

DRAFT Pond Siting Report

Poinciana Parkway Extension

Project Development and Environment (PD&E) Study

From CR 532 to North of I-4/SR 429 Interchange

Osceola and Polk Counties, Florida

Financial Project ID (FPID) No. 446581-1
ETDM No.: 14445



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March 2023

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Florida's Turnpike Enterprise
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This DRAFT Pond Siting Report is based solely upon the information made available to or gathered by RS&H. RS&H does not assume responsibility for conditions, which did not come to knowledge, or conditions not recognized as unacceptable at the time this report was prepared. RS&H has performed these drainage calculations and recommendations in a manner consistent with sound practices and that level of care and skill normally exercised by members of the profession operating under similar circumstances.

I, Erik N. Scott, hereby certify that this report, as listed above, is true and correct, represents the described work and is in accordance with the requirements of this project.

This item has been digitally signed and sealed by Erik N. Scott on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

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EXECUTIVE SUMMARY

Florida's Turnpike Enterprise (FTE) is conducting a Project Development and Environment (PD&E) study to evaluate extending Poinciana Parkway (SR 538) from County Road 532 (CR 532) to Interstate 4 (I-4)/State Road 429 (SR 429) interchange, modifying the I-4/SR 429 interchange to accommodate the Poinciana Parkway connection, and increasing capacity of SR 429 from I-4/SR 429 interchange to the SR 429/Sinclair Road interchange. The total project length is approximately four miles. The proposed project lies within Osceola and Polk Counties. Multiple corridors and various roadway geometrics have been evaluated as part of the overall process. For the purposes of this document the drainage was based on a 6-lane divided rural typical section. The purpose of this PD&E study is to evaluate engineering and environmental data and document information that will aid FTE in determining the location, type, and preliminary design of the proposed improvements.

The datum used for this study is North American Vertical Datum of 1988 (NAVD-88). The datum shift from NGVD-29 is (-)0.87-ft, with NAVD-88 being the lower elevation of the two.

$$\text{NAVD-88} = \text{NGVD-29} + \text{datum shift}$$

The analysis presented in this report identifies the stormwater management needs for each of the 9 basins defined within the study area. For basins which required new stormwater management facilities, three potential stormwater management alternatives within the basin were identified. The preferred alternative for each basin and anticipated right-of-way needs associated with the preferred alternatives are outlined in **Table 1**. The evaluation matrix which contains the details of the analysis has been provided in **Appendix E**. It should be noted that the information contained herein is preliminary and will need to be refined once this project enters the design phase. As outlined in the report which follows, there is excess treatment and attenuation provided within the currently permitted stormwater management systems that should be accounted for when developing the stormwater management design during the design phase.

Table 1: Preferred Pond Alternatives and Anticipated Right-of-Way

Basin	Preferred Alternative	Anticipated Right of Way Requirements (acres)
Basin 100	N/A	0.00
BSN206	2	5.64
BSN205	2	12.18
BSN204	2	9.97
BSN203	1	10.81
BSN Interchange	On-site	0.00
BSN202	1	5.80
BSN201	2	2.18
BSN200	1	2.45
BSN109	2	12.49

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- Appendix B – Pre-Development Calculations
- Appendix C – Post-Development Calculations
- Appendix D – Floodplain Encroachment Calculations
- Appendix E – Pond Site Evaluation Matrix
- Appendix F – Correspondence, Meeting Minutes, and Excerpts from Previous Permits and Studies

SECTION 1.0 – INTRODUCTION

Florida’s Turnpike Enterprise (FTE) is conducting a Project Development and Environment (PD&E) study to evaluate extending Poinciana Parkway (SR 538) from County Road 532 (CR 532) to Interstate 4 (I-4)/State Road 429 (SR 429) interchange, modifying the I-4/SR 429 interchange to accommodate the Poinciana Parkway connection, and increasing capacity of SR 429 from I-4/SR 429 interchange to the SR 429/Sinclair Road interchange. See **Figure 1** for a Project Location Map.

SECTION 2.0 – PROJECT DESCRIPTION

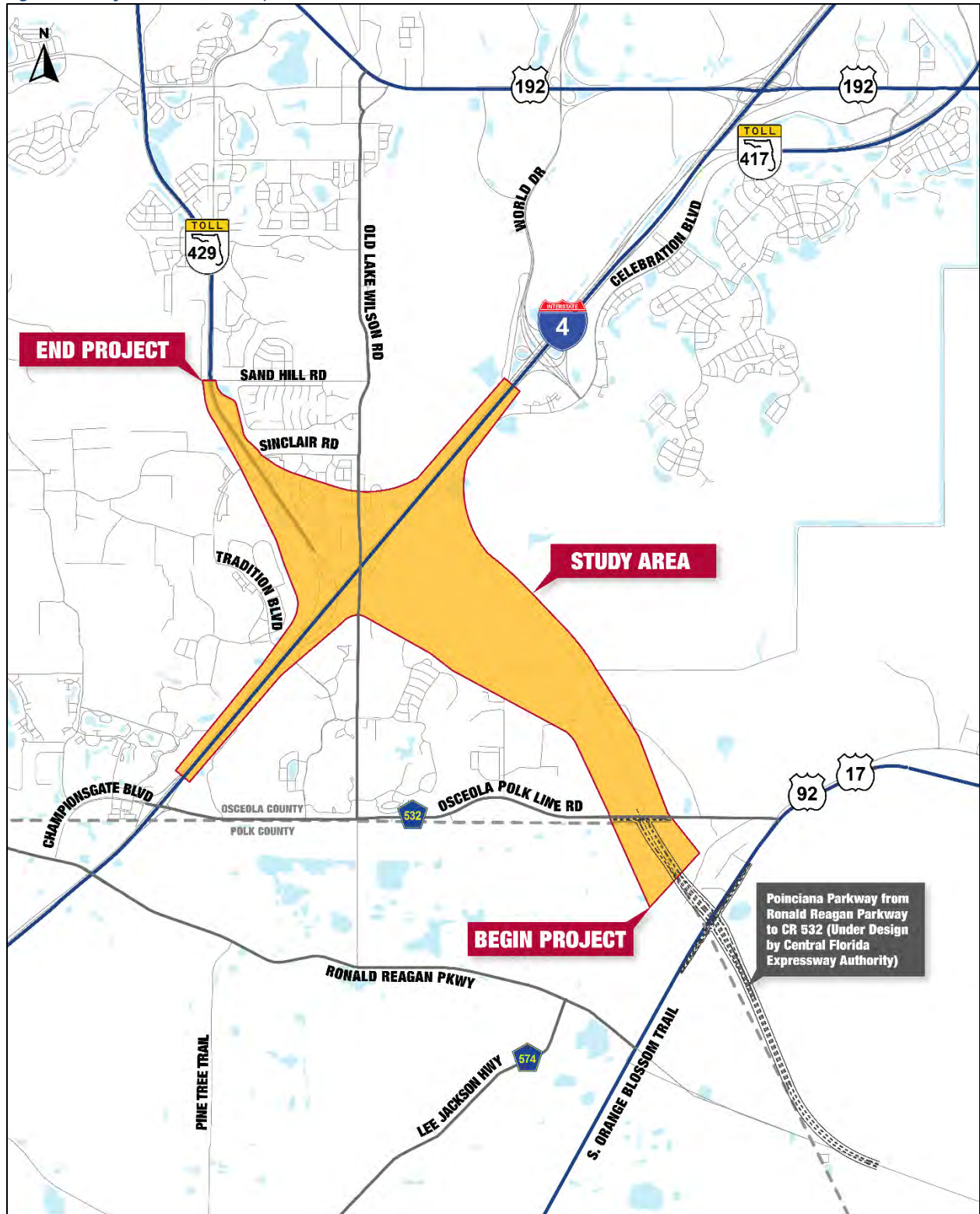
The proposed corridor from CR 532 to the I-4/SR 429 interchange was analyzed as a 6-lane rural typical section. New ramps connecting the proposed roadway to I-4 and SR 429 were analyzed as well as improvements to SR 429 to accommodate the connection of the new roadway. The total project length is approximately four miles. The project is located in Osceola and Polk Counties, Florida.

The vertical datum used for this project is the North American Vertical Datum of 1988 (NAVD-88). The datum shift from NGVD-29 is (-)0.87-ft, with NAVD-88 being the lower elevation of the two.

$$\text{NAVD-88} = \text{NGVD-29} + \text{datum shift}$$

Florida’s Turnpike SR 429 currently has a 4-lane typical section within the study limits. See **Figure 2** for the existing SR 429 typical section. A PD&E study (FPID 446164-1) is currently evaluating the feasibility of widening SR 429 from 4-lanes to 8-lanes between Interstate 4 and Seidel Road. See **Figure 3** for the planned SR 429 8-laned typical section. The proposed SR 538 corridor from CR 532 to the I-4/SR 429 interchange will be a new roadway. See **Figure 4** for the proposed 6-lane rural SR 538 typical section. The roadway is functionally classified as an Urban Principal Arterial – Freeway and Expressway and has a posted speed limit of 70 miles per hour (mph). See **Figure 5** for United States Geological Survey (USGS) Quadrangle Map.

Figure 1: Project Location Map



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Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange

Florida's Turnpike Enterprise

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Figure 2: Existing SR 429 Typical Section

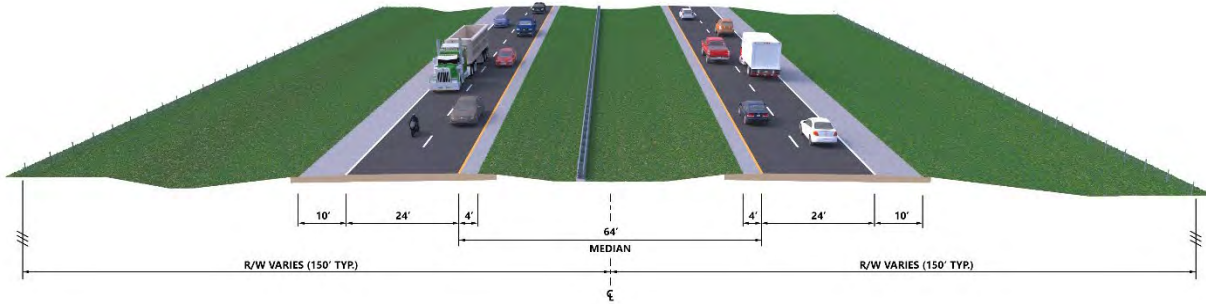


Figure 3: Planned SR 429 Typical Section

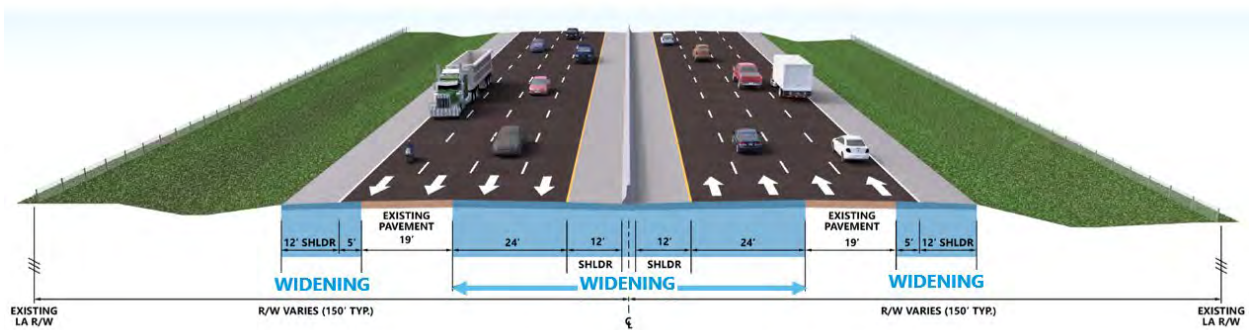


Figure 4: Proposed SR 538 Mainline Typical Section

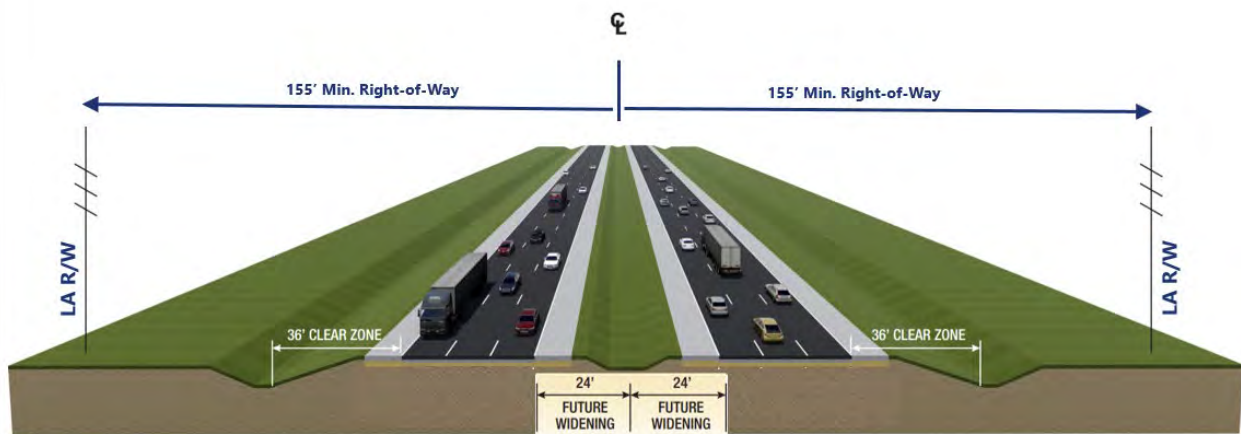


Figure 5: USGS Quad Map



SECTION 3.0 – DATA COLLECTION

Pre-application meetings were held with the Florida Department of Environmental Protection (FDEP), South Florida Water Management District (SFWMD), and Reedy Creek Improvement District (RCID) to discuss permitting requirements for the project. Meeting minutes from these pre-applications meeting have been provided in **Appendix F**. In order to locate and size the stormwater management facilities the following sources were utilized:

- USDA NRCS Web Soil Survey (2022)
- SFWMD ePermitting Web App
- FDEP NEXUS Permit Search Information Portal
- FDEP GIS Viewer (WBIDs, Impaired Waterbodies, etc.)
- FEMA Flood Insurance Rate Maps (12097C0040G, 12097C0045G)
- Conservation Easements and Wetlands- SFWMD 2016 (Updated 2020)
- LIDAR Data - <http://digir.fiu.edu/>

SECTION 4.0 – DESIGN CRITERIA

4.1 Rules & Regulations / Regulatory Agency Coordination

Project improvements will be designed to meet the regulatory requirements of the applicable water management districts, the requirements outlined in the FDOT Drainage Manual, and the requirements of Florida's Turnpike Enterprise (FTE). The project is located within the SFWMD jurisdiction, however FDEP reviewed and issued the original Environmental Resource Permit (ERP) in 2001. FDEP has indicated they will be responsible for issuing a permit for the proposed improvements for the project limits previously permitted by FDEP in 2001. This includes the SR 429 and the interchange located at Interstate 4 and to the north. SFWMD will be responsible for reviewing and permitting the proposed improvements located south of Interstate 4. In addition, the project is located within the Reedy Creek Watershed, therefore concurrence from RCID will be required as well. The FDEP ERP application should be submitted to RCID for concurrence prior to submitting to FDEP. FDEP will be responsible for Section 404 reviews and permitting. A National Pollutant Discharge Elimination System (NPDES) permit will also be required from FDEP.

4.1.1 Water Quality Criteria

SFWMD, FDEP, and RCID

- **Wet detention:** Detention volume shall be provided for the first inch of total runoff from the developed project, or 2.5 inches of the runoff from impervious area, whichever is greater.

- **Dry Retention:** retention volume shall be provided equal to 50 percent of the above amounts computed for wet detention. Retention volume included in flood protection calculations requires a guarantee of long-term operation and maintenance of system bleed-down ability.
- **Dry Detention:** volume shall be provided equal to 75 percent of the above amounts computed for wet detention.

4.1.2 Water Quantity Criteria

SFWMD

For open basins, the post-development peak discharge rate must not exceed the pre-development peak discharge rate during the 25-year, 72-hour storm. For closed basins, the post-development peak discharge volume must not exceed the pre-development peak discharge rate and volume during the 100-year, 72-hour storm.

RCID

Reedy Creek Improvement District will impose a drainage fee for any discharge from the proposed project which exceeds 13 csm (cfs per square mile) for the 50-year, 72-hour (12.91 inches of rainfall) event using the SFWMD distribution. See **Appendix F** for documentation.

FDOT

Per FDOT requirements, the above noted SFWMD requirements are to be followed in open basins. FDOT does, however, require that the constraints found in Chapter 14-86 of the Florida Administrative Code be utilized for design purposes in basins that are closed and where there are flooding concerns. For the purposes of this report, the volumetric difference associated with the 100-year, 10-day storm has been utilized for pond sizing in closed basins and basins with a history of flooding concerns.

4.2 Project-Specific Criteria

This project does not discharge to Outstanding Florida Waters, nor does it have any special basin criteria. The project does, however, traverse basins where a basin management action plan has been established. A summary of these special requirements is noted in the sections that follow.

4.2.1 TMDL Requirements

FDEP maintains the Statewide Comprehensive List of Impaired Waters, which contains waterbody-parameter combinations that have been verified as impaired based on criteria and assessment methodologies. Waterbody Identification (WBID) 3170K, 3170C, and 3170F7 are located within the project corridor. WBIDs 3170K and 3170C have been identified for impairments. **Table 2** outlines the impairments associated with these WBID's. It should be

noted that there are nutrient removal requirements associated with the basin management action plans for WBID's which may not be listed as impaired for nutrients in the Statewide Verified List.

Table 2: Statewide Water Quality Assessments

Waterbody Name	WBID	Class	Impairment
Davenport Creek	3170K	3F	Bacteria (Fecal)
Reedy Creek above Lake Russel	3170C	3F	Biology
Reedy Creek in RCID (Lower)	3170F7	3F	None

4.2.2 Basin Management Action Plans (BMAPs)

This project is within the Lake Okeechobee BMAP. Phosphorus is the nutrient of concern for this BMAP. A summary of the BMAP has been provided in **Table 3**. No additional treatment considerations were given for total phosphorus removal. Though the project is located within the basin of the BMAP, stormwater runoff from the corridor will not direct discharge into Reedy Creek, which ultimately discharges into Lake Okeechobee.

Table 3: Basin Management Action Plans

Basin Management Action Plan	Date	Parameters
Lake Okeechobee	January 2020	Total Phosphorus (TP)

SECTION 5.0 – ENVIRONMENTAL LOOK AROUND

Meetings were held with RCID, FDEP, SFWMD, and Osceola County as part of the coordination efforts of this project. During these meetings the potential opportunities for implementing a joint use or regional stormwater facility were discussed. FDEP and SFWMD stated they were open to the use of regional ponds, but no specific opportunities were identified during or after these meetings for any of the agencies and municipalities.

The value engineering (VE) study recommended a stormwater harvesting pond for the adjacent private property on the west side of the corridor, Reunion Golf Resort. Typically golf courses offer a great opportunity for joint use facilities. However, there are some design challenges which must be addressed. The first challenge is topography, the existing ground in the vicinity of the proposed corridor is approximately 77.00-ft. The existing golf course has elevations that range from 91-ft to 100-ft. To overcome this elevational difference a pumping station will be required. An agreement will be required between the FTE and Reunion to determine who will be

responsible for maintenance of the stormwater management facility and corresponding equipment. The meeting minutes have been included in **Appendix F**.

Upon review of the watershed for regional pond opportunities it was found that no sites were viable. The primary reason for this is because of the water quality and quantity standards implemented by RCID. This governing agency was formed in 1967 and has been responsible for approving development within the watershed since its inception. Most of the development around the proposed corridor was constructed in the early 2000's or later, therefore stormwater quality has been provided for these new developments. When evaluating the area for untreated sources of impervious area within the basin it was found to have little to none. Additionally, no other forms of pollutant generators were identified within the basin located upstream of the corridor to provide compensatory treatment.

CFX has applied for a permit for the widening of CR 532. As of December 2022, a permit has not been issued for these improvements. Additional coordination during the design phase is recommended for a possible joint use agreement for the CFX proposed pond located adjacent to BSN 206 near the proposed intersection of CR 532 and the Poinciana Parkway Extension.

SECTION 6.0 – EXISTING & PROPOSED CONDITIONS

6.1 Existing Drainage Conditions

The Poinciana Parkway Extension will be a new roadway between CR 532 and the I-4/SR 429 interchange. The existing land along the project corridor is primarily wooded. The general slope of the topography is from west to east towards Reedy Creek. There is one major waterway located just south of the interchange, Davenport Creek. In addition, smaller tributaries of Davenport Creek are located within the project corridor.

The existing Western Beltway (SR 429) corridor and I-4/SR 429 interchange were constructed in the early 2000's. 9 basins have been identified within the limits of the new Poinciana Parkway extension study area. These basins consist primarily of open basins. Basins have been defined to correlate with currently permitted conditions within the project limits, when applicable. Basin divides have been developed from existing permit information which has been supplemented with LIDAR data. The proposed drainage maps associated with the I-4 BTU improvements have been provided in **Appendix A** to serve as the existing condition drainage maps.

For the existing SR 429 roadway beginning at the I-4 interchange and continuing to the north of Sinclair Road there are no offsite areas which discharge into the right of way. The surrounding area is primarily residential neighborhoods which have their own stormwater management facilities. There are three cross culverts, CD-14, CD-15, and CD-16, located along the SR 429

corridor within the project study area. These culverts convey runoff captured within the FTE roadside swales to the west side of the corridor where it enters Davenport Creek Tributary No. 3.

The original Western Beltway (SR 429) corridor was designed and permitted for a 6-lane configuration, with 4-lanes constructed and 2 “future lanes” to be added within the median. This analysis takes the existing 6-lane permitted condition and analyzes the treatment and attenuation requirements for the proposed improvements.

FDOT District 5 has two ongoing projects within the I-4 / SR 429 interchange. These projects are part of the overall Beyond the Ultimate (BTU) I-4 improvements. The first project, which is currently in construction, is the Interstate 4/SR 429 Auxiliary Lanes (FPID 444329-1-52-01). Improvements include an auxiliary lane along Interstate 4 connecting to the outside of the existing northbound lanes of SR 429. Permitting documentation for this project can be found in ERP No. 0187636-005-EI issued August 19, 2019. The second project is the widening of Interstate 4 to 10-lanes and improvements to the Interstate 4/SR 429 interchange (FPID 431456-1-52-01). Permitting documentation for this project can be found in ERP No. 0187636-003-EI issued August 19, 2019. In addition, Florida’s Turnpike Enterprise is conducting a PD&E study for the widening of Western Beltway from Sinclair Road to Seidel Road (FPID 446164-1).

For the purposes of this study the auxiliary lane project and the BTU I-4 improvements at the I-4/SR 429 were utilized as the existing condition for the design analysis and expanded upon for the proposed Poinciana Parkway improvements. The permit for the I-4/SR 429 improvements and widening of I-4 (ERP No. 0187636-003-EI) changed the basin names as found in the original SR 429 interchange permitting (ERP No. 49-187636001). **Table 5** provided below correlates the names from one to another. Treatment calculations depicting the required and provided treatment volumes for the FDOT District 5 BTU I-4 improvements can be found in **Appendix B**. **Table 4** identifies the existing ponds treatment type, and which permit detailed information about the pond can be found in.

As noted in **Section 4.1.2**, RCID implements a fee for water quantity for any discharge over 13 csm. The Turnpike entered into an agreement with RCID for the construction of SR 429 in 2001. This agreement states the following, “Florida’s Turnpike Enterprise may discharge, and RCID, agrees to receive, surface water from the Western Beltway and the Interchange into RCID Facility at a rate of no greater than 297.64 cubic feet per second (cfs) for the 50-year/3-day storm event...”. A table is cited within the contract agreement which supposedly breaks down the discharge per outfall, however this table is missing. FDOT District 5 has also entered into an agreement with RCID for excess discharges from the I-4/SR 429 interchange. Upon review of BTU permit documentation, the original contract agreement adopted between FDOT and RCID could not be located. Therefore, the two agencies are currently negotiating a new agreement.

It should be noted that RCID has additional fees for permit reviews and for impacts within their watershed. See **Appendix F** for additional information.

The receiving waterbody, whether the basin is open or closed, and any special basin criteria is outlined in **Table 6**. FDEP has defined three WBID's that encompass the study area. **Table 2** also outlines which impairment relates to each WBID. Specific characteristics related to each basin are outlined in the following sections.

There is one drainage connection permit within the project corridor. This connection permit has been listed in **Table 7** below with the corresponding milepost for reference.

Table 4: Existing Pond Summary

Name	Basin	Treatment Method	Permit
EXIST. POND F-2-A	F2	Wet Detention	49-187636001
EXIST. POND F-2-B	F2	Wet Detention	49-187636001
EXIST. POND F-4-A	F4	Wet Detention	49-187636001
EXIST. POND F-4-B	F4	Wet Detention	49-187636001
EXIST. POND F-7	F7	Wet Detention	49-187636001
EXIST. POND G-1	G-1	Wet Detention	49-187636001
EXIST. POND B-2	B2	Wet Detention	49-187636001
EXIST. POND B-3A	B3	Wet Detention	49-187636001
EXIST. POND B-3B	B3	Wet Detention	49-187636001
EXIST. POND B-3C	B3	Dry Detention	49-187636001
EXIST. POND B-3D	B3	Dry Detention	49-187636001
EXIST. POND B-4	B4	Wet Detention	49-187636001
EXIST. POND B-5	B5	Wet Detention	49-187636001
EXIST. POND B-6A	B6	Wet Detention	49-187636001
EXIST. POND B-6B	B6	Dry Detention	49-187636001
EXIST. POND B-6C	B6	Dry Detention	49-187636001
EXIST. POND 5B	5B	Wet Detention	49-00792-S

Table 5: Pre to Post Basin Naming Convention

Existing Basin Name ERP No. 49-187636001	I-4 BTU Basin Name ERP No. 0187636-003-EI	Proposed Basin Name PD&E Study
Basin F-2	BSN105	BSN Interchange
Basin F-4	BSN106	BSN Interchange
Basin F-7	BSN107	BSN Interchange
Basin G-1	BSN108	BSN Interchange
Basin B-2	BSN104	BSN202
Basin B-3	-	BSN201
Basin B-4	-	BSN200

Basin B-5	-	BSN201
Basin B-6	-	BSN201
Basin 5B	BSN109	BSN109

Table 6: Project Basin Summary

Name	Type	Receiving Waterbody
Basin 100	Open	Ditch / Wetland
BSN206	Open	Wetland / Reedy Creek
BSN205	Open	Wetland / Reedy Creek
BSN204	Open	Davenport Creek Trib. No. 4
BSN203	Open	Davenport Creek
BSN Interchange	Open	Davenport Creek Trib. No. 3
BSN202	Open	Davenport Creek Trib. No. 3
BSN201	Open	Davenport Creek
BSN200	Open	Davenport Creek
BSN109	Open	Wetland / Reedy Creek

Table 7: Drainage Connection Permits

Name	Permit Number	Mile Post
Sinclair Road Apartments	TP-92-DC-180-18	1.5

6.1.1 BSN105 (Basin F-2)

Basin BSN105 is located within the Interstate 4 interchange from Sta. 84+00 to 103+00 (BL SR 400). Basin105 is an open basin which ultimately discharges to a tributary of Davenport Creek. There are two interconnected wet detention ponds located within BSN105, Pond 105A and Pond 105B.

BSN105 includes Ramp B from the high point near the gore at Sta. 324+00 (BL Ramp B) to the high point on the bridge over I-4. BSN105 also includes the median and east bound lanes of I-4 between the high point near Sta. 84+00 and ditch blocks near Sta. 103+00. See **Appendix B** for existing treatment calculations.

The control structure for the two interconnected ponds is located in Pond 105B and discharges to the 42-inch storm drain conveying offsite drainage around Ramp B to Davenport Creek Tributary.

6.1.2 BSN106 (Basin F-4)

BSN106 is located within the Interstate 4 interchange. It includes SR 429 up to Sta. 80+50 and the westbound lanes of Interstate 4 from Sta. 85+30 to 93+80 and Sta. 106+00 to 119+00 (BL SR400). BSN106 is an open basin which ultimately discharges to a tributary of Davenport Creek. There are two wet detention ponds located within BSN106, Pond 106A and Pond 106B. These ponds receive runoff from SR 429, Interstate 4 westbound lanes, and portions of Ramps A, B, C, and D within the interchange. See **Appendix B** for existing treatment calculations.

6.1.3 BSN107 (Basin F-7)

BSN107 is located within the Interstate 4 interchange. It includes the east bound lanes from Sta. 109+00 to 119+00 (BL SR400). BSN107 is an open basin which ultimately discharges into Davenport Creek. There is a wet detention pond located within BSN107, Pond 107. See **Appendix B** for existing treatment calculations.

6.1.4 BSN108 (Basin G-1)

BSN108 is located within the Interstate 4 interchange. It includes Ramps C & D east of CR 545, CR 545 south of I-4, and I-4 from the high point near Sta. 119+00 to 134+00 (BL SR400). BSN108 is an open basin which ultimately discharges to a tributary of Davenport Creek. An additional wet pond will be provided as part of the I-4 BTU improvements to treat and attenuate portions of the ramps to SR 429. Pond 108B will outfall to the same location as Pond 108A. See **Appendix B** for existing treatment calculations.

6.1.5 Basin B-2

Basin B-2 is located just north of the Interstate 4 interchange and just south of Sinclair Road (Sta. 80+40 to Sta. 101+00). Basin B-2 is an open drainage basin which ultimately discharges into a tributary of Davenport Creek. This basin contains one wet detention pond which discharges to a spreader swale located along the toe of Pond B-2 that overflows into an adjacent wetland.

As noted in the permit documentation for the auxiliary lanes project, no improvements will be made to Pond B-2 because there is sufficient treatment within the existing pond for the proposed improvements. See **Appendix B** for existing treatment calculations.

6.1.6 Basin B-3

This basin is a compilation of the sub-basins located just south of Sinclair Road and just north of Sinclair Road, on the east side of the corridor (Sta. 101+00 to Sta. 141+00). This basin also includes portions of Sinclair Road from the high point of the bridge over SR 429 to the east to Ramp F and Ramp G. There are four ponds in total with corresponding sub-basins: Pond B-3-A, Pond B-3-B, Pond B-3-C, and Pond B-3-D. The control structure for Basin B-3 discharges from Pond B-3-A to a wetland associated with Davenport Creek. Pond B-3-C and Pond B-3-D are dry detention facilities that do not provide treatment. Pond B-3-A and Pond B-3-B are wet detention facilities. Additionally, Pond B-5 is interconnected with Pond B-3-A to provide additional attenuation. See **Appendix B** for existing treatment calculations.

6.1.7 Basin B-4

Basin B-4 is located from Sand Hill Road and to the north (Sta. 141+50 and Sta. 167+00). This basin has one wet detention pond. Pond B-4 discharges under the adjacent access road to the west and into a wetland associated with Davenport Creek. See **Appendix B** for existing treatment calculations.

6.1.8 Basin B-5

Basin B-5 is located south of Sand Hill Road on the east side of SR 429. Basin B-5 includes Sand Hill Road from Sta. 803+00 to 814+00 and portions of the Connector Road. This basin has one wet detention pond. Pond B-5 is interconnected with Pond B-3-A in order to better utilize the large volume in Pond B-5 to help reduce flows out of Basin B-3. Pond B-5 discharges through a control structure in Pond B-3-A into a wetland associated with Davenport Creek. See **Appendix B** for existing treatment calculations. Please note treatment calculations are coupled with Basin B-3.

6.1.9 Basin B-6

This basin is a compilation of the sub-basins located just south of Sinclair Road to north of Sinclair Road (Sta. 101+00 to Sta. 125+00) on the west side of SR 429. Basin B-6 consists of three ponds: Pond B-6-A, Pond B-6-B, and Pond B-6-C. Pond B-6-B and Pond B-6C are dry detention ponds with no treatment volume associated with them. These two ponds discharge into Pond B-6-A, which is a wet detention facility. Pond B-6-A discharges into a wetland associated with Davenport Creek. See **Appendix B** for existing treatment calculations.

6.1.10 BSN109 (Basin 5B)

BSN109 is located from Sta. 133+50 of the I-4 westbound lane to the Reedy Creek bridge. The basin contains a wet detention pond, Pond 109 located on the north side of I-4, just west of the Reedy Creek bridge at Sta. 146+00. Compensatory treatment was provided for the westbound

lanes from Sta. 133+50 and for the eastbound lanes from Sta. 138+00 to Sta. 148+00. The median will also be treated from Sta. 134+00 to Sta. 148+00. From Sta. 148+00 to the Reedy Creek bridge no treatment of existing or proposed pavement was provided given the hydraulic difficulties draining the pavement to Pond 109. The pond location remains unchanged from the original permit condition. The pond has been expanded to maximize the footprint within the right-of-way. The control structure has been revised, but discharges to the same locations as the original pond.

6.2 Proposed Drainage Conditions

9 basins have been identified within the limits of the study area, which have been outlined on the proposed drainage maps included in **Appendix A**. Proposed treatment, attenuation, and pond sizing calculations can be found in **Appendix C**. For the purposes of this document, the basins located within the I-4 Interchange have been combined into one basin, Basin Interchange. The rationale being that a number of these basins within the interchange already utilized interconnected ponds to provide treatment and attenuation. With the expansion of the interchange, it became necessary to connect most of the ponds together to provide sufficient treatment and attenuation primarily because the interchange is bounded by Davenport Creek Tributary No. 3 on the west side, Davenport Creek to the south, Reedy Creek to the east, reducing the available space to provide stormwater management facilities.

As noted in **Section 6.1** the Turnpike entered into an agreement with RCID for the construction of the Western Beltway in 2001. As such, RCID will accept 297.64-cfs of discharge from the SR 429 corridor. FDOT District 5 has entered into an agreement with RCID to discharge no more than 729.00-cfs from FDOT right-of-way with the improvements associated with I-4 BTU. The limits of discharge are not solely based on the SR 429/I-4 Interchange discharges, but rather the entirety of the I-4 improvements within Polk and Osceola Counties. A separate agreement will be provided for the improvements located within Orange County (east of I-4 / W Osceola Parkway interchange).

For the purposes of this design analysis, attenuation volumes will be based on the RCID design storm of 50-year, 3-day (12.91-inches) for new stormwater management facilities. Please note this fee does not eliminate the pre vs post development water quantity requirement. No discharge over the pre-condition rate will be accepted. This is the reason for using the 50-year, 3-day instead of the 25-year, 3-day.

In addition to the discharge fee posed by RCID, they also have a \$750 administration fee for permit review and an impact fee of \$200 per acre. An impact fee was paid by the Turnpike for the original Western Beltway improvements. This should be interpreted as the area within the

existing right-of-way. Any new right-of-way will be subject to a fee at the rate previously described.

Treatment and attenuation calculations are provided in **Appendix C**. These calculations identify the stormwater management system type, treatment required, treatment provided, approximate low edge of pavement, outfall elevation, and soil types for each of the basin identified below. Wet detention facilities are anticipated for the new stormwater management facilities located south of the SR 429/ I-4 interchange.

Base clearance for the proposed corridor will meet the requirements outlined in the FDOT Drainage Manual and the Turnpike Supplemental to the FDOT Drainage Manual. Because the corridor is located within a region containing a substantial of low-lying wetlands the profile of the new roadway needs to be elevated by at least 6-feet in areas to meet this criterion. During the design phase identifying seasonal high water elevations and wetland elevations along the corridor will be crucial to a successful project.

To accommodate aesthetic features, the footprints of the stormwater management facilities have been increased by an additional 50% where possible. See Section 8.0 Stormwater Ponds for detailed information regarding sizing.

Drainage Maps have been provided in **Appendix A** which depicts offsite drainage areas and the proposed cross drain locations that allow runoff through the corridor.

6.2.1 Basin 100

Basin 100 is located within the SR 538/CR 532 interchange from Sta. 6200+00 to Sta. 6212+50. This basin was analyzed by GAI Consultants, Inc. who are responsible for the SR 538 extension from US 17/92 to CR 532 (ERP No. 49-107415-P). Pond 100 will provide treatment and attenuation of the mainline improvements from CR 532 to the south.

6.2.2 BSN206

BSN206 is located within the SR 538/CR 532 interchange from Sta. 6212+50 to Sta. 6221+20. BSN206 is an open basin which ultimately discharges to a wetland of Reedy Creek. The lowest ground elevation within this basin is at approximately elevation 84-ft with a popoff elevation of 88-ft. ICPR modeling will be required during the design phase to determine tailwater elevations within the basin and to determine if the basin exceeds elevation 88-ft to be classified as an open basin.

The proposed mainline improvements within this basin will be conveyed to BSN205 for treatment and attenuation. The proposed ramps connecting SR 538 to CR 532 may be too low to be hydraulically connected to the BSN205 pond, therefore pond alternatives have been

identified for BSN206. Drainage within this basin will require closed storm sewer to convey runoff to the stormwater management facility. Offsite drainage is equalized via CD-1

There are no FEMA floodplains associated with this basin, however, historical storage area will be impacted. Three pond alternatives have been identified to provide treatment and attenuation of the proposed ramps and compensate for the loss of historical within the basin. Approximately 0.33 ac.-ft. of treatment and 1.15 ac.-ft of attenuation is anticipated. Proposed pond sizing calculations can be found in **Appendix C**.

6.2.3 BSN205

BSN205 is located just north of CR 532, Sta. 6221+20 to Sta. 6255+00. BSN205 is an open drainage basin which ultimately discharges into wetlands of Reedy Creek. This basin contains two wetland areas that are associated with the FEMA 100-year floodplain. The wetland located at approximately 6225+00 has a low ground elevation of 84-ft with a popoff elevation of 86-ft. The wetland located at 6242+50 has a low ground elevation of 83-ft with a popoff elevation of 85-ft. ICPR modeling will be required during the design phase to determine tailwater elevations within the basin.

Drainage within this basin will be comprised of open conveyance ditches and closed collections systems to convey runoff. In the vicinity of the 100-yr floodplain offsite area flows towards the proposed right of way. A dual swale system may be feasible, but it is recommended to utilize shoulder gutter and a closed storm sewer system to minimize wetland and floodplain impacts and to convey runoff from the roadway to the stormwater management pond. Open conveyance ditches are anticipated to direct offsite flow to CD-2 and CD-3.

Approximately 2.03 ac.-ft. of treatment and 12.82 ac.-ft of attenuation is anticipated. Proposed pond sizing calculations can be found in **Appendix C**.

6.2.4 BSN204

BSN204 is located from Sta. 6255+00 to Sta. 6296+20. BSN204 is an open drainage basin which discharges into the confluence of Davenport Creek Tributary No. 4 and wetlands associated with Reedy Creek.

Offsite drainage from the west side of the corridor discharges towards the proposed corridor for the majority of this basin. A combination of open conveyance ditches and closed collection systems are anticipated for this basin. Davenport Creek Tributary No. 4 is conveyed through the corridor via CD-6. CD-4 and CD-5 will convey offsite flow from minor channels through the corridor.

Approximately 2.23 ac.-ft. of treatment and 10.59 ac.-ft of attenuation is anticipated. Proposed pond sizing calculations can be found in **Appendix C**.

6.2.5 Basin 203

BSN203 is located from Sta. 6296+20 to Sta. 6328+00. BSN203 is an open drainage basin which discharges into the confluence of Davenport Creek and wetlands associated with Reedy Creek.

This basin is located adjacent to the Reunion Golf Resort. Minimal offsite area drains towards the proposed right of way. CD-7 will convey offsite flow through the corridor. A combination of open conveyance ditches and closed collection systems are anticipated for this basin. A bridge is required to traverse Davenport Creek.

Approximately 2.41 ac.-ft. of treatment and 14.79 ac.-ft of attenuation is anticipated. Proposed pond sizing calculations can be found in **Appendix C**.

6.2.6 BSN Interchange

BSN Interchange is comprised of the ponds within the interchange associated with basins: BSN105, BSN106, BSN107, and BSN108. These ponds were analyzed for the proposed improvements. In addition to determining the required treatment and attenuation associated with the proposed improvements, impacts to each of the interchange ponds has been identified. The ponds in BSN105 can be expanded significantly with the transition of the existing ramps utilizing walls and earthen embankments to being bridged. The existing pond in BSN106 will be significantly impacted with the new ramp configurations. To offset these impacts cross drains are proposed to connect the ponds within the interchange. Minor impacts to the existing ponds within BSN107 and BSN108 are anticipated.

The interchange will be composed primarily of closed storm sewer systems. Multiple cross drains are located within the interchange to convey runoff through the I-4 and SR 429 corridors.

Approximately 14.43ac.-ft. of treatment and 85.01 ac.-ft of attenuation is anticipated. Proposed pond sizing calculations can be found in **Appendix C**.

6.2.7 BSN202

BSN202 is located from Sta. 6381+75 to Sta. 6406+00 along the mainline, Sta. 638+50 to 620+50 along the northbound connector to I-4, and Sta. 883+20 to Sta. 907+00 along the southbound connector from I-4. This basin correlates with Basin B-2 from the existing condition. The basin is an open basin which discharges into a Davenport Creek Tributary No. 3. The existing pond located adjacent to the existing southbound lanes will be impacted by the proposed southbound I-4 connector ramps. See Section 8.0 for proposed pond alternative locations.

A combination of open conveyance ditches and closed storm sewer systems are anticipated for this basin. CD-15 conveys runoff from the east side of the corridor to the west side and into Davenport Creek Tributary No. 3.

Approximately 2.09 ac.-ft. of treatment and 11.05 ac.-ft of attenuation is anticipated. Proposed pond sizing calculations can be found in **Appendix C**.

6.2.8 BSN201

BSN201 is located at the interchange of SR 429 and Sinclair Road from Sta. 6406+00 to Sta. 6442+50. This basin correlates with Basin B-3, Basin B-5, and Basin B-6 from the existing condition. BSN201 is an open basin which discharges into a wetland associated with Davenport Creek. Existing attenuation ponds located south of Sinclair Road within the interchange are expected to have minor impacts as part of the proposed connectors. See Section 8.0 for proposed pond alternative locations.

A combination of open conveyance ditches and closed storm sewer systems are anticipated for this basin. CD-16 conveys runoff from the east side of the corridor to the west side and into wetlands associated with Davenport Creek.

Approximately 0.34 ac.-ft. of treatment and 12.80 ac.-ft of attenuation is anticipated. Proposed pond sizing calculations can be found in **Appendix C**.

6.2.9 BSN200

BSN200 is located from Sta. 6442+50 to 6474+00. This basin correlates with Basin B-4 from the existing condition. BSN200 discharges into existing Pond B-4 which outfalls under the adjacent access road to the west and into a wetland associated with Davenport Creek. By utilizing a MES wall along the southbound lanes, it is possible to widen the existing Pond B-4 to accommodate the 8-lane typical section in this area. It should be noted that Pond B-4 in the existing condition has little to no freeboard for the adjacent Sand Hill Road / Access Road for the design storm. For this reason, additional pond alternatives were identified to ensure attenuation requirements would be met during the design phase. See Section 8.0 for proposed pond alternative locations.

A combination of open conveyance ditches and closed storm sewer systems are anticipated for this basin.

Approximately 0.17 ac.-ft. of treatment and 0.88 ac.-ft of attenuation is anticipated. Proposed pond sizing calculations can be found in **Appendix C**.

6.2.10 BSN109

BSN109 is located on the eastside of the SR 429 / I-4 interchange, located from Sta. 5369+50 to Sta. 5420+00 along I-4 (SR 400). This basin correlates to Basin 5B from the existing condition. BSN109 is an open basin that discharges in wetlands associated with Reedy Creek. See Section 8.0 for proposed pond alternative locations.

Closed storm sewer systems are anticipated for this basin. CD-12 conveys offsite from the north to the south. Reedy Creek bridge is located on the eastern side of this basin.

Approximately 3.31 ac.-ft. of treatment and 24.41 ac.-ft of attenuation is anticipated. Proposed pond sizing calculations can be found in **Appendix C**.

SECTION 7.0 – FLOODPLAIN & ENVIRONMENT INFORMATION

Project Improvements will have encroachments into FEMA floodplains. A detailed analysis of the impacts resulting from roadway improvements and compensation for these impacts has been included in the *Location Hydraulic Report*, included under separate cover with this submittal. The limits of the floodplain have been outlined on the drainage maps included in **Appendix A**.

SECTION 8.0 – STORMWATER PONDS

Three pond alternatives have been provided for each of the basins within the proposed project corridor. Seasonal high water elevations were determined from the best available information which was typically either as-built information or permit documentation for the portion of the project located at the SR 429 / Interstate 4 interchange. Otherwise, seasonal high water elevations were assumed using wetland lines and contours developed from LiDAR data.

Where feasible existing FDOT parcels and existing stormwater management facilities were considered for pond alternatives. There is one FDOT owned remnant parcel within the corridor. This parcel has been called out on the proposed drainage maps provided in **Appendix A** near Sta. 6426+00. A field review was conducted for the remnant parcel and it was determined that the elevation of the property was not suitable for a stormwater management facility.

The required treatment and attenuation volumes are included on the pond sizing calculation sheets provided in **Appendix C**. The preferred alternative alignment was utilized for determining treatment and attenuation requirements. Impacts to existing ponds and ponds associated with the FDOT District 5 BTU improvements have also factored into the analysis. The impacted volumes were combined with the required treatment and attenuation volumes as noted on the calculations provided. As noted in **Section 5.0** of this report, no opportunities are available with local stakeholders for a joint use pond.

A brief synopsis of each pond alternative is provided in the paragraphs that follow. A pond evaluation matrix has been included in **Appendix E**. Pond alternatives are identified within the proposed drainage maps included in **Appendix A**. Preliminary design calculations with seasonal high water elevation assumptions can be found in **Appendix C**.

8.1.1 Basin 100

Treatment and attenuation of the proposed mainline will be provided in Pond 100. No additional ponds are proposed as part of this basin.

8.1.2 BSN206

As noted in Section 6.0, the proposed improvements will reduce historical storage within the wetland adjacent to CR 532. Additionally, the proposed ramps connecting SR 538 to CR 532 may be too low to be hydraulically connected to the BSN205 pond. Therefore, three offsite pond alternatives have been identified should they be required. CFX is proposing a pond near the intersection of CR 532 and Poinciana Parkway Extension. Should a pond be necessary for this basin, a joint use agreement with CFX should be pursued. The pond depicted within the drainage maps have not been increased to account for aesthetics.

- BSN 206 Pond Alternative 1 is located in the northwest quadrant of the SR 538 / CR 532 interchange, adjacent to the SR 538 southbound exit ramp to CR 532 at approximately Sta. 6217+00. This alternative has the closest proximity to the corridor; however, it is located within a wetland and would further reduce the historical storage provided in the existing wetland. Wood stork and alligator habitat available – currently assuming presence for. Parcels required are as follows: 36-25-27-4782-0001-0030, 36-25-27-4782-0001-0040, and 36-25-27-4782-0001-0050.
- BSN 206 Pond Alternative 2 (**Preferred**) is located in the southwest quadrant of the SR 538 / CR 532 interchange, adjacent to the southbound SR 538 onramp at approximately Sta. 6210+00. No impacts to existing wetlands or historical storage is anticipated for this location. Eastern indigo snake habitat available – currently assuming presence for. Parcels required are as follows: Polk County 27-26-01-000000-011080 and 27-26-01-000000-011140.
- BSN 206 Pond Alternative 3 is located in the southeast quadrant of the SR 538 / CR 532 interchange at approximately Sta. 6205.00. This pond is not located adjacent to a ramp like the other ponds because of an existing utility corridor containing gas lines located within the adjacent parcel. The proposed storm sewer would be required to traverse this corridor, therefore there is potential for utility conflicts with the proposed storm sewer system associated with this alternative. Additionally, the owner of the gas line is proposing to install a larger gas main within the easement in

the near future. An easement will be required for this alternative. Eastern indigo snake habitat available – currently assuming presence for. Parcels required are as follows: 06-26-28-4785-0001-0010, 06-26-28-4785-0001-0020, 06-26-28-4785-0001-0030, and 06-26-28-4785-0001-0040.

8.1.3 BSN205

Three offsite pond alternatives have been identified for this basin:

- BSN 205 Pond Alternative 1 is located on the east side of the proposed corridor at approximately Sta. 6240+00. This pond is located approximately 500-ft from the corridor due to the floodplain and utility easement. Storm sewer pipes would need to traverse the utility corridor to discharge to this pond alternative. The pond has been visually upsized by 50% to account for aesthetics. Eastern indigo snake habitat available – currently assuming presence for. Parcels required are as follows: 36-25-27-0000-0030-0000.
- BSN 205 Pond Alternative 2 (**Preferred**) is located on the west side of the corridor at approximately Sta. 6247+00. This is the preferred alternative because there are no anticipated wetland and utility conflicts. This alternative has less trees than alternative 3. Sand skink, Florida scrub jay, and eastern indigo snake habitat available – currently assuming presence for. The pond has been visually upsized by 50% to account for aesthetics. Parcels required are as follows: 31-25-28-5455-0001-0200.
- BSN 205 Pond Alternative 3 is located on the west side of the corridor at approximately Sta. 6237+00. This pond would be located adjacent to a RV park. The elimination of the trees between the park and the corridor could result in additional noise. Eastern indigo snake habitat available – currently assuming presence for. The pond has been visually upsized by 30% to account for aesthetics. Parcels required are as follows: the remainder of 31-25-28-5455-0001-0380.

8.1.4 BSN204

Three offsite pond alternatives have been identified for this basin:

- BSN 204 Pond Alternative 1 is located on the west side of the proposed corridor at approximately Sta. 6287+00. This pond is located within a residential area. Aerial photography depicts areas that appear to hold water in the vicinity of the proposed pond. This could be the result of a localized low area or the seasonal high water

- table being close to the surface. Eastern indigo snake habitat available – currently assuming presence for. This pond has not been increased in size for aesthetics due to the adjacent parcels having residential homes on them. Parcels required are as follows: 35-25-27-3160-000A-0040.
- BSN 204 Pond Alternative 2 (**Preferred**) is located on the west side of the corridor at approximately 6269+00. This pond is located adjacent to a natural waterway. The existing elevation of this pond alternative is higher than the other two alternatives. Sand skink and eastern indigo snake habitat available – currently assuming presence for. This pond has not been upsized to account for aesthetics; an additional two parcels will be required. Parcels required are as follows: 36-25-27-0000-0098-0000 and 36-25-27-0000-0099-0000.
 - BSN 204 Pond Alternative 3 is located on the east side of the corridor at approximately Sta. 6255+00. This alternative would be located between the proposed Celebration Road and the existing utility easement. Storm sewer pipes from the proposed SR 538 corridor would be required to traverse the new Celebration Road. Wetland impacts are anticipated for this alternative. Sand skink and eastern indigo snake habitat available – currently assuming presence for. The pond has been visually upsized by 50% to account for aesthetics. Parcels required are as follows: the remainder of 31-25-28-5455-0001-0230.

8.1.5 BSN203

The proposed roadway is located primarily within the FEMA 100-yr floodplain associated with the confluence of Davenport Creek and Davenport Creek Tributary No. 4 into the wetlands of Reedy Creek. Available ponds sites located outside the floodplain were found to be limited within the vicinity of the corridor. Given the lack of available area for pond locations, none of the alternatives have been upsized to accommodate aesthetics. Three offsite pond alternatives have been identified for this basin:

- BSN 203 Pond Alternative 1 (**Preferred**) is located on the west side of the proposed corridor at approximately Sta. 6316+00. Of the three pond alternatives this alternative does not encroach into the FEMA floodplain and has a higher elevation than the other alternatives. Wetland impacts are anticipated for this alternative. Wood stork and alligator habitat available – currently assuming presence for. Parcels required are as follows: 34-25-27-4012-0002-0020.
- BSN 203 Pond Alternative 2 is located on each side of the proposed corridor at approximately Sta. 6306+00. This pond alternative is located partially within the FEMA 100-yr floodplain. The eastern portion of the pond is limited in size by a utility easement to the east and the outfall of Davenport Creek into the wetlands associated

with Reedy Creek. Wetland impacts are anticipated for this alternative. Wood stork and alligator habitat available – currently assuming presence for. Parcels required are as follows: 34-25-27-4012-0002-0020.

- BSN 203 Pond Alternative 3 is located on the west side of the proposed at approximately Sta. 6294+00. This pond alternative has been placed adjacent to Davenport Creek Tributary No. 4. A portion of the pond will be located within the FEMA 100-yr floodplain. The pond berm has been located outside of the tributary; however additional survey will be required to ensure the side slopes do not encroach into the tributary. Wetland impacts are anticipated for this alternative. Wood stork and alligator habitat available – currently assuming presence for. Parcels required are as follows: 35-25-27-3160-000A-0060 and 35-25-27-3160-000A-0050.

It should be noted that there is an upland area located northeast of the corridor as depicted within the FEMA FIRM panel. This site was not selected as a pond alternative due to the distance from the corridor, approximately 1000-ft, and the storm sewer pipes would have to traverse a gas line easement. It is recommended during the design phase to verify the elevations of this upland area to confirm it is above the FEMA Zone A elevation and consider it as an option.

8.1.6 BSN Interchange

One onsite and two offsite pond alternatives have been identified for this basin. Given the lack of available area for pond locations, none of the alternatives have been upsized to accommodate aesthetics.

- BSN Interchange Pond Alternative 1 is located on the east side of the proposed corridor adjacent to Ramp C1 at approximately Sta. 1047+00. This pond alternative is bounded by the utility easement to the west, Ramp C1 to the north, and a new subdivision to the west and south. Wetland impacts are anticipated for this alternative which would eliminate the tree buffer between the new subdivision and the proposed corridor. Wood stork and alligator habitat available – currently assuming presence for. Parcels required are as follows: 26-25-27-0000-0025-0000 and 26-25-27-0000-0040-0000.
- BSN Interchange Pond Alternative 2 is located on the east side of the proposed corridor adjacent to Ramp C1 at approximately Sta. 1035+00. This pond alternative is bounded by the proposed corridor to the west and north, a new subdivision to the east, and Davenport Creek to the south. Wetland impacts are anticipated for this alternative which would eliminate the tree buffer between the new subdivision and the proposed corridor. Wood stork and alligator habitat available – currently

assuming presence for. Parcels required are as follows: 26-25-27-0000-0025-0000 and 26-25-27-0000-0070-0000.

- BSN Interchange Onsite Pond Alternatives (**Preferred**) are located within the SR 429 / Interstate 4 interchange. These ponds are comprised of existing ponds that have been modified to utilize the area under the new connector ramps and reconstruction of the existing ramps that are currently placed on earthen fill. It will be necessary to interconnect Pond 106 and Pond 107 to Pond 105 to achieve the necessary volume needed for treatment and attenuation. Pond 108A and Pond 108B will be constructed as part of the I-4 BTU improvements at SR 429 and are proposed to remain as part of the proposed improvements. Pond 108A will be enlarged to utilize the increased infield area once the existing ramp is reconstructed from being on fill to being a bridge. Existing CD-2, or proposed CD-14, will be rerouted due to a conflict with the proposed pond expansion and piers associated with the proposed bridges. Refer to the Location Hydraulics Report for detailed information regarding this culvert.

8.1.7 BSN202

Three offsite pond alternatives have been identified for this basin. Given the lack of available real estate for pond locations, none of the alternatives have been upsized to accommodate aesthetics.

- BSN 202 Pond Alternative 1 (**Preferred**) is located within the parcel located in the southwest quadrant of the SR 429 / Sinclair Road interchange adjacent to the southbound onramp to SR 429 at approximately Sta. 6405+00. The proposed improvements would eliminate the existing Pond B-2. This pond alternative would provide the closest alternative to the existing pond to help maintain existing drainage infrastructure. At the time of writing a permit has been granted for Phase I construction of a multi-family residential community within the identified parcel, however construction has not started. The proposed Phase I development will not impact the proposed pond location shown. Sand skink and eastern indigo snake habitat available – currently assuming presence for. Parcels required are as follows: 22-25-27-3160-000C-0010.
- BSN 202 Pond Alternative 2 is located along Sinclair Road (Sta. 13+00) on the north side approximately 1400-ft east of SR 429. Given the distance away from the corridor and the recent construction activities this pond alternative is not recommended. Sand skink and eastern indigo snake habitat available – currently assuming presence for. Parcels required are as follows: 22-25-27-5245-0001-0010.

- BSN 202 Pond Alternative 3 is located in the northeast quadrant of the SR 429 / Sinclair Road interchange adjacent to the northbound SR 429 onramp at approximately Sta. 6414+00. New construction activities have started on this parcel and as such this pond alternative is not recommended. Sand skink and eastern indigo snake habitat available – currently assuming presence for. Parcels required are as follows: 22-25-27-3160-000B-0010.

8.1.8 BSN201

Roadway improvements are anticipated to be minimal north of Sinclair Road. It may be feasible to provide the required treatment and attenuation within the existing stormwater management facilities, but without final grading it cannot be guaranteed, therefore three offsite pond alternatives and one onsite alternative have been identified for this basin:

- BSN 201 Pond Alternative 1 is located in the northwest quadrant of the SR 429 / Sinclair Road interchange adjacent to the southbound off ramp to Sinclair Road at approximately Sta. 6412+00. The proposed development of this parcel has been planned by others; however, a permit has not been granted at the time of writing. Sand skink and eastern indigo snake habitat available – currently assuming presence for. Parcels required are as follows: 22-25-27-0000-0024-0000.
- BSN 201 Pond Alternative 2 (**Preferred**) is located in the northwest quadrant of the SR 429 / Sinclair Road interchange adjacent to the southbound off ramp to Sinclair Road at approximately Sta. 6423+00. This alternative would widen the existing stormwater management facility into the adjacent parcel. Wood stork and alligator habitat available – currently assuming presence for. Parcels required are as follows: 21-25-27-3302-0001-0030.
- BSN 201 Pond Alternative 3 is located along Sinclair Road (Sta. 19+00) on the north side approximately 2,000-ft east of SR 429. This site has recently broken ground with construction activity for a new development, therefore this alternative is not recommended. Sand skink and eastern indigo snake habitat available – currently assuming presence for. Parcels required are as follows: 22-25-27-5245-0001-0010.
- BSN 201 Pond Alternative 4 is located within an existing wetland / conservation area at Sta. 6431+00. Additionally, this alternative is within the FEMA 100-yr floodplain. This alternative is not recommended.

8.1.9 BSN200

Roadway improvements are anticipated to be minimal north of Sinclair Road. It may be feasible to provide the required treatment and attenuation within the existing stormwater management

facilities, but without final grading it cannot be guaranteed, therefore three offsite pond alternatives have been identified for this basin:

- BSN 200 Pond Alternative 1 (**Preferred**) is located on the west side of the corridor approximately at Sta. 6461+00. This pond location can be interconnected with the existing Pond B-4 to provide the necessary treatment and attenuation. Eastern indigo snake habitat available – currently assuming presence for. Parcels required are as follows: 16-25-27-3160-000D-0010.
- BSN 200 Pond Alternative 2 is located on the west side of the corridor approximately at Sta. 6472+00. This location is not recommended for two reasons. The pond is located at the upstream portion of the basin, which would limit the lower portion of the basins from discharging into this facility. Additionally, the pond is in close proximity to an existing treatment plant with a cell phone tower, which could result in conflicts with existing utilities serving the plant and accompanying cell phone tower. Eastern indigo snake habitat available – currently assuming presence for. Parcels required are as follows: 16-25-27-3160-000A-0010.
- BSN 200 Pond Alternative 3 is located on the west side of the corridor approximately at Sta. 6461+00. Unlike pond alternative 1, this alternative is not located within the FEMA 100-yr floodplain, however wetland impacts are anticipated. This location will require an easement from the parcel identified in Alternative 1. Wood stork and alligator habitat available – currently assuming presence for. Parcels required are as follows: 16-25-27-0000-0045-0000.

8.1.10 BSN109

Three offsite pond alternatives have been identified for this basin:

- BSN 204 Pond Alternative 1 is located 1,200-ft north of Interstate 4 at approximately Sta. 5386+00. Though there are no utility conflicts for the construction of this pond alternative, a gas line is located along the eastern and northern berms. This would require the proposed storm sewer pipes to traverse this utility. Wetland impacts are anticipated for this pond alternative. Wood stork and alligator habitat available – currently assuming presence for. This pond has not been upsized to accommodate aesthetics; an additional parcel will be required to do so. Parcels required are as follows: 23-25-27-4925-0001-00E0.
- BSN 204 Pond Alternative 2 (**Preferred**) is located adjacent to Ramp D1 at approximately Sta. 5394+00. Wetland impacts are anticipated for this pond alternative. Wood stork and alligator habitat available – currently assuming presence

- for. This pond has been visually upsized by 50% to account for aesthetics. Parcels required are as follows: 23-25-27-0000-0035-0000 and 23-25-27-0000-0030-0000.
- BSN 204 Pond Alternative 3 is located 700-ft north of Interstate 4 approximately at Sta. 5404+00. Wood stork and alligator habitat available – currently assuming presence for. This pond has been visually upsized by 50% to account for aesthetics. Parcels required are as follows: 23-25-27-0000-0020-0000.

SECTION 9.0 – RESULTS

The analysis presented in this report identified potential pond sites based on recent aerials and other preliminary data. Once the potential pond sites were narrowed down to three alternatives, a more detailed analysis was conducted utilizing the following parameters: right of way requirements, easement requirements, atypical construction costs for a given pond site, potential contamination, threatened endangered & significant species, maintenance, cultural resources, wetland impacts, floodplain impacts and impacts to other relevant features as noted in the pond site evaluation matrix provided in **Appendix E**. In conjunction with this analysis, a *Contamination Screening Evaluation Report* and *Natural Resource Evaluation*, and a *Cultural Resource Assessment Survey* were prepared and are provided under separate cover with this submittal. In addition, a Technical Memorandum providing a summary of cultural resources related to the proposed pond sites is included in **Appendix F**. The following outlines the results of the technical memorandum.

Archaeological Resources

None of the alternative pond sites are located within or adjacent to known significant archaeological sites. While 12 pond sites (see Table 1 of the Technical Memo) are located within or adjacent to eight previously recorded archaeological sites, none of these sites have been previously determined by the State Historic Preservation Officer (SHPO) to be National Register-eligible. Of the eight sites, four have been previously determined by the SHPO to be National Register-ineligible

(8OS47, 8OS587, 8OS592, and 8OS595), one has been determined to exhibit insufficient information to make a determination of National Register eligibility (8OS2940), and three (8OS49, 8OS93, and 8OS612) have not yet been evaluated by the SHPO for National Register eligibility.

Historic Resources

None of the alternative pond sites are located within, or within 150 feet of, known significant or known potentially significant historic resources. The review noted only two proposed pond sites that had any previously

recorded or unrecorded potential historic resources located within, or within 150 feet of, their proposed location: Basin 204 - Alternative 1 and Basin 204 - Alternative 3 (see Table 2 of the Technical Memo). None of these recorded or unrecorded historic resources were located within the footprints of the pond alternatives. The previously recorded structure at 6805 Forehand Road (8OS2770) was previously determined by the SHPO to be National Register–ineligible. Field survey would be needed during Final Design to determine whether any unrecorded building associated with the two additional parcels with historic build dates are extant within an established area of potential effect (APE), and any within the APE would require an evaluation of National Register eligibility.

The preferred alternative for each basin and anticipated right of way needs associated with the preferred alternatives are outlined in **Table 8**. The evaluation matrix which contains the details of the analysis has been provided in **Appendix E**.

Table 8: Preferred Pond Alternatives and Anticipated Right of Way

Basin	Preferred Alternative	Anticipated Right of Way Requirements (acres)
Basin 100	N/A	0.00
BSN206	2	5.64
BSN205	2	12.18
BSN204	2	9.97
BSN203	1	10.81
BSN Interchange	On-site	0.00
BSN202	1	5.80
BSN201	2	2.18
BSN200	1	2.45
BSN109	2	12.49

SECTION 10.0 – CONCLUSIONS

As part of this analysis, pond site alternatives were analyzed for two basins. The previous sections of this report and the evaluation matrix included in **Appendix E** summarize the results of the analysis. A preferred alternative was selected based off of this analysis with the selection and estimated right of way needs summarized in **Table 8** provided in the previous section. It should be noted that the information contained herein is preliminary and will need to be refined once this project enters the design phase.

SECTION 11.0 – REFERENCES

FDOT Drainage Design Guide, 2023

FDOT Drainage Manual, 2023

ERP Applicant's Handbook Volume I, 2018

SFWMD ERP Applicant's Handbook Volume II, 2016

FDOT Project Development and Environment Manual, 2020

APPENDIX A – DRAINAGE MAPS

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1

EXISTING DRAINAGE MAPS

(PROPOSED DRAINAGE MAPS TAKEN FROM I-4 BTU PERMIT SET)

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1



REVISIONS				ENGINEER OF RECORD Renato E. Chuw, PE PE No. 56050 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			DC TRIBUTARY OUTFALL PROPOSED BASIN MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 400	OSCEOLA	431456-1-52-01		

OUTFALL 2: DAVENPORT CREEK TRIBUTARY

TREATED BASINS:

BSN105
 TOTAL AREA: 54.07 AC.
 IMPERVIOUS AREA: 28.75 AC.
 PERVIOUS AREA: 19.73 AC.
 WATER SURFACE: 5.59 AC.
 CN: 55.19
 DCIA: 34.34 AC.
 NDCIA: 19.73 AC.
 Tc (105A): 18.67 MIN (CALCULATED)
 Tc (105B): 27.84 MIN (CALCULATED)

BSN106
 TOTAL AREA: 21.38 AC.
 IMPERVIOUS AREA: 11.84 AC.
 PERVIOUS AREA: 6.90 AC.
 WATER SURFACE: 2.64 AC.
 CN: 56.83
 DCIA: 14.48 AC.
 NDCIA: 6.90 AC.
 Tc: 20.89 MIN (CALCULATED)

BSN106OFF
 TOTAL AREA: 4.25 AC.
 IMPERVIOUS AREA: 0.00 AC.
 PERVIOUS AREA: 4.25 AC.
 WATER SURFACE: 0.00 AC.
 CN: 49.00
 DCIA: 0.00 AC.
 NDCIA: 4.25 AC.
 Tc: 38.07 MIN (CALCULATED)

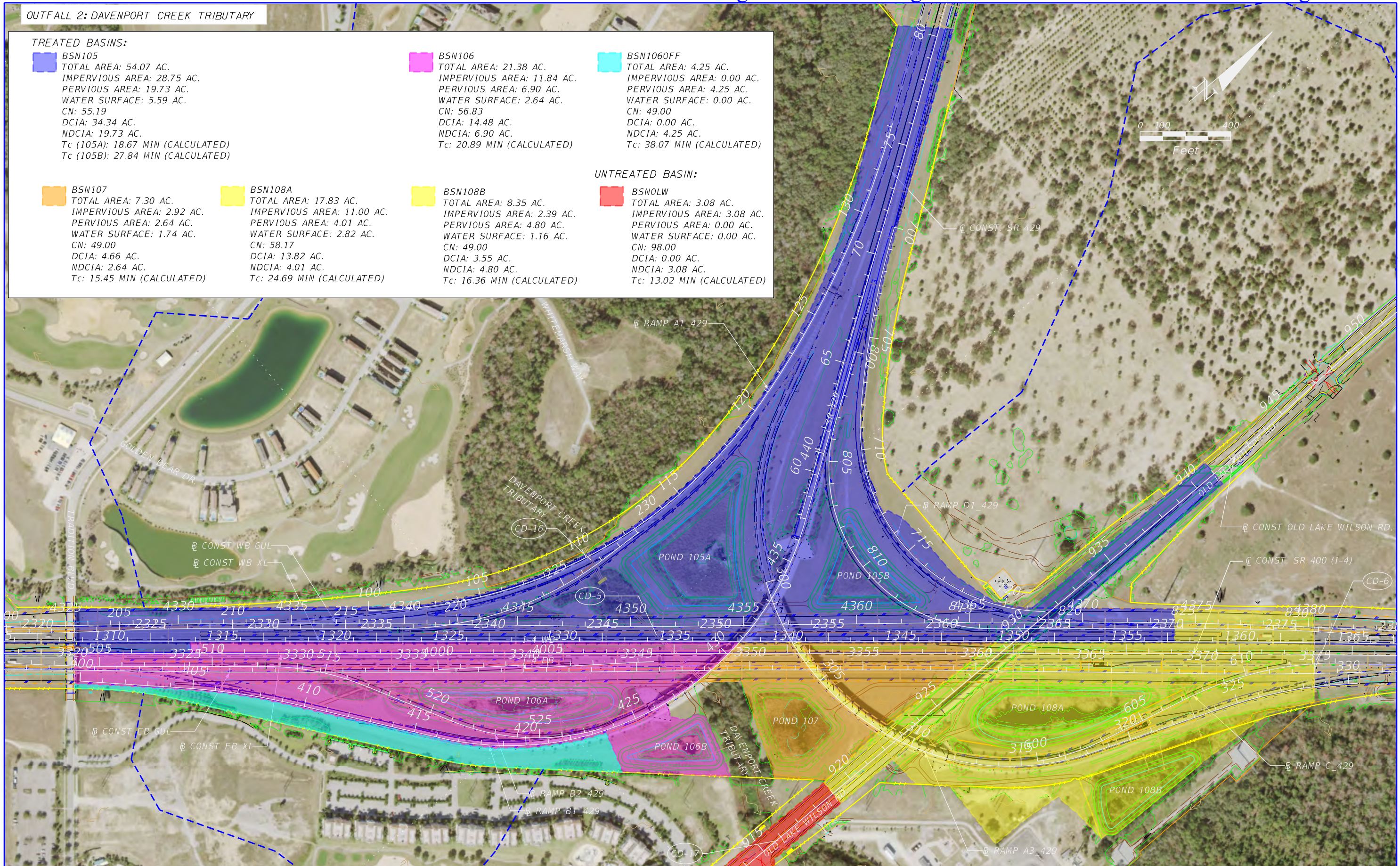
BSN107
 TOTAL AREA: 7.30 AC.
 IMPERVIOUS AREA: 2.92 AC.
 PERVIOUS AREA: 2.64 AC.
 WATER SURFACE: 1.74 AC.
 CN: 49.00
 DCIA: 4.66 AC.
 NDCIA: 2.64 AC.
 Tc: 15.45 MIN (CALCULATED)

BSN108A
 TOTAL AREA: 17.83 AC.
 IMPERVIOUS AREA: 11.00 AC.
 PERVIOUS AREA: 4.01 AC.
 WATER SURFACE: 2.82 AC.
 CN: 58.17
 DCIA: 13.82 AC.
 NDCIA: 4.01 AC.
 Tc: 24.69 MIN (CALCULATED)

BSN108B
 TOTAL AREA: 8.35 AC.
 IMPERVIOUS AREA: 2.39 AC.
 PERVIOUS AREA: 4.80 AC.
 WATER SURFACE: 1.16 AC.
 CN: 49.00
 DCIA: 3.55 AC.
 NDCIA: 4.80 AC.
 Tc: 16.36 MIN (CALCULATED)

UNTREATED BASIN:

BSNOLW
 TOTAL AREA: 3.08 AC.
 IMPERVIOUS AREA: 3.08 AC.
 PERVIOUS AREA: 0.00 AC.
 WATER SURFACE: 0.00 AC.
 CN: 98.00
 DCIA: 0.00 AC.
 NDCIA: 3.08 AC.
 Tc: 13.02 MIN (CALCULATED)
















REVISIONS				ENGINEER OF RECORD Renato E. Chuw, PE PE No. 56050 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			DC TRIBUTARY OUTFALL PROPOSED BASIN MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 400	OSCEOLA	431456-1-52-01		

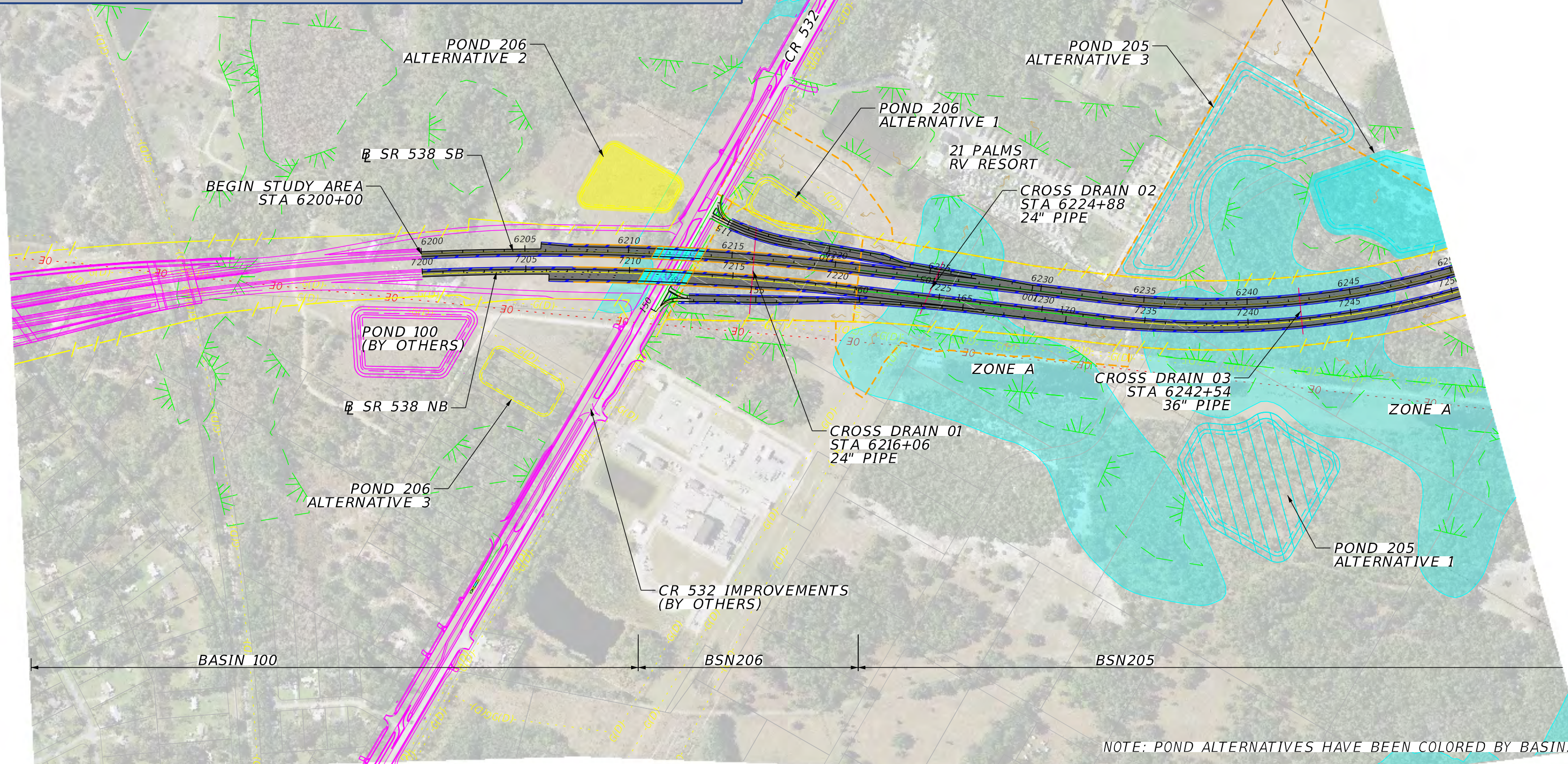
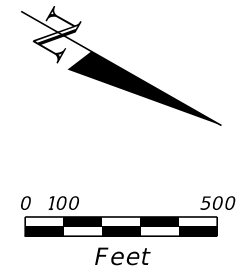
PROPOSED DRAINAGE MAPS

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1

LEGEND

-  EXIST. R/W LINE
-  EXIST. LA R/W LINE
-  PROP. R/W LINE
-  PROP. LA R/W LINE
-  BASIN DIVIDE
-  PARCEL LINE
-  PREFERRED FPC SITE
-  WETLANDS
-  FLOW ARROW
-  100 YEAR FLOODPLAIN
-  100 YEAR REGULATORY FLOODWAY
-  500 YEAR FLOODPLAIN
-  100 YEAR FLOOD ZONE/ELEVATION






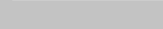









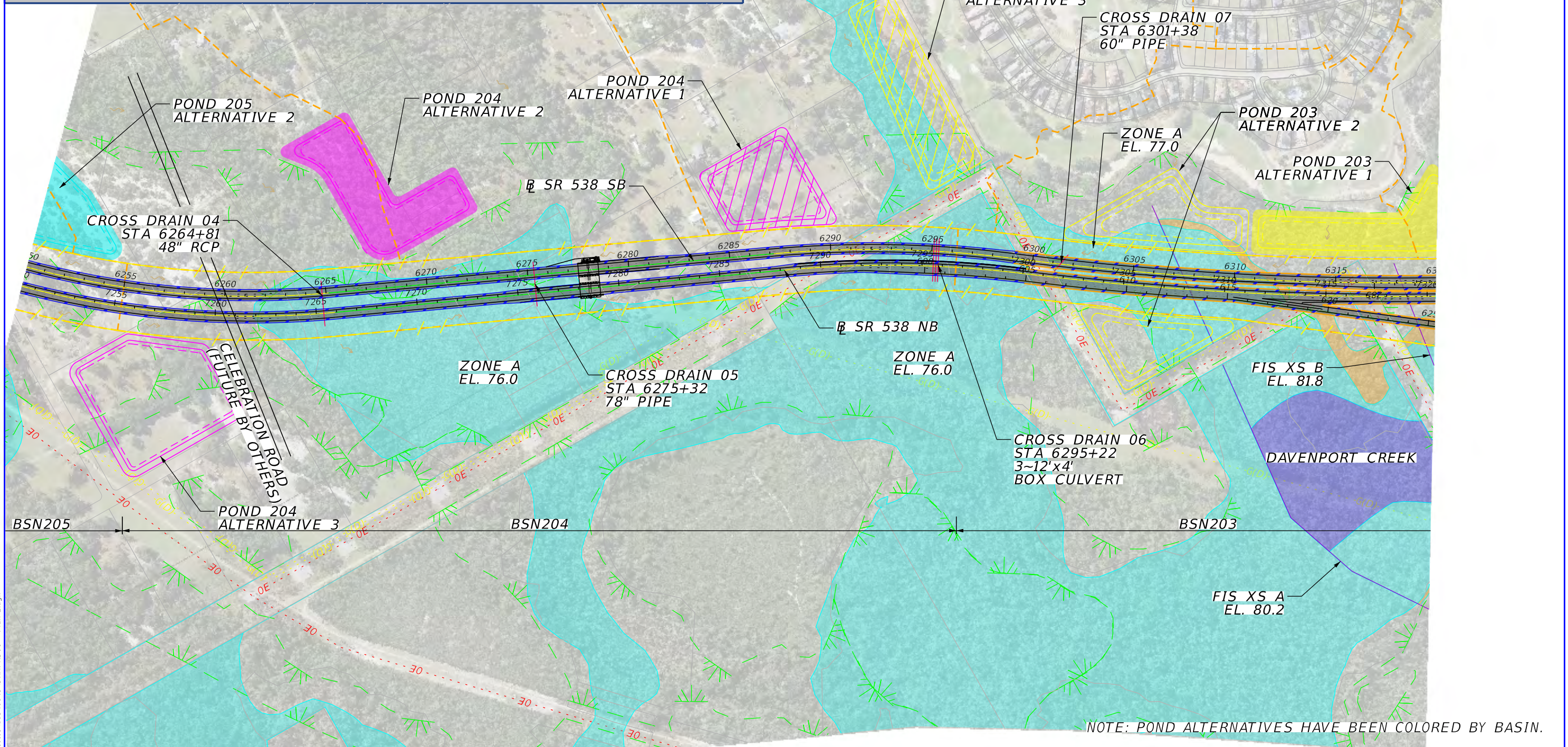
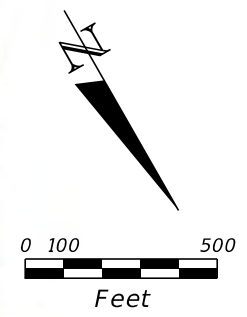
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REVISIONS		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	
				DRAINAGE MAP 1

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 538	OSCEOLA	446581-1

LEGEND

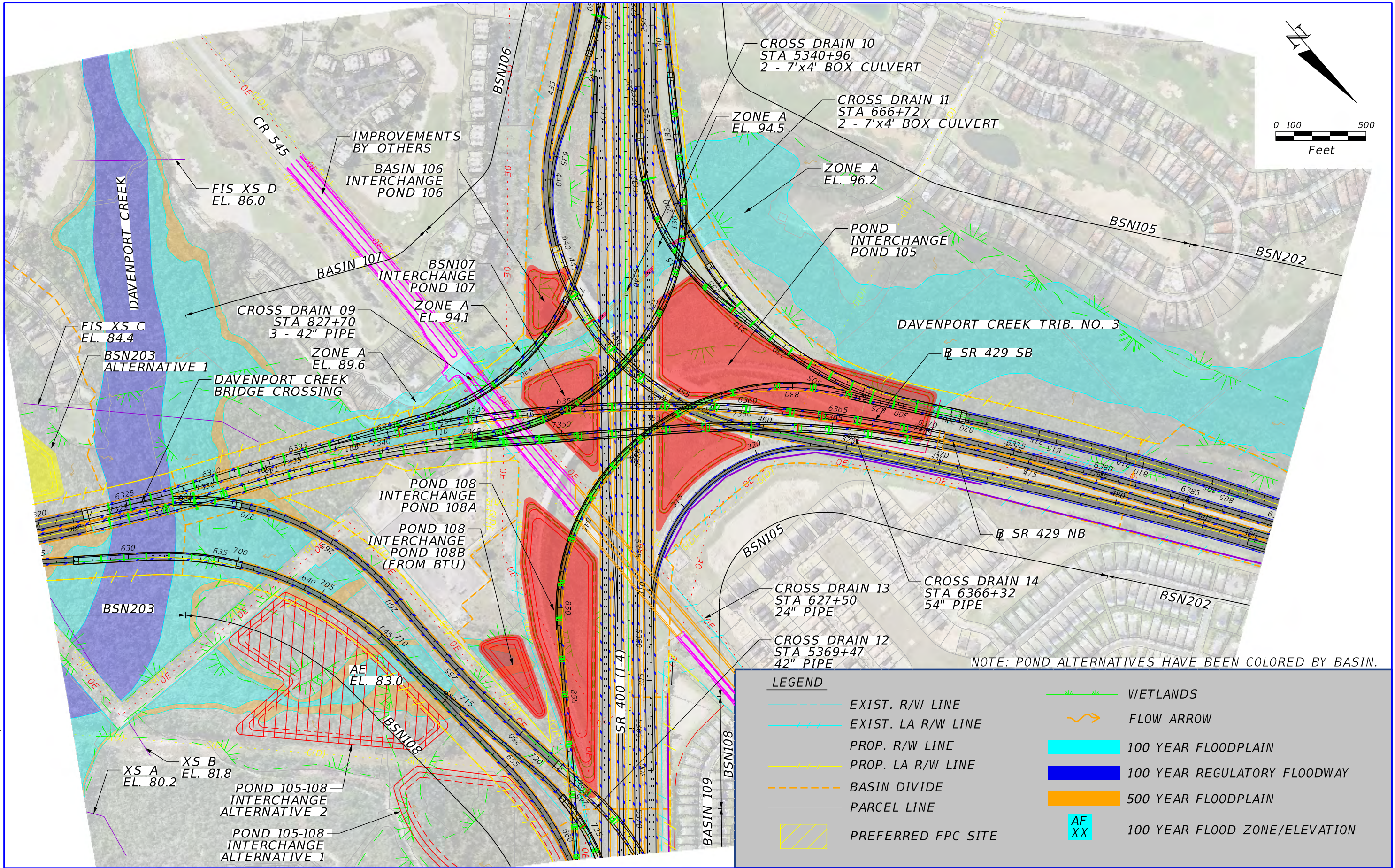
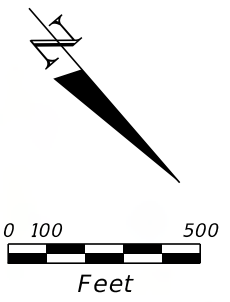
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-  EXIST. LA R/W LINE
-  PROP. R/W LINE
-  PROP. LA R/W LINE
-  BASIN DIVIDE
-  PARCEL LINE
-  PREFERRED FPC SITE
-  WETLANDS
-  FLOW ARROW
-  100 YEAR FLOODPLAIN
-  100 YEAR REGULATORY FLOODWAY
-  500 YEAR FLOODPLAIN
-  100 YEAR FLOOD ZONE/ELEVATION



NOTE: POND ALTERNATIVES HAVE BEEN COLORED BY BASIN.

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REVISIONS		REVISIONS		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			DRAINAGE MAP	SHEET NO. 2
DATE	DESCRIPTION	DATE	DESCRIPTION					
				SR 538	OSCEOLA	446581-1		



NOTE: POND ALTERNATIVES HAVE BEEN COLORED BY BASIN.

LEGEND

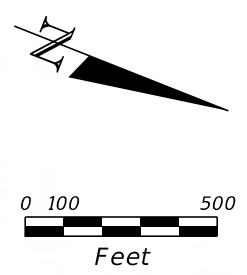
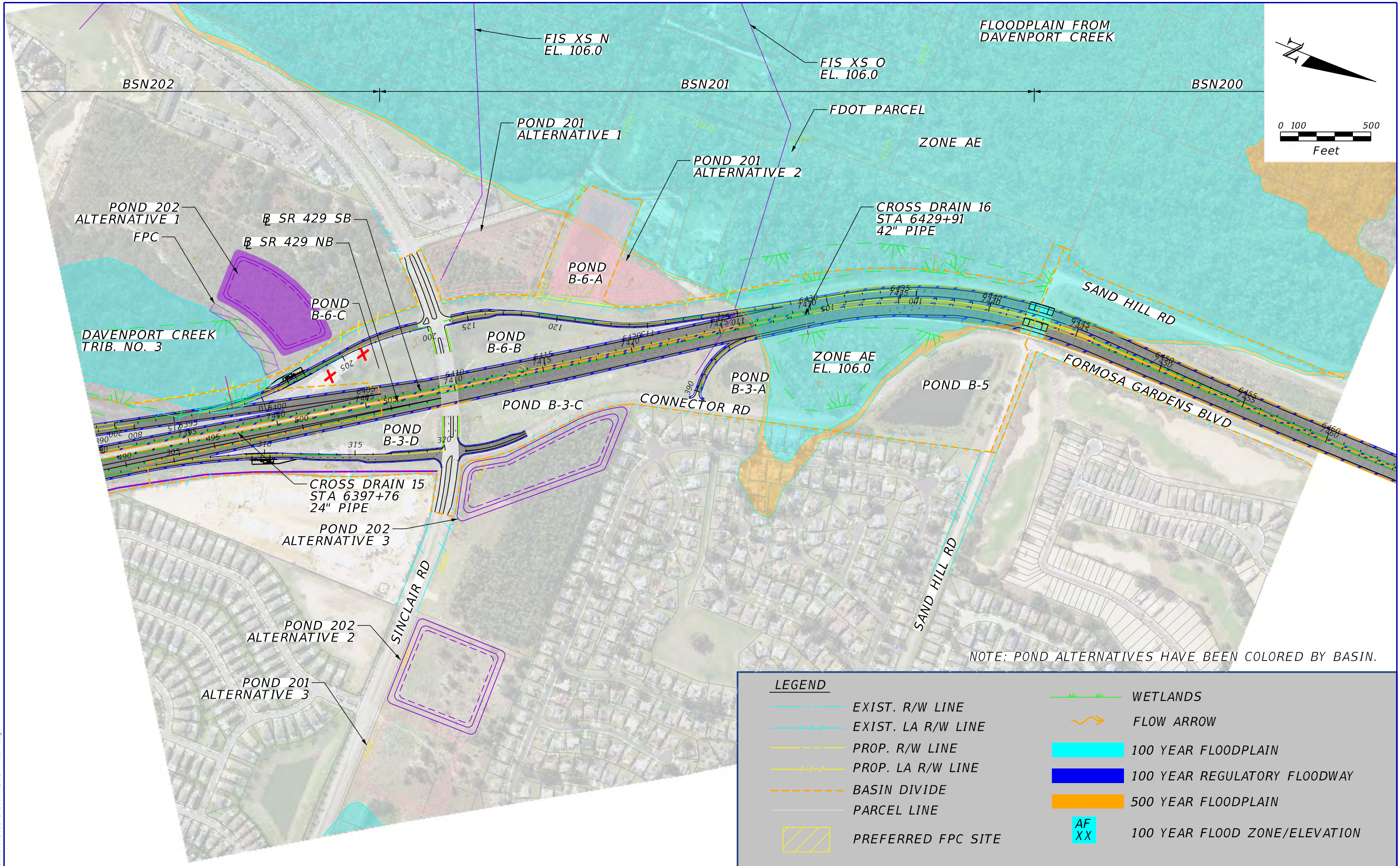
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	EXIST. LA R/W LINE		FLOW ARROW
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	PROP. LA R/W LINE		100 YEAR REGULATORY FLOODWAY
	BASIN DIVIDE		500 YEAR FLOODPLAIN
	PARCEL LINE		100 YEAR FLOOD ZONE/ELEVATION
	PREFERRED FPC SITE		

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 538	OSCEOLA	446581-1

DRAINAGE MAP		SHEET NO.
		3

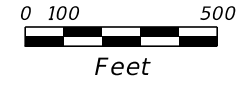
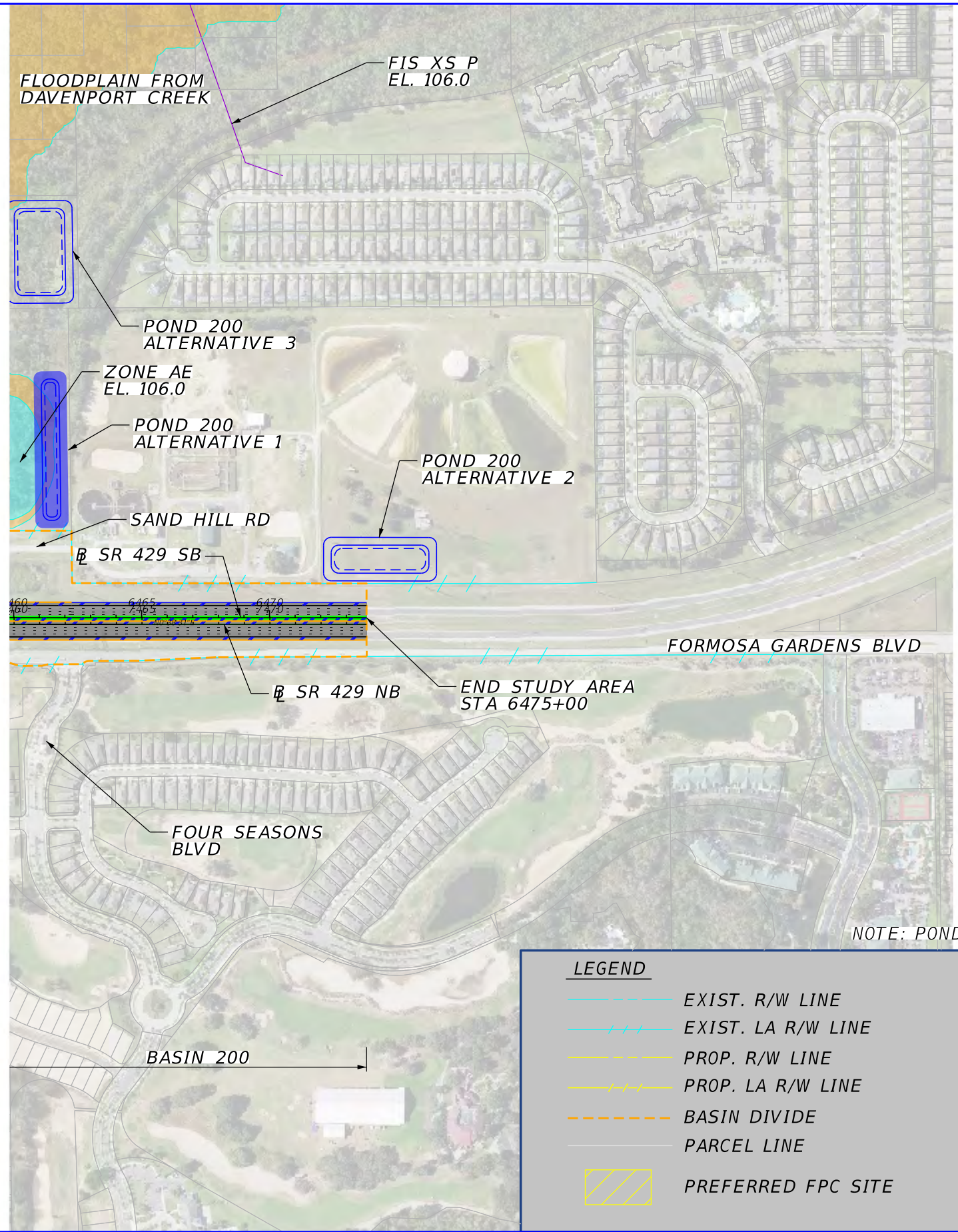


NOTE: POND ALTERNATIVES HAVE BEEN COLORED BY BASIN.

LEGEND	
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	EXIST. LA R/W LINE
	PROP. R/W LINE
	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	PREFERRED FPC SITE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	100 YEAR REGULATORY FLOODWAY
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

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REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
				SR 429	OSCEOLA	446581-1	
DRAINAGE MAP							4



LEGEND	
	EXIST. R/W LINE
	EXIST. LA R/W LINE
	PROP. R/W LINE
	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	PREFERRED FPC SITE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	100 YEAR REGULATORY FLOODWAY
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

NOTE: POND ALTERNATIVES HAVE BEEN COLORED BY BASIN.

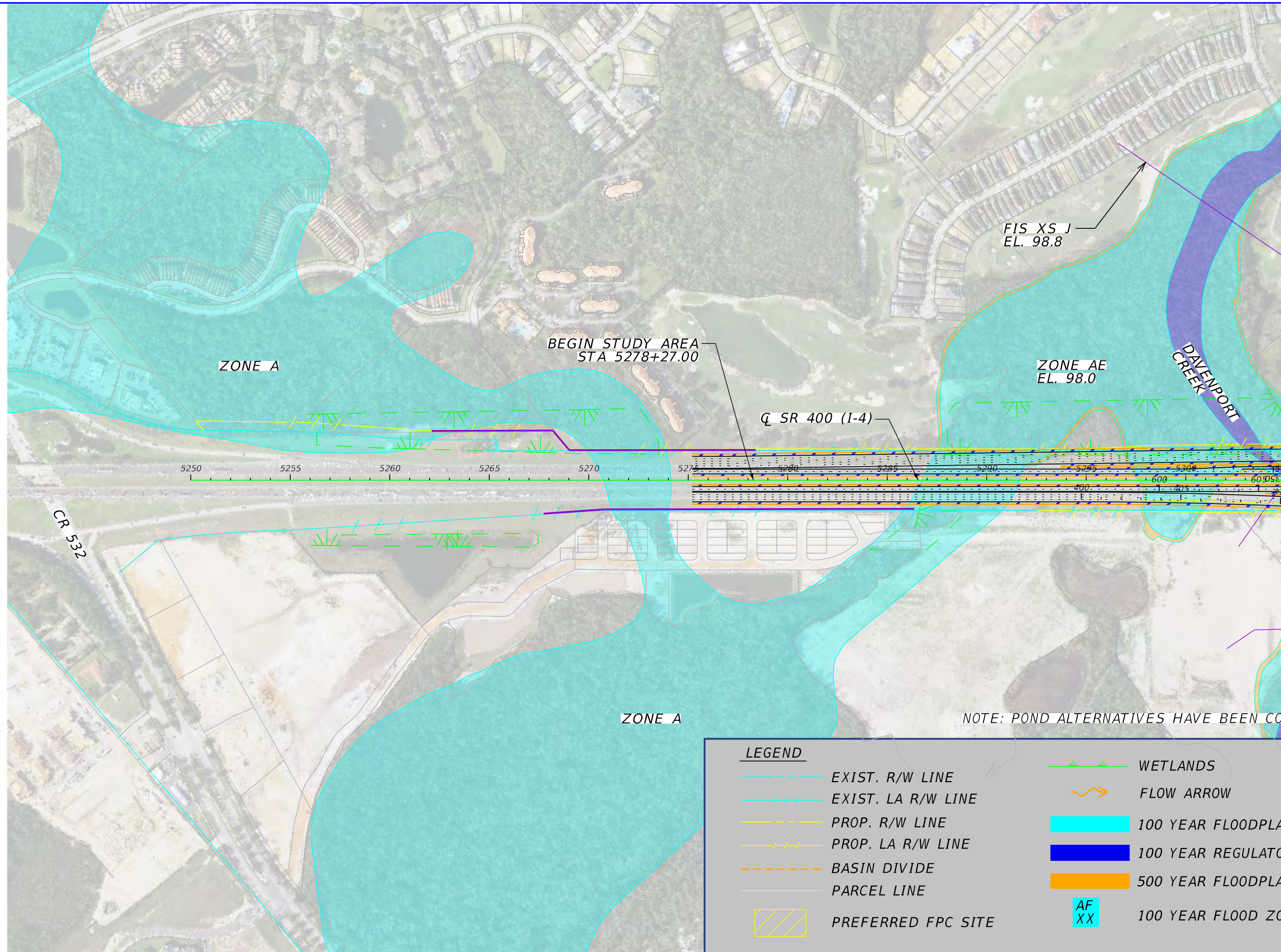
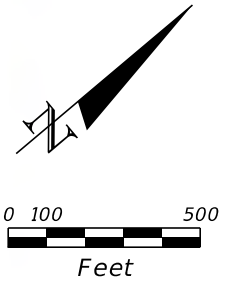
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR		

DRAINAGE MAP

SHEET NO.
5



LEGEND	
	EXIST. R/W LINE
	EXIST. LA R/W LINE
	PROP. R/W LINE
	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	PREFERRED FPC SITE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	100 YEAR REGULATORY FLOODWAY
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

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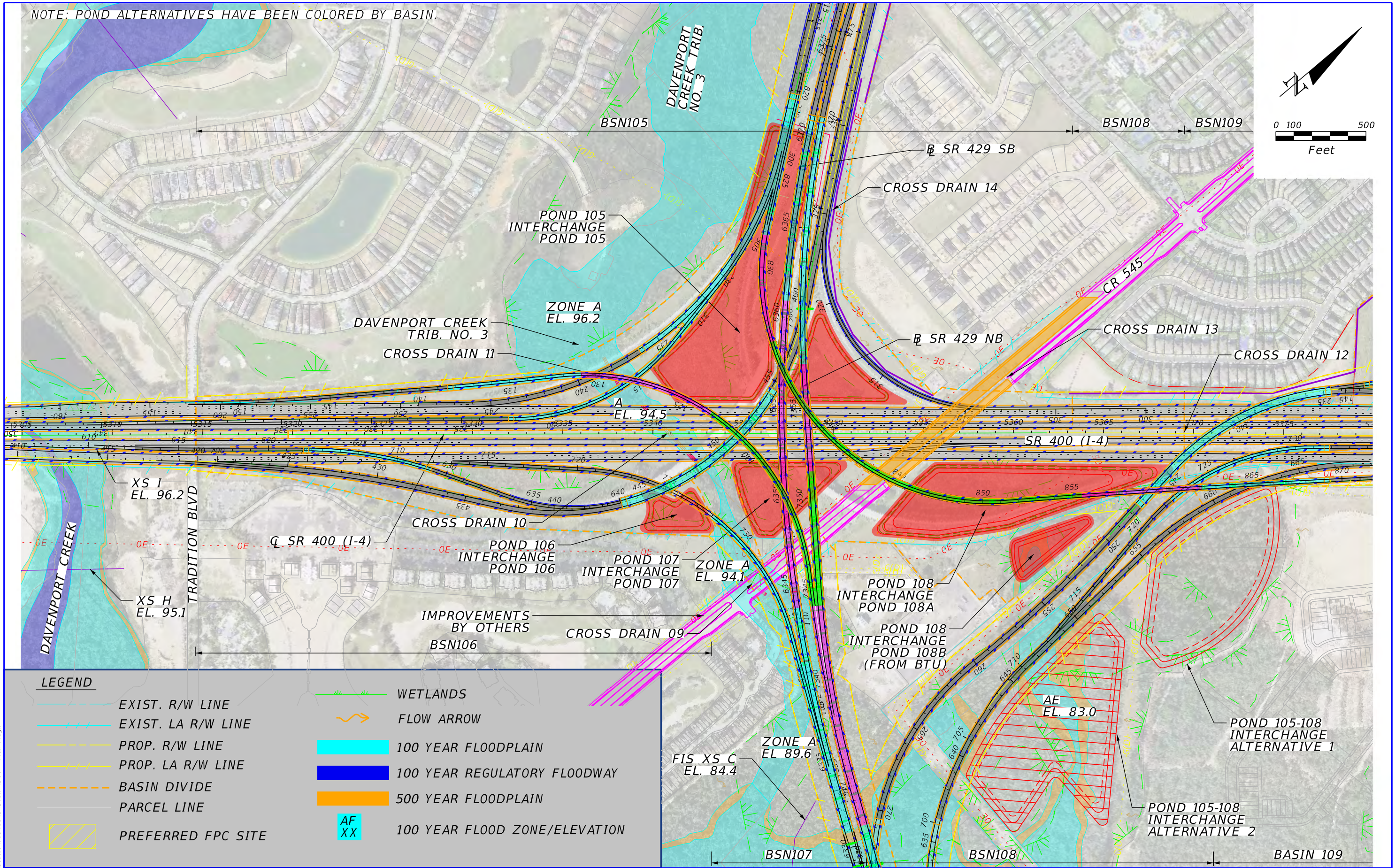
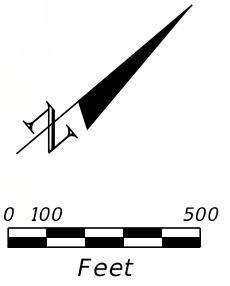
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DATE	DESCRIPTION	DATE	DESCRIPTION

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	OSCEOLA	446581-1

DRAINAGE MAP

SHEET NO.
6

NOTE: POND ALTERNATIVES HAVE BEEN COLORED BY BASIN.



LEGEND

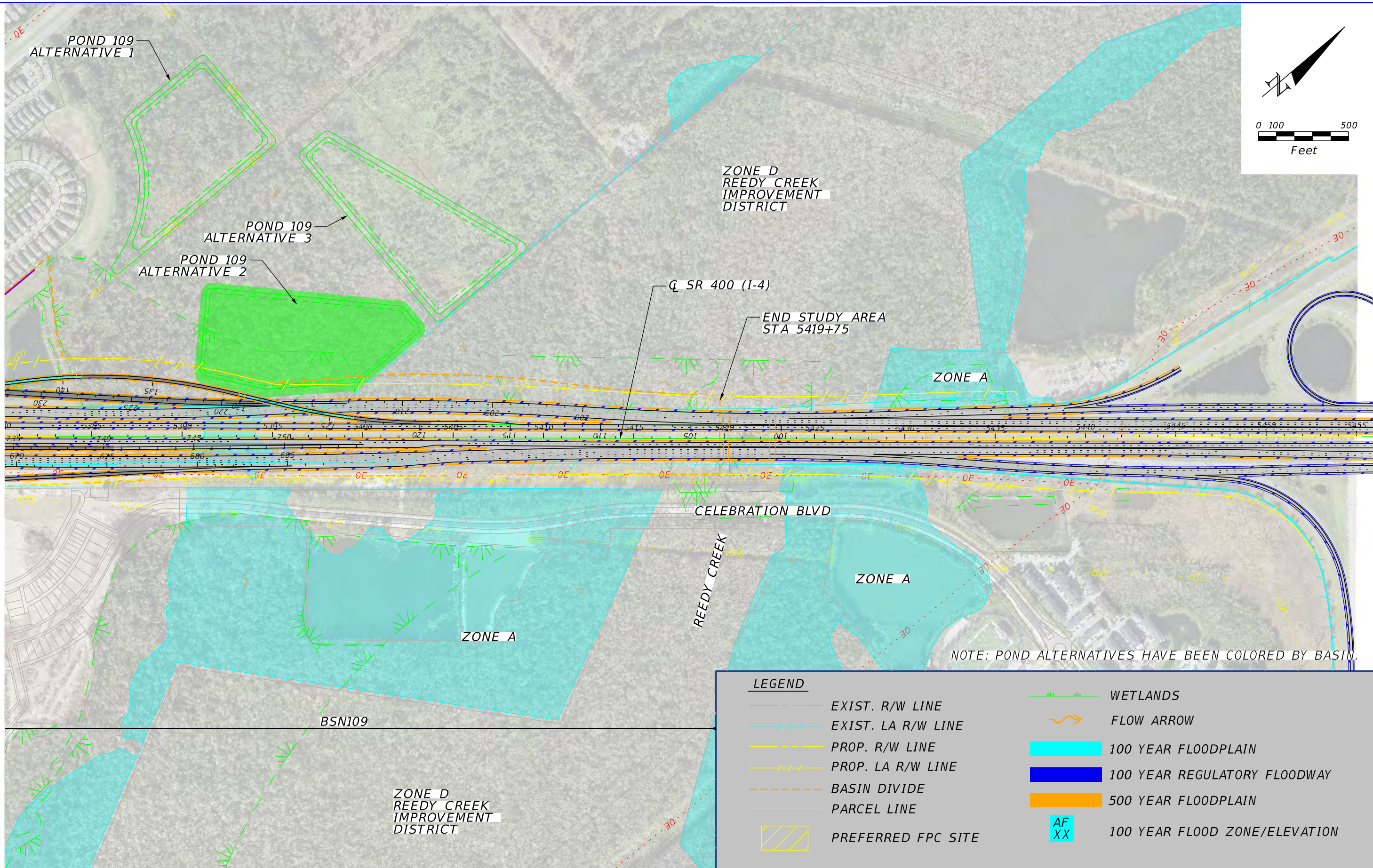
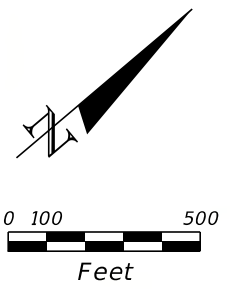
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- EXIST. LA R/W LINE
- PROP. R/W LINE
- PROP. LA R/W LINE
- BASIN DIVIDE
- PARCEL LINE
- PREFERRED FPC SITE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
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- 500 YEAR FLOODPLAIN
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 538	OSCEOLA	446581-1

DRAINAGE MAP	SHEET NO. 7
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LEGEND	
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	EXIST. LA R/W LINE
	PROP. R/W LINE
	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	PREFERRED FPC SITE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	100 YEAR REGULATORY FLOODWAY
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION










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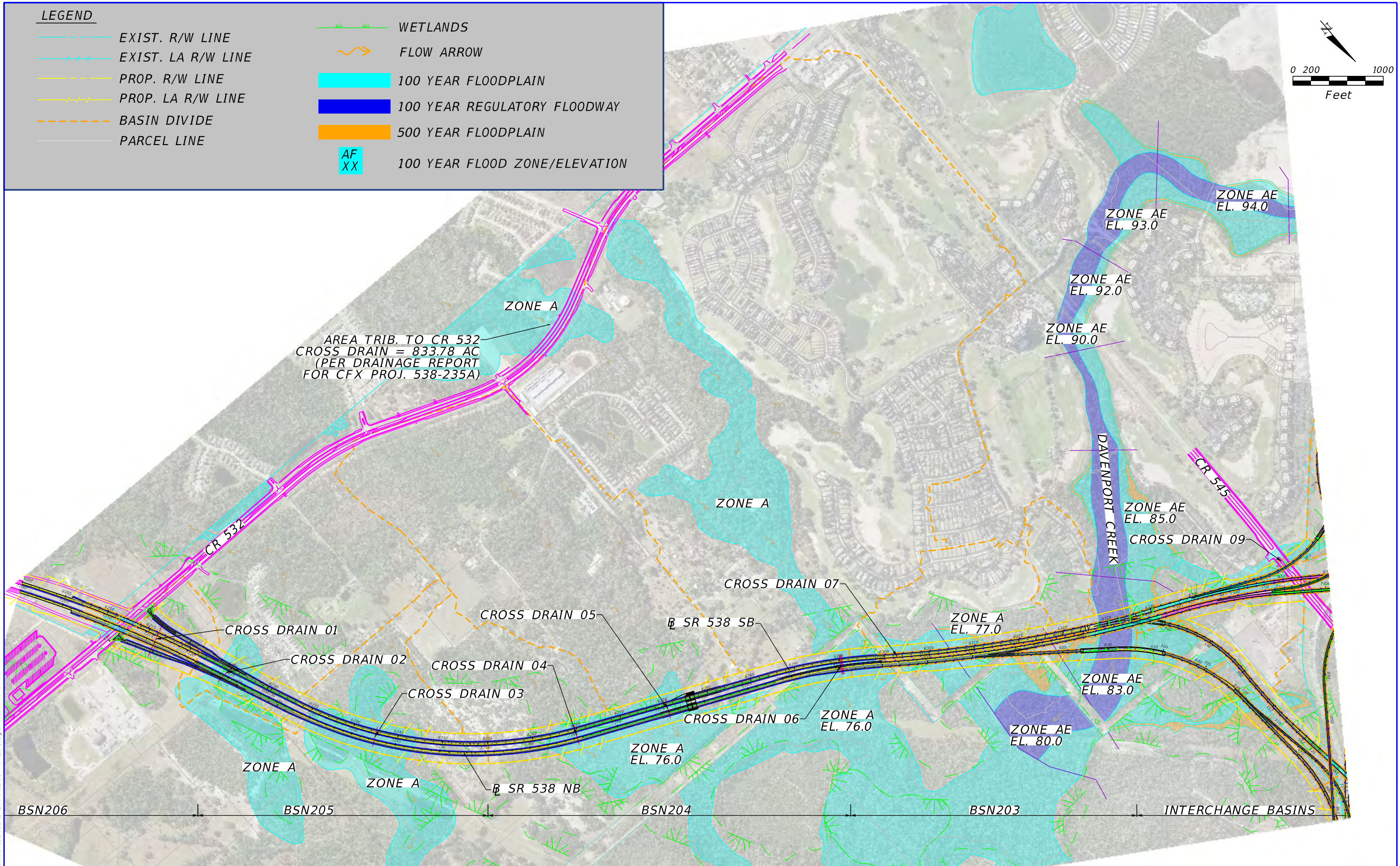
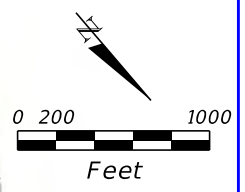
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 538	OSCEOLA	446581-1

<p>DRAINAGE MAP</p>	<p>SHEET NO. 8</p>
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LEGEND

-  EXIST. R/W LINE
-  EXIST. LA R/W LINE
-  PROP. R/W LINE
-  PROP. LA R/W LINE
-  BASIN DIVIDE
-  PARCEL LINE
-  WETLANDS
-  FLOW ARROW
-  100 YEAR FLOODPLAIN
-  100 YEAR REGULATORY FLOODWAY
-  500 YEAR FLOODPLAIN
-  100 YEAR FLOOD ZONE/ELEVATION



AREA TRIB. TO CR 532
CROSS DRAIN = 833.78 AC
(PER DRAINAGE REPORT
FOR CFX PROJ. 538-235A)

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DATE		REVISIONS		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			DRAINAGE MAP	SHEET NO. 9
DESCRIPTION		DESCRIPTION						
				CR 538	OSCEOLA	446581-1		

APPENDIX B – PRE-DEVELOPMENT CALCULATIONS

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1



DAVENPORT CREEK TRIBUTARY OUTFALL

PRE-DEVELOPMENT

Historic

EX_BSNF4

Total Basin Area (ac.)	36.32
Curve Number	48.92

Pre

EX_PNDF4A

Total Basin Area (ac.)	26.39
Curve Number	48.00

EX_PNDF4B

Total Basin Area (ac.)	9.72
Curve Number	48.00

Total Pre-Basin Summary

Peak Discharge (cfs)	
25yr/72hr	59.92
50yr/72hr	98.16
25yr/72hr	5.34
50yr/72hr	6.73

POST-DEVELOPMENT

BSN105A

Basin Area (ac.)	45.48
Curve Number	56.07

BSN105B

Basin Area (ac.)	13.90
Curve Number	49.00

Peak Discharge (cfs)

25yr/72hr	20.99
50yr/72hr	31.18

WATER QUALITY SUMMARY (Wet Detention Ponds)

Required Pollution Abatement Volume (PAV)	5.50	ac-ft
Provided PAV	4.83	ac-ft
Pond Control Elevation	93.50	ft, NAVD
PAV Elevation	94.73	ft, NAVD

POND SUMMARY

POND 105A

Pond Control Elevation (NWL)	93.50	ft, NAVD
Average Estimated Seasonal High Water Elevation	95.70	ft, NAVD
Inside Berm Elevation	99.50	ft, NAVD
Design High Water Elevation (25yr/72h)	97.43	ft, NAVD
Freeboard Provided	2.07	ft

POND 105B

Pond Control Elevation (NWL)	93.50	ft, NAVD
Average Estimated Seasonal High Water Elevation	95.70	ft, NAVD
Inside Berm Elevation	99.50	ft, NAVD
Design High Water Elevation (25yr/72h)	97.52	ft, NAVD
Freeboard Provided	1.98	ft

PAVEMENT SUMMARY

Total Existing Pavement	10.48	ac.
Existing Untreated Pavement	0.00	ac.
Existing Treated Pavement	10.48	ac.
Total Proposed Pavement	30.75	ac.
Proposed Untreated Pavement	0.00	ac.
Proposed Treated Pavement	30.75	ac.

WATER QUANTITY CALCULATIONS

Water Quantity Estimate, Based on SCS Runoff Volume for RCID 50-Year/ 72-Hour

Post V(R):		Pre V(R):		Exist Pond Att Vol:	
BSN105A	40.32 ac-ft	EX_BSNF4A	20.84 ac-ft	EX_PONDF4A	12.46 ac-ft
BSN105B	11.63 ac-ft	EX_BSNF4B	7.75 ac-ft	EX_PONDF4B	6.14 ac-ft
TOTAL:	51.95 ac-ft		28.59 ac-ft		18.60 ac-ft

Storage Required = Post V(R) - Pre V(R) + Exist Pond Att Vol =
Storage Provided = Att. Vol.(PND105A&B)

41.96 ac-ft.
31.83 ac-ft.



DAVENPORT CREEK TRIBUTARY OUTFALL

PRE-DEVELOPMENT

Historic

EX_BSNF2

Total Basin Area (ac.)	20.87
Curve Number	53.94

Pre

EX_BSNF2A

Total Basin Area (ac.)	18.11
Curve Number	48.00

EX_BSNF2B

Total Basin Area (ac.)	2.69
Curve Number	48.00

EX_S405

Total Basin Area (ac.)	1.05
Curve Number	61.81

EX_BSNOLW

Total Basin Area (ac.)	3.20
Curve Number	71.36

Total Pre-Basin Summary

Peak Discharge (cfs)	
25yr/72hr	39.60
50yr/72hr	62.08
25yr/72hr	16.78
50yr/72hr	28.34

POST-DEVELOPMENT

BSN106

Basin Area (ac.)	19.70
Curve Number	57.96

BSN106OFF

Basin Area (ac.)	4.25
Curve Number	49.00

BSNOLW

Basin Area (ac.)	3.08
Curve Number	98.00

Peak Discharge (cfs)

25yr/72hr	21.60
50yr/72hr	32.74

WATER QUALITY SUMMARY (Wet Detention Ponds)

Required Pollution Abatement Volume (PAV)	2.47	ac-ft
Provided PAV	4.23	ac-ft
Pond Control Elevation	93.20	ft, NAVD
PAV Elevation	94.70	ft, NAVD

POND SUMMARY

POND 106A&B

Pond Control Elevation (NWL)	93.20	ft, NAVD
Average Estimated Seasonal High Water Elevation	96.45	ft, NAVD
Inside Berm Elevation	99.20	ft, NAVD
Design High Water Elevation (25yr/72h)	96.39	ft, NAVD
Freeboard Provided	2.81	ft

PAVEMENT SUMMARY

Total Existing Pavement	8.54	ac.
Existing Untreated Pavement	1.75	ac.
Existing Treated Pavement	6.79	ac.
Total Proposed Pavement	14.92	ac.
Proposed Untreated Pavement	3.08	ac.
Proposed Treated Pavement	11.84	ac.

WATER QUANTITY CALCULATIONS

Water Quantity Estimate, Based on SCS Runoff Volume for RCID 50-Year/ 72-Hour

Post V(R):		Pre V(R):		Exist Pond Att Vol:	
BSN106	18.28 ac-ft	EX_BSNF2A	13.71 ac-ft	EX_PNDF2A	7.33 ac-ft
BSN106OFF	1.96 ac-ft	EX_BSNF2B	1.70 ac-ft	EX_PNDF2B	3.29 ac-ft
BSNOLW	3.25 ac-ft	EX_S405	0.67 ac-ft		
		EX_BSNOLW	2.42 ac-ft		
TOTAL:	20.23 ac-ft		18.50 ac-ft		10.62 ac-ft

Storage Required = Post V(R) - Pre V(R) + Exist Pond Att Vol =

12.35 ac-ft.

Storage Provided = Att. Vol. (PND106)

16.30 ac-ft.



DAVENPORT CREEK TRIBUTARY OUTFALL

PRE-DEVELOPMENT

Historic

EX_BSNF7

Total Basin Area (ac.)	8.53
Curve Number	54.80

Pre

EX_BSNF7

Total Basin Area (ac.)	8.37
Curve Number	48.00

POST-DEVELOPMENT

BSN107

Basin Area (ac.)	7.30
Curve Number	49.00

Peak Discharge (cfs)

25yr/72hr	1.58
50yr/72hr	1.91

Total Pre-Basin Summary

Peak Discharge (cfs)

25yr/72hr	16.47
50yr/72hr	25.64

25yr/72hr	1.55
50yr/72hr	1.96

WATER QUALITY SUMMARY (Wet Detention Ponds)

Required Pollution Abatement Volume (PAV)	0.61	ac-ft
Provided PAV	5.68	ac-ft
Pond Control Elevation	93.00	ft, NAVD
PAV Elevation	96.00	ft, NAVD

POND SUMMARY

Pond Control Elevation (NWL)	93.00	ft, NAVD
Average Estimated Seasonal High Water Elevation	93.30	ft, NAVD
Inside Berm Elevation	97.00	ft, NAVD
Design High Water Elevation (25yr/72h)	94.63	ft, NAVD
Freeboard Provided	2.37	ft

PAVEMENT SUMMARY

Total Existing Pavement	1.04	ac.
Existing Untreated Pavement	0.00	ac.
Existing Treated Pavement	1.04	ac.
Total Proposed Pavement	2.92	ac.
Proposed Untreated Pavement	0.00	ac.
Proposed Treated Pavement	2.92	ac.

WATER QUANTITY CALCULATIONS

Water Quantity Estimate, Based on SCS Runoff Volume for RCID 50-Year/ 72-Hour

Post V(R):		Pre V(R):		Exist Pond Att Vol:	
BSN107	6.35 ac-ft	EX_BSNF7	5.67 ac-ft	EX_PNDF7	3.48 ac-ft
TOTAL:	6.35 ac-ft		5.67 ac-ft		3.48 ac-ft

Storage Required = Post V(R) - Pre V(R) + Exist Pond Att Vol =
Storage Provided = Att. Vol.(PND107)

4.16 ac-ft.
6.72 ac-ft.



DAVENPORT CREEK TRIBUTARY OUTFALL

PRE-DEVELOPMENT

Historic

EX_BSNG1

Total Basin Area (ac.)	20.34
Curve Number	74.05

Pre

EX_BSNG1

Total Basin Area (ac.)	20.43
Curve Number	48.00

Total Pre-Basin Summary

<i>Peak Discharge (cfs)</i>	
25yr/72hr	61.25
50yr/72hr	85.55
25yr/72hr	12.51
50yr/72hr	16.51

POST-DEVELOPMENT

BSN108A

Basin Area (ac.)	17.83
Curve Number	58.17

BSN108B

Basin Area (ac.)	8.35
Curve Number	49.00

<i>Peak Discharge (cfs)</i>	
25yr/72hr	6.88
50yr/72hr	19.27

WATER QUALITY SUMMARY (Wet Detention Ponds)

POND 108A

Required Pollution Abatement Volume (PAV)	2.29	ac-ft
Provided PAV	6.58	ac-ft
Pond Control Elevation	85.30	ft, NAVD
PAV Elevation	87.50	ft, NAVD

POND 108B

Required Pollution Abatement Volume (PAV)	0.70	ac-ft
Provided PAV	1.61	ac-ft
Pond Control Elevation	87.00	ft, NAVD
PAV Elevation	88.30	ft, NAVD

POND SUMMARY

POND 108A

Pond Control Elevation (NWL)	85.30	ft, NAVD
Average Estimated Seasonal High Water Elevation	86.90	ft, NAVD
Inside Berm Elevation	88.80	ft, NAVD
Design High Water Elevation (25yr/72h)	87.87	ft, NAVD
Freeboard Provided	0.93	ft

POND 108B

Pond Control Elevation (NWL)	87.00	ft, NAVD
Average Estimated Seasonal High Water Elevation	87.50	ft, NAVD
Inside Berm Elevation	90.00	ft, NAVD
Design High Water Elevation (25yr/72h)	89.05	ft, NAVD
Freeboard Provided	0.95	ft

PAVEMENT SUMMARY

Total Existing Pavement	8.37	ac.
Existing Untreated Pavement	0.00	ac.
Existing Treated Pavement	8.37	ac.
Total Proposed Pavement	13.39	ac.
Proposed Untreated Pavement	0.00	ac.
Proposed Treated Pavement	13.39	ac.

WATER QUANTITY CALCULATIONS

Water Quantity Estimate, Based on SCS Runoff Volume for RCID 50-Year/ 72-Hour

Post V(R):		Pre V(R):		Exist Pond Att Vol:	
BSN108A	35.18 ac-ft	EX_BSNG1	16.37 ac-ft	EX_PNDG1	6.72 ac-ft
BSN108B	6.20 ac-ft				
TOTAL:	41.38 ac-ft		16.37 ac-ft		6.72 ac-ft

Storage Required = Post V(R) - Pre V(R) + Exist Pond Att Vol =
 Storage Provided = Att. Vol.(PND108A&B)

31.73 ac-ft.
10.10 ac-ft.

OUTFALL 2: DAVENPORT CREEK TRIBUTARY

TREATED BASINS:

BSN105
 TOTAL AREA: 54.07 AC.
 IMPERVIOUS AREA: 28.75 AC.
 PERVIOUS AREA: 19.73 AC.
 WATER SURFACE: 5.59 AC.
 CN: 55.19
 DCIA: 34.34 AC.
 NDCIA: 19.73 AC.
 Tc (105A): 18.67 MIN (CALCULATED)
 Tc (105B): 27.84 MIN (CALCULATED)

BSN107
 TOTAL AREA: 7.30 AC.
 IMPERVIOUS AREA: 2.92 AC.
 PERVIOUS AREA: 2.64 AC.
 WATER SURFACE: 1.74 AC.
 CN: 49.00
 DCIA: 4.66 AC.
 NDCIA: 2.64 AC.
 Tc: 15.45 MIN (CALCULATED)

BSN108A
 TOTAL AREA: 17.83 AC.
 IMPERVIOUS AREA: 11.00 AC.
 PERVIOUS AREA: 4.01 AC.
 WATER SURFACE: 2.82 AC.
 CN: 58.17
 DCIA: 13.82 AC.
 NDCIA: 4.01 AC.
 Tc: 24.69 MIN (CALCULATED)

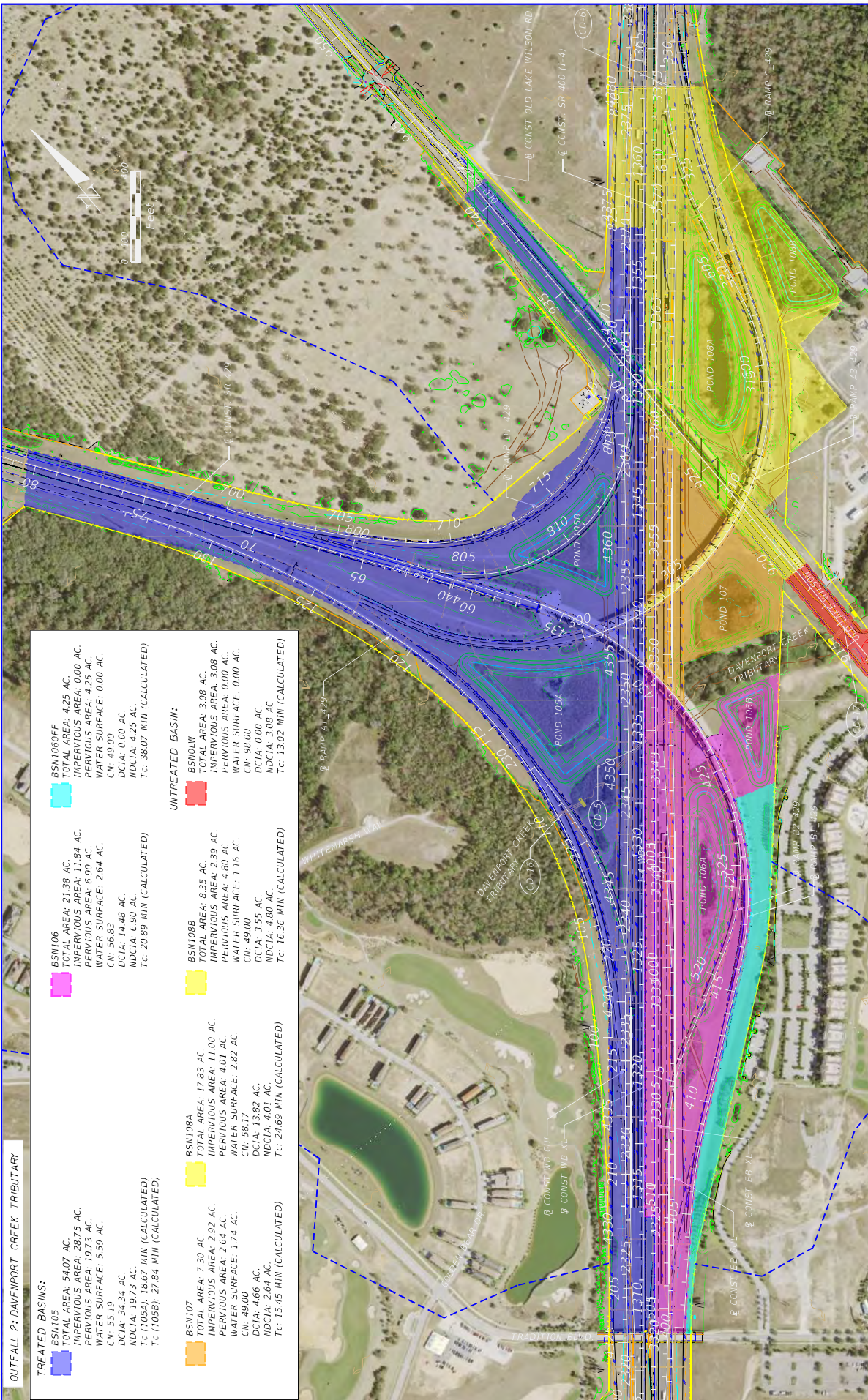
BSN106
 TOTAL AREA: 21.38 AC.
 IMPERVIOUS AREA: 11.84 AC.
 PERVIOUS AREA: 6.90 AC.
 WATER SURFACE: 2.64 AC.
 CN: 56.83
 DCIA: 14.48 AC.
 NDCIA: 6.90 AC.
 Tc: 20.89 MIN (CALCULATED)

BSN108B
 TOTAL AREA: 8.35 AC.
 IMPERVIOUS AREA: 2.39 AC.
 PERVIOUS AREA: 4.80 AC.
 WATER SURFACE: 1.16 AC.
 CN: 49.00
 DCIA: 3.55 AC.
 NDCIA: 4.80 AC.
 Tc: 16.36 MIN (CALCULATED)

BSN106OFF
 TOTAL AREA: 4.25 AC.
 IMPERVIOUS AREA: 0.00 AC.
 PERVIOUS AREA: 4.25 AC.
 WATER SURFACE: 0.00 AC.
 CN: 49.00
 DCIA: 0.00 AC.
 NDCIA: 4.25 AC.
 Tc: 38.07 MIN (CALCULATED)

UNTREATED BASIN:

BSN108W
 TOTAL AREA: 3.08 AC.
 IMPERVIOUS AREA: 3.08 AC.
 PERVIOUS AREA: 0.00 AC.
 WATER SURFACE: 0.00 AC.
 CN: 98.00
 DCIA: 0.00 AC.
 NDCIA: 3.08 AC.
 Tc: 13.02 MIN (CALCULATED)





DATE	DESCRIPTION	REVISIONS	DATE	DESCRIPTION

ENGINEER OF RECORD Renato F. Chow, PE PE No. 50050 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7024 3000 Oivera Drive P. 407.871.8850		DEPARTMENT OF TRANSPORTATION FINANCIAL PROJECT ID 431456-152-01	ROAD NO. SR 400	COUNTY OSCEOLA	SHEET NO. 80347 AM
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STATES OF FLORIDA DEPARTMENT OF TRANSPORTATION COUNTY OSCEOLA SR 400	FINANCIAL PROJECT ID 431456-152-01	SHEET NO. 80347 AM
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3/19/2018
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 C-427

DAVENPORT CREEK TRIBUTARY (POND 105A & B)

PROJECT TITLE:	I-4 Beyond the Ultimate		
PROJECT NUMBER:	431456-1-52-01		
BASIN DESIGNATION:	BSN105	DATE	
POND/NODE DESIGNATION:	PR_PND105A & B	MADE BY:	MOL 3/19/2018
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:	REC 3/19/2018



SFWMD SANTA BARBARA WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Pond NWL	N/A	N/A	100	5.59	559.00
				TOTALS	5.59
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98	28.75	2817.50
				TOTALS	28.75
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98		0.00
				TOTALS	0.00
PERVIOUS AREAS					
Open Land (Grass Cover 50% - 70%)		A	49	16.24	795.76
Open Land (Grass Cover 50% - 70%)		D	84	3.49	293.16
				TOTALS	19.73
SR 429 DEP PERMIT NO. 49-187636001; EXISTING POND F-4-A & B					TOTALS

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	34.34	TOTAL BASIN AREA	54.07	COMPOSITE CN	55.19

ESTIMATE OF RUNOFF VOLUME					
PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:					
1) DETERMINE SOIL STORAGE - S	----->	$S = (1000 / CN) - 10$			(inches)
2) DETERMINE RUNOFF - R	----->	$R = (P - 0.2 * S)^2 / (P + 0.8 * S)$			(inches)
		P = rainfall in inches			
3) DETERMINE RUNOFF VOLUME - V(R)	----->	$V(R) = (R / 12) * \text{BASIN AREA}$			(acres-feet)
CALCULATION TABLE			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		82.59
Agency	Design Storm Frequency	P (in)	S (in)	R (in)	V(R) (ac-ft)
FDOT	10 yr/24 hr	6.20	2.11	4.23	19.08
Osceola County	10 yr/72 hr	7.84	2.11	5.78	26.03
SFWMD	25 yr/72 hr	9.80	2.11	7.66	34.50
RCID	50 yr/72 hr	12.91	2.11	10.68	48.14

DAVENPORT CREEK TRIBUTARY (POND 105A)

PROJECT TITLE:	I-4 Beyond the Ultimate		
PROJECT NUMBER:	431456-1-52-01		
BASIN DESIGNATION:	BSN105A	DATE	
POND/NODE DESIGNATION:	PR_PND105A	MADE BY:	MOL 3/19/2018
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:	REC 3/19/2018



SFWMD SANTA BARBARA WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Pond NWL	N/A	N/A	100	3.83	383.00
				TOTALS	3.83
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98	24.38	2389.34
				TOTALS	24.38
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98		0.00
				TOTALS	0.00
PERVIOUS AREAS					
Open Land (Grass Cover 50% - 70%)		A	49	13.78	675.22
Open Land (Grass Cover 50% - 70%)		D	84	3.49	293.16
				TOTALS	17.27
SR 429 DEP PERMIT NO. 49-187636001; EXISTING POND F-4-A & B					TOTALS

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	28.21	TOTAL BASIN AREA	45.48	COMPOSITE CN	56.07

ESTIMATE OF RUNOFF VOLUME					
PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:					
1) DETERMINE SOIL STORAGE - S	----->	$S = (1000 / CN) - 10$			(inches)
2) DETERMINE RUNOFF - R	----->	$R = (P - 0.2 * S)^2 / (P + 0.8 * S)$			(inches)
P = rainfall in inches					
3) DETERMINE RUNOFF VOLUME - V(R)	----->	$V(R) = (R / 12) * \text{BASIN AREA}$			(acres-feet)
CALCULATION TABLE				BASED ON TOTAL DRAINAGE AREA	
				COMPOSITE CN	
				82.25	
Agency	Design Storm Frequency	P (in)	S (in)	R (in)	V(R) (ac-ft)
FDOT	10 yr/24 hr	6.20	2.16	4.20	15.91
Osceola County	10 yr/72 hr	7.84	2.16	5.74	21.74
SFWMD	25 yr/72 hr	9.80	2.16	7.61	28.86
RCID	50 yr/72 hr	12.91	2.16	10.64	40.32

DAVENPORT CREEK TRIBUTARY (POND 105B)



PROJECT TITLE:	I-4 Beyond the Ultimate		
PROJECT NUMBER:	431456-1-52-01		
BASIN DESIGNATION:	BSN105B		DATE
POND/NODE DESIGNATION:	PR_PND105B	MADE BY:	MOL 10/5/2018
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:	REC 10/5/2018

SFWMD SANTA BARBARA WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Pond NWL	N/A	N/A	100	1.76	176.00
				TOTALS	1.76
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98	4.37	428.16
Proposed Roadway (Treated)			98	2.00	196.00
				TOTALS	6.37
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98		0.00
				TOTALS	0.00
PERVIOUS AREAS					
Open Land (Grass Cover 50% - 70%)		A	49	2.46	120.54
Open Land (Grass Cover 50% - 70%)		A	49	3.31	162.19
				TOTALS	5.77
SR 429 DEP PERMIT NO. 49-187636001; EXISTING POND F-4-A & B					

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	8.13	TOTAL BASIN AREA	13.90	COMPOSITE CN	49.00

ESTIMATE OF RUNOFF VOLUME					
PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:					
1) DETERMINE SOIL STORAGE - S	----->	$S = (1000 / CN) - 10$			(inches)
2) DETERMINE RUNOFF - R	----->	$R = (P - 0.2*S)^2 / (P + 0.8*S)$			(inches)
					P = rainfall in inches
3) DETERMINE RUNOFF VOLUME - V(R)	----->	$V(R) = (R / 12) * \text{BASIN AREA}$			(acres-feet)
CALCULATION TABLE				BASED ON TOTAL DRAINAGE AREA	
				COMPOSITE CN	
				77.91	
Agency	Design Storm Frequency	P	S	R	V(R)
		(in)	(in)	(in)	(ac-ft)
FDOT	10 yr/24 hr	6.20	2.84	3.75	4.34
Osceola County	10 yr/72 hr	7.84	2.84	5.23	6.06
SFWMD	25 yr/72 hr	9.80	2.84	7.06	8.18
RCID	50 yr/72 hr	12.91	2.84	10.04	11.63

DAVENPORT CREEK TRIBUTARY (POND 105A & B)					
PROJECT TITLE:	I-4 Beyond the Ultimate				
PROJECT NUMBER:	431456-1-52-01				
BASIN DESIGNATION:	BSN105		MADE BY:	MOL	2/20/2018
POND/NODE DESIGNATION:	PR_PND105A&B		CHECKED BY:	REC	2/20/2018

Water Quality

Total Basin Area =	59.38	ac
Pond Area at NWL =	5.59	ac
Paved Area (Treated) =	26.38	ac
Paved Area (Untreated) =	0.00	

A.	1.0	" Over Total Basin Area =	4.95	Ac-Ft
B.	2.5	" Times Treated Paved Area =	5.50	Ac-Ft
		Required PAV =	5.50	Ac-Ft

Existing Pond F-4-A & B; SR 429 DEP Permit No. 49-187636001. The plans were developed in NAVD, therefore no conversion factors were used for the information shown below. The pond will be modified to accommodate the I-4 BTU

Stage Storage Calculations Pond 105A

ELEV. (ft)	AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
100.50	Outside Berm	5.61			31.45
			5.26	1.00	5.26
99.50	Inside Berm	4.90			26.19
			4.81	1.00	4.81
98.50	(ATT)	4.72			21.38
			4.39	3.77	16.55
94.73	(PAV)	4.05			4.83
			3.94	1.23	4.83
93.50	(NWL)	3.83			0.00
84.50	Pond Bottom	2.44			

Provided PAV = **4.83 ac-ft.**

Stage Storage Calculations Pond 105B

ELEV. (ft)	AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
100.50	Outside Berm	3.09			15.75
			2.82	1.00	2.82
99.50	Inside Berm	2.55			12.93
			2.48	1.00	2.48
98.50	(ATT)	2.42			10.45
			2.17	3.77	8.19
94.73	(PAV)	1.92			2.26
			1.84	1.23	2.26
93.50	(NWL)	1.76			0.00
84.50	Pond Bottom	1.07			



Provided PAV = **2.26 ac-ft.**

Bleed Down Volume in the 1st 24hrs

1/2" of the required detention volume = $0.5 \times (\text{Total Site - Water Surface}) \times (1\text{ft}/12\text{in}) =$ 2.24 Ac-Ft



Volume Remaining in Pond after Bleed Down = PAV - Bleed Down Volume = 2.59 Ac-Ft

DAVENPORT CREEK TRIBUTARY (POND 105A & B)

PROJECT TITLE:	I-4 Beyond the Ultimate				
	431456-1-52-01		DATE		
	PROJECT NUMBER:	BSN105	MADE BY:	MOL	2/20/2018
	BASIN DESIGNATION:	PR_PND105A&B	CHECKED BY:	REC	2/20/2018

Stage Storage Calculations

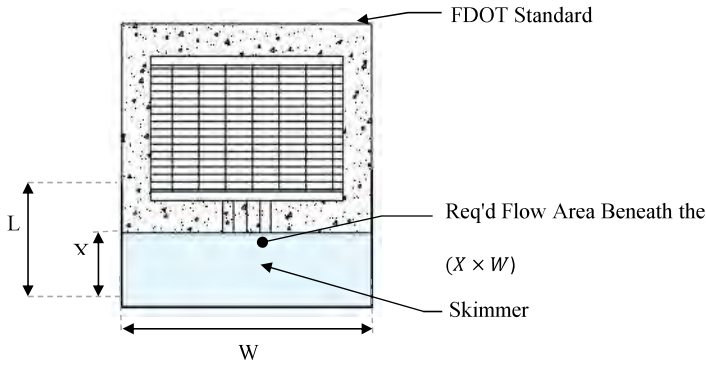
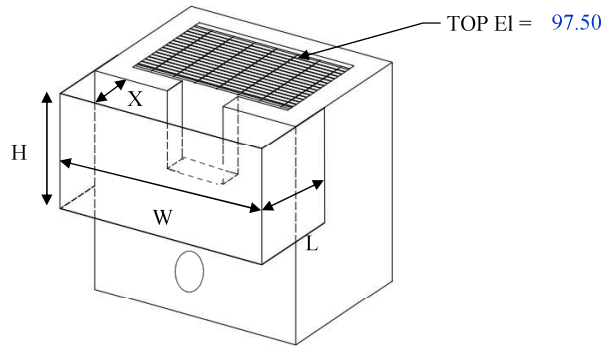
ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
100.50	Outside Berm	8.70				47.20
			8.08	1.00	8.08	
99.50	Inside Berm	7.45				39.12
			7.30	1.00	7.30	
98.50	(ATT)	7.14				31.83
			6.56	3.77	24.73	
94.73	(PAV)	5.97				7.09
			5.78	1.23	7.09	
93.50	(NWL)	5.59				0.00
84.50	Pond Bottom	3.51				

DAVENPORT CREEK TRIBUTARY (POND 105A)				
PROJECT TITLE:	I-4 Beyond the Ultimate			
PROJECT NUMBER:	431456-1-52-01			
BASIN DESIGNATION:	BSN105A	MADE BY:	SVC	DATE
POND DESIGNATION:	PR_PND105A&B	CHECKED BY:	REC	19-Mar-18
				03/12/2018

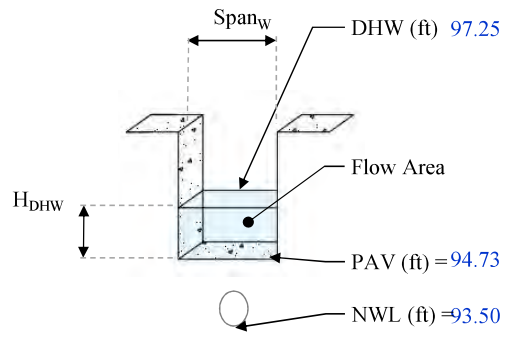
Skimmer Check (FDOT Index 240):

Design Note 2 Check: Flow Area Beneath the Skimmer must be 3 times larger than the Area of Weir

Skimmer Dimension Diagram:



Flow Area Calculations:



$$\begin{aligned}
 H_{DHW} \text{ (ft)} &= 2.52 \\
 H_{PAV} \text{ (ft)} &= 1.23 \\
 \text{Span}_W \text{ (ft)} &= 1.50 \\
 \text{Span}_{V\text{Notch}} \text{ (ft)} &= 0.00 \\
 \text{Area over PAV} \\
 H_{DHW} \times \text{Span}_W &= 3.78 \text{ ft}^2 \\
 \text{Area thru V-Notch} \\
 \left(\frac{1}{2} \times H_{PAV} \times \frac{\text{Span}_{V\text{Notch}}}{2}\right) \times 2 &= 0.00 \text{ ft}^2 \\
 \text{Total Area} &= \boxed{3.78} \text{ ft}^2
 \end{aligned}$$

Skimmer Dimensions:

- FDOT DBI Type = D
- Length "L" (In.) = 31.00
- Height "H" (In.) = 40.00
- Width "W" (In.) = 65.00
- Standoff "X" (In.) = 26.00

Notes:

1. Width Based upon C.I.P Construction wall thickness (8").

Flow Area of Weir =	3.78	ft ²
Req'd Flow Area Beneath the Skimmer =	11.35	ft ²
Flow Area Beneath Skimmer =	11.74	ft ²

Design Checks:

Flow Area Beneath the Skimmer is 3 times greater than area of Weir : YES

OUTFALL 2: DAVENPORT CREEK TRIBUTARY

TREATED BASINS:

BSN105
 TOTAL AREA: 54.07 AC.
 IMPERVIOUS AREA: 28.75 AC.
 PERVIOUS AREA: 19.73 AC.
 WATER SURFACE: 5.59 AC.
 CN: 55.19
 DCIA: 34.34 AC.
 NDCIA: 19.73 AC.
 Tc (105A): 18.67 MIN (CALCULATED)
 Tc (105B): 27.84 MIN (CALCULATED)

BSN107
 TOTAL AREA: 7.30 AC.
 IMPERVIOUS AREA: 2.92 AC.
 PERVIOUS AREA: 2.64 AC.
 WATER SURFACE: 1.74 AC.
 CN: 49.00
 DCIA: 4.66 AC.
 NDCIA: 2.64 AC.
 Tc: 15.45 MIN (CALCULATED)

BSN108A
 TOTAL AREA: 17.83 AC.
 IMPERVIOUS AREA: 11.00 AC.
 PERVIOUS AREA: 4.01 AC.
 WATER SURFACE: 2.82 AC.
 CN: 58.17
 DCIA: 13.82 AC.
 NDCIA: 4.01 AC.
 Tc: 24.69 MIN (CALCULATED)

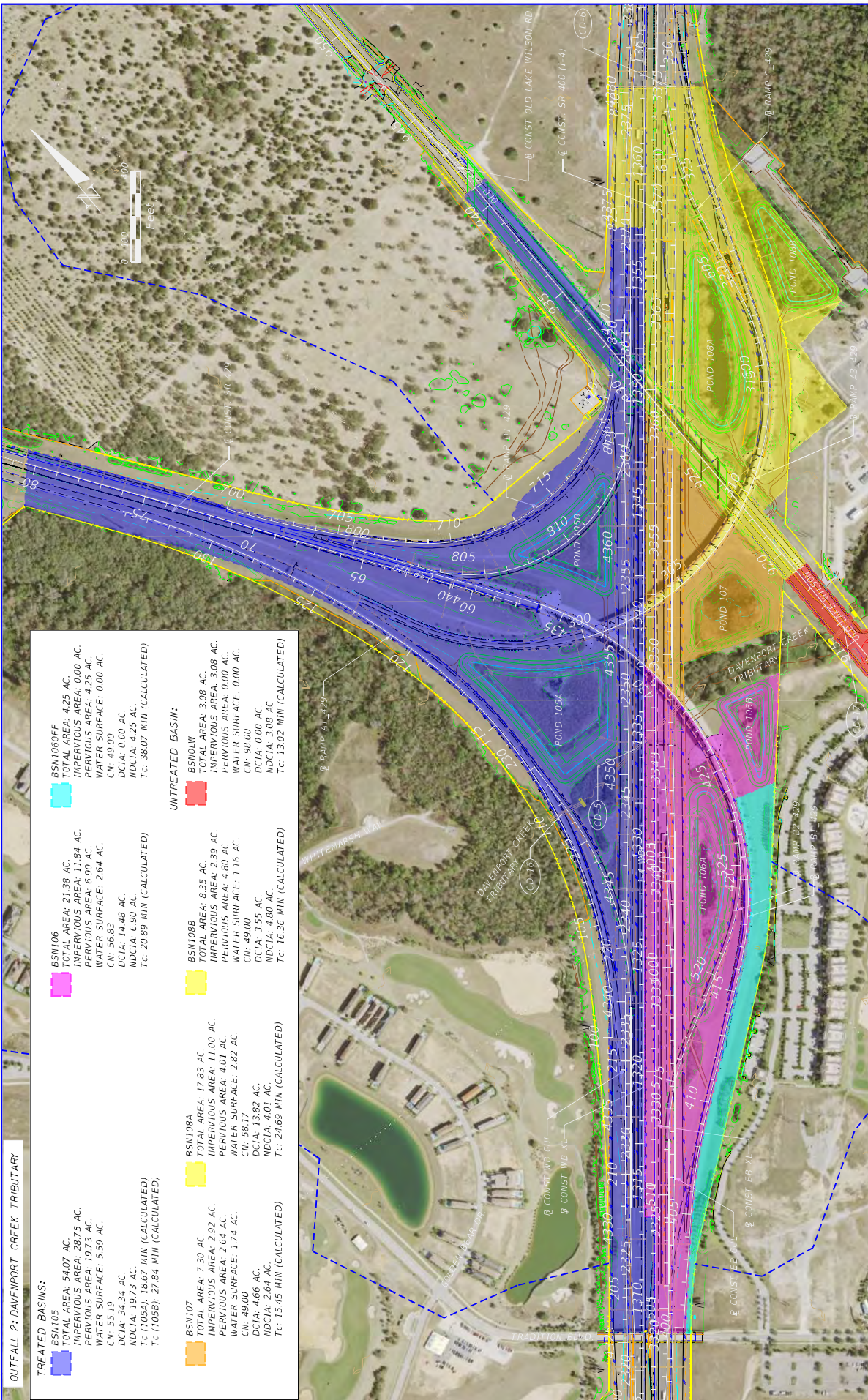
BSN106
 TOTAL AREA: 21.38 AC.
 IMPERVIOUS AREA: 11.84 AC.
 PERVIOUS AREA: 6.90 AC.
 WATER SURFACE: 2.64 AC.
 CN: 56.83
 DCIA: 14.48 AC.
 NDCIA: 6.90 AC.
 Tc: 20.89 MIN (CALCULATED)

BSN108B
 TOTAL AREA: 8.35 AC.
 IMPERVIOUS AREA: 2.39 AC.
 PERVIOUS AREA: 4.80 AC.
 WATER SURFACE: 1.16 AC.
 CN: 49.00
 DCIA: 3.55 AC.
 NDCIA: 4.80 AC.
 Tc: 16.36 MIN (CALCULATED)

BSN106OFF
 TOTAL AREA: 4.25 AC.
 IMPERVIOUS AREA: 0.00 AC.
 PERVIOUS AREA: 4.25 AC.
 WATER SURFACE: 0.00 AC.
 CN: 49.00
 DCIA: 0.00 AC.
 NDCIA: 4.25 AC.
 Tc: 38.07 MIN (CALCULATED)

UNTREATED BASIN:

BSN108W
 TOTAL AREA: 3.08 AC.
 IMPERVIOUS AREA: 3.08 AC.
 PERVIOUS AREA: 0.00 AC.
 WATER SURFACE: 0.00 AC.
 CN: 98.00
 DCIA: 0.00 AC.
 NDCIA: 3.08 AC.
 Tc: 13.02 MIN (CALCULATED)





DATE	DESCRIPTION	REVISIONS	DATE	DESCRIPTION

ENGINEER OF RECORD Renato F. Chow, PE PE No. 50050 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7024 3000 Oivera Drive P. 407.871.8850		DEPARTMENT OF TRANSPORTATION FINANCIAL PROJECT ID 431456-152-01	ROAD NO. SR 400	COUNTY OSCEOLA	SHEET NO.
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STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION
 COUNTY
 OSCEOLA
 ROAD NO.
 SR 400
 FINANCIAL PROJECT ID
 431456-152-01

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DAVENPORT CREEK TRIBUTARY OUTFALL (POND 106)



PROJECT TITLE:	I-4 Beyond the Ultimate		
PROJECT NUMBER:	431456-1-52-01		
BASIN DESIGNATION:	BSN106	DATE	
POND/NODE DESIGNATION:	PR_PND106	MADE BY:	MOL 7/30/2018
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:	REC 7/30/2018

SFWMD SANTA BARBARA WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Pond NWL	N/A	N/A	100	2.64	264.00
				TOTALS	2.64
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98	11.84	1160.32
				TOTALS	11.84
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98		0.00
				TOTALS	0.00
PERVIOUS AREAS					
Gravel (Rail Corridor)		A	76	2.00	152.00
Open Land (Grass Cover 50% - 70%)		A	49	4.90	240.10
				TOTALS	6.90

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	14.48	TOTAL BASIN AREA	21.38	COMPOSITE CN	56.83

ESTIMATE OF RUNOFF VOLUME					
PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:					
1) DETERMINE SOIL STORAGE - S	----->	$S = (1000 / CN) - 10$		(inches)	
2) DETERMINE RUNOFF - R	----->	$R = (P - 0.2*S)^2 / (P + 0.8*S)$		(inches)	
		P = rainfall in inches			
3) DETERMINE RUNOFF VOLUME - V(R)	----->	$V(R) = (R / 12) * \text{BASIN AREA}$		(acres-feet)	
CALCULATION TABLE				BASED ON TOTAL DRAINAGE AREA	
				COMPOSITE CN	
				84.96	
Agency	Design Storm Frequency	P (in)	S (in)	R (in)	V(R) (ac-ft)
FDOT	10 yr/24 hr	6.20	1.77	4.49	7.99
Osceola County	10 yr/72 hr	7.84	1.77	6.05	10.79
SFWMD	25 yr/72 hr	9.80	1.77	7.95	14.17
RCID	50 yr/72 hr	12.91	1.77	11.00	19.61



DAVENPORT CREEK TRIBUTARY					
PROJECT TITLE:	I-4 Beyond the Ultimate				
PROJECT NUMBER:	431456-1-52-01				
BASIN DESIGNATION:	BSN106OFF	MADE BY:		MOL	DATE
POND/NODE DESIGNATION:	Wetland_F2	CHECKED BY:		REC	3/19/2018
BASIN ANALYSIS (PRE/POST):	POST				3/19/2018

SFWMD SANTA BARBARA WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Pond NWL	N/A	N/A	100		0.00
				TOTALS	0.00
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98		0.00
				TOTALS	0.00
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98		0.00
				TOTALS	0.00
PERVIOUS AREAS					
Gravel (Rail Corridor)		A	76		0.00
Open Land (Grass Cover 50% - 70%)		A	49	4.25	208.25
				TOTALS	4.25

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	0.00	TOTAL BASIN AREA	4.25	COMPOSITE CN	49.00

ESTIMATE OF RUNOFF VOLUME					
PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:					
1) DETERMINE SOIL STORAGE - S	----->	$S = (1000 / CN) - 10$			(inches)
2) DETERMINE RUNOFF - R	----->	$R = (P - 0.2*S)^2 / (P + 0.8*S)$			(inches)
			P = rainfall in inches		
3) DETERMINE RUNOFF VOLUME - V(R)	----->	$V(R) = (R / 12)*BASIN AREA$			(acres-feet)
CALCULATION TABLE				BASED ON TOTAL DRAINAGE AREA	
			COMPOSITE CN		49.00
Agency	Design Storm Frequency	P (in)	S (in)	R (in)	V(R) (ac-ft)
FDOT	10 yr/24 hr	6.20	10.41	1.17	0.41
Osceola County	10 yr/72 hr	7.84	10.41	2.05	0.73
SFWMD	25 yr/72 hr	9.80	10.41	3.29	1.16
RCID	50 yr/72 hr	12.91	10.41	5.52	1.96

DAVENPORT CREEK TRIBUTARY				
PROJECT TITLE:	I-4 Beyond the Ultimate			
PROJECT NUMBER:	431456-1-52-01		DATE	
BASIN DESIGNATION:	BSNOLW	MADE BY:	MOL	10/8/2018
POND/NODE DESIGNATION:	Wetland_F2	CHECKED BY:	REC	10/8/2018
BASIN ANALYSIS (PRE/POST):	POST			



SFWMD SANTA BARBARA WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Pond NWL	N/A	N/A	100		0.00
TOTALS				0.00	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98		0.00
TOTALS				0.00	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Roadway (Untreated)			98	3.08	301.84
Proposed Roadway (Treated)			98		0.00
TOTALS				3.08	
*Existing OLW acres not treated is greater at 3.24 acres. Interchange Ponds are designed to compensate for the proposed untreated roadway runoff					
PERVIOUS AREAS					
Open Land (Grass Cover 50% - 70%)		A	49		0.00
TOTALS				0.00	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	0.00	TOTAL BASIN AREA	3.08	COMPOSITE CN	98.00

ESTIMATE OF RUNOFF VOLUME					
PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:					
1) DETERMINE SOIL STORAGE - S	----->	$S = (1000 / CN) - 10$			(inches)
2) DETERMINE RUNOFF - R	----->	$R = (P - 0.2*S)^2 / (P + 0.8*S)$			(inches)
		P = rainfall in inches			
3) DETERMINE RUNOFF VOLUME - V(R)	----->	$V(R) = (R / 12)*BASIN AREA$			(acres-feet)
CALCULATION TABLE				BASED ON TOTAL DRAINAGE AREA	
			COMPOSITE CN		98.00
Agency	Design Storm Frequency	P (in)	S (in)	R (in)	V(R) (ac-ft)
FDOT	10 yr/24 hr	6.20	0.20	5.96	1.53
Osceola County	10 yr/72 hr	7.84	0.20	7.60	1.95
SFWMD	25 yr/72 hr	9.80	0.20	9.56	2.45
RCID	50 yr/72 hr	12.91	0.20	12.67	3.25

DAVENPORT CREEK TRIBUTARY OUTFALL (POND 106A & B)

PROJECT TITLE:	I-4 Beyond the Ultimate		
PROJECT NUMBER:	431456-1-52-01		
BASIN DESIGNATION:	BSN106	MADE BY:	MOL
POND DESIGNATION:	PR_PND106A & 106B	CHECKED BY:	REC
			2/20/2018

Water Quality

Total Basin Area =	21.38	ac
Pond Area at NWL =	2.64	ac
Paved Area (Treated) =	11.84	ac
Paved Area (Untreated) =	0.00	

A.	1.0	" Over Total Basin Area =	1.78	Ac-Ft
B.	2.5	" Times Treated Paved Area =	2.47	Ac-Ft
		Required PAV =	2.47	Ac-Ft

Existing Pond F-2-A & B; SR 429 DEP Permit No. 49-187636001. The plans were developed in NAVD, therefore no conversion factors were used for the information shown below. The pond will be modified to accommodate the I-4 BTU

Stage Storage Calculations Pond 106A

ELEV. (ft)	AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
100.20	Outside Berm	3.50			17.11
			3.16	1.00	3.16
99.20	Inside Berm	2.82			13.95
			2.74	1.00	2.74
98.20	(ATT)	2.66			11.21
			2.37	3.50	8.28
94.70	(PAV)	2.08			2.93
			1.95	1.50	2.93
93.20	(NWL)	1.83			0.00
87.20	Pond Bottom	0.95			

Provided PAV = 2.93 ac-ft.

Stage Storage Calculations Pond 106B



ELEV. (ft)	AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
100.20	Outside Berm	1.70			7.87
			1.51	1.00	1.51
99.20	Inside Berm	1.32			6.36
			1.28	1.00	1.28
98.20	(ATT)	1.23			5.08
			1.08	3.50	3.79
94.70	(PAV)	0.93			1.30
			0.87	1.50	1.30
93.20	(NWL)	0.80			0.00
87.20	Pond Bottom	0.32			

Provided PAV = 1.30 ac-ft.

1/2" of the required detention volume = 0.5"(Total Site -Water Surface)(1ft/12in) = 0.78 Ac-Ft

Volume Remaining in Pond after Bleed Down = PAV - Bleed Down Volume = 2.15 Ac-Ft

DAVENPORT CREEK TRIBUTARY OUTFALL (POND 106A & B)



PROJECT TITLE:	I-4 Beyond the Ultimate				
	PROJECT NUMBER:			431456-1-52-01	DATE
	BASIN DESIGNATION:	BSN106	MADE BY:	MOL	2/20/2018
	POND DESIGNATION:	PR_PND106A & 106B	CHECKED BY:	REC	2/20/2018

Combined Stage Storage for Ponds 106A and 106B

Stage Storage Calculations

ELEV. (ft)	AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
100.20	Outside Berm	5.20			24.98
			4.67	1.00	4.67
99.20	Inside Berm	4.14			20.31
			4.01	1.00	4.01
98.20	(ATT)	3.89			16.30
			3.45	3.50	12.07
94.70	(PAV)	3.01			4.23
			2.82	1.50	4.23
93.20	(NWL)	2.63			0.00
87.20	Pond Bottom	1.27			

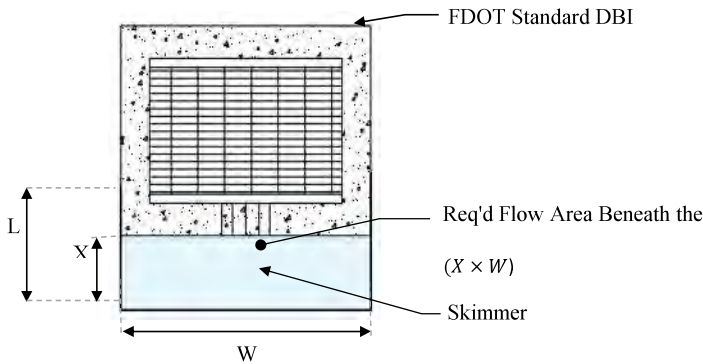
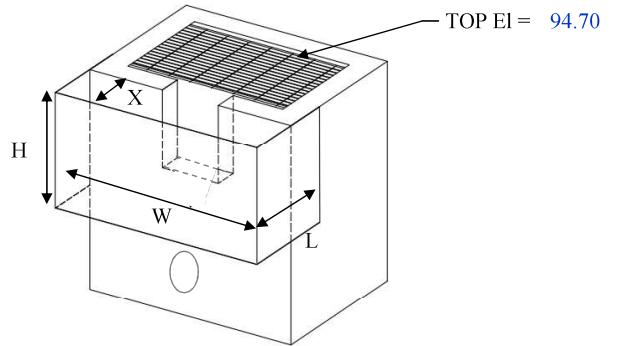
Provided PAV = 4.23 ac-ft.

DAVENPORT CREEK TRIBUTARY OUTFALL (POND 106B)				
PROJECT TITLE:	I-4 Beyond the Ultimate			
PROJECT NUMBER:	431456-1-52-01			
BASIN DESIGNATION:	BSN106	MADE BY:	SVC	DATE
POND DESIGNATION:	PR_PND106B	CHECKED BY:	REC	03/12/2018

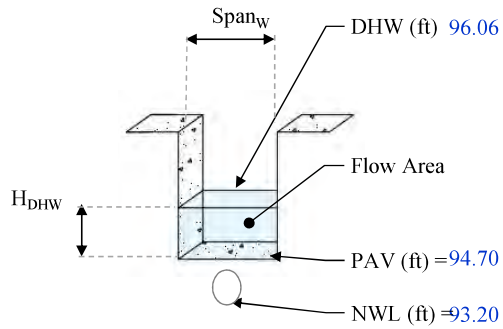
Skimmer Check (FDOT Index 240):

Design Note 2 Check: Flow Area Beneath the Skimmer must be 3 times larger than the Area of Weir

Skimmer Dimension Diagram:



Flow Area Calculations:



$$\begin{aligned}
 H_{DHW} \text{ (ft)} &= 1.36 \\
 H_{PAV} \text{ (ft)} &= 1.50 \\
 \text{Span}_W \text{ (ft)} &= 1.00 \\
 \text{Span}_{V\text{Notch}} \text{ (ft)} &= 0.00 \\
 \text{Area over PAV} \\
 H_{DHW} \times \text{Span}_W &= 1.36 \text{ ft}^2 \\
 \text{Area thru V-Notch} \\
 \left(\frac{1}{2} \times H_{PAV} \times \frac{\text{Span}_{V\text{Notch}}}{2}\right) \times 2 &= 0.00 \text{ ft}^2 \\
 \text{Total Area} &= \boxed{1.36} \text{ ft}^2
 \end{aligned}$$

Skimmer Dimensions:

- FDOT DBI Type = E
- Length "L" (In.) = 31.00
- Height "H" (In.) = 40.00
- Width "W" (In.) = 70.00
- Standoff "X" (In.) = 18.50

Notes:

1. Width Based upon C.I.P Construction wall thickness (8").

Flow Area of Weir =	1.36	ft ²
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Req'd Flow Area Beneath the Skimmer =	4.08	ft ²
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Flow Area Beneath Skimmer =	8.99	ft ²
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Design Checks:

Flow Area Beneath the Skimmer is 3 times greater than area of Weir : YES

OUTFALL 2: DAVENPORT CREEK TRIBUTARY

TREATED BASINS:

BSN105
 TOTAL AREA: 54.07 AC.
 IMPERVIOUS AREA: 28.75 AC.
 PERVIOUS AREA: 19.73 AC.
 WATER SURFACE: 5.59 AC.
 CN: 55.19
 DCIA: 34.34 AC.
 NDCIA: 19.73 AC.
 Tc (105A): 18.67 MIN (CALCULATED)
 Tc (105B): 27.84 MIN (CALCULATED)

BSN107
 TOTAL AREA: 7.30 AC.
 IMPERVIOUS AREA: 2.92 AC.
 PERVIOUS AREA: 2.64 AC.
 WATER SURFACE: 1.74 AC.
 CN: 49.00
 DCIA: 4.66 AC.
 NDCIA: 2.64 AC.
 Tc: 15.45 MIN (CALCULATED)

BSN108A
 TOTAL AREA: 17.83 AC.
 IMPERVIOUS AREA: 11.00 AC.
 PERVIOUS AREA: 4.01 AC.
 WATER SURFACE: 2.82 AC.
 CN: 58.17
 DCIA: 13.82 AC.
 NDCIA: 4.01 AC.
 Tc: 24.69 MIN (CALCULATED)

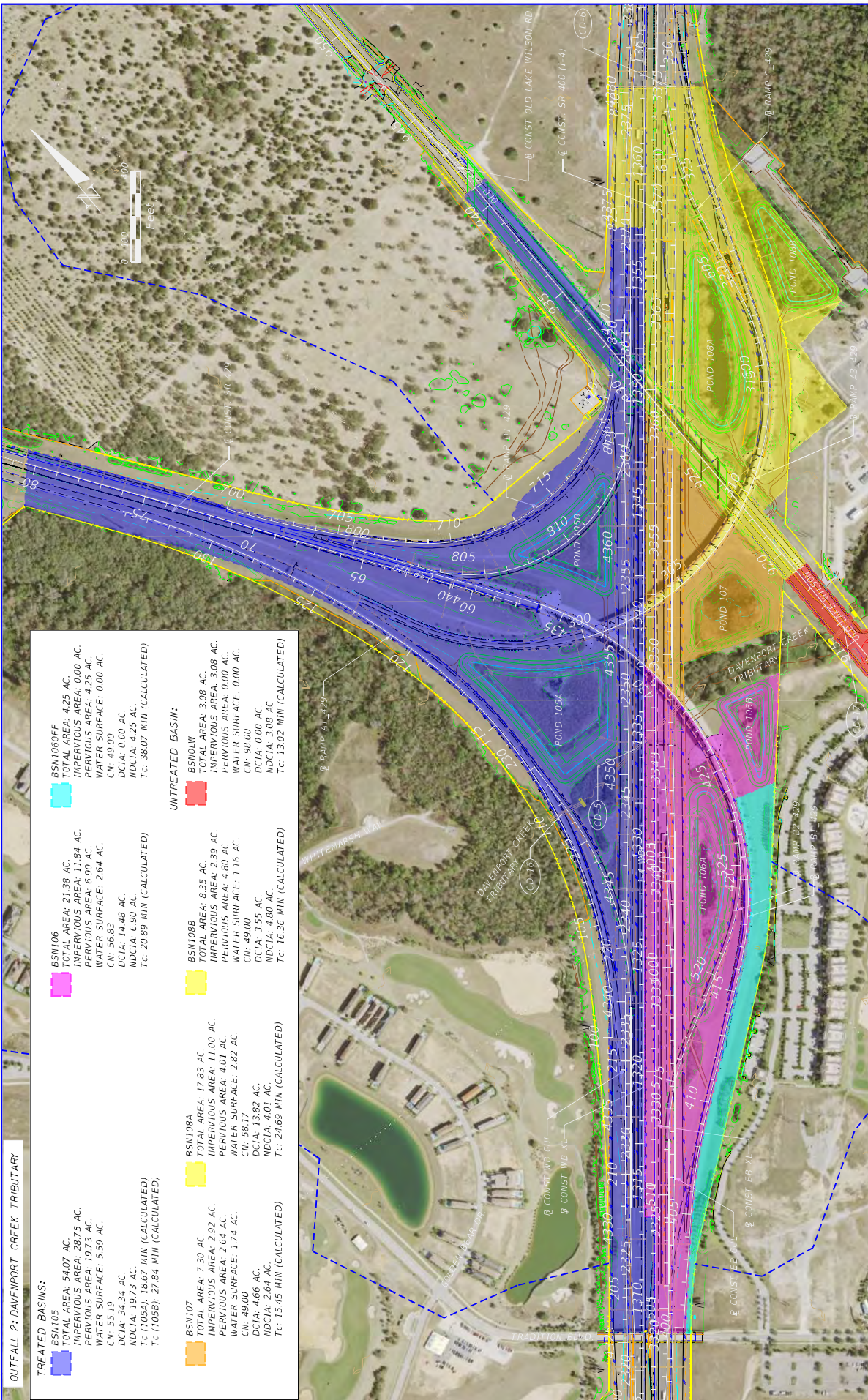
BSN108B
 TOTAL AREA: 8.35 AC.
 IMPERVIOUS AREA: 2.39 AC.
 PERVIOUS AREA: 4.80 AC.
 WATER SURFACE: 1.16 AC.
 CN: 49.00
 DCIA: 3.55 AC.
 NDCIA: 4.80 AC.
 Tc: 16.36 MIN (CALCULATED)

BSN106
 TOTAL AREA: 21.38 AC.
 IMPERVIOUS AREA: 11.84 AC.
 PERVIOUS AREA: 6.90 AC.
 WATER SURFACE: 2.64 AC.
 CN: 56.83
 DCIA: 14.48 AC.
 NDCIA: 6.90 AC.
 Tc: 20.89 MIN (CALCULATED)

BSN106OFF
 TOTAL AREA: 4.25 AC.
 IMPERVIOUS AREA: 0.00 AC.
 PERVIOUS AREA: 4.25 AC.
 WATER SURFACE: 0.00 AC.
 CN: 49.00
 DCIA: 0.00 AC.
 NDCIA: 4.25 AC.
 Tc: 38.07 MIN (CALCULATED)

UNTREATED BASIN:

BSN108W
 TOTAL AREA: 3.08 AC.
 IMPERVIOUS AREA: 3.08 AC.
 PERVIOUS AREA: 0.00 AC.
 WATER SURFACE: 0.00 AC.
 CN: 98.00
 DCIA: 0.00 AC.
 NDCIA: 3.08 AC.
 Tc: 13.02 MIN (CALCULATED)





DATE	DESCRIPTION	REVISIONS	DATE	DESCRIPTION

ENGINEER OF RECORD Renato F. Chow, PE PE No. 50050 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7024 3000 Oivera Drive P. 407.871.8850		DEPARTMENT OF TRANSPORTATION FINANCIAL PROJECT ID 431456-152-01	ROAD NO. SR 400	COUNTY OSCEOLA	SHEET NO. 1
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION COUNTY OSCEOLA ROAD NO. SR 400	FINANCIAL PROJECT ID 431456-152-01	SHEET NO. 1
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DAVENPORT CREEK TRIBUTARY (POND 107)



PROJECT TITLE:	I-4 Beyond the Ultimate		
PROJECT NUMBER:	431456-1-52-01		
BASIN DESIGNATION:	BSN107	DATE	
POND/NODE DESIGNATION:	EX_PND107	MADE BY:	MOL 3/19/2018
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:	REC 3/19/2018

SFWMD SANTA BARBARA WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Pond NWL	N/A	N/A	100	1.74	174.00
				TOTALS	1.74
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98	2.92	286.16
				TOTALS	2.92
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98		0.00
				TOTALS	0.00
PERVIOUS AREAS					
Gravel (Rail Corridor)		A	76		0.00
Open Land (Grass Cover 50% - 70%)		A	49	2.64	129.36
				TOTALS	2.64

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	4.66	TOTAL BASIN AREA	7.30	COMPOSITE CN	49.00

ESTIMATE OF RUNOFF VOLUME					
PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:					
1) DETERMINE SOIL STORAGE - S	----->	S = (1000 / CN) - 10	(inches)		
2) DETERMINE RUNOFF - R	----->	R = (P - 0.2*S) ² / (P + 0.8*S)	(inches)		
P = rainfall in inches					
3) DETERMINE RUNOFF VOLUME - V(R)	----->	V(R) = (R / 12) * BASIN AREA	(acres-feet)		
CALCULATION TABLE				BASED ON TOTAL DRAINAGE AREA	
			COMPOSITE CN		80.76
Agency	Design Storm Frequency	P (in)	S (in)	R (in)	V(R) (ac-ft)
FDOT	10 yr/24 hr	6.20	2.38	4.04	2.46
Osceola County	10 yr/72 hr	7.84	2.38	5.56	3.38
SFWMD	25 yr/72 hr	9.80	2.38	7.43	4.52
RCID	50 yr/72 hr	12.91	2.38	10.43	6.35

DAVENPORT CREEK TRIBUTARY (POND 107)				
PROJECT TITLE:	I-4 Beyond the Ultimate			
PROJECT NUMBER:	431456-1-52-01		DATE	
BASIN DESIGNATION:	BSN107	MADE BY:	MOL	2/20/2018
POND/NODE DESIGNATION:	EX_PND107	CHECKED BY:	REC	2/20/2018

Water Quality

Total Basin Area =	7.30	ac
Pond Area at NWL =	1.74	ac
Paved Area (Treated) =	2.92	ac
Paved Area (Untreated) =	0.00	

A.	1.0	" Over Total Basin Area =	0.61	Ac-Ft
B.	2.5	" Times Treated Paved Area =	0.61	Ac-Ft
		Required PAV =	0.61	Ac-Ft

Existing Pond F-7; SR 429 DEP Permit No. 49-187636001. The plans were developed in NAVD, therefore no conversion factors were used for the information shown below. The pond will be **not** be modified to accommodate the I-4 BTU

Stage Storage Calculations

ELEV. (ft)		AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
99.00	Outside Berm	2.72				12.65
			2.44	2.00	4.87	
97.00	Inside Berm	2.15				7.78
			2.12	0.50	1.06	
96.50	(ATT)	2.10				6.72
			2.07	0.50	1.04	
96.00	(PAV)	2.05				5.68
			1.89	3.00	5.68	
93.00	(NWL)	1.74				0.00
87.00	Pond Bottom	1.19				

Provided PAV = 5.68 ac-ft.

Bleed Down Volume in the 1st 24hrs

1/2" of the required detention volume = 0.5"(Total Site -Water Surface)(1ft/12in) = 0.23 Ac-Ft

Volume Remaining in Pond after Bleed Down = PAV - Bleed Down Volume = 5.45 Ac-Ft

OUTFALL 2: DAVENPORT CREEK TRIBUTARY

TREATED BASINS:

BSN105
 TOTAL AREA: 54.07 AC.
 IMPERVIOUS AREA: 28.75 AC.
 PERVIOUS AREA: 19.73 AC.
 WATER SURFACE: 5.59 AC.
 CN: 55.19
 DCIA: 34.34 AC.
 NDCIA: 19.73 AC.
 Tc (105A): 18.67 MIN (CALCULATED)
 Tc (105B): 27.84 MIN (CALCULATED)

BSN107
 TOTAL AREA: 7.30 AC.
 IMPERVIOUS AREA: 2.92 AC.
 PERVIOUS AREA: 2.64 AC.
 WATER SURFACE: 1.74 AC.
 CN: 49.00
 DCIA: 4.66 AC.
 NDCIA: 2.64 AC.
 Tc: 15.45 MIN (CALCULATED)

BSN108A
 TOTAL AREA: 17.83 AC.
 IMPERVIOUS AREA: 11.00 AC.
 PERVIOUS AREA: 4.01 AC.
 WATER SURFACE: 2.82 AC.
 CN: 58.17
 DCIA: 13.82 AC.
 NDCIA: 4.01 AC.
 Tc: 24.69 MIN (CALCULATED)

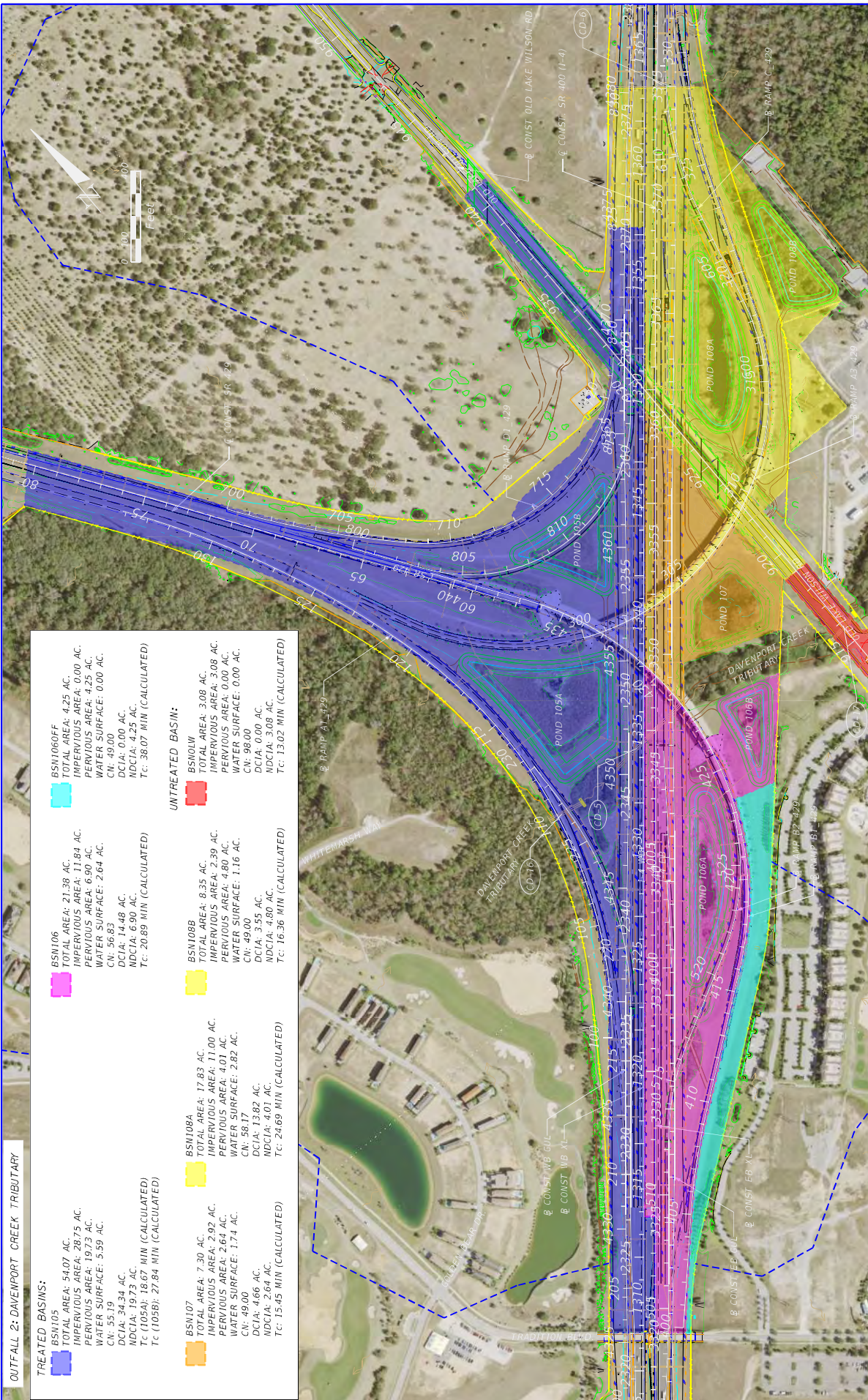
BSN108B
 TOTAL AREA: 8.35 AC.
 IMPERVIOUS AREA: 2.39 AC.
 PERVIOUS AREA: 4.80 AC.
 WATER SURFACE: 1.16 AC.
 CN: 49.00
 DCIA: 3.55 AC.
 NDCIA: 4.80 AC.
 Tc: 16.36 MIN (CALCULATED)

BSN106
 TOTAL AREA: 21.38 AC.
 IMPERVIOUS AREA: 11.84 AC.
 PERVIOUS AREA: 6.90 AC.
 WATER SURFACE: 2.64 AC.
 CN: 56.83
 DCIA: 14.48 AC.
 NDCIA: 6.90 AC.
 Tc: 20.89 MIN (CALCULATED)

BSN106OFF
 TOTAL AREA: 4.25 AC.
 IMPERVIOUS AREA: 0.00 AC.
 PERVIOUS AREA: 4.25 AC.
 WATER SURFACE: 0.00 AC.
 CN: 49.00
 DCIA: 0.00 AC.
 NDCIA: 4.25 AC.
 Tc: 38.07 MIN (CALCULATED)

UNTREATED BASIN:

BSN108W
 TOTAL AREA: 3.08 AC.
 IMPERVIOUS AREA: 3.08 AC.
 PERVIOUS AREA: 0.00 AC.
 WATER SURFACE: 0.00 AC.
 CN: 98.00
 DCIA: 0.00 AC.
 NDCIA: 3.08 AC.
 Tc: 13.02 MIN (CALCULATED)





DATE	DESCRIPTION	REVISIONS	DATE	DESCRIPTION

ENGINEER OF RECORD Renato F. Chow, PE PE No. 50050 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7024 3000 Oivera Drive P. 407.871.8850		DEPARTMENT OF TRANSPORTATION FINANCIAL PROJECT ID 431456-152-01	ROAD NO. SR 400	COUNTY OSCEOLA	SHEET NO. 80347 AM
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION COUNTY OSCEOLA SR 400	FINANCIAL PROJECT ID 431456-152-01	SHEET NO. 80347 AM
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3/19/2018
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 MINES
C-446

DAVENPORT CREEK TRIBUTARY OUTFALL (POND 108A)

PROJECT TITLE:	I-4 Beyond the Ultimate				
PROJECT NUMBER:	431456-1-52-01				
BASIN DESIGNATION:	BSN108A				
POND/NODE DESIGNATION:	PR_PND108A	MADE BY:	MOL	DATE	3/19/2018
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:	REC		3/19/2018



SFWMD SANTA BARBARA WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Pond NWL	N/A	N/A	100	2.82	282.00
				TOTALS	2.82
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98	11.00	1078.00
				TOTALS	11.00
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98		0.00
				TOTALS	0.00
PERVIOUS AREAS					
Gravel (Rail Corridor)		A	76	0.96	72.66
Gravel (Rail Corridor)		D	91	0.26	23.66
Open Land (Grass Cover 50% - 70%)		A	49	2.79	136.71
Open Land (Grass Cover 50% - 70%)		D	84		0.00
				TOTALS	4.01

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA	* BASED ON TOTAL DRAINAGE AREA	* BASED ON NDCIA AND PERVIOUS AREAS			
TOTAL DCIA	13.82	TOTAL BASIN AREA	17.83	COMPOSITE CN	58.17

ESTIMATE OF RUNOFF VOLUME					
PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:					
1) DETERMINE SOIL STORAGE - S	----->	S = (1000 / CN) - 10	(inches)		
2) DETERMINE RUNOFF - R	----->	R = (P - 0.2*S) ² / (P + 0.8*S)	(inches)		
		P = rainfall in inches			
3) DETERMINE RUNOFF VOLUME - V(R)	----->	V(R) = (R / 12) * BASIN AREA	(acres-feet)		
CALCULATION TABLE			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN		233.38
Agency	Design Storm Frequency	P (in)	S (in)	R (in)	V(R) (ac-ft)
FDOT	10 yr/24 hr	6.20	-5.72	33.12	49.20
Osceola County	10 yr/72 hr	7.84	-5.72	24.69	36.68
SFWMD	25 yr/72 hr	9.80	-5.72	22.91	34.03
RCID	50 yr/72 hr	12.91	-5.72	23.69	35.18

DAVENPORT CREEK TRIBUTARY OUTFALL (POND 108B)



PROJECT TITLE:	I-4 Beyond the Ultimate		
PROJECT NUMBER:	431456-1-52-01		
BASIN DESIGNATION:	BSN108B		DATE
POND/NODE DESIGNATION:	PR_PND108B	MADE BY:	MOL 3/19/2018
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:	REC 3/19/2018

SFWMD SANTA BARBARA WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Pond NWL	N/A	N/A	100	1.16	116.00
				TOTALS	1.16
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98	2.39	234.22
				TOTALS	2.39
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Proposed Roadway (Untreated)			98		0.00
Proposed Roadway (Treated)			98		0.00
				TOTALS	0.00
PERVIOUS AREAS					
Gravel (Rail Corridor)		A	76		0.00
Gravel (Rail Corridor)		D	91		0.00
Open Land (Grass Cover 50% - 70%)		A	49	4.80	235.20
Open Land (Grass Cover 50% - 70%)		D	84		0.00
				TOTALS	4.80

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	3.55	TOTAL BASIN AREA	8.35	COMPOSITE CN	49.00

ESTIMATE OF RUNOFF VOLUME					
PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:					
1) DETERMINE SOIL STORAGE - S	----->	$S = (1000 / CN) - 10$			(inches)
2) DETERMINE RUNOFF - R	----->	$R = (P - 0.2*S)^2 / (P + 0.8*S)$			(inches)
		P = rainfall in inches			
3) DETERMINE RUNOFF VOLUME - V(R)	----->	$V(R) = (R / 12)*BASIN AREA$			(acres-feet)
CALCULATION TABLE				BASED ON TOTAL DRAINAGE AREA	
			COMPOSITE CN		70.11
Agency	Design Storm Frequency	P (in)	S (in)	R (in)	V(R) (ac-ft)
FDOT	10 yr/24 hr	6.20	4.26	2.98	2.07
Osceola County	10 yr/72 hr	7.84	4.26	4.34	3.02
SFWMD	25 yr/72 hr	9.80	4.26	6.06	4.22
RCID	50 yr/72 hr	12.91	4.26	8.91	6.20

DAVENPORT CREEK TRIBUTARY OUTFALL (POND 108A)				
PROJECT TITLE:	I-4 Beyond the Ultimate			
PROJECT NUMBER:	431456-1-52-01		DATE	
BASIN DESIGNATION:	BSN108A	MADE BY:	MOL	3/19/2018
POND/NODE DESIGNATION:	PR_PND108A	CHECKED BY:	REC	3/19/2018

Water Quality

Total Basin Area = 17.83 ac
Pond Area at NWL = 2.82 ac
Paved Area (Treated) = 11.00 ac
Paved Area (Untreated) = 0.00 ac

A. 1.0 " Over Total Basin Area = 1.49 Ac-Ft
B. 2.5 " Times Treated Paved Area = 2.29 Ac-Ft
Required PAV = 2.29 Ac-Ft

Existing Pond G-1; SR 429 DEP Permit No. 49-187636001. The plans were developed in NAVD, therefore no conversion factors were used for the information shown below. The pond will be modified to accommodate the I-4 BTU

Stage Storage Calculations

ELEV. (ft)	AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
89.80 Outside Berm	3.98				14.49
		3.67	1.00	3.67	
88.80 Inside Berm	3.36				10.82
		3.28	1.00	3.28	
87.80 (ATT)	3.21				7.53
		3.18	0.30	0.95	
87.50 (PAV)	3.16				6.58
		2.99	2.20	6.58	
85.30 (NWL)	2.82				0.00
79.30 Pond Bottom	1.87				



Provided PAV = 6.58 ac-ft.

Bleed Down Volume in the 1st 24hrs

1/2" of the required detention volume = 0.5"(Total Site -Water Surface)(1ft/12in) = 0.63 Ac-Ft

Volume Remaining in Pond after Bleed Down = PAV - Bleed Down Volume = 5.95 Ac-Ft

DAVENPORT CREEK TRIBUTARY OUTFALL (POND 108B)

PROJECT TITLE:	I-4 Beyond the Ultimate		
PROJECT NUMBER:	431456-1-52-01		DATE
BASIN DESIGNATION:	BSN108B	MADE BY:	MOL 3/19/2018
POND/NODE DESIGNATION:	PR_PND108B	CHECKED BY:	REC 3/19/2018

Water Quality

Total Basin Area =	8.35	ac
Pond Area at NWL =	1.16	ac
Paved Area (Treated) =	2.39	ac
Paved Area (Untreated) =	0.00	

A.	1.0	" Over Total Basin Area =	0.70	Ac-Ft
B.	2.5	" Times Treated Paved Area =	0.50	Ac-Ft
		Required PAV =	0.70	Ac-Ft

Stage Storage Calculations

ELEV. (ft)	AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
91.00	Outside Berm	1.97			5.79
			1.75	1.75	
90.00	Inside Berm	1.53			4.04
			1.47	1.47	
89.00	(ATT)	1.41			2.57
			1.36	0.95	
88.30	(PAV)	1.32			1.61
			1.24	1.61	
87.00	(NWL)	1.16			0.00
81.00	Pond Bottom	0.58			

Provided PAV = 1.61 ac-ft.

Bleed Down Volume in the 1st 24hrs

1/2" of the required detention volume = $0.5 \times (\text{Total Site} - \text{Water Surface}) \times (1\text{ft}/12\text{in}) = 0.30 \text{ Ac-Ft}$

Volume Remaining in Pond after Bleed Down = PAV - Bleed Down Volume = 1.31 Ac-Ft

DAVENPORT CREEK TRIBUTARY OUTFALL (POND 108A)

PROJECT TITLE:	I-4 Beyond the Ultimate	FDOT		Inwood	
PROJECT NUMBER:	431456-1-52-01			DATE	
BASIN DESIGNATION:	BSN108A	MADE BY:	MOL	3/19/2018	
POND/NODE DESIGNATION:	PR_PND108A	CHECKED BY:	REC	3/19/2018	

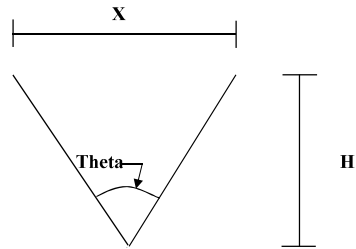
WATER QUALITY CONTROL DEVICE

Pond Bleed Down Design:

V-notch Design

$\text{Theta} = 2 * \text{atan}(0.492 * \text{Vdet} / \text{H}^{2.5})$

$\text{X} = \tan(\text{theta}/2) * (\text{H}) * (2)$



Vdet = 0.63 Ac-Ft

H = 0.624 ft



Theta = 90.0 deg

X = 1.25 ft

NOTE:

Vdet = Maximum design discharge: 1/2 inch of the detention volume in 24 hrs
(Refer to Pond Calculations for determination of **Vdet**)

DAVENPORT CREEK TRIBUTARY OUTFALL (POND 108B)

PROJECT TITLE:	I-4 Beyond the Ultimate			
PROJECT NUMBER:	431456-1-52-01			DATE
BASIN DESIGNATION:	BSN108B	MADE BY:	MOL	10/3/2018
POND/NODE DESIGNATION:	PR_PND108B	CHECKED BY:	REC	10/3/2018

WATER QUALITY CONTROL DEVICE

Pond Bleed Down Design:

Orifice Design:

Pond Control Elevation:	87.00	ft		
Req'd Bleed down in 1st 24 hrs:	0.30	ac-ft	=	0.15 cfs
PAV elevation:	88.30	ft		

Orifice Type: Circular

$$Q = 4.8 * A * H^{1/2}$$

H = PAV - Control Elev 1.30

$$A = \pi * D^2 / 4$$

$$D = [4 * Q / (\pi * 4.8 * H^{1/2})]^{1/2}$$

D = 0.19 ft ≈ 2.25 in

Note: Orifice sizing based on SFWMD criteria and methodology

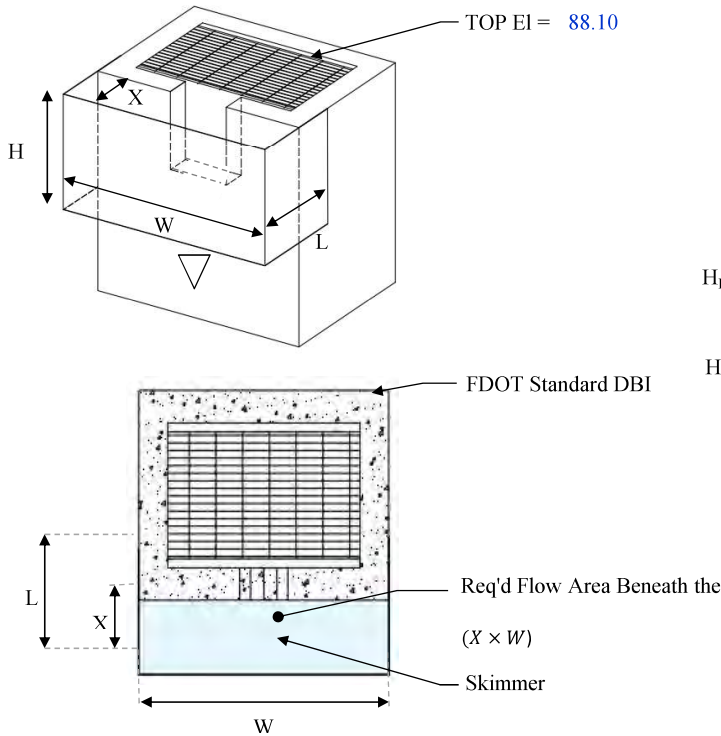
DAVENPORT CREEK TRIBUTARY OUTFALL (POND 108A)

PROJECT TITLE: PROJECT NUMBER: BASIN DESIGNATION: POND DESIGNATION:	I-4 Beyond the Ultimate			
	431456-1-52-01			DATE
	BSN108A	MADE BY:	SVC	19-Mar-18
	PR_PND108A	CHECKED BY:	REC	03/12/2018

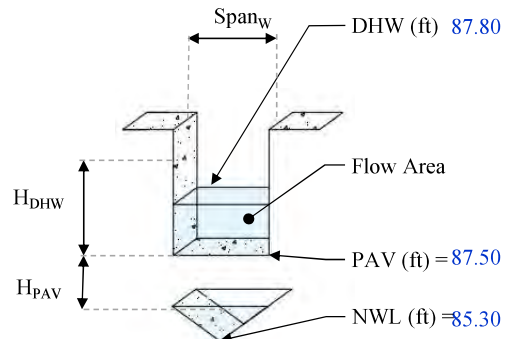
Skimmer Check (FDOT Index 240):

Design Note 2 Check: Flow Area Beneath the Skimmer must be 3 times larger than the Area of Weir

Skimmer Dimension Diagram:



Flow Area Calculations:



$$\begin{aligned}
 H_{DHW} \text{ (ft)} &= 0.30 \\
 H_{PAV} \text{ (ft)} &= 2.20 \\
 Span_W \text{ (ft)} &= 0.50 \\
 Span_{VNotch} \text{ (ft)} &= 0.00 \\
 \text{Area over PAV} \\
 H_{DHW} \times Span_W &= 0.15 \text{ ft}^2 \\
 \text{Area thru V-Notch} \\
 \left(\frac{1}{2} \times H_{PAV} \times \frac{Span_{VNotch}}{2}\right) \times 2 &= 0.00 \text{ ft}^2 \\
 \text{Total Area} &= \boxed{0.15} \text{ ft}^2
 \end{aligned}$$

Skimmer Dimensions:

- FDOT DBI Type = D
- Length "L" (In.) = 31.00
- Height "H" (In.) = 40.00
- Width "W" (In.) = 65.00
- Standoff "X" (In.) = 18.50



Notes:

1. Width Based upon C.I.P Construction wall thickness (8").

Flow Area of Weir =	0.15	ft ²
Req'd Flow Area Beneath the Skimmer =	0.45	ft ²
Flow Area Beneath Skimmer =	8.35	ft ²

Design Checks:

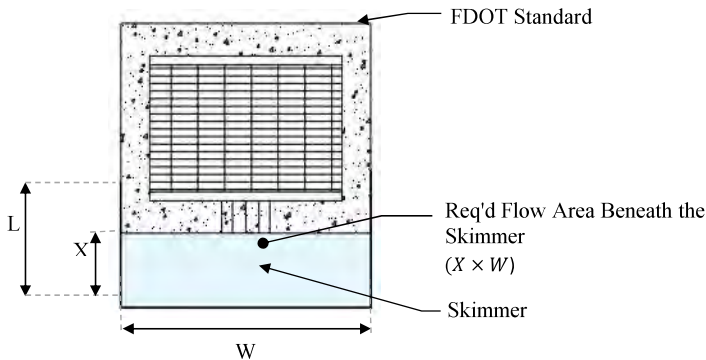
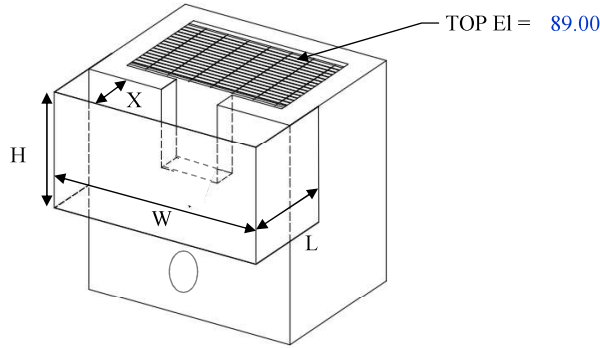
Flow Area Beneath the Skimmer is 3 times greater than area of Weir : YES

DAVENPORT CREEK TRIBUTARY OUTFALL (POND 108B)			
PROJECT TITLE:	I-4 Beyond the Ultimate		
PROJECT NUMBER:	431456-1-52-01		
BASIN DESIGNATION:	BSN108B	MADE BY:	SVC
POND DESIGNATION:	PR_PND108B	CHECKED BY:	REC
			DATE
			19-Mar-18
			03/12/2018

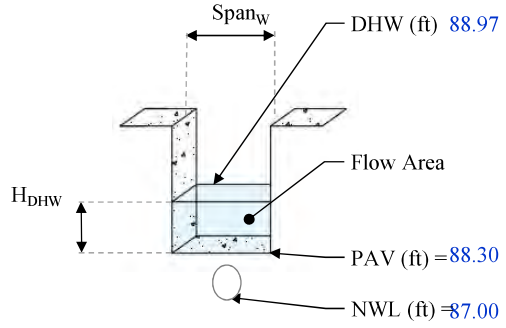
Skimmer Check (FDOT Index 240):

Design Note 2 Check: Flow Area Beneath the Skimmer must be 3 times larger than the Area of Weir

Skimmer Dimension Diagram:



Flow Area Calculations:



$$\begin{aligned}
 H_{DHW} \text{ (ft)} &= 0.67 \\
 H_{PAV} \text{ (ft)} &= 1.30 \\
 \text{Span}_W \text{ (ft)} &= 2.00 \\
 \text{Span}_{V\text{Notch}} \text{ (ft)} &= 0.00 \\
 \text{Area over PAV} \\
 H_{DHW} \times \text{Span}_W &= 1.34 \text{ ft}^2 \\
 \text{Area thru V-Notch} \\
 \left(\frac{1}{2} \times H_{PAV} \times \frac{\text{Span}_{V\text{Notch}}}{2}\right) \times 2 &= 0.00 \text{ ft}^2 \\
 \text{Total Area} &= \boxed{1.34} \text{ ft}^2
 \end{aligned}$$

Skimmer Dimensions:

- FDOT DBI Type = C
- Length "L" (In.) = 28.00
- Height "H" (In.) = 16.00
- Width "W" (In.) = 53.00
- Standoff "X" (In.) = 15.50

Notes:

1. Width Based upon C.I.P Construction wall thickness (8").

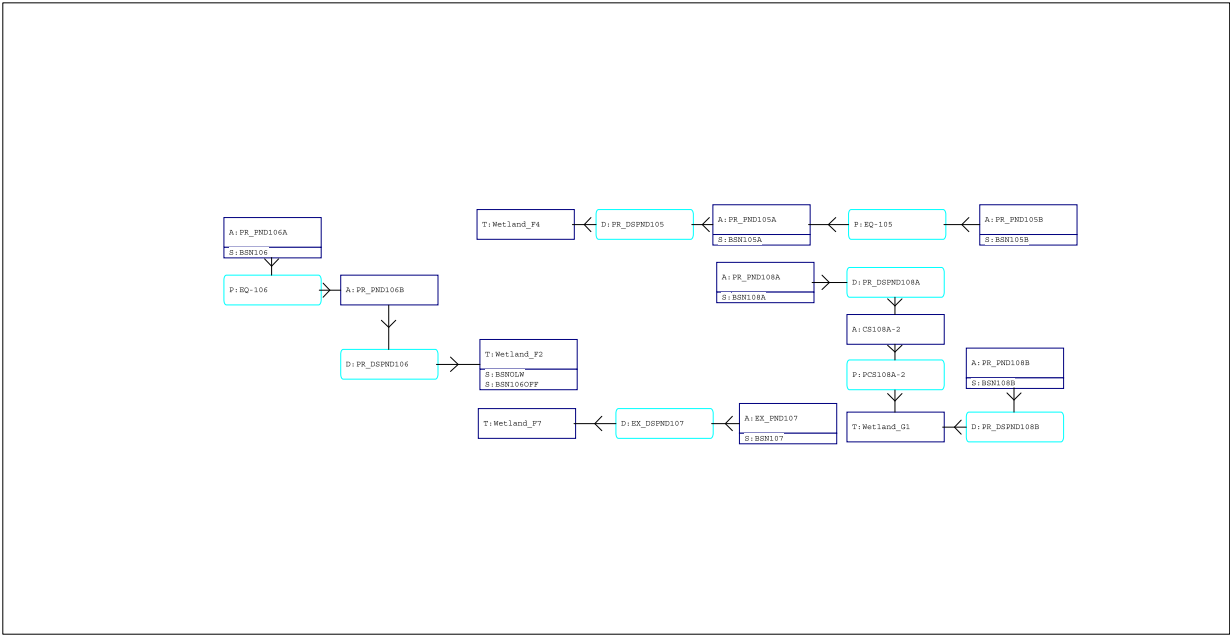
Flow Area of Weir =	1.34	ft ²
Req'd Flow Area Beneath the Skimmer =	4.02	ft ²
Flow Area Beneath Skimmer =	5.70	ft ²

Design Checks:

Flow Area Beneath the Skimmer is 3 times greater than area of Weir : YES

I-4 BTU INTERCHANGE POST

- Nodes**
 A Stage/Area
 V Stage/Volume
 T Time/Stage
 M Manhole
- Basins**
 O Overland Flow
 U SCS Unit CN
 S SBUH CN
 Y SCS Unit GA
 Z SBUH GA
- Links**
 P Pipe
 W Weir
 C Channel
 D Drop Structure
 B Bridge
 R Rating Curve
 H Breach
 E Percolation
 F Filter
 X Exfil Trench



I-4 BTU INTERCHANGE POST

=====
Basins
=====

Name: BSN105A Node: PR_PND105A Status: Onsite
Group: BASE Type: Santa Barbara CN

Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 18.67
Area(ac): 45.480 Time Shift(hrs): 0.00
Curve Number: 56.07 Time Increment(min): 5.00
DCIA(%): 62.03 Max Allowable Q(cfs): 999999.000

Minus 7 acres not being collected to pond 105A on LT side (I-4 & SR 429)
Minus 4 acres not being collected to pond 105A on RT side (SR 429)
Minus 6.46 acres from Old Lake Wilson; treatment provided in Reunion West SFWMD Permit
EXISTING BASIN F-4-A&B
SR 429 DEP PERMIT NO. 49-187636-001
TC from Storm Sewer System 105-6

Name: BSN105B Node: PR_PND105B Status: Onsite
Group: BASE Type: Santa Barbara CN

Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 27.84
Area(ac): 13.900 Time Shift(hrs): 0.00
Curve Number: 49.00 Time Increment(min): 5.00
DCIA(%): 58.50 Max Allowable Q(cfs): 999999.000

Name: BSN106 Node: PR_PND106A Status: Onsite
Group: BASE Type: Santa Barbara CN

Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 20.89
Area(ac): 21.380 Time Shift(hrs): 0.00
Curve Number: 56.83 Time Increment(min): 5.00
DCIA(%): 67.73 Max Allowable Q(cfs): 999999.000

EXISTING BASIN F-2-A & B
SR 429 DEP PERMIT NO. 49-187636-001
TC Storm Sewer System 106A-2

Name: BSN106OFF Node: Wetland_F2 Status: Onsite
Group: BASE Type: Santa Barbara CN

Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 38.07
Area(ac): 4.250 Time Shift(hrs): 0.00
Curve Number: 49.00 Time Increment(min): 5.00
DCIA(%): 0.00 Max Allowable Q(cfs): 999999.000

Name: BSN107 Node: EX_PND107 Status: Onsite
Group: BASE Type: Santa Barbara CN

Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 15.45
Area(ac): 7.300 Time Shift(hrs): 0.00
Curve Number: 49.00 Time Increment(min): 5.00
DCIA(%): 63.84 Max Allowable Q(cfs): 999999.000

EXISTING BASIN F-7
SR 429 DEP PERMIT NO. 49-187636-001
TC from Storm Sewer system 107A

Name: BSN108A Node: PR_PND108A Status: Onsite
Group: BASE Type: Santa Barbara CN

Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 75.09
Area(ac): 17.830 Time Shift(hrs): 0.00
Curve Number: 58.17 Time Increment(min): 5.00
DCIA(%): 77.53 Max Allowable Q(cfs): 999999.000

EXISTING BASIN G-1
SR 429 DEP PERMIT NO. 49-187636-001
TC from system 108A-2

Type: Stage/Area

EXISTING POND F-2-A TO BE MODIFIED
SR 429 DEP PERMIT NO. 49-187636-001

Stage(ft)	Area(ac)
93.200	1.8300
94.700	2.0800
98.200	2.6600
99.200	2.8200

Name: PR_PND106B	Base Flow(cfs): 0.000	Init Stage(ft): 93.200
Group: BASE		Warn Stage(ft): 98.200
Type: Stage/Area		

EXISTING POND F-2-B TO BE MODIFIED
SR 429 DEP PERMIT NO. 49-187636-001

Stage(ft)	Area(ac)
93.200	0.8000
94.700	0.9300
98.200	1.2300
99.200	1.3200

Name: PR_PND108A	Base Flow(cfs): 0.000	Init Stage(ft): 85.300
Group: BASE		Warn Stage(ft): 87.800
Type: Stage/Area		

EXISTING POND G-1 TO BE MODIFIED
SR 429 DEP PERMIT NO. 49-187636-001

Stage(ft)	Area(ac)
85.300	2.8200
87.500	3.1600
87.800	3.2100
88.800	3.3600

Name: PR_PND108B	Base Flow(cfs): 0.000	Init Stage(ft): 87.000
Group: BASE		Warn Stage(ft): 89.000
Type: Stage/Area		

PROPOSED POND 108B

Stage(ft)	Area(ac)
87.000	1.1600
88.300	1.3200
89.000	1.4100
90.000	1.5300

Name: Wetland_F2	Base Flow(cfs): 0.000	Init Stage(ft): 91.800
Group: BASE		Warn Stage(ft): 94.300
Type: Time/Stage		

EXISTING OUTFALL FOR BASINS F-2-A
WETLAND DOWNSTREAM DC
SR 429 DEP PERMIT NO. 49-187636-001

Time(hrs)	Stage(ft)
0.00	91.800
59.50	91.800
61.00	94.300
72.00	94.300
240.00	91.800

Name: Wetland_F4	Base Flow(cfs): 0.000	Init Stage(ft): 93.300
Group: BASE		Warn Stage(ft): 95.600
Type: Time/Stage		

EXISTING OUTFALL FOR BASIN F-4-A
WETLAND UPSTREAM DC
SR 429 DEP PERMIT NO. 49-187636-001

Time(hrs)	Stage(ft)
0.00	93.300
59.50	93.300
61.00	95.600

UPSTREAM	DOWNSTREAM	Solution Algorithm: Automatic
Geometry: Circular	Circular	Flow: Both
Span(in): 24.00	24.00	Entrance Loss Coef: 0.00
Rise(in): 24.00	24.00	Exit Loss Coef: 1.00
Invert(ft): 84.000	83.500	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

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

Name: EX_DSPND107	From Node: EX_PND107	Length(ft): 110.00
Group: BASE	To Node: Wetland_F7	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): 93.000	91.020	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

EXISTING CONTROL STRUCTURE, POND F-7
DEP PERMIT NO. 49-187636-001
INFORMATION FROM SURVEY AND AS-BUILTS

*** Weir 1 of 3 for Drop Structure EX_DSPND107 ***

Count: 1	Bottom Clip(ft): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(ft): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Trapezoidal	Orifice Disc Coef: 0.600	
Bottom Width(ft): 0.00	Invert(ft): 93.000	
Left Sd Slp(h/v): 1.00	Control Elev(ft): 93.000	
Right Sd Slp(h/v): 1.00	Struct Opening Dim(ft): 0.60	

*** Weir 2 of 3 for Drop Structure EX_DSPND107 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
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): 96.850	
Rise(in): 37.00	Control Elev(ft): 96.850	

*** Weir 3 of 3 for Drop Structure EX_DSPND107 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Fread	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): 96.000	
Rise(in): 12.00	Control Elev(ft): 96.000	

Name: PR_DSPND105	From Node: PR_PND105A	Length(ft): 59.00
Group: BASE	To Node: Wetland_F4	Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
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): 92.650	91.670	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

EXISTING CONTROL STRUCTURE, POND F-4-A TO BE MODIFIED
 DEP PERMIT NO. 49-187636-001
 INVERTS FROM SURVEY OF EXISTING 30" PIPE

*** Weir 1 of 3 for Drop Structure PR_DSPND105 ***
TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Vertical: Fread	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 18.00	Invert(ft): 94.730
Rise(in): 33.24	Control Elev(ft): 94.730

*** Weir 2 of 3 for Drop Structure PR_DSPND105 ***
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): 93.500
Rise(in): 5.00	Control Elev(ft): 93.500

*** Weir 3 of 3 for Drop Structure PR_DSPND105 ***
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): 97.500
Rise(in): 49.00	Control Elev(ft): 97.500

Name: PR_DSPND106	From Node: PR_PND106B	Length(ft): 92.00
Group: BASE	To Node: Wetland_F2	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: 0.000
Invert(ft): 91.980	91.000	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

EXISTING CONTROL STRUCTURE, POND F-2-A TO BE MODIFIED
 DEP PERMIT NO. 49-187636-001
 INVERTS FROM SURVEY OF EXISTING 24" OUTFALL PIPE

*** Weir 1 of 3 for Drop Structure PR_DSPND106 ***
TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Circular	Orifice Disc Coef: 0.600
Span(in): 3.50	Invert(ft): 93.200
Rise(in): 3.50	Control Elev(ft): 93.200

*** Weir 2 of 3 for Drop Structure PR_DSPND106 ***
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): 94.700
Rise(in): 33.60	Control Elev(ft): 94.700

*** Weir 3 of 3 for Drop Structure PR_DSPND106 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
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): 97.500	
Rise(in): 54.00	Control Elev(ft): 97.500	

Name: PR_DSPND108A	From Node: PR_PND108A	Length(ft): 177.00
Group: BASE	To Node: CSI08A-2	Count: 1

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: 0.500
Invert(ft): 84.500	84.000	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

EXISTING CONTROL STRUCTURE, POND G-1 TO BE MODIFIED
DEP PERMIT NO. 49-187636-001

*** Weir 1 of 3 for Drop Structure PR_DSPND108A ***

Count: 1	Bottom Clip(in): 0.000	TABLE
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): 88.100	
Rise(in): 37.00	Control Elev(ft): 88.100	

*** Weir 2 of 3 for Drop Structure PR_DSPND108A ***

Count: 1	Bottom Clip(ft): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(ft): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Trapezoidal	Orifice Disc Coef: 0.600	
Bottom Width(ft): 0.00	Invert(ft): 85.300	
Left Sd Slp(h/v): 1.00	Control Elev(ft): 85.300	
Right Sd Slp(h/v): 1.00	Struct Opening Dim(ft): 1.25	

*** Weir 3 of 3 for Drop Structure PR_DSPND108A ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 6.00	Invert(ft): 87.500	
Rise(in): 7.20	Control Elev(ft): 87.500	

Name: PR_DSPND108B	From Node: PR_PND108B	Length(ft): 65.00
Group: BASE	To Node: Wetland_G1	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): 84.000	83.500	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

NEW POND WITH NEW CONTROL STRUCTURE

*** Weir 1 of 3 for Drop Structure PR_DSPND108B ***

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): 87.000
 Rise(in): 2.00 Control Elev(ft): 87.000

*** Weir 2 of 3 for Drop Structure PR_DSPND108B ***

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): 88.300
 Rise(in): 8.40 Control Elev(ft): 88.300

*** Weir 3 of 3 for Drop Structure PR_DSPND108B ***

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): 89.000
 Rise(in): 24.00 Control Elev(ft): 89.000

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

Name: 10YR24HR
 Filename: F:\Projects\ACM-001-01\admin\Drainage\ICPR\I-4 BTU Interchange\Post\10YR24HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Fdot-24
 Rainfall Amount(in): 6.20

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 10YR72HR
 Filename: F:\Projects\ACM-001-01\admin\Drainage\ICPR\I-4 BTU Interchange\Post\10YR72HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 7.84

Time(hrs)	Print Inc(min)
55.000	30.00
70.000	5.00
72.000	30.00

Name: 25YR72HR
 Filename: F:\Projects\ACM-001-01\admin\Drainage\ICPR\I-4 BTU Interchange\Post\25YR72HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 9.80

Time(hrs)	Print Inc(min)
72.000	5.00

Name: 50YR72HR
 Filename: F:\Projects\ACM-001-01\admin\Drainage\ICPR\I-4 BTU Interchange\Post\50YR72HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 12.91

Time(hrs)	Print Inc(min)
55.000	30.00
70.000	5.00
72.000	30.00

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

Name: 10YR24HR Hydrology Sim: 10YR24HR
Filename: F:\Projects\ACM-001-01\admin\Drainage\ICPR\I-4 BTU Interchange\Post\10YR24HR.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): 30.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 15.000

Group Run

BASE Yes

Name: 10YR72HR Hydrology Sim: 10YR72HR
Filename: F:\Projects\ACM-001-01\admin\Drainage\ICPR\I-4 BTU Interchange\Post\10YR72HR.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): 80.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 15.000

Group Run

BASE Yes

Name: 25YR72HR Hydrology Sim: 25YR72HR
Filename: F:\Projects\ACM-001-01\admin\Drainage\ICPR\I-4 BTU Interchange\Post\25YR72HR.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): 80.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

999.000 15.000

Group Run

BASE Yes

Name: 50YR72HR Hydrology Sim: 50YR72HR
Filename: F:\Projects\ACM-001-01\admin\Drainage\ICPR\I-4 BTU Interchange\Post\50YR72HR.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): 80.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time (hrs)	Print Inc (min)
999.000	15.000
Group	Run
BASE	Yes

I-4 BTU INTERCHANGE POST

Name	Simulation	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Inflow cfs	Max Outflow cfs
CS108A-2	10YR24HR	85.40	90.10	0.0073	293	4.62	4.62
CS108A-2	10YR72HR	87.44	90.10	0.0073	124	2.87	2.84
CS108A-2	25YR72HR	87.49	90.10	0.0073	124	4.28	4.27
CS108A-2	50YR72HR	87.73	90.10	0.0073	124	8.04	8.03
EX_PND107	10YR24HR	93.89	96.00	0.0009	79815	3.19	1.12
EX_PND107	10YR72HR	94.40	96.00	0.0020	82118	19.10	1.34
EX_PND107	25YR72HR	94.63	96.00	0.0021	83140	24.99	1.58
EX_PND107	50YR72HR	95.12	96.00	0.0022	85326	34.58	1.91
PR_PND105A	10YR24HR	96.06	98.50	0.0027	186696	18.40	8.23
PR_PND105A	10YR72HR	96.70	98.50	0.0050	191693	111.05	13.48
PR_PND105A	25YR72HR	97.43	98.50	0.0050	197349	145.82	20.99
PR_PND105A	50YR72HR	98.51	98.50	0.0050	205728	202.13	31.18
PR_PND105B	10YR24HR	96.08	98.50	0.0030	91456	5.51	2.22
PR_PND105B	10YR72HR	96.76	98.50	0.0032	95364	27.26	3.38
PR_PND105B	25YR72HR	97.52	98.50	0.0035	99766	35.99	4.96
PR_PND105B	50YR72HR	98.63	98.50	0.0041	106176	50.33	6.97
PR_PND106A	10YR24HR	95.46	98.20	0.0026	96113	10.27	3.42
PR_PND106A	10YR72HR	95.81	98.20	0.0036	98641	54.50	16.97
PR_PND106A	25YR72HR	96.39	98.20	0.0038	102826	70.49	22.74
PR_PND106A	50YR72HR	97.23	98.20	0.0037	108911	96.24	31.97
PR_PND106B	10YR24HR	95.46	98.20	0.0026	43366	3.42	2.60
PR_PND106B	10YR72HR	95.81	98.20	0.0033	44666	16.97	4.11
PR_PND106B	25YR72HR	96.38	98.20	0.0033	46803	22.74	7.40
PR_PND106B	50YR72HR	97.20	98.20	0.0033	49864	31.97	13.03
PR_PND108A	10YR24HR	86.58	87.80	0.0015	131484	8.01	4.62
PR_PND108A	10YR72HR	87.62	87.80	0.0030	138525	24.27	2.87
PR_PND108A	25YR72HR	87.87	87.80	0.0023	140253	31.02	4.28
PR_PND108A	50YR72HR	88.29	87.80	0.0030	143043	41.85	8.04
PR_PND108B	10YR24HR	88.52	89.00	0.0019	58705	2.73	0.77
PR_PND108B	10YR72HR	88.69	89.00	0.0028	59698	17.84	1.69
PR_PND108B	25YR72HR	89.05	89.00	0.0029	61674	24.28	4.56
PR_PND108B	50YR72HR	89.45	89.00	0.0029	63765	34.97	14.22
Wetland_F2	10YR24HR	91.80	94.30	0.0000	0	3.52	0.00
Wetland_F2	10YR72HR	94.30	94.30	0.0064	0	15.16	0.00
Wetland_F2	25YR72HR	94.30	94.30	0.0082	0	21.60	0.00
Wetland_F2	50YR72HR	94.30	94.30	0.0067	0	32.74	0.00
Wetland_F4	10YR24HR	93.30	95.60	0.0000	0	8.23	0.00
Wetland_F4	10YR72HR	95.60	95.60	0.0059	0	13.48	0.00
Wetland_F4	25YR72HR	95.60	95.60	0.0075	0	20.99	0.00
Wetland_F4	50YR72HR	95.60	95.60	0.0061	0	31.18	0.00
Wetland_F7	10YR24HR	91.80	94.30	0.0000	0	1.12	0.00
Wetland_F7	10YR72HR	94.30	94.30	0.0064	0	1.34	0.00
Wetland_F7	25YR72HR	94.30	94.30	0.0082	0	1.58	0.00
Wetland_F7	50YR72HR	94.30	94.30	0.0067	0	1.91	0.00
Wetland_G1	10YR24HR	85.30	87.40	0.0000	148	5.07	0.00
Wetland_G1	10YR72HR	87.40	87.40	0.0053	11	4.14	0.00
Wetland_G1	25YR72HR	87.40	87.40	0.0069	11	6.88	0.00
Wetland_G1	50YR72HR	87.40	87.40	0.0056	11	19.27	0.00

Project: Western Beltway
 Proj. No. C100003822.00
 Subject Basin Areas

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 By DMR Date 6-29-01
 Ck SEY Date 6-22-01

BASIN B-3 POST DATA

BASIN B-3-A (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	5.70	98	0.95	(5)
PERVIOUS (A)	2.03	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	1.28	100	1.00	
TOTAL	9.01	87.0	0.79	

BASIN B-3-B (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	1.73	98	0.95	(5)
PERVIOUS (A)	2.71	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	0.29	100	1.00	
TOTAL	4.73	69.5	0.52	

- NOTES:
- (1) Areas calculated in Microstation
 - (2) Curve Number based on SCS Soil Hydrologic Group and Land Use - TR55 Manual (Table 5-8)
 - (3) Runoff Coefficient used for computing permanent pool volume
 - (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares Use Hydrologic Group A and D (wetlands), SCS Soil Survey
 - (5) Impervious Areas are based on future design with paved median

49-187636001

Project: Western Beltway
 Proj. No. C100003822.00
 Subject Basin Areas

Sheet _____ of _____
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 Ck SEY Date 6-20-01

BASIN B-3 POST DATA (CONT.)

BASIN B-3-C (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	2.41	98	0.95	(5)
PERVIOUS (A)	5.46	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	0.00	100	1.00	
TOTAL	7.87	63.3	0.43	

BASIN B-3-D (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	2.73	98	0.95	(5)
PERVIOUS (A)	3.21	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	0.00	100	1.00	
TOTAL	5.94	71.0	0.54	

- NOTES:
- (1) Areas calculated in Microstation
 - (2) Curve and Land Use - TR55 Manual (Table 5-8)
 - (3) Runoff Coefficient used for computing permanent pool volume
 - (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares Use Hydrologic Group A and D (wetlands), SCS Soil Survey
 - (5) Impervious Areas are based on future design with paved median

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Project: Western Beltway
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Sheet _____ of _____
 By DMR Date 5/16/01
 Ck JTW Date 5/23/01

BASIN B-5 POST DATA

BASIN B-5 (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	2.1	98	0.95	(5)
PERVIOUS (A)	6.71	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	3.60	100	1.00	
TOTAL	12.41	71.5	0.56	

- NOTES:
- (1) Areas calculated in Microstation
 - (2) Curve Number based on SCS Soil Hydrologic Group and Land Use - TR55 Manual (Table 5-8)
 - (3) Runoff Coefficient used for computing permanent pool volume
 - (4) Soil Type is based on Osceola County Soil Survey Use Hydrologic Group A and D (wetlands), SCS Soil Survey
 - (5) Impervious Areas are based on future design with paved median

49-187636001

Project: Western Beltway, Part C, Section 1
 FPN No. 403497 2 32 01
 Subject Water Quality

Sheet _____ of _____
 By JTW
 Ck SEY

Proj. No. C100003822.00
 Date 6-30-01
 Date 7-18-01

BASIN B-3-A & B-3-B & B-3-C & B-3-D & B-5

Assume minimal percolation
 in ponds B-3-C & B-3-D.

Required Water Quality Volume

Treatment Volume (Wet Detention):
 The greater of 1.0 inch over the total project area or
 2.5 inches over the project impervious area (excluding ponds)

1 inch x	39.96	=	3.33	ac-ft
2.5 inches x	14.67	=	3.06	ac-ft
Required Treatment Volume		=	3.33	ac-ft

Provided Water Quality Volume

Stage	Elev. (ft navd)	Area (acres)	Volume (acre-ft)
CE	101.0	5.17	0.00
WQ Stage	101.7	5.46	3.72
DHW	105.0	6.81	23.96

Provided Treatment Volume = 3.72 ac-ft
 Required Treatment Volume = 3.33 ac-ft
 Provided/Required Volume = 112% OK

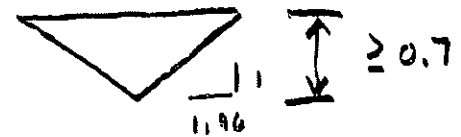
Size V-notch weir angle

V-notch weir angle (theta) sized using procedure found in SFWMD
 Basis of Review, page C-IV-26.

V-notch sized to bleed down 1/2 inch of treatment volume in 24 hours

Theta = $2 \times \arctan(0.492 \times V_{det} / H^{2.5})$

DA = drainage area (ac) = 39.96
 Vdet (ac ft) = DA (ac) x 0.5" / 12"/ft 1.67
 WQ Stage (ft navd) = 101.7
 V-notch El. (ft navd) = 101.0
 H (feet) = 0.7



Calculated Theta (degrees) = 126.8

Design Theta (degrees) = 126

Use same theta as for
 Basin B-3-B+B-3-A+B-5 only.

V-notch slope (Horiz / Vert.) = 1.96

Ponds B-3-B, B-3-A, & B-5 provide sufficient
 water quality volume to treat the entire basin
 without the retention in ponds B-3-C & B-3-D.

Note:
 ALL ELEVATIONS ARE NAVD '88 DATUM
 (NAVD '88 EL 0.00 = NGVD '29 EL 0.87)
 For example: 95.00 shown in the plans is equal
 to 95.87 NGVD '29.

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Project: Western Beltway
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Ck JTW Date 5/23/01

BASIN B-4 POST DATA

BASIN B-4 (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	10.85	98	0.95	(5)
PERVIOUS (A)	7.79	48	0.20	(4)
PERVIOUS (D)	1.66	80	0.20	(4)
WATER	2.60	100	1.00	
TOTAL	22.90	79.9	0.65	

- NOTES:
- (1) Areas calculated in Microstation
 - (2) Curve Number based on SCS Soil Hydrologic Group and Land Use - TR55 Manual (Table 5-8)
 - (3) Runoff Coefficient used for computing permanent pool volume
 - (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares Use Hydrologic Group A and D (wetlands), SCS Soil Survey
 - (5) Impervious Areas are based on future design with paved median

49-187636001

basindata 5/16/01

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Project: Western Beltway, Part C, Section 1
 FPN No. 403497 2 32 01
 Subject Water Quality

Sheet _____ of _____
 By DMR
 CK JTW

Proj. No. C100003822.00
 Date 5/21/01
 Date 5/21/01

BASIN B-4

Required Water Quality Volume

Treatment Volume (Wet Detention):

The greater of 1.0 inch over the total project area or
 2.5 inches over the project impervious area (excluding ponds)

1 inch x	22.9	=	1.91	ac-ft
2.5 inches x	10.85	=	2.26	ac-ft
Required Treatment Volume		=	2.26	ac-ft

Provided Water Quality Volume

Stage	Elev. (ft navd)	Area (acres)	Volume (acre-ft)
CE	101.0	2.60	0.00
WQ Stage	101.9	2.89	2.47
TOB	103.0	3.25	5.85
DHW	105.0	5.16	14.26

Provided Treatment Volume = 2.47 ac-ft
 Required Treatment Volume = 2.26 ac-ft
 Provided/Required Volume = 109% OK

Size V-notch weir angle

V-notch weir angle (theta) sized using procedure found in SFWMD
 Basis of Review, page C-IV-26.

V-notch sized to bleed down 1/2 inch of treatment volume in 24 hours

$\Theta = 2 \times \arctan(0.492 \times V_{det} / H^{2.5})$

DA = drainage area (ac) = 22.90
 Vdet (ac ft) = DA (ac) x 0.5" / 12"/ft 0.95
 WQ Stage (ft navd) = 101.9
 V-notch El. (ft navd) = 101.0
 H (feet) = 0.9

Calculated Theta (degrees) = 62.8

Design Theta (degrees) = 62

V-notch slope (Horiz / Vert.) = 0.60

49-187636001

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Note:
 ALL ELEVATIONS ARE NAVD '88 DATUM
 (NAVD '88 EL 0.00 = NGVD '29 EL 0.87)
 For example: 95.00 shown in the plans is equal
 to 95.87 NGVD '29.

Project: Western Beltway
 Proj. No. C100003822.00
 Subject Basin Areas

Sheet _____ of _____
 By DMR Date 6-22-01
 Ck SEY Date 6-22-01

BASIN B-6 POST DATA

BASIN B-6-A (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	0.74	98	0.95	(5)
PERVIOUS (A)	3.23	48	0.20	(4)
PERVIOUS (D)	0.41	80	0.20	(4)
WATER	3.33	100	1.00	
TOTAL	7.71	77.0	0.62	

BASIN B-6-B (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	3.42	98	0.95	(5)
PERVIOUS (A)	4.49	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	0.00	100	1.00	
TOTAL	7.91	69.6	0.52	

NOTES:

- (1) Areas calculated in Microstation
- (2) Curve Number based on SCS Soil Hydrologic Group and Land Use - TR55 Manual (Table 5-8)
- (3) Runoff Coefficient used for computing permanent pool volume
- (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares Use Hydrologic Group A and D (wetlands), SCS Soil Survey
- (5) Impervious Areas are based on future design with paved median

49-187636001

Project: Western Beltway
 Proj. No. C100003822.00
 Subject Basin Areas

Sheet _____ of _____
 By DMR
 Ck JTW

Date 5/16/01
 Date 5/16/01

BASIN B-6 POST DATA (CONT.)

BASIN B-6-C (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	2.16	98	0.95	(5)
PERVIOUS (A)	3.59	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	0.00	100	1.00	
TOTAL	5.75	66.8	0.48	

NOTES:

- (1) Areas calculated in Microstation
- (2) Curve
and Land Use - TR55 Manual (Table 5-8)
- (3) Runoff Coefficient used for computing permanent pool volume
- (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares
Use Hydrologic Group A and D (wetlands), SCS Soil Survey
- (5) Impervious Areas are based on future design with paved median

49-187636001

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Project: Western Beltway, Part C, Section 1
 FPN No. 403497 2 32 01
 Subject Water Quality

Sheet _____ of _____
 By STW
 Ck SEY

Proj. No. C10003822.00
 Date 6-30-01
 Date 7-18-01

BASIN B-6-A+B-6-B+B-6-C

Assume minimal percolation
 in ponds B-6-B & B-6-C

Required Water Quality Volume

Treatment Volume (Wet Detention):

The greater of 1.0 inch over the total project area or
 2.5 inches over the project impervious area (excluding ponds)

1 inch x	21.37	=	1.78	ac-ft
2.5 inches x	6.32	=	1.32	ac-ft
Required Treatment Volume		=	1.78	ac-ft

Provided Water Quality Volume

Stage	Elev. (ft navd)	Area (acres)	Volume (acre-ft)
CE	99.5	3.33	0.00
WQ Stage	100.1	3.42	2.03
DHW	101.0	3.56	5.17
TOB	101.0	3.56	5.17

Provided Treatment Volume	=	2.03	ac-ft
Required Treatment Volume	=	1.78	ac-ft
Provided/Required Volume	=	114%	OK

Size V-notch weir angle

V-notch weir angle (theta) sized using procedure found in SFWMD
 Basis of Review, page C-IV-26.

V-notch sized to bleed down 1/2 inch of treatment volume in 24 hours

Theta = $2 \times \arctan(0.492 \times V_{det} / H^{2.5})$

DA = drainage area (ac) =	21.37
Vdet (ac ft) = DA (ac) x 0.5" / 12"/ft	0.89
WQ Stage (ft navd) =	100.1
V-notch El. (ft navd) =	99.5
H (feet) =	0.6

49-187636001

Calculated Theta (degrees) = 115.0

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Design Theta (degrees) = 115 Use same theta as for
 Basin B-6-A only.

V-notch slope (Horiz / Vert.) = 1.57

Ponds B-6-A provides sufficient
 water quality volume to treat the entire basin
 without the retention in ponds B-6-B & B-6-C.

Note:
 ALL ELEVATIONS ARE NAVD '88 DATUM
 (NAVD '88 EL 0.00 = NGVD '29 EL 0.87)
 For example: 95.00 shown in the plans is equal
 to 95.87 NGVD '29.

APPENDIX C – POST-DEVELOPMENT CALCULATIONS

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 07/28/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN206
Alternative 1

Treatment Volume Required for Additional Impervious Area:	0.33 acre-ft
Treatment Volume Impacted:	0.00 acre-ft
Total Treatment Volume Required:	0.33 acre-ft
Attenuation Volume Required for Additional Impervious Area:	0.58 acre-ft
Attenuation Volume Impacted:	0.00 acre-ft
Attenuation Volume Required:	0.58 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN206 Alternative 1	<i>Pre-Development Condition</i>	<i>Post Development Condition</i>
Total Area, acre	2.45	2.45
Impervious Area, ac	0.00	1.56
CN	77.0	98.7
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	2.99	0.13
Runoff Depth (Q), in	9.91	12.76
Runoff Volume, acre-ft	2.02	2.60
Volume Differential, acre-ft	0.58	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.33
OR		
1.0-in. (1ft./12 in.) x Contributing Basin Area (ac.) = acre-ft		0.20
Total Volume Required, acre-ft	0.91	



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/28/2022

Basin 206 Pond Alternative 1, Station 6217+00 LT

Wet Detention Calculations

Electric utility easement OHW between pond and Road	Existing Ground at Pond site =	85.00	from LiDAR
	ELEV EOP @ Low Point =	90.00	PGL
	Elev SHW =	85.5	Pond 3D from CR 532 plans control elevation
Treatment Volume Required		0.33	AC-FT.
Attenuation Volume Required		0.58	AC-FT.
Pond Area Based on treatment volume		0.88	AC
Assume 1 foot of pond freeboard		1.00	FT.
Treatment Depth		0.37	FT.
Total Attenuation Depth based on Pond Area		0.7	FT.
Total Depth from SHWL to Top of Berm		2.03	FT.
Elev SHW=		85.5	
Top of Berm Elevation given a total depth =		87.53	
Unit Length Based on L/W = 2		277	FT.
Unit Width Based on L/W = 2		138	FT.
Maintenance Berm Width of 20-ft		40	FT.
Grade Adjustment Width Assumed 1:2		10	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth		16.26	FT.
Total Pond Length (including maintenance berm and adjustments)		343.01	FT.
Total Pond Width (including maintenance berm and adjustments)		204.6982	FT.
Preliminary Property Size Required to accommodate Pond Footprint		1.61	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency		1.77	AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN206 Alternative 1
Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	0.00 ac	A	49	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.45 ac	D	77	188.65	Woods, Good Cover
Pervious Area	0.00 ac	A	25	0.00	Woods, Good Cover
Pervious Area	0.00 ac	A	45	0.00	Woods, Poor Cover
Impervious Area	0.00 ac		100	0.00	Roadway Pavement
Wetted Pond Area	0.00 ac		100	0.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	2.45 ac			188.65	77.0 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	0.00 ac	A	49	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	1.56 ac		98	152.88	Roadway Pavement
Wetted Pond Area	0.89 ac		100	89.00	Pond
Dry Pond Area	0.00 ac	D	84	0.00	Pond
Total Area	2.45 ac			241.88	98.7 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 07/28/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN206
Alternative 2

Treatment Volume Required for Additional Impervious Area:	0.33 acre-ft
Treatment Volume Impacted:	0.00 acre-ft
Total Treatment Volume Required:	0.33 acre-ft
Attenuation Volume Required for Additional Impervious Area:	1.09 acre-ft
Attenuation Volume Impacted:	0.00 acre-ft
Attenuation Volume Required:	1.09 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/28/2022

Basin 206 Pond Alternative 2, Station 6210+00 LT

Wet Detention Calculations

Existing Ground at Pond site =	88.00	NAVD 88 (LiDAR converted from NGVD 29) 623500 exst ground is 88 assume 3' higher for
ELEV EXST EOP @ Low Point =	91.00	PGL
Elev SHW =	85.5	Pond 3D from CR 532 plans control elevation
Treatment Volume Required	0.33	AC-FT.
Attenuation Volume Required	1.09	AC-FT.
Pond Area Based on treatment volume	2.12	AC
Assume 1 foot of pond freeboard	1.00	FT.
Treatment Depth	0.15	FT.
Total Attenuation Depth based on Pond Area	0.5	FT.
Total Depth from SHWL to Top of Berm	1.67	FT.
Elev SHW=	85.5	
Top of Berm Elevation given a total depth =	87.17	
Unit Length Based on L/W = 2	430	FT.
Unit Width Based on L/W = 2	215	FT.
Maintenance Berm Width of 20-ft	40	FT.
Grade Adjustment Width Assumed 1:2	3	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	13.34	FT.
Total Pond Length (including maintenance berm and adjustments)	486.85	FT.
Total Pond Width (including maintenance berm and adjustments)	271.762	FT.
Preliminary Property Size Required to accommodate Pond Footprint	3.04	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	3.34	AC.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN206 Alternative 2	<i>Pre-Development Condition</i>	<i>Post Development Condition</i>
Total Area, acre	3.68	3.68
Impervious Area, ac	0.00	1.56
CN	72.4	99.2
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	3.81	0.09
Runoff Depth (Q), in	9.24	12.81
Runoff Volume, acre-ft	2.84	3.93
Volume Differential, acre-ft	1.09	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.33
OR		
1.0-in. (1ft./12 in.) x Contributing Basin Area (ac.) = acre-ft		0.31
Total Volume Required, acre-ft	1.42	



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN206 Alternative 2
Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	0.00 ac	A	49	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.12 ac	B	69	146.28	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	1.56 ac	D	77	120.12	Woods, Good Cover
Pervious Area	0.00 ac	A	25	0.00	Woods, Good Cover
Pervious Area	0.00 ac	A	45	0.00	Woods, Poor Cover
Impervious Area	0.00 ac		100	0.00	Roadway Pavement
Wetted Pond Area	0.00 ac		100	0.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	3.68 ac			266.40	72.4 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	0.00 ac	A	49	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	1.56 ac		98	152.88	Roadway Pavement
Wetted Pond Area	2.12 ac		100	212.00	Pond
Dry Pond Area	0.00 ac	A	49	0.00	Pond
Total Area	3.68 ac			364.88	99.2 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 07/28/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN206
Alternative 3

Treatment Volume Required for Additional Impervious Area:	0.33 acre-ft
Treatment Volume Impacted:	0.00 acre-ft
Total Treatment Volume Required:	0.33 acre-ft
Attenuation Volume Required for Additional Impervious Area:	1.15 acre-ft
Attenuation Volume Impacted:	0.00 acre-ft
Attenuation Volume Required:	1.15 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN206 Alternative 3	<i>Pre-Development Condition</i>	<i>Post Development Condition</i>
Total Area, acre	3.08	3.08
Impervious Area, ac	0.00	1.56
CN	66.1	99.0
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	5.12	0.10
Runoff Depth (Q), in	8.31	12.79
Runoff Volume, acre-ft	2.13	3.28
Volume Differential, acre-ft	1.15	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.33
OR		
1.0-in. (1ft./12 in.) x Contributing Basin Area (ac.) = acre-ft		0.26
Total Volume Required, acre-ft	1.47	



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/28/2022

Basin 206 Pond Alternative 3, Station 6205.00 RT

Wet Detention Calculations

Existing Ground at Pond site =	88.00	NAVD 88 (LiDAR converted from NGVD 29) 623500 exst ground is 88 assume 3' higher for
ELEV EXST EOP @ Low Point =	91.00	PGL
Elev SHW =	85.5	Pond 3D from CR 532 plans control elevation
Treatment Volume Required	0.33	AC-FT.
Attenuation Volume Required	1.15	AC-FT.
Pond Area Based on treatment volume	1.52	AC
Assume 1 foot of pond freeboard	1.00	FT.
Treatment Depth	0.21	FT.
Total Attenuation Depth based on Pond Area	0.76	FT.
Total Depth from SHWL to Top of Berm	1.97	FT.
Elev SHW=	85.5	
Top of Berm Elevation given a total depth =	87.47	
Unit Length Based on L/W = 2	364	FT.
Unit Width Based on L/W = 2	182	FT.
Maintenance Berm Width of 15-ft	30	FT.
Grade Adjustment Width Assumed 1:2	2	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	15.77	FT.
Total Pond Length (including maintenance berm and adjustments)	411.63	FT.
Total Pond Width (including maintenance berm and adjustments)	229.7555	FT.
Preliminary Property Size Required to accommodate Pond Footprint	2.17	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	2.39	AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN206 Alternative 3
 Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	0.00 ac	A	49	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	1.56 ac	D	77	120.12	Woods, Good Cover
Pervious Area	1.52 ac	B	55	83.60	Woods, Good Cover
Pervious Area	0.00 ac	A	45	0.00	Woods, Poor Cover
Impervious Area	0.00 ac		100	0.00	Roadway Pavement
Wetted Pond Area	0.00 ac		100	0.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	3.08 ac			203.72	66.1 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	0.00 ac	A	49	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	1.56 ac		98	152.88	Roadway Pavement
Wetted Pond Area	1.52 ac		100	152.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	3.08 ac			304.88	99.0 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 07/28/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN205
Alternative 1

Treatment Volume Required for Additional Impervious Area: 2.76 acre-ft
Treatment Volume Impacted: 0.00 acre-ft
Total Treatment Volume Required: 2.76 acre-ft

Attenuation Volume Required for Additional Impervious Area: 12.82 acre-ft
Attenuation Volume Impacted: 0.00 acre-ft
Attenuation Volume Required: 12.82 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN205 Alternative 1	<i>Pre-Development Condition</i>	<i>Post Development Condition</i>
Total Area, acre	33.14	33.14
Impervious Area, ac	0.00	9.72
CN	47.3	76.8
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	11.12	3.02
Runoff Depth (Q), in	5.24	9.88
Runoff Volume, acre-ft	14.46	27.28
Volume Differential, acre-ft	12.82	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		2.03
OR		
1.0-in. (1ft./12 in.) x Contributing Basin Area (ac.) = acre-ft		2.76
Total Volume Required, acre-ft	14.84	



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/28/2022

Basin 205 Pond Alternative 1, Station 6240+00 RT

Wet Detention Calculations

Electric utility easement OHW between pond and Road	Existing Ground at Pond site =	85.00	from LiDAR
	ELEV EOP @ Low Point =	90.00	PGL
	Elev SHW =	85.5	Pond 3D from CR 532 plans control elevation
Treatment Volume Required		2.76	AC-FT.
Attenuation Volume Required		12.82	AC-FT.
Pond Area Based on treatment volume		3.68	AC
Assume 1 foot of pond freeboard		1.00	FT.
Treatment Depth		0.75	FT.
Total Attenuation Depth based on Pond Area		3.5	FT.
Total Depth from SHWL to Top of Berm		5.23	FT.
Elev SHW=		85.5	
Top of Berm Elevation given a total depth =		90.73	
Unit Length Based on L/W = 2		566	FT.
Unit Width Based on L/W = 2		283	FT.
Maintenance Berm Width of 20-ft		40	FT.
Grade Adjustment Width Assumed 1:2		23	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth		41.85	FT.
Total Pond Length (including maintenance berm and adjustments)		671.16	FT.
Total Pond Width (including maintenance berm and adjustments)		387.9663	FT.
Preliminary Property Size Required to accommodate Pond Footprint		5.98	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency		6.58	AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN205 Alternative 1
 Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	3.49 ac	A	49	171.01	Open Spaces, Lawns/Fair Condition
Pervious Area	6.25 ac	B	69	431.25	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	7.34 ac	D	77	565.18	Woods, Good Cover
Pervious Area	16.06 ac	A	25	401.50	Woods, Good Cover
Pervious Area	0.00 ac	A	45	0.00	Woods, Poor Cover
Impervious Area	0.00 ac		100	0.00	Roadway Pavement
Wetted Pond Area	0.00 ac		100	0.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	33.14 ac			1568.94	47.3 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	12.41 ac	A	49	608.09	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	4.76 ac	D	84	399.84	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	9.72 ac		98	952.56	Roadway Pavement
Wetted Pond Area	3.68 ac		100	368.00	Pond
Dry Pond Area	2.57 ac	D	84	215.88	Pond
Total Area	33.14 ac			2544.37	76.8 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 07/28/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN205
Alternative 2

Treatment Volume Required for Additional Impervious Area:	2.77 acre-ft
Treatment Volume Impacted:	0.00 acre-ft
Total Treatment Volume Required:	2.77 acre-ft
Attenuation Volume Required for Additional Impervious Area:	13.80 acre-ft
Attenuation Volume Impacted:	0.00 acre-ft
Attenuation Volume Required:	13.80 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN205 Alternative 2	<i>Pre-Development Condition</i>	<i>Post Development Condition</i>
Total Area, acre	33.28	33.28
Impervious Area, ac	0.00	9.72
CN	43.6	74.5
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	12.94	3.42
Runoff Depth (Q), in	4.58	9.55
Runoff Volume, acre-ft	12.70	26.50
Volume Differential, acre-ft	13.80	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		2.03
OR		
1.0-in. (1ft./12 in.) x Contributing Basin Area (ac.) = acre-ft		2.77
Total Volume Required, acre-ft	15.82	



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/28/2022

Basin 205 Pond Alternative 2, Station 6247+00 LT

Wet Detention Calculations

Existing Ground at Pond site =	88.00	NAVD 88 (LiDAR converted from NGVD 29) 623500 exst ground is 88 assume 5' higher for
ELEV EXST EOP @ Low Point =	93.00	PGL
Elev SHW =	85.5	Pond 3D from CR 532 plans control elevation
Treatment Volume Required	2.77	AC-FT.
Attenuation Volume Required	13.80	AC-FT.
Pond Area Based on treatment volume	3.96	AC
Assume 1 foot of pond freeboard	1.00	FT.
Treatment Depth	0.70	FT.
Total Attenuation Depth based on Pond Area	3.5	FT.
Total Depth from SHWL to Top of Berm	5.18	FT.
Elev SHW=	85.5	
Top of Berm Elevation given a total depth =	90.68	
Unit Length Based on L/W = 2	588	FT.
Unit Width Based on L/W = 2	294	FT.
Maintenance Berm Width of 20-ft	40	FT.
Grade Adjustment Width Assumed 1:2	11	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	41.46	FT.
Total Pond Length (including maintenance berm and adjustments)	679.69	FT.
Total Pond Width (including maintenance berm and adjustments)	385.9359	FT.
Preliminary Property Size Required to accommodate Pond Footprint	6.02	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	6.62	AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN205

Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	9.88 ac	A	49	484.12	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	7.34 ac	D	77	565.18	Woods, Good Cover
Pervious Area	16.06 ac	A	25	401.50	Woods, Good Cover
Pervious Area	0.00 ac	A	45	0.00	Woods, Poor Cover
Impervious Area	0.00 ac		100	0.00	Roadway Pavement
Wetted Pond Area	0.00 ac		100	0.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	33.28 ac			1450.80	43.6 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	12.41 ac	A	49	608.09	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	4.76 ac	D	84	399.84	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	9.72 ac		98	952.56	Roadway Pavement
Wetted Pond Area	4.05 ac		100	405.00	Pond
Dry Pond Area	2.34 ac	A	49	114.66	Pond
Total Area	33.28 ac			2480.15	74.5 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 07/28/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN205

Treatment Volume Required for Additional Impervious Area:	2.71 acre-ft
Treatment Volume Impacted:	0.00 acre-ft
Total Treatment Volume Required:	2.71 acre-ft
Attenuation Volume Required for Additional Impervious Area:	13.09 acre-ft
Attenuation Volume Impacted:	0.00 acre-ft
Attenuation Volume Required:	13.09 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN205	<i>Pre-Development Condition</i>	<i>Post Development Condition</i>
Total Area, acre	32.55	32.55
Impervious Area, ac	0.00	9.72
CN	43.5	73.3
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	13.00	3.63
Runoff Depth (Q), in	4.56	9.38
Runoff Volume, acre-ft	12.37	25.45
Volume Differential, acre-ft	13.09	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		2.03
OR		
1.0-in. (1ft./12 in.) x Contributing Basin Area (ac.) = acre-ft		2.71
Total Volume Required, acre-ft	15.11	



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/28/2022

Basin 205 Pond Alternative 3, Station 6237+00 LT

Wet Detention Calculations

Existing Ground at Pond site =	88.00	NAVD 88 (LiDAR converted from NGVD 29) 623500 exst ground is 88 assume 5' higher for
ELEV EXST EOP @ Low Point =	93.00	PGL
Elev SHW =	85.5	Pond 3D from CR 532 plans control elevation
Treatment Volume Required	2.71	AC-FT.
Attenuation Volume Required	13.09	AC-FT.
Pond Area Based on treatment volume	3.19	AC
Assume 1 foot of pond freeboard	1.00	FT.
Treatment Depth	0.85	FT.
Total Attenuation Depth based on Pond Area	4.10	FT.
Total Depth from SHWL to Top of Berm	5.95	FT.
Elev SHW=	85.5	
Top of Berm Elevation given a total depth =	91.45	
Unit Length Based on L/W = 2	527	FT.
Unit Width Based on L/W = 2	264	FT.
Maintenance Berm Width of 20-ft	40	FT.
Grade Adjustment Width Assumed 1:2	14	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	47.61	FT.
Total Pond Length (including maintenance berm and adjustments)	628.69	FT.
Total Pond Width (including maintenance berm and adjustments)	365.0508	FT.
Preliminary Property Size Required to accommodate Pond Footprint	5.27	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	5.80	AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN205

Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	9.15 ac	A	49	448.35	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	7.34 ac	D	77	565.18	Woods, Good Cover
Pervious Area	16.06 ac	A	25	401.50	Woods, Good Cover
Pervious Area	0.00 ac	A	45	0.00	Woods, Poor Cover
Impervious Area	0.00 ac		100	0.00	Roadway Pavement
Wetted Pond Area	0.00 ac		100	0.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	32.55 ac			1415.03	43.5 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	12.41 ac	A	49	608.09	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	4.76 ac	D	84	399.84	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	9.72 ac		98	952.56	Roadway Pavement
Wetted Pond Area	3.38 ac		100	338.00	Pond
Dry Pond Area	2.28 ac	A	39	88.92	Pond
Total Area	32.55 ac			2387.41	73.3 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN204
Alternative 1

Treatment Volume Required for Additional Impervious Area: 2.98 acre-ft
Treatment Volume Impacted: 0.00 acre-ft
Total Treatment Volume Required: 2.98 acre-ft

Attenuation Volume Required for Additional Impervious Area: 9.10 acre-ft
Attenuation Volume Impacted: 0.00 acre-ft
Attenuation Volume Required: 9.10 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN204 Alternative 1	<i>Pre-Development Condition</i>	<i>Post Development Condition</i>
Total Area, acre	35.80	35.80
Impervious Area, ac	0.00	10.71
CN	57.7	77.8
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	7.32	2.85
Runoff Depth (Q), in	6.98	10.03
Runoff Volume, acre-ft	20.82	29.92
Volume Differential, acre-ft	9.10	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		2.23
OR		
1.0-in. (1ft./12 in.) x Contributing Basin Area (ac.) = acre-ft		2.98
Total Volume Required, acre-ft	11.33	



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/28/2022

Basin 204 Pond Alternative 1, Station 6287+00 LT

Wet Detention Calculations

Existing Ground at Pond site =	81.00 (LiDAR)
ELEV EOP @ Low Point =	98.38 6286+05 low point per PGL along profile (99.10), minus two 12' lanes @ 3.0% slope
Elev SHW =	75 76 is the best fit contour for the 100-yr floodplain assume shw for wetland is 1' below
Treatment Volume Required	2.98 AC-FT.
Attenuation Volume Required	9.10 AC-FT.
Pond Area Based on treatment volume	2.98 AC
Assume 1.0 foot of pond freeboard	1.00 FT.
Treatment Depth	1.00 FT.
Total Attenuation Depth based on Pond Area	3.0 FT.
Total Depth from SHWL to Top of Berm	5.05 FT.
Elev SHW=	75.0
Top of Berm Elevation given a total depth =	80.05
Unit Length Based on L/W = 2	510 FT.
Unit Width Based on L/W = 2	255 FT.
Maintenance Berm Width of 20-ft	40 FT.
Grade Adjustment Width Assumed 1:2	4 FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	40.39 FT.
Total Pond Length (including maintenance berm and adjustments)	594.01 FT.
Total Pond Width (including maintenance berm and adjustments)	339.1025 FT.
Preliminary Property Size Required to accommodate Pond Footprint	4.62 AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	5.09 AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN204 Alternative 1
Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	0.00 ac	A	49	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	16.30 ac	B	69	1124.70	Open Spaces, Lawns/Fair Condition
Pervious Area	8.88 ac	A	25	222.00	Woods, Good Cover
Pervious Area	7.56 ac	D	77	582.12	Woods, Good Cover
Pervious Area	3.06 ac	A	45	137.70	Woods, Poor Cover
Impervious Area	0.00 ac		98	0.00	Roadway Pavement
Wetted Pond Area	0.00 ac		100	0.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	35.80 ac			2066.52	57.7 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	8.10 ac	A	49	396.90	Open Spaces, Lawns/Fair Condition
Pervious Area	7.12 ac	B	69	491.28	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	5.05 ac	D	84	424.20	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	10.71 ac		98	1049.58	Roadway Pavement
Wetted Pond Area	2.98 ac		100	298.00	Pond
Dry Pond Area	1.84 ac	B	69	126.96	Pond
Total Area	35.80 ac			2786.92	77.8 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN204
Alternative 2

Treatment Volume Required for Additional Impervious Area: 3.11 acre-ft
Treatment Volume Impacted: 0.00 acre-ft
Total Treatment Volume Required: 3.11 acre-ft

Attenuation Volume Required for Additional Impervious Area: 10.50 acre-ft
Attenuation Volume Impacted: 0.00 acre-ft
Attenuation Volume Required: 10.50 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN204 Alternative 2	<i>Pre-Development Condition</i>	<i>Post Development Condition</i>
Total Area, acre	37.26	37.26
Impervious Area, ac	0.00	10.71
CN	56.3	78.5
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	7.77	2.74
Runoff Depth (Q), in	6.74	10.12
Runoff Volume, acre-ft	20.93	31.43
Volume Differential, acre-ft	10.50	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		2.23
OR		
1.0-in. (1ft./12 in.) x Contributing Basin Area (ac.) = acre-ft		3.11
Total Volume Required, acre-ft	12.73	



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/28/2022

Basin 204 Pond Alternative 2, Station 6269+00 LT

Wet Detention Calculations

Existing Ground at Pond site =	82.00 (LiDAR)
ELEV EOP @ Low Point =	98.38 6286+05 low point per PGL along profile (99.10), minus two 12' lanes @ 3.0% slope
Elev SHW =	75 76 is the best fit contour for the 100-yr floodplain assume shw for wetland is 1' below
Treatment Volume Required	3.11 AC-FT.
Attenuation Volume Required	10.50 AC-FT.
Pond Area Based on treatment volume	3.88 AC
Assume 1 foot of pond freeboard	1.00 FT.
Treatment Depth	0.80 FT.
Total Attenuation Depth based on Pond Area	2.7 FT.
Total Depth from SHWL to Top of Berm	4.50 FT.
Elev SHW=	75.0
Top of Berm Elevation given a total depth =	79.50
Unit Length Based on L/W = 2	581 FT.
Unit Width Based on L/W = 2	291 FT.
Maintenance Berm Width of 20-ft	40 FT.
Grade Adjustment Width Assumed 1:2	10 FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	36.04 FT.
Total Pond Length (including maintenance berm and adjustments)	667.51 FT.
Total Pond Width (including maintenance berm and adjustments)	376.7658 FT.
Preliminary Property Size Required to accommodate Pond Footprint	5.77 AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	6.35 AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN204 Alternative 2
Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	0.00 ac	A	49	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	11.48 ac	B	69	792.12	Open Spaces, Lawns/Fair Condition
Pervious Area	11.20 ac	A	25	280.09	Woods, Good Cover
Pervious Area	11.52 ac	D	77	886.76	Woods, Good Cover
Pervious Area	3.06 ac	A	45	137.70	Woods, Poor Cover
Impervious Area	0.00 ac		98	0.00	Roadway Pavement
Wetted Pond Area	0.00 ac		100	0.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	37.26 ac			2096.67	56.3 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	8.10 ac	A	49	396.90	Open Spaces, Lawns/Fair Condition
Pervious Area	7.12 ac	B	69	491.28	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	5.05 ac	D	84	424.20	Open Spaces, Lawns/Fair Condition
Dry Pond Area	0.82 ac	A	49	40.25	Pond
Impervious Area	10.71 ac		98	1049.58	Roadway Pavement
Wetted Pond Area	4.06 ac		100	406.00	Pond
Dry Pond Area	1.40 ac	D	84	117.48	Pond
Total Area	37.26 ac			2925.69	78.5 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN204
Alternative 3

Treatment Volume Required for Additional Impervious Area: 3.08 acre-ft
Treatment Volume Impacted: 0.00 acre-ft
Total Treatment Volume Required: 3.08 acre-ft

Attenuation Volume Required for Additional Impervious Area: 10.59 acre-ft
Attenuation Volume Impacted: 0.00 acre-ft
Attenuation Volume Required: 10.59 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/28/2022

Basin 204 Pond Alternative 3, Station 6255+00 RT

Wet Detention Calculations

Existing Ground at Pond site =	83.00 (LiDAR)
ELEV EOP @ Low Point =	98.38 6286+05 low point per PGL along profile (99.10), minus two 12' lanes @ 3.0% slope
Elev SHW =	75 76 is the best fit contour for the 100-yr floodplain assume shw for wetland is 1' below
Treatment Volume Required	3.08 AC-FT.
Attenuation Volume Required	10.59 AC-FT.
Pond Area Based on treatment volume	3.62 AC
Assume 1 foot of pond freeboard	1.00 FT.
Treatment Depth	0.85 FT.
Total Attenuation Depth based on Pond Area	2.9 FT.
Total Depth from SHWL to Top of Berm	4.77 FT.
Elev SHW=	75.0
Top of Berm Elevation given a total depth =	79.77
Unit Length Based on L/W = 2	562 FT.
Unit Width Based on L/W = 2	281 FT.
Maintenance Berm Width of 20-ft	30 FT.
Grade Adjustment Width Assumed 1:2	13 FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	38.18 FT.
Total Pond Length (including maintenance berm and adjustments)	642.87 FT.
Total Pond Width (including maintenance berm and adjustments)	361.9795 FT.
Preliminary Property Size Required to accommodate Pond Footprint	5.34 AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	5.88 AC.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN204 Alternative 3	<i>Pre-Development Condition</i>	<i>Post Development Condition</i>
Total Area, acre	36.95	36.95
Impervious Area, ac	0.00	10.71
CN	55.4	77.9
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	8.06	2.84
Runoff Depth (Q), in	6.59	10.03
Runoff Volume, acre-ft	20.31	30.89
Volume Differential, acre-ft	10.59	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		2.23
OR		
1.0-in. (1ft./12 in.) x Contributing Basin Area (ac.) = acre-ft		3.08
Total Volume Required, acre-ft	12.82	



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN204 Alternative 3
 Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	0.00 ac	A	49	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	15.18 ac	B	69	1047.52	Open Spaces, Lawns/Fair Condition
Pervious Area	11.15 ac	A	25	278.72	Woods, Good Cover
Pervious Area	7.56 ac	D	77	582.12	Woods, Good Cover
Pervious Area	3.06 ac	A	45	137.70	Woods, Poor Cover
Impervious Area	0.00 ac		98	0.00	Roadway Pavement
Wetted Pond Area	0.00 ac		100	0.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	36.95 ac			2046.05	55.4 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	8.10 ac	A	49	396.90	Open Spaces, Lawns/Fair Condition
Pervious Area	7.12 ac	B	69	491.28	Open Spaces, Lawns/Fair Condition
Dry Pond Area	1.40 ac	B	79	110.21	Pond
Pervious Area	5.05 ac	D	84	424.20	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	10.71 ac		98	1049.58	Roadway Pavement
Wetted Pond Area	3.72 ac		100	372.00	Pond
Dry Pond Area	0.86 ac	A	39	33.35	Pond
Total Area	36.95 ac			2877.51	77.9 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 05/23/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN203
Alternative 1

Treatment Volume Required for Additional Impervious Area: 2.71 acre-ft
Treatment Volume Impacted: 0.00 acre-ft
Total Treatment Volume Required: 2.71 acre-ft

Attenuation Volume Required for Additional Impervious Area: 14.79 acre-ft
Attenuation Volume Impacted: 0.00 acre-ft
Attenuation Volume Required: 14.79 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN203 Alternative 1	<i>Pre-Development Condition</i>	<i>Post Development Condition</i>
Total Area, acre	32.56	32.56
Impervious Area, ac	0.00	11.56
CN	43.5	77.8
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	12.98	2.86
Runoff Depth (Q), in	4.57	10.02
Runoff Volume, acre-ft	12.39	27.18
Volume Differential, acre-ft	14.79	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		2.41
OR		
1.0-in. (1ft./12 in.) x Contributing Basin Area (ac.) = acre-ft		2.71
Total Volume Required, acre-ft	17.19	



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin 203 Pond Alternative 1, Station 6316+00 LT

Wet Detention Calculations

Existing Ground at Pond site = 87.00 (LiDAR)
ELEV EOP @ Low Point = 101.43 6296+22 approx CL elev (102.15) minus two 12' lanes at 3.0%
Elev SHW = 77 estimated based off of wetland line

Treatment Volume Required 2.71 AC-FT.
Attenuation Volume Required 14.79 AC-FT.
Pond Area Based on treatment volume 3.01 AC
Assume 1 foot of pond freeboard 1.00 FT.

Treatment Depth 0.90 FT.
Total Attenuation Depth based on Pond Area 4.9 FT.
Total Depth from SHWL to Top of Berm 6.80 FT.

Elev SHW= 77.0
Top of Berm Elevation given a total depth = 83.80

Unit Length Based on L/W = 2 512 FT.
Unit Width Based on L/W = 2 256 FT.
Maintenance Berm Width of 20-ft 40 FT.
Grade Adjustment Width Assumed 1:2 13 FT.
Horizontal Distance Based on a 1:4 Slope and total Depth 54.44 FT.
Total Pond Length (including maintenance berm and adjustments) 619.71 FT.
Total Pond Width (including maintenance berm and adjustments) 363.47 FT.

Preliminary Property Size Required to accommodate Pond Footprint 5.17 AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency 5.69 AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN203 Alternative 1
Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	16.14 ac	A	25	403.50	Woods, Good Cover
Pervious Area	11.40 ac	B	55	627.00	Woods, Good Cover
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	5.02 ac	D	77	386.54	Woods, Good Cover
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	0.00 ac		98	0.00	Roadway Pavement
Wetted Pond Area	0.00 ac		100	0.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	32.56 ac			1417.04	43.5 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	9.57 ac	A	49	468.93	Open Spaces, Lawns/Fair Condition
Pervious Area	2.78 ac	B	69	191.82	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	3.22 ac	D	84	270.48	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	11.56 ac		98	1132.88	Roadway Pavement
Wetted Pond Area	3.01 ac		100	301.00	Pond
Dry Pond Area	2.42 ac	B	69	166.98	Pond
Total Area	32.56 ac			2532.09	77.8 = Weighted CN

Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: HGL Check

Prepared by: CAB
Checked by: JAF
Date: 5/27/2022
Revised:

BSN203 - Pond Alternative 1
Hydraulic Grade Line Check

ESTIMATE ENERGY LOSSES

Start Station 6296+20 Length (L) = 1665
End Station 6311+00 slope % = 0.05

Est. Energy Losses = L x slope = **0.8325**

Low Point in Gutter (ft): **101.43**

Clearance (ft): 1

Est. Energy Losses: 0.8325

Maximum Allowable Pond Stage Per HGL Calculations = **99.60 ft**

Pond Stage Per Model Results for 50yr72hr Storm = **86 ft**



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN203
Alternative 2

Treatment Volume Required for Additional Impervious Area:	2.75 acre-ft
Treatment Volume Impacted:	0.00 acre-ft
Total Treatment Volume Required:	2.75 acre-ft
Attenuation Volume Required for Additional Impervious Area:	14.20 acre-ft
Attenuation Volume Impacted:	0.00 acre-ft
Attenuation Volume Required:	14.20 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN203 Alternative 2	<i>Pre-Development Condition</i>	<i>Post Development Condition</i>
Total Area, acre	32.98	32.98
Impervious Area, ac	0.00	11.56
CN	43.0	75.1
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	13.28	3.32
Runoff Depth (Q), in	4.47	9.63
Runoff Volume, acre-ft	12.28	26.48
Volume Differential, acre-ft	14.20	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		2.41
OR		
1.0-in. (1ft./12 in.) x Contributing Basin Area (ac.) = acre-ft		2.75
Total Volume Required, acre-ft	16.60	



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/28/2022

Basin 203 Pond Alternative 2, Station 6306+00 RT

Wet Detention Calculations

Existing Ground at Pond site =	79.00 (LiDAR)
ELEV EXST EOP @ Low Point =	101.43 6296+22 approx CL elev (102.15) minus two 12' lanes at 3.0%
Elev SHW =	77 estimated based off of wetland line
Treatment Volume Required	2.75 AC-FT.
Attenuation Volume Required	17.65 AC-FT.
Pond Area Based on treatment volume	2.89 AC
Assume 1 foot of pond freeboard	1.00 FT.
Treatment Depth	0.95 FT.
Total Attenuation Depth based on Pond Area	6.1 FT.
Total Depth from SHWL to Top of Berm	8.05 FT.
Elev SHW=	77.0
Top of Berm Elevation given a total depth =	85.05
Unit Length Based on L/W = 2	502 FT.
Unit Width Based on L/W = 2	251 FT.
Maintenance Berm Width of 20-ft	40 FT.
Grade Adjustment Width Assumed 1:2	24 FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	64.41 FT.
Total Pond Length (including maintenance berm and adjustments)	630.65 FT.
Total Pond Width (including maintenance berm and adjustments)	379.6316 FT.
Preliminary Property Size Required to accommodate Pond Footprint	5.50 AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	6.05 AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN203 Alternative 2
 Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	19.07 ac	A	25	476.63	Woods, Good Cover
Pervious Area	5.97 ac	B	55	328.35	Woods, Good Cover
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	7.95 ac	D	77	611.77	Woods, Good Cover
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	0.00 ac		98	0.00	Roadway Pavement
Wetted Pond Area	0.00 ac		100	0.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	32.98 ac			1416.74	43.0 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	9.57 ac	A	49	468.93	Open Spaces, Lawns/Fair Condition
Pervious Area	2.78 ac	B	69	191.82	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	3.22 ac	D	84	270.48	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	11.56 ac		98	1132.88	Roadway Pavement
Wetted Pond Area	3.01 ac		100	301.00	Pond
Dry Pond Area	2.84 ac	A	39	110.76	Pond
Total Area	32.98 ac			2475.87	75.1 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN203
Alternative 3

Treatment Volume Required for Additional Impervious Area: 2.74 acre-ft
Treatment Volume Impacted: 0.00 acre-ft
Total Treatment Volume Required: 2.74 acre-ft

Attenuation Volume Required for Additional Impervious Area: 14.21 acre-ft
Attenuation Volume Impacted: 0.00 acre-ft
Attenuation Volume Required: 14.21 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN203 Alternative 3	<i>Pre-Development Condition</i>	<i>Post Development Condition</i>
Total Area, acre	32.88	32.88
Impervious Area, ac	0.00	11.56
CN	45.2	78.0
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	12.12	2.82
Runoff Depth (Q), in	4.86	10.05
Runoff Volume, acre-ft	13.33	27.53
Volume Differential, acre-ft	14.21	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		2.41
OR		
1.0-in. (1ft./12 in.) x Contributing Basin Area (ac.) = acre-ft		2.74
Total Volume Required, acre-ft	16.62	



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/29/2022

Basin 203 Pond Alternative 3, Station 6294+00 LT

Wet Detention Calculations

Existing Ground at Pond site =	80.00 (LiDAR, west side of parcel)
ELEV EXST EOP @ Low Point =	101.43 6296+22 approx CL elev (102.15) minus two 12' lanes at 3.0%
Elev SHW =	77 estimated based off of wetland line
Treatment Volume Required	2.74 AC-FT.
Attenuation Volume Required	17.65 AC-FT.
Pond Area Based on treatment volume	3.04 AC
Assume 1 foot of pond freeboard	1.00 FT.
Treatment Depth	0.90 FT.
Total Attenuation Depth based on Pond Area	5.8 FT.
Total Depth from SHWL to Top of Berm	7.70 FT.
Elev SHW=	77.0
Top of Berm Elevation given a total depth =	84.70
Unit Length Based on L/W = 2	515 FT.
Unit Width Based on L/W = 2	258 FT.
Maintenance Berm Width of 20-ft	40 FT.
Grade Adjustment Width Assumed 1:2	19 FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	61.58 FT.
Total Pond Length (including maintenance berm and adjustments)	635.38 FT.
Total Pond Width (including maintenance berm and adjustments)	377.8763 FT.
Preliminary Property Size Required to accommodate Pond Footprint	5.51 AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	6.06 AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN203 Alternative 3
 Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	17.58 ac	A	25	439.44	Woods, Good Cover
Pervious Area	5.97 ac	B	55	328.35	Woods, Good Cover
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	9.33 ac	D	77	718.60	Woods, Good Cover
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	0.00 ac		98	0.00	Roadway Pavement
Wetted Pond Area	0.00 ac		100	0.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	32.88 ac			1486.39	45.2 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	9.57 ac	A	49	468.93	Open Spaces, Lawns/Fair Condition
Pervious Area	2.78 ac	B	69	191.82	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	3.22 ac	D	84	270.48	Open Spaces, Lawns/Fair Condition
Dry Pond Area	2.06 ac	D	84	172.62	Pond
Impervious Area	11.56 ac		98	1132.88	Roadway Pavement
Wetted Pond Area	3.01 ac		100	301.00	Pond
Dry Pond Area	0.69 ac	A	39	26.72	Pond
Total Area	32.88 ac			2564.45	78.0 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for SR429 / I-4 Interchange

Treatment Volume Required for Additional Impervious Area:	3.98 acre-ft
Treatment Volume Impacted:	6.97 acre-ft
Total Treatment Volume Required:	10.95 acre-ft
Attenuation Volume Required for Additional Impervious Area:	32.53 acre-ft
Attenuation Volume Impacted:	16.53 acre-ft
Attenuation Volume Required:	49.07 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN105

Treatment Volume Required for Additional Impervious Area: 0.89 acre-ft
Treatment Volume Impacted: 0.89 acre-ft
Total Treatment Volume Required: 1.78 acre-ft

Attenuation Volume Required for Additional Impervious Area: 4.12 acre-ft
Attenuation Volume Impacted: 2.73 acre-ft
Attenuation Volume Required: 6.85 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN106

Treatment Volume Required for Additional Impervious Area: 0.43 acre-ft
Treatment Volume Impacted: 5.91 acre-ft
Total Treatment Volume Required: 6.33 acre-ft

Attenuation Volume Required for Additional Impervious Area: 1.20 acre-ft
Attenuation Volume Impacted: 13.78 acre-ft
Attenuation Volume Required: 14.98 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN107

Treatment Volume Required for Additional Impervious Area: 1.46 acre-ft
Treatment Volume Impacted: 0.00 acre-ft
Total Treatment Volume Required: 1.46 acre-ft

Attenuation Volume Required for Additional Impervious Area: 6.22 acre-ft
Attenuation Volume Impacted: 0.00 acre-ft
Attenuation Volume Required: 6.22 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN108

Treatment Volume Required for Additional Impervious Area: 1.20 acre-ft
Treatment Volume Impacted: 0.18 acre-ft
Total Treatment Volume Required: 1.37 acre-ft

Attenuation Volume Required for Additional Impervious Area: 21.00 acre-ft
Attenuation Volume Impacted: 0.02 acre-ft
Attenuation Volume Required: 21.03 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN105	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	75.03	75.03
Impervious Area, ac	28.75	33.04
CN	71.4	76.0
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	4.00	3.16
Runoff Depth (Q), in	9.11	9.76
Runoff Volume, acre-ft	56.94	61.05
Volume Differential, acre-ft	4.12	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.89
Total Volume Required, acre-ft	5.01	

* - Used 2.5-inches over the Basin Area based on the I-4 BTU calculations.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN106	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	29.13	29.13
Impervious Area, ac	11.84	13.89
CN	74.0	77.4
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	3.52	2.92
Runoff Depth (Q), in	9.48	9.97
Runoff Volume, acre-ft	23.00	24.20
Volume Differential, acre-ft	1.20	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.43
Total Volume Required, acre-ft	1.62	

* - Used 2.5-inches over the Basin Area based on the I-4 BTU calculations.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN107	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	23.68	23.68
Impervious Area, ac	3.32	10.33
CN	51.3	71.2
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	9.49	4.05
Runoff Depth (Q), in	5.91	9.06
Runoff Volume, acre-ft	11.67	17.89
Volume Differential, acre-ft	6.22	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		1.46
Total Volume Required, acre-ft	7.68	

* - Used 2.5-inches over the Basin Area based on the I-4 BTU calculations.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN108	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	75.14	75.14
Impervious Area, ac	13.39	19.13
CN	51.5	72.8
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	9.40	3.73
Runoff Depth (Q), in	5.95	9.31
Runoff Volume, acre-ft	37.28	58.28
Volume Differential, acre-ft	21.00	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		1.20
Total Volume Required, acre-ft	22.20	

* - Used 2.5-inches over the Basin Area based on the I-4 BTU calculations.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/29/2022

BSN105-108 Pond Alternative 1, Station 1047+00 RT

Wet Detention Calculations

Existing Ground at Pond site =	82.00	estimated from LIDAR very rough Sta. 1054+00 (edge of Alt area, no LP along ramp)
ELEV EOP @ Lowest Point =	95.01	
Elev SHW =	85.3	Taken from As-Built Pond G-1 Details sheet (214)
Treatment Volume Required	10.95	AC-FT.
Attenuation Volume Required	49.07	AC-FT.
Pond Area Based on treatment volume Assume 1 foot of pond freeboard	8.11	AC
	1.00	FT.
Treatment Depth	1.35	FT.
Total Attenuation Depth based on Pond Area	6.1	FT.
Total Depth from SHWL to Top of Berm	8.40	FT.
Elev SHW=	85.3	
Top of Berm Elevation given a total depth =	93.70	
Unit Length Based on L/W = 2	841	FT.
Unit Width Based on L/W = 2	420	FT.
Maintenance Berm Width of 20-ft	40	FT.
Grade Adjustment Width Assumed 1:2	47	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	67.20	FT.
Total Pond Length (including maintenance berm and adjustments)	994.56	FT.
Total Pond Width (including maintenance berm and adjustments)	574.2832	FT.
Preliminary Property Size Required to accommodate Pond Footprint	13.11	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	14.42	AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN105
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	19.19 ac	A	49	940.31	Open Spaces, Lawns/Fair Condition
Pervious Area	3.94 ac	D	84	330.96	Open Spaces, Lawns/Fair Condition
Pervious Area	12.29 ac	A	25	307.25	Woods, Good Cover
Pervious Area	5.27 ac	D	77	405.79	Woods, Good Cover
Impervious Area	28.75 ac		98	2817.50	Roadway Pavement
Wetted Pond Area	5.59 ac		100	559.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	75.03 ac			5360.81	71.4 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	32.95 ac	A	49	1614.55	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	3.45 ac	D	84	289.80	Open Spaces, Lawns/Fair Condition
Impervious Area	33.04 ac		98	3237.92	Roadway Pavement
Wetted Pond Area	5.59 ac		100	559.00	Pond
Dry Pond Area		A	39	0.00	Pond
Total Area	75.03 ac			5701.27	76.0 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN106
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	13.46 ac	A	49	659.54	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.00 ac	A	76	152.00	Gravel (Rail Corridor)
Impervious Area	11.84 ac		98	1160.32	Roadway Pavement
Wetted Pond Area	1.83 ac		100	183.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	29.13 ac			2154.86	74.0 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	11.41 ac	A	49	559.09	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.00 ac	A	76	152.00	Gravel (Rail Corridor)
Impervious Area	13.89 ac		98	1361.22	Roadway Pavement
Wetted Pond Area	1.83 ac		100	183.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	29.13 ac			2255.31	77.4 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN107
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	6.26 ac	A	49	306.74	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	10.02 ac	A	25	250.50	Woods, Good Cover
Pervious Area	1.00 ac	B	55	55.00	Woods, Good Cover
Pervious Area	1.34 ac	D	77	103.18	Woods, Good Cover
Impervious Area	3.32 ac		98	325.36	Roadway Pavement
Wetted Pond Area	1.74 ac		100	174.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	23.68 ac			1214.78	51.3 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	6.04 ac	A	49	295.96	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	4.10 ac	A	25	102.50	Woods, Good Cover
Pervious Area	0.58 ac	B	55	31.90	Woods, Good Cover
Pervious Area	0.89 ac	D	77	68.53	Woods, Good Cover
Impervious Area	10.33 ac		98	1012.34	Roadway Pavement
Wetted Pond Area	1.74 ac		100	174.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	23.68 ac			1685.23	71.2 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations Basin BSN108
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	7.59 ac	A	49	371.91	Open Spaces, Lawns/Fair Condition Woods, Good Cover Woods, Good Cover Woods, Good Cover Gravel (Rail Corridor) Gravel (Rail Corridor) Roadway Pavement Pond Pond
Pervious Area	9.18 ac	B	55	504.90	
Pervious Area	36.04 ac	A	25	901.00	
Pervious Area	3.74 ac	D	77	287.98	
Pervious Area	0.96 ac	A	76	72.96	
Pervious Area	0.26 ac	D	91	23.66	
Impervious Area	13.39 ac		98	1312.22	
Wetted Pond Area	3.98 ac		100	398.00	
Dry Pond Area	0.00 ac	A	39	0.00	
Total Area	75.14 ac			3872.63	

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	25.90 ac	A	49	1269.10	Open Spaces, Lawns/Fair Condition Open Spaces, Lawns/Fair Condition Open Spaces, Lawns/Fair Condition Open Spaces, Lawns/Fair Condition Gravel (Rail Corridor) Gravel (Rail Corridor) Roadway Pavement Pond Pond
Pervious Area	8.00 ac	B	69	552.00	
Pervious Area	0.00 ac	C	79	0.00	
Pervious Area	2.84 ac	D	84	238.56	
Pervious Area	0.96 ac	A	76	72.96	
Pervious Area	0.26 ac	D	91	23.66	
Impervious Area	19.13 ac		98	1874.74	
Wetted Pond Area	12.08 ac		100	1208.00	
Dry Pond Area	5.97 ac	A	39	232.83	
Total Area	75.14 ac			5471.85	



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Ponds 105A/B, Stations 5339+00 to 5352+00 LT
Basin: BSN105

Pond Footprint:	8.04 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	91 %
Salvageable Footprint:	7.32 acres
Percentage of pond footprint impacted:	9 %
Pond footprint no longer useable:	0.72 acres
Treatment Depth:	1.23 ft (from as-builts)
Attenuation Depth:	3.77 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.89 acre-ft

Estimated Attenuation Volume Impacted: 2.73 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 04/22/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Ponds 106A/B, Stations 5330+00 to 5343+00 RT
Basin: BSN106

Pond Footprint:	5.25 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	25 %
Salvageable Footprint:	1.31 acres
Percentage of pond footprint impacted:	75 %
Pond footprint no longer useable:	3.94 acres
Treatment Depth:	1.50 ft (from as-builts)
Attenuation Depth:	3.5 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 5.91 acre-ft

Estimated Attenuation Volume Impacted: 13.78 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond 107, Stations 6348+00 to 6351+00 LT
Basin: BSN107

Pond Footprint:	2.01 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	2.01 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	3.00 ft (from as-builts)
Attenuation Depth:	0.5 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 0.00 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Ponds 108A/B, Stations 5354+00 to 5362+00 RT
Basin: BSN108

108A

Pond Footprint:	3.98 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	98 %
Salvageable Footprint:	3.90 acres
Percentage of pond footprint impacted:	2 %
Pond footprint no longer useable:	0.08 acres
Treatment Depth:	2.20 ft (from as-builts)
Attenuation Depth:	0.3 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.18 acre-ft

Estimated Attenuation Volume Impacted: 0.02 acre-ft

108B

Pond Footprint:	1.97 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	1.97 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	1.30 ft (from as-builts)
Attenuation Depth:	0.7 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 0.00 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for SR429 / I-4 Interchange

Treatment Volume Required for Additional Impervious Area: 3.98 acre-ft
Treatment Volume Impacted: 6.97 acre-ft
Total Treatment Volume Required: 10.95 acre-ft

Attenuation Volume Required for Additional Impervious Area: 29.92 acre-ft
Attenuation Volume Impacted: 16.53 acre-ft
Attenuation Volume Required: 46.45 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN105

Treatment Volume Required for Additional Impervious Area: 0.89 acre-ft
Treatment Volume Impacted: 0.89 acre-ft
Total Treatment Volume Required: 1.78 acre-ft

Attenuation Volume Required for Additional Impervious Area: 4.12 acre-ft
Attenuation Volume Impacted: 2.73 acre-ft
Attenuation Volume Required: 6.85 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN106

Treatment Volume Required for Additional Impervious Area: 0.43 acre-ft
Treatment Volume Impacted: 5.91 acre-ft
Total Treatment Volume Required: 6.33 acre-ft

Attenuation Volume Required for Additional Impervious Area: 1.20 acre-ft
Attenuation Volume Impacted: 13.78 acre-ft
Attenuation Volume Required: 14.98 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN107

Treatment Volume Required for Additional Impervious Area: 1.46 acre-ft
Treatment Volume Impacted: 0.00 acre-ft
Total Treatment Volume Required: 1.46 acre-ft

Attenuation Volume Required for Additional Impervious Area: 6.22 acre-ft
Attenuation Volume Impacted: 0.00 acre-ft
Attenuation Volume Required: 6.22 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN108

Treatment Volume Required for Additional Impervious Area: 1.20 acre-ft
Treatment Volume Impacted: 0.18 acre-ft
Total Treatment Volume Required: 1.37 acre-ft

Attenuation Volume Required for Additional Impervious Area: 18.39 acre-ft
Attenuation Volume Impacted: 0.02 acre-ft
Attenuation Volume Required: 18.41 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN105	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	75.03	75.03
Impervious Area, ac	28.75	33.04
CN	71.4	76.0
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	4.00	3.16
Runoff Depth (Q), in	9.11	9.76
Runoff Volume, acre-ft	56.94	61.05
Volume Differential, acre-ft	4.12	
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.89
Total Volume Required, acre-ft	5.01	

* - Used 2.5-inches over the Basin Area based on the I-4 BTU calculations.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN106	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	29.13	29.13
Impervious Area, ac	11.84	13.89
CN	74.0	77.4
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	3.52	2.92
Runoff Depth (Q), in	9.48	9.97
Runoff Volume, acre-ft	23.00	24.20
Volume Differential, acre-ft	1.20	
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.43
Total Volume Required, acre-ft	1.62	

* - Used 2.5-inches over the Basin Area based on the I-4 BTU calculations.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN107	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	23.68	23.68
Impervious Area, ac	3.32	10.33
CN	51.3	71.2
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	9.49	4.05
Runoff Depth (Q), in	5.91	9.06
Runoff Volume, acre-ft	11.67	17.89
Volume Differential, acre-ft	6.22	
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		1.46
Total Volume Required, acre-ft	7.68	

* - Used 2.5-inches over the Basin Area based on the I-4 BTU calculations.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN108	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	76.30	76.30
Impervious Area, ac	13.39	19.13
CN	54.6	73.1
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	8.33	3.68
Runoff Depth (Q), in	6.46	9.35
Runoff Volume, acre-ft	41.07	59.46
Volume Differential, acre-ft		18.39
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		1.20
Total Volume Required, acre-ft		19.58

* - Used 2.5-inches over the Basin Area based on the I-4 BTU calculations.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 07/29/2022

BSN105-108 Pond Alternative 2, Station 1035+00 RT

Wet Detention Calculations

Existing Ground at Pond site =	79.00	estimated from LIDAR very rough
ELEV EOP @ Lowest Point =	116.35	Sta. 1042+00 (edge of Alt area, no LP along ramp)
Elev SHW =	85.3	Taken from As-Built Pond G-1 Details sheet (214)
Treatment Volume Required	10.95	AC-FT.
Attenuation Volume Required	46.45	AC-FT.
Pond Area Based on treatment volume	9.12	AC
Assume 1 foot of pond freeboard	1.00	FT.
Treatment Depth	1.20	FT.
Total Attenuation Depth based on Pond Area	5.1	FT.
Total Depth from SHWL to Top of Berm	7.29	FT.
Elev SHW=	85.3	
Top of Berm Elevation given a total depth =	92.59	
Unit Length Based on L/W = 2	892	FT.
Unit Width Based on L/W = 2	446	FT.
Maintenance Berm Width of 20-ft	40	FT.
Grade Adjustment Width Assumed 1:2	54	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	58.33	FT.
Total Pond Length (including maintenance berm and adjustments)	1044.25	FT.
Total Pond Width (including maintenance berm and adjustments)	598.4726	FT.
Preliminary Property Size Required to accommodate Pond Footprint	14.35	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	15.78	AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN105
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	19.19 ac	A	49	940.31	Open Spaces, Lawns/Fair Condition
Pervious Area	3.94 ac	D	84	330.96	Open Spaces, Lawns/Fair Condition
Pervious Area	12.29 ac	A	25	307.25	Woods, Good Cover
Pervious Area	5.27 ac	D	77	405.79	Woods, Good Cover
Impervious Area	28.75 ac		98	2817.50	Roadway Pavement
Wetted Pond Area	5.59 ac		100	559.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	75.03 ac			5360.81	71.4 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	32.95 ac	A	49	1614.55	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	3.45 ac	D	84	289.80	Open Spaces, Lawns/Fair Condition
Impervious Area	33.04 ac		98	3237.92	Roadway Pavement
Wetted Pond Area	5.59 ac		100	559.00	Pond
Dry Pond Area		A	39	0.00	Pond
Total Area	75.03 ac			5701.27	76.0 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN106
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	13.46 ac	A	49	659.54	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.00 ac	A	76	152.00	Gravel (Rail Corridor)
Impervious Area	11.84 ac		98	1160.32	Roadway Pavement
Wetted Pond Area	1.83 ac		100	183.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	29.13 ac			2154.86	74.0 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	11.41 ac	A	49	559.09	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.00 ac	A	76	152.00	Gravel (Rail Corridor)
Impervious Area	13.89 ac		98	1361.22	Roadway Pavement
Wetted Pond Area	1.83 ac		100	183.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	29.13 ac			2255.31	77.4 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN107
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	6.26 ac	A	49	306.74	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	10.02 ac	A	25	250.50	Woods, Good Cover
Pervious Area	1.00 ac	B	55	55.00	Woods, Good Cover
Pervious Area	1.34 ac	D	77	103.18	Woods, Good Cover
Impervious Area	3.32 ac		98	325.36	Roadway Pavement
Wetted Pond Area	1.74 ac		100	174.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	23.68 ac			1214.78	51.3 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	6.04 ac	A	49	295.96	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	4.10 ac	A	25	102.50	Woods, Good Cover
Pervious Area	0.58 ac	B	55	31.90	Woods, Good Cover
Pervious Area	0.89 ac	D	77	68.53	Woods, Good Cover
Impervious Area	10.33 ac		98	1012.34	Roadway Pavement
Wetted Pond Area	1.74 ac		100	174.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	23.68 ac			1685.23	71.2 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations Basin BSN108
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	7.59 ac	A	49	371.91	Open Spaces, Lawns/Fair Condition
Pervious Area	9.18 ac	B	55	504.90	Woods, Good Cover
Pervious Area	32.17 ac	A	25	804.30	Woods, Good Cover
Pervious Area	8.77 ac	D	77	674.97	Woods, Good Cover
Pervious Area	0.96 ac	A	76	72.96	Gravel (Rail Corridor)
Pervious Area	0.26 ac	D	91	23.66	Gravel (Rail Corridor)
Impervious Area	13.39 ac		98	1312.22	Roadway Pavement
Wetted Pond Area	3.98 ac		100	398.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	76.30 ac			4162.92	54.6 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	25.90 ac	A	49	1269.10	Open Spaces, Lawns/Fair Condition
Pervious Area	8.00 ac	B	69	552.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.84 ac	D	84	238.56	Open Spaces, Lawns/Fair Condition
Pervious Area	0.96 ac	A	76	72.96	Gravel (Rail Corridor)
Pervious Area	0.26 ac	D	91	23.66	Gravel (Rail Corridor)
Impervious Area	19.13 ac		98	1874.74	Roadway Pavement
Wetted Pond Area	13.10 ac		100	1310.00	Pond
Dry Pond Area	6.11 ac	A	39	238.29	Pond
Total Area	76.30 ac			5579.31	73.1 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Ponds 105A/B, Stations 5339+00 to 5352+00 LT
Basin: BSN105

Pond Footprint:	8.04 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	91 %
Salvageable Footprint:	7.32 acres
Percentage of pond footprint impacted:	9 %
Pond footprint no longer useable:	0.72 acres
Treatment Depth:	1.23 ft (from as-builts)
Attenuation Depth:	3.77 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.89 acre-ft

Estimated Attenuation Volume Impacted: 2.73 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Ponds 106A/B, Stations 5330+00 to 5343+00 RT
Basin: BSN106

Pond Footprint:	5.25 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	25 %
Salvageable Footprint:	1.31 acres
Percentage of pond footprint impacted:	75 %
Pond footprint no longer useable:	3.94 acres
Treatment Depth:	1.50 ft (from as-builts)
Attenuation Depth:	3.5 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 5.91 acre-ft

Estimated Attenuation Volume Impacted: 13.78 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond 107, Stations 6348+00 to 6351+00 LT
Basin: BSN107

Pond Footprint:	2.01 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	2.01 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	3.00 ft (from as-builts)
Attenuation Depth:	0.5 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 0.00 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Ponds 108A/B, Stations 5354+00 to 5362+00 RT
Basin: BSN108

108A

Pond Footprint:	3.98 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	98 %
Salvageable Footprint:	3.90 acres
Percentage of pond footprint impacted:	2 %
Pond footprint no longer useable:	0.08 acres
Treatment Depth:	2.20 ft (from as-builts)
Attenuation Depth:	0.3 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.18 acre-ft

Estimated Attenuation Volume Impacted: 0.02 acre-ft

108B

Pond Footprint:	1.97 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	1.97 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	1.30 ft (from as-builts)
Attenuation Depth:	0.7 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 0.00 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 05/18/2022

TOTAL REQUIREMENTS FOR BASINS 105-108 & STORAGE AVAILABLE IN INTERCHANGE CELLS

BSN Interchange Onsite Alternative

Treatment Volume Required (105)	5.97 AC-FT.
Treatment Volume Required (106)	2.90 AC-FT.
Treatment Volume Required (107)	2.07 AC-FT.
Treatment Volume Required (108)	3.49 AC-FT.
Total Treatment Volume Required	14.43 AC-FT.
Attenuation Volume Required (105)	40.71 AC-FT.
Attenuation Volume Required (106)	12.91 AC-FT.
Attenuation Volume Required (107)	10.90 AC-FT.
Attenuation Volume Required (108)	20.49 AC-FT.
Total Attenuation Volume Required	85.01 AC-FT.
Treatment Volume Available (105)	8.25 AC-FT.
Treatment Volume Available (106)	0.83 AC-FT.
Treatment Volume Available (107)	2.64 AC-FT.
Treatment Volume Available (108)	8.43 AC-FT.
TOTAL	20.15 AC-FT.
Attenuation Volume Available (105)	50.32 AC-FT.
Attenuation Volume Available (106)	4.64 AC-FT.
Attenuation Volume Available (107)	12.02 AC-FT.
Attenuation Volume Available (108)	21.48 AC-FT.
TOTAL	88.46 AC-FT.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 05/18/2022

TOTAL REQUIREMENTS FOR BASIN 105 & STORAGE AVAILABLE IN INTERCHANGE CELLS

Treatment Volume Required	5.97 AC-FT.
Attenuation Volume Required	40.71 AC-FT.
Treatment Volume Available	8.25 AC-FT.
Attenuation Volume Available	50.32 AC-FT.

Note: A breakdown of the treatment and attenuation volume available in each cell is provided on the subsequent sheets.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 05/18/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN105

Treatment Volume Required for Additional Impervious Area:	0.89 acre-ft
Treatment Volume Impacted:	5.08 acre-ft
Total Treatment Volume Required:	5.97 acre-ft
Attenuation Volume Required for Additional Impervious Area:	8.88 acre-ft
Attenuation Volume Impacted:	31.83 acre-ft
Attenuation Volume Required:	40.71 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN105	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	75.03	75.03
Impervious Area, ac	28.75	33.04
CN	71.4	81.4
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	4.00	2.28
Runoff Depth (Q), in	9.11	10.53
Runoff Volume, acre-ft	56.94	65.82
Volume Differential, acre-ft	8.88	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.89
Total Volume Required, acre-ft	9.77	

* - No change in Basin Area, therefore used 2.5-inches over new impervious to be conservative.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JF
Date: 05/18/2022

STORAGE AVAILABLE SR 429 INTERCHANGE

location of interchange cell: TP-9

Elev EOP @ Low Point =	100.00 FT.	See Note 2
Avg Elev Existing Ground at Pond Site =	100.00 FT.	
Maintenance Berm Elevation (Outside)	99.50 FT.	
Maintenance Berm Elevation	98.50 FT.	
Vertical Distance from Exist Ground Elev. to Maint. Berm Elev. (Outside)	0.50 FT.	
Side slope from Exist Ground to Maint Berm (1:X)	4.00	
Maintenance Berm Width of 20-ft	40 FT.	
Offset to Max DHW (assume 1 foot of freeboard & 1:4 slope)	4 FT.	
Elevation of Max DHW (assumes 1 foot of freeboard)	97.5 FT.	
Area at Max DHW (assumes 1 foot of freeboard)	15.7 AC	measured in CAD
Elevation of NWL	93.5 FT.	See Note 1
Distance From Max DHW to Treatment Elev. (assumes 0.6' treatment depth)	3.4 FT.	Max attenuation Depth
Attenuation Depth Used	3.4 FT.	Must be less than Max DHW to Treatment Elev.
Area at Attenuation Depth	15.7 AC	measured in CAD
Wet Pond or Dry Pond	Wet	
Wet Pond-Area at SHW (assume 1:4 slope from Maint Berm)	13.6 AC	measured in CAD
Wet Pond-Area at Treatment Elevation (assumed 0.6' depth)	13.9 AC	measured in CAD
Dry Pond-Area at Pond Bottom (assume 1:4 slope from Maint Berm)	N/A AC	
Dry Pond-Area at Treatment Elevation (assumed 0.6' depth)	N/A AC	
Treatment Volume Available	8.25 AC-FT.	
Attenuation Volume Available	50.32 AC-FT.	

Notes:

1) NWL was determined from BTU Permit for Pond 105A/B

2) Lowest EOP elevation determined from BTU I-4 Roadway Profile, Sta 1330+00 (PD&E Sta. 5336+00)



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN105
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	19.19 ac	A	49	940.31	Open Spaces, Lawns/Fair Condition
Pervious Area	3.94 ac	D	84	330.96	Open Spaces, Lawns/Fair Condition
Pervious Area	12.29 ac	A	25	307.25	Woods, Good Cover
Pervious Area	5.27 ac	D	77	405.79	Woods, Good Cover
Impervious Area	28.75 ac		98	2817.50	Roadway Pavement
Wetted Pond Area	5.59 ac		100	559.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	75.03 ac			5360.81	71.4 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	24.94 ac	A	49	1222.06	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	3.45 ac	D	84	289.80	Open Spaces, Lawns/Fair Condition
Impervious Area	33.04 ac		98	3237.92	Roadway Pavement
Wetted Pond Area	13.60 ac		100	1360.00	Pond
Dry Pond Area		A	39	0.00	Pond
Total Area	75.03 ac			6109.78	81.4 = Weighted CN

Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: HGL Check

Prepared by: CAB
Checked by: JAF
Date: 5/26/2022
Revised: _____

BSN105 - Pond
Hydraulic Grade Line Check

ESTIMATE ENERGY LOSSES

Start Station 5336+00 Length (L) = 566.5 66.5' off of EOP
End Station 5341+00 slope % = 0.05

Est. Energy Losses = $L \times \text{slope} =$ **0.28325**

Low Point in Gutter (ft): 100
Clearance (ft): 1
Est. Energy Losses: 0.28325

Maximum Allowable Pond Stage Per HGL Calculations = **98.72 ft**

Pond Stage Per Model Results for 50yr72hr Storm = **97.50 ft**



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Ponds 105A/B, Stations 5339+00 to 5352+00 LT
Basin: BSN105

Pond Footprint:	8.04 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	91 %
Salvageable Footprint:	7.32 acres
Percentage of pond footprint impacted:	9 %
Pond footprint no longer useable:	0.72 acres
Pond Normal Water Level (NWL):	93.50 (from BTU calculations)
Pond Pollution Abatement Volume (PAV) Water Level:	94.73 (from BTU calculations)
Pond Attenuation Volume (ATT) Water Level:	98.50 (from BTU calculations)
Treatment Depth:	1.23 ft
Attenuation Depth:	5.00 ft

BTU Req. Treatment Volume: Impacted: 5.08 acre-ft (from BTU calculations)

BTU Attenuation Volume Impacted: 31.83 acre-ft (from BTU calculations)

Notes:

- 1) The BTU calculations for Storage Required and Storage Provided show that PAV volume is also counted as ATT volume
-For conservative purposes, the PD&E calculations will provide both volumes separately



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 05/18/2022

TOTAL REQUIREMENTS FOR BASIN 106 & STORAGE AVAILABLE IN INTERCHANGE CELLS

Treatment Volume Required	2.90 AC-FT.
Attenuation Volume Required	12.91 AC-FT.
Treatment Volume Available	0.83 AC-FT.
Attenuation Volume Available	4.64 AC-FT.

Note: A breakdown of the treatment and attenuation volume available in each cell is provided on the subsequent sheets.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 05/18/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN106

Treatment Volume Required for Additional Impervious Area: 0.43 acre-ft
Treatment Volume Impacted: 2.47 acre-ft
Total Treatment Volume Required: 2.90 acre-ft

Attenuation Volume Required for Additional Impervious Area: 0.56 acre-ft
Attenuation Volume Impacted: 12.35 acre-ft
Attenuation Volume Required: 12.91 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN106	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	29.31	29.31
Impervious Area, ac	11.84	13.89
CN	73.8	75.4
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	3.55	3.26
Runoff Depth (Q), in	9.45	9.68
Runoff Volume, acre-ft	23.09	23.65
Volume Differential, acre-ft	0.56	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.43
Total Volume Required, acre-ft	0.99	

* - No change in Basin Area, therefore used 2.5-inches over new impervious to be conservative.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JF
Date: 05/18/2022

STORAGE AVAILABLE SR 429 INTERCHANGE

location of interchange cell: PND106

Elev Exist EOP @ Low Point =	101.00 FT.	
Avg Elev Existing Ground at Pond Site =	100.00 FT.	*removing existing ramp
Maintenance Berm Elevation (Outside)	100.50 FT.	
Maintenance Berm Elevation (Inside)	99.50 FT.	
Vertical Distance from Exist Ground Elev. to Maint. Berm Elev. (Outside)	0.50 FT.	
Side slope from Exist Ground to Maint Berm (1:X)	4.00	
Maintenance Berm Width of 20-ft	40 FT.	
Offset to Max DHW (assume 1 foot of freeboard & 1:4 slope)	4 FT.	
Elevation of Max DHW (assumes 1 foot of freeboard)	98.5 FT.	
Area at Max DHW (assumes 1 foot of freeboard)	1.3 AC	measured in CAD
Elevation of NWL	93.2 FT.	NWL
Distance From Max DHW to Treatment Elev. (assumes 1' treatment depth)	4.3 FT.	Max attenuation Depth
Attenuation Depth Used	4.3 FT.	Must be less than Max DHW to Treatment Elev.
Area at Attenuation Depth	1.3 AC	
Wet Pond or Dry Pond	Wet	
Wet Pond-Area at SHW (assume 1:4 slope from Maint Berm)	0.8 AC	
Wet Pond-Area at Treatment Elevation (assumed 1' depth)	0.9 AC	
Dry Pond-Area at Pond Bottom (assume 1:4 slope from Maint Berm)	N/A AC	
Dry Pond-Area at Treatment Elevation (assumed 1' depth)	N/A AC	
Treatment Volume Available	0.83 AC-FT.	
Attenuation Volume Available	4.64 AC-FT.	

Notes:

- 1) NWL was determined from BTU Permit for Pond 106
- 2) Lowest EOP elevation determined from BTU I-4 Roadway Profile, Sta 1331+00 (PD&E Sta. 5337+00)



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN106
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	13.64 ac	A	49	668.36	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.00 ac	A	76	152.00	Gravel (Rail Corridor)
Impervious Area	11.84 ac		98	1160.32	Roadway Pavement
Wetted Pond Area	1.83 ac		100	183.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	29.31 ac			2163.68	73.8 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	12.64 ac	A	49	619.36	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.00 ac	A	76	152.00	Gravel (Rail Corridor)
Impervious Area	13.89 ac		98	1361.22	Roadway Pavement
Wetted Pond Area	0.78 ac		100	78.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	29.31 ac			2210.58	75.4 = Weighted CN

Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: HGL Check

Prepared by: CAB
Checked by: JAF
Date: 5/26/2022
Revised: _____

BSN106 - Pond
Hydraulic Grade Line Check

ESTIMATE ENERGY LOSSES

Start Station 5337+00 Length (L) = 530 (230' off EOP)
End Station 5340+00 slope % = 0.05

Est. Energy Losses = $L \times \text{slope} =$ 0.265

Low Point in Gutter (ft): 101
Clearance (ft): 1
Est. Energy Losses: 0.265

Maximum Allowable Pond Stage Per HGL Calculations = 99.74 ft

Pond Stage Per Model Results for 50yr72hr Storm = 98.50 ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 05/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Ponds 106A/B, Stations 5330+00 to 5343+00 RT
Basin: BSN106

Pond Footprint:	5.25 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	0 %
Salvageable Footprint:	0.00 acres
Percentage of pond footprint impacted:	100 %
Pond footprint no longer useable:	5.25 acres
Pond Normal Water Level (NWL):	93.20 (from BTU calculations)
Pond Pollution Abatement Volume (PAV) Water Level:	94.70 (from BTU calculations)
Pond Attenuation Volume (ATT) Water Level:	98.20 (from BTU calculations)
Treatment Depth:	1.50 ft
Attenuation Depth:	5.00 ft

BTU Req. Treatment Volume: Impacted: 2.47 acre-ft

BTU Required Attenuation Volume Impacted: 12.35 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 04/21/2022

TOTAL REQUIREMENTS FOR BASIN 107 & STORAGE AVAILABLE IN INTERCHANGE CELLS

Treatment Volume Required	2.07 AC-FT.
Attenuation Volume Required	10.90 AC-FT.
Treatment Volume Available	2.64 AC-FT.
Attenuation Volume Available	12.02 AC-FT.

Note: A breakdown of the treatment and attenuation volume available in each cell is provided on the subsequent sheets.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 04/26/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN107

Treatment Volume Required for Additional Impervious Area: 1.46 acre-ft
BTU Req. Treatment Volume Impacted: 0.61 acre-ft
Total Treatment Volume Required: 2.07 acre-ft

Attenuation Volume Required for Additional Impervious Area: 6.74 acre-ft
BTU Attenuation Volume Impacted: 4.16 acre-ft
Attenuation Volume Required: 10.90 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN107	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	23.68	23.68
Impervious Area, ac	3.32	10.33
CN	51.3	73.0
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	9.49	3.71
Runoff Depth (Q), in	5.91	9.33
Runoff Volume, acre-ft	11.67	18.41
Volume Differential, acre-ft	6.74	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		1.46
Total Volume Required, acre-ft	8.20	

* - No change in Basin Area, therefore used 2.5-inches over new impervious to be conservative.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JF
Date: 04/26/2022

STORAGE AVAILABLE SR 429 INTERCHANGE

location of interchange cell: Pond 107

Elev EOP @ Low Point =	101.00 FT.	See Note 2
Avg Elev Existing Ground at Pond Site =	99.00 FT.	
Maintenance Berm Elevation (Outside)	100.00 FT.	
Maintenance Berm Elevation	99.00 FT.	
Vertical Distance from Exist Ground Elev. to Maint. Berm Elev. (Outside)	1.00 FT.	
Side slope from Exist Ground to Maint Berm (1:X)	4.00	
Maintenance Berm Width of 20-ft	40 FT.	
Offset to Max DHW (assume 1 foot of freeboard & 1:4 slope)	4 FT.	
Elevation of Max DHW (assumes 1 foot of freeboard)	98.0 FT.	
Area at Max DHW (assumes 1 foot of freeboard)	3.3 AC	measured in CAD
Elevation of NWL	93.0 FT.	See Note 1
Distance From Max DHW to Treatment Elev. (assumes 1' treatment depth)	4.0 FT.	Max attenuation Depth
Attenuation Depth Used	4.0 FT.	Must be less than Max DHW to Treatment Elev.
Area at Attenuation Depth	3.3 AC	measured in CAD
Wet Pond or Dry Pond	Wet	
Wet Pond-Area at SHW (assume 1:4 slope from Maint Berm)	2.6 AC	measured in CAD
Wet Pond-Area at Treatment Elevation (assumed 1' depth)	2.7 AC	measured in CAD
Dry Pond-Area at Pond Bottom (assume 1:4 slope from Maint Berm)	N/A AC	
Dry Pond-Area at Treatment Elevation (assumed 1' depth)	N/A AC	
Treatment Volume Available	2.64 AC-FT.	
Attenuation Volume Available	12.02 AC-FT.	

Notes:

- 1) NWL was determined from BTU Permit for Pond 107
- 2) Lowest EOP elevation determined from BTU I-4 Roadway Profile, Sta 1331+00 (PD&E Sta. 5337+00)



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN107
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	6.26 ac	A	49	306.74	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	10.02 ac	A	25	250.50	Woods, Good Cover
Pervious Area	1.00 ac	B	55	55.00	Woods, Good Cover
Pervious Area	1.34 ac	D	77	103.18	Woods, Good Cover
Impervious Area	3.32 ac		98	325.36	Roadway Pavement
Wetted Pond Area	1.74 ac		100	174.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	23.68 ac			1214.78	51.3 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	5.21 ac	A	49	255.29	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	D	84	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	4.10 ac	A	25	102.50	Woods, Good Cover
Pervious Area	0.58 ac	B	55	31.90	Woods, Good Cover
Pervious Area	0.89 ac	D	77	68.53	Woods, Good Cover
Impervious Area	10.33 ac		98	1012.34	Roadway Pavement
Wetted Pond Area	2.57 ac		100	257.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	23.68 ac			1727.56	73.0 = Weighted CN

Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: HGL Check

Prepared by: CAB
Checked by: JAF
Date: 5/27/2022
Revised: _____

BSN107 - Pond
Hydraulic Grade Line Check

ESTIMATE ENERGY LOSSES

Start Station 5345+00 Length (L) = 50 50' off of EOP
End Station 5345+00 slope % = 0.05

Est. Energy Losses = $L \times \text{slope} =$ 0.025

Low Point in Gutter (ft): 103
Clearance (ft): 1
Est. Energy Losses: 0.025

Maximum Allowable Pond Stage Per HGL Calculations = 101.98 ft

Pond Stage Per Model Results for 50yr72hr Storm = 98.0 ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 05/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond 107, Stations 6348+00 to 6351+00 LT
Basin: BSN107

Pond Footprint:	2.72 acres
Is pond salvageable:	no (Expanding Pond 107)
If pond is salvageable what percentage remains functional:	0 %
Salvageable Footprint:	0.00 acres
Percentage of pond footprint impacted:	100 %
Pond footprint no longer useable:	2.72 acres
Pond Normal Water Level (NWL):	93.00 (from BTU calculations)
Pond Pollution Abatement Volume (PAV) Water Level:	96.00 (from BTU calculations)
Pond Attenuation Volume (ATT) Water Level:	96.50 (from BTU calculations)
Treatment Depth:	3.00 ft
Attenuation Depth:	3.50 ft

BTU Req. Treatment Volume: Impacted: 0.61 acre-ft (from BTU calculations)

BTU Attenuation Volume Impacted: 4.16 acre-ft (from BTU calculations)

Notes:

- 1) The BTU calculations for Storage Required and Storage Provided show that PAV volume is also counted as ATT volume
-For conservative purposes, the PD&E calculations will provide both volumes separately



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 04/26/2022

TOTAL REQUIREMENTS FOR BASIN 108 & STORAGE AVAILABLE IN INTERCHANGE CELLS

Treatment Volume Required	3.49 AC-FT.
Attenuation Volume Required	20.49 AC-FT.
Treatment Volume Available	8.43 AC-FT.
Attenuation Volume Available	21.48 AC-FT.

Note: A breakdown of the treatment and attenuation volume available in each cell is provided on the subsequent sheets.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 04/26/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN108

Treatment Volume Required for Additional Impervious Area: 1.20 acre-ft
Treatment Volume Impacted: 2.29 acre-ft
Total Treatment Volume Required: 3.49 acre-ft

Attenuation Volume Required for Additional Impervious Area: 12.96 acre-ft
Attenuation Volume Impacted: 7.53 acre-ft
Attenuation Volume Required: 20.49 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN108	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	57.09	57.09
Impervious Area, ac	13.39	19.13
CN	59.9	78.1
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	6.69	2.81
Runoff Depth (Q), in	7.33	10.06
Runoff Volume, acre-ft	34.90	47.86
Volume Differential, acre-ft	12.96	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		1.20
Total Volume Required, acre-ft	14.16	

* - No change in Basin Area, therefore used 2.5-inches over new impervious to be conservative.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JF
Date: 04/26/2022

STORAGE AVAILABLE SR 429 INTERCHANGE

location of interchange cell: PND108

Elev EOP @ Low Point =	91.60 FT.	see Note 2
Avg Elev Existing Ground at Pond Site =	91.00 FT.	*Removing Existing Ramp
Maintenance Berm Elevation (Outside)	91.00 FT.	
Maintenance Berm Elevation	90.00 FT.	
Vertical Distance from Exist Ground Elev. to Maint. Berm Elev. (Outside)	0.00 FT.	
Side slope from Exist Ground to Maint Berm (1:X)	3.00	
Maintenance Berm Width of 20-ft	40 FT.	
Offset to Max DHW (assume 1 foot of freeboard & 1:4 slope)	4 FT.	
Elevation of Max DHW (assumes 1 foot of freeboard)	89.0 FT.	
Area at Max DHW (assumes 1 foot of freeboard)	8.7 AC	measured in CAD
Elevation of NWL	85.3 FT.	See Note 1
Distance From Max DHW to Treatment Elev. (assumes 1.1' treatment depth)	2.6 FT.	Max attenuation Depth
Attenuation Depth Used	2.6 FT.	Must be less than Max DHW to Treatment Elev.
Area at Attenuation Depth	8.7 AC	measured in CAD
Wet Pond or Dry Pond	Wet	
Wet Pond-Area at SHW (assume 1:4 slope from Maint Berm)	7.5 AC	measured in CAD
Wet Pond-Area at Treatment Elevation (assumed 1.1' depth)	7.8 AC	measured in CAD
Dry Pond-Area at Pond Bottom (assume 1:4 slope from Maint Berm)	N/A AC	
Dry Pond-Area at Treatment Elevation (assumed 1.1' depth)	N/A AC	
Treatment Volume Available	8.43 AC-FT.	
Attenuation Volume Available	21.48 AC-FT.	

Notes:

1) NWL was determined from BTU Permit for Pond 108A

2) EOP elevation determined from BTU I-4 Roadway Profile, Sta 1361+00 (PD&E Sta. 5367+00)



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations Basin BSN108
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	7.59 ac	A	49	371.91	Open Spaces, Lawns/Fair Condition
Pervious Area	9.18 ac	B	55	504.90	
Pervious Area	17.99 ac	A	25	449.75	Woods, Good Cover
Pervious Area	3.74 ac	D	77	287.98	Woods, Good Cover
Pervious Area	0.96 ac	A	76	72.96	Gravel (Rail Corridor)
Pervious Area	0.26 ac	D	91	23.66	Gravel (Rail Corridor)
Impervious Area	13.39 ac		98	1312.22	Roadway Pavement
Wetted Pond Area	3.98 ac		100	398.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	57.09 ac			3421.38	59.9 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	17.55 ac	A	49	859.95	Open Spaces, Lawns/Fair Condition
Pervious Area	8.00 ac	B	69	552.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.84 ac	D	84	238.56	Open Spaces, Lawns/Fair Condition
Pervious Area	0.96 ac	A	76	72.96	Gravel (Rail Corridor)
Pervious Area	0.26 ac	D	91	23.66	Gravel (Rail Corridor)
Impervious Area	19.13 ac		98	1874.74	Roadway Pavement
Wetted Pond Area	8.35 ac		100	835.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	57.09 ac			4456.87	78.1 = Weighted CN

Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: HGL Check

Prepared by: CAB
Checked by: JAF
Date: 5/27/2022
Revised: _____

BSN108 - Pond
Hydraulic Grade Line Check

ESTIMATE ENERGY LOSSES

Start Station 5367+00 Length (L) = 255 (55' off of EOP)
End Station 5365+00 slope % = 0.05

Est. Energy Losses = $L \times \text{slope} =$ **0.1275**

Low Point in Gutter (ft): 91.6
Clearance (ft): 1
Est. Energy Losses: 0.1275

Maximum Allowable Pond Stage Per HGL Calculations = **90.47 ft**

Pond Stage Per Model Results for 50yr72hr Storm = **89.00 ft**



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN202
Alternative 3

Treatment Volume Required for Additional Impervious Area: 0.65 acre-ft
Treatment Volume Impacted: 1.44 acre-ft
Total Treatment Volume Required: 2.09 acre-ft

Attenuation Volume Required for Additional Impervious Area: 3.85 acre-ft
Attenuation Volume Impacted: 7.19 acre-ft
Attenuation Volume Required: 11.04 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN202 Alternative 3	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	31.56	31.56
Impervious Area, ac	7.56	10.69
CN	68.9	79.0
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	4.51	2.65
Runoff Depth (Q), in	8.73	10.20
Runoff Volume, acre-ft	22.96	26.81
Volume Differential, acre-ft		3.85
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.65
Total Volume Required, acre-ft		4.50

* - 1-4 BTU treatment calculations show 2.5-inches over the impervious area as the greater value.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 05/20/2022

Basin 202 Pond Alternative 3, Station 6414+00 RT

Wet Detention Calculations

Parcel has active permit for Illuminate Church Ph1,
Permit 49-105173-P

Existing Ground at Pond site = 123.00 estimated from LIDAR
ELEV EOP @ Low Point = 125.00 Estimated from W Belt. Prj., Connector Rd as-
built profile Sta. 913+15
Elev SHW = 99.5 Adjacent property (Reunion West) wet pond
SHW (May 2013 plans)

Treatment Volume Required	2.09 AC-FT.
Attenuation Volume Required	11.04 AC-FT.
Pond Area	2.90 AC
Assume 1 foot of pond freeboard	1.00 FT.
Treatment Depth	0.75 FT.
Total Attenuation Depth based on Pond Area	3.8 FT.
Total Depth from SHWL to Top of Berm	5.56 FT.
Elev SHW=	99.5
Top of Berm Elevation given a total depth =	105.06
Unit Length Based on L/W = 2	503 FT.
Unit Width Based on L/W = 2	251 FT.
Maintenance Berm Width of 20-ft	40 FT.
Grade Adjustment Width Assumed 1:2	72 FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	44.47 FT.
Total Pond Length (including maintenance berm and adjustments)	658.88 FT.
Total Pond Width (including maintenance berm and adjustments)	407.5548 FT.
Preliminary Property Size Required to accommodate Pond Footprint	6.16 AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	6.78 AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN202 Alternative 3
Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	18.22 ac	A	49	892.78	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.27 ac	D	84	190.68	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	7.56 ac		98	740.88	Roadway Pavement
Wetted Pond Area	3.51 ac		100	351.00	Pond
Dry Pond Area		A	49	0.00	Pond
Total Area	31.56 ac			2175.34	68.9 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	8.23 ac	A	49	403.27	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.27 ac	D	84	190.68	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	10.69 ac		98	1047.62	Roadway Pavement
Wetted Pond Area	6.76 ac		100	676.10	Pond
Dry Pond Area	3.61 ac	A	49	176.89	Pond
Total Area	31.56 ac			2494.56	79.0 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond 104, Stations 6382+00 to 66391+00 LT
Basin: BSN202

Pond Footprint:	4.11 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	30 %
Salvageable Footprint:	1.23 acres
Percentage of pond footprint impacted:	70 %
Pond footprint no longer useable:	2.88 acres
Treatment Depth:	0.50 ft (from as-builts)
Attenuation Depth:	2.5 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	1.44 acre-ft
Estimated Attenuation Volume Impacted:	7.19 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN202
Alternative 2

Treatment Volume Required for Additional Impervious Area: 0.65 acre-ft
Treatment Volume Impacted: 1.44 acre-ft
Total Treatment Volume Required: 2.09 acre-ft

Attenuation Volume Required for Additional Impervious Area: 2.51 acre-ft
Attenuation Volume Impacted: 7.19 acre-ft
Attenuation Volume Required: 9.70 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN202 Alternative 2	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	21.19	21.19
Impervious Area, ac	7.56	10.69
CN	69.0	78.8
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	4.50	2.69
Runoff Depth (Q), in	8.74	10.16
Runoff Volume, acre-ft	15.43	17.94
Volume Differential, acre-ft	2.51	
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.65
Total Volume Required, acre-ft	3.16	

* - 1-4 BTU treatment calculations show 2.5-inches over the impervious area as the greater value.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 05/20/2022

Basin 202 Pond Alternative 2, Station 13+00 RT

Wet Detention Calculations

Parcel has active permit for Sinclair Apartments,
Permit 49-105051-P

Existing Ground at Pond site = 125.00 estimated from LIDAR
ELEV EXST EOP @ Low Point = 108.00 estimated from LIDAR Ramp Station 205+00
Elev SHW = 99.5 Adjacent property (Reunion West) wet pond
SHW (May 2013 plans)

Treatment Volume Required	2.09 AC-FT.
Attenuation Volume Required	9.70 AC-FT.
Pond Area	2.70 AC
Assume 1 foot of pond freeboard	1.00 FT.
Treatment Depth	0.75 FT.
Total Attenuation Depth based on Pond Area	3.6 FT.
Total Depth from SHWL to Top of Berm	5.34 FT.
Elev SHW=	99.5
Top of Berm Elevation given a total depth =	104.84
Unit Length Based on L/W = 2	485 FT.
Unit Width Based on L/W = 2	242 FT.
Maintenance Berm Width of 20-ft	40 FT.
Grade Adjustment Width Assumed 1:2	81 FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	42.75 FT.
Total Pond Length (including maintenance berm and adjustments)	648.38 FT.
Total Pond Width (including maintenance berm and adjustments)	405.8764 FT.
Preliminary Property Size Required to accommodate Pond Footprint	6.04 AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	6.65 AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN202 Alternative 2
Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	18.14 ac	A	49	888.86	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.27 ac	D	84	190.68	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	7.56 ac		98	740.88	Roadway Pavement
Wetted Pond Area	3.51 ac		100	351.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	31.48 ac			2171.42	69.0 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	8.23 ac	A	49	403.27	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.27 ac	D	84	190.68	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	10.69 ac		98	1047.62	Roadway Pavement
Wetted Pond Area	6.56 ac		100	656.10	Pond
Dry Pond Area	3.73 ac	A	49	182.77	Pond
Total Area	31.48 ac			2480.44	78.8 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond 104, Stations 6382+00 to 66391+00 LT
Basin: BSN202

Pond Footprint:	4.11 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	30 %
Salvageable Footprint:	1.23 acres
Percentage of pond footprint impacted:	70 %
Pond footprint no longer useable:	2.88 acres
Treatment Depth:	0.50 ft (from as-builts)
Attenuation Depth:	2.5 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	1.44 acre-ft
Estimated Attenuation Volume Impacted:	7.19 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN202
Alternative 1

Treatment Volume Required for Additional Impervious Area:	0.65 acre-ft
Treatment Volume Impacted:	1.44 acre-ft
Total Treatment Volume Required:	2.09 acre-ft
Attenuation Volume Required for Additional Impervious Area:	1.81 acre-ft
Attenuation Volume Impacted:	7.19 acre-ft
Attenuation Volume Required:	9.00 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN202 Alternative 1	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	27.00	27.00
Impervious Area, ac	7.56	10.69
CN	72.3	77.9
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	3.83	2.84
Runoff Depth (Q), in	9.23	10.03
Runoff Volume, acre-ft	20.77	22.57
Volume Differential, acre-ft		1.81
Treatment Volume		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.65
Total Volume Required, acre-ft		2.46

* - 1-4 BTU treatment calculations show 2.5-inches over the impervious area as the greater value.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 08/03/2022

Basin 202 Pond Alternative 1, Station 6405+00 LT

Wet Detention Calculations

Existing Ground at Pond site =	108.00	estimated from LIDAR
ELEV EOP @ Low Point =	127.00	Estimated from W Belt. Prj., Ramp E as-built profile Sta. 1103+00, at edge of pr add'l lane
Elev SHW =	100	Taken from Davenport Trib. SHW, from FPID No. 403497-2 Drainage Map (9)
Treatment Volume Required	2.09	AC-FT.
Attenuation Volume Required	9.00	AC-FT.
Pond Area	2.79	AC
Assume 1 foot of pond freeboard	1.00	FT.
Treatment Depth	0.75	FT.
Total Attenuation Depth based on Pond Area	3.2	FT.
Total Depth from SHWL to Top of Berm	4.98	FT.
Elev SHW=	100.0	
Top of Berm Elevation given a total depth =	104.98	
Unit Length Based on L/W = 2	493	FT.
Unit Width Based on L/W = 2	246	FT.
Maintenance Berm Width of 20-ft	40	FT.
Grade Adjustment Width Assumed 1:2	12	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	39.82	FT.
Total Pond Length (including maintenance berm and adjustments)	584.70	FT.
Total Pond Width (including maintenance berm and adjustments)	338.307	FT.
Preliminary Property Size Required to accommodate Pond Footprint	4.54	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	5.00	AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN202 Alternative 1
Pre

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	13.66 ac	A	49	669.34	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.27 ac	D	84	190.68	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	7.56 ac		98	740.88	Roadway Pavement
Wetted Pond Area	3.51 ac		100	351.00	Pond
Dry Pond Area		A	39	0.00	Pond
Total Area	27.00 ac			1951.90	72.3 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	8.23 ac	A	49	403.27	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.27 ac	D	84	190.68	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	10.69 ac		98	1047.62	Roadway Pavement
Wetted Pond Area	3.84 ac		100	384.30	Pond
Dry Pond Area	1.97 ac	A	39	76.83	Pond
Total Area	27.00 ac			2102.70	77.9 = Weighted CN

Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: HGL Check

Prepared by: CAB
Checked by: JAF
Date: 5/27/2022
Revised: _____

BSN202 - Pond Alternative 1
Hydraulic Grade Line Check

ESTIMATE ENERGY LOSSES

Start Station 7406+00 Length (L) = 520 (520' off median)
End Station 7406+00 slope % = 0.05

Est. Energy Losses = $L \times \text{slope} =$ 0.26

Low Point in Gutter (ft): 103.91
Clearance (ft): 1
Est. Energy Losses: 0.26

Maximum Allowable Pond Stage Per HGL Calculations = 102.65 ft

Pond Stage Per Model Results for 50yr72hr Storm = 104.53 ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond 104, Stations 6382+00 to 66391+00 LT
Basin: BSN202

Pond Footprint:	4.11 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	30 %
Salvageable Footprint:	1.23 acres
Percentage of pond footprint impacted:	70 %
Pond footprint no longer useable:	2.88 acres
Treatment Depth:	0.50 ft (from as-builts)
Attenuation Depth:	2.5 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	1.44 acre-ft
Estimated Attenuation Volume Impacted:	7.19 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN201
Alternative 3

Treatment Volume Required for Additional Impervious Area:	0.24 acre-ft
Treatment Volume Impacted:	0.10 acre-ft
Total Treatment Volume Required:	0.34 acre-ft
Attenuation Volume Required for Additional Impervious Area:	3.24 acre-ft
Attenuation Volume Impacted:	9.32 acre-ft
Attenuation Volume Required:	12.56 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN201 Alternative 3	<i>Pre-Development "Permit Post" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	89.70	89.70
Impervious Area, ac	20.99	22.16
CN	67.4	70.3
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	4.84	4.23
Runoff Depth (Q), in	8.50	8.93
Runoff Volume, acre-ft	63.51	66.76
Volume Differential, acre-ft		3.24
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.24
Total Volume Required, acre-ft		3.49

* - No change in contributing area, therefore used 2.5-inches over new impervious to be conservative.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 05/20/2022

Basin 201 Pond Alternative 3, Station 19+00 RT

Wet Detention Calculations

Parcel has active permit for Sinclair Apartments,
Permit 49-105051-P

Existing Ground at Pond site = 118.00 estimated from LIDAR
ELEV EXST EOP @ Low Point = 108.00 estimated from LIDAR Ramp Station 205+00
Elev SHW = 99.5 Adjacent property (Reunion West) wet pond
SHW (May 2013 plans)

Treatment Volume Required 2.09 AC-FT.
Attenuation Volume Required 9.21 AC-FT.
Pond Area 3.10 AC
Assume 1 foot of pond freeboard 1.00 FT.
Treatment Depth 0.60 FT.
Total Attenuation Depth based on Pond Area 3.0 FT.
Total Depth from SHWL to Top of Berm 4.57 FT.
Elev SHW= 99.5
Top of Berm Elevation given a total depth = 104.07
Unit Length Based on L/W = 2 520 FT.
Unit Width Based on L/W = 2 260 FT.
Maintenance Berm Width of 20-ft 40 FT.
Grade Adjustment Width Assumed 1:2 56 FT.
Horizontal Distance Based on a 1:4 Slope and total Depth 36.57 FT.
Total Pond Length (including maintenance berm and adjustments) 651.97 FT.
Total Pond Width (including maintenance berm and adjustments) 392.13 FT.
Preliminary Property Size Required to accommodate Pond Footprint 5.87 AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency 6.46 AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN201 Alternative 3
 Pre (From Permit "Post" Calculations)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	53.14 ac	A	49	2603.86	Open Spaces, Lawns/Fair Condition
Pervious Area	4.06 ac	B	69	280.14	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	3.01 ac	D	84	252.84	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	20.99 ac		98	2057.02	Roadway Pavement
Wetted Pond Area	8.50 ac		100	850.00	Pond
Dry Pond Area		A	39	0.00	Pond
Total Area	89.70 ac			6043.86	67.4 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	44.93 ac	A	49	2201.57	Open Spaces, Lawns/Fair Condition
Pervious Area	4.06 ac	B	69	280.14	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	3.01 ac	D	84	252.84	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	22.16 ac		98	2171.68	Roadway Pavement
Wetted Pond Area	12.45 ac		100	1245.00	Pond
Dry Pond Area	3.09 ac	A	49	151.41	Pond
Total Area	89.70 ac			6302.64	70.3 = Weighted CN

Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: HGL Check

Prepared by: CAB
Checked by: JAF
Date: 5/27/2022
Revised:

BSN201 - Pond Alternative 3
Hydraulic Grade Line Check

ESTIMATE ENERGY LOSSES

Start Station 6423+00 Length (L) = 3180 (1880' off median)
End Station 6410+00 slope % = 0.05

Est. Energy Losses = L x slope = **1.59**

Low Point in Gutter (ft): **110.07** (As-built elev - (12'x3%)

Clearance (ft): 1

Est. Energy Losses: 1.59

Maximum Allowable Pond Stage Per HGL Calculations = **107.48 ft**

Pond Stage Per Model Results for 50yr72hr Storm = **103.07 ft**

low point based on As-Built for Western Beltway Sta. 122+00



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date :
Designed by : CAB
Checked by : JAF

Total Impacts to Existing Ponds

Treatment Volume: Impacted: 0.10 acre-ft

Attenuation Volume Impacted: 9.32 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-3-A, Stations 7424+00 to 7428+00 RT
Basin: BSN201

Pond Footprint:	1.78 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	1.78 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	0.50 ft (from as-builts)
Attenuation Depth:	3.50 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 0.00 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-3-B, Stations 7420+00 to 7424+00 RT
Basin: BSN201

Pond Footprint:	0.67 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	70 %
Salvageable Footprint:	0.47 acres
Percentage of pond footprint impacted:	30 %
Pond footprint no longer useable:	0.20 acres
Treatment Depth:	0.50 ft (from as-builts)
Attenuation Depth:	4.50 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	0.10 acre-ft
Estimated Attenuation Volume Impacted:	0.90 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-3-C, Stations 7411+00 to 7419+00 RT
Basin: BSN201

Pond Footprint:	2.08 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	50 %
Salvageable Footprint:	1.04 acres
Percentage of pond footprint impacted:	50 %
Pond footprint no longer useable:	1.04 acres
Treatment Depth:	0.00 ft (from as-builts)
Attenuation Depth:	2.50 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	0.00 acre-ft
Estimated Attenuation Volume Impacted:	2.60 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-3-D, Stations 7404+00 to 7409+00 RT
Basin: BSN201

Pond Footprint:	0.78 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	60 %
Salvageable Footprint:	0.47 acres
Percentage of pond footprint impacted:	40 %
Pond footprint no longer useable:	0.31 acres
Treatment Depth:	0.00 ft (from as-builts)
Attenuation Depth:	1.80 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 0.56 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-5, Stations 7431+00 to 7441+00 RT
Basin: BSN201

Pond Footprint:	5.31 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	5.31 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	0.50 ft (from as-builts)
Attenuation Depth:	3.50 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	0.00 acre-ft
Estimated Attenuation Volume Impacted:	0.00 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-6-B, Stations 6411+00 to 6419+00 LT
Basin: BSN201

Pond Footprint:	1.98 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	60 %
Salvageable Footprint:	1.19 acres
Percentage of pond footprint impacted:	40 %
Pond footprint no longer useable:	0.79 acres
Treatment Depth:	0.00 ft (from as-builts)
Attenuation Depth:	2.50 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 1.98 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-6-C, Stations 6404+00 to 6409+00 LT
Basin: BSN201

Pond Footprint:	1.31 acres
Is pond salvageable:	no
If pond is salvageable what percentage remains functional:	0 %
Salvageable Footprint:	0.00 acres
Percentage of pond footprint impacted:	100 %
Pond footprint no longer useable:	1.31 acres
Treatment Depth:	0.00 ft (from as-builts)
Attenuation Depth:	2.50 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 3.28 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN201
Alternative 2

Treatment Volume Required for Additional Impervious Area:	0.24 acre-ft
Treatment Volume Impacted:	0.10 acre-ft
Total Treatment Volume Required:	0.34 acre-ft
Attenuation Volume Required for Additional Impervious Area:	3.48 acre-ft
Attenuation Volume Impacted:	9.32 acre-ft
Attenuation Volume Required:	12.80 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN201 Alternative 2	<i>Pre-Development "Permit Post" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	90.00	90.00
Impervious Area, ac	20.99	22.16
CN	67.6	70.7
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	4.79	4.14
Runoff Depth (Q), in	8.53	9.00
Runoff Volume, acre-ft	64.00	67.48
Volume Differential, acre-ft		3.48
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.24
Total Volume Required, acre-ft		3.72

* - No change in contributing area, therefore used 2.5-inches over new impervious to be conservative.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 05/20/2022

Basin 201 Pond Alternative 2, Station 6423+00 LT

Wet Detention Calculations

This assumes the berm will be raised to up to elevation 104.4

Existing Ground at Pond site = 111.00 estimated from LIDAR
Estimated from W Belt. Prj., Ramp H as-built
ELEV EXST EOP @ Low Point = 109.00 profile Sta. 1423+00
Elev SHW = 99.5 SHW for Davenport Creek Swamp from FPID No. 403497-2

Treatment Volume Required	0.34 AC-FT.
Attenuation Volume Required	12.80 AC-FT.
Pond Area	3.80 AC
Assume 1 foot of pond freeboard	1.00 FT.
Treatment Depth	0.50 FT.
Total Attenuation Depth based on Pond Area	3.4 FT.
Total Depth from SHWL to Top of Berm	4.87 FT.
Elev SHW=	99.5
Top of Berm Elevation given a total depth =	104.37
Unit Length Based on L/W = 2	575 FT.
Unit Width Based on L/W = 2	288 FT.
Maintenance Berm Width of 20-ft	40 FT.
Grade Adjustment Width Assumed 1:2	27 FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	38.95 FT.
Total Pond Length (including maintenance berm and adjustments)	680.85 FT.
Total Pond Width (including maintenance berm and adjustments)	393.16 FT.
Preliminary Property Size Required to accommodate Pond Footprint	6.15 AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	6.76 AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN201 Alternative 2
 Pre (From Permit "Post" Calculations)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	52.66 ac	A	49	2580.40	Open Spaces, Lawns/Fair Condition
Pervious Area	4.06 ac	B	69	280.14	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	3.79 ac	D	84	318.26	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	20.99 ac		98	2057.02	Roadway Pavement
Wetted Pond Area	8.50 ac		100	850.00	Pond
Dry Pond Area	0.00 ac	A	49	0.00	Pond
Total Area	90.00 ac			6085.82	67.6 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	44.93 ac	A	49	2201.57	Open Spaces, Lawns/Fair Condition
Pervious Area	4.06 ac	B	69	280.14	Open Spaces, Lawns/Fair Condition
Dry Pond Area	0.32 ac	D	84	27.12	Pond
Pervious Area	3.01 ac	D	84	252.84	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	22.16 ac		98	2171.68	Roadway Pavement
Wetted Pond Area	13.15 ac		100	1315.00	Pond
Dry Pond Area	2.37 ac	A	49	115.99	Pond
Total Area	90.00 ac			6364.34	70.7 = Weighted CN

Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: HGL Check

Prepared by: CAB
Checked by: JAF
Date: 5/27/2022
Revised:

BSN201 - Pond Alternative 2
Hydraulic Grade Line Check

ESTIMATE ENERGY LOSSES

Start Station 6423+00 Length (L) = 185 (185' off median)
End Station 6423+00 slope % = 0.05

Est. Energy Losses = L x slope = **0.0925**

Low Point in Gutter (ft): **110.07** (As-built elev - (12'x3%)

Clearance (ft): 1

Est. Energy Losses: 0.0925

Maximum Allowable Pond Stage Per HGL Calculations = **108.98 ft**

Pond Stage Per Model Results for 50yr72hr Storm = **104.37 ft**

low point based on As-Built for Western Beltway Sta. 122+00



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date :
Designed by : CAB
Checked by : JAF

Total Impacts to Existing Ponds

Treatment Volume: Impacted: 0.10 acre-ft

Attenuation Volume Impacted: 9.32 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-3-A, Stations 7424+00 to 7428+00 RT
Basin: BSN201

Pond Footprint:	1.78 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	1.78 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	0.50 ft (from as-builts)
Attenuation Depth:	3.50 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 0.00 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-3-B, Stations 7420+00 to 7424+00 RT
Basin: BSN201

Pond Footprint:	0.67 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	70 %
Salvageable Footprint:	0.47 acres
Percentage of pond footprint impacted:	30 %
Pond footprint no longer useable:	0.20 acres
Treatment Depth:	0.50 ft (from as-builts)
Attenuation Depth:	4.50 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	0.10 acre-ft
Estimated Attenuation Volume Impacted:	0.90 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-3-C, Stations 7411+00 to 7419+00 RT
Basin: BSN201

Pond Footprint:	2.08 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	50 %
Salvageable Footprint:	1.04 acres
Percentage of pond footprint impacted:	50 %
Pond footprint no longer useable:	1.04 acres
Treatment Depth:	0.00 ft (from as-builts)
Attenuation Depth:	2.50 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	0.00 acre-ft
Estimated Attenuation Volume Impacted:	2.60 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-3-D, Stations 7404+00 to 7409+00 RT
Basin: BSN201

Pond Footprint:	0.78 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	60 %
Salvageable Footprint:	0.47 acres
Percentage of pond footprint impacted:	40 %
Pond footprint no longer useable:	0.31 acres
Treatment Depth:	0.00 ft (from as-builts)
Attenuation Depth:	1.80 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 0.56 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-5, Stations 7431+00 to 7441+00 RT
Basin: BSN201

Pond Footprint:	5.31 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	5.31 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	0.50 ft (from as-builts)
Attenuation Depth:	3.50 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	0.00 acre-ft
Estimated Attenuation Volume Impacted:	0.00 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-6-B, Stations 6411+00 to 6419+00 LT
Basin: BSN201

Pond Footprint:	1.98 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	60 %
Salvageable Footprint:	1.19 acres
Percentage of pond footprint impacted:	40 %
Pond footprint no longer useable:	0.79 acres
Treatment Depth:	0.00 ft (from as-builts)
Attenuation Depth:	2.50 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 1.98 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-6-C, Stations 6404+00 to 6409+00 LT
Basin: BSN201

Pond Footprint:	1.31 acres
Is pond salvageable:	no
If pond is salvageable what percentage remains functional:	0 %
Salvageable Footprint:	0.00 acres
Percentage of pond footprint impacted:	100 %
Pond footprint no longer useable:	1.31 acres
Treatment Depth:	0.00 ft (from as-builts)
Attenuation Depth:	2.50 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 3.28 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN201
Alternative 1

Treatment Volume Required for Additional Impervious Area: 0.24 acre-ft
Treatment Volume Impacted: 0.10 acre-ft
Total Treatment Volume Required: 0.34 acre-ft

Attenuation Volume Required for Additional Impervious Area: 2.99 acre-ft
Attenuation Volume Impacted: 9.32 acre-ft
Attenuation Volume Required: 12.31 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 05/20/2022

Basin 201 Pond Alternative 1, Station 6412+00 LT

Wet Detention Calculations

Existing Ground at Pond site =	115.00	estimated from LIDAR
ELEV EXST EOP @ Low Point =	121.50	Estimated from W Belt. Prj., Ramp H as-built profile Sta. 1413+00
Elev SHW =	99.5	SHW for Davenport Creek Swamp from FPID No. 403497-2 Drainage Map (8)
Treatment Volume Required	0.34	AC-FT.
Attenuation Volume Required	12.31	AC-FT.
Pond Area	2.70	AC
Assume 1 foot of pond freeboard	1.00	FT.
Treatment Depth	0.50	FT.
Total Attenuation Depth based on Pond Area	4.6	FT.
Total Depth from SHWL to Top of Berm	6.06	FT.
Elev SHW=	99.5	
Top of Berm Elevation given a total depth =	105.56	
Unit Length Based on L/W = 2	485	FT.
Unit Width Based on L/W = 2	242	FT.
Maintenance Berm Width of 20-ft	40	FT.
Grade Adjustment Width Assumed 1:2	38	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	48.46	FT.
Total Pond Length (including maintenance berm and adjustments)	611.23	FT.
Total Pond Width (including maintenance berm and adjustments)	368.73	FT.
Preliminary Property Size Required to accommodate Pond Footprint	5.17	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	5.69	AC.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN201 Alternative 1	<i>Pre-Development "Permit Post" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	88.96	88.96
Impervious Area, ac	20.99	22.16
CN	67.5	70.2
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	4.81	4.24
Runoff Depth (Q), in	8.52	8.92
Runoff Volume, acre-ft	63.16	66.15
Volume Differential, acre-ft		2.99
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.24
Total Volume Required, acre-ft		3.23

* - No change in contributing area, therefore used 2.5-inches over new impervious to be conservative.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN201 Alternative 1
Pre (From Permit "Post" Calculations)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	52.40 ac	A	49	2567.60	Open Spaces, Lawns/Fair Condition
Pervious Area	4.06 ac	B	69	280.14	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	3.01 ac	D	84	252.84	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	20.99 ac		98	2057.02	Roadway Pavement
Wetted Pond Area	8.50 ac		100	850.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	88.96 ac			6007.60	67.5 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	44.93 ac	A	49	2201.57	Open Spaces, Lawns/Fair Condition
Pervious Area	4.06 ac	B	69	280.14	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	3.01 ac	D	84	252.84	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	22.16 ac		98	2171.68	Roadway Pavement
Wetted Pond Area	12.05 ac		100	1205.00	Pond
Dry Pond Area	2.75 ac	A	49	134.75	Pond
Total Area	88.96 ac			6245.98	70.2 = Weighted CN

Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: HGL Check

Prepared by: CAB
Checked by: JAF
Date: 5/27/2022
Revised:

BSN201 - Pond Alternative 1
Hydraulic Grade Line Check

ESTIMATE ENERGY LOSSES

Start Station 6423+00 Length (L) = 1340 (440' off median)
End Station 6414+00 slope % = 0.05

Est. Energy Losses = L x slope = **0.67**

Low Point in Gutter (ft): **110.07** (As-built elev - (12'x3%)
Clearance (ft): 1
Est. Energy Losses: 0.67

Maximum Allowable Pond Stage Per HGL Calculations = **108.40 ft**

Pond Stage Per Model Results for 50yr72hr Storm = **104.56 ft**

low point based on As-Builts for Western Beltway Sta. 122+00



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date :
Designed by : CAB
Checked by : JAF

Total Impacts to Existing Ponds

Treatment Volume: Impacted: 0.10 acre-ft

Attenuation Volume Impacted: 9.32 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-3-A, Stations 7424+00 to 7428+00 RT
Basin: BSN201

Pond Footprint:	1.78 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	1.78 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	0.50 ft (from as-builts)
Attenuation Depth:	3.50 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 0.00 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-3-B, Stations 7420+00 to 7424+00 RT
Basin: BSN201

Pond Footprint:	0.67 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	70 %
Salvageable Footprint:	0.47 acres
Percentage of pond footprint impacted:	30 %
Pond footprint no longer useable:	0.20 acres
Treatment Depth:	0.50 ft (from as-builts)
Attenuation Depth:	4.50 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	0.10 acre-ft
Estimated Attenuation Volume Impacted:	0.90 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-3-C, Stations 7411+00 to 7419+00 RT
Basin: BSN201

Pond Footprint:	2.08 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	50 %
Salvageable Footprint:	1.04 acres
Percentage of pond footprint impacted:	50 %
Pond footprint no longer useable:	1.04 acres
Treatment Depth:	0.00 ft (from as-builts)
Attenuation Depth:	2.50 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	0.00 acre-ft
Estimated Attenuation Volume Impacted:	2.60 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-3-D, Stations 7404+00 to 7409+00 RT
Basin: BSN201

Pond Footprint:	0.78 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	60 %
Salvageable Footprint:	0.47 acres
Percentage of pond footprint impacted:	40 %
Pond footprint no longer useable:	0.31 acres
Treatment Depth:	0.00 ft (from as-builts)
Attenuation Depth:	1.80 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 0.56 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-5, Stations 7431+00 to 7441+00 RT
Basin: BSN201

Pond Footprint:	5.31 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	5.31 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	0.50 ft (from as-builts)
Attenuation Depth:	3.50 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	0.00 acre-ft
Estimated Attenuation Volume Impacted:	0.00 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-6-B, Stations 6411+00 to 6419+00 LT
Basin: BSN201

Pond Footprint:	1.98 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	60 %
Salvageable Footprint:	1.19 acres
Percentage of pond footprint impacted:	40 %
Pond footprint no longer useable:	0.79 acres
Treatment Depth:	0.00 ft (from as-builts)
Attenuation Depth:	2.50 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 1.98 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-6-C, Stations 6404+00 to 6409+00 LT
Basin: BSN201

Pond Footprint:	1.31 acres
Is pond salvageable:	no
If pond is salvageable what percentage remains functional:	0 %
Salvageable Footprint:	0.00 acres
Percentage of pond footprint impacted:	100 %
Pond footprint no longer useable:	1.31 acres
Treatment Depth:	0.00 ft (from as-builts)
Attenuation Depth:	2.50 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 3.28 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN200
Alternative 1

Treatment Volume Required for Additional Impervious Area:	0.17 acre-ft
Treatment Volume Impacted:	0.00 acre-ft
Total Treatment Volume Required:	0.17 acre-ft
Attenuation Volume Required for Additional Impervious Area:	0.88 acre-ft
Attenuation Volume Impacted:	0.00 acre-ft
Attenuation Volume Required:	0.88 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 05/19/2022

Basin 200 Pond Alternative 1, Station 6461+00 LT

Wet Detention Calculations

Existing Ground at Pond site = 101.00 estimated from LIDAR
from LiDAR - Edge of shoulder
ELEV EXST EOP @ Low Point = 106.00
Elev SHW = 101.5 Taken from Davenport Creek Swamp, from
FPID No. 403497-2 Drainage Map (9)

Treatment Volume Required	0.17 AC-FT.
Attenuation Volume Required	0.88 AC-FT.
Pond Area Based on treatment volume	0.38 AC
Assume 1 foot of pond freeboard	1.00 FT.
Treatment Depth	0.45 FT.
Total Attenuation Depth based on Pond Area	2.3 FT.
Total Depth from SHWL to Top of Berm	3.80 FT.
Elev SHW=	101.5
Top of Berm Elevation given a total depth =	105.30
Unit Length Based on L/W = 2	181 FT.
Unit Width Based on L/W = 2	90 FT.
Maintenance Berm Width of 20-ft	40 FT.
Grade Adjustment Width Assumed 1:2	17 FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	30.39 FT.
Total Pond Length (including maintenance berm and adjustments)	268.33 FT.
Total Pond Width (including maintenance berm and adjustments)	177.95 FT.
Preliminary Property Size Required to accommodate Pond Footprint	1.10 AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	1.21 AC.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN200 Alternative 1	<i>Pre-Development "Permit" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	32.32	32.32
Impervious Area, ac	12.32	13.13
CN	73.6	75.8
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	3.59	3.18
Runoff Depth (Q), in	9.42	9.74
Runoff Volume, acre-ft	25.37	26.25
Volume Differential, acre-ft		0.88
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.17
Total Volume Required, acre-ft		1.05

* - No change in Basin Area, therefore used 2.5-inches over new impervious to be conservative.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN200 Alternative 1
 Pre (from Permit "Post" Conditions)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	15.74 ac	A	49	771.26	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	1.66 ac	D	84	139.44	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	12.32 ac		98	1207.36	Roadway Pavement
Wetted Pond Area	2.60 ac		100	260.00	Pond
Dry Pond Area		A	39	0.00	Pond
Total Area	32.32 ac			2378.06	73.6 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	13.55 ac	A	49	663.95	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Dry Pond Area	0.00 ac	D	84	0.00	Pond
Pervious Area	1.66 ac	D	84	139.44	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	13.13 ac		98	1286.74	Roadway Pavement
Wetted Pond Area	3.26 ac		100	326.00	Pond
Dry Pond Area	0.72 ac	A	49	35.28	Pond
Total Area	32.32 ac			2451.41	75.8 = Weighted CN

Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: HGL Check

Prepared by: CAB
Checked by: JAF
Date: 5/27/2022
Revised:

BSN200- Pond Alternative 1
Hydraulic Grade Line Check

ESTIMATE ENERGY LOSSES

Start Station 6458+15 Length (L) = 685 (~300' off of EOP)
End Station 6462+00 slope % = 0.05

Est. Energy Losses = L x slope = **0.3425**

Low Point in Gutter (ft): **117.5**
Clearance (ft): 1
Est. Energy Losses: 0.3425

Maximum Allowable Pond Stage Per HGL Calculations = **116.16 ft**

Pond Stage Per Model Results for 50yr72hr Storm = **104.30 ft**



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-4, Stations 6444+00 to 6462+00 LT
Basin: BSN200

Pond Footprint:	5.69 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	5.69 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	0.90 ft (from as-builts)
Attenuation Depth:	3.10 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 0.00 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 05/19/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN200
Alternative 2

Treatment Volume Required for Additional Impervious Area:	0.17 acre-ft
Treatment Volume Impacted:	0.00 acre-ft
Total Treatment Volume Required:	0.17 acre-ft
Attenuation Volume Required for Additional Impervious Area:	0.88 acre-ft
Attenuation Volume Impacted:	0.00 acre-ft
Attenuation Volume Required:	0.88 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 05/19/2022

Basin 200 Pond Alternative 2, Station 6472+00 LT

Wet Detention Calculations

Existing Ground at Pond site =	126.00	very rough-estimated from LIDAR
ELEV EXST EOP @ Low Point =	120.64	from as-builts plus additional pr lane @ 3%
Elev SHW =	115	SHW set at control elevation from CFX Pond P- 2
Treatment Volume Required	0.17	AC-FT.
Attenuation Volume Required	0.88	AC-FT.
Pond Area Based on treatment volume	0.38	AC
Assume 1 foot of pond freeboard	1.00	FT.
Treatment Depth	0.45	FT.
Total Attenuation Depth based on Pond Area	2.3	FT.
Total Depth from SHWL to Top of Berm	3.80	FT.
Elev SHW=	115.0	
Top of Berm Elevation given a total depth =	118.80	
Unit Length Based on L/W = 2	181	FT.
Unit Width Based on L/W = 2	90	FT.
Maintenance Berm Width of 20-ft	40	FT.
Grade Adjustment Width Assumed 1:2	29	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	30.40	FT.
Total Pond Length (including maintenance berm and adjustments)	279.95	FT.
Total Pond Width (including maintenance berm and adjustments)	189.57	FT.
Preliminary Property Size Required to accommodate Pond Footprint	1.22	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	1.34	AC.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN200 Alternative 2	<i>Pre-Development "Permit" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	32.42	32.42
Impervious Area, ac	12.32	13.13
CN	73.5	75.8
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	3.60	3.20
Runoff Depth (Q), in	9.41	9.73
Runoff Volume, acre-ft	25.41	26.30
Volume Differential, acre-ft		0.88
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.17
Total Volume Required, acre-ft		1.05

* - No change in Basin Area, therefore used 2.5-inches over new impervious to be conservative.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN200 Alternative 2
 Pre (from Permit "Post" Conditions)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	15.84 ac	A	49	776.16	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	1.66 ac	D	84	139.44	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	12.32 ac		98	1207.36	Roadway Pavement
Wetted Pond Area	2.60 ac		100	260.00	Pond
Dry Pond Area		A	39	0.00	Pond
Total Area	32.42 ac			2382.96	73.5 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	13.55 ac	A	49	663.95	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	1.66 ac	D	84	139.44	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	13.13 ac		98	1286.74	Roadway Pavement
Wetted Pond Area	3.26 ac		100	326.00	Pond
Dry Pond Area	0.82 ac	A	49	40.18	Pond
Total Area	32.42 ac			2456.31	75.8 = Weighted CN

Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: HGL Check

Prepared by: CAB
Checked by: JAF
Date: 5/27/2022
Revised:

BSN200- Pond Alternative 2
Hydraulic Grade Line Check

ESTIMATE ENERGY LOSSES

Start Station 6458+15 Length (L) = 1570 (85' off of EOP)
End Station 6473+00 slope % = 0.05

Est. Energy Losses = $L \times \text{slope} =$ **0.785**

Low Point in Gutter (ft): 117.5
Clearance (ft): 1
Est. Energy Losses: 0.785

Maximum Allowable Pond Stage Per HGL Calculations = **115.72 ft**

Pond Stage Per Model Results for 50yr72hr Storm = 117.80 ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-4, Stations 6444+00 to 6462+00 LT
Basin: BSN200

Pond Footprint:	5.69 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	5.69 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	0.90 ft (from as-builts)
Attenuation Depth:	3.10 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	0.00 acre-ft
Estimated Attenuation Volume Impacted:	0.00 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN200
Alternative 3

Treatment Volume Required for Additional Impervious Area: 0.17 acre-ft
Treatment Volume Impacted: 0.00 acre-ft
Total Treatment Volume Required: 0.17 acre-ft

Attenuation Volume Required for Additional Impervious Area: 0.75 acre-ft
Attenuation Volume Impacted: 0.00 acre-ft
Attenuation Volume Required: 0.75 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN200 Alternative 3	<i>Pre-Development "Permit" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	32.30	32.30
Impervious Area, ac	12.32	13.13
CN	74.2	76.1
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	3.48	3.13
Runoff Depth (Q), in	9.51	9.79
Runoff Volume, acre-ft	25.59	26.34
Volume Differential, acre-ft		0.75
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		0.17
Total Volume Required, acre-ft		0.92

* - No change in Basin Area, therefore used 2.5-inches over new impervious to be conservative.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/29/2022

Basin 200 Pond Alternative 3, Station 6461+00 LT

Wet Detention Calculations

Existing Ground at Pond site = 100.00 estimated from LIDAR very rough
from LiDAR - Edge of shoulder
ELEV EOP @ Low Point = 106.00

Elev SHW = 101.5 Taken from Davenport Creek Swamp, from
FPID No. 403497-2 Drainage Map (9)

Treatment Volume Required 0.17 AC-FT.
Attenuation Volume Required 0.75 AC-FT.
Pond Area Based on treatment volume 0.38 AC
Assume 1 foot of pond freeboard 1.00 FT.

Treatment Depth 0.45 FT.
Total Attenuation Depth based on Pond Area 2.0 FT.
Total Depth from SHWL to Top of Berm 3.46 FT.

Elev SHW= 101.5
Top of Berm Elevation given a total depth = 104.96

Unit Length Based on L/W = 2 181 FT.
Unit Width Based on L/W = 2 90 FT.
Maintenance Berm Width of 15-ft 30 FT.
Grade Adjustment Width Assumed 1:2 20 FT.
Horizontal Distance Based on a 1:4 Slope and total Depth 27.64 FT.
Total Pond Length (including maintenance berm and adjustments) 258.21 FT.
Total Pond Width (including maintenance berm and adjustments) 167.8399 FT.

Preliminary Property Size Required to accommodate Pond Footprint 0.99 AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency 1.09 AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations BSN200 Alternative 3
 Pre (from Permit "Post" Conditions)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	15.17 ac	A	49	743.33	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.21 ac	D	84	185.64	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	12.32 ac		98	1207.36	Roadway Pavement
Wetted Pond Area	2.60 ac		100	260.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	32.30 ac			2396.33	74.2 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	13.55 ac	A	49	663.95	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Dry Pond Area	0.35 ac	D	84	29.40	Open Spaces, Lawns/Fair Condition
Pervious Area	1.66 ac	D	84	139.44	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Impervious Area	13.13 ac		98	1286.74	Roadway Pavement
Wetted Pond Area	3.26 ac		100	326.00	Pond
Dry Pond Area	0.35 ac	A	39	13.65	Pond
Total Area	32.30 ac			2459.18	76.1 = Weighted CN

Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: HGL Check

Prepared by: CAB
Checked by: JAF
Date: 5/27/2022
Revised:

BSN200- Pond Alternative 3
Hydraulic Grade Line Check

ESTIMATE ENERGY LOSSES

Start Station 6458+15 Length (L) = 1650 (1165' off of EOP)
End Station 6463+00 slope % = 0.05

Est. Energy Losses = L x slope = **0.825**

Low Point in Gutter (ft): **117.5**
Clearance (ft): 1
Est. Energy Losses: 0.825

Maximum Allowable Pond Stage Per HGL Calculations = **115.68 ft**

Pond Stage Per Model Results for 50yr72hr Storm = **104.96 ft**



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond EX_B-4, Stations 6444+00 to 6462+00 LT
Basin: BSN200

Pond Footprint:	5.69 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	100 %
Salvageable Footprint:	5.69 acres
Percentage of pond footprint impacted:	0 %
Pond footprint no longer useable:	0.00 acres
Treatment Depth:	0.90 ft (from as-builts)
Attenuation Depth:	3.10 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 0.00 acre-ft

Estimated Attenuation Volume Impacted: 0.00 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN109
Alternative 1

Treatment Volume Required for Additional Impervious Area:	2.15 acre-ft
Treatment Volume Impacted:	1.16 acre-ft
Total Treatment Volume Required:	3.31 acre-ft
Attenuation Volume Required for Additional Impervious Area:	17.28 acre-ft
Attenuation Volume Impacted:	4.66 acre-ft
Attenuation Volume Required:	21.93 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 08/03/2022

Basin 109 Pond Alternative 1, Station 5386+00 LT

Wet Detention Calculations

Existing Ground at Pond site =	78.00	estimated from LIDAR
ELEV EXST EOP @ Low Point =	81.00	est from LIDAR Sta 5390+00
Elev SHW =	74	from the Drrprd02_segC.dgn file Reddy Creek 100-yr stage is 75.19 conservatively assumed 74 for SHW of adjacent pond sites
Treatment Volume Required	3.31	AC-FT.
Attenuation Volume Required	21.93	AC-FT.
Pond Area Based on treatment volume	5.09	AC
Assume 1 foot of pond freeboard	1.00	FT.
Treatment Depth	0.65	FT.
Total Attenuation Depth based on Pond Area	4.3	FT.
Total Depth from SHWL to Top of Berm	5.96	FT.
Elev SHW=	74.0	
Top of Berm Elevation given a total depth =	79.96	
Unit Length Based on L/W = 2	666	FT.
Unit Width Based on L/W = 2	333	FT.
Maintenance Berm Width of 20-ft	40	FT.
Grade Adjustment Width Assumed 1:2	8	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	47.66	FT.
Total Pond Length (including maintenance berm and adjustments)	761.53	FT.
Total Pond Width (including maintenance berm and adjustments)	428.508	FT.
Preliminary Property Size Required to accommodate Pond Footprint	7.49	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	8.24	AC.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN109 Alternative 1	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	75.06	75.06
Impervious Area, ac	23.18	33.48
CN	56.5	74.4
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	7.70	3.43
Runoff Depth (Q), in	6.78	9.54
Runoff Volume, acre-ft	42.42	59.69
Volume Differential, acre-ft	17.28	
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		2.15
Total Volume Required, acre-ft	19.42	

* - Used 2.5-inches over the new impervious based on the I-4 BTU permit data.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations Basin BSN109 Alternative 1
Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	15.30 ac	A	49	749.70	Open Spaces, Lawns/Fair Condition
Pervious Area	1.25 ac	D	84	105.00	Open Spaces, Lawns/Fair Condition
Pervious Area	31.85 ac	A	25	796.25	Woods, Good Cover
Pervious Area	1.25 ac	D	77	96.25	Woods, Good Cover
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Pervious Area	0.00 ac	D	91	0.00	Gravel (Rail Corridor)
Impervious Area	23.18 ac		98	2271.64	Roadway Pavement
Wetted Pond Area	2.23 ac		100	223.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	75.06 ac			4241.84	56.5 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	32.02 ac	A	49	1568.98	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.50 ac	D	84	210.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Pervious Area	0.00 ac	D	91	0.00	Gravel (Rail Corridor)
Impervious Area	33.48 ac		98	3281.04	Roadway Pavement
Wetted Pond Area	4.14 ac		100	414.00	Pond
Dry Pond Area	2.92 ac	A	39	113.88	Pond
Total Area	75.06 ac			5587.90	74.4 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond 109, Stations 5379+00 to 5384+00 LT
Basin: BSN109

Pond Footprint:	5.82 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	50 %
Salvageable Footprint:	2.91 acres
Percentage of pond footprint impacted:	50 %
Pond footprint no longer useable:	2.91 acres
Treatment Depth:	0.40 ft (from as-builts)
Attenuation Depth:	1.6 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	1.16 acre-ft
Estimated Attenuation Volume Impacted:	4.66 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN109
Alternative 2

Treatment Volume Required for Additional Impervious Area:	2.15 acre-ft
Treatment Volume Impacted:	1.16 acre-ft
Total Treatment Volume Required:	3.31 acre-ft
Attenuation Volume Required for Additional Impervious Area:	19.76 acre-ft
Attenuation Volume Impacted:	4.66 acre-ft
Attenuation Volume Required:	24.41 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN109 Alternative 2	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	77.88	77.88
Impervious Area, ac	23.18	33.48
CN	55.4	75.1
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	8.06	3.31
Runoff Depth (Q), in	6.59	9.64
Runoff Volume, acre-ft	42.80	62.55
Volume Differential, acre-ft	19.76	
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		2.15
Total Volume Required, acre-ft	21.90	

* - Used 2.5-inches over the new impervious based on the I-4 BTU permit data.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 08/03/2022

Basin 109 Pond Alternative 2, Station 5394+00 LT

Wet Detention Calculations

Existing Ground at Pond site =	76.00	estimated from LIDAR
ELEV EXST EOP @ Low Point =	81.00	est from LIDAR Sta 5390+00
Elev SHW =	74	from the Drrprd02_segC.dgn file Reddy Creek 100-yr stage is 75.19 conservatively assumed 74 for SHW of adjacent pond sites
Treatment Volume Required	3.31	AC-FT.
Attenuation Volume Required	24.41	AC-FT.
Pond Area Based on treatment volume	5.52	AC
Assume 1 foot of pond freeboard	1.00	FT.
Treatment Depth	0.60	FT.
Total Attenuation Depth based on Pond Area	4.4	FT.
Total Depth from SHWL to Top of Berm	6.03	FT.
Elev SHW=	74.0	
Top of Berm Elevation given a total depth =	80.03	
Unit Length Based on L/W = 2	693	FT.
Unit Width Based on L/W = 2	347	FT.
Maintenance Berm Width of 20-ft	40	FT.
Grade Adjustment Width Assumed 1:2	16	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	48.21	FT.
Total Pond Length (including maintenance berm and adjustments)	797.55	FT.
Total Pond Width (including maintenance berm and adjustments)	450.9308	FT.
Preliminary Property Size Required to accommodate Pond Footprint	8.26	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	9.08	AC.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations Basin BSN109 Alternative 2
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	15.30 ac	A	49	749.70	Open Spaces, Lawns/Fair Condition
Pervious Area	1.25 ac	D	84	105.00	Open Spaces, Lawns/Fair Condition
Pervious Area	34.67 ac	A	25	866.75	Woods, Good Cover
Pervious Area	1.25 ac	D	77	96.25	Woods, Good Cover
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Pervious Area	0.00 ac	D	91	0.00	Gravel (Rail Corridor)
Impervious Area	23.18 ac		98	2271.64	Roadway Pavement
Wetted Pond Area	2.23 ac		100	223.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	77.88 ac			4312.34	55.4 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	32.02 ac	A	49	1568.98	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.50 ac	D	84	210.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Pervious Area	0.00 ac	D	91	0.00	Gravel (Rail Corridor)
Impervious Area	33.48 ac		98	3281.04	Roadway Pavement
Wetted Pond Area	6.62 ac		100	662.00	Pond
Dry Pond Area	3.26 ac	A	39	127.14	Pond
Total Area	77.88 ac			5849.16	75.1 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

Impacts to Existing Ponds
Pond 109, Stations 5379+00 to 5384+00 LT
Basin: BSN109

Pond Footprint:	5.82 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	50 %
Salvageable Footprint:	2.91 acres
Percentage of pond footprint impacted:	50 %
Pond footprint no longer useable:	2.91 acres
Treatment Depth:	0.40 ft (from as-builts)
Attenuation Depth:	1.6 ft (stage from permit weir elev from as-builts)

Estimated Treatment Volume: Impacted: 1.16 acre-ft

Estimated Attenuation Volume Impacted: 4.66 acre-ft



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2022
Designed by : CAB
Checked by : JAF

Total Volumetric Requirements for BSN109
Alternative 3

Treatment Volume Required for Additional Impervious Area:	2.15 acre-ft
Treatment Volume Impacted:	1.16 acre-ft
Total Treatment Volume Required:	3.31 acre-ft
Attenuation Volume Required for Additional Impervious Area:	18.19 acre-ft
Attenuation Volume Impacted:	4.66 acre-ft
Attenuation Volume Required:	22.85 acre-ft



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 08/03/2022

Basin 109 Pond Alternative 3, Station 5404+00 LT

Wet Detention Calculations

Existing Ground at Pond site =	78.00	estimated from LIDAR
ELEV EXST EOP @ Low Point =	81.00	est from LIDAR Sta 5390+00
Elev SHW =	74	from the Drrprd02_segC.dgn file Reddy Creek 100-yr stage is 75.19 conservatively assumed 74 for SHW of adjacent pond sites
Treatment Volume Required	3.31	AC-FT.
Attenuation Volume Required	22.85	AC-FT.
Pond Area Based on treatment volume	5.09	AC
Assume 1 foot of pond freeboard	1.00	FT.
Treatment Depth	0.65	FT.
Total Attenuation Depth based on Pond Area	4.5	FT.
Total Depth from SHWL to Top of Berm	6.14	FT.
Elev SHW=	74.0	
Top of Berm Elevation given a total depth =	80.14	
Unit Length Based on L/W = 2	666	FT.
Unit Width Based on L/W = 2	333	FT.
Maintenance Berm Width of 20-ft	40	FT.
Grade Adjustment Width Assumed 1:2	9	FT.
Horizontal Distance Based on a 1:4 Slope and total Depth	49.10	FT.
Total Pond Length (including maintenance berm and adjustments)	763.70	FT.
Total Pond Width (including maintenance berm and adjustments)	430.6748	FT.
Preliminary Property Size Required to accommodate Pond Footprint	7.55	AC.
Preliminary Property Size Required to accommodate Pond Footprint with 10% Contingency	8.31	AC.



Project Name: Poinciana Parkway Extension
Project Number: 446581-1-22-01
Task Description: Estimation of ROW Requirements

Prepared by: CAB
Checked by: JAF
Date: 03/16/2023

Basin BSN109 Alternative 3	<i>Pre-Development "BTU" Condition</i>	<i>Post Development Condition</i>
Total Area, acre	76.01	76.01
Impervious Area, ac	23.18	33.48
CN	56.1	74.8
Attenuation Volume-50yr72hr		
Precipitation	12.91	12.91
Potential Maximum Retention (S)	7.82	3.38
Runoff Depth (Q), in	6.72	9.59
Runoff Volume, acre-ft	42.55	60.74
Volume Differential, acre-ft	18.19	
Treatment Volume*		
2.5-in. (1ft./12 in.) x Total Increase in Impervious Area (ac.) = acre-ft		2.15
Total Volume Required, acre-ft	20.34	

* - Used 2.5-inches over the new impervious based on the I-4 BTU permit data.



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 03/16/2023
Designed by : CAB
Checked by : JAF

Curve Number Calculations Basin BSN109 Alternative 3
 Pre (Values from BTU Permit Worksheet)

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	15.30 ac	A	49	749.70	Open Spaces, Lawns/Fair Condition
Pervious Area	1.25 ac	D	84	105.00	Open Spaces, Lawns/Fair Condition
Pervious Area	32.80 ac	A	25	820.00	Woods, Good Cover
Pervious Area	1.25 ac	D	77	96.25	Woods, Good Cover
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Pervious Area	0.00 ac	D	91	0.00	Gravel (Rail Corridor)
Impervious Area	23.18 ac		98	2271.64	Roadway Pavement
Wetted Pond Area	2.23 ac		100	223.00	Pond
Dry Pond Area	0.00 ac	A	39	0.00	Pond
Total Area	76.01 ac			4265.59	56.1 = Weighted CN

Post

Description	Area (A)	Soil Group	Curve No. (CN)	CN x A	Cover type & hydrologic cond.
Pervious Area	32.02 ac	A	49	1568.98	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	B	69	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	C	79	0.00	Open Spaces, Lawns/Fair Condition
Pervious Area	2.50 ac	D	84	210.00	Open Spaces, Lawns/Fair Condition
Pervious Area	0.00 ac	A	76	0.00	Gravel (Rail Corridor)
Pervious Area	0.00 ac	D	91	0.00	Gravel (Rail Corridor)
Impervious Area	33.48 ac		98	3281.04	Roadway Pavement
Wetted Pond Area	5.09 ac		100	509.00	Pond
Dry Pond Area	2.92 ac	A	39	113.88	Pond
Total Area	76.01 ac			5682.90	74.8 = Weighted CN



Project Name : Poinciana Parkway Extension
Project Number : 446581-1-22-01
Date : 02/04/2022
Designed by : CAB
Checked by : JAF

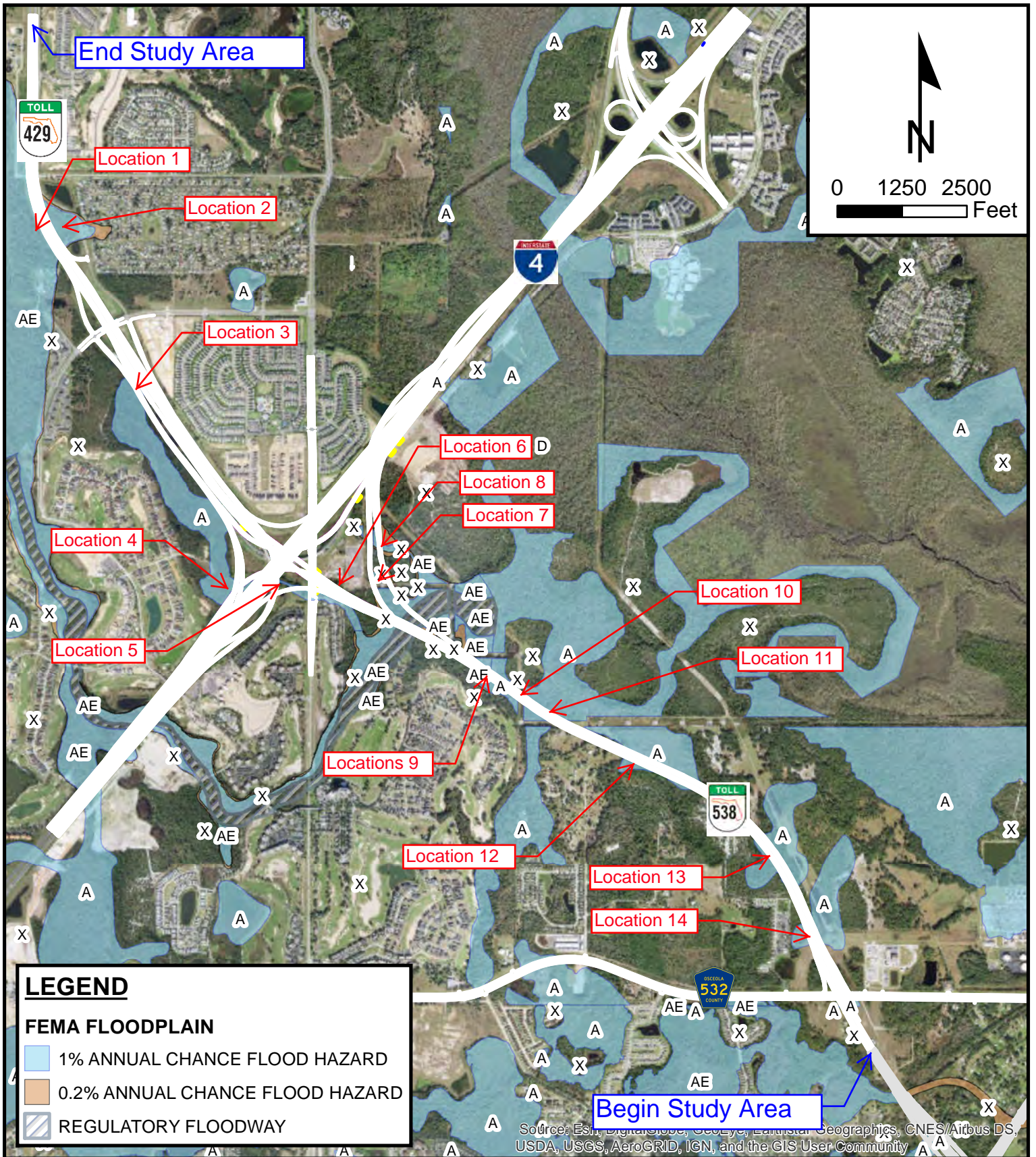
Impacts to Existing Ponds
Pond 109, Stations 5379+00 to 5384+00 LT
Basin: BSN109

Pond Footprint:	5.82 acres
Is pond salvageable:	yes
If pond is salvageable what percentage remains functional:	50 %
Salvageable Footprint:	2.91 acres
Percentage of pond footprint impacted:	50 %
Pond footprint no longer useable:	2.91 acres
Treatment Depth:	0.40 ft (from as-builts)
Attenuation Depth:	1.6 ft (stage from permit weir elev from as-builts)
Estimated Treatment Volume: Impacted:	1.16 acre-ft
Estimated Attenuation Volume Impacted:	4.66 acre-ft

APPENDIX D – FLOODPLAIN ENCROACHMENT CALCULATIONS

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1



FLOODPLAIN IMPACTS

POINCIANA PARKWAY EXTENSION

from CR 532 to North of I-4/SR 429 Interchange



RS&H, Inc.
FPID: 446581-1
FLOODPLAIN IMPACT VOLUME CALCULATIONS

By: CAB
Date: 3/23/2022
Checked: ENS
Date: 8/2/2022

Location: 2
Alignment: 429_SB
Beginning Station: 6426+00
End Station: 6435+00
Side: LT

Elevation (ft)	Area (ac)	Incremental Volume (ac-ft)	Cumulative Volume (ac-ft)	Comments
106.0	0.08		0.48	100-year BFE
		0.08		
105.0	0.08		0.40	
		0.08		
104.0	0.08		0.32	
		0.08		
103.0	0.08		0.24	
		0.08		
102.0	0.08		0.16	
		0.08		
101.0	0.08		0.08	
		0.08		
100.0	0.08		0.00	
		0.00		

APPENDIX E – POND SITE EVALUATION MATRIX

(Redacted)

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1

APPENDIX F – CORRESPONDENCE, MEETING MINUTES, AND EXCERPTS FROM PREVIOUS PERMITS AND STUDIES

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1



Florida Department of Transportation

RON DESANTIS
GOVERNOR

Florida's Turnpike Enterprise
P.O. Box 613069, Ocoee, FL 34761
407-532-3999

JARED W. PERDUE, P.E.
SECRETARY

MEETING MINUTES

FTE/FDEP PRE-APP COORDINATION MEETING

Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4

FPID No.: 446581-1-22-01

Western Beltway (SR 429) Widening PD&E Study from North of I-4 to Seidel Road

FPID No.: 446164-1-22-01

Osceola and Orange Counties County, Florida

Monday, April 11, 2022, 9:00 am

I. Attendees:

FTE

Henry Pinzon, PE (PD&E)
Rax Jung, PhD, PE (Project Dev. Engineer/EMO)
Philip Stein (Environmental)
Annemarie Hammond (Env. Permits Coordinator)
Erin Yao, PE (Drainage Engineer)

FDEP ERP/S404

Teayann Duclos, MS (Environmental Manager)
Jennipher Walton (Env. Specialist)
Leo Anglero (ERP/Stormwater)
Allan Popak, PG (Environmental Specialist)
Lindsay Furr (Environmental Consultant)
Jill Farris (Environmental Consultant)

FTE/GEC

Stephanie Underwood, PE (PM/HNTB GEC)
Fred Gaines, PWS (Permitting/Atkins GEC)
Adriana Kirwan, PE (Drainage/HNTB GEC)
Tiffany Crosby (Senior Scientist/Atkins GEC)

RS&H Team

Douglas Reed, PE (RS&H PM)
Erik Scott, PE (RS&H Drainage)
Sarah Johnson, MS (KHA/Environmental)

FDOT Central Office

Jonathan Turner (Project Delivery Coordinator)

FDOT District 5

Casey Lyon, MS (Env. Permits Coordinator)

Introductions

The meeting started with FDOT District 5 staff discussing their projects with Florida Department of Environmental Protection (FDEP). Next on the agenda are FDOT Florida's Turnpike Enterprise (FTE) projects. FTE, FTE General Engineering Consultant (GEC), FDOT Central Office, FDEP and FTE Project Consultant attendees were introduced, FTE/GEC staff explained the purpose of the meeting was to initiate pre-application coordination for the two FTE Project Development and Environment (PD&E) studies, Poinciana Parkway Extension (SR 538) and Widen Western Beltway (SR 429).

PowerPoint presentation

RS&H staff explained the two projects with a PowerPoint presentation and separate exhibits (attached). Discussion is summarized below.

446164-1 Widen Western Beltway PD&E Study:

- The PD&E study was summarized, including existing conditions and the proposed

widening of SR 429 from four to eight-lanes from north of I-4 to Seidel Road.

Improvements are also proposed at the existing interchanges at Sinclair Road, US 192, Western Way, and Seidel Road. A new interchange is proposed at Livingston Road. It was noted that this is early in the process in the PD&E phase, and not the Design phase, so a permit application is not imminent.

- FDEP Environmental Resource Permit (ERP) and Reedy Creek Improvement District (RCID – discharge volume) permitted SR 429 in 2001 as a four-lane roadway facility with stormwater management ponds and control structures sized for six-lanes. FTE is coordinating with RCID.
- The existing water quality volume was calculated based on the criteria of 1-inch over the contributing basin or 2.5-inches over the impervious area. For most of the basins the 1-inch over the contributing area was the controlling factor for the required water quality. This is due in part because the existing corridor was located within a rural corridor and offsite areas were included in the contributing basin calculation. Since 2001, some of the offsite areas have been developed with new, offsite ponds. Therefore, when adding the additional pavement along SR 429 for the eight-lane configuration, most of the basins still have sufficient water quality volume provided in the existing ponds. For any basins lacking the required water quality volume within the existing permitted ponds, the difference will be accommodated by adjusting the existing control structures or providing additional pond area.
- Basin boundaries will be revised to reflect the existing development adjacent to SR 429.
- Portions of the project study area is located within two impaired WBIDs (Water Basin Identification), Davenport Creek for bacteria (fecal coliform) and Whittenhorse Creek for dissolved oxygen. In addition, the project study area is located within the Lake Okeechobee Sub-watershed BMAP. FTE stated that the impaired WBID additional treatment is not required given FDOT BMPs include a series of treatment trains and their facilities do not directly discharge into the impaired waterbodies. FDEP stated that additional treatment considerations may not be necessary because they are moving away from the 50% additional treatment volume requirement, but these criteria will need to be discussed further during the design phase.
- Attenuation will be provided per FDEP ERP criteria for open and closed basins, with consideration for RCID (discharge volume) requirements. FDEP agreed this stormwater approach is reasonable.
- The corridor has floodplains associated with Boggy Creek and Whittenhorse Creek. There is one existing Floodplain Compensation site located north of Indian Creek Boulevard adjacent to the southbound lanes. Though encroachments are anticipated, they will be minimal. Encroachments will be mitigated by compensation sites or by using the importer/exporter method.
- FTE confirmed with FDEP that the ERP for any proposed widening of Western Beltway (SR 429) will be handled by FDEP. FDEP agreed.
- Since there are no federal retained Waters of the US, FTE understands that FDEP S404 will permit any proposed impacts. FDEP S404 agreed.
- Wetland lines from the previous permit will be used as much as possible in areas that are not new interchanges. FDEP agreed, although FDEP staff will need to field review wetland delineation. Direct wetland impacts are approximately 10 acres.
- Conservation easements are located within the project study area.

- Wetlands and conservation easements impacts will be avoided and minimized as much as possible. Some minimization methods considered include bridging or MSE walls.
- Impacts to most listed species is minimal along the existing roadway; however, there is suitable sand skink habitat to be considered within the new interchange area.
- Mitigation banks are located within the available service area for this project to offset any unavoidable wetland impacts.
- Coordination with USFWS occurred in 2021 and will continue as needed.
- FDEP indicated there were no questions, and additional coordination can occur as the project progresses.

446581-1 Poinciana Parkway Extension PD&E Study:

- The PD&E study was summarized, including existing conditions. The proposed new six-lane expressway will be a new alignment with interchanges at CR 532 and I-4. The new alignment crosses Davenport Creek on bridge structure.
- There are two build alternatives and the no-build alternative being analyzed for the PD&E study. The worst-case Alternative 1 was presented and discussed in the meeting.
- FTE clarified with FDEP that they anticipated that SFWMD would be responsible for issuing the new Individual ERP permit and FDEP would be responsible for reviewing and issuing the Section 404 permit. FDEP ERP/S404 agreed.
- Waters of the US limits and conservation areas within the study area were shown.
- Wetland lines from the previous permits will be used as much as possible in existing roadway areas, while new wetland lines will be set in the new alignment area. Direct wetland impacts range from 131 acres to 141 acres for the concept alternatives. Direct impacts will be further minimized with bridges and MSE walls.
- SFWMD conservation easements for Disney/RCID and Reunion are present within and adjacent to the project study area.
- Wetlands and conservation easement impacts will be avoided and minimized as much as possible. Some minimization methods considered include bridging or MSE walls.
- It was stated that FTE has already met with USFWS in October 2020 and again in October 2021. A scrub jay survey was completed in October 2021, however; there were no observations of scrub-jays during the survey. Suitable sand skink habitat is located within the project study area and sand skink tracks were observed.
- FTE will coordinate with FWC for state-listed species involvement, as appropriate.
- Mitigation banks are located within the available service area for this project to offset any unavoidable wetland impacts. FDEP S404 confirmed with FTE that mitigation banks should be utilized for wetland mitigation as the 1st priority and followed by other options (In-lieu Fee then Conservation Easements). Impacts to conservation easements should be a last resort. Should proposed mitigation be a Conservation Easement, FDEP has asked that FTE coordinate with FDEP early in the design development given the process is different than that of using mitigation banks.



Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JARED W. PERDUE, P.E.
SECRETARY

MEETING MINUTES

FTE/SFWMD PRE-APP COORDINATION MEETING

Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4

FPID No.: 446581-1-22-01

Osceola County, Florida

Wednesday, April 13, 2022, 2:00 pm

I. Attendees

Florida's Turnpike Enterprise (FTE)

Henry Pinzon, PE (Environmental Management Engineer)

Rax Jung, PhD, PE (Project Dev. Engineer)

AK Annemarie Hammond (Environmental Permits Coordinator)

Erin Yao, PE (District Drainage Engineer)

SFWMD ERP

Patricia Therrien, PE (Lead Eng/Env Review)

Richard Lott, MS (Engineering)

Lisa Prather (Section Leader/Environmental)

Richard Walker (Reg. Information Specialist)

FTE/GEC

Stephanie Underwood, PE (PM/HNTB GEC)

Fred Gaines, PWS (Permitting/Atkins GEC)

Adriana Kirwan, PE (Drainage/HNTB GEC)

Doug Zang, AICP (Noise/Atkins GEC)

FDEP ERP

Lee Anglero (Engineering)

RS&H Team

Douglas Reed, PE (RS&H PM)

Erik Scott, PE (RS&H Drainage)

Sarah Johnson, MS (KHA/Environmental)

II. Introduction

The meeting started with FDOT Florida's Turnpike Enterprise (FTE) staff thanking South Florida Water Management District (SFWMD) and Florida Department of Environmental Protection (FDEP) staff for participating in the pre-application meeting. FTE, FTE General Engineering Consultant (GEC), SFWMD, FDEP and FTE Project Consultant attendees were introduced.

After introductions, RS&H went through the agenda (attached to meeting request) and explained this is a PD&E study, so no environmental resource permit (ERP) application is imminent. RS&H then went through a PowerPoint presentation (attached) that started with an introduction to the Poinciana Parkway Extension (PPE) Project Development and Environment (PD&E) Study from CR 532 to north of the I-4/SR 429 interchange. The project is a new six-lane expressway with interchanges at CR 532, I-4, and SR 429/Sinclair Road. At the south end, PPE ties into the Central Florida Expressway Authority (CFX) Poinciana Parkway, which is currently in the Design Phase south of CR 532. At the north end, PPE ties into the SR 429/Western Beltway Widening PD&E Study from north of I-4 to Seidel Road. PPE has independent utility, so it provides benefits even if the Poinciana Parkway segment south of CR 532 is not constructed and the Western Beltway is not widened.

SFWMD referenced the existing I-4 Corridor through the SR429 area and asked if FTE is coordinating with

FDOT District 5's Beyond the Ultimate (BTU) I-4 project. FTE confirmed that coordination is on-going with FDOT District 5. FTE understands SFWMD would be responsible for permitting the new alignment and not the I-4 Interchange improvements previously permitted by FDEP. SFWMD confirmed that SFWMD will permit any new facility, while FDEP will still be responsible for permitting the portions of the existing SR 429 corridor and the I-4 interchange previously permitted by FDEP.

III. Drainage Discussion

RS&H stated that treatment would be provided for the improvements utilizing the criteria of 1-inch over the drainage basin or 2.5-inches over the impervious, whichever is greater. It was noted that the I-4/SR 429 interchange and SR 429 to the north are currently permitted by FDEP (ERP) and Reedy Creek Improvement District (RCID – discharge volumes). Required water quality volumes will be computed using the criteria described and compared against permitted water quality volumes. Should there be a deficiency, additional water quality volume will be provided in new ponds or in existing ponds with modified control structures.

RS&H explained that the project was located within a WBID (Water Basin Identification) impaired for bacteria (fecal coliform), as well as being within the Lake Okeechobee Watershed BMAP. FTE stated that additional treatment is not required given that FDOT BMPs include a series of treatment trains and their facilities do not directly discharge into the impaired waterbodies. SFWMD stated that phosphorus should still be analyzed to ensure a net reduction. Additionally, if the implemented BMPs have a net reduction in phosphorus it is implied that other impairments such as bacteria will be sufficiently reduced. SFWMD recommended that an additional pre-application meeting be held during the design phase to verify the design criteria closer to the time of permitting.

RS&H indicated that Davenport Creek would be bridged so there would be no impacts, and improvements along SR 429 would have minimal floodplain impacts. Unavoidable floodplain impacts would be mitigated using floodplain compensation sites. SFWMD stated that they would accept the "cup-for-cup" methodology.

IV. Environmental Discussion

KHA displayed a wetlands graphic (attached) and explained the blue color indicates wetlands, yellow indicates surface water/ditches. Wetland impacts will be minimized or avoided using MSE walls and bridges.

There are SFWMD Conservation Easement (CE) areas managed by the Reunion neighborhood, and RCID within the project study area. SFWMD stated that it has been difficult to process the release of CEs and that currently SFWMD's Board are not accepting mitigation credits as the mitigation option for releasing CEs. FTE asked if a "swap", impacting one area and providing an equal new compensation area nearby for the same system, is a potential mitigation option to address CE release. SFWMD stated that swaps are not guaranteed to gain approval through the SFWMD Board. SFWMD stated that it was their understanding that impacting a RCID CE was not possible due to language in the CE, while Reunion CE are not as big of a challenge. Bridge spanning the CE may be another potential option, but the SFWMD Board will review and make that decision. SFWMD's Executive Director could be consulted for input in advance. Impacts should be minimized to the greatest extent possible. SFWMD suggested that any potential swap areas would need to be connected to the same conservation area/wetland and have an equal or greater functional value.

It was shared that FTE met with USFWS in 2020 and 2021 to discuss the project's listed species involvement. A scrub jay survey was conducted in October 2021 and no scrub jays were found. The Team will coordinate with FWC for state-listed species.

V. Other Discussion

SFWMD stated that using the 10-yr/72-hr storm event is an option in Osceola County for water quantity. RS&H staff will review existing SR 429 permits and utilize the same storm event for the purposes of SFWMD permitting. It should be noted that RCID has a more stringent water quantity requirement that will dictate the overall design.

SFWMD asked when the Bridge Hydraulic Report would be completed. RS&H responded that it is not done in the PD&E phase; it is done in Final Design. Some ramps need to be designed at a higher elevation due to interchange profiles, so bridges are an option to maintain conveyance and keep flow rates and velocity rates similar to existing conditions and avoid erosive velocities.

An additional pre-application meeting with FDEP and SFWMD will be conducted early in the Design phase to determine the exact limits of the FDEP ERP and the SFWMD ERP.

MEETING MINUTES
 FTE/RCID AGENCY COORDINATION MEETING
 Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4
 FPID No.: 446581-1-22-01
 Western Beltway (SR 429) Widening PD&E Study from North of I-4 to Seidel Road
 FPID No.: 446164-1-22-01

Osceola and Orange Counties County, Florida
 Wednesday, May 19, 2021, 1:00 pm

I. Attendees:

Henry Pinzon (FTE PD&E)	Erin Yao (FTE/Drainage)	Rax Jung (FTE Project Dev. Eng./EMO)	Douglas Reed (RS&H PM)
Stephanie Underwood (FTE PM)	Doug Zang (FTE/Environmental)	Annemarie Hammond (FTE/Env. Permit Coordinator)	Erik Scott (RS&H Drainage)
Ramon Breton (KHA, DPM 446581)	Fred Gaines (FTE/Permitting)	Clif Tate (KHA/Engineering)	Sarah Johnson (KHA/Environmental)
Adriana Kirwan (FTE/Drainage)		Kate Kolbo (RCID Planning/Engineering)	

II. Introductions

Stephanie introduced the Florida Turnpike Enterprise (FTE) staff and explained the purpose of the meeting was to coordinate with the Reedy Creek Improvement District (RCID). RS&H team staff was introduced followed by the RCID staff. John Classe (RCID District Administrator and Sam Dewes (RCID Roadway) were not in attendance.

III. PowerPoint presentation

Doug Reed went through a PowerPoint presentation (attached), which was sent to RCID after the meeting. Discussion is summarized below.

- a. Slide 7: Kate Kolbo explained that there are no set procedures if the Wildlife Management Conservation Area (WMCA) is impacted. It was set up in 1966 as a major floodway to never be impacted. Although two crossings were anticipated, including I-4. Poinciana Parkway would also be an exemption. However, there cannot be any adverse impacts to the existing flow rates. Most flows are north to south, except for Reunion which flows south to north. Major cross drains will be required along the utility "stair step" area to maintain flows.

Sarah Johnson pointed out the two graphics were slightly different and asked which one is correct. Kate Kolbo will send the CADD file for the correct WMCA limits to Stephanie Underwood, who will distribute it to the team. Kate mentioned that they use a different datum and they will convert it to NAVD88 before sending.

Fred Gaines asked if any easements had been transferred to other owners. Kate responded that none had been transferred.

- b. Slide 15: Kate indicated that the system is well defined. The cross section is fixed, canals cannot be widened, and drainage structures cannot be modified. Therefore, the flow cannot be increased. Any additional runoff must flow elsewhere. Stephanie Underwood suggested pre-post flows should be ok. Kate responded that it may not

be, depending on the definition of pre-post, but she will send the stipulations to Stephanie. The Reedy Creek system is based on 13 cfm/sq mile, and they are already exceeding that volume. Anything over that will require a fee. Kate mentioned that I-4 Beyond the Ultimate (BtU) project is attenuating to below the pre-post volume.

Fred Gaines mentioned that Turnpike had already paid a fee for SR 429 during the original construction.

Erik Scott asked about the permit process. Kate responded that a SFWMD permit application should be sent to RCID first for review and approval before being submitted to South Florida Water Management District (SFWMD). RCID will then send SFWMD a letter explaining the negotiation points and expressing support.

Kate mentioned that RCID uses a different rainfall distribution than SFWMD with a 50 yr/72 hr event. Erik asked about the unit hydrograph, and Kate will send Stephanie the RCID drainage person's contact information who can provide the information.

Erik mentioned we anticipate staying below the 290 cfs that was used previously. Kate will pull the permit and modifications can be worked through. Kate also mentioned they would require an initial 30-day review period to provide comments or questions. The Turnpike's team will provide information for RCID to feed into the model. Kate also mentioned they will review the projects even if outside the RCID boundary as long as it is within the watershed.

Erik asked if there were any other entities that were interested in taking additional water. Kate responded that there were none.

Fred asked if RCID can provide conceptual approval since this is PD&E and we are not submitting an actual permit until a later phase. Kate responded that conceptual approval can be granted.

The bottom line was reiterated:

- Stay out of the WMCA, and
- Do not discharge more flow into RCID

IV. Action Items

- a. Doug Reed will prepare meeting minutes. (done)
- b. Kate Kolbo will send the CADD files for the correct WMCA limits and flow stipulations. (done)

MEETING MINUTES
 FTE/RCID AGENCY COORDINATION MEETING #2
 Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4
 FPID No.: 446581-1-22-01
 Western Beltway (SR 429) Widening PD&E Study from North of I-4 to Seidel Road
 FPID No.: 446164-1-22-01

Osceola and Orange Counties County, Florida
 Thursday, March 3, 2022, 10:00 am

I. Attendees:

Henry Pinzon (FTE PD&E)	Todd Rimmer (Walt Disney Planning)	Rax Jung (FTE Project Dev. Eng./EMO)	Douglas Reed (RS&H PM)
Stephanie Underwood (FTE PM)	Emam Emam (FTE/Planning/Traffic)	Philip Stein (FTE/Environmental)	Erik Scott (RS&H Drainage)
Ramon Breton (KHA, DPM 446581)	Fred Gaines (FTE/Permitting)	Clif Tate (KHA/Engineering)	Matt Betancourt (RS&H Public Inv.)
Katherine Luetzow (RCID)	Sarah Johnson (KHA/Env)	Kate Kolbo (RCID Planning/Eng)	Rick Langlass (RS&H DPM/Eng.)
Sandy Morales (RCID)			

II. Introductions

Stephanie introduced the Florida Turnpike Enterprise (FTE) staff and explained the purpose of the meeting was to continue coordination with the Reedy Creek Improvement District (RCID) on the two PD&E studies. The RS&H team and RCID was also introduced.

III. PowerPoint presentation

Doug Reed went through a PowerPoint presentation. Discussion is summarized below.

Poinciana Parkway Extension PD&E Study and Drainage Design:

Erik Scott outlined the anticipated worst—case encroachment into Whittenhorse Creek with the proposed 8-lane typical. Kate Kolbo requested the hydraulic model FTE is using to evaluate the HGL. RS&H does not anticipate any changes to the Boggy Creek culvert. Davenport Creek will be bridged

Kate Kolbo indicated that FTE is not required to use a specific hydraulic model, but all modeling (electronic executable files) would need to be submitted for RCID review.

Todd Rimmer indicated that the CADD files would be requested from Mattamy Homes for the Celebration Island Village site plan.

Erik Scott requested the RCID model for use. Kate Kolbo agreed to send it after the meeting.

Kate Kolbo suggested the permit request should be submitted to RCID before submitting to the South Florida Water Management District (SFWMD).

The fee structure of \$4.15 per acre/csm is still applicable. The \$200/acre is also still

applicable for the portion of the project located within the RCID boundary if runoff drains into RCID. The original permits will be reviewed and fees will be assessed based on the improvements.

It was noted that the easements are water management first and foremost, then wildlife conservation.

Todd Rimmer asked if the two Poinciana Parkway Extension alternatives operate similarly. The response was yes, the configuration differs, but operations are similar. Todd also suggested the relocation of utilities be included in the evaluation and footprint.

Historical storage must be preserved as this area serves a large area of Osceola and Orange counties. Flood storage is critical.

Kate Kolbo will send the latest GIS files for the most up to date information on the jurisdictional and water management conservation area limits. A separate meeting can be set up to go through the information.

Widen Western Beltway PD&E Study:

Todd Rimmer indicated they are looking at 2040 traffic models for Western Way due to its connection into Lake County. Emam Emam indicated he can share the Synchro files which have been coordinated with District 5 and FDOT Central Office.

Bike and pedestrian facilities can be removed from Western Way since other means (i.e. shuttles) are being incorporated by Disney for bike and pedestrian accommodations. This will ultimately be safer due to the free flow ramp movements.

RCID is evaluating widening Western Way to six lanes. Funding is included in the 10-year plan.

It was noted that Disney was not invited to the Reunion Coordination meeting scheduled for March 10, 2022.

In general, it was agreed that Poinciana Parkway Extension Alternative 2 has reduced direct and indirect impacts to RCID resources compared to Alternative 1.

IV. Action Items

- a. Doug Reed will prepare meeting minutes. (done)
- b. Kate Kolbo will send the RCID model.
- c. Stephanie Underwood will send the HEC-RAS and Synchro models.

MEETING MINUTES
 FTE/CFX AGENCY COORDINATION MEETING
 Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4
 FPID No.: 446581-1-22-01
 Western Beltway (SR 429) Widening PD&E Study from North of I-4 to Seidel Road
 FPID No.: 446164-1-22-01

Osceola and Orange Counties County, Florida
 Tuesday, March 30, 2021, 1:30 pm

I. Attendees:

Henry Pinzon (FTE PD&E)	Stephanie Underwood (FTE PM)	Rax Jung (FTE Project Dev. Eng./EMO)	Rick Langlass (RS&H DPM 446164)
Emam Emam (FTE Traffic)	Andrew Velasquez (FTE Traffic)	Douglas Reed (RS&H PM)	Mark Owen (GAI)
Ramon Breton (KHA, DPM 446581)	Carnot Evans (Dewberry)	Clif Tate (KHA/Engineering)	
Dana Chester (CFX, Manager of Engineering)	Fred Burkett (KHA CR 532 PM)	Jonathan Williamson (Dewberry, CFX GEC)	

II. Introductions

Stephanie introduced the Florida Turnpike Enterprise (FTE) staff and explained the purpose of the meeting was to continue coordination with the Central Florida Expressway Authority. CFX staff was introduced followed by the RS&H team.

III. PowerPoint presentation

Doug Reed went through a PowerPoint presentation. A PDF of the slides was attached to the meeting invitation.

a. Slide 4:

- Carnot Evans reported that the pond sites for Poinciana Parkway south of CR 532 had changed, and the utility coordination for the easement is ongoing. In addition, the CR 532 typical section has not been selected yet.
- Mark Owen showed a roll plot of the segment from US 17/92 to CR 532. CFX will design the stub-outs for the Turnpike concept to tie into north of the railroad. CFX has developed the profile for the extension north of CR 532. Mark will send the CADD files for the 30% package to Stephanie Underwood.
- Henry Pinzon asked about eliminating the ramps to/from the south at CR 532 and asked if CFX is open to keeping the connections to CR 532 but only as a CD road system for connectivity between CR 532 and US 17/92. The concern is removing them may become controversial with the public. Carnot Evans noted that there is not enough space between CR 532 and US 17/92 to have both ramp connections due to weaving, and that traffic volumes are light. Andrew Velasquez asked if CFX had evaluated traffic volumes for a Collector/Distributor (C/D) system that does not connect to the mainline, therefore avoids the weaving issue. Carnot replied that they had looked at a C/D system, but the ramp volumes were low – on the order of 100 vehicles per day. Once the Poinciana Parkway is connected to I-4, it reduces the demand for CR 532. Carnot noted that the ramp removal had been documented in an agreement between CFX and Osceola County. However, CFX is not opposed to the Turnpike taking another look at a CD

- system.
- b. Slide 5: Carnot addressed changes to the Poinciana Parkway typical section:
 - The median width will be 74 feet wide to allow ultimate widening to eight lanes with a median barrier.
 - The inside shoulder will be constructed full depth pavement to facilitate interim widening to six lanes. The shoulder will be 0.03 cross slope draining to the median, with the two travel lanes at 0.02 cross slope draining to the border.
 - Carnot will send the 30% plans package, including CADD files.
 - Ramon Breton asked about variations and exceptions. CFX does not use a FDOT-style Variation/Exception process but documented the reasons for a reduced border width (89 feet) in design documents.
 - c. Slide 6: CFX is still evaluating four-lane typical sections along CR 532.
 - d. Slide 9: There have been no changes to the tolling concept illustrated in the slide.
 - e. Slide 24: Carnot explained the coordination with the utility providers continues. CFX will purchase land and grant easements to the providers. The Duke Energy power transmission line will cross perpendicular to Poinciana Parkway north of CR 532 where the parkway is back at grade.
 - f. Henry Pinzon asked about environmental and permitting.
 - Carnot explained they will be doing sand skink surveys in the roadway and pond locations.
 - Additional testing for archaeological resources will also be done before the State Historic Preservation Officer (SHPO) will sign off.
 - Carnot explained that originally the South Florida Water Management District (SFWQMD) had agreed to waive the 50% additional treatment normally required when a project is within the Okeechobee watershed since the project is so far from Lake Okeechobee. But now the SFWMD staff is all different people, so they have to re-visit that agreement.
 - g. Carnot Evans will be the main point of contact for CFX.
 - h. Slide 26: Seidel Road is the northern limit of the FTE facility, with CFX ownership north of Seidel Road. Emam Emam asked about the future plans north of Seidel Road. CFX has no plans currently to widen Seidel Road or SR 429 to the north. However, CFX is updating their entire Master Plan for year 2045, so they will be evaluating needs. It was agreed that we can assume widening to six lanes, then eight lanes, in the future, for the purpose of lane consistency and travel demand modeling north and south of Seidel Road.
 - i. Andrew Velasquez asked if part time shoulder use was being considered for SR 429 north of Seidel Road. Dana Chester replied that they are considering that elsewhere as an interim solution to peak hour congestion or incident management, but it was not being considered here. Andrew asked if it was a strategy where right-of-way is constrained. Dana replied that no, it was traffic driven. As an interim solution until widening can be programmed.
 - j. Henry asked about future coordination between FTE and CFX. Stephanie Underwood suggested quarterly meetings or as needed at milestones. Dana agreed quarterly is fine, and CFX will share their milestone submittals for Poinciana Parkway south of CR 532.
 - k. Dana asked about I-4 Beyond the Ultimate (BtU), whether it was still a project moving forward. It was explained that although there is nothing programmed by FDOT at the moment, they are looking to make project construction segments

smaller and more affordable. Stephanie reminded everyone that the PD&E will evaluate tying into both the I-4 interim and ultimate conditions.

- l. Carnot Evans asked if widening SR 429 would be to the inside with a barrier wall between shoulders. Doug Reed explained we will be widening inside and outside, but we do not have a specific typical section identified yet.
- m. Rax Jung brought up the frontage road or C/D concept between CR 532 and US 17/92, asking if CFX is open to the idea. Dana responded that they would be open to discuss any ideas.
- n. Stephanie noted the Public Kickoff Meeting is planned for June 22 (virtual) and June 24 (in person) and reminded everyone that the PowerPoint presentation is attached to the meeting invitation. She will schedule the next coordination meeting once there is more information to share. She will also follow up with Carnot for the design files.

IV. Action Items

- a. Doug Reed will prepare meeting minutes. (done)
- b. Carnot Evans will send the design CADD files.
- c. Stephanie Underwood will schedule the next coordination meeting.

MEETING MINUTES
 FTE/OSCEOLA COUNTY AGENCY COORDINATION MEETING
 Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4
 FPID No.: 446581-1-22-01
 Western Beltway (SR 429) Widening PD&E Study from North of I-4 to Seidel Road
 FPID No.: 446164-1-22-01

Osceola and Orange Counties County, Florida
 Tuesday, April 20, 2021, 10:00 – 11:00 am

I. Attendees:

Henry Pinzon (FTE PD&E)	Karen Snyder (FDOT District 5 Project Development Manager)	Tawny Olore (Osceola County Transportation and Transit Director)	Douglas Reed (RS&H PM)
Stephanie Underwood (FTE PM)	Lorena Cucek (FDOT District 5)	Joshua DeVries (Osceola County PM Old Lake Wilson Road)	Rick Langlass (RS&H DPM 446164)
Rax Jung (FTE Project Dev. Eng./EMO)	Carol Scott (FDOT District 5 Planning)	David Dangel (Inwood PM Old Lake Wilson Road)	Ramon Breton (KHA, DPM 446581)
Emam Emam (FTE Traffic)		Kevin Freeman (VHB PM US 17/92)	Clif Tate (KHA/Engineering)

II. Introductions

Stephanie introduced the Florida Turnpike Enterprise (FTE) staff and explained the purpose of the meeting was to initiate coordination with Osceola County for the two PD&E studies. Osceola County staff was introduced followed by the RS&H team.

III. PowerPoint presentation

Doug Reed went through a PowerPoint presentation covering the two Turnpike PD&E studies and other projects in the area. A PDF of the presentation is attached, with a summary of the discussions provided below:

- a. Slide 5: David Dangel, the new Project Manager for Inwood Consulting Engineers, Inc., summarized the status of the Old Lake Wilson Road PD&E Study being conducted by Osceola County.
 - Traffic analysis and Intersection Control Evaluations (ICE) is underway.
 - Alternative four-lane divided typical sections have been developed and are being reviewed internally by county staff.
 - Existing right-of-way is available to make most of the improvements to widen Old Lake Wilson Road.
 - The Class of Action is a Type 2 Categorical Exclusion.
 - Osceola County will be meeting with FDOT District 5 regarding the I-4 Beyond the Ultimate (BtU) project and to discuss options for additional lanes crossing over I-4. One scenario is to leave the existing two-lane bridge in place and construct a new two-lane bridge, then reconstruct the existing bridge when the I-4 BtU project occurs.
 - There are no concepts or CADD files to share yet.
 - There is no funding for future phases in the County's current 5-year Capital

Improvement Plan (CIP); however, Osceola County is reviewing their 5-year CIP and making updates to the long-range plan to ensure Planning Consistency. Tawny Olore added that Design funding is earmarked for Fiscal Year 2023 but there is no right-of-way or construction funding identified yet.

- Significant controversy is not expected, as most of the right-of-way is available. Public interest in access management is expected. Most of the feedback received so far is supporting the need for the project, as other roads in the area have been or are being widened, leaving Old Lake Wilson Road as the only major two-lane roadway left; Polk County is widening their portion, and CR 532 is also being widened.
 - No new developments are planned that have not already been identified.
 - Celebration Boulevard is planned to be extended south to CR 532 in the future.
 - Emam Emam asked if the future traffic projections can be shared with Turnpike. Joshua DeVries responded that future projections have not been developed yet. Emam noted that FHWA will be looking for consistency between projects.
 - Henry Pinzon asked if Mattamy Homes has a development timetable. Joshua DeVries indicated that they had been on hold, but they are now moving forward again. Tawny Olore noted that they had met with Disney and Reedy Creek and there was no timetable given.
 - Ramon Breton noted that the schedules for Poinciana Parkway Extension and Old Lake Wilson Road PD&Es are running concurrently, so future coordination is critical to maintaining consistency in Old Lake Wilson Road and I-4/SR 429/Poinciana Parkway Extension interchange geometries.
 - Henry mentioned that Turnpike and Osceola County will meet again once concepts are developed.
 - The contact people are:
 - Poinciana Parkway Extension and Widen western Beltway PD&Es: Stephanie Underwood, FTE.
 - Old Lake Wilson Road and US 17/92 PD&Es: Joshua DeVries, Osceola County and David Dangle, Inwood.
 - FDOT District 5: Lorena Cucek will be the contact person for FDOT District 5, but Karen Snyder should be copied on any correspondence.
- b. Slide 9: The alternative CR 532 typical sections are being evaluated.
- c. Slide 12: Osceola County has not considered a frontage road concept between US 17/92 and CR 532 and there has been no indication from the public that is it in demand. Traffic evaluations by Osceola County to date have considered the half-diamond interchange at CR 532.
- d. Slide 13: US 17/92 PD&E Study
- The project limits changed. The project starts at Poinciana Parkway/Ivy Mist Lane and ends at Poinciana Boulevard.
 - District 1 will evaluate widening west of Poinciana Parkway.
 - The US 17/92 typical section will likely be suburban, with an urban typical section likely through Intercession City.
 - Osceola County is evaluating left, right, and center alignments, with an Alternatives Public Meeting scheduled in January 2022.
 - The Class of Action is a Type 2 Categorical Exclusion.
- e. Slide 22: Widen Western Beltway PD&E Study
- No new interchange needs have been identified within the limits of the study.

- f. Slide 24: Open Discussion
- Henry Pinzon asked if the county foresees controversy and if they have any additional stakeholder suggestions. Joshua DeVries responded that the list of stakeholders seems complete, and utility providers will require coordination.
 - Doug Reed asked for any available data on the golf cart crossing culvert #925501 and CADD files for Old Lake Wilson Road. David Dangel will check with structures staff for any data on culvert #925501, but there are no CADD files available yet.
 - Stephanie Underwood asked if the county would like to meet again after the Public Kickoff Meeting, perhaps in July, once concepts are available for all projects. All agreed.
 - Lorena Cucek will be the contact person for FDOT District 5, but Karen Snyder should be copied on any correspondence.

IV. Action Items

- a. Doug Reed will prepare meeting minutes. (done)
- b. Stephanie Underwood will distribute the presentation (Attached) and schedule the next coordination meeting when the time comes.
- c. David Dangel will check with structures staff for any data on culvert #925501.
- d. David Dangel will check with Kittelson & Associates for traffic data.

MEETING MINUTES
 FTE/OSCEOLA COUNTY AGENCY COORDINATION MEETING #2
 Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4
 FPID No.: 446581-1-22-01
 Western Beltway (SR 429) Widening PD&E Study from North of I-4 to Seidel Road
 FPID No.: 446164-1-22-01
 Osceola and Orange Counties County, Florida

Monday, March 7, 2022, 9:30 am

I. Attendees:

Henry Pinzon (FTE PD&E)	Saiosi Fine (FTE MPO Liaison)	Tawny Olore (Osceola County Transportation and Transit Director)	Douglas Reed (RS&H PM)
Stephanie Underwood (FTE PM)	Lorena Cucek (FDOT District 5)	Joshua DeVries (Osceola County Transportation/Transit)	Rick Langlass (RS&H DPM 446164)
Rax Jung (FTE Project Dev. Eng./EMO)	Carol Scott (FDOT District 5 Planning)	Kevin Freeman (VHB PM US 17/92)	Ramon Breton (KHA, DPM 446581)
Emam Emam (FTE Traffic)	Andrew Velesquez (FTE Planning/Traffic)		

II. Introductions

Stephanie introduced the Florida Turnpike Enterprise (FTE) staff and explained the purpose of the meeting was to initiate coordination with Osceola County for the two PD&E studies. Osceola County staff was introduced followed by the RS&H team.

III. PowerPoint presentation

Doug Reed went through a PowerPoint presentation (attached) covering the two Turnpike PD&E studies and other projects in the area. A summary of the discussion is provided below:

- Tawny Olore asked why the Turnpike is removing the ramps to and from the south of CR 532. Doug Reed explained there is not enough room between the ramps at US 17/92 and the ramps at CR 532 once the mainline is extended over CR 532. Emam Emam added that the traffic demand doesn't justify the need for the connection to the south, especially since there is a short alternate route from US 17/92.
- Tawny Olore mentioned a trucking study which Lorena Cucek will send.
- Joshua DeVries mentioned that the interchange at Livingston seems helpful for local access to SR 429 and Margaritaville. Tawny Olore added that it could open up access to the west side (Westside Boulevard). However, please note access would only be provided to and from the east side at Formosa Gardens Boulevard due to natural and environmental constraints on the west side of SR 429.
- Doug Reed mentioned that FGT had indicated that they will require a median opening at Old Lake Wilson Road for access to their facility.
- Emam Emam asked about the median opening along Sinclair Road at Happy Trails Road. Since it doesn't meet FDOT Access Management standards, the Turnpike would like to have it closed, changing it to a right-in/right-out configuration. Emam asked if Osceola County could evaluate modifying or moving the median opening location as

part of the Sinclair Road Extension PD&E Study. Joshua DeVries promised to pass along the request.

- Doug Reed asked about the status of the Celebration Boulevard Extension, and if the two-lane divided typical section on Slide 23 was still valid. Joshua DeVries stated the County is moving into a corridor feasibility study phase. The road is not currently funded but Mattamy Homes has a funding agreement, so they expect it to be constructed before Poinciana Parkway.
- Doug Reed asked for the CADD files for the Celebration Boulevard Extension and Celebration Island Village Site plan which Joshua DeVries agreed to send.
- Joshua DeVries mentioned that Design is programmed for Old Lake Wilson Road (or will be programmed in the CIP update).
- Tawny Olore indicated she would look for any plans to widen the two-lane section of Formosa Gardens Boulevard and check if there are plans to improve the intersection of Formosa Gardens with Funie Steed Road.

IV. Action Items

- a. Doug Reed will prepare meeting minutes. (done)
- b. Lorena Cucek will send a link to the trucking study.
- c. Tawny Olore will look for plans to widen Formosa Gardens Boulevard and check if there are plans to improve the Funie Steed Road intersection.
- d. Joshua DeVries will send CADD files for Celebration Boulevard Extension and Celebration Island Village Site plan.
- e. Joshua DeVries will forward a request for the County to evaluate the Sinclair Road/Happy Trails Road median opening.

MEETING MINUTES
REUNION COMMUNITY DEVELOPMENT DISTRICT (CDD) COORDINATION MEETING
Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4
FPID No.: 446581-1-22-01

Osceola County, Florida
Thursday, March 10, 2022, 1:00 pm

I. Attendees:

FTE

Henry Pinzon (PD&E)
Rax Jung (PD&E Engineer)
Stephanie Underwood (PM, GEC-HNTB)
Emam Emam (Traffic, GEC-AECOM)
Doug Zang (EMO, GEC-Atkins)
Doug Reed (PM, RS&H)
Matt Betancourt (PI, RS&H, virtual)
Ramon Breton (Deputy PM, KHA)

Reunion

Mark Greenstein (Reunion East CDD Chairman)
Steven Goldstein (Reunion East Vice-Chairman)
Kristen Trucco (Reunion CDD District Counsel)
Tricia Adams (Reunion CDD District Manager)
Trudy Hobbs (Reunion East Secretary)
John Dryburgh (Reunion East Asst-Secretary)
Steve Boys (District Engineer)
Alan Scheerer (Field Manager)
Victor Vargas (Reunion Security)
Tom McKeon (Assistant Secretary)
Mike Smith (Yellowstone)

II. Introductions

Tricia Adams called the meeting to order, called roll, and announced a quorum was present. She introduced Doug Reed, who introduced the Turnpike and Consultant Team members.

III. PowerPoint presentation

Doug Reed gave a PowerPoint presentation (attached). Discussion is summarized below.

Poinciana Parkway Extension PD&E Study:

Mr. Greenstein asked if there would be any access to SR 429 from Sinclair Road. Mr. Reed stated from Sinclair Road, SR 429 northbound lanes and I-4 eastbound or westbound could be accessed. Mr. Greenstein asked which alternative had less impact on Carriage Pointe. Mr. Reed referred to the evaluation matrix and exhibits showing dimension from the proposed roadway alternatives to Carriage Pointe. Alternative 1 would take the Poinciana Parkway Extension northbound lanes further away from Carriage Pointe. The minimum distance to the Carriage Pointe parcel line from the southbound lanes of Alternative 1 would be approximately 112 feet, whereas the minimum distance for Alternative 2 would be approximately 58 feet.

Mr. Dryburgh questioned the interchange being four levels high, as Reunion residents would be seeing ramps from their backyard. He asked how high the four-level interchange would be, expressing that this option had the most impact on residents but was a convenient choice due to the directness of the connection to SR 429, as opposed to following a corridor along CR 532

to I-4. Mr. Reed offered that a view analysis with renderings would be prepared. Mr. Henry Pinzon of FDOT FTE stated that Mr. Dryburgh's point was taken, but the location was selected because it would have the least impact to I-4 and provide the most benefit. Mr. Graham Staley, Reunion West CDD Board Member asked if the four-level highway would be 90 feet high. Mr. Reed noted the highest one currently was 80 feet.

Mr. McKeon asked how they determined how much of the right of way (ROW) they would need to purchase. Mr. Pinzon stated they must establish a need to acquire the ROW. Mr. Dryburgh questioned how wide the ROW would be. Ms. Stephanie Underwood of FDOT replied whatever was necessary based on the footprint of the proposed roadway typical section. Right now, the need was for the footprint of the roadway, but if there was not much land left (uneconomic remainder), FDOT ROW would coordinate with property owners and other land may be purchased. No further phases (design, right of way acquisition, or construction) are currently funded beyond this PD&E study.

Mr. Goldstein questioned how many years they were away from construction. Ms. Underwood stated that a project lifecycle is generally two years for PD&E, two years for design, two years for ROW acquisition and several years for construction, amounting to approximately 10 years. This project must also go through the Federal approval process.

Mr. Dryburgh asked how many cars per hour were anticipated during daytime hours. Mr. Emam Emam of FDOT estimated 20,000 to 50,000 vehicles per day. Mr. Dryburgh felt this would have a negative impact to Reunion and Celebration.

Mr. Greenstein addressed the following.

- Understood the plan was to create a beltway around Orlando and was a collection of roadways, not one continuous roadway. It would be ideal if this was in a less populated area, but unfortunately, Reunion was landlocked with many utilities and pipelines, and a lot of roadways.
- Questioned the average height of the roadway that would extend parallel to Reunion's eastern boundary from CR 532 when it was running through wetlands and behind Reunion before connecting to SR 429. Mr. Breton stated in this area, the intent was to be 5 feet above the existing ground to be able to get it out of the water. The first level was around 25 to 30 feet high. The next level was around 60 feet and the top was around 85 feet. The highest elevations were in the middle of the interchange. Mr. Dryburgh asked how high the current bridge was. Mr. Breton stated 45 to 50 feet high.
- Stated that the tree line along the golf course and homes along Gathering Court are 5 feet above ground and residents should not be able to see the roadway. In his opinion, Carriage Pointe residents would be the most affected. Mr. Breton stated that there would be a buffer. Mr. Greenstein felt that the view could be mitigated. Mr. Staley asked why it was so close to Reunion. Mr. Breton explained if it was moved, it would go through the center of Celebration which would not allow the Turnpike to connect it to I-4.
- Noted that the presentation material indicated "North of SR 429" not "To SR 429 interchange." Mr. Reed explained that it extends north of the I-4/SR 429 interchange.
- Noted that the presentation was very effective, but there was some frustration with the alternatives. Stated that FTE wanted to connect to SR 429 and I-4 just north of the

Carriage Pointe entrance and anything they could do to mitigate the impact was critical.

Ms. Adams opened the floor for audience comments.

Resident Dorothy Reynolds asked what option the Board would choose. Ms. Adams noted that the purpose of the presentation was to hear comments on the design from the Board and residents. The Board did not have to endorse one of the proposed alignments but needed to work with the authoritative resources on the project impacts to see how to mitigate the noise and visual impacts to the best extent possible. Mr. Straley preferred Alternative 1, splitting the highway to push some of the noise outside of Reunion.

A resident voiced concern about the noise and suggested having sound barriers that displayed art. Mr. Reed stated there could be an aesthetics package that included landscaping and walls. Mr. Doug Zang of FDOT stated that a noise study will be performed once the Preferred Alternative was selected. The noise model will look at future year conditions for all the homes constructed or for homes that had building permits at the time the noise analysis was completed. Mr. Emam noted during the design phase they would also have a public information meeting.

Ms. Adams thanked all participants for attending and stated that a copy of this presentation would be posted on the Reunion CDD website and incorporated in the Community Development District's records.

IV. Action Items

- a. Doug Reed to provide Tricia Adams with the meeting presentation (complete on 3-11-2022)



From: Luetzow, Katherine <kluetzow@rcid.org>
Sent: Wednesday, June 8, 2022 3:29 PM
To: Scott, Erik <Erik.Scott@rsandh.com>
Subject: RE: 446581-1/446164-1 Poinciana Parkway Extension & Widen Western Beltway: RCID H&H Model

Good afternoon Erik,

I have attached an exhibit explaining a little more regarding where we have detailed information for our model.

I have also attached a map that shows the Tributary basins to RCID. This shows the historic divide for outside areas that enter our system.

Downstream of S-40/our levee we do not have any basin or detailed information.

If there are any elevations/flows that you want along the Reedy Creek thread upstream of S-40, I am more than happy to provide. I just didn't know if they would actually be able to help as the distance and split of flow from Davenport is going to make them not really applicable for your project.

Sorry I couldn't be of more assistance.

Thanks,

Katherine Luetzow, PE, CFM
Sr. Water Resources Engineer
Planning & Engineering
Reedy Creek Improvement District
Office (407) 828-2954
Cell (407) 840-1246
www.rcid.org



From: Luetzow, Katherine
Sent: Tuesday, May 3, 2022 5:36 PM
To: Scott, Erik <Erik.Scott@rsandh.com>
Subject: RE: 446581-1/446164-1 Poinciana Parkway Extension & Widen Western Beltway: RCID H&H Model

Attached is the WMCA file.

Thanks,

Katherine Luetzow, PE, CFM
Sr. Water Resources Engineer
Planning & Engineering
Reedy Creek Improvement District
Office (407) 828-2954
Cell (407) 840-1246
www.rcid.org

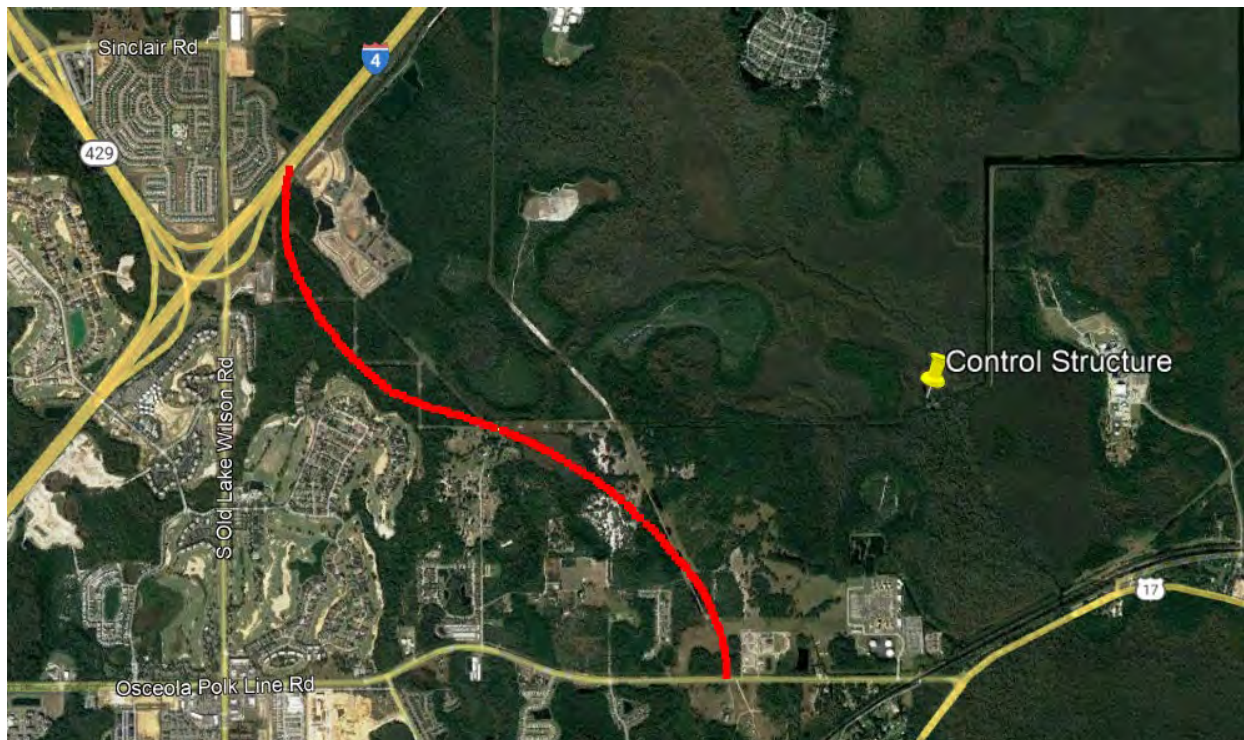


From: Scott, Erik <Erik.Scott@rsandh.com>
Sent: Tuesday, May 3, 2022 4:01 PM
To: Luetzow, Katherine <kluetzow@rcid.org>
Subject: RE: 446581-1/446164-1 Poinciana Parkway Extension & Widen Western Beltway: RCID H&H Model

Good afternoon Kate,

I am sorry I missed your call.

For the drainage model I have attached the limits below. In general the area bounded by CR 532 (Osceola Polk Line Road) / US 17 and Interstate 4.



With regards to the GIS data you are correct, the WMCA was certainly the main item we were missing. I will have our environmental group reach out to Daniel for any other items that were noted as outdated per our last meeting. As for the file type and datum, we are using state plane and I believe AutoCAD files would be the best resource for us.

Much appreciated,

Erik Scott, PE

Water Resources Engineer
1715 N Westshore Blvd, Suite 600, Tampa, FL 33607
813-636-2632

Erik.Scott@rsandh.com

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From: Luetzow, Katherine <kluetzow@rcid.org>

Sent: Tuesday, May 3, 2022 3:27 PM

To: Scott, Erik <Erik.Scott@rsandh.com>

Subject: RE: 446581-1/446164-1 Poinciana Parkway Extension & Widen Western Beltway: RCID H&H Model

Good afternoon Erik,

I left you a voicemail, I need a little more information to make sure I get you what you need.

For the drainage model-are there particular locations of interest that you need stage/flow information? If you can send me a map or exhibit showing your locations of interest, and what in particular you are wanting, I can get you that information.

I believe you also need the WMCA file. Do you have any preference on file type between a GIS file or AutoCad? Also, just to confirm, is your project in Stateplane as far as datum? I will get you that file.

For any other file request you can reach out to Daniel Bollone our GIS Administrator. His email is: dbollone@rcid.org

Let me know if you have any questions.

Thanks,

Katherine Luetzow, PE, CFM
Sr. Water Resources Engineer
Planning & Engineering
Reedy Creek Improvement District
Office (407) 828-2954

Cell (407) 840-1246
www.rcid.org



From: Scott, Erik <Erik.Scott@rsandh.com>
Sent: Tuesday, April 12, 2022 4:36 PM
To: Kolbo, Kate <kkolbo@rcid.org>
Cc: Reed, Douglas <Douglas.Reed@rsandh.com>; P. E. Stephanie Underwood (Stephanie.Underwood@dot.state.fl.us) <Stephanie.Underwood@dot.state.fl.us>
Subject: 446581-1/446164-1 Poinciana Parkway Extension & Widen Western Beltway: RCID H&H Model

Good afternoon Kate,

Per our conversation during the March 3 coordination meeting with yourself and Florida's Turnpike Enterprise staff regarding the PD&E studies Widening Western Beltway and Poinciana Parkway Extension I would like to request the most current version of the RCID hydrologic / hydraulic model to verify runoff rates and stages in the vicinity of these two projects.

In addition, could you please put me in touch with your GIS specialist. It seems as though some of the data we received previously has since been superseded.

Thank you,
Erik

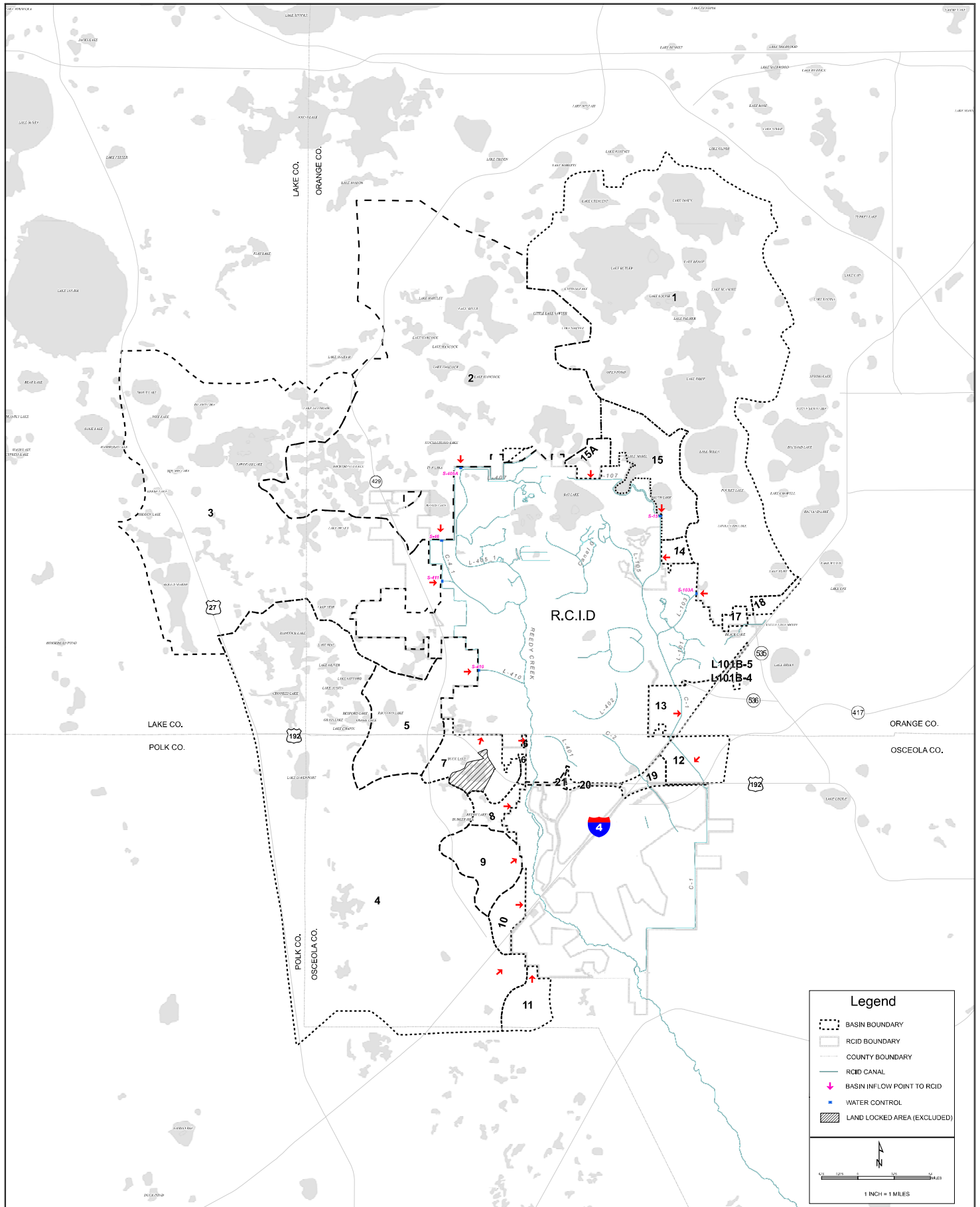
Erik Scott, PE

Water Resources Engineer
1715 N Westshore Blvd, Suite 600, Tampa, FL 33607
813-636-2632

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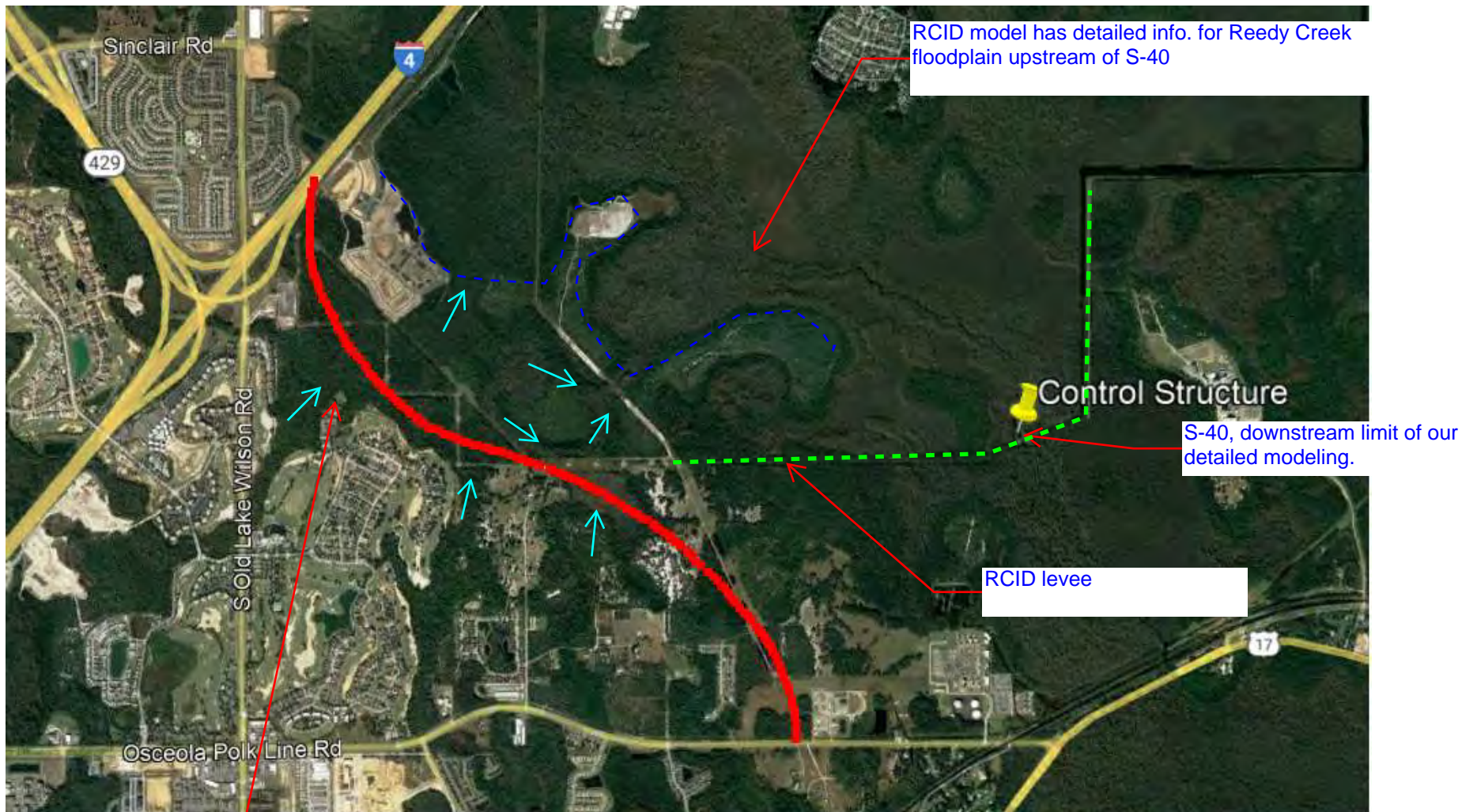
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TRIBUTARY LAND
WATERSHED MAP

REEDY CREEK IMPROVEMENT DISTRICT



We have outside areas modeled as tributary inflow, but it is not detailed. The model takes the entire basin/inflow and applies it to where that flow hits our primary system. So in this area, it is treated as direct inflow to the main Reedy Creek thread.

In reality this flow does split after entering RCID property as shown, but detailed modeling does not currently exist for this area. It is also sloping from Davenport Creek down to Reedy Creek, as Reedy Creek is lower than Davenport. Reedy Creek is also falling as it heads downstream toward S-40. So a complicated area!

S-40 is a dual, D-710 Amil gate. We have a maximum permitted discharge of 3,282 cfs for the 10-year, 72-hour event.

There is a USGS gauge at Intercession city and downstream of S-40. Perhaps that can be used to help, though still pretty far from your site.

**REACH 35
35RM1.677
100YR**

100-year Floodplain Stage (DG): 75.47
100-year Floodplain Stage (NAVD 88): 74.17

TIME HOURS	35RM1.67	
	35RM1.67 7 100YR STAGE FEET (DG)	7 100YR STAGE FEET (NAVD 88)
01/01/1988 07:00	70.28	68.98
01/01/1988 08:00	70.28	68.98
01/01/1988 09:00	70.29	68.99
01/01/1988 10:00	70.29	68.99
01/01/1988 11:00	70.29	68.99
01/01/1988 12:00	70.29	68.99
01/01/1988 13:00	70.29	68.99
01/01/1988 14:00	70.29	68.99
01/01/1988 15:00	70.29	68.99
01/01/1988 16:00	70.29	68.99
01/01/1988 17:00	70.29	68.99
01/01/1988 18:00	70.29	68.99
01/01/1988 19:00	70.28	68.98
01/01/1988 20:00	70.28	68.98
01/01/1988 21:00	70.27	68.97
01/01/1988 22:00	70.27	68.97
01/01/1988 23:00	70.26	68.96
01/02/1988 00:00	70.26	68.96
01/02/1988 01:00	70.25	68.95
01/02/1988 02:00	70.25	68.95
01/02/1988 03:00	70.24	68.94
01/02/1988 04:00	70.24	68.94
01/02/1988 05:00	70.24	68.94
01/02/1988 06:00	70.23	68.93
01/02/1988 07:00	70.23	68.93
01/02/1988 08:00	70.23	68.93
01/02/1988 09:00	70.23	68.93
01/02/1988 10:00	70.23	68.93
01/02/1988 11:00	70.24	68.94
01/02/1988 12:00	70.24	68.94
01/02/1988 13:00	70.25	68.95
01/02/1988 14:00	70.26	68.96
01/02/1988 15:00	70.27	68.97
01/02/1988 16:00	70.28	68.98
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01/02/1988 18:00	70.32	69.02
01/02/1988 19:00	70.34	69.04
01/02/1988 20:00	70.36	69.06

01/02/1988 21:00	70.38	69.08
01/02/1988 22:00	70.40	69.10
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01/03/1988 08:00	70.68	69.38
01/03/1988 09:00	70.72	69.42
01/03/1988 10:00	70.79	69.49
01/03/1988 11:00	70.87	69.57
01/03/1988 12:00	70.98	69.68
01/03/1988 13:00	71.09	69.79
01/03/1988 14:00	71.20	69.90
01/03/1988 15:00	71.28	69.98
01/03/1988 16:00	71.35	70.05
01/03/1988 17:00	71.41	70.11
01/03/1988 18:00	71.49	70.19
01/03/1988 19:00	71.77	70.47
01/03/1988 20:00	72.09	70.79
01/03/1988 21:00	72.48	71.18
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01/03/1988 23:00	73.00	71.70
01/04/1988 00:00	73.19	71.89
01/04/1988 01:00	73.36	72.06
01/04/1988 02:00	73.51	72.21
01/04/1988 03:00	73.66	72.36
01/04/1988 04:00	73.80	72.50
01/04/1988 05:00	73.94	72.64
01/04/1988 06:00	74.09	72.79
01/04/1988 07:00	74.24	72.94
01/04/1988 08:00	74.39	73.09
01/04/1988 09:00	74.53	73.23
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01/04/1988 11:00	74.78	73.48
01/04/1988 12:00	74.89	73.59
01/04/1988 13:00	75.00	73.70
01/04/1988 14:00	75.09	73.79
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01/04/1988 17:00	75.30	74.00
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01/04/1988 20:00	75.42	74.12
01/04/1988 21:00	75.44	74.14
01/04/1988 22:00	75.46	74.16
01/04/1988 23:00	75.47	74.17
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01/05/1988 02:00	75.47	74.17
01/05/1988 03:00	75.46	74.16
01/05/1988 04:00	75.45	74.15
01/05/1988 05:00	75.44	74.14
01/05/1988 06:00	75.42	74.12
01/05/1988 07:00	75.41	74.11
01/05/1988 08:00	75.39	74.09
01/05/1988 09:00	75.37	74.07
01/05/1988 10:00	75.35	74.05
01/05/1988 11:00	75.33	74.03
01/05/1988 12:00	75.31	74.01
01/05/1988 13:00	75.29	73.99
01/05/1988 14:00	75.27	73.97
01/05/1988 15:00	75.25	73.95
01/05/1988 16:00	75.23	73.93
01/05/1988 17:00	75.21	73.91
01/05/1988 18:00	75.19	73.89
01/05/1988 19:00	75.16	73.86
01/05/1988 20:00	75.14	73.84
01/05/1988 21:00	75.11	73.81
01/05/1988 22:00	75.09	73.79
01/05/1988 23:00	75.06	73.76
01/06/1988 00:00	75.03	73.73
01/06/1988 01:00	75.00	73.70
01/06/1988 02:00	74.98	73.68
01/06/1988 03:00	74.95	73.65
01/06/1988 04:00	74.93	73.63
01/06/1988 05:00	74.90	73.60
01/06/1988 06:00	74.87	73.57
01/06/1988 07:00	74.83	73.53
01/06/1988 08:00	74.80	73.50
01/06/1988 09:00	74.77	73.47
01/06/1988 10:00	74.74	73.44
01/06/1988 11:00	74.71	73.41
01/06/1988 12:00	74.67	73.37
01/06/1988 13:00	74.64	73.34
01/06/1988 14:00	74.61	73.31
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01/06/1988 18:00	74.47	73.17

01/06/1988 19:00	74.43	73.13
01/06/1988 20:00	74.41	73.11
01/06/1988 21:00	74.38	73.08
01/06/1988 22:00	74.34	73.04
01/06/1988 23:00	74.31	73.01
01/07/1988 00:00	74.27	72.97
01/07/1988 01:00	74.24	72.94
01/07/1988 02:00	74.20	72.90
01/07/1988 03:00	74.17	72.87
01/07/1988 04:00	74.13	72.83
01/07/1988 05:00	74.09	72.79
01/07/1988 06:00	74.06	72.76
01/07/1988 07:00	74.02	72.72
01/07/1988 08:00	73.98	72.68
01/07/1988 09:00	73.94	72.64
01/07/1988 10:00	73.90	72.60
01/07/1988 11:00	73.87	72.57
01/07/1988 12:00	73.84	72.54
01/07/1988 13:00	73.81	72.51
01/07/1988 14:00	73.77	72.47
01/07/1988 15:00	73.73	72.43
01/07/1988 16:00	73.70	72.40
01/07/1988 17:00	73.66	72.36
01/07/1988 18:00	73.63	72.33
01/07/1988 19:00	73.59	72.29
01/07/1988 20:00	73.56	72.26
01/07/1988 21:00	73.52	72.22
01/07/1988 22:00	73.49	72.19
01/07/1988 23:00	73.45	72.15
01/08/1988 00:00	73.42	72.12
01/08/1988 01:00	73.38	72.08
01/08/1988 02:00	73.34	72.04
01/08/1988 03:00	73.31	72.01
01/08/1988 04:00	73.29	71.99
01/08/1988 05:00	73.26	71.96
01/08/1988 06:00	73.23	71.93
01/08/1988 07:00	73.19	71.89
01/08/1988 08:00	73.16	71.86
01/08/1988 09:00	73.13	71.83
01/08/1988 10:00	73.10	71.80
01/08/1988 11:00	73.06	71.76
01/08/1988 12:00	73.03	71.73
01/08/1988 13:00	73.00	71.70
01/08/1988 14:00	72.97	71.67
01/08/1988 15:00	72.93	71.63
01/08/1988 16:00	72.90	71.60
01/08/1988 17:00	72.87	71.57

01/08/1988 18:00	72.83	71.53
01/08/1988 19:00	72.80	71.50
01/08/1988 20:00	72.76	71.46
01/08/1988 21:00	72.74	71.44
01/08/1988 22:00	72.72	71.42
01/08/1988 23:00	72.69	71.39
01/09/1988 00:00	72.65	71.35
01/09/1988 01:00	72.63	71.33
01/09/1988 02:00	72.60	71.30
01/09/1988 03:00	72.57	71.27
01/09/1988 04:00	72.54	71.24
01/09/1988 05:00	72.52	71.22
01/09/1988 06:00	72.49	71.19
01/09/1988 07:00	72.47	71.17
01/09/1988 08:00	72.44	71.14
01/09/1988 09:00	72.42	71.12
01/09/1988 10:00	72.40	71.10
01/09/1988 11:00	72.37	71.07
01/09/1988 12:00	72.35	71.05
01/09/1988 13:00	72.33	71.03
01/09/1988 14:00	72.30	71.00
01/09/1988 15:00	72.28	70.98
01/09/1988 16:00	72.26	70.96
01/09/1988 17:00	72.23	70.93
01/09/1988 18:00	72.21	70.91
01/09/1988 19:00	72.18	70.88
01/09/1988 20:00	72.17	70.87
01/09/1988 21:00	72.16	70.86
01/09/1988 22:00	72.14	70.84
01/09/1988 23:00	72.12	70.82
01/10/1988 00:00	72.11	70.81
01/10/1988 01:00	72.09	70.79
01/10/1988 02:00	72.07	70.77
01/10/1988 03:00	72.06	70.76
01/10/1988 04:00	72.04	70.74
01/10/1988 05:00	72.03	70.73
01/10/1988 06:00	72.01	70.71
01/10/1988 07:00	72.00	70.70
01/10/1988 08:00	71.98	70.68
01/10/1988 09:00	71.97	70.67
01/10/1988 10:00	71.96	70.66
01/10/1988 11:00	71.95	70.65
01/10/1988 12:00	71.94	70.64
01/10/1988 13:00	71.92	70.62
01/10/1988 14:00	71.91	70.61
01/10/1988 15:00	71.90	70.60
01/10/1988 16:00	71.89	70.59

01/10/1988 17:00	71.89	70.59
01/10/1988 18:00	71.88	70.58
01/10/1988 19:00	71.87	70.57
01/10/1988 20:00	71.86	70.56
01/10/1988 21:00	71.85	70.55
01/10/1988 22:00	71.85	70.55
01/10/1988 23:00	71.84	70.54
01/11/1988 00:00	71.83	70.53

**REACH 35
35RM1.677
10YR**

10-year Peak Stage (DG): 73.77
10-year Peak Stage (NAVD 88): 72.47

TIME HOURS	35RM1.67	
	35RM1.67 7 10YR STAGE FEET (DG)	7 10YR STAGE FEET (NAVD 88)
01/01/1988 07:00	70.28	68.98
01/01/1988 08:00	70.28	68.98
01/01/1988 09:00	70.29	68.99
01/01/1988 10:00	70.29	68.99
01/01/1988 11:00	70.29	68.99
01/01/1988 12:00	70.29	68.99
01/01/1988 13:00	70.29	68.99
01/01/1988 14:00	70.29	68.99
01/01/1988 15:00	70.29	68.99
01/01/1988 16:00	70.29	68.99
01/01/1988 17:00	70.29	68.99
01/01/1988 18:00	70.28	68.98
01/01/1988 19:00	70.28	68.98
01/01/1988 20:00	70.28	68.98
01/01/1988 21:00	70.27	68.97
01/01/1988 22:00	70.27	68.97
01/01/1988 23:00	70.26	68.96
01/02/1988 00:00	70.25	68.95
01/02/1988 01:00	70.25	68.95
01/02/1988 02:00	70.24	68.94
01/02/1988 03:00	70.24	68.94
01/02/1988 04:00	70.23	68.93
01/02/1988 05:00	70.23	68.93
01/02/1988 06:00	70.22	68.92
01/02/1988 07:00	70.22	68.92
01/02/1988 08:00	70.22	68.92
01/02/1988 09:00	70.22	68.92
01/02/1988 10:00	70.22	68.92
01/02/1988 11:00	70.22	68.92
01/02/1988 12:00	70.22	68.92
01/02/1988 13:00	70.22	68.92
01/02/1988 14:00	70.22	68.92
01/02/1988 15:00	70.23	68.93
01/02/1988 16:00	70.23	68.93
01/02/1988 17:00	70.24	68.94
01/02/1988 18:00	70.24	68.94
01/02/1988 19:00	70.25	68.95
01/02/1988 20:00	70.26	68.96

01/02/1988 21:00	70.27	68.97
01/02/1988 22:00	70.28	68.98
01/02/1988 23:00	70.29	68.99
01/03/1988 00:00	70.30	69.00
01/03/1988 01:00	70.31	69.01
01/03/1988 02:00	70.32	69.02
01/03/1988 03:00	70.33	69.03
01/03/1988 04:00	70.35	69.05
01/03/1988 05:00	70.36	69.06
01/03/1988 06:00	70.38	69.08
01/03/1988 07:00	70.39	69.09
01/03/1988 08:00	70.41	69.11
01/03/1988 09:00	70.43	69.13
01/03/1988 10:00	70.45	69.15
01/03/1988 11:00	70.49	69.19
01/03/1988 12:00	70.54	69.24
01/03/1988 13:00	70.60	69.30
01/03/1988 14:00	70.67	69.37
01/03/1988 15:00	70.75	69.45
01/03/1988 16:00	70.85	69.55
01/03/1988 17:00	70.95	69.65
01/03/1988 18:00	71.08	69.78
01/03/1988 19:00	71.26	69.96
01/03/1988 20:00	71.43	70.13
01/03/1988 21:00	71.54	70.24
01/03/1988 22:00	71.69	70.39
01/03/1988 23:00	71.81	70.51
01/04/1988 00:00	71.97	70.67
01/04/1988 01:00	72.11	70.81
01/04/1988 02:00	72.23	70.93
01/04/1988 03:00	72.34	71.04
01/04/1988 04:00	72.45	71.15
01/04/1988 05:00	72.56	71.26
01/04/1988 06:00	72.67	71.37
01/04/1988 07:00	72.80	71.50
01/04/1988 08:00	72.91	71.61
01/04/1988 09:00	73.02	71.72
01/04/1988 10:00	73.14	71.84
01/04/1988 11:00	73.25	71.95
01/04/1988 12:00	73.36	72.06
01/04/1988 13:00	73.44	72.14
01/04/1988 14:00	73.51	72.21
01/04/1988 15:00	73.57	72.27
01/04/1988 16:00	73.63	72.33
01/04/1988 17:00	73.67	72.37
01/04/1988 18:00	73.71	72.41
01/04/1988 19:00	73.73	72.43

01/04/1988 20:00	73.75	72.45
01/04/1988 21:00	73.77	72.47
01/04/1988 22:00	73.77	72.47
01/04/1988 23:00	73.77	72.47
01/05/1988 00:00	73.76	72.46
01/05/1988 01:00	73.75	72.45
01/05/1988 02:00	73.73	72.43
01/05/1988 03:00	73.71	72.41
01/05/1988 04:00	73.69	72.39
01/05/1988 05:00	73.66	72.36
01/05/1988 06:00	73.63	72.33
01/05/1988 07:00	73.60	72.30
01/05/1988 08:00	73.56	72.26
01/05/1988 09:00	73.53	72.23
01/05/1988 10:00	73.49	72.19
01/05/1988 11:00	73.45	72.15
01/05/1988 12:00	73.40	72.10
01/05/1988 13:00	73.36	72.06
01/05/1988 14:00	73.31	72.01
01/05/1988 15:00	73.29	71.99
01/05/1988 16:00	73.26	71.96
01/05/1988 17:00	73.22	71.92
01/05/1988 18:00	73.18	71.88
01/05/1988 19:00	73.14	71.84
01/05/1988 20:00	73.09	71.79
01/05/1988 21:00	73.05	71.75
01/05/1988 22:00	73.01	71.71
01/05/1988 23:00	72.97	71.67
01/06/1988 00:00	72.92	71.62
01/06/1988 01:00	72.88	71.58
01/06/1988 02:00	72.83	71.53
01/06/1988 03:00	72.78	71.48
01/06/1988 04:00	72.74	71.44
01/06/1988 05:00	72.71	71.41
01/06/1988 06:00	72.67	71.37
01/06/1988 07:00	72.63	71.33
01/06/1988 08:00	72.59	71.29
01/06/1988 09:00	72.55	71.25
01/06/1988 10:00	72.52	71.22
01/06/1988 11:00	72.48	71.18
01/06/1988 12:00	72.45	71.15
01/06/1988 13:00	72.42	71.12
01/06/1988 14:00	72.39	71.09
01/06/1988 15:00	72.36	71.06
01/06/1988 16:00	72.33	71.03
01/06/1988 17:00	72.30	71.00
01/06/1988 18:00	72.27	70.97

01/06/1988 19:00	72.24	70.94
01/06/1988 20:00	72.21	70.91
01/06/1988 21:00	72.18	70.88
01/06/1988 22:00	72.17	70.87
01/06/1988 23:00	72.15	70.85
01/07/1988 00:00	72.13	70.83
01/07/1988 01:00	72.10	70.80
01/07/1988 02:00	72.08	70.78
01/07/1988 03:00	72.06	70.76
01/07/1988 04:00	72.04	70.74
01/07/1988 05:00	72.02	70.72
01/07/1988 06:00	72.00	70.70
01/07/1988 07:00	71.98	70.68
01/07/1988 08:00	71.96	70.66
01/07/1988 09:00	71.94	70.64
01/07/1988 10:00	71.92	70.62
01/07/1988 11:00	71.90	70.60
01/07/1988 12:00	71.89	70.59
01/07/1988 13:00	71.87	70.57
01/07/1988 14:00	71.86	70.56
01/07/1988 15:00	71.84	70.54
01/07/1988 16:00	71.83	70.53
01/07/1988 17:00	71.81	70.51
01/07/1988 18:00	71.80	70.50
01/07/1988 19:00	71.79	70.49
01/07/1988 20:00	71.78	70.48
01/07/1988 21:00	71.77	70.47
01/07/1988 22:00	71.76	70.46
01/07/1988 23:00	71.75	70.45
01/08/1988 00:00	71.74	70.44
01/08/1988 01:00	71.73	70.43
01/08/1988 02:00	71.72	70.42
01/08/1988 03:00	71.71	70.41
01/08/1988 04:00	71.70	70.40
01/08/1988 05:00	71.69	70.39
01/08/1988 06:00	71.68	70.38
01/08/1988 07:00	71.68	70.38
01/08/1988 08:00	71.67	70.37
01/08/1988 09:00	71.66	70.36
01/08/1988 10:00	71.65	70.35
01/08/1988 11:00	71.64	70.34
01/08/1988 12:00	71.63	70.33
01/08/1988 13:00	71.63	70.33
01/08/1988 14:00	71.62	70.32
01/08/1988 15:00	71.62	70.32
01/08/1988 16:00	71.62	70.32
01/08/1988 17:00	71.61	70.31

01/08/1988 18:00	71.61	70.31
01/08/1988 19:00	71.60	70.30
01/08/1988 20:00	71.59	70.29
01/08/1988 21:00	71.59	70.29
01/08/1988 22:00	71.58	70.28
01/08/1988 23:00	71.57	70.27
01/09/1988 00:00	71.57	70.27
01/09/1988 01:00	71.56	70.26
01/09/1988 02:00	71.55	70.25
01/09/1988 03:00	71.55	70.25
01/09/1988 04:00	71.54	70.24
01/09/1988 05:00	71.53	70.23
01/09/1988 06:00	71.53	70.23
01/09/1988 07:00	71.52	70.22
01/09/1988 08:00	71.52	70.22
01/09/1988 09:00	71.51	70.21
01/09/1988 10:00	71.50	70.20
01/09/1988 11:00	71.50	70.20
01/09/1988 12:00	71.49	70.19
01/09/1988 13:00	71.49	70.19
01/09/1988 14:00	71.48	70.18
01/09/1988 15:00	71.48	70.18
01/09/1988 16:00	71.47	70.17
01/09/1988 17:00	71.47	70.17
01/09/1988 18:00	71.46	70.16
01/09/1988 19:00	71.46	70.16
01/09/1988 20:00	71.45	70.15
01/09/1988 21:00	71.45	70.15
01/09/1988 22:00	71.44	70.14
01/09/1988 23:00	71.44	70.14
01/10/1988 00:00	71.43	70.13
01/10/1988 01:00	71.43	70.13
01/10/1988 02:00	71.42	70.12
01/10/1988 03:00	71.42	70.12
01/10/1988 04:00	71.41	70.11
01/10/1988 05:00	71.41	70.11
01/10/1988 06:00	71.41	70.11
01/10/1988 07:00	71.40	70.10
01/10/1988 08:00	71.40	70.10
01/10/1988 09:00	71.39	70.09
01/10/1988 10:00	71.39	70.09
01/10/1988 11:00	71.38	70.08
01/10/1988 12:00	71.38	70.08
01/10/1988 13:00	71.38	70.08
01/10/1988 14:00	71.37	70.07
01/10/1988 15:00	71.37	70.07
01/10/1988 16:00	71.36	70.06

01/10/1988 17:00	71.36	70.06
01/10/1988 18:00	71.36	70.06
01/10/1988 19:00	71.35	70.05
01/10/1988 20:00	71.35	70.05
01/10/1988 21:00	71.34	70.04
01/10/1988 22:00	71.34	70.04
01/10/1988 23:00	71.34	70.04
01/11/1988 00:00	71.33	70.03

PERMIT DATA

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1

ERP No. 49-187636001

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1

TABLE III-1 POST BAS PARAMETER SUMMARY
WESTERN BELTWAY PART C SECTION 1

POND	F-2-A / F-2-B	F-4-A / F-4-B	F-7	G-1	B-2
Location	Sta. 98+00 Rt. BL SR400 Sta. 106+00 Rt. BL SR400	Sta. 107+00 Lt. BL SR400 Sta. 114+00 Lt. BL SR400	Sta. 112+00 Rt. BL SR400	Sta. 123+00 Rt. BL SR400	Sta. 86+00 Lt. BL SR429
Type of Treatment	Wet Detention	Wet Detention	Wet Detention	Wet Detention	Wet Detention
Receiving Body	Davenport Tributary	Davenport Tributary	Davenport Tributary	Davenport Tributary	Davenport Tributary
STAGES					
Seasonal High Tailwater, ft navd	91.8	93.3	91.8	85.3	99
Existing Ground El., ft navd	A 93 - 107 B 95 - 102	A 98 - 105 B 105 - 108	96 - 108	84 - 107	100 - 110
Seasonal High Ground Water, ft navd	94.8	95.7	94.0	87.1	99.4
Pond Bottom El., ft navd	87.2	87.5	87.0	79.3	93.0
V-notch (control) El., ft navd	93.2	93.5	93.0	85.3	99.0
Top of Water Quality Vol., ft, navd	94.0	94.2	93.5	86.0	99.5
Peak Stage (25yr.72hr), ft navd	96.7	97.1	94.8	88.2	101.5
Design High Water, ft navd	97.2	97.5	96.0	88.5	102.0
Berm El., ft navd (Back of Berm)	100.2	100.5	99.0	89.8	105.0
BASIN AREAS					
Pond Total Drainage Area, ac	20.87	36.32	8.53	20.34	14.78
Impervious Area Onsite and Offsite, ac	6.63	14.13	1.02	8.24	7.56
Pond Area at Control, ac	2.28	4.57	2.31	2.58	3.51
Pervious Area, ac	11.96	17.62	5.20	9.52	3.71
WATER QUALITY DESIGN					
Treatment Volume Required, ac-ft	1.74	3.03	0.71	1.72	1.58
Treatment Volume Provided, ac-ft	1.96	3.36	1.22	1.85	1.78
V-notch angle, degrees	74	122	90	90	119
V-notch vertical opening, ft	0.98	0.81	0.60	1.75	0.50
WATER QUANTITY DESIGN					
Rainfall Depth (25-yr 72-hr), inch	12.23	12.23	12.23	12.23	12.23
Rainfall Distribution	SFWMD72	SFWMD72	SFWMD72	SFWMD72	SFWMD72
Unit Hydrograph Shape Factor	323	323	323	323	323
Pre-Development Discharge, cfs	56.9	89.0	23.5	79.6	51.9
Post-Development Discharge, cfs	5.2	6.8	1.8	16.3	2.2

Note:
ALL ELEVATIONS ARE NAVD '88 DATUM
(NAVD '88 EL 0.00 = NGVD '29 EL 0.87
For example: 95.00 shown in the plans is equal
to 95.87 NGVD '29.

TABLE III-1 POST BAS ARAMETER SUMMARY
WESTERN BELTWAY PART C SECTION 1

POND	B-3A	B-3B	B-3C	B-3D	B-5
Location	Sta. 125+00 Rt. BL SR429	Sta. 121+00 Rt. BL SR429	Sta. 113+00 Rt. BL SR429	Sta. 105+00 Rt. BL SR429	Sta. 138+00 Rt. BL SR429
Type of Treatment	Wet Detention	Wet Detention	Dry Retention	Dry Retention	Wet Detention
Receiving Body	Davenport Creek	Davenport Creek	Davenport Creek	Davenport Creek	Davenport Creek
STAGES					
Seasonal High Tailwater, ft navd	100.5	Note 1	Note 1	Note 1	Note 1
Existing Ground El., ft navd	101 - 116	111 - 128	124 - 129	132 - 134	103 - 124
Seasonal High Ground Water, ft navd	100.8	< 103.0	< 103.0	< 107.5	104.7
Pond Bottom El., ft navd	95.0	95.0	106.2	111.9	95.0
V-notch (control) El., ft navd	101.0	101.0	106.7	113.1	101.0
Top of Water Quality Vol., ft navd	101.5	101.5	(Note 3)	(Note 3)	101.5
Peak Stage (25yr, 72hr), ft navd	104.6	104.7	108.8	114.7	104.6
Design High Water, ft navd	105.0	106.0	109.2	114.9	105.0
Berm El., ft navd (Back of Berm)	108.0	107.0	109.2	114.9	107.0
BASIN AREAS					
Pond Total Drainage Area, ac	9.01	4.73	7.87	5.94	12.41
Impervious Area Onsite and Offsite, ac	5.70	1.73	2.41	2.73	2.10
Pond Area at Control, ac	1.28	0.29	1.37	0.46	3.60
Pervious Area, ac	2.03	2.71	4.09	2.75	6.71
WATER QUALITY DESIGN					
Treatment Volume Required, ac-ft	2.18	Note 2	Note 3	Note 3	Note 2
Treatment Volume Provided, ac-ft	2.64	Note 2	Note 3	Note 3	Note 2
V-notch angle, degrees	143	Note 2	45	45	Note 2
V-notch vertical opening, ft	0.50	Note 2	2.00	2.00	Note 2
WATER QUANTITY DESIGN					
Rainfall Depth (25-yr 72-hr), inch	12.23	12.23	12.23	12.23	12.23
Rainfall Distribution	SFWM72	SFWM72	SFWM72	SFWM72	SFWM72
Unit Hydrograph Shape Factor	323	323	323	323	323
Pre-Development Discharge, cfs	77.0	Note 1	Note 1	Note 1	Note 1
Post-Development Discharge, cfs	5.4	Note 1	Note 1	Note 1	Note 1

Note:
ALL ELEVATIONS ARE NAVD '88 DATUM
(NAVD '88 EL 0.00 = NGVD '29 EL 0.87
For example: 95.00 shown in the plans is equal
to 95.87 NGVD '29.

Note 1: Ponds B-3-A, B-3-B, B-3-C, B-3-D, and B-5 discharge through Pond B-3-A Control Structure.
Pre and Post discharge based on total B-3 and B-5 Basin.

Note 2: Water Quality for Ponds B-3-A, B-3-B, and B-5 are based on total B-3-A, B-3-B, B-3-C, B-3-D, and B-5 Basins.

Note 3: Ponds B-3-C, B-3-D, B-6-B, B-6-C, are dry detention ponds with no treatment volume.

**TABLE III-1 POST BAS ARAMETER SUMMARY
WESTERN BELTWAY PART C SECTION 1**

POND	B-4	B-6A	B-6B	B-6C	TOTALS
Location	Sta. 150+00 Lt. BL SR429	Sta. 1415+00 Lt. BL Ramp H	Sta. 113+00 Lt. BL SR429	Sta. 105+00 Lt. BL SR429	
Type of Treatment	Wet Detention	Wet Detention	Dry Retention	Dry Retention	
Receiving Body	Davenport Creek	Davenport Creek	Davenport Creek	Davenport Creek	
STAGES					
Seasonal High Tailwater, ft navd	101.0	99.5	Note 4	Note 4	
Existing Ground El., ft navd	100 - 110	101 - 114	129 - 133	118 - 127	
Seasonal High Ground Water, ft navd	101.9	99.5	<101.4	<107.1	
Pond Bottom El., ft navd	95.0	93.5	104.4	111.9	
V-notch (control) El., ft navd	101.0	99.5	104.9	112.4	
Top of Water Quality Vol., ft navd	101.9	100.0	(Note 3)	(Note 3)	
Peak Stage (25yr. 72hr), ft navd	104.7	100.7	107.0	114.4	
Design High Water, ft navd	105.0	101.0	107.4	114.9	
Berm El., ft navd (Back of Berm)	104.0 (Note 5)	103.0	107.4	114.9	
BASIN AREAS					
Pond Total Drainage Area, ac	22.90	7.71	7.91	5.75	185.07
Impervious Area Onsite and Offsite, ac	10.85	0.74	3.42	2.16	69.42
Pond Area at Control - Water Body, ac	2.60	3.33	1.41	0.99	30.58
Pervious Area, ac	9.45	3.64	3.08	2.60	85.07
WATER QUALITY DESIGN					
Treatment Volume Required, ac-ft	2.26	0.64	Note 3	Note 3	
Treatment Volume Provided, ac-ft	2.47	1.68	Note 3	Note 3	
V-notch angle, degrees	62	83	45	45	
V-notch vertical opening, ft	1.10	1.50	0.80	0.50	
WATER QUANTITY DESIGN					
Rainfall Depth (25-yr 72-hr), inch	12.23	12.23	12.23	12.23	
Rainfall Distribution	SFWMD72	SFWMD72	SFWMD72	SFWMD72	
Unit Hydrograph Shape Factor	323	323	323	323	
Pre-Development Discharge, cfs	73.8	38.0	Note 4	Note 4	
Post-Development Discharge, cfs	4.5	6.4	Note 4	Note 4	

Note 3: Ponds B-3-C, B-3-D, B-6-B, B-6-C, are dry detention ponds with no treatment volume.

Note 4: Ponds B-6-A, B-6-B, and B-6-C discharge through Pond B-6-A Control Structure. Pre and Post discharge based on total B-6 Basin.

Note 5: Pond B-4 DHW 25 Yr > Back of Berm but < Edge of Shoulder of WWTP Access Road.

Note:
ALL ELEVATIONS ARE NAVD '88 DATUM
(NAVD '88 EL 0.00 = NGVD '29 EL 0.87
For example: 95.00 shown in the plans is
equal to 95.87 NGVD '29.

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BASIN F-2 POST DATA

BASIN F-2A (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	6.63	98	0.95	
PERVIOUS (A)	9.97	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	1.58	100	1.00	
TOTAL	18.18	70.8	0.54	

BASIN F-2B (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	0.00	98	0.95	
PERVIOUS (A)	1.99	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	0.70	100	1.00	
TOTAL	2.69	61.5	0.41	

- NOTES:
- (1) Areas calculated in Microstation
 - (2) Curve Number based on SCS Soil Hydrologic Group and Land Use - TR55 Manual (Table 5-8)
 - (3) Runoff Coefficient used for computing permanent pool volume
 - (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares Use Hydrologic Group A and D (wetlands), SCS Soil Survey

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BASIN F-2

Required Water Quality Volume

Treatment Volume (Wet Detention):

The greater of 1.0 inch over the total project area or
 2.5 inches over the project impervious area (excluding ponds)

1 inch x	20.87	=	1.74	ac-ft
2.5 inches x	6.63	=	1.38	ac-ft
Required Treatment Volume		=	1.74	ac-ft

Provided Water Quality Volume

Stage	Elev. (ft navd)	Area (acres)	Volume (acre-ft)
CE	93.2	2.28	0.00
WQ Stage	94.0	2.62	1.96
DHW	97.2	3.30	11.43
TOB	98.2	3.55	14.85

Provided Treatment Volume	=	1.96	ac-ft
Required Treatment Volume	=	1.74	ac-ft
Provided/Required Volume	=	113%	OK

Size V-notch weir angle

V-notch weir angle (theta) sized using procedure found in SFWMD
 Basis of Review, page C-IV-26.

V-notch sized to bleed down 1/2 inch of treatment volume in 24 hours

$$\text{Theta} = 2 \times \arctan(0.492 \times \text{Vdet} / \text{H}^{2.5})$$

DA = drainage area (ac) =	20.87
Vdet (ac ft) = DA (ac) x 0.5" / 12"/ft	0.87
WQ Stage (ft navd) =	94.0
V-notch El. (ft navd) =	93.2
H (feet) =	0.8

Calculated Theta (degrees) = 73.5

Design Theta (degrees) = 74

V-notch slope (Horiz / Vert.) = 0.75

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Note:
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 For example: 95.00 shown in the plans is equal
 to 95.87 NGVD '29.

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 Ck JTW Date 1/25/01

BASIN F-4 POST DATA

BASIN F-4 (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	14.13	98	0.95	
PERVIOUS (A)	17.62	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	4.57	100	1.00	
TOTAL	36.32	74.0	0.59	

NOTES:

- (1) Areas calculated in Microstation
- (2) Curve Number based on SCS Soil Hydrologic Group and Land Use - TR55 Manual (Table 5-8)
- (3) Runoff Coefficient used for computing permanent pool volume
- (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares Use Hydrologic Group A and D (wetlands), SCS Soil Survey

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BASIN F-4

Required Water Quality Volume

Treatment Volume (Wet Detention):

The greater of 1.0 inch over the total project area or
 2.5 inches over the project impervious area (excluding ponds)

1 inch x	36.32	=	3.03	ac-ft
2.5 inches x	14.13	=	2.94	ac-ft
Required Treatment Volume		=	3.03	ac-ft

Provided Water Quality Volume

Stage	Elev. (ft navd)	Area (acres)	Volume (acre-ft)
CE	93.5	4.57	0.00
WQ Stage	94.2	5.04	3.36
DHW	97.5	5.66	21.02
TOB	98.5	5.93	26.81

Provided Treatment Volume	=	3.36	ac-ft
Required Treatment Volume	=	3.03	ac-ft
Provided/Required Volume	=	111%	OK

Size V-notch weir angle

V-notch weir angle (theta) sized using procedure found in SFWMD
 Basis of Review, page C-IV-26.

V-notch sized to bleed down 1/2 inch of treatment volume in 24 hours

$\Theta = 2 \times \arctan(0.492 \times V_{det} / H^{2.5})$

DA = drainage area (ac) =	36.32
Vdet (ac ft) = DA (ac) x 0.5" / 12"/ft	1.51
WQ Stage (ft navd) =	94.2
V-notch El. (ft navd) =	93.5
H (feet) =	0.7

Calculated Theta (degrees) = 122.3

Design Theta (degrees) = 122

V-notch slope (Horiz / Vert.) = 1.80

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Note:
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 For example: 95.00 shown in the plans is equal
 to 95.87 NGVD '29.

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BASIN B-2 POST DATA

BASIN B-2 (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	7.56	98	0.95	(5)
PERVIOUS (A)	3.71	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	3.51	100	1.00	
TOTAL	14.78	85.9	0.77	

- NOTES:
- (1) Areas calculated in Microstation
 - (2) Curve Number based on SCS Soil Hydrologic Group and Land Use - TR55 Manual (Table 5-8)
 - (3) Runoff Coefficient used for computing permanent pool volume
 - (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares Use Hydrologic Group A and D (wetlands), SCS Soil Survey
 - (5) Impervious Areas are based on future design with paved median

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BASIN B-2

Required Water Quality Volume

Treatment Volume (Wet Detention):
 The greater of 1.0 inch over the total project area or
 2.5 inches over the project impervious area (excluding ponds)

1 inch x	14.78	=	1.23	ac-ft
2.5 inches x	7.56	=	1.58	ac-ft
Required Treatment Volume		=	1.58	ac-ft

Provided Water Quality Volume

Stage	Elev. (ft navd)	Area (acres)	Volume (acre-ft)
CE	99.0	3.51	0.00
WQ Stage	99.5	3.61	1.78
DHW	102.0	4.11	11.43
TOB	103.0	4.31	15.64

Provided Treatment Volume	=	1.78	ac-ft
Required Treatment Volume	=	1.58	ac-ft
Provided/Required Volume	=	113%	OK

Size V-notch weir angle

V-notch weir angle (theta) sized using procedure found in SFWMD
 Basis of Review, page C-IV-26.

V-notch sized to bleed down 1/2 inch of treatment volume in 24 hours

Theta = $2 \times \arctan(0.492 \times V_{det} / H^{2.5})$

DA = drainage area (ac) =	14.78
Vdet (ac ft) = DA (ac) x 0.5" / 12"/ft	0.62
WQ Stage (ft navd) =	99.5
V-notch El. (ft navd) =	99.0
H (feet) =	0.5

Calculated Theta (degrees) = 119.5

Design Theta (degrees) = 119

V-notch slope (Horiz / Vert.) = 1.70

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Note:
 ALL ELEVATIONS ARE NAVD '88 DATUM
 (NAVD '88 EL 0.00 = NGVD '29 EL 0.87)
 For example: 95.00 shown in the plans is equal
 to 95.87 NGVD '29.

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BASIN B-3 POST DATA

BASIN B-3-A (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	5.70	98	0.95	(5)
PERVIOUS (A)	2.03	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	1.28	100	1.00	
TOTAL	9.01	87.0	0.79	

BASIN B-3-B (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	1.73	98	0.95	(5)
PERVIOUS (A)	2.71	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	0.29	100	1.00	
TOTAL	4.73	69.5	0.52	

- NOTES:
- (1) Areas calculated in Microstation
 - (2) Curve Number based on SCS Soil Hydrologic Group and Land Use - TR55 Manual (Table 5-8)
 - (3) Runoff Coefficient used for computing permanent pool volume
 - (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares Use Hydrologic Group A and D (wetlands), SCS Soil Survey
 - (5) Impervious Areas are based on future design with paved median

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BASIN B-3 POST DATA (CONT.)

BASIN B-3-C (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	2.41	98	0.95	(5)
PERVIOUS (A)	5.46	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	0.00	100	1.00	
TOTAL	7.87	63.3	0.43	

BASIN B-3-D (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	2.73	98	0.95	(5)
PERVIOUS (A)	3.21	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	0.00	100	1.00	
TOTAL	5.94	71.0	0.54	

- NOTES:
- (1) Areas calculated in Microstation
 - (2) Curve and Land Use - TR55 Manual (Table 5-8)
 - (3) Runoff Coefficient used for computing permanent pool volume
 - (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares Use Hydrologic Group A and D (wetlands), SCS Soil Survey
 - (5) Impervious Areas are based on future design with paved median

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BASIN B-5 POST DATA

BASIN B-5 (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	2.1	98	0.95	(5)
PERVIOUS (A)	6.71	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	3.60	100	1.00	
TOTAL	12.41	71.5	0.56	

- NOTES:
- (1) Areas calculated in Microstation
 - (2) Curve Number based on SCS Soil Hydrologic Group and Land Use - TR55 Manual (Table 5-8)
 - (3) Runoff Coefficient used for computing permanent pool volume
 - (4) Soil Type is based on Osceola County Soil Survey Use Hydrologic Group A and D (wetlands), SCS Soil Survey
 - (5) Impervious Areas are based on future design with paved median

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BASIN B-3-A & B-3-B & B-3-C & B-3-D & B-5

Assume minimal percolation
 in ponds B-3-C & B-3-D.

Required Water Quality Volume

Treatment Volume (Wet Detention):
 The greater of 1.0 inch over the total project area or
 2.5 inches over the project impervious area (excluding ponds)

1 inch x	39.96	=	3.33	ac-ft
2.5 inches x	14.67	=	3.06	ac-ft
Required Treatment Volume		=	3.33	ac-ft

Provided Water Quality Volume

Stage	Elev. (ft navd)	Area (acres)	Volume (acre-ft)
CE	101.0	5.17	0.00
WQ Stage	101.7	5.46	3.72
DHW	105.0	6.81	23.96

Provided Treatment Volume = 3.72 ac-ft
 Required Treatment Volume = 3.33 ac-ft
 Provided/Required Volume = 112% OK

Size V-notch weir angle

V-notch weir angle (theta) sized using procedure found in SFWMD
 Basis of Review, page C-IV-26.

V-notch sized to bleed down 1/2 inch of treatment volume in 24 hours

Theta = $2 \times \arctan(0.492 \times V_{det} / H^{2.5})$

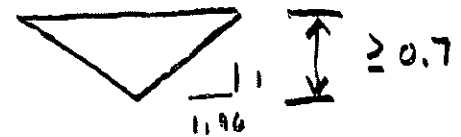
DA = drainage area (ac) = 39.96
 Vdet (ac ft) = DA (ac) x 0.5" / 12"/ft 1.67
 WQ Stage (ft navd) = 101.7
 V-notch El. (ft navd) = 101.0
 H (feet) = 0.7

Calculated Theta (degrees) = 126.8

Design Theta (degrees) = 126

V-notch slope (Horiz / Vert.) = 1.96

Ponds B-3-B, B-3-A, & B-5 provide sufficient
 water quality volume to treat the entire basin
 without the retention in ponds B-3-C & B-3-D.



Note:
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 (NAVD '88 EL 0.00 = NGVD '29 EL 0.87)
 For example: 95.00 shown in the plans is equal
 to 95.87 NGVD '29.

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BASIN B-4 POST DATA

BASIN B-4 (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	10.85	98	0.95	(5)
PERVIOUS (A)	7.79	48	0.20	(4)
PERVIOUS (D)	1.66	80	0.20	(4)
WATER	2.60	100	1.00	
TOTAL	22.90	79.9	0.65	

- NOTES:
- (1) Areas calculated in Microstation
 - (2) Curve Number based on SCS Soil Hydrologic Group and Land Use - TR55 Manual (Table 5-8)
 - (3) Runoff Coefficient used for computing permanent pool volume
 - (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares Use Hydrologic Group A and D (wetlands), SCS Soil Survey
 - (5) Impervious Areas are based on future design with paved median

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 Date 5/21/01

BASIN B-4

Required Water Quality Volume

Treatment Volume (Wet Detention):

The greater of 1.0 inch over the total project area or
 2.5 inches over the project impervious area (excluding ponds)

1 inch x	22.9	=	1.91	ac-ft
2.5 inches x	10.85	=	2.26	ac-ft
Required Treatment Volume		=	2.26	ac-ft

Provided Water Quality Volume

Stage	Elev. (ft navd)	Area (acres)	Volume (acre-ft)
CE	101.0	2.60	0.00
WQ Stage	101.9	2.89	2.47
TOB	103.0	3.25	5.85
DHW	105.0	5.16	14.26

Provided Treatment Volume = 2.47 ac-ft
 Required Treatment Volume = 2.26 ac-ft
 Provided/Required Volume = 109% OK

Size V-notch weir angle

V-notch weir angle (theta) sized using procedure found in SFWMD
 Basis of Review, page C-IV-26.

V-notch sized to bleed down 1/2 inch of treatment volume in 24 hours

$\Theta = 2 \times \arctan(0.492 \times V_{det} / H^{2.5})$

DA = drainage area (ac) = 22.90
 Vdet (ac ft) = DA (ac) x 0.5" / 12"/ft 0.95
 WQ Stage (ft navd) = 101.9
 V-notch El. (ft navd) = 101.0
 H (feet) = 0.9

Calculated Theta (degrees) = 62.8

Design Theta (degrees) = 62

V-notch slope (Horiz / Vert.) = 0.60

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Note:
 ALL ELEVATIONS ARE NAVD '88 DATUM
 (NAVD '88 EL 0.00 = NGVD '29 EL 0.87)
 For example: 95.00 shown in the plans is equal
 to 95.87 NGVD '29.

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BASIN B-6 POST DATA

BASIN B-6-A (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	0.74	98	0.95	(5)
PERVIOUS (A)	3.23	48	0.20	(4)
PERVIOUS (D)	0.41	80	0.20	(4)
WATER	3.33	100	1.00	
TOTAL	7.71	77.0	0.62	

BASIN B-6-B (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	3.42	98	0.95	(5)
PERVIOUS (A)	4.49	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	0.00	100	1.00	
TOTAL	7.91	69.6	0.52	

NOTES:

- (1) Areas calculated in Microstation
- (2) Curve Number based on SCS Soil Hydrologic Group and Land Use - TR55 Manual (Table 5-8)
- (3) Runoff Coefficient used for computing permanent pool volume
- (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares Use Hydrologic Group A and D (wetlands), SCS Soil Survey
- (5) Impervious Areas are based on future design with paved median

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BASIN B-6 POST DATA (CONT.)

BASIN B-6-C (POST)

<u>AREAS</u>	<u>ACRES (1)</u>	<u>CN (2)</u>	<u>C (3)</u>	
IMPERVIOUS	2.16	98	0.95	(5)
PERVIOUS (A)	3.59	48	0.20	(4)
PERVIOUS (D)	0.00	80	0.20	(4)
WATER	0.00	100	1.00	
TOTAL	5.75	66.8	0.48	

NOTES:

- (1) Areas calculated in Microstation
- (2) Curve
and Land Use - TR55 Manual (Table 5-8)
- (3) Runoff Coefficient used for computing permanent pool volume
- (4) Soil Type is based on Osceola County Soil Survey: Chandler, Hontoon, Pamello, & Tavares
Use Hydrologic Group A and D (wetlands), SCS Soil Survey
- (5) Impervious Areas are based on future design with paved median

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 By STW
 Ck SEY

Proj. No. C10003822.00
 Date 6-30-01
 Date 7-18-01

BASIN B-6-A+B-6-B+B-6-C

Assume minimal percolation
 in ponds B-6-B & B-6-C

Required Water Quality Volume

Treatment Volume (Wet Detention):

The greater of 1.0 inch over the total project area or
 2.5 inches over the project impervious area (excluding ponds)

1 inch x	21.37	=	1.78	ac-ft
2.5 inches x	6.32	=	1.32	ac-ft
Required Treatment Volume		=	1.78	ac-ft

Provided Water Quality Volume

Stage	Elev. (ft navd)	Area (acres)	Volume (acre-ft)
CE	99.5	3.33	0.00
WQ Stage	100.1	3.42	2.03
DHW	101.0	3.56	5.17
TOB	101.0	3.56	5.17

Provided Treatment Volume	=	<input type="text" value="2.03"/>	ac-ft
Required Treatment Volume	=	<input type="text" value="1.78"/>	ac-ft
Provided/Required Volume	=	114%	OK

Size V-notch weir angle

V-notch weir angle (theta) sized using procedure found in SFWMD
 Basis of Review, page C-IV-26.

V-notch sized to bleed down 1/2 inch of treatment volume in 24 hours

Theta = $2 \times \arctan(0.492 \times V_{det} / H^{2.5})$

DA = drainage area (ac) =	21.37
Vdet (ac ft) = DA (ac) x 0.5" / 12"/ft	0.89
WQ Stage (ft navd) =	100.1
V-notch El. (ft navd) =	99.5
H (feet) =	0.6

49-187636001

Calculated Theta (degrees) = 115.0

RECEIVED AUG 15 2001

Design Theta (degrees) = Use same theta as for
 Basin B-6-A only.

V-notch slope (Horiz / Vert.) = 1.57

Ponds B-6-A provides sufficient
 water quality volume to treat the entire basin
 without the retention in ponds B-6-B & B-6-C.

Note:
 ALL ELEVATIONS ARE NAVD '88 DATUM
 (NAVD '88 EL 0.00 = NGVD '29 EL 0.87)
 For example: 95.00 shown in the plans is equal
 to 95.87 NGVD '29.

ERP No. 49-00507-S

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1



FLORIDA DEPARTMENT OF Environmental Protection

CENTRAL DISTRICT OFFICE
3319 MAGUIRE BLVD., SUITE 232
ORLANDO, FLORIDA 32803

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

Permittee/Authorized Entity:

Florida Department of Transportation (FDOT), District 5
Casey Lyon, District Environmental Permit Coordinator

Casey.Lyon@dot.state.fl.us

719 South Woodland Boulevard
DeLand, Florida 32720

State Road 400 (I-4) and State Road 429 Interchange Stormwater Management System (SWMS)

Authorized Agent:

AECOM Technical Services

Dustin Perkins, P.E., Transportation Manager

Dustin.Perkins@aecom.com

150 North Orange Avenue, Suite 200
Orlando, Florida 32801

Environmental Resource Permit – Individual

State-Owned Submerged Lands Authorization – Not Applicable

U.S. Army Corps of Engineers – Separate Authorization May Be Required

Permit No.: 0187636-003-EI

Oculus Facility-Site ID Search: ERP_187636

Permit Issuance Date: August 19, 2019

Permit Construction Expiration Date: August 19, 2024



FLORIDA DEPARTMENT OF Environmental Protection

CENTRAL DISTRICT OFFICE
3319 MAGUIRE BLVD., SUITE 232
ORLANDO, FLORIDA 32803

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Governor

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Secretary

Environmental Resource Permit

Permittee: FDOT

Attention: Casey Lyon, District Environmental Permit Coordinator

Permit No.: 0187636-003-EI

PROJECT LOCATION

The activities authorized by this permit are north of Osceola Polk Line Road, east of US Highway 27, at the interchange of SR429 and I-4, in Sections 22, 23, 26, 27, Township 25 South and Range 27 East, Kissimmee, Osceola County.

PROJECT DESCRIPTION

The permittee will be widening the existing six (6) lane divided urban highway to a ten (10) lane divided urban highway. The stormwater management system (SWMS) serving the existing and proposed lanes consists of one (1) new wet detention pond, Pond 108B, and seven (7) existing wet detention ponds. Existing Ponds F-4-A, F-2-A, F-2-B, F-4-B and G-1 are proposed to be expanded while existing Ponds B2 and F-7 are not proposed to be modified within this authorization. All existing ponds were originally authorized to be constructed under ERP49-187636-001-EI and are to be named differently under this authorization as described on the Wet Detention Ponds Names table below.

Wet Detention Ponds Names	
Existing Name	Proposed Name
B2	104
F-4-A	105A
F-2-A	106A
F-2-B	106B
F-7	107
F-4-B	105B
G-1	108A

The permittee will be impacting 5.79 acres of direct wetland impacts and 1.57 acres of secondary impacts of wetlands. Mitigation to offset these impacts includes the purchase of 2.79 forested wetland credits and 0.05 herbaceous wetland credits from Bullfrog Mitigation Bank (SFWMD Permit No 53-0004-M). Additionally, the permittee is authorized to permanently impact 10.14 acres of other surface waters. Mitigation is not requested for the surface water impacts due to in-kind replacement and construction of new stormwater management features to sufficiently offset the impacts.

AUTHORIZATIONS

The permittee is authorized to:

1. Construct Pond 108B as depicted on Exhibits 1 and 2;
2. Expand all existing ponds with the exception of Ponds B2 (104) and F-7 (107) as depicted on Exhibits 1 and 2;

3. Rename all existing ponds as depicted on Exhibits 1 and 2; and
4. Impact 5.79 acres of direct impacts of wetlands, 1.57 acres of secondary impacts of wetlands, and 10.14 acres of impacts to other surface waters on Exhibit 3.

PERMIT HISTORY

- ERP49-187636-001-EI, Exhibit 5, is the Individual Permit that authorized the construction of the SWMS associated with SR 429 from I-4 to Seidel Road. There were 61.28 acres of wetland impacts associated with this authorization. This authorization was issued on August 21, 2002 with an expiration date of May 15, 2007.
- ERP49-187636-002-EM was an application to modify SR429 to shift pavement to accommodate the high-speed rail. The application was received on November 16, 2010 and withdrawn on March 11, 2011.

Environmental Resource Permit

The Department has determined that the activity qualifies for an Environmental Resource Permit. Therefore, the Environmental Resource Permit is hereby granted, pursuant to Part IV of Chapter 373, Florida Statutes (F.S.), and Chapter 62-330, Florida Administrative Code (F.A.C.).

Sovereignty Submerged Lands Authorization

As staff to the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), the Department has determined the activity is not on submerged lands owned by the State of Florida. Therefore, your project is not subject to the requirements of Chapter 253, F.S., or Chapter 18-21, F.A.C.

Federal Authorization

Your proposed activity as outlined on your application and attached drawings **does not qualify** for Federal authorization pursuant to the State Programmatic General Permit and a **SEPARATE permit** or authorization **may be required** from the U. S. Army Corps of Engineers. You must apply separately to the Corps using the federal application form (ENG 4345). More information about Corps permitting may be found online in the Jacksonville District Regulatory Division Sourcebook. **Failure to obtain Corps authorization prior to construction could subject you to federal enforcement action by that agency.**

Authority for review - an agreement with the USACOE entitled "Coordination Agreement Between the U. S. Army Corps of Engineers (Jacksonville District) and the Florida Department of Environmental Protection, or Duly Authorized Designee, State Programmatic General Permit", Section 10 of the Rivers and Harbor Act of 1899, and Section 404 of the Clean Water Act.

Coastal Zone Management

Issuance of this authorization also constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act.

Water Quality Certification

This permit also constitutes a water quality certification under Section 401 of the Clean Water Act, 33 U.S.C. 1341.

Other Authorizations

You are advised that authorizations or permits for this activity may be required by other federal, state, regional, or local entities including but not limited to local governments or municipalities. This permit does not relieve you from the requirements to obtain all other required permits or authorizations. (NOTE: If there are discharge points from the proposed stormwater management system, a National Pollutant Discharge Elimination System (NPDES) permit may be required.)

The activity described may be conducted only in accordance with the terms, conditions and attachments contained in this document. Issuance and granting of the permit and authorizations herein do not infer, nor guarantee, nor imply that future permits, authorizations, or modifications will be granted by the Department.

PERMIT CONDITIONS

The activities described herein must be conducted in accordance with:

- **The Specific Conditions**
- **The General Conditions**
- **The limits, conditions and locations of work shown in the attached drawings**
- **The term limits of this authorization**

You are advised to read and understand these conditions and drawings prior to beginning the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings herein. If you are using a contractor, the contractor also should read and understand these conditions and drawings prior to beginning any activity. Failure to comply with these conditions, including any mitigation requirements, shall be grounds for the Department to revoke the permit and authorization and to take appropriate enforcement action. Operation of the facility is not authorized except when determined to be in conformance with all applicable rules and this permit, as described.

SPECIFIC CONDITIONS – PRIOR TO CONSTRUCTION

1. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), “Construction Commencement Notice.” The construction commencement notice can be found on the following link: [Form 62-330.350\(1\)](#)
2. All wetland areas or water bodies which are outside of the specific limits of construction authorized herein by this permit must be protected from erosion, sedimentation, scouring or excess turbidity and dewatering.
3. Best management practices for erosion control shall be implemented prior to construction commencement and shall always be maintained during construction to prevent siltation and turbid discharges in a manner that does not cause or contribute to violations of state water quality standards in accordance with 62-302, F.A.C.
4. This permit does not authorize the construction of any additional structures and/or fill not illustrated on the permit drawings attached herein.

SPECIFIC CONDITIONS – ADDITIONAL REGULATED ACTIVITIES

5. The permittee must obtain additional authorization from the Department prior to beginning construction and/or operation of any regulated activity described in 62-330.020, F.A.C not specifically authorized herein.

SPECIFIC CONDITIONS – STORMWATER MANAGEMENT SYSTEM (SWMS)

6. The following maintenance activities shall be performed as needed on:
 - A. All permitted systems:
 - 1) Removal of trash and debris;
 - 2) Inspection of inlets and outlets;

- 3) Removal of sediments when the storage volume or conveyance capacity of the stormwater management system is less than the permitted design; and
 - 4) Stabilization and restoration of eroded areas.
- B. Retention, ditch, swale, and underdrain systems:
- 1) Mowing and removal of grass clippings;
 - 2) Aeration, tilling, or replacement of topsoil; and
 - 3) Re-establishment of vegetation on disturbed surfaces.
- C. Wet detention systems, if applicable:
- 1) Replanting of natural vegetation within the littoral zone; and
 - 2) Control of nuisance and exotic vegetation.
7. In accordance with Section 373.416(2), F.S., unless revoked or abandoned, all stormwater management systems, dams, impoundments, reservoirs, appurtenant works, or works permitted under Part IV of Chapter 373, F.S., must be operated and maintained in perpetuity.
 8. If the stormwater management system is not functioning as designed and permitted, operational maintenance must be performed immediately to restore the system. Within 30 days of any failure of the stormwater management system or deviation from the permit, a report shall be submitted electronically or in writing to the Department using the enclosed "Operation and Maintenance Inspection Certification" [Form 62-330.311(1)] describing the remedial actions taken to resolve the failure or deviation. If operational maintenance measures are insufficient to enable the system to meet the design and performance standards of this Chapter 62-330, F.A.C., the permittee must either replace the system or construct an alternative design. A permit modification must be obtained from the Department prior to constructing such an alternate design pursuant to Rule 62-330.315, F.A.C.
 9. Upon completion of the permitted stormwater management systems, dams, reservoirs, impoundments, appurtenant work, or works, the Agency shall have periodic inspections made to ensure the project was constructed and is being operated in compliance with the terms and conditions of the permit, and in a manner that protects the public health and safety and the natural resources of the state. No person shall refuse immediate entry or access to any authorized representative of the District or DEP who requests entry for purposes of such inspection and presents appropriate credentials pursuant to Part 12.4 (b) of the Applicant's Handbook Volume I.
 10. Inspections may be performed by Agency staff during and after construction. When needed to ensure a project is being operated and maintained in perpetuity, the permit may require the operation and maintenance entity to conduct the periodic inspections. The required inspection schedule for a specific project will be specified in the permit pursuant to Part 12.4 (c) of the Applicant's Handbook Volume I.
 11. The efficiency of stormwater management systems decreases over time without periodic maintenance. For example, a significant reduction in the flow capacity of a stormwater management system often can be attributed to partial blockages of its conveyance system. Once flow capacity is compromised, flooding may result. Therefore, operation and maintenance entities must perform periodic inspections to identify if there are any deficiencies in structural integrity, degradation due to insufficient maintenance, or improper operation of projects that may endanger public health, safety, or welfare, or the water

resources. If deficiencies are found, the operation and maintenance entity will be responsible for correcting the deficiencies so that the project is returned to the operational functions required in the permit and contemplated by the design of the project as permitted pursuant to Part 12.4 (e) of the Applicant's Handbook Volume I.

12. The operation and maintenance entity must maintain a record of each inspection, including the date of inspection, the name and contact information of the inspector, whether the system was functioning as designed and permitted, and make such record available upon request of the Agency pursuant to Section 12.4 (h) of Applicant's Handbook Volume I.

SPECIFIC CONDITIONS – DEWATERING

13. If dewatering is to occur at any time and discharge is to on-site or off-site surface waters of the State, either directly or via a stormwater management system, a generic permit in accordance with Rule 62-621.300, F.A.C., will be required prior to any dewatering.
14. In accordance with 40E-2.041, F.A.C., a water use permit must be obtained from the District prior to any use or withdrawal of water unless expressly exempt by law or District rule.

SPECIFIC CONDITIONS – POST ISSUANCE SUBMITTALS

15. All post-issuance submittals required by the Specific or General Conditions of this permit shall be provided to the Department in a digital format (via electronic mail, CD or DVD, or through a file transfer site) when practicable. The mailing address for the appropriate Department office is 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767 and the electronic mail address is DEP_CD@dep.state.fl.us. All submittals shall include the project name and indicated permit number when referring to this project.

SPECIFIC CONDITIONS – FLORIDA FISH AND WILDLIFE (FWC)

16. Construction, operation and maintenance activities are to avoid adversely impacting or causing "take" of state listed species and other regulated species of fish and wildlife. Compliance with state laws regulating the take of fish and wildlife is the responsibility of the owner or applicant associated with this project. Please refer to Chapter 68A-27 of the Florida Administrative Code for definitions of "take" and a list of fish and wildlife species. Most marine endangered and threatened species are statutorily protected and a "take" permit cannot be issued. If listed species are observed onsite, FWC staff are available to provide decision support information or to assist in obtaining the appropriate FWC permits. Requests for assistance or further information can be sent to FWCConservationPlanningServices@MyFWC.com.

SPECIFIC CONDITIONS – CONSTRUCTED ACTIVITY

17. In accordance with 62-330.301(1), F.A.C., the activity authorized to be constructed and operated herein:
 - a. Will not cause adverse water quantity impacts to receiving waters and adjacent lands;
 - b. Will not cause adverse flooding to on-site or off-site property;
 - c. Will not cause adverse impacts to existing surface water storage and conveyance capabilities;
 - d. Will not adversely affect the quality of receiving waters such that the state water quality standards set forth in chapters 62-4, 62-302, 62-520, and 62-550, F.A.C., including the

antidegradation provisions of paragraphs 62-4.242(1)(a) and (b), F.A.C., subsections 62-4.242(2) and (3), F.A.C., and rule 62-302.300, F.A.C., and any special standards for Outstanding Florida Waters and Outstanding National Resource Waters set forth in subsections 62-4.242(2) and (3), F.A.C.;

- e. Will not adversely impact the maintenance of surface or ground water levels or surface water flows established pursuant to section 373.042, F.S.;
 - f. Will not cause adverse impacts to a Work of the District established pursuant to section 373.086, F.S.;
 - g. Will be capable, based on generally accepted engineering and scientific principles, of performing and functioning as proposed;
 - h. Will be conducted by a person with the financial, legal and administrative capability of ensuring that the activity will be undertaken in accordance with the terms and conditions herein.
18. In accordance with 62-330.350(1)(q), F.A.C., if the proposed activity authorized herein causes any adverse impacts, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.

SPECIFIC CONDITIONS – WETLANDS AND SURFACE WATERS

19. This permit authorizes permanent impacts to the wetland fill areas shown on the permit drawings of only 5.79 acres, Exhibit 3. No other areas are authorized to be impacted, which includes but is not limited to clearing with the use of heavy equipment, filling, or excavation.
20. There shall not be any excess lumber, scrap wood, trash, garbage, etc. within the wetlands.
21. Construction equipment shall not be repaired or refueled in wetlands. If refueling of equipment is required within wetlands and surface waters, the proper best management practices must be employed to ensure there will be no release of toxic or hazardous substances or fuel into wetlands and surface waters. Any fuel spills shall be reported immediately to the State Watch Office at 1-800-320-0519 as well as the local DEP office.
22. The permittee shall report any damage to wetlands and surface waters, not authorized in this permit, to the Department within 24 hours. If any damage occurs to wetlands or surface waters as a result of any construction activities, the permittee shall be required to restore the wetland area by regrading the damaged areas back to the natural reconstruction elevations and planting vegetation of the size, densities and species that exist in the adjacent areas pursuant to a consent order. The restoration shall be completed within 30 days of completion of the construction and shall be done to the satisfaction of the Department.

GENERAL CONDITIONS FOR INDIVIDUAL PERMITS

The following general conditions are binding on all Individual Permits issued under Chapter 62-330, F.A.C., except where the conditions are not applicable to the authorized activity, or where the conditions must be modified to accommodate project-specific conditions.

1. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.
2. A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.
3. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Environmental Protection and Florida Department of Transportation June 2007, <http://www.fdot.gov/roadway/drainage/files/Erosion-Sediment-Control.pdf> and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008, <http://www.dep.state.fl.us/water/nonpoint/docs/erosion/erosion-inspectors-manual.pdf>), which are both incorporated by reference in subparagraph 62-330.050(9)(b)5., F.A.C., unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.*
4. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice," [October 1, 2013], which is incorporated by reference in paragraph 62-330.350(1)(d), F.A.C., indicating the expected start and completion dates. A copy of this form may be obtained from the Agency, as described in subsection 62-330.010(5), F.A.C. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.
5. Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.
6. Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:
 - a) For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex – "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit" [Form 62-330.310(3)]; or
 - b) For all other activities – "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)]. (See Specific Condition 2 regarding requirements for the submittal package.)
 - c) If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.
7. If the final operation and maintenance entity is a third party:
 - a) Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as-built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance

documents (see sections 12.3 thru 12.3.3 of Volume I) as filed with the Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.

- b) Within 30 days of submittal of the as-built certification, the permittee shall submit “Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity” [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.
8. The permittee shall notify the Agency in writing of changes to the permitted activity required by any other regulatory agency. Any required modification of this permit must be obtained prior to implementing the changes.
9. This permit does not:
 - a) Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;
 - b) Convey to the permittee or create in the permittee any interest in real property;
 - c) Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
 - d) Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.
10. Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.
11. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.
12. The permittee shall notify the Agency in writing:
 - a) Immediately if any previously submitted information is discovered to be inaccurate; and
 - b) Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.
13. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.
14. If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate

vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification shall be provided in accordance with Section 872.05, F.S.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.
16. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.
17. This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.
18. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with subsection 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

NOTICE OF RIGHTS

This action is final and effective on the date filed with the Clerk of the Department unless a petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. On the filing of a timely and sufficient petition, this action will not be final and effective until a subsequent order of the Department. Because the administrative hearing process is designed to formulate final agency action, the subsequent order may modify or take a different position than this action.

Petition for Administrative Hearing

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. Pursuant to Rules 28-106.201 and 28-106.301, F.A.C., a petition for an administrative hearing must contain the following information:

- (a) The name and address of each agency affected and each agency's file or identification number, if known;
- (b) The name, address, any e-mail address, any facsimile number, and telephone number of the petitioner, if the petitioner is not represented by an attorney or a qualified representative; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;
- (c) A statement of when and how the petitioner received notice of the agency decision;
- (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

- (e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
- (f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

The petition must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, or via electronic correspondence at Agency_Clerk@dep.state.fl.us. Also, a copy of the petition shall be mailed to the applicant at the address indicated above at the time of filing.

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant and persons entitled to written notice under Section 120.60(3), F.S., must be filed within 21 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 21 days of publication of the notice or within 21 days of receipt of the written notice, whichever occurs first. You cannot justifiably rely on the finality of this decision unless notice of this decision and the right of substantially affected persons to challenge this decision has been duly published or otherwise provided to all persons substantially affected by the decision. While you are not required to publish notice of this action, you may elect to do so pursuant Rule 62-110.106(10)(a).

The failure to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C. If you do not publish notice of this action, this waiver may not apply to persons who have not received a clear point of entry.

Extension of Time

Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, or via electronic correspondence at Agency_Clerk@dep.state.fl.us, before the deadline for filing a petition for an administrative hearing. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Mediation

Mediation is not available in this proceeding.

FLAWAC Review

The applicant, or any party within the meaning of Section 373.114(1)(a) or 373.4275, F.S., may also seek appellate review of this order before the Land and Water Adjudicatory Commission under Section 373.114(1) or 373.4275, F.S. Requests for review before the Land and Water Adjudicatory

Commission must be filed with the Secretary of the Commission and served on the Department within 20 days from the date when this order is filed with the Clerk of the Department.

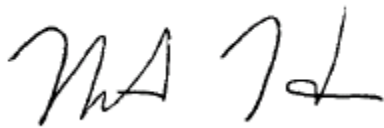
Judicial Review

Once this decision becomes final, any party to this action has the right to seek judicial review pursuant to Section 120.68, F.S., by filing a Notice of Appeal pursuant to Florida Rules of Appellate Procedure 9.110 and 9.190 with the Clerk of the Department in the Office of General Counsel (Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000) and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice must be filed within 30 days from the date this action is filed with the Clerk of the Department.

EXECUTION AND CLERKING

Executed in Orlando, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION



Nathan Hess
Program Administrator
Permitting and Waste Cleanup

Attachments:

- Exhibit 1: 0187636-003-EI SWMS Engineering Drawings, 20 pages
- Exhibit 2: 0187636-003-EI Drainage Basin Maps, 4 pages
- Exhibit 3: 0187636-003-EI Wetland Impacts Figures, 17 pages
- Exhibit 4: 0187636-003-EI Mitigation Bank Letter of Credit Reservation, 1 page
- Exhibit 5: [Oculus Link to 0187636-001-EI Permit and Drawings, 234 pages](#)
- Exhibit 6: [Oculus Link to 0187636 DEP ERP Permitting History](#)
- Exhibit 7: See the links below for the 62-330 Forms,
[Link to the Construction Commencement Notice/Form 62-330.350\(1\)](#)
[Link to the As-built Certification and Request for Conversion to Operational Phase/Form 62-330.310\(1\)](#)
[Link to the Operation and Maintenance Inspection Certification/Form 62-330.311\(1\)](#)
[Link to the Request to Transfer Permit/Form 62-330.340\(1\)](#)

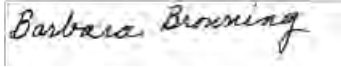
CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this permit and all copies were sent on the filing date below to the following listed persons:

- Casey Lyon, FDOT, Casey.Lyon@dot.state.fl.us
- Dustin Perkins, P.E., AECOM, Dustin.Perkins@aecom.com
- Jose Pereira, P.E., AECOM, Jose.Pereira1@aecom.com
- Matt Martin, ESciences, MMartin@esciences.com
- Osceola County, RKec@osceola.org
- Debra Laisure, P.E., SFWMD, DLaisure@sfwmd.gov
- Lisa Prather, SFWMD, LPrather@sfwmd.gov
- FDEP: Nathan Hess, Christine Daniel, Leo Angleró, Dan Shideler, Megan Warr

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52(7), F.S., with the designated Department clerk, receipt of which is hereby acknowledged.



Clerk

August 19, 2019

Date

CONTRACT PLANS COMPONENTS

- ROADWAY PLANS
- STRUCTURES - BRIDGE CONCEPT PLAN AND ELEVATION
- CONCEPT SIGNING PLAN - SCROLL PLOTS
- CONCEPT SIGNAL LAYOUT PLANS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID 431456-1-52-01

(FEDERAL FUNDS)

OSCEOLA COUNTY (92130)

STATE ROAD NO. 400 (I-4)

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	NOTES TO REVIEWERS
3 - 20	DRAINAGE MAPS
21 - 31	EXISTING DRAINAGE STRUCTURES
32 - 41	BRIDGE HYDRAULIC RECOMMENDATION SHEETS
42 - 61	TYPICAL SECTIONS
62 - 70	CURVE DATA
71	GENERAL NOTES
72 - 141	ROADWAY PLAN
142 - 411	ROADWAY PROFILE
412 - 424	INTERCHANGE LAYOUT
425 - 497	POND DETAILS
498 - 516	DRAINAGE STRUCTURES
517	LATERAL DITCH PLAN-PROFILE
518 - 522	LATERAL DITCH CROSS SECTIONS
523 - 531	CROSS SECTION PATTERN SHEET
532	ROADWAY SOIL SURVEY
533 - 1382	ROADWAY CROSS SECTIONS
1383 - 1403	POND CROSS SECTIONS
1404 - 1412	BONNET CREEK CROSS SECTIONS
1413 - 1415	STORMWATER POLLUTION PREVENTION PLAN
1416 - 1477	EROSION CONTROL PLANS
CTL-1 - CTL-23	PROJECT NETWORK CONTROL

SHEETS INTENTIONALLY OMITTED

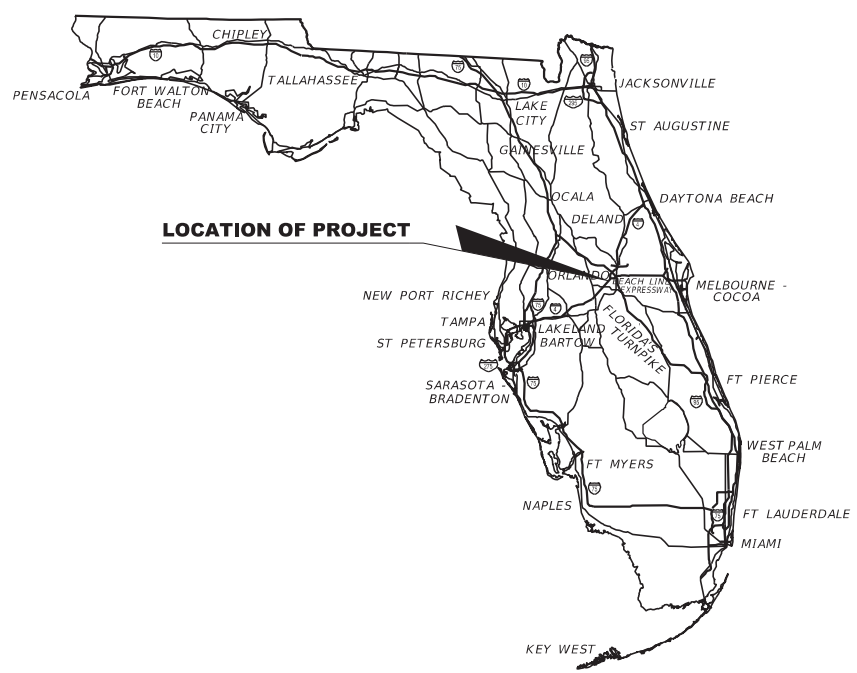
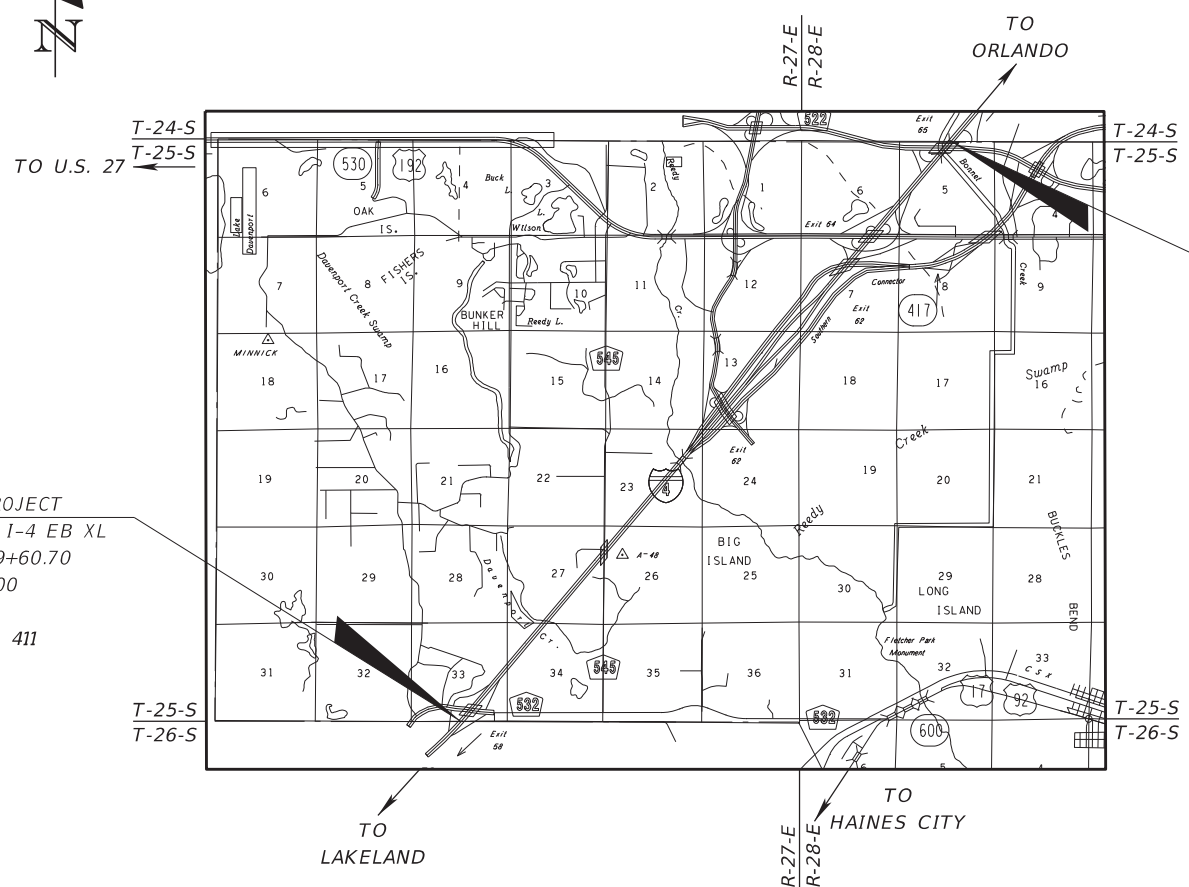
- PLANS TO BE PERMITTED BY SFWMD
- DRAINAGE MAPS: 3 - 4, 9 - 18
- BRIDGE HYDRAULIC RECOMMENDATION SHEETS: 32 - 41
- TYPICAL SECTIONS: 44 - 46, 48 - 49, 54 - 60
- ROADWAY PLAN: 72 - 79, 86 - 117, 125 - 141
- ROADWAY PROFILE: 142 - 146, 152 - 176, 182 - 206, 212 - 236, 242 - 277, 304 - 411
- INTERCHANGE LAYOUT: 412, 415 - 424
- POND DETAILS: 425 - 431, 443 - 497
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- LATERAL DITCH CROSS SECTIONS: 518 - 522
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- POND CROSS SECTIONS: 1383 - 1412
- EROSION CONTROL PLANS: 1416 - 1421, 1427 - 1453, 1461 - 1477

GOVERNING DESIGN STANDARDS:

Florida Department of Transportation, FY2017-18 Design Standards eBook (DSeB) and applicable Design Standards Revisions (DSRs) at the following website:
<http://www.fdot.gov/rddesign/DesignStandards/Standards.shtm>

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, Jan. 2018 Standard Specifications for Road and Bridge Construction at the following website:
<http://www.fdot.gov/programmanagement/Implemented/SpecBooks>



END PROJECT
@ CONST. I-4 EB XL
STA. 1645+73.44
M.P. 7.881

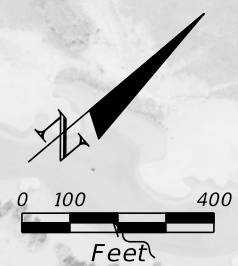
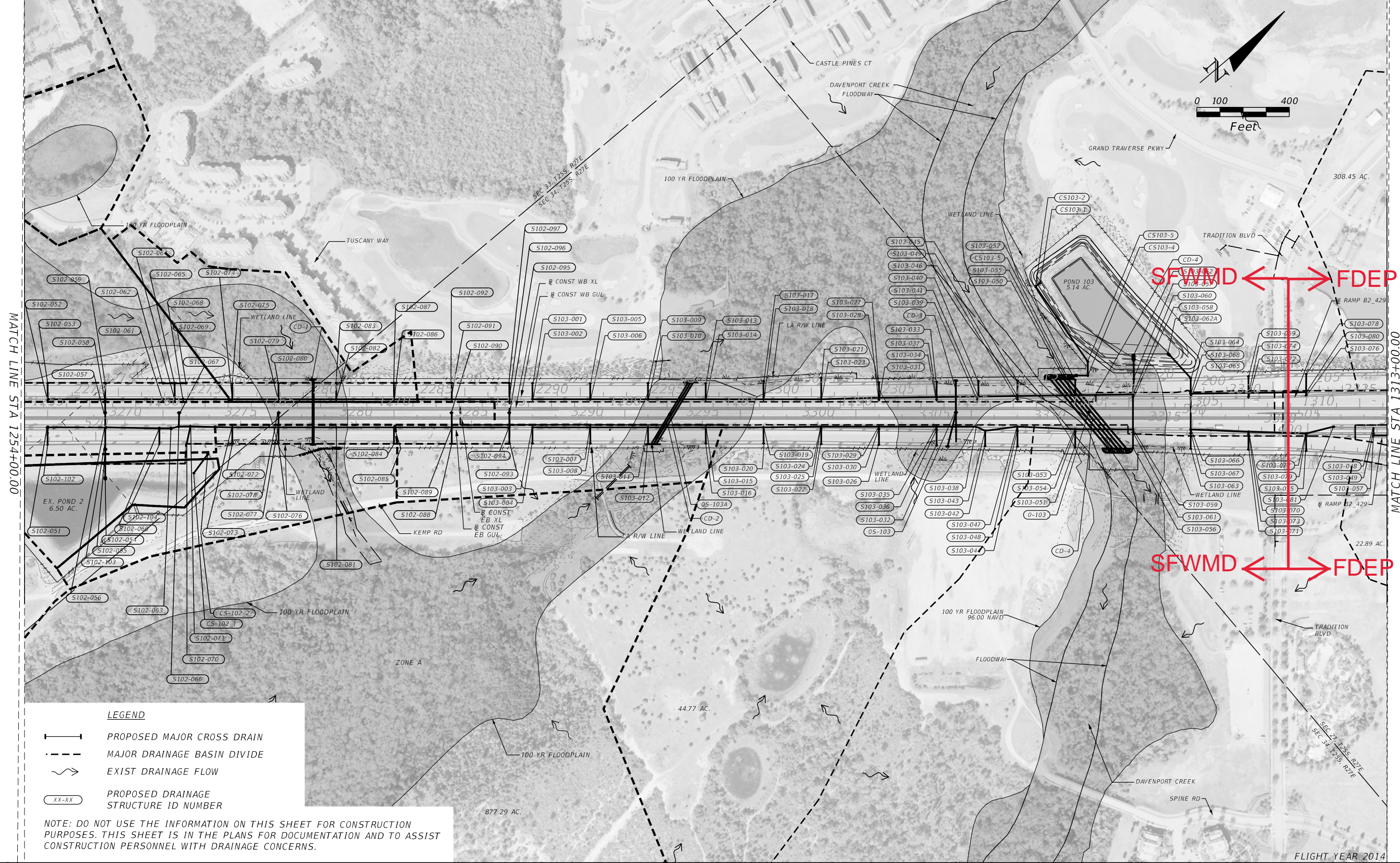
**FINAL
CONCEPT PLANS
PERMIT SET
JANUARY 2019**

**ROADWAY PLANS
ENGINEER OF RECORD:**

AECOM Technical Services, Inc.
150 North Orange Ave, Suite 200
Orlando, FL. 32801
T 407.422.0353 F 407.423.2695
Certificate of Authorization No. 8115

FDOT PROJECT MANAGER:
Su Hao, PE

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
TBD	22	1



MATCH LINE STA 1254+00.00

MATCH LINE STA 1313+00.00

LEGEND

- PROPOSED MAJOR CROSS DRAIN
- MAJOR DRAINAGE BASIN DIVIDE
- EXIST DRAINAGE FLOW
- PROPOSED DRAINAGE STRUCTURE ID NUMBER

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

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

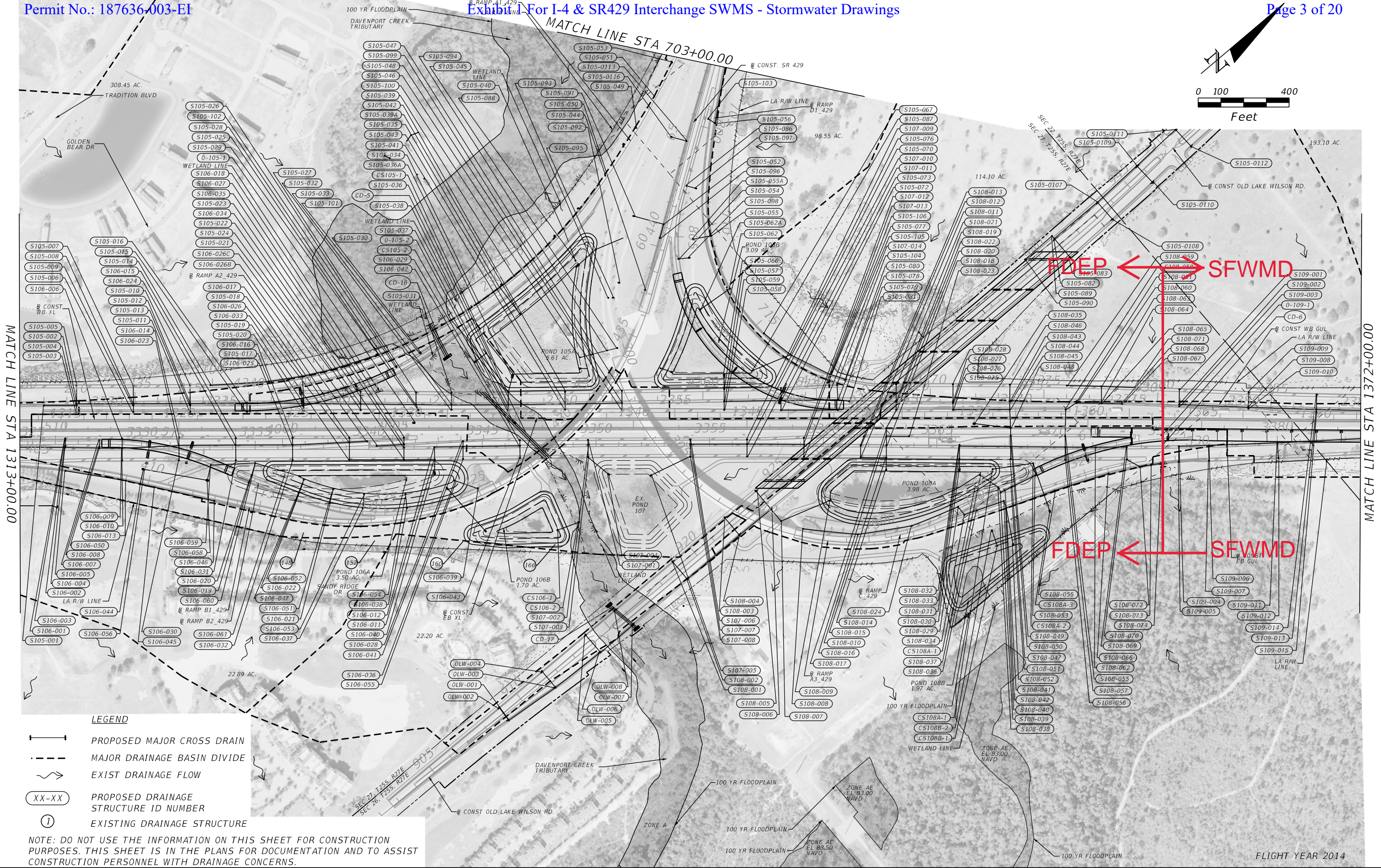
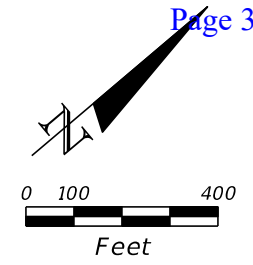
AECOM TECHNICAL SERVICES, Inc.
 150 North Orange Avenue, Suite 200
 Orlando, FL, 32801
 T 407.843.6552 F 407.839.1789
 Certificate of Authorization No. 8115
 www.aecom.com

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	OSCEOLA	431456-1-52-01

**DRAINAGE MAP (2)
PROPOSED CONDITION**

SHEET NO.

PRELIMINARY: NOT FOR CONSTRUCTION



MATCH LINE STA 1313+00.00

MATCH LINE STA 1372+00.00

- LEGEND**
- PROPOSED MAJOR CROSS DRAIN
 - MAJOR DRAINAGE BASIN DIVIDE
 - EXIST DRAINAGE FLOW
 - PROPOSED DRAINAGE STRUCTURE ID NUMBER
 - EXISTING DRAINAGE STRUCTURE

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

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

Inwood Consulting Engineers, Inc.
 Certificate of Authorization No. 7074
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	OSCEOLA	431456-1-52-01

DRAINAGE MAP (3)
PROPOSED CONDITION

SHEET NO.

PRELIMINARY: NOT FOR CONSTRUCTION



LEGEND

- PROPOSED MAJOR CROSS DRAIN
- MAJOR DRAINAGE BASIN DIVIDE
- EXIST DRAINAGE FLOW
- PROPOSED DRAINAGE STRUCTURE ID NUMBER
- EXIST. DRAINAGE STRUCTURE

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

REVISIONS	
DATE	DESCRIPTION

Inwood Consulting Engineers, Inc.
 Certificate of Authorization No. 7074
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	OSCEOLA	431456-1-52-01

DRAINAGE MAP (9)
PROPOSED CONDITION

SHEET NO.

PRELIMINARY: NOT FOR CONSTRUCTION



LEGEND

- MAJOR DRAINAGE BASIN DIVIDE
- ~> EXIST DRAINAGE FLOW
- ① EXIST. DRAINAGE STRUCTURE

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

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

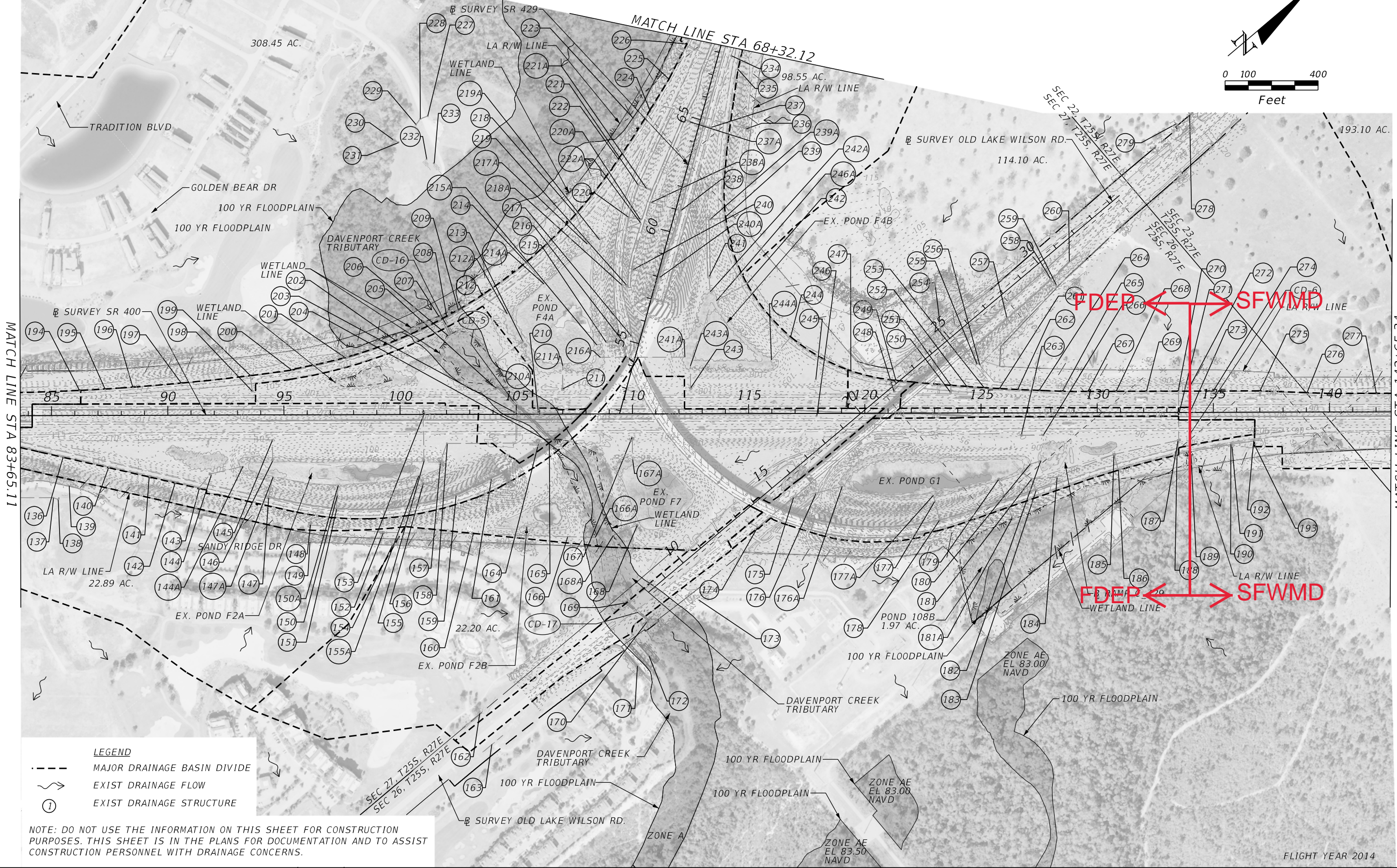
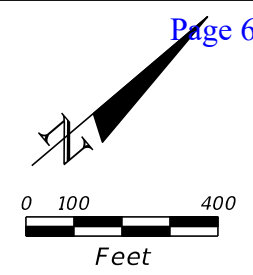
AECOM TECHNICAL SERVICES, Inc.
 150 North Orange Avenue, Suite 200
 Orlando, FL, 32801
 T 407.843.6552 F 407.839.1789
 Certificate of Authorization No. 8115
 www.aecom.com

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	OSCEOLA	431456-1-52-01

**DRAINAGE MAP (2)
EXISTING CONDITION**

SHEET NO.

PRELIMINARY: NOT FOR CONSTRUCTION



LEGEND

- MAJOR DRAINAGE BASIN DIVIDE
- ~> EXIST DRAINAGE FLOW
- ① EXIST DRAINAGE STRUCTURE

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

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	OSCEOLA	431456-1-52-01

**DRAINAGE MAP (3)
 EXISTING CONDITION**

SHEET NO.

PRELIMINARY: NOT FOR CONSTRUCTION



LEGEND

- MAJOR DRAINAGE BASIN DIVIDE
- ~> EXIST DRAINAGE FLOW
- ① EXIST. DRAINAGE STRUCTURE

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

REVISIONS	
DATE	DESCRIPTION

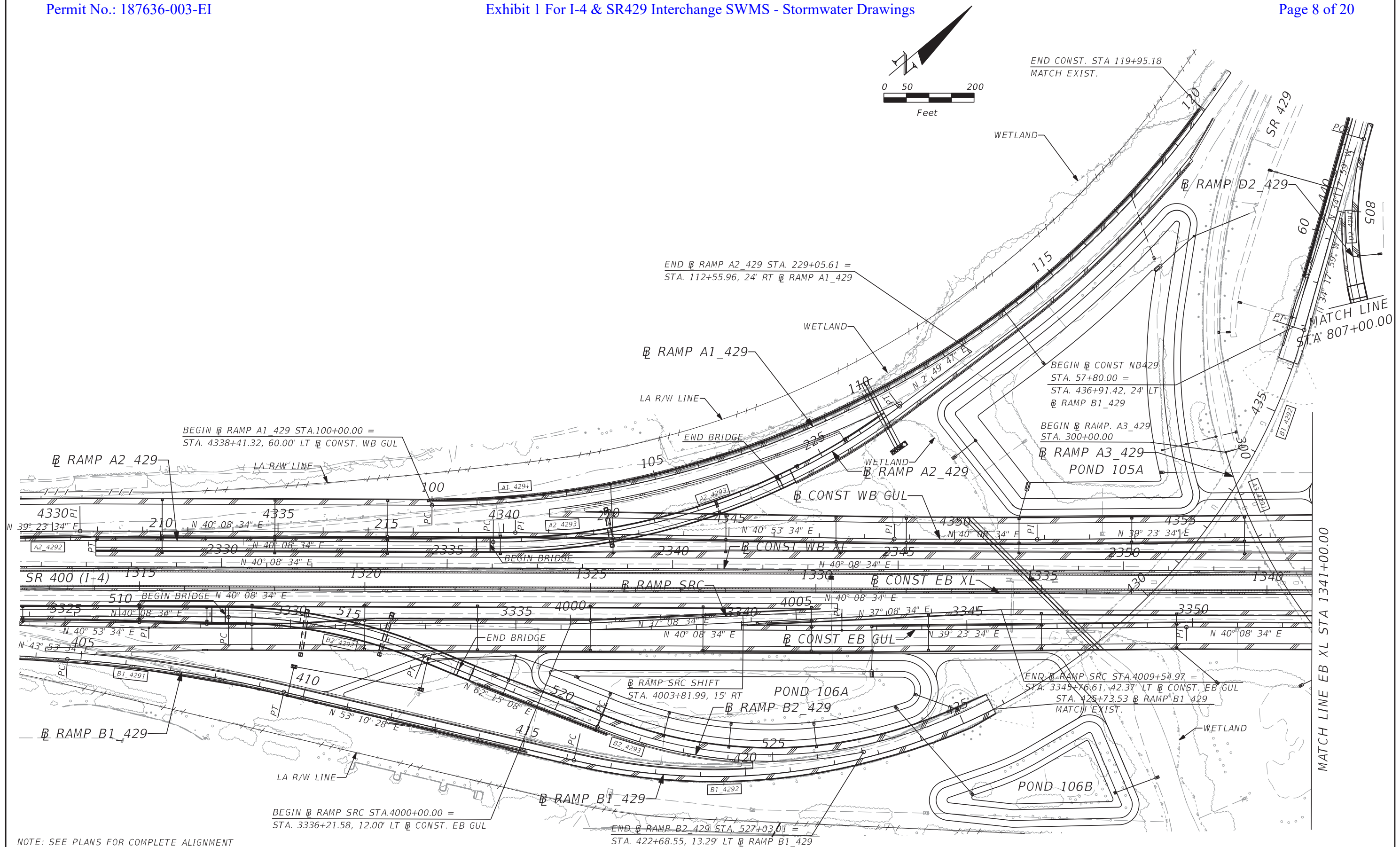
Inwood Consulting Engineers, Inc.
 Certificate of Authorization No. 7074
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	OSCEOLA	431456-1-52-01

DRAINAGE MAP (9)
EXISTING CONDITION

SHEET NO.

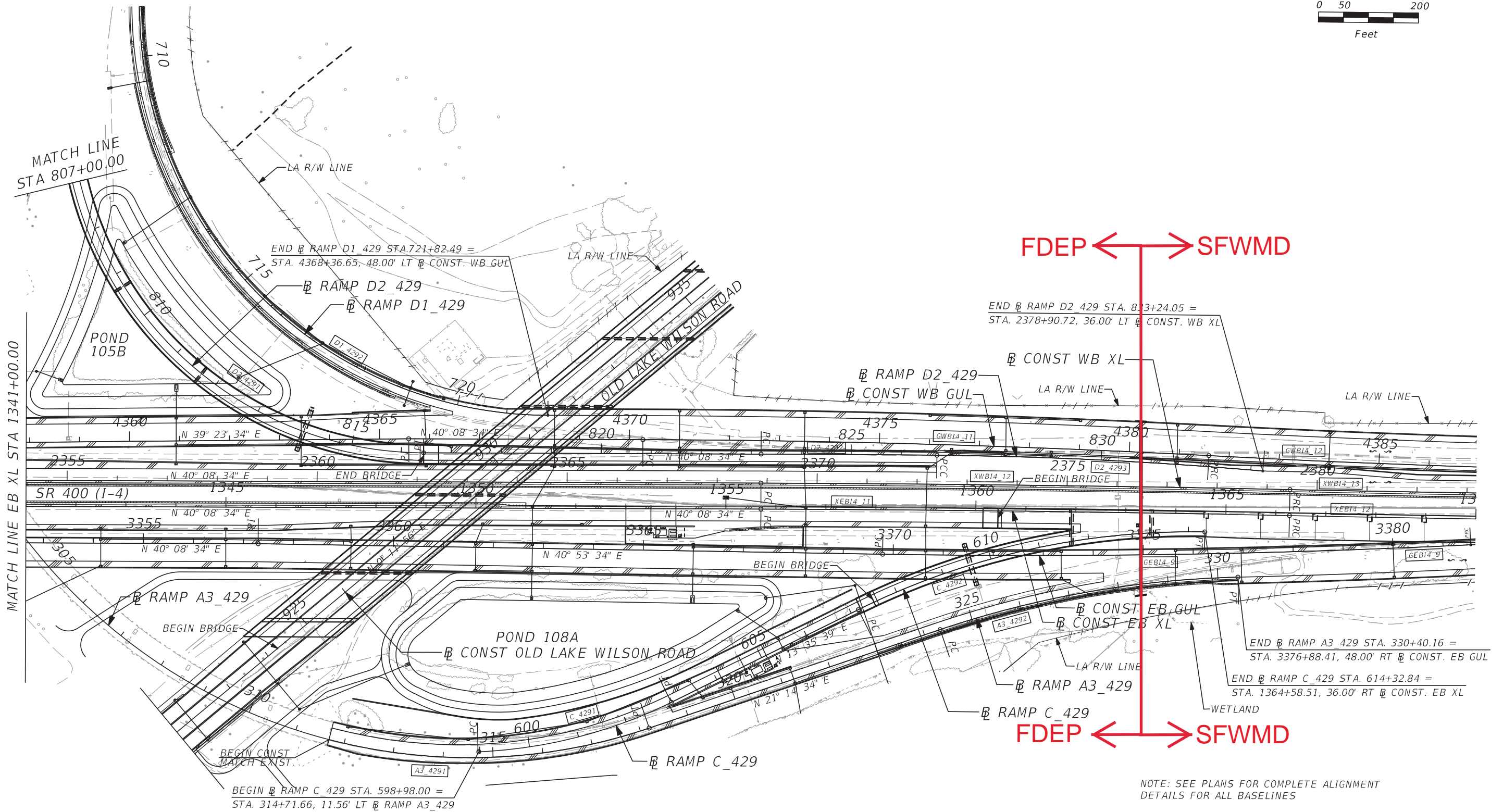
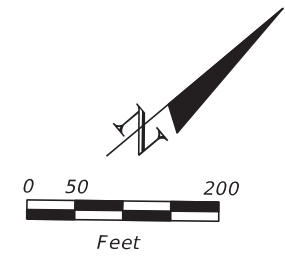
PRELIMINARY: NOT FOR CONSTRUCTION



NOTE: SEE PLANS FOR COMPLETE ALIGNMENT DETAILS FOR ALL BASELINES

REVISIONS				AECOM TECHNICAL SERVICES, Inc. 150 North Orange Avenue, Suite 200 Orlando, FL, 32801 T 407.843.6552 F 407.839.1789 Certificate of Authorization No. 8115 www.aecom.com	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			INTERCHANGE LAYOUT SR 429 (1)	SHEET NO. 413
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 400	OSCEOLA	431456-1-52-01		

PRELIMINARY: NOT FOR CONSTRUCTION



FDEP ← → SFWMD

FDEP ← → SFWMD

NOTE: SEE PLANS FOR COMPLETE ALIGNMENT
DETAILS FOR ALL BASELINES

REVISIONS		REVISIONS	
DATE	DESCRIPTION	DATE	DESCRIPTION

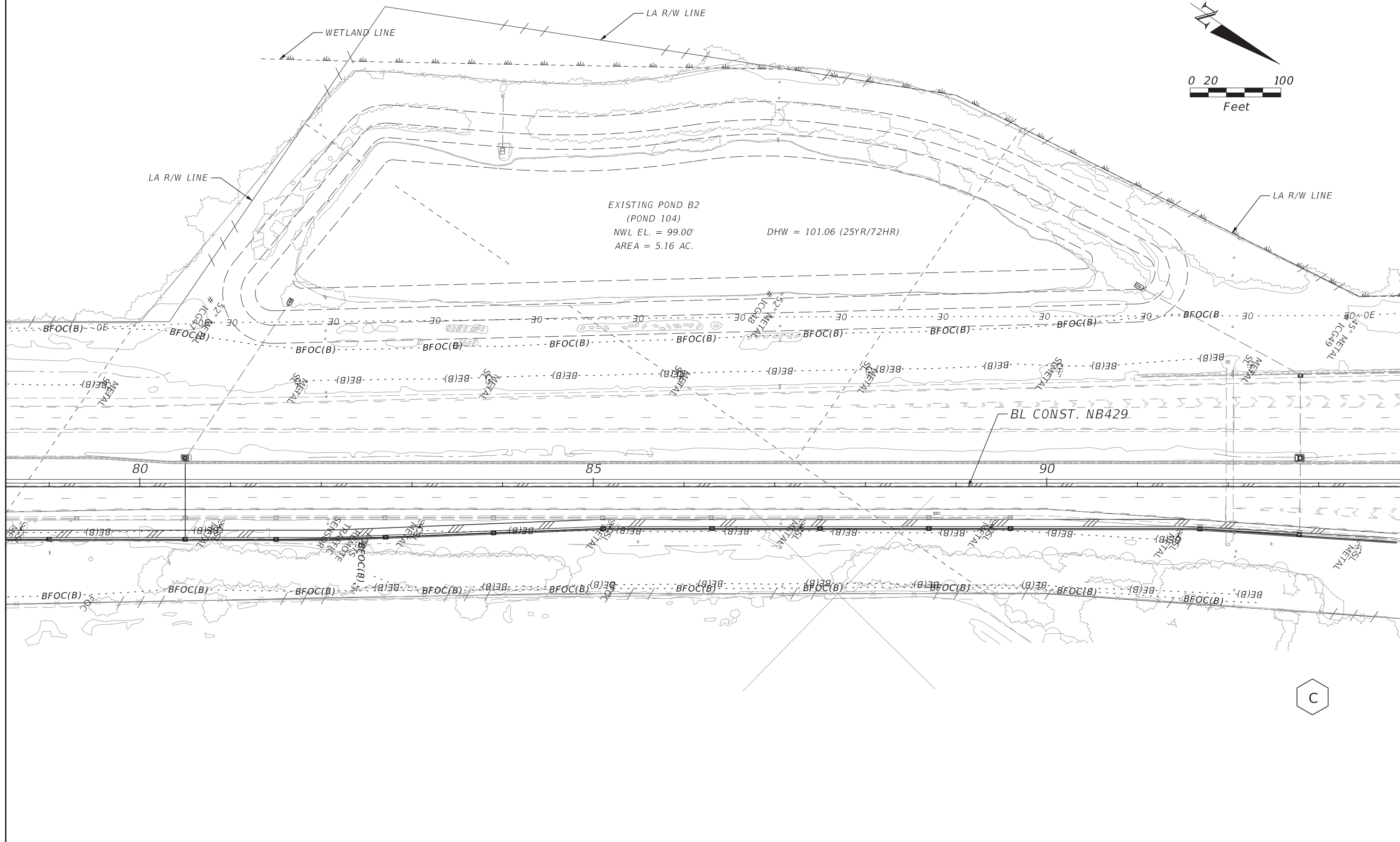
AECOM TECHNICAL SERVICES, Inc.
150 North Orange Avenue, Suite 200
Orlando, FL, 32801
T 407.843.6552 F 407.839.1789
Certificate of Authorization No. 8115
www.aecom.com

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	OSCEOLA	431456-1-52-01

INTERCHANGE LAYOUT
SR 429 (2)

SHEET NO.
414

PRELIMINARY: NOT FOR CONSTRUCTION



C

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	OSCEOLA	431456-1-52-01

POND DETAIL
POND 104

SHEET NO.
432

PRELIMINARY: NOT FOR CONSTRUCTION

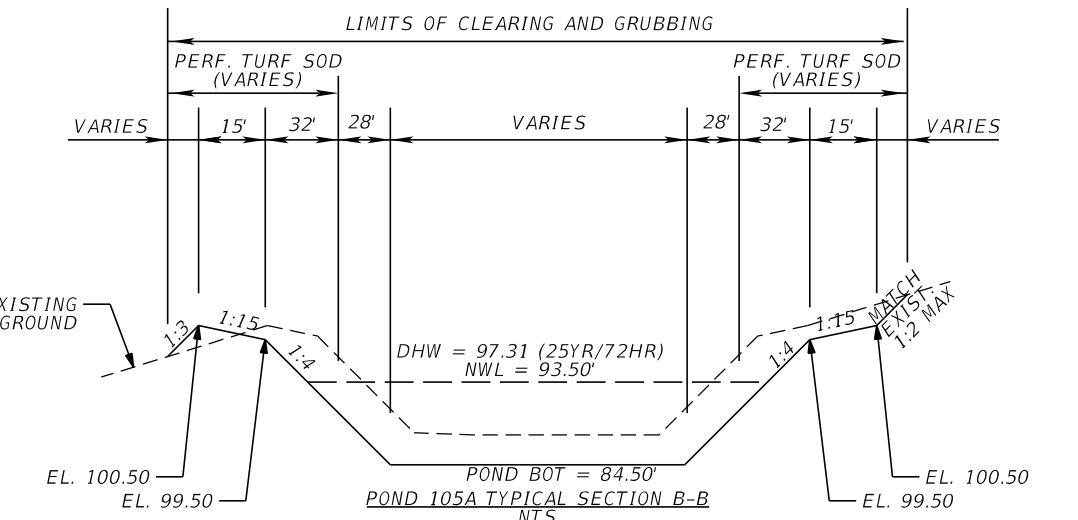
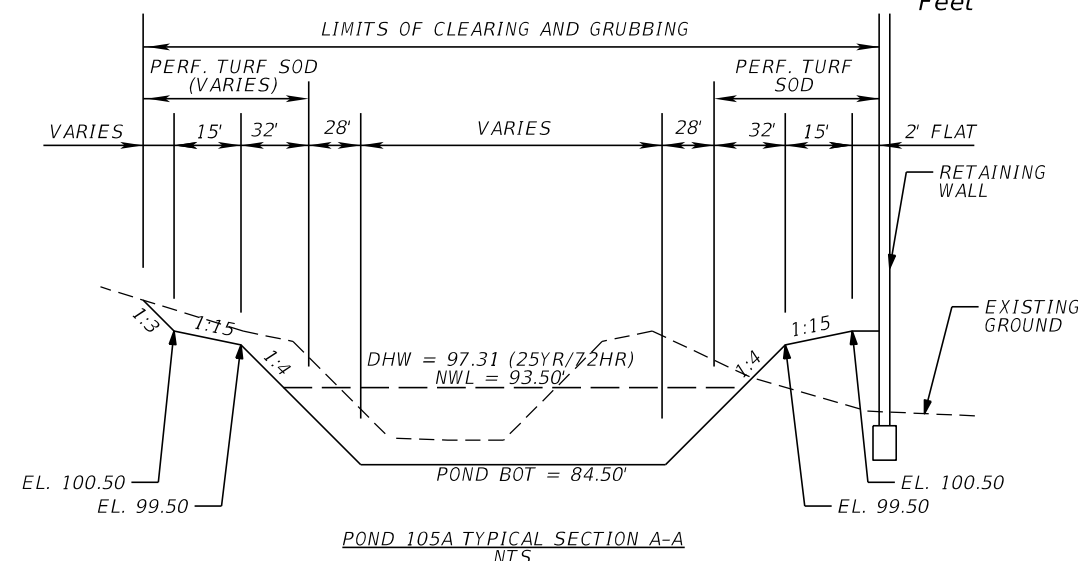
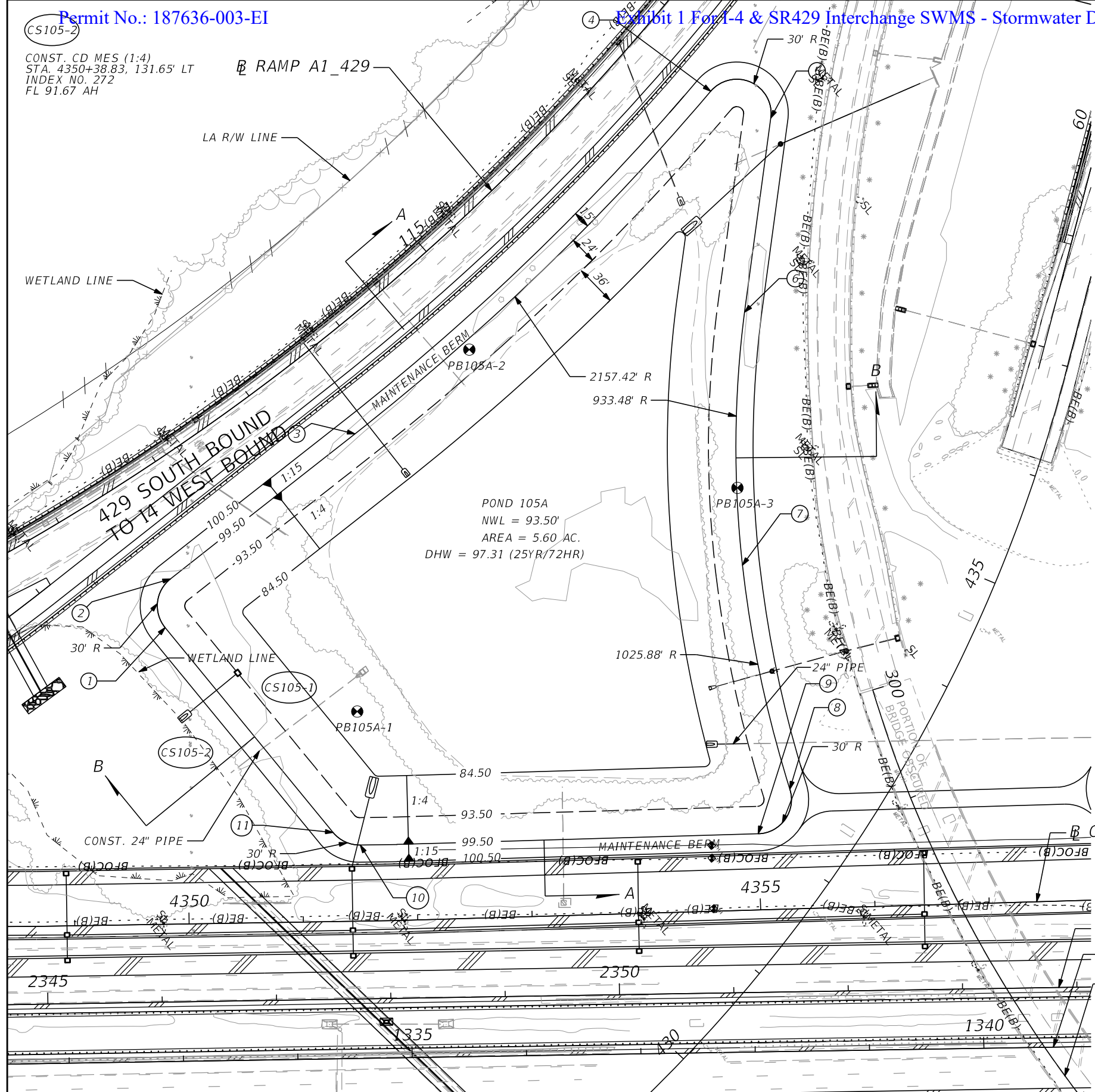
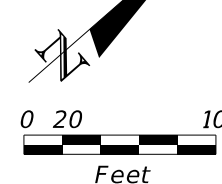
CS105-2
 CONST. CD MES (1:4)
 STA. 4350+38.83, 131.65' LT
 INDEX NO. 272
 FL 91.67 AH

NOTES:

1. MAINTENANCE ACCESS AND MAINTENANCE BERM SHALL BE SOD ON 12" OF TYPE B STABILIZATION.

LEGEND

ESHW = ESTIMATED SEASONAL HIGH WATER
 DHW = DESIGN HIGH WATER
 ● = APPROXIMATE BORING LOCATION



REFERENCE POINT	CONST. GWB14	OFFSET (FT)	SIDE
1	4349+83.26	259.32	LT
2	4349+88.61	301.85	LT
3	4351+52.06	426.04	LT
4	4354+77.39	716.55	LT
5	4355+29.27	691.55	LT
6	4355+01.24	522.82	LT
7	4354+92.99	301.65	LT
8	4355+28.66	104.70	LT
9	4354+99.80	66.50	LT
10	4351+50.74	66.50	LT
11	4351+27.24	77.85	LT

REVISIONS		REVISIONS	
DATE	DESCRIPTION	DATE	DESCRIPTION

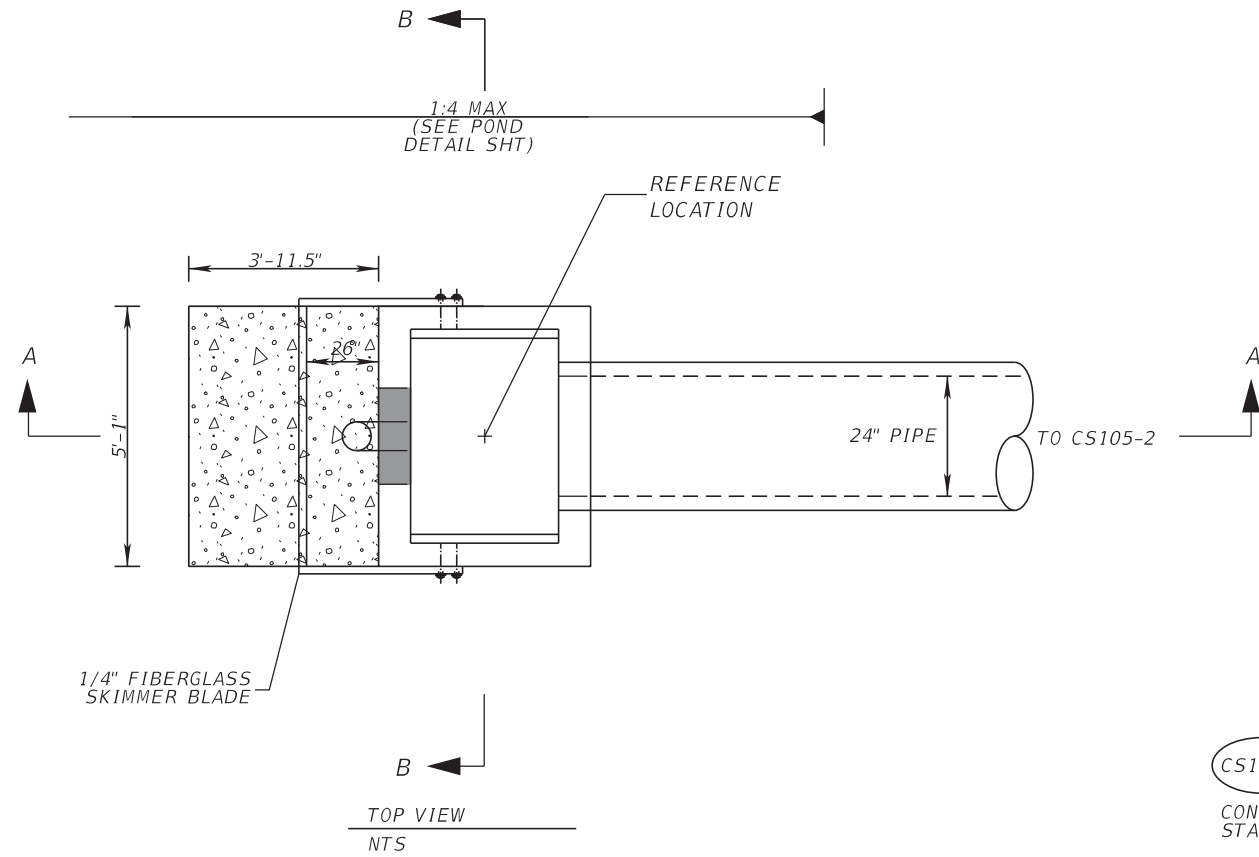
Inwood Consulting Engineers, Inc.
 Certificate of Authorization No. 7074
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	OSCEOLA	431456-1-52-01

POND DETAIL
POND 105A

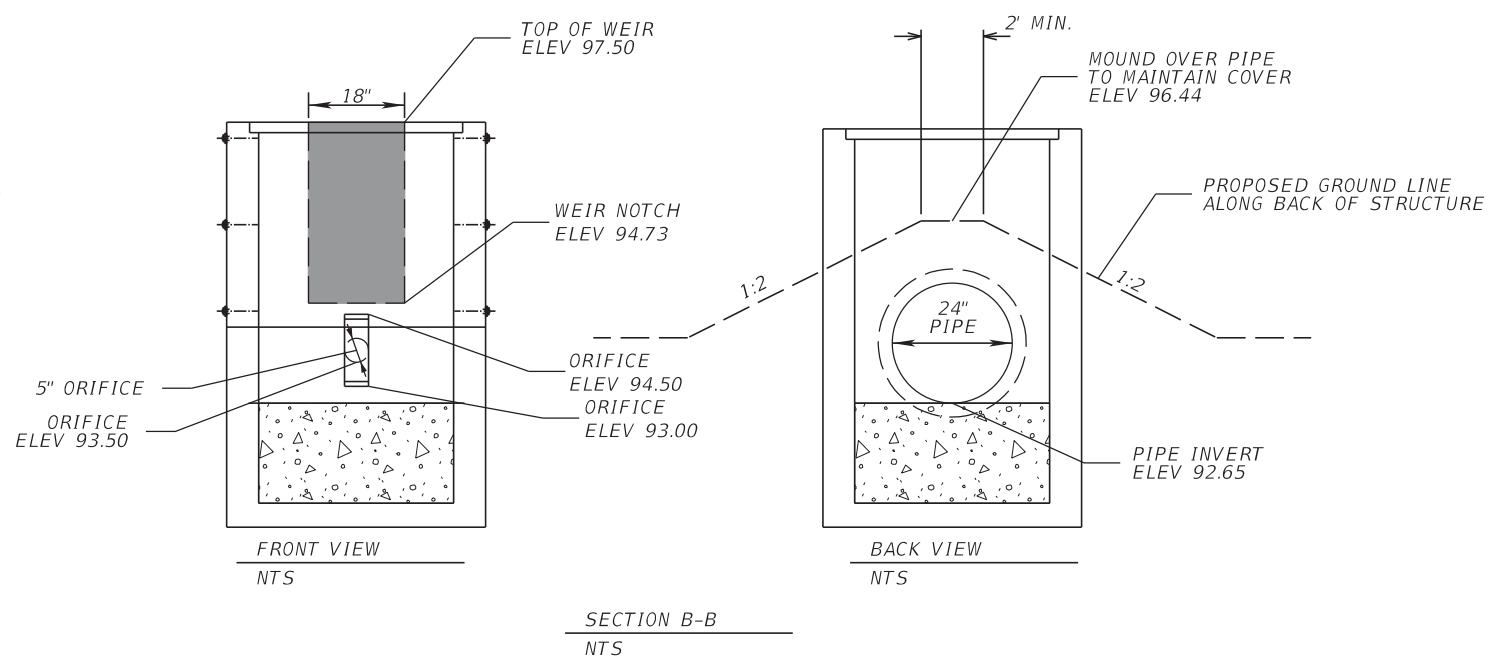
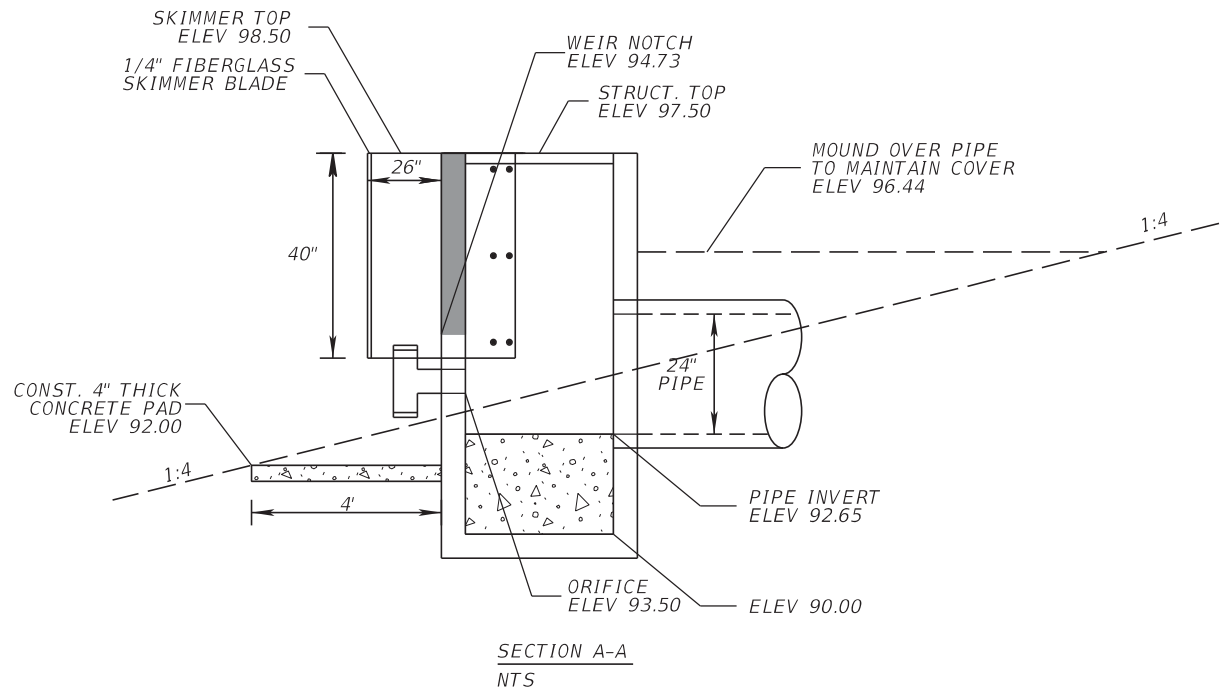
SHEET NO.

PRELIMINARY: NOT FOR CONSTRUCTION



CS105-1
CONST. DBI TYPE D-MOD
STA. 4350+86.98, 167.21' LT

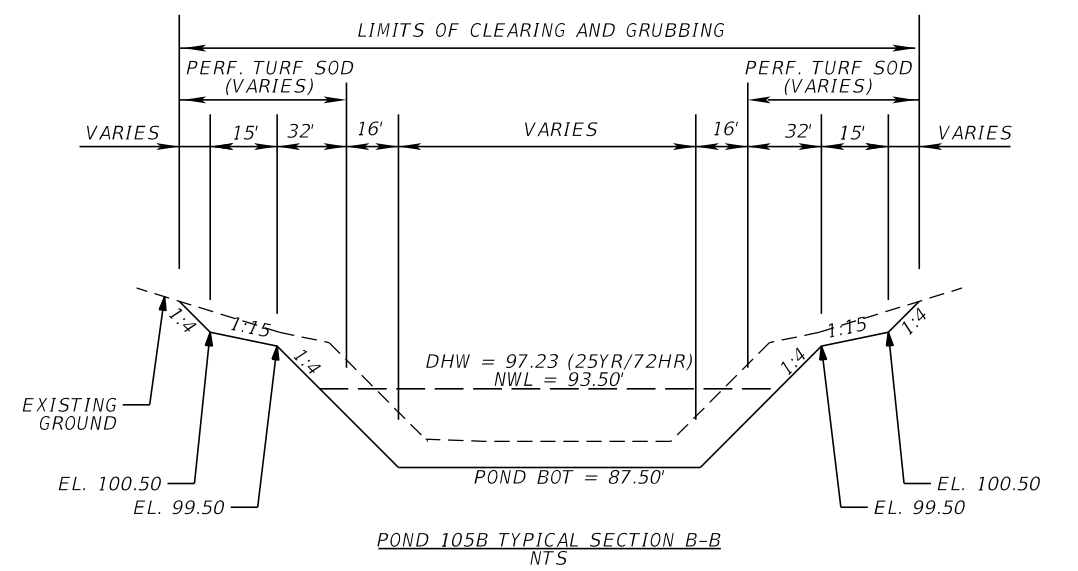
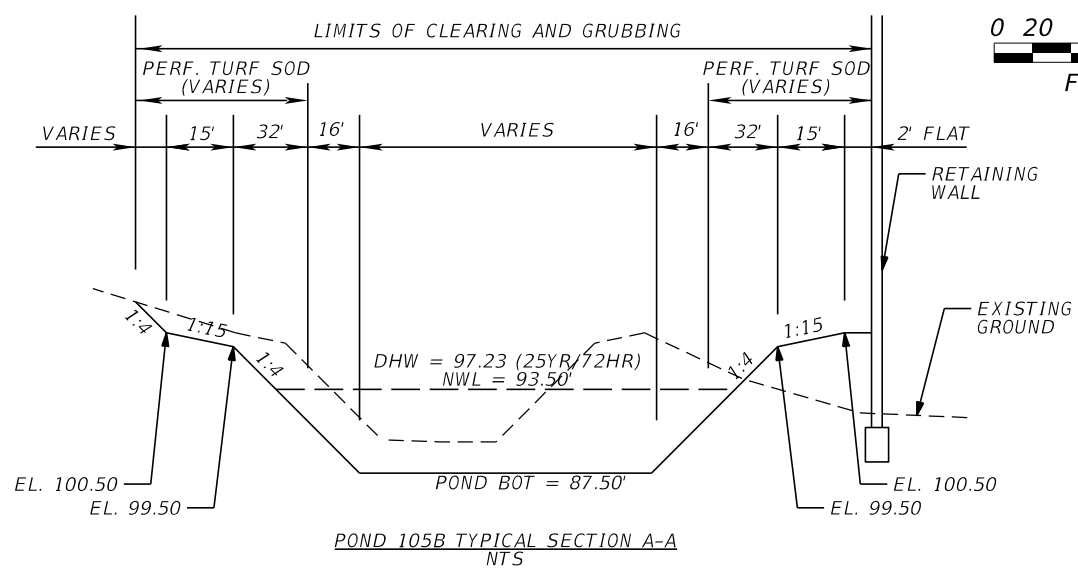
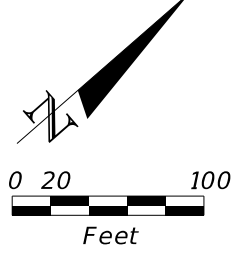
- NOTE:
1. CONTRACTOR SHALL CUT A STAINLESS STEEL PLATE TO DIMENSION AS SHOWN ON TABLE. USE 1/2" X 4" EXPAN. STAINLESS STEEL ANCHOR BOLT.
 2. SKIMMER ATTACHMENT NOTE: SKIMMER TO BE ATTACHED TO BACK OF STRUCTURE USING 3/8" STAINLESS STEEL STUD TYPE EXPANSION ANCHOR WITH NUT AND WASHER. EMBEDDED DEPTH TO BE 2-1/2". ANCHORS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS OR AS DIRECTED BY THE ENGINEER.
 3. MOUNTING STRAPS SHALL BE 1/4" THICK BENT STAINLESS STEEL PLATES WITH DRILLED HOLES.
 4. FASTEN MOUNTING STRAP IN WITH 1/2" X 4" EXPAN. STAINLESS STEEL ANCHOR BOLT.
 5. ALL CONTROL STRUCTURES SHALL HAVE STEEL RECTICULAR GRATES.



REVISIONS				Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			CONTROL STRUCTURE DETAIL POND 105A	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						SR 400	OSCEOLA		431456-1-52-01

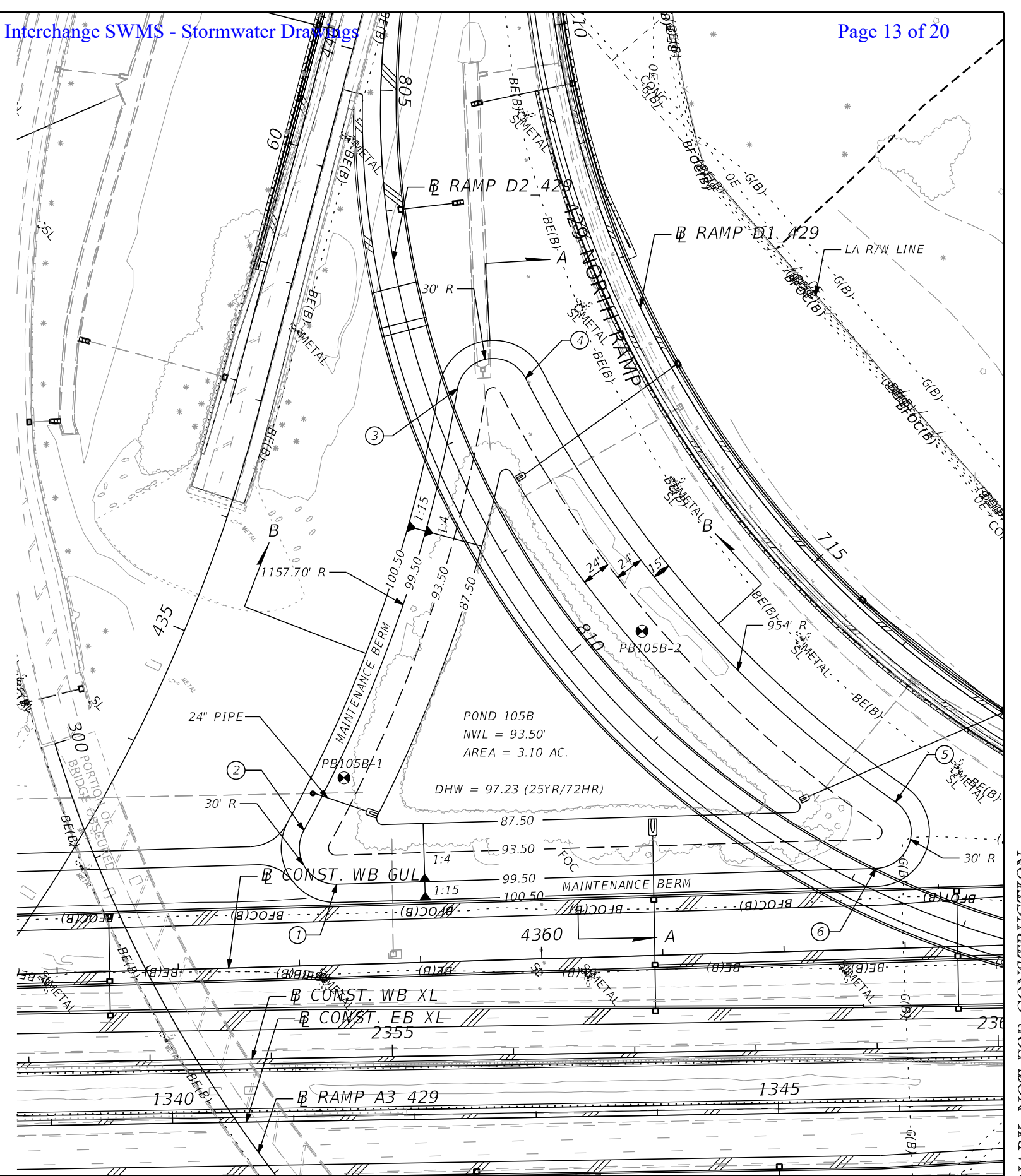
PRELIMINARY: NOT FOR CONSTRUCTION

1. MAINTENANCE ACCESS AND MAINTENANCE BERM SHALL BE SOD ON 12" OF TYPE B STABILIZATION.



REFERENCE POINT	B CONST. GWB14	OFFSET (FT)	SIDE
1	4358+32.76	66.50	LT
2	4358+06.89	111.70	LT
3	4359+44.24	472.15	LT
4	4360+00.77	479.14	LT
5	4362+95.61	120.62	LT
6	4362+77.78	66.50	LT

LEGEND
 ESHW = ESTIMATED SEASONAL HIGH WATER
 DHW = DESIGN HIGH WATER
 ● = APPROXIMATE BORING LOCATION



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

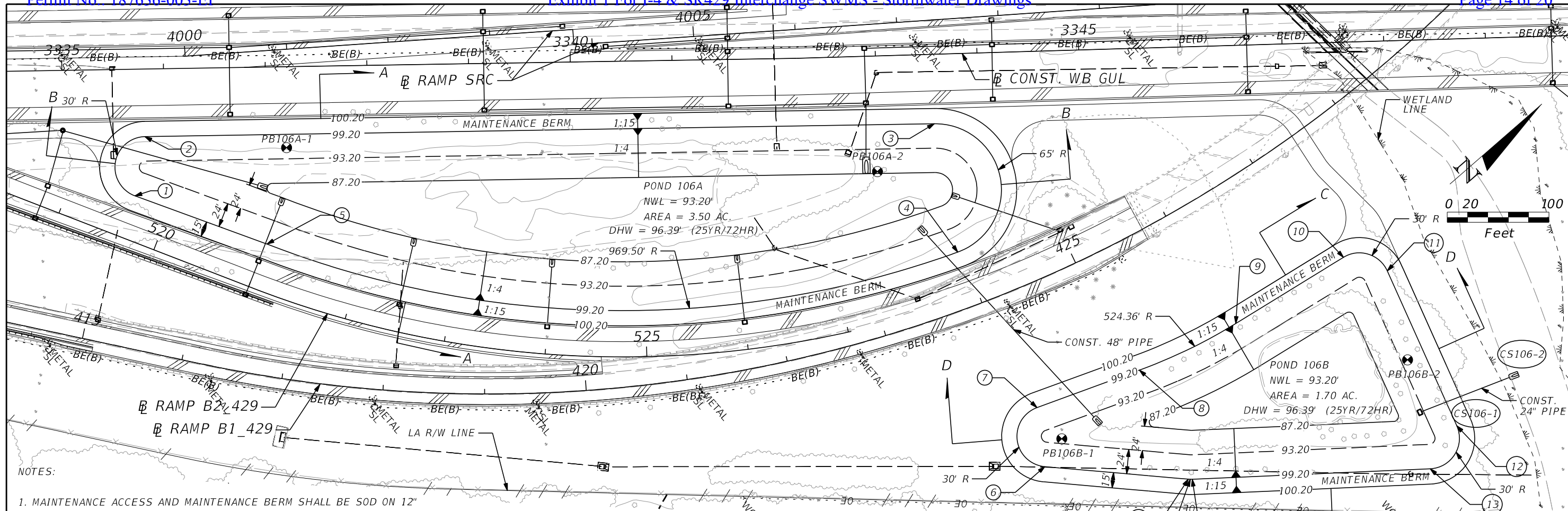
Inwood Consulting Engineers, Inc.
 Certificate of Authorization No. 7074
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	OSCEOLA	431456-1-52-01

POND DETAIL
POND 105B

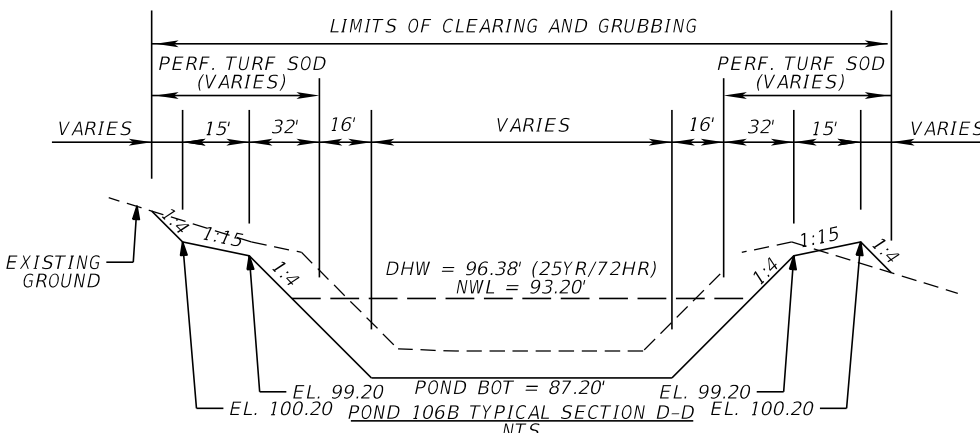
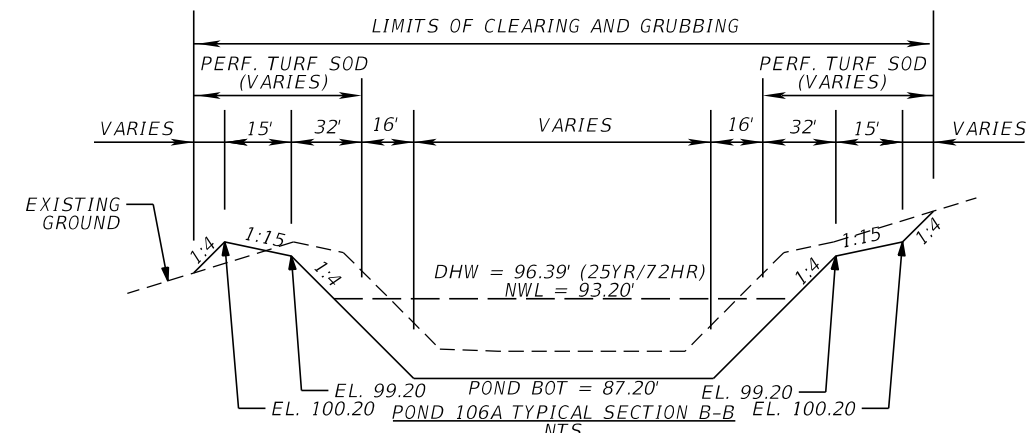
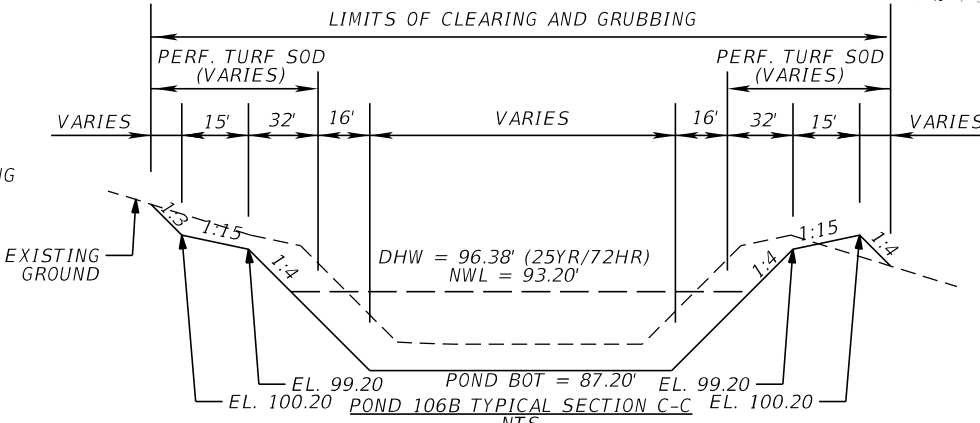
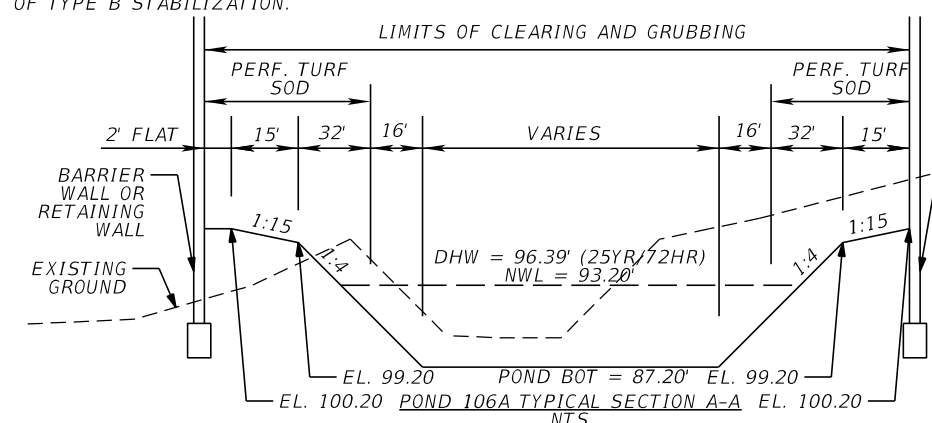
SHEET NO.

PRELIMINARY: NOT FOR CONSTRUCTION



NOTES:

1. MAINTENANCE ACCESS AND MAINTENANCE BERM SHALL BE SOD ON 12" OF TYPE B STABILIZATION.



REFERENCE POINT	CONST. GEBI4	OFFSET (FT)	SIDE
1	3335+69.97	124.51	RT
2	3335+80.70	66.50	RT
3	3343+55.91	68.25	RT
4	3343+75.31	195.01	RT
5	3336+98.94	173.96	RT
REFERENCE POINT	CONST. RAMP B1_429	OFFSET (FT)	SIDE
6	424+00.14	172.55	LT
7	424+12.65	115.63	LT
8	425+11.14	122.12	LT
9	426+07.58	125.52	LT
10	427+21.23	126.64	LT
11	427+46.24	162.23	LT
12	427+19.71	326.19	LT
13	426+83.57	346.93	LT
14	425+11.49	241.32	LT
15	425+08.52	239.55	LT

(CS106-2)
 CONST. CD MES (1:4)
 STA. 427+76.00, 317.64' RT
 INDEX NO. 272
 FL 91.00 BK

LEGEND
 ESHW = ESTIMATED SEASONAL HIGH WATER
 DHW = DESIGN HIGH WATER
 ⊙ = APPROXIMATE BORING LOCATION

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

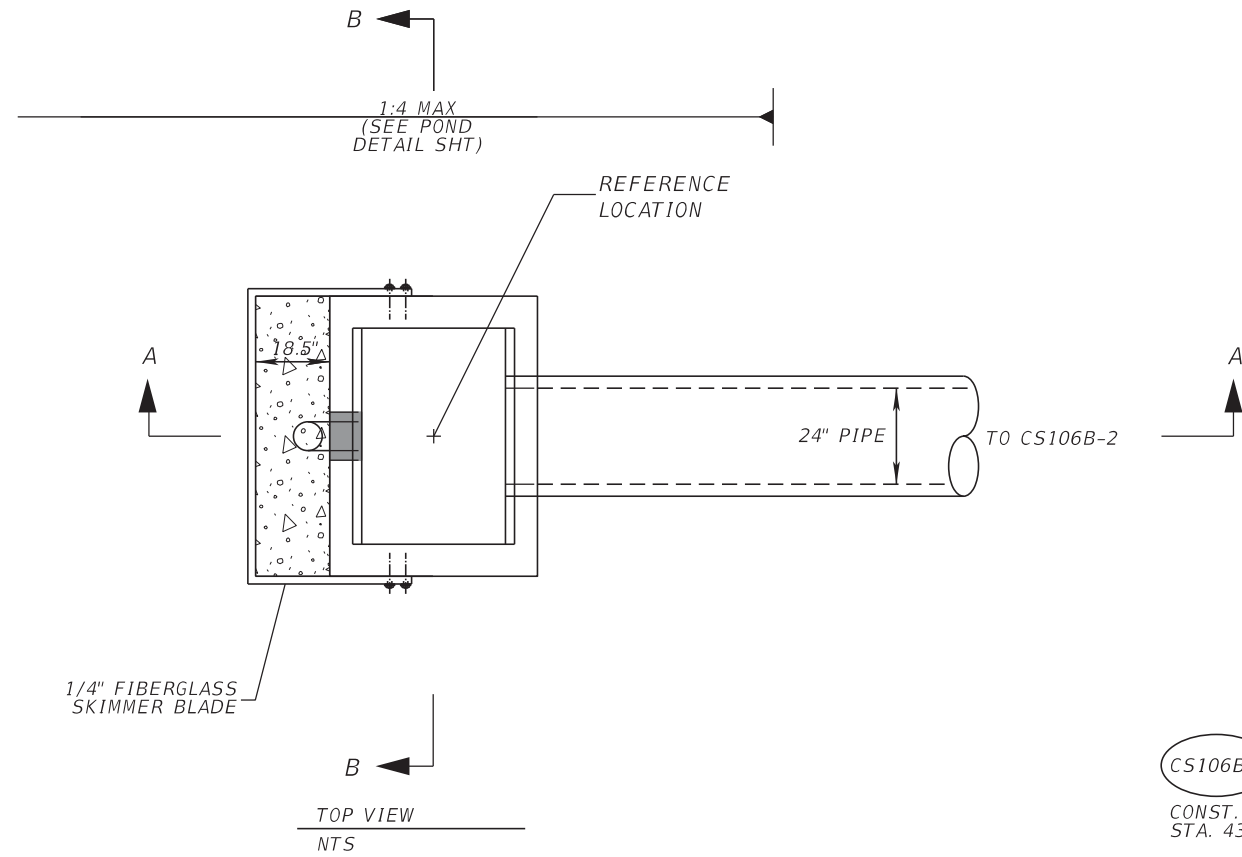
Inwood Consulting Engineers, Inc.
 Certificate of Authorization No. 7074
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	OSCEOLA	431456-1-52-01

POND DETAIL
POND 106A & POND 106B

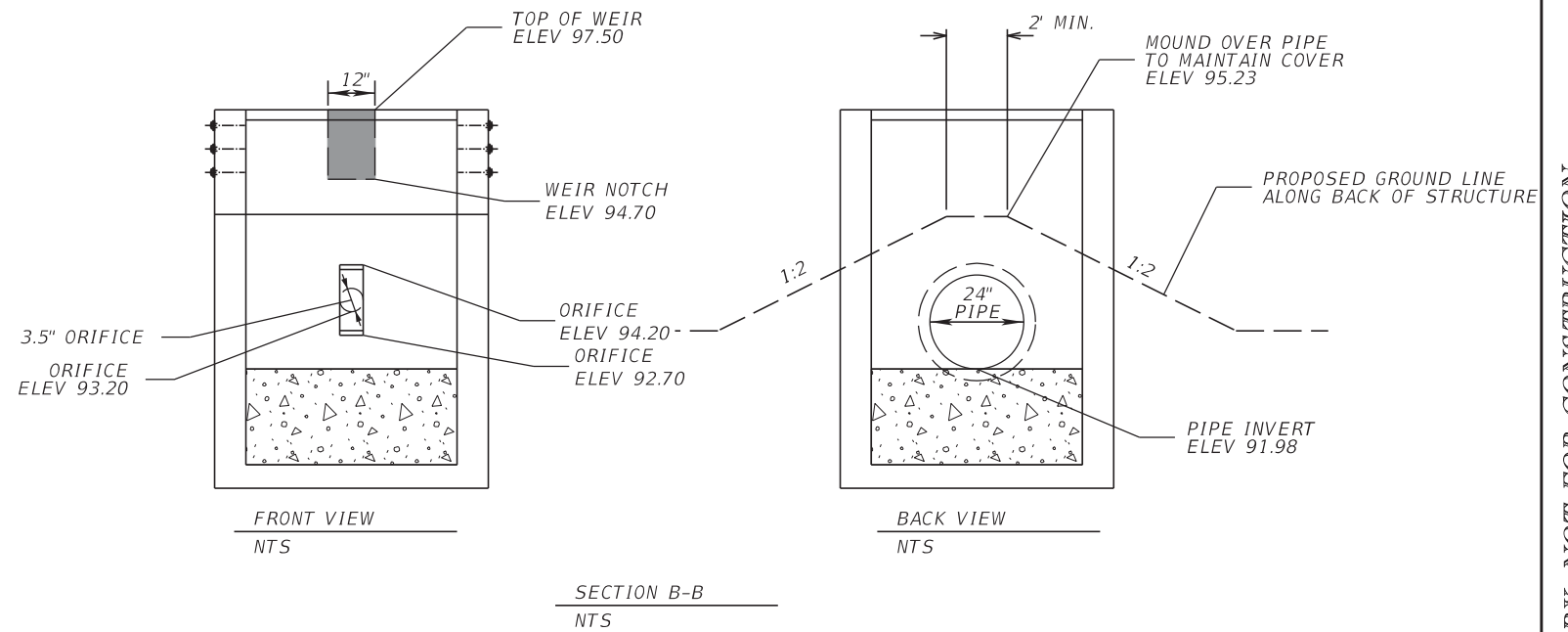
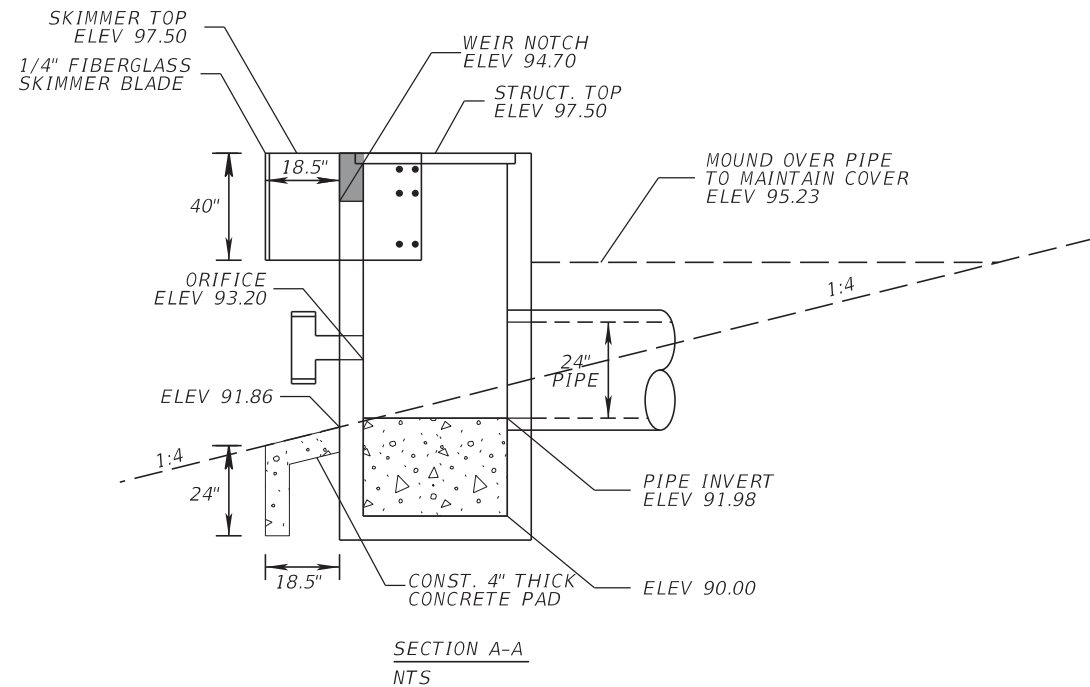
SHEET NO.
436

PRELIMINARY: NOT FOR CONSTRUCTION



CS106B-1
 CONST. DBI TYPE E-MOD
 STA. 4353+50.64, 563.10' RT.

- NOTE:
1. CONTRACTOR SHALL CUT A STAINLESS STEEL PLATE TO DIMENSION AS SHOWN ON TABLE. USE 1/2" X 4" EXPAN. STAINLESS STEEL ANCHOR BOLT.
 2. SKIMMER ATTACHMENT NOTE: SKIMMER TO BE ATTACHED TO BACK OF STRUCTURE USING 3/8" STAINLESS STEEL STUD TYPE EXPANSION ANCHOR WITH NUT AND WASHER. EMBEDDED DEPTH TO BE 2-1/2". ANCHORS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS OR AS DIRECTED BY THE ENGINEER.
 3. MOUNTING STRAPS SHALL BE 1/4" THICK BENT STAINLESS STEEL PLATES WITH DRILLED HOLES.
 4. FASTEN MOUNTING STRAP IN WITH 1/2" X 4" EXPAN. STAINLESS STEEL ANCHOR BOLT.
 5. ALL CONTROL STRUCTURES SHALL HAVE STEEL RECTICULAR GRATES.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

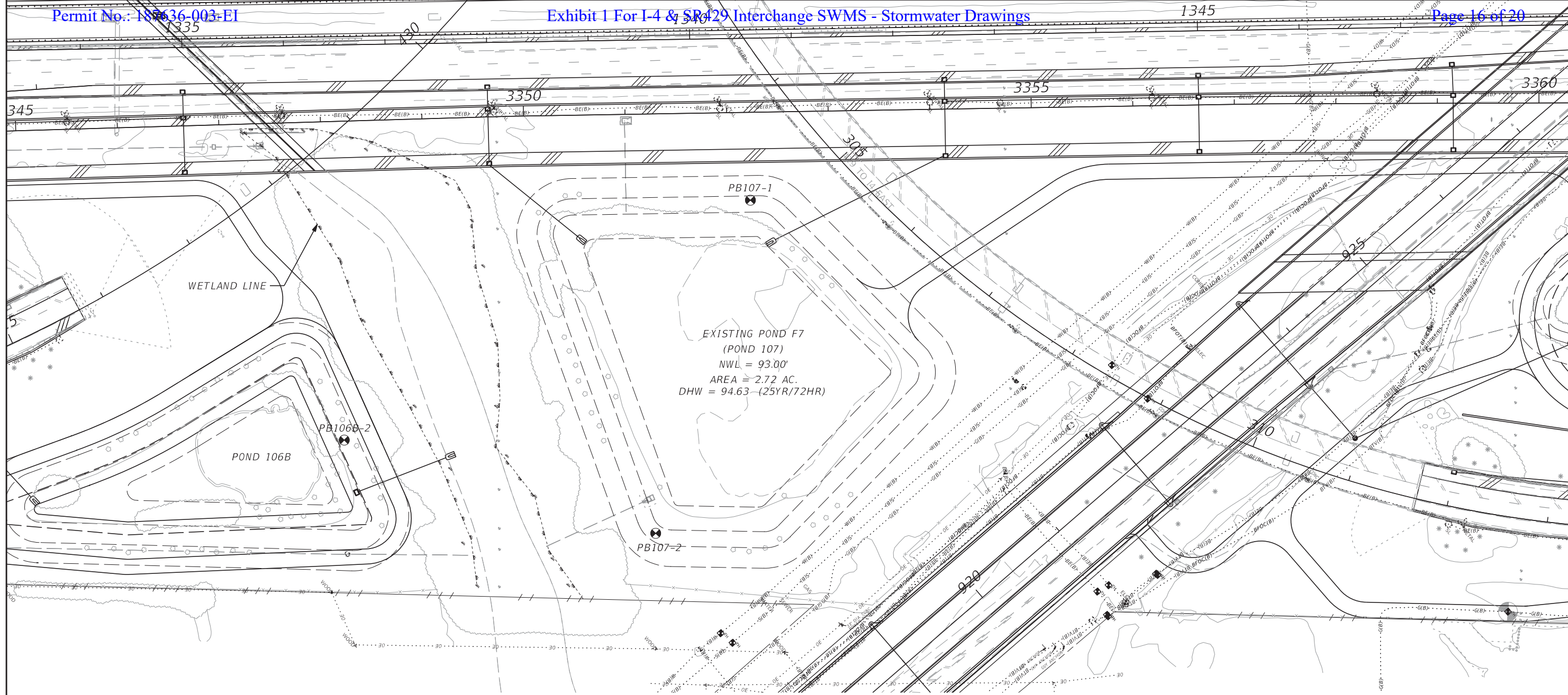
Inwood Consulting Engineers, Inc.
 Certificate of Authorization No. 7074
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	OSCEOLA	431456-1-52-01

CONTROL STRUCTURE DETAIL
POND 106B

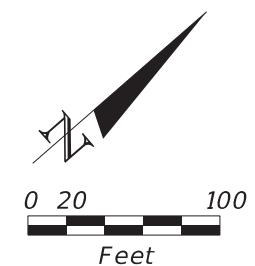
SHEET NO.
 437

PRELIMINARY: NOT FOR CONSTRUCTION



NOTES:

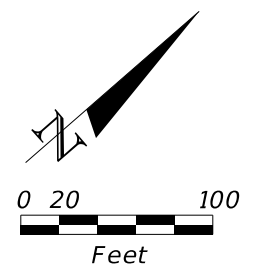
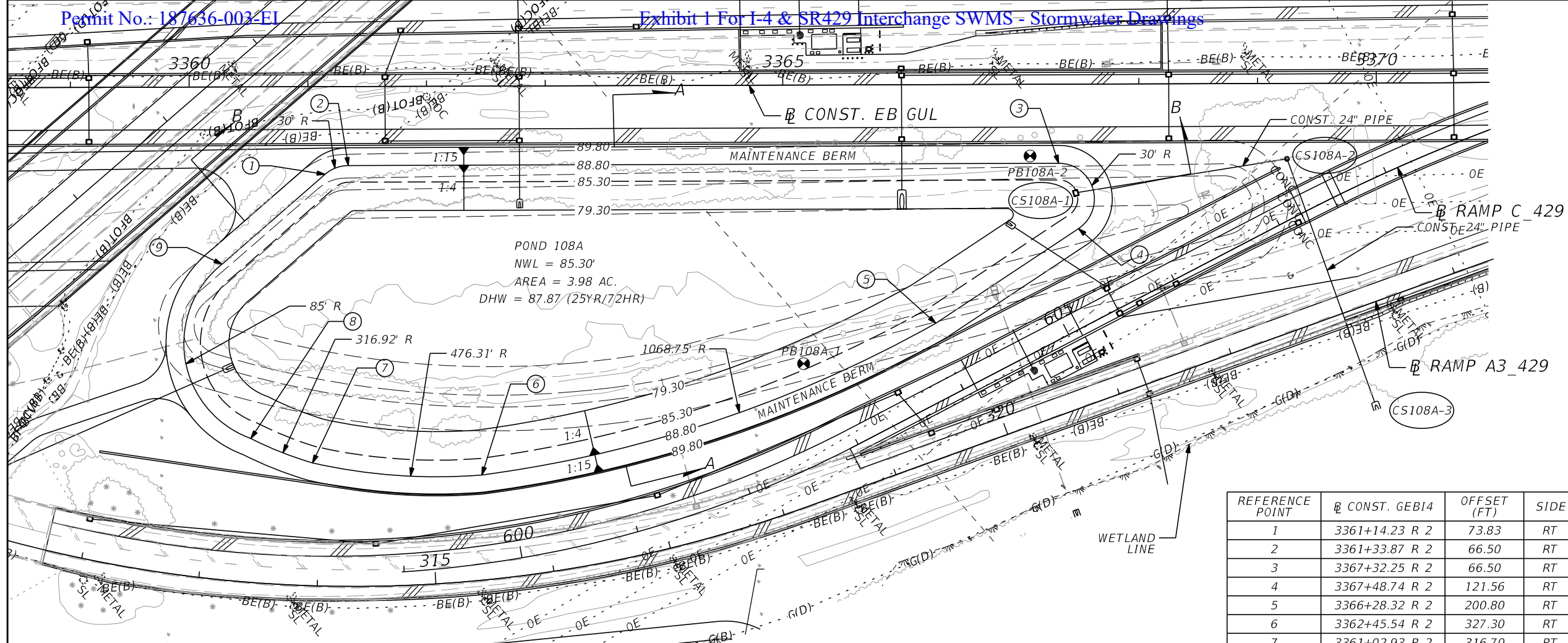
- 1. MAINTENANCE ACCESS AND MAINTENANCE BERM SHALL BE SOD ON 12" OF TYPE B STABILIZATION.



REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POND DETAIL POND 107	SHEET NO. 438
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				SR 400	OSCEOLA	431456-1-52-01		

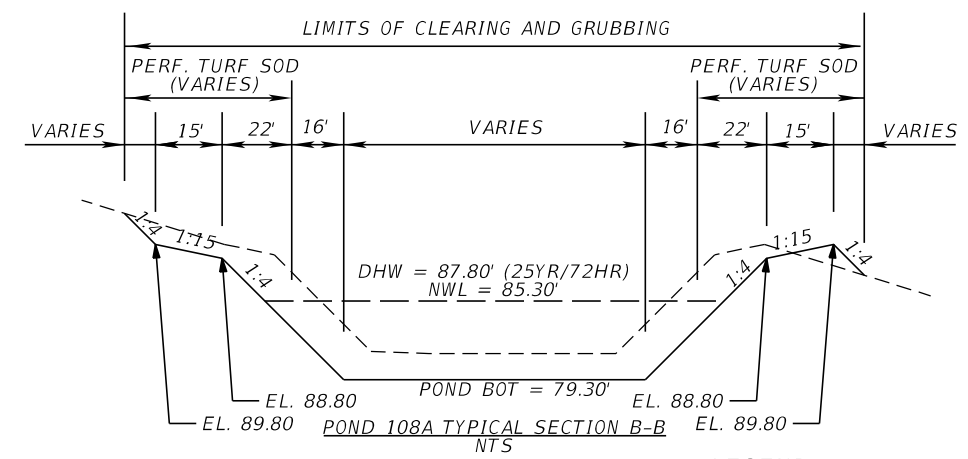
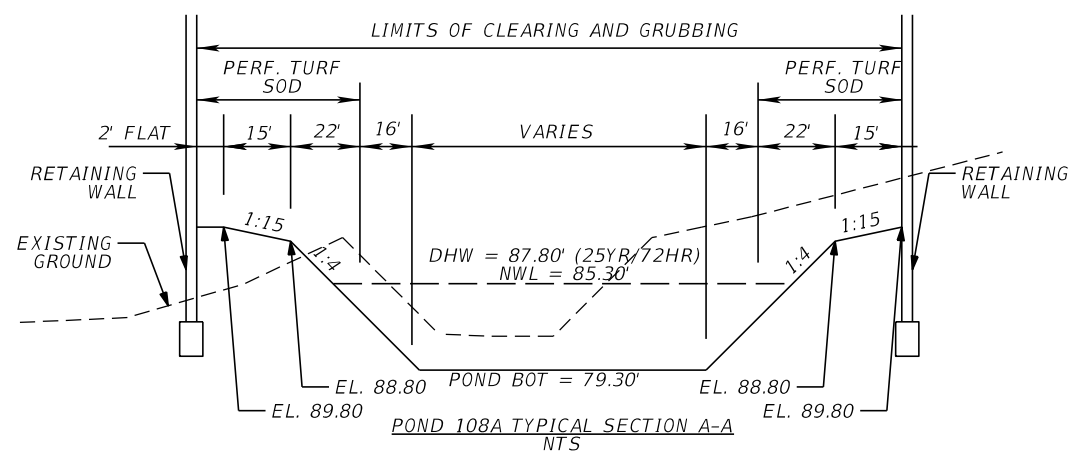
Inwood Consulting Engineers, Inc.
 Certificate of Authorization No. 7074
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765
 P 407.971.8850

PRELIMINARY: NOT FOR CONSTRUCTION



- CS108A-2
CONST. MANHOLE P-8
STA. 3369+24.56, 63.45' RT
TOP EL. 90.10
INDEX NO. 272
FL 84.00 RT
FL 84.00 BK
- CS108A-3
CONST. CD MES (1:4)
STA. 3369+97.46, 269.31' RT
INDEX NO. 272
FL 83.20 LT

REFERENCE POINT	CONST. GEBI4	OFFSET (FT)	SIDE
1	3361+14.23 R 2	73.83	RT
2	3361+33.87 R 2	66.50	RT
3	3367+32.25 R 2	66.50	RT
4	3367+48.74 R 2	121.56	RT
5	3366+28.32 R 2	200.80	RT
6	3362+45.54 R 2	327.30	RT
7	3361+02.93 R 2	316.70	RT
8	3360+51.06 R 2	295.96	RT
9	3360+27.21 R 2	149.15	RT

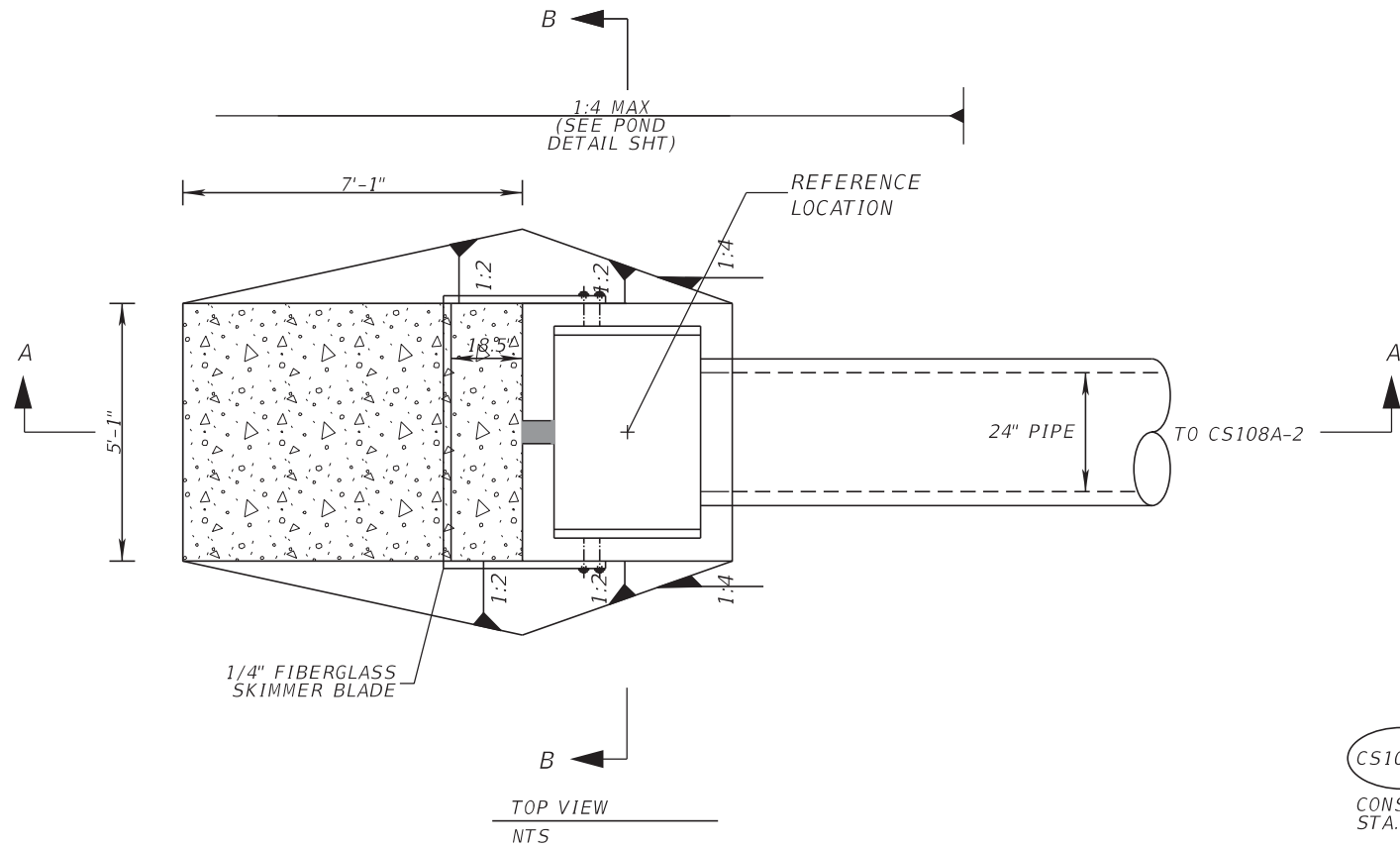


NOTES:
1. MAINTENANCE ACCESS AND MAINTENANCE BERM SHALL BE SOD ON 12" OF TYPE B STABILIZATION.

LEGEND
 ESHW = ESTIMATED SEASONAL HIGH WATER
 DHW = DESIGN HIGH WATER
 ● = APPROXIMATE BORING LOCATION

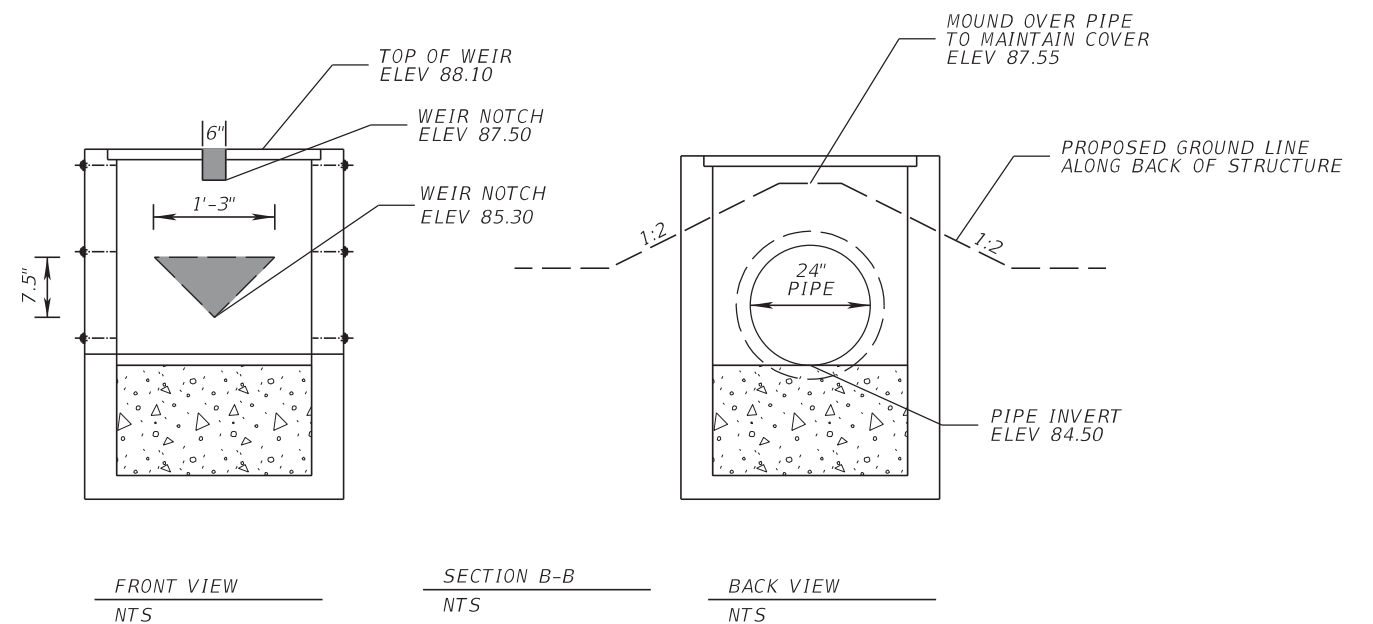
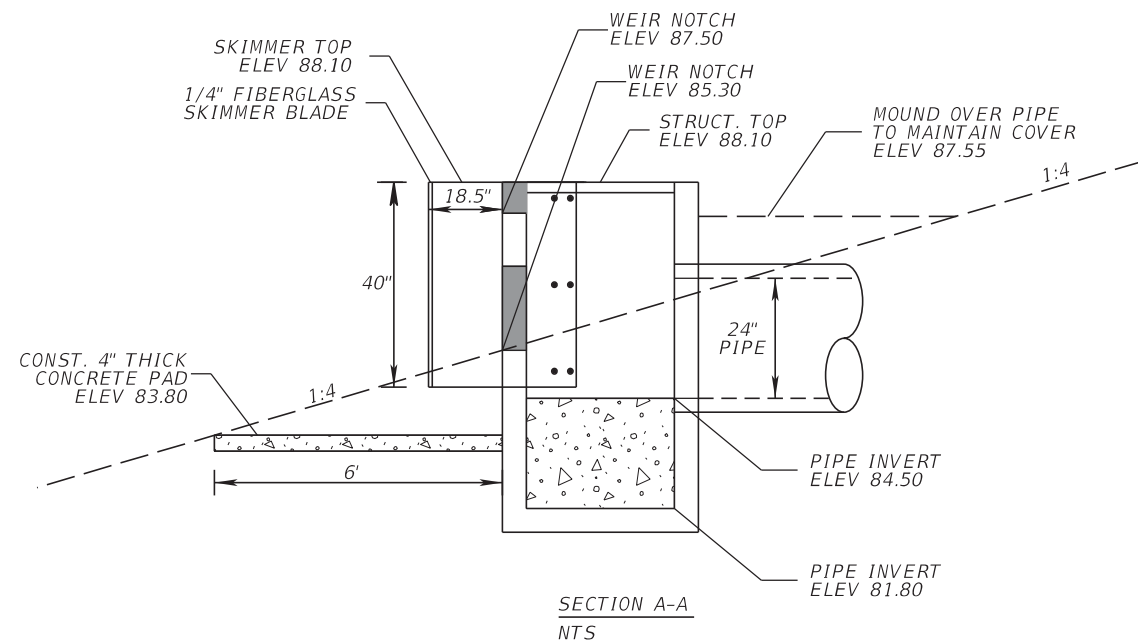
REVISIONS				Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POND DETAIL POND 108A	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 400	OSCEOLA	431456-1-52-01		

PRELIMINARY: NOT FOR CONSTRUCTION



CS108A-1
 CONST. DBI TYPE D-MOD
 STA. 4372+77.08, 314.53' RT.

- NOTE:
1. CONTRACTOR SHALL CUT A STAINLESS STEEL PLATE TO DIMENSION AS SHOWN ON TABLE. USE 1/2" X 4" EXPAN. STAINLESS STEEL ANCHOR BOLT.
 2. SKIMMER ATTACHMENT NOTE: SKIMMER TO BE ATTACHED TO BACK OF STRUCTURE USING 3/8" STAINLESS STEEL STUD TYPE EXPANSION ANCHOR WITH NUT AND WASHER. EMBEDDED DEPTH TO BE 2-1/2". ANCHORS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS OR AS DIRECTED BY THE ENGINEER.
 3. MOUNTING STRAPS SHALL BE 1/4" THICK BENT STAINLESS STEEL PLATES WITH DRILLED HOLES.
 4. FASTEN MOUNTING STRAP IN WITH 1/2" X 4" EXPAN. STAINLESS STEEL ANCHOR BOLT.
 5. ALL CONTROL STRUCTURES SHALL HAVE STEEL RECTICULAR GRATES.

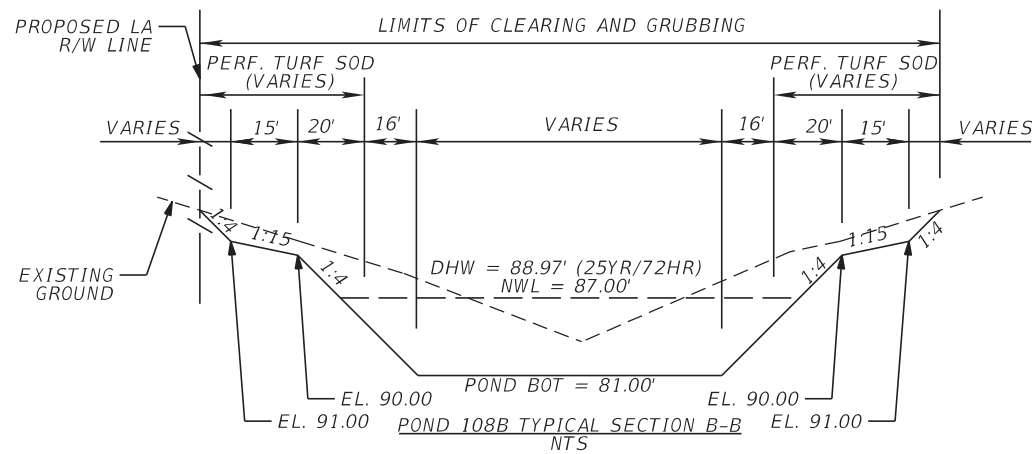
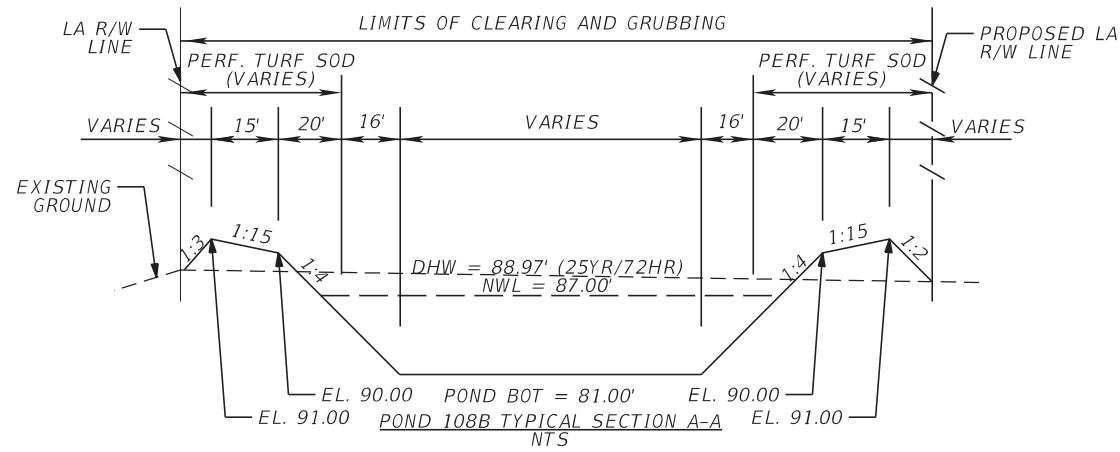
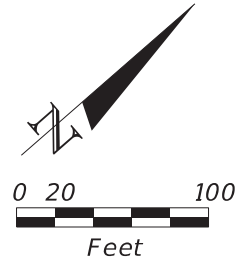


REVISIONS				Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			CONTROL STRUCTURE DETAIL POND 108A	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						SR 400	OSCEOLA		431456-1-52-01

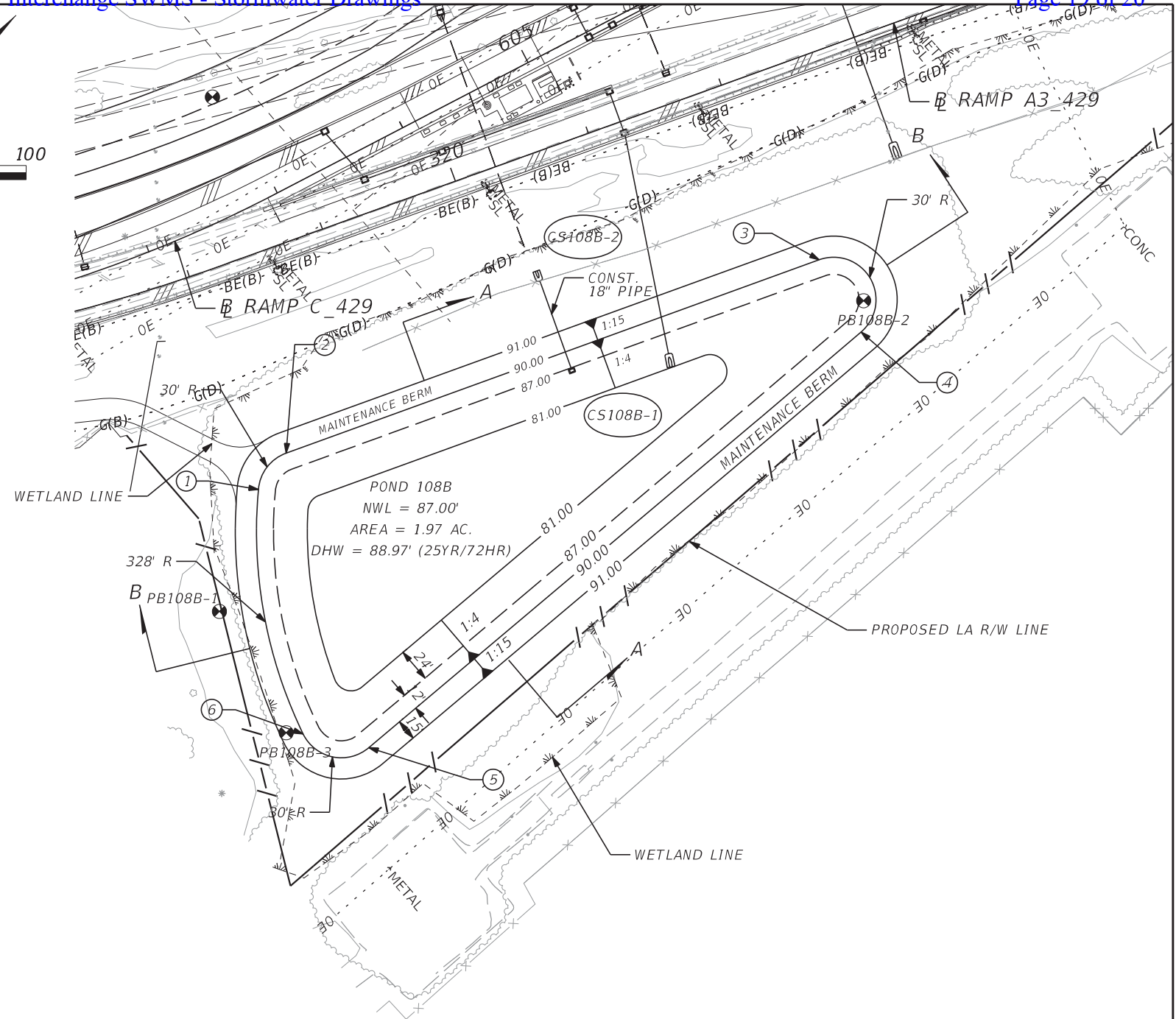
PRELIMINARY: NOT FOR CONSTRUCTION

NOTES:

1. MAINTENANCE ACCESS AND MAINTENANCE BERM SHALL BE SOD ON 12" OF TYPE B STABILIZATION.



REFERENCE POINT	B RAMP A3_429	OFFSET (FT)	SIDE
1	317+97.79	158.25	RT
2	318+22.12	140.38	RT
3	322+23.22	139.70	RT
4	322+33.83	197.78	RT
5	318+09.36	356.29	RT
6	317+78.02	332.31	RT

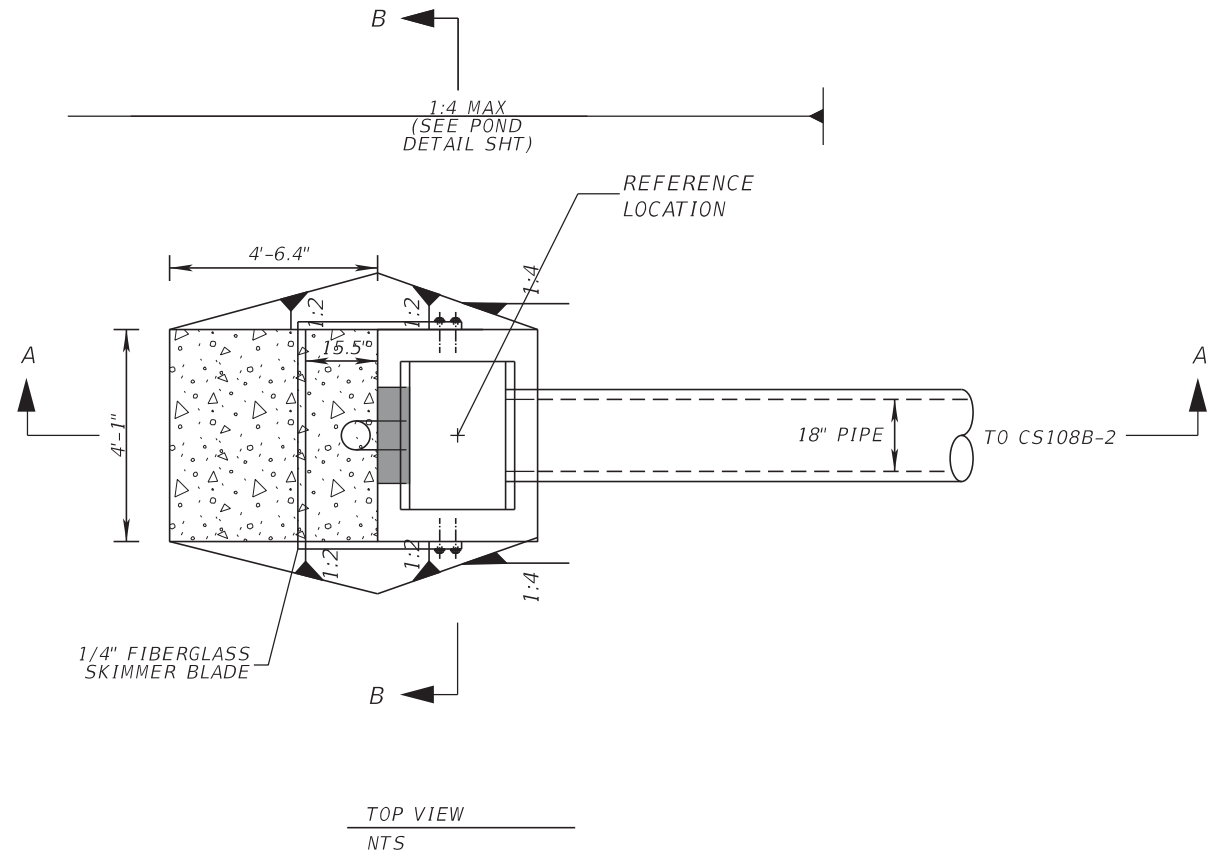


CS108B-2
 CONST. CD MES (1:4)
 STA. 320+32.22, 84.33' RT
 INDEX NO. 272
 FL 82.50 RT

LEGEND
 ESHW = ESTIMATED SEASONAL HIGH WATER
 DHW = DESIGN HIGH WATER
 ● = APPROXIMATE BORING LOCATION

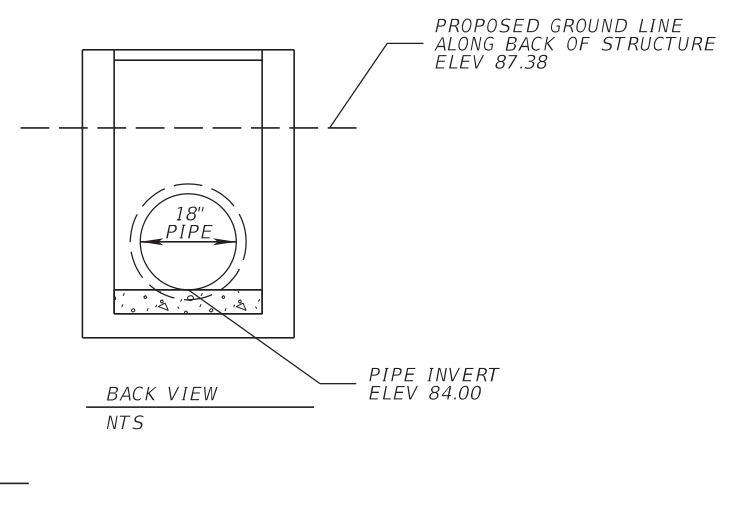
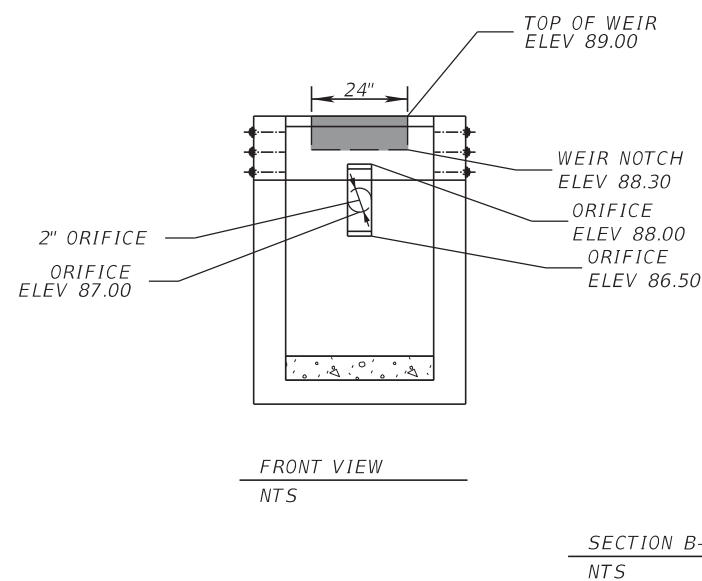
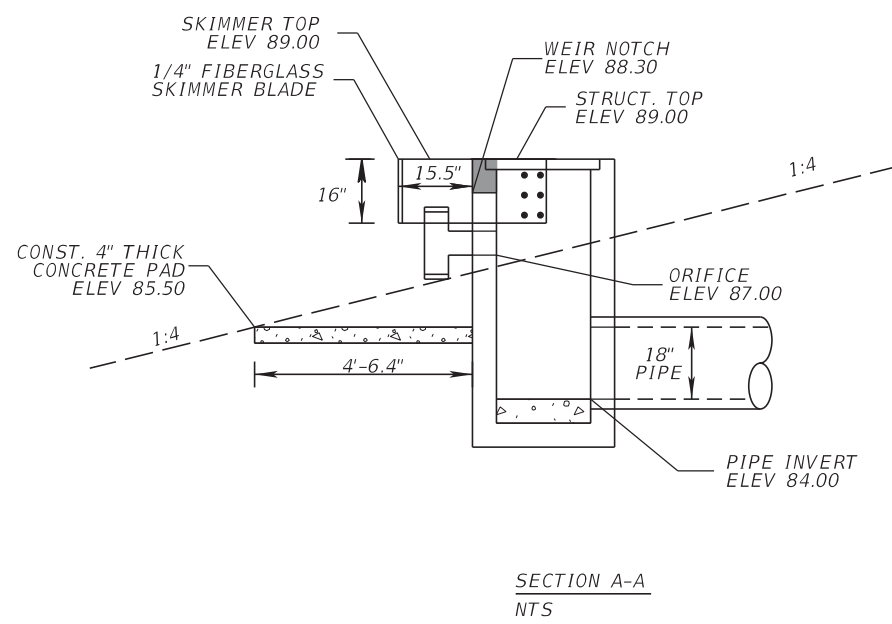
REVISIONS				Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POND DETAIL POND 108B	SHEET NO. 441
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 400	OSCEOLA	431456-1-52-01		

PRELIMINARY: NOT FOR CONSTRUCTION



CS108B-1
 CONST. DBI TYPE C-MOD
 STA. 4373+00.96, 651.79' RT.

- NOTE:
1. CONTRACTOR SHALL CUT A STAINLESS STEEL PLATE TO DIMENSION AS SHOWN ON TABLE. USE 1/2" X 4" EXPAN. STAINLESS STEEL ANCHOR BOLT.
 2. SKIMMER ATTACHMENT NOTE: SKIMMER TO BE ATTACHED TO BACK OF STRUCTURE USING 3/8" STAINLESS STEEL STUD TYPE EXPANSION ANCHOR WITH NUT AND WASHER. EMBEDDED DEPTH TO BE 2-1/2". ANCHORS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS OR AS DIRECTED BY THE ENGINEER.
 3. MOUNTING STRAPS SHALL BE 1/4" THICK BENT STAINLESS STEEL PLATES WITH DRILLED HOLES.
 4. FASTEN MOUNTING STRAP IN WITH 1/2" X 4" EXPAN. STAINLESS STEEL ANCHOR BOLT.
 5. ALL CONTROL STRUCTURES SHALL HAVE STEEL RETICULAR GRATES.



REVISIONS				Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			CONTROL STRUCTURE DETAIL POND 108B	SHEET NO. 442
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 400	OSCEOLA	431456-1-52-01		

PRELIMINARY: NOT FOR CONSTRUCTION



OUTFALL 4: DAVENPORT CREEK TRIBUTARY

TREATED BASINS:
 EX_BSNB2
 TOTAL AREA: 14.78 AC.
 IMPERVIOUS AREA: 7.56 AC. (FUTURE WIDENING WITH PAVED MEDIAN)
 PERVIOUS AREA: 3.71 AC.
 WATER SURFACE: 3.51 AC.
 CN: 48.00
 DCIA: 11.07 AC.
 NDCIA: 3.71 AC.
 Tc: 10.00 MIN (PERMITTED),
 DEP PERMIT #: 49-187636001

REVISIONS				ENGINEER OF RECORD Renato E. Chuw, PE PE No. 56050 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			DC TRIBUTARY OUTFALL EXISTING BASIN MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 400	OSCEOLA	431456-1-52-01		

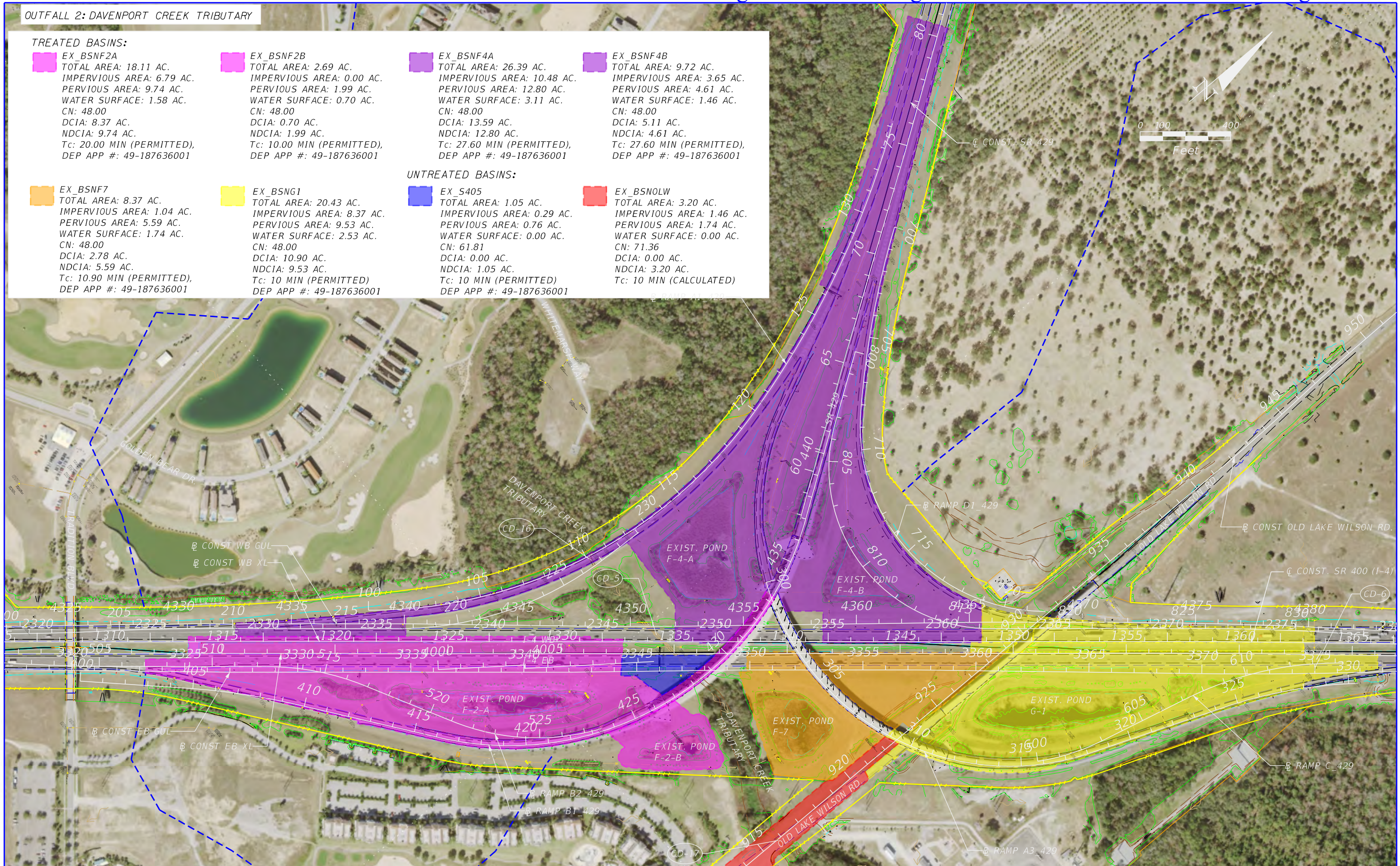
OUTFALL 2: DAVENPORT CREEK TRIBUTARY

TREATED BASINS:

- EX_BSNF2A
TOTAL AREA: 18.11 AC.
IMPERVIOUS AREA: 6.79 AC.
PERVIOUS AREA: 9.74 AC.
WATER SURFACE: 1.58 AC.
CN: 48.00
DCIA: 8.37 AC.
NDCIA: 9.74 AC.
Tc: 20.00 MIN (PERMITTED),
DEP APP #: 49-187636001
- EX_BSNF2B
TOTAL AREA: 2.69 AC.
IMPERVIOUS AREA: 0.00 AC.
PERVIOUS AREA: 1.99 AC.
WATER SURFACE: 0.70 AC.
CN: 48.00
DCIA: 0.70 AC.
NDCIA: 1.99 AC.
Tc: 10.00 MIN (PERMITTED),
DEP APP #: 49-187636001
- EX_BSNF4A
TOTAL AREA: 26.39 AC.
IMPERVIOUS AREA: 10.48 AC.
PERVIOUS AREA: 12.80 AC.
WATER SURFACE: 3.11 AC.
CN: 48.00
DCIA: 13.59 AC.
NDCIA: 12.80 AC.
Tc: 27.60 MIN (PERMITTED),
DEP APP #: 49-187636001
- EX_BSNF4B
TOTAL AREA: 9.72 AC.
IMPERVIOUS AREA: 3.65 AC.
PERVIOUS AREA: 4.61 AC.
WATER SURFACE: 1.46 AC.
CN: 48.00
DCIA: 5.11 AC.
NDCIA: 4.61 AC.
Tc: 27.60 MIN (PERMITTED),
DEP APP #: 49-187636001

- EX_BSNF7
TOTAL AREA: 8.37 AC.
IMPERVIOUS AREA: 1.04 AC.
PERVIOUS AREA: 5.53 AC.
WATER SURFACE: 1.74 AC.
CN: 48.00
DCIA: 2.78 AC.
NDCIA: 5.59 AC.
Tc: 10.90 MIN (PERMITTED),
DEP APP #: 49-187636001
- EX_BSNF1
TOTAL AREA: 20.43 AC.
IMPERVIOUS AREA: 8.37 AC.
PERVIOUS AREA: 9.53 AC.
WATER SURFACE: 2.53 AC.
CN: 48.00
DCIA: 10.90 AC.
NDCIA: 9.53 AC.
Tc: 10 MIN (PERMITTED),
DEP APP #: 49-187636001
- EX_S405
TOTAL AREA: 1.05 AC.
IMPERVIOUS AREA: 0.29 AC.
PERVIOUS AREA: 0.76 AC.
WATER SURFACE: 0.00 AC.
CN: 61.81
DCIA: 0.00 AC.
NDCIA: 1.05 AC.
Tc: 10 MIN (PERMITTED),
DEP APP #: 49-187636001
- EX_BSNOLW
TOTAL AREA: 3.20 AC.
IMPERVIOUS AREA: 1.46 AC.
PERVIOUS AREA: 1.74 AC.
WATER SURFACE: 0.00 AC.
CN: 71.36
DCIA: 0.00 AC.
NDCIA: 3.20 AC.
Tc: 10 MIN (CALCULATED)

UNTREATED BASINS:



REVISIONS				ENGINEER OF RECORD Renato E. Chuw, PE PE No. 56050 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			DC TRIBUTARY OUTFALL EXISTING BASIN MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 400	OSCEOLA	431456-1-52-01		



OUTFALL 4: DAVENPORT CREEK TRIBUTARY

TREATED BASINS:

- BSN104
- TOTAL AREA: 15.48 AC.
- IMPERVIOUS AREA: 7.56 AC. (FUTURE WIDENING WITH PAVED MEDIAN)
- PERVIOUS AREA: 4.61 AC.
- WATER SURFACE: 3.31 AC.
- CN: 48.00
- DCIA: 10.87 AC.
- NDCIA: 4.61 AC.
- Tc: 20.00 MIN (CALCULATED)

REVISIONS				ENGINEER OF RECORD Renato E. Chuw, PE PE No. 56050 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			DC TRIBUTARY OUTFALL PROPOSED BASIN MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 400	OSCEOLA	431456-1-52-01		

OUTFALL 2: DAVENPORT CREEK TRIBUTARY

TREATED BASINS:

BSN105
 TOTAL AREA: 54.07 AC.
 IMPERVIOUS AREA: 28.75 AC.
 PERVIOUS AREA: 19.73 AC.
 WATER SURFACE: 5.59 AC.
 CN: 55.19
 DCIA: 34.34 AC.
 NDCIA: 19.73 AC.
 Tc (105A): 18.67 MIN (CALCULATED)
 Tc (105B): 27.84 MIN (CALCULATED)

BSN106
 TOTAL AREA: 21.38 AC.
 IMPERVIOUS AREA: 11.84 AC.
 PERVIOUS AREA: 6.90 AC.
 WATER SURFACE: 2.64 AC.
 CN: 56.83
 DCIA: 14.48 AC.
 NDCIA: 6.90 AC.
 Tc: 20.89 MIN (CALCULATED)

BSN106OFF
 TOTAL AREA: 4.25 AC.
 IMPERVIOUS AREA: 0.00 AC.
 PERVIOUS AREA: 4.25 AC.
 WATER SURFACE: 0.00 AC.
 CN: 49.00
 DCIA: 0.00 AC.
 NDCIA: 4.25 AC.
 Tc: 38.07 MIN (CALCULATED)

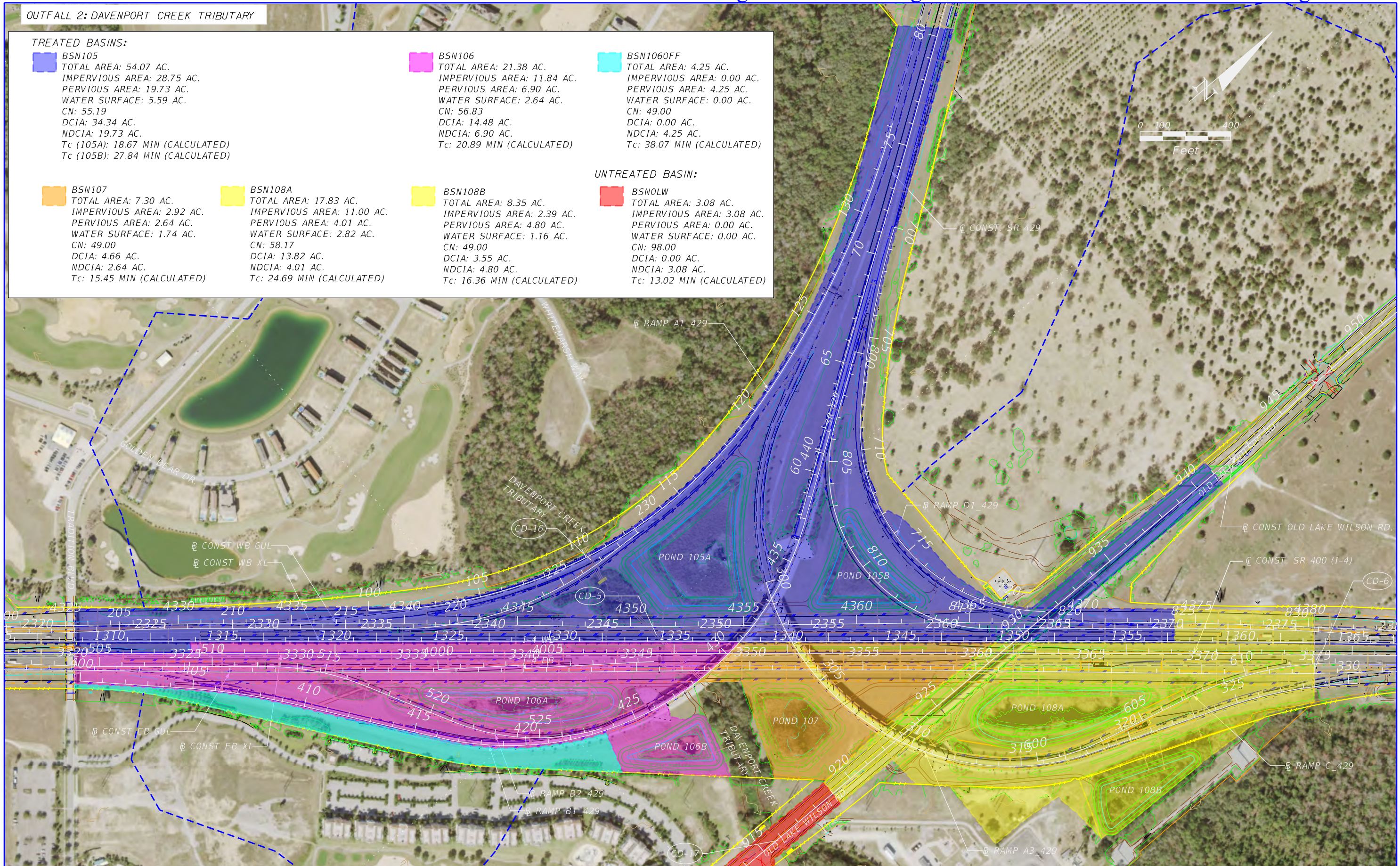
BSN107
 TOTAL AREA: 7.30 AC.
 IMPERVIOUS AREA: 2.92 AC.
 PERVIOUS AREA: 2.64 AC.
 WATER SURFACE: 1.74 AC.
 CN: 49.00
 DCIA: 4.66 AC.
 NDCIA: 2.64 AC.
 Tc: 15.45 MIN (CALCULATED)

BSN108A
 TOTAL AREA: 17.83 AC.
 IMPERVIOUS AREA: 11.00 AC.
 PERVIOUS AREA: 4.01 AC.
 WATER SURFACE: 2.82 AC.
 CN: 58.17
 DCIA: 13.82 AC.
 NDCIA: 4.01 AC.
 Tc: 24.69 MIN (CALCULATED)

BSN108B
 TOTAL AREA: 8.35 AC.
 IMPERVIOUS AREA: 2.39 AC.
 PERVIOUS AREA: 4.80 AC.
 WATER SURFACE: 1.16 AC.
 CN: 49.00
 DCIA: 3.55 AC.
 NDCIA: 4.80 AC.
 Tc: 16.36 MIN (CALCULATED)

UNTREATED BASIN:

BSNOLW
 TOTAL AREA: 3.08 AC.
 IMPERVIOUS AREA: 3.08 AC.
 PERVIOUS AREA: 0.00 AC.
 WATER SURFACE: 0.00 AC.
 CN: 98.00
 DCIA: 0.00 AC.
 NDCIA: 3.08 AC.
 Tc: 13.02 MIN (CALCULATED)



REVISIONS				ENGINEER OF RECORD Renato E. Chuw, PE PE No. 56050 Inwood Consulting Engineers, Inc. Certificate of Authorization No. 7074 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			DC TRIBUTARY OUTFALL PROPOSED BASIN MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					SR 400	OSCEOLA	431456-1-52-01		

Bullfrog Bay Mitigation Bank

Osceola Mitigation Partners, LLC

July 29, 2019

Ms. Megan Warr, Environmental Specialist
FDEP Central District
3319 Maguire Boulevard
Orlando, FL 32803

**Re: *I-4 Beyond the Ultimate Improvements from Tradition Blvd. to East of Old Lake Wilson Road
FDEP Application Number 187636
Bullfrog Bay Mitigation Bank Letter of Credit Reservation***

Dear Ms. Warr:

This is to confirm that the FDOT District Five have purchased 2.79 UMAM freshwater forested credits and 0.05 UMAM freshwater herbaceous credits from Bullfrog Bay Mitigation Bank, SFWMD Mitigation Banking Permit No 53-00004-M.

These mitigation credits are reserved accordingly for the I-4 Beyond the Ultimate Improvements from Tradition Blvd. to East of Old Lake Wilson Road project (FDOT Project Number 431456-1) and will transfer as required by the Florida Department of Environmental Protection Permit for this project when approved.

Please do not hesitate to contact us if you have any questions or need further information.

Sincerely,



Rodney A. Welty

cc: Letitia Neal, FDOT
Casey Lyon, FDOT
Edward Northey, FDOT
Jennifer Ferngren, FDOT
Ned Dewhirst, Osceola Mitigation Partners, LLC
Desmond Duke, EcoResolve, Inc

RCID DATA

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1

Turnpike 484
File: 403497-268 (RCID)

This instrument prepared by:

Jack R. Leonard
Assistant General Counsel
FLORIDA'S TURNPIKE ENTERPRISE
Florida Department of Transportation
Post Office Box 613069
Ocoee, Florida 34761

DRAINAGE AGREEMENT

THIS DRAINAGE AGREEMENT (hereinafter the "Agreement") is made and entered into by and between the FLORIDA DEPARTMENT OF TRANSPORTATION, FLORIDA'S TURNPIKE ENTERPRISE (hereinafter "FLORIDA'S TURNPIKE ENTERPRISE"), an agency of the State of Florida created under Section 20.23, Florida Statutes, with principal place of business located at Turnpike Headquarters, Post Office Box 613069, Ocoee, Florida 34761, and REEDY CREEK IMPROVEMENT DISTRICT (hereinafter "RCID"), a special district created under Chap. 67-764, Laws of Florida (1967) and Chapter 298, Florida Statutes, with principal place of business located at 1900 Hotel Plaza Boulevard, Post Office Box 10170, Lake Buena Vista, Florida 32830-0170.

WITNESSETH

WHEREAS, FLORIDA'S TURNPIKE ENTERPRISE owns the right of way for the alignment of the Western Beltway, Part "C" (SR 429), (hereinafter the "Western Beltway") lying in part in Osceola County, and in part in Orange County, Florida, more particularly described in the attached Exhibit "A;" and

WHEREAS, FLORIDA DEPARTMENT OF TRANSPORTATION, including DISTRICT 5 and FLORIDA'S TURNPIKE ENTERPRISE, also owns the right of way for the construction of the interchange between the Western Beltway (SR 429) and Interstate 4 (SR 400) (hereinafter the "Interchange") lying in Osceola County, Florida, more particularly described in the attached Exhibit "B;" and

WHEREAS, FLORIDA'S TURNPIKE ENTERPRISE desires to acquire the right to discharge storm water from the Western Beltway (SR 429) and the Interchange; and

WHEREAS, RCID owns and operates a surface storm water control system (hereinafter "RCID Facility"), which is, or will be made, capable of receiving a limited amount of storm water runoff from the Western Beltway and the Interchange; and

WHEREAS, FLORIDA'S TURNPIKE ENTERPRISE, through its consultants, Dyer, Riddle, Mills & Precourt, Inc., HDR Engineering, Inc., and URS Corporation, has prepared certain Construction Plans and Calculation Reports (hereinafter "Construction Plans") for the construction of the Western Beltway and the Interchange, and has transmitted those Construction Plans to RCID by transmittal letter dated December 5, 2001; and

WHEREAS, FLORIDA'S TURNPIKE ENTERPRISE intends to construct and operate a storm water drainage facility (hereinafter the "Turnpike Facility") for the Western Beltway and the Interchange, which is to be constructed in accordance with the Construction Plans; and

WHEREAS, FLORIDA'S TURNPIKE ENTERPRISE has obtained Permit Number ERP 49-187637-001-EI for the construction of the Western Beltway and the Interchange, and agrees to forward a copy of that permit to the RCID; and

WHEREAS, the parties hereto desire to implement an agreement setting forth the criteria, standards, and costs, that will be associated with the discharge of storm water by FLORIDA'S TURNPIKE ENTERPRISE from the Western Beltway, the Interchange, and the Turnpike Facility into the RCID Facility.

NOW, THEREFORE, in consideration of the foregoing recitals, the mutual covenants set forth herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

1. **RECITALS.** The above recitals are true and correct and form a material part of this Agreement.
2. **DRAINAGE FEE.** For and in consideration of FLORIDA'S TURNPIKE ENTERPRISE use of the RCID Facility, FLORIDA'S TURNPIKE ENTERPRISE will pay to RCID, within thirty (30) days after execution of this Agreement, the sum of One Hundred Seventy One Thousand Fifty-Five and 69/100 Dollars (\$171,055.69) ("Drainage Fee").
3. **TERM.** This Agreement shall commence on the date that this Agreement is executed by the last of the parties to sign, and shall expire on the date that FLORIDA'S TURNPIKE ENTERPRISE ceases to discharge storm water into the RCID Facility, unless sooner terminated as provided herein.

4. **STORM WATER DISCHARGE RATE.**

Permitted Discharge. FLORIDA'S TURNPIKE ENTERPRISE may discharge, and RCID agrees to receive, surface water from the Western Beltway and the Interchange into the RCID Facility at a rate no greater than 297.64 cubic feet per second (CFS) for the 50-year/3-day storm event ("Calculated Discharge") (based upon October 19, 2001 table). The discharge shall enter the RCID Facility in the manner and at the locations shown on the Construction Plans.

5. **COMPLIANCE WITH LAWS.**

A. Compliance. FLORIDA'S TURNPIKE ENTERPRISE and RCID shall comply with the surface water quality standards of Section 62-302, et seq., Florida Administrative Code and the Water Quality Act (33 USC, Ch. 26, Subchapter I, Section 1251, et seq.) (hereinafter the "Laws"), and FLORIDA'S TURNPIKE ENTERPRISE shall maintain and comply with FDEP Permit Number ERP 49-187636-001-EI in connection with FLORIDA'S TURNPIKE ENTERPRISE'S use of the Western Beltway and Interchange and the RCID Facility.

B. Notification. FLORIDA'S TURNPIKE ENTERPRISE shall notify RCID, and RCID shall notify FLORIDA'S TURNPIKE ENTERPRISE, within five (5) business days, in writing, of any condition that is likely to result in (i) noncompliance with the terms and conditions of this Agreement, or (ii) conflict with FDEP Permit No. ERP 49-187637-001-EI previously issued to FLORIDA'S TURNPIKE ENTERPRISE. If a condition arises that will or has led to noncompliance with the terms and conditions of this Agreement, or the above-recited FDEP permit, said notification to RCID or FLORIDA'S TURNPIKE ENTERPRISE shall also include the planned course of action to remedy the situation. This requirement shall exist throughout the construction of the Western Beltway and Interchange and the term of this Agreement.

C. Testing and Monitoring. From time to time, to the extent RCID is required to monitor and submit water quality test (as distinguished from waste water quality tests) results to any applicable governmental agency, FLORIDA'S TURNPIKE ENTERPRISE shall, at its expense and at RCID's option, be required to test within the Western Beltway and Interchange for the parameters of water quality at the same time and at the same frequency as is required of RCID. Additionally, RCID shall have the right (at any time and from time to time), to come upon any portion of the Western Beltway and Interchange, to obtain water samples for purposes of water quality testing, provided that the results of such testing are timely provided to FLORIDA'S TURNPIKE ENTERPRISE. Such reports must show the quality of stormwater being discharged from the Western Beltway and Interchange and that such water meets or exceeds water quality standards.

D. Monitoring Reports. If FLORIDA'S TURNPIKE ENTERPRISE provides other governmental agencies with data regarding the quality of stormwater being discharged from the Western Beltway and the Interchange, FLORIDA'S TURNPIKE ENTERPRISE shall also provide RCID with copies of such reports.

E. Violations. If RCID determines that any violation of any surface water quality Laws is an imminent threat to health, safety or the environment, RCID shall provide written notice to FLORIDA'S TURNPIKE ENTERPRISE within 24-hours; and RCID shall have the right, at its sole option, to take whatever immediate actions RCID deems reasonably necessary to prevent the imminent threat to health, safety or the environment. Such actions may include, but are not limited to, the right to enter upon the Western Beltway and the Interchange to implement appropriate containment measures and to prevent discharge, not meeting such surface water quality Laws, from entering into the RCID Facility; provided, however, that such containment measures shall not create an unsafe condition to the roadway or endanger the users of the roadway. RCID shall be reimbursed by FLORIDA'S TURNPIKE ENTERPRISE, upon demand, for all sums expended by RCID in order to remedy any discharge of stormwater (occurring from the Western Beltway and the Interchange) not meeting such surface water quality Laws.

6. **SUPERIOR REQUIREMENT.** Notwithstanding anything contained in this Agreement to the contrary, all of the provisions of this Agreement are subject to any additional or more stringent requirements imposed by any applicable federal, state or local governmental entity or authority, whether currently existing or enacted in the future, subject to the right of FLORIDA'S TURNPIKE ENTERPRISE to cure any deficiencies that may be required by such future enactments. If RCID is required to perform any additional testing, monitoring, maintenance of other activities in the RCID Facility and such requirements are also applicable to FLORIDA'S TURNPIKE ENTERPRISE'S Western Beltway or Interchange, or if the failure to perform certain activities or functions with respect to the Western Beltway or Interchange by FLORIDA'S TURNPIKE ENTERPRISE could adversely affect the RCID Facility or cause the RCID Facility to be in violation of any applicable Laws, then FLORIDA'S TURNPIKE ENTERPRISE shall satisfy all reasonable requirements of RCID to assure the compliance of the Western Beltway, the Interchange and the RCID Facility.

7. **CONSTRUCTION PLANS.** RCID has reviewed and approved the Western Beltway and the Interchange Construction Plans prepared in accordance with the applicable RCID and FDEP stormwater requirements, and FDEP permit number ERP 49-187636-001-EI. No stormwater conveyance or storage facility shall be constructed prior to the full execution of this Agreement.

Review and approval of any and all modifications to the drainage provisions of the Construction Plans that increase in any material way FLORIDA'S TURNPIKE ENTERPRISE'S storm water discharge rate into the RCID Facility, shall be subject to RCID's prior review and written approval. The review will be performed by

RCID in a timely manner and will be denied only for good and sufficient engineering reasons. If approved, such modifications shall require a written modification to this Agreement.

8. **CERTIFICATE OF COMPLETION; AS-BUILT PLANS.** Within thirty (30) days after completion and final acceptance of construction on the surface water management system on the Western Beltway and the Interchange, FLORIDA'S TURNPIKE ENTERPRISE shall provide RCID (and to FDEP as required by Permit Number ERP 49-187636-001-EI) a set of "As-Built Plans" of its completed drainage facilities and a certificate of completion for all drainage facilities constructed on the Western Beltway and Interchange to be signed and sealed by a registered professional engineer licensed to practice in the State of Florida, and, as required by FDEP as part of SFWMD's Chapters 40E-4.381 (1)(f), F.A.C. and 40E-40.381 (1), F.A.C.

9. **MAINTENANCE AND MODIFICATION OF THE WESTERN BELTWAY AND THE INTERCHANGE.** FLORIDA'S TURNPIKE ENTERPRISE covenants and agrees to exercise reasonable efforts to operate and maintain the Western Beltway and the Interchange surface water drainage system in good and substantial order and condition and as otherwise required by applicable Laws. Any modification to the Western Beltway and the Interchange surface water drainage system that increases in any material way FLORIDA'S TURNPIKE ENTERPRISE'S storm water discharge rate into the RCID Facility must be reviewed and approved by RCID prior to the modification. The review will be performed by RCID in a timely manner and will be denied only for good and sufficient engineering reasons. RCID may approve and admit additional surface waters and assess additional charges to be paid by FLORIDA'S TURNPIKE ENTERPRISE, or choose to deny the admission of additional surface waters into the RCID Facility based only upon sound engineering principles. Should the surface water drainage system modifications increase in any material way FLORIDA'S TURNPIKE ENTERPRISE'S storm water discharge rate into the RCID Facility, RCID may choose to deny the admission of additional surface waters into the RCID Facility or admit additional surface waters and assess additional charges to be paid by FLORIDA'S TURNPIKE ENTERPRISE.

10. **BREACH.** If FLORIDA'S TURNPIKE ENTERPRISE breaches any provision in this Agreement and fails to cure any such breach within ten (10) days after written notice thereof or fails to commence remedial action within such period if cure is not possible within such period, and thereafter fails to proceed diligently to complete curing same, RCID shall have the right, but not the obligation at its option to cure any such breach and FLORIDA'S TURNPIKE ENTERPRISE agrees to reimburse RCID for the cost thereof upon demand.

11. **ARBITRATION.** All disputes and controversies of every kind and nature between the parties arising out of or in connection with this Agreement as the continued existence, construction, validity, interpretation or meaning, performance,

nonperformance, enforcement, operation, breach, continuance, or termination shall be submitted to arbitration pursuant to the following procedure:

A. Either party may demand arbitration in writing within ten (10) days after any controversy arises, which demand shall include the name of the arbitrator chosen by the party demanding arbitration, together with a statement of the matter in controversy.

B. Within ten (10) days after the receipt of such demand, the other party shall name its arbitrator, and the two selected arbitrators shall select a third arbitrator.

C. Each party shall bear its own arbitration costs and expenses, including attorneys' fees.

D. The arbitration hearing shall be held on thirty (30) days advance written notice to the parties, under the rules of the American Arbitration Association, Building and Construction, and the Florida Evidence Code shall govern the presentation of evidence.

E. The arbitration hearing shall be concluded within five business days unless otherwise ordered by the arbitrators and the award shall be made within fifteen days after the close of the submission of evidence. A unanimous award rendered by the arbitration panel shall be final and binding on each of the parties during the period of this Agreement, and judgment on such award may be entered by either party in the Circuit Court of Orange County, Florida.

F. The parties stipulate that the provisions of this Agreement shall be a complete defense to any suit, action, or proceeding instituted in any federal, state, or local court or before any administrative tribunal with respect to any controversy or dispute arising during the period of this Agreement and that is arbitrable under this Agreement. These arbitration provisions shall, with respect to such controversy or dispute, survive the termination or expiration of this Agreement.

G. Nothing in this Agreement shall be deemed to give the arbitrators any authority, power, or right to alter, change, amend, modify, add to, or subtract from any of the provisions of this Agreement.

H. This agreement is made pursuant to the provisions of the Florida Arbitration Code (Chapter 682, Florida Statutes) and shall be governed by the Code.

12. **NOTICE.** All notices and approvals required or permitted under this Agreement to be served, given or delivered upon either party shall be in writing and shall be sent by registered mail, return receipt requested, or by a national overnight

receipt delivery service (e.g. Federal Express). Such notices shall be deemed served, given and delivered on the earlier of the following:

A. The date of actual receipt; or

B. The fifth business day after any registered or certified notice was deposited in a sealed envelope in the United States mail, postage paid; or

C. The next business day after any notice was delivered (on a business day) to a receipt overnight delivery service; or

All notices and requests for approval or consent shall be addressed as herein below set forth, or to such other address and/or persons as RCID or FLORIDA'S TURNPIKE ENTERPRISE shall hereafter give notice to the other in writing:

To RCID: Reedy Creek Improvement District
Attn: Ray Maxwell, District Administrator
Post Office Box 10,170
Lake Buena Vista, FL 32830-0170

With copy to: General Counsel
Post Office Box 10,170
Lake Buena Vista, FL 32830

To Florida's
Turnpike Enterprise: FLORIDA'S TURNPIKE ENTERPRISE
Turnpike Headquarters
Post Office Box 613069 *
Ocoee, FL 34761

With copy to: Office of the General Counsel
Post Office Box 613069
Ocoee, FL 34761

13. **ASSIGNS.** FLORIDA'S TURNPIKE ENTERPRISE shall not assign this Agreement without the prior written consent of RCID, which consent will not be unreasonably withheld.

14. **NON-WAIVER.** Forbearance of RCID to insist upon performance of any provision of this Agreement at any time or under any circumstances shall not constitute a waiver of that provision or any other provision of this Agreement.

15. **BINDING OBLIGATIONS.** This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective legal representatives, successors, and permitted assigns

16. **CONFLICT OF LAWS.** This Agreement shall be construed and enforced in accordance with the Laws of the State of Florida.

17. **RECORDATION.** This Agreement may be recorded in the appropriate public records.

18. **NO WARRANTY; ENTIRE AGREEMENT.** RCID has made no representations, statements, or warranties to FLORIDA'S TURNPIKE ENTERPRISE, nor has FLORIDA'S TURNPIKE ENTERPRISE made any representations, statements, or warranties to RCID, other than as set forth herein. This Agreement embodies the entire understanding of the parties hereto, and supersedes all prior discussion and agreements between RCID and FLORIDA'S TURNPIKE ENTERPRISE, and there are no further or other agreements or understanding, written or oral, in effect between the parties relating to the subject matter hereof. This Agreement shall not be modified or amended in any respect except by a written agreement executed by or on behalf of the parties hereto, in the same manner as executed herein.

19. **EFFECTIVE DATE.** This Agreement shall become effective on the date of approval by RCID or upon the date of approval by FLORIDA'S TURNPIKE ENTERPRISE, whichever date is later.

THIS SPACE LEFT BLANK INTENTIONALLY

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed and delivered on the day and year first above written.

Signed, sealed and delivered
In the presence of:

Wanda Thomas
Signature of witness

WANDA THOMAS
Name of witness printed or typed

**FLORIDA DEPARTMENT OF
TRANSPORTATION,
FLORIDA'S TURNPIKE ENTERPRISE**

By: [Signature]
for James L. Ely, DPA
Executive Director and
Chief Executive Officer

Sandra Wilde
Signature of witness

Sandra Wilde
Name of witness printed or typed

Legal Review:

[Signature]

STATE OF FLORIDA
COUNTY OF ORANGE

The foregoing instrument was acknowledged before me, a Notary Public in the State of Florida, on this 3rd day of SEPTEMBER, 2003, by CHRISTOPHER L. WARREN, DEPUTY EXECUTIVE DIRECTOR & CHIEF OPERATING OFFICER OF FLORIDA'S TURNPIKE ENTERPRISE, who was by me duly sworn and placed under his oath, and who is personally known to me or who produced a current Florida driver's license as identification.

Elizabeth M. Decker
Notary Public, State of Florida

Name of Notary printed or typed

Notary Public Commission Number:



Signed, sealed and delivered
In the presence of:

**REEDY CREEK IMPROVEMENT
DISTRICT**

Sandra I. Bazinet
Signature of witness

By: 
Ray Maxwell
District Administrator

Sandra I. Bazinet
Name of witness printed or typed

Signature of witness

Name of witness printed or typed

STATE OF FLORIDA
COUNTY OF ORANGE

The foregoing instrument was acknowledged before me, a Notary Public in the State of Florida, on this 5th day of August, 2003, by Ray Maxwell, RCID District Administrator, who was by me duly sworn and placed under his oath, and who is personally known to me or who produced a current Florida driver's license as identification.

Sandra I. Bazinet
Notary Public, State of Florida

Sandra I. Bazinet
Name of Notary printed or typed

Notary Public Commission Number:

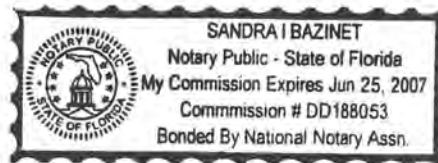


EXHIBIT "A"

Right of Way limits for the Western Beltway Part C (State Road 429) as shown on the following Florida Department of Transportation Right of Way Maps:

Osceola County

Section 1, Financial Project No. 403497-1 (Sheets 1 through 13 of 13 by DRMP Inc., dated 12/01/00), Osceola County, Florida: Being a portion of Sections 21, 22, 23, and 26, Township 25 South, Range 27 East, and running generally from Begin Station 75+76.80 to End Station 141+60.98, State Road 429.

Section 2A, Financial Project No. 403497-3, (Sheets 1 through 19 of 19 by DRMP Inc., dated 12/01/00), Osceola County, Florida: Being a portion of Sections 4, 9, 15 and 16, Township 25 South, Range 27 East, and running generally from Begin Station 141+60.98 to End Station 320+55.81, State Road 429.

Orange County

Section 2B, Financial Project No. 403498-2, (Sheets 1 through 13 of 13 by DRMP, Inc, dated 11/15/00, Orange County, Florida, Being a portion of Sections 28 and 33, Township 24 South, Range 27 East, and running generally from Begin Station 320+55.81 to End Station 449+96.53, State Road 429.

Section 3, Financial Project No. 403498-3, (Sheets 1 through 14 of 14) by Berryman & Henigar, Inc., dated 12/27/00, Orange County, Florida: Being a portion of Sections 8, 16, 17, and 21, Township 24 South, Range 27 East, and running generally from Begin Station 449+96.53 to End Station 623+08.75, State Road 429.

EXHIBIT "B"

Right of Way for the Interstate 4 (State Road 400) / Western Beltway Part C (State Road 429), Interchange improvements as shown on the following Florida Department of Transportation Right of Way Maps:

Section 1, Financial Project No. 403497-1 (Sheets 1- 4, and 7 – 13 of 13 by URS Corporation, Inc., dated 11/27/00), Osceola County, Florida: Being a portion of Sections 26, 27 and 34, Township 25 South, Range 27 East, and running generally from Begin Station 70+00 (State Road 400), more or less to End Station 150+00 (State Road 400), more or less, and running generally from Begin Station 51+85.99 (State Road 429) to End Station 75+76.80 (State Road 429).



*Operates the statewide
Turnpike System as
part of the Florida
Department of
Transportation*

JEB BUSH
Governor

JOSÉ ABREU
*Secretary of
Transportation*

JAMES L. ELY
Executive Director

Turnpike Headquarters:
Mile Post 263, Bldg. 5315
Turkey Lake Service Plaza
Ocoee, FL 34761

Mailing Address:
P.O. Box 613069
Ocoee, FL 34761

Tel: 407.532.3999

www.floridasturnpike.com

APPOINTMENT AND DELEGATION OF AUTHORITY

I, James L. Ely, Executive Director and Chief Executive Officer of the Florida's Turnpike Enterprise of the Florida Department of Transportation, do hereby appoint:

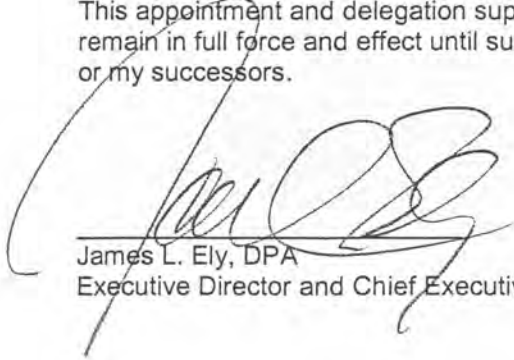
CHRISTOPHER WARREN, Deputy Executive Director and Chief Operating Officer
NANCY CLEMENTS, Director of Planning and Production
WILLIAM THORP, Chief Financial Officer
RICHARD NELSON, Director of Business Development and Concessions Management
BRUCE SEILER, Director of Highway Operations
KIM POULTON, Director of Communications and Marketing

as my designees to supervise and implement the operational activities of the Florida's Turnpike Enterprise office of the Florida Department of Transportation during my absence from the office for any extended period of time.

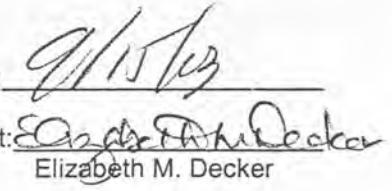
Anytime during my absence from the office, I hereby delegate authority to sign correspondence and execute documents that require my signature to Christopher Warren, Deputy Executive Director and Chief Operating Officer; or in his absence, Nancy Clements, Director of Planning and Production; or in her absence, William Thorp, Chief Financial Officer; or in his absence, Richard Nelson, Director of Business Development and Concessions Management; or in his absence, Bruce Seiler, Director of Highway Operations; or in his absence, Kim Poulton, Director of Communications and Marketing. Anytime during my absence, I hereby delegate to each the authority to execute any contracts or documents not already delegated to them in their individual delegations, except in those instances where the authority to execute and sign any particular documents is either expressly retained by me or expressly delegated by the Secretary of Transportation to the District Secretaries and the Executive Director of the Florida's Turnpike Enterprise, such instances include but are not necessarily limited to:

1. Approval, execution and signature of all necessary Department resolutions to initiate eminent domain proceedings to obtain real property rights for the Florida's Turnpike Enterprise transportation facilities.
2. Approval, execution and signature of instruments of sale, lease and conveyance of property owned by the Florida's Turnpike Enterprise.
3. Approval, certification and signature of maintenance maps evidencing the Florida's Turnpike Enterprise's maintenance of right of way.
4. Approval, execution and signature of all necessary Department resolutions for engineer witnesses in Circuit Court to bind the Department of Transportation on those issues regarding design and construction for the Florida's Turnpike Enterprise's transportation facilities.

This appointment and delegation supersedes prior appointment and delegations and shall remain in full force and effect until such time as it is revoked or suspended in writing by me or my successors.


James L. Ely, DPA
Executive Director and Chief Executive Officer

Date: 9/15/13

Attest: 
Elizabeth M. Decker



**REEDY CREEK
IMPROVEMENT DISTRICT**

P.O. BOX 10170 LAKE BUENA VISTA, FLORIDA 32830-0170 TELEPHONE (407) 828-2250 FAX (407) 828-2560

PLANNING AND ENGINEERING

December 14, 1999

Mr. Tim Holton
Transportation Consulting Group
1201 S. Orlando Avenue, Suite 200
P.O. 2547
Winter Park, Florida 32790

**SUBJECT: Reedy Creek Improvement District Requirements for
Outside Drainage Projects**

Dear Mr Holton,

The information you requested regarding engineering submittal requirements and associated fees is listed below.

RCID REQUIREMENTS

The RCID drainage fee is established based on any discharge from the proposed project which exceeds 13 csm (cfs per square mile) for the 50-year/72-hour (12.91 inches rainfall) event using the South Florida Water Management District (SFWMD) distribution. Once the construction plans and design calculations are complete, the following information should be submitted to the RCID office of Planning and Engineering.

1. Completed South Florida Water Management District (SFWMD) or St. Johns River Water Management District (SJRWMD) Management and Storage of Surface Waters (MSSW) or Environmental Resource Permit (ERP) Application including signed and sealed drainage calculations and construction plans.
2. Signed and sealed drainage calculations for the 50-year/72-hour design event.
3. Legal description of the construction project and contributing drainage areas.
4. Name and title of the land owner corporate officer who will sign and seal the drainage agreement.

49-187636001

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Mr. Tim Holton
Page Two

The review and drainage fees associated with all outside drainage projects are listed as follows:

1. There is a fee of \$750 for reviewing submitted construction plans and calculations. This review fee should be submitted along with the plans and calculations.
2. One time drainage impact fee of \$200 per acre will be assessed for use of the services and water control facilities within the RCID.
3. The drainage fee is determined based on \$4.15 per acre per csm for runoff from the development site that exceeds 13 csm. The maximum allowable discharge for the 50-year/72-hour event will be limited to the predevelopment discharge rate from the project site.

Below is the equation for the determination of the fee:

Fee Equation:

$$[(\text{project runoff in cfs/project ac.}) (640 \text{ acres/sq. mi.}) - 13 \text{ csm}] \times [(\$4.15/\text{acre/csm}) (\text{project ac.})] = \text{Drainage Fee}$$

4. Inspection fee of completed facilities by RCID engineer is \$50 per hour.

Once the calculations and plans have been approved by the RCID office and the drainage fee determined, a Drainage Agreement will be written and sent out to the consulting engineer for review and signatures by the corporate officer representing the developer or land owner. The executed drainage agreement along with the fees should be sent back to our office so the District Administrator can execute his portion of the document. A copy of the completed drainage agreement along with a receipt for the fees mentioned above will then be sent to you for your records.

In addition, if it is available, please submit a copy of data in electronic format showing the exact areas of construction improvements that apply to this project. Specific format should be either in ARC-INFO EXPORT or AUTOCADD DXF. Any questions regarding the electronic format should be directed to Mr. Jason Amadori or Jia Wei at 828-2250.

Generally, you should anticipate that this review process depending on work load will take approximately 30 days from the date of submittal until either a request for additional information or a draft drainage agreement is sent out from our office.

Should you have any questions or comments regarding the information contained in this letter, please call me at 828-2250.

Sincerely,



Mack Elsabagh
Water Resources Engineer

cc: Kate Kolbo, RCID

Engineer#1/Letter/outside drainage requirements.doc

49-187636000

RECEIVED AUG 15 2001

Scott, Erik

From: Stys-Palasz, Beata <Beata.Stys-Palasz@dot.state.fl.us>
Sent: Wednesday, July 20, 2022 11:20 AM
To: Scott, Erik
Subject: RE: I-4 Orange & Osceola County / RCID Drainage Agreement
Attachments: Drainage Agreement With FDOT DLM 7 18 22.docx

Follow Up Flag: Follow up
Flag Status: Completed

It is Polk and Osceola County. From West of US 27 to Osceola\Orange CL.



Beata Stys-Palasz, P.E.
(Beyahya Styce-Pahwash)

Senior Project Manager

State of Florida Department of Transportation
719 South Woodland Boulevard
Mail Station 542
Deland, Florida 32720

☎ **Phone:** office (386) 943-5418 cell (407) 488-7201

☎ **Fax:** (386) 736-5153

✉ **Email:** beata.stys-palasz@dot.state.fl.us

Chat with me on [TEAMS!](#)



From: Scott, Erik <Erik.Scott@rsandh.com>
Sent: Wednesday, July 20, 2022 10:49 AM
To: Stys-Palasz, Beata <Beata.Stys-Palasz@dot.state.fl.us>
Subject: FW: I-4 Orange & Osceola County / RCID Drainage Agreement

EXTERNAL SENDER: Use caution with links and attachments.

Beata,

With your permission I would like to include this information in my PD&E Draft Pond Siting Report.

Also, one item I would like clarification on. Mr. McDermott stated that he is working on the Orange County part of the agreement. However, it seems like the information provided in the email chain from Mr. McDermott below may be for Osceola County. Could you please confirm the county the 729.0-cfs and respective fee is associated with.

Thank you,

Erik Scott, PE

Water Resources Engineer
1715 N Westshore Blvd, Suite 600, Tampa, FL 33607
813-636-2632
Erik.Scott@rsandh.com
rsandh.com | [Facebook](#) | [Twitter](#) | [LinkedIn](#) | [Blog](#)

[Stay up-to-date with our latest news and insights.](#)



From: McDermott, Daniel <Daniel.McDermott@dot.state.fl.us>
Sent: Wednesday, July 20, 2022 8:21 AM
To: Stys-Palasz, Beata <Beata.Stys-Palasz@dot.state.fl.us>
Cc: Scott, Erik <Erik.Scott@rsandh.com>
Subject: I-4 Orange & Osceola County / RCID Drainage Agreement

Beata,

As you know I am working on the Orange County “part” of the RCID Drainage Agreement. Erik Scott is working with the Turnpike on drainage into RCID’s system. My understanding is there needs to be coordination for the Osceola County area. If you can work with Erik on this to close the loop on the cumulative impacts to RCID’s system, that would be most helpful.

I will continue to work on the Orange County agreement that contributes 729.0 cubic feet per second for the 50-year/3 day storm event. The calculated payment for the discharge is \$3,061,024.63.

I am very close to finishing up the agreement and will keep you in the loop.

Daniel L. McDermott
Senior Attorney
Office of General Counsel
719 South Woodland Blvd.
DeLand, Florida 32720
(386) 943-5495 (office)
(386) 956-1896 (cell)

Daniel.McDermott@dot.state.fl.us

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If you are not the intended recipient, please notify the sender, delete this message, and do not use, disseminate or copy its contents. Thank you.

Record and Return to:

Kathryn Boes Kolbo, P.E.
Reedy Creek Improvement District
Planning and Engineering Department
Post Office Box 10170
Lake Buena Vista, FL 32830-0170

----- THIS SPACE FOR RECORDER'S USE -----

DRAINAGE AGREEMENT

THIS DRAINAGE AGREEMENT (this “**Agreement**”) is made and entered into as of this _____ day of _____, 2022 (the “**Effective Date**”), by and between the **REEDY CREEK IMPROVEMENT DISTRICT**, a public corporation and public body corporate and politic of the State of Florida, whose address is 1900 Hotel Plaza Blvd., Lake Buena Vista, Florida 32830 (“**RCID**”), and **FLORIDA DEPARTMENT OF TRANSPORTATION**, a political subdivision of the State of Florida, whose address is 719 South Woodland Boulevard, DeLand, Florida 32720 (“**FDOT**”).

WITNESSETH

WHEREAS, FDOT owns those certain lands commonly known as a section of Interstate 4 lying and being in Osceola and Polk County, Florida, and being more particularly described in the Right of Way Map, State Road No 400 (Interstate 4), F.P. No. 431456-1, Section 92130, Polk and Osceola County, Florida, a copy of which shall be kept on file with the RCID Planning and Engineering Department located at 1900 Hotel Plaza Blvd., Lake Buena Vista, Florida 32830, and is incorporated herein by reference (the “**Right of Way Map**”); and

WHEREAS, the Right of Way Map is the full and complete description of lands pertinent to this Drainage Agreement and hereinafter referred to as (the “**Property**”); and

WHEREAS, the general location of the Property (which is more particularly identified on the Right of Way Map) is identified in a sketch attached hereto as Exhibit “A” and incorporated herein by reference; and

WHEREAS, AECOM Technical Services, Inc. prepared for FDOT a report entitled RCID Fee Determination Package, I-4 (SR 400) Beyond the Ultimate Concept, Osceola County, Florida, dated December 2020, and plans entitled Contract Plans Financial Project ID 431456-1-52-01 (Federal Funds) Osceola County (92130) State Road No. 400 (I-4) Final Concept Plans Permit Set dated August 2018 (collectively, the “**Construction Documents**”); and

WHEREAS, FDOT intends to construct and operate a surface water drainage facility (the “**FDOT Facility**”) on the Property, to be constructed in accordance with the Construction Documents (the FDOT Facility is deemed to be part of the Property); and

WHEREAS, FDOT intends to obtain approvals/permits for construction of all

improvements on and to the Property (including, without limitation, the FDOT Facility, collectively, the “**Project**”) from all applicable agencies and shall forward copies of those approvals/permits to RCID; and

WHEREAS, RCID owns and operates a surface water control system (the “**RCID Facility**”) which is, or will be, capable of receiving a limited amount of surface water runoff from the Property; and

WHEREAS, FDOT desires to acquire the right to discharge surface water from the Property, through the FDOT Facility, and into the RCID Facility; and

WHEREAS, the parties hereto wish to implement this Agreement setting forth, among other things, the criteria, standards and costs that will be associated with the discharge by FDOT of surface water from the Property, through the FDOT Facility, and into the RCID Facility.

NOW THEREFORE, in consideration of the premises and the mutual covenants and conditions herein contained, the parties hereto agree as follows:

1. **RECITALS.** The above recitals are true and correct and form a material part of this Agreement.

2. **DRAINAGE FEE.** Following receipt of an invoice from RCID, FDOT will pay to RCID, within the time frames established by Section 215.422, *Florida Statutes*, the sum of Two Million Sixty-One Thousand Twenty-Four and 63/100 Dollars (\$2,061,024.63) (the “**Drainage Fee**”). Payment of the Drainage Fee is consideration for the discharge from the Property, through the FDOT Facility, and into the RCID Facility in accordance with the Construction Documents and this Agreement.

3. **TERM.** This Agreement shall commence on the Effective Date and shall expire on the date that the discharge of surface water into the RCID Facility from the Property ceases, unless sooner terminated as provided herein.

4. **SURFACE WATER VOLUME.**

(a) Permitted Discharge. The Property may discharge surface water through the FDOT Facility into the RCID Facility at a rate of no greater than 729.00 cubic feet per second for the 50-year/3-day storm event (the “**Calculated Discharge**”), as shown in the Construction Documents and in accordance with this Agreement, and RCID agrees to receive such surface water in accordance with this Agreement. All discharge shall enter the RCID Facility in the manner and only at the location(s) shown in the Construction Documents.

(b) Modifications. Prior to modifying any portion of the Project, FDOT shall provide to RCID an update to: (i) the Construction Documents; and (ii) the calculations for surface water discharge from the Property. RCID shall have no obligation to approve any modification of the Project that might affect the volume, flow rate, velocity, quality or discharge location(s) of surface water from the Property into the RCID Facility, including, without limitation, any modification which might or does: (a) cause the discharge from the Property to exceed the Calculated Discharge; (b) relocate any point(s) of discharge into the RCID Facility; and/or (c)

change the uses of the Property from those shown in the Construction Documents (each and collectively, an “**Adverse Change**”). If any modification to the Project and/or the Construction Documents indicates an Adverse Change, the RCID Facility shall not be obligated to accept surface water from the modified Project, unless approved by RCID in its sole and absolute discretion, and RCID may require FDOT to further modify the Project and Construction Documents to alleviate the Adverse Change. FDOT shall also obtain any and all required permits and approvals from South Florida Water Management District (the “**SFWMD**”) prior to the initiation of construction of any modification.

(c) Adjustments to Drainage Fees. If RCID agrees, in its sole and absolute discretion, to accept a modification to the Project and Construction Documents that indicates an Adverse Change, FDOT shall pay to RCID an additional drainage fee as determined by RCID. Payment shall be made following FDOT’s receipt of an invoice from RCID within the time frames established by Section 215.422, *Florida Statutes*.

5. COMPLIANCE WITH LAWS.

(a) Compliance. Subject to the provisions of paragraphs 6, 22 and 24 hereof, FDOT shall ensure that the quality and quantity of surface water discharge and/or flow from the Property to the RCID Facility comply, to the extent applicable to RCID and/or the RCID Facility, with all present and future state, federal, local, municipal and county, laws, statutes, governmental constitutions, ordinances, codes, regulations, resolutions, rules, requirements, standards, applications and directives, as well as decisions, judgments, writs, injunctions, orders, decrees or demands of courts, administrative bodies and other authorities construing any of the foregoing, and with all applicable permits and approvals, including, without limitation, any and all of the foregoing applicable to water quality, wastewater discharge, and environmental impacts, including, without limitation, meeting or exceeding the standards of Chapter 62 of the Florida Administrative Code and the Water Quality Act of 1987, as such Code and Act (collectively, “**Laws**”). FDOT shall promptly deliver to RCID true and accurate copies of all applicable permits evidencing FDOT’s compliance with the foregoing. The parties acknowledge and agree that RCID, as a special district, and the RCID Facility are subject to local government Laws while FDOT, as a state agency, may not be subject to such Laws.

(b) Notification. FDOT shall notify RCID within five (5) business days, in writing, of: (i) FDOT’s discovery of any condition which is likely to result in noncompliance with any Laws and/or this Agreement, including, without limitation, the discharge (or potential discharge) into the RCID Facility of any surface water the quantity and/or quality of which is in violation of this Agreement; and (ii) FDOT’s planned course of action to remedy (or prevent) the situation. Any such planned course of action shall be subject to RCID’s written approval, which approval RCID may grant or withhold in its sole and absolute discretion, and shall be implemented at FDOT’s sole cost and expense (subject to the provisions of paragraphs 22 and 24 hereof). This requirement shall exist during the entire term of this Agreement and shall survive the expiration or earlier termination hereof.

(c) Testing and Monitoring. At any time and from time to time, to the extent RCID is required (or elects on an “as needed” basis) to monitor and submit water quality test results to any applicable governmental agency, FDOT shall, within ten (10) business days after

RCID's request and at FDOT's sole cost and expense, perform such monitoring and testing as to the surface water being discharged into the RCID Facility utilizing the parameters (including, without limitation, timing and frequency) as reasonably required by RCID. Additionally, RCID shall have the right, but not the obligation, to come upon any portion of the Property (at any time and from time to time), to perform monitoring and/or to obtain water samples. If requested by FDOT, RCID personnel shall be accompanied by FDOT personnel, provided that such FDOT personnel are made reasonably available within forty-eight (48) hours after RCID's request for entry.

(d) Monitoring Reports. If FDOT provides any other governmental agency with information regarding the quality of surface water being discharged from the Property, FDOT shall, within fifteen (15) days thereafter, provide RCID with true and accurate copies of such data and information. Further, FDOT shall promptly provide RCID with the results and/or response provided by any governmental agency.

(e) Waste Load Allocations. If future Laws impose upon RCID waste load limitations on the quantity of pollutants and other constituent elements of surface water that may be discharged into or from the RCID Facility ("**Waste Load Limitations**"), RCID may impose, and FDOT shall comply with, such Waste Load Limitations on the surface water discharged from the Property.

(f) Survival. The provisions of this paragraph 5 shall exist during the entire term of this Agreement and shall survive the expiration or earlier termination hereof.

6. **SUPERIOR REQUIREMENT**. Notwithstanding anything contained in this Agreement to the contrary, all provisions of this Agreement are subject to any additional or more stringent requirements imposed by any applicable Laws, including, without limitation, requirements for additional testing, monitoring, maintenance or other activities, and FDOT shall promptly comply with the same if and to the extent the same apply to RCID and/or the RCID Facility with respect to surface water discharged from the Property into the RCID Facility.

7. **CONSTRUCTION PLANS**. Notwithstanding anything contained herein to the contrary, FDOT shall not be permitted to discharge any surface water into the RCID Facility, except as expressly provided in this Agreement, including, without limitation, the requirement that the Project and the discharge of surface water therefrom be consistent with the Construction Documents and that any modifications to the Project and/or the Construction Documents be approved by RCID in accordance with paragraph 4(b) hereof.

8. **BREACH**. Subject to and in accordance with paragraphs 22, 23, and 24 hereof, if FDOT breaches any provision in this Agreement and: (i) fails to cure such breach within ten (10) days after written notice thereof; or (ii) if cure is not possible within said ten (10) day period, fails to commence remedial action within such period or, having commenced such cure, thereafter fails to proceed diligently to complete curing same, in addition to any other right or remedy available to RCID under this Agreement, at law or in equity, RCID shall have the right, but not the obligation, to take whatever actions RCID deems reasonably necessary to cure such violation, including, without limitation, implementing appropriate containment and/or corrective measures (including, without limitation, installing a dam if the breach poses an imminent threat to the health or safety of the public or the environment) to prevent any further violative discharge of surface

water from the Property into the RCID Facility until the violation is cured. RCID shall have (and is hereby granted) the right to enter upon the Property to implement such actions. Notwithstanding the foregoing, if the breach poses an imminent threat to health, safety of the public or the environment, RCID shall have the right, but not the obligation, to exercise its rights under this paragraph 8 immediately (and prior to providing FDOT with prior notice). In such a case, RCID shall notify FDOT as soon as possible, but in any case, no later than twenty-four (24) hours after any entry onto the Property. RCID shall promptly reimburse FDOT for any damages sustained by FDOT due to action(s) by RCID that may exceed the minimal actions necessary to cure the imminent threat and to ensure that all discharge from the Property is in compliance with this Agreement. The parties shall also endeavor to prevent duplication of efforts in complying with this paragraph 8. Following receipt of an invoice from RCID, FDOT will, within the time frames established by Section 215.422, *Florida Statutes*, reimburse RCID all sums expended by RCID in order to remedy any violation of this Agreement and for any other damages which RCID may have sustained as a result of such violations. Any amounts due and payable by FDOT to RCID under this Agreement that are not paid within the time periods specified in Section 215.422, *Florida Statutes*, shall accrue interest as provided thereunder for late payments.

9. **INDEMNIFICATION.** Notwithstanding anything to the contrary contained in this Agreement, and consistent with the provisions of paragraph 22 herein and to the extent allowed by Laws, it is specifically understood and agreed that by acceptance and execution of this Agreement, FDOT, for and on behalf of itself and its successors, grantees, invitees, and assigns and all of its/their officers, directors, representatives, agents and employees: (i) assumes sole and entire responsibility for any and all loss of life, injury to person or damage to property (wherever such person or property may be located) that may be sustained directly or indirectly due to the condition of the Property and/or the Project and/or the use and/or operation thereof, including, but not limited to, any discharge of surface water from the Property into the RCID Facility (the “**Indemnified Causes**”); and (ii) shall and hereby does exonerate, hold free, clear and harmless, protect, defend, indemnify, and release RCID and its Board of Supervisors, officers, directors, agents, employees, representatives, successors and assigns (collectively, the “**Indemnitees**”) from and against any and all claims, demands, losses, suits, actions, judgments, liens, damages, penalties, fines, interests, costs, and expenses (including, without limitation, reasonable legal fees and expenses (including, without limitation, the fees and expenses of experts and para-professionals), whether such fees and expenses are incurred before, during or after any trial, re-trial, re-hearing, mediation or arbitration, administrative proceedings, appeals or bankruptcy or insolvency proceedings) incurred by the Indemnitees because of, in connection with, or in any way related to, or alleged to be because of, in connection with, or in any way related to, the Indemnified Causes and/or any breach of this Agreement by FDOT or anyone acting by, through or under FDOT. Nothing contained in this paragraph 9 shall be understood, construed, or interpreted to be a waiver of sovereign immunity to any extent, nor shall it be understood, construed, or interpreted as either of the parties to this Agreement accepting or assuming liability beyond that allowed by Section 768.28, *Florida Statutes*. The foregoing provisions shall survive the expiration or sooner termination of this Agreement.

10. **INSURANCE.** FDOT shall provide RCID certificates of insurance verifying the coverages which FDOT has under Florida’s risk management/insurance program. [**FDOT to send RCID copy of Florida risk management/insurance program for RCID to review.**]

11. **MAINTENANCE OF THE PROPERTY.** FDOT covenants and agrees to maintain the Property and the Project in good and working order in accordance with FDOT's standard maintenance practices for roads, bridges, and appurtenant facilities and as otherwise required by this Agreement.

12. **CERTIFICATE OF COMPLETION; AS-BUILT PLANS.** FDOT shall, together with the delivery of this Agreement, provide a certificate of completion for any facilities constructed on the Property prior to the Effective Date. In addition, within ten (10) days prior to the date on which any portions of the Project are subjected to beneficial use, FDOT shall provide to RCID (and to SFWMD if required to do so by SFWMD) a set of "As-Built Plans" of the completed drainage facilities and a certificate of completion for all drainage facilities constructed on the Property. Such "As-Built Plans" shall be in electronic format, properly signed and sealed by a professional engineer licensed to practice in the State of Florida, and as otherwise required by SFWMD in Chapters 40E-4.381 (1)(f) F. A. C. and 40E-40.381 (1) F. A. C.

13. **NOTICE.** All notices and approvals required or permitted under this Agreement to be served, given or delivered upon either party shall be in writing and shall be sent by registered mail, return receipt requested, or by a national overnight receipted delivery service (e.g., Federal Express). Such notices shall be deemed served, given and delivered on the earliest of the following:

- (a) the date of actual receipt;
- (b) the third business day after any registered or certified notice was deposited in a sealed envelope in the United States mail, postage prepaid;
- (c) the next business day after any notice was delivered (on a business day) to a receipted overnight delivery service; or
- (d) the first attempted delivery date of any notice hereunder (regardless of whether the recipient of said notice accepted same).

All notices and requests for approval or consent shall be addressed as hereinbelow set forth, or to such other address and/or persons as RCID or FDOT shall hereafter give notice to the other in accordance with this paragraph 13. Notices given by counsel for a party are hereby authorized and shall be effective.

If to RCID: Reedy Creek Improvement District
Attn: District Administration
1900 Hotel Plaza Boulevard
Lake Buena Vista, FL 32830

With copies to: Reedy Creek Improvement District
Attn: Manager, Planning & Engineering
1900 Hotel Plaza Boulevard
Lake Buena Vista, FL 32830

Milgrim Law Group
Attn: Edward Milgrim, Esq.

3216 Corrine Drive
Orlando, FL 32803

If to FDOT:

Florida Department of Transportation
Attn: C. Jack Adkins, Director of Transportation Dev
719 South Woodland Boulevard
DeLand, FL 32720

With copies to:

Florida Department of Transportation
Attn: Legal Department
719 S. Woodland Blvd.
DeLane, FL 32720

14. **ASSIGNS.** FDOT shall not assign this Agreement without the prior written consent of RCID, which consent may be withheld in RCID's sole and absolute discretion.

15. **BINDING OBLIGATIONS.** This Agreement, including, without limitation, the obligations under paragraph 9, shall be binding upon and inure to the benefit of the parties hereto and their respective legal representatives, successors and permitted assigns. All provisions of this Agreement which from their sense and context are intended to survive the expiration or sooner termination of this Agreement shall survive such expiration or sooner termination and continue to be binding upon the applicable party, whether or not so expressed.

16. **NO THIRD-PARTY BENEFICIARIES.** Nothing in this Agreement is intended or shall be deemed to confer any rights or benefits upon any entity or person (including, without limitation, any assignee) other than the parties hereto or to make any entity or person a third-party beneficiary of this Agreement (other than the Indemnitees who/which are intended third-party beneficiaries).

17. **NO IMPLIED WAIVER; RIGHTS AND REMEDIES.** No course of dealing between the parties or forbearance by RCID to insist upon performance of any provision of this Agreement, or in exercising any right or remedy conferred by this Agreement now or hereafter existing at law, in equity, by statute or otherwise, at any time or under any circumstances, shall operate as a waiver of, or otherwise prejudice, any such provision (or any other provision set forth herein) or right or remedy of the parties hereto. Any waiver of any rights or remedies must be in writing and signed by the party or parties to be bound. The rights and remedies of RCID provided for under this Agreement are in addition to any other rights and remedies provided by law or in equity.

18. **CONFLICT OF LAWS; RESOLUTION.** This Agreement shall be construed under and interpreted and enforced in accordance with the laws of the State of Florida.

19. **WAIVER OF JURY TRIAL; JURISDICTION.** ANY LEGAL PROCEEDING OF ANY NATURE BROUGHT BY EITHER PARTY AGAINST THE OTHER TO ENFORCE ANY RIGHT OR OBLIGATION UNDER THIS AGREEMENT, OR ARISING OUT OF ANY MATTER PERTAINING TO THIS AGREEMENT, SHALL BE EXCLUSIVELY SUBMITTED FOR TRIAL, WITHOUT JURY, EXCLUSIVELY BEFORE A CIRCUIT COURT OF

COMPOTENT JURISDICTION IN THE STATE OF FLORIDA.

20. **RECORDATION.** FDOT shall cause this Agreement to be promptly recorded in the public records of Osceola County and Polk County.

21. **NO WARRANTY; ENTIRE AGREEMENT.** RCID has made no representations, statements, warranties or agreements to FDOT in or in connection with this Agreement. This Agreement embodies the entire understanding of the parties hereto with respect to the matters set forth in this Agreement and supersedes all prior discussions and agreements between FDOT and RCID with respect to the subject matter hereof, and there are no further or other agreements or understanding, written or oral, in effect between the parties relating to the subject matter hereof. This Agreement shall not be modified or amended in any respect except by a written agreement (including, without limitation, any assignment) executed by or on behalf of the parties hereto in the same manner as executed herein.

22. **NO WAIVER OF SOVEREIGN IMMUNITY.** Notwithstanding any provision of this Agreement to the contrary, nothing herein shall be deemed to be a waiver of sovereign immunity by FDOT or RCID. If and to the extent that any provision(s) of this Agreement would require a party to waive of sovereign immunity for such provision(s) to be legal and enforceable, the applicable provision(s) shall be deemed revised to the extent necessary for such provision(s) (and compliance therewith) to be legal and enforceable without a waiver of sovereign immunity, or, if those provision(s) cannot be so revised, such provision(s) shall be deemed to be severed from this Agreement and this Agreement shall remain in full force and effect without such provision(s).

23. **PROTECTION OF PUBLIC SAFETY.** In taking any of the action which RCID is permitted to take hereunder, including, but not limited to, entering the Property, notwithstanding the authority granted to RCID pursuant to this Agreement, RCID shall not take any action which will threaten public safety, including, but not limited to, the safety of the traveling public using Interstate 4, it being agreed that implementing appropriate containment and/or corrective measures and/or preventing discharge from the Property shall be deemed not to threaten public safety. RCID shall, at all times and to the extent reasonably possible, ensure that there is no obstruction of traffic and/or interference with any FDOT facilities.

24. **FUTURE COMMITMENT OF FUNDS.** With regard to any financial obligations of FDOT related to the Drainage Fee and/or fees imposed by RCID as a result of increased discharge in excess of the Calculated Discharge (as set out in paragraph 4) for fiscal years beyond the fiscal year in which this Agreement is executed, this Agreement shall not be deemed to be a binding commitment of funds, if such obligation would constitute a violation of Section 339.135(6)(a), *Florida Statutes*. Should such financial obligations (as set out in this Agreement) constitute a violation of Section 339.135(6)(a), *Florida Statutes*, this Agreement shall be deemed to constitute an affirmative obligation and promise by FDOT to seek funding from the legislature in those future years to meet those obligations. In addition, all future fiscal year financial obligations of FDOT shall be subject to annual appropriations from the legislature, which FDOT shall and hereby agrees to request in an amount not less than the full amount incurred.

25. **SEVERABILITY.** If any clause or provision of this Agreement is illegal, invalid or unenforceable under applicable present or future Laws, the remainder of this Agreement shall not be affected. In lieu of each clause or provision of this Agreement which is illegal, invalid or

unenforceable, there shall be added as a part of this Agreement a clause or provision as nearly identical as may be possible and as may be legal, valid and enforceable.

26. **ATTORNEYS' FEES AND COSTS.** If and to the extent permitted under Section 768.28, *Florida Statutes*, without waiving the rights of FDOT and RCID to sovereign immunity, if either party employs an attorney or brings an action against the other arising out of the terms of this Agreement, the prevailing party (whether such prevailing party has been awarded a money judgment or not) shall receive from the other party (and the other party shall be obligated to pay) the prevailing party's reasonable legal fees and expenses (including, without limitation, the fees and expenses of experts and para-professionals), whether such fees and expenses are incurred before, during or after any trial, re-trial, re-hearing, mediation or arbitration, administrative proceedings, appeals or bankruptcy or insolvency proceedings, and irrespective of whether the prevailing party would have been entitled to such fees and expenses under applicable law in the absence of this provision. Without limiting the generality of the foregoing, the term "expenses" shall include expert witness fees, bonds, filing fees, administrative fees, transcription fees, depositions or proceedings, costs of discovery and travel costs. The term "prevailing party" as used in this provision shall mean that party whose positions substantially prevail in such action or proceeding, and any action or proceeding brought by either party against the other as contemplated in this provision may include a plea or request for judicial determination of the "prevailing party" within the meaning of this provision. In the event neither party substantially prevails in its positions, the court may rule that neither party has so substantially prevailed, in which event each party shall be responsible for its own fees and expenses in connection therewith. Notwithstanding the foregoing, nothing contained in this paragraph 27 shall be understood, construed, or interpreted to be a waiver of sovereign immunity to any extent, nor shall it be understood, construed, or interpreted as FDOT or RCID accepting or assuming liability beyond that allowed by Section 768.28, *Florida Statutes*.

27. **COUNTERPARTS.** This Agreement may be executed in one (1) or more counterparts, each of which shall be deemed to be an original and all of which together shall be deemed to be one and the same instrument.

28. **NO PUBLIC RIGHTS CREATED.** Nothing in this Agreement shall create or be construed to create any rights in and/or for the benefit of the general public related to the subject matter herein.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed and delivered as of the Effective Date.

REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK

SIGNATURES ON FOLLOWING PAGES

Signed, sealed and delivered
in the presence of:

FLORIDA DEPARTMENT OF TRANSPORTATION, a
political subdivision of the State of Florida

Witness

By: _____
C. Jack Akins, Director of Transportation Development

Printed Name

Witness

Printed Name

STATE OF FLORIDA)
) SS.
COUNTY OF _____)

The foregoing Agreement was acknowledged before me by means of physical presence
or online notarization, this _____ day of _____, 2022, by C. Jack Adkins, as Director
of Transportation Development of **FLORIDA DEPARTMENT OF TRANSPORTATION**, a
political subdivision of the State of Florida, on behalf thereof, who is personally known to me,
or presented _____ as identification (if left blank, then
personally known to me).

Signature of Notary Public-State of Florida

(AFFIX STAMP)

SIGNATURES CONTINUE ON FOLLOWING PAGE

Signed, sealed and delivered in the presence of:

REEDY CREEK IMPROVEMENT DISTRICT, a public corporation and public body corporate and politic of the State of Florida

Witness

Printed Name

By: _____
John H. Classe, Jr., District Administrator

Witness

Printed Name

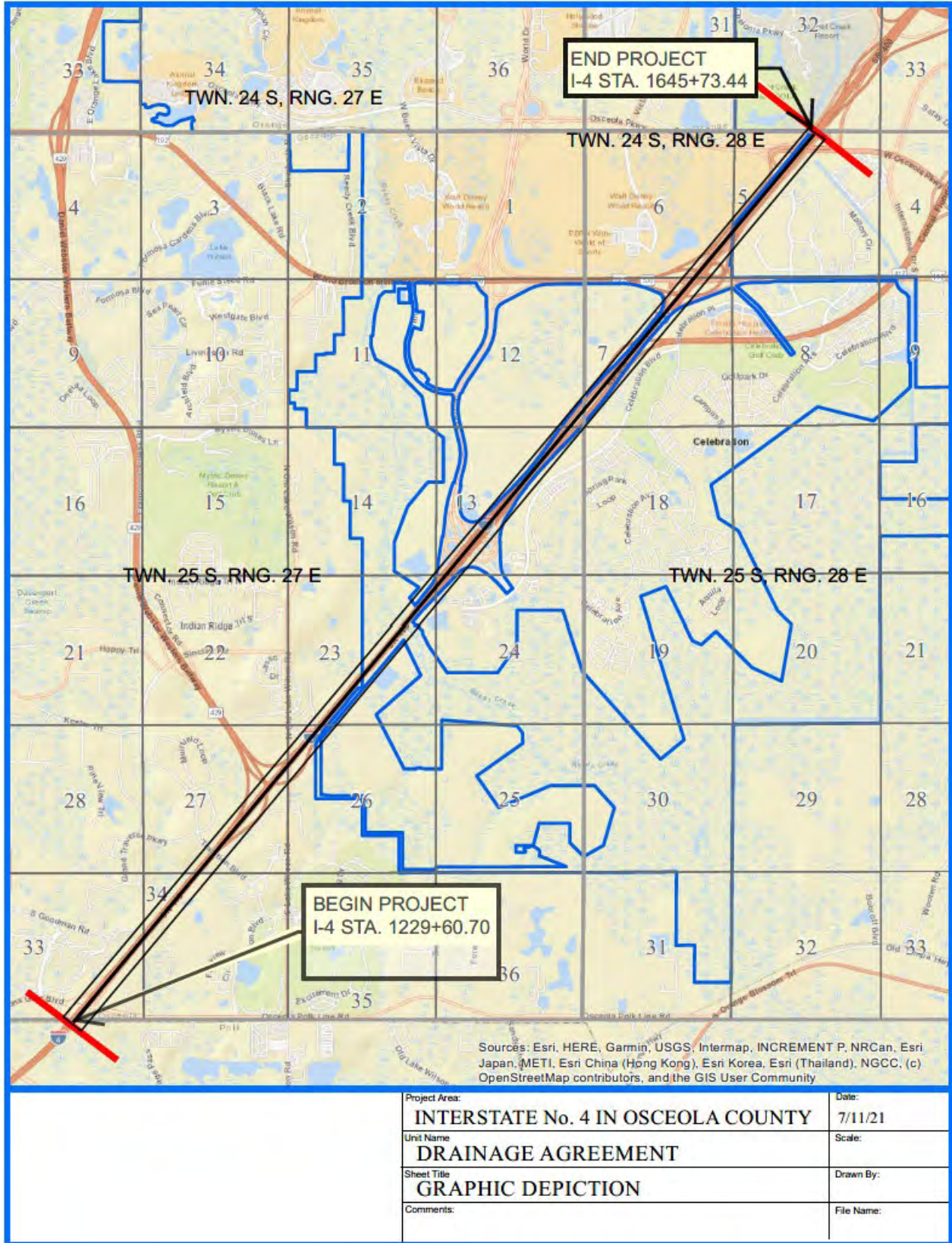
STATE OF FLORIDA)
) SS.
COUNTY OF ORANGE)

The foregoing Agreement was acknowledged before me by means of physical presence or online notarization, this _____ day of _____, 2022, by John H. Classe, Jr., as District Administrator of **REEDY CREEK IMPROVEMENT DISTRICT**, a public corporation and public body corporate and politic of the State of Florida, on behalf thereof, who is personally known to me, or who has presented _____ as identification (if left blank, then personally known to me).

Signature of Notary Public-State of Florida

(AFFIX STAMP)

Exhibit "A"
(Sketch of General Location of the Property)





From: Luetzow, Katherine <kluetzow@rcid.org>
Sent: Wednesday, June 8, 2022 3:29 PM
To: Scott, Erik <Erik.Scott@rsandh.com>
Subject: RE: 446581-1/446164-1 Poinciana Parkway Extension & Widen Western Beltway: RCID H&H Model

Good afternoon Erik,

I have attached an exhibit explaining a little more regarding where we have detailed information for our model.

I have also attached a map that shows the Tributary basins to RCID. This shows the historic divide for outside areas that enter our system.

Downstream of S-40/our levee we do not have any basin or detailed information.

If there are any elevations/flows that you want along the Reedy Creek thread upstream of S-40, I am more than happy to provide. I just didn't know if they would actually be able to help as the distance and split of flow from Davenport is going to make them not really applicable for your project.

Sorry I couldn't be of more assistance.

Thanks,

Katherine Luetzow, PE, CFM
Sr. Water Resources Engineer
Planning & Engineering
Reedy Creek Improvement District
Office (407) 828-2954
Cell (407) 840-1246
www.rcid.org



From: Luetzow, Katherine
Sent: Tuesday, May 3, 2022 5:36 PM
To: Scott, Erik <Erik.Scott@rsandh.com>
Subject: RE: 446581-1/446164-1 Poinciana Parkway Extension & Widen Western Beltway: RCID H&H Model

Attached is the WMCA file.

Thanks,

Katherine Luetzow, PE, CFM
Sr. Water Resources Engineer
Planning & Engineering
Reedy Creek Improvement District
Office (407) 828-2954
Cell (407) 840-1246
www.rcid.org

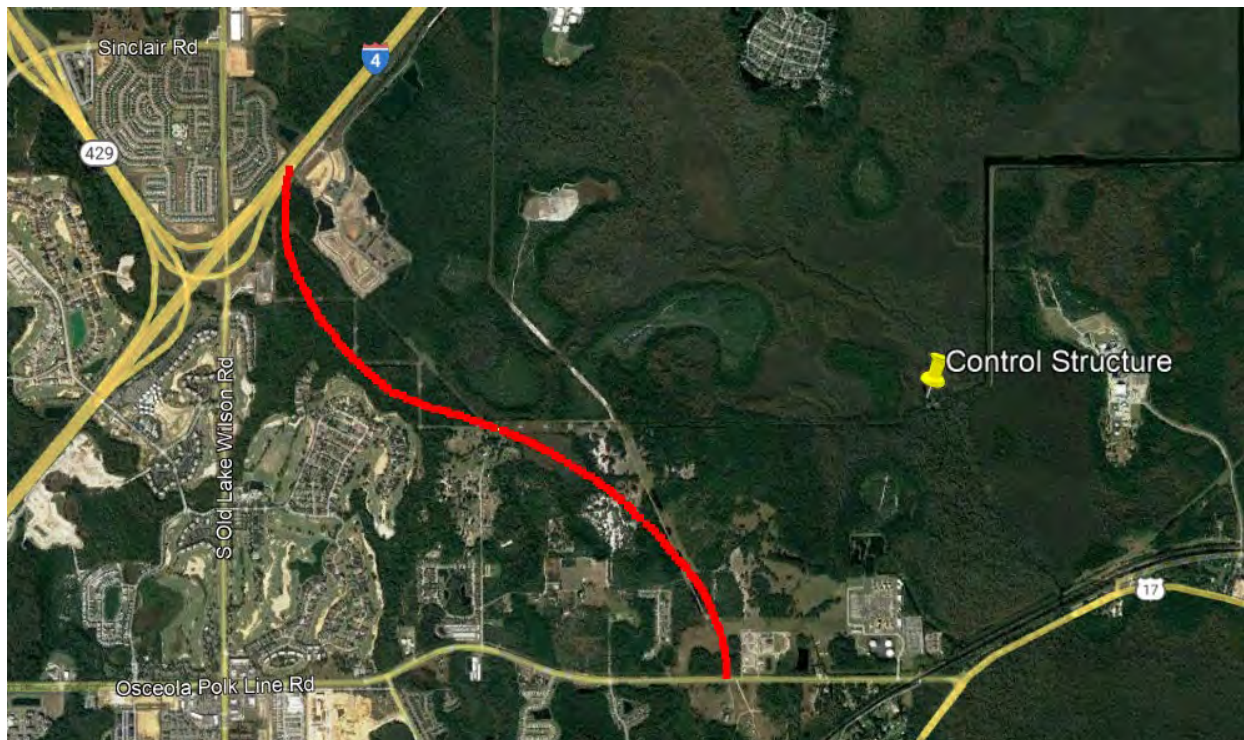


From: Scott, Erik <Erik.Scott@rsandh.com>
Sent: Tuesday, May 3, 2022 4:01 PM
To: Luetzow, Katherine <kluetzow@rcid.org>
Subject: RE: 446581-1/446164-1 Poinciana Parkway Extension & Widen Western Beltway: RCID H&H Model

Good afternoon Kate,

I am sorry I missed your call.

For the drainage model I have attached the limits below. In general the area bounded by CR 532 (Osceola Polk Line Road) / US 17 and Interstate 4.



With regards to the GIS data you are correct, the WMCA was certainly the main item we were missing. I will have our environmental group reach out to Daniel for any other items that were noted as outdated per our last meeting. As for the file type and datum, we are using state plane and I believe AutoCAD files would be the best resource for us.

Much appreciated,

Erik Scott, PE

Water Resources Engineer
1715 N Westshore Blvd, Suite 600, Tampa, FL 33607
813-636-2632

Erik.Scott@rsandh.com

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From: Luetzow, Katherine <kluetzow@rcid.org>

Sent: Tuesday, May 3, 2022 3:27 PM

To: Scott, Erik <Erik.Scott@rsandh.com>

Subject: RE: 446581-1/446164-1 Poinciana Parkway Extension & Widen Western Beltway: RCID H&H Model

Good afternoon Erik,

I left you a voicemail, I need a little more information to make sure I get you what you need.

For the drainage model-are there particular locations of interest that you need stage/flow information? If you can send me a map or exhibit showing your locations of interest, and what in particular you are wanting, I can get you that information.

I believe you also need the WMCA file. Do you have any preference on file type between a GIS file or AutoCad? Also, just to confirm, is your project in Stateplane as far as datum? I will get you that file.

For any other file request you can reach out to Daniel Bollone our GIS Administrator. His email is: dbollone@rcid.org

Let me know if you have any questions.

Thanks,

Katherine Luetzow, PE, CFM
Sr. Water Resources Engineer
Planning & Engineering
Reedy Creek Improvement District
Office (407) 828-2954

Cell (407) 840-1246
www.rcid.org



From: Scott, Erik <Erik.Scott@rsandh.com>
Sent: Tuesday, April 12, 2022 4:36 PM
To: Kolbo, Kate <kkolbo@rcid.org>
Cc: Reed, Douglas <Douglas.Reed@rsandh.com>; P. E. Stephanie Underwood (Stephanie.Underwood@dot.state.fl.us) <Stephanie.Underwood@dot.state.fl.us>
Subject: 446581-1/446164-1 Poinciana Parkway Extension & Widen Western Beltway: RCID H&H Model

Good afternoon Kate,

Per our conversation during the March 3 coordination meeting with yourself and Florida's Turnpike Enterprise staff regarding the PD&E studies Widening Western Beltway and Poinciana Parkway Extension I would like to request the most current version of the RCID hydrologic / hydraulic model to verify runoff rates and stages in the vicinity of these two projects.

In addition, could you please put me in touch with your GIS specialist. It seems as though some of the data we received previously has since been superseded.

Thank you,
Erik

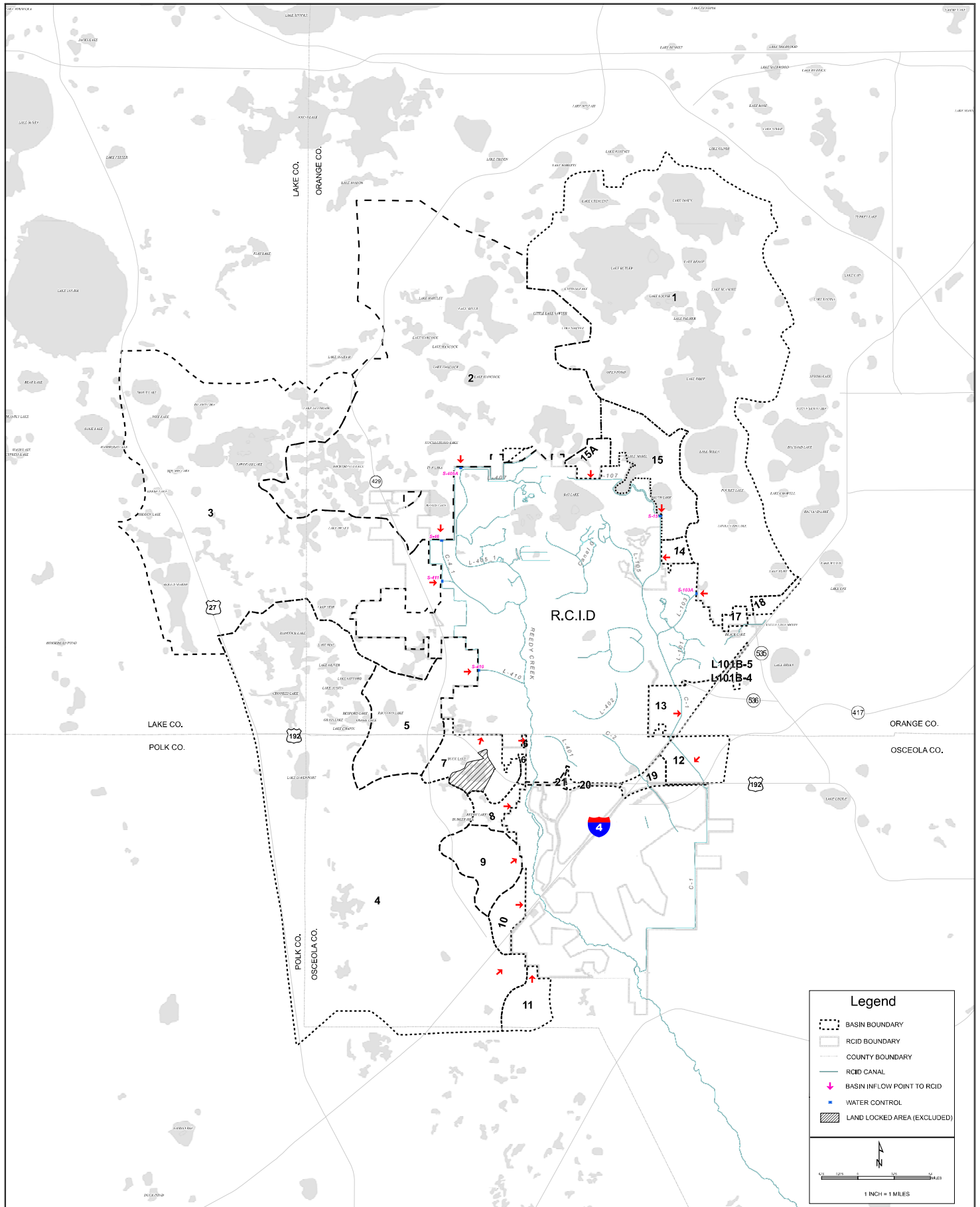
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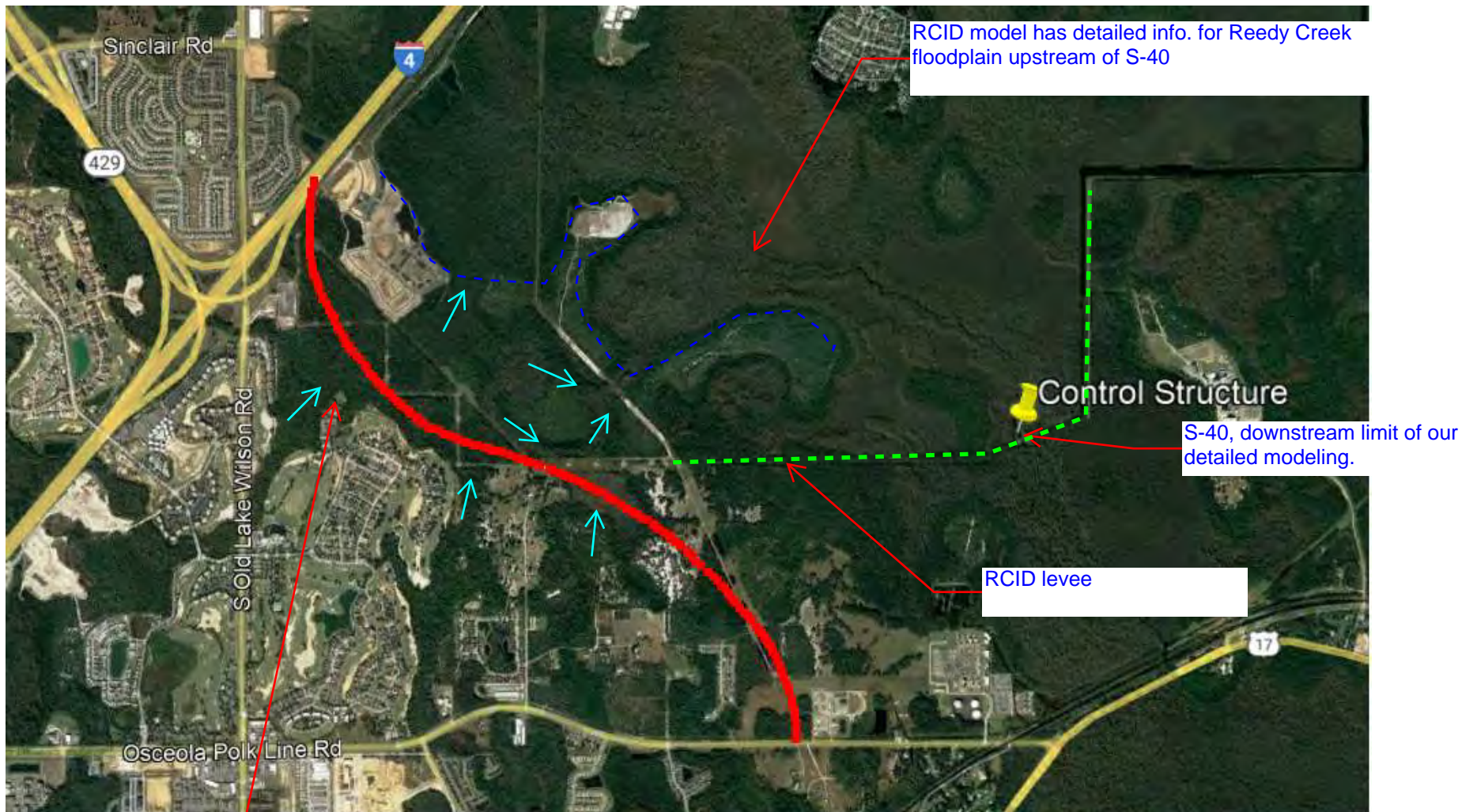
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TRIBUTARY LAND
WATERSHED MAP

REEDY CREEK IMPROVEMENT DISTRICT



We have outside areas modeled as tributary inflow, but it is not detailed. The model takes the entire basin/inflow and applies it to where that flow hits our primary system. So in this area, it is treated as direct inflow to the main Reedy Creek thread.

In reality this flow does split after entering RCID property as shown, but detailed modeling does not currently exist for this area. It is also sloping from Davenport Creek down to Reedy Creek, as Reedy Creek is lower than Davenport. Reedy Creek is also falling as it heads downstream toward S-40. So a complicated area!

S-40 is a dual, D-710 Amil gate. We have a maximum permitted discharge of 3,282 cfs for the 10-year, 72-hour event.

There is a USGS gauge at Intercession city and downstream of S-40. Perhaps that can be used to help, though still pretty far from your site.

**REACH 35
35RM1.677
100YR**

100-year Floodplain Stage (DG): 75.47
100-year Floodplain Stage (NAVD 88): 74.17

TIME HOURS	35RM1.67	
	35RM1.67 7 100YR STAGE FEET (DG)	7 100YR STAGE FEET (NAVD 88)
01/01/1988 07:00	70.28	68.98
01/01/1988 08:00	70.28	68.98
01/01/1988 09:00	70.29	68.99
01/01/1988 10:00	70.29	68.99
01/01/1988 11:00	70.29	68.99
01/01/1988 12:00	70.29	68.99
01/01/1988 13:00	70.29	68.99
01/01/1988 14:00	70.29	68.99
01/01/1988 15:00	70.29	68.99
01/01/1988 16:00	70.29	68.99
01/01/1988 17:00	70.29	68.99
01/01/1988 18:00	70.29	68.99
01/01/1988 19:00	70.28	68.98
01/01/1988 20:00	70.28	68.98
01/01/1988 21:00	70.27	68.97
01/01/1988 22:00	70.27	68.97
01/01/1988 23:00	70.26	68.96
01/02/1988 00:00	70.26	68.96
01/02/1988 01:00	70.25	68.95
01/02/1988 02:00	70.25	68.95
01/02/1988 03:00	70.24	68.94
01/02/1988 04:00	70.24	68.94
01/02/1988 05:00	70.24	68.94
01/02/1988 06:00	70.23	68.93
01/02/1988 07:00	70.23	68.93
01/02/1988 08:00	70.23	68.93
01/02/1988 09:00	70.23	68.93
01/02/1988 10:00	70.23	68.93
01/02/1988 11:00	70.24	68.94
01/02/1988 12:00	70.24	68.94
01/02/1988 13:00	70.25	68.95
01/02/1988 14:00	70.26	68.96
01/02/1988 15:00	70.27	68.97
01/02/1988 16:00	70.28	68.98
01/02/1988 17:00	70.30	69.00
01/02/1988 18:00	70.32	69.02
01/02/1988 19:00	70.34	69.04
01/02/1988 20:00	70.36	69.06

01/02/1988 21:00	70.38	69.08
01/02/1988 22:00	70.40	69.10
01/02/1988 23:00	70.42	69.12
01/03/1988 00:00	70.45	69.15
01/03/1988 01:00	70.47	69.17
01/03/1988 02:00	70.50	69.20
01/03/1988 03:00	70.52	69.22
01/03/1988 04:00	70.55	69.25
01/03/1988 05:00	70.58	69.28
01/03/1988 06:00	70.61	69.31
01/03/1988 07:00	70.64	69.34
01/03/1988 08:00	70.68	69.38
01/03/1988 09:00	70.72	69.42
01/03/1988 10:00	70.79	69.49
01/03/1988 11:00	70.87	69.57
01/03/1988 12:00	70.98	69.68
01/03/1988 13:00	71.09	69.79
01/03/1988 14:00	71.20	69.90
01/03/1988 15:00	71.28	69.98
01/03/1988 16:00	71.35	70.05
01/03/1988 17:00	71.41	70.11
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01/03/1988 19:00	71.77	70.47
01/03/1988 20:00	72.09	70.79
01/03/1988 21:00	72.48	71.18
01/03/1988 22:00	72.77	71.47
01/03/1988 23:00	73.00	71.70
01/04/1988 00:00	73.19	71.89
01/04/1988 01:00	73.36	72.06
01/04/1988 02:00	73.51	72.21
01/04/1988 03:00	73.66	72.36
01/04/1988 04:00	73.80	72.50
01/04/1988 05:00	73.94	72.64
01/04/1988 06:00	74.09	72.79
01/04/1988 07:00	74.24	72.94
01/04/1988 08:00	74.39	73.09
01/04/1988 09:00	74.53	73.23
01/04/1988 10:00	74.66	73.36
01/04/1988 11:00	74.78	73.48
01/04/1988 12:00	74.89	73.59
01/04/1988 13:00	75.00	73.70
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01/04/1988 16:00	75.24	73.94
01/04/1988 17:00	75.30	74.00
01/04/1988 18:00	75.35	74.05
01/04/1988 19:00	75.39	74.09

01/04/1988 20:00	75.42	74.12
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01/04/1988 22:00	75.46	74.16
01/04/1988 23:00	75.47	74.17
01/05/1988 00:00	75.47	74.17
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01/05/1988 02:00	75.47	74.17
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01/05/1988 05:00	75.44	74.14
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01/05/1988 07:00	75.41	74.11
01/05/1988 08:00	75.39	74.09
01/05/1988 09:00	75.37	74.07
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01/05/1988 17:00	75.21	73.91
01/05/1988 18:00	75.19	73.89
01/05/1988 19:00	75.16	73.86
01/05/1988 20:00	75.14	73.84
01/05/1988 21:00	75.11	73.81
01/05/1988 22:00	75.09	73.79
01/05/1988 23:00	75.06	73.76
01/06/1988 00:00	75.03	73.73
01/06/1988 01:00	75.00	73.70
01/06/1988 02:00	74.98	73.68
01/06/1988 03:00	74.95	73.65
01/06/1988 04:00	74.93	73.63
01/06/1988 05:00	74.90	73.60
01/06/1988 06:00	74.87	73.57
01/06/1988 07:00	74.83	73.53
01/06/1988 08:00	74.80	73.50
01/06/1988 09:00	74.77	73.47
01/06/1988 10:00	74.74	73.44
01/06/1988 11:00	74.71	73.41
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01/06/1988 13:00	74.64	73.34
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01/06/1988 15:00	74.57	73.27
01/06/1988 16:00	74.54	73.24
01/06/1988 17:00	74.50	73.20
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01/06/1988 19:00	74.43	73.13
01/06/1988 20:00	74.41	73.11
01/06/1988 21:00	74.38	73.08
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01/06/1988 23:00	74.31	73.01
01/07/1988 00:00	74.27	72.97
01/07/1988 01:00	74.24	72.94
01/07/1988 02:00	74.20	72.90
01/07/1988 03:00	74.17	72.87
01/07/1988 04:00	74.13	72.83
01/07/1988 05:00	74.09	72.79
01/07/1988 06:00	74.06	72.76
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01/07/1988 08:00	73.98	72.68
01/07/1988 09:00	73.94	72.64
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01/08/1988 05:00	73.26	71.96
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01/08/1988 17:00	72.87	71.57

01/08/1988 18:00	72.83	71.53
01/08/1988 19:00	72.80	71.50
01/08/1988 20:00	72.76	71.46
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01/09/1988 08:00	72.44	71.14
01/09/1988 09:00	72.42	71.12
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01/09/1988 11:00	72.37	71.07
01/09/1988 12:00	72.35	71.05
01/09/1988 13:00	72.33	71.03
01/09/1988 14:00	72.30	71.00
01/09/1988 15:00	72.28	70.98
01/09/1988 16:00	72.26	70.96
01/09/1988 17:00	72.23	70.93
01/09/1988 18:00	72.21	70.91
01/09/1988 19:00	72.18	70.88
01/09/1988 20:00	72.17	70.87
01/09/1988 21:00	72.16	70.86
01/09/1988 22:00	72.14	70.84
01/09/1988 23:00	72.12	70.82
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01/10/1988 01:00	72.09	70.79
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01/10/1988 03:00	72.06	70.76
01/10/1988 04:00	72.04	70.74
01/10/1988 05:00	72.03	70.73
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01/10/1988 07:00	72.00	70.70
01/10/1988 08:00	71.98	70.68
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01/10/1988 13:00	71.92	70.62
01/10/1988 14:00	71.91	70.61
01/10/1988 15:00	71.90	70.60
01/10/1988 16:00	71.89	70.59

01/10/1988 17:00	71.89	70.59
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01/10/1988 19:00	71.87	70.57
01/10/1988 20:00	71.86	70.56
01/10/1988 21:00	71.85	70.55
01/10/1988 22:00	71.85	70.55
01/10/1988 23:00	71.84	70.54
01/11/1988 00:00	71.83	70.53

**REACH 35
35RM1.677
10YR**

10-year Peak Stage (DG): 73.77
10-year Peak Stage (NAVD 88): 72.47

TIME HOURS	35RM1.67	
	35RM1.67 7 10YR STAGE FEET (DG)	7 10YR STAGE FEET (NAVD 88)
01/01/1988 07:00	70.28	68.98
01/01/1988 08:00	70.28	68.98
01/01/1988 09:00	70.29	68.99
01/01/1988 10:00	70.29	68.99
01/01/1988 11:00	70.29	68.99
01/01/1988 12:00	70.29	68.99
01/01/1988 13:00	70.29	68.99
01/01/1988 14:00	70.29	68.99
01/01/1988 15:00	70.29	68.99
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01/01/1988 17:00	70.29	68.99
01/01/1988 18:00	70.28	68.98
01/01/1988 19:00	70.28	68.98
01/01/1988 20:00	70.28	68.98
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01/01/1988 22:00	70.27	68.97
01/01/1988 23:00	70.26	68.96
01/02/1988 00:00	70.25	68.95
01/02/1988 01:00	70.25	68.95
01/02/1988 02:00	70.24	68.94
01/02/1988 03:00	70.24	68.94
01/02/1988 04:00	70.23	68.93
01/02/1988 05:00	70.23	68.93
01/02/1988 06:00	70.22	68.92
01/02/1988 07:00	70.22	68.92
01/02/1988 08:00	70.22	68.92
01/02/1988 09:00	70.22	68.92
01/02/1988 10:00	70.22	68.92
01/02/1988 11:00	70.22	68.92
01/02/1988 12:00	70.22	68.92
01/02/1988 13:00	70.22	68.92
01/02/1988 14:00	70.22	68.92
01/02/1988 15:00	70.23	68.93
01/02/1988 16:00	70.23	68.93
01/02/1988 17:00	70.24	68.94
01/02/1988 18:00	70.24	68.94
01/02/1988 19:00	70.25	68.95
01/02/1988 20:00	70.26	68.96

01/02/1988 21:00	70.27	68.97
01/02/1988 22:00	70.28	68.98
01/02/1988 23:00	70.29	68.99
01/03/1988 00:00	70.30	69.00
01/03/1988 01:00	70.31	69.01
01/03/1988 02:00	70.32	69.02
01/03/1988 03:00	70.33	69.03
01/03/1988 04:00	70.35	69.05
01/03/1988 05:00	70.36	69.06
01/03/1988 06:00	70.38	69.08
01/03/1988 07:00	70.39	69.09
01/03/1988 08:00	70.41	69.11
01/03/1988 09:00	70.43	69.13
01/03/1988 10:00	70.45	69.15
01/03/1988 11:00	70.49	69.19
01/03/1988 12:00	70.54	69.24
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01/03/1988 14:00	70.67	69.37
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01/03/1988 17:00	70.95	69.65
01/03/1988 18:00	71.08	69.78
01/03/1988 19:00	71.26	69.96
01/03/1988 20:00	71.43	70.13
01/03/1988 21:00	71.54	70.24
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01/04/1988 04:00	72.45	71.15
01/04/1988 05:00	72.56	71.26
01/04/1988 06:00	72.67	71.37
01/04/1988 07:00	72.80	71.50
01/04/1988 08:00	72.91	71.61
01/04/1988 09:00	73.02	71.72
01/04/1988 10:00	73.14	71.84
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01/04/1988 20:00	73.75	72.45
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01/05/1988 00:00	73.76	72.46
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01/05/1988 02:00	73.73	72.43
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01/05/1988 04:00	73.69	72.39
01/05/1988 05:00	73.66	72.36
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01/05/1988 07:00	73.60	72.30
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01/05/1988 14:00	73.31	72.01
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01/05/1988 16:00	73.26	71.96
01/05/1988 17:00	73.22	71.92
01/05/1988 18:00	73.18	71.88
01/05/1988 19:00	73.14	71.84
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01/06/1988 00:00	72.92	71.62
01/06/1988 01:00	72.88	71.58
01/06/1988 02:00	72.83	71.53
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01/06/1988 09:00	72.55	71.25
01/06/1988 10:00	72.52	71.22
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01/06/1988 15:00	72.36	71.06
01/06/1988 16:00	72.33	71.03
01/06/1988 17:00	72.30	71.00
01/06/1988 18:00	72.27	70.97

01/06/1988 19:00	72.24	70.94
01/06/1988 20:00	72.21	70.91
01/06/1988 21:00	72.18	70.88
01/06/1988 22:00	72.17	70.87
01/06/1988 23:00	72.15	70.85
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01/07/1988 05:00	72.02	70.72
01/07/1988 06:00	72.00	70.70
01/07/1988 07:00	71.98	70.68
01/07/1988 08:00	71.96	70.66
01/07/1988 09:00	71.94	70.64
01/07/1988 10:00	71.92	70.62
01/07/1988 11:00	71.90	70.60
01/07/1988 12:00	71.89	70.59
01/07/1988 13:00	71.87	70.57
01/07/1988 14:00	71.86	70.56
01/07/1988 15:00	71.84	70.54
01/07/1988 16:00	71.83	70.53
01/07/1988 17:00	71.81	70.51
01/07/1988 18:00	71.80	70.50
01/07/1988 19:00	71.79	70.49
01/07/1988 20:00	71.78	70.48
01/07/1988 21:00	71.77	70.47
01/07/1988 22:00	71.76	70.46
01/07/1988 23:00	71.75	70.45
01/08/1988 00:00	71.74	70.44
01/08/1988 01:00	71.73	70.43
01/08/1988 02:00	71.72	70.42
01/08/1988 03:00	71.71	70.41
01/08/1988 04:00	71.70	70.40
01/08/1988 05:00	71.69	70.39
01/08/1988 06:00	71.68	70.38
01/08/1988 07:00	71.68	70.38
01/08/1988 08:00	71.67	70.37
01/08/1988 09:00	71.66	70.36
01/08/1988 10:00	71.65	70.35
01/08/1988 11:00	71.64	70.34
01/08/1988 12:00	71.63	70.33
01/08/1988 13:00	71.63	70.33
01/08/1988 14:00	71.62	70.32
01/08/1988 15:00	71.62	70.32
01/08/1988 16:00	71.62	70.32
01/08/1988 17:00	71.61	70.31

01/08/1988 18:00	71.61	70.31
01/08/1988 19:00	71.60	70.30
01/08/1988 20:00	71.59	70.29
01/08/1988 21:00	71.59	70.29
01/08/1988 22:00	71.58	70.28
01/08/1988 23:00	71.57	70.27
01/09/1988 00:00	71.57	70.27
01/09/1988 01:00	71.56	70.26
01/09/1988 02:00	71.55	70.25
01/09/1988 03:00	71.55	70.25
01/09/1988 04:00	71.54	70.24
01/09/1988 05:00	71.53	70.23
01/09/1988 06:00	71.53	70.23
01/09/1988 07:00	71.52	70.22
01/09/1988 08:00	71.52	70.22
01/09/1988 09:00	71.51	70.21
01/09/1988 10:00	71.50	70.20
01/09/1988 11:00	71.50	70.20
01/09/1988 12:00	71.49	70.19
01/09/1988 13:00	71.49	70.19
01/09/1988 14:00	71.48	70.18
01/09/1988 15:00	71.48	70.18
01/09/1988 16:00	71.47	70.17
01/09/1988 17:00	71.47	70.17
01/09/1988 18:00	71.46	70.16
01/09/1988 19:00	71.46	70.16
01/09/1988 20:00	71.45	70.15
01/09/1988 21:00	71.45	70.15
01/09/1988 22:00	71.44	70.14
01/09/1988 23:00	71.44	70.14
01/10/1988 00:00	71.43	70.13
01/10/1988 01:00	71.43	70.13
01/10/1988 02:00	71.42	70.12
01/10/1988 03:00	71.42	70.12
01/10/1988 04:00	71.41	70.11
01/10/1988 05:00	71.41	70.11
01/10/1988 06:00	71.41	70.11
01/10/1988 07:00	71.40	70.10
01/10/1988 08:00	71.40	70.10
01/10/1988 09:00	71.39	70.09
01/10/1988 10:00	71.39	70.09
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01/10/1988 13:00	71.38	70.08
01/10/1988 14:00	71.37	70.07
01/10/1988 15:00	71.37	70.07
01/10/1988 16:00	71.36	70.06

01/10/1988 17:00	71.36	70.06
01/10/1988 18:00	71.36	70.06
01/10/1988 19:00	71.35	70.05
01/10/1988 20:00	71.35	70.05
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01/10/1988 22:00	71.34	70.04
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CRAS Technical Memorandum

DRAFT Pond Siting Report

Poinciana Parkway Extension from CR 532 to North of I-4/SR 429 Interchange
Florida's Turnpike Enterprise
Financial Project ID 446581-1

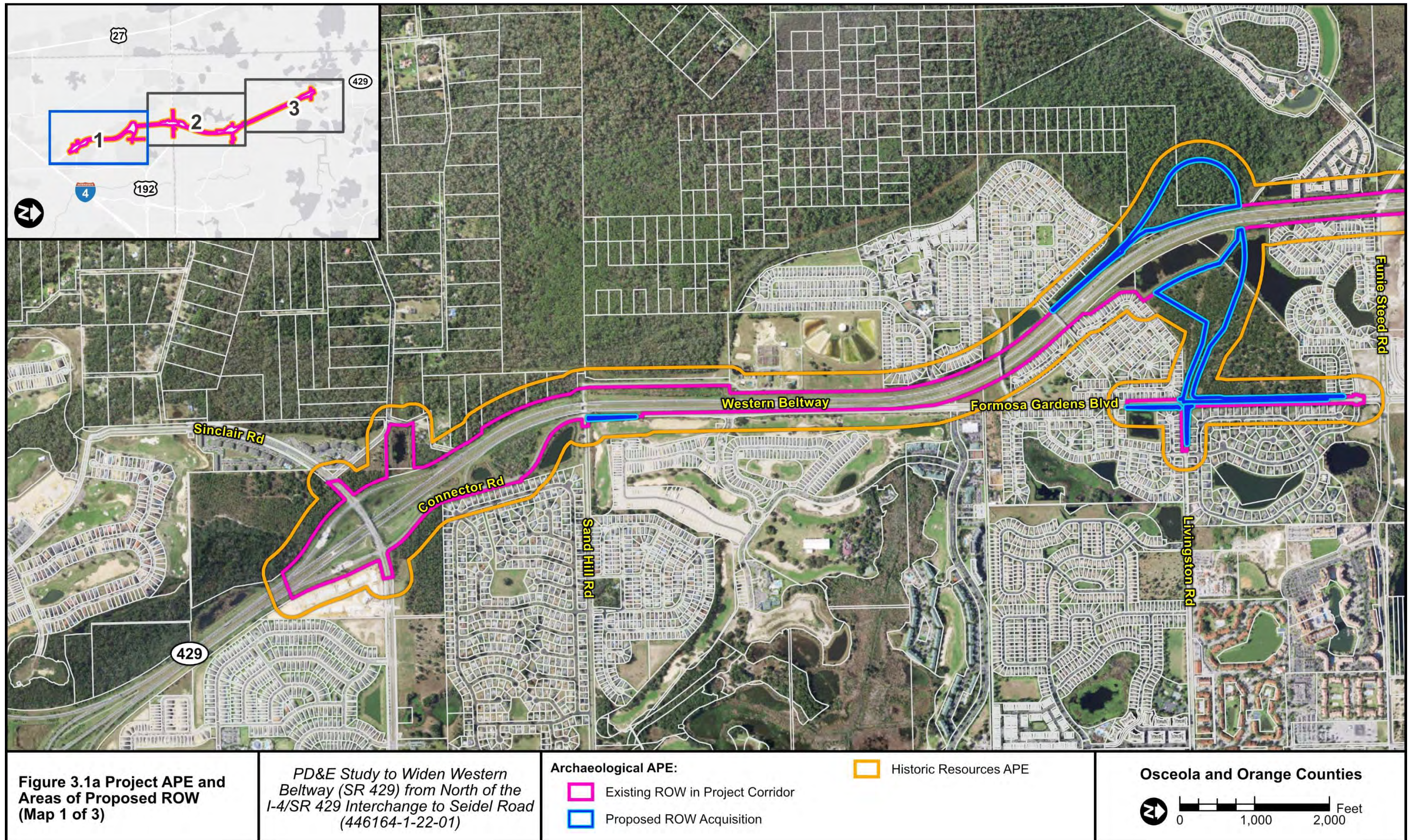


Figure 3.1a Project APE and Areas of Proposed ROW (Map 1 of 3)

PD&E Study to Widen Western Beltway (SR 429) from North of the I-4/SR 429 Interchange to Seidel Road (446164-1-22-01)

Archaeological APE:
█ Existing ROW in Project Corridor
█ Proposed ROW Acquisition

Historic Resources APE

Osceola and Orange Counties

 0 1,000 2,000 Feet

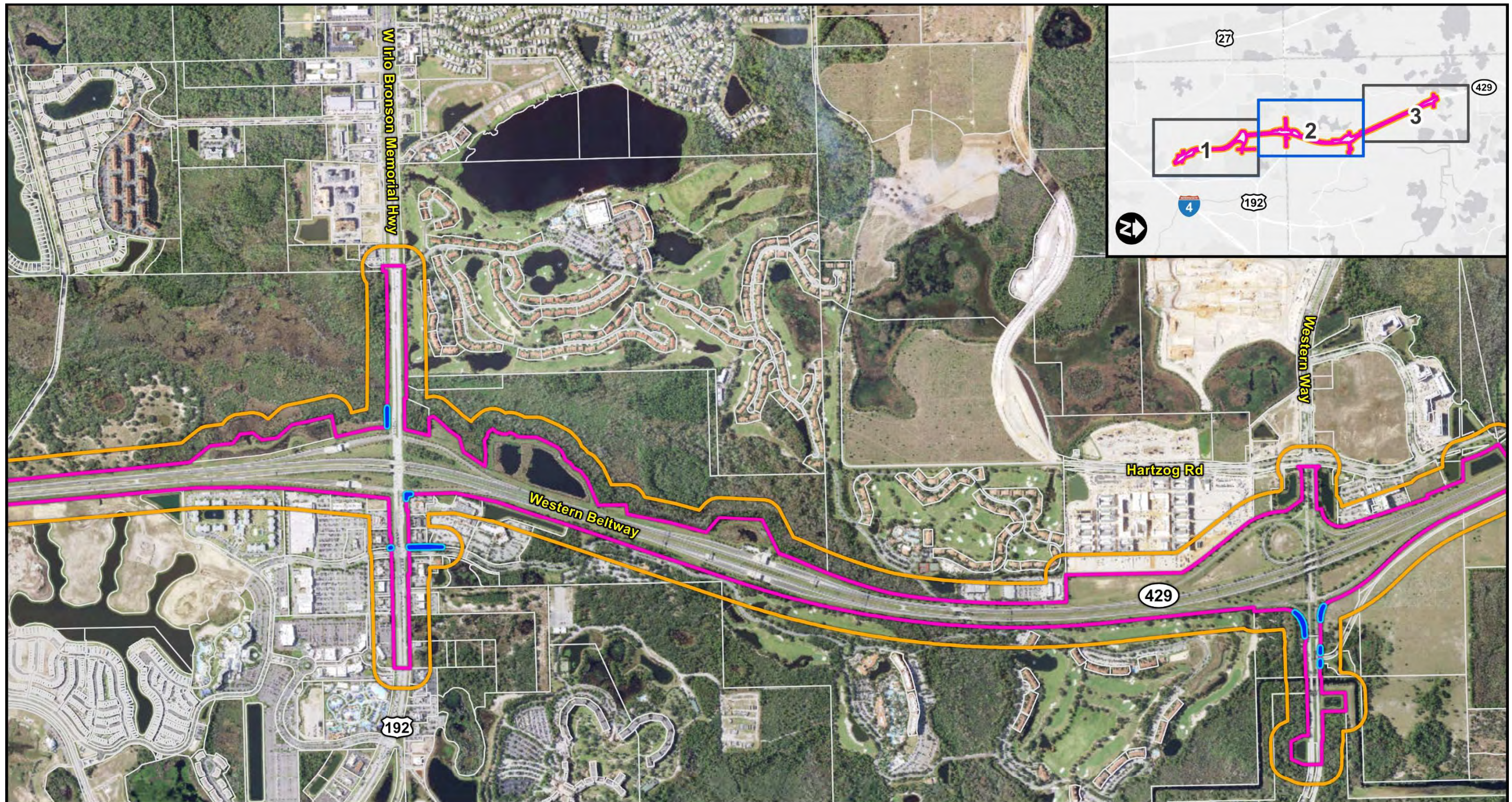


Figure 3.1b Project APE and Areas of Proposed ROW (Map 2 of 3)

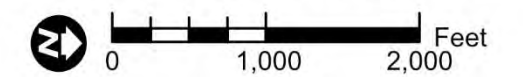
PD&E Study to Widen Western Beltway (SR 429) from North of the I-4/SR 429 Interchange to Seidel Road (446164-1-22-01)

Archaeological APE:

- Existing ROW in Project Corridor
- Proposed ROW Acquisition

Historic Resources APE

Osceola and Orange Counties



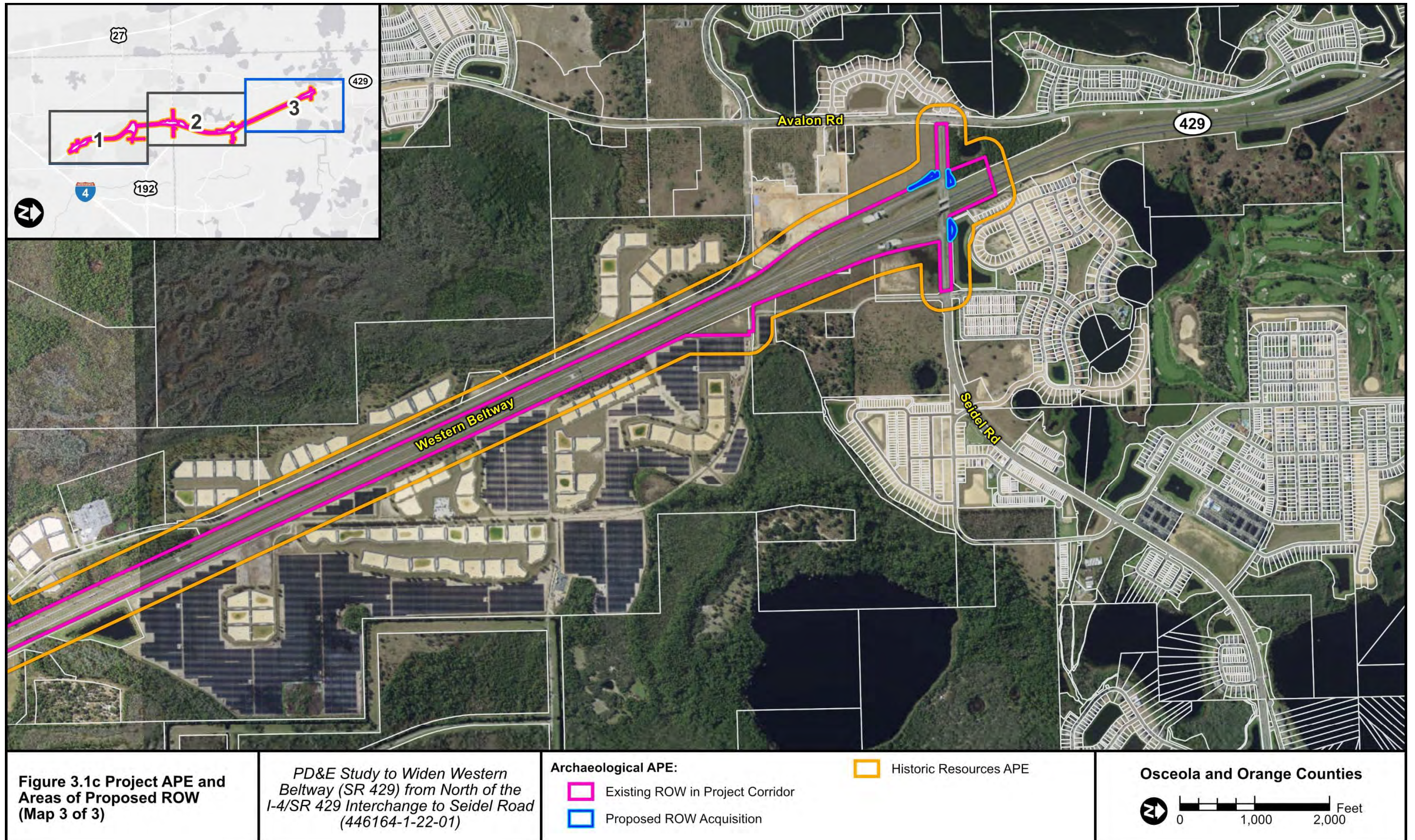


Figure 3.1c Project APE and Areas of Proposed ROW (Map 3 of 3)

PD&E Study to Widen Western Beltway (SR 429) from North of the I-4/SR 429 Interchange to Seidel Road (446164-1-22-01)

Archaeological APE:

- Existing ROW in Project Corridor
- Proposed ROW Acquisition

Historic Resources APE

Osceola and Orange Counties

