I-4 BtU SEGMENT 3

SR 400 (I-4) 1 mile E of SR 434 to E of US 17/92 in Seminole County

POND SITING REPORT ADDENDUM

Financial Project No: 242592-4-52-01

Prepared for

Florida Department of Transportation
District Five

July 2017

POND SITING REPORT
ADDENDUM

SR 400 (I-4) Segment 3

From One Mile East of SR 434 to East of SR 15-600/US 17-92

Seminole County, Florida

Financial Project ID 242592-4-52-01

Prepared for:

FLORIDA DEPARTMENT OF TRANSPORTATION

District Five
DeLand, Florida

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July 2017

Executive Summary

The Florida Department of Transportation (FDOT) is proposing to widen State Road 400 (SR 400) / Interstate 4 (I-4) from the existing six lane divided urban facility to a divided highway that varies between 10 and 12 lanes. The project limits extend from one mile east of SR 434 to east of SR 15/600-US 17/92 in Seminole County, Florida. The right-of-way requirements for stormwater management were identified in the Pond Siting Report (PSR) during the Project Development and Environmental (PD&E) phase of the project. The PD&E PSR identified twenty-two (22) drainage basins which will require twenty-seven (27) pond sites and one floodplain compensation site (FPC).

The intent of this report is to amend the right-of-way requirements for stormwater management that were presented in the PD&E PSR and are no longer viable options. The Pond Siting Report Addendum (Addendum) is proposing to modify three stormwater facilities, a floodplain compensation site and will add one stormwater pond. The following tables summarize the recommendations from the PD&E PSR and the Addendum recommendations.

As indicated in the following tables, the Addendum will reduce the right-of-way requirements from 17.28 acres to 7.59 acres. ***This is a 9.69 acre reduction in required right-of-way for stormwater management.***

Table ES-1
PD&E Pond Site Recommendation Summary

Basin	Pond / FPC	Location/Prop. Owner	Recommendation	Required ROW (Ac.)
Basin 300	Pond 300	Sta. 2117+00 (Rt) Parcel No. 25-20-29-503-0A00-0000	Provide stormwater management for Basin 300	3.46
		Parcel No. 25-20-29-510-000-0070		0.58
Basin 300	FPC 300-A	Sta. 2125+00 (Rt) Parcel No. 25-20-29-300-0050-0000	Provide floodplain compensation for Basin 300	1.14
Basin 303	Pond 303-A1	Sta. 2178+00 (Lt) Parcel No. 24-20-29-512-0000-0020	Provide stormwater management for Basin 303	4.39
Basin 308	Pond 308	Sta. 2320+00 (Rt) Drainage Easement on Parcel No. 07-20-30-5MK-0000-0020	Expand existing pond to accommodate the entire Basin 308 basin area	7.71
			Total Require ROW =	**17.28**

Table ES-2
Addendum Pond Site Recommendation Summary

Basin	Pond / FPC	Location/Prop. Owner	Recommendation	Required ROW (Ac.)
Basin 300	Pond 300	Sta. 2140+00 (Rt) FDOT Property (Rest Area)	Provide stormwater management for Basin 300	0.00
Basin 303	Pond 303-B2	Sta. 2183+00 (Lt) Parcel No. 24-20-29-300-0090-0000	Least costly alternative for stormwater management	2.71
Basin 308A	Pond 308A	Sta. 2328+00 (Rt) Drainage Easement on Parcel No. 07-20-30-5MK-0000-0020	Construct second pond in lieu of expanding the existing pond in Basin 308	3.45
Basin 317D	Pond 317D	Sta. 180+00 (Lt) Parcel No. 21-19-30-502-0400-0000	Proposed pond site	1.43
			Total Require ROW =	**7.59**

Based on the summary tables, the pond sites amended from the PD&E PSR will reduce the right-of-way requirements for stormwater management. However, additional factors were also considered that required amending the pond sites presented in the PD&E PSR. These include public input, geotechnical feasibility, and design revisions.

As indicated in the PD&E PSR, stormwater management for Basin 300 would be accomplished from expanding Pond 300 to the east. However, expanding the pond to the east would impact existing trees along the berm between Lake Grace and SR 400 (I-4). Local residence expressed concerns that removing the trees would result in increased noise levels and diminished aesthetics for the homeowners of Lake Grace. Therefore, Pond 300 and FPC 300-A were relocated to the south side of the rest area for SR 400. Relocating the pond and floodplain compensation utilizes the existing rest area and avoids additional right-of-way cost.

In Basin 308, the PD&E PSR proposed to expand the existing pond to the north to provide the required stormwater management for the roadway improvements. Geotechnical investigation indicated that the seasonal high water table does not support expanding the pond to the north. As a result, the Addendum is proposing to utilize the existing pond with a second pond located further north to provide the remaining stormwater management for the basin.

Lastly, at the request of Seminole County, additional sidewalks and bike lanes were added on both sides of Orange Boulevard around Pond 318B. Seminole County also requested that the contouring for Pond 318B be modified from the PD&E to comply the Highway Beautification Policy. The additional impervious area and the reduction in pond size due to the revised contouring required an additional pond site. The proposed pond is located at the southwest corner of Monroe Road and Orange Boulevard which is currently occupied by Marathon Gas with a Kangaroo Convenience Store. The proposed pond site is referred to in the Addendum as Pond 317D.

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1.0 INTRODUCTION

1.1 Project Description and Location

The Florida Department of Transportation (FDOT) is proposing to widen State Road 400 (SR 400) / Interstate 4 (I-4) from the existing six lane divided urban facility to a divided highway that varies between 10 and 12 lanes. The intent is to improve traffic operations, enhance connectivity and improve mobility by providing travel choices to the motoring public. The project limits extend from one mile east of SR 434 to east of SR 15/600-US 17/92 in Seminole County, Florida. The project is referred to as Financial Project ID (FPID) Number 432100-1-22-01 in the Florida Department of Transportation (FDOT) system.

As a result of the proposed roadway improvements there will be an increase in stormwater runoff. The additional runoff will need to collected and managed in both existing and proposed stormwater management facilities. A Pond Siting Report (PSR) dated August 2016 was prepared during the Project Development and Environment (PD&E) phase of the project to identify the projects right-of-way requirements for stormwater management. The PD&E PSR identified twenty-two (22) drainage basins that will require twenty-seven (27) pond sites. The project location map from the PD&E PSR is provided in Appendix A.

The vertical datum used for this project and documented in this report is the North American Vertical Datum of 1988 (NAVD 88).

1.2 Purpose

The purpose of this report is to amend the right-of-way requirements for stormwater management that were presented in the PD&E PSR and are no longer viable options. The updated right-of-way requirements are based on various factors such as revised roadway design, additional topographic survey, and geotechnical investigation. This document is referred to as the Addendum since it only includes revisions to the pond sites and floodplain compensation sites developed in the PD&E PSR.

2.0 AMENDED POND SITE ALTERNATIVES

The recommended pond sites and FPC sites were reviewed with respect to the current roadway design, updated survey and geotechnical data. The Addendum is proposing to modify three stormwater facilities, a floodplain compensation site and will add one stormwater pond. The pond sites and FPC site that will be amended are referred to as Pond 300, FPC 300-A, Pond 303-B2, Pond 308A and Pond 317D.

2.1 Basin 300

2.1.1 PD&E PSR Basin and Floodplain Description

Basin 300 in the PD&E PSR is a roadway drainage basin that begins at Station 2092+50 and extends north to Station 2125+00. The basin consists of the full right-of-way and the recommended pond site alternative. Both the recommended pond site and the roadway drainage basin lie in a closed basin with discharge. The drainage map from the PD&E PSR is included in Appendix A.

Based on the PD&E PSR, the required stormwater management for Basin 300 will be accomplished from expanding an existing stormwater facility referred to as Pond E in Permit No. 22434-1. The existing pond currently functions as a wet detention facility that discharges north, into an existing cross drain and then drains into Grace Lake. The pond is located on the right side of the roadway between Station 2113+50 and Station 2121+00. The expanded pond site is referred to as Pond 300 in the PD&E PSR and is shown on the drainage map provided in Appendix A. The calculations for Pond 300 are also included in Appendix A. Within Basin 300 the PD&E PSR has also identified a floodplain compensation site referred to as FPC 300-A on the right side of the roadway at Station 2126+00. FPC 300-A is proposed to provide compensation for the floodplain impacts between Station 2106+00 and Station 2125+00 on both the left and the right sides of the roadway.

The proposed Pond 300 expansion, was planned to the north, south and east of the existing pond location. This expansion would require partial right-of-way takes from two separate parcels, impacts an existing billboard and would additionally impact the existing floodplain. FPC 300-A would require a partial right-of-way take from one parcel. The PD&E PSR basin and pond description for Basin 300 are included in Appendix A.

2.1.2 Addendum

In order to eliminate the two partial right-of-way takes and impacts to an existing billboard for Pond 300 and the one partial take for FPC 300-A, we evaluated conveying the runoff from Basin 300 to Basin 301 and providing a pond on the existing rest area within the FDOT's right-of-way. Basins 300 and 301 are both part of the overall Myrtle Lake Basin. Our proposed design would involve collecting the storm water runoff from the entire I-4 roadway from Station 243+20 to Station 288+20 along with some minor areas on EE Williams Road and conveying it to Pond 300 located on the rest area, adjacent to Pond 301 near Station 290+00. The proposed Pond 300 will be a wet detention pond. The drainage map for Basin 300 and 301 is included in Appendix C . The existing and proposed basin and pond calculations for Basin 300 and 301 are also provided in Appendix C.

Within Myrtle Lake Basin is a sub basin referred to as Grace Lake which includes the roadway improvement project. The entire Grace Lake watershed was previously modeled in ICPR by Pegasus Engineering for Seminole County. The analysis was part of an approved Environmental Resource Permit by SJRWMD for an alternative sinkhole remediation protocol for Grace Lake dated March 2014. This ICPR model considers the stormwater affects to the watershed if the sinkhole in Grace Lake were plugged. A partial copy of this documentation is included in Appendix C, which includes the general documentation write-up, along with the input and output from the ICPR model. The existing County ICPR model will be used to demonstrate that the proposed roadway improvements will have no adverse impacts to Grace Lake or any of the surrounding offsite areas associated with shifting stormwater runoff from Basin 300 to Basin 301.

In utilizing the existing model the first step was to revise the model to accurately represent the areas with the FDOT's right-of-way. Modifications to the model included the following: revising onsite curve numbers, revising storage areas based on topographic survey within the FDOT right-of-way as well as updating existing drainage structures and pipes based on new survey data. All areas outside the FDOT right-of-way remain unchanged from the original model. The results of this modified model are referred to as our "Existing Conditions, Grace Lake" model and can be found in Appendix C. We then updated this model to represent the proposed conditions, which included adding Pond 300 and Pond 301. In

addition, the existing Pond E has been modified by removing the existing berms and lowering the ground to elevation 61.0 thus allowing it to provide additional floodplain storage within the Grace Lake Basin. The results of the "Proposed Conditions, Grace Lake" model are included in Appendix C.

2.2 Basin 303

2.2.1 PD&E PSR Basin and Pond Description

Basin 303 in the PD&E PSR is a roadway drainage basin that begins at Station 2162+00 and extends north to Station 2189+00. The basin consists of the full right-of-way and the recommended pond site alternative. Both the recommended pond site and the roadway drainage basin lie in a closed basin with discharge. The drainage map from the PD&E PSR is included in Appendix A.

2.2.2 Addendum

According to Section 5.3.6 in the PD&E PSR, Pond 303-A1 is the least costly alternative and is the recommended alternative for this basin. However, Table 7 in the PD&E PSR indicates that Pond 303-B2 is the least costly alternative. Based on the cost analysis provided in the PD&E PSR, the recommended pond site alternative for the addendum is Pond 303-B2. Section 5.3.6 and Table 7 from the PD&E PSR are provided in Appendix A.

2.3 Basin 308

2.3.1 PD&E PSR Basin and Pond Description

Basin 308 in the PD&E PSR is a roadway drainage basin that begins at Station 2305+00 and extends north to Station 2365+00. The basin consists of the full right-of-way and the recommended pond site alternative. Both the recommended pond site and the roadway drainage basin lie in a closed basin with discharge. The drainage map from the PD&E PSR is included in Appendix A.

Based on the PD&E PSR, the required stormwater management for Basin 308 will be accomplished from expanding an existing stormwater facility referred to as Pond 3 in Permit No. 22142-2. The existing pond currently functions as a dry retention facility that discharges west through the International Parkway storm sewer system. The pond is located on the right side of the roadway between Station 2310+00 and Station 2318+00 in an easement on the Heathrow development property. The expanded pond site is referred to as Pond 308 in the PD&E PSR and is shown on the drainage map provided in Appendix A. The calculations for Pond 308 are also included in Appendix A.

The proposed pond expansion will occur to the north where the existing ground elevation varies from 60.0 feet to 85.0 feet. Recent geotechnical investigation included 4 pond borings indicating that the seasonal high water elevation in the expanded pond area varies between elevation 48.57 feet and elevation 61.23 feet. The average seasonal high water elevation of the four pond borings is 57.40 feet which is above the proposed pond bottom elevation of 50.2 feet. Based on the recent geotechnical borings, the seasonal high water elevations do not support expanding the existing pond to the north for For a dry retention facility. The PD&E PSR basin and pond description for 308 are included in Appendix A. Results from the recent geotechnical investigation for Pond 308 are provided in Appendix B.

2.3.2 Addendum

Since the seasonal high water elevations do not support expanding the existing pond to the north, an additional pond is recommended to provide stormwater management for the basin runoff. The proposed pond is approximately 850 feet north of the existing pond at Station 480+00 and is referred to in this addendum as Pond 308A. The basin limits for the runoff discharging to Pond 308A begin at Station 487+50 and extend north to Station 506+00. The basin discharging to the pond is referred to as Basin 308A. The drainage map for Basin 308A is included in Appendix C . The basin and pond calculations for Basin 308A are also provided in Appendix C.

The remaining runoff within the basin will be managed in the existing pond which is referred to in this addendum as Pond 308. The amount of roadway runoff discharging to the existing pond will not require modifying the existing pond and will allow it continue to function as a dry retention facility. The basin limits for runoff discharging to Pond 308 begin at Station 455+00 and extend north to Station 487+50. The basin discharging to Pond 308 is referred to in this addendum as Basin 308. The drainage map for Basin 308 is included in Appendix C. The basin and pond calculations are also provided in Appendix C.

2.4 Basin 317D

2.4.1 PD&E PSR Basin and Pond Description

Basin 317D and Pond 317D were not included in the PD&E PSR. During Phase II of the project, the need for an additional pond (Pond 317D) and the basin discharging to the pond (Basin 317D) were identified. The following section includes information regarding the basin description and the stormwater management requirements for the basin.

2.4.2 Addendum

Basin 317D is a proposed roadway drainage basin that was developed during Phase II of the project. The basin begins at Station 179+44 on CR 15 and extends west to Station 184+80. The basin consists primarily of the proposed roadway and the recommended pond site referred to as Pond 317D. Both the drainage basin and the recommended pond site lie in an open basin that ultimately discharge to Lake Monroe. The basin limits and pond site are shown on the drainage map provided in Appendix C.

During the design phase, Seminole County requested that additional sidewalks and bicycle lanes be placed on both the inside and outside of Orange Boulevard around Pond 318B. The sidewalks and bicycle lanes have increased the amount runoff in Basin 318B and have reduced the size of Pond 318B as presented in the PD&E PSR. Pond 318B has also been reconfigured in the Addendum at the request of Seminole County to comply with the Highway Beautification Policy. The reconfigured pond will result in a reduction in pond volume due to the curvilinear contouring along the pond berm. As a result, an additional pond referred to as Pond 317D has been proposed in the Addendum to provide stormwater management for the increase in runoff and the reduction in pond volume in Pond 318B.

Pond 317D is located at the southwest corner of Monroe Road and Orange Boulevard. The site is currently occupied by a Marathon Gas Station with a Kangaroo Convenience Store. The existing site discharges to the west into a dry retention/detention facility located on the Donnie Myers Luxury Coach site. Runoff from the Donnie Myers stormwater facility discharges to the existing ditch on Orange Boulevard that ultimately outfalls to Lake Monroe. The proposed pond site (Pond 317D) will discharge

directly into the existing ditch on Orange Boulevard and not through the Donnie Myers property. The ditch along Orange Boulevard will continue to outfall to Lake Monroe as in the existing condition.

3.0 Special Basin Criteria

3.1 Wekiva Basin Recharge Area

Basin 300, Basin 301, & Basin 308 lie in the Wekiva Recharge Area. The pond sites in the Addendum were designed to include the historical recharge volume and the required volume as a result of the proposed roadway improvements. The required recharge volume for the post developed condition was calculated using 3 inches over the impervious area that was previously A type soils. Calculations demonstrating the proposed ponds provide for the required recharge volume are included in Appendix C.

3.2 Outstanding Florida Water (OFW)

There are no Outstanding Florida Waters within the project limits.

3.3 Basin Impairment

The outfall for Pond 317D is Lake Monroe which has been listed as impaired for nutrients. A Basin Management Action Plan (BMAP) has been developed which includes nutrient reduction calculations for FDOT ponds that ultimately discharge to Lake Monroe. Based on the BMAP, the FDOT ponds that will reduce nutrient loadings into Lake Monroe have been constructed. Calculations demonstrating the proposed roadway improvements will not increase nutrient loadings into Lake Monroe will be provided in the Phase II Drainage Design Document.

4.0 Pond Alternative Matrix

The Pond Alternative Matrix provides a summary of the cost and impacts associated with the recommended pond site alternatives. The Total Pond Cost provided in the matrix include associated pond construction costs such as drainage structures, earthwork, and soil remediation. The Pond Alternative Matrix is provide in Table 3.

Table 3
Pond Alternative Matrix

Pond	Existing Land Use	Threatened or Endangered Species	Hazardous Materials & Contamination Potential	Major Utility Conflict (Y/N)	Floodplain Impacts (ac-ft)	Wetland & Surface Water Impacts (ac)	Total Pond Cost	Rankings
303-A1	Other	High	Low	N	0.00	0.00	$3,716,650	2
303-A2	Vacant Nonresidential	High	Low	N	0.00	0.00	$24,048	1
303-B2	Acreage Not Zoned for Agriculture	High	Low	N	0.00	0.00	$3,321,411	1
300 (Relocated)	Public / Semi-public	High	Low	N	0.00	0.00	$564,667	1
308A	No Data Available	High	High	N	0.00	0.00	$1,697,276	1
317D	Commercial	Low	Med	N	0.00	0.00	$3,850,240	1

5.0 PROPERTY OWNER COORDINATION

Coordination with affected property owners was initiated with a first letter mailing on December 7th, 2016. The letter informed property owners that their property has been selected for a preferred site for a stormwater management facility and requested any input with regards to pond location and configuration. A second letter was sent on February 27th, 2017 informing the property owners that their property has been selected for a preferred pond site and requesting any input with regards to pond configuration. The coordination letters with the affected property owners is included in Appendix D.

6.0 ADDENDUM SUMMARY

The Addendum is proposing to modify three stormwater facilities, a floodplain compensation site and will add one stormwater pond. The following tables summarize the stormwater facilities recommended in the PD&E PSR and the ponds that have been modified from the PD&E. As indicated in the following summary tables, the recommended pond sites in the Addendum will reduce right-of-way requirements approximately 9.69 acres.

Table 4
PD&E Pond Site Recommendation Summary

Basin	Pond / FPC	Location/Prop. Owner	Recommendation	Required ROW (Ac.)
Basin 300	Pond 300	Sta. 2117+00 (Rt) Parcel No. 25-20-29-503-0A00-0000	Provide stormwater management for Basin 300	3.46
		Parcel No. 25-20-29-510-000-0070		0.58
Basin 300	FPC 300-A	Sta. 2125+00 (Rt) Parcel No. 25-20-29-300-0050-0000	Provide floodplain compensation for Basin 300	1.14
Basin 303	Pond 303-A1	Sta. 2178+00 (Lt) Parcel No. 24-20-29-512-0000-0020	Provide stormwater management for Basin 303	4.39
Basin 308	Pond 308	Sta. 2320+00 (Rt) Drainage Easement on Parcel No. 07-20-30-5MK-0000-0020	Expand existing pond to accommodate the entire Basin 308 basin area	7.71
			Total Require ROW =	**17.28**

Table 5
Addendum Pond Site Recommendation Summary

Basin	Pond / FPC	Location/Prop. Owner	Recommendation	Required ROW (Ac.)
Basin 300	Pond 300	Sta. 2140+00 (Rt) FDOT Property (Rest Area)	Provide stormwater management for Basin 300	0.00
Basin 303	Pond 303-B2	Sta. 2183+00 (Lt) Parcel No. 24-20-29-300-0090-0000	Least costly alternative for stormwater management	2.71
Basin 308A	Pond 308A	Sta. 2328+00 (Rt) Drainage Easement on Parcel No. 07-20-30-5MK-0000-0020	Construct second pond in lieu of expanding the existing pond in Basin 308	3.45
Basin 317D	Pond 317D	Sta. 180+00 (Lt) Parcel No. 21-19-30-502-0400-0000	Proposed pond site	1.43
			Total Require ROW =	**7.59**

Appendix A
PD&E Pond Siting Report Excerpts (August 2016)

PD&E Pond Siting Report

Project Location Map

Figure 1 – Project Location Map

PD&E Pond Siting Report

Pond Engineering Data & Analysis Summary

Table 5 – Pond Engineering Data & Analysis

Pond	Location	Soil Names & Hydrologic Groups	Estimated SHWT El. (ft)	Lowest Edge of Roadway (ft)	Outfall Location	Roadway Drainage Area (ac)	Method of Treatment	Required Treatment & Attenuation Volume (ac-ft)	Provided Treatment & Attenuation Volume (ac-ft)	Required Add. Pond Area Including Access (ac)	Total Parcel Available (ac)
HH	Station 2050+00 FDOT Property	Basinger, Samsula, & Hontoon (A/D) & Urban Land (A/D)	50.00	56.00	Little Wekiva River	9.30	Dry Retention	N/A	N/A	N/A	N/A
II	Station 2065+00 FDOT Property	Astatula-Apopka (A)	60.00	56.00	Little Wekiva River	11.98	Dry Retention	N/A	N/A	N/A	N/A
300	Station 2112+00 FDOT Property & Parcel No. 25-20-29-503-0A00-0000	Astatula (A) & Myakka & EauGallie (A/D)	59.96	65.00	Grace Lake	32.83	Wet Detention	12.53	12.53	3.46	4.07
	Parcel No. 25-20-29-510-000-0070									0.58	9.46
301	Station 2138+00 FDOT Property (Rest Area)	Basinger, Samsula & Hontoon (A/D), Astatula-Apopka (A) & Myakka and Eaugallie (A/D)	47.96	55.00	Depressional Area at Sta. 2133+75	9.34	Dry Retention	3.57	4.85	N/A	N/A
302	Station 2153+00 FDOT Property	Astatula (A)	41.46	55.00	Depressional Area at Sta. 2150+00	19.05	Dry Retention	8.46	9.20	N/A	N/A
303-A1	Station 2176+00 FDOT Property & Parcel No. 24-20-29-512-0000-0020	Astatula (A)	45.06	66.00	Lake Myrtle	19.04	Dry Retention	13.22	21.06	4.39	4.56
303-A2	Station 2176+00 FDOT Property	Astatula (A)	45.06	66.00	Lake Myrtle	10.66	Dry Retention	6.40	6.79	N/A	N/A
303-B2	Station 2180+50 Parcel No. 24-20-29-300-0090-0000	Astatula (A)	55.00	66.00	Lake Myrtle	8.37	Dry Retention	4.72	4.90	2.71	2.71
304	Station 2217+00 FDOT Property	Astatula (A)	45.00	68.00	Depressional Area at Sta. 2224+00	23.63	Dry Retention	15.90	16.48	N/A	N/A
305 & 305A	Station 2248+60 FDOT Property	Astatula (A) Myakka & EauGallie (A/D)	38.96	48.66	Heathrow Development	79.30	Dry Retention	48.09	53.08	N/A	N/A
306	Station 2268+00 FDOT Property	Astatula (A)	38.33	57.68	Heathrow Development	18.38	Dry Retention	6.90	13.02	N/A	N/A
307	Station 2296+00 Drainage Easement	Basinger, Samsula & Hontoon (A/D)	39.36	60.00	Primera Development Property	15.36	Dry Retention	6.80	6.80	N/A	N/A
308	Station 2309+00 Drainage Easement & Parcel No. 07-20-30-5MK-0000-0020	Astatula (A) Basinger, Samsula & Hontoon (A/D)	47.16	60.00	International Pkwy Storm Sewer System	43.01	Dry Retention	24.81	32.32	7.71	155.33
309	2369+50 FDOT Property	Tavares-Millhopper & Astatula (A)	66.96	70.65	None	24.72	Wet Retention	53.09	56.66	N/A	N/A

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Table 6 – Floodplain Compensation Pond Engineering Data & Analysis

FPC Pond	Location	Soil Names & Hydrologic Groups	Estimated SHWT El. (ft)	100 YR Floodplain Elevation (ft)	Required Compensation (ac-ft)	Storage Provided (ac-ft)	Required Add. Pond Area Including Access (ac)	Total Parcel Available (ac)
300-A	Station 2125+00 Parcel No. 25-20-29-300-0050-0000	Myakka & Eau Gallie (A/D)	55.00	66.00	3.61	3.79	1.14	3.37
300-B	Station 2117+00 Parcel No. 26-20-29-300-0010-0000	Myakka & Eau Gallie (A/D)	57.00	66.00	3.61	3.95	1.70	11.02

Table 7 – Pond and Floodplain Compensation Pond Impact & Cost Analysis

Pond	Existing Land Use	**Threatened or Endangered Species Impacts	***Hazardous Materials & Contamination Potential	Major Utility Conflict Potential (Y/N)	Floodplain Impacts (ac-ft)	Wetland & Surface Water Impacts (ac)		Total Pond Cost	Rankings
HH	No Data Available	Moderate	Low	N	0.00	0.00		$0.00*	1
II	No Data Available	High	Low	N	0.00	0.00		$10,022	1
300	Residential	Moderate	Medium	N	6.43	0.00	1.33	$3,007,104	1
301	Public / Semi-Public	High	Low	N	0.00	0.00		$147,267	1
302	Vacant Residential	High	Low	N	0.00	0.00		$125,014	1
303-A1	Other	High	Low	N	0.00	0.00		$3,716,650	1
303-A2	Vacant Nonresidential	High	Low	N	0.00	0.00		$24,048	2
303-B2	Acreage Not Zoned for Agriculture	High	Low	N	0.00	0.00		$3,321,411	
304	Parcels with no Values	High	Low	N	0.00	0.00		$83,427	1
305 & 305A	Parcels with no Values	High	Low	N	0.00	0.00		$487,591	1
306	Parcels with no Values	Moderate	Low	N	0.00	0.00		$438,650	1
307	No Data Available	Moderate	High	N	0.00	0.00		$0.00*	1
308	No Data Available	High	High	N	0.00	0.00		$4,077,912	1
309	No Data Available	High	Low	N	0.00	0.00		$447,713	1

DRAFT

Pond	Existing Land Use	**Threatened or Endangered Species Impacts	***Hazardous Materials & Contamination Potential	Major Utility Conflict Potential (Y/N)	Floodplain Impacts (ac-ft)	Wetland & Surface Water Impacts (ac)		Total Pond Cost	Rankings
310	No Data Available	High	Low	N	0.00	0.00		$384,903	1
311	No Data Available	High	Low	N	0.00	0.00		$100,239	1
312	No Data Available	High	Low	N	0.00	0.00		$0.00*	1
313 & 313A	No Data Available	High	Low	N	0.00	0.00		$0.00*	1
Swale 313A	No Data Available	Low	Medium	N	0.00	0.00		$94,893	1
314	No Data Available	High	Low	N	0.00	0.00		$0.00*	1
315	No Data Available	High	Low	N	0.00	0.00		$0.00*	1
316	No Data Available	High	Low	N	0.00	0.00		$0.00*	1
317A	No Data Available & Vacant Residential	High	Low	Y	0.00	4.46	0.00	$1,698,766	1
317B	No Data Available	High	Low	Y	0.00	0.00		$0.00*	1
317C	No Data Available	Moderate	Low	Y	0.00	0.00		$9,174	1
318A	Vacant Government	High	Low	N	0.00	0.00		$888,574	1
318B	Vacant Commercial, Vacant Government & Residential	Low	Low	N	0.00	0.00		$1,173,120	1
FPC 300-A	Residential	Moderate	Medium	N	0.00	0.00		$493,519	1
FPC 300-B	Institutional	Moderate	Medium	N	0.00	0.00		$638,151	2

*Since there are no proposed changes to this pond, the total pond cost is $0.
**Refer to the Endangered Species Biological Assessment (ESBA) for more detailed information.
***Refer to the Contamination Screening Evaluation Report (CSER) for more detailed information.

DRAFT

PD&E Pond Siting Report

Basin 300 & FCP 300-A

(Report Text, Drainage Maps, & Pond Calculations)

[redacted]

5.4 Floodplains/Floodways

5.4.1 Basin 300

The Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) for Seminole and Volusia Counties. According to FEMA Map No. 12117C0135F, portions of the roadway and the proposed pond (Pond E in Permit No. 22434-1) within Basin 300 are located in the 100-year floodplain. Based on the FEMA floodplain lines, the roadway widening will impact the floodplain on both sides of the roadway. The widening of the westbound lanes will impact the floodplain from Station 2116+00 to 2124+00 and are located in Zone AE of the floodplain with an elevation of 66.00 ft NAVD. The widening of the eastbound lanes will impact the floodplain from Station 2106+50 to 2124+50 and are located in Zone AE of the floodplain with an elevation of 66.00 ft NAVD. The pond berm for Pond 300 will also impact the floodplain and is located in Zone AE of the floodplain with an elevation of 66.00 ft NAVD. Although the pond berm causes an impact to the floodplain, the area of cut between the existing ground and the design high water will result in the pond providing compensation for the floodplain impacts. The roadway impacts the floodplain for a total of 6.43 ac-ft. There are two (2) feasible alternatives for the floodplain compensation pond in this basin. After consideration from the public involvement meeting and meetings with property owners, it was determined that FPC Pond 300-A has the least amount of impacts.

5.4.1.1 FPC 300-A

The first alternative is FPC 300-A. FPC 300-A would impact one (1) parcel for a total right-of-way take of 1.15 ac from the 3.35 ac parcel. The right-of-way take would not impact the existing house or the billboard on this parcel. FPC 300-A is located east of I-4 from Station 2125+00 to 2126+50. The pond soils are classified in Hydrologic Soil Group A. The floodplain compensation pond is hydraulically connected to the floodplain. FPC 300-A is a modified alternative from Section 2 FEIS under the name Pond CP-1. **FPC 300-A is the recommended alternative for this basin.**

5.4.1.2 FPC 300-B

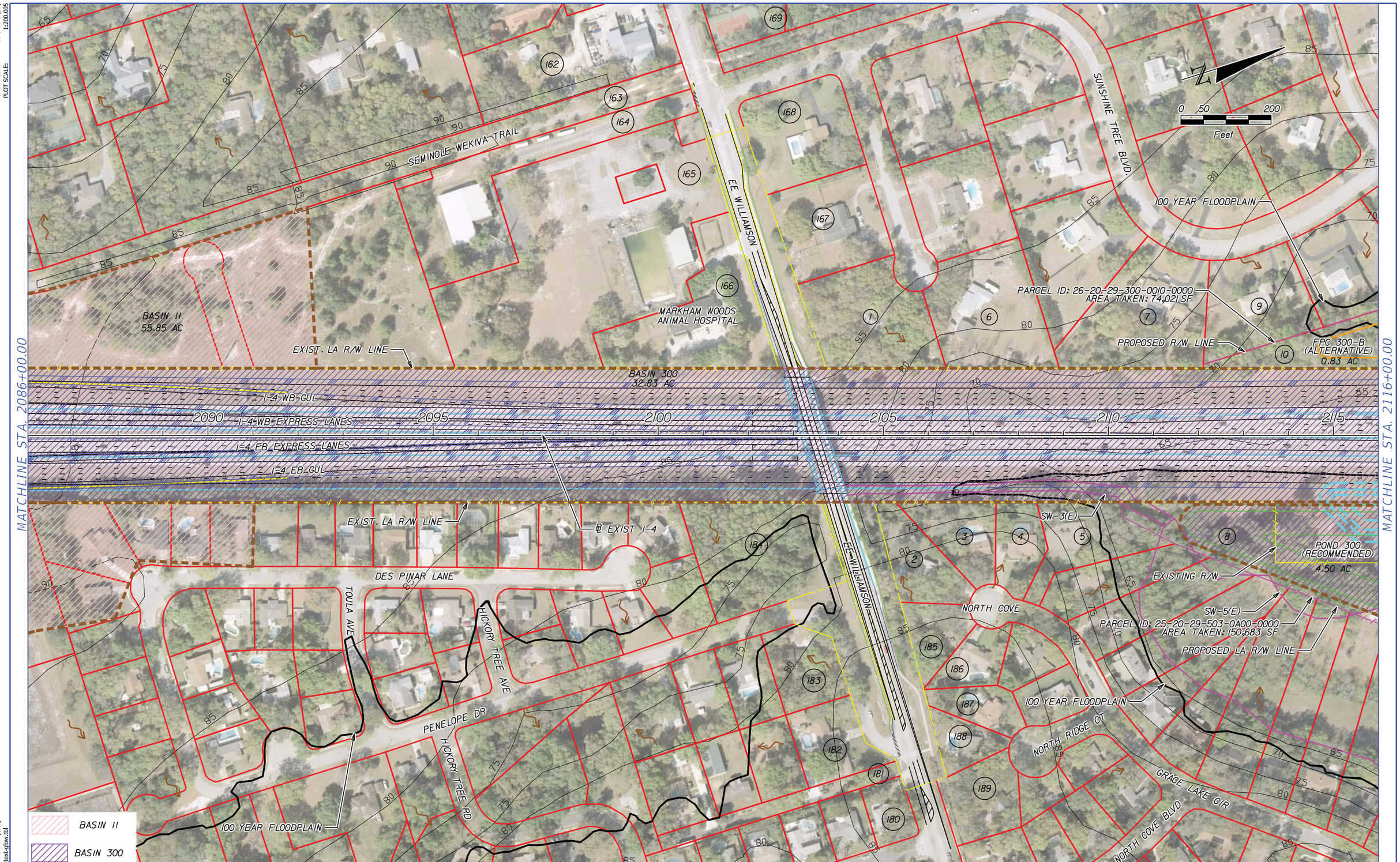
The second alternative is FPC 300-B. FPC 300-B would impact one (1) parcel for a total right-of-way take of 1.70 ac from the 11.02 ac parcel. There is a 20 foot buffer between the top of pond and the property line on the east and west sides, which allows some of the trees to remain. The right-of-way take would not impact the existing soccer fields north of the pond or the billboard on this parcel. FPC 300-B is located west of I-4 from Station 2114+00 to 2118+50. The pond soils are classified in Hydrologic Soil Group A/D. The floodplain compensation pond is hydraulically connected to the floodplain by an existing crossdrain located at Station 2120+87.

5.4.1.3 FPC 300-C

The third alternative is FPC 300-C. FPC 300-C is an option that was recommended by the Value Engineering Study due to the impacts to an existing billboard within the FPC 300-A parcel. The potential pond site is located within the floodplain of Lake Grace, just east of Pond 300. After receiving additional topographic survey for the site, it was determined that it is not a feasible option. The existing ground elevation for the majority of the potential site is lower than the floodplain elevation of 66.00 ft. NAVD. After this alternative was eliminated, FPC 300-A was reconfigured around the existing billboard as not to impact it.

[redacted]

DRAFT



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HNTB CORPORATION
610 CRESCENT EXECUTIVE CT
SUITE 400
LAKE MARY, FL 32746
(407) 805-0355
CERT. OF AUTH. NO. 6500

ENGINEER OF RECORD: SANAM RAI, P.E.
FL. REGISTRATION NO. 69089

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	432100-1-22-01

I-4 PD&E STUDY
DRAINAGE MAP
SEGMENT 3

SHEET NO.
A-7

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FDOT_text-glow.tbl

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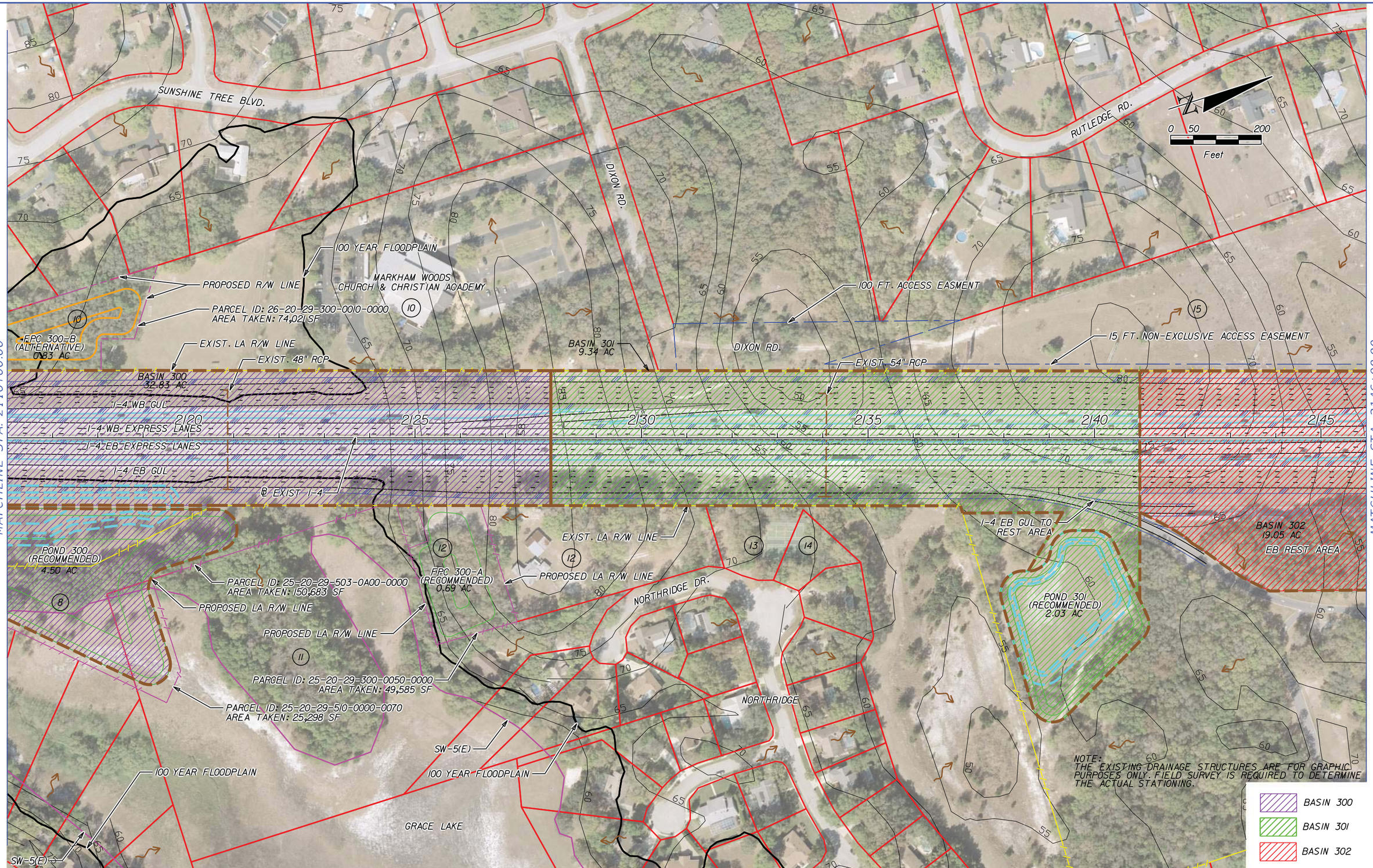

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HNTB CORPORATION
610 CRESCENT EXECUTIVE CT
SUITE 400
LAKE MARY, FL 32746
(407) 805-0355
CERT. OF AUTH. NO. 6500

ENGINEER OF RECORD: SANAM RAI, P.E.
FL. REGISTRATION NO. 69089

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	432100-1-22-01

I-4 PD&E STUDY DRAINAGE MAP SEGMENT 3

SHEET NO.
A-8

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FDOT_text-glow.tbl
PRINT DRIVER:
PEN TABLE:

APPENDIX C –

FLOODPLAIN CALCULATIONS

HNTB Corporation
610 Crescent Executive Court, Suite 400
Lake Mary, FL 32746

		date:
made by:	SR	16-Aug-16
checked by:	BJS	16-Aug-16
HNTB job #:	59219	

PROJECT: **I-4 PD&E - SEGMENT 3**

POND NAME: FPC 300-A

FLOODPLAIN COMPENSATION CALCULATIONS

WESTBOUND ROADWAY:

Station Limits: 2116+00 to 2124+00

Roadway Length: 800 ft

Roadway Width: 20 ft

100 YR Floodplain Elevation:	66.0 ft
Ave. Existing Ground Elevation:	62.0 ft
Elevation Difference:	4.0 ft

Required Compensation = Roadway Length * Roadway Width * Elevation Difference: 1.47 ac-ft

---

EASTBOUND ROADWAY:

Station Limits: 2106+50 to 2124+50

Roadway Length: 1800 ft

Roadway Width: 30 ft

100 YR Floodplain Elevation:	66.0 ft
Ave. Existing Ground Elevation:	62.0 ft
Elevation Difference:	4.0 ft

Required Compensation = Roadway Length * Roadway Width * Elevation Difference: 4.96 ac-ft

---

Total Roadway Required Compensation: 6.43 ac-ft

HNTB Corporation
610 Crescent Executive Court, Suite 400
Lake Mary, FL 32746

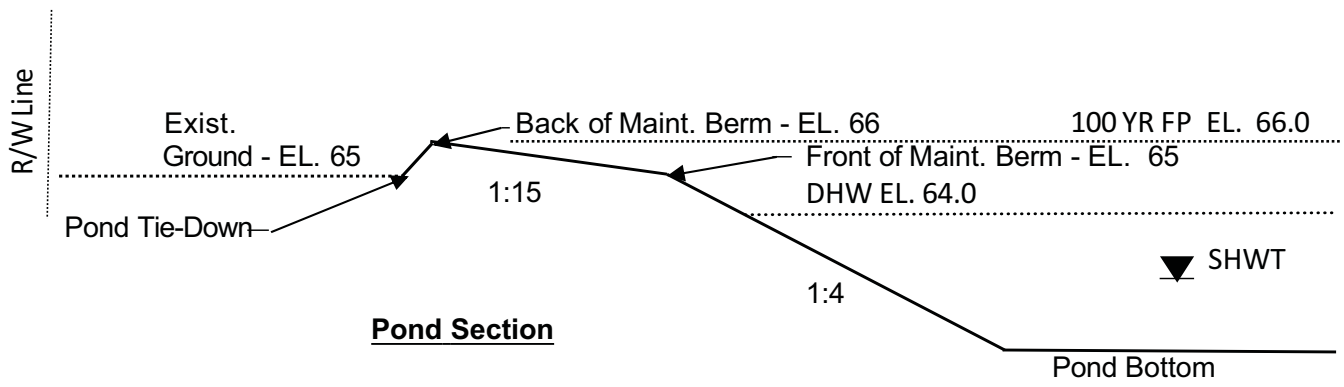
		date:
made by:	SR	16-Aug-16
checked by:	BJS	16-Aug-16
HNTB job #:	59219	

PROJECT: I-4 PD&E - SEGMENT 3

POND NAME: FPC 300-A

FLOODPLAIN COMPENSATION CALCULATIONS

EXISTING/PROPOSED TREATMENT POND:



Pond Section

Area Between Pond Tie Down and Front of Berm: 0.79 ac

Back of Berm Elevation: 66.0 ft
Existing Ground EL./Front of Berm EL.: 65.0 ft

Elevation Difference: 1.0 ft

Amount of Fill = Area * Elevation Difference: 0.79 ac-ft

Ave. Area Between Front of Berm and DHW from Pond: 3.61 ac

Existing Ground EL./Front of Berm EL.: 65.0 ft
DHW Elevation: 64.0 ft

Elevation Difference: 1.0 ft

Amount of Cut = Ave. Area * Elevation Difference: 3.61 ac-ft

Provided Pond Compensation = Amount of Cut - Amount of Fill: 2.82 ac-ft

HNTB Corporation
610 Crescent Executive Court, Suite 400
Lake Mary, FL 32746

		date:
made by:	SR	16-Aug-16
checked by:	BJS	16-Aug-16
HNTB job #:	59219	

PROJECT: **I-4 PD&E - SEGMENT 3**

POND NAME: FPC 300-A

FLOODPLAIN COMPENSATION CALCULATIONS

REQUIRED COMPENSATION

Required Roadway Compensation:	6.43 ac-ft
Provided Pond Compensation:	-2.82 ac-ft
Total Required Compensation:	3.61 ac-ft

PROPOSED FLOODPLAIN POND:

FPC 300-A

100 YR Floodplain Elevation: 66.0 ft
Avg. Existing Ground Elevation: 75.0 ft

Seasonal High Water Elevation: 55.0 ft

* Seasonal High Water El. From GEC Borings

Elevation	Area	Storage
66.00	0.69 ac	3.79 ac-ft
66.00	0.62 ac	3.79 ac-ft
65.00	0.56 ac	3.20 ac-ft
55.00	0.08 ac	0.00 ac-ft

Total Storage Provided by FPC Ponds: **3.79 ac-ft**

Total Compensation Needed: **3.61 ac-ft**

Additional Storage Provided: **0.18 ac-ft**

PD&E Pond Siting Report

Basin 303-A1

(Report Text, Drainage Maps)

5.3.6 Basin 303

Basin 303 begins at the high point north of the eastbound rest area at Station 2162+00 and continues north to the high point at Station 2189+00. The basin consists of the pond site and the full right-of-way. This section is located within the Wekiva Recharge Protection Basin and the Wekiva River Hydrologic Basin. The stormwater runoff from the roadway will be collected by roadside ditches and storm sewer systems that discharge to the pond. There are two alternatives for this basin. Pond 303-A1 is the least costly alternative and is the recommended alternative for this basin.

5.3.6.1 Pond 303-A1

The first alternative is Pond 303-A1. Pond 303-A1 is an existing pond (Pond I in Permit No. 22434-1) that will need to be expanded in order to accommodate the roadway widening. The pond was built under the I-4 Widening from SR 434 to Lake Mary Blvd. project (FPID No. 77160-3601). This pond alternative was evaluated under Section 2 FEIS as Pond LL-2. The existing plans were designed in 1929 NGVD. The existing pond would be expanded to 5.42 acres and the maintenance berm will be regraded and reduced to 15-foot. The proposed pond will impact one parcel. Refer to Table 5 for total right-of-way takes. The pond is located east of I-4 from Station 2176+00 to 2182+00. The pond soils are classified in Hydrologic Soil Group A. The pond will be designed as a dry retention pond. The pond discharges south to an outfall ditch within an FDOT drainage easement that flows to Lake Myrtle. Lake Myrtle is land-locked. Since the pond is located in a closed basin, additional treatment volume for OFW criteria is not required. Gopher tortoise burrows were observed on this pond site. The burrows will be relocated prior to site manipulation in the vicinity of the burrow. The pond construction cost located on Table 7, take this cost into account. For additional information on gopher tortoise impacts, refer to the ESBA provided by Stantec. **Pond 303-A1 is the recommended alternative for this basin.**

5.3.6.2 Ponds 303-A2 and 303-B2

The second alternative consists of two ponds, Ponds 303-A2 and 303-B2. Pond 303-A2 is an existing pond (Pond I in Permit No. 22434-1) where the maintenance berm will be regraded and reduced to 15-foot. The pond was built under the I-4 Widening from SR 434 to Lake Mary Blvd. project (FPID No. 77160-3601). This pond alternative was evaluated under Section 2 FEIS as Pond LL-2. The existing plans were designed in 1929 NGVD. The pond is located east of I-4 from Station 2176+00 to 2181+00. Pond 303-A2 will collect the runoff from the eastbound side of the roadway. Pond 303-B2 is a proposed pond on the west side of the roadway from Station 2180+50 to 2186+00. This pond alternative was evaluated under Section 2 FEIS as Pond LL-1. The pond will collect the runoff form the westbound side of the roadway. Pond 303-B2 will impact one (1) parcel, which has a billboard sign on it. Refer to Table 5 for total right-of-way takes. The pond soils are classified in Hydrologic Soil Group A. The ponds will be designed as dry retention ponds. The ponds will continue to discharge south to an outfall ditch within an FDOT drainage easement that flows to Lake Myrtle. Lake Myrtle is land-locked. Since the ponds are located in a closed basin, additional treatment volume for OFW criteria is not required. Several gopher tortoise burrows were observed on the pond sites. The burrows will be relocated prior to site manipulation in the vicinity of the burrow. The pond construction cost located on Table 7, take this cost into account. For additional information on gopher tortoise impacts, refer to the ESBA provided by Stantec.

[redacted]

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HNTB CORPORATION
610 CRESCENT EXECUTIVE CT
SUITE 400
LAKE MARY, FL 32746
(407) 805-0355
CERT. OF AUTH. NO. 6500

ENGINEER OF RECORD: SANAM RAI, P.E.
FL. REGISTRATION NO. 69089

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	432100-1-22-01

I-4 PD&E STUDY DRAINAGE MAP SEGMENT 3

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A-9

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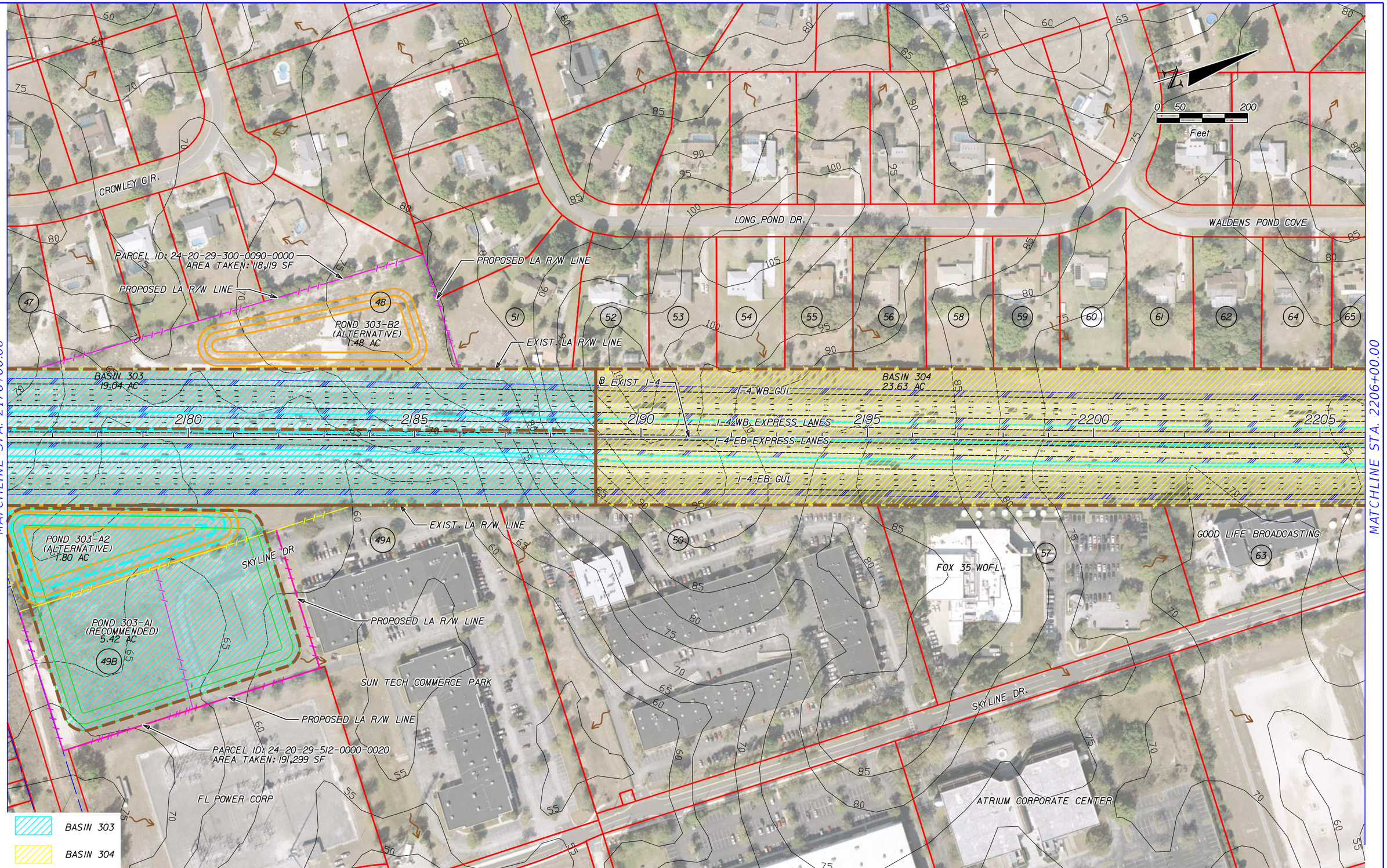

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HNTB CORPORATION
610 CRESCENT EXECUTIVE CT
SUITE 400
LAKE MARY, FL 32746
(407) 805-0355
CERT. OF AUTH. NO. 6500

ENGINEER OF RECORD: SANAM RAI, P.E.
FL. REGISTRATION NO. 69089

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	432100-1-22-01

I-4 PD&E STUDY DRAINAGE MAP SEGMENT 3

SHEET NO.
A-10

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PD&E Pond Siting Report

Basin 308

(Report Text, Drainage Maps, & Pond Calculations)

[redacted]

5.3.11 Basin 308

Basin 308 begins at Station 2305+00 and continues north to Station 2365+00. The basin limits for the proposed condition was extended to the north by 1,250 ft. Since there is not enough room for expansion near the ponds (Ponds 309, 309A and 310) to the north, the additional pavement added for the ultimate condition was sent to Pond 308. The basin consists of the pond site and the full right-of-way. The stormwater runoff from the roadway will be collected by storm sewer systems that discharge to the pond. There is only one alternative for this basin.

5.3.11.1 Pond 308

Pond 308 is an existing pond (Pond 3 in Permit No. 22124-2) that will be expanded to the north and east of the pond and the maintenance berm will be regraded and reduced to 15-foot. The pond was sized to store the additional area from the north that was not previously draining to it. The pond was built under the I-4 Widening from West of Lake Mary Blvd to West of SR 15 project (FPID No. 242598-1-52-01). The existing plans were designed in 1929 NGVD. This pond was shown as designed by others in the Section 2 FEIS. The pond is located east of I-4 from Station 2309+00 to 2321+76. The proposed pond will impact one (1) parcel. Refer to Table 5 for total right-of-way takes. The pond soils are classified in Hydrologic Soil Group A and A/D and is designed as a dry retention pond. The pond is located in a drainage easement so that the property owners can relocate the pond in the future if needed. The pond will continue to discharge west through the International Parkway storm sewer system, and is located in the Heathrow development property which is land-locked. Two active gopher tortoise burrows were observed on this pond site. The burrows will be relocated prior to site manipulation in the vicinity of the burrow. The pond construction cost located on Table 7, take this cost into account. For additional information on gopher tortoise impacts, refer to the ESBA provided by Stantec. **Pond 308 is the recommended alternative for this basin.**

[redacted]

[redacted]

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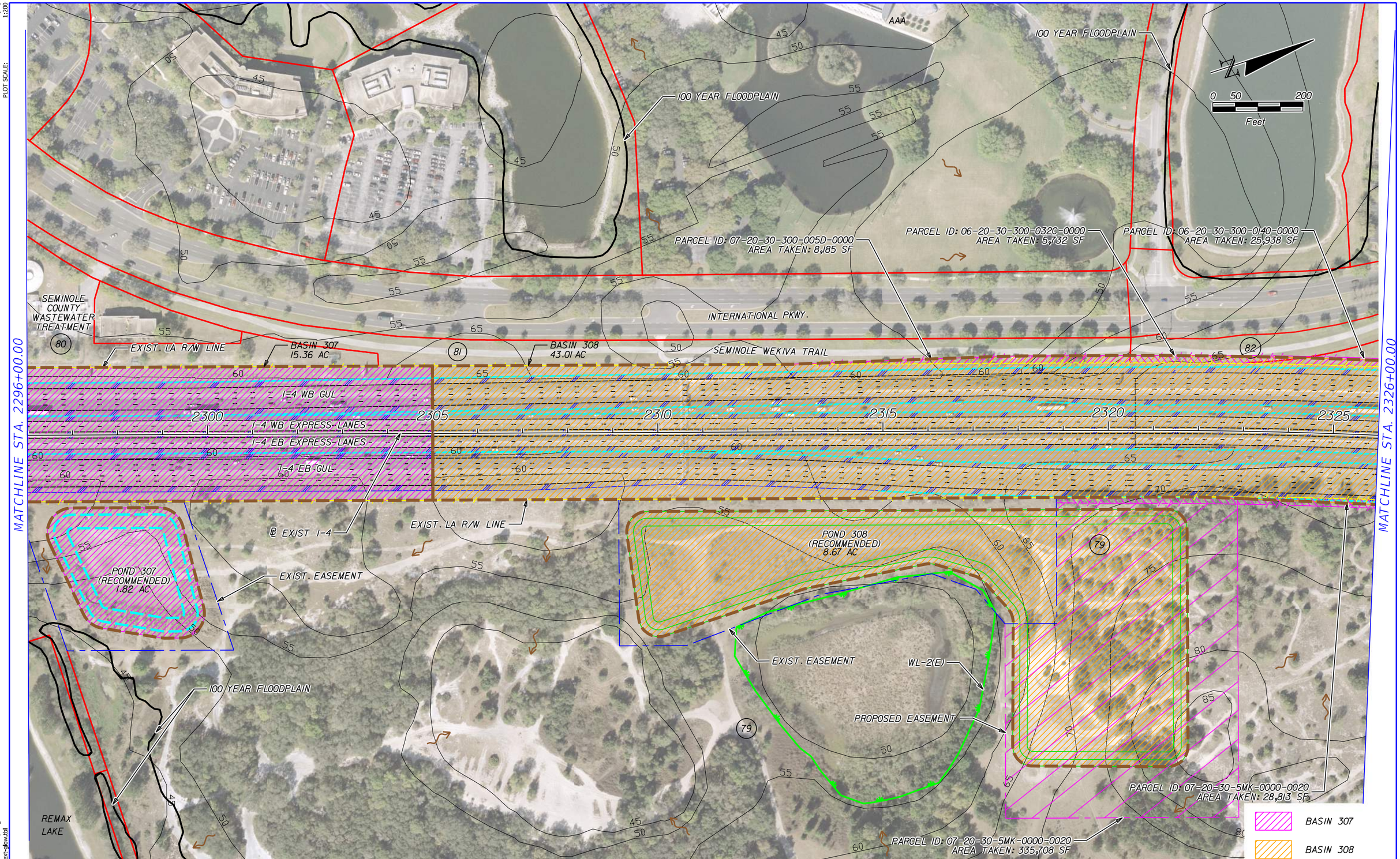

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HNTB CORPORATION
610 CRESCENT EXECUTIVE CT
SUITE 400
LAKE MARY, FL 32746
(407) 805-0355
CERT. OF AUTH. NO. 6500

ENGINEER OF RECORD: SANAM RAI, P.E.
FL. REGISTRATION NO. 69089

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	432100-1-22-01

I-4 PD&E STUDY DRAINAGE MAP SEGMENT 3

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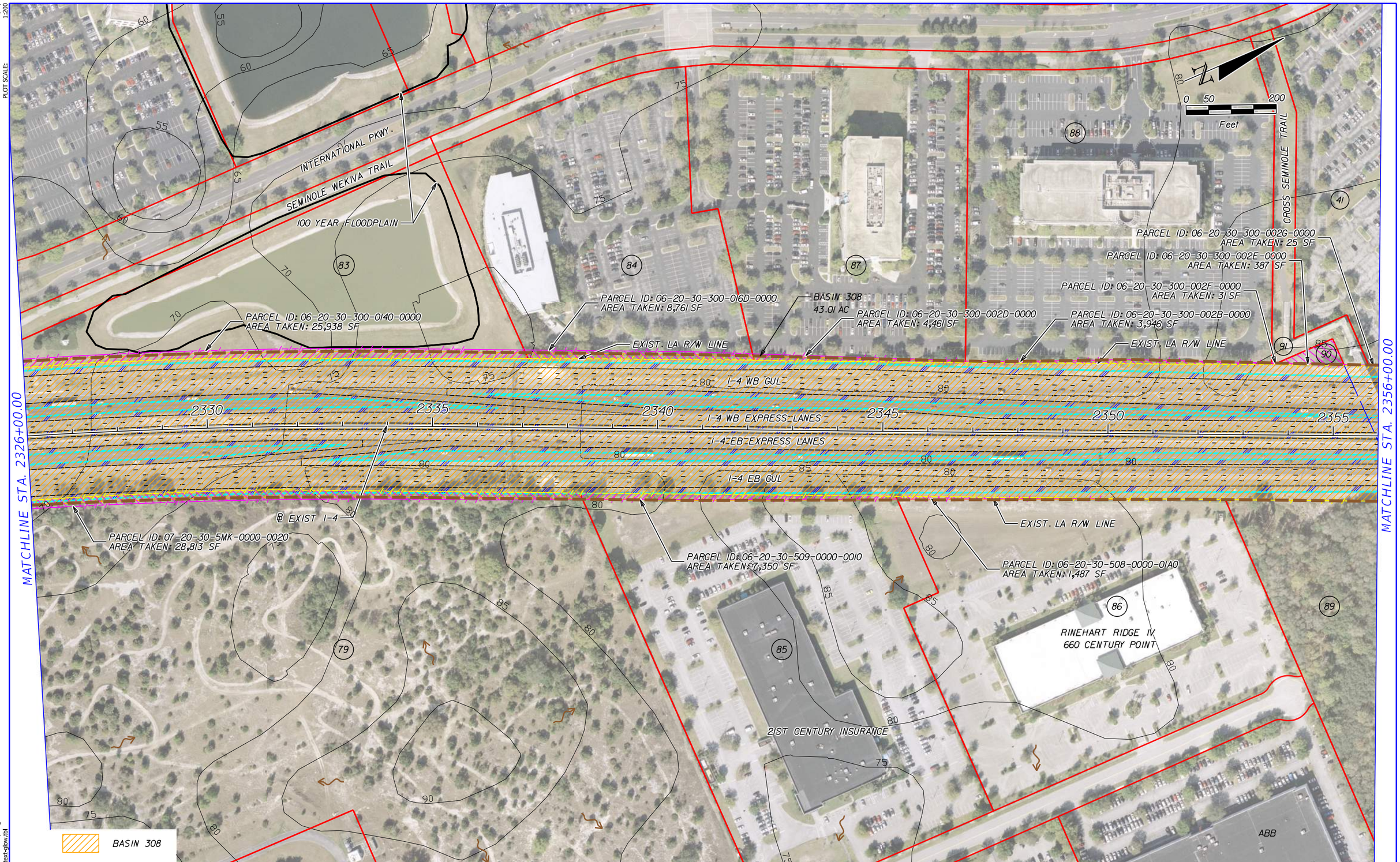

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HNTB CORPORATION
610 CRESCENT EXECUTIVE CT
SUITE 400
LAKE MARY, FL 32746
(407) 805-0355
CERT. OF AUTH. NO. 6500

ENGINEER OF RECORD: SANAM RAI, P.E.
FL. REGISTRATION NO. 69089

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	432100-1-22-01

I-4 PD&E STUDY DRAINAGE MAP SEGMENT 3

SHEET NO.
A-15

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drmprd10
16.5x10.6 (in.)
1:200

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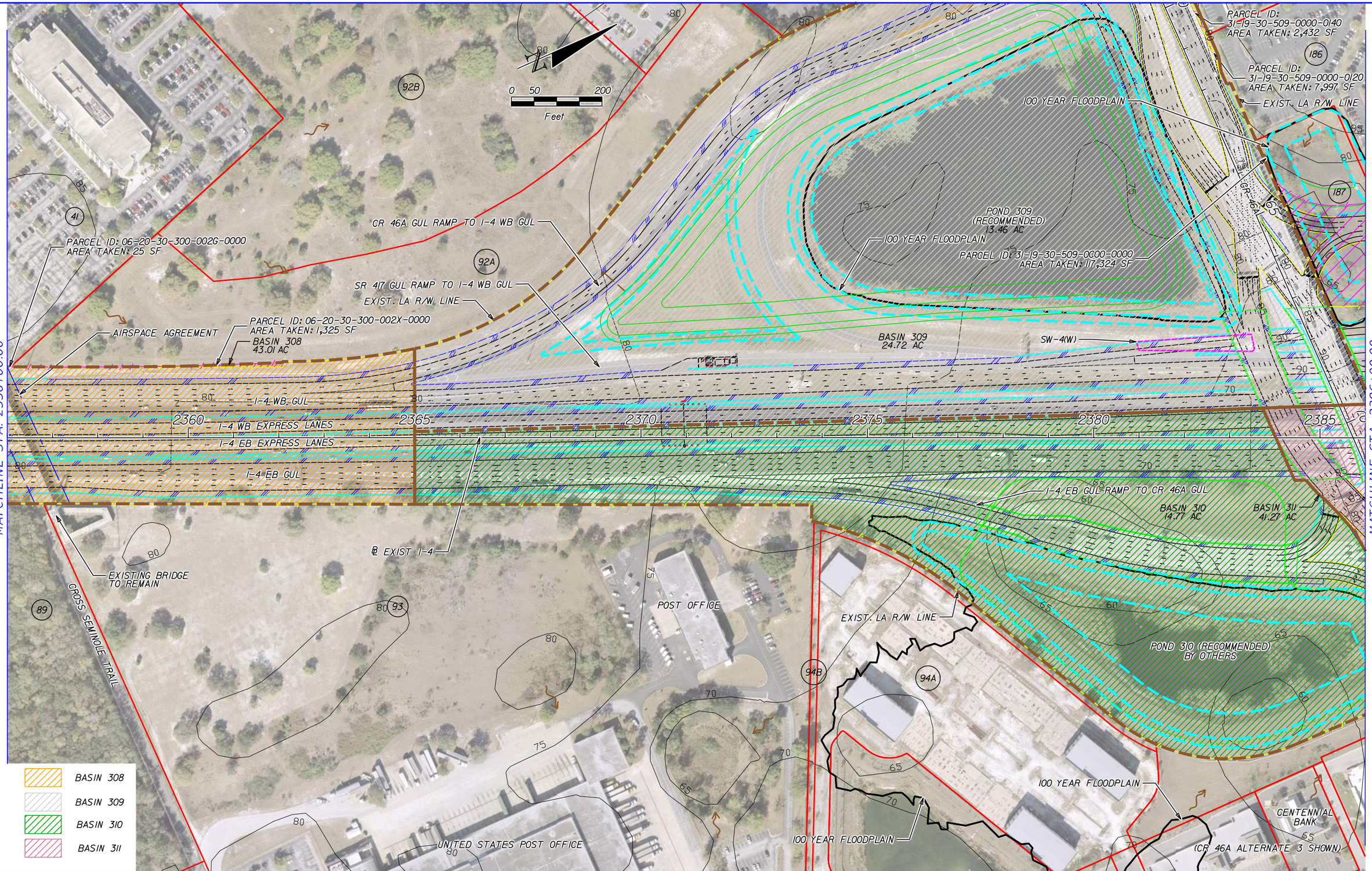

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HNTB CORPORATION
610 CRESCENT EXECUTIVE CT
SUITE 400
LAKE MARY, FL 32746
(407) 805-0355
CERT. OF AUTH. NO. 6500

ENGINEER OF RECORD: SANAM RAI, P.E.
FL. REGISTRATION NO. 69089

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	432100-1-22-01

I-4 PD&E STUDY
DRAINAGE MAP
SEGMENT 3

SHEET NO.
A-16

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PEN TABLE:

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HNTB Corporation
610 Crescent Executive Court, Suite 400
Lake Mary, FL 32746

		date:
made by:	LDP	26-Mar-15
checked by:	BJS	26-Mar-15
HNTB job #:	59219	

PROJECT: I-4 PD&E - SEGMENT 3

BASIN NAME: 308
POND NAME: 308 (Pond 3 from Permit No. 22124-2)

STATION LIMITS: From: 2305+00 To: 2365+00

Roadway Length: 6000 ft
R/W Width: 300 ft

EXISTING CONDITION

Note: Existing condition reflects the previous condition before the current pond was built.

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	12 ft	4	48 ft
Inside Shoulder	10 ft	2	20 ft
Outside Shoulder	8 ft	2	16 ft
		Total Impervious Width:	84 ft

Additional Impervious: 0.00 ac
(ramps, turn lanes, etc.)

Impervious Roadway Area: 11.57 ac
Pervious Roadway Area: 31.44 ac
Total Roadway Area: 43.01 ac

Pond Area:

Pervious Pond Area: 8.67 ac
Water Surface Area: 0.00 ac
Total Pond Area: 8.67 ac

Total Area:

Impervious Area: 11.57 ac
Pervious Area: 40.11 ac
Water Surface Area: 0.00 ac
Total Area: 51.68 ac

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious Area	---	98	11.57 ac	1133.9
Water Area	---	100	0.00 ac	0.0
Open Land (Grass cover 50% - 75%)	A	49	35.24 ac	1726.7
Open Land (Grass cover 50% - 75%)	A/D	84	4.87 ac	409.1
		Total:	51.68 ac	3269.7

CN = Total CN * Area / Total Area = **63.3**

Runoff:

Soil Capacity (S) = $\frac{1000}{CN} - 10 =$ 5.81 in

Precipitation (P) = 18.5 in (for 100yr/10dy storm event)

Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)} =$ **12.99 in**

HNTB Corporation
610 Crescent Executive Court, Suite 400
Lake Mary, FL 32746

		date:
made by:	LDP	26-Mar-15
checked by:	BJS	26-Mar-15
HNTB job #:	59219	

PROJECT: I-4 PD&E - SEGMENT 3

BASIN NAME: 308
POND NAME: 308 (Pond 3 from Permit No. 22124-2)

PROPOSED CONDITION

STATION LIMITS: From: 2305+00 To: 2365+00

Roadway Length: 6000 ft
R/W Width: 300 ft

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	12 ft	14	168 ft
Wall	2 ft	7	14 ft
Shoulder	12 ft	3	36 ft
Shoulder	6 ft	2	12 ft
Shoulder	10 ft	3	30 ft
		Total Impervious Width:	260 ft

Additional Impervious: 2.66 ac
(ramps, turn lanes, etc.)

Impervious Roadway Area: 38.47 ac
Pervious Roadway Area: 4.54 ac
Total Roadway Area: 43.01 ac

Pond Area:

Pervious Pond Area: 2.40 ac
Water Surface Area: 6.27 ac (At the Treatment Volume Stage)
Total Pond Area: 8.67 ac

Total Area:

Impervious Area: 38.47 ac
Pervious Area: 6.93 ac
Water Surface Area: 6.27 ac
Total Area: 51.68 ac

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious Area	---	98	38.47 ac	3770.3
Water Area	---	100	6.27 ac	627.4
Open Land (Grass cover 50% - 75%)	A	49	3.54 ac	173.6
Open Land (Grass cover 50% - 75%)	A/D	84	3.39 ac	284.8
		Total:	51.68 ac	4856.1

CN = Total CN * Area / Total Area = **94.0**

Runoff:

Soil Capacity (S) = $\frac{1000}{CN} - 10 =$ 0.64 in

Precipitation (P) = 18.5 in (for 100yr/10dy storm event)

Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)} =$ **17.75 in**

HNTB Corporation
610 Crescent Executive Court, Suite 400
Lake Mary, FL 32746

		date:
made by:	LDP	26-Mar-15
checked by:	BJS	26-Mar-15
HNTB job #:	59219	

PROJECT: I-4 PD&E - SEGMENT 3

BASIN NAME: 308
POND NAME: 308 (Pond 3 from Permit No. 22124-2)

POND SIZING : DRY RETENTION POND (CLOSED BASIN) - SJRWMD (W/ OUTFALL)

Required Treatment Volume:

1.25" over Impervious Area + 0.5" over Total Area= 4.01 ac-ft
1" over Total Area = 4.31 ac-ft

Treatment V_{req} = Largest of Trt. Vol. = 4.31 ac-ft

Required Attenuation Volume:

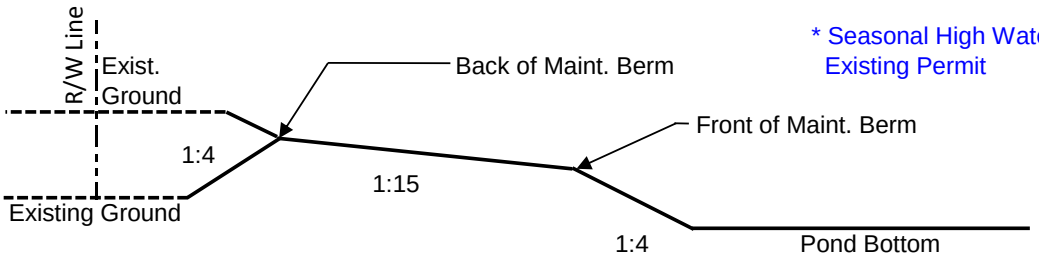
Total Runoff:
Q_{pre} = 12.99 in
Q_{post} = 17.75 in
ΔQ = 4.76 in

Attenuation V_{req} = ΔQ/12 x Total Area= 20.51 ac-ft

Maintenance Area Width = 15.0 ft @ 1:15
Pond Tie-In Width = 18.0 ft @ 1:4

Existing Ground Elevation = 55.0 ft
Seasonal High Water Elevation* = 47.16 ft
Lowest EOP Elevation = 60.0 ft

* Seasonal High Water El. From Existing Permit



Pond Section

Elevation	Description	Area	Dimensions		Storage
			Length	Width	
57.00	Back of Maintenance Berm	8.67 ac			47.66 ac-ft
56.00	Front of Maintenance Berm	7.44 ac			39.60 ac-ft
55.00	---	7.12 ac			32.32 ac-ft
52.00	---	6.64 ac			11.68 ac-ft
50.16	Pond Bottom	6.06 ac			0.00 ac-ft

Required Treatment Volume: 4.31 ac-ft
Required Treat. Vol. + Atten.: 24.81 ac-ft
Top El. Of Treatment Volume: 50.84
Top El. Of Treat. Vol. + Atten.: 53.91

Appendix B
Geotechnical Pond Boring Summary

Geotechnical and Environmental Consultants, Inc.

Table 11
POND SUMMARY TABLE
I-4 Segment 3 BTU
FPID:232592-4-32-01
GEC Project No. 3763G

Project Element	Boring No.	Northing	Easting	GSE (NAVD 88)	Boring Depth (ft)	Boring Type	Date Drilled	Field Perm Depth (ft)	Soil Type	Hydraulic Conductivity Kh (ft/day)	Enc. GWT Depth (ft)	Enc. GWT Elev. (NAVD88)	Enc. GWT Date	SHWT Depth (ft)	SHWT Elev. (NAVD88)	Bottom of Aquifer Elevation (NAVD88)	Porosity (%)
Pond 301	P301-1	1595366.233	536205.696	51.7	20	AB	11/16/15	---	---	---	7.1	+44.6	11/17/15	6.1	+45.6	+31.7	0.25
	P301-2	1595365.492	536328.918	51.4	20	AB	11/16/15	3 - 5	A-3	40	6.9	+44.5	11/17/15	5.9	+45.5	+31.4	
	P301-3	1595489.160	536116.121	52.3	20	AB	11/16/15	6 - 8	A-3	40	7.2	+45.1	11/17/15	6.2	+46.1	+32.3	
	P301-4	1595528.683	536265.808	51.0	20	AB	11/16/15	---	---	---	6.9	+44.1	11/17/15	5.9	+45.1	+31.0	
Pond 300	P300-1	1595521.052	536565.863	57.9	30	AB	02/14/17	9 - 11	A-7-6	0	17	+40.9	02/17/17	9.0	+48.9	+48.9	0.25
	P300-2	1595530.484	536741.886	57.2	30	AB	02/14/17	---	---	---	15	+42.2	02/17/17	10.0	+47.2	+46.2	
Pond 301A	P301A-1	1596030.172	536620.845	63.5	30	AB	02/17/17	10 - 12	A-3	2.2	10	+53.5	02/20/17	7.0	+56.5	+48.5	0.25
	P301A-2	1596409.601	536685.690	54.3	30	AB	02/17/17	---	---	---	6.8	+47.5	02/20/17	3.8	+50.5	+28.8	
Pond 302	P302-1	1596813.381	535947.946	56.5	20	AB	11/25/15	---	---	---	13.3	+43.2	11/29/15	12.0	+44.5	+36.5	0.25
	P302-2	1596867.508	536049.737	49.9	20	AB	11/25/15	7 - 9	A-2-4	23.4	6.7	+43.2	11/29/15	5.7	+44.2	+31.9	
	P302-3	1596988.403	535995.854	48.6	20	AB	11/25/15	2 - 4	A-3	1.0	4.8	+43.8	11/29/15	4.0	+44.6	+28.6	
	P302-4	1597062.595	536117.400	50.2	20	AB	11/25/15	---	---	---	7.0	+43.2	11/29/15	6.0	+44.2	+30.2	
Pond 303-A2	P303-A2-1	1599034.774	537192.597	55.3	20	AB	11/17/15	5 - 7	A-7-6	0.0	15.2	+40.1	11/18/15	14.0	+41.3	* +37.3	0.25
	P303-A2-2	1599135.971	537288.866	55.0	20	AB	11/17/15	---	---	---	14.6	+40.4	11/18/15	13.5	+41.5	* +41.0	
	P303-A2-3	1599393.030	537294.346	54.7	20	AB	11/17/15	7 - 9	A-3	32	13.1	+41.6	11/18/15	12.0	+42.7	+37.2	
Pond 303-B2	P303-B2-1	1599876.659	536931.659	77.4	30	AB	11/30/15	13 - 15	A-3	27.7	GNE @ 30.0	---	11/30/15	25.0	+52.4	* +47.4	0.25
	303-B2-2	1599589.629	536977.133	72.2	30	AB	02/17/17	12 - 14	A-3	7.0	18	+54.2	02/20/17	15.0	+57.2	+42.2	
Pond 304	P304-1	1603171.418	538041.150	55.4	20	AB	11/17/15	---	---	---	18	+37.4	11/29/15	16.5	+38.9	+43.4	0.25
	P304-2	1603320.310	537958.171	54.7	20	AB	11/17/15	---	---	---	17.1	+37.6	11/29/15	16.1	+38.6	+43.7	
	P304-3	1603359.102	538121.969	55.4	20	AB	11/24/15	6 - 8	A-3	40	18.3	+37.1	11/29/15	17.0	+38.4	+46.4	
	P304-4	1603472.795	538013.290	54.6	20	AB	11/24/15	2 - 4	A-2-4	3.6	16.0	+38.6	11/29/15	15.0	+39.6	+50.1	
	P304-5	1603537.478	538155.171	54.7	20	AB	11/24/15	---	---	---	17.5	+37.2	11/29/15	16.0	+38.7	+44.7	
Pond 305	P305-1	1605977.621	539354.144	40.4	20	AB	11/18/15	2 - 4	A-3	5.3	+0.4	+40.8	11/18/15	AGS	---	+20.4	0.25
	P305-2	1606168.802	539475.706	40.0	20	AB	11/18/15	---	---	---	+0.8	+40.8	11/18/15	AGS	---	+25.0	
	P305-3	1606294.019	539575.388	40.1	20	AB	11/19/15	---	---	---	+0.5	+40.6	11/19/15	AGS	---	+20.1	
	P305-4	1606427.898	539509.533	40.6	20	AB	11/19/15	---	---	---	+0.2	+40.8	11/19/15	AGS	---	+30.6	
	P305-5	1606350.252	539746.376	39.8	20	AB	11/19/15	8 - 10	A-2-4	0.6	+1.0	+40.8	11/19/15	AGS	---	+34.8	
	P305-6	1606583.455	539729.449	40.5	20	AB	11/19/15	---	---	---	+0.4	+40.9	11/19/15	AGS	---	+25.5	
	P305-7	1606773.015	539608.459	40.9	20	AB	11/19/15	4 - 6	A-3	1.8	0.0	+40.9	11/19/15	AGS	---	+22.4	
	P305-8	1606673.801	539937.632	39.7	20	AB	11/19/15	---	---	---	+1.0	+40.7	11/19/15	AGS	---	+19.7	
	P305-9	1606897.999	539851.265	39.9	20	AB	11/19/15	---	---	---	+0.7	+40.6	11/19/15	AGS	---	+19.9	
	P305-10	1607105.921	539724.594	40.8	20	AB	11/19/15	---	---	---	+0.4	+41.2	11/19/15	AGS	---	+20.8	
	P305-11	1606995.247	540112.545	40.8	20	AB	11/18/15	8 - 10	A-2-4	1.4	0.0	+40.8	11/19/15	AGS	---	+21.8	
	P305-12	1607578.132	539951.922	47.6	25	AB	02/20/17	5 - 7	A-3	20.1	10	+57.6	02/21/17	7.0	+40.6	+22.6	
Pond 306	P306-1	1608551.656	539784.661	45.8	20	AB	11/17/15	---	---	---	6.2	+39.6	11/19/15	5.2	+40.6	+25.8	0.25
	P306-2	1608671.910	539612.269	45.1	20	AB	11/17/15	3 - 5	A-3	0.7	6.9	+38.2	11/19/15	5.9	+39.2	+25.1	
	P306-3	1608701.886	539759.247	45.3	20	AB	11/17/15	---	---	---	6.6	+38.7	11/19/15	5.6	+39.7	+25.3	
	P306-4	1608822.477	539860.529	46.1	20	AB	11/17/15	6 - 8	A-3	4.2	5.8	+40.3	11/19/15	4.8	+41.3	+26.1	
	P306-5	1608403.879	539672.741	47.2	25	AB	02/20/17	2.5 - 5 10 - 12	A-2-4 A-2-4	4.9 1.0	10	+37.2	02/21/17	7.0	+40.2	+22.2	

Geotechnical and Environmental Consultants, Inc.

Table 11
POND SUMMARY TABLE
I-4 Segment 3 BTU
FPID:232592-4-32-01
GEC Project No. 3763G

Project Element	Boring No.	Northing	Easting	GSE (NAVD 88)	Boring Depth (ft)	Boring Type	Date Drilled	Field Perm Depth (ft)	Soil Type	Hydraulic Conductivity Kh (ft/day)	Enc. GWT Depth (ft)	Enc. GWT Elev. (NAVD88)	Enc. GWT Date	SHWT Depth (ft)	SHWT Elev. (NAVD88)	Bottom of Aquifer Elevation (NAVD88)	Porosity (%)
Pond 307	P307-1	1610553.388	540861.881	49.3	20	AB	11/16/15	5 - 7	A-2-4	1.6	10.6	+38.7	11/19/15	9.6	+39.7	* +29.3	0.25
	P307-2	1610554.987	540978.190	48.7	20	AB	11/16/15	---	---	---	10.8	+37.9	11/19/15	9.8	+38.9	+28.7	
	P307-3	1610669.903	540892.221	49.2	20	AB	11/16/15	---	---	---	11.0	+38.2	11/19/15	10.0	+39.2	+29.2	
	P307-4	1610671.532	541021.976	47.9	20	AB	11/16/15	3 - 5	A-2-4	0.3	10.2	+37.7	11/19/15	9.2	+38.7	+27.9	
	P307-5	1610602.317	540952.393	48.9	15	AB	03/06/17	3 - 5	A-2-4	0.9	12.8	+36.1	03/07/17	9.8	+39.1	+33.9	
Pond 308	P308-1	1611719.494	541226.218	52.1	20	AB	11/16/15	4 - 6	A-3	40	10.0	+42.1	11/17/15	9.0	+43.1	+42.1	0.25
	P308-2	1611788.485	541402.518	51.1	20	AB	11/30/15	---	---	---	10.5	+40.6	12/01/15	9.5	+41.6	+38.1	
	P308-3	1612043.045	541337.211	50.6	20	AB	11/15/15	---	---	---	7.9	+42.7	11/19/15	6.9	+43.7	+30.6	
	P308-4	1612279.179	541399.973	50.5	20	AB	11/16/15	3 - 5	A-3	40	7.5	+43.0	11/16/15	6.5	+44.0	+30.5	
	P308-5	1612544.237	541535.448	56.8	20	AB	11/16/15	---	---	---	8.4	+48.4	11/19/15	7.4	+49.4	+38.8	
	P308-6	1612461.853	541805.559	61.9	20	AB	11/16/15	7 - 9	A-3	36	14.3	+47.6	11/17/15	13.3	+48.6	+41.9	
	P308-7	1612652.805	541744.169	75.7	20	AB	11/17/15	---	---	---	18 c/o	+57.7	---	16.0	+59.7	+55.7	
	P308-8	1612789.661	541617.554	74.1	20	AB	11/16/15	6 - 8	A-2-4	34.7	16 c/o	+58.1	---	14.0	+60.1	+54.1	
	P308-9	1612680.771	541955.340	74.2	20	AB	11/17/15	---	---	---	15 c/o	+59.2	---	13.0	+61.2	+54.2	
Pond 308A	P308A-1	1613410.972	541801.863	72.3	25	AB	02/14/17	---	---	---	16.5	+55.8	02/17/15	13.5	+58.8	+56.3	0.25
	P308A-2	1613413.745	541977.278	71.7	25	AB	02/14/17	7 - 9	A-3	3.8	12.5	+59.2	02/17/17	10.0	+61.7	+56.7	
Pond 311	P311-1	1618909.182	544746.449	64.6	30	AB (on berm)	02/17/17	2 - 4	A-3	7.8	7	+57.6	02/21/17	**	**	+34.7	0.25
LOCH LEHMAN	LL-1	1619482.780	543920.497	64.3	25	AB (on berm)	02/17/17	2 - 4	A-3	12.8	6 c/o	+58.3	02/20/17	**	**	+39.3	0.25
Pond 317D	P317D-1	1634025.900	552639.967	10.9	10	AB	07/06/17	---	---	---	3.8	+4.9	07/07/17	2.4	+8.5	+5.9	0.25
	P317D-2	1633804.864	552582.164	12.5	10	AB	07/06/17	---	---	---	5.8	+6.5	07/07/17	4.0	+8.5	+7.0	
Pond 318B	P318B-1	1633603.631	552969.553	10.0	15	AB	02/17/17	---	---	---	5.5	+4.5	02/20/17	3.0	+7.0	+0.0	0.25

Notes: GNE = Ground Water Not Encountered Within the Depth Explored, AGS = At or Above the Ground Surface, --- = N/A, c/o = borehole caved off at depth

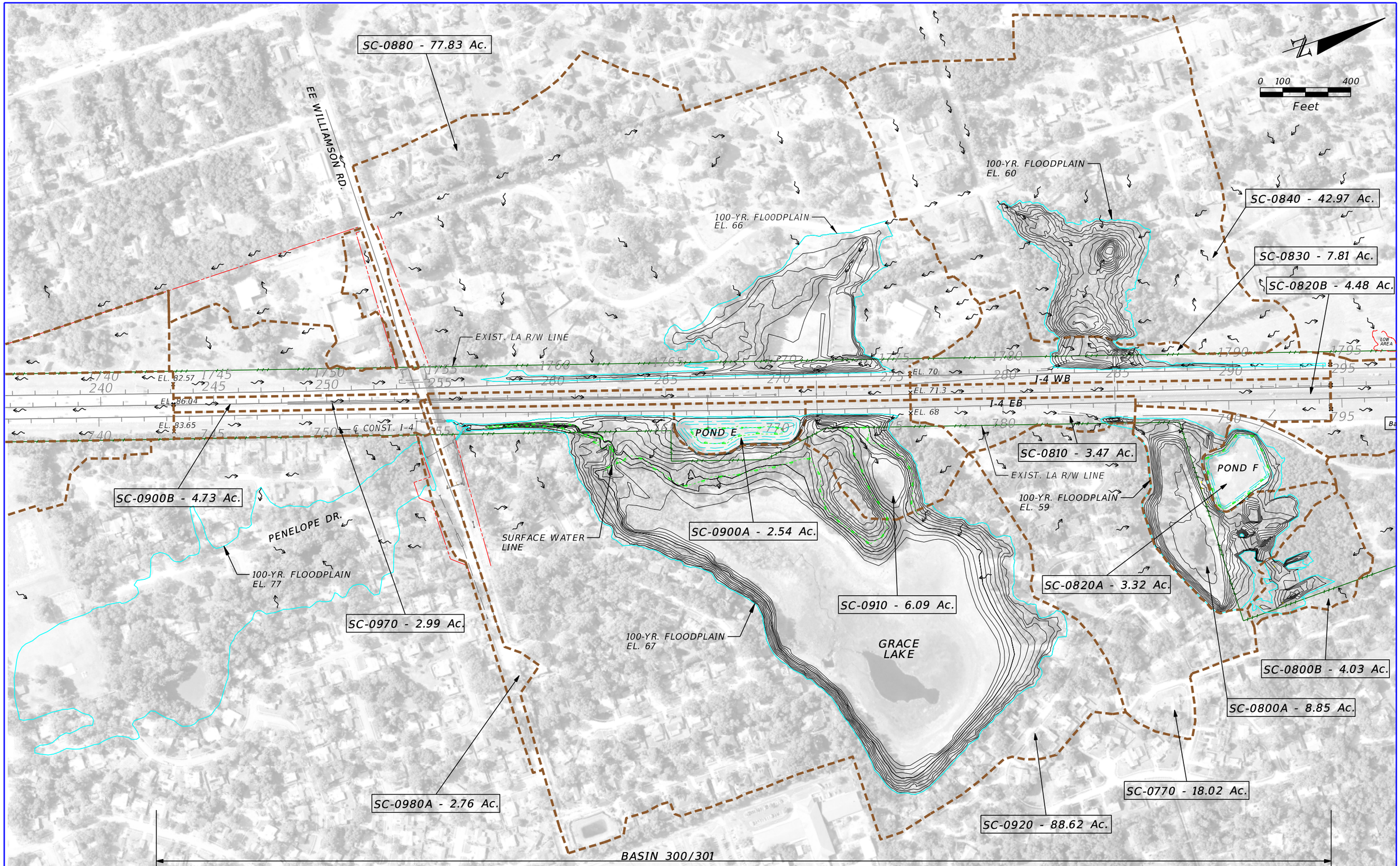
* Indicates that the value is only valid if the clayey soils are removed per the hatched cross section

** Seasonal high groundwater level controlled by the adjacent stormwater ponds and their control elevation

Appendix C
Basin Drainage Maps, Routing & Calculations

Basin 300 & 301

- Drainage Maps
- Basin and Pond Calculations
- Basin and Pond Routing (ICPR)
  - Pre-Development
  - Post-Development
- Grace Lake Stormwater Model
  - SJRWMD ERP for Grace Lake, March 2014
  - Existing Conditions for Grace Lake
  - Proposed Conditions for Grace Lake
- Existing Permits (Supporting Documentation)



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. QUARTETTI, P.E.
P.E. LICENSE NUMBER 45976
WSP USA Inc.
2202 N WEST SHORE BLVD., SUITE 300
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	242592-4-52-01

DRAINAGE MAP
EXISTING BASIN 300 & 301

SHEET NO.
1

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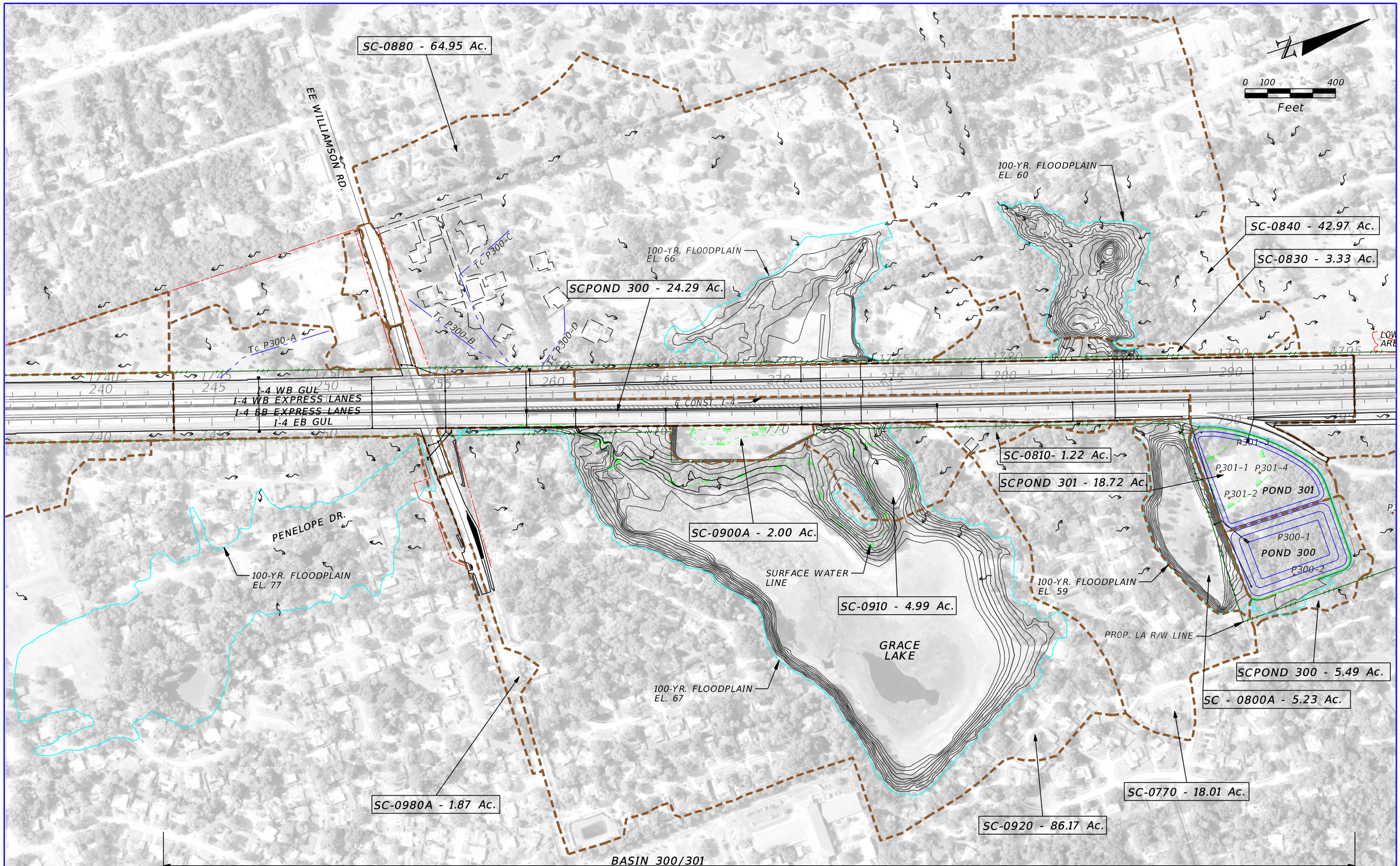

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TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	242592-4-52-01

DRAINAGE MAP
PROPOSED BASIN 300 & 301

SHEET NO.
2

PROJECT TITLE:	I-4 BtU Segment 3	**DATE:**	May 30, 2017
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	JLL
BASIN DESIGNATION:	Basin 300 & 301	**CHECKED BY:**	MB

I ***PRE DEVELOPMENT***

RUNOFF CURVE NUMBER (CN) CALCULATIONS

Basin 300 & 301

COMPUTED R/W AREA (Ac) 50.23

DETERMINE BASIN RUNOFF CURVE-NUMBER-CN

FDOT R/W Area in Basin 300 & 301

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA	PRODUCT
Impervious				
I-4 & EE Williams Rd.	-	98	16.70	1636.60
Sub-total for Impervious Land Uses			16.70	1636.60
Pervious				
Open Space, Fair Condition	A	49	11.32	554.68
Open Space, Fair Condition	A	51	5.59	285.09
Open Space, Fair Condition	D / B/D	80	16.62	1329.60
Sub-total for Pervious Land Uses			33.53	2169.37
		TOTAL	50.23	3805.97

COMPOSITE CN 75.8

ESTIMATED RUNOFF VOLUME

SUMMARY TABLE:

DESIGN STORM	Agency	P [in]	S [in]	R [in]	V[R] [ac-ft]
25 yr / 96 hr	SJRWMD	11.20	3.20	8.11	33.93
100 yr / 10-day	FDOT	18.50	3.20	15.15	63.41

SAMPLE CALCULATION:

1) DETERMINE SOIL STORAGE - S

S= (1000/CN) - 10 — SOIL STORAGE (inches) S 3.20

2) DETERMINE RUNOFF - R

P = 18.50

R = (P - 0.2*S)^2 / (P + 0.8*S) — RUNOFF (inches) R 15.15

3) DETERMINE RUNOFF VOLUME - V[R]

V[R] = R / 12 * AREA — RUNOFF (ac-ft) V[R] 63.41

PROJECT TITLE:	I-4 BtU Segment 3	**DATE:**	May 30, 2017
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	JLL
BASIN DESIGNATION:	Basin 300 & 301	**CHECKED BY:**	MB

II ***POST DEVELOPMENT***
RUNOFF CURVE NUMBER (CN) CALCULATIONS
Basin 300 & 301

COMPUTED R/W AREA (Ac) 50.96

DETERMINE BASIN RUNOFF CURVE-NUMBER-CN

Basin 300

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA	PRODUCT
Impervious				
I-4 Pavement Draining to Pond 300	-	98	17.77	1741.46
Pervious				
Open Space, Fair Condition	A	49	0.88	43.12
Open Space, Fair Condition	A	51	5.59	285.09
Open Space, Fair Condition	D / B/D	80	3.43	274.40
Sub-total for Pervious Land Uses			9.90	602.61
Pond 300 (Water)	-	100	2.11	211.00
Sub-total for Pond Land Uses			2.11	211.00
		TOTAL	29.78	2555.07

COMPOSITE CN	**85.8**

Basin 301

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA	PRODUCT
Impervious				
I-4 Pavement Draining to Pond 301	-	98	13.62	1334.76
Pervious				
Open Space, Fair Condition	A	49	1.69	82.81
Open Space, Fair Condition	D / B/D	80	3.41	272.80
Sub-total for Pervious Land Uses			5.10	355.61
		TOTAL	18.72	1690.37

COMPOSITE CN	**90.3**

Remaining Area within the FDOT R/W

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA	PRODUCT
Impervious				
EE Williams West of I-4	-	98	0.73	71.54
EE Williams East of I-4	-	98	0.89	87.22
Sub-total for Impervious Land Uses			1.62	158.76
Pervious				
Open Space, Fair Condition - EE Williams West of I-4	A	49	0.12	5.88
Open Space, Fair Condition - EE Williams East of I-4	D / B/D	80	0.72	57.60
Sub-total for Pervious Land Uses			0.84	63.48
		TOTAL	2.46	222.24

COMPOSITE CN	**90.3**
BASIN COMPOSITE CN	**87.7**

PROJECT TITLE:	I-4 BtU Segment 3	**DATE:**	May 30, 2017
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	JLL
BASIN DESIGNATION:	Basin 300 & 301	**CHECKED BY:**	MB

ESTIMATED RUNOFF VOLUME

SUMMARY TABLE:

DESIGN STORM	Agency	P [in]	S [in]	R [in]	V[R] [ac-ft]
25 yr / 96 hr	SJRWMD	11.20	1.41	9.67	41.08
100 yr / 10-day	FDOT	18.50	1.41	16.91	71.82

SAMPLE CALCULATION:

1) DETERMINE SOIL STORAGE - S

S= (1000/CN) - 10

SOIL STORAGE (inches)	S	1.41

2) DETERMINE RUNOFF - R

P = 18.50

R = (P - 0.2*S)^2 / (P + 0.8*S)

RUNOFF (inches)	R	16.91

3) DETERMINE RUNOFF VOLUME - V[R]

V[R] = R / 12 * AREA

RUNOFF (ac-ft)	V[R]	71.82

PROJECT TITLE:	I-4 BtU Segment 3	**DATE:**	May 30, 2017
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	JLL
BASIN DESIGNATION:	Basin 300 & 301	**CHECKED BY:**	MB

III ***GEOTECHNICAL INFORMATION***

Pond 300

Estimated Seasonal High Water Table (SHWT)	
	Estimated SHWT (Ft)
Pond Borings (Avg. of Borings P300-1 to P300-2)	48.05
Estimated SHWT	49.0

Pond 301

Estimated Seasonal High Water Table (SHWT)	
	Estimated SHWT (Ft)
Existing Permit No. 22434-1 Pond F	48.0
Pond Borings (Avg. of Borings P301-1 to P301-4)	45.58
SHWT Used	45.6

IV ***SUMMARY OF REQUIRED ATTENUATION AND TREATMENT VOLUME***
Basin 300 & 301

REQUIRED ATTENUATION CACULATION

PRE-DEVELOPED CONDITION		**POST-DEVELOPED CONDITION**	
AREA (AC):	50.23	AREA (AC):	50.96
CN:	75.8	CN:	87.7
IMPERVIOUS AREA (AC):	15.94	IMPERVIOUS AREA (AC):	33.03
PERVIOUS AREA (AC):	34.29	PERVIOUS AREA (AC):	17.93
		NEW IMPERVIOUS AREA (AC):	17.09

SUMMARY OF WATER MANAGEMENT DISTRICT ATTENUATION ESTIMATES

AGENCY	DESIGN STORM	RUNOFF VOLUME V[R] PRE [AC-FT]	POST [AC-FT]	TOTAL RETENTION [AC-FT]
SJRWMD	25 yr / 96 hr	33.93	41.08	**7.15**
FDOT	100 yr / 10-day	63.41	71.82	**8.42**

Basin 300

Required Treatment Volume Calculation		AC-FT	Basin Area	
Wet Detention Treatment Req. =	1" x Basin Area	2.48	29.78	
or	2.5" x Impervious Area	3.70		***<Controls>***

Basin 301

Required Treatment Volume Calculation		AC-FT	Basin Area	
Dry Retention Treatment Req. =	1" x Basin Area	1.56	18.72	
or	1.25" x Impervious Area + 0.5" x Basin Area	2.20		***<Controls>***

Required Wekiva Basin Most Effective Recharge Volume	**AC**	**AC-FT**	
Pre Devp. A Soils =	16.91		
Post Devp. A Soils =	8.28		
Post Devp. Impervious Area - Pre Devp. Impervious Area =	8.63		
Wekiva Recharge Area required by previous project (Basin E) =	1.92		Permit No. 22434-1 Pond E
Wekiva Recharge Area required by previous project (Basin F) =	1.79		Permit No. 22434-1 Pond F
Sum of Current + prevous project impervous area added =	12.34		
3" x Total Impervous Area on A Soils =		**3.09**	

PROJECT TITLE:	I-4 BtU Segment 3	**DATE:**	May 30, 2017
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	JLL
BASIN DESIGNATION:	Basin 300 & 301	**CHECKED BY:**	MB

Required Closed Basin Volume - SJRWMD 25-yr / 96-hr	**AC-FT**	
Pre Devp. Runoff Volume	33.93	
Post Devp. Runoff Volume	41.08	
Current Project Delta	7.15	
Previous Project Required Volume	1.67	Permit No. 22434-1 for Pond E
Previous Project Required Volume	1.29	Permit No. 22434-1 for Pond F
Current Project Delta + Prevous Project Required Volume	**10.11**	

Required Closed Basin Volume - FDOT 100-yr / 10-day	**AC-FT**	
Pre Devp. Runoff Volume	63.41	
Post Devp. Runoff Volume	71.82	
Current Project Delta	8.42	
Previous Project Required Volume	2.15	Permit No. 22434-1 for Pond E
Previous Project Required Volume	1.80	Permit No. 22434-1 for Pond F
Current Project Delta + Prevous Project Required Volume	**12.37**	

V ***PROVIDED TREATMENT & ATTENUATION VOLUME CALCULATIONS***

Pond 300

POND STAGE, AREA & STORAGE			
DESCRIPTION	**STAGE (FT)**	**AREA (AC)**	**CUMMULATIVE STORAGE (AC-FT)**
Pond Bottom Elevation	40.50	1.25	0.00
SHWT Elevation	49.00	2.11	14.28
Water Quality Treatment Elevation	50.67	2.32	17.98
Top of Bank Elevation	57.00	3.11	35.16
Top of Berm Elevation	57.00	3.56	35.16

Provided Treatment Volume Calculation	AC-FT
Treatment Volume Provided = Volume between SHWT El. and the Water Quality Treatment El.	3.70

Pond 301

POND STAGE, AREA & STORAGE			
DESCRIPTION	**STAGE (FT)**	**AREA (AC)**	**CUMMULATIVE STORAGE (AC-FT)**
Pond Bottom Elevation	52.00	2.83	0.00
Water Quality Treatment Elevation	52.76	2.94	2.20
Wekiva Recovery El. (Wekiva Criteria)	53.07	2.98	3.09
FDOT Closed Basin El. (7 day - half Vol)	54.08	3.12	6.18
SJRWMD Closed Basin El. (14-day)	55.30	3.29	10.11
Weir Crest El. (FDOT Closed Basin)	55.98	3.39	12.37
Top of Bank Elevation	57.00	3.53	15.90
Top of Berm Elevation	57.00	3.21	15.90

Provided Treatment Volume Calculation	AC-FT
Treatment Volume Provided = Volume between Pond Bottom El. and the Water Quality Treatment El.	2.20

PROJECT TITLE:	I-4 BtU Segment 3	**DATE:**	May 30, 2017
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	JLL
BASIN DESIGNATION:	Basin 300 & 301	**CHECKED BY:**	MB

VI ***PERMANENT POOL VOLUME CALCULATIONS FOR POND 300***

$$PPV = \frac{DA * C * R * RT}{WS * CF}$$

PPV: Permanent Pool Volume (ac-ft)
DA: Drainage Area to the Pond (ac)(excluding water body)
C: Drainage Area Runoff Coefficient
R: Wet Season Rainfall Depth (in)(Figure 29-1)
RT: Residence Time (days)
WS: Length of Wet Season (June - October = 153 days)(days)
CF: Conversion Factor (12 in/ft)

Special Basin: N/A
Additional 50% (7-days) for OFW or Class I or Class II or Class III

DA =	29.78	acres	
C =	0.83		
R =	31	inches	(See Figure 26-1, SJRWMD)
WS =	153	days	
RT =	14	days	
Non-Littoral Zone Option RT =	7	days	
Special Water RT =	0	days	(OFW or Class I or Class II or Class III)
Design RT =	21	days	

Required Permanent Pool Volume:

PPV =	8.805	ac-ft
	383543	cu.ft

Permanent Pool Volume Check:

Proposed Orifice Invert Elevation:	49.00	feet
Actual Pond Volume:	14.28	ac-ft
	622037	cu.feet
Required Permanent Pool Volume:	8.805	ac-ft
Actual Permanent Pool Volume:	14.280	ac-ft
Additional Permanent Pool Volume:	5.475	ac-ft

Exceeds Requirement

POND DEPTH

Pond Depth Criteria:
Maximum Pond Depth Shall Not Exceed 12 feet

Control Elevation:	49.00	feet
Pond Bottom Elevation:	40.50	feet
Pond Depth:	8.50	feet

Does Not Exceed Maximum Pond Depth Requirement

PROJECT TITLE:	I-4 BtU Segment 3	**DATE:**	May 30, 2017
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	JLL
BASIN DESIGNATION:	Basin 300 & 301	**CHECKED BY:**	MB

PERMANENT POOL MEAN DEDPTH

Mean Depth Equation:

$$\text{Mean Depth} = \frac{\text{Pond Volume at Control Elevation}}{\text{Pond Area at Control Elevation}}$$

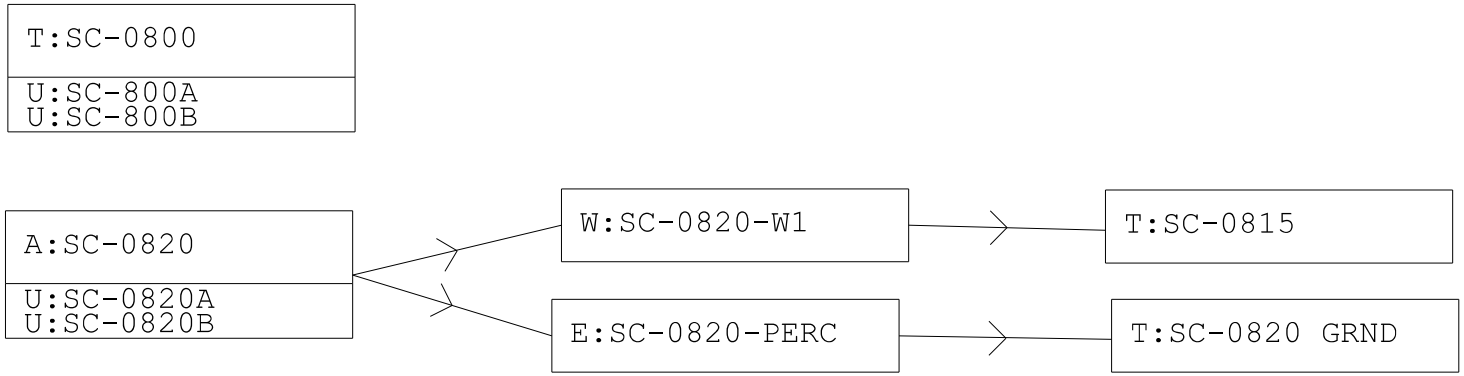
Mean Depth Criteria:

Permanent Pool Depth Shall Vary Between 2 and 8 feet

Control Elevation:	49.00	feet
Volume at Control Elevation:	14.28	ac-ft
Area at Control Elevation:	2.11	ac
Mean Depth:	6.77	feet

Meets Mean Depth Requirement

Pre Development



FLIGHT DATE: 2015

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

PARSONS BRINCKERHOFF, INC.
2202 N WEST SHORE BLVD., SUITE 300
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	242592-4-52-01

ICPR LINK NODE DIAGRAM
EXISTING BASIN 300-301

SHEET NO.
N/A

AndersonT 4/27/2017 11:02:15 AM T:\Sys\Projects\24259245201\drainage\REPORT\ICPR Link_Node\Basin300_301_Exist_Link

BASIN 300 & 301
Existing Conditions Output

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
SC-0800	BASIN300&301	100Y240H	11.02	52.00	52.00	0.00	0	183.91	7.91	0.00	0.00
SC-0800	BASIN300&301	SJRWMD	11.00	52.00	52.00	0.00	0	60.00	51.81	0.00	0.00
SC-0815	BASIN300&301	100Y240H	0.00	55.00	56.00	0.00	0	216.05	0.19	0.00	0.00
SC-0815	BASIN300&301	SJRWMD	0.00	55.00	56.00	0.00	0	0.00	0.00	0.00	0.00
SC-0820	BASIN300&301	100Y240H	216.05	55.05	56.00	0.00	63275	183.91	4.86	39.99	2.14
SC-0820	BASIN300&301	SJRWMD	64.27	53.30	56.00	0.00	50720	60.08	28.37	61.21	5.84
SC-0820 GRND	BASIN300&301	100Y240H	0.00	45.60	45.60	0.00	0	39.99	2.14	0.00	0.00
SC-0820 GRND	BASIN300&301	SJRWMD	0.00	45.60	45.60	0.00	0	61.21	5.84	0.00	0.00

Existing Discharge Rates:
Basin 300
Q-FDOT (100-yr/240-hr)= 7.91 cfs
Q-SJRWMD (25-yr/96-hr)= 51.81 cfs

Basin 301
Q-FDOT (100-yr/240-hr)= 0.19 cfs
Q-SJRWMD (25-yr/96-hr)= 0.00 cfs

```
==========================================================================================
==== Basins ==============================================================================
==========================================================================================

         Name: SC-0820A                Node: SC-0820                Status: Onsite
        Group: BASIN300&301            Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File: Sjrwmd96           Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200               Time of Conc(min): 11.00
             Area(ac): 3.320                  Time Shift(hrs): 0.00
          Curve Number: 73.00             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Area draining directly to Existing Pond F

------------------------------------------------------------------------------------------
         Name: SC-0820B                Node: SC-0820                Status: Onsite
        Group: BASIN300&301            Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File: Sjrwmd96           Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200               Time of Conc(min): 30.00
             Area(ac): 4.480                  Time Shift(hrs): 0.00
          Curve Number: 81.00             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

I-4 Roadway Area draining directly to Existing Pond F

------------------------------------------------------------------------------------------
         Name: SC-800A                 Node: SC-0800                Status: Onsite
        Group: BASIN300&301            Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File: Sjrwmd96           Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200               Time of Conc(min): 13.00
             Area(ac): 8.850                  Time Shift(hrs): 0.00
          Curve Number: 75.00             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Northridge Depressional Area

------------------------------------------------------------------------------------------
         Name: SC-800B                 Node: SC-0800                Status: Onsite
        Group: BASIN300&301            Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File: Sjrwmd96           Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200               Time of Conc(min): 12.00
             Area(ac): 4.030                  Time Shift(hrs): 0.00
          Curve Number: 70.00             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

I-4 Rest Area - Wooded Area

==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

      Name: SC-0800            Base Flow(cfs): 0.000          Init Stage(ft): 49.000
     Group: BASIN300&301                                      Warn Stage(ft): 52.000
      Type: Time/Stage

Depressional Area in Northridge Community

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          49.000
          11.00          52.000
          16.00          52.000
          24.00          52.000
          96.00          49.000

------------------------------------------------------------------------------------------
      Name: SC-0815            Base Flow(cfs): 0.000          Init Stage(ft): 55.000
     Group: BASIN300&301                                      Warn Stage(ft): 56.000
      Type: Time/Stage

Depressional area on east side of I-4 R/W at the upstream end of the existing  54" Crossdrain under I-4.
```

```
      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          55.000
          96.00          55.000

-----------------------------------------------------------------------------------------
      Name: SC-0820             Base Flow(cfs): 0.000          Init Stage(ft): 52.000
     Group: BASIN300&301                                       Warn Stage(ft): 56.000
      Type: Stage/Area

Existing Pond F - FDOT Permit No. 22434-1 (Used same node name as the Grace Lake Model)

      Stage(ft)        Area(ac)
--------------- ---------------
         52.000          1.0600
         53.000          1.1400
         54.000          1.2200
         55.000          1.4400
         56.000          1.6700

-----------------------------------------------------------------------------------------
      Name: SC-0820 GRND        Base Flow(cfs): 0.000          Init Stage(ft): 45.600
     Group: BASIN300&301                                       Warn Stage(ft): 45.600
      Type: Time/Stage



      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          45.600
         336.00          45.600

=========================================================================================
==== Weirs ==============================================================================
=========================================================================================

         Name: SC-0820-W1          From Node: SC-0820
        Group: BASIN300&301          To Node: SC-0815
         Flow: Both                    Count: 1
         Type: Vertical: Mavis      Geometry: Trapezoidal

            Bottom Width(ft): 5.00
        Left Side Slope(h/v): 6.00
       Right Side Slope(h/v): 6.00
                  Invert(ft): 55.000
       Control Elevation(ft): 55.000
      Struct Opening Dim(ft): 9999.00
                                                TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

Existing Pond F Weir

=========================================================================================
==== Percolation Links ===================================================================
=========================================================================================

         Name: SC-0820-PERC        From Node: SC-0820                 Flow: Both
        Group: BASIN300&301          To Node: SC-0820 GRND           Count: 1

         Surface Area Option: Vary based on Stage/Area Table
   Vertical Flow Termination: Horizontal Flow Algorithm
       Aquifer Base Elev(ft): 31.600                       Perimeter 1(ft): 1038.000
        Water Table Elev(ft): 45.600                       Perimeter 2(ft): 1352.000
 ****************************-9999.000                    Perimeter 3(ft): 3859.000
  Horiz Conductivity(ft/day): 20.000                   Distance 1 to 2(ft): 50.000
   Vert Conductivity(ft/day): 10.000                   Distance 2 to 3(ft): 450.000
     Effective Porosity(dec): 0.250                       Num Cells 1 to 2: 10
            Suction Head(in): 4.000                       Num Cells 2 to 3: 45
         Layer Thickness(ft): 6.400




=========================================================================================
==== Hydrology Simulations ===============================================================
=========================================================================================

         Name: 100Y240H
```

```
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\I-4 Existing\100Y240H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 18.50

Time(hrs)       Print Inc(min)
--------------- ---------------
336.000         5.00

-----------------------------------------------------------------------------------------------------
         Name: SJRWMD
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\I-4 Existing\SJRWMD.R32

      Override Defaults: No

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.00
14.000          1.00
96.000          5.00

==========================================================================================
==== Routing Simulations ================================================================
==========================================================================================

         Name: 100Y240H            Hydrology Sim: 100Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\I-4 Existing\100Y240H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 336.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
336.000         15.000

Group           Run
--------------- -----
BASIN300&301    Yes


-----------------------------------------------------------------------------------------------------
         Name: SJRWMD              Hydrology Sim: SJRWMD
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\I-4 Existing\SJRWMD.I32

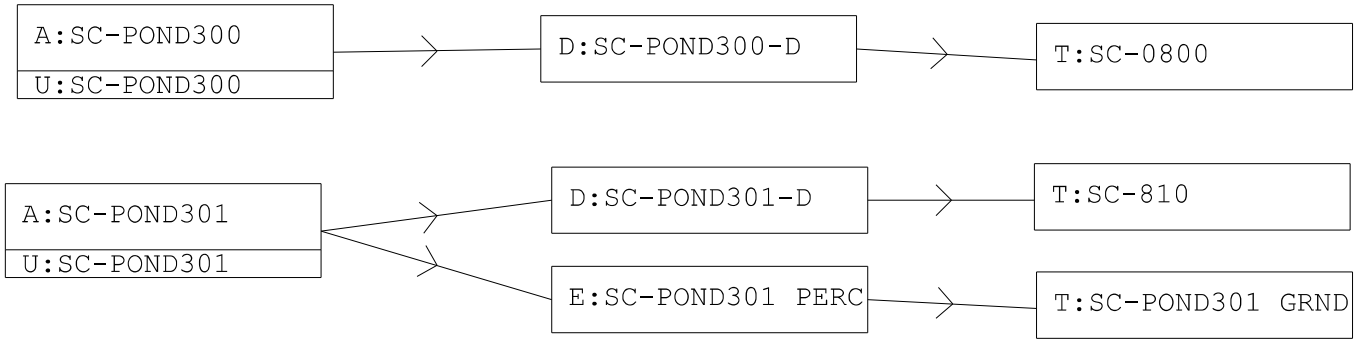
      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 120.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 1.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.000
14.000          1.000
96.000          5.000
120.000         5.000

Group           Run
--------------- -----
BASIN300&301    Yes
```

Post Development



FLIGHT DATE: 2015

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

PARSONS BRINCKERHOFF, INC.
2202 N WEST SHORE BLVD., SUITE 300
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	242592-4-52-01

ICPR LINK NODE DIAGRAM PROPOSED BASIN 300-301

SHEET NO.
N/A

AndersonT 4/27/2017 11:12:47 AM T:\Sys\Projects\24259245201\drainage\REPORT\ICPR Link_Node\Basin300_301_Prop_Link

Basin 300 & 301
Proposed Condition Output

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
GRND 301	BASIN300&301	100Y240H	0.00	45.60	45.60	0.0000	0	39.99	6.18	0.00	0.00
GRND 301	BASIN300&301	SJRWMD	0.00	45.60	45.60	0.0000	0	59.20	14.27	0.00	0.00
SC-0800	BASIN300&301	100Y240H	11.00	52.00	52.00	0.0041	0	184.00	9.67	0.00	0.00
SC-0800	BASIN300&301	SJRWMD	11.00	52.00	52.00	0.0021	0	60.00	26.39	0.00	0.00
SC-810	BASIN300&301	100Y240H	0.00	55.00	55.00	0.0000	0	0.00	0.00	0.00	0.00
SC-810	BASIN300&301	SJRWMD	0.00	55.00	55.00	0.0000	0	0.00	0.00	0.00	0.00
SC-POND300	BASIN300&301	100Y240H	184.99	55.45	56.00	0.0031	127013	183.91	18.93	184.99	6.62
SC-POND300	BASIN300&301	SJRWMD	63.24	55.97	56.00	0.0021	129844	60.17	104.94	64.25	7.34
SC-POND301	BASIN300&301	100Y240H	216.94	55.91	56.00	0.0023	147090	183.91	11.97	39.99	6.18
SC-POND301	BASIN300&301	SJRWMD	72.40	54.23	56.00	0.0013	136846	60.08	75.51	59.20	14.27

Proposed Discharge Rates:
Basin 300

Q-FDOT (100-yr/240-hr)= 9.67 cfs
Q-SJRWMD (25-yr/96-hr)= 26.39 cfs

Basin 301
Q-FDOT (100-yr/240-hr)= 0.00 cfs
Q-SJRWMD (25-yr/96-hr)= 0.00 cfs

Basin 301 (Pond 301)
SJRWMD Treatment/Wekiva Recovery
3-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	SC-POND301	BASIN300&301	0.00	53.07	56.00	129800	0.000	0.000	0.00	0.00
PERC	SC-POND301	BASIN300&301	0.02	53.06	56.00	129768	0.000	15.019	0.00	0.01
PERC	SC-POND301	BASIN300&301	0.03	53.06	56.00	129725	0.000	15.015	0.00	0.03
PERC	SC-POND301	BASIN300&301	0.05	53.05	56.00	129683	0.000	15.010	0.00	0.05
PERC	SC-POND301	BASIN300&301	0.07	53.04	56.00	129640	0.000	15.005	0.00	0.07
PERC	SC-POND301	BASIN300&301	0.08	53.04	56.00	129597	0.000	15.000	0.00	0.09
PERC	SC-POND301	BASIN300&301	0.10	53.03	56.00	129555	0.000	14.995	0.00	0.11
PERC	SC-POND301	BASIN300&301	0.12	53.02	56.00	129512	0.000	14.990	0.00	0.14
PERC	SC-POND301	BASIN300&301	0.13	53.02	56.00	129469	0.000	14.985	0.00	0.16
PERC	SC-POND301	BASIN300&301	0.15	53.01	56.00	129426	0.000	14.980	0.00	0.18
PERC	SC-POND301	BASIN300&301	0.17	53.00	56.00	129384	0.000	14.975	0.00	0.20
PERC	SC-POND301	BASIN300&301	0.18	52.99	56.00	129341	0.000	14.970	0.00	0.22
PERC	SC-POND301	BASIN300&301	0.20	52.99	56.00	129298	0.000	14.965	0.00	0.24
PERC	SC-POND301	BASIN300&301	0.22	52.98	56.00	129256	0.000	14.960	0.00	0.26
PERC	SC-POND301	BASIN300&301	0.24	52.97	56.00	129213	0.000	14.955	0.00	0.28
PERC	SC-POND301	BASIN300&301	0.25	52.97	56.00	129170	0.000	14.950	0.00	0.30
PERC	SC-POND301	BASIN300&301	0.27	52.96	56.00	129128	0.000	14.945	0.00	0.32
PERC	SC-POND301	BASIN300&301	0.29	52.95	56.00	129085	0.000	14.940	0.00	0.34
PERC	SC-POND301	BASIN300&301	0.30	52.95	56.00	129042	0.000	14.935	0.00	0.36
PERC	SC-POND301	BASIN300&301	0.32	52.94	56.00	128999	0.000	14.930	0.00	0.38
PERC	SC-POND301	BASIN300&301	0.34	52.93	56.00	128957	0.000	14.926	0.00	0.41
PERC	SC-POND301	BASIN300&301	0.35	52.92	56.00	128914	0.000	14.921	0.00	0.43
PERC	SC-POND301	BASIN300&301	0.37	52.92	56.00	128871	0.000	14.916	0.00	0.45
PERC	SC-POND301	BASIN300&301	0.39	52.91	56.00	128829	0.000	14.911	0.00	0.47
PERC	SC-POND301	BASIN300&301	0.40	52.90	56.00	128786	0.000	14.906	0.00	0.49
PERC	SC-POND301	BASIN300&301	0.42	52.90	56.00	128743	0.000	14.901	0.00	0.51
PERC	SC-POND301	BASIN300&301	0.44	52.89	56.00	128700	0.000	14.896	0.00	0.53
PERC	SC-POND301	BASIN300&301	0.45	52.88	56.00	128658	0.000	14.891	0.00	0.55
PERC	SC-POND301	BASIN300&301	0.47	52.88	56.00	128615	0.000	14.886	0.00	0.57
PERC	SC-POND301	BASIN300&301	0.49	52.87	56.00	128572	0.000	14.881	0.00	0.59
PERC	SC-POND301	BASIN300&301	0.50	52.86	56.00	128530	0.000	14.876	0.00	0.61
PERC	SC-POND301	BASIN300&301	0.52	52.85	56.00	128487	0.000	14.871	0.00	0.63
PERC	SC-POND301	BASIN300&301	0.54	52.85	56.00	128444	0.000	14.866	0.00	0.65
PERC	SC-POND301	BASIN300&301	0.55	52.84	56.00	128402	0.000	14.861	0.00	0.67
PERC	SC-POND301	BASIN300&301	0.57	52.83	56.00	128359	0.000	14.856	0.00	0.70
PERC	SC-POND301	BASIN300&301	0.59	52.83	56.00	128316	0.000	14.851	0.00	0.72
PERC	SC-POND301	BASIN300&301	0.61	52.82	56.00	128273	0.000	14.846	0.00	0.74
PERC	SC-POND301	BASIN300&301	0.62	52.81	56.00	128231	0.000	14.842	0.00	0.76
PERC	SC-POND301	BASIN300&301	0.64	52.81	56.00	128188	0.000	14.837	0.00	0.78
PERC	SC-POND301	BASIN300&301	0.66	52.80	56.00	128145	0.000	14.832	0.00	0.80
PERC	SC-POND301	BASIN300&301	0.67	52.79	56.00	128103	0.000	14.827	0.00	0.82
PERC	SC-POND301	BASIN300&301	0.69	52.78	56.00	128060	0.000	14.822	0.00	0.84
PERC	SC-POND301	BASIN300&301	0.71	52.78	56.00	128017	0.000	14.817	0.00	0.86
PERC	SC-POND301	BASIN300&301	0.72	52.77	56.00	127975	0.000	14.812	0.00	0.88
PERC	SC-POND301	BASIN300&301	0.74	52.76	56.00	127932	0.000	14.807	0.00	0.90
PERC	SC-POND301	BASIN300&301	0.76	52.76	56.00	127889	0.000	14.802	0.00	0.92
PERC	SC-POND301	BASIN300&301	0.77	52.75	56.00	127846	0.000	14.797	0.00	0.94
PERC	SC-POND301	BASIN300&301	0.79	52.74	56.00	127804	0.000	14.792	0.00	0.96
PERC	SC-POND301	BASIN300&301	0.81	52.74	56.00	127761	0.000	14.787	0.00	0.98
PERC	SC-POND301	BASIN300&301	0.82	52.73	56.00	127718	0.000	14.782	0.00	1.00
PERC	SC-POND301	BASIN300&301	0.84	52.72	56.00	127676	0.000	14.777	0.00	1.02
PERC	SC-POND301	BASIN300&301	0.86	52.71	56.00	127633	0.000	14.772	0.00	1.04
PERC	SC-POND301	BASIN300&301	0.87	52.71	56.00	127590	0.000	14.767	0.00	1.07
PERC	SC-POND301	BASIN300&301	0.89	52.70	56.00	127548	0.000	14.762	0.00	1.09
PERC	SC-POND301	BASIN300&301	0.91	52.69	56.00	127505	0.000	14.758	0.00	1.11
PERC	SC-POND301	BASIN300&301	0.92	52.69	56.00	127462	0.000	14.753	0.00	1.13
PERC	SC-POND301	BASIN300&301	0.94	52.68	56.00	127419	0.000	14.748	0.00	1.15
PERC	SC-POND301	BASIN300&301	0.96	52.67	56.00	127377	0.000	14.743	0.00	1.17
PERC	SC-POND301	BASIN300&301	0.97	52.67	56.00	127334	0.000	14.738	0.00	1.19
PERC	SC-POND301	BASIN300&301	0.99	52.66	56.00	127291	0.000	14.733	0.00	1.21
PERC	SC-POND301	BASIN300&301	1.01	52.65	56.00	127249	0.000	14.728	0.00	1.23
PERC	SC-POND301	BASIN300&301	1.02	52.65	56.00	127227	0.000	14.725	0.00	1.24
PERC	SC-POND301	BASIN300&301	1.03	52.64	56.00	127185	0.000	14.720	0.00	1.26
PERC	SC-POND301	BASIN300&301	1.05	52.63	56.00	127142	0.000	14.715	0.00	1.28
PERC	SC-POND301	BASIN300&301	1.07	52.63	56.00	127099	0.000	14.711	0.00	1.30
PERC	SC-POND301	BASIN300&301	1.08	52.62	56.00	127056	0.000	14.706	0.00	1.32
PERC	SC-POND301	BASIN300&301	1.10	52.61	56.00	127014	0.000	14.701	0.00	1.34
PERC	SC-POND301	BASIN300&301	1.12	52.61	56.00	126971	0.000	14.696	0.00	1.36
PERC	SC-POND301	BASIN300&301	1.13	52.60	56.00	126928	0.000	14.691	0.00	1.38
PERC	SC-POND301	BASIN300&301	1.15	52.59	56.00	126886	0.000	14.686	0.00	1.40
PERC	SC-POND301	BASIN300&301	1.17	52.59	56.00	126843	0.000	14.681	0.00	1.42
PERC	SC-POND301	BASIN300&301	1.18	52.58	56.00	126800	0.000	14.676	0.00	1.44
PERC	SC-POND301	BASIN300&301	1.20	52.57	56.00	126758	0.000	14.671	0.00	1.46
PERC	SC-POND301	BASIN300&301	1.22	52.56	56.00	126715	0.000	14.666	0.00	1.48
PERC	SC-POND301	BASIN300&301	1.24	52.56	56.00	126672	0.000	14.661	0.00	1.50
PERC	SC-POND301	BASIN300&301	1.25	52.55	56.00	126629	0.000	14.656	0.00	1.53
PERC	SC-POND301	BASIN300&301	1.27	52.54	56.00	126587	0.000	14.651	0.00	1.55
PERC	SC-POND301	BASIN300&301	1.29	52.54	56.00	126544	0.000	14.646	0.00	1.57
PERC	SC-POND301	BASIN300&301	1.30	52.53	56.00	126501	0.000	14.641	0.00	1.59
PERC	SC-POND301	BASIN300&301	1.32	52.52	56.00	126459	0.000	14.636	0.00	1.61
PERC	SC-POND301	BASIN300&301	1.34	52.52	56.00	126416	0.000	14.631	0.00	1.63

Basin 301 (Pond 301)
SJRWMD Treatment/Wekiva Recovery
3-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	SC-POND301	BASIN300&301	1.35	52.51	56.00	126373	0.000	14.627	0.00	1.65
PERC	SC-POND301	BASIN300&301	1.37	52.50	56.00	126330	0.000	14.622	0.00	1.67
PERC	SC-POND301	BASIN300&301	1.39	52.49	56.00	126288	0.000	14.617	0.00	1.69
PERC	SC-POND301	BASIN300&301	1.40	52.49	56.00	126245	0.000	14.612	0.00	1.71
PERC	SC-POND301	BASIN300&301	1.42	52.48	56.00	126202	0.000	14.607	0.00	1.73
PERC	SC-POND301	BASIN300&301	1.44	52.47	56.00	126160	0.000	14.602	0.00	1.75
PERC	SC-POND301	BASIN300&301	1.45	52.47	56.00	126117	0.000	14.597	0.00	1.77
PERC	SC-POND301	BASIN300&301	1.47	52.46	56.00	126074	0.000	14.592	0.00	1.79
PERC	SC-POND301	BASIN300&301	1.49	52.45	56.00	126032	0.000	14.587	0.00	1.81
PERC	SC-POND301	BASIN300&301	1.50	52.45	56.00	125989	0.000	14.582	0.00	1.83
PERC	SC-POND301	BASIN300&301	1.52	52.44	56.00	125946	0.000	14.577	0.00	1.85
PERC	SC-POND301	BASIN300&301	1.54	52.43	56.00	125903	0.000	14.572	0.00	1.87
PERC	SC-POND301	BASIN300&301	1.55	52.42	56.00	125861	0.000	14.567	0.00	1.89
PERC	SC-POND301	BASIN300&301	1.57	52.42	56.00	125818	0.000	14.562	0.00	1.91
PERC	SC-POND301	BASIN300&301	1.59	52.41	56.00	125775	0.000	14.557	0.00	1.93
PERC	SC-POND301	BASIN300&301	1.60	52.40	56.00	125733	0.000	14.552	0.00	1.95
PERC	SC-POND301	BASIN300&301	1.62	52.40	56.00	125690	0.000	14.547	0.00	1.97
PERC	SC-POND301	BASIN300&301	1.64	52.39	56.00	125647	0.000	14.543	0.00	1.99
PERC	SC-POND301	BASIN300&301	1.66	52.38	56.00	125605	0.000	14.538	0.00	2.01
PERC	SC-POND301	BASIN300&301	1.67	52.38	56.00	125562	0.000	14.533	0.00	2.03
PERC	SC-POND301	BASIN300&301	1.69	52.37	56.00	125519	0.000	14.528	0.00	2.05
PERC	SC-POND301	BASIN300&301	1.71	52.36	56.00	125476	0.000	14.523	0.00	2.07
PERC	SC-POND301	BASIN300&301	1.72	52.35	56.00	125434	0.000	14.518	0.00	2.09
PERC	SC-POND301	BASIN300&301	1.74	52.35	56.00	125391	0.000	14.513	0.00	2.11
PERC	SC-POND301	BASIN300&301	1.76	52.34	56.00	125348	0.000	14.508	0.00	2.13
PERC	SC-POND301	BASIN300&301	1.77	52.33	56.00	125306	0.000	14.503	0.00	2.15
PERC	SC-POND301	BASIN300&301	1.79	52.33	56.00	125263	0.000	14.498	0.00	2.17
PERC	SC-POND301	BASIN300&301	1.81	52.32	56.00	125220	0.000	14.493	0.00	2.19
PERC	SC-POND301	BASIN300&301	1.82	52.31	56.00	125177	0.000	14.488	0.00	2.21
PERC	SC-POND301	BASIN300&301	1.84	52.30	56.00	125135	0.000	14.483	0.00	2.23
PERC	SC-POND301	BASIN300&301	1.86	52.30	56.00	125092	0.000	14.478	0.00	2.25
PERC	SC-POND301	BASIN300&301	1.87	52.29	56.00	125049	0.000	14.473	0.00	2.27
PERC	SC-POND301	BASIN300&301	1.89	52.28	56.00	125007	0.000	14.468	0.00	2.29
PERC	SC-POND301	BASIN300&301	1.91	52.28	56.00	124964	0.000	14.463	0.00	2.31
PERC	SC-POND301	BASIN300&301	1.92	52.27	56.00	124921	0.000	14.458	0.00	2.33
PERC	SC-POND301	BASIN300&301	1.94	52.26	56.00	124879	0.000	14.454	0.00	2.35
PERC	SC-POND301	BASIN300&301	1.96	52.26	56.00	124836	0.000	14.449	0.00	2.37
PERC	SC-POND301	BASIN300&301	1.97	52.25	56.00	124793	0.000	14.444	0.00	2.39
PERC	SC-POND301	BASIN300&301	1.99	52.24	56.00	124750	0.000	14.439	0.00	2.41
PERC	SC-POND301	BASIN300&301	2.01	52.23	56.00	124708	0.000	14.434	0.00	2.43
PERC	SC-POND301	BASIN300&301	2.02	52.23	56.00	124686	0.000	14.431	0.00	2.44
PERC	SC-POND301	BASIN300&301	2.03	52.22	56.00	124644	0.000	14.426	0.00	2.46
PERC	SC-POND301	BASIN300&301	2.05	52.22	56.00	124601	0.000	14.421	0.00	2.48
PERC	SC-POND301	BASIN300&301	2.07	52.21	56.00	124558	0.000	14.416	0.00	2.50
PERC	SC-POND301	BASIN300&301	2.08	52.20	56.00	124516	0.000	14.412	0.00	2.52
PERC	SC-POND301	BASIN300&301	2.10	52.20	56.00	124473	0.000	14.407	0.00	2.54
PERC	SC-POND301	BASIN300&301	2.12	52.19	56.00	124430	0.000	14.402	0.00	2.56
PERC	SC-POND301	BASIN300&301	2.13	52.18	56.00	124387	0.000	14.397	0.00	2.58
PERC	SC-POND301	BASIN300&301	2.15	52.18	56.00	124345	0.000	14.392	0.00	2.60
PERC	SC-POND301	BASIN300&301	2.17	52.17	56.00	124302	0.000	14.387	0.00	2.62
PERC	SC-POND301	BASIN300&301	2.18	52.16	56.00	124259	0.000	14.382	0.00	2.64
PERC	SC-POND301	BASIN300&301	2.20	52.15	56.00	124217	0.000	14.377	0.00	2.66
PERC	SC-POND301	BASIN300&301	2.22	52.15	56.00	124174	0.000	14.372	0.00	2.68
PERC	SC-POND301	BASIN300&301	2.24	52.14	56.00	124131	0.000	14.367	0.00	2.70
PERC	SC-POND301	BASIN300&301	2.25	52.13	56.00	124089	0.000	14.362	0.00	2.72
PERC	SC-POND301	BASIN300&301	2.27	52.13	56.00	124046	0.000	14.357	0.00	2.74
PERC	SC-POND301	BASIN300&301	2.29	52.12	56.00	124003	0.000	14.352	0.00	2.76
PERC	SC-POND301	BASIN300&301	2.30	52.11	56.00	123960	0.000	14.347	0.00	2.78
PERC	SC-POND301	BASIN300&301	2.32	52.11	56.00	123918	0.000	14.342	0.00	2.80
PERC	SC-POND301	BASIN300&301	2.34	52.10	56.00	123875	0.000	14.337	0.00	2.82
PERC	SC-POND301	BASIN300&301	2.35	52.09	56.00	123832	0.000	14.332	0.00	2.84
PERC	SC-POND301	BASIN300&301	2.37	52.08	56.00	123790	0.000	14.328	0.00	2.86
PERC	SC-POND301	BASIN300&301	2.39	52.08	56.00	123747	0.000	14.323	0.00	2.88
PERC	SC-POND301	BASIN300&301	2.40	52.07	56.00	123704	0.000	14.318	0.00	2.90
PERC	SC-POND301	BASIN300&301	2.42	52.06	56.00	123662	0.000	14.313	0.00	2.92
PERC	SC-POND301	BASIN300&301	2.44	52.06	56.00	123619	0.000	14.308	0.00	2.94
PERC	SC-POND301	BASIN300&301	2.45	52.05	56.00	123576	0.000	14.303	0.00	2.96
PERC	SC-POND301	BASIN300&301	2.47	52.04	56.00	123533	0.000	14.298	0.00	2.98
PERC	SC-POND301	BASIN300&301	2.49	52.04	56.00	123491	0.000	14.293	0.00	3.00
PERC	SC-POND301	BASIN300&301	2.50	52.03	56.00	123448	0.000	14.288	0.00	3.02
PERC	SC-POND301	BASIN300&301	2.52	52.02	56.00	123405	0.000	14.283	0.00	3.04
PERC	SC-POND301	BASIN300&301	2.54	52.01	56.00	123363	0.000	14.278	0.00	3.06
PERC	SC-POND301	BASIN300&301	2.55	52.01	56.00	123320	0.000	14.273	0.00	3.08
PERC	SC-POND301	BASIN300&301	2.57	52.00	56.00	123277	0.000	3.231	0.00	3.09
PERC	SC-POND301	BASIN300&301	2.59	52.00	56.00	123275	0.000	0.000	0.00	3.10

Basin 300 & 301 (Pond 301)
SJRWMD Closed Basin Recovery
14-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	SC-POND301	BASIN300&301	0.00	55.30	56.00	143400	0.000	0.000	0.00	0.00
PERC	SC-POND301	BASIN300&301	0.02	55.29	56.00	143367	0.000	16.593	0.00	0.01
PERC	SC-POND301	BASIN300&301	0.03	55.29	56.00	143325	0.000	16.589	0.00	0.03
PERC	SC-POND301	BASIN300&301	0.05	55.28	56.00	143282	0.000	16.584	0.00	0.06
PERC	SC-POND301	BASIN300&301	0.07	55.27	56.00	143239	0.000	16.579	0.00	0.08
PERC	SC-POND301	BASIN300&301	0.08	55.27	56.00	143197	0.000	16.574	0.00	0.10
PERC	SC-POND301	BASIN300&301	0.10	55.26	56.00	143154	0.000	16.569	0.00	0.13
PERC	SC-POND301	BASIN300&301	0.12	55.25	56.00	143111	0.000	16.564	0.00	0.15
PERC	SC-POND301	BASIN300&301	0.13	55.25	56.00	143069	0.000	16.559	0.00	0.17
PERC	SC-POND301	BASIN300&301	0.15	55.24	56.00	143026	0.000	16.554	0.00	0.20
PERC	SC-POND301	BASIN300&301	0.17	55.23	56.00	142983	0.000	16.549	0.00	0.22
PERC	SC-POND301	BASIN300&301	0.18	55.22	56.00	142940	0.000	16.544	0.00	0.24
PERC	SC-POND301	BASIN300&301	0.20	55.22	56.00	142898	0.000	16.539	0.00	0.26
PERC	SC-POND301	BASIN300&301	0.22	55.21	56.00	142855	0.000	16.534	0.00	0.29
PERC	SC-POND301	BASIN300&301	0.24	55.20	56.00	142812	0.000	16.529	0.00	0.31
PERC	SC-POND301	BASIN300&301	0.25	55.20	56.00	142770	0.000	16.524	0.00	0.33
PERC	SC-POND301	BASIN300&301	0.27	55.19	56.00	142727	0.000	16.519	0.00	0.36
PERC	SC-POND301	BASIN300&301	0.29	55.18	56.00	142684	0.000	16.514	0.00	0.38
PERC	SC-POND301	BASIN300&301	0.30	55.18	56.00	142642	0.000	16.509	0.00	0.40
PERC	SC-POND301	BASIN300&301	0.32	55.17	56.00	142599	0.000	16.504	0.00	0.43
PERC	SC-POND301	BASIN300&301	0.34	55.16	56.00	142556	0.000	16.500	0.00	0.45
PERC	SC-POND301	BASIN300&301	0.35	55.15	56.00	142513	0.000	16.495	0.00	0.47
PERC	SC-POND301	BASIN300&301	0.37	55.15	56.00	142471	0.000	16.490	0.00	0.49
PERC	SC-POND301	BASIN300&301	0.39	55.14	56.00	142428	0.000	16.485	0.00	0.52
PERC	SC-POND301	BASIN300&301	0.40	55.13	56.00	142385	0.000	16.480	0.00	0.54
PERC	SC-POND301	BASIN300&301	0.42	55.13	56.00	142343	0.000	16.475	0.00	0.56
PERC	SC-POND301	BASIN300&301	0.44	55.12	56.00	142300	0.000	16.470	0.00	0.59
PERC	SC-POND301	BASIN300&301	0.45	55.11	56.00	142257	0.000	16.465	0.00	0.61
PERC	SC-POND301	BASIN300&301	0.47	55.11	56.00	142215	0.000	16.460	0.00	0.63
PERC	SC-POND301	BASIN300&301	0.49	55.10	56.00	142172	0.000	16.455	0.00	0.65
PERC	SC-POND301	BASIN300&301	0.50	55.09	56.00	142129	0.000	16.450	0.00	0.68
PERC	SC-POND301	BASIN300&301	0.52	55.08	56.00	142086	0.000	16.445	0.00	0.70
PERC	SC-POND301	BASIN300&301	0.54	55.08	56.00	142044	0.000	16.440	0.00	0.72
PERC	SC-POND301	BASIN300&301	0.55	55.07	56.00	142001	0.000	16.435	0.00	0.75
PERC	SC-POND301	BASIN300&301	0.57	55.06	56.00	141958	0.000	16.430	0.00	0.77
PERC	SC-POND301	BASIN300&301	0.59	55.06	56.00	141916	0.000	16.425	0.00	0.79
PERC	SC-POND301	BASIN300&301	0.61	55.05	56.00	141873	0.000	16.420	0.00	0.81
PERC	SC-POND301	BASIN300&301	0.62	55.04	56.00	141830	0.000	16.416	0.00	0.84
PERC	SC-POND301	BASIN300&301	0.64	55.04	56.00	141787	0.000	16.411	0.00	0.86
PERC	SC-POND301	BASIN300&301	0.66	55.03	56.00	141745	0.000	16.406	0.00	0.88
PERC	SC-POND301	BASIN300&301	0.67	55.02	56.00	141702	0.000	16.401	0.00	0.91
PERC	SC-POND301	BASIN300&301	0.69	55.01	56.00	141659	0.000	16.396	0.00	0.93
PERC	SC-POND301	BASIN300&301	0.71	55.01	56.00	141617	0.000	16.391	0.00	0.95
PERC	SC-POND301	BASIN300&301	0.72	55.00	56.00	141574	0.000	16.386	0.00	0.97
PERC	SC-POND301	BASIN300&301	0.74	54.99	56.00	141531	0.000	16.381	0.00	1.00
PERC	SC-POND301	BASIN300&301	0.76	54.99	56.00	141489	0.000	16.376	0.00	1.02
PERC	SC-POND301	BASIN300&301	0.77	54.98	56.00	141446	0.000	16.371	0.00	1.04
PERC	SC-POND301	BASIN300&301	0.79	54.97	56.00	141403	0.000	16.366	0.00	1.06
PERC	SC-POND301	BASIN300&301	0.81	54.97	56.00	141360	0.000	16.361	0.00	1.09
PERC	SC-POND301	BASIN300&301	0.82	54.96	56.00	141318	0.000	16.356	0.00	1.11
PERC	SC-POND301	BASIN300&301	0.84	54.95	56.00	141275	0.000	16.351	0.00	1.13
PERC	SC-POND301	BASIN300&301	0.86	54.94	56.00	141232	0.000	16.346	0.00	1.16
PERC	SC-POND301	BASIN300&301	0.87	54.94	56.00	141190	0.000	16.341	0.00	1.18
PERC	SC-POND301	BASIN300&301	0.89	54.93	56.00	141147	0.000	16.336	0.00	1.20
PERC	SC-POND301	BASIN300&301	0.91	54.92	56.00	141104	0.000	16.332	0.00	1.22
PERC	SC-POND301	BASIN300&301	0.92	54.92	56.00	141062	0.000	16.327	0.00	1.25
PERC	SC-POND301	BASIN300&301	0.94	54.91	56.00	141019	0.000	16.322	0.00	1.27
PERC	SC-POND301	BASIN300&301	0.96	54.90	56.00	140976	0.000	16.317	0.00	1.29
PERC	SC-POND301	BASIN300&301	0.97	54.90	56.00	140933	0.000	16.312	0.00	1.31
PERC	SC-POND301	BASIN300&301	0.99	54.89	56.00	140891	0.000	16.307	0.00	1.34
PERC	SC-POND301	BASIN300&301	1.01	54.88	56.00	140848	0.000	16.302	0.00	1.36
PERC	SC-POND301	BASIN300&301	1.02	54.88	56.00	140827	0.000	16.299	0.00	1.37
PERC	SC-POND301	BASIN300&301	1.03	54.87	56.00	140784	0.000	16.294	0.00	1.39
PERC	SC-POND301	BASIN300&301	1.05	54.86	56.00	140741	0.000	16.289	0.00	1.42
PERC	SC-POND301	BASIN300&301	1.07	54.86	56.00	140699	0.000	16.285	0.00	1.44
PERC	SC-POND301	BASIN300&301	1.08	54.85	56.00	140656	0.000	16.280	0.00	1.46
PERC	SC-POND301	BASIN300&301	1.10	54.84	56.00	140613	0.000	16.275	0.00	1.48
PERC	SC-POND301	BASIN300&301	1.12	54.84	56.00	140570	0.000	16.270	0.00	1.51
PERC	SC-POND301	BASIN300&301	1.13	54.83	56.00	140528	0.000	16.265	0.00	1.53
PERC	SC-POND301	BASIN300&301	1.15	54.82	56.00	140485	0.000	16.260	0.00	1.55
PERC	SC-POND301	BASIN300&301	1.17	54.82	56.00	140442	0.000	16.255	0.00	1.57
PERC	SC-POND301	BASIN300&301	1.18	54.81	56.00	140400	0.000	16.250	0.00	1.60
PERC	SC-POND301	BASIN300&301	1.20	54.80	56.00	140357	0.000	16.245	0.00	1.62
PERC	SC-POND301	BASIN300&301	1.22	54.79	56.00	140314	0.000	16.240	0.00	1.64
PERC	SC-POND301	BASIN300&301	1.24	54.79	56.00	140272	0.000	16.235	0.00	1.66
PERC	SC-POND301	BASIN300&301	1.25	54.78	56.00	140229	0.000	16.230	0.00	1.69
PERC	SC-POND301	BASIN300&301	1.27	54.77	56.00	140186	0.000	16.225	0.00	1.71
PERC	SC-POND301	BASIN300&301	1.29	54.77	56.00	140143	0.000	16.220	0.00	1.73
PERC	SC-POND301	BASIN300&301	1.30	54.76	56.00	140101	0.000	16.215	0.00	1.75
PERC	SC-POND301	BASIN300&301	1.32	54.75	56.00	140058	0.000	16.210	0.00	1.78
PERC	SC-POND301	BASIN300&301	1.34	54.75	56.00	140015	0.000	16.205	0.00	1.80

Basin 300 & 301 (Pond 301)
SJRWMD Closed Basin Recovery
14-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	SC-POND301	BASIN300&301	81.00	52.00	56.00	123295	0.000	0.321	0.00	10.08
PERC	SC-POND301	BASIN300&301	81.02	52.00	56.00	123294	0.000	0.321	0.00	10.08
PERC	SC-POND301	BASIN300&301	81.04	52.00	56.00	123293	0.000	0.321	0.00	10.08
PERC	SC-POND301	BASIN300&301	81.05	52.00	56.00	123292	0.000	0.321	0.00	10.08
PERC	SC-POND301	BASIN300&301	81.07	52.00	56.00	123291	0.000	0.321	0.00	10.08
PERC	SC-POND301	BASIN300&301	81.09	52.00	56.00	123290	0.000	0.321	0.00	10.09

Basin 300 & 301 (Pond 301)
FDOT Closed Basin Recovery
7-Day / 30-day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	SC-POND301	BASIN300&301	0.00	55.98	56.00	147546	0.000	0.000	0.00	0.00
PERC	SC-POND301	BASIN300&301	0.02	55.97	56.00	147514	0.000	17.073	0.00	0.01
PERC	SC-POND301	BASIN300&301	0.03	55.97	56.00	147472	0.000	17.068	0.00	0.04
PERC	SC-POND301	BASIN300&301	0.05	55.96	56.00	147429	0.000	17.064	0.00	0.06
PERC	SC-POND301	BASIN300&301	0.07	55.95	56.00	147386	0.000	17.059	0.00	0.08
PERC	SC-POND301	BASIN300&301	0.08	55.95	56.00	147344	0.000	17.054	0.00	0.11
PERC	SC-POND301	BASIN300&301	0.10	55.94	56.00	147301	0.000	17.049	0.00	0.13
PERC	SC-POND301	BASIN300&301	0.12	55.93	56.00	147258	0.000	17.044	0.00	0.15
PERC	SC-POND301	BASIN300&301	0.13	55.93	56.00	147215	0.000	17.039	0.00	0.18
PERC	SC-POND301	BASIN300&301	0.15	55.92	56.00	147173	0.000	17.034	0.00	0.20
PERC	SC-POND301	BASIN300&301	0.17	55.91	56.00	147130	0.000	17.029	0.00	0.22
PERC	SC-POND301	BASIN300&301	0.18	55.90	56.00	147087	0.000	17.024	0.00	0.25
PERC	SC-POND301	BASIN300&301	0.20	55.90	56.00	147045	0.000	17.019	0.00	0.27
PERC	SC-POND301	BASIN300&301	0.22	55.89	56.00	147002	0.000	17.014	0.00	0.30
PERC	SC-POND301	BASIN300&301	0.24	55.88	56.00	146959	0.000	17.009	0.00	0.32
PERC	SC-POND301	BASIN300&301	0.25	55.88	56.00	146917	0.000	17.004	0.00	0.34
PERC	SC-POND301	BASIN300&301	0.27	55.87	56.00	146874	0.000	16.999	0.00	0.37
PERC	SC-POND301	BASIN300&301	0.29	55.86	56.00	146831	0.000	16.994	0.00	0.39
PERC	SC-POND301	BASIN300&301	0.30	55.86	56.00	146788	0.000	16.989	0.00	0.41
PERC	SC-POND301	BASIN300&301	0.32	55.85	56.00	146746	0.000	16.984	0.00	0.44
PERC	SC-POND301	BASIN300&301	0.34	55.84	56.00	146703	0.000	16.980	0.00	0.46
PERC	SC-POND301	BASIN300&301	0.35	55.83	56.00	146660	0.000	16.975	0.00	0.48
PERC	SC-POND301	BASIN300&301	0.37	55.83	56.00	146618	0.000	16.970	0.00	0.51
PERC	SC-POND301	BASIN300&301	0.39	55.82	56.00	146575	0.000	16.965	0.00	0.53
PERC	SC-POND301	BASIN300&301	0.40	55.81	56.00	146532	0.000	16.960	0.00	0.56
PERC	SC-POND301	BASIN300&301	0.42	55.81	56.00	146490	0.000	16.955	0.00	0.58
PERC	SC-POND301	BASIN300&301	0.44	55.80	56.00	146447	0.000	16.950	0.00	0.60
PERC	SC-POND301	BASIN300&301	0.45	55.79	56.00	146404	0.000	16.945	0.00	0.63
PERC	SC-POND301	BASIN300&301	0.47	55.79	56.00	146361	0.000	16.940	0.00	0.65
PERC	SC-POND301	BASIN300&301	0.49	55.78	56.00	146319	0.000	16.935	0.00	0.67
PERC	SC-POND301	BASIN300&301	0.50	55.77	56.00	146276	0.000	16.930	0.00	0.70
PERC	SC-POND301	BASIN300&301	0.52	55.76	56.00	146233	0.000	16.925	0.00	0.72
PERC	SC-POND301	BASIN300&301	0.54	55.76	56.00	146191	0.000	16.920	0.00	0.74
PERC	SC-POND301	BASIN300&301	0.55	55.75	56.00	146148	0.000	16.915	0.00	0.77
PERC	SC-POND301	BASIN300&301	0.57	55.74	56.00	146105	0.000	16.910	0.00	0.79
PERC	SC-POND301	BASIN300&301	0.59	55.74	56.00	146063	0.000	16.905	0.00	0.81
PERC	SC-POND301	BASIN300&301	0.61	55.73	56.00	146020	0.000	16.900	0.00	0.84
PERC	SC-POND301	BASIN300&301	0.62	55.72	56.00	145977	0.000	16.895	0.00	0.86
PERC	SC-POND301	BASIN300&301	0.64	55.72	56.00	145934	0.000	16.891	0.00	0.88
PERC	SC-POND301	BASIN300&301	0.66	55.71	56.00	145892	0.000	16.886	0.00	0.91
PERC	SC-POND301	BASIN300&301	0.67	55.70	56.00	145849	0.000	16.881	0.00	0.93
PERC	SC-POND301	BASIN300&301	0.69	55.69	56.00	145806	0.000	16.876	0.00	0.95
PERC	SC-POND301	BASIN300&301	0.71	55.69	56.00	145764	0.000	16.871	0.00	0.98
PERC	SC-POND301	BASIN300&301	0.72	55.68	56.00	145721	0.000	16.866	0.00	1.00
PERC	SC-POND301	BASIN300&301	0.74	55.67	56.00	145678	0.000	16.861	0.00	1.03
PERC	SC-POND301	BASIN300&301	0.76	55.67	56.00	145635	0.000	16.856	0.00	1.05
PERC	SC-POND301	BASIN300&301	0.77	55.66	56.00	145593	0.000	16.851	0.00	1.07
PERC	SC-POND301	BASIN300&301	0.79	55.65	56.00	145550	0.000	16.846	0.00	1.10
PERC	SC-POND301	BASIN300&301	0.81	55.65	56.00	145507	0.000	16.841	0.00	1.12
PERC	SC-POND301	BASIN300&301	0.82	55.64	56.00	145465	0.000	16.836	0.00	1.14
PERC	SC-POND301	BASIN300&301	0.84	55.63	56.00	145422	0.000	16.831	0.00	1.17
PERC	SC-POND301	BASIN300&301	0.86	55.62	56.00	145379	0.000	16.826	0.00	1.19
PERC	SC-POND301	BASIN300&301	0.87	55.62	56.00	145337	0.000	16.821	0.00	1.21
PERC	SC-POND301	BASIN300&301	0.89	55.61	56.00	145294	0.000	16.816	0.00	1.24
PERC	SC-POND301	BASIN300&301	0.91	55.60	56.00	145251	0.000	16.811	0.00	1.26
PERC	SC-POND301	BASIN300&301	0.92	55.60	56.00	145208	0.000	16.807	0.00	1.28
PERC	SC-POND301	BASIN300&301	0.94	55.59	56.00	145166	0.000	16.802	0.00	1.31
PERC	SC-POND301	BASIN300&301	0.96	55.58	56.00	145123	0.000	16.797	0.00	1.33
PERC	SC-POND301	BASIN300&301	0.97	55.58	56.00	145080	0.000	16.792	0.00	1.35
PERC	SC-POND301	BASIN300&301	0.99	55.57	56.00	145038	0.000	16.787	0.00	1.38
PERC	SC-POND301	BASIN300&301	1.01	55.56	56.00	144995	0.000	16.782	0.00	1.40
PERC	SC-POND301	BASIN300&301	1.02	55.56	56.00	144974	0.000	16.779	0.00	1.41
PERC	SC-POND301	BASIN300&301	1.03	55.55	56.00	144931	0.000	16.774	0.00	1.43
PERC	SC-POND301	BASIN300&301	1.05	55.54	56.00	144888	0.000	16.769	0.00	1.46
PERC	SC-POND301	BASIN300&301	1.07	55.54	56.00	144845	0.000	16.765	0.00	1.48
PERC	SC-POND301	BASIN300&301	1.08	55.53	56.00	144803	0.000	16.760	0.00	1.50
PERC	SC-POND301	BASIN300&301	1.10	55.52	56.00	144760	0.000	16.755	0.00	1.53
PERC	SC-POND301	BASIN300&301	1.12	55.52	56.00	144717	0.000	16.750	0.00	1.55
PERC	SC-POND301	BASIN300&301	1.13	55.51	56.00	144675	0.000	16.745	0.00	1.57
PERC	SC-POND301	BASIN300&301	1.15	55.50	56.00	144632	0.000	16.740	0.00	1.60
PERC	SC-POND301	BASIN300&301	1.17	55.50	56.00	144589	0.000	16.735	0.00	1.62
PERC	SC-POND301	BASIN300&301	1.18	55.49	56.00	144547	0.000	16.730	0.00	1.64
PERC	SC-POND301	BASIN300&301	1.20	55.48	56.00	144504	0.000	16.725	0.00	1.67
PERC	SC-POND301	BASIN300&301	1.22	55.47	56.00	144461	0.000	16.720	0.00	1.69
PERC	SC-POND301	BASIN300&301	1.24	55.47	56.00	144418	0.000	16.715	0.00	1.71
PERC	SC-POND301	BASIN300&301	1.25	55.46	56.00	144376	0.000	16.710	0.00	1.74
PERC	SC-POND301	BASIN300&301	1.27	55.45	56.00	144333	0.000	16.705	0.00	1.76
PERC	SC-POND301	BASIN300&301	1.29	55.45	56.00	144290	0.000	16.700	0.00	1.78
PERC	SC-POND301	BASIN300&301	1.30	55.44	56.00	144248	0.000	16.695	0.00	1.81
PERC	SC-POND301	BASIN300&301	1.32	55.43	56.00	144205	0.000	16.690	0.00	1.83
PERC	SC-POND301	BASIN300&301	1.34	55.43	56.00	144162	0.000	16.685	0.00	1.85

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	SC-POND301	BASIN300&301	5.41	54.11	56.00	136165	0.000	3.455	0.00	6.07
PERC	SC-POND301	BASIN300&301	5.42	54.11	56.00	136159	0.000	3.443	0.00	6.07
PERC	SC-POND301	BASIN300&301	5.44	54.11	56.00	136148	0.000	3.419	0.00	6.08
PERC	SC-POND301	BASIN300&301	5.45	54.11	56.00	136142	0.000	3.407	0.00	6.08
PERC	SC-POND301	BASIN300&301	5.47	54.11	56.00	136130	0.000	3.384	0.00	6.09
PERC	SC-POND301	BASIN300&301	5.49	54.11	56.00	136119	0.000	3.361	0.00	6.09
PERC	SC-POND301	BASIN300&301	5.50	54.11	56.00	136113	0.000	3.350	0.00	6.10
PERC	SC-POND301	BASIN300&301	5.52	54.10	56.00	136102	0.000	3.328	0.00	6.10
PERC	SC-POND301	BASIN300&301	5.54	54.10	56.00	136096	0.000	3.317	0.00	6.10
PERC	SC-POND301	BASIN300&301	5.56	54.10	56.00	136085	0.000	3.296	0.00	6.11
PERC	SC-POND301	BASIN300&301	5.57	54.10	56.00	136079	0.000	3.285	0.00	6.11
PERC	SC-POND301	BASIN300&301	5.59	54.10	56.00	136068	0.000	3.264	0.00	6.12
PERC	SC-POND301	BASIN300&301	5.61	54.10	56.00	136057	0.000	3.244	0.00	6.12
PERC	SC-POND301	BASIN300&301	5.62	54.10	56.00	136052	0.000	3.234	0.00	6.13
PERC	SC-POND301	BASIN300&301	5.64	54.09	56.00	136041	0.000	3.214	0.00	6.13
PERC	SC-POND301	BASIN300&301	5.65	54.09	56.00	136035	0.000	3.204	0.00	6.14
PERC	SC-POND301	BASIN300&301	5.68	54.09	56.00	136022	0.000	3.180	0.00	6.14
PERC	SC-POND301	BASIN300&301	5.69	54.09	56.00	136015	0.000	3.168	0.00	6.15
PERC	SC-POND301	BASIN300&301	5.70	54.09	56.00	136008	0.000	3.156	0.00	6.15
PERC	SC-POND301	BASIN300&301	5.73	54.09	56.00	135995	0.000	3.133	0.00	6.16
PERC	SC-POND301	BASIN300&301	5.74	54.08	56.00	135988	0.000	3.122	0.00	6.16
PERC	SC-POND301	BASIN300&301	5.76	54.08	56.00	135982	0.000	3.111	0.00	6.16
PERC	SC-POND301	BASIN300&301	5.77	54.08	56.00	135975	0.000	3.100	0.00	6.17
PERC	SC-POND301	BASIN300&301	5.80	54.08	56.00	135962	0.000	3.078	0.00	6.17
PERC	SC-POND301	BASIN300&301	5.81	54.08	56.00	135956	0.000	3.067	0.00	6.18
PERC	SC-POND301	BASIN300&301	5.82	54.08	56.00	135949	0.000	3.056	0.00	6.18
PERC	SC-POND301	BASIN300&301	5.83	54.08	56.00	135943	0.000	3.046	0.00	6.18
PERC	SC-POND301	BASIN300&301	5.86	54.08	56.00	135930	0.000	3.025	0.00	6.19
PERC	SC-POND301	BASIN300&301	5.87	54.07	56.00	135923	0.000	3.015	0.00	6.19
PERC	SC-POND301	BASIN300&301	5.89	54.07	56.00	135917	0.000	3.004	0.00	6.20
PERC	SC-POND301	BASIN300&301	5.90	54.07	56.00	135911	0.000	2.994	0.00	6.20
PERC	SC-POND301	BASIN300&301	5.93	54.07	56.00	135898	0.000	2.974	0.00	6.21
PERC	SC-POND301	BASIN300&301	5.94	54.07	56.00	135892	0.000	2.965	0.00	6.21
PERC	SC-POND301	BASIN300&301	5.95	54.07	56.00	135885	0.000	2.955	0.00	6.21
PERC	SC-POND301	BASIN300&301	5.98	54.07	56.00	135873	0.000	2.936	0.00	6.22
PERC	SC-POND301	BASIN300&301	5.99	54.06	56.00	135867	0.000	2.927	0.00	6.22
PERC	SC-POND301	BASIN300&301	6.01	54.06	56.00	135860	0.000	2.917	0.00	6.23
PERC	SC-POND301	BASIN300&301	6.02	54.06	56.00	135854	0.000	2.908	0.00	6.23
PERC	SC-POND301	BASIN300&301	6.04	54.06	56.00	135842	0.000	2.890	0.00	6.23
PERC	SC-POND301	BASIN300&301	6.06	54.06	56.00	135836	0.000	2.881	0.00	6.24
PERC	SC-POND301	BASIN300&301	6.07	54.06	56.00	135830	0.000	2.872	0.00	6.24
PERC	SC-POND301	BASIN300&301	6.08	54.06	56.00	135824	0.000	2.863	0.00	6.24
PERC	SC-POND301	BASIN300&301	6.11	54.06	56.00	135811	0.000	2.846	0.00	6.25
PERC	SC-POND301	BASIN300&301	6.12	54.05	56.00	135805	0.000	2.837	0.00	6.25
PERC	SC-POND301	BASIN300&301	6.14	54.05	56.00	135799	0.000	2.828	0.00	6.26
PERC	SC-POND301	BASIN300&301	6.16	54.05	56.00	135787	0.000	2.812	0.00	6.26
PERC	SC-POND301	BASIN300&301	6.18	54.05	56.00	135781	0.000	2.803	0.00	6.27
PERC	SC-POND301	BASIN300&301	6.19	54.05	56.00	135775	0.000	2.795	0.00	6.27
PERC	SC-POND301	BASIN300&301	6.20	54.05	56.00	135770	0.000	2.787	0.00	6.27
PERC	SC-POND301	BASIN300&301	6.23	54.05	56.00	135758	0.000	2.771	0.00	6.28
PERC	SC-POND301	BASIN300&301	6.24	54.05	56.00	135752	0.000	2.763	0.00	6.28
PERC	SC-POND301	BASIN300&301	6.25	54.04	56.00	135746	0.000	2.755	0.00	6.28
PERC	SC-POND301	BASIN300&301	6.27	54.04	56.00	135740	0.000	2.747	0.00	6.29
PERC	SC-POND301	BASIN300&301	6.29	54.04	56.00	135729	0.000	2.732	0.00	6.29
PERC	SC-POND301	BASIN300&301	6.31	54.04	56.00	135723	0.000	2.724	0.00	6.30
PERC	SC-POND301	BASIN300&301	6.32	54.04	56.00	135717	0.000	2.717	0.00	6.30
PERC	SC-POND301	BASIN300&301	6.33	54.04	56.00	135711	0.000	2.709	0.00	6.30
PERC	SC-POND301	BASIN300&301	6.36	54.04	56.00	135700	0.000	2.694	0.00	6.31
PERC	SC-POND301	BASIN300&301	6.37	54.04	56.00	135694	0.000	2.687	0.00	6.31
PERC	SC-POND301	BASIN300&301	6.39	54.04	56.00	135688	0.000	2.680	0.00	6.31
PERC	SC-POND301	BASIN300&301	6.41	54.03	56.00	135677	0.000	2.665	0.00	6.32
PERC	SC-POND301	BASIN300&301	6.43	54.03	56.00	135671	0.000	2.658	0.00	6.32
PERC	SC-POND301	BASIN300&301	6.44	54.03	56.00	135666	0.000	2.651	0.00	6.32
PERC	SC-POND301	BASIN300&301	6.45	54.03	56.00	135660	0.000	2.644	0.00	6.33
PERC	SC-POND301	BASIN300&301	6.48	54.03	56.00	135649	0.000	2.630	0.00	6.33
PERC	SC-POND301	BASIN300&301	6.49	54.03	56.00	135643	0.000	2.623	0.00	6.34
PERC	SC-POND301	BASIN300&301	6.50	54.03	56.00	135638	0.000	2.617	0.00	6.34
PERC	SC-POND301	BASIN300&301	6.52	54.03	56.00	135632	0.000	2.610	0.00	6.34
PERC	SC-POND301	BASIN300&301	6.54	54.02	56.00	135621	0.000	2.597	0.00	6.35
PERC	SC-POND301	BASIN300&301	6.56	54.02	56.00	135615	0.000	2.590	0.00	6.35
PERC	SC-POND301	BASIN300&301	6.57	54.02	56.00	135610	0.000	2.584	0.00	6.35
PERC	SC-POND301	BASIN300&301	6.60	54.02	56.00	135599	0.000	2.571	0.00	6.36
PERC	SC-POND301	BASIN300&301	6.61	54.02	56.00	135594	0.000	2.564	0.00	6.36
PERC	SC-POND301	BASIN300&301	6.62	54.02	56.00	135588	0.000	2.558	0.00	6.36
PERC	SC-POND301	BASIN300&301	6.64	54.02	56.00	135583	0.000	2.552	0.00	6.37
PERC	SC-POND301	BASIN300&301	6.66	54.02	56.00	135572	0.000	2.539	0.00	6.37
PERC	SC-POND301	BASIN300&301	6.67	54.02	56.00	135566	0.000	2.533	0.00	6.38
PERC	SC-POND301	BASIN300&301	6.69	54.01	56.00	135561	0.000	2.527	0.00	6.38
PERC	SC-POND301	BASIN300&301	6.70	54.01	56.00	135556	0.000	2.521	0.00	6.38
PERC	SC-POND301	BASIN300&301	6.73	54.01	56.00	135545	0.000	2.509	0.00	6.39
PERC	SC-POND301	BASIN300&301	6.74	54.01	56.00	135540	0.000	2.503	0.00	6.39

Basin 300 & 301 (Pond 301)
FDOT Closed Basin Recovery
7-Day / 30-day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	SC-POND301	BASIN300&301	149.87	52.01	56.00	123310	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	149.88	52.01	56.00	123309	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	149.90	52.01	56.00	123308	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	149.92	52.01	56.00	123308	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	149.93	52.01	56.00	123307	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	149.95	52.01	56.00	123306	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	149.97	52.01	56.00	123306	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	149.98	52.00	56.00	123305	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	150.00	52.00	56.00	123304	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	150.02	52.00	56.00	123304	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	150.03	52.00	56.00	123303	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	150.05	52.00	56.00	123302	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	150.07	52.00	56.00	123302	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	150.08	52.00	56.00	123301	0.000	0.225	0.00	12.35
PERC	SC-POND301	BASIN300&301	150.10	52.00	56.00	123300	0.000	0.225	0.00	12.35

Basin 300
Stormsewer Tailwater - 10-YR. / 240-HR. (Orifice Off & Initial Stage Set at the Weir Elevation)

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010Y240H	SC-POND300	BASIN300&301	182.50	54.49	56.00	121826	13.66	3.99	20.28	10.50
010Y240H	SC-POND300	BASIN300&301	182.59	54.52	56.00	121956	13.66	4.03	20.37	10.53
010Y240H	SC-POND300	BASIN300&301	182.67	54.54	56.00	122086	13.66	4.06	20.47	10.56
010Y240H	SC-POND300	BASIN300&301	182.75	54.57	56.00	122215	13.67	4.10	20.56	10.58
010Y240H	SC-POND300	BASIN300&301	182.84	54.59	56.00	122343	13.67	4.14	20.66	10.61
010Y240H	SC-POND300	BASIN300&301	182.92	54.61	56.00	122471	13.67	4.17	20.75	10.64
010Y240H	SC-POND300	BASIN300&301	183.00	54.64	56.00	122598	13.67	4.21	20.85	10.67
010Y240H	SC-POND300	BASIN300&301	183.08	54.66	56.00	122717	13.67	4.24	20.94	10.70
010Y240H	SC-POND300	BASIN300&301	183.17	54.68	56.00	122843	13.68	4.27	21.03	10.73
010Y240H	SC-POND300	BASIN300&301	183.25	54.70	56.00	122969	13.68	4.31	21.13	10.76
010Y240H	SC-POND300	BASIN300&301	183.34	54.73	56.00	123094	13.68	4.34	21.22	10.79
010Y240H	SC-POND300	BASIN300&301	183.42	54.75	56.00	123218	13.68	4.38	21.32	10.82
010Y240H	SC-POND300	BASIN300&301	183.50	54.77	56.00	123342	13.68	4.41	21.41	10.85
010Y240H	SC-POND300	BASIN300&301	183.59	54.80	56.00	123469	13.69	4.45	21.51	10.88
010Y240H	SC-POND300	BASIN300&301	183.67	54.82	56.00	123587	13.69	4.48	21.60	10.91
010Y240H	SC-POND300	BASIN300&301	183.76	54.84	56.00	123712	13.69	4.51	21.70	10.94
010Y240H	SC-POND300	BASIN300&301	183.84	54.86	56.00	123829	13.69	4.55	21.79	10.97
010Y240H	SC-POND300	BASIN300&301	183.92	54.88	56.00	123954	13.69	4.58	21.89	11.00
010Y240H	SC-POND300	BASIN300&301	184.00	54.91	56.00	124069	13.69	4.61	21.98	11.03
010Y240H	SC-POND300	BASIN300&301	184.09	54.93	56.00	124191	13.47	4.65	22.07	11.07
010Y240H	SC-POND300	BASIN300&301	184.17	54.95	56.00	124299	12.94	4.68	22.16	11.10
010Y240H	SC-POND300	BASIN300&301	184.26	54.97	56.00	124406	11.85	4.71	22.25	11.13
010Y240H	SC-POND300	BASIN300&301	184.33	54.98	56.00	124485	10.65	4.73	22.32	11.16
010Y240H	SC-POND300	BASIN300&301	184.42	54.99	56.00	124554	9.37	4.75	22.39	11.19
010Y240H	SC-POND300	BASIN300&301	184.50	55.01	56.00	124609	8.24	4.77	22.45	11.23
010Y240H	SC-POND300	BASIN300&301	184.59	55.01	56.00	124650	7.31	4.78	22.51	11.26
010Y240H	SC-POND300	BASIN300&301	184.67	55.02	56.00	124677	6.63	4.79	22.55	11.29
010Y240H	SC-POND300	BASIN300&301	184.75	55.02	56.00	124697	6.00	4.79	22.60	11.33
010Y240H	SC-POND300	BASIN300&301	184.84	55.02	56.00	124710	5.49	4.80	22.64	11.36
010Y240H	SC-POND300	BASIN300&301	184.92	55.02	56.00	124716	5.10	4.80	22.67	11.39

Basin 300
Stormsewer Tailwater - 50-YR. / 240-HR. (Orifice Off & Initial Stage Set at the Weir Elevation)

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
050Y240H	SC-POND300	BASIN300&301	182.50	55.43	56.00	126924	17.85	5.42	27.45	15.00
050Y240H	SC-POND300	BASIN300&301	182.59	55.46	56.00	127081	17.86	5.47	27.57	15.03
050Y240H	SC-POND300	BASIN300&301	182.67	55.49	56.00	127237	17.86	5.51	27.69	15.07
050Y240H	SC-POND300	BASIN300&301	182.75	55.52	56.00	127393	17.86	5.55	27.81	15.11
050Y240H	SC-POND300	BASIN300&301	182.84	55.55	56.00	127560	17.86	5.60	27.94	15.15
050Y240H	SC-POND300	BASIN300&301	182.92	55.58	56.00	127714	17.86	5.64	28.06	15.19
050Y240H	SC-POND300	BASIN300&301	183.01	55.60	56.00	127874	17.86	5.69	28.19	15.23
050Y240H	SC-POND300	BASIN300&301	183.09	55.63	56.00	128033	17.87	5.73	28.31	15.27
050Y240H	SC-POND300	BASIN300&301	183.17	55.66	56.00	128175	17.87	5.77	28.43	15.30
050Y240H	SC-POND300	BASIN300&301	183.25	55.69	56.00	128333	17.87	5.82	28.55	15.34
050Y240H	SC-POND300	BASIN300&301	183.34	55.72	56.00	128489	17.87	5.86	28.68	15.38
050Y240H	SC-POND300	BASIN300&301	183.42	55.75	56.00	128645	17.87	5.91	28.81	15.43
050Y240H	SC-POND300	BASIN300&301	183.50	55.77	56.00	128785	17.87	5.95	28.92	15.46
050Y240H	SC-POND300	BASIN300&301	183.59	55.80	56.00	128940	17.88	5.99	29.05	15.51
050Y240H	SC-POND300	BASIN300&301	183.67	55.83	56.00	129093	17.88	6.04	29.17	15.55
050Y240H	SC-POND300	BASIN300&301	183.76	55.86	56.00	129246	17.88	6.08	29.30	15.59
050Y240H	SC-POND300	BASIN300&301	183.83	55.88	56.00	129383	17.88	6.12	29.41	15.63
050Y240H	SC-POND300	BASIN300&301	183.92	55.91	56.00	129535	17.88	6.17	29.54	15.67
050Y240H	SC-POND300	BASIN300&301	184.00	55.94	56.00	129686	17.86	6.21	29.66	15.72
050Y240H	SC-POND300	BASIN300&301	184.09	55.96	56.00	129834	17.58	6.25	29.79	15.76
050Y240H	SC-POND300	BASIN300&301	184.18	55.99	56.00	129975	16.80	6.29	29.91	15.80
050Y240H	SC-POND300	BASIN300&301	184.25	56.01	56.00	130090	15.58	6.33	30.01	15.84
050Y240H	SC-POND300	BASIN300&301	184.34	56.03	56.00	130204	13.71	6.36	30.12	15.89
050Y240H	SC-POND300	BASIN300&301	184.42	56.05	56.00	130278	12.21	6.38	30.20	15.93
050Y240H	SC-POND300	BASIN300&301	184.50	56.06	56.00	130344	10.75	6.40	30.28	15.98
050Y240H	SC-POND300	BASIN300&301	184.59	56.07	56.00	130391	9.59	6.42	30.35	16.02
050Y240H	SC-POND300	BASIN300&301	184.67	56.07	56.00	130425	8.61	6.43	30.42	16.07
050Y240H	SC-POND300	BASIN300&301	184.76	56.08	56.00	130448	7.81	6.43	30.48	16.11
050Y240H	SC-POND300	BASIN300&301	184.83	56.08	56.00	130460	7.21	6.44	30.52	16.15
050Y240H	SC-POND300	BASIN300&301	184.92	56.08	56.00	130466	6.64	6.44	30.57	16.20

Basin 301
Stormsewer Tailwater - 10-YR. / 240-HR. (Initial Stage Set at the Weir Elevation)

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010Y240H	SC-POND301	BASIN300&301	182.50	55.50	56.00	144639	8.69	0.97	13.71	15.25
010Y240H	SC-POND301	BASIN300&301	182.59	55.52	56.00	144737	8.69	0.98	13.77	15.25
010Y240H	SC-POND301	BASIN300&301	182.67	55.54	56.00	144835	8.69	0.98	13.83	15.26
010Y240H	SC-POND301	BASIN300&301	182.75	55.55	56.00	144933	8.69	0.99	13.89	15.27
010Y240H	SC-POND301	BASIN300&301	182.84	55.57	56.00	145031	8.69	0.99	13.95	15.28
010Y240H	SC-POND301	BASIN300&301	182.92	55.58	56.00	145129	8.69	0.99	14.01	15.28
010Y240H	SC-POND301	BASIN300&301	183.00	55.60	56.00	145226	8.69	1.00	14.07	15.29
010Y240H	SC-POND301	BASIN300&301	183.08	55.61	56.00	145318	8.70	1.00	14.13	15.30
010Y240H	SC-POND301	BASIN300&301	183.17	55.63	56.00	145416	8.70	1.00	14.19	15.30
010Y240H	SC-POND301	BASIN300&301	183.25	55.65	56.00	145513	8.70	1.00	14.25	15.31
010Y240H	SC-POND301	BASIN300&301	183.34	55.66	56.00	145610	8.70	1.01	14.31	15.32
010Y240H	SC-POND301	BASIN300&301	183.42	55.68	56.00	145708	8.70	1.01	14.37	15.32
010Y240H	SC-POND301	BASIN300&301	183.50	55.69	56.00	145805	8.70	1.01	14.43	15.33
010Y240H	SC-POND301	BASIN300&301	183.59	55.71	56.00	145904	8.70	1.02	14.49	15.34
010Y240H	SC-POND301	BASIN300&301	183.67	55.73	56.00	145997	8.70	1.02	14.55	15.34
010Y240H	SC-POND301	BASIN300&301	183.76	55.74	56.00	146097	8.70	1.02	14.61	15.35
010Y240H	SC-POND301	BASIN300&301	183.84	55.76	56.00	146189	8.70	1.03	14.67	15.36
010Y240H	SC-POND301	BASIN300&301	183.92	55.77	56.00	146289	8.70	1.03	14.73	15.37
010Y240H	SC-POND301	BASIN300&301	184.00	55.79	56.00	146381	8.69	1.03	14.79	15.37
010Y240H	SC-POND301	BASIN300&301	184.09	55.80	56.00	146479	8.49	1.04	14.85	15.38
010Y240H	SC-POND301	BASIN300&301	184.17	55.82	56.00	146565	7.97	1.04	14.91	15.39
010Y240H	SC-POND301	BASIN300&301	184.26	55.83	56.00	146650	6.94	1.03	14.96	15.39
010Y240H	SC-POND301	BASIN300&301	184.33	55.84	56.00	146713	6.00	1.03	15.00	15.40
010Y240H	SC-POND301	BASIN300&301	184.42	55.85	56.00	146769	5.15	1.02	15.04	15.41
010Y240H	SC-POND301	BASIN300&301	184.50	55.86	56.00	146818	4.45	1.01	15.07	15.42
010Y240H	SC-POND301	BASIN300&301	184.59	55.87	56.00	146859	3.92	1.00	15.10	15.42
010Y240H	SC-POND301	BASIN300&301	184.67	55.87	56.00	146891	3.54	0.99	15.13	15.43
010Y240H	SC-POND301	BASIN300&301	184.75	55.88	56.00	146922	3.19	0.98	15.15	15.44
010Y240H	SC-POND301	BASIN300&301	184.84	55.88	56.00	146949	2.90	0.97	15.17	15.44
010Y240H	SC-POND301	BASIN300&301	184.92	55.89	56.00	146970	2.68	0.96	15.19	15.45

ORIFICE CALCULATIONS

Prepared by:	JLL
Date:	30-May-17
Checked by:	MB
Date:	5-Jun-17

Project Name:	I-4 BtU Segment 3
Project Number:	242592-4-52-01

Drawdown Time: 24 - 30

Pond	Drawdown Structure	Area at SHWT Elevation (ac.)	Area at Weir Elevation (ac)	Avg. Area between Weir and SHWT (ac)	Height of Treatment Volume h1 (ft)	Half of the treatment volume h2 (ft)	Orifice flow coefficient Cd	Orifice area Required (ft^2)	Orifice Diameter Required (in)	Orifice Diameter Provided (in)	V-Notch Detention Volume (ac-ft)	V-Notch Angle Required	V-Notch Angle Provided	Actual Discharge time for half Volume t (hrs)	Time for Full Discharge of Treatment Volume (hrs)
Pond 300	Orifice	2.11	2.32	2.22	1.67	0.84	0.65	0.16	5.43	5.25	N/A	N/A	N/A	25.71	89.07

Remarks:

J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\Calculations\Basin 300&301\Pond 300 Orifice Calcs.xls

```
==========================================================================================
==== Basins ==============================================================================
==========================================================================================

         Name: SC-800A                  Node: SC-0800                Status: Onsite
        Group: BASIN300&301             Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File: Sjrwmd96            Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200                Time of Conc(min): 13.00
             Area(ac): 5.230                     Time Shift(hrs): 0.00
          Curve Number: 82.00               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: SC-POND300               Node: SC-POND300             Status: Onsite
        Group: BASIN300&301             Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Sjrwmd96            Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200                Time of Conc(min): 31.00
             Area(ac): 29.780                    Time Shift(hrs): 0.00
          Curve Number: 85.80               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: SC-POND301               Node: SC-POND301             Status: Onsite
        Group: BASIN300&301             Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Sjrwmd96            Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200                Time of Conc(min): 25.00
             Area(ac): 18.720                    Time Shift(hrs): 0.00
          Curve Number: 90.30               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

      Name: GRND 301            Base Flow(cfs): 0.000          Init Stage(ft): 45.600
     Group: BASIN300&301                                       Warn Stage(ft): 45.600
      Type: Time/Stage


      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          45.600
         336.00          45.600

-----------------------------------------------------------------------------------------
      Name: SC-0800             Base Flow(cfs): 0.000          Init Stage(ft): 49.000
     Group: BASIN300&301                                       Warn Stage(ft): 52.000
      Type: Time/Stage


      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          49.000
          11.00          52.000
          16.00          52.000
          24.00          52.000
          96.00          49.000

-----------------------------------------------------------------------------------------
      Name: SC-810              Base Flow(cfs): 0.000          Init Stage(ft): 55.000
```

```
     Group: BASIN300&301                                    Warn Stage(ft): 55.000
      Type: Time/Stage



      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          55.000
          96.00          55.000

-------------------------------------------------------------------------------------------
      Name: SC-POND300          Base Flow(cfs): 0.000          Init Stage(ft): 49.000
     Group: BASIN300&301                                    Warn Stage(ft): 56.000
      Type: Stage/Area



      Stage(ft)        Area(ac)
--------------- ---------------
         49.000          2.1100
         57.000          3.1100

-------------------------------------------------------------------------------------------
      Name: SC-POND301          Base Flow(cfs): 0.000          Init Stage(ft): 52.000
     Group: BASIN300&301                                    Warn Stage(ft): 56.000
      Type: Stage/Area



      Stage(ft)        Area(ac)
--------------- ---------------
         52.000          2.8300
         57.000          3.5300

===========================================================================================
==== Drop Structures ======================================================================
===========================================================================================

         Name: S-O300              From Node: SC-POND300         Length(ft): 351.00
        Group: BASIN300&301          To Node: SC-0800                 Count: 1

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                 Flow: Both
     Rise(in): 18.00          18.00                     Entrance Loss Coef: 1.000
   Invert(ft): 49.000         48.700                        Exit Loss Coef: 0.500
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

DBI Type C

*** Weir 1 of 3 for Drop Structure S-O300 ***
                                                                                   TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Vertical: Mavis            Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Circular               Orifice Disc Coef: 0.600

               Span(in): 5.25                         Invert(ft): 49.000
               Rise(in): 5.25                   Control Elev(ft): 49.000

*** Weir 2 of 3 for Drop Structure S-O300 ***
                                                                                   TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Vertical: Mavis            Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular            Orifice Disc Coef: 0.600
```

```
              Span(in): 2.00                        Invert(ft): 50.670
              Rise(in): 63.96                 Control Elev(ft): 50.670

*** Weir 3 of 3 for Drop Structure S-O300 ***
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Horizontal                Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 37.00                       Invert(ft): 56.420
              Rise(in): 24.00                 Control Elev(ft): 56.420


-----------------------------------------------------------------------------------------------
         Name: S-O301             From Node: SC-POND301        Length(ft): 413.00
        Group: BASIN300&301         To Node: SC-810                 Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Average Conveyance
     Geometry: Circular       Circular                  Solution Algorithm: Automatic
     Span(in): 18.00          18.00                                  Flow: Both
     Rise(in): 18.00          18.00                     Entrance Loss Coef: 0.500
   Invert(ft): 53.900         52.300                        Exit Loss Coef: 1.000
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

DBI Type D

*** Weir 1 of 1 for Drop Structure S-O301 ***
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Horizontal                Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 49.00                       Invert(ft): 55.980
              Rise(in): 37.00                 Control Elev(ft): 55.980


=====================================================================================
==== Percolation Links ===============================================================
=====================================================================================

         Name: PERC 301           From Node: SC-POND301              Flow: Both
        Group: BASIN300&301         To Node: GRND 301               Count: 1

         Surface Area Option: Vary based on Stage/Area Table
   Vertical Flow Termination: Horizontal Flow Algorithm
       Aquifer Base Elev(ft): 31.600                       Perimeter 1(ft): 1561.000
        Water Table Elev(ft): 45.600                       Perimeter 2(ft): 1933.000
 ****************************-9999.000                    Perimeter 3(ft): 4912.000
  Horiz Conductivity(ft/day): 20.000                   Distance 1 to 2(ft): 50.000
   Vert Conductivity(ft/day): 10.000                   Distance 2 to 3(ft): 450.000
     Effective Porosity(dec): 0.250                       Num Cells 1 to 2: 10
            Suction Head(in): 4.000                       Num Cells 2 to 3: 45
         Layer Thickness(ft): 6.400



=====================================================================================
==== Hydrology Simulations ===========================================================
=====================================================================================

         Name: 010Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y240H.R32

      Override Defaults: Yes
```

```
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 13.50

Time(hrs)       Print Inc(min)
--------------- ---------------
240.000         5.00

-----------------------------------------------------------------------------------------------
         Name: 050Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\050Y240H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 17.50

Time(hrs)       Print Inc(min)
--------------- ---------------
250.000         5.00

-----------------------------------------------------------------------------------------------
         Name: 100Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\100Y240H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 18.50

Time(hrs)       Print Inc(min)
--------------- ---------------
240.000         5.00

-----------------------------------------------------------------------------------------------
         Name: SJRWMD
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\SJRWMD.R32

      Override Defaults: No

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.00
14.000          1.00
96.000          5.00

=============================================================================================
==== Routing Simulations ====================================================================
=============================================================================================

         Name: 010Y240H            Hydrology Sim: 010Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y240H.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 240.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
240.000         5.000

Group           Run
--------------- -----
BASIN300&301    Yes


-----------------------------------------------------------------------------------------------
         Name: 050Y240H            Hydrology Sim: 050Y240H
```

```
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\050Y240H.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 240.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:



Time(hrs)       Print Inc(min)
--------------- ---------------
240.000         5.000

Group           Run
--------------- -----
BASIN300&301    Yes


-------------------------------------------------------------------------------------------------
         Name: 100Y240H            Hydrology Sim: 100Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\100Y240H.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 336.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:



Time(hrs)       Print Inc(min)
--------------- ---------------
336.000         15.000

Group           Run
--------------- -----
BASIN300&301    Yes


-------------------------------------------------------------------------------------------------
         Name: PERC                Hydrology Sim:
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\PERC.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 720.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:



Time(hrs)       Print Inc(min)
--------------- ---------------
720.000         1.000

Group           Run
--------------- -----
BASIN300&301    Yes


-------------------------------------------------------------------------------------------------
         Name: SJRWMD              Hydrology Sim: SJRWMD
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\SJRWMD.I32

      Execute: Yes         Restart: No            Patch: No
```

```
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 120.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.000
16.000          1.000
96.000          5.000
120.000         5.000

Group           Run
--------------- -----
BASIN300&301    Yes
```

Grace Lake Stormwater Model

SJRWMD ERP for Grace Lake March 2014

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD)
JOINT APPLICATION FOR INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT

ERP APPLICATION NO. 4-117-121387-2
ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE
SEMINOLE COUNTY, FLORIDA

MARCH 2014

Pegasus ENGINEERING

SJRWMD Joint Application for Individual Environmental Resource Permit

ERP Application No. 4-117-121387-2
Alternative Sinkhole Remediation Protocol for Grace Lake

Acknowledgements

- Bob Dallari, District 1 Commissioner
- John Horan, District 2 Commissioner
- Lee Constantine, District 3 Commissioner
- Carton Henley, District 4 Commissioner
- Brenda Carey, District 5 Commissioner

Seminole County
Florida's Natural Choice

Antoine Khoury, P.E., Public Works Director
Brett Blackadaar, P.E., County Engineer
Mark Flomerfelt, P.E., Stormwater Capital Projects

Certification

Pegasus Engineering

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The information contained within the following document was prepared by Pegasus Engineering, LLC under the supervision and direction of the respective undersigned, whose seal as a registered professional engineer is affixed below.

SJRWMD Permit Application Package	ICPR Stormwater Modeling
GREGORY ALLEN TEAGUE LICENSE NO. 47663 STATE OF FLORIDA PROFESSIONAL ENGINEER	JOHAN A. RODRIGUEZ LICENSE No 66517 STATE OF FLORIDA PROFESSIONAL ENGINEER
Greg A. Teague, P.E., CFM	Johan A. Rodriguez, P.E.
Florida Registration No. 47663	Florida Registration No. 66517
March 28, 2014	March 28, 2014

FOREWORD

Certifications i

TAB 1: JOINT APPLICATION FOR INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT

Section	Description	
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2.2	Updated Surface Water Analysis	4
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- ✓ Table 3.2.5 => Partial Tabulation of Computed Runoff Curve Numbers 12

3.3 Time of Concentration Computations
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TAB 4: UPDATED SURFACE WATER ANALYSIS

Section Description

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- ✓ Initial Stage => Elevation 58-Ft, NAVD 48

4.3 ICPR FIood Routing Results for the 100-Year, 96-Hour Storm Event ("Grace Lake" Group)
- ✓ Initial Stage => Elevation 59-Ft, NAVD 51

4.4 ICPR FIood Routing Results for the 100-Year, 96-Hour Storm Event ("Grace Lake" Group)
- ✓ Initial Stage => Elevation 60-Ft, NAVD 54

4.5 ICPR FIood Routing Results for the 100-Year, 96-Hour Storm Event ("Grace Lake" Group)
- ✓ Initial Stage => Elevation 61-Ft, NAVD 57

4.6 ICPR FIood Routing Results for the 100-Year, 96-Hour Storm Event ("Grace Lake" Group)
- ✓ Initial Stage => Elevation 62-Ft, NAVD 60

4.7 ICPR FIood Routing Results for the 100-Year, 96-Hour Storm Event ("Grace Lake" Group)
- ✓ Initial Stage => Elevation 62.6-Ft, NAVD 63

TAB 5: SUPPORTING DOCUMENTATION FOR THE CONTINUOUS SIMULATION ANALYSIS

Section Description

5.1 Rainfall vs. Discharge Volume Rating Curve for the "Up-Gradient" Drainage Basins
- ✓ Table No. 5.1.1 ~ Rainfall Events Between 0.25" and 1.25" (AMC I Condition) 1
- ✓ Table No. 5.1.2 ~ Rainfall Events Between 1.50" and 2.50" (AMC I Condition) 1
- ✓ Table No. 5.1.3 ~ Rainfall Events Between 3.00" and 5.00" (AMC I Condition) 1
- ✓ Table No. 5.1.4 ~ Rainfall Events Between 6.00" and 10.00" (AMC I Condition) 1

5.2 ICPR Flood Routing Results for the "Up-Gradient" Drainage Basins
- ✓ Time vs. Discharge Volume for Node SC-0930 (AMC I Condition).....2
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- ✓ Time vs. Discharge Volume for Node SC-0930 (AMC II Condition).....23
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TAB 6: CONTINUOUS SIMULATION ANALYSIS
(PREPARED BY DEVO ENGINEERING)

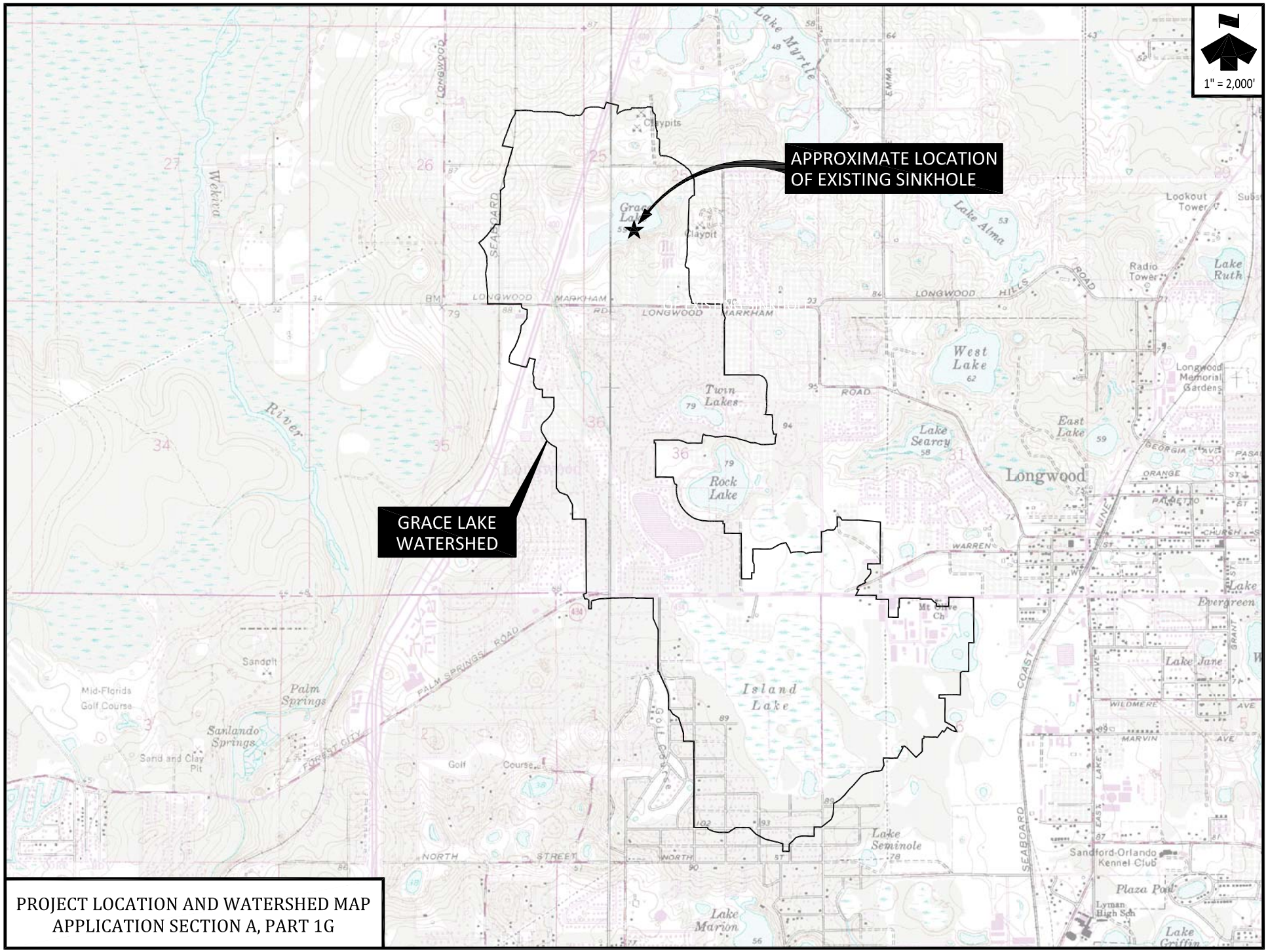
TAB 7: CONSTRUCTION PLANS
(PREPARED BY DEVO ENGINEERING)

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD)
JOINT APPLICATION FOR INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT

ERP APPLICATION NO. 4-117-121387-2
ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

TAB 1.2

SECTION A: MAPS AND OTHER ATTACHMENTS



PROJECT LOCATION AND WATERSHED MAP
APPLICATION SECTION A, PART 1G

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD)
JOINT APPLICATION FOR INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT

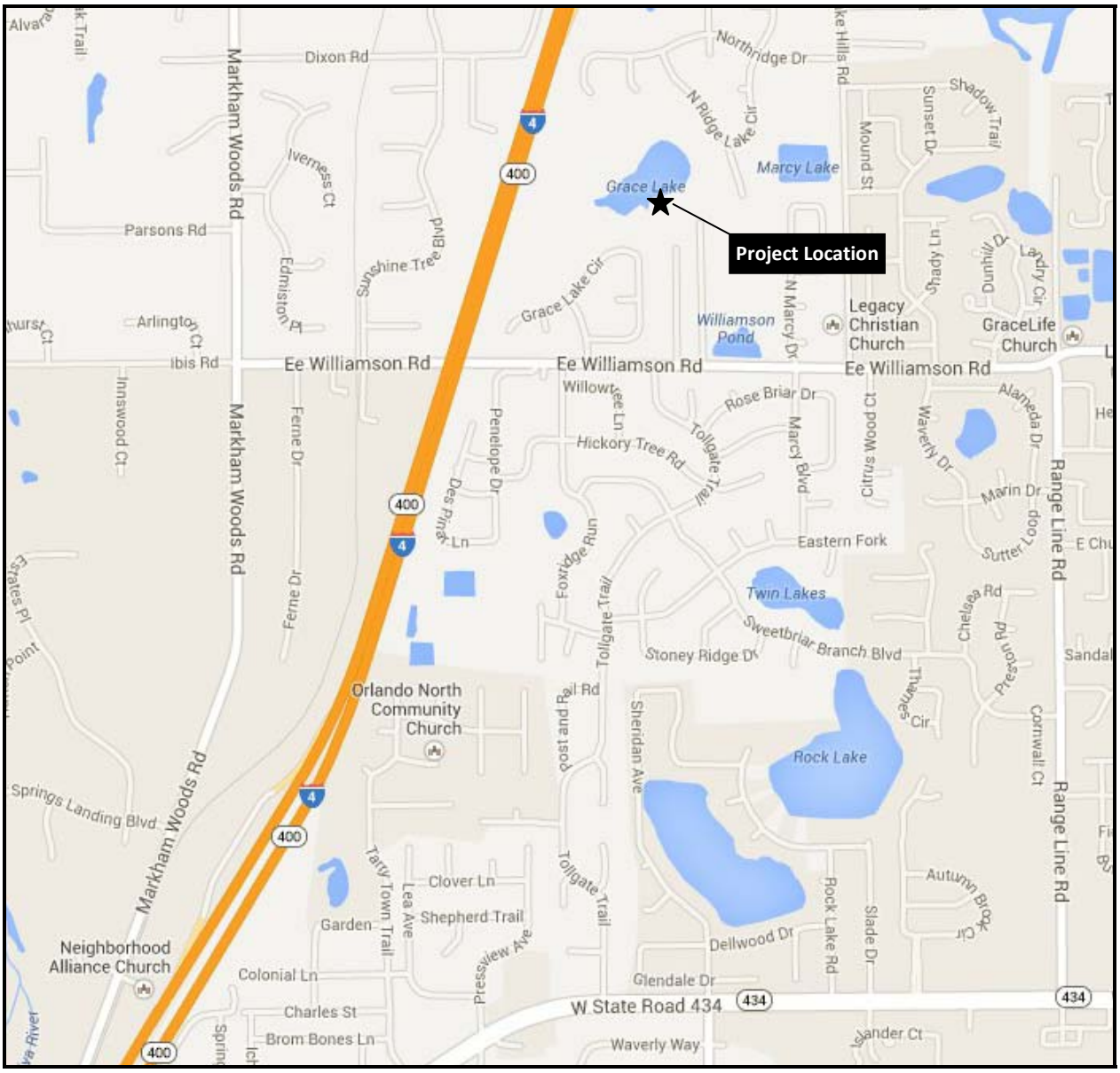
ERP APPLICATION NO. 4-117-121387-2
ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

TAB 2.1

APPLICATION OVERVIEW

2.1 Introduction and Project Overview

Grace Lake is located north of E.E. Williamson Road, east of Interstate 4, south of Northridge Drive and west of South Ridge Lake Circle (shown on most maps as North Ridge Lake Circle) and the Bay Lagoon Subdivision.



Beginning in April of 1986, water levels in Grace Lake have been altered by a sinkhole which formed approximately 120 feet north of the single family home located at 1526 Grace Lake Circle. Although post-sinkhole water levels have fluctuated in response to seasonal weather patterns and natural plugging of the formation, the lake is typically well below the normal water level (elevation 58-ft, NAVD). Subsequently, the lake's water area is most often well below the ±22 acres that would otherwise be occupied at the normal water level.

A remediation protocol[1] for Grace Lake was first developed in 2005, with actual design, engineering, and construction plans and permitting for a different repair approach completed a few years later[2]. The St. Johns River Water Management District (SJRWMD) issued Permit No. 4-117-121387-1 on June 13, 2011 which authorized the following construction activities for the sinkhole repair project.

- Installation of sheet pile panels to form a square-shaped coffer dam around the perimeter of the existing sinkhole formation.
- Backfilling inside and outside the sheet pile panels in alternating layers of rubble riprap and soil.
- Compaction grouting within the sinkhole and around the perimeter of the cofferdam in an effort to stabilize the subsurface soils.
- Although the repairs were focused upon stabilizing the existing sinkhole, water levels within Grace Lake would not be completely restored to pre-sinkhole (historical) conditions.

Because the bid documents[2] for the above sinkhole repairs were never finalized, Seminole County authorized additional work to investigate alternative options that could be more cost-effective and potentially more beneficial in terms of restoring water levels in Grace Lake to pre-sinkhole conditions. As part of this new authorization, the team of Devo Engineering and Pegasus Engineering has been tasked with the following scope of work.

<u>Devo Engineering</u>

- Investigate and evaluate various repair options and develop an alternative sinkhole remediation protocol.
- Develop a continuous simulation model to assess the performance characteristics of the alternative sinkhole remediation protocol in terms of both restoring the lake hydroperiod and maintaining adequate flood protection.
- Develop bid documents (construction plans and technical specifications) for the construction activities associated with the alternative sinkhole remediation protocol.

<u>Pegasus Engineering</u>

- Review and revise (if necessary) the surface water analysis developed for the original sinkhole remediation program. As part of this evaluation process, the high-level overflow path from Grace Lake to Myrtle Lake will also be confirmed, revised and/or refined.
- Utilize the updated surface water analysis to predict 100-year flood elevations, taking into account any changes to the Grace Lake hydroperiod associated with the proposed alternative sinkhole remediation protocol.

[1] Geotechnical Engineering Report for the Grace Lake Sinkhole Restoration (Devo Engineering, April 2005).
[2] Sinkhole repair improvements developed jointly by Professional Service Industries (PSI) and HDR Engineering.

- Evaluate flood protection issues and concerns relative to regulations associated with FEMA's National Flood Insurance Program (NFIP).

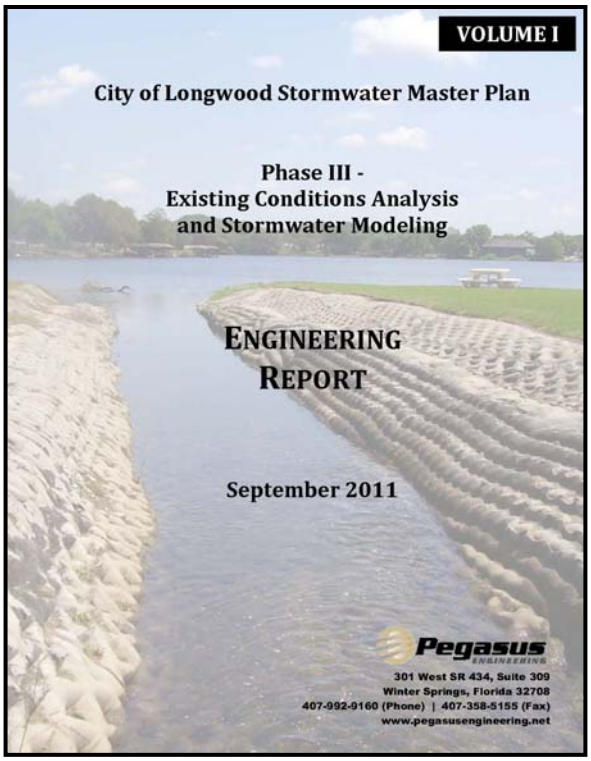
- Perform additional stormwater model simulation scenarios in support of the continuous simulation model being developed by Devo Engineering. More specifically, rating curves will be developed to quantify the discharge volume for inflows to Grace Lake that are outside the limits of the "direct rainfall" basin. Simulated rainfall will be increased (on an incremental basis) to encompass the actual rainfall for the period of record to be evaluated by the continuous simulation model.

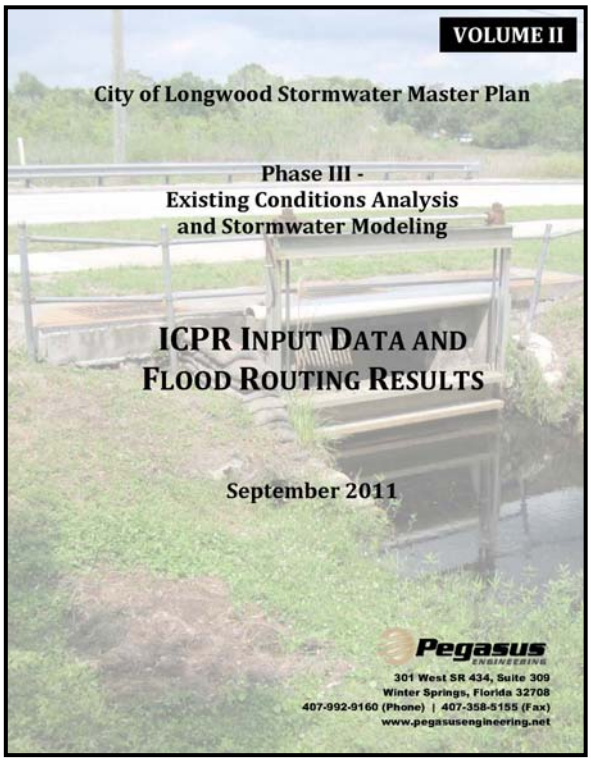
- Prepare a SJRWMD permit application package to modify the previously approved permit for the alternative sinkhole remediation protocol.

2.2 Updated Surface Water Analysis

The original sinkhole remediation program included the development of a surface water analysis for the drainage area that contributes stormwater runoff to Grace Lake. Although the surface water analysis was revised several times, research efforts[3] indicate that the final ICPR stormwater model was published within a response to the District's request for information (RAI) entitled "Grace Lake - Analysis of Sinkhole Repair, Permit Application Report RAI Update" (prepared by HDR and dated stamped received by the District on April 26, 2011).

In September 2011, final deliverables were published for the City of Longwood Stormwater Master Plan. More specifically, Phase 3 of Longwood's Stormwater Master Plan provided an existing conditions analysis and stormwater modeling for most of the drainage basins that encompass the City, including a significant portion of the Grace Lake watershed.

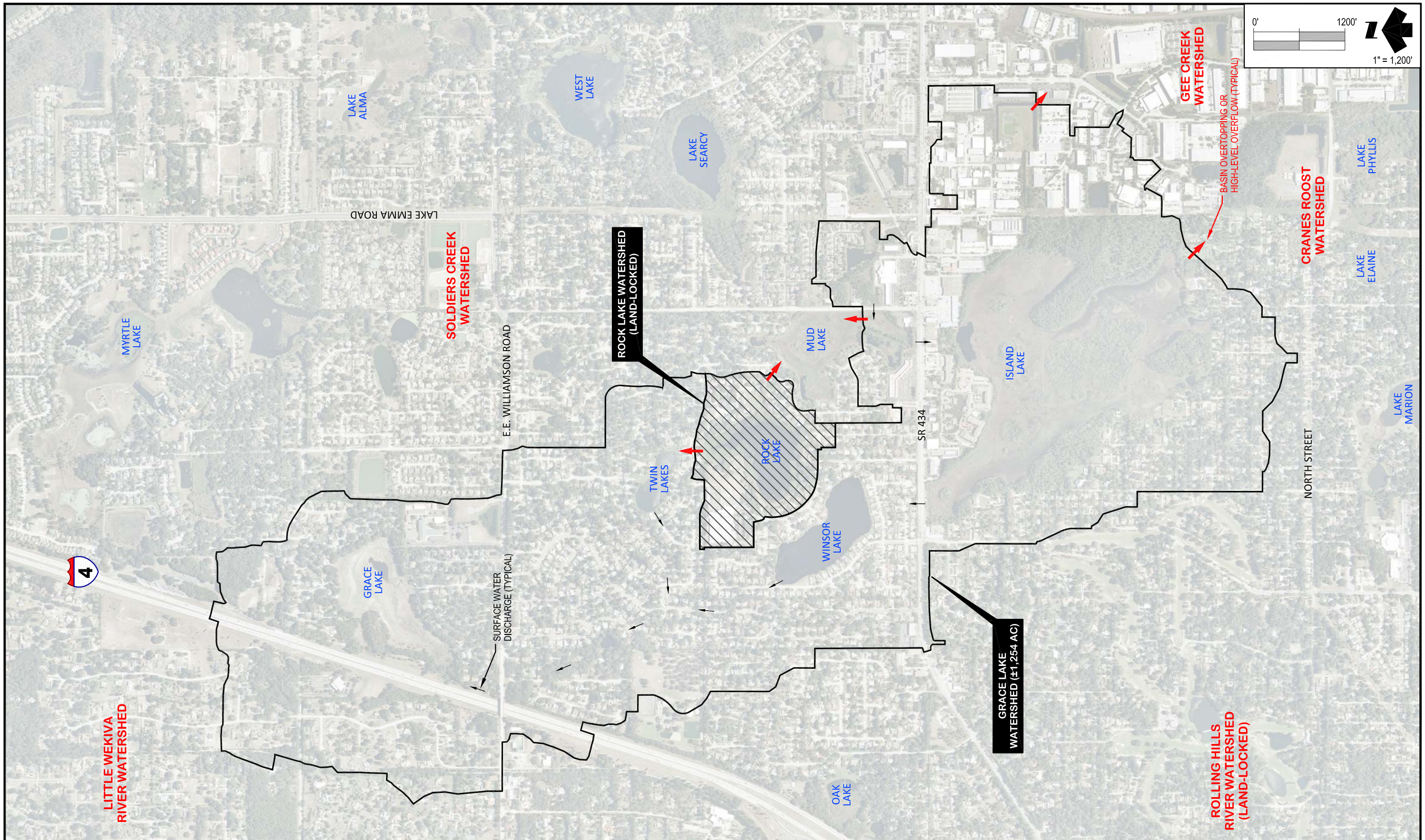




The original scope of work for the current project envisioned various activities related to reviewing, updating and revising the original surface water analysis for Grace Lake that was ultimately approved by the District under Permit No. 4-117-121387-1 dated June 13, 2011. However, the existing conditions analysis and stormwater modeling developed as part of Longwood's Stormwater Master Plan provides more current and comprehensive information, with several distinct benefits as summarized below.

- **Watershed Interactions**. As illustrated on the following figure, the Grace Lake watershed can potentially interact with several adjacent watersheds during large storm events that produce stages that rise above topographic ridges that define surface water basins.

[3] Seminole County and SJRWMD archives.



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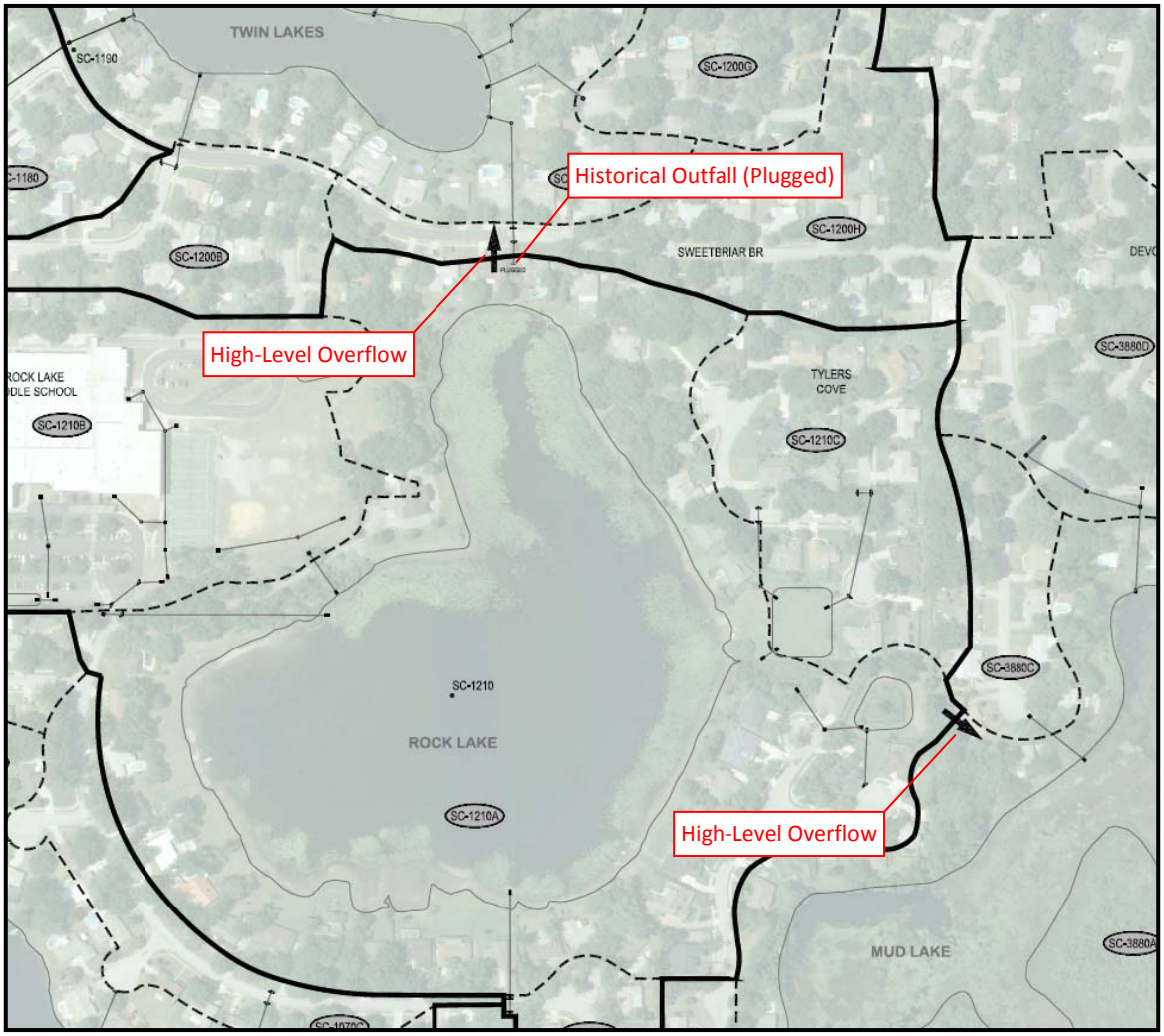
ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

FIGURE NO. 2-1
GRACE LAKE WATERSHED INTERACTION

- **Rock Lake Overflow Patterns**. Although Rock Lake had a historical discharge to Twin Lakes, the pipe connection on Sweetbriar Branch Boulevard was plugged at some point in time. Existing topography indicates that overflow from Rock Lake could potentially occur to the north (across Sweetbriar Branch Boulevard to Twin Lakes) or to the southeast (to Mud Lake within the Soldiers Creek watershed). Both of these high-level overflows, which essentially occur at the same elevation, are included within Longwood's Stormwater Master Plan (as shown below), whereas, only the north overflow was included within the original surface water analysis for Grace Lake.



Excerpt from Longwood's Stormwater Master Plan (Phase 3 - Existing Conditions Analysis and Stormwater Modeling)

It should be noted that the City of Longwood has implemented emergency pumping operations at Rock Lake in the past (during periods of high water and potential flooding), with various force mains and hoses connected to existing drainage systems that eventually result in discharge from Rock Lake to Mud Lake. For this reason, Rock Lake (a ±70-acre watershed) will <u>not</u> be included within the contributing drainage area for the Grace Lake watershed, although overflow discharge is accounted for in the updated surface water analysis as previously discussed.

- **Information Accuracy**. Phase 2 of Longwood's Stormwater Master Plan included the development of a comprehensive drainage inventory, encompassing both primary and secondary drainage systems. To facilitate the existing conditions analysis and stormwater modeling associated with Phase 3 of Longwood's Stormwater Master Plan, topographic surveys were completed for all of the drainage systems to be included within the ICPR stormwater model. Generally speaking, relying on comprehensive survey information is typically more reliable than developing stormwater model input data from "best available information", which is often derived from approximate sources or altered by some type of datum shift to maintain elevation consistency.

- **Elevation Datum Consistency**. Longwood's Stormwater Master Plan was developed with all elevation information referenced to the NAVD vertical datum, which provides for improved accuracy and consistency with information presented within FEMA's National Flood Insurance Program (NFIP).

  Unless specified otherwise, elevations presented throughout this report are referenced to the NAVD vertical datum. In the event that elevation information referenced to the NGVD vertical datum was used, a datum shift of 1.03 feet was applied as a constant conversion to the NAVD vertical datum. In some cases, an approximate datum shift of 1 foot was used.

- **Areal Extent of the Revision Area**. Because Longwood's Stormwater Master Plan included a large portion of the Grace Lake watershed with a northern terminus located just south of E.E. Williamson Road, only the land areas located north of E.E. Williamson Road had to be appended for the purpose of developing the updated surface water analysis. Because the ICPR input data for the updated surface water analysis was obtained from a variety of different sources, substantial information was added to the ICPR comment fields to provide the necessary reference citations. Because portions of the original surface water analysis were used to incorporate the northern extent of the Grace Lake watershed, consistency with current conditions was confirmed by field reviews performed by Pegasus Engineering staff.

- **Minimizing Modeling Assumptions.** A number of modeling assumptions were presented within the engineering narrative for the original surface water analysis, some of which related to a previous drainage study[4] and to various drainage systems and their intended discharge patterns throughout the Grace Lake watershed.

- **SJRWMD Considerations**. Pursuant to previous conversations with District staff, using a stormwater model that was previously developed as part of a comprehensive and/or large scale master plan is acceptable. However, the application submittal should only include whatever portion of the stormwater model that is necessary to support the proposed improvements (i.e., the District does not want to approve the entire model as part of the County's application for this project).

[4] Engineering Study and Drainage Inventory for the Soldiers Creek Basin (Singhofen & Associates, December 1996).

2.3 Report Organization

In support of this application overview and the updated surface water analysis for Grace Lake, the following full size exhibits (24" x 36" set is to scale) are provided as an external attachment to this report. For the reader's convenience, a reduced size set of exhibits (11" x 17" is not to scale) is also provided later within this narrative. These mapping exhibits should be considered equally important companion material that provides graphical representations of the drainage basins and drainage systems that are germane to the updated surface water analysis for Grace Lake.

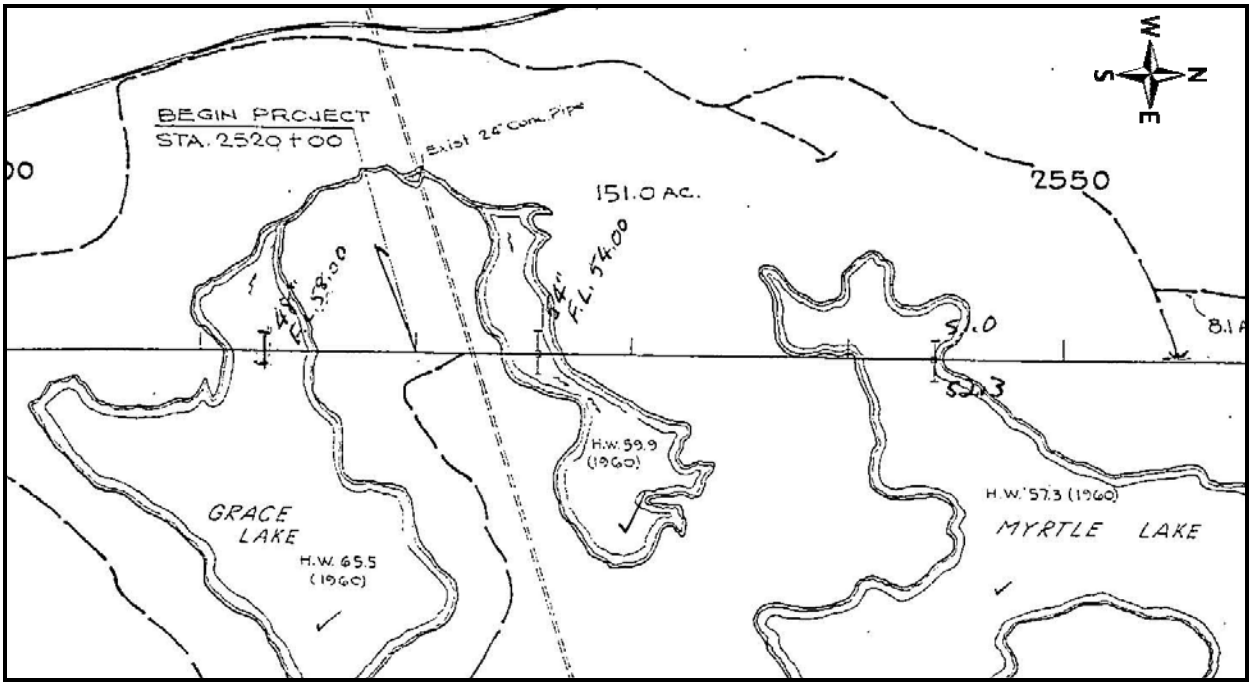
COMPANION PLANS	
Sheet	Exhibit Name
1	Cover Sheet
2	NRCS Soils and FLUCCS Land Use
3	Drainage Basins and ICPR Nodes
4	High Level Overflow Path ~ Grace Lake to Myrtle Lake
5	ICPR Nodes and Links ("Network Builder")
6	Topographic Survey Coverage
7	100-Year Floodplains (Effective and Predicted SFHA's)

In keeping with the District's directive relative to submitting information associated with a comprehensive and/or large scale master plan, mapping exhibits (companion plans) and printouts from the stormwater model will be limited to the northern extent of the Grace Lake watershed (ICPR Group "Grace Lake"). Additional information (outside of these limits) can be obtained from Longwood's Stormwater Master Plan and is available upon request.

2.4 Flood Protection and the Grace Lake Overflow

As part of the alternative sinkhole remediation protocol, County staff emphasized the significance of ensuring adequate flood protection for both existing property and developed parcels located contiguous to Grace Lake and elsewhere within upstream portions of the watershed. Therefore, and in addition to updating the surface water analysis as previously discussed herein, current work efforts focused upon "where" and at "what elevation" Grace Lake overflows.

As shown below, the original drainage basin map for Interstate 4 (circa 1962) provides a historical illustration of Grace Lake before the Interstate was constructed. A narrow waterway (creek or stream) is shown to connect the north and south portions of Grace Lake, with a substantial land area that separates Grace Lake from Myrtle Lake. High water elevations associated with Hurricane Donna (circa September 1960) are shown for Myrtle Lake as well as the north and south portions of Grace Lake at elevations 57.3', 59.9' and 65.5', respectively. Given the age of this information, the high water elevations are believed to be referenced to the NGVD vertical datum.



Because the Interstate 4 alignment bisected both the north and south portions of Grace Lake, culverts were constructed to maintain water conveyance to and from the connecting waterway as discussed above. Current aerial photography indicates that the land areas surrounding Grace Lake are almost entirely developed. Furthermore, development on the west side of Interstate 4 has impacted most of the natural waterway that connected the north and south portions of Grace Lake.

A combination of archival research and field reviews conducted by Pegasus Engineering staff resulted in developing a current illustration of the high-level overflow path(s) between Grace Lake and Myrtle Lake (refer to Sheet 4 of the companion plans), the most important aspects of which are summarized below.

- Once the water flow path(s) was accurately defined, the various conveyance elements (drainage pipes, topographic saddles associated with overland flow, etc.) were identified and surveyed.

- Although the reader is referred to the table that summarizes the conveyance elements and elevations, the critical elevation for the Grace Lake overflow occurs on the west side of Interstate 4 at approximate elevation 62.6-ft, NAVD.

- Two (2) different overflow paths were identified for Grace Lake, with the western (historical) overflow designated as "primary" and the northern overflow designated as "secondary". Although both of these high-level overflows are included within the stormwater model for the updated surface water analysis, the conveyance capacity of the northern ("secondary") overflow is very limited until stages exceed elevation 67.9-ft, NAVD. Therefore, the "primary" overflow path is also considered to be the most probable.

Flood protection for this project will be quantitatively evaluated using two (2) different analysis methodologies as discussed below.

Continuous Simulation Model

Although the reader is referred to the engineering narrative provided within the following **Tabbed Section 6** of this report, the following points are provided to emphasize the significance of the continuous simulation modeling for this project.

- A continuous simulation model was required to address the unique hydrogeology of Grace Lake, including infiltration aspects associated with the natural lake bottom, the existing sinkhole and the post-sinkhole condition after the repairs have been completed.

- The continuous simulation model provides an analysis of actual recorded rainfall over a sufficiently long period of time. Flood protection for proposed conditions (post-sinkhole repairs) can be evaluated and compared to what actually occurred in the past (pre-sinkhole repairs), inclusive of any tropical storms and/or hurricanes during the period of record.

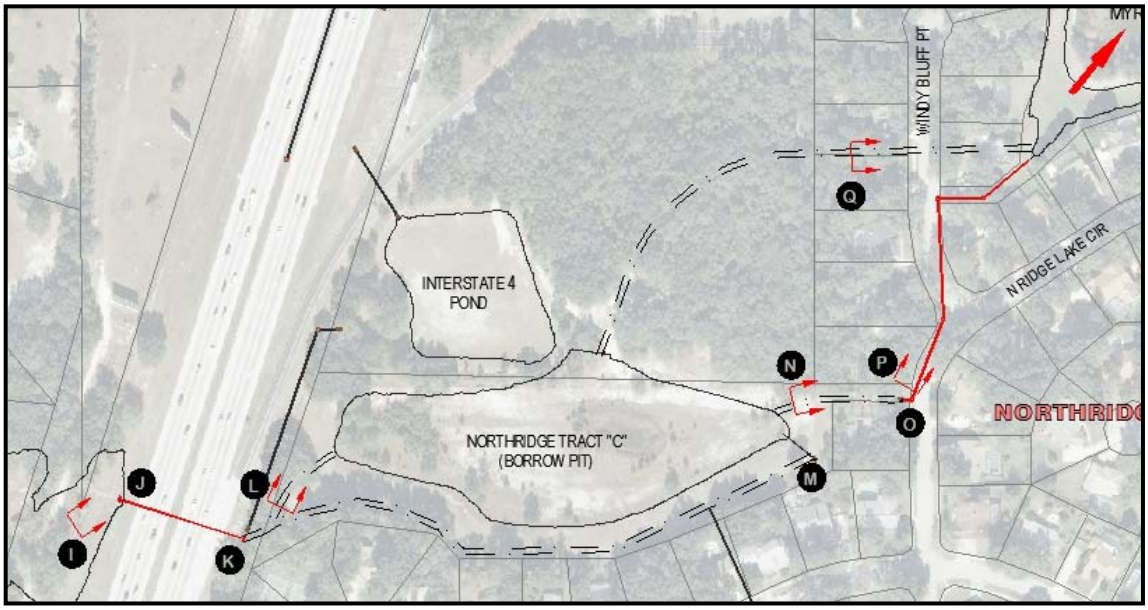
- Prior experience with similar projects indicates that continuous simulation (extended duration) modeling of Grace Lake (including discharge from the up-gradient basins) is an acceptable analysis methodology[5].

[5] In lieu of the District's presumptive criteria related to hypothetical storm events of specific frequency and duration.

ICPR Stormwater Model

The updated surface water analysis for Grace Lake was developed for several different reasons, with some of the most important considerations summarized below.

- It should be noted that most of the narrative discussions presented within the original surface water analysis for Grace Lake were correct in terms of describing the western ("primary") overflow path. However, overflow discharge between the northern culvert crossing Interstate 4 and the existing drainage systems along North Ridge Lake Circle and Windy Bluff Point was not defined and therefore not included within the stormwater model (i.e., the western overflow path was incorrectly terminated within the stormwater model). As shown on the graphic below, this portion of the outfall path that was excluded from the original surface water analysis corresponds to Locations "L" through "Q".



- The original surface water analysis included all of the drainage conveyance elements located between North Ridge Lake Circle, Windy Bluff Point and Myrtle Lake. However, the water surface elevations fall dramatically to the east of North Ridge Lake Circle and Windy Bluff Point. As such, the updated surface water analysis includes a stage versus time boundary condition at a location just east of Windy Bluff Point. Water surface elevations downstream of this location will not influence peak flood stages within Grace Lake or induce tailwater on the Grace Lake overflow (i.e., free discharge).

- Information was obtained from the updated surface water analysis (the ICPR node time series report) in support of the continuous simulation model. More specifically, and as summarized within the following **Tabbed Section 5** of this report, rating curves were developed to quantify the rainfall depth versus discharge volume for inflows to Grace Lake from the "up-gradient" basins. As shown on Sheet 3 of the companion plans, discharge volume from the "up-gradient" basins was obtained from ICPR Node SC-0930 (outfall ditch along the east side of Interstate 4) and ICPR Node SC-0990 (discharge end of the outfall system from the Woodlands Elementary School pond). Seasonal variation in surface runoff volume was encompassed by developing rating curves for both AMC I and AMC II conditions.

- Predicted flood elevations for proposed conditions (post-sinkhole repairs) were used to evaluate flood protection relative to regulations associated with FEMA's National Flood Insurance Program (NFIP). More specifically, the 100-year, 96-hour storm event, with a total rainfall depth of 15-inches, was used to define special flood hazard areas (SFHA's) and the potential for flooding.

FEMA Flood Insurance Study for Seminole County (September 28, 2007)				
Flooding Source	Summary of Stillwater Elevations (ft, NAVD)			
	10% (10-Year)	2% (50 Year)	1% (100 Year)	0.2% (500 Year)
Grace Lake	66.3	67.0	67.1	67.2

- Rating curves were used in the original surface water analysis to quantify the vertical leakage (infiltration) through the natural lake bottom and/or the sinkhole formation, whereas, vertical leakage (infiltration) will not be included in the updated surface water analysis. Although vertical leakage would have a measurable impact on reducing the duration of flooding (storage recovery), it would have little to no effect upon lowering peak stages which is the primary focus of the updated surface water analysis.

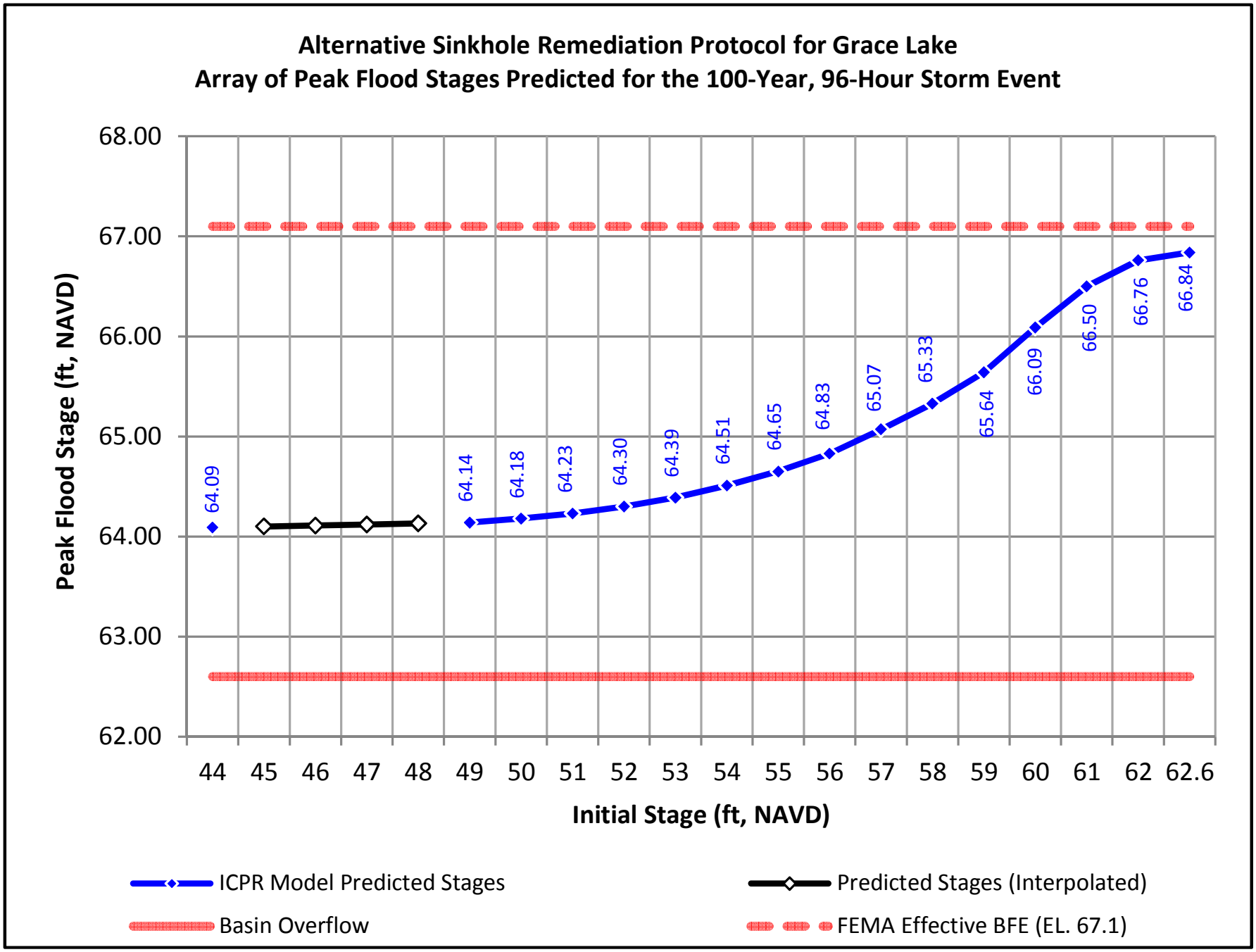
- The updated surface water analysis is defined as a "proposed conditions" evaluation, although it is important to clarify that it could also be defined as a "historic conditions" evaluation before the sinkhole formed (i.e., proposed conditions is attempting to return the lake hydroperiod to the historic condition). An analysis of "current conditions" would be significantly different and would have to include infiltration estimates for the current sinkhole in terms of both discharge volume and altering (lowering) the lake hydroperiod as reflected by the initial stage.

- Because the proposed hydroperiod is somewhat variable, the chart on the following page provides an array of peak flood elevations that were predicted for a range of initial stages that should be representative of post-sinkhole conditions within Grace Lake. It should be noted that the effective base flood elevation (BFE) was computed in accordance with FEMA's criteria[6], which assumes an initial stage in Grace Lake that corresponds to the "brim full" condition (where water is coincident with the lowest overflow elevation).

- Regarding flood protection issues and concerns, the reader is referred to Sheet 7 of the companion plans for a graphical representation of 100-year floodplains. In addition to providing an illustration of FEMA's effective SFHA's for the Grace Lake vicinity, additional floodplains are also shown based on the predicted flood elevations as previously discussed.

  Although finished floor elevations were previously surveyed for all of the residential properties contiguous to Grace Lake, the County should consider additional finished floor elevation surveys in the future to better assess flood protection issues and concerns for all of the floodplains shown on Sheet 7 of the companion plans.

[6] Managing Floodplain Development in Approximate Zone "A" Areas: A Guide for Obtaining and Developing Base (100-Year) Flood Elevations (FEMA 265).



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2.5 Additional Permitting Considerations

Sovereign Submerged Lands (SSL)

An excerpt from the District's Technical Staff Report (TSR) for SJRWMD Permit No. 4-117-121387-1 dated June 13, 2011 is provided below and should allay any potential SSL issues for the alternative sinkhole remediation protocol and specifically the current permit modification.

> *The proposed activity will be wholly located within Grace Lake. Per correspondence received by the District on May 18, 2004 from the Florida Department of Environmental Protection (FDEP), the proprietary requirements that would normally apply to state owned lands will not be applied to Grace Lake.*

Wetland Impact Areas

The District's Technical Staff Report (TSR) for SJRWMD Permit No. 4-117-121387-1 dated June 13, 2011 also provides the following breakdown for wetland impact areas that were anticipated for the original sinkhole repair project.

- Temporary wetland impact area ..... 3.66 acres
- Permanent wetland impact area ..... 0.06 acres
- Total wetland impact area ..... 3.72 acres

The temporary impact area shown above included clearing and grubbing activities associated with both construction ingress/egress and staging of equipment and materials. Given that the alternative sinkhole remediation protocol for Grace Lake is not significantly different than what was authorized within the previous approval, no change in the wetland impact areas is proposed as part of the current permit modification.

2.6 References (in chronological order)

1. Original Drainage Map for Interstate 4 (Grace Lake Vicinity) 1962
   - Florida Department of Transportation (FDOT)

2. Seminole County Soil Survey ..... June 1966
   - Soil Conservation Services (SCS)

3. Seminole County Soil Survey Supplement ..... September 1975
   - Soil Conservation Services (SCS)

4. Stormwater Management System Design and
   Permit Calculations for Northridge Subdivision ..... April 1984
   - CPH Engineers, Inc.

5. Revised Surface Water Management Calculations for Northridge Subdivision (Phase 3)..... April 1985
   - CPH Engineers, Inc.

6. As-built Plans for Northridge Subdivision ..... May 1985
   - CPH Engineers, Inc.

7. Permit for the Interstate 4 Widening (SR 434 to Lake Mary Boulevard) ..... January 10, 1995
   - SJRMWD Permit No. 4-117-22434-1

8. Permit for the Interstate 4 Rest Area Expansion at Lake Mary.....July 8, 1998
   - SJRMWD Permit No. 4-117-22434-2

9. Permit for the Woodlands Elementary School Addition and Renovation.....July 27, 1999
   - SJRMWD Permit No. 42-117-49356-2

10. Engineering Study and Drainage Inventory for the Soldiers Creek Basin .....December 1996
    - Singhofen & Associates (under contract with Seminole County)

11. LiDAR Topography for the Grace Lake Vicinity..... 2005
    - Watershed Concepts (under contract with Seminole County)
    - St. Johns River Water Management District (3-dimensional data set in the form of LAS files)

12. Geotechnical Engineering Report for Grace Lake Sinkhole Restoration .....April 2005
    - Devo Engineering

13. Topographic surveys for the Grace Lake Vicinity .....December 2007
    - Southeastern Surveying and Mapping Corporation (Project No. 53087001)

14. Countywide FEMA application for Letter of Map Revision (LOMR)..... 2007
    - Watershed Concepts (under contract with Seminole County)

15. Flood Insurance Study (FIS) for Seminole County .....September 28, 2007
    - Federal Emergency Management Agency (FEMA)

16. Permit for the Woodlands Elementary School Pond Modification.....November 21, 2007
    - SJRMWD Permit No. 42-117-49356-3

17. Geotechnical Engineering Services Report - Grace Lake Sinkhole Repair Study..... March 2008
    - Professional Service Industries (PSI)

18. Permit for the Bella Tuscany Subdivision ..... October 24, 2008
    - SJRMWD Permit No. 42-117-49356-4

19. Grace Lake - Analysis of Sinkhole Repair.....April 2011 (Final Version)
    - HDR Engineering, Inc.

20. Construction Plans (90%) for the Grace Lake Sinkhole Repair Project .....April 2011
    - HDR Engineering, Inc.

21. Permit for the Grace Lake Sinkhole Repair Project ..... June 13, 2011
    - SJRMWD Permit No. 4-117-121387-1

22. Topographic surveys for the Grace Lake Vicinity ..... August 2013
    - Southeastern Surveying and Mapping Corporation (Project No. 53087001)

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD)
JOINT APPLICATION FOR INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT

ERP APPLICATION NO. 4-117-121387-2
ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

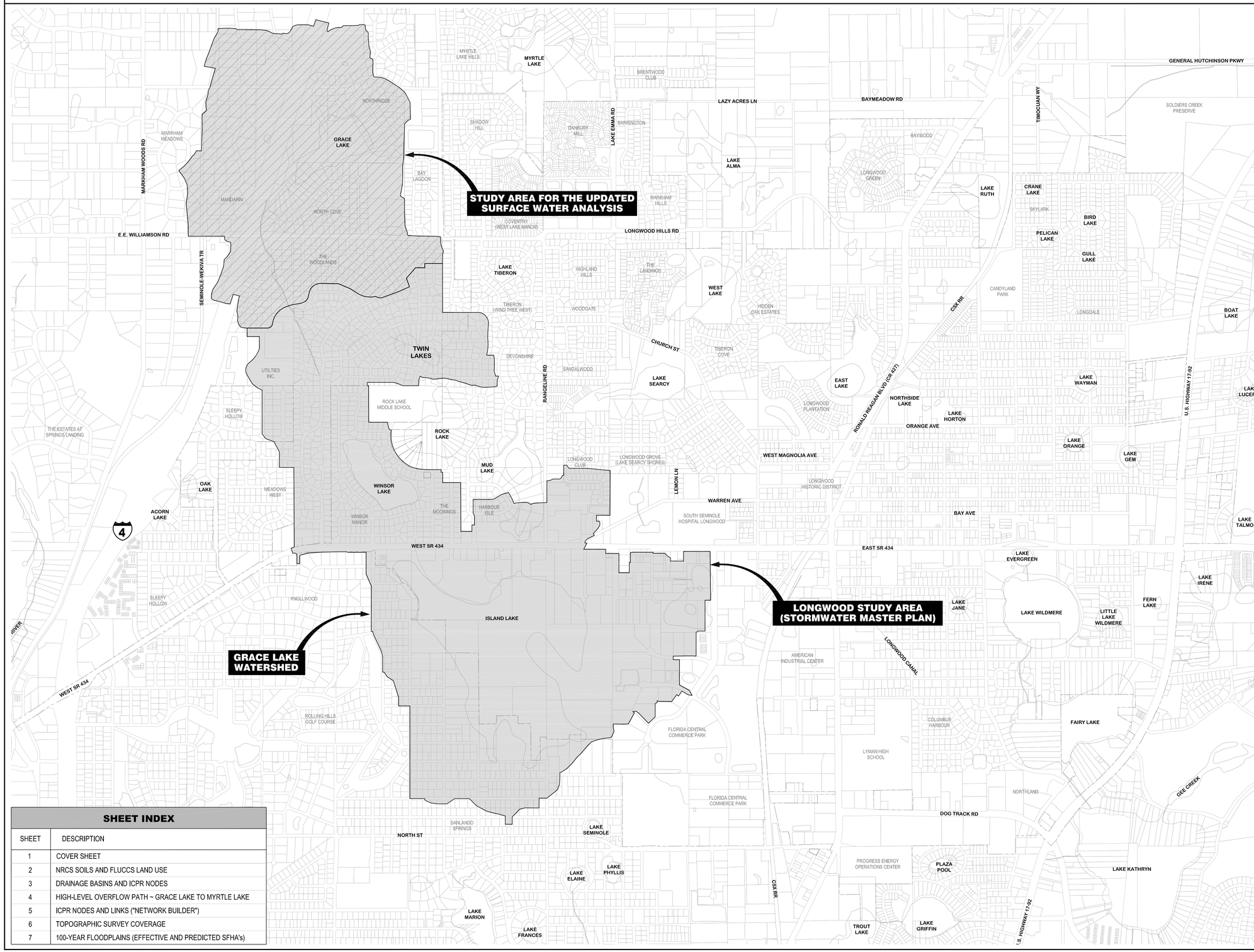
TAB 3.1

SUPPORTING DOCUMENTATION FOR THE
UPDATED SURFACE WATER ANALYSIS

COMPANION PLANS
(11" X 17" NOT TO SCALE)

ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

COMPANION PLANS FOR THE UPDATED SURFACE WATER ANALYSIS



SHEET INDEX

SHEET	DESCRIPTION
1	COVER SHEET
2	NRCS SOILS AND FLUCCS LAND USE
3	DRAINAGE BASINS AND ICPR NODES
4	HIGH-LEVEL OVERFLOW PATH ~ GRACE LAKE TO MYRTLE LAKE
5	ICPR NODES AND LINKS ("NETWORK BUILDER")
6	TOPOGRAPHIC SURVEY COVERAGE
7	100-YEAR FLOODPLAINS (EFFECTIVE AND PREDICTED SFHA's)

GENERAL LEGEND

LONGWOOD MUNICIPAL LIMITS

HYDROLOGY AND MODELING NOMENCLATURE

- DRAINAGE BASIN BOUNDARY
- CLOSED (LAND-LOCKED) BASIN OR OTHER NON-CONTRIBUTING DRAINAGE AREA
- BASIN OVERTOPPING
- XX-XXXX — SUB-BASIN NAME
- XX-XXXX — ICPR NODE NAME
- SC — SOLDIERS CREEK WATERSHED (INCLUDES GRACE LAKE)

PRIMARY DRAINAGE SYSTEMS

- CANALS AND MAJOR DITCHES
- STORMWATER PUMP STATION AND FORCE MAIN
- OUTFALL CONTROL STRUCTURE AND PIPE (ALSO USED TO REPRESENT SYSTEM CONTROL POINTS)
- CULVERT / PIPE
- DRAINAGE CURB INLETS AND PIPE
- DRAINAGE FLAT INLETS AND PIPE
- DRAINAGE MANHOLES AND PIPE

SECONDARY DRAINAGE SYSTEMS

- OPEN CHANNELS AND DITCHES
- OUTFALL CONTROL STRUCTURE AND PIPE (ALSO USED TO REPRESENT SYSTEM CONTROL POINTS)
- PIPE / CULVERT
- DRAINAGE CURB INLETS AND PIPE
- DRAINAGE FLAT INLETS AND PIPE
- DRAINAGE MANHOLES AND PIPE
- STORMWATER POND

GENERAL NOTES

1. Attention is directed to the fact that these plans may may have been changed in size by reproduction. This must be considered when obtaining scaled data.

   => 11" x 17" drawings ~ Not to Scale
   => 12" x 18" drawings ~ Half Size (2 x Scale)
   => 24" x 36" drawings ~ To Scale

MAPPING NOTES

1. Unless otherwise noted, the following sheets were prepared using base mapping as described below.

   => Aerial photography obtained from the Seminole County Property Appraiser (www.scpafl.org). These images were flown in late 2011 and early 2012.

   => Aerial topography (1-foot contours) developed by Watershed Concepts (using data provided by the St. Johns River Water Management District) for the purpose of FEMA floodplain mapping circa 2005. The vertical control for the topographic contours is the North American Vertical Datum of 1988 (NAVD88).

   => Mapping exhibits developed by Pegasus Engineering for the City of Longwood Stormwater Master Plan (Phases 1, 2 and 3). The vertical control for elevation information presented within Longwood's Stormwater Master Plan is the North American Vertical Datum of 1988 (NAVD88).

2. It should be noted that alignment issues between various information referenced to the County's representation of roads and parcels may not properly align with the aerial photography and topographic contours. For the current project, graphically illustrating the drainage systems of interest was completed assuming that the aerial photography and topographic contours represent the most accurate base mapping available on a regional basis.

3. A comprehensive drainage inventory was developed for Longwood's Stormwater Master Plan (Phase 2) and includes a portion of the Grace Lake watershed. Although the drainage inventory was expanded to include various drainage systems of interest within the Grace Lake watershed, the drainage inventory for Grace Lake should not be considered complete and comprehensive.

PREPARED FOR (CLIENT)

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FLORIDA'S NATURAL CHOICE

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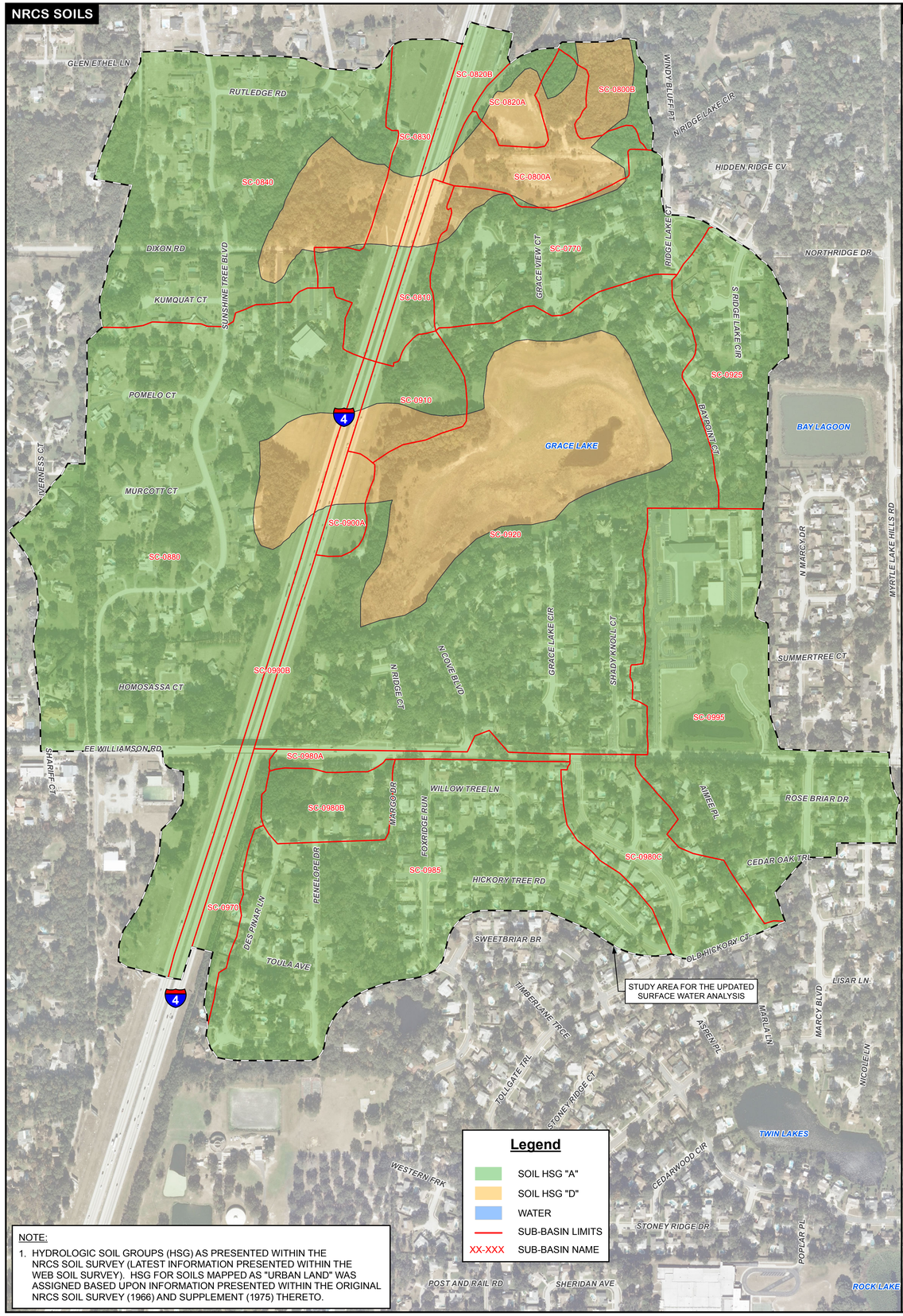
ENGINEER: _____
Johan A. Rodríguez, P.E.
REG. NO. 66517
DATE: _____

ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

NRCS SOILS



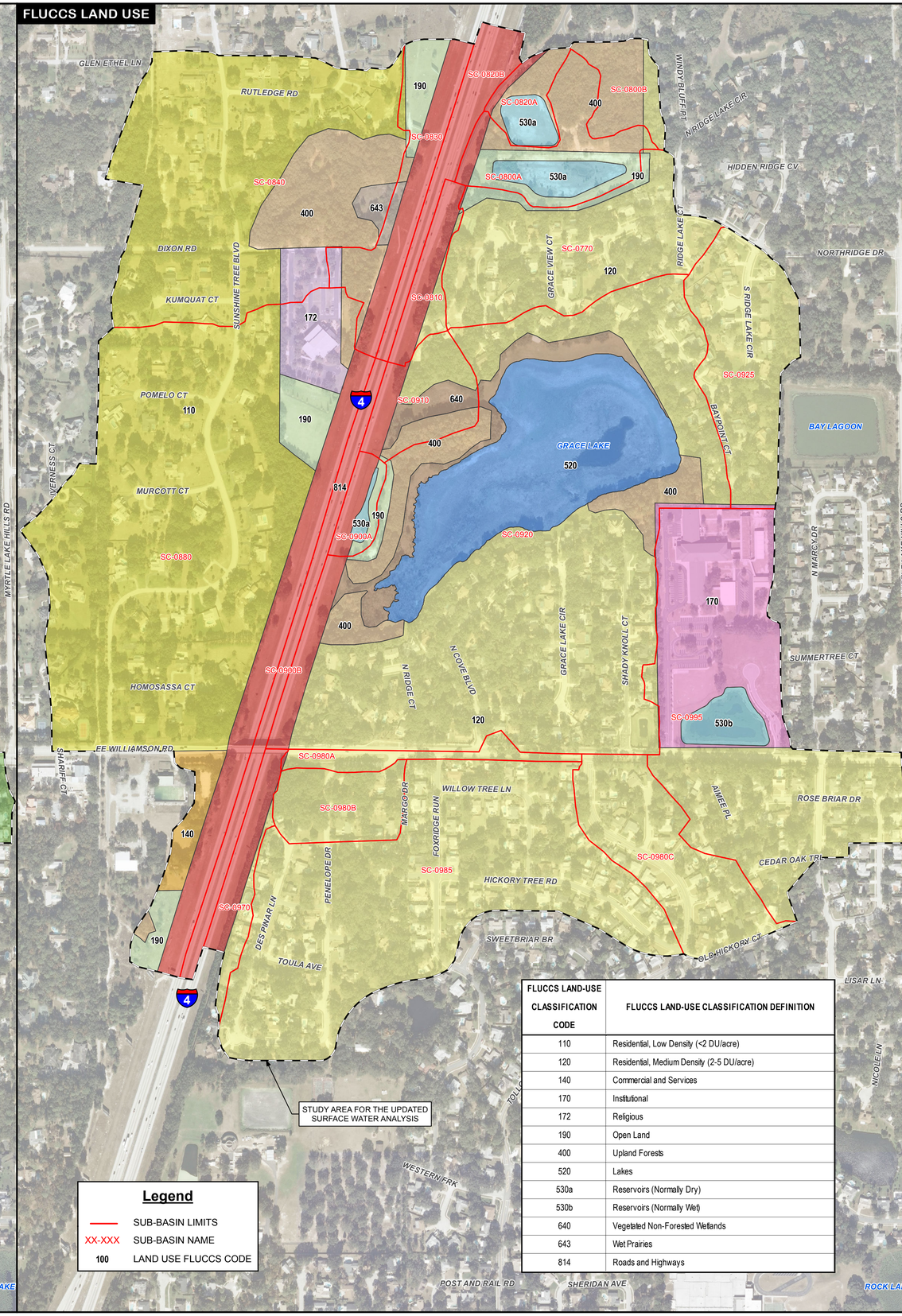
Legend

- SOIL HSG "A"
- SOIL HSG "D"
- WATER
- SUB-BASIN LIMITS
- XX-XXX SUB-BASIN NAME

NOTE:

1. HYDROLOGIC SOIL GROUPS (HSG) AS PRESENTED WITHIN THE NRCS SOIL SURVEY (LATEST INFORMATION PRESENTED WITHIN THE WEB SOIL SURVEY). HSG FOR SOILS MAPPED AS "URBAN LAND" WAS ASSIGNED BASED UPON INFORMATION PRESENTED WITHIN THE ORIGINAL NRCS SOIL SURVEY (1966) AND SUPPLEMENT (1975) THERETO.

FLUCCS LAND USE



Legend

- SUB-BASIN LIMITS
- XX-XXX SUB-BASIN NAME
- 100 LAND USE FLUCCS CODE

FLUCCS LAND-USE CLASSIFICATION CODE	FLUCCS LAND-USE CLASSIFICATION DEFINITION
110	Residential, Low Density (<2 DU/acre)
120	Residential, Medium Density (2-5 DU/acre)
140	Commercial and Services
170	Institutional
172	Religious
190	Open Land
400	Upland Forests
520	Lakes
530a	Reservoirs (Normally Dry)
530b	Reservoirs (Normally Wet)
640	Vegetated Non-Forested Wetlands
643	Wet Prairies
814	Roads and Highways

0' 300'
1" = 300'

REV.	DATE	DESCRIPTION

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

NRCS SOILS AND FLUCCS LAND USE

Pegasus ENGINEERING

Pegasus Engineering, LLC
301 West SR 434, Suite 309
Winter Springs, Florida 32708

Office (407) 992-9160
Fax (407) 358-5155

State of Florida Board of Professional Engineers
Certificate of Authorization No. 27770

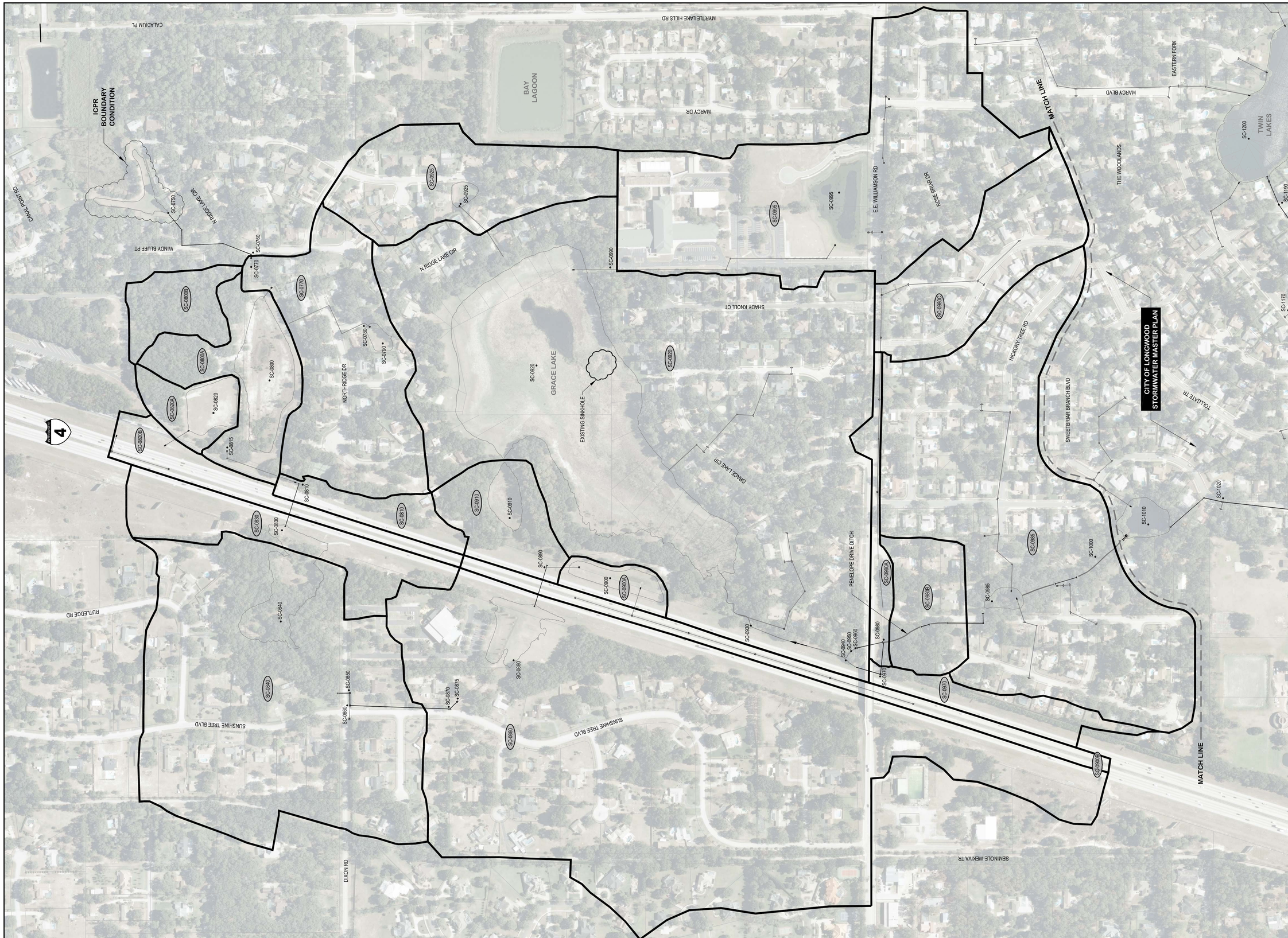
JOB NO.:	SMC-014
DESIGNED BY:	JAR
DRAWN BY:	JJB
APPROVED BY:	DWH
DATE:	SEPT 2013

SHEET 2 OF 7

NOT A FINAL PLAN UNLESS SIGNED AND SEALED

JOHAN RODRIGUEZ, P.E.
REGISTRATION No. 66517

DATE: _____



0' 200'
1" = 200'

REV.	DATE	DESCRIPTION

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

DRAINAGE BASINS AND ICPR NODES

Pegasus ENGINEERING

Pegasus Engineering, LLC
301 West SR 434, Suite 309
Winter Springs, Florida 32708

Office (407) 992-9160
Fax. (407) 358-5155

State of Florida Board of Professional Engineers
Certificate of Authorization No. 27770

JOB No.:	SMC-014
DESIGNED BY:	JAR
DRAWN BY:	JJB
APPROVED BY:	DWH
DATE:	SEPT 2013

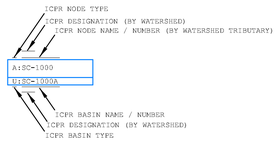
SHEET 3 OF 7

NOT A FINAL PLAN UNLESS SIGNED AND SEALED

JOHAN A. RODRIGUEZ, P.E.
REGISTRATION No. 66517

DATE: _____

ICPR BASIN AND NODE LEGEND



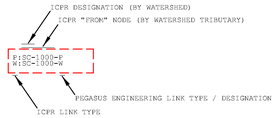
ICPR NODES

- A: => STAGE / AREA
- V: => STAGE / VOLUME
- T: => STAGE / TIME
- M: => MANHOLE

ICPR BASINS

- O: => OVERLAND FLOW
- U: => SCS UNIT HYDROGRAPH
- S: => SANTA BARBARA

ICPR LINK LEGEND

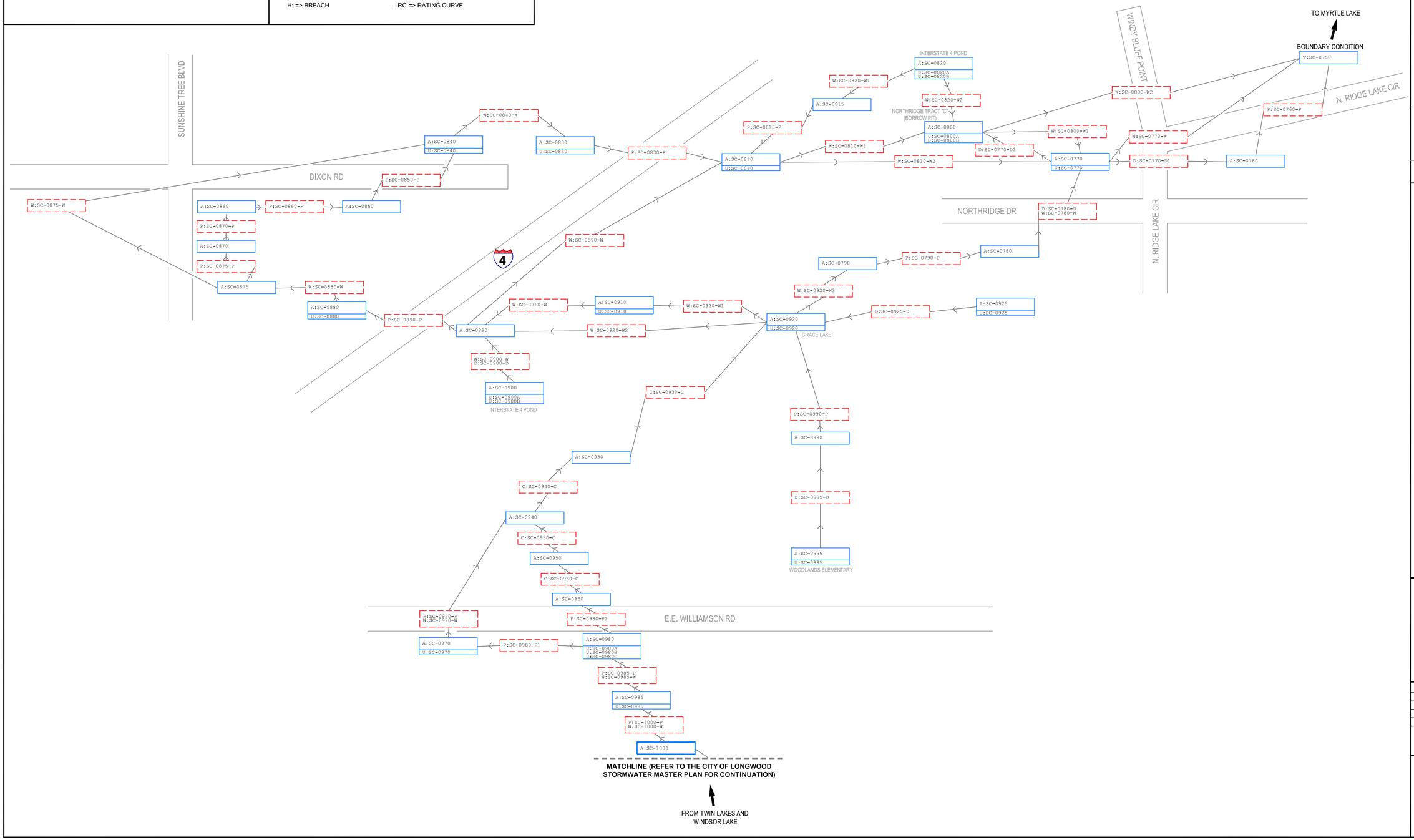


ICPR LINKS

- P: => PIPES
- W: => WEIR
- C: => CHANNEL
- D: => DROP STRUCTURE
- B: => BRIDGE
- R: => RATING CURVE
- H: => BREACH

PEGASUS ENGINEERING LINKS

- P => PIPES
- W => WEIR
- R => WEIR (ROADWAY OVERTOPPING)
- C => CHANNEL
- D => DROP STRUCTURE
- B => BRIDGE
- RC => RATING CURVE



N.T.S.

REV.	DATE

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

ICPR NODES AND LINKS ("NETWORK BUILDER")

Pegasus ENGINEERING

Pegasus Engineering, LLC
301 West SR 434, Suite 309
Winter Springs, Florida 32708

Office (407) 992-9160
Fax. (407) 358-5155

State of Florida Board of Professional Engineers
Certificate of Authorization No. 27770

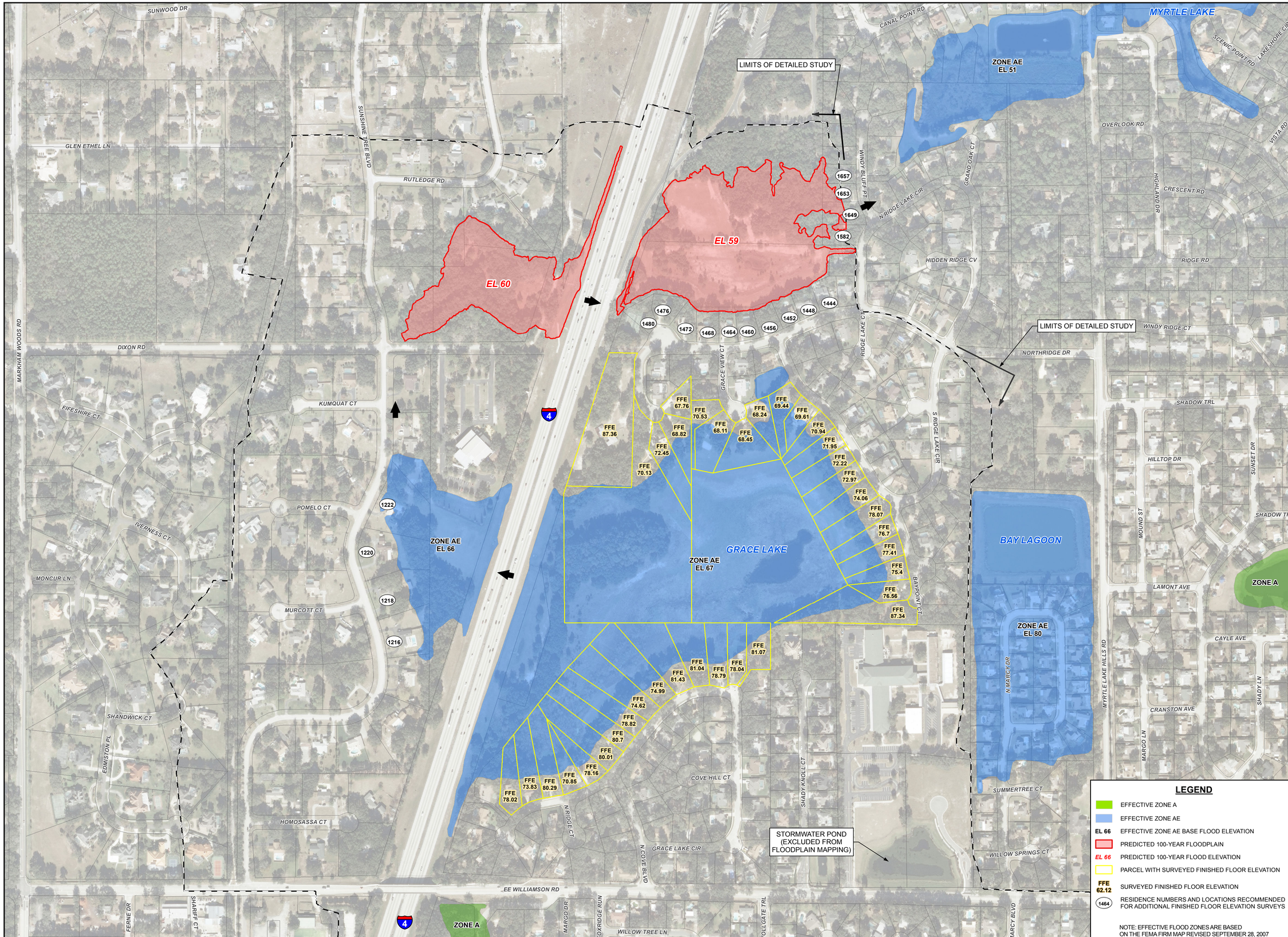
JOB No.:	SMC-014
DESIGNED BY:	JAR
DRAWN BY:	JJB
APPROVED BY:	DWH
DATE:	SEPT 2013

SHEET 5 OF 7

NOT A FINAL PLAN UNLESS SIGNED AND SEALED

JOHAN A. RODRIGUEZ, P.E.
REGISTRATION No. 66517

DATE: _____



LEGEND

- EFFECTIVE ZONE A
- EFFECTIVE ZONE AE
- EL 66 — EFFECTIVE ZONE AE BASE FLOOD ELEVATION
- PREDICTED 100-YEAR FLOODPLAIN
- EL 66 — PREDICTED 100-YEAR FLOOD ELEVATION
- PARCEL WITH SURVEYED FINISHED FLOOR ELEVATION
- FFE 62.12 — SURVEYED FINISHED FLOOR ELEVATION
- 1464 — RESIDENCE NUMBERS AND LOCATIONS RECOMMENDED FOR ADDITIONAL FINISHED FLOOR ELEVATION SURVEYS

NOTE: EFFECTIVE FLOOD ZONES ARE BASED ON THE FEMA FIRM MAP REVISED SEPTEMBER 28, 2007

REV.	DATE	DESCRIPTION

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

100-YEAR FLOOD PLAINS (EFFECTIVE AND PREDICTED SFHA'S)

Pegasus ENGINEERING

Pegasus Engineering, LLC
301 West SR 434, Suite 309
Winter Springs, Florida 32708

Office (407) 992-9160
Fax (407) 338-5155

State of Florida Board of Professional Engineers
Certificate of Authorization No. 27770

JOB NO.:	SMC-014
DESIGNED BY:	JAR
DRAWN BY:	JJB
APPROVED BY:	DWH
DATE:	SEPT 2013

SHEET 7 OF 7

NOT A FINAL PLAN UNLESS SIGNED AND SEALED

JOHAN RODRIGUEZ, P.E.
REGISTRATION No. 66517

DATE: _____

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD)
JOINT APPLICATION FOR INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT

ERP APPLICATION NO. 4-117-121387-2
ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

TAB 3.2

SUPPORTING DOCUMENTATION FOR THE UPDATED SURFACE WATER ANALYSIS

RUNOFF CURVE NUMBER COMPUTATIONS

Alternative Sinkhole Remediation Protocol for Grace Lake
Tabulation of Existing Soils (Organized By NRCS Soil Number)

Table No. 3.2.1

SOIL NUMBER	SOIL NAME	NRCS HSG [1]	ASSIGNED HSG [1, 2]	FLOODING			HIGH WATER TABLE	
				FREQUENCY	DURATION	MONTHS	DEPTH (ft) [3]	MONTHS
6	Astatula-Apopka fine sands, 0 to 5 percent slopes	A	A	None	- - -	- - -	> -6.0	- - -
7	Astatula-Apopka fine sands, 5 to 8 percent slopes	A	A	None	- - -	- - -	> -6.0	- - -
8	Astatula-Apopka fine sands, 8 to 12 percent slopes	A	A	None	- - -	- - -	> -6.0	- - -
10	Basinger, Samsula, and Hontoon soils, depressional	A/D	D	None	- - -	- - -	+2.0 to 0.0	Jun - Feb, Jan - Dec
20	Myakka and Eau Gallie fine sands	A/D	D	None	- - -	- - -	0.0 to -1.0	Jun - Oct
31	Tavares-Millhopper fine sands, 0 to 5 percent slopes	A	A	None	- - -	- - -	-3.5 to -6.0	Jul - Dec
34	Urban land, 0 to 12 percent slopes	-	A	None	- - -	- - -	> -2.0	- - -

SOURCE

NRCS Soil Survey of Seminole County
Issued September 2012

NOTES

[1] HSG => Hydrologic Soil Group

[2] Assigned HSG applies to any mapping units classified with either a dual hydrologic soil group or if NRCS data was unavailable.

[3] A plus sign under "Depth to high water table" indicates that the water table is above the surface of the soil.

[3] A minus sign under "Depth to high water table" indicates that the water table is below the surface of the soil.

Alternative Sinkhole Remediation Protocol for Grace Lake
Tabulation of Existing Soils (Organized By Hydrologic Soil Group)

Table No. 3.2.2

SOIL NUMBER	SOIL NAME	HYDROLOGIC SOIL GROUP		SOIL BREAKDOWN	
		NRCS	ASSIGNED	AREA (ac)	PERCENT
TYPE "A" SOILS					
6	Astatula-Apopka fine sands, 0 to 5 percent slopes	A	A		
7	Astatula-Apopka fine sands, 5 to 8 percent slopes	A	A		
8	Astatula-Apopka fine sands, 8 to 12 percent slopes	A	A		
31	Tavares-Millhopper fine sands, 0 to 5 percent slopes	A	A		
34	Urban land, 0 to 12 percent slopes	N/A	A		
		Sub-total		332.1	84.7%
TYPE "B" SOILS					
		Sub-total		0.0	0.0%
TYPE "C" SOILS					
		Sub-total		0.0	0.0%
TYPE "B/D" and "D" SOILS					
10	Basinger, Samsula, and Hontoon soils, depressional	A/D	D		
20	Myakka and Eau Gallie fine sands	A/D	D		
		Sub-total		60.0	15.3%
"OTHER" SOILS					
99	Water	N/A	W		
		Sub-total		0.0	0.0%
		Totals		392.1	100.0%

SOURCE NRCS Soil Survey of Seminole County
Issued September 2012

NOTES [1] Hydrologic soil group not identified within the NRCS soil survey, and was therefore assigned using narrative discussions provided within the NRCS map unit descriptions.

Alternative Sinkhole Remediation Protocol for Grace Lake
Tabulation of FLUCCS Land Use Classifications

Table No. 3.2.3

FLUCCS LAND-USE CLASSIFICATION CODE	FLUCCS LAND-USE CLASSIFICATION DEFINITION	LAND USE BREAKDOWN	
		AREA (ac)	PERCENT
110	Residential, Low Density (<2 DU/acre)	89.1	22.7%
120	Residential, Medium Density (2-5 DU/acre)	168.9	43.1%
140	Commercial and Services	2.4	0.6%
170	Institutional	16.5	4.2%
172	Religious	5.4	1.4%
190	Open Land	10.7	2.7%
400	Upland Forests	26.5	6.8%
520	Lakes	22.1	5.6%
530a	Reservoirs (Normally Dry)	4.1	1.0%
530b	Reservoirs (Normally Wet)	2.3	0.6%
640	Vegetated Non-Forested Wetlands	6.2	1.6%
643	Wet Prairies	1.2	0.3%
814	Roads and Highways	36.8	9.4%
	Totals	392.1	100.0%

REFERENCE Florida Land Use, Cover, and Forms Classification System (FLUCCS)
Florida Department of Transportation (FDOT)
January 1999

NOTES Land use delineations dated 2004 were obtained from the St. Johns River Water Management District (SJRWMD) Geographi Information System (GIS) and updated as necessary using aerial photography dated 2008. Land use polygons wer subsequently aggregated to combine land uses with similar FLUCCS codes into larger delineations

Alternative Sinkhole Remediation Protocol for Grace Lake
Tabulation of Runoff Curve Numbers Based On Existing Land Use

Table No. 3.2.4

FLUCCS LAND USE CLASSIFICATION [1]		USDA TR-55 COVER DESCRIPTION	CURVE NUMBER FOR HYDROLOGIC SOIL GROUP [3]			
NUMBER	DEFINITION [2]		A	B	C	D
110	Residential, Low Density (<2 DU/acre)	1 acre avg. lot (avg. 20% imp.)	51	68	79	84
120	Residential, Medium Density (2-5 DU/acre)	1/3 acre avg. lot (avg. 30% imp.)	57	72	81	86
140	Commercial and Services	Commercial and Business (avg. 85% imp.)	89	92	94	95
170	Institutional	Average 50% imp.	69	80	86	89
172	Religious	Average 50% imp.	69	80	86	89
185	Parks	Average 20% imp.	51	68	79	84
190	Open Land	Open space (grass cover 50% to 75%)	49	69	79	84
400	Upland Forests	Woods (good cond.)	39	55	70	77
520	Lakes	Water	100	100	100	100
530a	Reservoirs (Normally Dry)	Open space (grass cover 50% to 75%)	49	69	79	84
530b	Reservoirs (Normally Wet)	Water and Open Space (grass cover >75%)	92	92	92	92
640	Vegetated Non-Forested Wetlands	SJRWMD Tech Pub. #85-5, Table 2	98	98	98	98
643	Wet Prairies	SJRWMD Tech Pub. #85-5, Table 2	98	98	98	98
814	Roads and Highways	Average 50% imp.	69	80	86	89

NOTES

[1] Florida Land Use, Cover, and Forms Classification System (FLUCCS)
Florida Department of Transportation (FDOT)
January 1999

[2] Land use delineations dated 2004 were obtained from the St. Johns River Water Management District (SJRWMD) Geographic Information System (GIS) and updated as necessary using aerial photography flown in 2009.
http://www.sjrwmd.com/gisdevelopment/docs/themes.html

[3] Technical Release 55, Soils Conservation Service, June 1986 (second edition)

Alternative Sinkhole Remediation Protocol for Grace Lake
Partial Tabulation of Computed Runoff Curve Numbers

Table No. 3.2.5

Sub-Basin Name	FLUCCS Land Use Code	Soil HSG	Runoff CN	Acres	CN x Area	Weighted Runoff CN
SC-0770	120	A	57	16.48	939.63	
SC-0770	120	D	86	0.38	32.33	
SC-0770	190	A	49	0.49	23.88	
SC-0770	190	D	84	0.63	52.99	
SC-0770	400	A	39	0.01	0.26	
SC-0770	814	D	89	0.03	3.00	
			Totals	**18.02**	**1,052.07**	**58.39**
SC-0800A	120	A	57	0.12	6.85	
SC-0800A	190	A	49	0.25	12.44	
SC-0800A	190	D	84	2.25	188.61	
SC-0800A	400	A	39	1.18	45.95	
SC-0800A	400	D	77	2.31	177.76	
SC-0800A	814	A	69	0.24	16.54	
SC-0800A	814	D	89	0.40	35.43	
SC-0800A	530a	D	84	2.23	187.53	
			Totals	**8.98**	**671.11**	**74.76**
SC-0800B	120	A	57	0.92	52.55	
SC-0800B	120	D	86	0.05	3.91	
SC-0800B	400	A	39	0.28	11.09	
SC-0800B	400	D	77	2.78	213.86	
			Totals	**4.03**	**281.41**	**69.84**
SC-0810	120	A	57	0.69	39.36	
SC-0810	120	D	86	0.07	5.72	
SC-0810	190	D	84	0.01	0.77	
SC-0810	814	A	69	1.77	121.83	
SC-0810	814	D	89	0.94	83.31	
			Totals	**3.47**	**251.00**	**72.37**
SC-0820A	400	A	39	0.63	24.39	
SC-0820A	400	D	77	0.71	54.40	
SC-0820A	814	A	69	0.42	28.94	
SC-0820A	530a	D	84	1.47	123.61	
			Totals	**3.22**	**231.35**	**71.78**

Alternative Sinkhole Remediation Protocol for Grace Lake
Partial Tabulation of Computed Runoff Curve Numbers

Table No. 3.2.5

Sub-Basin Name	FLUCCS Land Use Code	Soil HSG	Runoff CN	Acres	CN x Area	Weighted Runoff CN
SC-0820B	814	A	69	4.20	290.11	
SC-0820B	814	D	89	0.78	69.14	
			Totals	**4.98**	**359.24**	**72.12**
SC-0830	110	A	51	0.23	11.70	
SC-0830	172	A	69	0.31	21.51	
SC-0830	172	D	89	0.04	3.87	
SC-0830	190	A	49	1.97	96.72	
SC-0830	400	A	39	1.45	56.73	
SC-0830	400	D	77	0.08	5.82	
SC-0830	643	A	98	0.01	0.79	
SC-0830	643	D	98	0.40	39.41	
SC-0830	814	A	69	3.71	255.65	
SC-0830	814	D	89	1.04	92.41	
			Totals	**9.24**	**584.62**	**63.25**
SC-0840	110	A	51	31.08	1,585.27	
SC-0840	110	D	84	0.18	15.13	
SC-0840	172	A	69	0.99	68.41	
SC-0840	172	D	89	0.51	45.16	
SC-0840	190	A	49	0.04	1.75	
SC-0840	400	A	39	3.17	123.49	
SC-0840	400	D	77	4.75	365.96	
SC-0840	643	A	98	0.00	0.04	
SC-0840	643	D	98	0.82	80.59	
			Totals	**41.54**	**2,285.79**	**55.03**
SC-0880	110	A	51	55.38	2,824.55	
SC-0880	110	D	84	2.20	184.54	
SC-0880	140	A	89	2.37	210.76	
SC-0880	172	A	69	3.54	244.30	
SC-0880	190	A	49	2.70	132.28	
SC-0880	190	D	84	1.05	88.22	
SC-0880	400	A	39	0.90	35.12	
SC-0880	814	A	69	7.99	551.29	
SC-0880	814	D	89	1.70	151.36	
			Totals	**77.83**	**4,422.43**	**56.82**

Alternative Sinkhole Remediation Protocol for Grace Lake
Partial Tabulation of Computed Runoff Curve Numbers

Table No. 3.2.5

Sub-Basin Name	FLUCCS Land Use Code	Soil HSG	Runoff CN	Acres	CN x Area	Weighted Runoff CN
SC-0900A	190	A	49	0.36	17.73	
SC-0900A	190	D	84	0.24	19.78	
SC-0900A	814	A	69	0.61	42.37	
SC-0900A	814	D	89	0.68	60.56	
SC-0900A	530a	A	49	0.30	14.88	
SC-0900A	530a	D	84	0.10	8.03	
			Totals	**2.29**	**163.35**	**71.30**
SC-0900B	814	A	69	4.62	318.70	
SC-0900B	814	D	89	0.92	81.97	
			Totals	**5.54**	**400.67**	**72.33**
SC-0910	120	A	57	1.98	112.74	
SC-0910	120	D	86	0.01	0.44	
SC-0910	190	D	84	0.02	1.79	
SC-0910	400	A	39	0.11	4.37	
SC-0910	400	D	77	1.16	89.02	
SC-0910	640	A	98	0.95	92.92	
SC-0910	640	D	98	0.58	56.37	
SC-0910	814	A	69	0.61	41.79	
SC-0910	814	D	89	0.69	61.25	
			Totals	**6.09**	**460.69**	**75.65**
SC-0920	120	A	57	50.59	2,883.68	
SC-0920	120	D	86	0.65	55.53	
SC-0920	170	A	69	0.36	24.95	
SC-0920	190	A	49	0.43	21.06	
SC-0920	190	D	84	0.24	20.06	
SC-0920	400	A	39	5.09	198.36	
SC-0920	400	D	77	1.93	148.66	
SC-0920	520	A	100	0.54	54.12	
SC-0920	520	D	100	21.51	2,151.07	
SC-0920	640	A	98	1.12	109.63	
SC-0920	640	D	98	3.54	347.37	
SC-0920	814	A	69	2.63	181.13	
			Totals	**88.62**	**6,195.63**	**69.91**

Alternative Sinkhole Remediation Protocol for Grace Lake
Partial Tabulation of Computed Runoff Curve Numbers

Table No. 3.2.5

Sub-Basin Name	FLUCCS Land Use Code	Soil HSG	Runoff CN	Acres	CN x Area	Weighted Runoff CN
SC-0925	120	A	57	13.12	747.80	
SC-0925	170	A	69	0.12	8.12	
			Totals	**13.24**	**755.92**	**57.11**
SC-0970	120	A	57	1.39	79.26	
SC-0970	814	A	69	2.83	195.22	
			Totals	**4.22**	**274.48**	**65.05**
SC-0980A	120	A	57	2.73	155.53	
SC-0980A	814	A	69	0.03	2.27	
			Totals	**2.76**	**157.80**	**57.14**
SC-0980B	120	A	57	5.83	332.19	
SC-0980B	814	A	69	0.00	0.11	
			Totals	**5.83**	**332.30**	**57.00**
SC-0980C	120	A	57	12.31	701.60	
			Totals	**12.31**	**701.60**	**57.00**
SC-0985	120	A	57	43.86	2,499.94	
			Totals	**43.86**	**2,499.94**	**57.00**
SC-0995	120	A	57	17.74	1,011.30	
SC-0995	170	A	69	16.01	1,104.93	
SC-0995	400	A	39	0.00	0.18	
SC-0995	530b	A	92	2.32	213.14	
			Totals	**36.08**	**2,329.55**	**64.57**

Total Area (acres) = 392.15

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD)
JOINT APPLICATION FOR INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT

ERP APPLICATION NO. 4-117-121387-2
ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

TAB 3.3

SUPPORTING DOCUMENTATION FOR THE UPDATED SURFACE WATER ANALYSIS

TIME OF CONCENTRATION COMPUTATIONS

Alternative Sinkhole Remediation Protocol for Grace Lake
Partial Tabulation of Computed Times of Concentration

Table No. 3.3.1

SUB-BASIN I.D.	SHEET FLOW								SHALLOW CONCENTRATED FLOW							CHANNEL FLOW			ACCUMULATED TOTAL TIME OF CONC.		BASIN I.D.
	SURFACE DESC.	("n")	FLOW LENGTH (feet)	2-yr, 24-hr RAINFALL (inch)	UPPER EL. (feet)	LOWER EL. (feet)	CALC'D SLOPE (foot/foot)	TRAVEL TIME (hour)	PAVED OR UNPAVED	FLOW LENGTH (feet)	UPPER EL. (feet)	LOWER EL. (feet)	CALC'D SLOPE (foot/foot)	VEL. (fps)	TRAVEL TIME (hour)	VEL. (fps)	FLOW LENGTH (feet)	TRAVEL TIME (hour)	(hour)	(min.)	
SC-0770	Dense Grass	0.24	100	4.50	85.00	79.00	0.0600	0.13	Unpaved	96	79.00	70.00	0.0938	4.9	0.01	3.00	195	0.02	0.24	14	SC-0770
									Paved	593	70.00	65.00	0.0084	1.9	0.09						
SC-0800A	Dense Grass	0.24	100	4.50	67.50	64.00	0.0350	0.16	Unpaved	512	64.00	47.00	0.0332	2.9	0.05				0.21	13	SC-0800A
SC-0800B	Dense Grass	0.24	100	4.50	65.00	61.50	0.0350	0.16	Unpaved	423	61.50	51.00	0.0248	2.5	0.05				0.21	12	SC-0800B
SC-0810	Dense Grass	0.24	100	4.50	85.00	76.00	0.0900	0.11	Unpaved	52	76.00	70.00	0.1154	5.5	0.00	3.00	706	0.07	0.18	11	SC-0810
SC-0820A	Dense Grass	0.24	100	4.50	68.00	64.50	0.0350	0.16	Unpaved	237	64.50	52.00	0.0527	3.7	0.02				0.18	11	SC-0820A
SC-0820B	Dense Grass	0.24	100	4.50	72.00	71.00	0.0100	0.26	Unpaved	1071	71.00	64.00	0.0065	1.3	0.23				0.49	30	SC-0820B
SC-0830	Dense Grass	0.24	100	4.50	84.50	84.20	0.0030	0.43	Unpaved	491	84.20	53.00	0.0635	4.1	0.03				0.46	28	SC-0830
SC-0840	Dense Grass	0.24	100	4.50	81.00	78.00	0.0300	0.17	Unpaved	892	78.00	62.00	0.0179	2.2	0.11	3.00	623	0.06	0.34	21	SC-0840
SC-0880	Dense Grass	0.24	100	4.50	86.00	85.00	0.0100	0.26	Unpaved	294	85.00	80.00	0.0170	2.1	0.04	3.00	1557	0.14	0.45	27	SC-0880
SC-0900A	Dense Grass	0.24	100	4.50	70.50	62.00	0.0850	0.11	Unpaved	85	62.00	55.00	0.0824	4.6	0.01				0.12	7	SC-0900A
SC-0900B	Dense Grass	0.24	100	4.50	87.00	86.00	0.0100	0.26	Unpaved	962	86.00	75.00	0.0114	1.7	0.15	3.00	1626	0.15	0.57	34	SC-0900B
SC-0910	Dense Grass	0.24	100	4.50	73.00	69.00	0.0400	0.15	Unpaved	340	69.00	55.00	0.0412	3.3	0.03				0.18	11	SC-0910
SC-0920	Dense Grass	0.24	100	4.50	86.00	84.00	0.0200	0.20	Unpaved	431	84.00	78.00	0.0139	1.9	0.06	3.00	1152	0.11	0.37	22	SC-0920
SC-0925	Dense Grass	0.24	100	4.50	89.00	83.50	0.0550	0.13	Unpaved	235	83.50	79.00	0.0191	2.2	0.03				0.26	15	SC-0925
									Paved	360	79.00	78.00	0.0028	1.1	0.09						
SC-0970	Dense Grass	0.24	100	4.50	88.00	86.80	0.0120	0.25	Unpaved	302	86.80	75.00	0.0391	3.2	0.03				0.27	16	SC-0970
SC-0980A	Dense Grass	0.24	100	4.50	88.00	87.50	0.0050	0.35	Unpaved	98	87.50	87.00	0.0051	1.2	0.02	3.00	1227	0.11	0.49	29	SC-0980A
SC-0980B	Dense Grass	0.24	100	4.50	86.50	85.00	0.0150	0.23	Unpaved	347	85.00	71.00	0.0403	3.2	0.03				0.25	15	SC-0980B
SC-0980C	Dense Grass	0.24	100	4.50	96.50	95.50	0.0100	0.26	Unpaved	137	95.50	95.00	0.0036	1.0	0.04				0.34	20	SC-0980C
									Paved	180	95.00	94.00	0.0056	1.5	0.03						
SC-0985	Dense Grass	0.24	100	4.50	87.00	86.00	0.0100	0.26	Unpaved	288	86.00	72.00	0.0486	3.6	0.02				0.29	17	SC-0985
SC-0995	Dense Grass	0.24	100	4.50	94.00	93.50	0.0050	0.35	Unpaved	294	93.50	86.00	0.0255	2.6	0.03				0.38	23	SC-0995

REFERENCE
URBAN HYDROLOGY FOR SMALL WATERSHEDS
TECHNICAL RELEASE 55, SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE
JUNE 1986

NOTES

1. Empty cells indicate that the time of concentration for that sub-basin was assumed.
2. In some cases, the assumed time of concentration includes a lag factor to account for stormwater management systems that provide retention storage or attenuation volume that is not otherwise accounted for in the stormwater model.
3. In some cases, and specifically when detailed topographic information is unavailable, time of concentrations for residential land uses assume sheet flow with a minimum lot grade of 1% (FHA minimum standard) and shallow concentrated flow with a minimum road grade of 0.5%.

Pegasus ENGINEERING

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD)
JOINT APPLICATION FOR INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT

ERP APPLICATION NO. 4-117-121387-2
ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

TAB 4.1

UPDATED SURFACE WATER ANALYSIS

ICPR INPUT DATA
(GROUP "GRACE LAKE")

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

==== Basins ====

```
         Name: SC-0770                  Node: SC-0770                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 14.00
             Area(ac): 18.020                    Time Shift(hrs): 0.00
          Curve Number: 58.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00
```

```
         Name: SC-0800A                 Node: SC-0800                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 13.00
             Area(ac): 8.980                     Time Shift(hrs): 0.00
          Curve Number: 75.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00
```

```
         Name: SC-0800B                 Node: SC-0800                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 12.00
             Area(ac): 4.030                     Time Shift(hrs): 0.00
          Curve Number: 70.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00
```

```
         Name: SC-0810                  Node: SC-0810                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 11.00
             Area(ac): 3.470                     Time Shift(hrs): 0.00
          Curve Number: 72.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00
```

```
         Name: SC-0820A                 Node: SC-0820                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 11.00
             Area(ac): 3.220                     Time Shift(hrs): 0.00
          Curve Number: 72.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00
```

FDOT POND F BASIN AREA

```
         Name: SC-0820B                 Node: SC-0820                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 30.00
             Area(ac): 4.980                     Time Shift(hrs): 0.00
          Curve Number: 72.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00
```

I-4 BASIN AREA CONTRIBUTING RUNOFF TO POND SC-0820

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
         Name: SC-0830                  Node: SC-0830                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 28.00
            Area(ac): 9.240                      Time Shift(hrs): 0.00
         Curve Number: 63.00             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00
```

```
         Name: SC-0840                  Node: SC-0840                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 21.00
            Area(ac): 41.540                     Time Shift(hrs): 0.00
         Curve Number: 55.00             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00
```

```
         Name: SC-0880                  Node: SC-0880                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 27.00
            Area(ac): 77.830                     Time Shift(hrs): 0.00
         Curve Number: 57.00             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00
```

```
         Name: SC-0900A                 Node: SC-0900                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 2.290                      Time Shift(hrs): 0.00
         Curve Number: 71.00             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00
```

FDOT POND E BASIN

```
         Name: SC-0900B                 Node: SC-0900                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 34.00
            Area(ac): 5.540                      Time Shift(hrs): 0.00
         Curve Number: 72.00             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00
```

I-4 BASIN CONTRIBUTING RUNOFF TO POND E

```
         Name: SC-0910                  Node: SC-0910                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 11.00
            Area(ac): 6.090                      Time Shift(hrs): 0.00
         Curve Number: 76.00             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00
```

```
         Name: SC-0920                  Node: SC-0920                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
       Unit Hydrograph: Uh323                    Peaking Factor: 323.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 22.00
              Area(ac): 88.620                  Time Shift(hrs): 0.00
         Curve Number: 70.00              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
        Name: SC-0925                  Node: SC-0925                Status: Onsite
       Group: Grace Lake               Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh323                    Peaking Factor: 323.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 15.00
              Area(ac): 13.240                  Time Shift(hrs): 0.00
         Curve Number: 57.00              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
        Name: SC-0970                  Node: SC-0970                Status: Onsite
       Group: Grace Lake               Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh323                    Peaking Factor: 323.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 16.00
              Area(ac): 4.220                   Time Shift(hrs): 0.00
         Curve Number: 65.00              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
        Name: SC-0980A                 Node: SC-0980                Status: Onsite
       Group: Grace Lake               Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh323                    Peaking Factor: 323.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 29.00
              Area(ac): 2.760                   Time Shift(hrs): 0.00
         Curve Number: 57.00              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
        Name: SC-0980B                 Node: SC-0980                Status: Onsite
       Group: Grace Lake               Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh323                    Peaking Factor: 323.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 15.00
              Area(ac): 5.830                   Time Shift(hrs): 0.00
         Curve Number: 57.00              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
        Name: SC-0980C                 Node: SC-0980                Status: Onsite
       Group: Grace Lake               Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh323                    Peaking Factor: 323.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 20.00
              Area(ac): 12.310                  Time Shift(hrs): 0.00
         Curve Number: 57.00              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
        Name: SC-0985                  Node: SC-0985                Status: Onsite
       Group: Grace Lake               Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh323                    Peaking Factor: 323.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 17.00
              Area(ac): 43.860                  Time Shift(hrs): 0.00
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Curve Number: 57.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: SC-0995 Node: SC-0995 Status: Onsite
Group: Grace Lake Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 23.00
Area(ac): 36.080 Time Shift(hrs): 0.00
Curve Number: 65.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

==========
==== Nodes ==========
==========

Name: SC-0750 Base Flow(cfs): 0.000 Init Stage(ft): 52.000
Group: Grace Lake Warn Stage(ft): 54.000
Type: Time/Stage

ASSUMED TAILWATER AT THE CROWN OF THE OUTFALL PIPE THAT DISCHARGES TO THE BOLLING FARMS SUBDIVISION WETLAND AND POND.
SURVEYED PIPE INVERT ELEVATION IS 48.96 FT, NAVD (SSMC SURVEY DATED DEC. 2007).

Time(hrs)	Stage(ft)
0.00	52.000
180.00	52.000

Name: SC-0760 Base Flow(cfs): 0.000 Init Stage(ft): 53.080
Group: Grace Lake Warn Stage(ft): 58.000
Type: Stage/Area

CURB INLET STRUCTURE LOCATED ALONG THE NORTH RIDGE LAKE CIRCLE WEST RIGHT-OF-WAY.
PARAMETERS WERE OBTAINED FROM SURVEY DATA BY SSMC (DATED DEC. 2007 AND JULY 2013).

Stage(ft)	Area(ac)
53.080	0.0010
58.780	0.0010

Name: SC-0770 Base Flow(cfs): 0.000 Init Stage(ft): 57.000
Group: Grace Lake Warn Stage(ft): 58.000
Type: Stage/Area

NORTHRIDGE SWALE LOCATED SOUTH OF THE NORTHRIDGE DEPRESSIONAL AREA

Stage(ft)	Area(ac)
55.900	0.0100
57.000	0.4100
58.000	0.7700

Name: SC-0780 Base Flow(cfs): 0.000 Init Stage(ft): 64.240
Group: Grace Lake Warn Stage(ft): 67.270
Type: Stage/Area

DIVERSION STRUCTURE. DATA OBTAINED FROM THE NORTHRIDGE SUBDIVISION AS-BUILT PLANS (DATED 05/19/1985). REFER TO STRUCTURE

Stage(ft)	Area(ac)
64.240	0.0010
67.570	0.0010

Name: SC-0790 Base Flow(cfs): 0.000 Init Stage(ft): 64.000
Group: Grace Lake Warn Stage(ft): 67.000
Type: Stage/Area

SMALL DRY RETENTION POND LOCATED NORTH OF GRACE LAKE, SOUTH OF NORTH RIDGE DR., EAST OF GRACE VIEW CT., AND WEST OF NORTH R
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.

Stage(ft)	Area(ac)

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

64.000	0.1800
65.000	0.2300
66.000	0.2900
67.000	0.3900

Name: SC-0800 Base Flow(cfs): 0.000 Init Stage(ft): 47.000
Group: Grace Lake Warn Stage(ft): 56.000
Type: Stage/Area

NORTHRIDE DEPRESSIONAL AREA

Stage(ft)	Area(ac)
47.000	0.9700
48.000	1.9200
49.000	2.3000
50.000	2.6500
51.000	2.9900
52.000	3.3100
53.000	3.6200
54.000	4.0400
55.000	4.8500
56.000	6.2700
57.000	7.1700

Name: SC-0810 Base Flow(cfs): 0.000 Init Stage(ft): 52.330
Group: Grace Lake Warn Stage(ft): 58.000
Type: Stage/Area

STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.

Stage(ft)	Area(ac)
52.330	0.0010
55.000	0.0050
56.000	0.0100
57.000	0.0200
58.000	0.0400

Name: SC-0815 Base Flow(cfs): 0.000 Init Stage(ft): 55.000
Group: Grace Lake Warn Stage(ft): 56.000
Type: Stage/Area

SHALLOW SWALE

Stage(ft)	Area(ac)
55.000	0.0200
56.000	0.0300

Name: SC-0820 Base Flow(cfs): 0.000 Init Stage(ft): 53.000
Group: Grace Lake Warn Stage(ft): 56.000
Type: Stage/Area

FDOT POND F
STAGE-AREA RELATIONSHIP OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP AND COMPARED TO THE PERMITTED PARAMETERS (SJRWMD PERMIT NO.

Stage(ft)	Area(ac)
52.000	0.9100
53.000	1.2100
54.000	1.3300
55.000	1.4800
56.000	1.6100
57.000	1.6900

Name: SC-0830 Base Flow(cfs): 0.000 Init Stage(ft): 52.890
Group: Grace Lake Warn Stage(ft): 59.000
Type: Stage/Area

DEPRESSIONAL AREA IMMEDIATELY WEST (UPSTREAM SIDE) OF THE I-4 CULVERT CROSSING (NORTH PIPE)

Stage(ft)	Area(ac)
52.000	0.0010
53.000	0.0500

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

54.000	0.3100
55.000	0.4800
56.000	0.5900
57.000	0.6800
58.000	0.7900
59.000	0.9200

Name: SC-0840 Base Flow(cfs): 0.000 Init Stage(ft): 50.000
Group: Grace Lake Warn Stage(ft): 58.000
Type: Stage/Area

DEPRESSIONAL AREA NORTH OF DIXON ROAD AND EAST OF SUNSHINE TREE BOULEVARD.
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHI MAP.

Stage(ft)	Area(ac)
47.000	0.0200
48.000	0.0500
49.000	0.0900
50.000	0.1200
51.000	0.3400
52.000	0.5400
53.000	0.7700
54.000	1.1800
55.000	1.9200
56.000	2.7200
57.000	3.4100
58.000	4.1100
59.000	4.7300

Name: SC-0850 Base Flow(cfs): 0.000 Init Stage(ft): 56.690
Group: Grace Lake Warn Stage(ft): 59.500
Type: Stage/Area

Stage(ft)	Area(ac)
56.650	0.0010
59.500	0.0010

Name: SC-0860 Base Flow(cfs): 0.000 Init Stage(ft): 56.920
Group: Grace Lake Warn Stage(ft): 61.550
Type: Stage/Area

DITCH BOTTOM INLET LOCATED AT THE SOUTHEAST CORNER OF THE INTERSECTION OF DIXON RD. AND SUNSHINE TREE BLVD.

Stage(ft)	Area(ac)
56.920	0.0010
62.650	0.0010

Name: SC-0870 Base Flow(cfs): 0.000 Init Stage(ft): 59.620
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.
CURB INLET LOCATED ALONG THE SUNSHINE TREE BLVD EAST RIGHT-OF-WAY.

Stage(ft)	Area(ac)
59.620	0.0010
67.000	0.0010

Name: SC-0875 Base Flow(cfs): 0.000 Init Stage(ft): 59.710
Group: Grace Lake Warn Stage(ft): 64.000
Type: Stage/Area

Stage(ft)	Area(ac)
59.710	0.0100
64.000	0.0100

Name: SC-0880 Base Flow(cfs): 0.000 Init Stage(ft): 57.840

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Group: Grace Lake Warn Stage(ft): 64.000
Type: Stage/Area

DEPRESSIONAL AREA SOUTH OF THE ONE CHURCH (SOCCER FIELDS)
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.

Stage(ft)	Area(ac)
57.840	0.0010
58.000	0.0020
59.000	0.0300
60.000	0.5700
61.000	0.7700
62.000	1.6400
63.000	3.0800
64.000	3.8700
65.000	5.6500

Name: SC-0890 Base Flow(cfs): 0.000 Init Stage(ft): 58.430
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

UPSTREAM END (EAST SIDE) OF THE SOUTHERN CULVERT CROSSING I-4

Stage(ft)	Area(ac)
58.160	0.0100
66.000	0.0100

Name: SC-0900 Base Flow(cfs): 0.000 Init Stage(ft): 60.000
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

STAGE-AREA RELATIONSHIP OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.
FDOT POND E (REFER TO THE SJRWMD PERMIT NO. 22434-1)

Stage(ft)	Area(ac)
59.000	0.3000
60.000	0.4400
61.000	0.6200
62.000	0.7900
63.000	0.9200
64.000	1.0400
65.000	1.1900
66.000	1.3900
67.000	1.5400

Name: SC-0910 Base Flow(cfs): 0.000 Init Stage(ft): 58.000
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

DEPRESSIONAL AREA IMMEDIATELY EAST OF THE SOUTH I-4 CROSS CULVERT, ADJACENT TO GRACE LAKE.
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.

Stage(ft)	Area(ac)
55.000	0.1700
56.000	0.3000
57.000	0.4500
58.000	0.6600
59.000	0.9600
60.000	1.4200
61.000	1.8200
62.000	2.2500
63.000	2.6800
64.000	2.9600
65.000	3.2500
66.000	3.4800
67.000	3.6800

Name: SC-0920 Base Flow(cfs): 0.000 Init Stage(ft): 58.000
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

GRACE LAKE.
STAGE-AREA RELATIONSHIP BETWEEN ELEVATIONS 33-54 FT, NAVD, WAS OBTAINED FROM THE SURVEY PREPARED BY SSMC, DATED DEC. 2007.
STAGE-AREA RELATIONSHIP BETWEEN ELEVATIONS 55-67, NAVD, IS BASED ON THE 1-FT TOPOGRAPHY.

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

INITIAL STAGE IS BASED ON THE GRACE LAKE "NORMAL" HYDROPERIOD ELEVATION BETWEEN ELEVATION 58-63 FT, NAVD (REFER TO ENGINEERING REPORT FROM DEVO ENGINEERING).

Stage(ft)	Area(ac)
33.000	0.0000
34.000	0.0005
35.000	0.0014
36.000	0.0028
37.000	0.0053
38.000	0.0140
39.000	0.0450
40.000	0.0980
41.000	0.1830
42.000	0.3010
43.000	0.4270
44.000	0.5320
45.000	0.6430
46.000	0.7540
47.000	0.8640
48.000	1.1900
49.000	3.6300
50.000	5.8800
51.000	8.1300
52.000	10.5200
53.000	12.8800
54.000	14.9400
55.000	16.6400
56.000	18.3800
57.000	20.0700
58.000	22.0500
59.000	24.0900
60.000	26.0500
61.000	27.8500
62.000	29.7000
63.000	31.6800
64.000	33.6800
65.000	35.3300
66.000	36.9000
67.000	38.7900

Name: SC-0925 Base Flow(cfs): 0.000 Init Stage(ft): 68.000
Group: Grace Lake Warn Stage(ft): 76.000
Type: Stage/Area

SMALL DRY RETENTION POND LOCATED ALONG NORTH RIDGE LAKE CIRCLE, SOUTH OF NORTH RIDGE DR.
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAPS.

Stage(ft)	Area(ac)
68.000	0.0300
69.000	0.0800
70.000	0.1000
71.000	0.1300
72.000	0.1600
73.000	0.1800
74.000	0.2200
75.000	0.2500
76.000	0.2900
77.000	0.5100
78.000	0.8700
79.000	1.1900

Name: SC-0930 Base Flow(cfs): 0.000 Init Stage(ft): 62.900
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

NODE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO NODE GHOST 3.

Stage(ft)	Area(ac)
62.900	0.0100
66.000	0.0100

Name: SC-0940 Base Flow(cfs): 0.000 Init Stage(ft): 65.700
Group: Grace Lake Warn Stage(ft): 69.000
Type: Stage/Area

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

NODE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO NODE GHOST 2.

Stage(ft)	Area(ac)
65.700	0.0100
69.000	0.0100

Name: SC-0950 Base Flow(cfs): 0.000 Init Stage(ft): 66.200
Group: Grace Lake Warn Stage(ft): 72.000
Type: Stage/Area

NODE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO NODE GHOST 1.

Stage(ft)	Area(ac)
66.200	0.0100
72.000	0.0100

Name: SC-0960 Base Flow(cfs): 0.000 Init Stage(ft): 68.780
Group: Grace Lake Warn Stage(ft): 73.000
Type: Stage/Area

NODE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO NODE GHOST 0.

Stage(ft)	Area(ac)
68.780	0.0100
73.000	0.0100

Name: SC-0970 Base Flow(cfs): 0.000 Init Stage(ft): 65.780
Group: Grace Lake Warn Stage(ft): 71.000
Type: Stage/Area

STAGE AREA ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.
NODE INITIAL STAGE OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO NODE Ghost_I-4_30in.

Stage(ft)	Area(ac)
65.780	0.0100
71.000	0.0400

Name: SC-0980 Base Flow(cfs): 0.000 Init Stage(ft): 68.100
Group: Grace Lake Warn Stage(ft): 74.000
Type: Stage/Area

STAGE-AREA OBTAINED FROM THE 1-FT TOPO MAPS
INITIAL STAGE IS BASED ON THE DOWNSTREAM PIPE INVERT ELEVATION

Stage(ft)	Area(ac)
67.000	0.0100
70.000	0.0150
71.000	0.0200
72.000	0.1000
73.000	0.1800
74.000	0.3200

Name: SC-0985 Base Flow(cfs): 0.000 Init Stage(ft): 68.100
Group: Grace Lake Warn Stage(ft): 73.000
Type: Stage/Area

PENELOPE POND (POND LOCATED EAST OF PENELOPE DR AND NORTH OF HICKORY TREE RD)
STAGE-AREA RELATIONSHIP OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP
INITIAL STAGE WAS ESTIMATED BASED ON THE DOWNSTREAM PIPE INVERT JUST SOUTH OF EE WILLIAMSON RD

Stage(ft)	Area(ac)
66.000	0.1100
71.000	0.2200
72.000	0.3400
73.000	0.5900
74.000	1.2000

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Name: SC-0990 Base Flow(cfs): 0.000 Init Stage(ft): 71.000
Group: Grace Lake Warn Stage(ft): 79.000
Type: Stage/Area

EMERGENCY OVERFLOW MANHOLE

Stage(ft)	Area(ac)
71.000	0.0010
79.000	0.0010

Name: SC-0995 Base Flow(cfs): 0.000 Init Stage(ft): 77.500
Group: Grace Lake Warn Stage(ft): 84.000
Type: Stage/Area

WET DETENTION POND THAT SERVES THE WOODLAND ELEMENTARY SCHOOL, THE BELLA TUSCANY SUBDIVISION AND A PORTION OF EE WILLIAMSON POND WAS EXPANDED TO PROVIDE WATER QUALITY TREATMENT AND ATTENUATION FROM THE BELLA TUSCANY SUBDIVISION (REFER TO THE SJRMD STAGE-AREA RELATIONSHIP AND INITIAL STAGE WAS OBTAINED FROM THE PERMITTED PARAMETERS. ELEVATIONS SHOWN HEREIN WERE CONVERT SINCE THE ORIGINAL BELLA TUSCANY SUBDIVISION PLANS ARE REFERENCED TO THE NGVD VERTICAL DATUM (CONVERSION USED: NAVD ELEV.

Stage(ft)	Area(ac)
77.500	1.8600
78.000	1.9300
79.000	2.0000
80.000	2.0800
81.000	2.2200
82.000	2.3600
83.000	2.5000
84.000	2.6500
85.000	2.8000

==========
==== Cross Sections ==========
==========

Name: SC-0810_W1 Group: Grace Lake
Encroachment: No

OVERLAND OVERTOPPING CROSS SECTION FROM I-4 CULVERT CROSSING (NORTH PIPE) TO THE NORTHRIDGE DEPRESSIONAL AREA

Station(ft)	Elevation(ft)	Manning's N
0.000	58.400	0.000000
11.900	57.800	0.000000
31.100	57.200	0.000000
43.400	57.800	0.000000
63.200	58.700	0.000000

Name: SC-0810_W2 Group: Grace Lake
Encroachment: No

OVERLAND OVERTOPPING CROSS SECTION FROM I-4 CULVERT CROSSING (NORTH PIPE) TO THE NORTHRIDGE SWALE

Station(ft)	Elevation(ft)	Manning's N
0.000	59.300	0.000000
30.700	59.000	0.000000
68.400	58.500	0.000000
106.100	58.700	0.000000
133.700	59.300	0.000000

Name: SC-0840_W Group: Grace Lake
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	59.000	0.000000
6.700	58.000	0.000000
13.300	57.000	0.000000
20.000	56.000	0.000000
39.900	55.000	0.000000
91.800	54.000	0.000000
116.000	54.000	0.000000
137.600	54.000	0.000000

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

182.000	55.000	0.000000
203.100	56.000	0.000000
218.500	57.000	0.000000
229.100	58.000	0.000000
239.500	59.000	0.000000

Name: SC-0875_W Group: Grace Lake
Encroachment: No

CROSS SECTION DATA ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

Station(ft)	Elevation(ft)	Manning's N
0.000	67.000	0.000000
36.600	66.000	0.000000
44.200	65.500	0.000000
51.800	66.000	0.000000
78.700	67.000	0.000000

Name: SC-0880_W Group: Grace Lake
Encroachment: No

CROSS SECTION DATA OBTAINED FROM SSMC SURVEY, DATED JULY 2013.

Station(ft)	Elevation(ft)	Manning's N
0.000	63.300	0.000000
9.200	62.600	0.000000
24.700	63.400	0.000000

Name: SC-0890_W Group: Grace Lake
Encroachment: No

SURVEYED CROSS SECTION (SSMC, DATED JULY 2013).

Station(ft)	Elevation(ft)	Manning's N
0.000	70.960	0.000000
4.200	70.600	0.000000
26.000	67.700	0.000000
48.500	71.100	0.000000
64.600	79.100	0.000000
78.400	83.600	0.000000
82.500	83.400	0.000000

Name: SC-0920_W1 Group: Grace Lake
Encroachment: No

CROSS SECTION DATA ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

Station(ft)	Elevation(ft)	Manning's N
0.000	67.000	0.000000
20.300	66.000	0.000000
45.300	65.000	0.000000
53.000	64.000	0.000000
63.600	63.000	0.000000
80.700	62.000	0.000000
93.800	61.000	0.000000
106.600	60.000	0.000000
139.200	59.500	0.000000
168.200	60.000	0.000000
194.200	61.000	0.000000
206.100	62.000	0.000000
224.900	63.000	0.000000
240.600	64.000	0.000000
249.600	65.000	0.000000
258.000	66.000	0.000000
277.100	67.000	0.000000

Name: SC-0920_W3 Group: Grace Lake
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

0.000	66.900	0.000000
24.000	66.800	0.000000
47.000	67.100	0.000000

Name: SC-0930_DS Group: Grace Lake
Encroachment: No

CHANNEL CROSS SECTION DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR CROSS SECTION I-4 Chan3DS.

Station(ft)	Elevation(ft)	Manning's N
0.000	64.000	0.011000
0.320	63.600	0.011000
1.550	63.000	0.011000
2.250	62.600	0.011000
4.340	62.700	0.011000
5.150	63.000	0.011000
6.110	63.400	0.011000
8.310	64.000	0.011000

Name: SC-0940_DS Group: Grace Lake
Encroachment: No

CHANNEL CROSS SECTION DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR CROSS SECTION I-4 Chan2DS3US.

Station(ft)	Elevation(ft)	Manning's N
0.000	65.700	0.150000
2.240	65.000	0.150000
5.290	64.000	0.150000
8.190	63.100	0.150000
9.050	63.000	0.150000
11.130	62.900	0.150000
12.170	63.000	0.150000
19.550	64.000	0.150000
26.880	65.000	0.150000

Name: SC-0950_DS Group: Grace Lake
Encroachment: No

CHANNEL CROSS SECTION DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR CROSS SECTION I-4 Chan1DS2US.

Station(ft)	Elevation(ft)	Manning's N
0.000	67.980	0.150000
9.010	66.700	0.150000
15.920	66.000	0.150000
17.990	65.800	0.150000
20.380	65.700	0.150000
22.200	66.000	0.150000
23.200	66.300	0.150000
27.190	66.500	0.150000
30.370	67.000	0.150000
40.400	68.000	0.150000
48.060	68.700	0.150000

Name: SC-0950_US Group: Grace Lake
Encroachment: No

CHANNEL CROSS SECTION DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR CROSS SECTION I-4 Chan1_US.

Station(ft)	Elevation(ft)	Manning's N
0.000	71.000	0.150000
1.190	70.000	0.150000
2.360	69.000	0.150000
3.560	68.000	0.150000
4.580	67.000	0.150000
5.300	66.200	0.150000
11.970	67.000	0.150000
12.060	68.000	0.150000
12.060	69.000	0.150000
12.060	69.700	0.150000

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Name: SC-0960_DS Group: Grace Lake
Encroachment: No

CHANNEL CROSS SECTION DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR CROSS SECTION EEW I-4 Chan DS.

Station(ft)	Elevation(ft)	Manning's N
0.000	71.230	0.011000
0.610	71.000	0.011000
2.090	70.000	0.011000
3.570	69.000	0.011000
3.800	68.640	0.011000
8.900	68.640	0.011000
9.240	69.000	0.011000
10.080	70.000	0.011000

Name: SC-0960_US Group: Grace Lake
Encroachment: No

CHANNEL CROSS SECTION DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR CROSS SECTION EEW I-4 Chan US.

Station(ft)	Elevation(ft)	Manning's N
0.000	71.000	0.011000
0.960	70.000	0.011000
1.930	69.000	0.011000
7.640	68.860	0.011000
7.810	69.000	0.011000
8.830	70.000	0.011000
9.880	71.000	0.011000
10.790	72.000	0.011000

==========
==== Pipes ==========
==========

Name: SC-0760-P From Node: SC-0760 Length(ft): 534.00
Group: Grace Lake To Node: SC-0750 Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	36.00	36.00
Rise(in):	36.00	36.00
Invert(ft):	53.080	48.960
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY DATA BY SSMC, DATED DEC. 2007.

Name: SC-0790-P From Node: SC-0790 Length(ft): 30.00
Group: Grace Lake To Node: SC-0780 Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	18.00	18.00
Rise(in):	18.00	18.00
Invert(ft):	64.050	64.240
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

PIPE DATA OBTAINED FROM THE NORTHRIDGE SUBDIVISION AS-BUILTS (DATED 05/19/1985).
ORIGINAL PLANS WERE REFERENCED TO THE NGVD VERTICAL DATUM AND HAD TO BE CONVERTED TO THE NAVD VERTICAL DATUM.
ELEVATIONS SHOWN CORRESPOND TO THE NAVD DATUM.

```
         Name: SC-0815-P          From Node: SC-0815           Length(ft): 412.00
        Group: Grace Lake           To Node: SC-0810                Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                              Flow: Both
     Span(in): 18.00          18.00                      Entrance Loss Coef: 0.50
     Rise(in): 18.00          18.00                          Exit Loss Coef: 0.00
   Invert(ft): 55.000         53.520                         Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

UPSTREAM INVERT OBTAINED FROM THE PROPOSED ICPR MODEL, PREPARED BY HDR IN SUPPORT OF THE
LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008).
DOWNSTREAM INVERT WAS OBTAINED FROM THE SSMC SURVEY, DATED JULY 2013.

```
         Name: SC-0830-P          From Node: SC-0830           Length(ft): 227.00
        Group: Grace Lake           To Node: SC-0810                Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                              Flow: Both
     Span(in): 54.00          54.00                      Entrance Loss Coef: 0.50
     Rise(in): 54.00          54.00                          Exit Loss Coef: 0.00
   Invert(ft): 51.520         52.330                         Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

CULVERT CROSSING I-4 (NORTH CROSSING)
UPSTREAM (WEST END) INVERT DATA WAS OBTAINED FROM SURVEY PERFORMED BY SSMC, DATED DEC. 2007.
DOWNSTREAM (EAST END) INVERT ELEVATION WAS REVISED BASED ON SURVEY PERFORMED BY SSMC, DATED JULY 2013.

```
         Name: SC-0850-P          From Node: SC-0850           Length(ft): 66.00
        Group: Grace Lake           To Node: SC-0840                Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                              Flow: Both
     Span(in): 36.00          36.00                      Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                          Exit Loss Coef: 0.00
   Invert(ft): 56.690         56.270                         Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.

```
         Name: SC-0860-P          From Node: SC-0860           Length(ft): 62.00
        Group: Grace Lake           To Node: SC-0850                Count: 1
                                                          Friction Equation: Automatic
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                               Flow: Both
     Span(in): 36.00          36.00                      Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                          Exit Loss Coef: 0.00
   Invert(ft): 56.920         56.650                         Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.

-----------------------------------------------------------------------------------------------------
         Name: SC-0870-P           From Node: SC-0870            Length(ft): 499.00
        Group: Grace Lake            To Node: SC-0860                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                               Flow: Both
     Span(in): 36.00          36.00                      Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                          Exit Loss Coef: 0.00
   Invert(ft): 59.620         57.050                         Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.

-----------------------------------------------------------------------------------------------------
         Name: SC-0875-P           From Node: SC-0875            Length(ft): 47.00
        Group: Grace Lake            To Node: SC-0870                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                               Flow: Both
     Span(in): 36.00          36.00                      Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                          Exit Loss Coef: 0.00
   Invert(ft): 59.710         59.650                         Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.

-----------------------------------------------------------------------------------------------------
         Name: SC-0890-P           From Node: SC-0890            Length(ft): 220.00
        Group: Grace Lake            To Node: SC-0880                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                               Flow: Both
     Span(in): 48.00          48.00                      Entrance Loss Coef: 0.50
     Rise(in): 48.00          48.00                          Exit Loss Coef: 0.00
   Invert(ft): 58.430         57.840                         Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

CULVERT CROSSING I-4 (SOUTH CROSSING)
INVERT DATA WAS OBTAINED FROM SURVEY PERFORMED BY SSMC, DATED DEC. 2007.

```
         Name: SC-0970-P          From Node: SC-0970           Length(ft): 200.00
        Group: Grace Lake           To Node: SC-0940                Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 30.00          30.00                       Entrance Loss Coef: 0.50
     Rise(in): 30.00          30.00                           Exit Loss Coef: 0.00
   Invert(ft): 65.780         65.700                          Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                          Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PIPE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008)

```
         Name: SC-0980-P1         From Node: SC-0980           Length(ft): 165.00
        Group: Grace Lake           To Node: SC-0970                Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 30.00          30.00                       Entrance Loss Coef: 0.50
     Rise(in): 30.00          30.00                           Exit Loss Coef: 0.00
   Invert(ft): 68.100         66.070                          Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                          Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PIPE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO HDR PIPE LINK I-4_30Inch. SURVEY DATA PROVIDED BY SSMC (DATED DEC. 2007)

```
         Name: SC-0980-P2         From Node: SC-0980           Length(ft): 135.00
        Group: Grace Lake           To Node: SC-0960                Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 24.00          24.00                       Entrance Loss Coef: 0.50
     Rise(in): 24.00          24.00                           Exit Loss Coef: 0.00
   Invert(ft): 69.830         68.780                          Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                          Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PIPE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR PIPE LINK EEWilliams_24. SURVEY DATA PROVIDED BY SSMC (DATED DEC. 2007)

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
-----------------------------------------------------------------------------------------------
         Name: SC-0985-P          From Node: SC-0985           Length(ft): 230.00
        Group: Grace Lake           To Node: SC-0980                Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 42.00          42.00                       Entrance Loss Coef: 0.50
     Rise(in): 42.00          42.00                           Exit Loss Coef: 0.00
   Invert(ft): 67.000         67.000                          Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                          Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PIPE SIZE AND INVERT DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR, IN
SUPPORT OF THE GRACE LAKE SINKHOLE ANALYSIS REPORT (DATED APRIL 2008).
IT APPEARS THAT THIS PIPE SEGMENT WAS NOT SURVEYED
PIPE LENGTH WAS ADJUSTED TO MATCH FIELD OBSERVATIONS

```
-----------------------------------------------------------------------------------------------
         Name: SC-0990-P          From Node: SC-0990           Length(ft): 219.00
        Group: Grace Lake           To Node: SC-0920                Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 15.00          15.00                       Entrance Loss Coef: 0.50
     Rise(in): 15.00          15.00                           Exit Loss Coef: 0.00
   Invert(ft): 71.000         52.000                          Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                          Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

EMERGENCY OVERFLOW PIPE FROM THE WOODLAND ELEMENTARY POND TO GRACE LAKE (FINAL PIPE SEGMENT).
PARAMETERS WERE OBTAINED FROM PERMITTED PLANS (REFER TO THE SJRWMD PERMIT NO. 49356-3, DATED 11/21/2007).
NOTE THAT ORIGINAL PLANS WERE REFERENCED TO THE NGVD DATUM. ELEVATIONS SHOWN HEREIN WERE CONVERTED TO THE NAVD VERTICAL DA

```
-----------------------------------------------------------------------------------------------
         Name: SC-1000-P          From Node: SC-1000           Length(ft): 112.00
        Group: Grace Lake           To Node: SC-0985                Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Arch           Arch                                     Flow: Both
     Span(in): 95.00          95.00                       Entrance Loss Coef: 0.50
     Rise(in): 67.00          67.00                           Exit Loss Coef: 0.00
   Invert(ft): 68.620         68.070                          Bend Loss Coef: 0.00
  Manning's N: 0.024000       0.024000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                          Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Pipe Arch 18" Corner Radius CM: 90° headwall

Downstream FHWA Inlet Edge Description:
Pipe Arch 18" Corner Radius CM: 90° headwall

CULVERT CROSSING HICKORY DITCH ROAD
INVERT DATA OBTAINED FROM THE CITY OF LONGWOOD STORMWATER MASTERPLAN
PIPE SIZE WAS ADJUSTED TO REFLECT THE NEAREST STANDARD SIZE FOR AN ARCH PIPE BASED ON SURVEYED DIMENSIONS

```
==============================================================================================
==== Channels ================================================================================
==============================================================================================

          Name: SC-0930-C          From Node: SC-0930           Length(ft): 106.00
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
         Group: Grace Lake            To Node: SC-0920                Count: 1

                UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
      Geometry: Irregular      Irregular                 Solution Algorithm: Automatic
    Invert(ft): 62.900         62.600                               Flow: Both
 TClpInitZ(ft): 9999.000       9999.000                  Contraction Coef: 0.100
   Manning's N:                                              Expansion Coef: 0.300
  Top Clip(ft):                                          Entrance Loss Coef: 0.000
  Bot Clip(ft):                                              Exit Loss Coef: 0.000
     Main XSec: SC-0940_DS     SC-0930_DS                 Outlet Ctrl Spec: Use dc or tw
  AuxElev1(ft): 0.000          0.000                       Inlet Ctrl Spec: Use dc
     Aux XSec1:                                           Stabilizer Option: None
  AuxElev2(ft): 0.000          0.000
     Aux XSec2:
 Top Width(ft):
     Depth(ft):
 Bot Width(ft):
  LtSdSlp(h/v):
  RtSdSlp(h/v):
```

CHANNEL DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO CHANNEL LINK I-4 Channel 3 AND CROSS SECTIONS I-4 Chan2DS3US (UPSTREAM) AND I-4 Chan3DS (DOWNSTREAM)

```
          Name: SC-0940-C           From Node: SC-0940            Length(ft): 496.00
         Group: Grace Lake            To Node: SC-0930                 Count: 1

                UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
      Geometry: Irregular      Irregular                 Solution Algorithm: Automatic
    Invert(ft): 65.700         62.900                               Flow: Both
 TClpInitZ(ft): 9999.000       9999.000                  Contraction Coef: 0.100
   Manning's N:                                              Expansion Coef: 0.300
  Top Clip(ft):                                          Entrance Loss Coef: 0.000
  Bot Clip(ft):                                              Exit Loss Coef: 0.000
     Main XSec: SC-0950_DS     SC-0940_DS                 Outlet Ctrl Spec: Use dc or tw
  AuxElev1(ft): 0.000          0.000                       Inlet Ctrl Spec: Use dc
     Aux XSec1:                                           Stabilizer Option: None
  AuxElev2(ft): 0.000          0.000
     Aux XSec2:
 Top Width(ft):
     Depth(ft):
 Bot Width(ft):
  LtSdSlp(h/v):
  RtSdSlp(h/v):
```

CHANNEL DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO CHANNEL LINK I-4 Channel 2 AND CROSS SECTIONS I-4 Chan1DS2US (UPSTREAM) AND I-4 Chan2DS3US (DOWNSTREAM)

```
          Name: SC-0950-C           From Node: SC-0950            Length(ft): 66.00
         Group: Grace Lake            To Node: SC-0940                 Count: 1

                UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
      Geometry: Irregular      Irregular                 Solution Algorithm: Automatic
    Invert(ft): 66.200         65.700                               Flow: Both
 TClpInitZ(ft): 9999.000       9999.000                  Contraction Coef: 0.100
   Manning's N:                                              Expansion Coef: 0.300
  Top Clip(ft):                                          Entrance Loss Coef: 0.000
  Bot Clip(ft):                                              Exit Loss Coef: 0.000
     Main XSec: SC-0950_US     SC-0950_DS                 Outlet Ctrl Spec: Use dc or tw
  AuxElev1(ft): 0.000          0.000                       Inlet Ctrl Spec: Use dc
     Aux XSec1:                                           Stabilizer Option: None
  AuxElev2(ft): 0.000          0.000
     Aux XSec2:
 Top Width(ft):
     Depth(ft):
 Bot Width(ft):
  LtSdSlp(h/v):
  RtSdSlp(h/v):
```

CHANNEL DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO CHANNEL LINK I-4 Channel 1 AND CROSS SECTIONS I-4 Chan 1_US (UPSTREAM) AND I-4 Chan1DS2US (DOWNSTREAM)

```
          Name: SC-0960-C           From Node: SC-0960            Length(ft): 15.00
         Group: Grace Lake            To Node: SC-0950                 Count: 1

                UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
      Geometry: Irregular      Irregular                 Solution Algorithm: Automatic
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
    Invert(ft): 68.780         68.640                                  Flow: Both
 TClpInitZ(ft): 9999.000       9999.000                   Contraction Coef: 0.100
   Manning's N:                                             Expansion Coef: 0.300
  Top Clip(ft):                                         Entrance Loss Coef: 0.000
  Bot Clip(ft):                                             Exit Loss Coef: 0.000
     Main XSec: SC-0960_US     SC-0960_DS                 Outlet Ctrl Spec: Use dc or tw
  AuxElev1(ft): 0.000          0.000                       Inlet Ctrl Spec: Use dc
     Aux XSec1:                                          Stabilizer Option: None
  AuxElev2(ft): 0.000          0.000
     Aux XSec2:
 Top Width(ft):
     Depth(ft):
 Bot Width(ft):
  LtSdSlp(h/v):
  RtSdSlp(h/v):
```

CHANNEL DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO CHANNEL LINK 24 Splwy Chan AND CROSS SECTIONS EEW I-4 Chan US (UPSTREAM) AND EEW I-4 Chan DS (DOWNSTREAM)

```
==========================================================================================
==== Drop Structures ====================================================================
==========================================================================================

         Name: SC-0770-D1          From Node: SC-0770            Length(ft): 17.00
        Group: Grace Lake            To Node: SC-0760                 Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 36.00          36.00                                  Flow: Both
     Rise(in): 36.00          36.00                     Entrance Loss Coef: 0.500
   Invert(ft): 53.250         53.080                        Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

DITCH BOTTOM STRUCTURE LOCATED ALONG THE NORTH RIDGE LAKE CIRCLE WEST RIGHT-OF-WAY, NORTH OF NORTH RIDGE DRIVE (TRACT "C" O


*** Weir 1 of 4 for Drop Structure SC-0770-D1 ***
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 10.20                       Invert(ft): 57.170
              Rise(in): 33.60                 Control Elev(ft): 57.170

*** Weir 2 of 4 for Drop Structure SC-0770-D1 ***
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 9.60                        Invert(ft): 57.180
              Rise(in): 34.80                 Control Elev(ft): 57.180

*** Weir 3 of 4 for Drop Structure SC-0770-D1 ***
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 9.00                        Invert(ft): 57.170
              Rise(in): 34.80                 Control Elev(ft): 57.170

*** Weir 4 of 4 for Drop Structure SC-0770-D1 ***
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Horizontal                Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
              Span(in): 36.00                      Invert(ft): 58.180
              Rise(in): 54.00                 Control Elev(ft): 58.180


-----------------------------------------------------------------------------------------------
         Name: SC-0770-D2          From Node: SC-0770           Length(ft): 70.00
        Group: Grace Lake            To Node: SC-0800                Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                Flow: Both
     Rise(in): 18.00          18.00                     Entrance Loss Coef: 0.500
   Invert(ft): 49.660         49.140                        Exit Loss Coef: 0.000
  Manning's N: 0.024000       0.024000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

CONTROL STRUCTURE LOCATED WITHIN THE NORTHRIDGE SWALE.
REFER TO SSMC SURVEY DATED DEC. 2007 AND THE NORTHRIDGE SUBDIVISION AS-BUILT PLANS (DATED  05/19/1985).
IT APPEARS THAT SURVEY FROM SSMC DID NOT PICK UP THE WEIR CUT-OUT (SLOT).  HOWEVER, AS BUILTS PROVIDE AN INVERT ELEVATION F

*** Weir 1 of 2 for Drop Structure SC-0770-D2 ***
                                                                                    TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 30.00                      Invert(ft): 56.820
              Rise(in): 15.50                 Control Elev(ft): 56.820

*** Weir 2 of 2 for Drop Structure SC-0770-D2 ***
                                                                                    TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Horizontal                Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 37.00                      Invert(ft): 58.360
              Rise(in): 49.00                 Control Elev(ft): 58.360


-----------------------------------------------------------------------------------------------
         Name: SC-0780-D           From Node: SC-0780           Length(ft): 443.00
        Group: Grace Lake            To Node: SC-0770                Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                Flow: Both
     Rise(in): 18.00          18.00                     Entrance Loss Coef: 0.500
   Invert(ft): 62.370         55.900                        Exit Loss Coef: 0.000
  Manning's N: 0.013000       0.013000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

DIVERSION / CONTROL STRUCTURE.  DATA OBTAINED FROM THE NORTHRIDGE SUBDIVISION AS-BUILT PLANS (DATED 05/19/1985).
ELEVATIONS SHOWN WERE CONVERTED TO THE NAVD VERTICAL DATUM.

*** Weir 1 of 1 for Drop Structure SC-0780-D ***
                                                                                    TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 50.40                      Invert(ft): 65.500
              Rise(in): 24.84                 Control Elev(ft): 65.500
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
-----------------------------------------------------------------------------------------------
         Name: SC-0900-D          From Node: SC-0900           Length(ft): 164.00
        Group: Grace Lake           To Node: SC-0890                Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                 Solution Algorithm: Most Restrictive
     Span(in): 24.00          24.00                                Flow: Both
     Rise(in): 24.00          24.00                   Entrance Loss Coef: 0.500
   Invert(ft): 59.500         58.160                      Exit Loss Coef: 0.000
  Manning's N: 0.013000       0.013000                  Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

FDOT POND E OUTFALL STRUCTURE.  STRUCTURE DATA AND UPSTREAM INVERT WAS OBTAINED FROM THE FDOT CONSTUCTION PLANS (PREPARED B
IT APPEARS THAT THE FDOT PLANS ARE REFERENCED TO THE NGVD VERTICAL DATUM.  THESE ELEVATIONS WERE CONVERTED TO THE NAVD DATU
DOWNSTREAM PIPE INVERT ELEVATION WAS OBTAINED FROM SURVEYED DATA, PREPARED BY SSMC (DATED DEC. 2007)

*** Weir 1 of 3 for Drop Structure SC-0900-D ***
                                                                                    TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 36.00                       Invert(ft): 63.700
              Rise(in): 15.60                  Control Elev(ft): 63.700

*** Weir 2 of 3 for Drop Structure SC-0900-D ***
                                                                                    TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Horizontal                Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 37.00                       Invert(ft): 65.000
              Rise(in): 49.00                  Control Elev(ft): 65.000

*** Weir 3 of 3 for Drop Structure SC-0900-D ***
                                                                                    TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Circular              Orifice Disc Coef: 0.600

              Span(in): 2.00                        Invert(ft): 60.000
              Rise(in): 2.00                   Control Elev(ft): 60.000


-----------------------------------------------------------------------------------------------
         Name: SC-0925-D          From Node: SC-0925           Length(ft): 360.00
        Group: Grace Lake           To Node: SC-0920                Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                 Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                Flow: Both
     Rise(in): 18.00          18.00                   Entrance Loss Coef: 0.500
   Invert(ft): 69.350         64.010                      Exit Loss Coef: 0.000
  Manning's N: 0.013000       0.013000                  Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

CONTROL STRUCTURE DATA WAS OBTAINED FROM THE AS-BUILT PLANS OF THE NORTHRIDGE SUBDIVISION, PREPARED BY CPH, DATED 05/19/198
CONSTRUCTION PLANS WERE REFERENCED TO THE NGVD VERTICAL DATUM AND CONVERTED TO THE NAVD DATUM.

*** Weir 1 of 2 for Drop Structure SC-0925-D ***
                                                                                    TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
              Span(in): 12.00                      Invert(ft): 74.020
              Rise(in): 46.70                 Control Elev(ft): 74.020

*** Weir 2 of 2 for Drop Structure SC-0925-D ***
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Horizontal                Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 36.00                      Invert(ft): 77.910
              Rise(in): 54.00                 Control Elev(ft): 77.910


-------------------------------------------------------------------------------------------------
         Name: SC-0995-D          From Node: SC-0995           Length(ft): 1211.00
        Group: Grace Lake           To Node: SC-0990                Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 15.00          15.00                                  Flow: Both
     Rise(in): 15.00          15.00                     Entrance Loss Coef: 0.500
   Invert(ft): 80.000         76.250                        Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

EMERGENCY OVERFLOW STRUCTURE AND PIPE FROM THE WOODLAND ELEMENTARY POND TO GRACE LAKE.
PARAMETERS WERE OBTAINED FROM PERMITTED PLANS (REFER TO THE SJRWMD PERMIT NO. 49356-3, DATED 11/21/2007).
NOTE THAT ORIGINAL PLANS WERE REFERENCED TO THE NGVD DATUM.  ELEVATIONS SHOWN HEREIN WERE CONVERTED TO THE NAVD VERTICAL DA

*** Weir 1 of 1 for Drop Structure SC-0995-D ***
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Horizontal                Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 36.00                      Invert(ft): 83.160
              Rise(in): 54.00                 Control Elev(ft): 83.160


=======================================================================================
==== Weirs ===========================================================================
=======================================================================================

         Name: SC-0770-W          From Node: SC-0770
        Group: Grace Lake           To Node: SC-0750
         Flow: Both                   Count: 1
         Type: Vertical: Fread     Geometry: Rectangular

                   Span(in): 180.00
                   Rise(in): 999.00
                 Invert(ft): 58.500
       Control Elevation(ft): 58.500
                                            TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

OVERTOPPING WEIR.  PARAMETERS WERE ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

-------------------------------------------------------------------------------------------------
         Name: SC-0780-W          From Node: SC-0780
        Group: Grace Lake           To Node: SC-0770
         Flow: Both                   Count: 1
         Type: Vertical: Fread     Geometry: Rectangular

                   Span(in): 2400.00
                   Rise(in): 999.00
                 Invert(ft): 67.900
       Control Elevation(ft): 67.900
                                            TABLE
             Bottom Clip(in): 0.000
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
               Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600
```

OVERLAND OVERTOPPING FROM POND TO THE NORTHRIDGE SWALE.
ELEVATION WAS OBTAINED FROM THE NORTHRIDGE SUBDIVISION AS-BUILT PLANS AND COMPARED TO THE 1-FT TOPOGRAPHIC MAP.

```
---------------------------------------------------------------------------------------------------
         Name: SC-0800-W1          From Node: SC-0800
        Group: Grace Lake            To Node: SC-0770
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                   Span(in): 1200.00
                   Rise(in): 999.00
                 Invert(ft): 58.000
       Control Elevation(ft): 58.000
                                          TABLE
            Bottom Clip(in): 0.000
               Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

NORTHRIDGE DEPRESSIONAL AREA BERM OVERTOPPING
PARAMETERS WERE ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP AND SURVEYED DATA.

```
---------------------------------------------------------------------------------------------------
         Name: SC-0800-W2          From Node: SC-0800
        Group: Grace Lake            To Node: SC-0750
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                   Span(in): 600.00
                   Rise(in): 999.00
                 Invert(ft): 58.500
       Control Elevation(ft): 58.500
                                          TABLE
            Bottom Clip(in): 0.000
               Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

OVERTOPPING WEIR. PARAMETERS WERE ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

```
---------------------------------------------------------------------------------------------------
         Name: SC-0810-W1          From Node: SC-0810
        Group: Grace Lake            To Node: SC-0800
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0810_W1
                 Invert(ft): 57.200
       Control Elevation(ft): 57.200
      Struct Opening Dim(ft): 9999.00
                                          TABLE
            Bottom Clip(ft): 0.000
               Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



---------------------------------------------------------------------------------------------------
         Name: SC-0810-W2          From Node: SC-0810
        Group: Grace Lake            To Node: SC-0770
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0810_W2
                 Invert(ft): 58.500
       Control Elevation(ft): 58.500
      Struct Opening Dim(ft): 9999.00
                                          TABLE
            Bottom Clip(ft): 0.000
               Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



---------------------------------------------------------------------------------------------------
         Name: SC-0820-W1          From Node: SC-0820
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
        Group: Grace Lake            To Node: SC-0815
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Trapezoidal

            Bottom Width(ft): 5.00
        Left Side Slope(h/v): 6.00
       Right Side Slope(h/v): 6.00
                  Invert(ft): 55.000
       Control Elevation(ft): 55.000
      Struct Opening Dim(ft): 9999.00
                                          TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

CONCRETE WEIR (OUTFALL)

```
---------------------------------------------------------------------------------------------
         Name: SC-0820-W2          From Node: SC-0820
        Group: Grace Lake            To Node: SC-0800
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 600.00
                    Rise(in): 999.00
                  Invert(ft): 56.500
       Control Elevation(ft): 56.500
                                          TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

POND BERM OVERTOPPING

```
---------------------------------------------------------------------------------------------
         Name: SC-0840-W           From Node: SC-0840
        Group: Grace Lake            To Node: SC-0830
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0840_W
                  Invert(ft): 54.000
       Control Elevation(ft): 54.000
      Struct Opening Dim(ft): 9999.00
                                          TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



---------------------------------------------------------------------------------------------
         Name: SC-0875-W           From Node: SC-0875
        Group: Grace Lake            To Node: SC-0840
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0875_W
                  Invert(ft): 65.500
       Control Elevation(ft): 65.500
      Struct Opening Dim(ft): 9999.00
                                          TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

OVERLAND OVERTOPPING

```
---------------------------------------------------------------------------------------------
         Name: SC-0880-W           From Node: SC-0880
        Group: Grace Lake            To Node: SC-0875
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0880_W
                  Invert(ft): 62.600
       Control Elevation(ft): 62.600
      Struct Opening Dim(ft): 9999.00
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
                                        TABLE
            Bottom Clip(ft): 0.000
               Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0890-W          From Node: SC-0890
        Group: Grace Lake           To Node: SC-0810
         Flow: Both                   Count: 1
         Type: Vertical: Fread     Geometry: Irregular

                       XSec: SC-0890_W
                 Invert(ft): 67.700
       Control Elevation(ft): 67.700
      Struct Opening Dim(ft): 9999.00
                                        TABLE
            Bottom Clip(ft): 0.000
               Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

OVERTOPPING OF I-4 SWALE AT HIGH POING ALONG THE EAST RIGHT-OF-WAY.
POTENTIAL INTERCONNECTION OF THE TWO (2) CULVERTS CROSSING I-4 (NORTH AND SOUTH).
CROSS SECTION DATA WAS OBTAINED FROM SURVEY PERFORMED BY SSMC (DATED JULY 2013).

-----------------------------------------------------------------------------------------------
         Name: SC-0900-W          From Node: SC-0900
        Group: Grace Lake           To Node: SC-0890
         Flow: Both                   Count: 1
         Type: Vertical: Fread     Geometry: Rectangular

                    Span(in): 120.00
                    Rise(in): 999.00
                 Invert(ft): 68.000
       Control Elevation(ft): 68.000
                                        TABLE
            Bottom Clip(in): 0.000
               Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

ELEVATIONS WERE ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

-----------------------------------------------------------------------------------------------
         Name: SC-0910-W          From Node: SC-0910
        Group: Grace Lake           To Node: SC-0890
         Flow: Both                   Count: 1
         Type: Vertical: Fread     Geometry: Rectangular

                    Span(in): 960.00
                    Rise(in): 999.00
                 Invert(ft): 59.500
       Control Elevation(ft): 59.500
                                        TABLE
            Bottom Clip(in): 0.000
               Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

OVERTOPPING ELEVATION WAS ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

-----------------------------------------------------------------------------------------------
         Name: SC-0920-W1         From Node: SC-0920
        Group: Grace Lake           To Node: SC-0910
         Flow: Both                   Count: 1
         Type: Vertical: Fread     Geometry: Irregular

                       XSec: SC-0920_W1
                 Invert(ft): 59.500
       Control Elevation(ft): 59.500
      Struct Opening Dim(ft): 9999.00
                                        TABLE
            Bottom Clip(ft): 0.000
               Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
         Name: SC-0920-W2          From Node: SC-0920
        Group: Grace Lake            To Node: SC-0890
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                   Span(in): 1160.00
                   Rise(in): 999.00
                 Invert(ft): 62.500
       Control Elevation(ft): 62.500
                                          TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600


         Name: SC-0920-W3          From Node: SC-0920
        Group: Grace Lake            To Node: SC-0790
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0920_W3
                 Invert(ft): 66.800
       Control Elevation(ft): 66.800
      Struct Opening Dim(ft): 9999.00
                                          TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

PARAMETERS ARE BASED ON SURVEY DATA OBTAINED FROM SSMC, DATED JULY 2013.

```
         Name: SC-0925-W           From Node: SC-0925
        Group: Grace Lake            To Node: SC-0920
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                   Span(in): 680.00
                   Rise(in): 999.00
                 Invert(ft): 78.700
       Control Elevation(ft): 78.700
                                          TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600


         Name: SC-0970-W           From Node: SC-0970
        Group: Grace Lake            To Node: SC-0940
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                   Span(in): 120.00
                   Rise(in): 999.00
                 Invert(ft): 71.000
       Control Elevation(ft): 71.000
                                          TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600


         Name: SC-0985-W           From Node: SC-0985
        Group: Grace Lake            To Node: SC-0980
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                   Span(in): 600.00
                   Rise(in): 999.00
                 Invert(ft): 73.500
       Control Elevation(ft): 73.500
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
                                          TABLE
            Bottom Clip(in): 0.000
               Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

PENELOPE POND OVERTOPPING
PARAMETERS WERE ESTIMATED USING THE 1-FT TOPOGRAPHIC MAPS

-------------------------------------------------------------------------------------------------
         Name: SC-1000-W          From Node: SC-1000
        Group: Grace Lake           To Node: SC-0985
         Flow: Both                   Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                   Span(in): 600.00
                   Rise(in): 999.00
                 Invert(ft): 77.500
       Control Elevation(ft): 77.500
                                          TABLE
            Bottom Clip(in): 0.000
               Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

OVERTOPPING HICKORY TREE ROAD

=========================================================================================
==== Hydrology Simulations ==============================================================
=========================================================================================

         Name: 010-024
     Filename: L:\Projects_Drainage\Seminole\SMC-22014 Grace Lake\ICPR Pegasus (Sept 2013)\010-024.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 6.80

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-------------------------------------------------------------------------------------------------
         Name: 025-024
     Filename: L:\Projects_Drainage\Seminole\SMC-22014 Grace Lake\ICPR Pegasus (Sept 2013)\025-024.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 8.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-------------------------------------------------------------------------------------------------
         Name: 025-096
     Filename: L:\Projects_Drainage\Seminole\SMC-22014 Grace Lake\ICPR Pegasus (Sept 2013)\025-096.R32

      Override Defaults: Yes
    Storm Duration(hrs): 96.00
          Rainfall File: Sjrwmd96
    Rainfall Amount(in): 11.30

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-------------------------------------------------------------------------------------------------
         Name: 100-024
     Filename: L:\Projects_Drainage\Seminole\SMC-22014 Grace Lake\ICPR Pegasus (Sept 2013)\100-024.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 11.40

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
-----------------------------------------------------------------------------------------------
         Name: 100-096
     Filename: L:\Projects_Drainage\Seminole\SMC-22014 Grace Lake\ICPR Pegasus (Sept 2013)\100-096.R32

      Override Defaults: Yes
    Storm Duration(hrs): 96.00
          Rainfall File: Sjrwmd96
    Rainfall Amount(in): 15.00

Time(hrs)       Print Inc(min)
--------------- ---------------
96.000          5.00

-----------------------------------------------------------------------------------------------
         Name: MA-024
     Filename: L:\Projects_Drainage\Seminole\SMC-22014 Grace Lake\ICPR Pegasus (Sept 2013)\MA-024.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 4.40

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

=================================================================================================
==== Routing Simulations ========================================================================
=================================================================================================

         Name: 010-024             Hydrology Sim: 010-024
     Filename: L:\Projects_Drainage\Seminole\SMC-22014 Grace Lake\ICPR Pegasus (Sept 2013)\010-024.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 36.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 1.0000
        Boundary Stages: 010-024                  Boundary Flows:

GRACE LAKE SINKHOLE REMEDIATION
PROPOSED CONDITIONS ANALYSIS
10-YEAR STORM EVENT (24-HOUR DURATION)

Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes
Cranes          Yes
Gee             Yes
Grace Lake      Yes
Soldier         Yes


-----------------------------------------------------------------------------------------------
         Name: 025-024             Hydrology Sim: 025-024
     Filename: L:\Projects_Drainage\Seminole\SMC-22014 Grace Lake\ICPR Pegasus (Sept 2013)\025-024.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 36.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 1.0000
        Boundary Stages: 025-024                  Boundary Flows:

GRACE LAKE SINKHOLE REMEDIATION
PROPOSED CONDITIONS ANALYSIS
25-YEAR STORM EVENT (24-HOUR DURATION)

Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
BASE            Yes
Cranes          Yes
Gee             Yes
Grace Lake      Yes
Soldier         Yes


-----------------------------------------------------------------------------------------------
         Name: 025-096             Hydrology Sim: 025-096
     Filename: L:\Projects_Drainage\Seminole\SMC-22014 Grace Lake\ICPR Pegasus (Sept 2013)\025-096.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 120.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 60.0000
        Boundary Stages: 100-024                  Boundary Flows:



Time(hrs)       Print Inc(min)
--------------- ---------------
96.000          15.000
120.000         30.000

Group           Run
--------------- -----
BASE            Yes
Cranes          Yes
Gee             Yes
Grace Lake      Yes
Soldier         Yes


-----------------------------------------------------------------------------------------------
         Name: 100-024             Hydrology Sim: 100-024
     Filename: L:\Projects_Drainage\Seminole\SMC-22014 Grace Lake\ICPR Pegasus (Sept 2013)\100-024.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 336.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages: 100-024                  Boundary Flows:

GRACE LAKE SINKHOLE REMEDIATION
PROPOSED CONDITIONS ANALYSIS
100-YEAR STORM EVENT (24-HOUR DURATION)

Time(hrs)       Print Inc(min)
--------------- ---------------
48.000          15.000
336.000         60.000

Group           Run
--------------- -----
BASE            Yes
Cranes          Yes
Gee             Yes
Grace Lake      Yes
Soldier         Yes


-----------------------------------------------------------------------------------------------
         Name: 100-096             Hydrology Sim: 100-096
     Filename: L:\Projects_Drainage\Seminole\SMC-22014 Grace Lake\ICPR Pegasus (Sept 2013)\100-096.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 180.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 60.0000
        Boundary Stages: 100-024                  Boundary Flows:
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Time(hrs)	Print Inc(min)
96.000	15.000
120.000	30.000
180.000	60.000

Group	Run
BASE	Yes
Cranes	Yes
Gee	Yes
Grace Lake	Yes
Soldier	Yes

Name: MA-024 Hydrology Sim: MA-024
Filename: L:\Projects_Drainage\Seminole\SMC-22014 Grace Lake\ICPR Pegasus (Sept 2013)\MA-024.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 36.00
Min Calc Time(sec): 0.1000 Max Calc Time(sec): 1.0000
Boundary Stages: 010-024 Boundary Flows:

GRACE LAKE SINKHOLE REMEDIATION
PROPOSED CONDITIONS ANALYSIS
MEAN ANNUAL STORM EVENT (24-HOUR DURATION)

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes
Cranes	Yes
Gee	Yes
Grace Lake	Yes
Soldier	Yes

==== Boundary Conditions ====

Name: 010-024 Node: GC-1000 Type: Stage

Time(hrs)	Stage(ft)
0.000	50.400
0.500	50.400
1.000	50.400
1.500	50.400
2.000	50.400
2.500	50.400
3.000	50.400
3.500	50.400
4.000	50.400
4.500	50.400
5.000	50.400
5.500	50.400
6.000	50.400
6.500	50.400
7.000	50.400
7.500	50.400
8.000	50.400
8.500	50.410
8.670	50.410
8.830	50.420
9.000	50.420
9.170	50.430
9.330	50.430
9.500	50.440
9.670	50.440
9.830	50.450
10.000	50.460
10.170	50.470
10.330	50.470

10.500	50.480
10.670	50.490
10.830	50.510
11.000	50.520
11.170	50.530
11.330	50.550
11.500	50.570
11.670	50.600
11.830	50.650
12.000	50.740
12.170	50.840
12.330	50.960
12.500	51.080
12.670	51.170
12.830	51.250
13.000	51.320
13.170	51.370
13.330	51.420
13.500	51.460
13.670	51.500
13.830	51.540
14.000	51.570
14.170	51.600
14.330	51.620
14.500	51.650
14.670	51.680
14.830	51.700
15.000	51.720
15.170	51.750
15.330	51.770
15.500	51.790
15.670	51.810
15.830	51.830
16.000	51.850
16.170	51.870
16.670	51.930
17.170	51.980
17.670	52.040
18.170	52.090
18.670	52.150
19.170	52.200
19.670	52.250
20.170	52.300
20.670	52.340
21.170	52.390
21.670	52.430
22.170	52.470
22.670	52.500
23.170	52.540
23.670	52.570
24.170	52.600
24.670	52.620
25.170	52.640
25.670	52.650
26.170	52.660
26.670	52.670
27.170	52.670
27.670	52.680
28.170	52.680
28.670	52.680
29.170	52.690
29.670	52.690
30.170	52.680
30.670	52.680
31.170	52.680
31.670	52.680
32.170	52.670
32.670	52.670
33.170	52.660
33.670	52.660
34.170	52.650
34.670	52.640
35.170	52.640
35.670	52.630
36.000	52.620

Name: 010-024 Node: SC-3000 Type: Stage

Time(hrs)	Stage(ft)
0.000	42.140

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

0.500	42.140
1.000	42.140
1.500	42.140
2.000	42.140
2.500	42.140
3.000	42.150
3.500	42.150
4.000	42.150
4.500	42.150
5.000	42.150
5.500	42.160
6.000	42.160
6.500	42.160
7.000	42.170
7.500	42.180
8.000	42.190
8.500	42.210
8.750	42.220
9.000	42.240
9.250	42.250
9.500	42.270
9.750	42.280
10.000	42.300
10.250	42.310
10.500	42.330
10.750	42.350
11.000	42.370
11.250	42.390
11.500	42.420
11.750	42.470
12.000	42.570
12.250	42.700
12.500	42.830
12.750	42.910
13.000	42.940
13.250	42.950
13.500	42.950
13.750	42.940
14.000	42.940
14.250	42.930
14.500	42.930
14.750	42.930
15.000	42.940
15.250	42.970
15.500	43.000
15.750	43.020
16.000	43.050
16.250	43.080
16.750	43.120
17.250	43.160
17.750	43.190
18.250	43.220
18.750	43.240
19.250	43.250
19.750	43.270
20.250	43.280
20.750	43.290
21.250	43.300
21.750	43.310
22.250	43.320
22.750	43.320
23.250	43.330
23.750	43.350
24.250	43.370
24.750	43.390
25.250	43.410
25.750	43.420
26.250	43.430
26.750	43.450
27.250	43.460
27.750	43.470
28.250	43.470
28.750	43.480
29.250	43.480
29.750	43.490
30.250	43.490
30.750	43.490
31.250	43.490
31.750	43.490
32.250	43.490
32.750	43.490
33.250	43.490

33.750	43.490
34.250	43.480
34.750	43.480
35.250	43.480
35.750	43.470
36.250	43.460
36.750	43.460
37.250	43.450
37.750	43.440
38.250	43.440
38.750	43.430
39.250	43.420
39.750	43.410
40.250	43.400
40.750	43.390
41.250	43.380
41.750	43.370
42.250	43.360
42.750	43.350
43.250	43.340
43.750	43.330
44.250	43.310
44.750	43.300
45.250	43.290
45.750	43.280
46.250	43.270
46.750	43.250
47.250	43.240
47.750	43.230
48.000	43.220

Name: 010-024 Node: SC-3010 Type: Stage

Time(hrs)	Stage(ft)
0.000	45.860
0.500	46.020
1.000	46.080
1.500	46.090
2.000	46.100
2.500	46.110
3.000	46.110
3.500	46.120
4.000	46.120
4.500	46.120
5.000	46.130
5.500	46.130
6.000	46.130
6.500	46.130
7.000	46.130
7.500	46.130
8.000	46.130
8.500	46.130
8.750	46.140
9.000	46.140
9.250	46.140
9.500	46.140
9.750	46.150
10.000	46.150
10.250	46.160
10.500	46.160
10.750	46.170
11.000	46.180
11.250	46.200
11.500	46.220
11.750	46.260
12.000	46.330
12.250	46.430
12.500	46.530
12.750	46.600
13.000	46.650
13.250	46.690
13.500	46.720
13.750	46.740
14.000	46.770
14.250	46.800
14.500	46.820
14.750	46.850
15.000	46.870
15.250	46.900
15.500	46.920

15.750	46.950
16.000	46.980
16.250	47.000
16.750	47.060
17.250	47.120
17.750	47.180
18.250	47.240
18.750	47.300
19.250	47.350
19.750	47.410
20.250	47.460
20.750	47.490
21.250	47.520
21.750	47.550
22.250	47.580
22.750	47.730
23.250	48.070
23.750	48.530
24.250	48.700
24.750	48.810
25.250	48.880
25.750	48.920
26.250	48.950
26.750	48.970
27.250	48.980
27.750	48.980
28.250	48.980
28.750	48.970
29.250	48.960
29.750	48.950
30.250	48.940
30.750	48.920
31.250	48.910
31.750	48.890
32.250	48.870
32.750	48.850
33.250	48.830
33.750	48.810
34.250	48.790
34.750	48.770
35.250	48.750
35.750	48.720
36.250	48.700
36.750	48.680
37.250	48.660
37.750	48.640
38.250	48.620
38.750	48.600
39.250	48.580
39.750	48.560
40.250	48.540
40.750	48.520
41.250	48.510
41.750	48.490
42.250	48.470
42.750	48.290
43.250	48.270
43.750	48.240
44.250	48.220
44.750	48.200
45.250	48.170
45.750	48.150
46.250	48.130
46.750	48.110
47.250	48.090
47.750	48.060
48.000	48.050

Name: 010-024 Node: SC-5000 Type: Stage

Time(hrs)	Stage(ft)
0.000	41.060
0.500	41.060
1.000	41.060
1.500	41.060
2.000	41.060
2.500	41.060
3.000	41.060
3.500	41.060
4.000	41.060

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

4.500	41.060
5.000	41.090
5.500	41.180
6.000	41.310
6.500	41.400
7.000	41.520
7.500	41.670
8.000	41.810
8.500	41.960
8.750	42.050
9.000	42.130
9.250	42.230
9.500	42.320
9.750	42.400
10.000	42.480
10.250	42.570
10.500	42.670
10.750	42.770
11.000	42.870
11.250	42.970
11.500	43.120
11.750	43.540
12.000	43.920
12.250	44.110
12.500	44.080
12.750	43.900
13.000	43.750
13.250	43.700
13.500	43.720
13.750	43.740
14.000	43.750
14.250	43.750
14.500	43.780
14.750	43.840
15.000	43.910
15.250	43.960
15.500	44.000
15.750	44.020
16.000	44.030
16.250	44.030
16.750	44.020
17.250	44.000
17.750	43.960
18.250	43.900
18.750	43.840
19.250	43.790
19.750	43.740
20.250	43.700
20.750	43.670
21.250	43.660
21.750	43.650
22.250	43.650
22.750	43.640
23.250	43.630
23.750	43.620
24.250	43.600
24.750	43.570
25.250	43.540
25.750	43.510
26.250	43.480
26.750	43.460
27.250	43.430
27.750	43.430
28.250	43.320
28.750	42.350
29.250	42.150
29.750	42.080
30.250	42.030
30.750	42.000
31.250	41.970
31.750	41.950
32.250	41.920
32.750	41.890
33.250	41.860
33.750	41.830
34.250	41.810
34.750	41.790
35.250	41.770
35.750	41.750
36.250	41.730
36.750	41.710
37.250	41.700

37.750	41.680
38.250	41.670
38.750	41.660
39.250	41.650
39.750	41.640
40.250	41.630
40.750	41.620
41.250	41.610
41.750	41.600
42.250	41.590
42.750	41.580
43.250	41.570
43.750	41.560
44.250	41.550
44.750	41.550
45.250	41.540
45.750	41.530
46.250	41.520
46.750	41.520
47.250	41.510
47.750	41.510
48.000	41.510

Name: 025-024 Node: GC-1000 Type: Stage

Time(hrs)	Stage(ft)
0.000	50.400
0.500	50.400
1.000	50.400
1.500	50.400
2.000	50.400
2.500	50.400
3.000	50.400
3.500	50.400
4.000	50.400
4.500	50.400
5.000	50.400
5.500	50.400
6.000	50.400
6.500	50.400
7.000	50.410
7.500	50.420
8.000	50.430
8.500	50.450
8.670	50.450
8.830	50.460
9.000	50.470
9.170	50.480
9.330	50.480
9.500	50.490
9.670	50.500
9.830	50.510
10.000	50.520
10.170	50.530
10.330	50.550
10.500	50.560
10.670	50.570
10.830	50.590
11.000	50.610
11.170	50.630
11.330	50.650
11.500	50.680
11.670	50.710
11.830	50.780
12.000	50.880
12.170	51.020
12.330	51.170
12.500	51.310
12.670	51.440
12.830	51.530
13.000	51.610
13.170	51.680
13.330	51.740
13.500	51.800
13.670	51.840
13.830	51.890
14.000	51.920
14.170	51.960
14.330	52.000
14.500	52.030

14.670	52.060
14.830	52.090
15.000	52.120
15.170	52.140
15.330	52.170
15.500	52.200
15.670	52.220
15.830	52.250
16.000	52.280
16.170	52.300
16.670	52.380
17.170	52.450
17.670	52.520
18.170	52.590
18.670	52.650
19.170	52.720
19.670	52.770
20.170	52.830
20.670	52.890
21.170	52.940
21.670	52.980
22.170	53.030
22.670	53.070
23.170	53.110
23.670	53.140
24.170	53.170
24.670	53.190
25.170	53.200
25.670	53.210
26.170	53.220
26.670	53.230
27.170	53.230
27.670	53.230
28.170	53.240
28.670	53.230
29.170	53.230
29.670	53.230
30.170	53.220
30.670	53.220
31.170	53.210
31.670	53.210
32.170	53.200
32.670	53.190
33.170	53.180
33.670	53.170
34.170	53.160
34.670	53.150
35.170	53.140
35.670	53.130
36.000	53.120

Name: 025-024 Node: SC-3000 Type: Stage

Time(hrs)	Stage(ft)
0.000	42.140
0.500	42.140
1.000	42.140
1.500	42.140
2.000	42.140
2.500	42.140
3.000	42.150
3.500	42.150
4.000	42.150
4.500	42.150
5.000	42.160
5.500	42.160
6.000	42.170
6.500	42.180
7.000	42.190
7.500	42.210
8.000	42.240
8.500	42.270
8.750	42.280
9.000	42.300
9.250	42.320
9.500	42.330
9.750	42.350
10.000	42.370
10.250	42.380
10.500	42.400

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

10.750	42.420
11.000	42.450
11.250	42.470
11.500	42.500
11.750	42.560
12.000	42.670
12.250	42.820
12.500	42.950
12.750	43.030
13.000	43.070
13.250	43.080
13.500	43.080
13.750	43.080
14.000	43.090
14.250	43.110
14.500	43.150
14.750	43.200
15.000	43.250
15.250	43.300
15.500	43.340
15.750	43.370
16.000	43.410
16.250	43.440
16.750	43.490
17.250	43.540
17.750	43.570
18.250	43.600
18.750	43.620
19.250	43.640
19.750	43.650
20.250	43.670
20.750	43.690
21.250	43.720
21.750	43.750
22.250	43.780
22.750	43.810
23.250	43.830
23.750	43.860
24.250	43.880
24.750	43.900
25.250	43.910
25.750	43.920
26.250	43.930
26.750	43.940
27.250	43.940
27.750	43.950
28.250	43.950
28.750	43.950
29.250	43.950
29.750	43.950
30.250	43.950
30.750	43.940
31.250	43.940
31.750	43.930
32.250	43.930
32.750	43.920
33.250	43.910
33.750	43.910
34.250	43.900
34.750	43.890
35.250	43.880
35.750	43.870
36.250	43.850
36.750	43.840
37.250	43.830
37.750	43.820
38.250	43.800
38.750	43.790
39.250	43.780
39.750	43.760
40.250	43.750
40.750	43.730
41.250	43.720
41.750	43.700
42.250	43.690
42.750	43.670
43.250	43.660
43.750	43.640
44.250	43.630
44.750	43.610
45.250	43.600
45.750	43.580

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

46.250	43.570
46.750	43.550
47.250	43.530
47.750	43.520
48.000	43.510

Name: 025-024 Node: SC-3010 Type: Stage

Time(hrs)	Stage(ft)
0.000	45.860
0.500	46.020
1.000	46.080
1.500	46.090
2.000	46.100
2.500	46.110
3.000	46.110
3.500	46.120
4.000	46.120
4.500	46.120
5.000	46.130
5.500	46.130
6.000	46.130
6.500	46.130
7.000	46.130
7.500	46.130
8.000	46.140
8.500	46.150
8.750	46.150
9.000	46.150
9.250	46.160
9.500	46.160
9.750	46.170
10.000	46.180
10.250	46.190
10.500	46.200
10.750	46.220
11.000	46.240
11.250	46.260
11.500	46.290
11.750	46.330
12.000	46.400
12.250	46.570
12.500	46.710
12.750	46.800
13.000	46.860
13.250	46.910
13.500	46.940
13.750	46.980
14.000	47.010
14.250	47.040
14.500	47.070
14.750	47.100
15.000	47.130
15.250	47.160
15.500	47.190
15.750	47.220
16.000	47.260
16.250	47.290
16.750	47.350
17.250	47.410
17.750	47.460
18.250	47.500
18.750	47.530
19.250	47.570
19.750	47.720
20.250	48.190
20.750	48.710
21.250	48.950
21.750	49.120
22.250	49.240
22.750	49.310
23.250	49.370
23.750	49.410
24.250	49.430
24.750	49.430
25.250	49.430
25.750	49.440
26.250	49.430
26.750	49.430
27.250	49.420

27.750	49.410
28.250	49.400
28.750	49.380
29.250	49.360
29.750	49.340
30.250	49.320
30.750	49.300
31.250	49.280
31.750	49.250
32.250	49.230
32.750	49.190
33.250	49.160
33.750	49.130
34.250	49.100
34.750	49.080
35.250	49.050
35.750	49.020
36.250	48.990
36.750	48.960
37.250	48.930
37.750	48.900
38.250	48.870
38.750	48.840
39.250	48.820
39.750	48.790
40.250	48.770
40.750	48.740
41.250	48.720
41.750	48.700
42.250	48.670
42.750	48.650
43.250	48.630
43.750	48.610
44.250	48.590
44.750	48.570
45.250	48.550
45.750	48.530
46.250	48.510
46.750	48.500
47.250	48.480
47.750	48.460
48.000	48.290

Name: 025-024 Node: SC-5000 Type: Stage

Time(hrs)	Stage(ft)
0.000	41.060
0.500	41.060
1.000	41.060
1.500	41.060
2.000	41.060
2.500	41.060
3.000	41.060
3.500	41.060
4.000	41.060
4.500	41.140
5.000	41.280
5.500	41.390
6.000	41.510
6.500	41.670
7.000	41.830
7.500	42.000
8.000	42.170
8.500	42.340
8.750	42.420
9.000	42.500
9.250	42.580
9.500	42.650
9.750	42.730
10.000	42.800
10.250	42.870
10.500	42.960
10.750	43.070
11.000	43.160
11.250	43.240
11.500	43.430
11.750	43.690
12.000	44.060
12.250	44.120
12.500	44.140

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

12.750	44.090
13.000	43.950
13.250	43.930
13.500	43.870
13.750	43.960
14.000	44.130
14.250	44.240
14.500	44.340
14.750	44.420
15.000	44.490
15.250	44.540
15.500	44.570
15.750	44.580
16.000	44.580
16.250	44.570
16.750	44.520
17.250	44.470
17.750	44.410
18.250	44.350
18.750	44.290
19.250	44.240
19.750	44.180
20.250	44.130
20.750	44.070
21.250	43.990
21.750	43.910
22.250	43.840
22.750	43.770
23.250	43.720
23.750	43.690
24.250	43.660
24.750	43.630
25.250	43.600
25.750	43.570
26.250	43.550
26.750	43.530
27.250	43.510
27.750	43.480
28.250	43.460
28.750	43.440
29.250	43.410
29.750	43.400
30.250	42.620
30.750	42.160
31.250	42.050
31.750	42.010
32.250	41.980
32.750	41.960
33.250	41.930
33.750	41.910
34.250	41.900
34.750	41.890
35.250	41.880
35.750	41.860
36.250	41.850
36.750	41.840
37.250	41.830
37.750	41.820
38.250	41.830
38.750	41.810
39.250	41.800
39.750	41.790
40.250	41.770
40.750	41.760
41.250	41.750
41.750	41.730
42.250	41.720
42.750	41.710
43.250	41.700
43.750	41.680
44.250	41.670
44.750	41.660
45.250	41.650
45.750	41.640
46.250	41.630
46.750	41.620
47.250	41.610
47.750	41.600
48.000	41.600

Name: 100-024 Node: GC-1000 Type: Stage

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Time(hrs)	Stage(ft)
0.000	50.400
0.500	50.400
1.000	50.400
1.500	50.400
2.000	50.400
2.500	50.400
3.000	50.410
3.500	50.410
4.000	50.410
4.500	50.410
5.000	50.420
5.500	50.420
6.000	50.440
6.500	50.450
7.000	50.460
7.500	50.480
8.000	50.510
8.500	50.540
8.670	50.550
8.830	50.560
9.000	50.570
9.170	50.580
9.330	50.600
9.500	50.610
9.670	50.630
9.830	50.640
10.000	50.660
10.170	50.680
10.330	50.700
10.500	50.720
10.670	50.740
10.830	50.770
11.000	50.790
11.170	50.820
11.330	50.850
11.500	50.890
11.670	50.950
11.830	51.040
12.000	51.170
12.170	51.350
12.330	51.560
12.500	51.760
12.670	51.940
12.830	52.080
13.000	52.200
13.170	52.310
13.330	52.410
13.500	52.490
13.670	52.570
13.830	52.640
14.000	52.710
14.170	52.770
14.330	52.830
14.500	52.880
14.670	52.930
14.830	52.970
15.000	53.010
15.170	53.050
15.330	53.080
15.500	53.120
15.670	53.150
15.830	53.180
16.000	53.210
16.170	53.230
16.670	53.310
17.170	53.380
17.670	53.440
18.170	53.500
18.670	53.560
19.170	53.610
19.670	53.660
20.170	53.700
20.670	53.740
21.170	53.780
21.670	53.820
22.170	53.850
22.670	53.880
23.170	53.910
23.670	53.940

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

24.170	53.970
24.670	53.980
25.170	54.000
25.670	54.000
26.170	54.010
26.670	54.010
27.170	54.010
27.670	54.000
28.170	54.000
28.670	54.000
29.170	53.990
29.670	53.990
30.170	53.980
30.670	53.970
31.170	53.970
31.670	53.960
32.170	53.950
32.670	53.940
33.170	53.920
33.670	53.910
34.170	53.900
34.670	53.890
35.170	53.870
35.670	53.860
36.000	53.850

Name: 100-024 Node: SC-3000 Type: Stage

Time(hrs)	Stage(ft)
0.000	42.140
0.500	42.140
1.000	42.140
1.500	42.140
2.000	42.140
2.500	42.140
3.000	42.150
3.500	42.150
4.000	42.150
4.500	42.160
5.000	42.170
5.500	42.180
6.000	42.210
6.500	42.230
7.000	42.270
7.500	42.300
8.000	42.330
8.500	42.370
8.750	42.380
9.000	42.400
9.250	42.420
9.500	42.440
9.750	42.460
10.000	42.470
10.250	42.500
10.500	42.520
10.750	42.540
11.000	42.570
11.250	42.600
11.500	42.630
11.750	42.700
12.000	42.830
12.250	42.980
12.500	43.130
12.750	43.230
13.000	43.300
13.250	43.350
13.500	43.390
13.750	43.450
14.000	43.540
14.250	43.610
14.500	43.690
14.750	43.750
15.000	43.810
15.250	43.860
15.500	43.910
15.750	43.950
16.000	43.990
16.250	44.020
16.750	44.090
17.250	44.150

17.750	44.200
18.250	44.250
18.750	44.300
19.250	44.350
19.750	44.390
20.250	44.430
20.750	44.460
21.250	44.490
21.750	44.520
22.250	44.550
22.750	44.570
23.250	44.600
23.750	44.620
24.250	44.640
24.750	44.650
25.250	44.660
25.750	44.670
26.250	44.670
26.750	44.670
27.250	44.670
27.750	44.670
28.250	44.670
28.750	44.670
29.250	44.670
29.750	44.670
30.250	44.670
30.750	44.670
31.250	44.660
31.750	44.660
32.250	44.650
32.750	44.650
33.250	44.640
33.750	44.630
34.250	44.620
34.750	44.610
35.250	44.600
35.750	44.590
36.250	44.570
36.750	44.560
37.250	44.540
37.750	44.530
38.250	44.510
38.750	44.490
39.250	44.470
39.750	44.450
40.250	44.430
40.750	44.410
41.250	44.390
41.750	44.370
42.250	44.350
42.750	44.330
43.250	44.300
43.750	44.280
44.250	44.260
44.750	44.240
45.250	44.210
45.750	44.190
46.250	44.170
46.750	44.140
47.250	44.120
47.750	44.100
48.000	44.070

Name: 100-024 Node: SC-3010 Type: Stage

Time(hrs)	Stage(ft)
0.000	45.860
0.500	46.020
1.000	46.080
1.500	46.090
2.000	46.100
2.500	46.110
3.000	46.110
3.500	46.120
4.000	46.120
4.500	46.120
5.000	46.130
5.500	46.130
6.000	46.130
6.500	46.140

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

7.000	46.150
7.500	46.150
8.000	46.170
8.500	46.180
8.750	46.190
9.000	46.200
9.250	46.220
9.500	46.230
9.750	46.250
10.000	46.270
10.250	46.290
10.500	46.320
10.750	46.330
11.000	46.330
11.250	46.340
11.500	46.360
11.750	46.440
12.000	46.630
12.250	46.860
12.500	47.030
12.750	47.140
13.000	47.210
13.250	47.270
13.500	47.310
13.750	47.350
14.000	47.390
14.250	47.430
14.500	47.460
14.750	47.480
15.000	47.500
15.250	47.520
15.500	47.540
15.750	47.560
16.000	47.600
16.250	47.750
16.750	48.370
17.250	48.910
17.750	49.200
18.250	49.380
18.750	49.510
19.250	49.610
19.750	49.700
20.250	49.770
20.750	49.830
21.250	49.890
21.750	49.890
22.250	49.910
22.750	49.940
23.250	49.950
23.750	49.960
24.250	49.970
24.750	49.960
25.250	49.950
25.750	49.950
26.250	49.950
26.750	49.950
27.250	49.950
27.750	49.950
28.250	49.940
28.750	49.940
29.250	49.940
29.750	49.940
30.250	49.940
30.750	49.930
31.250	49.920
31.750	49.910
32.250	49.900
32.750	49.890
33.250	49.890
33.750	49.870
34.250	49.840
34.750	49.810
35.250	49.770
35.750	49.740
36.250	49.700
36.750	49.660
37.250	49.620
37.750	49.580
38.250	49.530
38.750	49.490
39.250	49.450
39.750	49.410

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

40.250	49.370
40.750	49.340
41.250	49.300
41.750	49.260
42.250	49.220
42.750	49.180
43.250	49.140
43.750	49.100
44.250	49.070
44.750	49.040
45.250	49.010
45.750	48.980
46.250	48.950
46.750	48.920
47.250	48.890
47.750	48.870
48.000	48.840

Name: 100-024 Node: SC-5000 Type: Stage

Time(hrs)	Stage(ft)
0.000	41.060
0.500	41.060
1.000	41.060
1.500	41.060
2.000	41.060
2.500	41.060
3.000	41.060
3.500	41.140
4.000	41.280
4.500	41.420
5.000	41.600
5.500	41.810
6.000	42.000
6.500	42.190
7.000	42.380
7.500	42.530
8.000	42.680
8.500	42.800
8.750	42.870
9.000	42.940
9.250	43.020
9.500	43.080
9.750	43.140
10.000	43.200
10.250	43.370
10.500	43.370
10.750	43.430
11.000	43.500
11.250	43.540
11.500	43.610
11.750	43.920
12.000	44.160
12.250	44.250
12.500	44.260
12.750	44.220
13.000	44.240
13.250	44.400
13.500	44.650
13.750	44.870
14.000	45.020
14.250	45.170
14.500	45.290
14.750	45.370
15.000	45.460
15.250	45.500
15.500	45.500
15.750	45.470
16.000	45.410
16.250	45.350
16.750	45.250
17.250	45.140
17.750	45.030
18.250	44.910
18.750	44.800
19.250	44.690
19.750	44.600
20.250	44.510
20.750	44.420
21.250	44.350

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

21.750	44.280
22.250	44.220
22.750	44.170
23.250	44.120
23.750	44.050
24.250	43.970
24.750	43.860
25.250	43.730
25.750	43.640
26.250	43.600
26.750	43.580
27.250	43.560
27.750	43.540
28.250	43.530
28.750	43.510
29.250	43.510
29.750	43.510
30.250	43.510
30.750	43.490
31.250	43.470
31.750	43.450
32.250	43.420
32.750	43.420
33.250	43.330
33.750	42.350
34.250	42.110
34.750	42.050
35.250	42.020
35.750	42.000
36.250	41.980
36.750	41.960
37.250	41.950
37.750	41.930
38.250	41.920
38.750	41.910
39.250	41.900
39.750	41.890
40.250	41.880
40.750	41.870
41.250	41.870
41.750	41.860
42.250	41.860
42.750	41.850
43.250	41.850
43.750	41.840
44.250	41.840
44.750	41.840
45.250	41.830
45.750	41.830
46.250	41.830
46.750	41.830
47.250	41.830
47.750	41.820
48.000	41.820

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD)
JOINT APPLICATION FOR INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT

ERP APPLICATION NO. 4-117-121387-2
ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

TAB 4.2

UPDATED SURFACE WATER ANALYSIS

ICPR FLOOD ROUTING RESULTS FOR THE
100-YEAR, 96-HOUR STORM EVENT
(GROUP "GRACE LAKE")

INITIAL STAGE => ELEVATION 58-FT, NAVD

ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE
PROPOSED CONDITIONS ANALYSIS
NODE MAXIMUM CONDITIONS REPORT
MARCH 2014
GRACE LAKE INITIAL STAGE = 58 FT, NAVD

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
SC-0750	Grace Lake	100-096	0.00	52.00	54.00	0.0000	40	96.00	48.18	0.00	0.00
SC-0760	Grace Lake	100-096	96.00	55.87	58.00	0.0001	619	96.00	31.85	95.93	31.85
SC-0770	Grace Lake	100-096	96.00	58.69	58.00	-0.0004	44368	59.72	49.94	96.00	34.71
SC-0780	Grace Lake	100-096	0.00	64.24	67.27	0.0000	114	0.00	0.00	0.00	0.00
SC-0790	Grace Lake	100-096	0.00	64.00	67.00	0.0000	7842	0.00	0.00	0.00	0.00
SC-0800	Grace Lake	100-096	96.00	58.70	56.00	0.0002	379104	61.31	96.79	96.02	39.83
SC-0810	Grace Lake	100-096	96.00	58.73	58.00	0.0049	2421	61.41	68.15	61.42	68.15
SC-0815	Grace Lake	100-096	96.00	58.70	56.00	0.0001	2500	0.00	0.00	0.00	0.00
SC-0820	Grace Lake	100-096	96.00	58.70	56.00	0.0001	79554	60.08	39.78	61.46	6.73
SC-0830	Grace Lake	100-096	96.00	59.03	59.00	-0.0010	40264	61.21	74.77	61.43	72.31
SC-0840	Grace Lake	100-096	96.00	59.03	58.00	0.0002	206982	60.31	150.90	61.28	62.39
SC-0850	Grace Lake	100-096	96.00	60.16	59.50	0.0011	145	96.00	42.89	96.00	42.89
SC-0860	Grace Lake	100-096	96.00	61.24	61.55	0.0006	155	96.00	42.89	96.00	42.89
SC-0870	Grace Lake	100-096	96.00	63.86	66.00	0.0004	154	96.00	42.89	96.00	42.89
SC-0875	Grace Lake	100-096	96.00	64.88	64.00	0.0006	439	96.00	42.89	96.00	42.89
SC-0880	Grace Lake	100-096	96.00	64.94	64.00	0.0047	241109	60.08	157.25	96.00	42.89
SC-0890	Grace Lake	100-096	96.74	65.33	66.00	0.0066	458	97.72	100.44	97.69	42.08
SC-0900	Grace Lake	100-096	96.54	65.32	66.00	0.0001	54641	60.08	34.60	61.26	9.03
SC-0910	Grace Lake	100-096	96.52	65.33	66.00	0.0001	144829	67.64	20.89	97.72	51.58
SC-0920	Grace Lake	100-096	96.52	65.33	66.00	0.0001	1562098	60.08	567.06	97.72	67.27
SC-0925	Grace Lake	100-096	60.56	78.79	76.00	0.0002	48853	60.08	63.78	60.56	23.84
SC-0930	Grace Lake	100-096	60.25	65.95	66.00	0.0001	9594	60.19	105.55	60.25	105.16
SC-0940	Grace Lake	100-096	60.19	69.07	69.00	0.0017	12328	60.17	105.66	60.19	105.55
SC-0950	Grace Lake	100-096	60.25	69.44	72.00	0.0019	1139	60.48	38.86	60.49	38.89
SC-0960	Grace Lake	100-096	60.44	70.40	73.00	0.0043	505	60.48	38.86	60.48	38.86
SC-0970	Grace Lake	100-096	60.10	72.09	71.00	0.0005	2037	60.08	69.36	60.10	69.16
SC-0980	Grace Lake	100-096	60.48	77.25	74.00	0.0008	33808	60.08	131.53	60.53	91.11
SC-0985	Grace Lake	100-096	60.48	77.27	73.00	0.0004	139136	60.08	371.60	63.31	77.79
SC-0990	Grace Lake	100-096	68.21	72.66	79.00	0.0009	151	68.20	5.76	68.21	5.76
SC-0995	Grace Lake	100-096	68.20	86.23	84.00	0.0002	129991	60.08	167.63	68.20	5.76

ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE
PROPOSED CONDITIONS ANALYSIS
LINK MAXIMUM CONDITIONS REPORT
MARCH 2014
GRACE LAKE INITIAL STAGE = 58 FT, NAVD

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
SC-0760-P	Grace Lake	100-096	95.93	31.85	0.003	96.00	55.87	0.00	52.00
SC-0770-D1	Grace Lake	100-096	96.00	31.85	0.001	96.00	58.69	96.00	55.87
SC-0770-D2	Grace Lake	100-096	60.06	14.66	0.611	96.00	58.69	96.00	58.70
SC-0770-W	Grace Lake	100-096	96.00	3.49	-0.000	96.00	58.69	0.00	52.00
SC-0780-D	Grace Lake	100-096	0.00	0.00	0.000	0.00	64.24	96.00	58.69
SC-0780-W	Grace Lake	100-096	0.00	0.00	0.000	0.00	64.24	96.00	58.69
SC-0790-P	Grace Lake	100-096	0.00	0.00	0.000	0.00	64.00	0.00	64.24
SC-0800-W1	Grace Lake	100-096	96.04	27.03	-0.011	96.00	58.70	96.00	58.69
SC-0800-W2	Grace Lake	100-096	96.00	12.84	0.000	96.00	58.70	0.00	52.00
SC-0810-W1	Grace Lake	100-096	61.42	68.15	-0.023	96.00	58.73	96.00	58.70
SC-0810-W2	Grace Lake	100-096	96.00	7.40	-0.002	96.00	58.73	96.00	58.69
SC-0815-P	Grace Lake	100-096	0.00	0.00	-0.002	96.00	58.70	96.00	58.73
SC-0820-W1	Grace Lake	100-096	0.00	0.00	-0.002	96.00	58.70	96.00	58.70
SC-0820-W2	Grace Lake	100-096	61.46	12.64	0.830	96.00	58.70	96.00	58.70
SC-0830-P	Grace Lake	100-096	61.43	72.31	4.384	96.00	59.03	96.00	58.73
SC-0840-W	Grace Lake	100-096	61.28	62.39	5.653	96.00	59.03	96.00	59.03
SC-0850-P	Grace Lake	100-096	96.00	42.89	-1.869	96.00	60.16	61.44	59.02
SC-0860-P	Grace Lake	100-096	96.00	42.89	0.059	96.00	61.24	96.00	60.16
SC-0870-P	Grace Lake	100-096	96.00	42.89	0.009	96.00	63.86	96.00	61.24
SC-0875-P	Grace Lake	100-096	96.00	42.89	-0.017	96.00	64.88	96.00	63.86
SC-0875-W	Grace Lake	100-096	0.00	0.00	0.000	96.00	64.88	96.00	59.03
SC-0880-W	Grace Lake	100-096	96.00	42.89	-0.010	96.00	64.94	96.00	64.88
SC-0890-P	Grace Lake	100-096	97.69	42.08	-12.347	96.74	65.33	96.00	64.94
SC-0890-W	Grace Lake	100-096	0.00	0.00	0.000	96.74	65.33	96.00	58.73
SC-0900-D	Grace Lake	100-096	61.26	9.03	1.109	96.54	65.32	96.74	65.33
SC-0900-W	Grace Lake	100-096	0.00	0.00	0.000	96.54	65.32	96.74	65.33
SC-0910-W	Grace Lake	100-096	97.72	51.58	37.633	96.52	65.33	96.74	65.33
SC-0920-W1	Grace Lake	100-096	96.11	19.85	3.451	96.52	65.33	96.52	65.33
SC-0920-W2	Grace Lake	100-096	97.72	47.89	28.679	96.52	65.33	96.74	65.33
SC-0920-W3	Grace Lake	100-096	0.00	0.00	0.000	96.52	65.33	0.00	64.00
SC-0925-D	Grace Lake	100-096	60.56	19.84	0.032	60.56	78.79	96.52	65.33
SC-0925-W	Grace Lake	100-096	60.56	4.00	0.001	60.56	78.79	96.52	65.33
SC-0930-C	Grace Lake	100-096	60.25	105.16	-0.436	60.25	65.95	96.52	65.33
SC-0940-C	Grace Lake	100-096	60.19	105.55	-0.034	60.19	69.07	60.25	65.95
SC-0950-C	Grace Lake	100-096	60.49	38.89	0.721	60.25	69.44	60.19	69.07
SC-0960-C	Grace Lake	100-096	60.48	38.86	-15.425	60.44	70.40	60.25	69.44
SC-0970-P	Grace Lake	100-096	60.09	37.51	-5.134	60.10	72.09	60.19	69.07
SC-0970-W	Grace Lake	100-096	60.10	31.68	0.004	60.10	72.09	60.19	69.07
SC-0980-P1	Grace Lake	100-096	60.57	52.28	0.003	60.48	77.25	60.10	72.09
SC-0980-P2	Grace Lake	100-096	60.48	38.86	0.005	60.48	77.25	59.48	70.78
SC-0985-P	Grace Lake	100-096	71.34	47.27	-0.050	60.48	77.27	60.48	77.25
SC-0985-W	Grace Lake	100-096	63.31	69.28	-0.224	60.48	77.27	60.48	77.25
SC-0990-P	Grace Lake	100-096	68.21	5.76	0.013	68.21	72.66	116.99	64.70
SC-0995-D	Grace Lake	100-096	68.20	5.76	0.004	68.20	86.23	68.21	72.66
SC-1000-P	Grace Lake	100-096	62.34	182.85	-252.066	60.46	78.05	60.48	77.27
SC-1000-W	Grace Lake	100-096	60.46	56.63	56.633	60.46	78.05	60.48	77.27

ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE
PROPOSED CONDITIONS ANALYSIS
BASIN MAXIMUM CONDITIONS REPORT
MARCH 2014
GRACE LAKE INITIAL STAGE = 58 FT, NAVD

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100-096	SC-0770	Grace Lake	60.04	92.29	8.835	577896
100-096	SC-0800A	Grace Lake	60.03	52.65	11.625	378938
100-096	SC-0800B	Grace Lake	60.03	23.17	10.850	158725
100-096	SC-0810	Grace Lake	60.01	22.88	11.173	140732
100-096	SC-0820A	Grace Lake	60.03	19.44	11.164	130493
100-096	SC-0820B	Grace Lake	60.13	22.13	11.173	201980
100-096	SC-0830	Grace Lake	60.17	32.41	9.697	325245
100-096	SC-0840	Grace Lake	60.11	148.40	8.286	1249386
100-096	SC-0880	Grace Lake	60.18	251.81	8.650	2443779
100-096	SC-0900A	Grace Lake	60.02	14.15	11.008	91507
100-096	SC-0900B	Grace Lake	60.22	22.93	11.170	224637
100-096	SC-0910	Grace Lake	60.03	38.07	11.775	260308
100-096	SC-0920	Grace Lake	60.08	448.71	10.856	3492417
100-096	SC-0925	Grace Lake	60.03	64.99	8.656	416039
100-096	SC-0970	Grace Lake	60.05	22.94	10.044	153865
100-096	SC-0980A	Grace Lake	60.13	10.05	8.654	86703
100-096	SC-0980B	Grace Lake	60.03	28.62	8.656	183195
100-096	SC-0980C	Grace Lake	60.09	54.01	8.656	386816
100-096	SC-0985	Grace Lake	60.07	205.63	8.656	1378148
100-096	SC-0995	Grace Lake	60.11	168.83	10.044	1315407

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD)
JOINT APPLICATION FOR INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT

ERP APPLICATION NO. 4-117-121387-2
ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE

TAB 4.7

UPDATED SURFACE WATER ANALYSIS

ICPR FLOOD ROUTING RESULTS FOR THE
100-YEAR, 96-HOUR STORM EVENT
(GROUP "GRACE LAKE")

INITIAL STAGE => ELEVATION 62.6-FT, NAVD

ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE
PROPOSED CONDITIONS ANALYSIS
NODE MAXIMUM CONDITIONS REPORT
MARCH 2014
GRACE LAKE INITIAL STAGE = 62.6 FT, NAVD

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
SC-0750	Grace Lake	100-096	0.00	52.00	54.00	0.0000	40	72.14	65.02	0.00	0.00
SC-0760	Grace Lake	100-096	72.12	56.22	58.00	0.0001	342	72.12	37.54	72.12	37.54
SC-0770	Grace Lake	100-096	72.12	58.77	58.00	0.0001	45682	59.72	49.94	72.11	42.95
SC-0780	Grace Lake	100-096	97.37	64.44	67.27	0.0000	129	96.85	0.00	0.00	0.00
SC-0790	Grace Lake	100-096	97.43	64.44	67.00	0.0000	8815	95.56	0.09	96.85	0.00
SC-0800	Grace Lake	100-096	72.15	58.79	56.00	0.0002	382357	60.08	164.59	72.42	48.09
SC-0810	Grace Lake	100-096	72.15	58.82	58.00	0.0049	2497	61.08	95.99	61.09	95.99
SC-0815	Grace Lake	100-096	72.15	58.79	56.00	0.0001	2536	0.00	0.00	0.00	0.00
SC-0820	Grace Lake	100-096	72.15	58.79	56.00	0.0001	79844	60.08	39.78	60.59	19.83
SC-0830	Grace Lake	100-096	61.22	59.85	59.00	-0.0010	44942	60.67	102.70	61.23	99.91
SC-0840	Grace Lake	100-096	61.22	59.86	58.00	0.0001	229303	60.08	188.60	61.19	87.24
SC-0850	Grace Lake	100-096	61.24	60.96	59.50	0.0001	123	96.00	46.99	96.00	46.99
SC-0860	Grace Lake	100-096	61.26	62.04	61.55	0.0003	155	96.00	46.99	96.00	46.99
SC-0870	Grace Lake	100-096	96.00	64.88	66.00	0.0001	154	96.00	46.99	96.00	46.99
SC-0875	Grace Lake	100-096	96.00	66.11	64.00	0.0003	439	96.00	57.19	96.00	57.19
SC-0880	Grace Lake	100-096	96.00	66.17	64.00	0.0001	336649	60.17	208.09	96.00	57.19
SC-0890	Grace Lake	100-096	95.19	66.84	66.00	0.0066	458	93.88	119.00	96.85	53.46
SC-0900	Grace Lake	100-096	95.85	66.83	66.00	0.0001	65989	60.08	34.60	60.71	6.43
SC-0910	Grace Lake	100-096	95.67	66.83	66.00	0.0000	158860	60.00	31.68	93.88	58.72
SC-0920	Grace Lake	100-096	95.56	66.84	66.00	0.0000	1676967	60.08	567.06	93.88	83.35
SC-0925	Grace Lake	100-096	60.56	78.79	76.00	0.0002	48853	60.08	63.78	60.56	23.84
SC-0930	Grace Lake	100-096	94.94	66.87	66.00	0.0001	9192	60.19	105.55	60.25	105.15
SC-0940	Grace Lake	100-096	60.19	69.07	69.00	0.0014	12328	60.17	105.66	60.19	105.55
SC-0950	Grace Lake	100-096	60.26	69.44	72.00	0.0019	1139	69.31	41.38	60.50	38.92
SC-0960	Grace Lake	100-096	60.43	70.40	73.00	0.0047	505	60.49	38.89	69.31	41.38
SC-0970	Grace Lake	100-096	60.10	72.09	71.00	0.0003	2037	60.08	69.37	60.10	69.16
SC-0980	Grace Lake	100-096	60.49	77.26	74.00	0.0005	33859	60.08	131.88	60.52	91.18
SC-0985	Grace Lake	100-096	60.49	77.28	73.00	0.0002	139367	60.08	371.23	63.32	77.81
SC-0990	Grace Lake	100-096	68.21	72.66	79.00	0.0009	151	68.20	5.76	68.21	5.76
SC-0995	Grace Lake	100-096	68.20	86.23	84.00	0.0002	129991	60.08	167.63	68.20	5.76

ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE
PROPOSED CONDITIONS ANALYSIS
LINK MAXIMUM CONDITIONS REPORT
MARCH 2014
GRACE LAKE INITIAL STAGE = 62.6 FT, NAVD

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
SC-0760-P	Grace Lake	100-096	72.12	37.54	0.004	72.12	56.22	0.00	52.00
SC-0770-D1	Grace Lake	100-096	72.12	37.54	0.001	72.12	58.77	72.12	56.22
SC-0770-D2	Grace Lake	100-096	59.97	14.25	0.611	72.12	58.77	72.15	58.79
SC-0770-W	Grace Lake	100-096	72.12	6.03	-0.000	72.12	58.77	0.00	52.00
SC-0780-D	Grace Lake	100-096	0.00	0.00	0.000	97.37	64.44	72.12	58.77
SC-0780-W	Grace Lake	100-096	0.00	0.00	0.000	97.37	64.44	72.12	58.77
SC-0790-P	Grace Lake	100-096	96.85	0.00	0.003	97.43	64.44	97.37	64.44
SC-0800-W1	Grace Lake	100-096	96.04	27.57	0.012	72.15	58.79	72.12	58.77
SC-0800-W2	Grace Lake	100-096	72.15	21.45	0.000	72.15	58.79	0.00	52.00
SC-0810-W1	Grace Lake	100-096	61.09	95.99	-0.023	72.15	58.82	72.15	58.79
SC-0810-W2	Grace Lake	100-096	72.20	14.85	-0.003	72.15	58.82	72.12	58.77
SC-0815-P	Grace Lake	100-096	0.00	0.00	-0.002	72.15	58.79	72.15	58.82
SC-0820-W1	Grace Lake	100-096	0.00	0.00	-0.002	72.15	58.79	72.15	58.79
SC-0820-W2	Grace Lake	100-096	60.59	25.78	0.870	72.15	58.79	72.15	58.79
SC-0830-P	Grace Lake	100-096	61.23	99.91	2.172	61.22	59.85	72.15	58.82
SC-0840-W	Grace Lake	100-096	61.19	87.24	-0.008	61.22	59.86	61.22	59.85
SC-0850-P	Grace Lake	100-096	96.00	46.99	0.005	61.24	60.96	61.22	59.86
SC-0860-P	Grace Lake	100-096	96.00	46.99	0.138	61.26	62.04	61.24	60.96
SC-0870-P	Grace Lake	100-096	96.00	46.99	0.005	96.00	64.88	61.26	62.04
SC-0875-P	Grace Lake	100-096	96.00	46.99	-0.002	96.00	66.11	96.00	64.88
SC-0875-W	Grace Lake	100-096	96.00	10.19	-0.000	96.00	66.11	61.22	59.86
SC-0880-W	Grace Lake	100-096	96.00	57.19	-0.002	96.00	66.17	96.00	66.11
SC-0890-P	Grace Lake	100-096	96.85	53.46	5.223	95.19	66.84	96.00	66.17
SC-0890-W	Grace Lake	100-096	0.00	0.00	0.000	95.19	66.84	72.15	58.82
SC-0900-D	Grace Lake	100-096	60.71	6.43	1.261	95.85	66.83	95.19	66.84
SC-0900-W	Grace Lake	100-096	0.00	0.00	0.000	95.85	66.83	95.19	66.84
SC-0910-W	Grace Lake	100-096	93.88	58.72	39.647	95.67	66.83	95.19	66.84
SC-0920-W1	Grace Lake	100-096	91.45	24.32	9.915	95.56	66.84	95.67	66.83
SC-0920-W2	Grace Lake	100-096	93.88	59.18	33.527	95.56	66.84	95.19	66.84
SC-0920-W3	Grace Lake	100-096	95.56	0.09	-0.000	95.56	66.84	97.43	64.44
SC-0925-D	Grace Lake	100-096	60.56	19.84	0.032	60.56	78.79	95.56	66.84
SC-0925-W	Grace Lake	100-096	60.56	4.00	0.001	60.56	78.79	95.56	66.84
SC-0930-C	Grace Lake	100-096	60.25	105.15	-0.436	94.94	66.87	95.56	66.84
SC-0940-C	Grace Lake	100-096	60.19	105.55	1.012	60.19	69.07	94.94	66.87
SC-0950-C	Grace Lake	100-096	60.50	38.92	0.721	60.26	69.44	60.19	69.07
SC-0960-C	Grace Lake	100-096	69.31	41.38	-17.116	60.43	70.40	60.26	69.44
SC-0970-P	Grace Lake	100-096	60.09	37.51	-5.134	60.10	72.09	60.19	69.07
SC-0970-W	Grace Lake	100-096	60.10	31.68	0.004	60.10	72.09	60.19	69.07
SC-0980-P1	Grace Lake	100-096	60.53	52.30	0.003	60.49	77.26	60.10	72.09
SC-0980-P2	Grace Lake	100-096	60.49	38.89	0.003	60.49	77.26	59.48	70.78
SC-0985-P	Grace Lake	100-096	70.90	48.30	-0.051	60.49	77.28	60.49	77.26
SC-0985-W	Grace Lake	100-096	63.32	69.30	-0.227	60.49	77.28	60.49	77.26
SC-0990-P	Grace Lake	100-096	68.21	5.76	0.013	68.21	72.66	116.84	65.99
SC-0995-D	Grace Lake	100-096	68.20	5.76	0.004	68.20	86.23	68.21	72.66
SC-1000-P	Grace Lake	100-096	62.20	182.55	-252.336	60.41	78.07	60.49	77.28
SC-1000-W	Grace Lake	100-096	60.41	59.76	59.763	60.41	78.07	60.49	77.28

ALTERNATIVE SINKHOLE REMEDIATION PROTOCOL FOR GRACE LAKE
PROPOSED CONDITIONS ANALYSIS
BASIN MAXIMUM CONDITIONS REPORT
MARCH 2014
GRACE LAKE INITIAL STAGE = 62.6 FT, NAVD

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100-096	SC-0770	Grace Lake	60.04	92.29	8.835	577896
100-096	SC-0800A	Grace Lake	60.03	52.65	11.625	378938
100-096	SC-0800B	Grace Lake	60.03	23.17	10.850	158725
100-096	SC-0810	Grace Lake	60.01	22.88	11.173	140732
100-096	SC-0820A	Grace Lake	60.03	19.44	11.164	130493
100-096	SC-0820B	Grace Lake	60.13	22.13	11.173	201980
100-096	SC-0830	Grace Lake	60.17	32.41	9.697	325245
100-096	SC-0840	Grace Lake	60.11	148.40	8.286	1249386
100-096	SC-0880	Grace Lake	60.18	251.81	8.650	2443779
100-096	SC-0900A	Grace Lake	60.02	14.15	11.008	91507
100-096	SC-0900B	Grace Lake	60.22	22.93	11.170	224637
100-096	SC-0910	Grace Lake	60.03	38.07	11.775	260308
100-096	SC-0920	Grace Lake	60.08	448.71	10.856	3492417
100-096	SC-0925	Grace Lake	60.03	64.99	8.656	416039
100-096	SC-0970	Grace Lake	60.05	22.94	10.044	153865
100-096	SC-0980A	Grace Lake	60.13	10.05	8.654	86703
100-096	SC-0980B	Grace Lake	60.03	28.62	8.656	183195
100-096	SC-0980C	Grace Lake	60.09	54.01	8.656	386816
100-096	SC-0985	Grace Lake	60.07	205.63	8.656	1378148
100-096	SC-0995	Grace Lake	60.11	168.83	10.044	1315407

Existing Conditions, Grace Lake

GRACE LAKE
EXISTING CONDITIONS OUTPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs
SC-0750	Grace Lake	100-096	0.00	52.00	54.00	0.0000	40	72.14	62.48	0.00
SC-0760	Grace Lake	100-096	72.11	56.17	58.00	0.0001	342	72.12	36.70	72.11
SC-0770	Grace Lake	100-096	72.12	58.76	58.00	-0.0004	45492	59.72	49.94	72.11
SC-0780	Grace Lake	100-096	0.00	64.24	67.27	0.0000	114	0.00	0.00	0.00
SC-0790	Grace Lake	100-096	0.00	64.00	67.00	0.0000	7842	0.00	0.00	0.00
SC-0800	Grace Lake	100-096	72.16	58.77	59.00	0.0001	225137	61.52	108.04	72.35
SC-0810	Grace Lake	100-096	72.17	58.80	58.00	0.0024	2038	61.23	84.96	61.24
SC-0830	Grace Lake	100-096	61.22	59.61	59.00	-0.0003	29239	60.94	91.07	61.22
SC-0840	Grace Lake	100-096	61.22	59.62	58.00	0.0002	219543	60.08	189.65	61.14
SC-0850	Grace Lake	100-096	61.23	60.69	59.50	0.0003	123	96.00	46.72	96.00
SC-0860	Grace Lake	100-096	61.24	61.74	61.55	0.0003	155	96.00	46.72	96.00
SC-0870	Grace Lake	100-096	96.00	64.81	66.00	0.0003	154	96.00	46.72	96.00
SC-0875	Grace Lake	100-096	96.00	66.03	64.00	0.0003	439	96.00	53.55	96.00
SC-0880	Grace Lake	100-096	96.00	66.08	64.00	-0.0002	288585	60.17	166.24	96.00
SC-0900	Grace Lake	100-096	96.00	66.73	67.00	0.0029	87002	60.00	10.65	150.07
SC-0910	Grace Lake	100-096	96.00	66.73	66.00	-0.0002	138757	95.93	50.30	96.88
SC-0920	Grace Lake	100-096	96.00	66.73	66.00	-0.0002	1612618	60.08	538.84	95.98
SC-0925	Grace Lake	100-096	60.56	78.79	76.00	0.0002	48853	60.08	63.78	60.56
SC-0930	Grace Lake	100-096	96.00	66.74	69.20	0.0050	12734	60.51	94.79	60.55
SC-0940	Grace Lake	100-096	60.39	69.34	70.00	0.0001	7068	60.49	94.68	60.51
SC-0980	Grace Lake	100-096	60.49	77.24	74.00	0.0007	33711	60.08	137.29	60.49
SC-0985	Grace Lake	100-096	60.49	77.25	73.00	0.0004	138791	60.08	377.30	63.19
SC-0990	Grace Lake	100-096	68.21	72.66	79.00	0.0009	151	68.20	5.76	68.21
SC-0995	Grace Lake	100-096	68.20	86.23	84.00	0.0002	129991	60.08	167.62	68.20

Grace Lake, Existing Conditions, April 2017
Summary of Computed Runoff Curve Numbers

Table No. 3.2.5

Sub-Basin Name	FLUCCS Land Use Code	Soil HSG	Runoff CN	Acres	CN x Area	Weighted Runoff CN
SC-0770	120	A	57	16.48	939.36	
SC-0770	120	D	86	0.38	32.68	
SC-0770	190	A	49	0.49	24.01	
SC-0770	190	D	84	0.63	52.92	
SC-0770	400	A	39	0.01	0.39	
SC-0770	814	D	89	0.03	2.67	
			Totals	18.02	1052.03	58.38
SC-0800A	120	A	57	0.12	6.84	
SC-0800A	190	A	49	0.25	12.25	
SC-0800A	190	D	84	2.25	189.00	
SC-0800A	400	A	39	1.07	41.73	
SC-0800A	400	D	77	2.09	160.93	
SC-0800A	814	A	49	0.26	12.74	
SC-0800A	814	D	80	0.39	31.20	
SC-0800A	814	-	98	0.19	18.62	
SC-0800A	530a	D	84	2.23	187.32	
			Totals	8.85	660.63	74.65
SC-0800B	120	A	57	0.92	52.44	
SC-0800B	120	D	86	0.05	4.30	
SC-0800B	400	A	39	0.28	10.92	
SC-0800B	400	D	77	2.78	214.06	
			Totals	4.03	281.72	69.91
SC-0810	120	A	57	0.69	39.33	
SC-0810	120	D	86	0.07	6.02	
SC-0810	190	D	84	0.01	0.84	
SC-0810	814	A	49	1.12	54.88	
SC-0810	814	D	80	0.61	48.80	
SC-0810	814	-	98	0.97	95.06	
			Totals	3.47	244.93	70.59
SC-0820A	400	A	39	0.81	31.59	
SC-0820A	400	D	80	0.64	51.20	
SC-0820A	814	-	98	0.21	20.58	
SC-0820A	530a	D	84	1.66	139.44	
			Totals	3.32	242.81	73.14

Grace Lake, Existing Conditions, April 2017
Summary of Computed Runoff Curve Numbers

Table No. 3.2.5

Sub-Basin Name	FLUCCS Land Use Code	Soil HSG	Runoff CN	Acres	CN x Area	Weighted Runoff CN
SC-0820B	814	A	49	1.45	71.05	
SC-0820B	814	D	80	0.18	14.40	
SC-0820B	814	-	98	2.85	279.30	
			Totals	4.48	364.75	81.42
SC-0830	110	A	51	0	0.00	
SC-0830	172	A	69	0.31	21.39	
SC-0830	172	D	89	0.04	3.56	
SC-0830	190	A	49	0.17	8.33	
SC-0830	400	A	39	1.45	56.55	
SC-0830	400	D	77	0.08	6.16	
SC-0830	643	A	98	0.01	0.98	
SC-0830	643	D	98	1	98.00	
SC-0830	814	A	49	2.36	115.64	
SC-0830	814	D	80	0.92	73.60	
SC-0830	814	-	98	1.47	144.06	
			Totals	7.81	528.27	67.64
SC-0840	110	A	51	31.31	1596.81	
SC-0840	110	D	84	0.18	15.12	
SC-0840	172	A	69	0.99	68.31	
SC-0840	172	D	89	0.51	45.39	
SC-0840	190	A	49	1.84	90.16	
SC-0840	400	A	39	3.17	123.63	
SC-0840	400	D	77	4.75	365.75	
SC-0840	643	A	98	0.00	0.04	
SC-0840	643	D	98	0.22	21.56	
			Totals	42.97	2326.77	54.15
SC-0880	110	A	51	55.38	2824.38	
SC-0880	110	D	84	2.2	184.80	
SC-0880	140	A	89	2.37	210.93	
SC-0880	172	A	69	3.54	244.26	
SC-0880	190	A	49	2.7	132.30	
SC-0880	190	D	84	1.05	88.20	
SC-0880	400	A	39	0.9	35.10	
SC-0880	814	A	49	5.70	279.30	
SC-0880	814	D	80	1.27	101.60	
SC-0880	814	-	98	2.72	266.56	
			Totals	77.83	4367.43	56.11

Grace Lake, Existing Conditions, April 2017
Summary of Computed Runoff Curve Numbers

Table No. 3.2.5

Sub-Basin Name	FLUCCS Land Use Code	Soil HSG	Runoff CN	Acres	CN x Area	Weighted Runoff CN
SC-0900A	814	A	49	0.95	46.55	
SC-0900A	814	D	80	0.72	57.60	
SC-0900A	814	-	98	0.45	44.10	
SC-0900A	530a	Water	100	0.42	42.00	
			Totals	2.54	190.25	74.90
SC-0900B	814	A	49	0.86	42.14	
SC-0900B	814	D	80	0.2	16.00	
SC-0900B	814	-	98	3.67	359.66	
			Totals	4.73	417.80	88.33
SC-0910	120	A	57	1.98	112.86	
SC-0910	120	D	86	0.01	0.86	
SC-0910	190	D	84	0.02	1.68	
SC-0910	400	A	39	0.11	4.29	
SC-0910	400	D	77	1.16	89.32	
SC-0910	640	A	98	0.95	93.10	
SC-0910	640	D	98	0.58	56.84	
SC-0910	814	A	49	0.43	21.07	
SC-0910	814	D	80	0.49	39.20	
SC-0910	814	-	98	0.36	35.28	
			Totals	6.09	454.50	74.63
SC-0920	120	A	57	50.59	2883.63	
SC-0920	120	D	86	0.65	55.90	
SC-0920	170	A	69	0.36	24.84	
SC-0920	190	A	49	0.43	21.07	
SC-0920	190	D	84	0.24	20.16	
SC-0920	400	A	39	5.09	198.51	
SC-0920	400	D	77	1.93	148.61	
SC-0920	520	A	100	0.54	54.00	
SC-0920	520	D	100	21.51	2151.00	
SC-0920	640	A	98	1.12	109.76	
SC-0920	640	D	98	3.54	346.92	
SC-0920	814	A	49	1.66	81.34	
SC-0920	814	-	98	0.96	94.08	
			Totals	88.62	6189.82	69.85

Grace Lake, Existing Conditions, April 2017
Summary of Computed Runoff Curve Numbers

Table No. 3.2.5

Sub-Basin Name	FLUCCS Land Use Code	Soil HSG	Runoff CN	Acres	CN x Area	Weighted Runoff CN
SC-0925	120	A	57	13.12	747.84	
SC-0925	170	A	69	0.12	8.28	
			Totals	13.24	756.12	57.11
SC-0970	814	-	98	0.92	90.16	
SC-0970	814	A	49	2.07	101.43	
			Totals	2.99	191.59	64.08
SC-0980A	814	A	49	1.59	77.91	
SC-0980A	814	-	98	1.17	114.66	
			Totals	2.76	192.57	69.77
SC-0980B	120	A	57	5.83	332.31	
SC-0980B	814	A	69	0.00	0.00	
			Totals	5.83	332.31	57.00
SC-0980C	120	A	57	12.31	701.67	
			Totals	12.31	701.67	57.00
SC-0985	120	A	57	45.09	2570.13	
			Totals	45.09	2570.13	57.00
SC-0995	120	A	57	17.74	1011.41	
SC-0995	170	A	69	16.01	1104.97	
SC-0995	400	A	39	0.00	0.08	
SC-0995	530b	A	92	2.32	213.81	
			Totals	36.08	2330.26	64.58

Total Project Area (acres) =	391.06
I-4 Pavement (acres)=	15.94

GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

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==== Basins ==========
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         Name: SC-0770                  Node: SC-0770                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 14.00
               Area(ac): 18.020                  Time Shift(hrs): 0.00
           Curve Number: 58.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


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         Name: SC-0800A                 Node: SC-0800                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 13.00
               Area(ac): 8.850                   Time Shift(hrs): 0.00
           Curve Number: 75.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


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         Name: SC-0800B                 Node: SC-0800                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 12.00
               Area(ac): 4.030                   Time Shift(hrs): 0.00
           Curve Number: 70.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


-------------------------------------------------------------------------------------------
         Name: SC-0810                  Node: SC-0810                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 11.00
               Area(ac): 3.470                   Time Shift(hrs): 0.00
           Curve Number: 71.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


-------------------------------------------------------------------------------------------
         Name: SC-0820A                 Node: SC-0820                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 11.00
               Area(ac): 3.320                   Time Shift(hrs): 0.00
           Curve Number: 73.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00

FDOT POND F BASIN AREA

-------------------------------------------------------------------------------------------
         Name: SC-0820B                 Node: SC-0820                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 30.00
               Area(ac): 4.480                   Time Shift(hrs): 0.00
           Curve Number: 81.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00

I-4 BASIN AREA CONTRIBUTING RUNOFF TO POND SC-0820

-------------------------------------------------------------------------------------------
         Name: SC-0830                  Node: SC-0830                Status: Onsite
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                    Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 28.00
             Area(ac): 7.810                     Time Shift(hrs): 0.00
          Curve Number: 68.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------
         Name: SC-0840                  Node: SC-0840                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                    Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 21.00
             Area(ac): 42.970                    Time Shift(hrs): 0.00
          Curve Number: 54.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------
         Name: SC-0880                  Node: SC-0880                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                    Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 27.00
             Area(ac): 77.830                    Time Shift(hrs): 0.00
          Curve Number: 56.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------
         Name: SC-0900A                 Node: SC-0900                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                    Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
             Area(ac): 2.540                     Time Shift(hrs): 0.00
          Curve Number: 75.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

FDOT POND E BASIN

-------------------------------------------------------------------------------------------
         Name: SC-0900B                 Node: SC-0900                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 32.00
             Area(ac): 4.730                     Time Shift(hrs): 0.00
          Curve Number: 88.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

I-4 BASIN CONTRIBUTING RUNOFF TO POND E

-------------------------------------------------------------------------------------------
         Name: SC-0910                  Node: SC-0910                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                    Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 11.00
             Area(ac): 6.090                     Time Shift(hrs): 0.00
          Curve Number: 75.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------
         Name: SC-0920                  Node: SC-0920                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 22.00
             Area(ac): 88.620                    Time Shift(hrs): 0.00
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
          Curve Number: 70.00             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



-------------------------------------------------------------------------------------------------
         Name: SC-0925                 Node: SC-0925                Status: Onsite
        Group: Grace Lake              Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 15.00
             Area(ac): 13.240                   Time Shift(hrs): 0.00
          Curve Number: 57.00             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



-------------------------------------------------------------------------------------------------
         Name: SC-0970                 Node: SC-0970                Status: Onsite
        Group: Grace Lake              Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 16.00
             Area(ac): 2.990                   Time Shift(hrs): 0.00
          Curve Number: 64.00             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



-------------------------------------------------------------------------------------------------
         Name: SC-0980A                Node: SC-0980                Status: Onsite
        Group: Grace Lake              Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 29.00
             Area(ac): 2.760                   Time Shift(hrs): 0.00
          Curve Number: 70.00             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



-------------------------------------------------------------------------------------------------
         Name: SC-0980B                Node: SC-0980                Status: Onsite
        Group: Grace Lake              Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 15.00
             Area(ac): 5.830                   Time Shift(hrs): 0.00
          Curve Number: 57.00             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



-------------------------------------------------------------------------------------------------
         Name: SC-0980C                Node: SC-0980                Status: Onsite
        Group: Grace Lake              Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 20.00
             Area(ac): 12.310                  Time Shift(hrs): 0.00
          Curve Number: 57.00             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



-------------------------------------------------------------------------------------------------
         Name: SC-0985                 Node: SC-0985                Status: Onsite
        Group: Grace Lake              Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 17.00
             Area(ac): 45.090                  Time Shift(hrs): 0.00
          Curve Number: 57.00             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



-------------------------------------------------------------------------------------------------
```

GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
         Name: SC-0995                  Node: SC-0995                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 23.00
              Area(ac): 36.080                 Time Shift(hrs): 0.00
          Curve Number: 65.00             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00
```

```
==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

      Name: SC-0750            Base Flow(cfs): 0.000         Init Stage(ft): 52.000
     Group: Grace Lake                                       Warn Stage(ft): 54.000
      Type: Time/Stage
```

ASSUMED TAILWATER AT THE CROWN OF THE OUTFALL PIPE THAT DISCHARGES TO THE BOLLING FARMS SUBDIVISION WETLAND AND POND.
SURVEYED PIPE INVERT ELEVATION IS 48.96 FT, NAVD (SSMC SURVEY DATED DEC. 2007).

Time(hrs)	Stage(ft)
0.00	52.000
180.00	52.000

```
------------------------------------------------------------------------------------------
      Name: SC-0760            Base Flow(cfs): 0.000         Init Stage(ft): 53.080
     Group: Grace Lake                                       Warn Stage(ft): 58.000
      Type: Stage/Area
```

CURB INLET STRUCTURE LOCATED ALONG THE NORTH RIDGE LAKE CIRCLE WEST RIGHT-OF-WAY.
PARAMETERS WERE OBTAINED FROM SURVEY DATA BY SSMC (DATED DEC. 2007 AND JULY 2013).

Stage(ft)	Area(ac)
53.080	0.0010
58.780	0.0010

```
------------------------------------------------------------------------------------------
      Name: SC-0770            Base Flow(cfs): 0.000         Init Stage(ft): 57.000
     Group: Grace Lake                                       Warn Stage(ft): 58.000
      Type: Stage/Area
```

NORTHRIDGE SWALE LOCATED SOUTH OF THE NORTHRIDGE DEPRESSIONAL AREA

Stage(ft)	Area(ac)
55.900	0.0100
57.000	0.4100
58.000	0.7700

```
------------------------------------------------------------------------------------------
      Name: SC-0780            Base Flow(cfs): 0.000         Init Stage(ft): 64.240
     Group: Grace Lake                                       Warn Stage(ft): 67.270
      Type: Stage/Area
```

DIVERSION STRUCTURE. DATA OBTAINED FROM THE NORTHRIDGE SUBDIVISION AS-BUILT PLANS (DATED 05/19/1985). REFER TO STRUCTURE C-1.

Stage(ft)	Area(ac)
64.240	0.0010
67.570	0.0010

```
------------------------------------------------------------------------------------------
      Name: SC-0790            Base Flow(cfs): 0.000         Init Stage(ft): 64.000
     Group: Grace Lake                                       Warn Stage(ft): 67.000
      Type: Stage/Area
```

SMALL DRY RETENTION POND LOCATED NORTH OF GRACE LAKE, SOUTH OF NORTH RIDGE DR., EAST OF GRACE VIEW CT., AND WEST OF NORTH RIDGE
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.

Stage(ft)	Area(ac)
64.000	0.1800
65.000	0.2300
66.000	0.2900
67.000	0.3900

```
------------------------------------------------------------------------------------------
      Name: SC-0800            Base Flow(cfs): 0.000         Init Stage(ft): 47.000
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Group: Grace Lake Warn Stage(ft): 59.000
Type: Stage/Area

NORTHRIDE DEPRESSIONAL AREA

Stage(ft)	Area(ac)
47.000	0.9700
48.000	1.9200
49.000	2.3000
50.000	2.6500
51.000	2.9900
52.000	3.3100
53.000	3.6700
54.000	4.1400
55.000	4.9500
56.000	5.6900
57.000	6.5900
58.000	7.3600
59.000	8.1400

Name: SC-0810 Base Flow(cfs): 0.000 Init Stage(ft): 52.330
Group: Grace Lake Warn Stage(ft): 58.000
Type: Stage/Area

STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.

Stage(ft)	Area(ac)
52.330	0.0010
55.000	0.0050
56.000	0.0100
57.000	0.0200
58.000	0.0400
59.000	0.0800

Name: SC-0815 Base Flow(cfs): 0.000 Init Stage(ft): 55.000
Group: Grace Lake Warn Stage(ft): 56.000
Type: Stage/Area

SHALLOW SWALE

Stage(ft)	Area(ac)
55.000	0.0200
56.000	0.0300
57.000	0.0800
58.000	0.1300
59.000	0.1800

Name: SC-0820 Base Flow(cfs): 0.000 Init Stage(ft): 52.000
Group: Grace Lake Warn Stage(ft): 59.000
Type: Stage/Area

FDOT POND F
STAGE-AREA RELATIONSHIP OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP AND COMPARED TO THE PERMITTED PARAMETERS (SJRWMD PERMIT NO. 22434

Stage(ft)	Area(ac)
52.000	1.0600
53.000	1.1400
54.000	1.2200
55.000	1.4400
56.000	1.6700
57.000	1.7500
58.000	1.8500
59.000	1.9800

Name: SC-0830 Base Flow(cfs): 0.000 Init Stage(ft): 52.890
Group: Grace Lake Warn Stage(ft): 59.000
Type: Stage/Area

DEPRESSIONAL AREA IMMEDIATELY WEST (UPSTREAM SIDE) OF THE I-4 CULVERT CROSSING (NORTH PIPE)

Stage(ft)	Area(ac)
52.000	0.0010
53.000	0.1200
54.000	0.3100
55.000	0.5400

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

56.000	0.6800
57.000	0.8000
58.000	0.9100
59.000	1.1100
60.000	1.4200

Name: SC-0840 Base Flow(cfs): 0.000 Init Stage(ft): 50.000
Group: Grace Lake Warn Stage(ft): 58.000
Type: Stage/Area

DEPRESSIONAL AREA NORTH OF DIXON ROAD AND EAST OF SUNSHINE TREE BOULEVARD.
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHI MAP.

Stage(ft)	Area(ac)
47.000	0.0200
48.000	0.0500
49.000	0.0900
50.000	0.1200
51.000	0.3400
52.000	0.5400
53.000	0.7700
54.000	1.1800
55.000	1.8600
56.000	2.6300
57.000	3.2900
58.000	3.9900
59.000	4.5400
60.000	5.3500

Name: SC-0850 Base Flow(cfs): 0.000 Init Stage(ft): 56.690
Group: Grace Lake Warn Stage(ft): 59.500
Type: Stage/Area

Stage(ft)	Area(ac)
56.650	0.0010
59.500	0.0010

Name: SC-0860 Base Flow(cfs): 0.000 Init Stage(ft): 56.920
Group: Grace Lake Warn Stage(ft): 61.550
Type: Stage/Area

DITCH BOTTOM INLET LOCATED AT THE SOUTHEAST CORNER OF THE INTERSECTION OF DIXON RD. AND SUNSHINE TREE BLVD.

Stage(ft)	Area(ac)
56.920	0.0010
62.650	0.0010

Name: SC-0870 Base Flow(cfs): 0.000 Init Stage(ft): 59.620
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.
CURB INLET LOCATED ALONG THE SUNSHINE TREE BLVD EAST RIGHT-OF-WAY.

Stage(ft)	Area(ac)
59.620	0.0010
67.000	0.0010

Name: SC-0875 Base Flow(cfs): 0.000 Init Stage(ft): 59.710
Group: Grace Lake Warn Stage(ft): 64.000
Type: Stage/Area

Stage(ft)	Area(ac)
59.710	0.0100
64.000	0.0100

Name: SC-0880 Base Flow(cfs): 0.000 Init Stage(ft): 62.600
Group: Grace Lake Warn Stage(ft): 64.000
Type: Stage/Area

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

DEPRESSIONAL AREA SOUTH OF THE ONE CHURCH (SOCCER FIELDS)
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.

Stage(ft)	Area(ac)
57.260	0.0010
58.000	0.0020
59.000	0.0300
60.000	0.1000
61.000	0.2900
62.000	1.5200
63.000	3.1000
64.000	4.1400
65.000	5.7500
66.000	7.4600
67.000	9.2100

Name: SC-0890 Base Flow(cfs): 0.000 Init Stage(ft): 62.600
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

UPSTREAM END (EAST SIDE) OF THE SOUTHERN CULVERT CROSSING I-4

Stage(ft)	Area(ac)
58.200	0.0100
66.000	0.0100

Name: SC-0900 Base Flow(cfs): 0.000 Init Stage(ft): 60.000
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

STAGE-AREA RELATIONSHIP OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.
FDOT POND E (REFER TO THE SJRWMD PERMIT NO. 22434-1)

Stage(ft)	Area(ac)
59.000	0.3950
60.000	0.5280
61.000	0.6600
62.000	0.8500
63.000	0.9700
63.700	1.0300
64.500	1.2000
65.000	1.3700
66.000	1.4500

Name: SC-0910 Base Flow(cfs): 0.000 Init Stage(ft): 62.600
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

DEPRESSIONAL AREA IMMEDIATELY EAST OF THE SOUTH I-4 CROSS CULVERT, ADJACENT TO GRACE LAKE.
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.

Stage(ft)	Area(ac)
55.000	0.1700
56.000	0.3000
57.000	0.4500
58.000	0.6600
59.000	0.9600
60.000	1.4200
61.000	1.8200
62.000	2.2500
63.000	2.6800
64.000	2.9600
65.000	3.2500
66.000	3.4800
67.000	3.6800

Name: SC-0920 Base Flow(cfs): 0.000 Init Stage(ft): 62.600
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

GRACE LAKE.
STAGE-AREA RELATIONSHIP BETWEEN ELEVATIONS 33-54 FT, NAVD, WAS OBTAINED FROM THE SURVEY PREPARED BY SSMC, DATED DEC. 2007.
STAGE-AREA RELATIONSHIP BETWEEN ELEVATIONS 55-67, NAVD, IS BASED ON THE 1-FT TOPOGRAPHY.
INITIAL STAGE IS BASED ON THE GRACE LAKE "NORMAL" HYDROPERIOD ELEVATION BETWEEN ELEVATION 58-63 FT, NAVD
(REFER TO ENGINEERING REPORT FROM DEVO ENGINEERING).

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Stage(ft)	Area(ac)
33.000	0.0000
34.000	0.0005
35.000	0.0014
36.000	0.0028
37.000	0.0053
38.000	0.0140
39.000	0.0450
40.000	0.0980
41.000	0.1830
42.000	0.3010
43.000	0.4270
44.000	0.5320
45.000	0.6430
46.000	0.7540
47.000	0.8640
48.000	1.1900
49.000	3.6300
50.000	5.8800
51.000	8.1300
52.000	10.5200
53.000	12.8800
54.000	14.9400
55.000	16.6400
56.000	18.3800
57.000	20.0700
58.000	22.0500
59.000	24.0900
60.000	26.0500
61.000	27.8500
62.000	29.7000
63.000	31.6800
64.000	33.6800
65.000	35.3300
66.000	36.9000
67.000	38.7900

Name: SC-0925 Base Flow(cfs): 0.000 Init Stage(ft): 68.000
Group: Grace Lake Warn Stage(ft): 76.000
Type: Stage/Area

SMALL DRY RETENTION POND LOCATED ALONG NORTH RIDGE LAKE CIRCLE, SOUTH OF NORTH RIDGE DR.
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAPS.

Stage(ft)	Area(ac)
68.000	0.0300
69.000	0.0800
70.000	0.1000
71.000	0.1300
72.000	0.1600
73.000	0.1800
74.000	0.2200
75.000	0.2500
76.000	0.2900
77.000	0.5100
78.000	0.8700
79.000	1.1900

Name: SC-0930 Base Flow(cfs): 0.000 Init Stage(ft): 61.000
Group: Grace Lake Warn Stage(ft): 69.200
Type: Stage/Area

NODE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE
LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO NODE GHOST 3.

Stage(ft)	Area(ac)
61.000	0.0100
69.200	0.0100

Name: SC-0940 Base Flow(cfs): 0.000 Init Stage(ft): 64.930
Group: Grace Lake Warn Stage(ft): 69.000
Type: Stage/Area

NODE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE
LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO NODE GHOST 2.

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Stage(ft)	Area(ac)
64.930	0.0100
69.000	0.0100

Name: SC-0950 Base Flow(cfs): 0.000 Init Stage(ft): 66.200
Group: Grace Lake Warn Stage(ft): 72.000
Type: Stage/Area

NODE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO NODE GHOST 1.

Stage(ft)	Area(ac)
66.200	0.0100
72.000	0.0100

Name: SC-0960 Base Flow(cfs): 0.000 Init Stage(ft): 68.780
Group: Grace Lake Warn Stage(ft): 73.000
Type: Stage/Area

NODE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO NODE GHOST 0.

Stage(ft)	Area(ac)
68.780	0.0100
73.000	0.0100

Name: SC-0970 Base Flow(cfs): 0.000 Init Stage(ft): 65.680
Group: Grace Lake Warn Stage(ft): 71.000
Type: Stage/Area

STAGE AREA ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.
NODE INITIAL STAGE OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO NODE Ghost_I-4_30in.

Stage(ft)	Area(ac)
65.680	0.0100
71.000	0.0400

Name: SC-0980 Base Flow(cfs): 0.000 Init Stage(ft): 68.100
Group: Grace Lake Warn Stage(ft): 74.000
Type: Stage/Area

STAGE-AREA OBTAINED FROM THE 1-FT TOPO MAPS
INITIAL STAGE IS BASED ON THE DOWNSTREAM PIPE INVERT ELEVATION

Stage(ft)	Area(ac)
67.000	0.0100
70.000	0.0150
71.000	0.0200
72.000	0.1000
73.000	0.1800
74.000	0.3200

Name: SC-0985 Base Flow(cfs): 0.000 Init Stage(ft): 68.100
Group: Grace Lake Warn Stage(ft): 73.000
Type: Stage/Area

PENELOPE POND (POND LOCATED EAST OF PENELOPE DR AND NORTH OF HICKORY TREE RD)
STAGE-AREA RELATIONSHIP OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP
INITIAL STAGE WAS ESTIMATED BASED ON THE DOWNSTREAM PIPE INVERT JUST SOUTH OF EE WILLIAMSON RD

Stage(ft)	Area(ac)
66.000	0.1100
71.000	0.2200
72.000	0.3400
73.000	0.5900
74.000	1.2000

Name: SC-0990 Base Flow(cfs): 0.000 Init Stage(ft): 71.000
Group: Grace Lake Warn Stage(ft): 79.000
Type: Stage/Area

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

EMERGENCY OVERFLOW MANHOLE

Stage(ft)	Area(ac)
71.000	0.0010
79.000	0.0010

Name: SC-0995 Base Flow(cfs): 0.000 Init Stage(ft): 77.500
Group: Grace Lake Warn Stage(ft): 84.000
Type: Stage/Area

WET DETENTION POND THAT SERVES THE WOODLAND ELEMENTARY SCHOOL, THE BELLA TUSCANY SUBDIVISION AND A PORTION OF EE WILLIAMSON ROAD POND WAS EXPANDED TO PROVIDE WATER QUALITY TREATMENT AND ATTENUATION FROM THE BELLA TUSCANY SUBDIVISION (REFER TO THE SJRMD PERM STAGE-AREA RELATIONSHIP AND INITIAL STAGE WAS OBTAINED FROM THE PERMITTED PARAMETERS. ELEVATIONS SHOWN HEREIN WERE CONVERTED TO SINCE THE ORIGINAL BELLA TUSCANY SUBDIVISION PLANS ARE REFERENCED TO THE NGVD VERTICAL DATUM (CONVERSION USED: NAVD ELEV. = NGV

Stage(ft)	Area(ac)
77.500	1.8600
78.000	1.9300
79.000	2.0000
80.000	2.0800
81.000	2.2200
82.000	2.3600
83.000	2.5000
84.000	2.6500
85.000	2.8000

==== Cross Sections ====

Name: SC-0810_W1 Group: Grace Lake
Encroachment: No

OVERLAND OVERTOPPING CROSS SECTION FROM I-4 CULVERT CROSSING (NORTH PIPE) TO THE NORTHRIDGE DEPRESSIONAL AREA

Station(ft)	Elevation(ft)	Manning's N
0.000	58.400	0.000000
11.900	57.800	0.000000
31.100	57.200	0.000000
43.400	57.800	0.000000
63.200	58.700	0.000000

Name: SC-0810_W2 Group: Grace Lake
Encroachment: No

OVERLAND OVERTOPPING CROSS SECTION FROM I-4 CULVERT CROSSING (NORTH PIPE) TO THE NORTHRIDGE SWALE

Station(ft)	Elevation(ft)	Manning's N
0.000	59.300	0.000000
30.700	59.000	0.000000
68.400	58.500	0.000000
106.100	58.700	0.000000
133.700	59.300	0.000000

Name: SC-0840_W Group: Grace Lake
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	60.000	0.000000
12.000	59.000	0.000000
18.700	58.000	0.000000
25.300	57.000	0.000000
32.000	56.000	0.000000
51.900	55.000	0.000000
103.800	54.000	0.000000
128.000	54.000	0.000000
149.600	54.000	0.000000
194.000	55.000	0.000000
215.100	56.000	0.000000
230.500	57.000	0.000000
241.100	58.000	0.000000
251.500	59.000	0.000000
262.500	60.000	0.000000

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Name: SC-0875_W Group: Grace Lake
Encroachment: No

CROSS SECTION DATA ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

Station(ft)	Elevation(ft)	Manning's N
0.000	67.000	0.000000
36.600	66.000	0.000000
44.200	65.500	0.000000
51.800	66.000	0.000000
78.700	67.000	0.000000

Name: SC-0880_W Group: Grace Lake
Encroachment: No

CROSS SECTION DATA OBTAINED FROM SSMC SURVEY, DATED JULY 2013.

Station(ft)	Elevation(ft)	Manning's N
0.000	63.300	0.000000
9.200	62.600	0.000000
24.700	63.400	0.000000

Name: SC-0890_W Group: Grace Lake
Encroachment: No

SURVEYED CROSS SECTION (SSMC, DATED JULY 2013).

Station(ft)	Elevation(ft)	Manning's N
0.000	70.960	0.000000
4.200	70.600	0.000000
26.000	68.500	0.000000
48.500	71.100	0.000000
64.600	79.100	0.000000
78.400	83.600	0.000000
82.500	83.400	0.000000

Name: SC-0920_W1 Group: Grace Lake
Encroachment: No

CROSS SECTION DATA ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

Station(ft)	Elevation(ft)	Manning's N
0.000	67.000	0.000000
20.300	66.000	0.000000
45.300	65.000	0.000000
53.000	64.000	0.000000
63.600	63.000	0.000000
80.700	62.000	0.000000
93.800	61.000	0.000000
106.600	60.000	0.000000
139.200	59.500	0.000000
168.200	60.000	0.000000
194.200	61.000	0.000000
206.100	62.000	0.000000
224.900	63.000	0.000000
240.600	64.000	0.000000
249.600	65.000	0.000000
258.000	66.000	0.000000
277.100	67.000	0.000000

Name: SC-0920_W3 Group: Grace Lake
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	66.900	0.000000
24.000	66.800	0.000000
47.000	67.100	0.000000

Name: SC-0930_DS Group: Grace Lake
Encroachment: No

GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

CHANNEL CROSS SECTION DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR CROSS SECTION I-4 Chan3DS.

Station(ft)	Elevation(ft)	Manning's N
0.000	64.000	0.011000
28.100	63.000	0.011000
28.900	62.000	0.011000
29.500	61.000	0.011000
32.000	60.500	0.011000
38.000	60.500	0.011000
41.400	61.000	0.011000
43.200	62.000	0.011000
44.800	63.000	0.011000
77.900	64.000	0.011000

Name: SC-0940_DS Group: Grace Lake
Encroachment: No

CHANNEL CROSS SECTION DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR CROSS SECTION I-4 Chan2DS3US.

Station(ft)	Elevation(ft)	Manning's N
0.000	68.000	0.150000
10.100	67.000	0.150000
30.500	66.000	0.150000
45.200	65.000	0.150000
49.100	64.000	0.150000
49.500	63.000	0.150000
50.500	62.000	0.150000
52.000	61.000	0.150000
54.000	62.000	0.150000
56.000	63.000	0.150000
64.200	64.000	0.150000
79.000	65.000	0.150000
85.000	66.000	0.150000
90.000	67.000	0.150000

Name: SC-0950_DS Group: Grace Lake
Encroachment: No

CHANNEL CROSS SECTION DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR CROSS SECTION I-4 Chan1DS2US.

Station(ft)	Elevation(ft)	Manning's N
0.000	69.000	0.150000
16.000	68.000	0.150000
42.400	67.000	0.150000
47.400	66.000	0.150000
51.600	65.000	0.150000
56.100	64.930	0.150000
60.200	65.000	0.150000
64.800	66.000	0.150000
69.300	67.000	0.150000
73.700	68.000	0.150000
78.000	69.000	0.150000

Name: SC-0950_US Group: Grace Lake
Encroachment: No

CHANNEL CROSS SECTION DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR CROSS SECTION I-4 Chan1_US.

Station(ft)	Elevation(ft)	Manning's N
0.000	71.000	0.150000
1.190	70.000	0.150000
2.360	69.000	0.150000
3.560	68.000	0.150000
4.580	67.000	0.150000
5.300	66.200	0.150000
11.970	67.000	0.150000
12.060	68.000	0.150000
12.060	69.000	0.150000
12.060	69.700	0.150000

Name: SC-0960_DS Group: Grace Lake
Encroachment: No

GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

CHANNEL CROSS SECTION DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR CROSS SECTION EEW I-4 Chan DS.

Station(ft)	Elevation(ft)	Manning's N
0.000	71.230	0.011000
0.610	71.000	0.011000
2.090	70.000	0.011000
3.570	69.000	0.011000
3.800	68.640	0.011000
8.900	68.640	0.011000
9.240	69.000	0.011000
10.080	70.000	0.011000

Name: SC-0960_US Group: Grace Lake
Encroachment: No

CHANNEL CROSS SECTION DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR CROSS SECTION EEW I-4 Chan US.

Station(ft)	Elevation(ft)	Manning's N
0.000	71.000	0.011000
0.960	70.000	0.011000
1.930	69.000	0.011000
7.640	68.780	0.011000
7.810	69.000	0.011000
8.830	70.000	0.011000
9.880	71.000	0.011000
10.790	72.000	0.011000

==========
==== Pipes ==========
==========

Name: SC-0760-P From Node: SC-0760 Length(ft): 534.00
Group: Grace Lake To Node: SC-0750 Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	36.00	36.00
Rise(in):	36.00	36.00
Invert(ft):	53.080	48.960
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY DATA BY SSMC, DATED DEC. 2007.

Name: SC-0790-P From Node: SC-0790 Length(ft): 30.00
Group: Grace Lake To Node: SC-0780 Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	18.00	18.00
Rise(in):	18.00	18.00
Invert(ft):	64.050	64.240
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PIPE DATA OBTAINED FROM THE NORTHRIDGE SUBDIVISION AS-BUILTS (DATED 05/19/1985).
ORIGINAL PLANS WERE REFERENCED TO THE NGVD VERTICAL DATUM AND HAD TO BE CONVERTED TO THE NAVD VERTICAL DATUM.
ELEVATIONS SHOWN CORRESPOND TO THE NAVD DATUM.

GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
-----------------------------------------------------------------------------------------------
         Name: SC-0815-P           From Node: SC-0815            Length(ft): 412.00
        Group: Grace Lake            To Node: SC-0810                 Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 18.00          18.00                       Entrance Loss Coef: 0.50
     Rise(in): 18.00          18.00                           Exit Loss Coef: 0.00
   Invert(ft): 55.000         53.520                          Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                           Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

UPSTREAM INVERT OBTAINED FROM THE PROPOSED ICPR MODEL, PREPARED BY HDR IN SUPPORT OF THE
LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008).
DOWNSTREAM INVERT WAS OBTAINED FROM THE SSMC SURVEY, DATED JULY 2013.

-----------------------------------------------------------------------------------------------
         Name: SC-0830-P           From Node: SC-0830            Length(ft): 227.00
        Group: Grace Lake            To Node: SC-0810                 Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 54.00          54.00                       Entrance Loss Coef: 0.50
     Rise(in): 54.00          54.00                           Exit Loss Coef: 0.00
   Invert(ft): 51.520         52.330                          Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                           Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

CULVERT CROSSING I-4 (NORTH CROSSING)
UPSTREAM (WEST END) INVERT DATA WAS OBTAINED FROM SURVEY PERFORMED BY SSMC, DATED DEC. 2007.
DOWNSTREAM (EAST END) INVERT ELEVATION WAS REVISED BASED ON SURVEY PERFORMED BY SSMC, DATED JULY 2013.

-----------------------------------------------------------------------------------------------
         Name: SC-0850-P           From Node: SC-0850            Length(ft): 66.00
        Group: Grace Lake            To Node: SC-0840                 Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 36.00          36.00                       Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                           Exit Loss Coef: 0.00
   Invert(ft): 56.690         56.270                          Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                           Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.

-----------------------------------------------------------------------------------------------
         Name: SC-0860-P           From Node: SC-0860            Length(ft): 62.00
        Group: Grace Lake            To Node: SC-0850                 Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 36.00          36.00                       Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                           Exit Loss Coef: 0.00
   Invert(ft): 56.920         56.650                          Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                           Inlet Ctrl Spec: Use dc
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None



Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.

-----------------------------------------------------------------------------------------------
         Name: SC-0870-P           From Node: SC-0870            Length(ft): 499.00
        Group: Grace Lake            To Node: SC-0860                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                   Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                  Flow: Both
     Span(in): 36.00          36.00                        Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                            Exit Loss Coef: 0.00
   Invert(ft): 59.620         57.050                           Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                       Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                            Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None



Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.

-----------------------------------------------------------------------------------------------
         Name: SC-0875-P           From Node: SC-0875            Length(ft): 47.00
        Group: Grace Lake            To Node: SC-0870                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                   Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                  Flow: Both
     Span(in): 36.00          36.00                        Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                            Exit Loss Coef: 0.00
   Invert(ft): 59.710         59.650                           Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                       Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                            Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None



Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.

-----------------------------------------------------------------------------------------------
         Name: SC-0890-P           From Node: SC-0890            Length(ft): 220.00
        Group: Grace Lake            To Node: SC-0880                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                   Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                  Flow: Both
     Span(in): 48.00          48.00                        Entrance Loss Coef: 0.50
     Rise(in): 48.00          48.00                            Exit Loss Coef: 0.00
   Invert(ft): 57.420         57.260                           Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                       Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                            Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None



Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

CULVERT CROSSING I-4 (SOUTH CROSSING)
INVERT DATA WAS OBTAINED FROM SURVEY PERFORMED BY SSMC, DATED DEC. 2007.


-----------------------------------------------------------------------------------------------
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
         Name: SC-0970-P           From Node: SC-0970            Length(ft): 128.00
        Group: Grace Lake            To Node: SC-0940                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                   Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                  Flow: Both
     Span(in): 30.00          30.00                        Entrance Loss Coef: 0.50
     Rise(in): 30.00          30.00                            Exit Loss Coef: 0.00
   Invert(ft): 65.680         64.930                           Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                       Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                            Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PIPE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE
LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008)


-------------------------------------------------------------------------------------------------
         Name: SC-0980-P1          From Node: SC-0980            Length(ft): 165.00
        Group: Grace Lake            To Node: SC-0970                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                   Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                  Flow: Both
     Span(in): 30.00          30.00                        Entrance Loss Coef: 0.50
     Rise(in): 30.00          30.00                            Exit Loss Coef: 0.00
   Invert(ft): 68.100         66.070                           Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                       Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                            Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PIPE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE
LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO HDR PIPE LINK I-4_30Inch.
SURVEY DATA PROVIDED BY SSMC (DATED DEC. 2007)

-------------------------------------------------------------------------------------------------
         Name: SC-0980-P2          From Node: SC-0980            Length(ft): 135.00
        Group: Grace Lake            To Node: SC-0960                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                   Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                  Flow: Both
     Span(in): 24.00          24.00                        Entrance Loss Coef: 0.50
     Rise(in): 24.00          24.00                            Exit Loss Coef: 0.00
   Invert(ft): 69.830         68.780                           Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                       Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                            Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PIPE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE
LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR PIPE LINK EEWilliams_24.
SURVEY DATA PROVIDED BY SSMC (DATED DEC. 2007)

-------------------------------------------------------------------------------------------------
         Name: SC-0985-P           From Node: SC-0985            Length(ft): 230.00
        Group: Grace Lake            To Node: SC-0980                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                   Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                  Flow: Both
     Span(in): 42.00          42.00                        Entrance Loss Coef: 0.50
     Rise(in): 42.00          42.00                            Exit Loss Coef: 0.00
   Invert(ft): 67.000         67.000                           Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                       Outlet Ctrl Spec: Use dc or tw
```

GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                      Stabilizer Option: None



Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PIPE SIZE AND INVERT DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR, IN
SUPPORT OF THE GRACE LAKE SINKHOLE ANALYSIS REPORT (DATED APRIL 2008).
IT APPEARS THAT THIS PIPE SEGMENT WAS NOT SURVEYED
PIPE LENGTH WAS ADJUSTED TO MATCH FIELD OBSERVATIONS

-----------------------------------------------------------------------------------------------
         Name: SC-0990-P           From Node: SC-0990            Length(ft): 219.00
        Group: Grace Lake            To Node: SC-0920                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 15.00          15.00                       Entrance Loss Coef: 0.50
     Rise(in): 15.00          15.00                           Exit Loss Coef: 0.00
   Invert(ft): 71.000         52.000                          Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                           Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Stabilizer Option: None



Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

EMERGENCY OVERFLOW PIPE FROM THE WOODLAND ELEMENTARY POND TO GRACE LAKE (FINAL PIPE SEGMENT).
PARAMETERS WERE OBTAINED FROM PERMITTED PLANS (REFER TO THE SJRWMD PERMIT NO. 49356-3, DATED 11/21/2007).
NOTE THAT ORIGINAL PLANS WERE REFERENCED TO THE NGVD DATUM.  ELEVATIONS SHOWN HEREIN WERE CONVERTED TO THE NAVD VERTICAL DATUM (

-----------------------------------------------------------------------------------------------
         Name: SC-1000-P           From Node: SC-1000            Length(ft): 112.00
        Group: Grace Lake            To Node: SC-0985                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Arch           Arch                                     Flow: Both
     Span(in): 95.00          95.00                       Entrance Loss Coef: 0.50
     Rise(in): 67.00          67.00                           Exit Loss Coef: 0.00
   Invert(ft): 68.620         68.070                          Bend Loss Coef: 0.00
  Manning's N: 0.024000       0.024000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                           Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Stabilizer Option: None



Upstream FHWA Inlet Edge Description:
Pipe Arch 18" Corner Radius CM: 90° headwall

Downstream FHWA Inlet Edge Description:
Pipe Arch 18" Corner Radius CM: 90° headwall

CULVERT CROSSING HICKORY DITCH ROAD
INVERT DATA OBTAINED FROM THE CITY OF LONGWOOD STORMWATER MASTERPLAN
PIPE SIZE WAS ADJUSTED TO REFLECT THE NEAREST STANDARD SIZE FOR AN ARCH PIPE BASED ON SURVEYED DIMENSIONS

===============================================================================================
==== Channels ================================================================================
===============================================================================================

          Name: SC-0930-C           From Node: SC-0930            Length(ft): 106.00
         Group: Grace Lake            To Node: SC-0920                 Count: 1

                UPSTREAM       DOWNSTREAM                  Friction Equation: Automatic
      Geometry: Irregular      Irregular                  Solution Algorithm: Automatic
    Invert(ft): 61.000         60.500                                  Flow: Both
 TClpInitZ(ft): 9999.000       9999.000                     Contraction Coef: 0.100
   Manning's N:                                                 Expansion Coef: 0.300
  Top Clip(ft):                                             Entrance Loss Coef: 0.000
  Bot Clip(ft):                                                 Exit Loss Coef: 0.000
     Main XSec: SC-0940_DS     SC-0930_DS                    Outlet Ctrl Spec: Use dc or tw
  AuxElev1(ft): 0.000          0.000                           Inlet Ctrl Spec: Use dc
     Aux XSec1:                                              Stabilizer Option: None
  AuxElev2(ft): 0.000          0.000
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
     Aux XSec2:
 Top Width(ft):
     Depth(ft):
 Bot Width(ft):
  LtSdSlp(h/v):
  RtSdSlp(h/v):
```

CHANNEL DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO CHANNEL LINK I-4 Channel 3 AND CROSS SECTIONS I-4 Chan2DS3US (UPSTREAM) AND I-4 Chan3DS (DOWNSTREAM)

```
----------------------------------------------------------------------------------------------------
          Name: SC-0940-C           From Node: SC-0940            Length(ft): 496.00
         Group: Grace Lake            To Node: SC-0930                 Count: 1

                UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
      Geometry: Irregular      Irregular                 Solution Algorithm: Automatic
    Invert(ft): 64.930         61.000                               Flow: Both
 TClpInitZ(ft): 9999.000       9999.000                    Contraction Coef: 0.100
   Manning's N:                                                 Expansion Coef: 0.300
  Top Clip(ft):                                            Entrance Loss Coef: 0.000
  Bot Clip(ft):                                                Exit Loss Coef: 0.000
     Main XSec: SC-0950_DS     SC-0940_DS                    Outlet Ctrl Spec: Use dc or tw
  AuxElev1(ft): 0.000          0.000                          Inlet Ctrl Spec: Use dc
     Aux XSec1:                                             Stabilizer Option: None
  AuxElev2(ft): 0.000          0.000
     Aux XSec2:
 Top Width(ft):
     Depth(ft):
 Bot Width(ft):
  LtSdSlp(h/v):
  RtSdSlp(h/v):
```

CHANNEL DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO CHANNEL LINK I-4 Channel 2 AND CROSS SECTIONS I-4 Chan1DS2US (UPSTREAM) AND I-4 Chan2DS3US (DOWNSTREAM)

```
----------------------------------------------------------------------------------------------------
          Name: SC-0950-C           From Node: SC-0950            Length(ft): 66.00
         Group: Grace Lake            To Node: SC-0940                 Count: 1

                UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
      Geometry: Irregular      Irregular                 Solution Algorithm: Automatic
    Invert(ft): 66.200         64.930                               Flow: Both
 TClpInitZ(ft): 9999.000       9999.000                    Contraction Coef: 0.100
   Manning's N:                                                 Expansion Coef: 0.300
  Top Clip(ft):                                            Entrance Loss Coef: 0.000
  Bot Clip(ft):                                                Exit Loss Coef: 0.000
     Main XSec: SC-0950_US     SC-0950_DS                    Outlet Ctrl Spec: Use dc or tw
  AuxElev1(ft): 0.000          0.000                          Inlet Ctrl Spec: Use dc
     Aux XSec1:                                             Stabilizer Option: None
  AuxElev2(ft): 0.000          0.000
     Aux XSec2:
 Top Width(ft):
     Depth(ft):
 Bot Width(ft):
  LtSdSlp(h/v):
  RtSdSlp(h/v):
```

CHANNEL DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO CHANNEL LINK I-4 Channel 1 AND CROSS SECTIONS I-4 Chan 1_US (UPSTREAM) AND I-4 Chan1DS2US (DOWNSTREAM)

```
----------------------------------------------------------------------------------------------------
          Name: SC-0960-C           From Node: SC-0960            Length(ft): 15.00
         Group: Grace Lake            To Node: SC-0950                 Count: 1

                UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
      Geometry: Irregular      Irregular                 Solution Algorithm: Automatic
    Invert(ft): 68.780         68.640                               Flow: Both
 TClpInitZ(ft): 9999.000       9999.000                    Contraction Coef: 0.100
   Manning's N:                                                 Expansion Coef: 0.300
  Top Clip(ft):                                            Entrance Loss Coef: 0.000
  Bot Clip(ft):                                                Exit Loss Coef: 0.000
     Main XSec: SC-0960_US     SC-0960_DS                    Outlet Ctrl Spec: Use dc or tw
  AuxElev1(ft): 0.000          0.000                          Inlet Ctrl Spec: Use dc
     Aux XSec1:                                             Stabilizer Option: None
  AuxElev2(ft): 0.000          0.000
     Aux XSec2:
 Top Width(ft):
     Depth(ft):
 Bot Width(ft):
  LtSdSlp(h/v):
  RtSdSlp(h/v):
```

```
GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**
```

```
CHANNEL DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE
LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO CHANNEL LINK 24 Splwy Chan AND
CROSS SECTIONS EEW I-4 Chan US (UPSTREAM) AND EEW I-4 Chan DS (DOWNSTREAM)


=========================================================================================
==== Drop Structures ====================================================================
=========================================================================================

         Name: SC-0770-D1          From Node: SC-0770            Length(ft): 17.00
        Group: Grace Lake            To Node: SC-0760                 Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 36.00          36.00                                   Flow: Both
     Rise(in): 36.00          36.00                     Entrance Loss Coef: 0.500
   Invert(ft): 53.250         53.080                        Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

DITCH BOTTOM STRUCTURE LOCATED ALONG THE NORTH RIDGE LAKE CIRCLE WEST RIGHT-OF-WAY, NORTH OF NORTH RIDGE DRIVE (TRACT "C" OVERFL


*** Weir 1 of 4 for Drop Structure SC-0770-D1 ***
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 10.20                       Invert(ft): 57.170
              Rise(in): 33.60                 Control Elev(ft): 57.170

*** Weir 2 of 4 for Drop Structure SC-0770-D1 ***
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 9.60                        Invert(ft): 57.180
              Rise(in): 34.80                 Control Elev(ft): 57.180

*** Weir 3 of 4 for Drop Structure SC-0770-D1 ***
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 9.00                        Invert(ft): 57.170
              Rise(in): 34.80                 Control Elev(ft): 57.170

*** Weir 4 of 4 for Drop Structure SC-0770-D1 ***
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Horizontal                Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 36.00                       Invert(ft): 58.180
              Rise(in): 54.00                 Control Elev(ft): 58.180


-----------------------------------------------------------------------------------------------
         Name: SC-0770-D2          From Node: SC-0770            Length(ft): 70.00
        Group: Grace Lake            To Node: SC-0800                 Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                   Flow: Both
     Rise(in): 18.00          18.00                     Entrance Loss Coef: 0.500
   Invert(ft): 49.660         49.140                        Exit Loss Coef: 0.000
  Manning's N: 0.024000       0.024000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

CONTROL STRUCTURE LOCATED WITHIN THE NORTHRIDGE SWALE.
REFER TO SSMC SURVEY DATED DEC. 2007 AND THE NORTHRIDGE SUBDIVISION AS-BUILT PLANS (DATED 05/19/1985).
IT APPEARS THAT SURVEY FROM SSMC DID NOT PICK UP THE WEIR CUT-OUT (SLOT). HOWEVER, AS BUILTS PROVIDE AN INVERT ELEVATION FOR TH

*** Weir 1 of 2 for Drop Structure SC-0770-D2 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	30.00	Invert(ft):	56.820
Rise(in):	15.50	Control Elev(ft):	56.820

*** Weir 2 of 2 for Drop Structure SC-0770-D2 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	37.00	Invert(ft):	58.360
Rise(in):	49.00	Control Elev(ft):	58.360

Name:	SC-0780-D	From Node:	SC-0780	Length(ft):	443.00
Group:	Grace Lake	To Node:	SC-0770	Count:	1

	UPSTREAM	DOWNSTREAM		
			Friction Equation:	Automatic
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	18.00	18.00	Flow:	Both
Rise(in):	18.00	18.00	Entrance Loss Coef:	0.500
Invert(ft):	62.370	55.900	Exit Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

DIVERSION / CONTROL STRUCTURE. DATA OBTAINED FROM THE NORTHRIDGE SUBDIVISION AS-BUILT PLANS (DATED 05/19/1985).
ELEVATIONS SHOWN WERE CONVERTED TO THE NAVD VERTICAL DATUM.

*** Weir 1 of 1 for Drop Structure SC-0780-D ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	50.40	Invert(ft):	65.500
Rise(in):	24.84	Control Elev(ft):	65.500

Name:	SC-0900-D	From Node:	SC-0900	Length(ft):	164.00
Group:	Grace Lake	To Node:	SC-0890	Count:	1

	UPSTREAM	DOWNSTREAM		
			Friction Equation:	Automatic
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	24.00	24.00	Flow:	Both
Rise(in):	24.00	24.00	Entrance Loss Coef:	0.500
Invert(ft):	59.300	58.160	Exit Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

FDOT POND E OUTFALL STRUCTURE. STRUCTURE DATA AND UPSTREAM INVERT WAS OBTAINED FROM THE FDOT CONSTUCTION PLANS (PREPARED BY GRE
IT APPEARS THAT THE FDOT PLANS ARE REFERENCED TO THE NGVD VERTICAL DATUM. THESE ELEVATIONS WERE CONVERTED TO THE NAVD DATUM.
DOWNSTREAM PIPE INVERT ELEVATION WAS OBTAINED FROM SURVEYED DATA, PREPARED BY SSMC (DATED DEC. 2007)

*** Weir 1 of 3 for Drop Structure SC-0900-D ***

```
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 36.00                       Invert(ft): 63.120
              Rise(in): 18.96                 Control Elev(ft): 63.120
```

*** Weir 2 of 3 for Drop Structure SC-0900-D ***

```
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Horizontal                Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 37.00                       Invert(ft): 64.700
              Rise(in): 49.00                 Control Elev(ft): 64.700
```

*** Weir 3 of 3 for Drop Structure SC-0900-D ***

```
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Circular              Orifice Disc Coef: 0.600

              Span(in): 2.00                        Invert(ft): 60.000
              Rise(in): 2.00                  Control Elev(ft): 60.000


----------------------------------------------------------------------------------------------------
         Name: SC-0925-D          From Node: SC-0925           Length(ft): 360.00
        Group: Grace Lake           To Node: SC-0920                Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                  Flow: Both
     Rise(in): 18.00          18.00                    Entrance Loss Coef: 0.500
   Invert(ft): 69.350         64.010                       Exit Loss Coef: 0.000
  Manning's N: 0.013000       0.013000                   Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                       Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Solution Incs: 10
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

CONTROL STRUCTURE DATA WAS OBTAINED FROM THE AS-BUILT PLANS OF THE NORTHRIDGE SUBDIVISION, PREPARED BY CPH, DATED 05/19/1985.
CONSTRUCTION PLANS WERE REFERENCED TO THE NGVD VERTICAL DATUM AND CONVERTED TO THE NAVD DATUM.

*** Weir 1 of 2 for Drop Structure SC-0925-D ***

```
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 12.00                       Invert(ft): 74.020
              Rise(in): 46.70                 Control Elev(ft): 74.020
```

*** Weir 2 of 2 for Drop Structure SC-0925-D ***

```
                                                                                TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Horizontal                Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 36.00                       Invert(ft): 77.910
              Rise(in): 54.00                 Control Elev(ft): 77.910


----------------------------------------------------------------------------------------------------
         Name: SC-0995-D          From Node: SC-0995           Length(ft): 1211.00
        Group: Grace Lake           To Node: SC-0990                Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
```

GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
     Span(in): 15.00          15.00                                  Flow: Both
     Rise(in): 15.00          15.00                     Entrance Loss Coef: 0.500
   Invert(ft): 80.000         76.250                        Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

EMERGENCY OVERFLOW STRUCTURE AND PIPE FROM THE WOODLAND ELEMENTARY POND TO GRACE LAKE.
PARAMETERS WERE OBTAINED FROM PERMITTED PLANS (REFER TO THE SJRWMD PERMIT NO. 49356-3, DATED 11/21/2007).
NOTE THAT ORIGINAL PLANS WERE REFERENCED TO THE NGVD DATUM.  ELEVATIONS SHOWN HEREIN WERE CONVERTED TO THE NAVD VERTICAL DATUM (

*** Weir 1 of 1 for Drop Structure SC-0995-D ***
                                                                                TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Horizontal                 Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 36.00                        Invert(ft): 83.160
               Rise(in): 54.00                  Control Elev(ft): 83.160


=======================================================================================
==== Weirs ===========================================================================
=======================================================================================

         Name: SC-0770-W           From Node: SC-0770
        Group: Grace Lake            To Node: SC-0750
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 180.00
                    Rise(in): 999.00
                  Invert(ft): 58.500
       Control Elevation(ft): 58.500
                                             TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

OVERTOPPING WEIR.  PARAMETERS WERE ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

-------------------------------------------------------------------------------------------------
         Name: SC-0780-W           From Node: SC-0780
        Group: Grace Lake            To Node: SC-0770
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 2400.00
                    Rise(in): 999.00
                  Invert(ft): 67.900
       Control Elevation(ft): 67.900
                                             TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

OVERLAND OVERTOPPING FROM POND TO THE NORTHRIDGE SWALE.
ELEVATION WAS OBTAINED FROM THE NORTHRIDGE SUBDIVISION AS-BUILT PLANS AND COMPARED TO THE 1-FT TOPOGRAPHIC MAP.

-------------------------------------------------------------------------------------------------
         Name: SC-0800-W1          From Node: SC-0800
        Group: Grace Lake            To Node: SC-0770
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 1200.00
                    Rise(in): 999.00
                  Invert(ft): 58.000
       Control Elevation(ft): 58.000
                                             TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

NORTHRIDGE DEPRESSIONAL AREA BERM OVERTOPPING
PARAMETERS WERE ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP AND SURVEYED DATA.

```
-----------------------------------------------------------------------------------------------
         Name: SC-0800-W2          From Node: SC-0800
        Group: Grace Lake            To Node: SC-0750
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                   Span(in): 600.00
                   Rise(in): 999.00
                 Invert(ft): 58.500
       Control Elevation(ft): 58.500
                                             TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

OVERTOPPING WEIR. PARAMETERS WERE ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

```
-----------------------------------------------------------------------------------------------
         Name: SC-0810-W1          From Node: SC-0810
        Group: Grace Lake            To Node: SC-0800
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0810_W1
                 Invert(ft): 57.200
       Control Elevation(ft): 57.200
      Struct Opening Dim(ft): 9999.00
                                             TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0810-W2          From Node: SC-0810
        Group: Grace Lake            To Node: SC-0770
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0810_W2
                 Invert(ft): 58.500
       Control Elevation(ft): 58.500
      Struct Opening Dim(ft): 9999.00
                                             TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0820-W1          From Node: SC-0820
        Group: Grace Lake            To Node: SC-0815
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Trapezoidal

            Bottom Width(ft): 5.00
       Left Side Slope(h/v): 6.00
      Right Side Slope(h/v): 6.00
                 Invert(ft): 55.000
       Control Elevation(ft): 55.000
      Struct Opening Dim(ft): 9999.00
                                             TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

CONCRETE WEIR (OUTFALL)

```
-----------------------------------------------------------------------------------------------
         Name: SC-0820-W2          From Node: SC-0820
        Group: Grace Lake            To Node: SC-0800
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                   Span(in): 600.00
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
                   Rise(in): 999.00
                 Invert(ft): 56.010
       Control Elevation(ft): 56.010
                                                TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

POND BERM OVERTOPPING

-----------------------------------------------------------------------------------------------------
         Name: SC-0840-W           From Node: SC-0840
        Group: Grace Lake            To Node: SC-0830
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0840_W
                 Invert(ft): 54.000
       Control Elevation(ft): 54.000
      Struct Opening Dim(ft): 9999.00
                                                TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------------
         Name: SC-0875-W           From Node: SC-0875
        Group: Grace Lake            To Node: SC-0840
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0875_W
                 Invert(ft): 65.500
       Control Elevation(ft): 65.500
      Struct Opening Dim(ft): 9999.00
                                                TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

OVERLAND OVERTOPPING

-----------------------------------------------------------------------------------------------------
         Name: SC-0880-W           From Node: SC-0880
        Group: Grace Lake            To Node: SC-0875
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0880_W
                 Invert(ft): 62.600
       Control Elevation(ft): 62.600
      Struct Opening Dim(ft): 9999.00
                                                TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------------
         Name: SC-0890-W           From Node: SC-0890
        Group: Grace Lake            To Node: SC-0810
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0890_W
                 Invert(ft): 68.500
       Control Elevation(ft): 68.500
      Struct Opening Dim(ft): 9999.00
                                                TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

OVERTOPPING OF I-4 SWALE AT HIGH POING ALONG THE EAST RIGHT-OF-WAY.
POTENTIAL INTERCONNECTION OF THE TWO (2) CULVERTS CROSSING I-4 (NORTH AND SOUTH).
CROSS SECTION DATA WAS OBTAINED FROM SURVEY PERFORMED BY SSMC (DATED JULY 2013).
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
-----------------------------------------------------------------------------------------------
         Name: SC-0900-W           From Node: SC-0900
        Group: Grace Lake            To Node: SC-0890
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 120.00
                    Rise(in): 999.00
                  Invert(ft): 66.010
       Control Elevation(ft): 66.010
                                          TABLE
            Bottom Clip(in): 0.000
               Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

ELEVATIONS WERE ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

```
-----------------------------------------------------------------------------------------------
         Name: SC-0910-W           From Node: SC-0910
        Group: Grace Lake            To Node: SC-0890
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 960.00
                    Rise(in): 999.00
                  Invert(ft): 59.500
       Control Elevation(ft): 59.500
                                          TABLE
            Bottom Clip(in): 0.000
               Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

OVERTOPPING ELEVATION WAS ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

```
-----------------------------------------------------------------------------------------------
         Name: SC-0920-W1          From Node: SC-0920
        Group: Grace Lake            To Node: SC-0910
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0920_W1
                  Invert(ft): 59.500
       Control Elevation(ft): 59.500
      Struct Opening Dim(ft): 9999.00
                                          TABLE
            Bottom Clip(ft): 0.000
               Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0920-W2          From Node: SC-0920
        Group: Grace Lake            To Node: SC-0890
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 1160.00
                    Rise(in): 999.00
                  Invert(ft): 62.500
       Control Elevation(ft): 62.500
                                          TABLE
            Bottom Clip(in): 0.000
               Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0920-W3          From Node: SC-0920
        Group: Grace Lake            To Node: SC-0790
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0920_W3
                  Invert(ft): 66.800
       Control Elevation(ft): 66.800
      Struct Opening Dim(ft): 9999.00
                                          TABLE
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

PARAMETERS ARE BASED ON SURVEY DATA OBTAINED FROM SSMC, DATED JULY 2013.

-----------------------------------------------------------------------------------------------
         Name: SC-0925-W           From Node: SC-0925
        Group: Grace Lake            To Node: SC-0920
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 680.00
                    Rise(in): 999.00
                  Invert(ft): 78.700
       Control Elevation(ft): 78.700
                                          TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0970-W           From Node: SC-0970
        Group: Grace Lake            To Node: SC-0940
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 120.00
                    Rise(in): 999.00
                  Invert(ft): 71.000
       Control Elevation(ft): 71.000
                                          TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0985-W           From Node: SC-0985
        Group: Grace Lake            To Node: SC-0980
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 600.00
                    Rise(in): 999.00
                  Invert(ft): 73.500
       Control Elevation(ft): 73.500
                                          TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

PENELOPE POND OVERTOPPING
PARAMETERS WERE ESTIMATED USING THE 1-FT TOPOGRAPHIC MAPS

-----------------------------------------------------------------------------------------------
         Name: SC-1000-W           From Node: SC-1000
        Group: Grace Lake            To Node: SC-0985
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 600.00
                    Rise(in): 999.00
                  Invert(ft): 77.500
       Control Elevation(ft): 77.500
                                          TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

OVERTOPPING HICKORY TREE ROAD

=========================================================================================
==== Hydrology Simulations ==============================================================
=========================================================================================
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
         Name: 010-024
     Filename: C:\TEMP ICPR\010-024.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 6.80

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-----------------------------------------------------------------------------------------------
         Name: 025-024
     Filename: C:\TEMP ICPR\025-024.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 8.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-----------------------------------------------------------------------------------------------
         Name: 025-096
     Filename: C:\TEMP ICPR\025-096.R32

      Override Defaults: Yes
    Storm Duration(hrs): 96.00
          Rainfall File: Sjrwmd96
    Rainfall Amount(in): 11.30

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-----------------------------------------------------------------------------------------------
         Name: 100-024
     Filename: C:\TEMP ICPR\100-024.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 11.40

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-----------------------------------------------------------------------------------------------
         Name: 100-096
     Filename: C:\TEMP ICPR\100-096.R32

      Override Defaults: Yes
    Storm Duration(hrs): 96.00
          Rainfall File: Sjrwmd96
    Rainfall Amount(in): 15.00

Time(hrs)       Print Inc(min)
--------------- ---------------
96.000          5.00

-----------------------------------------------------------------------------------------------
         Name: MA-024
     Filename: C:\TEMP ICPR\MA-024.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 4.40

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

=================================================================================
==== Routing Simulations ========================================================
=================================================================================

         Name: 010-024             Hydrology Sim: 010-024
     Filename: C:\TEMP ICPR\010-024.I32
```

GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 36.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 1.0000
        Boundary Stages: 010-024                  Boundary Flows:

GRACE LAKE SINKHOLE REMEDIATION
PROPOSED CONDITIONS ANALYSIS
10-YEAR STORM EVENT (24-HOUR DURATION)

Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes
Cranes          Yes
Gee             Yes
Grace Lake      Yes
Soldier         Yes


-------------------------------------------------------------------------------------------------
         Name: 025-024             Hydrology Sim: 025-024
     Filename: C:\TEMP ICPR\025-024.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 36.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 1.0000
        Boundary Stages: 025-024                  Boundary Flows:

GRACE LAKE SINKHOLE REMEDIATION
PROPOSED CONDITIONS ANALYSIS
25-YEAR STORM EVENT (24-HOUR DURATION)

Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes
Cranes          Yes
Gee             Yes
Grace Lake      Yes
Soldier         Yes


-------------------------------------------------------------------------------------------------
         Name: 025-096             Hydrology Sim: 025-096
     Filename: C:\TEMP ICPR\025-096.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 120.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 60.0000
        Boundary Stages: 100-024                  Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
96.000          15.000
120.000         30.000

Group           Run
--------------- -----
BASE            Yes
Cranes          Yes
Gee             Yes
Grace Lake      Yes
Soldier         Yes
```

GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
-----------------------------------------------------------------------------------------------
         Name: 100-024             Hydrology Sim: 100-024
     Filename: C:\TEMP ICPR\100-024.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 336.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages: 100-024                  Boundary Flows:

GRACE LAKE SINKHOLE REMEDIATION
PROPOSED CONDITIONS ANALYSIS
100-YEAR STORM EVENT (24-HOUR DURATION)

Time(hrs)       Print Inc(min)
--------------- ---------------
48.000          15.000
336.000         60.000

Group           Run
--------------- -----
BASE            Yes
Cranes          Yes
Gee             Yes
Grace Lake      Yes
Soldier         Yes


-----------------------------------------------------------------------------------------------
         Name: 100-096             Hydrology Sim: 100-096
     Filename: C:\TEMP ICPR\100-096.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 180.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 60.0000
        Boundary Stages: 100-024                  Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
96.000          15.000
120.000         30.000
180.000         60.000

Group           Run
--------------- -----
BASE            Yes
Cranes          Yes
Gee             Yes
Grace Lake      Yes
Soldier         Yes


-----------------------------------------------------------------------------------------------
         Name: MA-024              Hydrology Sim: MA-024
     Filename: C:\TEMP ICPR\MA-024.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 36.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 1.0000
        Boundary Stages: 010-024                  Boundary Flows:

GRACE LAKE SINKHOLE REMEDIATION
PROPOSED CONDITIONS ANALYSIS
MEAN ANNUAL STORM EVENT (24-HOUR DURATION)

Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
```

GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

BASE	Yes
Cranes	Yes
Gee	Yes
Grace Lake	Yes
Soldier	Yes

==== Boundary Conditions ====

Name: 010-024 Node: GC-1000 Type: Stage

Time(hrs)	Stage(ft)
0.000	50.400
0.500	50.400
1.000	50.400
1.500	50.400
2.000	50.400
2.500	50.400
3.000	50.400
3.500	50.400
4.000	50.400
4.500	50.400
5.000	50.400
5.500	50.400
6.000	50.400
6.500	50.400
7.000	50.400
7.500	50.400
8.000	50.400
8.500	50.410
8.670	50.410
8.830	50.420
9.000	50.420
9.170	50.430
9.330	50.430
9.500	50.440
9.670	50.440
9.830	50.450
10.000	50.460
10.170	50.470
10.330	50.470
10.500	50.480
10.670	50.490
10.830	50.510
11.000	50.520
11.170	50.530
11.330	50.550
11.500	50.570
11.670	50.600
11.830	50.650
12.000	50.740
12.170	50.840
12.330	50.960
12.500	51.080
12.670	51.170
12.830	51.250
13.000	51.320
13.170	51.370
13.330	51.420
13.500	51.460
13.670	51.500
13.830	51.540
14.000	51.570
14.170	51.600
14.330	51.620
14.500	51.650
14.670	51.680
14.830	51.700
15.000	51.720
15.170	51.750
15.330	51.770
15.500	51.790
15.670	51.810
15.830	51.830
16.000	51.850
16.170	51.870
16.670	51.930
17.170	51.980
17.670	52.040
18.170	52.090

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

18.670	52.150
19.170	52.200
19.670	52.250
20.170	52.300
20.670	52.340
21.170	52.390
21.670	52.430
22.170	52.470
22.670	52.500
23.170	52.540
23.670	52.570
24.170	52.600
24.670	52.620
25.170	52.640
25.670	52.650
26.170	52.660
26.670	52.670
27.170	52.670
27.670	52.680
28.170	52.680
28.670	52.680
29.170	52.690
29.670	52.690
30.170	52.680
30.670	52.680
31.170	52.680
31.670	52.680
32.170	52.670
32.670	52.670
33.170	52.660
33.670	52.660
34.170	52.650
34.670	52.640
35.170	52.640
35.670	52.630
36.000	52.620

Name: 010-024 Node: SC-3000 Type: Stage

Time(hrs)	Stage(ft)
0.000	42.140
0.500	42.140
1.000	42.140
1.500	42.140
2.000	42.140
2.500	42.140
3.000	42.150
3.500	42.150
4.000	42.150
4.500	42.150
5.000	42.150
5.500	42.160
6.000	42.160
6.500	42.160
7.000	42.170
7.500	42.180
8.000	42.190
8.500	42.210
8.750	42.220
9.000	42.240
9.250	42.250
9.500	42.270
9.750	42.280
10.000	42.300
10.250	42.310
10.500	42.330
10.750	42.350
11.000	42.370
11.250	42.390
11.500	42.420
11.750	42.470
12.000	42.570
12.250	42.700
12.500	42.830
12.750	42.910
13.000	42.940
13.250	42.950
13.500	42.950
13.750	42.940
14.000	42.940
14.250	42.930
14.500	42.930

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

14.750	42.930
15.000	42.940
15.250	42.970
15.500	43.000
15.750	43.020
16.000	43.050
16.250	43.080
16.750	43.120
17.250	43.160
17.750	43.190
18.250	43.220
18.750	43.240
19.250	43.250
19.750	43.270
20.250	43.280
20.750	43.290
21.250	43.300
21.750	43.310
22.250	43.320
22.750	43.320
23.250	43.330
23.750	43.350
24.250	43.370
24.750	43.390
25.250	43.410
25.750	43.420
26.250	43.430
26.750	43.450
27.250	43.460
27.750	43.470
28.250	43.470
28.750	43.480
29.250	43.480
29.750	43.490
30.250	43.490
30.750	43.490
31.250	43.490
31.750	43.490
32.250	43.490
32.750	43.490
33.250	43.490
33.750	43.490
34.250	43.480
34.750	43.480
35.250	43.480
35.750	43.470
36.250	43.460
36.750	43.460
37.250	43.450
37.750	43.440
38.250	43.440
38.750	43.430
39.250	43.420
39.750	43.410
40.250	43.400
40.750	43.390
41.250	43.380
41.750	43.370
42.250	43.360
42.750	43.350
43.250	43.340
43.750	43.330
44.250	43.310
44.750	43.300
45.250	43.290
45.750	43.280
46.250	43.270
46.750	43.250
47.250	43.240
47.750	43.230
48.000	43.220

Name: 010-024 Node: SC-3010 Type: Stage

Time(hrs)	Stage(ft)
0.000	45.860
0.500	46.020
1.000	46.080
1.500	46.090
2.000	46.100
2.500	46.110
3.000	46.110

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

3.500	46.120
4.000	46.120
4.500	46.120
5.000	46.130
5.500	46.130
6.000	46.130
6.500	46.130
7.000	46.130
7.500	46.130
8.000	46.130
8.500	46.130
8.750	46.140
9.000	46.140
9.250	46.140
9.500	46.140
9.750	46.150
10.000	46.150
10.250	46.160
10.500	46.160
10.750	46.170
11.000	46.180
11.250	46.200
11.500	46.220
11.750	46.260
12.000	46.330
12.250	46.430
12.500	46.530
12.750	46.600
13.000	46.650
13.250	46.690
13.500	46.720
13.750	46.740
14.000	46.770
14.250	46.800
14.500	46.820
14.750	46.850
15.000	46.870
15.250	46.900
15.500	46.920
15.750	46.950
16.000	46.980
16.250	47.000
16.750	47.060
17.250	47.120
17.750	47.180
18.250	47.240
18.750	47.300
19.250	47.350
19.750	47.410
20.250	47.460
20.750	47.490
21.250	47.520
21.750	47.550
22.250	47.580
22.750	47.730
23.250	48.070
23.750	48.530
24.250	48.700
24.750	48.810
25.250	48.880
25.750	48.920
26.250	48.950
26.750	48.970
27.250	48.980
27.750	48.980
28.250	48.980
28.750	48.970
29.250	48.960
29.750	48.950
30.250	48.940
30.750	48.920
31.250	48.910
31.750	48.890
32.250	48.870
32.750	48.850
33.250	48.830
33.750	48.810
34.250	48.790
34.750	48.770
35.250	48.750
35.750	48.720
36.250	48.700
36.750	48.680
37.250	48.660

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

37.750	48.640
38.250	48.620
38.750	48.600
39.250	48.580
39.750	48.560
40.250	48.540
40.750	48.520
41.250	48.510
41.750	48.490
42.250	48.470
42.750	48.290
43.250	48.270
43.750	48.240
44.250	48.220
44.750	48.200
45.250	48.170
45.750	48.150
46.250	48.130
46.750	48.110
47.250	48.090
47.750	48.060
48.000	48.050

Name: 010-024 Node: SC-5000 Type: Stage

Time(hrs)	Stage(ft)
0.000	41.060
0.500	41.060
1.000	41.060
1.500	41.060
2.000	41.060
2.500	41.060
3.000	41.060
3.500	41.060
4.000	41.060
4.500	41.060
5.000	41.090
5.500	41.180
6.000	41.310
6.500	41.400
7.000	41.520
7.500	41.670
8.000	41.810
8.500	41.960
8.750	42.050
9.000	42.130
9.250	42.230
9.500	42.320
9.750	42.400
10.000	42.480
10.250	42.570
10.500	42.670
10.750	42.770
11.000	42.870
11.250	42.970
11.500	43.120
11.750	43.540
12.000	43.920
12.250	44.110
12.500	44.080
12.750	43.900
13.000	43.750
13.250	43.700
13.500	43.720
13.750	43.740
14.000	43.750
14.250	43.750
14.500	43.780
14.750	43.840
15.000	43.910
15.250	43.960
15.500	44.000
15.750	44.020
16.000	44.030
16.250	44.030
16.750	44.020
17.250	44.000
17.750	43.960
18.250	43.900
18.750	43.840
19.250	43.790
19.750	43.740

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

20.250	43.700
20.750	43.670
21.250	43.660
21.750	43.650
22.250	43.650
22.750	43.640
23.250	43.630
23.750	43.620
24.250	43.600
24.750	43.570
25.250	43.540
25.750	43.510
26.250	43.480
26.750	43.460
27.250	43.430
27.750	43.430
28.250	43.320
28.750	42.350
29.250	42.150
29.750	42.080
30.250	42.030
30.750	42.000
31.250	41.970
31.750	41.950
32.250	41.920
32.750	41.890
33.250	41.860
33.750	41.830
34.250	41.810
34.750	41.790
35.250	41.770
35.750	41.750
36.250	41.730
36.750	41.710
37.250	41.700
37.750	41.680
38.250	41.670
38.750	41.660
39.250	41.650
39.750	41.640
40.250	41.630
40.750	41.620
41.250	41.610
41.750	41.600
42.250	41.590
42.750	41.580
43.250	41.570
43.750	41.560
44.250	41.550
44.750	41.550
45.250	41.540
45.750	41.530
46.250	41.520
46.750	41.520
47.250	41.510
47.750	41.510
48.000	41.510

Name: 025-024 Node: GC-1000 Type: Stage

Time(hrs)	Stage(ft)
0.000	50.400
0.500	50.400
1.000	50.400
1.500	50.400
2.000	50.400
2.500	50.400
3.000	50.400
3.500	50.400
4.000	50.400
4.500	50.400
5.000	50.400
5.500	50.400
6.000	50.400
6.500	50.400
7.000	50.410
7.500	50.420
8.000	50.430
8.500	50.450
8.670	50.450
8.830	50.460
9.000	50.470

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

9.170	50.480
9.330	50.480
9.500	50.490
9.670	50.500
9.830	50.510
10.000	50.520
10.170	50.530
10.330	50.550
10.500	50.560
10.670	50.570
10.830	50.590
11.000	50.610
11.170	50.630
11.330	50.650
11.500	50.680
11.670	50.710
11.830	50.780
12.000	50.880
12.170	51.020
12.330	51.170
12.500	51.310
12.670	51.440
12.830	51.530
13.000	51.610
13.170	51.680
13.330	51.740
13.500	51.800
13.670	51.840
13.830	51.890
14.000	51.920
14.170	51.960
14.330	52.000
14.500	52.030
14.670	52.060
14.830	52.090
15.000	52.120
15.170	52.140
15.330	52.170
15.500	52.200
15.670	52.220
15.830	52.250
16.000	52.280
16.170	52.300
16.670	52.380
17.170	52.450
17.670	52.520
18.170	52.590
18.670	52.650
19.170	52.720
19.670	52.770
20.170	52.830
20.670	52.890
21.170	52.940
21.670	52.980
22.170	53.030
22.670	53.070
23.170	53.110
23.670	53.140
24.170	53.170
24.670	53.190
25.170	53.200
25.670	53.210
26.170	53.220
26.670	53.230
27.170	53.230
27.670	53.230
28.170	53.240
28.670	53.230
29.170	53.230
29.670	53.230
30.170	53.220
30.670	53.220
31.170	53.210
31.670	53.210
32.170	53.200
32.670	53.190
33.170	53.180
33.670	53.170
34.170	53.160
34.670	53.150
35.170	53.140
35.670	53.130
36.000	53.120

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Name: 025-024 Node: SC-3000 Type: Stage

Time(hrs)	Stage(ft)
0.000	42.140
0.500	42.140
1.000	42.140
1.500	42.140
2.000	42.140
2.500	42.140
3.000	42.150
3.500	42.150
4.000	42.150
4.500	42.150
5.000	42.160
5.500	42.160
6.000	42.170
6.500	42.180
7.000	42.190
7.500	42.210
8.000	42.240
8.500	42.270
8.750	42.280
9.000	42.300
9.250	42.320
9.500	42.330
9.750	42.350
10.000	42.370
10.250	42.380
10.500	42.400
10.750	42.420
11.000	42.450
11.250	42.470
11.500	42.500
11.750	42.560
12.000	42.670
12.250	42.820
12.500	42.950
12.750	43.030
13.000	43.070
13.250	43.080
13.500	43.080
13.750	43.080
14.000	43.090
14.250	43.110
14.500	43.150
14.750	43.200
15.000	43.250
15.250	43.300
15.500	43.340
15.750	43.370
16.000	43.410
16.250	43.440
16.750	43.490
17.250	43.540
17.750	43.570
18.250	43.600
18.750	43.620
19.250	43.640
19.750	43.650
20.250	43.670
20.750	43.690
21.250	43.720
21.750	43.750
22.250	43.780
22.750	43.810
23.250	43.830
23.750	43.860
24.250	43.880
24.750	43.900
25.250	43.910
25.750	43.920
26.250	43.930
26.750	43.940
27.250	43.940
27.750	43.950
28.250	43.950
28.750	43.950
29.250	43.950
29.750	43.950
30.250	43.950
30.750	43.940
31.250	43.940

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

31.750	43.930
32.250	43.930
32.750	43.920
33.250	43.910
33.750	43.910
34.250	43.900
34.750	43.890
35.250	43.880
35.750	43.870
36.250	43.850
36.750	43.840
37.250	43.830
37.750	43.820
38.250	43.800
38.750	43.790
39.250	43.780
39.750	43.760
40.250	43.750
40.750	43.730
41.250	43.720
41.750	43.700
42.250	43.690
42.750	43.670
43.250	43.660
43.750	43.640
44.250	43.630
44.750	43.610
45.250	43.600
45.750	43.580
46.250	43.570
46.750	43.550
47.250	43.530
47.750	43.520
48.000	43.510

Name: 025-024 Node: SC-3010 Type: Stage

Time(hrs)	Stage(ft)
0.000	45.860
0.500	46.020
1.000	46.080
1.500	46.090
2.000	46.100
2.500	46.110
3.000	46.110
3.500	46.120
4.000	46.120
4.500	46.120
5.000	46.130
5.500	46.130
6.000	46.130
6.500	46.130
7.000	46.130
7.500	46.130
8.000	46.140
8.500	46.150
8.750	46.150
9.000	46.150
9.250	46.160
9.500	46.160
9.750	46.170
10.000	46.180
10.250	46.190
10.500	46.200
10.750	46.220
11.000	46.240
11.250	46.260
11.500	46.290
11.750	46.330
12.000	46.400
12.250	46.570
12.500	46.710
12.750	46.800
13.000	46.860
13.250	46.910
13.500	46.940
13.750	46.980
14.000	47.010
14.250	47.040
14.500	47.070
14.750	47.100
15.000	47.130

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

15.250	47.160
15.500	47.190
15.750	47.220
16.000	47.260
16.250	47.290
16.750	47.350
17.250	47.410
17.750	47.460
18.250	47.500
18.750	47.530
19.250	47.570
19.750	47.720
20.250	48.190
20.750	48.710
21.250	48.950
21.750	49.120
22.250	49.240
22.750	49.310
23.250	49.370
23.750	49.410
24.250	49.430
24.750	49.430
25.250	49.430
25.750	49.440
26.250	49.430
26.750	49.430
27.250	49.420
27.750	49.410
28.250	49.400
28.750	49.380
29.250	49.360
29.750	49.340
30.250	49.320
30.750	49.300
31.250	49.280
31.750	49.250
32.250	49.230
32.750	49.190
33.250	49.160
33.750	49.130
34.250	49.100
34.750	49.080
35.250	49.050
35.750	49.020
36.250	48.990
36.750	48.960
37.250	48.930
37.750	48.900
38.250	48.870
38.750	48.840
39.250	48.820
39.750	48.790
40.250	48.770
40.750	48.740
41.250	48.720
41.750	48.700
42.250	48.670
42.750	48.650
43.250	48.630
43.750	48.610
44.250	48.590
44.750	48.570
45.250	48.550
45.750	48.530
46.250	48.510
46.750	48.500
47.250	48.480
47.750	48.460
48.000	48.290

Name: 025-024 Node: SC-5000 Type: Stage

Time(hrs)	Stage(ft)
0.000	41.060
0.500	41.060
1.000	41.060
1.500	41.060
2.000	41.060
2.500	41.060
3.000	41.060
3.500	41.060
4.000	41.060

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

4.500	41.140
5.000	41.280
5.500	41.390
6.000	41.510
6.500	41.670
7.000	41.830
7.500	42.000
8.000	42.170
8.500	42.340
8.750	42.420
9.000	42.500
9.250	42.580
9.500	42.650
9.750	42.730
10.000	42.800
10.250	42.870
10.500	42.960
10.750	43.070
11.000	43.160
11.250	43.240
11.500	43.430
11.750	43.690
12.000	44.060
12.250	44.120
12.500	44.140
12.750	44.090
13.000	43.950
13.250	43.930
13.500	43.870
13.750	43.960
14.000	44.130
14.250	44.240
14.500	44.340
14.750	44.420
15.000	44.490
15.250	44.540
15.500	44.570
15.750	44.580
16.000	44.580
16.250	44.570
16.750	44.520
17.250	44.470
17.750	44.410
18.250	44.350
18.750	44.290
19.250	44.240
19.750	44.180
20.250	44.130
20.750	44.070
21.250	43.990
21.750	43.910
22.250	43.840
22.750	43.770
23.250	43.720
23.750	43.690
24.250	43.660
24.750	43.630
25.250	43.600
25.750	43.570
26.250	43.550
26.750	43.530
27.250	43.510
27.750	43.480
28.250	43.460
28.750	43.440
29.250	43.410
29.750	43.400
30.250	42.620
30.750	42.160
31.250	42.050
31.750	42.010
32.250	41.980
32.750	41.960
33.250	41.930
33.750	41.910
34.250	41.900
34.750	41.890
35.250	41.880
35.750	41.860
36.250	41.850
36.750	41.840
37.250	41.830
37.750	41.820
38.250	41.830

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

38.750	41.810
39.250	41.800
39.750	41.790
40.250	41.770
40.750	41.760
41.250	41.750
41.750	41.730
42.250	41.720
42.750	41.710
43.250	41.700
43.750	41.680
44.250	41.670
44.750	41.660
45.250	41.650
45.750	41.640
46.250	41.630
46.750	41.620
47.250	41.610
47.750	41.600
48.000	41.600

Name: 100-024 Node: GC-1000 Type: Stage

Time(hrs)	Stage(ft)
0.000	50.400
0.500	50.400
1.000	50.400
1.500	50.400
2.000	50.400
2.500	50.400
3.000	50.410
3.500	50.410
4.000	50.410
4.500	50.410
5.000	50.420
5.500	50.420
6.000	50.440
6.500	50.450
7.000	50.460
7.500	50.480
8.000	50.510
8.500	50.540
8.670	50.550
8.830	50.560
9.000	50.570
9.170	50.580
9.330	50.600
9.500	50.610
9.670	50.630
9.830	50.640
10.000	50.660
10.170	50.680
10.330	50.700
10.500	50.720
10.670	50.740
10.830	50.770
11.000	50.790
11.170	50.820
11.330	50.850
11.500	50.890
11.670	50.950
11.830	51.040
12.000	51.170
12.170	51.350
12.330	51.560
12.500	51.760
12.670	51.940
12.830	52.080
13.000	52.200
13.170	52.310
13.330	52.410
13.500	52.490
13.670	52.570
13.830	52.640
14.000	52.710
14.170	52.770
14.330	52.830
14.500	52.880
14.670	52.930
14.830	52.970
15.000	53.010
15.170	53.050

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

15.330	53.080
15.500	53.120
15.670	53.150
15.830	53.180
16.000	53.210
16.170	53.230
16.670	53.310
17.170	53.380
17.670	53.440
18.170	53.500
18.670	53.560
19.170	53.610
19.670	53.660
20.170	53.700
20.670	53.740
21.170	53.780
21.670	53.820
22.170	53.850
22.670	53.880
23.170	53.910
23.670	53.940
24.170	53.970
24.670	53.980
25.170	54.000
25.670	54.000
26.170	54.010
26.670	54.010
27.170	54.010
27.670	54.000
28.170	54.000
28.670	54.000
29.170	53.990
29.670	53.990
30.170	53.980
30.670	53.970
31.170	53.970
31.670	53.960
32.170	53.950
32.670	53.940
33.170	53.920
33.670	53.910
34.170	53.900
34.670	53.890
35.170	53.870
35.670	53.860
36.000	53.850

Name: 100-024 Node: SC-3000 Type: Stage

Time(hrs)	Stage(ft)
0.000	42.140
0.500	42.140
1.000	42.140
1.500	42.140
2.000	42.140
2.500	42.140
3.000	42.150
3.500	42.150
4.000	42.150
4.500	42.160
5.000	42.170
5.500	42.180
6.000	42.210
6.500	42.230
7.000	42.270
7.500	42.300
8.000	42.330
8.500	42.370
8.750	42.380
9.000	42.400
9.250	42.420
9.500	42.440
9.750	42.460
10.000	42.470
10.250	42.500
10.500	42.520
10.750	42.540
11.000	42.570
11.250	42.600
11.500	42.630
11.750	42.700
12.000	42.830

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

12.250	42.980
12.500	43.130
12.750	43.230
13.000	43.300
13.250	43.350
13.500	43.390
13.750	43.450
14.000	43.540
14.250	43.610
14.500	43.690
14.750	43.750
15.000	43.810
15.250	43.860
15.500	43.910
15.750	43.950
16.000	43.990
16.250	44.020
16.750	44.090
17.250	44.150
17.750	44.200
18.250	44.250
18.750	44.300
19.250	44.350
19.750	44.390
20.250	44.430
20.750	44.460
21.250	44.490
21.750	44.520
22.250	44.550
22.750	44.570
23.250	44.600
23.750	44.620
24.250	44.640
24.750	44.650
25.250	44.660
25.750	44.670
26.250	44.670
26.750	44.670
27.250	44.670
27.750	44.670
28.250	44.670
28.750	44.670
29.250	44.670
29.750	44.670
30.250	44.670
30.750	44.670
31.250	44.660
31.750	44.660
32.250	44.650
32.750	44.650
33.250	44.640
33.750	44.630
34.250	44.620
34.750	44.610
35.250	44.600
35.750	44.590
36.250	44.570
36.750	44.560
37.250	44.540
37.750	44.530
38.250	44.510
38.750	44.490
39.250	44.470
39.750	44.450
40.250	44.430
40.750	44.410
41.250	44.390
41.750	44.370
42.250	44.350
42.750	44.330
43.250	44.300
43.750	44.280
44.250	44.260
44.750	44.240
45.250	44.210
45.750	44.190
46.250	44.170
46.750	44.140
47.250	44.120
47.750	44.100
48.000	44.070

Name: 100-024 Node: SC-3010 Type: Stage

GRACE LAKE
EXISTING CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Time(hrs)	Stage(ft)
0.000	45.860
0.500	46.020
1.000	46.080
1.500	46.090
2.000	46.100
2.500	46.110
3.000	46.110
3.500	46.120
4.000	46.120
4.500	46.120
5.000	46.130
5.500	46.130
6.000	46.130
6.500	46.140
7.000	46.150
7.500	46.150
8.000	46.170
8.500	46.180
8.750	46.190
9.000	46.200
9.250	46.220
9.500	46.230
9.750	46.250
10.000	46.270
10.250	46.290
10.500	46.320
10.750	46.330
11.000	46.330
11.250	46.340
11.500	46.360
11.750	46.440
12.000	46.630
12.250	46.860
12.500	47.030
12.750	47.140
13.000	47.210
13.250	47.270
13.500	47.310
13.750	47.350
14.000	47.390
14.250	47.430
14.500	47.460
14.750	47.480
15.000	47.500
15.250	47.520
15.500	47.540
15.750	47.560
16.000	47.600
16.250	47.750
16.750	48.370
17.250	48.910
17.750	49.200
18.250	49.380
18.750	49.510
19.250	49.610
19.750	49.700
20.250	49.770
20.750	49.830
21.250	49.890
21.750	49.890
22.250	49.910
22.750	49.940
23.250	49.950
23.750	49.960
24.250	49.970
24.750	49.960
25.250	49.950
25.750	49.950
26.250	49.950
26.750	49.950
27.250	49.950
27.750	49.950
28.250	49.940
28.750	49.940
29.250	49.940
29.750	49.940
30.250	49.940
30.750	49.930
31.250	49.920
31.750	49.910
32.250	49.900

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

32.750	49.890
33.250	49.890
33.750	49.870
34.250	49.840
34.750	49.810
35.250	49.770
35.750	49.740
36.250	49.700
36.750	49.660
37.250	49.620
37.750	49.580
38.250	49.530
38.750	49.490
39.250	49.450
39.750	49.410
40.250	49.370
40.750	49.340
41.250	49.300
41.750	49.260
42.250	49.220
42.750	49.180
43.250	49.140
43.750	49.100
44.250	49.070
44.750	49.040
45.250	49.010
45.750	48.980
46.250	48.950
46.750	48.920
47.250	48.890
47.750	48.870
48.000	48.840

Name: 100-024 Node: SC-5000 Type: Stage

Time(hrs)	Stage(ft)
0.000	41.060
0.500	41.060
1.000	41.060
1.500	41.060
2.000	41.060
2.500	41.060
3.000	41.060
3.500	41.140
4.000	41.280
4.500	41.420
5.000	41.600
5.500	41.810
6.000	42.000
6.500	42.190
7.000	42.380
7.500	42.530
8.000	42.680
8.500	42.800
8.750	42.870
9.000	42.940
9.250	43.020
9.500	43.080
9.750	43.140
10.000	43.200
10.250	43.370
10.500	43.370
10.750	43.430
11.000	43.500
11.250	43.540
11.500	43.610
11.750	43.920
12.000	44.160
12.250	44.250
12.500	44.260
12.750	44.220
13.000	44.240
13.250	44.400
13.500	44.650
13.750	44.870
14.000	45.020
14.250	45.170
14.500	45.290
14.750	45.370
15.000	45.460
15.250	45.500
15.500	45.500

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

15.750	45.470
16.000	45.410
16.250	45.350
16.750	45.250
17.250	45.140
17.750	45.030
18.250	44.910
18.750	44.800
19.250	44.690
19.750	44.600
20.250	44.510
20.750	44.420
21.250	44.350
21.750	44.280
22.250	44.220
22.750	44.170
23.250	44.120
23.750	44.050
24.250	43.970
24.750	43.860
25.250	43.730
25.750	43.640
26.250	43.600
26.750	43.580
27.250	43.560
27.750	43.540
28.250	43.530
28.750	43.510
29.250	43.510
29.750	43.510
30.250	43.510
30.750	43.490
31.250	43.470
31.750	43.450
32.250	43.420
32.750	43.420
33.250	43.330
33.750	42.350
34.250	42.110
34.750	42.050
35.250	42.020
35.750	42.000
36.250	41.980
36.750	41.960
37.250	41.950
37.750	41.930
38.250	41.920
38.750	41.910
39.250	41.900
39.750	41.890
40.250	41.880
40.750	41.870
41.250	41.870
41.750	41.860
42.250	41.860
42.750	41.850
43.250	41.850
43.750	41.840
44.250	41.840
44.750	41.840
45.250	41.830
45.750	41.830
46.250	41.830
46.750	41.830
47.250	41.830
47.750	41.820
48.000	41.820

Proposed Conditions, Grace Lake

GRACE LAKE
PROPOSED CONDITIONS OUTPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs
SC-0750	Grace Lake	100-096	0.00	52.00	54.00	0.0000	40	72.15	62.47	0.00
SC-0760	Grace Lake	100-096	72.13	56.17	58.00	0.0001	342	72.12	36.70	72.11
SC-0770	Grace Lake	100-096	72.12	58.76	58.00	-0.0004	45492	59.72	49.94	72.11
SC-0780	Grace Lake	100-096	0.00	64.24	67.27	0.0000	114	0.00	0.00	0.00
SC-0790	Grace Lake	100-096	0.00	64.00	67.00	0.0000	7842	0.00	0.00	0.00
SC-0800	Grace Lake	100-096	72.16	58.77	59.00	0.0001	225137	61.55	108.18	72.34
SC-0810	Grace Lake	100-096	72.17	58.80	58.00	0.0024	2038	61.23	84.96	61.24
SC-0830	Grace Lake	100-096	61.22	59.61	59.00	-0.0003	29239	60.94	91.07	61.22
SC-0840	Grace Lake	100-096	61.22	59.62	58.00	0.0002	219543	60.08	189.65	61.14
SC-0850	Grace Lake	100-096	61.23	60.69	59.50	0.0003	123	96.00	46.72	96.00
SC-0860	Grace Lake	100-096	61.24	61.74	61.55	0.0003	155	96.00	46.72	96.00
SC-0870	Grace Lake	100-096	96.00	64.81	66.00	0.0003	154	96.00	46.72	96.00
SC-0875	Grace Lake	100-096	96.00	66.03	64.00	0.0003	439	96.00	53.55	96.00
SC-0880	Grace Lake	100-096	96.00	66.08	64.00	-0.0002	288585	60.17	166.24	96.00
SC-0900	Grace Lake	100-096	96.00	66.73	67.00	0.0029	87002	60.00	10.65	150.07
SC-0910	Grace Lake	100-096	96.00	66.73	66.00	-0.0002	138757	95.93	50.30	96.88
SC-0920	Grace Lake	100-096	96.00	66.73	66.00	-0.0002	1612618	60.08	538.84	95.98
SC-0925	Grace Lake	100-096	60.56	78.79	76.00	0.0002	48853	60.08	63.78	60.56
SC-0930	Grace Lake	100-096	96.00	66.74	69.20	0.0050	12734	60.51	94.79	60.55
SC-0940	Grace Lake	100-096	60.39	69.34	70.00	0.0001	7068	60.49	94.68	60.51
SC-0980	Grace Lake	100-096	60.49	77.24	74.00	0.0007	33711	60.08	137.29	60.49
SC-0985	Grace Lake	100-096	60.49	77.25	73.00	0.0004	138791	60.08	377.30	63.19
SC-0990	Grace Lake	100-096	68.21	72.66	79.00	0.0009	151	68.20	5.76	68.21
SC-0995	Grace Lake	100-096	68.20	86.23	84.00	0.0002	129991	60.08	167.62	68.20
SC-POND300	Grace Lake	100-096	72.17	58.78	59.00	0.0002	180874	60.17	143.67	60.90
SC-POND301	Grace Lake	100-096	72.17	58.78	59.00	0.0001	180870	60.08	102.24	62.32

Grace Lake, Proposed Conditions, April 2017
Summary of Computed Runoff Curve Numbers

Table No. 3.2.5

Sub-Basin Name	FLUCCS Land Use Code	Soil HSG	Runoff CN	Acres	CN x Area	Weighted Runoff CN
SC-0770	120	A	57	16.48	939.36	
SC-0770	120	D	86	0.38	32.68	
SC-0770	190	A	49	0.48	23.52	
SC-0770	190	D	84	0.63	52.92	
SC-0770	400	A	39	0.01	0.39	
SC-0770	814	D	89	0.03	2.67	
			Totals	18.01	1051.54	58.39
SC-0800A	190	A	49	0.25	12.25	
SC-0800A	190	D	84	2.25	189.00	
SC-0800A	400	A	39	0.03	1.17	
SC-0800A	400	D	77	0.10	7.70	
SC-0800A	814	D	80	0.37	29.60	
SC-0800A	530a	D	84	2.23	187.32	
			Totals	5.23	427.04	81.65
SC-Pond300	400	D	80	3.43	274.40	
SC-Pond300	110	A	51	5.59	285.09	
SC-Pond300	530a	Water	100	2.11	211.00	
SC-Pond300	814	A	49	0.88	43.12	
SC-Pond300	814	-	98	17.77	1741.46	
			Totals	29.78	2555.07	85.80
SC-0810	120	A	57	0.69	39.33	
SC-0810	120	D	86	0.07	6.02	
SC-0810	190	D	84	0.01	0.84	
SC-0810	814	A	49	0.29	14.21	
SC-0810	814	D	80	0.16	12.80	
			Totals	1.22	73.20	60.00
SC-Pond301	400	A	49	1.69	82.81	
SC-Pond301	400	D	80	3.41	272.80	
SC-Pond301	814	-	98	13.62	1334.76	
			Totals	18.72	1690.37	90.30

Grace Lake, Proposed Conditions, April 2017
Summary of Computed Runoff Curve Numbers

Table No. 3.2.5

Sub-Basin Name	FLUCCS Land Use Code	Soil HSG	Runoff CN	Acres	CN x Area	Weighted Runoff CN
SC-0830	172	A	69	0.31	21.39	
SC-0830	172	D	89	0.04	3.56	
SC-0830	190	A	49	0.17	8.33	
SC-0830	400	A	39	1.45	56.55	
SC-0830	400	D	77	0.08	6.16	
SC-0830	643	A	98	0.01	0.98	
SC-0830	643	D	98	1.00	98.00	
SC-0830	814	A	49	0.19	9.31	
SC-0830	814	D	80	0.08	6.40	
			Totals	3.33	210.68	63.27
SC-0840	110	A	51	31.31	1596.81	
SC-0840	110	D	84	0.18	15.12	
SC-0840	172	A	69	0.99	68.31	
SC-0840	172	D	89	0.51	45.39	
SC-0840	190	A	49	1.84	90.16	
SC-0840	400	A	39	3.17	123.63	
SC-0840	400	D	77	4.75	365.75	
SC-0840	643	D	98	0.22	21.56	
			Totals	42.97	2326.73	54.15
SC-0880	110	A	51	49.79	2539.29	
SC-0880	110	D	84	2.2	184.80	
SC-0880	140	A	89	2.37	210.93	
SC-0880	172	A	69	3.54	244.26	
SC-0880	190	A	49	2.78	136.22	
SC-0880	190	D	84	1.05	88.20	
SC-0880	400	A	39	0.9	35.10	
SC-0880	814	A	49	1.90	93.10	
SC-0880	814	D	80	0.42	33.60	
			Totals	64.95	3565.50	54.90

Grace Lake, Proposed Conditions, April 2017
Summary of Computed Runoff Curve Numbers

Table No. 3.2.5

Sub-Basin Name	FLUCCS Land Use Code	Soil HSG	Runoff CN	Acres	CN x Area	Weighted Runoff CN
SC-0900A	190	A	49	1.29	63.21	
SC-0900A	814	D	80	0.71	56.80	
			Totals	2.00	120.01	60.01
SC-0910	120	A	57	1.98	112.86	
SC-0910	120	D	86	0.01	0.86	
SC-0910	400	A	39	0.11	4.29	
SC-0910	400	D	77	1.1	84.70	
SC-0910	640	A	98	0.95	93.10	
SC-0910	640	D	98	0.58	56.84	
SC-0910	814	A	49	0.12	5.88	
SC-0910	814	D	80	0.14	11.20	
			Totals	4.99	369.73	74.09
SC-0920	120	A	57	50.59	2883.63	
SC-0920	120	D	86	0.65	55.90	
SC-0920	170	A	69	0.36	24.84	
SC-0920	190	A	49	0.43	21.07	
SC-0920	190	D	84	0.08	6.72	
SC-0920	400	A	39	4.69	182.91	
SC-0920	400	D	77	1.66	127.82	
SC-0920	520	A	100	0.54	54.00	
SC-0920	520	D	100	21.51	2151.00	
SC-0920	640	A	98	1.12	109.76	
SC-0920	640	D	98	3.54	346.92	
SC-0920	814 - EE W	-	49	0.12	5.88	
SC-0920	814 - EE W	-	98	0.88	86.24	
			Totals	86.17	6056.69	70.29

Grace Lake, Proposed Conditions, April 2017
Summary of Computed Runoff Curve Numbers

Table No. 3.2.5

Sub-Basin Name	FLUCCS Land Use Code	Soil HSG	Runoff CN	Acres	CN x Area	Weighted Runoff CN
SC-0925	120	A	57	13.12	747.84	
SC-0925	170	A	69	0.12	8.28	
			Totals	13.24	756.12	57.11
SC-0980A	814	A	49	1.11	54.39	
SC-0980A	814	-	98	0.76	74.48	
			Totals	1.87	128.87	68.91
SC-0980B	120	A	57	5.83	332.31	
			Totals	5.83	332.31	57.00
SC-0980C	120	A	57	12.31	701.67	
			Totals	12.31	701.67	57.00
SC-0985	120	A	57	45.09	2570.13	
			Totals	45.09	2570.13	57.00
SC-0995	120	A	57	17.74	1011.41	
SC-0995	170	A	69	16.01	1104.97	
SC-0995	530b	A	92	2.32	213.81	
			Totals	36.08	2330.18	64.58

Total Project Area (acres) =	391.79
I-4 Pavement (acres)=	33.03
Additional Area (acres)=	0.73
New Impervious Area (acres)=	17.09

GRACE LAKE
PROPOSED CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

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==========================================================================================
==== Basins ==============================================================================
==========================================================================================

         Name: SC-0770                  Node: SC-0770                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 14.00
            Area(ac): 18.010                     Time Shift(hrs): 0.00
         Curve Number: 58.00               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------
         Name: SC-0800A                 Node: SC-0800                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 13.00
            Area(ac): 5.230                      Time Shift(hrs): 0.00
         Curve Number: 82.00               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------
         Name: SC-0810                  Node: SC-0810                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 11.00
            Area(ac): 1.220                      Time Shift(hrs): 0.00
         Curve Number: 60.00               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------
         Name: SC-0830                  Node: SC-0830                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 20.00
            Area(ac): 3.330                      Time Shift(hrs): 0.00
         Curve Number: 63.00               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------
         Name: SC-0840                  Node: SC-0840                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 21.00
            Area(ac): 42.970                     Time Shift(hrs): 0.00
         Curve Number: 54.00               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------
         Name: SC-0880                  Node: SC-0880                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 27.00
            Area(ac): 64.950                     Time Shift(hrs): 0.00
         Curve Number: 55.00               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------
         Name: SC-0900A                 Node: SC-0900                Status: Onsite
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                    Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
               Area(ac): 2.000                   Time Shift(hrs): 0.00
           Curve Number: 60.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00

NEW FPC SITE

-----------------------------------------------------------------------------------------------
         Name: SC-0910                  Node: SC-0910                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                    Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 11.00
               Area(ac): 4.990                   Time Shift(hrs): 0.00
           Curve Number: 74.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


-----------------------------------------------------------------------------------------------
         Name: SC-0920                  Node: SC-0920                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 22.00
               Area(ac): 86.170                  Time Shift(hrs): 0.00
           Curve Number: 70.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


-----------------------------------------------------------------------------------------------
         Name: SC-0925                  Node: SC-0925                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 15.00
               Area(ac): 13.240                  Time Shift(hrs): 0.00
           Curve Number: 57.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


-----------------------------------------------------------------------------------------------
         Name: SC-0980A                 Node: SC-0980                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 29.00
               Area(ac): 1.870                   Time Shift(hrs): 0.00
           Curve Number: 69.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


-----------------------------------------------------------------------------------------------
         Name: SC-0980B                 Node: SC-0980                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 15.00
               Area(ac): 5.830                   Time Shift(hrs): 0.00
           Curve Number: 57.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


-----------------------------------------------------------------------------------------------
         Name: SC-0980C                 Node: SC-0980                Status: Onsite
        Group: Grace Lake               Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 20.00
               Area(ac): 12.310                  Time Shift(hrs): 0.00
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
           Curve Number: 57.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00



-----------------------------------------------------------------------------------------------
         Name: SC-0985                 Node: SC-0985                Status: Onsite
        Group: Grace Lake              Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 17.00
               Area(ac): 45.090                 Time Shift(hrs): 0.00
           Curve Number: 57.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00



-----------------------------------------------------------------------------------------------
         Name: SC-0995                 Node: SC-0995                Status: Onsite
        Group: Grace Lake              Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 23.00
               Area(ac): 36.080                 Time Shift(hrs): 0.00
           Curve Number: 65.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00



-----------------------------------------------------------------------------------------------
         Name: SC-POND300              Node: SC-POND300             Status: Onsite
        Group: Grace Lake              Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 31.00
               Area(ac): 29.780                 Time Shift(hrs): 0.00
           Curve Number: 85.80             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00

POND 300

-----------------------------------------------------------------------------------------------
         Name: SC-POND301              Node: SC-POND301             Status: Onsite
        Group: Grace Lake              Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 25.00
               Area(ac): 18.720                 Time Shift(hrs): 0.00
           Curve Number: 90.30             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00

POND 301

===============================================================================================
==== Nodes ====================================================================================
===============================================================================================

      Name: SC-0750            Base Flow(cfs): 0.000         Init Stage(ft): 52.000
     Group: Grace Lake                                       Warn Stage(ft): 54.000
      Type: Time/Stage

ASSUMED TAILWATER AT THE CROWN OF THE OUTFALL PIPE THAT DISCHARGES TO THE BOLLING FARMS SUBDIVISION WETLAND AND POND.
SURVEYED PIPE INVERT ELEVATION IS 48.96 FT, NAVD (SSMC SURVEY DATED DEC. 2007).


      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          52.000
         180.00          52.000

-----------------------------------------------------------------------------------------------
      Name: SC-0760            Base Flow(cfs): 0.000         Init Stage(ft): 53.080
     Group: Grace Lake                                       Warn Stage(ft): 58.000
      Type: Stage/Area

CURB INLET STRUCTURE LOCATED ALONG THE NORTH RIDGE LAKE CIRCLE WEST RIGHT-OF-WAY.
PARAMETERS WERE OBTAINED FROM SURVEY DATA BY SSMC (DATED DEC. 2007 AND JULY 2013).

      Stage(ft)        Area(ac)
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** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

53.080	0.0010
58.780	0.0010

Name: SC-0770 Base Flow(cfs): 0.000 Init Stage(ft): 57.000
Group: Grace Lake Warn Stage(ft): 58.000
Type: Stage/Area

NORTHRIDGE SWALE LOCATED SOUTH OF THE NORTHRIDGE DEPRESSIONAL AREA

Stage(ft)	Area(ac)
55.900	0.0100
57.000	0.4100
58.000	0.7700

Name: SC-0780 Base Flow(cfs): 0.000 Init Stage(ft): 64.240
Group: Grace Lake Warn Stage(ft): 67.270
Type: Stage/Area

DIVERSION STRUCTURE. DATA OBTAINED FROM THE NORTHRIDGE SUBDIVISION AS-BUILT PLANS (DATED 05/19/1985). REFER TO STRUCTURE C-1.

Stage(ft)	Area(ac)
64.240	0.0010
67.570	0.0010

Name: SC-0790 Base Flow(cfs): 0.000 Init Stage(ft): 64.000
Group: Grace Lake Warn Stage(ft): 67.000
Type: Stage/Area

SMALL DRY RETENTION POND LOCATED NORTH OF GRACE LAKE, SOUTH OF NORTH RIDGE DR., EAST OF GRACE VIEW CT., AND WEST OF NORTH RIDGE
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.

Stage(ft)	Area(ac)
64.000	0.1800
65.000	0.2300
66.000	0.2900
67.000	0.3900

Name: SC-0800 Base Flow(cfs): 0.000 Init Stage(ft): 47.000
Group: Grace Lake Warn Stage(ft): 59.000
Type: Stage/Area

NORTHRIDE DEPRESSIONAL AREA

Stage(ft)	Area(ac)
47.000	0.9700
48.000	1.9200
49.000	2.3000
50.000	2.6300
51.000	2.9200
52.000	3.1800
53.000	3.4500
54.000	3.7300
55.000	4.0500
56.000	4.3500
57.000	4.6800
58.000	5.0600
59.000	5.2000

Name: SC-0810 Base Flow(cfs): 0.000 Init Stage(ft): 52.330
Group: Grace Lake Warn Stage(ft): 58.000
Type: Stage/Area

STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.

Stage(ft)	Area(ac)
52.330	0.0010
55.000	0.0030
56.000	0.0060
57.000	0.0140
58.000	0.0300
59.000	0.0500

Name: SC-0830 Base Flow(cfs): 0.000 Init Stage(ft): 52.890

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Group: Grace Lake Warn Stage(ft): 59.000
Type: Stage/Area

DEPRESSIONAL AREA IMMEDIATELY WEST (UPSTREAM SIDE) OF THE I-4 CULVERT CROSSING (NORTH PIPE)

Stage(ft)	Area(ac)
51.400	0.0010
53.000	0.0800
54.000	0.2300
55.000	0.4000
56.000	0.4900
57.000	0.5500
58.000	0.6000
59.000	0.6400
60.000	0.6900

Name: SC-0840 Base Flow(cfs): 0.000 Init Stage(ft): 50.000
Group: Grace Lake Warn Stage(ft): 58.000
Type: Stage/Area

DEPRESSIONAL AREA NORTH OF DIXON ROAD AND EAST OF SUNSHINE TREE BOULEVARD.
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHI MAP.

Stage(ft)	Area(ac)
47.000	0.0200
48.000	0.0500
49.000	0.0900
50.000	0.1200
51.000	0.3400
52.000	0.5400
53.000	0.7700
54.000	1.1800
55.000	1.8600
56.000	2.6300
57.000	3.2900
58.000	3.9900
59.000	4.5400
60.000	5.3500

Name: SC-0850 Base Flow(cfs): 0.000 Init Stage(ft): 56.690
Group: Grace Lake Warn Stage(ft): 59.500
Type: Stage/Area

Stage(ft)	Area(ac)
56.650	0.0010
59.500	0.0010

Name: SC-0860 Base Flow(cfs): 0.000 Init Stage(ft): 56.920
Group: Grace Lake Warn Stage(ft): 61.550
Type: Stage/Area

DITCH BOTTOM INLET LOCATED AT THE SOUTHEAST CORNER OF THE INTERSECTION OF DIXON RD. AND SUNSHINE TREE BLVD.

Stage(ft)	Area(ac)
56.920	0.0010
62.650	0.0010

Name: SC-0870 Base Flow(cfs): 0.000 Init Stage(ft): 59.620
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.
CURB INLET LOCATED ALONG THE SUNSHINE TREE BLVD EAST RIGHT-OF-WAY.

Stage(ft)	Area(ac)
59.620	0.0010
67.000	0.0010

Name: SC-0875 Base Flow(cfs): 0.000 Init Stage(ft): 59.710
Group: Grace Lake Warn Stage(ft): 64.000
Type: Stage/Area

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Stage(ft)	Area(ac)
59.710	0.0100
64.000	0.0100

Name: SC-0880 Base Flow(cfs): 0.000 Init Stage(ft): 62.600
Group: Grace Lake Warn Stage(ft): 64.000
Type: Stage/Area

DEPRESSIONAL AREA SOUTH OF THE ONE CHURCH (SOCCER FIELDS)
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.

Stage(ft)	Area(ac)
57.100	0.0010
58.000	0.0020
59.000	0.0110
60.000	0.0400
61.000	0.1700
62.000	1.3100
63.000	2.7800
64.000	3.6800
65.000	5.1500
66.000	6.5300
67.000	7.7500

Name: SC-0900 Base Flow(cfs): 0.000 Init Stage(ft): 61.000
Group: Grace Lake Warn Stage(ft): 67.000
Type: Stage/Area

NEW FPC SITE

Stage(ft)	Area(ac)
61.000	1.8100
62.000	1.8900
63.000	1.9500
64.000	1.9700
65.000	1.9800
66.000	1.9900
67.000	2.0000

Name: SC-0910 Base Flow(cfs): 0.000 Init Stage(ft): 62.600
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

DEPRESSIONAL AREA IMMEDIATELY EAST OF THE SOUTH I-4 CROSS CULVERT, ADJACENT TO GRACE LAKE.
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP.

Stage(ft)	Area(ac)
55.000	0.1700
56.000	0.3000
57.000	0.4500
58.000	0.6600
59.000	0.9600
60.000	1.4100
61.000	1.7800
62.000	2.1200
63.000	2.4800
64.000	2.6900
65.000	2.9200
66.000	3.0900
67.000	3.2200

Name: SC-0920 Base Flow(cfs): 0.000 Init Stage(ft): 62.600
Group: Grace Lake Warn Stage(ft): 66.000
Type: Stage/Area

GRACE LAKE.
STAGE-AREA RELATIONSHIP BETWEEN ELEVATIONS 33-54 FT, NAVD, WAS OBTAINED FROM THE SURVEY PREPARED BY SSMC, DATED DEC. 2007.
STAGE-AREA RELATIONSHIP BETWEEN ELEVATIONS 55-67, NAVD, IS BASED ON THE 1-FT TOPOGRAPHY.
INITIAL STAGE IS BASED ON THE GRACE LAKE "NORMAL" HYDROPERIOD ELEVATION BETWEEN ELEVATION 58-63 FT, NAVD
(REFER TO ENGINEERING REPORT FROM DEVO ENGINEERING).

Stage(ft)	Area(ac)

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

33.000	0.0000
34.000	0.0005
35.000	0.0014
36.000	0.0028
37.000	0.0053
38.000	0.0140
39.000	0.0450
40.000	0.0980
41.000	0.1830
42.000	0.3010
43.000	0.4270
44.000	0.5320
45.000	0.6430
46.000	0.7540
47.000	0.8640
48.000	1.1900
49.000	3.6300
50.000	5.8800
51.000	8.1300
52.000	10.5200
53.000	12.8800
54.000	14.9400
55.000	16.6400
56.000	18.3800
57.000	20.0700
58.000	22.0500
59.000	24.0900
60.000	26.0500
61.000	27.8500
62.000	29.5900
63.000	31.4200
64.000	33.1400
65.000	34.4100
66.000	35.7500
67.000	37.3700

Name: SC-0925 Base Flow(cfs): 0.000 Init Stage(ft): 68.000
Group: Grace Lake Warn Stage(ft): 76.000
Type: Stage/Area

SMALL DRY RETENTION POND LOCATED ALONG NORTH RIDGE LAKE CIRCLE, SOUTH OF NORTH RIDGE DR.
STAGE-AREA RELATIONSHIP WAS OBTAINED FROM THE 1-FT TOPOGRAPHIC MAPS.

Stage(ft)	Area(ac)
68.000	0.0300
69.000	0.0800
70.000	0.1000
71.000	0.1300
72.000	0.1600
73.000	0.1800
74.000	0.2200
75.000	0.2500
76.000	0.2900
77.000	0.5100
78.000	0.8700
79.000	1.1900

Name: SC-0930 Base Flow(cfs): 0.000 Init Stage(ft): 61.000
Group: Grace Lake Warn Stage(ft): 69.200
Type: Stage/Area

NODE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE
LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO NODE GHOST 3.

Stage(ft)	Area(ac)
61.000	0.0100
69.200	0.0100

Name: SC-0940 Base Flow(cfs): 0.000 Init Stage(ft): 66.500
Group: Grace Lake Warn Stage(ft): 70.000
Type: Stage/Area

Stage(ft)	Area(ac)
66.500	0.0100
70.000	0.0100

GRACE LAKE
PROPOSED CONDITIONS INPUT
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** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
-----------------------------------------------------------------------------------------
      Name: SC-0980            Base Flow(cfs): 0.000         Init Stage(ft): 68.100
     Group: Grace Lake                                       Warn Stage(ft): 74.000
      Type: Stage/Area
```

STAGE-AREA OBTAINED FROM THE 1-FT TOPO MAPS
INITIAL STAGE IS BASED ON THE DOWNSTREAM PIPE INVERT ELEVATION

Stage(ft)	Area(ac)
67.000	0.0100
70.000	0.0150
71.000	0.0200
72.000	0.1000
73.000	0.1800
74.000	0.3200

```
-----------------------------------------------------------------------------------------
      Name: SC-0985            Base Flow(cfs): 0.000         Init Stage(ft): 68.100
     Group: Grace Lake                                       Warn Stage(ft): 73.000
      Type: Stage/Area
```

PENELOPE POND (POND LOCATED EAST OF PENELOPE DR AND NORTH OF HICKORY TREE RD)
STAGE-AREA RELATIONSHIP OBTAINED FROM THE 1-FT TOPOGRAPHIC MAP
INITIAL STAGE WAS ESTIMATED BASED ON THE DOWNSTREAM PIPE INVERT JUST SOUTH OF EE WILLIAMSON RD

Stage(ft)	Area(ac)
66.000	0.1100
71.000	0.2200
72.000	0.3400
73.000	0.5900
74.000	1.2000

```
-----------------------------------------------------------------------------------------
      Name: SC-0990            Base Flow(cfs): 0.000         Init Stage(ft): 71.000
     Group: Grace Lake                                       Warn Stage(ft): 79.000
      Type: Stage/Area
```

EMERGENCY OVERFLOW MANHOLE

Stage(ft)	Area(ac)
71.000	0.0010
79.000	0.0010

```
-----------------------------------------------------------------------------------------
      Name: SC-0995            Base Flow(cfs): 0.000         Init Stage(ft): 77.500
     Group: Grace Lake                                       Warn Stage(ft): 84.000
      Type: Stage/Area
```

WET DETENTION POND THAT SERVES THE WOODLAND ELEMENTARY SCHOOL, THE BELLA TUSCANY SUBDIVISION AND A PORTION OF EE WILLIAMSON ROAD
POND WAS EXPANDED TO PROVIDE WATER QUALITY TREATMENT AND ATTENUATION FROM THE BELLA TUSCANY SUBDIVISION (REFER TO THE SJRMD PERM
STAGE-AREA RELATIONSHIP AND INITIAL STAGE WAS OBTAINED FROM THE PERMITTED PARAMETERS. ELEVATIONS SHOWN HEREIN WERE CONVERTED TO
SINCE THE ORIGINAL BELLA TUSCANY SUBDIVISION PLANS ARE REFERENCED TO THE NGVD VERTICAL DATUM (CONVERSION USED: NAVD ELEV. = NGV

Stage(ft)	Area(ac)
77.500	1.8600
78.000	1.9300
79.000	2.0000
80.000	2.0800
81.000	2.2200
82.000	2.3600
83.000	2.5000
84.000	2.6500
85.000	2.8000

```
-----------------------------------------------------------------------------------------
      Name: SC-POND300         Base Flow(cfs): 0.000         Init Stage(ft): 49.000
     Group: Grace Lake                                       Warn Stage(ft): 59.000
      Type: Stage/Area
```

NORTHRIDE DEPRESSIONAL AREA

Stage(ft)	Area(ac)
49.000	2.1100
57.000	3.1100
57.010	3.5700
58.000	3.8800
59.000	4.2300

```
-----------------------------------------------------------------------------------------
```

GRACE LAKE
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** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Name: SC-POND301 Base Flow(cfs): 0.000 Init Stage(ft): 52.000
Group: Grace Lake Warn Stage(ft): 59.000
Type: Stage/Area

POND 301

Stage(ft)	Area(ac)
52.000	2.8300
57.000	3.5300
57.010	4.0200
58.000	4.0900
59.000	4.1700

==========
==== Cross Sections ==========
==========

Name: SC-0810_W1 Group: Grace Lake
Encroachment: No

OVERLAND OVERTOPPING CROSS SECTION FROM I-4 CULVERT CROSSING (NORTH PIPE) TO THE NORTHRIDGE DEPRESSIONAL AREA

Station(ft)	Elevation(ft)	Manning's N
0.000	58.400	0.000000
11.900	57.800	0.000000
31.100	57.200	0.000000
43.400	57.800	0.000000
63.200	58.700	0.000000

Name: SC-0810_W2 Group: Grace Lake
Encroachment: No

OVERLAND OVERTOPPING CROSS SECTION FROM I-4 CULVERT CROSSING (NORTH PIPE) TO THE NORTHRIDGE SWALE

Station(ft)	Elevation(ft)	Manning's N
0.000	59.300	0.000000
30.700	59.000	0.000000
68.400	58.500	0.000000
106.100	58.700	0.000000
133.700	59.300	0.000000

Name: SC-0840_W Group: Grace Lake
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	60.000	0.000000
12.000	59.000	0.000000
18.700	58.000	0.000000
25.300	57.000	0.000000
32.000	56.000	0.000000
51.900	55.000	0.000000
103.800	54.000	0.000000
128.000	54.000	0.000000
149.600	54.000	0.000000
194.000	55.000	0.000000
215.100	56.000	0.000000
230.500	57.000	0.000000
241.100	58.000	0.000000
251.500	59.000	0.000000
262.500	60.000	0.000000

Name: SC-0875_W Group: Grace Lake
Encroachment: No

CROSS SECTION DATA ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

Station(ft)	Elevation(ft)	Manning's N
0.000	67.000	0.000000
36.600	66.000	0.000000
44.200	65.500	0.000000
51.800	66.000	0.000000
78.700	67.000	0.000000

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Name: SC-0880_W Group: Grace Lake
Encroachment: No

CROSS SECTION DATA OBTAINED FROM SSMC SURVEY, DATED JULY 2013.

Station(ft)	Elevation(ft)	Manning's N
0.000	63.300	0.000000
9.200	62.600	0.000000
24.700	63.400	0.000000

Name: SC-0920_W1 Group: Grace Lake
Encroachment: No

CROSS SECTION DATA ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

Station(ft)	Elevation(ft)	Manning's N
0.000	67.000	0.000000
20.300	66.000	0.000000
45.300	65.000	0.000000
53.000	64.000	0.000000
63.600	63.000	0.000000
80.700	62.000	0.000000
93.800	61.000	0.000000
106.600	60.000	0.000000
139.200	59.500	0.000000
168.200	60.000	0.000000
194.200	61.000	0.000000
206.100	62.000	0.000000
224.900	63.000	0.000000
240.600	64.000	0.000000
249.600	65.000	0.000000
258.000	66.000	0.000000
277.100	67.000	0.000000

Name: SC-0920_W3 Group: Grace Lake
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	66.900	0.000000
24.000	66.800	0.000000
47.000	67.100	0.000000

Name: SC-0930_DS Group: Grace Lake
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	64.000	0.011000
28.100	63.000	0.011000
28.900	62.000	0.011000
29.500	61.000	0.011000
32.000	60.500	0.011000
38.000	60.500	0.011000
41.400	61.000	0.011000
43.200	62.000	0.011000
44.800	63.000	0.011000
77.900	64.000	0.011000

Name: SC-0940_DS Group: Grace Lake
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	69.200	0.100000
0.100	64.500	0.100000
2.100	64.500	0.100000
12.600	61.000	0.100000
17.600	61.000	0.100000
27.800	64.400	0.100000
40.800	66.000	0.100000

GRACE LAKE
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** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
-----------------------------------------------------------------------
              Name: SC-0980_DS                   Group: Grace Lake
      Encroachment: No


    Station(ft)   Elevation(ft)     Manning's N
--------------- --------------- ---------------
          0.000          70.050        0.100000
          2.000          70.050        0.100000
         12.650          66.500        0.100000
         17.650          66.500        0.100000
         32.650          71.500        0.100000

==========================================================================================
==== Pipes ===============================================================================
==========================================================================================

         Name: SC-0760-P           From Node: SC-0760            Length(ft): 534.00
        Group: Grace Lake            To Node: SC-0750                 Count: 1
                                                            Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 36.00          36.00                       Entrance Loss Coef: 0.00
     Rise(in): 36.00          36.00                           Exit Loss Coef: 1.00
   Invert(ft): 53.080         48.960                          Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                           Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY DATA BY SSMC, DATED DEC. 2007.

-------------------------------------------------------------------------------------------------
         Name: SC-0790-P           From Node: SC-0790            Length(ft): 30.00
        Group: Grace Lake            To Node: SC-0780                 Count: 1
                                                            Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 18.00          18.00                       Entrance Loss Coef: 0.50
     Rise(in): 18.00          18.00                           Exit Loss Coef: 0.00
   Invert(ft): 64.050         64.240                          Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                           Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PIPE DATA OBTAINED FROM THE NORTHRIDGE SUBDIVISION AS-BUILTS (DATED 05/19/1985).
ORIGINAL PLANS WERE REFERENCED TO THE NGVD VERTICAL DATUM AND HAD TO BE CONVERTED TO THE NAVD VERTICAL DATUM.
ELEVATIONS SHOWN CORRESPOND TO THE NAVD DATUM.

-------------------------------------------------------------------------------------------------
         Name: SC-0830-P           From Node: SC-0830            Length(ft): 273.00
        Group: Grace Lake            To Node: SC-0810                 Count: 1
                                                            Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                  Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 54.00          54.00                       Entrance Loss Coef: 0.50
     Rise(in): 54.00          54.00                           Exit Loss Coef: 0.00
   Invert(ft): 51.400         52.330                          Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                      Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                           Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Circular Concrete: Square edge w/ headwall

CULVERT CROSSING I-4 (NORTH CROSSING)
UPSTREAM (WEST END) INVERT DATA WAS OBTAINED FROM SURVEY PERFORMED BY SSMC, DATED DEC. 2007.
DOWNSTREAM (EAST END) INVERT ELEVATION WAS REVISED BASED ON SURVEY PERFORMED BY SSMC, DATED JULY 2013.

```
-----------------------------------------------------------------------------------------------
         Name: SC-0850-P           From Node: SC-0850            Length(ft): 66.00
        Group: Grace Lake            To Node: SC-0840                 Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 36.00          36.00                     Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                         Exit Loss Coef: 0.00
   Invert(ft): 56.690         56.270                        Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.

```
-----------------------------------------------------------------------------------------------
         Name: SC-0860-P           From Node: SC-0860            Length(ft): 62.00
        Group: Grace Lake            To Node: SC-0850                 Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 36.00          36.00                     Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                         Exit Loss Coef: 0.00
   Invert(ft): 56.920         56.650                        Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.

```
-----------------------------------------------------------------------------------------------
         Name: SC-0870-P           From Node: SC-0870            Length(ft): 499.00
        Group: Grace Lake            To Node: SC-0860                 Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 36.00          36.00                     Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                         Exit Loss Coef: 0.00
   Invert(ft): 59.620         57.050                        Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.

```
-----------------------------------------------------------------------------------------------
         Name: SC-0875-P           From Node: SC-0875            Length(ft): 47.00
        Group: Grace Lake            To Node: SC-0870                 Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 36.00          36.00                     Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                         Exit Loss Coef: 0.00
   Invert(ft): 59.710         59.650                        Bend Loss Coef: 0.00
```

GRACE LAKE
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** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                      Stabilizer Option: None



Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PARAMETERS OBTAINED FROM SURVEY FROM SSMC, DATED JULY 2013.

-----------------------------------------------------------------------------------------------------
         Name: SC-0910-P           From Node: SC-0910            Length(ft): 272.00
        Group: Grace Lake            To Node: SC-0880                 Count: 1
                                                              Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                    Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                  Flow: Both
     Span(in): 48.00          48.00                         Entrance Loss Coef: 0.50
     Rise(in): 48.00          48.00                             Exit Loss Coef: 0.00
   Invert(ft): 57.420         57.100                            Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                      Stabilizer Option: None



Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

CULVERT CROSSING I-4 (SOUTH CROSSING)
INVERT DATA WAS OBTAINED FROM SURVEY PERFORMED BY SSMC, DATED DEC. 2007.


-----------------------------------------------------------------------------------------------------
         Name: SC-0980-P2          From Node: SC-0980            Length(ft): 181.00
        Group: Grace Lake            To Node: SC-0940                 Count: 1
                                                              Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                    Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                  Flow: Both
     Span(in): 36.00          36.00                         Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                             Exit Loss Coef: 0.00
   Invert(ft): 68.100         66.500                            Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                      Stabilizer Option: None



Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

PIPE DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE
LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER HDR PIPE LINK EEWilliams_24.
SURVEY DATA PROVIDED BY SSMC (DATED DEC. 2007)

-----------------------------------------------------------------------------------------------------
         Name: SC-0985-P           From Node: SC-0985            Length(ft): 230.00
        Group: Grace Lake            To Node: SC-0980                 Count: 1
                                                              Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                    Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                  Flow: Both
     Span(in): 42.00          42.00                         Entrance Loss Coef: 0.50
     Rise(in): 42.00          42.00                             Exit Loss Coef: 0.00
   Invert(ft): 67.000         67.000                            Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                      Stabilizer Option: None



Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall
```

GRACE LAKE
PROPOSED CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

PIPE SIZE AND INVERT DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR, IN
SUPPORT OF THE GRACE LAKE SINKHOLE ANALYSIS REPORT (DATED APRIL 2008).
IT APPEARS THAT THIS PIPE SEGMENT WAS NOT SURVEYED
PIPE LENGTH WAS ADJUSTED TO MATCH FIELD OBSERVATIONS

```
-----------------------------------------------------------------------------------------------
         Name: SC-0990-P           From Node: SC-0990            Length(ft): 219.00
        Group: Grace Lake            To Node: SC-0920                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                   Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                  Flow: Both
     Span(in): 15.00          15.00                        Entrance Loss Coef: 0.50
     Rise(in): 15.00          15.00                            Exit Loss Coef: 0.00
   Invert(ft): 71.000         52.000                           Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                       Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                            Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

EMERGENCY OVERFLOW PIPE FROM THE WOODLAND ELEMENTARY POND TO GRACE LAKE (FINAL PIPE SEGMENT).
PARAMETERS WERE OBTAINED FROM PERMITTED PLANS (REFER TO THE SJRWMD PERMIT NO. 49356-3, DATED 11/21/2007).
NOTE THAT ORIGINAL PLANS WERE REFERENCED TO THE NGVD DATUM. ELEVATIONS SHOWN HEREIN WERE CONVERTED TO THE NAVD VERTICAL DATUM (

```
-----------------------------------------------------------------------------------------------
         Name: SC-1000-P           From Node: SC-1000            Length(ft): 112.00
        Group: Grace Lake            To Node: SC-0985                 Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                   Solution Algorithm: Most Restrictive
     Geometry: Arch           Arch                                      Flow: Both
     Span(in): 95.00          95.00                        Entrance Loss Coef: 0.50
     Rise(in): 67.00          67.00                            Exit Loss Coef: 0.00
   Invert(ft): 68.620         68.070                           Bend Loss Coef: 0.00
  Manning's N: 0.024000       0.024000                       Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                            Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Pipe Arch 18" Corner Radius CM: 90° headwall

Downstream FHWA Inlet Edge Description:
Pipe Arch 18" Corner Radius CM: 90° headwall

CULVERT CROSSING HICKORY DITCH ROAD
INVERT DATA OBTAINED FROM THE CITY OF LONGWOOD STORMWATER MASTERPLAN
PIPE SIZE WAS ADJUSTED TO REFLECT THE NEAREST STANDARD SIZE FOR AN ARCH PIPE BASED ON SURVEYED DIMENSIONS

```
==============================================================================
==== Channels ================================================================
==============================================================================

          Name: SC-0930-C           From Node: SC-0930            Length(ft): 106.00
         Group: Grace Lake            To Node: SC-0920                 Count: 1

                UPSTREAM       DOWNSTREAM                   Friction Equation: Automatic
      Geometry: Irregular      Irregular                   Solution Algorithm: Automatic
    Invert(ft): 61.000         60.500                                   Flow: Both
 TClpInitZ(ft): 9999.000       9999.000                      Contraction Coef: 0.100
   Manning's N:                                                  Expansion Coef: 0.300
  Top Clip(ft):                                              Entrance Loss Coef: 0.000
  Bot Clip(ft):                                                  Exit Loss Coef: 0.000
     Main XSec: SC-0940_DS     SC-0930_DS                     Outlet Ctrl Spec: Use dc or tw
  AuxElev1(ft): 0.000          0.000                           Inlet Ctrl Spec: Use dc
     Aux XSec1:                                               Stabilizer Option: None
  AuxElev2(ft): 0.000          0.000
     Aux XSec2:
 Top Width(ft):
     Depth(ft):
 Bot Width(ft):
  LtSdSlp(h/v):
  RtSdSlp(h/v):
```

CHANNEL DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE
LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO CHANNEL LINK I-4 Channel 3 AND
CROSS SECTIONS I-4 Chan2DS3US (UPSTREAM) AND I-4 Chan3DS (DOWNSTREAM)

GRACE LAKE
PROPOSED CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
-----------------------------------------------------------------------------------------------
          Name: SC-0940-C           From Node: SC-0940           Length(ft): 550.00
         Group: Grace Lake            To Node: SC-0930                Count: 1

                UPSTREAM       DOWNSTREAM                  Friction Equation: Automatic
      Geometry: Irregular      Irregular                  Solution Algorithm: Automatic
    Invert(ft): 66.500         61.000                                Flow: Both
 TClpInitZ(ft): 9999.000       9999.000                     Contraction Coef: 0.100
   Manning's N:                                                 Expansion Coef: 0.300
  Top Clip(ft):                                             Entrance Loss Coef: 0.000
  Bot Clip(ft):                                                 Exit Loss Coef: 0.000
     Main XSec: SC-0980_DS     SC-0940_DS                    Outlet Ctrl Spec: Use dc or tw
  AuxElev1(ft): 0.000          0.000                          Inlet Ctrl Spec: Use dc
     Aux XSec1:                                             Stabilizer Option: None
  AuxElev2(ft): 0.000          0.000
     Aux XSec2:
 Top Width(ft):
     Depth(ft):
 Bot Width(ft):
  LtSdSlp(h/v):
  RtSdSlp(h/v):
```

CHANNEL DATA WAS OBTAINED FROM THE PROPOSED CONDITIONS ICPR MODEL PREPARED BY HDR IN SUPPORT OF THE LAKE GRACE SINKHOLE REPAIR ANALYSIS REPORT (DATED APRIL 2008). REFER TO CHANNEL LINK I-4 Channel 2 AND CROSS SECTIONS I-4 Chan1DS2US (UPSTREAM) AND I-4 Chan2DS3US (DOWNSTREAM)

```
===================================================================================
==== Drop Structures ==============================================================
===================================================================================

         Name: S-O300              From Node: SC-POND300         Length(ft): 351.00
        Group: Grace Lake            To Node: SC-0800                Count: 1

               UPSTREAM       DOWNSTREAM                  Friction Equation: Automatic
     Geometry: Circular       Circular                   Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                 Flow: Both
     Rise(in): 18.00          18.00                      Entrance Loss Coef: 0.500
   Invert(ft): 49.000         48.700                         Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                           Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

POND 300 OUTFALL

*** Weir 1 of 2 for Drop Structure S-O300 ***
                                                                                   TABLE
                 Count: 1                       Bottom Clip(in): 0.000
                  Type: Vertical: Mavis            Top Clip(in): 0.000
                  Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 2.00                        Invert(ft): 50.670
               Rise(in): 63.96                  Control Elev(ft): 50.670

*** Weir 2 of 2 for Drop Structure S-O300 ***
                                                                                   TABLE
                 Count: 1                       Bottom Clip(in): 0.000
                  Type: Vertical: Mavis            Top Clip(in): 0.000
                  Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Circular              Orifice Disc Coef: 0.600

               Span(in): 5.25                        Invert(ft): 49.000
               Rise(in): 5.25                   Control Elev(ft): 49.000


-----------------------------------------------------------------------------------------------
         Name: S-O301              From Node: SC-POND301         Length(ft): 380.00
        Group: Grace Lake            To Node: SC-0810                Count: 1

               UPSTREAM       DOWNSTREAM                  Friction Equation: Automatic
     Geometry: Circular       Circular                   Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                 Flow: Both
     Rise(in): 18.00          18.00                      Entrance Loss Coef: 0.500
   Invert(ft): 53.900         53.680                         Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                           Solution Incs: 10
```

GRACE LAKE
PROPOSED CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

POND 300 OUTFALL

*** Weir 1 of 1 for Drop Structure S-O301 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 49.00                       Invert(ft): 55.980
               Rise(in): 37.00                 Control Elev(ft): 55.980


-------------------------------------------------------------------------------------------------
         Name: SC-0770-D1          From Node: SC-0770            Length(ft): 17.00
        Group: Grace Lake            To Node: SC-0760                 Count: 1

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 36.00          36.00                                  Flow: Both
     Rise(in): 36.00          36.00                    Entrance Loss Coef: 0.500
   Invert(ft): 53.250         53.080                       Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                   Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                       Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

DITCH BOTTOM STRUCTURE LOCATED ALONG THE NORTH RIDGE LAKE CIRCLE WEST RIGHT-OF-WAY, NORTH OF NORTH RIDGE DRIVE (TRACT "C" OVERFL


*** Weir 1 of 4 for Drop Structure SC-0770-D1 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 10.20                       Invert(ft): 57.170
               Rise(in): 33.60                 Control Elev(ft): 57.170

*** Weir 2 of 4 for Drop Structure SC-0770-D1 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 9.60                        Invert(ft): 57.180
               Rise(in): 34.80                 Control Elev(ft): 57.180

*** Weir 3 of 4 for Drop Structure SC-0770-D1 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 9.00                        Invert(ft): 57.170
               Rise(in): 34.80                 Control Elev(ft): 57.170

*** Weir 4 of 4 for Drop Structure SC-0770-D1 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 36.00                       Invert(ft): 58.180
               Rise(in): 54.00                 Control Elev(ft): 58.180


-------------------------------------------------------------------------------------------------
```

GRACE LAKE
PROPOSED CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
         Name: SC-0770-D2          From Node: SC-0770           Length(ft): 70.00
        Group: Grace Lake            To Node: SC-0800                Count: 1

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                  Flow: Both
     Rise(in): 18.00          18.00                     Entrance Loss Coef: 0.500
   Invert(ft): 49.660         49.140                        Exit Loss Coef: 0.000
  Manning's N: 0.024000       0.024000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

CONTROL STRUCTURE LOCATED WITHIN THE NORTHRIDGE SWALE.
REFER TO SSMC SURVEY DATED DEC. 2007 AND THE NORTHRIDGE SUBDIVISION AS-BUILT PLANS (DATED  05/19/1985).
IT APPEARS THAT SURVEY FROM SSMC DID NOT PICK UP THE WEIR CUT-OUT (SLOT).  HOWEVER, AS BUILTS PROVIDE AN INVERT ELEVATION FOR TH

*** Weir 1 of 2 for Drop Structure SC-0770-D2 ***
                                                                                    TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 30.00                       Invert(ft): 56.820
               Rise(in): 15.50                  Control Elev(ft): 56.820

*** Weir 2 of 2 for Drop Structure SC-0770-D2 ***
                                                                                    TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 37.00                       Invert(ft): 58.360
               Rise(in): 49.00                  Control Elev(ft): 58.360


-----------------------------------------------------------------------------------------------
         Name: SC-0780-D           From Node: SC-0780           Length(ft): 443.00
        Group: Grace Lake            To Node: SC-0770                Count: 1

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                  Flow: Both
     Rise(in): 18.00          18.00                     Entrance Loss Coef: 0.500
   Invert(ft): 62.370         55.900                        Exit Loss Coef: 0.000
  Manning's N: 0.013000       0.013000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

DIVERSION / CONTROL STRUCTURE.  DATA OBTAINED FROM THE NORTHRIDGE SUBDIVISION AS-BUILT PLANS (DATED 05/19/1985).
ELEVATIONS SHOWN WERE CONVERTED TO THE NAVD VERTICAL DATUM.

*** Weir 1 of 1 for Drop Structure SC-0780-D ***
                                                                                    TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 50.40                       Invert(ft): 65.500
               Rise(in): 24.84                  Control Elev(ft): 65.500


-----------------------------------------------------------------------------------------------
         Name: SC-0925-D           From Node: SC-0925           Length(ft): 360.00
        Group: Grace Lake            To Node: SC-0920                Count: 1

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                  Flow: Both
     Rise(in): 18.00          18.00                     Entrance Loss Coef: 0.500
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
   Invert(ft): 69.350         64.010                        Exit Loss Coef: 0.000
  Manning's N: 0.013000       0.013000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

CONTROL STRUCTURE DATA WAS OBTAINED FROM THE AS-BUILT PLANS OF THE NORTHRIDGE SUBDIVISION, PREPARED BY CPH, DATED 05/19/1985.
CONSTRUCTION PLANS WERE REFERENCED TO THE NGVD VERTICAL DATUM AND CONVERTED TO THE NAVD DATUM.

*** Weir 1 of 2 for Drop Structure SC-0925-D ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 12.00                       Invert(ft): 74.020
               Rise(in): 46.70                  Control Elev(ft): 74.020

*** Weir 2 of 2 for Drop Structure SC-0925-D ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 36.00                       Invert(ft): 77.910
               Rise(in): 54.00                  Control Elev(ft): 77.910


-----------------------------------------------------------------------------------------------------
         Name: SC-0995-D           From Node: SC-0995            Length(ft): 1211.00
        Group: Grace Lake            To Node: SC-0990                 Count: 1

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 15.00          15.00                                 Flow: Both
     Rise(in): 15.00          15.00                     Entrance Loss Coef: 0.500
   Invert(ft): 80.000         76.250                        Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

EMERGENCY OVERFLOW STRUCTURE AND PIPE FROM THE WOODLAND ELEMENTARY POND TO GRACE LAKE.
PARAMETERS WERE OBTAINED FROM PERMITTED PLANS (REFER TO THE SJRWMD PERMIT NO. 49356-3, DATED 11/21/2007).
NOTE THAT ORIGINAL PLANS WERE REFERENCED TO THE NGVD DATUM.  ELEVATIONS SHOWN HEREIN WERE CONVERTED TO THE NAVD VERTICAL DATUM (

*** Weir 1 of 1 for Drop Structure SC-0995-D ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 36.00                       Invert(ft): 83.160
               Rise(in): 54.00                  Control Elev(ft): 83.160


=========================================================================================
==== Weirs ==============================================================================
=========================================================================================

         Name: SC-0770-W           From Node: SC-0770
        Group: Grace Lake            To Node: SC-0750
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                   Span(in): 180.00
                   Rise(in): 999.00
                  Invert(ft): 58.500
       Control Elevation(ft): 58.500
                                          TABLE
             Bottom Clip(in): 0.000
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

OVERTOPPING WEIR.  PARAMETERS WERE ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

-----------------------------------------------------------------------------------------------
         Name: SC-0780-W           From Node: SC-0780
        Group: Grace Lake            To Node: SC-0770
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 2400.00
                    Rise(in): 999.00
                  Invert(ft): 67.900
       Control Elevation(ft): 67.900
                                              TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

OVERLAND OVERTOPPING FROM POND TO THE NORTHRIDGE SWALE.
ELEVATION WAS OBTAINED FROM THE NORTHRIDGE SUBDIVISION AS-BUILT PLANS AND COMPARED TO THE 1-FT TOPOGRAPHIC MAP.

-----------------------------------------------------------------------------------------------
         Name: SC-0800-W1          From Node: SC-0800
        Group: Grace Lake            To Node: SC-0770
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 1200.00
                    Rise(in): 999.00
                  Invert(ft): 58.000
       Control Elevation(ft): 58.000
                                              TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

NORTHRIDGE DEPRESSIONAL AREA BERM OVERTOPPING
PARAMETERS WERE ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP AND SURVEYED DATA.

-----------------------------------------------------------------------------------------------
         Name: SC-0800-W2          From Node: SC-0800
        Group: Grace Lake            To Node: SC-0750
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 600.00
                    Rise(in): 999.00
                  Invert(ft): 58.500
       Control Elevation(ft): 58.500
                                              TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

OVERTOPPING WEIR.  PARAMETERS WERE ESTIMATED BASED ON THE 1-FT TOPOGRAPHIC MAP.

-----------------------------------------------------------------------------------------------
         Name: SC-0810-W1          From Node: SC-0810
        Group: Grace Lake            To Node: SC-0800
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                       XSec: SC-0810_W1
                  Invert(ft): 57.200
       Control Elevation(ft): 57.200
      Struct Opening Dim(ft): 9999.00
                                              TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0810-W2          From Node: SC-0810
        Group: Grace Lake            To Node: SC-0770
         Flow: Both                    Count: 1
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
         Type: Vertical: Fread      Geometry: Irregular

                        XSec: SC-0810_W2
                  Invert(ft): 58.500
       Control Elevation(ft): 58.500
      Struct Opening Dim(ft): 9999.00
                                            TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0840-W           From Node: SC-0840
        Group: Grace Lake            To Node: SC-0830
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                        XSec: SC-0840_W
                  Invert(ft): 54.000
       Control Elevation(ft): 54.000
      Struct Opening Dim(ft): 9999.00
                                            TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0875-W           From Node: SC-0875
        Group: Grace Lake            To Node: SC-0840
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                        XSec: SC-0875_W
                  Invert(ft): 65.500
       Control Elevation(ft): 65.500
      Struct Opening Dim(ft): 9999.00
                                            TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

OVERLAND OVERTOPPING

-----------------------------------------------------------------------------------------------
         Name: SC-0880-W           From Node: SC-0880
        Group: Grace Lake            To Node: SC-0875
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                        XSec: SC-0880_W
                  Invert(ft): 62.600
       Control Elevation(ft): 62.600
      Struct Opening Dim(ft): 9999.00
                                            TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0900-W           From Node: SC-0900
        Group: Grace Lake            To Node: SC-0910
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 40.00
                    Rise(in): 999.00
                  Invert(ft): 61.000
       Control Elevation(ft): 61.000
                                            TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
-----------------------------------------------------------------------------------------------
         Name: SC-0920-W1          From Node: SC-0920
        Group: Grace Lake            To Node: SC-0910
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                        XSec: SC-0920_W1
                  Invert(ft): 59.500
       Control Elevation(ft): 59.500
      Struct Opening Dim(ft): 9999.00
                                             TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0920-W2          From Node: SC-0920
        Group: Grace Lake            To Node: SC-0910
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 1160.00
                    Rise(in): 999.00
                  Invert(ft): 62.500
       Control Elevation(ft): 62.500
                                             TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0920-W3          From Node: SC-0920
        Group: Grace Lake            To Node: SC-0790
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Irregular

                        XSec: SC-0920_W3
                  Invert(ft): 66.800
       Control Elevation(ft): 66.800
      Struct Opening Dim(ft): 9999.00
                                             TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

PARAMETERS ARE BASED ON SURVEY DATA OBTAINED FROM SSMC, DATED JULY 2013.

-----------------------------------------------------------------------------------------------
         Name: SC-0925-W           From Node: SC-0925
        Group: Grace Lake            To Node: SC-0920
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 680.00
                    Rise(in): 999.00
                  Invert(ft): 78.700
       Control Elevation(ft): 78.700
                                             TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------
         Name: SC-0985-W           From Node: SC-0985
        Group: Grace Lake            To Node: SC-0980
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 600.00
                    Rise(in): 999.00
                  Invert(ft): 73.500
       Control Elevation(ft): 73.500
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
                                                TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

PENELOPE POND OVERTOPPING
PARAMETERS WERE ESTIMATED USING THE 1-FT TOPOGRAPHIC MAPS

-----------------------------------------------------------------------------------------------
         Name: SC-1000-W           From Node: SC-1000
        Group: Grace Lake            To Node: SC-0985
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 600.00
                    Rise(in): 999.00
                  Invert(ft): 77.500
       Control Elevation(ft): 77.500
                                                TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

OVERTOPPING HICKORY TREE ROAD

-----------------------------------------------------------------------------------------------
         Name: SC-POND300-W1       From Node: SC-POND300
        Group: Grace Lake            To Node: SC-0800
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 336.00
                    Rise(in): 999.00
                  Invert(ft): 57.010
       Control Elevation(ft): 57.010
                                                TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

POND BERM OVERTOPPING

-----------------------------------------------------------------------------------------------
         Name: SC-POND301-W1       From Node: SC-POND301
        Group: Grace Lake            To Node: SC-0800
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 355.00
                    Rise(in): 999.00
                  Invert(ft): 57.010
       Control Elevation(ft): 57.010
                                                TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 2.800
      Orifice Discharge Coef: 0.600

POND BERM OVERTOP

==========================================================================================
==== Hydrology Simulations ===============================================================
==========================================================================================

         Name: 010-024
     Filename: C:\TEMP ICPR\010-024.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 6.80

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-----------------------------------------------------------------------------------------------
         Name: 025-024
     Filename: C:\TEMP ICPR\025-024.R32

      Override Defaults: Yes
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

```
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 8.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-----------------------------------------------------------------------------------------------
         Name: 025-096
     Filename: C:\TEMP ICPR\025-096.R32

      Override Defaults: Yes
    Storm Duration(hrs): 96.00
          Rainfall File: Sjrwmd96
    Rainfall Amount(in): 11.30

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-----------------------------------------------------------------------------------------------
         Name: 100-024
     Filename: C:\TEMP ICPR\100-024.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 11.40

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-----------------------------------------------------------------------------------------------
         Name: 100-096
     Filename: C:\TEMP ICPR\100-096.R32

      Override Defaults: Yes
    Storm Duration(hrs): 96.00
          Rainfall File: Sjrwmd96
    Rainfall Amount(in): 15.00

Time(hrs)       Print Inc(min)
--------------- ---------------
96.000          5.00

-----------------------------------------------------------------------------------------------
         Name: MA-024
     Filename: C:\TEMP ICPR\MA-024.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 4.40

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

===============================================================================================
==== Routing Simulations ======================================================================
===============================================================================================

         Name: 010-024             Hydrology Sim: 010-024
     Filename: C:\TEMP ICPR\010-024.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 36.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 1.0000
        Boundary Stages: 010-024                  Boundary Flows:

GRACE LAKE SINKHOLE REMEDIATION
PROPOSED CONDITIONS ANALYSIS
10-YEAR STORM EVENT (24-HOUR DURATION)

Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000
```

```
GRACE LAKE
PROPOSED CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Group           Run
--------------- -----
BASE            Yes
Cranes          Yes
Gee             Yes
Grace Lake      Yes
Soldier         Yes


-----------------------------------------------------------------------------------------------
         Name: 025-024             Hydrology Sim: 025-024
     Filename: C:\TEMP ICPR\025-024.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 36.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 1.0000
        Boundary Stages: 025-024                  Boundary Flows:

GRACE LAKE SINKHOLE REMEDIATION
PROPOSED CONDITIONS ANALYSIS
25-YEAR STORM EVENT (24-HOUR DURATION)

Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes
Cranes          Yes
Gee             Yes
Grace Lake      Yes
Soldier         Yes


-----------------------------------------------------------------------------------------------
         Name: 025-096             Hydrology Sim: 025-096
     Filename: C:\TEMP ICPR\025-096.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 120.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 60.0000
        Boundary Stages: 100-024                  Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
96.000          15.000
120.000         30.000

Group           Run
--------------- -----
BASE            Yes
Cranes          Yes
Gee             Yes
Grace Lake      Yes
Soldier         Yes


-----------------------------------------------------------------------------------------------
         Name: 100-024             Hydrology Sim: 100-024
     Filename: C:\TEMP ICPR\100-024.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 336.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages: 100-024                  Boundary Flows:

GRACE LAKE SINKHOLE REMEDIATION
PROPOSED CONDITIONS ANALYSIS
100-YEAR STORM EVENT (24-HOUR DURATION)
```

GRACE LAKE
PROPOSED CONDITIONS INPUT
JUNE 2017

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

Time(hrs)	Print Inc(min)
48.000	15.000
336.000	60.000

Group	Run
BASE	Yes
Cranes	Yes
Gee	Yes
Grace Lake	Yes
Soldier	Yes

```
         Name: 100-096             Hydrology Sim: 100-096
     Filename: C:\TEMP ICPR\100-096.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 180.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 60.0000
        Boundary Stages: 100-024                  Boundary Flows:
```

Time(hrs)	Print Inc(min)
96.000	15.000
120.000	30.000
180.000	60.000

Group	Run
BASE	Yes
Cranes	Yes
Gee	Yes
Grace Lake	Yes
Soldier	Yes

```
         Name: MA-024              Hydrology Sim: MA-024
     Filename: C:\TEMP ICPR\MA-024.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 36.00
     Min Calc Time(sec): 0.1000               Max Calc Time(sec): 1.0000
        Boundary Stages: 010-024                  Boundary Flows:
```

GRACE LAKE SINKHOLE REMEDIATION
PROPOSED CONDITIONS ANALYSIS
MEAN ANNUAL STORM EVENT (24-HOUR DURATION)

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes
Cranes	Yes
Gee	Yes
Grace Lake	Yes
Soldier	Yes

```
==================================================================================
==== Boundary Conditions =========================================================
==================================================================================

      Name: 010-024               Node: GC-1000               Type: Stage

      Time(hrs)       Stage(ft)
--------------- ---------------
          0.000          50.400
```

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

0.500	50.400
1.000	50.400
1.500	50.400
2.000	50.400
2.500	50.400
3.000	50.400
3.500	50.400
4.000	50.400
4.500	50.400
5.000	50.400
5.500	50.400
6.000	50.400
6.500	50.400
7.000	50.400
7.500	50.400
8.000	50.400
8.500	50.410
8.670	50.410
8.830	50.420
9.000	50.420
9.170	50.430
9.330	50.430
9.500	50.440
9.670	50.440
9.830	50.450
10.000	50.460
10.170	50.470
10.330	50.470
10.500	50.480
10.670	50.490
10.830	50.510
11.000	50.520
11.170	50.530
11.330	50.550
11.500	50.570
11.670	50.600
11.830	50.650
12.000	50.740
12.170	50.840
12.330	50.960
12.500	51.080
12.670	51.170
12.830	51.250
13.000	51.320
13.170	51.370
13.330	51.420
13.500	51.460
13.670	51.500
13.830	51.540
14.000	51.570
14.170	51.600
14.330	51.620
14.500	51.650
14.670	51.680
14.830	51.700
15.000	51.720
15.170	51.750
15.330	51.770
15.500	51.790
15.670	51.810
15.830	51.830
16.000	51.850
16.170	51.870
16.670	51.930
17.170	51.980
17.670	52.040
18.170	52.090
18.670	52.150
19.170	52.200
19.670	52.250
20.170	52.300
20.670	52.340
21.170	52.390
21.670	52.430
22.170	52.470
22.670	52.500
23.170	52.540
23.670	52.570
24.170	52.600
24.670	52.620
25.170	52.640
25.670	52.650
26.170	52.660
26.670	52.670

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

27.170	52.670
27.670	52.680
28.170	52.680
28.670	52.680
29.170	52.690
29.670	52.690
30.170	52.680
30.670	52.680
31.170	52.680
31.670	52.680
32.170	52.670
32.670	52.670
33.170	52.660
33.670	52.660
34.170	52.650
34.670	52.640
35.170	52.640
35.670	52.630
36.000	52.620

Name: 010-024 Node: SC-3000 Type: Stage

Time(hrs)	Stage(ft)
0.000	42.140
0.500	42.140
1.000	42.140
1.500	42.140
2.000	42.140
2.500	42.140
3.000	42.150
3.500	42.150
4.000	42.150
4.500	42.150
5.000	42.150
5.500	42.160
6.000	42.160
6.500	42.160
7.000	42.170
7.500	42.180
8.000	42.190
8.500	42.210
8.750	42.220
9.000	42.240
9.250	42.250
9.500	42.270
9.750	42.280
10.000	42.300
10.250	42.310
10.500	42.330
10.750	42.350
11.000	42.370
11.250	42.390
11.500	42.420
11.750	42.470
12.000	42.570
12.250	42.700
12.500	42.830
12.750	42.910
13.000	42.940
13.250	42.950
13.500	42.950
13.750	42.940
14.000	42.940
14.250	42.930
14.500	42.930
14.750	42.930
15.000	42.940
15.250	42.970
15.500	43.000
15.750	43.020
16.000	43.050
16.250	43.080
16.750	43.120
17.250	43.160
17.750	43.190
18.250	43.220
18.750	43.240
19.250	43.250
19.750	43.270
20.250	43.280
20.750	43.290
21.250	43.300

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

21.750	43.310
22.250	43.320
22.750	43.320
23.250	43.330
23.750	43.350
24.250	43.370
24.750	43.390
25.250	43.410
25.750	43.420
26.250	43.430
26.750	43.450
27.250	43.460
27.750	43.470
28.250	43.470
28.750	43.480
29.250	43.480
29.750	43.490
30.250	43.490
30.750	43.490
31.250	43.490
31.750	43.490
32.250	43.490
32.750	43.490
33.250	43.490
33.750	43.490
34.250	43.480
34.750	43.480
35.250	43.480
35.750	43.470
36.250	43.460
36.750	43.460
37.250	43.450
37.750	43.440
38.250	43.440
38.750	43.430
39.250	43.420
39.750	43.410
40.250	43.400
40.750	43.390
41.250	43.380
41.750	43.370
42.250	43.360
42.750	43.350
43.250	43.340
43.750	43.330
44.250	43.310
44.750	43.300
45.250	43.290
45.750	43.280
46.250	43.270
46.750	43.250
47.250	43.240
47.750	43.230
48.000	43.220

Name: 010-024 Node: SC-3010 Type: Stage

Time(hrs)	Stage(ft)
0.000	45.860
0.500	46.020
1.000	46.080
1.500	46.090
2.000	46.100
2.500	46.110
3.000	46.110
3.500	46.120
4.000	46.120
4.500	46.120
5.000	46.130
5.500	46.130
6.000	46.130
6.500	46.130
7.000	46.130
7.500	46.130
8.000	46.130
8.500	46.130
8.750	46.140
9.000	46.140
9.250	46.140
9.500	46.140
9.750	46.150
10.000	46.150

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

10.250	46.160
10.500	46.160
10.750	46.170
11.000	46.180
11.250	46.200
11.500	46.220
11.750	46.260
12.000	46.330
12.250	46.430
12.500	46.530
12.750	46.600
13.000	46.650
13.250	46.690
13.500	46.720
13.750	46.740
14.000	46.770
14.250	46.800
14.500	46.820
14.750	46.850
15.000	46.870
15.250	46.900
15.500	46.920
15.750	46.950
16.000	46.980
16.250	47.000
16.750	47.060
17.250	47.120
17.750	47.180
18.250	47.240
18.750	47.300
19.250	47.350
19.750	47.410
20.250	47.460
20.750	47.490
21.250	47.520
21.750	47.550
22.250	47.580
22.750	47.730
23.250	48.070
23.750	48.530
24.250	48.700
24.750	48.810
25.250	48.880
25.750	48.920
26.250	48.950
26.750	48.970
27.250	48.980
27.750	48.980
28.250	48.980
28.750	48.970
29.250	48.960
29.750	48.950
30.250	48.940
30.750	48.920
31.250	48.910
31.750	48.890
32.250	48.870
32.750	48.850
33.250	48.830
33.750	48.810
34.250	48.790
34.750	48.770
35.250	48.750
35.750	48.720
36.250	48.700
36.750	48.680
37.250	48.660
37.750	48.640
38.250	48.620
38.750	48.600
39.250	48.580
39.750	48.560
40.250	48.540
40.750	48.520
41.250	48.510
41.750	48.490
42.250	48.470
42.750	48.290
43.250	48.270
43.750	48.240
44.250	48.220
44.750	48.200
45.250	48.170
45.750	48.150

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

46.250	48.130
46.750	48.110
47.250	48.090
47.750	48.060
48.000	48.050

Name: 010-024 Node: SC-5000 Type: Stage

Time(hrs)	Stage(ft)
0.000	41.060
0.500	41.060
1.000	41.060
1.500	41.060
2.000	41.060
2.500	41.060
3.000	41.060
3.500	41.060
4.000	41.060
4.500	41.060
5.000	41.090
5.500	41.180
6.000	41.310
6.500	41.400
7.000	41.520
7.500	41.670
8.000	41.810
8.500	41.960
8.750	42.050
9.000	42.130
9.250	42.230
9.500	42.320
9.750	42.400
10.000	42.480
10.250	42.570
10.500	42.670
10.750	42.770
11.000	42.870
11.250	42.970
11.500	43.120
11.750	43.540
12.000	43.920
12.250	44.110
12.500	44.080
12.750	43.900
13.000	43.750
13.250	43.700
13.500	43.720
13.750	43.740
14.000	43.750
14.250	43.750
14.500	43.780
14.750	43.840
15.000	43.910
15.250	43.960
15.500	44.000
15.750	44.020
16.000	44.030
16.250	44.030
16.750	44.020
17.250	44.000
17.750	43.960
18.250	43.900
18.750	43.840
19.250	43.790
19.750	43.740
20.250	43.700
20.750	43.670
21.250	43.660
21.750	43.650
22.250	43.650
22.750	43.640
23.250	43.630
23.750	43.620
24.250	43.600
24.750	43.570
25.250	43.540
25.750	43.510
26.250	43.480
26.750	43.460
27.250	43.430
27.750	43.430
28.250	43.320

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

28.750	42.350
29.250	42.150
29.750	42.080
30.250	42.030
30.750	42.000
31.250	41.970
31.750	41.950
32.250	41.920
32.750	41.890
33.250	41.860
33.750	41.830
34.250	41.810
34.750	41.790
35.250	41.770
35.750	41.750
36.250	41.730
36.750	41.710
37.250	41.700
37.750	41.680
38.250	41.670
38.750	41.660
39.250	41.650
39.750	41.640
40.250	41.630
40.750	41.620
41.250	41.610
41.750	41.600
42.250	41.590
42.750	41.580
43.250	41.570
43.750	41.560
44.250	41.550
44.750	41.550
45.250	41.540
45.750	41.530
46.250	41.520
46.750	41.520
47.250	41.510
47.750	41.510
48.000	41.510

Name: 025-024 Node: GC-1000 Type: Stage

Time(hrs)	Stage(ft)
0.000	50.400
0.500	50.400
1.000	50.400
1.500	50.400
2.000	50.400
2.500	50.400
3.000	50.400
3.500	50.400
4.000	50.400
4.500	50.400
5.000	50.400
5.500	50.400
6.000	50.400
6.500	50.400
7.000	50.410
7.500	50.420
8.000	50.430
8.500	50.450
8.670	50.450
8.830	50.460
9.000	50.470
9.170	50.480
9.330	50.480
9.500	50.490
9.670	50.500
9.830	50.510
10.000	50.520
10.170	50.530
10.330	50.550
10.500	50.560
10.670	50.570
10.830	50.590
11.000	50.610
11.170	50.630
11.330	50.650
11.500	50.680
11.670	50.710
11.830	50.780

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

12.000	50.880
12.170	51.020
12.330	51.170
12.500	51.310
12.670	51.440
12.830	51.530
13.000	51.610
13.170	51.680
13.330	51.740
13.500	51.800
13.670	51.840
13.830	51.890
14.000	51.920
14.170	51.960
14.330	52.000
14.500	52.030
14.670	52.060
14.830	52.090
15.000	52.120
15.170	52.140
15.330	52.170
15.500	52.200
15.670	52.220
15.830	52.250
16.000	52.280
16.170	52.300
16.670	52.380
17.170	52.450
17.670	52.520
18.170	52.590
18.670	52.650
19.170	52.720
19.670	52.770
20.170	52.830
20.670	52.890
21.170	52.940
21.670	52.980
22.170	53.030
22.670	53.070
23.170	53.110
23.670	53.140
24.170	53.170
24.670	53.190
25.170	53.200
25.670	53.210
26.170	53.220
26.670	53.230
27.170	53.230
27.670	53.230
28.170	53.240
28.670	53.230
29.170	53.230
29.670	53.230
30.170	53.220
30.670	53.220
31.170	53.210
31.670	53.210
32.170	53.200
32.670	53.190
33.170	53.180
33.670	53.170
34.170	53.160
34.670	53.150
35.170	53.140
35.670	53.130
36.000	53.120

Name: 025-024 Node: SC-3000 Type: Stage

Time(hrs)	Stage(ft)
0.000	42.140
0.500	42.140
1.000	42.140
1.500	42.140
2.000	42.140
2.500	42.140
3.000	42.150
3.500	42.150
4.000	42.150
4.500	42.150
5.000	42.160
5.500	42.160

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

6.000	42.170
6.500	42.180
7.000	42.190
7.500	42.210
8.000	42.240
8.500	42.270
8.750	42.280
9.000	42.300
9.250	42.320
9.500	42.330
9.750	42.350
10.000	42.370
10.250	42.380
10.500	42.400
10.750	42.420
11.000	42.450
11.250	42.470
11.500	42.500
11.750	42.560
12.000	42.670
12.250	42.820
12.500	42.950
12.750	43.030
13.000	43.070
13.250	43.080
13.500	43.080
13.750	43.080
14.000	43.090
14.250	43.110
14.500	43.150
14.750	43.200
15.000	43.250
15.250	43.300
15.500	43.340
15.750	43.370
16.000	43.410
16.250	43.440
16.750	43.490
17.250	43.540
17.750	43.570
18.250	43.600
18.750	43.620
19.250	43.640
19.750	43.650
20.250	43.670
20.750	43.690
21.250	43.720
21.750	43.750
22.250	43.780
22.750	43.810
23.250	43.830
23.750	43.860
24.250	43.880
24.750	43.900
25.250	43.910
25.750	43.920
26.250	43.930
26.750	43.940
27.250	43.940
27.750	43.950
28.250	43.950
28.750	43.950
29.250	43.950
29.750	43.950
30.250	43.950
30.750	43.940
31.250	43.940
31.750	43.930
32.250	43.930
32.750	43.920
33.250	43.910
33.750	43.910
34.250	43.900
34.750	43.890
35.250	43.880
35.750	43.870
36.250	43.850
36.750	43.840
37.250	43.830
37.750	43.820
38.250	43.800
38.750	43.790
39.250	43.780
39.750	43.760

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

40.250	43.750
40.750	43.730
41.250	43.720
41.750	43.700
42.250	43.690
42.750	43.670
43.250	43.660
43.750	43.640
44.250	43.630
44.750	43.610
45.250	43.600
45.750	43.580
46.250	43.570
46.750	43.550
47.250	43.530
47.750	43.520
48.000	43.510

Name: 025-024 Node: SC-3010 Type: Stage

Time(hrs)	Stage(ft)
0.000	45.860
0.500	46.020
1.000	46.080
1.500	46.090
2.000	46.100
2.500	46.110
3.000	46.110
3.500	46.120
4.000	46.120
4.500	46.120
5.000	46.130
5.500	46.130
6.000	46.130
6.500	46.130
7.000	46.130
7.500	46.130
8.000	46.140
8.500	46.150
8.750	46.150
9.000	46.150
9.250	46.160
9.500	46.160
9.750	46.170
10.000	46.180
10.250	46.190
10.500	46.200
10.750	46.220
11.000	46.240
11.250	46.260
11.500	46.290
11.750	46.330
12.000	46.400
12.250	46.570
12.500	46.710
12.750	46.800
13.000	46.860
13.250	46.910
13.500	46.940
13.750	46.980
14.000	47.010
14.250	47.040
14.500	47.070
14.750	47.100
15.000	47.130
15.250	47.160
15.500	47.190
15.750	47.220
16.000	47.260
16.250	47.290
16.750	47.350
17.250	47.410
17.750	47.460
18.250	47.500
18.750	47.530
19.250	47.570
19.750	47.720
20.250	48.190
20.750	48.710
21.250	48.950
21.750	49.120
22.250	49.240

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

22.750	49.310
23.250	49.370
23.750	49.410
24.250	49.430
24.750	49.430
25.250	49.430
25.750	49.440
26.250	49.430
26.750	49.430
27.250	49.420
27.750	49.410
28.250	49.400
28.750	49.380
29.250	49.360
29.750	49.340
30.250	49.320
30.750	49.300
31.250	49.280
31.750	49.250
32.250	49.230
32.750	49.190
33.250	49.160
33.750	49.130
34.250	49.100
34.750	49.080
35.250	49.050
35.750	49.020
36.250	48.990
36.750	48.960
37.250	48.930
37.750	48.900
38.250	48.870
38.750	48.840
39.250	48.820
39.750	48.790
40.250	48.770
40.750	48.740
41.250	48.720
41.750	48.700
42.250	48.670
42.750	48.650
43.250	48.630
43.750	48.610
44.250	48.590
44.750	48.570
45.250	48.550
45.750	48.530
46.250	48.510
46.750	48.500
47.250	48.480
47.750	48.460
48.000	48.290

Name: 025-024 Node: SC-5000 Type: Stage

Time(hrs)	Stage(ft)
0.000	41.060
0.500	41.060
1.000	41.060
1.500	41.060
2.000	41.060
2.500	41.060
3.000	41.060
3.500	41.060
4.000	41.060
4.500	41.140
5.000	41.280
5.500	41.390
6.000	41.510
6.500	41.670
7.000	41.830
7.500	42.000
8.000	42.170
8.500	42.340
8.750	42.420
9.000	42.500
9.250	42.580
9.500	42.650
9.750	42.730
10.000	42.800
10.250	42.870
10.500	42.960

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

10.750	43.070
11.000	43.160
11.250	43.240
11.500	43.430
11.750	43.690
12.000	44.060
12.250	44.120
12.500	44.140
12.750	44.090
13.000	43.950
13.250	43.930
13.500	43.870
13.750	43.960
14.000	44.130
14.250	44.240
14.500	44.340
14.750	44.420
15.000	44.490
15.250	44.540
15.500	44.570
15.750	44.580
16.000	44.580
16.250	44.570
16.750	44.520
17.250	44.470
17.750	44.410
18.250	44.350
18.750	44.290
19.250	44.240
19.750	44.180
20.250	44.130
20.750	44.070
21.250	43.990
21.750	43.910
22.250	43.840
22.750	43.770
23.250	43.720
23.750	43.690
24.250	43.660
24.750	43.630
25.250	43.600
25.750	43.570
26.250	43.550
26.750	43.530
27.250	43.510
27.750	43.480
28.250	43.460
28.750	43.440
29.250	43.410
29.750	43.400
30.250	42.620
30.750	42.160
31.250	42.050
31.750	42.010
32.250	41.980
32.750	41.960
33.250	41.930
33.750	41.910
34.250	41.900
34.750	41.890
35.250	41.880
35.750	41.860
36.250	41.850
36.750	41.840
37.250	41.830
37.750	41.820
38.250	41.830
38.750	41.810
39.250	41.800
39.750	41.790
40.250	41.770
40.750	41.760
41.250	41.750
41.750	41.730
42.250	41.720
42.750	41.710
43.250	41.700
43.750	41.680
44.250	41.670
44.750	41.660
45.250	41.650
45.750	41.640
46.250	41.630
46.750	41.620

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

47.250	41.610
47.750	41.600
48.000	41.600

Name: 100-024 Node: GC-1000 Type: Stage

Time(hrs)	Stage(ft)
0.000	50.400
0.500	50.400
1.000	50.400
1.500	50.400
2.000	50.400
2.500	50.400
3.000	50.410
3.500	50.410
4.000	50.410
4.500	50.410
5.000	50.420
5.500	50.420
6.000	50.440
6.500	50.450
7.000	50.460
7.500	50.480
8.000	50.510
8.500	50.540
8.670	50.550
8.830	50.560
9.000	50.570
9.170	50.580
9.330	50.600
9.500	50.610
9.670	50.630
9.830	50.640
10.000	50.660
10.170	50.680
10.330	50.700
10.500	50.720
10.670	50.740
10.830	50.770
11.000	50.790
11.170	50.820
11.330	50.850
11.500	50.890
11.670	50.950
11.830	51.040
12.000	51.170
12.170	51.350
12.330	51.560
12.500	51.760
12.670	51.940
12.830	52.080
13.000	52.200
13.170	52.310
13.330	52.410
13.500	52.490
13.670	52.570
13.830	52.640
14.000	52.710
14.170	52.770
14.330	52.830
14.500	52.880
14.670	52.930
14.830	52.970
15.000	53.010
15.170	53.050
15.330	53.080
15.500	53.120
15.670	53.150
15.830	53.180
16.000	53.210
16.170	53.230
16.670	53.310
17.170	53.380
17.670	53.440
18.170	53.500
18.670	53.560
19.170	53.610
19.670	53.660
20.170	53.700
20.670	53.740
21.170	53.780
21.670	53.820

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

22.170	53.850
22.670	53.880
23.170	53.910
23.670	53.940
24.170	53.970
24.670	53.980
25.170	54.000
25.670	54.000
26.170	54.010
26.670	54.010
27.170	54.010
27.670	54.000
28.170	54.000
28.670	54.000
29.170	53.990
29.670	53.990
30.170	53.980
30.670	53.970
31.170	53.970
31.670	53.960
32.170	53.950
32.670	53.940
33.170	53.920
33.670	53.910
34.170	53.900
34.670	53.890
35.170	53.870
35.670	53.860
36.000	53.850

Name: 100-024 Node: SC-3000 Type: Stage

Time(hrs)	Stage(ft)
0.000	42.140
0.500	42.140
1.000	42.140
1.500	42.140
2.000	42.140
2.500	42.140
3.000	42.150
3.500	42.150
4.000	42.150
4.500	42.160
5.000	42.170
5.500	42.180
6.000	42.210
6.500	42.230
7.000	42.270
7.500	42.300
8.000	42.330
8.500	42.370
8.750	42.380
9.000	42.400
9.250	42.420
9.500	42.440
9.750	42.460
10.000	42.470
10.250	42.500
10.500	42.520
10.750	42.540
11.000	42.570
11.250	42.600
11.500	42.630
11.750	42.700
12.000	42.830
12.250	42.980
12.500	43.130
12.750	43.230
13.000	43.300
13.250	43.350
13.500	43.390
13.750	43.450
14.000	43.540
14.250	43.610
14.500	43.690
14.750	43.750
15.000	43.810
15.250	43.860
15.500	43.910
15.750	43.950
16.000	43.990
16.250	44.020

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

16.750	44.090
17.250	44.150
17.750	44.200
18.250	44.250
18.750	44.300
19.250	44.350
19.750	44.390
20.250	44.430
20.750	44.460
21.250	44.490
21.750	44.520
22.250	44.550
22.750	44.570
23.250	44.600
23.750	44.620
24.250	44.640
24.750	44.650
25.250	44.660
25.750	44.670
26.250	44.670
26.750	44.670
27.250	44.670
27.750	44.670
28.250	44.670
28.750	44.670
29.250	44.670
29.750	44.670
30.250	44.670
30.750	44.670
31.250	44.660
31.750	44.660
32.250	44.650
32.750	44.650
33.250	44.640
33.750	44.630
34.250	44.620
34.750	44.610
35.250	44.600
35.750	44.590
36.250	44.570
36.750	44.560
37.250	44.540
37.750	44.530
38.250	44.510
38.750	44.490
39.250	44.470
39.750	44.450
40.250	44.430
40.750	44.410
41.250	44.390
41.750	44.370
42.250	44.350
42.750	44.330
43.250	44.300
43.750	44.280
44.250	44.260
44.750	44.240
45.250	44.210
45.750	44.190
46.250	44.170
46.750	44.140
47.250	44.120
47.750	44.100
48.000	44.070

Name: 100-024 Node: SC-3010 Type: Stage

Time(hrs)	Stage(ft)
0.000	45.860
0.500	46.020
1.000	46.080
1.500	46.090
2.000	46.100
2.500	46.110
3.000	46.110
3.500	46.120
4.000	46.120
4.500	46.120
5.000	46.130
5.500	46.130
6.000	46.130
6.500	46.140

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

7.000	46.150
7.500	46.150
8.000	46.170
8.500	46.180
8.750	46.190
9.000	46.200
9.250	46.220
9.500	46.230
9.750	46.250
10.000	46.270
10.250	46.290
10.500	46.320
10.750	46.330
11.000	46.330
11.250	46.340
11.500	46.360
11.750	46.440
12.000	46.630
12.250	46.860
12.500	47.030
12.750	47.140
13.000	47.210
13.250	47.270
13.500	47.310
13.750	47.350
14.000	47.390
14.250	47.430
14.500	47.460
14.750	47.480
15.000	47.500
15.250	47.520
15.500	47.540
15.750	47.560
16.000	47.600
16.250	47.750
16.750	48.370
17.250	48.910
17.750	49.200
18.250	49.380
18.750	49.510
19.250	49.610
19.750	49.700
20.250	49.770
20.750	49.830
21.250	49.890
21.750	49.890
22.250	49.910
22.750	49.940
23.250	49.950
23.750	49.960
24.250	49.970
24.750	49.960
25.250	49.950
25.750	49.950
26.250	49.950
26.750	49.950
27.250	49.950
27.750	49.950
28.250	49.940
28.750	49.940
29.250	49.940
29.750	49.940
30.250	49.940
30.750	49.930
31.250	49.920
31.750	49.910
32.250	49.900
32.750	49.890
33.250	49.890
33.750	49.870
34.250	49.840
34.750	49.810
35.250	49.770
35.750	49.740
36.250	49.700
36.750	49.660
37.250	49.620
37.750	49.580
38.250	49.530
38.750	49.490
39.250	49.450
39.750	49.410
40.250	49.370
40.750	49.340

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

41.250	49.300
41.750	49.260
42.250	49.220
42.750	49.180
43.250	49.140
43.750	49.100
44.250	49.070
44.750	49.040
45.250	49.010
45.750	48.980
46.250	48.950
46.750	48.920
47.250	48.890
47.750	48.870
48.000	48.840

Name: 100-024 Node: SC-5000 Type: Stage

Time(hrs)	Stage(ft)
0.000	41.060
0.500	41.060
1.000	41.060
1.500	41.060
2.000	41.060
2.500	41.060
3.000	41.060
3.500	41.140
4.000	41.280
4.500	41.420
5.000	41.600
5.500	41.810
6.000	42.000
6.500	42.190
7.000	42.380
7.500	42.530
8.000	42.680
8.500	42.800
8.750	42.870
9.000	42.940
9.250	43.020
9.500	43.080
9.750	43.140
10.000	43.200
10.250	43.370
10.500	43.370
10.750	43.430
11.000	43.500
11.250	43.540
11.500	43.610
11.750	43.920
12.000	44.160
12.250	44.250
12.500	44.260
12.750	44.220
13.000	44.240
13.250	44.400
13.500	44.650
13.750	44.870
14.000	45.020
14.250	45.170
14.500	45.290
14.750	45.370
15.000	45.460
15.250	45.500
15.500	45.500
15.750	45.470
16.000	45.410
16.250	45.350
16.750	45.250
17.250	45.140
17.750	45.030
18.250	44.910
18.750	44.800
19.250	44.690
19.750	44.600
20.250	44.510
20.750	44.420
21.250	44.350
21.750	44.280
22.250	44.220
22.750	44.170
23.250	44.120

** ALL ELEVATIONS ARE REFERENCED TO THE NAVD VERTICAL DATUM**

23.750	44.050
24.250	43.970
24.750	43.860
25.250	43.730
25.750	43.640
26.250	43.600
26.750	43.580
27.250	43.560
27.750	43.540
28.250	43.530
28.750	43.510
29.250	43.510
29.750	43.510
30.250	43.510
30.750	43.490
31.250	43.470
31.750	43.450
32.250	43.420
32.750	43.420
33.250	43.330
33.750	42.350
34.250	42.110
34.750	42.050
35.250	42.020
35.750	42.000
36.250	41.980
36.750	41.960
37.250	41.950
37.750	41.930
38.250	41.920
38.750	41.910
39.250	41.900
39.750	41.890
40.250	41.880
40.750	41.870
41.250	41.870
41.750	41.860
42.250	41.860
42.750	41.850
43.250	41.850
43.750	41.840
44.250	41.840
44.750	41.840
45.250	41.830
45.750	41.830
46.250	41.830
46.750	41.830
47.250	41.830
47.750	41.820
48.000	41.820

Summary of ICPR Flood Routing Results for the
100-Year / 96-Hour Storm Event
(Group "Grace Lake")
Initial Stage => Elevation 62.6-FT, NAVD

Node Name	SJRWMD ERP 3/14 Model Max Stage (ft) (1)	Updated Existing Model Max Stage (ft) (2)	Delta (2) - (1)	Proposed Model Max Stage (ft) (3)	Delta (3) - (2)
SC-0750	52	52	0	52.00	0.00
SC-0760	56.22	56.21	-0.01	56.17	-0.04
SC-0770	58.77	58.77	0	58.76	-0.01
SC-0780	64.44	64.24	-0.2	64.24	0.00
SC-0790	64.44	64.11	-0.33	64.00	-0.11
SC-0800	58.79	58.78	-0.01	58.77	-0.01
SC-0810	58.82	58.82	0	58.80	-0.02
SC-0815	58.79	58.78	-0.01		-
SC-0820	58.79	58.78	-0.01		-
SC-0830	59.85	59.81	-0.04	59.61	-0.20
SC-0840	59.86	59.82	-0.04	59.62	-0.20
SC-0850	60.96	60.91	-0.05	60.69	-0.22
SC-0860	62.04	61.99	-0.05	61.74	-0.25
SC-0870	64.88	64.88	0	64.81	-0.07
SC-0875	66.11	66.11	0	66.03	-0.08
SC-0880	66.17	66.16	-0.01	66.08	-0.08
SC-0890	66.84	66.83	-0.01		-
SC-0900	66.83	66.82	-0.01	66.73	-0.09
SC-0910	66.83	66.82	-0.01	66.73	-0.09
SC-0920	66.84	66.83	-0.01	66.73	-0.10
SC-0925	78.79	78.79	0	78.79	0.00
SC-0930	66.87	66.84	-0.03	66.74	-0.10
SC-0940 ***	69.07	68.61	-0.46	69.34	0.73
SC-0950	69.44	69.16	-0.28		-
SC-0960	70.4	70.38	-0.02		-
SC-0970	72.09	71.82	-0.27		-
SC-0980	77.26	77.28	0.02	77.24	-0.04
SC-0985	77.28	77.29	0.01	77.25	-0.04
SC-0990	72.66	72.66	0	72.66	0.00
SC-0995	86.23	86.23	0	86.23	0.00
SC-POND300	**	**	**	58.78	-
SC-POND301	**	**	**	58.78	-

* This Node was removed in the proposed model.
** This Node was added in the proposed model.
*** Node SC0940 is increased in the proposed condition, however this increase is contained within the FDOT R/W.

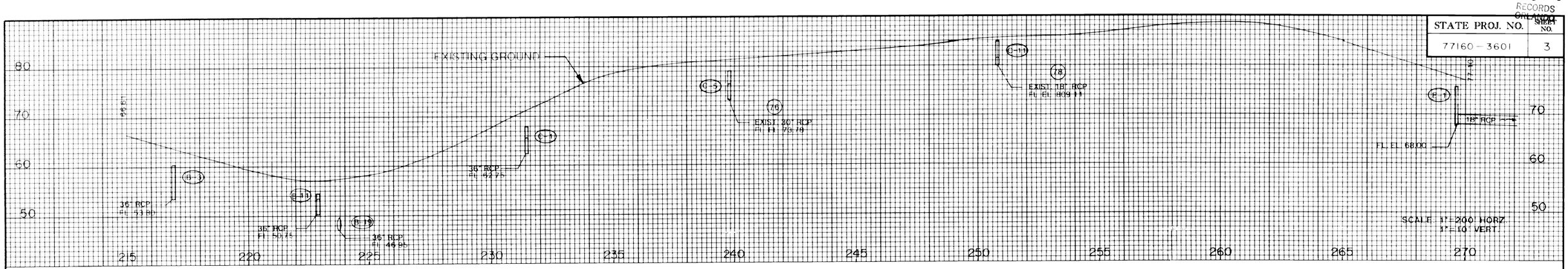
Existing Permits

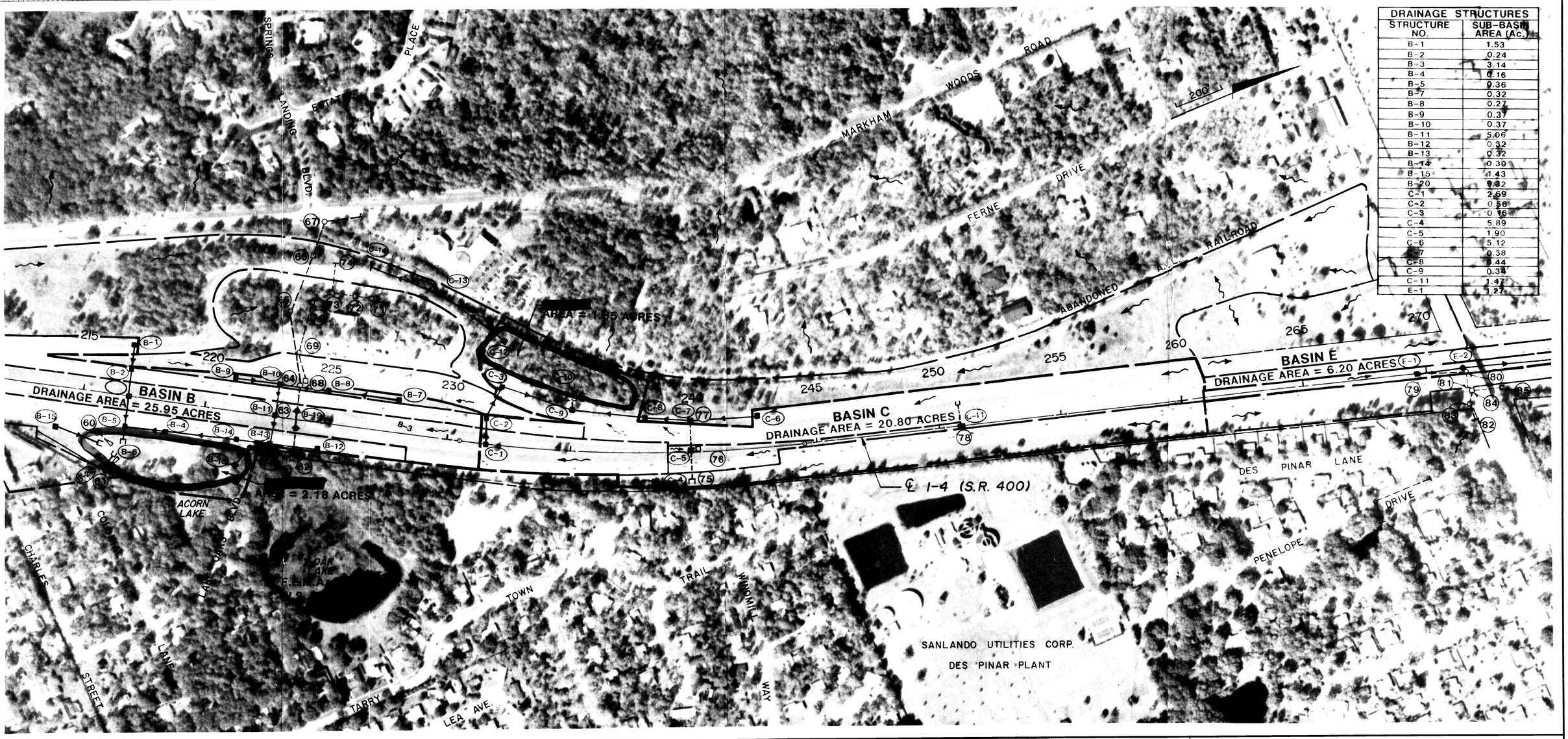
ERP # 22434-1

Datum = NGVD 29

RECEIVED
JUN 15 1994
4170398 06
RECORDS
ORLANDO

STATE PROJ. NO.	SHEET NO.
77160 – 3601	3





DRAINAGE STRUCTURES

STRUCTURE NO.	SUB-BASIN AREA (Ac.)
B-1	1.53
B-2	0.24
B-3	3.14
B-4	0.16
B-5	0.36
B-7	0.32
B-8	0.27
B-9	0.37
B-10	0.37
B-11	5.06
B-12	0.32
B-13	0.32
B-14	0.30
B-15	1.43
B-20	0.32
C-1	2.69
C-2	0.56
C-3	0.16
C-4	5.89
C-5	1.90
C-6	5.12
C-7	0.38
C-8	0.44
C-9	0.34
C-11	1.47
E-1	1.27

REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

AERIAL PHOTOGRAPHY DATA	
FLOWN BY	F.D.O.T.
PHOTO DATE	2-13-93
PHOTO ID. NO.	P.D. 4125 3-08

	NAME	DATE		NAME	DATE
DESIGNED BY	MAJ	7/93	DRAWN BY	GIY	7/93
CHECKED BY	BAK	7/93	CHECKED BY	BAK	7/93
SUPERVISED BY : KENNETH A CARPER, PE					

FLORIDA DEPARTMENT OF TRANSPORTATION

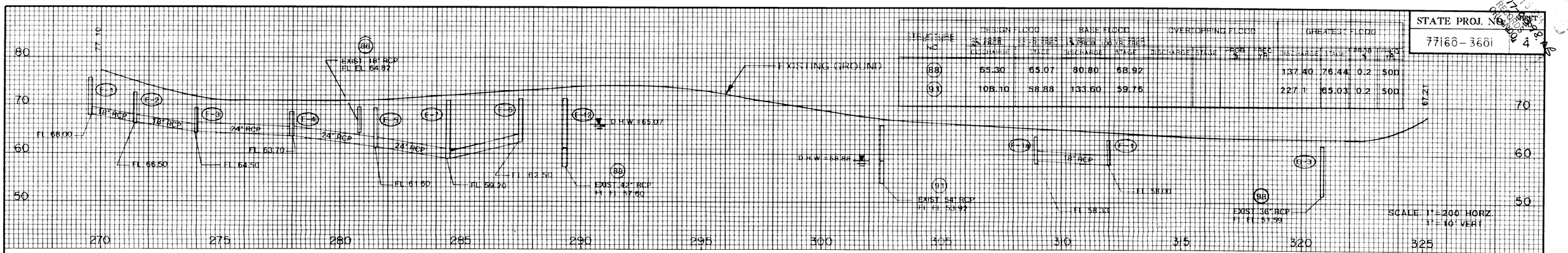
APPROVED BY :

DATE :

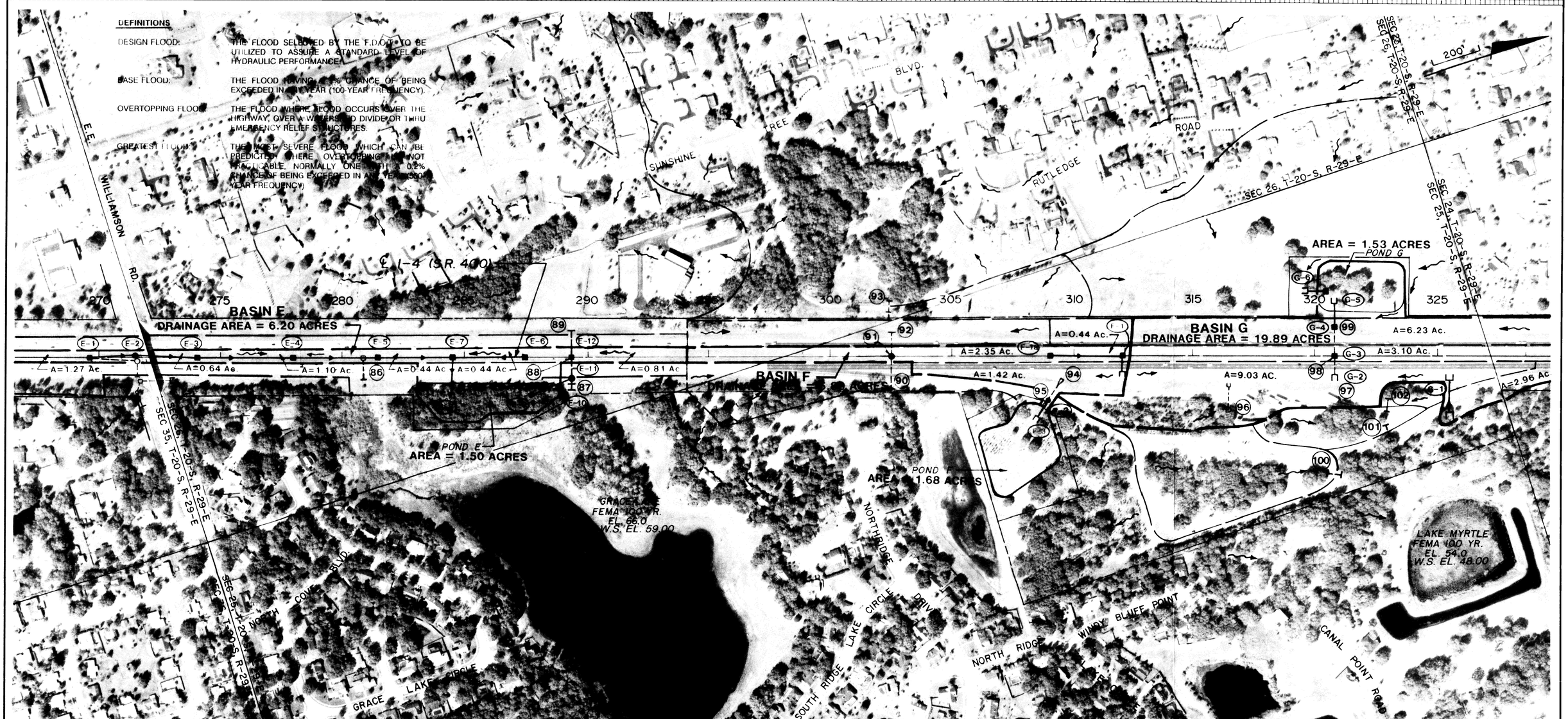
DRAINAGE MAP

Datum = NGVD 29

STATE PROJ. NO. 77160-3601 SHEET 4



TIE-IN CURVE NO	DESIGN FLOOD 25 YEAR DISCHARGE	DESIGN FLOOD 25 YEAR STAGE	BASE FLOOD 100 YR. DISCHARGE	BASE FLOOD 100 YR. STAGE	OVERTOPPING FLOOD DISCHARGE	OVERTOPPING FLOOD STAGE	GREATEST FLOOD DISCHARGE	GREATEST FLOOD STAGE	GREATEST FLOOD FREQ.	GREATEST FLOOD %
(88)	65.30	65.07	80.80	68.92			137.40	76.44	0.2	500
(91)	108.10	58.88	133.60	59.76			227.1	65.03	0.2	500



REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

AERIAL PHOTOGRAPHY DATA	
FLOWN BY	F.D.O.T.
PHOTO DATE	2-13-93
PHOTO ID. NO.	P.D. 4125 3-08

	NAME	DATE		NAME	DATE
DESIGNED BY	MAJ	7/93	DRAWN BY	GIY	7/93
CHECKED BY	BAK	7/93	CHECKED BY	BAK	7/93

SUPERVISED BY : KENNETH A. CARPER, PE

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY :

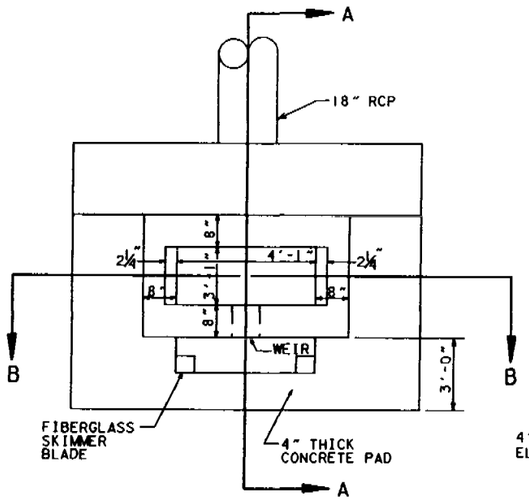
DATE :

DRAINAGE MAP

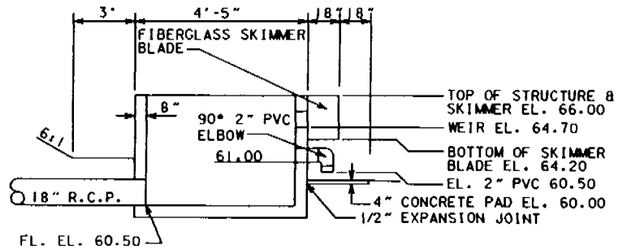
STATE PROJ. NO.	SHEET NO.
77160-3601	51

4-117-0398AGX

Datum = NGVD 29



E-9 PLAN VIEW
TYPE D SPECIAL
N.T.S.



SECTION A-A
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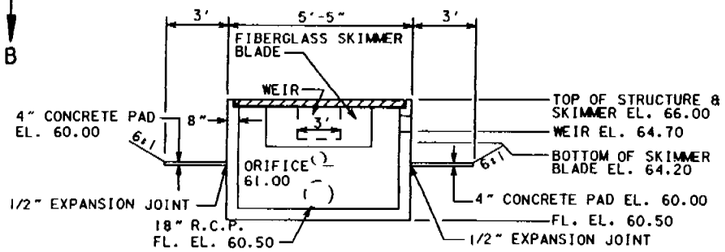

SECTION B-B
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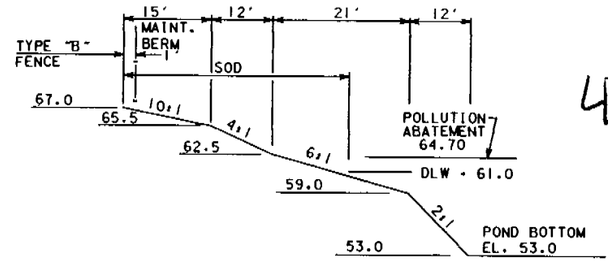
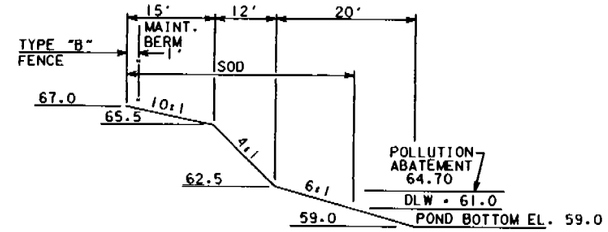


POND E TYPICAL SECTION A-A



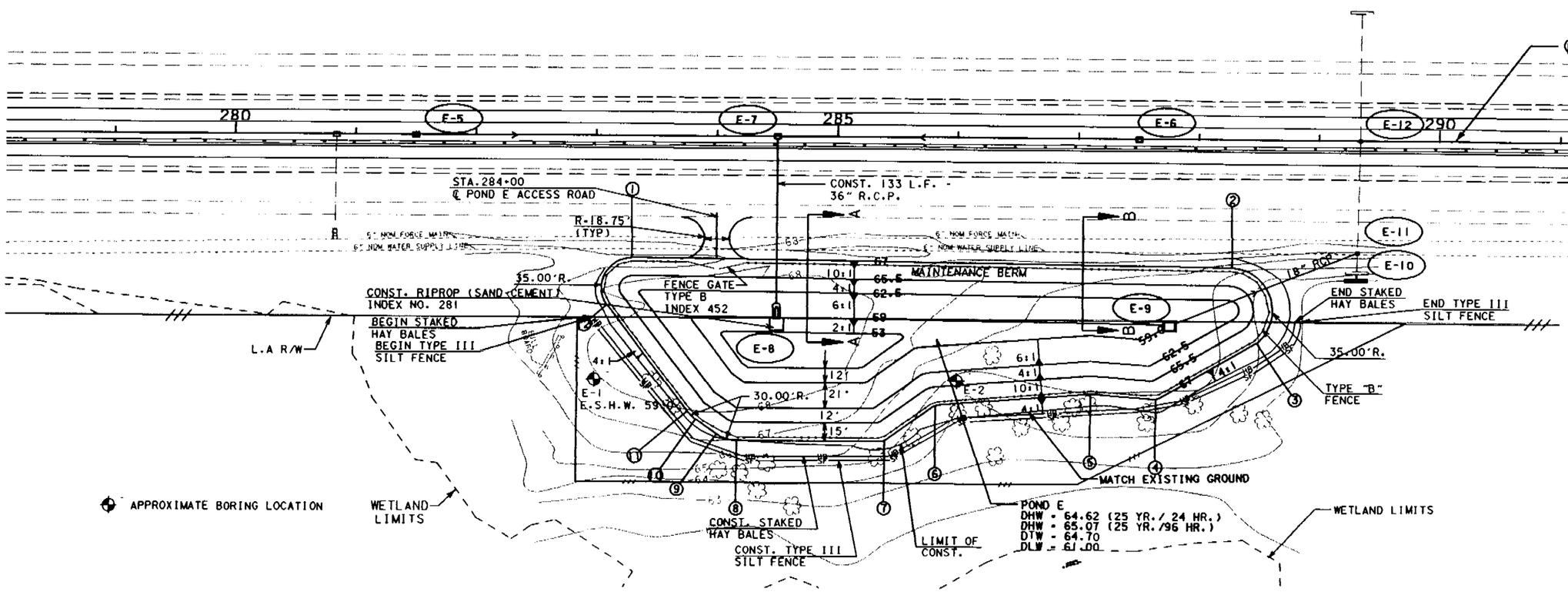
POND E TYPICAL SECTION B-B

E.S.H.W. 55.50 TO 59.00

NOTES:

1. MINIMUM RADIUS FOR CURVES IS 5 FEET. CURVES BELOW TOP OF BERM CONTOUR ARE CONCENTRIC.
2. SKIMMERS SHALL BE CONSTRUCTED OF 3/16" FIBERGLASS, STAINLESS STEEL TUBING, REINFORCED PLASTIC PLATES AND ANGLES, CONNECTED BY EPOXY BONDING AND NON-METALLIC RIVETS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PLASTIC ANGLES SHALL BE ATTACHED TO THE CONCRETE WITH STAINLESS STEEL BOLTS. ALL WORK SHALL CONFORM TO THE SPECIAL SPECIFICATIONS.
3. SKIMMER SHALL EXTEND FROM 6" BELOW WEIR CREST TO 6" TOP OF STRUCTURE
4. SKIMMER BLADE, WEIR, ORIFICE, CONCRETE PAD ETC. TO BE INCLUDED IN CONTRACT UNIT PRICE FOR CONTROL STRUCTURE.

Robert C. Alderman
12-7-94



REFERENCE POINT	℄ I-4 (SR 400) STATION	OFFSET
1	283+29.85	100.00'RT.
2	288+26.85	100.00'RT.
3	288+48.75	167.25'RT.
4	287+64.10	213.78'RT.
5	287+10.70	210.00'RT.
6	285+82.30	220.31'RT.
7	285+40.65	249.13'RT.
8	284+17.95	250.00'RT.
9	284+00.95	244.70'RT.
10	283+83.70	232.83'RT.
11	283+76.70	226.09'RT.
12	283+09.15	139.14'RT.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY	R.C.A.	8/94	DRAWN BY	R.T.M.	8/94
CHECKED BY	R.D.M.	8/94	CHECKED BY	R.C.A.	8/94

SUPERVISED BY : KENNETH A. CARPER, P.E.

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY :

DATE :

Greiner

POND E DETAIL

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DN: U:\0180\pondeetail.dgn
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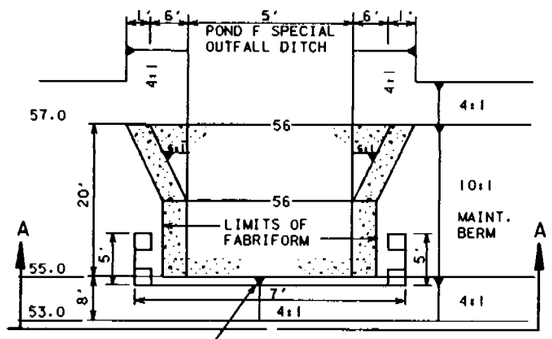
DGN Jun 23, 1993 08:32:43
MS/PC 4.0.3.1

STATE PROJ. NO.	SHEET NO.
77160-3601	52

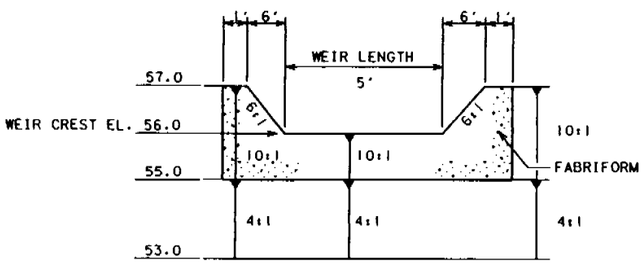
NOTES:

1. MINIMUM RADIUS FOR CURVES IS 5 FEET. CURVES BELOW TOP OF BERM CONTOUR ARE CONCENTRIC.
2. MAINTENANCE ACCESS AND MAINTENANCE BERM SHALL BE SOD ON 12" STABILIZED SUBGRADE TYPE "B" (LBR 40).
3. SKIMMERS SHALL BE CONSTRUCTED OF 3/16" FIBERGLASS, STAINLESS STEEL TUBING, REINFORCED PLASTIC PLATES AND ANGLES, CONNECTED BY EPOXY BONDING AND NON-METALLIC RIVETS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PLASTIC ANGLES SHALL BE ATTACHED TO THE CONCRETE WITH STAINLESS STEEL BOLTS. ALL WORK SHALL CONFORM TO THE SPECIAL SPECIFICATIONS.
4. SKIMMER BLADE, WEIR, ORIFICE, CONCRETE PAD ETC. TO BE INCLUDED IN CONTRACT UNIT PRICE FOR CONTROL STRUCTURE.

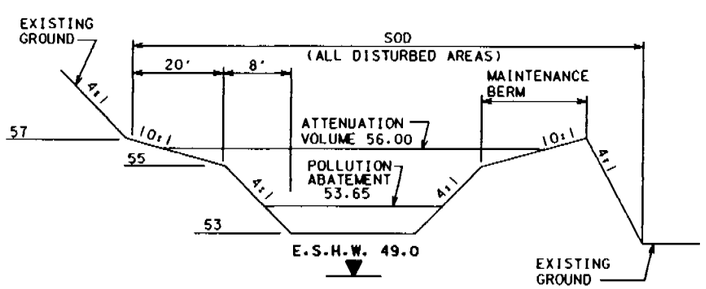


PLAN

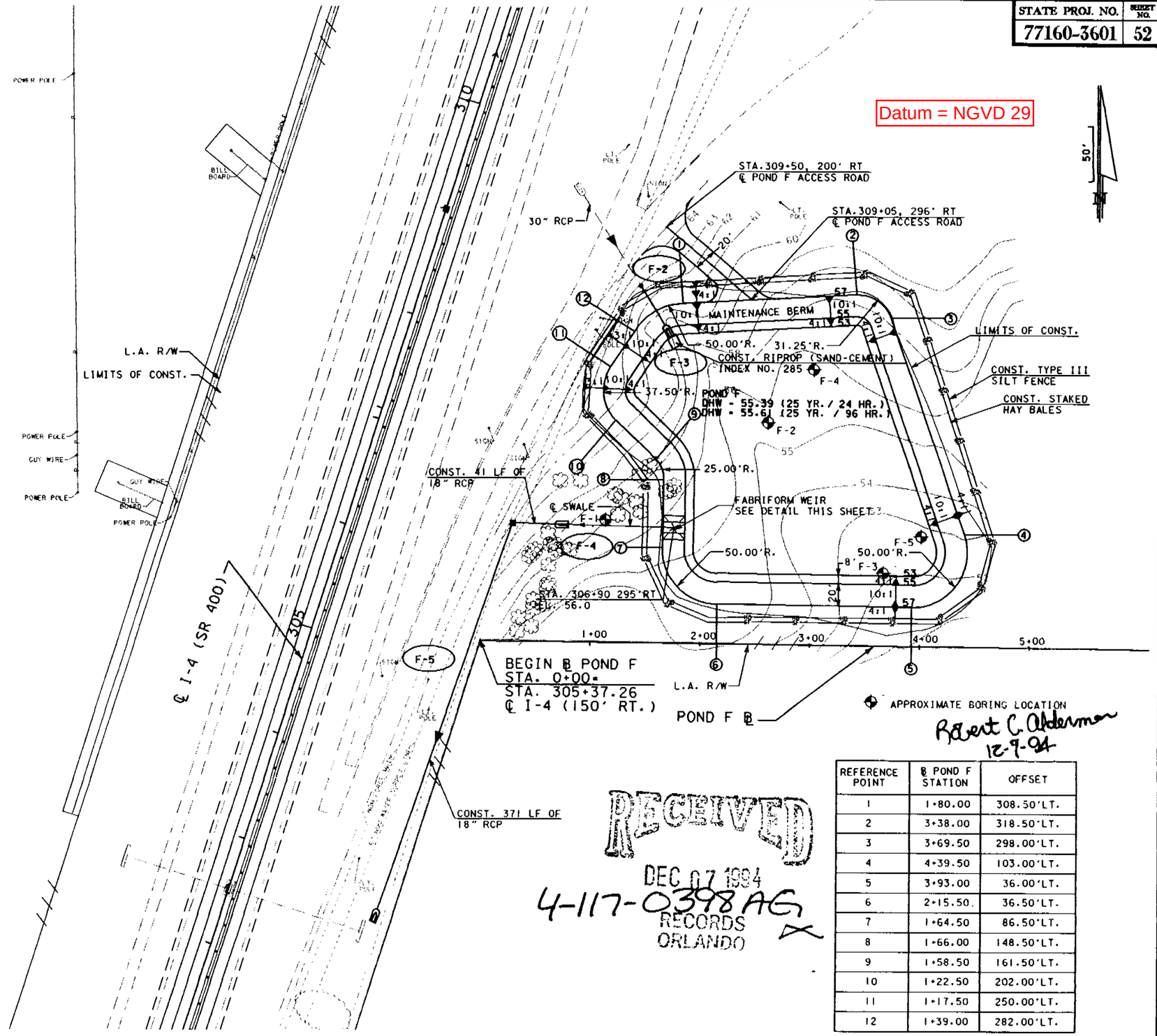
POND F OUTFALL WEIR DETAIL



SECTION A-A



POND F TYPICAL SECTION



Robert C. Alderman
12-7-94

REFERENCE POINT	℄ POND F STATION	OFFSET
1	1+80.00	308.50'LT.
2	3+38.00	318.50'LT.
3	3+69.50	298.00'LT.
4	4+39.50	103.00'LT.
5	3+93.00	36.00'LT.
6	2+15.50	36.50'LT.
7	1+64.50	86.50'LT.
8	1+66.00	148.50'LT.
9	1+58.50	161.50'LT.
10	1+22.50	202.00'LT.
11	1+17.50	250.00'LT.
12	1+39.00	282.00'LT.

RECEIVED
DEC 07 1994
4-117-0398AG
RECORDS
ORLANDO

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY	R.C.A.	8/94	DRAWN BY	R.T.M.	8/94
CHECKED BY	R.D.M.	8/94	CHECKED BY	R.C.A.	8/94

SUPERVISED BY: KENNETH A. CARPER, P.E.

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY:

DATE:

Greiner

POND F DETAIL

Mon Nov 14 08:41:17 1994
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MS/PC 4.0.3.1
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RECEIVED
JUN 15 1994
4-117-0398 AC
RECORDS
ORLANDO

INTERSTATE 4 WIDENING
(S.R. 434 to Lake Mary Boulevard)
State Project No. 77160-3601
W.P.I. Number 5148825

Datum = NGVD 29

VOLUME I
Individual MSSW Permit Calculations

Seminole County, Florida

June, 1994

Datum = NGVD 29

INTRODUCTION

The Florida Department of Transportation has retained the Orlando office of Greiner, Inc. to design and prepare construction plans for the widening of Interstate 4 from four (4) lanes to six (6) lanes beginning at S.R. 434 and ending at Lake Mary Boulevard, a distance of 3.98 miles. A key component of this project is the design of stormwater management facilities to serve the proposed improvements. There are eight water retention areas required for this project. Currently the Department owns two of the eight sites; therefore, six sites will require the purchase of additional right-of-way.

The purpose of this report is to present the design concepts and calculations to support a pre-development and post-development analysis of each basin. This report will enable the reviewer to examine the construction plans and determine the stormwater criteria has been satisfied.

Information utilized in the analysis included As-Built Plans for Interstate 4 (1961); St. Johns River Water Management District (SJRWMD) contour aerial photographs; the FDOT Location Hydraulics Report (March 1992) prepared for this project; USGS Quadrangle Maps; USDA Soil Conservation Service Soil Survey of Seminole County, Florida; FEMA Flood Insurance Rate Maps for Seminole County, Florida (Unincorporated Areas); and numerous field investigations.

STORMWATER MANAGEMENT CRITERIA

Datum = NGVD 29

The project corridor is in west Seminole County, and it lies within the jurisdiction of the St. Johns River Water Management District (SJRWMD). The majority of the project lies within Most Effective Recharge Areas of the Wekiva River Hydrologic Basin, as defined by SJRWMD. Runoff from the southern portion of the roadway (S.R. 434 to 1,110 ft. south of E.E. Williamson Road) flows via existing ditch and/or storm sewer systems to the Little Wekiva River, which has been designated as an Outstanding Florida Water (O.F.W.) per Chapter 17-302.700(9)(i) F.A.C. Runoff from the remainder of the project flows to either a land-locked lake (ie: Grace Lake, Lake Myrtle) or an isolated depression with no positive outfall.

The stormwater management facilities for this project will be designed in conformance with the latest requirements of SJRWMD. In addition, the facilities must meet the requirements of Chapter 14-86 F.A.C. as established by FDOT.

A summary of the Stormwater Management Criteria applicable to the two (2) types of basins encountered in the project corridor is presented on the following pages.

STORMWATER MANAGEMENT CRITERIA
FOR
SYSTEMS DISCHARGING TO
OUTSTANDING FLORIDA WATERS (O.F.W'S)

Datum = NGVD 29

A. WATER QUALITY - Basins A, B, and C

1. On-line retention systems discharging to an O.F.W. shall provide:
   a. Retention of 1.5 inches of runoff; or
   b. Retention of 2.625 inches of runoff from directly connected impervious areas; or
   c. Retention of runoff from a 3-year/1-hour storm;

   whichever is greater. Retention systems shall provide the capacity for the given volume of stormwater within 72 hours following the storm event assuming average antecedent conditions.

B. RECHARGE

1. Retention systems in Most Effective Recharge Areas shall:
   a. Provide retention of 3.0 inches of runoff from the directly connected impervious areas; or
   b. Demonstrate that the post-development recharge will be equal to the pre-development recharge.

   Stormwater that is retained must be infiltrated into the soil or evaporated such that the storage volume is recovered within 14 days following a storm event.

C. RUNOFF CONTROL VOLUME

Not applicable for systems with positive outfalls.

Datum = NGVD 29

D. PEAK DISCHARGE

1. The post-development peak rate of discharge must not exceed the pre-development peak rate of discharge for the following events:
   a. 25-hear/24-hour storm; and
   b. Critical Duration (1-hour thru 10 day) storm for all frequencies (2-year thru 100-year); and
   c. Mean Annual, 24-hour storm IF the facility serves an area greater than 50% impervious surface (excluding water bodies).

Datum = NGVD 29

STORMWATER MANAGEMENT CRITERIA
FOR
SYSTEMS DISCHARGING TO
LAND-LOCKED BASINS

A. WATER QUALITY - Basins F, G, I, and J

1. On-line retention systems shall provide:
   a. Retention of 1.0 inches of runoff; or
   b. Retention of 1.75 inches of runoff from the directly connected impervious areas;

   whichever is greater. Retention systems shall provide the capacity for the given volume of stormwater within 72 hours following the storm event assuming average antecedent conditions.

Basin E

2. Wet detention systems shall provide:
   a. Treatment for 1.0 inches of runoff; or
   b. Treatment for 2.5 inches of runoff from the impervious areas;

   whichever is greater. The outfall structure shall be designed to bleed down one-half the given volume of stormwater within 48-60 hours following a storm event, but no more than one-half of this volume will be discharged within the first 48 hours. Wet detention systems shall provide a 14 day residence time during the wet season (June-October), and at least 30% of the surface area shall be the littoral zone (6:1 or flatter).

B. RECHARGE

1. Retention systems in Most Effective Recharge Areas shall:
   a. Provide retention of 3.0 inches of runoff from the directly connected impervious areas; or

Datum = NGVD 29

b. Demonstrate that the post-development recharge will be equal to the pre-development recharge.

Stormwater that is retained must be infiltrated into the soil or evaporated such that the storage volume is recovered within 14 days following a storm event.

C. RUNOFF CONTROL VOLUME

1. The post-development volume of direct runoff must not exceed the pre-development volume of direct runoff for the following events:
   a. 25-year/96-hour storm; or P=12.96 inches
   b. 100-year, Critical Duration (1-hour thru 10-day) storm;

   whichever is greater. The retention volume must recover at a rate such that one-half of the volume is available within 7 days with the total volume available in 14 days.

D. PEAK DISCHARGE

1. The post-development peak rate of discharge must not exceed the pre-development peak rate of discharge for the following events:
   a. 25-year/24-hour storm; and P=8.2 inches
   b. Critical Duration (1-hour thru 10 day) storm for all frequencies (2-year thru 100-year); and
   c. Mean Annual, 24-hour storm IF the facility serves an area with greater than 50% impervious surface (excluding water bodies).

Datum = NGVD 29

TABLE 2

SUMMARY OF PRE-DEVELOPMENT HYDROLOGIC PARAMETERS

POST-DEV BASIN DESIGNATION	PRE-DEV BASIN DESIGNATION	BASIN AREA (ac)	CURVE NUMBER	TIME OF CONC. (min)	DISCHARGE 25-YR/24-HR (cfs)	DISCHARGE 25-YR/24-HR (cfs)
A	BASIN A	13.89	59.60	30.00	25.28	N/A
A	POND A	1.18	30.00	23.18	.013	N/A
B	B - 201	10.33	74.40	22.20	35.31	N/A
C	B - 208	7.94	53.10	42.40	8.45	N/A
C	B - 210	20.18	47.40	61.20	11.79	N/A
E	BASIN E	6.20	54.50	31.60	10.79	16.28
F	BASIN F	5.89	48.20	34.00	6.94	12.39
G	BASIN G	19.45	51.81	29.30	31.30	49.60
I	BASIN I	18.07	53.50	34.00	28.14	44.21
J	BASIN J	23.96	47.70	73.70	15.43	29.64
TOTALS		127.09				

TABLE 3

Datum = NGVD 29

SUMMARY OF POST-DEVELOPMENT HYDROLOGIC PARAMETERS

BASIN DESIGNATION	BASIN AREA (ac)	IMP. AREA (ac)	% IMP. AREA	CURVE NUMBER (cn)	TIME OF CONC. (min)	DISCHARGE 25-YR/24-HR (cfs)	DISCHARGE 25-YR/96-HR (cfs)
A	15.91	7.62	47.9	67.30	26.33	49.35	N/A
B	25.95	10.95	42.2	63.90	32.83	62.59	N/A
C	20.80	8.22	39.5	62.30	49.80	35.04	N/A
E	6.20	3.59	57.9	77.30	31.60	21.48	23.73
F	5.89	2.71	46.0	66.10	34.00	14.83	18.75
G	19.89	6.55	32.9	58.40	29.30	42.66	59.64
I	18.08	6.35	35.1	59.70	34.00	36.92	51.31
J	29.92	7.80	26.1	54.40	73.70	27.56	45.30

[V018010.TABLE]

TABLE 4

Datum = NGVD 29

PEAK CONDITIONS HYDROGRAPH

POST-DEV BASIN DESIGNATION	POST-DEV BASIN DESIGNATION	PRE-DEVELOPMENT		POST-DEVELOPMENT	
		DISCHARGE 25 yr/24 hr (cfs)	DISCHARGE(1) 25 yr/96 hr (cfs)	DISCHARGE 25 yr/24 hr (cfs)	DISCHARGE(1) 25 yr/96 hr (cfs)
A	BASIN A	25.28	N/A	N/A	N/A
A	POND A	0.13	N/A	N/A	N/A
B	B - 201	35.31	N/A	62.59	N/A
C	B - 208	8.45	N/A	35.04	N/A
C	B - 210	11.79	N/A	N/A	N/A
E	(1) E	10.79	16.28	21.48	23.73
F	(1) F	6.94	12.39	14.83	18.75
G	(1) G	31.30	49.60	42.66	59.64
I	(1) I	28.14	44.21	36.92	51.31
J	(1) J	15.43	29.64	27.56	45.30

TABLE 5

Datum = NGVD 29

PRE VS. POST ROUTING DISCHARGE DATA

BASIN DESIGNATION	PRE-DEVELOPMENT		POST-DEVELOPMENT	
	DISCHARGE 25 yr/96 hr (cfs)	DISCHARGE 25 yr/96 hr (cfs)	DISCHARGE 25 yr/24 hr (cfs)	DISCHARGE 25 yr/96 hr (cfs)
A	49.26	N/A	40.14	N/A
B	16.90	N/A	11.17	N/A
C	14.66	N/A	12.70	N/A
E	10.79	16.28	.20	1.85
F	6.94	12.39	.41	1.67
G	31.30	49.60	2.01	14.53
I	28.14	44.21	2.70	15.94
J	15.43	29.64	0.00	0.00

TABLE 6

Datum = NGVD 29

SUMMARY OF REQUIRED RETENTION VOLUMES

BASIN DESIGNATION	CRITERIA	POND TYPE WET/DRY	BASIN AREA (ac)	IMPERVIOUS AREA (ac)	OFW* 1.5 in	OFW* 2.625 in	OFW* *** 3.0 in	LANDLOCKED** 1.0 in	LANDLOCKED** 1.75 in	LANDLOCKED** 2.5 in	LANDLOCKED** *** 3.0 in	VOLUME PROVIDED (ac-ft)
A	OFW	DRY	15.91	7.62	1.99	1.67	1.91					2.00
B	OFW	DRY	25.95	10.95	3.24	2.40	2.74					3.56
C	OFW	DRY	20.80	8.22	1.73	1.80	2.06					2.06
E	LANDLOCKED	WET	6.20	3.59				0.53		0.75		0.77
F	LANDLOCKED	DRY	5.89	2.71				0.49	0.40		0.68	0.72
G	LANDLOCKED	DRY	19.89	6.55				1.66	0.95		1.64	3.40
I	LANDLOCKED	DRY	18.08	6.35				1.51	0.93		1.59	1.62
J	LANDLOCKED	DRY	29.93	7.8				2.49	1.14		1.95	2.08

* OFW - OUTSTANDING FLORIDA WATER
** LANDLOCKED - LANDLOCKED BASIN
*** RECHARGE VOLUME: 3.0"X DCIA

[V018010.TABLE]

TABLE 7

Datum = NGVD 29

SUMMARY OF PRIMARY WATER CONTROL STRUCTURES

POND	STRUCTURE TYPE (1)	WEIR ELEV.	WEIR LENGTH	METHOD OF RECOVERY	POND BOTTOM / CONTROL ELEV.
A	SCW	55.80	3.00	PERCOLATION	51.00
B	SCW	53.50	3.00	PERCOLATION	51.00
C	SCW	63.00	3.00	PERCOLATION	60.00
E	SCW	64.70	3.00	(qty = 1) 2* ORIFICE	61.00
F	BCW	56.00	3.00	PERCOLATION	53.00
G	SCW	55.00	3.00	PERCOLATION	50.00
I	SCW	60.23	3.00	PERCOLATION	56.00
J	SCW	63.50	3.00	PERCOLATION	56.00

TABLE 8

Datum = NGVD 29

SUMMARY OF RETENTION VOLUME DRAWDOWN

POND	DRAINAGE BASIN AREA (ac)	TREATMENT VOLUME REQUIRED (ac-ft)	TREATMENT VOLUME PROVIDED (ac-ft)	RECOVERY DURATION (hours)
A	15.91	1.99	2.00	68.50
B	25.95	3.24	3.56	42.00
C	20.80	2.06	2.08	67.50
E	6.20	0.75	0.77	48.00 (1)
F	5.89	0.68	0.72	2.00
G	19.89	1.66	3.40	4.50
I	18.08	4.59	1.62	70.50
J	24.07	2.49		8.00

(1) BLEED DOWN ONE-HALF THE REQUIRED TREATMENT VOLUME IN 48 HOURS.

BASIN E

Datum = NGVD 29

Basin E extends from Sta. 261+00 to Sta. 293+00. There is approximately 6.20 acres in the post-development drainage basin. The stormwater runoff is conveyed to Pond E via median ditch bottom inlets and storm sewer pipe. All widening is to be accomplished in the median with the cross slope of the proposed pavement toward the center line of I-4. No work is planned for the roadside ditches in this basin. Only proposed impervious areas in the basin will be treated in Pond E. The existing four lane section of I-4 will continue to drain to the outside roadway ditches and be carried away from I-4.

The location for Pond E is a heavily wooded parcel within the floodplain of Grace Lake, adjacent to the right (east) side of Interstate 4 (Sta. 284+00 to Sta. 289+00). The SCS Soil Survey indicates that Myakka and Eau Gallie fine sands are present at this location. These soils are classified in Hydrologic Soil Group B/D, and in their undrained condition exhibit groundwater levels at or near the surface. Pond E is be a wet detention system with a maintained water elevation equal to the normal water level of Grace Lake. Discharge from the pond will be dependent upon the level of Grace Lake. Pond E will serve as an extension of Grace Lake, providing additional floodplain storage to compensate for the new impervious areas and any existing storage that may be eliminated by placement of fill. According to the FEMA Maps in the vicinity of the pond location, the 100-year floodplain elevation is 66.00. The pond maintenance berm will displace approximately 388 cubic-feet of volume. However, Pond E will provide greater than 388 cubic-feet of compensating volume.

In order to maximize the flow-path through the pond and eliminate problems with short-circuiting, the pond is designed so that runoff enters from the south and discharges to the north. Pond E is designed in conformance with the Land-Locked Basin Criteria.

Pond E has a meandering shape due to an effort to save many of the native mature hardwood trees. These trees act as a visual and sound buffer for the Northridge and Northcove subdivision homeowners. See Table 8 in Section 2 for a summary of required retention volumes and drawdown results.

Datum = NGVD 29

GREINER INC: WATER RESOURCES GROUP
CURVE NUMBER AND RUNOFF VOLUME WORKSHEET

PROJECT TITLE:	I-4 WIDENING	FILENAME:	CNPR-PDE.WK3	
PROJECT NUMBER:	V0187.10	SCALE (1" =)	0	DATE
BASIN DESIGNATION:	POND E	MADE BY:	MJJ	28-Apr-94
BASIN ANALYSIS (PRE/POST):	PRE	CHECKED BY:	(RCG)	[illegible]

SUB-BASIN ANALYSIS

1) BASIN / STUDY DATA

PLANIMETERED BASIN AREA (in^2)	0.00
COMPUTED BASIN AREA (Ac)	6.20
RAINFALL (inches) - P	18.84

DETERMINE BASIN RUNOFFF CURVE NUMBER - CN

LAND-USE	DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA	PRODUCT
RANGE / GRASS	BASIN I-4			39	4.11	160.29
WOODS	POND SITE			80	1.50	120.00
PAVEMENT	BASIN I-4			98	0.59	57.82
				TOTALS	6.20	338.11

COMPOSITE CN	54.5

ESTIMATE OF RUNOFF VOLUME

1) DETERMINE SOIL STORAGE - S

S = (1000 / CN) - 10

SOIL STORAGE (inches)	S	8.34

2) DETERMINE RUNOFF - R

R = (P - 0.2*S)^2 / (P + 0.8*S)

RUNOFF (inches)	R	11.56

3) DETERMINE RUNOFF VOLUME - V(R)

V(R) = R / 12 * AREA

RUNOFF (Ac-ft)	V(R)	5.97

Greiner

Datum = NGVD 29

Job I-4 Widening | Project No. V0180.10 | Sheet ____ of ____

Description Pond E Pre-development Time of Concentration | Computed By RCG | Date 6/94

Checked By ____ | Date ____

Pre-dev. time of concentration

Due to the proposed widening to the inside, the pre-dev. T_c is similar to the post-dev. T_c. The drainage patterns and basins are not altered due to the construction.

Due to the median ditch flow T_c = 26.6 min

+ 1100 LF of pipe flow = 5 min

31.6 min.

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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SJRWMD 25 YR \ 96 HR RAINFALL EVENT -- PRE-DEVELOPMENT--
12-16-93

Datum = NGVD 29

BASIN NAME	BASINE
NODE NAME	PONDE
UNIT HYDROGRAPH	UH323
PEAKING FACTOR	323.
RAINFALL FILE	SJRWMD96
RAIN AMOUNT (in)	12.96
STORM DURATION (hrs)	96.00
AREA (ac)	6.20
CURVE NUMBER	54.50
DCIA (%)	.00
TC (mins)	31.60
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
BASINE	16.28	60.18	6.49	POND E BASIN PRE-DEVELOPMENT

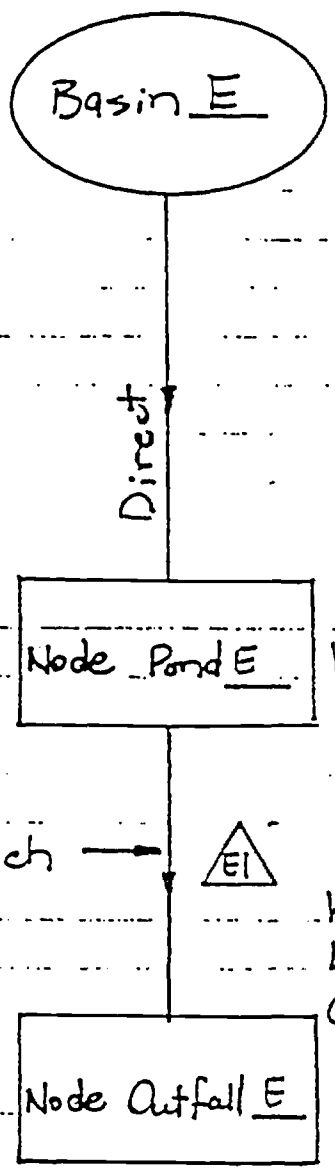
Greiner

Datum = NGVD 29

Job _____ Project No. _____ Sheet ____ of ____

Description _____ Computed By _____ Date _____

_____ Checked By _____ Date _____



Basin Characteristics:
Drainage Area = 6.20 ac.
CN = 77.3
T_c = 31.6 min

Drop Structure:
Weir 64.70 Pipe Length 168'
Length 3' U.S. Inv 60.5
Orifice 61.0 D.S. Inv 58.8
Dia. 2" Dia. 24

Post-Development Nodal Diagram

6-21

Datum = NGVD 29

GREINER INC: WATER RESOURCES GROUP CURVE NUMBER AND RUNOFF VOLUME WORKSHEET				
PROJECT TITLE:	I-4 WIDENING	FILENAME:	CN-PONDE.WK3	
PROJECT NUMBER:	V0187.10	SCALE (1" = _)	0	DATE
BASIN DESIGNATION:	POND E	MADE BY:	MJJ	28-Apr-94
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:	[illegible]	[illegible]

SUB-BASIN ANALYSIS

1) BASIN / STUDY DATA

PLANIMETERED BASIN AREA (in^2)	0.00
COMPUTED BASIN AREA (Ac)	6.20
RAINFALL (inches) - P	18.84

DETERMINE BASIN RUNOFFF CURVE NUMBER - CN

LAND-USE	DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA	PRODUCT
RANGE / GRASS	BASIN I-4			39	✓1.11	43.29
	POND SITE			39	✓1.08	42.12
PAVEMENT	BASIN I-4			98	✓3.59	351.82
	POND SITE			98	0	0.00
WATER	POND SITE			100	✓0.42	42.00
				TOTALS	✓6.20	479.23

COMPOSITE CN	77.3

ESTIMATE OF RUNOFF VOLUME

1) DETERMINE SOIL STORAGE - S

S = (1000 / CN) - 10

SOIL STORAGE (inches)	S	2.94

2) DETERMINE RUNOFF - R

R = (P - 0.2*S)^2 / (P + 0.8*S)

RUNOFF (inches)	R	15.72

3) DETERMINE RUNOFF VOLUME - V(R)

V(R) = R / 12 * AREA

RUNOFF (Ac-ft)	V(R)	✓8.12

Datum = NGVD 29

ST JOHN'S RIVER WATER MANAGEMENT DISTRICT
POLLUTION ABATEMENT VOLUME REQUIREMENT
OFFLINE RETENTION

POND E

POST DEVELOPMENT LAND USE	
1) IMPERVIOUS AREA (Ac.)	3.59
2) PERVIOUS AREA (Ac.)	2.61
3) TOTAL AREA (Ac.)	6.20

POLLUTION ABATEMENT VOLUME (REQUIRED)	(Ac–ft)
1) 1.0 inch OF RUNOFF OVER ENTIRE AREA ------ 1.0" / (12" / 1 ft) * (TOTAL AREA) =	0.52
2) 2.5 inches OVER THE IMPERVIOUS AREA ----- 2.5" / (12" / 1 ft) * (IMP. AREA) =	0.75
3) 3 year / 1 Hour STORM EVENT RUNOFF ------ SEE CURVE NUMBER SHEET	N/A
4) POLLUTION ABATEMENT VOLUME (REQUIRED)	0.75

RECHARGE VOLUME (REQUIRED)	(Ac–ft)
1) POST–DEVELOPMENT IMPERVIOUS AREA	3.59
2) PRE–DEVELOPMENT IMPERVIOUS AREA	0.59
4) RECHARGE VOLUME (REQUIRED) ---- (3.0 " / (12" / 1 FT) * (IMP. DELTA)	0.90

GREINER INC: WATER RESOURCES GROUP POLLUTION ABATEMENT / RECHARGE VOLUME CALCULATIONS				
PROJECT TITLE:	I – 4 WIDENING	FILENAME:	PAVPONDE.WK3	
PROJECT NUMBER:	V0180.10	SCALE (1" = __)	200	DATE
BASIN DESIGNATION:	POND E	MADE BY:	MJJ	29–Apr–94
ANALYSIS (PRE/POST):	POST	CHECKED BY:	RCQ	1-29-72

Datum = NGVD 29

GREINER INC: WATER RESOURCES GROUP

POND STAGE STORAGE CALCULATIONS – POND E

PROJECT TITLE:	I – 4 WIDENING	FILENAME:	SSPONDE.WK3	
PROJECT NUMBER:	V0180.10	SCALE (1" =__)	200	DATE
BASIN DESIGNATION:	POND E	MADE BY:	MJJ	09–Jun–94
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:		

ELEV.	PLAN. VALUE 1 (si)	PLAN. VALUE 2 (si)	AREA (ac)	AVE. AREA (ac)	DELTA D (ft)	DELTA STORAGE (ac–ft)	STORAGE P.A.V.* (ac–ft)	ATTENUATION OF PEAK DISCHARGE (ac–ft)
53.00	0.104	0.081	0.085				0	0
				0.17	6	1.04		
59.00	0.283	0.286	0.261				1.04	1.04
				0.33	1	0.33		
60.00			0.395				1.37	1.37
				0.46	1	0.46		
61.00	0.569	0.579	0.527				1.83	*** 1.83
				0.59	1	0.59		
62.00			0.660				0.59	0.59
				0.69	0.5	0.35		
62.50	0.789	0.796	0.728				0.94	0.94
				0.79	0.5	0.39		
63.00			0.851				1.34	1.34
				0.91	1	0.91		
64.00			0.973				2.25	2.25
				1.00	0.7	0.70		
64.70			1.034				2.95	** 2.95
				1.12	0.8	0.89		
65.50	1.302	1.313	1.201				3.84	3.84
				1.28	0.5	0.64		
66.00			1.368				4.49	4.49
				1.41	1	1.41		
67.00	1.589	1.572	1.451				5.89	5.90

* P.A.V. = POLLUTION ABATEMENT VOLUME.
** VOLUME IS BASED ON POLLUTION ABATEMENT AND LANDLOCKED CONTROL VOLUME.
*** PERMANENT POOL VOLUME.

Greiner

Datum = NGVD 29

Job I-4 Widening | Project No. V0180.10 | Sheet ____ of ____

Description Pond E Tailwater Info | Computed By RCA | Date 6/94

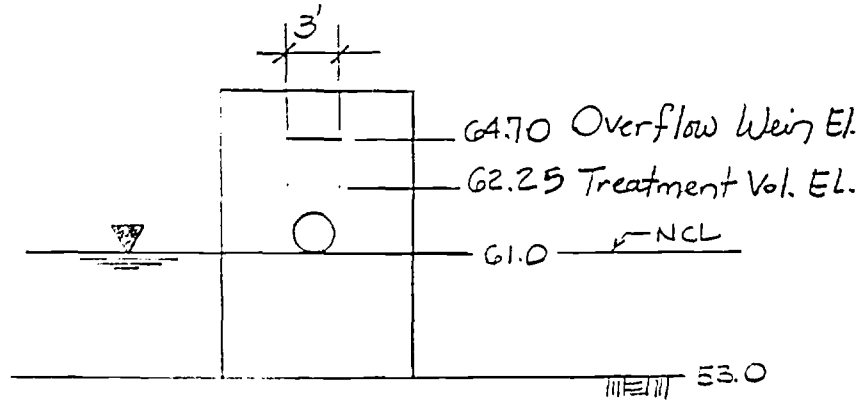
Checked By ____ | Date ____

Pond E discharges to Grace Lake. Grace Lake is located in a land-locked basin and Pond E is located with sufficient vertical clearance from Grace Lake that Grace Lake has no effect on the tailwater associated with Pond E.

Greiner

Datum = NGVD 29

Job	I-4 Widening	Project No.	V0180.10	Sheet ____ of ____	
Description		Computed By	RCQ	Date	12-14-93
Pond E Control Structure		Checked By	MJJ	Date	12-93

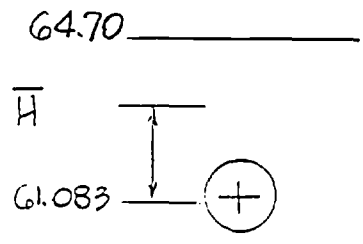


Treatment Volume = 0.75 ac-ft Treatment Volume depth = 1.25'

Criteria:

Bleed down ½ the pollution abatement volume with in 48 to 60 hours <u>but</u> no more than ½ of this volume with in the first 48 hrs.

one-half × pollution abatement volume = ½ × 0.75 = <u>0.38 ac-ft</u>



$\bar{H} = (64.70 + 61.083)/2 = 62.89 - 61.083 = 1.809'$

$t = 48 \text{ hours} \times 3600 \frac{\text{sec}}{\text{hr}} = 172{,}800 \text{ sec}$

$Q = \frac{0.38 \text{ ac-ft} \times 43{,}560}{172{,}800 \text{ sec.}} = 0.0958 \text{ cfs}$

Orifice eq'n:

$Q = C A \sqrt{2gH}$

$A = \frac{0.0958}{0.6\sqrt{2(32.2)(1.809)}} = 0.0148 \text{ ft}^2$ .026

the diameter of an orifice

$A = \frac{\pi d^2}{4} = 0.0148 \text{ ft}^2$

$d = 1.65 \text{ in}$ $\boxed{\text{dia.} \Rightarrow 2.0''}$

Greiner

Datum = NGVD 29

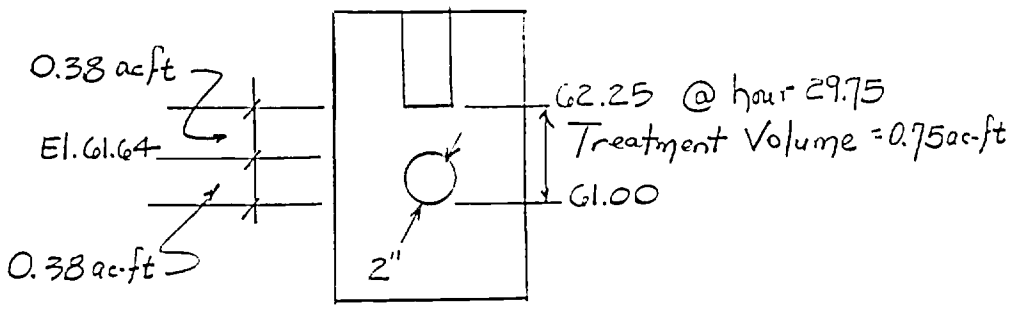
Job I-4 Widening | Project No. V0180.10 | Sheet ____ of ____

Description | Computed By RCQ | Date 12-14-93

Pond E Control Structure | Checked By NAJ | Date 12-93

Check computer model Adicpr for recovery data on Pond E

Recover 0.38 ac-ft in 48 hours:



recovery clock begins @ hour 29.75 during the storm
add 48 hours and check volume remaining in Pond E

Check ADICPR Output → 29.75 + 48.00 = 77.75 hour Stage = 61.64 Volume = 0.38 ac-ft

Greiner

Datum = NGVD 29

Job: I-4 Widening | Project No. V0180.10 | Sheet ____ of ____

Description: Pond E Control Structure | Computed By: RCQ | Date: 12-14-93

Checked By: MNJ | Date: 12-93

Check permanent pool volume:

Calculate runoff coefficient:

Sta. 261+50 to Sta. 293+60 ⟹ 3150 LF

			C	
49' pav't	× 3150	= 3.54 ac.	× 0.95	3.36
15' grass	× 3150	= 1.08 ac.	× 0.30	0.32
water El. 61.0		= 0.53 ac.	× 1.00	0.53
Berm pond E @ 67.0		= 0.92 ac.	× 0.30	0.28
		Σ 6.10 ac.		Σ = 4.49

$$\text{weighted } \bar{c} = \frac{c \times A}{A}$$

$$= \frac{4.49}{6.10} = 0.74$$

2 week residence time during the wet season = 14 days / 153 days

$$\text{Min. permanent pool volume} = \frac{(6.20\text{ ac.})(0.74)(32\text{ in})(14/153)}{12\text{ in/ft}} = 1.12\text{ ac-ft}$$

Pond E volume below an elevation of 61.0 feet is:

El.	Area	Vol ac-ft
53.0	0.085	
		1.04
59.0	0.261	
		0.79
61.0	0.528	
		1.83 ac-ft

Perm. Pool Req'd = 1.12 ac-ft << Perm. Pool Avail. = 1.83 ac-ft ✓

JOB:	I – 4 WIDENING	PROJECT NO.:	V0180.10		
DESCRIPTION:	POST DEVELOPMENT CALCULATIONS AND	COMPUTED BY:	MJJ	DATE:	09–Dec–93
	DITCH PROFILES FOR POND "E"	CHECKED BY:		DATE:	

Right Side	
Median	XX
Left Side	

Overall Basin Length:	261 + 00	to	293 + 00
Sub–Basin 1:	261 + 00	to	287 + 50
Sub–Basin 2:	293 + 00	to	287 + 50

Rainfall Zone:	7
Frequency:	25

Datum = NGVD 29

SECTION INFORMATION				DITCH GEOMETRY												
Station to Station		Length	Slope	TOTAL (CA)	Time of Conc.	Inten–sity	Flow Q	Front Slope	Bottom Width	Back Slope	*** n	Depth	Calc'd Vel.	Section Flow Time	Lining	Remarks
Begin	End	(ft)	%	(Ac)	(min)	(in/hr)	(CFS)	(ft/ft)	(ft)	(ft/ft)		(ft)	(ft/sec)	(min)	(Y/N)	
261	262	100	0.30	0.117	10.00	8.26	0.97	6		10	0.060	0.48	0.52	3.2		
262	264	200	0.90	0.352	13.21	7.54	2.65	6		10	0.060	0.57	1.01	3.3		
264	266	200	1.55	0.586	16.51	6.95	4.07	6		10	0.060	0.60	1.38	2.4		
266	268	200	1.55	0.820	18.92	6.59	5.41	6		10	0.060	0.67	1.48	2.3		
268	270	200	1.55	1.055	21.17	6.30	6.65	6		10	0.042	0.63	2.04	1.6		
270	272	200	1.55	1.289	22.81	6.11	7.87	6		10	0.042	0.67	2.13	1.6		
272	274	200	0.55	1.524	24.37	5.93	9.04	6		10	0.042	0.86	1.50	2.2		
					26.59	5.71										
274	276	200	0.55	0.234	10.00	8.26	1.94	6		10	0.060	0.55	0.78	4.3		
276	278	200	0.55	0.469	14.27	7.33	3.44	6		10	0.060	0.69	0.90	3.7		
					17.98	6.73										

*** If the calculated value D < 0.7 ft., use Manning's n = 0.06
If the calculated value D >= 0.7 ft., use Manning's n = 0.042

Basin E T_c = 26.6 min + 1100 LF of pipe to Pond E (5 min) = 31.6 min

6-29

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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25YR-96HR POST-DEVELOPMENT BASINS B,C,E,F,G,I,&J
05-02-94

Datum = NGVD 29

BASIN NAME	BASINE
NODE NAME	PONDE
UNIT HYDROGRAPH	UH323
PEAKING FACTOR	323.
RAINFALL FILE	SCSII-24
RAIN AMOUNT (in)	12.20
STORM DURATION (hrs)	96.00
AREA (ac)	6.20
CURVE NUMBER	77.30
DCIA (%)	.00
TC (mins)	31.60
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
BASINE	16.74	48.10	9.27	POND E POST-DEVELOPMENT

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25YR-96HR POST-DEVELOPMENT BASINS B,C,E,F,G,I,&J
05-02-94

Datum = NGVD 29

NODAL MIN/MAX/TIME CONDITIONS REPORT

NODE ID	PARAMETER	|<-- MINIMUMS --> VALUE	TIME (hr)	|<-- MAXIMUMS --> VALUE	TIME (hr)
PONDE	STAGE (ft):	61.00	7.25	64.92	52.75
	VOLUME (af):	.00	7.25	3.16	52.75
	RUNOFF (cfs):	.00	16.00	16.49	48.00
	OFFSITE (cfs):	.00	96.00	.00	96.00
	OTHER (cfs):	.00	96.00	.00	96.00
	OUTFLOW (cfs):	-.12	13.75	1.17	52.75

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10YR-24HR POST-DEVELOPMENT BASINS B,C,E,F,G,I,&J
05-02-94

Datum = NGVD 29

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
PONDB	AREA	51.000	.000	.000	.000	51.000	1.320
						52.000	1.400
						53.000	1.480
						54.000	1.560
						55.000	1.640
						55.500	1.680
						56.000	1.850
						57.000	2.180
PONDC	AREA	60.000	.000	.000	.000	60.000	.520
						61.000	.640
						62.000	.750
						63.000	.860
						64.000	.980
						65.000	1.090
						66.000	1.210
						67.000	1.320
						67.500	1.380
						69.000	1.850
PONDE	AREA	61.000	.000	.000	.000	61.000	.528
						62.000	.660
						62.500	.730
						63.000	.850
						64.000	.970
						65.000	1.030
						65.500	1.200
						66.000	1.370
						67.000	1.450
PONDF	AREA	53.000	.000	.000	.000	53.000	1.060
						54.000	1.140
						55.000	1.220
						56.000	1.440
						57.000	1.670
PONDG	AREA	50.000	.000	.000	.000	50.000	.701
						51.000	.776
						52.000	.851
						53.000	.926
						54.000	1.000
						55.000	1.080
						56.000	1.190
						57.000	1.370
						58.000	1.590

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10YR-24HR POST-DEVELOPMENT BASINS B,C,E,F,G,I,&J
05-02-94

Datum = NGVD 29

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
PONDI	AREA	56.000	.000	.000	.000	56.000	.648
						57.000	.742
						58.000	.837
						59.000	.931
						60.000	1.025
						61.000	1.120
						62.000	1.380
						63.000	1.650
PONDJ	AREA	56.000	.000	.000	.000	56.000	1.300
						57.000	1.480
						58.000	1.650
						59.000	1.830
						60.000	2.000
						61.000	2.180
						62.000	2.360
						63.000	2.530
						64.000	2.710
						65.000	2.890
OUTFALLB	TIME	47.470	.000	.000	.000	47.470	.000
						50.470	11.000
						50.470	16.000
						47.470	24.000
OUTFALLC	TIME	50.000	.000	.000	.000	50.000	.000
						50.000	24.000
OUTFALLE	TIME	58.300	.000	.000	.000	58.300	.000
						62.300	11.000
						62.300	16.000
						58.300	24.000
OUTFALLF	TIME	53.540	.000	.000	.000	53.540	.000
						55.790	11.000
						55.790	16.000
						53.540	24.000
OUTFALLG	TIME	54.000	.000	.000	.000	54.000	.000
						54.000	24.000

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10YR-24HR POST-DEVELOPMENT BASINS B,C,E,F,G,I,&J
05-02-94

Datum = NGVD 29

```
>>REACH NAME        : E1
  FROM NODE         : PONDE
  TO NODE           : OUTFALLE
  REACH TYPE        : DROP STRUCTURE w/ CIRC. CULVERT
  FLOW DIRECTION    : POSITIVE AND NEGATIVE FLOWS ALLOWED
  TURBO SWITCH      : OFF

  CULVERT DATA      :
         SPAN (in):  24.000        RISE (in):  24.000     LENGTH (ft): 168.000
   U/S INVERT (ft):  60.500 D/S INVERT (ft):  58.800       MANNING N:    .012
       ENTRNC LOSS:    .500    # OF CULVERTS:   1.000

  POSITION A        : CIRCULAR RISER SLOT
   INVERT EL. (ft):  61.000        SPAN (in):   2.000       RISE (in):   2.000
        WEIR COEF.:   3.200       GATE COEF.:    .600 NUMBER OF ELEM.:   1.000

  POSITION B        : RECTANGULAR RISER SLOT
    CREST EL. (ft):  64.700  CREST LN. (ft):   3.000    OPENING (ft): 999.000
        WEIR COEF.:   3.200       GATE COEF.:    .600 NUMBER OF ELEM.:   1.000

                NOTE: POND E OUTFALL STR.

>>REACH NAME        : G1
  FROM NODE         : PONDG
  TO NODE           : OUTFALLG
  REACH TYPE        : DROP STRUCTURE w/ CIRC. CULVERT
  FLOW DIRECTION    : POSITIVE AND NEGATIVE FLOWS ALLOWED
  TURBO SWITCH      : OFF

  CULVERT DATA      :
         SPAN (in):  24.000        RISE (in):  24.000     LENGTH (ft):  58.000
   U/S INVERT (ft):  52.500 D/S INVERT (ft):  52.000       MANNING N:    .012
       ENTRNC LOSS:    .500    # OF CULVERTS:   1.000

  POSITION A        : RECTANGULAR RISER SLOT
    CREST EL. (ft):  55.000  CREST LN. (ft):   3.000    OPENING (ft):   1.000
        WEIR COEF.:   3.200       GATE COEF.:    .600 NUMBER OF ELEM.:   1.000

  POSITION B        : RECTANGULAR RISER SLOT
    CREST EL. (ft):  57.000  CREST LN. (ft):  15.000    OPENING (ft): 999.000
        WEIR COEF.:   3.200       GATE COEF.:    .600 NUMBER OF ELEM.:   1.000

                NOTE: POND G OUTFALL STR.
```

BASIN F

Datum = NGVD 29

Basin F extends from Sta. 293+00 to Sta. 312+00. There is approximately 5.89 acres in the post-development drainage basin. The stormwater runoff is conveyed to Pond F via median ditch bottom inlets and storm sewer pipe. All widening is to be accomplished in the median with the cross slope of the proposed pavement toward the center line of I-4. No work is planned for the roadside ditches in this basin. Only proposed impervious areas in the basin will be treated in Pond F and a small basin draining to the gore area of the eastbound rest area and I-4. The existing four lane section of I-4 will continue to drain to the outside roadway ditches and be carried away from I-4.

The location of Pond F is within the southwest corner of the existing eastbound Rest Area. It is within right-of-way currently owned by FDOT. The site is bounded on the south by an existing water retention area that serves the Northridge Subdivision. The outfall for Pond F will be to an existing isolated depression on the left (west) side of Interstate 4 via an existing 54" cross drain at Sta. 302±00. This depression currently receives runoff from Interstate 4, as well as from a large portion of the residential area to the west. Pond F is designed in conformance with the Land-Locked Basin Criteria, as the depression has no positive outfall.

Pond F is proposed as a dry facility with a bond bottom located at elevation 53.00. Pond F discharges via an overflow weir constructed into the maintenance berm of the pond. The discharge from Pond F is contained within a ditch inside FDOT right-of-way. Pond F recovers the required pollution abatement volume within 2.0 hours. See attached L. J. Nodarse & Associates, Inc. geotechnical report. See Table 8 in Section 2 for a summary of required retention volumes and drawdown analysis.

GREINER INC: WATER RESOURCES GROUP CURVE NUMBER AND RUNOFF VOLUME WORKSHEET				
PROJECT TITLE:	I-4 WIDENING	FILENAME:	CNPR-PDF.WK3	
PROJECT NUMBER:	V0187.10	SCALE (1" = __)	0	DATE
BASIN DESIGNATION:	POND F	MADE BY:	MJJ	28-Apr-94
BASIN ANALYSIS (PRE/POST):	PRE	CHECKED BY:	[illegible]	[illegible]

Datum = NGVD 29

SUB-BASIN ANALYSIS

1) BASIN / STUDY DATA

PLANIMETERED BASIN AREA (in^2)	0.00
COMPUTED BASIN AREA (Ac)	5.89
RAINFALL (inches) -- P	18.84

DETERMINE BASIN RUNOFFF CURVE NUMBER -- CN

LAND-USE	DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA	PRODUCT
RANGE / GRASS	BASIN I-4			39	2.44	95.16
RANGE / GRASS	GORE AREA			39	0.85	33.15
RANGE / GRASS	POND SITE			39	1.68	65.52
PAVEMENT	BASIN I-4			98	0.35	34.30
PAVEMENT	POND SITE			98	0.57	55.86
				TOTALS	5.89	283.99

COMPOSITE CN	48.2

ESTIMATE OF RUNOFF VOLUME

1) DETERMINE SOIL STORAGE -- S

S = (1000 / CN) -- 10

SOIL STORAGE (inches)	S	10.74

2) DETERMINE RUNOFF -- R

R = (P -- 0.2*S)^2 / (P + 0.8*S)

RUNOFF (inches)	R	10.16

3) DETERMINE RUNOFF VOLUME -- V(R)

V(R) = R / 12 * AREA

RUNOFF (Ac-ft)	V(R)	4.99

Greiner

Datum = NGVD 29

Job I-4 Widening | Project No. V0130.10 | Sheet ____ of ____

Description | Computed By RCA | Date 6/94

Pond F Pre-development | Checked By | Date

Time of Concentration

Pre-dev. time of concentration

Due to the proposed widening to the inside, the pre-dev T_c is similar to the post-dev T_c. The drainage patterns and basins are not altered due to the construction.

Due to the median ditch flow T_c = 34.0 min

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SJRWMD 25 YR \ 96 HR RAINFALL EVENT -- PRE-DEVELOPMENT--
12-16-93

Datum = NGVD 29

BASIN NAME	BASINF
NODE NAME	PONDF
UNIT HYDROGRAPH	UH323
PEAKING FACTOR	323.
RAINFALL FILE	SJRWMD96
RAIN AMOUNT (in)	12.96
STORM DURATION (hrs)	96.00
AREA (ac)	5.89
CURVE NUMBER	48.20
DCIA (%)	.00
TC (mins)	34.00
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
BASINF	12.39	60.22	5.42	POND F BASIN PRE-DEVELOPMENT

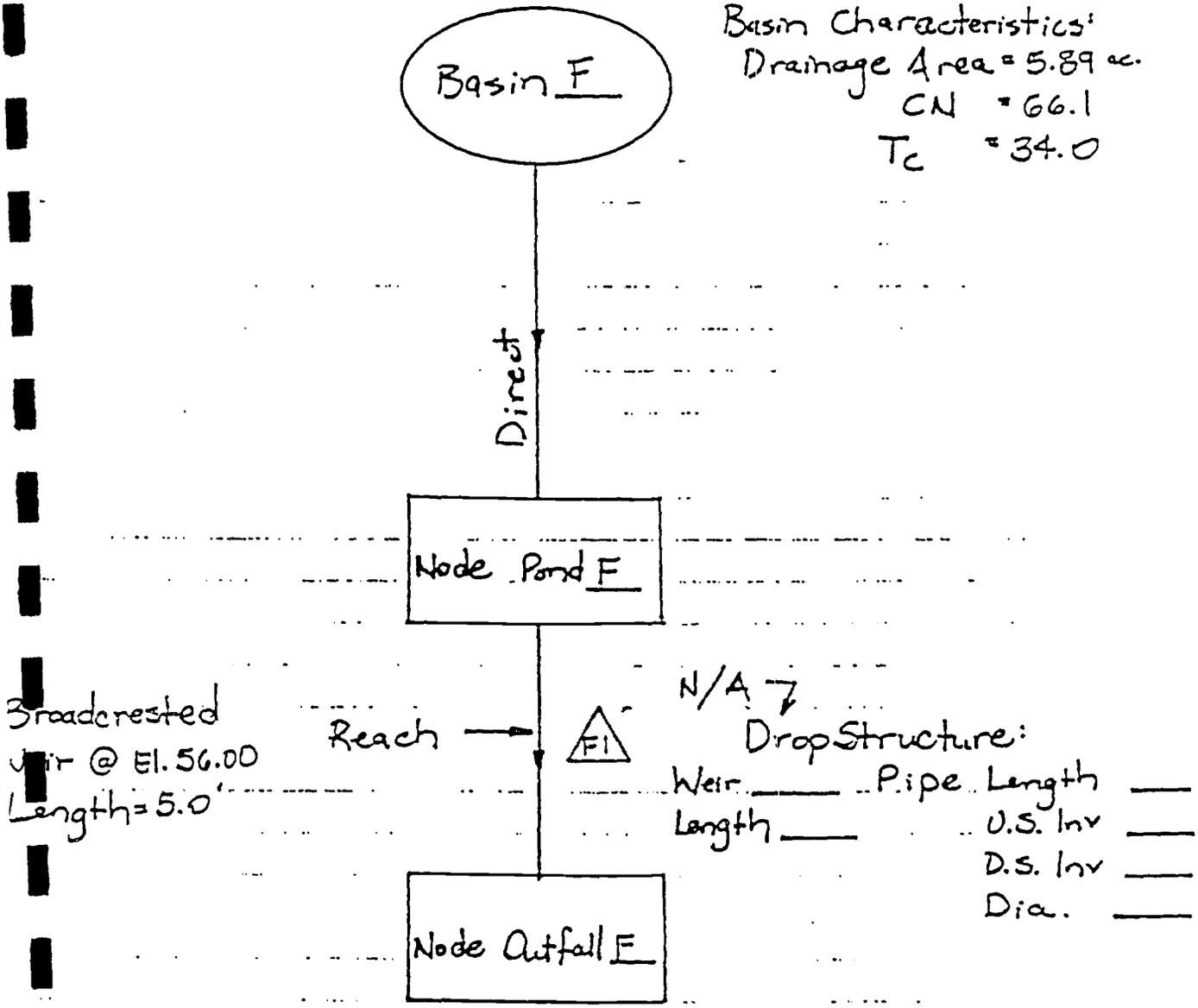
Greiner

Job _____ Project No. _____ Sheet ____ of ____

Description _____ Computed By _____ Date _____

_____ Checked By _____ Date _____

Datum = NGVD 29



Post-Development Nodal Diagram

GREINER INC: WATER RESOURCES GROUP CURVE NUMBER AND RUNOFF VOLUME WORKSHEET				
PROJECT TITLE:	I-4 WIDENING	FILENAME:	CN-PONDF.WK3	
PROJECT NUMBER:	V0187.10	SCALE (1" = __)	0	DATE
BASIN DESIGNATION:	POND F	MADE BY:	MJJ	28-Apr-94
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:	RCa	[illegible]

Datum = NGVD 29

SUB-BASIN ANALYSIS

1) BASIN / STUDY DATA

PLANIMETERED BASIN AREA (in^2)	0.00
COMPUTED BASIN AREA (Ac)	5.89
RAINFALL (inches) – P	18.84

DETERMINE BASIN RUNOFFF CURVE NUMBER – CN

LAND-USE	DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA	PRODUCT
RANGE / GRASS	BASIN I-4			39	✓ 0.65	25.35
RANGE / GRASS	GORE AREA			39	✓ 0.85	33.15
RANGE / GRASS	POND SITE			39	✓ 1.68	65.52
PAVEMENT	BASIN I-4			98	✓ 2.14	209.72
PAVEMENT	POND SITE			98	✓ 0.57	55.86
				TOTALS	5.89	389.60

COMPOSITE CN	✓ 66.1

ESTIMATE OF RUNOFF VOLUME

1) DETERMINE SOIL STORAGE – S

$S = (1000 / CN) - 10$

SOIL STORAGE (inches)	S	5.12

2) DETERMINE RUNOFF – R

$R = (P - 0.2*S)^2 / (P + 0.8*S)$

RUNOFF (inches)	R	13.84

3) DETERMINE RUNOFF VOLUME – V(R)

$V(R) = R / 12 * AREA$

RUNOFF (Ac-ft)	V(R)	✓ 6.79

ST JOHN'S RIVER WATER MANAGEMENT DISTRICT
POLLUTION ABATEMENT VOLUME REQUIREMENT
OFFLINE RETENTION

Datum = NGVD 29

POND F

POST DEVELOPMENT LAND USE	
1) IMPERVIOUS AREA (Ac.)	2.71
2) PERVIOUS AREA (Ac.)	3.18
3) TOTAL AREA (Ac.)	5.89

POLLUTION ABATEMENT VOLUME (REQUIRED)	(Ac–ft)
1) 1.0 inch OF RUNOFF OVER ENTIRE AREA ------ 1.0" / (12" / 1 ft) * (TOTAL AREA) =	0.49
2) 1.75 inches OVER THE IMPERVIOUS AREA ----- 1.75" / (12" / 1 ft) * (IMP. AREA) =	0.40
3) 3 year / 1 Hour STORM EVENT RUNOFF ------ SEE CURVE NUMBER SHEET	N/A
4) POLLUTION ABATEMENT VOLUME (REQUIRED)	0.49

RECHARGE VOLUME (REQUIRED)	(Ac–ft)
1) POST–DEVELOPMENT IMPERVIOUS AREA	2.71
2) PRE–DEVELOPMENT IMPERVIOUS AREA	0.92
3) RECHARGE VOLUME (BASIN F) ---- (3.0 " / (12" / 1 FT) * (IMP. DELTA)	0.45
4) ADD'L RECHARGE VOL. (BASIN E) ---- (3.0 " / (12" / 1') * (3.59 Ac – 0.59 Ac)	0.75
5) TOTAL RECHARGE VOLUME – (BASIN E + BASIN F)	1.20

GREINER INC: WATER RESOURCES GROUP POLLUTION ABATEMENT/ RECHARGE VOLUME CALCULATIONS				
PROJECT TITLE:	I – 4 WIDENING	FILENAME:	PAVPONDF.WK3	
PROJECT NUMBER:	V0180.10	SCALE (1" = _)	200	DATE
BASIN DESIGNATION:	POND F	MADE BY:	MJJ	14–Nov–94
ANALYSIS (PRE/POST):	POST	CHECKED BY:	RCO	11/14/94

Greiner

Datum = NGVD 29

Job: I-4 Widening | Project No. V0180.10 | Sheet ___ of ___

Description: Question No. 4 | Computed By: RGA | Date: 11/8/94

Checked By: MJJ | Date: 11/14/94

Basin E

Impervious Area:

Pre-dev. = 0.59 acres

Post-dev. = 3.59 acres

Δ = 3.59 - 0.59 = 3.00 acres of add'l impervious in Basin E

Recharge Volume 3" x Add'l Imp.

$\frac{3''}{12'} \times 3.00 \text{ acres} = \boxed{0.75 \text{ ac-ft}}$ ✓ (A)

Add recharge volume to Basin F and provide recharge volume in Pond F which is in adjacent landlocked basin.

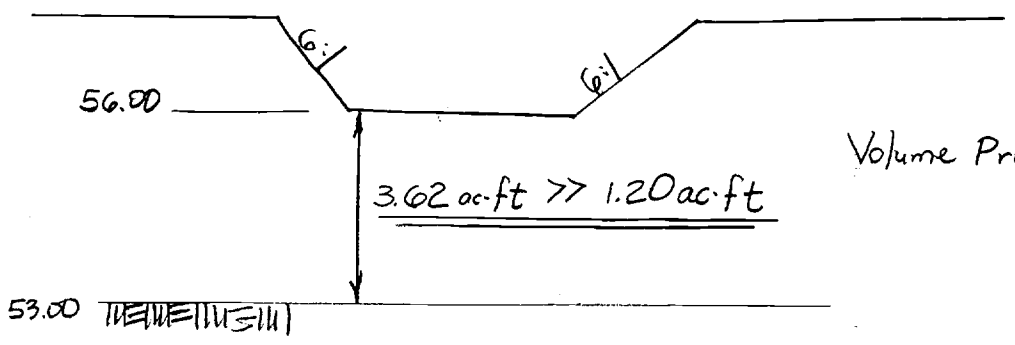
Pond F required volume: $(2.71 - 0.92) \times \frac{3 \text{ in}}{12} = \boxed{0.45 \text{ ac-ft}}$ ✓ (B)

Post-Dev. Imp. = 2.71 acres

Pre-Dev. Imp. = 0.92 acres

0.45 ac-ft + 0.75 ac-ft = $\boxed{1.20 \text{ ac-ft}}$ ✓ ← (A) + (B)

Pond F



3.62 ac-ft >> 1.20 ac-ft

Volume Provided = 3.62 ac-ft

Volume between Pond bottom 53.0 and Weir El. 56.0

See stage/storage on sheet 7-24

Received on June 15, 2004

Datum = NGVD 29

GREINER INC: WATER RESOURCES GROUP

POND STAGE STORAGE CALCULATIONS – POND F

PROJECT TITLE:	I – 4 WIDENING	FILENAME:	SSPONDF.WK3	
PROJECT NUMBER:	V0180.10	SCALE (1" = __)	200	DATE
BASIN DESIGNATION:	POND F	MADE BY:	MJJ	09–Jun–94
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:	RCO	

ELEV.	PLAN. VALUE 1 (si)	PLAN. VALUE 2 (si)	AREA (ac)	AVE. AREA (ac)	DELTA D (ft)	DELTA STORAGE (ac–ft)	STORAGE P.A.V.* (ac–ft)	ATTENUATION OF PEAK DISCHARGE (ac–ft)
53.00	1.145	1.171	1.063				0	0
				1.09	0.62	0.67		
53.62			1.113				0.67	0.67
				1.13	0.38	0.43		
54.00			1.143				1.10	1.10
				1.16	0.5	0.58		
54.50			1.184				1.69	1.69
				1.20	0.5	0.60		
55.00	1.364	1.301	1.224				2.29	2.29
				1.33	1	1.33		
56.00			1.445				3.62	** 3.62
				1.56	1	1.56		
57.00	1.79	1.84	1.667				5.18	5.18

* P.A.V. = POLLUTION ABATEMENT VOLUME.

** VOLUME IS BASED ON POLLUTION ABATEMENT AND LANDLOCKED CONTROL VOLUME.

Greiner

Datum = NGVD 29

Job I-4 Widening Project No. V0180.10 Sheet ____ of ____

Description Pond F Tailwater Info Computed By RCA Date 6/94

Checked By ____ Date ____

Pond F is located in and discharges to a land-locked depressional area. The depressional area offers no effect on the tailwater for Pond F.

JOB:	I – 4 WIDENING	PROJECT NO.:	V0180.10		
DESCRIPTION:	POST DEVELOPMENT CALCULATIONS AND	COMPUTED BY:	MJJ	DATE:	09–Dec–93
	DITCH PROFILES FOR POND " F "	CHECKED BY:		DATE:	

Right Side	
Median	XX
Left Side	

Overall Basin Length:	293 + 00	to	312 + 00
Sub–Basin 1:	293 + 00	to	312 + 00
Sub–Basin 2:	0	to	0

Rainfall Zone:	7
Frequency:	25

Datum = NGVD 29

SECTION INFORMATION					DITCH GEOMETRY												
Station to Station			Length	Slope	TOTAL (CA)	Time of Conc.	Inten–sity	Flow Q	Front Slope	Bottom Width	Back Slope	*** n	Depth	Calc'd Vel.	Section Flow Time	Lining	Remarks
Begin		End	(ft)	%	(Ac)	(min)	(in/hr)	(CFS)	(ft/ft)	(ft)	(ft/ft)		(ft)	(ft/sec)	(min)	(Y/N)	
293		296		300	0.70	0.352	10.00	8.26	2.90	6		10	0.060	0.61	0.94	5.3		
296		298		200	0.70	0.586	15.32	7.15	4.19	6		10	0.042	0.62	1.35	2.5		
298		300		200	0.70	0.820	17.79	6.76	5.54	6	2.00	10	0.060	0.67	1.10	3.0		
300		302		200	0.70	1.055	20.82	6.34	6.69	6	7.00	10	0.060	0.53	1.10	3.0		
302		304		200	0.70	1.289	23.85	5.99	7.72	6	4.00	10	0.060	0.68	1.18	2.8		
304		306		200	0.26	1.524	26.67	5.70	8.69	6	1.00	10	0.042	0.92	1.11	3.0		
306		309		300	0.25	1.875	29.68	5.43	10.18	6		10	0.042	1.05	1.15	4.3		
							34.02	5.08										
309		312		300	0.11	0.352	10.00	8.26	2.90	6	2.00	10	0.042	0.65	0.61	8.2		
312		309	58	242	0.66	0.651	18.20	6.70	4.36	6	5.00	4	0.060	0.53	1.07	3.8		
							21.97	6.20										

*** If the calculated value D < 0.7 ft., use Manning's n = 0.06
If the calculated value D >= 0.7 ft., use Manning's n = 0.042

Basin F T_c

7-26

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25YR-96HR POST-DEVELOPMENT BASINS B,C,E,F,G,I,&J
05-02-94 (REVISED RAI NO.1) 11-08-94

Datum = NGVD 29

BASIN NAME	BASINF
NODE NAME	PONDF
UNIT HYDROGRAPH	UH323
PEAKING FACTOR	323.
RAINFALL FILE	SJRWMD96
RAIN AMOUNT (in)	12.96
STORM DURATION (hrs)	96.00
AREA (ac)	5.89
CURVE NUMBER	66.10
DCIA (%)	.00
TC (mins)	34.00
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
BASINF	18.75	60.22	8.35	POND F POST - DEVELOPMENT

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25YR-96HR POST-DEVELOPMENT BASINS B,C,E,F,G,I,&J
05-02-94 (REVISED RAI NO.1) 11-08-94

Datum = NGVD 29

NODAL MIN/MAX/TIME CONDITIONS REPORT

NODE ID	PARAMETER	|<-- MINIMUMS --> VALUE	TIME (hr)	|<-- MAXIMUMS --> VALUE	TIME (hr)
PONDF	STAGE (ft):	53.00	7.25	55.81	63.00
	VOLUME (af):	.00	7.00	3.36	63.00
	RUNOFF (cfs):	.00	27.50	18.35	60.25
	OFFSITE (cfs):	.00	96.00	.00	96.00
	OTHER (cfs):	.00	96.00	.00	96.00
	OUTFLOW (cfs):	-1.31	16.00	1.67	63.00

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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10YR-24HR POST-DEVELOPMENT BASINS B,C,E,F,G,I,&J
05-02-94

Datum = NGVD 29

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
PONDB	AREA	51.000	.000	.000	.000	51.000	1.320
						52.000	1.400
						53.000	1.480
						54.000	1.560
						55.000	1.640
						55.500	1.680
						56.000	1.850
						57.000	2.180
PONDC	AREA	60.000	.000	.000	.000	60.000	.520
						61.000	.640
						62.000	.750
						63.000	.860
						64.000	.980
						65.000	1.090
						66.000	1.210
						67.000	1.320
						67.500	1.380
						69.000	1.850
PONDE	AREA	61.000	.000	.000	.000	61.000	.528
						62.000	.660
						62.500	.730
						63.000	.850
						64.000	.970
						65.000	1.030
						65.500	1.200
						66.000	1.370
						67.000	1.450
PONDF	AREA	53.000	.000	.000	.000	53.000	1.060
						54.000	1.140
						55.000	1.220
						56.000	1.440
						57.000	1.670
PONDG	AREA	50.000	.000	.000	.000	50.000	.701
						51.000	.776
						52.000	.851
						53.000	.926
						54.000	1.000
						55.000	1.080
						56.000	1.190
						57.000	1.370
						58.000	1.590

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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10YR-24HR POST-DEVELOPMENT BASINS B,C,E,F,G,I,&J
05-02-94

Datum = NGVD 29

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
PONDI	AREA	56.000	.000	.000	.000	56.000	.648
						57.000	.742
						58.000	.837
						59.000	.931
						60.000	1.025
						61.000	1.120
						62.000	1.380
						63.000	1.650
PONDJ	AREA	56.000	.000	.000	.000	56.000	1.300
						57.000	1.480
						58.000	1.650
						59.000	1.830
						60.000	2.000
						61.000	2.180
						62.000	2.360
						63.000	2.530
						64.000	2.710
						65.000	2.890
OUTFALLB	TIME	47.470	.000	.000	.000	47.470	.000
						50.470	11.000
						50.470	16.000
						47.470	24.000
OUTFALLC	TIME	50.000	.000	.000	.000	50.000	.000
						50.000	24.000
OUTFALLE	TIME	58.300	.000	.000	.000	58.300	.000
						62.300	11.000
						62.300	16.000
						58.300	24.000
OUTFALLF	TIME	53.540	.000	.000	.000	53.540	.000
						55.790	11.000
						55.790	16.000
						53.540	24.000
OUTFALLG	TIME	54.000	.000	.000	.000	54.000	.000
						54.000	24.000

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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25YR-24HR POST-DEVELOPMENT BASINS B,C,E,F,G,I,&J
05-02-94 (REVISED RAI NO.1) 11-08-94

Datum = NGVD 29

```
>>REACH NAME       : F1
  FROM NODE        : PONDF
  TO NODE          : OUTFALLF
  REACH TYPE       : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
  FLOW DIRECTION   : POSITIVE AND NEGATIVE FLOWS ALLOWED
    CREST EL. (ft):  56.000 BTM. WIDTH (ft):   5.000   LEFT SS (h/v):  6.000
     RGHT SS (h/v):   6.000    OPENING (ft): 999.000      WEIR COEF.:  3.130
        GATE COEF.:    .600 NUMBER OF ELEM.:   1.000
              NOTE:
```

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.10)
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10YR-24HR POST-DEVELOPMENT BASINS B,C,E,F,G,I,&J
05-02-94

Datum = NGVD 29

```
>>REACH NAME        : F2
  FROM NODE         : PONDF
  TO NODE           : OUTFALLF
  REACH TYPE        : CULVERT, CIRCULAR w/ ROADWAY
  FLOW DIRECTION    : POSITIVE AND NEGATIVE FLOWS ALLOWED
  TURBO SWITCH      : OFF

  CULVERT DATA      :
         SPAN (in):  18.000        RISE (in):  18.000     LENGTH (ft): 42[illegible].000
   U/S INVERT (ft):  55.000 D/S INVERT (ft):  54.500       MANNING N:     .013
       ENTRNC LOSS:    .500    # OF CULVERTS:   1.000

  POSITION A        : NOT USED

  POSITION B        : NOT USED

              NOTE:
```

Datum = NGVD 29

SEASONAL HIGH GROUNDWATER LEVELS

Pond	Estimated Seasonal High Groundwater Elevation (Ft., NGVD)	Seasonal High Used in PONDFLOW Model (Ft., NGVD)
A	+33.7 to +45.5	+49.1, (+46.1)*
B	+44.3 to +48.0	+48.1, (+45.6)*
C	+50.0	-55.1
E	+55.5 to +59.0	Wet Pond
F	+49.0	+46.0
G	+42.0 to +42.5	+43.1
I	+44.7 to +46.1	+52.1, (+51.0)*
J	+46.0	+46.0

* The seasonal high estimated based on recommended over excavation.

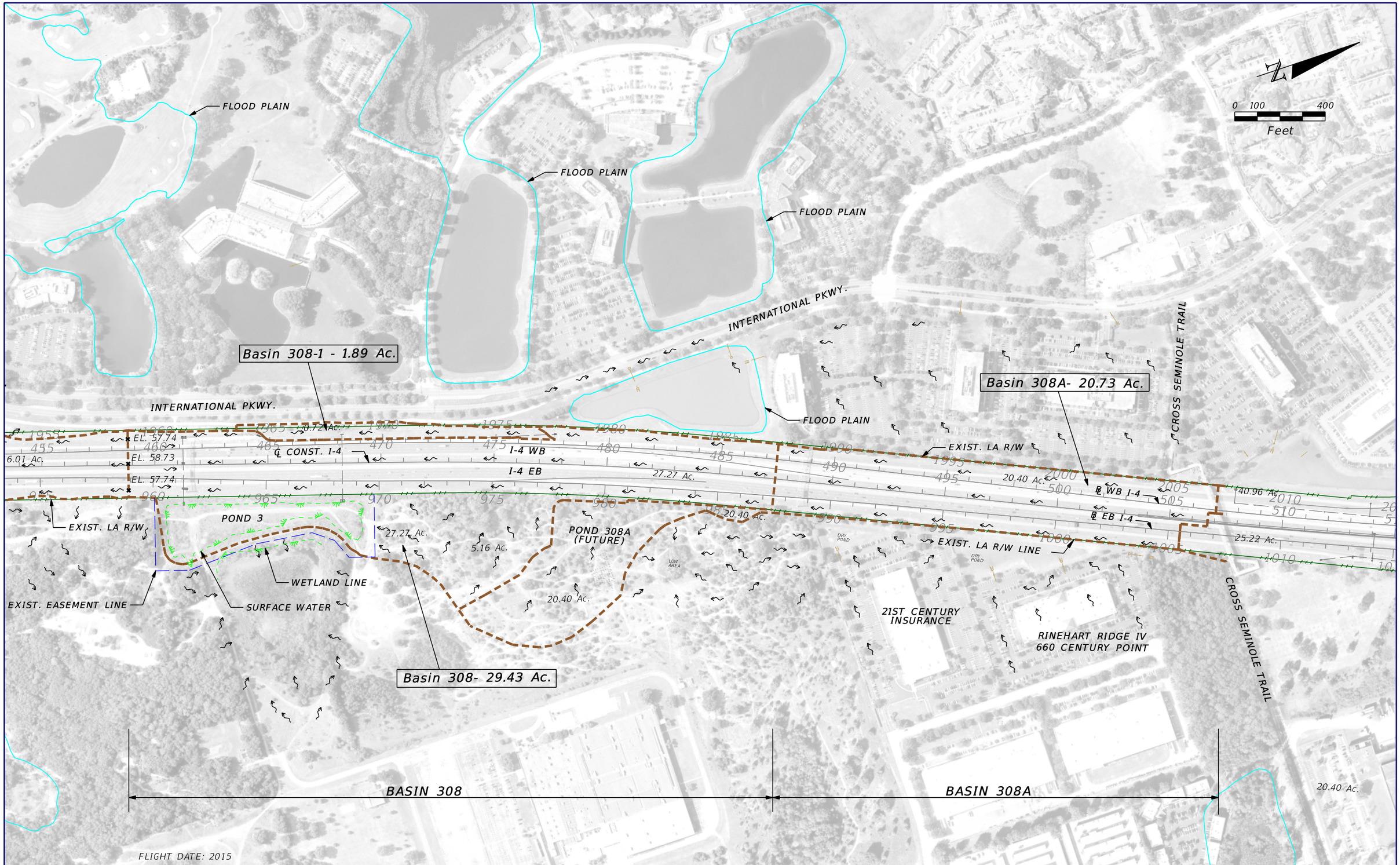
Table 2
Summary of Groundwater Level
and Estimated Seasonal High for Ponds
S.R. 400 (I-4) Improvements
State Project No. 77160-1601
LJN Project No. 92-0393

Datum = NGVD 29

Boring No.	Station	Offset	Approximate Ground Surface Elevation (ft. NGVD)	Encountered Groundwater Elevation (ft. NGVD)	Estimated Seasonal High Elevation (ft. NGVD)
A-1	195+00	150' LT	+53.7	GNE	+33.7
A-2	197+00	200' LT	+57.0	GNE	+37.0
A-3	198+00	250' LT	+55.0	GNE	+35.0
A-4	198+00	150' LT	+61.0	GNE	+41.0
A-5	200+00	250' LT	+61.0	GNE	+41.0
A-6	200+00	150' LT	+65.5	GNE	+45.5
A-7	198+00	200' LT	+52.5	GNE	**
B-1	216+00	220' RT	+64.3	GNE	+46.3
B-2	217+00	250' RT	+53.2	+44.2	+46.7
B-3	219+00	220' RT	+57.0	+44.0	+48.0
B-4	221+00	250' RT	+50.3	+38.1	+44.3
C-1	232+00	375' LT	+66.0	GNE	+50.0
C-2	234+00	325' LT	+66.0	GNE	+50.0
C-3	236+00	275' LT	+66.0	GNE	+50.0
E-1	283+00	200' RT	+67.0	+55.5	+59.0
E-2	286+00	200' RT	+65.0	+51.3	+55.5
F-1	1+30*	80' LT	+57.0	+45.5	+49.0
F-2	2+50*	200' RT	+55.5	+43.4	+49.0
F-3	3+50*	100' RT	+52.5	+45.1	+49.0
F-4	3+00*	250' LT	+56.5	+43.8	+49.0
F-5	4+00*	100' LT	+54.0	+44.7	+49.0

Basin 308 & 308A

- Drainage Maps
- Basin and Pond Calculations
- Basin and Pond Routing (ICPR)
  - Pre-Development
  - Post-Development
- Existing Permits (Supporting Documentation)



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

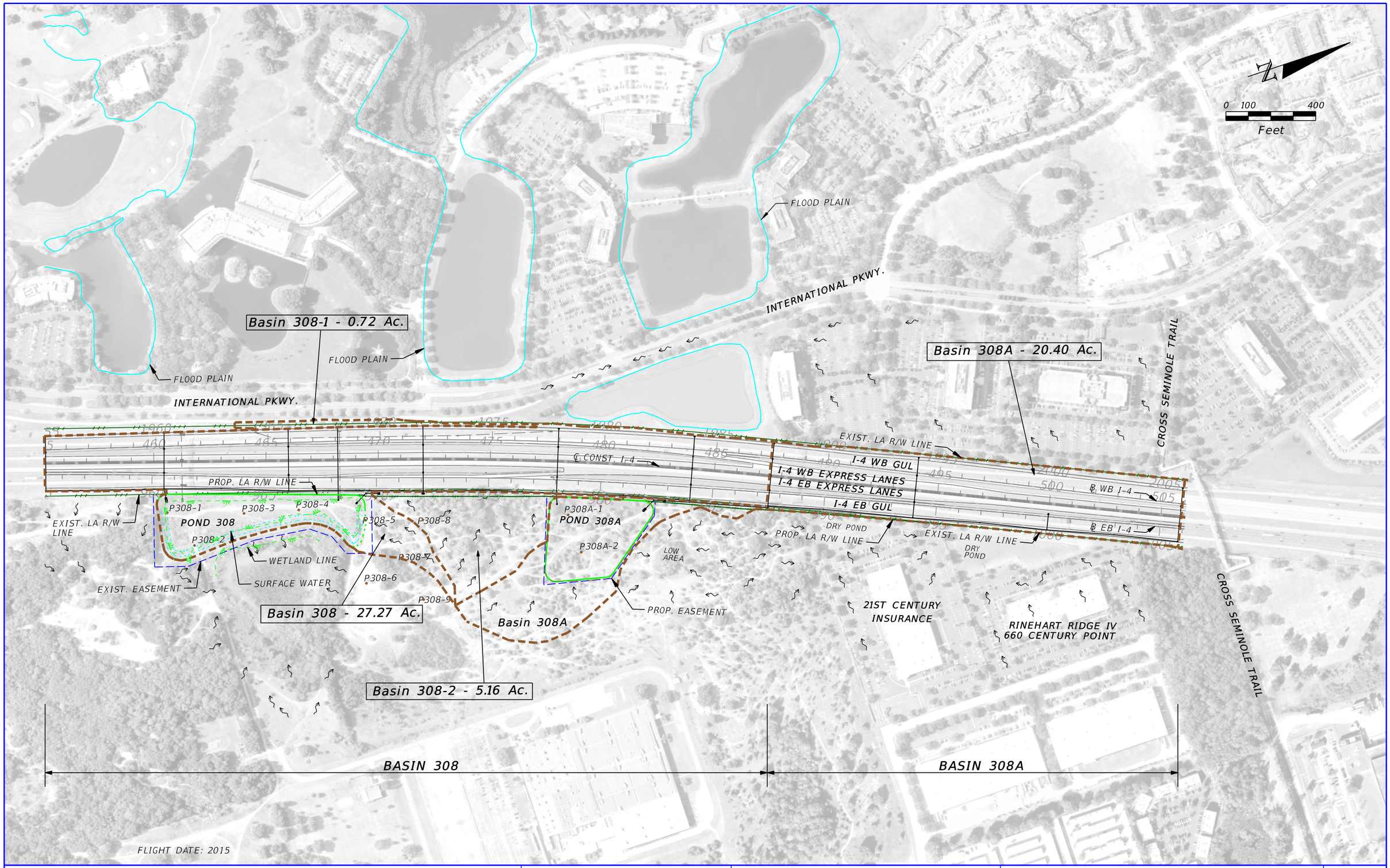
MICHAEL J. QUARTETTI, P.E.
P.E. LICENSE NUMBER 45976
WSP USA Inc.
2202 N WEST SHORE BLVD., SUITE 300
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	242592-4-52-01

DRAINAGE MAP
EXISTING BASIN 308 & 308A

SHEET NO.
1



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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CERTIFICATE OF AUTHORIZATION 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	242592-4-52-01

DRAINAGE MAP
PROPOSED BASIN 308-308A

SHEET NO. 2

PROJECT TITLE:	I-4 BTU Segment 3	**DATE:**	Apr-17
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	TDA
BASIN DESIGNATION:	Basin 308	**CHECKED BY:**	JLL

I ***PRE DEVELOPMENT***

RUNOFF CURVE NUMBER (CN) CALCULATIONS

Basin 308

Pond 3

COMPUTED BASIN AREA (Ac) 29.43

DETERMINE BASIN RUNOFF CURVE-NUMBER-CN

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA	PRODUCT
Impervious				
Roadway, Shoulder and sidewalk		98	9.22	903.56
Sub-total for Impervious Land Uses			9.22	903.56
Pervious				
Open Space, Fair Condition - (Astatula)	A	49	12.25	600.25
Open Space, Fair Condition - (Tavares)	A	49	3.82	187.18
Sub-total for Pervious Land Uses			16.07	787.43
Pond				
Exist. Pond Site Area	A	49	4.14	202.86
Sub-total for Pervious Land Uses			4.14	202.86
		TOTAL	29.43	1893.85

COMPOSITE CN **64.4**

ESTIMATED RUNOFF VOLUME

SUMMARY TABLE:

DESIGN STORM	Agency	P [in]	S [in]	R [in]	V[R] [ac-ft]
25 yr / 96 hr	SJRWMD	11.20	5.54	6.52	15.98
100 yr / 10-day	FDOT	18.50	5.54	13.19	32.35

SAMPLE CALCULATION:

1) DETERMINE SOIL STORAGE - S

S= (1000/CN) - 10 — SOIL STORAGE (inches) | S | 5.54

2) DETERMINE RUNOFF - R

P = 18.50

R = (P - 0.2*S)^2 / (P + 0.8*S) — RUNOFF (inches) | R | 13.19

3) DETERMINE RUNOFF VOLUME - V[R]

V[R] = R / 12 * AREA — RUNOFF (ac-ft) | V[R] | 32.35

PROJECT TITLE:	I-4 BTU Segment 3	**DATE:**	Apr-17
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	TDA
BASIN DESIGNATION:	Basin 308	**CHECKED BY:**	JLL

II ***POST DEVELOPMENT***
RUNOFF CURVE NUMBER (CN) CALCULATIONS
Basin 308
Pond 308

COMPUTED BASIN AREA (Ac) 27.27

DETERMINE BASIN RUNOFF CURVE-NUMBER-CN

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA	PRODUCT
Impervious				
Roadway, Shoulder and sidewalk		98	20.78	2036.44
Sub-total for Impervious Land Uses			20.78	2036.44
Pervious				
Open Space, Fair Condition - (Astatula)	A	49	1.88	92.12
Open Space, Fair Condition - (Tavares)	A	49	0.47	23.03
Sub-total for Impervious Land Uses			2.35	115.15
Pond				
Exist. Pond Site Area	A	49	4.14	202.86
Sub-total for Impervious Land Uses			4.14	202.86
		TOTAL	27.27	2354.45

COMPOSITE CN 86.3

ESTIMATED RUNOFF VOLUME

SUMMARY TABLE:

DESIGN STORM	Agency	P [in]	S [in]	R [in]	V[R] [ac-ft]
25 yr / 96 hr	SJRWMD	11.20	1.58	9.50	21.59
100 yr / 10-day	FDOT	18.50	1.58	16.73	38.01

SAMPLE CALCULATION:

1) DETERMINE SOIL STORAGE - S

S= (1000/CN) - 10 — SOIL STORAGE (inches) S 1.58

2) DETERMINE RUNOFF - R

P = 18.50

R = (P - 0.2*S)^2 / (P + 0.8*S) — RUNOFF (inches) R 16.73

3) DETERMINE RUNOFF VOLUME - V[R]

V[R] = R / 12 * AREA — RUNOFF (ac-ft) V[R] 38.01

PROJECT TITLE:	I-4 BTU Segment 3	**DATE:**	Apr-17
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	TDA
BASIN DESIGNATION:	Basin 308	**CHECKED BY:**	JLL

III ***GEOTECHNICAL INFORMATION***

Estimated Seasonal High Water Table (SHWT)	
	Estimated SHWT (Ft)
Permit No. 22124-2	48.20
Pond Borings (Avg. Boring P308-1 to P308-4)	43.10
Estimated SHWT	43.10

IV ***SUMMARY OF REQUIRED ATTENUTION AND TREATMENT VOLUME***
Basin 308
Pond 308

REQUIRED ATTENUTATION CACULATION

PRE-DEVELOPED CONDITION		**POST-DEVELOPED CONDITION**	
AREA (AC):	29.43	AREA (AC):	27.27
CN:	64.4	CN:	86.3
IMPERVIOUS AREA (AC):	9.22	IMPERVIOUS AREA (AC):	20.78
PERVIOUS AREA (AC):	20.21	PERVIOUS AREA (AC):	6.49
		NEW IMPERVIOUS AREA (AC):	11.56

SUMMARY OF ATTENUATION ESTIMATES

AGENCY	DESIGN STORM	RUNOFF VOLUME V[R] PRE [AC-FT]	POST [AC-FT]	TOTAL RETENTION [AC-FT]
SJRWMD	25 yr / 96 hr	15.98	21.59	**5.61**
FDOT	100 yr / 10-day	32.35	38.01	**5.67**

REQUIRED TREATMENT VOLUME CALCULATION		AC-FT	Basin Area	
Dry Retention Treatment Requirement =	1" x Basin Area	1.93	23.13	
or	1.25" x Impervious Area + 0.5" x Basin Area	3.13		***Controls***

Wekiva Basin Most Effective Recharge Area	**AC**	**AC-FT**	
Pre Devp. Impervious Area on A Soils (West of I-4 CL) =	6.98		
Post Devp. Impervious Area on A Soils (West of I-4 CL) =	14.67		
Post Devp. Impervious Area - Pre Devp. Impervious Area =	7.69		
Impevious Area added to prevous project (West of I-4 CL) =	0		Permit No. 22124-2
Sum of Current and prevous project Impervous Area =	7.69		
3" x Total Impervous Area on A Soils (West of I-4 CL) =	-	1.92	

SJRWMD Closed Basin Volume	**AC-FT**	
Pre Devp. Runoff Volume	15.98	
Post Devp. Runoff Volume	21.59	
Current Project Delta	5.61	
Previous Project Required Volume (60% of 4.92 ac-ft)	2.95	Permit No. 22124-2 (SJRWMD 25-yr / 96-hr)
Current Project Delta + Prevous Project Required Volume	8.57	***Controls All***

FDOT Closed Basin Volume	**AC-FT**	
Pre Devp. Runoff Volume	32.35	
Post Devp. Runoff Volume	38.01	
Current Project Delta	5.66	
Previous Project Required Volume (60% of 7.33 ac-ft)	4.40	Permit No. 22124-2 (FDOT 100-yr / 10-day)
Current Project Delta + Prevous Project Required Volume	10.06	***Controls All***

PROJECT TITLE:	I-4 BTU Segment 3	**DATE:**	Apr-17
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	TDA
BASIN DESIGNATION:	Basin 308	**CHECKED BY:**	JLL

V ***PROVIDED TREATMENT & ATTENUATION VOLUME CALCULATIONS***

Basin 308

POND STAGE, AREA & STORAGE			
DESCRIPTION	**STAGE (FT)**	**AREA (AC)**	**CUMMULATIVE STORAGE (AC-FT)**
Pond Bottom	51.20	2.29	0.00
Wekiva Requirement	52.01	2.45	1.92
Treatment	52.50	2.55	3.14
1/2 Closed Basin Volume (FDOT)	53.23	2.69	5.06
SJRWMD Closed Basin Volume	54.48	2.94	8.58
FDOT Closed Basin Volume	54.98	3.04	10.07
Top of Bank Elevation	56.60	3.36	15.26
Top of Berm	58.10	4.14	20.88

PROVIDED TREATMENT VOLUME	AC-FT
Treatment Volume Provided = Volume between Pond Bottom and Weir Crest Elevation	3.14

PROJECT TITLE:	I-4 BTU Segment 3	**DATE:**	Apr-17
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	TDA
BASIN DESIGNATION:	Basin 308-1	**CHECKED BY:**	JLL

I ***PRE DEVELOPMENT***

RUNOFF CURVE NUMBER (CN) CALCULATIONS

Basin 308-1

COMPUTED BASIN AREA (Ac) 1.89

DETERMINE BASIN RUNOFF CURVE-NUMBER-CN

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA	PRODUCT
Impervious				
Roadway, Shoulder and sidewalk		98	0.00	0.00
Sub-total for Impervious Land Uses			0.00	0.00
Pervious				
Open Space, Fair Condition - (Astatula)	A	49	1.89	92.61
Sub-total for Pervious Land Uses			1.89	92.61
		TOTAL	1.89	92.61

COMPOSITE CN **49.0**

II ***POST DEVELOPMENT***

RUNOFF CURVE NUMBER (CN) CALCULATIONS

Basin 308-1

COMPUTED BASIN AREA (Ac) 0.72

DETERMINE BASIN RUNOFF CURVE-NUMBER-CN

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA	PRODUCT
Impervious				
Roadway, Shoulder and sidewalk		98	0.00	0.00
Sub-total for Impervious Land Uses			0.00	0.00
Pervious				
Open Space, Fair Condition - (Astatula)	A	49	0.72	35.28
Sub-total for Impervious Land Uses			0.72	35.28
		TOTAL	0.72	35.28

COMPOSITE CN **49.0**

PROJECT TITLE:	I-4 BTU Segment 3	**DATE:**	Apr-17
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	TDA
BASIN DESIGNATION:	Basin 308-2	**CHECKED BY:**	JLL

I ***POST DEVELOPMENT***
RUNOFF CURVE NUMBER (CN) CALCULATIONS
Basin 308-2

COMPUTED BASIN AREA (Ac) 5.16

DETERMINE BASIN RUNOFF CURVE-NUMBER-CN

LAND-USE DESCRIPTION	**SOIL GROUP**	**CN**	**AREA**	**PRODUCT**
Impervious				
Roadway, Shoulder and sidewalk		98	0.00	0.00
Sub-total for Impervious Land Uses			0.00	0.00
Pervious				
Open Space, Fair Condition - (Astatula)	A	49	5.16	252.84
Sub-total for Impervious Land Uses			5.16	252.84
		TOTAL	5.16	252.84

COMPOSITE CN **49.0**

PROJECT TITLE:	I-4 BTU Segment 3	**DATE:**	Apr-17
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	TDA
BASIN DESIGNATION:	Basin 308A	**CHECKED BY:**	MB

I ***PRE DEVELOPMENT***
RUNOFF CURVE NUMBER (CN) CALCULATIONS
Basin 308A
Pond: 308A

COMPUTED BASIN AREA (Ac) 20.73

DETERMINE BASIN RUNOFF CURVE-NUMBER-CN

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA	PRODUCT
Impervious				
Roadway, Shoulder and sidewalk		98	5.91	579.18
Sub-total for Impervious Land Uses			5.91	579.18
Pervious				
Open Space, Fair Condition - (Astatula)	A	49	9.20	450.80
Open Space, Fair Condition - (Tavares)	A	49	3.05	149.45
Sub-total for Pervious Land Uses			12.25	600.25
Pond				
Pond Site Area	A	49	2.57	125.93
Sub-total for Pervious Land Uses			2.57	125.93
		TOTAL	20.73	1305.36

COMPOSITE CN **63.0**

ESTIMATED RUNOFF VOLUME

SUMMARY TABLE:

DESIGN STORM	Agency	P [in]	S [in]	R [in]	V[R] [ac-ft]
25 yr / 96 hr	SJRWMD	11.20	5.88	6.32	10.91
100 yr / 10-day	FDOT	18.50	5.88	12.93	22.34

SAMPLE CALCULATION:

1) DETERMINE SOIL STORAGE - S

S= (1000/CN) - 10 — SOIL STORAGE (inches) S 5.88

2) DETERMINE RUNOFF - R

P = 18.50

R = (P - 0.2*S)^2 / (P + 0.8*S) — RUNOFF (inches) R 12.93

3) DETERMINE RUNOFF VOLUME - V[R]

V[R] = R / 12 * AREA — RUNOFF (ac-ft) V[R] 22.34

PROJECT TITLE:	I-4 BTU Segment 3	**DATE:**	Apr-17
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	TDA
BASIN DESIGNATION:	Basin 308A	**CHECKED BY:**	MB

II ***POST DEVELOPMENT***
RUNOFF CURVE NUMBER (CN) CALCULATIONS
Basin 308A
Pond: 308A

COMPUTED BASIN AREA (Ac) 20.40

DETERMINE BASIN RUNOFF CURVE-NUMBER-CN

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA	PRODUCT
Impervious				
Roadway, Shoulder and sidewalk		98	11.27	1104.46
Sub-total for Impervious Land Uses			11.27	1104.46
Pervious				
Open Space, Fair Condition - (Astatula)	A	49	4.92	241.08
Open Space, Fair Condition - (Tavares)	A	49	1.64	80.36
Sub-total for Impervious Land Uses			6.56	321.44
Pond				
Pond Site Area	A	49	2.57	125.93
Sub-total for Impervious Land Uses			2.57	125.93
		TOTAL	20.40	1551.83

COMPOSITE CN **76.1**

ESTIMATED RUNOFF VOLUME

SUMMARY TABLE:

DESIGN STORM	Agency	P [in]	S [in]	R [in]	V[R] [ac-ft]
25 yr / 96 hr	SJRWMD	11.20	3.15	8.15	13.85
100 yr / 10-day	FDOT	18.50	3.15	15.20	25.83

SAMPLE CALCULATION:

1) DETERMINE SOIL STORAGE - S

S= (1000/CN) - 10 — SOIL STORAGE (inches) S 3.15

2) DETERMINE RUNOFF - R

P = 18.50

R = (P - 0.2*S)^2 / (P + 0.8*S) — RUNOFF (inches) R 15.20

3) DETERMINE RUNOFF VOLUME - V[R]

V[R] = R / 12 * AREA — RUNOFF (ac-ft) V[R] 25.83

PROJECT TITLE:	I-4 BTU Segment 3	**DATE:**	Apr-17
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	TDA
BASIN DESIGNATION:	Basin 308A	**CHECKED BY:**	MB

III ***GEOTECHNICAL INFORMATION***

Estimated Seasonal High Water Table (SHWT)	
	Estimated SHWT (Ft)
Pond Borings (Avg. Boring P308A-1 7 P308A-2)	60.30
Estimated SHWT	60.30

IV ***SUMMARY OF TREATMENT & ATTENUATION VOLUME***
Basin 308A
Pond: 308A

REQUIRED ATTENUTATION CACULATION

PRE-DEVELOPED CONDITION		**POST-DEVELOPED CONDITION**	
AREA (AC):	20.73	AREA (AC):	20.40
CN:	63.0	CN:	76.1
IMPERVIOUS AREA (AC):	5.91	IMPERVIOUS AREA (AC):	11.27
PERVIOUS AREA (AC):	14.82	PERVIOUS AREA (AC):	9.13
		NEW IMPERVIOUS AREA (AC):	5.36

SUMMARY OF WATER MANAGEMENT DISTRICT ATTENUATION ESTIMATES

AGENCY	DESIGN STORM	RUNOFF VOLUME V[R] PRE [AC-FT]	POST [AC-FT]	TOTAL RETENTION [AC-FT]
SJRWMD	25 yr / 96 hr	10.91	13.85	**2.94**
FDOT	100 yr / 10-day	22.34	25.83	**3.49**

REQUIRED TREATMENT VOLUME CALCULATION		AC-FT	Basin Area	
Dry Retention Treatment Requirement =	1" x Basin Area	1.70	20.40	
or	1.25" x Impervious Area + 0.5" x Basin Area	2.02		***Controls***

SJRWMD Closed Basin Volume	**AC-FT**	
Pre Devp. Runoff Volume	10.91	
Post Devp. Runoff Volume	13.85	
Current Project Delta	2.94	
Previous Project Required Volume (40% of 4.92 ac-ft)	1.97	Permit No. 22124-2 (SJRWMD 25-yr / 96-hr)
Current Project Delta + Prevous Project Required Volume	4.91	

FDOT Closed Basin Volume	**AC-FT**	
Pre Devp. Runoff Volume	22.34	
Post Devp. Runoff Volume	25.83	
Current Project Delta	3.49	
Previous Project Required Volume (40% of 7.33 ac-ft)	2.93	Permit No. 22124-2 (FDOT 100-yr / 10-day)
Current Project Delta + Prevous Project Required Volume	6.42	***Controls All***

PROJECT TITLE:	I-4 BTU Segment 3	**DATE:**	Apr-17
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	TDA
BASIN DESIGNATION:	Basin 308A	**CHECKED BY:**	MB

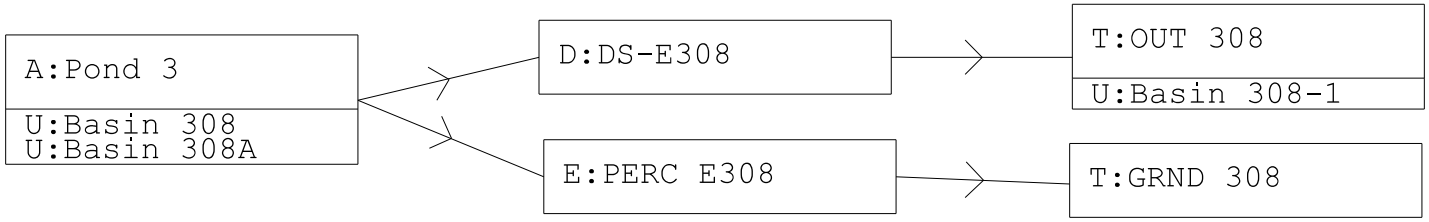
V ***PROVIDED TREATMENT & ATTENUATION VOLUME CALCULATIONS***
Basin 308A

Basin 308A

POND STAGE, AREA & STORAGE			
DESCRIPTION	**STAGE (FT)**	**AREA (AC)**	**CUMMULATIVE STORAGE (AC-FT)**
Pond Bottom	69.10	1.99	0.00
Treatment	70.09	2.11	2.03
1/2 Closed Basin Volume (FDOT)	70.65	2.17	3.22
SJRWMD Closed Basin Volume	71.41	2.26	4.91
FDOT Closed Basin Volume	72.07	2.34	6.43
	73.98	2.56	11.10
Top of Bank Elevation (Inside)	74.00	2.57	11.15

PROVIDED TREATMENT VOLUME	AC-FT
Treatment Volume Provided = Pond Bottom and Weir Crest Elevation	2.03

Pre Development



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. QUARTETTI, P.E.
P.E. LICENSE NUMBER 45976
WSP USA Inc.
2202 N WEST SHORE BLVD., SUITE 300
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	242592-4-52-01

ICPR LINK NODE DIAGRAM
EXISTING BASIN 308

SHEET NO.
N/A

BASIN 308
Existing Conditions Output

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
GRND 308	BASIN308	100Y240H	0.00	43.10	43.10	0.00	0	40.17	9.08	0.00	0.00
OUT 308	BASIN308	100Y240H	0.00	49.95	49.95	0.00	0	184.00	22.53	0.00	0.00
Pond 3	BASIN308	100Y240H	184.77	55.65	57.75	0.00	151413	184.00	29.14	184.69	23.93
GRND 308	BASIN308	SJRWMD	0.00	43.10	43.10	0.00	0	62.65	15.76	0.00	0.00
OUT 308	BASIN308	SJRWMD	0.00	49.95	49.95	0.00	0	64.90	7.57	0.00	0.00
Pond 3	BASIN308	SJRWMD	64.90	54.25	57.75	0.00	139022	60.67	73.28	62.65	20.14

Existing Discharge Rates:
Basin 308
Q-FDOT (100-yr/240-hr)= 22.53 cfs
Q-SJRWMD (25-yr/96-hr)= 7.57 cfs

```
==========================================================================================
==== Basins ==============================================================================
==========================================================================================

         Name: Basin 308                Node: Pond 3                 Status: Onsite
        Group: BASIN308                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Sjrwmd96            Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200                Time of Conc(min): 77.00
             Area(ac): 29.430                    Time Shift(hrs): 0.00
          Curve Number: 64.40              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Used Post Development time of concentration from Permit No. 22124-2.

-------------------------------------------------------------------------------------------
         Name: Basin 308-1              Node: OUT 308                Status: Onsite
        Group: BASIN308                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Sjrwmd96            Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200                Time of Conc(min): 10.00
             Area(ac): 1.890                     Time Shift(hrs): 0.00
          Curve Number: 49.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



-------------------------------------------------------------------------------------------
         Name: Basin 308A               Node: Pond 3                 Status: Onsite
        Group: BASIN308                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Sjrwmd96            Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200                Time of Conc(min): 77.00
             Area(ac): 20.730                    Time Shift(hrs): 0.00
          Curve Number: 63.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Used Post Development time of concentration from Permit No. 22124-2.

==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

      Name: GRND 308            Base Flow(cfs): 0.000          Init Stage(ft): 43.100
     Group: BASIN308                                           Warn Stage(ft): 43.100
      Type: Time/Stage


      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          43.100
         336.00          43.100

-----------------------------------------------------------------------------------------
      Name: OUT 308             Base Flow(cfs): 0.000          Init Stage(ft): 49.950
     Group: BASIN308                                           Warn Stage(ft): 49.950
      Type: Time/Stage

Used Boundary Conditon developed in previous project (Permit No. 22124-2).

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          49.950
         336.00          49.950

-----------------------------------------------------------------------------------------
      Name: Pond 3              Base Flow(cfs): 0.000          Init Stage(ft): 51.200
     Group: BASIN308                                           Warn Stage(ft): 57.750
      Type: Stage/Area

Used stage/storage from Permit No. 22124-2.

      Stage(ft)        Area(ac)
--------------- ---------------
         51.200          2.5700
         56.600          3.6700
         58.100          4.4700

==========================================================================================
```

```
==== Drop Structures ==================================================================
=======================================================================================

         Name: DS-E308            From Node: Pond 3            Length(ft): 310.00
        Group: BASIN308             To Node: OUT 308                 Count: 1

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 30.00          30.00                                   Flow: Both
     Rise(in): 30.00          30.00                    Entrance Loss Coef: 1.000
   Invert(ft): 51.180         50.520                       Exit Loss Coef: 0.500
  Manning's N: 0.012000       0.012000                   Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                       Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Control Strcuture based on pervious permit for Post Develoment (Permit No. 22124-2).

*** Weir 1 of 2 for Drop Structure DS-E308 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 37.00                       Invert(ft): 56.750
               Rise(in): 49.00                 Control Elev(ft): 56.750

*** Weir 2 of 2 for Drop Structure DS-E308 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 24.00                       Invert(ft): 53.150
               Rise(in): 43.20                 Control Elev(ft): 53.150


=======================================================================================
==== Percolation Links ================================================================
=======================================================================================

         Name: PERC E308          From Node: Pond 3                  Flow: Both
        Group: BASIN308             To Node: GRND 308                Count: 1

         Surface Area Option: Vary based on Stage/Area Table
   Vertical Flow Termination: Horizontal Flow Algorithm
       Aquifer Base Elev(ft): 35.330                       Perimeter 1(ft): 2300.000
        Water Table Elev(ft): 43.100                       Perimeter 2(ft): 2615.000
 ****************************-9999.000                    Perimeter 3(ft): 5200.000
  Horiz Conductivity(ft/day): 20.000                   Distance 1 to 2(ft): 50.000
   Vert Conductivity(ft/day): 10.000                   Distance 2 to 3(ft): 450.000
     Effective Porosity(dec): 0.250                       Num Cells 1 to 2: 10
            Suction Head(in): 4.000                       Num Cells 2 to 3: 45
         Layer Thickness(ft): 8.100



=======================================================================================
==== Hydrology Simulations ============================================================
=======================================================================================

         Name: 100Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\I-4 Existing\100Y240H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 18.50

Time(hrs)       Print Inc(min)
--------------- ---------------
336.000         5.00

-------------------------------------------------------------------------------------------------
         Name: SJRWMD
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\I-4 Existing\SJRWMD.R32
```

```
      Override Defaults: No

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.00
14.000          1.00
96.000          5.00

==========================================================================================
==== Routing Simulations ================================================================
==========================================================================================

         Name: 100Y240H            Hydrology Sim: 100Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\I-4 Existing\100Y240H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 336.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
336.000         15.000

Group           Run
--------------- -----
BASIN308        Yes


------------------------------------------------------------------------------------------------------
         Name: SJRWMD              Hydrology Sim: SJRWMD
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\I-4 Existing\SJRWMD.I32

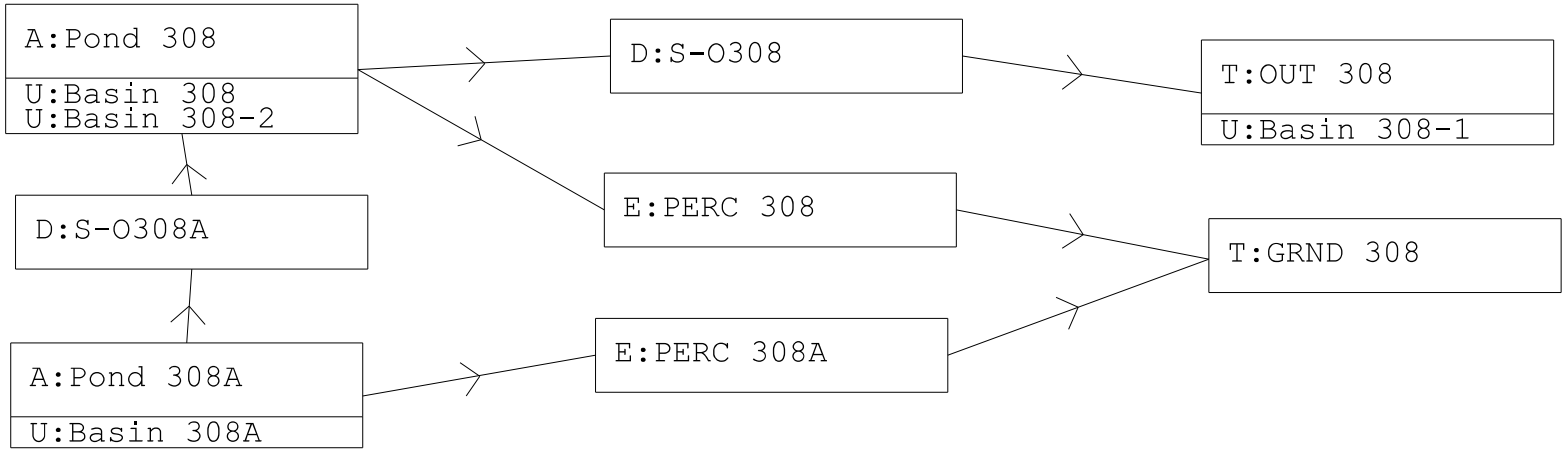
      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 120.00
     Min Calc Time(sec): 0.0100               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.000
14.000          1.000
96.000          5.000
120.000         5.000

Group           Run
--------------- -----
BASIN308        Yes
```

Post Development



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. QUARTETTI, P.E.
P.E. LICENSE NUMBER 45976
WSP USA Inc.
2202 N WEST SHORE BLVD., SUITE 300
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	242592-4-52-01

ICPR LINK NODE DIAGRAM PROPOSED BASIN 308

SHEET NO.
N/A

Basin 308
Proposed Conditions Output

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
GRND 308	BASIN308	100Y240H	0.00	43.10	43.10	0.0000	0	38.51	9.86	0.00	0.00
GRND 308	BASIN308	SJRWMD	0.00	43.10	43.10	0.0000	0	57.78	12.52	0.00	0.00
OUT 308	BASIN308	100Y240H	0.00	49.95	49.95	0.0000	0	184.35	20.51	0.00	0.00
OUT 308	BASIN308	SJRWMD	0.00	49.95	49.95	0.0000	0	68.08	2.86	0.00	0.00
Pond 308	BASIN308	100Y240H	184.38	56.99	57.10	0.0033	155106	184.00	31.93	184.31	22.84
Pond 308	BASIN308	SJRWMD	68.25	55.50	57.10	0.0025	136898	60.08	124.51	57.06	11.55
Pond 308A	BASIN308	100Y240H	184.09	72.99	73.00	0.0026	106528	184.00	12.67	184.09	12.21
Pond 308A	BASIN308	SJRWMD	62.39	72.43	73.00	0.0019	103732	60.08	78.75	62.39	5.62

Proposed Discharge Rates:
Basin 308
Q-FDOT (100-yr/240-hr)= 20.51 cfs
Q-SJRWMD (25-yr/96-hr)= 2.86 cfs

```
==========================================================================================
==== Basins ==============================================================================
==========================================================================================

         Name: Basin 308                Node: Pond 308               Status: Onsite
        Group: BASIN308                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Sjrwmd96            Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200                Time of Conc(min): 23.00
            Area(ac): 27.270                    Time Shift(hrs): 0.00
         Curve Number: 86.30              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: Basin 308-1              Node: OUT 308                Status: Onsite
        Group: BASIN308                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Sjrwmd96            Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200                Time of Conc(min): 10.00
            Area(ac): 0.720                     Time Shift(hrs): 0.00
         Curve Number: 49.00              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: Basin 308-2              Node: Pond 308               Status: Onsite
        Group: BASIN308                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Sjrwmd96            Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200                Time of Conc(min): 14.20
            Area(ac): 5.160                     Time Shift(hrs): 0.00
         Curve Number: 49.00              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: Basin 308A               Node: Pond 308A              Status: Onsite
        Group: BASIN308                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Sjrwmd96            Storm Duration(hrs): 96.00
    Rainfall Amount(in): 11.200                Time of Conc(min): 21.00
            Area(ac): 20.400                    Time Shift(hrs): 0.00
         Curve Number: 76.10              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

      Name: GRND 308            Base Flow(cfs): 0.000          Init Stage(ft): 43.100
     Group: BASIN308                                           Warn Stage(ft): 43.100
      Type: Time/Stage


      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          43.100
         336.00          43.100

------------------------------------------------------------------------------------------
      Name: OUT 308             Base Flow(cfs): 0.000          Init Stage(ft): 49.950
     Group: BASIN308                                           Warn Stage(ft): 49.950
      Type: Time/Stage


      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          49.950
         336.00          49.950

------------------------------------------------------------------------------------------
      Name: Pond 308            Base Flow(cfs): 0.000          Init Stage(ft): 51.200
     Group: BASIN308                                           Warn Stage(ft): 57.100
      Type: Stage/Area
```

```
      Stage(ft)        Area(ac)
--------------- ---------------
         51.200          2.2900
         52.010          2.4500
         52.500          2.5500
         53.230          2.6900
         54.480          2.9400
         54.980          3.0400
         56.600          3.3600
         58.100          4.1400

-------------------------------------------------------------------------------------------
      Name: Pond 308A           Base Flow(cfs): 0.000          Init Stage(ft): 69.100
     Group: BASIN308                                           Warn Stage(ft): 73.000
      Type: Stage/Area


      Stage(ft)        Area(ac)
--------------- ---------------
         69.100          1.9900
         70.050          2.1000
         70.650          2.1700
         71.410          2.2600
         72.070          2.3400
         73.980          2.5600
         74.000          2.5700

===========================================================================================
==== Drop Structures ======================================================================
===========================================================================================

         Name: S-O308              From Node: Pond 308           Length(ft): 310.00
        Group: BASIN308              To Node: OUT 308                 Count: 1

               UPSTREAM       DOWNSTREAM                  Friction Equation: Automatic
     Geometry: Circular       Circular                   Solution Algorithm: Most Restrictive
     Span(in): 30.00          30.00                                  Flow: Both
     Rise(in): 30.00          30.00                      Entrance Loss Coef: 1.000
   Invert(ft): 51.180         50.520                         Exit Loss Coef: 0.500
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                           Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 2 for Drop Structure S-O308 ***
                                                                                   TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Vertical: Mavis            Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 28.00                        Invert(ft): 54.980
               Rise(in): 20.40                  Control Elev(ft): 54.980

*** Weir 2 of 2 for Drop Structure S-O308 ***
                                                                                   TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Horizontal                 Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 37.00                        Invert(ft): 57.100
               Rise(in): 49.00                  Control Elev(ft): 57.100


-----------------------------------------------------------------------------------------------
         Name: S-O308A             From Node: Pond 308A          Length(ft): 1800.00
        Group: BASIN308              To Node: Pond 308                Count: 1

               UPSTREAM       DOWNSTREAM                  Friction Equation: Automatic
     Geometry: Circular       Circular                   Solution Algorithm: Most Restrictive
     Span(in): 24.00          24.00                                  Flow: Both
     Rise(in): 24.00          24.00                      Entrance Loss Coef: 1.000
   Invert(ft): 67.810         51.200                         Exit Loss Coef: 0.500
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                           Solution Incs: 10
```

```
Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall



*** Weir 1 of 2 for Drop Structure S-O308A ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 78.00                       Invert(ft): 72.070
               Rise(in): 4.92                  Control Elev(ft): 72.070

*** Weir 2 of 2 for Drop Structure S-O308A ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 37.00                       Invert(ft): 72.900
               Rise(in): 49.00                 Control Elev(ft): 72.900


=========================================================================================
==== Percolation Links ===================================================================
=========================================================================================

         Name: PERC 308            From Node: Pond 308                 Flow: Both
        Group: BASIN308              To Node: GRND 308                Count: 1

         Surface Area Option: Vary based on Stage/Area Table
   Vertical Flow Termination: Horizontal Flow Algorithm
       Aquifer Base Elev(ft): 35.330                       Perimeter 1(ft): 2300.000
        Water Table Elev(ft): 43.100                       Perimeter 2(ft): 2615.000
 ****************************-9999.000                    Perimeter 3(ft): 5200.000
  Horiz Conductivity(ft/day): 20.000                   Distance 1 to 2(ft): 50.000
   Vert Conductivity(ft/day): 10.000                   Distance 2 to 3(ft): 450.000
     Effective Porosity(dec): 0.250                       Num Cells 1 to 2: 10
            Suction Head(in): 4.000                       Num Cells 2 to 3: 45
         Layer Thickness(ft): 8.100



-----------------------------------------------------------------------------------------------------
         Name: PERC 308A           From Node: Pond 308A                Flow: Both
        Group: BASIN308              To Node: GRND 308                Count: 1

         Surface Area Option: Vary based on Stage/Area Table
   Vertical Flow Termination: Horizontal Flow Algorithm
       Aquifer Base Elev(ft): 56.500                       Perimeter 1(ft): 1331.000
        Water Table Elev(ft): 60.300                       Perimeter 2(ft): 1645.000
 ****************************-9999.000                    Perimeter 3(ft): 4472.000
  Horiz Conductivity(ft/day): 1.900                    Distance 1 to 2(ft): 50.000
   Vert Conductivity(ft/day): 0.950                    Distance 2 to 3(ft): 450.000
     Effective Porosity(dec): 0.250                       Num Cells 1 to 2: 10
            Suction Head(in): 4.000                       Num Cells 2 to 3: 45
         Layer Thickness(ft): 8.800



=========================================================================================
==== Hydrology Simulations ===============================================================
=========================================================================================

         Name: 010Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y240H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 13.50

Time(hrs)       Print Inc(min)
--------------- ---------------
240.000         5.00

-----------------------------------------------------------------------------------------------------
         Name: 050Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\050Y240H.R32
```

```
      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 17.50

Time(hrs)       Print Inc(min)
--------------- ---------------
250.000         5.00

-----------------------------------------------------------------------------------------------
         Name: 100Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\100Y240H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 18.50

Time(hrs)       Print Inc(min)
--------------- ---------------
240.000         5.00

-----------------------------------------------------------------------------------------------
         Name: SJRWMD
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\SJRWMD.R32

      Override Defaults: No

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.00
14.000          1.00
96.000          5.00

=============================================================================================
==== Routing Simulations ====================================================================
=============================================================================================

         Name: 010Y240H            Hydrology Sim: 010Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y240H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 240.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
240.000         5.000

Group           Run
--------------- -----
BASIN308        Yes


-----------------------------------------------------------------------------------------------
         Name: 050Y240H            Hydrology Sim: 050Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\050Y240H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 240.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
240.000         5.000

Group           Run
--------------- -----
BASIN308        Yes


-----------------------------------------------------------------------------------------------
         Name: 100Y240H            Hydrology Sim: 100Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\100Y240H.I32
```

```
      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 336.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
336.000         15.000

Group           Run
--------------- -----
BASIN308        Yes


-------------------------------------------------------------------------------------------------
         Name: PERC                Hydrology Sim:
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\PERC.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 720.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
720.000         1.000

Group           Run
--------------- -----
BASIN308        Yes


-------------------------------------------------------------------------------------------------
         Name: SJRWMD              Hydrology Sim: SJRWMD
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\SJRWMD.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 120.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.000
16.000          1.000
96.000          5.000
120.000         5.000

Group           Run
--------------- -----
BASIN308        Yes
```

Basin 308
SJRWMD Wekiva Recovery
3-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308	BASIN308	0.00	52.01	57.10	106722	0.00	0.00	0.00	0.00
PERC	Pond 308	BASIN308	0.02	52.00	57.10	106677	0.00	12.35	0.00	0.01
PERC	Pond 308	BASIN308	0.03	52.00	57.10	106617	0.00	12.34	0.00	0.03
PERC	Pond 308	BASIN308	0.05	51.99	57.10	106556	0.00	12.33	0.00	0.04
PERC	Pond 308	BASIN308	0.07	51.98	57.10	106496	0.00	12.33	0.00	0.06
PERC	Pond 308	BASIN308	0.08	51.98	57.10	106436	0.00	12.32	0.00	0.08
PERC	Pond 308	BASIN308	0.10	51.97	57.10	106376	0.00	12.31	0.00	0.09
PERC	Pond 308	BASIN308	0.12	51.96	57.10	106315	0.00	12.31	0.00	0.11
PERC	Pond 308	BASIN308	0.13	51.96	57.10	106255	0.00	12.30	0.00	0.13
PERC	Pond 308	BASIN308	0.15	51.95	57.10	106195	0.00	12.29	0.00	0.15
PERC	Pond 308	BASIN308	0.17	51.94	57.10	106135	0.00	12.28	0.00	0.16
PERC	Pond 308	BASIN308	0.18	51.93	57.10	106074	0.00	12.28	0.00	0.18
PERC	Pond 308	BASIN308	0.20	51.93	57.10	106014	0.00	12.27	0.00	0.20
PERC	Pond 308	BASIN308	0.22	51.92	57.10	105954	0.00	12.26	0.00	0.21
PERC	Pond 308	BASIN308	0.24	51.91	57.10	105894	0.00	12.26	0.00	0.23
PERC	Pond 308	BASIN308	0.25	51.91	57.10	105833	0.00	12.25	0.00	0.25
PERC	Pond 308	BASIN308	0.27	51.90	57.10	105773	0.00	12.24	0.00	0.26
PERC	Pond 308	BASIN308	0.29	51.89	57.10	105713	0.00	12.24	0.00	0.28
PERC	Pond 308	BASIN308	0.30	51.89	57.10	105653	0.00	12.23	0.00	0.30
PERC	Pond 308	BASIN308	0.32	51.88	57.10	105592	0.00	12.22	0.00	0.32
PERC	Pond 308	BASIN308	0.34	51.87	57.10	105532	0.00	12.21	0.00	0.33
PERC	Pond 308	BASIN308	0.35	51.86	57.10	105472	0.00	12.21	0.00	0.35
PERC	Pond 308	BASIN308	0.37	51.86	57.10	105412	0.00	12.20	0.00	0.37
PERC	Pond 308	BASIN308	0.39	51.85	57.10	105351	0.00	12.19	0.00	0.38
PERC	Pond 308	BASIN308	0.40	51.84	57.10	105291	0.00	12.19	0.00	0.40
PERC	Pond 308	BASIN308	0.42	51.84	57.10	105231	0.00	12.18	0.00	0.42
PERC	Pond 308	BASIN308	0.44	51.83	57.10	105171	0.00	12.17	0.00	0.43
PERC	Pond 308	BASIN308	0.45	51.82	57.10	105110	0.00	12.17	0.00	0.45
PERC	Pond 308	BASIN308	0.47	51.82	57.10	105050	0.00	12.16	0.00	0.47
PERC	Pond 308	BASIN308	0.49	51.81	57.10	104990	0.00	12.15	0.00	0.48
PERC	Pond 308	BASIN308	0.50	51.80	57.10	104930	0.00	12.14	0.00	0.50
PERC	Pond 308	BASIN308	0.52	51.79	57.10	104869	0.00	12.14	0.00	0.52
PERC	Pond 308	BASIN308	0.54	51.79	57.10	104809	0.00	12.13	0.00	0.54
PERC	Pond 308	BASIN308	0.55	51.78	57.10	104749	0.00	12.12	0.00	0.55
PERC	Pond 308	BASIN308	0.57	51.77	57.10	104689	0.00	12.12	0.00	0.57
PERC	Pond 308	BASIN308	0.59	51.77	57.10	104628	0.00	12.11	0.00	0.59
PERC	Pond 308	BASIN308	0.61	51.76	57.10	104568	0.00	12.10	0.00	0.60
PERC	Pond 308	BASIN308	0.62	51.75	57.10	104508	0.00	12.10	0.00	0.62
PERC	Pond 308	BASIN308	0.64	51.75	57.10	104448	0.00	12.09	0.00	0.64
PERC	Pond 308	BASIN308	0.66	51.74	57.10	104387	0.00	12.08	0.00	0.65
PERC	Pond 308	BASIN308	0.67	51.73	57.10	104327	0.00	12.07	0.00	0.67
PERC	Pond 308	BASIN308	0.69	51.72	57.10	104267	0.00	12.07	0.00	0.69
PERC	Pond 308	BASIN308	0.71	51.72	57.10	104207	0.00	12.06	0.00	0.70
PERC	Pond 308	BASIN308	0.72	51.71	57.10	104146	0.00	12.05	0.00	0.72
PERC	Pond 308	BASIN308	0.74	51.70	57.10	104086	0.00	12.05	0.00	0.74
PERC	Pond 308	BASIN308	0.76	51.70	57.10	104026	0.00	12.04	0.00	0.75
PERC	Pond 308	BASIN308	0.77	51.69	57.10	103966	0.00	12.03	0.00	0.77
PERC	Pond 308	BASIN308	0.79	51.68	57.10	103905	0.00	12.03	0.00	0.79
PERC	Pond 308	BASIN308	0.81	51.68	57.10	103845	0.00	12.02	0.00	0.80
PERC	Pond 308	BASIN308	0.82	51.67	57.10	103785	0.00	12.01	0.00	0.82
PERC	Pond 308	BASIN308	0.84	51.66	57.10	103725	0.00	12.01	0.00	0.84
PERC	Pond 308	BASIN308	0.86	51.65	57.10	103664	0.00	12.00	0.00	0.85
PERC	Pond 308	BASIN308	0.87	51.65	57.10	103604	0.00	11.99	0.00	0.87
PERC	Pond 308	BASIN308	0.89	51.64	57.10	103544	0.00	11.98	0.00	0.89
PERC	Pond 308	BASIN308	0.91	51.63	57.10	103484	0.00	11.98	0.00	0.90
PERC	Pond 308	BASIN308	0.92	51.63	57.10	103423	0.00	11.97	0.00	0.92
PERC	Pond 308	BASIN308	0.94	51.62	57.10	103363	0.00	11.96	0.00	0.94
PERC	Pond 308	BASIN308	0.96	51.61	57.10	103303	0.00	11.96	0.00	0.95
PERC	Pond 308	BASIN308	0.97	51.61	57.10	103243	0.00	11.95	0.00	0.97
PERC	Pond 308	BASIN308	0.99	51.60	57.10	103182	0.00	11.94	0.00	0.99
PERC	Pond 308	BASIN308	1.01	51.59	57.10	103122	0.00	11.94	0.00	1.00
PERC	Pond 308	BASIN308	1.02	51.59	57.10	103092	0.00	11.93	0.00	1.01
PERC	Pond 308	BASIN308	1.03	51.58	57.10	103032	0.00	11.92	0.00	1.03
PERC	Pond 308	BASIN308	1.05	51.57	57.10	102971	0.00	11.92	0.00	1.04
PERC	Pond 308	BASIN308	1.07	51.57	57.10	102911	0.00	11.91	0.00	1.06
PERC	Pond 308	BASIN308	1.08	51.56	57.10	102851	0.00	11.90	0.00	1.08
PERC	Pond 308	BASIN308	1.10	51.55	57.10	102791	0.00	11.90	0.00	1.09
PERC	Pond 308	BASIN308	1.12	51.55	57.10	102730	0.00	11.89	0.00	1.11
PERC	Pond 308	BASIN308	1.13	51.54	57.10	102670	0.00	11.88	0.00	1.13
PERC	Pond 308	BASIN308	1.15	51.53	57.10	102610	0.00	11.88	0.00	1.14
PERC	Pond 308	BASIN308	1.17	51.53	57.10	102550	0.00	11.87	0.00	1.16
PERC	Pond 308	BASIN308	1.18	51.52	57.10	102489	0.00	11.86	0.00	1.18
PERC	Pond 308	BASIN308	1.20	51.51	57.10	102429	0.00	11.86	0.00	1.19
PERC	Pond 308	BASIN308	1.22	51.50	57.10	102369	0.00	11.85	0.00	1.21
PERC	Pond 308	BASIN308	1.24	51.50	57.10	102309	0.00	11.84	0.00	1.23
PERC	Pond 308	BASIN308	1.25	51.49	57.10	102248	0.00	11.83	0.00	1.24
PERC	Pond 308	BASIN308	1.27	51.48	57.10	102188	0.00	11.83	0.00	1.26
PERC	Pond 308	BASIN308	1.29	51.48	57.10	102128	0.00	11.82	0.00	1.28
PERC	Pond 308	BASIN308	1.30	51.47	57.10	102068	0.00	11.81	0.00	1.29
PERC	Pond 308	BASIN308	1.32	51.46	57.10	102007	0.00	11.81	0.00	1.31
PERC	Pond 308	BASIN308	1.34	51.46	57.10	101947	0.00	11.80	0.00	1.32
PERC	Pond 308	BASIN308	1.35	51.45	57.10	101887	0.00	11.79	0.00	1.34
PERC	Pond 308	BASIN308	1.37	51.44	57.10	101827	0.00	11.79	0.00	1.36
PERC	Pond 308	BASIN308	1.39	51.43	57.10	101766	0.00	11.78	0.00	1.37

Basin 308
SJRWMD Wekiva Recovery
3-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308	BASIN308	1.40	51.43	57.10	101706	0.00	11.77	0.00	1.39
PERC	Pond 308	BASIN308	1.42	51.42	57.10	101646	0.00	11.76	0.00	1.41
PERC	Pond 308	BASIN308	1.44	51.41	57.10	101586	0.00	11.76	0.00	1.42
PERC	Pond 308	BASIN308	1.45	51.41	57.10	101525	0.00	11.75	0.00	1.44
PERC	Pond 308	BASIN308	1.47	51.40	57.10	101465	0.00	11.74	0.00	1.46
PERC	Pond 308	BASIN308	1.49	51.39	57.10	101405	0.00	11.74	0.00	1.47
PERC	Pond 308	BASIN308	1.50	51.39	57.10	101345	0.00	11.73	0.00	1.49
PERC	Pond 308	BASIN308	1.52	51.38	57.10	101284	0.00	11.72	0.00	1.50
PERC	Pond 308	BASIN308	1.54	51.37	57.10	101224	0.00	11.72	0.00	1.52
PERC	Pond 308	BASIN308	1.55	51.36	57.10	101164	0.00	11.71	0.00	1.54
PERC	Pond 308	BASIN308	1.57	51.36	57.10	101104	0.00	11.70	0.00	1.55
PERC	Pond 308	BASIN308	1.59	51.35	57.10	101043	0.00	11.69	0.00	1.57
PERC	Pond 308	BASIN308	1.60	51.34	57.10	100983	0.00	11.69	0.00	1.59
PERC	Pond 308	BASIN308	1.62	51.34	57.10	100923	0.00	11.68	0.00	1.60
PERC	Pond 308	BASIN308	1.64	51.33	57.10	100863	0.00	11.67	0.00	1.62
PERC	Pond 308	BASIN308	1.66	51.32	57.10	100802	0.00	11.67	0.00	1.63
PERC	Pond 308	BASIN308	1.67	51.32	57.10	100742	0.00	11.66	0.00	1.65
PERC	Pond 308	BASIN308	1.69	51.31	57.10	100682	0.00	11.65	0.00	1.67
PERC	Pond 308	BASIN308	1.71	51.30	57.10	100622	0.00	11.65	0.00	1.68
PERC	Pond 308	BASIN308	1.72	51.29	57.10	100561	0.00	11.64	0.00	1.70
PERC	Pond 308	BASIN308	1.74	51.29	57.10	100501	0.00	11.63	0.00	1.72
PERC	Pond 308	BASIN308	1.76	51.28	57.10	100441	0.00	11.63	0.00	1.73
PERC	Pond 308	BASIN308	1.77	51.27	57.10	100381	0.00	11.62	0.00	1.75
PERC	Pond 308	BASIN308	1.79	51.27	57.10	100320	0.00	11.61	0.00	1.76
PERC	Pond 308	BASIN308	1.81	51.26	57.10	100260	0.00	11.60	0.00	1.78
PERC	Pond 308	BASIN308	1.82	51.25	57.10	100200	0.00	11.60	0.00	1.80
PERC	Pond 308	BASIN308	1.84	51.24	57.10	100140	0.00	11.59	0.00	1.81
PERC	Pond 308	BASIN308	1.86	51.24	57.10	100079	0.00	11.58	0.00	1.83
PERC	Pond 308	BASIN308	1.87	51.23	57.10	100019	0.00	11.58	0.00	1.84
PERC	Pond 308	BASIN308	1.89	51.22	57.10	99959	0.00	11.57	0.00	1.86
PERC	Pond 308	BASIN308	1.91	51.22	57.10	99899	0.00	11.56	0.00	1.88
PERC	Pond 308	BASIN308	1.92	51.21	57.10	99838	0.00	11.56	0.00	1.89
PERC	Pond 308	BASIN308	1.94	51.20	57.10	99778	0.00	11.55	0.00	1.91
PERC	Pond 308	BASIN308	1.96	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	1.97	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	1.99	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.01	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.02	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.03	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.05	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.08	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.09	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.11	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.12	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.14	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.16	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.18	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.19	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.20	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.23	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.24	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.25	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.27	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.29	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.31	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.33	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.34	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.36	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.38	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.39	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.41	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.42	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.44	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.46	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.47	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.49	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.51	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.52	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.54	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.56	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.57	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.59	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.61	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.62	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.64	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.66	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.67	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.69	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.71	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.72	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.74	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.76	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.77	51.20	57.10	99752	0.00	0.00	0.00	1.92
PERC	Pond 308	BASIN308	2.79	51.20	57.10	99752	0.00	0.00	0.00	1.92

Basin 308
SJRWMD Treatment Recovery
3-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308	BASIN308	0.00	52.50	57.10	111078	0.00	0.00	0.00	0.00
PERC	Pond 308	BASIN308	0.02	52.49	57.10	111031	0.00	12.85	0.00	0.01
PERC	Pond 308	BASIN308	0.03	52.49	57.10	110969	0.00	12.84	0.00	0.03
PERC	Pond 308	BASIN308	0.05	52.48	57.10	110907	0.00	12.84	0.00	0.04
PERC	Pond 308	BASIN308	0.07	52.47	57.10	110845	0.00	12.83	0.00	0.06
PERC	Pond 308	BASIN308	0.08	52.47	57.10	110782	0.00	12.82	0.00	0.08
PERC	Pond 308	BASIN308	0.10	52.46	57.10	110720	0.00	12.81	0.00	0.10
PERC	Pond 308	BASIN308	0.12	52.45	57.10	110658	0.00	12.81	0.00	0.12
PERC	Pond 308	BASIN308	0.13	52.45	57.10	110596	0.00	12.80	0.00	0.13
PERC	Pond 308	BASIN308	0.15	52.44	57.10	110533	0.00	12.79	0.00	0.15
PERC	Pond 308	BASIN308	0.17	52.43	57.10	110471	0.00	12.79	0.00	0.17
PERC	Pond 308	BASIN308	0.18	52.42	57.10	110409	0.00	12.78	0.00	0.19
PERC	Pond 308	BASIN308	0.20	52.42	57.10	110347	0.00	12.77	0.00	0.20
PERC	Pond 308	BASIN308	0.22	52.41	57.10	110284	0.00	12.76	0.00	0.22
PERC	Pond 308	BASIN308	0.24	52.40	57.10	110222	0.00	12.76	0.00	0.24
PERC	Pond 308	BASIN308	0.25	52.40	57.10	110160	0.00	12.75	0.00	0.26
PERC	Pond 308	BASIN308	0.27	52.39	57.10	110098	0.00	12.74	0.00	0.28
PERC	Pond 308	BASIN308	0.29	52.38	57.10	110035	0.00	12.74	0.00	0.29
PERC	Pond 308	BASIN308	0.30	52.38	57.10	109973	0.00	12.73	0.00	0.31
PERC	Pond 308	BASIN308	0.32	52.37	57.10	109911	0.00	12.72	0.00	0.33
PERC	Pond 308	BASIN308	0.34	52.36	57.10	109849	0.00	12.71	0.00	0.35
PERC	Pond 308	BASIN308	0.35	52.35	57.10	109786	0.00	12.71	0.00	0.36
PERC	Pond 308	BASIN308	0.37	52.35	57.10	109724	0.00	12.70	0.00	0.38
PERC	Pond 308	BASIN308	0.39	52.34	57.10	109662	0.00	12.69	0.00	0.40
PERC	Pond 308	BASIN308	0.40	52.33	57.10	109600	0.00	12.69	0.00	0.42
PERC	Pond 308	BASIN308	0.42	52.33	57.10	109537	0.00	12.68	0.00	0.43
PERC	Pond 308	BASIN308	0.44	52.32	57.10	109475	0.00	12.67	0.00	0.45
PERC	Pond 308	BASIN308	0.45	52.31	57.10	109413	0.00	12.66	0.00	0.47
PERC	Pond 308	BASIN308	0.47	52.31	57.10	109351	0.00	12.66	0.00	0.49
PERC	Pond 308	BASIN308	0.49	52.30	57.10	109288	0.00	12.65	0.00	0.50
PERC	Pond 308	BASIN308	0.50	52.29	57.10	109226	0.00	12.64	0.00	0.52
PERC	Pond 308	BASIN308	0.52	52.28	57.10	109164	0.00	12.63	0.00	0.54
PERC	Pond 308	BASIN308	0.54	52.28	57.10	109102	0.00	12.63	0.00	0.56
PERC	Pond 308	BASIN308	0.55	52.27	57.10	109039	0.00	12.62	0.00	0.57
PERC	Pond 308	BASIN308	0.57	52.26	57.10	108977	0.00	12.61	0.00	0.59
PERC	Pond 308	BASIN308	0.59	52.26	57.10	108915	0.00	12.61	0.00	0.61
PERC	Pond 308	BASIN308	0.61	52.25	57.10	108853	0.00	12.60	0.00	0.63
PERC	Pond 308	BASIN308	0.62	52.24	57.10	108790	0.00	12.59	0.00	0.64
PERC	Pond 308	BASIN308	0.64	52.24	57.10	108728	0.00	12.58	0.00	0.66
PERC	Pond 308	BASIN308	0.66	52.23	57.10	108666	0.00	12.58	0.00	0.68
PERC	Pond 308	BASIN308	0.67	52.22	57.10	108604	0.00	12.57	0.00	0.70
PERC	Pond 308	BASIN308	0.69	52.21	57.10	108541	0.00	12.56	0.00	0.71
PERC	Pond 308	BASIN308	0.71	52.21	57.10	108479	0.00	12.56	0.00	0.73
PERC	Pond 308	BASIN308	0.72	52.20	57.10	108417	0.00	12.55	0.00	0.75
PERC	Pond 308	BASIN308	0.74	52.19	57.10	108355	0.00	12.54	0.00	0.77
PERC	Pond 308	BASIN308	0.76	52.19	57.10	108292	0.00	12.53	0.00	0.78
PERC	Pond 308	BASIN308	0.77	52.18	57.10	108230	0.00	12.53	0.00	0.80
PERC	Pond 308	BASIN308	0.79	52.17	57.10	108168	0.00	12.52	0.00	0.82
PERC	Pond 308	BASIN308	0.81	52.17	57.10	108106	0.00	12.51	0.00	0.84
PERC	Pond 308	BASIN308	0.82	52.16	57.10	108043	0.00	12.51	0.00	0.85
PERC	Pond 308	BASIN308	0.84	52.15	57.10	107981	0.00	12.50	0.00	0.87
PERC	Pond 308	BASIN308	0.86	52.14	57.10	107919	0.00	12.49	0.00	0.89
PERC	Pond 308	BASIN308	0.87	52.14	57.10	107857	0.00	12.48	0.00	0.91
PERC	Pond 308	BASIN308	0.89	52.13	57.10	107794	0.00	12.48	0.00	0.92
PERC	Pond 308	BASIN308	0.91	52.12	57.10	107732	0.00	12.47	0.00	0.94
PERC	Pond 308	BASIN308	0.92	52.12	57.10	107670	0.00	12.46	0.00	0.96
PERC	Pond 308	BASIN308	0.94	52.11	57.10	107608	0.00	12.45	0.00	0.98
PERC	Pond 308	BASIN308	0.96	52.10	57.10	107545	0.00	12.45	0.00	0.99
PERC	Pond 308	BASIN308	0.97	52.10	57.10	107483	0.00	12.44	0.00	1.01
PERC	Pond 308	BASIN308	0.99	52.09	57.10	107421	0.00	12.43	0.00	1.03
PERC	Pond 308	BASIN308	1.01	52.08	57.10	107359	0.00	12.43	0.00	1.04
PERC	Pond 308	BASIN308	1.02	52.08	57.10	107327	0.00	12.42	0.00	1.05
PERC	Pond 308	BASIN308	1.03	52.07	57.10	107265	0.00	12.41	0.00	1.07
PERC	Pond 308	BASIN308	1.05	52.06	57.10	107203	0.00	12.41	0.00	1.09
PERC	Pond 308	BASIN308	1.07	52.06	57.10	107141	0.00	12.40	0.00	1.10
PERC	Pond 308	BASIN308	1.08	52.05	57.10	107078	0.00	12.39	0.00	1.12
PERC	Pond 308	BASIN308	1.10	52.04	57.10	107016	0.00	12.39	0.00	1.14
PERC	Pond 308	BASIN308	1.12	52.04	57.10	106954	0.00	12.38	0.00	1.16
PERC	Pond 308	BASIN308	1.13	52.03	57.10	106892	0.00	12.37	0.00	1.17
PERC	Pond 308	BASIN308	1.15	52.02	57.10	106829	0.00	12.36	0.00	1.19
PERC	Pond 308	BASIN308	1.17	52.02	57.10	106767	0.00	12.36	0.00	1.21
PERC	Pond 308	BASIN308	1.18	52.01	57.10	106706	0.00	12.35	0.00	1.23
PERC	Pond 308	BASIN308	1.20	52.00	57.10	106645	0.00	12.34	0.00	1.24
PERC	Pond 308	BASIN308	1.22	51.99	57.10	106585	0.00	12.34	0.00	1.26
PERC	Pond 308	BASIN308	1.24	51.99	57.10	106525	0.00	12.33	0.00	1.28
PERC	Pond 308	BASIN308	1.25	51.98	57.10	106465	0.00	12.32	0.00	1.29
PERC	Pond 308	BASIN308	1.27	51.97	57.10	106404	0.00	12.32	0.00	1.31
PERC	Pond 308	BASIN308	1.29	51.97	57.10	106344	0.00	12.31	0.00	1.33
PERC	Pond 308	BASIN308	1.30	51.96	57.10	106284	0.00	12.30	0.00	1.35
PERC	Pond 308	BASIN308	1.32	51.95	57.10	106224	0.00	12.29	0.00	1.36
PERC	Pond 308	BASIN308	1.34	51.95	57.10	106163	0.00	12.29	0.00	1.38
PERC	Pond 308	BASIN308	1.35	51.94	57.10	106103	0.00	12.28	0.00	1.40
PERC	Pond 308	BASIN308	1.37	51.93	57.10	106043	0.00	12.27	0.00	1.41
PERC	Pond 308	BASIN308	1.39	51.92	57.10	105983	0.00	12.27	0.00	1.43

Basin 308
SJRWMD Treatment Recovery
3-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308	BASIN308	2.81	51.33	57.10	100891	0.00	11.68	0.00	2.84
PERC	Pond 308	BASIN308	2.82	51.33	57.10	100831	0.00	11.67	0.00	2.85
PERC	Pond 308	BASIN308	2.84	51.32	57.10	100771	0.00	11.66	0.00	2.87
PERC	Pond 308	BASIN308	2.86	51.31	57.10	100711	0.00	11.66	0.00	2.88
PERC	Pond 308	BASIN308	2.87	51.30	57.10	100650	0.00	11.65	0.00	2.90
PERC	Pond 308	BASIN308	2.89	51.30	57.10	100590	0.00	11.64	0.00	2.92
PERC	Pond 308	BASIN308	2.91	51.29	57.10	100530	0.00	11.64	0.00	2.93
PERC	Pond 308	BASIN308	2.92	51.28	57.10	100470	0.00	11.63	0.00	2.95
PERC	Pond 308	BASIN308	2.94	51.28	57.10	100409	0.00	11.62	0.00	2.96
PERC	Pond 308	BASIN308	2.96	51.27	57.10	100349	0.00	11.61	0.00	2.98
PERC	Pond 308	BASIN308	2.97	51.26	57.10	100289	0.00	11.61	0.00	3.00
PERC	Pond 308	BASIN308	2.99	51.26	57.10	100229	0.00	11.60	0.00	3.01
PERC	Pond 308	BASIN308	3.01	51.25	57.10	100168	0.00	11.59	0.00	3.03
PERC	Pond 308	BASIN308	3.03	51.24	57.10	100108	0.00	11.59	0.00	3.05
PERC	Pond 308	BASIN308	3.03	51.24	57.10	100078	0.00	11.58	0.00	3.05
PERC	Pond 308	BASIN308	3.05	51.23	57.10	100018	0.00	11.58	0.00	3.07
PERC	Pond 308	BASIN308	3.07	51.22	57.10	99957	0.00	11.57	0.00	3.09
PERC	Pond 308	BASIN308	3.08	51.22	57.10	99897	0.00	11.56	0.00	3.10
PERC	Pond 308	BASIN308	3.10	51.21	57.10	99837	0.00	11.56	0.00	3.12
PERC	Pond 308	BASIN308	3.12	51.20	57.10	99777	0.00	11.55	0.00	3.13
PERC	Pond 308	BASIN308	3.13	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.15	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.17	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.18	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.20	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.22	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.24	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.25	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.27	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.28	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.30	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.33	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.34	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.35	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.38	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.39	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.40	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.42	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.44	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.46	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.47	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.49	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.50	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.52	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.54	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.55	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.57	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.58	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.60	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.62	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.63	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.65	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.67	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.68	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.70	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.72	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.73	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.75	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.77	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.78	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.80	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.82	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.83	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.85	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.87	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.88	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.90	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.92	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.93	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.95	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.97	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	3.98	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	4.00	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	4.02	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	4.03	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	4.05	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	4.07	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	4.08	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	4.10	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	4.12	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	4.13	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	4.15	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	4.17	51.20	57.10	99752	0.00	0.00	0.00	3.14
PERC	Pond 308	BASIN308	4.18	51.20	57.10	99752	0.00	0.00	0.00	3.14

Basin 308
SJRWMD Closed Basin Recovery
14-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308	BASIN308	0.00	54.48	57.10	128066	0.00	0.00	0.00	0.00
PERC	Pond 308	BASIN308	0.02	54.47	57.10	128021	0.00	14.82	0.00	0.01
PERC	Pond 308	BASIN308	0.03	54.47	57.10	127960	0.00	14.81	0.00	0.03
PERC	Pond 308	BASIN308	0.05	54.46	57.10	127899	0.00	14.80	0.00	0.05
PERC	Pond 308	BASIN308	0.07	54.45	57.10	127838	0.00	14.80	0.00	0.07
PERC	Pond 308	BASIN308	0.08	54.45	57.10	127777	0.00	14.79	0.00	0.09
PERC	Pond 308	BASIN308	0.10	54.44	57.10	127716	0.00	14.78	0.00	0.11
PERC	Pond 308	BASIN308	0.12	54.43	57.10	127655	0.00	14.77	0.00	0.13
PERC	Pond 308	BASIN308	0.13	54.43	57.10	127594	0.00	14.77	0.00	0.15
PERC	Pond 308	BASIN308	0.15	54.42	57.10	127533	0.00	14.76	0.00	0.17
PERC	Pond 308	BASIN308	0.17	54.41	57.10	127472	0.00	14.75	0.00	0.20
PERC	Pond 308	BASIN308	0.18	54.40	57.10	127411	0.00	14.75	0.00	0.22
PERC	Pond 308	BASIN308	0.20	54.40	57.10	127350	0.00	14.74	0.00	0.24
PERC	Pond 308	BASIN308	0.22	54.39	57.10	127289	0.00	14.73	0.00	0.26
PERC	Pond 308	BASIN308	0.24	54.38	57.10	127228	0.00	14.73	0.00	0.28
PERC	Pond 308	BASIN308	0.25	54.38	57.10	127167	0.00	14.72	0.00	0.30
PERC	Pond 308	BASIN308	0.27	54.37	57.10	127106	0.00	14.71	0.00	0.32
PERC	Pond 308	BASIN308	0.29	54.36	57.10	127045	0.00	14.70	0.00	0.34
PERC	Pond 308	BASIN308	0.30	54.36	57.10	126984	0.00	14.70	0.00	0.36
PERC	Pond 308	BASIN308	0.32	54.35	57.10	126923	0.00	14.69	0.00	0.38
PERC	Pond 308	BASIN308	0.34	54.34	57.10	126862	0.00	14.68	0.00	0.40
PERC	Pond 308	BASIN308	0.35	54.33	57.10	126801	0.00	14.68	0.00	0.42
PERC	Pond 308	BASIN308	0.37	54.33	57.10	126740	0.00	14.67	0.00	0.44
PERC	Pond 308	BASIN308	0.39	54.32	57.10	126679	0.00	14.66	0.00	0.46
PERC	Pond 308	BASIN308	0.40	54.31	57.10	126618	0.00	14.65	0.00	0.48
PERC	Pond 308	BASIN308	0.42	54.31	57.10	126557	0.00	14.65	0.00	0.50
PERC	Pond 308	BASIN308	0.44	54.30	57.10	126496	0.00	14.64	0.00	0.52
PERC	Pond 308	BASIN308	0.45	54.29	57.10	126435	0.00	14.63	0.00	0.54
PERC	Pond 308	BASIN308	0.47	54.29	57.10	126374	0.00	14.63	0.00	0.56
PERC	Pond 308	BASIN308	0.49	54.28	57.10	126313	0.00	14.62	0.00	0.58
PERC	Pond 308	BASIN308	0.50	54.27	57.10	126252	0.00	14.61	0.00	0.60
PERC	Pond 308	BASIN308	0.52	54.26	57.10	126191	0.00	14.61	0.00	0.62
PERC	Pond 308	BASIN308	0.54	54.26	57.10	126130	0.00	14.60	0.00	0.64
PERC	Pond 308	BASIN308	0.55	54.25	57.10	126069	0.00	14.59	0.00	0.66
PERC	Pond 308	BASIN308	0.57	54.24	57.10	126008	0.00	14.58	0.00	0.68
PERC	Pond 308	BASIN308	0.59	54.24	57.10	125947	0.00	14.58	0.00	0.70
PERC	Pond 308	BASIN308	0.61	54.23	57.10	125886	0.00	14.57	0.00	0.72
PERC	Pond 308	BASIN308	0.62	54.22	57.10	125824	0.00	14.56	0.00	0.74
PERC	Pond 308	BASIN308	0.64	54.22	57.10	125763	0.00	14.56	0.00	0.77
PERC	Pond 308	BASIN308	0.66	54.21	57.10	125702	0.00	14.55	0.00	0.79
PERC	Pond 308	BASIN308	0.67	54.20	57.10	125641	0.00	14.54	0.00	0.81
PERC	Pond 308	BASIN308	0.69	54.19	57.10	125580	0.00	14.53	0.00	0.83
PERC	Pond 308	BASIN308	0.71	54.19	57.10	125519	0.00	14.53	0.00	0.85
PERC	Pond 308	BASIN308	0.72	54.18	57.10	125458	0.00	14.52	0.00	0.87
PERC	Pond 308	BASIN308	0.74	54.17	57.10	125397	0.00	14.51	0.00	0.89
PERC	Pond 308	BASIN308	0.76	54.17	57.10	125336	0.00	14.51	0.00	0.91
PERC	Pond 308	BASIN308	0.77	54.16	57.10	125275	0.00	14.50	0.00	0.93
PERC	Pond 308	BASIN308	0.79	54.15	57.10	125214	0.00	14.49	0.00	0.95
PERC	Pond 308	BASIN308	0.81	54.15	57.10	125153	0.00	14.49	0.00	0.97
PERC	Pond 308	BASIN308	0.82	54.14	57.10	125092	0.00	14.48	0.00	0.99
PERC	Pond 308	BASIN308	0.84	54.13	57.10	125031	0.00	14.47	0.00	1.01
PERC	Pond 308	BASIN308	0.86	54.12	57.10	124970	0.00	14.46	0.00	1.03
PERC	Pond 308	BASIN308	0.87	54.12	57.10	124909	0.00	14.46	0.00	1.05
PERC	Pond 308	BASIN308	0.89	54.11	57.10	124848	0.00	14.45	0.00	1.07
PERC	Pond 308	BASIN308	0.91	54.10	57.10	124787	0.00	14.44	0.00	1.09
PERC	Pond 308	BASIN308	0.92	54.10	57.10	124726	0.00	14.44	0.00	1.11
PERC	Pond 308	BASIN308	0.94	54.09	57.10	124665	0.00	14.43	0.00	1.13
PERC	Pond 308	BASIN308	0.96	54.08	57.10	124604	0.00	14.42	0.00	1.15
PERC	Pond 308	BASIN308	0.97	54.08	57.10	124543	0.00	14.41	0.00	1.17
PERC	Pond 308	BASIN308	0.99	54.07	57.10	124482	0.00	14.41	0.00	1.19
PERC	Pond 308	BASIN308	1.01	54.06	57.10	124421	0.00	14.40	0.00	1.21
PERC	Pond 308	BASIN308	1.02	54.06	57.10	124391	0.00	14.40	0.00	1.22
PERC	Pond 308	BASIN308	1.03	54.05	57.10	124330	0.00	14.39	0.00	1.24
PERC	Pond 308	BASIN308	1.05	54.04	57.10	124269	0.00	14.38	0.00	1.26
PERC	Pond 308	BASIN308	1.07	54.04	57.10	124208	0.00	14.38	0.00	1.28
PERC	Pond 308	BASIN308	1.08	54.03	57.10	124147	0.00	14.37	0.00	1.30
PERC	Pond 308	BASIN308	1.10	54.02	57.10	124086	0.00	14.36	0.00	1.32
PERC	Pond 308	BASIN308	1.12	54.02	57.10	124025	0.00	14.35	0.00	1.34
PERC	Pond 308	BASIN308	1.13	54.01	57.10	123964	0.00	14.35	0.00	1.36
PERC	Pond 308	BASIN308	1.15	54.00	57.10	123903	0.00	14.34	0.00	1.38
PERC	Pond 308	BASIN308	1.17	54.00	57.10	123842	0.00	14.33	0.00	1.40
PERC	Pond 308	BASIN308	1.18	53.99	57.10	123781	0.00	14.33	0.00	1.42
PERC	Pond 308	BASIN308	1.20	53.98	57.10	123720	0.00	14.32	0.00	1.44
PERC	Pond 308	BASIN308	1.22	53.97	57.10	123659	0.00	14.31	0.00	1.46
PERC	Pond 308	BASIN308	1.24	53.97	57.10	123598	0.00	14.31	0.00	1.48
PERC	Pond 308	BASIN308	1.25	53.96	57.10	123537	0.00	14.30	0.00	1.50
PERC	Pond 308	BASIN308	1.27	53.95	57.10	123476	0.00	14.29	0.00	1.52
PERC	Pond 308	BASIN308	1.29	53.95	57.10	123415	0.00	14.28	0.00	1.54
PERC	Pond 308	BASIN308	1.30	53.94	57.10	123354	0.00	14.28	0.00	1.56
PERC	Pond 308	BASIN308	1.32	53.93	57.10	123293	0.00	14.27	0.00	1.58
PERC	Pond 308	BASIN308	1.34	53.93	57.10	123232	0.00	14.26	0.00	1.60
PERC	Pond 308	BASIN308	1.35	53.92	57.10	123171	0.00	14.26	0.00	1.62
PERC	Pond 308	BASIN308	1.37	53.91	57.10	123110	0.00	14.25	0.00	1.64
PERC	Pond 308	BASIN308	1.39	53.90	57.10	123049	0.00	14.24	0.00	1.65

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308	BASIN308	18.21	51.26	57.10	100238	0.00	1.26	0.00	8.44
PERC	Pond 308	BASIN308	18.23	51.26	57.10	100232	0.00	1.25	0.00	8.44
PERC	Pond 308	BASIN308	18.25	51.25	57.10	100225	0.00	1.25	0.00	8.44
PERC	Pond 308	BASIN308	18.26	51.25	57.10	100219	0.00	1.25	0.00	8.44
PERC	Pond 308	BASIN308	18.28	51.25	57.10	100212	0.00	1.25	0.00	8.45
PERC	Pond 308	BASIN308	18.30	51.25	57.10	100206	0.00	1.25	0.00	8.45
PERC	Pond 308	BASIN308	18.31	51.25	57.10	100199	0.00	1.25	0.00	8.45
PERC	Pond 308	BASIN308	18.33	51.25	57.10	100193	0.00	1.25	0.00	8.45
PERC	Pond 308	BASIN308	18.35	51.25	57.10	100186	0.00	1.25	0.00	8.45
PERC	Pond 308	BASIN308	18.36	51.25	57.10	100180	0.00	1.25	0.00	8.45
PERC	Pond 308	BASIN308	18.38	51.25	57.10	100174	0.00	1.25	0.00	8.46
PERC	Pond 308	BASIN308	18.40	51.25	57.10	100167	0.00	1.24	0.00	8.46
PERC	Pond 308	BASIN308	18.41	51.25	57.10	100161	0.00	1.24	0.00	8.46
PERC	Pond 308	BASIN308	18.43	51.25	57.10	100154	0.00	1.24	0.00	8.46
PERC	Pond 308	BASIN308	18.45	51.25	57.10	100148	0.00	1.24	0.00	8.46
PERC	Pond 308	BASIN308	18.46	51.25	57.10	100142	0.00	1.24	0.00	8.46
PERC	Pond 308	BASIN308	18.48	51.24	57.10	100135	0.00	1.24	0.00	8.47
PERC	Pond 308	BASIN308	18.50	51.24	57.10	100129	0.00	1.24	0.00	8.47
PERC	Pond 308	BASIN308	18.51	51.24	57.10	100122	0.00	1.24	0.00	8.47
PERC	Pond 308	BASIN308	18.53	51.24	57.10	100116	0.00	1.24	0.00	8.47
PERC	Pond 308	BASIN308	18.55	51.24	57.10	100110	0.00	1.24	0.00	8.47
PERC	Pond 308	BASIN308	18.56	51.24	57.10	100103	0.00	1.24	0.00	8.47
PERC	Pond 308	BASIN308	18.58	51.24	57.10	100097	0.00	1.23	0.00	8.48
PERC	Pond 308	BASIN308	18.60	51.24	57.10	100091	0.00	1.23	0.00	8.48
PERC	Pond 308	BASIN308	18.61	51.24	57.10	100084	0.00	1.23	0.00	8.48
PERC	Pond 308	BASIN308	18.63	51.24	57.10	100078	0.00	1.23	0.00	8.48
PERC	Pond 308	BASIN308	18.65	51.24	57.10	100071	0.00	1.23	0.00	8.48
PERC	Pond 308	BASIN308	18.66	51.24	57.10	100065	0.00	1.23	0.00	8.48
PERC	Pond 308	BASIN308	18.68	51.24	57.10	100059	0.00	1.23	0.00	8.49
PERC	Pond 308	BASIN308	18.70	51.23	57.10	100052	0.00	1.23	0.00	8.49
PERC	Pond 308	BASIN308	18.71	51.23	57.10	100046	0.00	1.23	0.00	8.49
PERC	Pond 308	BASIN308	18.73	51.23	57.10	100040	0.00	1.23	0.00	8.49
PERC	Pond 308	BASIN308	18.75	51.23	57.10	100033	0.00	1.23	0.00	8.49
PERC	Pond 308	BASIN308	18.76	51.23	57.10	100027	0.00	1.22	0.00	8.49
PERC	Pond 308	BASIN308	18.78	51.23	57.10	100021	0.00	1.22	0.00	8.50
PERC	Pond 308	BASIN308	18.80	51.23	57.10	100014	0.00	1.22	0.00	8.50
PERC	Pond 308	BASIN308	18.81	51.23	57.10	100008	0.00	1.22	0.00	8.50
PERC	Pond 308	BASIN308	18.83	51.23	57.10	100002	0.00	1.22	0.00	8.50
PERC	Pond 308	BASIN308	18.85	51.23	57.10	99996	0.00	1.22	0.00	8.50
PERC	Pond 308	BASIN308	18.86	51.23	57.10	99989	0.00	1.22	0.00	8.50
PERC	Pond 308	BASIN308	18.88	51.23	57.10	99983	0.00	1.22	0.00	8.51
PERC	Pond 308	BASIN308	18.90	51.23	57.10	99977	0.00	1.22	0.00	8.51
PERC	Pond 308	BASIN308	18.91	51.23	57.10	99970	0.00	1.22	0.00	8.51
PERC	Pond 308	BASIN308	18.93	51.22	57.10	99964	0.00	1.22	0.00	8.51
PERC	Pond 308	BASIN308	18.95	51.22	57.10	99958	0.00	1.21	0.00	8.51
PERC	Pond 308	BASIN308	18.96	51.22	57.10	99952	0.00	1.21	0.00	8.52
PERC	Pond 308	BASIN308	18.98	51.22	57.10	99945	0.00	1.21	0.00	8.52
PERC	Pond 308	BASIN308	19.00	51.22	57.10	99939	0.00	1.21	0.00	8.52
PERC	Pond 308	BASIN308	19.01	51.22	57.10	99933	0.00	1.21	0.00	8.52
PERC	Pond 308	BASIN308	19.03	51.22	57.10	99927	0.00	1.21	0.00	8.52
PERC	Pond 308	BASIN308	19.05	51.22	57.10	99920	0.00	1.21	0.00	8.52
PERC	Pond 308	BASIN308	19.06	51.22	57.10	99914	0.00	1.21	0.00	8.53
PERC	Pond 308	BASIN308	19.08	51.22	57.10	99908	0.00	1.21	0.00	8.53
PERC	Pond 308	BASIN308	19.10	51.22	57.10	99902	0.00	1.21	0.00	8.53
PERC	Pond 308	BASIN308	19.11	51.22	57.10	99895	0.00	1.21	0.00	8.53
PERC	Pond 308	BASIN308	19.13	51.22	57.10	99889	0.00	1.20	0.00	8.53
PERC	Pond 308	BASIN308	19.15	51.22	57.10	99883	0.00	1.20	0.00	8.53
PERC	Pond 308	BASIN308	19.16	51.21	57.10	99877	0.00	1.20	0.00	8.54
PERC	Pond 308	BASIN308	19.18	51.21	57.10	99870	0.00	1.20	0.00	8.54
PERC	Pond 308	BASIN308	19.20	51.21	57.10	99864	0.00	1.20	0.00	8.54
PERC	Pond 308	BASIN308	19.21	51.21	57.10	99858	0.00	1.20	0.00	8.54
PERC	Pond 308	BASIN308	19.23	51.21	57.10	99852	0.00	1.20	0.00	8.54
PERC	Pond 308	BASIN308	19.25	51.21	57.10	99846	0.00	1.20	0.00	8.54
PERC	Pond 308	BASIN308	19.26	51.21	57.10	99839	0.00	1.20	0.00	8.54
PERC	Pond 308	BASIN308	19.28	51.21	57.10	99833	0.00	1.20	0.00	8.55
PERC	Pond 308	BASIN308	19.30	51.21	57.10	99827	0.00	1.20	0.00	8.55
PERC	Pond 308	BASIN308	19.31	51.21	57.10	99821	0.00	1.20	0.00	8.55
PERC	Pond 308	BASIN308	19.33	51.21	57.10	99815	0.00	1.19	0.00	8.55
PERC	Pond 308	BASIN308	19.35	51.21	57.10	99808	0.00	1.19	0.00	8.55
PERC	Pond 308	BASIN308	19.36	51.21	57.10	99802	0.00	1.19	0.00	8.55
PERC	Pond 308	BASIN308	19.38	51.21	57.10	99796	0.00	1.19	0.00	8.56
PERC	Pond 308	BASIN308	19.40	51.20	57.10	99790	0.00	1.19	0.00	8.56
PERC	Pond 308	BASIN308	19.41	51.20	57.10	99784	0.00	1.19	0.00	8.56
PERC	Pond 308	BASIN308	19.43	51.20	57.10	99778	0.00	1.19	0.00	8.56
PERC	Pond 308	BASIN308	19.45	51.20	57.10	99772	0.00	1.19	0.00	8.56
PERC	Pond 308	BASIN308	19.46	51.20	57.10	99765	0.00	1.19	0.00	8.56
PERC	Pond 308	BASIN308	19.48	51.20	57.10	99759	0.00	1.19	0.00	8.57
PERC	Pond 308	BASIN308	19.50	51.20	57.10	99753	0.00	0.26	0.00	8.57
PERC	Pond 308	BASIN308	19.51	51.20	57.10	99752	0.00	0.00	0.00	8.57
PERC	Pond 308	BASIN308	19.53	51.20	57.10	99752	0.00	0.00	0.00	8.57
PERC	Pond 308	BASIN308	19.55	51.20	57.10	99752	0.00	0.00	0.00	8.57
PERC	Pond 308	BASIN308	19.56	51.20	57.10	99752	0.00	0.00	0.00	8.57
PERC	Pond 308	BASIN308	19.58	51.20	57.10	99752	0.00	0.00	0.00	8.57
PERC	Pond 308	BASIN308	19.60	51.20	57.10	99752	0.00	0.00	0.00	8.57

Basin 308
FDOT Closed Basin Recovery
7-Day / 30-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308	BASIN308	0.00	54.98	57.10	132422	0.00	0.00	0.00	0.00
PERC	Pond 308	BASIN308	0.02	54.97	57.10	132377	0.00	15.32	0.00	0.01
PERC	Pond 308	BASIN308	0.03	54.97	57.10	132316	0.00	15.31	0.00	0.03
PERC	Pond 308	BASIN308	0.05	54.96	57.10	132255	0.00	15.31	0.00	0.05
PERC	Pond 308	BASIN308	0.07	54.95	57.10	132194	0.00	15.30	0.00	0.07
PERC	Pond 308	BASIN308	0.08	54.95	57.10	132133	0.00	15.29	0.00	0.10
PERC	Pond 308	BASIN308	0.10	54.94	57.10	132072	0.00	15.29	0.00	0.12
PERC	Pond 308	BASIN308	0.12	54.93	57.10	132011	0.00	15.28	0.00	0.14
PERC	Pond 308	BASIN308	0.13	54.93	57.10	131950	0.00	15.27	0.00	0.16
PERC	Pond 308	BASIN308	0.15	54.92	57.10	131889	0.00	15.26	0.00	0.18
PERC	Pond 308	BASIN308	0.17	54.91	57.10	131828	0.00	15.26	0.00	0.20
PERC	Pond 308	BASIN308	0.18	54.90	57.10	131767	0.00	15.25	0.00	0.22
PERC	Pond 308	BASIN308	0.20	54.90	57.10	131706	0.00	15.24	0.00	0.24
PERC	Pond 308	BASIN308	0.22	54.89	57.10	131645	0.00	15.24	0.00	0.27
PERC	Pond 308	BASIN308	0.24	54.88	57.10	131584	0.00	15.23	0.00	0.29
PERC	Pond 308	BASIN308	0.25	54.88	57.10	131523	0.00	15.22	0.00	0.31
PERC	Pond 308	BASIN308	0.27	54.87	57.10	131462	0.00	15.22	0.00	0.33
PERC	Pond 308	BASIN308	0.29	54.86	57.10	131401	0.00	15.21	0.00	0.35
PERC	Pond 308	BASIN308	0.30	54.86	57.10	131340	0.00	15.20	0.00	0.37
PERC	Pond 308	BASIN308	0.32	54.85	57.10	131279	0.00	15.19	0.00	0.39
PERC	Pond 308	BASIN308	0.34	54.84	57.10	131218	0.00	15.19	0.00	0.41
PERC	Pond 308	BASIN308	0.35	54.83	57.10	131157	0.00	15.18	0.00	0.43
PERC	Pond 308	BASIN308	0.37	54.83	57.10	131096	0.00	15.17	0.00	0.46
PERC	Pond 308	BASIN308	0.39	54.82	57.10	131035	0.00	15.17	0.00	0.48
PERC	Pond 308	BASIN308	0.40	54.81	57.10	130974	0.00	15.16	0.00	0.50
PERC	Pond 308	BASIN308	0.42	54.81	57.10	130913	0.00	15.15	0.00	0.52
PERC	Pond 308	BASIN308	0.44	54.80	57.10	130852	0.00	15.14	0.00	0.54
PERC	Pond 308	BASIN308	0.45	54.79	57.10	130791	0.00	15.14	0.00	0.56
PERC	Pond 308	BASIN308	0.47	54.79	57.10	130730	0.00	15.13	0.00	0.58
PERC	Pond 308	BASIN308	0.49	54.78	57.10	130669	0.00	15.12	0.00	0.60
PERC	Pond 308	BASIN308	0.50	54.77	57.10	130608	0.00	15.12	0.00	0.62
PERC	Pond 308	BASIN308	0.52	54.76	57.10	130547	0.00	15.11	0.00	0.64
PERC	Pond 308	BASIN308	0.54	54.76	57.10	130486	0.00	15.10	0.00	0.67
PERC	Pond 308	BASIN308	0.55	54.75	57.10	130425	0.00	15.10	0.00	0.69
PERC	Pond 308	BASIN308	0.57	54.74	57.10	130364	0.00	15.09	0.00	0.71
PERC	Pond 308	BASIN308	0.59	54.74	57.10	130303	0.00	15.08	0.00	0.73
PERC	Pond 308	BASIN308	0.61	54.73	57.10	130242	0.00	15.07	0.00	0.75
PERC	Pond 308	BASIN308	0.62	54.72	57.10	130180	0.00	15.07	0.00	0.77
PERC	Pond 308	BASIN308	0.64	54.72	57.10	130119	0.00	15.06	0.00	0.79
PERC	Pond 308	BASIN308	0.66	54.71	57.10	130058	0.00	15.05	0.00	0.81
PERC	Pond 308	BASIN308	0.67	54.70	57.10	129997	0.00	15.05	0.00	0.83
PERC	Pond 308	BASIN308	0.69	54.69	57.10	129936	0.00	15.04	0.00	0.85
PERC	Pond 308	BASIN308	0.71	54.69	57.10	129875	0.00	15.03	0.00	0.87
PERC	Pond 308	BASIN308	0.72	54.68	57.10	129814	0.00	15.02	0.00	0.90
PERC	Pond 308	BASIN308	0.74	54.67	57.10	129753	0.00	15.02	0.00	0.92
PERC	Pond 308	BASIN308	0.76	54.67	57.10	129692	0.00	15.01	0.00	0.94
PERC	Pond 308	BASIN308	0.77	54.66	57.10	129631	0.00	15.00	0.00	0.96
PERC	Pond 308	BASIN308	0.79	54.65	57.10	129570	0.00	15.00	0.00	0.98
PERC	Pond 308	BASIN308	0.81	54.65	57.10	129509	0.00	14.99	0.00	1.00
PERC	Pond 308	BASIN308	0.82	54.64	57.10	129448	0.00	14.98	0.00	1.02
PERC	Pond 308	BASIN308	0.84	54.63	57.10	129387	0.00	14.98	0.00	1.04
PERC	Pond 308	BASIN308	0.86	54.62	57.10	129326	0.00	14.97	0.00	1.06
PERC	Pond 308	BASIN308	0.87	54.62	57.10	129265	0.00	14.96	0.00	1.08
PERC	Pond 308	BASIN308	0.89	54.61	57.10	129204	0.00	14.95	0.00	1.10
PERC	Pond 308	BASIN308	0.91	54.60	57.10	129143	0.00	14.95	0.00	1.12
PERC	Pond 308	BASIN308	0.92	54.60	57.10	129082	0.00	14.94	0.00	1.15
PERC	Pond 308	BASIN308	0.94	54.59	57.10	129021	0.00	14.93	0.00	1.17
PERC	Pond 308	BASIN308	0.96	54.58	57.10	128960	0.00	14.93	0.00	1.19
PERC	Pond 308	BASIN308	0.97	54.58	57.10	128899	0.00	14.92	0.00	1.21
PERC	Pond 308	BASIN308	0.99	54.57	57.10	128838	0.00	14.91	0.00	1.23
PERC	Pond 308	BASIN308	1.01	54.56	57.10	128777	0.00	14.90	0.00	1.25
PERC	Pond 308	BASIN308	1.02	54.56	57.10	128747	0.00	14.90	0.00	1.26
PERC	Pond 308	BASIN308	1.03	54.55	57.10	128686	0.00	14.89	0.00	1.28
PERC	Pond 308	BASIN308	1.05	54.54	57.10	128625	0.00	14.89	0.00	1.30
PERC	Pond 308	BASIN308	1.07	54.54	57.10	128564	0.00	14.88	0.00	1.32
PERC	Pond 308	BASIN308	1.08	54.53	57.10	128503	0.00	14.87	0.00	1.34
PERC	Pond 308	BASIN308	1.10	54.52	57.10	128442	0.00	14.87	0.00	1.36
PERC	Pond 308	BASIN308	1.12	54.52	57.10	128381	0.00	14.86	0.00	1.38
PERC	Pond 308	BASIN308	1.13	54.51	57.10	128320	0.00	14.85	0.00	1.40
PERC	Pond 308	BASIN308	1.15	54.50	57.10	128259	0.00	14.84	0.00	1.42
PERC	Pond 308	BASIN308	1.17	54.50	57.10	128198	0.00	14.84	0.00	1.45
PERC	Pond 308	BASIN308	1.18	54.49	57.10	128137	0.00	14.83	0.00	1.47
PERC	Pond 308	BASIN308	1.20	54.48	57.10	128076	0.00	14.82	0.00	1.49
PERC	Pond 308	BASIN308	1.22	54.47	57.10	128015	0.00	14.82	0.00	1.51
PERC	Pond 308	BASIN308	1.24	54.47	57.10	127954	0.00	14.81	0.00	1.53
PERC	Pond 308	BASIN308	1.25	54.46	57.10	127893	0.00	14.80	0.00	1.55
PERC	Pond 308	BASIN308	1.27	54.45	57.10	127832	0.00	14.80	0.00	1.57
PERC	Pond 308	BASIN308	1.29	54.45	57.10	127771	0.00	14.79	0.00	1.59
PERC	Pond 308	BASIN308	1.30	54.44	57.10	127710	0.00	14.78	0.00	1.61
PERC	Pond 308	BASIN308	1.32	54.43	57.10	127649	0.00	14.77	0.00	1.63
PERC	Pond 308	BASIN308	1.34	54.43	57.10	127588	0.00	14.77	0.00	1.65
PERC	Pond 308	BASIN308	1.35	54.42	57.10	127527	0.00	14.76	0.00	1.67
PERC	Pond 308	BASIN308	1.37	54.41	57.10	127466	0.00	14.75	0.00	1.69
PERC	Pond 308	BASIN308	1.39	54.40	57.10	127405	0.00	14.75	0.00	1.71

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308	BASIN308	4.20	53.23	57.10	117187	0.00	13.56	0.00	5.01
PERC	Pond 308	BASIN308	4.22	53.22	57.10	117128	0.00	13.56	0.00	5.02
PERC	Pond 308	BASIN308	4.24	53.22	57.10	117069	0.00	13.55	0.00	5.04
PERC	Pond 308	BASIN308	4.25	53.21	57.10	117011	0.00	13.54	0.00	5.06
PERC	Pond 308	BASIN308	4.27	53.20	57.10	116952	0.00	13.54	0.00	5.08
PERC	Pond 308	BASIN308	4.29	53.20	57.10	116894	0.00	13.53	0.00	5.10
PERC	Pond 308	BASIN308	4.30	53.19	57.10	116835	0.00	13.52	0.00	5.12
PERC	Pond 308	BASIN308	4.32	53.18	57.10	116777	0.00	13.52	0.00	5.14
PERC	Pond 308	BASIN308	4.34	53.18	57.10	116718	0.00	13.51	0.00	5.16
PERC	Pond 308	BASIN308	4.35	53.17	57.10	116660	0.00	13.50	0.00	5.17
PERC	Pond 308	BASIN308	4.37	53.16	57.10	116601	0.00	13.50	0.00	5.19
PERC	Pond 308	BASIN308	4.39	53.15	57.10	116543	0.00	13.49	0.00	5.21
PERC	Pond 308	BASIN308	4.40	53.15	57.10	116484	0.00	13.48	0.00	5.23
PERC	Pond 308	BASIN308	4.42	53.14	57.10	116426	0.00	13.48	0.00	5.25
PERC	Pond 308	BASIN308	4.44	53.13	57.10	116367	0.00	13.47	0.00	5.27
PERC	Pond 308	BASIN308	4.45	53.13	57.10	116309	0.00	13.46	0.00	5.29
PERC	Pond 308	BASIN308	4.47	53.12	57.10	116250	0.00	13.45	0.00	5.31
PERC	Pond 308	BASIN308	4.49	53.11	57.10	116192	0.00	13.45	0.00	5.32
PERC	Pond 308	BASIN308	4.50	53.11	57.10	116133	0.00	13.44	0.00	5.34
PERC	Pond 308	BASIN308	4.52	53.10	57.10	116075	0.00	13.43	0.00	5.36
PERC	Pond 308	BASIN308	4.54	53.09	57.10	116016	0.00	13.43	0.00	5.38
PERC	Pond 308	BASIN308	4.55	53.08	57.10	115958	0.00	13.42	0.00	5.40
PERC	Pond 308	BASIN308	4.57	53.08	57.10	115899	0.00	13.41	0.00	5.42
PERC	Pond 308	BASIN308	4.59	53.07	57.10	115841	0.00	13.41	0.00	5.44
PERC	Pond 308	BASIN308	4.60	53.06	57.10	115782	0.00	13.40	0.00	5.45
PERC	Pond 308	BASIN308	4.62	53.06	57.10	115724	0.00	13.39	0.00	5.47
PERC	Pond 308	BASIN308	4.64	53.05	57.10	115665	0.00	13.39	0.00	5.49
PERC	Pond 308	BASIN308	4.66	53.04	57.10	115607	0.00	13.38	0.00	5.51
PERC	Pond 308	BASIN308	4.67	53.04	57.10	115548	0.00	13.37	0.00	5.53
PERC	Pond 308	BASIN308	4.69	53.03	57.10	115490	0.00	13.37	0.00	5.55
PERC	Pond 308	BASIN308	4.71	53.02	57.10	115431	0.00	13.36	0.00	5.57
PERC	Pond 308	BASIN308	4.72	53.01	57.10	115373	0.00	13.35	0.00	5.58
PERC	Pond 308	BASIN308	4.74	53.01	57.10	115314	0.00	13.35	0.00	5.60
PERC	Pond 308	BASIN308	4.76	53.00	57.10	115256	0.00	13.34	0.00	5.62
PERC	Pond 308	BASIN308	4.77	52.99	57.10	115197	0.00	13.33	0.00	5.64
PERC	Pond 308	BASIN308	4.79	52.99	57.10	115139	0.00	13.33	0.00	5.66
PERC	Pond 308	BASIN308	4.81	52.98	57.10	115080	0.00	13.32	0.00	5.68
PERC	Pond 308	BASIN308	4.82	52.97	57.10	115022	0.00	13.31	0.00	5.70
PERC	Pond 308	BASIN308	4.84	52.97	57.10	114963	0.00	13.31	0.00	5.71
PERC	Pond 308	BASIN308	4.86	52.96	57.10	114905	0.00	13.30	0.00	5.73
PERC	Pond 308	BASIN308	4.87	52.95	57.10	114846	0.00	13.29	0.00	5.75
PERC	Pond 308	BASIN308	4.89	52.94	57.10	114788	0.00	13.29	0.00	5.77
PERC	Pond 308	BASIN308	4.91	52.94	57.10	114729	0.00	13.28	0.00	5.79
PERC	Pond 308	BASIN308	4.92	52.93	57.10	114671	0.00	13.27	0.00	5.81
PERC	Pond 308	BASIN308	4.94	52.92	57.10	114612	0.00	13.27	0.00	5.83
PERC	Pond 308	BASIN308	4.96	52.92	57.10	114554	0.00	13.26	0.00	5.84
PERC	Pond 308	BASIN308	4.97	52.91	57.10	114495	0.00	13.25	0.00	5.86
PERC	Pond 308	BASIN308	4.99	52.90	57.10	114437	0.00	13.25	0.00	5.88
PERC	Pond 308	BASIN308	5.01	52.90	57.10	114378	0.00	13.24	0.00	5.90
PERC	Pond 308	BASIN308	5.02	52.89	57.10	114320	0.00	13.23	0.00	5.92
PERC	Pond 308	BASIN308	5.04	52.88	57.10	114261	0.00	13.22	0.00	5.94
PERC	Pond 308	BASIN308	5.05	52.88	57.10	114232	0.00	13.22	0.00	5.94
PERC	Pond 308	BASIN308	5.07	52.87	57.10	114174	0.00	13.21	0.00	5.96
PERC	Pond 308	BASIN308	5.08	52.86	57.10	114115	0.00	13.21	0.00	5.98
PERC	Pond 308	BASIN308	5.10	52.86	57.10	114057	0.00	13.20	0.00	6.00
PERC	Pond 308	BASIN308	5.12	52.85	57.10	113998	0.00	13.19	0.00	6.02
PERC	Pond 308	BASIN308	5.13	52.84	57.10	113940	0.00	12.87	0.00	6.04
PERC	Pond 308	BASIN308	5.15	52.84	57.10	113884	0.00	12.37	0.00	6.05
PERC	Pond 308	BASIN308	5.17	52.83	57.10	113829	0.00	11.92	0.00	6.07
PERC	Pond 308	BASIN308	5.18	52.82	57.10	113777	0.00	11.50	0.00	6.09
PERC	Pond 308	BASIN308	5.20	52.82	57.10	113727	0.00	11.12	0.00	6.10
PERC	Pond 308	BASIN308	5.22	52.81	57.10	113678	0.00	10.78	0.00	6.12
PERC	Pond 308	BASIN308	5.23	52.81	57.10	113631	0.00	10.46	0.00	6.13
PERC	Pond 308	BASIN308	5.25	52.80	57.10	113584	0.00	10.17	0.00	6.15
PERC	Pond 308	BASIN308	5.27	52.79	57.10	113540	0.00	9.90	0.00	6.16
PERC	Pond 308	BASIN308	5.29	52.79	57.10	113496	0.00	9.64	0.00	6.17
PERC	Pond 308	BASIN308	5.30	52.78	57.10	113454	0.00	9.41	0.00	6.19
PERC	Pond 308	BASIN308	5.32	52.78	57.10	113412	0.00	9.19	0.00	6.20
PERC	Pond 308	BASIN308	5.34	52.77	57.10	113371	0.00	8.99	0.00	6.21
PERC	Pond 308	BASIN308	5.35	52.77	57.10	113332	0.00	8.80	0.00	6.23
PERC	Pond 308	BASIN308	5.37	52.77	57.10	113293	0.00	8.62	0.00	6.24
PERC	Pond 308	BASIN308	5.39	52.76	57.10	113254	0.00	8.46	0.00	6.25
PERC	Pond 308	BASIN308	5.41	52.76	57.10	113212	0.00	8.28	0.00	6.26
PERC	Pond 308	BASIN308	5.43	52.75	57.10	113166	0.00	8.10	0.00	6.28
PERC	Pond 308	BASIN308	5.44	52.75	57.10	113144	0.00	8.01	0.00	6.28
PERC	Pond 308	BASIN308	5.46	52.74	57.10	113100	0.00	7.84	0.00	6.30
PERC	Pond 308	BASIN308	5.47	52.74	57.10	113078	0.00	7.76	0.00	6.30
PERC	Pond 308	BASIN308	5.49	52.73	57.10	113035	0.00	7.61	0.00	6.32
PERC	Pond 308	BASIN308	5.51	52.73	57.10	112992	0.00	7.47	0.00	6.33
PERC	Pond 308	BASIN308	5.52	52.73	57.10	112972	0.00	7.40	0.00	6.34
PERC	Pond 308	BASIN308	5.54	52.72	57.10	112930	0.00	7.27	0.00	6.35
PERC	Pond 308	BASIN308	5.55	52.72	57.10	112910	0.00	7.21	0.00	6.36
PERC	Pond 308	BASIN308	5.57	52.71	57.10	112870	0.00	7.09	0.00	6.37
PERC	Pond 308	BASIN308	5.58	52.71	57.10	112850	0.00	7.03	0.00	6.37

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308	BASIN308	30.80	51.23	57.10	100033	0.00	0.87	0.00	9.99
PERC	Pond 308	BASIN308	30.82	51.23	57.10	100029	0.00	0.87	0.00	9.99
PERC	Pond 308	BASIN308	30.84	51.23	57.10	100024	0.00	0.87	0.00	9.99
PERC	Pond 308	BASIN308	30.85	51.23	57.10	100020	0.00	0.87	0.00	9.99
PERC	Pond 308	BASIN308	30.87	51.23	57.10	100015	0.00	0.87	0.00	9.99
PERC	Pond 308	BASIN308	30.89	51.23	57.10	100011	0.00	0.87	0.00	9.99
PERC	Pond 308	BASIN308	30.90	51.23	57.10	100006	0.00	0.87	0.00	10.00
PERC	Pond 308	BASIN308	30.92	51.23	57.10	100002	0.00	0.87	0.00	10.00
PERC	Pond 308	BASIN308	30.94	51.23	57.10	99997	0.00	0.87	0.00	10.00
PERC	Pond 308	BASIN308	30.95	51.23	57.10	99993	0.00	0.87	0.00	10.00
PERC	Pond 308	BASIN308	30.97	51.23	57.10	99988	0.00	0.87	0.00	10.00
PERC	Pond 308	BASIN308	30.99	51.23	57.10	99984	0.00	0.87	0.00	10.00
PERC	Pond 308	BASIN308	31.00	51.23	57.10	99979	0.00	0.87	0.00	10.00
PERC	Pond 308	BASIN308	31.02	51.23	57.10	99975	0.00	0.87	0.00	10.00
PERC	Pond 308	BASIN308	31.04	51.23	57.10	99970	0.00	0.87	0.00	10.00
PERC	Pond 308	BASIN308	31.05	51.22	57.10	99966	0.00	0.87	0.00	10.01
PERC	Pond 308	BASIN308	31.07	51.22	57.10	99962	0.00	0.87	0.00	10.01
PERC	Pond 308	BASIN308	31.09	51.22	57.10	99957	0.00	0.87	0.00	10.01
PERC	Pond 308	BASIN308	31.10	51.22	57.10	99953	0.00	0.87	0.00	10.01
PERC	Pond 308	BASIN308	31.12	51.22	57.10	99948	0.00	0.87	0.00	10.01
PERC	Pond 308	BASIN308	31.14	51.22	57.10	99944	0.00	0.87	0.00	10.01
PERC	Pond 308	BASIN308	31.15	51.22	57.10	99939	0.00	0.87	0.00	10.01
PERC	Pond 308	BASIN308	31.17	51.22	57.10	99935	0.00	0.86	0.00	10.01
PERC	Pond 308	BASIN308	31.19	51.22	57.10	99930	0.00	0.86	0.00	10.02
PERC	Pond 308	BASIN308	31.20	51.22	57.10	99926	0.00	0.86	0.00	10.02
PERC	Pond 308	BASIN308	31.22	51.22	57.10	99921	0.00	0.86	0.00	10.02
PERC	Pond 308	BASIN308	31.24	51.22	57.10	99917	0.00	0.86	0.00	10.02
PERC	Pond 308	BASIN308	31.25	51.22	57.10	99912	0.00	0.86	0.00	10.02
PERC	Pond 308	BASIN308	31.27	51.22	57.10	99908	0.00	0.86	0.00	10.02
PERC	Pond 308	BASIN308	31.29	51.22	57.10	99903	0.00	0.86	0.00	10.02
PERC	Pond 308	BASIN308	31.30	51.22	57.10	99899	0.00	0.86	0.00	10.02
PERC	Pond 308	BASIN308	31.32	51.22	57.10	99895	0.00	0.86	0.00	10.02
PERC	Pond 308	BASIN308	31.34	51.22	57.10	99890	0.00	0.86	0.00	10.03
PERC	Pond 308	BASIN308	31.35	51.22	57.10	99886	0.00	0.86	0.00	10.03
PERC	Pond 308	BASIN308	31.37	51.21	57.10	99881	0.00	0.86	0.00	10.03
PERC	Pond 308	BASIN308	31.39	51.21	57.10	99877	0.00	0.86	0.00	10.03
PERC	Pond 308	BASIN308	31.40	51.21	57.10	99872	0.00	0.86	0.00	10.03
PERC	Pond 308	BASIN308	31.42	51.21	57.10	99868	0.00	0.86	0.00	10.03
PERC	Pond 308	BASIN308	31.44	51.21	57.10	99863	0.00	0.86	0.00	10.03
PERC	Pond 308	BASIN308	31.45	51.21	57.10	99859	0.00	0.86	0.00	10.03
PERC	Pond 308	BASIN308	31.47	51.21	57.10	99855	0.00	0.86	0.00	10.04
PERC	Pond 308	BASIN308	31.49	51.21	57.10	99850	0.00	0.86	0.00	10.04
PERC	Pond 308	BASIN308	31.50	51.21	57.10	99846	0.00	0.86	0.00	10.04
PERC	Pond 308	BASIN308	31.52	51.21	57.10	99841	0.00	0.86	0.00	10.04
PERC	Pond 308	BASIN308	31.54	51.21	57.10	99837	0.00	0.86	0.00	10.04
PERC	Pond 308	BASIN308	31.55	51.21	57.10	99832	0.00	0.86	0.00	10.04
PERC	Pond 308	BASIN308	31.57	51.21	57.10	99828	0.00	0.86	0.00	10.04
PERC	Pond 308	BASIN308	31.59	51.21	57.10	99824	0.00	0.86	0.00	10.04
PERC	Pond 308	BASIN308	31.60	51.21	57.10	99819	0.00	0.85	0.00	10.04
PERC	Pond 308	BASIN308	31.62	51.21	57.10	99815	0.00	0.85	0.00	10.05
PERC	Pond 308	BASIN308	31.64	51.21	57.10	99810	0.00	0.85	0.00	10.05
PERC	Pond 308	BASIN308	31.65	51.21	57.10	99806	0.00	0.85	0.00	10.05
PERC	Pond 308	BASIN308	31.67	51.21	57.10	99801	0.00	0.85	0.00	10.05
PERC	Pond 308	BASIN308	31.69	51.21	57.10	99797	0.00	0.85	0.00	10.05
PERC	Pond 308	BASIN308	31.70	51.20	57.10	99793	0.00	0.85	0.00	10.05
PERC	Pond 308	BASIN308	31.72	51.20	57.10	99788	0.00	0.85	0.00	10.05
PERC	Pond 308	BASIN308	31.74	51.20	57.10	99784	0.00	0.85	0.00	10.05
PERC	Pond 308	BASIN308	31.75	51.20	57.10	99779	0.00	0.85	0.00	10.06
PERC	Pond 308	BASIN308	31.77	51.20	57.10	99775	0.00	0.85	0.00	10.06
PERC	Pond 308	BASIN308	31.79	51.20	57.10	99771	0.00	0.85	0.00	10.06
PERC	Pond 308	BASIN308	31.80	51.20	57.10	99766	0.00	0.85	0.00	10.06
PERC	Pond 308	BASIN308	31.82	51.20	57.10	99762	0.00	0.85	0.00	10.06
PERC	Pond 308	BASIN308	31.84	51.20	57.10	99757	0.00	0.85	0.00	10.06
PERC	Pond 308	BASIN308	31.85	51.20	57.10	99753	0.00	0.22	0.00	10.06
PERC	Pond 308	BASIN308	31.87	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	31.89	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	31.90	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	31.92	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	31.94	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	31.95	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	31.97	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	31.99	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	32.00	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	32.02	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	32.04	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	32.05	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	32.07	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	32.09	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	32.10	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	32.12	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	32.14	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	32.15	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	32.17	51.20	57.10	99752	0.00	0.00	0.00	10.06
PERC	Pond 308	BASIN308	32.19	51.20	57.10	99752	0.00	0.00	0.00	10.06

Basin 308A
SJRWMD Treatment Recovery
3-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308A	BASIN308	0.00	70.09	73.00	91679	0.00	0.00	0.00	0.00
PERC	Pond 308A	BASIN308	0.02	70.09	73.00	91677	0.00	1.01	0.00	0.00
PERC	Pond 308A	BASIN308	0.03	70.09	73.00	91673	0.00	1.01	0.00	0.00
PERC	Pond 308A	BASIN308	0.05	70.09	73.00	91670	0.00	1.01	0.00	0.00
PERC	Pond 308A	BASIN308	0.07	70.09	73.00	91667	0.00	1.01	0.00	0.00
PERC	Pond 308A	BASIN308	0.08	70.09	73.00	91663	0.00	1.01	0.00	0.01
PERC	Pond 308A	BASIN308	0.10	70.09	73.00	91660	0.00	1.01	0.00	0.01
PERC	Pond 308A	BASIN308	0.12	70.09	73.00	91656	0.00	1.01	0.00	0.01
PERC	Pond 308A	BASIN308	0.13	70.08	73.00	91653	0.00	1.01	0.00	0.01
PERC	Pond 308A	BASIN308	0.15	70.08	73.00	91650	0.00	1.01	0.00	0.01
PERC	Pond 308A	BASIN308	0.17	70.08	73.00	91646	0.00	1.01	0.00	0.01
PERC	Pond 308A	BASIN308	0.18	70.08	73.00	91643	0.00	1.01	0.00	0.01
PERC	Pond 308A	BASIN308	0.20	70.08	73.00	91640	0.00	1.01	0.00	0.02
PERC	Pond 308A	BASIN308	0.22	70.08	73.00	91636	0.00	1.01	0.00	0.02
PERC	Pond 308A	BASIN308	0.24	70.08	73.00	91633	0.00	1.01	0.00	0.02
PERC	Pond 308A	BASIN308	0.25	70.08	73.00	91629	0.00	1.01	0.00	0.02
PERC	Pond 308A	BASIN308	0.27	70.08	73.00	91626	0.00	1.01	0.00	0.02
PERC	Pond 308A	BASIN308	0.29	70.08	73.00	91623	0.00	1.01	0.00	0.02
PERC	Pond 308A	BASIN308	0.30	70.08	73.00	91619	0.00	1.01	0.00	0.02
PERC	Pond 308A	BASIN308	0.32	70.08	73.00	91616	0.00	1.01	0.00	0.03
PERC	Pond 308A	BASIN308	0.34	70.08	73.00	91613	0.00	1.01	0.00	0.03
PERC	Pond 308A	BASIN308	0.35	70.08	73.00	91609	0.00	1.01	0.00	0.03
PERC	Pond 308A	BASIN308	0.37	70.08	73.00	91606	0.00	1.01	0.00	0.03
PERC	Pond 308A	BASIN308	0.39	70.07	73.00	91602	0.00	1.01	0.00	0.03
PERC	Pond 308A	BASIN308	0.40	70.07	73.00	91599	0.00	1.01	0.00	0.03
PERC	Pond 308A	BASIN308	0.42	70.07	73.00	91596	0.00	1.01	0.00	0.03
PERC	Pond 308A	BASIN308	0.44	70.07	73.00	91592	0.00	1.01	0.00	0.04
PERC	Pond 308A	BASIN308	0.45	70.07	73.00	91589	0.00	1.01	0.00	0.04
PERC	Pond 308A	BASIN308	0.47	70.07	73.00	91585	0.00	1.01	0.00	0.04
PERC	Pond 308A	BASIN308	0.49	70.07	73.00	91582	0.00	1.01	0.00	0.04
PERC	Pond 308A	BASIN308	0.50	70.07	73.00	91579	0.00	1.01	0.00	0.04
PERC	Pond 308A	BASIN308	0.52	70.07	73.00	91575	0.00	1.01	0.00	0.04
PERC	Pond 308A	BASIN308	0.54	70.07	73.00	91572	0.00	1.01	0.00	0.04
PERC	Pond 308A	BASIN308	0.55	70.07	73.00	91569	0.00	1.01	0.00	0.05
PERC	Pond 308A	BASIN308	0.57	70.07	73.00	91565	0.00	1.01	0.00	0.05
PERC	Pond 308A	BASIN308	0.59	70.07	73.00	91562	0.00	1.01	0.00	0.05
PERC	Pond 308A	BASIN308	0.61	70.07	73.00	91558	0.00	1.01	0.00	0.05
PERC	Pond 308A	BASIN308	0.62	70.07	73.00	91555	0.00	1.01	0.00	0.05
PERC	Pond 308A	BASIN308	0.64	70.06	73.00	91552	0.00	1.01	0.00	0.05
PERC	Pond 308A	BASIN308	0.66	70.06	73.00	91548	0.00	1.01	0.00	0.05
PERC	Pond 308A	BASIN308	0.67	70.06	73.00	91545	0.00	1.01	0.00	0.06
PERC	Pond 308A	BASIN308	0.69	70.06	73.00	91542	0.00	1.01	0.00	0.06
PERC	Pond 308A	BASIN308	0.71	70.06	73.00	91538	0.00	1.01	0.00	0.06
PERC	Pond 308A	BASIN308	0.72	70.06	73.00	91535	0.00	1.01	0.00	0.06
PERC	Pond 308A	BASIN308	0.74	70.06	73.00	91531	0.00	1.01	0.00	0.06
PERC	Pond 308A	BASIN308	0.76	70.06	73.00	91528	0.00	1.01	0.00	0.06
PERC	Pond 308A	BASIN308	0.77	70.06	73.00	91525	0.00	1.01	0.00	0.06
PERC	Pond 308A	BASIN308	0.79	70.06	73.00	91521	0.00	1.01	0.00	0.07
PERC	Pond 308A	BASIN308	0.81	70.06	73.00	91518	0.00	1.01	0.00	0.07
PERC	Pond 308A	BASIN308	0.82	70.06	73.00	91514	0.00	1.01	0.00	0.07
PERC	Pond 308A	BASIN308	0.84	70.06	73.00	91511	0.00	1.01	0.00	0.07
PERC	Pond 308A	BASIN308	0.86	70.06	73.00	91508	0.00	1.01	0.00	0.07
PERC	Pond 308A	BASIN308	0.87	70.06	73.00	91504	0.00	1.01	0.00	0.07
PERC	Pond 308A	BASIN308	0.89	70.05	73.00	91501	0.00	1.01	0.00	0.07
PERC	Pond 308A	BASIN308	0.91	70.05	73.00	91498	0.00	1.01	0.00	0.07
PERC	Pond 308A	BASIN308	0.92	70.05	73.00	91494	0.00	1.01	0.00	0.08
PERC	Pond 308A	BASIN308	0.94	70.05	73.00	91491	0.00	1.01	0.00	0.08
PERC	Pond 308A	BASIN308	0.96	70.05	73.00	91487	0.00	1.01	0.00	0.08
PERC	Pond 308A	BASIN308	0.97	70.05	73.00	91484	0.00	1.01	0.00	0.08
PERC	Pond 308A	BASIN308	0.99	70.05	73.00	91481	0.00	1.01	0.00	0.08
PERC	Pond 308A	BASIN308	1.01	70.05	73.00	91477	0.00	1.01	0.00	0.08
PERC	Pond 308A	BASIN308	1.02	70.05	73.00	91476	0.00	1.01	0.00	0.08
PERC	Pond 308A	BASIN308	1.03	70.05	73.00	91472	0.00	1.01	0.00	0.09
PERC	Pond 308A	BASIN308	1.05	70.05	73.00	91469	0.00	1.01	0.00	0.09
PERC	Pond 308A	BASIN308	1.07	70.05	73.00	91466	0.00	1.01	0.00	0.09
PERC	Pond 308A	BASIN308	1.08	70.05	73.00	91462	0.00	1.01	0.00	0.09
PERC	Pond 308A	BASIN308	1.10	70.05	73.00	91459	0.00	1.01	0.00	0.09
PERC	Pond 308A	BASIN308	1.12	70.05	73.00	91455	0.00	1.01	0.00	0.09
PERC	Pond 308A	BASIN308	1.13	70.05	73.00	91452	0.00	1.01	0.00	0.09
PERC	Pond 308A	BASIN308	1.15	70.04	73.00	91449	0.00	1.01	0.00	0.10
PERC	Pond 308A	BASIN308	1.17	70.04	73.00	91445	0.00	1.01	0.00	0.10
PERC	Pond 308A	BASIN308	1.18	70.04	73.00	91442	0.00	1.01	0.00	0.10
PERC	Pond 308A	BASIN308	1.20	70.04	73.00	91439	0.00	1.01	0.00	0.10
PERC	Pond 308A	BASIN308	1.22	70.04	73.00	91435	0.00	1.01	0.00	0.10
PERC	Pond 308A	BASIN308	1.24	70.04	73.00	91432	0.00	1.01	0.00	0.10
PERC	Pond 308A	BASIN308	1.25	70.04	73.00	91429	0.00	1.01	0.00	0.10
PERC	Pond 308A	BASIN308	1.27	70.04	73.00	91425	0.00	1.01	0.00	0.10
PERC	Pond 308A	BASIN308	1.29	70.04	73.00	91422	0.00	1.01	0.00	0.11
PERC	Pond 308A	BASIN308	1.30	70.04	73.00	91419	0.00	1.01	0.00	0.11
PERC	Pond 308A	BASIN308	1.32	70.04	73.00	91415	0.00	1.01	0.00	0.11
PERC	Pond 308A	BASIN308	1.34	70.04	73.00	91412	0.00	1.01	0.00	0.11
PERC	Pond 308A	BASIN308	1.35	70.04	73.00	91408	0.00	1.01	0.00	0.11
PERC	Pond 308A	BASIN308	1.37	70.04	73.00	91405	0.00	1.01	0.00	0.11
PERC	Pond 308A	BASIN308	1.39	70.04	73.00	91402	0.00	1.00	0.00	0.11

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308A	BASIN308	23.80	69.15	73.00	86927	0.00	0.96	0.00	1.93
PERC	Pond 308A	BASIN308	23.82	69.15	73.00	86924	0.00	0.96	0.00	1.93
PERC	Pond 308A	BASIN308	23.83	69.15	73.00	86920	0.00	0.96	0.00	1.93
PERC	Pond 308A	BASIN308	23.85	69.15	73.00	86917	0.00	0.96	0.00	1.93
PERC	Pond 308A	BASIN308	23.87	69.15	73.00	86914	0.00	0.96	0.00	1.94
PERC	Pond 308A	BASIN308	23.88	69.14	73.00	86910	0.00	0.96	0.00	1.94
PERC	Pond 308A	BASIN308	23.90	69.14	73.00	86907	0.00	0.96	0.00	1.94
PERC	Pond 308A	BASIN308	23.92	69.14	73.00	86904	0.00	0.96	0.00	1.94
PERC	Pond 308A	BASIN308	23.93	69.14	73.00	86900	0.00	0.96	0.00	1.94
PERC	Pond 308A	BASIN308	23.95	69.14	73.00	86897	0.00	0.96	0.00	1.94
PERC	Pond 308A	BASIN308	23.97	69.14	73.00	86894	0.00	0.96	0.00	1.94
PERC	Pond 308A	BASIN308	23.98	69.14	73.00	86890	0.00	0.96	0.00	1.95
PERC	Pond 308A	BASIN308	24.00	69.14	73.00	86887	0.00	0.96	0.00	1.95
PERC	Pond 308A	BASIN308	24.02	69.14	73.00	86884	0.00	0.96	0.00	1.95
PERC	Pond 308A	BASIN308	24.03	69.14	73.00	86880	0.00	0.96	0.00	1.95
PERC	Pond 308A	BASIN308	24.05	69.14	73.00	86877	0.00	0.96	0.00	1.95
PERC	Pond 308A	BASIN308	24.07	69.14	73.00	86874	0.00	0.96	0.00	1.95
PERC	Pond 308A	BASIN308	24.08	69.14	73.00	86870	0.00	0.96	0.00	1.95
PERC	Pond 308A	BASIN308	24.10	69.14	73.00	86867	0.00	0.96	0.00	1.95
PERC	Pond 308A	BASIN308	24.12	69.14	73.00	86864	0.00	0.96	0.00	1.96
PERC	Pond 308A	BASIN308	24.13	69.13	73.00	86860	0.00	0.96	0.00	1.96
PERC	Pond 308A	BASIN308	24.15	69.13	73.00	86857	0.00	0.96	0.00	1.96
PERC	Pond 308A	BASIN308	24.17	69.13	73.00	86854	0.00	0.95	0.00	1.96
PERC	Pond 308A	BASIN308	24.18	69.13	73.00	86850	0.00	0.95	0.00	1.96
PERC	Pond 308A	BASIN308	24.20	69.13	73.00	86847	0.00	0.95	0.00	1.96
PERC	Pond 308A	BASIN308	24.22	69.13	73.00	86844	0.00	0.95	0.00	1.96
PERC	Pond 308A	BASIN308	24.23	69.13	73.00	86840	0.00	0.95	0.00	1.96
PERC	Pond 308A	BASIN308	24.25	69.13	73.00	86837	0.00	0.95	0.00	1.97
PERC	Pond 308A	BASIN308	24.27	69.13	73.00	86834	0.00	0.95	0.00	1.97
PERC	Pond 308A	BASIN308	24.28	69.13	73.00	86830	0.00	0.95	0.00	1.97
PERC	Pond 308A	BASIN308	24.30	69.13	73.00	86827	0.00	0.95	0.00	1.97
PERC	Pond 308A	BASIN308	24.32	69.13	73.00	86824	0.00	0.95	0.00	1.97
PERC	Pond 308A	BASIN308	24.33	69.13	73.00	86820	0.00	0.95	0.00	1.97
PERC	Pond 308A	BASIN308	24.35	69.13	73.00	86817	0.00	0.95	0.00	1.97
PERC	Pond 308A	BASIN308	24.37	69.13	73.00	86814	0.00	0.95	0.00	1.98
PERC	Pond 308A	BASIN308	24.38	69.12	73.00	86810	0.00	0.95	0.00	1.98
PERC	Pond 308A	BASIN308	24.40	69.12	73.00	86807	0.00	0.95	0.00	1.98
PERC	Pond 308A	BASIN308	24.42	69.12	73.00	86804	0.00	0.95	0.00	1.98
PERC	Pond 308A	BASIN308	24.43	69.12	73.00	86800	0.00	0.95	0.00	1.98
PERC	Pond 308A	BASIN308	24.45	69.12	73.00	86797	0.00	0.95	0.00	1.98
PERC	Pond 308A	BASIN308	24.47	69.12	73.00	86794	0.00	0.95	0.00	1.98
PERC	Pond 308A	BASIN308	24.48	69.12	73.00	86790	0.00	0.95	0.00	1.98
PERC	Pond 308A	BASIN308	24.50	69.12	73.00	86787	0.00	0.95	0.00	1.99
PERC	Pond 308A	BASIN308	24.52	69.12	73.00	86784	0.00	0.95	0.00	1.99
PERC	Pond 308A	BASIN308	24.53	69.12	73.00	86780	0.00	0.95	0.00	1.99
PERC	Pond 308A	BASIN308	24.55	69.12	73.00	86777	0.00	0.95	0.00	1.99
PERC	Pond 308A	BASIN308	24.57	69.12	73.00	86774	0.00	0.95	0.00	1.99
PERC	Pond 308A	BASIN308	24.58	69.12	73.00	86770	0.00	0.95	0.00	1.99
PERC	Pond 308A	BASIN308	24.60	69.12	73.00	86767	0.00	0.95	0.00	1.99
PERC	Pond 308A	BASIN308	24.62	69.12	73.00	86764	0.00	0.95	0.00	2.00
PERC	Pond 308A	BASIN308	24.63	69.12	73.00	86760	0.00	0.95	0.00	2.00
PERC	Pond 308A	BASIN308	24.65	69.11	73.00	86757	0.00	0.95	0.00	2.00
PERC	Pond 308A	BASIN308	24.67	69.11	73.00	86754	0.00	0.95	0.00	2.00
PERC	Pond 308A	BASIN308	24.68	69.11	73.00	86750	0.00	0.95	0.00	2.00
PERC	Pond 308A	BASIN308	24.70	69.11	73.00	86747	0.00	0.95	0.00	2.00
PERC	Pond 308A	BASIN308	24.72	69.11	73.00	86744	0.00	0.95	0.00	2.00
PERC	Pond 308A	BASIN308	24.73	69.11	73.00	86741	0.00	0.95	0.00	2.00
PERC	Pond 308A	BASIN308	24.75	69.11	73.00	86737	0.00	0.95	0.00	2.01
PERC	Pond 308A	BASIN308	24.77	69.11	73.00	86734	0.00	0.95	0.00	2.01
PERC	Pond 308A	BASIN308	24.78	69.11	73.00	86731	0.00	0.95	0.00	2.01
PERC	Pond 308A	BASIN308	24.80	69.11	73.00	86727	0.00	0.95	0.00	2.01
PERC	Pond 308A	BASIN308	24.82	69.11	73.00	86724	0.00	0.95	0.00	2.01
PERC	Pond 308A	BASIN308	24.83	69.11	73.00	86721	0.00	0.95	0.00	2.01
PERC	Pond 308A	BASIN308	24.85	69.11	73.00	86717	0.00	0.95	0.00	2.01
PERC	Pond 308A	BASIN308	24.87	69.11	73.00	86714	0.00	0.95	0.00	2.01
PERC	Pond 308A	BASIN308	24.88	69.11	73.00	86711	0.00	0.95	0.00	2.02
PERC	Pond 308A	BASIN308	24.90	69.10	73.00	86707	0.00	0.95	0.00	2.02
PERC	Pond 308A	BASIN308	24.92	69.10	73.00	86704	0.00	0.95	0.00	2.02
PERC	Pond 308A	BASIN308	24.93	69.10	73.00	86701	0.00	0.95	0.00	2.02
PERC	Pond 308A	BASIN308	24.95	69.10	73.00	86697	0.00	0.95	0.00	2.02
PERC	Pond 308A	BASIN308	24.97	69.10	73.00	86694	0.00	0.95	0.00	2.02
PERC	Pond 308A	BASIN308	24.98	69.10	73.00	86691	0.00	0.95	0.00	2.02
PERC	Pond 308A	BASIN308	25.00	69.10	73.00	86687	0.00	0.95	0.00	2.03
PERC	Pond 308A	BASIN308	25.02	69.10	73.00	86684	0.00	0.00	0.00	2.03
PERC	Pond 308A	BASIN308	25.03	69.10	73.00	86684	0.00	0.00	0.00	2.03
PERC	Pond 308A	BASIN308	25.05	69.10	73.00	86684	0.00	0.00	0.00	2.03
PERC	Pond 308A	BASIN308	25.07	69.10	73.00	86684	0.00	0.00	0.00	2.03
PERC	Pond 308A	BASIN308	25.08	69.10	73.00	86684	0.00	0.00	0.00	2.03
PERC	Pond 308A	BASIN308	25.10	69.10	73.00	86684	0.00	0.00	0.00	2.03
PERC	Pond 308A	BASIN308	25.12	69.10	73.00	86684	0.00	0.00	0.00	2.03
PERC	Pond 308A	BASIN308	25.13	69.10	73.00	86684	0.00	0.00	0.00	2.03
PERC	Pond 308A	BASIN308	25.15	69.10	73.00	86684	0.00	0.00	0.00	2.03
PERC	Pond 308A	BASIN308	25.17	69.10	73.00	86684	0.00	0.00	0.00	2.03
PERC	Pond 308A	BASIN308	25.18	69.10	73.00	86684	0.00	0.00	0.00	2.03

Basin 308A
SJRWMD Closed Basin Recovery
14-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308A	BASIN308	0.00	71.41	73.00	98446	0.00	0.00	0.00	0.00
PERC	Pond 308A	BASIN308	0.02	71.41	73.00	98443	0.00	1.08	0.00	0.00
PERC	Pond 308A	BASIN308	0.03	71.41	73.00	98440	0.00	1.08	0.00	0.00
PERC	Pond 308A	BASIN308	0.05	71.41	73.00	98436	0.00	1.08	0.00	0.00
PERC	Pond 308A	BASIN308	0.07	71.41	73.00	98433	0.00	1.08	0.00	0.01
PERC	Pond 308A	BASIN308	0.08	71.41	73.00	98429	0.00	1.08	0.00	0.01
PERC	Pond 308A	BASIN308	0.10	71.41	73.00	98426	0.00	1.08	0.00	0.01
PERC	Pond 308A	BASIN308	0.12	71.41	73.00	98422	0.00	1.08	0.00	0.01
PERC	Pond 308A	BASIN308	0.13	71.40	73.00	98419	0.00	1.08	0.00	0.01
PERC	Pond 308A	BASIN308	0.15	71.40	73.00	98416	0.00	1.08	0.00	0.01
PERC	Pond 308A	BASIN308	0.17	71.40	73.00	98412	0.00	1.08	0.00	0.01
PERC	Pond 308A	BASIN308	0.18	71.40	73.00	98409	0.00	1.08	0.00	0.02
PERC	Pond 308A	BASIN308	0.20	71.40	73.00	98405	0.00	1.08	0.00	0.02
PERC	Pond 308A	BASIN308	0.22	71.40	73.00	98402	0.00	1.08	0.00	0.02
PERC	Pond 308A	BASIN308	0.24	71.40	73.00	98398	0.00	1.08	0.00	0.02
PERC	Pond 308A	BASIN308	0.25	71.40	73.00	98395	0.00	1.08	0.00	0.02
PERC	Pond 308A	BASIN308	0.27	71.40	73.00	98392	0.00	1.08	0.00	0.02
PERC	Pond 308A	BASIN308	0.29	71.40	73.00	98388	0.00	1.08	0.00	0.02
PERC	Pond 308A	BASIN308	0.30	71.40	73.00	98385	0.00	1.08	0.00	0.03
PERC	Pond 308A	BASIN308	0.32	71.40	73.00	98381	0.00	1.08	0.00	0.03
PERC	Pond 308A	BASIN308	0.34	71.40	73.00	98378	0.00	1.08	0.00	0.03
PERC	Pond 308A	BASIN308	0.35	71.40	73.00	98374	0.00	1.08	0.00	0.03
PERC	Pond 308A	BASIN308	0.37	71.40	73.00	98371	0.00	1.08	0.00	0.03
PERC	Pond 308A	BASIN308	0.39	71.39	73.00	98368	0.00	1.08	0.00	0.03
PERC	Pond 308A	BASIN308	0.40	71.39	73.00	98364	0.00	1.08	0.00	0.04
PERC	Pond 308A	BASIN308	0.42	71.39	73.00	98361	0.00	1.08	0.00	0.04
PERC	Pond 308A	BASIN308	0.44	71.39	73.00	98357	0.00	1.08	0.00	0.04
PERC	Pond 308A	BASIN308	0.45	71.39	73.00	98354	0.00	1.08	0.00	0.04
PERC	Pond 308A	BASIN308	0.47	71.39	73.00	98350	0.00	1.08	0.00	0.04
PERC	Pond 308A	BASIN308	0.49	71.39	73.00	98347	0.00	1.08	0.00	0.04
PERC	Pond 308A	BASIN308	0.50	71.39	73.00	98344	0.00	1.08	0.00	0.04
PERC	Pond 308A	BASIN308	0.52	71.39	73.00	98340	0.00	1.08	0.00	0.05
PERC	Pond 308A	BASIN308	0.54	71.39	73.00	98337	0.00	1.08	0.00	0.05
PERC	Pond 308A	BASIN308	0.55	71.39	73.00	98333	0.00	1.08	0.00	0.05
PERC	Pond 308A	BASIN308	0.57	71.39	73.00	98330	0.00	1.08	0.00	0.05
PERC	Pond 308A	BASIN308	0.59	71.39	73.00	98326	0.00	1.08	0.00	0.05
PERC	Pond 308A	BASIN308	0.61	71.39	73.00	98323	0.00	1.08	0.00	0.05
PERC	Pond 308A	BASIN308	0.62	71.39	73.00	98319	0.00	1.08	0.00	0.05
PERC	Pond 308A	BASIN308	0.64	71.38	73.00	98316	0.00	1.08	0.00	0.06
PERC	Pond 308A	BASIN308	0.66	71.38	73.00	98313	0.00	1.08	0.00	0.06
PERC	Pond 308A	BASIN308	0.67	71.38	73.00	98309	0.00	1.08	0.00	0.06
PERC	Pond 308A	BASIN308	0.69	71.38	73.00	98306	0.00	1.08	0.00	0.06
PERC	Pond 308A	BASIN308	0.71	71.38	73.00	98302	0.00	1.08	0.00	0.06
PERC	Pond 308A	BASIN308	0.72	71.38	73.00	98299	0.00	1.08	0.00	0.06
PERC	Pond 308A	BASIN308	0.74	71.38	73.00	98295	0.00	1.08	0.00	0.07
PERC	Pond 308A	BASIN308	0.76	71.38	73.00	98292	0.00	1.08	0.00	0.07
PERC	Pond 308A	BASIN308	0.77	71.38	73.00	98289	0.00	1.08	0.00	0.07
PERC	Pond 308A	BASIN308	0.79	71.38	73.00	98285	0.00	1.08	0.00	0.07
PERC	Pond 308A	BASIN308	0.81	71.38	73.00	98282	0.00	1.08	0.00	0.07
PERC	Pond 308A	BASIN308	0.82	71.38	73.00	98278	0.00	1.08	0.00	0.07
PERC	Pond 308A	BASIN308	0.84	71.38	73.00	98275	0.00	1.08	0.00	0.07
PERC	Pond 308A	BASIN308	0.86	71.38	73.00	98271	0.00	1.08	0.00	0.08
PERC	Pond 308A	BASIN308	0.87	71.38	73.00	98268	0.00	1.08	0.00	0.08
PERC	Pond 308A	BASIN308	0.89	71.37	73.00	98265	0.00	1.08	0.00	0.08
PERC	Pond 308A	BASIN308	0.91	71.37	73.00	98261	0.00	1.08	0.00	0.08
PERC	Pond 308A	BASIN308	0.92	71.37	73.00	98258	0.00	1.08	0.00	0.08
PERC	Pond 308A	BASIN308	0.94	71.37	73.00	98254	0.00	1.08	0.00	0.08
PERC	Pond 308A	BASIN308	0.96	71.37	73.00	98251	0.00	1.08	0.00	0.08
PERC	Pond 308A	BASIN308	0.97	71.37	73.00	98247	0.00	1.08	0.00	0.09
PERC	Pond 308A	BASIN308	0.99	71.37	73.00	98244	0.00	1.08	0.00	0.09
PERC	Pond 308A	BASIN308	1.01	71.37	73.00	98241	0.00	1.08	0.00	0.09
PERC	Pond 308A	BASIN308	1.02	71.37	73.00	98239	0.00	1.08	0.00	0.09
PERC	Pond 308A	BASIN308	1.03	71.37	73.00	98235	0.00	1.08	0.00	0.09
PERC	Pond 308A	BASIN308	1.05	71.37	73.00	98232	0.00	1.08	0.00	0.09
PERC	Pond 308A	BASIN308	1.07	71.37	73.00	98229	0.00	1.08	0.00	0.09
PERC	Pond 308A	BASIN308	1.08	71.37	73.00	98225	0.00	1.08	0.00	0.10
PERC	Pond 308A	BASIN308	1.10	71.37	73.00	98222	0.00	1.08	0.00	0.10
PERC	Pond 308A	BASIN308	1.12	71.37	73.00	98218	0.00	1.08	0.00	0.10
PERC	Pond 308A	BASIN308	1.13	71.37	73.00	98215	0.00	1.08	0.00	0.10
PERC	Pond 308A	BASIN308	1.15	71.36	73.00	98211	0.00	1.08	0.00	0.10
PERC	Pond 308A	BASIN308	1.17	71.36	73.00	98208	0.00	1.08	0.00	0.10
PERC	Pond 308A	BASIN308	1.18	71.36	73.00	98205	0.00	1.08	0.00	0.11
PERC	Pond 308A	BASIN308	1.20	71.36	73.00	98201	0.00	1.08	0.00	0.11
PERC	Pond 308A	BASIN308	1.22	71.36	73.00	98198	0.00	1.08	0.00	0.11
PERC	Pond 308A	BASIN308	1.24	71.36	73.00	98194	0.00	1.08	0.00	0.11
PERC	Pond 308A	BASIN308	1.25	71.36	73.00	98191	0.00	1.08	0.00	0.11
PERC	Pond 308A	BASIN308	1.27	71.36	73.00	98187	0.00	1.08	0.00	0.11
PERC	Pond 308A	BASIN308	1.29	71.36	73.00	98184	0.00	1.08	0.00	0.11
PERC	Pond 308A	BASIN308	1.30	71.36	73.00	98181	0.00	1.08	0.00	0.12
PERC	Pond 308A	BASIN308	1.32	71.36	73.00	98177	0.00	1.08	0.00	0.12
PERC	Pond 308A	BASIN308	1.34	71.36	73.00	98174	0.00	1.08	0.00	0.12
PERC	Pond 308A	BASIN308	1.35	71.36	73.00	98170	0.00	1.08	0.00	0.12
PERC	Pond 308A	BASIN308	1.37	71.36	73.00	98167	0.00	1.08	0.00	0.12
PERC	Pond 308A	BASIN308	1.39	71.36	73.00	98163	0.00	1.08	0.00	0.12

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308A	BASIN308	63.01	69.11	73.00	86732	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.03	69.11	73.00	86731	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.05	69.11	73.00	86730	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.06	69.11	73.00	86729	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.08	69.11	73.00	86728	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.10	69.11	73.00	86728	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.11	69.11	73.00	86727	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.13	69.11	73.00	86726	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.15	69.11	73.00	86725	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.16	69.11	73.00	86724	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.18	69.11	73.00	86723	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.20	69.11	73.00	86722	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.21	69.11	73.00	86721	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.23	69.11	73.00	86720	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.25	69.11	73.00	86719	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.26	69.11	73.00	86718	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.28	69.11	73.00	86717	0.00	0.27	0.00	4.89
PERC	Pond 308A	BASIN308	63.30	69.11	73.00	86716	0.00	0.26	0.00	4.89
PERC	Pond 308A	BASIN308	63.31	69.11	73.00	86715	0.00	0.26	0.00	4.89
PERC	Pond 308A	BASIN308	63.33	69.11	73.00	86715	0.00	0.26	0.00	4.89
PERC	Pond 308A	BASIN308	63.35	69.11	73.00	86714	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.36	69.11	73.00	86713	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.38	69.11	73.00	86712	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.40	69.11	73.00	86711	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.41	69.11	73.00	86710	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.43	69.10	73.00	86709	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.45	69.10	73.00	86708	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.46	69.10	73.00	86707	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.48	69.10	73.00	86706	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.50	69.10	73.00	86705	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.51	69.10	73.00	86704	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.53	69.10	73.00	86704	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.55	69.10	73.00	86703	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.56	69.10	73.00	86702	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.58	69.10	73.00	86701	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.60	69.10	73.00	86700	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.61	69.10	73.00	86699	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.63	69.10	73.00	86698	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.65	69.10	73.00	86697	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.66	69.10	73.00	86696	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.68	69.10	73.00	86695	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.70	69.10	73.00	86694	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.71	69.10	73.00	86694	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.73	69.10	73.00	86693	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.75	69.10	73.00	86692	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.76	69.10	73.00	86691	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.78	69.10	73.00	86690	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.80	69.10	73.00	86689	0.00	0.26	0.00	4.90
PERC	Pond 308A	BASIN308	63.81	69.10	73.00	86688	0.00	0.26	0.00	4.91
PERC	Pond 308A	BASIN308	63.83	69.10	73.00	86687	0.00	0.26	0.00	4.91
PERC	Pond 308A	BASIN308	63.85	69.10	73.00	86686	0.00	0.26	0.00	4.91
PERC	Pond 308A	BASIN308	63.86	69.10	73.00	86685	0.00	0.26	0.00	4.91
PERC	Pond 308A	BASIN308	63.88	69.10	73.00	86685	0.00	0.07	0.00	4.91
PERC	Pond 308A	BASIN308	63.90	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	63.91	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	63.93	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	63.95	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	63.96	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	63.98	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.00	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.01	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.03	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.05	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.06	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.08	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.10	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.11	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.13	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.15	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.16	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.18	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.20	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.21	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.23	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.25	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.26	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.28	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.30	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.31	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.33	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.35	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.36	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.38	69.10	73.00	86684	0.00	0.00	0.00	4.91
PERC	Pond 308A	BASIN308	64.40	69.10	73.00	86684	0.00	0.00	0.00	4.91

Basin 308A
FDOT Closed Basin Recovery
7-Day / 30-Day

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308A	BASIN308	0.00	72.07	73.00	101930	0.00	0.00	0.00	0.00
PERC	Pond 308A	BASIN308	0.02	72.07	73.00	101928	0.00	1.12	0.00	0.00
PERC	Pond 308A	BASIN308	0.03	72.07	73.00	101924	0.00	1.12	0.00	0.00
PERC	Pond 308A	BASIN308	0.05	72.07	73.00	101921	0.00	1.12	0.00	0.00
PERC	Pond 308A	BASIN308	0.07	72.07	73.00	101917	0.00	1.12	0.00	0.01
PERC	Pond 308A	BASIN308	0.08	72.07	73.00	101914	0.00	1.12	0.00	0.01
PERC	Pond 308A	BASIN308	0.10	72.07	73.00	101910	0.00	1.12	0.00	0.01
PERC	Pond 308A	BASIN308	0.12	72.07	73.00	101907	0.00	1.12	0.00	0.01
PERC	Pond 308A	BASIN308	0.13	72.06	73.00	101903	0.00	1.12	0.00	0.01
PERC	Pond 308A	BASIN308	0.15	72.06	73.00	101900	0.00	1.12	0.00	0.01
PERC	Pond 308A	BASIN308	0.17	72.06	73.00	101896	0.00	1.12	0.00	0.01
PERC	Pond 308A	BASIN308	0.18	72.06	73.00	101893	0.00	1.12	0.00	0.02
PERC	Pond 308A	BASIN308	0.20	72.06	73.00	101889	0.00	1.12	0.00	0.02
PERC	Pond 308A	BASIN308	0.22	72.06	73.00	101886	0.00	1.12	0.00	0.02
PERC	Pond 308A	BASIN308	0.24	72.06	73.00	101882	0.00	1.12	0.00	0.02
PERC	Pond 308A	BASIN308	0.25	72.06	73.00	101879	0.00	1.12	0.00	0.02
PERC	Pond 308A	BASIN308	0.27	72.06	73.00	101875	0.00	1.12	0.00	0.02
PERC	Pond 308A	BASIN308	0.29	72.06	73.00	101872	0.00	1.12	0.00	0.03
PERC	Pond 308A	BASIN308	0.30	72.06	73.00	101868	0.00	1.12	0.00	0.03
PERC	Pond 308A	BASIN308	0.32	72.06	73.00	101865	0.00	1.12	0.00	0.03
PERC	Pond 308A	BASIN308	0.34	72.06	73.00	101861	0.00	1.12	0.00	0.03
PERC	Pond 308A	BASIN308	0.35	72.06	73.00	101858	0.00	1.12	0.00	0.03
PERC	Pond 308A	BASIN308	0.37	72.06	73.00	101854	0.00	1.12	0.00	0.03
PERC	Pond 308A	BASIN308	0.39	72.05	73.00	101850	0.00	1.12	0.00	0.04
PERC	Pond 308A	BASIN308	0.40	72.05	73.00	101847	0.00	1.12	0.00	0.04
PERC	Pond 308A	BASIN308	0.42	72.05	73.00	101843	0.00	1.12	0.00	0.04
PERC	Pond 308A	BASIN308	0.44	72.05	73.00	101840	0.00	1.12	0.00	0.04
PERC	Pond 308A	BASIN308	0.45	72.05	73.00	101836	0.00	1.12	0.00	0.04
PERC	Pond 308A	BASIN308	0.47	72.05	73.00	101833	0.00	1.12	0.00	0.04
PERC	Pond 308A	BASIN308	0.49	72.05	73.00	101829	0.00	1.12	0.00	0.04
PERC	Pond 308A	BASIN308	0.50	72.05	73.00	101826	0.00	1.12	0.00	0.05
PERC	Pond 308A	BASIN308	0.52	72.05	73.00	101822	0.00	1.12	0.00	0.05
PERC	Pond 308A	BASIN308	0.54	72.05	73.00	101819	0.00	1.12	0.00	0.05
PERC	Pond 308A	BASIN308	0.55	72.05	73.00	101815	0.00	1.12	0.00	0.05
PERC	Pond 308A	BASIN308	0.57	72.05	73.00	101812	0.00	1.12	0.00	0.05
PERC	Pond 308A	BASIN308	0.59	72.05	73.00	101808	0.00	1.12	0.00	0.05
PERC	Pond 308A	BASIN308	0.61	72.05	73.00	101805	0.00	1.12	0.00	0.06
PERC	Pond 308A	BASIN308	0.62	72.05	73.00	101801	0.00	1.12	0.00	0.06
PERC	Pond 308A	BASIN308	0.64	72.04	73.00	101798	0.00	1.12	0.00	0.06
PERC	Pond 308A	BASIN308	0.66	72.04	73.00	101794	0.00	1.12	0.00	0.06
PERC	Pond 308A	BASIN308	0.67	72.04	73.00	101791	0.00	1.12	0.00	0.06
PERC	Pond 308A	BASIN308	0.69	72.04	73.00	101787	0.00	1.12	0.00	0.06
PERC	Pond 308A	BASIN308	0.71	72.04	73.00	101784	0.00	1.12	0.00	0.06
PERC	Pond 308A	BASIN308	0.72	72.04	73.00	101780	0.00	1.12	0.00	0.07
PERC	Pond 308A	BASIN308	0.74	72.04	73.00	101777	0.00	1.12	0.00	0.07
PERC	Pond 308A	BASIN308	0.76	72.04	73.00	101773	0.00	1.12	0.00	0.07
PERC	Pond 308A	BASIN308	0.77	72.04	73.00	101770	0.00	1.12	0.00	0.07
PERC	Pond 308A	BASIN308	0.79	72.04	73.00	101766	0.00	1.12	0.00	0.07
PERC	Pond 308A	BASIN308	0.81	72.04	73.00	101763	0.00	1.12	0.00	0.07
PERC	Pond 308A	BASIN308	0.82	72.04	73.00	101759	0.00	1.12	0.00	0.08
PERC	Pond 308A	BASIN308	0.84	72.04	73.00	101756	0.00	1.12	0.00	0.08
PERC	Pond 308A	BASIN308	0.86	72.04	73.00	101752	0.00	1.12	0.00	0.08
PERC	Pond 308A	BASIN308	0.87	72.04	73.00	101749	0.00	1.12	0.00	0.08
PERC	Pond 308A	BASIN308	0.89	72.03	73.00	101745	0.00	1.12	0.00	0.08
PERC	Pond 308A	BASIN308	0.91	72.03	73.00	101742	0.00	1.12	0.00	0.08
PERC	Pond 308A	BASIN308	0.92	72.03	73.00	101738	0.00	1.12	0.00	0.08
PERC	Pond 308A	BASIN308	0.94	72.03	73.00	101735	0.00	1.12	0.00	0.09
PERC	Pond 308A	BASIN308	0.96	72.03	73.00	101731	0.00	1.12	0.00	0.09
PERC	Pond 308A	BASIN308	0.97	72.03	73.00	101728	0.00	1.12	0.00	0.09
PERC	Pond 308A	BASIN308	0.99	72.03	73.00	101724	0.00	1.12	0.00	0.09
PERC	Pond 308A	BASIN308	1.01	72.03	73.00	101721	0.00	1.12	0.00	0.09
PERC	Pond 308A	BASIN308	1.02	72.03	73.00	101719	0.00	1.12	0.00	0.09
PERC	Pond 308A	BASIN308	1.03	72.03	73.00	101715	0.00	1.12	0.00	0.09
PERC	Pond 308A	BASIN308	1.05	72.03	73.00	101712	0.00	1.12	0.00	0.10
PERC	Pond 308A	BASIN308	1.07	72.03	73.00	101708	0.00	1.12	0.00	0.10
PERC	Pond 308A	BASIN308	1.08	72.03	73.00	101705	0.00	1.12	0.00	0.10
PERC	Pond 308A	BASIN308	1.10	72.03	73.00	101701	0.00	1.12	0.00	0.10
PERC	Pond 308A	BASIN308	1.12	72.03	73.00	101698	0.00	1.12	0.00	0.10
PERC	Pond 308A	BASIN308	1.13	72.03	73.00	101694	0.00	1.12	0.00	0.10
PERC	Pond 308A	BASIN308	1.15	72.02	73.00	101691	0.00	1.12	0.00	0.11
PERC	Pond 308A	BASIN308	1.17	72.02	73.00	101687	0.00	1.12	0.00	0.11
PERC	Pond 308A	BASIN308	1.18	72.02	73.00	101684	0.00	1.12	0.00	0.11
PERC	Pond 308A	BASIN308	1.20	72.02	73.00	101680	0.00	1.12	0.00	0.11
PERC	Pond 308A	BASIN308	1.22	72.02	73.00	101677	0.00	1.12	0.00	0.11
PERC	Pond 308A	BASIN308	1.24	72.02	73.00	101673	0.00	1.12	0.00	0.11
PERC	Pond 308A	BASIN308	1.25	72.02	73.00	101670	0.00	1.12	0.00	0.12
PERC	Pond 308A	BASIN308	1.27	72.02	73.00	101666	0.00	1.12	0.00	0.12
PERC	Pond 308A	BASIN308	1.29	72.02	73.00	101663	0.00	1.12	0.00	0.12
PERC	Pond 308A	BASIN308	1.30	72.02	73.00	101659	0.00	1.12	0.00	0.12
PERC	Pond 308A	BASIN308	1.32	72.02	73.00	101656	0.00	1.12	0.00	0.12
PERC	Pond 308A	BASIN308	1.34	72.02	73.00	101652	0.00	1.12	0.00	0.12
PERC	Pond 308A	BASIN308	1.35	72.02	73.00	101649	0.00	1.12	0.00	0.12
PERC	Pond 308A	BASIN308	1.37	72.02	73.00	101645	0.00	1.12	0.00	0.13
PERC	Pond 308A	BASIN308	1.39	72.02	73.00	101642	0.00	1.12	0.00	0.13

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308A	BASIN308	35.00	70.68	73.00	94703	0.00	1.04	0.00	3.13
PERC	Pond 308A	BASIN308	35.02	70.68	73.00	94700	0.00	1.04	0.00	3.13
PERC	Pond 308A	BASIN308	35.04	70.68	73.00	94697	0.00	1.04	0.00	3.13
PERC	Pond 308A	BASIN308	35.05	70.68	73.00	94693	0.00	1.04	0.00	3.13
PERC	Pond 308A	BASIN308	35.07	70.68	73.00	94690	0.00	1.04	0.00	3.13
PERC	Pond 308A	BASIN308	35.09	70.68	73.00	94686	0.00	1.04	0.00	3.13
PERC	Pond 308A	BASIN308	35.10	70.68	73.00	94683	0.00	1.04	0.00	3.13
PERC	Pond 308A	BASIN308	35.12	70.68	73.00	94680	0.00	1.04	0.00	3.14
PERC	Pond 308A	BASIN308	35.14	70.68	73.00	94676	0.00	1.04	0.00	3.14
PERC	Pond 308A	BASIN308	35.15	70.68	73.00	94673	0.00	1.04	0.00	3.14
PERC	Pond 308A	BASIN308	35.17	70.68	73.00	94669	0.00	1.04	0.00	3.14
PERC	Pond 308A	BASIN308	35.19	70.68	73.00	94666	0.00	1.04	0.00	3.14
PERC	Pond 308A	BASIN308	35.20	70.68	73.00	94663	0.00	1.04	0.00	3.14
PERC	Pond 308A	BASIN308	35.22	70.68	73.00	94659	0.00	1.04	0.00	3.14
PERC	Pond 308A	BASIN308	35.24	70.68	73.00	94656	0.00	1.04	0.00	3.15
PERC	Pond 308A	BASIN308	35.25	70.67	73.00	94652	0.00	1.04	0.00	3.15
PERC	Pond 308A	BASIN308	35.27	70.67	73.00	94649	0.00	1.04	0.00	3.15
PERC	Pond 308A	BASIN308	35.29	70.67	73.00	94646	0.00	1.04	0.00	3.15
PERC	Pond 308A	BASIN308	35.30	70.67	73.00	94642	0.00	1.04	0.00	3.15
PERC	Pond 308A	BASIN308	35.32	70.67	73.00	94639	0.00	1.04	0.00	3.15
PERC	Pond 308A	BASIN308	35.34	70.67	73.00	94635	0.00	1.04	0.00	3.15
PERC	Pond 308A	BASIN308	35.35	70.67	73.00	94632	0.00	1.04	0.00	3.16
PERC	Pond 308A	BASIN308	35.37	70.67	73.00	94629	0.00	1.04	0.00	3.16
PERC	Pond 308A	BASIN308	35.39	70.67	73.00	94625	0.00	1.04	0.00	3.16
PERC	Pond 308A	BASIN308	35.40	70.67	73.00	94622	0.00	1.04	0.00	3.16
PERC	Pond 308A	BASIN308	35.42	70.67	73.00	94618	0.00	1.04	0.00	3.16
PERC	Pond 308A	BASIN308	35.44	70.67	73.00	94615	0.00	1.04	0.00	3.16
PERC	Pond 308A	BASIN308	35.45	70.67	73.00	94612	0.00	1.04	0.00	3.16
PERC	Pond 308A	BASIN308	35.47	70.67	73.00	94608	0.00	1.04	0.00	3.17
PERC	Pond 308A	BASIN308	35.49	70.67	73.00	94605	0.00	1.04	0.00	3.17
PERC	Pond 308A	BASIN308	35.50	70.66	73.00	94601	0.00	1.04	0.00	3.17
PERC	Pond 308A	BASIN308	35.52	70.66	73.00	94598	0.00	1.04	0.00	3.17
PERC	Pond 308A	BASIN308	35.54	70.66	73.00	94595	0.00	1.04	0.00	3.17
PERC	Pond 308A	BASIN308	35.55	70.66	73.00	94591	0.00	1.04	0.00	3.17
PERC	Pond 308A	BASIN308	35.57	70.66	73.00	94588	0.00	1.04	0.00	3.17
PERC	Pond 308A	BASIN308	35.59	70.66	73.00	94584	0.00	1.04	0.00	3.18
PERC	Pond 308A	BASIN308	35.60	70.66	73.00	94581	0.00	1.04	0.00	3.18
PERC	Pond 308A	BASIN308	35.62	70.66	73.00	94578	0.00	1.04	0.00	3.18
PERC	Pond 308A	BASIN308	35.64	70.66	73.00	94574	0.00	1.04	0.00	3.18
PERC	Pond 308A	BASIN308	35.65	70.66	73.00	94571	0.00	1.04	0.00	3.18
PERC	Pond 308A	BASIN308	35.67	70.66	73.00	94567	0.00	1.04	0.00	3.18
PERC	Pond 308A	BASIN308	35.69	70.66	73.00	94564	0.00	1.04	0.00	3.18
PERC	Pond 308A	BASIN308	35.70	70.66	73.00	94561	0.00	1.04	0.00	3.19
PERC	Pond 308A	BASIN308	35.72	70.66	73.00	94557	0.00	1.04	0.00	3.19
PERC	Pond 308A	BASIN308	35.74	70.66	73.00	94554	0.00	1.04	0.00	3.19
PERC	Pond 308A	BASIN308	35.75	70.65	73.00	94550	0.00	1.04	0.00	3.19
PERC	Pond 308A	BASIN308	35.77	70.65	73.00	94547	0.00	1.04	0.00	3.19
PERC	Pond 308A	BASIN308	35.79	70.65	73.00	94544	0.00	1.04	0.00	3.19
PERC	Pond 308A	BASIN308	35.80	70.65	73.00	94540	0.00	1.04	0.00	3.19
PERC	Pond 308A	BASIN308	35.82	70.65	73.00	94537	0.00	1.04	0.00	3.20
PERC	Pond 308A	BASIN308	35.84	70.65	73.00	94533	0.00	1.04	0.00	3.20
PERC	Pond 308A	BASIN308	35.85	70.65	73.00	94530	0.00	1.04	0.00	3.20
PERC	Pond 308A	BASIN308	35.87	70.65	73.00	94527	0.00	1.04	0.00	3.20
PERC	Pond 308A	BASIN308	35.89	70.65	73.00	94523	0.00	1.04	0.00	3.20
PERC	Pond 308A	BASIN308	35.90	70.65	73.00	94520	0.00	1.04	0.00	3.20
PERC	Pond 308A	BASIN308	35.92	70.65	73.00	94516	0.00	1.04	0.00	3.20
PERC	Pond 308A	BASIN308	35.94	70.65	73.00	94513	0.00	1.04	0.00	3.21
PERC	Pond 308A	BASIN308	35.95	70.65	73.00	94510	0.00	1.04	0.00	3.21
PERC	Pond 308A	BASIN308	35.97	70.65	73.00	94506	0.00	1.04	0.00	3.21
PERC	Pond 308A	BASIN308	35.99	70.65	73.00	94503	0.00	1.04	0.00	3.21
PERC	Pond 308A	BASIN308	36.00	70.64	73.00	94500	0.00	1.04	0.00	3.21
PERC	Pond 308A	BASIN308	36.02	70.64	73.00	94496	0.00	1.04	0.00	3.21
PERC	Pond 308A	BASIN308	36.04	70.64	73.00	94493	0.00	1.04	0.00	3.21
PERC	Pond 308A	BASIN308	36.05	70.64	73.00	94490	0.00	1.04	0.00	3.22
PERC	Pond 308A	BASIN308	36.07	70.64	73.00	94486	0.00	1.04	0.00	3.22
PERC	Pond 308A	BASIN308	36.09	70.64	73.00	94483	0.00	1.04	0.00	3.22
PERC	Pond 308A	BASIN308	36.10	70.64	73.00	94480	0.00	1.04	0.00	3.22
PERC	Pond 308A	BASIN308	36.12	70.64	73.00	94476	0.00	1.04	0.00	3.22
PERC	Pond 308A	BASIN308	36.14	70.64	73.00	94473	0.00	1.04	0.00	3.22
PERC	Pond 308A	BASIN308	36.15	70.64	73.00	94469	0.00	1.04	0.00	3.22
PERC	Pond 308A	BASIN308	36.17	70.64	73.00	94466	0.00	1.04	0.00	3.23
PERC	Pond 308A	BASIN308	36.19	70.64	73.00	94463	0.00	1.04	0.00	3.23
PERC	Pond 308A	BASIN308	36.20	70.64	73.00	94459	0.00	1.04	0.00	3.23
PERC	Pond 308A	BASIN308	36.22	70.64	73.00	94456	0.00	1.04	0.00	3.23
PERC	Pond 308A	BASIN308	36.24	70.64	73.00	94453	0.00	1.04	0.00	3.23
PERC	Pond 308A	BASIN308	36.25	70.64	73.00	94449	0.00	1.04	0.00	3.23
PERC	Pond 308A	BASIN308	36.27	70.63	73.00	94446	0.00	1.04	0.00	3.23
PERC	Pond 308A	BASIN308	36.29	70.63	73.00	94443	0.00	1.04	0.00	3.24
PERC	Pond 308A	BASIN308	36.30	70.63	73.00	94439	0.00	1.04	0.00	3.24
PERC	Pond 308A	BASIN308	36.32	70.63	73.00	94436	0.00	1.04	0.00	3.24
PERC	Pond 308A	BASIN308	36.34	70.63	73.00	94433	0.00	1.04	0.00	3.24
PERC	Pond 308A	BASIN308	36.35	70.63	73.00	94429	0.00	1.04	0.00	3.24
PERC	Pond 308A	BASIN308	36.37	70.63	73.00	94426	0.00	1.04	0.00	3.24
PERC	Pond 308A	BASIN308	36.39	70.63	73.00	94423	0.00	1.04	0.00	3.24

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
PERC	Pond 308A	BASIN308	207.20	69.11	73.00	86715	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.22	69.11	73.00	86715	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.24	69.11	73.00	86714	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.25	69.11	73.00	86714	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.27	69.11	73.00	86714	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.29	69.11	73.00	86714	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.30	69.11	73.00	86713	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.32	69.11	73.00	86713	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.34	69.11	73.00	86713	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.35	69.11	73.00	86713	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.37	69.11	73.00	86712	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.39	69.11	73.00	86712	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.40	69.11	73.00	86712	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.42	69.11	73.00	86712	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.44	69.11	73.00	86712	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.45	69.11	73.00	86711	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.47	69.11	73.00	86711	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.49	69.11	73.00	86711	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.50	69.11	73.00	86711	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.52	69.11	73.00	86710	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.54	69.11	73.00	86710	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.55	69.11	73.00	86710	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.57	69.11	73.00	86710	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.59	69.10	73.00	86710	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.60	69.10	73.00	86709	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.62	69.10	73.00	86709	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.64	69.10	73.00	86709	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.65	69.10	73.00	86709	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.67	69.10	73.00	86708	0.00	0.06	0.00	6.41
PERC	Pond 308A	BASIN308	207.69	69.10	73.00	86708	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.70	69.10	73.00	86708	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.72	69.10	73.00	86708	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.74	69.10	73.00	86708	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.75	69.10	73.00	86707	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.77	69.10	73.00	86707	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.79	69.10	73.00	86707	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.80	69.10	73.00	86707	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.82	69.10	73.00	86706	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.84	69.10	73.00	86706	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.85	69.10	73.00	86706	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.87	69.10	73.00	86706	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.89	69.10	73.00	86705	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.90	69.10	73.00	86705	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.92	69.10	73.00	86705	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.94	69.10	73.00	86705	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.95	69.10	73.00	86705	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.97	69.10	73.00	86704	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	207.99	69.10	73.00	86704	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.00	69.10	73.00	86704	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.02	69.10	73.00	86704	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.04	69.10	73.00	86703	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.05	69.10	73.00	86703	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.07	69.10	73.00	86703	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.09	69.10	73.00	86703	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.10	69.10	73.00	86703	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.12	69.10	73.00	86702	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.14	69.10	73.00	86702	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.15	69.10	73.00	86702	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.17	69.10	73.00	86702	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.19	69.10	73.00	86701	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.20	69.10	73.00	86701	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.22	69.10	73.00	86701	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.24	69.10	73.00	86701	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.25	69.10	73.00	86700	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.27	69.10	73.00	86700	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.29	69.10	73.00	86700	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.30	69.10	73.00	86700	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.32	69.10	73.00	86700	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.34	69.10	73.00	86699	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.35	69.10	73.00	86699	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.37	69.10	73.00	86699	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.39	69.10	73.00	86699	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.40	69.10	73.00	86698	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.42	69.10	73.00	86698	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.44	69.10	73.00	86698	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.45	69.10	73.00	86698	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.47	69.10	73.00	86698	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.49	69.10	73.00	86697	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.50	69.10	73.00	86697	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.52	69.10	73.00	86697	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.54	69.10	73.00	86697	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.55	69.10	73.00	86696	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.57	69.10	73.00	86696	0.00	0.06	0.00	6.42
PERC	Pond 308A	BASIN308	208.59	69.10	73.00	86696	0.00	0.06	0.00	6.42

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **242592-4** County: **SEMINOLE** Network: **308** Designed by **TFS** Date: 7/17/2017
Description: **I-4 BTU SEGMENT 3** Organization **PB AMERICAS, INC.** State Road: **400 (I-4)** Checked by: **MB** Date: 7/17/2017

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. / UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.25 / C= 0.20 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BR L S	PIPE SIZE (in.) / RISE / SPAN	SLOPE % / HGL / PHYS MIN.	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 7 / FREQ. (Yrs): 10 / MANNINGS n: 0.0120 / TAILW EL (ft): 56.44
CLI4			**S-800**			0.59	0.59	0.56										59.19	59.17	0.02		24.00	0.037	1.32		
				BW 219	67.17	0.00	0.00	0.00	10.00	0.56	7.41	0.56	0.00	**4.15**	0.01	59.53	**0.34**	56.53	56.43		1		0.149		9.46	
455+18	118.81	Lt.	S-801			0.00	0.00	0.00					0.00					54.53	54.43	0.10		24.00	0.102	3.01		
CLI4			**S-801**			0.93	1.52	0.88										59.17	59.08	0.08		30.00	0.098	2.14		
				BW 217	84.67	0.00	0.00	0.00	10.56	0.66	7.27	1.44	0.00	**10.50**	0.04	59.97	**0.80**	56.27	56.17		1		0.118		15.27	
455+18	48.39	Lt.	S-802			0.00	0.00	0.00					0.00					53.77	53.67	0.10		30.00	0.076	3.11		
CLI4			**S-802**			0.83	2.35	0.79										59.08	58.90	0.18		30.00	0.231	3.24		
				BW 217	79.10	0.00	0.00	0.00	11.22	0.41	7.12	2.23	0.00	**15.91**	0.08	60.21	**1.13**	56.17	54.80		1		1.732		58.48	
455+18	40.28	Rt.	S-803			0.00	0.00	0.00					0.00					53.67	52.30	1.37		30.00	0.076	11.91		
CLI4			**S-803**			0.70	3.05	0.66										58.90	58.20	0.70		30.00	0.304	4.15		
				BW 219	228.25	0.00	0.00	0.00	11.63	0.92	7.04	2.90	0.00	**20.39**	0.21	59.16	**0.26**	54.80	54.30		1		0.219		20.80	
455+18	122.63	Rt.	S-804			0.00	0.00	0.00					0.00					52.30	51.80	0.50		30.00	0.076	4.24		
CLI4			**S-804**			0.00	3.05	0.00										58.20	57.92	0.28		36.00	0.097	2.81		
				MH-8J	289.77	0.00	0.00	0.00	12.54	1.72	6.85	2.90	0.00	**19.84**	0.06	60.25	**2.05**	54.80	54.50		1		0.104		23.25	
457+50.00	121.86	Rt.	S-805			0.00	0.00	0.00					0.00					51.80	51.50	0.30		36.00	0.059	3.29		
CLI4			**S-805**			0.63	20.12	0.60										57.92	57.14	0.79		60.00	1.838	6.69		
				BW 218	42.92	0.00	0.20	0.00	19.46	0.00	5.77	19.16	0.00	**131.35**	0.70	61.12	**3.20**	56.50	56.20		1		0.699		235.88	
460+43.75	118.65	Rt.	OUT308			0.00	0.00	0.00					20.74					51.50	51.20	0.30		60.00	0.030	12.01		
CLI4			**S-806**			1.00	2.75	0.95										58.16	57.92	0.23		30.00	0.351	3.83		
				BW 217	66.59	0.00	0.00	0.00	10.87	0.29	7.20	2.61	0.00	**18.82**	0.11	61.65	**3.49**	58.10	54.46		1		5.466		103.89	
460+44.75	48.56	Rt.	S-805			0.00	0.00	0.00					0.00					55.60	51.96	3.64		30.00	0.076	21.16		
CLI4			**S-807**			1.11	1.75	1.05										58.53	58.16	0.37		24.00	0.358	3.87		
				BW 217	102.93	0.00	0.00	0.00	10.43	0.44	7.31	1.66	0.00	**12.15**	0.12	61.35	**2.82**	58.14	57.60		1		0.525		17.75	
460+46.18	58.36	Lt.	S-806			0.00	0.00	0.00					0.00					56.14	55.60	0.54		24.00	0.102	5.65		
CLI4			**S-808**			0.64	0.64	0.61										58.65	58.53	0.12		18.00	0.188	2.55		
				BW 218	65.40	0.00	0.00	0.00	10.00	0.43	7.41	0.61	0.00	**4.51**	0.02	61.15	**2.50**	58.02	57.92		1		0.153		4.45	
460+47.13	127.25	Lt.	S-807			0.00	0.00	0.00					0.00					56.52	56.42	0.10		18.00	0.150	2.52		
CLI4			**S-809**			0.00	13.69	0.00										58.74	57.92	0.82		54.00	0.323	6.11		
				MH-8J	252.37	0.00	0.20	0.00	18.77	0.69	5.86	13.06	0.00	**97.23**	0.29	62.50	**3.76**	58.84	56.46		1		0.943		206.88	
463+00.10	121.67	Rt.	S-805			0.00	0.00	0.00					20.74					54.34	51.96	2.38		54.00	0.035	13.01		
CLI4			**S-810**			0.59	0.59	0.56										60.80	60.68	0.11		18.00	0.157	2.35		
				BW 218	71.80	0.00	0.00	0.00	10.00	0.51	7.41	0.56	0.00	**4.15**	0.02	62.85	**2.05**	59.84	59.73		1		0.153		4.45	
466+00	137.86	Lt.	S-811			0.00	0.00	0.00					0.00					58.34	58.23	0.11		18.00	0.150	2.52		
CLI4			**S-811**			1.42	2.01	1.35										60.68	60.50	0.18		30.00	0.149	2.83		
				BW 217	123.23	0.00	0.00	0.00	10.51	0.72	7.29	1.91	0.00	**13.91**	0.06	63.68	**3.00**	60.59	60.50		1		0.073		12.01	
466+00	62.56	Lt.	S-812			0.00	0.00	0.00					0.00					58.09	58.00	0.09		30.00	0.076	2.45		
CLI4			**S-812**			1.25	3.26	1.19										60.22	59.89	0.32		30.00	0.480	4.49		
				BW 217	67.18	0.00	0.00	0.00	11.23	0.25	7.12	3.10	0.00	**22.05**	0.16	63.97	**3.75**	60.50	57.60		1		4.317		92.32	
466+00	64.67	Rt.	S-813			0.00	0.00	0.00					0.00					58.00	55.10	2.90		30.00	0.076	18.81		
CLI4			**S-813**			0.68	13.69	0.65										59.89	58.84	1.05		54.00	0.355	6.20		
				BW 219	296.45	0.00	0.20	0.00	17.98	0.80	5.96	13.06	0.00	**98.61**	0.42	62.86	**2.97**	59.60	58.84		1		0.256		107.87	
466+00	135.10	Rt.	S-809			0.00	0.00	0.00					20.74					55.10	54.34	0.76		54.00	0.035	6.78		

Units: ENGLISH **HGL method: Standard FDOT (Jump HGL to pipe crown).**

Automated Storm sewer Analysis & Design (ASAD), copyright 1992-2007, Hiteshew Engineering Systems, Inc. Ph: (352) 383-4191
Portions of ASAD were developed by Kenneth J. Leeming, P.E. at International Engineering Consultants, Inc.

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **242592-4** County: **SEMINOLE** Network: **308** Designed by **TFS** Date: 7/17/2017
Description: **I-4 BTU SEGMENT 3** Organization **PB AMERICAS, INC.** State Road: **400 (I-4)** Checked by: **MB** Date: 7/17/2017

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.25 / C= 0.20 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BR L S	PIPE SIZE (in.) / RISE / SPAN	SLOPE % / HGL / PHYS MIN.	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 7 / FREQ. (Yrs): 10 / MANNINGS n: 0.0120 / TAILW EL (ft): 56.44
CLI4			**S-814**			0.00	9.75	0.00										60.92	59.89	1.03		48.00	0.346	6.15		
				MH-8J	296.33	0.00	0.20	0.00	17.17	0.80	6.08	9.31	0.00	**77.32**	0.29	65.20	**4.28**	61.58	59.10		1		0.837		142.36	
469+00.08	135.37	Rt.	S-813			0.00	0.00	0.00					20.74					57.58	55.10	2.48		48.00	0.041	11.33		
CLI4			**S-815**			0.52	0.52	0.49										65.41	65.32	0.09		18.00	0.121	2.07		
				BW 218	77.37	0.00	0.00	0.00	10.00	0.62	7.41	0.49	0.00	**3.66**	0.01	67.80	**2.39**	64.79	64.67		1		0.155		4.48	
472+00	144.57	Lt.	S-816			0.00	0.00	0.00					0.00					63.29	63.17	0.12		18.00	0.150	2.54		
CLI4			**S-816**			1.52	2.04	1.44										65.32	65.13	0.18		30.00	0.154	2.87		
				BW 217	119.70	0.00	0.00	0.00	10.62	0.70	7.26	1.94	0.00	**14.07**	0.06	67.86	**2.54**	64.77	64.40		1		0.309		24.70	
472+00	63.70	Lt.	S-817			0.00	0.00	0.00					0.00					62.27	61.90	0.37		30.00	0.076	5.03		
CLI4			**S-817**			0.86	2.90	0.82										65.13	64.85	0.28		30.00	0.350	3.99		
				BW 217	79.17	0.00	0.00	0.00	11.32	0.33	7.10	2.76	0.00	**19.57**	0.12	68.09	**2.96**	64.40	62.48		1		2.425		69.20	
472+00	60.00	Rt.	S-818			0.00	0.00	0.00					0.00					61.90	59.98	1.92		30.00	0.076	14.10		
CLI4			**S-818**			1.13	9.75	1.07										64.85	63.50	1.35		48.00	0.459	6.24		10 yr 240 hr per proposed
				BW 219	295.25	0.00	0.20	0.00	16.38	0.79	6.19	9.31	5.60	**78.39**	0.60	67.20	**2.35**	63.98	63.50		1		0.163		62.74	ICPR
472+00	142.42	Rt.	S-814			0.00	0.00	0.00					20.74					59.98	59.50	0.48		48.00	0.041	4.99		
CLI4			**S-819**			0.00	0.00	0.00										64.85	64.85	0.00		18.00	0.003	0.21		
				DBI-D	7.99	0.20	0.20	0.05	10.00	0.07	7.41	0.05	0.00	**0.37**	0.00	65.00	**0.15**	63.39	63.10		1		3.630		21.68	
472+00	153.16	Rt.	S-818			0.00	0.00	0.00					0.00					61.89	61.60	0.29		18.00	0.150	12.27		
CLI4			**S-820**			0.00	5.72	0.00										65.67	64.85	0.81		42.00	0.277	5.15		
				MH-8J	293.30	0.00	0.00	0.00	15.44	0.95	6.34	5.43	0.00	**49.57**	0.21	69.20	**3.53**	65.62	63.48		1		0.730		93.10	
474+99.85	137.02	Rt.	S-818			0.00	0.00	0.00					15.14					62.12	59.98	2.14		42.00	0.048	9.68		
CLI4			**S-821**			0.51	0.51	0.48										74.98	74.89	0.09		18.00	0.116	2.03		
				BW 218	77.38	0.00	0.00	0.00	10.00	0.63	7.41	0.48	0.00	**3.59**	0.01	76.78	**1.80**	73.77	73.58		1		0.246		5.64	
478+00	144.58	Lt.	S-822			0.00	0.00	0.00					0.00					72.27	72.08	0.19		18.00	0.150	3.19		
CLI4			**S-822**			0.96	1.47	0.91										74.89	74.59	0.31		24.00	0.233	3.23		
				BW 217	131.31	0.00	0.00	0.00	10.63	0.68	7.26	1.40	0.00	**10.13**	0.08	76.59	**1.70**	73.54	73.41		1		0.099		7.71	
478+00	63.70	Lt.	S-823			0.00	0.00	0.00					0.00					71.54	71.41	0.13		24.00	0.102	2.45		
CLI4			**S-823**			0.97	2.44	0.92										74.59	71.14	3.45		30.00	4.954	18.20		
				BW 217	69.58	0.00	0.00	0.00	11.31	0.06	7.10	2.32	0.00	**16.47**	2.58	77.30	**2.71**	73.91	67.93		1		8.594		130.26	
478+00	70.61	Rt.	S-824			0.00	0.00	0.00					0.00					71.41	65.43	5.98		30.00	0.076	26.54		
CLI4			**S-824**			0.98	5.72	0.93										71.14	67.21	3.93		42.00	1.338	10.17		
				BW 219	293.60	0.00	0.00	0.00	14.95	0.48	6.41	5.43	0.00	**50.00**	1.61	76.18	**5.04**	71.25	68.93		1		0.790		96.89	
478+00	142.44	Rt.	S-820			0.00	0.00	0.00					15.14					67.75	65.43	2.32		42.00	0.048	10.07		
CLI4			**S-825**			0.00	2.30	0.00										71.53	71.14	0.39		30.00	0.132	2.98		
				MH-8	294.09	0.00	0.00	0.00	13.31	1.64	6.70	2.18	0.00	**14.64**	0.07	73.70	**2.17**	71.21	67.93		1		1.115		46.93	
480+99.65	137.79	Rt.	S-824			0.00	0.00	0.00					0.00					68.71	65.43	3.28		30.00	0.076	9.56		
CLI4			**S-826**			0.31	0.31	0.29										73.68	73.64	0.04		18.00	0.042	1.23		
				BW 218	87.81	0.00	0.00	0.00	10.00	0.73	7.41	0.29	0.00	**2.18**	0.00	76.78	**3.10**	73.77	73.64		1		0.148		4.38	
484+00	144.57	Lt.	S-827			0.00	0.00	0.00					0.00					72.27	72.14	0.13		18.00	0.150	2.48		
CLI4			**S-827**			0.48	0.79	0.46										73.27	73.08	0.19		18.00	0.372	3.07		
				BW 217	50.85	0.00	0.00	0.00	10.73	0.28	7.23	0.75	0.00	**5.43**	0.07	76.84	**3.57**	73.64	73.07		1		1.121		12.05	
484+00	54.26	Lt.	S-828			0.00	0.00	0.00					0.00					72.14	71.57	0.57		18.00	0.150	6.82		

Units: ENGLISH **HGL method: Standard FDOT (Jump HGL to pipe crown).**

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Portions of ASAD were developed by Kenneth J. Leeming, P.E. at International Engineering Consultants, Inc.

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **242592-4** County: **SEMINOLE** Network: **308** Designed by **TFS** Date: 7/17/2017
Description: **I-4 BTU SEGMENT 3** Organization **PB AMERICAS, INC.** State Road: **400 (I-4)** Checked by: **MB** Date: 7/17/2017

LOCATION OF UPPER END / ALIGNMENT NAME			STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 C= 0.25 C= 0.20 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE CROWN FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BR LS	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 7 FREQ. (Yrs): 10 MANNINGS n: 0.0120 TAILW EL (ft): 56.44
CLI4			**S-828**			0.38	1.17	0.36										73.08	72.96	0.12		24.00	0.178	2.54		
				BW 217	69.08	0.00	0.00	0.00	11.01	0.45	7.17	1.11	0.00	**7.97**	0.05	76.08	**3.00**	73.03	72.96		1		0.101		7.80	
484+00	1.42	Lt.	S-829			0.00	0.00	0.00					0.00					71.03	70.96	0.07		24.00	0.102	2.48		
CLI4			**S-829**			0.73	1.90	0.69										72.90	72.59	0.31		24.00	0.462	4.06		
				BW 217	67.17	0.00	0.00	0.00	11.46	0.28	7.07	1.80	0.00	**12.76**	0.13	77.30	**4.40**	72.96	72.59		1		0.551		18.19	
484+00	70.66	Rt.	S-830			0.00	0.00	0.00					0.00					70.96	70.59	0.37		24.00	0.102	5.79		
CLI4			**S-830**			0.40	2.30	0.38										72.00	71.53	0.47		30.00	0.160	3.12		
				BW 219	294.77	0.00	0.00	0.00	11.74	1.57	7.01	2.18	0.00	**15.32**	0.12	76.18	**4.18**	73.09	71.21		1		0.638		35.49	
484+00	141.08	Rt.	S-825			0.00	0.00	0.00					0.00					70.59	68.71	1.88		30.00	0.076	7.23		
CLI4			**S-O308A**			0.00	0.00	0.00										71.22	71.14	0.08		30.00	0.181	3.08		
				DBI-D	45.73	0.00	0.00	0.00	10.00	0.25	7.41	0.00	15.14	**15.14**	0.03	72.00	**0.78**	70.31	70.25		1		0.131		16.09	
478+03.98	190.76	Rt.	S-824			0.00	0.00	0.00					15.14					67.81	67.75	0.06		30.00	0.076	3.28		

Units: ENGLISH **HGL method: Standard FDOT (Jump HGL to pipe crown).**

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FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **242592-4** County: **SEMINOLE** Network: **3082** Designed by **LNW** Date: 7/ 5/2017
Description: **I-4 BTU SEGMENT 3** Organization **PB AMERICAS, INC.** State Road: **400 (I-4)** Checked by: **MB** Date: 7/ 5/2017

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. / UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.25 / C= 0.20 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BR L S	PIPE SIZE (in.) / RISE / SPAN	SLOPE % / HGL / PHYS MIN.	ACTUAL VEL. / PHYS. / VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 7 / FREQ. (Yrs): 10 / MANNINGS n: 0.0120 / TAILW EL (ft): 56.44
CLI4			**S-831**			0.00	0.00	0.00										56.53	56.44	0.09		24.00	0.160	2.19		
				MH-8	55.31	0.00	5.16	0.00	23.35	0.00	5.33	1.29	0.00	**6.88**	0.04	58.00	**1.47**	55.55	53.20		1		4.249		50.52	
469+43.00	150.13	Rt.	DUT3082			0.00	0.00	0.00					0.00					53.55	51.20	2.35		24.00	0.102	16.08		
CLI4			**S-832**			0.00	0.00	0.00										60.73	56.53	4.20		24.00	7.780	16.52		
				DBI-D	54.02	5.16	5.16	1.29	23.30	0.05	5.34	1.29	0.00	**6.89**	0.00	63.90	**3.17**	62.35	55.55		1		12.589		86.95	
470+00.00	151.50	Rt.	S-831			0.00	0.00	0.00					0.00					60.35	53.55	6.80		24.00	0.102	27.68		

Units: ENGLISH **HGL method: Standard FDOT (Jump HGL to pipe crown).**

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FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **242592-4** County: **SEMINOLE** Network: **308A** Designed by **LNW** Date: 7/18/2017
Description: **I-4 BTU SEGMENT 3** Organization **PB AMERICAS, INC.** State Road: **400 (I-4)** Checked by: **MB** Date: 7/18/2017

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. / UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.25 / C= 0.20 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BR L S	PIPE SIZE (in.) / RISE / SPAN	SLOPE % / HGL / PHYS MIN.	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 7 / FREQ. (Yrs): 10 / MANNINGS n: 0.0120 / TAILW EL (ft): 72.71
CLI4			**S-833**			0.00	11.05	0.00										73.35	73.06	0.29		48.00	0.548	4.76		
				MH-8	52.79	0.00	0.96	0.00	21.19	0.00	5.57	10.74	0.00	**59.78**	0.21	75.40	**2.05**	71.40	70.50		1		1.705		203.20	
482+39.09	151.13	Rt.	)UT308A			0.00	0.00	0.00					0.00					67.40	66.50	0.90		48.00	0.041	16.17		
CLI4			**S-834**			0.00	11.05	0.00										73.59	73.35	0.24		48.00	0.565	4.77		
				DBI-DJ	42.49	0.96	0.96	0.24	21.04	0.15	5.58	10.74	0.00	**59.96**	0.18	75.40	**1.81**	71.60	71.40		1		0.471		106.76	
482+85.56	151.15	Rt.	S-833			0.00	0.00	0.00					0.00					67.60	67.40	0.20		48.00	0.041	8.50		
CLI4			**S-835**			0.00	11.05	0.00										73.92	73.59	0.33		48.00	0.302	4.70		
				MH-8J	108.81	0.00	0.00	0.00	20.65	0.39	5.63	10.50	0.00	**59.09**	0.17	76.20	**2.28**	72.90	71.60		1		1.195		170.09	
484+00.00	148.42	Rt.	S-834			0.00	0.00	0.00					0.00					68.90	67.60	1.30		48.00	0.041	13.54		
CLI4			**S-836**			0.67	0.67	0.64										76.19	76.06	0.13		18.00	0.206	2.67		
				BW 218	65.38	0.00	0.00	0.00	10.00	0.41	7.41	0.64	0.00	**4.72**	0.02	79.07	**2.88**	76.06	75.96		1		0.153		4.45	
487+52.2	144.56	Lt.	S-837			0.00	0.00	0.00					0.00					74.56	74.46	0.10		18.00	0.150	2.52		
CLI4			**S-837**			0.68	1.35	0.65										76.06	75.89	0.17		24.00	0.243	2.98		
				BW 217	71.27	0.00	0.00	0.00	10.41	0.40	7.31	1.28	0.00	**9.38**	0.07	79.38	**3.32**	74.80	74.70		1		0.140		9.18	
487+52.5	75.69	Lt.	S-838			0.00	0.00	0.00					0.00					72.80	72.70	0.10		24.00	0.102	2.92		
CLI4			**S-838**			0.82	2.17	0.78										75.89	75.75	0.14		30.00	0.226	3.03		
				BW 217	62.49	0.00	0.00	0.00	10.81	0.34	7.22	2.06	0.00	**14.88**	0.07	78.29	**2.40**	75.20	75.10		1		0.160		17.78	
487+52.5	1.42	Lt.	S-839			0.00	0.00	0.00					0.00					72.70	72.60	0.10		30.00	0.076	3.62		
CLI4			**S-839**			1.19	3.36	1.13										75.75	75.40	0.34		30.00	0.512	4.64		
				BW 217	67.20	0.00	0.00	0.00	11.15	0.24	7.14	3.19	0.00	**22.79**	0.17	79.59	**3.84**	75.10	75.00		1		0.149		17.14	
487+52.5	64.07	Rt.	S-840			0.00	0.00	0.00					0.00					72.60	72.50	0.10		30.00	0.076	3.49		
CLI4			**S-840**			0.73	11.05	0.69										75.40	75.14	0.26		48.00	5.084	4.82		
				BW 219	5.13	0.00	0.00	0.00	19.44	0.02	5.77	10.50	0.00	**60.61**	0.25	78.46	**3.06**	75.24	75.14		1		1.948		217.18	
487+52.5	134.52	Rt.	S-841			0.00	0.00	0.00					0.00					71.24	71.14	0.10		48.00	0.041	17.28		
CLI4			**S-841**			0.00	11.05	0.00										74.73	73.92	0.81		48.00	0.236	4.82		
				MH-8J	344.23	0.00	0.00	0.00	19.46	1.19	5.77	10.50	0.00	**60.59**	0.29	78.20	**3.47**	73.50	72.90		1		0.174		64.97	
487+52.5	143.40	Rt.	S-835			0.00	0.00	0.00					0.00					69.50	68.90	0.60		48.00	0.041	5.17		
CLI4			**S-842**			0.00	6.96	0.00										75.94	75.50	0.44		42.00	0.181	4.06		
				MH-8	244.46	0.00	0.00	0.00	18.44	1.00	5.90	6.61	0.00	**39.03**	0.13	80.00	**4.06**	76.50	75.50		1		0.409		69.71	
489+99.50	124.33	Rt.	S-840			0.00	0.00	0.00					0.00					73.00	72.00	1.00		42.00	0.048	7.25		
CLI4			**S-843**			0.70	0.70	0.66										79.91	79.75	0.17		18.00	0.219	2.79		
				BW 218	75.59	0.00	0.00	0.00	10.00	0.45	7.41	0.66	0.00	**4.93**	0.02	82.37	**2.46**	79.36	79.25		1		0.146		4.34	
494+00	145.79	Lt.	S-844			0.00	0.00	0.00					0.00					77.86	77.75	0.11		18.00	0.150	2.46		
CLI4			**S-844**			0.73	1.43	0.69										79.75	79.57	0.18		24.00	0.288	3.16		
				BW 217	62.28	0.00	0.00	0.00	10.45	0.33	7.30	1.36	0.00	**9.92**	0.08	83.21	**3.46**	79.75	79.45		1		0.482		17.01	
494+00	66.70	Lt.	S-845			0.00	0.00	0.00					0.00					77.75	77.45	0.30		24.00	0.102	5.41		
CLI4			**S-845**			0.25	1.68	0.24										79.57	79.35	0.22		24.00	0.427	3.67		
				BW 217	50.76	0.00	0.00	0.00	10.78	0.23	7.22	1.60	0.00	**11.53**	0.10	82.50	**2.93**	79.45	79.35		1		0.197		10.88	
494+00	1.42	Lt.	S-846			0.00	0.00	0.00					0.00					77.45	77.35	0.10		24.00	0.102	3.46		
CLI4			**S-846**			0.36	2.04	0.34										77.43	77.30	0.13		30.00	0.190	2.83		
				BW 217	67.24	0.00	0.00	0.00	11.01	0.40	7.17	1.94	0.00	**13.90**	0.06	83.80	**6.37**	77.40	77.30		1		0.149		17.14	
494+00	52.35	Rt.	S-847			0.00	0.00	0.00					0.00					74.90	74.80	0.10		30.00	0.076	3.49		

Units: ENGLISH **HGL method: Standard FDOT (Jump HGL to pipe crown).**

Automated Storm sewer Analysis & Design (ASAD), copyright 1992-2007, Hiteshew Engineering Systems, Inc. Ph: (352) 383-4191
Portions of ASAD were developed by Kenneth J. Leeming, P.E. at International Engineering Consultants, Inc.

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **242592-4** County: **SEMINOLE** Network: **308A** Designed by **LNW** Date: 7/18/2017
Description: **I-4 BTU SEGMENT 3** Organization **PB AMERICAS, INC.** State Road: **400 (I-4)** Checked by: **MB** Date: 7/18/2017

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. / UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.25 / C= 0.20 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BR L S	PIPE SIZE (in.) / RISE / SPAN	SLOPE % / HGL / MIN.	ACTUAL VEL. / PHYS. / VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 7 / FREQ. (Yrs): 10 / MANNINGS n: 0.0120 / TAILW EL (ft): 72.71
CLI4			**S-847**			0.24	6.96	0.23										77.24	76.50	0.74		42.00	0.186	4.21			
				BW 219	397.75	0.00	0.00	0.00	16.86	1.58	6.12	6.61	0.00	**40.47**	0.19	82.68	**5.44**	76.70	76.50		1		0.050		24.44	
494+00	122.84	Rt.	S-842			0.00	0.00	0.00					0.00					73.20	73.00	0.20		42.00	0.048	2.54			
CLI4			**S-848**			0.00	4.68	0.00										77.81	77.24	0.57		36.00	0.192	3.97			
				MH-8	297.39	0.00	0.00	0.00	15.61	1.25	6.31	4.45	0.00	**28.05**	0.12	84.00	**6.19**	76.40	76.20		1		0.067		18.74	
497+00.02	114.45	Rt.	S-847			0.00	0.00	0.00					0.00					73.40	73.20	0.20		36.00	0.059	2.65			
CLI4			**S-849**			0.65	0.65	0.62										80.59	80.46	0.13		18.00	0.193	2.59			
				BW 217	67.22	0.00	0.00	0.00	10.00	0.43	7.41	0.62	0.00	**4.58**	0.02	83.57	**2.98**	80.56	80.46		1		0.149		4.39	
500+00	46.52	Rt.	S-850			0.00	0.00	0.00					0.00					79.06	78.96	0.10		18.00	0.150	2.48			
CLI4			**S-850**			0.46	4.68	0.44										78.44	77.81	0.63		36.00	0.213	4.09			
				BW 219	297.24	0.00	0.00	0.00	14.40	1.21	6.51	4.45	0.00	**28.93**	0.16	83.08	**4.64**	76.75	76.40		1		0.118		24.79	
500+00	116.99	Rt.	S-848			0.00	0.00	0.00					0.00					73.75	73.40	0.35		36.00	0.059	3.51			
CLI4			**S-851**			0.00	3.57	0.00										78.83	78.44	0.38		36.00	0.129	3.25			
				MH-8	297.21	0.00	0.00	0.00	12.88	1.52	6.78	3.39	0.00	**23.00**	0.08	82.00	**3.17**	76.95	76.75		1		0.067		18.74	
502+99.84	108.64	Rt.	S-850			0.00	0.00	0.00					0.00					73.95	73.75	0.20		36.00	0.059	2.65			
CLI4			**S-852**			1.00	1.00	0.95										79.60	79.57	0.03		30.00	0.033	1.43			
				BW 218	77.38	0.00	0.00	0.00	10.00	0.64	7.41	0.95	0.00	**7.04**	0.01	80.75	**1.15**	77.05	76.95		1		0.129		15.97	
505+85	128.23	Lt.	S-853			0.00	0.00	0.00					0.00					74.55	74.45	0.10		30.00	0.076	3.25			
CLI4			**S-853**			1.25	2.25	1.19										79.57	79.39	0.18		30.00	0.214	3.16			
				BW 217	84.30	0.00	0.00	0.00	10.64	0.44	7.25	2.14	0.00	**15.51**	0.08	81.58	**2.01**	76.95	76.85		1		0.119		15.30	
505+85	47.35	Lt.	S-854			0.00	0.00	0.00					0.00					74.45	74.35	0.10		30.00	0.076	3.12			
CLI4			**S-854**			0.65	2.90	0.62										79.39	79.28	0.11		36.00	0.164	2.79			
				BW 217	67.19	0.00	0.00	0.00	11.09	0.40	7.15	2.76	0.00	**19.71**	0.06	81.27	**1.88**	77.35	77.25		1		0.149		27.88	
505+85	40.95	Rt.	S-855			0.00	0.00	0.00					0.00					74.35	74.25	0.10		36.00	0.059	3.94			
CLI4			**S-855**			0.67	3.57	0.64										79.28	78.83	0.45		36.00	0.161	3.39			
				BW 219	282.65	0.00	0.00	0.00	11.49	1.39	7.06	3.39	0.00	**23.96**	0.14	81.11	**1.83**	77.25	76.95		1		0.106		23.54	
505+85	111.39	Rt.	S-851			0.00	0.00	0.00					0.00					74.25	73.95	0.30		36.00	0.059	3.33			

Units: ENGLISH **HGL method: Standard FDOT (Jump HGL to pipe crown).**

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Portions of ASAD were developed by Kenneth J. Leeming, P.E. at International Engineering Consultants, Inc.

Basin 308
Stormsewer Tailwater - 10-YR. / 240-HR. (No Orifice & Initial Stage set at the Weir Elevation)
Stage at Peak Inflow

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010Y240H	Pond 308	BASIN308	182.01	55.97	57.10	140931	22.25	9.57	22.80	19.65
010Y240H	Pond 308	BASIN308	182.09	56.00	57.10	141166	22.28	9.87	22.96	19.72
010Y240H	Pond 308	BASIN308	182.17	56.02	57.10	141373	22.30	10.14	23.10	19.78
010Y240H	Pond 308	BASIN308	182.25	56.05	57.10	141598	22.32	10.44	23.26	19.85
010Y240H	Pond 308	BASIN308	182.34	56.07	57.10	141817	22.35	10.73	23.42	19.93
010Y240H	Pond 308	BASIN308	182.42	56.10	57.10	142031	22.37	11.02	23.57	20.01
010Y240H	Pond 308	BASIN308	182.50	56.12	57.10	142219	22.39	11.28	23.72	20.08
010Y240H	Pond 308	BASIN308	182.59	56.14	57.10	142423	22.41	11.56	23.87	20.16
010Y240H	Pond 308	BASIN308	182.67	56.17	57.10	142622	22.43	11.83	24.03	20.24
010Y240H	Pond 308	BASIN308	182.76	56.19	57.10	142816	22.45	12.11	24.19	20.32
010Y240H	Pond 308	BASIN308	182.84	56.21	57.10	143006	22.47	12.37	24.35	20.41
010Y240H	Pond 308	BASIN308	182.92	56.23	57.10	143167	22.49	12.60	24.49	20.49
010Y240H	Pond 308	BASIN308	183.00	56.25	57.10	143348	22.51	12.86	24.65	20.58
010Y240H	Pond 308	BASIN308	183.09	56.27	57.10	143524	22.53	13.11	24.80	20.67
010Y240H	Pond 308	BASIN308	183.17	56.29	57.10	143695	22.55	13.36	24.96	20.76
010Y240H	Pond 308	BASIN308	183.25	56.31	57.10	143847	22.57	13.58	25.11	20.85
010Y240H	Pond 308	BASIN308	183.34	56.33	57.10	144025	22.59	13.84	25.28	20.95
010Y240H	Pond 308	BASIN308	183.42	56.35	57.10	144174	22.60	14.06	25.43	21.05
010Y240H	Pond 308	BASIN308	183.50	56.36	57.10	144319	22.62	14.28	25.58	21.14
010Y240H	Pond 308	BASIN308	183.58	56.38	57.10	144460	22.64	14.49	25.73	21.23
010Y240H	Pond 308	BASIN308	183.68	56.40	57.10	144621	22.66	14.73	25.91	21.35
010Y240H	Pond 308	BASIN308	183.76	56.41	57.10	144756	22.67	14.93	26.06	21.45
010Y240H	Pond 308	BASIN308	183.84	56.43	57.10	144887	22.69	15.13	26.21	21.54
010Y240H	Pond 308	BASIN308	183.92	56.44	57.10	145015	22.70	15.32	26.36	21.65
010Y240H	Pond 308	BASIN308	184.01	56.46	57.10	145165	22.65	15.55	26.54	21.77
010Y240H	Pond 308	BASIN308	184.10	56.47	57.10	145286	22.14	15.73	26.69	21.88
010Y240H	Pond 308	BASIN308	184.18	56.49	57.10	145387	20.76	15.88	26.84	21.99
010Y240H	Pond 308	BASIN308	184.26	56.49	57.10	145456	18.87	15.96	26.97	22.09
010Y240H	Pond 308	BASIN308	184.35	56.50	57.10	145492	17.12	15.99	27.10	22.20
010Y240H	Pond 308	BASIN308	184.43	56.50	57.10	145499	15.71	15.96	27.21	22.31
010Y240H	Pond 308	BASIN308	184.51	56.50	57.10	145485	14.60	15.90	27.32	22.42
010Y240H	Pond 308	BASIN308	184.60	56.49	57.10	145455	13.71	15.81	27.41	22.53
010Y240H	Pond 308	BASIN308	184.68	56.49	57.10	145412	12.97	15.71	27.51	22.64
010Y240H	Pond 308	BASIN308	184.76	56.48	57.10	145358	12.33	15.59	27.59	22.75
010Y240H	Pond 308	BASIN308	184.85	56.48	57.10	145297	11.77	15.45	27.68	22.86
010Y240H	Pond 308	BASIN308	184.93	56.47	57.10	145228	11.29	15.31	27.76	22.96

Basin 308A
Stormsewer Tailwater - 10-YR. / 240-HR. (No Orifice & Initial Stage set at the Weir Elevation)
Stage at Peak Inflow

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010Y240H	Pond 308A	BASIN308	182.01	72.67	73.00	104963	8.94	8.28	11.58	10.14
010Y240H	Pond 308A	BASIN308	182.09	72.68	73.00	104973	8.94	8.30	11.64	10.20
010Y240H	Pond 308A	BASIN308	182.17	72.68	73.00	104981	8.95	8.31	11.70	10.26
010Y240H	Pond 308A	BASIN308	182.25	72.68	73.00	104990	8.95	8.33	11.76	10.31
010Y240H	Pond 308A	BASIN308	182.34	72.68	73.00	104999	8.96	8.35	11.83	10.37
010Y240H	Pond 308A	BASIN308	182.42	72.68	73.00	105008	8.96	8.37	11.89	10.43
010Y240H	Pond 308A	BASIN308	182.50	72.68	73.00	105016	8.96	8.38	11.95	10.49
010Y240H	Pond 308A	BASIN308	182.59	72.69	73.00	105024	8.97	8.40	12.01	10.54
010Y240H	Pond 308A	BASIN308	182.67	72.69	73.00	105033	8.97	8.41	12.07	10.60
010Y240H	Pond 308A	BASIN308	182.76	72.69	73.00	105041	8.97	8.43	12.14	10.66
010Y240H	Pond 308A	BASIN308	182.84	72.69	73.00	105049	8.98	8.45	12.20	10.72
010Y240H	Pond 308A	BASIN308	182.92	72.69	73.00	105055	8.98	8.46	12.26	10.77
010Y240H	Pond 308A	BASIN308	183.00	72.69	73.00	105063	8.99	8.47	12.32	10.83
010Y240H	Pond 308A	BASIN308	183.09	72.70	73.00	105070	8.99	8.49	12.38	10.89
010Y240H	Pond 308A	BASIN308	183.17	72.70	73.00	105078	8.99	8.50	12.45	10.95
010Y240H	Pond 308A	BASIN308	183.25	72.70	73.00	105084	9.00	8.51	12.50	11.01
010Y240H	Pond 308A	BASIN308	183.34	72.70	73.00	105092	9.00	8.53	12.57	11.07
010Y240H	Pond 308A	BASIN308	183.42	72.70	73.00	105098	9.00	8.54	12.63	11.13
010Y240H	Pond 308A	BASIN308	183.50	72.70	73.00	105105	9.01	8.55	12.69	11.19
010Y240H	Pond 308A	BASIN308	183.58	72.70	73.00	105111	9.01	8.57	12.75	11.24
010Y240H	Pond 308A	BASIN308	183.68	72.71	73.00	105118	9.01	8.58	12.82	11.31
010Y240H	Pond 308A	BASIN308	183.76	72.71	73.00	105124	9.02	8.59	12.88	11.37
010Y240H	Pond 308A	BASIN308	183.84	72.71	73.00	105129	9.02	8.60	12.94	11.42
010Y240H	Pond 308A	BASIN308	183.92	72.71	73.00	105135	9.02	8.61	13.00	11.48
010Y240H	Pond 308A	BASIN308	184.01	72.71	73.00	105142	8.99	8.62	13.07	11.55
010Y240H	Pond 308A	BASIN308	184.10	72.71	73.00	105145	8.66	8.63	13.13	11.61
010Y240H	Pond 308A	BASIN308	184.18	72.71	73.00	105140	7.76	8.62	13.19	11.67
010Y240H	Pond 308A	BASIN308	184.26	72.71	73.00	105118	6.51	8.58	13.24	11.73
010Y240H	Pond 308A	BASIN308	184.35	72.70	73.00	105081	5.40	8.50	13.28	11.79
010Y240H	Pond 308A	BASIN308	184.43	72.69	73.00	105031	4.58	8.40	13.31	11.84
010Y240H	Pond 308A	BASIN308	184.51	72.68	73.00	104973	3.97	8.28	13.34	11.90
010Y240H	Pond 308A	BASIN308	184.60	72.66	73.00	104908	3.50	8.15	13.37	11.96
010Y240H	Pond 308A	BASIN308	184.68	72.65	73.00	104840	3.12	8.00	13.39	12.01
010Y240H	Pond 308A	BASIN308	184.76	72.64	73.00	104768	2.81	7.85	13.41	12.07
010Y240H	Pond 308A	BASIN308	184.85	72.62	73.00	104695	2.57	7.69	13.43	12.12
010Y240H	Pond 308A	BASIN308	184.93	72.61	73.00	104621	2.37	7.52	13.45	12.17

Existing Permits

ERP # 22124-2

Florida Department
of
Environmental Protection,
Delegated Water Management District,
and
U.S. Army Corps of Engineers

Datum = NAVD 88

JOINT APPLICATION
For
Environmental Resource Permit
and
Section 404 Dredge and Fill Permit

For

SR 400 (I-4) WIDENING

(From West of Lake Mary Blvd. to West of SR 15/600)

The Florida Department of Transportation

Seminole County, Florida
FPID: 242598-1-52-01
W.P.I. No. 5148847

Prepared by:
HDR ENGINEERING, INC.

HDR

SEPTEMBER 2001

RECEIVED
SEP 12 2001
PDS
ORLANDO
SJR WMD

Datum = NAVD 88

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Datum = NAVD 88

APPENDICES

APPENDIX A: **WETLAND AND SURFACE WATER AERIAL DELINEATIONS**

APPENDIX B: **IMPACT PLAN VIEWS AND CROSS SECTIONS**

ENCLOSURES

ENCLOSURE 1: **PERMIT APPLICATION DOCUMENTATION REPORT (DRAINAGE DESIGN)**

ENCLOSURE 2: **11" x 17" DESIGN PLANS**

Datum = NAVD 88

BASIN 3

This basin is comprised of two sub-basins which both discharge to the Heathrow property, which is considered a land-locked or closed basin. The proposed pond site will maintain this drainage pattern by discharging to the International Parkway storm sewer system. The proposed stormwater management pond has been designed to store the water quality and attenuation needs of this project.

Portions of this basin are located in the Wekiva River Hydrologic Basin Most Effective Recharge Area. This area is legally represented as that portion of the project that lies west of the centerline of Interstate-4. This criteria requires that a volume equivalent to three (3) inches times the impervious area, within SCS Type "A" soils in the Most Effective Recharge Area, be recovered within 14 days. Recovery calculations indicate that draw-down of this volume occurs within the 14-day requirement.

Water Quality Volume calculations have been performed and this volume is provided in the pond site. A control structure has been designed to retain this volume and therefore has been set above the water quality volume elevation. This volume is recovered within the 72-hour requirement.

This basin is designed with closed-basin pond criteria. From a volume standpoint, the design storm is the 25-year 96-hour storm event with the SJRWMD-96 rainfall distribution. From a stage and flow rate standpoint, the design storm is the 25-year 24-hour storm event with the SCS Type II rainfall distribution. Both of these storm events were evaluated. To meet closed basin requirements, a control structure was designed for the pond with a slot set at the elevation required to retain the volumetric difference between the pre- and post-development 25-year 96-hour hydrographs.

The Pond-3 site has been designed as a dry pond. The tailwater for this stormwater management system is set at the crown of pipe of the proposed pond outfall pipe at the tie in to the existing Heathrow storm sewer system. Coordination of the storm sewer tie-in with Pizutti, developers of Heathrow, has taken place. The ultimate outfall of this system is the Heathrow development.

The system was modeled using AdICPR 2.20. Results from the routed model are provided on the table below. Post-Development flow rates and volumes do not exceed pre-development for the design storms evaluated. Thus, no impacts to the Heathrow system are anticipated with the design of this project.

<u>Basin 3 Pre-Post Comparison</u>

	Pre	Post
Q – 25Y24H (cfs)	47.05	11.59
Volume – 25Y96H (ac-ft)	24.05	23.57
Stage – 25Y96H (ft)	N/A	54.61

Datum = NAVD 88

Basin 3 – Post Development

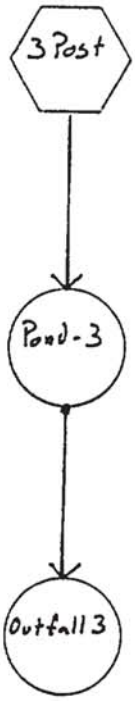
Job No. | No.

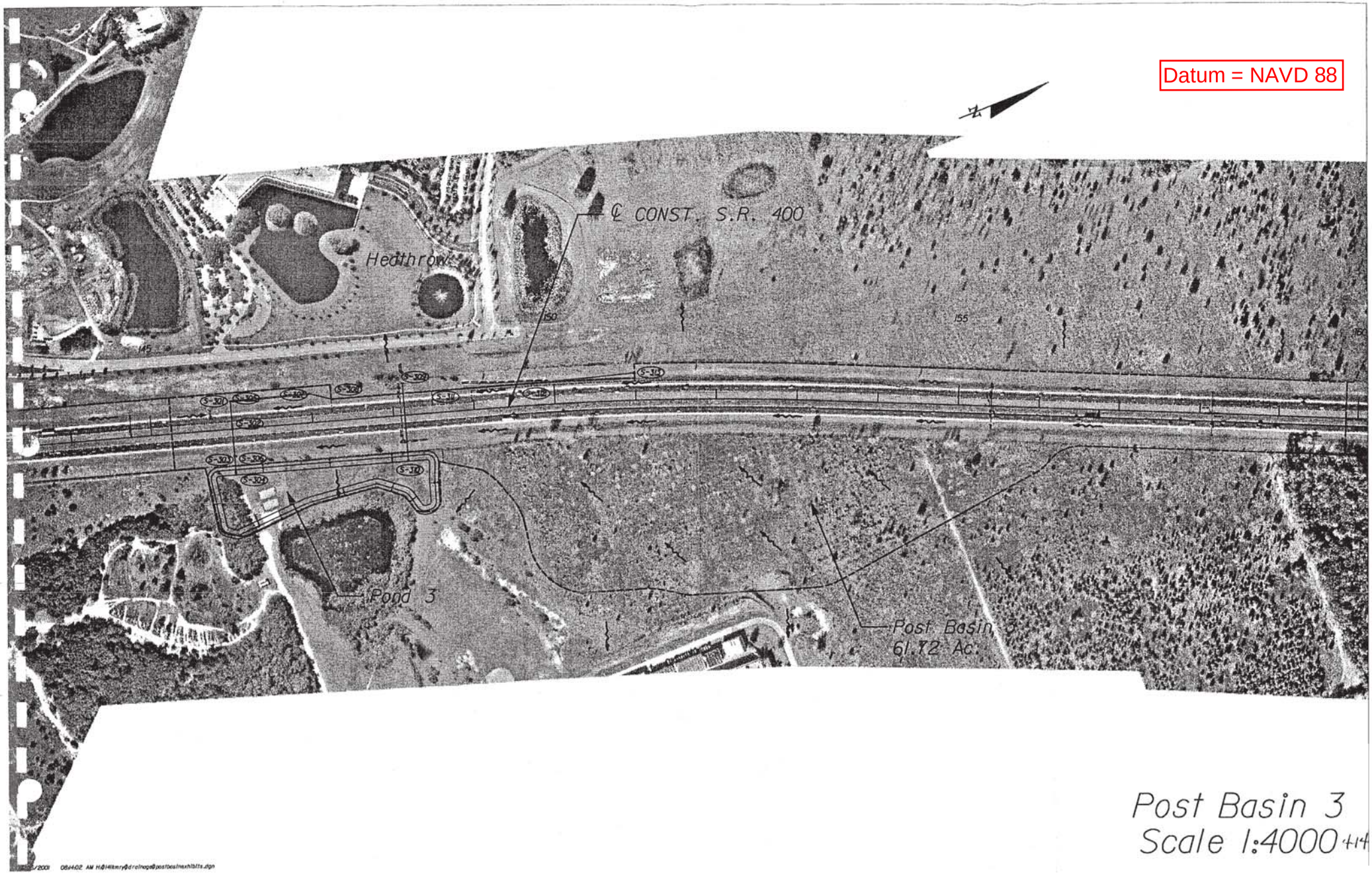
HDR Computation

Datum = NAVD 88

HDR

Project	I-4/Lake Mary	Computed GTP	Date 7/9/2001
Subject	Basin 3	Checked	Date 9-6-01
Task	Post Development Node Diagram	Sheet 1	Of 1




Datum = NAVD 88
℄ CONST. S.R. 400
Heathrow
Pond 3
Post Basin 3
61.72 Ac.
Post Basin 3
Scale 1:4000

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20) [1]
Copyright 1995, Streamline Technologies, Inc.

I-4 WIDENING: LAKE MARY BLVD TO US 17/92
BASIN 3 POST DEVELOPMENT CALCS
07/30/01; 10:2 am

Datum = NAVD 88

********** Node Maximum Conditions - 25Y24H **********

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
OUTFALL3	BASE	0.00	49.95	49.95	0.0000	0.00	17.04	11.59	0.00	0.00
POND-3	BASE	17.04	54.61	57.75	0.0139	142167.95	12.76	55.88	17.04	11.59

(16.65 m) 24 hr Post Stage

24 hr Post Q

4-15

R 96-01

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20) [1]
Copyright 1995, Streamline Technologies, Inc.

I-4 WIDENING: LAKE MARY BLVD. TO US 17-92
BASIN 3 POST DEVELOPMENT CALCS
07/30/01; 10:3 am

Datum = NAVD 88

********** Node Time Series by Node - 25Y96H **********

Time (hrs)	Stage (ft)	Surface Ar.(ac)	Inflow: Base Q (cfs)	Inflow: Onsite (cfs)	Inflow: Offsite (cfs)	Inflow: Bndry Q (cfs)	Inflow: Link Q (cfs)	Link Outflow (cfs)	Cumulative Volume In (ac.ft)	Cumulative Volume Out (ac.ft)
*** Group: BASE		Node: OUTFALL3								
199.059	49.95	0.00	0.00	0.00	0.00	0.00	0.01	0.00	23.5709	0.0000
199.309	49.95	0.00	0.00	0.00	0.00	0.00	0.01	0.00	23.5710	0.0000
199.559	49.95	0.00	0.00	0.00	0.00	0.00	0.01	0.00	23.5711	0.0000
199.809	49.95	0.00	0.00	0.00	0.00	0.00	0.01	0.00	23.5712	0.0000
200.018	49.95	0.00	0.00	0.00	0.00	0.00	0.01	0.00	23.5713	0.0000
*** Group: BASE		Node: POND-3								
199.059	53.16	2.97	0.00	0.00	0.00	0.00	0.00	0.01	28.9738	23.5709
199.309	53.16	2.97	0.00	0.00	0.00	0.00	0.00	0.01	28.9738	23.5710
199.559	53.16	2.97	0.00	0.00	0.00	0.00	0.00	0.01	28.9738	23.5711
199.809	53.16	2.97	0.00	0.00	0.00	0.00	0.00	0.01	28.9738	23.5712
200.018	53.16	2.97	0.00	0.00	0.00	0.00	0.00	0.01	28.9738	23.5713

96hr Post Volume

4-16

10-9-01

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20) [1]
Copyright 1995, Streamline Technologies, Inc.

a 9-6-01

I-4 WIDENING: LAKE MARY BLVD. TO US 17-92
BASIN 3 POST DEVELOPMENT CALCS
07/30/01; 12:3 pm

Datum = NAVD 88

********** Basin Summary - 25Y24H **********

***

Basin Name:	3POST
Group Name:	BASE
Node Name:	POND-3
Hydrograph Type:	UH
Unit Hydrograph:	UH323
Peaking Factor:	323.00
Spec Time Inc (min):	10.26
Comp Time Inc (min):	10.27
Rainfall File:	SCSII-24
Rainfall Amount (in):	8.60
Storm Duration (hr):	24.00
Status:	ONSITE
Time of Conc. (min):	77.00
Lag Time (hr):	0.00
Area (acres):	61.72
Vol of Unit Hyd (in):	1.00
Curve Number:	55.00
DCIA (%):	0.00
Time Max (hrs):	12.83
Flow Max (cfs):	56.26
Runoff Volume (in):	3.20
Runoff Volume (cf):	717134

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20) [1]
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cl 9-6-01

I-4 WIDENING: LAKE MARY BLVD. TO US 17-92
BASIN 3 POST DEVELOPMENT CALCS
07/30/01; 12:3 pm

Datum = NAVD 88

********** Basin Summary - 25Y96H **********

***

Basin Name:	3POST
Group Name:	BASE
Node Name:	POND-3
Hydrograph Type:	UH
Unit Hydrograph:	UH323
Peaking Factor:	323.00
Spec Time Inc (min):	10.26
Comp Time Inc (min):	10.27
Rainfall File:	SJRWMD96
Rainfall Amount (in):	11.80
Storm Duration (hr):	96.00
Status:	ONSITE
Time of Conc. (min):	77.00
Lag Time (hr):	0.00
Area (acres):	61.72
Vol of Unit Hyd (in):	1.00
Curve Number:	55.00
DCIA (%):	0.00
Time Max (hrs):	60.57
Flow Max (cfs):	78.35
Runoff Volume (in):	5.63
Runoff Volume (cf):	1262005

Datum = NAVD 88

```
Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20) [1]
Copyright 1995, Streamline Technologies, Inc.

I-4 WIDENING: LAKE MARY BLVD. TO US 17-92
BASIN 3 POST DEVELOPMENT CALCS
07/30/01; 12:4 pm

********** Input Report ***********************************************************
--------Class: Node-----------------------------------------------------------------
   Name: OUTFALL3   Base Flow(cfs): 0          Init Stage(ft): 49.95
  Group: BASE                                  Warn Stage(ft): 49.95
Comment: Outfalls to the Heathrow Development

Time(hrs)    Stage(ft)
0            49.95
300          49.95
--------Class: Node-----------------------------------------------------------------
   Name: POND-3     Base Flow(cfs): 0          Init Stage(ft): 51.2
  Group: BASE                                  Warn Stage(ft): 57.75
Comment:

Stage(ft)    Area(ac)
51.2         2.57
56.6         3.67
58.1         4.47
--------Class: Basin----------------------------------------------------------------
Basin: 3POST      Node: POND-3     Status: On Site    Type: SCS Unit Hydr
Group: BASE
    Unit Hydrograph: UH323                  Peak Factor: 323
      Rainfall File: SCSII-24        Storm Duration(hrs): 24
Rainfall Amount(in): 8.6
           Area(ac): 61.72       Concentration Time(min): 77
            Curve #: 55                  Time Shift(hrs): 0
            DCIA(%): 0
```

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20) [2]
Copyright 1995, Streamline Technologies, Inc.

Datum = NAVD 88

I-4 WIDENING: LAKE MARY BLVD. TO US 17-92
BASIN 3 POST DEVELOPMENT CALCS
07/30/01; 12:4 pm

********** Input Report **********
--------Class: Drop Structure----------

```
     Name: OUTFALL        From Node: POND-3        Length(ft): 310
    Group: BASE             To Node: OUTFALL3           Count: 1

    Outlet Cntrl Spec: Use dc or tw     Inlet Cntrl Spec: Use dn
    Upstream Geometry: Circular      Downstream Geometry: Circular
                            UPSTREAM              DOWNSTREAM
              Span(in): 30                    30
              Rise(in): 30                    30
            Invert(ft): 51.18                 50.52
           Manning's N: 0.012                 0.012
          Top Clip(in): 0                     0
       Bottom Clip(in): 0                     0

     Entrance Loss Coef: 1                      Flow: Both
         Exit Loss Coef: 0.5               Equation: Aver Conveyance

      Upstream FHWA Inlet Edge Description:
      Circular Concrete: Groove end projecting                  1     3
      Downstream FHWA Inlet Edge Description:
      Circular Concrete: Groove end w/ headwall                 1     2

              DBI TYPE "D" TO STRAIGHT CONCRETE ENDWALL
 *** Weir 1 of 2 for Drop Structure OUTFALL ***                [TABLE]
   Count: 1                    Bottom Clip(in): 0
    Type: Horiz                   Top Clip(in): 0
    Flow: Both             Weir Discharge Coef: 3.3
Geometry: Rectangular  Orifice Discharge Coef: 0.6

         Span(in): 37                         Invert(ft): 56.75
         Rise(in): 49                    Control Elev(ft): 56.75


 *** Weir 2 of 2 for Drop Structure OUTFALL ***                [TABLE]
   Count: 1                    Bottom Clip(in): 0
    Type: Mavis                   Top Clip(in): 0
    Flow: Both             Weir Discharge Coef: 3.3
Geometry: Rectangular  Orifice Discharge Coef: 0.6

         Span(in): 24                         Invert(ft): 53.15
         Rise(in): 43.2                  Control Elev(ft): 53.15
```

I-4 Widening (Lake Mary to US 17-92)
Seminole County

Prepared by: GTP Date: 7/29/01
Checked by: CJL Date: 9-6-01

Water Quality Treatment Volume Requirements
Basin 3: Pond 3

Datum = NAVD 88

Basin Parameters:

Basin Area (ac)	61.72	(24.979 ha)	Roadway Impervious Area (ac)	15.16	(6.136 ha)
Offsite Area (ac)	26.55	(10.745 ha)	Composite Curve Number (CN)	55	
SHGWT	48.2 ft	(14.700 m)			

SJRWMD Water Quality Volume Criteria:

Wet Detention: The greater of 1" of Runoff times the Basin Area, or the total runoff of 2.5" times the impervious Area

Dry Retention (Off-line): The greater of 0.5" of Runoff times the Basin Area, or the total runoff of 1.25" times the impervious Area

Dry Retention (On-line): The greater of 1" of Runoff times the Basin Area, or the total runoff of 1.25" times the impervious Area plus an additional 0.5" of runoff times the Basin Area

Pond Treatment Method: Dry Retention (On-line)

WQV Calculation:

1"of Runoff times Basin Area=	**5.14 ac-ft**	**Control**
1.25" times the Impervious Area plus 0.5" of Runoff times the Basin Area=	**4.15 ac-ft**	

Wekiva Basin Most Effective Recharge Area:

Volume Requirement: 3" of Runoff times the Impervious Area of Hydrologic Group "A" Soils Located West of the I-4 Centerline.

Impervious Area of Group A soils West of the I-4 Centerline: 6.37 ac (2.578 ha)

3"of Runoff times above Impervious Area= **1.59 ac-ft**

Treatment Pond Stage-Area-Storage Relationship:

	Stage		Area		Incremental Storage	Cumulative Storage
	ft	M	ac	ha	ac-ft	ac-ft
Pond Bottom	51.2	15.60	2.57	1.040	0.00	0.00
Low Berm	56.6	17.25	3.67	1.487	16.90	16.90
Maintenance Berm	58.1	17.70	4.47	1.808	6.01	22.91

Water Quality Volume Required = **5.14 ac- ft** @ **52.83 ft**
Water Quality Volume Provided= **6.15 ac- ft** @ **53.15 ft** (16.200 m) **OK**

I-4 Widening (Lake Mary to US 17-92)
Seminole County

Prepared by: GTP Date: 7/29/01
Checked by: CJL Date: 9-6-01

Recovery Calculations for Water Quality / Wekiva Basin Most Effective Recharge Area Volumes

Datum = NAVD 88

Basin 3

Boring # AB-13			Water Quality Volume =	6.15 ac-ft
Void Ratio:	0.32		Recharge Volume =	1.59 ac-ft
S.H.W.T. (ft)=	48.2	(14.700 m)	**Permeability Rate :**	
Pond Bottom (ft)=	51.2	(15.600 m)	k =	8 in/hr
Unsaturated Storage			FS =	2
Volume Available (ac-ft)=	2.43			

Proposed Pond Elevation - Infiltration Relationship

	ELEVATION		AREA		INFILTRATION	
	(English) ft	(Metric) m	(English) ac	(Metric) ha	(English) ft3/sec	(Metric) m3/sec
Pond Bottom	51.2	15.60	2.57	1.040	20.56	0.582
	56.6	17.25	3.67	1.487	29.40	0.832
	58.1	17.70	4.47	1.808	35.74	1.011

Darcy Equation:

Q = KIA/FS

Where Q = Flow Rate (cfs)
or Required Volume (cf) Divided by Time (sec)
K = Permeability Rate (in/hr)
I = Hydraulic Gradient (Use a gradient of 1)
A = Area of Pond Bottom (ac)

I. Recovery of Water Quality Treatment Volume

$$\text{Time} = \frac{\text{Water Quality Volume}}{\text{KIA}} = \boxed{\textbf{3.6 hrs} \quad << 72 \text{ hours} \quad \textbf{OK}}$$

Designed as Dry Retention Pond. Water Quality Treatment Volume Must be Recovered within 72 Hours.

II. Recovery of Wekiva Basin Most Effective Recharge Area Volume

$$\text{Time} = \frac{\text{Most Effective Recharge Volume x Safety Factor}}{\text{KIA}}$$

$$= \boxed{\textbf{0.1 days} \quad << 14 \text{ days} \quad \textbf{OK}}$$

Wekiva Basin Most Effective Recharge Area Volume Must be Recovered within 14 Days

Prepared by: GTP Date: 7/30/01
Checked by: CJL Date: 9-6-01

SKIMMER BLADE DESIGN
Pond 3 Outfall

Datum = NAVD 88

SKIMMER BLADE WILL BE ATTACHED AROUND THE PERIMETER OF THE CONTROL BOX WITH THE BOTTOM OF THE BLADE LOCATED 6" BELOW THE CONTROL ELEVATION **53.1 ft** (16.200 m) AND THE TOP OF BLADE LOCATED 6" ABOVE THE DESIGN HIGH WATER ELEVATION (25 YR 96 HR) **54.60 ft** (16.642 m)

TOP OF SKIMMER ELEV	**55.1 ft**	(16.794 m)
BOTTOM OF SKIMMER EL	**52.6 ft**	(16.048 m)

1) CALCULATION OF SEPARATION BETWEEN SKIMMER & CONTROL BOX (D1)

ASSUMING FLOW UNDER BLADE ACTS AS FLOW THROUGH AN ORIFICE:

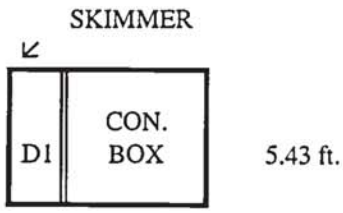
$A_{req'c} = Q / (C \times \text{sqrt} (2 \times g \times H))$

Where:

C = 0.6 (Orifice coefficient)
$A_{req'c}$ = Area between skimmer and control box
$D1_{req'c}$ = distance between skimmer and control box
= $A_{req'c} / (Lc + 2Wc)$
Lc,Wc = control structure inside length & width
g = 32.2 ft/sec*sec
H = 0.2 ft (allowable head difference)
P = inside perimeter of control box = Lc (Weir - one side only)
Q = design peak flow rate

INPUT INFORMATION	
Q (cfs)	11.6
Lc (feet)	4.1
Wc (feet)	3.1

OUTPUT INFORMATION	
P (feet)	5.4
$A_{req'c}$ (sq. ft)	5.4
$D1_{req'c}$ (ft)	1.0
D1 (min) (ft)	1.0
D1 (design) (ft)	**1.0**



Type "D" DBI

PLAN VIEW

4-23

2) CALCULATION OF SEPARATION BETWEEN SKIMMER & POND BOTTOM (D2)

Datum = NAVD 88

ASSUMING FLOW UNDER BLADE ACTS AS FLOW THROUGH AN ORIFICE:

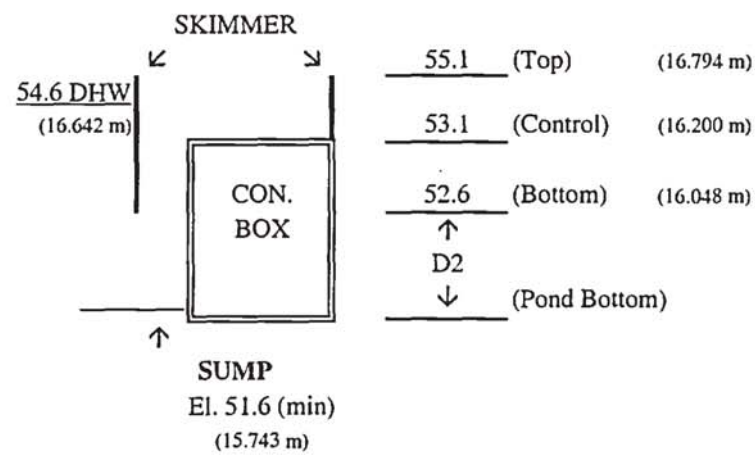
$A_{req'c} = Q / (C \times sqrt (2 \times g \times H))$

Where:

$C = 0.6$ (Orifice coefficient)
$A_{req'c}$ = Area between skimmer and pond bottom
$D2_{req'c}$ = distance between skimmer and pond bottom
$= A_{req'c} / (Lc + 2Wc)$
Lc,Wc = control structure inside length & width
$g = 32.2$ ft/sec*sec
H = 0.2 ft (allowable head difference)
Q = design peak flow rate

INPUT INFORMATION	
Q (cfs)	11.6
Lc (feet)	4.1
Wc (feet)	3.1

OUTPUT INFORMATION	
P (feet)	7.4
$A_{req'c}$ (sq. ft)	5.4
$D2_{req'd}$ (ft)	0.7
D2 (min) (ft)	1.0
D2 (design) (ft)	**1.0**



CROSS SECTION VIEW

WORKSHEET 2: Runoff curve number and runoff

Datum = NAVD 88

Project: I-4 Widening (Lake Mary to US 17-92) By: GTP Date: 7/28/2001
Location: SEMINOLE COUNTY Checked: ✓ Date: 9-6-01

Circle One: Present (Developed) **Basin 3**

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix A)	Cover description (cover type, treatment, and hydrologic condition, percent impervious area ratio)	CN ¹ Table 2-2	Fig 2-3	Fig 2-4	Area ☑ acres ☐ mi² ☐ %		
Soil # 2 Group C	Fair Grassland	79			0.38	30.06	(0.154 ha)
Soil # 6, 7, 8, 31 Group A	Fair Grassland	49			15.46	757.71	(6.258 ha)
Soil # 10 Group B/D	Fair Grassland Assume Group C	79			4.17	329.12	(1.686 ha)
Impervious Roadway		98			15.16	1485.88	(6.136 ha)
Soil # 6, 7, 31 Group A	Meadow (Offsite)	30			26.55	796.53	(10.745 ha)
1	Use only one CN source per line.			Totals =	61.72	3399.31	24.979 ha

=

CN (weighted) = total product/total area = 3399.31 / 61.72 = 55.07 Use CN = 55

4-25

WORKSHEET 3: Time of Concentration (Tc) or Travel Time (Tt)

Datum = NAVD 88

Project:	I-4 Widening (Lake Mary to US 17-92)	By:	GTP	Date:	7/28/2001
Location:	SEMINOLE COUNTY	Checked:	[illegible]	Date:	7-6-01

Circle One: Present **Developed** **Basin 3**

Station 146+00 to Station 159+75 (median)

Circle One: **T_c** T_t through subarea

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to T_c only)

	Segment ID				
1. Surface Description (table 3-1.)	-				
2. Manning's roughness coeff., n (table3-1.)	-				
3. Flow length, L (total L <= 300 ft.) ft	-				
4. Two-yr 24-hr rainfall, P_2 in	-				
5. Land slope, s ft/ft	-				
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$ Compute T...hr	Assume	0.170	+		= 0.17

Shallow concentrated flow

	Segment ID				
7. Surface Description (paved or unpaved)	AB				
8. Flow length, L ft	unpaved				
9. Watercourse slope, s ft/ft	4512				
10. Average velocity, V (figure 3-1) ft/s	0.0048				
11. $T_t = \frac{L}{3600\ V}$ Compute T_t .....hr	1.12				
		1.120	+		= 1.12

Channel flow

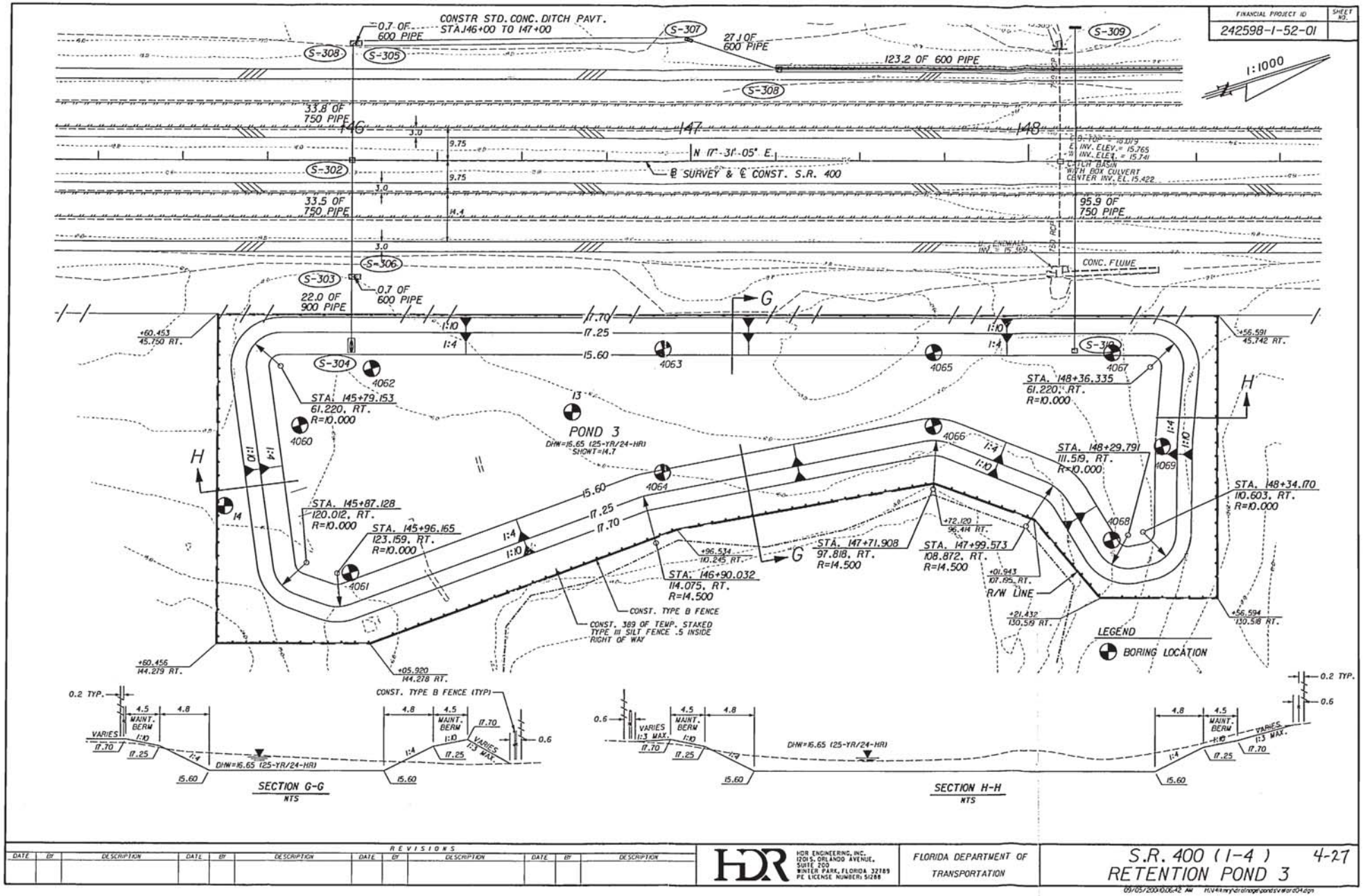
	Segment ID				
12. Cross sectional flow area, a ft^2					
13. Wetted perimeter, P_w ft/ft					
14. Hydraulic radius, $r = a/P_w$ Compute r ft					
15. Channel slope, s ft/ft					
16. Manning's roughness coeff., n					
17. $V = 1.49\ r^{2/3}\ s^{1/2}/n$ Compute V ft/s					
18. Flow length, L ft					
19. $T_t = L / 3600\ V$ Compute T hr					
			+		= 0.00
20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr					1.29

77 minutes

4-26

(210-VI-TR-55, Second Ed., June 1996)

Datum = NAVD 88



REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HDR ENGINEERING, INC.
12015 ORLANDO AVENUE,
SUITE 200
WINTER PARK, FLORIDA 32789
PE LICENSE NUMBER: 5288

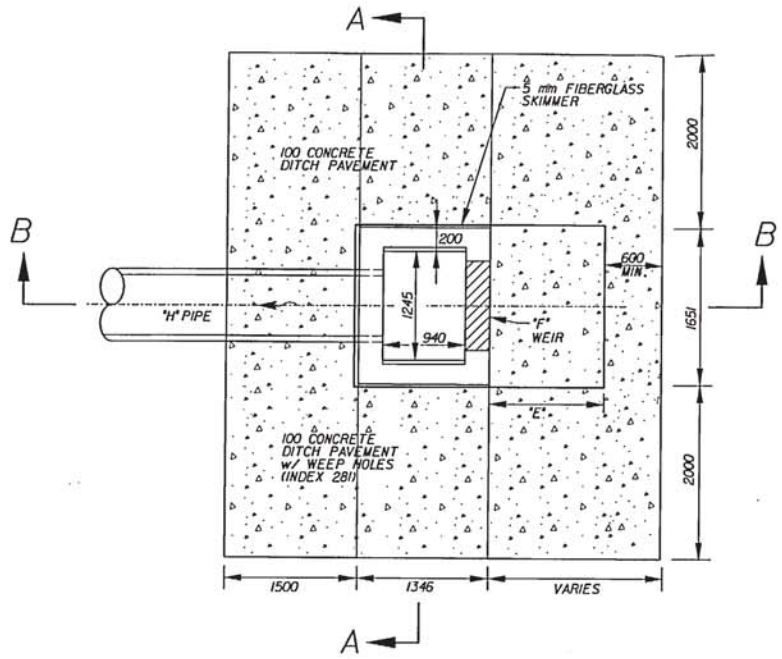
FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 400 (I-4) 4-27
RETENTION POND 3

05/05/2004 10:06:42 AM H:\04kimy\drainage\ponds\sr4ord04.dgn

Datum = NAVD 88

FINANCIAL PROJECT ID	SHEET NO.
242598-1-52-01	

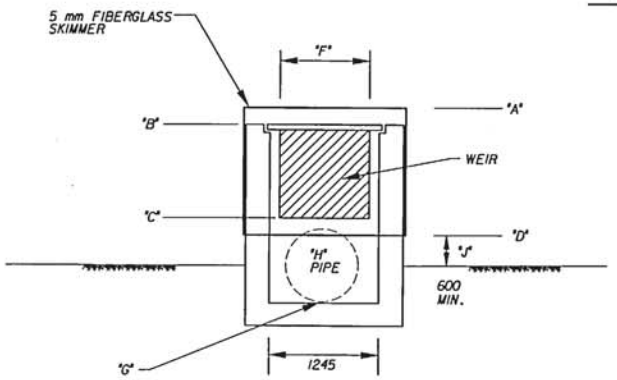


PLAN VIEW

N.T.S.

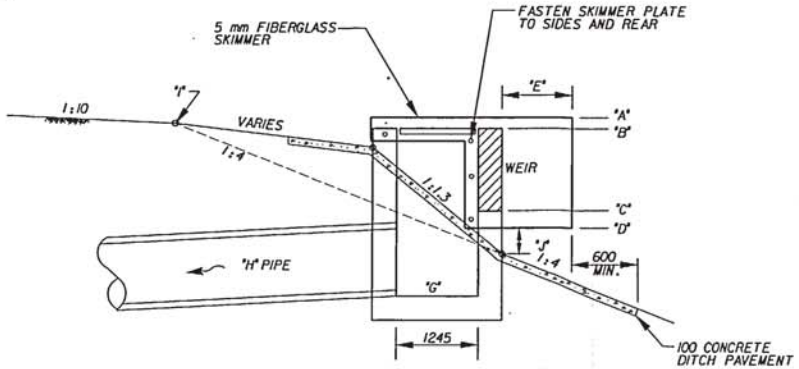
	POND	2	3
	STRUCTURE	S-205	S-310
	STATION	142+00.000	148+14.000
	OFFSET	56.80	56.40
	SIDE	RT.	RT.
	INLET TYPE	D	D
"A"	SKIMMER TOP EL.	16.96	16.79
"B"	GRATE EL.	17.35	17.30
"C"	WEIR SLOT EL.	16.10	16.20
"D"	SKIMMER BOTTOM EL.	15.94	16.04
"E"	SKIMMER OFFSET (mm)	300	300
"F"	WEIR WIDTH (mm)	305	610
"G"	PIPE F.L.	14.50	15.60
"H"	PIPE SIZE	600	750
"I"	LOW BERM EL.	17.20	17.25
"J"	SKIMMER CLEARANCE	300	300

NOTE: THE 100mm CONCRETE DITCH PAVEMENT SHALL INCLUDE 150x150, No.10 WELDED WIRE FABRIC. PAYMENT OF THE WELDED WIRE FABRIC AND 5 mm FIBERGLASS SKIMMER SHALL BE INCLUDED IN THE UNIT PRICE OF DITCH BOTTOM INLET.



SECTION A-A

N.T.S.



SECTION B-B

N.T.S.

4-28

REVISIONS												
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HDR ENGINEERING, INC. 12015 ORLANDO AVENUE, SUITE 200 WINTER PARK, FLORIDA 32789 PE LICENSE NUMBER: 5288

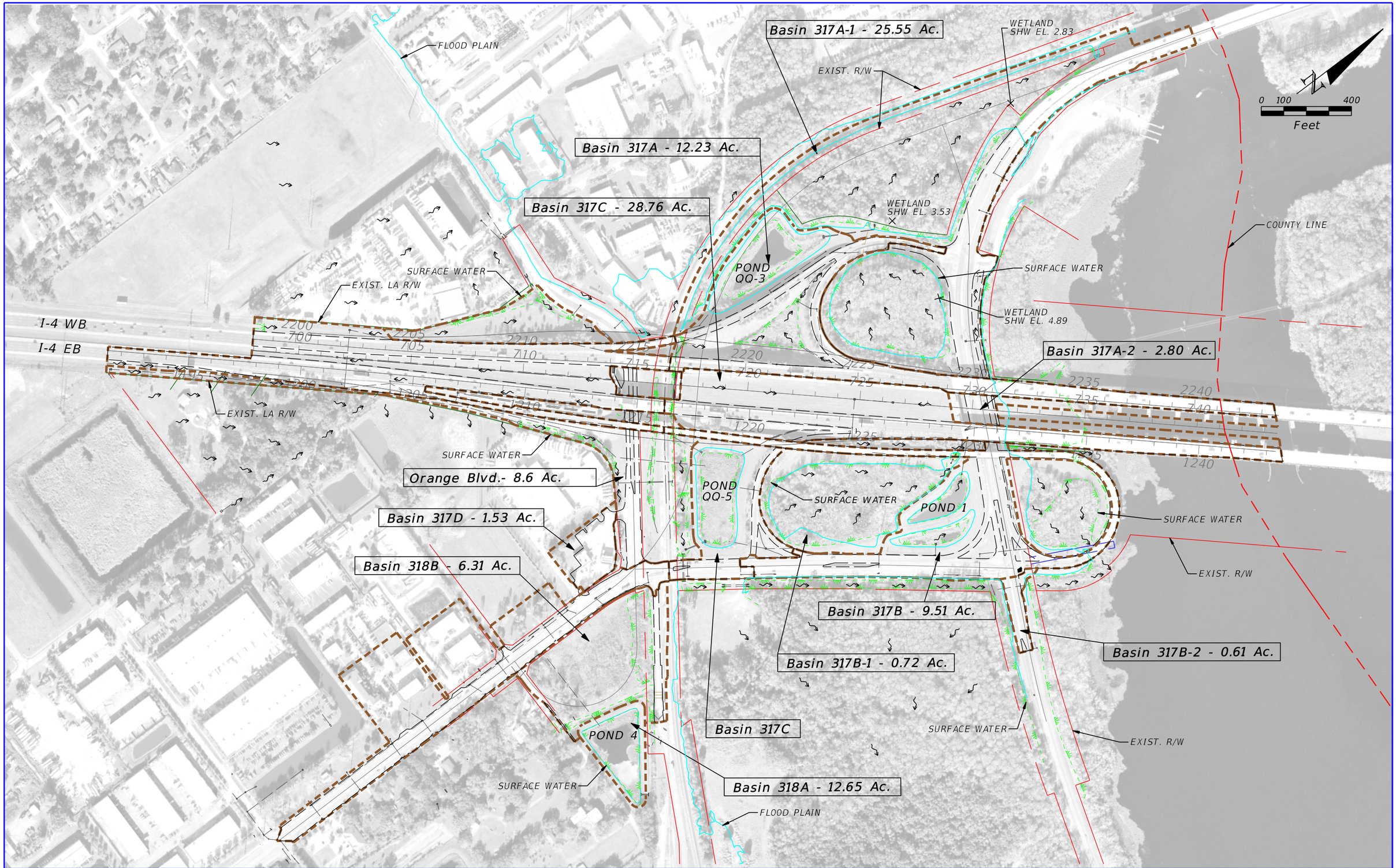
FLORIDA DEPARTMENT OF TRANSPORTATION

CONTROL STRUCTURE DETAILS
S.R. 400 (I-4)

09/05/2006 09:05:55 AM h:\14\inwy\drainage\pond\pondrtr03.dgn

Basin 317D

- Basin Maps
- Basin and Pond Calculations
- Basin and Pond Routing (ICPR)
  - Pre-Development
  - Post-Development



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

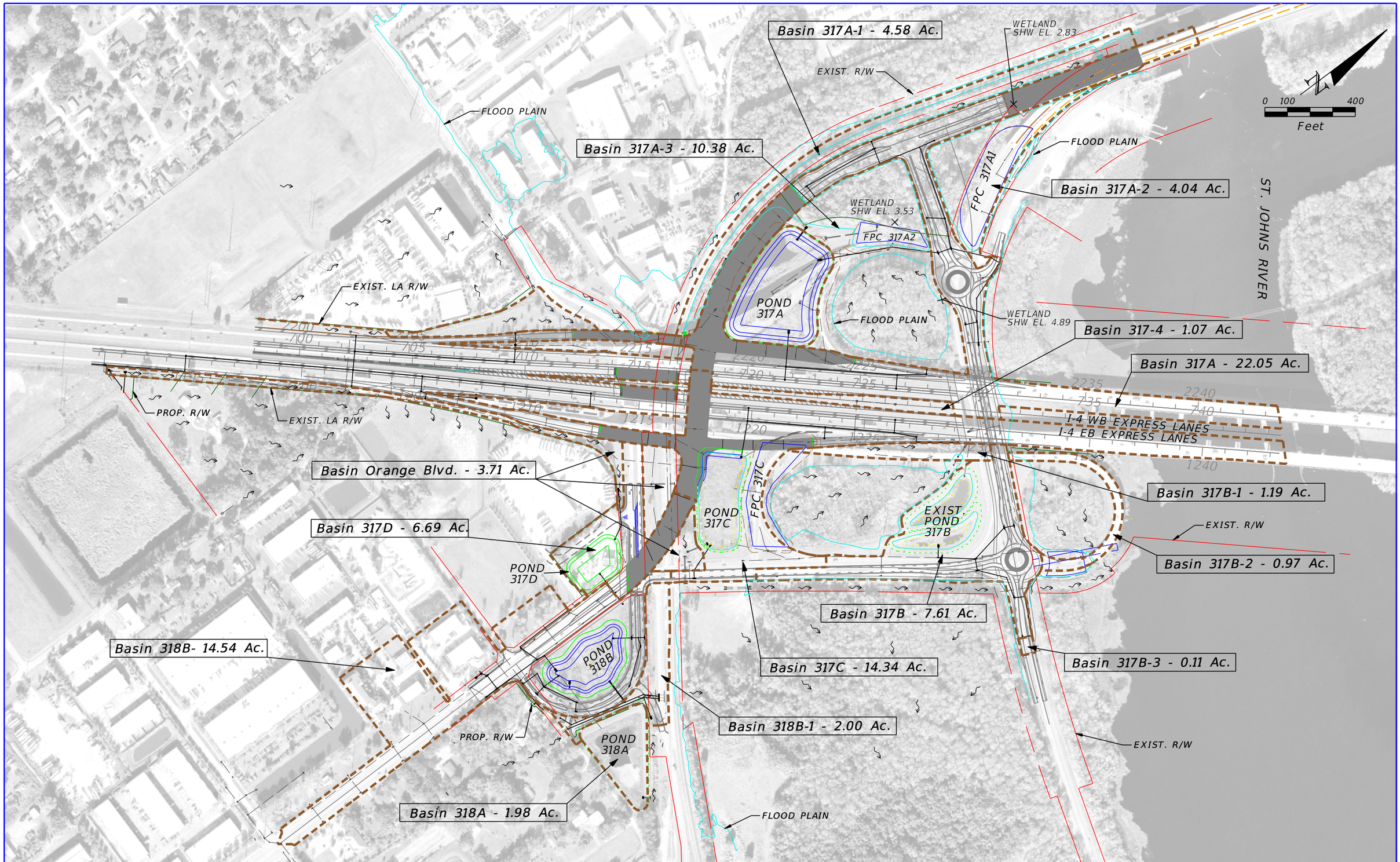
MICHAEL J. QUARTETTI, P.E.
P.E. LICENSE NUMBER 45976
WSP USA Inc.
2202 N WEST SHORE BLVD., SUITE 300
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	242592-4-52-01

DRAINAGE MAP
EXISTING BASIN 317 & 318

SHEET NO.
1



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. QUARTETTI, P.E.
P.E. LICENSE NUMBER 45976
WSP USA Inc.
2202 N WEST SHORE BLVD., SUITE 300
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	242592-4-52-01

DRAINAGE MAP
PROPOSED BASIN 317 & 318

SHEET NO. 2

PROJECT TITLE:	I-4 BtU Segment 3	**DATE:**	May 4, 2017
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	JLL
BASIN DESIGNATION:	Basin 317D	**CHECKED BY:**	MB

I ***PRE DEVELOPMENT***
RUNOFF CURVE NUMBER (CN) CALCULATIONS
Basin 317D

COMPUTED BASIN AREA (Ac) 1.53

DETERMINE BASIN RUNOFF CURVE-NUMBER-CN

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA	PRODUCT
Impervious				
Roadway, Shoulder and sidewalk		98	1.06	103.88
Sub-total for Impervious Land Uses			1.06	103.88
Pervious				
Open Space, Fair Condition	A/D	80	0.47	37.60
Sub-total for Pervious Land Uses			0.47	37.60
		TOTAL	1.53	141.48

COMPOSITE CN 92.5

II ***POST DEVELOPMENT***
RUNOFF CURVE NUMBER (CN) CALCULATIONS
Basin 317D

COMPUTED BASIN AREA (Ac) 6.69

DETERMINE BASIN RUNOFF CURVE-NUMBER-CN

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA	PRODUCT
Impervious				
Roadway, Shoulder and sidewalk		98	2.38	233.24
Future Orange Blvd. Typical (bike & sidewalk)		98	0.16	15.68
Sub-total for Impervious Land Uses			2.54	248.92
Pervious				
Open Space, Fair Condition	A/D	80	3.65	292.00
Pond Site - Wet Detention		100	0.50	50.00
Sub-total for Pervious Land Uses			4.15	342.00
		TOTAL	6.69	590.92

COMPOSITE CN 88.3

PROJECT TITLE:	I-4 BtU Segment 3	**DATE:**	May 4, 2017
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	JLL
BASIN DESIGNATION:	Basin 317D	**CHECKED BY:**	MB

III ***GEOTECHNICAL INFORMATION***

Estimated Seasonal High Water Table (SHWT)	
	Estimated SHWT (Ft)
Boring P317D-1 and P317D-2	8.50
Estimated SHWT	8.50

REQUIRED TREATMENT VOLUME CALCULATION (WET DETENTION)	AC-FT
1.0 inch of Runoff over the Basin Area	0.56
Total Runoff from 2.5 inches over the Impervious Area	0.53

<< CONTROLS>>

V ***PROVIDED TREATMENT & ATTENUATION VOLUME CALCULATIONS***

REQUIRED ATTENUTATION CACULATION

PRE-DEVELOPED CONDITION		**POST-DEVELOPED CONDITION**	
AREA (AC):	1.53	AREA (AC):	6.69
CN:	92.5	CN:	88.3
IMPERVIOUS AREA (AC):	1.06	IMPERVIOUS AREA (AC):	2.54
PERVIOUS AREA (AC):	0.47	PERVIOUS AREA (AC):	4.15
		NEW IMPERVIOUS AREA (AC):	1.48

POND STAGE, AREA & STORAGE

DESCRIPTION	**STAGE (FT)**	**AREA (AC)**	**CUMMULATIVE STORAGE (AC-FT)**
Pond Bottom	3.50	0.26	0.00
SHWT / Orifice Elevation	8.50	0.50	1.90
Weir Crest Elevation	9.55	0.56	2.46
Top of Bank Elevation (Inside)	12.00	0.70	4.00
Top of Berm	12.01	0.95	4.01

PROVIDED TREATMENT VOLUME	AC-FT
Treatment Volume Provided = Volume between Seasonal High and Weir Crest Elevation	0.56

PROJECT TITLE:	I-4 BtU Segment 3	**DATE:**	May 4, 2017
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	JLL
BASIN DESIGNATION:	Basin 317D	**CHECKED BY:**	MB

VI ***PERMANENT POOL VOLUME CALCULATIONS FOR POND 300***

$$PPV = \frac{DA * C * R * RT}{WS * CF}$$

PPV: Permanent Pool Volume (ac-ft)
DA: Drainage Area to the Pond (ac)(excluding water body)
C: Drainage Area Runoff Coefficient
R: Wet Season Rainfall Depth (in)(Figure 29-1)
RT: Residence Time (days)
WS: Length of Wet Season (June - October = 153 days)(days)
CF: Conversion Factor (12 in/ft)

Special Basin: N/A
Additional 50% (7-days) for OFW or Class I or Class II or Class III

DA =	6.69	acres	
C =	0.50		
R =	31	inches	(See Figure 26-1, SJRWMD)
WS =	153	days	
RT =	14	days	
Non-Littoral Zone Option RT =	7	days	(50% of Residence Time & Non-Littoral Zone Option)
Special Water RT =	0	days	
Design RT =	21	days	

Required Permanent Pool Volume:

PPV =	1.189	ac-ft
	51,807	cu.ft

Permanent Pool Volume Check:

Proposed Orifice Invert Elevation:	8.50	feet
Actual Pond Volume:	1.900	ac-ft
	82,764	cu.feet
Required Permanent Pool Volume:	1.189	ac-ft
Actual Permanent Pool Volume:	1.900	ac-ft
Additional Permanent Pool Volume:	0.711	ac-ft

Exceeds Requirement

<u>POND DEPTH</u>

Pond Depth Criteria:
Maximum Pond Depth Shall Not Exceed 12 feet

Control Elevation:	8.50	feet
Pond Bottom Elevation:	3.50	feet
Pond Depth:	5.00	feet

Does Not Exceed Maximum Pond Depth Requirement

PROJECT TITLE:	I-4 BtU Segment 3	**DATE:**	May 4, 2017
PROJECT NUMBER:	242592-4-52-01	**MADE BY:**	JLL
BASIN DESIGNATION:	Basin 317D	**CHECKED BY:**	MB

PERMANENT POOL MEAN DEDPTH

Mean Depth Equation:

$$\text{Mean Depth} = \frac{\text{Pond Volume at Control Elevation}}{\text{Pond Area at Control Elevation}}$$

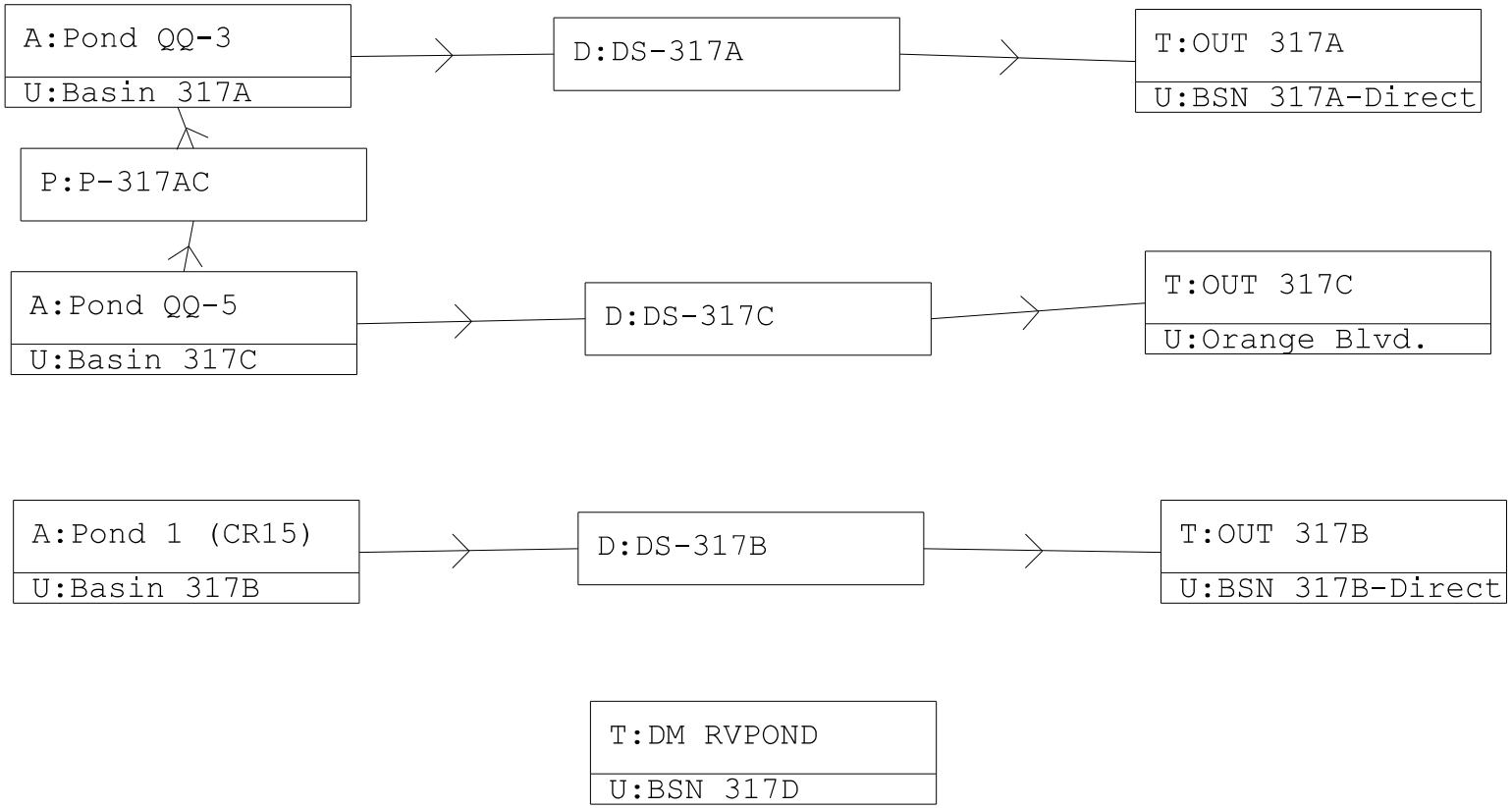
Mean Depth Criteria:

Permanent Pool Depth Shall Vary Between 2 and 8 feet

Control Elevation:	8.50	feet
Volume at Control Elevation:	1.90	ac-ft
Area at Control Elevation:	0.50	ac
Mean Depth:	3.80	feet

Meets Mean Depth Requirement

Pre Development



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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	242592-4-52-01

ICPR LINK NODE DIAGRAM EXISTING BASIN 317

SHEET NO.
N/A

BASIN 317
Existing Conditions Output

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
DM RV Pond	BASIN317	SJRWMD	12.00	10.50	12.00	0.00	0	12.03	8.39	0.00	0.00
OUT 317A	BASIN317	SJRWMD	48.00	7.50	8.50	-0.00	0	12.17	128.27	0.00	0.00
OUT 317B	BASIN317	SJRWMD	12.00	6.00	8.50	0.00	0	12.33	9.74	0.00	0.00
OUT 317C	BASIN317	SJRWMD	48.00	7.50	8.50	-0.00	0	12.73	47.81	0.00	0.00
Pond 1(CR15)	BASIN317	SJRWMD	13.20	7.78	8.50	0.00	64902	12.10	41.41	13.36	7.92
Pond QQ-3	BASIN317	SJRWMD	48.10	7.49	8.50	0.00	97420	12.13	64.04	12.96	33.88
Pond QQ-5	BASIN317	SJRWMD	12.89	8.14	8.50	-0.00	84300	12.23	94.75	12.88	51.89

Existing Discharge Rates:
Basin 317A
Q-SJRWMD (25-yr/24-hr)= 128.27 cfs

Basin 317B
Q-SJRWMD (25-yr/24-hr)= 9.74 cfs

Basin 317C
Q-SJRWMD (25-yr/24-hr)= 47.81 cfs

```
==========================================================================================
==== Basins ==============================================================================
==========================================================================================

         Name: Basin 317A              Node: Pond QQ-3              Status: Onsite
        Group: BASIN317                Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
    Rainfall Amount(in): 8.600                 Time of Conc(min): 19.10
             Area(ac): 12.230                    Time Shift(hrs): 0.00
          Curve Number: 90.70              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Tc = 19.1 min. per ERP Permit No. 64105-7

------------------------------------------------------------------------------------------
         Name: Basin 317B              Node: Pond 1(CR15)           Status: Onsite
        Group: BASIN317                Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
    Rainfall Amount(in): 8.600                 Time of Conc(min): 19.31
             Area(ac): 9.510                     Time Shift(hrs): 0.00
          Curve Number: 92.80              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Tc = 19.31 min. per ERP Permit No. 64105-7

------------------------------------------------------------------------------------------
         Name: Basin 317C              Node: Pond QQ-5              Status: Onsite
        Group: BASIN317                Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
    Rainfall Amount(in): 8.600                 Time of Conc(min): 32.93
             Area(ac): 28.760                    Time Shift(hrs): 0.00
          Curve Number: 89.70              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Tc = 32.93 min. per ERP Permit No. 64105-7

------------------------------------------------------------------------------------------
         Name: Basin 317D              Node: DM RV Pond             Status: Onsite
        Group: BASIN317                Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
    Rainfall Amount(in): 8.600                 Time of Conc(min): 10.00
             Area(ac): 1.530                     Time Shift(hrs): 0.00
          Curve Number: 92.50              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



------------------------------------------------------------------------------------------
         Name: BSN 317A-Direct         Node: OUT 317A               Status: Onsite
        Group: BASIN317                Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
    Rainfall Amount(in): 8.600                 Time of Conc(min): 20.00
             Area(ac): 28.350                    Time Shift(hrs): 0.00
          Curve Number: 83.10              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



------------------------------------------------------------------------------------------
         Name: BSN 317B-Direct         Node: OUT 317B               Status: Onsite
        Group: BASIN317                Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
    Rainfall Amount(in): 8.600                 Time of Conc(min): 15.00
             Area(ac): 1.330                     Time Shift(hrs): 0.00
          Curve Number: 81.40              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Wetland and infield areas

------------------------------------------------------------------------------------------
         Name: Orange Blvd.            Node: OUT 317C               Status: Onsite
```

```
        Group: BASIN317                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
    Rainfall Amount(in): 8.600                 Time of Conc(min): 40.00
             Area(ac): 8.600                    Time Shift(hrs): 0.00
          Curve Number: 82.40              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

      Name: DM RV Pond          Base Flow(cfs): 0.000          Init Stage(ft): 9.000
     Group: BASIN317                                           Warn Stage(ft): 12.000
      Type: Time/Stage

DM = Donnie Myer

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00           9.000
          12.00          10.500
          24.00           9.000

------------------------------------------------------------------------------------------
      Name: OUT 317A            Base Flow(cfs): 0.000          Init Stage(ft): 4.000
     Group: BASIN317                                           Warn Stage(ft): 8.500
      Type: Time/Stage

Tailwater conditions obtained from the Lake Monroe
Basin Engineering Study dated December 1999.
Elevations converted to NAVD (NGVD  - 1.04)

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00           4.000
          12.00           5.000
          24.00           5.500
          48.00           7.500
          72.00           4.500
         336.00           4.000

------------------------------------------------------------------------------------------
      Name: OUT 317B            Base Flow(cfs): 0.000          Init Stage(ft): 4.000
     Group: BASIN317                                           Warn Stage(ft): 8.500
      Type: Time/Stage

Tailwater conditions obtained from the Lake Monroe
Basin Engineering Study dated December 1999.
Elevations converted to NAVD (NGVD  - 1.04)

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00           4.000
          12.00           6.000
          24.00           4.000
         336.00           4.000

------------------------------------------------------------------------------------------
      Name: OUT 317C            Base Flow(cfs): 0.000          Init Stage(ft): 4.000
     Group: BASIN317                                           Warn Stage(ft): 8.500
      Type: Time/Stage

Tailwater conditions obtained from the Lake Monroe
Basin Engineering Study dated December 1999.
Elevations converted to NAVD (NGVD  - 1.04)

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00           4.000
          12.00           5.000
          24.00           5.500
          48.00           7.500
          72.00           4.500
         336.00           4.000

------------------------------------------------------------------------------------------
      Name: Pond 1(CR15)        Base Flow(cfs): 0.000          Init Stage(ft): 4.500
     Group: BASIN317                                           Warn Stage(ft): 8.500
      Type: Stage/Area
```

Permitted Weir El. = 5.85
Permitted Grate El. = 8.5
Permit No. 64105-7

Stage(ft)	Area(ac)
-3.750	0.1600
4.500	0.8500
5.850	1.1100
6.000	1.1400
8.490	1.6300
8.500	1.6300
9.500	2.2700

Name: Pond QQ-3 Base Flow(cfs): 0.000 Init Stage(ft): 4.500
Group: BASIN317 Warn Stage(ft): 8.500
Type: Stage/Area

Stage(ft)	Area(ac)
4.500	1.6300
8.500	2.4400
9.500	3.1700

Name: Pond QQ-5 Base Flow(cfs): 0.000 Init Stage(ft): 4.500
Group: BASIN317 Warn Stage(ft): 8.500
Type: Stage/Area

Stage(ft)	Area(ac)
4.500	1.3390
8.500	1.9930
9.500	2.6020

Pipes

Name: P-317AC From Node: Pond QQ-5 Length(ft): 940.00
Group: BASIN317 To Node: Pond QQ-3 Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.50
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	36.00	36.00
Rise(in):	36.00	36.00
Invert(ft):	2.980	2.770
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Drop Structures

Name: DS-317A From Node: Pond QQ-3 Length(ft): 225.00
Group: BASIN317 To Node: OUT 317A Count: 2
Friction Equation: Automatic
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 1.000
Exit Loss Coef: 0.500
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Solution Incs: 10

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	2.950	2.820
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

```
Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 3 for Drop Structure DS-317A ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 151.00                      Invert(ft): 6.000
               Rise(in): 999.00                 Control Elev(ft): 6.000

*** Weir 2 of 3 for Drop Structure DS-317A ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 79.00                       Invert(ft): 6.750
               Rise(in): 36.00                  Control Elev(ft): 6.750

*** Weir 3 of 3 for Drop Structure DS-317A ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Circular              Orifice Disc Coef: 0.600

               Span(in): 5.00                        Invert(ft): 4.500
               Rise(in): 5.00                   Control Elev(ft): 4.500


-------------------------------------------------------------------------------------------------
         Name: DS-317B             From Node: Pond 1(CR15)       Length(ft): 163.00
        Group: BASIN317              To Node: OUT 317B                Count: 1

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Automatic
     Span(in): 18.00          18.00                                  Flow: Both
     Rise(in): 18.00          18.00                    Entrance Loss Coef: 1.000
   Invert(ft): 4.000          3.500                        Exit Loss Coef: 0.500
  Manning's N: 0.012000       0.012000                   Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                       Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 3 for Drop Structure DS-317B ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 15.00                       Invert(ft): 5.850
               Rise(in): 31.38                  Control Elev(ft): 5.850

*** Weir 2 of 3 for Drop Structure DS-317B ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 79.00                       Invert(ft): 8.500
               Rise(in): 36.00                  Control Elev(ft): 8.500

*** Weir 3 of 3 for Drop Structure DS-317B ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Circular              Orifice Disc Coef: 0.600
```

```
              Span(in): 4.50                        Invert(ft): 4.500
              Rise(in): 4.50                   Control Elev(ft): 4.500


-----------------------------------------------------------------------------------------------
         Name: DS-317C             From Node: Pond QQ-5          Length(ft): 95.00
        Group: BASIN317              To Node: OUT 317C                Count: 2

              UPSTREAM       DOWNSTREAM                  Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Automatic
     Span(in): 24.00          24.00                                 Flow: Both
     Rise(in): 24.00          24.00                     Entrance Loss Coef: 1.000
   Invert(ft): 3.920          3.820                         Exit Loss Coef: 0.500
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall



*** Weir 1 of 3 for Drop Structure DS-317C ***
                                                                                    TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 36.00                       Invert(ft): 6.000
              Rise(in): 999.00                 Control Elev(ft): 6.000

*** Weir 2 of 3 for Drop Structure DS-317C ***
                                                                                    TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Horizontal                Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 79.00                       Invert(ft): 8.000
              Rise(in): 36.00                  Control Elev(ft): 8.000

*** Weir 3 of 3 for Drop Structure DS-317C ***
                                                                                    TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Circular              Orifice Disc Coef: 0.600

              Span(in): 5.00                        Invert(ft): 4.500
              Rise(in): 5.00                   Control Elev(ft): 4.500


===========================================================================================
==== Hydrology Simulations ================================================================
===========================================================================================

         Name: SJRWMD
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\I-4 Existing\SJRWMD.R32

      Override Defaults: No

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.00
14.000          1.00
96.000          5.00

===========================================================================================
==== Routing Simulations ==================================================================
===========================================================================================

         Name: SJRWMD              Hydrology Sim: SJRWMD
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\I-4 Existing\SJRWMD.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

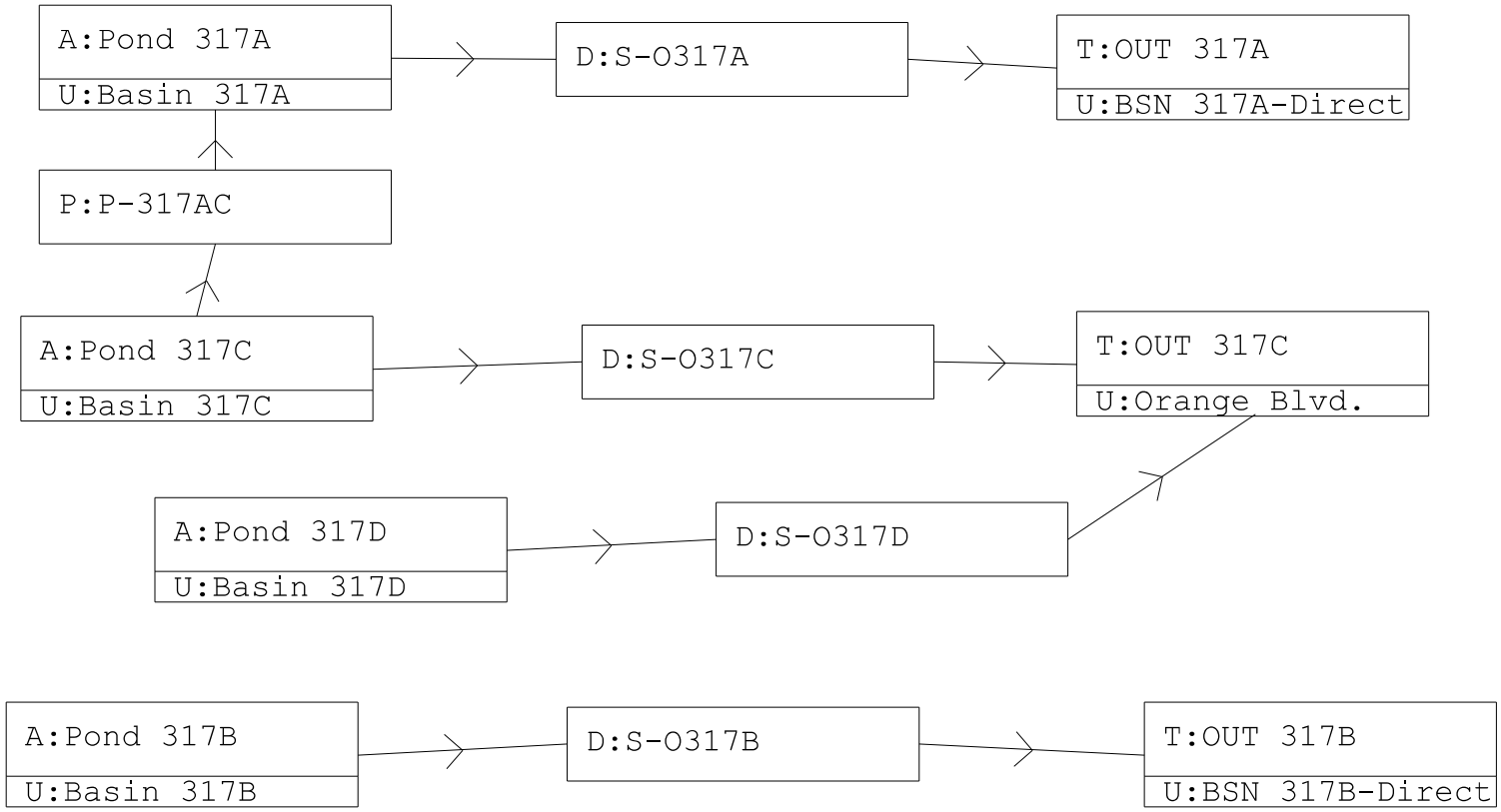
        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
```

```
        Start Time(hrs): 0.000                    End Time(hrs): 120.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.000
14.000          1.000
96.000          5.000
120.000         5.000

Group           Run
--------------- -----
BASIN317        Yes
```

Post Development



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
400	SEMINOLE	242592-4-52-01

ICPR LINK NODE DIAGRAM PROPOSED BASIN 317

SHEET NO.
N/A

BASIN 317
Proposed Condition Output

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
OUT 317A	BASIN317	SJRWMD	48.00	7.50	8.50	-0.0021	0	12.82	27.46	0.00	0.00
OUT 317B	BASIN317	SJRWMD	12.00	6.00	8.50	0.0028	0	12.10	10.52	0.00	0.00
OUT 317C	BASIN317	SJRWMD	48.00	7.50	8.50	-0.0021	0	12.38	46.78	0.00	0.00
Pond 317A	BASIN317	SJRWMD	12.82	7.57	8.50	0.0047	132152	12.08	112.61	12.82	27.46
Pond 317B	BASIN317	SJRWMD	13.14	7.12	8.50	0.0040	59167	12.07	35.06	13.29	5.04
Pond 317C	BASIN317	SJRWMD	12.81	7.57	8.50	0.0050	72036	12.07	69.36	12.45	22.04
Pond 317D	BASIN317	SJRWMD	12.33	11.00	11.00	0.0050	28006	12.05	34.38	12.33	20.53

Proposed Discharge Rates:
Basin 317A
Q-SJRWMD (25-yr/24-hr)= 27.46 cfs

Basin 317B
Q-SJRWMD (25-yr/24-hr)= 10.52 cfs

Basin 317 C
Q-SJRWMD (25-yr/24-hr)= 46.78 cfs

```
==========================================================================================
==== Basins ==============================================================================
==========================================================================================

         Name: Basin 317A               Node: Pond 317A              Status: Onsite
        Group: BASIN317                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
    Rainfall Amount(in): 8.600                 Time of Conc(min): 16.00
            Area(ac): 22.050                     Time Shift(hrs): 0.00
         Curve Number: 96.00              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00



-------------------------------------------------------------------------------------------
         Name: Basin 317B               Node: Pond 317B              Status: Onsite
        Group: BASIN317                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
    Rainfall Amount(in): 8.400                 Time of Conc(min): 15.00
            Area(ac): 7.610                      Time Shift(hrs): 0.00
         Curve Number: 90.10              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00



-------------------------------------------------------------------------------------------
         Name: Basin 317C               Node: Pond 317C              Status: Onsite
        Group: BASIN317                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
    Rainfall Amount(in): 8.600                 Time of Conc(min): 15.00
            Area(ac): 14.340                     Time Shift(hrs): 0.00
         Curve Number: 92.80              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00



-------------------------------------------------------------------------------------------
         Name: Basin 317D               Node: Pond 317D              Status: Onsite
        Group: BASIN317                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
    Rainfall Amount(in): 8.600                 Time of Conc(min): 11.00
            Area(ac): 6.690                      Time Shift(hrs): 0.00
         Curve Number: 88.30              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00



-------------------------------------------------------------------------------------------
         Name: BSN 317A-Direct          Node: OUT 317A               Status: Onsite
        Group: BASIN317                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 96.00
    Rainfall Amount(in): 8.600                 Time of Conc(min): 15.00
            Area(ac): 20.070                     Time Shift(hrs): 0.00
         Curve Number: 80.00              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00

Represents Basins 317A-1 thru Basin 317A-4 (See Drainage Map)

-------------------------------------------------------------------------------------------
         Name: BSN 317B-Direct          Node: OUT 317B               Status: Onsite
        Group: BASIN317                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
    Rainfall Amount(in): 8.600                 Time of Conc(min): 15.00
            Area(ac): 2.270                      Time Shift(hrs): 0.00
         Curve Number: 80.20              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00

Wetland and infield areas

-------------------------------------------------------------------------------------------
         Name: Orange Blvd.             Node: OUT 317C               Status: Onsite
        Group: BASIN317                 Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File: Flmod               Storm Duration(hrs): 24.00
```

```
    Rainfall Amount(in): 8.600                 Time of Conc(min): 20.00
               Area(ac): 3.710                   Time Shift(hrs): 0.00
           Curve Number: 80.00              Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00



==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

      Name: OUT 317A            Base Flow(cfs): 0.000          Init Stage(ft): 4.000
     Group: BASIN317                                           Warn Stage(ft): 8.500
      Type: Time/Stage

Tailwater conditions obtained from the Lake Monroe
Basin Engineering Study dated December 1999.
Elevations converted to NAVD (NGVD  - 1.04)

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00           4.000
          12.00           5.000
          24.00           5.500
          48.00           7.500
          72.00           4.500
         336.00           4.000

------------------------------------------------------------------------------------------
      Name: OUT 317B            Base Flow(cfs): 0.000          Init Stage(ft): 4.000
     Group: BASIN317                                           Warn Stage(ft): 8.500
      Type: Time/Stage

Tailwater conditions obtained from the Lake Monroe
Basin Engineering Study dated December 1999.
Elevations converted to NAVD (NGVD  - 1.04)

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00           4.000
          12.00           6.000
          24.00           4.000
         336.00           4.000

------------------------------------------------------------------------------------------
      Name: OUT 317C            Base Flow(cfs): 0.000          Init Stage(ft): 4.000
     Group: BASIN317                                           Warn Stage(ft): 8.500
      Type: Time/Stage

Tailwater conditions obtained from the Lake Monroe
Basin Engineering Study dated December 1999.
Elevations converted to NAVD (NGVD  - 1.04)

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00           4.000
          12.00           5.000
          24.00           5.500
          48.00           7.500
          72.00           4.500
         336.00           4.000

------------------------------------------------------------------------------------------
      Name: Pond 317A           Base Flow(cfs): 0.000          Init Stage(ft): 4.500
     Group: BASIN317                                           Warn Stage(ft): 8.500
      Type: Stage/Area

SHWT = 4.5'

      Stage(ft)        Area(ac)
--------------- ---------------
          -3.500          1.7700
           4.500          2.7100
           5.030          2.8600
           6.000          2.9100
           7.000          2.9100
           8.500          3.2300
           9.500          3.9400

------------------------------------------------------------------------------------------
      Name: Pond 317B           Base Flow(cfs): 0.000          Init Stage(ft): 4.500
     Group: BASIN317                                           Warn Stage(ft): 8.500
      Type: Stage/Area


      Stage(ft)        Area(ac)
--------------- ---------------
```

```
         -3.500          0.1900
          4.500          0.8500
          5.850          1.1100
          6.980          1.3300
          7.180          1.3700
          8.500          1.6300
          9.500          2.2700

-------------------------------------------------------------------------------------------
      Name: Pond 317C           Base Flow(cfs): 0.000          Init Stage(ft): 4.500
     Group: BASIN317                                           Warn Stage(ft): 8.500
      Type: Stage/Area


      Stage(ft)        Area(ac)
--------------- ---------------
         -3.500          0.1900
          4.500          1.2700
          5.850          1.4400
          6.000          1.4600
          7.000          1.5800
          8.500          1.7700
          9.500          2.0800

-------------------------------------------------------------------------------------------
      Name: Pond 317D           Base Flow(cfs): 0.000          Init Stage(ft): 8.500
     Group: BASIN317                                           Warn Stage(ft): 11.000
      Type: Stage/Area


      Stage(ft)        Area(ac)
--------------- ---------------
          3.500          0.2600
          8.500          0.5000
         12.000          0.7000
         12.010          0.9500

===========================================================================================
==== Pipes ================================================================================
===========================================================================================

         Name: P-317AC             From Node: Pond 317C          Length(ft): 940.00
        Group: BASIN317              To Node: Pond 317A               Count: 1
                                                             Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                   Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                  Flow: Both
     Span(in): 36.00          36.00                      Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                          Exit Loss Coef: 1.00
   Invert(ft): 2.980          2.770                          Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                          Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


===========================================================================================
==== Drop Structures ======================================================================
===========================================================================================

         Name: S-0317D             From Node: Pond 317D          Length(ft): 275.00
        Group: BASIN317              To Node: OUT 317C               Count: 1

               UPSTREAM       DOWNSTREAM                    Friction Equation: Automatic
     Geometry: Circular       Circular                     Solution Algorithm: Most Restrictive
     Span(in): 24.00          24.00                                     Flow: Both
     Rise(in): 24.00          24.00                        Entrance Loss Coef: 0.500
   Invert(ft): 5.500          5.100                            Exit Loss Coef: 1.000
  Manning's N: 0.012000       0.012000                       Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                            Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                              Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall
```

```
*** Weir 1 of 3 for Drop Structure S-0317D ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 49.00                       Invert(ft): 9.550
               Rise(in): 17.40                 Control Elev(ft): 9.550

*** Weir 2 of 3 for Drop Structure S-0317D ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 36.00                       Invert(ft): 11.420
               Rise(in): 79.00                 Control Elev(ft): 11.420

*** Weir 3 of 3 for Drop Structure S-0317D ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Circular              Orifice Disc Coef: 0.600

               Span(in): 2.30                        Invert(ft): 8.500
               Rise(in): 2.30                  Control Elev(ft): 8.500


-------------------------------------------------------------------------------------------------
         Name: S-O317A            From Node: Pond 317A         Length(ft): 305.00
        Group: BASIN317             To Node: OUT 317A               Count: 2

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Automatic
     Span(in): 24.00          24.00                                  Flow: Both
     Rise(in): 24.00          24.00                     Entrance Loss Coef: 1.000
   Invert(ft): 4.100          4.000                         Exit Loss Coef: 0.500
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Per the permit plans:  Weir Length = (6'+3')*2 = 216

*** Weir 1 of 3 for Drop Structure S-O317A ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 144.00                      Invert(ft): 6.000
               Rise(in): 18.96                 Control Elev(ft): 6.000

*** Weir 2 of 3 for Drop Structure S-O317A ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 79.00                       Invert(ft): 8.000
               Rise(in): 36.00                 Control Elev(ft): 8.000

*** Weir 3 of 3 for Drop Structure S-O317A ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
               Geometry: Circular              Orifice Disc Coef: 0.600

               Span(in): 5.90                        Invert(ft): 4.500
               Rise(in): 5.90                  Control Elev(ft): 4.500


-------------------------------------------------------------------------------------------------
         Name: S-O317B            From Node: Pond 317B         Length(ft): 163.00
        Group: BASIN317             To Node: OUT 317B               Count: 1
```

```
               UPSTREAM       DOWNSTREAM                  Friction Equation: Automatic
     Geometry: Circular       Circular                   Solution Algorithm: Automatic
     Span(in): 18.00          18.00                                  Flow: Both
     Rise(in): 18.00          18.00                      Entrance Loss Coef: 1.000
   Invert(ft): 4.000          3.500                          Exit Loss Coef: 0.500
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                           Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Outfall not modified from existing condition.

*** Weir 1 of 2 for Drop Structure S-O317B ***
                                                                                    TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Vertical: Mavis            Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 15.00                        Invert(ft): 5.850
               Rise(in): 31.38                  Control Elev(ft): 5.850

*** Weir 2 of 2 for Drop Structure S-O317B ***
                                                                                    TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Horizontal                 Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 79.00                        Invert(ft): 8.500
               Rise(in): 36.00                  Control Elev(ft): 8.500


-----------------------------------------------------------------------------------------------------
         Name: S-O317C             From Node: Pond 317C          Length(ft): 95.00
        Group: BASIN317              To Node: OUT 317C                Count: 2

               UPSTREAM       DOWNSTREAM                  Friction Equation: Automatic
     Geometry: Circular       Circular                   Solution Algorithm: Automatic
     Span(in): 24.00          24.00                                  Flow: Both
     Rise(in): 24.00          24.00                      Entrance Loss Coef: 1.000
   Invert(ft): 3.920          3.820                          Exit Loss Coef: 0.500
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                           Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Outfall not modified from existing condition.

*** Weir 1 of 3 for Drop Structure S-O317C ***
                                                                                    TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Horizontal                 Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 79.00                        Invert(ft): 8.000
               Rise(in): 36.00                  Control Elev(ft): 8.000

*** Weir 2 of 3 for Drop Structure S-O317C ***
                                                                                    TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Vertical: Mavis            Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 35.00                        Invert(ft): 6.000
               Rise(in): 18.96                  Control Elev(ft): 6.000

*** Weir 3 of 3 for Drop Structure S-O317C ***
                                                                                    TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Vertical: Mavis            Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Circular              Orifice Disc Coef: 0.600

               Span(in): 4.00                         Invert(ft): 4.500
               Rise(in): 4.00                   Control Elev(ft): 4.500
```

```
==========================================================================================
==== Hydrology Simulations ===============================================================
==========================================================================================

         Name: 003Y008H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\003Y08H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 8.00
          Rainfall File: Fdot-8
    Rainfall Amount(in): 4.16

Time(hrs)       Print Inc(min)
--------------- ---------------
16.000          1.00

-----------------------------------------------------------------------------------------------
         Name: 010Y001H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y001H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 1.00
          Rainfall File: Fdot-1
    Rainfall Amount(in): 3.25

Time(hrs)       Print Inc(min)
--------------- ---------------
2.000           2.50

-----------------------------------------------------------------------------------------------
         Name: 010Y008H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y008H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 8.00
          Rainfall File: Fdot-8
    Rainfall Amount(in): 5.60

Time(hrs)       Print Inc(min)
--------------- ---------------
16.000          1.00

-----------------------------------------------------------------------------------------------
         Name: 010Y024H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y024H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Fdot-24
    Rainfall Amount(in): 7.68

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.00
14.000          1.00
30.000          5.00

-----------------------------------------------------------------------------------------------
         Name: 010Y072H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y072H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Fdot-72
    Rainfall Amount(in): 9.00

Time(hrs)       Print Inc(min)
--------------- ---------------
73.000          5.00

-----------------------------------------------------------------------------------------------
         Name: 010Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y240H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 13.50

Time(hrs)       Print Inc(min)
--------------- ---------------
240.000         5.00

-----------------------------------------------------------------------------------------------
         Name: 050Y008H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\050Y008H.R32
```

```
      Override Defaults: Yes
    Storm Duration(hrs): 8.00
          Rainfall File: Fdot-8
    Rainfall Amount(in): 7.52

Time(hrs)       Print Inc(min)
--------------- ---------------
16.000          1.00

-----------------------------------------------------------------------------------------------
         Name: 050Y024H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\050Y024H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Fdot-24
    Rainfall Amount(in): 10.08

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.00
14.000          1.00
30.000          5.00
75.000          10.00

-----------------------------------------------------------------------------------------------
         Name: 050Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\050Y240H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 17.50

Time(hrs)       Print Inc(min)
--------------- ---------------
250.000         5.00

-----------------------------------------------------------------------------------------------
         Name: 100Y072H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\100Y072H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Fdot-72
    Rainfall Amount(in): 13.80

Time(hrs)       Print Inc(min)
--------------- ---------------
73.000          5.00

-----------------------------------------------------------------------------------------------
         Name: 100Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\100Y240H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 18.50

Time(hrs)       Print Inc(min)
--------------- ---------------
240.000         5.00

-----------------------------------------------------------------------------------------------
         Name: SJRWMD
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\SJRWMD.R32

      Override Defaults: No

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.00
14.000          1.00
96.000          5.00

=============================================================================================
==== Routing Simulations ====================================================================
=============================================================================================

         Name: 003Y008H            Hydrology Sim: 003Y008H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\003Y008H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
```

```
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 16.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:



Time(hrs)       Print Inc(min)
--------------- ---------------
16.000          5.000

Group           Run
--------------- -----
BASIN317        Yes


-------------------------------------------------------------------------------------------------
         Name: 010Y001H            Hydrology Sim: 010Y001H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y001H.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 2.00
     Min Calc Time(sec): 0.0100               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:



Time(hrs)       Print Inc(min)
--------------- ---------------
2.000           2.500

Group           Run
--------------- -----
BASIN299        Yes


-------------------------------------------------------------------------------------------------
         Name: 010Y008H            Hydrology Sim: 010Y008H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y008H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 16.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:



Time(hrs)       Print Inc(min)
--------------- ---------------
16.000          5.000

Group           Run
--------------- -----
BASIN317        Yes


-------------------------------------------------------------------------------------------------
         Name: 010Y024H            Hydrology Sim: 010Y024H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y024H.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:



Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.000
14.000          1.000
30.000          5.000

Group           Run
--------------- -----
BASIN316        Yes
```

```
-----------------------------------------------------------------------------------------------
         Name: 010Y072H            Hydrology Sim: 010Y072H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y072H.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 73.00
     Min Calc Time(sec): 0.0100               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
73.000          5.000

Group           Run
--------------- -----
BASIN299        Yes


-----------------------------------------------------------------------------------------------
         Name: 010Y240H            Hydrology Sim: 010Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\010Y240H.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 240.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
240.000         5.000

Group           Run
--------------- -----
BASIN300&301    Yes
BASIN302        Yes
BASIN303        Yes
BASIN304        Yes
BASIN307        Yes
BASIN308        Yes
BASIN309        Yes
BASIN310        Yes
BASIN311        Yes


-----------------------------------------------------------------------------------------------
         Name: 050Y008H            Hydrology Sim: 050Y008H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\050Y008H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 16.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
16.000          5.000

Group           Run
--------------- -----
BASIN317        Yes


-----------------------------------------------------------------------------------------------
         Name: 050Y024H            Hydrology Sim: 050Y024H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\050Y024H.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No
```

```
        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 75.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.000
14.000          1.000
30.000          5.000
75.000          10.000

Group           Run
--------------- -----
BASIN316        Yes


-----------------------------------------------------------------------------------------------------
         Name: 050Y240H            Hydrology Sim: 050Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\050Y240H.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 240.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
240.000         5.000

Group           Run
--------------- -----
BASIN300&301    Yes
BASIN302        Yes
BASIN303        Yes
BASIN304        Yes
BASIN307        Yes
BASIN308        Yes
BASIN309        Yes
BASIN310        Yes
BASIN311        Yes


-----------------------------------------------------------------------------------------------------
         Name: 100Y072H            Hydrology Sim: 100Y072H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\100Y072H.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 73.00
     Min Calc Time(sec): 0.0100               Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
73.000          5.000

Group           Run
--------------- -----
BASIN299        Yes


-----------------------------------------------------------------------------------------------------
         Name: 100Y240H            Hydrology Sim: 100Y240H
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\100Y240H.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 336.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
```

```
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
336.000         15.000

Group           Run
--------------- -----
BASIN300&301    Yes
BASIN302        Yes
BASIN303        Yes
BASIN304        Yes
BASIN307        Yes
BASIN308        Yes
BASIN309        Yes
BASIN310        Yes
BASIN311        Yes


-------------------------------------------------------------------------------------------------
         Name: PERC                Hydrology Sim:
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\PERC.I32

      Execute: No          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 720.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
720.000         1.000

Group           Run
--------------- -----
BASIN299        Yes
BASIN300&301    Yes
BASIN302        Yes
BASIN303        Yes
BASIN304        Yes
BASIN305&306    Yes
BASIN307        Yes
BASIN308        Yes
BASIN309        Yes
BASIN310        Yes
BASIN311        Yes


-------------------------------------------------------------------------------------------------
         Name: SJRWMD              Hydrology Sim: SJRWMD
     Filename: J:\185708 I-4 BtU Seg3\6.0FinalDesign\6.12Drainage\ICPR\SJRWMD.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 120.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.000
16.000          1.000
96.000          5.000
120.000         5.000

Group           Run
--------------- -----
BASIN317        Yes
```

Appendix D
Property Owner Coordination

First Property Owner Mailing

Florida Department of Transportation

RICK SCOTT
GOVERNOR

719 S. Woodland Boulevard
DeLand, Florida 32720-6834

JIM BOXOLD
SECRETARY

December 7th, 2016

LMLD New Century I LLC
390 N Orange Ave Ste 2400
Orlando, FL 32801

Dear Property Owner:

The Florida Department of Transportation (FDOT) seeks your input as it moves forward with the construction plans for the widening and reconstruction of State Road 400 (I-4) from 1 mile East of State Road 434 to East of State Road 15/600/US 17/92 Seminole / Volusia County Line.

As part of the design process, your property has been selected as a preferred site for one of the stormwater management facility areas. These stormwater management facilities are part of the drainage design to fulfill St. Johns River Water Management District permitting requirements. Enclosed is a sketch showing the location and approximate size of the stormwater management area.

Your input is important. FDOT would like your input on the location of this pond, including any suggestions you might have on reconfiguring the pond to better fit the future use of your property. We would also be willing to meet with you to discuss any concerns you might have with the pond location. Please respond by January 16th, 2017 so that we can incorporate your input.

Thank you for your cooperation. Please direct all questions and comments to:

Eileen LaSeur
I-4 BTU Public Information Officer
(Quest Corporation of America, Inc.)
17220 Camelot Court
Land O'Lakes, FL 34638
Eileen.LaSeur@QCAusa.com
Office: 866-662-6273
Cell: 407-883-8257
Fax: 813-926-2962

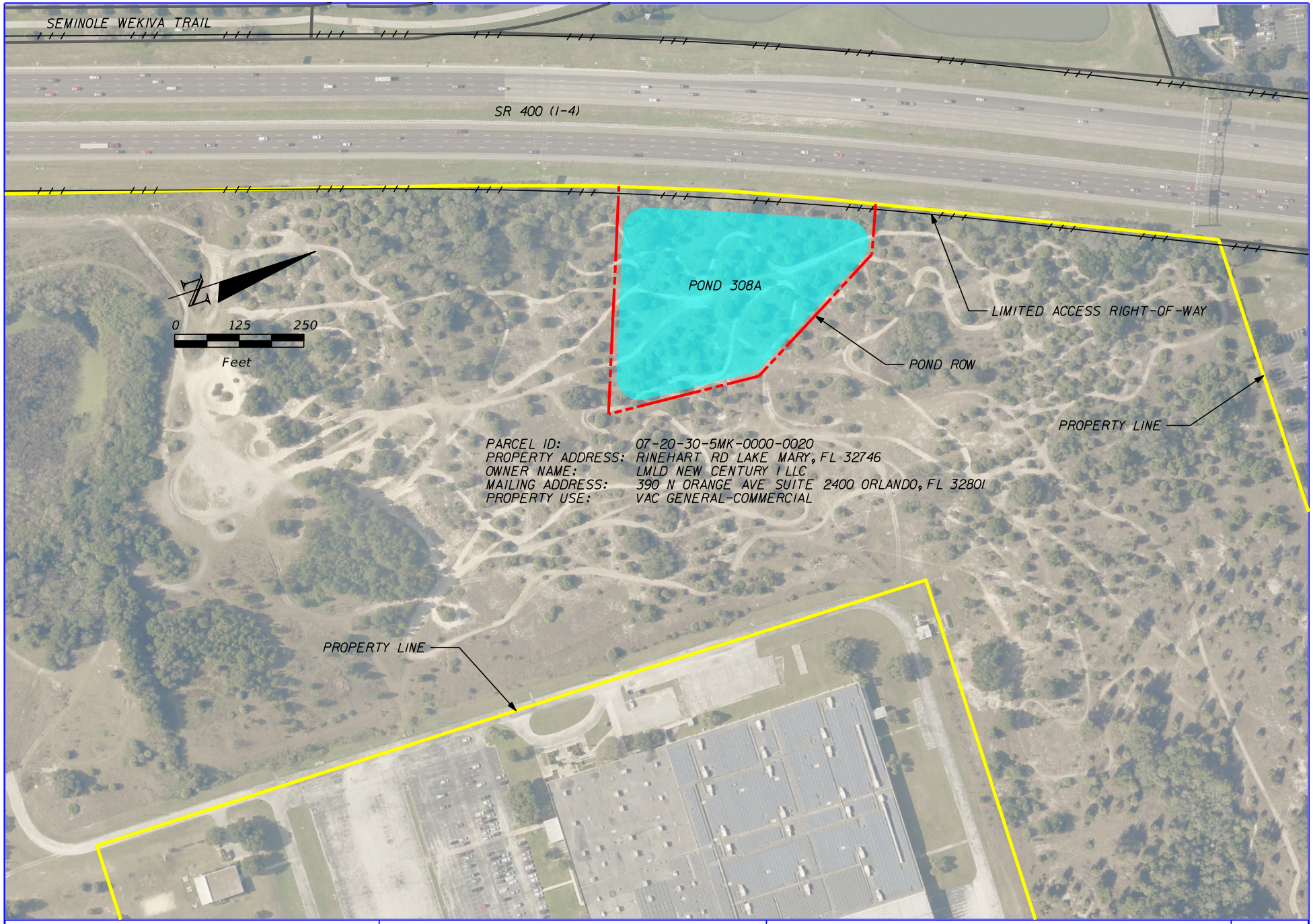
You may also contact me directly, Catalina.Chacon@dot.state.fl.us, (386) 943-5039

Sincerely,

Catalina Chacon, P.E.
Project Manager
Florida Department of Transportation
District Five

Enclosure

cc: Ferrell L. Hickson, Jr., P.E., District Drainage Engineer
Karen A. Snyder, P.E., Assistant District Drainage Engineer
Suzanne S. Phillips, P.E., District Consultant Project Management Engineer
Michael L. McPhail, MAI, Cost Estimate / Design Support Manager
Eileen LaSeur, Quest Corporation of America / Public Information Officer



MICHAEL J. QUARTETTI
P.E. LICENSE NO. 45976
PARSONS BRINCKERHOFF, INC.
2202 N. WEST SHORE BLVD, SUITE 300
TAMPA, FL 33607
PH (813) 520-4444 FAX (813) 520-4290
CERTIFICATE OF AUTHORIZATION NO. 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	SEMINOLE	242592-4

POND SITING PARCEL SKETCHES

SHEET NO.

robert.martini 12/7/2016 8:37:37 AM c:\pwworking\aecom_na\rmartini\dms63673\Pond308A 07-20-30-5MK-0000-0020.dgn

Florida Department of Transportation

RICK SCOTT
GOVERNOR

719 S. Woodland Boulevard
DeLand, Florida 32720-6834

JIM BOXOLD
SECRETARY

December 7th, 2016

TLC Properties Inc.
5321 Corporate Blvd
Baton Rouge, LA 70808

Dear Property Owner:

The Florida Department of Transportation (FDOT) seeks your input as it moves forward with the construction plans for the widening and reconstruction of State Road 400 (I-4) from 1 mile East of State Road 434 to East of State Road 15/600/US 17/92 Seminole / Volusia County Line.

As part of the design process, your property has been selected as a preferred site for one of the stormwater management facility areas. These stormwater management facilities are part of the drainage design to fulfill St. Johns River Water Management District permitting requirements. Enclosed is a sketch showing the location and approximate size of the stormwater management area.

Your input is important. FDOT would like your input on the location of this pond, including any suggestions you might have on reconfiguring the pond to better fit the future use of your property. We would also be willing to meet with you to discuss any concerns you might have with the pond location. Please respond by January 16th, 2017 so that we can incorporate your input.

Thank you for your cooperation. Please direct all questions and comments to:

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Land O'Lakes, FL 34638
Eileen.LaSeur@QCAusa.com
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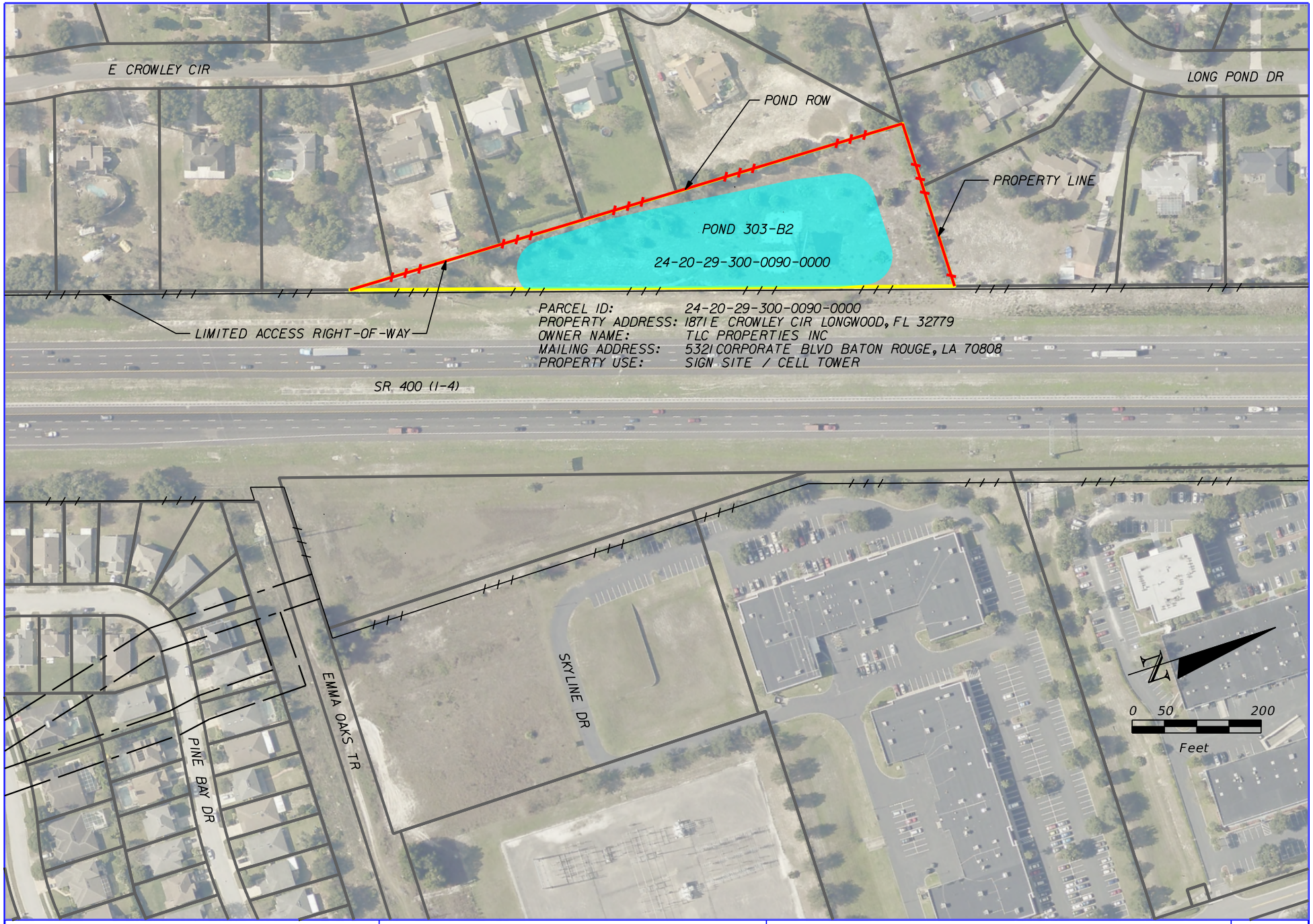
You may also contact me directly, Catalina.Chacon@dot.state.fl.us, (386) 943-5039

Sincerely,

Catalina Chacon, P.E.
Project Manager
Florida Department of Transportation
District Five

Enclosure

cc: Ferrell L. Hickson, Jr., P.E., District Drainage Engineer
Karen A. Snyder, P.E., Assistant District Drainage Engineer
Suzanne S. Phillips, P.E., District Consultant Project Management Engineer
Michael L. McPhail, MAI, Cost Estimate / Design Support Manager
Eileen LaSeur, Quest Corporation of America / Public Information Officer



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PH (813) 520-4444 FAX (813) 520-4290
CERTIFICATE OF AUTHORIZATION NO. 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	SEMINOLE	242592-4

POND SITING PARCEL SKETCHES

SHEET NO.

robert.martini 12/7/2016 8:06:21 AM c:\pwworking\aecom_na\rmartini\dms63673\Pond303-B2 24-20-29-300-0090-0000.dgn

Second Property Owner Mailing

Florida Department of Transportation

RICK SCOTT
GOVERNOR

719 S. Woodland Boulevard
DeLand, Florida 32720-6834

RACHEL D. CONE
INTERIM SECRETARY

February 27, 2017

LMLD New Century I LLC
390 N Orange Ave Ste 2400
Orlando, FL 32801

Dear Property Owner:

The Florida Department of Transportation (FDOT) sent notice to you, dated December 7, 2016, requesting your input as it moves forward with the construction plans for the widening and reconstruction of State Road 400 (I-4) from 1 mile East of State Road 434 to East of State Road 15/600/US 17/92 Seminole / Volusia County Line.

As part of the design process, your property has been selected as a preferred site for one of the stormwater management facility areas. These stormwater management facilities are part of the drainage design to fulfill St. Johns River Water Management District permitting requirements. Enclosed is a sketch showing the approximate location and size of the stormwater management area.

Your input is important. FDOT would like your input on the location of this pond, including any suggestions you might have on reconfiguring the pond to better fit the future use of your property. We would like to get your input by March 30, 2017, so that we can finalize all pond sites.

Thank you for your cooperation. Please direct all questions and comments to:

Beata Styś-Pałasz, P.E.
Senior Project Manager
State of Florida Department of Transportation
719 South Woodland Boulevard
Mail Station 542
Deland, Florida 32720
Office: 386-943-5418
Fax: 386-736-5153

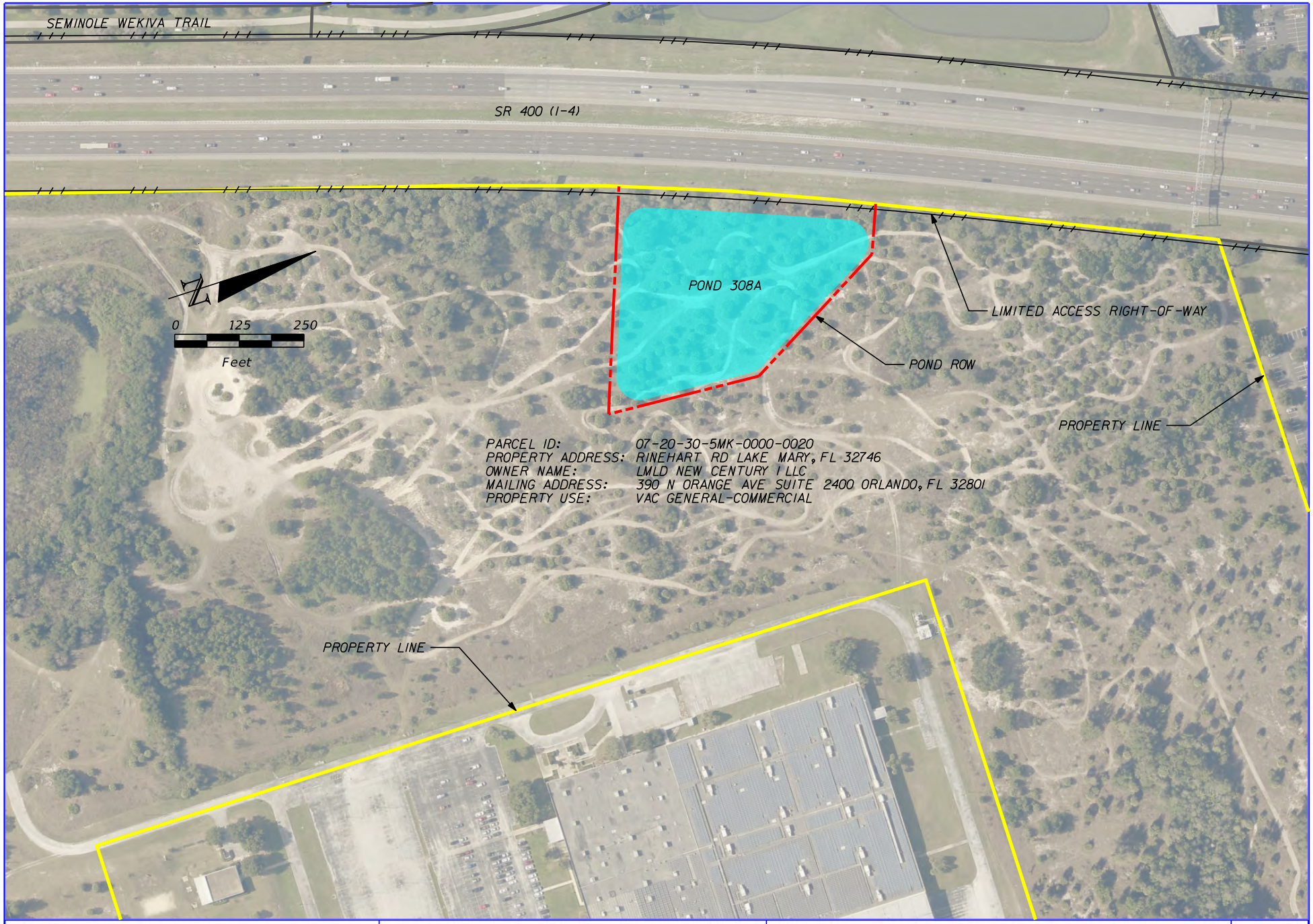
You may also contact me directly, **beata.stys-palasz@dot.state.fl.us**

Sincerely,

Beata Styś-Pałasz, P.E.
Senior Project Manager
Florida Department of Transportation
District Five

Enclosure

cc: Ferrell L. Hickson, Jr., P.E., District Drainage Engineer
Karen A. Snyder, P.E., Assistant District Drainage Engineer
Suzanne S. Phillips, P.E., District Consultant Project Management Engineer
Michael L. McPhail, MAI, Cost Estimate / Design Support Manager
Eileen LaSeur, Quest Corporation of America / Public Information Coordinator



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TAMPA, FL 33607
PH (813) 520-4444 FAX (813) 520-4290
CERTIFICATE OF AUTHORIZATION NO. 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	SEMINOLE	242592-4

POND SITING PARCEL SKETCHES

SHEET NO.

robert.martini 12/7/2016 8:37:37 AM c:\pwworking\aecom_na\rmartini\dms63673\Pond308A 07-20-30-5MK-0000-0020.dgn

Florida Department of Transportation

RICK SCOTT
GOVERNOR

719 S. Woodland Boulevard
DeLand, Florida 32720-6834

RACHEL D. CONE
INTERIM SECRETARY

February 27, 2017

TLC Properties Inc.
5321 Corporate Blvd
Baton Rouge, LA 70808

Dear Property Owner:

The Florida Department of Transportation (FDOT) sent notice to you, dated December 7, 2016, requesting your input as it moves forward with the construction plans for the widening and reconstruction of State Road 400 (I-4) from 1 mile East of State Road 434 to East of State Road 15/600/US 17/92 Seminole / Volusia County Line. We appreciate the feedback you have provided from this letter.

As part of the design process, your property has been selected as a preferred site for one of the stormwater management facility areas. These stormwater management facilities are part of the drainage design to fulfill St. Johns River Water Management District permitting requirements. We understand from your coordination with the FDOT that the original pond site is acceptable and we will continue to coordinate with you regarding relocation of the billboard on your property. Enclosed is a sketch showing the approximate location and size of the stormwater management area.

Your continued input is important. FDOT would like any additional input or suggestions you might have on reconfiguring the pond to better fit the future use of your property. We would like to get your input by March 30, 2017, so that we can finalize all pond sites.

Thank you for your cooperation. Please direct all questions and comments to:

Beata Styś-Pałasz, P.E.
Senior Project Manager
State of Florida Department of Transportation
719 South Woodland Boulevard
Mail Station 542
Deland, Florida 32720
Office: 386-943-5418
Fax: 386-736-5153

You may also contact me directly, **beata.stys-palasz@dot.state.fl.us**

Sincerely,

Beata Styś-Pałasz, P.E.
Senior Project Manager
Florida Department of Transportation
District Five

Enclosure

cc: Ferrell L. Hickson, Jr., P.E., District Drainage Engineer
Karen A. Snyder, P.E., Assistant District Drainage Engineer
Suzanne S. Phillips, P.E., District Consultant Project Management Engineer
Michael L. McPhail, MAI, Cost Estimate / Design Support Manager
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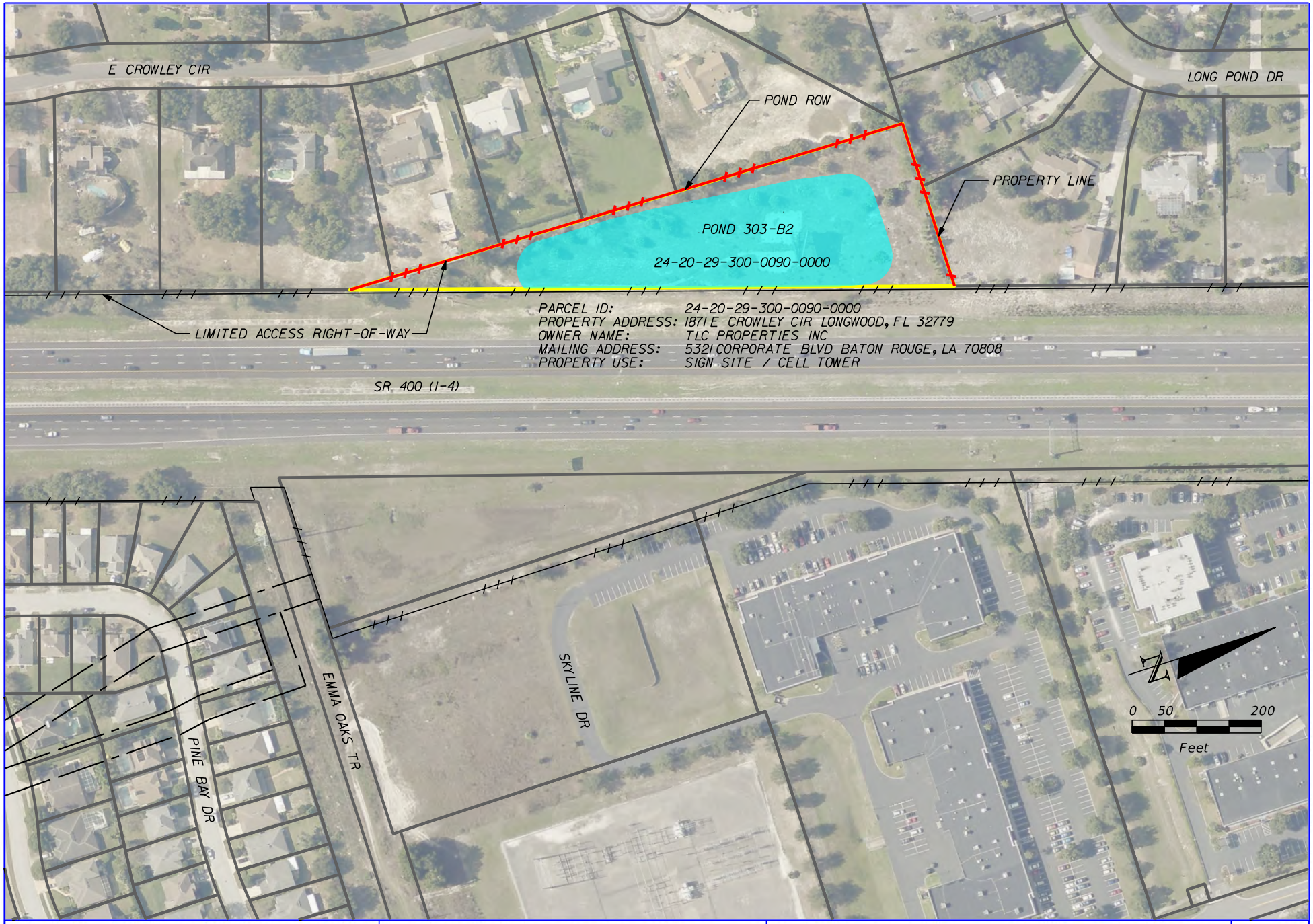

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TAMPA, FL 33607
PH (813) 520-4444 FAX (813) 520-4290
CERTIFICATE OF AUTHORIZATION NO. 00001462

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	SEMINOLE	242592-4

POND SITING PARCEL SKETCHES

SHEET NO.

MEMO

TO: File

FROM: John Littlefield

SUBJECT: Pond 303-B2 (Parcel 48) Coordination with property owner representative

DATE: **February 21, 2017**

Attendees: Beata Stys-Palasz, FDOT, Catalina Chacon, FDOT, Abhay Thorat, WSP, Michael McPhail, FDOT, Peter Costanza, Lamar Outdoor Advertising, & John Littlefield, WSP.

This property is owned by TLC Properties Inc. which also owns the existing electronic billboard on the property. Peter Costanza requested this meeting after receiving the pond letter dated December 7th, 2016 indicating that their site is one of the preferred pond site for the I-4 project.

Peter indicated that they did not have an issues with the purchase of the property with the exception of the billboard.

Peter went on to explain that the electronic billboard on this property generates more revenue than any other billboard the company owns. This billboard is very important to their company.

FDOT staff indicated that they are proposing to relocate the billboard within the proposed pond site and allow The Lamar maintenance staff to access the billboard through the adjacent property owner as they currently do today.

Peter didn't seem to have any issues with this proposal.

We discussed the maintenance access from the adjacent property. Peter indicated that since this is an electronic billboard that maintenance access is very seldom.

John indicated that the pond design is preliminary and once it is final we can discuss the relocation of the billboard.

All agreed to have a follow-up meeting in June to discuss the relocated billboard.

MEMO

TO: File

FROM: John Littlefield

SUBJECT: Pond 303-B2 (Parcel 48) Coordination with property owner representative

DATE: **June 28, 2017**

Attendees: Beata Stys-Palasz, FDOT, Abhay Thorat, WSP, Michael McPhail, FDOT, Peter Costanza, Lamar Outdoor Advertising, Nick Truncone, FDOT, & John Littlefield, WSP.

This property is owned by TLC Properties Inc which also owns the existing billboard on the property. The purpose of the call was to continue discussion of the property taking and the proposed relocation of the existing electronic billboard in the proposed condition. Mr. Peter Costanza is the owner's representative.

John mentioned that pond design with the proposed relocated billboard at the southern end of the proposed pond. This provides that required 15-foot offset from the existing ROW.

It was discussed that the maintenance access from the adjacent property would remain unchanged.

Peter mentioned that a significant portion of the revenue for the sign is the side facing west so he wants to make sure that we won't be obstructing the view with the relocation.

He asked if the view to the relocated billboard site will be the same or better than the existing location.

We discussed relocating the billboard on the north side of the property

desirable DDI design criteria with FDOT, District 5 design staff.

Mike, asked what would the desirable design speed would be. We discussed the criteria published in the new FHWA DDI design manual.

Mark stated that 30-35 mph would be acceptable.

Mike asked what desirable deflection angles would be acceptable at the diverging intersections.

Mark acknowledged that FHWA would allow 40 degrees in cases, but FDOT considers 45 degrees more desirable.

Mike asked what the FDOT would consider is a desirable signal clearance time.

Mark stated a time of 3-4 seconds would be preferable.