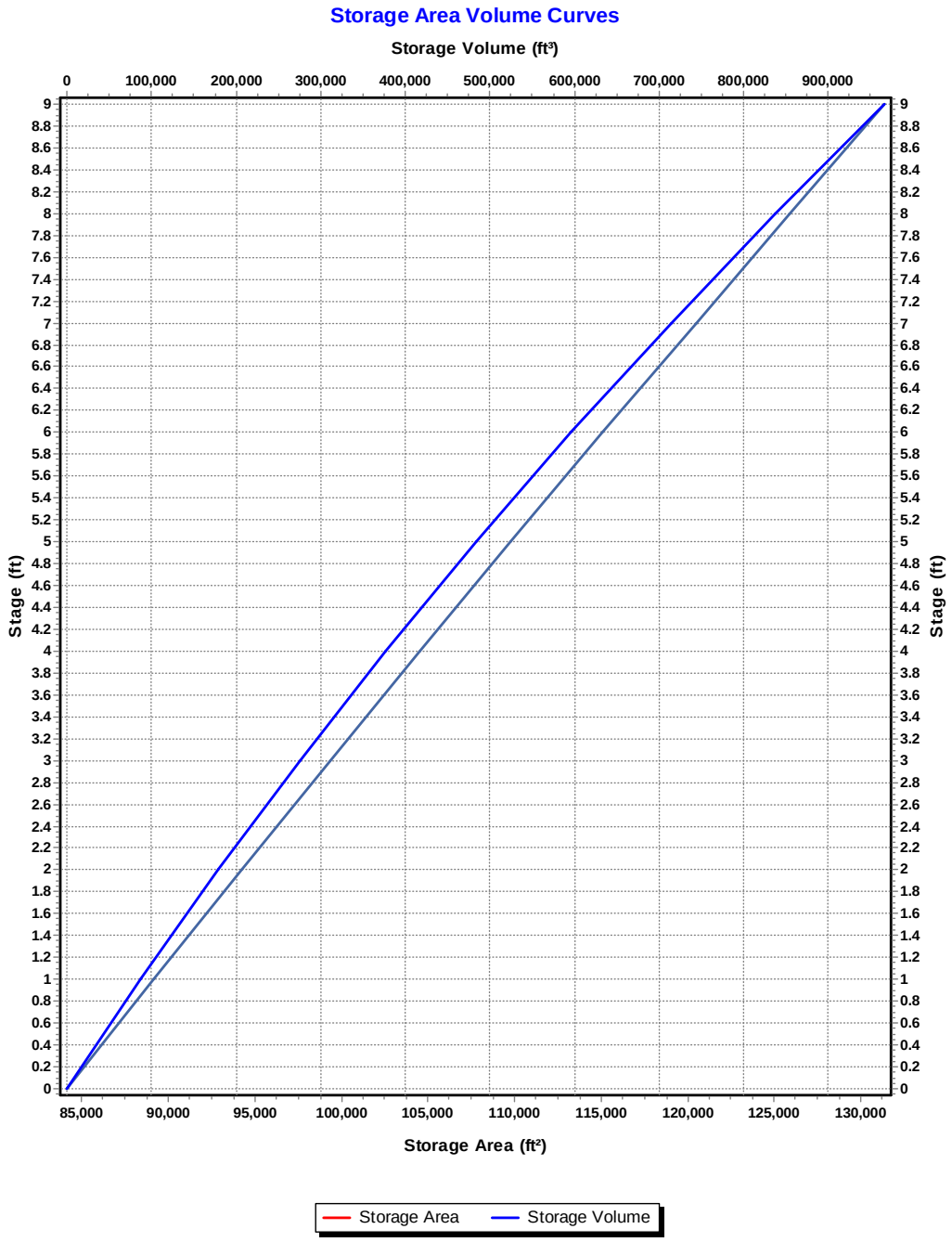
Input Data

Invert Elevation (ft)	950.00
Max (Rim) Elevation (ft)	959.00
Max (Rim) Offset (ft)	9.00
Initial Water Elevation (ft)	955.00
Initial Water Depth (ft)	5.00
Ponded Area (ft²)	131353.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	84128	0
1	89142	86635
2	94216	178314
3	99350	275097
4	104542	377043
5	109791	484209.5
6	115096	596653
7	120458	714430
8	125877	837597.5
9	131353	966212.5



Storage Node : Stor-01 (continued)

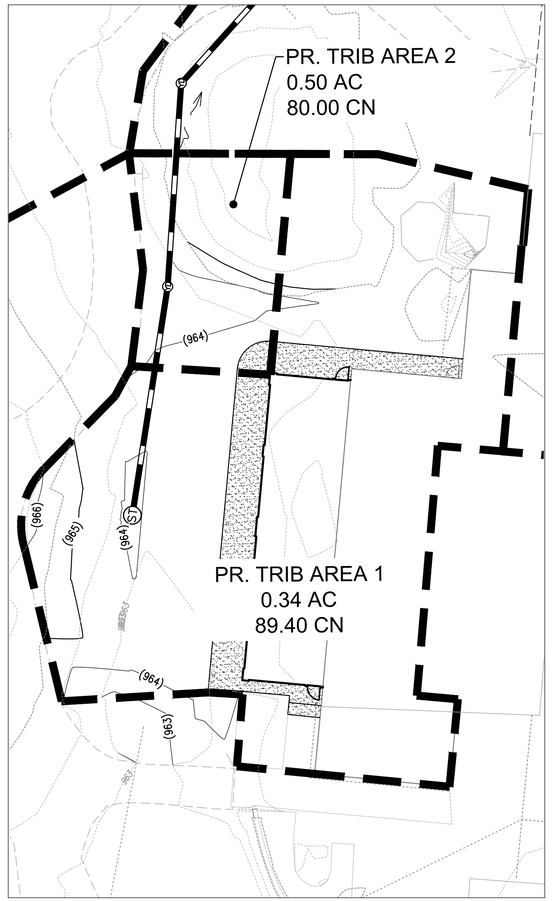
Output Summary Results

Peak Inflow (cfs)	97.18
Peak Lateral Inflow (cfs)	94.61
Peak Outflow (cfs)	0.4
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	957.26
Max HGL Depth Attained (ft)	7.26
Average HGL Elevation Attained (ft)	956.01
Average HGL Depth Attained (ft)	6.01
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft³)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

APPENDIX E: POST-DEVELOPMENT MAP

100′ 0 100′ 200′

DRAWING SCALE 1″ = 100′



20′ 0 20′ 40′

DRAWING SCALE 1″=20′

verdantas
PEOPLE FOCUSED FUTURE
6397 EMERALD PKWY, SUITE 200
DUBLIN, OH 43016
TEL: 614.793.8777
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ERIC KOCH, P.E.

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT NO.
EJK	JPW	EJK	18164

CHK'D BY	DATE

REVISION

No.

PRIVATE SITE IMPROVEMENT PLAN FOR
THE COUNTRY CLUB AT MURFIELD VILLAGE
WEST PATIO ADDITION
FRANKLIN COUNTY, DUBLIN, OHIO
APPENDIX E

APPLICATION NO.

DATE: 08/09/2023

SCALE:

SHEET:

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