9TH AVENUE NW
Drainage Report

Manatee County, Florida

Prepared for:

Prepared by:

Kimley-Horn and Associates, Inc.

October 2025

200 S Orange Ave Suite 600
Orlando, FL 32801

PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify that I am a registered professional engineer in the State of Florida practicing with **Kimley-Horn and Associates, Inc.** and that I have supervised the preparation and approve the findings, opinions, conclusions, and technical advice hereby reported in:

REPORT: 9thAvenue NW Drainage Report

PROJECT: 9th Avenue NW from 71st St to 99th Street NW

LOCATION: Manatee County, FL

The following duly authorized engineering business performed the engineering work represented by this document:

Kimley-Horn and Associates, Inc.
200 South Orange Avenue, Suite 600
Orlando, Florida 32801
Telephone: (407) 898-1511
FL Certificate of Authorization No. 696

This report contains calculations for hydrologic and hydraulic analysis for the above roadway improvement project. The information used to determine hydrologic and hydraulic parameters for the calculations was based on the best information available at the time of the analysis.

I acknowledge that the procedures and references used for this report, and its calculations are standard to the practice of civil engineering as applied through professional judgement and experience.

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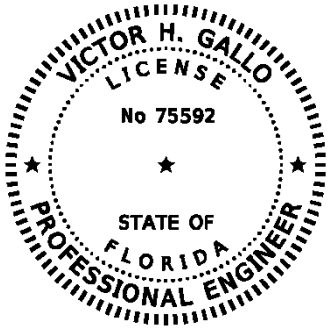

PREPARED BY: Victor Hugh Gallo, PE
PE NUMBER: FL # 75592
DATE: As Noted

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Victor Gallo 2025.10.02 12:22:27 -04'00'

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INTRODUCTION

Kimley-Horn and Associates, Inc. previously performed planning and engineering services for Manatee County associated with the 9th Avenue NW Concept Plan from 71st Street NW to 99th Street NW. This planning phase defined a preferred concept for the design and construction of this project.

From 71st Street NW to 75th Street NW, a 5-foot sidewalk is proposed on the south side of the project. The existing drainage system is proposed to be adjusted as necessary.

From 75th Street NW to 99th Street NW, the project will consist of milling and resurfacing of the road, roadway safety improvements, a 10-foot multi-use trail, sidewalks, crosswalks, signage, pavement marking, street lighting, closed and open drainage systems, a stormwater BMP and wetland mitigation areas. Speed reduction measures are also proposed through raised intersections through the corridor.

The purpose of this report is to provide drainage documentation. A flooding study is included to identify and address the causes of the flooding between 99th Street NW and 92nd Street NW. An ICPR4 model was used to analyze existing conditions and to determine appropriate proposed conditions.

Vertical Datum Information

All elevations referenced are from the North American Vertical Datum of 1988 (NAVD88).

Water Quantity and Quality

The total vehicular impervious areas within the project limits are reduced by 0.54 acres with the proposed improvements. Despite a net reduction in vehicular impervious areas, the Southwest Florida Water Management District (SWFWMD) requires that this project demonstrates no adverse impacts to water quality. The proposed trail and sidewalks improvements add a non-vehicular impervious area of 0.49 acres. Since the basin outfalls are tidally influenced, no attenuation is required. Best Management Practices (BMPs) are proposed for water quality control and flood reliefs.

This segment of 9th Ave NW outfalls to Palma Sola Bay (WBID 1883). Palma Sola Bay does not have impairments for nutrients, so no additional treatment is required.

PERMITTING HISTORY

A General Environmental Resource Permit (ERP) for 87th St NW to 75th St NW along 9th Ave NW was issued to Manatee County by the SWFWMD in 1990 for 9th Ave NW (See Permit #7516.00; App #18478). There is no existing ERP for 9th Ave Nefrom 99th St NW to 87th St NW.

MANATEE COUNTY MEETINGS

April 5th, 2021 – 9th Ave NW Kickoff Meeting with Manatee County

> Project Goals and Objectives were discussed. Flooding on the west end of the project was requested to be resolved.

April 28th, 2021 – 9th Ave NW Drainage Approach Meeting with Manatee County

Drainage Scope including Cross Drain, Ditch, Pond, Floodplain Compensation, Overtopping, and Outfall Analysis was provided and discussed. Field Visits and Flooding Reports were discussed as well as Pond Alternatives.

June 3rd, 2021 – 9th Ave Drainage Discussion with Manatee County

Design Considerations about Segment A were discussed. Outfall improvement discussion included Manatee County preference to use sea-level rise as a factor of safety rather than normal design. Modeling discussion also occurred.

July, 2025 – 9th Ave BMP Discussion with Manatee County

Manatee County asked Kimley-Horn to evaluate alternatives to the BMP located at the Hawthorn Park outfall due to difficulty obtaining the right of way needed for the BMP.

July 6th, 2025 – 9th Ave Discussion with SWFWMD

Kimley-Horn met with SWFWMD to discuss an alternative approach to provide nutrient removal for 9th Ave such that the project would not cause adverse impacts. The approach consisted of nutrient removal through vegetated filter strips and ditch block in roadside swales to provide a permanent pool volume. SWFWMD approved this approach.

July 14th, 2025 – 9th Ave BMP Approach Discussion with Manatee County

Kimley-Horn met with Manatee County to review 3 BMP alternatives for nutrient removal. The alternatives consisted of the following:

- Option 1: The original BMP design
- Option 2: A revised version of the original BMP which reduced right-of-way acquisition, but increased wetland impacts
- Option 3: A BMP design that proposes ditch block in roadsides swales to create a permanent pool and vegetated filter strips.

During this meeting, Manatee County decided to move forward with option 3.

EXISTING CONDITIONS

Segment A:

Segment A extends from Station 17+34.19 to Station 33+36.80. In the existing conditions, the 62-foot right-of-way section contains an undivided two-lane crown section of roadway with flush, unpaved shoulders. Drainage swales are on each side of the roadway, conveying runoff to existing outfalls at the Robinson Preserve and to an outfall ditch south of Hawthorn Park.

Segment B and Segment C:

Segment B extends from Station 34+50.00 to 40+43.66 and Segment C extends from Station 40+43.66 to Station 53+51.52. In the existing conditions, the 50-foot to 84-foot right-of-way section contains an undivided two-lane crown section of roadway with 9.5-foot travel lanes and flush unpaved shoulders on both sides of the roadway. A 5-foot sidewalk is located on the north side. An existing inlet and pipe system captures roadway runoff and conveys it to the existing outfall ditch located south of Hawthorn Park.

Segment D:

Segment D extends from Station 53+51.52 to Station 95+61.12. In the existing conditions, the 67-foot to 84-foot right-of-way section contains an undivided two-lane crown section of roadway with 14-foot travel lanes, a 5-foot-wide paved shoulder, and Type F curb and gutter on both sides of the roadway. The north side of the roadway contains a 12-foot-wide grass utility strip and a 6-foot-wide existing sidewalk, and the south side contains a 6-foot-wide existing sidewalk. An existing inlet and pipe systems captures roadway runoff and conveys it to the existing cross drain located at 78th Street.

Segment E:

Segment E begins at Station 95+61.12 and ends at Station 109+35.87. The existing conditions consist of a 48-foot-wide right-of-way section with an undivided two-lane crown section of roadway with 12' wide lanes and flush unpaved shoulders. An existing inlet and pipe system captures roadway run off and ties into the drainage system in Segment D.

Flooding

9th Ave NW currently experiences a significant amount flooding during normal storm events from 99th Street NW to 92nd Street NW. During field visits, it was observed that the existing water elevations in the ditches were up to 8" below the edge of pavement. Portions of the existing piping were also submerged.

An on-site field meeting was had with Vincent Bland from the Manatee County Maintenance Department on April 20, 2021. Discussions during the meeting revealed that a suspected cause of the flooding was due to a blockage of the outfall ditch that discharges to Palma Sola Bay.

Basins

There are a total of 7 roadway drainage sub-basins within the project limits. The existing basins ultimately discharge to Palma Sola Bay. The basins are as follows:

- DA_R01
  - From Begin Project (Station 17+34.19) to Station 22+71.33, spanning the crown of the road to the right-of-way on the north.
  - Discharges west to the Robinson Preserve.
- DA_R02
  - From Begin Project (Station 17+34.19) to approximately Station 32+10, spanning from the crown of the road to the right-of-way on south.
  - Discharges west to the Robinson Preserve.
- DA_R03
  - From Station 22+71.33 to Station 54+10, spanning the crown of the road to the right-of-way on the north.
  - Discharges south of Hawthorn Park to an outfall ditch.
- DA_R04
  - From approximately Station 22+71.33 to Station 54+10, spanning from the crown of the road to the north right-of-way.
  - Discharge's south of Hawthorn Park to an outfall ditch.
- DA_R05
  - From Station 54+10 to approximately Station 56+65
  - Discharges south to outfall pipe near Station 54+40.
- DA_R06
  - From Station 56+65 to Station 66+90.
  - Discharges to south to outfall pipe near Station 60+20.

- DA_R07
  - From Station 66+90 to the end of the project (Station 95+61.12)
  - Discharges to an existing cross drain at Station 84+00.

See **Appendix B** for the attached Roadway Drainage Maps.

USDA/SCS Soils Information

Soil classification and descriptions for the project were determined using the USDA/SCS Soil Survey of Manatee County, Florida. Refer to **Appendix B** for Soil Classification Map. The predominant soil types within each basin are EauGallie-EauGallie Wet Fine sand, Estero Muck, Pomello Fine sand, Duette Fine sand, and Delray-EauGallie complex.

Seasonal High-Water Elevation

A Preliminary Roadway Soil Survey was completed by Ardaman and Associates, Inc (Geotechnical, Environmental, and Materials Consultants). The existing groundwater elevations were measured at depths ranging from 2.5 to 3.8 feet below the ground surface. The estimated seasonal high-water elevation at Pond 2 was estimated to be at about 0.46.

Floodplain Information

The project's floodplain information is based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) data for Manatee County, Florida within Panels 12081C0143F and 12081C0144F dated August 10, 2021. The project limits are located within Zone X, areas determined to be outside the 0.2% annual chance floodplain, and within Zone AE, areas inside of the flood zone with determined base flood elevations (BFE). Refer to Appendix B. Existing and Proposed ICPR models that show no impacts to the floodplain elevation are included in Appendix C.

Wetland/Environmental Resource Assessment

An environmental resource assessment was performed by Kimley-Horn and Associates. Please refer to the 9th Avenue NW Environmental Narrative.

PROPOSED CONDITIONS

Segment A:

The proposed conditions consist of an undivided two 10.5' lane crown section of roadway with 2-foot to 8-foot shoulders. A 10' multi-use trail is proposed on the north side of the road. A proposed open and closed drainage system will collect and convey roadway and offsite runoff to appropriate outfalls without creating adverse impacts. The improvements in Segment A are considered Phase 1 of this project and will be constructed separately.

Drainage improvements from Station 23+60 to 33+40 will be completed as part of the proposed development located at Tideline CV.

Segment B.

The proposed conditions consist of an undivided two-lane crown section of roadway. Curb and gutter is proposed on the north side starting at Station 33+36.80 on the north side and 36+19.90 on the south side. A 2-foot minimum width shoulder is proposed from 33+36.80 to 36+18on the south side. A 10-foot-wide multi-use trail is proposed on the north side of the roadway and the existing ditch side slopes will be

regraded as necessary.

A raised intersection with curb and gutter is proposed at the intersection of 92nd Street NW. A storm sewer system is proposed to accommodate the new curb and gutter and to maintain drainage patterns.

Segment C:

The proposed conditions consist of two-lane crown section of roadway with unpaved shoulders. The road will be widened 2' to meet a travel lane width standard of 10.5', a 10-foot-wide multi-use trail is proposed on the north side of the roadway.

Segment D:

The proposed conditions consist of the milling and resurfacing of the existing road. Raised intersections are proposed at the intersections of 87th Street NW and 83rd Street NW. The existing drainage systems will be adjusted to accommodate the raised intersections. 10' sidewalks are also proposed at the raised intersections.

Segment E:

The proposed improvements in Segment E include a 5-foot-wide sidewalk on the south side of the roadway. The existing drainage system is proposed to be adjusted as needed to accommodate the proposed intersections.

STORMWATER MODELING

ICPR Model

ICPR models were created to analyze the existing and proposed conditions from 99th St NW to 92nd St NW. The model analyzes the following storm events with 24-hour durations:

- 2.3 Year
- 5 Year
- 10 Year
- 25 Year
- 100 Year

To alleviate the flooding concerns from 99th Street NW to 92nd street NW (within Segment A), the outfall ditch south of Hawthorn Park is proposed to be cleared and regraded to allow for proper conveyance to Palma Sola Bay.

The table below compares the existing and proposed maximum stages for each storm event.

Table 1: Maximum Stage Comparison

Simulation	Max Stage (ft_NAVD88) / Design Storm						Remarks
	Node	2.3 Yr	5 Yr	10 Yr	25 Yr	100 Yr	
Existing	STG_R01	2.91	3.08	3.21	3.33	3.4	Ditch North (99th ST NW)
	STG_R02	1.7	1.74	1.79	1.84	1.94	Ditch South (99th ST NW)
	STG_R03	2.93	3.09	3.22	3.34	3.4	Ditch North (Hawthorn Pond)
	STG_R04	2.44	2.57	2.68	2.83	3.06	Ditch South (Outfall)
Proposed	STG_R01	2.74	2.87	3.00	3.19	3.5	Ditch North (99th ST NW)
	STG_R02	1.66	1.7	1.73	1.78	1.87	Ditch South (99th ST NW)
	STG_R03	2.6	2.82	2.92	3.04	3.21	Ditch North (Hawthorn Pond)
	STG_R04	2.28	2.39	2.45	2.53	2.65	Ditch South (Outfall)

The table below compares the existing and proposed maximum discharges for all storm events.

Table 2: Maximum Discharge Comparison

Simulation	Node	Max Discharge over 9th Avenue (cfs) / Design Storm				
		2.3 Yr	5 Yr	10 Yr	25 Yr	100 Yr
Existing	Road_02	0	0	0	10.27	49.36
Proposed	Road_02	0	0	0	0	0

The ICPR Model used to analyze the existing flooding conditions and to determine proposed conditions is included in **Appendix C.**

STORMWATER MANAGEMENT APPROACH

The proposed improvements reduce the total vehicular impervious area by 0.49 acres and increase the total non-vehicular impervious area by 0.74 AC. See the table below for a summary of the basin areas.

Table 3: Basin Summary

	Existing					Proposed				
Basin	Total	Open Space	Impervious (Non-Vehicular)	Impervious (Vehicular)	Residential	Total	Open Space	Impervious (Non-Vehicular)	Impervious (Vehicular)	Residential
DA R01	2.07	1.42		0.44	0.21	0.71	1.42	0.13	0.11	0.21
DA R02	1.03	0.64		0.39		1.97	0.64		0.43	
DA R03	1.94	1.08	0.21	0.65		3.66	1.08	0.41	1.03	
DA R04	1.50	0.83		0.67		0.50	0.83		0.26	
DA R05	0.63	0.21	0.02	0.40		0.63	0.21	0.05	0.32	
DA R06	1.82	0.70	0.10	1.02		1.83	0.70	0.16	0.98	
DA R07	8.75	3.21	0.35	3.35	1.84	8.75	3.21	0.42	3.25	1.84

Base Clearance

A preliminary base clearance analysis was performed as a part of this report. The calculations are provided in **Appendix C**.

BMP Sites

Water quality treatment will be addressed with vegetated filter strips and 2 roadside swales. The vegetated filter strips are located in the green space on the north side of the road between Stations 28+00 and 33+00. The roadside swales are also proposed on the north side of the road: one from Station 35+20 to 36+60 and the other from 37+20 to 39+00. The proposed roadside swales will utilize ditch block to provide a permanent pool volume for pollutant removal. These BMPs provide a net pollutant loading reduction of 42% TN and 47% TP. Please see **Appendix A** for BMP calculations.

Stormwater Conveyance Analysis

Storm drain tabulations and ditch tabulations have been provided in **Appendix D**.

CONCLUSION

The proposed roadway and drainage improvements do not pose adverse impacts. The existing flooding issues from 99th St NW to 92md St NW will be resolved with the proposed improvements and drainage patterns will be maintained.

APPENDICES

APPENDIX A
BMP Calculations

9th Ave Existing Cutve Number Calculations

7/21/2025

Basin	Total	Open Space (A 75% Cover)	Open Space (A 50% Cover)	Open space (D 75% Cover)	Impervious (Non-Vehicular)	Impervious (Vehicular)	Residential	Water	Weighted CN
DA R01	2.07	1.42				0.44	0.21		63
DA R02	1.03	0.64				0.39			68
DA R03	1.94	1.08			0.21	0.65			71
DA R04	1.50	0.83				0.67			71
DA R05	0.63	0.21			0.02	0.40			82
DA R06	1.82	0.70			0.10	1.02			79
DA R07	8.75	3.21			0.35	3.35	1.84		78
DA 01	99.07			69.26	29.81				85
DA 02	35.85				35.85				98
DA 03	13.40		0.50		12.90				97
DA 04	51.00			10.66	40.34				94
DA 05	36.24		3.39		32.85				95
DA 07	15.23				15.23				98
DA 08	59.05		45.67		13.38				75
DA 09	47.04				47.04				98
DA 11	23.21				23.21				98

Curve Number (HSG A/D)	
Open Space (A 75% Cover)	49
Open Space (A 50% Cover)	68
Open space (D 75% Cover)	80
Impervious	98
Water	100
Residential	87

9th Ave Propsed Cutve Number Calculations

7/21/2025

Basin	Total	Open Space (75% Cover)	Open Space (A 50% Cover)	Open space (D 75% Cover)	Impervious (Non-Vehicular)	Impervious (Vehicular)	Residential	Water	Weighted CN
DA R01	0.71	0.26			0.13	0.11	0.21		77
DA R02	1.97	1.54				0.43			60
DA R03	3.66	2.21			0.41	1.03		0.01	68
DA R04	0.50	0.24				0.26			74
DA R05	0.63	0.26			0.05	0.32			78
DA R06	1.83	0.69			0.16	0.98			80
DA R07	8.60	3.09			0.42	3.25	1.84		78
DA 01	99.07			69.26	29.81				85
DA 02	35.85				35.85				98
DA 03	13.40		0.50		12.90				97
DA 04	51.00			10.66	40.34				94
DA 05	36.24		3.39		32.85				95
DA 07	15.23				15.23				98
DA 08	59.05		45.67		13.38				75
DA 09	47.04				47.04				98
DA 11	23.21				23.21				98

Curve Number (HSG A/D)	
Open Space (75% Cover)	49
Open Space (A 50% Cover)	68
Open space (D 75% Cover)	80
Impervious	98
Water	100
Residential	87

PERFORMANCE EFFICIENCY RATE MATRIX

Project: 9th Ave NW
Location Manatee County

Compensatory Nutrient Loading & BMP Efficiency Analysis Summary

Basin	Basin	Pre-Dev. Loading (kg/yr)		Post-Dev. Loading (kg/yr)		BMP Series Train Description	Annual Capture Efficiency Rate						Provided BMP Efficiency Rate	
							TN			TP				
		TN	TP	TN	TP		BMP1	BMP2	BMP3	BMP1	BMP2	BMP3	TN	TP
DA_R04	Bay Outfall	4.343	0.601	1.333	0.184	-							0%	0%
DA_R03	Bay Outfall	4.598	0.64	7.77	1.075	Wet Detention in Ditches, VFS	14%	73%	0%	45%	73%	0%	77%	85%
DA_R01	Bay Outfall	2.65	0.37	3.64	0.50	-							0%	0%

						Minimum Required Treatment Summary								Provided Treatment Summary					
Basin	Pre-Dev. Nutrient Loading (kg/yr)		Post-Dev. Nutrient Loading (kg/yr)		Development Loading Increase (kg/yr)		Post-Dev. BMP Load Allowable (kg/yr)		Reduction from Pre-Dev Condition		Required BMP Efficiency Rate		Post-Dev. BMP Nutrient Loading (kg/yr)		Provided BMP Efficiency Rate		Provided Pre-Development Reductions	
	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP	TN	TP
Bay Outfall	11.6	1.6	12.7	1.8	1.1	0.2	11.6	1.6	0%	0%			6.8	0.8	47%	52%	42%	47%

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Project: 9th Ave

Date: 9/25/2025 5:18:45 PM

Site and Catchment Information

Analysis: Net Improvement

Catchment Name	DA_R04	DA_R03	DA_R02
Rainfall Zone	Florida Zone 4	Florida Zone 4	Florida Zone 4
Annual Mean Rainfall	51.00	51.00	51.00

Pre-Condition Landuse Information

Landuse	User Defined Values	User Defined Values	User Defined Values
Area (acres)	1.50	1.94	1.03
Rational Coefficient (0-1)	0.44	0.36	0.39
Non DCIA Curve Number	80.00	80.00	80.00
DCIA Percent (0-100)	45.00	33.50	38.00
Nitrogen EMC (mg/l)	1.250	1.250	1.250
Phosphorus EMC (mg/l)	0.173	0.173	0.173
Runoff Volume (ac-ft/yr)	2.818	2.983	1.720
Groundwater N (kg/yr)	0.000	0.000	0.000
Groundwater P (kg/yr)	0.000	0.000	0.000
Nitrogen Loading (kg/yr)	4.343	4.598	2.652
Phosphorus Loading (kg/yr)	0.601	0.636	0.367

Post-Condition Landuse Information

Landuse	User Defined Values	User Defined Values	User Defined Values
Area (acres)	0.50	3.66	1.97
Rational Coefficient (0-1)	0.41	0.32	0.28
Non DCIA Curve Number	80.00	80.00	80.00
DCIA Percent (0-100)	40.00	28.00	22.00
Wet Pond Area (ac)	0.00	0.00	0.00
Nitrogen EMC (mg/l)	1.250	1.250	1.250

Phosphorus EMC (mg/l)	0.173	0.173	0.173
Runoff Volume (ac-ft/yr)	0.865	5.040	2.361
Groundwater N (kg/yr)	0.000	0.000	0.000
Groundwater P (kg/yr)	0.000	0.000	0.000
Nitrogen Loading (kg/yr)	1.333	7.768	3.639
Phosphorus Loading (kg/yr)	0.184	1.075	0.504

Catchment Number: 1 Name: DA_R04
Project: 9th Ave
Date: 9/25/2025

None Design

Watershed Characteristics

Catchment Area (acres)	0.50
Contributing Area (acres)	0.500
Non-DCIA Curve Number	80.00
DCIA Percent	40.00
Rainfall Zone	Florida Zone 4
Rainfall (in)	51.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	

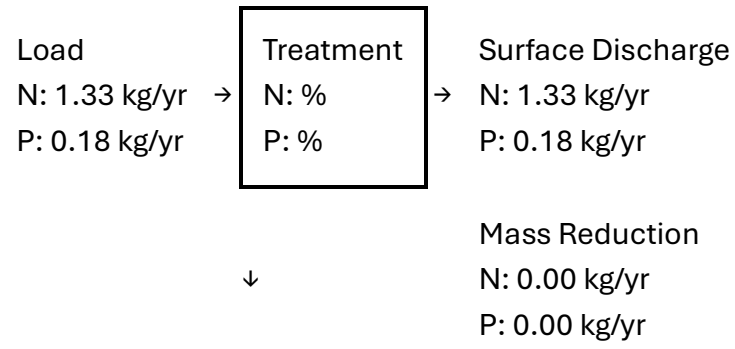
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	0.000
Media P Reduction (%)	0.000

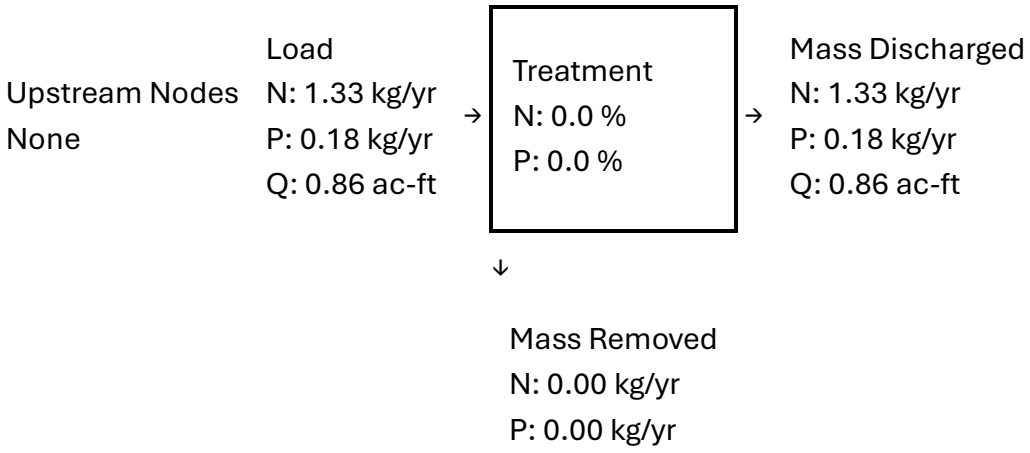
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for None (stand-alone)



Load Diagram for None (As Used In Routing)



Catchment Number: 2 Name: DA_R03
Project: 9th Ave
Date: 9/25/2025

Multiple BMP in Series Design Parameters

BMP in Series Number: 1
BMP Type: Wet Detention

Permanent Pool Volume (ac-ft)	0.028
Permanent Pool Volume (ac-ft) for 31 days residence	0.428
Annual Residence Time (days)	2
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

BMP in Series Number: 2
BMP Type: Vegetated Natural Buffer

Buffer Width (ft)	20.000
Buffer Length (ft)	1,794.000
Storage Depth (ft)	1.000
Width of Area Feeding Buffer (ft)	10.500
Water storage capacity of soil (in/in)	0.100
Slope of Bufer Width (2%-6%)	6.667

BMP in Series Number: 3
BMP Type: None

BMP in Series Number: 4
BMP Type: None

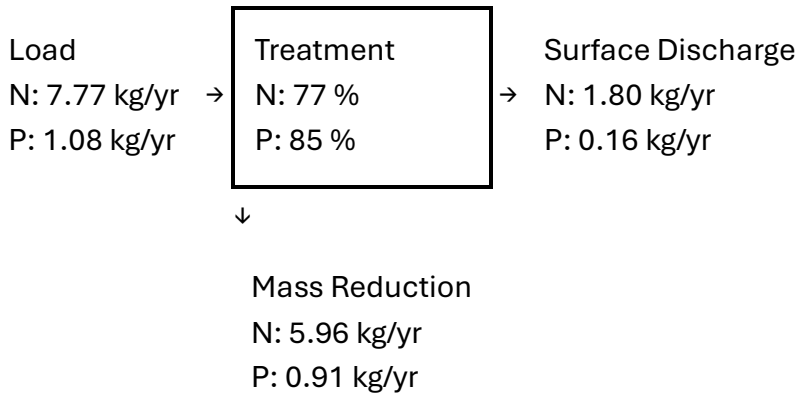
Watershed Characteristics

Catchment Area (acres)	3.66
Contributing Area (acres)	3.660
Non-DCIA Curve Number	80.00
DCIA Percent	28.00
Rainfall Zone	Florida Zone 4
Rainfall (in)	51.00

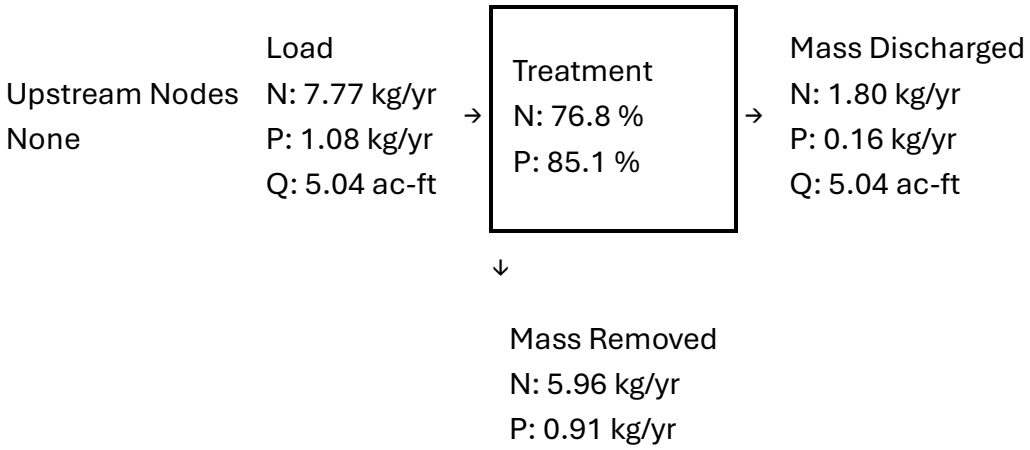
Surface Water Discharge

Required TN Treatment Efficiency (%)	41
Provided TN Treatment Efficiency (%)	77
Required TP Treatment Efficiency (%)	41
Provided TP Treatment Efficiency (%)	85

Load for Multiple BMP in Series



Load Diagram for Multiple BMP (As Used In Routing)



Catchment Number: 3 Name: DA_R02
Project: 9th Ave
Date: 9/25/2025

None Design

Watershed Characteristics

Catchment Area (acres)	1.97
Contributing Area (acres)	1.970
Non-DCIA Curve Number	80.00
DCIA Percent	22.00
Rainfall Zone	Florida Zone 4
Rainfall (in)	51.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	27
Provided TN Treatment Efficiency (%)	
Required TP Treatment Efficiency (%)	27
Provided TP Treatment Efficiency (%)	

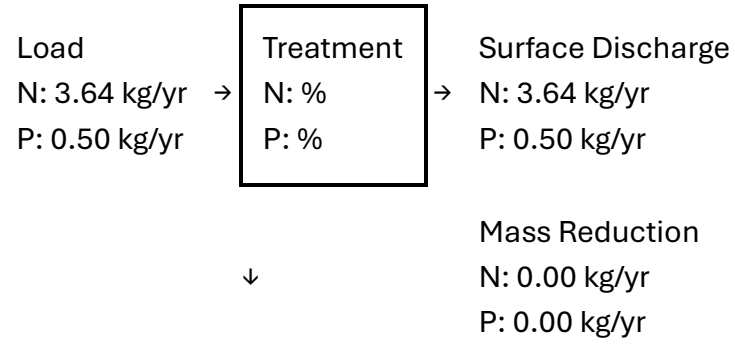
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	0.000
Media P Reduction (%)	0.000

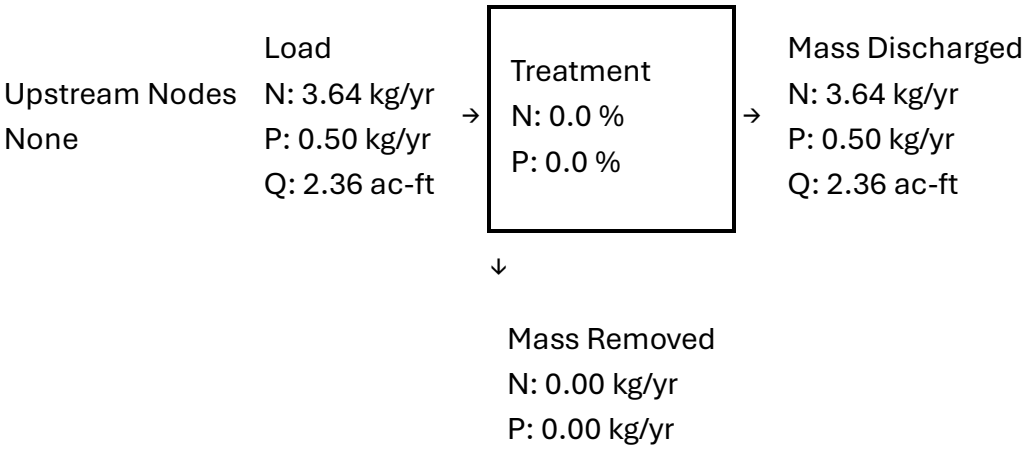
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for None (stand-alone)



Load Diagram for None (As Used In Routing)



Summary Treatment Report Version: 4.3.5

Project: 9th Ave

Analysis Type: Net Improvement Date:9/25/2025

BMP Types:

Catchment 1 - (DA_R04) None

Catchment 2 - (DA_R03) Multiple BMP

Catchment 3 - (DA_R02) None

Routing Summary

Catchment 1 Routed to Outlet

Catchment 2 Routed to Outlet

Catchment 3 Routed to Outlet

Based on % removal values to the nearest percent

Total nitrogen target removal met? **Yes**

Total phosphorus target removal met? **Yes**

Summary Report

Nitrogen

Surface Water Discharge

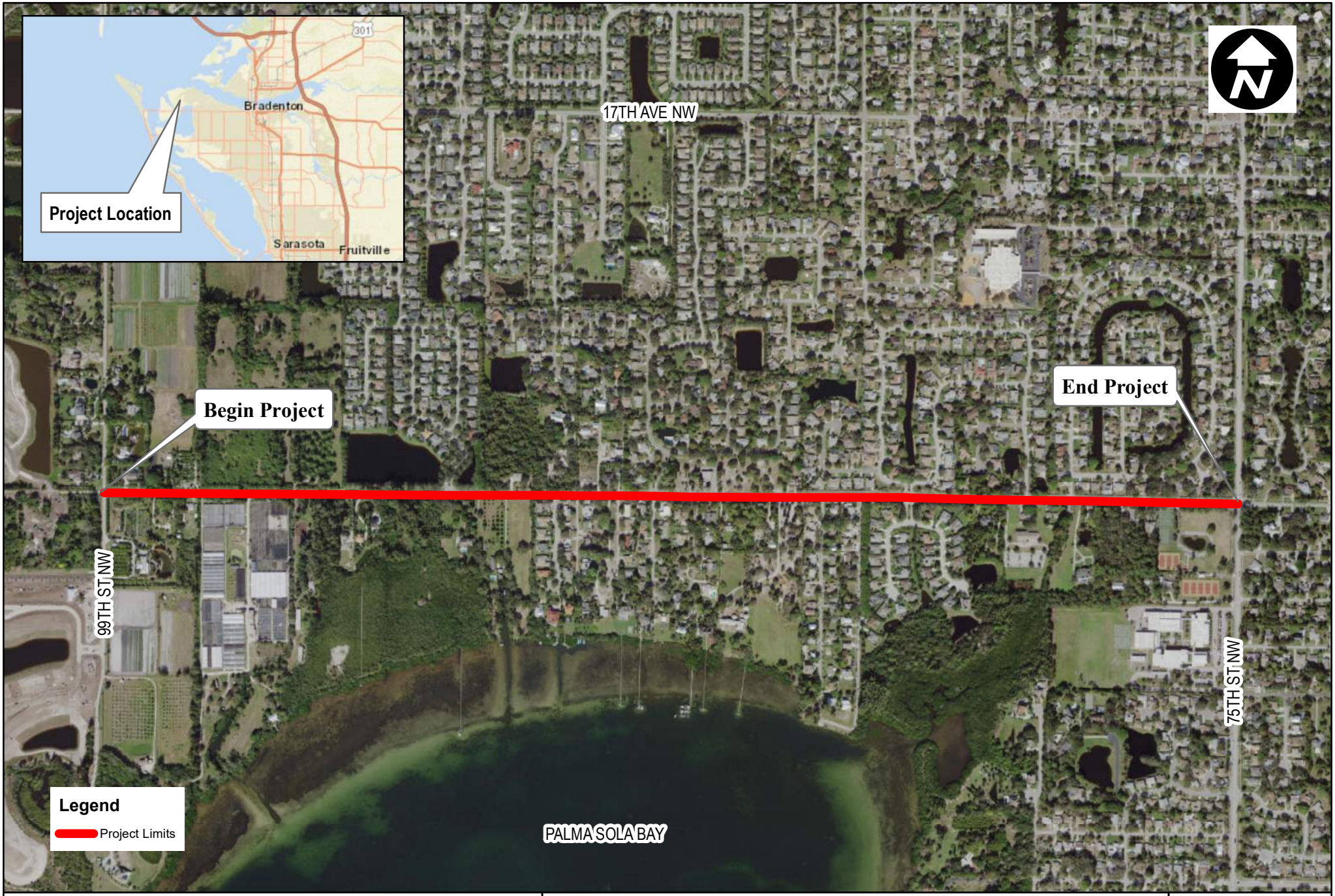
Total N pre load	11.59 kg/yr	
Total N post load	12.74 kg/yr	
Target N load reduction	9 %	
Target N discharge load	11.59 kg/yr	
Percent N load reduction	47 %	
Provided N discharge load	6.78 kg/yr	14.94 lb/yr
Provided N load removed	5.96 kg/yr	13.15 lb/yr

Phosphorus

Surface Water Discharge

Total P pre load	1.604 kg/yr	
Total P post load	1.763 kg/yr	
Target P load reduction	9 %	
Target P discharge load	1.604 kg/yr	
Percent P load reduction	52 %	
Provided P discharge load	.848 kg/yr	1.87 lb/yr
Provided P load removed	.915 kg/yr	2.017 lb/yr

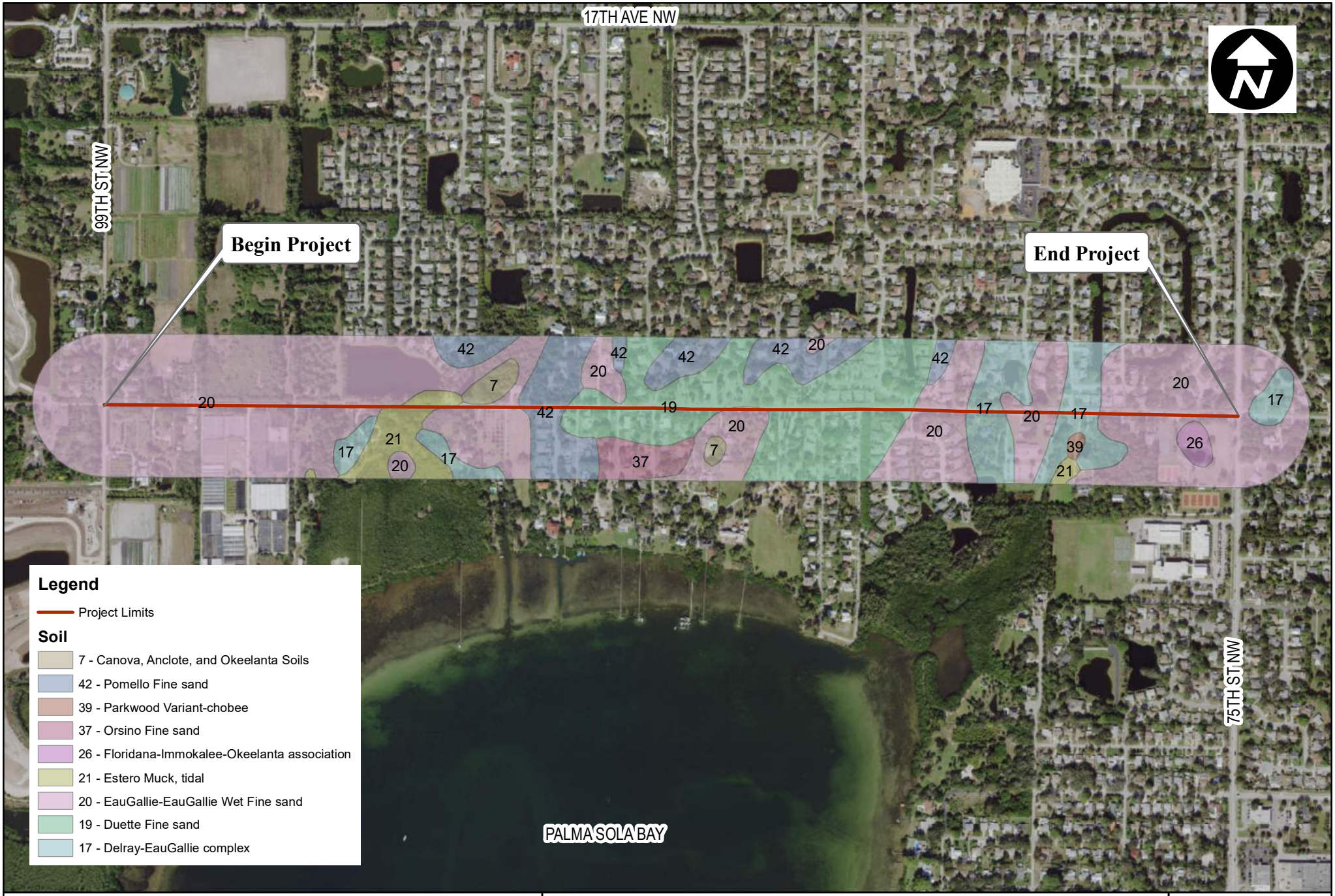
APPENDIX B
Exhibits



Manatee County FLORIDA

LOCATION MAP

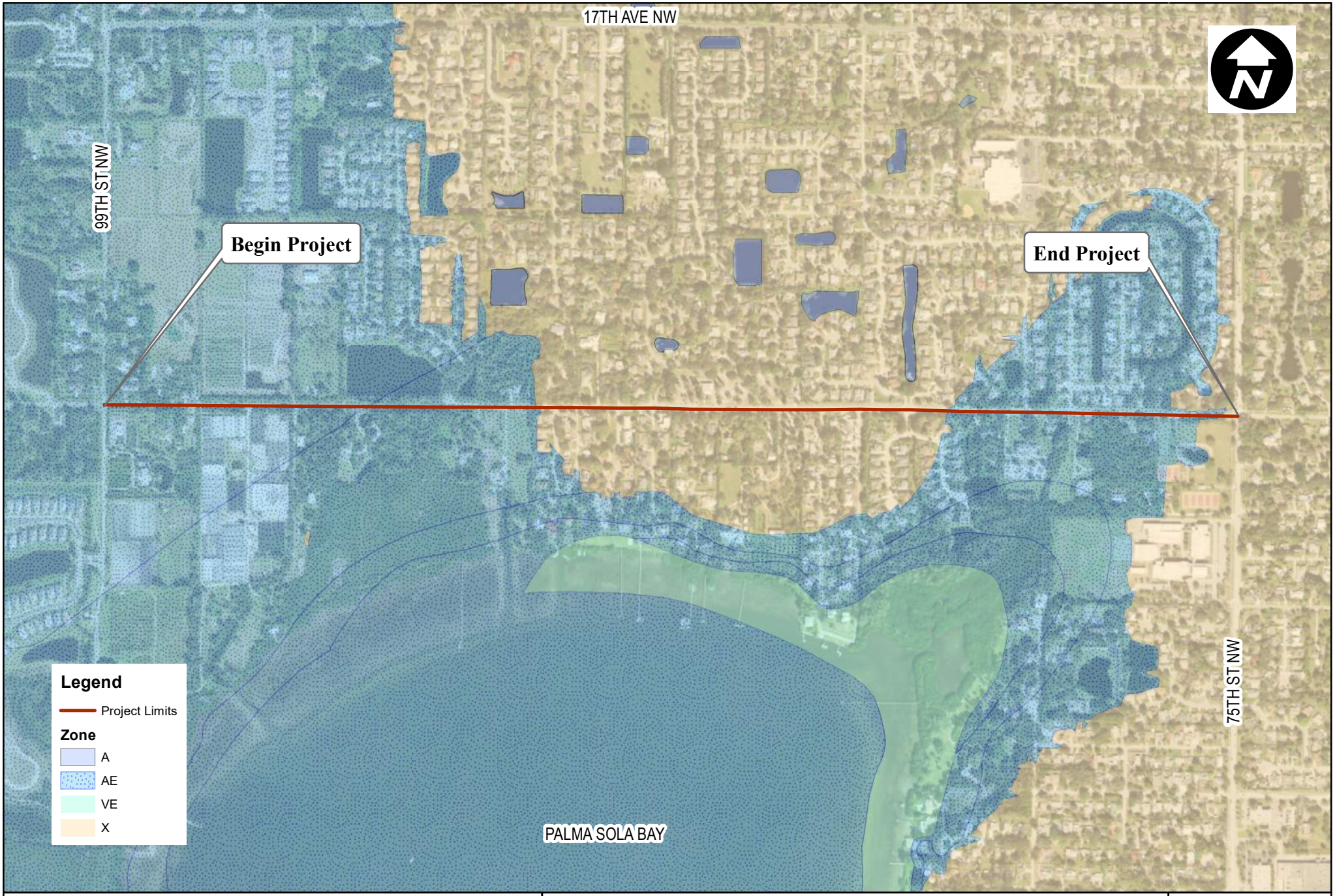
FIGURE 1



Manatee County FLORIDA

SOIL MAP

FIGURE 2



Manatee County FLORIDA

FEMA MAP

FIGURE 3

LEGEND

FLOW DIRECTION

BASIN DIVIDE

N

0 50 200

Feet

99TH ST NW

GERALDSON'S FAMILY FARM

PI STA. 9+00.00

PI STA. 17+00.00

Δ = 0° 2' 52.94"

DA_R01
2.07 AC

DA_R02
1.03 AC

10 15 20 25 3

9TH AVE

9TH AVE NW

BARKSBNB

ORBAN'S NURSERY

BEGIN PROJECT
BEGIN CONSTRUCTION
STA. 10+80.48
℄ SURVEY 9TH AVENUE NW

MATCH LINE STA. 30+00.00

DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. THIS SHEET IS IN THE PLANS FOR DOCUMENTATION AND TO ASSIST CONSTRUCTION PERSONELLE WITH DRAINAGE CONCERNS.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

Kimley»Horn

JORDAN E. LEEP, P.E.
P.E. LICENSE NUMBER 76102
1777 MAIN STREET, SUITE 200
SARASOTA, FL 34236
(941) 379-7600

MANATEE COUNTY

PROJECT NAME	FPID NO.
9TH AVENUE	148400070

EXISTING ROADWAY DRAINAGE MAP (1)

SHEET NO.


LEGEND
FLOW DIRECTION
BASIN DIVIDE
N
0 50 200
Feet
MATCH LINE STA. 30+00.00
MATCH LINE STA. 58+00.00
92ND ST NW
87TH ST NW
DA_R01
DA_R02
DA_R03
1.94 AC
DA_R04
1.50 AC
DA_R05
0.63 AC
DA_R06
1.82 AC
POT STA. 10+00.00
PI STA. 43+40.66
9TH AVE NW
89TH CT NW
89TH ST NW
88TH ST NW
87TH ST CT NW
35
40
45
50
55
15
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1777 MAIN STREET, SUITE 200
SARASOTA, FL 34236
(941) 379-7600

MANATEE COUNTY

PROJECT NAME	FPID NO.
9TH AVENUE	148400070

EXISTING ROADWAY DRAINAGE MAP (2)

SHEET NO.

LEGEND

FLOW DIRECTION

BASIN DIVIDE

N

0 50 200

Feet

MATCH LINE STA. 58+00.00

MATCH LINE STA. 86+00.00

PALMA SOLA COMMUNITY CHURCH

DA_R06

PI STA. 69+80.66
Δ = 0° 0' 45.59"

DA_R07
8.75 AC

83RD ST NW

79TH ST NW

78TH ST NW

9TH AVE NW

8TH TERR NW

NORTHWEST BAPTIST CHURCH

86TH ST CT NW

84TH ST NW

83RD ST NW

60 65 70 75 80 85

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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P.E. LICENSE NUMBER: 76102
1777 MAIN STREET, SUITE 200
SARASOTA, FL 34236
(941) 379-7600

MANATEE COUNTY	
PROJECT NAME	FPID NO.
9TH AVENUE	148400070

EXISTING ROADWAY DRAINAGE MAP (3)

SHEET NO.

LEGEND

FLOW DIRECTION

BASIN DIVIDE

DA_R07

9TH AVE NW

9TH AVE NW

MATCH LINE STA. 86+00.00

75TH ST SW

72ND ST NW

71ST ST NW

PI STA. 96+27.50

Δ = 0° 45' 7.59"

90 95 100 105 110

N

0 50 200

Feet

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

Kimley»Horn

JORDAN E. LEEP, P.E.
P.E. LICENSE NUMBER: 76102
1777 MAIN STREET, SUITE 200
SARASOTA, FL 34236
(941) 379-7600

MANATEE COUNTY	
PROJECT NAME	FPID NO.
9TH AVENUE	148400070

EXISTING ROADWAY DRAINAGE MAP (4)

SHEET NO.

No.	REVISIONS	DATE	BY

Kimley»Horn

1800 SECOND STREET, SUITE 900, SARASOTA, FL 34236
PHONE: 941-379-7600
WWW.KIMLEY-HORN.COM

KHA PROJECT	148400070
DATE	07/23/2025
SCALE	AS SHOWN
DESIGNED BY	
DRAWN BY	
CHECKED BY	

Manatee County Florida

9TH AVENUE NW

MANATEE COUNTY FL

LICENSED PROFESSIONAL

JORDAN E. LEEP, P.E.

FL LICENSE NUMBER 76102

DATE:

DRAINAGE MAP (1)

SHEET NUMBER

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gloria.manriquez 7/22/2025 10:14:27 AM Default K:\SAR_Roadway\148400070_9thAve\148400070\drainage\Tideline Alternative Bid Files\DRMPRD01_Tideline.dgn

LEGEND

FLOW DIRECTION

BASIN DIVIDE

HAWTHORN PARK DRAINAGE POND

HAWTHORN PARK DRAINAGE DITCH

92ND ST NW

87TH ST NW

9TH AVE NW

89TH CT NW

89TH ST NW

88TH ST NW

S-208

S-209

DA_R02
1.97 AC

PI STA. 10+00.00

PI STA. 43+40.66
Δ = 0° 0' 41.26"

PI STA. 10+00.00

MATCH LINE STA. 30+00.00

MATCH LINE STA. 58+00.00

COUNTY CIP MAINLINE PROJECT
TO BE COMPLETED UNDER SEPARATE CONTRACT

15

0 50 200
Feet

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No.	REVISIONS	DATE	BY

Kimley»Horn

1800 SECOND STREET, SUITE 900, SARASOTA, FL 34236
PHONE: 941-379-7600
WWW.KIMLEY-HORN.COM

KHA PROJECT	148400070
DATE	07/23/2025
SCALE	AS SHOWN
DESIGNED BY	
DRAWN BY	
CHECKED BY	

Manatee County FLORIDA

9TH AVENUE NW

MANATEE COUNTY FL

LICENSED PROFESSIONAL

JORDAN E. LEEP, P.E.
FL LICENSE NUMBER
76102

DATE:

DRAINAGE MAP (2)

SHEET NUMBER

gloria.manriquez 7/22/2025 10:39:00 AM Default K:\SAR_Roadway\148400070_9thAve\148400070\drainage\Tideline Alternative Bid Files\DRMPRD02_Tideline.dgn

LEGEND

FLOW DIRECTION

BASIN DIVIDE

N

0 50 200

Feet

MATCH LINE STA. 30+00.00

HAWTHORN PARK DRAINAGE POND

HAWTHORN PARK DRAINAGE DITCH

TRIPLE-42" CROSS DRAIN

92ND ST NW

PI STA. 43+40.66

PI STA. 10+00.00

9TH AVE NW

89TH CT NW

89TH ST NW

87TH ST NW

88TH ST NW

87TH ST CT NW

DA_R02
1.97 AC

DA_R03
3.66 AC

DA_R04
1.10 AC

DA_R05
0.63 AC

DA_R06
1.83 AC

S-210 S-211 S-212 S-213 S-214 S-215 S-300 S-301 S-210A

S-500 S-500A S-501 S-502 S-503 S-504 S-505 S-506 S-507 S-508 S-509

S-402 S-403 S-404 S-405 S-406 S-406A S-407 S-408 S-409

S-701 S-702 S-703 S-704 S-705 S-706 S-707 S-708 S-709 S-710 S-711 S-712

S-800 S-801 S-802 S-803 S-804 S-805 S-806 S-807

BEGIN CONSTRUCTION
BEGIN PROJECT
BEGIN MILLING & RESURFACING
STA. 33+36.80
℄ SURVEY 9TH AVENUE NW

NEAL COMMUNITIES TIDELINE PROJECT
COMPLETED UNDER SEPARATE CONTRACT

WETLAND BOUNDARY

INSET A

SEE INSET A

MATCH LINE STA. 58+00.00

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No.	REVISIONS	DATE	BY

Kimley»Horn

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WWW.KIMLEY-HORN.COM

KHA PROJECT 148400070
DATE 07/23/2025
SCALE AS SHOWN
DESIGNED BY
DRAWN BY
CHECKED BY

Manatee County FLORIDA

9TH AVENUE NW

MANATEE COUNTY FL

LICENSED PROFESSIONAL

JORDAN E. LEEP, P.E.
FL LICENSE NUMBER 76102

DATE:

DRAINAGE MAP (1)

SHEET NUMBER

gloria.manriquez 7/21/2025 8:58:03 PM Default K:\SAR_Roadway\148400070_9thAve\148400070\drainage\DRMPRD02.dgn

LEGEND

FLOW DIRECTION

BASIN DIVIDE

N

0 50 200

Feet

MATCH LINE STA. 58+00.00

MATCH LINE STA. 86+00.00

PALMA SOLA COMMUNITY CHURCH

PI STA. 69+80.66

83RD ST NW

79TH ST NW

78TH ST NW

86TH ST CT NW

84TH ST NW

83RD ST NW

9TH AVE NW

8TH TERR NW

60 65 70 75 80 85

S-1101 S-1102 S-1103 S-1104 S-1105 S-1106 S-1107

DA_R06
1.83 AC

DA_R07
8.60 AC

NORTHWEST BAPTIST CHURCH

END MILLING & RESURFACING
STA. 83+14.38
℄ SURVEY 9TH AVENUE NW

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PHONE: 941-379-7600
WWW.KIMLEY-HORN.COM

KHA PROJECT 148400070
DATE 07/23/2025
SCALE AS SHOWN
DESIGNED BY
DRAWN BY
CHECKED BY

Manatee County FLORIDA

9TH AVENUE NW

MANATEE COUNTY FL

LICENSED PROFESSIONAL

JORDAN E. LEEP, P.E.
FL LICENSE NUMBER 76102
DATE:

DRAINAGE MAP (2)

SHEET NUMBER

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LEGEND

FLOW DIRECTION

BASIN DIVIDE

N

0 50 200

Feet

MATCH LINE STA. 86+00.00

DA_R07
8.60 AC

90

95

9TH AVE NW

75TH ST SW

PI STA. 96+27.50

100

72ND ST NW

105

71ST ST NW

110

END PROJECT
END CONSTRUCTION
STA. 109+35.87
℄ SURVEY 9TH AVENUE NW

S-901

S-902

S-903

S-904

DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. THIS SHEET IS IN THE PLANS FOR DOCUMENTATION AND TO ASSIST CONSTRUCTION PERSONELLE WITH DRAINAGE CONCERNS.

No.	REVISIONS	DATE	BY

Kimley»Horn

1800 SECOND STREET, SUITE 900, SARASOTA, FL 34236
PHONE: 941-379-7600
WWW.KIMLEY-HORN.COM

KHA PROJECT 148400070
DATE 07/23/2025
SCALE AS SHOWN
DESIGNED BY
DRAWN BY
CHECKED BY

Manatee County FLORIDA

9TH AVENUE NW

MANATEE COUNTY FL

LICENSED PROFESSIONAL

JORDAN E. LEEP, P.E.
FL LICENSE NUMBER 76102
DATE:

DRAINAGE MAP (3)

SHEET NUMBER

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gloria.manriquez 7/21/2025 8:58:58 PM Default K:\SAR_Roadway\148400070_9thAve\148400070\drainage\DRMPRD04.dgn

APPENDIX C
Base Clearance

9th AVE
from 99th St W to75th St W
Manatee County, FL
BASE CLEARANCE DOCUMENTATION

Borehole Name	Station	Offset	Existing Ground Elevation (NAVD)	Encountered Boring Water Depth (ft) (from Geotech Report)	Boring Encountered Water Elevation (NAVD)	Estimated SHWT (NAVD)*	Max BCWE (NAVD)*	E.O.P Elevation (NAVD)	Proposed Pavement Structure Depth (ft)	Bottom Base Elevation (NAVD)	Clearance (ft)	Meets 1-ft Base Clearance? (Yes/No)	Comments
HA-1	17+45.75	-12.96	2.95	2.50	0.45	N/A	N/A	3.22	0.67	2.55	2.10	YES	
SP-1	18+66.87	-4.98	3.01	5.00	-1.99	N/A	N/A	3.96	0.67	3.29	5.28	YES	
HA-2	19+78.46	-14.01	3.80	3.10	0.70	N/A	N/A	3.89	0.67	3.22	2.52	YES	
HA-3	22+34.46	14.12	3.69	3.10	0.59	N/A	N/A	4.26	0.67	3.59	3.00	YES	
HA-4	23+89.32	-14.22	2.83	3.00	-0.17	N/A	N/A	3.91	0.67	3.24	3.41	YES	
HA-5	25+57.39	-12.03	3.22	2.50	0.72	N/A	N/A	3.57	0.67	2.90	2.18	YES	
SP-1	27+48.22	-8.13	3.80	2.60	1.20	N/A	N/A	3.50	0.67	2.83	1.63	YES	
HA-6	27+89.63	-14.13	3.45	3.00	0.45	N/A	N/A	3.61	0.67	2.94	2.49	YES	
SP-2	29+05.98	3.75	3.78	2.50	1.28	N/A	N/A	3.63	0.67	2.96	1.68	YES	
HA-7	29+76.20	29.12	4.69	3.00	1.69	N/A	N/A	3.74	0.67	3.07	1.38	YES	
HA-8	31+61.71	-15.07	3.43	3.60	-0.17	N/A	N/A	3.74	0.67	3.07	3.24	YES	
HA-9	33+73.12	14.05	3.16	2.50	0.66	N/A	N/A	3.43	0.67	2.76	2.10	YES	
HA-10	35+29.64	-13.31	3.24	2.50	0.74	N/A	N/A	3.33	0.67	2.66	1.92	YES	
HA-11	36+83.46	-30.11	2.75	3.00	-0.25	N/A	N/A	3.33	0.67	2.66	2.91	YES	
SP-3	38+67.51	6.94	3.22	2.50	0.72	N/A	N/A	3.33	0.67	2.66	1.94	YES	
HA-12	39+90.18	-10.02	3.58	3.00	0.58	N/A	N/A	3.33	0.67	2.66	2.08	YES	

*To be completed with the next submittal

APPENDIX D
Stormwater Conveyance Calculations

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM SEWER TABULATION FORM

Financial Project ID: | County: | Network: 100 | Sheet: _____ of _____
Description: | Organization: | State Road: | Prepared by: | Checked by: | Date: 1 7/21/2025 | Date:

LOCATION OF UPPER END			STRUCTURE NO.	TYPE OF STRUCTURE	LENGTH (ft)	DRAINAGE AREA (ac. or ha.)			TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	TOTAL (C*A)	BASE FLOW (cfs)	TOTAL FLOW (cfs)	MINOR LOSSES (ft)	INLET ELEVATION (ft)	HGL CLEARANCE (ft)	HYDRAULIC GRADIENT			NUMBER OF BARRELS	PIPE SIZE (in)	SLOPE (%)	ACTUAL VELOCITY (fps)	FULL FLOW CAPACITY (cfs)	NOTES AND REMARKS
						INCREMENTAL												CROWN				RISE				ZONE: Zone
ALIGNMENT NAME						CUMULATIVE												FLOWLINE ELEVATION					HYD. GRAD.			FREQUENCY (yrs): 10.00 Year
STATION	OFFSET DISTANCE (ft.)	SIDE	UPPER LOWER			COMPOSITE C VALUE	AREA	SUB-TOTAL (C*A)										UPPER END ELEVATION (ft)	LOWER END ELEVATION (ft)	FALL (ft)		SPAN	PHYSICAL MIN. PHYSICAL	PHYSICAL VELOCITY (fps)		MANNINGS n: 0.012
CL_CONST			S-107															3.74	3.40	0.34		18.0	0.306%	1.81		TAILWATER EL. (ft): 0.23
22+13.00	18.00	LT	S-106	DBI-TYPE-E	111.00	0.720	0.770	0.554	10.00	1.02	5.65	0.554	0.000	3.13	0.02	3.98	0.24	2.37	2.32	0.05	1	14.0	0.05%	1.16	2.05	
																		1.20	1.15	0.05		23.0	0.15%			
CL_CONST			S-106															3.40	2.97	0.43		18.0	0.218%	1.93		
21+00.00	34.00	LT	S-105	DBI-TYPE-E	197.00	0.820	0.190	0.156	10.00	1.70	7.47	0.156	0.000	1.16	0.03	3.40	0.00	2.32	2.15	0.17	1	14.0	0.09%	1.61	2.84	
																		1.15	0.98	0.17		23.0	0.15%			
CL_CONST			S-105															2.97	2.53	0.44		18.0	0.389%	2.46		
19+00.00	19.00	LT	S-104	GUTTER-INLET-TYPE-V	113.00	0.810	0.250	0.203	10.00	0.77	7.47	0.203	0.000	1.51	0.04	3.41	0.44	2.15	2.02	0.13	1	14.0	0.12%	1.86	3.28	
																		0.98	0.85	0.13		23.0	0.15%			
CL_CONST			S-104															2.53	2.23	0.30		24.0	0.508%	3.07		
17+83.00	18.50	LT	S-102	GUTTER-INLET-TYPE-V	59.00	0.730	0.160	0.117	10.00	0.32	7.47	0.117	0.000	0.87	0.03	2.89	0.36	2.02	1.97	0.05	1	14.0	0.08%	1.59	5.00	
																		0.85	0.80	0.05		23.0	0.10%			
CL_CONST			S-101															2.25	2.23	0.02		18.0	0.154%	1.87		
17+21.00	46.00	RT	S-102	MES	13.00	0.540	0.440	0.238	10.00	0.12	4.88	0.238	0.000	1.16	0.29	4.00	1.75	2.17	2.07	0.10	1	14.0	0.77%	4.80	8.48	
																		1.00	0.90	0.10		23.0	0.15%			
CL_CONST			S-102															2.23	1.94	0.29		18.0	0.604%	3.39		
17+21.00	29.00	LT	S-103	DBI-TYPE-D	48.00	0.740	0.030	0.022	10.00	0.24	7.47	0.022	0.000	0.17	0.04	3.20	0.97	1.97	1.92	0.05	1	14.0	0.10%	1.77	3.12	
																		0.80	0.75	0.05		23.0	0.15%			
CL_CONST			EX-5															1.95	1.94	0.01		15.0	0.143%	0.85		
17+20.00	33.00	RT	S-103	GRATE-INLET	7.00	0.630	0.200	0.126	10.00	0.14	5.65	0.126	0.000	0.71	4.78	2.90	0.95	2.66	1.55	1.11	1	12.0	15.86%	19.62	24.08	
																		1.66	0.55	1.11		18.0	0.19%			
CL_CONST			S-103															1.94	1.71	0.23		24.0	0.390%	2.75		
17+23.00	22.00	RT	S-100	DBI-TYPE-D	59.00	0.600	0.620	0.372	10.00	0.36	4.18	0.372	0.000	1.56	0.05	2.90	0.96	2.33	2.28	0.05	1	19.0	0.08%	1.95	6.11	
																		0.75	0.70	0.05		30.0	0.10%			

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM SEWER TABULATION FORM

Financial Project ID: 14840070 **County:** Manatee **Network:** 400 **Sheet:** x of x
Description: **Organization:** **State Road:** 9th Avenue NW, Bradenton, FL **Prepared by:** MA **Date: 0** 7/23/2025
Checked by: GM **Date:** 7/23/2025

LOCATION OF UPPER END			STRUCTURE NO.	TYPE OF STRUCTURE	LENGTH (ft)	DRAINAGE AREA (ac. or ha.)			TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	TOTAL (C*A)	BASE FLOW (cfs)	TOTAL FLOW (cfs)	MINOR LOSSES (ft)	INLET ELEVATION (ft)	HGL CLEARANCE (ft)	HYDRAULIC GRADIENT			NUMBER OF BARRELS	PIPE SIZE (in)	SLOPE (%)	ACTUAL VELOCITY (fps)	FULL FLOW CAPACITY (cfs)	NOTES AND REMARKS
						INCREMENTAL												CROWN				RISE				ZONE: Zone
ALIGNMENT NAME						CUMULATIVE												FLOWLINE ELEVATION					HYD. GRAD.			FREQUENCY (yrs): 10.00 Year
																							PHYSICAL			MANNINGS n: 0.012
STATION	OFFSET DISTANCE (ft.)	SIDE	UPPER LOWER			COMPOSITE C VALUE	AREA	SUB-TOTAL (C*A)										UPPER END ELEVATION (ft)	LOWER END ELEVATION (ft)	FALL (ft)		SPAN	MIN. PHYSICAL	PHYSICAL VELOCITY (fps)		TAILWATER EL. (ft): FREE
CL_CONST			S-409																							
43+59.75	18.75	RT	S-408	DBI-TYPE-C	64.00	0.390	0.040	0.016	10.00	2.18	7.47	0.016	0.000	0.12	0.24	6.30	4.30	2.00	1.99	0.01	1	18	0.016%	0.49	7.81	
																		3.30	3.00	0.30		18	0.47%	4.42		
																		1.80	1.50	0.30		18	0.15%			
CL_CONST			S-408															1.99	1.66	0.33		18	0.250%	2.35		
42+93.00	14.00	RT	S-407	INLET-TYPE-P-9	132.00	0.950	0.170	0.162	10.00	0.94	7.47	0.162	0.000	1.21	0.16	6.02	4.03	3.00	2.60	0.40	1	18	0.30%	3.55	6.28	
																		1.50	1.10	0.40		18	0.15%			
CL_CONST			S-407															1.66	1.51	0.15		24	0.441%	2.31		
41+58.25	4.75	RT	S-406A	INLET-TYPE-P-9	34.00	0.950	0.050	0.048	10.00	0.25	7.47	0.048	0.000	0.35	0.22	5.12	3.46	3.10	3.00	0.10	1	24	0.29%	4.24	13.33	
																		1.10	1.00	0.10		24	0.10%			
CL_CONST			S-406A															1.51	1.37	0.14		24	1.077%	2.61		
41+23.25	6.25	RT	S-406	MH P-7	13.00	0.000	0.000	0.000	10.00	0.08	7.47	0.000	0.000	1.58	0.58	5.32	3.81	3.00	2.90	0.10	1	24	0.77%	6.86	21.55	
																		1.00	0.90	0.10		24	0.10%			
CL_CONST			S-406															1.37	1.20	0.17		24	0.189%	2.37		
41+23.25	20.25	RT	S-405	DBI-TYPE-C	90.00	0.480	0.070	0.034	10.00	0.63	7.47	0.034	0.000	0.25	0.34	4.40	3.03	2.90	2.50	0.40	1	24	0.44%	5.21	16.38	
																		0.90	0.50	0.40		24	0.10%			
CL_CONST			S-405															1.20	1.07	0.13		24	0.112%	1.97		
40+30.00	20.75	RT	S-404	DBI-TYPE-D	116.00	0.720	0.060	0.043	10.00	0.98	7.47	0.043	0.000	0.32	0.13	3.90	2.70	2.50	2.30	0.20	1	24	0.17%	3.25	10.20	
																		0.50	0.30	0.20		24	0.10%			
CL_CONST			S-404															1.07	0.98	0.09		24	0.281%	2.14		
39+10.00	21.25	RT	S-403	DBI-TYPE-E-(CIP)	32.00	0.590	0.100	0.059	10.00	0.25	7.47	0.059	0.000	0.44	0.24	3.10	2.03	2.30	2.20	0.10	1	24	0.31%	4.37	13.74	
																		0.30	0.20	0.10		24	0.10%			
CL_CONST			S-403															0.98	0.67	0.31		24	4.429%	2.87		
36+80.00	33.25	RT	S-402	DBI-TYPE-E-(CIP)	7.00	0.720	0.060	0.043	10.00	0.04	7.47	0.043	0.000	0.32	1.09	3.01	2.03	2.20	2.10	0.10	1	24.0	1.43%	9.35	29.37	
																		0.20	0.10	0.10		24	0.10%			

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM SEWER TABULATION FORM

Financial Project ID: 14840070 **County:** Manatee **Network:** 500 **Sheet:** _____ of _____
Description: **Organization:** **State Road:** 9th Avenue NW, Bradenton, FL **Prepared by:** MA **Date:** 10/1/2025
Checked by: GM **Date:** 10/1/2025

LOCATION OF UPPER END			STRUCTURE NO.	TYPE OF STRUCTURE	LENGTH (ft)	DRAINAGE AREA (ac. or ha.)			TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	TOTAL (C*A)	BASE FLOW (cfs)	TOTAL FLOW (cfs)	MINOR LOSSES (ft)	INLET ELEVATION (ft)	HGL CLEARANCE (ft)	HYDRAULIC GRADIENT			NUMBER OF BARRELS	PIPE SIZE (in)	SLOPE (%)	ACTUAL VELOCITY (fps)	FULL FLOW CAPACITY (cfs)	NOTES AND REMARKS
						INCREMENTAL												CROWN				RISE				ZONE: Zone
ALIGNMENT NAME						CUMULATIVE												FLOWLINE ELEVATION				HYD. GRAD.		PHYSICAL VELOCITY (fps)		FREQUENCY (yrs): 10.00 Year
STATION	OFFSET DISTANCE (ft.)	SIDE	UPPER LOWER			COMPOSITE C VALUE	AREA	SUB-TOTAL (C*A)										UPPER END ELEVATION (ft)	LOWER END ELEVATION (ft)	FALL (ft)		SPAN	PHYSICAL MIN. PHYSICAL			MANNINGS n: 0.012
																										TAILWATER EL. (ft): 2.92
CL_CONST			S-509	DBI-TYPE-C	16.00	0.760	0.640	0.486	10.00	0.11	6.97	0.486	0.000	3.39	0.48	6.36	2.54	3.82	3.81	0.01	1	18.0	0.062%	2.35	10.93	
43+60.5	13.75	LT	S-508															3.40	3.30	0.10		24.0	0.62%	6.18		
																		1.40	1.30	0.10		24.0	0.15%			
CL_CONST			S-507	MES	84.00	0.000	0.000	0.000	10.00	0.13	6.97	0.000	0.000	40.00	2.17	5.81	1.55	4.26	3.81	0.45	1	18.0	0.536%	10.39	23.38	
43+40.25	108.50	LT	S-508															5.17	3.87	1.30		38.0	1.55%	13.23		
																		2.00	0.70	1.30		60.0	0.15%			
CL_CONST			S-508	TYPE J-7 MH	178.00	0.000	0.000	0.000	10.00	0.50	6.97	0.000	0.000	50.52	0.08	7.06	3.25	3.81	3.29	0.52	1	18.0	0.292%	5.96	4.45	
43+40.5	18.75	LT	S-505															3.77	3.67	0.10		38.0	0.06%	2.52		
																		0.60	0.50	0.10		60.0	0.15%			
CL_CONST			S-506	INLET-TYPE-P9	22.00	0.680	0.190	0.129	10.00	0.12	7.47	0.129	0.000	0.96	0.35	5.25	1.16	4.09	3.29	0.80	1	24.0	3.636%	3.11	16.57	
41+58.25	12.25	LT	S-505															3.30	3.20	0.10		24.0	0.45%	5.27		
																		1.30	1.20	0.10		24.0	0.10%			
CL_CONST			S-505	TYPE J-7 MH	26.00	0.000	0.000	0.000	10.00	0.12	7.47	0.000	0.000	64.23	2.54	5.97	2.68	3.29	3.95	-0.66	1	18.0	-2.538%	3.70	25.28	
41+58.50	38.75	LT	S-504															2.58	2.18	0.40		43.0	1.54%	14.30		
																		-1.00	-1.40	0.40		68.0	0.15%			
CL_CONST			S-504	INLET-TYPE-P9	44.00	0.810	0.070	0.057	10.00	0.14	7.47	0.057	0.000	0.42	0.75	5.05	1.10	3.95	4.25	-0.30	1	24.0	-0.682%	5.39	24.42	
41+30.5	42.50	LT	S-503															2.18	1.98	0.20		43.0	0.45%	7.77		
																		-1.40	-1.60	0.20		68.0	0.10%			
CL_CONST			S-503	INLET-TYPE-J-9-(4'X8')	7.00	0.810	0.060	0.049	10.00	0.02	7.47	0.049	0.000	0.36	2.36	4.90	0.65	4.25	4.89	-0.64	1	15.0	-9.143%	6.14	16.91	
40+83.75	38.25	RT	S-502															1.98	1.88	0.10		43.0	1.43%	13.78		
																		-1.60	-1.70	0.10		68.0	0.19%			
CL_CONST			S-502	TYPE J-7 MH	78.00	0.000	0.000	0.000	10.00	0.14	7.47	0.000	0.000	84.97	2.54	5.48	0.59	4.89	2.92	1.97	1	24.0	2.526%	9.08	44.93	
40+09.00	24.00	LT	S-501															1.88	3.08	-1.20		43.0	-1.54%	14.30		
																		-1.70	-0.50	-1.20		68.0	0.10%			

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM SEWER TABULATION FORM

Financial Project ID: 14840070 | County: Manatee | Network: 700 & 800 | Sheet: _____ of _____
Description: | Organization: | State Road: 9th Avenue NW, Bradenton, FL | Prepared by: MA | Date: 7/23/2025
Checked by: GM | Date: 7/23/2025

LOCATION OF UPPER END			STRUCTURE NO.	TYPE OF STRUCTURE	LENGTH (ft)	DRAINAGE AREA (ac. or ha.)			TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	TOTAL (C*A)	BASE FLOW (cfs)	TOTAL FLOW (cfs)	MINOR LOSSES (ft)	INLET ELEVATION (ft)	HGL CLEARANCE (ft)	HYDRAULIC GRADIENT			NUMBER OF BARRELS	PIPE SIZE (in)	SLOPE (%)	ACTUAL VELOCITY (fps)	FULL FLOW CAPACITY (cfs)	NOTES AND REMARKS
						INCREMENTAL												CROWN				RISE				ZONE: Zone
ALIGNMENT NAME						CUMULATIVE												FLOWLINE ELEVATION					HYD. GRAD.			FREQUENCY (yrs): 10.00 Year
STATION	OFFSET DISTANCE (ft.)	SIDE	UPPER LOWER			COMPOSITE C VALUE	AREA	SUB-TOTAL (C*A)										UPPER END ELEVATION (ft)	LOWER END ELEVATION (ft)	FALL (ft)		SPAN	PHYSICAL MIN. PHYSICAL	PHYSICAL VELOCITY (fps)		MANNINGS n: 0.012
																										TAILWATER EL. (ft): 0.46
CL_CONST			S-701	Inlet P-5	20.00	0.790	0.040	0.032	10.00	0.12	7.47	0.032	0.000	0.24	0.28	14.06	0.60	13.46	13.46	0.00	1	18	0.000%	2.85	8.35	
54+22.00	14.50	RT	S-703															11.58	11.48	0.10		18.96	0.50%	4.73		
																		10.00	9.90	0.10		30	0.15%			
CL_CONST			S-703	Inlet P-5	9.00	0.750	0.110	0.083	10.00	0.05	7.47	0.083	0.000	0.62	0.62	14.24	0.78	13.46	13.45	0.01	1	18	0.111%	2.97	12.45	
54+22.00	9.00	LT	S-702															11.48	11.38	0.10		18.96	1.11%	7.05		
																		9.90	9.80	0.10		30	0.15%			
CL_CONST			S-702	MH J-7	92.00	0.000	0.000	0.000	-	0.31	-	0.000	0.000	10.08	0.06	14.97	1.52	13.45	12.44	1.01	1	15	1.098%	4.89	2.61	
55+22.00	21.50	RT	S-705															11.30	11.20	0.10		18	0.11%	2.13		
																		9.80	9.70	0.10		18	0.19%			
CL_CONST			S-708	Inlet P-9	40.00	0.670	0.080	0.054	10.00	0.35	7.47	0.054	0.000	0.40	0.09	14.48	2.03	12.45	12.45	0.00	1	15	0.000%	1.92	3.36	
55+58.5	53.75	LT	S-704															11.67	11.57	0.10		14.04	0.25%	2.74		
																		10.50	10.40	0.10		23.04	0.19%			
CL_CONST			S-704	Inlet J-9	25.00	0.680	0.090	0.061	10.00	0.22	7.47	0.061	0.000	0.46	1.14	14.14	1.69	12.45	12.44	0.01	1	15	0.040%	1.90	11.74	
55+12.5	53.50	LT	S-705															11.65	10.95	0.70		15	2.80%	9.57		
																		10.40	9.70	0.70		15	0.19%			
CL_CONST			S-710	Inlet P-9	17.00	0.670	0.110	0.074	10.00	0.13	7.47	0.074	0.000	0.55	0.15	15.18	2.46	12.72	12.72	0.00	1	18	0.000%	2.16	6.19	
55+81.25	11.50	LT	S-709															12.90	12.85	0.05		18	0.29%	3.50		
																		11.40	11.35	0.05		18	0.15%			
CL_CONST			S-709	MH P-7	60.00	0.000	0.000	0.000	-	0.30	-	0.000	0.000	3.28	0.14	16.10	3.38	12.72	12.44	0.28	1	15	0.467%	3.28	4.05	
55+79.00	29.00	LT	S-705															12.60	12.40	0.20		15	0.33%	3.30		
																		11.35	11.15	0.20		15	0.19%			
CL_CONST			S-705	MH P-7	41.00	0.000	0.000	0.000	-	0.17	-	0.000	0.000	12.33	0.19	14.81	2.37	12.44	12.09	0.35	1	24	0.854%	3.93	12.14	
55+15.75	25.75	LT	S-706															11.70	11.60	0.10		24	0.24%	3.86		
																		9.70	9.60	0.10		24	0.10%			
CL_CONST			S-706	MH P-7	19.00	0.000	0.000	0.000	-	0.08	-	0.000	0.000	12.33	0.40	15.15	3.06	12.09	11.78	0.31	1	24	1.632%	3.93	17.83	
55+15.00	14.75	RT	S-707															11.60	11.50	0.10		24	0.53%	5.67		
																		9.60	9.50	0.10		24	0.10%			
CL_CONST			S-707	Inlet P-9	24.00	0.950	0.020	0.019	10.00	0.08	7.47	0.019	0.000	0.14	0.32	14.63	2.85	11.78	11.47	0.31	1	24	1.292%	4.76	15.86	
10+32.75	11.00	RT	S-712															11.50	11.40	0.10		24	0.42%	5.05		
																		9.50	9.40	0.10		24	0.10%			
CL_CONST			S-711	Inlet P-3	33.00	0.590	0.100	0.059	10.00	0.08	7.47	0.059	0.000	0.44	0.91	15.27	3.77	11.50	11.47	0.03	1	18	0.091%	6.50	15.16	
55+84.0	19.50	LT	S-712															11.40	10.40	1.00		12	3.03%	8.58		
																		10.40	9.40	1.00		18	0.15%			
CL_CONST			S-712	Inlet J-9	75.00	0.780	0.040	0.031	10.00	0.25	7.47	0.031	0.000	0.23	0.10	14.83	3.36	11.47	9.75	1.72	1	24	2.293%	5.01	8.97	
10+32.00	14.25	RT	S-800															11.40	11.30	0.10		24	0.13%	2.86		
																		9.40	9.30	0.10		24	0.10%			
CL_CONST			S-800	MH P-7	32.54	0.000	0.000	0.000	-	0.10	-	0.000	0.000	14.07	0.47	15.59	5.84	9.75	7.42	2.33	1	24	7.160%	5.52	19.26	
11+09.75	5.75	LT	S-801															10.00	9.80	0.20		24	0.61%	6.13		
																		8.00	7.80	0.20		24	0.10%			
CL_CONST			S-801	MH P-7	181.00	0.000	0.000	0.000	-	0.60	-	0.000	0.000	14.07	0.08	15.20	7.78	7.42	5.28	2.14	1	24	1.182%	5.00	8.17	
12+69.25	5.75	LT	S-802															7.10	6.90	0.20		24	0.11%	2.60		
																		5.10	4.90	0.20		24	0.10%			
CL_CONST			S-802	MH P-7	109.00	0.000	0.000	0.000	-	0.36	-	0.000	0.000	14.04	0.07	12.35	7.07	5.28	1.59	3.69	1	24	3.385%	4.98	7.44	
14+50.00	6.00	LT	S-803															5.10	5.00	0.10		24	0.09%	2.37		
																		3.10	3.00	0.10		24	0.10%			
CL_CONST			S-803	MH P-7	119.00	0.000	0.000	0.000	-	0.45	-	0.000	0.000	14.04	0.06	9.14	4.75	4.39	3.70	0.69	1	24	0.580%	4.44	7.12	
15+58.00	6.00	LT	S-804															3.50	3.40	0.10		24	0.08%	2.27		
																		1.50	1.40	0.10		24	0.10%			
CL_CONST			S-804	MH P-7	22.00	0.000	0.000	0.000	-	0.08	-	0.000	0.000	13.94	0.35	8.16	4.46	3.70	3.33	0.37	1	24	1.682%	4.44	16.57	
16+78.25	2.50	LT	S-805															3.30	3.20	0.10		24	0.45%	5.27		
																		1.30	1.20	0.10		24	0.10%			
CL_CONST			S-805	MH P-7	33.00	0.000	0.000	0.000	-	0.12	-	0.000	0.000	13.94	0.23	7.85	4.52	3.33	1.09	2.24	1	18	6.788%	4.65	7.61	
17+11.25	2.00	RT	S-806															3.10	3.00	0.10		24	0.30%	4.31		
																		1.10	1.00	0.10		24	0.15%			
CL_CONST			S-806	MH P-7	272.00	0.000	0.000	0.000	-	0.94	-	0.000	0.000	13.94	0.08	8.01	5.10	2.91	1.09	1.82	1	18	0.669%	4.82	4.53	
17+36.75	6.25	LT	EX-OF-02															2.48	2.08	0.40		18.96	0.15%	2.56		
																		0.90	0.50	0.40		30	0.15%			

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM SEWER TABULATION FORM

Financial Project ID: | **County:** | **Network:** 200 | **Sheet:** 1 of 1
Description: | **Organization:** Kimley Horn | **State Road:** | **Prepared by:** MA | **Date:** 1 1/8/2024
Checked by: | **Date:**

LOCATION OF UPPER END			STRUCTURE NO.	TYPE OF STRUCTURE	LENGTH (ft)	DRAINAGE AREA (ac. or ha.)			TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	TOTAL (C*A)	BASE FLOW (cfs)	TOTAL FLOW (cfs)	MINOR LOSSES (ft)	INLET ELEVATION (ft)	HGL CLEARANCE (ft)	HYDRAULIC GRADIENT			NUMBER OF BARRELS	PIPE SIZE (in)	SLOPE (%)	ACTUAL VELOCITY (fps)	FULL FLOW CAPACITY (cfs)	NOTES AND REMARKS
						INCREMENTAL												CROWN				RISE				ZONE: Zone
ALIGNMENT NAME						CUMULATIVE												FLOWLINE ELEVATION				HYD. GRAD.				FREQUENCY (yrs): 10.00 Year
STATION	OFFSET DISTANCE (ft.)	SIDE	UPPER LOWER			COMPOSITE C VALUE	AREA	SUB-TOTAL (C*A)										UPPER END ELEVATION (ft)	LOWER END ELEVATION (ft)	FALL (ft)		SPAN	PHYSICAL MIN. PHYSICAL	PHYSICAL VELOCITY (fps)		MANNINGS n: 0.012
CL_CONST			S-200	Gutter Inlet Type V	62.00	0.720	0.090	0.065	10.00	2.20	7.47	0.065	0.000	0.48	0.00	3.64	-0.27	3.91	3.91	0.00	1	18	0.000%	0.47	3.88	TAILWATER EL. (ft): 3.91
23+07.00	16.50	LT	EX-200															2.31	2.21	0.10		14	0.16%	2.19		EOP is 4.15, OK
																		1.14	1.04	0.10		23	0.15%			

9TH AVENUE NW

SPREAD CALCULATIONS
(POST-DEVELOPMENT)

Road: 9th Ave NW
County: Manatee
System Description: Station 41+50 to 54+00
Date Modified 1/17/2024

Intensity (inches/hour): *4.0*
Manning's "n": *0.013*
Prepared by: *MA*
Checked by: *VHG*

Spread Formula : $Q = (0.56/n)\,(S_X)^{5/3}\,(S_L)^{1/2}\,(T)^{8/3}$

Structure Number or Description	Locate from Station	Locate to Station	Type of Inlet	Runoff Flow Direction	Overland Runoff (Acres) SFR 0.4	Pav't 0.95	Bus. 0.025	Side Left or Right	Weighted Discharge Coefficient "C"	Intensity "i" (in./hr.)	Total Area A (acres)	Runoff Q = c i A (cfs)	Previous Bypass Q_O (cfs)	Total Flow Q_T (cfs)	Cross Slope S_X (ft/ft)	Longitudinal Slope S_L (ft/ft)	Spread T (ft)	Intercepted Flow Q_I (cfs)	Bypass Flow Q_B (cfs)	Allowable Spread Ta (ft)	Bypass to Inlet (cfs)
S-404	38+35.74	39+10.04	CLOSED FLUME	EAST	0.032	0.024	0.000	LT	0.63	4.00	0.056	0.141	0.000	0.141	0.020	0.019	2.8	0.141	0.000	8.0	N/A
	39+10.04	38+35.74	CLOSED FLUME	WEST	0.041	0.029	0.000	LT	0.63	4.00	0.070	0.176	0.000	0.176	0.020	0.019	3.1	0.176	0.000	8.0	N/A
S-503	41+07.60	40+83.75	J-9	EAST	0.003	0.016	0.000	LT	0.86	4.00	0.020	0.068	0.000	0.068	0.020	0.019	0.0	0.068	0.000	8.0	N/A
S-504	41+07.60	41+30.50	J-9	EAST	0.003	0.017	0.000	LT	0.87	4.00	0.020	0.068	0.000	0.068	0.020	0.008	2.6	0.068	0.000	8.0	N/A
S-506	43+40.61	41+56.63	P-9	WEST	0.000	0.036	0.000	RT	0.95	4.00	0.036	0.138	0.000	0.138	0.020	0.008	3.3	0.138	0.000	8.0	N/A
S-407	42+91.41	41+38.25	P-9	WEST	0.000	0.038	0.000	RT	0.95	4.00	0.038	0.143	0.000	0.143	0.020	0.008	3.4	0.143	0.000	8.0	N/A
S-408	43+56.79	42+93.00	P-9	WEST	0.000	0.019	0.000	RT	0.95	4.00	0.019	0.074	0.000	0.074	0.020	0.017	2.3	0.074	0.000	6.8	N/A

Remarks:

Note:
1)Spread calculations do not take bypass flow into consideration as Q values dont exceed 2.8cfs and longitudinal slopes are less than 1%
2)Spread at sag vertical curves are calculated at the inlet from both upstream directions.

9TH AVENUE NW

SPREAD CALCULATIONS
(POST-DEVELOPMENT)

Road: 9th Ave NW
County: Manatee
System Description: 87th St

Intensity (inches/hour): *4.0*
Manning's "n": *0.016*
Prepared by: *MA*
Checked by: *VHG*

Spread Formula : $Q = (0.56/n)\,(S_X)^{5/3}\,(S_L)^{1/2}\,(T)^{8/3}$

Structure Number or Description	Locate from Station	Locate to Station	Type of Inlet	Runoff Flow Direction	Overland Runoff (Acres) SFR 0.4	Pav't 0.95	Bus. 0.35	Side Left or Right	Weighted Discharge Coefficient "C"	Intensity "i" (in./hr.)	Total Area A (acres)	Runoff Q = c i A (cfs)	Previous Bypass Q_O (cfs)	Total Flow Q_T (cfs)	Cross Slope S_X (ft/ft)	Longitudinal Slope S_L (ft/ft)	Spread T (ft)	Intercepted Flow Q_I (cfs)	Bypass Flow Q_B (cfs)	Allowable Spread Ta (ft)	Bypass to Inlet (cfs)
S-701	54+18.10	54+97.60	P-5	EAST	0.012	0.030	0.000	RT	0.79	4.00	0.042	0.133	0.000	0.133	0.020	0.005	3.85	0.133	0.000	6.8	N/A
S-703	54+18.10	54+97.60	P-5	EAST	0.014	0.030	0.000	LT	0.78	4.00	0.044	0.136	0.000	0.136	0.020	0.006	3.75	0.136	0.000	6.8	N/A
S-704-AH	54+75.25	55+35.35	J-9	SOUTH	0.021	0.023	0.000	LT	0.68	4.00	0.044	0.119	0.000	0.119	0.020	0.005	3.70	0.119	0.000	6.8	N/A
S-704-BK	54+75.25	55+35.35	J-9	NORTH	0.021	0.023	0.000	LT	0.68	4.00	0.044	0.119	0.000	0.119	0.020	0.005	3.70	0.119	0.000	6.8	N/A
S-708-AH	55+35.40	55+72.20	P-9	SOUTH	0.003	0.018	0.000	LT	0.86	4.00	0.021	0.072	0.000	0.072	0.020	0.004	3.18	0.072	0.000	6.8	N/A
S-708-BK	55+35.40	55+72.20	P-9	EAST	0.003	0.018	0.000	LT	0.86	4.00	0.021	0.072	0.000	0.072	0.020	0.004	3.18	0.072	0.000	6.8	N/A
S-707	55+72.80	55+72.80	P-9	SOUTH	0.000	0.020	0.000	RT	0.95	4.00	0.020	0.076	0.000	0.076	0.020	0.007	2.93	0.076	0.000	6.8	N/A
S-710	10+32.75	55+65.85	P-9	WEST	0.023	0.025	0.000	LT	0.69	4.00	0.048	0.133	0.000	0.133	0.020	0.011	3.34	0.133	0.000	6.8	N/A
S-711	55+73.30	56+81.30	P-9	WEST	0.022	0.026	0.000	RT	0.70	4.00	0.048	0.133	0.000	0.133	0.020	0.004	4.06	0.133	0.000	6.8	N/A
S-712	10+32.00	55+73.30	P-9	SOUTH	0.011	0.024	0.000	RT	0.78	4.00	0.035	0.109	0.000	0.109	0.020	0.015	2.91	0.109	0.000	6.8	N/A

Remarks:

Note:
1)Spread calculations do not take bypass flow into consideration as Q values dont exceed 2.8cfs and longitudinal slopes are less than 1%
2)Spread at sag vertical curves are calculated at the inlet from both upstream directions.

9TH AVENUE NW

SPREAD CALCULATIONS
(POST-DEVELOPMENT)

Road: 9th Ave NW
County: Manatee
System Description: 83rd St

Intensity (inches/hour): *4.0*
Manning's "n": *0.016*
Prepared by: *MA*
Checked by: *VHG*

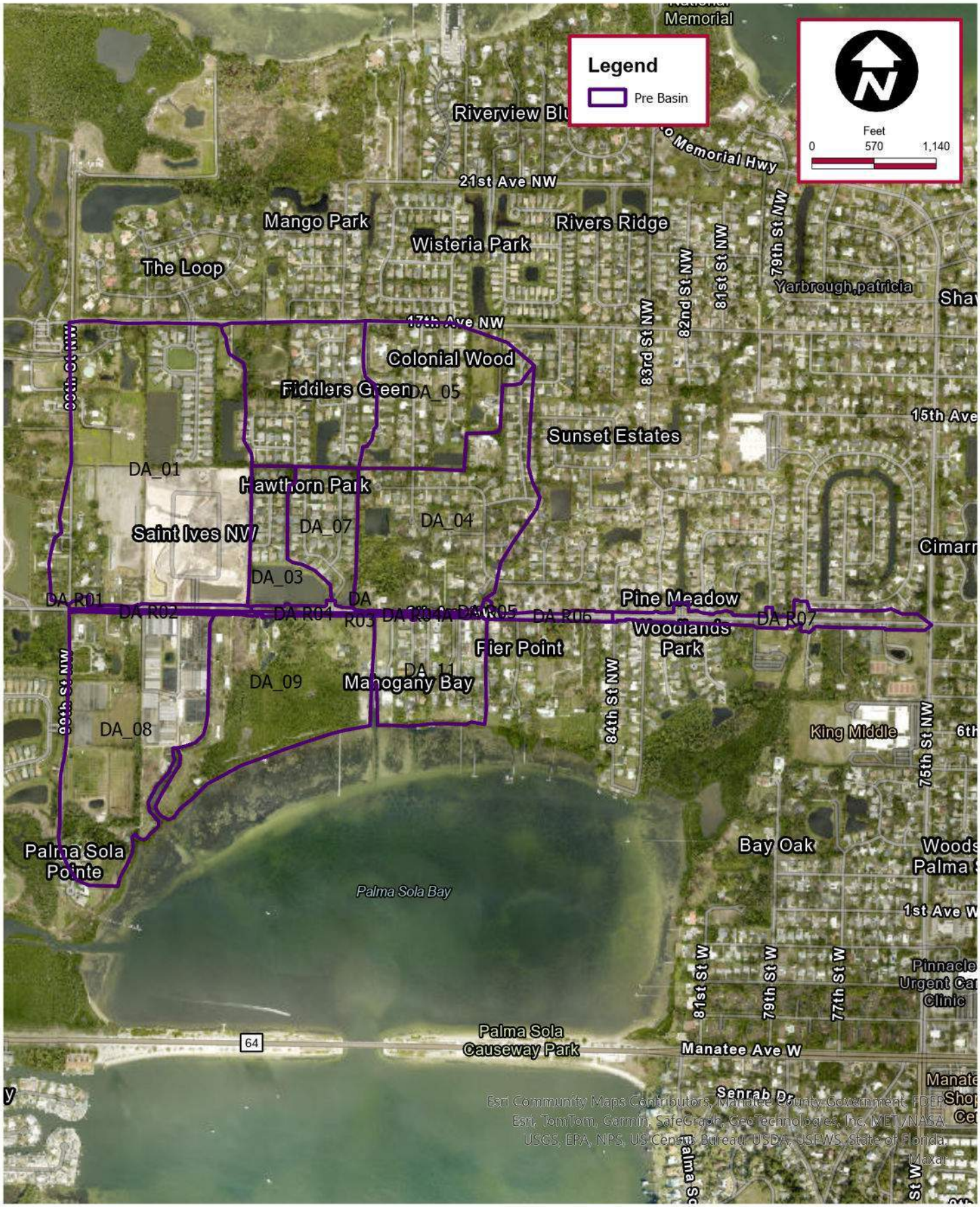
Spread Formula : $Q = (0.56/n)\,(S_X)^{5/3}\,(S_L)^{1/2}\,(T)^{8/3}$

Structure Number or Description	Locate from Station	Locate to Station	Type of Inlet	Runoff Flow Direction	Overland Runoff (Acres) SFR 0.4	Pav't 0.95	Bus. 0.35	Side Left or Right	Weighted Discharge Coefficient "C"	Intensity "i" (in./hr.)	Total Area A (acres)	Runoff Q = c i A (cfs)	Previous Bypass Q_O (cfs)	Total Flow Q_T (cfs)	Cross Slope S_X (ft/ft)	Longitudinal Slope S_L (ft/ft)	Spread T (ft)	Intercepted Flow Q_I (cfs)	Bypass Flow Q_B (cfs)	Allowable Spread Ta (ft)	Bypass to Inlet (cfs)
S-1101	71+71.17	72+50.00	P-4	SOUTH	0.000	0.026	0.000	LT	0.95	4.00	0.026	0.100	0.000	0.100	0.020	0.019	2.70	0.100	0.000	9.50	N/A
S-1102	71+71.17	72+50.00	P-4	NORTH	0.000	0.026	0.000	LT	0.95	4.00	0.026	0.097	0.000	0.097	0.020	0.019	2.67	0.097	0.000	9.50	N/A
S-1103	72+94.00	73+20.50	P-4	SOUTH	0.000	0.025	0.000	LT	0.95	4.00	0.025	0.096	0.000	0.096	0.020	0.019	2.66	0.096	0.000	9.50	N/A
S-1104	72+57.72	73+50.25	P-4	NORTH	0.000	0.026	0.000	LT	0.95	4.00	0.026	0.098	0.000	0.098	0.020	0.078	2.05	0.098	0.000	11.00	N/A

Remarks:

Note:
1)Spread calculations do not take bypass flow into consideration as Q values dont exceed 2.8cfs and longitudinal slopes are less than 1%
2)Spread at sag vertical curves are calculated at the inlet from both upstream directions.

APPENDIX E
Stormwater Modeling



K:\ORL_Roadway\148400070_9thAve\ENGINEERING\ORL_Drainage\GIS\ARCPRO 2025\9THAVE.aprx - 7/22/2025 9:44 AM - Gloria.Manriquez

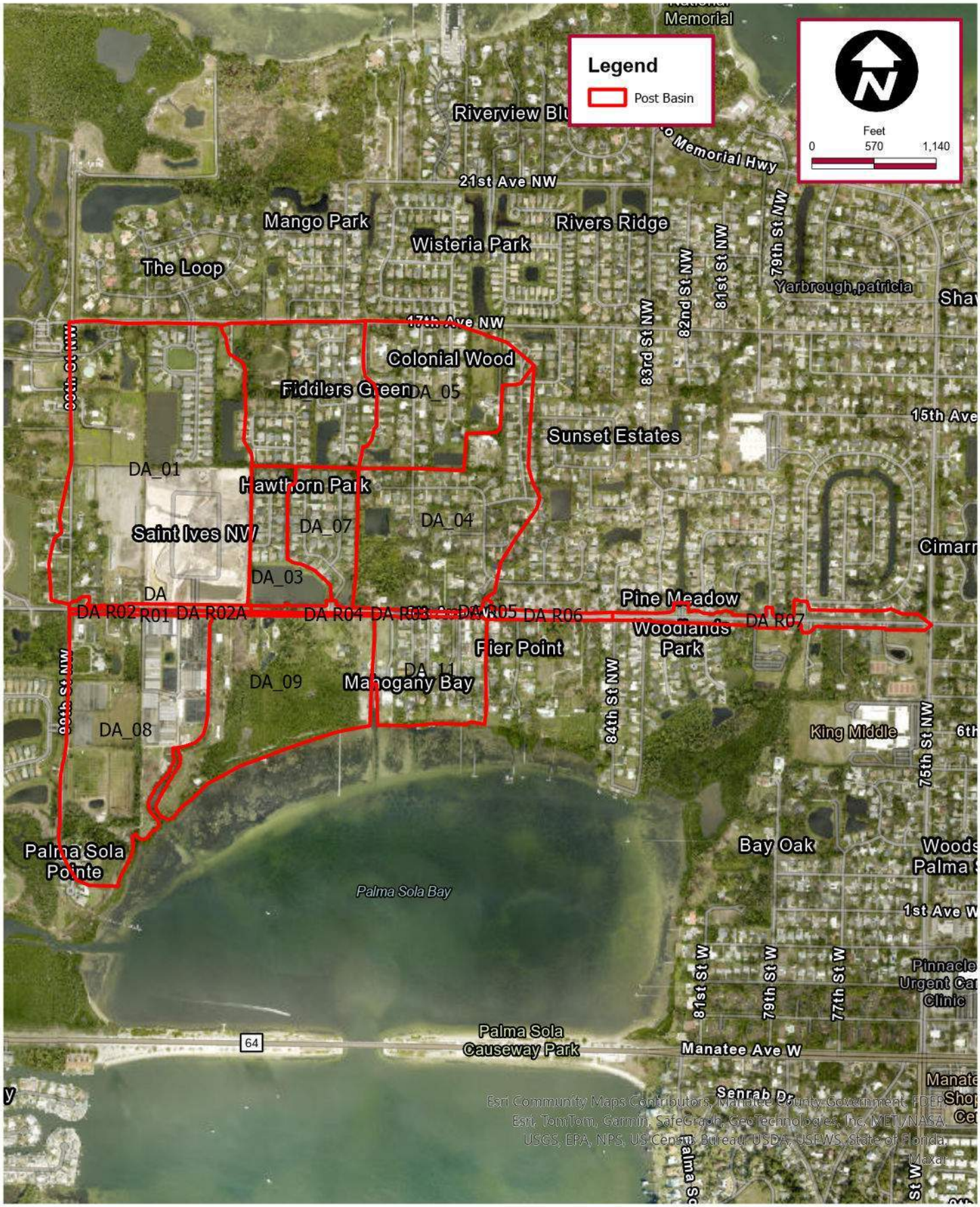
Kimley»Horn

1514 Broadway, Suite 301, Fort Myers, FL 33901
Phone: 239 271 2650
www.kimley-horn.com CA 00000696

PRE BASIN MAP

9TH AVE NW
MANATEE COUNTY, FLORIDA

Scale: As Noted		JULY 2025	



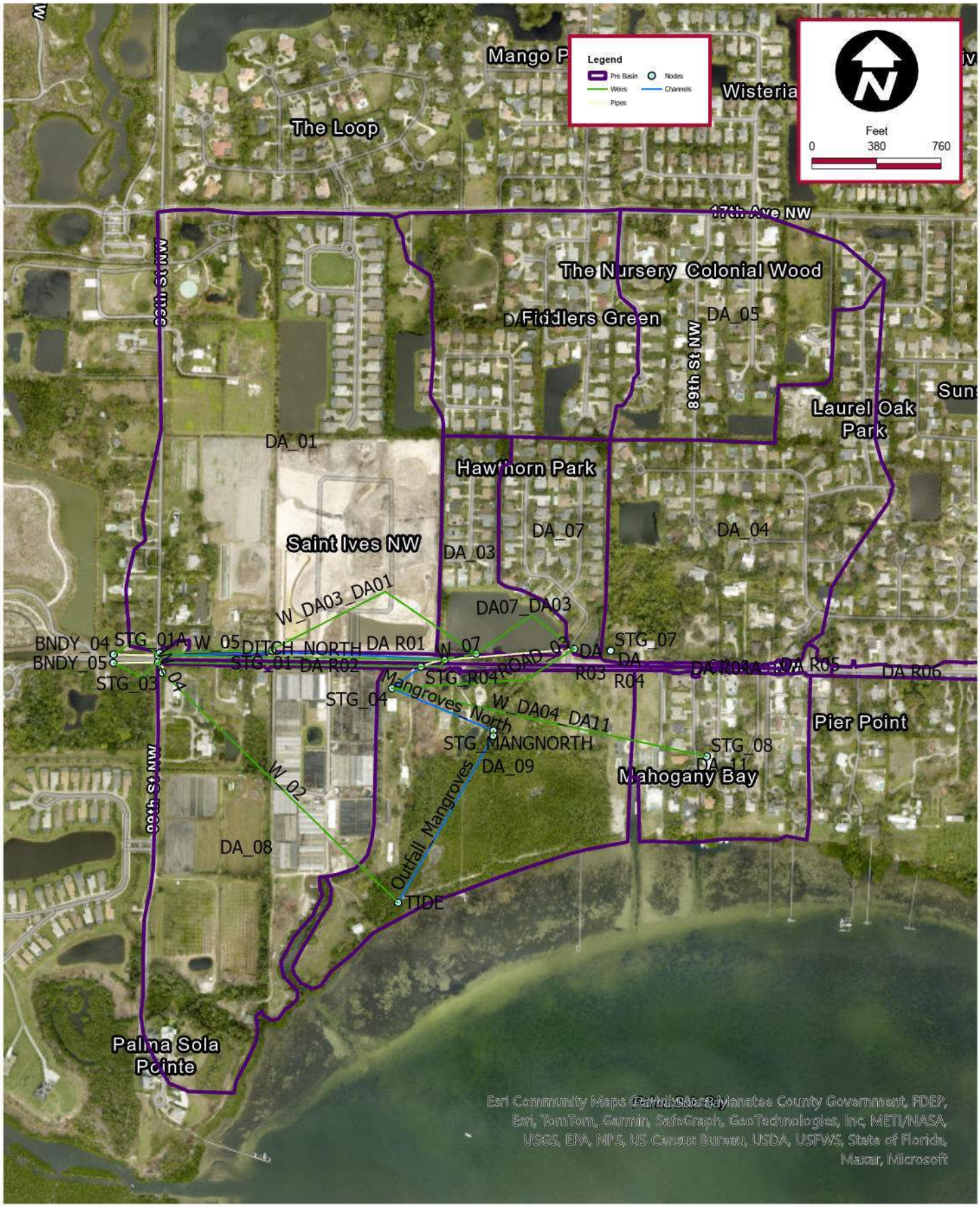
POST BASIN MAP

9TH AVE NW
MANATEE COUNTY, FLORIDA

Scale: As Noted | JULY 2025

Kimley»Horn

1514 Broadway, Suite 301, Fort Myers, FL 33901
Phone: 239 271 2650
www.kimley-horn.com CA 00000696



K:\ORL_Roadway\148400070_9thAve\ENGINEERING\ORL_Drainage\GIS\ARCPRO 2025\9THAVE.aprx - 7/22/2025 9:39 AM - Gloria.Manriquez

Kimley»Horn

1514 Broadway, Suite 301, Fort Myers, FL 33901
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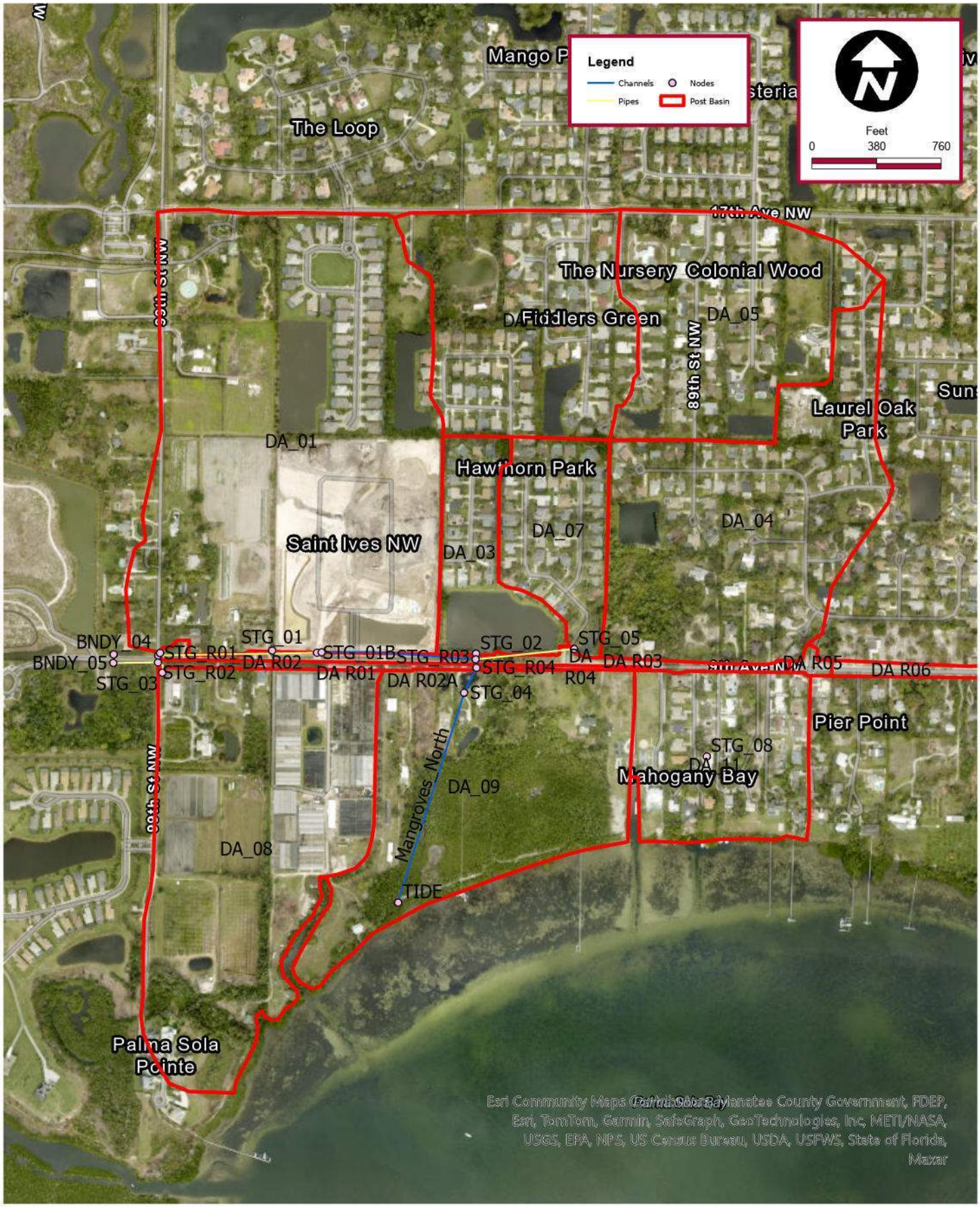
www.kimley-horn.com CA 00000696

PRE NODAL DIAGRAM

9TH AVE NW
MANATEE COUNTY, FLORIDA

Scale: As Noted		JULY 2025	



K:\ORL_Roadway\148400070_9thAve\ENGINEERING\ORL_Drainage\GIS\ARCPRO 2025\9THAVE.aprx - 7/22/2025 9:40 AM - Gloria.Manriquez

Kimley»Horn

1514 Broadway, Suite 301, Fort Myers, FL 33901
Phone: 239 271 2650
www.kimley-horn.com CA 00000696

POST NODAL DIAGRAM

9TH AVE NW
MANATEE COUNTY, FLORIDA

Scale: As Noted		JULY 2025	

Simulation: 05Y24H

Scenario: EXISTING
Run Date/Time: 7/22/2025 8:14:26 AM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

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

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

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

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

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3
Reference ET Folder:
Unit Hydrograph Folder: ICPR3

Lookup Tables

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

Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	5.13 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	1 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 100Y24H

Scenario:	EXISTING
Run Date/Time:	7/22/2025 8:15:37 AM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

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

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

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

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

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3
Reference ET Folder:
Unit Hydrograph Folder: ICPR3

Lookup Tables

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

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic
Dflt Damping (2D): 0.0050 ft
Min Node Srf Area (2D): 1 ft2
Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 10.40 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 113 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 10Y24H

Scenario: EXISTING
Run Date/Time: 7/22/2025 8:16:37 AM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

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

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

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

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

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3
Reference ET Folder:
Unit Hydrograph Folder: ICPR3

Lookup Tables

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

Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	6.06 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	1 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 2.3Y24H

Scenario:	EXISTING
Run Date/Time:	7/22/2025 8:18:01 AM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

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

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

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

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

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3
Reference ET Folder:
Unit Hydrograph Folder: ICPR3

Lookup Tables

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

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic
Dflt Damping (2D): 0.0050 ft
Min Node Srf Area (2D): 1 ft2
Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 4.30 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 113 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 25Y24H

Scenario: EXISTING
Run Date/Time: 7/22/2025 8:18:54 AM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	300.0000

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

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

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

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3
Reference ET Folder:
Unit Hydrograph Folder: ICPR3

Lookup Tables

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

Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	7.56 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	1 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 05Y24H

Scenario:	PROPOSED
Run Date/Time:	7/22/2025 8:27:00 AM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

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

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

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

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

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3
Reference ET Folder:
Unit Hydrograph Folder: ICPR3

Lookup Tables

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

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic
Dflt Damping (2D): 0.0050 ft
Min Node Srf Area (2D): 1 ft2
Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 5.13 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 113 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 100Y24H

Scenario: PROPOSED
Run Date/Time: 7/22/2025 8:28:02 AM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

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

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

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

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

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3
Reference ET Folder:
Unit Hydrograph Folder: ICPR3

Lookup Tables

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

Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	10.40 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	1 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 10Y24H

Scenario:	PROPOSED
Run Date/Time:	7/22/2025 8:28:40 AM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

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

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

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	1.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3
Reference ET Folder:
Unit Hydrograph Folder: ICPR3

Lookup Tables

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

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic
Dflt Damping (2D): 0.0050 ft
Min Node Srf Area (2D): 1 ft2
Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 6.06 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 113 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 2.3Y24H

Scenario: PROPOSED
Run Date/Time: 7/22/2025 8:30:48 AM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

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

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

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

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

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3
Reference ET Folder:
Unit Hydrograph Folder: ICPR3

Lookup Tables

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

Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	4.30 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	1 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 25Y24H

Scenario:	PROPOSED
Run Date/Time:	7/22/2025 8:31:39 AM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	300.0000

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

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

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

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3
Reference ET Folder:
Unit Hydrograph Folder: ICPR3

Lookup Tables

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

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic
Dflt Damping (2D): 0.0050 ft
Min Node Srf Area (2D): 1 ft2
Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 7.56 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 113 ft2
Energy Switch (1D): Energy

Comment:

Simple Basin: DA_01

Scenario:	EXISTING
Node:	STG_01
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	99.0000 ac
Curve Number:	85.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_02

Scenario:	EXISTING
Node:	STG_01
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	20.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	35.8500 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_03

Scenario:	EXISTING
Node:	STG_02
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	13.4000 ac
Curve Number:	97.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_04

Scenario:	EXISTING
Node:	STG_05
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	30.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	51.0000 ac
Curve Number:	94.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_05

Scenario:	EXISTING
Node:	STG_05
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	35.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	36.2400 ac
Curve Number:	95.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_07

Scenario:	EXISTING
Node:	STG_05
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	15.2300 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_08

Scenario:	EXISTING
Node:	STG_03
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	59.0500 ac
Curve Number:	75.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_09

Scenario:	EXISTING
Node:	STG_04
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	47.0300 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_11

Scenario:	EXISTING
Node:	STG_08
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	23.2100 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_R01

Scenario:	EXISTING
Node:	STG_R01
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.0700 ac
Curve Number:	63.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_R02

Scenario:	EXISTING
Node:	STG_R02
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.0300 ac
Curve Number:	68.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_R03

Scenario:	EXISTING
Node:	STG_R03
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9400 ac
Curve Number:	71.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_R04

Scenario:	EXISTING
Node:	STG_R04
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.5000 ac
Curve Number:	71.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_01

Scenario:	PROPOSED
Node:	STG_01
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	99.0700 ac
Curve Number:	85.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_02

Scenario:	PROPOSED
Node:	STG_01
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	20.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	35.8500 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_03

Scenario:	PROPOSED
Node:	STG_02
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	13.4000 ac
Curve Number:	97.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_04

Scenario:	PROPOSED
Node:	STG_05
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	30.0000 min
Max Allowable Q:	999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	51.0000 ac
Curve Number:	94.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_05

Scenario:	PROPOSED
Node:	STG_05
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	35.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	36.2300 ac
Curve Number:	95.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_07

Scenario:	PROPOSED
Node:	STG_05
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	15.2500 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_08

Scenario:	PROPOSED
Node:	STG_03
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	59.0500 ac
Curve Number:	75.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_09

Scenario:	PROPOSED
Node:	STG_04
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	47.0400 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_11

Scenario:	PROPOSED
Node:	STG_08
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	23.2100 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_R01

Scenario:	PROPOSED
Node:	STG_01A
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7100 ac
Curve Number:	77.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_R02

Scenario:	PROPOSED
Node:	STG_R02
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9700 ac
Curve Number:	60.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_R03

Scenario:	PROPOSED
Node:	STG_R03
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.6600 ac
Curve Number:	64.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: DA_R04

Scenario:	PROPOSED
Node:	STG_R03
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5000 ac
Curve Number:	74.0
% Impervious:	0.00
% DCIA:	0.00

% Direct: 0.00
Rainfall Name:

Comment:

Node: BNDY_04

Scenario: EXISTING
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 1.44 ft
Warning Stage: 1.44 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	1.40
0	0	0	72.0000	1.40

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
BNDY_04	05Y24H	1.44	1.40	0.0000	10.31	0.80	0
BNDY_04	100Y24H	1.44	1.40	0.0000	11.66	0.80	0
BNDY_04	10Y24H	1.44	1.40	0.0000	10.88	0.80	0
BNDY_04	2.3Y24H	1.44	1.40	0.0000	9.54	0.80	0
BNDY_04	25Y24H	1.44	1.40	0.0000	11.41	0.80	0

Node: BNDY_05

Scenario: EXISTING
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 1.44 ft
Warning Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	1.44
0	0	0	72.0000	1.44

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
BNDY_05	05Y24H	0.00	1.44	0.0000	2.24	0.94	0
BNDY_05	100Y24H	0.00	1.44	0.0000	2.88	0.75	0
BNDY_05	10Y24H	0.00	1.44	0.0000	2.40	0.90	0
BNDY_05	2.3Y24H	0.00	1.44	0.0000	2.06	0.99	0
BNDY_05	25Y24H	0.00	1.44	0.0000	2.59	1.35	0

Node: STG_01

Scenario: EXISTING
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.30 ft
Warning Stage: 11.00 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.1000	4356
2.00	7.0000	304920
3.00	33.8000	1472328
4.00	71.1000	3097116
5.00	94.2000	4103352
6.00	96.5000	4203540
7.00	97.8000	4260168
8.00	98.3000	4281948
9.00	98.9000	4308084
10.00	99.5000	4334220
11.00	99.6000	4338576
12.00	99.8000	4347288
13.00	99.8000	4347288

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_01	05Y24H	11.00	3.37	0.0007	325.15	11.38	2068539
STG_01	100Y24H	11.00	4.43	0.0005	3038.04	528.94	3532608
STG_01	10Y24H	11.00	3.59	0.0006	416.73	12.36	2423881
STG_01	2.3Y24H	11.00	3.16	0.0008	259.61	10.31	1735104
STG_01	25Y24H	11.00	3.90	0.0004	599.21	30.26	2941756

Node: STG_01A

Scenario: EXISTING
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.35 ft
Warning Stage: 5.00 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.2000	8712
2.00	0.4000	17424
3.00	0.6000	26136
4.00	1.1000	47916
5.00	1.3000	56628
6.00	1.3000	56628
7.00	1.3000	56628

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_01A	05Y24H	5.00	3.37	0.0007	10.19	10.13	34103
STG_01A	100Y24H	5.00	4.43	-0.0010	49.50	13.99	51678
STG_01A	10Y24H	5.00	3.58	0.0006	11.08	11.01	38867
STG_01A	2.3Y24H	5.00	3.16	0.0008	9.29	9.24	29633
STG_01A	25Y24H	5.00	3.90	0.0010	30.26	23.83	45810

Node: STG_02

Scenario: EXISTING
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.10 ft
Warning Stage: 11.00 ft

Stage [ft]	Area [ac]	Area [ft2]
4.00	5.3000	230868
5.00	5.9000	257004
6.00	6.2000	270072
7.00	7.1000	309276
8.00	8.7000	378972
9.00	12.0000	522720
10.00	13.6000	592416
11.00	13.7000	596772
12.00	13.7000	596772

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_02	05Y24H	11.00	3.37	0.0076	47.47	52.49	113
STG_02	100Y24H	11.00	4.43	-0.4677	684.85	2664.73	242170
STG_02	10Y24H	11.00	3.59	0.0092	90.06	97.79	113
STG_02	2.3Y24H	11.00	3.16	0.0045	33.89	33.89	113
STG_02	25Y24H	11.00	3.91	0.0239	154.46	168.24	113

Node: STG_03

Scenario: EXISTING
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.27 ft
Warning Stage: 7.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.00	0.0000	0
0.00	0.2000	8712
1.00	2.7000	117612
2.00	26.4000	1149984
3.00	42.6000	1855656
4.00	51.1000	2225916
5.00	57.2000	2491632
6.00	58.1000	2530836
7.00	58.4000	2543904
8.00	58.7000	2556972
9.00	58.9000	2565684

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_03	05Y24H	7.00	1.64	0.0002	144.85	118.79	777821
STG_03	100Y24H	7.00	1.88	-0.0001	373.46	318.17	1027983
STG_03	10Y24H	7.00	1.70	0.0001	183.61	149.77	836055

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_03	2.3Y24H	7.00	1.58	0.0001	111.39	91.20	715761
STG_03	25Y24H	7.00	1.77	0.0001	248.61	204.93	914021

Node: STG_04

Scenario: EXISTING
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.70 ft
Warning Stage: 10.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.00	1.2000	52272
1.00	10.3000	448668
2.00	25.2000	1097712
3.00	33.0000	1437480
4.00	38.1000	1659636
5.00	43.7000	1903572
6.00	45.9000	1999404
7.00	46.9000	2042964
8.00	46.9000	2042964
9.00	47.0000	2047320
10.00	47.0000	2047320

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_04	05Y24H	10.00	2.57	0.0004	264.93	53.88	1302328
STG_04	100Y24H	10.00	3.07	-0.0004	440.21	104.30	1464140
STG_04	10Y24H	10.00	2.68	0.0004	303.20	64.89	1341346
STG_04	2.3Y24H	10.00	2.44	0.0004	227.18	43.01	1258032
STG_04	25Y24H	10.00	2.83	0.0003	360.90	80.79	1390868

Node: STG_05

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

Initial Stage: 1.70 ft
Warning Stage: 12.00 ft

Stage [ft]	Area [ac]	Area [ft2]
3.00	0.0000	0
4.00	0.5000	21780
5.00	0.7000	30492
6.00	0.8000	34848
7.00	1.2000	52272
8.00	3.9000	169884
9.00	9.1000	396396
10.00	12.8000	557568
11.00	15.2000	662112
12.00	15.3000	666468

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_05	05Y24H	12.00	5.18	0.0010	183.48	176.14	31301
STG_05	100Y24H	12.00	5.97	-0.0010	383.40	382.60	34716
STG_05	10Y24H	12.00	5.43	0.0010	219.01	216.30	32355
STG_05	2.3Y24H	12.00	4.65	0.0010	151.61	139.78	27445
STG_05	25Y24H	12.00	5.67	-0.0010	276.04	274.63	33408

Node: STG_07

Scenario: EXISTING
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 5.00 ft
Warning Stage: 22.00 ft

Stage [ft]	Area [ac]	Area [ft2]
5.00	3050.0000	132858000
6.00	20700.0000	901692000
7.00	59025.0000	2571129000
8.00	119300.0000	5196708000
9.00	178975.0000	7796151000
10.00	256125.0000	11156805000
11.00	316350.0000	13780206000
12.00	384850.0000	16764066000
13.00	487925.0000	21254013000
14.00	672450.0000	29291922000

Stage [ft]	Area [ac]	Area [ft2]
15.00	827275.0000	36036099000
16.00	1114450.0000	48545442000
17.00	1557225.0000	67832721000
18.00	1859875.0000	81016155000
19.00	2100100.0000	91480356000
20.00	2166175.0000	94358583000
21.00	2205050.0000	96051978000
22.00	2206225.0000	96103161000

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_07	05Y24H	22.00	5.00	0.0000	0.00	0.00	132858000
STG_07	100Y24H	22.00	5.00	0.0000	0.00	0.00	132858000
STG_07	10Y24H	22.00	5.00	0.0000	0.00	0.00	132858000
STG_07	2.3Y24H	22.00	5.00	0.0000	0.00	0.00	132858000
STG_07	25Y24H	22.00	5.00	0.0000	0.00	0.00	132858000

Node: STG_08

Scenario: EXISTING
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.10 ft
Warning Stage: 9.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.00	0.3000	13068
1.00	0.7000	30492
2.00	1.2000	52272
3.00	3.3000	143748
4.00	5.4000	235224
5.00	7.1000	309276
6.00	8.6000	374616
7.00	10.1000	439956
8.00	11.4000	496584
9.00	13.1000	570636
10.00	14.5000	631620
11.00	16.7000	727452
12.00	18.6000	810216
13.00	21.2000	923472
14.00	22.4000	975744

Stage [ft]	Area [ac]	Area [ft2]
15.00	23.2000	1010592
16.00	23.3000	1014948

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_08	05Y24H	9.00	2.57	0.0001	60.62	58.67	104861
STG_08	100Y24H	9.00	3.07	-0.0004	123.52	90.32	150196
STG_08	10Y24H	9.00	2.69	0.0001	71.74	69.69	115099
STG_08	2.3Y24H	9.00	2.45	0.0001	50.68	48.82	93105
STG_08	25Y24H	9.00	2.83	0.0001	89.66	80.79	128361

Node: STG_MANGNORTH

Scenario: EXISTING
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.00 ft
Warning Stage: 20.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-8.00	0.0010	44
20.00	0.0010	44

Comment: Node Stage Mangrove north Obstruction point

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_MANGNORTH	05Y24H	20.00	2.51	0.0104	19.19	19.19	6989
STG_MANGNORTH	100Y24H	20.00	2.85	0.0104	55.34	55.32	7915
STG_MANGNORTH	10Y24H	20.00	2.58	0.0104	26.01	26.01	7618
STG_MANGNORTH	2.3Y24H	20.00	2.41	0.0104	12.39	12.39	6618
STG_MANGN	25Y24H	20.00	2.68	0.0104	36.03	36.03	7706

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ORTH							

Node: STG_MANGSOUTH

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

Stage [ft]	Area [ac]	Area [ft2]
-8.00	0.0010	44
10.00	0.0010	44

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_MANGSOUTH	05Y24H	10.00	1.99	0.0010	19.19	18.17	34630
STG_MANGSOUTH	100Y24H	10.00	2.64	0.0010	55.32	54.84	38185
STG_MANGSOUTH	10Y24H	10.00	2.16	0.0010	26.01	25.34	36918
STG_MANGSOUTH	2.3Y24H	10.00	1.77	0.0010	12.39	11.56	31479
STG_MANGSOUTH	25Y24H	10.00	2.36	0.0010	36.03	35.62	38185

Node: STG_R01

Scenario: EXISTING
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.90 ft
Warning Stage: 5.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.90	0.0010	44

Stage [ft]	Area [ac]	Area [ft2]
1.20	0.0200	871
4.00	0.1100	4792

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_R01	05Y24H	5.00	3.08	0.0099	22.56	19.07	3529
STG_R01	100Y24H	5.00	3.40	0.0099	22.56	20.54	3959
STG_R01	10Y24H	5.00	3.21	0.0099	22.56	19.80	3699
STG_R01	2.3Y24H	5.00	2.91	0.0099	22.56	16.79	3304
STG_R01	25Y24H	5.00	3.33	0.0099	22.56	20.34	3872

Node: STG_R02

Scenario: EXISTING
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.42 ft
Warning Stage: 5.00 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.1000	4356
2.00	0.3000	13068
3.00	0.5000	21780
4.00	1.0000	43560
5.00	1.2000	52272
6.00	1.2000	52272

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_R02	05Y24H	5.00	1.74	0.0002	90.24	90.25	11127
STG_R02	100Y24H	5.00	1.94	-0.0001	174.85	175.05	12736
STG_R02	10Y24H	5.00	1.79	0.0001	107.33	107.37	11461
STG_R02	2.3Y24H	5.00	1.70	0.0001	72.34	72.34	10752
STG_R02	25Y24H	5.00	1.84	0.0001	131.65	131.73	11942

Node: STG_R03

Scenario: EXISTING
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.70 ft
Warning Stage: 7.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.00	0.0000	0
1.00	0.1000	4356
2.00	0.2000	8712
3.00	0.3000	13068
4.00	0.5000	21780
5.00	0.7000	30492
6.00	0.9000	39204
7.00	1.1000	47916

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_R03	05Y24H	7.00	3.09	-0.0008	156.11	154.92	81594
STG_R03	100Y24H	7.00	3.40	0.0006	177.53	177.06	81594
STG_R03	10Y24H	7.00	3.22	-0.0007	162.42	161.10	81594
STG_R03	2.3Y24H	7.00	2.93	-0.0008	141.31	140.16	81594
STG_R03	25Y24H	7.00	3.34	-0.0010	168.13	166.21	81594

Node: STG_R04

Scenario: EXISTING
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.70 ft
Warning Stage: 7.80 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.90	0.0006	26
-1.80	0.0017	74
-1.70	0.0023	100
-1.60	0.0034	148
-1.50	0.0046	200
-1.40	0.0063	274
-1.30	0.0075	327
-1.20	0.0080	348

Stage [ft]	Area [ac]	Area [ft2]
-1.10	0.0086	375
-1.00	0.0098	427
-0.90	0.0098	427
-0.80	0.0109	475
-0.70	0.0115	501
-0.60	0.0143	623
-0.50	0.0166	723
-0.40	0.0189	823
-0.30	0.0201	876
-0.20	0.0218	950
-0.10	0.0230	1002
0.00	0.0253	1102
0.10	0.0264	1150
0.20	0.0275	1198
0.30	0.0362	1577
0.40	0.0407	1773
0.50	0.0448	1951
0.60	0.0471	2052
0.70	0.0494	2152
0.80	0.0562	2448
0.90	0.0671	2923
1.00	0.0758	3302
1.10	0.0855	3724
1.20	0.0930	4051
1.30	0.0964	4199
1.40	0.1022	4452
1.50	0.1090	4748
1.60	0.1165	5075
1.70	0.1211	5275
1.80	0.1366	5950
1.90	0.1561	6800
2.00	0.1756	7649
2.10	0.1980	8625
2.20	0.2198	9574
2.30	0.2330	10149
2.40	0.2445	10650
2.50	0.2542	11073
2.60	0.2657	11574
2.70	0.2864	12476
2.80	0.3053	13299
2.90	0.3289	14327
3.00	0.3610	15725
3.10	0.3851	16775
3.20	0.4052	17651
3.30	0.4586	19977
3.40	0.5131	22351
3.50	0.5504	23975
3.60	0.5854	25500
3.70	0.6089	26524

Stage [ft]	Area [ac]	Area [ft2]
3.80	0.6370	27748
3.90	0.6566	28601
4.00	0.6686	29124
4.10	0.6767	29477
4.20	0.6830	29751
4.30	0.6899	30052
4.40	0.6967	30348
4.50	0.7059	30749
4.60	0.7111	30976
4.70	0.7185	31298
4.80	0.7231	31498
4.90	0.7283	31725
5.00	0.7346	31999
5.10	0.7404	32252
5.20	0.7461	32500
5.30	0.7553	32901
5.40	0.7719	33624
5.50	0.7823	34077
5.60	0.7937	34574
5.70	0.8029	34974
5.80	0.8104	35301
5.90	0.8178	35623
6.00	0.8259	35976
6.10	0.8356	36399
6.20	0.8437	36752
6.30	0.8540	37200
6.40	0.8637	37623
6.50	0.8752	38124
6.60	0.8833	38477
6.70	0.8930	38899
6.80	0.9051	39426
6.90	0.9154	39875
7.00	0.9269	40376
7.10	0.9372	40824
7.20	0.9447	41151
7.30	0.9504	41399
7.40	0.9579	41726
7.50	0.9648	42027
7.60	0.9705	42275
7.70	0.9745	42449
7.80	0.9757	42501

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning	Max Stage	Min/Max	Max Total	Max Total	Max Surface

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_R04	05Y24H	7.80	2.57	-0.0010	138.73	137.33	12451
STG_R04	100Y24H	7.80	3.06	-0.0010	174.39	171.41	17802
STG_R04	10Y24H	7.80	2.68	0.0010	145.92	144.33	13493
STG_R04	2.3Y24H	7.80	2.44	-0.0010	125.11	123.98	11802
STG_R04	25Y24H	7.80	2.83	-0.0010	154.09	152.26	14867

Node: TIDE

Scenario: EXISTING
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 0.00 ft
Warning Stage: 0.50 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	0.50
0	0	0	75.0000	0.50

Comment:

Node Max Conditions [EXISTING]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
TIDE	05Y24H	0.50	0.50	0.0000	132.34	0.00	0
TIDE	100Y24H	0.50	0.50	0.0000	359.50	0.00	0
TIDE	10Y24H	0.50	0.50	0.0000	167.88	0.00	0
TIDE	2.3Y24H	0.50	0.50	0.0000	99.65	0.00	0
TIDE	25Y24H	0.50	0.50	0.0000	230.05	0.00	0

Node: BNDY_04

Scenario: PROPOSED
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 1.44 ft
Warning Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	1.40
0	0	0	72.0000	1.40

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
BNDY_04	05Y24H	0.00	1.40	0.0000	0.00	0.00	0
BNDY_04	100Y24H	0.00	1.40	0.0000	0.00	0.00	0
BNDY_04	10Y24H	0.00	1.40	0.0000	0.00	0.00	0
BNDY_04	2.3Y24H	0.00	1.40	0.0000	0.00	0.00	0
BNDY_04	25Y24H	0.00	1.40	0.0000	0.00	0.00	0

Node: BNDY_05

Scenario: PROPOSED
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 1.44 ft
Warning Stage: 1.44 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	1.44
0	0	0	72.0000	1.44

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
BNDY_05	05Y24H	1.44	1.44	0.0000	3.49	1.64	0
BNDY_05	100Y24H	1.44	1.44	0.0000	4.69	1.64	0
BNDY_05	10Y24H	1.44	1.44	0.0000	3.72	1.64	0
BNDY_05	2.3Y24H	1.44	1.44	0.0000	3.17	1.64	0
BNDY_05	25Y24H	1.44	1.44	0.0000	4.08	1.64	0

Node: STG_01

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.30 ft
Warning Stage: 9.00 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.1000	4356
2.00	7.0000	304920
3.00	33.8000	1472328
4.00	71.1000	3097116
5.00	94.2000	4103352
6.00	96.5000	4203540
7.00	97.8000	4260168
8.00	98.3000	4281948
9.00	98.9000	4308084
10.00	99.5000	4334220
11.00	99.6000	4338576
12.00	99.8000	4347288
13.00	99.8000	4347288

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_01	05Y24H	9.00	3.34	0.0005	325.15	12.56	2018951
STG_01	100Y24H	9.00	4.39	0.0006	2074.47	626.06	3491031
STG_01	10Y24H	9.00	3.55	0.0005	408.52	13.87	2369650
STG_01	2.3Y24H	9.00	3.13	0.0005	259.74	11.60	1690647
STG_01	25Y24H	9.00	3.87	-0.0006	580.71	30.27	2887371

Node: STG_01A

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.35 ft
Warning Stage: 5.00 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.2000	8712
2.00	0.4000	17424
3.00	0.6000	26136

Stage [ft]	Area [ac]	Area [ft2]
4.00	1.1000	47916
5.00	1.3000	56628
6.00	1.3000	56628
7.00	1.3000	56628

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_01A	05Y24H	5.00	3.34	0.0006	13.89	9.49	33439
STG_01A	100Y24H	5.00	4.39	-0.0010	40.81	32.48	51324
STG_01A	10Y24H	5.00	3.55	0.0005	15.41	10.30	38141
STG_01A	2.3Y24H	5.00	3.13	0.0006	12.57	8.70	29037
STG_01A	25Y24H	5.00	3.87	-0.0010	30.27	23.92	45082

Node: STG_01B

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.25 ft
Warning Stage: 5.00 ft

Stage [ft]	Area [ac]	Area [ft2]
1.25	0.0010	44
5.00	0.0010	44

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_01B	05Y24H	5.00	2.87	0.0007	0.10	0.07	470
STG_01B	100Y24H	5.00	3.50	0.0007	0.07	0.07	470
STG_01B	10Y24H	5.00	3.00	-0.0007	0.08	0.07	470
STG_01B	2.3Y24H	5.00	2.74	0.0006	0.10	0.07	470
STG_01B	25Y24H	5.00	3.19	0.0009	0.18	0.07	470

Node: STG_01C

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.25 ft
Warning Stage: 1.25 ft

Stage [ft]	Area [ac]	Area [ft2]
1.25	0.0010	44
5.00	0.0010	44

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_01C	05Y24H	1.25	2.82	0.0034	18.01	5.54	44292
STG_01C	100Y24H	1.25	3.21	0.0034	24.15	6.13	51703
STG_01C	10Y24H	1.25	2.92	0.0034	20.54	5.94	45871
STG_01C	2.3Y24H	1.25	2.60	0.0034	14.90	4.13	41341
STG_01C	25Y24H	1.25	3.04	0.0034	22.68	5.91	47864

Node: STG_02

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.10 ft
Warning Stage: 2.10 ft

Stage [ft]	Area [ac]	Area [ft2]
4.00	5.3000	230868
5.00	5.9000	257004
6.00	6.2000	270072
7.00	7.1000	309276
8.00	8.7000	378972
9.00	12.0000	522720
10.00	13.6000	592416
11.00	13.7000	596772
12.00	13.7000	596772

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_02	05Y24H	2.10	3.34	0.0065	40.65	43.23	113
STG_02	100Y24H	2.10	4.39	-0.4338	757.84	1727.77	241085
STG_02	10Y24H	2.10	3.55	0.0119	74.81	81.93	113
STG_02	2.3Y24H	2.10	3.14	0.0043	33.90	33.90	113
STG_02	25Y24H	2.10	3.87	0.0154	134.73	150.41	113

Node: STG_03

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.27 ft
Warning Stage: 9.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.00	0.0000	0
0.00	0.2000	8712
1.00	2.7000	117612
2.00	26.4000	1149984
3.00	42.6000	1855656
4.00	51.1000	2225916
5.00	57.2000	2491632
6.00	58.1000	2530836
7.00	58.4000	2543904
8.00	58.7000	2556972
9.00	58.9000	2565684

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_03	05Y24H	9.00	1.60	0.0001	128.55	102.11	741624
STG_03	100Y24H	9.00	1.83	-0.0002	328.98	262.70	977104
STG_03	10Y24H	9.00	1.66	0.0001	162.43	127.26	795047
STG_03	2.3Y24H	9.00	1.54	0.0001	98.68	77.35	680081
STG_03	25Y24H	9.00	1.73	0.0001	219.90	170.48	868527

Node: STG_04

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.50 ft
Warning Stage: 10.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.00	1.2000	52272
1.00	10.3000	448668
2.00	25.2000	1097712
3.00	33.0000	1437480
4.00	38.1000	1659636
5.00	43.7000	1903572
6.00	45.9000	1999404
7.00	46.9000	2042964
8.00	46.9000	2042964
9.00	47.0000	2047320
10.00	47.0000	2047320

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_04	05Y24H	10.00	2.03	0.0003	249.08	84.70	1181769
STG_04	100Y24H	10.00	2.49	-0.0005	474.43	160.21	1341297
STG_04	10Y24H	10.00	2.13	0.0003	290.80	99.82	1217809
STG_04	2.3Y24H	10.00	1.91	0.0003	211.63	69.07	1113644
STG_04	25Y24H	10.00	2.27	0.0003	356.33	121.33	1265186

Node: STG_05

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.70 ft
Warning Stage: 12.00 ft

Stage [ft]	Area [ac]	Area [ft2]
3.00	0.0000	0
4.00	0.5000	21780
5.00	0.7000	30492
6.00	0.8000	34848
7.00	1.2000	52272

Stage [ft]	Area [ac]	Area [ft2]
8.00	3.9000	169884
9.00	9.1000	396396
10.00	12.8000	557568
11.00	15.2000	662112
12.00	15.3000	666468

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_05	05Y24H	12.00	5.07	0.0010	183.50	177.91	30823
STG_05	100Y24H	12.00	5.94	-0.0010	383.46	382.01	34599
STG_05	10Y24H	12.00	5.33	-0.0010	219.05	216.60	31952
STG_05	2.3Y24H	12.00	4.65	0.0010	151.63	144.56	27436
STG_05	25Y24H	12.00	5.60	-0.0010	276.08	275.14	33129

Node: STG_08

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.10 ft
Warning Stage: 18.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.00	0.3000	13068
1.00	0.7000	30492
2.00	1.2000	52272
3.00	3.3000	143748
4.00	5.4000	235224
5.00	7.1000	309276
6.00	8.6000	374616
7.00	10.1000	439956
8.00	11.4000	496584
9.00	13.1000	570636
10.00	14.5000	631620
11.00	16.7000	727452
12.00	18.6000	810216
13.00	21.2000	923472
14.00	22.4000	975744
15.00	23.2000	1010592
16.00	23.3000	1014948

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_08	05Y24H	18.00	2.45	0.0001	60.62	58.67	93287
STG_08	100Y24H	18.00	2.56	0.0002	123.52	121.08	103678
STG_08	10Y24H	18.00	2.47	0.0001	71.74	69.69	95434
STG_08	2.3Y24H	18.00	2.43	0.0001	50.68	48.82	91173
STG_08	25Y24H	18.00	2.51	0.0002	89.66	87.44	98561

Node: STG_R01

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.80 ft
Warning Stage: 4.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.80	0.0010	44
1.20	0.0200	871
4.00	0.1100	4792

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_R01	05Y24H	4.00	2.87	0.0016	9.49	9.49	3213
STG_R01	100Y24H	4.00	3.50	0.0016	13.09	13.08	4098
STG_R01	10Y24H	4.00	3.00	0.0016	10.30	10.30	3398
STG_R01	2.3Y24H	4.00	2.74	0.0016	8.70	8.70	3034
STG_R01	25Y24H	4.00	3.19	0.0016	11.42	11.42	3666

Node: STG_R02

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

Initial Stage: 1.42 ft
Warning Stage: 4.70 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.1165	5075
1.10	0.1521	6625
1.20	0.2020	8800
1.30	0.2542	11075
1.40	0.3214	14000
1.50	0.3903	17000
1.60	0.4390	19125
1.70	0.4792	20875
1.80	0.5441	23700
1.90	0.6061	26400
2.00	0.6686	29125
2.10	0.7306	31825
2.20	0.8018	34925
2.30	0.8844	38525
2.40	0.9688	42200
2.50	1.0577	46075
2.60	1.1765	51250
2.70	1.2999	56625
2.80	1.4411	62775
2.90	1.5444	67275
3.00	1.6030	69825
3.10	1.6414	71500
3.20	1.7086	74425
3.30	1.7860	77800
3.40	1.8538	80750
3.50	1.9387	84450
3.60	2.0179	87900
3.70	2.0868	90900
3.80	2.1493	93625
3.90	2.2389	97525
4.00	2.3163	100900
4.10	2.3812	103725
4.20	2.4328	105975
4.30	2.4661	107425
4.40	2.4948	108675
4.50	2.5195	109750
4.60	2.5356	110450
4.70	2.5419	110725
4.80	2.5430	110775

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_R02	05Y24H	4.70	1.70	-0.0003	72.92	72.86	20978
STG_R02	100Y24H	4.70	1.87	-0.0003	110.41	111.03	25764
STG_R02	10Y24H	4.70	1.73	-0.0003	81.12	81.14	21880
STG_R02	2.3Y24H	4.70	1.66	-0.0003	59.72	59.67	20247
STG_R02	25Y24H	4.70	1.78	-0.0003	91.55	91.82	23340

Node: STG_R03

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.70 ft
Warning Stage: 7.84 ft

Stage [ft]	Area [ac]	Area [ft2]
0.34	0.0023	100
0.44	0.0080	350
0.54	0.0189	825
0.64	0.0321	1400
0.74	0.0476	2075
0.84	0.0643	2800
0.94	0.0792	3450
1.04	0.0953	4150
1.14	0.1108	4825
1.24	0.1188	5175
1.34	0.1314	5725
1.44	0.1515	6600
1.54	0.1768	7700
1.64	0.1928	8400
1.74	0.2118	9225
1.84	0.2250	9800
1.94	0.2353	10250
2.04	0.2416	10525
2.14	0.2520	10975
2.24	0.2646	11525
2.34	0.2778	12100
2.44	0.2984	13000
2.54	0.3128	13625
2.64	0.3220	14025
2.74	0.3472	15125
2.84	0.3719	16200
2.94	0.3880	16900
3.04	0.4012	17475
3.14	0.4213	18350
3.24	0.4482	19525

Stage [ft]	Area [ac]	Area [ft2]
3.34	0.4769	20775
3.44	0.4936	21500
3.54	0.5091	22175
3.64	0.5194	22625
3.74	0.5269	22950
3.84	0.5435	23675
3.94	0.5492	23925
4.04	0.5647	24600
4.14	0.5854	25500
4.24	0.5952	25925
4.34	0.6066	26425
4.44	0.6170	26875
4.54	0.6290	27400
4.64	0.6365	27725
4.74	0.6457	28125
4.84	0.6566	28600
4.94	0.6795	29600
5.04	0.7099	30925
5.14	0.7668	33400
5.24	0.8104	35300
5.34	0.8448	36800
5.44	0.8706	37925
5.54	0.8953	39000
5.64	0.9171	39950
5.74	0.9349	40725
5.84	0.9556	41625
5.94	0.9757	42500
6.04	0.9986	43500
6.14	1.0262	44700
6.24	1.0497	45725
6.34	1.0744	46800
6.44	1.0996	47900
6.54	1.1295	49200
6.64	1.1461	49925
6.74	1.1628	50650
6.84	1.1834	51550
6.94	1.2041	52450
7.04	1.2224	53250
7.14	1.2391	53975
7.24	1.2523	54550
7.34	1.2655	55125
7.44	1.2758	55575
7.54	1.2850	55975
7.64	1.2925	56300
7.74	1.2965	56475
7.84	1.2971	56500

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_R03	05Y24H	7.84	2.82	-0.0010	169.23	149.39	89561
STG_R03	100Y24H	7.84	3.21	-0.0010	208.09	172.94	96917
STG_R03	10Y24H	7.84	2.92	-0.0010	180.28	158.72	91087
STG_R03	2.3Y24H	7.84	2.60	-0.0010	146.88	128.46	86480
STG_R03	25Y24H	7.84	3.04	-0.0010	191.83	164.00	92829

Node: STG_R04

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.70 ft
Warning Stage: 7.80 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.90	0.0006	25
-1.80	0.0017	75
-1.70	0.0023	100
-1.60	0.0034	150
-1.50	0.0046	200
-1.40	0.0063	275
-1.30	0.0075	325
-1.20	0.0075	325
-1.10	0.0080	350
-1.00	0.0086	375
-0.90	0.0086	375
-0.80	0.0092	400
-0.70	0.0098	425
-0.60	0.0121	525
-0.50	0.0143	625
-0.40	0.0161	700
-0.30	0.0161	700
-0.20	0.0166	725
-0.10	0.0166	725
0.00	0.0178	775
0.10	0.0184	800
0.20	0.0184	800
0.30	0.0218	950
0.40	0.0235	1025
0.50	0.0270	1175
0.60	0.0281	1225
0.70	0.0293	1275
0.80	0.0350	1525
0.90	0.0448	1950

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.0494	2150
1.10	0.0551	2400
1.20	0.0574	2500
1.30	0.0603	2625
1.40	0.0649	2825
1.50	0.0712	3100
1.60	0.0740	3225
1.70	0.0769	3350
1.80	0.0907	3950
1.90	0.1045	4550
2.00	0.1182	5150
2.10	0.1309	5700
2.20	0.1412	6150
2.30	0.1446	6300
2.40	0.1515	6600
2.50	0.1555	6775
2.60	0.1641	7150
2.70	0.1779	7750
2.80	0.1877	8175
2.90	0.2020	8800
3.00	0.2215	9650
3.10	0.2342	10200
3.20	0.2445	10650
3.30	0.2806	12225
3.40	0.3145	13700
3.50	0.3392	14775
3.60	0.3639	15850
3.70	0.3782	16475
3.80	0.3972	17300
3.90	0.4098	17850
4.00	0.4161	18125
4.10	0.6767	29477
4.20	0.6830	29751
4.30	0.6899	30052
4.40	0.6967	30348
4.50	0.7059	30749
4.60	0.7111	30976
4.70	0.7185	31298
4.80	0.7231	31498
4.90	0.7283	31725
5.00	0.7346	31999
5.10	0.7404	32252
5.20	0.7461	32500
5.30	0.7553	32901
5.40	0.7719	33624
5.50	0.7823	34077
5.60	0.7937	34574
5.70	0.8029	34974
5.80	0.8104	35301

Stage [ft]	Area [ac]	Area [ft2]
5.90	0.8178	35623
6.00	0.8259	35976
6.10	0.8356	36399
6.20	0.8437	36752
6.30	0.8540	37200
6.40	0.8637	37623
6.50	0.8752	38124
6.60	0.8833	38477
6.70	0.8930	38899
6.80	0.9051	39426
6.90	0.9154	39875
7.00	0.9269	40376
7.10	0.9372	40824
7.20	0.9447	41151
7.30	0.9504	41399
7.40	0.9579	41726
7.50	0.9648	42027
7.60	0.9705	42275
7.70	0.9745	42449
7.80	0.9757	42501

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
STG_R04	05Y24H	7.80	2.39	-0.0010	146.11	145.35	35853
STG_R04	100Y24H	7.80	2.65	0.0010	169.26	168.66	39024
STG_R04	10Y24H	7.80	2.45	-0.0010	154.11	153.40	36835
STG_R04	2.3Y24H	7.80	2.28	-0.0010	125.38	124.61	34173
STG_R04	25Y24H	7.80	2.53	-0.0010	161.09	160.39	37668

Node: TIDE

Scenario: PROPOSED
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 0.00 ft
Warning Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	0.46
0	0	0	75.0000	0.46

Comment:

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
TIDE	05Y24H	0.00	0.46	0.0000	184.31	0.00	0
TIDE	100Y24H	0.00	0.46	0.0000	414.05	0.00	0
TIDE	10Y24H	0.00	0.46	0.0000	223.08	0.00	0
TIDE	2.3Y24H	0.00	0.46	0.0000	144.76	0.00	0
TIDE	25Y24H	0.00	0.46	0.0000	285.83	0.00	0

Pipe Link: CULV_01		Upstream		Downstream	
Scenario:	EXISTING	Invert:	0.93 ft	Invert:	0.52 ft
From Node:	STG_R01	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	BNDY_04	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	111.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV_01	05Y24H	10.31	-0.80	0.10	5.84	6.63	6.23
CULV_01	100Y24H	11.66	-0.80	0.10	6.60	7.17	6.88
CULV_01	10Y24H	10.88	-0.80	0.10	6.15	6.85	6.49
CULV_01	2.3Y24H	9.54	-0.80	0.10	5.40	6.35	5.87
CULV_01	25Y24H	11.41	-0.80	0.10	6.45	7.06	6.76

Pipe Link: CULV_02		Upstream		Downstream	
Scenario:	EXISTING	Invert:	0.59 ft	Invert:	0.73 ft
From Node:	STG_R02	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	BNDY_05	Geometry: Rectangular		Geometry: Rectangular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Max Width:	1.50 ft	Max Width:	1.50 ft
Damping:	0.0000 ft	Fillet:	0.00 ft	Fillet:	0.00 ft
Length:	262.57 ft	Bottom Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec	Top Clip			
Energy Switch:	Energy	Default:	0.00 ft	Default:	0.00 ft
		Op Table:		Op Table:	
		Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV_02	05Y24H	2.24	-0.94	0.10	1.50	2.11	1.80
CULV_02	100Y24H	2.88	-0.75	0.10	1.92	2.70	2.31
CULV_02	10Y24H	2.40	-0.90	0.10	1.60	2.25	1.92
CULV_02	2.3Y24H	2.06	-0.99	0.10	1.38	1.94	1.66
CULV_02	25Y24H	2.59	-1.35	0.10	1.73	2.43	2.08

Pipe Link: CULV_03		Upstream		Downstream	
Scenario:	EXISTING	Invert:	0.98 ft	Invert:	1.66 ft
From Node:	STG_R01	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	STG_R02	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	41.11 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.30	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV_03	05Y24H	5.30	0.00	0.00	3.00	4.87	3.94
CULV_03	100Y24H	7.31	0.00	0.00	4.13	5.55	4.84
CULV_03	10Y24H	6.08	0.00	0.00	3.44	5.14	4.29
CULV_03	2.3Y24H	4.31	0.00	0.00	2.44	4.52	3.48
CULV_03	25Y24H	6.89	0.00	0.00	3.90	5.41	4.65

Pipe Link: CULV_04		Upstream		Downstream	
Scenario:	EXISTING	Invert:	-0.14 ft	Invert:	-0.31 ft
From Node:	STG_05	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	STG_R03	Geometry: Rectangular		Geometry: Rectangular	
Link Count:	1	Max Depth:	3.16 ft	Max Depth:	3.16 ft
Flow Direction:	Both	Max Width:	5.00 ft	Max Width:	5.00 ft
Damping:	0.0000 ft	Fillet:	0.00 ft	Fillet:	0.00 ft
Length:	102.00 ft	Bottom Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.40	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec	Top Clip			
Energy Switch:	Energy	Default:	0.00 ft	Default:	0.00 ft
		Op Table:		Op Table:	
		Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV_04	05Y24H	153.98	-0.15	-3.25	9.75	9.75	9.75
CULV_04	100Y24H	170.48	-0.13	-2.91	10.79	10.79	10.79
CULV_04	10Y24H	159.33	-0.13	-3.12	10.08	10.08	10.08
CULV_04	2.3Y24H	139.76	-0.13	3.18	8.85	8.85	8.85
CULV_04	25Y24H	163.36	-0.28	-3.51	10.34	10.34	10.34

Pipe Link: CULV_05		Upstream		Downstream	
Scenario:	EXISTING	Invert:	-1.93 ft	Invert:	-0.92 ft
From Node:	STG_R03	Manning's N:	0.0130	Manning's N:	0.0130

		Geometry: Rectangular		Geometry: Rectangular	
To Node:	STG_R04	Max Depth:	3.50 ft	Max Depth:	3.50 ft
Link Count:	1	Max Width:	6.00 ft	Max Width:	6.00 ft
Flow Direction:	Both	Fillet:	0.00 ft	Fillet:	0.00 ft
Damping:	0.0000 ft	Bottom Clip			
Length:	20.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.50	Ref Node:		Ref Node:	
Exit Loss Coef:	0.30	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00	Top Clip			
Bend Location:	0.00 dec	Default:	0.00 ft	Default:	0.00 ft
Energy Switch:	Energy	Op Table:		Op Table:	
		Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV_05	05Y24H	137.24	-9.44	-7.19	6.54	6.84	6.68
CULV_05	100Y24H	147.86	-9.44	-7.19	7.04	7.04	7.04
CULV_05	10Y24H	143.71	-9.44	-7.19	6.84	7.01	6.91
CULV_05	2.3Y24H	124.15	-9.44	-7.19	5.91	6.36	6.13
CULV_05	25Y24H	149.60	-9.44	-7.19	7.12	7.13	7.12

Pipe Link: CULV_06		Upstream		Downstream	
Scenario:	EXISTING	Invert:	1.16 ft	Invert:	0.96 ft
From Node:	STG_01A	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	STG_R01	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	16.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.30	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV_06	05Y24H	10.13	-3.81	0.10	8.25	8.49	8.37
CULV_06	100Y24H	13.99	-2.41	-0.07	11.40	11.50	11.44
CULV_06	10Y24H	11.01	-3.78	0.09	8.97	9.21	9.08
CULV_06	2.3Y24H	9.24	-3.58	-0.56	7.53	7.76	7.65
CULV_06	25Y24H	12.20	-3.43	-0.24	9.94	10.17	10.02

Weir Link: DA07_DA03

Scenario:	EXISTING
From Node:	STG_05
To Node:	STG_02
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	4.68 ft
Control Elevation:	4.68 ft
Cross Section:	DA07_DA03

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DA07_DA03	05Y24H	22.24	0.00	0.02	1.61	1.61	1.61
DA07_DA03	100Y24H	212.12	0.00	-0.27	2.57	2.57	2.57
DA07_DA03	10Y24H	57.10	0.00	0.05	1.97	1.97	1.97
DA07_DA03	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DA07_DA03	25Y24H	111.73	0.00	0.07	2.27	2.27	2.27

Channel Link: DITCHNORTH

Scenario:	EXISTING
From Node:	STG_R03
To Node:	STG_R01
Link Count:	1
Flow Direction:	None

Upstream

Invert:	0.00 ft
Manning's N:	0.0000

Geometry: Irregular

Cross Section:	DITCHNORTH

Downstream

Invert:	0.91 ft
Manning's N:	0.0000

Geometry: Irregular

Cross Section:	DITCHNORTH

Damping:	0.0000 ft
Length:	2000.00 ft
Contraction Coef:	0.00
Expansion Coef:	0.00
Entr Loss Coef:	0.00
Exit Loss Coef:	0.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DITCHNORTH	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DITCHNORTH	100Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DITCHNORTH	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DITCHNORTH	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DITCHNORTH	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Weir Link: DITCH_NORTH

Scenario:	EXISTING
From Node:	STG_R03
To Node:	STG_R01
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	0.90 ft
Control Elevation:	0.90 ft
Cross Section:	DITCH_NORTH

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DITCH_NORT	05Y24H	21.58	-5.10	-0.44	2.26	2.26	2.26

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
H							
DITCH_NORTH	100Y24H	21.58	-7.28	-0.70	2.26	2.26	2.26
DITCH_NORTH	10Y24H	21.58	-5.64	-0.44	2.26	2.26	2.26
DITCH_NORTH	2.3Y24H	21.58	-4.53	-0.44	2.26	2.26	2.26
DITCH_NORTH	25Y24H	21.58	-8.24	-0.47	2.26	2.26	2.26

Weir Link: DITCH_SOUTH

Scenario:	EXISTING	Bottom Clip	
From Node:	STG_R04	Default:	0.00 ft
To Node:	STG_R02	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	1.21 ft	Discharge Coefficients	
Control Elevation:	1.21 ft	Weir Default:	2.800
Cross Section:	DITCH_SOUTH	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DITCH_SOUTH	05Y24H	86.19	0.00	0.18	2.81	2.81	2.81
DITCH_SOUTH	100Y24H	166.79	0.00	-0.11	3.26	3.26	3.26
DITCH_SOUTH	10Y24H	102.05	0.00	0.15	2.92	2.92	2.92
DITCH_SOUTH	2.3Y24H	69.48	0.00	0.14	2.68	2.68	2.68
DITCH_SOUTH	25Y24H	124.55	0.00	0.16	3.06	3.06	3.06

Drop Structure Link: DROP_01		Upstream Pipe		Downstream Pipe	
Scenario:	EXISTING	Invert:	-0.01 ft	Invert:	-0.07 ft
From Node:	STG_02	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	STG_R03	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	368.41 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	3.81 ft	Ref Node:	
Control Elevation:	3.81 ft	Discharge Coefficients	
Max Depth:	1.73 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DROP_01 - Pipe	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DROP_01 - Weir: 1	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DROP_01 - Pipe	100Y24H	1.72	0.00	0.37	0.00	0.00	0.00

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DROP_01 - Weir: 1	100Y24H	1.72	0.00	0.34	2.26	2.26	2.26
DROP_01 - Pipe	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DROP_01 - Weir: 1	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DROP_01 - Pipe	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DROP_01 - Weir: 1	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DROP_01 - Pipe	25Y24H	0.04	0.00	0.00	0.00	0.00	0.00
DROP_01 - Weir: 1	25Y24H	0.04	0.00	0.00	0.83	0.83	0.83

Drop Structure Link: DROP_02		Upstream Pipe		Downstream Pipe	
Scenario:	EXISTING	Invert:	1.11 ft	Invert:	1.09 ft
From Node:	STG_05	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	STG_02	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.14 ft	Max Depth:	0.14 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	578.12 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.00	Op Table:		Op Table:	
Exit Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				
Pipe Comment:					

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	3.90 ft	Ref Node:	
Control Elevation:	3.90 ft	Discharge Coefficients	
Max Depth:	1.81 ft		

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DROP_02 - Pipe	05Y24H	0.01	0.00	0.00	0.00	0.00	0.00
DROP_02 - Weir: 1	05Y24H	0.01	0.00	0.00	0.19	0.19	0.19
DROP_02 - Pipe	100Y24H	0.01	-0.01	0.00	0.00	0.00	0.00
DROP_02 - Weir: 1	100Y24H	0.01	-0.01	0.00	0.16	0.16	0.16
DROP_02 - Pipe	10Y24H	0.01	0.00	0.00	0.00	0.00	0.00
DROP_02 - Weir: 1	10Y24H	0.01	0.00	0.00	0.19	0.19	0.19
DROP_02 - Pipe	2.3Y24H	0.01	0.00	0.00	0.00	0.00	0.00
DROP_02 - Weir: 1	2.3Y24H	0.01	0.00	0.00	0.19	0.19	0.19
DROP_02 - Pipe	25Y24H	0.01	0.00	0.00	0.00	0.00	0.00
DROP_02 - Weir: 1	25Y24H	0.01	0.00	0.00	0.18	0.18	0.18

Weir Link: Mangroves

Scenario:	EXISTING
From Node:	STG_MANGNORTH
To Node:	STG_MANGSOUTH
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	0.82 ft
Control Elevation:	0.82 ft

Bottom Clip	
Default:	1.28 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800

Cross Section: Mang_DammPoint

Weir Table:
Orifice Default: 0.600
Orifice Table:

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Mangroves	05Y24H	19.19	0.00	0.01	1.73	1.73	1.73
Mangroves	100Y24H	55.32	0.00	-0.03	2.30	2.30	2.30
Mangroves	10Y24H	26.01	0.00	0.01	1.85	1.85	1.85
Mangroves	2.3Y24H	12.39	0.00	0.00	1.53	1.53	1.53
Mangroves	25Y24H	36.03	0.00	0.00	2.02	2.02	2.02

Channel Link: Mangroves_North

Scenario: EXISTING
From Node: STG_04
To Node: STG_MANGNORTH
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Length: 322.00 ft
Contraction Coef: 0.00
Expansion Coef: 0.00
Entr Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Bend Location: 0.00 dec
Energy Switch: Energy

Upstream		Downstream	
Invert:	-1.15 ft	Invert:	0.82 ft
Manning's N:	0.0000	Manning's N:	0.0000
Geometry:	Irregular	Geometry:	Irregular
Cross Section:	MANG_CHANNEL02	Cross Section:	MANG_CHANNEL03

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Mangroves_North	05Y24H	19.19	-0.06	-0.26	0.22	3.27	1.74
Mangroves_North	100Y24H	55.34	-0.05	-0.26	0.40	3.27	1.74
Mangroves_N	10Y24H	26.01	-0.05	-0.26	0.23	3.27	1.74

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
orth							
Mangroves_North	2.3Y24H	12.39	-0.07	-0.26	0.22	3.27	1.74
Mangroves_North	25Y24H	36.03	-0.07	-0.26	0.30	3.27	1.74

Channel Link: Outfall1		Upstream		Downstream	
Scenario:	EXISTING	Invert:	-1.60 ft	Invert:	-1.00 ft
From Node:	STG_R04	Manning's N:	0.0000	Manning's N:	0.0000
To Node:	STG_04	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	MANG_CHANNEL01	Cross Section:	MANG_CHANNEL02
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	40.00 ft				
Contraction Coef:	0.00				
Expansion Coef:	0.00				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				
Comment:					

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Outfall1	05Y24H	72.19	-41.41	8.02	0.83	0.99	0.91
Outfall1	100Y24H	61.18	-66.71	-5.62	0.61	0.65	0.63
Outfall1	10Y24H	71.75	-47.33	-7.76	0.80	0.92	0.85
Outfall1	2.3Y24H	71.22	-35.42	-7.87	0.85	1.01	0.93
Outfall1	25Y24H	68.61	-55.54	-7.87	0.73	0.82	0.77

Channel Link: Outfall_Mangroves		Upstream		Downstream	
Scenario:	EXISTING	Invert:	0.82 ft	Invert:	-0.30 ft
From Node:	STG_MANGSOUTH	Manning's N:	0.0000	Manning's N:	0.0000
To Node:	TIDE	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	MANG_CHANNEL04	Cross Section:	MANG_CHANNEL05
Flow Direction:	Both				

Damping:	0.0000 ft
Length:	415.00 ft
Contraction Coef:	0.00
Expansion Coef:	0.00
Entr Loss Coef:	0.00
Exit Loss Coef:	0.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Outfall_Mangroves	05Y24H	18.17	0.00	-0.13	0.59	0.66	0.62
Outfall_Mangroves	100Y24H	54.84	0.00	-0.13	0.95	2.00	1.48
Outfall_Mangroves	10Y24H	25.34	0.00	0.13	0.67	0.92	0.79
Outfall_Mangroves	2.3Y24H	11.56	0.00	-0.13	0.53	0.42	0.47
Outfall_Mangroves	25Y24H	35.62	0.00	-0.13	0.78	1.30	1.04

Pipe Link: P-Nursery		Upstream		Downstream	
Scenario:	EXISTING	Invert:	0.57 ft	Invert:	1.66 ft
From Node:	STG_R02	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	STG_03	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	10.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.30	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
P-Nursery	05Y24H	0.02	0.00	0.00	0.02	0.00	0.01
P-Nursery	100Y24H	0.25	0.00	0.00	0.20	1.99	1.08
P-Nursery	10Y24H	0.05	0.00	0.00	0.04	0.00	0.02
P-Nursery	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
P-Nursery	25Y24H	0.11	0.00	0.00	0.09	1.67	0.88

Weir Link: ROAD_01

Scenario:	EXISTING	**Bottom Clip**	
From Node:	STG_R01	Default:	0.00 ft
To Node:	STG_R02	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.52 ft	**Discharge Coefficients**	
Control Elevation:	3.52 ft	Weir Default:	2.800
Cross Section:	ROAD_01	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
ROAD_01	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_01	100Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_01	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_01	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_01	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Weir Link: ROAD_02

Scenario:	EXISTING	**Bottom Clip**	
From Node:	STG_R03	Default:	0.00 ft
To Node:	STG_R04	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	3.27 ft
Control Elevation:	3.27 ft
Cross Section:	ROAD_02

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
ROAD_02	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_02	100Y24H	49.36	0.00	-0.04	0.82	0.82	0.82
ROAD_02	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_02	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_02	25Y24H	10.27	0.00	0.00	0.57	0.57	0.57

Weir Link: ROAD_03

Scenario:	EXISTING
From Node:	STG_05
To Node:	STG_04
Link Count:	1
Flow Direction:	None
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	5.31 ft
Control Elevation:	5.31 ft
Cross Section:	ROAD_03

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
ROAD_03	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
ROAD_03	100Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_03	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_03	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_03	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Weir Link: W_02

Scenario:	EXISTING	**Bottom Clip**	
From Node:	STG_03	Default:	0.00 ft
To Node:	TIDE	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	1.09 ft	**Discharge Coefficients**	
Control Elevation:	1.09 ft	Weir Default:	2.800
Cross Section:	W_DA08_TIDE	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_02	05Y24H	118.79	0.00	0.04	1.73	1.73	1.73
W_02	100Y24H	318.17	0.00	-0.13	1.86	1.86	1.86
W_02	10Y24H	149.77	0.00	0.04	1.78	1.78	1.78
W_02	2.3Y24H	91.20	0.00	0.04	1.64	1.64	1.64
W_02	25Y24H	204.93	0.00	0.03	1.80	1.80	1.80

Weir Link: W_04

Scenario:	EXISTING	**Bottom Clip**	
From Node:	STG_R02	Default:	0.00 ft
To Node:	STG_03	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	

Geometry Type:	Irregular
Invert:	1.20 ft
Control Elevation:	1.20 ft
Cross Section:	W_04

Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_04	05Y24H	87.98	0.00	0.03	1.58	1.58	1.58
W_04	100Y24H	171.99	0.00	-0.08	1.64	1.64	1.64
W_04	10Y24H	104.93	0.00	0.02	1.61	1.61	1.61
W_04	2.3Y24H	70.27	0.00	0.03	1.55	1.55	1.55
W_04	25Y24H	129.06	0.00	0.02	1.64	1.64	1.64

Weir Link: W_05

Scenario:	EXISTING
From Node:	STG_01
To Node:	STG_01A
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	1.05 ft
Control Elevation:	1.05 ft
Cross Section:	W_05

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_05	05Y24H	10.19	-3.64	-0.03	-1.22	-1.22	-1.22
W_05	100Y24H	49.50	-3.64	-31.07	-1.22	-1.22	-1.22
W_05	10Y24H	11.08	-3.64	0.02	-1.22	-1.22	-1.22

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_05	2.3Y24H	9.29	-3.64	-0.17	-1.22	-1.22	-1.22
W_05	25Y24H	30.26	-13.09	-30.27	-1.22	-1.22	-1.22

Weir Link: W_07

Scenario:	EXISTING	Bottom Clip	
From Node:	STG_02	Default:	0.00 ft
To Node:	STG_R03	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.67 ft	Discharge Coefficients	
Control Elevation:	4.67 ft	Weir Default:	2.800
Cross Section:	W_07	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_07	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_07	100Y24H	0.03	0.00	0.03	0.00	0.00	0.00
W_07	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_07	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_07	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Weir Link: W_99THST01

Scenario:	EXISTING	Bottom Clip	
From Node:	STG_R01	Default:	0.00 ft
To Node:	BNDY_04	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	None	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.71 ft	Discharge Coefficients	

Control Elevation:	3.71 ft		
Cross Section:	W_99THST01	Weir Default:	2.800
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_99THST01	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST01	100Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST01	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST01	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST01	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Weir Link: W_99THST02

Scenario:	EXISTING	Bottom Clip	
From Node:	STG_R02	Default:	0.00 ft
To Node:	BNDY_05	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.52 ft	Discharge Coefficients	
Control Elevation:	3.52 ft	Weir Default:	2.800
Cross Section:	W_99THST02	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_99THST02	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST02	100Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST02	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST02	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST02	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Weir Link: W_DA03_DA01			
Scenario:	EXISTING	Bottom Clip	
From Node:	STG_02	Default:	0.00 ft
To Node:	STG_01	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.28 ft	Discharge Coefficients	
Control Elevation:	2.28 ft	Weir Default:	2.800
Cross Section:	W_DA03_DA01	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_DA03_DA01	05Y24H	52.49	-1.26	-24.61	1.37	1.37	1.37
W_DA03_DA01	100Y24H	2664.30	-505.08	2664.30	2.09	2.09	2.09
W_DA03_DA01	10Y24H	97.79	-1.41	-37.37	1.25	1.25	1.25
W_DA03_DA01	2.3Y24H	33.89	-1.06	-12.01	1.35	1.35	1.35
W_DA03_DA01	25Y24H	168.24	-0.80	-93.75	1.02	1.02	1.02

Weir Link: W_DA04_DA11			
Scenario:	EXISTING	Bottom Clip	
From Node:	STG_08	Default:	0.00 ft
To Node:	STG_04	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.18 ft	Discharge Coefficients	
Control Elevation:	2.18 ft	Weir Default:	2.800
Cross Section:	W_DA04_DA11	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [EXISTING]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_DA04_DA11	05Y24H	58.67	0.00	0.03	1.27	1.27	1.27
W_DA04_DA11	100Y24H	90.32	0.00	-0.08	1.11	1.11	1.11
W_DA04_DA11	10Y24H	69.69	0.00	0.03	1.32	1.32	1.32
W_DA04_DA11	2.3Y24H	48.82	0.00	0.03	1.21	1.21	1.21
W_DA04_DA11	25Y24H	80.79	0.00	0.03	1.36	1.36	1.36

Pipe Link: CULV-09		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	1.20 ft	Invert:	1.00 ft
From Node:	STG_01B	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	STG_R01	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	570.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV-09	05Y24H	0.07	-0.10	-0.04	-0.22	-1.40	-0.81
CULV-09	100Y24H	0.07	-0.07	-0.04	-0.22	-1.40	-0.81
CULV-09	10Y24H	0.07	-0.08	-0.04	-0.22	-1.40	-0.81
CULV-09	2.3Y24H	0.07	-0.10	-0.04	-0.22	-1.40	-0.81

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV-09	25Y24H	0.07	-0.18	0.04	-0.22	-1.40	-0.81

Pipe Link: CULV_02		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	0.75 ft	Invert:	0.70 ft
From Node:	STG_R02	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	BNDY_05	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	59.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.30	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Diff Wave	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV_02	05Y24H	3.49	-1.64	0.02	2.38	3.30	2.84
CULV_02	100Y24H	4.69	-1.64	0.02	2.59	4.26	3.42
CULV_02	10Y24H	3.72	-1.64	0.02	2.43	3.52	2.98
CULV_02	2.3Y24H	3.17	-1.64	0.03	2.29	3.00	2.64
CULV_02	25Y24H	4.08	-1.64	0.03	2.49	3.86	3.18

Pipe Link: CULV_03		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	0.80 ft	Invert:	0.75 ft
From Node:	STG_R01	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	STG_R02	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	48.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000

Exit Loss Coef:	0.30	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV_03	05Y24H	9.49	-1.15	0.02	5.37	6.31	5.84
CULV_03	100Y24H	13.08	-1.15	0.02	7.40	7.79	7.59
CULV_03	10Y24H	10.30	-1.15	0.02	5.83	6.62	6.22
CULV_03	2.3Y24H	8.70	-1.15	0.02	4.93	6.03	5.47
CULV_03	25Y24H	11.42	-1.15	-0.14	6.46	7.07	6.77

Pipe Link: CULV_04		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	-0.14 ft	Invert:	-0.31 ft
From Node:	STG_05	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	STG_R03	Geometry: Rectangular		Geometry: Rectangular	
Link Count:	1	Max Depth:	3.16 ft	Max Depth:	3.16 ft
Flow Direction:	Both	Max Width:	5.00 ft	Max Width:	5.00 ft
Damping:	0.0000 ft	Fillet:	0.00 ft	Fillet:	0.00 ft
Length:	102.00 ft	Bottom Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.40	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec	Top Clip			
Energy Switch:	Energy	Default:	0.00 ft	Default:	0.00 ft
		Op Table:		Op Table:	
		Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV_04	05Y24H	165.64	0.00	-1.26	10.48	10.50	10.49
CULV_04	100Y24H	191.59	0.00	-4.31	12.13	12.13	12.13

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV_04	10Y24H	175.00	0.00	-3.88	11.08	11.10	11.09
CULV_04	2.3Y24H	144.55	0.00	1.34	9.15	9.79	9.45
CULV_04	25Y24H	183.96	-0.02	-4.14	11.64	11.65	11.64

Pipe Link: CULV_08		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	1.00 ft	Invert:	0.90 ft
From Node:	STG_01A	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	STG_R01	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	16.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.30	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
CULV_08	05Y24H	9.49	-0.40	0.98	5.37	5.37	5.37
CULV_08	100Y24H	13.09	-0.40	0.99	7.40	7.40	7.40
CULV_08	10Y24H	10.30	-0.40	0.99	5.83	5.83	5.83
CULV_08	2.3Y24H	8.70	-0.40	0.98	4.93	4.93	4.93
CULV_08	25Y24H	11.42	-0.40	0.99	6.46	6.46	6.46

Weir Link: DA07_DA03			
Scenario:	PROPOSED	Bottom Clip	
From Node:	STG_05	Default:	0.00 ft
To Node:	STG_02	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	

Geometry Type:	Irregular
Invert:	4.68 ft
Control Elevation:	4.68 ft
Cross Section:	DA07_DA03

Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DA07_DA03	05Y24H	12.26	0.00	0.01	1.42	1.42	1.42
DA07_DA03	100Y24H	201.29	0.00	-0.23	2.54	2.54	2.54
DA07_DA03	10Y24H	41.58	0.00	0.03	1.84	1.84	1.84
DA07_DA03	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DA07_DA03	25Y24H	95.17	0.00	0.06	2.19	2.19	2.19

Channel Link: DITCHNORTH		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	1.40 ft	Invert:	-1.80 ft
From Node:	STG_01C	Manning's N:	0.0000	Manning's N:	0.0000
To Node:	STG_R03	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	DITCH_NORTHC	Cross Section:	DITCH_NORTHC
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	1321.00 ft				
Contraction Coef:	0.00				
Expansion Coef:	0.00				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DITCHNORTH	05Y24H	5.54	-18.01	0.09	0.30	-2.37	-1.19
DITCHNORTH	100Y24H	6.13	-24.15	0.07	0.28	-2.37	-1.19

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DITCHNORTH	10Y24H	5.94	-20.54	0.18	0.30	-2.37	-1.19
DITCHNORTH	2.3Y24H	4.13	-14.90	0.09	0.29	-3.17	-1.61
DITCHNORTH	25Y24H	5.91	-22.68	0.06	0.28	-2.37	-1.19

Weir Link: DITCH_SOUTH

Scenario:	PROPOSED	**Bottom Clip**	
From Node:	STG_R04	Default:	0.00 ft
To Node:	STG_R02	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	1.21 ft	**Discharge Coefficients**	
Control Elevation:	1.21 ft	Weir Default:	2.800
Cross Section:	DITCH_SOUTH	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment: 1.21

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DITCH_SOUTH	05Y24H	63.91	-1.63	-0.04	2.63	2.63	2.63
DITCH_SOUTH	100Y24H	96.73	-0.76	-0.05	2.89	2.89	2.89
DITCH_SOUTH	10Y24H	71.13	-1.54	-0.04	2.69	2.69	2.69
DITCH_SOUTH	2.3Y24H	51.61	-1.53	-0.04	2.50	2.50	2.50
DITCH_SOUTH	25Y24H	80.23	-1.85	-0.04	2.77	2.77	2.77

Weir Link: DRIVEWAY

Scenario:	PROPOSED	**Bottom Clip**	
From Node:	STG_01B	Default:	0.00 ft
To Node:	STG_01C	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Rectangular
Invert:	3.87 ft
Control Elevation:	3.87 ft
Max Depth:	9999.00 ft
Max Width:	10.00 ft
Fillet:	0.00 ft

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DRIVEWAY	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DRIVEWAY	100Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DRIVEWAY	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DRIVEWAY	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DRIVEWAY	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Drop Structure Link: DROP_01		Upstream Pipe		Downstream Pipe	
Scenario:	PROPOSED	Invert:	-0.01 ft	Invert:	-0.07 ft
From Node:	STG_02	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	STG_R03	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	368.41 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	0.30	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft

Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Invert:	3.81 ft
Control Elevation:	3.81 ft
Max Depth:	1.73 ft

Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DROP_01 - Pipe	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DROP_01 - Weir: 1	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DROP_01 - Pipe	100Y24H	1.51	0.00	0.33	0.00	0.00	0.00
DROP_01 - Weir: 1	100Y24H	1.51	0.00	0.50	2.18	2.18	2.18
DROP_01 - Pipe	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DROP_01 - Weir: 1	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DROP_01 - Pipe	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DROP_01 - Weir: 1	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
DROP_01 - Pipe	25Y24H	0.02	0.00	0.00	0.00	0.00	0.00
DROP_01 - Weir: 1	25Y24H	0.02	0.00	0.00	0.00	0.00	0.00

Drop Structure Link: DROP_02		Upstream Pipe		Downstream Pipe	
Scenario:	PROPOSED	Invert:	1.11 ft	Invert:	1.09 ft
From Node:	STG_05	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	STG_02	Geometry: Circular		Geometry: Circular	

Link Count:	1	Max Depth:	0.14 ft	Max Depth:	0.14 ft
Flow Direction:	Positive	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	578.12 ft	Top Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.00	Op Table:		Op Table:	
Exit Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	3.90 ft	Ref Node:	
Control Elevation:	3.90 ft	Discharge Coefficients	
Max Depth:	1.81 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DROP_02 - Pipe	05Y24H	0.01	0.00	0.00	0.00	0.00	0.00
DROP_02 - Weir: 1	05Y24H	0.01	0.00	0.00	0.19	0.19	0.19
DROP_02 - Pipe	100Y24H	0.01	-1.12	-0.90	0.00	0.00	0.00
DROP_02 - Weir: 1	100Y24H	0.01	-1.12	-0.90	-1.58	-1.58	-1.58
DROP_02 - Pipe	10Y24H	0.01	0.00	0.00	0.00	0.00	0.00

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
DROP_02 - Weir: 1	10Y24H	0.01	0.00	0.00	0.19	0.19	0.19
DROP_02 - Pipe	2.3Y24H	0.01	0.00	0.00	0.00	0.00	0.00
DROP_02 - Weir: 1	2.3Y24H	0.01	0.00	0.00	0.19	0.19	0.19
DROP_02 - Pipe	25Y24H	0.01	0.00	0.00	0.00	0.00	0.00
DROP_02 - Weir: 1	25Y24H	0.01	0.00	0.00	0.18	0.18	0.18

Channel Link: Mangroves_North		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	0.49 ft	Invert:	-1.20 ft
From Node:	STG_04	Manning's N:	0.0800	Manning's N:	0.0800
To Node:	TIDE	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	MANG_CHANNEL04	Cross Section:	MANG_CHANNEL05
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	557.00 ft				
Contraction Coef:	0.00				
Expansion Coef:	0.00				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				
Comment:					

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Mangroves_North	05Y24H	84.70	0.00	0.04	0.60	2.44	1.52
Mangroves_North	100Y24H	160.21	0.00	-0.09	0.81	3.78	2.29
Mangroves_North	10Y24H	99.82	0.00	-0.04	0.65	2.88	1.77
Mangroves_North	2.3Y24H	69.07	0.00	0.03	0.55	1.99	1.27
Mangroves_North	25Y24H	121.33	0.00	0.04	0.71	3.47	2.09

Channel Link: Outfall1		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	-1.00 ft	Invert:	0.50 ft
From Node:	STG_R04	Manning's N:	0.0800	Manning's N:	0.0800
To Node:	STG_04	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	MANG_CHANNEL01	Cross Section:	MANG_CHANNEL02
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	385.00 ft				
Contraction Coef:	0.00				
Expansion Coef:	0.00				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				
Comment:					

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Outfall1	05Y24H	81.65	0.00	-0.11	0.41	4.21	2.31
Outfall1	100Y24H	73.83	0.00	0.09	0.40	4.21	2.31
Outfall1	10Y24H	82.86	0.00	0.14	0.40	4.21	2.31
Outfall1	2.3Y24H	73.15	0.00	-0.10	0.41	4.21	2.31
Outfall1	25Y24H	81.10	0.00	-0.64	0.40	4.21	2.31

Pipe Link: PR_CULV02		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	-0.90 ft	Invert:	-1.00 ft
From Node:	STG_R03	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	STG_R04	Geometry:	Circular	Geometry:	Circular
Link Count:	3	Max Depth:	3.50 ft	Max Depth:	3.50 ft
Flow Direction:	Positive	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	52.30 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.30	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
PR_CULV02	05Y24H	146.11	0.00	5.82	5.06	5.11	5.09
PR_CULV02	100Y24H	169.26	0.00	5.40	5.86	5.86	5.86
PR_CULV02	10Y24H	154.11	0.00	6.15	5.34	5.36	5.35
PR_CULV02	2.3Y24H	125.38	0.00	5.41	4.34	4.47	4.40
PR_CULV02	25Y24H	161.09	0.00	5.90	5.58	5.58	5.58

Pipe Link: P_Nursery		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	0.90 ft	Invert:	1.66 ft
From Node:	STG_R02	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	STG_03	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	10.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.30	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
P_Nursery	05Y24H	0.00	0.00	0.00	0.01	0.00	0.00
P_Nursery	100Y24H	0.14	0.00	0.00	0.14	1.64	0.87
P_Nursery	10Y24H	0.02	0.00	0.00	0.02	0.00	0.01
P_Nursery	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
P_Nursery	25Y24H	0.05	0.00	0.00	0.05	0.00	0.03

Weir Link: ROAD_01			
Scenario:	PROPOSED	Bottom Clip	
From Node:	STG_R01	Default:	0.00 ft
To Node:	STG_R02	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.52 ft
Control Elevation:	3.52 ft
Cross Section:	ROAD_01

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
ROAD_01	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_01	100Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_01	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_01	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_01	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Weir Link: ROAD_02

Scenario:	PROPOSED
From Node:	STG_R03
To Node:	STG_R04
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	4.47 ft
Control Elevation:	4.47 ft
Cross Section:	ROAD_02

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
ROAD_02	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_02	100Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_02	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_02	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_02	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Weir Link: ROAD_03

Scenario:	PROPOSED	**Bottom Clip**	
From Node:	STG_05	Default:	0.00 ft
To Node:	STG_04	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	None	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.31 ft	**Discharge Coefficients**	
Control Elevation:	5.31 ft	Weir Default:	2.800
Cross Section:	ROAD_03	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
ROAD_03	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_03	100Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_03	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_03	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
ROAD_03	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Weir Link: W_02

Scenario:	PROPOSED	**Bottom Clip**	
From Node:	STG_03	Default:	0.00 ft
To Node:	TIDE	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft

Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	1.09 ft
Control Elevation:	1.09 ft
Cross Section:	W_DA08_TIDE

Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_02	05Y24H	102.11	0.00	0.04	1.68	1.68	1.68
W_02	100Y24H	262.70	0.00	-0.13	1.83	1.83	1.83
W_02	10Y24H	127.26	0.00	0.03	1.75	1.75	1.75
W_02	2.3Y24H	77.35	0.00	0.04	1.59	1.59	1.59
W_02	25Y24H	170.48	0.00	0.03	1.79	1.79	1.79

Weir Link: W_04

Scenario:	PROPOSED
From Node:	STG_R02
To Node:	STG_03
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	1.20 ft
Control Elevation:	1.20 ft
Cross Section:	W_04

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_04	05Y24H	69.37	0.00	0.02	1.52	1.52	1.52
W_04	100Y24H	106.35	0.00	-0.05	1.52	1.52	1.52

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_04	10Y24H	77.40	0.00	-0.02	1.48	1.48	1.48
W_04	2.3Y24H	56.50	0.00	0.03	1.50	1.50	1.50
W_04	25Y24H	87.73	0.00	-0.02	1.48	1.48	1.48

Weir Link: W_05

Scenario:	PROPOSED	**Bottom Clip**	
From Node:	STG_01	Default:	0.00 ft
To Node:	STG_01A	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	1.05 ft	**Discharge Coefficients**	
Control Elevation:	1.05 ft	Weir Default:	2.800
Cross Section:	W_05	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_05	05Y24H	12.56	-3.64	0.24	-1.22	-1.22	-1.22
W_05	100Y24H	39.56	-19.46	-36.21	-1.22	-1.22	-1.22
W_05	10Y24H	13.87	-3.64	-0.26	-1.22	-1.22	-1.22
W_05	2.3Y24H	11.60	-3.64	0.22	-1.22	-1.22	-1.22
W_05	25Y24H	30.27	-13.06	-30.27	-1.22	-1.22	-1.22

Weir Link: W_07

Scenario:	PROPOSED	**Bottom Clip**	
From Node:	STG_02	Default:	0.00 ft
To Node:	STG_R03	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	

Invert:	4.67 ft
Control Elevation:	4.67 ft
Cross Section:	W_07

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_07	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_07	100Y24H	0.02	0.00	0.02	0.00	0.00	0.00
W_07	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_07	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_07	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Weir Link: W_99THST01

Scenario:	PROPOSED
From Node:	STG_R01
To Node:	BNDY_04
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	3.71 ft
Control Elevation:	3.71 ft
Cross Section:	W_99THST01

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_99THST01	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST01	100Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST01	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST01	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_99THST01	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Weir Link: W_99THST02

Scenario:	PROPOSED
From Node:	STG_R02
To Node:	BNDY_05
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.52 ft
Control Elevation:	3.52 ft
Cross Section:	W_99THST02

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_99THST02	05Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST02	100Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST02	10Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST02	2.3Y24H	0.00	0.00	0.00	0.00	0.00	0.00
W_99THST02	25Y24H	0.00	0.00	0.00	0.00	0.00	0.00

Weir Link: W_DA03_DA01

Scenario:	PROPOSED
From Node:	STG_02
To Node:	STG_01
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	2.28 ft
Control Elevation:	2.28 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800

Cross Section:	W_DA03_DA01		
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_DA03_DA01	05Y24H	43.23	-1.42	-19.93	1.39	1.39	1.39
W_DA03_DA01	100Y24H	1727.53	-607.75	1727.53	1.72	1.72	1.72
W_DA03_DA01	10Y24H	81.93	-1.24	-38.98	1.31	1.31	1.31
W_DA03_DA01	2.3Y24H	33.90	-1.10	-12.22	1.35	1.35	1.35
W_DA03_DA01	25Y24H	150.41	-0.89	-63.25	0.97	0.97	0.97

Weir Link: W_DA04_DA11

Scenario:	PROPOSED	Bottom Clip	
From Node:	STG_08	Default:	0.00 ft
To Node:	STG_04	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.18 ft	Discharge Coefficients	
Control Elevation:	2.18 ft	Weir Default:	2.800
Cross Section:	W_DA04_DA11	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Link Min/Max Conditions [PROPOSED]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
W_DA04_DA1	05Y24H	58.67	0.00	0.03	1.27	1.27	1.27

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
1							
W_DA04_DA11	100Y24H	121.08	0.00	-0.07	1.51	1.51	1.51
W_DA04_DA11	10Y24H	69.69	0.00	0.03	1.32	1.32	1.32
W_DA04_DA11	2.3Y24H	48.82	0.00	0.02	1.21	1.21	1.21
W_DA04_DA11	25Y24H	87.44	0.00	0.03	1.40	1.40	1.40