

Pond Siting Report

Widening Western Beltway (SR 429)

Project Development and Environment (PD&E) Study

From Interstate 4 to Seidel Road
(MP 0.5 to MP 11.5)

Osceola and Orange Counties, Florida

Financial Project ID (FPID) No. 446164-1
ETDM No.: 14446



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March 2023

POND SITING REPORT
PD&E Study Widening Western Beltway from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
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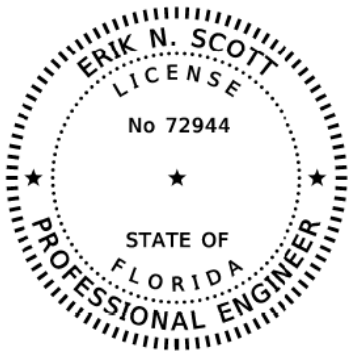
This document and the information contained within have been prepared solely for the use of Florida's Turnpike Enterprise.

This report consists of the following parts:

Sections 1 through 11
Appendices A through F

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

The Florida Turnpike Enterprise (FTE), part of the Florida Department of Transportation (FDOT), is evaluating the widening of Florida’s Turnpike (State Road (SR) 429) from Interstate 4 to Seidel Road, a distance of approximately 10 miles. The project is located in Osceola and Orange 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 currently has a 4-lane typical section within the study limit. This PD&E study evaluates the widening of the mainline from 4-lanes to 8-lanes. 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). The purpose of the project is to improve mobility on Florida’s Turnpike mainline to accommodate current and future traffic volumes, as well as improve safety along SR 429.

The analysis presented in this report identifies the stormwater management needs for each of the 20 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)	Total Cost
2A-2	1	12.42 ¹	\$6,426,744
FGB (Basin B)	3	4.80	\$1,048,101

1. A portion of proposed Pond 2A-2 will be located within the existing right-of-way.

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- Appendix A – Drainage Maps
- 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

The Florida Turnpike Enterprise (FTE) is evaluating alternatives to widen Florida’s Turnpike (State Road (SR) 429) from Interstate 4 to Seidel Road, a distance of approximately 11 miles. As part of the study, all existing interchanges within the project limits and the need for a new interchange will be evaluated. The purpose of the project is to improve mobility on Florida’s Turnpike mainline to accommodate current and future traffic volumes and improve safety along SR 429.

SECTION 2.0 – PROJECT DESCRIPTION

The project is located in Osceola and Orange Counties, Florida. See **Figure 1** for a Project Location Map. 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 currently has 4-lane typical section within the study limits. See **Figure 2** for the existing 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).

This PD&E Study will evaluate the widening of the Florida’s Turnpike from 4-lanes to 8-lanes, along with interchange improvements. See **Figure 3** for the proposed typical section. The total project length is approximately 11.0-miles. The study includes five existing interchanges and one new interchange.

Existing interchanges are as follows:

- Interstate 4 (MP 0)
- Sinclair Road (MP 1)
- US 192 (MP 6)
- Western Way (MP 8)
- Seidel Road (MP 11)

Proposed interchange:

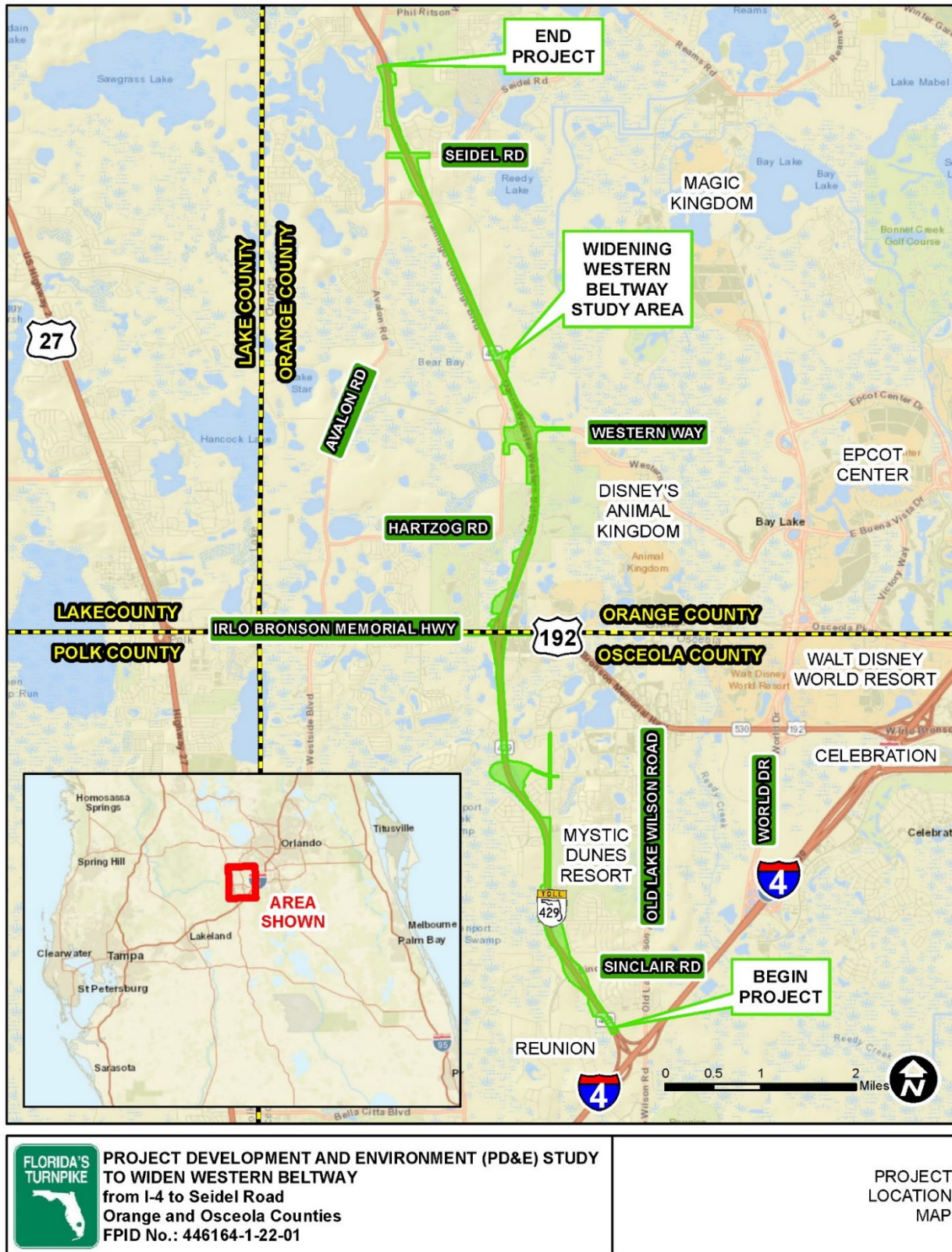
- Livingston Road (MP 4)

See **Figure 4** for United States Geological Survey (USGS) Quadrangle Map.

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Figure 1: Project Location Map



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Figure 2: Existing Typical Section

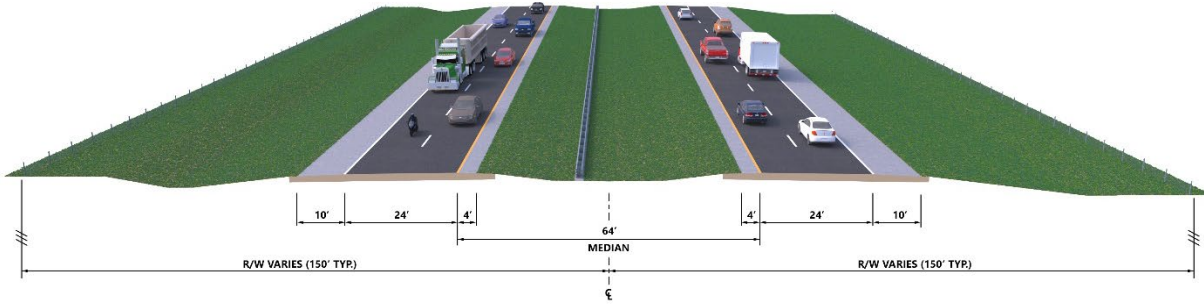
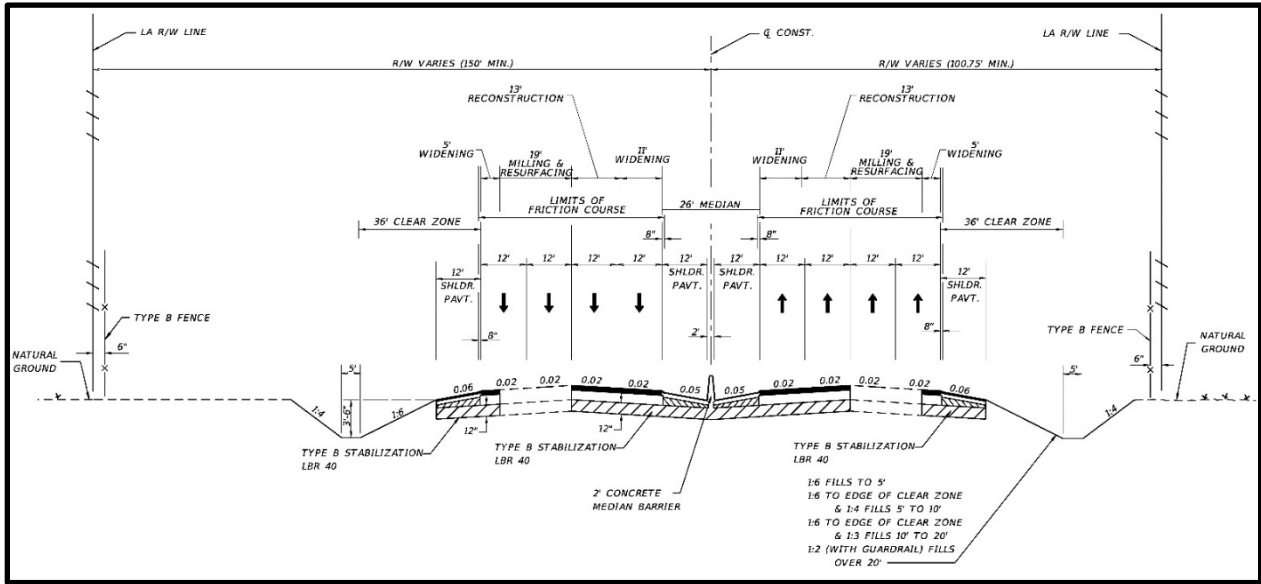


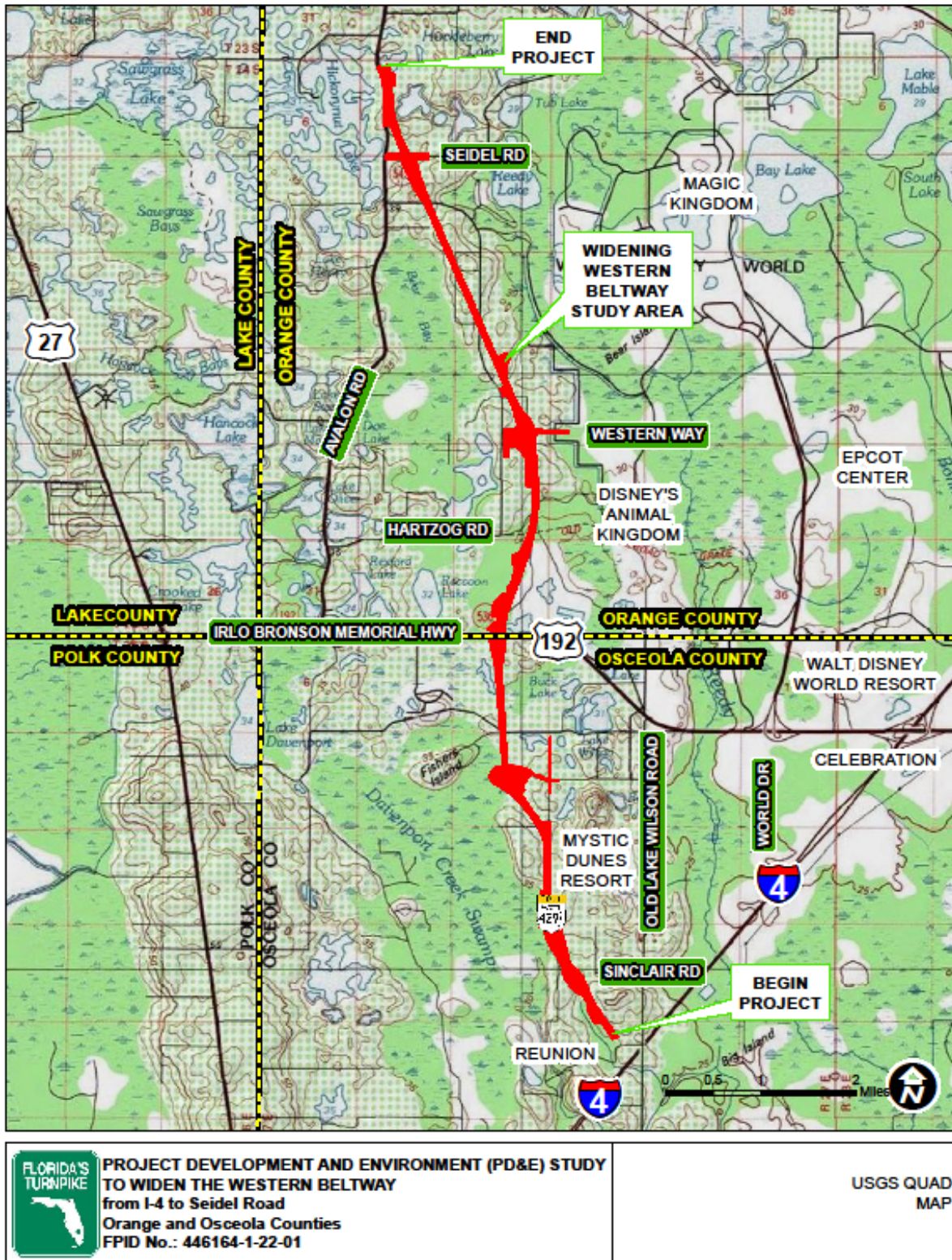
Figure 3: Proposed Typical Section



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Figure 4: 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, 12097C0030G, 12095C0580F, 12095C0390F, 12095C0375F)
- 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. In addition, the Reedy Creek Improvement District entered into a drainage agreement with FTE for discharges outside the right of way.

FDEP will be the permitting lead for the ERP based on Ch. 338.250, FS "The Central Florida Beltway Mitigation Bill", while utilizing the applicable local water management district criteria. In addition, the project is within the Reedy Creek Watershed, therefore approval / drainage agreement from RCID will be required as well. The FDEP ERP application should be submitted to RCID for review prior to submitting to FDEP for concurrence. FDEP will be responsible for Section 404 reviews and permitting. A National Pollutant Discharge Elimination System (NPDES) permit will also be required from FDEP.

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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. 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.

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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 and 3170F4 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)
Davenport Creek Headwaters	3170F5	3F	None
Whittenhorse Creek	3170F4	3F	Dissolved Oxygen
Lake Hickorynut Drain	3170IA	3F	None

Existing stormwater management facilities are based on the water management districts presumptive treatment volumes. No additional treatment volume beyond the presumptive treatment volume will be provided for the impaired basins.

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

Individual technical meetings were held with RCID, FDEP, SFWMD, Osceola County, and Orange 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 meeting minutes for each of these meetings have been included in **Appendix F**.

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SECTION 6.0 – EXISTING & PROPOSED CONDITIONS

6.1 Existing Drainage Conditions

The existing Western Beltway (SR 429) corridor was constructed in phases in the early 2000's. The PD&E study area falls within "Part C" of the system. Part C was further subdivided into sections; the sections of interest are Section 1, Section 2A, Section 2B, and Section 3. 20 basins have been identified within the limits of the study area. These basins consist of open and closed basins. Basins have been defined to correlate with currently permitted conditions within the project limits. Basin divides have been developed from existing permit information which has been supplemented with LIDAR data. Basin divides have been detailed on the existing basin maps included in **Appendix A**.

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 analysis the treatment and attenuation requirements for an 8-lane corridor with a new interchange at Livingston Road. Existing treatment calculations depicting the required and provided treatment volumes can be found in **Appendix B**.

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 extension of Poinciana Parkway from CR 532 to Sinclair Road.

For the purposes of this study only the auxiliary lane project will be considered as an existing condition. The reason for this is twofold, the BTU Interstate 4/SR 429 improvements are still in design and the Poinciana Parkway Extension evaluation will evaluate the 8-lane configuration with the BTU Interstate 4/SR 429 improvements incorporated. Based on the permit data for the auxiliary lane project found in ERP No. 0187636-005-EI, the existing stormwater management system associated with the original construction of the corridor has enough water quality and quantity volume to capture, treat, and attenuate the runoff for the auxiliary lane improvements. These improvements only fall within Basin F-4 of the PD&E study area.

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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.

There are four drainage connection permits within the project corridor. These connection permits have been listed in **Table 4** below with the corresponding milepost for reference. Additionally, the receiving waterbody, whether the basin is open or closed, and any special basin criteria is outlined in **Table 5**. FDEP has defined four 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.

Table 6 below provides a summary of the stormwater management facilities in each basin, along with the type of facility and the permit number for each. **Table 7** provides the required treatment and provided/permitted treatment within each of the each of the existing stormwater management facilities.

Table 4: Drainage Connection Permits

Name	Permit Number	Mile Post
Sinclair Road Apartments	TP-92-DC-180-18	1.5
Flamingo Crossings PD	TP-75-DC-130-18	7.5
Flamingo Crossings Ph I	TP-75-DC-010-08	7
Horizon High School	TP-75-DC-181-20	11

Table 5: Project Basin Summary

Name	Type	Receiving Waterbody
BASIN F-4	Open	Davenport Trib
BASIN B-2	Open	Davenport Trib
BASIN B-3	Open	Davenport Creek
BASIN B-4	Open	Davenport Creek
BASIN B-5	Open	Davenport Creek

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Name	Type	Receiving Waterbody
BASIN B-6	Open	Davenport Creek
BASIN 2A-2	Open	Davenport Creek
BASIN 2A-3	Open	Boggy Creek
BASIN 2B-1	Open	Boggy Creek
BASIN 2B-2	Open	Boggy Creek
BASIN 10	Closed	-
BASIN 11	Open	RCID Perimeter Canal
BASIN 12	Open	Whittenhorse Creek
BASIN 13	Open	Whittenhorse Creek
BASIN 14	Open	Bear Bay / Whittenhorse Creek
BASIN 15	Closed	-
BASIN 1	Open	Panther Lake
BASIN 2	Open	Wetland
BASIN B (FGB)	Open	Davenport Creek
BASIN FL 530	Open	Boggy Creek

Table 6: Existing Pond Summary

Name	Basin	Treatment Method	Permit
EXIST. POND F4-A	F4	Wet Detention	49-187636001
EXIST. POND F4-B	F4	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 2A-2	2A-2	Wet Detention	49-187636001
EXIST. POND 2A-3	2A-3	Wet Detention	49-187636001
EXIST. POND 2B-1	2B-1	Wet Detention	49-187636001
EXIST. POND 2B-2	2B-2	Wet Detention	49-187636001
EXIST. POND 10	10	Dry Retention	49-187636001
EXIST. SWALE 11A	11	Dry Retention	49-187636001
EXIST. SWALE 11B	11	Dry Retention	49-187636001
EXIST. SWALE 11C	11	Dry Retention	49-187636001
EXIST. POND 11D	11	Dry Retention	49-187636001
EXIST. POND 12	12	Wet Detention	49-187636001
EXIST. POND 13	13	Wet Detention	49-187636001
EXIST. POND 14A	14	Dry Retention	49-187636001
EXIST. POND 14B	14	Dry Retention	49-187636001
EXIST. POND 14C	14	Dry Retention	49-187636001

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Name	Basin	Treatment Method	Permit
EXIST. POND 15A	15	Dry Retention	49-187636001
EXIST. POND 15B	15	Dry Retention	49-187636001
EXIST. POND 15C	15	Dry Retention	49-187636001
EXIST. POND 15D	15	Dry Retention	49-187636001
EXIST. POND 15E	15	Dry Retention	49-187636001
EXIST. POND 1	1	Dry Retention	48-166214001*
EXIST. POND 2	2	Wet Detention	48-166214001*
EXIST. POND B (FGB)	B (FGB)	Wet Detention	49-00507-S
EXIST. POND A (FL 530)	A (FL 530)	Wet Detention	49-00956-P
EXIST. SWALE B (FL 530)	B (FL 530)	Dry Detention	49-00956-P
EXIST. POND C (FL 530)	C (FL 530)	Wet Detention	49-00956-P

* - Permit information could not be found through FDEP NEXUS Portal. As-built plans and drainage documentation obtained through CFX records request.

Table 7: Existing Treatment Summary

Name	Basin	Required Treatment Volume (ac-ft)	Provided / Permitted Treatment Volume (ac-ft)
EXIST. POND F4-A / F4-B	F4	3.03	3.36
EXIST. POND B-2	B2	1.58	1.78
EXIST. POND B-3A / B-3B / B-3C / B-3D / B-5	B3	2.18	2.64
EXIST. POND B-4	B4	2.26	2.47
EXIST. POND B-6A / B-6B / B-6C	B6	0.64	1.68
EXIST. POND 2A-2	2A-2	11.21	11.62
EXIST. POND 2A-3	2A-3	5.19	5.43
EXIST. POND 2B-1	2B-1	4.65	4.81
EXIST. POND 2B-2	2B-2	4.12	4.25
EXIST. POND 10	10	1.50	1.60
EXIST. SWALE 11A	11	0.72	12.54
EXIST. SWALE 11B	11	0.79	0.69
EXIST. SWALE 11C	11	0.56	0.54
EXIST. POND 11D	11	0.68	0.81
EXIST. POND 12	12	1.68	1.80
EXIST. POND 13	13	5.98	6.10
EXIST. POND 14A	14	0.88	1.03
EXIST. POND 14B	14	0.33	0.44
EXIST. POND 14C	14	0.80	0.80
EXIST. POND 15A	15	1.56	1.57
EXIST. POND 15B	15	1.28	1.68
EXIST. POND 15C	15	0.15	0.32
EXIST. POND 15D	15	0.43	0.18
EXIST. POND 15E	15	0.74	0.80
EXIST. POND 1	1	0.88	1.06
EXIST. POND 2	2	2.50	2.50

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Name	Basin	Required Treatment Volume (ac-ft)	Provided / Permitted Treatment Volume (ac-ft)
EXIST. POND B (FGB)	B (FGB)	N/A	N/A
EXIST. POND A (FL 530)	A (FL 530)	1.85*	2.16
EXIST. SWALE B (FL 530)	B (FL 530)	0.48	0.54
EXIST. POND C (FL 530)	C (FL 530)	4.18	4.18

* - Required treatment calculations show 1.85 ac-ft or 2.04 ac-ft, the greater of the two. However, the permit shows 1.85 ac-ft as the required volume when it should have been 2.04 ac-ft.

6.1.1 Basin F-4

Basin F-4 is located within the Interstate 4 interchange, just north of Interstate 4 (Sta. 54+00 to 80+40). Basin F-4 is an open basin which ultimately discharges to a tributary of Davenport Creek. There are two wet detention ponds located within Basin F-4, Pond F-4-A and Pond F-4-B. 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.

This basin falls within the project limits of the auxiliary lane project, however as noted in the permit documentation for the auxiliary lanes project, no improvements will be made to Pond F-4 because there is sufficient treatment within the existing pond for the proposed improvements. See **Appendix B** for existing treatment calculations.

6.1.2 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. See **Appendix B** for existing treatment calculations.

6.1.3 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.

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6.1.4 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.

6.1.5 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.

6.1.6 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 that provides all the treatment volume for Basin 6. Pond B-6-A discharges into a wetland associated with Davenport Creek. See **Appendix B** for existing treatment calculations.

6.1.7 Basin 2A-2

Basin 2A-2 is located north of Sand Hill Road to Funie Steed Road (Sta. 180+00 to Sta. 268+00). This basin has one wet detention pond. Pond 2A-2 discharges under SR 429 and into Davenport Creek. This basin accepts flow from a number of offsite ponds from adjacent residential communities, as noted in the FDEP ERP documentation (49-187636001). As shown in the treatment calculations in **Appendix B**, portions of Sand Hill Road, Funie Steed Road, and Oak Island Cove are conveyed into Pond 2A-2 for treatment. The stormwater management facilities for adjacent communities Windsor Palms (permitted as Wyndham Palms) and Indian Creek discharge into FTE right-of-way. It should be noted the Indian Creek/Fantasy Heights subdivision located on the east side of the SR 429 corridor discharges to a privately owned stormwater management facility on the west side of the SR 429 via a 42-inch storm sewer pipe.

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6.1.8 Basin 2A-3

Basin 2A-3 is located between Funie Steed Road and SR 530 (Sta. 268+00 to Sta. 320+50). This basin has one wet detention pond. Pond 2A-3 discharges into Boggy Creek. Offsite areas east of SR 429 is collected within roadside ditches and taken into Pond 2A-3. It is stated within the permit documentation that it is possible for a portion of Basin 2A-3 to be sent to Basin 2B-1 for treatment. Though the treatment calculations seem to reflect this, the basin boundaries shown within the as-built drawings do not reflect this. See **Appendix B** for existing treatment calculations.

6.1.9 Basin 2B-1

Basin 2B-1 is located between SR 530 and just south the toll plaza (Sta. 320+50 and Sta. 1359+00). This basin has one wet detention pond. Pond 2A-3 discharges to Boggy Creek. As noted in the treatment calculations a portion of SR 530 and possibly a portion of Basin 2A-3 is conveyed to Pond 2B-1. See **Appendix B** for existing treatment calculations.

6.1.10 Basin 2B-2

Basin 2B-2 begins just south of the toll plaza located north of SR 530 and continues north to the bridge over W Orange Lake Boulevard (Sta. 1359+00 to Sta. 414+00). This basin has one wet detention pond. Pond 2B-2 discharges to Boggy Creek. See **Appendix B** for existing treatment calculations.

6.1.11 Basin 10

Basin 10 is located from the high point of the bridge over W Orange Lake Boulevard to just south of Western Way (Sta. 414+00 to Sta. 438+43). Basin 10 is a closed basin with one dry retention pond. Pond 10 was designed to retain the 100-year, 10-day storm event. Approximately 14.80-acres of offsite area discharged into this pond from the west which was treated within the pond. See **Appendix B** for existing treatment calculations.

6.1.12 Basin 11

This basin is a compilation of the sub-basins located within the SR 429 at Western Way interchange (Sta. 435+00 to Sta. 474+00). Basin 11 is comprised of four dry retention ponds within the interchange. Three of the four ponds are interconnected: Pond 11B, Pond 11C and Pond 11D. The basin has a by-pass system used to convey runoff from offsite drainage areas through the project corridor without co-mingling. The ponds discharge through Pond 11C control structure to the by-pass system which outfalls into the RCID perimeter canal via a closed storm sewer system located adjacent the eastbound lanes of Western Way. See **Appendix B** for existing treatment calculations. Pond 11A was oversized to provide additional attenuation.

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6.1.13 Basin 12

Basin 12 is located just north of the Western Way interchange (Sta. 474+00 to Sta. 490+00). This basin has one wet detention pond. Pond 12 discharges into an outfall ditch which conveys discharge to Whittenhorse Creek. See **Appendix B** for existing treatment calculations.

6.1.14 Basin 13

Basin 13 is located between Western Way and Seidel Road (Sta. 490+00 to Sta. 574+00). This basin has one wet detention pond. Pond 13 discharges into a by-pass system that runs south along the east right-of-way line to Whittenhorse Creek. Off-site flow is conveyed through the corridor via a cross drain, S-518. Offsite flow does not flow into the on-site basins. See **Appendix B** for existing treatment calculations.

6.1.15 Basin 14

This basin is a compilation of the sub-basins located just south of the SR 429 at Seidel Road interchange (Sta. 530+00 to Sta. 585+00). Basin 14 provides treatment for SR 429 and the improvements to Hartzog Road. Pond 14A is dry retention pond that provide treatment and attenuation for Hartzog Road. Pond 14A discharges into a wetland, Bear Bay, which is associated with Whittenhorse Creek. Pond 14B is a dry retention pond that provides treatment and attenuation for Hartzog Road. Pond 14B discharges to a wetland associated with Reedy Lake. Pond 14C is a dry retention pond that provides treatment for SR 429. This pond discharges to a wetland associated with Reedy Lake. See **Appendix B** for existing treatment calculations.

6.1.16 Basin 15

This basin is a compilation of the sub-basins located within the SR 429 at Seidel Road interchange (Sta. 585+00 to Sta. 618+00). Basin 15 is a closed basin which consists of five ponds: Pond 15A, Pond 15B, Pond 15C, Pond 15D, and Pond 15E. Pond 15B, Pond 15C, and Pond 15D are interconnected with equalizer pipes to maximize treatment. Pond 15E discharges into Pond 15A, which is designed to retain the 100-year, 10-day storm event. Pond 15A does have an emergency overflow weir that discharges into Pond 15B. See **Appendix B** for existing treatment calculations.

6.1.17 Basin 1

This basin is located from Seidel Road to just north of Seidel Road (Sta. 1622+18.86 to Sta. 602+00). This basin has one dry retention pond. Pond 1 discharges into Panther Lake. See **Appendix B** for existing treatment calculations.

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6.1.18 Basin 2

This basin is located from north of Seidel Road to CR 545 (Sta. 602+00 to Sta. 641+83.82). This basin has one wet detention pond. Pond 2 discharges into a wetland located on the east side of SR 429. See **Appendix B** for existing treatment calculations.

6.1.19 Basin FGB (Basin B)

Basin OS-1 and Basin B are associated with the Formosa Gardens subdivision located east of SR 429 between Livingston Road and Funie Steed Road. Basin OS-1 is located on the west side of Formosa Gardens Boulevard (FGB) and discharges under the roadway into Basin B. Basin B is located on the east side of FGB and is comprised of single-family homes. Pond B provides treatment and attenuation for these basins. Permit information for Formosa Gardens can be found in ERP No. 49-00507-S.

Pond B provides treatment and attenuation for the 2-lane portion of Formosa Gardens Blvd located between Livingston Road and Formosa Blvd.

6.1.20 Basin FL 530

Widening of FL 530 (SR 530 or US192) in the vicinity of SR 429 received a permit March 11, 1999 (ERP No. 49-00956-P). The improvements included stormwater management facilities along the corridor. Basin A, Basin B, and Basin C of these improvements are located within the vicinity of SR 429. Pond A is a wet detention pond that discharges to Boggy Creek. Basin B discharges into a dry swale with swale blocks and a raised inlet that discharges to Boggy Creek. Pond C is a wet detention pond that discharges to an adjacent channel.

6.2 Proposed Drainage Conditions

20 basins have been identified within the limits of the study area, which have been outlined on the proposed drainage maps included in **Appendix A**. It is anticipated that only minor changes to the basin divides will occur in the proposed condition, with the vast majority of the changes controlled by the layout of the conveyance system which will occur during the design phase. When this project was originally constructed the surrounding area was primarily rural with wetlands, wooded areas, and pastures. Over the years residential and commercial development has occurred adjacent to the corridor. This development has changed some of the offsite areas that previously discharged in the Turnpike's right-of-way. These changes are reflected in the offsite basins shown within the proposed drainage maps and within each of the basin descriptions that follow.

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

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attenuation requirements for an 8-lane corridor with a new interchange at Livingston Road. Existing treatment calculations depicting the required and provided treatment volumes can be found in **Appendix B**. Proposed treatment and attenuation calculations can be found in **Appendix C**. For the purposes of this document, the term new impervious area will only refer to the amount of impervious area that is beyond the permitted value for "future pavement". Additional analysis will be required during the design phase once the design of the conveyance system has been incorporated into the project.

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 corridor. For the purposes of this design analysis, attenuation volumes will be based on the FDOT design storm of 50-year, 3-day (11.40-inches) for existing facilities. The rationale being the fee will be less than the cost of new right-of-way and construction of 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 areas where new stormwater management facilities are required, the RCID design storm of 50-year, 3-day (12.91-inches) will be utilized. The intent is to provide attenuation within Turnpike right-of-way as to not discharge more runoff into RCID than necessary for new facilities.

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.

6.2.1 Basin F-4

Basin F-4 is located within the Interstate 4 interchange, just north of Interstate 4 (Sta. 54+00 to 80+40). Basin F-4 is an open basin which ultimately discharges to a tributary of Davenport Creek. There are two existing wet detention ponds located within Basin F-4: Pond F-4-A and Pond F-4-B. These ponds receive runoff from SR 429, Interstate 4, Ramp A, Ramp B, Ramp C, and Ramp D within the interchange.

The proposed improvements will not impact the existing stormwater management facilities Pond F-4-A and Pond F-4-B. The proposed improvements will result in approximately 1.50-acreas of impervious area requiring treatment. Based on the treatment volume provided, the surplus treatment within these interconnected ponds should be sufficient to meet permit requirements without modification or the need to purchase additional right-of-way. Approximately 0.86 ac.-ft. of attenuation is anticipated to meet the RCID requirements. The

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outfall structure will need to be adjusted to accommodate the attenuation requirements. Proposed treatment and attenuation calculations can be found in **Appendix C**.

6.2.2 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.

The proposed improvements will bring the total impervious area within Basin B-2 to approximately 7.85-acres. According to the existing permit, Pond B-2 was designed to treat 8.08-acres of impervious, therefore no changes to Pond B-2 are anticipated. Proposed treatment and attenuation calculations can be found in **Appendix C**.

It should be noted that improvements associated with the I-4 Beyond the Ultimate will impact Pond B-2, reducing the treatment volume by approximately 0.10 ac-ft. This will effectively bring the provided treatment volume down to 1.68 ac-ft, which would match the required volume of 1.68 ac-ft. Should additional treatment and attenuation be required due to changes associated with the I-4 Beyond the Ultimate improvements currently in design, the closed storm sewer system which collects the inside lanes can be configured to discharge into Pond B-3-D and/or Pond B-6-C. With the proposed removal of impervious area associated of the existing toll gantries and surplus treatment associated with these basins, sufficient treatment and attenuation should be available.

6.2.3 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.

Approximately 2.35-acres of impervious area will require treatment within Basin B-3 and Basin B-5. The proposed improvements are not anticipated to impact the existing footprint of the

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existing ponds. In contrast, with the re-alignment of SR 429 and the northbound off ramp onto Sinclair Road, it will be feasible to expand the existing ponds to provide additional attenuation.

The proposed improvements will utilize surplus treatment within the existing ponds to offset the new impervious area. Approximately 2.84 ac-ft of volume is anticipated for attenuation. This volume will be offset with the expansion of Pond B-3-D. Proposed treatment and attenuation calculations can be found in **Appendix C**.

6.2.4 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.

Proposed improvements include the re-alignment of SR 429 in the vicinity of Pond B-4. This will necessitate the need for a MSE wall adjacent to Pond B-4 to ensure the proposed roadway side slope does not encroach into the existing pond. With the use of a wall, it will be possible to expand the existing pond to allow for additional attenuation and to reduce stages. Per existing design documentation, the design high water (25-yr event) exceeds the pond berm but is lower than the adjacent side road edge of shoulder.

The proposed improvements will require approximately 0.75-acres of impervious area to be treated. This results in a required treatment volume of 2.41 ac-ft. Per the permit documentation 2.47 ac-ft of treatment volume has been provided within Pond B-4. Additionally, approximately 0.04 ac-ft of volume is required for attenuation purposes. As previously noted, the pond can be expanded to provide the additional volume without additional right-of-way. Proposed treatment and attenuation calculations can be found in **Appendix C**.

6.2.5 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 to better utilize the large volume in Pond B-5 and 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 C** for proposed treatment calculations. Please note treatment calculations are coupled with Basin B-3. See Basin B-3 for additional information regarding the treatment and attenuation volumes.

6.2.6 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

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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.

Approximately 0.28-acres of impervious area will require treatment. Surplus treatment provided within this basin exceeds the required treatment volume associated with the new impervious area. Approximately 0.73 ac-ft of attenuation will be required. This represents approximately 1.5-inches within the existing Basin B-6 ponds. With the proposed removal of the existing toll gantry Pond B-6-C can be expanded to provide the attenuation volume necessary to accommodate the additional pavement. Proposed treatment and attenuation calculations can be found in **Appendix C**.

6.2.7 Basin 2A-2

Basin 2A-2 is located north of Sand Hill Road to Funie Steed Road (Sta. 180+00 to Sta. 268+00). This basin has one existing wet detention pond. This pond will be modified or relocated to accommodate the new Livingston Road interchange, see **Section 8.0** for pond alternatives. This basin accepts flow from a number of offsite ponds from adjacent residential communities, as noted in the FDEP ERP No. 49-187636001. As shown in the existing treatment calculations in **Appendix B**, portions of Sand Hill Road, Funie Steed Road, and permitted Oak Island Cove, Oak Island Harbor subdivision, are conveyed into Pond 2A-2 for treatment. The new Pond 2A-2 has been sized to accommodate these offsite flows. The stormwater management facilities for adjacent communities Windsor Palms (permitted as Wyndham Palms) and Indian Creek discharge into FTE right-of-way. The permitted Windsor Palms (Wyndham Palms) subdivision, stormwater management facility (Pond P-2), located in the southwest quadrant of the Canary Island Drive and SR 429 overpass, discharges into the FTE closed storm sewer system at structure W-6. See the Western Beltway Part C – Section 2A as-builts for detailed information. The Indian Creek stormwater management facility, SMA-3, discharges into FTE right-of-way approximately 400-ft north of the Indian Creek Road bridge over SR 429. The existing FTE ditch which accepts SMA-3 discharge will be impacted as part of the proposed improvements. It will be necessary to convey the discharge from SMA-3 to the outfall via a closed storm sewer pipe.

The Indian Creek/Fantasy Heights subdivision located on the east side of the SR 429 corridor discharges to a privately owned stormwater management facility, SMA-2, located on the west side of the SR 429 via a 42-inch storm sewer pipe. As part of the PD&E analysis a technical memorandum was developed analyzing design alternatives for the Canary Island Road overpass bridge. As part of this memorandum various drainage design alternatives were identified to work around or relocate the existing 42-inch storm sewer pipe that traverses SR 429. One of the

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alternatives outlined in the memo was to redirect flow from the Indian Creek subdivision into Pond 2A-2 for treatment; this would eliminate the need for the 42-inch pipe under SR 429, thus removing the conflict. Because this was only one of a handful of solutions, the treatment calculations provided in **Appendix C** do not account for this possibility. If during design that alternative is selected, Pond 2A-2 would need to be adjusted accordingly to ensure sufficient treatment is provided.

The proposed Livingston Road interchange will require treatment of approximately 14.09-acres of new impervious area and an attenuation volume of approximately 6.60 ac-ft to accommodate the new roadway.

6.2.8 Basin 2A-3

Basin 2A-3 is located between Funie Steed Road and SR 530 (Sta. 268+00 to Sta. 320+50). This basin has one wet detention pond. Pond 2A-3 discharges into Boggy Creek. Offsite areas east of SR 429 is collected within roadside ditches and taken into Pond 2A-3. It is stated within the permit documentation that is possible for a portion of Basin 2A-3 to be sent to Basin 2B-1 for treatment. Though the treatment calculations seem to reflect this, the basin boundaries shown within the as-built drawings do not reflect this.

Despite the possible irregularity previously noted between Basin 2A-3 and Basin 2B-1, Pond 2A-3 will be able to provide treatment and attenuation for the proposed improvements without modification. This is primarily in part due to the change in basin size and a surplus amount of treatment previously provided. When the Western Beltway was constructed approximately 12.32-acres of offsite open grass area was conveyed into Pond 2A-3 for treatment. Over the years the surrounding areas has been developed and the offsite area which once entered Pond 2A-3 for treatment has been converted into residential and commercial properties. These new facilities, Rolling Oaks Mass Grading and Rolling Oaks Commons (ERP No. 49-01801-P), no longer discharge into FTE right-of-way and discharge into stormwater management facilities located within the private development. Because the existing Pond 2A-3 was sized to treat one inch over the basin area, the required treatment volume has decreased. Treatment calculations provided in **Appendix C** depict the proposed treatment requirements based on the new basin size and new impervious area associated with the roadway widening. No additional right-of-way is anticipated for this basin.

6.2.9 Basin 2B-1

Basin 2B-1 is located between SR 530 and just south the toll plaza (Sta. 320+50 and Sta. 1359+00). This basin has one wet detention pond. Pond 2A-3 discharges to Boggy Creek. As noted in the treatment calculations a portion of SR 530 and possibly a portion of Basin 2A-3 is conveyed to Pond 2B-1.

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The proposed improvements will result in a net zero gain for impervious area. There is an existing toll gantry located within Basin 2B-2 that will be removed as part of the 8-lane configuration. Though the gantry itself is located within the adjacent basin, the extra lanes associated with the gantry extends into this basin. With the new impervious associated with the widening and the removal of pavement associated with the toll gantry the amount of new impervious area requiring treatment is negligible. Pond 2B-1 currently has a surplus treatment volume of 0.24 ac-ft. No additional right-of-way is anticipated for this basin. See **Appendix C** for proposed treatment calculations.

6.2.10 Basin 2B-2

Basin 2B-2 begins just south of the toll plaza located north of SR 530 and continues north to the bridge over W Orange Lake Boulevard (Sta. 1359+00 to Sta. 414+00). This basin has one wet detention pond. Pond 2B-2 discharges to Boggy Creek.

The proposed improvements will result in a net loss of impervious pavement within this basin. The proposed 8-lane configuration would remove the existing toll gantry, eliminating approximately 6.50-acres of impervious area. No additional right-of-way is anticipated for this basin. See **Appendix C** for proposed treatment calculations.

6.2.11 Basin 10

Basin 10 is located from the high point of the bridge over W Orange Lake Boulevard to just south of Western Way (Sta. 414+00 to Sta. 438+43). Basin 10 is a closed basin with one dry retention pond. Pond 10 was designed to retain the 100-year, 10-day storm event. In the existing condition approximately 14.80-acres of offsite area discharged into this pond from the west. However, in 2021 an apartment complex was being constructed to the west of the Western Beltway. The Flamingo Crossing East development can be found in ERP No. 48-00714-P. Permit documentation the proposed development will utilize an exfiltration system to provide treatment and attenuation prior to entering FTE right-of-way. The design drawings and corresponding drainage calculations show an area within the developed area discharging to Pond 10 which is greater in the post condition than the pre-condition. See Drainage Maps in **Appendix A**. The developer noted that the post development flow entering Pond 10 was equal to or less than the pre-condition. Per the documentation, additional flow would enter the soil via the filtration system and therefore a greater basin area could discharge into Pond 10 while not surpassing the pre-condition discharge rate. A connection permit was issued by FTE. See **Table 5** for details.

Because 14.80-acres of offsite area entered the pond in the existing condition, treatment was provided for this area. With the development of this area, treatment of this area is no longer required. This will offset the 0.15-acres of impervious area requiring treatment and leave Pond

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10 with a surplus treatment volume of 0.71 ac-ft. The new impervious area will require approximately 0.10 ac-ft of attenuation for the 100-yr, 10-day storm event. This volume is anticipated to increase the stage within the pond for the 100-yr, 10-day event by 0.02-ft. Treatment and attenuation calculations have been provided on separated for this particular basin. The treatment calculations have removed the 14.80-acres of offsite not requiring treatment. The attenuation spreadsheet has left the 14.80-acres of offsite area to account for the Flamingo Crossing development discharge into Pond 10. No additional right-of-way is anticipated for this basin. The pond was designed based on Chapter 14-86 critical duration approach. During design the same approach will be required. See **Appendix C** for proposed treatment calculations.

6.2.12 Basin 11

This basin is a compilation of the sub-basins located within the SR 429 at Western Way interchange (Sta. 435+00 to Sta. 474+00). Basin 11 is comprised of four dry retention ponds within the interchange. Three of the four ponds are interconnected: Pond 11B, Pond 11C and Pond 11D. The basin has a by-pass system used to convey runoff from offsite drainage areas through the project corridor without co-mingling. Ponds 11B-11D discharge through Pond 11C control structure to the by-pass system which outfalls into the RCID perimeter canal via a closed storm sewer system located adjacent the eastbound lanes of Western Way. Pond 11A was oversized to provide additional attenuation. Pond 11A discharges into Pond 11B via a control structure.

In order to provide sufficient attenuation during the original design Pond 11A was oversized. As noted in the permit documentation 14.58 ac-ft of treatment volume was provided, when 2.75 ac-ft was required. Therefore, the surplus treatment can be utilized towards the approximate 2.35-acres of new impervious area. With regards to attenuation, approximately 0.85 ac-ft of volume will be required. This can be accomplished by adjusting the existing control structures by 2-inches. No additional right-of-way is anticipated for this basin. See **Appendix C** for proposed treatment calculations.

6.2.13 Basin 12

Basin 12 is located just north of the Western Way interchange (Sta. 435+00 to Sta. 490+00). This basin has one wet detention pond. Pond 12 discharges into an outfall ditch which conveys discharge to Whittenhorse Creek.

Per permit documentation for the original design approximately 6.05-acres of offsite area was treated in Pond 12. With the construction of Walt Disney World Master Plan Development (ERP No. 48-00718-P) adjacent to Pond 12, this offsite area no longer requires treatment and attenuation. Therefore, the approximately 0.34-acres of new impervious area requiring

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treatment can be offset utilizing the surplus treatment and attenuation from the removal of this area discharging to the pond.

6.2.14 Basin 13

Basin 13 is located between Western Way and Seidel Road (Sta. 490+00 to Sta. 574+00). This basin has one wet detention pond. Pond 13 discharges into a by-pass system that runs south along the east right-of-way line to Whittenhorse Creek.

Pond 13 was sized to provide treatment for one inch over the basin area. With the proposed improvements adding an additional 2.63-acres of impervious pavement, the treatment calculations were re-evaluated to ensure the 2.5-inches over the impervious area was not the controlling criteria. As shown in the treatment calculation provided in **Appendix C**, the one inch over the basin still controls, therefore no additional treatment needs to be provided.

The new impervious area will result in approximately 1.71 ac-ft of volume needed for attenuation. This results in a 3.30-inch increase in depth within the pond to accommodate attenuation. The design peak stage for the 25-year, 72-hr event is 105.87-ft. The inside berm elevation is 105.50-ft with a outside berm elevation of 107.00-ft. The ability to expand the pond or provide a secondary site for attenuation is limited in this basin due to Whittenhorse Creek being located immediately south of Pond 13 and the surrounding area is owned by RCID for the purposes of their rapid infiltration basins. Basin 12 is anticipated to have a reduction in outflow due to the change in basin size. The attenuation previously provided in Basin 12 (approximately 1.83 ac-ft) could be used to offset the attenuation needs for Basin 13 (approximately 1.71 ac-ft). Both basins discharge into Whittenhorse Creek.

6.2.15 Basin 14

This basin is a compilation of the sub-basins located just south of the SR 429 at Seidel Road interchange (Sta. 530+00 to Sta. 585+00). Basin 14 provides treatment for SR 429 and the improvements to Hartzog Road. Pond 14A is dry retention pond that provide treatment and attenuation for Hartzog Road. Pond 14A discharges into a wetland, Bear Bay, which is associated with Whittenhorse Creek. Pond 14B is a dry retention pond that provides treatment and attenuation for Hartzog Road. Pond 14B discharges to a wetland associated with Reedy Lake. Pond 14C is a dry retention pond that provides treatment for SR 429. This pond discharges to a wetland associated with Reedy Lake.

Only Basin 14C will change as a result of the proposed improvements. Approximately 0.24-acres of impervious will require additional treatment, requiring approximately 0.03 ac-ft of volume. However, there is a surplus amount of treatment within the basin of 0.27 ac-ft. See **Appendix C** for proposed treatment calculations.

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Attenuation required for the proposed improvements is approximately 0.14 ac-ft. This is approximately 2-inches of depth within Pond 14C alone or ¾-inches among all three ponds. Much like Basin 13, the RCID rapid infiltration basins surround this basin. With the reduction of area discharging to Pond 15A and Pond 15B, it may be possible to route a portion of Basin 14 to these ponds for attenuation.

6.2.16 Basin 15

This basin is a compilation of the sub-basins located within the SR 429 at Seidel Road interchange (Sta. 585+00 to Sta. 618+00). Basin 15 is a closed basin which consists of five ponds: Pond 15A, Pond 15B, Pond 15C, Pond 15D, and Pond 15E. Pond 15B, Pond 15C, and Pond 15D are interconnected with equalizer pipes to maximize treatment. Pond 15E discharges into Pond 15A, which is designed to retain the 100-year, 10-day storm event. Pond 15A does have an emergency overflow weir that discharges into Pond 15B.

With the construction recent construction of the Horizon High School (ERP No. 48-101923-P) approximately 18.89-acres will be removed from Pond 15A and 6.73-acres from Pond 15B. Additional improvements include the Waterleigh development (ERP No. 48-02575-P), located on the west side of Western Beltway adjacent to Basin 15E. This development redirected approximately 2.00-acres of offsite area which previously discharged into FTE right-of-way.

The proposed improvement will add an additional 0.42-acres of impervious area. With the surplus volume provided in the existing condition and the removal of offsite area, Basin 15 will have a surplus treatment volume of approximately 1.63 ac-ft after accounting for the proposed improvements. See **Appendix C** for proposed treatment calculations.

With the removal offsite areas discharging to FTE right-of-way there is a surplus of attenuation within Basin 15 ponds. This surplus exceeds the amount needed to offset the new impervious area.

6.2.17 Basin 1

This basin is located from Seidel Road to just north of Seidel Road (Sta. 1622+18.86 to Sta. 602+00). This basin has one dry retention pond. Pond 1 discharges into Panther Lake.

In the existing condition approximately 2.00-acres of offsite area was treated in Pond 1. With the construction of the Seidel East (ERP No. 48-02363-P) located on the east side of the Western Beltway, the offsite 2.00-acres no longer enters FTE right-of-way.

The anticipated impervious area associated with the proposed improvements do not exceed the 8.44-acres permitted. Therefore, no additional treatment or attenuation is anticipated for this basin. See **Appendix C** for proposed treatment calculations.

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6.2.18 Basin 2

This basin is located from north of Seidel Road to CR 545 (Sta. 602+00 to Sta. 641+83.82). This basin has one wet detention pond. Pond 2 discharges into a wetland located on the east side of SR 429.

The anticipated impervious area associated with the proposed improvements do not exceed the 12.01-acres permitted. Therefore, no additional treatment or attenuation is anticipated for this basin. See **Appendix C** for proposed treatment calculations.

6.2.19 Basin FGB (Basin B)

Basin OS-1 and Basin B are associated with the Formosa Gardens subdivision located east of SR 429 between Livingston Road and Funie Steed Road. Basin OS-1 is located on the west side of Formosa Gardens Boulevard (FGB) and discharges under the roadway into Basin B. Basin B is located on the east side of FGB and is comprised of single-family homes. Pond B provides treatment and attenuation for these basins. Permit information for Formosa Gardens can be found in ERP No. 49-00507-S.

In the existing condition Pond B located within the residential community provides treatment and attenuation for the 2-lane crowned roadway of Formosa Gardens Boulevard between Livingston Road and Formosa Boulevard. With the addition of 2-lanes, it should be possible to regrade the existing 2-lanes (future northbound lanes) to discharge to the east into existing Pond B. The future two southbound lanes and a portion of the Livingston Road interchange will require treatment and attenuation. This will be provided in a new stormwater management facility, see **Section 8.0** for stormwater management facility alternatives.

6.2.20 Basin FL 530

Widening of FL 530 (SR 530 or US192) in the vicinity of SR 429 received a permit March 11, 1999 (ERP No. 49-00956-P). The improvements included stormwater management facilities along the corridor. Basin A, Basin B, and Basin C of these improvements are located within the vicinity of SR 429. Pond A is a wet detention pond that discharge to Boggy Creek. Basin B discharges into a dry swale with swale blocks and a raised inlet that discharges to Boggy Creek. Pond C is a wet detention pond that discharges to an adjacent channel.

A portion of FL 530 is treated within FTE stormwater management facilities. With the proposed improvements the new impervious will require treatment and attenuation. Pond A will require approximately 0.20 ac-ft of treatment and 0.37 ac-ft of attenuation. Pond C will require approximately 0.22 ac-ft of treatment and 0.61 ac-ft of attenuation. Some of this can be compensated within FTE Pond 2A-3 and 2B-1, however modifications to FL 530 Pond A and Pond C will be required.

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Orange County and RCID have expressed interest in widening FL 530 in the near future given the amount of recent development in the area. Therefore, it is possible these improvements will be done prior to the widening of Western Beltway. Coordination with these entities is recommended during the design phase.

SECTION 7.0 – FLOODPLAIN & ENVIRONMENT INFORMATION

Project Improvements will have a minimal impact on adjacent 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

As previously noted in **Section 6.0**, the corridor was originally designed to accommodate a 6-lane configuration. Additionally, the majority of the existing ponds were sized to treat one inch over the basin, not the impervious area only. This has allowed new impervious area beyond the existing 6-lanes to be accounted for since treatment is based on the greater of the two scenarios; one inch over the basin or 2.5-inches over the impervious area. Three pond alternatives have only been provided for Basin 2A-2 and Basin FGB due to the impacts to the existing Pond 2A-2 and the new Livingston Road interchange. Seasonal high-water elevations were determined from the best available information which was typically either as-built information or permit documentation. Where feasible existing FDOT parcels were considered for pond alternatives. The location of the FDOT owned parcels haven been called out on the proposed drainage maps provided in **Appendix A**. The required treatment and attenuation volumes are included on the pond sizing calculation sheets provided in **Appendix C**. The preferred alternative interchange alignment was utilized for determining storage requirements. Impacts to existing ponds was also factored into the analysis. The impacted volumes were combined with the required treatment and attenuation volumes as noted on the calculations provided in **Appendix B**. As noted in **Section 5.0** of this report, no joint use or regional opportunities were identified as part of the environmental look around process. A brief synopsis of the concerns and outstanding features related to each pond alternative is also provided in the paragraphs that follow and the evaluation matrix has been included in **Appendix E**. The location of all pond alternatives has been shown on the proposed drainage maps included in **Appendix A**.

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8.1.1 Basin 2A-2

With the proposed Livingston Road interchange impacting the existing Pond 2A-2, three pond alternatives have been provided. Pond alternative 1 utilizes the infield area and large parcel of land immediately south of the proposed interchange on the east side of the Western Beltway. The pond will be located within the same parcel of land being acquired for the new interchange. Therefore, it is anticipated that the pond will be placed within a remnant piece of the parcel. This alternative is similar to the existing pond, therefore the seasonal high water table elevation of 101.50-ft and other design data from the original pond design was utilized. Alternative 1 will impact an existing electric corridor. The proposed pond has been configured to minimize impacts to existing poles where possible, however pole relocation will be necessary due to the pond and roadway improvements. Coordination meetings have been held with Duke Energy to make them aware of the impacts. Pond alternative 2 and 3 utilize a FDOT remnant parcel located on the west side of Western Beltway.

Pond Alternative 2 would require an additional parcel from the Indian Creek Homeowners Association. Additionally, alternative 2 would require compensation for wetland impacts and additional floodplain storage for lost storage space in existing Pond 2A-2. During the geotechnical site evaluation, the area was inundated with water. Pond 2A-2 is located upstream with a seasonal high water elevation of 101.50-ft, therefore that value was used for the analysis.

Pond alternative 3 would require an additional parcel from the Tohopekaliga Water Authority. Additionally, alternative 3 would require compensation for wetland impacts and additional floodplain storage for lost storage space in existing Pond 2A-2. Pond 2A-2 is located upstream with a seasonal high water elevation of 101.50-ft, therefore that value was used for the analysis.

8.1.2 Basin FGB (Basin B)

The improvements to Formosa Gardens Boulevard will require treatment and attenuation. As previously mentioned, the existing 2-lanes are currently treated within a wet detention pond located within the residential community immediately east of the roadway. One possible alternative (Alternative 1) is to provide treatment and attenuation for the proposed 2-lane expansion within this existing pond. The peak stage within the pond for the 100-yr, 72-hr event is 105.60-ft (NGVD-29) with a finish floor elevation of 107.00-ft (NGVD-29). Proposed attenuation for this storm event is anticipated to require 4.60 ac-ft of volume. This would potentially increase the stage within the pond to 106.20-ft (NGVD-29) for the 100-yr event.

Alternative 2 is to provide treatment and attenuation for Formosa Gardens Boulevard within proposed Pond 2A-2 located within the Livingston Road interchange. This pond alternative is

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only viable if the preferred alternative for Pond 2A-2 is selected, and it is not necessary to re-route the Indian Creek subdivision in FTE right-of-way for treatment and attenuation.

Pond alternative 3 is to provide a pond located in the northwest quadrant of the intersection of Livingston Road and Formosa Gardens Boulevard. This location will utilize an anticipated remnant parcel required for the Livingston Road interchange. An outfall pipe will need to be constructed within the border width of the proposed interchange to the current outfall of Pond 2A-2. Based on a preliminary geotechnical evaluation the seasonal high water table is approximately 4-ft below the surface, at approximately elevation 108.00-ft.

SECTION 9.0 – RESULTS

The analysis presented in this report identified potential pond sites based on recent aeriels 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, hazardous materials, threatened endangered & significant species, maintenance, cultural resources, wetland impacts, floodplain impacts and impacts to other relevant features as noted in the pond stie evaluation matrix provided in **Appendix E**. In conjunction with this analysis, a *Contamination Screening Evaluation Report*, *Natural Resource Evaluation*, and a *Cultural Resource Assessment Survey* were prepared and are provided under separate cover with this submittal. The preferred alternative for each basin and anticipated right of way needs associated with the preferred alternatives are outlined in **Table 9**. 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)	Total Cost
2A-2	1	12.42 ^{1,2}	\$6,426,744
FGB (Basin B)	3	4.80 ¹	\$1,048,101

1. Pond to be placed within remnant parcel of land being purchased for proposed roadway alignment.
2. A portion of proposed Pond 2A-2 will be located within the existing right-of-way.

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.

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SECTION 11.0 – REFERENCES

FDOT Drainage Design Guide, 2022

FDOT Drainage Manual, 2022

ERP Applicant's Handbook Volume I, 2018

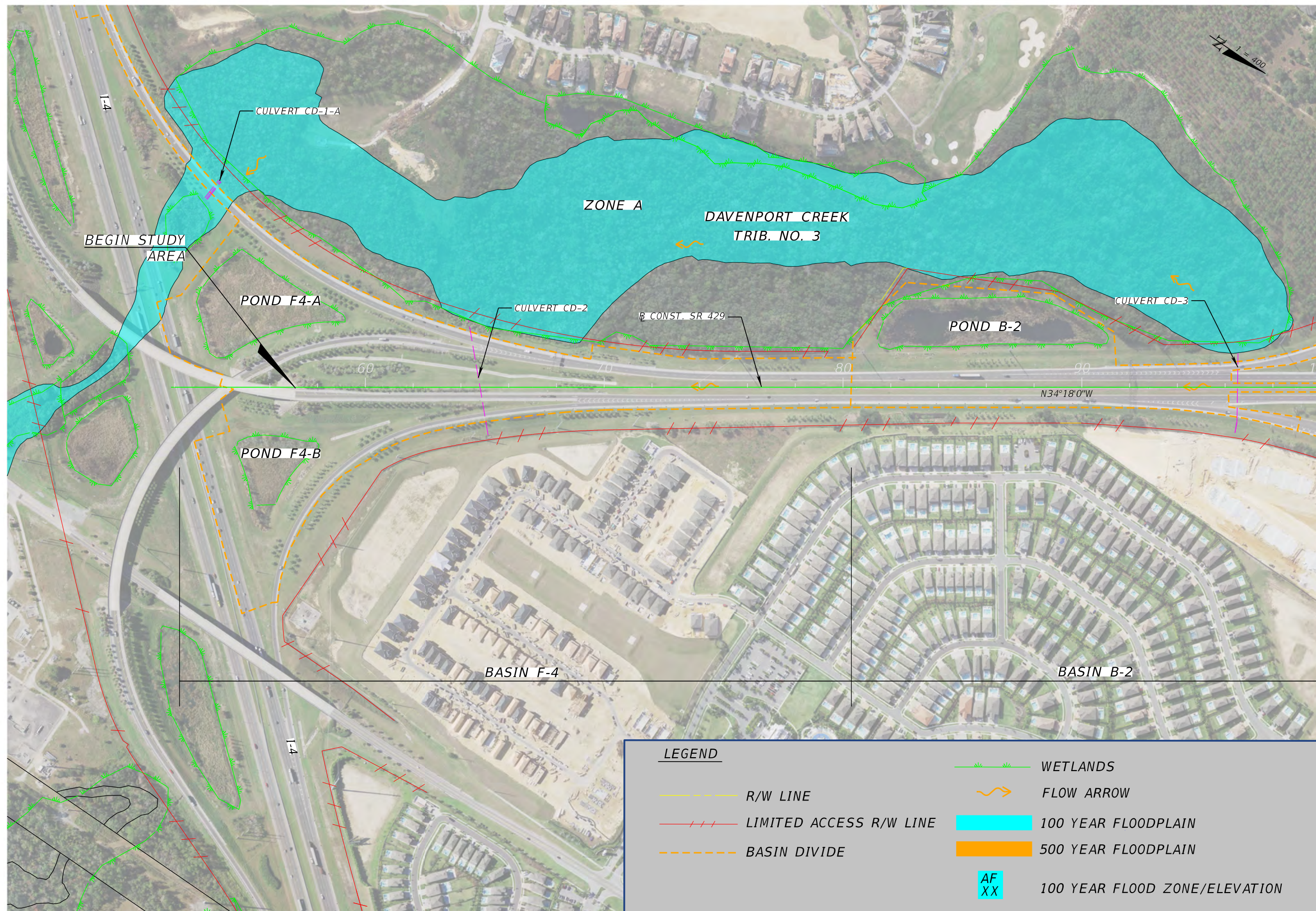
SFWMD ERP Applicant's Handbook Volume II, 2016

FDOT Project Development and Environment Manual, 2020

APPENDIX A – DRAINAGE MAPS

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
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LEGEND

- R/W LINE
- LIMITED ACCESS R/W LINE
- BASIN DIVIDE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION

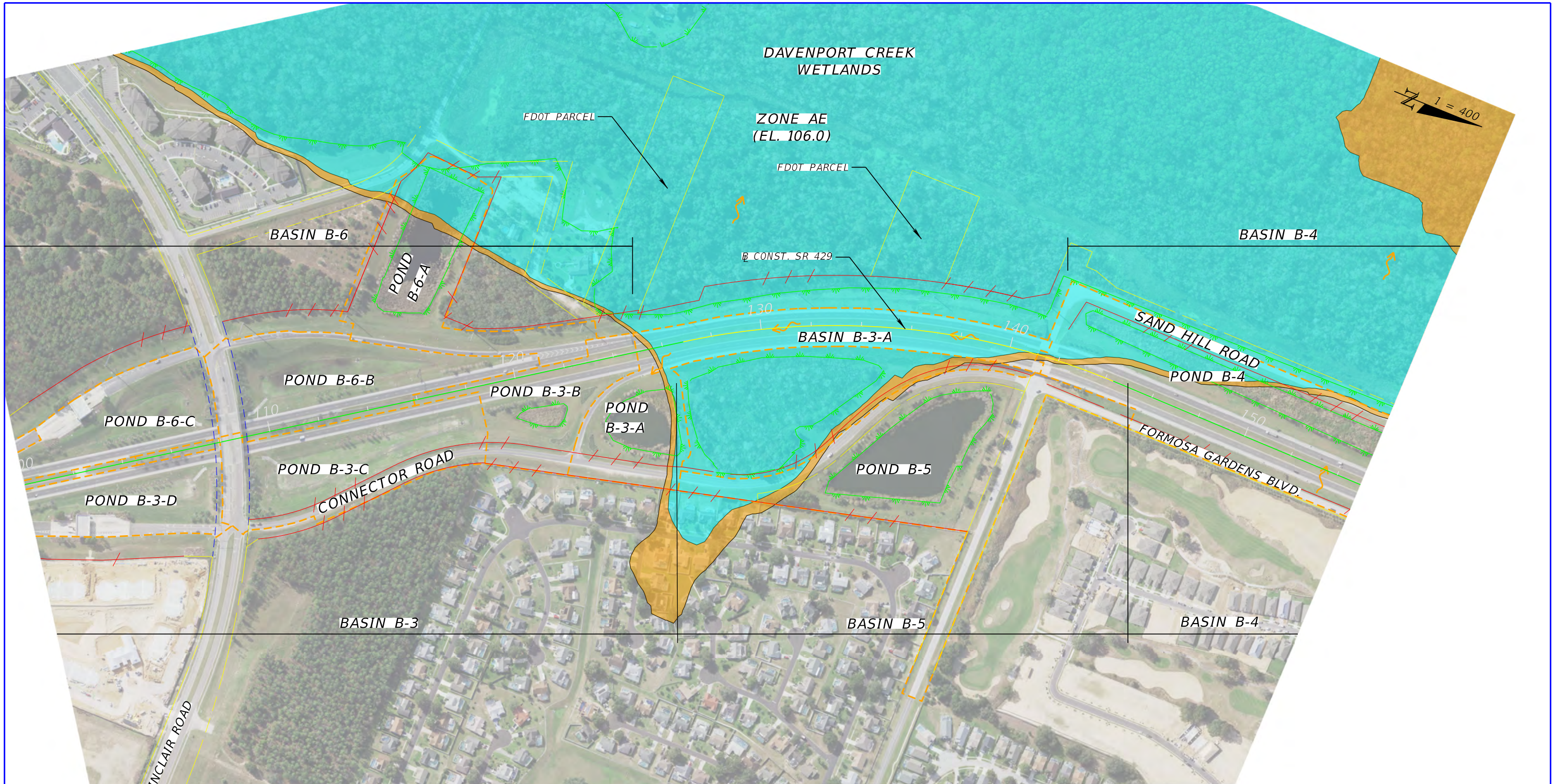
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
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**EXISTING
 DRAINAGE MAP**

SHEET NO.
 1



LEGEND

- WETLANDS
- R/W LINE
- LIMITED ACCESS R/W LINE
- BASIN DIVIDE
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION

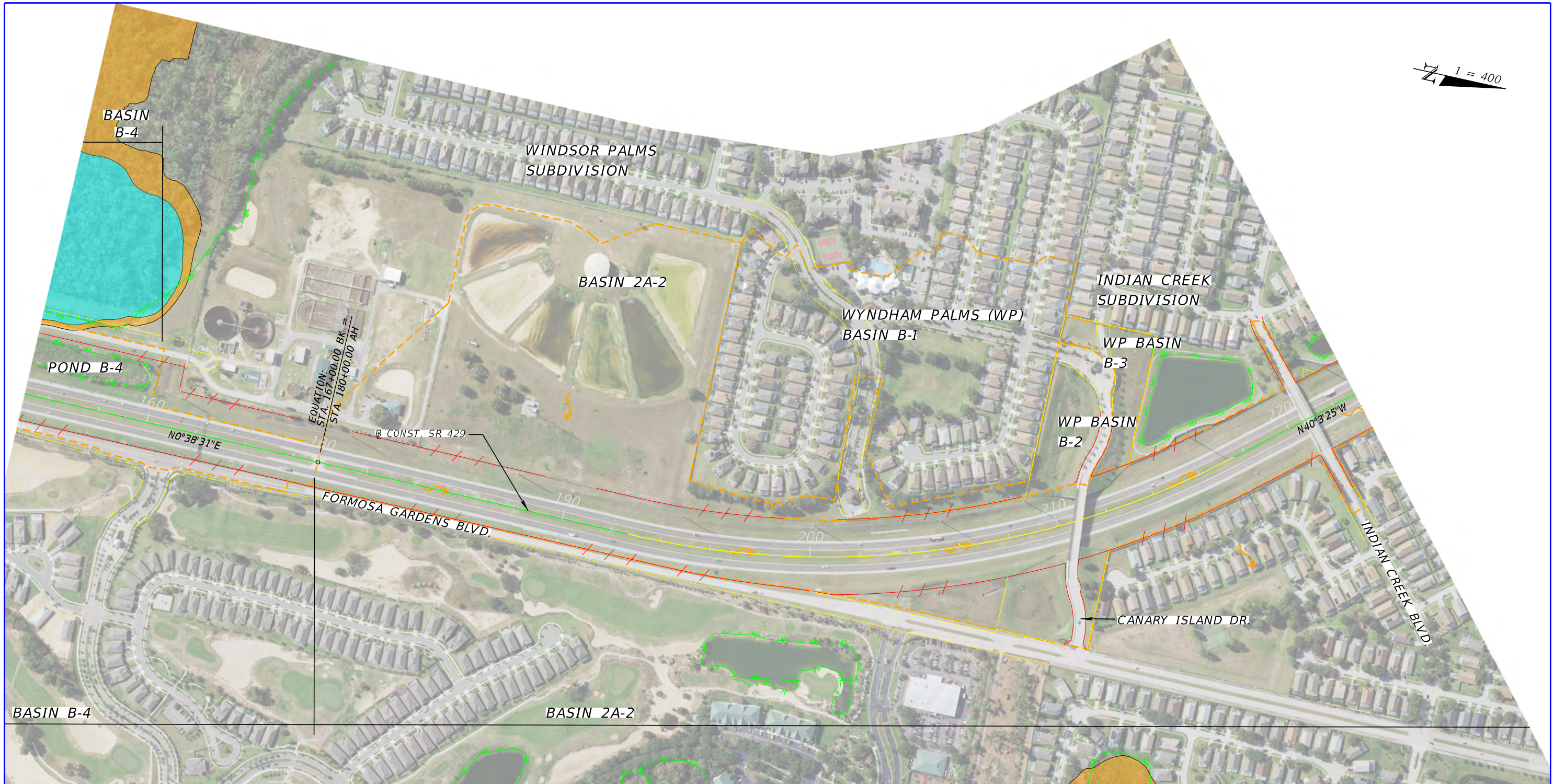
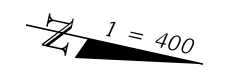
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**EXISTING
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2

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LEGEND	
	R/W LINE
	LIMITED ACCESS R/W LINE
	BASIN DIVIDE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

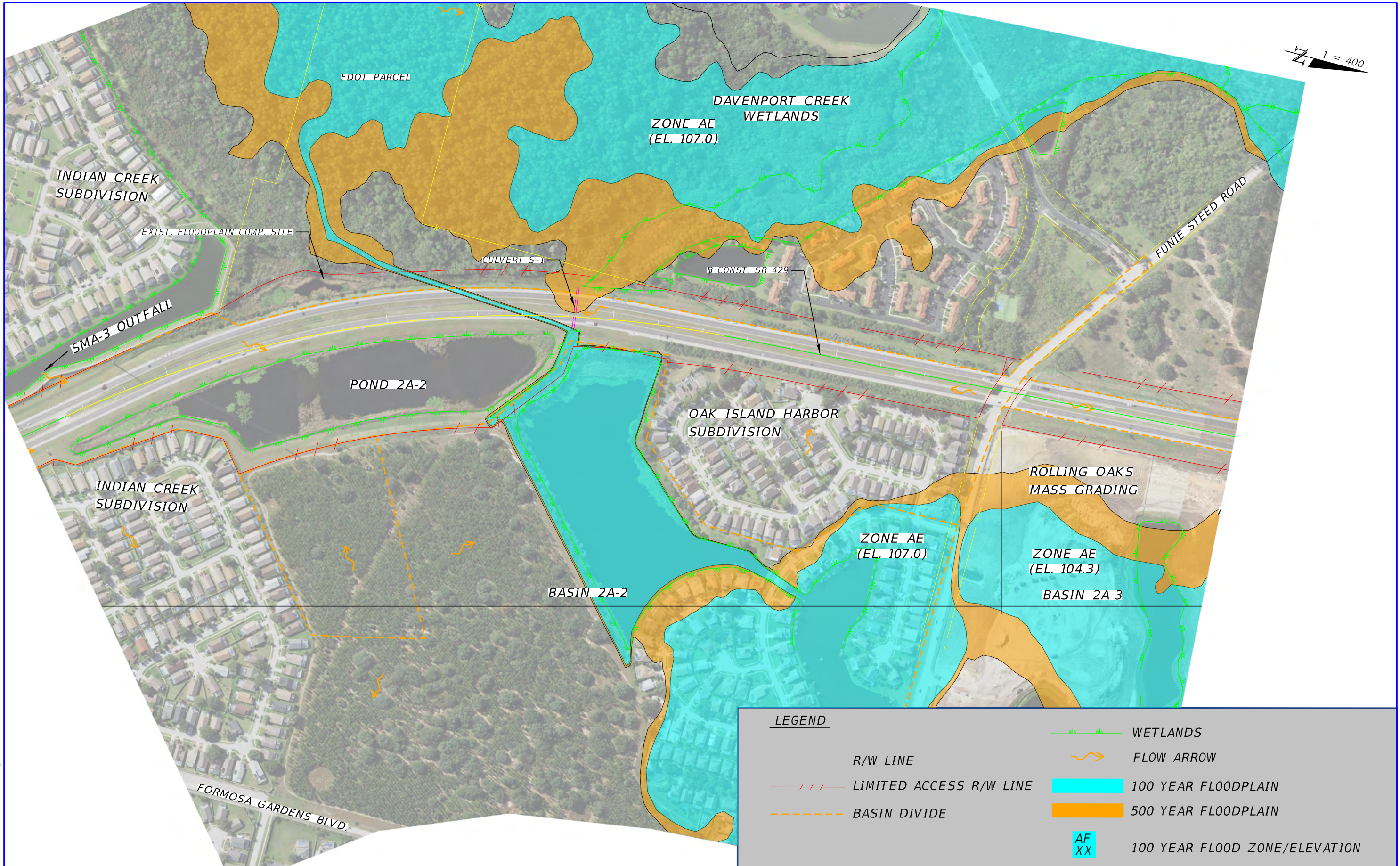
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EXISTING DRAINAGE MAP	SHEET NO. 3
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1 = 400



LEGEND

- R/W LINE
- LIMITED ACCESS R/W LINE
- BASIN DIVIDE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION

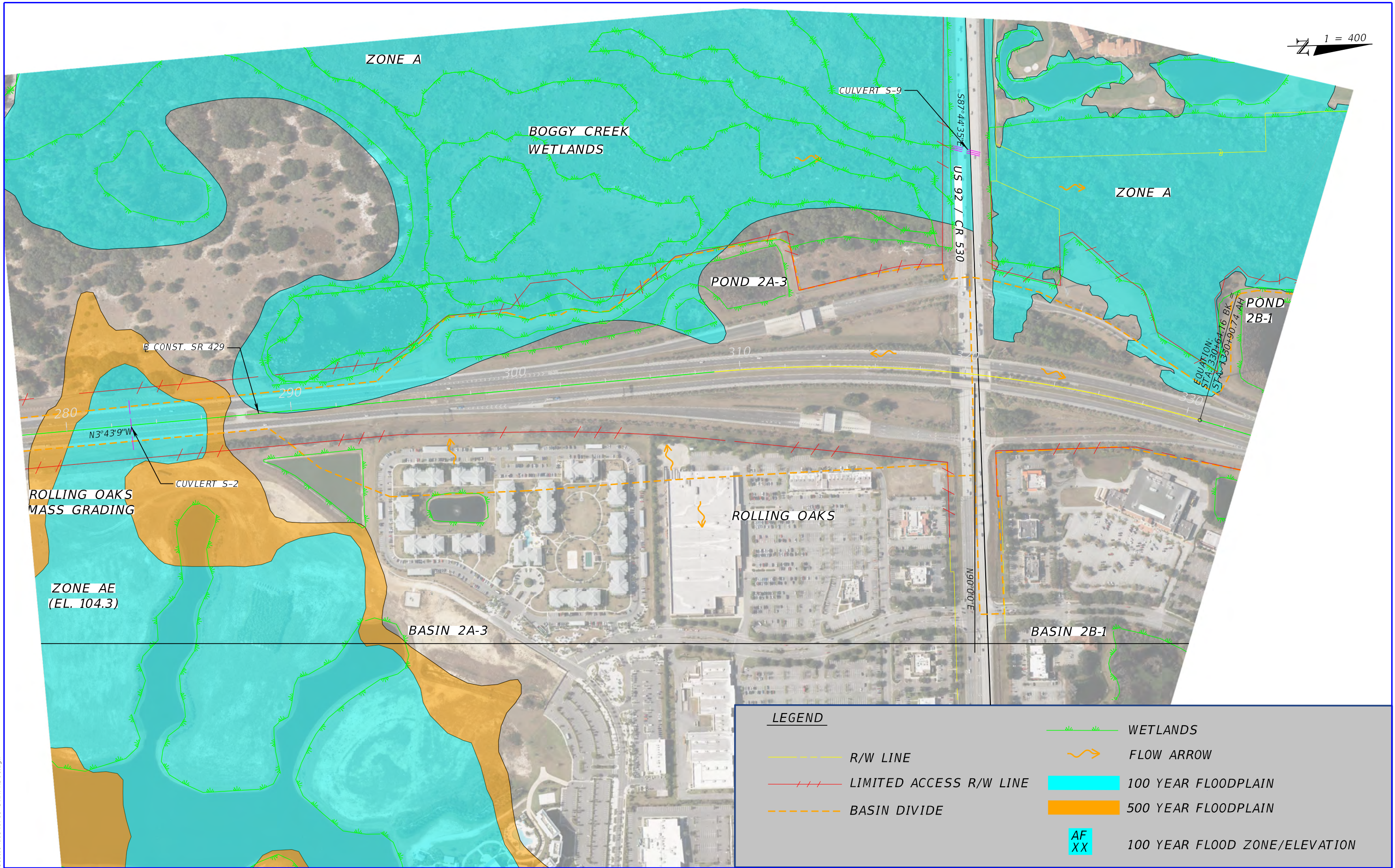
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**EXISTING
DRAINAGE MAP**

SHEET NO.
4



LEGEND

- WETLANDS
- R/W LINE
- - - LIMITED ACCESS R/W LINE
- - - BASIN DIVIDE
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- AF
XX 100 YEAR FLOOD ZONE/ELEVATION

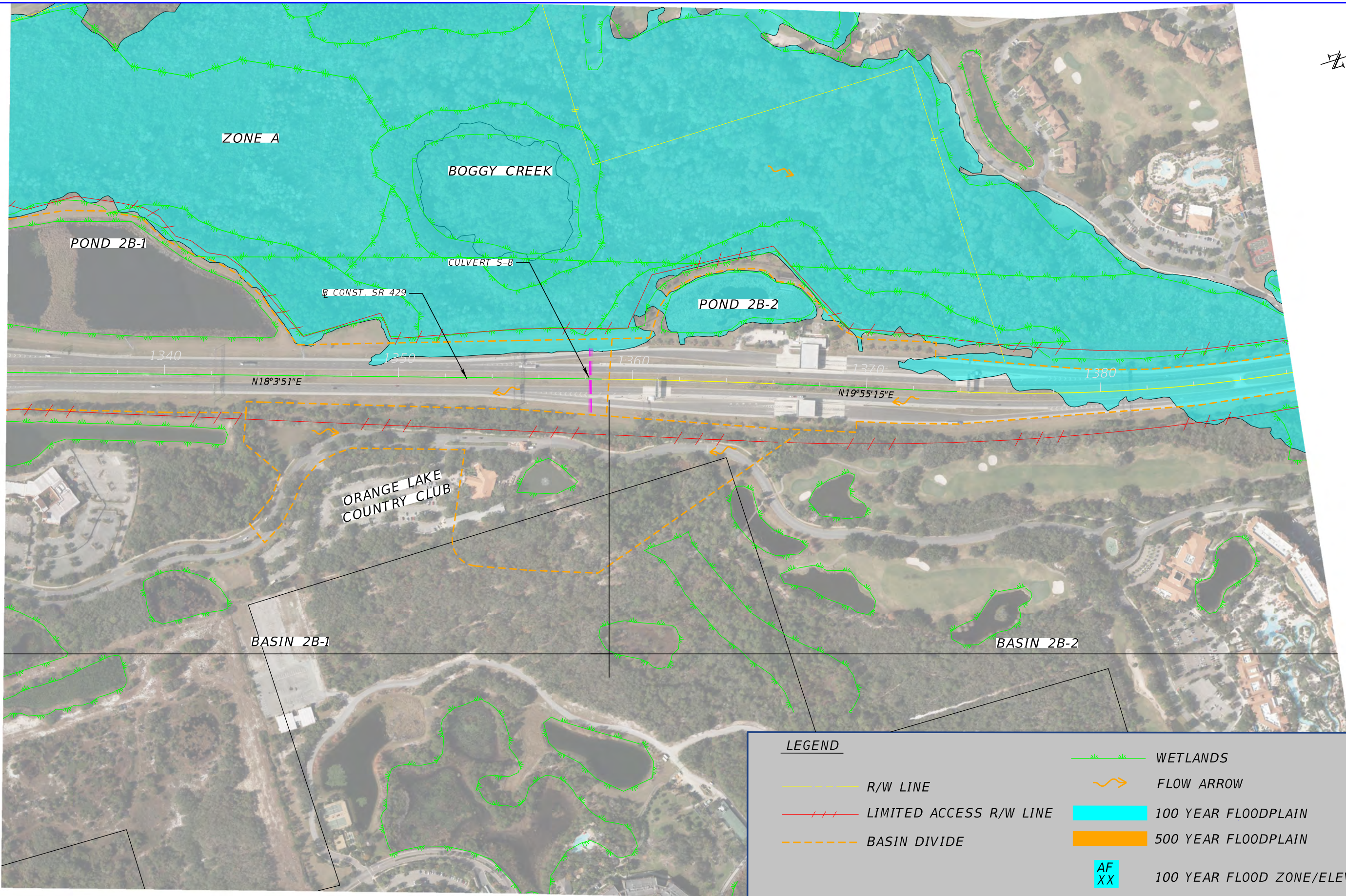
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<p><i>EXISTING DRAINAGE MAP</i></p>	<p>SHEET NO. 5</p>
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LEGEND

- WETLANDS
- R/W LINE
- LIMITED ACCESS R/W LINE
- BASIN DIVIDE
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION

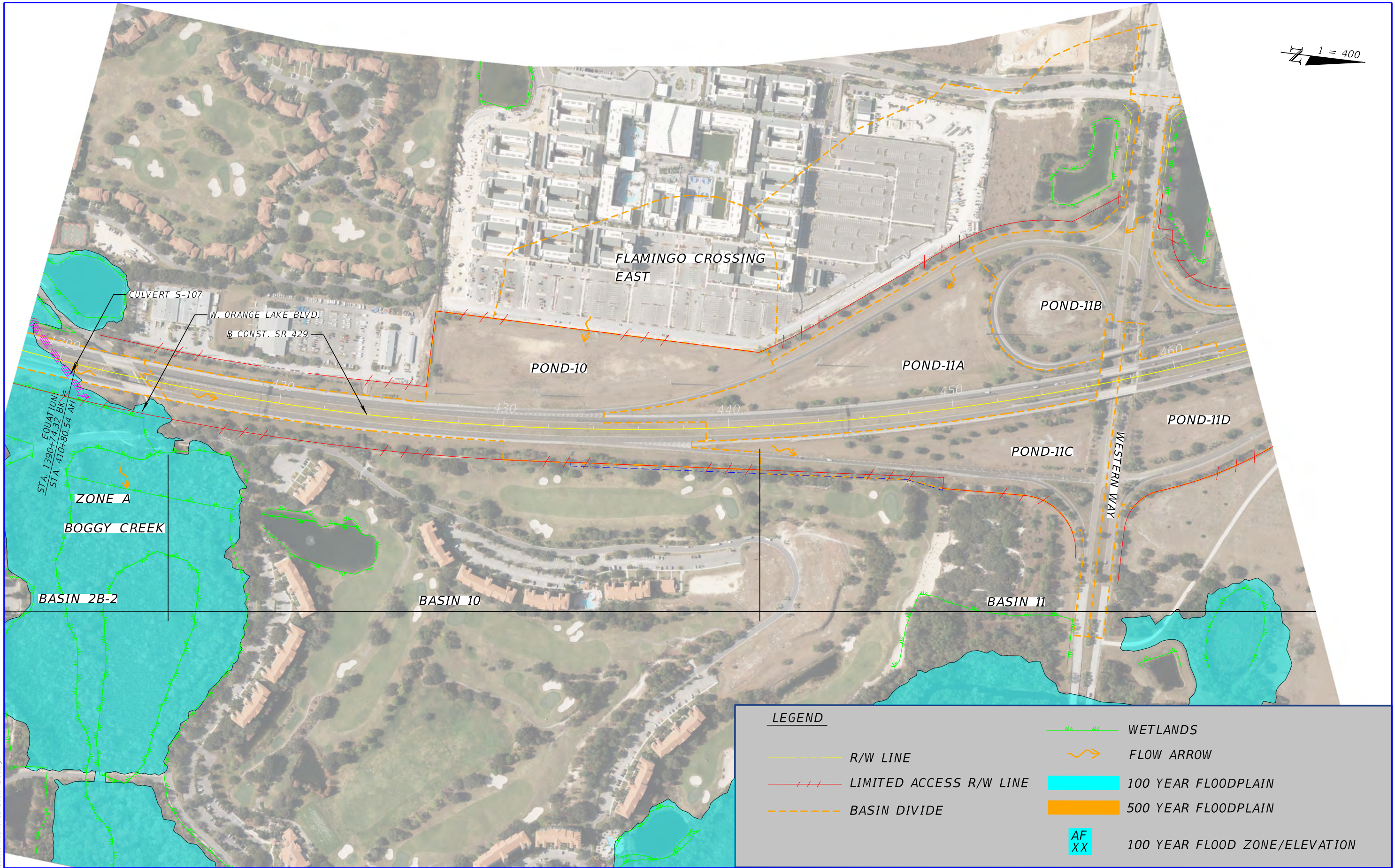
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**EXISTING
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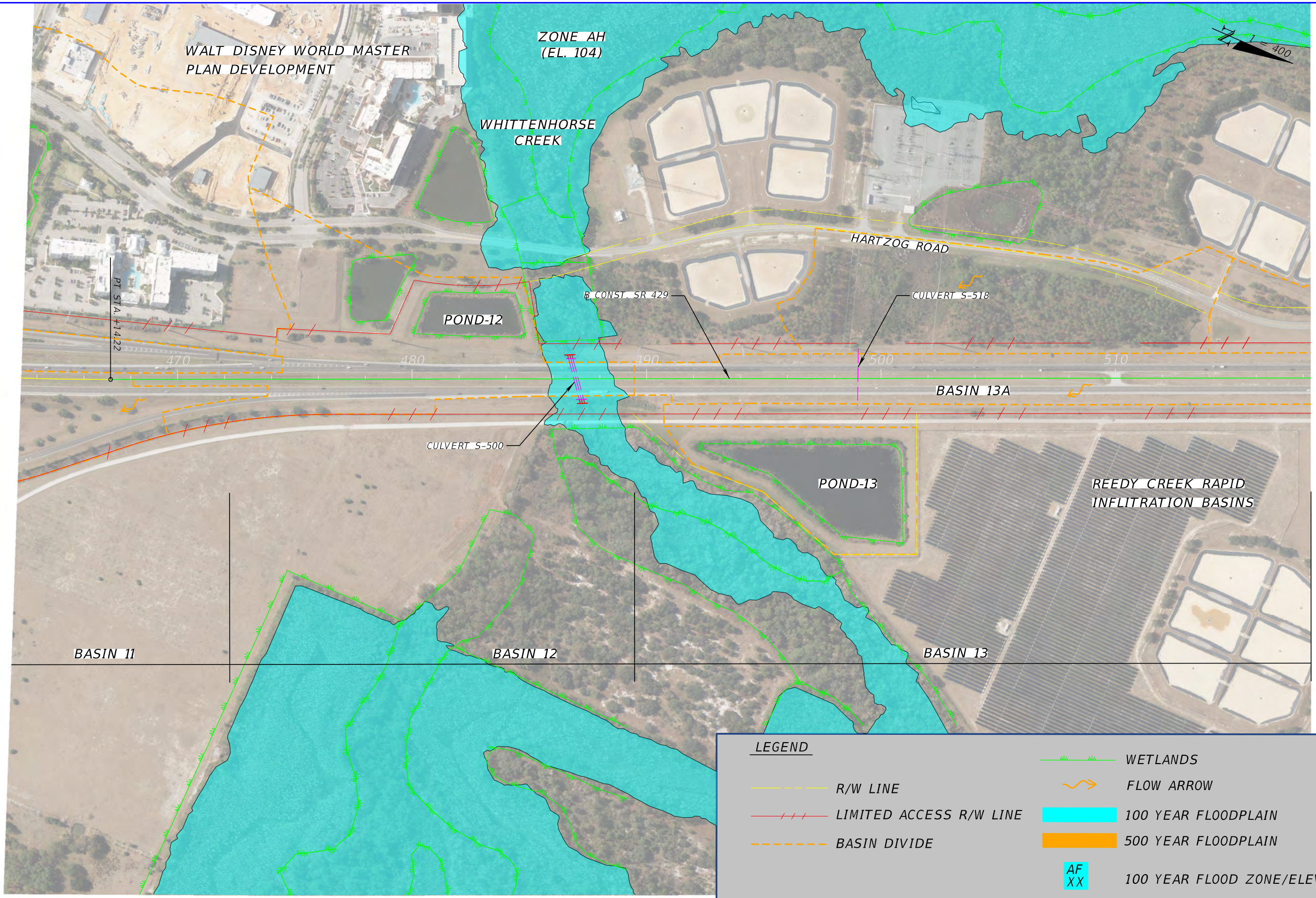
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	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION
	R/W LINE
	LIMITED ACCESS R/W LINE
	BASIN DIVIDE

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<p>EXISTING DRAINAGE MAP</p>	<p>SHEET NO. 7</p>
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LEGEND

- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION
- R/W LINE
- LIMITED ACCESS R/W LINE
- BASIN DIVIDE

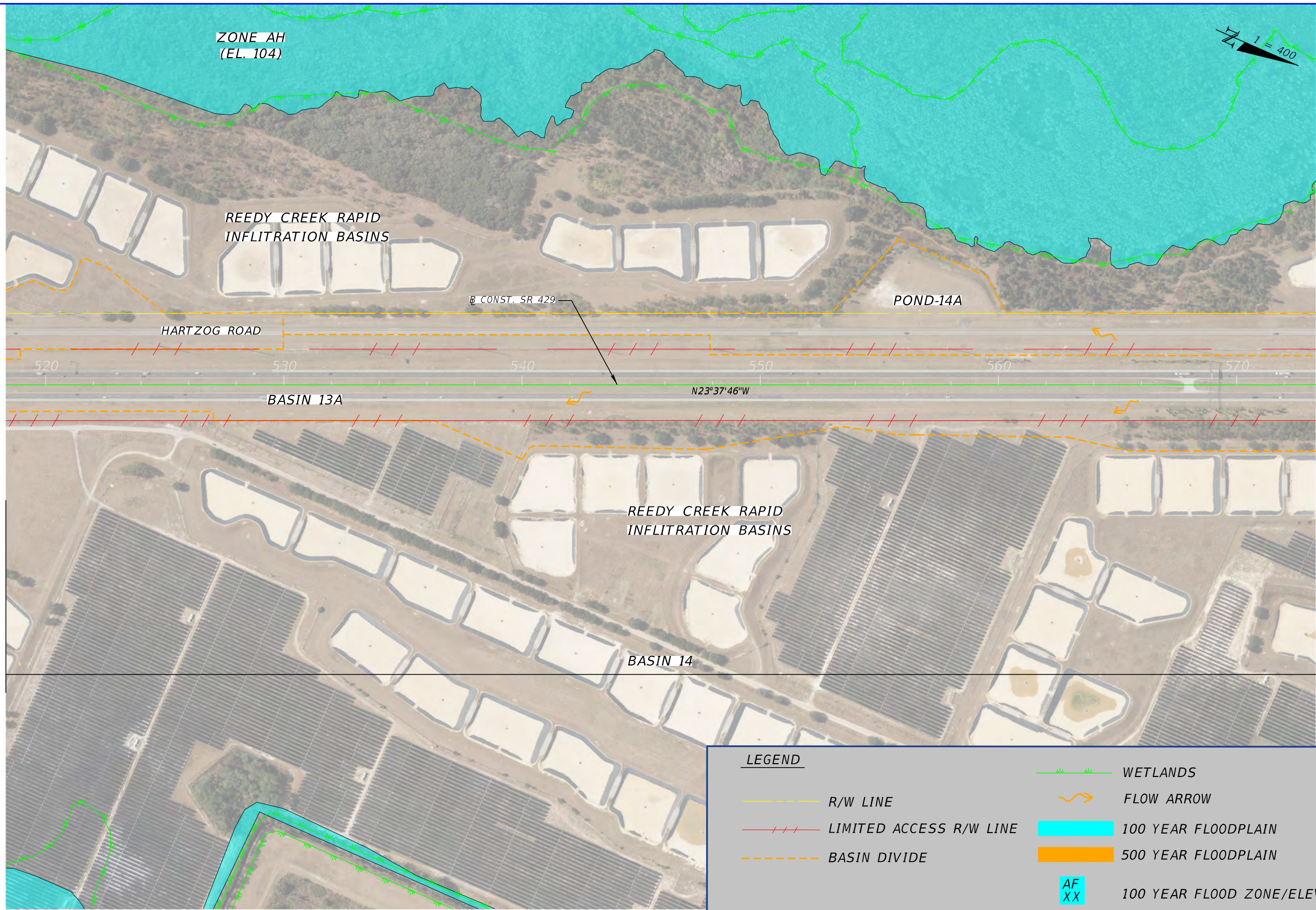
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**EXISTING
DRAINAGE MAP**

SHEET NO.
8



ZONE AH
(EL. 104)

REEDY CREEK RAPID
INFILTRATION BASINS

CONST. SR 429

POND-14A

HARTZOG ROAD

520

530

540

550

560

570

BASIN 13A

N23°37'46"W

REEDY CREEK RAPID
INFILTRATION BASINS

BASIN 14

LEGEND

--- R/W LINE

/// LIMITED ACCESS R/W LINE

- - - BASIN DIVIDE

WETLANDS

FLOW ARROW

100 YEAR FLOODPLAIN

500 YEAR FLOODPLAIN

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XX 100 YEAR FLOOD ZONE/ELEVATION

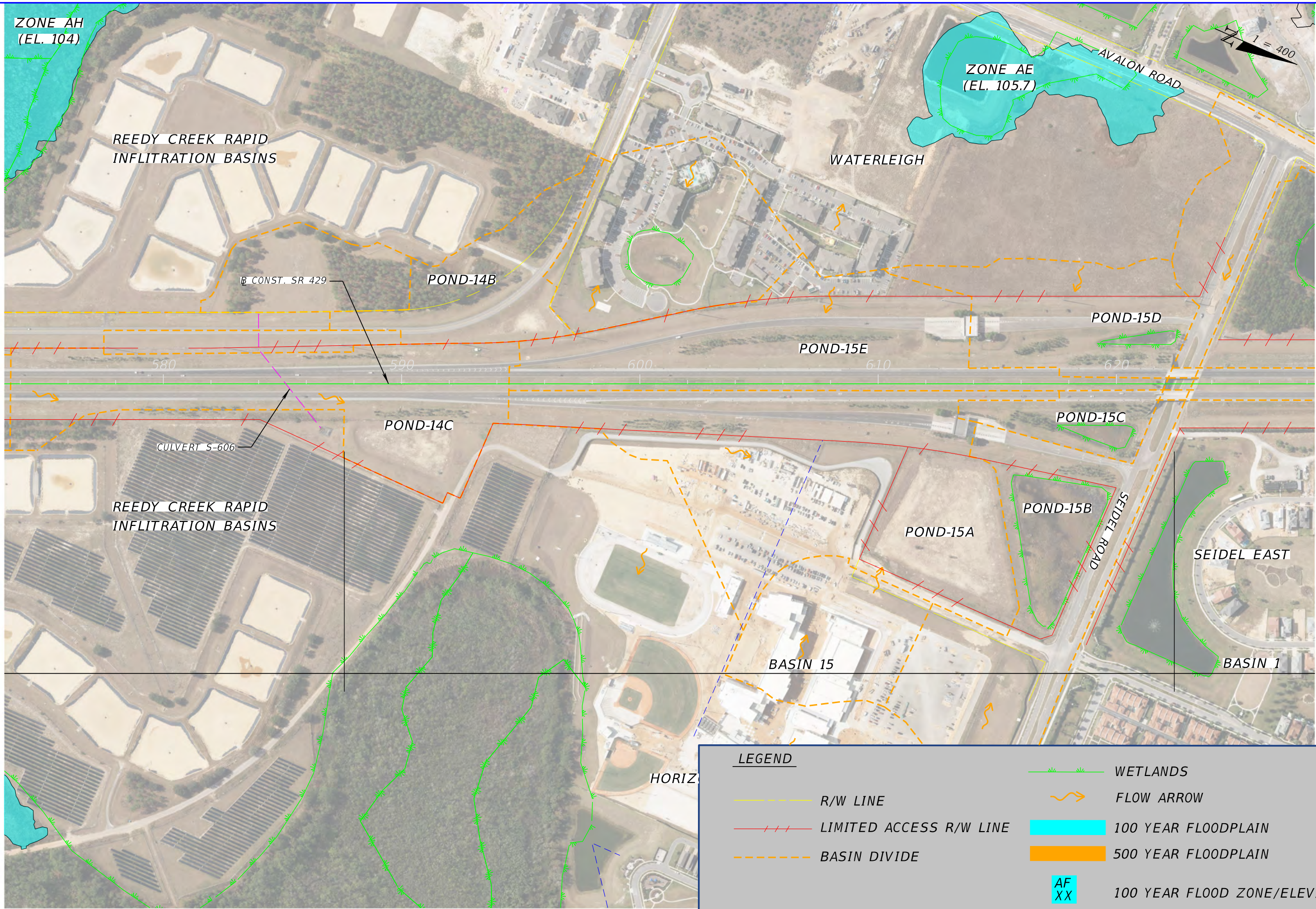
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<p>EXISTING DRAINAGE MAP</p>

SHEET NO.
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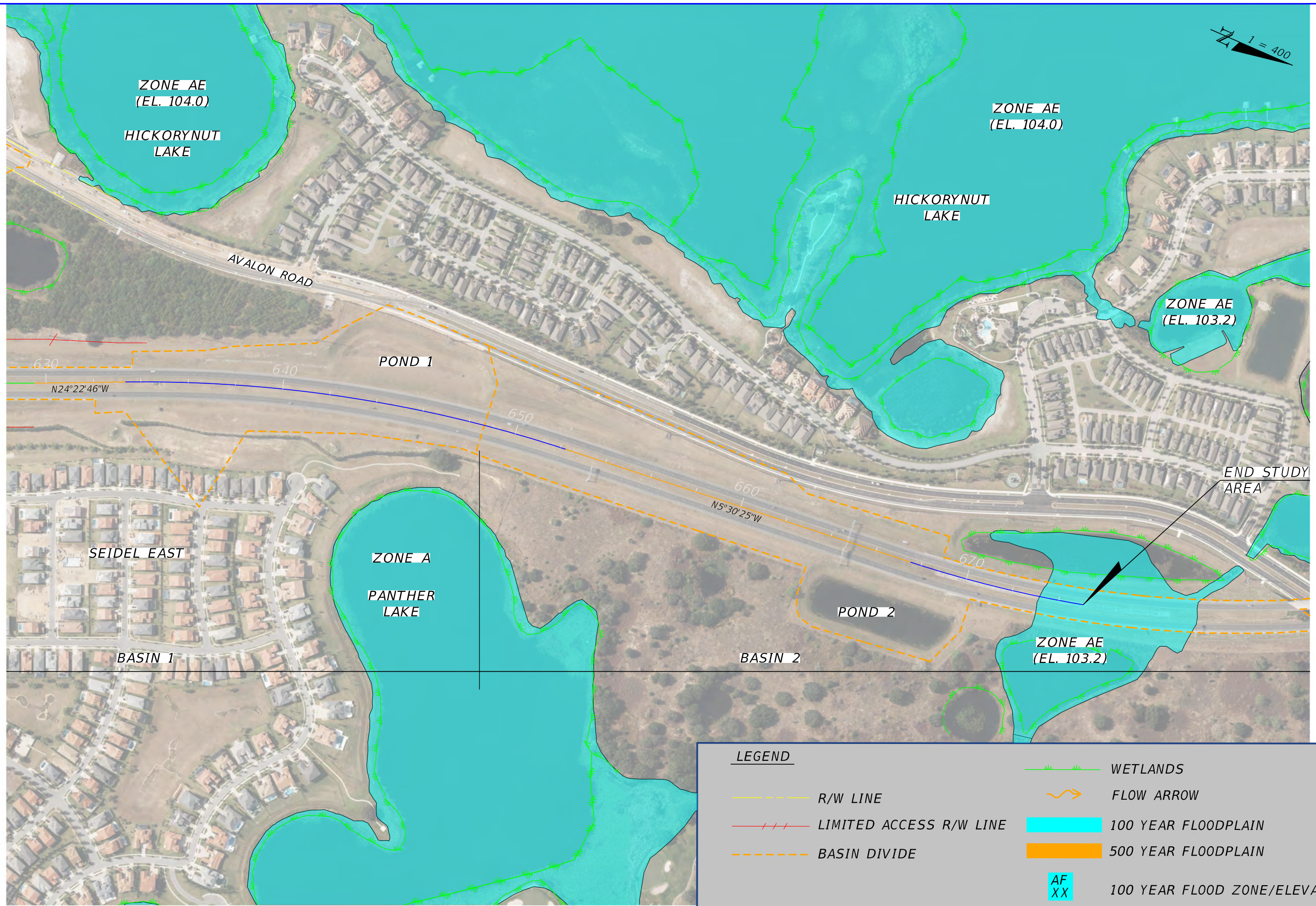
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**EXISTING
DRAINAGE MAP**

SHEET NO.
10



LEGEND

- R/W LINE
- LIMITED ACCESS R/W LINE
- BASIN DIVIDE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION

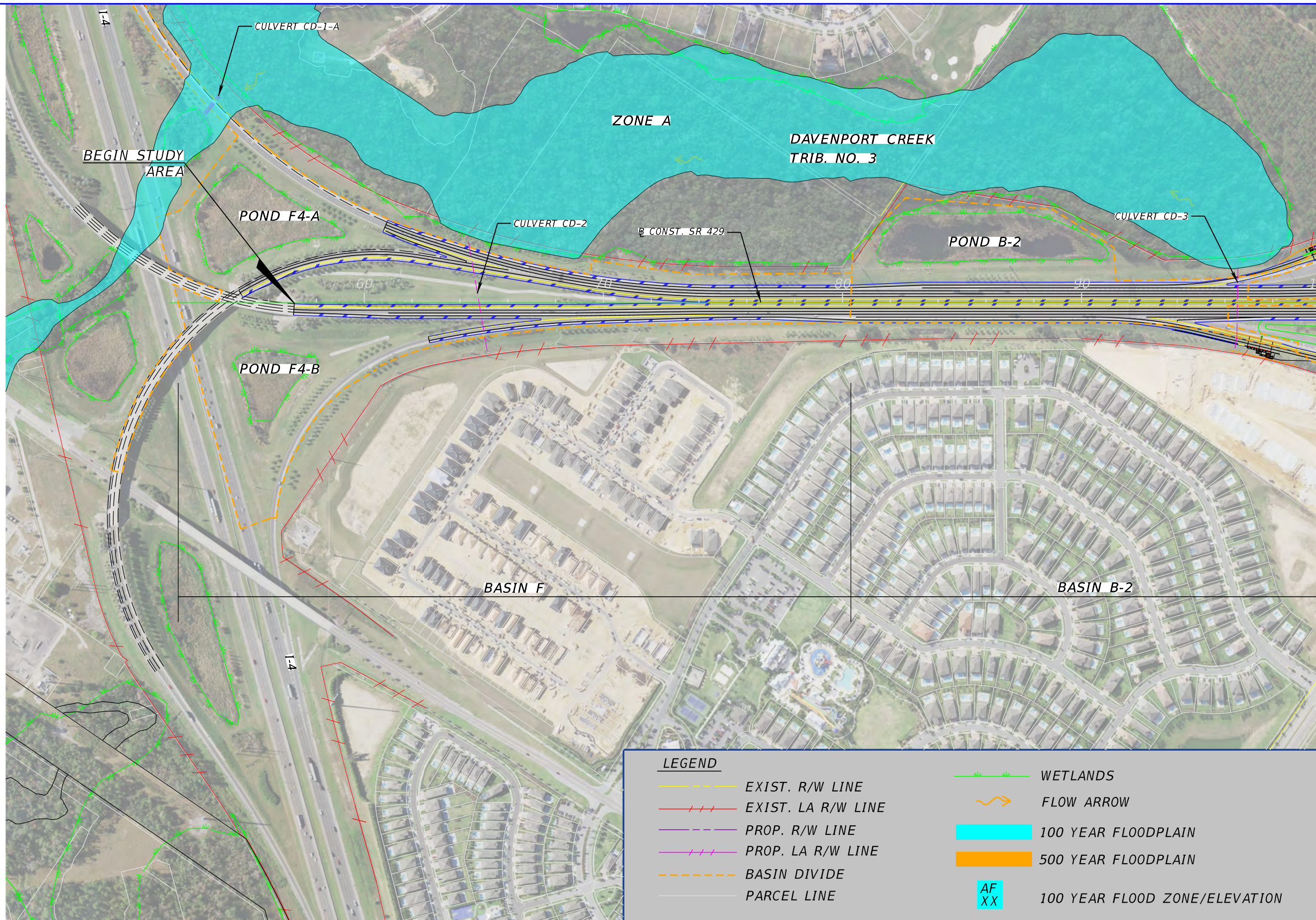
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
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**EXISTING
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11



LEGEND

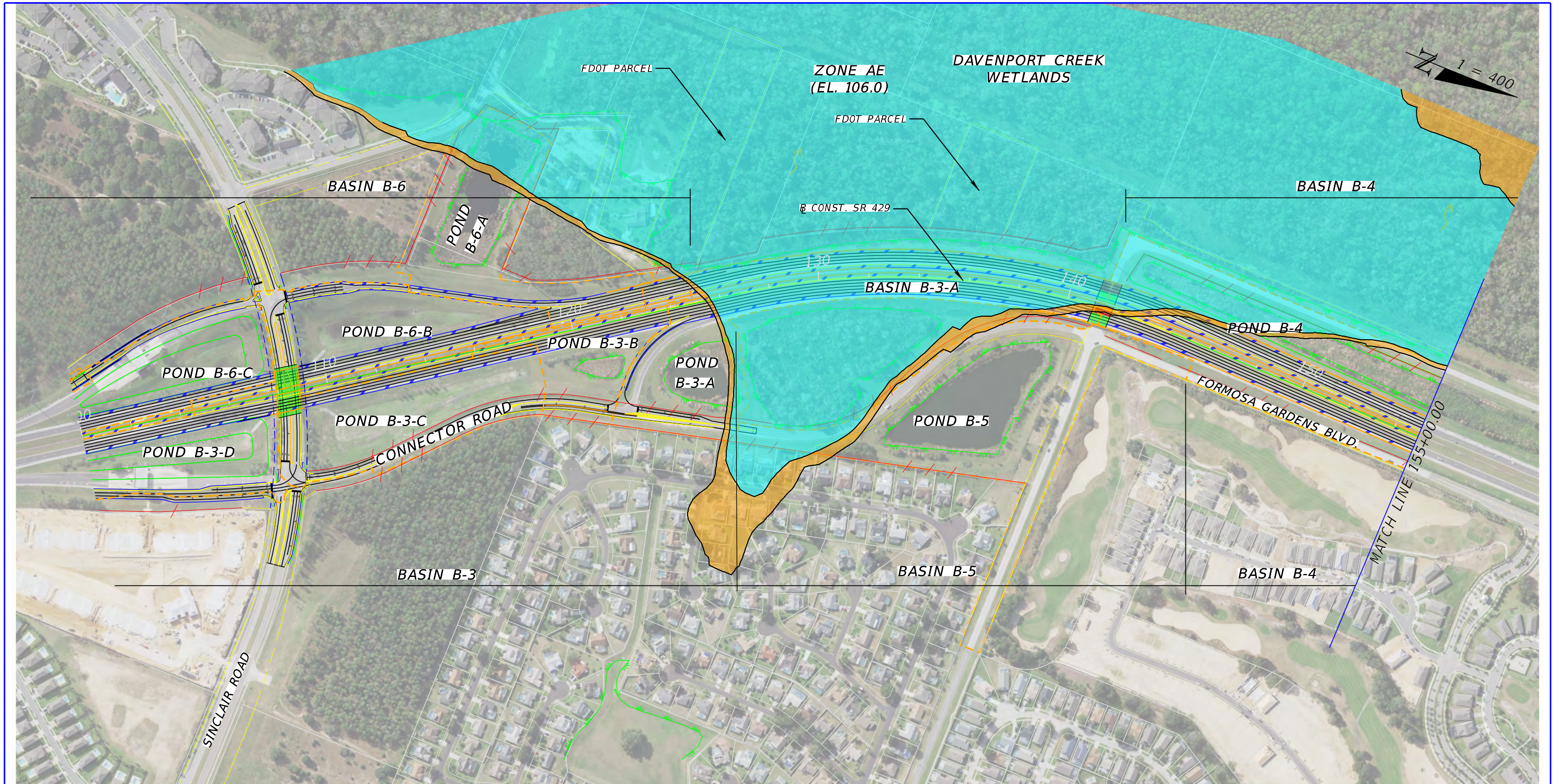
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	PROP. LA R/W LINE		500 YEAR FLOODPLAIN
	BASIN DIVIDE		100 YEAR FLOOD ZONE/ELEVATION
	PARCEL LINE		

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<p>PROPOSED DRAINAGE MAP</p>	<p>SHEET NO. 12</p>
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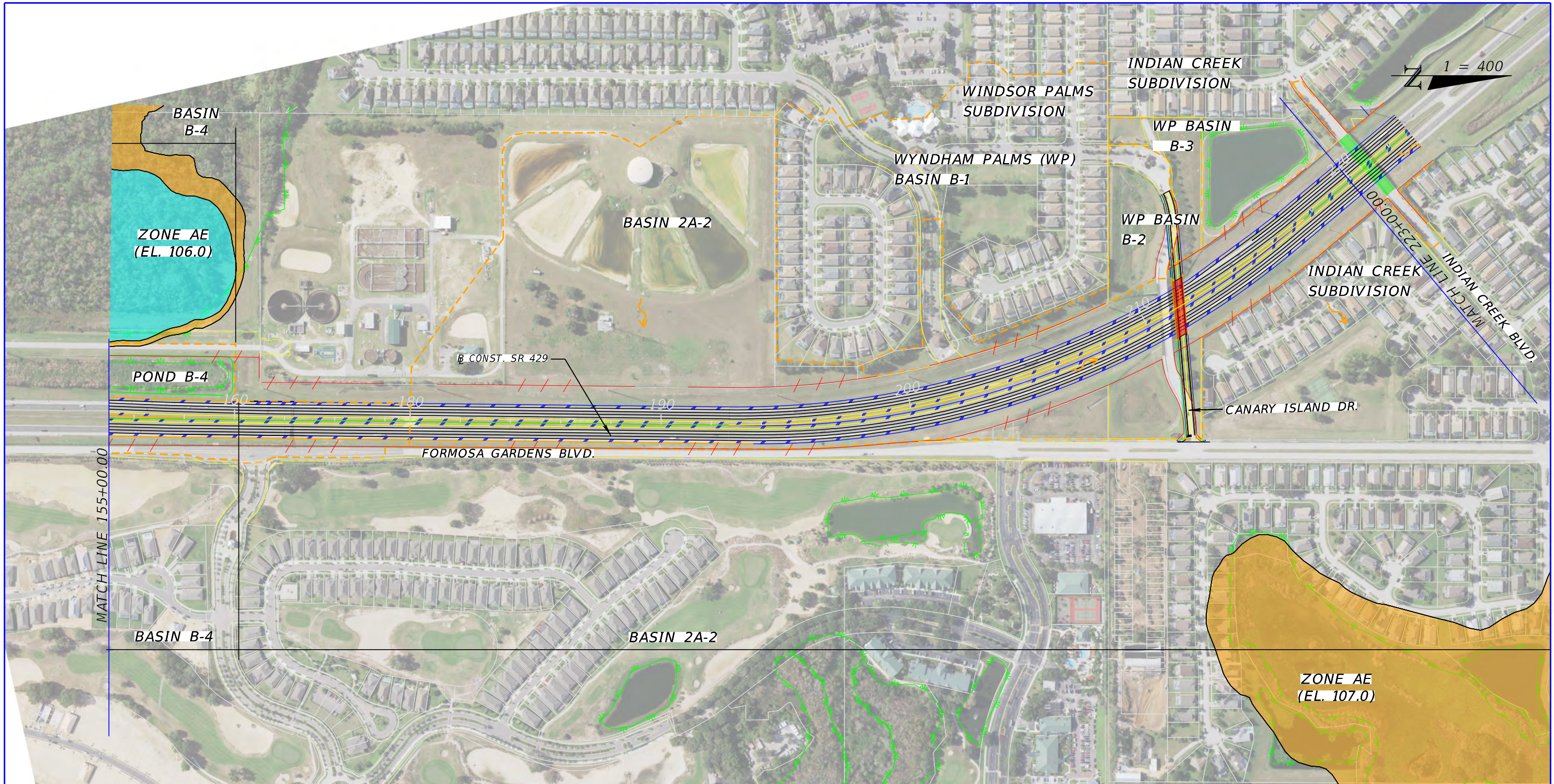
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	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

<p>PROPOSED DRAINAGE MAP</p>	<p>SHEET NO. 13</p>
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1 = 400

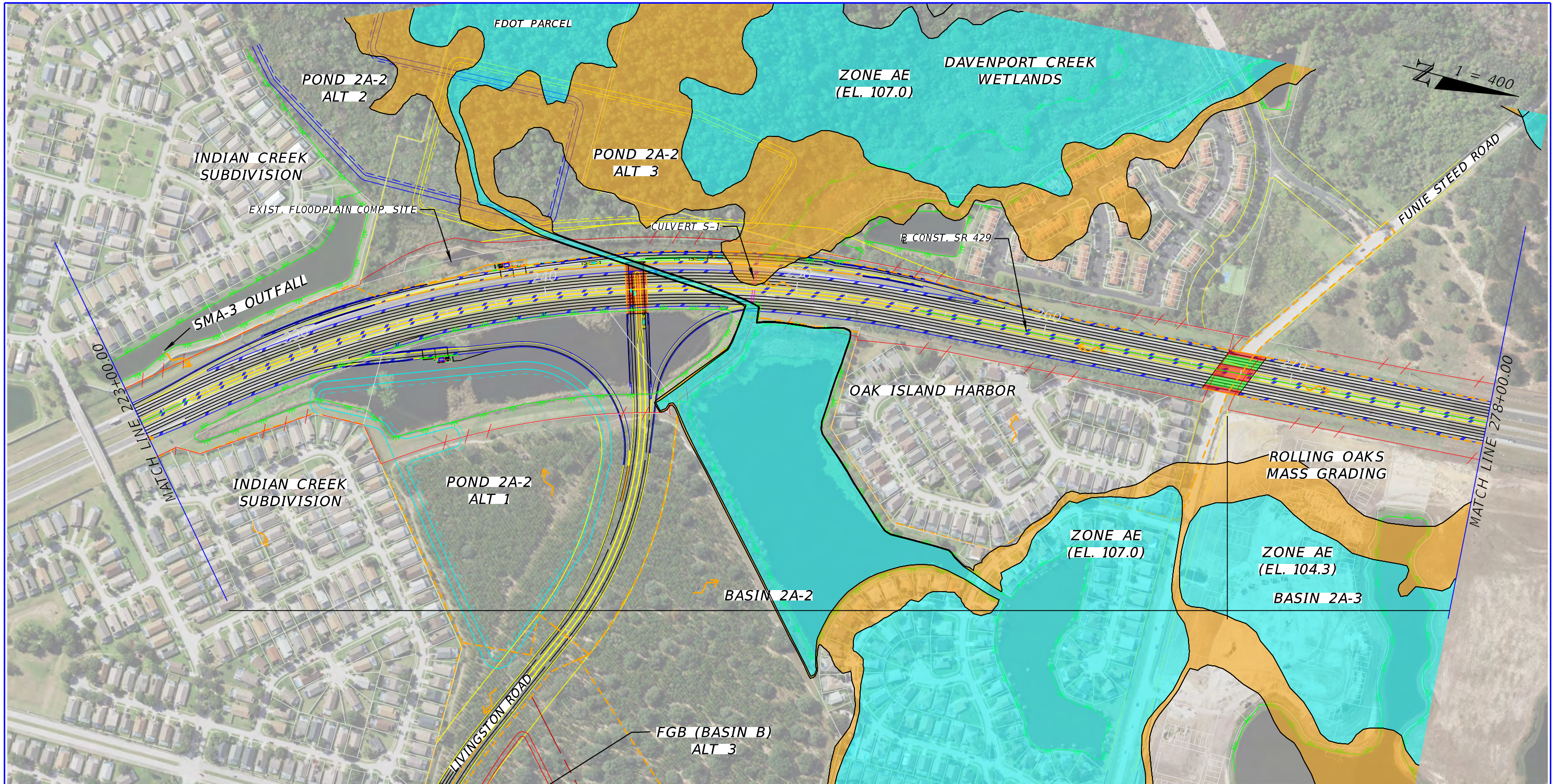
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	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

PROPOSED DRAINAGE MAP		SHEET NO. 14
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LEGEND

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	EXIST. LA R/W LINE		FLOW ARROW
	PROP. R/W LINE		100 YEAR FLOODPLAIN
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	BASIN DIVIDE		100 YEAR FLOOD ZONE/ELEVATION
	PARCEL LINE		

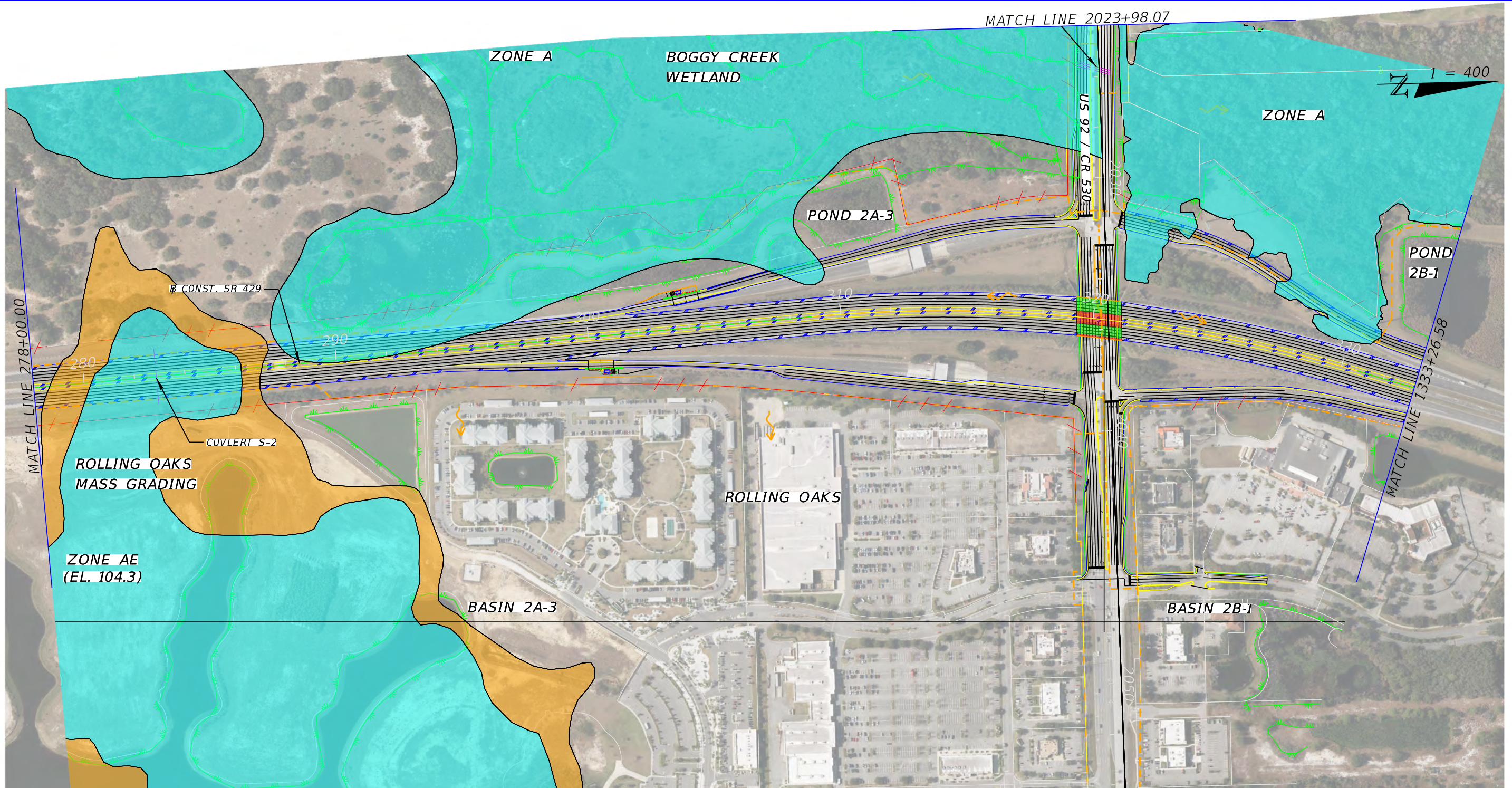
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**PROPOSED
DRAINAGE MAP**

SHEET NO.
15



1" = 400'

LEGEND

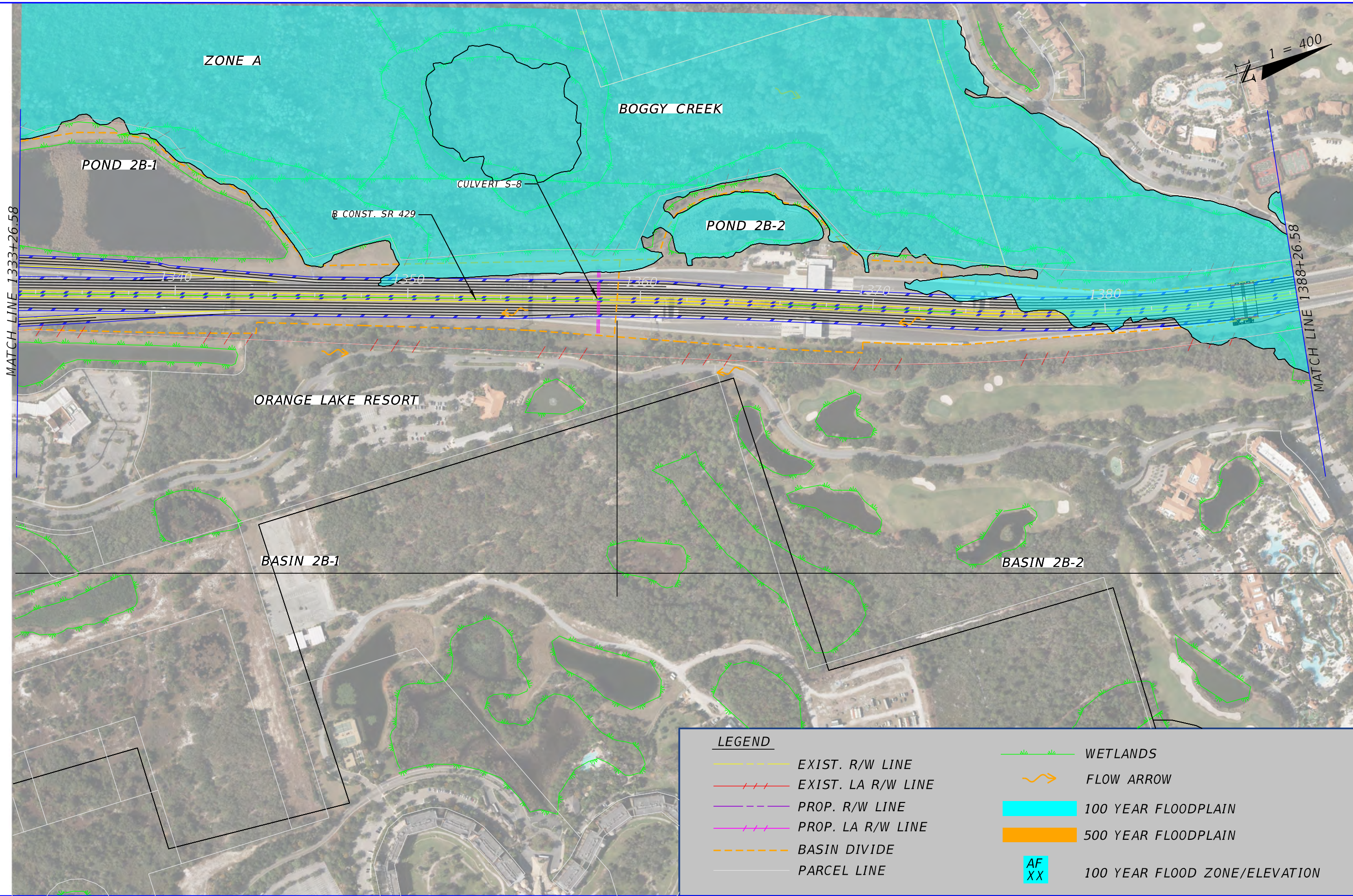
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- BASIN DIVIDE
- PARCEL LINE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- AF
XX 100 YEAR FLOOD ZONE/ELEVATION

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REVISIONS	
DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

PROPOSED DRAINAGE MAP	SHEET NO. 16
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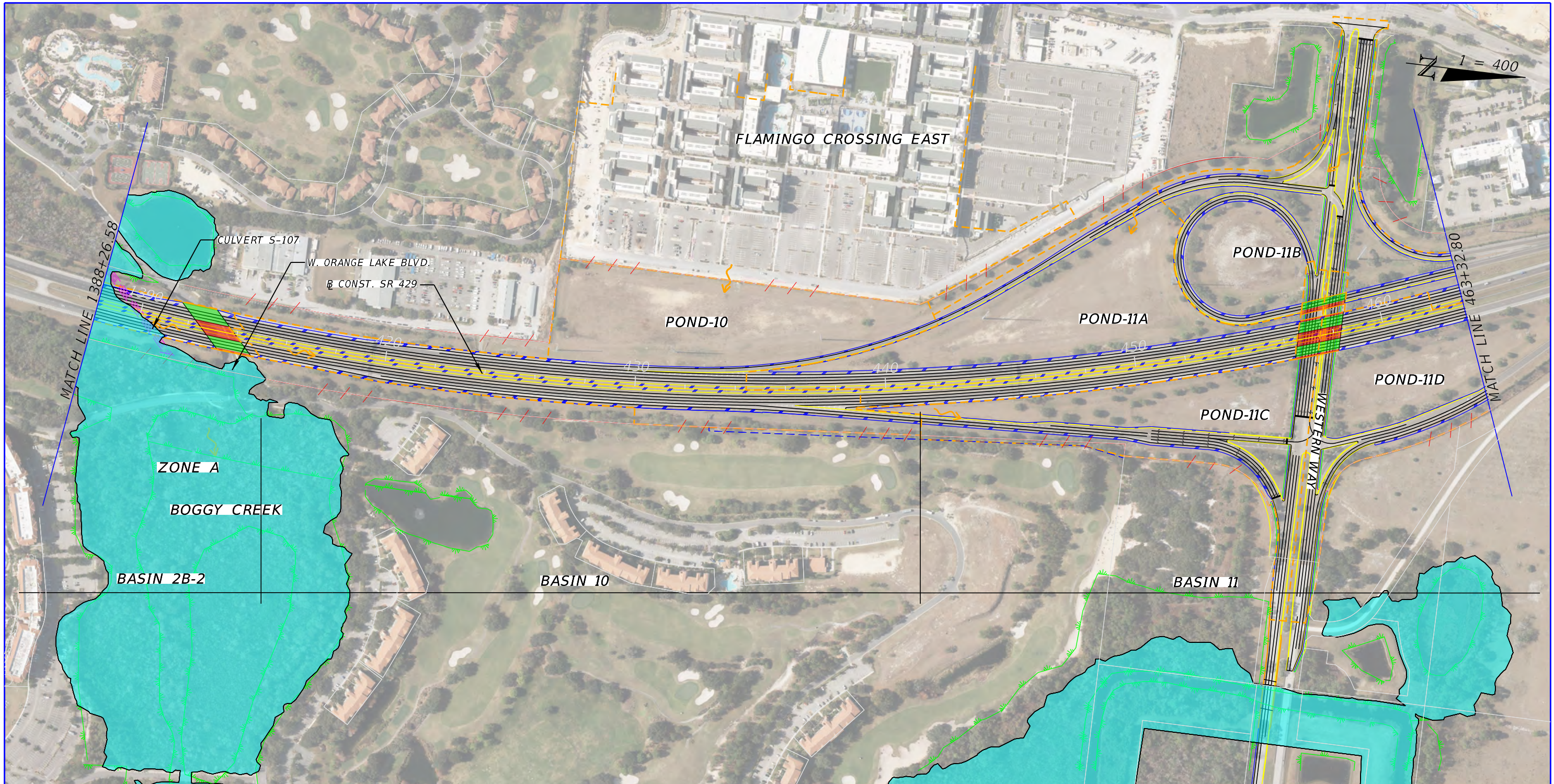
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	PROP. R/W LINE
	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

PROPOSED DRAINAGE MAP	SHEET NO. 17
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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
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION

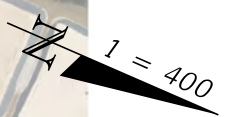
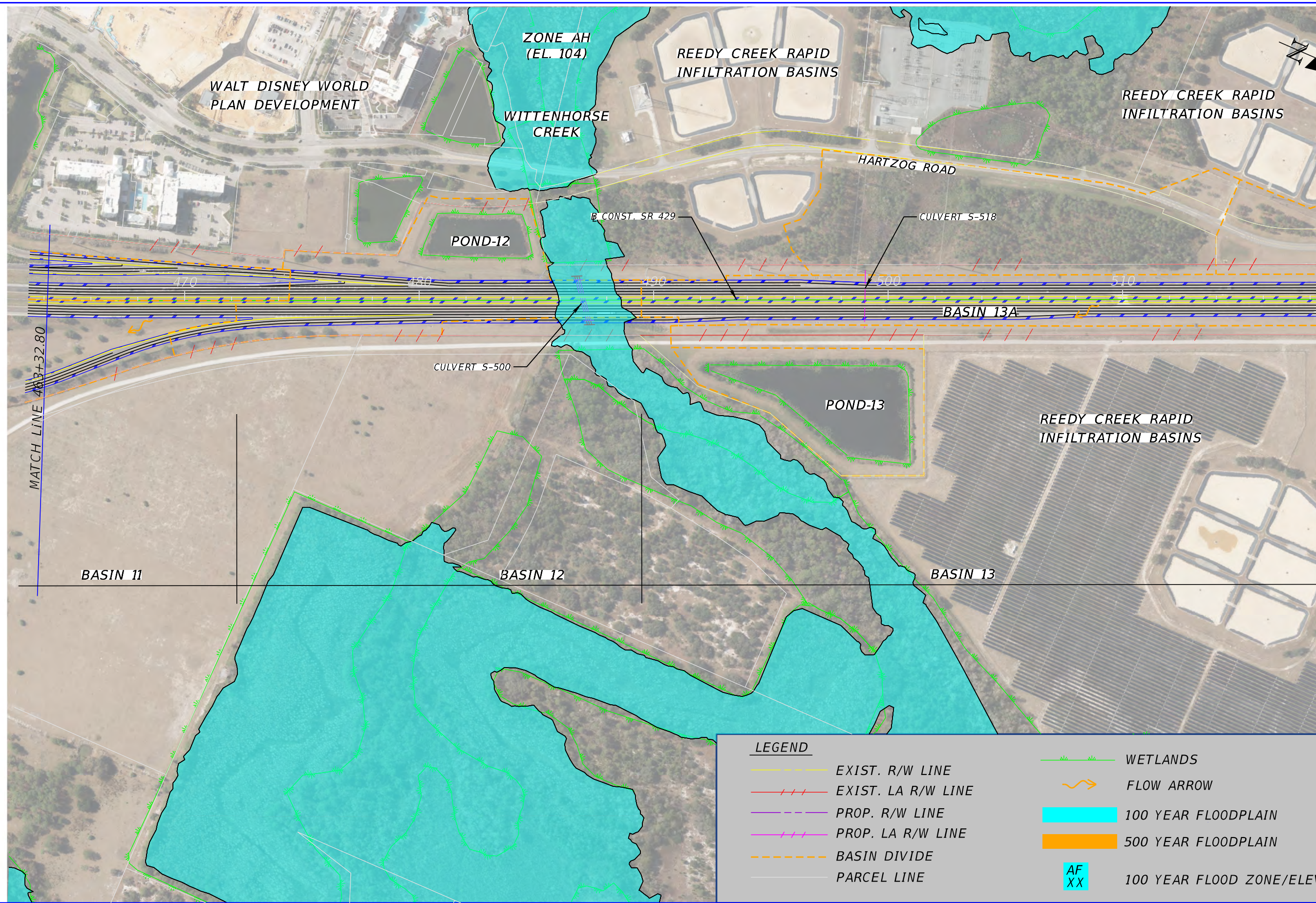
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**PROPOSED
DRAINAGE MAP**

SHEET NO.
18



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
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

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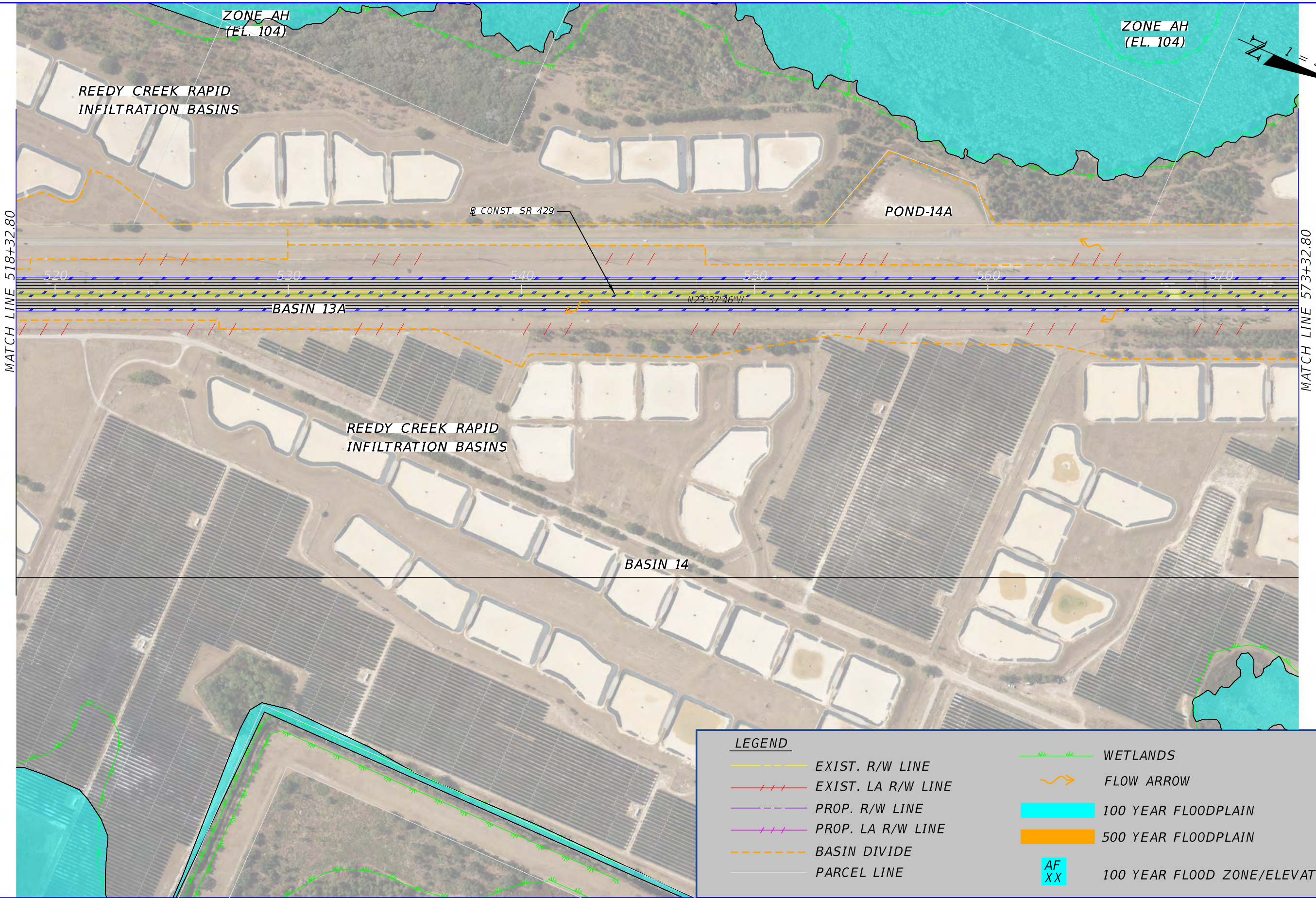
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**PROPOSED
DRAINAGE MAP**

SHEET
NO.

19



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
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION

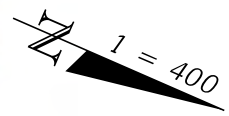
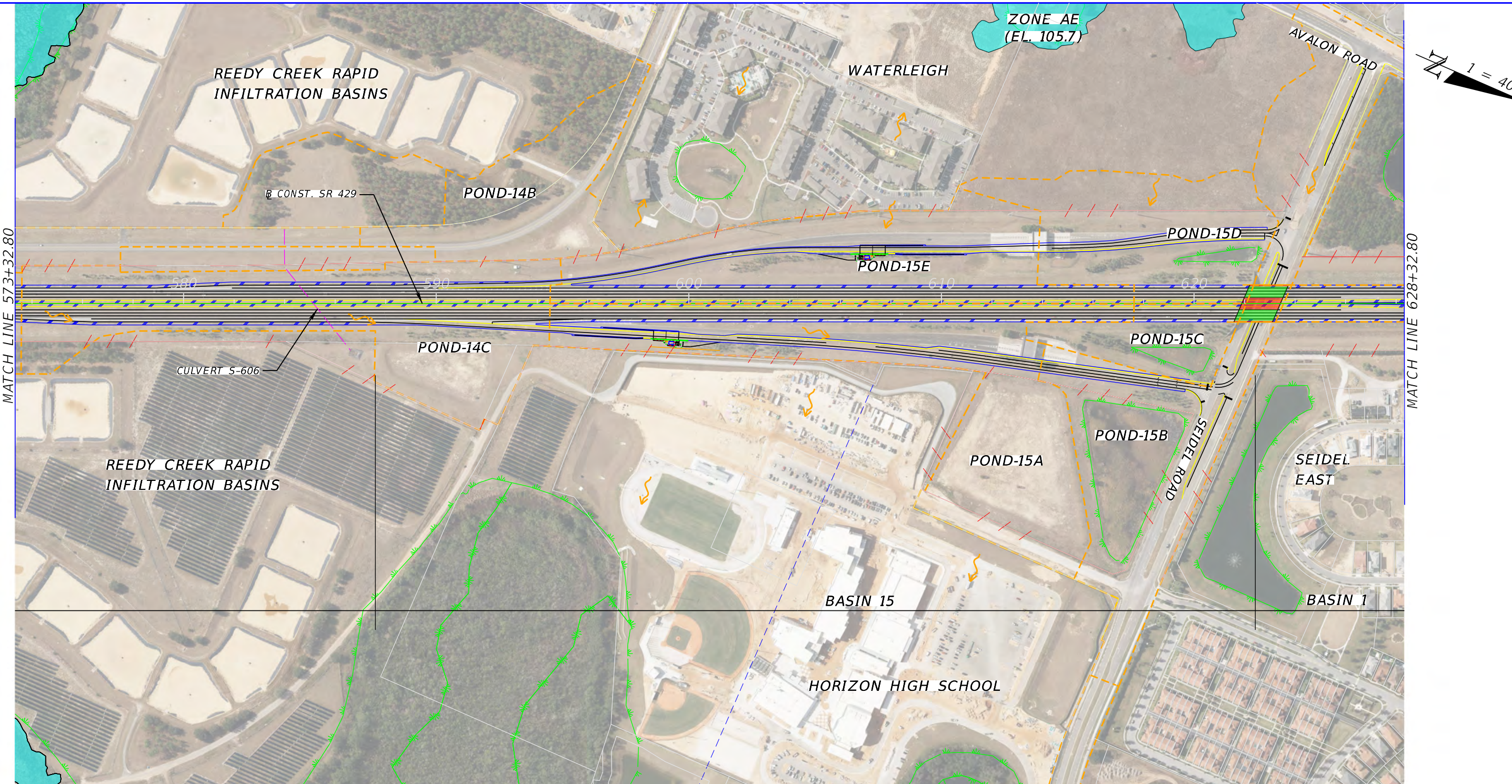
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REVISIONS	
DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**PROPOSED
DRAINAGE MAP**

SHEET NO.
20



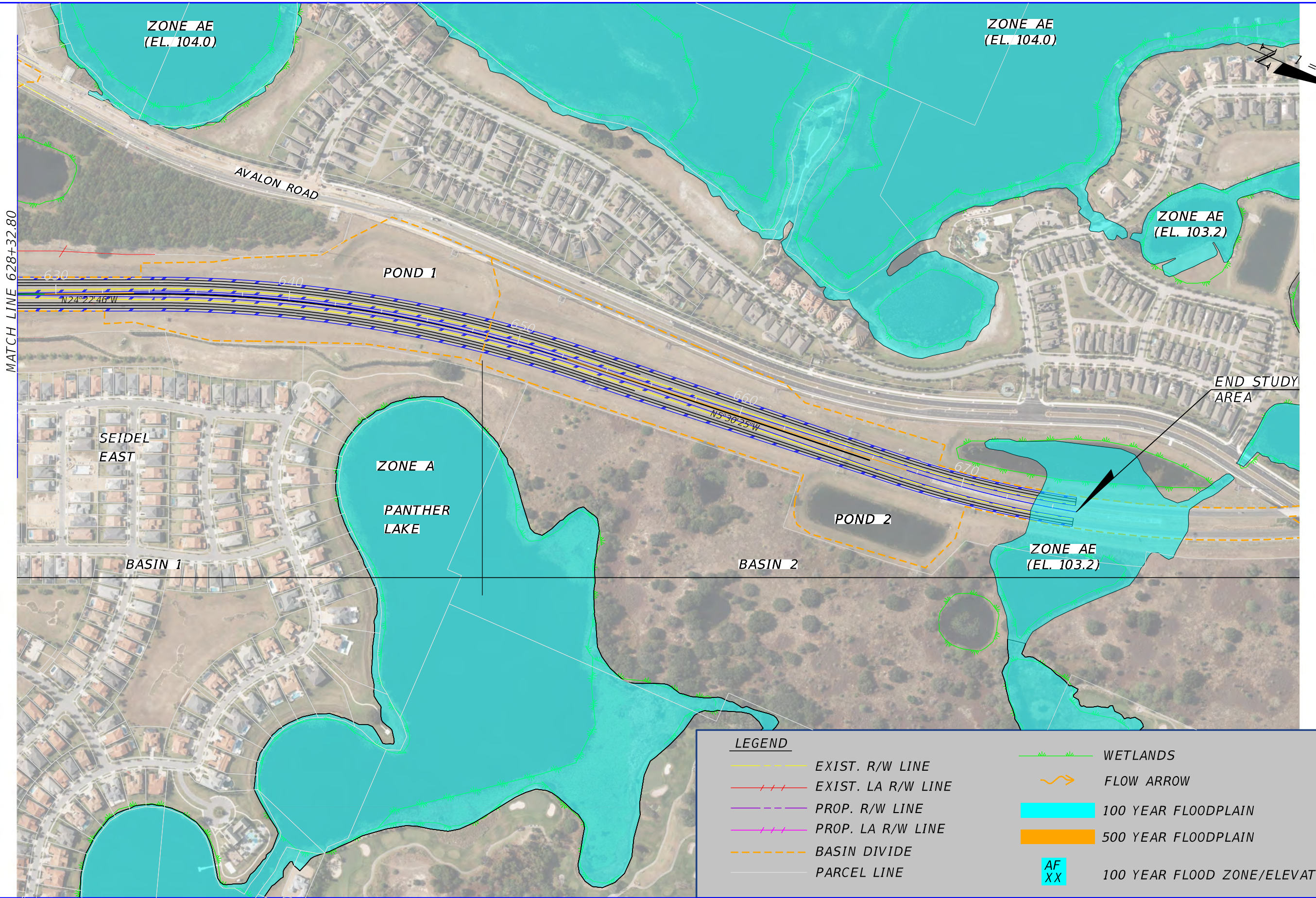
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	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

PROPOSED DRAINAGE MAP	SHEET NO. 21
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MATCH LINE 628+32.80

1" = 400'

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
	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 429	ORANGE AND OSCEOLA	446164-1-22-01

**PROPOSED
DRAINAGE MAP**

SHEET NO.
22

APPENDIX B – PRE-DEVELOPMENT CALCULATIONS

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01

Existing Development: Basin F-4

Stations 54+00 to 80+40

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Basin F-4				
Impervious Area	A	14.13	98	1384.74
Pervious	A	17.62	48	845.76
Pervious	D	0.00	80	0.00
Water		4.57	100	457.00
		<u>36.32</u>		<u>2687.50</u>

CN= 74.0

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	36.32	3.03
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	14.13	2.94

Treatment Volume Required (ac.ft.) = **3.03**

Treatment Volume Provided (ac.ft.) = **3.36**

Existing Development: Basin B-2

Stations 80+40 to 101+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Good Condition	A	3.51	48	168.48
	D	0.00	80	0.00
Pavement	A	8.08	98	791.84
	D	0.00	98	0.00
Pond	A	3.45	100	345.00
	D	0.00	100	0.00
		<u>15.04</u>		<u>1305.32</u>

CN= 86.8

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	15.04	1.25
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	8.08	1.68

Treatment Volume Required (ac.ft.) = **1.68**

Treatment Volume Provided (ac.ft.) = **1.78**

NOTES:

1. Based on Interstate 4/SR 429 Aux Lane proposed condition

Existing Development: Basin B-3-A, B-3-B, B-3-C, B-3-D, B-5

Stations 101+00 to 141+50

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Basin B-3-A</u>				
Impervious Area	A	5.70	98	558.60
Pervious	A	2.03	48	97.44
Pervious	D	0.00	80	0.00
Water		1.28	100	128.00
		<u>9.01</u>		<u>784.04</u>
<u>Basin B-3-B</u>				
Impervious Area	A	1.73	98	169.54
Pervious	A	2.71	48	130.08
Pervious	D	0.00	80	0.00
Water		0.29	100	29.00
		<u>4.73</u>		<u>328.62</u>
<u>Basin B-3-C</u>				
Impervious Area	A	2.41	98	236.18
Pervious	A	5.46	48	262.08
Pervious	D	0.00	80	0.00
Water		0.00	100	0.00
		<u>7.87</u>		<u>498.26</u>
<u>Basin B-3-D</u>				
Impervious Area	A	2.73	98	267.54
Pervious	A	3.21	48	154.08
Pervious	D	0.00	80	0.00
Water		0.00	100	0.00
		<u>5.94</u>		<u>421.62</u>
<u>Basin B-5</u>				
Impervious Area	A	2.10	98	205.80
Pervious	A	6.71	48	322.08
Pervious	D	0.00	80	0.00
Water		3.60	100	360.00
		<u>12.41</u>		<u>887.88</u>
CN=				73.1

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	39.96	3.33
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	14.67	3.06

Treatment Volume Required (ac.ft.) = **3.33**

Treatment Volume Provided (ac.ft.) = **3.72**

Existing Development: Basin B-4

Stations 141+50 to 167+00 (180+00)

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Basin B-4				
Impervious Area	A	10.85	98	1063.30
Pervious	A	7.79	48	373.92
Pervious	D	1.66	80	132.80
Water		2.60	100	260.00
		<u>22.90</u>		<u>1830.02</u>

CN= 79.9

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	22.90	1.91
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	10.85	2.26

Treatment Volume Required (ac.ft.) = **2.26**

Treatment Volume Provided (ac.ft.) = **2.47**

Existing Development: Basin B-6-A, B-6-B, B-6-C

Stations 101+00 to 125+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Basin B-6-A</u>				
Impervious Area	A	0.74	98	72.52
Pervious	A	3.23	48	155.04
Pervious	D	0.41	80	32.80
Water		3.33	100	333.00
		<u>7.71</u>		<u>593.36</u>
<u>Basin B-6-B</u>				
Impervious Area	A	3.42	98	335.16
Pervious	A	4.49	48	215.52
Pervious	D	0.00	80	0.00
Water		0.00	100	0.00
		<u>7.91</u>		<u>550.68</u>
<u>Basin B-6-C</u>				
Impervious Area	A	2.16	98	211.68
Pervious	A	3.59	48	172.32
Pervious	D	0.00	80	0.00
Water		0.00	100	0.00
		<u>5.75</u>		<u>384.00</u>
CN=				71.5

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	21.37	1.78
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	6.32	1.32

Treatment Volume Required (ac.ft.) = **1.78**

Treatment Volume Provided (ac.ft.) = **2.03**

Existing Development: Basin Wyndham Palms Basin 1

Stations 198+00 - 213+00

Project: Widen Western Beltway PD&E

Date: 10/7/2021

Project No.: 104-0125-000

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<i>Onsite</i>				
Open Space-Good Condition	A	14.55	39	567.45
Pavement	A	14.20	98	1391.60
Pond	A	0.85	98	83.30
		<u>29.60</u>		<u>2042.35</u>

CN=	69.0
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WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
1" Over Total Project Area	1	29.60	2.47
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	14.20	2.96

Treatment Volume=Greater of Two Values (ac.ft.)

Treatment Volume=	2.96
--------------------------	-------------

TIME OF CONCENTRATION	LENGTH (FT)	VELOCITY (FT/S)	TC (MIN)
<i>Sheet Flow</i>	<i>Assume 15 minutes</i>		15.0
<i>Ditch Flow</i>	N/A	N/A	
<i>Pipe Flow</i>	N/A	N/A	

Time of Conc.=	15.0
-----------------------	-------------

Existing Development: Wyndham Palms Basin B-2

Stations 198+00 - 213+00

Project: Widen Western Beltway PD&E

Date: 10/7/2021

Project No.: 104-0125-000

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<i>Onsite</i>				
Open Space-Good Condition	A	3.09	39	120.51
Dreamer's Drive	A	1.10	98	107.80
Wyndham Pavement	A	1.20	98	117.60
Pond	A	0.71	98	69.58
		<u>6.10</u>		<u>415.49</u>

CN=	68.1
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WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
1" Over Total Project Area	1	6.10	0.51
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	2.30	0.48

Treatment Volume=Greater of Two Values (ac.ft.)

Treatment Volume=	0.51
-------------------	-------------

TIME OF CONCENTRATION	LENGTH (FT)	VELOCITY (FT/S)	TC (MIN)
Sheet Flow	Assume 15 minutes		15.0
Ditch Flow	N/A	N/A	
Pipe Flow	N/A	N/A	

Time of Conc.=	15.0
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Existing Development: Wyndham Palms Basin B-3

Stations 198+00 - 213+00

Project: Widen Western Beltway PD&E

Date: 10/7/2021

Project No.: 104-0125-000

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Good Condition	A	3.09	39	120.51
		<u>3.09</u>		<u>120.51</u>
CN=				39.0

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
1" Over Total Project Area	1	3.09	0.26
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	0.00	0.00
Treatment Volume=Greater of Two Values (ac.ft.)			Treatment Volume= 0.26

TIME OF CONCENTRATION	LENGTH (FT)	VELOCITY (FT/S)	TC (MIN)
Sheet Flow	Assume 15 minutes		15.0
Ditch Flow	N/A	N/A	
Pipe Flow	N/A	N/A	
Time of Conc.=			15.0

Existing Development: Basin 2A-2

Stations 180+00 - 268+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Good Condition	A	11.61	39	452.79
	D	14.03	80	1122.40
Pavement	A	12.59	98	1233.82
	D	6.70	98	656.60
Future Pavement	A	6.93	98	679.14
	D	3.82	98	374.36
Pond	A	4.97	98	487.06
	D	6.97	98	683.06
<u>Wyndham Palms (Triangle Offsite)</u>				
Woods - Grass Combination Fair	A	4.67	43	200.81
Dreamer's Drive	A	0.62	98	60.76
Sandhill	A	1.10	98	107.80
<u>Treatment Plant (Offsite)</u>				
Woods - Grass Combination Fair	A	29.07	43	1250.01
<u>Offsite</u>				
Woods Fair	A	10.94	36	393.84
<u>Sand Hill Road</u>				
Pavement	A	0.98	98	96.04
<u>Funie Steed Road</u>				
Pavement	A	0.46	98	45.08
<u>Oak Island Cove</u>				
Res. 1/8 acre or less (65% Imp)	A	16.95	77	1305.15
	D	2.14	92	196.88
		<u>134.55</u>		<u>9345.60</u>
CN=				69.5

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
<i>Wet Detention</i>			
1" Over Total Project Area	1	134.55	11.21
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	45.61	9.50

Treatment Volume Required (ac.ft.) = **11.21**

Treatment Volume Provided (ac.ft.) = **11.62**

Existing Development: Basin 2A-3

Stations 268+00 - 320+50

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Good Condition	A	22.21	39	866.19
Pavement	A	12.91	98	1265.18
	D	1.40	98	137.20
Future Pavement	A	5.91	98	579.18
	D	0.73	98	71.54
Pond	A	4.71	98	461.58
<u>Offsite</u>				
Woods	A	12.32	36	443.52
SR 530/US 192				
Pavement	A	1.20	98	117.60
Open Space-Good Condition	A	0.91	39	35.49
		<u>62.30</u>		<u>3977.48</u>
CN=				63.8

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	62.30	5.19
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	22.15	4.61

Treatment Volume Required (ac.ft.) = **5.19**

Treatment Volume Provided (ac.ft.) = **5.43**

Existing Development: Basin 2B-1

Stations 320+50 - 1359+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Good Condition	A	4.04	39	157.56
	C	5.87	74	434.38
	D	3.38	80	270.40
Pavement	A	2.94	98	288.12
	C	7.36	98	721.28
	D	3.79	98	371.42
Future Pavement	A	2.73	98	267.54
	C	1.47	98	144.06
	D	2.28	98	223.44
Pond	A	3.50	98	343.00
	C	5.07	98	496.86
	D	2.92	98	286.16
<u>SR 530/US 192</u>				
Pavement	A	1.74	98	170.52
Open Space-Good Condition	A	1.75	39	68.25
		<u>48.84</u>		<u>4242.99</u>
CN=				86.9

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
<i>Wet Detention</i>			
1" Over Total Project Area	1	48.84	4.07
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	22.31	4.65

Treatment Volume Required (ac.ft.) = 4.65

Treatment Volume Provided (ac.ft.) = 4.81

Existing Development: Basin 2B-2

Stations 1359+00 - 414+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Good Condition	C	2.91	74	215.34
	D	1.31	80	104.80
Toll Facility	D	0.86	98	84.28
Pavement	C	5.83	98	571.34
	D	4.40	98	431.20
Future Pavement	C	2.28	98	223.44
	D	1.09	98	106.82
Pond	C	1.78	98	174.44
	D	0.79	98	77.42
Section 3 (Sta. 400+00 - 414+00)				
Pavement	C	1.28	98	125.44
	D	2.24	98	219.52
Future Pavement	C	0.65	98	63.70
	D	1.15	98	112.70
		<u>26.57</u>		<u>2510.44</u>

CN=	94.5
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WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
<i>Wet Detention</i>			
1" Over Total Project Area	1	26.57	2.21
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	19.78	4.12

Treatment Volume Required (ac.ft.) =

4.12

Treatment Volume Provided (ac.ft.) =

4.25

Existing Development: Basin 10

Stations 414+00 - 445+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Fair Condition	A	8.20	49	401.80
Pavement	A	8.40	98	823.20
Pond	A	4.50	100	450.00
<u>Offsite</u>				
Woods (grove)-Poor	A	14.80	57	843.60
		<u>35.90</u>		<u>2518.60</u>
CN=				70.2

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	35.90	1.50
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	8.40	0.88

Treatment Volume Required (ac.ft.) = **1.50**

Treatment Volume Provided (ac.ft.) = **1.60**

Existing Development: Basin 11A

Stations 435+00 - 455+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	6.00	49	294.00
	C	0.20	79	15.80
Pavement	A	6.20	98	607.60
Pond	A	4.90	100	490.00
		<u>17.30</u>		<u>1407.40</u>

CN= 81.4

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	17.30	0.72
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	6.20	0.65

Treatment Volume Required (ac.ft.) = **0.72**

Treatment Volume Provided (ac.ft.) = **12.54**

Existing Development: Basin 11B

Stations 455+00 - 490+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	5.90	49	289.10
	C	0.70	79	55.30
	D	0.40	84	33.60
Pavement	A	7.60	98	744.80
Pond	A	2.20	100	220.00
		<u>16.80</u>		<u>1342.80</u>

CN= 79.9

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	16.80	0.70
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	7.60	0.79

Treatment Volume Required (ac.ft.) = **0.79**

Treatment Volume Provided (ac.ft.) = **0.69**

Existing Development: Basin 11C

Stations 438+00 - 457+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	5.00	49	245.00
	C	2.90	79	229.10
Pavement	A	3.90	98	382.20
Pond	A	1.60	100	160.00
		<u>13.40</u>		<u>1016.30</u>

CN= 75.8

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	13.40	0.56
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	3.90	0.41

Treatment Volume Required (ac.ft.) = **0.56**

Treatment Volume Provided (ac.ft.) = **0.54**

Existing Development: Basin 11D

Stations 457+00 - 474+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	7.30	49	357.70
	C	0.20	79	15.80
Pavement	A	6.20	98	607.60
Pond	A	2.50	100	250.00
		<u>16.20</u>		<u>1231.10</u>

CN= 76.0

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	16.20	0.68
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	6.20	0.65

Treatment Volume Required (ac.ft.) = **0.68**

Treatment Volume Provided (ac.ft.) = **0.81**

Existing Development: Basin 12

Stations 474+00 - 490+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Fair Condition	A	5.70	49	279.30
	C	1.20	79	94.80
Woods (grove)-Fair	A	4.70	43	202.10
Pavement	A	6.70	98	656.60
Pond	A	1.80	100	180.00
		<u>20.10</u>		<u>1412.80</u>

CN= 70.3

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	20.10	1.68
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	6.70	1.40

Treatment Volume Required (ac.ft.) = **1.68**

Treatment Volume Provided (ac.ft.) = **1.80**

Existing Development: Basin 13 & 13A

Stations 490+00 - 574+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Basin 13A				
<u>Onsite</u>				
Open Space-Fair Condition	A	26.70	49	1308.30
	B	0.50	69	34.50
	C	0.30	79	23.70
Pavement	A	25.80	98	2528.40
<u>Offsite</u>				
Tree Farm-Poor Condition	A	9.50	57	541.50
		<u>62.80</u>		<u>4436.40</u>
CN=				70.6

Basin 13

Onsite

Open Space-Fair Condition	A	1.50	49	73.50
	C	1.30	79	102.70
Pond	A	6.20	100	620.00
		<u>9.00</u>		<u>796.20</u>
CN=				88.5

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
<i>Wet Detention</i>			
1" Over Total Project Area	1	71.80	5.98
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	25.80	5.38

Treatment Volume Required (ac.ft.) = **5.98**

Treatment Volume Provided (ac.ft.) = **6.10**

Existing Development: Basin 14A

Stations 530+00 - 585+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	15.00	49	735.00
Pavement	A	4.10	98	401.80
Pond	A	1.90	100	190.00
		<u>21.00</u>		<u>1326.80</u>
			CN=	63.2

Compensatory Treatment

(Hartzog Road)

Pavement

A 0.80 98 78.40

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	21.00	0.88
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	4.90	0.51

Treatment Volume Required (ac.ft.) = **0.88**

Treatment Volume Provided (ac.ft.) = **1.03**

Existing Development: Basin 14B

Stations 587+00 - 590+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Woods (Poor)	A	5.90	45	265.50
Pavement	A	1.10	98	107.80
Pond	A	1.00	100	100.00
		<u>8.00</u>		<u>473.30</u>
CN=				59.2

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	8.00	0.33
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	1.10	0.11

Treatment Volume Required (ac.ft.) = **0.33**

Treatment Volume Provided (ac.ft.) = **0.44**

Existing Development: Basin 14C

Stations 574+00 - 595+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	7.70	49	377.30
Pavement	A	7.70	98	754.60
Pond	A	1.40	100	140.00
		<u>16.80</u>		<u>1271.90</u>
			CN=	75.7

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	16.80	0.70
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	7.70	0.80

Treatment Volume Required (ac.ft.) = **0.80**

Treatment Volume Provided (ac.ft.) = **0.80**

Existing Development: Basin 15A

Stations 595+00 - 618+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Basin 15A				
<u>Onsite</u>				
Open Space-Fair Condition	A	7.40	49	362.60
Pavement	A	5.20	98	509.60
Pond	A	5.10	100	510.00
<u>Offsite</u>				
Grove-Good Condition	A	5.80	32	185.60
Meadow	A	4.40	30	132.00
		<u>27.90</u>		<u>1699.80</u>
CN=				60.9

Basin 15F

Onsite

Meadow	A	9.00	30	270.00
Pavement	A	0.50	98	49.00
		<u>9.50</u>		<u>319.00</u>
CN=				33.6

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	37.40	1.56
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	5.70	0.59

Treatment Volume Required (ac.ft.) = **1.56**

Treatment Volume Provided (ac.ft.) = **1.57**

Existing Development: Basin 15B

Stations 595+00 - 618+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	5.70	49	279.30
Open Space-Fair Condition	C	1.30	79	102.70
Open Space-Fair Condition	D	0.40	84	33.60
Pavement	A	8.00	98	784.00
Pond	A	3.00	100	300.00
Offsite				
Grove-Good Condition	A	1.60	43	68.80
Meadow	A	9.10	30	273.00
Grove-Good Condition	C	0.60	72	43.20
Grove-Good Condition	D	1.00	79	79.00
		<u>30.70</u>		<u>1963.60</u>

CN= 64.0

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	30.70	1.28
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	8.00	0.83

Treatment Volume Required (ac.ft.) = **1.28**

Treatment Volume Provided (ac.ft.) = **1.68**

Existing Development: Basin 15C

Stations 595+00 - 618+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	1.50	49	73.50
Open Space-Fair Condition	C	0.70	79	55.30
Open Space-Fair Condition	D	0.40	84	33.60
Pavement	A	0.40	98	39.20
Pond	A	0.50	100	50.00
		<u>3.50</u>		<u>251.60</u>

CN= 71.9

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	3.50	0.15
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	0.40	0.04

Treatment Volume Required (ac.ft.) = **0.15**

Treatment Volume Provided (ac.ft.) = **0.32**

Existing Development: Basin 15D

Stations 595+00 - 618+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	3.40	49	166.60
Open Space-Fair Condition	C	1.10	79	86.90
Open Space-Fair Condition	D	0.20	84	16.80
Pavement	A	1.70	98	166.60
Pond	A	0.20	100	20.00
Offsite				
Meadow	A	3.70	30	111.00
		<u>10.30</u>		<u>567.90</u>
CN=				55.1

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	10.30	0.43
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	1.70	0.18

Treatment Volume Required (ac.ft.) = 0.43

Treatment Volume Provided (ac.ft.) = 0.18

Existing Development: Basin 15E

Stations 595+00 - 618+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	6.80	49	333.20
Pavement	A	7.10	98	695.80
Pond	A	1.80	100	180.00
Offsite				
Meadow	A	2.00	32	64.00
		<u>17.70</u>		<u>1273.00</u>
CN=				71.9

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	17.70	0.74
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	7.10	0.74

Treatment Volume Required (ac.ft.) = 0.74

Treatment Volume Provided (ac.ft.) = 0.80

Existing Development: Basin 1

Stations 1622+18.86 - 602+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	10.88	39	424.32
Pavement	A	8.44	98	827.12
Pond	A	1.72	39	67.08
		<u>21.04</u>		<u>1318.52</u>
			CN=	62.7

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
50% of 1" Over Total Project Area	1	21.04	0.88
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	8.44	0.88

Treatment Volume Required (ac.ft.) = **0.88**

Treatment Volume Provided (ac.ft.) = **1.06**

Existing Development: Basin 2

Stations 602+00 - 641+83.82

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	8.53	39	332.67
Pavement	A	12.01	98	1176.98
Pond	A	2.61	100	261.00
		23.15		1770.65
CN=				76.5

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention	Wet Detention	Wet Detentio	Wet Deter
1" Over Total Project Area	1	23.15	1.93
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	12.01	2.50

Treatment Volume Required (ac.ft.) = 2.50

Treatment Volume Provided (ac.ft.) = 2.50

Existing Development: Basin FGB

Project: Widen Western Beltway PD&E
Project No.: 446164-1-22-01

Date: 7/12/2022

Basin Info:

Basin Type: Open Basin
Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Woods - Grass Combination Fair	A	7.03	43	302.29
Pavement	A	0.00	98	0.00
Pond	A	2.00	43	86.00
<u>Offsite</u>				
Woods - Grass Combination Fair	A	9.43	43	405.49
		<u>18.46</u>		<u>793.78</u>
		CN=		43.0

Existing Development: SR 530 Basin A

Stations 12+83 - 27+60

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>SR 530/US 192</u>				
Open Space-Good Condition	D	10.12	79	799.19
Pavement	A	9.79	98	959.19
Pond	D	1.37	100	136.65
	D	0.93	79	73.40
		<u>22.20</u>		<u>1968.42</u>

CN= 88.7

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	22.20	1.85
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	9.79	2.04

Treatment Volume Required (ac.ft.) = **1.85**

Treatment Volume Provided (ac.ft.) = **2.16**

NOTES:

1. Permit states 1.85-acres required, however this does not appear to be the greater of the two calculations.

Existing Development: SR 530 Basin C

Stations 31+70 - 55+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>SR 530/US 192</u>				
Pavement	D	9.29	98	910.51
Pond	D	1.85	98	180.99
Grassed Area - Fair	A	8.26	49	404.77
	D	1.11	84	93.40
Pavement	D	3.11	98	304.39
Off-site Impervious	D	1.09	98	106.55
Grassed Area - Fair	D	3.61	84	303.04
Pavement	D	5.53	98	541.95
Off-site Impervious	D	1.04	98	101.46
Grassed Area - Fair	A	3.04	49	148.93
		<u>37.92</u>		<u>3096.00</u>

CN= 81.7

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	37.92	3.16
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	20.05	4.18

Treatment Volume Required (ac.ft.) = **4.18**

Treatment Volume Provided (ac.ft.) = **4.18**

NOTES:

1. CN differs from permit because of a calculation error for the 3.61-ac of Grassed Area.

APPENDIX C – POST-DEVELOPMENT CALCULATIONS

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01

Treatment Summary Page: Pre Conditions vs. Post Conditions

Project: Widen Western Beltway PD&E
 Project No.: 446164-1-22-01
 Company: RS&H

11/4/2022

	<i>Pre Conditions</i>	<i>Post Conditions</i>	
<i>Basin</i>	<i>Treatment Volume Provided (ac.ft.)</i>	<i>Treatment Volume Required (ac.ft.)</i>	<i>Delta (ac-ft)</i>
F-4	3.36	3.26	-0.10
B-2	1.78	1.68	-0.10
B-3 & B-5	3.72	3.66	-0.06
B-4	2.47	2.41	-0.06
B-6	2.03	1.91	-0.12
2A-2	11.62	13.71	2.09
2A-3	5.43	4.86	-0.57
2B-1	4.81	4.65	-0.16
2B-2	4.25	2.64	-1.61
10	1.60	0.89	-0.71
11A	12.54	0.75	-11.79
11B	0.69	0.93	0.24
11C	0.54	0.50	-0.04
11D	0.81	0.66	-0.15
Total 11	14.58	2.85	-11.73
12	1.80	1.47	-0.33
13	6.10	5.98	-0.12
14A	1.03	0.88	-0.16
14B	0.44	0.33	-0.11
14C	0.80	0.83	0.03
15A	1.57	0.77	-0.80
15B	1.68	0.83	-0.85
15C	0.32	0.15	-0.17
15D	0.18	0.43	0.25
15E	0.80	0.74	-0.06
Total 15	4.55	2.92	-1.63
1	1.06	0.88	-0.18
2	2.50	2.50	0.00
Basin B (FGB)	-	1.54	1.54
FL 530 (Basin A)	2.16	2.41	0.25
FL 530 (Basin C)	4.18	4.40	0.22

Attenuation Summary Page: Pre Conditions vs. Post Conditions

Project: Widen Western Beltway PD&E
 Project No.: 446164-1-22-01
 Company: RS&H

11/4/2022

	<i>Pre Conditions</i>	<i>Post Conditions</i>	<i>Delta (ac-ft)</i>
<i>Basin</i>	<i>Runoff Volume (ac.ft.)</i>	<i>Runoff Volume (ac.ft.)</i>	
F-4	24.37	25.23	0.86
B-2	12.23	12.23	0.00
B-3 & B-5	26.39	29.23	2.84
B-4	16.90	16.94	0.04
B-6	13.72	14.51	0.79
2A-2	103.51	110.11	6.60
2A-3	34.36	34.20	-0.16
2B-1	39.76	37.31	-2.45
2B-2	23.75	21.96	-1.79
10	28.04	18.93	-9.11
11A	13.04	13.89	0.85
11B	12.40	13.62	1.22
11C	9.27	8.73	-0.54
11D	11.24	11.12	-0.12
Total 11	45.95	47.36	1.41
12	12.62	10.79	-1.83
13	45.39	47.10	1.71
14A	-	-	-
14B	-	-	-
14C	11.60	11.74	0.14
15A	21.08	15.85	-5.23
15B	21.52	16.70	-4.82
15C	2.81	3.01	0.20
15D	5.98	5.87	-0.11
15E	14.22	11.79	-2.43
Total 15	65.61	53.22	-12.39
1	11.30	11.30	0.00
2	16.19	16.19	0.00
Basin B (FGB)	5.35	8.86	3.51
FL 530 (Basin A)	22.16	22.53	0.37
FL 530 (Basin C)	34.87	35.48	0.61

Post Development: Basin F-4

Stations 54+00 to 80+40

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Basin F-4				
Impervious Area	A	15.63	98	1531.74
Pervious	A	16.12	48	773.76
Pervious	D	0.00	80	0.00
Water		4.57	100	457.00
		<u>36.32</u>		<u>2762.50</u>

CN= 76.1

WATER QUALITY	CRITERIA	AREA	TREATMENT
Wet Detention			
1" Over Total Project Area	1	36.32	3.03
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	15.63	3.26

Treatment Volume Required (ac.ft.) = 3.26

Treatment Volume Permitted (ac.ft.) = 3.36

Additional Treatment Required (ac.ft.) = -0.10

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	3.51	3.15
Runoff Depth (Q), in	8.05	8.33
Runoff Volume, acre-ft	24.37	25.23
Volume Differential, acre-ft		0.86

NOTES:

Post Development: Basin B-2

Stations 80+40 to 101+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Good Condition	A	3.51	48	168.48
	D	0.00	80	0.00
Pavement	A	8.08	98	791.84
	D	0.00	98	0.00
New/Future 8-Lane Pavement (Req. treatment)	A	0.00	98	0.00
	D	0.00	98	0.00
Pond	A	3.45	100	345.00
	D	0.00	100	0.00
		<u>15.04</u>		<u>1305.32</u>
		CN=		86.8

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	15.04	1.25
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	8.08	1.68

Treatment Volume Required (ac.ft.) = **1.68**

Treatment Volume Permitted (ac.ft.) = **1.78**

Additional Treatment Required (ac.ft.) = **-0.10**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	1.52	1.52
Runoff Depth (Q), in	9.76	9.76
Runoff Volume, acre-ft	12.23	12.23
Volume Differential, acre-ft		0.00

NOTES:

1. Existing permit assumed paved median. New impervious area does not exceed permitted impervious area.

Post Development: Basin B-3-A, B-3-B, B-3-C, B-3-D, B-5

Stations 101+00 to 141+50

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Basin B-3-A</u>				
Impervious Area	A	7.87	98	771.26
Pervious	A	3.05	48	146.40
Pervious	D	0.00	80	0.00
Water		1.28	100	128.00
		<u>12.20</u>		<u>1045.66</u>
<u>Basin B-3-B</u>				
Impervious Area	A	1.93	98	189.14
Pervious	A	1.95	48	93.60
Pervious	D	0.00	80	0.00
Water		0.29	100	29.00
		<u>4.17</u>		<u>311.74</u>
<u>Basin B-3-C</u>				
Impervious Area	A	1.91	98	187.18
Pervious	A	6.08	48	291.84
Pervious	D	0.00	80	0.00
Water		0.00	100	0.00
		<u>7.99</u>		<u>479.02</u>
<u>Basin B-3-D</u>				
Impervious Area	A	3.21	98	314.58
Pervious	A	3.99	48	191.52
Pervious	D	0.00	80	0.00
Water		0.00	100	0.00
		<u>7.20</u>		<u>506.10</u>
<u>Basin B-5</u>				
Impervious Area	A	2.10	98	205.80
Pervious	A	6.71	48	322.08
Pervious	D	0.00	80	0.00
Water		3.60	100	360.00
		<u>12.41</u>		<u>887.88</u>
CN=				73.5

WATER QUALITY	CRITERIA	AREA	TREATMENT
Wet Detention			
1" Over Total Project Area	1	43.97	3.66
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	17.02	3.55

Treatment Volume Required (ac.ft.) = **3.66**

Treatment Volume Permitted (ac.ft.) = **3.72**

Additional Treatment Required (ac.ft.) = **-0.06**

Post Development: Basin B-3-A, B-3-B, B-3-C, B-3-D, B-5

Stations 101+00 to 141+50

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	3.68	3.61
Runoff Depth (Q), in	7.93	7.98
Runoff Volume, acre-ft	26.39	29.24
Volume Differential, acre-ft		2.84

NOTES:

Post Development: Basin B-4

Stations 141+50 to 167+00 (180+00)

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Basin B-4				
Impervious Area	A	11.57	98	1133.86
Pervious	A	6.14	48	294.72
Pervious	D	1.66	80	132.80
Water		2.60	100	260.00
		<u>21.97</u>		<u>1821.38</u>

CN= **82.9**

WATER QUALITY	CRITERIA	AREA	TREATMENT
Wet Detention			
1" Over Total Project Area	1	21.97	1.83
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	11.57	2.41

Treatment Volume Required (ac.ft.) = **2.41**

Treatment Volume Permitted (ac.ft.) = **2.47**

Additional Treatment Required (ac.ft.) = **-0.06**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	2.51	2.06
Runoff Depth (Q), in	8.85	9.25
Runoff Volume, acre-ft	16.90	16.94
Volume Differential, acre-ft		0.04

NOTES:

1. Pond can be expanded 10 to 15-ft to the east to provide additional attenuation volume with the use of an MSE wall.

Post Development: Basin B-6-A, B-6-B, B-6-C

Stations 101+00 to 125+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Basin B-6-A</u>				
Impervious Area	A	1.22	98	119.56
Pervious	A	3.85	48	184.80
Pervious	D	0.41	80	32.80
Water		3.33	100	333.00
		<u>8.81</u>		<u>670.16</u>
<u>Basin B-6-B</u>				
Impervious Area	A	3.44	98	337.12
Pervious	A	4.24	48	203.52
Pervious	D	0.00	80	0.00
Water		0.00	100	0.00
		<u>7.68</u>		<u>540.64</u>
<u>Basin B-6-C</u>				
Impervious Area	A	2.04	98	199.92
Pervious	A	4.37	48	209.76
Pervious	D	0.00	80	0.00
Water		0.00	100	0.00
		<u>6.41</u>		<u>409.68</u>
CN=				70.8

WATER QUALITY	CRITERIA	AREA	TREATMENT
Wet Detention			
1" Over Total Project Area	1	22.90	1.91
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	6.70	1.40

Treatment Volume Required (ac.ft.) = **1.91**

Treatment Volume Permitted (ac.ft.) = **2.03**

Additional Treatment Required (ac.ft.) = **-0.12**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	3.99	4.13
Runoff Depth (Q), in	7.71	7.60
Runoff Volume, acre-ft	13.72	14.51
Volume Differential, acre-ft		0.79

NOTES:

Post Development: Basin Wyndham Palms Basin 1

Stations 198+00 - 213+00

Project: Widen Western Beltway PD&E

Date: 10/7/2021

Project No.: 104-0125-000

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Good Condition	A	14.55	39	567.45
Pavement	A	14.20	98	1391.60
Pond	A	0.85	98	83.30
		<u>29.60</u>		<u>2042.35</u>

CN=	69.0
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WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
1" Over Total Project Area	1	29.60	2.47
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	14.20	2.96

Treatment Volume=Greater of Two Values (ac.ft.)

Treatment Volume=	2.96
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TIME OF CONCENTRATION	LENGTH (FT)	VELOCITY (FT/S)	TC (MIN)
Sheet Flow	Assume 15 minutes		15.0
Ditch Flow	N/A	N/A	
Pipe Flow	N/A	N/A	

Time of Conc.=	15.0
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Post Development: Wyndham Palms Basin B-2

Stations 198+00 - 213+00

Project: Widen Western Beltway PD&E

Date: 10/7/2021

Project No.: 104-0125-000

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<i>Onsite</i>				
Open Space-Good Condition	A	3.09	39	120.51
Dreamer's Drive	A	1.10	98	107.80
Wyndham Pavement	A	1.20	98	117.60
Pond	A	0.71	98	69.58
		<u>6.10</u>		<u>415.49</u>

CN=	68.1
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WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
1" Over Total Project Area	1	6.10	0.51
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	2.30	0.48

Treatment Volume=Greater of Two Values (ac.ft.)

Treatment Volume=	0.51
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TIME OF CONCENTRATION	LENGTH (FT)	VELOCITY (FT/S)	TC (MIN)
Sheet Flow	Assume 15 minutes		15.0
Ditch Flow	N/A	N/A	
Pipe Flow	N/A	N/A	

Time of Conc.=	15.0
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Post Development: Wyndham Palms Basin B-3

Stations 198+00 - 213+00

Project: Widen Western Beltway PD&E

Date: 10/7/2021

Project No.: 104-0125-000

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Good Condition	A	3.09	39	120.51
		<u>3.09</u>		<u>120.51</u>
CN=				39.0

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
1" Over Total Project Area	1	3.09	0.26
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	0.00	0.00
Treatment Volume=Greater of Two Values (ac.ft.)			Treatment Volume= 0.26

TIME OF CONCENTRATION	LENGTH (FT)	VELOCITY (FT/S)	TC (MIN)
Sheet Flow	Assume 15 minutes		15.0
Ditch Flow	N/A	N/A	
Pipe Flow	N/A	N/A	
Time of Conc.=			15.0

Post Pre Development: Basin 2A-2

Stations 180+00 - 268+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Good Condition	A	7.59	39	296.01
	D	14.03	80	1122.40
Pavement	A	12.59	98	1233.82
	D	6.70	98	656.60
"Future" Pavement (Permitted 6-Lanes)	A	6.93	98	679.14
	D	3.82	98	374.36
New/Future 8-Lane Pavement (Req. treatment)	A	6.89	98	675.22
	D	0.00	98	0.00
Livingston Interchange Pavement	A	0.00	98	0.00
	D	0.00	98	0.00
Woods - Good Cover	D	18.04	77	1389.08
Pond	A	4.97	98	487.06
	D	6.97	98	683.06
Wyndham Palms (Triangle Offsite)				
Woods - Grass Combination Fair	A	4.67	43	200.81
Dreamer's Drive	A	0.62	98	60.76
Sandhill	A	1.10	98	107.80
Treatment Plant (Offsite)				
Woods - Grass Combination Fair	A	29.07	43	1250.01
<u>Offsite</u>				
Woods Fair	A	20.04	36	721.44
Sand Hill Road				
Pavement	A	0.98	98	96.04
Funie Steed Road				
Pavement	A	0.46	98	45.08
Oak Island Cove				
Res. 1/8 acre or less (65% Imp)	A	16.95	77	1305.15
	D	2.14	92	196.88
		<u>164.56</u>		<u>11580.72</u>
CN=				70.4

NOTES:

1. Pre vs post require the same basin area, therefore this sheet represents the permitted condition with the additional offsite area required for the new interchange.

Post Development: Basin 2A-2 (Alt 1 Preferred)

Stations 180+00 - 268+00

Project: Widen Western Beltway PD&E
Project No.: 446164-1-22-01

Date: 7/12/2022

Basin Info:

Basin Type: Open Basin
Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Good Condition	A	19.00	39	741.00
	D	14.03	80	1122.40
Pavement	A	12.59	98	1233.82
	D	6.70	98	656.60
"Future" Pavement (Permitted 6-Lanes)	A	6.93	98	679.14
	D	3.82	98	374.36
New/Future 8-Lane Pavement (Req. treatment)	A	6.89	98	675.22
	D	0.00	98	0.00
Livingston Interchange Pavement	A	4.38	98	429.24
	D	2.82	98	276.36
Woods - Good Cover	D	18.04	77	1389.08
Pond	A	13.37	98	1310.26
	D	0.00	98	0.00
Wyndham Palms (Triangle Offsite)				
Woods - Grass Combination Fair	A	4.67	43	200.81
Dreamer's Drive	A	0.62	98	60.76
Sandhill	A	1.10	98	107.80
Treatment Plant (Offsite)				
Woods - Grass Combination Fair	A	29.07	43	1250.01
Sand Hill Road				
Pavement	A	0.98	98	96.04
Funie Steed Road				
Pavement	A	0.46	98	45.08
Oak Island Cove				
Res. 1/8 acre or less (65% Imp)	A	16.95	77	1305.15
	D	2.14	92	196.88
		<u>164.56</u>		<u>12150.01</u>

CN= 73.8

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
<i>Wet Detention</i>			
1" Over Total Project Area	1	164.56	13.71
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	59.70	12.44

Treatment Volume Required (ac.ft.) = **13.71**

Treatment Volume Permitted (ac.ft.) = **11.62**

Additional Treatment Required (ac.ft.) = **2.09**

Post Development: Basin 2A-2 (Alt 1 Preferred)

Stations 180+00 - 268+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	4.21	3.54
Runoff Depth (Q), in	7.55	8.03
Runoff Volume, acre-ft	103.51	110.11
Volume Differential, acre-ft		6.60

POND SIZING

Pond Bottom / Control Elevation = 101.50 FT
 Top of bank elevation = 106.00 FT
 Area @ pond bottom / control elevation = 13.06 AC
 Area @ Top of bank = 14.32 AC

Elevation ft		Area acres	Volume acre-ft
101.50	Control Elev.	13.06	0.00
102.60	Treat. EI	13.37	14.54
106.00	Inside TOB	14.32	61.61
102.60	Treat. EI	13.37	0.00
103.20	Attenuation EI	13.54	8.07
106.00	Inside TOB	14.32	47.07

RCID CALCULATIONS (50-yr/72-hr)	MAX. ALLOWABLE DISCHARGE RATE (BASED ON 13 CFS PER SQ MI)
--	--

Precipitation, in	12.91
Area, ac	164.56
Area, sq-mi	0.26
Peak Allowable Runoff, cfs	3.34

NOTES:

1. Basin area changed due to new interchange
2. Used RCID rainfall to avoid drainage fee.
3. SHWT based on permitted elevation for existing Pond 2A-2.

Post Development: Basin 2A-2 (Alt 2)

Stations 180+00 - 268+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Good Condition	A	15.89	39	619.71
	D	14.03	80	1122.40
Pavement	A	12.59	98	1233.82
	D	6.70	98	656.60
"Future" Pavement (Permitted 6-Lanes)	A	6.93	98	679.14
	D	3.82	98	374.36
New/Future 8-Lane Pavement (Req. treatment)	A	6.89	98	675.22
	D	0.00	98	0.00
Livingston Interchange Pavement	A	4.38	98	429.24
	D	2.82	98	276.36
Woods - Good Cover	D	18.04	77	1389.08
Pond	A	16.48	98	1615.04
	D	0.00	98	0.00
Wyndham Palms (Triangle Offsite)				
Woods - Grass Combination Fair	A	4.67	43	200.81
Dreamer's Drive	A	0.62	98	60.76
Sandhill	A	1.10	98	107.80
Treatment Plant (Offsite)				
Woods - Grass Combination Fair	A	29.07	43	1250.01
Sand Hill Road				
Pavement	A	0.98	98	96.04
Funie Steed Road				
Pavement	A	0.46	98	45.08
Oak Island Cove				
Res. 1/8 acre or less (65% Imp)	A	16.95	77	1305.15
	D	2.14	92	196.88
		<u>164.56</u>		<u>12333.50</u>

CN= 74.9

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
<i>Wet Detention</i>			
1" Over Total Project Area	1	164.56	13.71
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	59.70	12.44

Treatment Volume Required (ac.ft.) = **13.71**

Treatment Volume Permitted (ac.ft.) = **11.62**

Additional Treatment Required (ac.ft.) = **2.09**

Post Development: Basin 2A-2 (Alt 2)

Stations 180+00 - 268+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	4.21	3.34
Runoff Depth (Q), in	7.55	8.18
Runoff Volume, acre-ft	103.51	112.21
Volume Differential, acre-ft		8.70

POND SIZING

Pond Bottom / Control Elevation = 101.50 FT
 Top of bank elevation = 104.00 FT
 Area @ pond bottom / control elevation = 15.54 AC
 Area @ Top of bank = 16.48 AC

Elevation ft		Area acres	Volume acre-ft
101.50	Control Elev.	15.54	0.00
102.40	Treat. El	15.88	14.14
104.00	Inside TOB	16.48	40.03
102.40	Treat. El	15.88	0.00
103.00	Attenuation El	16.10	9.59
104.00	Inside TOB	16.48	25.89

RCID CALCULATIONS (50-yr/72-hr)	MAX. ALLOWABLE DISCHARGE RATE (BASED ON 13 CFS PER SQ MI)
--	--

Precipitation, in	12.91
Area, ac	164.56
Area, sq-mi	0.26
Peak Allowable Runoff, cfs	3.34

NOTES:

1. Basin area changed due to new interchange
2. Used RCID rainfall to avoid drainage fee.
3. SHWT based on permitted elevation for existing Pond 2A-2.

Post Development: Basin 2A-2 (Alt 3)

Stations 180+00 - 268+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Good Condition	A	16.94	39	660.66
	D	14.03	80	1122.40
Pavement	A	12.59	98	1233.82
	D	6.70	98	656.60
"Future" Pavement (Permitted 6-Lanes)	A	6.93	98	679.14
	D	3.82	98	374.36
New/Future 8-Lane Pavement (Req. treatment)	A	6.89	98	675.22
	D	0.00	98	0.00
Livingston Interchange Pavement	A	4.38	98	429.24
	D	2.82	98	276.36
Woods - Good Cover	D	18.04	77	1389.08
Pond	A	15.43	98	1512.14
	D	0.00	98	0.00
Wyndham Palms (Triangle Offsite)				
Woods - Grass Combination Fair	A	4.67	43	200.81
Dreamer's Drive	A	0.62	98	60.76
Sandhill	A	1.10	98	107.80
Treatment Plant (Offsite)				
Woods - Grass Combination Fair	A	29.07	43	1250.01
Sand Hill Road				
Pavement	A	0.98	98	96.04
Funie Steed Road				
Pavement	A	0.46	98	45.08
Oak Island Cove				
Res. 1/8 acre or less (65% Imp)	A	16.95	77	1305.15
	D	2.14	92	196.88
		<u>164.56</u>		<u>12271.55</u>

CN=	74.6
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WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
<i>Wet Detention</i>			
1" Over Total Project Area	1	164.56	13.71
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	59.70	12.44

Treatment Volume Required (ac.ft.) =

13.71

Treatment Volume Permitted (ac.ft.) =

11.62

Additional Treatment Required (ac.ft.) =

2.09

Post Development: Basin 2A-2 (Alt 3)

Stations 180+00 - 268+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
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Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	4.21	3.41
Runoff Depth (Q), in	7.55	8.13
Runoff Volume, acre-ft	103.51	111.51
Volume Differential, acre-ft		7.99

POND SIZING

Pond Bottom / Control Elevation =	101.50 FT
Top of bank elevation =	104.00 FT
Area @ pond bottom / control elevation =	14.60 AC
Area @ Top of bank =	15.43 AC

Elevation ft		Area acres	Volume acre-ft
101.50	Control Elev.	14.60	0.00
102.50	Treat. EI	14.93	14.77
104.00	Inside TOB	15.43	37.54
102.50	Treat. EI	14.93	0.00
103.05	Attenuation EI	15.11	8.26
104.05	Inside TOB	15.43	23.53

RCID CALCULATIONS (50-yr/72-hr)	MAX. ALLOWABLE DISCHARGE RATE (BASED ON 13 CFS PER SQ MI)
---------------------------------	--

Precipitation, in	12.91
Area, ac	164.56
Area, sq-mi	0.26
Peak Allowable Runoff, cfs	3.34

NOTES:

1. Basin area changed due to new interchange
2. Used RCID rainfall to avoid drainage fee.
3. SHWT based on permitted elevation for existing Pond 2A-2.

Post Development: Basin 2A-3

Stations 268+00 - 320+50

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Open Space-Good Condition	A	21.03	39	820.17
Pavement	A	12.91	98	1265.18
	D	1.40	98	137.20
"Future" Pavement (Permitted 6-Lanes)	A	5.91	98	579.18
	D	0.73	98	71.54
New/Future 8-Lane Pavement (Req. treatment)	A	1.18	98	115.64
	D	0.00	98	0.00
Pond	A	4.71	98	461.58
<u>Offsite</u>				
Woods	A	0.00	36	0.00
SR 530/US 192				
Pavement	A	1.20	98	117.60
New Pavement	A	0.00	98	0.00
Open Space-Good Condition	A	0.91	39	35.49
		<u>49.98</u>		<u>3603.58</u>
CN=				72.1

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
<i>Wet Detention</i>			
1" Over Total Project Area	1	49.98	4.17
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	23.33	4.86

Treatment Volume Required (ac.ft.) = **4.86**

Treatment Volume Permitted (ac.ft.) = **5.43**

Additional Treatment Required (ac.ft.) = **-0.57**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	5.66	3.87
Runoff Depth (Q), in	6.62	7.79
Runoff Volume, acre-ft	34.36	32.44
Volume Differential, acre-ft		-1.91

NOTES:

1. Reduction in basin area is a result of Rolling Oak commercial property no longer discharging to FTE R/W.

Post Development: Basin 2B-1

Stations 320+50 - 1359+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Good Condition	A	4.04	39	157.56
	C	5.87	74	434.38
	D	3.38	80	270.40
Pavement	A	2.94	98	288.12
	C	7.36	98	721.28
	D	3.79	98	371.42
"Future" Pavement (Permitted 6-Lanes)	A	2.73	98	267.54
	C	1.47	98	144.06
	D	2.28	98	223.44
New/Future 8-Lane Pavement (Req. treatment)	A	0.00	98	0.00
	C	0.00	98	0.00
	D	0.00	98	0.00
Pond	A	3.50	98	343.00
	C	5.07	98	496.86
	D	2.92	98	286.16
SR 530/US 192				
Pavement	A	1.74	98	170.52
Open Space-Good Condition	A	1.75	39	68.25
		<u>48.84</u>		<u>4242.99</u>
CN=				86.9

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
<i>Wet Detention</i>			
1" Over Total Project Area	1	48.84	4.07
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	22.31	4.65

Treatment Volume Required (ac.ft.) = **4.65**

Treatment Volume Permitted (ac.ft.) = **4.81**

Additional Treatment Required (ac.ft.) = **-0.16**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	1.51	1.51
Runoff Depth (Q), in	9.77	9.77
Runoff Volume, acre-ft	39.76	39.76
Volume Differential, acre-ft	0.00	

NOTES:

Post Development: Basin 2B-2

Stations 1359+00 - 414+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Good Condition	C	10.04	74	742.96
	D	1.31	80	104.80
Toll Facility Pavement	D	0.86	98	84.28
	C	5.83	98	571.34
"Future" Pavement (Permitted 6-Lanes)	D	4.40	98	431.20
	C	2.28	98	223.44
New/Future 8-Lane Pavement (Req. treatment)	D	1.09	98	106.82
	C	-6.56	98	-642.88
Pond	D	0.00	98	0.00
	C	1.78	98	174.44
	D	0.79	98	77.42
Section 3 (Sta. 400+00 - 414+00)				
Pavement	C	1.28	98	125.44
	D	2.24	98	219.52
"Future" Pavement (Permitted 6-Lanes)	C	0.65	98	63.70
	D	1.15	98	112.70
New/Future 8-Lane Pavement (Req. treatment)	C	-0.57	98	-55.86
	D	0.00	98	0.00
		<u>26.57</u>		<u>2339.32</u>
CN=				88.0

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
<i>Wet Detention</i>			
1" Over Total Project Area	1	26.57	2.21
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	12.65	2.64

Treatment Volume Required (ac.ft.) = **2.64**

Treatment Volume Permitted (ac.ft.) = **4.25**

Additional Treatment Required (ac.ft.) = **-1.61**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	0.58	1.36
Runoff Depth (Q), in	10.73	9.92
Runoff Volume, acre-ft	23.75	21.96
Volume Differential, acre-ft		-1.79

NOTES:

1. Assumes the removal of the toll lanes. Assumed toll building and parking lot to remain.

Post Development: Basin 10

Stations 414+00 - 445+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	8.05	49	394.45
Pavement (Permitted)	A	8.40	98	823.20
New Pavement (Req. Treatment)	A	0.15	98	14.70
Pond	A	4.50	100	450.00
Offsite				
Woods (grove)-Poor	A	0.00	57	0.00
		<u>21.10</u>		<u>1682.35</u>
CN=				79.7

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	21.10	0.88
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	8.55	0.89

Treatment Volume Required (ac.ft.) = **0.89**

Treatment Volume Permitted (ac.ft.) = **1.60**

Additional Treatment Required (ac.ft.) = **-0.71**

NOTES:

- Reduction in basin area is a result of Flamingo East Village Apartments being treated prior to entering FTE R/W.
- Apartment exfiltration system discharges into FTE Pond 10.

Post Development: Basin 10

Stations 414+00 - 445+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	8.05	49	394.45
Pavement (Permitted)	A	8.40	98	823.20
New Pavement (Req. Treatment)	A	0.15	98	14.70
Pond	A	4.50	100	450.00
Offsite				
Woods (grove)-Poor	A	14.80	57	843.60
		<u>35.90</u>		<u>2525.95</u>
			CN=	70.4

WATER QUANTITY (100-yr/240-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	15.80	15.80
Potential Maximum Retention (S)	4.25	4.21
Runoff Depth (Q), in	11.64	11.67
Runoff Volume, acre-ft	34.82	34.91
Volume Differential, acre-ft		0.10

NOTES:

1. Apartment exfiltration system discharges into FTE Pond 10.

Post Development: Basin 11A

Stations 435+00 - 455+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	5.82	49	285.18
	C	0.20	79	15.80
Pavement (Permitted)	A	6.20	98	607.60
New Pavement (Req. Treatment)	A	0.98	98	96.04
Pond	A	4.90	100	490.00
		<u>18.10</u>		<u>1494.62</u>
CN=				82.6

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	18.10	0.75
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	7.18	0.75

Treatment Volume Required (ac.ft.) = **0.75**

Treatment Volume Permitted (ac.ft.) = **12.54**

Additional Treatment Required (ac.ft.) = **-11.79**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	2.29	2.11
Runoff Depth (Q), in	9.05	9.21
Runoff Volume, acre-ft	13.04	13.89
Volume Differential, acre-ft	0.85	

NOTES:

1. Increase in basin area associated with outside NB widening associated with 8-lanes.

Post Development: Basin 11B

Stations 455+00 - 490+00

Project: Widen Western Beltway PD&E
 Project No.: 446164-1-22-01

Date: 7/12/2022

Basin Info:

Basin Type: Open Basin
 Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	5.76	49	282.24
	C	0.70	79	55.30
	D	0.40	84	33.60
Pavement (Permitted)	A	7.60	98	744.80
New Pavement (Req. Treatment)	A	1.36	98	133.28
Pond	A	2.20	100	220.00
		<u>18.02</u>		<u>1469.22</u>

CN= **81.5**

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	18.02	0.75
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	8.96	0.93

Treatment Volume Required (ac.ft.) = **0.93**

Treatment Volume Permitted (ac.ft.) = **0.69**

Additional Treatment Required (ac.ft.) = **0.24**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	2.51	2.27
Runoff Depth (Q), in	8.86	9.07
Runoff Volume, acre-ft	12.40	13.62
Volume Differential, acre-ft		1.22

NOTES:

1. Increase in basin area is a result of ramp and side road improvements.

Post Development: Basin 11C

Stations 438+00 - 457+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	3.58	49	175.42
	C	2.90	79	229.10
Pavement (Permitted)	A	3.90	98	382.20
New Pavement (Req. Treatment)	A	0.01	98	0.98
Pond	A	1.60	100	160.00
		<u>11.99</u>		<u>947.70</u>

CN= 79.0

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	11.99	0.50
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	3.91	0.41

Treatment Volume Required (ac.ft.) = 0.50

Treatment Volume Permitted (ac.ft.) = 0.54

Additional Treatment Required (ac.ft.) = -0.04

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	3.19	2.65
Runoff Depth (Q), in	8.31	8.74
Runoff Volume, acre-ft	9.27	8.73
Volume Differential, acre-ft		-0.54

NOTES:

Post Development: Basin 11D

Stations 457+00 - 474+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	7.00	49	343.00
	C	0.20	79	15.80
Pavement (Permitted)	A	6.20	98	607.60
New Pavement (Req. Treatment)	A	0.00	98	0.00
Pond	A	2.50	100	250.00
		<u>15.90</u>		<u>1216.40</u>
		CN=		76.5

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	15.90	0.66
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	6.20	0.65

Treatment Volume Required (ac.ft.) = **0.66**

Treatment Volume Permitted (ac.ft.) = **0.81**

Additional Treatment Required (ac.ft.) = **-0.15**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	3.16	3.07
Runoff Depth (Q), in	8.33	8.40
Runoff Volume, acre-ft	11.24	11.12
Volume Differential, acre-ft	-0.12	

NOTES:

1. Adjusted basin for 8-lane widening and side road improvements.

Post Development: Basin 12

Stations 474+00 - 490+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	4.01	49	196.49
	C	1.20	79	94.80
Woods (grove)-Fair	A	0.00	43	0.00
Pavement (Permitted)	A	6.70	98	656.60
New Pavement (Req. Treatment)	A	0.34	98	33.32
Pond	A	1.80	100	180.00
		<u>14.05</u>		<u>1161.21</u>

CN= 82.6

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
<i>Wet Detention</i>			
1" Over Total Project Area	1	14.05	1.17
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	7.04	1.47

Treatment Volume Required (ac.ft.) = **1.47**

Treatment Volume Permitted (ac.ft.) = **1.80**

Additional Treatment Required (ac.ft.) = **-0.33**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	4.23	2.10
Runoff Depth (Q), in	7.54	9.22
Runoff Volume, acre-ft	12.62	10.79
Volume Differential, acre-ft		-1.83

NOTES:

1. Reduction in basin size due to Walt Disney World Master site development. See permit 48-00714-S

Post Development: Basin 13 & 13A

Stations 490+00 - 574+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin
Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Basin 13A				
<u>Onsite</u>				
Open Space-Fair Condition	A	24.07	49	1179.43
	B	0.50	69	34.50
	C	0.30	79	23.70
Pavement (Permitted)	A	25.80	98	2528.40
New Pavement (Req. Treatment)	A	2.63	98	257.74
<u>Offsite</u>				
Tree Farm-Poor Condition	A	9.50	57	541.50
		<u>62.80</u>		<u>4565.27</u>
CN=				72.7

Basin 13

<u>Onsite</u>				
Open Space-Fair Condition	A	1.50	49	73.50
	C	1.30	79	102.70
Pond	A	6.20	100	620.00
		<u>9.00</u>		<u>796.20</u>
CN=				88.5

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	71.80	5.98
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	28.43	5.92

Treatment Volume Required (ac.ft.) = **5.98**

Treatment Volume Permitted (ac.ft.) = **6.10**

Additional Treatment Required (ac.ft.) = **-0.12**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	4.16	3.76
Runoff Depth (Q), in	7.59	7.87
Runoff Volume, acre-ft	45.39	47.10
Volume Differential, acre-ft		1.71

NOTES:

Post Development: Basin 14A

Stations 530+00 - 585+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	15.00	49	735.00
Pavement (Permitted)	A	4.10	98	401.80
New Pavement (Req. Treatment)	A	0.00	98	0.00
Pond	A	1.90	100	190.00
		<u>21.00</u>		<u>1326.80</u>

CN= 63.2

Compensatory Treatment

(Hartzog Road)

Pavement

A 0.80 98 78.40

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	21.00	0.88
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	4.90	0.51

Treatment Volume Required (ac.ft.) = **0.88**

Treatment Volume Permitted (ac.ft.) = **1.03**

Additional Treatment Required (ac.ft.) = **-0.16**

NOTES:

1. No change

Post Development: Basin 14B

Stations 587+00 - 590+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Woods (Poor)	A	5.90	45	265.50
Pavement (Permitted)	A	1.10	98	107.80
New Pavement (Req. Treatment)	A	0.00	98	0.00
Pond	A	1.00	100	100.00
		<u>8.00</u>		<u>473.30</u>

CN= 59.2

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	8.00	0.33
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	1.10	0.11

Treatment Volume Required (ac.ft.) = **0.33**

Treatment Volume Permitted (ac.ft.) = **0.44**

Additional Treatment Required (ac.ft.) = **-0.11**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	6.90	6.90
Runoff Depth (Q), in	5.93	5.93
Runoff Volume, acre-ft	3.95	3.95
Volume Differential, acre-ft	0.00	

NOTES:

1. No change is anticipated in this basin.

Post Development: Basin 14C

Stations 574+00 - 595+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	7.46	49	365.54
Pavement (Permitted)	A	7.70	98	754.60
New Pavement (Req. Treatment)	A	0.24	98	23.52
Pond	A	1.40	100	140.00
		<u>16.80</u>		<u>1283.66</u>

CN= 76.4

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	16.80	0.70
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	7.94	0.83

Treatment Volume Required (ac.ft.) = **0.83**

Treatment Volume Permitted (ac.ft.) = **0.80**

Additional Treatment Required (ac.ft.) = **0.03**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	3.21	3.09
Runoff Depth (Q), in	8.29	8.38
Runoff Volume, acre-ft	11.60	11.74
Volume Differential, acre-ft		0.14

NOTES:

Post Development: Basin 15A

Stations 595+00 - 618+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Basin 15A				
<u>Onsite</u>				
Open Space-Fair Condition	A	7.67	49	375.83
Pavement (Permitted)	A	5.20	98	509.60
New Pavement (Req. Treatment)	A	0.54	30	16.20
Pond	A	5.10	100	510.00
<u>Offsite</u>				
Grove-Good Condition	A	0.00	32	0.00
Meadow	A	0.00	30	0.00
		<u>18.51</u>		<u>1411.63</u>
CN=				76.3

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	18.51	0.77
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	5.74	0.60
Treatment Volume Required (ac.ft.) =			0.77
Treatment Volume Permitted (ac.ft.) =			1.57
Additional Treatment Required (ac.ft.) =			-0.80

WATER QUANTITY (100-yr/240-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	15.80	15.80
Potential Maximum Retention (S)	8.53	3.11
Runoff Depth (Q), in	8.78	12.59
Runoff Volume, acre-ft	27.37	19.43
Volume Differential, acre-ft	-7.94	

NOTES:

- Basin 15F and Offsite have been removed due to the construction of Horizon High School, Permit No. 48-101923-P
- It appears new roadway pavement was added which discharges to Pond 15A as part of the Horizon High School project, however there was no mention of impacts or calculations for Pond 15A presented in the permit.

Post Development: Basin 15B

Stations 595+00 - 618+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	5.70	49	279.30
Open Space-Fair Condition	C	1.30	79	102.70
Open Space-Fair Condition	D	0.40	84	33.60
Pavement (Permitted)	A	8.00	98	784.00
New Pavement (Req. Treatment)	A	0.00	98	0.00
Pond	A	3.00	100	300.00
		<u>18.40</u>		<u>1499.60</u>

CN= 81.5

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	18.40	0.77
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	8.00	0.83

Treatment Volume Required (ac.ft.) = **0.83**

Treatment Volume Permitted (ac.ft.) = **1.68**

Additional Treatment Required (ac.ft.) = **-0.85**

WATER QUANTITY (100-yr/240-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	15.80	15.80
Potential Maximum Retention (S)	5.63	2.27
Runoff Depth (Q), in	10.60	13.37
Runoff Volume, acre-ft	27.12	20.50
Volume Differential, acre-ft		-6.62

NOTES:

1. Offsite has been removed due to the construction of Horizon High School, Permit No. 48-101923-P
2. It appears new roadway pavement was added which discharges to Pond 15B as part of the Horizon High School project, however there was no mention of impacts or calculations for Pond 15B presented in the permit.

Post Development: Basin 15C

Stations 595+00 - 618+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	1.16	49	56.84
Open Space-Fair Condition	C	0.70	79	55.30
Open Space-Fair Condition	D	0.40	84	33.60
Pavement (Permitted)	A	0.40	98	39.20
New Pavement (Req. Treatment)	A	0.34	98	33.32
Pond	A	0.50	100	50.00
		<u>3.50</u>		<u>268.26</u>

CN= 76.6

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	3.50	0.15
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	0.74	0.08

Treatment Volume Required (ac.ft.) = 0.15

Treatment Volume Permitted (ac.ft.) = 0.32

Additional Treatment Required (ac.ft.) = -0.17

WATER QUANTITY (100-yr/240-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	15.80	15.80
Potential Maximum Retention (S)	3.91	3.05
Runoff Depth (Q), in	11.91	12.65
Runoff Volume, acre-ft	3.48	3.69
Volume Differential, acre-ft	0.22	

NOTES:

Post Development: Basin 15D

Stations 595+00 - 618+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	3.36	49	164.64
Open Space-Fair Condition	C	1.10	79	86.90
Open Space-Fair Condition	D	0.20	84	16.80
Pavement (Permitted)	A	1.70	98	166.60
New Pavement (Req. Treatment)	A	0.04	98	3.92
Pond	A	0.20	100	20.00
Offsite				
Meadow	A	3.70	30	111.00
		<u>10.30</u>		<u>569.86</u>
CN=				55.3

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	10.30	0.43
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	1.74	0.18

Treatment Volume Required (ac.ft.) = **0.43**

Treatment Volume Permitted (ac.ft.) = **0.18**

Additional Treatment Required (ac.ft.) = **0.25**

WATER QUANTITY (100-yr/240-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	15.80	15.80
Potential Maximum Retention (S)	8.14	8.07
Runoff Depth (Q), in	9.00	9.04
Runoff Volume, acre-ft	7.73	7.76
Volume Differential, acre-ft		0.03

NOTES:

Post Development: Basin 15E

Stations 595+00 - 618+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Closed Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	6.80	49	333.20
Pavement (Permitted)	A	7.10	98	695.80
New Pavement (Req. Treatment)	A	0.00	98	0.00
Pond	A	1.80	100	180.00
		<u>15.70</u>		<u>1209.00</u>

CN=	77.0
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WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Dry Retention			
50% of 1" Over Total Project Area	1	15.70	0.65
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	7.10	0.74

Treatment Volume Required (ac.ft.) =

0.74

Treatment Volume Permitted (ac.ft.) =

0.80

Additional Treatment Required (ac.ft.) =

-0.06

WATER QUANTITY (100-yr/240-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	15.80	15.80
Potential Maximum Retention (S)	3.90	2.99
Runoff Depth (Q), in	11.92	12.71
Runoff Volume, acre-ft	17.58	16.63
Volume Differential, acre-ft		-0.96

NOTES:

1. Basin Offsite removed due to WaterLeigh improvements, see Permit No. 48-02575-P
2. The permitted 7.10-acres of impervious is greater than the proposed pavement of 5.48-acres.

Post Development: Basin 1

Stations 1622+18.86 - 602+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	8.88	39	346.32
Pavement (Permitted)	A	8.44	98	827.12
New Pavement (Req. Treatment)	A	0.00	98	0.00
Pond	A	1.72	39	67.08
		<u>19.04</u>		<u>1240.52</u>

CN= 65.2

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
50% of 1" Over Total Project Area	1	19.04	0.79
50% of 2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	8.44	0.88

Treatment Volume Required (ac.ft.) = **0.88**

Treatment Volume Permitted (ac.ft.) = **1.06**

Additional Treatment Required (ac.ft.) = **-0.18**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	5.96	5.35
Runoff Depth (Q), in	6.45	6.81
Runoff Volume, acre-ft	11.30	10.80
Volume Differential, acre-ft		-0.50

NOTES:

1. Permitted pavement is greater than or equal to proposed pavement. Therefore, no "New Pavement".
2. Adjusted basin boundary to remove offsite area which no longer discharges into FTE R/W.

Post Development: Basin 2
Stations 602+00 - 641+83.82

Project: Widen Western Beltway PD&E
Project No.: 446164-1-22-01

Date: 7/12/2022

Basin Info:

Basin Type: Open Basin
Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Fair Condition	A	8.53	39	332.67
Pavement (Permitted)	A	12.01	98	1176.98
New Pavement (Req. Treatment)	A	0.00	98	0.00
Pond	A	2.61	100	261.00
		<u>23.15</u>		<u>1770.65</u>

CN= 76.5

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	23.15	1.93
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	12.01	2.50

Treatment Volume Required (ac.ft.) = **2.50**

Treatment Volume Permitted (ac.ft.) = **2.50**

Additional Treatment Required (ac.ft.) = **0.00**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	3.07	3.07
Runoff Depth (Q), in	8.39	8.39
Runoff Volume, acre-ft	16.19	16.19
Volume Differential, acre-ft		0.00

NOTES:

1. Permitted pavement is greater than or equal to proposed pavement. Therefore, no "New Pavement".

Post Development: Basin FGB - Alt 3

Project: Widen Western Beltway PD&E
Project No.: 446164-1-22-01

Date: 7/12/2022

Basin Info:

Basin Type: Open Basin
 Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>Onsite</u>				
Woods - Grass Combination Fair	A	3.72	43	159.96
Pavement	A	3.31	98	324.38
Pond	A	2.00	100	200.00
<u>Offsite</u>				
Woods - Grass Combination Fair	A	9.43	43	405.49
		<u>18.46</u>		<u>1089.83</u>
CN=				59.0

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	18.46	1.54
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	3.31	0.69

Treatment Volume Required (ac.ft.) = 1.54

Treatment Volume Permitted (ac.ft.) = 0.00

Additional Treatment Required (ac.ft.) = 1.54

Post Development: Basin FGB - Alt 3

Project: Widen Western Beltway PD&E
Project No.: 446164-1-22-01

Date: 7/12/2022

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
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Precipitation, in	11.40	11.40
Potential Maximum Retention (S)	13.26	6.94
Runoff Depth (Q), in	3.48	5.91
Runoff Volume, acre-ft	5.35	9.10
Volume Differential, acre-ft		3.75

POND SIZING

Pond Bottom / Control Elevation = 108.00 FT
 Top of bank elevation = 112.00 FT
 Area @ pond bottom / control elevation = 2.00 AC
 Area @ Top of bank = 2.16 AC

Elevation ft		Area acres	Volume acre-ft
108.00	Control Elev.	2.00	0.00
109.00	Treat. El	2.04	2.02
112.00	Inside TOB	2.16	8.32
109.00	Treat. El	2.04	0.00
111.00	Attenuation El	2.12	4.16
112.00	Inside TOB	2.16	6.30

REEDY CREEK CALCULATIONS (50-yr/72-hr)
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Precipitation, in	12.91	12.91
Area, ac		18.46
Area, sq-mi		0.03
Peak Allowable Runoff, cfs		0.37

NOTES:

1. Basin area changed due to new interchange

Post Development: SR 530 Basin A

Stations 12+83 - 27+60

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>SR 530/US 192</u>				
Open Space-Good Condition	D	8.34	79	658.57
Pavement	A	11.57	98	1133.63
Pond	D	1.37	100	136.65
	D	0.93	79	73.40
		<u>22.20</u>		<u>2002.24</u>

CN= 90.2

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
<i>Wet Detention</i>			
1" Over Total Project Area	1	22.20	1.85
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	11.57	2.41

Treatment Volume Required (ac.ft.) = **2.41**

Treatment Volume Permitted (ac.ft.) = **2.16**

Additional Treatment Required (ac.ft.) = **0.25**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	13.40	13.40
Potential Maximum Retention (S)	1.28	1.09
Runoff Depth (Q), in	11.98	12.18
Runoff Volume, acre-ft	22.16	22.53
Volume Differential, acre-ft		0.37

Post Development: SR 530 Basin A

Stations 12+83 - 27+60

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

POND SIZING

NGVD-29

Pond Bottom / Control Elevation = 103.00 FT
Top of bank elevation = 105.00 FT
Area @ pond bottom / control elevation = 1.37 AC
Area @ Top of bank = 1.62 AC

Elevation ft		Area acres	Volume acre-ft
103.00	Control Elev.	1.37	0.00
104.50	Treat. EI	1.56	2.19
105.00	Inside TOB	1.62	2.99

NOTES:

1. Elevations left in NGVD-29 for clarity in demonstrating the existing permitted conditions

Post Development: SR 530 Basin C

Stations 31+70 - 55+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

Basin Info:

Basin Type: Open Basin

Discharges to Impaired Waterbody: No

LAND USE	SCS CLASS	AREA (AC)	CN	PRODUCT
<u>SR 530/US 192</u>				
Pavement	D	10.37	98	1016.35
Pond	D	1.85	98	180.99
Grassed Area - Fair	A	7.18	49	351.85
	D	1.11	84	93.40
Pavement	D	3.11	98	304.39
Off-site Impervious	D	1.09	98	106.55
Grassed Area - Fair	D	3.61	84	303.04
Pavement	D	5.53	98	541.95
Off-site Impervious	D	1.04	98	101.46
Grassed Area - Fair	A	3.04	49	148.93
		<u>37.92</u>		<u>3148.92</u>

CN= 83.0

WATER QUALITY	CRITERIA (IN)	AREA (AC)	TREATMENT (AC.FT.)
Wet Detention			
1" Over Total Project Area	1	37.92	3.16
2.5" Over Project Impervious Areas (Exclude Ponds)	2.5	21.13	4.40

Treatment Volume Required (ac.ft.) = **4.40**

Treatment Volume Permitted (ac.ft.) = **4.18**

Additional Treatment Required (ac.ft.) = **0.22**

WATER QUANTITY (50-yr/72-hr)	PRE-DEVELOPMENT	POST DEVELOPMENT
Precipitation, in	13.40	13.40
Potential Maximum Retention (S)	2.25	2.04
Runoff Depth (Q), in	11.04	11.23
Runoff Volume, acre-ft	34.87	35.48
Volume Differential, acre-ft		0.61

Post Development: SR 530 Basin C

Stations 31+70 - 55+00

Project: Widen Western Beltway PD&E

Date: 7/12/2022

Project No.: 446164-1-22-01

POND SIZING

NGVD-29

Pond Bottom / Control Elevation = 100.00 FT
Top of bank elevation = 105.00 FT
Area @ pond bottom / control elevation = 1.85 AC
Area @ Top of bank = 2.47 AC

Elevation ft		Area acres	Volume acre-ft
100.00	Control Elev.	1.85	0.00
102.30	Treat. EI	2.13	4.58
105.00	Inside TOB	2.47	10.79

NOTES:

1. Elevations left in NGVD-29 for clarity in demonstrating the existing permitted conditions



NOAA Atlas 14, Volume 9, Version 2
Location name: Kissimmee, Florida, USA*
Latitude: 28.3481°, Longitude: -81.6148°
Elevation: 106.75 ft**

* source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.480 (0.392-0.581)	0.546 (0.445-0.662)	0.650 (0.527-0.789)	0.731 (0.590-0.893)	0.837 (0.649-1.05)	0.913 (0.693-1.17)	0.984 (0.722-1.30)	1.05 (0.740-1.44)	1.14 (0.767-1.61)	1.19 (0.788-1.74)
10-min	0.703 (0.573-0.851)	0.800 (0.652-0.969)	0.951 (0.772-1.16)	1.07 (0.864-1.31)	1.23 (0.950-1.54)	1.34 (1.01-1.71)	1.44 (1.06-1.90)	1.54 (1.08-2.11)	1.66 (1.12-2.35)	1.75 (1.16-2.54)
15-min	0.857 (0.699-1.04)	0.975 (0.795-1.18)	1.16 (0.942-1.41)	1.31 (1.05-1.60)	1.49 (1.16-1.88)	1.63 (1.24-2.09)	1.76 (1.29-2.32)	1.88 (1.32-2.57)	2.03 (1.37-2.87)	2.13 (1.41-3.10)
30-min	1.38 (1.13-1.67)	1.57 (1.27-1.90)	1.86 (1.51-2.26)	2.08 (1.68-2.55)	2.38 (1.84-2.99)	2.59 (1.97-3.32)	2.79 (2.05-3.69)	2.98 (2.10-4.08)	3.21 (2.17-4.55)	3.37 (2.23-4.90)
60-min	1.82 (1.48-2.20)	2.07 (1.69-2.51)	2.48 (2.01-3.01)	2.79 (2.26-3.42)	3.21 (2.49-4.03)	3.51 (2.66-4.49)	3.79 (2.78-5.01)	4.06 (2.85-5.55)	4.39 (2.96-6.21)	4.61 (3.05-6.71)
2-hr	2.25 (1.85-2.71)	2.58 (2.12-3.11)	3.10 (2.54-3.74)	3.51 (2.85-4.26)	4.04 (3.15-5.04)	4.42 (3.38-5.63)	4.79 (3.53-6.28)	5.13 (3.63-6.97)	5.56 (3.78-7.82)	5.86 (3.90-8.46)
3-hr	2.45 (2.02-2.93)	2.81 (2.32-3.37)	3.40 (2.79-4.09)	3.87 (3.16-4.68)	4.50 (3.53-5.61)	4.96 (3.82-6.31)	5.41 (4.02-7.10)	5.86 (4.17-7.95)	6.42 (4.39-9.02)	6.83 (4.56-9.84)
6-hr	2.81 (2.34-3.34)	3.22 (2.68-3.83)	3.91 (3.24-4.67)	4.50 (3.71-5.40)	5.34 (4.26-6.70)	6.02 (4.69-7.68)	6.72 (5.05-8.83)	7.45 (5.36-10.1)	8.45 (5.84-11.9)	9.23 (6.20-13.2)
12-hr	3.26 (2.74-3.85)	3.68 (3.09-4.35)	4.46 (3.73-5.29)	5.20 (4.32-6.20)	6.34 (5.15-8.02)	7.33 (5.79-9.39)	8.41 (6.40-11.1)	9.60 (6.99-13.1)	11.3 (7.91-15.9)	12.7 (8.60-18.1)
24-hr	3.75 (3.18-4.40)	4.22 (3.57-4.95)	5.14 (4.33-6.06)	6.06 (5.08-7.18)	7.57 (6.24-9.60)	8.91 (7.12-11.4)	10.4 (8.01-13.7)	12.1 (8.90-16.5)	14.6 (10.3-20.5)	16.7 (11.3-23.5)
2-day	4.29 (3.66-5.00)	4.86 (4.14-5.67)	5.99 (5.09-7.01)	7.12 (6.01-8.38)	8.96 (7.45-11.3)	10.6 (8.54-13.5)	12.4 (9.65-16.3)	14.5 (10.8-19.6)	17.6 (12.5-24.5)	20.1 (13.8-28.2)
3-day	4.72 (4.04-5.47)	5.32 (4.56-6.18)	6.53 (5.57-7.61)	7.73 (6.56-9.06)	9.68 (8.08-12.1)	11.4 (9.23-14.5)	13.4 (10.4-17.4)	15.5 (11.6-20.9)	18.7 (13.4-26.0)	21.4 (14.7-29.9)
4-day	5.10 (4.39-5.91)	5.72 (4.92-6.63)	6.95 (5.95-8.08)	8.17 (6.95-9.55)	10.1 (8.49-12.7)	11.9 (9.66-15.1)	13.9 (10.8-18.1)	16.1 (12.0-21.6)	19.3 (13.8-26.8)	22.0 (15.2-30.7)

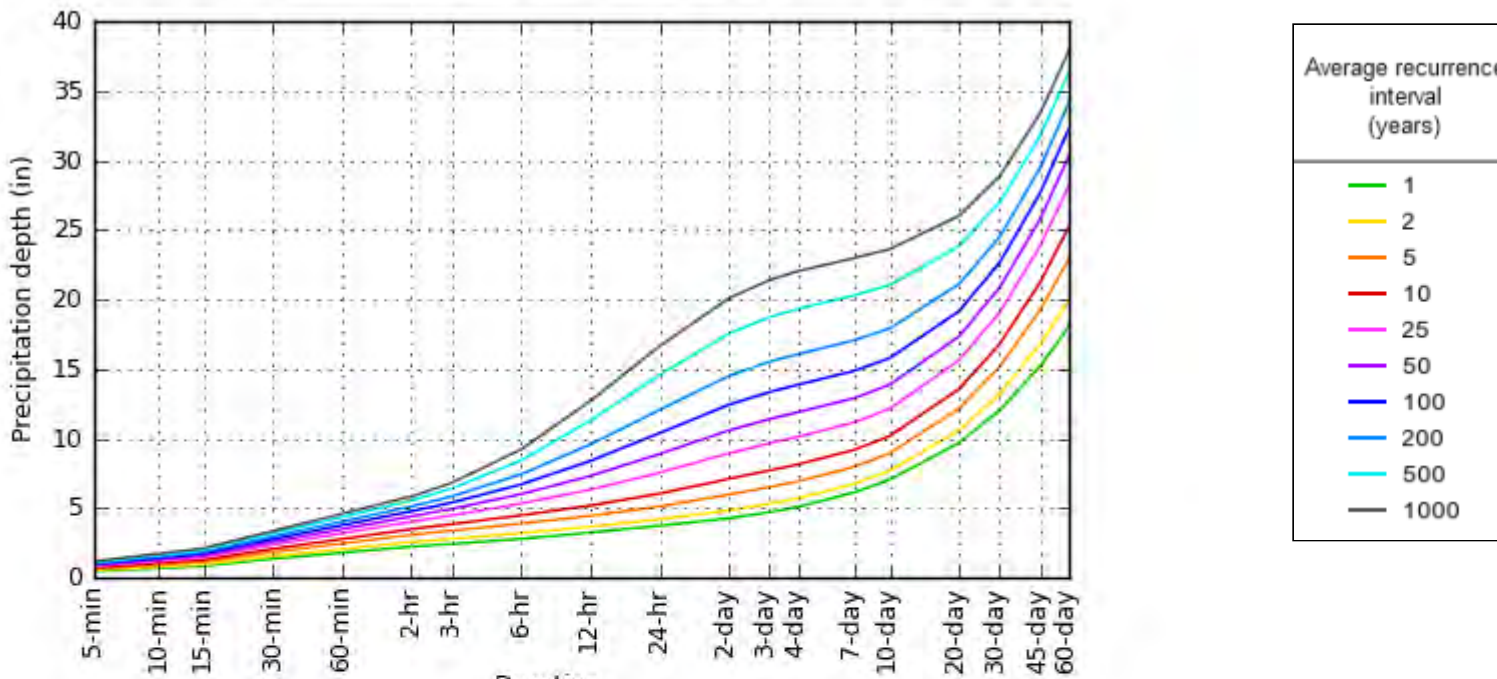
7-day	6.14 (5.32-7.07)	6.76 (5.85-7.79)	7.98 (6.88-9.23)	9.20 (7.88-10.7)	11.2 (9.40-13.8)	12.9 (10.5-16.2)	14.9 (11.7-19.2)	17.1 (12.8-22.8)	20.3 (14.6-27.9)	23.0 (15.9-31.8)
10-day	7.06 (6.15-8.10)	7.71 (6.70-8.85)	8.97 (7.77-10.3)	10.2 (8.78-11.8)	12.2 (10.2-14.9)	13.9 (11.4-17.3)	15.8 (12.4-20.3)	17.9 (13.5-23.8)	21.0 (15.2-28.8)	23.6 (16.4-32.6)
20-day	9.71 (8.52-11.1)	10.6 (9.30-12.1)	12.2 (10.6-13.9)	13.6 (11.8-15.6)	15.6 (13.2-18.8)	17.4 (14.2-21.2)	19.2 (15.1-24.2)	21.1 (15.9-27.5)	23.8 (17.2-32.2)	26.0 (18.2-35.7)
30-day	12.1 (10.6-13.7)	13.2 (11.7-15.0)	15.2 (13.3-17.3)	16.8 (14.7-19.2)	19.1 (16.1-22.7)	20.9 (17.1-25.2)	22.6 (17.9-28.3)	24.5 (18.5-31.6)	27.0 (19.5-36.1)	28.9 (20.3-39.4)
45-day	15.2 (13.5-17.2)	16.8 (14.9-19.0)	19.2 (17.0-21.8)	21.2 (18.6-24.2)	23.8 (20.1-28.0)	25.8 (21.2-30.9)	27.6 (21.9-34.2)	29.5 (22.3-37.7)	31.7 (23.0-42.1)	33.4 (23.6-45.4)
60-day	18.0 (16.1-20.3)	20.0 (17.7-22.5)	22.9 (20.3-25.9)	25.2 (22.2-28.7)	28.2 (23.8-32.9)	30.3 (25.0-36.1)	32.3 (25.6-39.7)	34.1 (25.9-43.5)	36.4 (26.4-48.0)	37.9 (26.8-51.4)

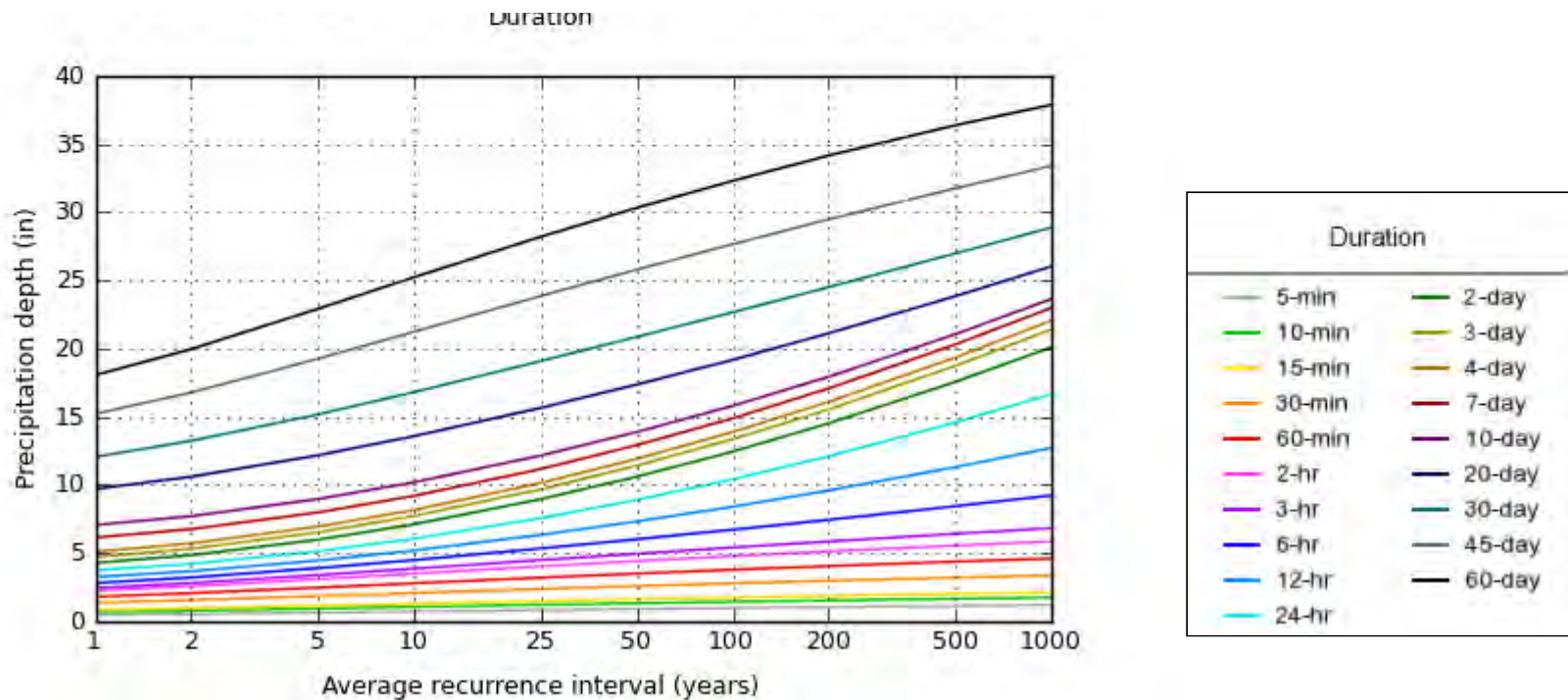
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 28.3481°, Longitude: -81.6148°





NOAA Atlas 14, Volume 9, Version 2

Created (GMT): Fri Nov 19 16:05:35 2021

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Maps & aerials

Small scale terrain



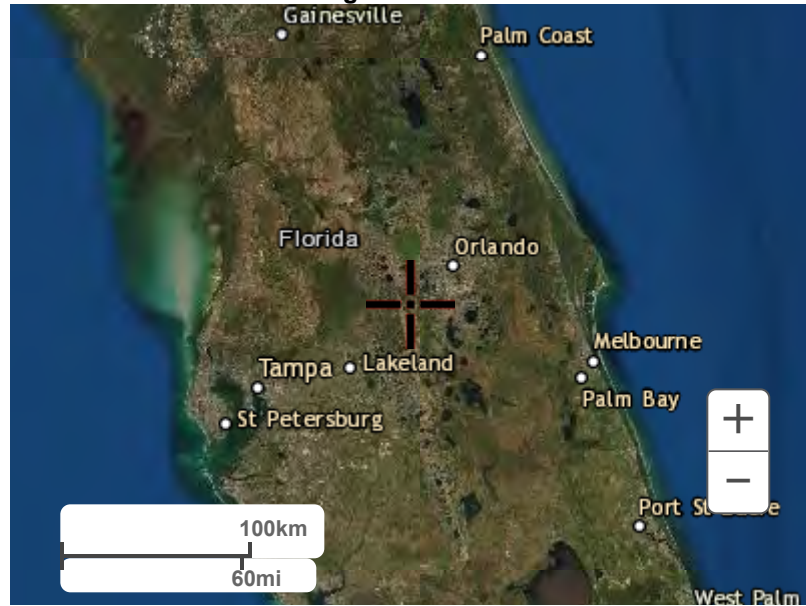
Large scale terrain



Large scale map



Large scale aerial



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[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

APPENDIX D – FLOODPLAIN ENCROACHMENT CALCULATIONS

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **Floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only (landward of 0.0' North American Vertical Datum of 1988 (NAVD 88)). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Transverse Mercator State Plane Florida East FIPS 0901. The horizontal datum was NAD83 HARN, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov/>.

Base map information shown on this FIRM was provided in digital format by the Osceola County Planning Office. Orthophotography was collected in late 2007/early 2008.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

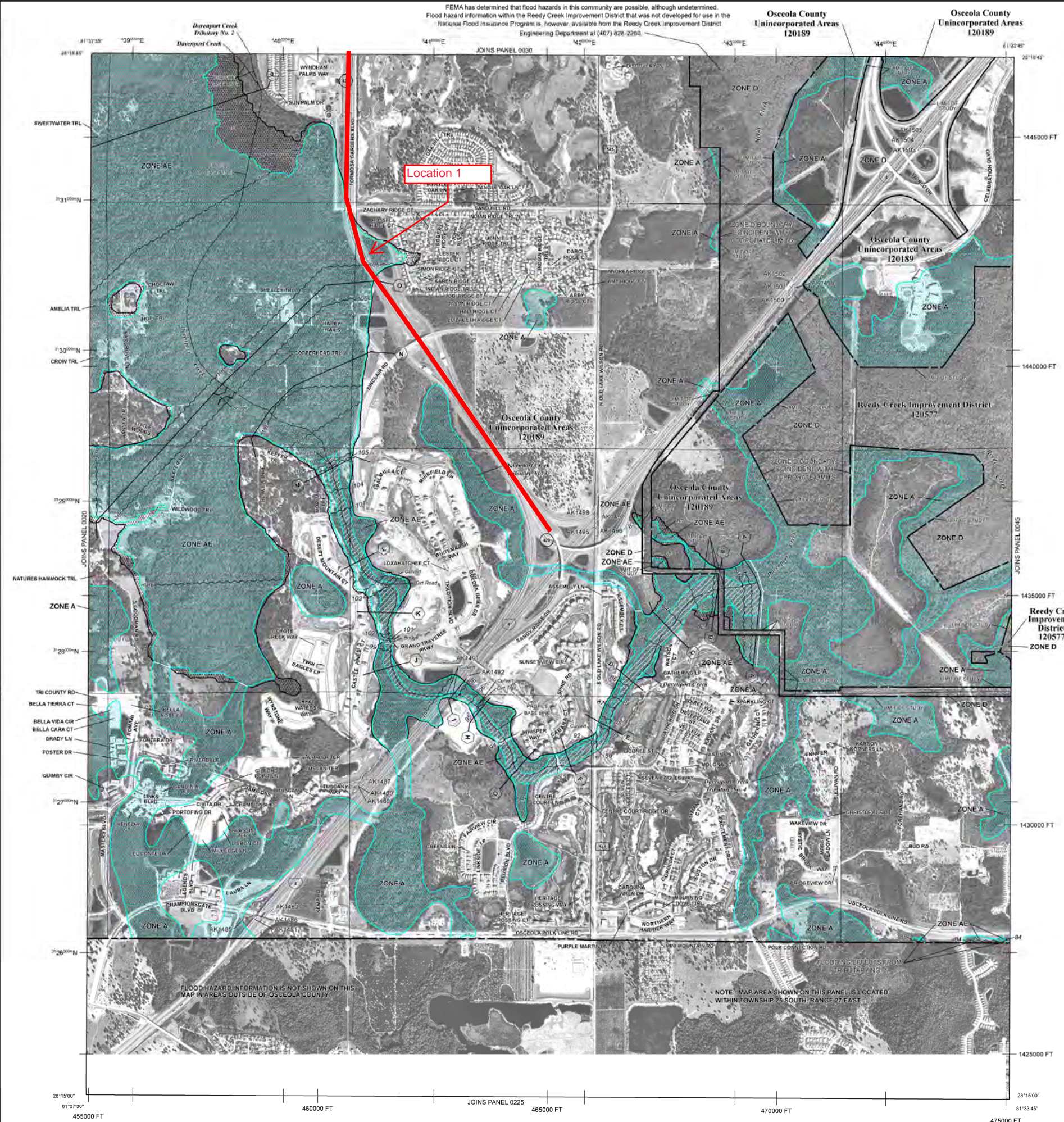
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Mapping Information Exchange at 1-877-FEMA-MAP (1-877-336-2271) or visit the FEMA Map Service website at <http://www.msc.fema.gov/>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

The "profile base lines" depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the "profile base line", in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

FEMA has determined that flood hazards in this community are possible, although undetermined. Flood hazard information within the Reedy Creek Improvement District that was not developed for use in the National Flood Insurance Program is, however, available from the Reedy Creek Improvement District Engineering Department at (407) 828-2250.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, AR, AR9, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently identified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE AR9** Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction, no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- 513 Base Flood Elevation line and value; elevation in feet
- 513 Base Flood Elevation value where elevation within zone; elevation in feet
- * Referenced to the North American Vertical Datum of 1988
- Transsect line
- 67°03'00" 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83). Within Hemisphere
- 478°00'00" E 1000-meter Universal Transverse Mercator grid ticks, zone 17
- 6000000 FT 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 0901), Transverse Mercator projection
- DX5510,0 Bench mark (see explanation in Notes to Users section of this FIS report)
- M1.5 Siver Mile
- MAP REPOSITORIES Refer to Map Repositories List on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP MAY 7, 2001
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL JUNE 8, 2011. To correct datum reference note.
- JUNE 18, 2013: To update corporate limits, change Base Flood Elevations, add Base Flood Elevations, change Special Flood Hazard Areas, change zone designations, update roads and road names, incorporate previously issued Letters of Map Revision, and reflect updated topographic information.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6020.

MAP SCALE 1" = 1000'

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0040G

FIRM

FLOOD INSURANCE RATE MAP

OSCEOLA COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 40 OF 900

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
OSCEOLA COUNTY	120189	0040	G
REEDY CREEK IMPROVEMENT DISTRICT	120577	0040	G

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 12097C0040G

MAP REVISED JUNE 18, 2013

Federal Emergency Management Agency

FLOOD HAZARD INFORMATION IS NOT SHOWN ON THIS MAP IN AREAS OUTSIDE OF OSCEOLA COUNTY.

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 25 SOUTH, RANGE 27 EAST.

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or Floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Transverse Mercator State Plane Florida East FIPS 0901. The horizontal datum was NAD83 HARN, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3252
(301) 713-3242

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Base map information shown on this FIRM was provided in digital format by the Osceola County Planning Office. Orthophotography was collected in late 2007/early 2008.

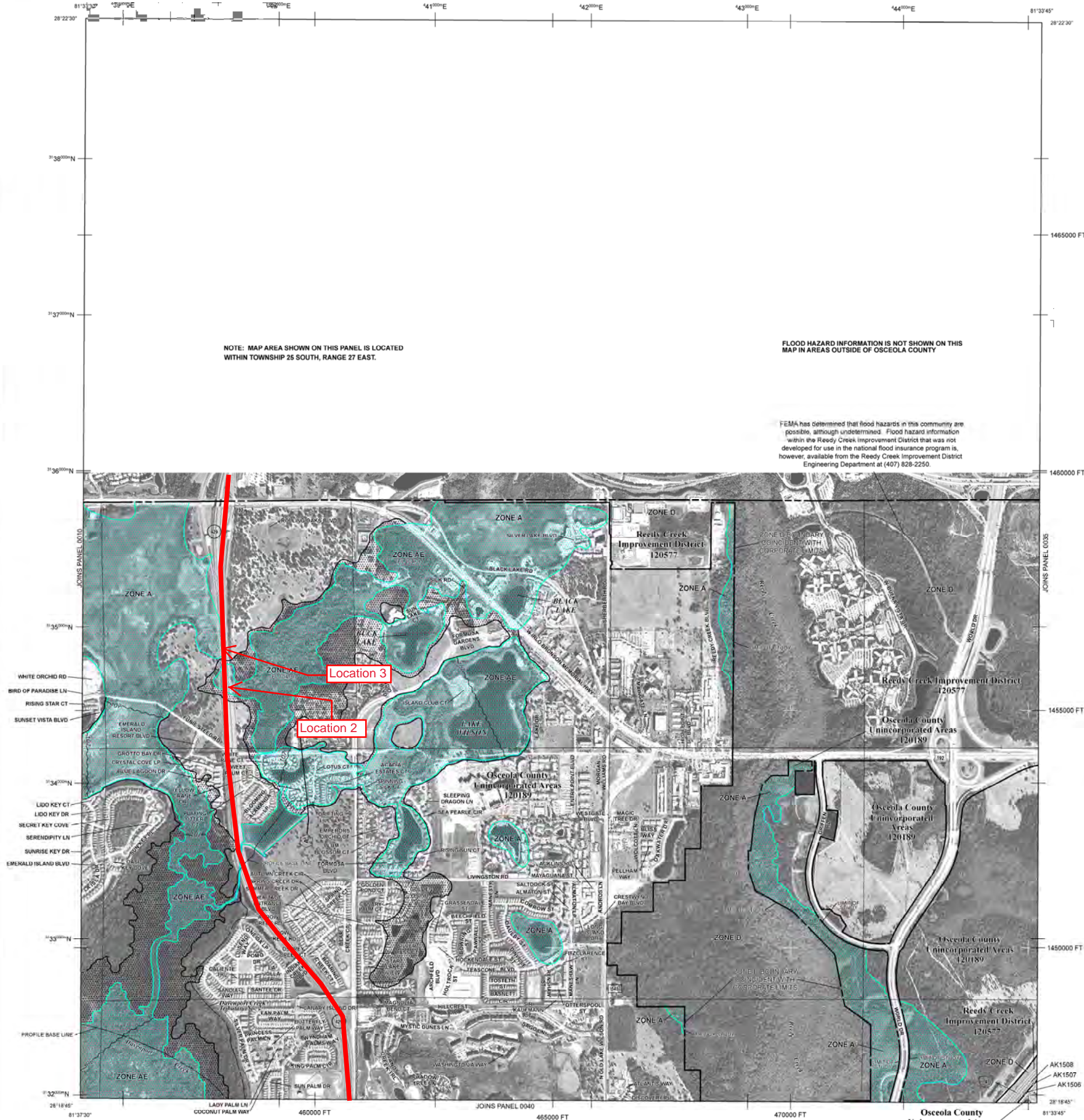
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The "profile base lines" depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the "profile base line", in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 25 SOUTH, RANGE 27 EAST.

FLOOD HAZARD INFORMATION IS NOT SHOWN ON THIS MAP IN AREAS OUTSIDE OF OSCEOLA COUNTY

FEMA has determined that flood hazards in this community are possible, although undetermined. Flood hazard information within the Reedy Creek Improvement District that was not developed for use in the national flood insurance program is, however, available from the Reedy Creek Improvement District Engineering Department at (407) 828-2250.

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AR** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- Zone U** Areas in which flood hazards are undetermined, but possible.

OTHER PROTECTED AREAS (OPAs)

OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone U boundary
- CBS and OPA boundary
- Boundary dividing Special Flood Hazard Areas and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- Base Flood Elevation line and value; elevation in feet
- Base Flood Elevation value where uniform within zone; elevation in feet (EL 987)

Other Symbols:

- Referenced to the North American Vertical Datum of 1988
- Cross section line
- Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 1000-meter Universal Transverse Mercator grid ticks, zone 17
- 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 0901), Transverse Mercator projection
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- Silver Mile
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- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP: MAY 7, 2001
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL: JUNE 8, 2013. To correct datum reference note.
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MAP SCALE 1" = 1000'

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0030G

FIRM

FLOOD INSURANCE RATE MAP

OSCEOLA COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 30 OF 900

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
OSCEOLA COUNTY	120189	0030	G
REEDY CREEK IMPROVEMENT DISTRICT	120577	0030	G

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MAP NUMBER 12097C0030G

MAP REVISED JUNE 18, 2013

Federal Emergency Management Agency

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Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was State Plane Florida East FIPS Zone 0901. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov>, or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was provided in digital format by Orange County, Florida.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

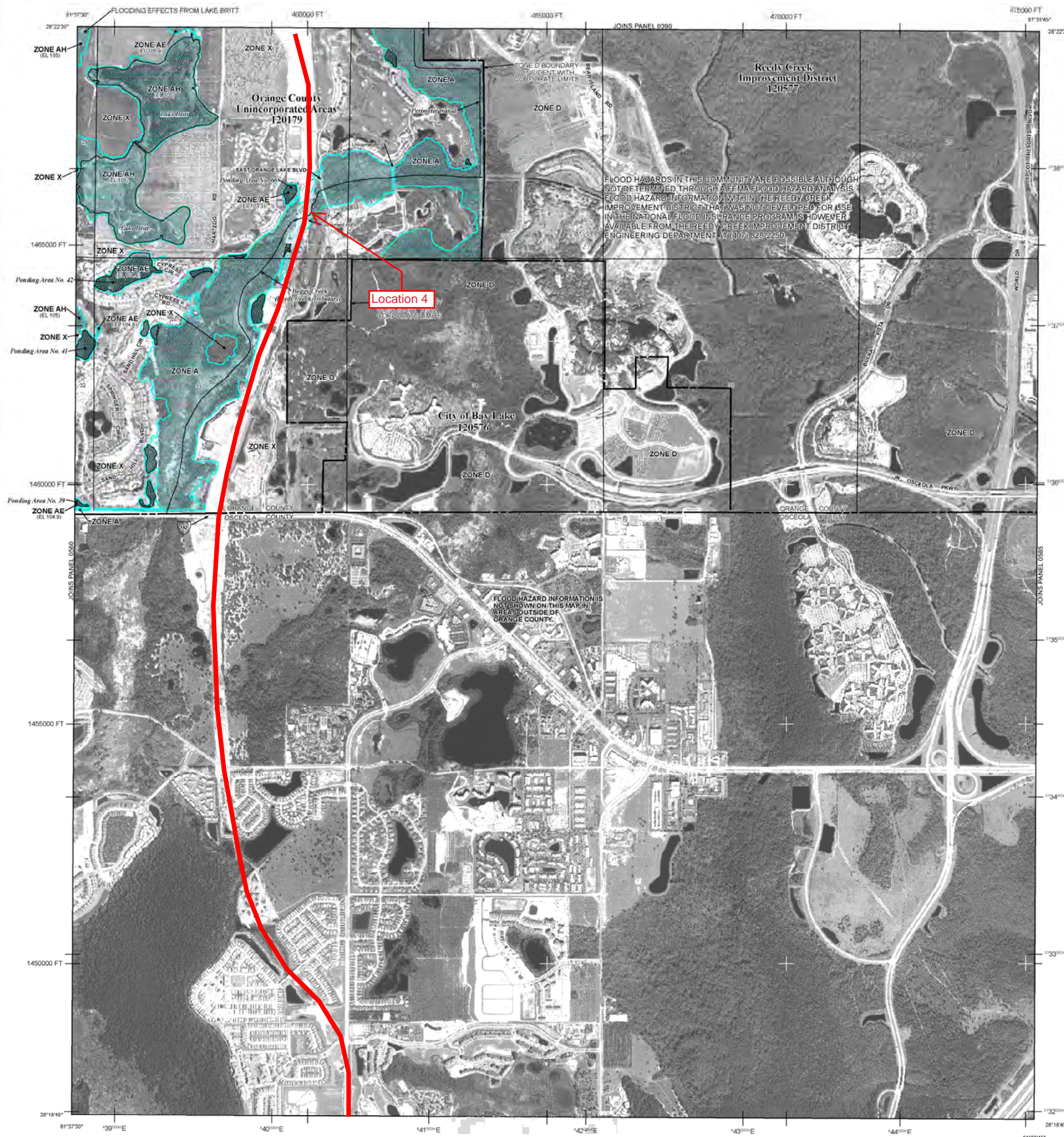
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/nfip/>.

NGVD29 to NAVD88 Vertical Datum Conversion Table (feet)

Watershed Name	Minimum Conversion	Maximum Conversion	Average Conversion	Maximum Offset
Big Econlockhatchee River	-1.03	-1.15	-1.09	0.06
Boggy Creek	-0.91	-1.01	-0.96	0.05
Cypress Creek	-0.87	-0.91	-0.89	0.02
Howell Branch	-0.96	-1.05	-0.98	0.07
Lake Apopka	-0.87	-0.97	-0.91	0.06
Lake Hart	-0.97	-1.07	-1.02	0.05
Little Econlockhatchee River	-0.92	-1.07	-1.01	0.09
Little Weeiva River	-0.91	-1.02	-0.95	0.07
Reedy Creek	-0.86	-0.89	-0.88	0.02
Shingle Creek	-0.88	-0.95	-0.91	0.04
St. Johns River	-1.08	-1.33	-1.19	0.14
Weeiva River	-0.88	-1.01	-0.94	0.07



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (10-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, ASB, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently destroyed. Zone AO indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE ASB Areas to be protected from 1% annual chance flood event by a federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary (dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities)

513 (EL. 987)
Base Flood Elevation line and value; elevation in feet*
Base Flood Elevation value where uniform within zone; elevation in feet*
* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A-A Cross section line
B-B Transsect line
Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
1000-meter Universal Transverse Mercator grid ticks, zone 17
5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPS2000 = 901), Transverse Mercator projection
Bench mark (see explanation in Notes to Users section of this FIRM panel)
River Mile
M1.5
MAP REPOSITORIES
Refer to Map Repositories list on Map Index
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
DECEMBER 6, 2009
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
SEPTEMBER 25, 2009 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to update map format, to add roads and road names, to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, and to incorporate previously issued Letters of Map Amendment.

for community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 500 1,000 1,500 2,000 FEET
150 0 150 300 450 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0580F

FIRM
FLOOD INSURANCE RATE MAP
ORANGE COUNTY,
FLORIDA
AND INCORPORATED AREAS

PANEL 580 OF 750
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BAY LAKE, CITY OF	120576	0580	F
ORANGE COUNTY	120179	0580	F
REEDY CREEK IMPROVEMENT DISTRICT	120577	0580	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
12095C0580F

MAP REVISED
SEPTEMBER 25, 2009
Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only to landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was State Plane Florida East FIPS Zone 0901. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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Silver Spring, Maryland 20910
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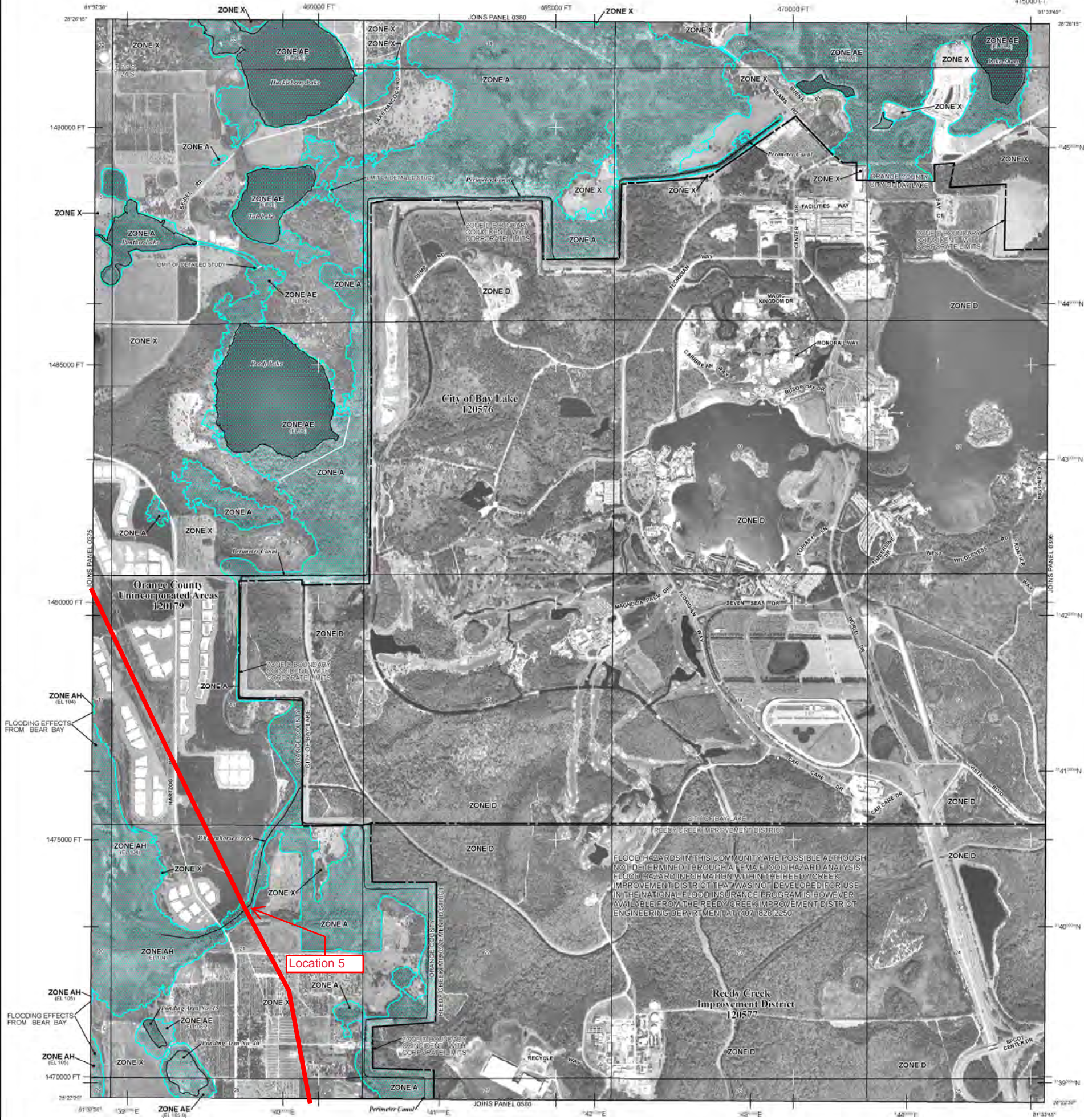
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NGVD29 to NAVD88 Vertical Datum Conversion Table (feet)

Watershed Name	Minimum Conversion	Maximum Conversion	Average Conversion	Maximum Offset
Big Econlockhatchee River	-1.03	-1.15	-1.09	0.06
Boggy Creek	-0.91	-1.01	-0.96	0.05
Cypress Creek	-0.87	-0.91	-0.89	0.02
Hosnell Branch	-0.95	-1.05	-0.96	0.07
Lake Apopka	-0.87	-0.97	-0.91	0.06
Lake Hart	-0.97	-1.07	-1.02	0.05
Little Econlockhatchee River	-0.92	-1.07	-1.01	0.09
Little Wee-wee River	-0.91	-1.02	-0.96	0.07
Reedy Creek	-0.86	-0.89	-0.88	0.02
Shingle Creek	-0.88	-0.95	-0.91	0.04
St. Johns River	-1.08	-1.33	-1.19	0.14
Wee-wee River	-0.88	-1.01	-0.94	0.07



FLOOD HAZARDS IN THIS COMMUNITY ARE POSSIBLE ALTHOUGH NOT DETERMINED THROUGH A FEMA FLOOD HAZARD ANALYSIS. FLOOD HAZARD INFORMATION WITHIN THE REEDY CREEK IMPROVEMENT DISTRICT THAT WAS NOT DEVELOPED FOR USE IN THE NATIONAL FLOOD INSURANCE PROGRAM IS HOWEVER AVAILABLE FROM THE REEDY CREEK IMPROVEMENT DISTRICT ENGINEERING DEPARTMENT AT (407) 826-2230.

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, ASR, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently identified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE ASR Areas to be protected from 1% annual chance flood event by a federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodways in the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513 (EL. 987)
Base Flood Elevation line and value; elevation in feet*
Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

— Cross section line
— Transsect line
Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
1000-meter Universal Transverse Mercator grid ticks, zone 17
5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPS ZONE = 901), Transverse Mercator projection
Bench mark (see explanation in Notes to Users section of this FIRM panel)
River Mile
MAP REPOSITORIES
Refer to Map Repositories list on Map Index
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
DECEMBER 6, 2009
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
SEPTEMBER 25, 2009 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to update map format, to add roads and road names, to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, and to incorporate previously issued Letters of Map Amendment.

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To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0390F

FIRM FLOOD INSURANCE RATE MAP ORANGE COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 390 OF 750
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BAY LAKE, CITY OF	120576	0390	F
ORANGE COUNTY	120179	0390	F
REEDY CREEK IMPROVEMENT DISTRICT	120577	0390	F

NOTE TO USER: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 12095C0390F

MAP REVISED SEPTEMBER 25, 2009
Federal Emergency Management Agency

NOTES TO USERS

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Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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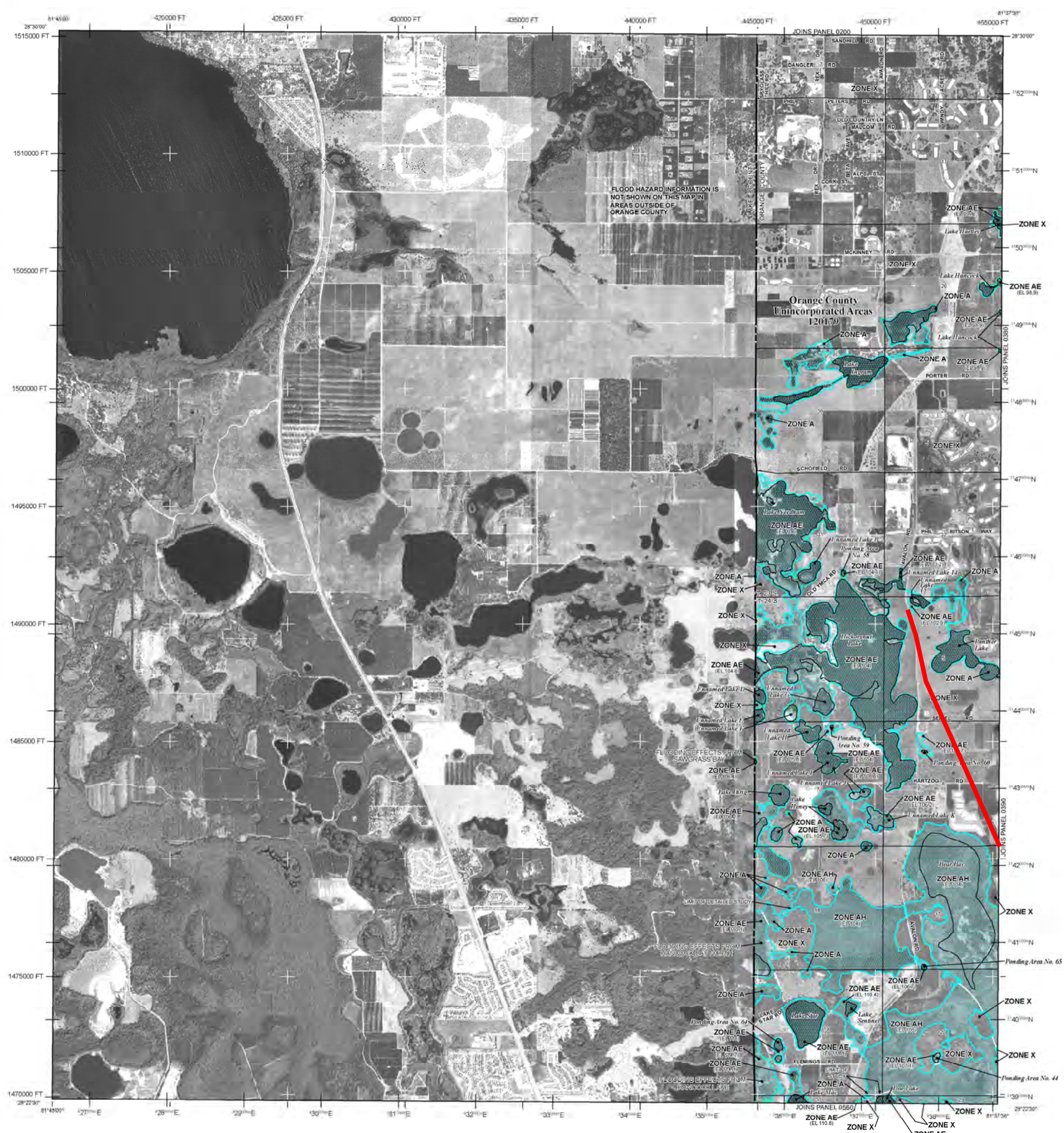
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Watershed Name	Minimum Conversion	Maximum Conversion	Average Conversion	Maximum Offset
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Lake Hart	-0.97	-1.07	-1.02	0.05
Little Econochoatchee River	-0.92	-1.07	-1.01	0.09
Little Weeja River	-0.91	-1.02	-0.95	0.07
Reedy Creek	-0.89	-0.93	-0.91	0.02
Shingle Creek	-0.88	-0.95	-0.91	0.04
St. Johns River	-1.06	-1.33	-1.19	0.14
Weeja River	-0.88	-1.01	-0.94	0.07



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

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ZONE AE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently identified. Zone AO indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE AV Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE D Areas determined to be outside the 0.2% annual chance floodplain; Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513 (EL 987)
Base Flood Elevation line and value; elevation in feet*
Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A-A Cross section line
B-B Transsect line
97°07'30" 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
475' 1000-meter Universal Transverse Mercator grid ticks, zone 17
8000000 FT 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 901), Transverse Mercator projection
Bench mark (see explanation in Notes to Users section of this FIRM panel)
DX5610
M 1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index:
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP: DECEMBER 6, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:
SEPTEMBER 25, 2009 - To update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to update map format, to add roads and road names, to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, and to incorporate previously issued Letters of Map Amendment.

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MAP SCALE 1" = 2000'

0 1,000 2,000 3,000 4,000 FEET
0 900 1,800 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0375F

FIRM
FLOOD INSURANCE RATE MAP
ORANGE COUNTY,
FLORIDA
AND INCORPORATED AREAS

PANEL 375 OF 750
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
ORANGE COUNTY 120175 0375 F

Notice to User: The Map Number shown below should be used when placing map orders, the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 12095C0375F

MAP REVISED SEPTEMBER 25, 2009
Federal Emergency Management Agency

RS&H, Inc.
FPID: 44616412201
FLOODPLAIN IMPACT VOLUME CALCULATIONS

By: AB
Date: 10/18/2022
Checked: ENS
Date: 11/9/2022

Location: 1
Alignment: SR 429
Beginning Station: 125+60
End Station: 141+00
Side: LT

Elevation (ft)	Area (ac)	Incremental Volume (ac-ft)	Cumulative Volume (ac-ft)	Comments
101.4	0.59		0.00	SHWT = 101.37 (permit)
		0.37		
102.0	0.59		0.37	
		0.59		
103.0	0.59		0.96	
		0.59		
104.0	0.59		1.55	
		0.59		
105.0	0.59		2.14	
		0.59		
106.0	0.59		2.73	100-year BFE (Zone AE)

Note: Permit data associated with ERP No. 49-187636001

RS&H, Inc.
FPID: 44616412201
FLOODPLAIN IMPACT VOLUME CALCULATIONS

By: AB
Date: 10/18/2022
Checked: ENS
Date: 11/9/2022

Location: 3
Alignment: SR 429
Beginning Station: 287+80
End Station: 296+00
Side: LT

Elevation (ft)	Area (ac)	Incremental Volume (ac-ft)	Cumulative Volume (ac-ft)	Comments
105.0	0.14		0.00	SHWT = 100.80 (Permitted Pond 2A-3)
		0.14		
106.0	0.14		0.14	
		0.14		
107.0	0.14		0.28	100-year BFE

Note: Permit data associated with ERP No. 49-187636001

RS&H, Inc.
FPID: 44616412201
FLOODPLAIN IMPACT VOLUME CALCULATIONS

By: AB
Date: 10/18/2022
Checked: ENS
Date: 11/9/2022

Location: 5
Alignment: SR 429
Beginning Station: 485+60
End Station: 489+20
Side: LT/RT

Elevation (ft)	Area (ac)	Incremental Volume (ac-ft)	Cumulative Volume (ac-ft)	Comments
100.0	0.06		0.00	SHWT = 100.00 (permit)
		0.06		
101.0	0.06		0.06	
		0.06		
102.0	0.06		0.11	
		0.01		
102.2	0.06		0.12	100-year BFE (permit)

Note: Permit data associated with ERP No. 49-187636001

APPENDIX E – POND SITE EVALUATION MATRIX

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01

Alternate Pond Site Evaluation
 Project Description: Widening Western Beltway
 FPID Number: 446164-1

Basin	2A-2			FGB (Basin B)		
Pond Alternative	1	2	3	1	2	3
Pond Right of Way Needed² (acres)	12.04	15.51	8.73	0.00	0.00	3.75
Right of Way Cost	\$2,640,000	\$469,000	\$383,000	\$0	\$0	\$825,000
Construction Costs	\$6,426,744	\$4,962,152	\$4,962,152	\$0	\$0	\$1,048,101
Potential Contamination¹	Med	No	No	No	No	Med
Utilities	Not Known	Not Known	Not Known	Not Known	Not Known	Not Known
Threatened, Endangered or Significant Species	Low	Low	Low	Low	Low	Low
Wetland Impacts (acres)	No Impacts	20.00	20.00	No Impacts	No Impacts	No Impacts
Wetland Cost	0.00	\$2,000,000	\$2,000,000	0.00	0.00	0.00
Maintenance	Low	Low	Low	Low	Low	Low
Cultural Resources	Low	Low	Low	Low	Low	Low
Aesthetics	n/a	n/a	n/a	n/a	n/a	n/a
Total Cost	\$9,066,744	\$7,431,152	\$7,345,152	\$0	\$0	\$1,873,101
Comments	See Note 3.					See Note 3.
Advantages	No wetland impacts, floodplain comp. in pond					
Disadvantages, etc	Utility conflict with electric lines	Additional floodplain comp site needed	Additional floodplain comp site needed	Increase stage in existing Pond B adjacent to homes	Relies on other design factors to be viable	
Preferred Pond Alternative	Preferred					Preferred

1. Potential Contamination includes contaminated soil.
2. Does not include additional right of way needed to offsite floodplain compensation lost in existing Pond 2A-2.
3. Contamination Level 2 impact to construction assessment should be conducted by Turnpike's CAR contractor to further evaluate potential construction costs and preferred alternative selection status.

APPENDIX F – CORRESPONDENCE, MEETING MINUTES, AND EXCERPTS FROM PREVIOUS PERMITS AND STUDIES

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01



Florida Department of Transportation

RON DESANTIS
GOVERNOR

Florida's Turnpike Enterprise
P.O. Box 613069, Ocoee, FL 34761
407-532-3999

KEVIN J. THIBAUT, 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 (PD&E)
Rax Jung (Project Dev. Engineer/EMO)
Philip Stein (Environmental)
Annemarie Hammond (Environmental Permits Coordinator)
Erin Yao (Drainage Engineer)

FDEP

Teayann Duclos (Environmental Manager)
Jennipher Walton (Env. Specialist)
Leo Anglero (ERP/Stormwater)
Allan Popak (Environmental Specialist)
Lindsay Furr (Environmental Consultant)
Jill Farris (Environmental Consultant)

FTE/GEC

Stephanie Underwood (PM/HNTB GEC)
Fred Gaines (Permitting/Atkins GEC)
Adriana Kirwan (Drainage/HNTB GEC)
Tiffany Crosby (Senior Scientist/Atkins GEC)

RS&H Team

Douglas Reed (RS&H PM)
Erik Scott (RS&H Drainage)
Sarah Johnson (KHA/Environmental)

FDOT Central Office

Jonathan Turner (Project Delivery Coordinator)

FDOT District 5

Casey Lyon (Env. Permits Coordinator)

II. Introductions

The meeting started with FDOT District 5 discussed their projects with FDEP. After attendees were introduced, Stephanie Underwood explained the purpose of the meeting was to initiate pre-application coordination with the Florida Department of Environmental Protection for the two Project Development and Environment (PD&E) studies.

III. PowerPoint presentation

Erik Scott explained the two projects with a PowerPoint presentation and separate exhibits (attached). Discussion is summarized below.

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 and Reedy Creek Improvement District (RCID) permitted SR 429 in 2001. 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 in 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 development adjacent to SR 429.
- The project study area is located within two impaired WBIDs, Davenport Creek for bacteria and Whittenhorse Creek for dissolved oxygen. In addition, the project study is located within the Lake Okeechobee Subwatershed BMAP. FTE believes that 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 but will need to be discussed further during the design phase.
- Attenuation will be provided per FDEP criteria for open and closed basins, with consideration for RCID 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 Environmental Resource Permit (ERP) for widening of Western Beltway (SR 429) will be handled by FDEP. This includes the 404 permit.
- Wetland lines from the previous permit will be used as much as possible in areas that are not new interchanges. 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 species is minimal along the existing roadway; however, there is suitable sand skink habitat to be considered especially 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 for species involvement occurred in 2021.
- There were no questions, but if any questions arise, additional coordination can occur.

Poinciana Parkway Extension PD&E Study:

- The PD&E study was summarized, including existing conditions; the proposed new six-lane expressway on new alignment; and interchanges at CR 532, I-4, and Sinclair Road. The new

alignment crosses Davenport Creek on bridge structure.

- There are two alternatives, but the worst-case Alternative 1 was discussed.
- FTE clarified with FDEP that they anticipated that SFWMD would be responsible for issuing the ERP and FDEP would be responsible for reviewing and issuing the 404 permit.
- The team depicted the wetlands and conservation areas within the study area.
- Wetland lines from the previous permits will be used as much as possible in existing roadway areas; new wetland lines will be set in the new alignment area. Direct wetland impacts range from 131 acres to 141 acres for the alternatives. Approximately 130 acres of direct impacts will be minimized with bridges and MSE walls.
- Conservation easements for RCID and Reunion are present within and adjacent to 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.
- 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 as a result of the survey. Suitable sand skink habitat is located within the project study area and sand skink tracks were observed during pedestrian transects.
- We will coordinate with FWC for state-listed species.
- Mitigation banks are located within the available service area for this project to offset any unavoidable wetland impacts. FDEP confirmed with FTE that mitigation banks should be utilized for wetland mitigation as the 1st priority and followed by other options after this measure. Impacts to conservation easements should be a last resort. Should the release of a Conservation Easement or an impact to a Conservation Easement be necessary, FDEP has asked that FTE coordinate with FDEP early in the design development given the process is different than that of mitigation banks.
- FTE indicated that the avoidance and minimization measures mentioned previously is standard and considered adequate; FDEP indicated that FTE is on the right track

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.

PERMIT DATA

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01

ERP No. 49-187636001
(SR 429 Part C – Section 1, 2A, 2B, and 3)

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01

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	SFWMD72	SFWMD72	SFWMD72	SFWMD72	SFWMD72
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:
 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-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:
 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-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

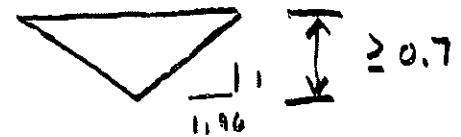
Size V-notch weir angle

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

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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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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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	=	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

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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.

Section I – Project Overview

I-28

Table I-17 – Basin Parameter Summary

Pond Number	2A-2	2A-3	2B-1	2B-2	FB-1	FB-2	B-2
Type of Treatment	WET	WET	WET	WET	DRY	DRY	WET
Receiving Body	Davenport	W.Boggy	W.Boggy	W.Boggy	W. Boggy	W. Boggy	Davenport
Existing Ground	110.34	108.90	104.37	102.74	102±	102±	120±
Seasonal High Water Table	101.5	100.8	100.4	100.4	104.0	104.0	115.0
Pond Bottom El.	94.0	95.0	95.0	95.0	104.0	104.0	109
Weir Crest El.	102.4	101.8	103.7	103.7	104.6	104.2	115.4
Weir Length (ft.)	19.17	15.00	20.00	50.00	14.33	14.33	15.00
Design High Water (DHW ₂₅) El	105.76	104.07	103.82	104.10	104.89	104.36	115.26
Berm El.	109.0	106.00	105.0	105.0	106.3	106.3	120.0
Orifice (Control) El.	101.5	100.8	100.4	100.4	104.0	104.0	115.0
Orifice Diameter Required (in.)	20.0" (notch)	104° (v-notch)	8.8"	4.7"	20° (v-notch)	58° (v-notch)	100° (v-notch)
Orifice Diameter Provided (in.)	20.0" (notch)	104° (v-notch)	5 – 4"	5"	20° (v-notch)	58° (v-notch)	100° (v-notch)
Pond Total Drainage Area (ac.)	134.54	62.30	48.84	26.57	2.33	0.60	6.10
Impervious Area Onsite & Offsite (ac.)	45.61	22.15	22.31	19.78	0.59	0.16	2.30
Pond Area @ Control–Water Body (ac.)	11.94	4.71	11.49	2.57	1.01	0.17	0.71
Impervious Area (ac.)	77.00	35.44	15.04	4.22	1.74	0.44	3.09
Treatment Volume Required (ac-ft)	11.21	5.19	4.65	4.12	0.15	0.04	0.51
Treatment Volume Provided (ac-ft)	11.62	5.43	4.81	4.25	0.76	0.05	0.62
Storm Frequency – 72 Hour	25	25	25	25	25	25	25
Rainfall Type	SFWMD72	SFWMD72	SFWMD72	SFWMD72	SFWMD72	SFWMD72	SFWMD72
Unit Hydrograph Shape Factor	323	323	323	323	323	323	323
Pre-Development Discharge (cfs)	163.65	45.81	147.60		10.42		19.74
Post Development Discharge (cfs)	103.89	52.72	5.55	49.90	7.30	2.98	16.85
Initial Construction Impervious Area	34.86	15.51	15.83	14.61	0.59	0.16	2.30

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Section III – Post-Development Analysis

III-1

Post Development Basin 2A-2

(Sta. 180+00 - 268+00)

Soils (5) Basinger Fine Sand, (7) Candler 0 - 5% Slope, (15) Hontoon Muck, (16) Immokalee Fine Sand, (37) Pompano Fine Sand, Depression, (8) Candler 5 - 12% Slope, (22) Myakka Fine Sand, (44) Tavares Fine Sand 0 - 5 % Slope

LAND USE	SCS CLASS.	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Good Condition	A	11.61	39	452.79
	D	14.03	80	1122.40
Pavement	A	12.59	98	1233.62
	D	6.70	98	656.15
Future Pavement	A	6.93	98	679.12
	D	3.82	98	374.36
Pond	A	4.97	98	487.06
	D	6.97	98	683.06
Wyndham Palms (Triangle Offsite)				
Woods - Grass Combination	A	4.67	43	200.81
Fair				
Dreamer's Drive	A	0.62	98	60.76
Sandhill	A	1.1	98	107.80
Treatment Plant (Offsite)				
Woods-Grass Combination	A	29.07	43	1250.01
Fair				
Offsite				
Woods Fair	A	10.94	36	393.84
Sand Hill Road				
Pavement	A	0.98	98	96.04
Funie Steed Road				
Pavement	A	0.46	98	45.08
Oak Island Cove				
Res. 1/8 acre or less (65% Imp)	A	16.95	77	1305.15
	D	2.14	92	196.71
		<u>134.54</u>		<u>9344.76</u>

CN = 69.5

Time of Concentration

SHEET FLOW

Assume a minimum of 10 minutes for water to reach ditch

DITCH FLOW	T(t1)(hr)=	0.167	SUBTOTAL = 0.167
	Length (ft)=	2200	
	Velocity (ft/s)=	1.500	
	Time of conc. (hr)=	0.407	SUBTOTAL = 0.407
PIPE FLOW	Length (ft)=	1900	
	Velocity (ft/s)=	4.00	
	Time of conc. (hr)=	0.132	SUBTOTAL = 0.132

TOTAL Tc (hr) = 0.706

TOTAL Tc (min) = 42.4

Stage Storage

Stage (ft)	Area (acres)	Volume (acre-ft)
101.5	11.94	0.00
102.4	12.32	10.92

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Section III – Post-Development Analysis

106.0	13.88	58.08
107.0	16.09	73.06
108.0	16.85	89.53
108.5	17.21	98.05
109.0	17.58	106.74

Water Quality Basins

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	134.54	=	11.21	ac.ft.
2.5 inches x	45.60	=	9.50	ac.ft.

Treatment Volume	11.21	ac.ft.
=		

Water Quality Recovery

Stage (ft)	Volume (acre-ft)			
101.5	0.00			
X	11.62	X=	102.4	ft
106.0	58.08			

Recover 0.5" over Contributing Basin within 24 hrs

Average Head = $(102.4 + 101.95)/2 - 101.5$

Average Head = 0.68

Use slot $Q = 3.13 * L * H^{1.5}$

$Q = 0.5 * (133.92/12) * 43560 / 24 / 3600$

$Q = 2.83$

$L = Q / (3.13 * H^{1.5})$

L = 1.63 ft

L = 19.54 in

Use 20" slot

100-yr -72-hr Runoff Volume

Post Development

Soil Storage (in) =	4.40
Rainfall (in) =	14.4
Runoff (in) =	10.20

Runoff Vol. (ac-ft) =	114.39
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Pre-Development

Basin 1

CN =	43.0
Soil Storage (in) =	13.26
Rainfall (in) =	14.40
Runoff (in) =	5.52
Area (acres) =	57.84

Runoff Vol. (ac-ft) =	26.61
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Basin 2

CN =	60.5
Soil Storage (in) =	6.53
Rainfall (in) =	14.40
Runoff (in) =	8.74
Area (acres) =	88.31

Runoff Vol. (ac-ft) =	64.30
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Section III – Post-Development Analysis

Wyndham Palms Post Development 25-Year 72-Hour

Wyndham Palms Post Development Basin 1 (Sta. 198+00 - 213+00)

Basin B-1

Soils

(7) Candler 0 - 5% Slope,
 (8) Candler 5 - 12% Slope
 (44) Tavares Fine Sand 0 - 5 %
 Slope

LAND USE	SCS CLASS.	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Good Condition	A	14.55	39	567.45
Pavement	A	14.20	98	1391.60
Pond	A	0.85	98	83.30
		<u>29.60</u>		<u>2042.35</u>

CN = 69.0

Time of Concentration

SHEET FLOW

Assume a minimum of 15 minutes
 for
 water to reach Pond

T(t)(hr)= 0.250 **SUBTOTAL = 0.250**

TOTAL Tc (hr) = 0.250

TOTAL Tc (min) = 15.0

Stage Storage

Stage (ft)	Area (acres)	Volume (acre-ft)
124.00	0.58	0.00
125.00	0.67	0.63
126.00	0.76	1.34
127.00	0.85	2.15
128.00	0.95	3.05
129.00	1.05	4.05
130.00	1.16	5.15
131.00	1.26	6.36
132.00	1.38	7.68
133.00	1.49	9.12
134.00	1.61	10.67

Wyndham Palms Post Development Basin 2 (Sta. 198+00 - 213+00)

Basin B-2

Soils

(7) Candler 0 - 5% Slope,
 (8) Candler 5 - 12% Slope
 (44) Tavares Fine Sand 0 - 5 %
 Slope

LAND USE	SCS CLASS.	AREA (AC)	CN	PRODUCT
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Section III – Post-Development Analysis

<u>Onsite</u>				
Open Space-Good Condition	A	3.09	39	120.51
Dreamer's Drive	A	1.10	98	107.80
Wyndham Pavement	A	1.20	98	117.60
Pond	A	0.71	98	69.58
		<u>6.10</u>		<u>415.49</u>

WEIGHTED CN = 68.1

Time of Concentration

SHEET FLOW

Assume a minimum of 15 minutes
for
water to reach Pond

T(t)(hr) = 0.250 **SUBTOTAL = 0.250**

TOTAL Tc (hr) = 0.250

TOTAL Tc (min) = 15.0

Stage Storage Pond 2

Stage (ft)	Area (acres)	Volume (acre-ft)
109.00	0.27	0.00
110.00	0.34	0.31
111.00	0.40	0.68
112.00	0.48	1.12
113.00	0.55	1.63
114.00	0.63	2.22
115.00	0.71	2.89
116.00	0.79	3.64
117.00	0.88	4.48
118.00	0.96	5.40
119.00	1.05	6.40
120.00	1.53	7.69

Water Quality Basins

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	6.10	=	0.51	ac.ft.
2.5 inches x	2.30	=	0.48	ac.ft.
Treatment Volume		=	0.51	ac.ft.

Water Quality Recovery

Recover 0.5" over Contributing Basin within 24hrs

Drainage Area (ac) = 6.10 = V = 0.25 ac-ft

Stage (ft)	Volume (acre-ft)			
115.0	0.00			
X	0.62	X =	115.40	acre-ft
120.0	7.69			

Head of Notch = X - Control Elevation = 0.4 ft

$$\theta = 2 \cdot \tan^{-1}((0.492 \cdot V) / (H^{2.5})) \cdot (180 / \pi)$$

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Section III – Post-Development Analysis

III-22

Post Development Basin 2A-3

(Sta. 268+00 - 320+50)

Soils (7) Candler 0 - 5% Slope, (8) Candler 5 - 12% Slope,
(22) Myakka Fine Sand, (44) Tavares Fine Sand 0 - 5% Slope

Weighted CN Calcs.

LAND USE	SCS CLASS.	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Good Condition	A	22.21	39	866.19
Pavement	A	12.91	98	1265.18
	D	1.40	98	136.86
Future Pavement	A	5.91	98	579.65
	D	0.73	98	71.45
Pond	A	4.71	98	461.58
Offsite				
Woods	A	12.32	36	443.52
SR 530/US 192 Pavement	A	1.20	98	117.60
Open Space-Good Condition	A	0.91	39	35.49
		<u>62.30</u>		<u>3977.52</u>

WEIGHTED CN = 63.8

Time of Concentration

SHEET FLOW

Assume a minimum of 10 minutes for water to reach ditch

T(t1)(hr)= 0.167 **SUBTOTAL = 0.167**

PIPE FLOW

Length (ft)= 2500
Velocity (ft/s)= 4
Time of conc. (hr)= 0.174 **SUBTOTAL = 0.174**

TOTAL Tc (hr) = 0.340

TOTAL Tc (min) = 20.4

Stage Storage

Stage (ft)	Area (acres)	Volume (acre-ft)
100.8	4.71	0.00
101.8	5.04	5.19
105.0	6.14	22.79
106.0	7.91	29.81

Water Quality Basins

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 62.30 = 5.19 ac.ft.

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Section III – Post-Development Analysis

2.5 inches x	22.15	=	4.61	ac.ft.
Treatment Volume =			5.19	ac.ft.

Water Quality Recovery

Recover 0.5" over Contributing Basin within 24hrs

Drainage Area (ac) = 62.30 = V = 2.60 ac-ft

Stage (ft)	Volume (acre-ft)	
100.8	0.00	
X	5.43	X = 101.8 acre-ft
105.0	22.79	

Head of Notch = X - Control Elevation = 1.0 ft

$\theta = 2 * \tan^{-1}((0.492 * V) / (H^{2.5})) * (180 / \pi)$

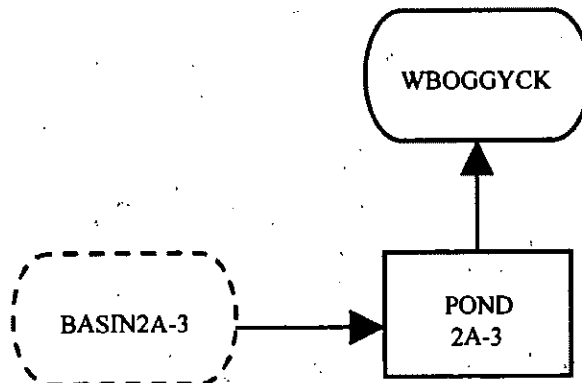
0.492 * V = 1.280
 H^{2.5} = 1.000
 θ = 104

Weir Length = $\frac{\tan(\theta / 2) * H}{2}$

Weir Length = 2.6 ft

Slope = (L * 0.5) / H
 Slope = 1.30

Figure III-3 - Basin 2A-3 Nodal Diagram



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Section III – Post-Development Analysis

Post Development Basin 2B-1

(Sta. 320+50 - 1359+00)

Soils

(3) Basinger Fine Sand Depressional, (4) Candler Fine Sand 0-5% Slope
 (20) Immokalee Fine Sand, (34) Pomello Fine Sand 0-5% Slope
 (42) Sanibel Muck, (46) Tavares Fine Sand 0-5% Slope,
 (47) Tavares-Millhopper Fine Sand 0-5% Slope, (54) Zolfo Fine Sand

Weighted CN Calcs.

LAND USE	SCS CLASS.	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Good Condition	A	4.04	39	157.56
	C	5.87	74	434.38
	D	3.38	80	270.40
Pavement	A	2.94	98	288.12
	C	7.36	98	721.28
	D	3.79	98	371.42
Future Pavement	A	2.73	98	267.54
	C	1.47	98	144.06
	D	2.28	98	223.44
Pond	A	3.50	98	343
	C	5.07	98	496.86
	D	2.92	98	286.16
SR 530/US 192				
Pavement	A	1.74	98	170.52
Open Space-Good Condition	A	1.75	39	68.25
		<u>48.84</u>		<u>4242.99</u>

CN = 86.9

Time of Concentration

SHEET FLOW

Assume a minimum of 10 minutes for water to reach inlet

T(t1)(hr)= 0.167 **SUBTOTAL = 0.167**

DITCH FLOW

Length (ft)= 800

Velocity (ft/s)= 1.000

Time of conc. (hr)= 0.222 **SUBTOTAL = 0.222**

PIPE FLOW

Length (ft)= 300

Velocity (ft/s)= 4.0

Time of conc. (hr)= 0.021 **SUBTOTAL = 0.021**

TOTAL Tc (hr) = 0.4

TOTAL Tc (min) = 24.6

Stage Storage

Stage (ft)	Area (acres)	Volume (acre-ft)
100.4	11.49	0.00
100.8	11.61	4.65
104.0	12.56	43.29
105.0	14.11	56.62

Water Quality Basins

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Section III - Post-Development Analysis

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	48.84	=	4.07	ac-ft.
2.5 inches x	22.31	=	4.65	ac-ft.
Treatment Volume		=	4.65	ac-ft.

Water Quality Recovery

Stage (ft)	Volume (acre-ft)			
100.4	0.00			
X	4.81	X=	100.8	acre-ft
104.0	43.29			

Recover 0.5" over Contribution Basin within 24hrs

Drainage Area (ac) =	48.84	=	2.04	ac-ft
Average Q (cfs) =	1.03			
Orifice (cfs) = C * A (2*g*h) ^{0.5}				
C = coefficient =	0.6			
g =	32.2			
Average Head = (100.8 + 100.6)/2 - 100.4				
h = head (ft) =	0.30			
Solve for A				
A = Area (ft ²) =	0.43	8.8	inches diameter	will not fit
		use multiple	4	inches diameter
		use =	5	0.09

100-yr-72-hr Runoff Volume

Post Development

P (in) =	14.40
S (in) =	1.51
R (in) =	12.73
Volume (acre-ft) =	51.82

Pre-Development

Basin 5

CN =	63.90
P (in) =	14.40
S (in) =	5.65
R (in) =	9.31
Area (acres) =	71.19
Volume (acre-ft) =	55.22

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Section III – Post-Development Analysis

Post Development Basin 2B-2

(Sta. 1359+00 - 414+00)

Soils

(3) Basinger Fine Sand Depressional,
 (20) Immokalee Fine Sand, (34) Pomello Fine Sand 0-5%
 Slope
 (42) Sanibel Muck, (46) Tavares Fine Sand 0-5% Slope,
 (47) Tavares-Miilhopper Fine Sand 0-5% Slope, (54) Zolfo Fine Sand

Weighted CN Calcs.

LAND USE	SCS CLASS.	AREA (AC)	CN	PRODUCT
Onsite				
Open Space-Good Condition	C	2.91	74	215.34
	D	1.31	80	104.80
Toll Facility Pavement	D	0.86	98	84.28
	C	5.83	98	571.34
Future Pavement	D	4.40	98	431.2
	C	2.28	98	223.44
Pond	D	1.09	98	106.82
	C	1.78	98	174.44
Section 3 (Sta. 400+00 - 414+00) Pavement	D	0.79	98	77.42
	C	1.28	98	125.44
Future Pavement	D	2.24	98	219.52
	C	0.65	98	63.7
	D	1.15	98	112.7
		<u>26.57</u>		<u>2510.44</u>

CN = 94.5

Time of Concentration

SHEET FLOW

Assume a minimum of 10 minutes for water to reach inlet

T(t1)(hr)= 0.167 **SUBTOTAL = 0.167**

PIPE FLOW

Length (ft)= 2300

Velocity (ft/s)= 4.0

Time of conc. (hr)= 0.160

SUBTOTAL = 0.160

TOTAL Tc (hr) = 0.3

TOTAL Tc (min) = 19.6

Stage Storage

Stage (ft)	Area (acres)	Volume (acre-ft)
100.4	2.57	0.00
101.9	2.79	4.12
104.0	3.10	10.21
105.0	3.88	13.70

Water Quality Basins

Treatment Volume (Wet Detention):
 The greater of 1.0 inch over the total project area or

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Section III – Post-Development Analysis

2.5 inches over the project impervious area (excluding ponds)

1 inch x	26.57	=	2.21	ac-ft.
2.5 inches x	19.78	=	4.12	ac-ft.

Treatment Volume	=	4.12	ac-ft.
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Water Quality Recovery

Stage (ft)	Volume (acre-ft)			
100.4	0.00			
X	4.25	X=	101.9	acre-ft
104.0	10.21			

Recover 0.5" over Contributing Basin within 24hrs.

Drainage Area (ac) = 26.57 = 1.11 ac-ft

Average Q (cfs) = 0.56

Orifice (cfs) = $C * A (2 * g * h)^{0.5}$

C = coefficient = 0.6

g = 32.2

Average Head = $(101.9 + 101.15)/2 - 100.4$

h = head (ft) = 1.13

solve for A

A = Area (ft²) = 0.12 4.7 inches diameter

use = 5.0 inches diameter

100-yr 72-hr Runoff Volume

Post Development

P (in) = 14.40

S (in) = 0.58

R (in) = 13.72

Volume (acre-ft) = 30.38

Pre-Development

Basin 5

CN = 63.90

P (in) = 14.40

S (in) = 5.65

R (in) = 9.31

Area (acres) = 71.19

Volume (acre-ft) = 55.22

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Section III – Post-Development Analysis

**Post Development Basin Fowler Access Road 1 (Sta. 0+00 -10+30.00)
Basin FB-1**

Soils (16) Immokalee Fine Sand

Weighted CN Calcs.

LAND USE	SCS CLASS.	AREA (AC)	CN	PRODUCT
Open Space-Good Condition	D	1.74	80	139.20
Pavement	D	0.55	98	53.90
SR 530/US 192 Pavement	D	0.04	98	3.92
		<u>2.33</u>		<u>197.02</u>

WEIGHTED CN = 84.6

Time of Concentration
SHEET FLOW

Assume a minimum of 10 minutes for water to reach ditch

$T(t1)(hr) = 0.167$ **SUBTOTAL = 0.167**

TOTAL Tc (hr) = 0.167

TOTAL Tc (min) = 10.0

Stage Storage

Stage (ft)	Area (acres)	Volume (acre-ft)
104.0	1.01	0.00
105.0	1.24	1.13
106.0	1.47	2.48
106.3	1.54	2.93

Water Quality Basins

Treatment Volume (Dry Detention):

Seventy five percent of 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 0.75 x 2.33 = 0.15 ac.ft.
2.5 inches x 0.75 x 0.59 = 0.09 ac.ft.

Treatment Volume = 0.15 ac.ft.

Water Quality Recovery

Recover 0.5" over Contributing Basin within 24hrs

Drainage Area (ac) = 2.33 = V = 0.10 ac-ft

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Section III – Post-Development Analysis

Stage (ft)	Volume (acre-ft)	
104.0	0.00	
X	0.76	X = 104.6 acre-ft
106.3	2.93	

Head of Notch = X - Control Elevation = 0.6 ft

$$\theta = 2 * \tan^{-1}((0.492 * V) / (H^{2.5})) * (180 / \pi)$$

0.492 * V = 0.050

H^{2.5} = 0.279

θ = 20 V-notch

Weir Length = tan (θ / 2) * H * 2

Weir Length = 0.2 ft

Slope = (L * 0.5) / H

Slope = 0.17

Post Development Basin Fowler Access Road 2 (Sta. 10+30.00 - 13+17.74)

Basin FB-2

Soils (16) Immokalee Fine Sand

Weighted CN Calcs.

LAND USE	SCS CLASS.	AREA (AC)	CN	PRODUCT
Open Space-Good Condition	D	0.44	80	35.20
Pavement	D	0.16	98	15.68
		<u>0.60</u>		<u>50.88</u>

WEIGHTED CN = 84.8

Time of Concentration

SHEET FLOW

Assume a minimum of 10 minutes for water to reach ditch

T(t1)(hr) = 0.167 SUBTOTAL = 0.167

TOTAL Tc (hr) = 0.167

TOTAL Tc (min) = 10.0

Stage Storage

Stage (ft)	Area (acres)	Volume (acre-ft)
104.0	0.17	0.00
105.0	0.25	0.21
106.0	0.33	0.50
106.3	0.36	0.60

49-187636001

Section III - Post-Development Analysis

III-40

Water Quality Basins

Treatment Volume (Dry Detention):

Seventy five percent of 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 0.75 x 0.60 = 0.04 ac.ft.
 2.5 inches x 0.75 x 0.16 = 0.03 ac.ft.

Treatment Volume	=	0.04	ac.ft.
-------------------------	----------	-------------	---------------

Water Quality Recovery

Recover 0.5" over Contributing Basin within 24hrs

Drainage Area (ac) = 0.60 = V = 0.03 ac-ft

Stage (ft)	Volume (acre-ft)		
104.0	0.00		
X	0.05	X =	104.2 acre-ft
106.3	0.60		

Head of Notch = X - Control Elevation = 0.2 ft

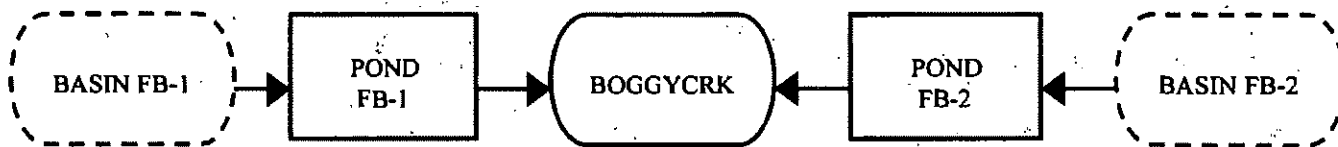
$\theta = 2 * \tan^{-1}((0.492 * V) / (H^{2.5})) * (180 / \pi)$

0.492 * V = 0.010
 H^{2.5} = 0.018
 θ = 58 V-notch

Weir Length = tan (θ / 2) * H * 2
 Weir Length = 0.2 ft

Slope = (L * 0.5) / H
 Slope = 0.50

Figure III-5 -Basin FB-1 & FB-2 Nodal Diagram



49-187636001

H-10

TABLE III-1 - BASIN PARAMETER SUMMARY

POND NUMBER	10		11A		11B		11C		11D		Totals	
	430+00 Lt	445+00 Lt	455+00 Lt	450+00 Rt	460+00 Rt	Basin 11	485+00 Lt	493+00 Rt	Wet	Wet	Detention	Detention
Location	Dry Retention	Dry Retention	Dry Retention	Dry Retention	Dry Retention							
Type Of Treatment	Boggy Creek	Pond 11B	RCID Perimeter Canal									
Receiving Body												
Existing Ground El., ft.	120.0	112.0	104.0	103.0	104.0							Whittenhorse Creek
Seasonal High Water Table (Shwt) El., ft.	102.0	100.0	100.0	100.0	96.0							105.0
Pond Bottom El., ft.	111.5	108.5	103.0	103.0	103.0							100.0
Weir Crest El., ft.	N/A	111.0		103.3								94.0
Weir Length, in.	N/A	172.0		3.0								100.9
Design High Water (Dhw25) El., ft.	114.63	110.78	106.28	106.16	106.13							3.8
Berm El., ft.	116.0	115.0	107.0	107.0	107.0							103.89
V-Notch (Control) El., ft.	N/A	N/A	N/A	N/A	N/A							105.0
V-Notch Angle	N/A	N/A	N/A	N/A	N/A							100
V-Notch Area (in ²)	N/A	N/A	N/A	N/A	N/A							20
Pond Total Drainage Area, ac.	35.9	17.3	16.8	13.4	16.2							20.6
Impervious Area Onsite And Offsite, ac. Future	8.4	6.2	7.6	3.9	6.2							20.1
Impervious Area Onsite And Offsite, ac. Present	5.4	3.9	7.3	3.8	4.6							6.7
Pond Area At Control - Water Body, ac.	5.0	4.9	2.2	1.6	2.5							3.6
Pervious Area, ac. Future	27.5	11.1	9.2	9.5	10.0							1.8
Pervious Area, ac. Present	30.5	13.4	9.5	9.6	11.6							13.4
Treatment Volume Required, ac.-ft.	1.50	0.72	0.79	0.56	0.68							16.5
Treatment Volume Provided, ac.-ft.	1.60	12.54	0.69	0.54	0.81							1.68
Storm Frequency - 72 Hour	25 yr	25 yr	25 yr	25 yr	25 yr							1.80
Rainfall Type	SFWMD	SFWMD	SFWMD	SFWMD	SFWMD							SFWMD
Unit Hydrograph Shape Factor	323	323	323	323	323							SFWMD
Pre-Development Discharge, cfs.	9.1		67.2									323
Post-Development Discharge, cfs.	0		56.6									20.8
Does Pond Recover in Required Time	Yes	Yes	Yes	Yes	Yes							7.8
												Yes
												Yes

49-1876-600

H 1 17

TABLE III-1 - BASIN PARAMETRIK SUMMARY

POND NUMBER	14A	14B	14C	15A	15B	15C	15D	15E	Totals
Location	3556+00 Lt	3595+00 Rt	590+00 Rt	613+00 Rt	120+00 Rt	620+00 Rt	620+00 Lt	605+00 Lt	Basin 15
Type Of Treatment	Dry Retention	Dry Retention	Dry Retention	Dry Retention	Dry Retention	Dry Retention	Dry Retention	Dry Retention	
Receiving Body	Bear Bay	Wetland	Wetland	Pond 15B	N/A	N/A	N/A	Pond 15A	
Existing Ground El., ft.	116.0	137.0	123.0	119.0	109.0	103.0	108.0	125.0	
Seasonal High Water Table (Shwt) El., ft.	103.0	126.0	114.0	104.0	98.0	98.0	98.0	112.0	
Pond Bottom El., ft.	116.0	128.0	116.0	115.5	100.5	100.5	100.5	120.0	
Weir Crest El., ft.	116.5	128.3	116.5	117.4	N/A	N/A	N/A	122.0	
Weir Length, in.	2	2	2	172	N/A	N/A	N/A	172	
Design High Water (Dhw25) El., ft.	118.58	130.38	120.63	117.39	105.11	105.09	105.09	122.26	
Berm El., ft.	120.0	132.0	121.5	118.5	106.5	107.5	106.0	122.5	
V-Notch (Control) El., ft.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
V-Notch Angle	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
V-Notch Area (in ²)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Pond Total Drainage Area, ac.	21	8	16.8	37.4	30.7	3.5	10.3	17.7	99.6
Impervious Area (Onsite And Offsite, ac. Future)	4.1	1.1	7.7	5.7	8.0	0.4	1.7	7.1	22.9
Impervious Area (Onsite And Offsite, ac. Present)	4.1	1.1	4.1	5.4	8.0	0.4	1.5	3.2	18.5
Pond Area At Control - Water Body, ac.	1.8	0.8	1.4	5.1	3.0	0.4	0.2	1.8	76.7
Pervious Area, ac. Future	16.9	6.9	9.1	31.7	22.7	3.1	8.6	10.6	
Pervious Area, ac. Present	16.9	6.9	12.7	32.0	22.7	3.1	8.8	14.5	81.1
Treatment Volume Required, ac.-ft.	0.88	0.33	0.80	1.56	1.28	0.15	0.43	0.74	4.16
Treatment Volume Provided, ac.-ft.	1.03	0.44	0.80	1.57	1.68	0.32	0.18	0.80	4.55
Storm Frequency - 72 Hour	25 yr.	25 yr	25 yr	25 yr	25 yr	25 yr	25 yr	25 yr	
Rainfall Type	SFWMD	SFWMD	SFWMD	SFWMD	SFWMD	SFWMD	SFWMD	SFWMD	
Unit Hydrograph Shape Factor	323	323	323	323	323	323	323	323	
Pre-Development Discharge, cfs.	30.1	31.8	31.8	0	0	0	0	0	
Post-Development Discharge, cfs.	1.6	12.7	12.7	0	0	0	0	0	
Does Pond Recover in Required Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	

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49 - 1876360

TABLE III-1 - BASIN PARAMETER SUMMARI

POND NUMBER	TOTALS
Pond Total Drainage Area, ac.	336.9
Impervious Area Onsite And Offsite, ac. Future	100.6
Impervious Area Onsite And Offsite, ac. Present	71.2
Pervious Area, ac. Future	236.3
Pervious Area, ac. Present	265.7
Treatment Volume Required, ac.-ft.	18.1
Treatment Volume Provided, ac.-ft.	30.9

III - 1E

7/30/2001 @ 11:32 AM

3 of 3

Basin Param Summ totals.xls, Totals

49-187636001

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Table III-2 - Proposed and Ultimate Impervious Areas

ll
5-24-01

ID	Station	to Station		Proposed Area (acres)	Ultimate Area (acres)
Pond 10	Mainline	414+00	438+43	Tot. = 5.4	8.4
Pond 11A	Mainline Ramp B1	438+43	456+25	3.4 0.5 Tot. = 3.9	5.7 0.5 6.2
Pond 11B	Ramp B2	1501+25 1507+60 1513+50 1515+00 1517+00	1507+60 1513+50 1515+00 1517+20 1523+00	Tot. = 7.3	7.6
Pond 11C	Ramp C	110+00	115+00	Tot. = 3.8	3.9
Pond 11D	Mainline Ramp D	456+25 1709+00	468+00 1714+00	Tot. = 4.6	6.2
Pond 12	Mainline Ramp D	468+00 1714+00	489+52 1725+00	Tot. = 3.6	6.7
Pond 13	Mainline	489+52	573+72	Tot. = 14.8	25.8
Pond 14A	Hartzog			Tot. = 4.1	4.1
Pond 14B	Hartzog			Tot. = 1.1	1.1
Pond 14C	Mainline Ramp E Ramp F	573+72 576+00 580+00 581+60 580+00 582+20 590+00	594+56 580+00 581+60 595+00 582+20 590+00 594+60	Tot. = 4.1	7.7
Treat. Swale	Hartzog			Tot. = 1.3	1.3
Pond 15A	Ramp F NW Road NW Road	2004+50	2024+40	4.3 0.6 0.5 Tot. = 5.4	4.7 0.5 0.5 5.7
Pond 15B	Seidel Ramp F	2024+40	2028+00	Tot. = 8.0	8.0
Pond 15C	Mainline Ramp F			0.4 0.03 Tot. = 0.4	0.4 0.03 0.4
Pond 15D	Mainline Ramp E	1922+00 1927+00	1927+00 1929+50	0.5 1.0 Tot. = 1.5	0.5 1.2 1.7
Pond 15E	Mainline	594+56 1903+00	622+00 1922+00	Tot. = 3.2	7.1
Grand Total =				72.5	102.0

49-187636001

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Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: *cl*
3-15-01

Water Quality Treatment Volume Requirements

Basin 10: Pond 10

Basin Area (ac)	35.9	Roadway Impervious Area (ac) *	8.4
Offsite Area (ac)	14.8	Composite Curve Number (CN)	70

SFWMD Water Quality Volume Criteria:

- Wet Detention:** The greater of 1" of Runoff times the Basin Area, or the total runoff of 2.5" times the impervious Area
- Dry Detention:** Equal to 75 percent of the computed amounts for Wet Detention.
- Dry Retention:** Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area=	1.50 ac-ft	Control
50% of the total runoff of 2.5" times the Impervious Area =	0.88 ac-ft	

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	111.5	5.0	0.00	0.00
Low Berm	114.5	5.7	16.05	16.05
Maintenance Berm	116.0	6.8	9.38	25.43

Water Quality Volume Required = 1.50 ac- ft @ 111.8 ft
 Water Quality Volume Provided= 1.60 ac- ft @ 111.8 ft **OK**

* Assumes ultimate median impervious

49-187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by:

Water Quality Treatment Volume Requirements

Basin 11: Pond 11A

Basin Area (ac)	17.3	Roadway Impervious Area (ac) *	6.2
Offsite Area (ac)	0.0	Composite Curve Number (CN)	81

SFWMD Water Quality Volume Criteria:

- Wet Detention:** The greater of 1" of Runoff times the Basin Area, or the total runoff of 2.5" times the impervious Area
- Dry Detention:** Equal to 75 percent of the computed amounts for Wet Detention.
- Dry Retention:** Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area=	0.72 ac-ft	Control
50% of the total runoff of 2.5" times the Impervious Area =	0.65 ac-ft	

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	108.5	4.9	0.00	0.00
Low Berm	113.5	6.0	27.25	27.25
Maintenance Berm	115.0	7.0	9.75	37.00

Water Quality Volume Required = 0.72 ac- ft @ 108.6 ft
 Water Quality Volume Provided= 1.09 ac- ft @ 108.7 ft **OK**

Note: Additional Storage Provided to EL 111.0 to further reduce post discharge rate, volume and provide additional treatment volume.

Water Quality Volume Provided= 12.54 ac- ft @ 110.8 ft 25yr 72hr peak stage

* Assumes ultimate median impervious

49-187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: 5-18-01
[Signature]

Water Quality Treatment Volume Requirements

Basin 11: Pond 11B

Basin Area (ac)	16.8	Roadway Impervious Area (ac) *	7.6
Offsite Area (ac)	0.0	Composite Curve Number (CN)	80

SFWMD Water Quality Volume Criteria:

- Wet Detention:** The greater of 1" of Runoff times the Basin Area, or the total runoff of 2.5" times the impervious Area
- Dry Detention:** Equal to 75 percent of the computed amounts for Wet Detention.
- Dry Retention:** Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area =	0.70 ac-ft	
50% of the total runoff of 2.5" times the Impervious Area =	0.79 ac-ft	Control

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	103.0	2.2	0.00	0.00
Low Berm	105.5	2.4	5.75	5.75
Maintenance Berm	107.0	2.8	3.90	9.65

Water Quality Volume Required = 0.79 ac- ft @ 103.3 ft
 Water Quality Volume Provided = 0.69 ac- ft @ 103.3 ft **WQV Not Provided**

* Assumes ultimate median impervious

49-187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by:

Water Quality Treatment Volume Requirements

Basin 11: Pond 11C

Basin Area (ac)	13.4	Roadway Impervious Area (ac) *	3.9
Offsite Area (ac)	0.0	Composite Curve Number (CN)	76

SFWMD Water Quality Volume Criteria:

- Wet Detention:** The greater of 1" of Runoff times the Basin Area, or the total runoff of 2.5" times the impervious Area
- Dry Detention:** Equal to 75 percent of the computed amounts for Wet Detention.
- Dry Retention:** Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area=	0.56 ac-ft	Control
50% of the total runoff of 2.5" times the Impervious Area =	0.41 ac-ft	

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	103.0	1.6	0.00	0.00
Low Berm	105.5	2.0	4.50	4.50
Maintenance Berm	107.0	2.5	3.38	7.88

Water Quality Volume Required = **0.56 ac-ft** @ **103.3 ft**
 Water Quality Volume Provided = **0.54 ac-ft** @ **103.3 ft** **WQV Not Provided**

* Assumes ultimate median impervious

40 - 187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: *ll*
5-18-01

Water Quality Treatment Volume Requirements

Basin 11: Pond 11D

Basin Area (ac)	16.20	Roadway Impervious Area (ac) *	6.20
Offsite Area (ac)	0.00	Composite Curve Number (CN)	76

SFWMD Water Quality Volume Criteria:

- Wet Detention:** The greater of 1" of Runoff times the Basin Area, or the total runoff of 2.5" times the impervious Area
- Dry Detention:** Equal to 75 percent of the computed amounts for Wet Detention.
- Dry Retention:** Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area=	0.68 ac-ft	Control
50% of the total runoff of 2.5" times the Impervious Area =	0.65 ac-ft	

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	103.0	2.5	0.00	0.00
Low Berm	105.5	2.9	6.75	6.75
Maintenance Berm	107.0	3.5	4.80	11.55

Water Quality Volume Required = **0.68 ac-ft** @ **103.3 ft**
 Water Quality Volume Provided= **0.81 ac-ft** @ **103.3 ft** **OK**

* Assumes ultimate median impervious

49-187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: *U*
5-18-01

**Water Quality Treatment Volume Requirements
For Ponds 11B, 11C, & 11D**

Water Quality Treatment Volume Required (Dry Ponds), Greater of:

0.75" of Runoff times Project Area =	1.94 ac-ft	Control
1.875" x Impervious Area =	1.85 ac-ft	

Treatment Pond Stage-Area-Storage Relationship:

Pond 11B

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	103.0	2.2	0.0	0.0
Low Berm	105.5	2.4	5.8	5.8
Maintenance Berm	107.0	2.8	3.9	9.7

Water Quality Volume Provided = **0.69 ac-ft** @ **103.3 ft**

Pond 11C

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	103.0	1.6	0.0	0.0
Low Berm	105.5	2.0	4.5	4.5
Maintenance Berm	107.0	2.5	3.4	7.9

Water Quality Volume Provided = **0.54 ac-ft** @ **103.3 ft**

Pond 11D

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	103.0	2.5	0.0	0.0
Low Berm	105.5	2.9	6.8	6.8
Maintenance Berm	107.0	3.5	4.8	11.6

Water Quality Volume Provided = **0.81 ac-ft** @ **103.3 ft**

Total

Total Volume Required = **1.94 ac-ft**
Total Volume Provided = **2.04 ac-ft** @ **103.3 ft**

OK

49-187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by:

Water Quality Treatment Volume Requirements

Basin 12: Pond 12

Basin Area (ac)	20.1	Roadway Impervious Area (ac) *	6.7
Offsite Area (ac)	5.5	Composite Curve Number (CN)	70.0

SFWMD Water Quality Volume Criteria:

- Wet Detention:** The greater of 1" of Runoff times the Basin Area, or the total runoff of 2.5" times the impervious Area
- Dry Detention:** Equal to 75 percent of the computed amounts for Wet Detention.
- Dry Retention:** Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Wet Detention

WQV Calculation:

1" of Runoff times Basin Area=	1.68 ac-ft	Control
2.5" times the Impervious Area =	1.40 ac-ft	

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	94.0	1.2	0.00	0.00
SHWT, Control el.	100.0	1.8	0.00	0.00
Top of Bank	103.5	2.2	7.00	7.00
Maintenance Berm	105.0	2.7	3.68	10.68

Water Quality Volume Required = 1.68 ac- ft @ 100.8 ft
 Water Quality Volume Provided= 1.80 ac- ft @ 100.9 ft **OK**

* Assumes ultimate median impervious

40 - 187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: *3-20-01*

Water Quality Treatment Volume Requirements

Basin 13: Pond 13

Basin Area (ac)	71.8	Roadway Impervious Area (ac) *	25.8
Offsite Area (ac)	9.5	Composite Curve Number (CN)	71

SFWMD Water Quality Volume Criteria:

- Wet Detention:** The greater of 1" of Runoff times the Basin Area, or the total runoff of 2.5" times the impervious Area
- Dry Detention:** Equal to 75 percent of the computed amounts for Wet Detention.
- Dry Retention:** Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Wet Detention

WQV Calculation:

1" of Runoff times Basin Area=	5.98 ac-ft	Control
The total runoff of 2.5" times the Impervious Area =	5.38 ac-ft	

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	94.0	4.2	0.0	0.0
SHWT, Control el.	100.0	5.5	0.0	0.0
Low Berm	105.5	6.7	33.6	33.6
Maintenance Berm	107.0	7.6	10.7	44.3

Water Quality Volume Required = **5.98 ac-ft** @ **101.0 ft**
 Water Quality Volume Provided= **6.10 ac-ft** @ **101.0 ft** **OK**

* Assumes ultimate median impervious

49-187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: CC
3-30-01

Water Quality Treatment Volume Requirements

Basin 14A: Pond 14A

Basin Area (ac)	21.0	Roadway Impervious Area (ac) *	4.1
Offsite Area (ac)	0.0	Composite Curve Number (CN)	63

Compensatory Treatment for Hartzog Road:

Compensated Area 1 - (Hartzog Road Sta. 3512+91.56 to 3514+12)
 Impervious Area - (3512+91.56 to 3514+12) * 24 ft. = 0.1 ac

Compensated Area 2 - (Hartzog Road Sta. 3602+00 to 3614+62.73)
 Impervious Area 2 - (3602+00 to 3614+62.73) * 24 ft. = 0.7 ac

Total Impervious Area: 4.9 ac

SFWMD Water Quality Volume Criteria:

- Wet Detention:** The greater of 1" of Runoff times the Basin Area, or the total runoff of 2.5" times the impervious Area
- Dry Detention:** Equal to 75 percent of the computed amounts for Wet Detention.
- Dry Retention:** Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area=	0.88 ac-ft	Control
50% of the total runoff of 2.5" times the Impervious Area =	0.51 ac-ft	

Above calculation includes impervious from above compensatory areas.

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	116.0	1.9	0.00	0.00
Low Berm	118.5	2.2	5.13	5.13
Maintenance Berm	120.0	2.7	3.68	8.80

Water Quality Volume Required = **0.88 ac-ft** @ **116.4 ft**
 Water Quality Volume Provided = **1.03 ac-ft** @ **116.5 ft**

OK 9 - 1 8 7 6 3 6 0 0 1

* Assumes ultimate median impervious

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: *[Signature]*
5-17-01

Water Quality Treatment Volume Requirements

Basin 14BC: Pond 14B

Basin Area (ac)	8.0	Roadway Impervious Area (ac)	1.1
Offsite Area (ac)	3.0	Composite Curve Number (CN)	59

SFWMD Water Quality Volume Criteria:

- Wet Detention:** The greater of 1" of Runoff times the Basin Area, or the total runoff of 2.5" times the impervious Area
- Dry Detention:** Equal to 75 percent of the computed amounts for Wet Detention.
- Dry Retention:** Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area =	0.33 ac-ft	Control
50% of the total runoff of 2.5" times the Impervious Area =	0.11 ac-ft	

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	128.0	1.0	0.00	0.00
Low Berm	132.0	1.9	5.80	5.80

Water Quality Volume Required = **0.33 ac-ft** @ **128.2 ft**
 Water Quality Volume Provided = **0.44 ac-ft** @ **128.3 ft** **OK**

49-187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: *CL*
5-17-01

Water Quality Treatment Volume Requirements

Basin 14BC: Pond 14C

Basin Area (ac)	16.8	Roadway Impervious Area (ac)	7.7
Offsite Area (ac)	0.0	Composite Curve Number (CN)	76

SFWMD Water Quality Volume Criteria:

- Wet Detention:** The greater of 1" of Runoff times the Basin Area, or the total runoff of 2.5" times the impervious Area
- Dry Detention:** Equal to 75 percent of the computed amounts for Wet Detention.
- Dry Retention:** Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area =	0.70 ac-ft	
50% of the total runoff of 2.5" times the Impervious Area =	0.80 ac-ft	Control

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	116.0	1.4	0.00	0.00
Low Berm	120.0	1.8	6.40	6.40
Maintenance Berm	121.5	2.3	3.08	9.48

Water Quality Volume Required = 0.80 ac- ft @ 116.5 ft
 Water Quality Volume Provided= 0.80 ac- ft @ 116.5 ft **OK**

49-187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: *[Signature]*
4-15-01

Water Quality Treatment Volume Requirements

Basin 15: Pond 15A

Basin Area (ac)	37.4	Roadway Impervious Area (ac) *	5.7
Offsite Area (ac)	19.2	Composite Curve Number (CN)	54

All areas are from Basin 15A and 15F

SFWMD Water Quality Volume Criteria:

Wet Detention: The greater of 1" of Runoff times the Basin Area,
or the total runoff of 2.5" times the impervious Area

Dry Detention: Equal to 75 percent of the computed amounts for Wet Detention.

Dry Retention: Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area=	1.56 ac-ft	Control
50% of the total runoff of 2.5" times the Impervious Area =	0.59 ac-ft	

Treatment Pond Stage-Area-Storage Relationship:

	Stage ft	Area ac	Incremental Storage ac-ft	Cumulative Storage ac-ft
Pond Bottom	115.5	5.1	0.00	0.00
Low Berm	117.0	5.4	7.88	7.88
Maintenance Berm	118.5	6.1	8.63	16.50

Water Quality Volume Required = 1.56 ac- ft @ 115.8 ft
 Water Quality Volume Provided= 1.57 ac- ft @ 115.8 ft **OK**

* Assumes ultimate median impervious

49-187636001

11-202

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: *cl*
4-19-01

Water Quality Treatment Volume Requirements

Basin 15: Pond 15B

Basin Area (ac)	30.7	Roadway Impervious Area (ac)	8.0
Offsite Area (ac)	12.3	Composite Curve Number (CN)	64

SFWMD Water Quality Volume Criteria:

- Wet Detention:** The greater of 1" of Runoff times the Basin Area,
or the total runoff of 2.5" times the impervious Area
- Dry Detention:** Equal to 75 percent of the computed amounts for Wet Detention.
- Dry Retention:** Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area=	1.28 ac-ft	Control
50% of the total runoff of 2.5" times the Impervious Area =	0.83 ac-ft	

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	100.5	3.0	0.00	0.00
Low Berm	105.0	3.7	15.08	15.08
Maintenance Berm	106.5	4.3	6.00	21.08

Water Quality Volume Required = **1.28 ac- ft** @ **100.9 ft**
 Water Quality Volume Provided= **1.68 ac- ft** @ **101.0 ft** **OK**

49-187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: *ll*
4-15-01

Water Quality Treatment Volume Requirements

Basin 15: Pond 15C

Basin Area (ac)	3.5	Roadway Impervious Area (ac) *	0.4
Offsite Area (ac)	0.0	Composite Curve Number (CN)	72

SFWMD Water Quality Volume Criteria:

Wet Detention: The greater of 1" of Runoff times the Basin Area,
or the total runoff of 2.5" times the impervious Area

Dry Detention: Equal to 75 percent of the computed amounts for Wet Detention.

Dry Retention: Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area =

0.15	ac-ft
0.04	ac-ft

Control

50% of the total runoff of 2.5" times the Impervious Area =

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	100.5	0.4	0.00	0.00
Low Berm	106.0	0.9	3.58	3.58
Maintenance Berm	107.5	1.2	1.58	5.15

Water Quality Volume Required = **0.15 ac-ft** @ **100.7 ft**
 Water Quality Volume Provided = **0.32 ac-ft** @ **101.0 ft** **OK**

* Assumes ultimate median impervious

49-187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: 4-15-01
cl

Water Quality Treatment Volume Requirements

Basin 15: Pond 15D

Basin Area (ac)	10.3	Roadway Impervious Area (ac) *	1.7
Offsite Area (ac)	3.7	Composite Curve Number (CN)	55

SFWMD Water Quality Volume Criteria:

- Wet Detention:** The greater of 1" of Runoff times the Basin Area, or the total runoff of 2.5" times the impervious Area
- Dry Detention:** Equal to 75 percent of the computed amounts for Wet Detention.
- Dry Retention:** Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area=	0.43 ac-ft	Control
50% of the total runoff of 2.5" times the Impervious Area =	0.18 ac-ft	

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	100.5	0.2	0.00	0.00
Low Berm	104.5	0.5	1.40	1.40
Maintenance Berm	106.0	0.7	0.90	2.30

Water Quality Volume Required = **0.43 ac- ft** @ **101.7 ft**
 Water Quality Volume Provided= **0.18 ac- ft** @ **101.0 ft** **WQV Not Provided**

Ponds B, C & D are inter-connected to provide adequate treatment and attenuation.

Total WQV Required for Ponds B, C & D = **1.86 ac- ft**
 Total WQV Provided for Ponds B, C & D = **2.18 ac- ft @ 101.0 ft OK**

* Assumes ultimate median impervious

49-187636001

Western Beltway (SR 429)
Orange County, FL

Prepared by: GTP
Checked by: *ll*
4-15-01

Water Quality Treatment Volume Requirements

Basin 15: Pond 15E

Basin Area (ac)	17.7	Roadway Impervious Area (ac) *	7.1
Offsite Area (ac)	2.0	Composite Curve Number (CN)	72

SFWMD Water Quality Volume Criteria:

Wet Detention: The greater of 1" of Runoff times the Basin Area,
or the total runoff of 2.5" times the impervious Area

Dry Detention: Equal to 75 percent of the computed amounts for Wet Detention.

Dry Retention: Equal to 50 percent of the computed amounts for Wet Detention.

Pond Treatment Method: Dry Retention

WQV Calculation:

50% of 1" of Runoff times Basin Area =

0.74	ac-ft
0.74	ac-ft

50% of the total runoff of 2.5" times the Impervious Area =

Treatment Pond Stage-Area-Storage Relationship:

	Stage	Area	Incremental Storage	Cumulative Storage
	ft	ac	ac-ft	ac-ft
Pond Bottom	120.0	1.8	0.00	0.00
Low Berm	122.5	2.2	5.00	5.00
Maintenance Berm				

Water Quality Volume Required = 0.74 ac-ft @ 120.4 ft
 Water Quality Volume Provided = 0.80 ac-ft @ 120.4 ft **OK**

* Assumes ultimate median impervious

49-187636001

ERP No. 48-166214001
(CFX SR 429)

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01

PARSONS
ENGINEERS AND PLANNERS

Basin #1 Post Development Basin Calcs.

SUBJECT: Western Expressway - Part C

SECTION: 653

MADE BY: EJK

CHECKED BY:

JOB #: 643201

DATE: 10/14/03

DATE:

DRAINAGE AREA (A)

Basin No. 1 consists of 21.04 acres onsite area including 1.72 acre from the pond site area.

Total Area (A)	21.04 ac.
NDCIA:	0.12 ac.
DCIA:	8.32 ac.
%DCIA: $[(DCIA / A) (100)] =$	39.54 %
Pervious Area (P):	12.60 ac.

CURVE NUMBER (CN)

<u>SOIL TYPE</u>	<u>DESCRIPTION</u>	<u>CN</u>	<u>AREA</u>
A	Grass, Good Condition	39	12.60
	NDCIA, Pavement	98	0.12
<i>Composite CN:</i>		$\frac{(\sum CNi * \sum Ai)}{(\sum Ai)} =$	39.56

TIME OF CONCENTRATION

FLOW DESCRIPTION:

Sheet flow and shallow concentrated flow to ditch at Station 634+00 (Rt). Ditch conveyance to Station 590+00 (Rt). Pipe flow to Station 590+00 (Lt). Ditch conveyance to Station 595+00. Pipe flow to Pond 1.

See Ditch Calculations and Storm Sewer Tabulation Sheets (ASAD) for Tc calculations.

$T_1 = 23.39$ min.

PARSONS
ENGINEERS AND PLANNERS

SUBJECT: Western Expressway - Part C
SECTION: 653 **JOB #:** 643201
MADE BY: JYL **DATE:** 9/15/03
CHECKED BY: **DATE:**

Basin #1 Water Quality Volume Calcs.

wbpav1.xls

Pond No. 1

Seasonal High Water Elevation (SHW): 103.51 NGVD.

POND NO. 1 STAGE / STORAGE RELATIONSHIP (NODE POND #1)

Stage	Area	Average Area	Storage	Accum. Storage
112.00	0.56		0.00	0.00
		0.61		
113.00	0.66		0.61	0.61
		0.71		
114.00	0.76		0.71	1.32
		0.81		
115.00	0.86		0.81	2.13
		0.91		
116.00	0.97		0.91	3.04
		1.03		
117.00	1.08		1.03	4.07
		1.11		
117.50	1.13		0.55	4.62
		1.19		
118.00	1.25		0.60	5.22
		1.36		
119.00	1.48		1.36	6.58
		1.60		
120.00	1.72		1.60	8.18

WATER QUALITY VOLUME (WQV)

Pond No. 1 is located in an open basin in Orange County within the boundaries of the SFWMD. Use the SFWMD criteria; therefore the greater of: 0.50" of runoff from the entire contributing area or 1.25" multiplied by the percentage of impervious area. See Basis of Review, Section 5.2.1 of the SFWMD ERP Manual.

$$WQV = \frac{R \text{ (in.)} * A \text{ (ac.)}}{(12 \text{ in. / ft.})} \quad R = 0.50 \text{ in.}$$

$$A = 21.04 \text{ ac.}$$

therefore, $WQV = 0.88 \text{ ac.-ft.}$

or

$$WQV = \frac{R \text{ (in.)} * \% \text{ Imp.} * A \text{ (ac.)}}{(12 \text{ in. / ft.})(100)} \quad R = 1.25 \text{ in.}$$

$$A = 21.04 \text{ ac.}$$

$$\% \text{ Imp.} = 39.54$$

$$WQV = 0.87 \text{ ac.-ft.}$$

therefore use: 0.87 ac.-ft.

WATER QUALITY ELEVATION

Stage	Area (ac.)	Storage (ac-ft)
113	0.66	0.61
114	0.76	1.32

Therefore, from linear interpolation, minimum water quality elevation = **113.37** ' NGVD
Set weir overflow elevation at 113.64 to provide 1.06 ac-ft of Water Quality Volume

PARSONS
ENGINEERS AND PLANNERS

SUBJECT: Western Expressway - Part C

SECTION: 653

JOB #: 643201

MADE BY: JYL

DATE: 2/10/03

Basin #2 Post Development Basin Calcs.

CHECKED BY:

DATE:

DRAINAGE AREA (A)

Basin No.2 consists of 23.15 acres draining to Pond No. 2.

Total Area (A)	23.15 ac.
NDCIA	2.61 ac.
DCIA:	12.01 ac.
%DCIA: $[(DCIA / A) (100)] =$	51.88 %
Pervious Area (P):	8.53 ac.

CURVE NUMBER (CN)

<u>SOIL TYPE</u>	<u>DESCRIPTION</u>	<u>CN</u>	<u>AREA</u>
A	Candler, Fine Sand, Open Space, Good Condition	39	8.19
A	Tavares-Millhoper, Open Space, Good Condition	39	0.34
NDCIA	Water Surface	100	2.61

$$\text{Composite CN: } \frac{(\sum CN_i * \sum A_i)}{(\sum A_i)} = \mathbf{53.29}$$

TIME OF CONCENTRATION (T_c)

FLOW DESCRIPTION:

Sheet flow from edge of pavement to median @ Station 602+00 (assume negligible). Ditch flow to Station 622+00. Pipe flow to Pond No. 2 (assume negligible).

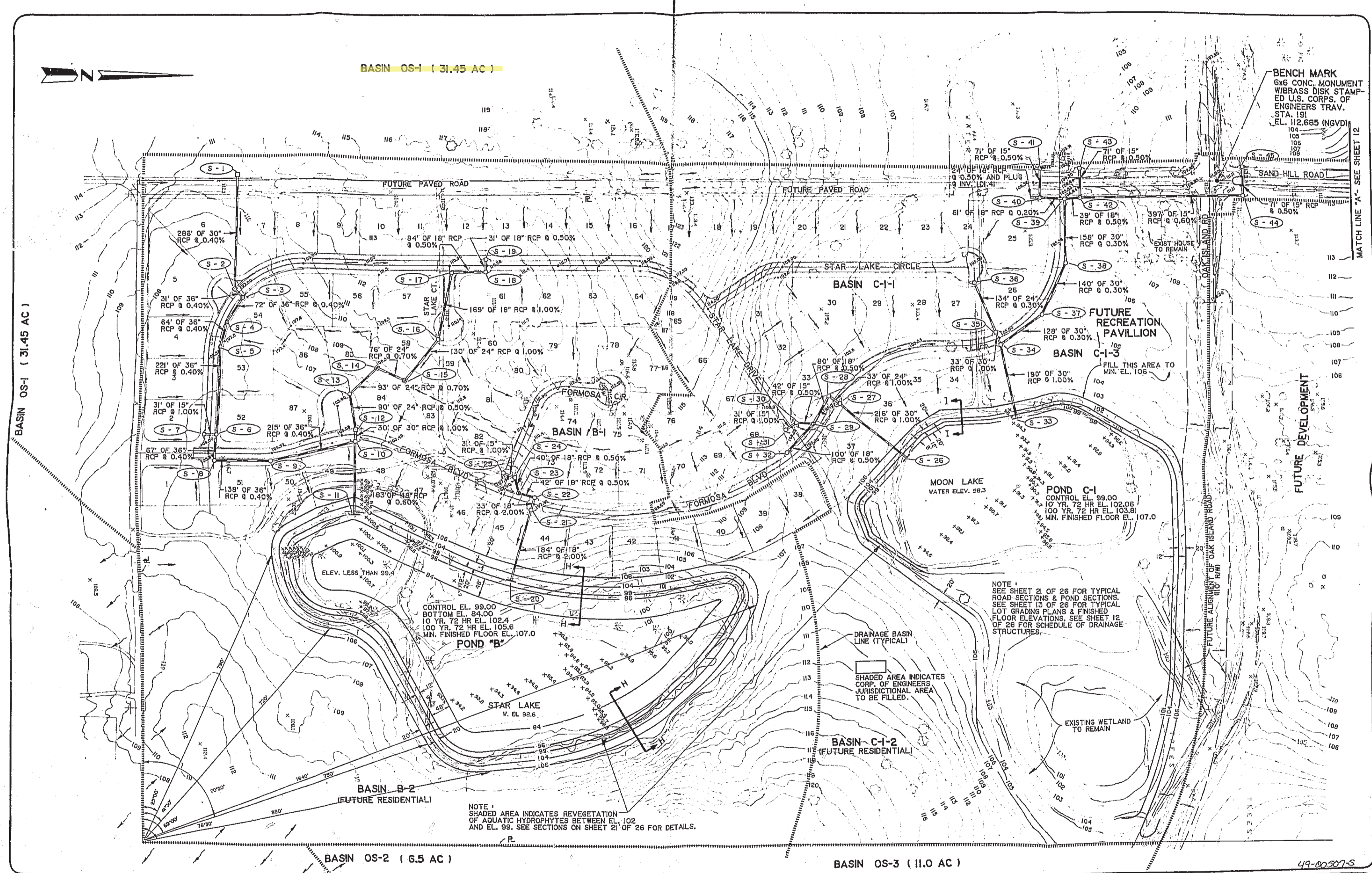
See Ditch Calculations and Storm Sewer Tabulation Sheets (ASAD) for TC calculations.

$$T_c = \mathbf{24.55 \text{ min.}}$$

ERP No. 49-00507-S
(Indian Creek Subdivision)

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01



BENCH MARK
 6x6 CONC. MONUMENT
 W/BRASS DISK STAMP-
 ED U.S. CORPS. OF
 ENGINEERS TRAV.
 STA. 191
 EL. 112.685 (NGVD)

NOTE:
 SEE SHEET 21 OF 26 FOR TYPICAL
 ROAD SECTIONS & POND SECTIONS.
 SEE SHEET 13 OF 26 FOR TYPICAL
 LOT GRADING PLANS & FINISHED
 FLOOR ELEVATIONS. SEE SHEET 12
 OF 26 FOR SCHEDULE OF DRAINAGE
 STRUCTURES.

NOTE:
 SHADED AREA INDICATES REVEGETATION
 OF AQUATIC HYDROPHYTES BETWEEN EL. 102
 AND EL. 99. SEE SECTIONS ON SHEET 21 OF 26 FOR DETAILS.

DESIGN	R.S.	F.B.N.	SEC. 34,34D
DRAWN	B.H.	PAGE	TWP. 25
CHECKED	R.S./L.V.	SCALE	1"=100'
		DATE	6-21-89
		RNG.	27
		Date	By
		Revision	

R.O. Box 397 • Kissimmee, Florida 32742
 Telephone (407) 847-9433

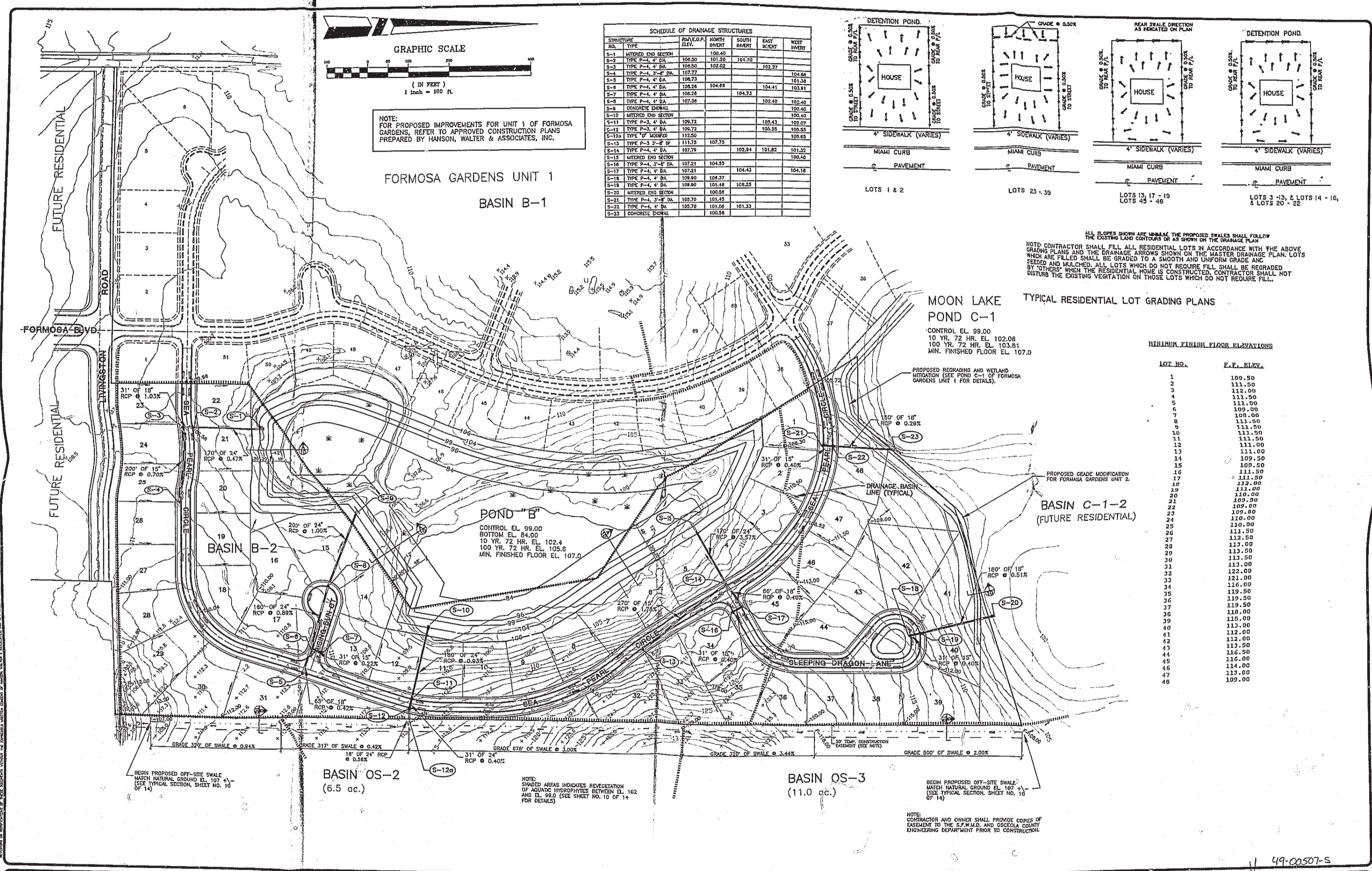
HWA
 ENGINEERING • SURVEYING • PLANNING
 Hanson, Walter & Associates, Inc.

Formosa Gardens
 UNIT 1

MASTER DRAINAGE PLAN

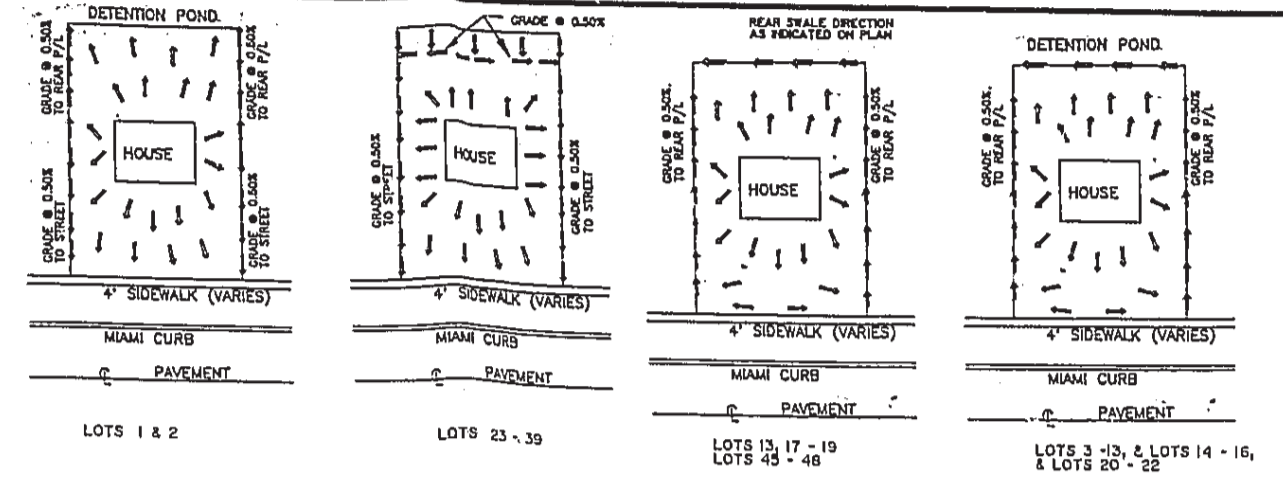
49-00207-S

SHEET NO
 11 of 26
 HWA No. 3273



SCHEDULE OF DRAINAGE STRUCTURES

STRUCTURE NO.	TYPE	AREA (A.P.)	ELEV.	INLET	OUTLET	WEST	EAST
S-1	MIXED END SECTION	100.40	100.40				
S-2	TYPE P-4, 4" DIA.	100.50	101.30	101.70			
S-3	TYPE P-4, 4" DIA.	100.50	100.50		102.00		
S-4	TYPE P-4, 4" DIA.	100.70	100.70			101.30	
S-5	TYPE P-4, 4" DIA.	100.70	100.70				101.30
S-6	TYPE P-4, 4" DIA.	100.80	104.00				101.91
S-7	TYPE P-4, 4" DIA.	100.50	104.90				
S-8	TYPE P-4, 4" DIA.	100.30	100.40	100.40	100.40		
S-9	CONCRETE DRAIN		100.40				
S-10	MIXED END SECTION		100.40				
S-11	TYPE P-4, 4" DIA.	100.70	100.70		100.70		
S-12	TYPE P-4, 4" DIA.	100.70	100.70			100.55	
S-13	TYPE P-4, 4" DIA.	100.70	100.70				100.55
S-14	TYPE P-4, 4" DIA.	100.70	100.70	100.84	101.80	101.30	
S-15	MIXED END SECTION		100.80				
S-16	TYPE P-4, 4" DIA.	100.30	104.55				104.10
S-17	TYPE P-4, 4" DIA.	100.30	104.30				104.10
S-18	TYPE P-4, 4" DIA.	100.50	104.30				104.10
S-19	TYPE P-4, 4" DIA.	100.50	104.40	104.25			
S-20	MIXED END SECTION		100.50				
S-21	TYPE P-4, 4" DIA.	100.70	101.45				
S-22	TYPE P-4, 4" DIA.	100.70	101.00	101.30			
S-23	CONCRETE DRAIN		100.50				



MOON LAKE POND C-1
 CONTROL EL. 99.00
 10 YR. 72 HR. EL. 102.06
 100 YR. 72 HR. EL. 103.81
 MIN. FINISHED FLOOR EL. 107.0

TYPICAL RESIDENTIAL LOT GRADING PLANS

MINIMUM FINISHED FLOOR ELEVATIONS

LOT NO.	F.F. ELEV.
1	109.50
2	111.50
3	111.00
4	111.50
5	111.00
6	109.00
7	108.00
8	111.50
9	111.50
10	111.50
11	111.00
12	111.00
13	111.00
14	109.50
15	109.50
16	111.50
17	111.50
18	111.00
19	111.00
20	109.50
21	109.50
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27	111.50
28	111.50
29	111.50
30	111.50
31	111.00
32	112.00
33	121.00
34	116.00
35	119.50
36	119.50
37	119.50
38	119.50
39	119.50
40	113.00
41	112.00
42	113.00
43	113.00
44	116.00
45	116.00
46	114.00
47	113.00
48	109.00

ERP No. 49-00956-P
(SR 530 / US 192)

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01

South Florida Water Management District

**BEG. PERMIT
NUMBER**

49-00956-P

APPLICATION NO.

980909-4

49-00956-P



Form 145
Rev 08/85

**SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE PERMIT NO. 49-00956-P
DATE ISSUED: MARCH 11, 1999**

PERMITTEE: FLORIDA DEPARTMENT OF TRANSPORTATION
(U.S. 192 (S.R. 530))
719 SOUTH WOODLAND BOULEVARD,
DELAND, FL 32720

PROJECT DESCRIPTION: AUTHORIZATION FOR THE CONSTRUCTION AND OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM TO SERVE THE 101.68-ACRE US192 (SR530) ROADWAY WIDENING PROJECT, DISCHARGING TO WEST BOGGY CREEK, BLACK LAKE, AND REEDY CREEK.

PROJECT LOCATION: OSCEOLA COUNTY, SECTION 2-5, 11, 32-34 TWP 25S RGE 27E
PROJECT LOCATION: ORANGE COUNTY,

PERMIT DURATION: Five years from the date issued to complete construction of the surface water management system as authorized herein. See attached Rule 40E-4.321, Florida Administrative Code.

This Permit is issued pursuant to Application No. 980909-4, dated August 26, 1998. Permittee agrees to hold and save the South Florida Water Management District and its successors harmless from any and all damages, claims or liabilities which may arise by reason of the construction, operation, maintenance or use of activities authorized by this Permit. This Permit is issued under the provisions of Chapter 373, Part IV Florida Statutes (F.S.), and the Operating Agreement Concerning Regulation Under Part IV, Chapter 373 F.S., between South Florida Water Management District and the Department of Environmental Protection. Issuance of this Permit constitutes certification of compliance with state water quality standards where necessary pursuant to Section 401, Public Law 92-500, 33 USC Section 1341, unless this Permit is issued pursuant to the net improvement provisions of Subsections 373.414(1)(b), F.S., or as otherwise stated herein.

This Permit may be transferred pursuant to the appropriate provisions of Chapter 373, F.S. and Sections 40B-1.6107(1) and (2), and 40B-4.351(1), (2), and (4), Florida Administrative Code (F.A.C.). This Permit may be revoked, suspended, or modified at any time pursuant to the appropriate provisions of Chapter 373, F.S. and Sections 40B-4.351(1), (2), and (4), F.A.C.

This Permit shall be subject to the General Conditions set forth in Rule 40B-4.381, F.A.C., unless waived or modified by the Governing Board. The Application, and the Environmental Resource Permit Staff Review Summary of the Application, including all conditions, and all plans and specifications incorporated by reference, are a part of this Permit. All activities authorized by this Permit shall be implemented as set forth in the plans, specifications, and performance criteria as set forth and incorporated in the Environmental Resource Permit Staff Review Summary. Within 30 days after completion of construction of the permitted activity, the Permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual, pursuant to the appropriate provisions of Chapter 373, F.S. and Sections 40B-4.361 and 40B-4.381, F.A.C.

In the event the property is sold or otherwise conveyed, the Permittee will remain liable for compliance with this Permit until transfer is approved by the District pursuant to Rule 40B-1.6107, F.A.C.

SPECIAL AND GENERAL CONDITIONS ARE AS FOLLOWS:
SEE PAGES 2-5 OF 9 (16 SPECIAL CONDITIONS).
SEE PAGES 6-9 OF 9 (19 GENERAL CONDITIONS).

FILED WITH THE CLERK OF THE SOUTH
FLORIDA WATER MANAGEMENT DISTRICT

SOUTH FLORIDA WATER MANAGEMENT
DISTRICT, BY ITS GOVERNING BOARD

ON _____ Original signed by:
BY Vern Kaiser
DEPUTY CLERK

Original signed by
By TONY BURNS
ASSISTANT SECRETARY

GLS
3/11/99
JMC

SPECIAL CONDITIONS

1. MINIMUM ROAD CROWN ELEVATION: BASIN: BASIN A - 106.00 FEET NGVD.
BASIN: BASIN B - 106.86 FEET NGVD.

2. DISCHARGE FACILITIES:

BASIN: BASIN A:

1-14.33' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 104.47' NGVD.
1-.4' DIA. CIRCULAR ORIFICE WITH INVERT AT ELEV. 103' NGVD.
42.64 LF OF 2.46' DIA. RCP CULVERT.

RECEIVING BODY : WEST BOGGY CREEK

CONTROL ELEV : 103 FEET NGVD. /103 FEET NGVD DRY SEASON.

BASIN: BASIN B, STRUCTURE NO. 1:

1-10.17' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 106.3' NGVD.
1-.25' DIA. CIRCULAR ORIFICE WITH INVERT AT ELEV. 104' NGVD.
124.64 LF OF 1.48' DIA. RCP CULVERT.

RECEIVING BODY : WEST BOGGY CREEK

CONTROL ELEV : 104 FEET NGVD. /104 FEET NGVD DRY SEASON.

BASIN: BASIN B, STRUCTURE NO. 2:

1-10.17' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 106.3' NGVD.
1-.25' DIA. CIRCULAR ORIFICE WITH INVERT AT ELEV. 104' NGVD.
164.33 LF OF 1.48' DIA. RCP CULVERT.

RECEIVING BODY : WEST BOGGY CREEK

CONTROL ELEV : 104 FEET NGVD. /104 FEET NGVD DRY SEASON.

BASIN: BASIN C/D:

1-5.15' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 102.2' NGVD.
1-.36' DIA. CIRCULAR ORIFICE WITH INVERT AT ELEV. 100' NGVD.
841.6 LF OF 3.94' DIA. RCP CULVERT.

RECEIVING BODY : ADJACENT CHANNEL

CONTROL E. : 100 FEET NGVD. /100 FEET NGVD DRY SEASON.

BASIN: BASIN E:

1-10' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 103.51' NGVD.
1-.25' DIA. CIRCULAR ORIFICE WITH INVERT AT ELEV. 99.71' NGVD.
49.2 LF OF 2.46' DIA. RCP CULVERT.

RECEIVING BODY : REEDY CREEK

CONTROL ELEV : 99.71 FEET NGVD. /99.71 FEET NGVD DRY SEASON.

3. THE PERMITTEE SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY EROSION, SHOALING OR WATER QUALITY PROBLEMS THAT RESULT FROM THE CONSTRUCTION OR OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM.
4. MEASURES SHALL BE TAKEN DURING CONSTRUCTION TO INSURE THAT SEDIMENTATION AND/OR TURBIDITY PROBLEMS ARE NOT CREATED IN THE RECEIVING WATER.
5. THE DISTRICT RESERVES THE RIGHT TO REQUIRE THAT ADDITIONAL WATER QUALITY TREATMENT METHODS BE INCORPORATED INTO THE DRAINAGE SYSTEM IF SUCH MEASURES ARE SHOWN TO BE NECESSARY.
6. LAKE SIDE SLOPES SHALL BE NO STEEPER THAN 5:1 (HORIZONTAL:VERTICAL) TO A DEPTH OF TWO FEET BELOW THE CONTROL ELEVATION. SIDE SLOPES SHALL BE NURTURED OR PLANTED FROM 2 FEET BELOW TO 1 FOOT ABOVE CONTROL ELEVATION TO INSURE VEGETATIVE GROWTH.
7. FACILITIES OTHER THAN THOSE STATED HEREIN SHALL NOT BE CONSTRUCTED WITHOUT AN APPROVED MODIFICATION OF THIS PERMIT.
8. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OF FUTURE PHASES, PAVING, GRADING, AND DRAINAGE PLANS SHALL BE SUBMITTED TO THE DISTRICT FOR PERMIT MODIFICATIONS.
9. OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL BE THE RESPONSIBILITY OF FLORIDA DEPARTMENT OF TRANSPORTATION.
10. SILT SCREENS, HAY BALES OR OTHER SUCH SEDIMENT CONTROL MEASURES SHALL BE UTILIZED DURING CONSTRUCTION. THE SELECTED SEDIMENT CONTROL MEASURES SHALL BE INSTALLED LANDWARD OF THE UPLAND BUFFER ZONES AROUND ALL PROTECTED WETLANDS. ALL AREAS SHALL BE STABILIZED AND VEGETATED IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION INTO THE WETLANDS AND UPLAND BUFFER ZONES.
11. THE SFWMD RESERVES THE RIGHT TO REQUIRE REMEDIAL MEASURES TO BE TAKEN BY THE PERMITTEE IF WETLAND AND/OR UPLAND MONITORING OR OTHER INFORMATION DEMONSTRATES THAT ADVERSE IMPACTS TO PROTECTED, CONSERVED, INCORPORATED OR MITIGATED WETLANDS OR UPLANDS HAVE OCCURRED DUE TO PROJECT RELATED ACTIVITIES.
12. ANY FUTURE CHANGES IN LAND USE OR TREATMENT OF WETLANDS AND/OR UPLAND BUFFER/COMPENSATION AREAS MAY REQUIRE A SURFACE WATER MANAGEMENT PERMIT MODIFICATION AND ADDITIONAL ENVIRONMENTAL REVIEW BY DISTRICT STAFF. PRIOR TO THE PERMITTEE INSTITUTING ANY FUTURE CHANGES NOT AUTHORIZED BY THIS PERMIT, THE PERMITTEE SHALL NOTIFY THE SFWMD OF SUCH INTENTIONS FOR A DETERMINATION OF ANY NECESSARY PERMIT MODIFICATIONS.

13. MITIGATION SHALL BE PROVIDED BY DESIGNATION OF 20 ACRES OF WETLAND RESTORATION/ENHANCEMENT WITHIN THE 534.9-ACRE THREE LAKES WILDLIFE MANAGEMENT AREA (TLWMA) MITIGATION SITE (PREVIOUSLY AUTHORIZED BY SFWMD PERMIT APPLICATION NUMBERS 940614-10 AND 940614-1-D). THIS MITIGATION ACREAGE WILL BE SUBTRACTED FROM THE 242.52 ACRES OF MITIGATION AVAILABLE, LEAVING A BALANCE OF 222.52 ACRES OF MITIGATION AVAILABLE TO OFFSET OTHER FDOT DISTRICT 5 ROADWAY PROJECTS (SEE EXHIBIT 11).
14. ALL PROVISIONS OF THE TLWMA PERMIT APPLICATION NUMBER 940614-10 CONCERNING CONSTRUCTION, MONITORING AND MAINTENANCE OF THE MITIGATION SITE ARE INCORPORATED HEREIN BY REFERENCE.
15. MONITORING REQUIRED:
DESCRIPTION: TURBIDITY EXPRESSED IN NEPHELOMETRIC TURBIDITY UNITS (NTU).
LOCATION: BACKGROUND - SAMPLES SHALL BE TAKEN 200 FEET UPSTREAM OF ANY CONSTRUCTION ACTIVITY WITHIN SURFACE WATER OF THE STATE (I.E., REEDY CREEK.)
COMPLIANCE - SAMPLES SHALL BE TAKEN 200 FEET DOWNSTREAM.
FREQUENCY: TWICE DAILY, WITH AT LEAST A FOUR-HOUR INTERVAL, DURING ALL WORK AUTHORIZED BY THIS PERMIT.
DURATION: MONITORING SHALL BEGIN ON THE FIRST DAY OF CONSTRUCTION FOR ALL ACTIVITIES RELATED TO THE PROPOSED ACTIVITIES THAT ARE CLASSIFIED AS SURFACE WATERS OF THE STATE. MONITORING SHALL CEASE WHEN ALL CONSTRUCTION ACTIVITIES RELATED TO THE PROPOSED ACTIVITIES ARE COMPLETED. THE MONITORING DATA MUST DEMONSTRATE THAT TURBIDITY 200 FEET DOWNSTREAM OF ALL PROPOSED ACTIVITIES IS LESS THAN OR EQUAL TO 29 NTU'S ABOVE NATURAL BACKGROUND TURBIDITY 200 FEET UPSTREAM OF EACH PROPOSED ACTIVITY FOR A PERIOD OF 7 CONSECUTIVE DAYS AFTER COMPLETION OF CONSTRUCTION.
ALL MONITORING DATA SHALL BE REPORTED WITHIN ONE WEEK OF ANALYSIS WITH DOCUMENTS CONTAINING THE FOLLOWING INFORMATION: (1) PERMIT AND APPLICATION NUMBER; (2) DATES OF SAMPLING AND ANALYSIS; (3) A STATEMENT DESCRIBING THE METHODS USED IN COLLECTION, HANDLING, STORAGE AND ANALYSIS OF THE SAMPLES; (4) A MAP INDICATING THE SAMPLING LOCATIONS AND (5) A STATEMENT BY THE INDIVIDUAL RESPONSIBLE FOR IMPLEMENTATION OF THE SAMPLING PROGRAM CONCERNING THE AUTHENTICITY, PRECISION, LIMITS OF DETECTION AND ACCURACY OF THE DATA.
MONITORING REPORTS SHALL ALSO INCLUDE THE FOLLOWING INFORMATION FOR EACH SAMPLE THAT IS TAKEN:
(A) TIME OF DAY SAMPLES TAKEN;
(B) DEPTH OF WATER BODY;
(C) DEPTH OF SAMPLES;
(D) ANTECEDENT WEATHER CONDITIONS;
(E) WIND DIRECTION AND VELOCITY;

IF MONITORING REVEALS VIOLATIONS OF THE STATE WATER QUALITY STANDARD FOR TURBIDITY, CONSTRUCTION ACTIVITIES SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL CORRECTIVE MEASURES HAVE BEEN TAKEN AND TURBIDITY HAS RETURNED TO ACCEPTABLE LEVELS. ANY SUCH OCCURRENCE SHALL ALSO BE IMMEDIATELY (WITHIN A 24 HOUR PERIOD) REPORTED TO THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT AT THE ORLANDO SERVICE CENTER, 7335 LAKE ELLENOR DRIVE, ORLANDO, FL 32809.

PERMIT NO: 49-00956-P
PAGE 5 OF 9

MONITORING REPORTS SHALL BE SUMMARIZED DAILY AND SUBMITTED WEEKLY TO THE
NATURAL RESOURCE MANAGEMENT DIVISION IN THE ORLANDO SERVICE CENTER.

16. THE AUTHORIZATION OF THE STORMWATER MANAGEMENT SYSTEM IS ISSUED PURSUANT TO
THE WATER QUALITY NET IMPROVEMENT PROVISIONS REFERENCED IN RULE SECTION
40E.4.303(1); THEREFORE, WATER QUALITY CERTIFICATION IS WAIVED.

GENERAL CONDITIONS

1. ALL ACTIVITIES AUTHORIZED BY THIS PERMIT SHALL BE IMPLEMENTED AS SET FORTH IN THE PLANS, SPECIFICATIONS AND PERFORMANCE CRITERIA AS APPROVED BY THIS PERMIT. ANY DEVIATION FROM THE PERMITTED ACTIVITY AND THE CONDITIONS FOR UNDERTAKING THAT ACTIVITY SHALL CONSTITUTE A VIOLATION OF THIS PERMIT AND PART IV, CHAPTER 373, F.S.
2. THIS PERMIT OR A COPY THEREOF, COMPLETE WITH ALL CONDITIONS, ATTACHMENTS, EXHIBITS, AND MODIFICATIONS SHALL BE KEPT AT THE WORK SITE OF THE PERMITTED ACTIVITY. THE COMPLETE PERMIT SHALL BE AVAILABLE FOR REVIEW AT THE WORK SITE UPON REQUEST BY THE DISTRICT STAFF. THE PERMITTEE SHALL REQUIRE THE CONTRACTOR TO REVIEW THE COMPLETE PERMIT PRIOR TO COMMENCEMENT OF THE ACTIVITY AUTHORIZED BY THIS PERMIT.
3. ACTIVITIES APPROVED BY THIS PERMIT SHALL BE CONDUCTED IN A MANNER WHICH DOES NOT CAUSE VIOLATIONS OF STATE WATER QUALITY STANDARDS. THE PERMITTEE SHALL IMPLEMENT BEST MANAGEMENT PRACTICES FOR EROSION AND POLLUTION CONTROL TO PREVENT VIOLATION OF STATE WATER QUALITY STANDARDS. TEMPORARY EROSION CONTROL SHALL BE IMPLEMENTED PRIOR TO AND DURING CONSTRUCTION, AND PERMANENT CONTROL MEASURES SHALL BE COMPLETED WITHIN 7 DAYS OF ANY CONSTRUCTION ACTIVITY. TURBIDITY BARRIERS SHALL BE INSTALLED AND MAINTAINED AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATERBODY EXISTS DUE TO THE PERMITTED WORK. TURBIDITY BARRIERS SHALL REMAIN IN PLACE AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND SOILS ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE GUIDELINES AND SPECIFICATIONS DESCRIBED IN CHAPTER 6 OF THE FLORIDA LAND DEVELOPMENT MANUAL; A GUIDE TO SOUND LAND AND WATER MANAGEMENT (DEPARTMENT OF ENVIRONMENTAL REGULATION, 1988), INCORPORATED BY REFERENCE IN RULE 40E-4.092, F.A.C. UNLESS A PROJECT-SPECIFIC EROSION AND SEDIMENT CONTROL PLAN IS APPROVED AS PART OF THE PERMIT. THEREAFTER THE PERMITTEE SHALL BE RESPONSIBLE FOR THE REMOVAL OF THE BARRIERS. THE PERMITTEE SHALL CORRECT ANY EROSION OR SHOALING THAT CAUSES ADVERSE IMPACTS TO THE WATER RESOURCES.
4. THE PERMITTEE SHALL NOTIFY THE DISTRICT OF THE ANTICIPATED CONSTRUCTION START DATE WITHIN 30 DAYS OF THE DATE THAT THIS PERMIT IS ISSUED. AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ACTIVITY AUTHORIZED BY THIS PERMIT, THE PERMITTEE SHALL SUBMIT TO THE DISTRICT AN ENVIRONMENTAL RESOURCE PERMIT CONSTRUCTION COMMENCEMENT NOTICE FORM NO. 0960 INDICATING THE ACTUAL START DATE AND THE EXPECTED COMPLETION DATE.
5. WHEN THE DURATION OF CONSTRUCTION WILL EXCEED ONE YEAR, THE PERMITTEE SHALL SUBMIT CONSTRUCTION STATUS REPORTS TO THE DISTRICT ON AN ANNUAL BASIS UTILIZING AN ANNUAL STATUS REPORT FORM. STATUS REPORT FORMS SHALL BE SUBMITTED THE FOLLOWING JUNE OF EACH YEAR.
6. WITHIN 30 DAYS AFTER COMPLETION OF CONSTRUCTION OF THE PERMITTED ACTIVITY, THE PERMITTEE SHALL SUBMIT A WRITTEN STATEMENT OF COMPLETION AND

CERTIFICATION BY A REGISTERED PROFESSIONAL ENGINEER OR OTHER APPROPRIATE INDIVIDUAL AS AUTHORIZED BY LAW, UTILIZING THE SUPPLIED ENVIRONMENTAL RESOURCE PERMIT CONSTRUCTION COMPLETION/CONSTRUCTION CERTIFICATION FORM NO.0881. THE STATEMENT OF COMPLETION AND CERTIFICATION SHALL BE BASED ON ONSITE OBSERVATION OF CONSTRUCTION OR REVIEW OF ASBUILT DRAWINGS FOR THE PURPOSE OF DETERMINING IF THE WORK WAS COMPLETED IN COMPLIANCE WITH PERMITTED PLANS AND SPECIFICATIONS. THIS SUBMITTAL SHALL SERVE TO NOTIFY THE DISTRICT THAT THE SYSTEM IS READY FOR INSPECTION. ADDITIONALLY, IF DEVIATION FROM THE APPROVED DRAWINGS ARE DISCOVERED DURING THE CERTIFICATION PROCESS, THE CERTIFICATION MUST BE ACCOMPANIED BY A COPY OF THE APPROVED PERMIT DRAWINGS WITH DEVIATIONS NOTED. BOTH THE ORIGINAL AND REVISED SPECIFICATIONS MUST BE CLEARLY SHOWN. THE PLANS MUST BE CLEARLY LABELED AS "ASBUILT" OR "RECORD" DRAWING. ALL SURVEYED DIMENSIONS AND ELEVATIONS SHALL BE CERTIFIED BY A REGISTERED SURVEYOR.

7. THE OPERATION PHASE OF THIS PERMIT SHALL NOT BECOME EFFECTIVE: UNTIL THE PERMITTEE HAS COMPLIED WITH THE REQUIREMENTS OF CONDITION (6) ABOVE, HAS SUBMITTED A REQUEST FOR CONVERSION OF ENVIRONMENTAL RESOURCE PERMIT FROM CONSTRUCTION PHASE TO OPERATION PHASE, FORM NO.0920; THE DISTRICT DETERMINES THE SYSTEM TO BE IN COMPLIANCE WITH THE PERMITTED PLANS AND SPECIFICATIONS; AND THE ENTITY APPROVED BY THE DISTRICT IN ACCORDANCE WITH SECTIONS 9.0 AND 10.0 OF THE BASIS OF REVIEW FOR ENVIRONMENTAL RESOURCE PERMIT APPLICATIONS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT - AUGUST 1995, ACCEPTS RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF THE SYSTEM. THE PERMIT SHALL NOT BE TRANSFERRED TO SUCH APPROVED OPERATION AND MAINTENANCE ENTITY UNTIL THE OPERATION PHASE OF THE PERMIT BECOMES EFFECTIVE. FOLLOWING INSPECTION AND APPROVAL OF THE PERMITTED SYSTEM BY THE DISTRICT, THE PERMITTEE SHALL INITIATE TRANSFER OF THE PERMIT TO THE APPROVED RESPONSIBLE OPERATING ENTITY IF DIFFERENT FROM THE PERMITTEE. UNTIL THE PERMIT IS TRANSFERRED PURSUANT TO SECTION 40E-1.6107, F.A.C., THE PERMITTEE SHALL BE LIABLE FOR COMPLIANCE WITH THE TERMS OF THE PERMIT.
8. EACH PHASE OR INDEPENDENT PORTION OF THE PERMITTED SYSTEM MUST BE COMPLETED IN ACCORDANCE WITH THE PERMITTED PLANS AND PERMIT CONDITIONS PRIOR TO THE INITIATION OF THE PERMITTED USE OF SITE INFRASTRUCTURE LOCATED WITHIN THE AREA SERVED BY THAT PORTION OR PHASE OF THE SYSTEM. EACH PHASE OR INDEPENDENT PORTION OF THE SYSTEM MUST BE COMPLETED IN ACCORDANCE WITH THE PERMITTED PLANS AND PERMIT CONDITIONS PRIOR TO TRANSFER OF RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF THE PHASE OR PORTION OF THE SYSTEM TO A LOCAL GOVERNMENT OR OTHER RESPONSIBLE ENTITY.
9. FOR THOSE SYSTEMS THAT WILL BE OPERATED OR MAINTAINED BY AN ENTITY THAT WILL REQUIRE AN EASEMENT OR DEED RESTRICTION IN ORDER TO ENABLE THAT ENTITY TO OPERATE OR MAINTAIN THE SYSTEM IN CONFORMANCE WITH THIS PERMIT, SUCH EASEMENT OR DEED RESTRICTION MUST BE RECORDED IN THE PUBLIC RECORDS AND SUBMITTED TO THE DISTRICT ALONG WITH ANY OTHER FINAL OPERATION AND MAINTENANCE DOCUMENTS REQUIRED BY SECTIONS 9.0 AND 10.0 OF THE BASIS OF REVIEW FOR ENVIRONMENTAL RESOURCE PERMIT APPLICATIONS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT - AUGUST 1995, PRIOR TO LOT OR UNIT SALES OR PRIOR TO THE COMPLETION OF THE SYSTEM, WHICHEVER OCCURS FIRST. OTHER DOCUMENTS CONCERNING THE ESTABLISHMENT AND AUTHORITY OF THE OPERATING ENTITY MUST BE FILED WITH THE SECRETARY OF STATE WHERE APPROPRIATE. FOR THOSE SYSTEMS WHICH ARE PROPOSED TO BE MAINTAINED BY THE COUNTY OR MUNICIPAL ENTITIES, FINAL OPERATION AND MAINTENANCE DOCUMENTS MUST BE RECEIVED BY THE

DISTRICT WHEN MAINTENANCE AND OPERATION OF THE SYSTEM IS ACCEPTED BY THE LOCAL GOVERNMENT ENTITY. FAILURE TO SUBMIT THE APPROPRIATE FINAL DOCUMENTS WILL RESULT IN THE PERMITTEE REMAINING LIABLE FOR CARRYING OUT MAINTENANCE AND OPERATION OF THE PERMITTED SYSTEM AND ANY OTHER PERMIT CONDITIONS.

10. SHOULD ANY OTHER REGULATORY AGENCY REQUIRE CHANGES TO THE PERMITTED SYSTEM, THE PERMITTEE SHALL NOTIFY THE DISTRICT IN WRITING OF THE CHANGES PRIOR TO IMPLEMENTATION SO THAT A DETERMINATION CAN BE MADE WHETHER A PERMIT MODIFICATION IS REQUIRED.
11. THIS PERMIT DOES NOT ELIMINATE THE NECESSITY TO OBTAIN ANY REQUIRED FEDERAL, STATE, LOCAL AND SPECIAL DISTRICT AUTHORIZATIONS PRIOR TO THE START OF ANY ACTIVITY APPROVED BY THIS PERMIT. THIS PERMIT DOES NOT CONVEY TO THE PERMITTEE OR CREATE IN THE PERMITTEE ANY PROPERTY RIGHT, OR ANY INTEREST IN REAL PROPERTY, NOR DOES IT AUTHORIZE ANY ENTRANCE UPON OR ACTIVITIES ON PROPERTY WHICH IS NOT OWNED OR CONTROLLED BY THE PERMITTEE, OR CONVEY ANY RIGHTS OR PRIVILEGES OTHER THAN THOSE SPECIFIED IN THE PERMIT AND CHAPTER 40E-4 OR CHAPTER 40E-40, F.A.C.
12. THE PERMITTEE IS HEREBY ADVISED THAT SECTION 253.77, F.S. STATES THAT A PERSON MAY NOT COMMENCE ANY EXCAVATION, CONSTRUCTION, OR OTHER ACTIVITY INVOLVING THE USE OF SOVEREIGN OR OTHER LANDS OF THE STATE, THE TITLE TO WHICH IS VESTED IN THE BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND WITHOUT OBTAINING THE REQUIRED LEASE, LICENSE, EASEMENT, OR OTHER FORM OF CONSENT AUTHORIZING THE PROPOSED USE. THEREFORE, THE PERMITTEE IS RESPONSIBLE FOR OBTAINING ANY NECESSARY AUTHORIZATIONS FROM THE BOARD OF TRUSTEES PRIOR TO COMMENCING ACTIVITY ON SOVEREIGNTY LANDS OR OTHER STATE-OWNED LANDS.
13. THE PERMITTEE MUST OBTAIN A WATER USE PERMIT PRIOR TO CONSTRUCTION DEWATERING, UNLESS THE WORK QUALIFIES FOR A GENERAL PERMIT PURSUANT TO SUBSECTION 40E-20.302(4), F.A.C., ALSO KNOWN AS THE "NO NOTICE" RULE.
14. THE PERMITTEE SHALL HOLD AND SAVE THE DISTRICT HARMLESS FROM ANY AND ALL DAMAGES, CLAIMS, OR LIABILITIES WHICH MAY ARISE BY REASON OF THE CONSTRUCTION, ALTERATION, OPERATION, MAINTENANCE, REMOVAL, ABANDONMENT OR USE OF ANY SYSTEM AUTHORIZED BY THE PERMIT.
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 SECTION 373.421(2), F.S., PROVIDES OTHERWISE.
16. THE PERMITTEE SHALL NOTIFY THE DISTRICT IN WRITING WITHIN 30 DAYS OF ANY SALE, CONVEYANCE, OR OTHER TRANSFER OF OWNERSHIP OR CONTROL OF A PERMITTED SYSTEM OR THE REAL PROPERTY ON WHICH THE PERMITTED SYSTEM IS LOCATED. ALL TRANSFERS OF OWNERSHIP OR TRANSFERS OF A PERMIT ARE SUBJECT TO THE REQUIREMENTS OF RULES 40E-1.6105 AND 40E-1.6107, F.A.C. THE PERMITTEE TRANSFERRING THE PERMIT SHALL REMAIN LIABLE FOR CORRECTIVE ACTIONS THAT MAY BE REQUIRED AS A RESULT OF ANY VIOLATIONS PRIOR TO THE SALE, CONVEYANCE OR OTHER TRANSFER OF THE SYSTEM.
17. UPON REASONABLE NOTICE TO THE PERMITTEE, DISTRICT AUTHORIZED STAFF WITH

PROPER IDENTIFICATION SHALL HAVE PERMISSION TO ENTER, INSPECT, SAMPLE AND TEST THE SYSTEM TO INSURE CONFORMITY WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE PERMIT.

18. IF HISTORICAL OR ARCHAEOLOGICAL ARTIFACTS ARE DISCOVERED AT ANY TIME ON THE PROJECT SITE, THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE APPROPRIATE DISTRICT SERVICE CENTER.
19. THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DISTRICT IN WRITING OF ANY PREVIOUSLY SUBMITTED INFORMATION THAT IS LATER DISCOVERED TO BE INACCURATE.

40E-4.321 Duration of Permits

(1) Unless revoked or otherwise modified the duration of an environmental resource permit issued under this chapter or Chapter 40E-40, F.A.C. is as follows:

(a) For a conceptual approval, two years from the date of issuance or the date specified as a condition of the permit, unless within that period an application for an individual or standard general permit is filed for any portion of the project. If an application for an environmental resource permit is filed, then the conceptual approval remains valid until final action is taken on the environmental resource permit application. If the application is granted, then the conceptual approval is valid for an additional two years from the date of issuance of the permit. Conceptual approvals which have no individual or standard general environmental resource permit applications filed for a period of two years shall expire automatically at the end of the two year period.

(b) For a conceptual approval filed concurrently with a development of regional impact (DRI) application for development approval (ADA) and a local government comprehensive plan amendment, the duration of the conceptual approval shall be two years from whichever one of the following occurs at the latest date:

1. the effective date of the local government's comprehensive plan amendment.
2. the effective date of the local government development order.
3. the date on which the District issues the conceptual approval, or
4. the latest date of the resolution of any Chapter 120.57, F.A.C., administrative proceeding or other legal appeals.

(c) For an individual or standard general environmental resource permit, five years from the date of issuance or such amount of time as made a condition of the permit.

(d) For a noticed general permit issued pursuant to Chapter 40E-400, F.A.C., five years from the date the notice of intent to use the permit is provided to the District.

(2)(a) Unless prescribed by special permit condition, permits expire automatically according to the timeframes indicated in this rule. If application for extension is made in writing pursuant to subsection (3), the permit shall remain in full force and effect until:

1. the Governing Board takes action on an application for extension of an individual permit,
- or
2. staff takes action on an application for extension of a standard general permit.

(b) Installation of the project outfall structure shall not constitute a vesting of the permit.

(3) The permit extension shall be issued provided that a permittee files a written request with the District showing good cause prior to the expiration of the permit. For the purpose of this rule, good cause shall mean a set of extenuating circumstances outside of the control of the permittee. Requests for extensions, which shall include documentation of the extenuating circumstances and how they have delayed this project, will not be accepted more than 180 days prior to the expiration date.

(4) Substantial modifications to Conceptual Approvals will extend the duration of the Conceptual Approval for two years from the date of issuance of the modification. For the purposes of this section, the term "substantial modification" shall mean a modification which is reasonably expected to lead to substantially different water resource or environmental impacts which require a detailed review.

(5) Substantial modifications to individual or standard general environmental resource permits issued pursuant to a permit application extend the duration of the permit for three years from the date of issuance of the modification. Individual or standard general environmental resource permit modifications do not extend the duration of a conceptual approval.

(6) Permit modifications issued pursuant to subsection 40E-4.331(2)(b), F.A.C. (letting modifications) do not extend the duration of a permit.

(7) Failure to complete construction or alteration of the surface water management system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization in order to continue construction unless a permit extension is granted.



File

South Florida Water Management District

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045
TDD (561) 697-2574

March 2, 1999

Florida Department of Transportation
719 South Woodland Boulevard
Deland, FL 32720

Subject: Application No. 80909-4, U.S. 192 (S.R. 530),
Osceola County, S2-5,11,32-34/T25S/R27E

Enclosed is a copy of this District's staff report covering the permit application referenced therein. It is requested that you read this staff report thoroughly and understand its contents. The recommendations as stated in the staff report will be presented to our Governing Board for consideration on March 11, 1999.

Should you wish to object to the staff recommendations or file a petition, please provide written objections, petitions and/or waivers (refer to the attached "Notice of Right") to:

Vern Kaiser, Deputy Clerk
South Florida Water Management District
Post Office Box 24680
West Palm Beach, Florida 33416-4680

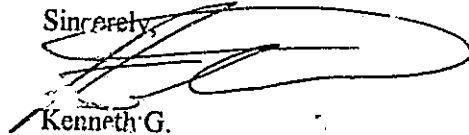
The "Notice of Rights" addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. You are advised, however, to be prepared to defend your position regarding the permit application when it is considered by the Governing Board for final agency action, even if you agree with the staff recommendations, as the Governing Board may take final agency action which differs materially from the proposed agency action.

Please contact the District if you have any questions concerning this matter. If we do not hear from you prior to the date on the "Notice of Rights", we will assume you concur with our recommendations.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the addressee this 2nd day of March 1999, in accordance with Section 120.60 (3) Florida Statutes.

Sincerely,


Kenneth G.
Deputy Dir.
Regulation I

KGA/jb

CERTIFIED Z 337 027 309
RETURN RECEIPT REQUESTED

Governing Board.
Frank Williamson, Jr. Chairman
Eugene K. Pettis, Jr. Chairman
Mitchell W. Berger

Vera M. Carter
William E. Graham
William Hammond

Richard A. Macheck
Michael D. Minton
Miriam Singer

Samuel E. Poole III, Executive Director
Michael Slayton, Deputy Executive Director

Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680

NOTICE OF RIGHTS

Section 120.569(1), Fla. Stat. (1997), requires that "each notice shall inform the recipient of any administrative hearing or judicial review that is available under this section, s. 120.57, or s. 120.68; shall indicate the procedure which must be followed to obtain the hearing or judicial review, and shall state the time limits which apply." Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

Petition for Administrative Proceedings

1. A person whose substantial interests are affected by the South Florida Water Management District's (SFWMD) action has the right to request an administrative hearing on that action. The affected person may request either a formal or an informal hearing, as set forth below. A point of entry into administrative proceedings is governed by Rules 28-106.111 and 40E-1.511, Fla. Admin. Code, (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109), as set forth below. Petitions are deemed filed upon receipt of the original documents by the SFWMD Clerk.

a. Formal Administrative Hearing: If a genuine issue(s) of material fact is in dispute, the affected person seeking a formal hearing on a SFWMD decision which does or may determine their substantial interests shall file a petition for hearing pursuant to Sections 120.569 and 120.57(1), Fla. Stat. or for mediation pursuant to Section 120.573, Fla. Stat. within 21 days, except as provided in subsections c. and d. below, of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-106.201(2), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

b. Informal Administrative Hearing: If there are no issues of material fact in dispute, the affected person seeking an informal hearing on a SFWMD decision which does or may determine their substantial interests shall file a petition for hearing pursuant to Sections 120.569 and 120.57(2), Fla. Stat. or for mediation pursuant to Section 120.573, Fla. Stat. within 21 days, except as provided in subsections c. and d. below, of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-106.301(2), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

c. Administrative Complaint and Order: If a Respondent objects to a SFWMD Administrative Complaint and Order, pursuant to Section 373.119, Fla. Stat. (1997), the person named in the Administrative Complaint and Order may file a petition for a hearing no later than 14 days after the date such order is served. Petitions must substantially comply with the requirements of either subsection a. or b. above.

d. State Lands Environmental Resource Permit: Pursuant to Section 373.427, Fla. Stat., and Rule 40E-1.511(3), Fla. Admin. Code (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109(2)(c)), a petition objecting to the SFWMD's agency action regarding consolidated applications for Environmental Resource Permits and Use of Sovereign Submerged Lands (SLERPs), must be filed within 14 days of the notice of consolidated intent to grant or deny the SLERP. Petitions must substantially comply with the requirements of either subsection a. or b. above.

e. Emergency Authorization and Order: A person whose substantial interests are affected by a SFWMD Emergency Authorization and Order, has a right to file a petition under Sections 120.569, 120.57(1), and 120.57(2), Fla. Stat., as provided in subsections a. and b. above. However, the person, or the agent of the person responsible for causing or contributing to the emergency conditions shall take whatever action necessary to cause immediate compliance with the terms of the Emergency Authorization and Order.

f. Order for Emergency Action: A person whose substantial interests are affected by a SFWMD Order for Emergency Action has a right to file a petition pursuant to Rules 28-107.005 and 40E-1.611, Fla. Admin. Code, copies of which are attached to this Notice of Rights, and Section 373.119(3), Fla. Stat., for a hearing on the Order. Any subsequent agency action or proposed agency action to initiate a formal revocation proceeding shall be separately noticed pursuant to section g. below.

g. Permit Suspension, Revocation, Annulment, and Withdrawal: If the SFWMD issues an administrative complaint to suspend, revoke, annul, or withdraw a permit, the permittee may request a hearing to be conducted in accordance with Sections 120.569 and 120.57, Fla. Stat., within 21 days of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-107.004(2), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

2. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the SFWMD's final action may be different from the position taken by it previously. Persons whose substantial interests may be affected by

any such final decision of the SFWMD shall have, pursuant to Rule 40E-1.511(2), Fla. Admin. Code (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109(2)(c)), an additional 21 days from the date of receipt of notice of said decision to request an administrative hearing. However, the scope of the administrative hearing shall be limited to the substantial deviation.

3. Pursuant to Rule 40E-1.511(4), Fla. Admin. Code, substantially affected persons entitled to a hearing pursuant to Section 120.57(1), Fla. Stat., may waive their right to such a hearing and request an informal hearing before the Governing Board pursuant to Section 120.57(2), Fla. Stat., which may be granted at the option of the Governing Board.

4. Pursuant to Rule 28-106.111(3), Fla. Admin. Code, persons may file with the SFWMD a request for extension of time for filing a petition. The SFWMD, for good cause shown, may grant the extension. The request for extension must contain a certificate that the petitioner has consulted with all other parties, if any, concerning the extension and that the SFWMD and all other parties agree to the extension.

CIRCUIT COURT

5. Pursuant to Section 373.617, Fla. Stat., any substantially affected person who claims that final agency action of the SFWMD relating to permit decisions constitutes an unconstitutional taking of property without just compensation may seek judicial review of the action in circuit court by filing a civil action in the circuit court in the judicial circuit in which the affected property is located within 90 days of the rendering of the SFWMD's final agency action.

6. Pursuant to Section 403.412, Fla. Stat., any citizen of Florida may bring an action for injunctive relief against the SFWMD to compel the SFWMD to enforce the laws of Chapter 373, Fla. Stat., and Title 40E, Fla. Admin. Code. The complaining party must file with the SFWMD Clerk a verified complaint setting forth the facts upon which the complaint is based and the manner in which the complaining party is affected. If the SFWMD does not take appropriate action on the complaint within 30 days of receipt, the complaining party may then file a civil suit for injunctive relief in the 15th Judicial Circuit in and for Palm Beach County or circuit court in the county where the cause of action allegedly occurred.

Pursuant to Section 373.433, Fla. Stat., a private citizen of Florida may file suit in circuit court to require the abatement of any stormwater management system, dam, impoundment, reservoir, appurtenant work or works that violate the provisions of Chapter 373, Fla. Stat.

DISTRICT COURT OF APPEAL

8. Pursuant to Section 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the SFWMD Clerk within 30 days of rendering of the final SFWMD action.

LAND AND WATER ADJUDICATORY COMMISSION

9. A party to a "proceeding below" may seek review by the Land and Water Adjudicatory Commission (LAWAC) of SFWMD's final agency action to determine if such action is consistent with the provisions and purposes of Chapter 373, Fla. Stat. Pursuant to Section 373.114, Fla. Stat., and Rules 42-2.013 and 42-2.0132, Fla. Admin. Code, a request for review of (a) an order or rule of the SFWMD must be filed with LAWAC within 20 days after rendition of the order or adoption of the rule sought to be reviewed; (b) an order of the Department of Environmental Protection (DEP) requiring amendment or repeal of a SFWMD rule must be filed with LAWAC within 30 days of rendition of the DEP's order, and (c) a SFWMD order entered pursuant to a formal administrative hearing under Section 120.57(1), Fla. Stat., must be filed no later than 20 days after rendition of the SFWMD's final order. Simultaneous with filing, a copy of the request for review must be served on the DEP Secretary, any person named in the SFWMD or DEP final order, and all parties to the proceeding below. A copy of Rule 42-2.013, Fla. Admin. Code is attached to this Notice of Rights.

PRIVATE PROPERTY RIGHTS PROTECTION ACT

10. A property owner who alleges a specific action of the SFWMD has inordinately burdened an existing use of the real property, or a vested right to a specific use of the real property, may file a claim in the circuit court where the real property is located within 1 year of the SFWMD action pursuant to the procedures set forth in Subsection 70.001(4)(a), Fla. Stat.

LAND USE AND ENVIRONMENTAL DISPUTE RESOLUTION

11. A property owner who alleges that a SFWMD development order (as that term is defined in Section 70.51(2)(a), Fla. Stat. to include permits) or SFWMD enforcement action is unreasonable, or unfairly burdens the use of the real property, may file a request for relief with the SFWMD within 30 days of receipt of the SFWMD's order or notice of agency action pursuant to the procedures set forth in Subsections 70.51(4) and (6), Fla. Stat.

MEDIATION

12. A person whose substantial interests are, or may be, affected by the SFWMD's action may choose mediation as an alternative remedy under Section 120.573, Fla. Stat. Pursuant to Rule 28-106.111(2), Fla. Admin. Code, the petition for mediation shall be filed within 21 days of either written notice through mail or posting or

publication of notice that the SFWMD has or intends to take final agency action. Choosing mediation will not adversely affect the right to an administrative hearing if mediation does not result in settlement.

Pursuant to Rule 28-106.402, Fla. Admin. Code, the contents of the petition for mediation shall contain the following information:

(1) the name, address and telephone number of the person requesting mediation and that person's representative, if any;

(2) a statement of the preliminary agency action;

(3) an explanation of how the person's substantial interests will be affected by the agency determination; and

(4) a statement of relief sought.

As provided in Section 120.573, Fla. Stat. (1997), the timely agreement of all the parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57, Fla. Stat., for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within 60 days of the execution of the agreement. If mediation results in settlement of the dispute, the SFWMD must enter a final order incorporating the agreement of the parties. Persons whose substantial interest will be affected by such a modified agency decision have a right to petition for hearing within 21 days of receipt of the final order in accordance with the requirements of Sections 120.569 and 120.57, Fla. Stat., and SFWMD Rule 28-106.201(2), Fla. Admin. Code. If mediation terminates without settlement of the dispute, the SFWMD shall notify all parties in writing that the administrative hearing process under Sections 120.569 and 120.57, Fla. Stat., remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action.

VARIANCES AND WAIVERS

13. A person who is subject to regulation pursuant to a SFWMD rule and believes the application of that rule will create a substantial hardship or will violate principles of fairness (as those terms are defined in Subsection 120.542(2), Fla. Stat.) and can demonstrate that the purpose of the underlying statute will be or has been achieved by other means, may file a petition with the SFWMD Clerk requesting a variance from or waiver of the SFWMD rule. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have concerning the SFWMD's action. Pursuant to Rule 28-104.002(2), Fla. Admin. Code, the petition must include the following information:

(a) the caption shall read:

Petition for (Variance from) or (Waiver of) Rule (Citation)

(b) The name, address, telephone number and any facsimile number of the petitioner;

(c) The name, address telephone number and any facsimile number of the attorney or qualified representative of the petitioner, (if any);

(d) the applicable rule or portion of the rule;

(e) the citation to the statute the rule is implementing;

(f) the type of action requested;

(g) the specific facts that demonstrate a substantial hardship or violation of principals of fairness that would justify a waiver or variance for the petitioner;

(h) the reason why the variance or the waiver requested would serve the purposes of the underlying statute; and

(i) a statement of whether the variance or waiver is permanent or temporary. If the variance or waiver is temporary, the petition shall include the dates indicating the duration of the requested variance or waiver.

A person requesting an emergency variance from or waiver of a SFWMD rule must clearly so state in the caption of the petition. In addition to the requirements of Section 120.542(5), Fla. Stat. pursuant to Rule 28-104.004(2), Fla. Admin. Code, the petition must also include:

a) the specific facts that make the situation an emergency; and

b) the specific facts to show that the petitioner will suffer immediate adverse effect unless the variance or waiver is issued by the SFWMD more expeditiously than the applicable timeframes set forth in Section 120.542, Fla. Stat.

WAIVER OF RIGHTS

14. Failure to observe the relevant time frames prescribed above will constitute a waiver of such right.

28-106.201

INITIATION OF PROCEEDINGS

(INVOLVING DISPUTED ISSUES OF MATERIAL FACT)

(2) All petitions filed under these rules shall contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; 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, as well as the rules and statutes which entitle the petitioner to relief; and

(f) A demand for relief.

28-107.301 INITIATION OF PROCEEDINGS
(NOT INVOLVING DISPUTED ISSUES OF MATERIAL FACT)

- (2) All petitions filed under these rules shall contain:
- (a) The name and address of each agency affected and each agency's file or identification number, if known;
 - (b) The name, address, and telephone number of the petitioner; 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 concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and
 - (e) A demand for relief.

28-107.004 SUSPENSION, REVOCATION, ANNULMENT, OR WITHDRAWAL

- (3) Requests for hearing filed in accordance with this rule shall include:
- (a) The name and address of the party making the request, for purposes of service;
 - (b) A statement that the party is requesting a hearing involving disputed issues of material fact, or a hearing not involving disputed issues of material fact; and
 - (c) A reference to the notice, order to show cause, administrative complaint, or other communication that the party has received from the agency.

42-2.013 REQUEST FOR REVIEW PURSUANT TO SECTION 373.114 OR 373.217

(1) In any proceeding arising under Chapter 373, F.S., review by the Florida Land and Water Adjudicatory Commission may be initiated by the Department or a party by filing a request for such review with the Secretary of the Commission and serving a copy on any person named in the rule or order, and on all parties to the proceeding which resulted in the order sought to be reviewed. A certificate of service showing completion of service as required by this subsection shall be a requirement for a determination of sufficiency under Rule 42-2.0132. Failure to file the request with the Commission within the time period provided in Rule 42-2.0132 shall result in dismissal of the request for review.

(2) The request for review shall identify the rule or order requested to be reviewed, the proceeding in which the rule or order was entered and the nature of the rule or order. A copy of the rule or order sought to be reviewed shall be attached. The request for review shall state with particularity:

- (a) How the order or rule conflicts with the requirements, provisions and purposes of Chapter 373, F.S., or rules duly adopted thereunder;

- (b) How the rule or order sought to be reviewed affects the interests of the party seeking review;

- (c) The oral or written statement, sworn or unsworn, which was submitted to the agency concerning the matter to be reviewed and the date and location of the statement, if the individual or entity requesting the review has not participated in a proceeding previously instituted pursuant to Chapter 120, F.S. on the order for which review is sought;

- (d) If review of an order is being sought, whether and how the activity authorized by the order would substantially affect natural resources of statewide or regional significance, or whether the order raises issues of policy, statutory interpretation, or rule interpretation that have regional or statewide significance from a standpoint of agency precedent, and all the factual bases in the record which the petitioner claims support such determination(s); and

- (e) The action requested to be taken by the Commission as a result of the review, whether to rescind or modify the order, or remand the proceeding to the water management district for further action, or to require the water management district to initiate rulemaking to adopt, amend or repeal a rule.

28-107.005 EMERGENCY ACTION

(1) If the agency finds that immediate serious danger to the public health, safety, or welfare requires emergency action, the agency shall summarily suspend, limit, or restrict a license.

(2) The 14-day notice requirement of Section 120.569(2)(b), F. S., does not apply and shall not be construed to prevent a hearing at the earliest time practicable upon request of an aggrieved party.

(3) Unless otherwise provided by law, within 20 days after emergency action taken pursuant to paragraph (1) of this rule, the agency shall initiate a formal suspension or revocation proceeding in compliance with Sections 120.569, 120.57, and 120.60, F.S.

40E-1.611 EMERGENCY ACTION

(1) An emergency exists when immediate action is necessary to protect public health, safety or welfare; the health of animals, fish or aquatic life; the works of the District; a public water supply, or recreational, commercial, industrial, agricultural or other reasonable uses of land and water resources.

(2) The Executive Director may employ the resources of the District to take whatever remedial action necessary to alleviate the emergency condition without the issuance of an emergency order, or in the event an emergency order has been issued, after the expiration of the requisite time for compliance with that order.

DRAFT
Subject to Governing
Board Approval

LAST DATE FOR GOVERNING BOARD ACTION:
MARCH 11, 1999

ENVIRONMENTAL RESOURCE PERMIT STAFF REVIEW SUMMARY

I. ADMINISTRATIVE

APPLICATION NUMBER: 980909-4
PERMIT NUMBER: 49-00956-P
PROJECT NAME: U.S. 192 (S.R. 530)
LOCATION: OSCEOLA COUNTY, S2-5,11,32-34/T25S/R27E
APPLICANT'S NAME: FLORIDA DEPARTMENT OF TRANSPORTATION
OWNER'S NAME AND ADDRESS: FLORIDA DEPARTMENT OF TRANSPORTATION
719 SOUTH WOODLAND BOULEVARD
DELAND, FL 32720
ENGINEER: DYER, RIDDLE, MILLS & PRECOURT, INC.

II. PROJECT DESCRIPTION

PROJECT AREA: 101.68 acres DRAINAGE AREA: 98.90 acres
DISTRICT DRAINAGE BASIN: REEDY CREEK
RECEIVING BODY: REEDY CREEK, BOGGY CREEK & BLACK LAKE
CLASSIFICATION: CLASS III
PURPOSE:

The purpose of this application is to authorize the construction and operation of the surface water management system to serve the 101.68-acre US192 (SR530) widening project.

EXISTING FACILITIES:

This is an existing four lane and six lane roadway extending from Captin Kidd Road to just east of Reedy Creek. Stormwater runoff is currently collected in existing roadside swales and conveyed to either West Boggy Creek, Black Lake, or Reedy Creek. There are no stormwater treatment facilities existing for the majority of the roadway. The only treatment facility currently existing is for pre-development Basin F, which extends approximately 1000 feet from Reedy Creek to the end of the project. Runoff from the Basin F is currently routed to an existing treatment pond.

PROPOSED FACILITIES:

Roadway improvements proposed consist of widening the existing highway to six-lanes and the construction of the associated stormwater management system. The post-developed roadway is divided into five separate drainage basins (Basins A, B, C/D, E, and F). These five basins are described below.

Surface water runoff from Basin A is collected in both a closed stormsewer system and roadside swales. The surface water is conveyed to proposed wet detention Pond A. Pond A provides water quality treatment for the total impervious area within Basin A, both existing and proposed. Pond A also provides attenuation for the entire drainage area within Basin A prior to discharging to adjacent West Boggy Creek via a spreader swale.

Runoff from Basin B is conveyed to adjacent roadway swales which provide dry detention and dry retention water quality treatment for the entire impervious area, both new and existing. Outfall structures and ditch blocks are proposed within the roadside swales to respectively detain and retain the runoff generated in Basin B. The portion of the swales that provide dry detention treatment will discharge to West Boggy Creek via an existing box culvert. Attenuation is provided in the roadside swales for the entire drainage area within Basin B.

Runoff from Basin C/D is collected in both a closed stormsewer system and roadside swales. Water quality treatment is provided in proposed wet detention Pond C for the total impervious area within Basin C/D, both new and existing. Attenuation is also provided for the entire Basin C/D drainage area prior to discharging to an adjacent channel.

Runoff from Basin E is collected in a closed stormsewer system and conveyed to proposed dry detention Pond E. Pond E provides water quality treatment for the new impervious area and a portion of the existing impervious area. Attenuation is also provided in Pond E prior to discharging to Reedy Creek.

Runoff from Basin F will continue to be routed to the existing stormwater treatment pond. The amount of new impervious area proposed within Basin F is minimal and will not adversely affect the current level of treatment and attenuation provided in the existing stormwater treatment pond.

The 98.9-acre drainage area consists of portions of the 101.68-acre project area plus adjacent offsite contributing areas. Those areas within the project area, but included in the drainage area, consist of undeveloped area within the right-of-way which do not sheetflow to the proposed swales or closed stormsewer system. There are no improvements proposed in these areas with this modification. See Exhibit #2 for a detailed comparison between project and drainage area for each proposed basin.

There are no significant floodplain impacts anticipated with the proposed roadway improvements.

BASIN INFORMATION:

Basin	Area Acres	WSWT Elev (ft. NGVD)	Normal/Dry Ctr'l Elev (ft. NGVD)	Method of Determination
BASIN A	22.20	103.00	103/103	WET SEASON SOIL BORINGS
BASIN B	7.93	104.00	104/104	WET SEASON SOIL BORINGS
BASIN C/D	37.90	100.00	100/100	WET SEASON SOIL BORINGS
BASIN E	29.90	99.71	99.71/99.71	WET SEASON SOIL BORINGS

DISCHARGE STRUCTURE INFORMATION:

Water Quality Structures:

Basin	Str. #	Bleeder Type	Dimensions	Invert Elev. (ft. NGVD)
BASIN A	1	CIRCULAR ORIFICE	.4' dia.	103.00
BASIN B	1	CIRCULAR ORIFICE	.25' dia.	104.00
BASIN B	2	CIRCULAR ORIFICE	.25' dia.	104.00
BASIN C/D	1	CIRCULAR ORIFICE	.36' dia.	100.00
BASIN E	1	CIRCULAR ORIFICE	.25' dia.	99.71

Major Discharge Structures:

Basin	Str. #	Description	Crest Elev. (ft. NGVD)
BASIN A	1	14.33' wide SHARP CRESTED weir	104.47
BASIN B	1	10.17' wide SHARP CRESTED weir	106.30
BASIN B	2	10.17' wide SHARP CRESTED weir	106.30

Major Discharge Structures:

Basin	Str. #	Description	Crest Elev. (ft. NGVD)
BASIN C/D	1	5.15' wide SHARP CRESTED weir	102.20
BASIN E	1	10' wide SHARP CRESTED weir	103.51

Discharge Culverts:

Basin	Str. #	Description
BASIN A	1	42.64' long, 2.46' dia. RCP
BASIN B	1	124.64' long, 1.48' dia. RCP
BASIN B	2	164.33' long, 1.48' dia. RCP
BASIN C/D	1	841.6' long, 3.94' dia. RCP
BASIN E	1	49.2' long, 2.46' dia. RCP

Receiving Body:

Basin	Str. #	Receiving Body
BASIN A	1	WEST BOGGY CREEK
BASIN B	1	WEST BOGGY CREEK
BASIN B	2	WEST BOGGY CREEK
BASIN C/D	1	ADJACENT CHANNEL
BASIN E	1	REEDY CREEK

III. PROJECT EVALUATION

Discharge Rate:

As shown in the table below, the proposed project discharge is within the allowable limit for the area.

Discharge Storm Frequency: 10YR/72HR Design Rainfall: 9.50

Basin	Allow Disch (cfs)	Method of Determination	Design Disch (cfs)	Design Stage (ft. NGVD)
BASIN A	34	PRE VS. POST	34	105.97
BASIN B	15	PRE VS. POST	15	106.86
BASIN C/D	33	PRE VS. POST	33	105.1
BASIN E	81	PRE VS. POST	81	105.71

WATER QUALITY:

Water quality treatment is provided as follows:

Basin A, C/D - in excess of 2.5" times the total percent impervious coverage

Basin B - in excess of 75% of 2.5" times the total impervious coverage

Basin E - in excess of 75% of 2.5" times the new impervious coverage

Basin	Treatment Method	Vol Req'd. (ac-ft)	Vol Prov'd (ac-ft)
BASIN A	2.47 acres WET DETENTION	1.85	2.16
BASIN B	3.21 acres DRY DETENTION	0.48	0.54
BASIN C/D	3.21 acres WET DETENTION	4.18	4.18
BASIN E	.99 acres DRY DETENTION	1.39	1.44

ROAD DESIGN:

As shown in the following table, minimum road center lines have been set at or above the calculated design storm flood elevation.

Design Storm Freq: 10YR/72HR

Design Rainfall: 9.50 inches

Basin	Flood Elevation (ft., NGVD)	Minimum Centerline Elevation (ft., NGVD)
BASIN A	106	106
BASIN B	106.86	106.86
BASIN C/D	105	105
BASIN E	105.71	105.71

IV. ENVIRONMENTAL ASSESSMENT

PROJECT SITE DESCRIPTION:

The project site consists of the proposed road right-of-way area which consists primarily of existing development. A total of 1.04 acres of wetland impacts are proposed. These wetland impacts are limited to the perimeter of existing wetlands which have been previously degraded from the existing roadway.

ENDANGERED, THREATENED & SPECIES OF SPECIAL CONCERN SUMMARY:

The project site does not contain preferred habitat for wetland-dependent endangered/threatened species or species of special concern. No wetland-dependent endangered/threatened species or species of special concern were observed on site, and submitted information indicates that potential use of the site by such species is minimal. This permit does not relieve the applicant from complying with all applicable rules and any other agencies' requirements if in the future, endangered/threatened species or species of special concern are discovered on the site.

WETLAND PRESERVATION AND IMPACT SUMMARY:

The proposed activities will result in a total of 1.04 acres of wetland impact. The majority of the impacts occur to the perimeter of wetlands located along the existing U.S. 192/S.R. 530 roadway. Impacts are being caused by the widening of this road which is necessitated by existing and future traffic use. The stormwater management ponds have been placed to avoid and minimize further wetland impacts. Remaining wetlands adjacent to the activities will be protected from secondary impacts with the placement of silt fences and erosion control devices.

There are a total of 15 wetland areas that are located within or adjacent to the proposed right-of-way limits. Wetland 1 is located just south of the discharge point for Pond A of the surface water management system (Exhibit 6). An average 25 foot upland buffer has been provided around the portion of wetland 1 within the project boundaries and no wetland impacts are proposed to this system. Wetlands 7 and 8 are located just outside of the right-of-way limits and no impacts are proposed to these systems (Exhibit 4). The remaining wetlands located within the project boundaries have impact areas ranging from 0.24 to 0.01 of an acre. Impact areas are minor and have been restricted to the perimeter of herbaceous and forested systems. The proposed wetland impact areas are of low ecological quality and do not provide valuable habitat due to their location along the existing roadway. Retention pond designs fall within the statutorily defined gradient relationships to adjacent wetlands.

MITIGATION MONITORING:

Mitigation to offset the 1.04 acres of wetland impacts will be assigned from activities accomplished by the Florida Department of Transportation within the Three Lakes Wildlife Management Area (TLWMA). Three Lakes Wildlife Management Area (TLWMA) mitigation site was previously permitted by the District. This offsite mitigation area is located within the Prairie Lakes Unit of the 50,589-acre TLWMA in Osceola County (see Exhibit 8 of the conceptual permit). The TLWMA is owned by the State of Florida (Trustees) and is leased and managed by the FGFWFC. The FGFWFC manages the preserve for public recreation

such as camping, hiking, fishing and hunting. Further details of the management plan are described in the construction permit. The 534.9 acre mitigation site has a management plan that includes the restoration of historically drained wetlands through the removal of levees and ditches within the historical floodplain of Lake Jackson. The results of these activities will include the creation of 24.23 acres of freshwater marsh (in the footprint of the levees and ditches). The remaining 500.67 acres of freshwater wetlands will be hydrologically enhanced through reconnection to Lake Jackson

The 20:1 (acres mitigation: acres impact) ratio of mitigation for the subject impacts has been established to reflect the remaining function and form of the wetlands impacted and is consistent with ratios applied to other FDOT impacts mitigated at TLWMA. The 534.9 acre offsite mitigation parcel at TLWMA will be debited twenty (20.00) acres from the total available acreage (See Exhibit 11). The proposed activities will provide substantial benefits to at least eleven listed species of fauna in an area of great ecological concern to the state.

WETLAND INVENTORY:

NEW PHASE-ON-SITE WETLAND INVENTORY FOR US 192/SR 530

ONSITE

Pre-Development		Post-Development				
	TOTAL EXISTING	PRESERVED	UNDISTURBED	IMPACTED	ENHANCED	RESTORED/ CREATED
FORESTED	2.73	0	1.86	.87	0	0
HERBACEOUS/SHRUB	.48	0	.31	.17	0	0
OSW	.1	0	.1	0	0	0
TOTALS	3.31	0	2.27	1.04	0	0

UPLAND COMP: PRESERVED: N/A ENHANCED: N/A

WETLAND INVENTORY:

NEW PHASE-THREE LAKES WILDLIFE MANAGEMENT AREA

OFFSITE

Pre-Development	Post-Development
-----------------	------------------

	TOTAL EXISTING	PRESERVED	UNDISTURBED	IMPACTED	ENHANCED	RESTORED/ CREATED
HERBACEOUS/SHRUB	20	20	0	0	20	0
TOTALS	20	20	0	0	20	0

UPLAND COMP: PRESERVED: N/A ENHANCED: N/A

OTHER COMPENSATION

MITIGATION BANK:
NAME: N/A
CREDITS USED: N/A

REGIONAL OFFSITE MITIGATION:
AREA: THREE LAKES WMA
AMOUNT CONTRIBUTED:

ENVIRONMENTAL SUMMARY:

The proposed activities have been evaluated for potential secondary and cumulative impacts and to determine if the project is contrary to the public interest. Based upon the proposed project design and the mitigation plan, the District has determined that the project will not cause adverse secondary or cumulative impacts to the water resources and is not contrary to the public interest.

The proposed activities will result in a total of 1.04 acres of wetland impact. As mitigation for the 1.04 acres of impacts, 20 acres will be debited from the total remaining mitigation acreage available at the offsite FDOT Three Lakes Wildlife Management Area site. Based on the degraded ecological condition of the proposed impact areas, the regionally significant offsite mitigation area will adequately compensate for the proposed impacts. No other adverse impacts to wetlands, surface waters or listed species will result from the proposed activities.

SYSTEM OPERATION:

Florida Department Of Transportation

PROPOSED LAND USE(S):

Highway

WATER USE PERMIT STATUS:

A Water Use permit is not required for this project at this time.

DRI STATUS:

This project is not a DRI.

SAVE OUR RIVERS:

The project is not within or adjacent to lands under consideration by the Save Our Rivers program.

SWIM BASIN:

The project is not within nor does it discharge directly to a designated SWIM basin.

RIGHT-OF-WAY PERMIT STATUS:

A Right-of-Way Permit is not required for this project.

ENFORCEMENT ACTIVITY:

There has been no enforcement activity associated with this application.

THIRD PARTY INTEREST:

No third party has contacted the District with concerns about this application.

WELL FIELD ZONE OF INFLUENCE:

The project is not located within the zone of influence of a wellfield.

V. APPLICABLE LAND AREA

The area listed as "Previously Permitted" in the land use table below represents the existing roadway acreage breakdown. However, it should be noted that there is no existing South Florida Water Management District permit for the roadway within the project area. This existing acreage is included for reference only as a comparison to the proposed land-use.

The existing stormwater treatment pond that serves Basin F is not included within the project area and therefore is not shown in the land-use table below.

PROJECT

	<u>TOTAL PROJECT</u>	<u>PREVIOUSLY PERMITTED</u>	<u>THIS PHASE</u>	
TOTAL ACRES	101.68	101.68	101.68	acres
WTRM ACREAGE	9.88	.00	9.88	acres
PERVIOUS	50.50	41.57	50.50	acres
	41.30	60.11	41.30	acres

DRAFT
Subject to Governing
Board Approval

VI. STAFF RECOMMENDATION

The Staff recommends that the following be issued:

Authorization for the construction and operation of the surface water management system to serve the 101.68-acre US192 (SR530) roadway widening project, discharging to West Boggy Creek, Black Lake, and Reedy Creek.

Based on the information provided, District rules have been adhered to.

Staff recommendation is for approval subject to the attached General and Special Conditions.

VII. STAFF REVIEW

NATURAL RESOURCE MANAGEMENT DIVISION APPROVAL

ENVIRONMENTAL EVALUATION

SUPERVISOR

for Shannon Carter
Shannon Carter

Marc S. Ady
Marc S. Ady

DIVISION DIRECTOR:

Robert G. Robbins
Robert G. Robbins

DATE: 2/22/99

SURFACE WATER MANAGEMENT DIVISION APPROVAL

ENGINEERING EVALUATION

SUPERVISOR

for Jamie Poulos
Jamie Poulos

for Edward W. Yarin, P.E.
Edward W. Yarin, P.E.

DIVISION DIPECTOR:

Anthony M. Waterhouse, P.E.
Anthony M. Waterhouse, P.E.

DATE: 3/1/99

GENERAL CONDITIONS

1. ALL ACTIVITIES AUTHORIZED BY THIS PERMIT SHALL BE IMPLEMENTED AS SET FORTH IN THE PLANS, SPECIFICATIONS AND PERFORMANCE CRITERIA AS APPROVED BY THIS PERMIT. ANY DEVIATION FROM THE PERMITTED ACTIVITY AND THE CONDITIONS FOR UNDERTAKING THAT ACTIVITY SHALL CONSTITUTE A VIOLATION OF THIS PERMIT AND PART IV, CHAPTER 373, F.S.
2. THIS PERMIT OR A COPY THEREOF, COMPLETE WITH ALL CONDITIONS, ATTACHMENTS, EXHIBITS, AND MODIFICATIONS SHALL BE KEPT AT THE WORK SITE OF THE PERMITTED ACTIVITY. THE COMPLETE PERMIT SHALL BE AVAILABLE FOR REVIEW AT THE WORK SITE UPON REQUEST BY THE DISTRICT STAFF. THE PERMITTEE SHALL REQUIRE THE CONTRACTOR TO REVIEW THE COMPLETE PERMIT PRIOR TO COMMENCEMENT OF THE ACTIVITY AUTHORIZED BY THIS PERMIT.
3. ACTIVITIES APPROVED BY THIS PERMIT SHALL BE CONDUCTED IN A MANNER WHICH DOES NOT CAUSE VIOLATIONS OF STATE WATER QUALITY STANDARDS. THE PERMITTEE SHALL IMPLEMENT BEST MANAGEMENT PRACTICES FOR EROSION AND POLLUTION CONTROL TO PREVENT VIOLATION OF STATE WATER QUALITY STANDARDS. TEMPORARY EROSION CONTROL SHALL BE IMPLEMENTED PRIOR TO AND DURING CONSTRUCTION, AND PERMANENT CONTROL MEASURES SHALL BE COMPLETED WITHIN 7 DAYS OF ANY CONSTRUCTION ACTIVITY. TURBIDITY BARRIERS SHALL BE INSTALLED AND MAINTAINED AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATERBODY EXISTS DUE TO THE PERMITTED WORK. TURBIDITY BARRIERS SHALL REMAIN IN PLACE AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND SOILS ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE GUIDELINES AND SPECIFICATIONS DESCRIBED IN CHAPTER 6 OF THE FLORIDA LAND DEVELOPMENT MANUAL; A GUIDE TO SOUND LAND AND WATER MANAGEMENT (DEPARTMENT OF ENVIRONMENTAL REGULATION, 1988), INCORPORATED BY REFERENCE IN RULE 40E-4.091, F.A.C. UNLESS A PROJECT-SPECIFIC EROSION AND SEDIMENT CONTROL PLAN IS APPROVED AS PART OF THE PERMIT. THEREAFTER THE PERMITTEE SHALL BE RESPONSIBLE FOR THE REMOVAL OF THE BARRIERS. THE PERMITTEE SHALL CORRECT ANY EROSION OR SHOALING THAT CAUSES ADVERSE IMPACTS TO THE WATER RESOURCES.
4. THE PERMITTEE SHALL NOTIFY THE DISTRICT OF THE ANTICIPATED CONSTRUCTION START DATE WITHIN 30 DAYS OF THE DATE THAT THIS PERMIT IS ISSUED. AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ACTIVITY AUTHORIZED BY THIS PERMIT, THE PERMITTEE SHALL SUBMIT TO THE DISTRICT AN ENVIRONMENTAL RESOURCE PERMIT CONSTRUCTION COMMENCEMENT NOTICE FORM NO. 0960 INDICATING THE ACTUAL START DATE AND THE EXPECTED COMPLETION DATE.
5. WHEN THE DURATION OF CONSTRUCTION WILL EXCEED ONE YEAR, THE PERMITTEE SHALL SUBMIT CONSTRUCTION STATUS REPORTS TO THE DISTRICT ON AN ANNUAL BASIS UTILIZING AN ANNUAL STATUS REPORT FORM. STATUS REPORT FORMS SHALL BE SUBMITTED THE FOLLOWING JUNE OF EACH YEAR.
6. WITHIN 30 DAYS AFTER COMPLETION OF CONSTRUCTION OF THE PERMITTED ACTIVITY, THE PERMITTEE SHALL SUBMIT A WRITTEN STATEMENT OF COMPLETION AND CERTIFICATION BY A REGISTERED PROFESSIONAL ENGINEER OR OTHER APPROPRIATE INDIVIDUAL AS AUTHORIZED BY LAW, UTILIZING THE SUPPLIED ENVIRONMENTAL

RESOURCE PERMIT CONSTRUCTION COMPLETION/CONSTRUCTION CERTIFICATION FORM NO. J8&1. THE STATEMENT OF COMPLETION AND CERTIFICATION SHALL BE BASED ON ONSITE OBSERVATION OF CONSTRUCTION OR REVIEW OF ASBUILT DRAWINGS FOR THE PURPOSE OF DETERMINING IF THE WORK WAS COMPLETED IN COMPLIANCE WITH PERMITTED PLANS AND SPECIFICATIONS. THIS SUBMITTAL SHALL SERVE TO NOTIFY THE DISTRICT THAT THE SYSTEM IS READY FOR INSPECTION. ADDITIONALLY, IF DEVIATION FROM THE APPROVED DRAWINGS ARE DISCOVERED DURING THE CERTIFICATION PROCESS, THE CERTIFICATION MUST BE ACCOMPANIED BY A COPY OF THE APPROVED PERMIT DRAWINGS WITH DEVIATIONS NOTED. BOTH THE ORIGINAL AND REVISED SPECIFICATIONS MUST BE CLEARLY SHOWN. THE PLANS MUST BE CLEARLY LABELED AS "ASBUILT" OR "RECORD" DRAWING. ALL SURVEYED DIMENSIONS AND ELEVATIONS SHALL BE CERTIFIED BY A REGISTERED SURVEYOR.

7. THE OPERATION PHASE OF THIS PERMIT SHALL NOT BECOME EFFECTIVE: UNTIL THE PERMITTEE HAS COMPLIED WITH THE REQUIREMENTS OF CONDITION (6) ABOVE, HAS SUBMITTED A REQUEST FOR CONVERSION OF ENVIRONMENTAL RESOURCE PERMIT FROM CONSTRUCTION PHASE TO OPERATION PHASE, FORM NO.0920; THE DISTRICT DETERMINES THE SYSTEM TO BE IN COMPLIANCE WITH THE PERMITTED PLANS AND SPECIFICATIONS; AND THE ENTITY APPROVED BY THE DISTRICT IN ACCORDANCE WITH SECTIONS 9.0 AND 10.0 OF THE BASIS OF REVIEW FOR ENVIRONMENTAL RESOURCE PERMIT APPLICATIONS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT - AUGUST 1995, ACCEPTS RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF THE SYSTEM. THE PERMIT SHALL NOT BE TRANSFERRED TO SUCH APPROVED OPERATION AND MAINTENANCE ENTITY UNTIL THE OPERATION PHASE OF THE PERMIT BECOMES EFFECTIVE. FOLLOWING INSPECTION AND APPROVAL OF THE PERMITTED SYSTEM BY THE DISTRICT, THE PERMITTEE SHALL INITIATE TRANSFER OF THE PERMIT TO THE APPROVED RESPONSIBLE OPERATING ENTITY IF DIFFERENT FROM THE PERMITTEE. UNTIL THE PERMIT IS TRANSFERRED PURSUANT TO SECTION 40E-1.6107, F.A.C., THE PERMITTEE SHALL BE LIABLE FOR COMPLIANCE WITH THE TERMS OF THE PERMIT.
8. EACH PHASE OR INDEPENDENT PORTION OF THE PERMITTED SYSTEM MUST BE COMPLETED IN ACCORDANCE WITH THE PERMITTED PLANS AND PERMIT CONDITIONS PRIOR TO THE INITIATION OF THE PERMITTED USE OF SITE INFRASTRUCTURE LOCATED WITHIN THE AREA SERVED BY THAT PORTION OR PHASE OF THE SYSTEM. EACH PHASE OR INDEPENDENT PORTION OF THE SYSTEM MUST BE COMPLETED IN ACCORDANCE WITH THE PERMITTED PLANS AND PERMIT CONDITIONS PRIOR TO TRANSFER OF RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF THE PHASE OR PORTION OF THE SYSTEM TO A LOCAL GOVERNMENT OR OTHER RESPONSIBLE ENTITY.
9. FOR THOSE SYSTEMS THAT WILL BE OPERATED OR MAINTAINED BY AN ENTITY THAT WILL REQUIRE AN EASEMENT OR DEED RESTRICTION IN ORDER TO ENABLE THAT ENTITY TO OPERATE OR MAINTAIN THE SYSTEM IN CONFORMANCE WITH THIS PERMIT, SUCH EASEMENT OR DEED RESTRICTION MUST BE RECORDED IN THE PUBLIC RECORDS AND SUBMITTED TO THE DISTRICT ALONG WITH ANY OTHER FINAL OPERATION AND MAINTENANCE DOCUMENTS REQUIRED BY SECTIONS 9.0 AND 10.0 OF THE BASIS OF REVIEW FOR ENVIRONMENTAL RESOURCE PERMIT APPLICATIONS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT - AUGUST 1995, PRIOR TO LOT OR UNIT SALES OR PRIOR TO THE COMPLETION OF THE SYSTEM, WHICHEVER OCCURS FIRST. OTHER DOCUMENTS CONCERNING THE ESTABLISHMENT AND AUTHORITY OF THE OPERATING ENTITY MUST BE FILED WITH THE SECRETARY OF STATE WHERE APPROPRIATE. FOR THOSE SYSTEMS WHICH ARE PROPOSED TO BE MAINTAINED BY THE

- COUNTY OR MUNICIPAL ENTITIES, FINAL OPERATION AND MAINTENANCE DOCUMENTS MUST BE RECEIVED BY THE DISTRICT WHEN MAINTENANCE AND OPERATION OF THE SYSTEM IS ACCEPTED BY THE LOCAL GOVERNMENT ENTITY. FAILURE TO SUBMIT THE APPROPRIATE FINAL DOCUMENTS WILL RESULT IN THE PERMITTEE REMAINING LIABLE FOR CARRYING OUT MAINTENANCE AND OPERATION OF THE PERMITTED SYSTEM AND ANY OTHER PERMIT CONDITIONS.
10. SHOULD ANY OTHER REGULATORY AGENCY REQUIRE CHANGES TO THE PERMITTED SYSTEM, THE PERMITTEE SHALL NOTIFY THE DISTRICT IN WRITING OF THE CHANGES PRIOR TO IMPLEMENTATION SO THAT A DETERMINATION CAN BE MADE WHETHER A PERMIT MODIFICATION IS REQUIRED.
 11. THIS PERMIT DOES NOT ELIMINATE THE NECESSITY TO OBTAIN ANY REQUIRED FEDERAL, STATE, LOCAL AND SPECIAL DISTRICT AUTHORIZATIONS PRIOR TO THE START OF ANY ACTIVITY APPROVED BY THIS PERMIT. THIS PERMIT DOES NOT CONVEY TO THE PERMITTEE OR CREATE IN THE PERMITTEE ANY PROPERTY RIGHT, OR ANY INTEREST IN REAL PROPERTY, NOR DOES IT AUTHORIZE ANY ENTRANCE UPON OR ACTIVITIES ON PROPERTY WHICH IS NOT OWNED OR CONTROLLED BY THE PERMITTEE, OR CONVEY ANY RIGHTS OR PRIVILEGES OTHER THAN THOSE SPECIFIED IN THE PERMIT AND CHAPTER 40E-4 OR CHAPTER 40E-40, F.A.C.
 12. THE PERMITTEE IS HEREBY ADVISED THAT SECTION 253.77, F.S. STATES THAT A PERSON MAY NOT COMMENCE ANY EXCAVATION, CONSTRUCTION, OR OTHER ACTIVITY INVOLVING THE USE OF SOVEREIGN OR OTHER LANDS OF THE STATE, THE TITLE TO WHICH IS VESTED IN THE BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND WITHOUT OBTAINING THE REQUIRED LEASE, LICENSE, EASEMENT, OR OTHER FORM OF CONSENT AUTHORIZING THE PROPOSED USE. THEREFORE, THE PERMITTEE IS RESPONSIBLE FOR OBTAINING ANY NECESSARY AUTHORIZATIONS FROM THE BOARD OF TRUSTEES PRIOR TO COMMENCING ACTIVITY ON SOVEREIGNTY LANDS OR OTHER STATE-OWNED LANDS.
 13. THE PERMITTEE MUST OBTAIN A WATER USE PERMIT PRIOR TO CONSTRUCTION DEWATERING, UNLESS THE WORK QUALIFIES FOR A GENERAL PERMIT PURSUANT TO SUBSECTION 40E-20.302(4), F.A.C., ALSO KNOWN AS THE "NO NOTICE" RULE.
 14. THE PERMITTEE SHALL HOLD AND SAVE THE DISTRICT HARMLESS FROM ANY AND ALL DAMAGES, CLAIMS, OR LIABILITIES WHICH MAY ARISE BY REASON OF THE CONSTRUCTION, ALTERATION, OPERATION, MAINTENANCE, REMOVAL, ABANDONMENT OR USE OF ANY SYSTEM AUTHORIZED BY THE PERMIT.
 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 SECTION 373.421(2), F.S., PROVIDES OTHERWISE.
 16. THE PERMITTEE SHALL NOTIFY THE DISTRICT IN WRITING WITHIN 30 DAYS OF ANY SALE, CONVEYANCE, OR OTHER TRANSFER OF OWNERSHIP OR CONTROL OF A PERMITTED SYSTEM OR THE REAL PROPERTY ON WHICH THE PERMITTED SYSTEM IS LOCATED. ALL TRANSFERS OF OWNERSHIP OR TRANSFERS OF A PERMIT ARE SUBJECT TO THE REQUIREMENTS OF RULES 40E-1.6105 AND 40E-1.6107, F.A.C. THE PERMITTEE

TRANSFERRING THE PERMIT SHALL REMAIN LIABLE FOR CORRECTIVE ACTIONS THAT MAY BE REQUIRED AS A RESULT OF ANY VIOLATIONS PRIOR TO THE SALE, CONVEYANCE OR OTHER TRANSFER OF THE SYSTEM.

17. UPON REASONABLE NOTICE TO THE PERMITTEE, DISTRICT AUTHORIZED STAFF WITH PROPER IDENTIFICATION SHALL HAVE PERMISSION TO ENTER, INSPECT, SAMPLE AND TEST THE SYSTEM TO INSURE CONFORMITY WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE PERMIT.
18. IF HISTORICAL OR ARCHAEOLOGICAL ARTIFACTS ARE DISCOVERED AT ANY TIME ON THE PROJECT SITE, THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE APPROPRIATE DISTRICT SERVICE CENTER.
19. THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DISTRICT IN WRITING OF ANY PREVIOUSLY SUBMITTED INFORMATION THAT IS LATER DISCOVERED TO BE INACCURATE.

SPECIAL CONDITIONS

1. MINIMUM ROAD CROWN ELEVATION: BASIN: BASIN A - 106.00 FEET NGVD.
BASIN: BASIN B - 106.86 FEET NGVD.

2. DISCHARGE FACILITIES:

BASIN: BASIN A:

1-14.33' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 104.47' NGVD.
1-.4' DIA. CIRCULAR ORIFICE WITH INVERT AT ELEV. 103' NGVD.
42.64 LF OF 2.46' DIA. RCP CULVERT.

RECEIVING BODY : WEST BOGGY CREEK

CONTROL ELEV : 103 FEET NGVD. /103 FEET NGVD DRY SEASON.

BASIN: BASIN B, STRUCTURE NO. 1:

1-10.17' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 106.3' NGVD.
1-.25' DIA. CIRCULAR ORIFICE WITH INVERT AT ELEV. 104' NGVD.
124.64 LF OF 1.48' DIA. RCP CULVERT.

RECEIVING BODY : WEST BOGGY CREEK

CONTROL ELEV : 104 FEET NGVD. /104 FEET NGVD DRY SEASON.

BASIN: BASIN B, STRUCTURE NO. 2:

1-10.17' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 106.3' NGVD.
1-.25' DIA. CIRCULAR ORIFICE WITH INVERT AT ELEV. 104' NGVD.
164.33 LF OF 1.48' DIA. RCP CULVERT.

RECEIVING BODY : WEST BOGGY CREEK

CONTROL ELEV : 104 FEET NGVD. /104 FEET NGVD DRY SEASON.

BASIN: BASIN C/D:

1-5.15' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 102.2' NGVD.
1-.36' DIA. CIRCULAR ORIFICE WITH INVERT AT ELEV. 100' NGVD.
841.6 LF OF 3.94' DIA. RCP CULVERT.

RECEIVING BODY : ADJACENT CHANNEL

CONTROL ELEV : 100 FEET NGVD. /100 FEET NGVD DRY SEASON.

BASIN: BASIN E:

1-10' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 103.51' NGVD.
1-.25' DIA. CIRCULAR ORIFICE WITH INVERT AT ELEV. 99.71' NGVD.

49.2 LF OF 2.46' DIA RCP CULVERT.

RECEIVING BODY : REEDY CREEK

CONTROL ELEV : 99.71 FEET NGVD. /99.71 FEET NGVD DRY SEASON.

3. THE PERMITTEE SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY EROSION, SHOALING OR WATER QUALITY PROBLEMS THAT RESULT FROM THE CONSTRUCTION OR OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM.
4. MEASURES SHALL BE TAKEN DURING CONSTRUCTION TO INSURE THAT SEDIMENTATION AND/OR TURBIDITY PROBLEMS ARE NOT CREATED IN THE RECEIVING WATER.
5. THE DISTRICT RESERVES THE RIGHT TO REQUIRE THAT ADDITIONAL WATER QUALITY TREATMENT METHODS BE INCORPORATED INTO THE DRAINAGE SYSTEM IF SUCH MEASURES ARE SHOWN TO BE NECESSARY.
6. LAKE SIDE SLOPES SHALL BE NO STEEPER THAN 5:1 (HORIZONTAL:VERTICAL) TO A DEPTH OF TWO FEET BELOW THE CONTROL ELEVATION. SIDE SLOPES SHALL BE NURTURED OR PLANTED FROM 2 FEET BELOW TO 1 FOOT ABOVE CONTROL ELEVATION TO INSURE VEGETATIVE GROWTH.
7. FACILITIES OTHER THAN THOSE STATED HEREIN SHALL NOT BE CONSTRUCTED WITHOUT AN APPROVED MODIFICATION OF THIS PERMIT.
8. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OF FUTURE PHASES, PAVING, GRADING, AND DRAINAGE PLANS SHALL BE SUBMITTED TO THE DISTRICT FOR PERMIT MODIFICATIONS.
9. OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL BE THE RESPONSIBILITY OF FLORIDA DEPARTMENT OF TRANSPORTATION.
10. SILT SCREENS, HAY BALES OR OTHER SUCH SEDIMENT CONTROL MEASURES SHALL BE UTILIZED DURING CONSTRUCTION. THE SELECTED SEDIMENT CONTROL MEASURES SHALL BE INSTALLED LANDWARD OF THE UPLAND BUFFER ZONES AROUND ALL PROTECTED WETLANDS. ALL AREAS SHALL BE STABILIZED AND VEGETATED IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION INTO THE WETLANDS AND UPLAND BUFFER ZONES.
11. THE SFWMD RESERVES THE RIGHT TO REQUIRE REMEDIAL MEASURES TO BE TAKEN BY THE PERMITTEE IF WETLAND AND/OR UPLAND MONITORING OR OTHER INFORMATION DEMONSTRATES THAT ADVERSE IMPACTS TO PROTECTED, CONSERVED, INCORPORATED OR MITIGATED WETLANDS OR UPLANDS HAVE OCCURRED DUE TO PROJECT RELATED ACTIVITIES.
12. ANY FUTURE CHANGES IN LAND USE OR TREATMENT OF WETLANDS AND/OR UPLAND BUFFER/COMPENSATION AREAS MAY REQUIRE A SURFACE WATER MANAGEMENT PERMIT MODIFICATION AND ADDITIONAL ENVIRONMENTAL REVIEW BY DISTRICT STAFF. PRIOR TO THE PERMITTEE INSTITUTING ANY FUTURE CHANGES NOT AUTHORIZED BY THIS PERMIT, THE PERMITTEE SHALL NOTIFY THE SFWMD OF SUCH INTENTIONS FOR A DETERMINATION OF ANY NECESSARY PERMIT MODIFICATIONS.

13. MITIGATION SHALL BE PROVIDED BY DESIGNATION OF 20 ACRES OF WETLAND RESTORATION/ENHANCEMENT WITHIN THE 534.9-ACRE THREE LAKES WILDLIFE MANAGEMENT AREA (TLWMA) MITIGATION SITE (PREVIOUSLY AUTHORIZED BY SFWMD PERMIT APPLICATION NUMBERS 940614-10 AND 940614-1-D). THIS MITIGATION ACREAGE WILL BE SUBTRACTED FROM THE 242.52 ACRES OF MITIGATION AVAILABLE, LEAVING A BALANCE OF 222.52 ACRES OF MITIGATION AVAILABLE TO OFFSET OTHER FDOT DISTRICT 5 ROADWAY PROJECTS (SEE EXHIBIT 11).
14. ALL PROVISIONS OF THE TLWMA PERMIT APPLICATION NUMBER 940614-10 CONCERNING CONSTRUCTION, MONITORING AND MAINTENANCE OF THE MITIGATION SITE ARE INCORPORATED HEREIN BY REFERENCE.
15. MONITORING REQUIRED:

DESCRIPTION: TURBIDITY EXPRESSED IN NEPHELOMETRIC TURBIDITY UNITS (NTU).

LOCATION: BACKGROUND - SAMPLES SHALL BE TAKEN 200 FEET UPSTREAM OF ANY CONSTRUCTION ACTIVITY WITHIN SURFACE WATER OF THE STATE (I.E., REEDY CREEK.)

COMPLIANCE - SAMPLES SHALL BE TAKEN 200 FEET DOWNSTREAM.

FREQUENCY: TWICE DAILY, WITH AT LEAST A FOUR-HOUR INTERVAL, DURING ALL WORK AUTHORIZED BY THIS PERMIT.

DURATION: MONITORING SHALL BEGIN ON THE FIRST DAY OF CONSTRUCTION FOR ALL ACTIVITIES RELATED TO THE PROPOSED ACTIVITIES THAT ARE CLASSIFIED AS SURFACE WATERS OF THE STATE. MONITORING SHALL CEASE WHEN ALL CONSTRUCTION ACTIVITIES RELATED TO THE PROPOSED ACTIVITIES ARE COMPLETED. THE MONITORING DATA MUST DEMONSTRATE THAT TURBIDITY 200 FEET DOWNSTREAM OF ALL PROPOSED ACTIVITIES IS LESS THAN OR EQUAL TO 29 NTU'S ABOVE NATURAL BACKGROUND TURBIDITY 200 FEET UPSTREAM OF EACH PROPOSED ACTIVITY FOR A PERIOD OF 7 CONSECUTIVE DAYS AFTER COMPLETION OF CONSTRUCTION.

ALL MONITORING DATA SHALL BE SUBMITTED WITHIN ONE WEEK OF ANALYSIS WITH DOCUMENTS CONTAINING THE FOLLOWING INFORMATION: (1) PERMIT AND APPLICATION NUMBER; (2) DATES OF SAMPLING AND ANALYSIS; (3) A STATEMENT DESCRIBING THE METHODS USED IN COLLECTION, HANDLING, STORAGE AND ANALYSIS OF THE SAMPLES; (4) A MAP INDICATING THE SAMPLING LOCATIONS AND (5) A STATEMENT BY THE INDIVIDUAL RESPONSIBLE FOR IMPLEMENTATION OF THE SAMPLING PROGRAM CONCERNING THE AUTHENTICITY, PRECISION, LIMITS OF DETECTION AND ACCURACY OF THE DATA.

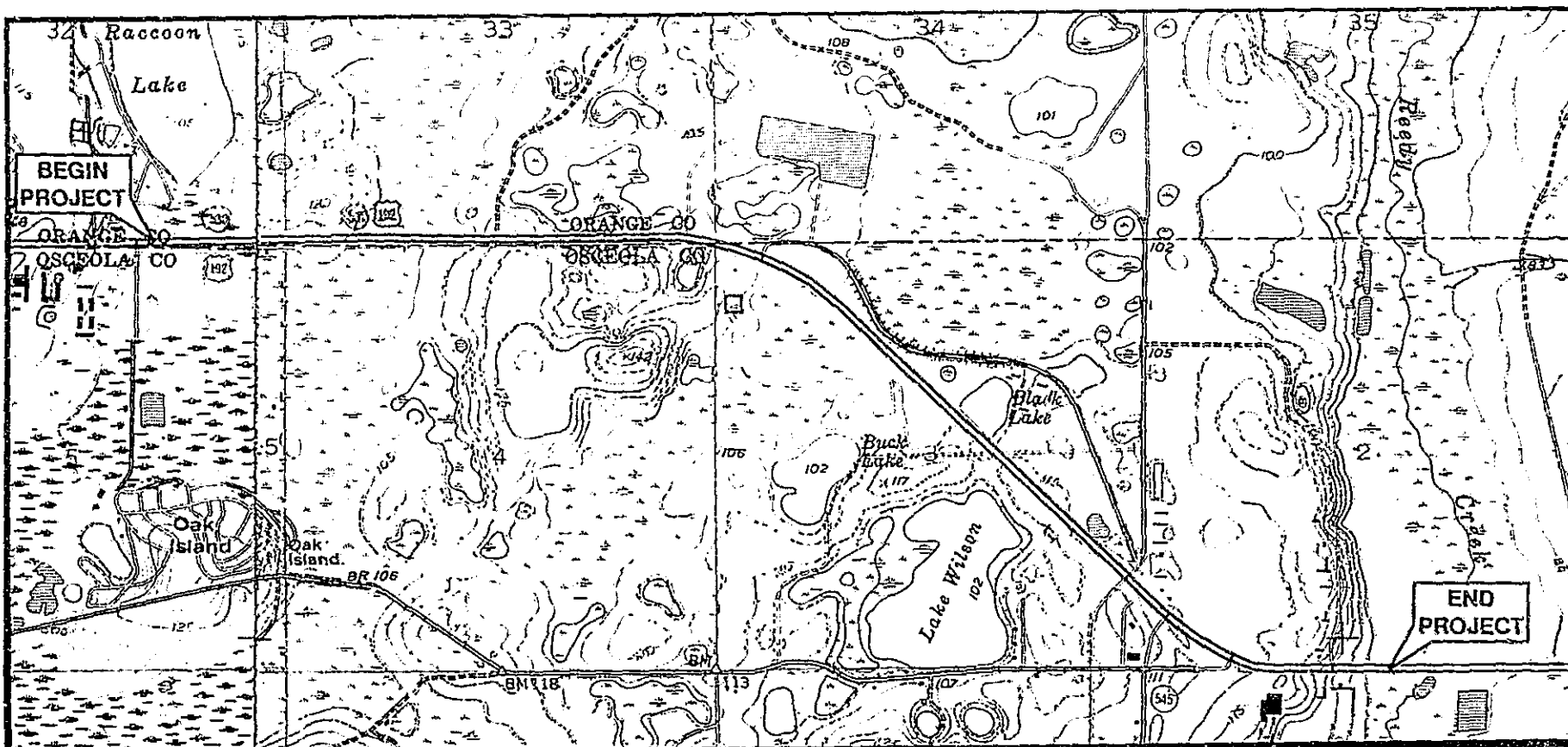
MONITORING REPORTS SHALL ALSO INCLUDE THE FOLLOWING INFORMATION FOR EACH SAMPLE THAT IS TAKEN:

- (A) TIME OF DAY SAMPLES TAKEN;
- (B) DEPTH OF WATER BODY;
- (C) DEPTH OF SAMPLES;
- (D) ANTECEDENT WEATHER CONDITIONS;
- (E) WIND DIRECTION AND VELOCITY;

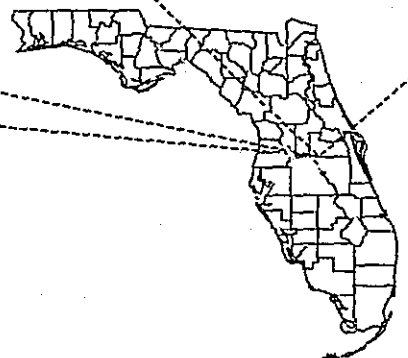
IF MONITORING REVEALS VIOLATIONS OF THE STATE WATER QUALITY STANDARD FOR TURBIDITY, CONSTRUCTION ACTIVITIES SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL CORRECTIVE MEASURES HAVE BEEN TAKEN AND TURBIDITY HAS RETURNED TO ACCEPTABLE LEVELS. ANY SUCH OCCURRENCE SHALL ALSO BE IMMEDIATELY (WITHIN A 24 HOUR PERIOD) REPORTED TO THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT AT THE ORLANDO SERVICE CENTER, 7335 LAKE ELLENOR DRIVE, ORLANDO, FL 32809.

MONITORING REPORTS SHALL BE SUMMARIZED DAILY AND SUBMITTED WEEKLY TO THE NATURAL RESOURCE MANAGEMENT DIVISION IN THE ORLANDO SERVICE CENTER.

16. THE AUTHORIZATION OF THE STORMWATER MANAGEMENT SYSTEM IS ISSUED PURSUANT TO THE WATER QUALITY NET IMPROVEMENT PROVISIONS REFERENCED IN RULE SECTION 40E.4.303(1): THEREFORE, WATER QUALITY CERTIFICATION IS WAIVED.



Prepared From:
 USGS Intercession City, FL & Lake Louisa SW, FL
 Quadrangle Map
 Sections: 2,3,4,5,11,32,33 & 34
 Township: 25 South
 Range: 27 East
 County: Osceola & Orange



EXHIBIT



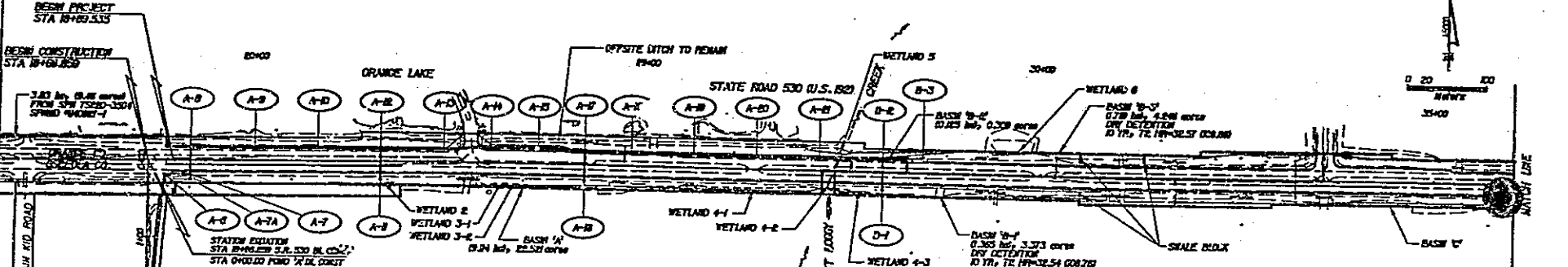
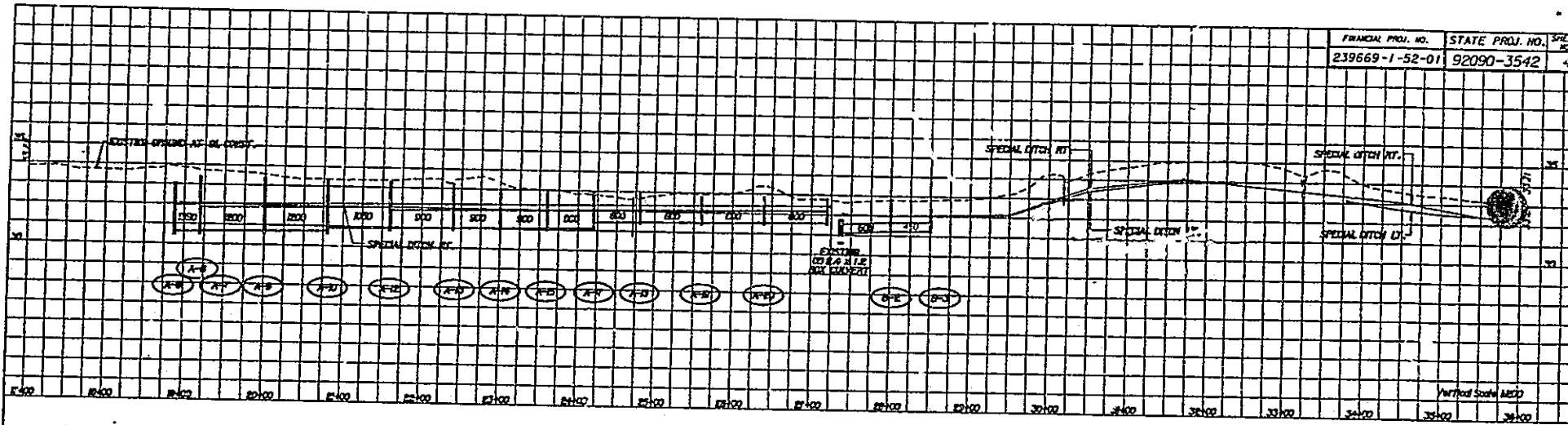
PROJECT LOCATION MAP
S.R. 530 EAST
 ORANGE / OSCEOLA COUNTY, FLORIDA

EXHIBIT
 1

Table 9 Project Areas

Basin	Total Project Area (within R/W) (ha/ac)	Drainage Area (within R/W) (ha/ac)	Offsite Drainage Area (ha/ac)	Total Drainage Area (ha/ac)	Water Mang. Area (ha/ac)
A	8.55/21.13	5.15/12.73	3.83/9.46	8.98/22.20	1.00/2.47
B	3.30/8.15	3.21/7.93	0/0	3.21/7.93	1.30/3.21
C/D	15.56/38.45	14.47/35.76	0.87/2.15	15.34/37.9	1.30/3.21
E	11.88/29.36	11.17/27.60	0.93/2.30	12.1/29.90	0.40/0.99
F	1.86/4.60	0.39/0.96	0/0	0.39/0.96	
Totals	41.15 /101.68	34.39/84.98	5.63/13.90	40.02/98.9	4.00/9.88

FINANCIAL PROJ. NO. STATE PROJ. NO. SHEET NO.
 239669-1-52-01 92090-3542 4



STRUCTURE NUMBER	AREA (SQ)	STRUCTURE NUMBER	AREA (SQ)
A-1	OUTFALL	A-15	3.23
A-2	181	A-16	0.53
A-3	181	A-17	0.8
A-4	181	A-18	0.4
A-5	181	A-19	0.4
A-6	3.83	A-20	0.4
A-7	181	A-21	0.4
A-7A	0.82	B-1	1.28
A-8	0.25	B-2	0.8
A-9	0.4	B-3	1.03
A-10	0.4		
A-11	0.80		
A-12	0.4		
A-13	0.13		
A-14	0.00		

APP# 980909-4

ADDITIONAL INFORMATION
 1/11/00
 GRANGE LAKE CENTER

[Handwritten signature]
 1/11/00

NOTE: EXISTING DRAINAGE STRUCTURES SHOWN ON AERIAL MAPS PER FOOT PROJECT

EXHIBIT 3

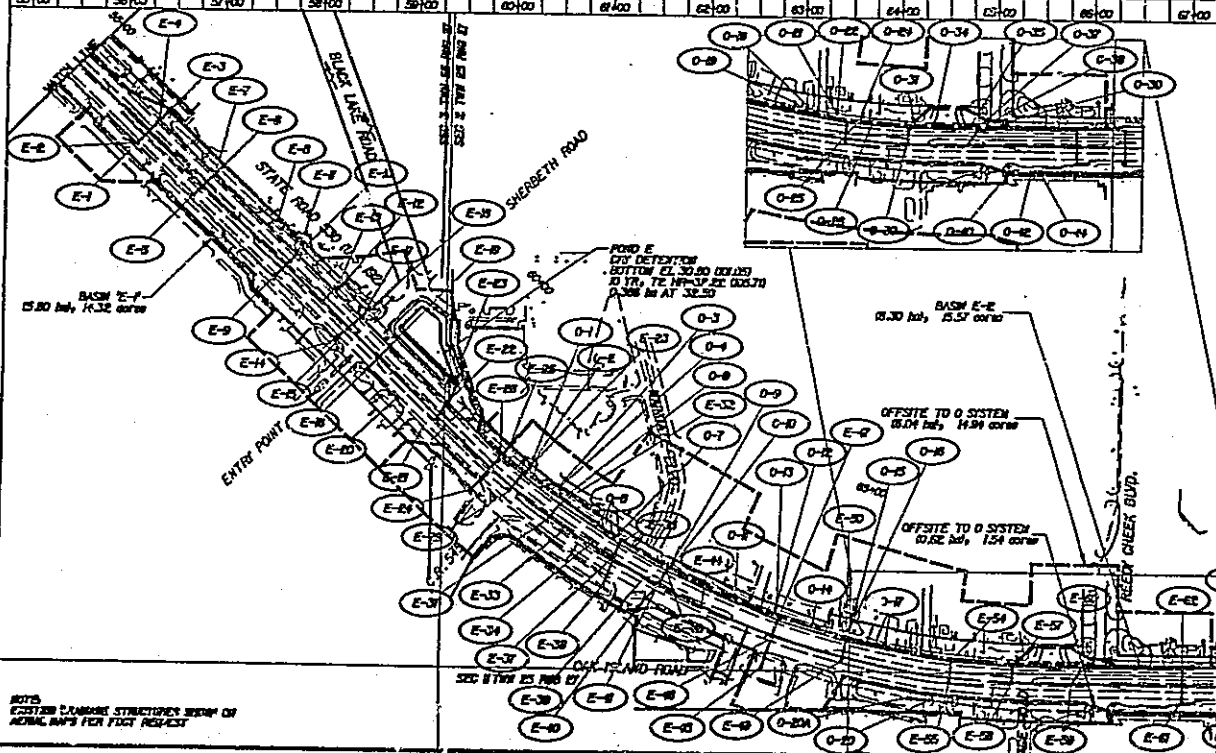
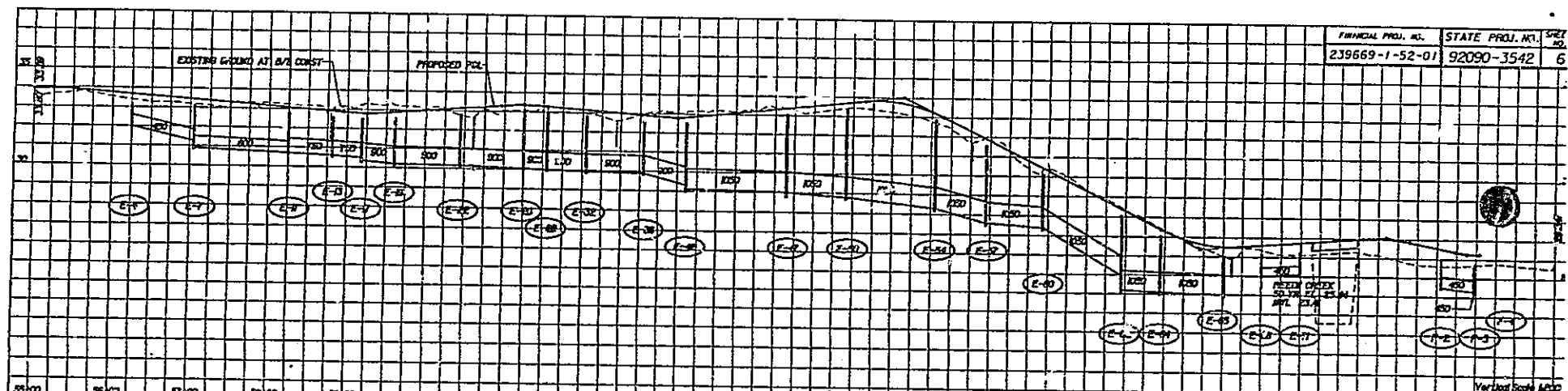
DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION

PREPARED BY
CDRMP

DRAINAGE MAP

FINANCIAL PROJ. NO. STATE PROJ. NO. SHEET NO.
 239669-1-52-01 92090-3542 6



STRUCTURE NUMBER	AREA (sq ft)	STRUCTURE NUMBER	AREA (sq ft)	STRUCTURE NUMBER	AREA (sq ft)
E-1	0.08	E-22	0.03	E-4	0.23
E-2	0.20	E-23	0.40	E-6	0.22
E-3	0.15	E-24	0.26	E-8	0.33
E-4	0.25	E-25	0.8	E-10	0.20
E-5	0.20	E-26	0.01	E-12	0.14
E-6	0.22	E-27	0.02	E-14	0.28
E-7	0.27	E-28	0.02	E-16	0.24
E-8	0.26	E-29	0.02	E-18	0.25
E-9	0.40	E-30	0.02	E-20	0.28
E-10	0.28	E-31	0.02	E-22	0.20
E-11	0.37	E-32	0.02	E-24	0.22
E-12	0.27	E-33	0.04	E-26	0.14
E-13	0.10	E-34	0.02	E-28	0.16
E-14	0.30	E-35	0.04	E-30	0.16
E-15	0.33	E-36	0.02	E-32	0.18
E-16	0.14	E-37	0.02	E-34	0.18
E-17	0.13	E-38	0.02	E-36	0.18
E-18	0.40	E-39	0.02	E-38	0.18
E-19	0.20	E-40	0.02	E-40	0.18
E-20	0.32	E-41	0.02	E-42	0.18
E-21	0.15	E-42	0.17	E-44	0.18
		E-43	0.17	E-46	0.18
				E-48	0.18
				E-50	0.18
				E-52	0.18
				E-54	0.18
				E-56	0.18
				E-58	0.18
				E-60	0.18
				E-62	0.18
				E-64	0.18
				E-66	0.18
				E-68	0.18
				E-70	0.18
				E-72	0.18
				E-74	0.18
				E-76	0.18
				E-78	0.18
				E-80	0.18
				E-82	0.18
				E-84	0.18
				E-86	0.18
				E-88	0.18
				E-90	0.18
				E-92	0.18
				E-94	0.18
				E-96	0.18
				E-98	0.18
				E-100	0.18

NOTES:
 1. EXISTING CHANNEL STRUCTURES SHOWN ON AERIAL MAPS PER FOOT REQUEST

DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION

DESIGN BRIDGE STA 7144.35 TO 7140.00
 WETLAND H-1
 WETLAND H-2
 WETLAND H-3

END BRIDGE STA 7143.83
 WETLAND H-4
 WETLAND H-5
 WETLAND H-6

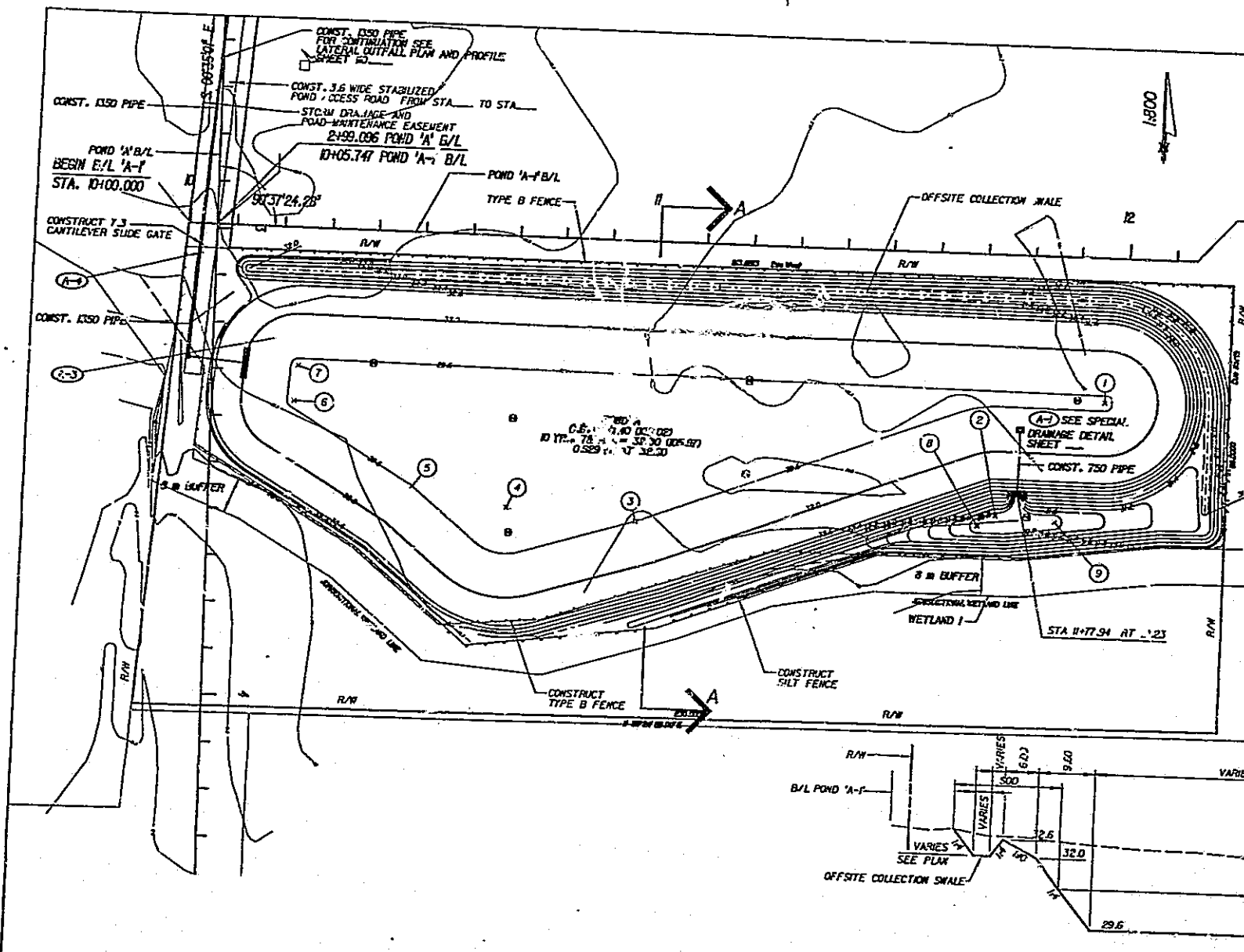
END CONSTRUCTION STA 73+00 TO 74+00
 END PROJECT STA 74+55.37

TO EXISTING POND SPWD 94-0022-5

EXHIBIT 5

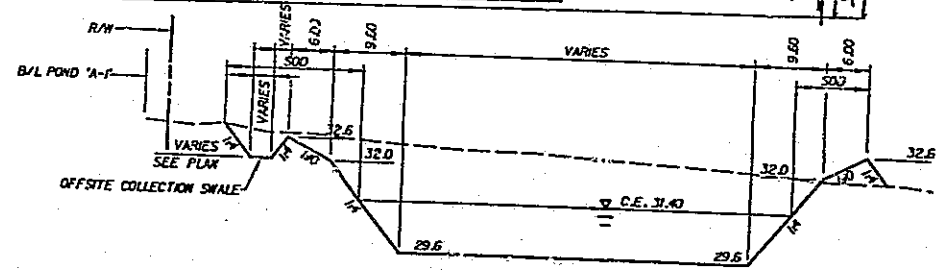
EXHIBIT 6

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
239669-1-52-01	92090-3542	62



NAME	STATION, OFFSET	RADIUS
1	11+95.26, 30.97 RT	1.50
2	10+73.30, 55.97 RT	23.50
3	10+97.04, 60.13 RT	
4	10+69.38, 58.19 RT	10.00
5	10+49.38, 54.47 RT	
6	10+23.4, 37.11 RT	1.50
7	10+24.00, 29.62 RT	1.50
8	11+69.54, 58.27 RT	1.50
9	11+86.08, 56.87 RT	1.50

NOTE: ALL STATION AND OFFSET LOCATIONS SHOWN IN THE ABOVE TABLE ARE TAKEN FROM B/L 'A'-1

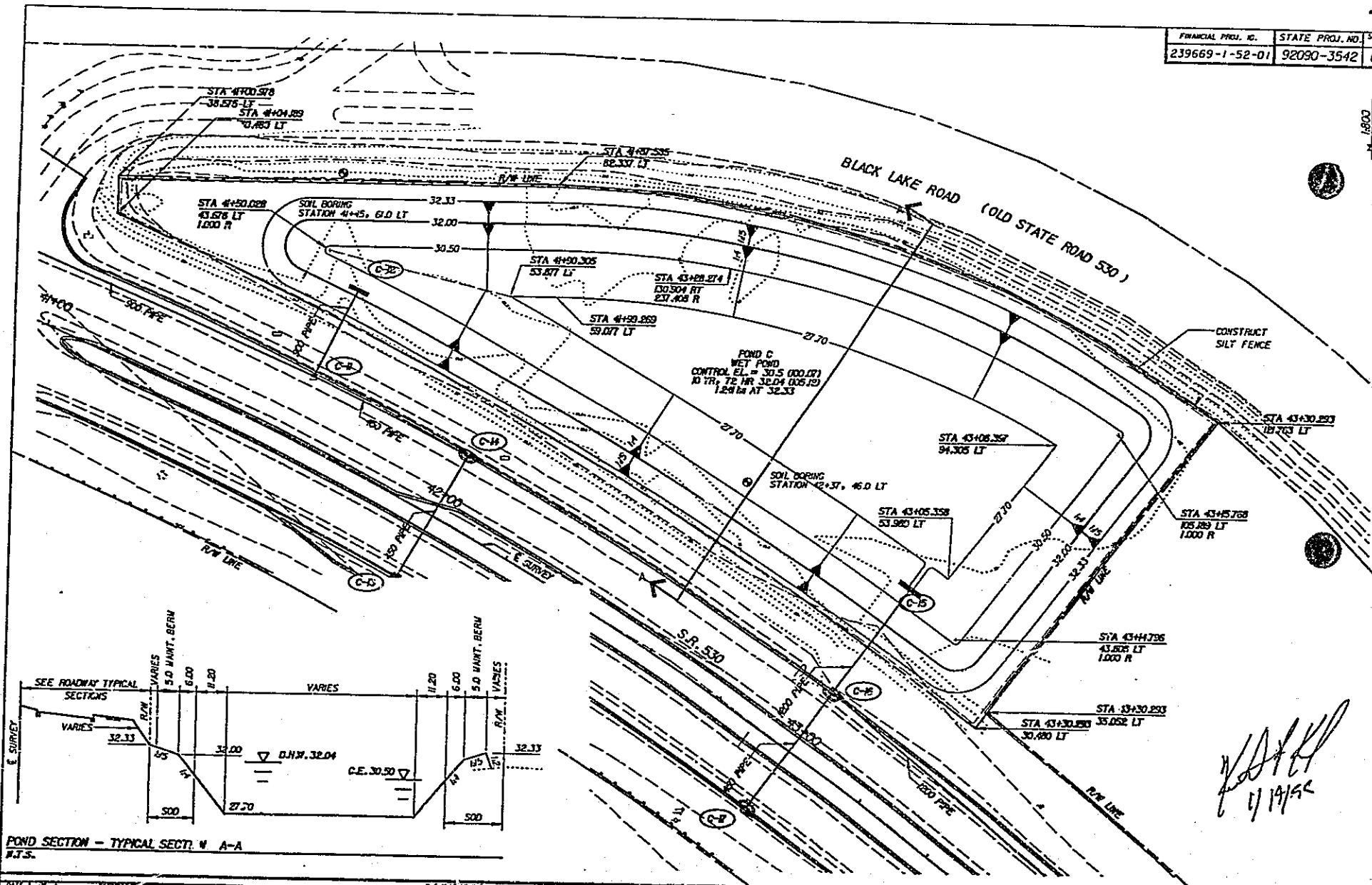


POND TYPICAL SECTION A-A
N.T.S.

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

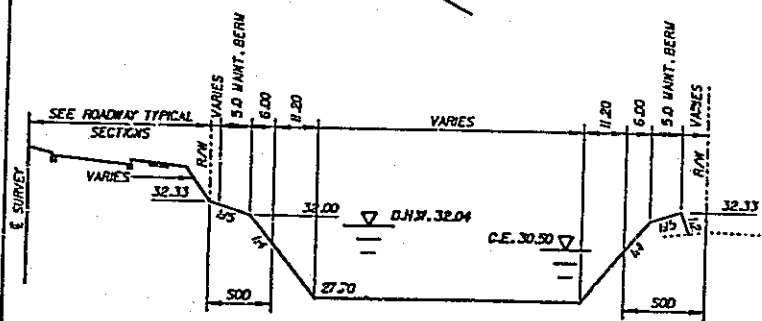
I:\0000\p21ar003.dgn Jan. 13, 1999 13:30:36 DWG

DESIGNED BY
DRMP POND A DETAIL SHEET



CONSTRUCT SILT FENCE

POND C
WET POND
CONTROL EL. = 30.5 (00.07)
10 TR, 7E NR 30.04 (005.12)
1.24 MI AT 32.33



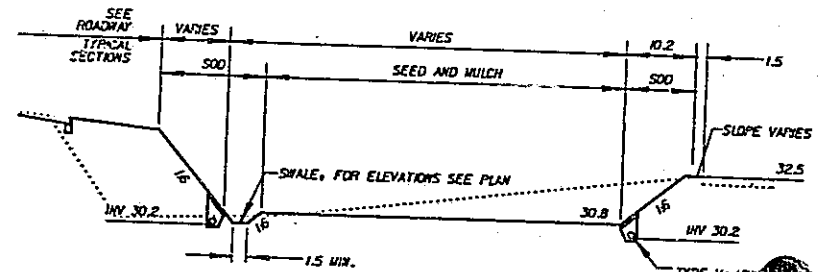
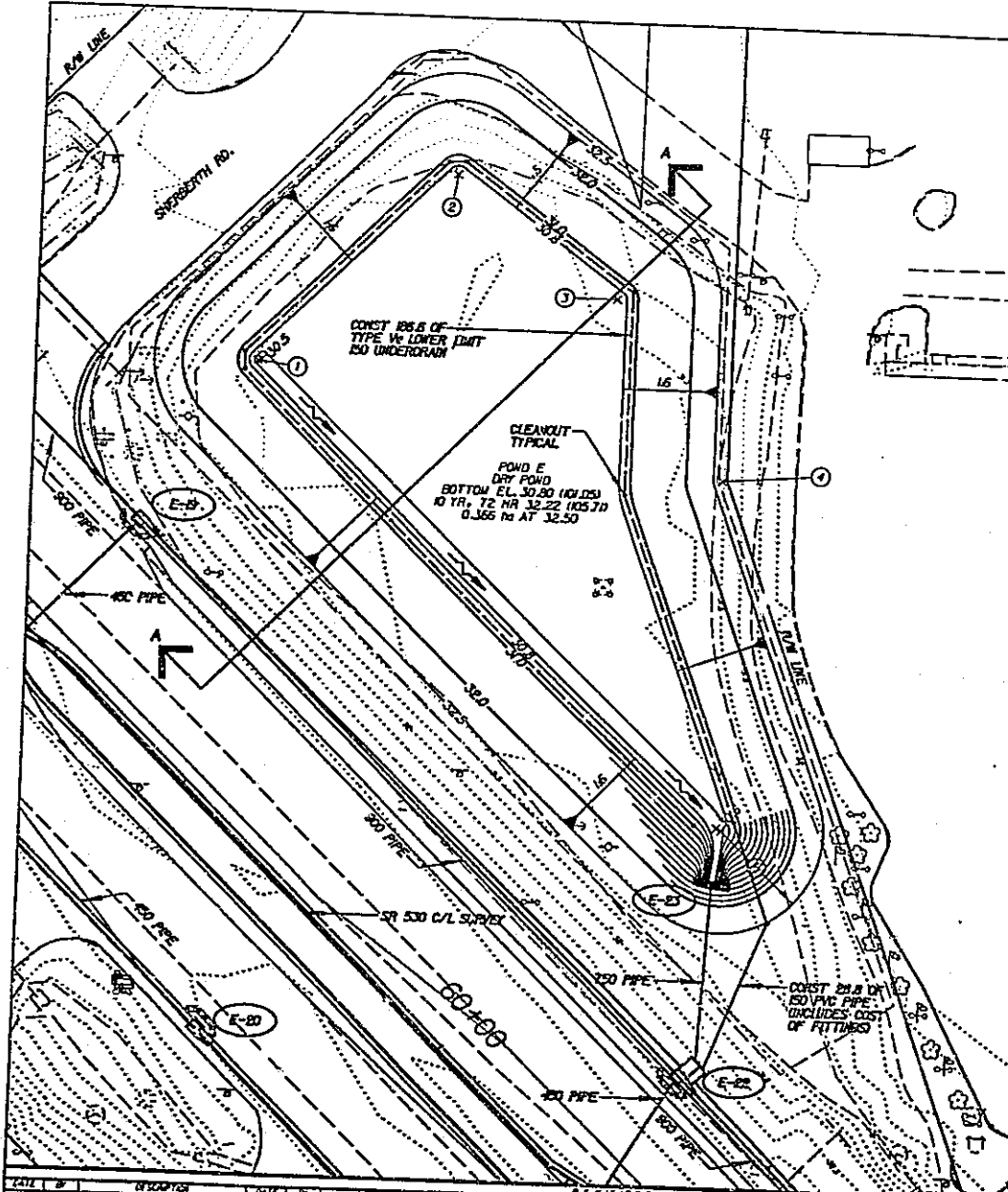
POND SECTION - TYPICAL SECT. W A-A
P.J.S.

[Handwritten signature]
1/19/92

EXHIBIT 7

DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
239669-1-52-01	92090-3542	64



POND SECTION A-A
N.T.S.

NAME	STATION, OFFSET	RADIUS
①	59+32.286, 38.000 LT	1.00
②	59+32.609, 67.892 LT	1.00
③	59+54.408, 70.798 LT	1.00
④	59+76.637, 65.249 LT	1.00
⑤	60+04.040, 38.683 LT	0.2
⑥	-	-
⑦	-	-

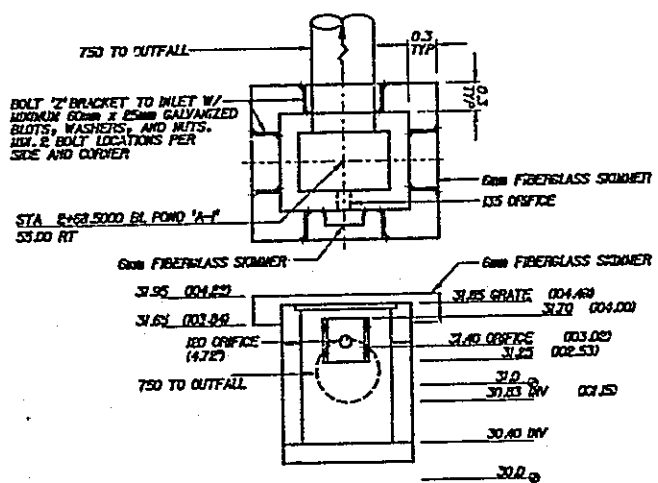
TYPE V6 UNDERDRAIN WRAPPED IN FIBRE FABRIC TYPE D-3 WITH A MAXIMUM A.O.S. OF 0.25 MM AND A MINIMUM PERMITTIVITY OF 0.2 SEC-1.

[Handwritten signature]
1/11/99

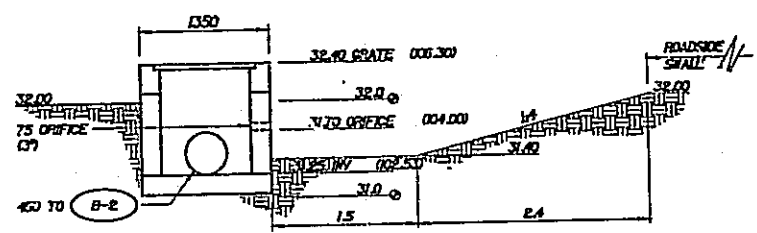
EXHIBIT 8

DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION

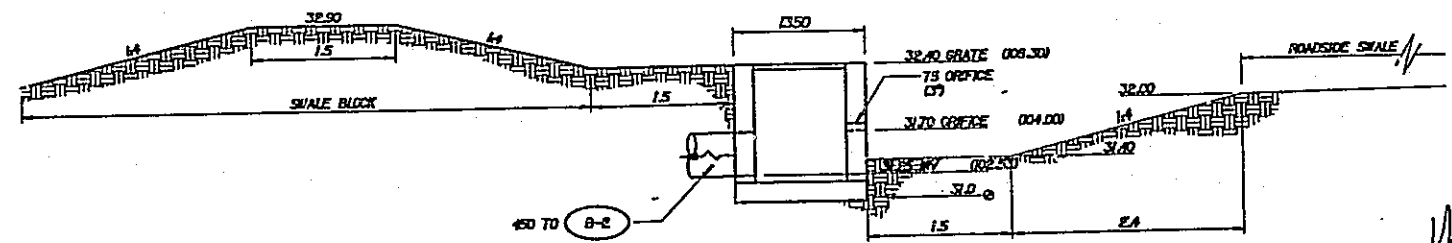
J:\0000\retard\2.dgn Jan. 14, 1999 09:41:54 DWP



A-1 STRUCTURE DETAIL - OUTFALL POND 'A'
SPECIAL TYPE 'V' INLET
N.T.S.
INDEX E32
N.T.S.
Costs of Skimmers, Mounting Brackets and Orifices to be included within the Cost of the Structure.



B-1 STRUCTURE DETAIL
SPECIAL TYPE 'V' INLET
N.T.S.
COST OF GRATE AND WEIR TO BE INCLUDED IN COST OF STRUCTURE



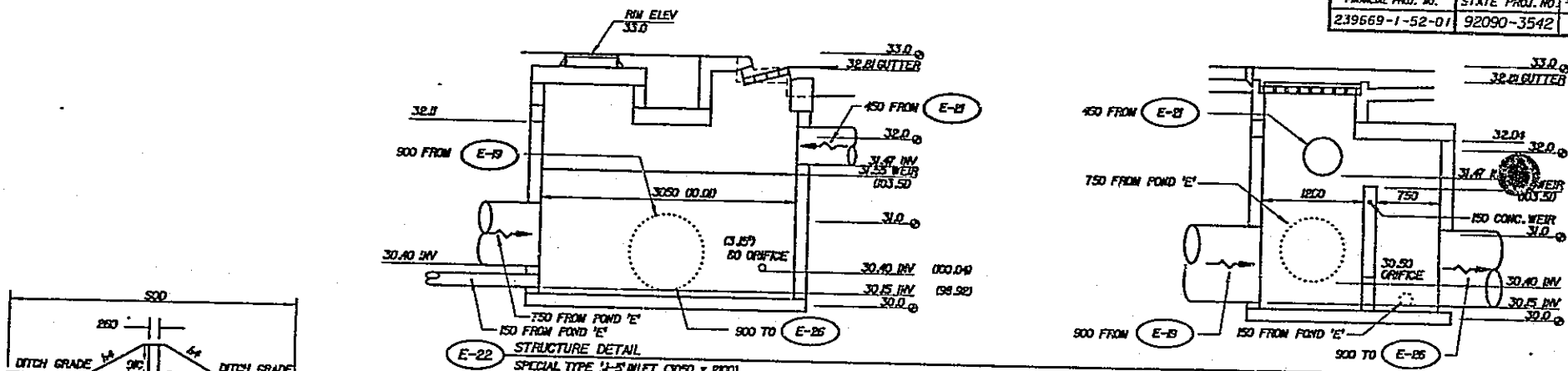
B-3 STRUCTURE DETAIL
SPECIAL TYPE 'V' INLET
N.T.S.
COST OF GRATE AND WEIR TO BE INCLUDED IN COST OF STRUCTURE

Handwritten signature and date:
1/24/99

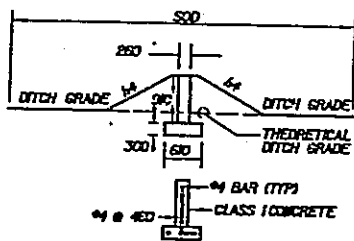
EXHIBIT 9

DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION

FINANCIAL PROJ. NO. 239669-1-52-01 STATE PROJ. NO. 92090-3542 SHEET NO. 61

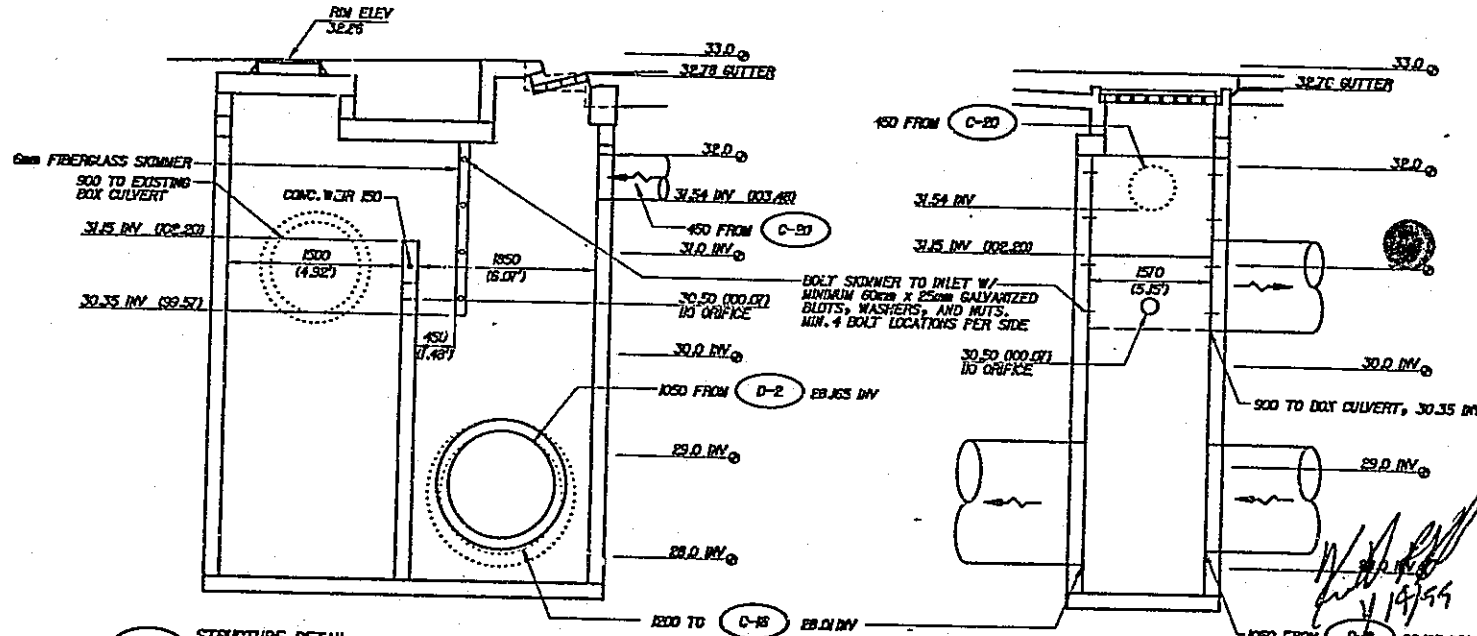


E-22 STRUCTURE DETAIL
SPECIAL TYPE 4'-5" INLET (0050 X 200)
N.T.S.
COST OF ORIFICE AND WEIR TO BE INCLUDED IN COST OF STRUCTURE



LOCATION	LENGTH (m)	CLASS I CONCRETE (m)
30+50.00 LT	8.0	3.38
30+50.00 RT	4.4	1.05
34+30.00 RT	8.0	2.52

DITCH BLOCK DETAIL
N.T.S.
COST OF REINFORCING STEEL TO BE INCLUDED IN THE COST OF THE CONCRETE



C-29 STRUCTURE DETAIL
SPECIAL TYPE 4'-5" INLET (070x3500)
N.T.S.
COST OF SKIMMER, ORIFICE AND WEIR TO BE INCLUDED IN COST OF STRUCTURE

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
PREPARED BY
DRAMP
SPECIAL DRAINAGE DETAILS

EXHIBIT 10

STATUS OF TLWMA MITIGATION
ACRES WITHDRAWN

APPLICATION #	AC. IMPACTS	FORESTED/ HERBACEOUS	FUNCT'L QUAL'TY	AC. MIT. USED	MIT AC. BALANCE	RATIO
STARTING BALANCE					534.9	
940927-1	1.92	MARSH	GOOD	34.0	500.9	17:1
950811-9	0.72 2.69	FORESTED HERBACEOUS	FAIR/POOR FAIR/POOR	24.65	476.25	15:1
940614-9 Conc./ 960124-5 Const.	3.78 2.01	FORESTED FORESTED	GOOD/FAIR GOOD/FAIR	95.7	380.55	20:1 10:1
970108-14	1.49	FORESTED	GOOD/FAIR	18.53	351.02	17:1
970918-10	1.98 0.21	Wet Ditch Herbaceous	FAIR /POOR FAIR	32.85	329.17	15:1 avg.
971113-2	3.96	FORESTED/ HERBACEOUS	FAIR/POOR	59.40	269.77	15:1
980909-4	1.04	FORESTED/ HERBACEOUS	FAIR/POOR	20.0	249.77	19:1
980515-2	3.46	FORESTED (.83 AC) HERBACEOUS (2.63)	FAIR	27.25	222.52	15:1 10:1

02/08/99
L:/ORA/Common/Three.Lakes.Mit.Ledger.Doc

EXHIBIT 11

STAFF REPORT DISTRIBUTION LIST

U.S. 192 (S.R. 530)

APPLICATION NUMBER: 980909-4

PERMIT MODIFICATION NUMBER: 49-00956-P

INTERNAL DISTRIBUTION

Reviewer:

- X Jamie Poulos
- X Shannon Carter
- X Edward W. Yaun, P.E.
- X Marc S. Ady
- X J. Golden - REG
- X A. Lee - ORL
- X R. Robbins - NRM
- X A. Waterhouse - REG
- X P. Bell - LEG
- X Environmental PPC Reviewer
- X Environmental Resource Compliance
- X Permit File

GOVERNING BOARD MEMBERS

- Mr. Mitchell W. Berger
- Ms. Vera Carter
- Mr. William Graham
- Mr. William Hammond
- Mr. Richard Machek
- Mr. Michael Minton
- Mr. Eugene K. Pettis
- Ms. Miriam Singer
- Mr. Frank Williamson, Jr.

DEPT. OF ENVIRONMENTAL PROTECTION

EXTERNAL DISTRIBUTION

X Applicant:
FLORIDA DEPARTMENT OF TRANSPORTATION

X Applicant's Consultant
DYER, RIDDLE, MILLS & PRECOURT, INC.

X Engineer, County of:
OSCEOLA, ORANGE

Engineer, City of:

Local Drainage District:

COUNTY

- X Orange -Army Corps of Engineers
-Dept of Environmental
Protection
-Public Utilities
- X Osceola -Army Corps of Engineers

BUILDING AND ZONING

OTHER

- X Div of Recreation and Park - District 6
- X F.G.F.W.F.C.
- X Florida Audubon - Charles Lee
- X Sherry Williams-Hooper, AICP
- X Sierra Club - Central Florida Group
- X US Army Corps of Engineers
- X US Army Corps of Engineers

STAFF REPORT ROUTE SHEET

APPLICATION NO. 980909-4

PROJECT NAME: U.S. 198 (S.R. 530)

SCHEDULED FOR 11-MAR-1999 GOVERNING BOARD

	<u>Name</u>	<u>Due Date</u>	<u>Date Signed</u>
ENGINEERING EVAL.	<u>Jamie Poulos</u>	<u>25-FEB-1999</u>	<u>JP 2/16/99</u>
ENVIRONMENTAL EVAL.	<u>Shannon Carter</u>	<u>25-FEB-1999</u>	<u>SC 2/10/99</u>
SUPERVISOR, SWM	<u>Edward W. Yaun, P.E.</u>	<u>05-MAR-1999</u>	_____
SUPERVISOR, NRM	<u>Marc S. Ady</u>	<u>05-MAR-1999</u>	_____
DIV. DIR., NRM	<u>Robert G. Robbins</u>	_____	_____
DIV. DIR., SWM	<u>Anthony M. Waterhouse</u>	_____	<u>AW 2/1/99</u>

RESOURCE CODES

- WETLAND, FORESTED/FRESHWATER MARSH
- WETLAND IMPACTS
- OFFSITE WETLAND MITIGATION

4 USER DEFINED SPECIAL CONDITIONS: See Attached Page(s)

USER DEFINED SPECIAL CONDITIONS

1. MITIGATION SHALL BE PROVIDED BY DESIGNATION OF 20 ACRES OF WETLAND RESTORATION/ENHANCEMENT WITHIN THE 534.9-ACRE THREE LAKES WILDLIFE MANAGEMENT AREA (TLWMA) MITIGATION SITE (PREVIOUSLY AUTHORIZED BY SFWMD PERMIT APPLICATION NUMBERS 940614-10 AND 940614-1-D). THIS MITIGATION ACREAGE WILL BE SUBTRACTED FROM THE 242.52 ACRES OF MITIGATION AVAILABLE, LEAVING A BALANCE OF 22.52 ACRES OF MITIGATION AVAILABLE TO OFFSET OTHER FDOT DISTRICT 5 ROADWAY PROJECTS (SEE EXHIBIT 11).

2. ALL PROVISIONS OF THE TLWMA PERMIT APPLICATION NUMBER 940614-10 CONCERNING CONSTRUCTION, MONITORING AND MAINTENANCE OF THE MITIGATION SITE ARE INCORPORATED HEREIN BY REFERENCE.

3. MONITORING REQUIRED:

DESCRIPTION: TURBIDITY EXPRESSED IN NEPHELOMETRIC TURBIDITY UNITS (NTU).

LOCATION: BACKGROUND - SAMPLES SHALL BE TAKEN 200 FEET UPSTREAM OF ANY CONSTRUCTION ACTIVITY WITHIN SURFACE WATER OF THE STATE (I.E., REEDY CREEK.)

COMPLIANCE - SAMPLES SHALL BE TAKEN 200 FEET DOWNSTREAM.

FREQUENCY: TWICE DAILY, WITH AT LEAST A FOUR-HOUR INTERVAL, DURING ALL WORK AUTHORIZED BY THIS PERMIT.

DURATION: MONITORING SHALL BEGIN ON THE FIRST DAY OF CONSTRUCTION FOR ALL ACTIVITIES RELATED TO THE PROPOSED ACTIVITIES THAT ARE CLASSIFIED AS SURFACE WATERS OF THE STATE. MONITORING SHALL CEASE WHEN ALL CONSTRUCTION ACTIVITIES RELATED TO THE PROPOSED ACTIVITIES ARE COMPLETED. THE MONITORING DATA MUST DEMONSTRATE THAT TURBIDITY 200 FEET DOWNSTREAM OF ALL PROPOSED ACTIVITIES IS LESS THAN OR EQUAL TO 29 NTU'S ABOVE NATURAL BACKGROUND TURBIDITY 200 FEET UPSTREAM OF EACH PROPOSED ACTIVITY FOR A PERIOD OF 7 CONSECUTIVE DAYS AFTER COMPLETION OF CONSTRUCTION.

ALL MONITORING DATA SHALL BE SUBMITTED WITHIN ONE WEEK OF ANALYSIS WITH DOCUMENTS CONTAINING THE FOLLOWING INFORMATION: (1) PERMIT AND APPLICATION NUMBER; (2) DATES OF SAMPLING AND ANALYSIS; (3) A STATEMENT DESCRIBING THE METHODS USED IN COLLECTION, HANDLING, STORAGE AND ANALYSIS OF THE SAMPLES; (4) A MAP INDICATING THE SAMPLING LOCATIONS AND (5) A STATEMENT BY THE INDIVIDUAL RESPONSIBLE FOR IMPLEMENTATION OF THE SAMPLING PROGRAM CONCERNING THE AUTHENTICITY, PRECISION, LIMITS OF DETECTION AND ACCURACY OF THE DATA.

MONITORING REPORTS SHALL ALSO INCLUDE THE FOLLOWING INFORMATION FOR EACH SAMPLE THAT IS TAKEN:

- (A) TIME OF DAY SAMPLES TAKEN;
- (B) DEPTH OF WATER BODY;
- (C) DEPTH OF SAMPLES;
- (D) ANTECEDENT WEATHER CONDITIONS;
- (E) WIND DIRECTION AND VELOCITY;

IF MONITORING REVEALS VIOLATIONS OF THE STATE WATER QUALITY STANDARD FOR TURBIDITY CONSTRUCTION ACTIVITIES SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL CORRECTIVE MEASURES HAVE BEEN TAKEN AND TURBIDITY HAS RETURNED TO ACCEPTABLE LEVELS. ANY SUCH OCCURRENCE SHALL ALSO BE IMMEDIATELY (WITHIN

USER DEFINED SPECIAL CONDITIONS

A 24 HOUR PERIOD) REPORTED TO THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT AT THE ORLANDO SERVICE CENTER, 7335 LAKE ELLENOR DRIVE, ORLANDO, FL 32809.

MONITORING REPORTS SHALL BE SUMMARIZED DAILY AND SUBMITTED WEEKLY TO THE NATURAL RESOURCE MANAGEMENT DIVISION IN THE ORLANDO SERVICE CENTER.

- 4 . THE AUTHORIZATION OF THE STORMWATER MANAGEMENT SYSTEM IS ISSUED PURSUANT TO THE WATER QUALITY NET IMPROVEMENT PROVISIONS REFERENCED IN RULE SECTION 40E.4.303(1); THEREFORE, WATER QUALITY CERTIFICATION IS WAIVED.

STAFF REPORT DISTRIBUTION LIST

ADDRESSES

Div of Recreation and Park - District 6
FDEP
1800 Wekiwa Circle
Apopka, FL 32712

F.G.F.W.F.C.
Mike Hulon
600 Thacker Avenue #A1
Kissimmee, FL 34741

Sherry Williams-Hooper, AICP
Orange Co. Community Services and Housing Div.
P.O. Box 1393
Orlando, FL 32802-1393

US Army Corps of Engineers
Mr. Thad Hart
Palatka Regulatory Office - CESAJ-RD-AP
Post Office Box 1317
Palatka, FL 32078-1317

US Army Corps of Engineers
Ms. Elizabeth Bishop
Merritt Island Regulatory Office - CESAJ-RD-AM
Courtney Sq Bldg, #101 - 2460 Courtney Square
Merritt Island, FL 32952-4101

TO: South Florida Water Management District
7355 Loe Ellenor Drive
Orlando, Florida 32809

APP# 980909-4

ATTENTION: Shannon Carter

DATE: 2-4-99

REGARDING: S.R. 530 (U.S. 192)

ADDITIONAL INFORMATION

FEB -4 1997

We are sending you:

ORLANDO SERVICE UNIT

- | | | |
|--|---|---|
| <input type="checkbox"/> Attached | <input type="checkbox"/> Airborne Express | <input type="checkbox"/> Pick-Up |
| <input checked="" type="checkbox"/> Hand Deliver | <input type="checkbox"/> First-Class | <input type="checkbox"/> UPS |
| <input type="checkbox"/> Shop Drawings | <input type="checkbox"/> Prints | <input type="checkbox"/> Reports |
| <input type="checkbox"/> Change Orders | <input type="checkbox"/> Plans | <input checked="" type="checkbox"/> See Below |

Copies	Date	Description
5	2-4-99	Revised Construction Plans (Sheets 30, 31, 32, 39, 40, 47, 48)

Transmitted:

- | | | |
|---|---|--|
| <input type="checkbox"/> For Your Approval | <input type="checkbox"/> For Your Use | <input checked="" type="checkbox"/> As Requested |
| <input type="checkbox"/> Returned From Loan | <input type="checkbox"/> For Review & Comment | <input type="checkbox"/> Other |

Remarks: If you have any questions regarding this transmittal, please contact our office.

Sincerely
Dyer, Riddle, Mills & Precourt
George McLatchey
 George McLatchey
 Environmental Scientist

Cc: Ken Kreil, DRMP
Tadd Kasbeer, FDOT

Fs2.75026000/wrr/mc/lot.doc

DIVISIONS OF FLORIDA DEPARTMENT OF STATE

- Office of the Secretary
- Office of International Relations
- Division of Elections
- Division of Corporations
- Division of Cultural Affairs
- Division of Historical Resources
- Division of Library and Information Services
- Division of Licensing
- Division of Administrative Services



FLORIDA DEPARTMENT OF STATE
Katherine Harris
Secretary of State

DIVISION OF HISTORICAL RESOURCES APPR

MEMBER OF THE FLORIDA CABINET

- State Board of Education
- Treasurer of the Internal Improvement Trust Fund
- Administration Commission
- Florida Land and Water Adjudicatory Services
- Banking Board
- Department of Banking
- Department of Law Enforcement
- Department of Highway Safety and Motor Vehicles
- Department of Veterans Affairs

February 2, 1999

Mr. Frederick R. Birnie
Florida Department of Transportation
Environmental Management Office
719 South Woodland Boulevard
DeLand, Florida 32720

RE: DHR Project File No. 990374
Cultural Resource Assessment Review Request
A Cultural Resource Assessment Survey of Three Proposed Stormwater Retention Areas,
Osceola County, Florida. By Southeastern Archaeological Research, Inc., January 1999
SPN: 92090-1539
WPN: 5115719

980909-4
ADDITIONAL INFORMATION

FEB - 4 1999

ORLANDO SERVICE CENTER

Dear Mr. Birnie:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), as well as the provisions contained in Chapter 267.061, *Florida Statutes*, we have reviewed the results of the field survey of the referenced project performed by Archaeological Research, Inc., and find them to be complete and sufficient.

Based on the negative results of the survey, it is the opinion of this office that the proposed undertaking will have no effect on historic properties listed or eligible for listing in the National Register of Historic Places or otherwise of historical, architectural or archaeological value.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservation Planner, at 850-487-2333 or 800-847-7278. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura C. Kammeyer

for

George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Esc

cc: C. I. Irwin, FDOT

END



Department of Environmental Protection

CC: KRK
AAK

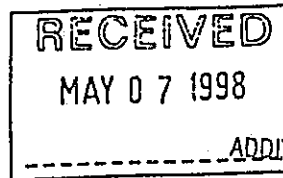
Lawton Chiles
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Virginia B. Wetherell
Secretary

April 27, 1998

APP# 980909-4



ADDITIONAL INFORMATION

FEB - 4 1997

ORLANDO SERVICE CENTER

Mr. George P. McLatchey
Environmental Scientist
Dyer, Riddle, Mills & Precourt, Inc.
Post Office Box 538505
Orlando, Florida 32853-8505

Dear Mr. McLatchey:

Re: S.R. 530 (U.S. 192) project in Sections 2, 3, 4, 5 and 11,
Township 25 South, Range 27 East, Osceola County

This is in response to your letter of March 12, 1998 requesting a determination of whether your activity will affect or be adjacent to sovereign submerged lands in Sections 2, 3, 4, 5 and 11, Township 25 South, Range 27 East, Osceola County.

Our records currently have insufficient information and documentation to determine whether those portions of Reedy Creek, Boggy Creek, and Black Lake which may be impacted by the proposed widening of S.R. 530 are state-owned. Therefore, submitting information to obtain authorization to use state-owned sovereign submerged lands is not recommended at this time. However, an environmental resource permit may be necessary prior to conducting your activity. Therefore, please submit this letter to the appropriate agency along with your environmental resource permit application. In the event Reedy Creek, Boggy Creek or Black Lake are determined to be navigable, and therefore, state-owned, proprietary requirements of the Board of Trustees for state-owned waterbodies, if any, will apply to this project. We will notify you if this is the case.

Thank you again for your inquiry. If this office can be of any further assistance regarding this determination, please address your questions to Melanie Knapp, Planner II, mail station No. 108 at the above letterhead address, or by telephone at (850) 488-8123.

Sincerely,

Terry E. Wilkinson, Chief
Bureau of Survey and Mapping
Division of State Lands

TEW/mjk
cc: Mr. Wilbert Holliday, CD SLERP

will not need an easment.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.



JOB #: 980909-4

1505 EAST COLONIAL DRIVE, P.O. BOX 538505, ORLANDO, FLORIDA 32853-8505

TEL: (407) 896-0594

ADDITIONAL INFORMATION

FAX: (407) 896-4836

FEB 03 1999

FAX COVER SHEET

ORLANDO SERVICE CENTER

DATE: 2-3-99 FAX #: 858-6121

TO: Shannon Carter

OF: SFWM D

RETURN CONFIRMATION TO: George McLaughlin

SENDING: 2 PAGES INCLUDING THIS COVER LETTER

ORIGINAL DOCUMENTS WILL WILL NOT BE SENT BY MAIL

MESSAGE:

Sending copy of Historical Resources letter re SR 530.

George
896-0594

CC: _____

Information contained in this transmission is privileged and confidential. It is intended only for the use of the individual or entity named above. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copy of this communication is strictly prohibited. If you have received this communication in error, please immediately notify us by telephone and return the original message to us at the above address via the U.S. Postal Service. Thank You.

If there are questions or problems with this fax, please call (407) 896-0594.

DIVISIONS OF FLORIDA DEPARTMENT OF STATE

- Office of the Secretary
- Office of International Relations
- Division of Elections
- Division of Corporations
- Division of Cultural Affairs
- Division of Historical Resources
- Division of Library and Information Services
- Division of Motor Vehicle Services
- Division of Administrative Services



FLORIDA DEPARTMENT OF STATE
Katherine Harris
Secretary of State

MEMBER OF THE FLORIDA COUNCIL

- State Board of Education
- Trustees of the Internal Improvement Trust Fund
- Administrative Commission
- Florida Land and Water Adjudicatory Commission
- State Board of Health
- Division of Social Services
- Department of Corrections
- Department of Law Enforcement
- Department of Military Service and Motor Vehicle
- Department of Veterans Affairs

DIVISION OF HISTORICAL RESOURCES

ADDITIONAL INFORMATION

February 2, 1999

FEB 03 1999

ORLANDO SERVICE CENTER

Mr. Frederick R. Birnie
Florida Department of Transportation
Environmental Management Office
719 South Woodland Boulevard
Deland, Florida 32720

APP# 980909-4

RE: DHR Project File No. 990374
Cultural Resource Assessment Review Request
A Cultural Resource Assessment Survey of Three Proposed Stormwater Retention Areas,
Osceola County, Florida. By Southeastern Archaeological Research, Inc., January 1999
SPN: 92090-1539
WPN: 5115719

Dear Mr. Birnie:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), as well as the provisions contained in Chapter 267,061, Florida Statutes, we have reviewed the results of the field survey of the referenced project performed by Archaeological Research, Inc., and find them to be complete and sufficient.

Based on the negative results of the survey, it is the opinion of this office that the proposed undertaking will have no effect on historic properties listed or eligible for listing in the National Register of Historic Places or otherwise of historical, architectural or archaeological value.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservation Planner, at 850-487-2373 or 800-847-7278. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura C. Kammeyer

for George W. Peroy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Esc

cc: C. I. Irwin, FDOT

END



ENGINEERS • SURVEYORS • PLANNERS

January 14, 1999

ADDITIONAL INFORMATION

Hand Delivery

JAN 14 1999

South Florida Water Management District
Attn: Jamie Poulos, Staff Engineer
Orlando Service Center
7335 Lake Ellenor Drive
Orlando, Florida 32809

ORLANDO SERVICE CENTER

APP# 980909-4

Re: U.S. 192 (S.R. 530)
SFWMD App # 980909-4
Orange and Osceola Counties, S2-5, 11, 32-34/T25;25S/R27;27E
Response to Request for Additional Information

Sh
2/13

Dear Mr. Poulos:

DRMP is in receipt of your letter dated December 23, 1998 with respect to the above referenced project. On behalf of the Florida Department of Transportation we are submitting five copies of the requested information with responses to your comments.

1. Revised Construction Plans Sheet, Signed and Sealed
4-6
8-28
38-43
60-64
2. Updated Drainage Calculations
Appendix E, Signed and Sealed
3. Sketches Signed and Sealed
2, 3, 8, 9, & 10 of 24
4. Revised Table 1 Project
Wetland and other Surface Water Summary

The comments are reiterated followed by our responses in bold text.

1. The proposed discharge rate appears excessive. Similar recently permitted S.R. 530 (U.S. 192) road improvements projects have included post-development discharge rates in the range of 0.66 to 1.44 cubic feet per second per acre. Please modify the proposed surface water management system to achieve a post-development discharge rate within this range.

✓ Pursuant to our meeting (1/6/99) we have revised the stormwater management plan to reduce the overall peak discharge for the project to approximately 1.67 cfs/acre (or less). Based on the discussions in our meeting and the existing conditions of the project the

Mr. Jamie Poulos
SFWMD RAI #2
January 14, 1999

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ORLANDO REGIONAL WATER TREATMENT PLANT

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Page 2

SFWMD felt that 1.67 cfs/acre or less would be appropriate for this project. We are submitting a revised Appendix E with these calculations

2. Based on the information submitted, it appears that the stormwater routings do not include offsite areas that are routed through the proposed systems. Please include all drainage areas directed to the stormwater system in the stormwater routings.

✓ Pursuant to our meeting (1/6/99) we have updated the project areas table so that the overall area and drainage areas will be more logical (see Page E - 9 Table 9 Project Areas).

3. Please provide a summary that accounts for the differences in acreage between the project area and onsite drainage area listed in Table 11 for each basin.

7
o Pursuant to our meeting (1/6/99) we have added an additional column to the project area Table to help clarify the acreage differences for each basin. (See Page E - 9 Table 9 Project Areas).

4. Please provide a recovery analysis for the portions of the swales in Basin B that are not hydraulically connected to the proposed bleeder orifice (i.e., the swale segments between ditch blocks).

✓ We have provided a recovery analysis for the swale systems that are located behind the swale blocks. Portion of the information relative to these swales were developed when the project was being designed in English units (specifically the geotechnical analysis). The appropriate portions these calculations have been attached for your use.

5. The water quality calculation submitted for Basin D are for one-inch over the new pavement only. Please submit calculations for 2.5 inches over the new impervious area or 1-inch over the right-of-way.

✓ We have revised the drainage system so that the Basin D is directed to Pond C and utilized appropriate water quality requirements. Please see revised calculations Appendix E.

6. Please provide calculations for the required exfiltration trench length utilizing the equation given in the Basin of Review, Volume IV, page C-V-10, as shown below.

$$L = \frac{V}{K(H^2W + 2H^2D - D^2 + 2H^2D) + (1.39 \times 10^{-4})WD}$$

It is unclear if the submitted trench length calculations for Basins D-1 and D-2 include the design assumptions that are built into the above equation. It should be noted that the above equation is for English units only.



Mr. Jamie Poulos
SFWMD RAI #2
January 14, 1999

ADDITIONAL INFORMATION

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ORLANDO SERVICE CENTER

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Page 3

✓ We have eliminated the exfiltration trench from the design and diverted Basin D to Pond C. This will eliminate the need for an exfiltration design.

7. A recent site visit conducted on December 17, 1998 by SFWMD staff revealed standing water in the location of proposed Pond E, with little to no antecedent rainfall. Due to this observation, as well as the submitted geotechnical engineering report, it appears that the pond bottom elevation proposed for dry detention Pond E is too low. In addition, the future Pond E site is currently covered with *Panicum repens*, a facultative wet plant species typically found in saturated soil conditions. Please raise the proposed dry pond bottom to one foot above the average wet season water table, as determined by the geotechnical engineering report. In addition, please provide a boring location plan for the soil borings taken in the proposed Pond E location.

✓ Pursuant to our meeting of 1/6/99 we have revised the design of Pond E. We have provided for a swale along the southern side to ensure positive outfall to the existing outfall. In addition we have provided underdrain around the pond to ensure that the pond will have a minimum of 1 foot to the wet season water table. Due to the locations of this pond on the pedestrian traffic that will be directed around this pond we felt it would present a much safer condition if this pond remained dry.

8. Based on the submitted information it appears that there will be additional wetland impacts within the right-of-way limits that have not been addressed. The SFWMD does not have reasonable assurance that the remaining wetland areas between the proposed wetland impact limits and the right-of-way will remain undisturbed. Please incorporate these remaining wetland areas into the total wetland impact acreage and revise the mitigation plan accordingly or provide reasonable assurances that these remaining wetland areas will remain undisturbed.

An offset from the limits of construction has been incorporated into the plans to allow for construction activity during the construction phase of this project. This offset is typically three meters (10 feet) from the limits of construction unless the right-of-way limit is encountered. No construction activity will occur beyond the right-of-way limits. All proposed construction is scheduled to occur within the three meter offset or the right-of-way limits, whichever is less. These impacted areas have been incorporated into the total wetland impact acreage and will be mitigated accordingly.

No clearing or mowing activities are anticipated in areas where the right-of-way limits extend beyond the three meter offset. Following the proposed construction, it is anticipated that the three meter offset area will revert back to its original conditions.

9. Based on the increased wetland impact acreage from 0.86 acres proposed in the original submittal to the 1.04 acres proposed in this current submittal, it appears that the proposed mitigation plan in the Three Lakes Wildlife Management Area is insufficient to adequately offset the wetland impacts. Please provide a revised mitigation plan that takes into account the additional wetland impacts.



Mr. Jamie Poulos
SFWMD RAI #2
January 14, 1999

ADDITIONAL INFORMATION APP# 98.0909-4

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ORLANDO SERVICE CENTER

Page 4

Based on our meeting with Shannon Carter on January 6, 1999, the proposed twenty acres of compensatory mitigation provided within the Three Lakes Wildlife Management Area is sufficient to adequately offset all wetland impacts. This mitigation plan will result in a 1.04 : 20 ratio.

A copy of the mitigation proposal is provided in Appendix A of the original Environmental Resource Permit application package.

10. According to Table 1, there are 0.029 acres of wetland impacts proposed to Wetland 5, but the cross section view on Sheet 9 of the dredge and fill sketches does not show any wetland impacts. Please revise Sheet 9 to show the proposed wetland impacts.

Please refer to the enclosed dredge and fill sketches. Revised Sheets 8, 9 and 10 are enclosed that identify the proposed wetland impacts for this area.

11. According to Sheet 22 of the dredge and fill sketches, 1206.0 square feet (0.028 acre) of impacts are proposed to Wetland 14-3, but Table 1 only reflects 0.0025 acre of impact. Please revise Table 1 and/or Sheet 22 accordingly and round the acreage in Table 1 to the nearest hundredth decimal place.

Table 1 is enclosed and has been revised to reflect the 0.028 acres of impact for Wetland 14-3.

12. Based in a review of the dredge and fill sketches, it appears that the scale of the cross section sheets is mislabeled. In order to adequately review the sketches, please revise the drawings to accurately represent the impact areas.

Upon review of the dredge and fill sketches it has been determined that the metric scale labeled on all exhibits are correct.

13. Please incorporate a 15-foot minimum/25 foot average upland buffer line around Wetland 1 on Sheet 3 of the dredge and fill sketches and Sheet 4 of the construction drawings. This upland buffer line was included on the aerials that were previously submitted.

Please refer to the enclosed dredge and fill sketches and construction drawings. An 8 meter (26.25 feet) buffer has been incorporated into the plans and is labeled on both the dredge and fill sketches and construction drawings.

14. As requested previously, please incorporate the requirements of the Stormwater Pollution Prevention Plan (SWPPP) submitted as Appendix 1 of the original submittal into the construction drawings. Please include the location of the proposed erosion control mechanisms and details and the water quality monitoring locations proposed in the SWPPP on the construction drawings. Please include the monitoring requirements on the construction drawings as well.



Mr. Jamie Poulos
SFWMD RAI #2
January 14, 1999

ADDITIONAL INFORMATION

JAN 14 1999

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Page 5

We have added the erosion control features to the construction plans. These plans are being resubmitted to you for your review.

15. According to the response to Question 14, the proposed control elevation of Pond A is 30.4. The construction level detail (Sheet 62) shows the control elevation set at 31.4 (103.02 feet National Geodetic Vertical Datum (NGVD)). Based on the submitted geotechnical report and wetland line topography, the appropriate control elevation appears to be 103.03 feet NGVD. Please verify that the construction drawings are correct.

The control elevation for Pond A is 31.4 and the construction drawings reflect this elevation.

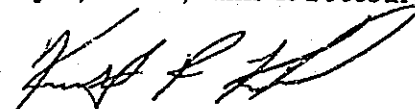
16. Please label the wetland line and include the unique wetland identification codes on the construction drawings. These wetland identification numbers should be consistent with the wetland impact areas that are shown on the dredge and fill sketches.

Please refer to the enclosed construction drawings. All wetlands have been identified with unique wetland identification codes as shown on the dredge and fill sketches.

Please note that the Florida Department of Transportation is proceeding with finalizing the project for construction bidding and award. If during the review you should have any questions please contact our office so that we can work out these comments to minimize additional permitting time. Thank you for your time and consideration in this matter, and we look forward to working with you on the successful completion of this project.

Yours very truly,

Dyer, Riddle, Mills & Precourt, Inc.



Kenneth R. Kniel, P.E.

Water Resources Department Manager

cc: Jim Hatcher (FDOT D5)
Tadd Kasbeer (FDOT D5) w/ attachments
Wayne Chalifoux, DRMP
Theresa Shaw, DRMP
George McLatchey, DRMP



GENERAL NOTES

ADDITIONAL INFORMATION

1. STRICT ADHERENCE TO SECTION 104 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION WILL BE USED IN CONJUNCTION WITH THIS APPLICATION TO PROVIDE REASONABLE ASSURANCE THAT WATER QUALITY STANDARDS WILL NOT BE VIOLATED. SILT FENCES, HAY BALES AND TURBIDITY BARRIERS WILL BE USED AS REQUIRED.
2. TYPES OF EQUIPMENT INVOLVED IN THE CONSTRUCTION WILL INCLUDE: GRADEALL, DUMP TRUCKS, BULLDOZER, PUMPS AND FRONT END LOADER. THE EQUIPMENT WILL BE TRUCKED OR SELF PROPELLED TO THE SITE.
3. TURBIDITY CURTAINS, SILT FENCES, SAND BAGS, HAY BALES OR SOME COMBINATION OF THESE ITEMS WILL BE USED AS DIRECTED BY THE PROJECT ENGINEER TO MAINTAIN STATE WATER QUALITY STANDARDS.
4. EXCAVATED MATERIAL THAT IS SUITABLE WILL BE USED IN CONSTRUCTION OF THE SHOULDERS. UNSUITABLE MATERIAL WILL BE DISPOSED OF AND CONTAINED IN UPLAND SITES PROVIDED BY THE CONTRACTOR.
5. FILL MATERIAL SHALL BE OF SATISFACTORY MATERIAL THAT IS CLEAN AND COMPACTIBLE INTO A SUITABLE AND ENDURING ROADWAY.
6. DURING THE CONSTRUCTION OR EXTENSION OF MULTIPLE OPENING STRUCTURES, THE CONTRACTOR, AS DIRECTED BY THE PROJECT ENGINEER, SHALL BE REQUIRED TO PHASE CONSTRUCT DRAINAGE STRUCTURES IN ORDER TO MAINTAIN ADEQUATE WATER FLOW.
7. ALL ELEVATION SHOWN IN THIS PERMIT APPLICATION ARE REFERENCED TO U.S.G.S. NATIONAL VERTICAL DATUM OF 1929
8. THE FOLLOWING AREAS OF IMPACT ARE REQUIRED FOR THE PROJECT.

JAN 14 1999

ORLANDO SERVICE CENTER

JURISDICTIONAL AREA	IMPACT AREA (SM/SF)
WETLAND 1	NO IMPACT
WETLAND 2	196.3 / 2113.0
WETLAND 3 -1	0.6 / 6.5
WETLAND 3-2	1.5 / 16.1
WETLAND 4-1	2.8 / 30.1
WETLAND 4-2	28.8 / 310.0
WETLAND 4-3	124.9 / 1344.4
WETLAND 5	117.2 / 1262.0
WETLAND 6	131.8 / 1418.7
WETLAND 7	NO IMPACT
WETLAND 8	NO IMPACT
WETLAND 9	490.9 / 5284.0
WETLAND 10	990.1 / 10657.0
WETLAND 11	235.0 / 2529.0
WETLAND 12-1	14.1 / 151.8

JURISDICTIONAL AREA	IMPACT AREA (SM/SF)
WETLAND 12-2	192.2 / 2068.8
WETLAND 13	247.5 / 2664.0
WETLAND 14-1	55.9 / 602.0
WETLAND 14-2	109.2 / 1175.0
WETLAND 14-3	112.0 / 1206
WETLAND 14-4	212.2 / 2284.0
WETLAND 14-5	44.1 / 474.7
WETLAND 14-6	91.7 / 987.1
WETLAND 14-7	414.8 / 4464.9
WETLAND 15	202.2 / 2176.0
WETLAND 15-1	117.8 / 1268.0
WETLAND 15-2	101.9 / 1096.8
TOTAL	4235.5 / 45589.8

PROJECT: U.S. 192 (S.R. 530) SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST

PURPOSE: JURISDICTIONAL IMPACT COUNTY OF OSCEOLA AND ORANGE

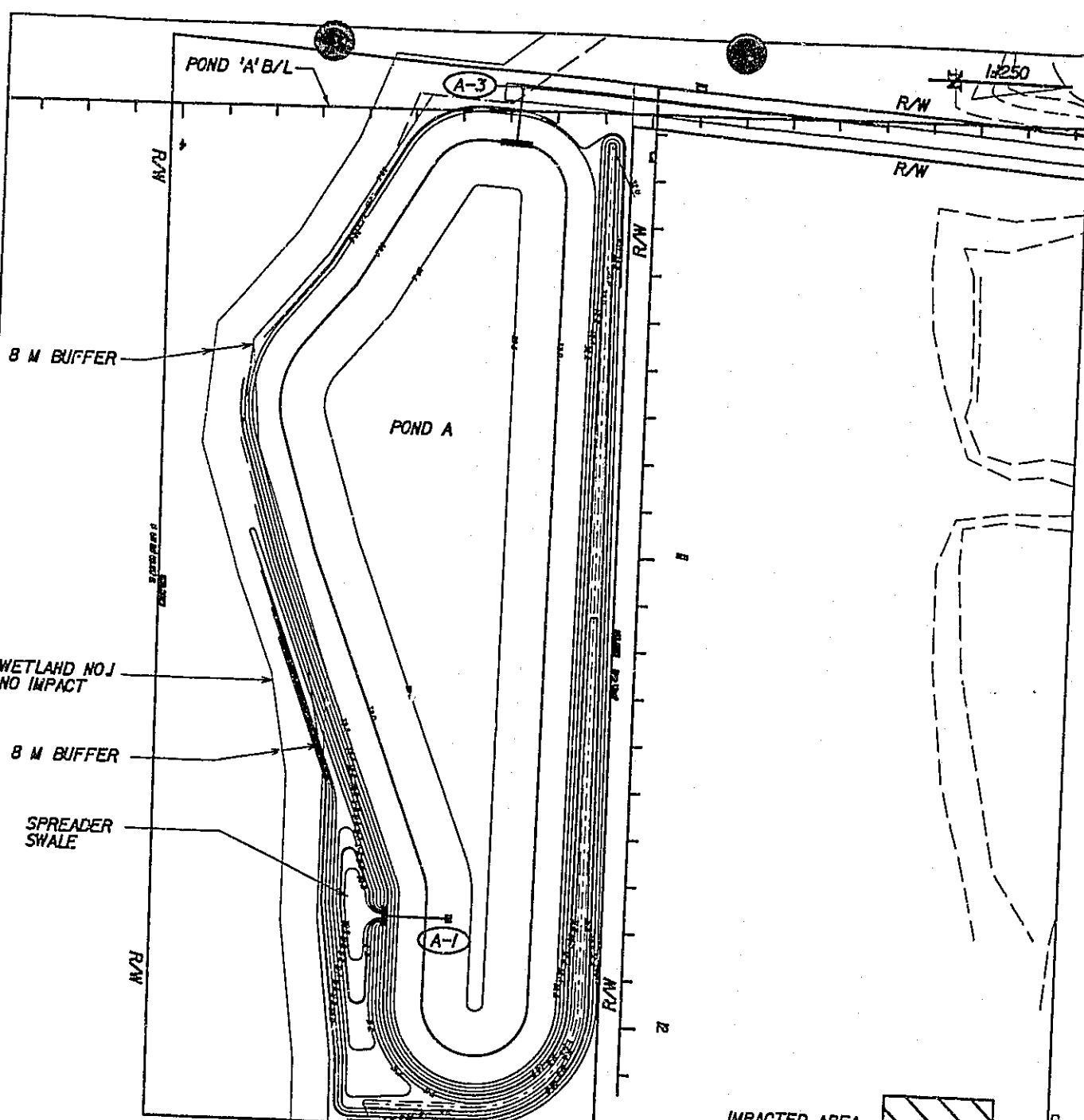
DATUM: NGVD STATE OF FLORIDA

SHEET 2 OF 24



Signed: *[Signature]*
 DATE: 1/19/99
 REG. FLA. ENG. NO. 37300

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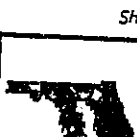
PROJECT: U.S. 192 (S.R. 530) SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST

PURPOSE: JURISDICTIONAL IMPACT COUNTY OF OSCEOLA AND ORANGE

DATUM: NGVD STATE OF FLORIDA

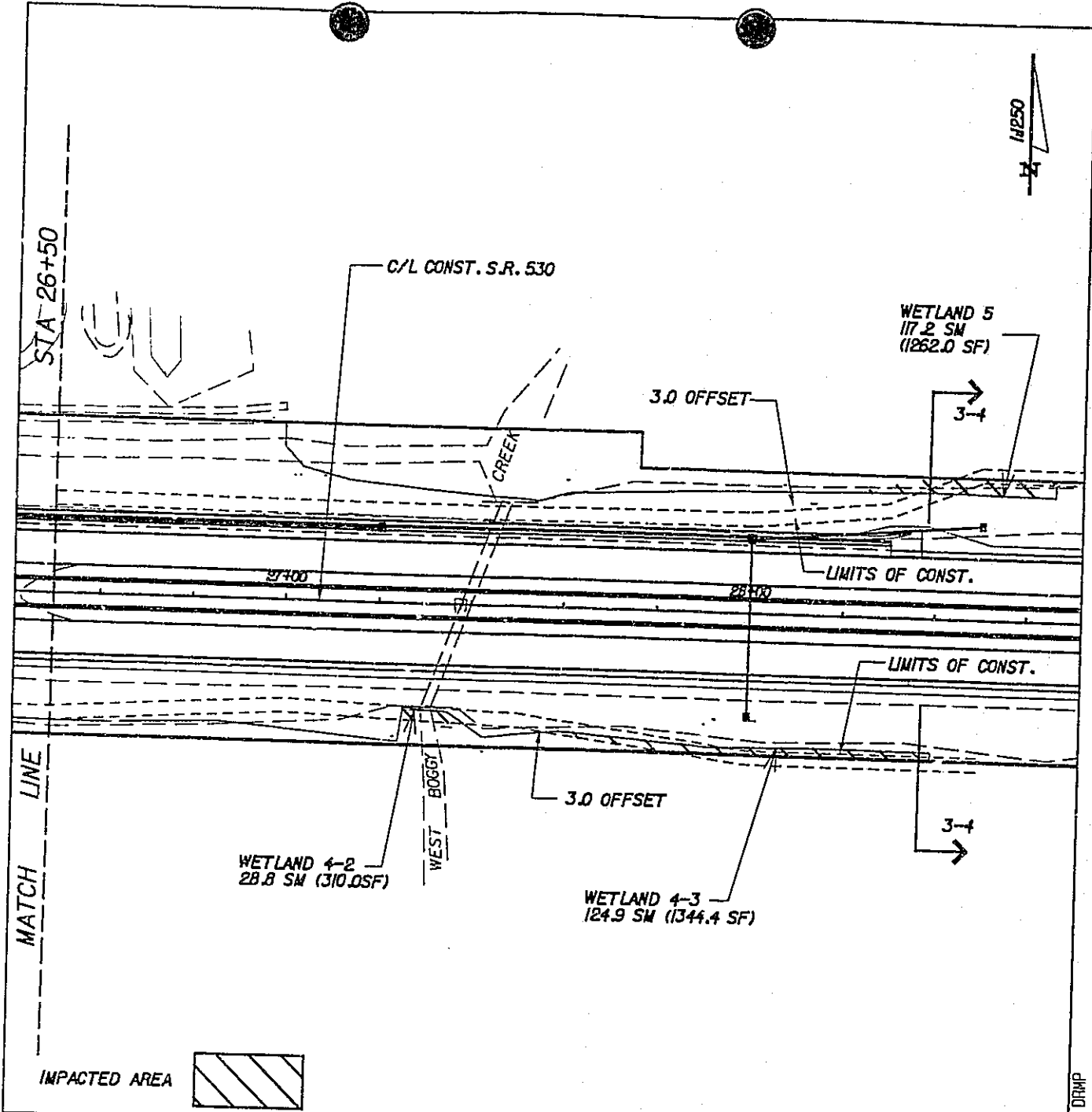
SHEET 3 OF 24

DRMP
 DYER, BIDDLE, WILKS & PERCOTT, INC.
 1505 E. COLONIAL DRIVE
 ORLANDO, FLORIDA 32803
 (407) 896-0594

 FLORIDA DEPARTMENT OF
 TRANSPORTATION

Signed _____
 DATE 1/14/99
 REG. FLA. ENG. NO. 37300

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IMPACTED AREA 

PROJECT:	U.S. 192 (S.R. 530)	SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	HGVD	STATE OF FLORIDA

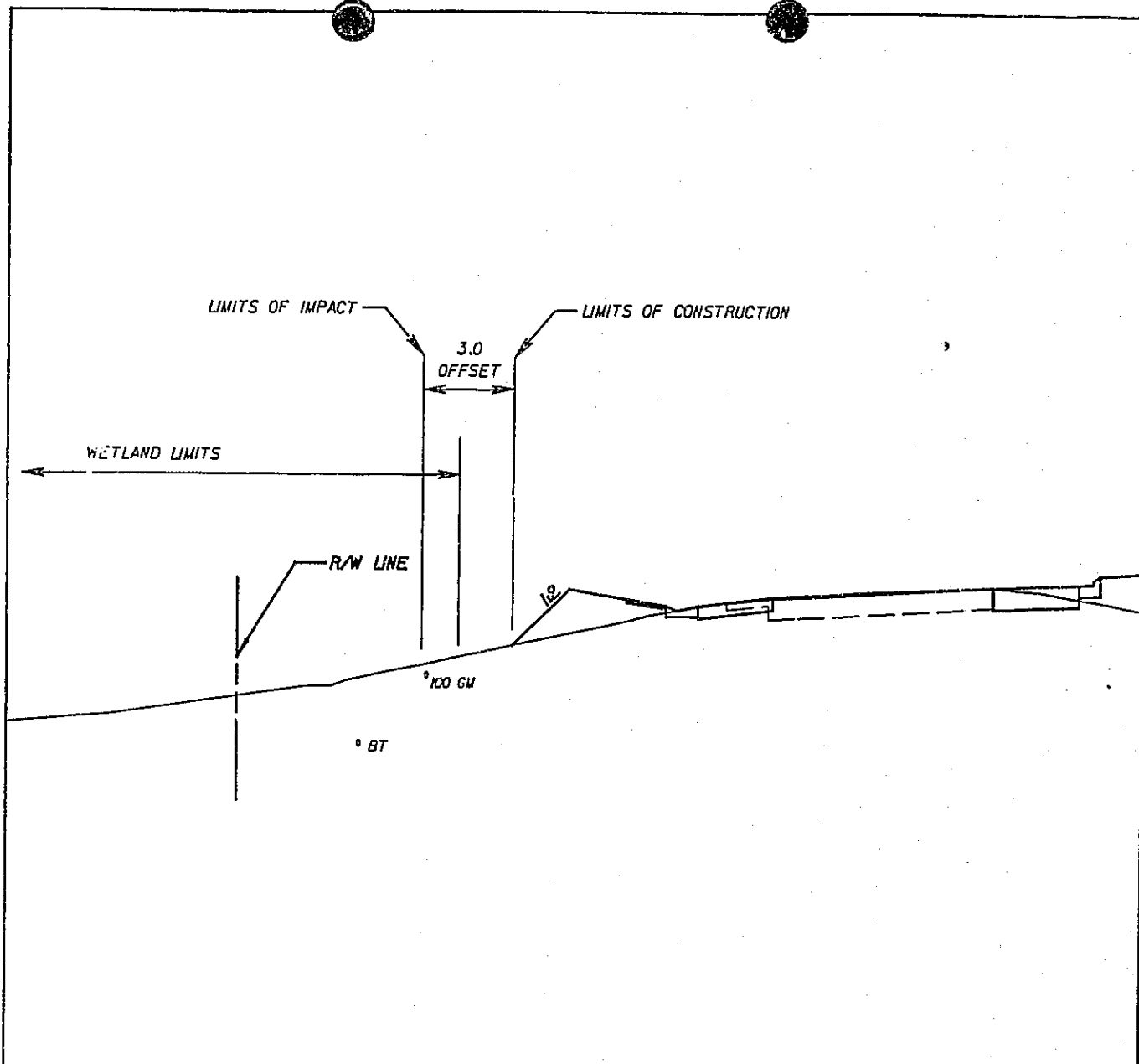
SHEET 8 OF 24

DRMP
 DTSZ, HIDDLE, HILLS & PERCOURT, INC.
 1505 E. COLONIAL DRIVE
 ORLANDO, FLORIDA 32803
 (407) 896-0594

 FLORIDA DEPARTMENT OF
 TRANSPORTATION

[Signature]
 Signed
 DATE 1/14/99
 REG. FLA. ENG. NO. 37300

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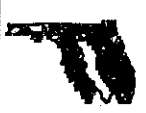
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SECTION 3-4
STA. 28+30.000

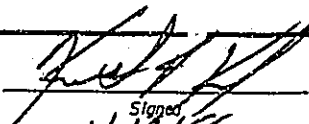
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PROJECT:	U.S. 192 (S.R. 530)	SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	NGVD	STATE OF FLORIDA
SHEET 9 OF 24		

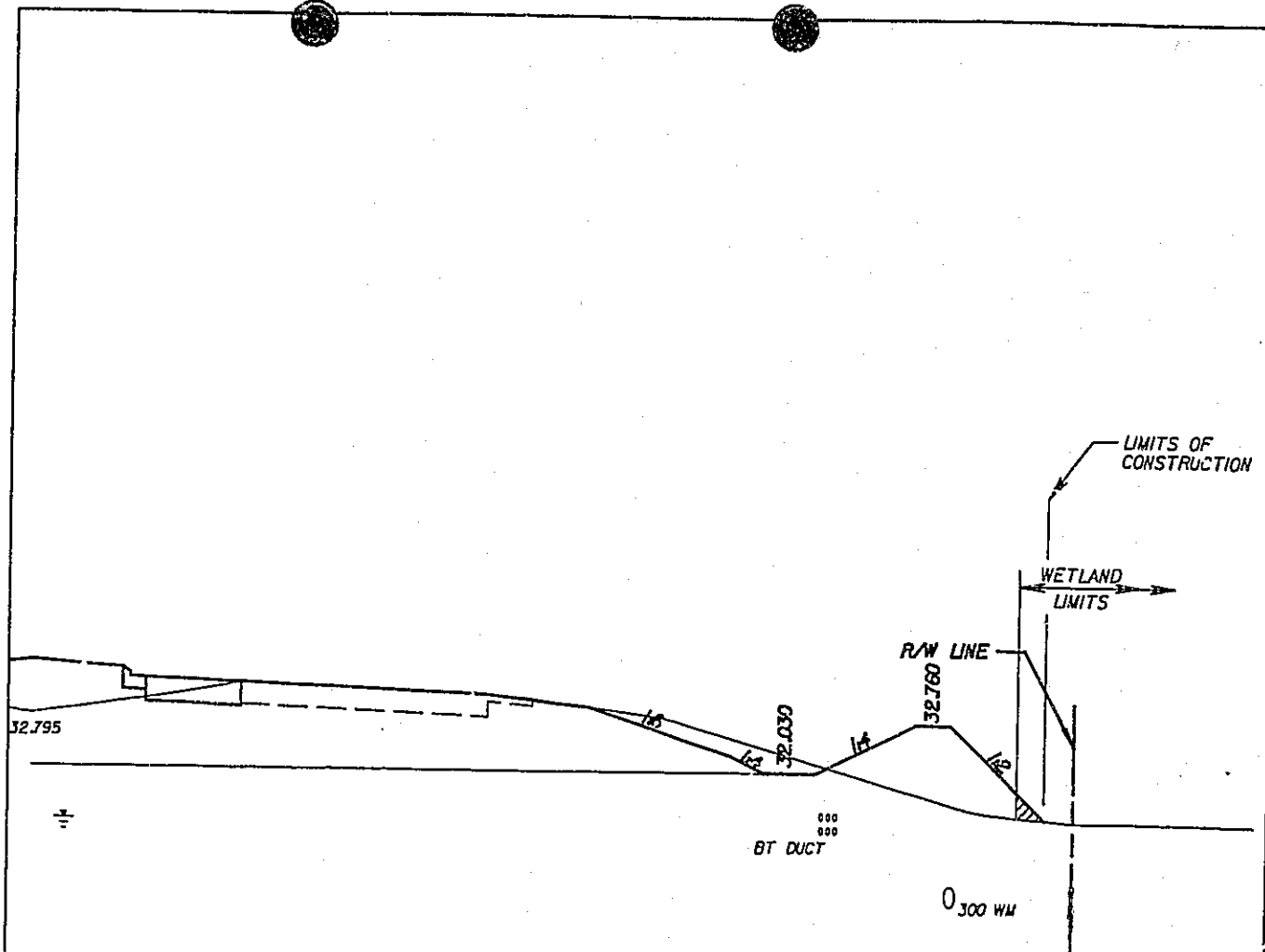
DRMP
DYLE, RIDDLE, HILLS & PERCOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 896-0594



FLORIDA DEPARTMENT OF
TRANSPORTATION


Signed
DATE 1/14/99
REG. FLA. ENG. NO. 37300

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FILL

SECTION 3-4
STA. 28+30.000

SCALE : 1:200 HORIZ.
1:100 VERT.

PROJECT:	U.S. 192 (S.R. 530)	SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	NGVD	STATE OF FLORIDA

SHEET 10 OF 24

DRMP
DYE, RIDDLE, WILKS & PESCOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 896-0594



FLORIDA DEPARTMENT OF
TRANSPORTATION

[Signature]
SIGNED
DATE 1/14/99
REG. FLA. ENG. NO. 37300

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APP# 980909-4

JAN 14 1990
ORLANDO SERVICE CENTER

TABLE ONE:

PROJECT WETLAND AND OTHER SURFACE WATER SUMMARY

WL & SW ID	WL & SW TYPE	WL & SW SIZE	WL & SW NOT IMPACTED	TEMPORARY WL & SW IMPACTS			PERMANENT WL & SW IMPACTS			MITIGATION AREA ID
				WL & SW TYPE	IMPACT SIZE	IMPACT TYPE	WL & SW TYPE	IMPACT SIZE	IMPACT TYPE	
1	PFO7C						PFO7C	0.000 ac		
2	PFO7C	0.303 ac	0.255 ac				PFO7C	0.048 ac	C	
3-1	PFO6C	0.005 ac	0.004 ac				PFO6C	0.00014 ac	C	
3-2	PFO6C						PFO6C	0.00036 ac	C/F	
4-1	PFO6F	0.179 ac	0.140 ac				PFO6F	0.00069 ac	C/F	
4-2	PFO6F						PFO6F	0.0071 ac	C/F	
4-3	PFO6F						PFO6F	0.03 ac	C/F	
5	PFO6F	0.331 ac	0.302 ac				PFO6F	0.028 ac	C/F	
6	PEM1F	0.033 ac	0.000 ac				PEM1F	0.032 ac	C/F	
7	PEM1F						PEM1F	0.00 ac		



WL & SW ID	WL & SW TYPE	WL & SW SIZE	WL & SW NOT IMPACTED	WL & SW TYPE	IMPACT SIZE	IMPACT TYPE	WL & SW TYPE	IMPACT SIZE	IMPACT TYPE	MITIGATION AREA ID
8	PEM1F						PEM1F	0.00 ac		
9	PFM1C	0.121 ac	0.000 ac				PFM1C	0.121 ac	C/F	
10	PSS1F	0.385 ac	0.141 ac				PSS1F	0.244 ac	C/F	
11	PSS1F	0.058 ac	0.00 ac				PSS1F	0.058 ac	C/F	
12-1	PSS1C	0.360 ac	0.309 ac				PSS1C	0.0034 ac	C/F	
12-2	PSS1C						PSS1C	0.047 ac	C/F	
13	PUBH	0.104 ac	0.043 ac				PUBH	0.061 ac	C/F	
14-1	PFO4A	0.849 ac	0.599 ac				PFO4A	0.013 ac	C/F	
14-2	PFO4A						PFO4A	0.026 ac	C/F	
14-3	PFO4A						PFO4A	0.028 ac	C/F	



WL & SW ID	WL & SW TYPE	WL & SW SIZE	WL & SW NOT IMPACTED	WL & SW TYPE	IMPACT SIZE	IMPACT TYPE	WL & SW TYPE	IMPACT SIZE	IMPACT TYPE	MITIGATION AREA ID
14-4	PFO4A						PFO4A	0.052 ac	C/F	
14-5	PFO4A						PFO4A	0.010 ac	C/F	
14-6	PFO4A						PFO4A	0.022 ac	C/F	
14-7	PFO4A						PFO4A	0.102 ac	C/F	
15	PFO4A	0.351 ac	0.248 ac				PFO4A	0.049 ac	C/F	
15-1	PFO4A						PFO4A	0.029 ac	C/F	
15-2	PFO4A						PFO4A	0.025 ac	C/F	
PROJECT TOTALS:		3.07 ac	2.03 ac					1.04 ac		

Comments:

Note:

WL = Wetland SW = Other Surface Water ID = Identification number, letter, etc.
 Wetland Type: from an established wetland classification system

Impact Type: D = dredge; F = fill; H = change hydrology; S = shading; C = clearing; O = other

Multiple entries per cell not allowed, except in the "Mitigation ID" column. If more than one impact is proposed in a given area, indicate the final impact.



South Florida Water Management District

Orlando Service Center • 7335 Lake Ellenor Drive • Orlando, FL 32809
(407) 858-6100 • Fax (407) 858-6121 • 1-800-250-4250 • Suncom 358-6100

CON 24-06-02

Regulation Department
Application No. 980909-4

December 23, 1998

Mr. Kenneth R. Kniel, P.E.
Department Manager
Dyer, Riddle, Mills & Precourt, Inc.
1505 East Colonial Drive
Orlando, Florida 32803-4780

Subject: U.S. 192 (S.R. 530)
Orange and Osceola Counties, S2-5,11,32-34/T25;25S/R27;27E

Dear Mr. Kniel:

South Florida Water Management District (SFWMD) staff have received information from you on December 4, 1998. The information was incomplete and did not adequately address the following items. According to Rule 40E-40, Florida Administrative Code (FAC), the satisfactory answers to the following questions must be provided before our review can continue.

1. The proposed discharge rate appears excessive. Similar recently permitted S.R. 530 (U.S. 192) road improvement projects have included post-development discharge rates in the range of 0.66 to 1.44 cubic feet per second per acre. Please modify the proposed surface water management system to achieve a post-development discharge rate within this range.
2. Based on the information submitted, it appears that the stormwater routings do not include offsite areas that are routed through the proposed system. Please include all drainage areas directed to the stormwater system in the stormwater routings.
3. Please provide a summary that accounts for the differences in acreage between the project area and onsite drainage area listed in Table 11 for each basin.
4. Please provide a recovery analysis for the portions of the swales in Basin B that are not hydraulically connected to the proposed bleeder orifice (i.e., the swale segments between ditch blocks).

Governing Board:

Frank Williamson, Jr., Chairman
Eugene K. Pettis, Vice Chairman
Mitchell W. Berger

Vera M. Carter
William E. Graham
William Hammond

Richard A. Machek
Michael D. Minton
Miriam Singer

Samuel E. Poole III, Executive Director
Michael Slayton, Deputy Executive Director
William C. Stimmel, Orlando Service Center Director

Mr. Kenneth R. Kniel, P.E.
December 23, 1998
Page 2

5. The water quality calculations submitted for Basin D are for one-inch over the new pavement only. Please submit calculations for 2.5 inches over the new impervious area or 1-inch over the right-of-way.
6. Please provide calculations for the required exfiltration trench length utilizing the equation given in the Basis of Review, Volume IV, page C-V-10, as shown below.

$$L = \frac{V}{K(H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4})WD_u}$$

It is unclear if the submitted trench length calculations for Basins D-1 and D-2 include the design assumptions that are built into the above equation. It should be noted that the above equation is for English units only.

7. A recent site visit conducted on December 17, 1998 by SFWMD staff revealed standing water in the location of proposed Pond E, with little to no antecedent rainfall. Due to this observation, as well as the submitted geotechnical engineering report, it appears that the pond bottom elevation proposed for dry detention Pond E is too low. In addition, the future Pond E site is currently covered with *Panicum repens*, a facultative wet plant species typically found in saturated soil conditions. Please raise the proposed dry pond bottom to one foot above the average wet season water table, as determined by the geotechnical engineering report. In addition, please provide a boring location plan for the soil borings taken in the proposed Pond E location.
8. Based on the submitted information, it appears that there will be additional wetland impacts within the right-of-way limits that have not been addressed. The SFWMD does not have reasonable assurance that the remaining wetland areas between the proposed wetland impact limits and the right-of-way will remain undisturbed. Please incorporate these remaining wetland areas into the total wetland impact acreage and revise the mitigation plan accordingly or provide reasonable assurances that these remaining wetland areas will remain undisturbed.
9. Based on the increased wetland impact acreage from 0.86 acres proposed in the original submittal to the 1.04 acres proposed in this current submittal, it appears that the proposed mitigation plan in the Three Lakes Wildlife Management Area is insufficient to adequately offset the wetland impacts. Please provide a revised mitigation plan that takes into account the additional wetland impacts.

Mr. Kenneth R. Kniel, P.E.
December 23, 1998
Page 3

10. According to Table 1, there are 0.029 acres of wetland impacts proposed to Wetland 5, but the cross section view on Sheet 9 of the dredge and fill sketches does not show any wetland impacts. Please revise Sheet 9 to show the proposed wetland impacts.
11. According to Sheet 22 of the dredge and fill sketches, 1206.0 square feet (0.028 acre) of impacts are proposed to Wetland 14-3, but Table 1 only reflects 0.0025 acre of impact. Please revise Table 1 and/or Sheet 22 accordingly and round the acreage in Table 1 to the nearest hundredth decimal place.
12. Based on a review of the dredge and fill sketches, it appears that the scale of the cross section sheets is mislabeled. In order to adequately review the sketches, please revise the drawings to accurately represent the impact areas.
13. Please incorporate a 15-foot minimum/25-foot average upland buffer line around Wetland 1 on Sheet 3 of the dredge and fill sketches and Sheet 4 of the construction drawings. This upland buffer line was included on the aeriols that were previously submitted.
14. As requested previously, please incorporate the requirements of the Stormwater Pollution Prevention Plan (SWPPP) submitted as Appendix I of the original submittal into the construction drawings. Please include the location of the proposed erosion control mechanisms and details and the water quality monitoring locations proposed in the SWPPP on the construction drawings. Please include the monitoring requirements on the construction drawings as well.
15. According to the response to Question 14, the proposed control elevation of Pond A is 30.4. The construction level detail (Sheet 62) shows the control elevation set at 31.4 (103.02 feet National Geudetic Vertical Datum (NGVD)). Based on the submitted geotechnical report and wetland line topography, the appropriate control elevation appears to be 103.02 feet NGVD. Please verify that the construction drawings are correct.
16. Please label the wetland line and include the unique wetland identification codes on the construction drawings. These wetland identification numbers should be consistent with the wetland impact areas that are shown on the dredge and fill sketches.

Mr. Kenneth R. Kniel, P.E.
December 23, 1998
Page 4

In accordance with 40E-1.603(4)(c) FAC, if the requested information is not received within 30 days of the date of this letter, this application may be processed for denial, if not withdrawn by the applicant. Please use the attached transmittal form and submit FIVE copies of the requested information to the Orlando Service Center and **include additional copies of your cover letter.** Also, in order to process your application as quickly as possible; **please collate your response into separate complete packages.** If you have any questions, please call Shannon Carter or me at (407) 858-6100.

Sincerely,



Jamie Poulos, E.I.
Staff Engineer
Orlando Service Center

JP/vj

Attachment

- c: Orange County Development Engineering Department (w/o Attachment)
- Osceola County Engineering Department (w/o Attachment)
- Mr. Tadd Kasbeer, Florida Department of Transportation (w/o Attachment)

Mr. Kenneth R. Kniel, P.E.
December 23, 1998
Page 5

bc: Jamie Poulos
Shannon Carter
Reader File
Backup File

SR 192 - Previously Permitted (Bennett Creek to 535)

Basin	Q	area	cfs/ac
1A	4.1	1.38	3
1B	18.6	14.82	1.25
2	31.9	26.20	1.22
3	31.4	19.03	1.65
4	47.4	30.94	1.53

$$133.4 / 92.4 \Rightarrow 1.44$$

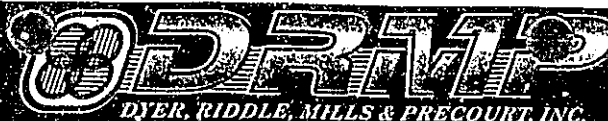
SR 192 - ~~Previously Permitted~~ ~~Current Application~~ (535 to Hoagland Blvd)

Basin	Q	area	cfs/ac
A	14.4	13.59	1.06
B	18.53	41.05	0.45
C	30.73	43.45	0.71
D	9.10	15.08	0.60
E	38.32	62.68	0.62
F	9.9	9.37	1.06

$$121.5 / 185.2 \Rightarrow 0.66$$

SR 192 - Current Appl. - (Captain Kidd Road to Reedy Creek)

Q	Area (onsite)	cfs/ac
196.8 cfs	97.95 acres	2.0 cfs/ac



ENGINEERS • SURVEYORS • PLANNERS

December 4, 1998

#95-0026.000

Hand Delivered

South Florida Water Management District
Orlando Service Center
7335 Lake Ellenor Drive
Orlando, Florida 32809

ADDITIONAL INFORMATION

DEC 04 1998

ORLANDO SERVICE CENTER

Regulation Department
Application No. 980909-4

Subject: S.R. 530 (US 192)
Orange and Osceola Counties
Financial Project # 239669-1-52-01
State Project # 92090-3542
W.P.I. 5115726

APP # 980909-4

Dear Mr. Poulos:

Dyer, Riddle, Mills & Precourt, Inc. (DRMP) has reviewed your request for additional information (RAI) received October 9, 1998, regarding the above referenced site. The following responses have been prepared and the appropriate revisions are reflected in the construction plans and drainage calculations to address your comments. Enclosed please find five copies below listed information:

1. Updated Appendix E (english units added signed and sealed)
2. Construction Plan sheets 4, 5, 6, 19, 20, 27, 39, 40, 41, 42, 60, 61, 62, 63, and 64 (signed and sealed)
3. Updated permit sketches per your request (signed and sealed)
4. Complete copy of updated Geotechnical Report
5. Wetland Impact Aerials
6. Revised Wetland Summary Table One
7. Purchase Requisition for \$2,400.00 (No. 102998)

In order to expedite your review we have provided your comment along with our responses for your review.

DEC 4 1998

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- ✓ #1 Based on the submitted application form, it appears that the proposed project area exceeds 100 acres (107.8 acres). Projects over 100 acres in size require an Individual Permit. The associated permit processing fee for an Individual Permit is \$3050.00. Please submit a check for an additional \$2400.00.

Enclosed is a Purchase Requisition from the Florida Department of Transportation, District Five for the amount of \$2400.00.

- ? #2 Please provide all drainage calculations and stormwater routing in English units. In addition, please provide dimensions and elevations in English units for all control structure and pond details included on the construction plans.

Pursuant to our phone conversation we have modified the calculations to include English elevations and flows for the proposed system. In addition we have provide English elevations for the key elements on the control structure sheets and the pond detail sheets. The English conversion is in parenthesis after the metric elevation on the construction plans.

- ✓ #3 Please provide a recovery analysis for proposed dry retention Ponds C and E.

For basin C we have provided a drawdown calculations for the stormwater treatment pond (see page E-39); Pond E is proposed to be a dry detention pond with an orifice bleed down (see page E-6).

- ? #4 Please include a table that illustrates, for each proposed pond and exfiltration trench; the boring(s) associated with the pond or trench location, the groundwater elevation encountered, the estimated average wet season water elevation, the existing ground elevation, and the proposed control elevation. Please provide all elevations in English units.

We have provided a table and some discussion where appropriate for all of the stormwater treatment systems. Please see pages E-1 through E-6.

- ✓ #5 The detail for Structure E-22 does not include the proposed circular orifice. Please correct this detail to include the orifice.

The plan sheet for structure E-22 has been clarified to indicate an orifice at the appropriate elevation (see plan sheet 61).

APP # 980909-4



- #6 Please provide an acreage breakdown table for the proposed project area. The project area should include all acreage within the right-of-way, as well as the proposed water management acreage for each basin. In addition please provide a breakdown of all acreage that is within the drainage area but not within the project area (i.e., offsite drainage areas routed through the proposed system).

✓ The revised appendix E page E-10 contains the acreage breakdown requested.

- #7 Please provide the approximate wetland limits on an aerial map and label the wetland numbers. Please shade/hatch the proposed wetland impact areas and label the impact areas with unique identification code. For example, Wetland 3 has two proposed impact areas that could be labeled as "Impact Area 3-1 and 3-2" respectively.

Please refer to the enclosed aerial. Wetland impacted areas have been labeled with unique identification codes and hatched accordingly for your review.

- #8 Please label the delineated wetland line on the dredge and fill sketches and label the proposed impact areas with a unique identification code as referenced in the previous question. The post-development status of each community type should also be included (i.e. preserved/enhanced, impacted, restored, created) on the plans.

Please refer to the enclosed dredge and fill sketches. The impacted areas have been labeled with unique identification codes to match those referenced on the enclosed aerial. All mitigation of wetland impacts are to occur off-site through mitigation banking. Consequently, the post-development status of each community type is classified as impacted. No preserved, enhanced, restored or created wetlands are scheduled to occur within the project boundaries.

- #9 Based on the information provided, it appears that the right-of-way limits extend outside of the proposed limits of wetland impact in various locations. What types of activities are proposed within the right-of-way limits (i.e.; mowing, tree clearing)? Will these activities cause additional wetland impacts? If so, please revise the construction drawings and wetland impact acreage to reflect the additional wetland impacts and provide compensatory mitigation.

ADDITIONAL INFORMATION

DEC 04 1998

STATE SERVICE CENTER

APP # 98-0909 - 4



All proposed construction activities are scheduled to occur within the limits of construction as shown on the construction plans and the dredge and fill sketches. In areas where the right-of-way extend outside the wetland limits, no clearing or mowing activities are anticipated. These areas are to remain in their current conditions.

- #10 Please provide information that demonstrates that the development of this project will not cause adverse secondary impacts to the water resource as defined by Section 4.2.7, Basis of Review. Adverse secondary impacts are generally defined as violations of water quality standards, adverse impacts to the ecological value of uplands to listed animal species, except where United States Fish and Wildlife Service of Florida Game and Fresh Water Fish Commission guidelines are met, impacts to significant historical and archeological resources, and potential for intended or reasonably expected future uses to have an adverse impact on water quality or wetland and other surface water functions.

Every step was taken during the development of this project to avoid or minimize wetland impacts. However, due to the close proximity of existing wetlands to S.R. 530, the placement of upland buffer zones to reduce secondary impacts was limited in some areas. In areas where the placement of an upland buffer zone was not possible, evaluation of these sites determined that the wetlands were of low quality due to developmental activities that have altered the hydrology and vegetation of these systems. The current vegetation along the outer edges of these wetland systems consist primarily of non-native or nuisance species. Consequently, secondary impacts to the existing wetland systems is anticipated to be minor. As shown on the construction plans, impacts to the wetland systems will run parallel with S.R. 530, shirting the outer edge of each wetland. It is anticipated that impacts to the wetland systems will result in no changes in the existing vegetation and hydrology.

All activities for this project shall be conducted in a manner such that no state water quality standards will be violated. Prior and during construction, the FDOT will implement and maintain all erosion control measures required to retain sediment on-site and to prevent violation of state water quality standards.

A general wildlife surveys was conducted for all wetlands and upland transitional zones on March 17, 1998 to determine the potential for the occurrence of state and federally listed species. No threatened or endangered species were observed during the survey. No protected plants are known to occur in the proposed area of impact. Since all high quality habitats lie beyond the right of way limits, no impacts to threatened or endangered species is anticipated. The majority of the project area is developed or altered and is considered unsuitable habitat for

ADDITIONAL INFORMATION

DEC 04 1998

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98 09 09 - 4



protected species. Reedy Creek does provide suitable seasonal foraging for numerous species of wading birds. However, during the general wildlife survey, no wading birds were observed. This may be attributed to the time of day in which the survey was conducted or the extremely high volume of vehicular traffic that occurs within the area.

If historical or archaeological artifacts are discovered at any time on the project site during construction, the Florida Department of Transportation will immediately notify the District.

- #11 Based on the information provided, it appears that no upland buffers are proposed for the remaining wetland systems along U.S. 192. SFWMD criteria require a buffer zone around wetlands to be protected or incorporated into a surface water management system. Natural replanted or structural buffers that extend at least 15 feet landward from the edge of the wetland in all places and average 25 feet from the edge of the wetland are presumed to be adequate. What type of buffer mechanism will be provided? Please revise the plans to include and label the limits of the buffer zone. If no buffer zone is proposed, please compensate for the lack of a buffer zone by providing additional mitigation.

Every attempt was made to avoid or minimize wetland impacts within the project limits. However, due to the proposed roadway alignment and the location of jurisdictional wetland limits, placement of an upland buffer zone for each remaining wetland system was not possible in some areas. In these areas, impacts to the buffer zone are hatched and identified on the dredge and fill sketches. Appropriate steps will be taken to mitigate for these impacts.

It should be noted that the wetlands within the right-of-way presently do not have an undisturbed buffer. Maintenance occurs in a normal sequence along the right-of-way up to the areas that may be slightly wet and therefore un-maintainable. This type of maintenance has been occurring for many years along this alignment. Where the Department is proposing new construction on undeveloped lands the buffer has been maintained in accordance with the SFWMD criteria (i.e. pond A).

- #12 Prior to the issuance of a construction permit, the applicant must stake/rope/fence the wetlands in the area of proposed construction. Please contact Shannon Carter, the environmental reviewer at (407) 858-6100 extension 3815 to schedule a site inspection of the required staking/roping/fencing.

ADDITIONAL INFORMATION

DEC 04 1998 PIP # 98 09 09 - 4
ORLANDO SERVICE CENTER



SR 530
SFWMD RAI, Mr. Poulos
12/4/98, page 6

A site visit was conducted on October 6, 1998 by Shannon Carter (SFWMD) and George McLatchey (DRMP, Inc.) to review all jurisdictional wetland limits within the project corridor. At that time, all required staking, roping and fencing concerns for wetlands were addressed.

- #13** What type of erosion control measures (i.e., silt curtains, hay bales, etc.) will be used to minimize turbidity in areas of construction located adjacent to wetlands? Please submit details and locations of the proposed erosion control mechanisms on the construction drawings.

The Florida Department of Transportation has a very stringent process and specification for ensuring that adverse water quality impacts will not occur during construction. Within the original appendix I a Stormwater Pollution Prevention Plan was submitted that outline the requirements and the specific measures that the contractor will have to address during construction.

- #14** Please provide the seasonal high and normal pool water elevations for Wetlands No. 1 and 10 that are adjacent to the proposed surface water Ponds A and C.

Wetland 1

The normal pool and the seasonal high water table for Wetland 1 was not determined since this is a large wetland offsite. The control elevation for the pond adjacent to this wetland was set at elevation 30.4. The existing wetland line, as shown on the pond detail sheet, varies between elevation 32.0 and 31.5. Based on this information the wetland seasonal high water table is below 31.5.

Wetland 10

Inspection of the box culvert located under the existing SR 530 within wetland 10 (station 45+50) indicates that there is potential for standing water however there is no appreciable staining. The invert elevation for the culvert is elevation 30.45 therefore the normal pool or wet season water table is below this elevation. On numerous field trips to this site the culvert was been reviewed and standing water has never been observed.

ADDITIONAL INFORMATION

DEC 04 1998

ORLANDO SERVICE CENTER 980902-4

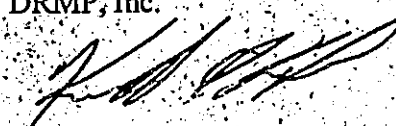


SR:530
SFWMD RAI, Mr. Poulos
12/4/98, page 7

Please note that the Florida Department of Transportation is proceeding with finalizing this project for construction bidding and award. There has been extensive cooperation with Osceola County on these improvements and final plans are due to the department in March of 1999. If during your review you should have any additional questions please contact our offices so that we can work out these comments to minimize additional permitting time. Thank you for your cooperation and we look forward to working with you on the successful completion of this project.

Sincerely,

DRMP, Inc.



Kenneth R. Kniel, P.E.

cc: Jim Hatcher (FDOT D5)
Tadd Kasbeer (FDOT D5) w/attachements
Wayne Chalifoux
Thersa Shaw
Sherry Burroughs
George McLatchey

ADDITIONAL INFORMATION

DEC 04 1998 APP # 980909-4

ORLANDO SERVICE CENTER



DEC 04 1998

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GENERAL NOTES

- STRICT ADHERENCE TO SECTION 104 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION WILL BE USED IN CONJUNCTION WITH THIS APPLICATION TO PROVIDE REASONABLE ASSURANCE THAT WATER QUALITY STANDARDS WILL NOT BE VIOLATED. SILT FENCES, HAY BALES AND TURBIDITY BARRIERS WILL BE USED AS REQUIRED.
- TYPES OF EQUIPMENT INVOLVED IN THE CONSTRUCTION WILL INCLUDE: GRADE ALL, DUMP TRUCKS, BULLDOZER, PUMPS AND FRONT END LOADER. THE EQUIPMENT WILL BE TRUCKED OR SELF PROPELLED TO THE SITE.
 - TURBIDITY CURTAINS, SILT FENCES, SAND BAGS, HAY BALES OR SOME COMBINATION OF THESE ITEMS WILL BE USED AS DIRECTED BY THE PROJECT ENGINEER TO MAINTAIN STATE WATER QUALITY STANDARDS.
 - EXCAVATED MATERIAL THAT IS SUITABLE WILL BE USED IN CONSTRUCTION OF THE SHOULDERS. UNSUITABLE MATERIAL WILL BE DISPOSED OF AND CONTAINED IN UPLAND SITES PROVIDED BY THE CONTRACTOR.
 - FILL MATERIAL SHALL BE OF SATISFACTORY MATERIAL THAT IS CLEAN AND COMPACTIBLE INTO A SUITABLE AND ENDURING ROADWAY.
 - DURING THE CONSTRUCTION OR EXTENSION OF MULTIPLE OPENING STRUCTURES, THE CONTRACTOR, AS DIRECTED BY THE PROJECT ENGINEER, SHALL BE REQUIRED TO PHASE CONSTRUCT DRAINAGE STRUCTURES IN ORDER TO MAINTAIN ADEQUATE WATER FLOW.
 - ALL ELEVATION SHOWN IN THIS PERMIT APPLICATION ARE REFERENCED TO U.S.G.S. NATIONAL VERTICAL DATUM OF 1929
 - THE FOLLOWING AREAS OF IMPACT ARE REQUIRED FOR THE PROJECT.

JURISDICTIONAL AREA	IMPACT AREA (SM/SF)
WETLAND 1	NO IMPACT
WETLAND 2	156.3 / 2113.0
WETLAND 3 -1	0.6 / 6.5
WETLAND 3-2	1.5 / 16.1
WETLAND 4-1	2.8 / 30.1
WETLAND 4-2	28.8 / 310.0
WETLAND 4-3	124.9 / 1344.4
WETLAND 5	117.2 / 1262.0
WETLAND 6	131.8 / 1418.7
WETLAND 7	NO IMPACT
WETLAND 8	NO IMPACT
WETLAND 9	490.9 / 5284.0
WETLAND 10	990.1 / 10657.0
WETLAND 11	235.0 / 2529.0
WETLAND 12-1	14.1 / 151.8

JURISDICTIONAL AREA	IMPACT AREA (SM/SF)
WETLAND 12-2	192.2 / 2068.8
WETLAND 13	247.5 / 2664.0
WETLAND 14-1	55.9 / 602.0
WETLAND 14-2	109.2 / 1175.0
WETLAND 14-3	112.0 / 112.0
WETLAND 14-4	212.2 / 2284.0
WETLAND 14-5	44.1 / 474.7
WETLAND 14-6	91.7 / 987.1
WETLAND 14-7	414.8 / 4464.9
WETLAND 15	202.2 / 2176.0
WETLAND 15-1	117.8 / 1268.0
WETLAND 15-2	101.9 / 1096.8
TOTAL	4235.5 / 45589.8

PROJECT: U.S. 192 (S.R. 530) SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
 PURPOSE: JURISDICTIONAL IMPACT COUNTY OF OSCEOLA AND ORANGE
 DATUM: NGVD STATE OF FLORIDA

SHEET 2 OF 24



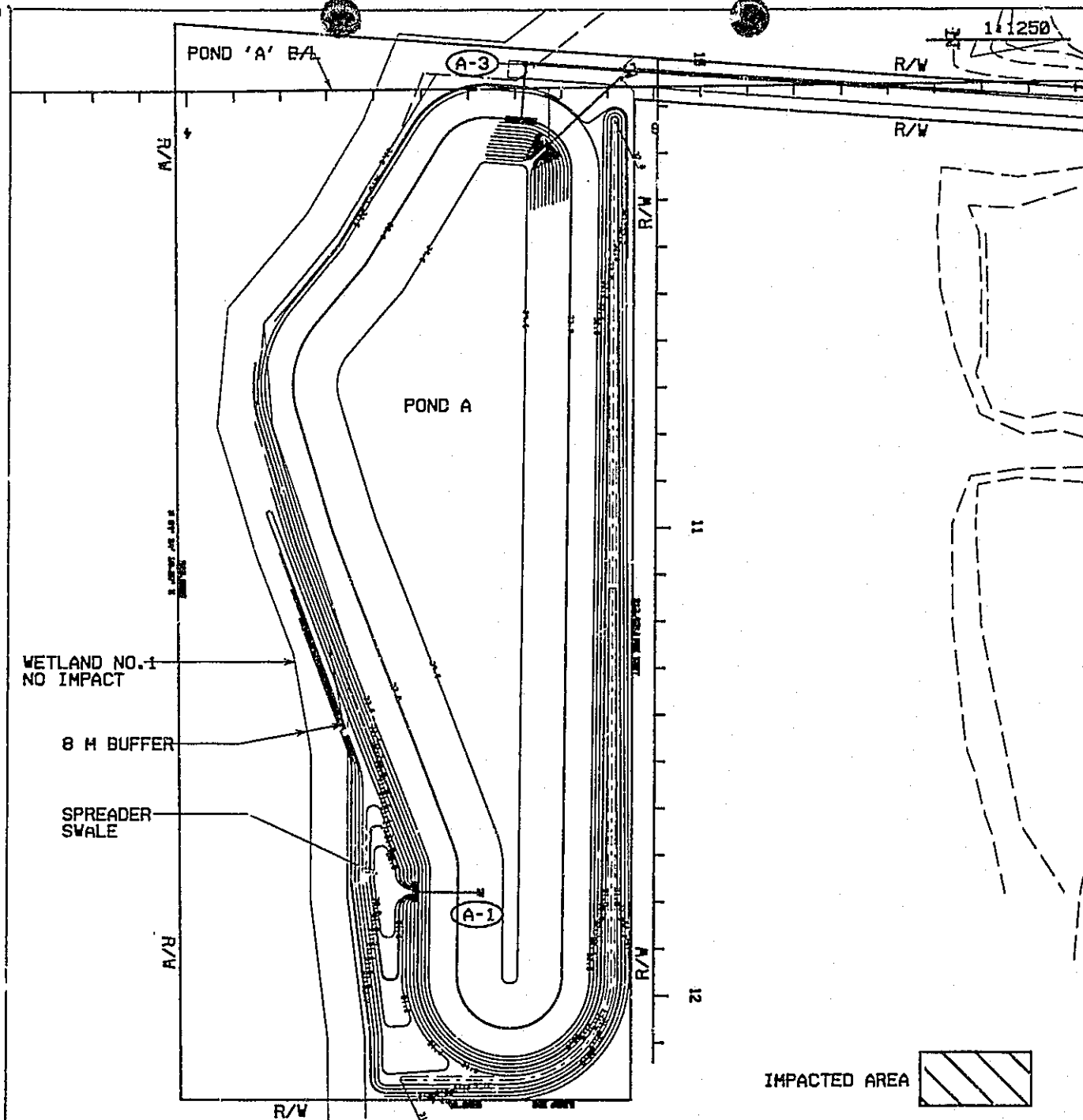
DRMP
 DYER, RIDDLE, HILLS & PERCOURT, INC.
 1505 E. COLONIAL DRIVE
 ORLANDO, FLORIDA 32803
 (407) 896-0594



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 DATE 12/14/98
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PROJECT: U S. 192 (S.R. 530) SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST

PURPOSE: JURISDICTIONAL IMPACT COUNTY OF OSCEOLA AND ORANGE

DATUM: NGVD STATE OF FLORIDA

SHEET 3 OF 24

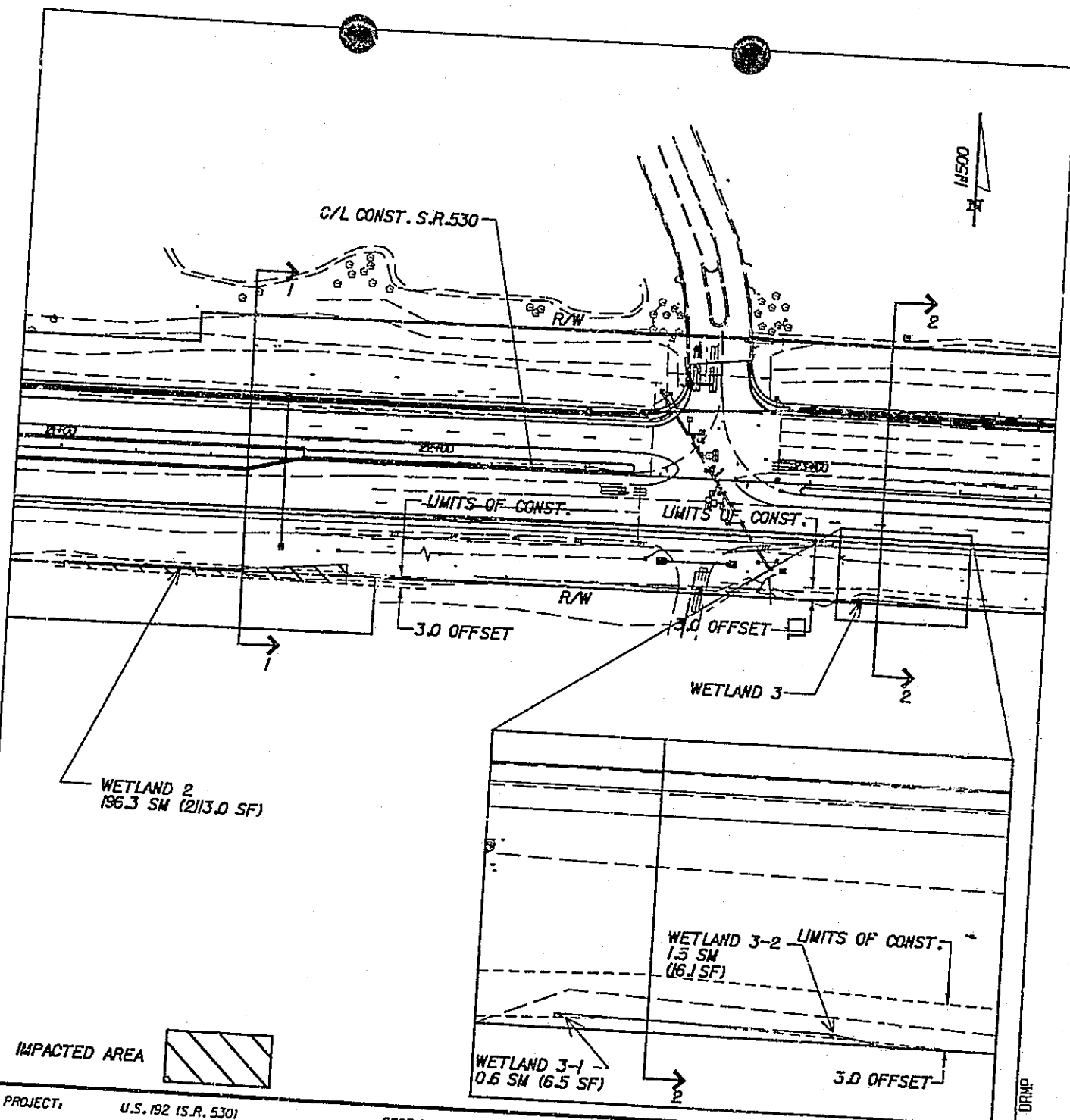
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IMPACTED AREA 

WETLAND 2
196.3 SM (2113.0 SF)

WETLAND 3-2
1.5 SM (6.1 SF)

WETLAND 3-1
0.6 SM (6.5 SF)

WETLAND 3

PROJECT: U.S. 192 (S.R. 530)

SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST

PURPOSE: JURISDICTIONAL IMPACT

COUNTY OF OSCEOLA AND ORANGE

DATUM: NGVD

STATE OF FLORIDA

SHEET 4 OF 24

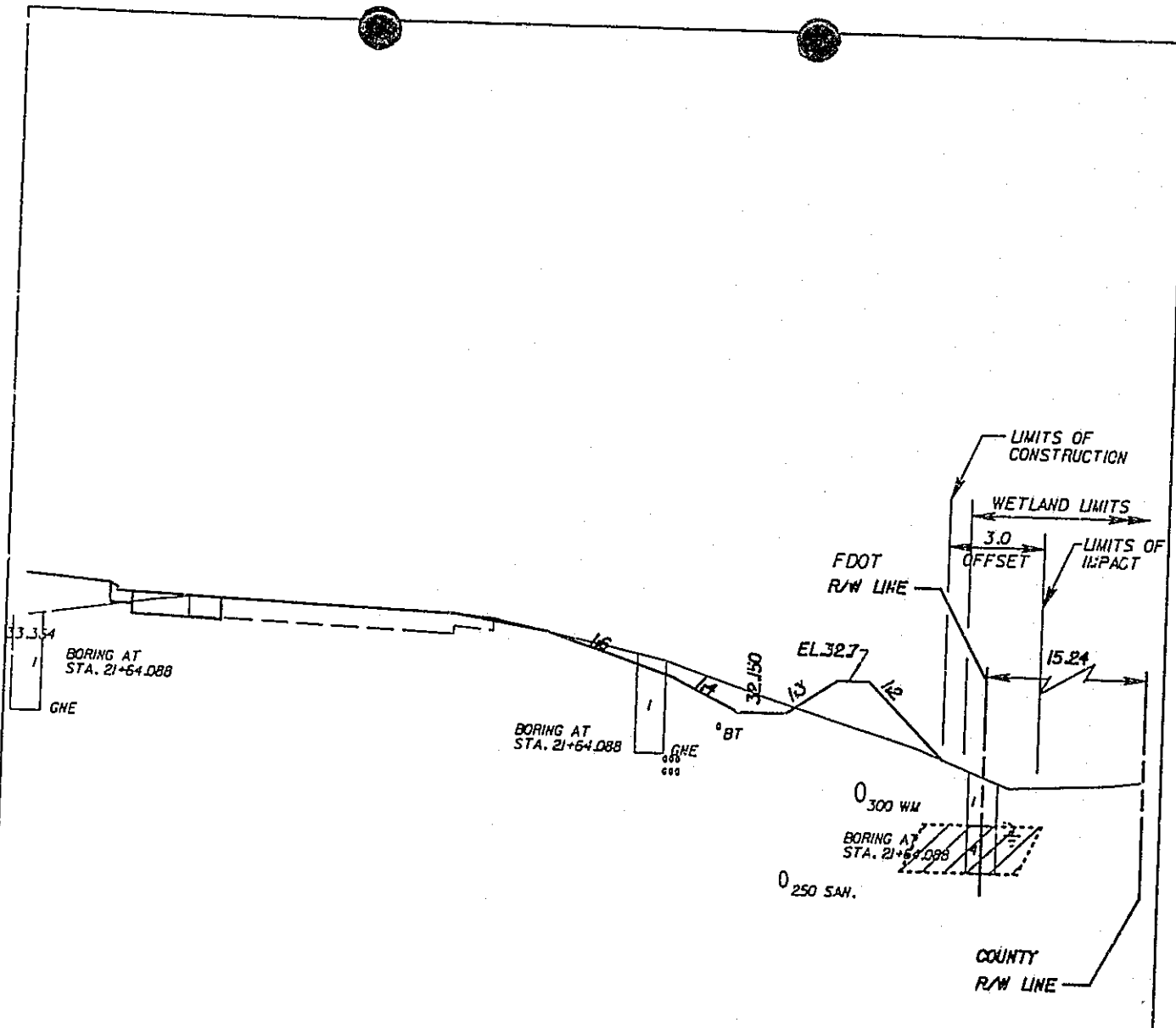
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SECTION 1-1
STA. 21+50.000

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PROJECT:	U.S. 92 (S.R. 530)	SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	NGVD	STATE OF FLORIDA
SHEET 5 OF 24		

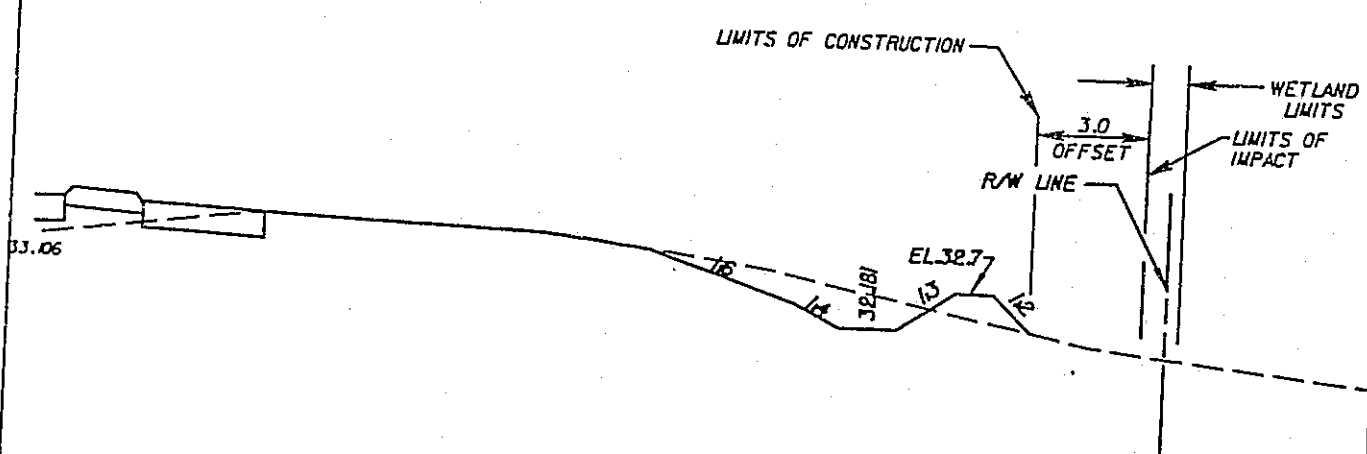
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ORLANDO, FLORIDA 32803
(407) 896-0594



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SECTION 2-2
STA. 23+20.000

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PROJECT: U.S. 192 (S.R. 530) SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST

PURPOSE: JURISDICTIONAL IMPACT COUNTY OF OSCEOLA AND ORANGE

DATUM: NGVD STATE OF FLORIDA

SHEET 6 OF 24

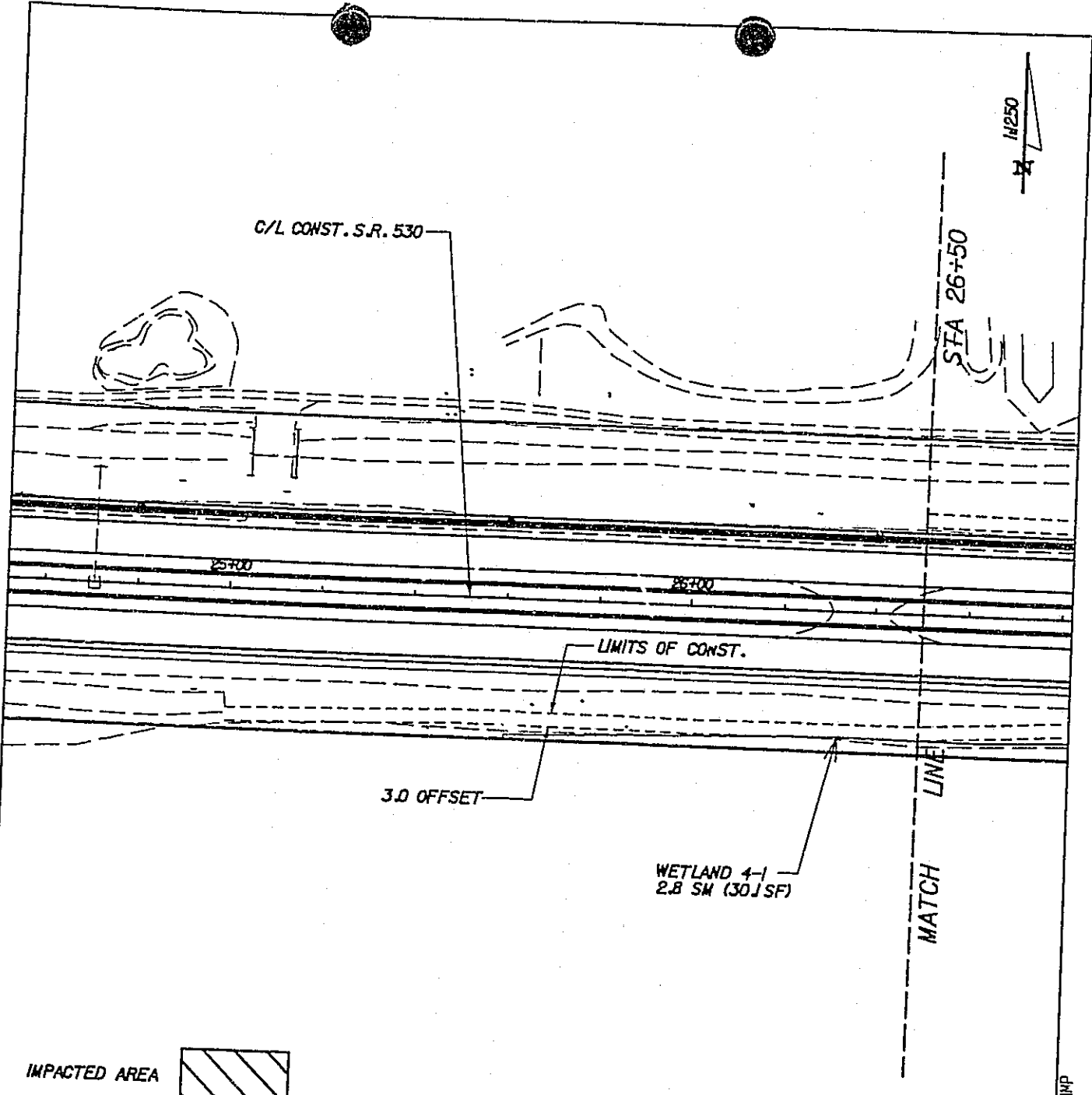
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(407) 896-0594



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TRANSPORTATION

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IMPACTED AREA



PROJECT:	U.S. 192 (S.R. 530)	SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	NGVD	STATE OF FLORIDA
SHEET 7 OF 24		

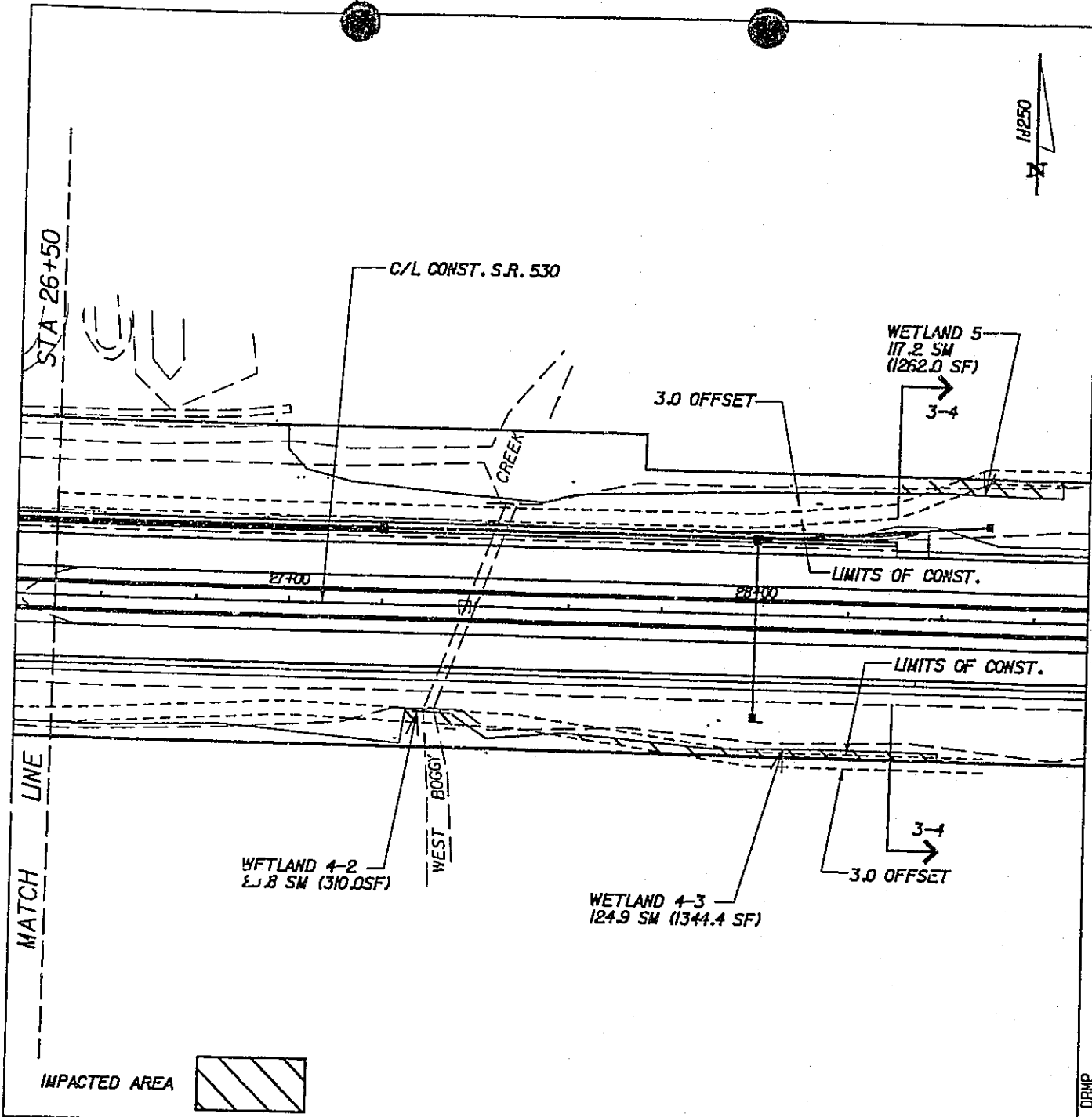
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MATCH LINE



PROJECT: U.S. 192 (S.R. 530) SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST

PURPOSE: JURISDICTIONAL IMPACT COUNTY OF OSCEOLA AND ORANGE

DATUM: NGVD STATE OF FLORIDA

SHEET 8 OF 24

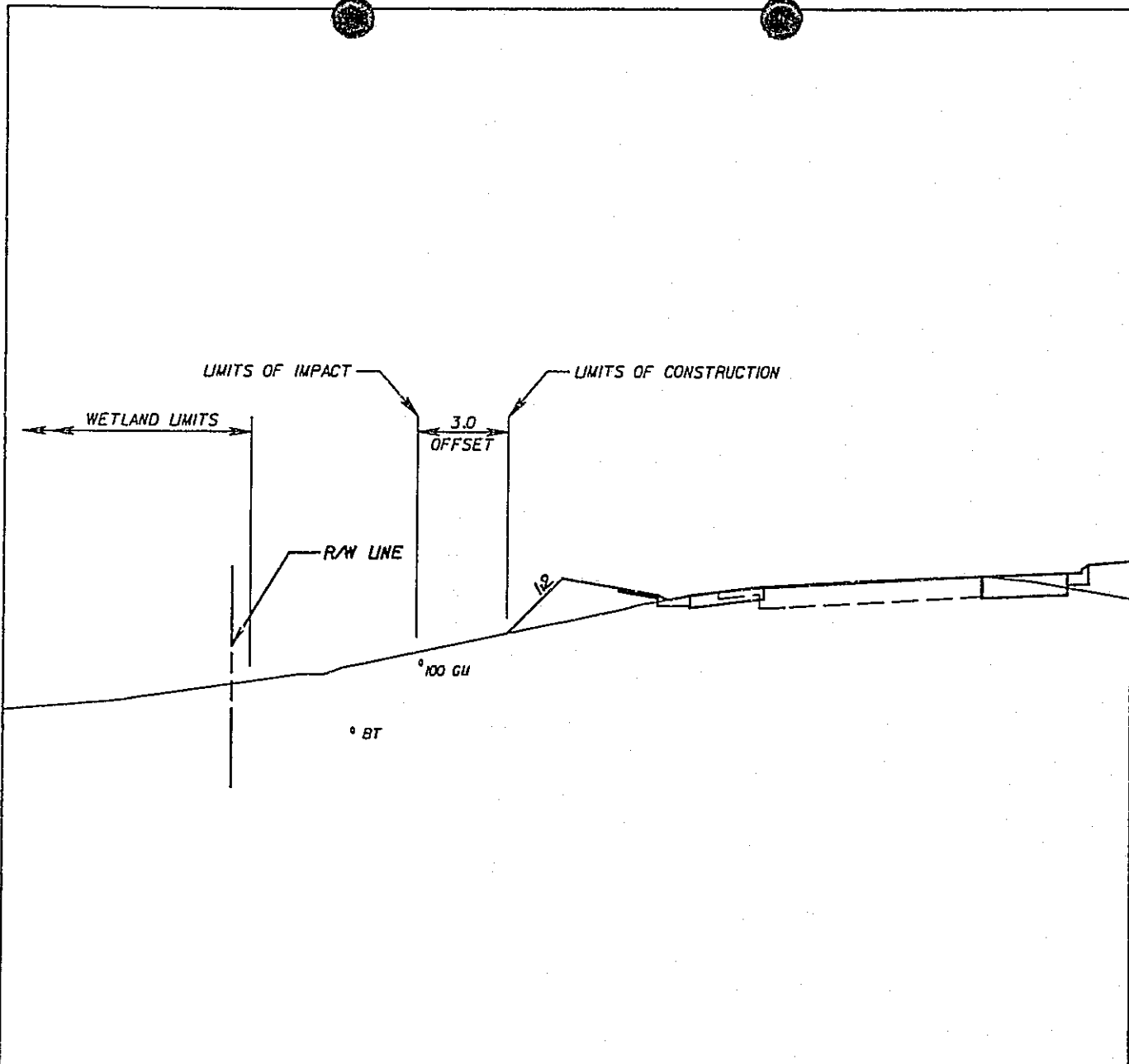
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 (407) 896-0594



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 TRANSPORTATION

[Signature]
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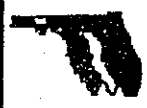
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SECTION 3-4
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PROJECT:	U.S. 192 (S.R. 530)	SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	MGVD	STATE OF FLORIDA
SHEET 9 OF 24		

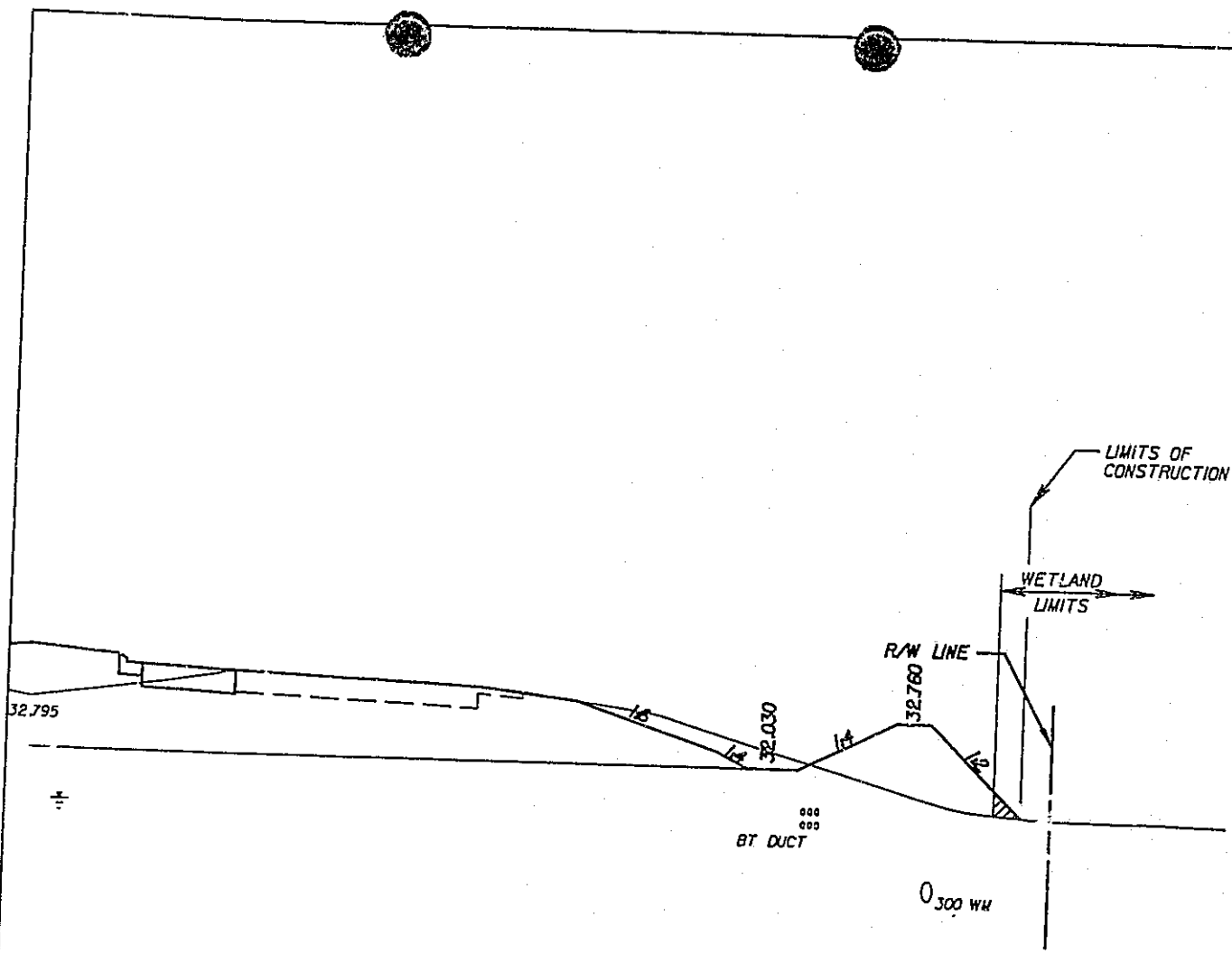
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SECTION 3-4
STA. 28+30.000

SCALE : 1:200 HORIZ.
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PROJECT:	U.S. 192 (S.R. 530)	SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	NGVD	STATE OF FLORIDA
SHEET 10 OF 24		

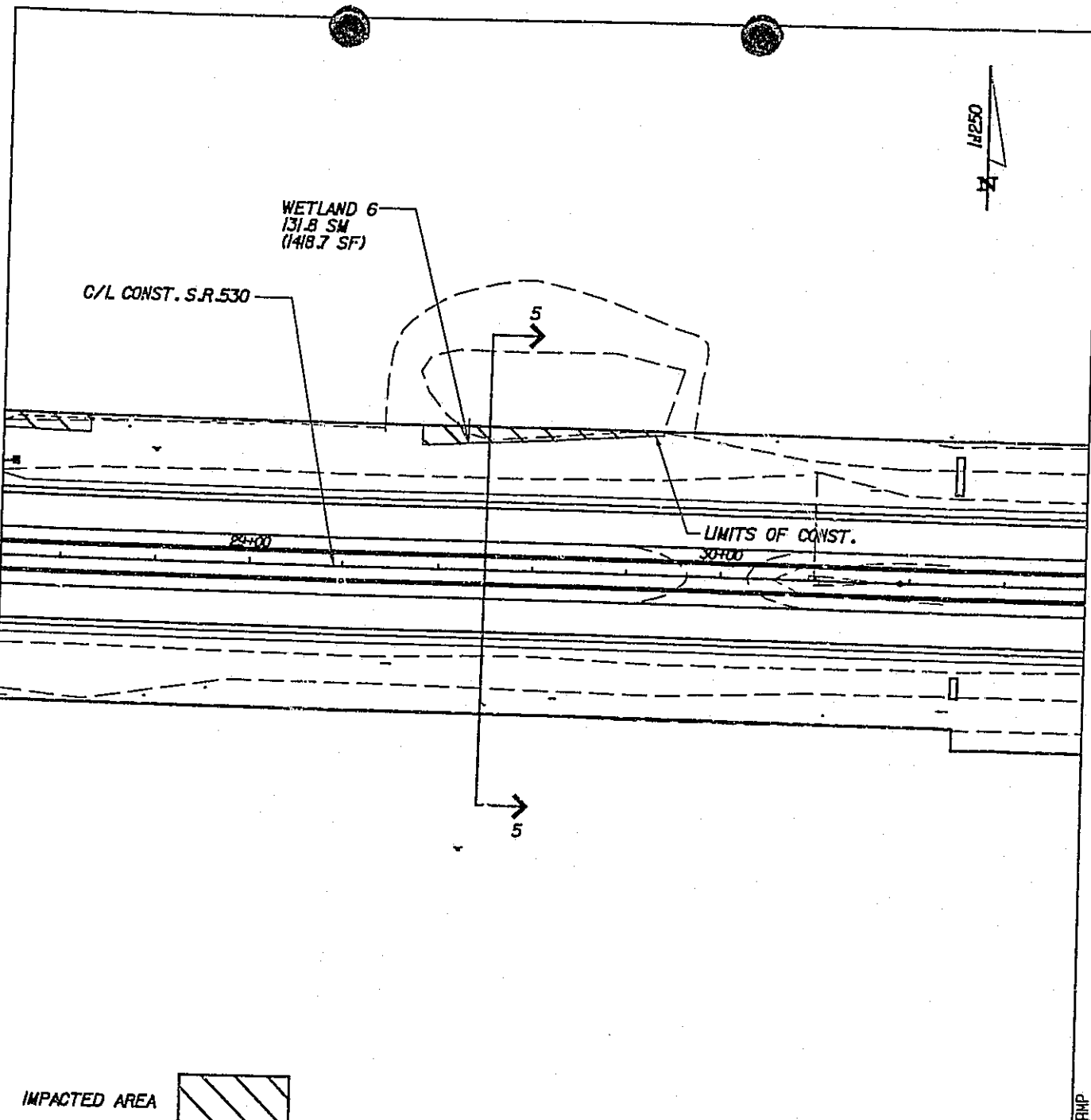
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TRANSPORTATION

[Signature]
Signed
DATE 12/19/98
REG. FLA. ENG. NO. 3790

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PROJECT: U.S. 192 (S.R. 530) SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST

PURPOSE: JURISDICTIONAL IMPACT COUNTY OF OSCEOLA AND ORANGE

DATUM: NGVD STATE OF FLORIDA

SHEET 11 OF 24

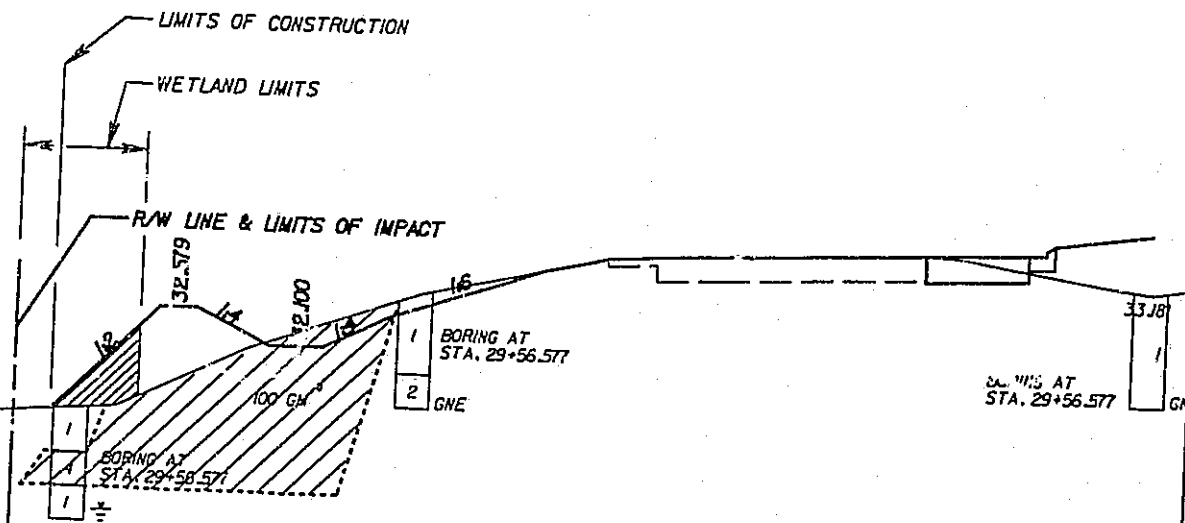
DRMP
DYER, RIDDLE, HILLS & PEECOCK, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 896-0594



FLORIDA DEPARTMENT OF
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DATE 12/9/99
REG. FLA. ENG. NO. 37300

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 FILL

SECTION 5-5
STA. 29+50.000

SCALE : 1:200 HORIZ.
1:100 VERT.

PROJECT:	U.S. 192 (S.R. 530)	SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	NGVD	STATE OF FLORIDA
SHEET 12 OF 24		

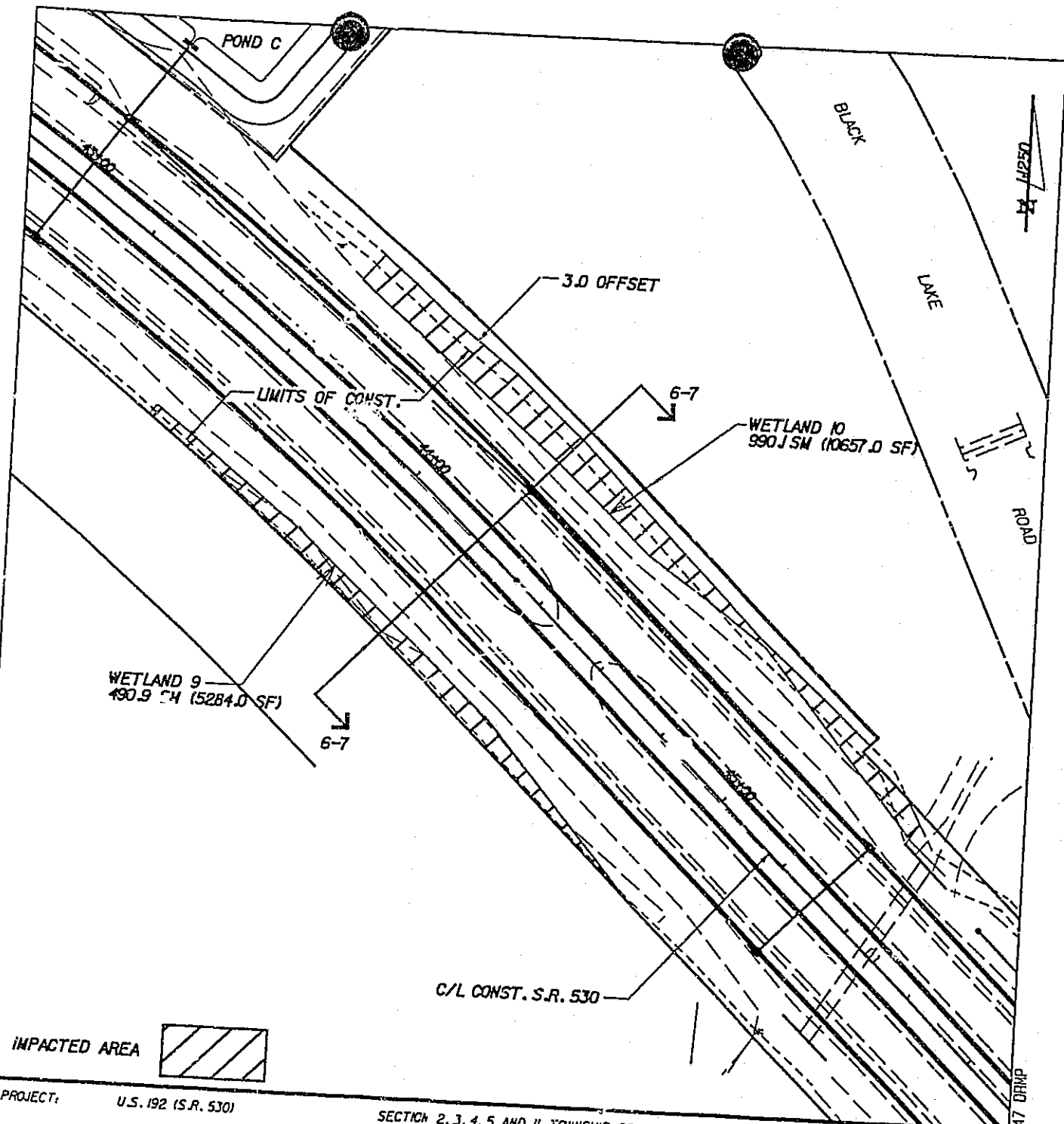
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DYER, RIDDLE, HILLS & PERCOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 896-0594



FLORIDA DEPARTMENT OF
TRANSPORTATION


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DATE 12/7/98
REG. FLA. ENG. NO. 3790

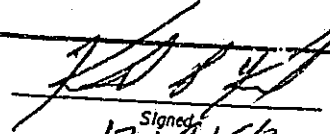
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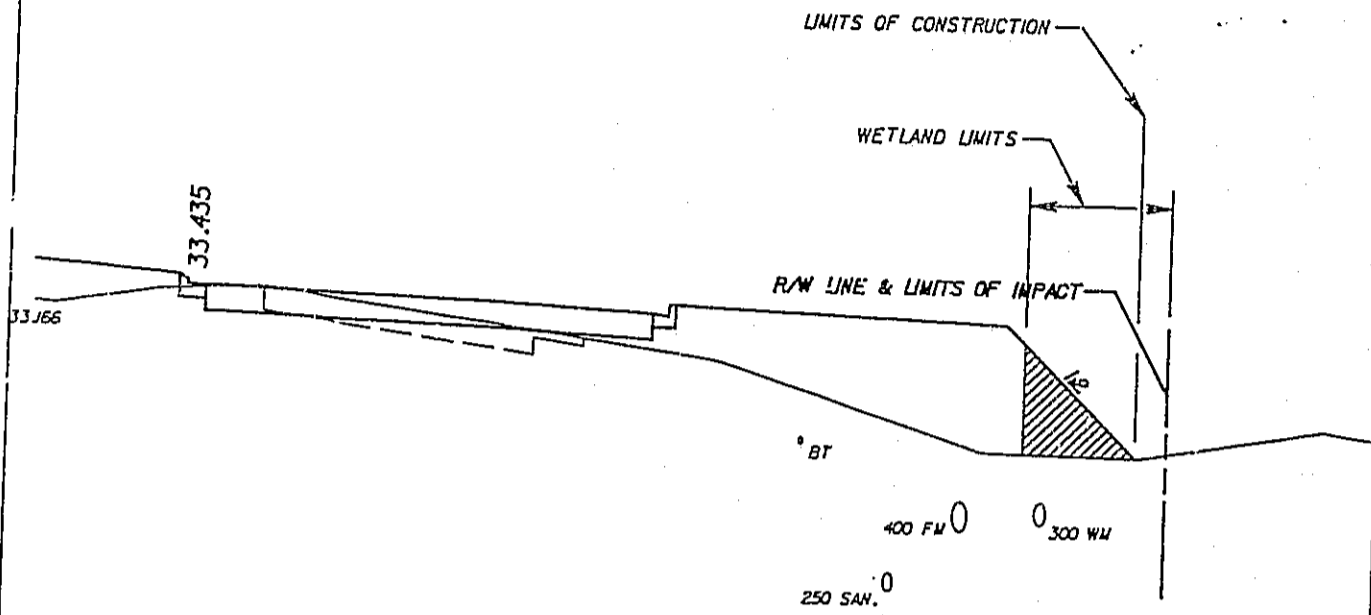
PROJECT: U.S. 192 (S.R. 530) SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
 PURPOSE: JURISDICTIONAL IMPACT COUNTY OF OSCEOLA AND ORANGE
 DATUM: NGVD STATE OF FLORIDA
 SHEET 13 OF 24

DRMP
 D. RE, RIDDLE, MILLS & PESCOTT, INC.
 1505 E. COLONIAL DRIVE
 ORLANDO, FLORIDA 32803
 (407) 896-0594


 FLORIDA DEPARTMENT OF
 TRANSPORTATION

Signed: 
 DATE: 12/4/98
 REG. FLA. ENG. NO. 3300

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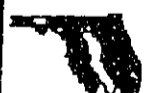
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STA. 44+20.000

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1:100 VERT.

PROJECT:	U.S. 192 (S.R. 530)	SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	NGVD	STATE OF FLORIDA

SHEET 14 OF 24

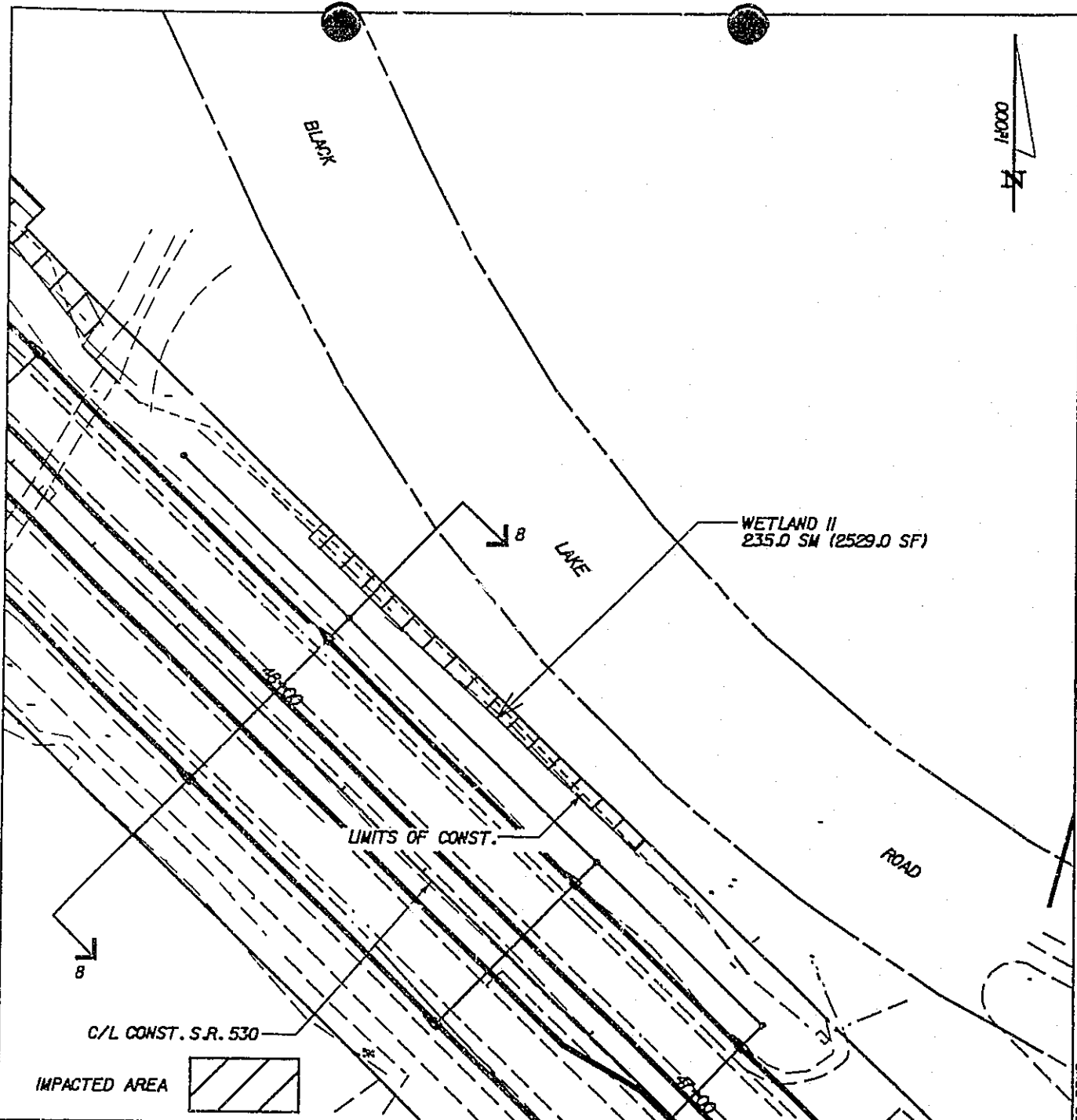
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DYRE, RIDDLE, MILLS & PERCOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 696-0594



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TRANSPORTATION

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DATE 12/19/98
REG. FLA. ENG. NO. 29300

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PROJECT: U.S. 192 (S.R. 530) SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST

PURPOSE: JURISDICTIONAL IMPACT COUNTY OF OSCEOLA AND ORANGE

DATUM: NGVD STATE OF FLORIDA

SHEET 16 OF 24

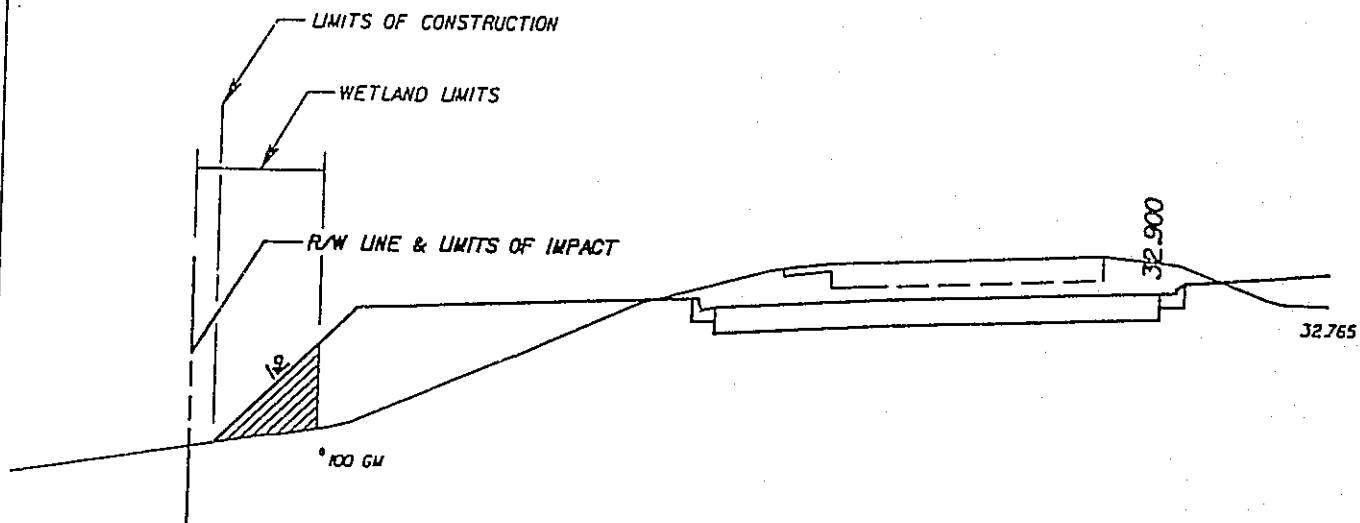
DRMP
 DYER, RIDDLE, MILLS & PERCOURT, INC.
 1505 E. COLONIAL DRIVE
 ORLANDO, FLORIDA 32803
 (407) 896-0594



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 TRANSPORTATION

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 DATE 12/19/98
 REG. FLA. ENG. NO. 37800

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SECTION 8
STA. 46+00.000

SCALE : 1:200 HORIZ.
1:100 VERT.

PROJECT: U.S. 192 (S.R. 530) SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST

PURPOSE: JURISDICTIONAL IMPACT COUNTY OF OSCEOLA AND ORANGE

DATUM: NGVD STATE OF FLORIDA

SHEET 17 OF 24

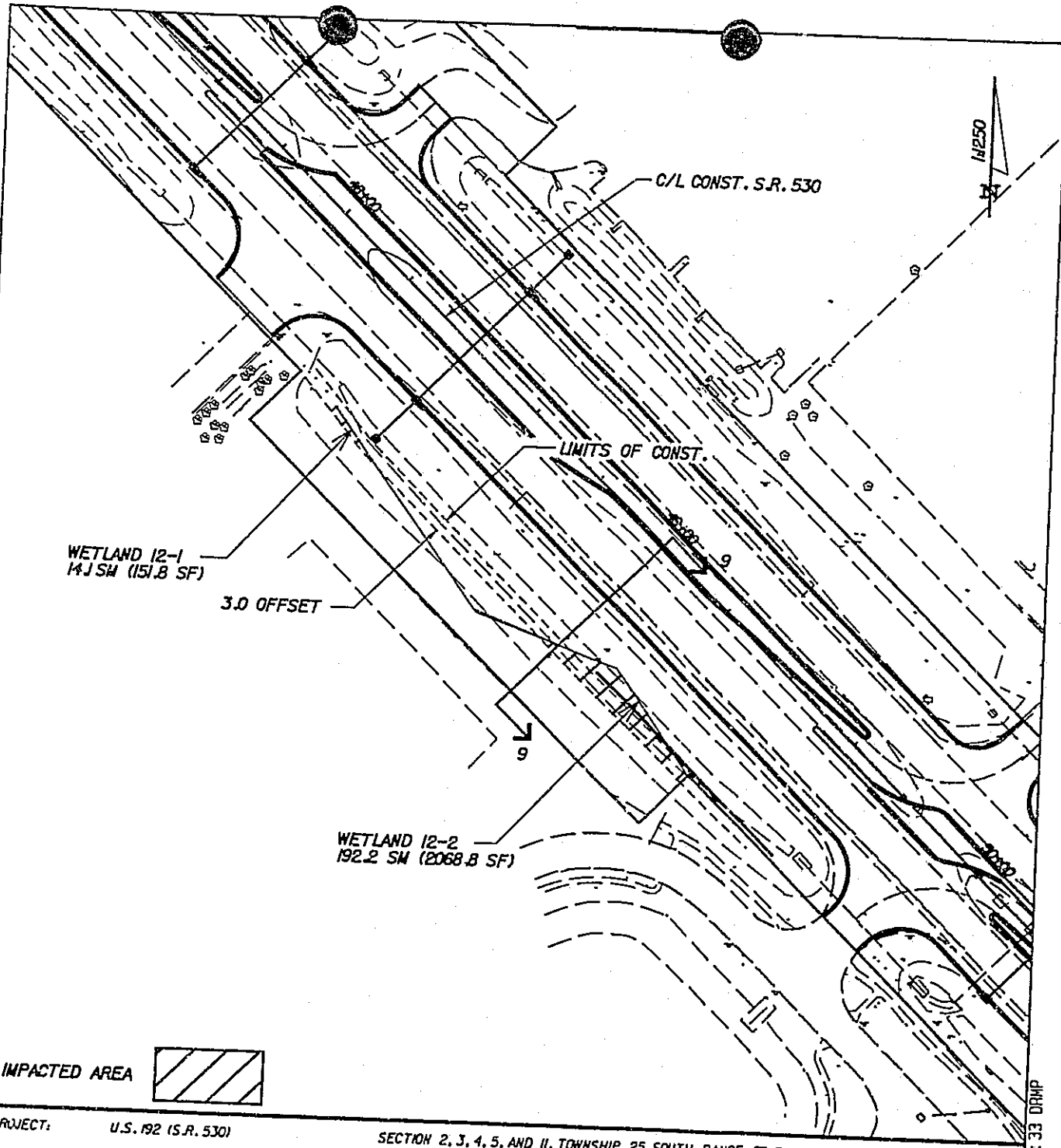
DRMP
DYER, RIDDLE, MILLS & PERCOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 896-0534



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[Signature]
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DATE 12/4/93
REG. FLA. ENG. NO. 37300

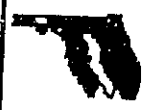
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IMPACTED AREA 

PROJECT:	U.S. 192 (S.R. 530)	SECTION 2, 3, 4, 5, AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	NGVD	STATE OF FLORIDA
SHEET 18 OF 24		

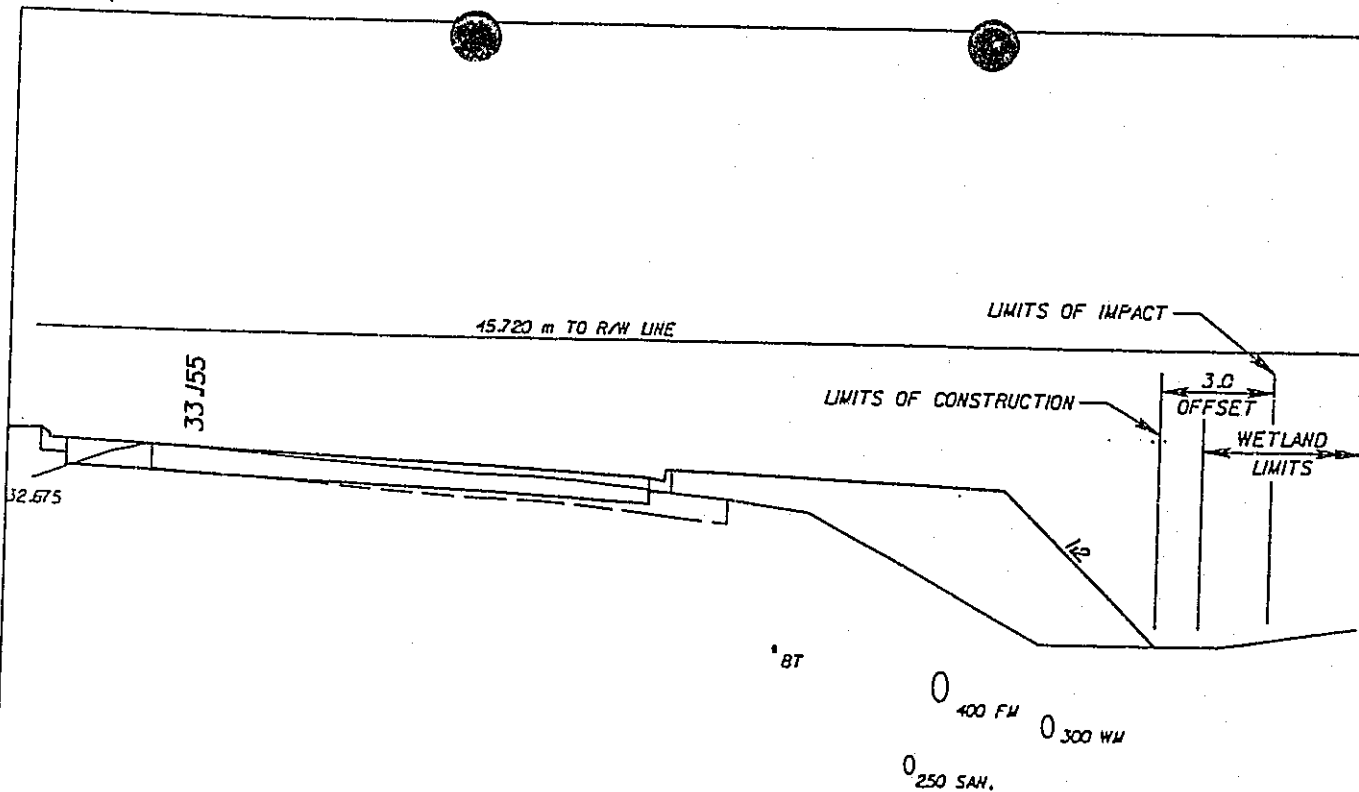
DRMP
 DYER, RIDDLE, MILLS & PRESCOTT, INC.
 1505 E. COLONIAL DRIVE
 ORLANDO, FLORIDA 32803
 (407) 896-0594



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[Signature]
 Signed
 DATE 12/4/98
 REG. FLA. ENG. NO. 10112

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FILL

SECTION 9
STA. 49+00.000

SCALE : 1:200 HORIZ.
1:100 VERT.

PROJECT: U.S. 192 (S.R. 530) SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST

PURPOSE: JURISDICTIONAL IMPACT COUNTY OF OSCEOLA AND ORANGE

DATUM: NGVD STATE OF FLORIDA

SHEET 19 OF 24

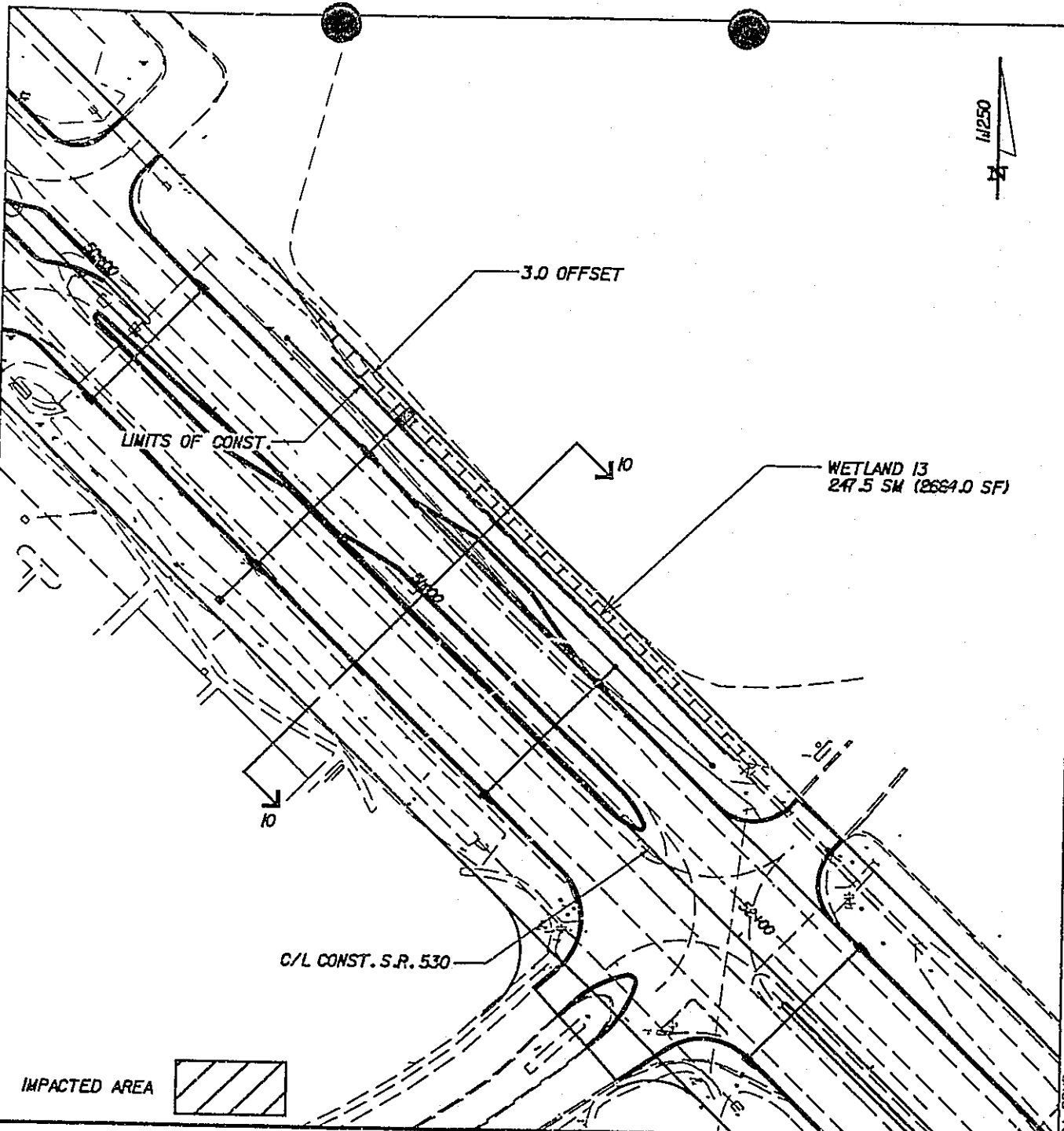
DRMP
DIXIE, RIDDLE, MILLS & PRINCOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 896-0594



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TRANSPORTATION

[Signature]
Signed
DATE 12/4/98
REG. FLA. ENG. NO. 37300

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IMPACTED AREA 

PROJECT:	U.S. 192 (S.R. 530)	SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	NGVD	STATE OF FLORIDA
SHEET 20 OF 24		

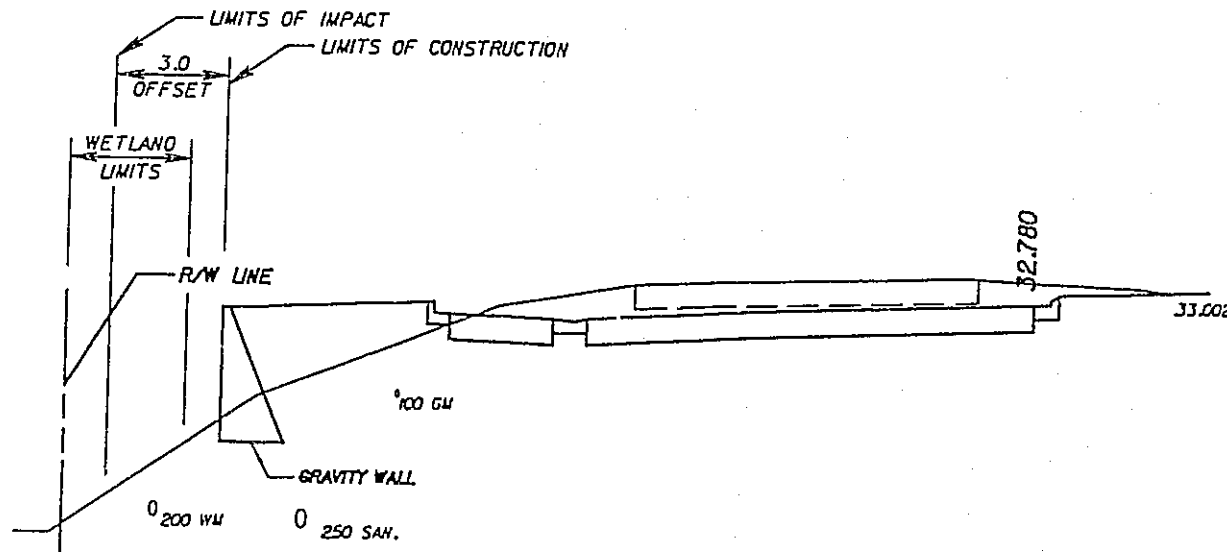
DRMP
 DYKE, RIDDLE, MILLS & PERCOURT, INC.
 1505 E. COLONIAL DRIVE
 ORLANDO, FLORIDA 32803
 (407) 896-0594



FLORIDA DEPARTMENT OF
 TRANSPORTATION

[Signature]
 Signed
 DATE 12/14/98
 REG. FLA. ENG. NO. 32300

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SECTION 10
STA. 51+00.000

SCALE : 1:200 HORIZ.
1:100 VERT.

PROJECT:	U.S. 192 (S.R. 530)	SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST
PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	NGVD	STATE OF FLORIDA

SHEET 21 OF 24

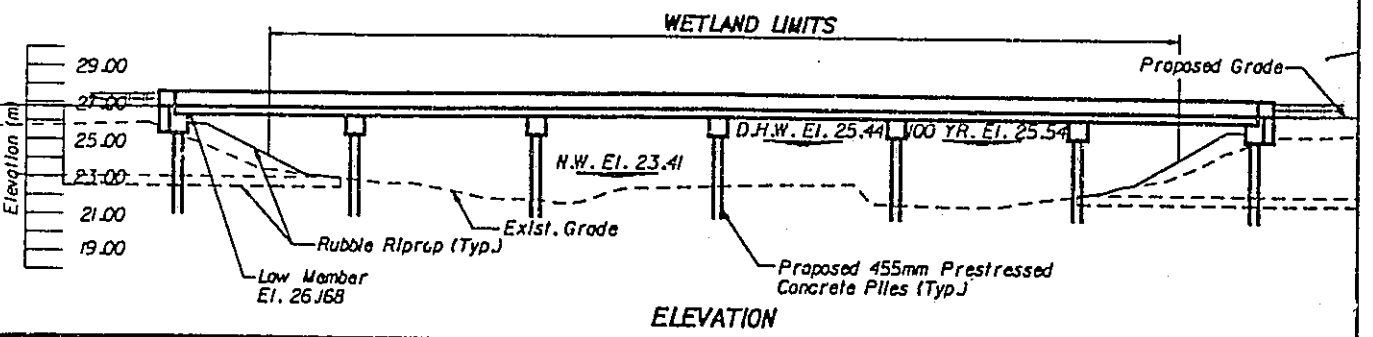
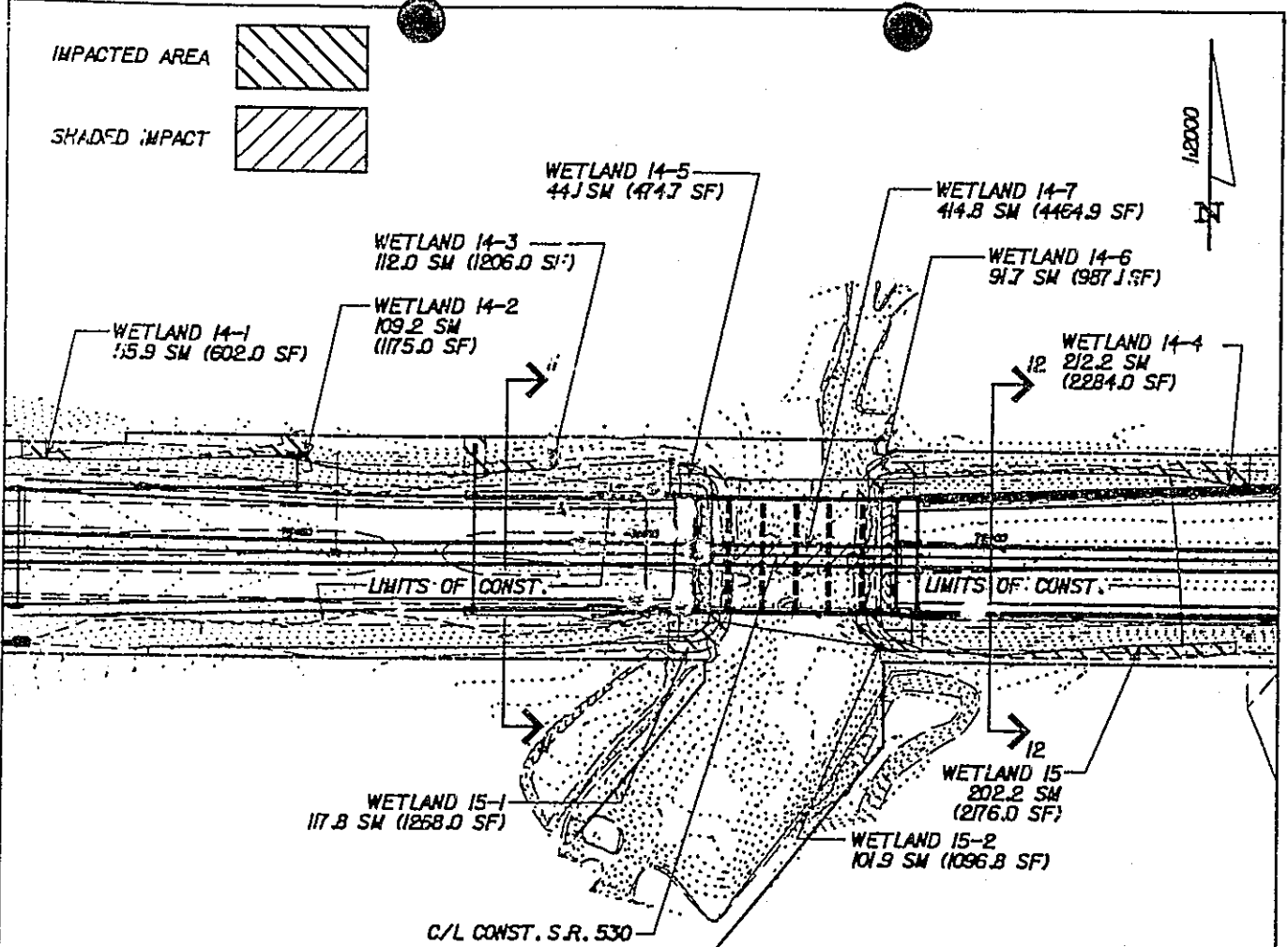
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DYEZ, RIDDLE, HILLS & PESCOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 896-0594



FLORIDA DEPARTMENT OF
TRANSPORTATION

[Signature]
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DATE 12/19/58
REG. FLA. ENG. NO. 32900

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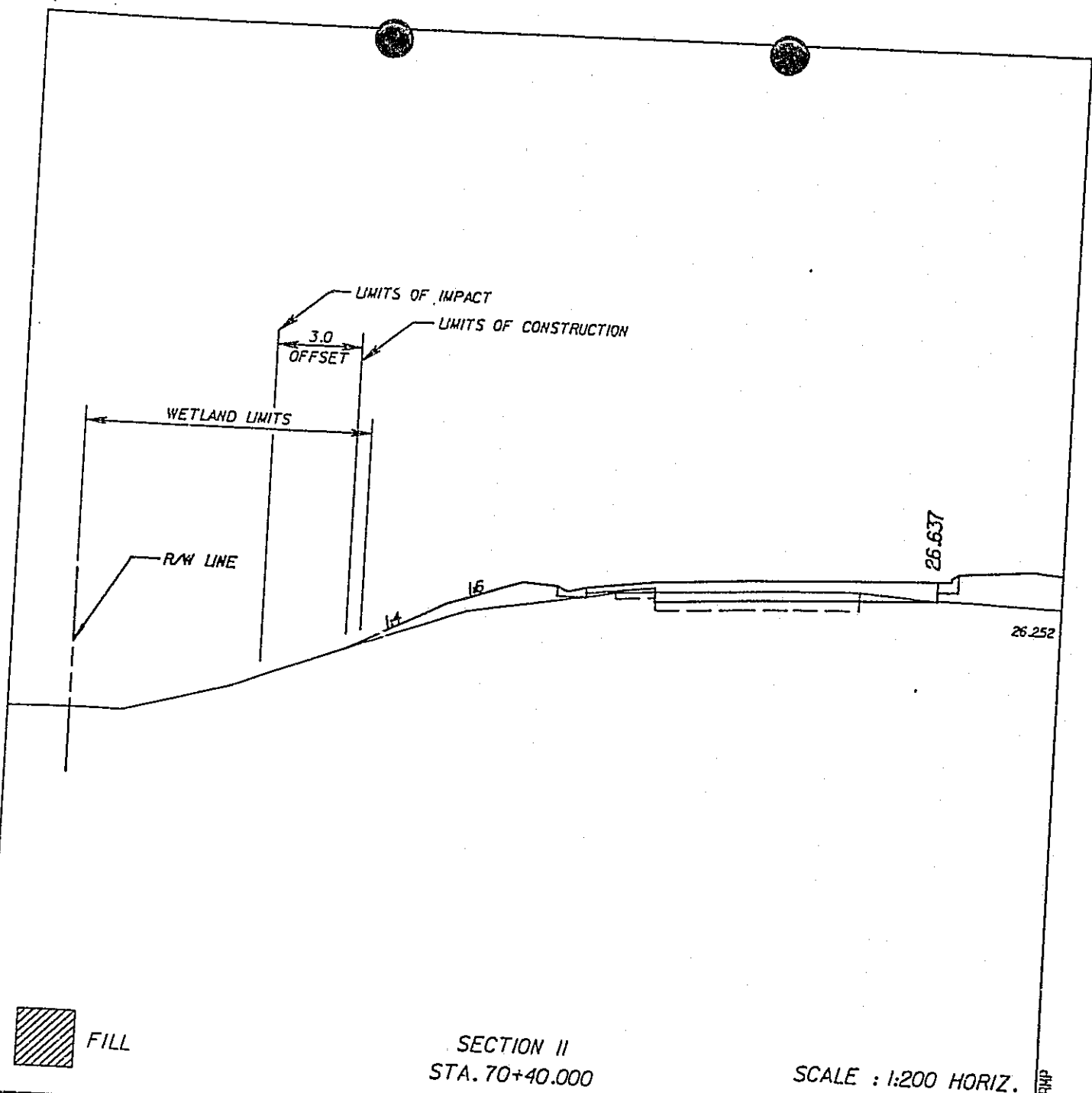
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PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF DSCEOLA AND ORANGE
DATUM:	MGVD	STATE OF FLORIDA

SHEET 22 OF 24

DRMP
 DYER, RIDDLE, HILLS & PERCOTT, INC.
 1505 E. COLONIAL DRIVE
 ORLANDO, FLORIDA 32803
 (407) 896-0594

FLORIDA DEPARTMENT OF
 TRANSPORTATION

Signed
 DATE 12/4/98
 REG. FLA. ENG. NO. 37300



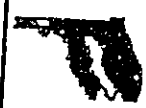
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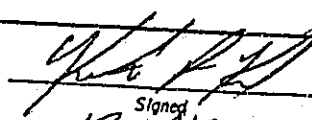
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PURPOSE:	JURISDICTIONAL IMPACT	COUNTY OF OSCEOLA AND ORANGE
DATUM:	MGVD	STATE OF FLORIDA

SHEET 23 OF 24

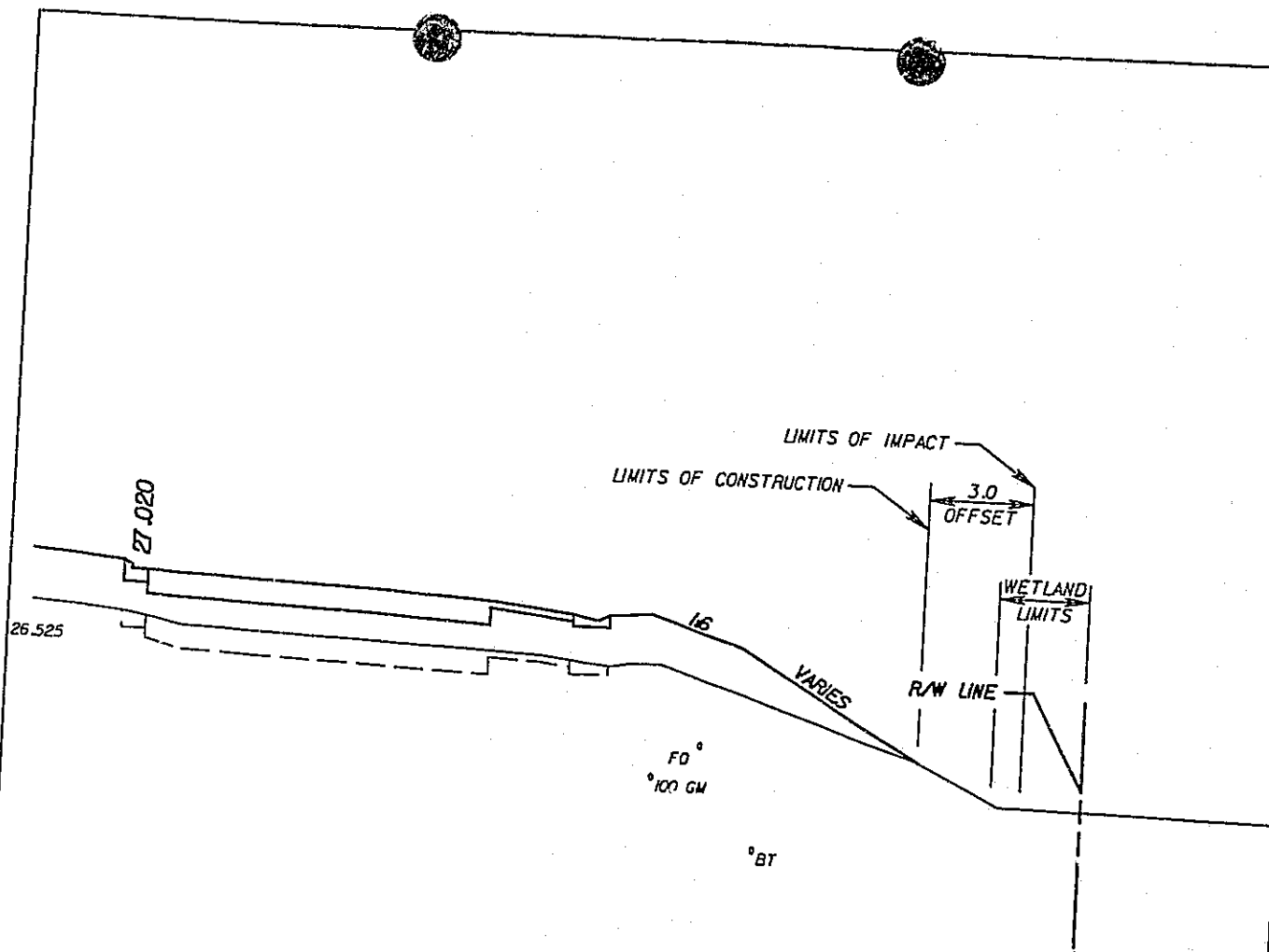

 DTRP, RIDDLE, HILL, JOG PERCOURT, INC.
 1505 E. COLONIAL DRIVE
 ORLANDO, FLORIDA 32803
 (407) 896-0594



FLORIDA DEPARTMENT OF
 TRANSPORTATION


 Signed
 DATE 12/4/98
 REG. FLA. ENG. NO. 37300

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SECTION 12
STA. 72+00.000

SCALE : 1:200 HORIZ.
1:100 VERT.

PROJECT: U.S. 192 (S.R. 530)

SECTION 2, 3, 4, 5 AND 11, TOWNSHIP 25 SOUTH, RANGE 27 EAST

PURPOSE: JURISDICTIONAL IMPACT

COUNTY OF OSCEOLA AND ORANGE

DATUM: NGVD

STATE OF FLORIDA

SHEET 21 OF 24

DRMP
DYE, RIDDLE, MILLS & FRECCOZZI, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 896-0594



FLORIDA DEPARTMENT OF
TRANSPORTATION

[Signature]
Signed
DATE 12/9/98
REG. FLA. ENG. NO. 37200

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APP # 980909-4

ADDITIONAL INFORMATION

DEC 04 1993

ORL WDO SERVICE CENTER

TABLE ONE:

PROJECT WETLAND AND OTHER SURFACE WATER SUMMARY

WL & SW ID	WL & SW TYPE	WL & SW SIZE	WL & SW NOT IMPACTED	TEMPORARY WL & SW IMPACTS			PERMANENT WL & SW IMPACTS			MITIGATION AREA ID
				WL & SW TYPE	IMPACT SIZE	IMPACT TYPE	WL & SW TYPE	IMPACT SIZE	IMPACT TYPE	
1	PFO7C						PFO7C	0.000 ac		
2	PFO7C	0.303 ac	0.255 ac				PFO7C	0.048 ac	C	
3-1	PFO6C	0.005 ac	0.004 ac				PFO6C	0.00014 ac	C	
3-2	PFO6C						PFO6C	0.00036 ac	C/F	
4-1	PFO6F	0.179 ac	0.140 ac				PFO6F	0.00069 ac	C/F	
4-2	PFO6F						PFO6F	0.0071 ac	C/F	
4-3	PFO6F						PFO6F	0.03 ac	C/F	
5	PFO6F	0.331 ac	0.302 ac				PFO6F	0.028 ac	C/F	
6	PEM1F	0.033 ac	0.000 ac				PEM1F	0.032 ac	C/F	
7	PEM1F						PEM1F	0.00 ac		



WL & SW ID	WL & SW TYPE	WL & SW SIZE	WL & SW NOT IMPACTED	WL & SW TYPE	IMPACT SIZE	IMPACT TYPE	WL & SW TYPE	IMPACT SIZE	IMPACT TYPE	MITIGATION AREA ID
8	PEM1F									
9	PFM1C	0.121 ac	0.000 ac				PEM1F	0.00 ac		
10	PSS1F	6.385 ac	0.141 ac				PFM1C	0.121 ac	C/F	
11	PSS1F	0.058 ac	0.00 ac				PSS1F	0.244 ac	C/F	
12-1	PSS1C	0.360 ac	0.309 ac				PSS1F	0.058 ac	C/F	
12-2	PSS1C						PSS1C	0.0034 ac	C/F	
13	PUBH	0.104 ac	0.043 ac				PSS1C	0.047 ac	C/F	
14-1	PFO4A	0.849 ac	0.599 ac				PUBH	0.061 ac	C/F	
14-2	PFO4A						PFO4A	0.013 ac	C/F	
14-3	PFO4A						PFO4A	0.026 ac	C/F	
							PFO4A	0.0025 ac	C/F	



WL & SW ID	WL & SW TYPE	WL & SW SIZE	WL & SW NOT IMPACTED	WL & SW TYPE	IMPACT SIZE	IMPACT TYPE	WL & SW TYPE	IMPACT SIZE	IMPACT TYPE	MITIGATION AREA ID
14-4	PFO4A						PFO4A	0.052 ac	C/F	
14-5	PFO4A						PFO4A	0.010 ac	C/F	
14-6	PFO4A						PFO4A	0.022 ac	C/F	
14-7	PFO4A						PFO4A	0.102 ac	C/F	
15	PFO4A	0.351 ac	0.248 ac				PFO4A	0.049 ac	C/F	
15-1	PFO4A						PFO4A	0.029 ac	C/F	
15-2	PFO4A						PFO4A	0.025 ac	C/F	
PROJECT TOTALS:		3.07 ac	2.03 ac					1.04 ac		

Comments:

Note:

WL = Wetland SW = Other Surface Water ID = Identification number, letter, etc.

Wetland Type: from an established wetland classification system

Impact Type: D = dredge; F = fill; H = change hydrology; S = shading; C = clearing; O = other

Multiple entries per cell not allowed, except in the "Mitigation ID" column. If more than one impact is proposed in a given area, indicate the final impact.



South Florida Water Management District

Orlando Service Center • 7335 Lake Ellenor Drive • Orlando, FL 32809
(407) 858-6100 • Fax (407) 858-6121 • 1-800-250-4250 • Suncom 358-6100

CON 24-06-02

Regulation Department
Application No. 980909-4

October 6, 1998

Mr. Kenneth R. Kniel, P.E.
Dyer, Riddle, Mills & Precourt, Inc.
1505 East Colonial Drive
Orlando, Florida 32853

Subject: U.S. 192 (S.R. 530)
Orange and Osceola Counties, S2-5, 11;32-34/T25;25S/R27;27E

Dear Mr. Kniel:

South Florida Water Management District (SFWMD) staff has completed a preliminary review of the U.S. 192 (S.R. 530) application. According to Rule 40E-40, Florida Administrative Code (FAC), and as discussed in our telephone conversation of September 29, 1998, the satisfactory answers to the following comments must be provided before our review can continue.

1. Based on the submitted application form, it appears that the proposed project area exceeds 100 acres (107.8 acres). Projects over 100 acres in size require an Individual Permit. The associated permit processing fee for an Individual Permit is \$3050.00. Please submit a check for an additional \$2400.00.
2. Please provide all drainage calculations and stormwater routings in English units. In addition, please provide dimensions and elevations in English units for all control structure and pond details included on the construction plans.
3. Please provide a recovery analysis for proposed dry retention Ponds C and E.
4. Please include a table that illustrates, for each proposed pond and exfiltration trench; the boring(s) associated with the pond or trench location, the groundwater elevation encountered, the estimated average wet season water elevation, the existing ground elevation, and the proposed control elevation. Please provide all elevations in English units.
5. The detail for Structure E-22 does not include the proposed circular orifice. Please correct this detail to include the orifice.

Governing Board:

Frank Williamson, Jr., Chairman
Eugene K. Pettis, Vice Chairman
Mitchell W. Berger

Vera M. Carter
William E. Graham
William Hammond

Richard A. Machek
Michael D. Minton
Miriam Singer

Samuel E. Poole III, Executive Director
Michael Slayton, Deputy Executive Director
William C. Stimmel, Orlando Service Center Director

District Headquarters • 3301 Gun Club Road, P.O. Box 24680, West Palm Beach, FL 33416-4680 • (561) 686-8800, FL WATS 1-800-432-2045

Mr. Kenneth R. Kniel, P.E.
October 6, 1998
Page 2

6. Please provide an acreage breakdown table for the proposed project area. The project area should include all acreage within the right-of-way, as well as the proposed water management acreage for each basin. In addition please provide a breakdown of all acreage that is within the drainage area but not within the project area (i.e., offsite drainage areas routed through the proposed system).
7. Please provide the approximate wetland limits on an aerial map and label the wetland numbers. Please shade/hatch the proposed wetland impact areas and label the impact areas with a unique identification code. For example, Wetland 3 has two proposed impact areas that could be labeled as "Impact Area 3-1 and 3-2" respectively.
8. Please label the delineated wetland line on the dredge and fill sketches and label the proposed impact areas with a unique identification code as referenced in the previous question. The post-development status of each community type should also be included (i.e., preserved/enhanced, impacted, restored, created) on the plans.
9. Based on the information provided, it appears that the right-of-way limits extend outside of the proposed limits of wetland impact in various locations. What types of activities are proposed within the right-of-way limits (i.e.; mowing, tree clearing)? Will these activities cause additional wetland impacts? If so, please revise the construction drawings and wetland impact acreage to reflect the additional wetland impacts and provide compensatory mitigation.
10. Please provide information that demonstrates that the development of this project will not cause adverse secondary impacts to the water resource as defined by Section 4.2.7, Basis of Review. Adverse secondary impacts are generally defined as violations of water quality standards, adverse impacts to the ecological value of uplands to listed animal species, except where United States Fish and Wildlife Service or Florida Game and Fresh Water Fish Commission guidelines are met, impacts to significant historical and archeological resources, and potential for intended or reasonably expected future uses to have an adverse impact on water quality or wetland and other surface water functions.

Mr. Kenneth R. Kniel, P.E.
October 6, 1998
Page 3


11. Based on the information provided, it appears that no upland buffers are proposed for the remaining wetland systems along U.S. 192. SFWMD criteria require a buffer zone around wetlands to be protected or incorporated into a surface water management system. Natural, replanted or structural buffers that extend at least 15 feet landward from the edge of the wetland in all places and average 25 feet from the edge of the wetland are presumed to be adequate. What type of buffer mechanism will be provided? Please revise the plans to include and label the limits of the buffer zone. If no buffer zone is proposed, please compensate for the lack of a buffer zone by providing additional mitigation.
12. Prior to the issuance of a construction permit, the applicant must stake/rope/fence the wetlands in the area of proposed construction. Please contact Shannon Carter, the environmental reviewer at (407) 858-6100 extension 3815 to schedule a site inspection of the required staking/roping/fencing.
13. What type of erosion control measures (i.e., silt curtains, hay bales, etc.) will be used to minimize turbidity in areas of construction located adjacent to wetlands? Please submit details and locations of the proposed erosion control mechanisms on the construction drawings.
14. Please provide the seasonal high and normal pool water elevations for Wetlands No. 1 and 10 that are adjacent to the proposed surface water Ponds A and C.

ADVISORY COMMENT: All Florida Department of Transportation (FDOT) projects with wetland impacts must be mitigated for under the FDOT mitigation bill. Even though the Three Lakes Wildlife Management Area has been previously approved and completed, the use of this site for mitigation needs to be processed in accordance with the FDOT mitigation bill. Please be advised that this project has been added to the FDOT mitigation bill inventory for legislative approval in 1999. Since the Three Lakes Wildlife Management Area has been permitted and completed, incorporation of this project into the mitigation bill will not delay the processing of this application. Incorporation of this project under the mitigation bill process will allow mitigation cost savings to be applied against the \$12 million SWIM debt. Please keep in mind that all future FDOT projects that require mitigation for wetland impacts will need to be incorporated under the FDOT bill process.

Mr. Kenneth R. Kniel, P.E.
October 6, 1998
Page 4

In accordance with 40E-1.603(4)(b) FAC, if the requested information is not received within 90 days of the date of this letter, this application may be processed for denial, if not withdrawn by the applicant. Please use the attached transmittal form and submit FIVE copies of the requested information to the Orlando Service Center and **include additional copies of your cover letter.** Also, in order to process your application as quickly as possible; **please collate your response into separate complete packages.** If you have any questions, please call Shannon Carter or me at (407) 858-6100.

Sincerely,



Jamie Poulos, E.I.
Staff Engineer
Orlando Service Center

/jp/jr

Attachment

- c: Orange County Engineering Department (w/o Attachment)
Osceola County Engineering Department (w/o Attachment)
Mr. Tadd Kasbeet, Florida Department of Transportation (w/o Attachment)

Mr. Kenneth R. Kniel, P.E.
October 6, 1998
Page 5

bc: Jamie Poulos
Shanron Carter
Backup File
Reader File



South Florida Water Management District

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(407) 858-6100 • Fax (407) 858-6121 • 1-800-250-4250 • Suncom 358-6100

NOTICE

September 10, 1998

Subject: Standard General Permit Application
Application No. 980909-4
U.S. 192 (S.R. 530)
Osceola & Orange Counties, S2-5,11,32-34/T25S/R27E

The South Florida Water Management District is currently processing the enclosed application. If you have any comments or objections concerning this project, please submit them in writing to this office within 30 days of receipt of this notice.

This is also an opportunity for applicable State agencies to concur with or object to the proposed project under the federal consistency provisions of the Coastal Zone Management Act. Review must be in accordance with the procedures adopted by the Interagency Management Committee on October 25, 1989. Findings of inconsistency must describe how the project conflicts with your agency's statutory authorities in the Florida Coastal Management Program and provide alternative measures, if any, which would make the project consistent. Commenting agencies must provide a copy of all consistency comment letters to the Florida Coastal Management Program Director, Department of Community Affairs, 2555 Shumard Oak Boulevard, Tallahassee, Florida 32399-2100.

Please refer to the applicant's name and application number as referenced above in any correspondence to help facilitate processing. Questions concerning this project should be addressed to Mr. Edward W. Yaun or Mr. Marc S. Ady at (407) 858-6100.

EWY/MSA/jr

Enclosure

c: U.S. Army Corps of Engineers – Merritt Island
Florida Game and Fresh Water Fish Commission
Florida Department of Environmental Protection
Department of Environmental Protection/Office of Protected Species Management
Department of State, Division of Historical Resources
Regional Planning Council

jr0192

Governing Board:

Frank Williamson, Jr., Chairman
Eugene K. Pettis, Vice Chairman
Mitchell W. Berger

Vera M. Carter
William E. Graham
William Hammond

Richard A. Machek
Michael D. Minton
Miriam Singer

Samuel E. Poole III, Executive Director
Michael Slayton, Deputy Executive Director
William C. Stimmel, Orlando Service Center Director

District Headquarters • 3301 Gun Club Road, P.O. Box 24680, West Palm Beach, FL 33416-4680 • (561) 686-8800, FL WATS 1-800-432-2045



South Florida Water Management District

Orlando Service Center • 7335 Lake Ellenor Drive • Orlando, FL 32809
(407) 858-6100 • Fax (407) 858-6121 • 1-800-250-4250 • Suncom 358-6100

(receipt)

Receipt No. 0000037426 - 0001

Refer to Application: 980909-4
Project Name : U.S. 192 (S.R. 530)

DYER, RIDDLE, MILLS & PRECOURT, INC.
1505 EAST COLONIAL DRIVE
ORLANDO, FL 32803-4780

REVENUE ACCOUNT CODE	RECEIPT OF PERMIT APPLICATION TYPE OF APPLICATION		FEE AMOUNT	
4615	ERP GENERAL PERMIT STANDARD GEN. PERMIT - NEW		\$650.00	
ITEM	TRANS TYPE	DATE RECEIVED	CHECK NO	AMOUNT RECEIVED
1	PAYMENT MADE BY APPLICANT	09/09/1998	058422	\$650.00
			BALANCE DUE	=====
				\$0.00

PROCESSED BY : JROY
DATE : September 10, 1998
SERVICE CENTER : ORL

c: Applicant
Accounting
Control
File

Governing Board:

Frank Williamsou, Jr., Chairman
Eugene K. Pettis, Vice Chairman
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William E. Graham
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District Headquarters • 3301 Gun Club Road, P.O. Box 24680, West Palm Beach, FL 33416-4680 • (561) 686-8800, FL WATS 1-800-432-2045

Mr. Ed Yaun
South Florida Water Management District
Orlando Service Center
7335 Lake Ellenor Drive
Orlando, Florida 32809

SEP 03 1998
ORLANDO SERVICE CENTER

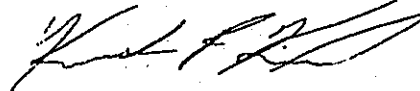
Subject: State Road 530
South Florida Water Management District/Standard General Permit
SPN 92090-3542
WPI 5115726
FPN 239669-1-52-01

Dear Mr. Yaun:

On Behalf of the Florida Department of Transportation District 5 we are pleased to submit the above referenced project for your review and approval. Enclosed please find five copies of the permit application and construction plans (signed and sealed) and a check for \$650.00. If during your review you or anyone on your staff should have any questions please contact our office.

Sincerely,

Dyer, Riddle, Mills & Precourt, Inc.



Kenneth R. Kniel, P.E.
Manager Water-Resources Department

cc: Jim Hatcher, FDOT D5
Tadd Kasbeer, FDOT D5
Wayne Chalifoux, DRMP
Theresa Shaw, DRMP
Sherry Burroughs, DRMP



ORIGINAL SUBMITTAL
SEP 09 1998
ORLANDO SERVICE CENTER

SECTION C
Environmental Resource Permit Notice of Receipt of Application

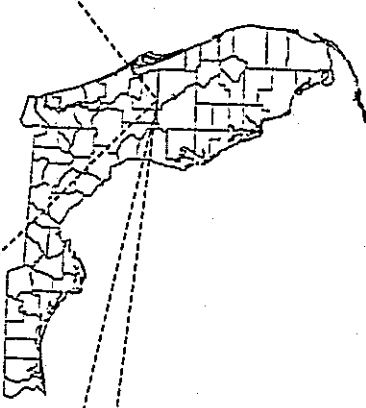
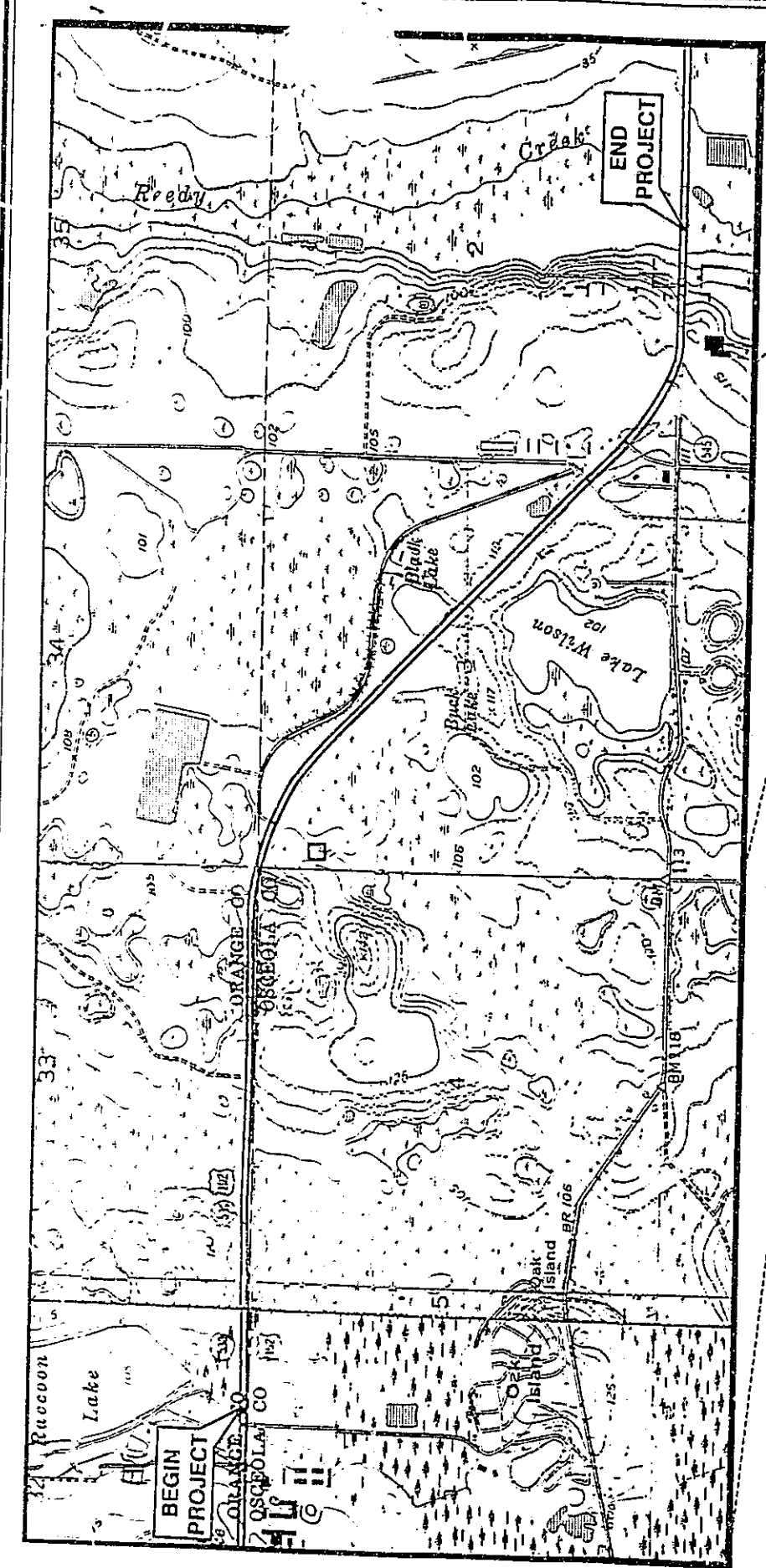
This information is required in addition to that required in other sections of the application. Please submit five copies of this notice of receipt of application and all attachments. PLEASE SUBMIT ALL INFORMATION ON 8 1/2" BY 11" PAPER.

Project Name: U.S. 192 (S.R. 530)
County: Orange and Osceola
Owner: Florida Department of Transportation
Applicant: Florida Department of Transportation
Applicant's Address: 719 South Woodland Boulevard
DeLand, Florida 32720-6800

APP # 980909-4

- 1. Indicate the project boundaries on a USGS quadrangle map, reduced or enlarged as necessary to legibly show the entire project. If not shown on the quadrangle map, provide a location map, that shows a north arrow, a graphic scale, Section(s), Township(s), and Range(s), and detail sufficient to allow a person unfamiliar with the site to find it.
Please see attached Location Map.
- 2. Provide the names of all wetland or other surface waters that would be dredged, filled, impounded, diverted, drained or would receive discharge (either directly or indirectly), or would otherwise be impacted by the proposed activity, and specify if they are in an Outstanding Florida Water or Aquatic Preserve:
Reedy Creek, Boggy Creek and Black Lake and un-named forested and herbaceous wetlands.
- 3. Attach a depiction (plan and section views), which clearly shows the works or other facilities proposed to be constructed. The depiction must use a scale sufficient to show the location and type of works.
Please see attached dedge and fill sketches.
- 4. Briefly describe the proposed project (such as "construct a deck with boatshelter", "replace two existing culverts", "construct surface water management system to serve 150 acre residential development"):
The FDOT is proposing to widen U.S. 192 (S.R. 530) from a four to six lane urban roadway. The proposed project will begin at Captain Kidd Road and just east of Reedy Creek.
- 5. Specify the acreage of wetlands or other surface waters, if any, that are proposed to be disturbed, filled, excavated, or otherwise impacted by the proposed activity:
Approximately 0.86 acres of jurisdictional wetlands will be impacted as a result of the proposed improvements.
- 6. Provide a brief statement describing any proposed mitigation for impacts to wetlands and other surface waters:
A regional off-site mitigation proposal at Three Lakes Wildlife Management Area was prepared by Environmental Management Systems, Inc. Approximately 20 acres were mitigated off-site for impacted wetlands associated with this project. A copy of the mitigation proposal is provided in Appendix A.

	FOR AGENCY USE ONLY
Application Name:	_____
Application Number:	_____
Office where the application can be inspected:	_____
_____	_____



Prepared From:
 USGS Intercession City, FL & Lake Louisa SW, FL
 Quadrangle Map
 Sections: 2,3,4,5,11,32,33 & 34
 Township: 25 South
 Range: 27 East
 County: Osceola & Orange



SCALE 1:24,000



PROJECT LOCATION MAP
S.R. 530 EAST
 ORANGE / OSCEOLA COUNTY, FLORIDA

EXHIBIT
 1



OWNER(s) OF LAND	ENTITY TO RECEIVE PERMIT (IF OTHER THAN OWNER)
NAME Florida Department of Transportation	NAME Same As Owner
ADDRESS 719 South Woodland Boulevard	ADDRESS
CITY, STATE, ZIP Deland, Florida	CITY, STATE, ZIP
COMPANY and TITLE	COMPANY and TITLE
TELEPHONE (904) 943-5000	TELEPHONE ()
FAX (904) 736-5059	FAX ()
AGENT AUTHORIZED TO SECURE PERMIT (IF AN AGENT IS USED)	CONSULTANT (IF DIFFERENT FROM AGENT)
NAME Kenneth R. Kniel, P.E.	NAME Same As Agent
COMPANY and TITLE DRMP, Inc. Water Resources Department Manager	COMPANY and TITLE
ADDRESS 1505 East Colonial Drive	ADDRESS
CITY, STATE, ZIP Orlando, Florida 32853	CITY, STATE, ZIP
TELEPHONE (407) 896-0594	TELEPHONE ()
FAX (407) 896-4836	FAX ()

Name of project, including phase if applicable U.S. 192 (S.R. 530)

Is this application for part of a multi-phase project? _____ yes no

Total applicant-owned area contiguous to the project 107.8 acres

Total project area for which a permit is sought 107.8 acres

Impervious area for which a permit is sought 47.4 acres

What is the total area (metric equivalent for federally funded projects) of work in, on or over wetlands or other surface waters?
0.856 acres 37298.3 square feet 0.346 hectares 3465.2 square meters

If a docking facility, the number of proposed new slips _____

Project location (use additional sheets, if needed)

County(ies) Osceola and Orange

Section(s) 2, 3, 4, 5, 11 Township 25 South Range 27 East

Section(s) 32, 33, 34 Township 25 South Range 27 East

Land Grant name, if applicable N/A

Tax Parcel Identification Number _____

Street address, road or other location _____

City, Zip Code if applicable _____



Describe in general terms the proposed project, system or activity.

The FDOT is proposing to widen U.S. 192 (S.R. 530) from a four to six lane roadway. The proposed project will begin at Captain Kldd Road and extend just east of Reedy Creek.

If there have been any pre-application meetings, including at the project site, with regulatory staff, please list the date(s), locations(s), and names of key staff and project representatives.

3-17-98: Wetland Jurisdictional Determination with Elisabeth Bishop of the ACOE.

Please identify by number any MSSW/Wetland Resource/ERP/ACOE permits pending, issued or denied for projects at the location, and any related enforcement actions.

Agency	Date	No.	Type of Application	Action Taken (Pending/Issued/Denied)
N/A				

Note: The following information is required for projects proposed to occur in, on or over wetlands or other surface waters that need a federal dredge and fill permit and/or authorization to use state-owned submerged lands. Please provide the names, addresses and zip codes of property owners whose property directly adjoins the project (excluding applicant). Please attach a plan view showing the owner's names and adjoining property lines. Attach additional sheets if necessary.

1. See Attachment A-1
- 2.
- 3.
- 4.



By signing this application form, I am applying, or I am applying on behalf of the applicant, for the permit and any proprietary authorizations identified above, according to the supporting data and other incidental information filed with this application. I am familiar with the information contained in this application and represent that such information is true, complete and accurate. I understand this is an application and not a permit, and that work prior to approval is a violation. I understand that this application and any permit issued or proprietary authorization issued pursuant thereto, does not relieve me of any obligation for obtaining any other required federal, state, water management district or local permit prior to commencement of construction. I agree, or I agree on behalf of my corporation, to operate and maintain the permitted system unless the permitting agency authorizes transfer of the permit to a responsible operation entity. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

Kenneth R. Kniel, P.E.
Typed/Printed Name of Applicant (If no Agent is used) or Agent (If one is so authorized below)
[Signature] 8/4/98
Signature of Applicant/Agent Date
DRMP Inc.
(Corporate Title if applicable)

AN AGENT MAY SIGN ABOVE ONLY IF THE APPLICANT COMPLETES THE FOLLOWING:

I hereby designate and authorize the agent listed above to act on my behalf, or on behalf of my corporation, as the agent in the processing of this application for the permit and/or proprietary authorization indicated above; and to furnish, on request, supplemental information in support of the application. In addition, I designate and authorize the above-listed agent to bind me, or my corporation, to perform any requirement which may be necessary to procure the permit or authorization indicated above. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

Tadd Kasbeer
Typed/Printed Name of Applicant
[Signature] 8/26/98
Signature of Applicant Date
Florida Department of Transportation District Five
(Corporate Title if applicable)

Please note: The applicant's original signature (not a copy) is required above.

PERSON AUTHORIZING ACCESS TO THE PROPERTY MUST COMPLETE THE FOLLOWING:

I either own the property described in this application or I have legal authority to allow access to the property, and I consent, after receiving prior notification, to any site visit on the property by agents or personnel from the Department of Environmental Protection, the Water Management District and the U.S. Army Corps of Engineers necessary for the review and inspection of the proposed project specified in this application. I authorize these agents or personnel to enter the property as many times as may be necessary to make such review and inspection. Further, I agree to provide entry to the project site for such agents or personnel to monitor permitted work if a permit is granted.

Tadd Kasbeer
Typed/Printed Name
[Signature] 8/26/98
Signature Date
Florida Department of Transportation District Five
(Corporate Title if applicable)



FOR AGENCY USE ONLY

ACOE Application # _____ DEPWMO Application # 980909.4
 Date Application Received _____ Date Application Received 9.9.98
 Proposed Project Lat. _____ Fee Received \$ 1050
 Proposed Project Long. _____ Fee Receipt # ~~31213~~ 31426

SECTION A

Are any of the activities described in this application proposed to occur in, on, or over wetlands or other surface waters: yes no
 Is this application being filed by or on behalf of a government entity or drainage district?
 yes no

A. Type of Environmental Resource Permit Requested (check at least one)

- Noticed General - include information requested in Section B.
- Standard General (Single Family Dwelling) - include information requested in Sections C and D.
- Standard General (all other projects) - include information requested in Sections C and E.
- Individual (Single Family Dwelling) - include information requested in Sections C and D.
- Individual (all other projects) - include information requested in Sections C and E.
- Conceptual - include information requested in Sections C and E.
- Mitigation Bank Permit (construction) - include information requested in Sections C and F.
 (If the proposed mitigation bank involves the construction of a surface water management system requiring another permit defined above, check the appropriate box and submit the information requested by the applicable section.)
- Mitigation Bank (conceptual) - include information requested in Sections C and F.
- Standard General Stormwater - include information requested in Sections C and H.
- Individual Stormwater - include information requested in Sections C and H.

B. Type of activity for which you are applying (check at least one)

- Construction or operation of a new system including dredging or filling in, on or over wetlands and other surface waters.
- Alteration or operation of an existing system which was not previously permitted by a WMD or DEP.
 Modification of a system previously permitted by a WMD or DEP. Provide previous permit numbers.

- Alteration and Operation of a system
- Abandonment of a system
- Removal of a system
- Extension of permit duration
- Construction and operation of additional phases of a system

C. Are you requesting authorization to use State Owned Submerged Lands. yes no
 (If yes, include the information requested in Section G.)

D. For activities in, on or over wetlands or other surface waters, check type of federal dredge and fill permit requested:
 Individual Programmatic General
 General Nationwide

E. Are you claiming to qualify for an exemption? yes no
 If yes, provide rule number if known. _____

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

**BACK-UP
MATERIAL**

PERMIT NO. 49-00956-P

APPLICATION NO. 980909-4

APP# 980909-4
**UPDATED APPENDIX E
DRAINAGE CALCULATIONS**

ADDITIONAL INFORMATION

JAN 14 1999

ORLANDO SERVICE CENTER

**S.R. 530 (U.S. 192)
ORANGE/OSCEOLA COUNTY**

**FINANCIAL PROJECT NO. 239669-1-52-01
STATE PROJECT NO. 92090-3542
WORK PROJECT NO. 5115726**

**RAI No. 2
SFWMD**

January 13, 1999

APP# 980909-4

**UPDATED APPENDIX E
DRAINAGE CALCULATIONS**

ADDITIONAL INFORMATION

JAN 14 1999

ORLANDO SERVICE CENTER

S.R. 530 (U.S. 192)
ORANGE/OSCEOLA COUNTY

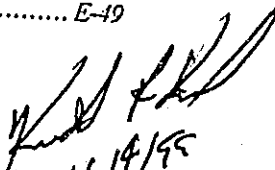
FINANCIAL PROJECT NO. 239669-1-52-01
STATE PROJECT NO. 92090-3542
WORK PROJECT NO. 5115726

**RAI No. 2
SFWMD**

January 13, 1999

Appendix E Drainage Calculations

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 11/14/95

Appendix E Drainage Calculations

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W. J. H.
1/14/99

Appendix E Drainage Calculations

E-1

Purpose

The purpose of this report is to provide the stormwater management information relative to the proposed improvements to S.R. 530 (U.S. 192) from the vicinity of Captain Kidd Road to east of Reedy Creek, a total length of approximately 5.55 km (3.45 miles). The stormwater management approach developed utilizes compensating treatment and storage volumes for stormwater runoff that is generated by new and existing impervious areas in basins that the availability of pond sites are economically and/or environmentally feasible. This technique allows for treatment and detention of existing paved areas in conjunction with the proposed improvements where feasible and minimizes these requirements in areas that treatment systems are not economically or environmentally feasible. (This is specifically applicable to the eastern most basin (basin E) where there are significant existing slopes adjacent to highly developed parcels and existing wetlands). This is a viable method since all runoff from the project area eventually reaches Reedy Creek as the ultimate outfall. A location map, soils map, and floodplain map are included in Appendix A.

Existing Conditions

The overall project was divided into five predevelopment drainage basins (see drainage map in Appendix A). The project is an existing six lane and four lane facility. The existing soils on site consist Candler Fine sand (type A), Tavares Fine Sand (type A), Immokalee Fine Sand (Type B/D), Placid Fine Sand (Type B/D), Pomello Fine Sand (type C), Narcoossee Fine Sand (type C) and Houtoon Muck (type D). The majority of the project is located within the Type A and C hydrologic soil group. There are a varying type of existing drainage collection systems within the project ranging from swales to storm sewer systems.

Basin A extends from stations 12+83 to 27+60 with a drainage area of 8.984 ha (22.20 ac). Stations 12+83 to 18+89 are part of the adjacent State Project #75220-3504, SFWMD Application #940927-1 (3.916 ha). The stormwater runoff generated from this basin is conveyed by roadside swales to West Boggy Creek. Two 2.4 x 1.2 m box culverts located at station 27+40 convey water from the south to the north. There is no existing permitted treatment facility in this basin.

Basin B extends from station 27+60 to 31+70 right and 27+60 to 33+60 left and has a drainage area of 3.209 ha (7.93 ac). Runoff from this basin is conveyed by roadside swales to West Boggy Creek. There is no existing permitted treatment facility in this basin.

Basin C extends from station 33+60 to 45+30 on the left side and from station 31+70 to 33+60 on the right and includes an area of 3.375 ha (8.34 ac). Stormwater runoff is

Appendix E Drainage Calculations

E-2

conveyed by roadside swales to an unnamed creek at station 45+45. At this location two 2.7 x 1.2 m box culverts convey water from the south to the north. There are no existing permitted facilities in this basin. A portion of this basin is landlocked and drains to an isolated low area on the south side of the alignment (4.925 ha 12.17 ac).

Basin D extends from station 45+30 to 55+00 and has a drainage area of 7.044 ha (17.41). Part of this basin drains to an unnamed creek at station 45+45 and part drains to the east to Black Lake via roadside swales. This basin includes offsite runoff from adjacent business that discharge into the roadside swales. Eventually Black Lake discharges to the west and into the un-named creek. There are no stormwater treatment facilities for the roadway within this basin.

Basin E extends from station 55+00 to 71+80 with a drainage area of 12.1 ha (29.90 ac). This basin includes offsite runoff from adjacent business which discharge into the roadside swales and into storm sewer systems along the left and right side of the roadway. This basin discharges via a storm sewer system and roadside swales into Reedy Creek. There are no stormwater treatment facilities for the roadway within this basin however, some of the offsite areas provide some treatment and attenuation prior to discharging into the roadway system.

Basin F extends from the end of the Reedy Creek Bridge to the east to the end of the project. This area is collected and taken to an existing stormwater treatment pond, SFWMD Permit #49-00732-S.

Proposed Conditions

The proposed drainage system consists of new swales, storm sewer systems, dry retention/detention ponds, and dry detention swales. The proposed alignment is a rural section from station 18+89.53 to 37+58.77 with roadside swales. The remaining portion of the proposed alignment is an urban section with a closed storm sewer system. In most instances offsite runoff areas are conveyed to the new storm sewer system with numerous inlet connections located to maintain the existing drainage patterns. For a large portion of Basin E the existing storm sewer system will remain in place to allow for continued service for the offsite areas. The drainage basin boundaries for the proposed conditions are similar to the existing conditions.

Basin A is part of the rural section, however the westbound segment from station 19+05.7 to the end of the basin at station 27+60 has a shoulder gutter and a closed storm sewer. This is due to the fact that environmentally sensitive areas exist at this location. The remaining segment has roadside swales, which connect to the closed storm sewer system via ditch bottom inlets. The stormwater runoff is directed to a wet detention pond, which provides treatment for the first 63.5 mm (2.5") of runoff over the existing

Appendix E
Drainage Calculations

E-3

and new pavement. The pond discharges to a spreader swale which naturally sheet flows into West Boggy Creek.

Table 1 - Soil Boring Information Basin A
(date drilled 5/11/98 see sheet 18 of 19 Geotechnical Report)

Station B/L A-1	Elevations		
	Existing Ground	24 Hour Encountered Ground Water	Estimated Seasonal High Groundwater
10+40 (28.5 RT)	32.3/105.97	31.1/102.03	32.0/104.99
10+70 (39 RT)	32.3/105.97	31.0/101.71	31.9/104.66
10+70 (63.5 RT)	32.3/105.97	31.0/101.71	31.9/104.66
11+20 (29 RT)	32.2/105.64	31.2/102.36	32.1/105.32
11+20 (49 RT)	32.5/106.63	31.1/102.03	32.0/104.99
11+80 (56 RT)	32.1/105.31	30.8/101.05	31.7/104.00
11+90 (30.5 RT)	32.0/104.99	31.0/101.71	31.9/104.66

Utilizing the soil information above an average observed water table elevation of 31.0 was computed compared to an estimated seasonal high wet season water table elevation of 32.0. In order to determine a control elevation for the pond all of the pertinent data was reviewed. The following factors stood out to be the most useful in trying to estimate a control elevation.

1. The elevations along the approved wetland line ranges from elevation 32.0 to below 31.5. This would indicate that the seasonal high water within the wetland is at most at 31.5 or below. If the average seasonal high water table was greater than 31.5 then so would the wetland.
2. The observed water tables were measured at such a time where the preceding three month rainfall (14.52 " or 4.84 "/month) was not quite what could be expected during the wet season but significant enough to influence the groundwater when estimating an average wet season water table.

Based on these two observations an average wet season water table and pond control elevation of 31.4 (103.02) was chosen.

Runoff in Basin B is conveyed by roadside swales, which also serve as treatment facilities. A control structure is located at the downstream end of each swale, which allows stormwater to bleed down slowly through an orifice. The swales provide treatment for the first 25.4 mm (1") over the right of way. A small segment of the road from station 27+60 to 28+30 westbound (Basin B-2) has shoulder gutter and a closed

**Appendix E
Drainage Calculations**

E-4

storm sewer system. The control structures in the swales are connected to this system which outfalls to the existing box culverts at station 27+40. Table 2 contains information on groundwater data for this basin.

Table 2 - Soil Boring Information Basin B
(date drilled 12/23/92 & 1/23/93 see sheet 6 of 19 Geotechnical Report)

Station C/L Survey	Elevations			
	Existing Ground	Swale Invert	24 Hour Encountered Ground Water	Estimated Seasonal High Groundwater
28+04 (30.5 RT)	31.4/103.02	32.0/104.99	30.8/101.05	31.2/102.36
28+65 (19.8 RT)	32.7/107.28	32.1/105.31	30.4/99.74	31.0/101.71
30+18 (0 RT)	34.1/111.88	33.1/108.60	30.2/99.08	30.7/100.72
31+39 (0 RT)	34.9/114.50	33.9/111.22	30.7/100.72	31.3/102.69
33+22 (0R)	34.3/112.53	33.6/110.24	30.0/98.43	30.7/100.72

Basin C has roadside swales in the rural section and a closed storm sewer system in the urban section. This basin consists of predevelopment basin C and D. Ditch bottom inlets connect the swales to the storm sewer system and then to a wet detention. The pond provides treatment for 63.5 mm (2.5") of runoff over the existing and new pavement. The pond is allowed to overflow back through the storm sewer system which outfalls into the box culvert at station 45+45.

Basin E is divided into two sub-basins in the post development conditions, E-1 (stations 55+00 to 61+00) and E-2 (stations 61+00 to 71+80). Both sub-basins have a closed storm sewer system. Sub-basin E-1 is discharging into Pond E. Pond E is a dry pond that provides 63.5 mm (2.5") of treatment over the existing and new pavement in Basin E-1. Basin E-2 maintains the existing drainage pattern and discharges into Reedy Creek in the similar manner that presently occurs.

In order to effectively determine the impacts in the basin and due to the offsite areas that presently share the collection system the basin was subdivided to include only the areas that would be draining to the proposed stormwater pond and storm sewer system. The existing storm sewer system will remain essentially intact and provide for the conveyance of the offsite areas and portions of the right-of-way (non-roadway pavement) in the same manner that presently occurs. This occurs within the eastern portion of the basin (E-2) where the existing structures (labeled O-xxx) will be left to accommodate the offsite areas. This will ensure that any of the offsite systems that connect to the existing system will be accommodated and there will be no interference from the proposed system.

The proposed pond E for basin E-1 is located within a remnant right-of-way parcel that has been left from the early construction and modifications to the old SR 530. This area

Appendix E
Drainage Calculations

E-5

will be re-graded slightly to form a pond and provide for a control structure within the E-22. This area has existed for many years without and signs of wetland vegetation at elevation 31±. The recent boring indicate some standing water however these boring were performed after a rainfall event. Even these borings indicate an infiltration rate of 6.3 - 24.8 inches/day, which is consistent with a well-drained type soils. This particular site is located on Taveres fine sand in what was an orange grove many years ago. Based on this information the proposed bottom grade of 31.8 along with the proposed drainage improvements should provide for an effective dry detention system.

Table 3 - Soil Boring Information Basin E
(date drilled 12/16/92 and 9/1/98 see sheet 9 and 19 of 19 Geotechnical Report)

Station	Elevations		
	Existing Elevations	24 Hour Encountered Ground Water	Estimated Seasonal High Groundwater
59+22 (22.9 LT)	32.2/105.64	30.1/98.75	30.5/100.07
59+63 (75 LT)	31.0/101.71	@SURFACE	
59+94 (53 LT)	31.1/102.03	@ SURFACE	

In order to ensure that the pond E will remain dry all of the time underdrains are proposed around the bottom of the pond. A detailed calculation of this drawdown with the underdrains is provided at the end of the calculations.

Basin F is a modification to the existing roadway system that will add additional shoulder pavement to the presently permitted area that flows to an existing pond. This area is accounted for by the previous permit SFWMD #49-00732-S.

Floodplain Impacts

There are no significant floodplain impacts anticipated due to the proposed construction (see appendix A for FEMA maps).

Water Quality

The proposed treatment facilities are designed to provide treatment for new and existing impervious areas wherever economically feasible. Due to the amount of development and the physical characteristics of the site providing traditional ponds, in some areas, would have been economically expensive and/or would have impacted wetlands for pond construction. Where feasible the treatment volumes were maximized and all pavement was treated, both existing and proposed. However due to the highly developed nature of the corridor some of these areas could not economically provide stormwater treatment. The goal of the design was to provide a treatment quantity greater than what would be required for the new pavement. Therefore, treatment of existing pavement provides compensation for parts of new pavement for which treatment is not economically

**Appendix E
Drainage Calculations**

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feasible. Basins A, B (excluding B-2), and C are treated as a new project and treatment is provided for the greater of 25.4 mm (1") over contributing area, or 63.5 mm (2.5") over impervious pavement (new plus existing). Locating ponds within these basins was much more feasible. In Basin E treatment is provided for sub-basin E-1 (new plus existing pavement), and Basin E-2 is allowed to discharge in its existing condition. It should be noted that most of basin E-2 is essentially already an existing 6 lane road which is exactly the number of lanes proposed under this permit. The only area available for a stormwater treatment pond is in the eastern portion of the basin which is in a FDEP conservation easement. This water quality treatment methodology is consistent with the criteria contained within the SFWMD Basis of Review 5.2.2 paragraph D.

Different kinds of treatment facilities are proposed throughout the project. A wet detention pond is proposed in Basin A, dry detention for Basin B, wet detention for Basins C, and dry detention for basin E. Treatment volumes were typically calculated using 25.4 mm (1") over the basin area or 63.5 mm (2.5") over the impervious area, whichever was the greater. A 50% reduction in treatment volume was allowed for dry retention, and 25% for dry detention. Table 1 shows the existing and new impervious areas in each basin and the treated areas. As it is seen from this table the new impervious area is approximately 3.6 hectares and the treated area is 23.05 hectares. Based on these numbers the project stormwater management system is providing over six times the treatment volume than if the project treated only the new impervious surface.

Table 4. Summary of Treated Areas.

Basin	Existing Impervious (ha/ac)	New Impervious (ha/ac)	Total Impervious (ha/ac)	Treated Area (ha/ac)
A	3.346/8.27	0.615/1.52	3.961/9.79	3.961/9.79
B-1	0.4/0.99	0.111/0.27	0.511/1.26	0.511/1.26
B-2	0.063/0.16	0.042/0.10	0.105/0.26	0/0
B-3	0.519/1.28	0.111/0.27	0.63/1.56	0.63/1.56
C	5.511/13.62	1.744/4.31	7.26/17.93	7.26/17.23
E	6.985/17.26	0.989/2.34	7.974/19.70	3.427/8.47
TOTALS	16.824 (41.57 acres)	3.612 (8.93 acres)	20.436 (50.50 acres)	23.05 (39.01 acres)

Appendix E
Drainage Calculations

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Table 5 Water Quality Volumes

Basin	Treatment Method	Control Elevation (m/ft)	Treatment Volume (m ³ /ac-ft)
A	Wet Detention	30.4/99.74	2664/2.16
B	Dry Detention	31.7/104.00	670/0.54
C	Wet Detention	30.5/100.07	5152/4.18
E	Dry Detention	30.5/100.07	1719/1.39

Water Quantity

To determine the post development discharge rates versus the predevelopment rate the runoff generated from the existing five drainage basins combined and compared to the runoff generated from the proposed five drainage basins. Table 2 summarizes the peak discharges for the existing conditions and Table 3 for the proposed conditions.

All of the basins ultimately outfall through Reedy Creek with the exception of a small area within basin C. However for purposes of this report the basins have been grouped together based on the outfall point along the roadway. In summary:

- Basin A - Outfalls to wetlands that eventually discharge under SR 530 (box culvert station 27+40) west Boggy Creek.
- Basin B - Outfalls to box culvert station 27+40 West Boggy Creek.
- Basin C - Outfalls to un-named Channel /Box Culvert at Station 45+50.
- Basin D - Outfalls to Box Culvert at Station 45+50.
- Basin E - Outfalls to the West Side of Reedy Creek.
- Basin F - Outfalls to previously permitted Project

Appendix E
Drainage Calculations

E-8

Table 6 Predevelopment Peak Discharge Rates

Basin	Area (ha/ac)	Discharge		
		(lps)	(m ³ /s)	(ft ³ /s)
A	8.984/22.20	1544.5	1.544	54.5
B-1	1.365/3.37	319.6	0.320	11.3
B-2	0.125/0.31	38.4	.038	1.4
B-3	1.719/4.25	416.7	0.417	14.7
Subtotal B		774.7	0.775	27.4
C	3.375/8.34	584.0	0.684	24.2
D	7.044/17.41	1354.8	1.355	47.8
Subtotal C/D		2157.0	2.158	76.2
E	12.10/29.90	2311.8	2.311	81.6
TOTALS	34.712/85.78	6669.8	6.67	235.4

Table 7 Post Development Discharge Peak

Basin	Area (ha/ac)	Peak Stage (m/ft)	Discharge		
			(lps)	(m ³ /s)	(ft ³ /s)
A	8.984/22.20	32.30/105.97	963.2	0.963	34.0
B-1	1.365/3.37	32.54/106.76	157.4	0.157	5.6
B-2	0.125/0.31	N/A	39.45	0.039	1.4
B-3	1.719/4.25	32.57/106.86	217.2	0.217	7.7
C	15.34/37.92	32.04/105.22	938.8	0.939	33.2
E	12.10/29.90	32.22/105.71	2299.1	2.30	81.2
TOTALS	39.637/97.95		4615.1	4.61	163.1

* The total post development area is slightly larger than the predevelopment area because in existing conditions a portion of Basin C is land locked with no outfall. In proposed conditions Basin C is diverted into Pond C.

$$\text{Overall } Q_{\text{post}} = \frac{163.1 \text{ cfs}}{97.95 \text{ ac}} = 1.67 \text{ cfs/ac}$$

Appendix E
Drainage Calculations

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Table 8 Predevelopment vs. Post Development Peak Discharge Rate

Basin	Predevelopment		Post Development	
	(m ³ /s)	(ft ³ /s)	(m ³ /s)	(ft ³ /s)
A	1.544	54.5	0.963	34.0
B-1	0.320	11.3	0.157	5.6
B-2	.038	1.4	0.039	1.4
B-3	0.417	14.7	0.217	7.7
Subtotal B	0.78	27.4	0.413	14.7
Subtotal C/D	2.16	76.2	0.838	29.6
E	2.31	81.6	2.30	81.2

Table 9 Project Areas

Basin	Total Project Area (within R/W) (ha/ac)	Drainage Area (within R/W) (ha/ac)	Offsite Drainage Area (ha/ac)	Total Drainage Area (ha/ac)	Water Mang. Area (ha/ac)
A	7.55/21.13	5.15/12.73	3.83/9.46	8.98/22.20	1.00/2.47
B	3.30/8.15	3.21/7.93	0/0	3.21/7.93	1.30/3.21
C/D	15.56/38.45	14.47/35.76	0.87/2.15	15.34/37.9	1.30/3.21
E	11.88/29.36	11.17/27.60	0.93/2.30	12.1/29.90	0.40/0.99
F	1.86/4.60	0.39/0.96	0/0	0.39/0.96	
Totals	41.15 /101.68	34.39/84.28	5.63/13.90	40.02/98.9	4.00/9.88

Appendix E
Drainage Calculations

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Hydrologic & Hydraulic Calculations

Predevelopment

Basin A

Basin A - STA. 12+83.208 TO 27+24 AND 27+24 TO 27+60 LEFT.
(Stations 12+83.208 to 18+89.535 not in this project)

Drainage Area = 8.984 ha

Soils - Placid fine sand, Immokalee fine sand, Type B/D
Candler sand 0 to 5 percent slopes, Type A
Pomelio fine sand 0 to 5% slopes, Type C

Description	Area(ha)	CN	Product
Pavement	3.346	98	327.91
Grassed area - fair	4.709	79	372.01
Range - fair	0.929	79	73.39
Total	8.984 22.20 acres		773.31

CN= 86.1

Time of Concentration
Channel Flow

STA. 12+83.208 TO 18+89.535

Area (sq m) = 1.951
Perimeter (m) = 6.401
Hydraulic Radius (m) = 0.305
Slope (m/m) = 0.0077
Manning's n = 0.04
Velocity (m/s) = 0.994
Length (m) = 606

T1 (min) = 10.2

STA. 18+89.535 TO 27+24

Area (sq m) = 1.951
Perimeter (m) = 6.401
Hydraulic Radius (m) = 0.305
Slope (m/m) = 0.0016
Manning's n = 0.04
Velocity (m/s) = 0.453
Length (m) = 835

T2 (min) = 30.7

Tc (min) = T1 + T2 = 40.9

Appendix E
Drainage Calculations

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Basin B-1

Basin B-1 - STA. 27+40 TO 31+70 RIGHT

Drainage area = 1.365 ha

Soils - Candler sand, 0 to 5% slopes, Type A
Immokalee fine sand, Type B/D

Weighted CN

Description	Area(ha)	CN	Product
Pavement	0.400	98	39.20
Grassed area - fair	0.482	49	23.62
Grassed area - fair	0.483	79	38.16
Total	1.365 3.37 acres		100.98

CN= 74.0

Time of Concentration

Shallow Concentrated Flow

Length (m) = 430

Surface = unpaved

Slope (m/m) = 0.008

Velocity (m/s) = 0.4

Tc (min) = 16.3

Basin B-2

Basin B-2 - STA. 27+60 TO 28+30 LEFT

Drainage area = 0.125 ha

Soils - Immokalee fine sand, Type B/D

Weighted CN

Description	Area(ha)	CN	Product
Pavement	0.063	98	6.17
Grassed area - fair	0.062	79	4.90
Total	0.125 0.31 acres		11.07

CN= 88.6

Time of Concentration

Shallow Concentrated Flow

Length (m) = 70

Surface = unpaved

Slope (m/m) = 0.009

Velocity (m/s) = 0.5

Tc (min) = 2.5 Use 10 min

**Appendix E
Drainage Calculations**

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Basin B-3

Basin B-3 - STA 28+30 TO 33+60 LEFT

Drainage area = 1.719 ha

Soils - Candler sand, 0 to 5% slopes and 5 to 12% slopes, Type A
Immokalee fine sand, Type D

Weighted CN Description	Area(ha)	CN	Product
Pavement	0.519	98	50.86
Grassed area - fair	0.914	49	44.79
Grassed area - fair	0.286	79	22.59
Total	1.719		118.24
	4.25 acres		
		CN=	68.8

Time of Concentration

Shallow Concentrated Flow

Length (m) = 320

Surface = unpaved

Slope (m/m) = 0.009

Velocity (m/s) = 0.5

Tc (min) = 11.4

Basin C

Basin C - STA. 40+00 TO 45+30

Drainage Area = 3.375 ha

Soils - Tavares fine sand Type A
Hontoon muck, Type D

Weighted CN Description	Area(ha)	CN	Product
Pavement	1.249	98	122.402
Grassed area - fair	0.776	84	65.184
Woods area - fair	1.350	43	58.050
Total	3.375		245.636
	8.34 acres		
		CN=	72.8

Time of Concentration

Channel Flow

Area (sq m) = 6.862

Perimeter (m) = 30.514

Hydraulic Radius (m) = 0.225

Slope (m/m) = 0.0019

Manning's n = 0.04

Velocity (m/s) = 0.403

Length (m) = 540

Tc (min) = 22.3

Appendix E Drainage Calculations

E-13

Basin D

Basin D - STA. 45+30 TO 55+00
Drainage area = 7.044 ha

Soils - Immokalee fine sand, Type B/D
Tavares fine sand, 0 to 5% slopes, and Candler sand, 0 to 5% slopes, Type A
Basinger fine sand, depressional, Type D

Weighted CN			
Description	Area(ha)	CN	Product
Existing pavement	2.703	98	264.89
Off-site impervious	0.859	98	84.18
Grassed area - fair	1.936	84	162.62
Grassed area - fair	1.546	49	75.75
Total	7.044		587.45
	17.40 acres		
		CN=	83.4

Time of Concentration
Channel Flow

Area (sq m) =	1.70		
Perimeter (m) =	8.60		
Hydraulic Radius (m) =	0.198		
Slope (m/m) =	0.0008		
Manning's n =	0.04		
Velocity (m/s) =	0.240		
Length (m) =	460	Tc (min) =	31.9

Basin E

Basin E - STA. 55+00 TO 71+80
Drainage area = 21.54 ha

Soils - Basinger fine sand and Immokalee fine sand, Type B/D
Tavares fine sand, 0 to 5% slopes, and Candler sand, 0 to 5% and 5 to 12% slopes, Type A
Narcoossee fine sand, Type C

Weighted CN			
Description	Area(ha)	CN	Product
Existing pavement	5.350	98	524.30
Off-site impervious	4.881	98	478.34
Grassed area - fair	5.654	79	446.67
Grassed area - fair	5.655	49	277.10
Total	21.540		1726.40
	53.22 acres		
		CN=	80.1

Time of Concentration
Channel Flow

Area (sq m) =	2.25		
Perimeter (m) =	9.06		
Hydraulic Radius (m) =	0.248		
Slope (m/m) =	0.002		
Manning's n =	0.04		
Velocity (m/s) =	0.442		
Length (m) =	550	Tc (min) =	20.7

Appendix E Drainage Calculations

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Pipe Flow

Length (m) 850
V (m/s) = 1.22

T2 (min) = 11.6

Tc (min) = T1 + T2 = 32.4

Hydrographs

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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SR 530, PREDEVELOPMENT BASINS, 10-YR 72-HR STORM
8/18/1998

BASIN NAME NODE NAME	BASINA OUTFALL	BASINB-1 OUTFALL	BASINB-2 OUTFALL	BASINB-3 OUTFALL	BASINC OUTFALL
UNIT HYDROGRAPH PEAKING FACTOR	UH323 323.	UH323 323.	UH323 323.	UH323 323.	UH323 323.
RAINFALL FILE	SEWMD72	SEWMD72	SEWMD72	SEWMD72	SEWMD72
RAIN AMOUNT (cm)	24.13	24.13	24.13	24.13	24.13
STORM DURATION (hrs)	72.00	72.00	72.00	72.00	72.00
AREA (ha)	8.98	1.37	.13	1.72	3.38
CURVE NUMBER	86.10	74.00	88.60	68.80	89.20
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	40.90	16.30	10.00	11.40	22.30
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN	QMX (lps)	TMX (hrs)	VOL (cm)	NOTES
BASINA	1544.49	60.26	19.83	1.54 m ³ /s 54.5 ft ³ /s
BASINB-1	319.60	60.05	15.97	0.32 m ³ /s 11.3 ft ³ /s
BASINB-2	38.44	60.00	20.62	0.04 m ³ /s 1.4 ft ³ /s
BASINB-3	416.69	60.01	14.29	0.42 m ³ /s 14.7 ft ³ /s
BASINC	683.99	60.11	15.58	0.68 m ³ /s 24.2 ft ³ /s

BASIN NAME NODE NAME	BASIND OUTFALL	BASINE OUTFALL
UNIT HYDROGRAPH PEAKING FACTOR	UH323 323.	UH323 323.
RAINFALL FILE	SEWMD72	SEWMD72
RAIN AMOUNT (cm)	24.13	24.13
STORM DURATION (hrs)	72.00	72.00
AREA (ha)	7.04	12.10
CURVE NUMBER	83.40	83.60
DCIA (%)	.00	.00
TC (mins)	31.90	32.40
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE

BASIN	QMX (lps)	TMX (hrs)	VOL (cm)	NOTES
BASIND	1354.77	60.18	18.97	1.36 m ³ /s 47.8 ft ³ /s
BASINE	2311.76	60.19	19.04	2.31 m ³ /s 81.6 ft ³ /s

**Appendix E
Drainage Calculations**

E-15

Post Development

Basin A

Basin A - STA. 12+83.208 TO 27+24 AND 27+24 TO 27+60 LEFT

(Stations 12+83.208 to 18+89.535 from adjacent State Project #75220-3504, SFWMD Application #940927-1)

Drainage Area = 8.984 ha

Soils - Placid fine sand, Pomello fine sand 0 to 5 percent slopes, Immokalee fine sand, Candler sand 0 to 5 percent slopes.

Hydrologic Soil Group = C

Description	Area(ha)	CN	Product
Pavement (adjacent project)	1.512	98	148.18
Grass- fair (adjacent project)	2.404	79	189.92
Pavement (current project)	2.449	98	240.00
Grass- fair (current project)	1.690	79	133.51
Pond (water)	0.553	100	55.30
Pond (grass)	0.376	79	29.70
Total	8.984		796.61
	22.20 acres		

CN = 88.7

Time of Concentration
Channel Flow
STA. 24+20 TO 27+24

Area (sq m) = 3.055
Perimeter (m) = 8.03
Hydraulic Radius (m) = 0.380
Slope (m/m) = 0.0005
Manning's n = 0.04
Velocity (m/s) = 0.294
Length (m) = 304

Pipe Flow

Length (m) = 922
V (m/s) = 0.85

T₁ (min) = 17.3

T₂ (min) = 18.1

T_c (min) = T₁ + T₂ = 35.3

Wet detention Pond A stage-area

Stage (m)	Area (ha)
31.40	0.553
31.85 104.49 ft	0.631
32.00	0.657
32.60	0.929

Average width equals length (155 m) width = 0.553 ha x 10,000 m².ha ÷ 155 m = 35.7 m = 117 ft

Appendix E Drainage Calculations

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Water Treatment Volumes

Type of treatment: wet detention pond

Treatment volume required = 63.5 mm (2.5") over the impervious area, or 25.4 mm (1.0") over the drainage area, whichever is greater

Existing impervious area =	3.346	ha	
New impervious area =	0.615	ha	
Drainage area =	8.98	ha	
Existing and proposed impervious areas =	3.961	ha	
$3.961 \times 10,000 \times 0.0635 =$	2515	m^3	
$8.984 \times 10,000 \times 0.0254 =$	2282	m^3	1.85 ac-ft - 1"
Treatment volume provided =	2664	m^3	2.16 ac-ft
			(from elevation 31.4 to 31.85 m)

Bleed-down calculations

Volume to be recovered in 24 hours =	$2664 \div 2 =$	1332	m^3
Required flow rate =	$1332 \div (24 \times 60 \times 60) = 0.015 \text{ m}^3/\text{s}$		
Assume an orifice diameter =	0.12	m	Invert elevation 31.4 m
Orifice area, a =	0.011	m^2	
$H = (0.45 + 0.225) / 2 =$	0.338	m	
$h = H - d / 2 =$	0.278	m	
Coefficient of discharge, C =	0.6		
$g =$	9.81	m/s^2	
$Q = C a (2gh)^{0.5} =$	0.016	m^3/s	OK

0.12 m orifice = 4.72" orifice

Hydrograph

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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SR 530, BASIN A, PROPOSED CONDITIONS, 10-YR 72-HR STORM
3/5/1998

BASIN NAME	BASINA
NODE NAME	PONDA
UNIT HYDROGRAPH	UH323
PEAKING FACTOR	323.
RAINFALL FILE	SFWMD72
RAIN AMOUNT (cm)	24.13
STORM DURATION (hrs)	72.00
AREA (ha)	8.98
CURVE NUMBER	88.70
DCIA (%)	.00
TC (mins)	35.30
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN QMX (lps)	TMX (hrs)	VOL (cm)	NOTES
BASINA 1701.22	60.17	20.63	1.70 m^3/s 60.1 ft^3/s

Appendix E
Drainage Calculations

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Flood Routing 10 Year 72 Hour

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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SR 530, BASIN A, PROPOSED CONDITIONS, 10-YR 72-HR STORM
3/5/1998

CONTROL PARAMETERS
=====

```

START TIME:      .00
END TIME:        72.00

TO TIME          SIMULATION INC   PRINT INC
(hours)          (secs)           (mins)
-----          -
72.00           5.00             5.00
    
```

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

NODE NAME	NODE TYPE	INI STAGE (m)	X-COOR (m)	Y-COOR (m)	LENGTH (m)	STAGE (m)	AR/TM/STR (ha/hr/m3)
PONDA	AREA	31.400	.000	.000	.000	31.400	.553
						32.000	.657
						32.600	.929
BNDRY	TIME	31.400	.000	.000	.000	31.400	.000
						31.400	20.000
						31.700	60.000
						31.400	72.000

```

>>REACH NAME      : A-2
FROM NODE         : PONDA
TO NODE           : BNDRY
REACH TYPE        : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION    : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH      : OFF
    
```

```

CULVERT DATA :
SPAN (cm) : 75.000   RISE (cm) : 75.000   LENGTH (m) : 13.000
U/S INVERT (m) : 30.830 D/S INVERT (m) : 30.800   MANNING N : .012
ENTRNC LOSS : .500   # OF CULVERTS : 1.000
    
```

```

POSITION A      : CIRCULAR RISER SLOT
INVERT EL. (m) : 31.400   SPAN (cm) : 12.000   RISE (cm) : 12.000
WEIR COEF. : 3.200   GATE COEF. : .600   NUMBER OF ELEM. : 1.000
    
```

```

POSITION B      : RECTANGULAR RISER SLOT
CREST EL. (m) : 31.850   CREST LN. (m) : 4.370   OPENING (m) : 999.000
WEIR COEF. : 1.730   GATE COEF. : .600   NUMBER OF ELEM. : 1.000
    
```

Appendix E Drainage Calculations

E-18

NOTE:

REACH SUMMARY =====

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	A-2	PONDA	BNDRY	DROP STRUCTURE w/ CIRC. CULVERT

NODAL MIN/MAX/TIME CONDITIONS REPORT =====

NODE ID	PARAMETER	<-- MINIMUMS -->		<-- MAXIMUMS -->		
		VALUE	TIME (hr)	VALUE	TIME (hr)	
PONDA	STAGE (m):	31.40	6.25	32.30	60.83	105.97 ft.
	VOLUME (cu. m):	0.	5.83	5930.	60.83	
	RUNOFF (lps):	.0	5.83	1701.1	60.17	
	OFFSITE (lps):	.0	72.00	.0	72.00	
	OTHER (lps):	.0	72.00	.0	72.00	
	OUTFLOW (lps):	.0	6.33	963.2	60.83	
						0.963 m ³ /s 34.0 ft ³ /s
BNDRY	STAGE (m):	31.40	72.00	31.70	60.00	
	VOLUME (cu. m):	0.	6.33	15324.	72.00	
	RUNOFF (lps):	.0	72.00	.0	72.00	
	OFFSITE (lps):	.0	72.00	.0	72.00	
	OTHER (lps):	.0	6.33	963.2	60.83	
	OUTFLOW (lps):	.0	72.00	.0	72.00	
OUTFLOW (lps):	.0	72.00	.0	72.00		

Basin B-1

Basin B-1 STA. 27+40 TO 31+70 RIGHT

Drainage area = 1.365 ha

Soils - Candler sand, 0 to 5% slopes, Type A
Immokalee fine sand, Type B/D

Weighted CN

Description	Area(ha)	CN	Product
Pavement	0.511	98	50.04
Grassed area - fair	0.427	49	20.92
Grassed area - fair	0.427	79	33.73
Total	1.365 3.37 acres		104.69

CN= 76.7

Time of Concentration
Channel Flow

Area (sq m) = 3.500
Perimeter (m) = 8.644
Hydraulic Radius (m) = 0.405
Slope (m/m) = 0.0005
Manning's n = 0.04
Velocity (m/s) = 0.306
Length (m) = 370

Tc (min) = 20.2

Appendix E Drainage Calculations

E-19

Swale stage- storage:

Stage (m)	Storage (m ³)
32.0	0.0
32.01	56.0
32.40	276.0
32.70	1386.0

Water Treatment Volume

Type of treatment: dry detention

Treatment volume required = 63.5 mm over the impervious area, or 25.4 mm over the right of way, whichever is greater (75% due to dry detention)

Existing impervious area = 0.4 ha

New impervious area = 0.111 ha

Existing and proposed impervious areas = 0.511 ha

Right of way area = 1.365 ha

$$0.511 \times 10,000 \times 0.0635 \times 75/100 = 244 \text{ cubic meters}$$

$$1.365 \times 10,000 \times 0.0254 \times 75/100 = 260 \text{ cubic meters} \quad 0.21 \text{ ac-ft} \quad -1''$$

Treatment volume provided = 275 cubic meters as follows: 0.22 ac-ft

Sta. 27+40 to 29+68: 219 cubic meters (from elevation 32.0 to 32.40 m NGVD)

Sta. 30+50 to 31+39: 56 cubic meters (from elevation 33.55 to 33.95 m NGVD)

Bleed-down calculations

Due to the varying grade on the ditch bottom, treatment is provided at two different locations (see stations above). A dry retention provides 56 m³ of treatment volume and a dry detention provides 219 m³. A control structure with a bleed-down orifice is proposed for the dry detention (structure B-1). Bleed-down calculations are as follows:

Volume to be recovered in 24 hours = 219/2 = 109.5 cubic meters

Required flow rate:

$$Q = 109.5 / (24 \times 60 \times 60) = 0.0013 \text{ m}^3/\text{s} = 0.046 \text{ cfs}$$

Assume an orifice diameter

d = 75 mm = 0.25 ft, with orifice invert elevation at 31.70 m

Orifice area, a = 0.004 m² = 0.043 ft²

H = (0.7 + 0.5) / 2 = 0.6 m

h = 0.6 - d/2 = 0.562 m = 1.84 ft

Coefficient of discharge C = 0.6

g = 9.81 m/s²

$$Q = C a (2gh)^{0.5} = 0.008 \text{ m}^3/\text{s} = 0.28 \text{ cfs} \quad \text{OK}$$

Appendix E Drainage Calculations

E-20

Hydrograph

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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SR 530, BASIN B-1, PROPOSED CONDITIONS
4/23/1996

BASIN NAME	BASINB-1
NODE NAME	SWALE
UNIT HYDROGRAPH	UH323
PEAKING FACTOR	323.
RAINFALL FILE	SEWMD72
RAIN AMOUNT (cm)	24.13
STORM DURATION (hrs)	72.00
AREA (ha)	1.37
CURVE NUMBER	76.70
DCIA (%)	.00
TC (mins)	20.20
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN QMX (lps)	TMX (hrs)	VOL (cm)	NOTES
BASINB-1	303.63	60.06	16.83

0.30 m³/s 10.7 ft³/s

Flood Routing 10 Year 72 Hour

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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SR 530, BASIN B-1, PROPOSED CONDITIONS
4/23/1996

CONTROL PARAMETERS

START TIME:	.00	
END TIME:	72.00	
TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
72.00	1.00	5.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

Appendix E Drainage Calculations

E-21

NODE NAME	NODE TYPE	INI STAGE (m)	X-COOR (m)	Y-COOR (m)	LENGTH (m)	STAGE (m)	AR/TM/STR (ha/hr/m3)
SWALE	STRG	32.000	.000	.000	.000	32.000	.000
						32.010	56.000
						32.400	276.000
						32.700	1386.000
BNDRY	TIME	32.000	.000	.000	.000	32.000	.000
						32.000	72.000

>>REACH NAME : B-1
 FROM NODE : SWALE
 TO NODE : BNDRY
 REACH TYPE : DROP STRUCTURE w/ CIRC. CULVERT.
 FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
 TURBO SWITCH : OFF

CULVERT DATA :
 SPAN (cm) : 45.000 RISE (cm) : 45.000 LENGTH (m) : 38.000
 U/S INVERT (m) : 31.250 D/S INVERT (m) : 31.150 MANNING N : .012
 ENTRNC LOSS : .200 # OF CULVERTS : 1.000

POSITION A : CIRCULAR RISER SLOT
 INVERT EL. (m) : 31.700 SPAN (cm) : 7.500 RISE (cm) : 7.500
 WEIR COEF. : 1.730 GATE COEF. : .600 NUMBER OF ELEM. : 1.000

POSITION B : RECTANGULAR RISER SLOT
 CREST EL. (m) : 32.400 CREST LN. (m) : 3.100 OPENING (m) : 999.000
 WEIR COEF. : 1.730 GATE COEF. : .600 NUMBER OF ELEM. : 1.000

NOTE: STRUCTURE B-1

REACH SUMMARY

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	B-1	SWALE	BNDRY	DROP STRUCTURE w/ CIRC. CULVERT

NODAL MIN/MAX/TIME CONDITIONS REPORT

NODE ID	PARAMETER	<-- MINIMUMS -->		<-- MAXIMUMS -->	
		VALUE	TIME (hr)	VALUE	TIME (hr)
SWALE	STAGE (m) :	32.00	14.67	32.54	60.50
	VOLUME (cu. m) :	0.	14.25	777.	60.50
	RUNOFF (lps) :	.0	14.25	302.6	60.08
	OFFSITE (lps) :	.0	72.00	.0	72.00
	OTHER (lps) :	.0	72.00	.0	72.00
	OUTFLOW (lps) :	.0	14.83	157.4	60.50
				0.157 m ³ /s	5.6 ft ³ /s
BNDRY	STAGE (m) :	32.00	72.00	32.00	72.00
	VOLUME (cu. m) :	0.	14.83	1975.	72.00
	RUNOFF (lps) :	.0	72.00	.0	72.00
	OFFSITE (lps) :	.0	72.00	.0	72.00
	OTHER (lps) :	.0	14.83	157.4	60.50
	OUTFLOW (lps) :	.0	72.00	.0	72.00

Basin B-2

Basin B-2 STA. 27+60 TO 28+30 LEFT

Drainage area = 0.125 ha

Soils - Immokalee fine sand, Type B/D

Weighted CN

Description	Area(ha)	CN	Product
Pavement	0.105	98	10.24
Grassed area - fair	0.021	79	1.62
Total	0.125 0.31 acres		11.86

CN= 94.9

Time of Concentration

Pipe Flow

Length (m) = 54

Velocity (m/s) = 0.55

Tc (min) = 1.6 Use 10 min

No treatment is provided in this basin.

Existing impervious area = 0.063 ha

New impervious area = 0.042 ha

HydrographAdvanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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4/23/1996

BASIN NAME	BASINB-2
NODE NAME	OUTFALL
UNIT HYDROGRAPH	UH323
PEAKING FACTOR	323.
RAINFALL FILE	SFWM72
RAIN AMOUNT (cm)	24.13
STORM DURATION (hrs)	72.00
AREA (ha)	.13
CURVE NUMBER	94.90
DCIA (%)	.00
TC (mins)	10.00
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN QMX (lps)	TMX (hrs)	VOL (cm)	NOTES
BASINB-2 39.45	60.00	22.58	0.039 m ³ /s 1.4 ft ³ /s

Appendix E Drainage Calculations

E-24

Due to the varying grade on the ditch bottom, treatment is provided at three different locations (see stations above). Two dry retention areas provide 54 m³ and 195 m³ of treatment volume respectively, and a dry detention area provides 146 m³. A control structure with a bleed-down orifice is proposed for the dry detention (structure B-3).

Bleed-down calculations are as follows:

Volume to be recovered in 24 hours = 146 ÷ 2 = 73 cubic meters
 Required flow rate $Q = 73 \div (24 \times 60 \times 60) = 0.0008 \text{ m}^3/\text{s} = 0.028 \text{ cfs}$

Assume an orifice diameter $d = 75 \text{ mm} = 0.25 \text{ ft}$ 2.95 inches
 with orifice invert elevation at 31.0 m
 Orifice area $a = 0.004 \text{ m}^2 = 0.043 \text{ ft}^2$
 $H = (0.7 + 0.5) \div 2 = 0.6 \text{ m}$
 $h = 0.6 - d/2 = 0.562 \text{ m} = 1.84 \text{ ft}$
 Coefficient of discharge $C = 0.6$
 $g = 9.81 \text{ m/s}^2$

$Q = C a (2gh)^{0.5} = 0.008 \text{ m}^3/\text{s} = 0.28 \text{ cfs}$ OK

Hydrograph

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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SR 530, BASIN B-3, PROPOSED CONDITIONS
 4/23/1996

BASIN NAME	BASINB-3
NODE NAME	SWALE
UNIT HYDROGRAPH	UH323
PEAKING FACTOR	323.
RAINFALL FILE	SEWMD72
RAIN AMOUNT (cm)	2.13
STORM DURATION (hrs)	72.00
AREA (ha)	1.72
CURVE NUMBER	71.40
DCIA (%)	.00
TC (mins)	28.90
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN	QMX (lps)	TMX (hrs)	VOL (cm)	NOTES
BASINB-3	300.77	60.17	15.13	0.30 m3/s 10.6 ft3/s

Flood Routing 10 Year 72 Hour

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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SR 530, BASIN B-3, PROPOSED CONDITIONS
 4/23/1996

CONTROL PARAMETERS

Appendix E Drainage Calculations

E-25

```

=====
START TIME:      .00
ENC TIME:       72.00

TO TIME   SIMULATION INC   PRINT INC
(hours)   (secs)           (mins)
-----
72.00    1.00             5.00
  
```

RUNOFF HYDROGRAPH FILE: DEFAULT
 OFFSITE HYDROGRAPH FILE: DEFAULT
 BOUNDARY DATABASE FILE: NONE

NOTE:

NODE NAME	NODE TYPE	INI STAGE (m)	X-COOR (m)	Y-COOR (m)	LENGTH (m)	STAGE (m)	AR/TM/STR (ha/hr/m3)
SWALE	STRG	32.000	.000	.000	.000	32.000	.000
						32.010	250.000
						32.400	395.000
						32.800	1295.000
BNDRY	TIME	32.000	.000	.000	.000	32.000	.000
						32.000	72.000

```

>>REACH NAME      : B-3
FROM NODE         : SWALE
TO NODE           : BNDRY
REACH TYPE        : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION    : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH      : OFF
  
```

```

CULVERT DATA :
SPAN (cm) : 45.000      RISE (cm) : 45.000      LENGTH (m) : 50.100
C/S INVERT (m) : 31.250 D/S INVERT (m) : 31.150      MANNING N: .012
ENTRNC LOSS: .200      # OF CULVERTS: 1.000
  
```

```

POSITION A      : CIRCULAR RISER SLOT
INVERT EL. (m) : 31.700      SPAN (cm) : 7.500      RISE (cm) : 7.500
WEIR COEF.: 1.730      GATE COEF.: .600      NUMBER OF ELEM.: 1.000
  
```

```

POSITION B      : RECTANGULAR RISER SLOT
CREST EL. (m) : 32.400      CREST LN. (m) : 3.100      OPENING (m) : 999.000
WEIR COEF.: 1.730      GATE COEF.: .600      NUMBER OF ELEM.: 1.000
  
```

NOTE: STRUCTURE B-3

REACH SUMMARY

INDEX	RCHNAME	FROM NODE	TO NODE	REACH TYPE
1	B-3	SWALE	BNDRY	DROP STRUCTURE w/ CIRC. CULVERT

Appendix E Drainage Calculations

E-26

NODAL MIN/MAX/TIME CONDITIONS REPORT

NODE ID	PARAMETER	<--- MINIMUMS --->		<--- MAXIMUMS --->		
		VALUE	TIME (hr)	VALUE	TIME (hr)	
SWALE	STAGE (m):	32.00	19.58	32.57	60.42	106.86 ft. 0.217 m ³ /s 7.67 ft ³ /s
	VOLUME (cu. m):	0.	18.75	776.	60.42	
	RUNOFF (lps):	.0	18.75	300.7	60.17	
	OFFSITE (lps):	.0	72.00	.0	72.00	
	OTHER (lps):	.0	72.00	.0	72.00	
	OUTFLOW (lps):	.0	19.92	217.2	60.42	
BNDRY	STAGE (m):	32.00	72.00	32.00	72.00	
	VOLUME (cu. m):	0.	19.92	2152.	72.00	
	RUNOFF (lps):	.0	72.00	.0	72.00	
	OFFSITE (lps):	.0	72.00	.0	72.00	
	OTHER (lps):	.0	19.92	217.2	60.42	
	OUTFLOW (lps):	.0	72.00	.0	72.00	

TABLE 1 (CONTINUED)
 DOUBLE RING INFILTRATION (DRI) TEST RESULTS
 S.R. 530 SIX LANING FROM THE ORANGE
 COUNTY LINE TO REEDY CREEK
 (SWALE AREA)
 GEC PROJECT NO. 219G

(STATION 103+00, 75' RT)
 31 + 39.4 22.9

ELAPSED TIME (MINUTES)	INFILTRATION RATE (INCHES/HOUR)
0 - 15	14.2
15 - 30	14.9
30 - 45	14.8
45 - 60	14.8
60 - 120	14.5
120 - 180	14.1
180 - 240	14.8

$$\bar{I} = 14.59 \text{ in/hr}$$

$$= \frac{8.89 \text{ m/day}}{\div 2 \text{ SF}}$$

Use

$$4.45$$

TABLE 1 (CONTINUED)
DOUBLE RING INFILTRATION (DRI) TEST RESULTS
S.R. 530 SIX LANING FROM THE ORANGE
COUNTY LINE TO REEDY CREEK
(SWALE AREA)
GEC PROJECT NO. 219G

(STATION 99+00, 80' LT)
30+17.5 2A, 4 LT

ELAPSED TIME (MINUTES)	INFILTRATION RATE (INCHES/HOUR)
0 - 15	27.8
15 - 30	27.9
30 - 45	27.6
45 - 60	27.6
60 - 120	26.9
120 - 150	26.5

Project Data

Project Name: SR 530 BASIN B-1
Simulation Description: POST DEV. BASIN B-1
SWALES 30+50 TO 31+39 (RT)
Project Number: 95-0026.000
Engineer : SG
Supervising Engineer: KRK
Date: 01-13-1999

Aquifer Data

Base Of Aquifer Elevation, [B] (m datum): 29.000
Water Table Elevation, [WT] (m datum): 31.300
Horizontal Saturated Hydraulic Conductivity, [Kh] (m/day): 4.500
Fillable Porosity, [n] (%): 25.00
Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (m): 89.0
Equivalent Pond Width, [W] (m): 3.1
Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (m datum)	Area (m ²)
33.55	66.5
33.95	213.5

Ditch Data

Ditch parallel to length axis is inactive
Ditch parallel to width axis is inactive

Discharge Structures

Discharge Structure #1 is inactive
Discharge Structure #2 is inactive
Discharge Structure #3 is inactive

Scenario Input Data

Scenario 1 :: 56 m³ slug load

Hydrograph Type: Slug Load

Treatment Volume (m³) 56

Initial ground water level (m datum) default, 31.30

PONDS Version 3.1.0241
 Retention Pond Recovery - Refined Method
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Detailed Results :: Scenario 1 :: 56 m³ slug load

Elapsed Time (hours)	Inflow Rate (m ³ /s)	Outside Recharge (m/day)	Stage Elevation (m datum)	Infiltration Rate (m ³ /s)	Overflow Discharge (m ³ /s)	Cumulative Inflow Volume (m ³)	Cumulative Infiltration Volume (m ³)	Cumulative Discharge Volume (m ³)	Flow Type
0.000	9.3333	0.0000	33.550	0.00000	0.00000	0.0	0.0	0.0	N.A.
0.002	9.3333	0.0000	33.945	0.17803	0.00000	56.0	1.1	0.0	S
2.400	0.0000	0.0000	31.846	0.00382	0.00000	56.0	56.0	0.0	S
8.000	0.0000	0.0000	31.647	0.00000	0.00000	56.0	56.0	0.0	S
12.000	0.0000	0.0000	31.544	0.00000	0.00000	56.0	56.0	0.0	S
24.000	0.0000	0.0000	31.471	0.00000	0.00000	56.0	56.0	0.0	S
36.000	0.0000	0.0000	31.434	0.00000	0.00000	56.0	56.0	0.0	S
48.000	0.0000	0.0000	31.412	0.00000	0.00000	56.0	56.0	0.0	S
60.000	0.0000	0.0000	31.398	0.00000	0.00000	56.0	56.0	0.0	S
72.000	0.0000	0.0000	31.387	0.00000	0.00000	56.0	56.0	0.0	S
84.000	0.0000	0.0000	31.379	0.00000	0.00000	56.0	56.0	0.0	S
96.000	0.0000	0.0000	31.372	—	—	56.0	56.0	0.0	N.A.

Summary of Results :: Scenario 1 :: 56 m³ slug load

Stage	Time (hours)	Stage (m datum)	Rate (m ³ /s)	Volume (m ³)
Minimum	96.000	31.37		
Maximum	0.002	33.94		
Inflow				
Rate - Maximum - Positive	0.002		9.3333	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	0.002			56.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			56.0
Infiltration				
Rate - Maximum - Positive	0.002		0.1780	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	2.400			56.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			56.0
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			0.0
Discharge Structure 1 (disabled)				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 (disabled)				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 (disabled)				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	36.000	31.43		56.0
72 Hour Stage and Infiltration Volume	72.000	31.39		56.0

Project Data

Project Name: SR 530 BASIN B-3
Simulation Description: POST DEV. BASIN B-3
SWALES 30+50 TO 31+30 (LT)
Project Number: 95-0026.000
Engineer : SG
Supervising Engineer: KRK
Date: 01-13-1999

Aquifer Data

Base Of Aquifer Elevation, [B] (m datum): 29.000
Water Table Elevation, [WT] (m datum): 31.300
Horizontal Saturated Hydraulic Conductivity, [Kh] (m/day): 4.500
Fillable Porosity, [n] (%): 25.00
Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (m): 80.0
Equivalent Pond Width, [W] (m): 3.1
Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (m datum)	Area (m ²)
33.40	60.0
33.60	210.0

Ditch Data

Ditch parallel to length axis is inactive
Ditch parallel to width axis is inactive

Discharge Structures

Discharge Structure #1 is inactive
Discharge Structure #2 is inactive
Discharge Structure #3 is inactive

Scenario Input Data

Scenario 1 :: 54 m³ slug load

Hydrograph Type: Slug Load

Treatment Volume (m³) 54

Initial ground water level (m datum) default, 31.30

E-35

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 Retention Pond Recovery - Refined Method
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Detailed Results :: Scenario 1 :: 54 m³ slug load

Elapsed Time (hours)	Inflow Rate (m ³ /s)	Outside Recharge (m/day)	Stage Elevation (m datum)	Infiltration Rate (m ³ /s)	Overflow Discharge (m ³ /s)	Cumulative Inflow Volume (m ³)	Cumulative Infiltration Volume (m ³)	Cumulative Discharge Volume (m ³)	Flow Type
0.000	9.0000	0.0000	33.400	0.00000	0.00000	0.0	0.0	0.0	N.A.
0.002	9.0000	0.0000	33.796	0.15586	0.00000	54.0	0.9	0.0	S
2.400	0.0000	0.0000	31.880	0.00369	0.00000	54.0	54.0	0.0	S
6.000	0.0000	0.0000	31.668	0.00000	0.00000	54.0	54.0	0.0	S
12.000	0.0000	0.0000	31.557	0.00000	0.00000	54.0	54.0	0.0	S
24.000	0.0000	0.0000	31.480	0.00000	0.00000	54.0	54.0	0.0	S
38.000	0.0000	0.0000	31.441	0.00000	0.00000	54.0	54.0	0.0	S
48.000	0.0000	0.0000	31.418	0.00000	0.00000	54.0	54.0	0.0	S
60.000	0.0000	0.0000	31.402	0.00000	0.00000	54.0	54.0	0.0	S
72.000	0.0000	0.0000	31.391	0.00000	0.00000	54.0	54.0	0.0	S
84.000	0.0000	0.0000	31.382	0.00000	0.00000	54.0	54.0	0.0	S
96.000	0.0000	0.0000	31.375	—	—	54.0	54.0	0.0	S
						54.0	54.0	0.0	N.A.

E-36

Summary of Results :: Scenario 1 :: 54 m³ slug load

	Time (hours)	Stage (m datum)	Rate (m ³ /s)	Volume (m ³)
Stage				
Minimum	96.000	31.38		
Maximum	0.002	33.80		
Inflow				
Rate - Maximum - Positive	0.002		9.0000	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	0.002			54.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			54.0
Infiltration				
Rate - Maximum - Positive	0.002		0.1559	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	2.400			54.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			54.0
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			0.0
Discharge Structure 1 (disabled)				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 (disabled)				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 (disabled)				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	36.000	31.44		54.0
72 Hour Stage and Infiltration Volume	72.000	31.39		54.0

Project Data

Project Name: SR 530 BASIN B-3
Simulation Description: POST DEV. BASIN B-3
SWALES 31+50 TO 33+40 (LT)
Project Number: 95-0076.000
Engineer : SG
Supervising Engineer: KRK
Date: 01-13-1999

Aquifer Data

Base Of Aquifer Elevation, [B] (m datum): 29.000
Water Table Elevation, [WT] (m datum): 31.300
Horizontal Saturated Hydraulic Conductivity, [Kh] (m/day): 4.500
Fillable Porosity, [n] (%): 25.00
Vertical infiltration was not considered.

Geometry Data

Equivalent Pond Length, [L] (m): 210.0
Equivalent Pond Width, [W] (m): 3.1
Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (m datum)	Area (m ²)
33.90	157.0
34.30	818.0

Ditch Data

Ditch parallel to length axis is inactive
Ditch parallel to width axis is inactive

Discharge Structures

Discharge Structure #1 is inactive
Discharge Structure #2 is inactive
Discharge Structure #3 is inactive

E-38

PONDS Version 3.1.0241
Retention Pond Recovery - Refined Method
Copyright 1998
Devo Seereeram, Ph.D., P.E.

Scenario Input Data

Scenario 1 :: 195 m³ slug load

Hydrograph Type: Slug Load

Treatment Volume (m³) 195

Initial ground water level (m datum) default, 31.30

E-39

PONDS Version 3.1.0241
 Retention Pond Recovery - Refined Method
 Copyright 1998
 Devo Seereeram, Ph.D., P.E.

Detailed Results :: Scenario 1 :: 195 m³ slug load

Elapsed Time (hours)	Inflow Rate (m ³ /s)	Outside Recharge (m/day)	Stage Elevation (m datum)	Infiltration Rate (m ³ /s)	Overflow Discharge (m ³ /s)	Cumulative Inflow Volume (m ³)	Cumulative Infiltration Volume (m ³)	Cumulative Discharge Volume (m ³)	Flow Type
0.000	32.5000	0.0000	33.900	0.00000	0.00000	0.0	0.0	0.0	N.A.
0.002	32.5000	0.0000	34.297	0.42192	0.00000	195.0	2.5	0.0	S
2.400	0.0000	0.0000	32.107	0.01338	0.00000	135.0	195.0	0.0	S
8.000	0.0000	0.0000	31.820	0.00000	0.00000	195.0	195.0	0.0	S
12.000	0.0000	0.0000	31.672	0.00000	0.00000	195.0	195.0	0.0	S
24.000	0.0000	0.0000	31.566	0.00000	0.00000	195.0	195.0	0.0	S
36.000	0.0000	0.0000	31.513	0.00000	0.00000	195.0	195.0	0.0	S
48.000	0.0000	0.0000	31.481	0.00000	0.00000	195.0	195.0	0.0	S
60.000	0.0000	0.0000	31.460	0.00000	0.00000	195.0	195.0	0.0	S
72.000	0.0000	0.0000	31.444	0.00000	0.00000	195.0	195.0	0.0	S
84.000	0.0000	0.0000	31.432	0.00000	0.00000	195.0	195.0	0.0	S
96.000	0.0000	0.0000	31.422	---	---	195.0	195.0	0.0	N.A.

ERP No. 49-01801-P
(Rolling Oaks)

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01



Drainage Calculations

Rolling Oaks (A.K.A Rolling Oaks/Splendid China)
Osceola County, Florida

(DSE Job No.: EHO 14)

Prepared By
Dave Schmitt Engineering, Inc.

Prepared For
Rolling Oaks Splendid, LLC
January 2016

Revised March 2016

Revised April 2016

Revised July 2016

Revised August 2016

Revised September 2016

Revised December 2016

Revised January 2017

Revised February 2017

Revised November 2017

Revised January 2018

Submit to: SFWMD & Osceola County
Modification to SFWMD Permit #: 49-01801-P-02
Modification to Osceola County Permit #: SDP16-0080

State of Florida Board of Professional Engineers
Certification of Authorization #27471

Drainage Calculations

Rolling Oaks

(A.K.A. Rolling Oaks/Splendid China)

Osceola County, Florida

(DSE Job No.: EHO 14)



Prepared For
Rolling Oaks Splendid, LLC

Prepared By
Dave Schmitt Engineering, Inc.

Dave Schmitt, P.E.
Fl. Reg. #48274

January 2016
Revised March 2016
Revised April 2016
Revised July 2016
Revised August 2016
Revised September 2016
Revised December 2016
Revised January 2017
Revised February 2017
Revised November 2017
Revised January 2018

12301 Lake Underhill Road Suite 241, Orlando, Florida 32828 (407) 207-9088
State of Florida Board of Professional Engineers
Certification of Authorization #27471

*Drainage Calculations
Rolling Oaks
Osceola County, Florida*

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Drainage Summary

The subject site is located southeast of the intersection of US192 and SR429 in Osceola County, Florida. The project site consists of approximately ± 365 acres. The owner proposes to develop a commercial area, 428 single family homes, 312 townhome units and 100 hotel units with parks and associated parking/drive areas. Stormwater runoff will be collected within multiple wet stormwater ponds located throughout the project site, which will then outfall to existing wetland/lake.

Existing Conditions

The northern portion of the existing site has been previously permitted under the project name, Rolling Oaks Commons. The permit application is: Permit No: 49-01801-P Application No: 160201-15.

Post Development Conditions

The project will be divided into ten basins. The run off from these basins will be handled via storm sewer system and convey it to the proposed wet ponds. Five wet ponds are interconnected and all of the ponds have either a control structure consisting of a orifice, slot weir, and grated top, or a weir that outfalls to the east to an existing wetland. All structures control the peak rate of discharge which must not exceed the pre development peak rate of discharge.

Design Criteria

The project falls within the jurisdiction of the South Florida Water Management District (SFWMD) and Osceola County. The design of the proposed stormwater management system for the proposed site is in accordance with standards and criteria set forth by both jurisdictions.

Attenuation

Osceola County:

All development must be designed, constructed, and maintained to meet but not limited to the following minimum performance standards:

Detention volume shall be provided so that the post-development peak rate of discharge shall not exceed the pre-development peak rate of discharge for the ten-year/seventy-two-hour (10yr –72hr) design storm event, with a rainfall depth of 8.9 inches.

SFWMD:

The proposed ± 365 acres post development peak rate of discharge must not exceed the pre-development peak rate of discharge for the ten-year/seventy-two-hour (10yr – 72hr) design storm events. Also the site is located in the Reedy Creek Basin which must not exceed a maximum allowable discharge of 195 CSM (cubic feet/ second sq-mile). The discharge from this project (±365 acres) is therefore limited to 110.9 CFS for the 10yr –72hr storm event.

Water Quality

SFWMD:

Provide Water Quality Treatment Volume (WQTV) – Retain the run-off from the greater of either the first 1 inch of rainfall over the entire drainage area or the first 2.5 inches of rainfall over the impervious area and recover that volume at a maximum rate of first ½” of WQ Volume in 24 hours and the total WQ within 72 hours. (SFWMD)

HYDROLOGIC ANALYSIS

Hydrologic analyses were performed with Advanced ICPR by Streamline Technologies. Runoff hydrographs were developed, using the FL-mod Hydrograph Methodology, for the appropriate storm events. Rainfall distributions used in the analysis are those provided in the SFWMD and Osceola County Regulations.

Drainage basins were defined by a combination of topographical survey, Osceola County Aerial Contour Maps, and field reconnaissance. See attached Pre and Post Development Basin Map.

The CN values were obtained from the Soil Conservation Service Technical Release 55 (SCS TR- 55), June 1986, using a general hydrologic classification of the soils encountered in accordance with the USDA Soil Conservation Service.

The time of concentration values were developed from the information and methodologies outlined in the SCS TR-55.

Updates July 10, 2015

Pre-Development Model Updates:

The County made a comment about the pre-development model not including a basin that discharges south. Based on a field visit and existing permitted data this basin as well as a basin that discharges directly to Buck Lake have been added. Per the information below, the discharge rate to the south was found and the discharge to Buck Lake had limited data, so a conservative allowable discharge rate has been assumed (1cfs per acre). Additionally, the acreage of these basins has been removed from the overall basin that discharges north through the existing culverts under US192. As a result the post development model was updated to include these two new discharge points and the peak rate of discharge for 10 year 72 hour event to each point was reviewed to meet the pre vs post rate for all discharge locations.

The following is a summary of the data used:

Splendid China SFWMD Permit: 49-00507-S (App 91067-6)

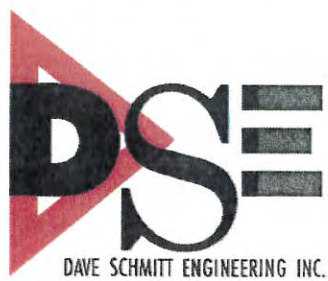
- **Based on the historic permit Basin Area is 37 Acres.**

- Two FDOT Type K outfall structures (S-12 and S-13) permitted and shown on survey.
- Control Elevation 99.0 NGVD.
- Both “K” Inlets discharge to Star Lake (aka Buck Lake).
- Discharge assumed at 1.0 cfs per acre (37 cfs).

Formosa Gardens SFWMD Permit: 49-00507-S (App 960826-8)

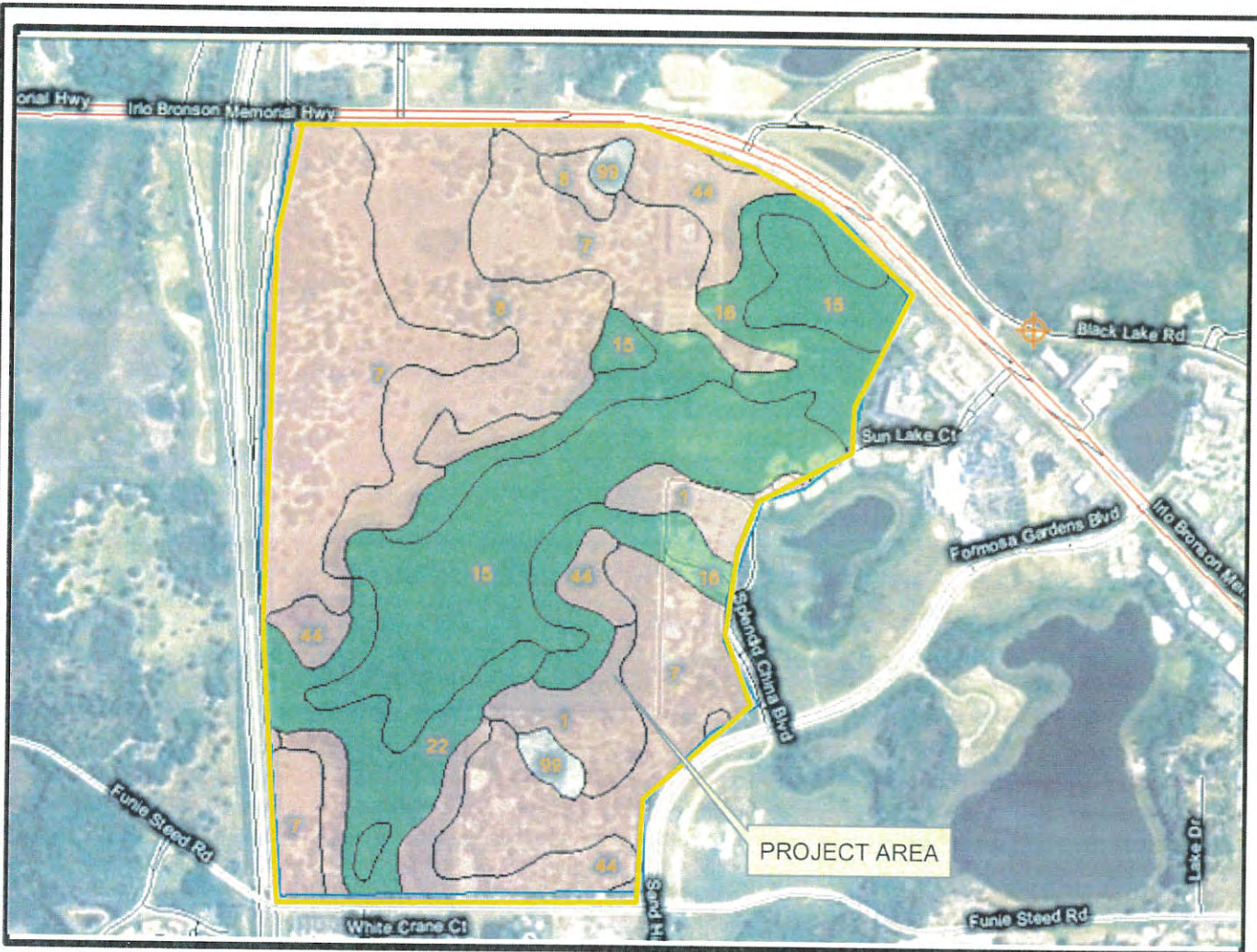
- ICPR Routings indicate that runoff from Funnie Steed road collecting in one way curb inlet (south side of street) and type C box (north side of street), directed to the wetland system on the current Rolling Oaks Site. Modeled as “Link R-1” in current Rolling Oaks Model.
 - Original Model had this as a drop structure with 15” RCP. Survey indicates 24” RCP.
 - The off-site basin FS-OFF, which consists of 1.25 acres of Funnie Steed has been added to both the pre and post development routings.
- Based on this historic permit Splendid China (Node F-1) contributes 32.45 cfs into existing pond G-1, occurring at hour 12.92 (10 year 24 hour storm).
- Based on this historic permit Splendid China Node F-1 contributes 37.17 cfs into existing pond G-1, occurring at hour 67.5 (10 year 72 hour storm).

SFWMD commented on the 100 year floodplain. The Required compensating storage approved in SFWMD permit # 49-018101-P-02 was 235,500 cy or 146 ac-ft. The floodplain area is being impacted completely in the current site layout as well as the above referenced site layout. The floodplain elevation is now 104.3 NAVD, which equates to 105.4 NGVD. This is a nominal increase from the 105.2 used in the cross section hand calculations previously approved in the above referenced permit. Currently, the ponds on-site provide 239 ac-ft of storage between elevation 100 (control) and elevation 105.4 (BFE).



Rolling Oaks

Aerial Map



Tables — Hydrologic Soil Group — Summary By Map Unit

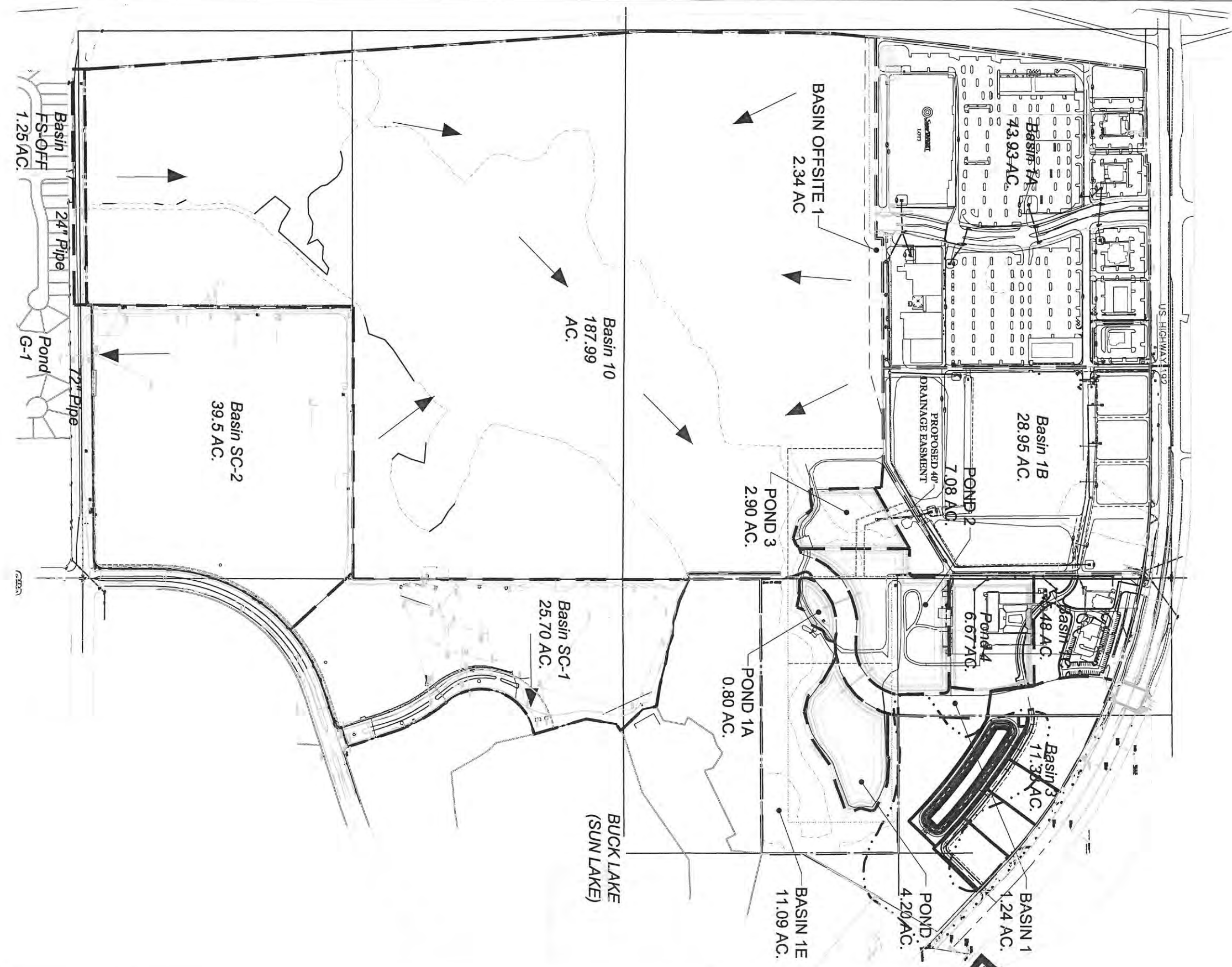
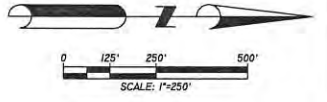
Summary by Map Unit — Osceola County, Florida (FL097)

Map unit symbol	Map unit name	Rating
1	Adamsville sand	A
7	Candler sand, 0 to 5 percent slopes	A
8	Candler sand, 5 to 12 percent slopes	A
15	Hontoon muck	A/D
16	Immokalee fine sand	A/D
22	Myakka fine sand	A/D
32	Placid fine sand, depressional	A/D
34	Pomello fine sand, 0 to 5 percent slopes	A
44	Tavares fine sand, 0 to 5 percent slopes	A
99	Water	



Rolling Oaks

Soils Map



DATE: MAY 2015
 PROJECT NO.: EHO-14
 DRAWN BY: RAH
 CHECKED BY: DMS
 SCALE: 1"=500'
 SHEET: 1 OF 1

PRE DEVELOPMENT BASIN MAP
 ROLLING OAKS
 OSCEOLA COUNTY, FLORIDA

DAVE M. SCHMITT
 FLORIDA REG. NUMBER
 48274

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CONTRACTOR "AS-BUILTS"
 I hereby state that these "As-Builts" were furnished to me by the contractor listed below, I, or an employee under my direct supervision have reviewed these "As-Builts" and believe them to be in compliance with my knowledge of what was actually constructed. This statement is based upon site observations of the construction.
 Contractor _____ Engineer _____
 Not valid without the signature and the original raised seal of a Florida Registered Engineer.

DAVE SCHMITT ENGINEERING, INC.
 3873 AVALON PARK EAST BLVD.
 ORLANDO, FL 32828
 407-207-9088 FAX 407-207-9089
 Certification of Authorization #27471



Rolling Oaks
PRE-DEVELOPMENT STORMWATER ANALYSIS
Basin Area, Curve Number, and Tc Summary

Basin #	Area (ac)	CN	Tc (min)
1	1.24	96	10
1A	44.28	88	16
1B	43.93	88	13
1C	5.48	89	10
1E	11.09	49	33
Offsite 1	2.34	49	15
10	183.9	50	54
FS-OFF	1.25	69	11
Total	293.51		

Total Basin Area¹ = 357.46

1. Total Basin Area is 357.46 AC which includes Funie Steed Off-Site (FS-OFF and Splendid China SC-1 & SC-2) Basin 3 (Charron) is not included in the on-site area.

Rolling Oaks
PRE-DEVELOPMENT STORMWATER ANALYSIS
Basin Area Summary

Basin #	On Site Area (ac)	Off Site Area (ac)	Total (ac)	Total with Ponds (ac)
1	1.24	0.00	1.24	1.24
1A	44.28	0.00	44.28	44.28
1B ⁴	28.95	0.00	28.95	43.93
1C	5.48	0.00	5.48	5.48
1E	11.09	0.00	11.09	11.09
Offsite 1	0	2.34	2.34	2.34
10	183.90	0.00	183.90	183.90
FS-OFF	0	1.25	1.25	0.00
Total	274.94	3.59	278.53	292.26
			Total Basin Area¹=	357.46
Pond 1	4.20	0.00	4.20	
Pond 1a	0.80	0.00	0.80	
Pond 2	7.08	0.00	7.08	
Pond 3	2.90	0.00	2.90	
Pond 4	6.67	0.00	6.67	

Total Pond Area = 21.65

1. Total Basin Area is 368.69 Including Splended China on-site Basin SC-1 & SC-2 (65.20 AC)
2. Splended China basins are not routed with pre-development.
Historic discharge rates from previous SFWMD permits will be used.
3. Total Pond Area has been added to Basin 1B minus pond 4 since Pond 4 is a comp pond.
4. Basin 3 (Charron) not included in model.

Rolling Oaks
PRE-DEVELOPMENT STORMWATER ANALYSIS
 Basin Impervious Area Calculation

Basin #	# House	Areas					Length ft	Cul-de-sac Area (#)	Area (ac)	Other Area (ac)	Sub-total Impervious Area (ac)	Pond Area (ac)	Total Impervious Area (ac)
		House (ac)	Driveways (ac)	Internal Road	Roadway	Area (ac)							
1	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.43	3.03	3.46	1.09	4.55	
1A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.42	35.42	0.00	35.42	
1B4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.18	23.18	11.26	34.44	
1C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.42	4.42	0.00	4.42	
1E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Offsite 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	2.04	0.00	2.04	
FS-OFF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.50	

Basin 1B Impervious Area is 80% of the Original Total Area of 28.97 ac

Basin 1B Pond Area includes all Wet Ponds NWL area and Dry Pond TOB area minus Pond 4 since Pond 4 is Comp Pond

Rolling Oaks

PRE-DEVELOPMENT STORMWATER ANALYSIS

Basin Curve Number Calculations

Basin #	CN = 98		CN = 100		Pond (% of total)	Pervious (ac)	Pervious (%)	Pervious CN	Total (ac)	Composite CN
	Impervious (ac)	Impervious (% of total)	Pond (ac)	Pond (% of total)						
1	0.77	62%	0.00	0.00	0.47	38%	92.00	1.24	96	
1A	35.42	80%	0.00	0.00	8.86	20%	49.00	44.28	88	
1B4	23.18	53%	11.26	0.26	9.49	22%	49.00	43.93	88	
1C	4.42	81%	0.00	0.00	1.06	19%	49.00	5.48	89	
1E	0.00	0%	0.00	0.00	11.09	100%	49.00	11.09	49	
Offsite 1	0.00	0%	0.00	0.00	2.34	100%	49.00	2.34	49	
10	2.04	1%	0.00	0.00	181.86	99%	49.00	183.90	50	
FS-OFF	0.50	40%	0.00	0.00	0.75	60%	49.00	1.25	69	

Basin 1B Impervious Area is 80% of the Original Total Area of 28.97 ac

Basin 1B Pond Area includes all Wet Ponds NWL area and Dry Pond TOB area minus Pond 4 since Pond 4 is Comp Pond

Rolling Oaks
PRE-DEVELOPMENT STORMWATER ANALYSIS

Time of Concentration

Basin	Sheet Flow		Manning n	Shallow		Sheet Flow Tt Min	Shallow		Avg. Vel V ft/s	Shallow		Pipe		Tc Min
	Slope ft/ft	L ft		Con Slope ft/ft	Con L ft		Con Flow Tt Min	Con Flow Tt Min		Flow L ft	Flow Tt Min			
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	790	6.58	10
1A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	1930	16.08	16
1B4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	1585	13.21	13
1C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	750	6.25	10
1E	0.02	300.00	0.24	0.01	245.00	30.93	0.01	2.04	2.00	0.00	0.00	0	0.00	33
Offsite 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	1785	14.88	15
10	0.03	300.00	0.24	0.01	3500.00	24.64	0.01	29.17	2.00	0.00	0.00	0	0.00	54
FS-OFF	0.05	60.00	0.15	0.01	0.00	3.81	0.01	0.00	2.00	0.00	0.00	890	7.42	11

Kinematic Wave Equation (Sheet Flow), Shallow Conc. Flow & Pipe Flow (SCS TR-55):

$$t = 0.93 * L^{0.6} * n^{0.6} / I^{0.4} * s^{0.3} + L / 60 * V + L / 60 * V$$

t = overland flow travel time (minutes), L = overland flow length (ft.), n = mannings roughness coefficient

I = rainfall intensity (4.50 in/hr), s = average slope (ft/ft), V = average velocity (ft/s) = 20.3282(s^0.5) (paved) or 16.1345(s^0.5) (unpaved)

Total Pond Area has been added to Basin 1B minus Pond 4 since Pond 4 is Comp Pond

Rolling Oaks
PRE-DEVELOPMENT STORMWATER ANALYSIS
Stage-Storage Calculations

Pond A

ELEVATION (feet)	AREA (acres)	AVG AREA (acres)	DEPTH (feet)	STORAGE (ac-ft)	Σ STORAGE (ac-ft)
100.00	0.71				0.00
		0.75	1.00	0.75	
101.00	0.78				0.75
		0.82	1.00	0.82	
102.00	0.85				1.56
		0.89	1.00	0.89	
103.00	0.93				2.45
		0.97	1.00	0.97	
104.00	1.00				3.42
		1.05	1.00	1.05	
105.00	1.09				4.46

Required Treatment Volume = 1.08 Ac-ft
Set Weir at or above = 101.41 feet
Weir Set at = 103.38 feet
Provided Treatment Volume = 2.82 Ac-ft

COMBINED PONDS 1, 1A AND 2

ELEVATION (feet)	AREA (acres)	AVG AREA (acres)	DEPTH (feet)	STORAGE (ac-ft)	Σ STORAGE (ac-ft)
102.00	8.44				0.00
		8.65	1.00	8.65	
103.00	8.85				8.65
		9.06	1.00	9.06	
104.00	9.27				17.71
		9.49	1.00	9.49	
105.00	9.71				27.20
		9.94	1.00	9.94	
106.00	10.16				37.13
		10.40	1.00	10.40	
107.00	10.63				47.53
		10.87	1.00	10.87	
108.00	11.11				58.40
		11.68	1.00	11.68	
109.00	12.25				70.08

Required Treatment Volume = 1.56 Ac-ft
 Set Weir at or above = 102.18 feet
 Weir Set at = 103.50 feet
 Provided Treatment Volume = 13.19 Ac-ft

POND 3

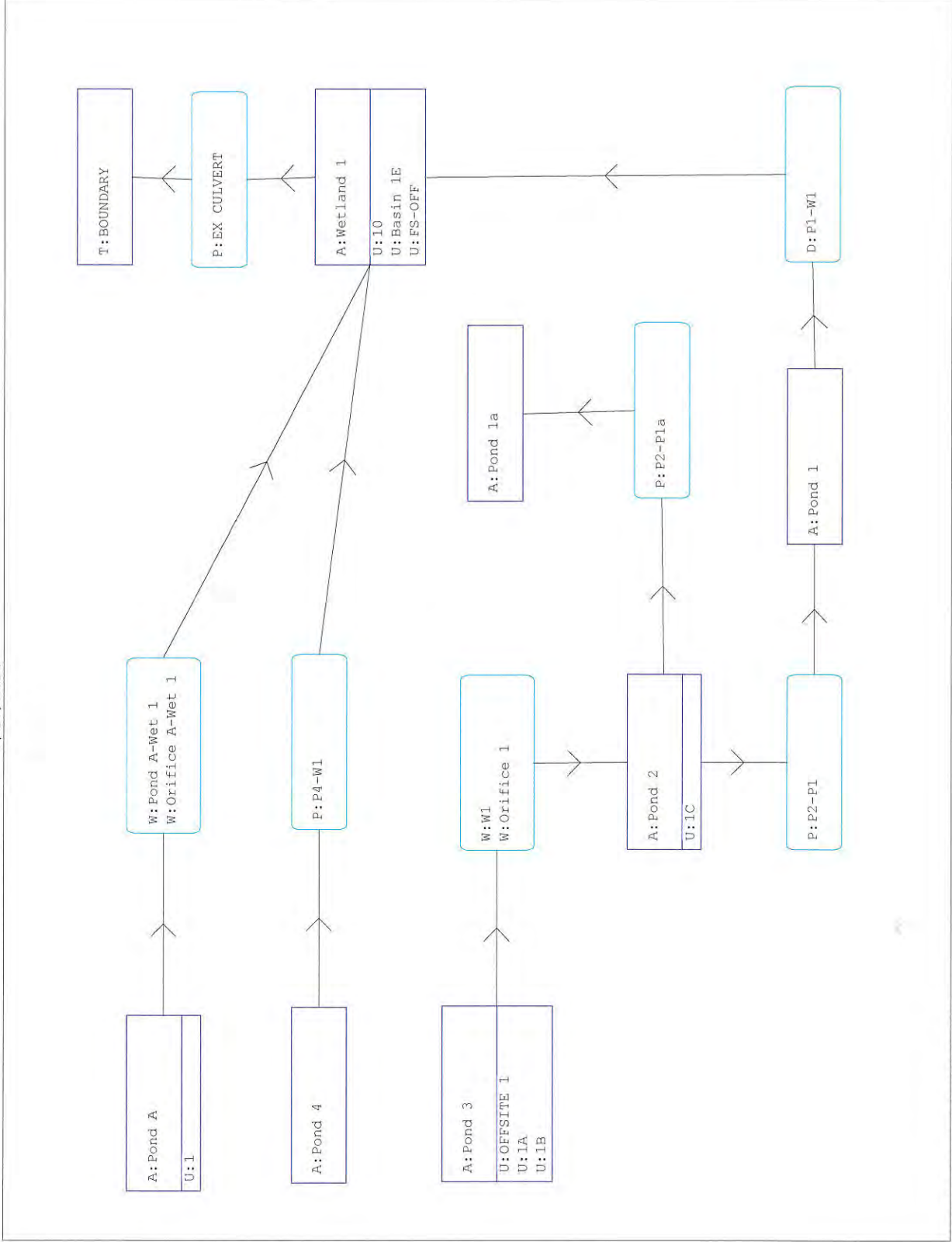
ELEVATION (feet)	AREA (acres)	AVG AREA (acres)	DEPTH (feet)	STORAGE (ac-ft)	Σ STORAGE (ac-ft)
104.00	2.06				0.00
		2.12	1.00	2.12	
105.00	2.18				2.12
		2.25	1.00	2.25	
106.00	2.31				4.37
		2.37	1.00	2.37	
107.00	2.43				6.74
		2.49	1.00	2.49	
108.00	2.55				9.23
		2.72	1.00	2.72	
109.00	2.88				11.94

Required Treatment Volume = 5.62 Ac-ft
 Set Weir at or above = 106.55 feet
 Weir Set at = 108.1 feet
 Provided Treatment Volume = 9.47 Ac-ft

POND 4

ELEVATION (feet)	AREA (acres)	AVG AREA (acres)	DEPTH (feet)	STORAGE (ac-ft)	Σ STORAGE (ac-ft)
102.00	3.75				0.00
		3.83	1.00	3.83	
103.00	3.90				3.83
		3.98	1.00	3.98	
104.00	4.06				7.81
		4.14	1.00	4.14	
105.00	4.21				11.94

- 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



EHO-14
PRE-DEVELOPMENT
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Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
BOUNDARY	BASE	010Y-24H	12.00	103.2	105.0	0.2000	1386	19.86	45.3	0.00	0.0
BOUNDARY	BASE	010Y-72H	60.00	103.5	105.0	0.2000	1386	61.96	147.8	0.00	0.0
BOUNDARY	BASE	100Y-24H	12.00	104.0	105.0	0.2000	398	16.47	156.2	0.00	0.0
BOUNDARY	BASE	100Y-72H	60.00	104.3	105.0	0.2000	69	63.83	290.3	0.00	0.0
Pond 1	BASE	010Y-24H	24.00	104.1	109.0	0.0016	138076	12.61	40.8	24.00	3.5
Pond 1	BASE	010Y-72H	62.85	105.9	109.0	0.0023	149944	60.41	69.1	62.96	23.7
Pond 1	BASE	100Y-24H	15.77	106.5	109.0	0.0035	154108	12.55	96.6	16.10	31.9
Pond 1	BASE	100Y-72H	62.79	108.0	109.0	0.0025	164573	60.50	101.6	62.88	56.2
Pond 1a	BASE	010Y-24H	24.00	104.1	109.0	0.0104	15995	12.21	35.7	0.00	0.0
Pond 1a	BASE	010Y-72H	62.32	106.0	109.0	0.0043	20502	60.06	14.7	0.00	0.0
Pond 1a	BASE	100Y-24H	15.00	106.7	109.0	0.0110	22588	11.21	35.7	0.00	0.0
Pond 1a	BASE	100Y-72H	61.21	108.8	109.0	0.0063	32059	60.10	29.3	0.00	0.0
Pond 2	BASE	010Y-24H	24.00	104.1	109.0	0.0027	252708	12.33	165.4	12.24	56.3
Pond 2	BASE	010Y-72H	62.32	106.0	109.0	0.0044	271000	60.04	298.0	60.26	79.1
Pond 2	BASE	100Y-24H	15.00	106.7	109.0	0.0071	277853	12.08	449.2	12.40	113.7
Pond 3	BASE	010Y-72H	61.22	108.8	109.0	0.0068	303866	60.03	486.2	60.25	122.5
Pond 3	BASE	010Y-24H	12.34	108.6	109.0	0.0069	117535	12.00	187.0	12.34	155.7
Pond 3	BASE	100Y-72H	60.04	108.8	109.0	0.0017	120229	60.00	293.5	60.04	278.6
Pond 3	BASE	100Y-24H	12.09	109.0	109.0	0.0020	122836	12.00	433.8	12.09	419.5
Pond 4	BASE	010Y-72H	60.04	109.0	109.0	0.0024	123449	60.00	475.2	60.04	454.8
Pond 4	BASE	010Y-24H	17.97	103.0	105.0	-0.2106	169846	0.00	0.0	0.00	12.4
Pond 4	BASE	100Y-72H	61.53	103.5	105.0	-0.2106	173640	0.00	0.0	0.00	12.4
Pond 4	BASE	010Y-24H	17.74	103.5	105.0	-0.2106	173604	0.00	0.0	0.00	12.4
Pond 4	BASE	100Y-72H	62.35	104.4	105.0	-0.2106	179807	0.00	0.0	0.00	12.4
Pond A	BASE	010Y-24H	24.00	101.2	105.0	0.0005	34536	12.00	3.7	0.00	0.0
Pond A	BASE	010Y-72H	72.00	102.9	105.0	0.0009	40088	60.00	4.9	72.00	0.1
Pond A	BASE	100Y-24H	16.47	103.7	105.0	0.0014	42548	12.00	7.7	17.18	1.4
Pond A	BASE	100Y-72H	61.40	104.5	105.0	0.0011	45565	60.00	7.7	60.01	5.1
Wetland 1	BASE	010Y-24H	15.42	103.1	105.0	0.0005	2741617	12.75	22.3	19.86	45.3
Wetland 1	BASE	010Y-72H	60.97	103.6	105.0	0.0001	2857738	60.50	153.1	61.96	147.8
Wetland 1	BASE	100Y-24H	14.32	103.8	105.0	0.0009	2925236	12.75	207.1	16.47	156.2
Wetland 1	BASE	100Y-72H	61.37	104.5	105.0	0.0003	3100111	60.50	358.5	63.83	290.3

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Name: 1	10	1A	1B	1C
Group: BASE	BASE	BASE	BASE	BASE
Simulation: 010Y-24H	010Y-24H	010Y-24H	010Y-24H	010Y-24H
Node: Pond A	Wetland 1	Pond 3	Pond 3	Pond 2
Type: SCS	SCS	SCS	SCS	SCS
Unit Hydrograph: Uh256	Uh256	Uh256	Uh256	Uh256
Peaking Factor: 256.0	256.0	256.0	256.0	256.0
Spec Time Inc(min): 1.33	7.20	2.13	1.73	1.33
Comp Time Inc(min): 1.33	5.00	2.13	1.73	1.33
Rain File: Flmod	Flmod	Flmod	Flmod	Flmod
Rain Amount(in): 5.200	5.200	5.200	5.200	5.200
Duration(hrs): 24.00	24.00	24.00	24.00	24.00
Status: Onsite	Onsite	Onsite	Onsite	Onsite
TC(min): 10.00	54.00	16.00	13.00	10.00
Time Shift(hrs): 0.00	0.00	0.00	0.00	0.00
Area(ac): 1.240	183.900	44.280	43.930	5.480
Vol of Unit Hyd(in): 1.000	1.000	1.000	1.000	1.000
Curve Num: 96.000	50.000	88.000	88.000	89.000
DCIA(%): 0.000	0.000	0.000	0.000	0.000
Time Max(hrs): 12.04	12.83	12.09	12.08	12.04
Flow Max(cfs): 3.789	28.296	97.114	105.574	14.966
Runoff Volume(in): 4.730	0.775	3.858	3.857	3.962
Runoff Volume(ft3): 21289.687	517418.563	620107.654	615030.593	78820.565

Name: Basin 1E	FS-OFF	OFFSITE 1	1	10
Group: BASE	BASE	BASE	BASE	BASE
Simulation: 010Y-24H	010Y-24H	010Y-24H	010Y-72H	010Y-72H
Node: Wetland 1	Wetland 1	Pond 3	Pond A	Wetland 1
Type: SCS	SCS	SCS	SCS	SCS
Unit Hydrograph: Uh256	Uh256	Uh256	Uh256	Uh256
Peaking Factor: 256.0	256.0	256.0	256.0	256.0
Spec Time Inc(min): 4.40	1.47	2.00	1.33	7.20
Comp Time Inc(min): 4.40	1.47	2.00	1.33	5.00
Rain File: Flmod	Flmod	Flmod	Sfwmd72	Sfwmd72
Rain Amount(in): 5.200	5.200	5.200	8.900	8.900
Duration(hrs): 24.00	24.00	24.00	72.00	72.00
Status: Onsite	Onsite	Onsite	Onsite	Onsite
TC(min): 33.00	11.00	15.00	10.00	54.00
Time Shift(hrs): 0.00	0.00	0.00	0.00	0.00
Area(ac): 11.090	1.250	2.340	1.240	183.900
Vol of Unit Hyd(in): 1.000	1.000	1.000	1.000	1.000
Curve Num: 49.000	69.000	49.000	96.000	50.000
DCIA(%): 0.000	0.000	0.000	0.000	0.000
Time Max(hrs): 12.54	12.08	12.33	60.02	60.50
Flow Max(cfs): 2.056	1.738	0.646	4.878	139.163
Runoff Volume(in): 0.718	2.102	0.719	8.416	2.810
Runoff Volume(ft3): 28913.365	9539.876	6104.349	37881.551	1876160.708

Name: 1A	1B	1C	Basin 1E	FS-OFF
Group: BASE	BASE	BASE	BASE	BASE
Simulation: 010Y-72H	010Y-72H	010Y-72H	010Y-72H	010Y-72H
Node: Pond 3	Pond 3	Pond 2	Wetland 1	Wetland 1
Type: SCS	SCS	SCS	SCS	SCS
Unit Hydrograph: Uh256	Uh256	Uh256	Uh256	Uh256
Peaking Factor: 256.0	256.0	256.0	256.0	256.0
Spec Time Inc(min): 2.13	1.73	1.33	4.40	1.47
Comp Time Inc(min): 2.13	1.73	1.33	4.40	1.47
Rain File: Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72
Rain Amount(in): 8.900	8.900	8.900	8.900	8.900
Duration(hrs): 72.00	72.00	72.00	72.00	72.00
Status: Onsite	Onsite	Onsite	Onsite	Onsite
TC(min): 16.00	13.00	10.00	33.00	11.00
Time Shift(hrs): 0.00	0.00	0.00	0.00	0.00
Area(ac): 44.280	43.930	5.480	11.090	1.250
Vol of Unit Hyd(in): 1.000	1.000	1.000	1.000	1.000
Curve Num: 88.000	88.000	89.000	49.000	69.000
DCIA(%): 0.000	0.000	0.000	0.000	0.000
Time Max(hrs): 60.05	60.03	60.02	60.21	60.03
Flow Max(cfs): 142.220	153.127	20.925	11.102	3.672
Runoff Volume(in): 7.447	7.446	7.569	2.695	5.122

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Runoff Volume(ft3):	1197028.767	1187457.716	150559.378	108482.674	23239.502
Name:	OFFSITE 1	1	10	1A	1B
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	010Y-72H	100Y-24H	100Y-24H	100Y-24H	100Y-24H
Node:	Pond 3	Pond A	Wetland 1	Pond 3	Pond 3
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh256	Uh256	Uh256	Uh256	Uh256
Peaking Factor:	256.0	256.0	256.0	256.0	256.0
Spec Time Inc(min):	2.00	1.33	7.20	2.13	1.73
Comp Time Inc(min):	2.00	1.33	5.00	2.13	1.73
Rain File:	Sfwmd72	Flmod	Flmod	Flmod	Flmod
Rain Amount(in):	8.900	10.600	10.600	10.600	10.600
Duration(hrs):	72.00	24.00	24.00	24.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	15.00	10.00	54.00	16.00	13.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	2.340	1.240	183.900	44.280	43.930
Vol of Unit Hyd(in):	1.000	1.000	1.000	1.000	1.000
Curve Num:	49.000	96.000	50.000	88.000	88.000
DCIA(%):	0.000	0.000	0.000	0.000	0.000
Time Max(hrs):	60.07	12.04	12.67	12.09	12.08
Flow Max(cfs):	3.594	7.850	200.733	221.467	239.791
Runoff Volume(in):	2.698	10.112	3.973	9.120	9.117
Runoff Volume(ft3):	22915.397	45518.257	2652161.330	1465853.832	1453896.917
Name:	1C	Basin 1E	FS-OFF	OFFSITE 1	1
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	100Y-24H	100Y-24H	100Y-24H	100Y-24H	100Y-72H
Node:	Pond 2	Wetland 1	Wetland 1	Pond 3	Pond A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh256	Uh256	Uh256	Uh256	Uh256
Peaking Factor:	256.0	256.0	256.0	256.0	256.0
Spec Time Inc(min):	1.33	4.40	1.47	2.00	1.33
Comp Time Inc(min):	1.33	4.40	1.47	2.00	1.33
Rain File:	Flmod	Flmod	Flmod	Flmod	Sfwmd72
Rain Amount(in):	10.600	10.600	10.600	10.600	14.000
Duration(hrs):	24.00	24.00	24.00	24.00	72.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	10.00	33.00	11.00	15.00	10.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	5.480	11.090	1.250	2.340	1.240
Vol of Unit Hyd(in):	1.000	1.000	1.000	1.000	1.000
Curve Num:	89.000	49.000	69.000	49.000	96.000
DCIA(%):	0.000	0.000	0.000	0.000	0.000
Time Max(hrs):	12.04	12.39	12.05	12.10	60.02
Flow Max(cfs):	33.441	15.772	5.623	5.029	7.694
Runoff Volume(in):	9.246	3.831	6.627	3.833	13.507
Runoff Volume(ft3):	183916.172	154228.168	30068.139	32554.841	60799.612
Name:	10	1A	1B	1C	Basin 1E
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	100Y-72H	100Y-72H	100Y-72H	100Y-72H	100Y-72H
Node:	Wetland 1	Pond 3	Pond 3	Pond 2	Wetland 1
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh256	Uh256	Uh256	Uh256	Uh256
Peaking Factor:	256.0	256.0	256.0	256.0	256.0
Spec Time Inc(min):	7.20	2.13	1.73	1.33	4.40
Comp Time Inc(min):	5.00	2.13	1.73	1.33	4.40
Rain File:	Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72
Rain Amount(in):	14.000	14.000	14.000	14.000	14.000
Duration(hrs):	72.00	72.00	72.00	72.00	72.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	54.00	16.00	13.00	10.00	33.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	183.900	44.280	43.930	5.480	11.090
Vol of Unit Hyd(in):	1.000	1.000	1.000	1.000	1.000
Curve Num:	50.000	88.000	88.000	89.000	49.000
DCIA(%):	0.000	0.000	0.000	0.000	0.000

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Time Max(hrs): 60.42	60.05	60.03	60.02	60.21
Flow Max(cfs): 312.040	229.069	246.531	33.549	25.216
Runoff Volume(in): 6.532	12.483	12.481	12.614	6.354
Runoff Volume(ft3): 4360260.398	2006393.346	1990360.331	250930.223	255798.485

Name: FS-OFF	OFFSITE 1
Group: BASE	BASE
Simulation: 100Y-72H	100Y-72H
Node: Wetland 1	Pond 3
Type: SCS	SCS
Unit Hydrograph: Uh256	Uh256
Peaking Factor: 256.0	256.0
Spec Time Inc(min): 1.47	2.00
Comp Time Inc(min): 1.47	2.00
Rain File: Sfwmd72	Sfwmd72
Rain Amount(in): 14.000	14.000
Duration(hrs): 72.00	72.00
Status: Onsite	Onsite
TC(min): 11.00	15.00
Time Shift(hrs): 0.00	0.00
Area(ac): 1.250	2.340
Vol of Unit Hyd(in): 1.000	1.000
Curve Num: 69.000	49.000
DCIA(%): 0.000	0.000
Time Max(hrs): 60.03	60.07
Flow Max(cfs): 6.565	8.034
Runoff Volume(in): 9.751	6.360
Runoff Volume(ft3): 44246.163	54023.072

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Basins
=====

Name: 1
Group: BASE
Node: Pond A
Type: SCS Unit Hydrograph CN
Status: Onsite
Unit Hydrograph: Uh256
Rainfall File:
Rainfall Amount(in): 0.000
Area(ac): 1.240
Curve Number: 96.00
DCIA(%): 0.00
Peaking Factor: 256.0
Storm Duration(hrs): 0.00
Time of Conc(min): 10.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: 10
Group: BASE
Node: Wetland 1
Type: SCS Unit Hydrograph CN
Status: Onsite
Unit Hydrograph: Uh256
Rainfall File:
Rainfall Amount(in): 0.000
Area(ac): 183.900
Curve Number: 50.00
DCIA(%): 0.00
Peaking Factor: 256.0
Storm Duration(hrs): 0.00
Time of Conc(min): 54.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: 1A
Group: BASE
Node: Pond 3
Type: SCS Unit Hydrograph CN
Status: Onsite
Unit Hydrograph: Uh256
Rainfall File:
Rainfall Amount(in): 0.000
Area(ac): 44.280
Curve Number: 88.00
DCIA(%): 0.00
Peaking Factor: 256.0
Storm Duration(hrs): 0.00
Time of Conc(min): 16.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: 1B
Group: BASE
Node: Pond 3
Type: SCS Unit Hydrograph CN
Status: Onsite
Unit Hydrograph: Uh256
Rainfall File:
Rainfall Amount(in): 0.000
Area(ac): 43.930
Curve Number: 88.00
DCIA(%): 0.00
Peaking Factor: 256.0
Storm Duration(hrs): 0.00
Time of Conc(min): 13.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: 1C
Group: BASE
Node: Pond 2
Type: SCS Unit Hydrograph CN
Status: Onsite
Unit Hydrograph: Uh256
Rainfall File:
Rainfall Amount(in): 0.000
Area(ac): 5.480
Curve Number: 89.00
DCIA(%): 0.00
Peaking Factor: 256.0
Storm Duration(hrs): 0.00
Time of Conc(min): 10.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: Basin 1E
Group: BASE
Node: Wetland 1
Type: SCS Unit Hydrograph CN
Status: Onsite

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Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 33.00
Area(ac): 11.090	Time Shift(hrs): 0.00
Curve Number: 49.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: FS-OFF Node: Wetland 1 Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 11.00
Area(ac): 1.250	Time Shift(hrs): 0.00
Curve Number: 69.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: OFFSITE 1 Node: Pond 3 Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 15.00
Area(ac): 2.340	Time Shift(hrs): 0.00
Curve Number: 49.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

==== Nodes =====

Name: BOUNDARY Base Flow(cfs): 0.000 Init Stage(ft): 99.800
 Group: BASE Warn Stage(ft): 105.000
 Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	99.800
72.00	99.800

Name: Pond 1 Base Flow(cfs): 0.000 Init Stage(ft): 102.000
 Group: BASE Warn Stage(ft): 109.000
 Type: Stage/Area

Stage(ft)	Area(ac)
102.000	2.8600
103.000	3.0000
104.000	3.1500
105.000	3.3000
106.000	3.4600
107.000	3.6200
108.000	3.7800
109.000	4.1900

Name: Pond 1a Base Flow(cfs): 0.000 Init Stage(ft): 102.000
 Group: BASE Warn Stage(ft): 109.000

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Type: Stage/Area

Stage(ft)	Area(ac)
102.000	0.2500
103.000	0.3000
104.000	0.3600
105.000	0.4100
106.000	0.4700
107.000	0.5400
108.000	0.6000
109.000	0.7700

Name: Pond 2 Base Flow(cfs): 0.000 Init Stage(ft): 102.000
 Group: BASE Warn Stage(ft): 109.000
 Type: Stage/Area

Stage(ft)	Area(ac)
102.000	5.3400
103.000	5.5600
104.000	5.7700
105.000	6.0000
106.000	6.2200
107.000	6.4500
108.000	6.6800
109.000	7.0500

Name: Pond 3 Base Flow(cfs): 0.000 Init Stage(ft): 104.000
 Group: BASE Warn Stage(ft): 109.000
 Type: Stage/Area

Stage(ft)	Area(ac)
104.000	2.0600
105.000	2.1800
106.000	2.3100
107.000	2.4300
108.000	2.5400
109.000	2.8200

Name: Pond 4 Base Flow(cfs): 0.000 Init Stage(ft): 102.000
 Group: BASE Warn Stage(ft): 105.000
 Type: Stage/Area

Stage(ft)	Area(ac)
102.000	3.7500
103.000	3.9000
104.000	4.0600
105.000	4.2100

Name: Pond A Base Flow(cfs): 0.000 Init Stage(ft): 100.000
 Group: BASE Warn Stage(ft): 105.000
 Type: Stage/Area

Stage(ft)	Area(ac)
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Name: P2-Pla          From Node: Pond 2          Length(ft): 196.00
Group: BASE          To Node: Pond 1a          Count: 2
                        UPSTREAM          DOWNSTREAM          Friction Equation: Automatic
                        Circular          Circular          Solution Algorithm: Most Restrictive
Geometry: Circular          Span(in): 36.00          36.00          Flow: Both
Span(in): 36.00          Rise(in): 36.00          36.00          Entrance Loss Coef: 0.00
Rise(in): 36.00          Invert(ft): 97.000          97.000          Exit Loss Coef: 1.00
Invert(ft): 97.000          Manning's N: 0.013000          0.013000          Bend Loss Coef: 0.00
Manning's N: 0.013000          Top Clip(in): 0.000          0.000          Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          Bot Clip(in): 0.000          0.000          Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000          Stabilizer Option: None
  
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Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

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

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Name: P4-W1          From Node: Pond 4          Length(ft): 161.00
Group: BASE          To Node: Wetland 1          Count: 2
                        UPSTREAM          DOWNSTREAM          Friction Equation: Automatic
                        Horz Ellipse          Horz Ellipse          Solution Algorithm: Most Restrictive
Geometry: Horz Ellipse          Span(in): 23.00          23.00          Flow: Both
Span(in): 23.00          Rise(in): 14.00          14.00          Entrance Loss Coef: 0.00
Rise(in): 14.00          Invert(ft): 100.000          100.000          Exit Loss Coef: 1.00
Invert(ft): 100.000          Manning's N: 0.013000          0.013000          Bend Loss Coef: 0.00
Manning's N: 0.013000          Top Clip(in): 0.000          0.000          Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          Bot Clip(in): 0.000          0.000          Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000          Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

==== Drop Structures =====

```

-----
Name: P1-W1          From Node: Pond 1          Length(ft): 23.00
Group: BASE          To Node: Wetland 1          Count: 1
                        UPSTREAM          DOWNSTREAM          Friction Equation: Automatic
                        Circular          Circular          Solution Algorithm: Most Restrictive
Geometry: Circular          Span(in): 36.00          36.00          Flow: Both
Span(in): 36.00          Rise(in): 36.00          36.00          Entrance Loss Coef: 0.000
Rise(in): 36.00          Invert(ft): 100.000          100.000          Exit Loss Coef: 1.000
Invert(ft): 100.000          Manning's N: 0.013000          0.013000          Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000          Top Clip(in): 0.000          0.000          Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000          Bot Clip(in): 0.000          0.000          Solution Incs: 10
Bot Clip(in): 0.000
  
```

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

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

*** Weir 1 of 3 for Drop Structure P1-W1 ***

F:\EHO14\Drainage\ICPR\Pre\PRE 7.8.2015.ICP

Count: 1
Type: Horizontal
Flow: Both
Geometry: Rectangular
Span(in): 37.00
Rise(in): 24.00
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 107.800
Control Elev(ft): 107.800

TABLE

*** Weir 2 of 3 for Drop Structure P1-W1 ***

Count: 1
Type: Vertical: Mavis
Flow: Both
Geometry: Rectangular
Span(in): 24.00
Rise(in): 51.60
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 103.500
Control Elev(ft): 103.500

TABLE

*** Weir 3 of 3 for Drop Structure P1-W1 ***

Count: 1
Type: Vertical: Mavis
Flow: Both
Geometry: Circular
Span(in): 3.00
Rise(in): 3.00
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 102.000
Control Elev(ft): 102.000

TABLE

=====
Weirs
=====

Name: Orifice 1 From Node: Pond 3
Group: BASE To Node: Pond 2
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Circular

Span(in): 6.00
Rise(in): 6.00
Invert(ft): 104.000
Control Elevation(ft): 104.000

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

TABLE

Name: Orifice A-Wet 1 From Node: Pond A
Group: BASE To Node: Wetland 1
Flow: Both Count: 1
Type: Horizontal Geometry: Circular

Span(in): 2.75
Rise(in): 2.75
Invert(ft): 100.000
Control Elevation(ft): 100.000

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

TABLE

Name: Pond A-Wet 1 From Node: Pond A
Group: BASE To Node: Wetland 1

Rainfall File: Flmod
Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
24.000	15.00

Name: 100Y-72H
Filename: F:\EHO14\Drainage\ICPR\Pre\100Y-72H.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Sfwmd72
Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
72.000	15.00

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

Name: 010Y-24H Hydrology Sim: 010Y-24H
Filename: F:\EHO14\Drainage\ICPR\Pre\010Y-24H.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.50000
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 24.00
Min Calc Time(sec): 2.0000 Max Calc Time(sec): 5.0000
Boundary Stages: 10-24 Boundary Flows:

Time(hrs)	Print Inc(min)
24.000	15.000

Group	Run
BASE	Yes

Name: 010Y-72H Hydrology Sim: 010Y-72H
Filename: F:\EHO14\Drainage\ICPR\Pre\010Y-72H.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.50000
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 72.00
Min Calc Time(sec): 2.0000 Max Calc Time(sec): 5.0000
Boundary Stages: 10-72 Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	15.000

Group	Run
BASE	Yes

F:\EHO14\Drainage\ICPR\Pre\PRE 7.8.2015.ICP

Name: 100Y-24H Hydrology Sim: 100Y-24H
 Filename: F:\EHO14\Drainage\ICPR\Pre\100Y-24H.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.50000
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 24.00
 Min Calc Time(sec): 2.0000 Max Calc Time(sec): 5.0000
 Boundary Stages: 100-24 Boundary Flows:

Time(hrs)	Print Inc(min)
24.000	15.000
Group	Run
BASE	Yes

Name: 100Y-72H Hydrology Sim: 100Y-72H
 Filename: F:\EHO14\Drainage\ICPR\Pre\100Y-72H.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.50000
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 72.00
 Min Calc Time(sec): 2.0000 Max Calc Time(sec): 5.0000
 Boundary Stages: 100-72 Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	15.000
Group	Run
BASE	Yes

==== Boundary Conditions =====

Name: 100-72 Node: BOUNDARY Type: Stage

Time(hrs)	Stage(ft)
0.000	100.000
60.000	104.300
72.000	102.700

Name: 100-24 Node: BOUNDARY Type: Stage

Time(hrs)	Stage(ft)
0.000	100.000
12.000	104.000
24.000	102.700

Name: 10-24 Node: BOUNDARY Type: Stage

Time(hrs)	Stage(ft)
-----------	-----------

EHO-14
PRE-DEVELOPMENT
1/17/2018

0.000	100.000
12.000	103.250
24.000	102.700

Name: 10-72

Node: BOUNDARY

Type: Stage

Time (hrs)	Stage (ft)
0.000	100.000
60.000	103.500
72.000	102.700

I:\014 Basin Map 01-10-2017.dwg, 1/19/2018 8:21:55 AM



F:\EHO14\Drawin



DAVE SCHMITT ENGINEERING, INC.
 3873 AVALON PARK EAST BLVD.
 ORLANDO, FL 32828
 407-207-9088 FAX 407-207-9089
 Certification of Authorization #27471

CONTRACTOR "AS-BUILTS"
 I hereby state that these "As-Builts" were furnished to me by the contractor listed below, I, or an employee under my direct supervision have reviewed these "As-Builts" and believe them to be in compliance with my knowledge of what was actually constructed. This statement is based upon site observations of the construction.
 Contractor _____ Engineer _____
 Not valid without the signature and the original raised seal of a Florida Registered Engineer.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DAVE M. SCHMITT
 FLORIDA REG. NUMBER
 48274

OVERALL MASTER PLAN
 ROLLING OAKS
 OSCEOLA COUNTY, FLORIDA

DATE: OCTOBER 2015
 PROJECT NO.: EHO-14
 DRAWN BY: JL
 CHECKED BY: DMS
 SCALE: NTS
 SHEET: 1 OF 1

Rolling Oaks

POST-DEVELOPMENT STORMWATER ANALYSIS

Table 1 - Basin Impervious Calculations

Basin	Total Area (ac)	Buildings & Driveways		Clubhouse, Pavilions, Pools & Maintenance	Roads				Sidewalks 5ft		Golfcart path 10ft		Subtotal Impervious (ac)	Pond Area (ac)	Total Impervious (ac)
		Number	Area (ac)		External ¹	Internal & Parking	Length (ft)	Area (ac)	Length (ft)	Area (ac)	Length (ac)	Area (ac)			
1	39.01		5.51	1.19	3223.54	4.59	7776.93	11.07	10391.99	1.19			23.55		23.55
2	18.94	124	3.55	0.43	1120.47	1.59	3559.00	5.07	3008.11	0.35	1404.40	0.32	11.30		11.30
3	23.53	134	4.20	1.39	2047.16	2.91	3380.39	4.81	2243.98	0.26	3128.72	0.72	14.29		14.29
4	20.69	153	4.66	0.48	1379.98	1.96	3191.64	4.54	4171.88	0.48	2491.15	0.57	12.70		12.70
5	20.86	129	3.76	0.61	1227.54	1.75	3645.34	5.19	3063.67	0.35	2101.99	0.48	12.14	0.42	12.56
6	25.20	197	6.41	0.52	1765.16	2.51	3297.40	4.69	3782.83	0.43	1985.52	0.46	15.03		15.03
10	4.29												0.00	2.92	2.92
11	19.59	142	4.20	0.40	1118.29	1.59	3144.75	4.48	3868.41	0.44	1631.80	0.37	11.49		11.49
Total															

NOTE:

1. External roads include curb and two 5ft sidewalks.
2. Offsite, Basin 7, Basin 8 and Charron remain unchanged.

Rolling Oaks
POST-DEVELOPMENT STORMWATER ANALYSIS
Table 1A - Basin Curve Number Calculations

Basin ID	Receiving Node	Area (ac)	% Total (Area)	Impervious Area (ac)	% Total (Impervious)	CN (Impervious)	Pervious (ac)	% Total (Pervious)	CN (Pervious)	Pond Area (ac)	% Total (Pond)	Weighted Runoff CN	S (in)
Offsite ^{1,2}	Pond 1	43.93	12.29	29.11	66.26	98	8.94	20.35	49	5.88	13.38	88	1.33
5	Pond 2	21.05	5.89	12.14	57.65	98	8.49	40.35	49	0.42	2.00	78	2.78
1	Pond 4	39.01	10.91	23.55	60.37	98	15.46	39.63	49	0.00	0.00	79	2.73
2	Pond 4	18.94	5.30	11.30	59.68	98	7.64	40.32	49	0.00	0.00	78	2.78
3	Pond 4	25.53	7.14	14.29	55.98	98	11.24	44.02	49	0.00	0.00	76	3.08
4	Pond 4	20.69	5.79	12.70	61.40	98	7.99	38.60	49	0.00	0.00	79	2.64
6	Pond 4	25.20	7.05	15.03	59.66	98	10.16	40.34	49	0.00	0.00	78	2.78
7 ²	Pond 4	73.67	20.61	62.62	85.00	98	11.05	11.05	49	0.00	0.00	89	1.27
9	Pond 4	40.73	11.39	0.00	0.00	98	0.00	0.00	49	40.73	100.00	100	0.00
11	Pond 4	19.59	5.48	11.49	58.65	98	8.10	41.35	49	0.00	0.00	78	2.86
10	Pond 5	4.66	1.30	0.00	0.00	98	1.74	37.34	49	2.92	62.66	81	2.35
8 ²	Pond 6	23.21	6.49	16.94	72.99	98	5.13	22.10	49	1.14	4.91	87	1.46
FS-OFF	Pond 4	1.25	0.35	0.50	40.00	98	0.85	68.00	49	0.00	0.00	73	3.79
Charron ⁴	Charron	11.33	0.00	5.44	48.01	98	3.84	33.89	49	2.05	18.09	82	2.23
Total		357.46	100.00	209.68			96.79			51.09			

NOTE:

1. Offsite not included in the plans. Therefore area is 320.54 AC
2. Offsite, Basin 7, Basin 8 and FS-OFF remain unchanged.
3. Curve Number per TR-55 Table 2-2C
4. Charron not included in on-site basin area.

Rolling Oaks

POST-DEVELOPMENT STORMWATER ANALYSIS

Table 2 - Time of Concentration Calculations

$$T_t = \frac{0.007(nL)^{0.8}}{P^{0.5}S^{0.4}} \quad T_t = \frac{L}{3600V} \quad V = \frac{1.49R^{2/3}S^{1/2}}{n}$$

BASIN ID	Overland/Sheet Flow [Kinematic Wave Formula]				Shallow Concentrated Flow				Channel/Pipe Flow				Time of Concentration Tc				
	Length (ft)	Slope (ft/ft)	Manning's n	Intensity (in/hr)	Travel Time (hr)	Travel Time (min)	Length (ft)	Slope (ft/ft)	Paved Velocity (ft/s)	Travel Time (hr)	Travel Time (min)	Length (ft)	Paved Velocity (ft/s)	Travel Time (hr)	Travel Time (min)	hours	minutes
Offsite	300	0.005	0.06	4.5	0.26	15.8	1020	0.01	2	0.14	8.5	1562	2	0.217	13.0	0.62	37
5	280	0.005	0.10	4.5	0.41	24.3	100	0.01	2	0.01	0.8	45	2	0.006	0.4	0.43	26
1	150	0.005	0.10	4.5	0.24	14.6	100	0.01	2	0.01	0.8	4160	2	0.578	34.7	0.83	50
2	100	0.005	0.10	4.5	0.18	10.7	140	0.01	2	0.02	1.2	0	2	0.000	0.0	0.20	12
3	300	0.005	0.11	4.5	0.46	27.4	160	0.01	2	0.02	1.3	0	2	0.000	0.0	0.48	29
4	160	0.005	0.10	4.5	0.25	15.1	160	0.01	2	0.02	1.3	0	2	0.000	0.0	0.27	16
6	120	0.005	0.10	4.5	0.21	12.4	160	0.01	2	0.02	1.3	0	2	0.000	0.0	0.23	14
7	30	0.005	0.04	4.5	0.03	1.7	0	0.01	2	0.00	0.0	2250	2	0.313	18.8	0.34	20
9	120	0.005	0.00	4.5	0.00	0.0	0	0.01	2	0.00	0.0	420	2	0.058	3.5	0.06	10
11	120	0.005	0.11	4.5	0.21	12.6	90	0.01	2	0.01	0.8	0	2	0.000	0.0	0.22	13
10	100	0.005	0.09	4.5	0.16	9.5	0	0.01	2	0.00	0.0	320	2	0.044	2.7	0.20	12
8	156	0.005	0.06	4.5	0.17	10.0	0	0.01	2	0.00	0.0	380	2	0.053	3.2	0.22	13
FS-OFF	60	0.005	0.15	4.5	0.06	3.8	0	0.01	2	0.00	0.0	890	2	0.124	7.4	0.18	11

NOTE:

1. Rainfall Intensity from 2year-24hour storm TR-55 Appendix B Figure b-3
2. Overland Flow Velocity per TR-55 Appendix F. $V = 16.1345 S^{0.5}$
3. Manning's Roughness Coefficient 'n' based on TR-55 Table 3-1
4. Manning's Roughness Coefficient: Paved Areas and RCP=0.012, Grass=0.15-0.41, Woods=0.4-0.8

Rolling Oaks
POST-DEVELOPMENT STORMWATER ANALYSIS

Table 4 - Stage- Storage Calculations

Ponds 1, 4 Combined - Wet Detention

	Stage (ft)	Pond 1 Area (ac)	Phase 1 of Pond 4 Area ¹ (ac)	Phase 2 of Pond 4 Area (ac)	Total Area (ac)	Storage Volume (ac-ft)	Cumulative Storage (ac-ft)
Top of Bank	106.0	5.88	20.00	19.21	45.09	45.71	309.66
FEMA	105.4	5.73	21.74	18.87	46.34	46.99	263.95
	105.0	5.63	23.48	18.53	47.64	46.79	216.96
	104.0	5.38	22.72	17.85	45.94	45.09	170.17
	103.0	5.12	21.95	17.16	44.24	43.39	125.08
	102.0	4.87	21.19	16.48	42.54	41.69	81.69
	101.0	4.62	20.43	15.80	40.85	40.00	40.00
Control Elevation	100.0	4.37	19.66	15.12	39.15	0.00	0.00

Water Quality Required per pond (ac-ft)	Pond 1	PH 1 Pond 4	PH 2 Pond 4	Pond 5
Total Required (Pond 1-4)	9.10	37.82	14.46	3.79
Water Quality provided; Set Weir	65.17 ac-ft @		101.60 ft	
Recovery Volume (0.5" over Basin)	116.41 ac-ft @		102.80 ft	
Treatment Volume Depth h_1	13.68 ac-ft @		100.34 ft	
	2.80 ft			

NOTE:

- 1.a) For Phase 1 of pond 4, areas with width less than 100ft are not included in Treatment Volume (see Exhibit)
- 1.b) Phase 1 of Pond 4: Removed 1 acre. (see Exhibit)**
2. The wet detention Pond 2 is only for attenuation and not water quality. Pond 2 does not meet criteria as specified in A.H. II 5.4.2

Rolling Oaks

POST-DEVELOPMENT STORMWATER ANALYSIS

Table 4 - Stage- Storage Calculations

Ponds 5, 6 Combined - Wet Detention

	Stage (ft)	Pond 5 Area (ac)	Pond 6 Area (ac)	Total Area (ac)	Storage Volume (ac-ft)	Cumulative Storage (ac-ft)
Top of Bank	111.0	2.92	1.14	4.06	3.96	20.55
	110.0	2.79	1.06	3.85	3.74	16.60
	109.0	2.65	0.98	3.63	3.53	12.86
	108.0	2.51	0.91	3.42	3.32	9.33
	107.0	2.37	0.84	3.21	3.11	6.02
	106.0	2.24	0.77	3.01	2.91	2.91
Control Elevation	105.0	2.09	0.71	2.80	0.00	0.00

Pond 5 Pond 6

Water Quality Required per pond (ac-ft)

Total Required (Pon5&6) 5.88 ac-ft @ 106.96 ft

Water Quality provided 6.35 ac-ft @ 107.10 ft

Recovery Volume (0.5" over Basin) V_T 1.16 ac-ft @ 105.40 ft

Treatment Volume Depth h_1 2.10 ft

Rolling Oaks

POST-DEVELOPMENT STORMWATER ANALYSIS

Table 4 - Stage- Storage Calculations

Charron Pond - Wet Detention

	Stage (ft)	Charron Pond Area (ac)	Storage Volume (ac-ft)	Cumulative Storage (ac-ft)
Top of Bank	105.0	2.10	2.03	8.75
	104.0	1.96	1.89	6.72
	103.0	1.82	1.75	4.83
	102.0	1.68	1.61	3.08
	101.0	1.54	1.47	1.47
Control Elevation	100.0	1.40	0.00	0.00

Water Quality Required

Water Quality Provided

Recovery Volume (0.5" over Basin)

Treatment Volume Depth

1.70

5.59

0.47

3.40

ac-ft @ 101.143

ac-ft @ 103.40 ft

ac-ft @ 100.32 ft

V_T

h_1

Rolling Oaks

POST-DEVELOPMENT STORMWATER ANALYSIS

Table 5 - Peak Stage and Discharge Rate Summary

Pond ID	Pond Control Elevation	100 YEAR-24 HOUR		100 YEAR-72 HOUR		10 YEAR-24 HOUR		10 YEAR-72 HOUR	
		FLMOD DISTRIBUTION Rainfall = 10.6in Peak Stage (ft)	FLMOD DISTRIBUTION Rainfall = 12in Peak Stage (ft)	FLMOD DISTRIBUTION Rainfall = 5.2in Peak Stage (ft)	FLMOD DISTRIBUTION Rainfall = 8.9in Peak Stage (ft)	FLMOD DISTRIBUTION Rainfall = 5.2in Peak Stage (ft)	FLMOD DISTRIBUTION Rainfall = 8.9in Peak Stage (ft)	FLMOD DISTRIBUTION Rainfall = 5.2in Peak Stage (ft)	FLMOD DISTRIBUTION Rainfall = 8.9in Peak Stage (ft)
1	100	104.83	105.68	102.51	104.08	104.08	104.08	104.08	104.08
2	100	104.89	105.18	102.55	104.40	104.40	104.40	104.40	104.40
4	100	105.39	105.97	102.37	104.52	104.52	104.52	104.52	104.52
5	105	109.13	109.68	107.44	108.67	108.67	108.67	108.67	108.67
6	105	109.76	110.38	107.44	108.86	108.86	108.86	108.86	108.86
Charron	100	104.03	104.66	102.19	103.60	103.60	103.60	103.60	103.60

Inflow Location	Link ID	Pre-Development Peak Discharge Rate (cfs)	Post-Development Peak Discharge Rate (cfs)
South Wetland	CS-2	37	0.0
North Wetland (Existing Culvert)	CS-1	24.8	13.3
Total		61.8	13.3

NOTE:

1. Minimum Road Elevation set at greater of the 10YR-72HR Peak Stage or 2 feet above control elevation
2. Minimum Top of Bank set 1 foot above 10YR-72HR design storm
3. Minimum finished floor elevations (FFE) set based on the peak of 100YR-72HR storm or 1 foot above 100YR-24HR storm
4. Based on maximum flow rate as determined in Pre-Condition Model
5. Maximum Flow rate as permitted under SFWMD Permit No. 49-00507 (App No.960826-8)

Rolling Oaks

POST-DEVELOPMENT STORMWATER ANALYSIS

Table 6 - Bleed Down/Recovery Orifice Calculation

ORIFICE DESIGN

ORIFICE DIAMETER HAS BEEN SIZED TO DISCHARGE VOLUME LESS THAN 1/2" OVER BASIN 24 HOURS AFTER POND HAS RECOVERED TO WATER QUALITY ELEVATION

INPUT

- h_1 DEPTH OF WATER BETWEEN TOP OF REQUIRED TREATMENT VOLUME AND ORIFICE INVERT
- h_2 DEPTH OF WATER BETWEEN STAGE AT HALF REQUIRED TREATMENT VOLUME AND ORIFICE INVERT
- V_T WATER QUALITY TREATMENT VOLUME TO BE RECOVERED
- T_R TIME REQUIRED FOR RECOVERY

CALCULATED

- h AVERAGE DEPTH OF WATER ABOVE ORIFICE
- Q AVERAGE FLOW RATE REQUIRED TO DRAW DOWN ONE HALF OF THE TREATMENT VOLUME WITHIN 24 HOURS
- A_{MAX} AREA OF ORIFICE REQUIRED
- D_{MAX} DIAMETER OF ORIFICE REQUIRED
- C ORIFICE HYDRAULIC COEFFICIENT = 0.6

DESIGN EQUATIONS

$$h = \frac{h_1 + h_2}{2} \qquad Q = V_T \left(\frac{43560 \text{ s} \cdot \text{ft}^3}{\text{acres}} \right) \left(\frac{1}{24 \text{ hour}} \right) \left(\frac{1 \text{ hour}}{3600 \text{ seconds}} \right) \qquad A = \frac{Q}{C \sqrt{2gr}} \qquad D = \sqrt{\frac{4A}{\pi}}$$

NODE ID	Structure ID	h1 (ft)	h2 (ft)	h (ft)	Vt (ac-ft)	Tr (hr)	Q (cfs)	A (ft2)	Amax (in2)	Dmax (in)	Number of Orifices	D (in)	Area (in2)
Pond 1	CS-1	2.80	1.40	2.10	10.18	24	2.57	0.37	52.95	8.21	4	4.6	66.48
Pond 5	CS-5	2.10	1.05	1.58	1.16	24	0.29	0.05	6.98	2.98	1	3.0	7.07
Charron	CS-CHAR	3.40	1.70	2.55	0.47	24	0.12	0.02	2.23	1.68	1	3.0	7.07

Rolling Oaks

POST-DEVELOPMENT STORMWATER ANALYSIS

Table 7 - Spreader Swale Design

ORIFICE DESIGN

SPREADER SWALE WILL BE SIZED TO REDUCE OUTFLOW VELOCITY TO BELOW 2 FT/S AT PEAK DISCHARGE RATE FROM THE DESIGN STORM

INPUT

L LENGTH OF SPREADER SWALE

Q_{MAX} PEAK DISCHARGE RATE FROM DESIGN STORM, OBTAINED FROM STORMWATER ROUTING

C WEIR HYDRAULIC COEFFICIENT

CALCULATED

H HEIGHT OF HYDRAULIC HEAD

A SPREADER SWALE AREA

DESIGN EQUATIONS

$$Q = CLH^{3/2}$$

Spreader Swale ID	From Node	To Node	Link	L (ft)	Q, 100YR-72HR (cfs)	C	H (ft)	A (ft ²)	Outflow Velocity (ft/s)
SS-1	Pond 1	Wetland	CS-1	130	64.14	3.97	0.25	32.37	1.98
SS-2	Pond 2	Outfall	CS-2	75	23.37	3.97	0.18	13.75	1.70

NOTE:

1. Design based on broad crested weir equation
2. Inflow rate based on Peak Discharge Rate from design storm, as obtained in stormwater routings
3. Minimum length 'L' indicates minimum length to achieve outflow velocity of less than 2.0 FPS

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Table 8 - Outfall Structure Summary

Node ID	Structure ID	Structure Type	Circular Bleeder Orifice		Water Quality Weirs		Structure Top Elevation (ft)	Skimmer		Outfall Pipe		Spreader swale Length (ft)	
			Invert (ft)	Number of Orifices	Size (in)	Elevation (ft)		Total Width (in)	Top Elevation (ft)	Bottom Elevation (ft)	Pipe Size (in)		Invert Elevation
Pond 1	CS-1	Drop	100	4	4.6	102.80	36	104.4	104.9	103.9	30	99	130
Pond 2	CS-2	Drop	-	-	-	-	104.4	104.9	104.9	101.2	48	97	75
Pond 5	CS-5	Drop	105	1	3.0	107.10	24	110.5	111	106.6	48	99	-
Pond 6	CS-6	Drop	-	-	-	-	105	105.5	105.5	104.5	48	94	-
Charron Pond	CS-CHAR ¹	BC Weir	100	1	3.0	103.40	120	N/A	-	100	-	-	-

NOTE:

1. Control structure from node Charron Pond (CS-CHAR) based on as-built data or existing structure

Rolling Oaks

POST-DEVELOPMENT STORMWATER ANALYSIS

Table 9 - Floodplain Compensation

Ponds 1, 2, 4 Combined - Floodplain Compensation Stage Storage

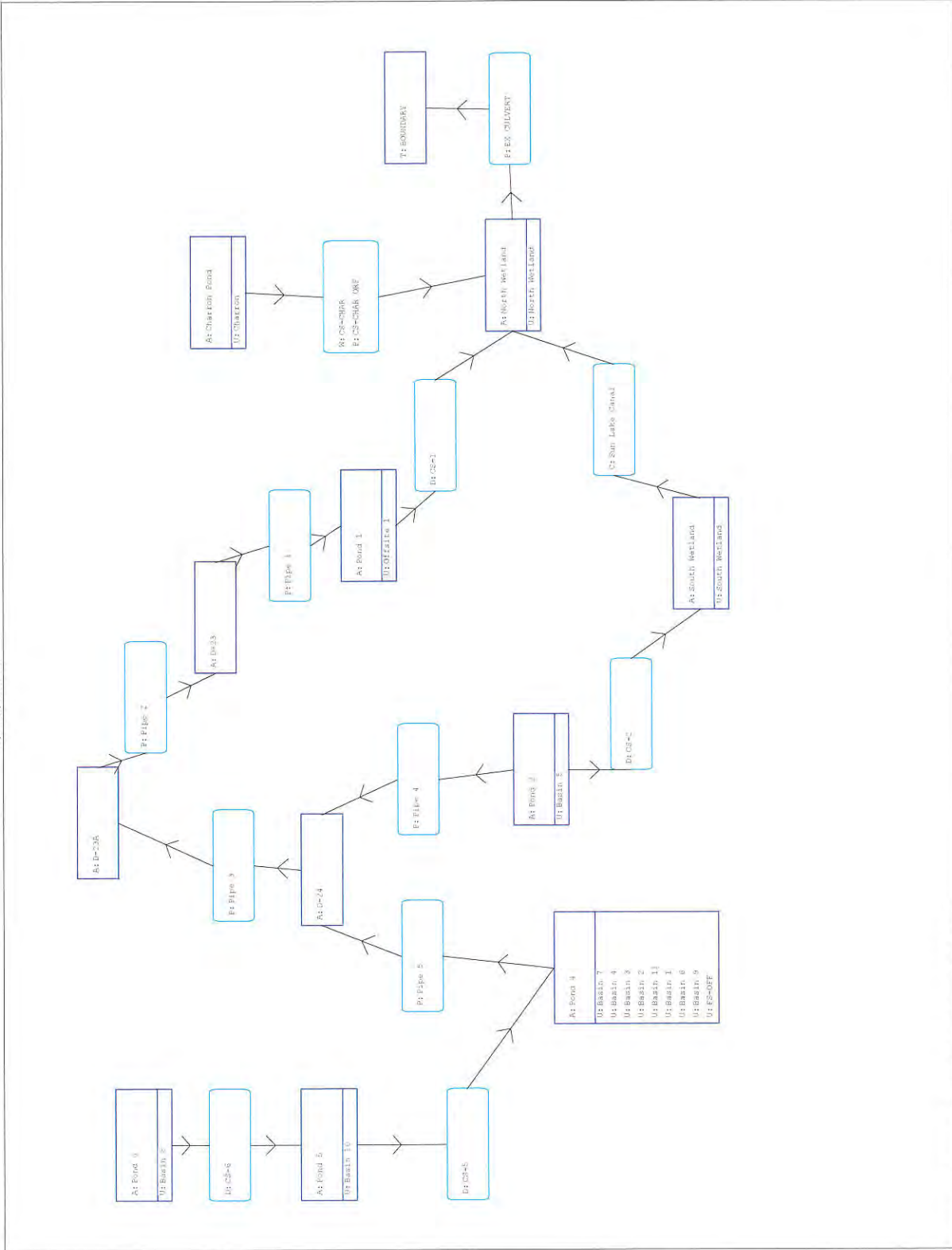
	Stage (ft)	Pond 1 Area (ac)	Pond 2 Area (ac)	Pond 4 Area (ac)	Total Area (ac)	Storage Volume (ac-ft)	Cumulative Storage (ac-ft)
Top of Bank	106.0	5.88	0.42	40.31	46.61	46.28	303.61
FEMA	105.4	5.73	0.39	39.84	45.96	45.68	257.33
	105.0	5.63	0.37	39.39	45.39	44.78	211.65
	104.0	5.38	0.32	38.47	44.17	43.56	166.87
	103.0	5.12	0.26	37.56	42.94	42.33	123.31
	102.0	4.87	0.21	36.64	41.72	41.10	80.99
	101.0	4.62	0.15	35.72	40.49	39.88	39.88
Control Elevation	100.0	4.37	0.10	34.80	39.27	0.00	0.00

NOTE:

1. Elevations based on NGVD 29 Datum

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- 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



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Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
BOUNDARY	BASE	100Y-24H	12.00	104.000	105.000	0.2000	69	24.00	32.306	0.00	0.000
BOUNDARY	BASE	100Y-72H	60.00	104.300	105.000	0.2000	69	67.84	66.070	0.00	0.000
BOUNDARY	BASE	10Y-24h	12.00	103.250	105.000	0.2000	1386	23.99	1.115	0.00	0.000
BOUNDARY	BASE	10Y-72H	60.00	103.500	105.000	0.2000	1386	72.00	17.460	0.00	0.000
Charron Pond	BASE	100Y-24H	12.94	104.028	105.000	0.0021	85547	12.00	62.426	13.00	11.575
Charron Pond	BASE	100Y-72H	60.15	104.661	105.000	0.0005	89409	60.00	57.447	60.16	43.074
Charron Pond	BASE	10Y-24h	24.00	102.194	105.000	0.0008	74364	12.00	24.744	0.00	0.000
Charron Pond	BASE	10Y-72H	62.16	103.595	105.000	0.0011	82910	60.00	41.122	62.17	2.974
D-23	BASE	100Y-24H	14.86	105.441	106.300	-0.5826	173	0.03	6.584	3.77	143.005
D-23	BASE	100Y-72H	62.17	106.249	106.300	-0.6130	173	0.03	6.541	24.22	142.936
D-23	BASE	10Y-24h	24.00	103.149	106.300	-0.5771	173	0.03	6.546	7.75	144.512
D-23	BASE	10Y-72H	62.59	104.714	106.300	-0.6183	173	0.03	6.533	31.52	145.947
D-23A	BASE	100Y-24H	22.60	104.578	106.300	0.4975	173	24.00	127.130	0.03	6.584
D-23A	BASE	100Y-72H	62.77	106.216	106.300	0.4992	173	72.00	126.486	0.03	6.541
D-23A	BASE	10Y-24h	24.00	102.071	106.300	0.4983	173	24.00	103.835	0.03	6.546
D-23A	BASE	10Y-72H	72.00	103.962	106.300	0.4992	173	72.00	128.382	0.03	6.533
D-24	BASE	100Y-24H	23.79	105.735	106.200	-0.6231	182	0.00	101.718	24.00	127.130
D-24	BASE	100Y-72H	64.36	106.129	106.200	-0.6218	182	0.00	101.718	72.00	126.486
D-24	BASE	10Y-24h	24.00	102.850	106.200	-0.4696	232	0.00	101.718	24.00	103.835
D-24	BASE	10Y-72H	72.00	105.075	106.200	-0.6218	182	0.00	101.718	72.00	128.382
North Wetland	BASE	100Y-24H	12.10	103.972	104.500	0.0020	352555	24.00	24.671	24.00	32.306
North Wetland	BASE	100Y-72H	60.01	104.298	104.500	0.0020	377738	68.00	55.161	67.84	66.070
North Wetland	BASE	10Y-24h	12.06	103.245	104.500	0.0020	298014	0.00	0.000	23.99	1.115
North Wetland	BASE	10Y-72H	60.02	103.496	104.500	0.0020	317319	72.00	12.748	72.00	17.460
Pond 1	BASE	100Y-24H	14.62	104.829	106.000	-1.0000	243395	12.25	287.256	24.00	20.813
Pond 1	BASE	100Y-72H	62.03	105.667	106.000	-1.0000	252521	60.25	259.031	72.00	23.365
Pond 1	BASE	10Y-24h	24.00	102.505	106.000	-1.0000	217649	12.25	186.464	0.00	0.000
Pond 1	BASE	10Y-72H	62.40	104.081	106.000	-1.0000	235253	60.25	221.803	72.00	13.244
Pond 2	BASE	100Y-24H	23.63	104.888	106.000	-0.0522	15884	12.25	84.117	12.14	59.027
Pond 2	BASE	100Y-72H	68.01	105.177	106.000	-0.0522	16513	60.00	73.579	60.33	76.370
Pond 2	BASE	10Y-24h	24.00	102.551	106.000	-0.0522	10377	12.25	31.498	12.31	28.552
Pond 2	BASE	10Y-72H	72.00	104.401	106.000	-0.0522	14823	60.00	51.565	60.51	46.199
Pond 4	BASE	100Y-24H	24.00	105.394	106.000	-0.5212	1724359	12.00	1185.162	0.00	97.518
Pond 4	BASE	100Y-72H	68.70	105.967	106.000	-0.5212	1760824	60.00	1133.187	0.00	97.518
Pond 4	BASE	10Y-24h	24.00	102.372	106.000	-0.5212	1532603	12.00	489.913	0.00	97.518
Pond 4	BASE	10Y-72H	72.00	104.516	106.000	-0.5213	1668765	60.00	809.273	0.00	97.518
Pond 5	BASE	100Y-24H	13.41	109.133	111.000	0.0017	116248	12.15	88.892	13.41	19.031

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Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Pond 5	BASE	100Y-72H	61.05	109.683	111.000	0.0013	119601	60.04	82.499	61.04	27.065
Pond 5	BASE	10Y-24h	23.56	107.436	111.000	0.0009	105899	12.10	44.835	23.56	1.608
Pond 5	BASE	10Y-72H	61.21	108.668	111.000	0.0011	113410	60.04	63.243	61.21	13.012
Pond 6	BASE	100Y-24H	12.49	109.755	111.000	0.0038	45320	12.00	135.018	12.26	68.110
Pond 6	BASE	100Y-72H	60.36	110.376	111.000	0.0028	47485	60.00	120.951	60.16	62.672
Pond 6	BASE	10Y-24h	23.52	107.439	111.000	0.0015	37929	12.00	58.192	12.14	35.611
Pond 6	BASE	10Y-72H	60.38	108.857	111.000	0.0021	42252	60.00	87.967	60.12	48.497
South Wetland	BASE	100Y-24H	24.00	103.005	105.000	0.0004	440924	12.25	23.550	24.00	2.022
South Wetland	BASE	100Y-72H	72.00	104.659	105.000	0.0004	494886	60.32	49.712	68.27	29.964
South Wetland	BASE	10Y-24h	24.00	99.873	105.000	0.0002	289398	12.25	3.104	0.00	0.000
South Wetland	BASE	10Y-72H	72.00	101.733	105.000	0.0002	396796	60.00	16.302	0.00	0.000

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Name: Basin 1	Basin 10	Basin 11	Basin 2	Basin 3
Group: BASE	BASE	BASE	BASE	BASE
Simulation: 100Y-24H	100Y-24H	100Y-24H	100Y-24H	100Y-24H
Node: Pond 4	Pond 5	Pond 4	Pond 4	Pond 4
Type: SCS	SCS	SCS	SCS	SCS
Unit Hydrograph: Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor: 323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min): 6.67	1.60	1.73	1.60	3.87
Comp Time Inc(min): 5.00	1.60	1.73	1.60	3.87
Rain File: Flmod	Flmod	Flmod	Flmod	Flmod
Rain Amount(in): 10.600	10.600	10.600	10.600	10.600
Duration(hrs): 24.00	24.00	24.00	24.00	24.00
Status: Onsite	Onsite	Onsite	Onsite	Onsite
TC(min): 50.00	12.00	13.00	12.00	29.00
Time Shift(hrs): 0.00	0.00	0.00	0.00	0.00
Area(ac): 39.010	4.660	19.590	18.940	25.530
Vol of Unit Hyd(in): 1.001	1.000	1.000	1.000	1.000
Curve Num: 79.000	81.000	78.000	78.000	76.000
DCIA(%): 0.000	0.000	0.000	0.000	0.000
Time Max(hrs): 12.50	12.05	12.05	12.05	12.24
Flow Max(cfs): 113.903	27.352	107.195	107.005	95.485
Runoff Volume(in): 7.962	8.230	7.835	7.837	7.571
Runoff Volume(ft3): 1127425.007	139211.732	557177.924	538844.893	701615.056
Name: Basin 4	Basin 5	Basin 6	Basin 7	Basin 8
Group: BASE	BASE	BASE	BASE	BASE
Simulation: 100Y-24H	100Y-24H	100Y-24H	100Y-24H	100Y-24H
Node: Pond 4	Pond 2	Pond 4	Pond 4	Pond 6
Type: SCS	SCS	SCS	SCS	SCS
Unit Hydrograph: Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor: 323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min): 2.13	3.47	1.87	2.67	1.73
Comp Time Inc(min): 2.13	3.47	1.87	2.67	1.73
Rain File: Flmod	Flmod	Flmod	Flmod	Flmod
Rain Amount(in): 10.600	10.600	10.600	10.600	10.600
Duration(hrs): 24.00	24.00	24.00	24.00	24.00
Status: Onsite	Onsite	Onsite	Onsite	Onsite
TC(min): 16.00	26.00	14.00	20.00	13.00
Time Shift(hrs): 0.00	0.00	0.00	0.00	0.00
Area(ac): 20.690	21.050	25.200	73.670	23.210
Vol of Unit Hyd(in): 1.000	1.000	1.000	1.000	1.000
Curve Num: 79.000	78.000	78.000	89.000	87.000
DCIA(%): 0.000	0.000	0.000	0.000	0.000
Time Max(hrs): 12.09	12.19	12.07	12.13	12.05
Flow Max(cfs): 106.279	85.893	134.541	383.825	140.624
Runoff Volume(in): 7.969	7.835	7.836	9.253	8.998
Runoff Volume(ft3): 598489.895	598703.180	716819.386	2474351.795	758076.898
Name: Basin 9	Charron	FS-OFF	North Wetland	Offsite 1
Group: BASE	BASE	BASE	BASE	BASE
Simulation: 100Y-24H	100Y-24H	100Y-24H	100Y-24H	100Y-24H
Node: Pond 4	Charron Pond	Pond 4	North Wetland	Pond 1
Type: SCS	SCS	SCS	SCS	SCS
Unit Hydrograph: Uh323	Uh323	Uh256	Uh323	Uh323
Peaking Factor: 323.0	323.0	256.0	323.0	323.0
Spec Time Inc(min): 1.33	1.73	1.47	2.00	4.93
Comp Time Inc(min): 1.33	1.73	1.47	2.00	4.93
Rain File: Flmod	Flmod	Flmod	Flmod	Flmod
Rain Amount(in): 10.600	10.600	10.600	10.600	10.600
Duration(hrs): 24.00	24.00	24.00	24.00	24.00
Status: Onsite	Onsite	Onsite	Onsite	Onsite
TC(min): 10.00	13.00	11.00	15.00	37.00
Time Shift(hrs): 0.00	0.00	0.00	0.00	0.00
Area(ac): 40.730	11.330	1.250	4.460	43.930
Vol of Unit Hyd(in): 1.000	1.000	1.000	1.001	1.000
Curve Num: 100.000	82.000	73.000	49.000	88.000
DCIA(%): 0.000	0.000	0.000	0.000	0.000
Time Max(hrs): 12.02	12.05	12.05	12.10	12.25
Flow Max(cfs): 283.513	65.248	6.054	11.067	168.445

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Runoff Volume(in):	10.605	8.357	7.166	3.836	9.119
Runoff Volume(ft3):	1567877.459	343709.904	32516.514	62096.339	1454154.154

Name: South Wetland	Basin 1	Basin 10	Basin 11	Basin 2
Group: BASE	BASE	BASE	BASE	BASE
Simulation: 100Y-24H	100Y-72H	100Y-72H	100Y-72H	100Y-72H
Node: South Wetland	Pond 4	Pond 5	Pond 4	Pond 4
Type: SCS	SCS	SCS	SCS	SCS
Unit Hydrograph: Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor: 323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min): 2.67	6.67	1.60	1.73	1.60
Comp Time Inc(min): 2.67	5.00	1.60	1.73	1.60
Rain File: Flmod	Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72
Rain Amount(in): 10.600	12.000	12.000	12.000	12.000
Duration(hrs): 24.00	72.00	72.00	72.00	72.00
Status: Onsite	Onsite	Onsite	Onsite	Onsite
TC(min): 20.00	50.00	12.00	13.00	12.00
Time Shift(hrs): 0.00	0.00	0.00	0.00	0.00
Area(ac): 11.410	39.010	4.660	19.590	18.940
Vol of Unit Hyd(in): 1.000	1.001	1.000	1.000	1.000
Curve Num: 49.000	79.000	81.000	78.000	78.000
DCIA(%): 0.000	0.000	0.000	0.000	0.000
Time Max(hrs): 12.13	60.33	60.03	60.03	60.03
Flow Max(cfs): 24.699	104.140	24.147	97.175	96.055
Runoff Volume(in): 3.836	9.298	9.586	9.176	9.177
Runoff Volume(ft3): 158860.814	1316586.849	162149.038	652540.698	630951.608

Name: Basin 3	Basin 4	Basin 5	Basin 6	Basin 7
Group: BASE	BASE	BASE	BASE	BASE
Simulation: 100Y-72H	100Y-72H	100Y-72H	100Y-72H	100Y-72H
Node: Pond 4	Pond 4	Pond 2	Pond 4	Pond 4
Type: SCS	SCS	SCS	SCS	SCS
Unit Hydrograph: Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor: 323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min): 3.87	2.13	3.47	1.87	2.67
Comp Time Inc(min): 3.87	2.13	3.47	1.87	2.67
Rain File: Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72
Rain Amount(in): 12.000	12.000	12.000	12.000	12.000
Duration(hrs): 72.00	72.00	72.00	72.00	72.00
Status: Onsite	Onsite	Onsite	Onsite	Onsite
TC(min): 29.00	16.00	26.00	14.00	20.00
Time Shift(hrs): 0.00	0.00	0.00	0.00	0.00
Area(ac): 25.530	20.690	21.050	25.200	73.670
Vol of Unit Hyd(in): 1.000	1.000	1.000	1.000	1.000
Curve Num: 76.000	79.000	78.000	78.000	89.000
DCIA(%): 0.000	0.000	0.000	0.000	0.000
Time Max(hrs): 60.13	60.05	60.09	60.04	60.09
Flow Max(cfs): 90.461	96.696	79.491	121.944	335.499
Runoff Volume(in): 8.899	9.314	9.176	9.176	10.639
Runoff Volume(ft3): 824716.009	699538.229	701173.134	839409.168	2845069.733

Name: Basin 8	Basin 9	Charron	FS-OFF	North Wetland
Group: BASE	BASE	BASE	BASE	BASE
Simulation: 100Y-72H	100Y-72H	100Y-72H	100Y-72H	100Y-72H
Node: Pond 6	Pond 4	Charron Pond	Pond 4	North Wetland
Type: SCS	SCS	SCS	SCS	SCS
Unit Hydrograph: Uh323	Uh323	Uh323	Uh256	Uh323
Peaking Factor: 323.0	323.0	323.0	256.0	323.0
Spec Time Inc(min): 1.73	1.33	1.73	1.47	2.00
Comp Time Inc(min): 1.73	1.33	1.73	1.47	2.00
Rain File: Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72
Rain Amount(in): 12.000	12.000	12.000	12.000	12.000
Duration(hrs): 72.00	72.00	72.00	72.00	72.00
Status: Onsite	Onsite	Onsite	Onsite	Onsite
TC(min): 13.00	10.00	13.00	11.00	15.00
Time Shift(hrs): 0.00	0.00	0.00	0.00	0.00
Area(ac): 23.210	40.730	11.330	1.250	4.460
Vol of Unit Hyd(in): 1.000	1.000	1.000	1.000	1.001

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Curve Num:	87.000	100.000	82.000	73.000	49.000
DCIA(%)	0.000	0.000	0.000	0.000	0.000
Time Max(hrs)	60.03	60.00	60.03	60.03	60.07
Flow Max(cfs)	121.622	233.641	57.806	5.674	13.290
Runoff Volume(in)	10.379	12.005	9.719	8.472	4.842
Runoff Volume(ft3)	874494.608	1774938.013	399731.773	38441.938	78385.147

Name:	Offsite 1	South Wetland	Basin 1	Basin 10	Basin 11
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	100Y-72H	100Y-72H	10Y-24H	10Y-24H	10Y-24H
Node:	Pond 1	South Wetland	Pond 4	Pond 5	Pond 4
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min)	4.93	2.67	6.67	1.60	1.73
Comp Time Inc(min)	4.93	2.67	5.00	1.60	1.73
Rain File:	Sfwmd72	Sfwmd72	Flmod	Flmod	Flmod
Rain Amount(in)	12.000	12.000	5.200	5.200	5.200
Duration(hrs)	72.00	72.00	24.00	24.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min)	37.00	20.00	50.00	12.00	13.00
Time Shift(hrs)	0.00	0.00	0.00	0.00	0.00
Area(ac)	43.930	11.410	39.010	4.660	19.590
Vol of Unit Hyd(in)	1.000	1.000	1.001	1.000	1.000
Curve Num:	88.000	49.000	79.000	81.000	78.000
DCIA(%)	0.000	0.000	0.000	0.000	0.000
Time Max(hrs)	60.19	60.09	12.50	12.05	12.08
Flow Max(cfs)	147.598	30.412	42.888	10.848	40.244
Runoff Volume(in)	10.504	4.842	2.973	3.164	2.883
Runoff Volume(ft3)	1675062.278	200532.406	421025.765	53522.495	204980.927

Name:	Basin 2	Basin 3	Basin 4	Basin 5	Basin 6
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	10Y-24H	10Y-24H	10Y-24H	10Y-24H	10Y-24H
Node:	Pond 4	Pond 4	Pond 4	Pond 2	Pond 4
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min)	1.60	3.87	2.13	3.47	1.87
Comp Time Inc(min)	1.60	3.87	2.13	3.47	1.87
Rain File:	Flmod	Flmod	Flmod	Flmod	Flmod
Rain Amount(in)	5.200	5.200	5.200	5.200	5.200
Duration(hrs)	24.00	24.00	24.00	24.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min)	12.00	29.00	16.00	26.00	14.00
Time Shift(hrs)	0.00	0.00	0.00	0.00	0.00
Area(ac)	18.940	25.530	20.690	21.050	25.200
Vol of Unit Hyd(in)	1.000	1.000	1.000	1.000	1.000
Curve Num:	78.000	76.000	79.000	78.000	78.000
DCIA(%)	0.000	0.000	0.000	0.000	0.000
Time Max(hrs)	12.05	12.24	12.09	12.19	12.07
Flow Max(cfs)	40.225	34.113	40.435	31.830	50.394
Runoff Volume(in)	2.884	2.701	2.976	2.883	2.883
Runoff Volume(ft3)	198247.736	250331.278	223499.828	220257.708	263717.688

Name:	Basin 7	Basin 8	Basin 9	Charron	FS-OFF
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	10Y-24H	10Y-24H	10Y-24H	10Y-24H	10Y-24H
Node:	Pond 4	Pond 6	Pond 4	Charron Pond	Pond 4
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh256
Peaking Factor:	323.0	323.0	323.0	323.0	256.0
Spec Time Inc(min)	2.67	1.73	1.33	1.73	1.47
Comp Time Inc(min)	2.67	1.73	1.33	1.73	1.47
Rain File:	Flmod	Flmod	Flmod	Flmod	Flmod
Rain Amount(in)	5.200	5.200	5.200	5.200	5.200
Duration(hrs)	24.00	24.00	24.00	24.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite

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TC(min):	20.00	13.00	10.00	13.00	11.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	73.670	23.210	40.730	11.330	1.250
Vol of Unit Hyd(in):	1.000	1.000	1.000	1.000	1.000
Curve Num:	89.000	87.000	100.000	82.000	73.000
DCIA(%):	0.000	0.000	0.000	0.000	0.000
Time Max(hrs):	12.13	12.05	12.02	12.08	12.08
Flow Max(cfs):	171.277	61.108	139.082	26.232	2.046
Runoff Volume(in):	3.965	3.757	5.202	3.259	2.437
Runoff Volume(ft3):	1060427.710	316495.720	769147.433	134031.892	11056.372

Name:	North Wetland	Offsite 1	South Wetland	Basin 1	Basin 10
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	10Y-24H	10Y-24H	10Y-24H	10Y-72H	10Y-72H
Node:	North Wetland	Pond 1	South Wetland	Pond 4	Pond 5
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.00	4.93	2.67	6.67	1.60
Comp Time Inc(min):	2.00	4.93	2.67	5.00	1.60
Rain File:	Flmod	Flmod	Flmod	Sfwmd72	Sfwmd72
Rain Amount(in):	5.200	5.200	5.200	8.900	8.900
Duration(hrs):	24.00	24.00	24.00	72.00	72.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	15.00	37.00	20.00	50.00	12.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	4.460	43.930	11.410	39.010	4.660
Vol of Unit Hyd(in):	1.001	1.000	1.000	1.001	1.000
Curve Num:	49.000	88.000	49.000	79.000	81.000
DCIA(%):	0.000	0.000	0.000	0.000	0.000
Time Max(hrs):	12.30	12.33	12.36	60.33	60.03
Flow Max(cfs):	1.383	73.752	3.179	73.431	17.240
Runoff Volume(in):	0.719	3.857	0.719	6.342	6.598
Runoff Volume(ft3):	11643.666	615095.984	29787.944	898046.985	111618.502

Name:	Basin 11	Basin 2	Basin 3	Basin 4	Basin 5
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	10Y-72H	10Y-72H	10Y-72H	10Y-72H	10Y-72H
Node:	Pond 4	Pond 4	Pond 4	Pond 4	Pond 2
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.73	1.60	3.87	2.13	3.47
Comp Time Inc(min):	1.73	1.60	3.87	2.13	3.47
Rain File:	Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72
Rain Amount(in):	8.900	8.900	8.900	8.900	8.900
Duration(hrs):	72.00	72.00	72.00	72.00	72.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	13.00	12.00	29.00	16.00	26.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.590	18.940	25.530	20.690	21.050
Vol of Unit Hyd(in):	1.000	1.000	1.000	1.000	1.000
Curve Num:	78.000	78.000	76.000	79.000	78.000
DCIA(%):	0.000	0.000	0.000	0.000	0.000
Time Max(hrs):	60.03	60.03	60.13	60.05	60.15
Flow Max(cfs):	68.560	67.797	63.033	68.444	55.955
Runoff Volume(in):	6.230	6.231	5.985	6.354	6.230
Runoff Volume(ft3):	443051.511	428396.017	554616.300	477183.065	476071.174

Name:	Basin 6	Basin 7	Basin 8	Basin 9	Charron
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	10Y-72H	10Y-72H	10Y-72H	10Y-72H	10Y-72H
Node:	Pond 4	Pond 4	Pond 6	Pond 4	Charron Pond
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.87	2.67	1.73	1.33	1.73
Comp Time Inc(min):	1.87	2.67	1.73	1.33	1.73

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	Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72
Rain File:	Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72	Sfwmd72
Rain Amount(in):	8.900	8.900	8.900	8.900	8.900
Duration(hrs):	72.00	72.00	72.00	72.00	72.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	14.00	20.00	13.00	10.00	13.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	25.200	73.670	23.210	40.730	11.330
Vol of Unit Hyd(in):	1.000	1.000	1.000	1.000	1.000
Curve Num:	78.000	89.000	87.000	100.000	82.000
DCIA(%):	0.000	0.000	0.000	0.000	0.000
Time Max(hrs):	60.04	60.09	60.03	60.00	60.03
Flow Max(cfs):	86.027	245.208	88.481	173.283	41.405
Runoff Volume(in):	6.230	7.574	7.330	8.904	6.720
Runoff Volume(ft3):	569928.436	2025579.706	617604.110	1316412.359	276385.324

	North Wetland	Offsite 1	South Wetland
Name:	FS-OFF	North Wetland	Offsite 1
Group:	BASE	BASE	BASE
Simulation:	10Y-72H	10Y-72H	10Y-72H
Node:	Pond 4	North Wetland	Pond 1
Type:	SCS	SCS	SCS
Unit Hydrograph:	Uh256	Uh323	Uh323
Peaking Factor:	256.0	323.0	323.0
Spec Time Inc(min):	1.47	2.00	4.93
Comp Time Inc(min):	1.47	2.00	4.93
Rain File:	Sfwmd72	Sfwmd72	Sfwmd72
Rain Amount(in):	8.900	8.900	8.900
Duration(hrs):	72.00	72.00	72.00
Status:	Onsite	Onsite	Onsite
TC(min):	11.00	15.00	37.00
Time Shift(hrs):	0.00	0.00	0.00
Area(ac):	1.250	4.460	43.930
Vol of Unit Hyd(in):	1.000	1.001	1.000
Curve Num:	73.000	49.000	88.000
DCIA(%):	0.000	0.000	0.000
Time Max(hrs):	60.03	60.07	60.19
Flow Max(cfs):	3.915	7.703	107.468
Runoff Volume(in):	5.612	2.700	7.449
Runoff Volume(ft3):	25466.368	43709.698	1187789.225

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==== Basins =====

Name: Basin 1 Node: Pond 4 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 72.00
Rainfall Amount(in): 8.900 Time of Conc(min): 50.00
Area(ac): 39.010 Time Shift(hrs): 0.00
Curve Number: 79.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 10 Node: Pond 5 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 72.00
Rainfall Amount(in): 8.900 Time of Conc(min): 12.00
Area(ac): 4.660 Time Shift(hrs): 0.00
Curve Number: 81.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 11 Node: Pond 4 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 72.00
Rainfall Amount(in): 8.900 Time of Conc(min): 13.00
Area(ac): 19.590 Time Shift(hrs): 0.00
Curve Number: 78.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 2 Node: Pond 4 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 72.00
Rainfall Amount(in): 8.900 Time of Conc(min): 12.00
Area(ac): 18.940 Time Shift(hrs): 0.00
Curve Number: 78.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 3 Node: Pond 4 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Storm Duration(hrs): 72.00
Rainfall Amount(in): 8.900 Time of Conc(min): 29.00
Area(ac): 25.530 Time Shift(hrs): 0.00
Curve Number: 76.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: Basin 4 Node: Pond 4 Status: Onsite

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Group: BASE	Type: SCS Unit Hydrograph CN
Unit Hydrograph: Uh323	Peaking Factor: 323.0
Rainfall File:	Storm Duration(hrs): 72.00
Rainfall Amount(in): 8.900	Time of Conc(min): 16.00
Area(ac): 20.690	Time Shift(hrs): 0.00
Curve Number: 79.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: Basin 5	Node: Pond 2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh323	Peaking Factor: 323.0	
Rainfall File:	Storm Duration(hrs): 72.00	
Rainfall Amount(in): 8.900	Time of Conc(min): 26.00	
Area(ac): 21.050	Time Shift(hrs): 0.00	
Curve Number: 78.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: Basin 6	Node: Pond 4	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh323	Peaking Factor: 323.0	
Rainfall File:	Storm Duration(hrs): 72.00	
Rainfall Amount(in): 8.900	Time of Conc(min): 14.00	
Area(ac): 25.200	Time Shift(hrs): 0.00	
Curve Number: 78.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: Basin 7	Node: Pond 4	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh323	Peaking Factor: 323.0	
Rainfall File:	Storm Duration(hrs): 72.00	
Rainfall Amount(in): 8.900	Time of Conc(min): 20.00	
Area(ac): 73.670	Time Shift(hrs): 0.00	
Curve Number: 89.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: Basin 8	Node: Pond 6	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh323	Peaking Factor: 323.0	
Rainfall File:	Storm Duration(hrs): 72.00	
Rainfall Amount(in): 8.900	Time of Conc(min): 13.00	
Area(ac): 23.210	Time Shift(hrs): 0.00	
Curve Number: 87.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: Basin 9	Node: Pond 4	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh323	Peaking Factor: 323.0	
Rainfall File:	Storm Duration(hrs): 72.00	
Rainfall Amount(in): 8.900	Time of Conc(min): 10.00	
Area(ac): 40.730	Time Shift(hrs): 0.00	

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Curve Number: 100.00
DCIA(%): 0.00

Max Allowable Q(cfs): 999999.000

Name: Charron
Group: BASE

Node: Charron Pond Status: Onsite
Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323
Rainfall File:
Rainfall Amount(in): 8.900
Area(ac): 11.330
Curve Number: 82.00
DCIA(%): 0.00

Peaking Factor: 323.0
Storm Duration(hrs): 72.00
Time of Conc(min): 13.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: FS-OFF
Group: BASE

Node: Pond 4 Status: Onsite
Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256
Rainfall File:
Rainfall Amount(in): 0.000
Area(ac): 1.250
Curve Number: 73.00
DCIA(%): 0.00

Peaking Factor: 256.0
Storm Duration(hrs): 0.00
Time of Conc(min): 11.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: North Wetland
Group: BASE

Node: North Wetland Status: Onsite
Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323
Rainfall File:
Rainfall Amount(in): 8.900
Area(ac): 4.460
Curve Number: 49.00
DCIA(%): 0.00

Peaking Factor: 323.0
Storm Duration(hrs): 72.00
Time of Conc(min): 15.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: Offsite 1
Group: BASE

Node: Pond 1 Status: Onsite
Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323
Rainfall File:
Rainfall Amount(in): 8.900
Area(ac): 43.930
Curve Number: 88.00
DCIA(%): 0.00

Peaking Factor: 323.0
Storm Duration(hrs): 72.00
Time of Conc(min): 37.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: South Wetland
Group: BASE

Node: South Wetland Status: Onsite
Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh323
Rainfall File:
Rainfall Amount(in): 8.900
Area(ac): 11.410
Curve Number: 49.00
DCIA(%): 0.00

Peaking Factor: 323.0
Storm Duration(hrs): 72.00
Time of Conc(min): 20.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

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Stage (ft)	Area (ac)
105.000	2.0900
106.000	2.2400
107.000	2.3700
108.000	2.5100
109.000	2.6500
110.000	2.7900
111.000	2.9200

Name: Pond 6 Base Flow(cfs): 0.000 Init Stage(ft): 105.000
 Group: BASE Warn Stage(ft): 111.000
 Type: Stage/Area

Stage (ft)	Area (ac)
105.000	0.7100
106.000	0.7700
107.000	0.8400
108.000	0.9100
109.000	0.9800
110.000	1.0600
111.000	1.1400

Name: South Wetland Base Flow(cfs): 0.000 Init Stage(ft): 100.000
 Group: BASE Warn Stage(ft): 105.000
 Type: Stage/Area

Stage (ft)	Area (ac)
98.000	1.1300
99.000	5.0400
100.000	6.8000
101.000	8.2800
102.000	9.3200
103.000	10.0400
104.000	10.9200
105.000	11.4100

==== Cross Sections =====

Name: North WL D/S Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	102.700	0.240000
10.000	102.200	0.240000
22.000	102.400	0.240000
67.000	102.000	0.240000

Name: South WL U/S Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	105.000	0.240000

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Geometry: Circular	Circular	Flow: Both
Span(in): 60.00	60.00	Entrance Loss Coef: 0.00
Rise(in): 60.00	60.00	Exit Loss Coef: 1.00
Invert(ft): 94.000	94.000	Bend Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

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

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

Name: Pipe 2	From Node: D-23A	Length(ft): 366.00
Group: BASE	To Node: D-23	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.00
Geometry: Circular	Circular	Exit Loss Coef: 1.00
Span(in): 60.00	60.00	Bend Loss Coef: 0.00
Rise(in): 60.00	60.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 94.000	94.000	Inlet Ctrl Spec: Use dc
Manning's N: 0.013000	0.013000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

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

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

Name: Pipe 3	From Node: D-24	Length(ft): 128.00
Group: BASE	To Node: D-23A	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.00
Geometry: Circular	Circular	Exit Loss Coef: 1.00
Span(in): 54.00	54.00	Bend Loss Coef: 0.00
Rise(in): 54.00	54.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 93.910	94.000	Inlet Ctrl Spec: Use dc
Manning's N: 0.013000	0.013000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

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

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

Name: Pipe 4	From Node: Pond 2	Length(ft): 100.00
Group: BASE	To Node: D-24	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.00
Geometry: Circular	Circular	
Span(in): 48.00	48.00	

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Rise(in): 48.00	48.00	Exit Loss Coef: 1.00
Invert(ft): 93.910	99.000	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

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

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

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Name: Pipe 5          From Node: Pond 4          Length(ft): 398.00
Group: BASE          To Node: D-24              Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
                                Entrance Loss Coef: 0.00
                                Exit Loss Coef: 1.00
                                Bend Loss Coef: 0.00
                                Outlet Ctrl Spec: Use dc or tw
                                Inlet Ctrl Spec: Use dc
                                Stabilizer Option: None

UPSTREAM          DOWNSTREAM
Geometry: Circular          Circular
Span(in): 54.00          54.00
Rise(in): 54.00          54.00
Invert(ft): 93.880          93.910
Manning's N: 0.013000          0.013000
Top Clip(in): 0.000          0.000
Bot Clip(in): 0.000          0.000
  
```

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

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

==== Channels =====

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Name: Sun Lake Canal      From Node: South Wetland      Length(ft): 260.00
Group: BASE              To Node: North Wetland        Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Automatic
                                Flow: Both
                                Contraction Coef: 0.100
                                Expansion Coef: 0.300
                                Entrance Loss Coef: 0.000
                                Exit Loss Coef: 0.000
                                Outlet Ctrl Spec: Use dc or tw
                                Inlet Ctrl Spec: Use dc
                                Stabilizer Option: None

UPSTREAM          DOWNSTREAM
Geometry: Irregular          Irregular
Invert(ft): 102.400          102.000
TClpInitZ(ft): 9999.000          9999.000
Manning's N:
Top Clip(ft):
Bot Clip(ft):
Main XSec: South WL U/S      North WL D/S
AuxElev1(ft): 0.000          0.000
Aux XSec1:
AuxElev2(ft): 0.000          0.000
Aux XSec2:
Top Width(ft):
Depth(ft):
Bot Width(ft):
LtSdSlp(h/v):
RtSdSlp(h/v):
  
```

==== Drop Structures =====

```

Name: CS-1          From Node: Pond 1          Length(ft): 490.00
  
```

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Group: BASE To Node: North Wetland Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 30.00	30.00	Flow: Both
Rise(in): 30.00	30.00	Entrance Loss Coef: 0.000
Invert(ft): 99.000	98.000	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

*** Weir 1 of 3 for Drop Structure CS-1 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 36.00	Invert(ft): 104.400
Rise(in): 54.00	Control Elev(ft): 104.400

*** Weir 2 of 3 for Drop Structure CS-1 ***

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): 36.00	Invert(ft): 102.800
Rise(in): 19.20	Control Elev(ft): 102.800

*** Weir 3 of 3 for Drop Structure CS-1 ***

TABLE

Count: 4	Bottom Clip(in): 0.000
Type: Vertical: Mavis	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Circular	Orifice Disc Coef: 0.600
Span(in): 4.60	Invert(ft): 100.000
Rise(in): 4.60	Control Elev(ft): 100.000

Name: CS-2 From Node: Pond 2 Length(ft): 45.00
 Group: BASE To Node: South Wetland Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 48.00	48.00	Flow: Both
Rise(in): 48.00	48.00	Entrance Loss Coef: 0.000
Invert(ft): 97.000	97.000	Exit Loss Coef: 1.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

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

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

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*** Weir 1 of 1 for Drop Structure CS-2 ***

TABLE

Count: 1
 Type: Horizontal
 Flow: Both
 Geometry: Rectangular
 Span(in): 36.00
 Rise(in): 54.00
 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Disc Coef: 3.200
 Orifice Disc Coef: 0.600
 Invert(ft): 104.400
 Control Elev(ft): 104.400

Name: CS-5 From Node: Pond 5 Length(ft): 508.00
 Group: BASE To Node: Pond 4 Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 48.00	48.00	Flow: Both
Rise(in): 48.00	48.00	Entrance Loss Coef: 0.000
Invert(ft): 99.000	99.000	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

*** Weir 1 of 3 for Drop Structure CS-5 ***

TABLE

Count: 1
 Type: Vertical: Mavis
 Flow: Both
 Geometry: Circular
 Span(in): 3.00
 Rise(in): 3.00
 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Disc Coef: 3.200
 Orifice Disc Coef: 0.600
 Invert(ft): 105.000
 Control Elev(ft): 105.000

*** Weir 2 of 3 for Drop Structure CS-5 ***

TABLE

Count: 1
 Type: Horizontal
 Flow: Both
 Geometry: Rectangular
 Span(in): 79.00
 Rise(in): 36.00
 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Disc Coef: 3.200
 Orifice Disc Coef: 0.600
 Invert(ft): 110.500
 Control Elev(ft): 110.500

*** Weir 3 of 3 for Drop Structure CS-5 ***

TABLE

Count: 1
 Type: Vertical: Mavis
 Flow: Both
 Geometry: Rectangular
 Span(in): 24.00
 Rise(in): 40.80
 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Disc Coef: 3.200
 Orifice Disc Coef: 0.600
 Invert(ft): 107.100
 Control Elev(ft): 107.100

Name: CS-6 From Node: Pond 6 Length(ft): 320.00
 Group: BASE To Node: Pond 5 Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 48.00	48.00	Flow: Both
Rise(in): 48.00	48.00	Entrance Loss Coef: 0.000

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Invert(ft): 94.000	94.000	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

*** Weir 1 of 1 for Drop Structure CS-6 ***

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): 79.00	Invert(ft): 105.000	
Rise(in): 36.00	Control Elev(ft): 105.000	

==== Weirs =====

Name: CS-CHAR	From Node: Charron Pond
Group: BASE	To Node: North Wetland
Flow: Both	Count: 1
Type: Vertical: Mavis	Geometry: Trapezoidal
Bottom Width(ft): 10.00	
Left Side Slope(h/v): 3.00	
Right Side Slope(h/v): 3.00	
Invert(ft): 103.400	
Control Elevation(ft): 103.400	
Struct Opening Dim(ft): 9999.00	

Bottom Clip(ft): 0.000	TABLE
Top Clip(ft): 0.000	
Weir Discharge Coef: 3.200	
Orifice Discharge Coef: 0.600	

==== Hydrology Simulations =====

Name: 100Y-24H
 Filename: F:\EHO14\Drainage\ICPR\Post\100Y-24H.R32
 Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Flmod
 Rainfall Amount(in): 10.60

Time (hrs)	Print Inc(min)
-----	-----
24.000	15.00

Name: 100Y-72H
 Filename: F:\EHO14\Drainage\ICPR\Post\100Y-72H.R32
 Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 12.00

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Time(hrs) Print Inc(min)

72.000 15.00

Name: 10Y-24H
Filename: F:\EHO14\Drainage\ICPR\Post\10Y-24H.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 5.20

Time(hrs) Print Inc(min)

24.000 15.00

Name: 10Y-72H
Filename: F:\EHO14\Drainage\ICPR\Post\10Y-72H.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Sfwmd72
Rainfall Amount(in): 8.90

Time(hrs) Print Inc(min)

72.000 15.00

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

Name: 100Y-24H Hydrology Sim: 100Y-24H
Filename: F:\EHO14\Drainage\ICPR\Post\100Y-24H.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.50000
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 24.00
Min Calc Time(sec): 2.0000 Max Calc Time(sec): 5.0000
Boundary Stages: 100-24 Boundary Flows:

Time(hrs) Print Inc(min)

24.000 15.000

Group Run

BASE Yes

Name: 100Y-72H Hydrology Sim: 100Y-72H
Filename: F:\EHO14\Drainage\ICPR\Post\100Y-72H.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.50000
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 72.00
Min Calc Time(sec): 2.0000 Max Calc Time(sec): 5.0000
Boundary Stages: 100-72 Boundary Flows:

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 POST-DEVELOPMENT
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Time(hrs)	Print Inc(min)
72.000	15.000
Group	Run
BASE	Yes

Name: 10Y-24h Hydrology Sim: 10Y-24H
 Filename: F:\EHO14\Drainage\ICPR\Post\10Y-24h.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.50000
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 24.00
 Min Calc Time(sec): 2.0000 Max Calc Time(sec): 5.0000
 Boundary Stages: 10-24 Boundary Flows:

Time(hrs)	Print Inc(min)
24.000	15.000
Group	Run
BASE	Yes

Name: 10Y-72H Hydrology Sim: 10Y-72H
 Filename: F:\EHO14\Drainage\ICPR\Post\10Y-72H.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.50000
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 72.00
 Min Calc Time(sec): 2.0000 Max Calc Time(sec): 5.0000
 Boundary Stages: 10-72 Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	15.000
Group	Run
BASE	Yes

=====
 Boundary Conditions
 =====

Name: 100-24	Node: BOUNDARY	Type: Stage
Time(hrs)	Stage(ft)	
0.000	100.000	
12.000	104.000	
24.000	102.700	

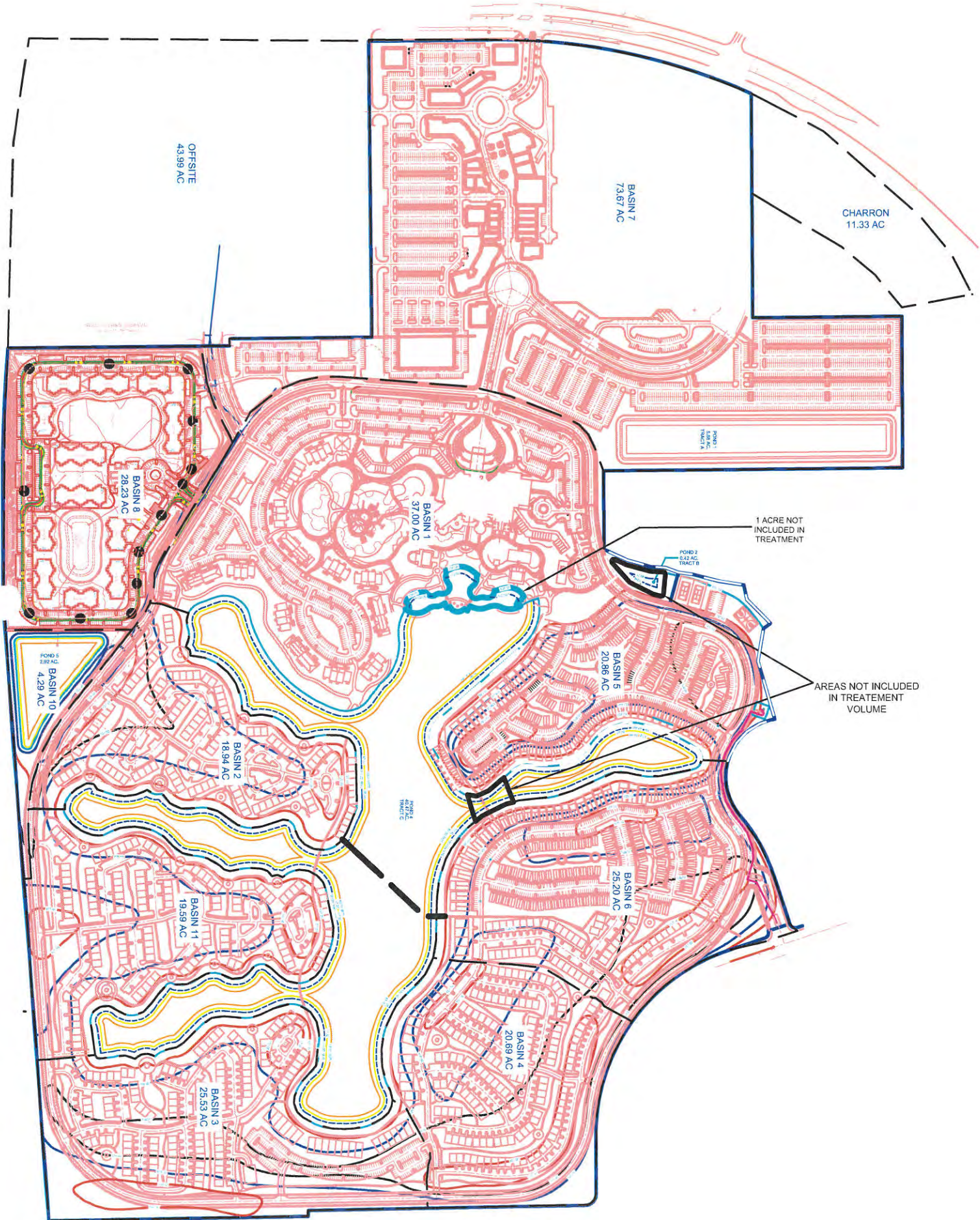
F:\EHO14\Drainage\ICPR\Post\EHO14 Post 11-13-2017.ICP

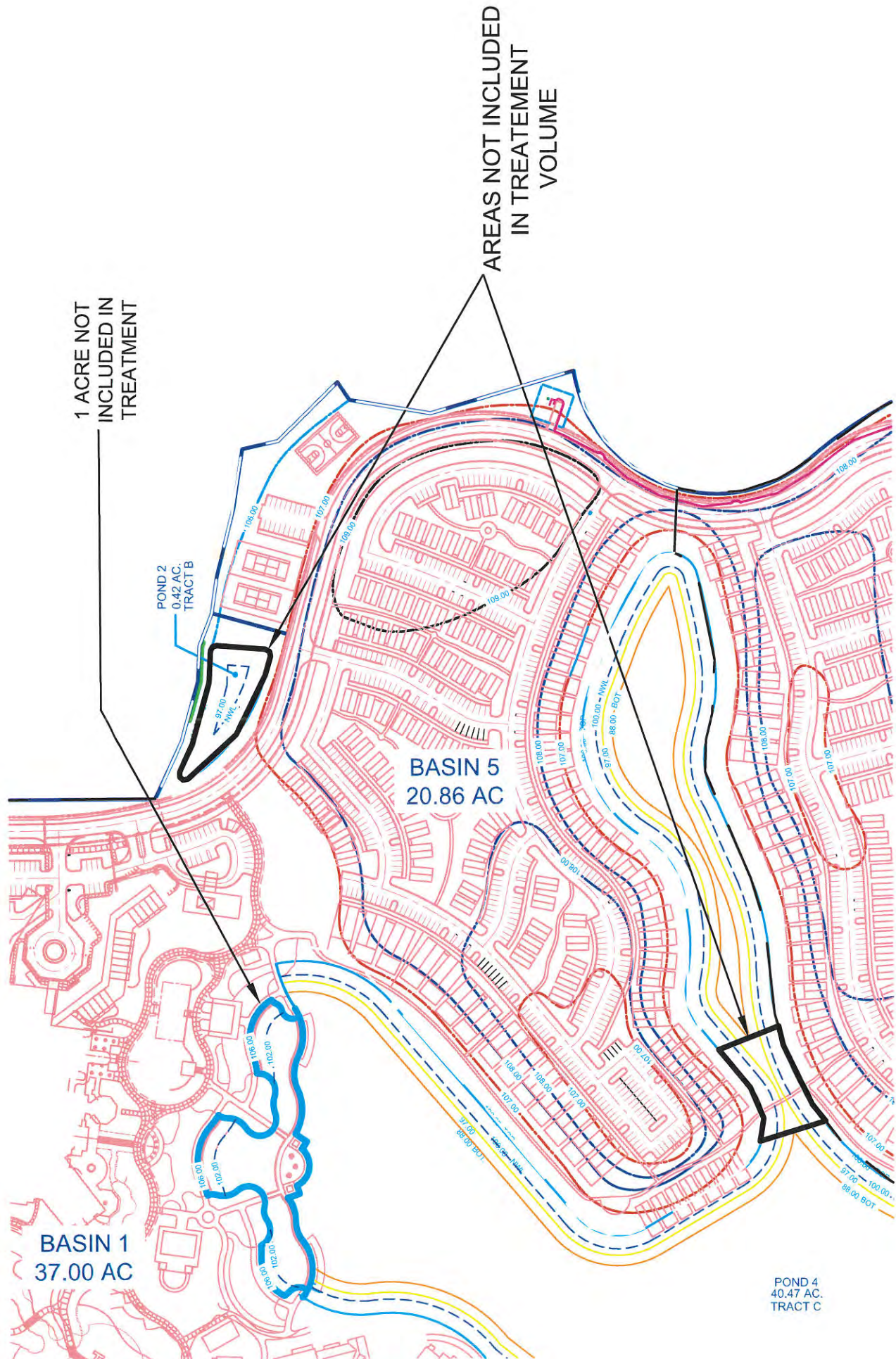
Rolling Oaks - EHO14
POST-DEVELOPMENT
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Name: 100-72	Node: BOUNDARY	Type: Stage
Time(hrs)	Stage(ft)	
0.000	100.000	
60.000	104.300	
72.000	102.700	

Name: 10-24	Node: BOUNDARY	Type: Stage
Time(hrs)	Stage(ft)	
0.000	100.000	
12.000	103.250	
24.000	102.700	

Name: 10-72	Node: BOUNDARY	Type: Stage
Time(hrs)	Stage(ft)	
0.000	100.000	
60.000	103.500	
72.000	102.700	





1 ACRE NOT INCLUDED IN TREATMENT

AREAS NOT INCLUDED IN TREATMENT VOLUME

POND 2
0.42 AC.
TRACT B

BASIN 5
20.86 AC

BASIN 1
37.00 AC

POND 4
40.47 AC.
TRACT C

ERP No. 48-00714-P
(Flamingo Crossing East)

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01

Flamingo Crossings LLC

Housing - East

ORANGE COUNTY, FLORIDA

DRAINAGE REPORT

PREPARED FOR:

FLAMINGO CROSSINGS, LLC

1375 BUENA VISTA DRIVE
4TH FLOOR NORTH
LAKE BUENA VISTA, FL 32830

PREPARED BY:



**KELLY,
COLLINS &
GENTRY, INC.**

ENGINEERING / PLANNING

1700 NORTH ORANGE AVENUE, SUITE 400
ORLANDO, FLORIDA 32804
P: (407) 898-7858 F: (407) 898-1488

DATE:

September 14, 2018

CIVIL DISCIPLINE ONLY
CERTIFICATION OF AUTHORIZATION
NUMBER 00007350

Sean C. Fortier, P.E.
FLORIDA REGISTRATION 68396

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I. Drainage Narrative

Developer:	Flamingo Crossings, LLC
Project Name:	Flamingo Crossings LLC Housing - East
Location:	Southeast Corner of Western Way, and Flamingo Crossings Blvd, Orange County, FL
Legal Description:	See Boundary Survey
Existing Use:	Undeveloped Citrus Grove
Proposed Use:	Multi-Family Residential

Project Description

The proposed project includes the construction of a surface water management system to serve a 1,323 unit multi-family apartment complex on a 60.78 acre site, which includes 4.84 acres of future commercial development. The project is located within unincorporated Orange County, Sections 28, Township 24 South, Range 27 East, and is bounded by Flamingo Crossings Blvd to the West, Western Way to the North, and the Western Beltway (SR 429) to the east.

Existing Conditions and Drainage Patterns

The project site is located within the Whittenhorse Creek watershed, which drains approximately 9,000 acres of swampy marshland west of SR 429, including Lake Britt, to Reedy Creek. Drainage patterns from the post developed site mimic that of the pre-development, with the southern portion draining to Lake Britt to the west, the central portion draining east to SR 429 Pond 10 (a former natural depression with no positive outfall), and northern portion draining to Western Way Pond 13. Groundcover on the existing site is best classified as Poor Grove, with well drained type A soils.

Permitting History

Western Beltway Conceptual Permit

On September 10, 1992, Conceptual Permit #48-00714-S was issued by SFWMD to authorize construction and operation of a water management system serving 241.00 acres of commercial lands discharging into Reedy Creek. This permit was later modified and approved on November 15, 2007 pursuant to Application No. 070530-22 to expand conceptual approval to 458.27 acres of a commercial project known as Walt Disney World's Master Development Plan Modification (Western Beltway Development). No construction was authorized with the modified conceptual approval.

The proposed project is located within the boundaries of this conceptual permit, and the permit included conceptual design of three stormwater management ponds, Ponds 13, 14, and 15, which served the three basins encompassing the proposed project.

Flamingo Crossings Phase 1 Modification

On February 15, 2008, the Conceptual Permit was modified by Application No. 071221-29, this authorized construction and operation of a surface water management system to serve a 130.49 acre commercial project known as Flamingo Crossings Phase 1. This permit included the construction of Western Way, and portions of Flamingo Crossings Blvd, as well as Pond 13, which serves a portion of the proposed project which is within the limits of Basin 13.

Flamingo Crossings Blvd South Modification

On June 25, 2010, the Conceptual Permit was again modified by Application No. 100428-7, and included the construction and operation of a surface water management system to serve 9.80 acres of roadway project known as Flamingo Crossings Blvd South. This permit included the construction of Pond 15, which serves the south portions of Flamingo Crossings Blvd, as well as a portion of the proposed project which is contained within Basin 15.

References to relevant portions of the above permits and applications are included in Appendix D.

Vertical Datum

The elevations referenced in this report are based on Orange County NAVD88 Datum per published bench mark number S-1270016, Elevation = 94.094, and S-1270013, Elevation = 87.129.

The reader is cautioned that while vertical elevations listed in this report are tied to the NAVD88 datum, vertical datums referenced in previously approved applications associated with SFWMD Conceptual Permit #48-00714-S reference NGVD29 and Reedy Creek datum. Discrepancies between design datum and construction datum have been discovered between plans and calculations associated with Application No. 100428-7.

Proposed Drainage Improvements

The proposed development will mimic the pre-development drainage patterns and the general intent of the conceptual permit. Basins 13, 14, and 15 will be modified in shape and area, as shown on the Drainage Basin Exhibit 1 in Appendix E.

Approximately 10.0 acres of the approved Basin 13 limits are contained on the north end of the project site, and per the conceptual permit, does not exceed 85% impervious. The area of the approved basin will be maintained, but the shape of the basin will be modified to fit proposed development phasing. Runoff from this basin will be collected onsite and discharge to the north to the constructed Pond 13 via pipe and drainage easement.

Pond 15, constructed with Flamingo Crossings Blvd South, will be converted from a dry retention pond to a wet detention pond, and expanded in volume to take additional basin area contained on the project site. The outfall from the proposed Pond 15 will remain as previously constructed and discharge to the Lake Britt wetland system as in the conceptual permit.

Basin 14 is proposed to be expanded to make up the remaining basin area on site, and the pond proposed in the conceptual permit to serve this basin will be replaced with an underground exfiltration system. Discharge from the exfiltration system will be as per the conceptual permit and FDOT criteria to FDOT Pond 10, which serves portions of the Western Beltway. Pond 10 is a closed pond with no positive outfall.

Design Criteria**Water Quantity Criteria****RCID**

Off-site peak discharge rates shall be limited to the discharge rates approved in the Western Way Stormwater Master Plan conceptual permit (Application No. 070530-22) for the 10 year/72 hour, 25 year/72 hour, and 100 year/72 hour storm events for ponds that have positive flow.

Orange County

In accordance with pre-application meeting, the ponds are to meet the criteria set forth by the Western Way Stormwater Master Plan conceptual permit as defined above under RCID.

FDOT

Ponds discharging to an FDOT system will be designed utilizing the FDOT critical duration storm methodology, which is to keep the peak discharge rate of the post development condition less than the peak discharge rate for the pre-development condition. Additionally, for ponds without a positive outfall, the post development volume can not exceed the predevelopment volume for the 100-year storm events from 1 hour to 10 days.

Water Quality Criteria

SFWMD

The ponds shall be designed to retain the first 1 inch of runoff from the drainage area, or 2.5 inches of runoff from the impervious area, whichever is greater. A 50% reduction is allowed for dry retention systems.

Methodology and Results

Water Quantity

Pond 13

Pond 13 is an existing pond that was sized for future development including a portion of this development. The proposed design does not increase the basin area or impervious area from that which was previously permitted. Therefore, all storm events will be unchanged.

Pond 14

Pond 14 is a proposed underground dry retention system (exfiltration system). It is the only pond that discharges to an FDOT system (Pond 10), therefore it is the only pond designed to meet the requirements of FDOT. Using the FDOT critical duration storm methodology, the peak discharge rate of the post development condition is less than the peak discharge rate for the pre-development condition.

Runoff hydrographs were generated for the post development drainage basins and then routed through the proposed stormwater management system using POND3.2 software to analyze the post development drainage characteristics. Runoff curve numbers were selected from SCS TR-55 methodology and were based upon the hydrological soil group and land use/land cover.

The results of the routings demonstrate that the peak discharge rate from Pond 14 during the critical duration storm event is less than the pre-development peak discharge from its respective critical duration storm event.

PEAK DISCHARGES

Hrs	Duration											
	2 Year		5 Year		10 Year		25 Year		50 Year		100 Year	
	Pre (cfs)	(cfs)	Pre (cfs)	(cfs)	Pre (cfs)	(cfs)	Pre (cfs)	(cfs)	Pre (cfs)	(cfs)	Pre (cfs)	(cfs)
1	0.900	0.000	2.063	0.000	2.948	0.000	4.685	0.000	6.282	0.000	8.039	0.000
2	1.323	0.000	2.810	0.000	3.861	0.000	5.675	0.000	7.376	0.000	9.236	0.000
4	2.182	0.000	4.106	0.000	5.794	0.000	7.964	0.000	9.963	0.000	12.100	0.000
8	2.138	0.000	4.033	0.000	5.806	0.000	8.151	0.000	10.527	0.000	12.725	0.000
24	1.515	0.000	2.540	0.000	3.579	0.000	4.694	0.000	6.019	0.000	6.959	0.000
72	2.153	0.000	3.559	0.000	4.292	0.000	5.413	0.000	6.549	0.000	8.075	8.012
168	2.160	0.000	3.069	0.000	3.760	0.000	4.686	0.000	5.614	6.170	6.539	11.322
240	2.769	0.000	4.092	0.000	5.170	0.000	6.255	0.000	7.342	3.719	8.427	12.030

Additionally, the post development volume does not exceed the predevelopment volume for the 100-year storm events from 1 hour to 10 days.

VOLUME

Hrs	Duration											
	2 Year		5 Year		10 Year		25 Year		50 Year		100 Year	
	Pre (cf)	Post (cf)	Pre (cf)	Post (cf)	Pre (cf)	Post (cf)	Pre (cf)	Post (cf)	Pre (cf)	Post (cf)	Pre (cf)	Post (cf)
1	5,057	0	11,634	0	16,634	0	26,489	0	35,580	0	45,613	0
2	10,135	0	22,333	0	30,910	0	45,613	0	59,321	0	74,168	0
4	18,459	0	35,580	0	50,949	0	71,115	0	90,013	0	110,177	0
8	28,667	0	53,692	0	77,261	0	106,736	0	135,074	0	161,237	0
24	56,483	0	96,603	0	138,738	0	184,532	0	233,154	0	266,836	0
72	90,013	0	161,237	0	200,459	0	262,577	0	327,762	0	418,258	131,973
168	142,428	0	220,769	0	284,005	0	372,566	0	464,712	36,615	559,508	197,630
240	180,599	0	284,005	0	372,566	0	464,712	0	559,508	44,613	656,321	218,320

The FDOT critical duration storm events include the 100 year/ 72 hour design storm required by RCID. For that particular storm event, the results demonstrate the pond is meeting the requirement by restricting the discharge volume from Pond 14 to the pre-development volume that enters the FDOT pond (Pond 10).

VOLUMES (POND 14)

Basin ID	100-YR 72 HR	
	Pre (cf)	Post (cf)
14	418,258	131,973

Pond 15

Pond 15 is an existing dry retention pond serving an RCID roadway (Flamingo Crossings Blvd.). The pond will be modified to wet detention to take in additional basin area across the project. Peak design stages for the below design storm events will not exceed those encountered in the Flamingo Crossings Blvd South Calculations, as found in Application No. 100428-7, and included in Appendix D as reference.

Runoff hydrographs were generated for the post development drainage basins and then routed through the proposed stormwater management system using ICPR3 drainage software to analyze the post development drainage characteristics. Runoff curve numbers were selected from SCS TR-55 methodology and were based upon the hydrological soil group and land use/land cover. The analysis looked at peak discharge rates from the following storm events:

- 10-year/72-hour, with a rainfall amount of 10.19 inches.
- 25-year/72-hour, with a rainfall amount of 11.69 inches.
- 50-year/72-hour, with a rainfall amount of 12.91 inches.
- 100-year/72-hour, with a rainfall amount of 14.27 inches.

The results of the routings demonstrate the conceptual permit peak discharge rates are not exceeded in the post development. Peak stages for Pond 15 do not exceed stages listed in the Flamingo Crossings Blvd South calculations.

PEAK DISCHARGE (POND 15)

Basin ID	10-YR 72-HR		25-YR 72 HR		50-YR 72-HR		100-YR 72 HR	
	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)
15		43.83		46.13		47.92		49.94

The results of the routings demonstrate the conceptual permit peak discharge rates are not exceeded

Summary – Pond Stages

PEAK STAGES

Basin ID	10-YR 72-HR	25-YR 72 HR	50-YR 72-HR	100-YR 72 HR
13 ¹	112.80	113.09	113.29	113.49
14	114.83	115.71	116.72	117.29
15	107.71	108.01	108.27	108.57

1. Pond 13 peak stages are from Flamingo Crossings Phase 1 permit (Application No. 071221-29)

Water Quality

Water quality calculations are provided for each basin within Appendix E. The Water Quantity criteria set forth above controls the total volume to be retained within the Exfiltration 14, but a recovery analysis was run to demonstrate the 72 hour recovery requirement was met.

Recovery

PONDS 3.2 software was utilized to run recovery simulations on the design retention volumes for Basin 14 with parameters from the geotechnical engineer, PSI. The recovery models are included within Appendix F. The results from the analyses demonstrate compliance with the above listed criteria.

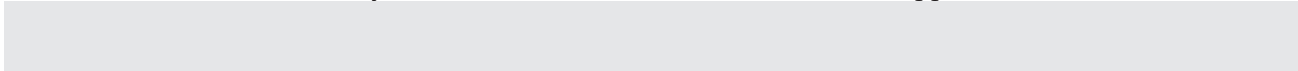
RCID

The required treatment volumes for Exfiltration 14 were run as a slug load. The results show recovery within 3 days. See Detailed Results - Scenario 49 under Appendix F.

The required 100 year/72 hour retention volume for Exfiltration 14 were run as single-basin SCS hydrograph. The model was extended to 14 days. The results demonstrate recovery within 14 days. See Detailed Results – Scenario 46 under Appendix F.

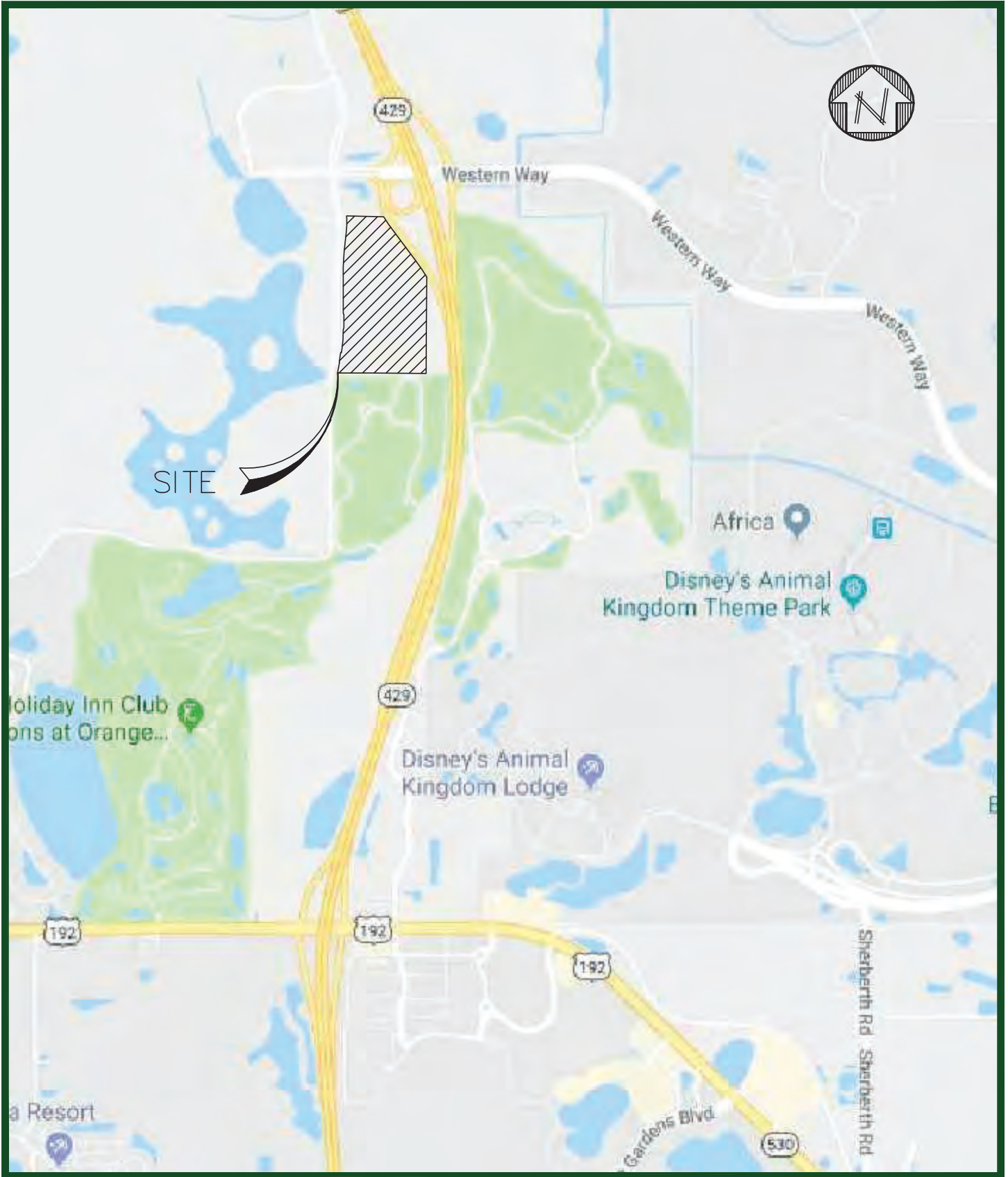
FDOT

The required critical duration storm event retention volume for Exfiltration 14 were run as single-basin SCS hydrograph. The model was extended to 14 days. For the worst case storm (100 Year – 10 Day), the results demonstrate half the volume recovered within 7 days and the remaining volume within 30 days. See Detailed Results – Scenario 48 under Appendix F.



APPENDIX A – Area Maps

1. Vicinity Map
2. Quadrangle Map
3. Aerial Map



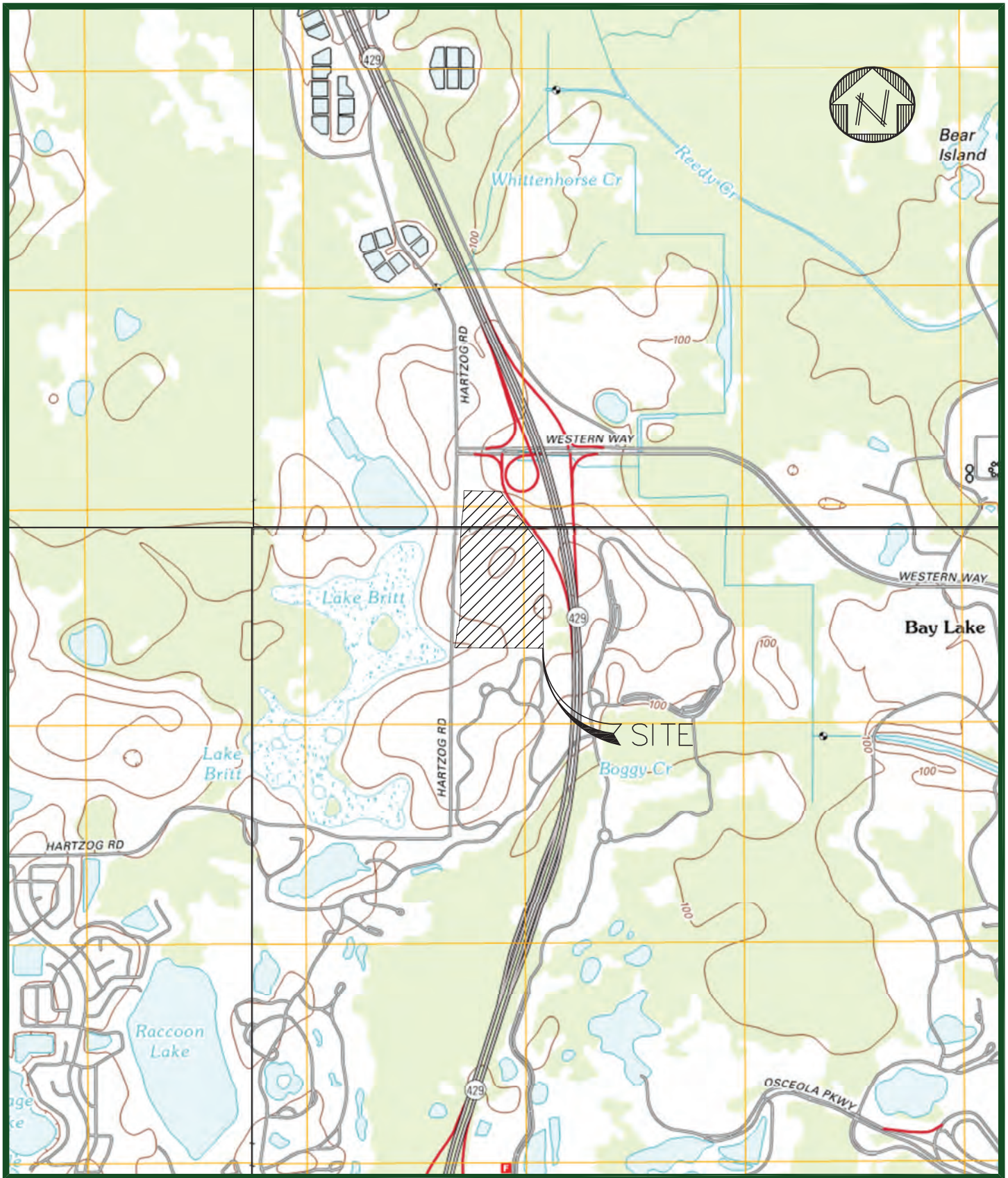
**KELLY,
COLLINS &
GENTRY, INC.**

ENGINEERING / PLANNING

Scale: 1: 2000
 Date: 02/02/2018
 S: 21 & 28 T: 24S R: 27E
 Job # : 1249.000
 Drawn by: KCW
 Appvd. by: SCF

**FLAMINGO
EAST PARCEL**

Exhibit: VICINITY MAP
 Source: GOOGLE MAPS
 Area: ORANGE COUNTY, FL



KELLY, COLLINS & GENTRY, INC.	Scale: 1: 2000	FLAMINGO EAST PARCEL
	Date: 02/09/2018	
ENGINEERING / PLANNING	S: 21 & 28 T: 24S R: 27E	Exhibit: TOPOGRAPHIC EXHIBIT
	Job # : 1249.000	Source: USGS
	Drawn by: KCW	Area: ORANGE COUNTY, FL
	Appvd. by: SCF	1 of 1

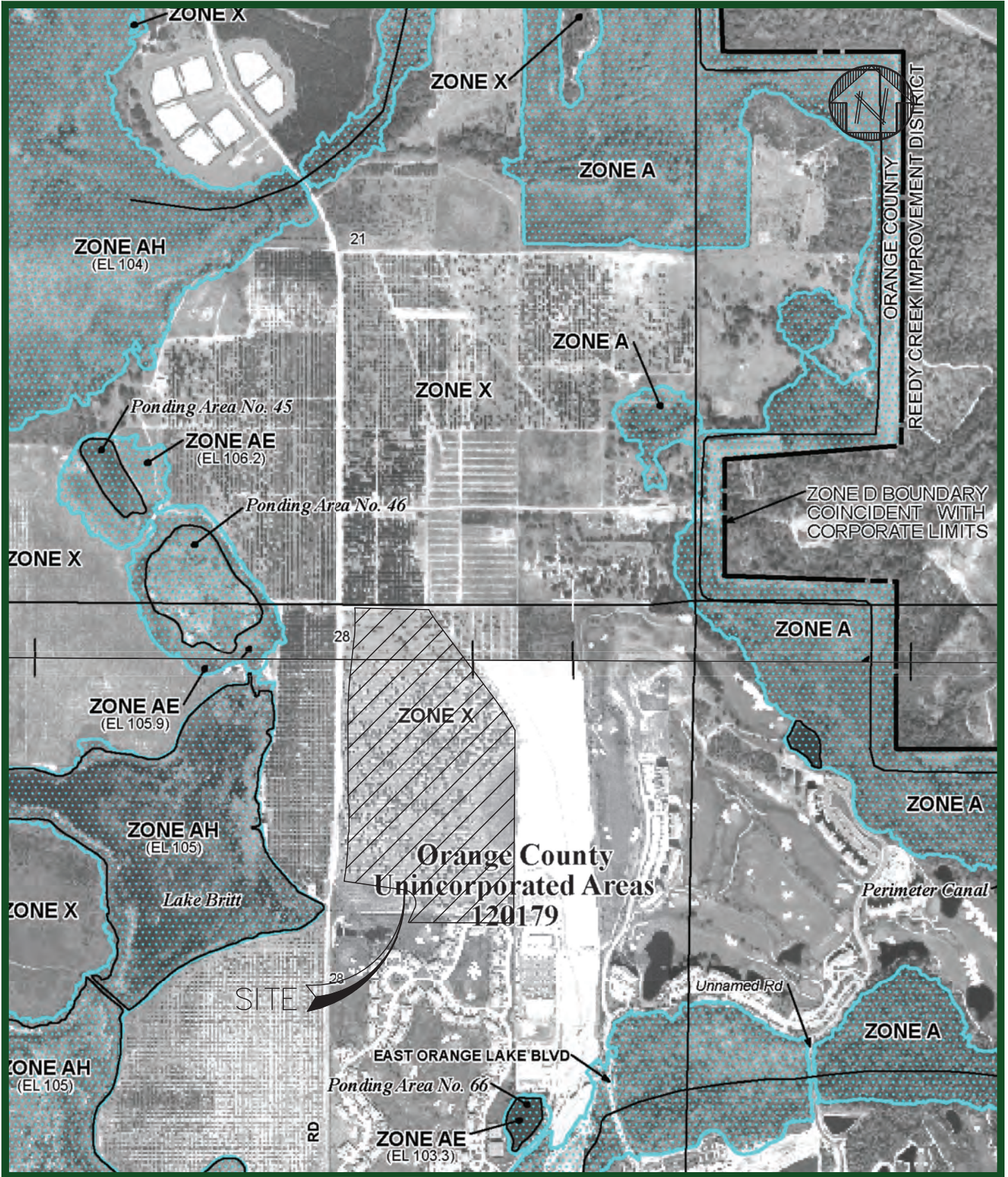


M:\11code\American Campus\Flamingo\Exhibits\Drainage Exhibits\East\Aerial Exhibit.dwg, 8.5x11, EXHIBIT (2), 2/14/2018 1:59:11 PM, 11

KELLY, COLLINS & GENTRY, INC.	Scale: 1: 2000	FLAMINGO EAST PARCEL	
	Date: 02/02/2018		
ENGINEERING / PLANNING	S: 21 & 28 T: 24S R: 27E	Exhibit: AERIAL EXHIBIT	
	Job # : 1249.000	Source: GOOGLE MAPS	
	Drawn by: KCW	Area: ORANGE COUNTY, FL	
	Appvd. by: SCF	1 of 1	

APPENDIX B – Flood Maps

1. FEMA Flood Insurance Rate Map (FIRM)



**KELLY,
COLLINS &
GENTRY, INC.**

ENGINEERING / PLANNING

Scale: 1:1000
 Date: 01/03/2018
 S: 21 & 28 T: 24S R: 27E
 Job #: 1249.000
 Drawn by: GMM
 Appvd. by: SCF

**FLAMINGO
EAST PARCEL**

Exhibit: FLOOD INSURANCE RATE MAP
 Source: FEMA
 Area: ORANGE COUNTY, FL

NFIP

PANEL 0580F

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
ORANGE COUNTY,
FLORIDA
AND INCORPORATED AREAS

PANEL 580 OF 750

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
BAY LAKE, CITY OF	120576	0580	F
ORANGE COUNTY	120179	0580	F
REEDY CREEK IMPROVEMENT DISTRICT	120577	0580	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
12095C0580F

MAP REVISED
SEPTEMBER 25, 2009

Federal Emergency Management Agency

**KELLY,
COLLINS &
GENTRY, INC.**

ENGINEERING / PLANNING

Scale: NOT TO SCALE
Date: 01/02/2017
S: 21 & 28 T: 24S R: 27E
Job #: 1249.000
Drawn by: GMM
Appvd. by: SCF

**FLAMINGO
EAST PARCEL**

Exhibit: FLOOD INSURANCE RATE MAP
Source: FEMA
Area: ORANGE COUNTY, FL

NFIP

PANEL 0390F

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
ORANGE COUNTY,
FLORIDA
AND INCORPORATED AREAS

PANEL 390 OF 750

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BAY LAKE, CITY OF	120576	0390	F
ORANGE COUNTY	120179	0390	F
REEDY CREEK IMPROVEMENT DISTRICT	120577	0390	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
12095C0390F

MAP REVISED
SEPTEMBER 25, 2009

Federal Emergency Management Agency

**KELLY,
COLLINS &
GENTRY, INC.**

ENGINEERING / PLANNING

Scale: NOT TO SCALE
Date: 01/03/2018
S: 21 & 28 T: 24S R: 27E
Job #: 1249.000
Drawn by: GMM
Appvd. by: SCF

**FLAMINGO
EAST PARCEL**

Exhibit: FLOOD INSURANCE RATE MAP
Source: FEMA
Area: ORANGE COUNTY, FL

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.







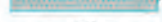




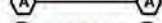

OTHER AREAS

- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

-  1% annual chance floodplain boundary
-  0.2% annual chance floodplain boundary
-  Floodway boundary
-  Zone D boundary
-  CBRS and OPA boundary
-  Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
-  Base Flood Elevation line and value; elevation in feet*
-  Base Flood Elevation value where uniform within zone; elevation in feet*
-  (EL 987)
-  * Referenced to the North American Vertical Datum of 1988 (NAVD 88)
-  Cross section line
-  Transect line
-  Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 1000-meter Universal Transverse Mercator grid ticks, zone 17
- 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 901), Transverse Mercator projection
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
DECEMBER 6, 2000

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

SEPTEMBER 25, 2009 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to update map format, to add roads and road names, to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, and to incorporate previously issued Letters of Map Amendment.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

**KELLY,
COLLINS &
GENTRY, INC.**

ENGINEERING / PLANNING

Scale: NOT TO SCALE

Date: 01/02/2017

S: 21 & 28 T: 24S R: 27E

Job #: 1249.000

Drawn by: GMM

Appvd. by: SCF

**FLAMINGO
EAST PARCEL**

Exhibit: FLOOD INSURANCE RATE MAP

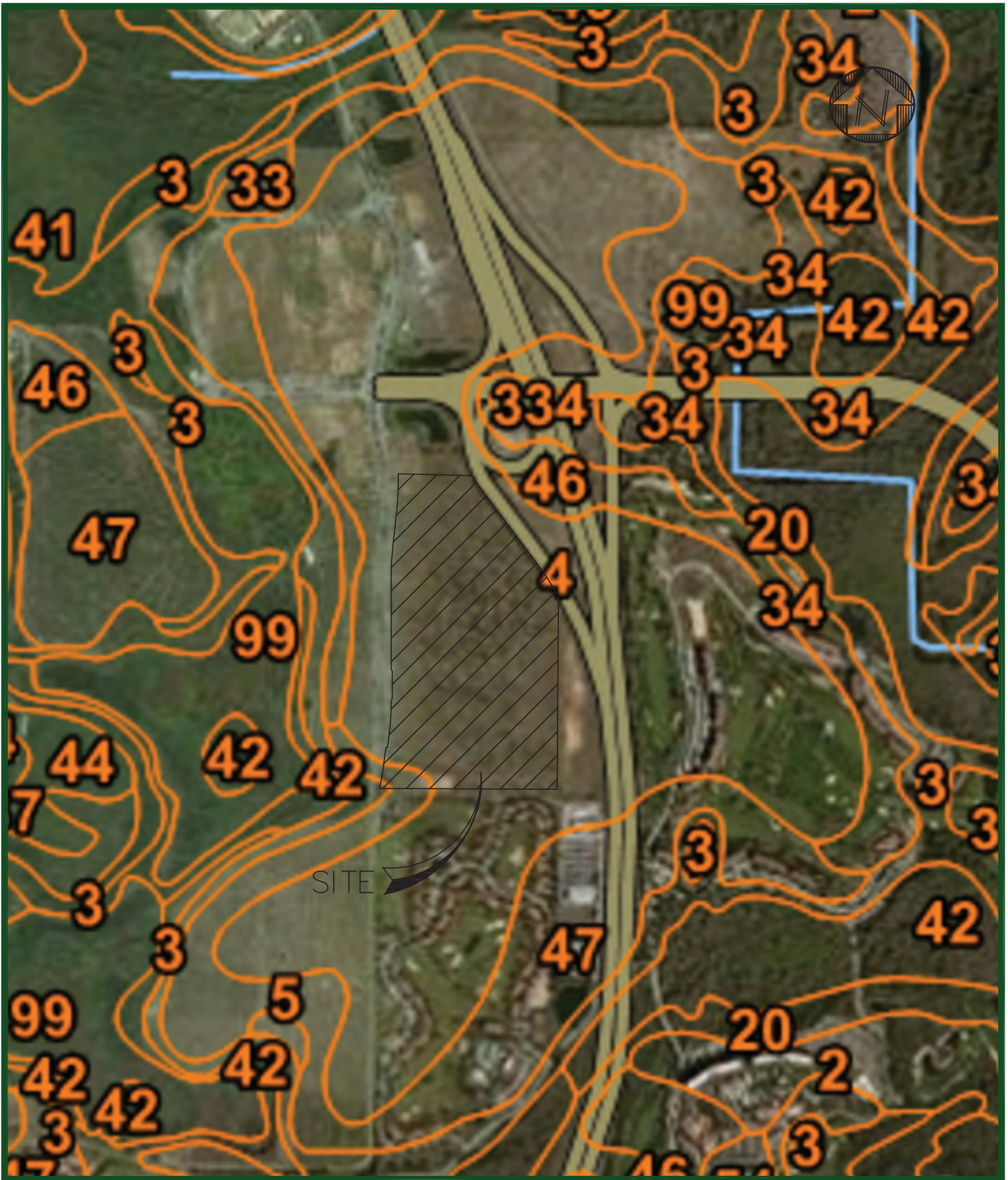
Source: FEMA

Area: ORANGE COUNTY, FL

4 of 4

APPENDIX C – Soils

1. USDA Soils Map
2. USDA Table 15 – Soils and Water Features



KELLY, COLLINS & GENTRY, INC.	Scale: 1:1000 Date: 12/22/2017	FLAMINGO EAST PARCEL	
	S: 21 & 28 T: 24S R: 27E Job # : 1249.000		
ENGINEERING / PLANNING	Drawn by: GMM Appvd. by: SCF	Source: USDA SOIL SURVEY Area: ORANGE COUNTY, FL	1 of 1

TABLE 15.--SOIL AND WATER FEATURES

["Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Hydro-logic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Dura- tion	Months	Depth Ft	Kind	Months	Initial In	Total In	Uncoated steel	Concrete
1. Arents.											
2 Archbold	A	None	---	---	3.5-6.0	Apparent	Jun-Nov	---	---	Low	Moderate.
3* Basinqr	D	None	---	---	+2-1.0	Apparent	Jun-Feb	---	---	High	Moderate.
4, 5 Candler	A	None	---	---	>6.0	---	---	---	---	Low	High.
6: Candler	A	None	---	---	>6.0	---	---	---	---	Low	High.
Apopka	A	None	---	---	>6.0	---	---	---	---	Moderate	High.
7, 8: Candler	A	None	---	---	>6.0	---	---	---	---	Low	High.
Urban land.											
9* Canova	B/D	None	---	---	+2-0	Apparent	Jan-Dec	3-6	8-12	High	Low.
10 Chobee	B/D	Frequent	Brief to very long.	Jun-Feb	0-1.0	Apparent	Jun-Feb	---	---	Moderate	Low.
41: Samsula*	B/D	None	---	---	+2-1.0	Apparent	Jan-Dec	16-20	30-36	High	High.
Hontoon*	B/D	None	---	---	+2-1.0	Apparent	Jan-Dec	16-24	>52	High	High.
Basinqr*	D	None	---	---	+2-1.0	Apparent	Jun-Feb	---	---	High	Moderate.
42* Sanibel	B/D	None	---	---	+1-1.0	Apparent	Jun-Feb	3-5	5-15	High	Low.
43 Seffner	C	None	---	---	1.5-3.5	Apparent	Jun-Nov	---	---	Low	Moderate.
44 Smyrna	B/D	None	---	---	0-1.0	Apparent	Jul-Oct	---	---	High	High.
45: Smyrna	B/D	None	---	---	0-1.0	Apparent	Jul-Oct	---	---	High	High.
Urban land.											
46 Tavares	A	None	---	---	3.5-6.0	Apparent	Jun-Dec	---	---	Low	High.
47: Tavares	A	None	---	---	3.5-6.0	Apparent	Jun-Dec	---	---	Low	High.
Millhopper	A	None	---	---	3.5-6.0	Perched	Aug-Feb	---	---	Low	Moderate.
48: Tavares	A	None	---	---	3.5-6.0	Apparent	Jun-Dec	---	---	Low	High.

**KELLY,
COLLINS &
GENTRY, INC.**

ENGINEERING / PLANNING

Scale: NOT TO SCALE
Date: 12/22/2017
S: 21 & 28 T: 24S R: 27E
Job #: 1249.000
Drawn by: GMM
Appvd. by: SCF

**FLAMINGO
EAST PARCEL**

Exhibit: SOILS MAP
Source: USDA SOIL SURVEY
Area: ORANGE COUNTY, FL

APPENDIX D – Approved Permits

1. Western Beltway Conceptual Permit (#48-007140-S)
 - a. Overall Drainage Plan
 - b. ICPR Node Min/Max Report
 - c. Excerpts from Western Beltway Calculations (Pond 10)
2. Flamingo Crossings Phase 1 (App #071221-29)
 - a. Overall Drainage Map
 - b. Treatment Calculations
3. Flamingo Crossings South (App #100428-7)
 - a. Post Development Drainage Basin Table
 - b. Basin Level Breakdown and Flood Protection (Peak Stages)

1. Western Beltway Conceptual Permit (#48-007140-S)

Western Beltway Development Post

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
PP-1	BASE	25YR72HR POST	60.64	109.468	111.000	0.0036	198821	60.00	105.208	60.64	35.340
PP-10	BASE	25YR72HR POST	60.06	110.825	111.000	0.0043	51586	60.00	73.471	60.06	67.589
PP-11	BASE	25YR72HR POST	60.54	107.581	108.000	0.0039	52422	60.00	45.534	61.05	16.422
PP-15	BASE	25YR72HR POST	60.21	109.514	110.000	0.0050	86098	60.00	97.009	60.17	63.899
PP-16	BASE	25YR72HR POST	60.15	103.785	105.000	0.0034	49687	60.00	46.543	60.15	38.534
PP-17	BASE	25YR72HR POST	60.56	104.423	106.000	0.0025	174572	60.00	92.746	60.56	63.928
PP-18	BASE	25YR72HR POST	61.25	101.428	103.000	0.0035	482443	60.00	212.975	61.37	36.886
PP-2-3	BASE	25YR72HR POST	60.53	110.910	111.500	0.0038	78654	60.00	63.558	60.53	35.668
PP-4	BASE	25YR72HR POST	60.23	108.718	111.000	0.0025	73694	60.00	32.323	60.23	20.084
PP-5	BASE	25YR72HR POST	60.24	108.513	110.000	0.0049	73025	59.75	55.797	60.16	23.384
PP-6	BASE	25YR72HR POST	60.41	106.753	109.000	0.0030	153679	60.00	51.422	60.41	21.551
PP-7	BASE	25YR72HR POST	60.24	109.312	110.000	0.0050	84530	60.00	83.136	60.17	45.591
PP-8	BASE	25YR72HR POST	60.30	107.317	108.000	0.0032	71078	60.00	59.748	60.30	47.345
PP-9	BASE	25YR72HR POST	60.43	107.406	108.000	0.0036	103714	60.00	97.927	60.40	77.522
W.FE	BASE	25YR72HR POST	61.72	105.717	108.000	0.0014	17718033	60.00	1610.609	61.72	458.057
W80-46	BASE	25YR72HR POST	67.99	106.652	108.000	0.0050	782165	60.00	204.300	67.99	11.575
W80-47	BASE	25YR72HR POST	67.99	106.653	108.000	0.0050	250506	60.00	83.564	60.83	48.738
W80-48	BASE	25YR72HR POST	73.09	104.028	107.000	0.0018	3867233	60.00	3283.787	73.09	127.225
W80-49	BASE	25YR72HR POST	60.96	100.483	102.000	-0.0029	115434	60.44	69.460	60.96	61.358
W80-52A	BASE	25YR72HR POST	60.23	98.269	100.000	0.0018	152024	60.00	56.420	60.23	48.740
W80-52B	BASE	25YR72HR POST	0.00	97.260	97.260	0.0000	0	60.06	39.993	0.00	0.000
W80-53	BASE	25YR72HR POST	0.00	97.330	97.330	0.0000	0	60.63	85.406	0.00	0.000
W80-54	BASE	25YR72HR POST	0.00	97.310	97.310	0.0000	0	60.08	47.179	0.00	0.000
WHITTENHORSE CR	BASE	25YR72HR POST	0.00	102.300	107.000	0.0000	0	73.09	127.225	0.00	0.000

Western Beltway Ponds 12, 13, and 14 SCS

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
NWOUAD	BASE	25HR72HR POST	0.00	101.080	104.850	0.0000	0	60.72	19.454	0.00	0.000
Pond12	BASE	25HR72HR POST	60.72	111.524	112.000	0.0050	103594	60.00	81.375	60.72	19.454
Pond13	BASE	25HR72HR POST	60.82	112.490	113.000	0.0050	93165	60.00	86.419	60.82	30.659
Pond14	BASE	25HR72HR POST	62.60	117.401	118.000	0.0050	337683	60.00	167.665	62.60	10.174
SWOUAD	BASE	25HR72HR POST	0.00	101.220	104.000	0.0000	0	60.82	30.659	0.00	0.000
Turnpike Pond10	BASE	25HR72HR POST	0.00	116.000	116.000	0.0000	0	62.60	10.174	0.00	0.000

PEAK STAGES

Western Beltway Development Post

Name	Group	Simulation	Max Stage	Max Stage	Warning Stage	Max Delta	Max Surf Area	Max Time	Max Inflow	Max Time	Max Inflow	Max Time	Max Outflow	Max cfs
			ft	hrs	ft	ft	ft2	hrs	cfs	hrs	cfs	hrs	cfs	cfs
FP-1	BASE	10YR72HR POST	109.808	60.59	111.000	0.0035	201488	60.00	129.012	60.89	129.012	60.89	39.402	39.402
FP-10	BASE	10YR72HR POST	110.952	60.05	111.000	0.0043	52083	60.00	90.195	60.05	90.195	60.05	83.572	83.572
FP-11	BASE	10YR72HR POST	107.928	60.57	108.000	0.0038	94540	60.00	55.823	61.61	55.823	61.61	20.209	20.209
FP-15	BASE	10YR72HR POST	109.950	60.29	110.000	-0.0050	86190	60.00	119.072	60.23	119.072	60.23	66.702	66.702
FP-16	BASE	10YR72HR POST	104.040	60.18	105.000	0.0034	50685	60.00	56.910	60.18	56.910	60.18	35.409	35.409
FP-17	BASE	10YR72HR POST	104.638	60.66	106.000	0.0026	176075	60.00	113.686	60.55	113.686	60.55	72.509	72.509
FP-18	BASE	10YR72HR POST	101.800	61.42	103.000	0.0036	487962	60.00	260.737	61.51	260.737	61.51	39.626	39.626
FP-2-3	BASE	10YR72HR POST	111.297	60.60	111.500	0.0037	81349	60.00	77.891	60.60	77.891	60.60	40.221	40.221
FP-4	BASE	10YR72HR POST	108.842	60.22	111.000	0.0024	74236	60.00	39.600	60.22	39.600	60.22	25.456	25.456
FP-5	BASE	10YR72HR POST	108.893	60.34	110.000	0.0050	74844	60.00	68.277	60.19	68.277	60.19	24.096	24.096
FP-6	BASE	10YR72HR POST	106.916	60.36	109.000	0.0024	154884	60.00	62.861	60.36	62.861	60.36	28.639	28.639
FP-7	BASE	10YR72HR POST	109.763	60.35	110.000	0.0050	87088	60.00	101.838	60.22	101.838	60.22	47.460	47.460
FP-8	BASE	10YR72HR POST	107.540	60.41	108.000	0.0032	72048	60.00	73.305	60.32	73.305	60.32	53.248	53.248
FP-9	BASE	10YR72HR POST	107.763	60.59	108.000	0.0035	105298	60.00	120.140	60.44	120.140	60.44	81.878	81.878
M-FE	BASE	10YR72HR POST	105.824	61.96	108.000	0.0014	20352380	60.00	2016.052	61.96	2016.052	61.96	563.522	563.522
W80-46	BASE	10YR72HR POST	106.768	61.89	108.000	0.0050	603689	60.00	252.853	61.89	252.853	61.89	67.942	67.942
W80-47	BASE	10YR72HR POST	106.843	61.72	108.000	0.0050	229631	60.00	89.815	61.60	89.815	61.60	46.062	46.062
W80-48	BASE	10YR72HR POST	104.606	72.78	107.000	0.0049	38551388	60.00	4090.675	72.78	4090.675	72.78	196.110	196.110
W80-49	BASE	10YR72HR POST	100.708	61.25	102.000	-0.0026	115434	60.16	82.880	61.25	82.880	61.25	89.597	89.597
W80-52A	BASE	10YR72HR POST	98.315	60.18	100.000	0.0013	152024	60.00	64.872	60.18	64.872	60.18	56.712	56.712
W80-52B	BASE	10YR72HR POST	97.260	0.00	97.260	0.0000	0	60.01	48.553	0.00	48.553	0.00	0.000	0.000
W80-53	BASE	10YR72HR POST	97.330	0.00	97.330	0.0000	0	60.03	105.571	0.00	105.571	0.00	0.000	0.000
W80-54	BASE	10YR72HR POST	97.310	0.00	97.310	0.0000	0	60.03	57.441	0.00	57.441	0.00	0.000	0.000
WHITTENHORSE, CR	BASE	10YR72HR POST	102.300	0.00	102.300	0.0000	0	72.78	196.110	0.00	196.110	0.00	0.000	0.000
FP-1	BASE	10YR72HR POST	109.261	60.61	111.000	0.0037	197196	60.00	91.270	60.61	91.270	60.61	32.583	32.583
FP-10	BASE	10YR72HR POST	110.747	60.06	111.000	0.0043	51280	60.00	63.664	60.06	63.664	60.06	58.288	58.288
FP-11	BASE	10YR72HR POST	107.399	60.53	108.000	0.0045	91309	60.00	39.524	61.02	39.524	61.02	13.889	13.889
FP-15	BASE	10YR72HR POST	110.000	60.17	110.000	0.0047	85093	60.00	84.090	60.15	84.090	60.15	61.190	61.190
FP-16	BASE	10YR72HR POST	105.799	60.16	105.000	0.0034	49742	60.00	40.471	60.16	40.471	60.16	33.154	33.154
FP-17	BASE	10YR72HR POST	104.320	60.58	106.000	0.0026	173857	60.00	80.517	60.58	80.517	60.58	54.729	54.729
FP-18	BASE	10YR72HR POST	101.129	61.16	103.000	0.0033	478022	60.00	185.007	61.22	185.007	61.22	35.723	35.723
FP-2-3	BASE	10YR72HR POST	110.697	60.97	111.500	0.0037	71167	60.00	55.160	60.47	55.160	60.47	32.878	32.878
FP-4	BASE	10YR72HR POST	108.636	60.25	111.000	0.0028	73338	60.00	28.066	60.25	28.066	60.25	16.793	16.793
FP-5	BASE	10YR72HR POST	108.303	60.42	110.000	0.0049	72021	60.00	48.521	60.13	48.521	60.13	22.991	22.991
FP-6	BASE	10YR72HR POST	106.625	60.48	109.000	0.0034	152734	60.00	44.749	60.48	44.749	60.48	16.374	16.374
FP-7	BASE	10YR72HR POST	109.980	60.20	110.000	0.0050	83214	60.00	72.210	60.12	72.210	60.12	45.298	45.298
FP-8	BASE	10YR72HR POST	107.217	60.31	108.000	0.0031	70643	60.00	51.820	60.31	51.820	60.31	40.557	40.557
FP-9	BASE	10YR72HR POST	107.216	60.91	108.000	0.0043	103104	60.00	84.243	60.41	84.243	60.41	68.019	68.019
M-FE	BASE	10YR72HR POST	105.652	61.89	108.000	0.0014	16113447	60.00	1371.435	61.69	1371.435	61.69	397.264	397.264
W80-46	BASE	10YR72HR POST	106.564	96.00	108.000	0.0050	918189	60.00	175.739	0.00	175.739	0.00	0.000	0.000
W80-47	BASE	10YR72HR POST	106.564	95.98	108.000	0.0050	260354	60.02	79.499	60.74	79.499	60.74	46.345	46.345
W80-48	BASE	10YR72HR POST	103.516	73.62	107.000	0.0029	2886114	60.00	2805.021	73.62	2805.021	73.62	75.104	75.104
W80-49	BASE	10YR72HR POST	100.355	61.00	102.000	-0.0029	115434	60.46	59.326	61.00	59.326	61.00	52.068	52.068
W80-52A	BASE	10YR72HR POST	98.239	60.37	100.000	0.0014	152024	60.00	51.727	60.37	51.727	60.37	43.880	43.880
W80-52B	BASE	10YR72HR POST	97.260	0.00	97.260	0.0000	0	60.10	34.527	0.00	34.527	0.00	0.000	0.000
W80-53	BASE	10YR72HR POST	97.330	0.00	97.330	0.0000	0	60.66	73.410	0.00	73.410	0.00	0.000	0.000
W80-54	BASE	10YR72HR POST	97.310	0.00	97.310	0.0000	0	60.09	40.481	0.00	40.481	0.00	0.000	0.000
WHITTENHORSE, CR	BASE	10YR72HR POST	102.300	0.00	102.300	0.0000	0	73.62	75.104	0.00	75.104	0.00	0.000	0.000

BASINS 1-18 (EXCEPT BASINS 12,13 & 14)

EXHIBIT 7A

PEAK STAGES

Western Beltway Ponds 12, 13, and 14 SCS

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
NWQUAD Pond12	BASE	100YR72HR POST	0.00	101.080	104.850	0.0000	0	50.71	24.515	0.00	0.000
Pond13	BASE	100YR72HR POST	60.71	111.930	112.000	0.0050	106231	60.00	99.722	60.71	24.615
Pond14	BASE	100YR72HR POST	60.73	112.930	113.000	-0.0050	95468	50.00	105.987	60.73	42.275
SWQUAD	BASE	100YR72HR POST	60.98	117.968	118.000	0.0050	341761	60.00	205.275	60.98	35.127
Turnpike Pond10	BASE	100YR72HR POST	0.00	101.220	104.000	0.0000	0	50.73	42.275	0.00	0.000
NWQUAD Pond12	BASE	100YR72HR POST	0.00	116.000	116.000	0.0000	0	60.98	35.127	0.00	0.000
Pond13	BASE	100YR72HR POST	0.00	101.080	104.850	0.0000	0	60.71	17.503	0.00	0.000
Pond14	BASE	100YR72HR POST	60.71	111.218	112.000	0.0050	101848	60.00	70.596	60.71	17.503
SWQUAD	BASE	100YR72HR POST	60.78	112.161	113.000	0.0050	91447	60.00	74.983	60.78	27.746
Turnpike Pond10	BASE	100YR72HR POST	68.15	117.232	118.000	0.0044	335995	60.00	145.583	68.15	4.105
	BASE	100YR72HR POST	0.00	101.220	104.000	0.0000	0	60.78	27.746	0.00	0.000
	BASE	100YR72HR POST	0.00	116.000	116.000	0.0000	0	68.15	4.105	0.00	0.000

BASINS 12, 13 & 14

EXHIBIT 7B

WORKSHEET 2: Runoff curve number and runoff

Project: Western Beltway (SR 429)
 Location: Orange County

By: GTP Date: 2/7/2001
 Checked: ll Date: 3-15-01

Circle One: Present Developed

Basin 10

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix A)	Cover description (cover type, treatment, and hydrologic condition, percent impervious area ratio)	CN			Area <input checked="" type="checkbox"/> acres <input type="checkbox"/> mi ² <input type="checkbox"/> %	
		Table 2-2	Fig 2-3	Fig 2-4		
Soil # 4,47 Group A	Fair Grassland	49			8.2	401.8
Impervious	Pond Bottom (Pond Modeled with Perc.)	100			4.5	450.0
Impervious	Roadway	98			8.4	823.2
Soil # 4 Group A	<u>Poor Grove</u> <u>Off-Site</u>	<u>57</u>			<u>14.8</u>	842.5
Use only one CN source per line.					Totals =	35.9 2517.5

CN (weighted) = total product/total area = $\frac{2517.5}{35.9} = 70.2$ Use CN = 70

WORKSHEET 3: Time of Concentration (Tc) or Travel Time (Tt)

111-21

Project: West Beltway (SR 429)
 Location: Orange County

By: GTP
 Checked: CL

Date: 1/5/2000
 Date: 3-15-01

Circle One: Present Developed Basin 10
Offsite Area
 Circle One: T_c T_c through subarea

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to T_c only)

- Segment ID
1. Surface Description (table 3-1.).....
 2. Manning's roughness coeff., n (table 3-1.).....
 3. Flow length, L (total L <= 300 ft.)..... ft
 4. Two-yr 24-hr rainfall, P₂..... in
 5. Land slope, sft/ft
 6. $T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$ Compute T_c...hr

AB		
Dense		
0.40		
300		
4.7		
0.0143		
0.81	+	= 0.81

Shallow concentrated flow

- Segment ID
7. Surface Description (paved or unpaved).....
 8. Flow length, L ft
 9. Watercourse slope, s ft/ft
 10. Average velocity, V (figure 3-1) ft/s
 11. $T_c = \frac{L}{3600 V}$ Compute T_c...hr

BC		
unpaved		
580		
0.0198		
2.27		
0.071	+	= 0.07

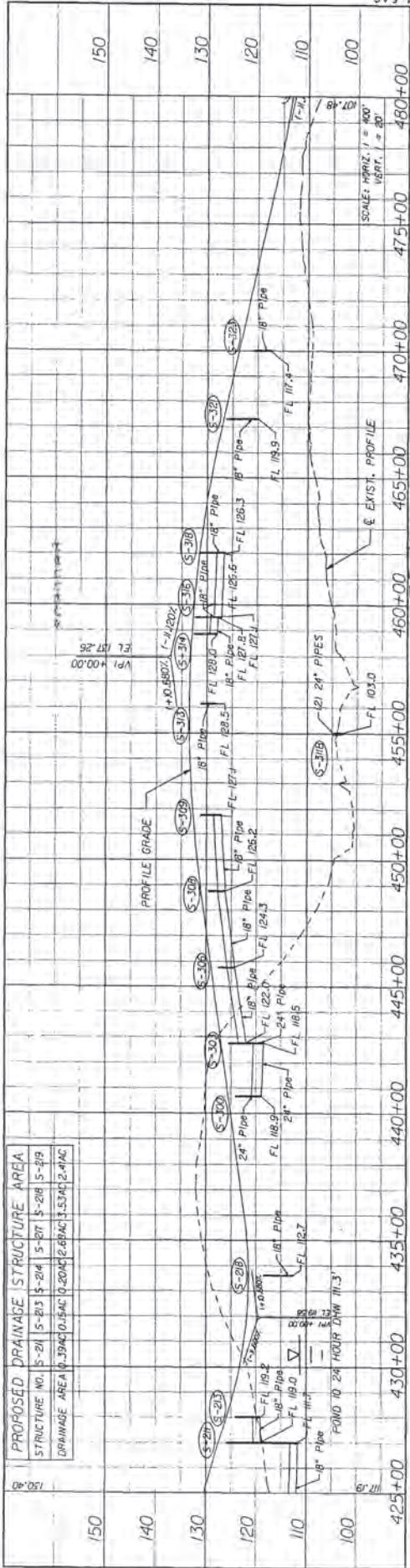
Channel flow

- Segment ID
12. Cross sectional flow area, a ft²
 13. Wetted perimeter, P_w ft/ft
 14. Hydraulic radius, r = a/P_w Compute r ft
 15. Channel slope, s ft/ft
 16. Manning's roughness coeff., n
 17. $V = 1.49 r^{2/3} s^{1/2} / n$ Compute V..... ft/s
 18. Flow length, L ft
 19. $T_c = L / 3600 V$ Compute T_c hr
 20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr

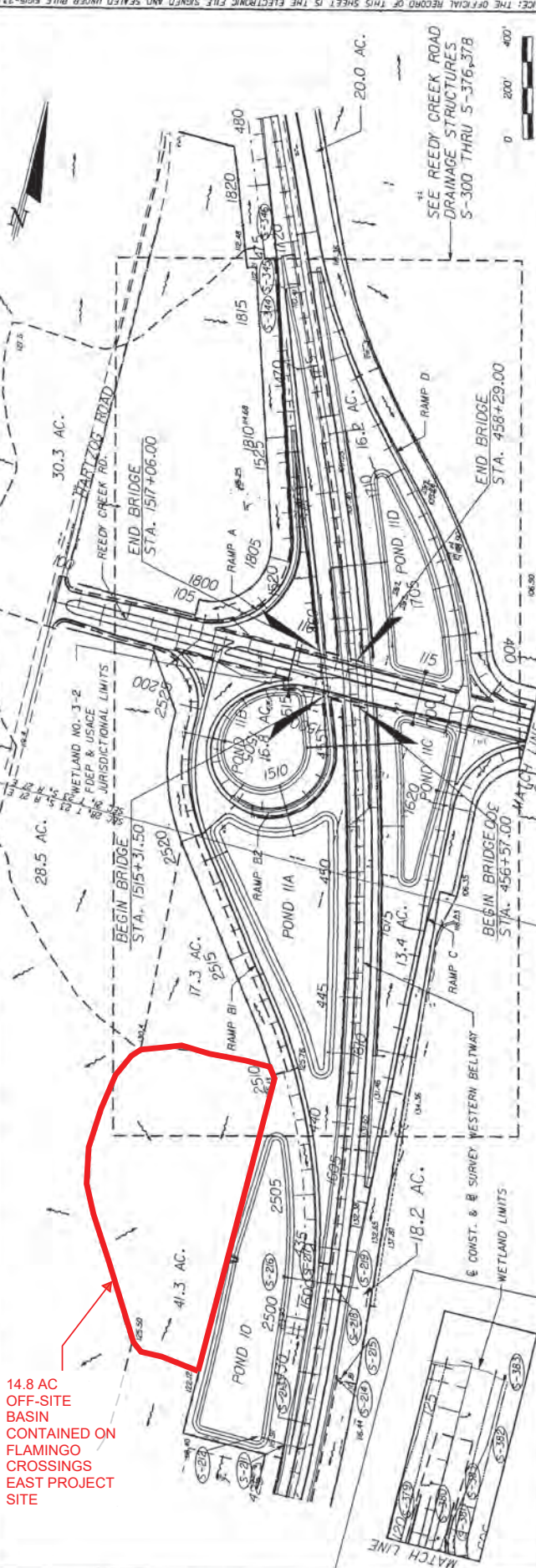
	+	= 0.00
		= 0.88

53 minutes

K:\rain\p...



PROPOSED DRAINAGE STRUCTURE AREA	
STRUCTURE NO. S-291	S-293 S-294 S-297 S-298 S-319
DRAINAGE AREA	0.39AC 0.5AC 0.20AC 2.69AC 3.53AC 2.41AC



14.8 AC
 OFF-SITE
 BASIN
 CONTAINED ON
 FLAMINGO
 CROSSINGS
 EAST PROJECT
 SITE

DATE: DESCRIPTION:		REVISIONS:	
DATE:	DESCRIPTION:	DATE:	DESCRIPTION:
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD NO. 429 COUNTY ORANGE FINANCIAL PROJECT ID 403498-3-52-01			
WESTERN BELTWAY - SECTION 3A STA. 425+00 TO STA. 480+00 DRAINAGE MAP			
HDR Engineering, Inc. 11000 West Orange Boulevard Tampa, FL 33607-3755 Attention: Project Manager Addressation No. 429 James W. Jarrarrah, P.E. #17904			
SHEET NO. 4		SHEET NO. 4	

2. Flamingo Crossings Phase 1 (App #071221-29)

FLAMINGO CROSSINGS

PBS&J

PROJECT AREA
 700 Colabekton Avenue
 Suite 200
 Colabekton, Florida 34747

PHASE 1 INFRASTRUCTURE

UNIT NAME
 Colabekton, Florida 34747

OVERALL DRAINAGE MAP

ACCOUNT NUMBER
 071876.01

APPROVED	DAC
CHECKED	WHT
DRAWN	WHT
SCALE	AS SHOWN

LEGEND

- LIMITS OF CONSTRUCTION
- WETLANDS WITH BUFFER
- EXISTING RIGHT-OF-WAY
- EXISTING CONTOUR
- PROPOSED BASIN NUMBER
- PROPOSED BASIN AREA
- PROPOSED FLOW PATTERN
- 100 YR FLOOD PLAN BOUNDARY

GRAPHIC SCALE

1" = 200'

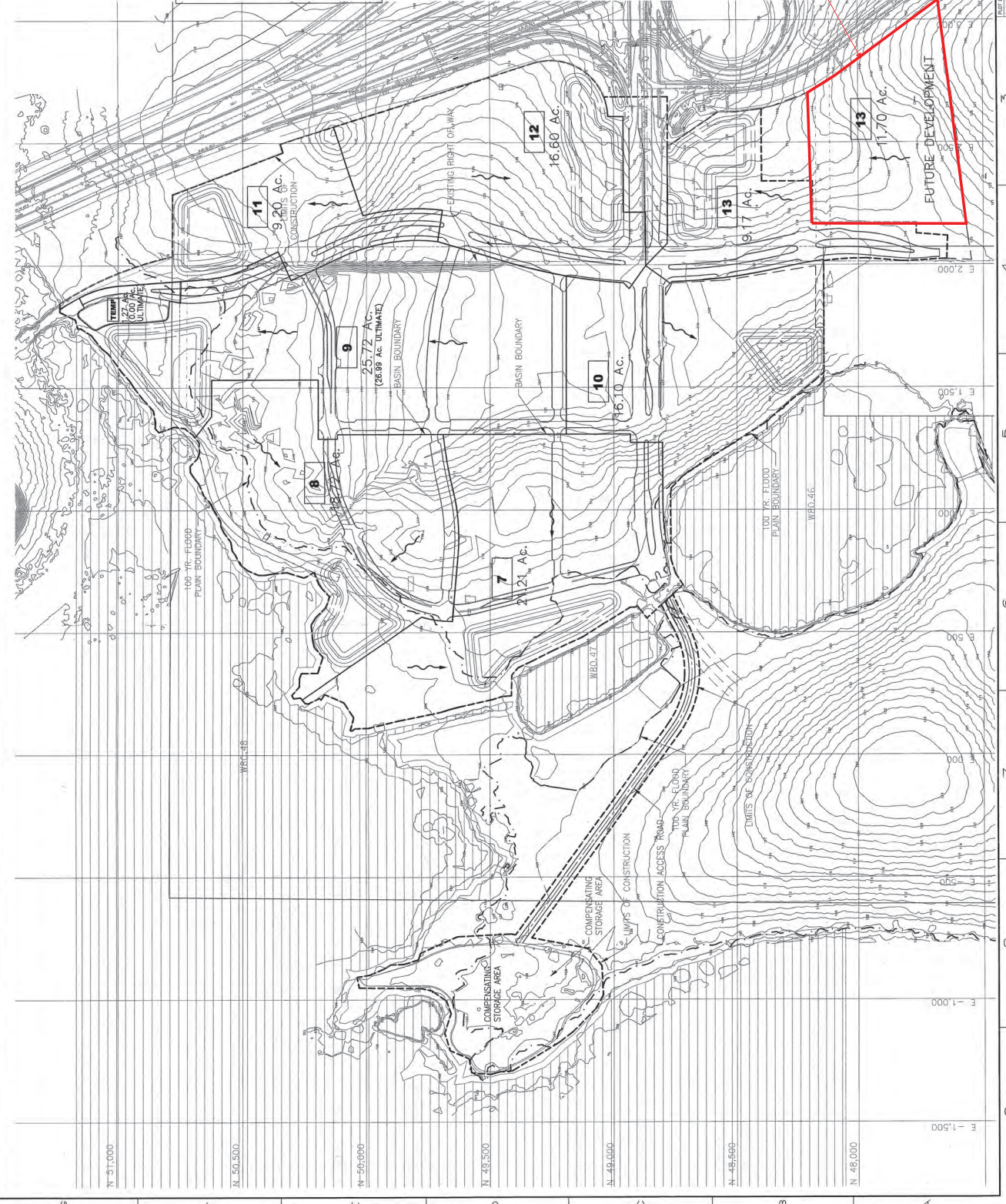
1/4" = 50'

1/8" = 25'

1/16" = 12.5'

PORTION OF BASIN 13 CONTAINED ON FLAMINGO CROSSINGS EAST PROJECT SITE - APPROXIMATELY 10.0 ACRES

NOTE: A PORTION OF BASIN 13 IS BEING DEVELOPED IN THIS PHASE. THE OTHER PORTION (FUTURE DEVELOPMENT) WILL BE DEVELOPED IN A FUTURE PHASE.



REV	DATE	DESCRIPTION
1	12/19/17	100% SUBMITTAL
2	11/21/17	90% SUBMITTAL
3	11/21/17	90% SUBMITTAL
4	11/21/17	ROAD REVIEW
5	11/21/17	100% SUBMITTAL
6		
7		
8		
9		

**Flamingo Crossings
Orange County, FL
Stormwater Treatment Volume Calculations
Post-Development**

Basin:	13	
Pond:	13	
Basin Area:	20.87	acres
Stormwater Mgmt. Area:	2.23	acres
Pond Area @ NWL:	1.61	acres
Normal Water Elev.:	108.0	ft

Curve Number: (Using the SCS TR-55, Second Ed., June 1986, Table 2-2a)

Cover Type	Cover Description	Curve Numbers for Soil Group			
		A	B	C	D
Open Space	Good (grass cover > 75%)	39	61	74	80
Impervious Area	Pavement, Buildings, etc.	98	98	98	98

Percentage of each soil type within the Basin: 100% 0% 0% 0%

Composite Pervious Curve Number (CN) = 39
Impervious Curve Number (CN) = 98

Land Use:	Total Area (ac)	% Imperv.	Imperv. Area (ac)	Imperv. CN	Pervious Area (ac)	Pervious CN	% Roof Area	Roof Area (ac)
Phase 1 Developable Area	4.05	85%	3.44		0.61		0%	0.00
Roadway	3.51	69%	2.41		1.10		0%	0.00
Pond	1.61	N/A	N/A		N/A		N/A	N/A
Future Developable Area	11.70	85%	9.95		1.76		0%	0.00
Totals	20.87		15.80	98	3.46	39		0.00

Weighted Curve Number (CN) = 89

Time of Concentration: (ref. SCS TR-55, Second Ed., June 1986)

Sheet flow (Eq. 3-3):
 $n = 0.40$ $P_2 = 4.75$ in
 $L = 100$ ft $s = 0.01$ ft/ft
 $T = 0.39$ hrs

Shallow concentrated flow (Fig. 3-1):
 Unpaved: Paved:
 $L = 0$ ft $L = 100$ ft
 $s = 0.01$ ft/ft $s = 0.005$ ft/ft
 $T = 0$ hrs $T = 0.019$ hrs

Pipe flow:
 $L = 1200.00$ ft $v = 2.50$ ft/sec (assumed)
 $T = 0.13$ hrs

T.C. = 0.54 hrs
 = 32 min

Treatment Volume Required: (ref. SFWMD Permit Info, Manual Vol. IV, Nov. 1987)

Avg. %Imperviousness = (Total Imp. Area - Roofs) / (Total Area - Lakes - Roofs) = 82%

First inch of runoff = 1" x Total Area x 1/12 = 1.74 acre-feet

2.5" x %Imp. = 2.5" x (Total Area - Lakes) x Avg. %Imp. x 1/12 = 3.29 acre-feet <<==== governs

Pond: 13

Stage Storage:	Stage (ft)	Area (ac)	Treat. Vol. (ac-ft)
Orifice Inv. Elev. = NWL =	108.00	1.61	0
	109.00	1.72	1.67
	110.00	1.83	2.92
minimum weir elevation =	110.15		3.29 <<==== Minimum Treatment Volume Required
proposed weir elevation =	110.20		3.40 <<==== Proposed Treatment Volume Provided
	111.00	1.95	5.34
	112.00	2.06	7.34
	113.00	2.18	9.46
top of bank =	113.50	2.23	10.56

Treatment Volume Provided:

Minimum weir elevation required = 110.15 (ft)
 Proposed weir elevation provided = 110.20 (ft)
 Treatment Volume Provided = 3.40 (ac-ft)
 Extra Treatment Volume Provided = 0.11 (ac-ft)

Drawdown Calculations: (based on drawdown of 1/2" of wet detention volume in 24 hrs)

Orifice Diameter = $\sqrt{\frac{(2 \cdot A \cdot (h_1^{1/2} - h_2^{1/2}))}{Cd \cdot (3.144 \cdot n) \cdot (2 \cdot g)^{1/2} \cdot (t_2 - t_1)}}$, where:

Treatment Volume = 3.40 acre-feet A = pond area (ft²)
 Stage @ Treatment Vol. = 110.20 feet h1 = starting head above orifice (ft),
 Orifice Invert El. = 108.00 feet h2 = ending head above orifice (ft),
 h1 = 2.20 feet Cd = orifice coefficient (0.6),
 h2 = 1.66 feet n = number of orifices
 n = Number of Orifices = 1 g = gravitational constant (32.2 ft/s²),
 Orifice Diameter = 3.47 inches t1 = starting time (sec), and
 Design Orifice Diameter = 3 inches t2 = ending time (sec).

3. Flamingo Crossings South (App #100428-7)

FLAMINGO CROSSINGS BOULEVARD

APP# 1 0 0 4 2 8 - 7

ORIGINAL SUBMITTAL

APR 2 8 2010

ORLANDO SERVICE CENTER

TAB 2 PRIMARY DRAINAGE DATA

Osceola Engineering, Inc.
1025 10TH STREET
ST. CLOUD, FLORIDA 34769

EXHIBIT 4

FLAMINGO CROSSINGS BOULEVARD

POST-DEVELOPMENT DRAINAGE BASIN TABLE

Basin i.D.	Building (acres)	Roadway Sidewalk (acres)	Pond @ T.O.B. (acres)	Pervious (acres)	Wetland (acres)	TOTAL (acres)
---------------	---------------------	--------------------------------	-----------------------------	---------------------	--------------------	------------------

ON-SITE BASINS

NORTH ⁽¹⁾	0.00	1.97	0.00	0.42	0.00	2.39
SOUTH1 ⁽²⁾	0.00	1.30	0.00	0.49	0.00	1.79
SOUTH 2 ⁽²⁾	0.00	2.54	0.00	1.01	0.00	3.55
POND 15 ⁽²⁾	0.00	0.00	1.35	0.72	0.00	2.07
TOTAL:	0.00	5.81	1.35	2.64	0.00	9.80

OFF-SITE BASINS CONTRIBUTING TO POND 15

15	0.00	0.00	0.00	16.55	0.00	16.55
TOTAL:	0.00	0.00	0.00	16.55	0.00	16.55

GRAND TOTAL AREA: 26.35

NOTES:

(1) THIS BASIN DRAINS TO POND 13 PERMITTED FOR CONSTRUCTION UNDER APPLICATION 071221-29 (FLAMINGO CROSSINGS PHASE 1).

(2) THIS BASIN WILL DRAIN TO POND 15 CONCEPTUALLY PERMITTED UNDER APPLICATION 070530-22 (WALT DISNEY WORLD'S MASTER DEVELOPMENT PLAN MODIFICATION).

EXHIBIT 7

FLAMINGO CROSSINGS BOULEVARD BASIN LEVEL BREAKDOWN AND FLOOD PROTECTION

Roads- Local Road Criteria: 10-year/72-hour

Rainfall Amount (inches)
10.19

MINIMUM ROADWAY PAVEMENT ELEVATIONS 10 YEAR 72 HOUR STORM EVENT			
BASIN I.D./ POND I.D.	CURRENT PEAK POND STAGE FT. NGVD 1929	CONCEPTUAL PEAK POND STAGE FT. NGVD 1929	MINIMUM PAVEMENT ELEVATION FT. NGVD 1929
SOUTH 1/POND 15	109.06	109.30	116.59
SOUTH 2/POND 15	109.06	109.30	111.01
NORTH/POND 13	112.00	112.16	116.42

Basin Design – 25-year/72-event

11.69

Peak Discharge –35.20 cfs at peak stage 109.30 ft. NGVD29

Building Finish Floors – 100-year/72-hour storm event

14.27

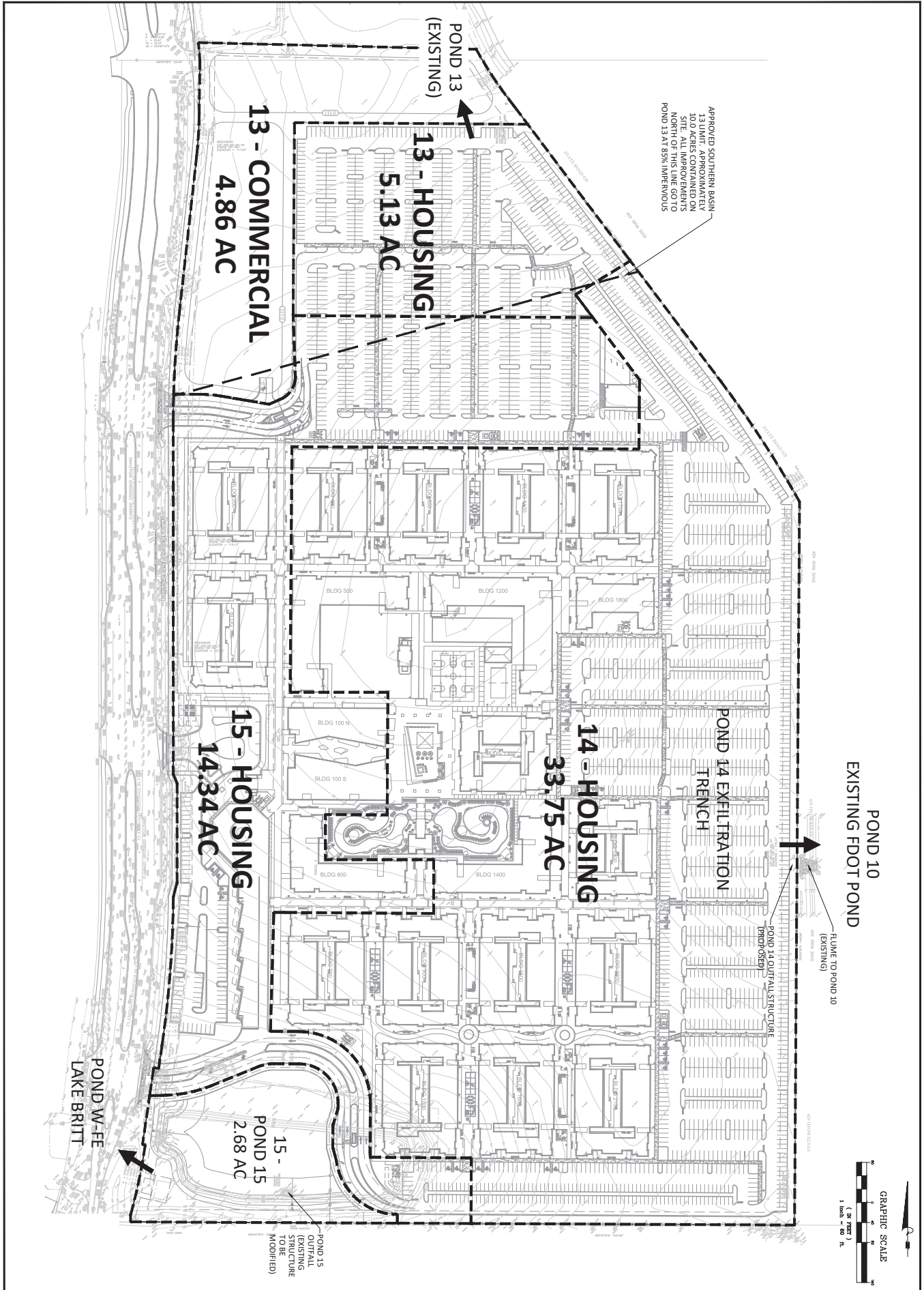
Flood Contour:

Basin 15= 109.67 ft-NGVD 29

Minimum Finished Floor: N/A, no finished floors are proposed for this project.

APPENDIX E – Post-Development

1. Post-Development Basin Map
2. Basin 13
 - a. Area Summary
3. Basin 14
 - a. Area Summary
 - b. Exfiltration Trench 14 Calculations
4. Basin 15
 - a. Area Summary
 - b. Pond 15 Calculations



DATE	REVISION

POST-DEVELOPMENT
BASIN MAP

FLAMINGO CROSSINGS
LLC. HOUSING - EAST

PREPARED FOR:
FLAMINGO
CROSSINGS, LLC.

KCG
KELLY,
COLLINS &
GENTRY, INC.

1700 NORTH ORANGE AVENUE, SUITE 400
ORLANDO, FLORIDA 32804
(407) 898-7858 FAX (407) 898-1485

Basin 14 Area Summary

SUB BASIN	BASIN AREA (AC)	DCIA				NON-DCIA								BASIN RUNOFF					
		PAVEMENT (AC)	ROOF (AC)	WATER BODIES (AC)	TOTAL DCIA (AC)	DCIA %	SUB-AREA 1				SUB-AREA 2				NON-DCIA COMPOSITE CN	Weighted CN	100YR/72HR STORM (IN)	100YR/72HR STORM (AC-FT)	
							AREA (AC)	SOIL	CN	COVER TYPE	AREA (AC)	SOIL	CN	COVER TYPE					
14 - Housing	33.75	15.89	9.48	-	25.37	75%	8.38	A	39	Open Space - Good	-	-	-	-	39	83	12.12	34.10	
Basin 10 Offsite	14.80	-	-	-	-	0%	14.80	A	57	Grove - Poor	-	-	-	-	57	57	8.02	9.89	
SUBTOTAL	48.55	15.89	9.48	-	25.37	52%	23.18												

Notes:

1. Refer to Post-Development Basin Map for basin delineations
2. Runoff Curve Numbers (CN) selected from Table 2-2 of the NRCS TR-55 Manual, utilizing aerial images and site observation to determine cover types.
3. Runoff volumes calculated per SCS Runoff Curve Number Method:

$$Q = (P - 0.2S)^2 / (P + 0.8S) \quad [\text{eq. 2-3}]$$

$$S = 1000 / \text{CN} - 10 \quad [\text{eq. 2-4}]$$

P = 14.27 in 100 Year / 72 Hour Storm

EXFILTRATION TRENCH 14

STAGE-STORAGE CALCULATION:

	Stage [ft]	Cumulative Storage [cf]	Cumulative Storage [af]
BOTTOM	112.50	0.00	0.00
	113.00	30,000	0.69
	114.00	141,460	3.25
	115.00	263,604	6.05
	116.00	372,876	8.56
	117.00	453,355	10.41
TOP	118.00	513,355	11.79
PROPOSED WEIR			
	117.00	453,355	10.41

WATER QUALITY VOLUME CALCULATION:

Area Summary

Basin Area = 33.75 ac

Impervious Area

Pavement 15.89 ac

Roof 9.48 ac

Totals 25.37 ac

Water Bodies (WB)* 0.00 ac

**Water bodies include area of water surface at the control elevation of proposed pond.*

1.25" x Imperviousness

Water Quality Area Basin (WQA_{basin}) = 24.27 ac

Water Quality Area Pervious (WQA_{perv}) = 8.38 ac

Water Quality Area Impervious (WQA_{imperv}) = 15.89 ac

Water Quality Imperviousness % ($WQI_{\%}$) = 65.5%

1.25" times % Imperviousness = 0.82 in

Total Treatment Volume = 2.30 ac-ft

$$WQA_{basin} = Basin\ Area - WB - Roof$$

$$WQA_{perv} = Basin\ Area - WB - Impervious$$

$$WQA_{imperv} = WQA_{basin} - WQA_{perv}$$

$$WQI_{\%} = WQA_{imp} / WQA_{basin}$$

$$TV = Inches\ Required \times \% \ Imperviousness$$

0.5" X Basin Area

Treatment Volume = 1.41 ac-ft

Water Quality Volume Required

Use 1.25" x Imperviousness = 2.30 ac-ft

Total Retention Volume Required = 2.30 ac-ft

100,264 cf

BASIN 15 - WET DETENTION POND 15

STAGE-STORAGE CALCULATION:

	Stage [ft]	Area [sf]	Area [ac]	Incremental Storage [cf]	Total Pond Storage		Pond Storage Above NWL	
					Cumulative Storage [cf]	Cumulative Storage [af]	Cumulative Storage [cf]	Cumulative Storage [af]
BOT	98.00	29,687	0.682		0.00	0.00		
NWL	104.50	65,847	1.512	310,486	310,486	7.13	0	0.00
	106.50	71,118	1.633	136,965	447,451	10.27	136,965	3.14
WEIR	106.59	71,442	1.640	6,415	453,866	10.42	143,380	3.29
TOB	110.00	83,724	1.922	264,558	718,424	16.49	407,939	9.36

TREATMENT VOLUME CALCULATION:

Area Summary

Basin Area = 22.36 ac

Impervious Area

Pavement 13.07 ac

Roof 2.39 ac

Totals 15.46 ac

Water Bodies (WB)* 1.51 ac

**Water bodies include area of water surface at the control elevation of proposed pond.*

2.5" x Imperviousness

Water Quality Area Basin (WQA_{basin}) = 18.46 ac

$WQA_{basin} = Basin Area - WB - Roof$

Water Quality Area Pervious (WQA_{perv}) = 5.39 ac

$WQA_{perv} = Basin Area - WB - Impervious$

Water Quality Area Impervious (WQA_{imperv}) = 13.07 ac

$WQA_{imperv} = WQA_{basin} - WQA_{perv}$

Water Quality Imperviousness % ($WQI_{\%}$) = 70.8%

$WQI_{\%} = WQA_{imp} / WQA_{basin}$

2.5" times % Imperviousness = 1.77 in

$TV = Inches Required \times \% Imperviousness$

Treatment Volume = 3.30 ac-ft

$TV = Inches Required \times Basin Area$

1" X Basin Area

Treatment Volume = 1.86 ac-ft

$TV = 1" \times Basin Area$

Treatment Volume Required

Use 2.5" x Imperviousness = 3.30 ac-ft

Total TV Required 3.30 ac-ft

143,682 cf

1/2 of Required TV 1.65 ac-ft

71,841 cf

Pond 15 Weir Proposed =

1/2 Treatment Vol. =

	Volume	Volume	Stage
	143,682 cf	3.30 ac-ft	106.59 ft
	71,841 cf	1.65 ac-ft	105.54 ft

ORIFICE CALCULATION:

$$Q = C A (2 g h)^{0.5}$$

$$Q = \frac{RV}{2 t CF}$$

Retention Volume (RV) = 143,682 cf
RV El. - NWL (h_1) = 2.00 ft
Average Depth of Water (h) = 1.00 ft

Minimum Recovery

Recovery Time (t) = 24 hours
Rate of Discharge (Q) = 0.8315 cfs
Orifice Area (A) = 0.173 sf
Orifice Diameter (D) = 5.63 in

Maximum Recovery

Recovery Time (t) = 30 hours
Rate of Discharge (Q) = 0.6652 cfs
Orifice Area (A) = 0.138 sf
Orifice Diameter (D) = 5.03 in

Design Orifice Diameter = 5 1/2 in

Orifice Area (A) = 0.165 sf
Rate of Discharge (Q) = 0.7944 cfs

Retention Vol Recovery = 25.12 hours

APPENDIX F – PONDS 3.2 Model (Pond 14)

1. Routing & Recovery Analysis
 - a. Input Data
 - b. Reports
 - i. Stage - Maximum
 - ii. Discharge Rate - Maximum
 - iii. Discharge - Cumulative Volume
 - c. Detailed Results
 - i. Scenario 46 (End of Simulation - FDOT 100 Year / 72 Hour Storm)
 - ii. Scenario 48 (End of Simulation) - FDOT 100 Year / 10 Day Storm
 - iii. Scenario 49 - Treatment Volume Slug Load

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Project Data

Project Name: Flamingo Crossings
Simulation Description: Exfiltration 14
Project Number: 1249.000
Engineer : Sean C. Fortier, P.E.
Supervising Engineer:
Date: 09-07-2018

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum): 102.00
Water Table Elevation, [WT] (ft datum): 105.00
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day): 49.50
Fillable Porosity, [n] (%): 25.00
Unsaturated Vertical Infiltration Rate, [Iv] (ft/day): 33.0
Maximum Area For Unsaturated Infiltration, [Av] (ft²): 150000.0

Geometry Data

Equivalent Pond Length, [L] (ft): 1280.0
Equivalent Pond Width, [W] (ft): 200.0
Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft ²)
112.50	150000.0
112.55	0.0
113.00	60000.0
114.00	111460.0
115.00	122143.0
116.00	109272.0
117.00	80479.0
118.00	60000.0

Discharge Structures

Discharge Structure #1 is active as orifice

Structure Parameters

Description: DS-14 a

Orifice elevation, (ft datum):	117
Orifice coefficient:	6.4
Orifice area, (ft ²):	.78
Orifice exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structure #2 is active as orifice

Structure Parameters

Description: DS-14 b

Orifice elevation, (ft datum):	117
Orifice coefficient:	6.4
Orifice area, (ft ²):	.78
Orifice exponent:	0.5

Tailwater - disabled, free discharge

Discharge Structure #3 is active as orifice

Structure Parameters

Description: DS-14 c

Orifice elevation, (ft datum):	117
Orifice coefficient:	6.4
Orifice area, (ft ²):	.78
Orifice exponent:	0.5

Tailwater - disabled, free discharge

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Scenario Input Data

Scenario 1 :: FDOT 1 Hour - 1 hr - 2 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	2.4
Design Rainfall Duration (hours)	1.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 1 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

Scenario 2 :: FDOT 2 Hour - 2 hr - 2 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	2.8
Design Rainfall Duration (hours)	2.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 2 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

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Scenario Input Data (cont'd.)

Scenario 3 :: FDOT 4 Hour - 4 hr - 2 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	3.3
Design Rainfall Duration (hours)	4.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 4 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	14.000

Scenario 4 :: FDOT 8 Hour - 8 hr - 2 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	3.8
Design Rainfall Duration (hours)	8.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 8 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	14.000

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Scenario Input Data (cont'd.)

Scenario 5 :: FDOT 24 Hour - 24 hr - 2 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	4.9
Design Rainfall Duration (hours)	24.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 24 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

Scenario 6 :: FDOT 72 Hour - 72 hr - 2 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	6.0
Design Rainfall Duration (hours)	72.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 72 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

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Scenario Input Data (cont'd.)

Scenario 7 :: FDOT 168 Hour - 168 hr - 2 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	7.5
Design Rainfall Duration (hours)	168.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 168 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

Scenario 8 :: FDOT 240 Hour - 240 hr - 2 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	8.5
Design Rainfall Duration (hours)	240.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 240 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

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Scenario Input Data (cont'd.)

Scenario 9 :: FDOT 1 Hour - 1 hr - 5 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	2.9
Design Rainfall Duration (hours)	1.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 1 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

Scenario 10 :: FDOT 2 Hour - 2 hr - 5 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	3.5
Design Rainfall Duration (hours)	2.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 2 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

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Scenario Input Data (cont'd.)

Scenario 11 :: FDOT 4 Hour - 4 hr - 5 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	4.1
Design Rainfall Duration (hours)	4.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 4 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

Scenario 12 :: FDOT 8 Hour - 8 hr - 5 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	4.8
Design Rainfall Duration (hours)	8.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 8 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

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Scenario Input Data (cont'd.)

Scenario 13 :: FDOT 24 Hour - 24 hr - 5 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	6.2
Design Rainfall Duration (hours)	24.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 24 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

Scenario 14 :: FDOT 72 Hour - 72 hr - 5 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	8.0
Design Rainfall Duration (hours)	72.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 72 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

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Scenario Input Data (cont'd.)

Scenario 15 :: FDOT 168 Hour - 168 hr - 5 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	9.5
Design Rainfall Duration (hours)	168.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 168 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

Scenario 16 :: FDOT 240 Hour - 240 hr - 5 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	11.0
Design Rainfall Duration (hours)	240.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 240 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

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Scenario Input Data (cont'd.)

Scenario 17 :: FDOT 1 Hour - 1 hr - 10 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	3.2
Design Rainfall Duration (hours)	1.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 1 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

Scenario 18 :: FDOT 2 Hour - 2 hr - 10 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	3.9
Design Rainfall Duration (hours)	2.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 2 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

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Scenario Input Data (cont'd.)

Scenario 19 :: FDOT 4 Hour - 4 hr - 10 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	4.7
Design Rainfall Duration (hours)	4.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 4 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

Scenario 20 :: FDOT 8 Hour - 8 hr - 10 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	5.6
Design Rainfall Duration (hours)	8.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 8 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

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Scenario Input Data (cont'd.)

Scenario 21 :: FDOT 24 Hour - 24 hr - 10 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	7.4
Design Rainfall Duration (hours)	24.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 24 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
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	14.000

Scenario 22 :: FDOT 72 Hour - 72 hr - 10 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	9.0
Design Rainfall Duration (hours)	72.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 72 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

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Scenario Input Data (cont'd.)

Scenario 23 :: FDOT 168 Hour - 168 hr - 10 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	11.0
Design Rainfall Duration (hours)	168.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 168 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
<hr/>	
	14.000

Scenario 24 :: FDOT 240 Hour - 240 hr - 10 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	13.0
Design Rainfall Duration (hours)	240.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 240 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
<hr/>	
	14.000

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Scenario Input Data (cont'd.)

Scenario 25 :: FDOT 1 Hour - 1 hr - 25 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	3.7
Design Rainfall Duration (hours)	1.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 1 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

Scenario 26 :: FDOT 2 Hour - 2 hr - 25 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	4.5
Design Rainfall Duration (hours)	2.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 2 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

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Scenario Input Data (cont'd.)

Scenario 27 :: FDOT 4 Hour - 4 hr - 25 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	5.4
Design Rainfall Duration (hours)	4.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 4 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

Scenario 28 :: FDOT 8 Hour - 8 hr - 25 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	6.5
Design Rainfall Duration (hours)	8.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 8 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

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Scenario Input Data (cont'd.)

Scenario 29 :: FDOT 24 Hour - 24 hr - 25 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	8.6
Design Rainfall Duration (hours)	24.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 24 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

Scenario 30 :: FDOT 72 Hour - 72 hr - 25 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	10.5
Design Rainfall Duration (hours)	72.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 72 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

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Scenario Input Data (cont'd.)

Scenario 31 :: FDOT 168 Hour - 168 hr - 25 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	13.0
Design Rainfall Duration (hours)	168.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 168 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

Scenario 32 :: FDOT 240 Hour - 240 hr - 25 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	15.0
Design Rainfall Duration (hours)	240.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 240 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

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Scenario Input Data (cont'd.)

Scenario 33 :: FDOT 1 Hour - 1 hr - 50 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	4.1
Design Rainfall Duration (hours)	1.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 1 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

Scenario 34 :: FDOT 2 Hour - 2 hr - 50 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	5.0
Design Rainfall Duration (hours)	2.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 2 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

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Scenario Input Data (cont'd.)

Scenario 35 :: FDOT 4 Hour - 4 hr - 50 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	6.0
Design Rainfall Duration (hours)	4.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 4 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
<hr/>	
	14.000

Scenario 36 :: FDOT 8 Hour - 8 hr - 50 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	7.3
Design Rainfall Duration (hours)	8.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 8 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
<hr/>	
	14.000

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Scenario Input Data (cont'd.)

Scenario 37 :: FDOT 24 Hour - 24 hr - 50 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	9.8
Design Rainfall Duration (hours)	24.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 24 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

Scenario 38 :: FDOT 72 Hour - 72 hr - 50 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	12.0
Design Rainfall Duration (hours)	72.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 72 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

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Scenario Input Data (cont'd.)

Scenario 39 :: FDOT 168 Hour - 168 hr - 50 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	15.0
Design Rainfall Duration (hours)	168.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 168 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

Scenario 40 :: FDOT 240 Hour - 240 hr - 50 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	17.0
Design Rainfall Duration (hours)	240.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 240 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

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Scenario Input Data (cont'd.)

Scenario 41 :: FDOT 1 Hour - 1 hr - 100 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	4.5
Design Rainfall Duration (hours)	1.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 1 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

Scenario 42 :: FDOT 2 Hour - 2 hr - 100 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	5.5
Design Rainfall Duration (hours)	2.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 2 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

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Scenario Input Data (cont'd.)

Scenario 43 :: FDOT 4 Hour - 4 hr - 100 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	6.6
Design Rainfall Duration (hours)	4.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 4 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
<hr/>	
	14.000

Scenario 44 :: FDOT 8 Hour - 8 hr - 100 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	8.0
Design Rainfall Duration (hours)	8.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 8 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
<hr/>	
	14.000

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Scenario Input Data (cont'd.)

Scenario 45 :: FDOT 24 Hour - 24 hr - 100 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	10.6
Design Rainfall Duration (hours)	24.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 24 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

Scenario 46 :: FDOT 72 Hour - 72 hr - 100 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	14.0
Design Rainfall Duration (hours)	72.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 72 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	<hr/>
	14.000

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Scenario Input Data (cont'd.)

Scenario 47 :: FDOT 168 Hour - 168 hr - 100 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	17.0
Design Rainfall Duration (hours)	168.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 168 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	14.000

Scenario 48 :: FDOT 240 Hour - 240 hr - 100 yr

Hydrograph Type:	Inline SCS
Modflow Routing:	Routed with infiltration
Repetitions:	1
Basin Area (acres)	33.750
Time Of Concentration (minutes)	15.0
DCIA (%)	75.0
Curve Number	39
Design Rainfall Depth (inches)	19.0
Design Rainfall Duration (hours)	240.0
Shape Factor	UHG 256
Rainfall Distribution	FDOT 240 Hour
Initial ground water level (ft datum)	105.00 (default)
Time After Storm Event (days)	
	7.000
	30.000

Scenario 49 :: Treatment Volume Slug Load

Hydrograph Type:	Slug Load
Modflow Routing:	Routed with infiltration
Treatment Volume (ft ³)	100264
Initial ground water level (ft datum)	105.00 (default)

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Scenario Input Data (cont'd.)

Scenario 49 (cont'd.) :: Slug Load :: Treatment Volume Slug Load

<u>Time After Storm Event (days)</u>	<u>Time After Storm Event (days)</u>
0.100	2.000
0.250	2.500
0.500	3.000
1.000	3.500
1.500	4.000

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Sort-By-Category Report

Scenarios Considered: 1 to 49

Stage - Maximum

Rank	Scenario Number	Maximum Stage (ft datum)	Time (hours)	Description
1	48	117.645	184.167	FDOT 240 Hour - 240 hr - 100 yr
2	47	117.572	160.100	FDOT 168 Hour - 168 hr - 100 yr
3	46	117.287	64.100	FDOT 72 Hour - 72 hr - 100 yr
4	39	117.170	160.233	FDOT 168 Hour - 168 hr - 50 yr
5	40	117.062	184.467	FDOT 240 Hour - 240 hr - 50 yr
6	45	116.916	22.367	FDOT 24 Hour - 24 hr - 100 yr
7	38	116.721	68.200	FDOT 72 Hour - 72 hr - 50 yr
8	37	116.238	22.400	FDOT 24 Hour - 24 hr - 50 yr
9	32	116.171	216.200	FDOT 240 Hour - 240 hr - 25 yr
10	31	116.011	161.000	FDOT 168 Hour - 168 hr - 25 yr
11	30	115.705	68.200	FDOT 72 Hour - 72 hr - 25 yr
12	44	115.676	8.133	FDOT 8 Hour - 8 hr - 100 yr
13	29	115.379	22.333	FDOT 24 Hour - 24 hr - 25 yr
14	24	115.159	216.167	FDOT 240 Hour - 240 hr - 10 yr
15	36	115.153	8.133	FDOT 8 Hour - 8 hr - 50 yr
16	43	115.006	4.167	FDOT 4 Hour - 4 hr - 100 yr
17	23	114.986	160.933	FDOT 168 Hour - 168 hr - 10 yr
18	22	114.826	68.167	FDOT 72 Hour - 72 hr - 10 yr
19	21	114.591	22.267	FDOT 24 Hour - 24 hr - 10 yr
20	28	114.578	8.100	FDOT 8 Hour - 8 hr - 25 yr
21	35	114.562	4.167	FDOT 4 Hour - 4 hr - 50 yr
22	41	114.402	1.167	FDOT 1 Hour - 1 hr - 100 yr
23	42	114.382	2.300	FDOT 2 Hour - 2 hr - 100 yr
24	15	114.250	160.833	FDOT 168 Hour - 168 hr - 5 yr
25	14	114.235	68.100	FDOT 72 Hour - 72 hr - 5 yr
26	16	114.233	192.233	FDOT 240 Hour - 240 hr - 5 yr
27	33	114.147	1.133	FDOT 1 Hour - 1 hr - 50 yr
28	27	114.113	4.133	FDOT 4 Hour - 4 hr - 25 yr
29	34	113.995	2.267	FDOT 2 Hour - 2 hr - 50 yr
30	49	113.972	0.002	Treatment Volume Slug Load
31	20	113.915	8.067	FDOT 8 Hour - 8 hr - 10 yr
32	25	113.901	1.100	FDOT 1 Hour - 1 hr - 25 yr
33	13	113.794	22.167	FDOT 24 Hour - 24 hr - 5 yr
34	26	113.660	1.333	FDOT 2 Hour - 2 hr - 25 yr
35	17	113.578	1.033	FDOT 1 Hour - 1 hr - 10 yr
36	19	113.545	4.067	FDOT 4 Hour - 4 hr - 10 yr
37	8	113.417	184.767	FDOT 240 Hour - 240 hr - 2 yr
38	9	113.374	1.000	FDOT 1 Hour - 1 hr - 5 yr
39	7	113.309	160.633	FDOT 168 Hour - 168 hr - 2 yr
40	18	113.302	1.233	FDOT 2 Hour - 2 hr - 10 yr
41	12	113.233	7.433	FDOT 8 Hour - 8 hr - 5 yr
42	6	113.157	64.500	FDOT 72 Hour - 72 hr - 2 yr
43	10	113.064	1.167	FDOT 2 Hour - 2 hr - 5 yr
44	1	113.010	0.933	FDOT 1 Hour - 1 hr - 2 yr
45	11	112.943	3.933	FDOT 4 Hour - 4 hr - 5 yr
46	5	112.523	22.033	FDOT 24 Hour - 24 hr - 2 yr
47	2	112.516	0.967	FDOT 2 Hour - 2 hr - 2 yr
48	3	112.499	4.667	FDOT 4 Hour - 4 hr - 2 yr
49	4	112.499	5.600	FDOT 8 Hour - 8 hr - 2 yr

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Sort-By-Category Report (cont'd.)

Discharge - Rate - Maximum Positive

Rank	Scenario Number	Maximum Positive Discharge Rate (ft ³ /s)	Time (hours)	Description
1	48	12.0297	184.167	FDOT 240 Hour - 240 hr - 100 yr
2	47	11.3216	160.100	FDOT 168 Hour - 168 hr - 100 yr
3	46	8.0124	64.100	FDOT 72 Hour - 72 hr - 100 yr
4	39	6.1696	160.233	FDOT 168 Hour - 168 hr - 50 yr
5	40	3.7188	184.467	FDOT 240 Hour - 240 hr - 50 yr
6	1	None	N.A.	FDOT 1 Hour - 1 hr - 2 yr
7	2	None	N.A.	FDOT 2 Hour - 2 hr - 2 yr
8	3	None	N.A.	FDOT 4 Hour - 4 hr - 2 yr
9	4	None	N.A.	FDOT 8 Hour - 8 hr - 2 yr
10	5	None	N.A.	FDOT 24 Hour - 24 hr - 2 yr
11	6	None	N.A.	FDOT 72 Hour - 72 hr - 2 yr
12	7	None	N.A.	FDOT 168 Hour - 168 hr - 2 yr
13	8	None	N.A.	FDOT 240 Hour - 240 hr - 2 yr
14	9	None	N.A.	FDOT 1 Hour - 1 hr - 5 yr
15	10	None	N.A.	FDOT 2 Hour - 2 hr - 5 yr
16	11	None	N.A.	FDOT 4 Hour - 4 hr - 5 yr
17	12	None	N.A.	FDOT 8 Hour - 8 hr - 5 yr
18	13	None	N.A.	FDOT 24 Hour - 24 hr - 5 yr
19	14	None	N.A.	FDOT 72 Hour - 72 hr - 5 yr
20	15	None	N.A.	FDOT 168 Hour - 168 hr - 5 yr
21	16	None	N.A.	FDOT 240 Hour - 240 hr - 5 yr
22	17	None	N.A.	FDOT 1 Hour - 1 hr - 10 yr
23	18	None	N.A.	FDOT 2 Hour - 2 hr - 10 yr
24	19	None	N.A.	FDOT 4 Hour - 4 hr - 10 yr
25	20	None	N.A.	FDOT 8 Hour - 8 hr - 10 yr
26	21	None	N.A.	FDOT 24 Hour - 24 hr - 10 yr
27	22	None	N.A.	FDOT 72 Hour - 72 hr - 10 yr
28	23	None	N.A.	FDOT 168 Hour - 168 hr - 10 yr
29	24	None	N.A.	FDOT 240 Hour - 240 hr - 10 yr
30	25	None	N.A.	FDOT 1 Hour - 1 hr - 25 yr
31	26	None	N.A.	FDOT 2 Hour - 2 hr - 25 yr
32	27	None	N.A.	FDOT 4 Hour - 4 hr - 25 yr
33	28	None	N.A.	FDOT 8 Hour - 8 hr - 25 yr
34	29	None	N.A.	FDOT 24 Hour - 24 hr - 25 yr
35	30	None	N.A.	FDOT 72 Hour - 72 hr - 25 yr
36	31	None	N.A.	FDOT 168 Hour - 168 hr - 25 yr
37	32	None	N.A.	FDOT 240 Hour - 240 hr - 25 yr
38	33	None	N.A.	FDOT 1 Hour - 1 hr - 50 yr
39	34	None	N.A.	FDOT 2 Hour - 2 hr - 50 yr
40	35	None	N.A.	FDOT 4 Hour - 4 hr - 50 yr
41	36	None	N.A.	FDOT 8 Hour - 8 hr - 50 yr
42	37	None	N.A.	FDOT 24 Hour - 24 hr - 50 yr
43	38	None	N.A.	FDOT 72 Hour - 72 hr - 50 yr
44	41	None	N.A.	FDOT 1 Hour - 1 hr - 100 yr
45	42	None	N.A.	FDOT 2 Hour - 2 hr - 100 yr
46	43	None	N.A.	FDOT 4 Hour - 4 hr - 100 yr
47	44	None	N.A.	FDOT 8 Hour - 8 hr - 100 yr
48	45	None	N.A.	FDOT 24 Hour - 24 hr - 100 yr
49	49	None	N.A.	Treatment Volume Slug Load

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Sort-By-Category Report (cont'd.)

Discharge - Cumulative Volume - End of Simulation

Rank	Scenario Number	Cumulative Discharge Volume End Of Simulation (ft ³)	Time (hours)	Description
1	48	218320.2	961.533	FDOT 240 Hour - 240 hr - 100 yr
2	47	197630.2	505.533	FDOT 168 Hour - 168 hr - 100 yr
3	46	131973.0	409.533	FDOT 72 Hour - 72 hr - 100 yr
4	40	44613.2	577.533	FDOT 240 Hour - 240 hr - 50 yr
5	39	36615.1	505.533	FDOT 168 Hour - 168 hr - 50 yr
6	1	0.0	338.533	FDOT 1 Hour - 1 hr - 2 yr
7	2	0.0	339.533	FDOT 2 Hour - 2 hr - 2 yr
8	3	0.0	341.533	FDOT 4 Hour - 4 hr - 2 yr
9	4	0.0	345.533	FDOT 8 Hour - 8 hr - 2 yr
10	5	0.0	361.533	FDOT 24 Hour - 24 hr - 2 yr
11	6	0.0	409.533	FDOT 72 Hour - 72 hr - 2 yr
12	7	0.0	505.533	FDOT 168 Hour - 168 hr - 2 yr
13	8	0.0	577.533	FDOT 240 Hour - 240 hr - 2 yr
14	9	0.0	338.533	FDOT 1 Hour - 1 hr - 5 yr
15	10	0.0	339.533	FDOT 2 Hour - 2 hr - 5 yr
16	11	0.0	341.533	FDOT 4 Hour - 4 hr - 5 yr
17	12	0.0	345.533	FDOT 8 Hour - 8 hr - 5 yr
18	13	0.0	361.533	FDOT 24 Hour - 24 hr - 5 yr
19	14	0.0	409.533	FDOT 72 Hour - 72 hr - 5 yr
20	15	0.0	505.533	FDOT 168 Hour - 168 hr - 5 yr
21	16	0.0	577.533	FDOT 240 Hour - 240 hr - 5 yr
22	17	0.0	338.533	FDOT 1 Hour - 1 hr - 10 yr
23	18	0.0	339.533	FDOT 2 Hour - 2 hr - 10 yr
24	19	0.0	341.533	FDOT 4 Hour - 4 hr - 10 yr
25	20	0.0	345.533	FDOT 8 Hour - 8 hr - 10 yr
26	21	0.0	361.533	FDOT 24 Hour - 24 hr - 10 yr
27	22	0.0	409.533	FDOT 72 Hour - 72 hr - 10 yr
28	23	0.0	505.533	FDOT 168 Hour - 168 hr - 10 yr
29	24	0.0	577.533	FDOT 240 Hour - 240 hr - 10 yr
30	25	0.0	338.533	FDOT 1 Hour - 1 hr - 25 yr
31	26	0.0	339.533	FDOT 2 Hour - 2 hr - 25 yr
32	27	0.0	341.533	FDOT 4 Hour - 4 hr - 25 yr
33	28	0.0	345.533	FDOT 8 Hour - 8 hr - 25 yr
34	29	0.0	361.533	FDOT 24 Hour - 24 hr - 25 yr
35	30	0.0	409.533	FDOT 72 Hour - 72 hr - 25 yr
36	31	0.0	505.533	FDOT 168 Hour - 168 hr - 25 yr
37	32	0.0	577.533	FDOT 240 Hour - 240 hr - 25 yr
38	33	0.0	338.533	FDOT 1 Hour - 1 hr - 50 yr
39	34	0.0	339.533	FDOT 2 Hour - 2 hr - 50 yr
40	35	0.0	341.533	FDOT 4 Hour - 4 hr - 50 yr
41	36	0.0	345.533	FDOT 8 Hour - 8 hr - 50 yr
42	37	0.0	361.533	FDOT 24 Hour - 24 hr - 50 yr
43	38	0.0	409.533	FDOT 72 Hour - 72 hr - 50 yr
44	41	0.0	338.533	FDOT 1 Hour - 1 hr - 100 yr
45	42	0.0	339.533	FDOT 2 Hour - 2 hr - 100 yr
46	43	0.0	341.533	FDOT 4 Hour - 4 hr - 100 yr
47	44	0.0	345.533	FDOT 8 Hour - 8 hr - 100 yr
48	45	0.0	361.533	FDOT 24 Hour - 24 hr - 100 yr
49	49	0.0	96.000	Treatment Volume Slug Load

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Detailed Results (cont,d.) :: Scenario 46 :: FDOT 72 Hour - 72 hr - 100 yr

Elapsed Time	Instantaneous Inflow Rate	Outside Recharge	Stage Elevation	Infiltration Rate	Combined Instantaneous Discharge	Cumulative Inflow	Cumulative Infiltration	Combined Cumulative	
71.533	1.9541	0.00000	116.93420	2.40625	0	1394178.000	837199.10000	131973	S
71.567	1.9541	0.00000	116.93350	2.40438	0	1394412.000	837487.70000	131973	S
71.600	1.9542	0.00000	116.93290	2.40252	0	1394647.000	837776.10000	131973	S
71.633	1.9542	0.00000	116.93220	2.40066	0	1394881.000	838064.30000	131973	S
71.667	1.9542	0.00000	116.93160	2.39882	0	1395116.000	838352.30000	131973	S
71.700	1.9543	0.00000	116.93090	2.39698	0	1395350.000	838640.00000	131973	S
71.733	1.9543	0.00000	116.93030	2.39515	0	1395585.000	838927.60000	131973	S
71.767	1.9543	0.00000	116.92960	2.39334	0	1395819.000	839214.80000	131973	S
71.800	1.9544	0.00000	116.92900	2.39152	0	1396054.000	839501.90000	131973	S
71.833	1.9544	0.00000	116.92840	2.38972	0	1396288.000	839788.80000	131973	S
71.867	1.9544	0.00000	116.92770	2.38792	0	1396523.000	840075.40000	131973	S
71.900	1.9544	0.00000	116.92710	2.38614	0	1396757.000	840361.90000	131973	S
71.933	1.9545	0.00000	116.92650	2.38436	0	1396992.000	840648.10000	131973	S
71.967	1.9545	0.00000	116.92590	2.38259	0	1397227.000	840934.10000	131973	S
72.000	1.9545	0.00000	116.92520	2.38073	0	1397461.000	841219.90000	131973	S
72.033	1.9313	0.00000	116.92460	2.37853	0	1397694.000	841505.50000	131973	S
72.067	1.8817	0.00000	116.92390	2.37565	0	1397923.000	841790.80000	131973	S
72.100	1.7886	0.00000	116.92310	2.37168	0	1398143.000	842075.70000	131973	S
72.133	1.6443	0.00000	116.92220	2.36636	0	1398349.000	842360.00000	131973	S
72.167	1.4892	0.00000	116.92100	2.35986	0	1398537.000	842643.60000	131973	S
72.200	1.3403	0.00000	116.91970	2.35252	0	1398707.000	842926.40000	131973	S
72.233	1.2038	0.00000	116.91810	2.34467	0	1398860.000	843208.30000	131973	S
72.267	1.0828	0.00000	116.91640	2.33653	0	1398997.000	843489.10000	131973	S
72.300	0.9757	0.00000	116.91450	2.32829	0	1399120.000	843769.00000	131973	S
72.333	0.8842	0.00000	116.91250	2.32005	0	1399232.000	844047.90000	131973	S
72.367	0.8036	0.00000	116.91040	2.31189	0	1399333.000	844325.80000	131973	S
72.400	0.7291	0.00000	116.90810	2.30380	0	1399425.000	844602.80000	131973	S
72.433	0.6624	0.00000	116.90580	2.29580	0	1399509.000	844878.70000	131973	S
72.467	0.6019	0.00000	116.90340	2.28792	0	1399584.000	845153.80000	131973	S
72.500	0.5476	0.00000	116.90100	2.28016	0	1399653.000	845427.80000	131973	S
72.533	0.4980	0.00000	116.89840	2.27253	0	1399716.000	845701.00000	131973	S
72.567	0.4530	0.00000	116.89590	2.26504	0	1399773.000	845973.30000	131973	S
72.600	0.4126	0.00000	116.89320	2.25770	0	1399825.000	846244.60000	131973	S
72.633	0.3770	0.00000	116.89060	2.25052	0	1399873.000	846515.10000	131973	S
72.667	0.3444	0.00000	116.88790	2.24348	0	1399916.000	846784.70000	131973	S
72.700	0.3134	0.00000	116.88510	2.23656	0	1399955.000	847053.50000	131973	S
72.733	0.2839	0.00000	116.88230	2.22976	0	1399991.000	847321.50000	131973	S
72.767	0.2560	0.00000	116.87950	2.22307	0	1400024.000	847588.60000	131973	S
72.800	0.2296	0.00000	116.87670	2.21647	0	1400053.000	847855.00000	131973	S
72.833	0.2048	0.00000	116.87390	2.20998	0	1400079.000	848120.60000	131973	S
72.867	0.1815	0.00000	116.87100	2.20359	0	1400102.000	848385.40000	131973	S
72.900	0.1598	0.00000	116.86810	2.19730	0	1400122.000	848649.40000	131973	S
72.933	0.1396	0.00000	116.86520	2.19111	0	1400140.000	848912.80000	131973	S
72.967	0.1210	0.00000	116.86230	2.18502	0	1400156.000	849175.30000	131973	S
73.000	0.1039	0.00000	116.85930	2.17904	0	1400169.000	849437.20000	131973	S
73.033	0.0884	0.00000	116.85640	2.17316	0	1400181.000	849698.30000	131973	S
73.067	0.0745	0.00000	116.85340	2.16738	0	1400191.000	849958.80000	131973	S
73.100	0.0621	0.00000	116.85050	2.16172	0	1400199.000	850218.40000	131973	S
73.133	0.0512	0.00000	116.84750	2.15617	0	1400206.000	850477.60000	131973	S
73.167	0.0419	0.00000	116.84450	2.15072	0	1400211.000	850735.90000	131973	S
73.200	0.0341	0.00000	116.84150	2.14539	0	1400216.000	850993.70000	131973	S
73.233	0.0272	0.00000	116.83850	2.14017	0	1400220.000	851250.80000	131973	S
73.267	0.0209	0.00000	116.83560	2.13504	0	1400222.000	851507.40000	131973	S
73.300	0.0155	0.00000	116.83260	2.13001	0	1400225.000	851763.30000	131973	S
73.333	0.0109	0.00000	116.82960	2.12508	0	1400226.000	852018.60000	131973	S
73.367	0.0070	0.00000	116.82670	2.12024	0	1400227.000	852273.30000	131973	S
73.400	0.0039	0.00000	116.82370	2.11549	0	1400228.000	852527.40000	131973	S
73.433	0.0016	0.00000	116.82070	2.11083	0	1400228.000	852781.00000	131973	S
73.467	0.0000	0.00000	116.81780	2.10626	0	1400228.000	853034.00000	131973	S
73.500	0.0000	0.00000	116.81480	2.10179	0	1400228.000	853286.50000	131973	S
73.533	0.0000	0.00000	116.81190	2.09940	0	1400228.000	853538.40000	131973	S
409.533	0.0000	0.00000	112.14740	----	----	1400228.000	1268255.00000	131973	N.A.

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Detailed Results (cont,d.) :: Scenario 48 :: FDOT 240 Hour - 240 hr - 100 yr

Elapsed Time	Instantaneous Inflow Rate	Outside Recharge	Stage Elevation	Infiltration Rate	Combined Instantaneous Discharge	Cumulative Inflow	Cumulative Infiltration	Combined Cumulative	
239.267	1.0623	0.00000	116.65070	1.25600	0	1963383.000	1344570.00000	218320.2	S
239.300	1.0623	0.00000	116.65040	1.25578	0	1963510.000	1344721.00000	218320.2	S
239.333	1.0623	0.00000	116.65010	1.25555	0	1963638.000	1344871.00000	218320.2	S
239.367	1.0623	0.00000	116.64990	1.25533	0	1963765.000	1345022.00000	218320.2	S
239.400	1.0623	0.00000	116.64960	1.25511	0	1963893.000	1345173.00000	218320.2	S
239.433	1.0623	0.00000	116.64940	1.25488	0	1964020.000	1345323.00000	218320.2	S
239.467	1.0623	0.00000	116.64910	1.25465	0	1964148.000	1345474.00000	218320.2	S
239.500	1.0623	0.00000	116.64890	1.25443	0	1964275.000	1345624.00000	218320.2	S
239.533	1.0623	0.00000	116.64860	1.25421	0	1964403.000	1345775.00000	218320.2	S
239.567	1.0623	0.00000	116.64840	1.25398	0	1964530.000	1345925.00000	218320.2	S
239.600	1.0623	0.00000	116.64810	1.25375	0	1964657.000	1346076.00000	218320.2	S
239.633	1.0624	0.00000	116.64790	1.25353	0	1964785.000	1346226.00000	218320.2	S
239.667	1.0624	0.00000	116.64760	1.25331	0	1964912.000	1346377.00000	218320.2	S
239.700	1.0624	0.00000	116.64730	1.25308	0	1965040.000	1346527.00000	218320.2	S
239.733	1.0624	0.00000	116.64710	1.25286	0	1965167.000	1346677.00000	218320.2	S
239.767	1.0624	0.00000	116.64680	1.25264	0	1965295.000	1346828.00000	218320.2	S
239.800	1.0624	0.00000	116.64660	1.25242	0	1965422.000	1346978.00000	218320.2	S
239.833	1.0624	0.00000	116.64630	1.25219	0	1965550.000	1347128.00000	218320.2	S
239.867	1.0624	0.00000	116.64610	1.25197	0	1965677.000	1347278.00000	218320.2	S
239.900	1.0624	0.00000	116.64580	1.25175	0	1965805.000	1347429.00000	218320.2	S
239.933	1.0624	0.00000	116.64560	1.25153	0	1965932.000	1347579.00000	218320.2	S
239.967	1.0624	0.00000	116.64530	1.25130	0	1966060.000	1347729.00000	218320.2	S
240.000	1.0624	0.00000	116.64510	1.25103	0	1966187.000	1347879.00000	218320.2	S
240.033	1.0498	0.00000	116.64480	1.25060	0	1966314.000	1348029.00000	218320.2	S
240.067	1.0228	0.00000	116.64450	1.24982	0	1966438.000	1348179.00000	218320.2	S
240.100	0.9722	0.00000	116.64420	1.24850	0	1966558.000	1348329.00000	218320.2	S
240.133	0.8938	0.00000	116.64380	1.24653	0	1966670.000	1348479.00000	218320.2	S
240.167	0.8095	0.00000	116.64330	1.24396	0	1966772.000	1348628.00000	218320.2	S
240.200	0.7285	0.00000	116.64260	1.24098	0	1966865.000	1348778.00000	218320.2	S
240.233	0.6543	0.00000	116.64190	1.23774	0	1966948.000	1348926.00000	218320.2	S
240.267	0.5885	0.00000	116.64110	1.23435	0	1967022.000	1349075.00000	218320.2	S
240.300	0.5304	0.00000	116.64020	1.23091	0	1967089.000	1349223.00000	218320.2	S
240.333	0.4806	0.00000	116.63930	1.22746	0	1967150.000	1349370.00000	218320.2	S
240.367	0.4368	0.00000	116.63830	1.22404	0	1967205.000	1349517.00000	218320.2	S
240.400	0.3963	0.00000	116.63720	1.22066	0	1967255.000	1349664.00000	218320.2	S
240.433	0.3600	0.00000	116.63610	1.21730	0	1967300.000	1349810.00000	218320.2	S
240.467	0.3272	0.00000	116.63490	1.21400	0	1967342.000	1349956.00000	218320.2	S
240.500	0.2976	0.00000	116.63370	1.21076	0	1967379.000	1350101.00000	218320.2	S
240.533	0.2707	0.00000	116.63250	1.20757	0	1967413.000	1350247.00000	218320.2	S
240.567	0.2462	0.00000	116.63130	1.20445	0	1967444.000	1350391.00000	218320.2	S
240.600	0.2243	0.00000	116.63000	1.20140	0	1967472.000	1350536.00000	218320.2	S
240.633	0.2049	0.00000	116.62870	1.19842	0	1967498.000	1350680.00000	218320.2	S
240.667	0.1872	0.00000	116.62740	1.19551	0	1967522.000	1350823.00000	218320.2	S
240.700	0.1703	0.00000	116.62610	1.19265	0	1967543.000	1350967.00000	218320.2	S
240.733	0.1543	0.00000	116.62470	1.18984	0	1967563.000	1351109.00000	218320.2	S
240.767	0.1391	0.00000	116.62330	1.18708	0	1967580.000	1351252.00000	218320.2	S
240.800	0.1248	0.00000	116.62190	1.18437	0	1967596.000	1351394.00000	218320.2	S
240.833	0.1113	0.00000	116.62050	1.18170	0	1967610.000	1351536.00000	218320.2	S
240.867	0.0987	0.00000	116.61910	1.17907	0	1967623.000	1351678.00000	218320.2	S
240.900	0.0869	0.00000	116.61770	1.17649	0	1967634.000	1351819.00000	218320.2	S
240.933	0.0759	0.00000	116.61630	1.17396	0	1967644.000	1351960.00000	218320.2	S
240.967	0.0658	0.00000	116.61480	1.17147	0	1967652.000	1352101.00000	218320.2	S
241.000	0.0565	0.00000	116.61340	1.16902	0	1967659.000	1352241.00000	218320.2	S
241.033	0.0481	0.00000	116.61190	1.16663	0	1967666.000	1352382.00000	218320.2	S
241.067	0.0405	0.00000	116.61050	1.16428	0	1967671.000	1352521.00000	218320.2	S
241.100	0.0337	0.00000	116.60900	1.16198	0	1967676.000	1352661.00000	218320.2	S
241.133	0.0278	0.00000	116.60750	1.15974	0	1967679.000	1352800.00000	218320.2	S
241.167	0.0228	0.00000	116.60600	1.15754	0	1967682.000	1352939.00000	218320.2	S
241.200	0.0186	0.00000	116.60450	1.15540	0	1967685.000	1353078.00000	218320.2	S
241.233	0.0148	0.00000	116.60310	1.15330	0	1967687.000	1353217.00000	218320.2	S
241.267	0.0114	0.00000	116.60160	1.15125	0	1967688.000	1353355.00000	218320.2	S
241.300	0.0084	0.00000	116.60010	1.14924	0	1967689.000	1353493.00000	218320.2	S
241.333	0.0059	0.00000	116.59860	1.14728	0	1967690.000	1353631.00000	218320.2	S
241.367	0.0038	0.00000	116.59710	1.14536	0	1967691.000	1353768.00000	218320.2	S
241.400	0.0021	0.00000	116.59560	1.14348	0	1967691.000	1353906.00000	218320.2	S
241.433	0.0008	0.00000	116.59410	1.14164	0	1967691.000	1354043.00000	218320.2	S
241.467	0.0000	0.00000	116.59260	1.13985	0	1967692.000	1354180.00000	218320.2	S
241.500	0.0000	0.00000	116.59120	1.13810	0	1967692.000	1354316.00000	218320.2	S
241.533	0.0000	0.00000	116.58970	1.13710	0	1967692.000	1354453.00000	218320.2	S
409.533	0.0000	0.00000	114.14740	0.36313	0	1967692.000	1629844.00000	218320.2	S
961.533	0.0000	0.00000	111.01250	----	----	1967692.000	1749371.00000	218320.2	N.A.

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Detailed Results :: Scenario 49 :: Treatment Volume Slug Load

Elapsed Time	Instantaneous Inflow Rate	Outside Recharge	Stage Elevation	Infiltration Rate	Combined Instantaneous Discharge	Cumulative Inflow	Cumulative Infiltration	Combined Cumulative	
0.000	16710.6700	0.00000	105.00000	0.00000	0	0.000	0.00000	0	N.A.
0.002	16710.6700	0.00000	113.97240	57.25188	0	100264.000	343.75000	0	U/P
2.400	0.0000	0.00000	----	----	----	100264.000	100264.00000	0	dry
6.000	0.0000	0.00000	----	----	----	100264.000	100264.00000	0	dry
12.000	0.0000	0.00000	----	----	----	100264.000	100264.00000	0	dry
24.000	0.0000	0.00000	----	----	----	100264.000	100264.00000	0	dry
36.000	0.0000	0.00000	----	----	----	100264.000	100264.00000	0	dry
48.000	0.0000	0.00000	----	----	----	100264.000	100264.00000	0	dry
60.000	0.0000	0.00000	----	----	----	100264.000	100264.00000	0	dry
72.000	0.0000	0.00000	----	----	----	100264.000	100264.00000	0	dry
84.000	0.0000	0.00000	----	----	----	100264.000	100264.00000	0	dry
96.000	0.0000	0.00000	----	----	----	100264.000	100264.00000	0	dry

APPENDIX G – ICPR Model (Pond 15)

1. Nodal Diagram
2. Node Min/Max Report
3. Input Report

Flamingo Crossings East

Nodes

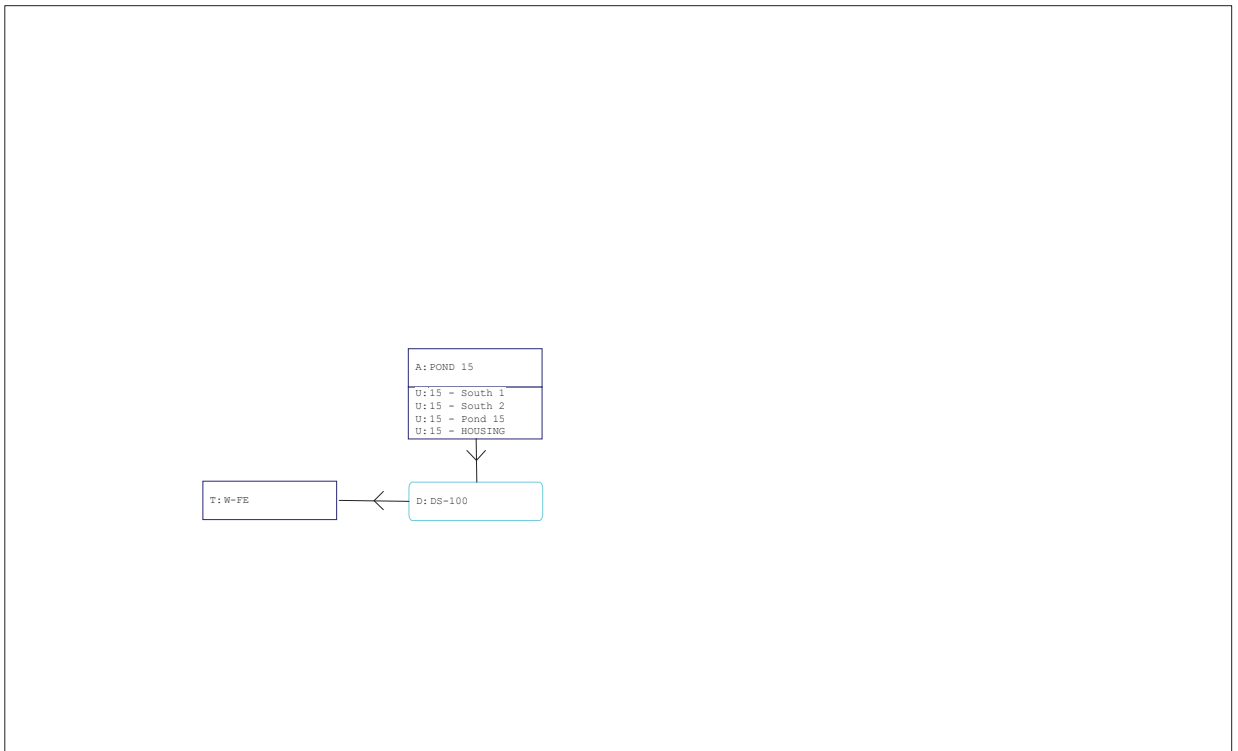
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

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



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Kelly, Collins & Gentry, Inc.
09/06/2018

Flamingo Crossings East

Name	Simulation	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Inflow cfs	Max Outflow cfs
POND 15	100YR72HR	108.57	110.00	0.0050	78586	111.87	49.94
POND 15	10YR72HR	107.71	110.00	0.0050	75496	76.45	43.83
POND 15	25YR72HR	108.01	110.00	-0.0050	76551	89.32	46.13
POND 15	50YR72HR	108.27	110.00	0.0050	77486	99.94	47.92

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 Kelly, Collins & Gentry, Inc.
 09/06/2018

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

Name: DS-100 From Node: POND 15 Length(ft): 513.00
 Group: BASE To Node: W-FE Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 36.00	36.00	Flow: Both
Rise(in): 36.00	36.00	Entrance Loss Coef: 0.500
Invert(ft): 102.050	101.210	Exit Loss Coef: 1.000
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

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

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

*** Weir 1 of 2 for Drop Structure DS-100 ***

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): 105.00	Invert(ft): 106.590	
Rise(in): 36.00	Control Elev(ft): 106.590	

*** Weir 2 of 2 for Drop Structure DS-100 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Circular	Orifice Disc Coef: 0.600	
Span(in): 5.50	Invert(ft): 104.000	
Rise(in): 5.50	Control Elev(ft): 104.500	

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

Name: 100YR72HR
 Filename: N:\Projects\American Campus\Flamingo Crossings\Calculations\Drainage\East\2018-08-29\ICPR\100YR72HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 14.27

Time(hrs)	Print Inc(min)
-----	-----
96.000	5.00

Name: 10YR72HR
 Filename: N:\Projects\American Campus\Flamingo Crossings\Calculations\Drainage\East\2018-08-29\ICPR\10YR72HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 10.19

Time(hrs)	Print Inc(min)
-----	-----
96.000	5.00

Name: 25YR72HR
 Filename: N:\Projects\American Campus\Flamingo Crossings\Calculations\Drainage\East\2018-08-29\ICPR\25YR72HR.R32

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 11.69

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

96.000 5.00

Name: 50YR72HR
Filename: N:\Projects\American Campus\Flamingo Crossings\Calculations\Drainage\East\2018-08-29\ICPR\50YR72HR.R32

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

Time(hrs) Print Inc(min)

96.000 5.00

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

Name: 100YR72HR Hydrology Sim: 100YR72HR
Filename: N:\Projects\American Campus\Flamingo Crossings\Calculations\Drainage\East\2018-08-29\ICPR\100YR72HR.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): 96.00
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: N:\Projects\American Campus\Flamingo Crossings\Calculations\Drainage\East\2018-08-29\ICPR\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): 96.00
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: N:\Projects\American Campus\Flamingo Crossings\Calculations\Drainage\East\2018-08-29\ICPR\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): 96.00
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

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Kelly, Collins & Gentry, Inc.
09/06/2018

Group	Run
BASE	Yes

Name: 50YR72HR Hydrology Sim: 50YR72HR
Filename: N:\Projects\American Campus\Flamingo Crossings\Calculations\Drainage\East\2018-08-29\ICPR\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): 96.00
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

ERP No. 48-00718-P
(Walt Disney World Master Plan Development)

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01



FORM #0157
Rev. 0895

**SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE
PERMIT MODIFICATION NO. 48-00714-S
DATE ISSUED: NOVEMBER 15, 2007**

PERMITTEE: REEDY CREEK IMPROVEMENT DISTRICT AND WALT DISNEY WORLD CO
(WALT DISNEY WORLD'S MASTER DEVELOPMENT PLAN MODIFICATION)
1900 HOTEL PLAZA BLVD, P O BOX 10170
LAKE BUENA VISTA, FL 32830-0170

ORIGINAL PERMIT ISSUED: SEPTEMBER 10, 1992

ORIGINAL PROJECT DESCRIPTION: CONSTRUCTION AND OPERATION OF A WATER MANAGEMENT SYSTEM SERVING 241.00 ACRES OF COMMERCIAL LANDS DISCHARGING INTO REEDY CREEK. (NOTE: ORIGINAL PERMIT WAS ISSUED AS A CONCEPTUAL PERMIT 48-00714-S DATED SEPTEMBER 10, 1992.)

APPROVED MODIFICATION : CONCEPTUAL APPROVAL OF A SURFACE WATER MANAGEMENT SYSTEM TO SERVE 458.27 ACRES OF A COMMERCIAL PROJECT KNOWN AS WALT DISNEY WORLD'S MASTER DEVELOPMENT PLAN MODIFICATION (WESTERN BELTWAY DEVELOPMENT). (NO CONSTRUCTION IS AUTHORIZED BY THIS PERMIT.)

PROJECT LOCATION: ORANGE COUNTY, SECTION 20,21,22,27,28,29 TWP 24S RGE 27E

PERMIT DURATION: See Special Condition No.1. See attached Rule 40E-4.321, Florida Administrative Code.

This Permit Modification is approved pursuant to Application No. 070530-22, dated May 24, 2007. Permittee agrees to hold and save the South Florida Water Management District and its successors harmless from any and all damages, claims or liabilities which may arise by reason of the construction, operation, maintenance or use of any activities authorized by this Permit. This Permit is issued under the provisions of Chapter 373, Part IV Florida Statutes(F.S.), and the Operating Agreement Concerning Regulation Under Part IV, Chapter 373 F.S. between South Florida Water Management District and the Department of Environmental Protection. Issuance of this Permit constitutes certification of compliance with state water quality standards where necessary pursuant to Section 401, Public Law 92-500, 33 USC Section 1341, unless this Permit is issued pursuant to the net improvement provisions of Subsections 373.414(1)(b), F.S., or as otherwise stated herein.

This Permit Modification may be revoked, suspended, or modified at any time pursuant to the appropriate provisions of Chapter 373, F.S., and Sections 40E-4.351(1), (2), and (4), Florida Administrative Code (F.A.C.). This Permit Modification may be transferred pursuant to the appropriate provisions of Chapter 373, F.S., and Sections 40E-1.6107(1) and (2), and 40E-4.351(1), (2), and (4), F.A.C.

All specifications and special and limiting/general conditions attendant to the original Permit,unless specifically rescinded by this or previous modifications, remain in effect.

This Permit Modification shall be subject to the Environmental Resource Permit set forth in Rule 40E-4.381, F.A.C., unless waived or modified by the Governing Board. The Application, and Environmental Resource Permit Staff Review Summary of the Application, including all conditions, and all plans and specifications incorporated by reference, are a part of this Permit Modification. All activities authorized by this Permit Modification shall be implemented as set forth in the plans, specifications, and performance criteria as set forth and incorporated in the Environmental Resource Permit Staff Review Summary. Within 30 days after completion of construction of the permitting activity, the Permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual, pursuant to the appropriate provisions of Chapter 373, F.S. and Sections 40E-4.361 and 40E-4.381, F.A.C.

In the event the property is sold or otherwise conveyed, the Permittee will remain liable for compliance with this Permit until transfer is approved by the District pursuant to Rule 40E-1.6107, F.A.C.

SPECIAL AND GENERAL CONDITIONS ARE AS FOLLOWS:
SEE PAGES 2 - 6 Of 9 (28 SPECIAL CONDITIONS).
SEE PAGES 7 - 9 Of 9 (19 GENERAL CONDITIONS).

PERMIT MODIFICATION APPROVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT

ON _____ ORIGINAL SIGNED BY:
BY _____ ELIZABETH VEGUILLA
DEPUTY CLERK


SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Reedy Creek Improvement District
1900 Hotel Plaza Road
P.O. Box 10170
Lake Buena Vista, FL 32830-0170

COMPLETE THIS SECTION ON DELIVERY

A. Signature  Agent Addressee

B. Received by (Printed Name) M. Ziem C. Date of Delivery 10-29-09

D. Is delivery address different from item 1? Yes No
if YES, enter delivery address below:

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

2. Article Number (Transfer from service label) 7005 0390 0005 9817 1810

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL 33406




SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Walt Disney World Co.
A Florida Corporation
P.O. Box 10000
Lake Buena Vista, FL 32830

COMPLETE THIS SECTION ON DELIVERY

A. Signature  Agent Addressee

B. Received by (Printed Name) N. Z. Chen C. Date of Delivery 10-29-07

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

2. Article Number 7005 0390 0005 9817 1827
(Transfer from service label)

UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL 33406



SPECIAL CONDITIONS

1. The conceptual phase of this permit shall expire on November 15, 2009.
2. Operation of the surface water management system shall be the responsibility of REEDY CREEK IMPROVEMENT DISTRICT. Within one year of permit issuance or concurrent with the engineering certification of construction completion, whichever comes first, the permittee shall submit a copy of the recorded deed restrictions (or declaration of condominium, if applicable), a copy of the filed articles of incorporation, and a copy of the certificate of incorporation for the association.
3. Discharge Facilities:

Basin: 1, Structure: FP-1

1-4" dia. CIRCULAR ORIFICE with invert at elev. 107' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 108.1' NGVD 29.

Receiving body : Wetland W-FE
Control elev : 107 feet NGVD 29.

Basin: 2-3, Structure: FP-2-3

1-3" dia. CIRCULAR ORIFICE with invert at elev. 107.5' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 109.5' NGVD 29.

Receiving body : Wetland W-FE
Control elev : 107.5 feet NGVD 29.

Basin: 4, Structure: FP-4

1-3" dia. CIRCULAR ORIFICE with invert at elev. 107' NGVD 29.
50 LF of 24" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 108' NGVD 29.

Receiving body : Wetland W80-48
Control elev : 107 feet NGVD 29.

Basin: 5, Structure: FP-5

1-3" dia. CIRCULAR ORIFICE with invert at elev. 106' NGVD 29.
50 LF of 24" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 107.2' NGVD 29.

Receiving body : Wetland W80-47
Control elev : 106 feet NGVD 29.

Basin: 6, Structure: FP-6

1-3" dia. CIRCULAR ORIFICE with invert at elev. 105' NGVD 29.
50 LF of 24" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 106' NGVD 29.

Receiving body : Wetland W80-48
Control elev : 105 feet NGVD 29.

Basin: 7, Structure: FP-7

1-3" dia. CIRCULAR ORIFICE with invert at elev. 106' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-37" W X 49" L drop inlet with crest at elev. 107.9' NGVD 29.

Receiving body : Wetland W80-47
Control elev : 106 feet NGVD 29.

Basin: 8, Structure: FP-8

1-3" dia. CIRCULAR ORIFICE with invert at elev. 104' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-37" W X 49" L drop inlet with crest at elev. 106.3' NGVD 29.

Receiving body ; Wetland W80-48
Control elev : 104 feet NGVD 29.

Basin: 9 & 11, Structure: FP-9

1-4" dia. CIRCULAR ORIFICE with invert at elev. 104' NGVD 29.
50 LF of 36" dia. REINFORCED CONCRETE PIPE culvert.
1-36" W X 79" L drop inlet with crest at elev. 106.2' NGVD 29.

Receiving body : Wetland W80-48
Control elev : 104 feet NGVD 29.

Basin: 10, Structure: FP-10

1-3" dia. CIRCULAR ORIFICE with invert at elev. 107' NGVD 29.
2-30" dia. REINFORCED CONCRETE PIPE culverts each 50' long.
2-36" W X 48" L drop inletS with crest at elev. 110' NGVD 29.

Receiving body : Wetland W80-46
Control elev : 107 feet NGVD 29.

Basin: 12, Structure: Pond 12

1-30" W X 15" H SHARP CRESTED weir with crest at elev. 109.3' NGVD 29.
1-3" dia. CIRCULAR ORIFICE with invert at elev. 108' NGVD 29.
120 LF of 24" dia. REINFORCED CONCRETE PIPE culvert.
1-" W X 48" L drop inlet with crest at elev. 111.65' NGVD 29.

Receiving body : Western Beltway Storm Sewer Structure
Control elev : 108 feet NGVD 29.

Basin: 13, Structure: Pond 13

3-24" W X 9" H SHARP CRESTED weirs with crest at elev. 110.2' NGVD 29.
1-3" dia. CIRCULAR ORIFICE with invert at elev. 108' NGVD 29.
120 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-' W X 96" L drop inlet with crest at elev. 112.45' NGVD 29.

Receiving body : Western Beltway Storm Sewer Structure
Control elev : 108 feet NGVD 29.

Basin: 14

1-10' W X 2' H BROAD CRESTED weir with crest at elev. 117' NGVD 29.

Receiving body : Western Beltway Pond 10
Control elev : 113 feet NGVD 29.

Basin: 15, Structure: FP-15

1-4" dia. CIRCULAR ORIFICE with invert at elev. 106' NGVD 29.
220 LF of 36" dia. REINFORCED CONCRETE PIPE culvert.
1-36" W X 105" L drop inlet with crest at elev. 108.3' NGVD 29.

Receiving body : Wetland W-FE
Control elev : 106 feet NGVD 29.

Basin: 16, Structure: FP-16

1-3" dia. CIRCULAR ORIFICE with invert at elev. 101' NGVD 29.
380 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-37" W X 49" L drop inlet with crest at elev. 103' NGVD 29.

Receiving body : Wetland W-80.54
Control elev : 101 feet NGVD 29.

Basin: 17, Structure: FP-17

1-4" dia. CIRCULAR ORIFICE with invert at elev. 102' NGVD 29.
90 LF of 36" dia. REINFORCED CONCRETE PIPE culvert.
1-36" W X 79" L drop inlet with crest at elev. 103.4' NGVD 29.

Receiving body : Wetland W-80.49
Control elev : 102 feet NGVD 29.

Basin: 18, Structure: FP-18

3-4" dia. CIRCULAR ORIFICES with invert at elev. 99' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 99.7' NGVD 29.

Receiving body : Wetland W-80.52
Control elev : 99 feet NGVD 29.

4. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.
5. Measures shall be taken during construction to insure that sedimentation and/or turbidity violations do not occur in the receiving water.
6. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.
7. Lake side slopes shall be no steeper than 5:1 (horizontal:vertical) to a depth of two feet below the control elevation. Side slopes shall be nurtured or planted from 2 feet below to 1 foot above control elevation to insure vegetative growth, unless shown on the plans.

8. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.
9. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
10. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments/debris. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.
11. The permittee acknowledges, that pursuant to Rule 40E-4.101(2), F.A.C., a notice of Environmental Resource or Surface Water Management Permit may be recorded in the county public records. Pursuant to the specific language of the rule, this notice shall not be considered an encumbrance upon the property.
12. Minimum building floor elevation: Please see Exhibits 7A and 7B.
13. Minimum road crown elevation: Please see Exhibits 7A and 7B.
14. Minimum parking lot elevation: Please see Exhibits 7A and 7B.
15. All future commercial/industrial parcels shall provide a minimum dry pre-treatment volume of 1/2 inch of runoff prior to discharge into the master surface water management system.
16. Prior to construction of future phases, a permit modification will be required. Plans and calculations shall be submitted to demonstrate compliance with the land use and site grading assumptions made in this application.
17. The exhibits and special conditions in this permit apply only to this application. They do not supersede or delete any requirements for other applications covered in Permit No. 48-00714-S unless otherwise specified herein.
18. Prior to commencement of construction and in accordance with the work schedule in the attached exhibits, the permittee shall submit documentation from the Florida Department of Environmental Protection that 4.40 freshwater forested and 0.80 freshwater herbaceous mitigation bank credits have been deducted from the ledger for Florida Mitigation Bank #492924779.
19. An average 25' wide, minimum 15', buffer of undisturbed upland vegetation shall be maintained between the proposed development and existing wetlands. Buffers shall be staked and roped and District environmental staff notified for inspection prior to clearing..
20. Silt screens, hay bales, turbidity screens/barriers or other such sediment control measures shall be utilized during construction. The selected sediment control measure shall be installed landward of the upland buffer zones around all protected wetlands and shall be properly "trenched" etc. All areas shall be stabilized and vegetated immediately after construction to prevent erosion into the wetlands and upland buffer zones.
21. Wetland preservation/mitigation areas, upland buffer zones and/or upland preservation areas shall be dedicated as conservation and common areas in the Disney Master Plan as well as on the plat if the project will be platted. Restrictions for use of the conservation/ common areas shall stipulate:

The wetland preservation/mitigation areas, upland buffer zones, and/or upland preservation areas are hereby dedicated as conservation and common areas. The conservation/common areas shall be the perpetual responsibility of the Walt Disney World and may in no way be altered from their natural or permitted state as documented in the permit file, with the exception of permitted restoration activities. Activities prohibited within the conservation areas include, but are not limited to: construction or placing soil or other substances such as trash; removal or destruction of trees, shrubs, or other vegetation - with the exception of exotic/nuisance vegetation removal; excavation, dredging, or removal of soil material;

diking or fencing; and any other activities detrimental to drainage, flood control, water conservation, erosion control, or fish and wildlife habitat conservation or preservation.

Copies of recorded documents shall be submitted to the District's Environmental Resource Compliance staff concurrently with engineering certification of construction completion.

22. Prior to the commencement of construction and in accordance with the work schedule in the attached exhibits, the permittee shall submit two certified copies of the recorded conservation easement for the mitigation area and associated buffers. The data shall be supplied in a digital ESRI Geodatabase (mdb), ESRI Shapefile (shp) or AutoCAD Drawing Interchange (dxf) file format using Florida State Plane coordinate system, East Zone (3601), Datum NAD83, HARN with the map units in feet. This data shall be submitted as a paper map depicting the Conservation Easement over the best available satellite or aerial imagery. This data shall also reside on a CD or floppy disk and be submitted to the District's Environmental Resource Compliance Division in the service area office where the application was submitted.

The recorded easement shall utilize the form attached as an exhibit. Any proposed modifications to the approved form must receive prior written consent from the District. The easement must be free of encumbrances or interests in the easement which the District determines are contrary to the intent of the easement. In the event it is later determined that there are encumbrances or interests in the easement which the District determines are contrary to the intent of the easement, the permittee shall be required to provide release or subordination of such encumbrances or interests.

23. Permanent physical markers designating the preserve status of the wetland preservation areas and buffer zones shall be placed as at the edge of the conservation areas. The markers shall be maintained in perpetuity.
24. The wetland conservation areas and upland buffer zones may in no way be altered from their natural or permitted state. Activities prohibited within the conservation areas include, but are not limited to: construction or placing of buildings on or above the ground; dumping or placing soil or other substances such as trash; removal or destruction of trees, shrubs, or other vegetation - with the exception of exotic vegetation removal; excavation, dredging, or removal of soil materials; diking or fencing; and any other activities detrimental to drainage, flood control, water conservation, erosion control, or fish and wildlife habitat conservation or preservation.
25. The District reserves the right to require remedial measures to be taken by the permittee if monitoring or other information demonstrates that adverse impacts to onsite or offsite wetlands, upland conservation areas or buffers, or other surface waters have occurred due to project related activities.
25. The following exhibits for the permit are incorporated by reference herein and are located in the permit file:

Exhibit No. 3E2 - 3E20 Wetland impact Exhibits

26. A maintenance program shall be implemented for the preserved wetland/upland areas on a regular basis to ensure the integrity and viability of those areas as permitted. Maintenance shall be conducted in perpetuity to ensure that the conservation areas are maintained free from Category 1 exotic vegetation (as defined by the Florida Exotic Pest Plant Council at the time of permit issuance) immediately following a maintenance activity. Maintenance in perpetuity shall also insure that conservation areas, including buffers, maintain the species and coverage of native, desirable vegetation specified in the permit. Coverage of exotic plant species shall not exceed 5% of total cover between maintenance activities. Coverage of nuisance plant species shall not exceed 10% of total cover between maintenance activities. In addition, the permittee shall manage the conservation areas such that exotic/nuisance plant species do not dominate any one section of those areas.
27. Endangered species, threatened species and/or species of special concern have been observed onsite and/or the project contains suitable habitat for these species. It shall be the permittee's responsibility to coordinate with the Florida Fish and Wildlife Conservation Commission and/or the U.S. Fish and Wildlife Service for appropriate guidance, recommendations and/or necessary permits to avoid impacts to listed species.

GENERAL CONDITIONS

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit and Part IV, Chapter 373, F.S.
2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.
3. Activities approved by this permit shall be conducted in a manner which does not cause violations of State water quality standards. The permittee shall implement best management practices for erosion and pollution control to prevent violation of State water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. All practices shall be in accordance with the guidelines and specifications described in Chapter 6 of the Florida Land Development Manual; A Guide to Sound Land and Water Management (Department of Environmental Regulation, 1988), incorporated by reference in Rule 40E-4.091, F.A.C. unless a project-specific erosion and sediment control plan is approved as part of the permit. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.
4. The permittee shall notify the District of the anticipated construction start date within 30 days of the date that this permit is issued. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District an Environmental Resource Permit Construction Commencement Notice Form Number 0960 indicating the actual start date and the expected construction completion date.
5. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual status report form. Status report forms shall be submitted the following June of each year.
6. Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a professional engineer or other individual authorized by law, utilizing the supplied Environmental Resource/Surface Water Management Permit Construction Completion/Certification Form Number 0881A, or Environmental Resource/Surface Water Management Permit Construction Completion Certification - For Projects Permitted prior to October 3, 1995 Form No. 0881B, incorporated by reference in Rule 40E-1.659, F.A.C. The statement of completion and certification shall be based on onsite observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and specifications. This submittal shall serve to notify the District that the system is ready for inspection. Additionally, if deviation from the approved drawings are discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawings. All surveyed dimensions and elevations shall be certified by a registered surveyor.
7. The operation phase of this permit shall not become effective: until the permittee has complied with the requirements of condition (6) above, and submitted a request for conversion of Environmental Resource Permit from Construction Phase to Operation Phase, Form No. 0920; the District determines the system to be in compliance with the permitted plans and specifications; and the entity approved by the District in accordance with Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, accepts responsibility for operation and maintenance of the system. The permit shall not be transferred to such approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall initiate transfer of the permit to the approved responsible operating entity if different from the permittee. Until the permit is transferred pursuant to Section 40E-1.6107, F.A.C., the permittee

shall be liable for compliance with the terms of the permit,

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of the phase or portion of the system to a local government or other responsible entity.
9. For those systems that will be operated or maintained by an entity that will require an easement or deed restriction in order to enable that entity to operate or maintain the system in conformance with this permit, such easement or deed restriction must be recorded in the public records and submitted to the District along with any other final operation and maintenance documents required by Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit applications within the South Florida Water Management District, prior to lot or units sales or prior to the completion of the system, whichever comes first. Other documents concerning the establishment and authority of the operating entity must be filed with the Secretary of State, county or municipal entities. Final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system and any other permit conditions.
10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the District in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.
11. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40E-4 or Chapter 40E-40, F.A.C..
12. The permittee is hereby advised that Section 253.77, F.S. states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the State, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.
13. The permittee must obtain a Water Use permit prior to construction dewatering, unless the work qualifies for a general permit pursuant to Subsection 40E-20.302(3), F.A.C., also known as the "No Notice" Rule.
14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the permit.
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 Section 373.421(2), F.S., provides otherwise.
16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of a permitted system or the real property on which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rules 40E-1.6105 and 40E-1.6107, F.A.C.. The permittee transferring the permit shall remain liable for corrective actions that may be required as a result of any violations prior to the sale, conveyance or other transfer of the system.
17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the appropriate District service center.
19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

ENVIRONMENTAL RESOURCE PERMITS CHAPTER 40E-4 (01/07)

40E-4.321 Duration of Permits.

(1) Unless revoked or otherwise modified the duration of an environmental resource permit issued under this chapter or Chapter 40E-40, F.A.C., is as follows:

(a) For a conceptual approval, two years from the date of issuance or the date specified as a condition of the permit, unless within that period an application for an individual or standard general permit is filed for any portion of the project. If an application for an environmental resource permit is filed, then the conceptual approval remains valid until final action is taken on the environmental resource permit application. If the application is granted, then the conceptual approval is valid for an additional two years from the date of issuance of the permit. Conceptual approvals which have no individual or standard general environmental resource permit applications filed for a period of two years shall expire automatically at the end of the two year period.

(b) For a conceptual approval filed concurrently with a development of regional impact (DRI) application for development approval (ADA) and a local government comprehensive plan amendment, the duration of the conceptual approval shall be two years from whichever one of the following occurs at the latest date:

1. The effective date of the local government's comprehensive plan amendment,
2. The effective date of the local government development order,
3. The date on which the District issues the conceptual approval, or
4. The date on which the District issues a final order pertaining to the resolution of any Section 120.57, F.S., administrative proceeding or other legal appeals.

(c) For an individual or standard general environmental resource permit, the construction phase authorizing construction, removal, alteration or abandonment of a system shall expire five years from the date of issuance or such amount of time as made a condition of the permit.

(d) For an individual or standard general environmental resource permit, the operational phase of the permit is perpetual for operation and maintenance.

(e) For a noticed general permit issued pursuant to Chapter 40E-400, F.A.C., five years from the date the notice of intent to use the permit is provided to the District.

(2)(a) Unless prescribed by special permit condition, permits expire automatically according to the timeframes indicated in this rule. If application for extension is made by electronic mail at the District's e-Permitting website or in writing pursuant to subsection (3), the permit shall remain in full force and effect until:

1. The Governing Board takes action on an application for extension of an individual permit, or
2. Staff takes action on an application for extension of a standard general permit.

(b) Installation of the project outfall structure shall not constitute a vesting of the permit.

(3) The permit extension shall be issued provided that a permittee files a written request with the District showing good cause prior to the expiration of the permit. For the purpose of this rule, good cause shall mean a set of extenuating circumstances outside of the control of the permittee. Requests for extensions, which shall include documentation of the extenuating circumstances and how they have delayed this project, will not be accepted more than 180 days prior to the expiration date.

(4) Substantial modifications to Conceptual Approvals will extend the duration of the Conceptual Approval for two years from the date of issuance of the modification. For the purposes of this section, the term "substantial modification" shall mean a modification which is reasonably expected to lead to substantially different water resource or environmental impacts which require a detailed review.

(5) Substantial modifications to individual or standard general environmental resource permits issued pursuant to a permit application extend the duration of the permit for three years from the date of issuance of the modification. Individual or standard general environmental resource permit modifications do not extend the duration of a conceptual approval.

(6) Permit modifications issued pursuant to paragraph 40E-4.331(2)(b), F.A.C. (letter modifications) do not extend the duration of the permit.

(7) Failure to complete construction or alteration of the surface water management system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization in order to continue construction unless a permit extension is granted.

Specific Authority 373.044, 373.113, 668.003, 668.004, 668.50 FS. Law Implemented 373.413, 373.416, 373.419, 373.426, 668.003, 668.004, 668.50 FS. History-New 9-3-81, Amended 1-31-82, 12-1-82, Formerly 16K-4.07(4), Amended 7-1-86, 4-20-94, 10-3-95, 5-28-00, 10-1-06.


SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.


1. Article Addressed to:

Reedy Creek Improvement District
Walt Disney World Co.
1900 Hotel Plaza Blvd.
P.O. Box 10170
Lake Buena Vista, FL 32830-0170

COMPLETE THIS SECTION ON DELIVERY

A. Signature  Agent Addressee

B. Received by (Printed Name) NOV 19 2007 Date of Delivery

D. Is delivery address different from item 1? Yes No
If YES, enter delivery address below: 

3. Service Type Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes No

2. Article Number 7005 0390 0005 9817 2114
(Transfer from service label)

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

UNITED STATES POSTAL SERVICE
MIAMI FL 33138

19 NOV 07 PM 7 L

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

12/10
[Signature]
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL 33406



459



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

November 14, 2007

Reedy Creek Improvement District
Walt Disney World Co.
1900 Hotel Plaza Blvd.
P.O. Box 10170
Lake Buena Vista, FL 32830-0170

Dear Sir or Madam:

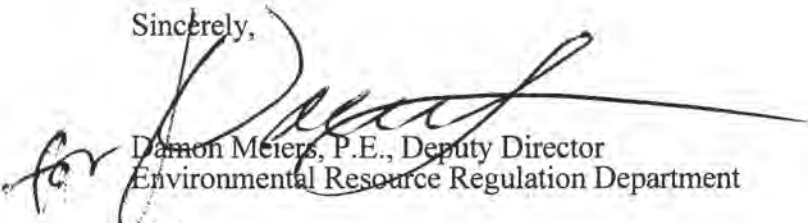
Subject: Addendum to Staff dated October 25, 2007
Application No. 070530-22, Walt Disney World's Master Development Plan Modification
Orange County, S20,21,22,27,28,29/T24S/R27E

Enclosed is an addendum to a staff report sent to you on October 25, 2007. It is requested that you read this addendum thoroughly and understand its contents. The recommendations as stated in the staff report and the addendum will be presented to our Governing Board for consideration on **Thursday, November 15, 2007. Please note, the meeting will be held at the Key Largo Bay Marriott Beach Resort, 10300 Overseas Highway, Key Largo, FL 33037.**

Should you wish to object to the staff recommendation or file a petition, please provide written objections, petitions, and/or waivers to:

Elizabeth Veguilla, Deputy Clerk
South Florida Water Management District
Post Office Box 24680
West Palm Beach, Florida 33416-4680

Sincerely,

A handwritten signature in black ink, appearing to read "for Damon Meiers".
Damon Meiers, P.E., Deputy Director
Environmental Resource Regulation Department

DM/ja

CERTIFIED MAIL #7005 0390 0005 9817 2114
RETURN RECEIPT REQUESTED

Application No. 070530-22

WALT DISNEY WORLD'S MASTER DEVELOPMENT PLAN MODIFICATION

Orange County, S20,21,22,27,28,29/T24S/R27E

ADDENDUM TO STAFF REPORT



The purpose of this addendum is to revise the text in the previous Staff Report.

Individual Environmental Resource Permit Staff Report:

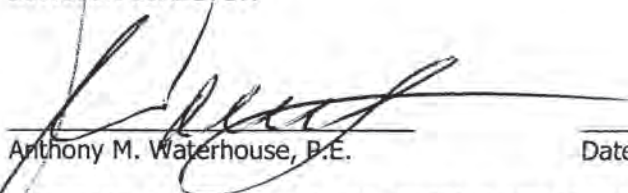
- Page 1 of 19 is revised to read:
Operating Entity: ~~WALT DISNEY WORLD~~ Reedy Creek Improvement District
- Page 3 of 19 – Discharge Rate: - is revised to read:
Allow Disch (cfs): ~~287~~ 3282
- Page 4 of 19 – Control Elevation: - is revised to read:
Basin 12 Ctrl Elev (ft, NGVD 29): ~~106~~ 108
- Page 5 of 19 – Weirs: Basin 13: - is revised to read:
Count: ~~1~~ 3
- Page 5 of 19 – Bleeders: Basin 18: - is revised to read:
Count: ~~1~~ 3

Special Conditions:

- Page 14 of 19 is revised to read:
2. Operation of the surface water management system shall be the responsibility of ~~WALT DISNEY WORLD~~ Reedy Creek Improvement District.
- Page 15 of 19 is revised to read:
Basin: 12, Structure: Pond 12..... Control elev: ~~106~~ 108 feet NGVD 29.
- Page 15 of 19 is revised to read:
Basin: 13, Structure: Pond 13
~~1~~ 3 – 24" W X 9" H SHARP CRESTED weir with crest at elev. 110.2' NGVD 29.
- Page 16 of 19 is revised to read:
Basin: 18, Structure: FP-18
~~1~~ 3 – 4" dia. CIRCULAR ORIFICE with invert at elev. 99' NGVD 29.

SURFACE WATER MANAGEMENT DEPARTMENT APPROVAL

DIVISION DIRECTOR


Anthony M. Waterhouse, P.E. Date 11/14/07

NATURAL RESOURCE MANAGEMENT DEPARTMENT APPROVAL

DIVISION DIRECTOR


Anita L. Bain Date 11/14/07

SPECIAL CONDITIONS

1. The conceptual phase of this permit shall expire on November 15, 2009.
2. Operation of the surface water management system shall be the responsibility of REEDY CREEK IMPROVEMENT DISTRICT. Within one year of permit issuance or concurrent with the engineering certification of construction completion, whichever comes first, the permittee shall submit a copy of the recorded deed restrictions (or declaration of condominium, if applicable), a copy of the filed articles of incorporation, and a copy of the certificate of incorporation for the association.
3. Discharge Facilities:

Basin: 1, Structure: FP-1

1-4" dia. CIRCULAR ORIFICE with invert at elev. 107' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 108.1' NGVD 29.

Receiving body : Wetland W-FE
Control elev : 107 feet NGVD 29.

Basin: 2-3, Structure: FP-2-3

1-3" dia. CIRCULAR ORIFICE with invert at elev. 107.5' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 109.5' NGVD 29.

Receiving body : Wetland W-FE
Control elev : 107.5 feet NGVD 29.

Basin: 4, Structure: FP-4

1-3" dia. CIRCULAR ORIFICE with invert at elev. 107' NGVD 29.
50 LF of 24" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 108' NGVD 29.

Receiving body : Wetland W80-48
Control elev : 107 feet NGVD 29.

Basin: 5, Structure: FP-5

1-3" dia. CIRCULAR ORIFICE with invert at elev. 106' NGVD 29.
50 LF of 24" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 107.2' NGVD 29.

Receiving body : Wetland W80-47
Control elev : 106 feet NGVD 29.

Basin: 6, Structure: FP-6

1-3" dia. CIRCULAR ORIFICE with invert at elev. 105' NGVD 29.
50 LF of 24" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 106' NGVD 29.

Receiving body : Wetland W80-48

SPECIAL CONDITIONS

Control elev : 105 feet NGVD 29.

Basin: 7, Structure: FP-7

1-3" dia. CIRCULAR ORIFICE with invert at elev. 106' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-37" W X 49" L drop inlet with crest at elev. 107.9' NGVD 29.

Receiving body : Wetland W80-47
Control elev : 106 feet NGVD 29.

Basin: 8, Structure: FP-8

1-3" dia. CIRCULAR ORIFICE with invert at elev. 104' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-37" W X 49" L drop inlet with crest at elev. 106.3' NGVD 29.

Receiving body : Wetland W80-48
Control elev : 104 feet NGVD 29.

Basin: 9 & 11, Structure: FP-9

1-4" dia. CIRCULAR ORIFICE with invert at elev. 104' NGVD 29.
50 LF of 36" dia. REINFORCED CONCRETE PIPE culvert.
1-36" W X 79" L drop inlet with crest at elev. 106.2' NGVD 29.

Receiving body : Wetland W80-48
Control elev : 104 feet NGVD 29.

Basin: 10, Structure: FP-10

1-3" dia. CIRCULAR ORIFICE with invert at elev. 107' NGVD 29.
2-30" dia. REINFORCED CONCRETE PIPE culverts each 50' long.
2-36" W X 48" L drop inlets with crest at elev. 110' NGVD 29.

Receiving body : Wetland W80-46
Control elev : 107 feet NGVD 29.

Basin: 12, Structure: Pond 12

1-30" W X 15" H SHARP CRESTED weir with crest at elev. 109.3' NGVD 29.
1-3" dia. CIRCULAR ORIFICE with invert at elev. 108' NGVD 29.
120 LF of 24" dia. REINFORCED CONCRETE PIPE culvert.
1-" W X 48" L drop inlet with crest at elev. 111.65' NGVD 29.

Receiving body : Western Beltway Storm Sewer Structure
Control elev : 108 feet NGVD 29.

Basin: 13, Structure: Pond 13

3-24" W X 9" H SHARP CRESTED weirs with crest at elev. 110.2' NGVD 29.
1-3" dia. CIRCULAR ORIFICE with invert at elev. 108' NGVD 29.
120 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.

SPECIAL CONDITIONS

1-1' W X 96" L drop inlet with crest at elev. 112.45' NGVD 29.

Receiving body : Western Beltway Storm Sewer Structure
Control elev : 108 feet NGVD 29.

Basin: 14

1-10' W X 2' H BROAD CRESTED weir with crest at elev. 117' NGVD 29.

Receiving body : Western Beltway Pond 10
Control elev : 113 feet NGVD 29.

Basin: 15, Structure: FP-15

1-4" dia. CIRCULAR ORIFICE with invert at elev. 106' NGVD 29.
220 LF of 36" dia. REINFORCED CONCRETE PIPE culvert.
1-36" W X 105" L drop inlet with crest at elev. 108.3' NGVD 29.

Receiving body : Wetland W-FE
Control elev : 106 feet NGVD 29.

Basin: 16, Structure: FP-16

1-3" dia. CIRCULAR ORIFICE with invert at elev. 101' NGVD 29.
380 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-37" W X 49" L drop inlet with crest at elev. 103' NGVD 29.

Receiving body : Wetland W-80.54
Control elev : 101 feet NGVD 29.

Basin: 17, Structure: FP-17

1-4" dia. CIRCULAR ORIFICE with invert at elev. 102' NGVD 29.
90 LF of 36" dia. REINFORCED CONCRETE PIPE culvert.
1-36" W X 79" L drop inlet with crest at elev. 103.4' NGVD 29.

Receiving body : Wetland W-80.49
Control elev : 102 feet NGVD 29.

Basin: 18, Structure: FP-18

3-4" dia. CIRCULAR ORIFICES with invert at elev. 99' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 99.7' NGVD 29.

Receiving body : Wetland W-80.52
Control elev : 99 feet NGVD 29.

4. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.
5. Measures shall be taken during construction to insure that sedimentation and/or turbidity violations do not occur in the receiving water.

SPECIAL CONDITIONS

6. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.
7. Lake side slopes shall be no steeper than 5:1 (horizontal:vertical) to a depth of two feet below the control elevation. Side slopes shall be nurtured or planted from 2 feet below to 1 foot above control elevation to insure vegetative growth, unless shown on the plans.
8. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.
9. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
10. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments/debris. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.
11. The permittee acknowledges, that pursuant to Rule 40E-4.101(2), F.A.C., a notice of Environmental Resource or Surface Water Management Permit may be recorded in the county public records. Pursuant to the specific language of the rule, this notice shall not be considered an encumbrance upon the property.
12. Minimum building floor elevation: Please see Exhibits 7A and 7B.
13. Minimum road crown elevation: Please see Exhibits 7A and 7B.
14. Minimum parking lot elevation: Please see Exhibits 7A and 7B.
15. All future commercial/industrial parcels shall provide a minimum dry pre-treatment volume of 1/2 inch of runoff prior to discharge into the master surface water management system.
16. Prior to construction of future phases, a permit modification will be required. Plans and calculations shall be submitted to demonstrate compliance with the land use and site grading assumptions made in this application.
17. The exhibits and special conditions in this permit apply only to this application. They do not supersede or delete any requirements for other applications covered in Permit No. 48-00714-S unless otherwise specified herein.
18. Prior to commencement of construction and in accordance with the work schedule in the attached exhibits, the permittee shall submit documentation from the Florida Department of Environmental Protection that 4.40 freshwater forested and 0.80 freshwater herbaceous mitigation bank credits have been deducted from the ledger for Florida Mitigation Bank #492924779.
19. An average 25' wide, minimum 15', buffer of undisturbed upland vegetation shall be maintained between the proposed development and existing wetlands. Buffers shall be staked and roped and District environmental staff notified for inspection prior to clearing.
20. Silt screens, hay bales, turbidity screens/barriers or other such sediment control measures shall be utilized during construction. The selected sediment control measure shall be installed landward of the upland buffer zones around all protected wetlands and shall be properly "trenched" etc. All areas shall be stabilized and vegetated immediately after construction to prevent erosion into the wetlands and upland buffer zones.
21. Wetland preservation/mitigation areas, upland buffer zones and/or upland preservation areas shall be dedicated as conservation and common areas in the Disney Master Plan as well as on the plat if the

SPECIAL CONDITIONS

project will be platted. Restrictions for use of the conservation/ common areas shall stipulate:

The wetland preservation/mitigation areas, upland buffer zones, and/or upland preservation areas are hereby dedicated as conservation and common areas. The conservation/common areas shall be the perpetual responsibility of the Walt Disney World and may in no way be altered from their natural or permitted state as documented in the permit file, with the exception of permitted restoration activities.

Activities prohibited within the conservation areas include, but are not limited to: construction or placing soil or other substances such as trash; removal or destruction of trees, shrubs, or other vegetation - with the exception of exotic/nuisance vegetation removal; excavation, dredging, or removal of soil material; diking or fencing; and any other activities detrimental to drainage, flood control, water conservation, erosion control, or fish and wildlife habitat conservation or preservation.

Copies of recorded documents shall be submitted to the District's Environmental Resource Compliance staff concurrently with engineering certification of construction completion.

22. Prior to the commencement of construction and in accordance with the work schedule in the attached exhibits, the permittee shall submit two certified copies of the recorded conservation easement for the mitigation area and associated buffers. The data shall be supplied in a digital ESRI Geodatabase (mdb), ESRI Shapefile (shp) or AutoCAD Drawing Interchange (dxf) file format using Florida State Plane coordinate system, East Zone (3601), Datum NAD83, HARN with the map units in feet. This data shall be submitted as a paper map depicting the Conservation Easement over the best available satellite or aerial imagery. This data shall also reside on a CD or floppy disk and be submitted to the District's Environmental Resource Compliance Division in the service area office where the application was submitted.

The recorded easement shall utilize the form attached as an exhibit. Any proposed modifications to the approved form must receive prior written consent from the District. The easement must be free of encumbrances or interests in the easement which the District determines are contrary to the intent of the easement. In the event it is later determined that there are encumbrances or interests in the easement which the District determines are contrary to the intent of the easement, the permittee shall be required to provide release or subordination of such encumbrances or interests.

23. Permanent physical markers designating the preserve status of the wetland preservation areas and buffer zones shall be placed as at the edge of the conservation areas. The markers shall be maintained in perpetuity.
24. The wetland conservation areas and upland buffer zones may in no way be altered from their natural or permitted state. Activities prohibited within the conservation areas include, but are not limited to: construction or placing of buildings on or above the ground; dumping or placing soil or other substances such as trash; removal or destruction of trees, shrubs, or other vegetation - with the exception of exotic vegetation removal; excavation, dredging, or removal of soil materials; diking or fencing; and any other activities detrimental to drainage, flood control, water conservation, erosion control, or fish and wildlife habitat conservation or preservation.
25. The District reserves the right to require remedial measures to be taken by the permittee if monitoring or other information demonstrates that adverse impacts to onsite or offsite wetlands, upland conservation areas or buffers, or other surface waters have occurred due to project related activities.
25. The following exhibits for the permit are incorporated by reference herein and are located in the permit file:

Exhibit No. 3E2 - 3E20 Wetland Impact Exhibits

26. A maintenance program shall be implemented for the preserved wetland/upland areas on a regular basis to ensure the integrity and viability of those areas as permitted. Maintenance shall be

SPECIAL CONDITIONS

conducted in perpetuity to ensure that the conservation areas are maintained free from Category 1 exotic vegetation (as defined by the Florida Exotic Pest Plant Council at the time of permit issuance) immediately following a maintenance activity. Maintenance in perpetuity shall also insure that conservation areas, including buffers, maintain the species and coverage of native, desirable vegetation specified in the permit. Coverage of exotic plant species shall not exceed 5% of total cover between maintenance activities. Coverage of nuisance plant species shall not exceed 10% of total cover between maintenance activities. In addition, the permittee shall manage the conservation areas such that exotic/nuisance plant species do not dominate any one section of those areas.

27. Endangered species, threatened species and/or species of special concern have been observed onsite and/or the project contains suitable habitat for these species. It shall be the permittee's responsibility to coordinate with the Florida Fish and Wildlife Conservation Commission and/or the U.S. Fish and Wildlife Service for appropriate guidance, recommendations and/or necessary permits to avoid impacts to listed species.

STAFF REPORT DISTRIBUTION LIST

WALT DISNEY WORLD'S MASTER DEVELOPMENT PLAN MODIFICATION

Application No: 070530-22

Permit No: 48-00714-S

INTERNAL DISTRIBUTION

- X Annette V. Burkett - 2250
- X Susan C. Elfers - 2250
- X Marc S. Ady - 2250
- X Edward W. Yaun, P.E. - 2250
- X A. Bain - 4250
- X A. Lee - 6850
- X A. Waterhouse - 4220
- X ERC Engineering - 6850
- X ERC Environmental - 6850
- X J. Golden - 4210
- X Permit File

GOVERNING BOARD MEMBERS

- Mr. Charles J Dauray
- Mr. Eric Buermann
- Mr. Harkley R. Thornton
- Mr. Malcolm S. Wade, Jr.
- Mr. Michael Collins
- Mr. Nicolas Gutierrez, Jr.
- Mr. Patrick Rooney, Jr.
- Ms. Melissa Meeker
- Ms. Shannon A. Estenoz

EXTERNAL DISTRIBUTION

- X Permittee - Reedy Creek Improvement District
- X Permittee - Walt Disney World Co
- X Engr Consultant - Pbs&J
- X Owner - Reedy Creek Improvemnt District

GOVERNMENT AGENCIES

- X Div of Recreation and Park - District 6 - FDEP
- X Florida Department of Environmental Protection
- X Florida Fish & Wildlife Conservation Commission -
Imperiled Species Mgmt Section
- X Orange County - Environmental Protection Division
- X Orange County - Public Utilities Division
- X Orange County Engineer - Dept of Public Works
- X Reedy Creek Improvement District

OTHER INTERESTED PARTIES

- X Sierra Club - Central Florida Group P.O. Box 941692

STAFF REPORT DISTRIBUTION LIST

ADDRESSES

Reedy Creek Improvement District
1900 Hotel Plaza Blvd
P O Box 10170
Lake Buena Vista FL 32830-0170

Walt Disney World Co
1900 Hotel Plaza Blvd
P O Box 10170
Lake Buena Vista FL 32830-0170

Mr. Charles J Dauray
Sfwmd Governing Board, 1162
P.O. Box 24680
West Palm Beach FL 33416-4680

Mr. Harkley R. Thornton
Outlook Media
2295 South Hiwassee Road, Suite 203
Orlando FL 32835

Mr. Michael Collins
Po Box 803
Islamorada FL 33036

Mr. Patrick Rooney, Jr.
Palm Beach Kennel Club
1111 N. Congress Avenue
West Palm Beach FL 33409

Ms. Shannon A. Estenoz
National Parks Conserv. Assoc.
450 N. Park Rd, Suite 301
Hollywood FL 33021

Div of Recreation and Park - District 6 - FDEP
1800 Wekiwa Circle
Apopka FL 32712

Florida Fish & Wildlife Conservation Commission -
Imperiled Species Mgmt Section
620 South Meridian Street
Tallahassee FL 32399-6000

Pbs&J
482 South Keller Road
Orlando FL 32810

Reedy Creek Improvemnt District

Mr. Eric Buermann
Squire, Sanders & Dempsey L.L.P.
200 South Biscayne Blvd, Ste 4000
Miami FL 33131-2398

Mr. Malcolm S. Wade, Jr.
111 Ponce De Leon Ave
Clewiston FL 33440

Mr. Nicolas Gutierrez, Jr.
Rafferty, Gutierrez & Sanchez-Aballi, Pa
1101 Brickel Ave, Suite 1400
Miami FL 33131

Ms. Melissa Meeker
Hesperides Group
6526 S. Kanner Hwy #339
Stuart FL 34997

Florida Department of Environmental Protection
3319 Maguire Blvd
Suite 232
Orlando FL 32803-3767

STAFF REPORT DISTRIBUTION LIST

Orange County - Environmental Protection Division
800 Mercy Drive
Suite 4
Orlando FL 32808

Orange County - Public Utilities Division
109 East Church Street
C&S Bank Building
Orlando FL 32801

Orange County Engineer - Dept of Public Works
4200 John Young Parkway
Orlando FL 32839-9205

Reedy Creek Improvement District
Po Box 10170
Lake Buena Vista FL 32830

Sierra Club - Central Florida Group P.O. Box 941692

Maitland FL 32794



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

October 25, 2007

Reedy Creek Improvement District
1900 Hotel Plaza Road
P.O. Box 10170
Lake Buena Vista, FL 32830-0170

Walt Disney World Co.
A Florida Corporation
P.O. Box 10000
Lake Buena Vista, FL 32830

Subject: Application No. 070530-22, **Walt Disney World's Master Development Plan Modification**
Orange County, S20,21,22,27,28,29/T24S/R27E

Enclosed is a copy of the South Florida Water Management District's staff report covering the permit application referenced therein. It is requested that you read this staff report thoroughly and understand its contents. The recommendations as stated in the staff report will be presented to our Governing Board for consideration on **Thursday, November 15, 2007. Please note, the meeting will be held at the Key Largo Bay Marriott Beach Resort, 103800 Overseas Highway, Key Largo, FL 33037.**

Should you wish to object to the staff recommendation or file a petition, please provide written objections, petitions and/or waivers (refer to the attached "Notice of Rights") to:

Elizabeth Veguilla, Deputy Clerk
South Florida Water Management District
Post Office Box 24680
West Palm Beach, Florida 33416-4680

The "Notice of Rights" addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. You are advised, however, to be prepared to defend your position regarding the permit application when it is considered by the Governing Board for final agency action, even if you agree with the staff recommendation, as the Governing Board may take final agency action which differs materially from the proposed agency action.

Please contact the District if you have any questions concerning this matter.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the addressee this 25th day of October, 2007 in accordance with Section 120.60 (3), Florida Statutes.

Sincerely,

A handwritten signature in black ink, appearing to read "Damon Meiers".

Damon Meiers, P.E., Deputy Director
Environmental Resource Regulation Department

DM/ja

CERTIFIED #7005 0390 0005 9817 1810, #7005 0390 0005 9817 1827
RETURN RECEIPT REQUESTED

NOTICE OF RIGHTS

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., following is notice of the opportunities which may be available for administrative hearing and/or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

Right to Request Administrative Hearing

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569, 120.57, and 120.60(3), Fla. Stat. Persons seeking a hearing on a District decision which does or may determine their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision in accordance with Rule 28-106.111, Fla. Admin. Code. Any person who receives written notice of a District decision and fails to file a written request for hearing within 21 days waives the right to request a hearing on that decision as provided by Subsection 28-106.111(4), Fla. Admin. Code.

The Petition must be filed at the Office of the District Clerk of the SFWMD, 3301 Gun Club Road, P.O. Box 24680, West Palm Beach, Florida, 33416, and must comply with the requirements of Rule 28-106.104, Fla. Admin. Code. Filings with the District Clerk may be made by mail, hand-delivery or facsimile. **Filings by e-mail will not be accepted.** A petition for administrative hearing is deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Pursuant to Rule 28-106.104, Fla. Admin. Code, any document received by the office of the District Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day.

- Filings made by mail must include the original and one copy and must be addressed to the Office of the District Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must also include the original and one copy of the petition. **Delivery of a petition to the District's security desk does not constitute filing. To ensure proper filing, it will be necessary to request the District's security officer to contact the Clerk's office.** An employee of the District's Clerk's office will file the petition and return the extra copy reflecting the date and time of filing.
- Filings by facsimile must be transmitted to the District Clerk's Office at (561) 682-6010. Pursuant to Subsections 28-106.104(7), (8) and (9), Fla. Admin. Code, a party who files a document by facsimile represents that the original physically signed document will be retained by that party for the duration of that proceeding and of any subsequent appeal or subsequent proceeding in that cause. Any party who elects to file any document by facsimile shall be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed with the clerk as a result. The filing date for a document filed by facsimile shall be the date the District Clerk receives the complete document.

The following provisions may be applicable to SFWMD actions in combination with the applicable Uniform Rules of Procedure (Subsections 40E-0.109(1)(a) and 40E-1.511(1)(a), Fla. Admin. Code):

- (1)(a) "Receipt of written notice of agency decision" as set forth in Rule 28-106.111, Fla. Admin. Code, means receipt of either written notice through mail or posting that the District has or intends to take final agency action, or publication of notice that the District has or intends to take final agency action.
- (b) If notice is published pursuant to Chapter 40E-1, F.A.C., publication shall constitute constructive notice to all persons. Until notice is published, the point of entry to request a formal or informal administrative proceeding shall remain open unless actual notice is received.
- (2) If the District's Governing Board takes action which substantially differs from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law. The District Governing Board's action is considered to substantially differ from the notice of intended agency decision when the potential impact on water resources has changed.
- (3) Notwithstanding the timeline in Rule 28-106.111, Fla. Admin. Code, intended agency decisions or agency decisions regarding consolidated applications for Environmental Resource Permits and Use of Sovereign Submerged Lands pursuant to Section 373.427, Fla. Stat., shall provide a 14 day point of entry to file petitions for administrative hearing.

Hearings Involving Disputed Issues of Material Fact

The procedure for hearings involving disputed issues of material fact is set forth in Subsection 120.57(1), Fla. Stat., and Rules 28-106.201-.217, Fla. Admin. Code. Petitions involving disputed issues of material fact shall be filed in accordance with Rule 28-106.104, Fla. Admin. Code, and must comply with the requirements set forth in Rule 28-106.201, Fla. Admin. Code.

Hearings Not Involving Disputed Issues of Material Fact

The procedure for hearings not involving disputed issues of material fact is set forth in Subsection 120.57(2), Fla. Stat., and Rules 28-106.301-.307, Fla. Admin. Code. Petitions not involving disputed issues of material fact shall be filed in accordance with Rule 28-106.104, Fla. Admin. Code, and must comply with the requirements set forth in Rule 28-106.301, Fla. Admin. Code.

Mediation

As an alternative remedy under Sections 120.569 and 120.57, Fla. Stat., any person whose substantial interests are or may be affected by the SFWMD's action may choose to pursue mediation. The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-.405, Fla. Admin. Code. Choosing mediation will not adversely affect the rights to a hearing if mediation does not result in a settlement.

DISTRICT COURT OF APPEAL

Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the SFWMD Clerk within 30 days of rendering of the final SFWMD action.

Last Date For Agency Action: 15-NOV-2007

INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Walt Disney World'S Master Development Plan Modification

Permit No.: 48-00714-S

Application No.: 070530-22

Application Type: Environmental Resource (Conceptual Approval Modification)

Location: Orange County, S20,21,22,27,28,29/T24S/R27E

Permittee : Reedy Creek Improvement District
Walt Disney World Co

Operating Entity : Walt Disney World

Project Area: 458.27 acres

Project Land Use: Commercial

Drainage Basin: REEDY CREEK

Receiving Body: Reedy Creek via Reedy Creek Master Surface Water
Management System

Class: CLASS III

Special Drainage District: Reedy Creek Improvement District

Total Acres Wetland Onsite: 80.34

Total Acres Wetland Preserved Onsite: 75.46

Total Acres Impacted Onsite : 3.60

Total Acres Presv/Mit Compensation Onsite: 75.46

Offsite Mitigation Credits-Mit.Bank: 5.20 Florida Mitigation Bank

Conservation Easement To District : Yes

Sovereign Submerged Lands: No



PROJECT PURPOSE:

Modification of an Environmental Resource Permit to authorize conceptual approval of a surface water management system to serve 458.27 acres of a commercial project known as Walt Disney World's Master Development Plan Modification (Western Beltway Development). Staff recommends approval with conditions.

PROJECT EVALUATION:**PROJECT SITE DESCRIPTION:**

The site is located in all four quadrants of the Western Beltway (S.R. 429) / Western Way Interchange.

There are no permitted surface water management facilities within the project area. The site contains remnant citrus grove land.

The project area is predominantly abandoned orange groves and silviculture activities with large contiguous marsh and historic forested systems on the west side and several smaller contiguous mixed hardwood systems on the eastern side of the project. The wetlands are connected ultimately with the Reedy Creek Swamp.

PROPOSED PROJECT:

The project consists of the conceptual approval only of the surface water management system serving the improvements to Walt Disney World's Master Development Plan Modification (Western Beltway Development).

The proposed improvements consist of the conceptual approval of the master surface water management system to serve 458.27 acres of tourist-commercial development. The property is adjacent and will be added to the original project area of 27,086 acres from the conceptual permit No. 48-00714-S for Walt Disney World's Master Development Plan resulting in a total conceptual project area of 27,544 acres.

The water management system proposed for conceptual approval consists of the proposed water quality treatment and attenuation master ponds which outfall to existing wetland areas. The wetland areas eventually discharge into Whittenhorse Creek and RCID Outer D8 Canal and ultimately into Reedy Creek. The project limits lie within the Reedy Creek Drainage Basin.

The project proposes 20 basins with 18 proposed ponds; the last two basins (Basin 19 - 3.73 acres and Basin 20 - 13.83 acres) will provide surface water management systems when developed and will be required to meet criteria in effect at that time; please see Special Condition 16. No adverse water quality impacts are anticipated as a result of the proposed project. In the design of the master surface water management system for the 18 proposed basins, water quality is provided in excess of the governing water quality criteria of 2.5 inches of runoff times the percent impervious coverage for an assumed maximum impervious coverage of 85 percent.

Floodplain compensating storage of 32.03 acre-feet is provided in the proposed ponds 6, 8, 9 and 11 and a "scrape" area within Basin 20 (all hydraulically connected to the floodplain wetland area). Compensating storage provided in each basin is listed below.

Future construction on each basin within the project area will require a modification to this permit. At that time, each basin will be required to provide dry pre-treatment for commercial areas or reasonable assurances that hazardous materials will not enter the surface water management system. Please see Special Condition 15.

This plan has been reviewed by Reedy Creek Improvement District and is in conformance with the master water management system design.

LAND USE:

The assumed land use breakdown for each basin is shown in Exhibit 6.

**Construction:
Project:****This Phase**

Impervious	275.21	acres
Lake	45.57	acres
Pervious	61.41	acres
Wetland	76.08	acres
Total:	458.27	

WATER QUANTITY :

The discharge shown below is with respect to a 27,086-acre drainage area in the pre-development condition and a 27,544-acre drainage area in the post-development condition resulting in the same discharge rate in pre- and post-.

Discharge Rate :

As shown in the table below, the proposed project discharge is within the allowable limit for the area.

Discharge Storm Frequency : 25 YEAR-3 DAY

Design Rainfall : 11.69 inches

Basin	Allow Disch (cfs)	Method Of Determination	Peak Disch (cfs)	Peak Stage (ft, NGVD 29)
1	2871	Previously Permitted	2870	119.6

Finished Floors :

As shown in Exhibit 7, minimum finished floor elevations have been conceptually set at the calculated design storm flood elevation.

Building Storm Frequency : 100 YEAR-3 DAY

Design Rainfall : 14.27 inches

Road Design :

As shown in Exhibit 7, minimum road center lines have been conceptually set at the calculated design storm flood elevation.

Road Storm Frequency : 10 YEAR-3 DAY

Design Rainfall: 10.19 inches

Parking Lot Design :

As shown in Exhibit 7, minimum parking lot elevations have been conceptually set at the calculated design storm flood elevation.

Parking Lot Storm Frequency : 10 YEAR-3 DAY

Design Rainfall 10.19 inches

Flood Plain/Compensating Storage:

The total floodplain compensating storage provided within the project is composed of the storage in each of the proposed ponds 6, 8, 9, 11 and the "scrape" area within Basin 20; each of which provide floodplain compensating storage quantities of 6.43 acre-feet, 4.13 acre-feet, 6.23 acre-feet, 5.29 acre-feet and 11.08 acre-feet, respectively as detailed in Exhibit 8.

Displaced Volume	Compensating Volume	100-Year Stage Elevation
31.81 ac-ft	33.17 ac-ft	107 ft-NGVD

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NGVD 29)	WSWT Ctrl Elev (ft, NGVD 29)	Method Of Determination
1	24.28	107	107.00	Wet Season Soil Borings
2-3	17.36	107.5	107.50	Wet Season Soil Borings
4	7.34	107	107.00	Wet Season Soil Borings
5	11.23	106	106.00	Wet Season Soil Borings
6	11.20	105	105.00	Wet Season Soil Borings
7	18.23	106	106.00	Wet Season Soil Borings
8	18.97	104	104.00	Wet Season Soil Borings
9 & 11	37.90	104	104.00	Wet Season Soil Borings
10	17.74	107	107.00	Wet Season Soil Borings
12	16.21	106	108.00	Wet Season Soil Borings
13	20.52	108	108.00	Wet Season Soil Borings
14	34.02	113	111.00	Wet Season Soil Borings
15	22.17	106	106.00	Wet Season Soil Borings
16	12.09	101	101.00	Wet Season Soil Borings
17	31.56	102	102.00	Wet Season Soil Borings
18	50.95	99	99.00	Wet Season Soil Borings

Receiving Body :

Basin	Str.#	Receiving Body
1	FP-1	Wetland W-FE
2-3	FP-2-3	Wetland W-FE
4	FP-4	Wetland W80-48
5	FP-5	Wetland W80-47
6	FP-6	Wetland W80-48
7	FP-7	Wetland W80-47
8	FP-8	Wetland W80-48
9 & 11	FP-9	Wetland W80-48
10	FP-10	Wetland W80-46
12	Pond 12	Western Beltway Storm Sewer Structure
13	Pond 13	Western Beltway Storm Sewer Structure
14	Pond 14	Western Beltway Pond 10
15	FP-15	Wetland W-FE
16	FP-16	Wetland W-80.54
17	FP-17	Wetland W-80.49
18	FP-18	Wetland W-80.52

Discharge Structures: Note: The units for all the elevation values of structures are (ft, NGVD 29)

Culverts:

Basin	Str#	Count	Type	Width	Length	Dia.
1	FP-1	1	Reinforced Concrete Pipe		50'	30"

Discharge Structures:**Culverts:**

10	FP-10	2	Reinforced Concrete Pipe	50'	30"
12	Pond 12	1	Reinforced Concrete Pipe	120'	24"
13	Pond 13	1	Reinforced Concrete Pipe	120'	30"
15	FP-15	1	Reinforced Concrete Pipe	220'	36"
16	FP-16	1	Reinforced Concrete Pipe	380'	30"
17	FP-17	1	Reinforced Concrete Pipe	90'	36"
18	FP-18	1	Reinforced Concrete Pipe	50'	30"
2-3	FP-2-3	1	Reinforced Concrete Pipe	50'	30"
4	FP-4	1	Reinforced Concrete Pipe	50'	24"
5	FP-5	1	Reinforced Concrete Pipe	50'	24"
6	FP-6	1	Reinforced Concrete Pipe	50'	24"
7	FP-7	1	Reinforced Concrete Pipe	50'	30"
8	FP-8	1	Reinforced Concrete Pipe	50'	30"
9 & 11	FP-9	1	Reinforced Concrete Pipe	50'	36"

Inlets:

Basin	Str#	Count	Type	Width	Length	Dia.	Crest Elev.
1	FP-1	1	Fdot Mod C Drop Inlet	24"	37"		108.1
10	FP-10	2	Fdot Mod D Drop Inlet	36"	48"		110
12	Pond 12	1	Inlet		48"		111.65
13	Pond 13	1	Inlet		96"		112.45
15	FP-15	1	Fdot Mod H Drop Inlet	36"	105"		108.3
16	FP-16	1	Fdot Mod D Drop Inlet	37"	49"		103
17	FP-17	1	Fdot Mod H Drop Inlet	36"	79"		103.4
18	FP-18	1	Fdot Mod C Drop Inlet	24"	37"		99.7
2-3	FP-2-3	1	Fdot Mod C Drop Inlet	24"	37"		109.5
4	FP-4	1	Fdot Mod C Drop Inlet	24"	37"		108
5	FP-5	1	Fdot Mod C Drop Inlet	24"	37"		107.2
6	FP-6	1	Fdot Mod C Drop Inlet	24"	37"		106
7	FP-7	1	Fdot Mod D Drop Inlet	37"	49"		107.9
8	FP-8	1	Fdot Mod D Drop Inlet	37"	49"		106.3
9 & 11	FP-9	1	Fdot Mod H Drop Inlet	36"	79"		106.2

Weirs:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Elev.
12	Pond 12	1	Sharp Crested	30"	15"			109.3 (crest)
13	Pond 13	1	Sharp Crested	24"	9"			110.2 (crest)

Water Quality Structures: Note: The units for all the elevation values of structures are (ft, NGVD 29)

Bleeders:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Invert Angle	Invert Elev.
1	FP-1	1	Circular Orifice				4"		107
10	FP-10	1	Circular Orifice				3"		107
12	Pond 12	1	Circular Orifice				3"		108
13	Pond 13	1	Circular Orifice				3"		108
15	FP-15	1	Circular Orifice				4"		106
16	FP-16	1	Circular Orifice				3"		101
17	FP-17	1	Circular Orifice				4"		102
18	FP-18	1	Circular Orifice				4"		99
2-3	FP-2-3	1	Circular Orifice				3"		107.5
4	FP-4	1	Circular Orifice				3"		107

Water Quality Structures:**Bleeders:**

5	FP-5	1	Circular Orifice	3"	106
6	FP-6	1	Circular Orifice	3"	105
7	FP-7	1	Circular Orifice	3"	106
8	FP-8	1	Circular Orifice	3"	104
9 & 11	FP-9	1	Circular Orifice	4"	104

Weirs:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Elev.
14	Pond 14	1	Broad Crested	10'	2'			117 (crest)

WATER QUALITY :

No adverse water quality impacts are anticipated as a result of the proposed project. In the design of the master surface water management system, water quality provided is in excess of the governing water quality criteria of 2.5 inches of runoff times the percent impervious coverage for an assumed maximum impervious coverage of 85 percent quantities of which are shown in Exhibit 6 for each basin. It should be noted that proposed pond 14 is a dry retention pond; all other proposed ponds are wet detention ponds.

WETLANDS:

The project site contains a total of 80.34 acres of forested and herbaceous wetland systems. More specifically 3 large marshes flow into a burnt over cypress swamp on the western portion of the project. Several smaller, 5-10 acre contiguous marshes, bay/maple systems are found in the north eastern corner of the project. The wetlands show evidence of hydrologic alteration, and nuisance and exotic species invasion. The systems on the west side are connected to Bear Bay Swamp which flows north and east into the larger Disney property and ultimately into the Reedy Creek Swamp. The eastern wetland flows directly east into the Reedy Creek Swamp.

Wetland Impacts:

Of the total 80.34 acres of wetlands found onsite a total 3.60 acres of direct impacts (or approximately 5% of total wetlands) are proposed. Another 1.28 acres of secondary impacts are occurring due to loss of buffer. The majority of the impacts occur as the result of roadway crossings accessing the different areas of the site. The crossing sites are well chosen based on the existence of historic crossings, the narrowest access points and degraded channelized conditions. The project has demonstrated sufficient elimination and reduction of wetland impacts. The impacts and the mitigation both occur within the Reedy Creek Basin so no unacceptable cumulative impacts to the basin are anticipated. The project has been designed to include an erosion and siltation prevention plan with Best Management practices. The surface water management system has been designed to support the historic hydrologic regimes and avoid gradient drawdowns.

Mitigation Proposal:

As mitigation to offset 1.15 acre of direct herbaceous impacts, 0.45 acre of secondary impacts to herbaceous areas, 2.45 acres of direct forested wetland impacts and .83 acres of secondary forested wetland impacts, it is proposed to purchase 4.4 freshwater forested and 0.80 freshwater herbaceous mitigation Bank credits from the Florida Mitigation Bank (FDEP ERP # 492924779). (A copy of the letter of reservation is attached as an exhibit). The bank credits are WRAP based. Therefore the impacts were assessed for functional loss using the Wrap methodology and Basis of Review Ratios. The assessment concluded a total functional loss of 0.54 (herbaceous) units X 1.5:1 (BOR ratio) plus 2.20 (forested) units

X 2:1 (BOR ratio) which totals 5.20 total mitigation credits required to offset the functional losses.

Wetland Inventory :

CONCEPTUAL MOD -WDW Master Dev't. Plan

Site Id	Site Type	Pre-Development				Post-Development						
		Pre Fluc cs	AA Type	Acreage (Acres)	Current Wo Pres	With Project	Time Lag (Yrs)	Risk Factor	Pres. Adj. Factor	Post Fluc cs	Adj Delta	Functional Gain / Loss
1.1a	ON	600	Direct	.34							.000	.000
109-510	ON	600	Secondary	.10							.000	.000
109-610	ON	610	Secondary	.22							.000	.000
8.1a1	ON	610	Direct	1.08							.000	.000
8.1a1-85	ON	610	Direct	.35							.000	.000
8.20	ON	610	Direct	.21							.000	.000
8.28	ON	610	Direct	.15							.000	.000
80.46	ON	641	Preservation	18.09								
80.46i	ON	641	Direct	.43							.000	.000
80.46i2	ON	641	Secondary	.24							.000	.000
80.47	ON	641	Preservation	3.46								
80.47i	ON	641	Direct	.19							.000	.000
80.47i2	ON	641	Secondary	.07							.000	.000
80.48	ON	621	Preservation	28.24								
80.49	ON	641	Preservation	2.65								
80.52	ON	630	Preservation	4.70								
80.52i	ON	630	Direct	.05							.000	.000
80.52i2	ON	630	Secondary	.07							.000	.000
80.53	ON	610	Preservation	5.68								
80.53i	ON	610	Direct	.05							.000	.000
80.53i2	ON	610	Secondary	.06							.000	.000
80.54	ON	610	Preservation	1.14								
80.54i	ON	610	Direct	.56							.000	.000
80.54i2	ON	610	Secondary	.18							.000	.000
80.56i2	ON	621	Secondary	.30							.000	.000
80.58	ON	641	Direct	.18							.000	.000
80.62	ON	641	Preservation	11.50								
80.66i	ON	641	Direct	.01							.000	.000
80.66i2	ON	641	Secondary	.04							.000	.000
osw	ON	510	Direct	1.56							.000	.000
Total:				81.90								.00

<u>Fluccs Code</u>	<u>Description</u>
510	Streams And Waterways
600	Wetlands
610	Wetland Hardwood Forests
621	Cypress
630	Wetland Forested Mixed
641	Freshwater Marshes

MITBANK

FLORIDA MITIGATION BANK

Type Of Credits	Number Of Credits
	Mitigation Bank Cr Used
Fresh Water Forested	4.40
Fresh Water Herbaceous	.80
Total:	5.20

LEGAL ISSUES:

Although not proposed as mitigation to offset wetland impacts, the remaining 76.74 acres of onsite wetlands shall be dedicated to the District under a standard passive recreational easement (see copy attached as an exhibit).

RELATED CONCERNS:

Water Use Permit Status:

The applicant has indicated that the Reedy Creek Improvement District will be used as a source for reclaim irrigation water for the project.

This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation, unless the work qualifies for a No-Notice Short-Term Dewatering permit pursuant to Chapter 40E-20.302(3) or is exempt pursuant to Section 40E-2.051, FAC.

CERP:

The proposed project is not located within or adjacent to a Comprehensive Everglades Restoration Project component.

Potable Water Supplier:

Reedy Creek Improvement District

Waste Water System/Supplier:

Reedy Creek Improvement District

Right-Of-Way Permit Status:

A Right-of-Way Permit is not required for this project.

DRI Status:

This project is not a DRI.

Historical/Archeological Resources:

No information has been received that indicates the presence of archaeological or historical resources or that the proposed activities could cause adverse impacts to archaeological or historical resources.

DCA/CZM Consistency Review:

The District has not received a finding of inconsistency from the Florida Department of Environmental Protection or other commenting agencies regarding the provisions of the federal Coastal Zone Management Plan.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF RECOMMENDATION:

The Staff recommends that the following be issued :

Conceptual approval of a surface water management system to serve 458.27 acres of a commercial project known as Walt Disney World's Master Development Plan Modification (Western Beltway Development).

Based on the information provided, District rules have been adhered to.

Staff recommendation is for approval subject to the attached General and Special Conditions.



STAFF REVIEW:

NATURAL RESOURCE MANAGEMENT DIVISION APPROVAL

ENVIRONMENTAL EVALUATION

Susan C. Elfers

Susan C. Elfers

SUPERVISOR

Marc S. Ady

Marc S. Ady

DIVISION DIRECTOR :

Anita R. Bain

Anita R. Bain

DATE: 10/23/07

SURFACE WATER MANAGEMENT DIVISION APPROVAL

ENGINEERING EVALUATION

Annette V. Burkett

Annette V. Burkett

SUPERVISOR

Edward W. Yaur

Edward W. Yaur, P.E.

DIVISION DIRECTOR :

Anthony M. Waterhouse

Anthony M. Waterhouse, P.E.

DATE: 10/24/07

GENERAL CONDITIONS

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit and Part IV, Chapter 373, F.S.
2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.
3. Activities approved by this permit shall be conducted in a manner which does not cause violations of State water quality standards. The permittee shall implement best management practices for erosion and pollution control to prevent violation of State water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. All practices shall be in accordance with the guidelines and specifications described in Chapter 6 of the Florida Land Development Manual; A Guide to Sound Land and Water Management (Department of Environmental Regulation, 1988), incorporated by reference in Rule 40E-4.091, F.A.C. unless a project-specific erosion and sediment control plan is approved as part of the permit. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.
4. The permittee shall notify the District of the anticipated construction start date within 30 days of the date that this permit is issued. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District an Environmental Resource Permit Construction Commencement Notice Form Number 0960 indicating the actual start date and the expected construction completion date.
5. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual status report form. Status report forms shall be submitted the following June of each year.
6. Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a professional engineer or other individual authorized by law, utilizing the supplied Environmental Resource/Surface Water Management Permit Construction Completion/Certification Form Number 0881A, or Environmental Resource/Surface Water Management Permit Construction Completion Certification - For Projects Permitted prior to October 3, 1995 Form No. 0881B, incorporated by reference in Rule 40E-1.659, F.A.C. The statement of completion and certification shall be based on onsite observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and specifications. This submittal shall serve to notify the District that the system is ready for inspection. Additionally, if deviation from the approved drawings are discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawings. All surveyed dimensions and elevations shall be certified by a registered surveyor.
7. The operation phase of this permit shall not become effective: until the permittee has complied with the requirements of condition (6) above, and submitted a request for conversion of Environmental Resource Permit from Construction Phase to Operation Phase, Form No. 0920; the District determines the system to be in compliance with the permitted plans and specifications; and the entity

GENERAL CONDITIONS

approved by the District in accordance with Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, accepts responsibility for operation and maintenance of the system. The permit shall not be transferred to such approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall initiate transfer of the permit to the approved responsible operating entity if different from the permittee. Until the permit is transferred pursuant to Section 40E-1.6107, F.A.C., the permittee shall be liable for compliance with the terms of the permit.

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of the phase or portion of the system to a local government or other responsible entity.
9. For those systems that will be operated or maintained by an entity that will require an easement or deed restriction in order to enable that entity to operate or maintain the system in conformance with this permit, such easement or deed restriction must be recorded in the public records and submitted to the District along with any other final operation and maintenance documents required by Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit applications within the South Florida Water Management District, prior to lot or units sales or prior to the completion of the system, whichever comes first. Other documents concerning the establishment and authority of the operating entity must be filed with the Secretary of State, county or municipal entities. Final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system and any other permit conditions.
10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the District in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.
11. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40E-4 or Chapter 40E-40, F.A.C..
12. The permittee is hereby advised that Section 253.77, F.S. states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the State, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.
13. The permittee must obtain a Water Use permit prior to construction dewatering, unless the work qualifies for a general permit pursuant to Subsection 40E-20.302(3), F.A.C., also known as the "No Notice" Rule.
14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal,

GENERAL CONDITIONS

abandonment or use of any system authorized by the permit.

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 Section 373.421(2), F.S., provides otherwise.
16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of a permitted system or the real property on which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rules 40E-1.6105 and 40E-1.6107, F.A.C.. The permittee transferring the permit shall remain liable for corrective actions that may be required as a result of any violations prior to the sale, conveyance or other transfer of the system.
17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.
18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the appropriate District service center.
19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

SPECIAL CONDITIONS

1. The conceptual phase of this permit shall expire on November 15, 2009.
2. Operation of the surface water management system shall be the responsibility of WALT DISNEY WORLD.
3. Discharge Facilities:

Basin: 1, Structure: FP-1

1-4" dia. CIRCULAR ORIFICE with invert at elev. 107' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 108.1' NGVD 29.
Receiving body : Wetland W-FE
Control elev : 107 feet NGVD 29.

Basin: 2-3, Structure: FP-2-3

1-3" dia. CIRCULAR ORIFICE with invert at elev. 107.5' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 109.5' NGVD 29.
Receiving body : Wetland W-FE
Control elev : 107.5 feet NGVD 29.

Basin: 4, Structure: FP-4

1-3" dia. CIRCULAR ORIFICE with invert at elev. 107' NGVD 29.
50 LF of 24" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 108' NGVD 29.
Receiving body : Wetland W80-48
Control elev : 107 feet NGVD 29.

Basin: 5, Structure: FP-5

1-3" dia. CIRCULAR ORIFICE with invert at elev. 106' NGVD 29.
50 LF of 24" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 107.2' NGVD 29.
Receiving body : Wetland W80-47
Control elev : 106 feet NGVD 29.

Basin: 6, Structure: FP-6

1-3" dia. CIRCULAR ORIFICE with invert at elev. 105' NGVD 29.
50 LF of 24" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 106' NGVD 29.
Receiving body : Wetland W80-48
Control elev : 105 feet NGVD 29.

Basin: 7, Structure: FP-7

1-3" dia. CIRCULAR ORIFICE with invert at elev. 106' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-37" W X 49" L drop inlet with crest at elev. 107.9' NGVD 29.
Receiving body : Wetland W80-47
Control elev : 106 feet NGVD 29.

Basin: 8, Structure: FP-8

1-3" dia. CIRCULAR ORIFICE with invert at elev. 104' NGVD 29.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-37" W X 49" L drop inlet with crest at elev. 106.3' NGVD 29.
Receiving body : Wetland W80-48

SPECIAL CONDITIONS

Control elev : 104 feet NGVD 29.

Basin: 9 & 11, Structure: FP-9

1-4" dia. CIRCULAR ORIFICE with invert at elev. 104' NGVD 29.

50 LF of 36" dia. REINFORCED CONCRETE PIPE culvert.

1-36" W X 79" L drop inlet with crest at elev. 106.2' NGVD 29.

Receiving body : Wetland W80-48

Control elev : 104 feet NGVD 29.

Basin: 10, Structure: FP-10

1-3" dia. CIRCULAR ORIFICE with invert at elev. 107' NGVD 29.

2-30" dia. REINFORCED CONCRETE PIPE culverts each 50' long.

2-36" W X 48" L drop inletS with crest at elev. 110' NGVD 29.

Receiving body : Wetland W80-46

Control elev : 107 feet NGVD 29.

Basin: 12, Structure: Pond 12

1-30" W X 15" H SHARP CRESTED weir with crest at elev. 109.3' NGVD 29.

1-3" dia. CIRCULAR ORIFICE with invert at elev. 108' NGVD 29.

120 LF of 24" dia. REINFORCED CONCRETE PIPE culvert.

1- W X 48" L drop inlet with crest at elev. 111.65' NGVD 29.

Receiving body : Western Beltway Storm Sewer Structure

Control elev : 106 feet NGVD 29.

Basin: 13, Structure: Pond 13

1-24" W X 9" H SHARP CRESTED weir with crest at elev. 110.2' NGVD 29.

1-3" dia. CIRCULAR ORIFICE with invert at elev. 108' NGVD 29.

120 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.

1- W X 96" L drop inlet with crest at elev. 112.45' NGVD 29.

Receiving body : Western Beltway Storm Sewer Structure

Control elev : 108 feet NGVD 29.

Basin: 14

1-10' W X 2' H BROAD CRESTED weir with crest at elev. 117' NGVD 29.

Receiving body : Western Beltway Pond 10

Control elev : 113 feet NGVD 29.

Basin: 15, Structure: FP-15

1-4" dia. CIRCULAR ORIFICE with invert at elev. 106' NGVD 29.

220 LF of 36" dia. REINFORCED CONCRETE PIPE culvert.

1-36" W X 105" L drop inlet with crest at elev. 108.3' NGVD 29.

Receiving body : Wetland W-FE

Control elev : 106 feet NGVD 29.

Basin: 16, Structure: FP-16

1-3" dia. CIRCULAR ORIFICE with invert at elev. 101' NGVD 29.

380 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.

1-37" W X 49" L drop inlet with crest at elev. 103' NGVD 29.

Receiving body : Wetland W-80.54

Control elev : 101 feet NGVD 29.

Basin: 17, Structure: FP-17

1-4" dia. CIRCULAR ORIFICE with invert at elev. 102' NGVD 29.

SPECIAL CONDITIONS

90 LF of 36" dia. REINFORCED CONCRETE PIPE culvert.
 1-36" W X 79" L drop inlet with crest at elev. 103.4' NGVD 29.
 Receiving body : Wetland W-80.49
 Control elev : 102 feet NGVD 29.

Basin: 18, Structure: FP-18
 1-4" dia. CIRCULAR ORIFICE with invert at elev. 99' NGVD 29.
 50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
 1-24" W X 37" L drop inlet with crest at elev. 99.7' NGVD 29.
 Receiving body : Wetland W-80.52
 Control elev : 99 feet NGVD 29.

4. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.
5. Measures shall be taken during construction to insure that sedimentation and/or turbidity violations do not occur in the receiving water.
6. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.
7. Lake side slopes shall be no steeper than 5:1 (horizontal:vertical) to a depth of two feet below the control elevation. Side slopes shall be nurtured or planted from 2 feet below to 1 foot above control elevation to insure vegetative growth, unless shown on the plans.
8. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.
9. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
10. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments/debris. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.
11. The permittee acknowledges, that pursuant to Rule 40E-4.101(2), F.A.C., a notice of Environmental Resource or Surface Water Management Permit may be recorded in the county public records. Pursuant to the specific language of the rule, this notice shall not be considered an encumbrance upon the property.
12. Minimum building floor elevation: Please see Exhibits 7A and 7B.
13. Minimum road crown elevation: Please see Exhibits 7A and 7B.
14. Minimum parking lot elevation: Please see Exhibits 7A and 7B.
15. All future commercial/industrial parcels shall provide a minimum dry pre-treatment volume of 1/2 inch of runoff prior to discharge into the master surface water management system.
16. Prior to construction of future phases, a permit modification will be required. Plans and calculations shall be submitted to demonstrate compliance with the land use and site grading assumptions made in this application.
17. The exhibits and special conditions in this permit apply only to this application. They do not supersede or delete any requirements for other applications covered in Permit No. 48-00714-S unless otherwise specified herein.

SPECIAL CONDITIONS

18. Prior to commencement of construction and in accordance with the work schedule in the attached exhibits, the permittee shall submit documentation from the Florida Department of Environmental Protection that 4.40 freshwater forested and 0.80 freshwater herbaceous mitigation bank credits have been deducted from the ledger for Florida Mitigation Bank #492924779.
19. An average 25' wide, minimum 15', buffer of undisturbed upland vegetation shall be maintained between the proposed development and existing wetlands. Buffers shall be staked and roped and District environmental staff notified for inspection prior to clearing..
20. Silt screens, hay bales, turbidity screens/barriers or other such sediment control measures shall be utilized during construction. The selected sediment control measure shall be installed landward of the upland buffer zones around all protected wetlands and shall be properly "trenched" etc. All areas shall be stabilized and vegetated immediately after construction to prevent erosion into the wetlands and upland buffer zones.
21. Wetland preservation/mitigation areas, upland buffer zones and/or upland preservation areas shall be dedicated as conservation and common areas in the Disney Master Plan as well as on the plat if the project will be platted. Restrictions for use of the conservation/ common areas shall stipulate:

The wetland preservation/mitigation areas, upland buffer zones, and/or upland preservation areas are hereby dedicated as conservation and common areas. The conservation/common areas shall be the perpetual responsibility of the Walt Disney World and may in no way be altered from their natural or permitted state as documented in the permit file, with the exception of permitted restoration activities.

Activities prohibited within the conservation areas include, but are not limited to: construction or placing soil or other substances such as trash; removal or destruction of trees, shrubs, or other vegetation - with the exception of exotic/nuisance vegetation removal; excavation, dredging, or removal of soil material; diking or fencing; and any other activities detrimental to drainage, flood control, water conservation, erosion control, or fish and wildlife habitat conservation or preservation.

Copies of recorded documents shall be submitted to the District's Environmental Resource Compliance staff concurrently with engineering certification of construction completion.

22. Prior to the commencement of construction and in accordance with the work schedule in the attached exhibits, the permittee shall submit two certified copies of the recorded conservation easement for the mitigation area and associated buffers. The data shall be supplied in a digital ESRI Geodatabase (mdb), ESRI Shapefile (shp) or AutoCAD Drawing Interchange (dxf) file format using Florida State Plane coordinate system, East Zone (3601), Datum NAD83, HARN with the map units in feet. This data shall be submitted as a paper map depicting the Conservation Easement over the best available satellite or aerial imagery. This data shall also reside on a CD or floppy disk and be submitted to the District's Environmental Resource Compliance Division in the service area office where the application was submitted.

The recorded easement shall utilize the form attached as an exhibit. Any proposed modifications to the approved form must receive prior written consent from the District. The easement must be free of encumbrances or interests in the easement which the District determines are contrary to the intent of the easement. In the event it is later determined that there are encumbrances or interests in the easement which the District determines are contrary to the intent of the easement, the permittee shall be required to provide release or subordination of such encumbrances or interests.

23. Permanent physical markers designating the preserve status of the wetland preservation areas and buffer zones shall be placed as at the edge of the conservation areas. The markers shall be maintained in perpetuity.
24. The wetland conservation areas and upland buffer zones may in no way be altered from their natural or permitted state. Activities prohibited within the conservation areas include, but are not limited to: construction or placing of buildings on or above the ground; dumping or placing soil or other

SPECIAL CONDITIONS

substances such as trash; removal or destruction of trees, shrubs, or other vegetation - with the exception of exotic vegetation removal; excavation, dredging, or removal of soil materials; diking or fencing; and any other activities detrimental to drainage, flood control, water conservation, erosion control, or fish and wildlife habitat conservation or preservation.

25. The District reserves the right to require remedial measures to be taken by the permittee if monitoring or other information demonstrates that adverse impacts to onsite or offsite wetlands, upland conservation areas or buffers, or other surface waters have occurred due to project related activities.
25. The following exhibits for the permit are incorporated by reference herein and are located in the permit file:

Exhibit No. 3E2 - 3E20 Wetland impact Exhibits

26. A maintenance program shall be implemented for the preserved wetland/upland areas on a regular basis to ensure the integrity and viability of those areas as permitted. Maintenance shall be conducted in perpetuity to ensure that the conservation areas are maintained free from Category 1 exotic vegetation (as defined by the Florida Exotic Pest Plant Council at the time of permit issuance) immediately following a maintenance activity. Maintenance in perpetuity shall also insure that conservation areas, including buffers, maintain the species and coverage of native, desirable vegetation specified in the permit. Coverage of exotic plant species shall not exceed 5% of total cover between maintenance activities. Coverage of nuisance plant species shall not exceed 10% of total cover between maintenance activities. In addition, the permittee shall manage the conservation areas such that exotic/nuisance plant species do not dominate any one section of those areas.
27. Endangered species, threatened species and/or species of special concern have been observed onsite and/or the project contains suitable habitat for these species. It shall be the permittee's responsibility to coordinate with the Florida Fish and Wildlife Conservation Commission and/or the U.S. Fish and Wildlife Service for appropriate guidance, recommendations and/or necessary permits to avoid impacts to listed species.

VICINITY MAP

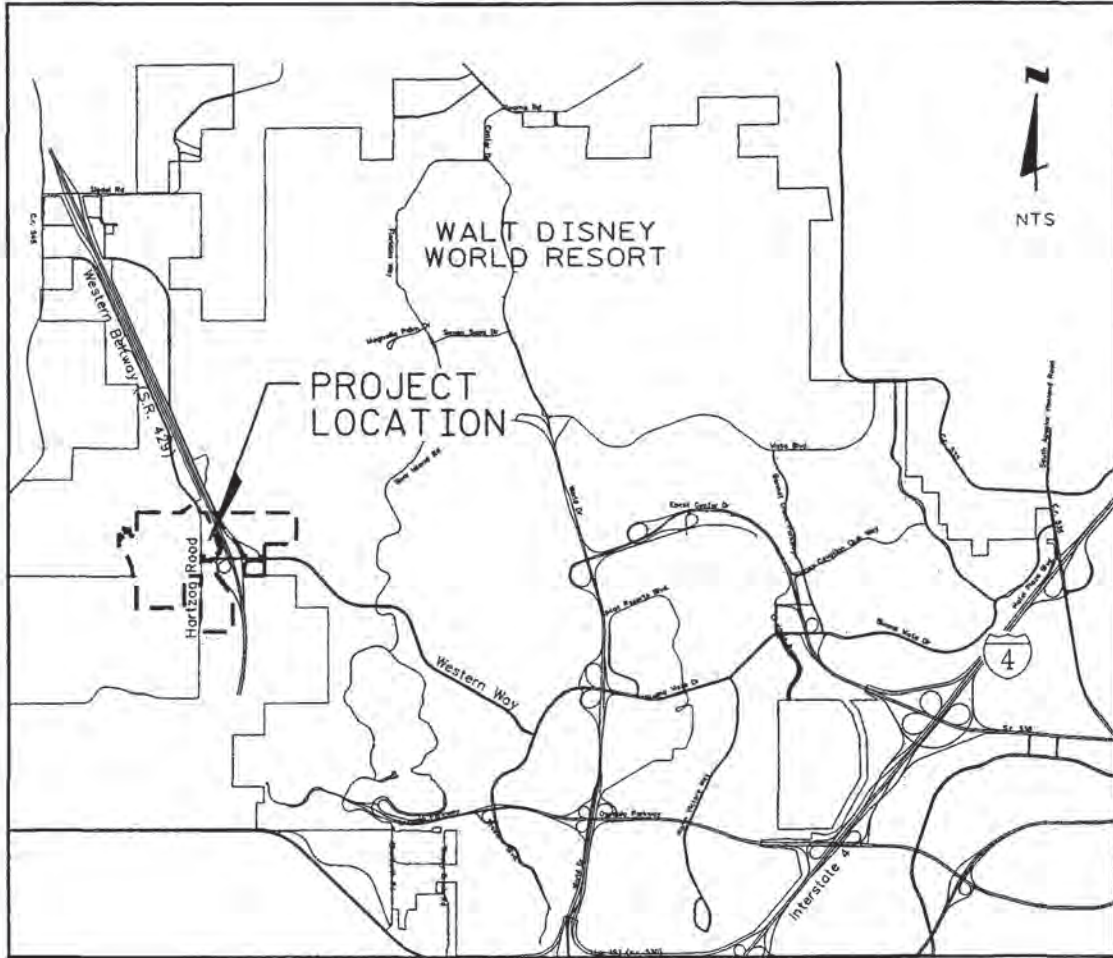


EXHIBIT 1B

Vicinity Map
 Western Beltway Development Project
 Orange County, Florida



Exhibit 1



Exhibit Date: 9/11/06

LOCATION MAP



EXHIBIT 1C



Exhibit Date: 9/11/06

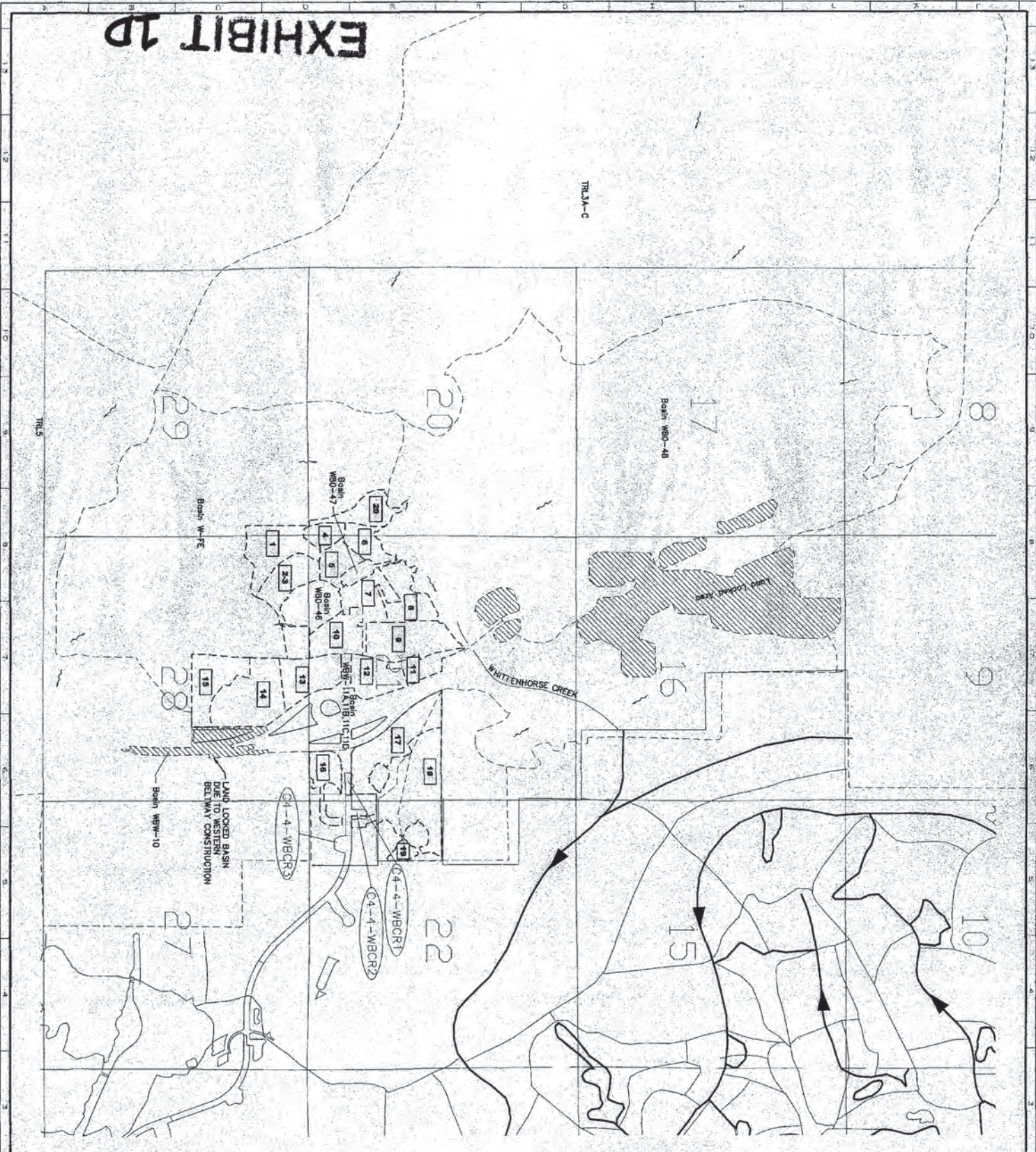
Location Map
Western Beltway Development Project
Orange County, Florida



Exhibit 2

PBSJ

EXHIBIT 1D



8 300' 000
 1:5000
 NORTH
 11/15/2007
 11/15/2007
 11/15/2007
 11/15/2007

[Signature]
 [Signature]

PBS PROJECTS & SERVICES 888 Collier Avenue Collier, Florida 33907	WESTERN RAILWAY DEVELOPMENT PROJECT	MASTER DRAINAGE PLAN	POST-DEVELOPMENT DRAINAGE BASIN PLAN	SHEET NO. 13
				DATE: 11/15/2007
PROJECT TITLE:				1. AS SHOWN
DRAWN BY:				2. []
CHECKED BY:				3. []
APPROVED BY:				4. []
DATE:				5. []
SCALE:				6. []
PROJECT NO.:				7. []
DRAWING NO.:				8. []
SHEET NO.:				9. []
TOTAL SHEETS:				10. []
DATE:				11. []
SCALE:				12. []
PROJECT NO.:				13. []

1	REVISION	DATE	BY	APP'D
2	REVISION	DATE	BY	APP'D
3	REVISION	DATE	BY	APP'D
4	REVISION	DATE	BY	APP'D
5	REVISION	DATE	BY	APP'D
6	REVISION	DATE	BY	APP'D
7	REVISION	DATE	BY	APP'D
8	REVISION	DATE	BY	APP'D
9	REVISION	DATE	BY	APP'D



W. Lind
10/1/00

GRAPHIC SCALE
 HORIZONTAL SCALE: 1" = 200'
 VERTICAL SCALE: 1" = 200'

- LEGEND**
- PROPOSED DRAINAGE MANHOLE
 - PROPOSED DRAINAGE STRUCTURE
 - PROPOSED DRAINAGE PIPE AND SIZE
 - PROPOSED CONTOUR
 - PROJECT BOUNDARY
 - DRAINAGE BASIN BOUNDARY
 - PRE-DEVELOPMENT 100 YEAR FLOOD FLOOD LINE
 - PRE-DEVELOPMENT 100 YEAR FLOOD WITH WAVE DESIGNATOR
 - POND DESIGNATOR
 - PROPOSED NET RETENTION POND
 - PROPOSED NET RETENTION POND OPERATING IN 100 YEAR FLOOD PLAIN
 - PROPOSED NET RETENTION POND OPERATING IN 100 YEAR FLOOD PLAIN WITH WAVE DESIGNATOR
 - HALT CONTROL STRUCTURE
 - EQUALIZER PIPE
 - DRAINAGE FLOW

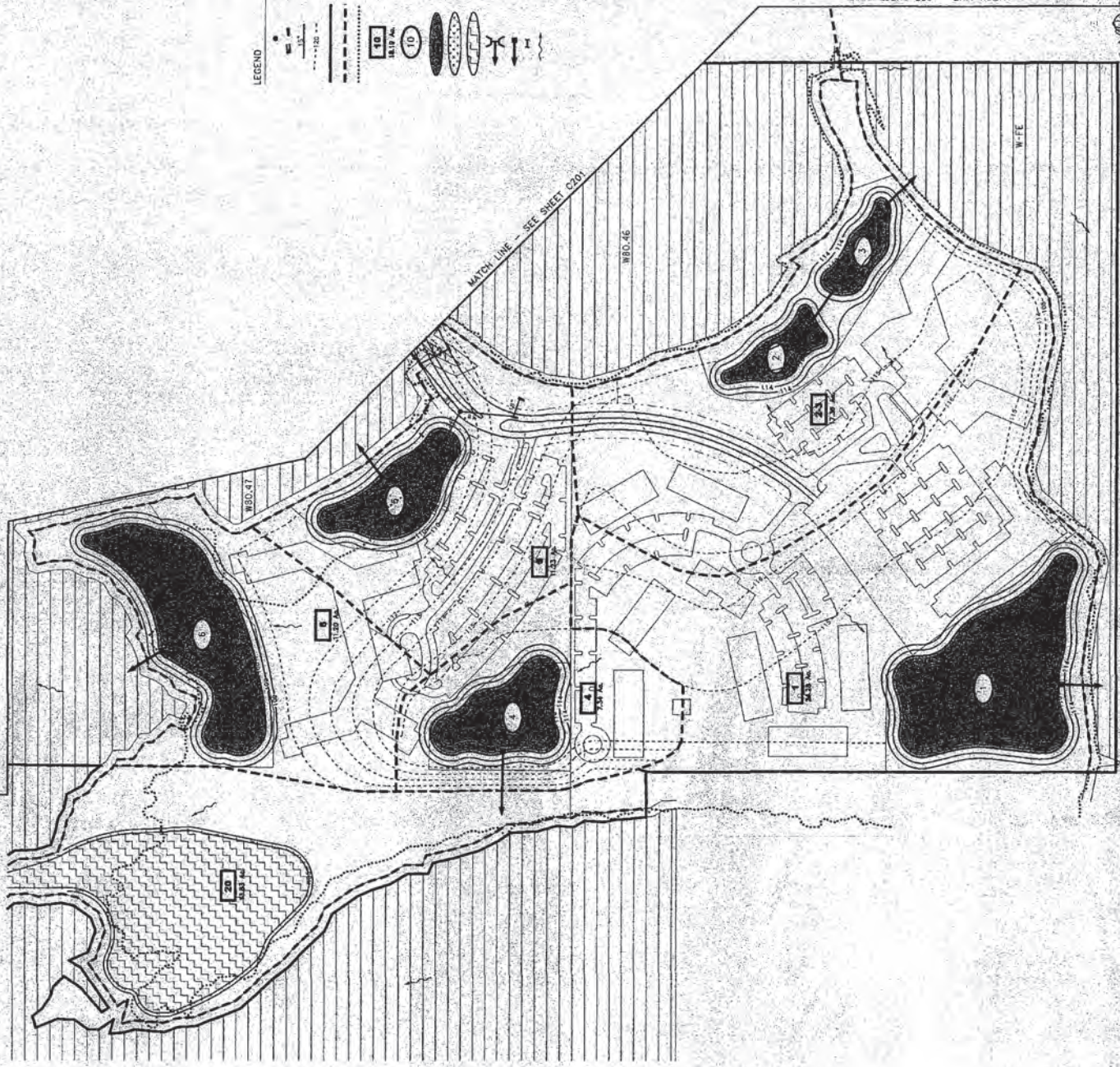


EXHIBIT 3B

DESIGNER: PBS
 CONSULTING ENGINEERS
 10000 WEST 10TH AVENUE
 DENVER, COLORADO 80231
 PHONE: 303.755.1000
 FAX: 303.755.1001
 WWW: WWW.PBS-ENGINEERS.COM



*Cellulose
 9/10/07*

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	08/20/07
2	REVISION	09/10/07
3	REVISION	09/10/07
4	REVISION	09/10/07
5	REVISION	09/10/07
6	REVISION	09/10/07
7	REVISION	09/10/07
8	REVISION	09/10/07
9	REVISION	09/10/07

GRAPHIC SCALE
 HORIZONTAL SCALE: 1" = 100'
 VERTICAL SCALE: 1" = 200'

- LEGEND**
- PROPOSED DRAINAGE MANHOLE
 - PROPOSED DRAINAGE STRUCTURE
 - PROPOSED DRAINAGE PIPE AND SIZE
 - PROPOSED CONTOUR
 - PROJECT BOUNDARY
 - DRAINAGE BASIN BOUNDARY
 - 100 YEAR FLOOD DEVELOPMENT WITH AREA
 - DRAINAGE BASIN DESIGNATOR
 - POND DESIGNATOR
 - PROPOSED WET DETENTION POND
 - PROPOSED DRY RETENTION POND
 - PROPOSED 100 YEAR FLOOD CONTROL AND STORAGE POND
 - BROAD-CRESTED WEIR CONTROL STRUCTURE
 - INLET CONTROL STRUCTURE
 - EQUALIZER PIPE
 - DRAINAGE FLOW

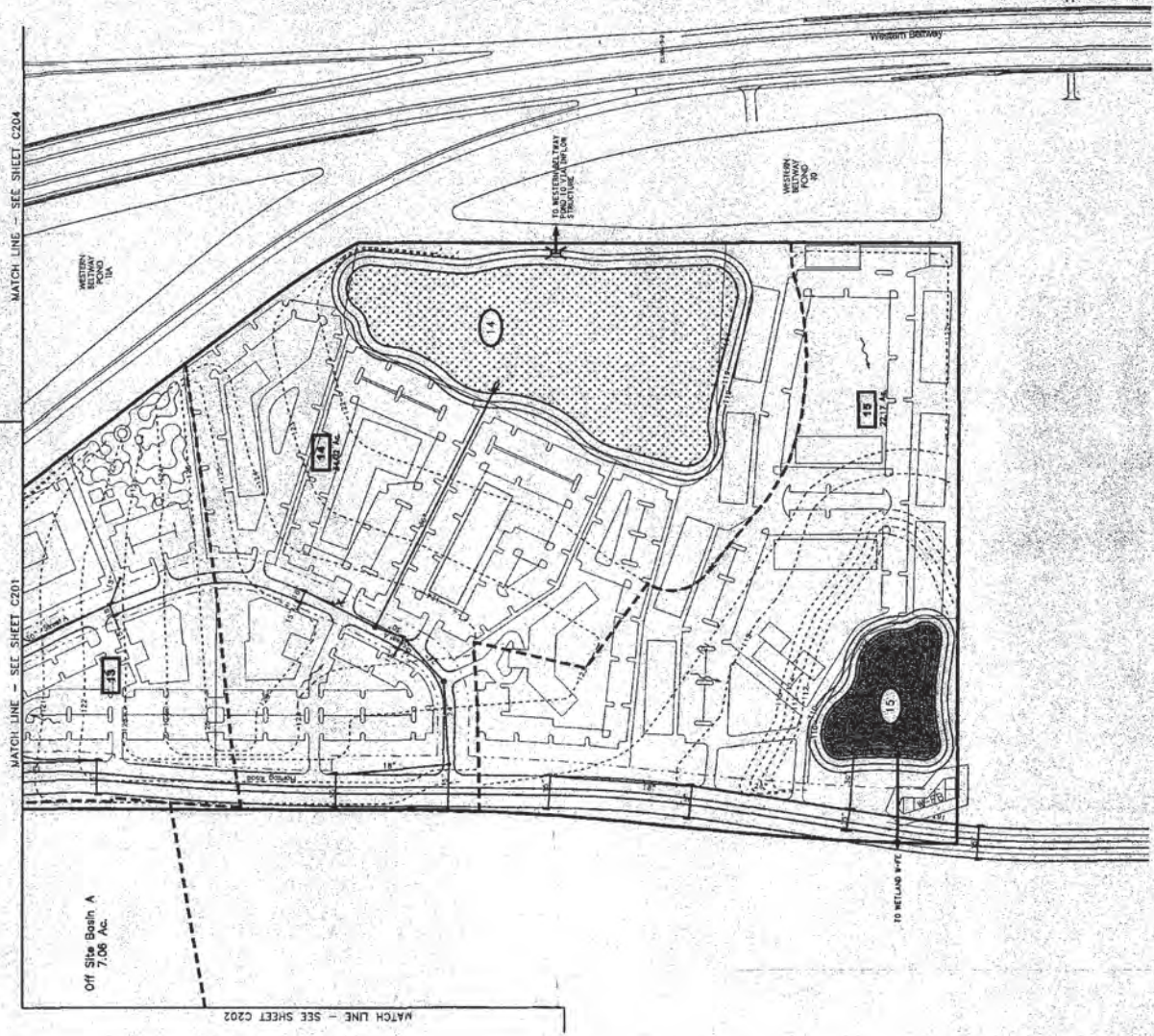


EXHIBIT 3C

LEGEND

- PROPOSED DRAINAGE MANHOLE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED DRAINAGE PIPE AND SILE
- PROPOSED CONTOUR
- PROJECT BOUNDARY
- CHALLENGE BASH BOUNDARY
- 100 YEAR FLOOD PLAIN LINE
- 100 YEAR FLOOD PLAIN WITH 100 YEAR DESIGNATION
- POND DELINEATOR
- PROPOSED NET DETENTION POND
- PROPOSED DRY RETENTION POND
- PROPOSED 100 YEAR FLOOD PLAIN COMPLIANT AND STABLE AREA
- STRUCTURE TIED WITH CONTROL
- EQUALIZER PIPE
- INLET CONTROL STRUCTURE
- BRANCHING PIPE
- DRAINAGE FLOW

0 50 100 200
 FEET
 SCALE: 1" = 50'
 HALF SILE: 1" = 200'

KEY MAP

THE NUMBER OF SHEETS TO BE SUBMITTED SHALL BE DETERMINED BY THE NUMBER OF SHEETS TO BE SUBMITTED AT 100% SCALE AND NOT AT REDUCED SCALE. ACTUAL DETAIL.

WESTERN BELTWAY PROJECT
 MASTER DRAINAGE PLAN
 SHEET 13

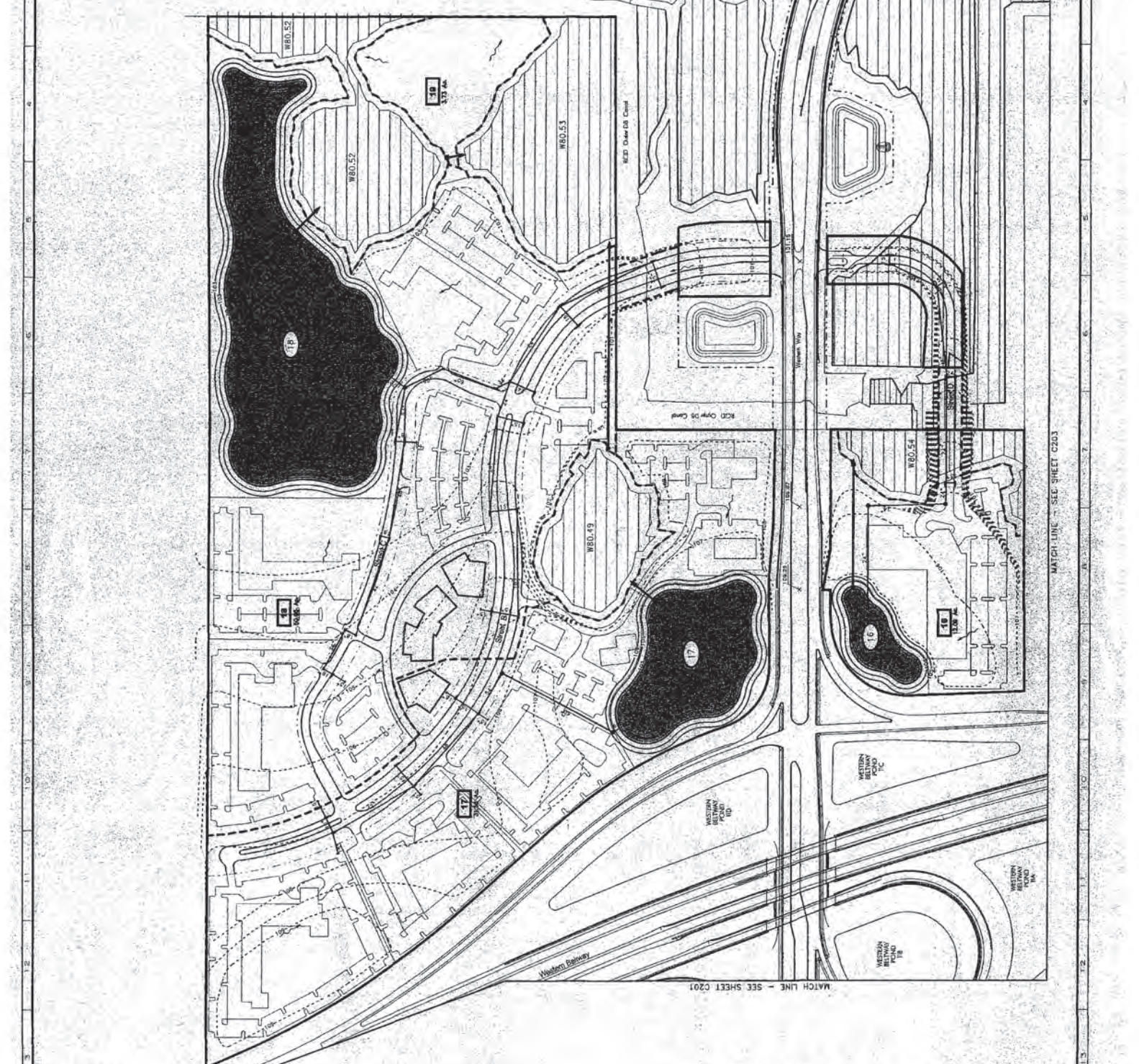
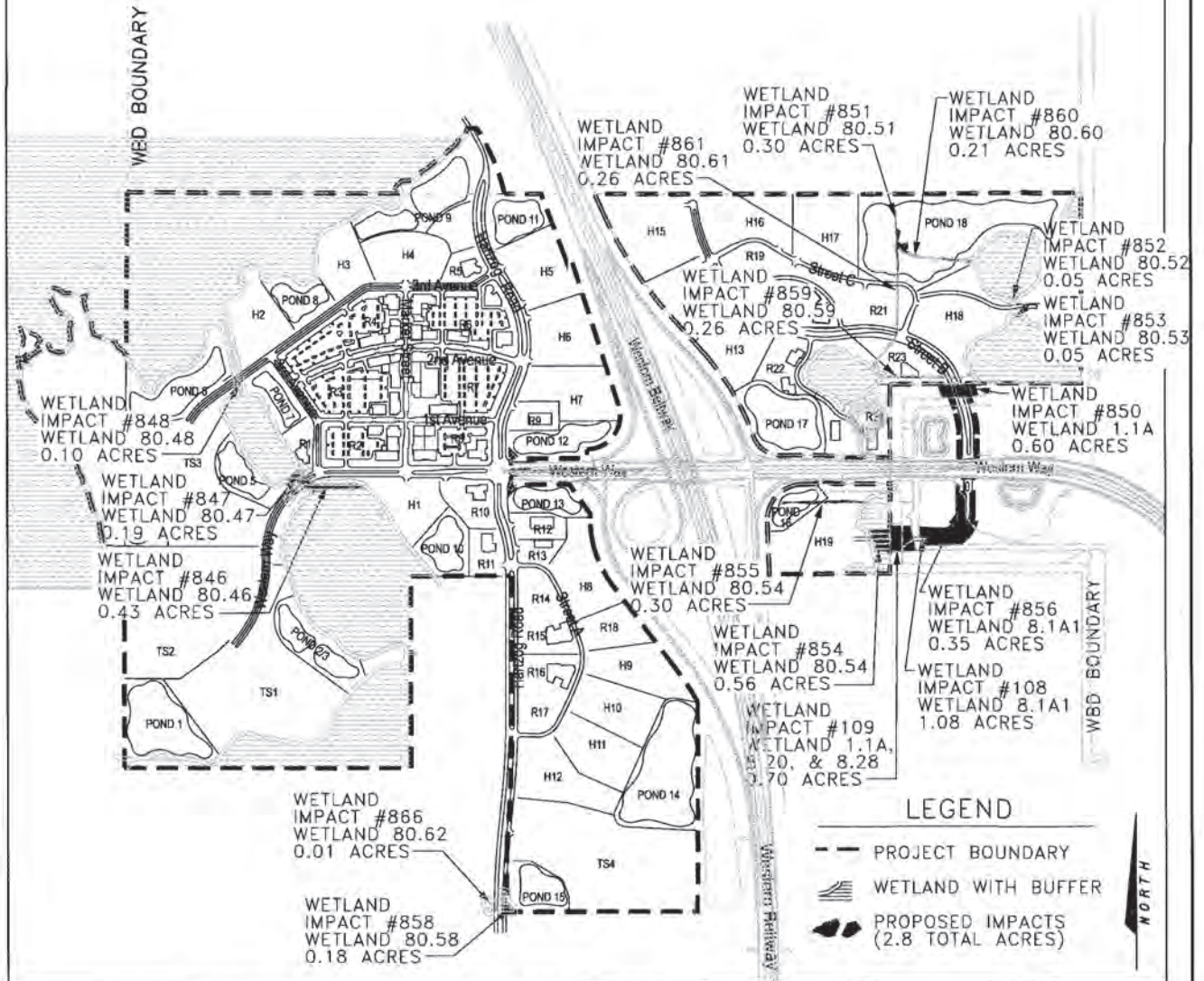


EXHIBIT 3D

WETLAND IMPACT LOCATIONS



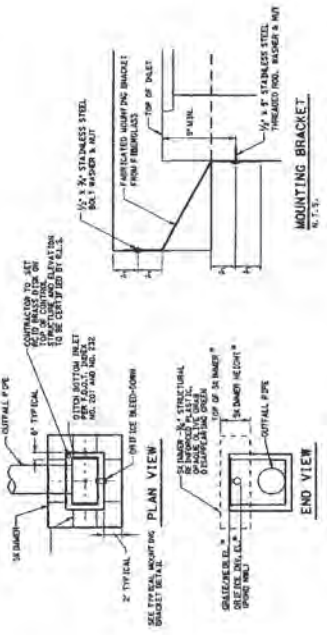
WETLAND IMPACT					PREVIOUS IMPACT	LEGEND
WETLAND SYS No.	LTP IMPACT (PER TABLE II)	ACTUAL IMPACT	REMAINING IMPACT	OU No.		
						--- PHOTO INTERP SURVEY --- OU LIMITS --- VEGETATION [Hatched Box] PRESENT IMPACT [Solid Black Box] APPROVED/TAKING [Dotted Box] APPROV/NOT TAKING [White Box] NOT APPROV/TAKING [Grey Box] WETLAND AREA 516 COVER TYPE
AGENCY S.F.W.M.D.		PHOTO INTERP SURVEYED		Y (N) Y (N)	EXHIBIT DATE 3/2/06	

NOTE:
THIS EXHIBIT IS TO BE USED IN CONJUNCTION WITH TABLE II.

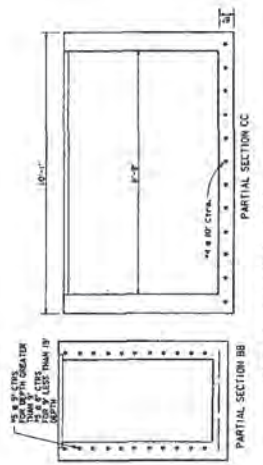
WESTERN BELTWAY DEVELOPMENT PROJECT

OPP UNIT NUMBER

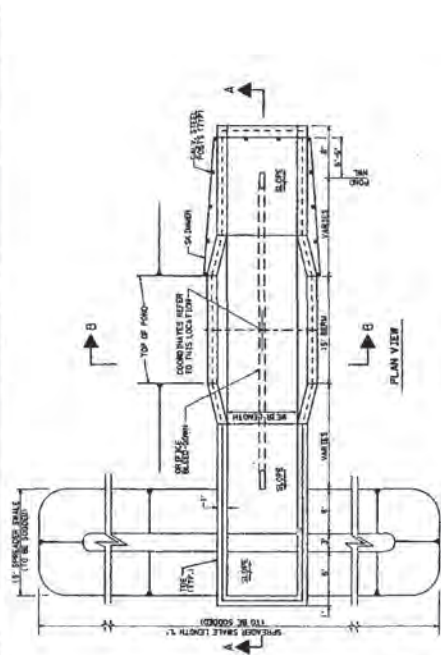
CELEBRATING 50 YEARS OF SERVICE PERMIT PROJECT SFWMD\COLORADO\1\WBIP\MPCCOV01.DGN



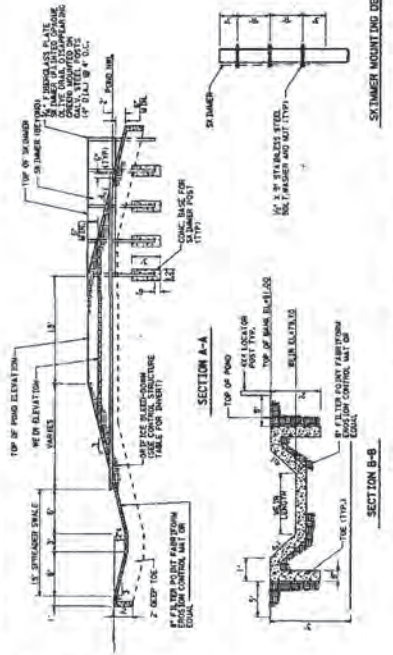
3 SKIMMER DETAIL FOR INLET CONTROL STRUCTURE
N.T.S.



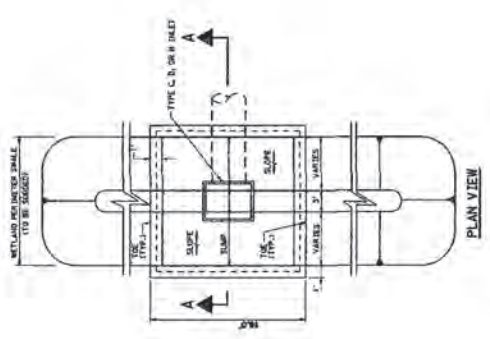
3 MODIFIED TYPE H (4-GRATE) INLET CONTROL STRUCTURE
N.T.S.



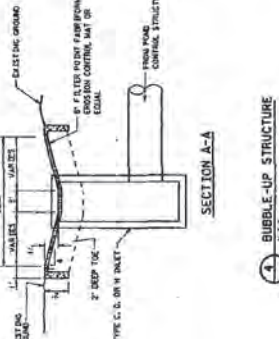
3 BROAD-GRESSED WEIR CONTROL STRUCTURE
N.T.S.



3 BUBBLE-UP STRUCTURE
N.T.S.



3 MODIFIED TYPE H (4-GRATE) INLET CONTROL STRUCTURE
N.T.S.



3 BUBBLE-UP STRUCTURE
N.T.S.

**Western Beltway Development Conceptual Drainage
PROJECT SUMMARY**

POND BASIN NO.	BASIN AREA (ACRES)	WATER MANAGEMENT			Western Beltway Development Master Drainage Plan ULTIMATE BUILDOUT CONDITIONS			WATER QUALITY TREATMENT VOLUME PROVIDED (AC-FT)	WATER QUALITY TREATMENT VOLUME REQUIRED (AC-FT)	ADICPR 25-YR/72-HR MAX. STAGE EL.
		POND NORMAL WATER LEVEL EL. (NWL)	POND AREA @ NWL (ACRES)	PERVIOUS AREA (ACRES)	IMPERVIOUS AREA (ACRES)					
1	24.28	107.00	4.13	3.02	17.13	3.57	4.66	109.47		
2 ¹	17.36	107.50	0.67	2.41	13.66	2.85	2.89	110.91		
3 ¹	-- ¹	107.50	0.62	-- ¹	-- ¹	-- ¹	-- ¹	110.91		
4	7.34	107.00	1.51	0.87	4.96	1.03	1.57	108.72		
5	11.23	106.00	1.41	1.47	8.35	1.74	1.78	108.51		
6	11.20	105.00	3.22	1.20	6.78	1.41	3.31	106.75		
7	18.23	106.00	1.51	2.51	14.21	2.96	3.10	109.31		
8	18.97	104.00	1.30	2.65	15.02	3.13	3.27	107.32		
9 ²	27.98	104.00	1.99	3.90	22.09	6.07	7.90	107.41		
10	17.74	107.00	0.88	2.53	14.33	2.99	2.99	110.83		
11 ²	9.92	104.00	1.62	1.25	7.06	-- ²	-- ²	107.58		
12	16.21	108.00	1.95	2.14	12.12	2.53	2.65	111.51		
13	20.52	108.00	1.56	2.84	16.12	3.36	3.42	112.47		
14	34.02	114.00	6.75	4.09	23.18	4.84	21.82	117.40		
15	22.17	106.00	1.62	3.08	17.47	3.64	3.99	109.51		
16	12.09	101.00	0.91	1.68	9.50	1.98	1.98	103.88		
17	31.56	102.00	3.64	4.19	23.73	5.15	5.26	104.42		
18	50.95	99.00	10.28	6.10	34.57	7.20	7.31	101.38		
19	3.73	N/A	N/A	0.56	3.17	N/A	N/A	N/A		
20	13.83	N/A	N/A	2.07	11.76	N/A	N/A	N/A		
DRAINAGE TOTAL	369.33	--	45.57	48.56	275.21					

Note: All elevations based on NGVD 1929 datum.

¹ Ponds 2 and 3 are equalized with a common outfall.

² Ponds 9 and 11 are equalized with a common outfall.

W. J. Fisher
10/9/07

10/5/2007 11:17 AM

G:\PROJECTS\swelia&emaster\07D001_42 Fischer Property\Conceptual Drainage\postdevelopmentsummary.xls

EXHIBIT 6

PEAK STAGES

Western Beltway Development Post

Name	Group	Simulation	Max Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
FP-1	BASE	100YR72HR POST	60.59	109.808	111.000	0.0035	201488	60.00	129.012	60.59	39.402
FP-10	BASE	100YR72HR POST	60.05	110.952	111.000	0.0043	52083	60.00	90.195	60.05	83.572
FP-11	BASE	100YR72HR POST	60.57	107.928	108.000	0.0038	94540	60.00	55.823	61.61	20.209
FP-15	BASE	100YR72HR POST	60.29	109.950	110.000	-0.0050	86190	60.00	119.072	60.23	66.702
FP-16	BASE	100YR72HR POST	60.18	104.040	105.000	0.0034	50685	60.00	56.910	60.18	45.409
FP-17	BASE	100YR72HR POST	60.66	104.638	106.000	0.0026	176075	60.00	113.686	60.55	72.509
FP-18	BASE	100YR72HR POST	61.42	101.800	103.000	0.0036	487962	60.00	260.737	61.51	39.626
FP-2-3	BASE	100YR72HR POST	60.60	111.297	111.500	0.0037	81349	60.00	77.891	60.60	40.221
FP-4	BASE	100YR72HR POST	60.22	108.842	111.000	0.0024	74236	60.00	39.600	60.22	25.456
FP-5	BASE	100YR72HR POST	60.34	108.893	110.000	0.0050	74844	59.75	68.277	60.19	24.096
FP-6	BASE	100YR72HR POST	60.36	106.916	109.000	0.0024	154884	60.00	62.861	60.36	28.639
FP-7	BASE	100YR72HR POST	60.35	109.763	110.000	0.0050	87088	60.00	101.838	60.22	47.460
FP-8	BASE	100YR72HR POST	60.41	107.540	108.000	0.0035	72048	60.00	73.305	60.32	53.248
FP-9	BASE	100YR72HR POST	60.59	107.763	108.000	0.0035	105298	60.00	120.140	60.44	81.878
M-FE	BASE	100YR72HR POST	61.96	105.824	108.000	0.0014	20352380	60.00	2016.052	61.96	563.522
W80-46	BASE	100YR72HR POST	61.89	106.768	108.000	0.0050	603689	60.00	252.853	61.89	67.942
W80-47	BASE	100YR72HR POST	61.72	106.843	108.000	0.0050	229631	60.00	89.815	61.60	46.062
W80-48	BASE	100YR72HR POST	72.78	104.606	107.000	0.0049	38551388	60.00	4090.675	72.78	186.110
W80-49	BASE	100YR72HR POST	61.25	100.708	102.000	-0.0026	115434	60.18	82.880	61.25	89.597
W80-52A	BASE	100YR72HR POST	60.18	98.315	100.000	0.0013	152024	60.00	64.872	60.18	56.712
W80-52B	BASE	100YR72HR POST	0.00	97.260	97.260	0.0000	0	60.01	48.553	0.00	0.000
W80-53	BASE	100YR72HR POST	0.00	97.330	97.330	0.0000	0	60.03	105.571	0.00	0.000
W80-54	BASE	100YR72HR POST	0.00	97.310	97.310	0.0000	0	60.03	57.441	0.00	0.000
WHITTENHORSE CR	BASE	100YR72HR POST	0.00	102.300	107.000	0.0000	0	72.78	196.110	0.00	0.000
FP-1	BASE	100YR72HR POST	60.61	109.261	111.000	0.0037	197196	60.00	91.270	60.61	32.583
FP-10	BASE	100YR72HR POST	60.06	110.747	111.000	0.0043	51280	60.00	63.664	60.06	58.288
FP-11	BASE	100YR72HR POST	60.53	107.399	108.000	0.0045	91309	60.00	39.524	61.02	13.989
FP-15	BASE	100YR72HR POST	60.17	109.304	110.000	0.0047	85033	60.00	84.090	60.15	61.190
FP-16	BASE	100YR72HR POST	60.16	103.799	105.000	0.0034	49742	60.00	40.471	60.16	33.154
FP-17	BASE	100YR72HR POST	60.58	104.320	106.000	0.0026	173857	60.00	80.517	60.58	54.729
FP-18	BASE	100YR72HR POST	61.16	101.129	103.000	0.0033	478022	60.00	185.007	61.22	35.723
FP-2-3	BASE	100YR72HR POST	60.97	110.697	111.500	0.0037	71167	60.00	55.160	60.47	32.878
FP-4	BASE	100YR72HR POST	60.25	108.636	111.000	0.0028	73338	60.00	28.066	60.25	16.793
FP-5	BASE	100YR72HR POST	60.22	108.303	110.000	0.0049	72021	59.75	48.521	60.13	22.991
FP-6	BASE	100YR72HR POST	60.48	106.625	109.000	0.0034	152734	60.00	44.749	60.48	16.374
FP-7	BASE	100YR72HR POST	60.20	109.980	110.000	0.0050	83214	60.00	72.210	60.12	45.298
FP-8	BASE	100YR72HR POST	60.31	107.217	108.000	0.0031	70643	60.00	51.820	60.31	40.557
FP-9	BASE	100YR72HR POST	60.91	107.246	108.000	0.0043	103104	60.00	84.243	60.41	68.019
M-FE	BASE	100YR72HR POST	61.89	105.652	108.000	0.0014	16113447	60.00	1371.435	61.69	397.264
W80-46	BASE	100YR72HR POST	96.00	106.564	108.000	0.0050	918189	60.00	175.739	0.00	0.000
W80-47	BASE	100YR72HR POST	95.98	106.554	108.000	0.0050	260354	60.02	79.499	60.74	46.345
W80-48	BASE	100YR72HR POST	73.62	103.516	107.000	0.0009	2886114	60.00	2805.021	73.62	75.104
W80-49	BASE	100YR72HR POST	61.00	100.355	102.000	-0.0029	115434	60.46	59.326	61.00	52.068
W80-52A	BASE	100YR72HR POST	60.37	98.239	100.000	0.0014	152024	60.00	51.727	60.37	43.880
W80-52B	BASE	100YR72HR POST	0.00	97.260	97.260	0.0000	0	60.10	34.527	0.00	0.000
W80-53	BASE	100YR72HR POST	0.00	97.330	97.330	0.0000	0	60.66	73.410	0.00	0.000
W80-54	BASE	100YR72HR POST	0.00	97.310	97.310	0.0000	0	60.09	40.481	0.00	0.000
WHITTENHORSE CR	BASE	100YR72HR POST	0.00	102.300	107.000	0.0000	0	73.62	75.104	0.00	0.000

BASINS 1-18 (EXCEPT BASINS 12,13 & 14)

PEAK STAGES

Western Beltway Ponds 12, 13, and 14 SCS

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
NRQUAD Pond12	BASE	100YR72HR POST	0.00	101.080	104.850	0.0000	0	60.71	24.615	0.00	0.000
Pond13	BASE	100YR72HR POST	60.71	111.990	112.000	0.0050	106231	60.00	99.722	60.71	24.615
Pond14	BASE	100YR72HR POST	60.73	112.930	113.000	-0.0050	95468	60.00	105.987	60.73	42.275
SMQUAD Pond12	BASE	100YR72HR POST	60.98	117.908	118.000	0.0050	341761	60.00	205.275	60.98	35.127
Pond13	BASE	100YR72HR POST	0.00	101.220	104.000	0.0000	0	60.73	42.275	0.00	0.000
Pond14	BASE	100YR72HR POST	0.00	116.000	116.000	0.0000	0	60.98	35.127	0.00	0.000
Turnpike NWQUAD Pond12	BASE	100YR72HR POST	0.00	101.080	104.850	0.0000	0	60.71	17.503	0.00	0.000
Pond13	BASE	100YR72HR POST	60.71	111.216	112.000	0.0050	101848	60.00	70.596	60.71	17.503
Pond14	BASE	100YR72HR POST	60.78	112.161	113.000	0.0050	91447	60.00	74.983	60.78	27.746
SMQUAD Pond12	BASE	100YR72HR POST	68.15	117.232	118.000	0.0044	335995	60.00	145.583	68.15	4.105
Pond13	BASE	100YR72HR POST	0.00	101.220	104.000	0.0000	0	60.78	27.746	0.00	0.000
Turnpike Pond10	BASE	100YR72HR POST	0.00	116.000	116.000	0.0000	0	68.15	4.105	0.00	0.000

BASINS 12, 13 & 14

EXHIBIT 7B

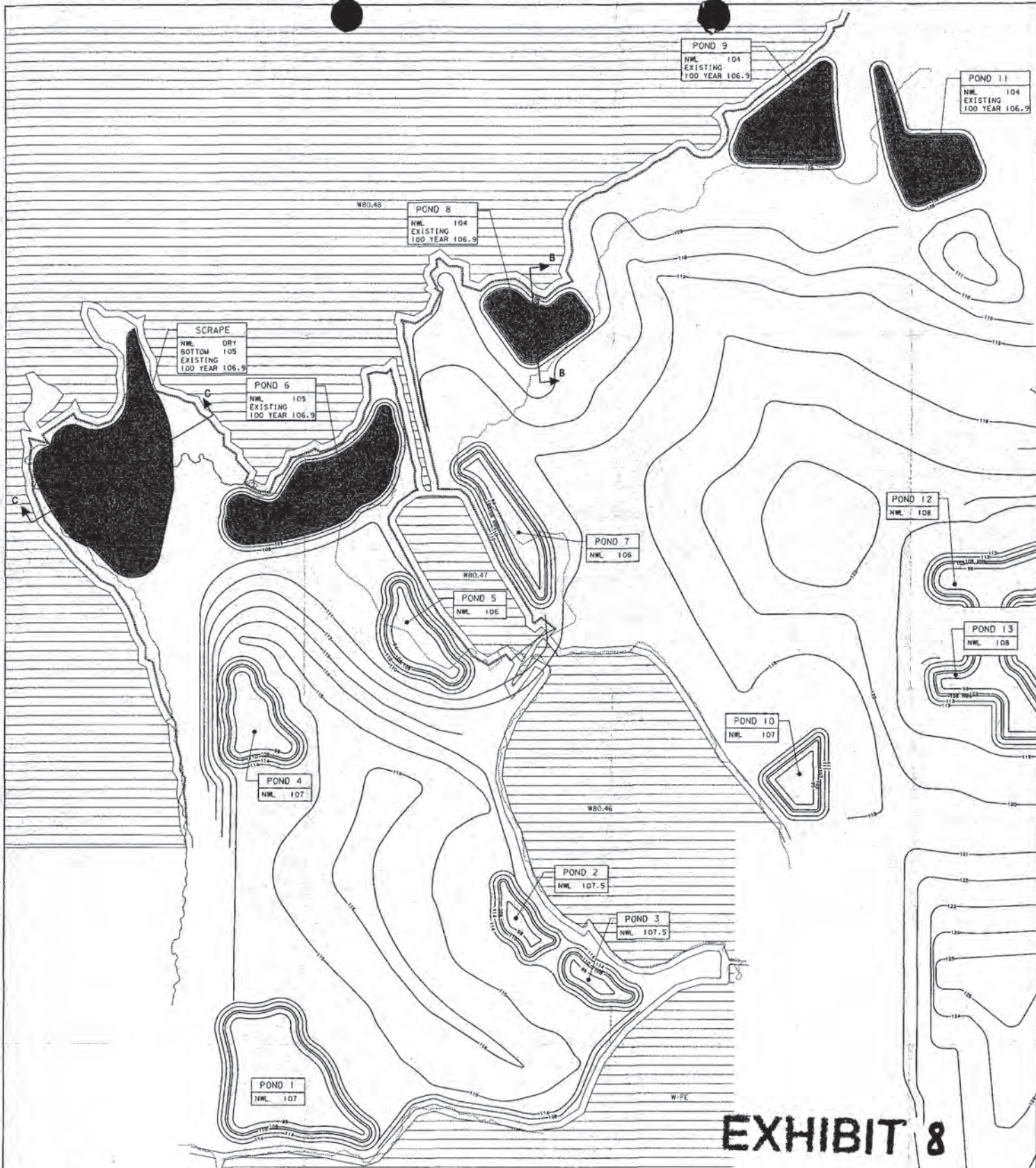
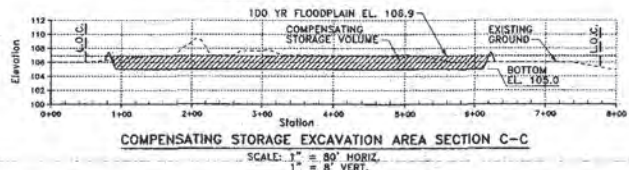
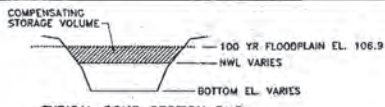
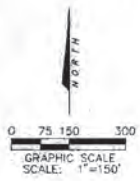


EXHIBIT 8



- LEGEND**
- 100 YEAR FLOODPLAIN COMPENSATING STORAGE AREA
 - WETLAND WITH 25' BUFFER
 - PROPOSED CONTOURS
 - PRE-DEVELOPMENT 100 YEAR FLOODPLAIN LINE
 - POST-DEVELOPMENT 100 YEAR FLOODPLAIN LINE
 - LIMITS OF CONSTRUCTION
 - PROPOSED DRAINAGE SUBBASIN LIMIT

ERP No. 48-02575-P
(Waterleigh)

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01



**SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE PERMIT NO. 48-02575-P**

DATE ISSUED: September 28, 2018

PERMITTEE: SPRING GROVE PROPERTIES, LLC
DHIC - WATERLEIGH, LLC
DR HORTON

(See attached for Permittee addresses)

PROJECT DESCRIPTION: Construction and Operation of a stormwater management (SWM) system serving 40.23 acres of residential development known as Waterleigh PD Parcels 10 and 11.

PROJECT LOCATION: ORANGE COUNTY, SEC 8 TWP 24S RGE 27E

PERMIT DURATION: See Special Condition No:1.

This is to notify you of the District's agency action for Permit Application No. 180507-1, dated May 7, 2018. This action is taken pursuant to the provisions of Chapter 373, Part IV, Florida Statutes (F.S).

Based on the information provided, District rules have been adhered to and an Environmental Resource Permit is in effect for this project subject to:

1. Not receiving a filed request for a Chapter 120, Florida Statutes, administrative hearing.
2. the attached 18 General Conditions (See Pages : 2 - 4 of 7),
3. the attached 14 Special Conditions (See Pages : 5 - 7 of 7) and
4. the attached 4 Exhibit(s)

Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights," we will assume that you concur with the District's action.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY THAT this written notice has been mailed or electronically transmitted to the Permittee (and the persons listed in the attached distribution list) this 28th day of September, 2018, in accordance with Section 120.60(3), F.S. Notice was also electronically posted on this date through a link on the home page of the District's website (my.sfwmd.gov/ePermitting).

BY: _____
Ricardo A. Valera, P.E.
Bureau Chief - Environmental Resource
Orlando Regulatory Office

PERMITTEE ADDRESSES :

D R Horton
6200 Lee Vista Boulevard Suite 400
Orlando FL 32822

D H I C - Waterleigh L L C
1341 Horton Circle
Arlington TX 76011

Spring Grove Properties L L C
1411 Edgewater Drive, Suite 101
Orlando FL 32804

GENERAL 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), and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), 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," (November 16, 2016), (<http://www.flrules.org/Gateway/reference.asp?No=Ref-02505>), incorporated by reference herein, 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., and shall be submitted electronically or by mail to the Agency. However, for activities involving more than one acre of construction that also require a NPDES stormwater construction general permit, submittal of the Notice of Intent to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities, DEP Form 62-621.300(4)(b), shall also serve as notice of commencement of construction under this chapter and, in such a case, submittal of Form 62-330.350(1) is not required.
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:
 1. 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
 2. For all other activities - "As-Built Certification and Request for Conversion to Operation Phase" [Form 62-330.310(1)].
 3. 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:
 1. 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 12.3.4 of Volume I) as filed with the Florida 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

GENERAL CONDITIONS

the activity is located.

2. 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 and Maintenance 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 required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.
9. This permit does not:
 1. 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.;
 2. Convey to the permittee or create in the permittee any interest in real property;
 3. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
 4. 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:
 1. Immediately if any previously submitted information is discovered to be inaccurate; and
 2. 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 prehistoric or historic artifacts, such as pottery or ceramics, projectile points, stone tools, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section (DHR), at (850)245-6333, as well as the appropriate permitting agency office. Project activities 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 the proper authorities notified in accordance with section 872.05, F.S. For project

GENERAL CONDITIONS

activities subject to prior consultation with the DHR and as an alternative to the above requirements, the permittee may follow procedures for unanticipated discoveries as set forth within a cultural resources assessment survey determined complete and sufficient by DHR and included as a specific permit condition herein.

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.

SPECIAL CONDITIONS

1. The construction phase of this permit shall expire on September 28, 2023.
2. Operation and maintenance of the dry retention SWM system shall be the responsibility of the PROPERTY OWNERS ASSOCIATION. Operation and maintenance of the wet detention stormwater management system shall be the responsibility of the ORANGE COUNTY.

3. Discharge Facilities:

BASIN 1, Structure: CS P-1

1-17" W X 28.8" H SHARP CRESTED weir with crest at elev. 121.6' NAVD 88.

960 LF of 36" dia. REINFORCED CONCRETE PIPE culvert.

1-54" W X 36" L drop inlet with crest at elev. 124' NAVD 88.

Receiving body : Pond 3

Control elev : 118 feet NAVD 88.

BASIN 2, Structure CS P-2

1-6" W X 12" H RECTANGULAR NOTCH weir with crest at elev. 118.5' NAVD 88.

253 LF of 18" dia. REINFORCED CONCRETE PIPE culvert.

1-49" W X 37" L drop inlet with crest at elev. 122' NAVD 88.

Receiving body : Pond 3

Control elev : 116 feet NAVD 88.

BASIN 3, Structure: CS P-3

1-48" W X 12" H RECTANGULAR NOTCH weir with crest at elev. 103.2' NAVD 88.

1-4" dia. CIRCULAR ORIFICE with invert at elev. 101.4' NAVD 88.

199 LF of 42" dia. REINFORCED CONCRETE PIPE culvert.

1-79" W X 36" L drop inlet with crest at elev. 105.6' NAVD 88.

Receiving body : Hickorynut Lake

Control elev : 101.4 feet NAVD 88.

BASIN 1A, Structure: CS P-4

1-8" W X 28.8" H SHARP CRESTED weir with crest at elev. 121.6' NAVD 88.

82 LF of 18" dia. REINFORCED CONCRETE PIPE culvert.

1-49" W X 37" L drop inlet with crest at elev. 124' NAVD 88.

Receiving body : Pond 1

Control elev : 102 feet NAVD 88.

4. Lake side slopes shall be no steeper than 5:1 (horizontal:vertical) to a depth of two feet below the control elevation. Side slopes shall be nurtured or planted from 2 feet below to 1 foot above control elevation to insure vegetative growth, unless shown on the plans.
5. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
6. The following are exhibits to this permit. Exhibits noted as incorporated by reference are available on the District's ePermitting website (<http://my.sfwmd.gov/ePermitting>) under this application number.
 - Exhibit No. 1 Location Map
 - Exhibit No. 2 Construction Plans, Pages 1 - 9
 - Exhibit No. 3 Environmental Exhibits, Pages 1 - 18
 - Exhibit No. 4 Engineering Summary Tables, Pages 1 - 7

SPECIAL CONDITIONS

7. Prior to initiating construction activities associated with this Environmental Resource Permit (ERP), the permittee is required to hold a pre-construction meeting with field representatives, consultants, contractors, District Environmental Resource Compliance (ERC) staff, and any other local government entities as necessary.

The purpose of the pre-construction meeting is to discuss construction methods, sequencing, best management practices, identify work areas, staking and roping of preserves where applicable, and to facilitate coordination and assistance amongst relevant parties.

To schedule a pre-construction meeting, please contact ERC staff from the Orlando Service Center at (407) 858-6100 or via e-mail at: pre-con@sfwmd.gov. When sending a request for a pre-construction meeting, please include the application number, permit number, and contact name and phone number.

8. Minimum building floor elevation:

BASIN 1 - 125.40 feet NAVD 88.
BASIN 2 - 123.40 feet NAVD 88.
BASIN 3 - 107.60 feet NAVD 88.
BASIN 1A - 118.30 feet NAVD 88.

9. Minimum parking lot elevation:

BASIN 1 - 123.50 feet NAVD 88.
BASIN 2 - 121.00 feet NAVD 88.
BASIN 3 - 105.00 feet NAVD 88.
BASIN 1A - 113.10 feet NAVD 88.

10. The permittee shall retain the services of a professional archaeologist and perform an archeological survey as requested in the June 7, 2018 letter from the Department of State, Division of Historical Resources, Exhibit No. 3. If historical/archaeological artifacts are discovered, site alteration activities shall be postponed until such time as the Florida Department of State, Division of Historical Resources grants authorization to commence work.
11. Silt screens, hay bales, turbidity screens/barriers or other such sediment control measures shall be utilized during construction. The selected sediment control measure shall be installed landward of the upland buffer zones around all protected wetlands and shall be properly "trenched" etc, in accordance with Exhibit No. 2. All areas shall be stabilized and vegetated immediately after construction to prevent erosion into the wetlands and upland buffer zones.
12. The District reserves the right to require remedial measures to be taken by the permittee if monitoring or other information demonstrates that adverse impacts to onsite or offsite wetlands, upland conservation areas or buffers, or other surface waters have occurred due to project related activities.
13. A maintenance program shall be implemented in accordance with Exhibit No. 3 for the preserved off-site wetland area on a regular basis to ensure the integrity and viability of those areas as permitted. Maintenance shall be conducted in perpetuity to ensure that the conservation areas are maintained free from Category 1 exotic vegetation (as defined by the Florida Exotic Pest Plant Council at the time of permit issuance) immediately following a maintenance activity. Maintenance in perpetuity shall also insure that conservation area maintains the species and coverage of native, desirable vegetation specified in the permit. Coverage of exotic and nuisance plant species shall not exceed 10% of total cover between maintenance activities. In addition, the permittee shall manage the conservation area such that

SPECIAL CONDITIONS

exotic/nuisance plant species do not dominate any one section of those areas.

14. Prior to October 31, 2018 and prior to the commencement of construction, whichever occurs first, the permittee shall submit the following via ePermitting or to the Environmental Compliance staff at the local District office:
 - One certified copy of the recorded conservation easement document including exhibits.
 - A CD or DVD containing the easement data in a digital ESRI Geodatabase (mdb), ESRI Shapefile (shp) or AutoCAD Drawing Interchange (dxf) file format using Florida State Plane coordinate system, East Zone (3601), Datum NAD83, HARN with the map units in feet.
 - A map depicting the Conservation Easement over the best available satellite or aerial imagery.
 - Form 1001 ERP REG: Title, Possession, and Lien Affidavit, fully executed by the owner and notarized.

The recorded easement shall utilize the form attached as Exhibit No. 3. This Exhibit may not be modified. The easement must be free of mortgages, liens, easements or other encumbrances or interests in the easement which District staff states are contrary to the intent of the easement. In the event it is later determined that there are encumbrances or interests in the easement which the District determines are contrary to the intent of the easement, the permittee shall be required to provide release or subordination of such encumbrances or interests.

NOTICE OF RIGHTS

As required by Sections 120.569 and 120.60(3), Fla. Stat., the following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all of the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be **affected by the South Florida Water Management District's** (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a SFWMD decision which affects or may affect their substantial interests shall file a petition for hearing with the Office of the District Clerk of the SFWMD, in accordance with the filing instructions set forth herein, within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: (1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or (2) within 14 days of service of an Administrative Order pursuant to Section 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of written notice through mail, electronic mail, or posting that the SFWMD has or intends to take final agency action, or publication of notice that the SFWMD has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

If the District takes final agency action which materially differs from the noticed intended agency decision, persons who may be substantially affected shall, unless otherwise provided by law, have an additional Rule 28-106.111, Fla. Admin. Code, point of entry.

Any person to whom an emergency order is directed pursuant to Section 373.119(2), Fla. Stat., shall comply therewith immediately, but on petition to the board shall be afforded a hearing as soon as possible.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for an extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

FILING INSTRUCTIONS

A petition for administrative hearing must be filed with the Office of the District Clerk of the SFWMD. Filings with the Office of the District Clerk may be made by mail, hand-delivery, or e-mail. Filings by facsimile will not be accepted. A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the Office of the District Clerk at SFWMD headquarters in West Palm Beach, Florida. **The District's normal business hours are 8:00 a.m. – 5:00 p.m.,** excluding weekends and District holidays. Any document received by the Office of the District Clerk after 5:00 p.m. shall be deemed filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, 3301 Gun Club Road, West Palm Beach, Florida 33406.

- Filings by hand-delivery must be delivered to the Office of the District Clerk. Delivery of a petition to the SFWMD's security desk does not constitute filing. It will be necessary to request that the SFWMD's security officer contact the Office of the District Clerk. An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by e-mail must be transmitted to the Office of the District Clerk at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the Office of the District Clerk receives the complete document. A party who files a document by e-mail shall (1) represent that the original physically signed document will be retained by that party for the duration of the proceeding and of any subsequent appeal or subsequent proceeding in that cause and that the party shall produce it upon the request of other parties; and (2) be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed.

INITIATION OF AN ADMINISTRATIVE HEARING

Pursuant to Sections 120.54(5)(b)4. and 120.569(2)(c), Fla. Stat., and Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, SFWMD file number or any other SFWMD identification number, if known.
2. The name, address, any email address, any facsimile number, and telephone number of the petitioner and **petitioner's representative, if any.**
3. An explanation of how the **petitioner's substantial interests will be affected by the agency determination.**
4. A statement of when and how the petitioner received notice of the SFWMD's **decision.**
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's **proposed action.**
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's **proposed action.**
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's **proposed action.**

MEDIATION

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401–.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Section 120.68, Fla. Stat., and in accordance with Florida Rule of Appellate Procedure 9.110, a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal with the Office of the District Clerk of the SFWMD in accordance with the filing instructions set forth herein within 30 days of rendition of the order to be reviewed, and by filing a copy of the notice with the clerk of the appropriate district court of appeal.

Last Date For Agency Action: November 12, 2018

INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Waterleigh P D Parcels 10 And 11

Permit No.: 48-02575-P

Application No.: 180507-1

Application Type: Environmental Resource (Construction/Operation Modification)

Location: Orange County, S8/T24S/R27E

Permittee : DR Horton
DHIC - Waterleigh, LLC
Spring Grove Properties, LLC

Operating Entity : Pond 3: Orange County
Ponds 1, 2, and 4: Property Owners Association

Project Area: 47.40 acres

Permit Area: 47.40 acres

Project Land Use: Residential

Drainage Basin: REEDY CREEK

Receiving Body: Hickorynut Lake

Class: CLASS III

Special Drainage District: NA

Total Acres Presv/Mit Compensation Offsite: 6.50

Conservation Easement To District : Yes

Sovereign Submerged Lands: No

PROJECT SUMMARY:

This Environmental Resource Permit Modification authorizes Construction and Operation of a SWM system serving 47.4 acres of residential development known as Waterleigh PD Parcels 10 and 11.

This project is for construction of a 7.07-acre SWM system and 26.19 acres of impervious area for a 588-unit multi-family residential development with parking and common amenities. The application modifies a SWM system design originally authorized under ERP 48-02575-P, application 161019-2, and ERP 48-02566-P, application 160119-12. The wet detention pond authorized under ERP 48-02566-P will be expanded. The dry retention pond authorized under ERP 48-02575-P were not constructed.

Issuance of this permit constitutes certification of compliance with state water quality standards in accordance with Rule 62-330.062, F.A.C.

PROJECT EVALUATION:**PROJECT SITE DESCRIPTION:**

The project is located on the northeast side of the intersection of Avalon Road and Harzog Road in western Orange County. Refer to Exhibit 1 for a location map.

A wet detention pond, authorized under ERP 48-02566-P, constructed on the north side of the site will be expanded. The SWM system authorized under ERP 48-02575-P was never built and the site contains an old citrus grove. A formal wetland determination was done as part of Horizon's West, Village H, ERP 48-00018-F.

For information on wetlands and other surface waters within the site, please refer to the Wetlands and Other Surface Waters section of this staff report.

LAND USE:**Construction****Basin :** APF**Total Basin**

Impervious	1.81	acres
Pervious	2.71	acres
Total:	4.52	

Basin : BASIN 1**Total Basin**

Building Coverage	3.24	acres
Dry Retention Areas	.99	acres
Impervious	7.24	acres
Pervious	3.94	acres
Total:	15.41	

Basin : BASIN 1A**Total Basin**

Building Coverage	1.13	acres
Dry Retention Areas	1.60	acres
Impervious	1.95	acres
Pervious	2.08	acres
Total:	6.76	

Basin : BASIN 2**Total Basin**

Building Coverage	3.50	acres
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Basin : BASIN 2**Total Basin**

Dry Retention Areas	2.14	acres
Impervious	6.93	acres
Pervious	3.77	acres
Total:	16.34	

Basin : BASIN 3**Total Basin**

Impervious	.39	acres
Pervious	.13	acres
Wet Detention	1.20	acres
Total:	1.72	

Basin : FLAMINGO**Total Basin**

Impervious	1.27	acres
Pervious	.68	acres
Total:	1.95	

Basin : OFFSITE 301**Total Basin**

Pervious	1.14	acres
Total:	1.14	

Basin : ONSITE 302**Total Basin**

Impervious	10.24	acres
Pervious	5.12	acres
Wet Detention	1.14	acres
Total:	16.50	

WATER QUANTITY :**Discharge Rate :**

As shown in Exhibit 4, the project discharge is within the allowable limit for the area.

Discharge Storm Frequency : 25 YEAR-1 DAY

Design Rainfall : 8.6 inches

Basin	Allow Disch (cfs)	Method Of Determination	Peak Disch (cfs)	Peak Stage (ft, NAVD 88)
BASIN 1	n/a	n/a	n/a	123.5
BASIN 2	n/a	n/a	n/a	120.9
BASIN 3	n/a	n/a	n/a	104.9
BASIN 1A	n/a	n/a	n/a	113

Finished Floors :

As shown in the following table, minimum finished floor elevations have been set at or above the calculated design storm flood elevation.

Building Storm Frequency : 100 YEAR-3 DAY

Design Rainfall : 13 inches

Basin	Peak Stage (ft, NAVD 88)	Proposed Min. Finished Floors (ft, NAVD 88)	FEMA Elevation (ft, NAVD 88)
BASIN 1	124.4	125.4	N/A
BASIN 2	122.4	123.4	N/A
BASIN 3	106.6	107.6	N/A
BASIN 1A	117.3	118.3	N/A

Parking Lot Design :

As shown in the following table, minimum parking lot elevations have been set at or above the calculated design storm flood elevation.

Parking Lot Storm Frequency : 10 YEAR-1 DAY

Design Rainfall : 7.44 inches

Basin	Peak Stage (ft, NAVD 88)	Proposed Min. Parking Elev. (ft, NAVD 88)
BASIN 1	123.2	123.5
BASIN 2	120.3	121
BASIN 3	104.5	105
BASIN 1A	111.8	113.1

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NAVD 88)	WSWT Ctrl Elev (ft, NAVD 88)	Method Of Determination
BASIN 1	15.41	118		Wet Season Soil Borings
BASIN 2	16.34	116		Wet Season Soil Borings
APF	4.52	101.4		Wet Season Soil Borings
FLAMINGO	1.95	101.4		Wet Season Soil Borings
ONSITE 302	16.50	101.4		Wet Season Soil Borings
OFFSITE 301	1.14	101.4		Wet Season Soil Borings
BASIN 3	1.72	101.4		Wet Season Soil Borings
BASIN 1A	6.76	102		Wet Season Soil Borings

Receiving Body :

Basin	Str.#	Receiving Body
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Receiving Body :

Basin	Str.#	Receiving Body
Basin 1	CS P-1	Pond 3
Basin 2	CS P-2	Pond 3
Basin 3	CS P-3	Hickorynut Lake
Basin 1a	CS P-4	Pond 1

Discharge Structures: Note: The units for all the elevation values of structures are (ft, NAVD 88)

Culverts:

Basin	Str#	Count	Type	Width	Length	Dia.
BASIN 1	CS P-1	1	Reinforced Concrete Pipe		960'	36"
BASIN 1A	CS P-4	1	Reinforced Concrete Pipe		82'	18"
BASIN 2	CS P-2	1	Reinforced Concrete Pipe		253'	18"
BASIN 3	CS P-3	1	Reinforced Concrete Pipe		199'	42"

Inlets:

Basin	Str#	Count	Type	Width	Length	Dia.	Crest Elev.
BASIN 1	CS P-1	1	Fdot Mod E Drop Inlet	54"	36"		124
BASIN 1A	CS P-4	1	Fdot Mod D Drop Inlet	49"	37"		124
BASIN 2	CS P-2	1	Fdot Mod D Drop Inlet	49"	37"		122
BASIN 3	CS P-3	1	Fdot Mod H Drop Inlet	79"	36"		105.6

Weirs:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Elev.
BASIN 1	CS P-1	1	Sharp Crested	17"	28.8"			121.6 (crest)
BASIN 1A	CS P-4	1	Sharp Crested	8"	28.8"			121.6 (crest)
BASIN 2	CS P-2	1	Rectangular Notch	6"	12"			118.5 (crest)
BASIN 3	CS P-3	1	Rectangular Notch	48"	12"			103.2 (crest)

Water Quality Structures: Note: The units for all the elevation values of structures are (ft, NAVD 88)

Bleeders:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Invert Angle	Invert Elev.
BASIN 3	CS P-3	1	Circular Orifice				4"		101.4

WATER QUALITY :

Water quality treatment is provided in 2.34 acres of wet detention and 4.73 acres of dry retention. As shown in the Water Quality Section and in Exhibit 4, the project provides 7.56 acre-feet of required water quality treatment volume based on the greater of 1.0 inch over the controlled basin areas or 2.5 inches times the percent impervious basin areas.

Pursuant to Appendix E of Environmental Resource Permit Applicant's Handbook Volume II, the provided water quality includes an additional 50% volume above the requirements in Section 4.2 of Volume II as reasonable assurance that the project provides a net improvement to water quality in the downstream water body. The project is located within the watershed of Lake Okeechobee.

In addition to the required water quality treatment volume, the applicant provided site specific pollutant loading calculations demonstrating that the SWM system reduces the post development loading of phosphorus to levels less than the loadings generated under the pre-development condition. The pollutant loading calculations are based upon the removal characteristics associated with the system.

The project includes implementation of an Turbidity and Erosion Control Plan (Exhibit 2) as additional reasonable assurance of compliance with water quality criteria during construction and operation.

Basin	Treatment Method		Vol Req.d (ac-ft)	Vol Prov'd
BASIN 1	Treatment	Dry Retention	1.44	1.45
BASIN 2	Treatment	Dry Retention	1.42	2.3
BASIN 3	Treatment	Wet Detention	2.34 acres	4.46
BASIN 1A	Treatment	Dry Retention	.42	14.91

WETLANDS:

Wetlands And Other Surface Waters:

The project site contains 1 wetland totaling 0.85 acres. Please see Exhibit 2 for wetland locations. The wetland can generally be described as Bay Swamp. Additional wetland descriptions are available in the ePermitting file.

The project will result in 0.85 acres of wetland impacts as described in the table below. Exhibit 2 identifies the location of the other surface water being impacted. The wetland is isolated, of low quality, and provides little habitat or foraging function. Per Section 10.2.1.2, the proposed mitigation should provide a greater long term ecological value than the preservation of this isolated wetland.

To mitigate for the wetland impacts, the applicant will preserve 6.5 acres at the off-site Spring Grove Mitigation Tract, as depicted in Exhibits 3. The amount of required mitigation was determined using the Uniform Mitigation Assessment Method in Chapter 62-345, F.A.C. The final scores can be found in the ePermitting file.

The proposed mitigation is located within the same basin as the impacts, therefore pursuant to Section 10.2.8 of Volume I, the project will not result in unacceptable cumulative impacts to the Reedy Creek Basin.

Wetland SGMT-1 will be preserved off site under a conservation easement dedicated to the District.

Wetland Inventory :

CONSTRUCTION MOD -Waterleigh Parcels 10 & 11

Site Id	Site Type	Pre-Development				Post-Development						
		Pre Fluc cs	AA Type	Acreage (Acres)	Current Wo Pres	With Project	Time Lag (Yrs)	Risk Factor	Pres. Adj. Factor	Post Fluc cs	Adj Delta	Functional Gain / Loss
SGMT-1 OFF	611	Preservation		6.50	.60	.67	1	1.00	.60		.042	.273
W-9	ON 611	Direct		.85	.30	.00					-.300	-.255
Total:				7.35								.02

<u>Fluc cs Code</u>	<u>Description</u>
524	Lakes < 10 Acres Which Are Dominant
611	Bay Swamps

CERTIFICATION, OPERATION, AND MAINTENANCE:

Pursuant to Chapter 62-330.310, F.A.C., Individual Permits will not be converted from the construction phase to the operation phase until construction completion certification of the project is submitted to and accepted by the District. This includes compliance with all permit conditions, except for any long term maintenance and monitoring requirements. It is suggested that the permittee retain the services of an appropriate professional registered in the State of Florida for periodic observation of construction of the project.

For projects permitted with an operating entity that is different from the permittee, it should be noted that until the construction completion certification is accepted by the District and the permit is transferred to an acceptable operating entity pursuant to Sections 12.1-12.3 of the Applicant's Handbook Volume I and Section 62-330.310, F.A.C., the permittee is liable for operation and maintenance in compliance with the terms and conditions of this permit.

In accordance with Section 373.416(2), F.S., unless revoked or abandoned, all SWM systems and works permitted under Part IV of Chapter 373, F.S., must be operated and maintained in perpetuity.

The efficiency of SWM systems, dams, impoundments, and most other project components will decrease over time without periodic maintenance. The operation and maintenance entity 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 is responsible for correcting the deficiencies in a timely manner to prevent compromises to flood protection and water quality. See Section 12.4 of the Applicant's Handbook Volume I for Minimum Operation and Maintenance Standards.

RELATED CONCERNS:

Water Use Permit Status:

The applicant has indicated that reclaimed water will be used as a source for irrigation water for the project.

The applicant has demonstrated that proposed dewatering qualifies for the permit by rule under Rule 40E-2.061, F.A.C.

This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation.

CERP:

The proposed project is not located within or adjacent to a Comprehensive Everglades Restoration Project component.

Potable Water Supplier:

Orange County Utilities

Waste Water System/Supplier:

Orange County Utilities

Right-Of-Way Permit Status:

A District Right-of-Way Permit is not required for this project.

Historical/Archeological Resources:

On June 7, 2018, the District received a letter from the Florida Department of State, Division of Historical Resources requesting the applicant to perform a systematic, professional archaeological and historical survey. The applicant has arranged to perform the requested archaeological and historical survey for the property.

This permit does not release the permittee from complying with any other agencies' requirements in the event that historical and/or archaeological resources are found on the site.

DEO/CZM Consistency Review:

Issuance of this permit constitutes a finding of consistency with the Florida Coastal Management Program.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF REVIEW:

DIVISION APPROVAL:

NATURAL RESOURCE MANAGEMENT:



Marc S. Ady

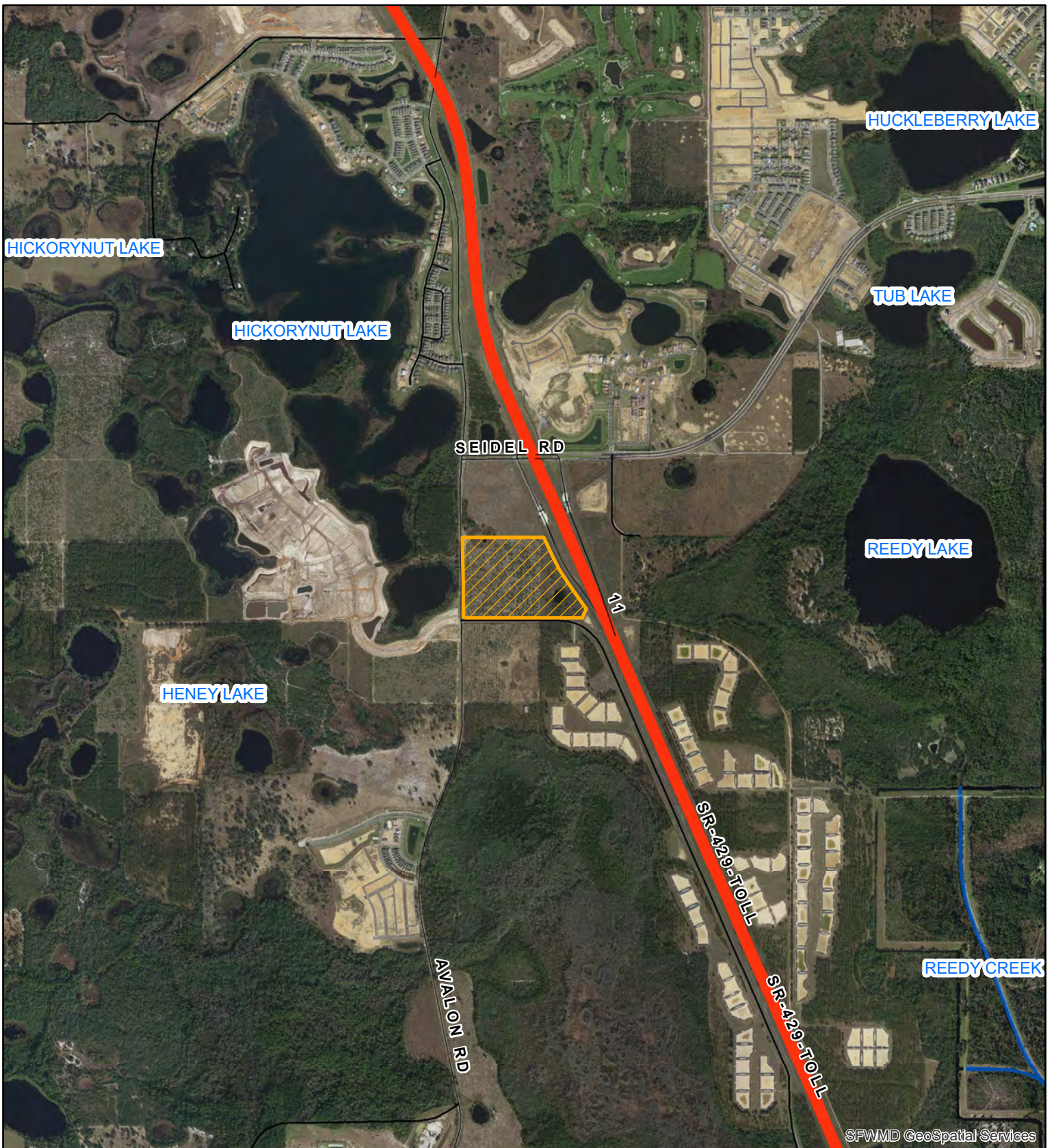
DATE: 9/28/18

SURFACE WATER MANAGEMENT:









Mark S. Daron, P.E.

DATE: 9-28-18



SFWMD GeoSpatial Services

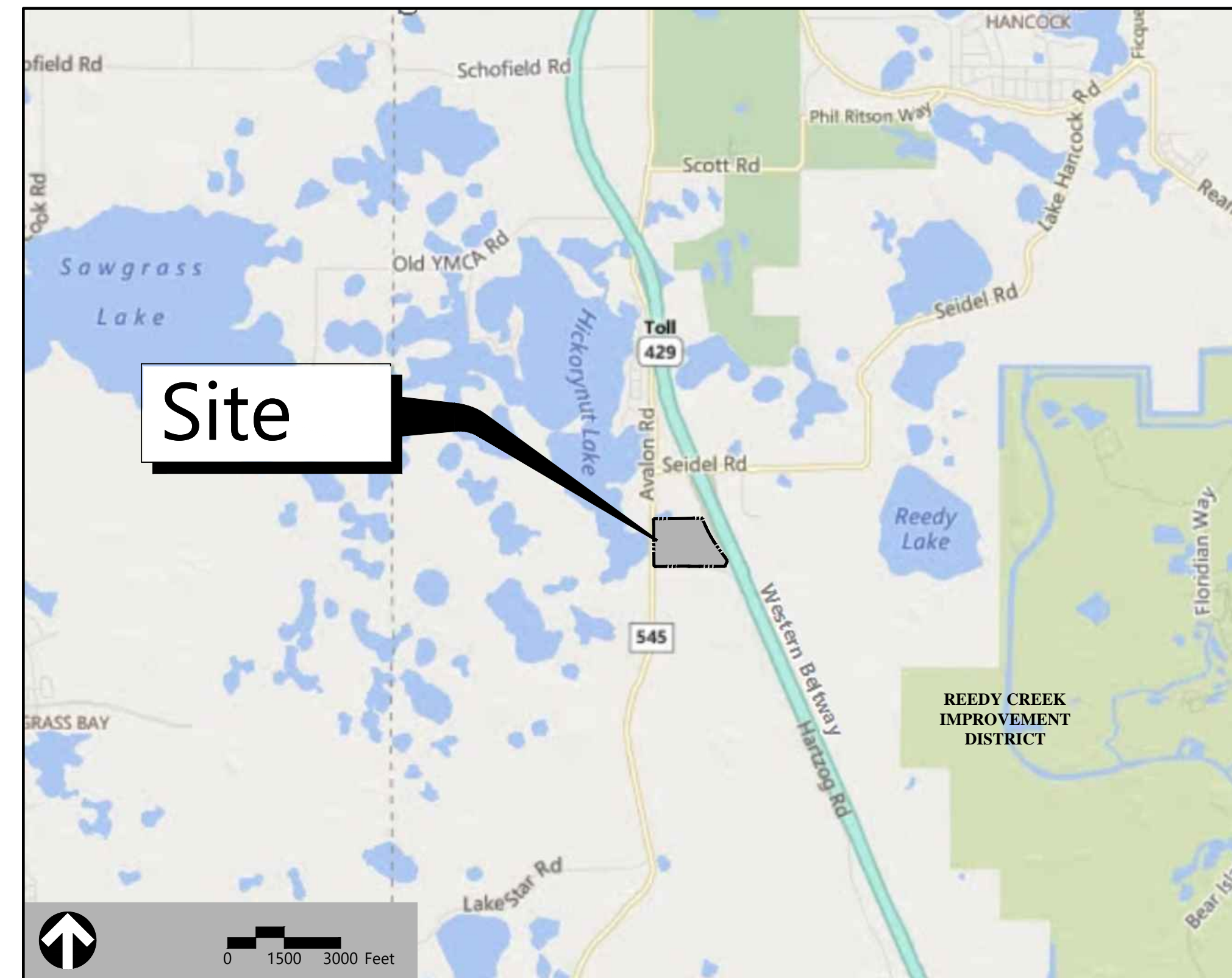
<p>Exhibit No: 1</p>	<p>Exhibit Created On: 2018-09-27</p>	<p>ORANGE COUNTY, FL</p>	<p> Application</p> <p>Permit No: 48-02575-P</p> <p>Application Number: 180507-1</p> 
<p align="center">REGULATION DIVISION</p> <p align="center">Project Name: WATERLEIGH P D PARCELS 10 AND 11</p> <div style="display: flex; align-items: center;">  <div style="text-align: center;"> <p>0 1,950 3,900</p>  <p>Feet</p> </div> <div style="margin-left: 20px; text-align: center;"> <p>N</p>  </div> </div>			<p>Created by</p>  <p>South Florida Water Management District</p>

Construction Plans

Issued for SFWMD ERP
 Date Issued October 14, 2016
 Latest Issue August 1, 2018

Waterleigh PD - Parcels 10 and 11

Orange County, Florida
 Parcel ID: 08-24-27-0000-00-017



225 E. Robinson Street
 Suite 300
 Orlando, FL 32801
 407.839.4006
 Certificate of Authorization
 Number FL #3932

Owner / Applicant

D.R. Horton
 6200 Lee Vista Blvd., Suite 400
 Orlando, Florida 32822
 P 407.850.5228

Sheet Index

No.	Drawing Title	Latest Issue
C1.00	Legend & General Notes	January 25, 2017
C1.01	Existing Conditions & Erosion Control Plan	May 4, 2018
C1.02	Erosion Control Details	January 25, 2017
C1.03	Master Site Plan & Site Data	May 4, 2018
C1.04	Typical Sections & Details	May 4, 2018
C2.00	Grading & Drainage Plan	August 1, 2018
C2.04	Grading Details	May 4, 2018
C2.05 - C2.06	Control Structure Details	August 1, 2018
C9.00 - C9.01	Standard F.D.O.T. Details	January 25, 2017

Reference Drawings

No.	Drawing Title	Latest Issue
1 of 2	Boundary Survey	March 25, 2016
2 of 2	Boundary Survey	March 25, 2016
2 of 2	Boundary and Topographic Survey	March 25, 2016

Community Planner & Civil Engineer

VHB
 225 E. Robinson St., Suite 300
 Orlando, Florida 32801
 P 407.839.4006 · F 407.839.4008

Surveyor

Allen & Company
 16 E. Plant St.
 Winter Garden, FL 34787-3127
 P 407.654.5355

Geotechnical

Universal Engineering Sciences
 3532 Maggie Blvd.
 Orlando, FL 32811
 P 407.423.0504

Environmental

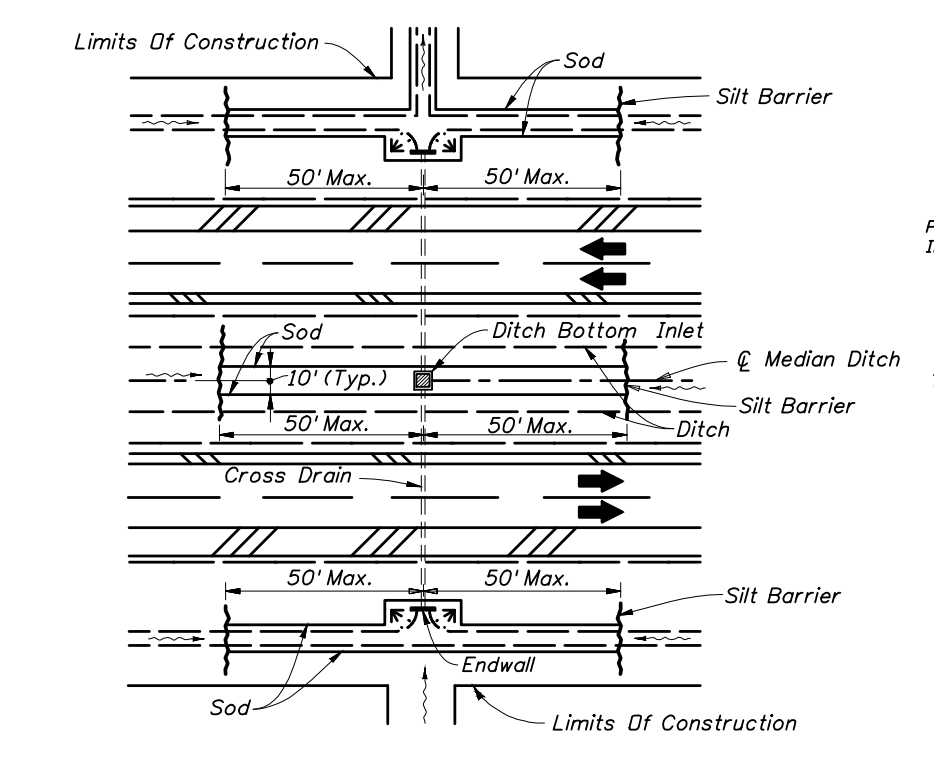
Bio-Tech Consulting, Inc.
 2002 E. Robinson St.
 Orlando, FL 32803
 P 407.894.5969

James Hoffman, P.E.
 P.E. # 75623
 DATE: Aug. 01, 2018

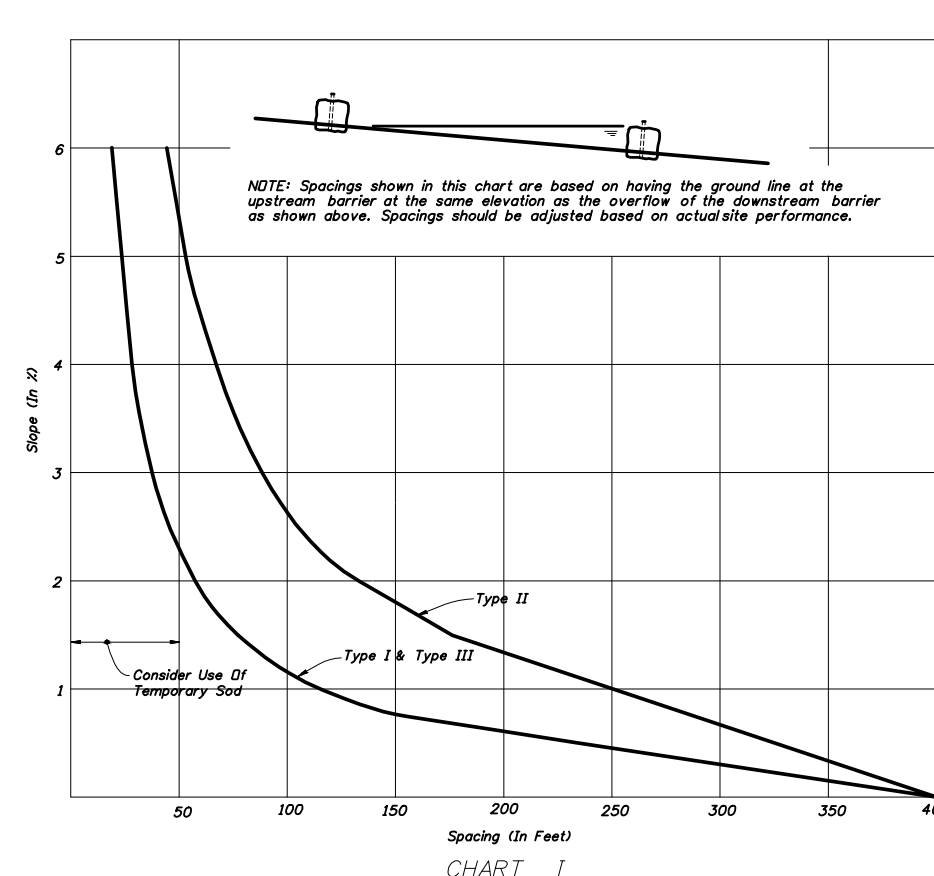
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Issued for: SFWMD ERP

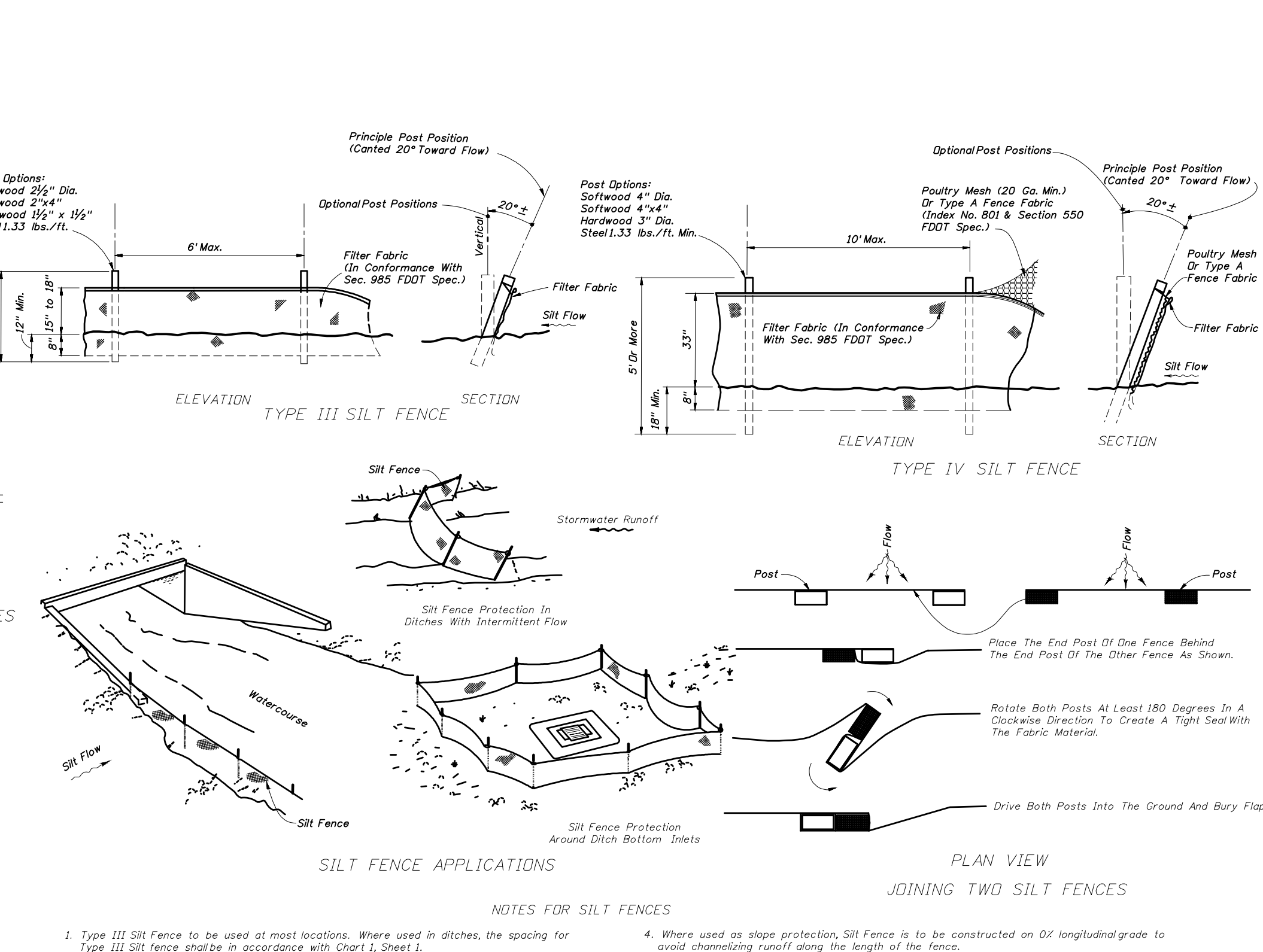
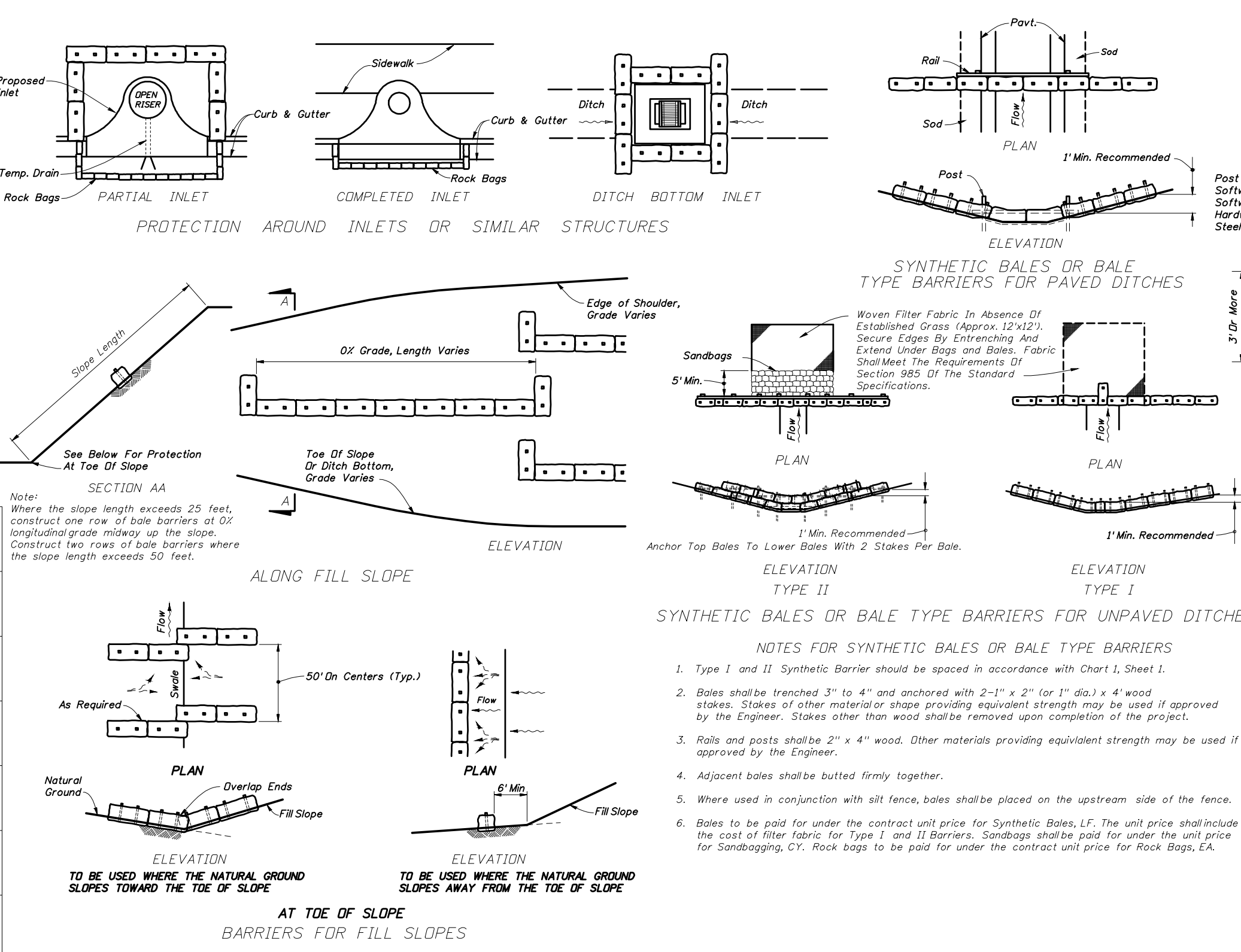
VHB Project No. 61701.06



DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

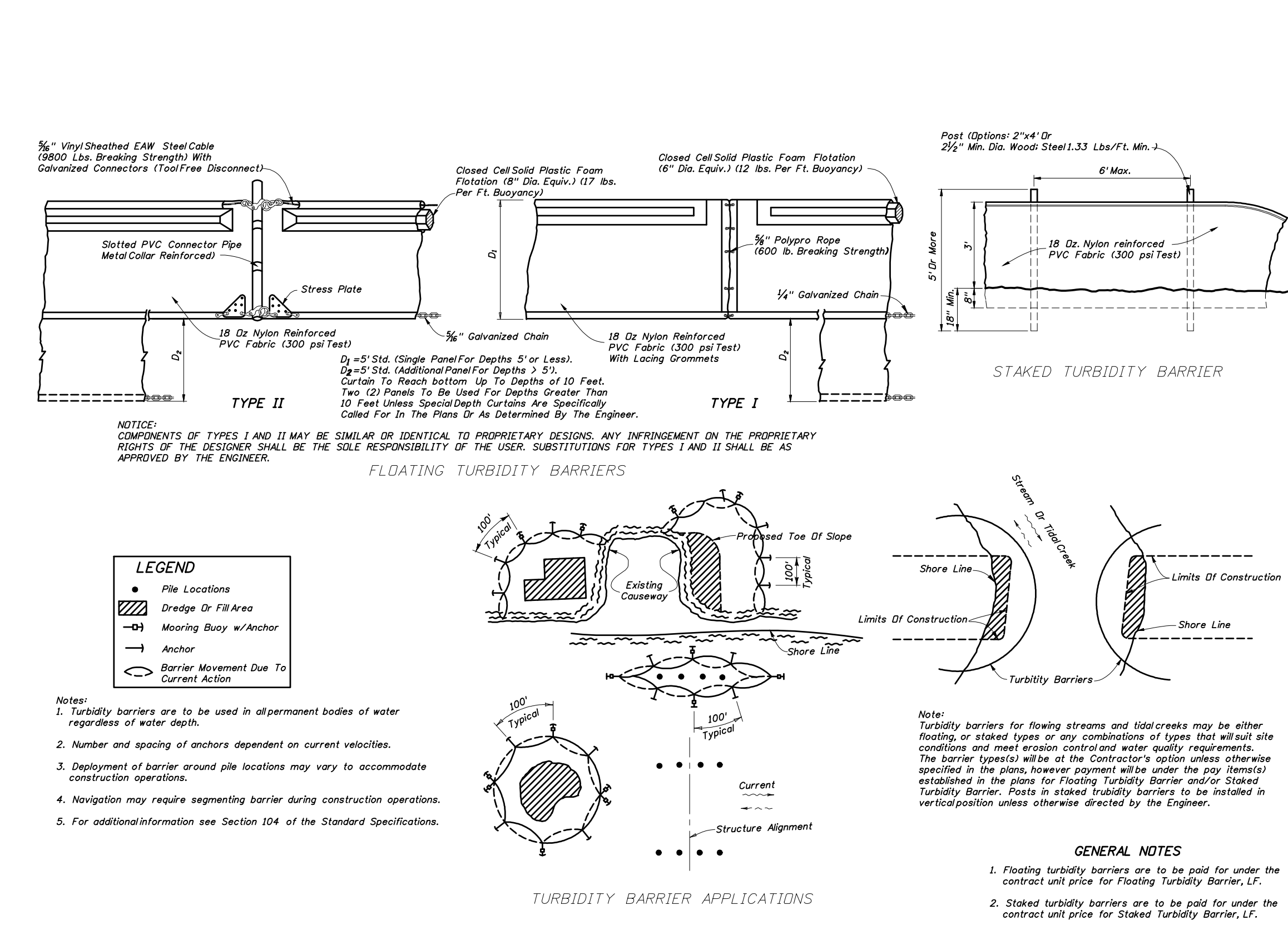


RECOMMENDED SPACING FOR SYNTHETIC BALES OR BALE TYPE BARRIERS AND TYPE III SILT FENCE



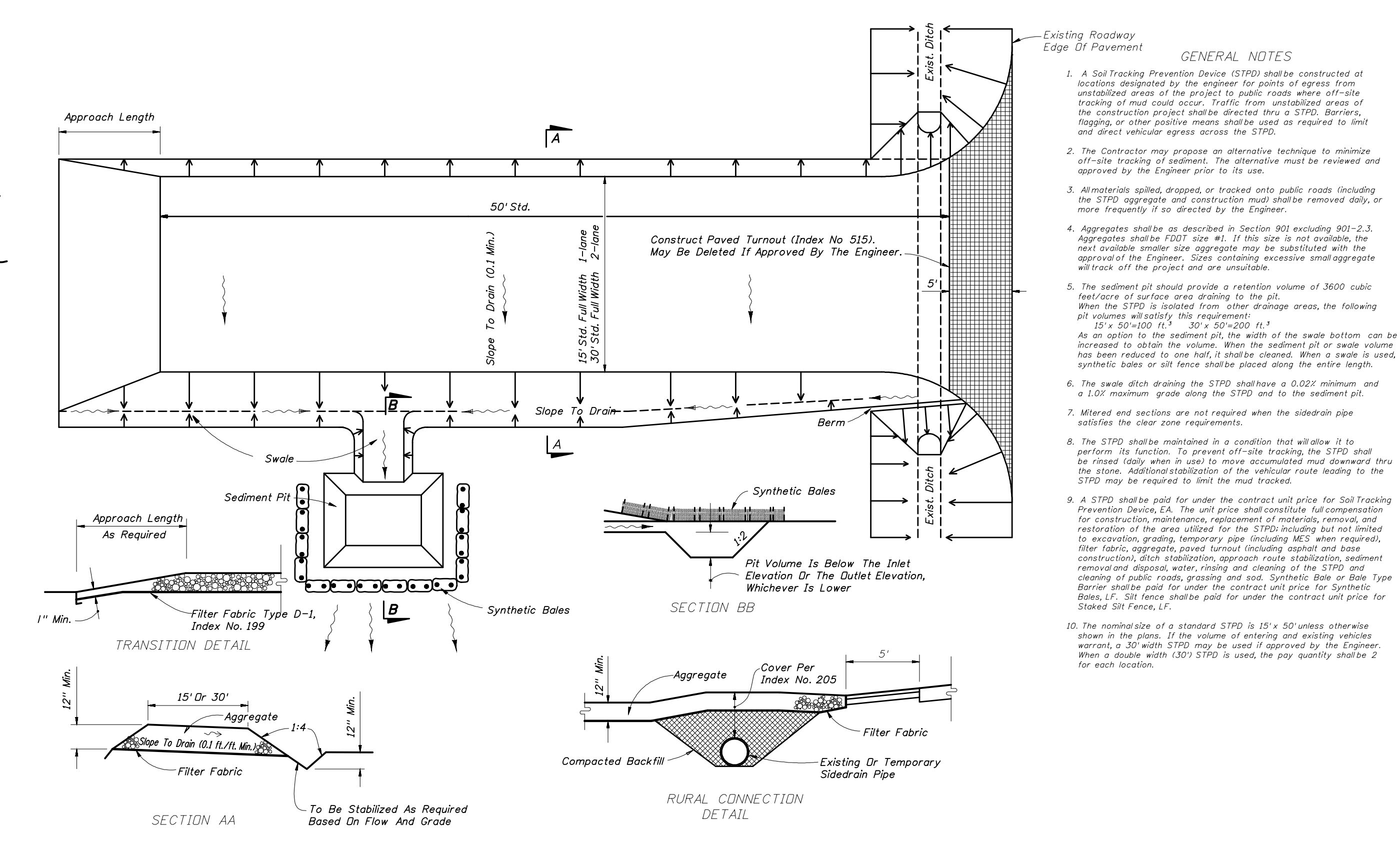
Temporary Erosion and Sediment Control
N.T.S.

Source: 2008 FDOT Index No. 102



Turbidity Barriers
N.T.S.

Source: 2008 FDOT Index No. 103



Soil Tracking Prevention Device Type A - Temporary Gravel Construction Access
N.T.S.

Source: 2008 FDOT Index No. 106

Waterleigh PD - Parcels 10 and 11

Orange County, Florida

No.	Revision	Date	App'd.
4	Revised per SFWMD comment	08/01/2018	
3	Field revision	05/04/2018	
2	Revised per SFWMD comment	01/25/2017	
1	Revised per SFWMD comment	01/06/2017	

Designed by: JRH
Checked by: JRH

Issued for: SFWMD ERP
Date: June 8, 2018

Erosion Control Details

Vertical Datum: NAVD88

Drawing Number

C1.02

Sheet of

James Hoffman, P.E.
P.E. # 75623
DATE: Aug. 01, 2018
Project Number: 61701.06

Saved Monday, April 23, 2018 3:27:00 PM COERLICH Plotted Wednesday, August 1, 2018 8:12:23 AM Fitzpatrick, Len



225 E. Robinson Street
Suite 300
Orlando, FL 32801
407.839.4006
Certificate of Authorization
Number FL #3932

OWNERSHIP/MAINTENANCE:		
ROADWAYS	PRIVATE:	TO BE OWNED AND MAINTAINED BY PROPERTY OWNERS ASSOCIATION.
CROSS ACCESS/UTILITY/DRAINAGE/ LANDSCAPE EASEMENTS	PRIVATE:	TO BE OWNED AND MAINTAINED BY PROPERTY OWNERS ASSOCIATION.
STORMWATER TRACT SW-1	PUBLIC:	TO BE OWNED AND MAINTAINED BY ORANGE COUNTY WITH USE AGREEMENT TO ALLOW H.O.A. ABILITY TO MAINTAIN FOR AESTHETIC PURPOSES.
STORMWATER AREA - PHASES 1 AND 2	PRIVATE:	TO BE OWNED AND MAINTAINED BY PROPERTY OWNERS ASSOCIATION.
ONSITE SANITARY SEWER, RECLAIMED WATER & POTABLE WATER SYSTEM	PRIVATE:	TO BE OWNED AND MAINTAINED BY PROPERTY OWNERS ASSOCIATION.
PUBLIC PARK AND CIVIC	PRIVATE:	TO BE OWNED AND MAINTAINED BY PROPERTY OWNERS ASSOCIATION.
OPEN SPACE	PRIVATE:	TO BE OWNED AND MAINTAINED BY PROPERTY OWNERS ASSOCIATION.
WETLANDS, UPLAND BUFFERS, OPEN WATER TRACTS	PRIVATE:	TO BE OWNED AND MAINTAINED BY THE PROPERTY OWNERS ASSOCIATION WITH DEVELOPMENT RIGHTS TO ORANGE COUNTY AND CONSERVATION EASEMENT GRANTED TO ORANGE COUNTY.
ORANGE COUNTY UTILITY APF TRACT	PUBLIC:	TO BE OWNED AND MAINTAINED BY ORANGE COUNTY.

SITE DATA:

GENERAL:	
ZONING	PD
PROPOSED UNITS - PHASE 1	300 MF UNITS
PHASE 1B	54 MF UNITS
PHASE 2	234 MF UNITS
TOTAL GROSS ACRES	47.27 AC.
PHASE 1 ACRES	15.38 AC.
PHASE 1B ACRES	6.90 AC.
PHASE 2 ACRES	16.81 AC.
OFFSITE STORMWATER	1.00 AC.
APF CR 545 POND	1.51 AC.
APF CR 545 ROW	1.57 AC.
APF OCU UTILITY TRACT	4.50 AC.
ON SITE WETLAND TO REMAIN	0.00 AC.
UPLAND BUFFER	0.00 AC.
TOTAL DEVELOPABLE ACRES	15.38 AC.
PROVIDED PUBLIC PARK/STORMWATER	4.85 AC.
NET DEVELOPABLE ACRES	10.73 AC.
RESIDENTIAL DENSITY	27.96 DU/AC.

SETBACKS:

FRONT	10' (1)
SIDE	15' / 10' for front porch or bay
SIDE STREET	15' / 10' for front porch
REAR	20'
LAKEFRONT	50' FROM NORMAL HIGH WATER ELEV.
BLDG TO BLDG SEPARATION	20' (2)

NOTES:
(1) AWNINGS AND OTHER OVERHANGS MAY EXTEND UP TO FIVE (5) FEET INTO THIS SETBACK.
(2) EXCEPT WHERE A FIRE WALL MEETING ORANGE COUNTY CODE REQUIREMENTS IS PROVIDED.

PHASING:

THIS PROJECT WILL BE DEVELOPED IN THREE (3) PHASES: PHASE 1 (APTS), PHASE 1B (APTS), AND PHASE 2 (APTS).

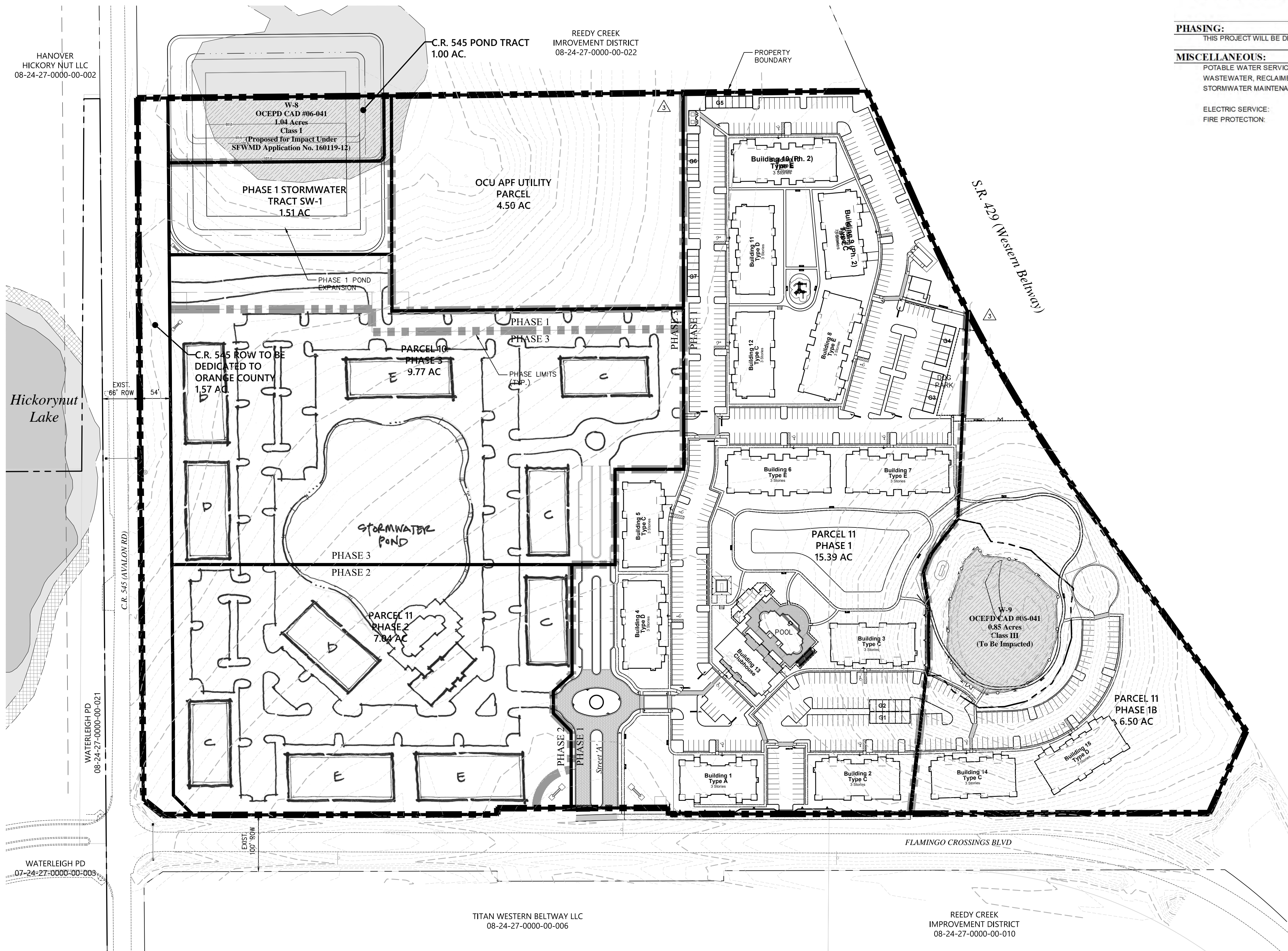
MISCELLANEOUS:

POTABLE WATER SERVICE: ORANGE COUNTY UTILITIES
WASTEWATER, RECLAIMED SERVICE: ORANGE COUNTY UTILITIES
STORMWATER MAINTENANCE: PRIVATE - PROPERTY OWNER ASSOCIATION (POND 1 AND POND 2)
PUBLIC - ORANGE COUNTY (POND 3)
DUKE ENERGY
ORANGE COUNTY

ELECTRIC SERVICE:
FIRE PROTECTION:

Legend

- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- PHASE LIMITS
- FUTURE POND EXPANSION
- PRESERVED WETLAND
- WETLAND TO BE REMOVED
- UPLAND BUFFER/ CONSERVATION EASEMENT



**Waterleigh PD -
Parcels 10 and 11**

Orange County, Florida

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1	Revised per SFWMD comment	01/06/2017	

Designed by: JRH
Checked by: JRH

Issued for: SFWMD ERP
Date: June 8, 2018

**Master Site Plan &
Site Data**

Vertical Datum: NAVD88

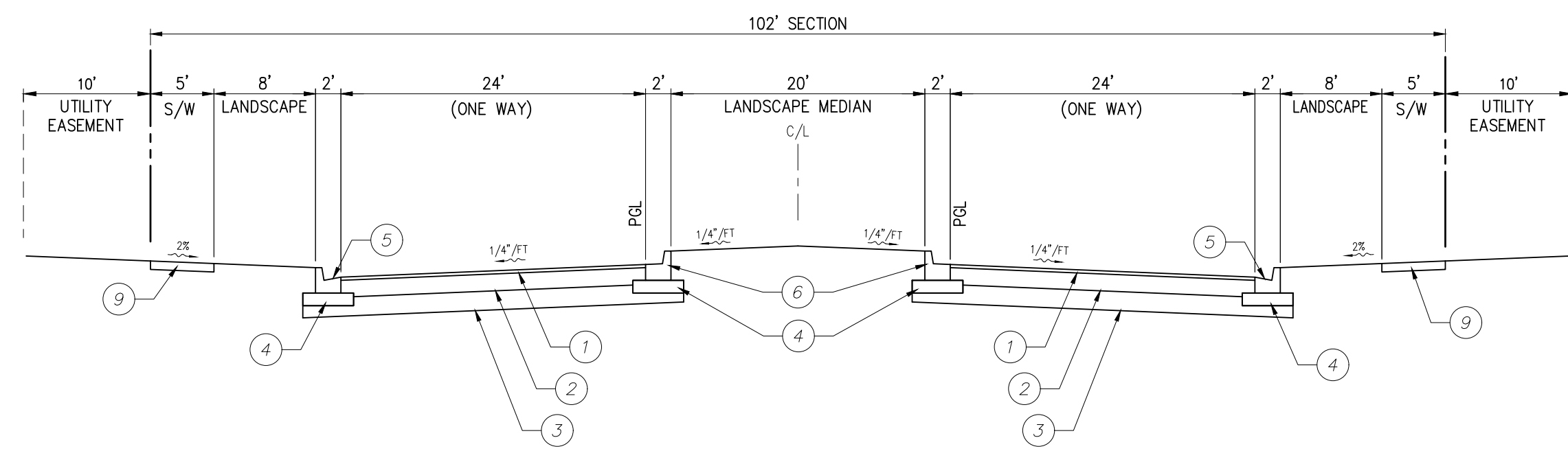
Drawing Number: **C1.03**

Sheet: of

James Hoffman, P.E.
P.E. # 75623
DATE: Aug. 01, 2018

Project Number: 61701.06

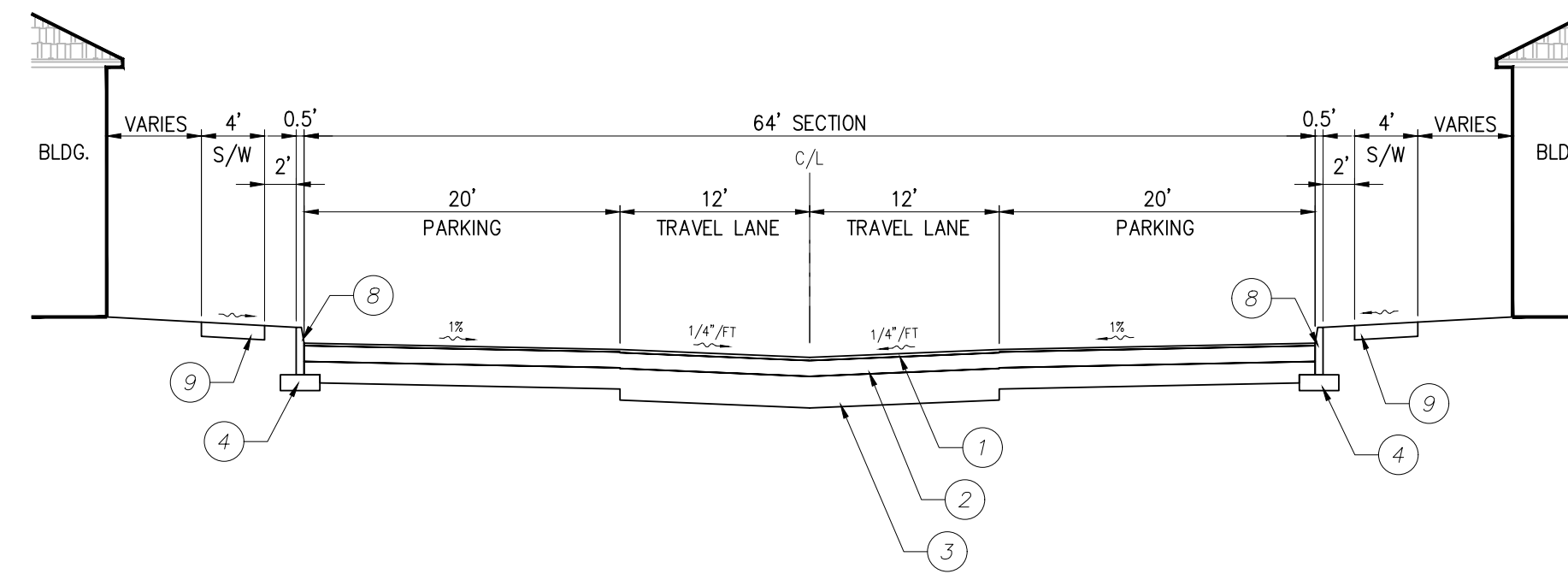
Saved Tuesday, June 5, 2018 9:51:01 AM LPTZPA TRICK Plotted Wednesday, August 1, 2018 8:12:45 AM Fitzpatrick, Leah



NOTE:
 SHADE TREE @ 40' O.C. TYPICAL
 (PER ORANGE COUNTY CODES SEC. 24-5 B)

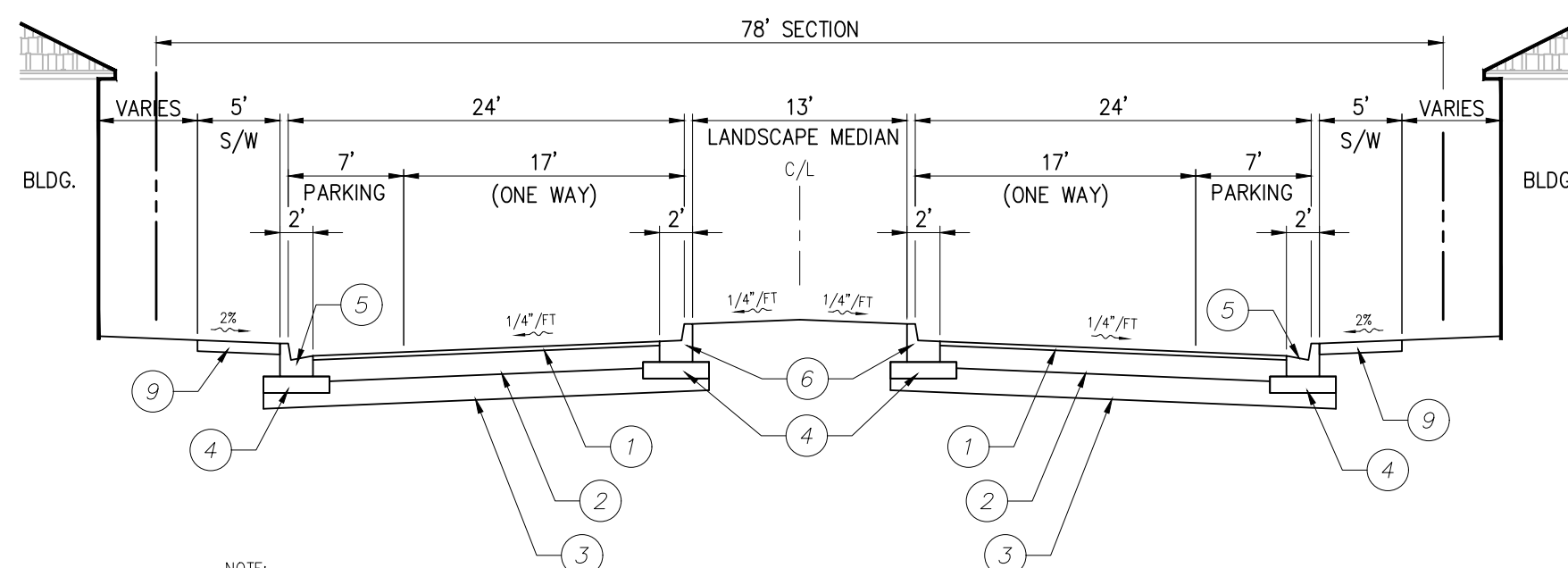
A - Typical Road Section (102' ROW)

N.T.S.



B - Typical Pavement Section

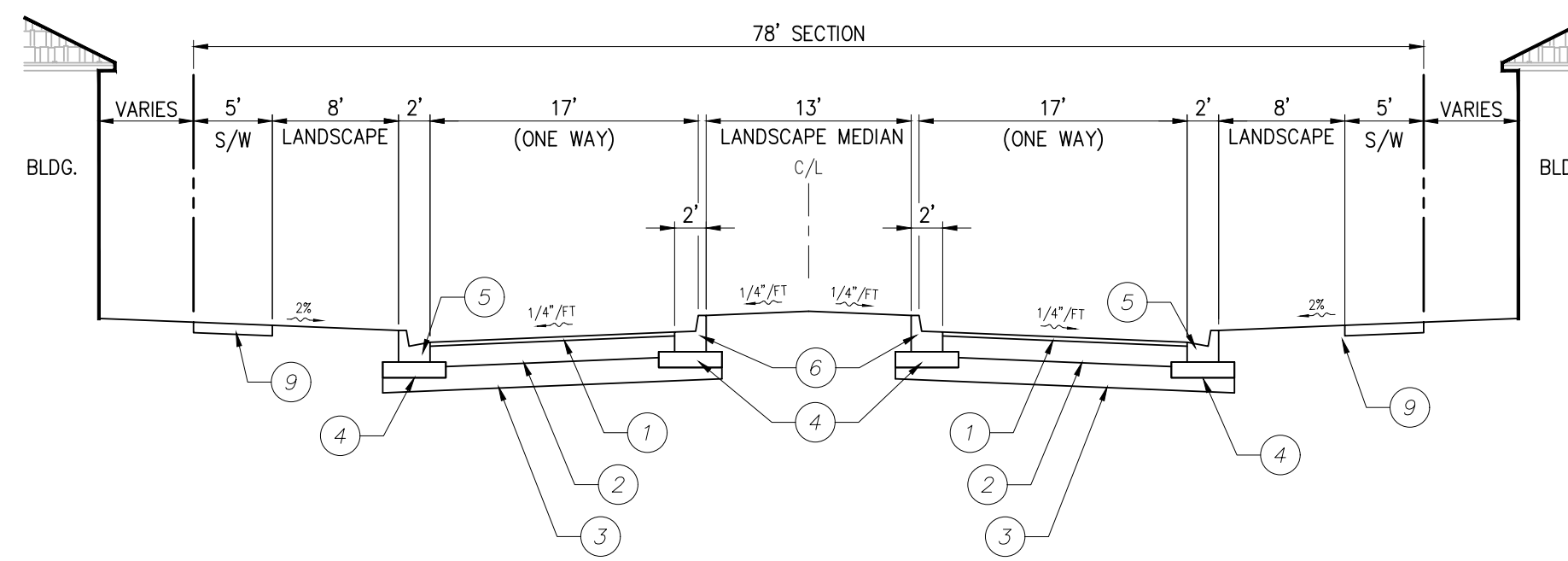
N.T.S.



NOTE:
 SHADE TREE @ 40' O.C. TYPICAL
 (PER ORANGE COUNTY CODES SEC. 24-5 B)

C - Typical Road Section (78' Section w/Parking)

N.T.S.



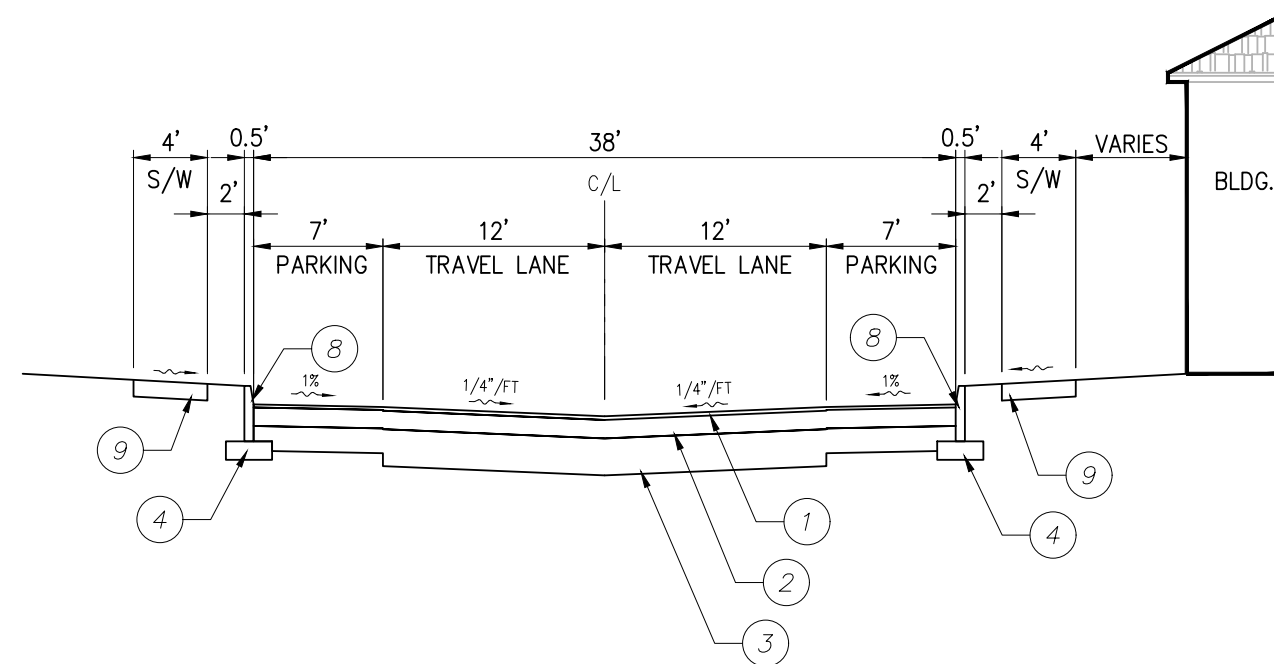
D - Typical Road Section (78' Section)

N.T.S.

LEGEND:

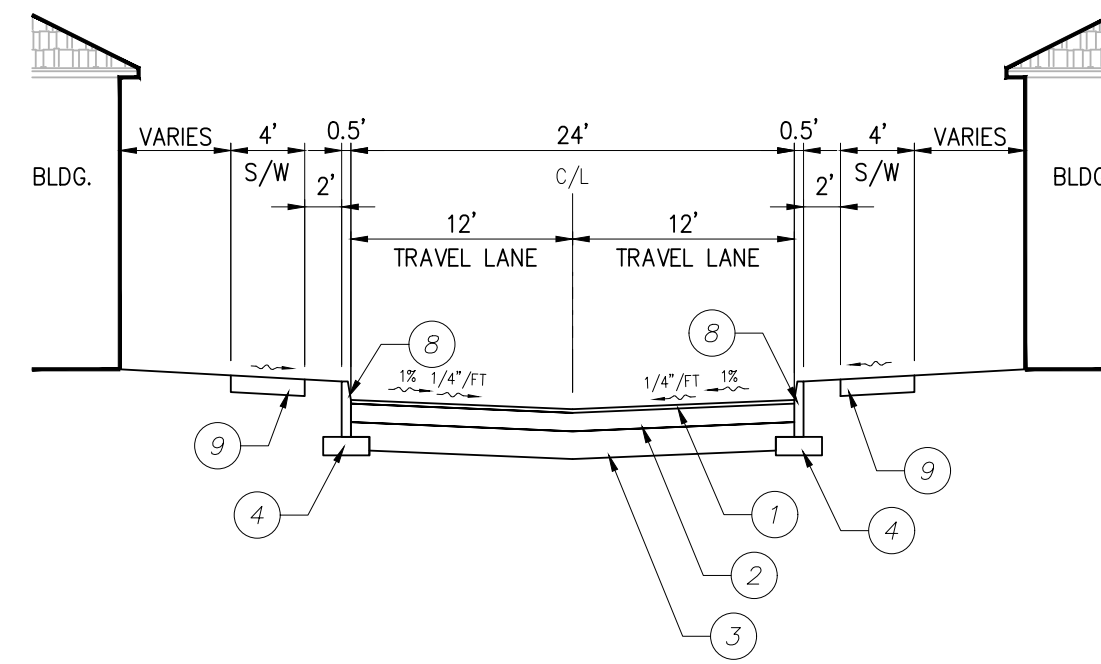
- ① 1 1/2" (IN.) SP 9.5 ASPHALT (COMPACTED TO 93% OF LABORATORY MAXIMUM DENSITY)
- ② 6" (IN.) CRUSHED CONCRETE BASE (LBR 160) (COMPACTED TO A DENSITY OF 98% MODIFIED PROCTOR)
 ALTERNATE:
 6" (IN.) SOIL-CEMENT BASE (MIN. 7-DAY STRENGTH OF 500/450 PSI, MIXED IN PLACE/PLANT MIXED) (COMPACTED TO 95% OF MAXIMUM DRY DENSITY PER ASTM D-558 OR GREATER)
- ③ 6" (IN.) STABILIZED SUBGRADE (FBV 75 PSI OR LBR 40) (COMPACTED TO 98% OF MODIFIED PROCTOR MAX. DRY DENSITY PER ASTM D 1557)
- ④ 6" (IN.) STABILIZED SUBGRADE IN CURB AREA TO EXTEND 12" (IN.) EACH SIDE TO 50 FBV
- ⑤ TYPE 'f' CONCRETE CURB
- ⑦ TYPE 'f' CONCRETE CURB (MODIFIED-SPILL OUT)
- ⑧ TYPE 'd' CONCRETE CURB
- ⑨ 4" (IN.) CONC. SIDEWALK (3000 P.S.I.)

* FOR DETAILS ON PAVEMENT SECTIONS, SEE REPORT BY UNIVERSAL ENGINEERING SCIENCES, DATED MAY 18, 2016.
 **CRUSHED CONCRETE BASE WITHIN PUBLIC RIGHTS OF WAY SHALL MEET THE REQUIREMENTS OF SECTION 204-2 OF THE F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.



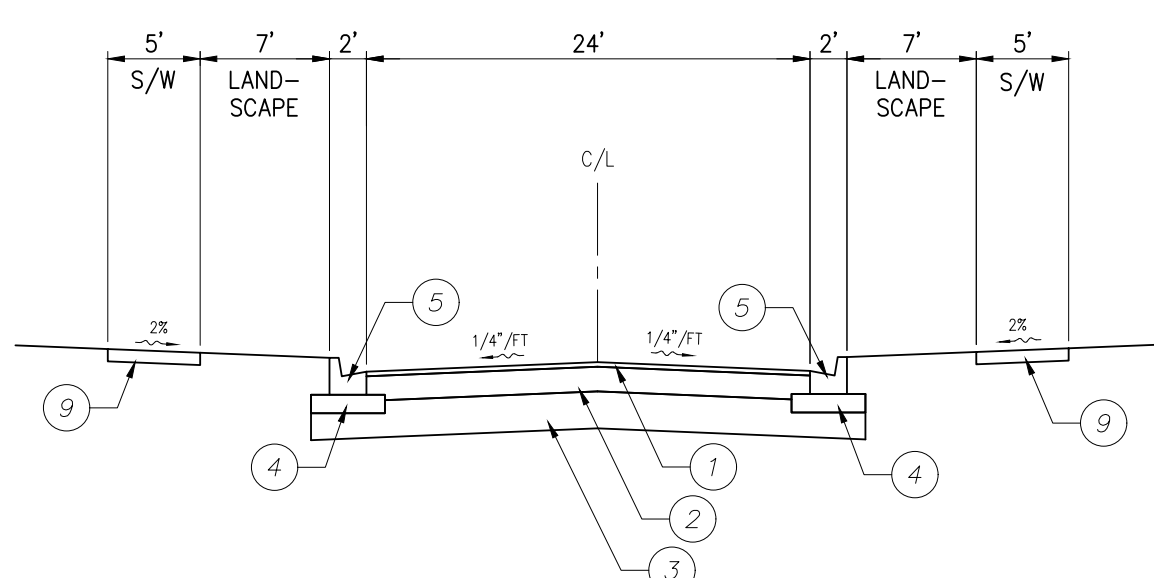
E - Typical Road Section

N.T.S.



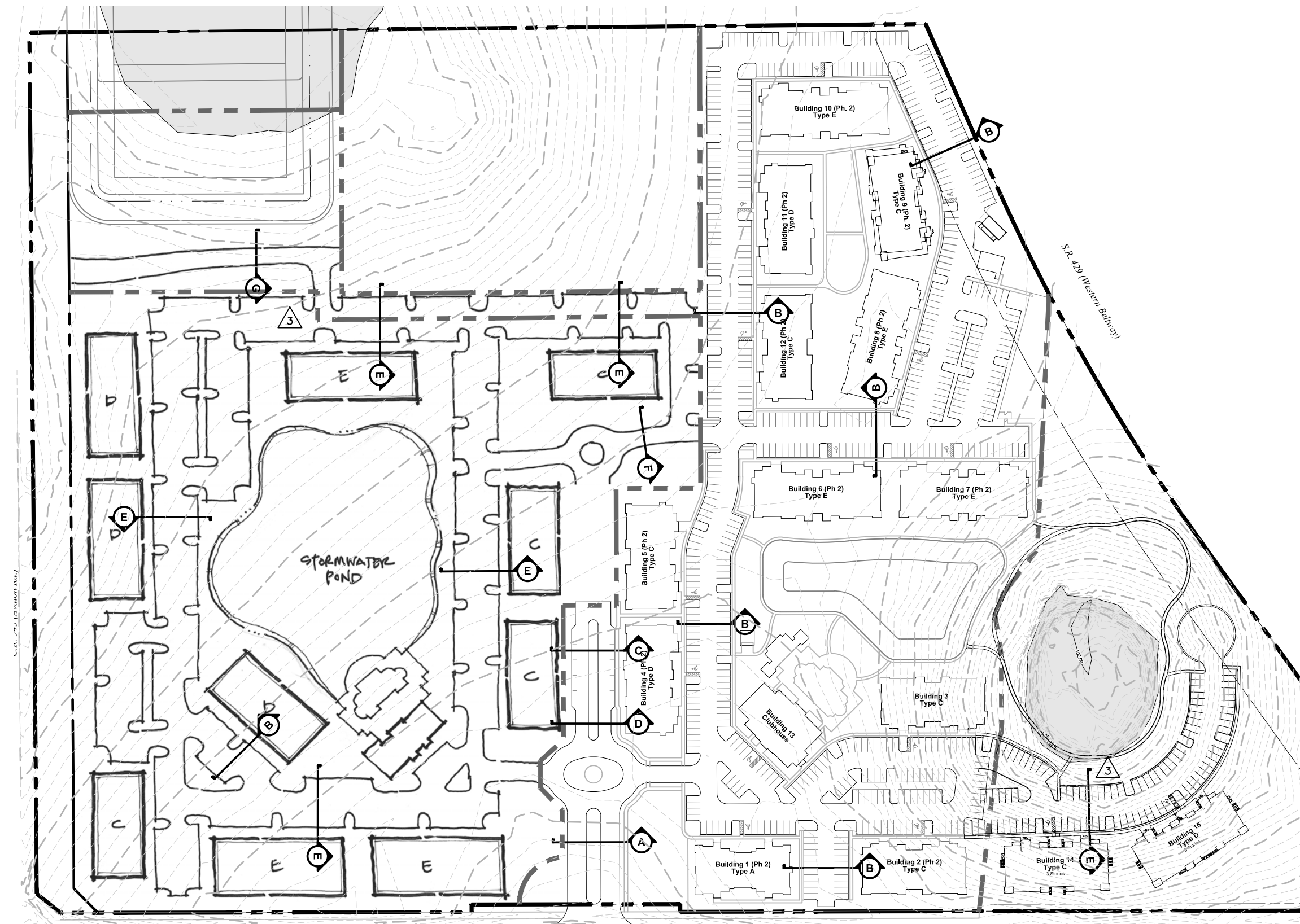
F - Typical Road Section

N.T.S.



G - Typical Road Section

N.T.S.



**Waterleigh PD -
 Parcels 10 and 11**

Orange County, Florida

No.	Revision	Date	Appr.
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1	Revised per SFWMD comment	01/06/2017	
Designed by		Checked by	
JRH		JRH	
Issued for		Date	
SFWMD ERP		June 8, 2018	

**Typical Road Sections
 & Details**

Vertical Datum: NAVD88

Drawing Number

C1.04

Sheet of

James Hoffman, P.E.
 P.E. # 75623
 DATE: Aug. 01, 2018

Project Number
 61701.06



225 E. Robinson Street
Suite 300
Orlando, FL 32801
407.839.4006
Certificate of Authorization
Number FL #3932

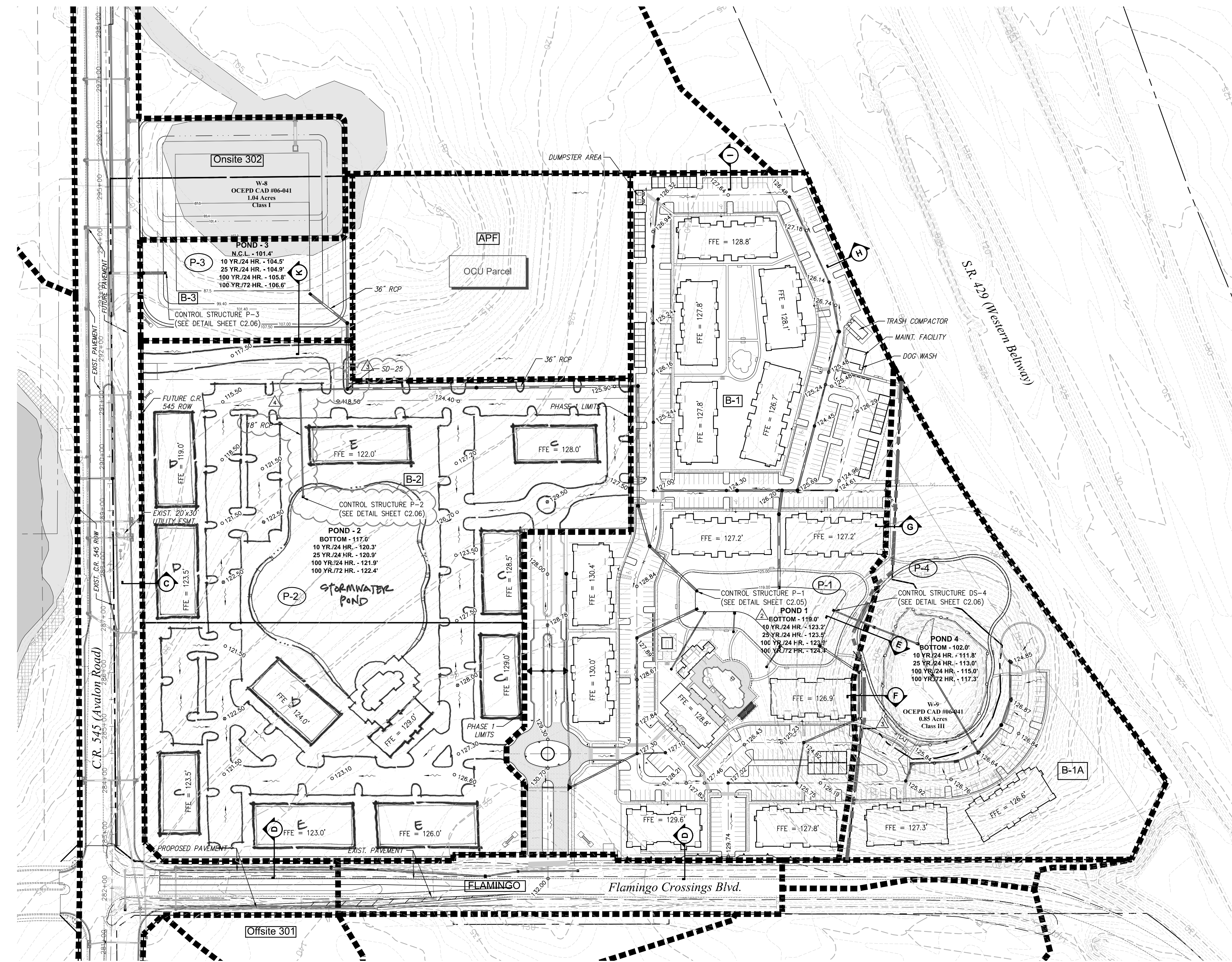
MINIMUM FINISHED FLOOR ELEVATIONS

Basin ID	Node ID	100yr/72hr Stage	Minimum Finished Floor Elevation ¹
B-1	P-1	124.4	125.0
B-2	P-2	122.4	123.0
B-1A	P-4	117.4	117.4
APF			
HORTON-INT			
FLAMINGO	POND 3	106.6	106.8
ONSITE-302			
OFFSITE-301			

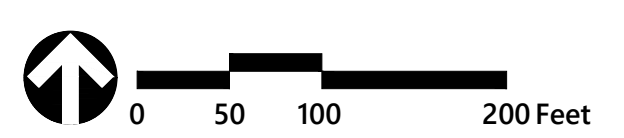
Notes:
1. Finished floor elevations depicted on grading plan are based on preliminary site grading and may change with final engineering construction plans. Minimum finished floor elevation within each basin shall be 1-foot above the peak stage in the receiving pond for the 100yr/72hr storm event.
2. All elevations are NAVD, 1988

Legend

- PD BOUNDARY
- PHASE BOUNDARY
- DRAINAGE BASIN BOUNDARY
- PROPOSED STORM DRAIN, CURB INLET, MANHOLE
- EXISTING STORM DRAIN, CURB INLET, MANHOLE
- FLOW DIRECTION
- EXISTING TOPOGRAPHIC CONTOUR
- 120.0 PROPOSED GRADE



NOTE: FINISHED FLOOR ELEVATIONS FOR EACH BUILDING ARE BASED ON PRELIMINARY SITE GRADING. MINIMUM FINISHED FLOOR ELEVATIONS SHALL BE SET TO 1-FT ABOVE THE 100-YEAR 72-HR STORM STAGE FOR EACH RESPECTIVE BASIN.



**Waterleigh PD -
Parcels 10 and 11**

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Designed by: JRH
Checked by: JRH
Issued for: SFWMD ERP
Date: June 8, 2018

Grading & Drainage Plan

Vertical Datum: NAVD88

Drawing Number

C2.00

Sheet of

James Hoffman, P.E.
P.E. # 75623
DATE: Aug. 01, 2018

Project Number
61701.06

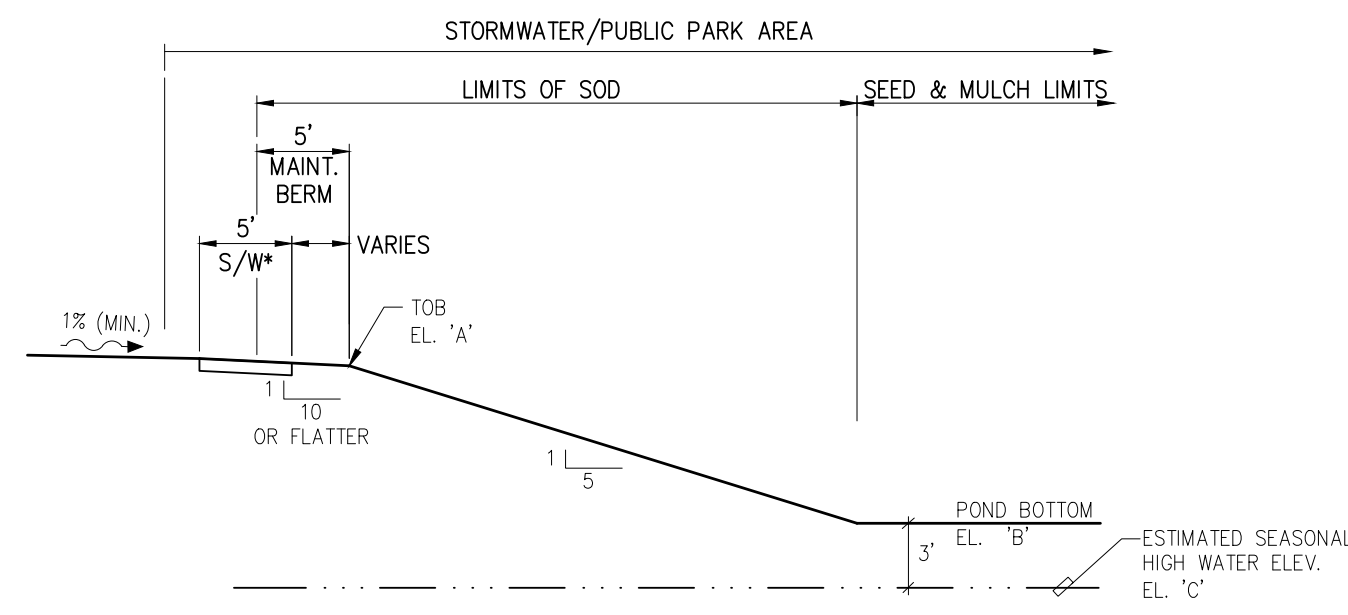
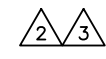
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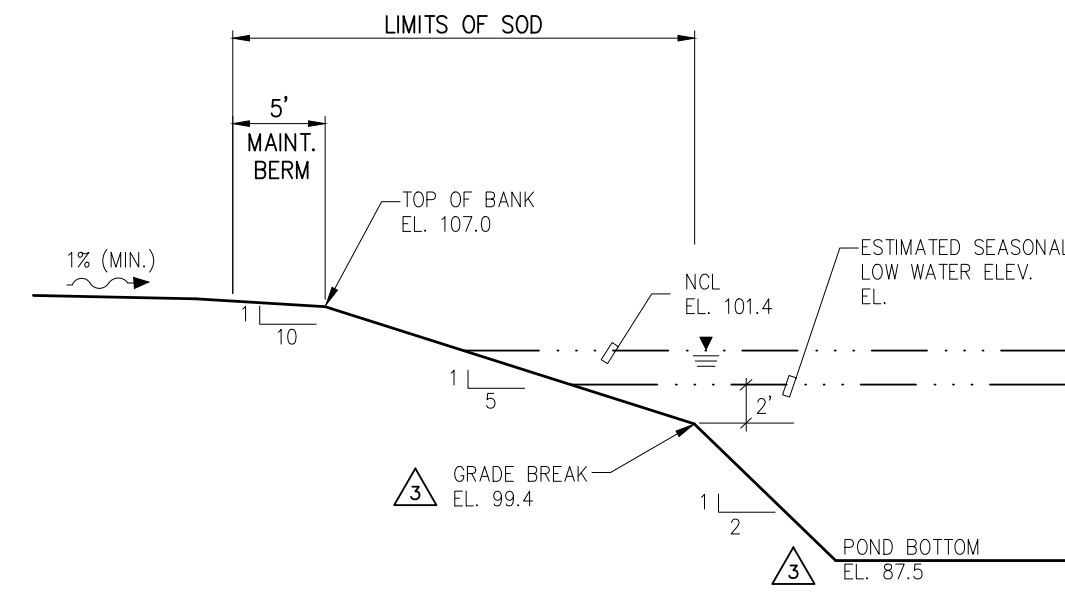
vhb.com
225 E. Robinson Street
Suite 300
Orlando, FL 32801
407.839.4006
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Number FL #3932

Dry Pond Summary Chart

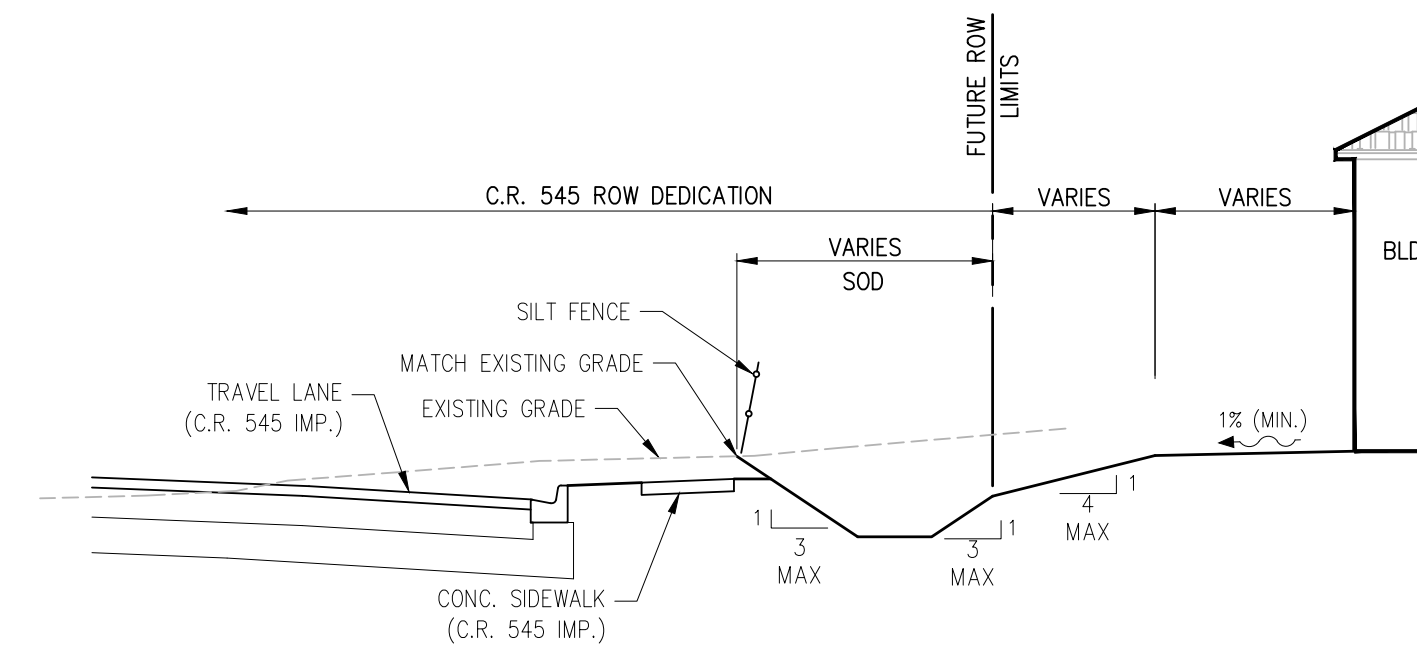
Pond #	EL. 'A'	EL. 'B'	EL. 'C'
1	125.0	119.0	113.0
2	126.5	121.0	106.5
4	123.0	102.0	



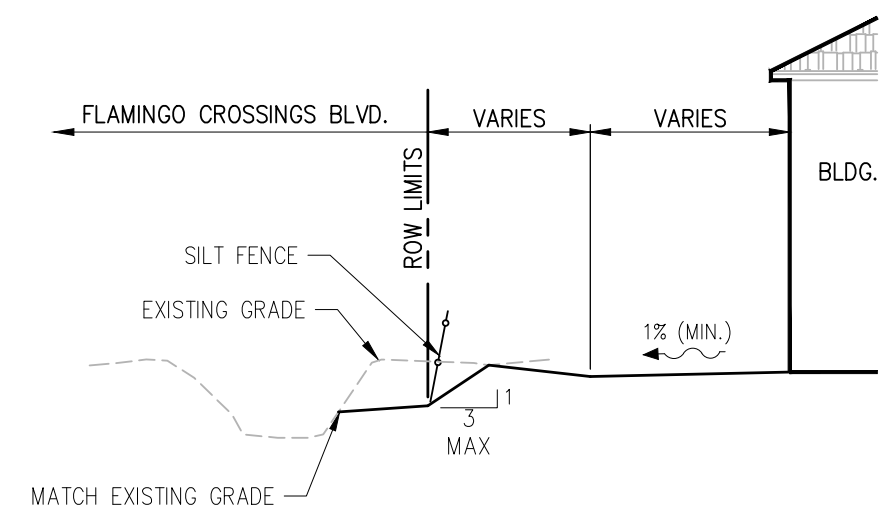
Typical Dry Pond Detail
N.T.S.



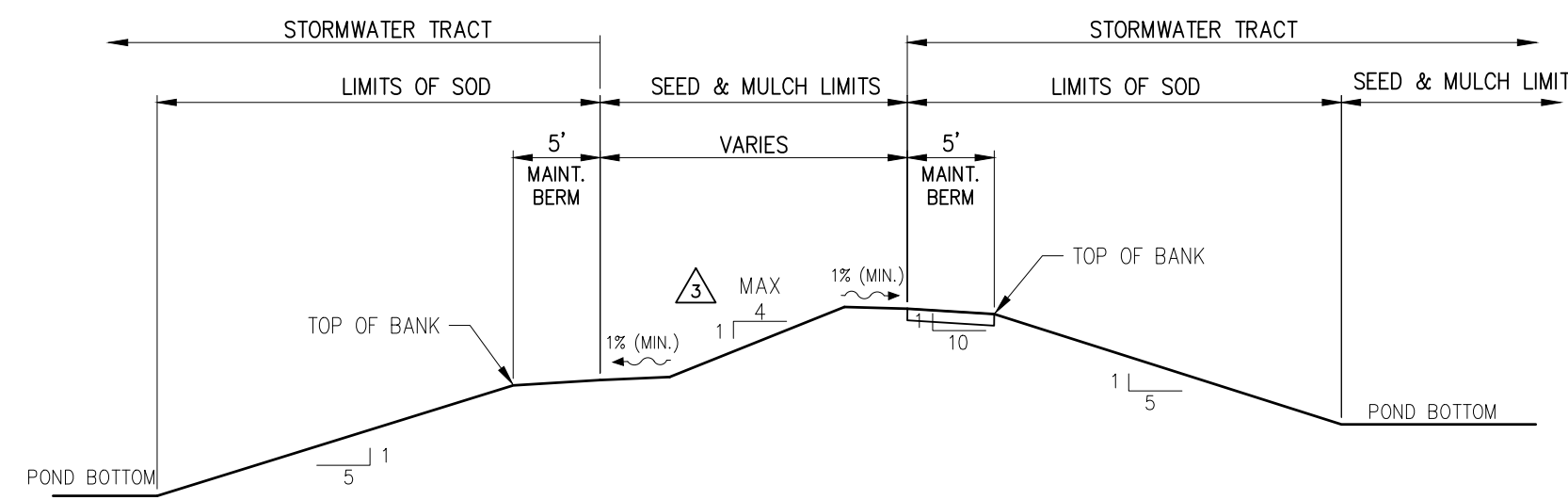
Typical Wet Pond Detail - Pond 3
N.T.S.



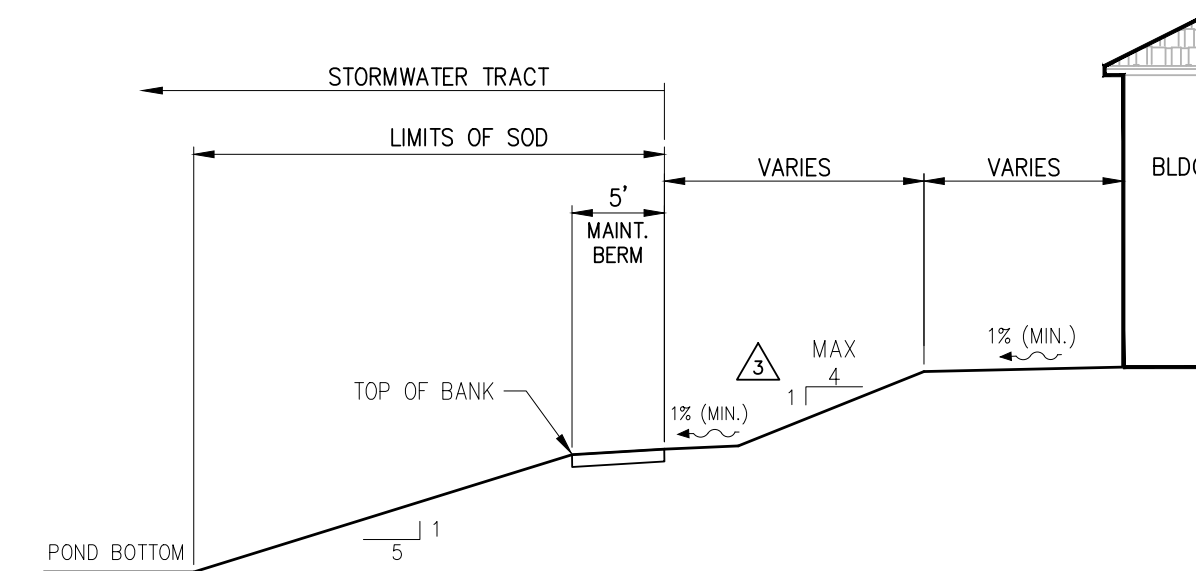
C - Typical Grading Section
N.T.S.



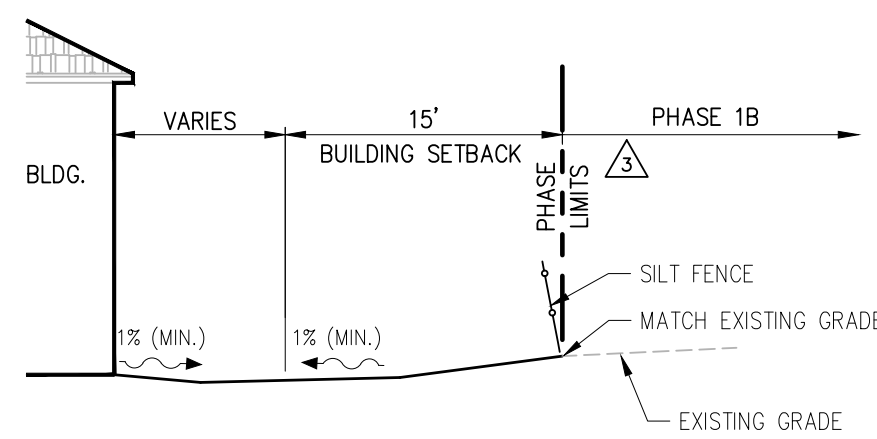
D - Typical Grading Section
N.T.S.



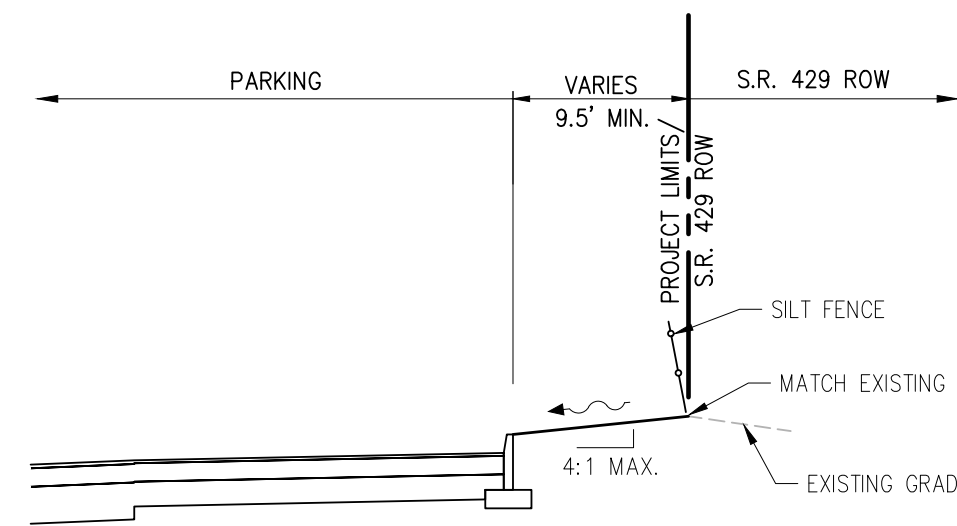
E - Typical Grading Section
N.T.S.



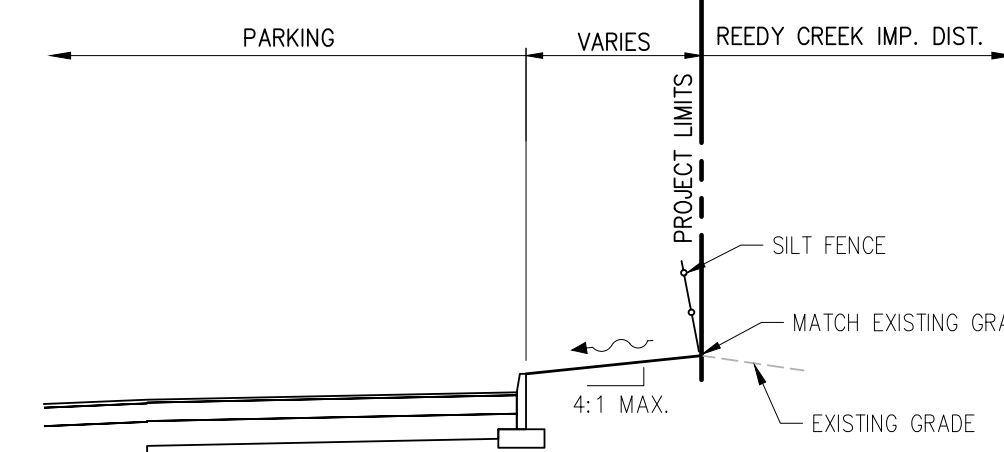
F - Typical Grading Section
N.T.S.



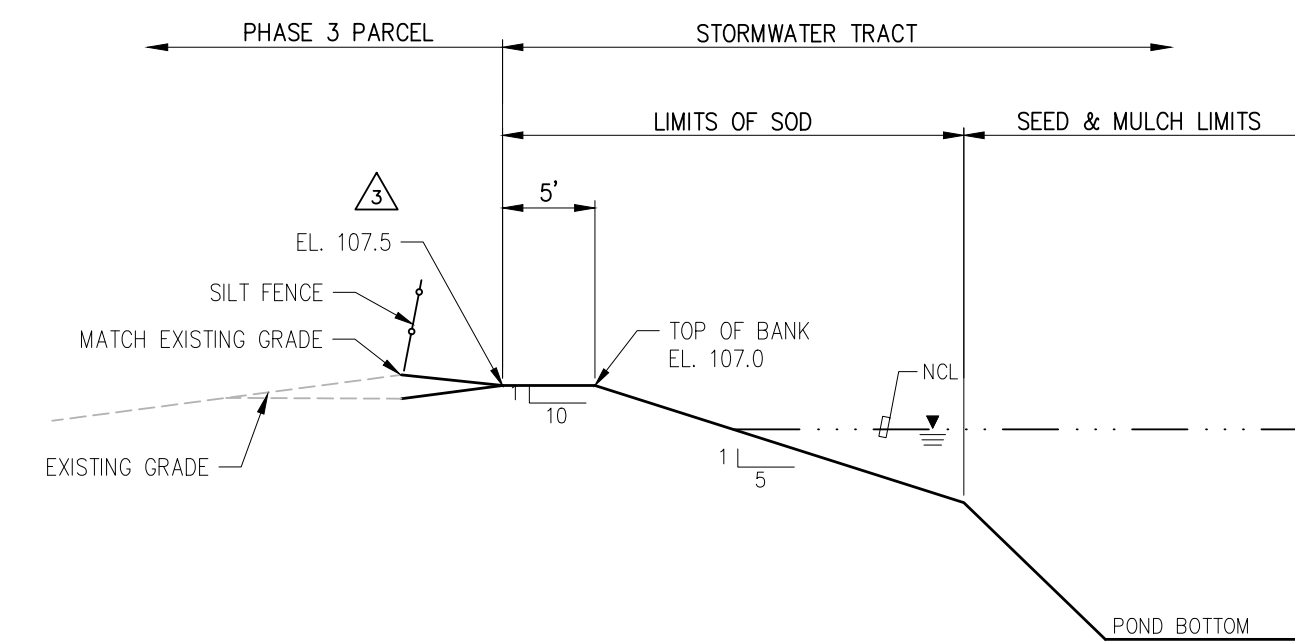
G - Typical Grading Section
N.T.S.



H - Typical Grading Section
N.T.S.



I - Typical Grading Section
N.T.S.



K - Typical Grading Section
N.T.S.

**Waterleigh PD -
Parcels 10 and 11**

Orange County, Florida

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Designed by: JRH
Checked by: JRH
Issued for: SFWMD ERP
Date: June 8, 2018

Grading Details

Vertical Datum: NAVD88

Drawing Number

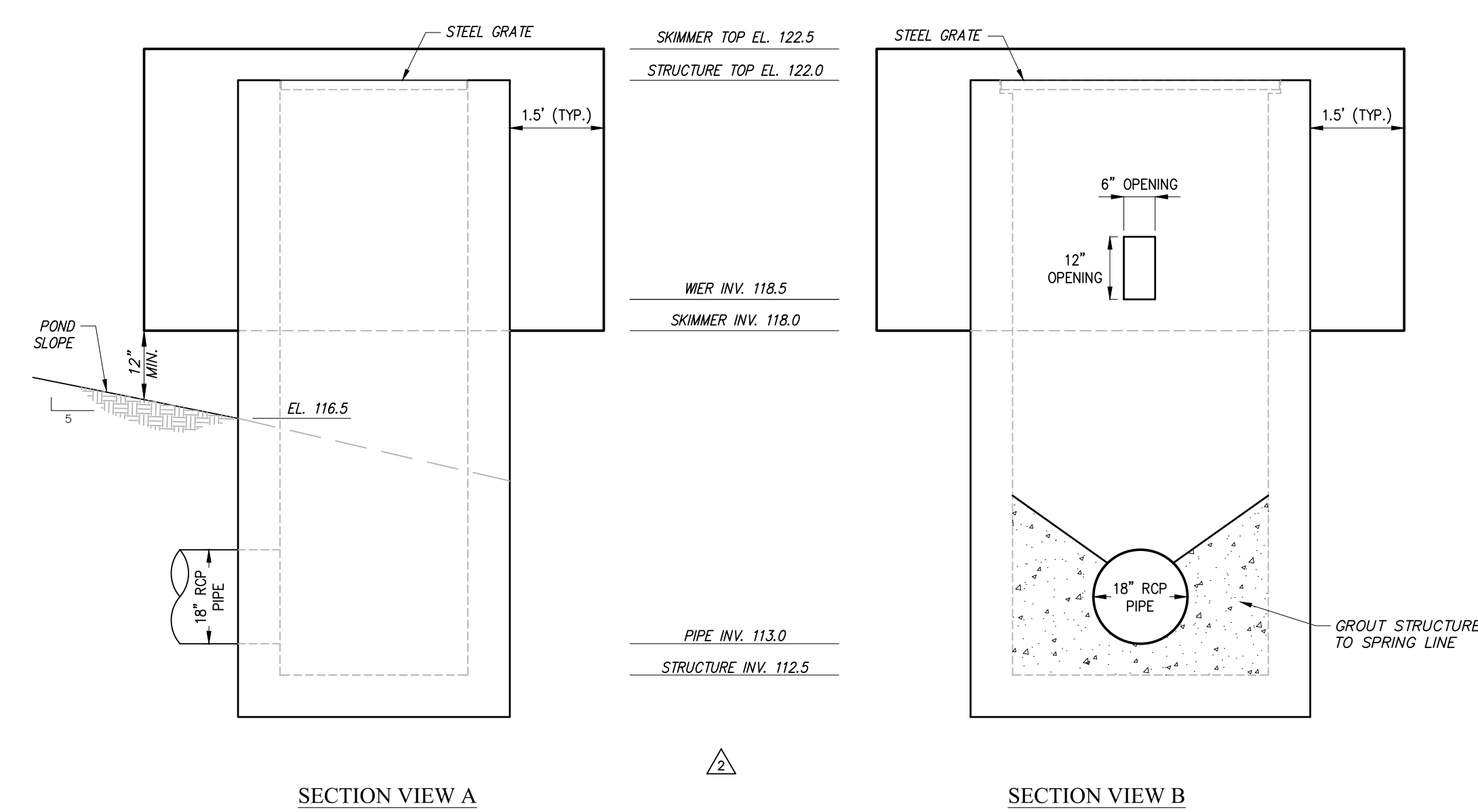
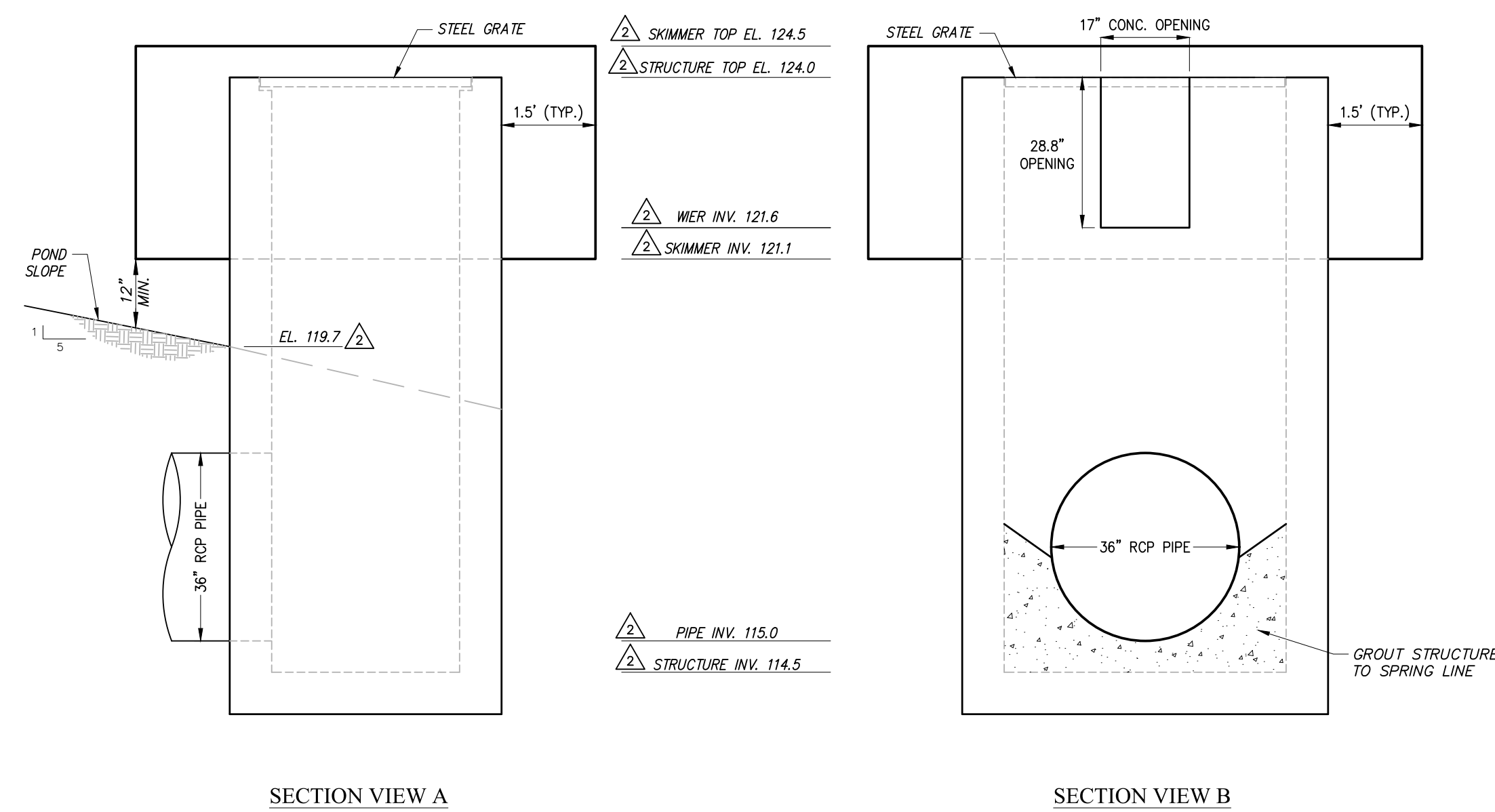
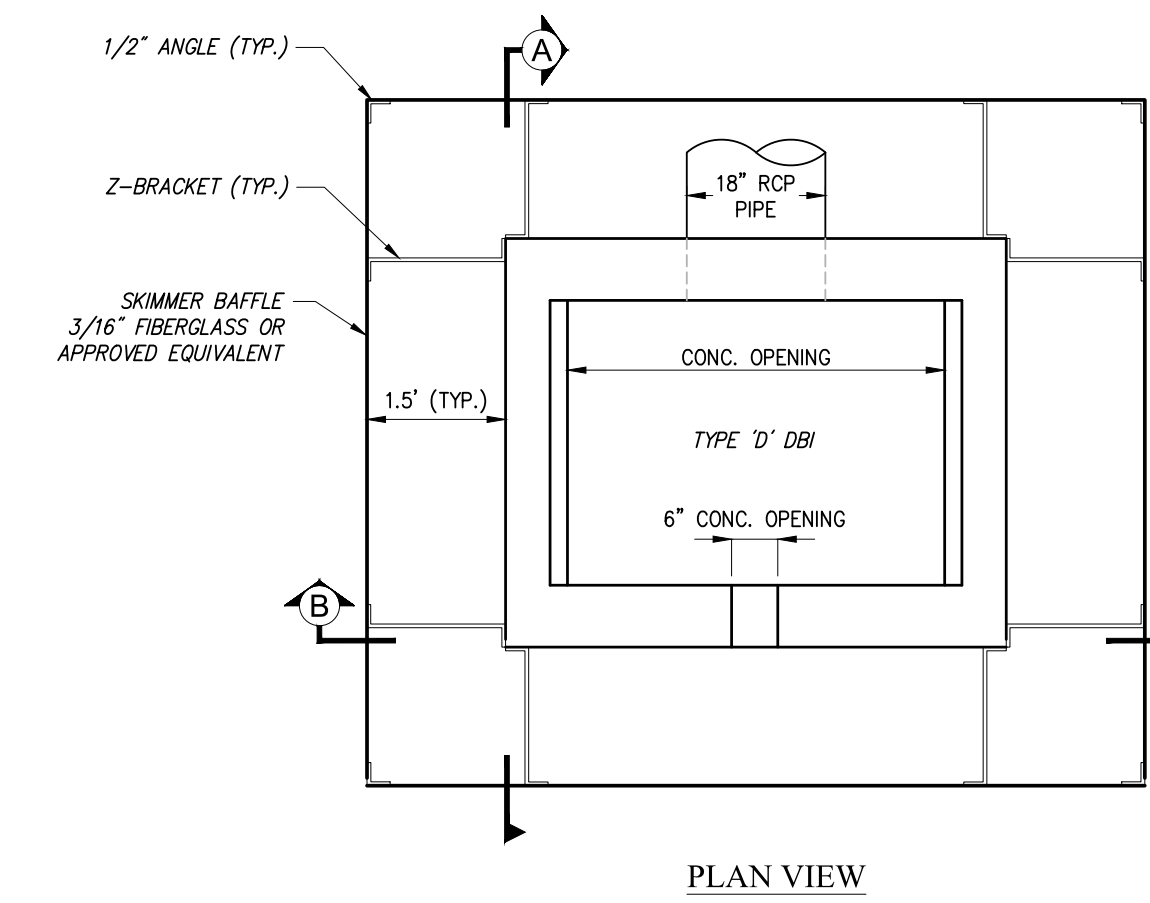
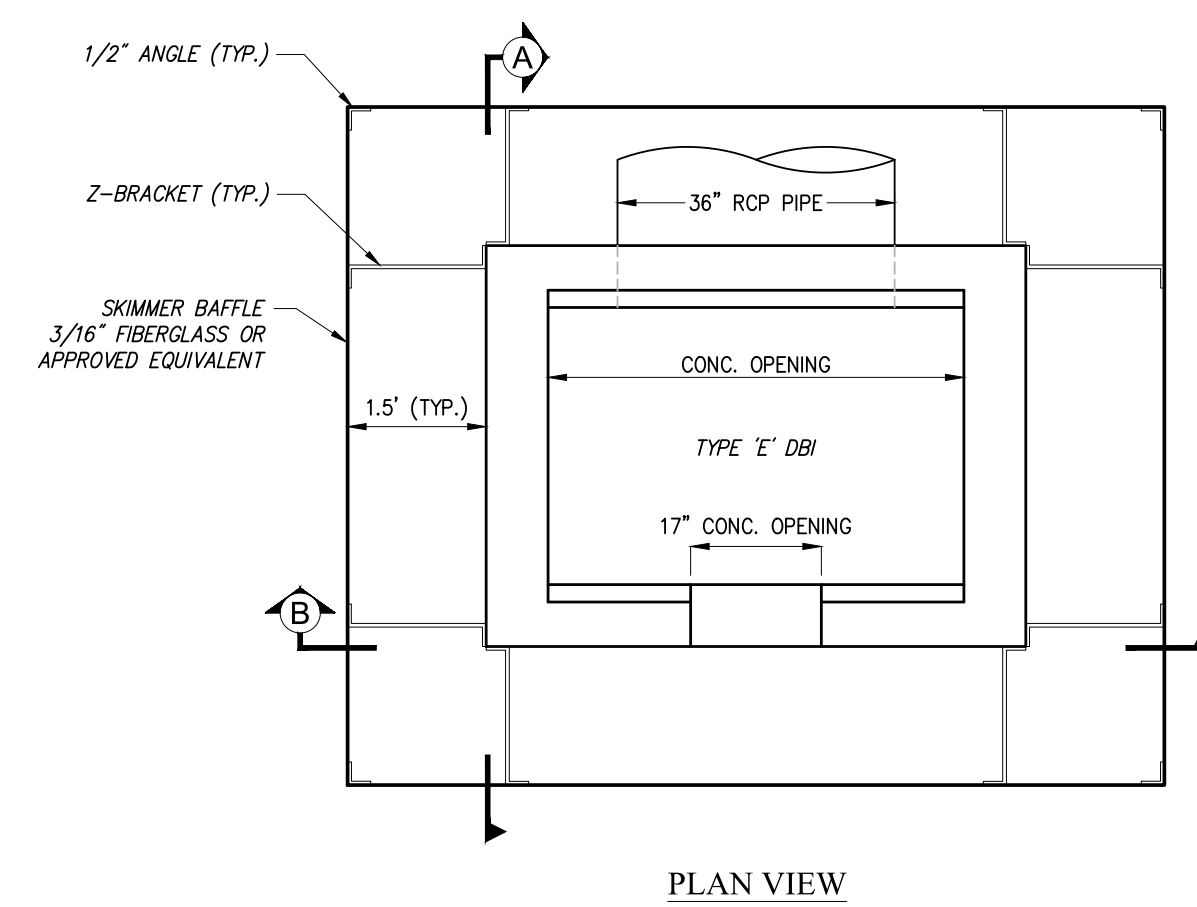
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Sheet of

James Hoffman, P.E.
P.E. # 75623
DATE: Aug. 01, 2018

Project Number
61701.06

CONTROL STRUCTURE NOTES (TYP.):
 1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO BE REVIEWED BY ENGINEER FOR ALL DRAINAGE STRUCTURES BEFORE FABRICATION.
 2. ALL BOX STRUCTURES TO INCLUDE GRATES & CHAINS.
 3. A SURVEY BENCHMARK SHALL BE SET INTO THE TOP OF EACH CONTROL STRUCTURE AS REQUIRED BY SFWMD ENVIRONMENTAL RESOURCE PERMIT APPLICANT'S HANDBOOK.



NOTE: SKIMMER TO BE MOUNTED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

Outfall Control Structure Detail - #P-1

N.T.S.

NOTE: SKIMMER TO BE MOUNTED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

Outfall Control Structure Detail - #P-2

N.T.S.

**Waterleigh PD -
Parcels 10 and 11**

Orange County, Florida

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Designed by		Checked by	
JRH		JRH	
Issued for		Date	
SFWMD ERP		June 8, 2018	

Drawing Title
**Control Structure
Details**

Vertical Datum: NAVD88

Drawing Number

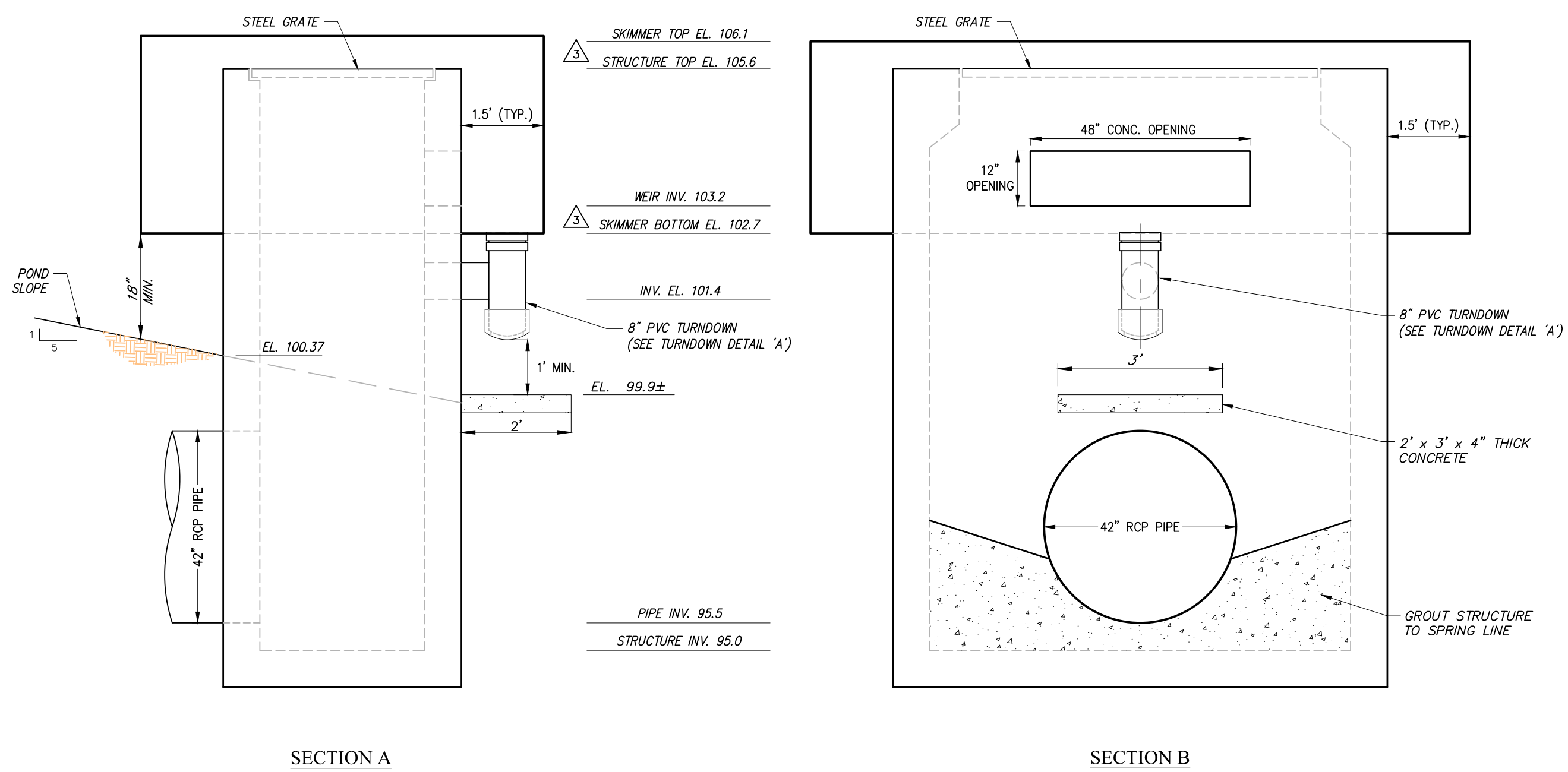
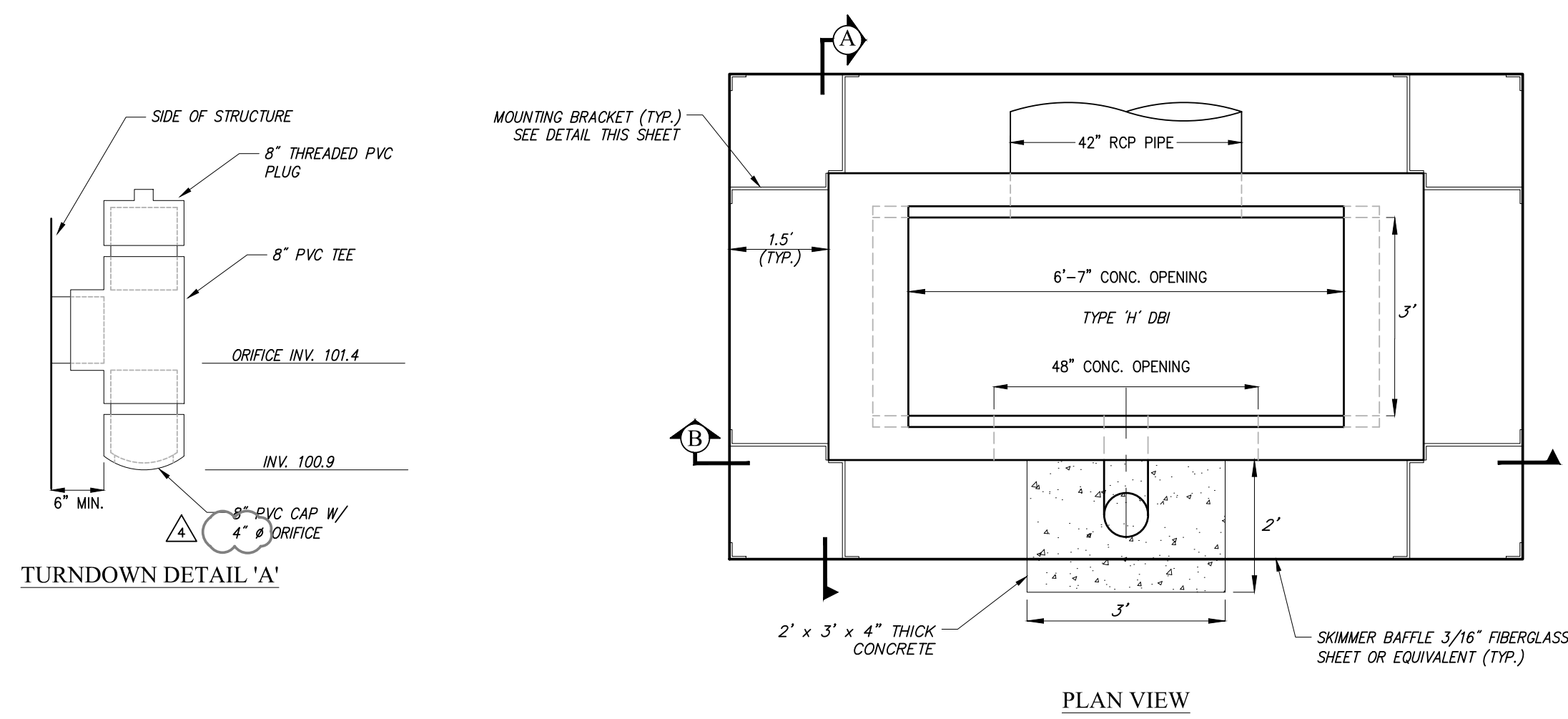
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Sheet of

James Hoffman, P.E.
P.E. # 75623
DATE: Aug. 01, 2018

Project Number
61701.06

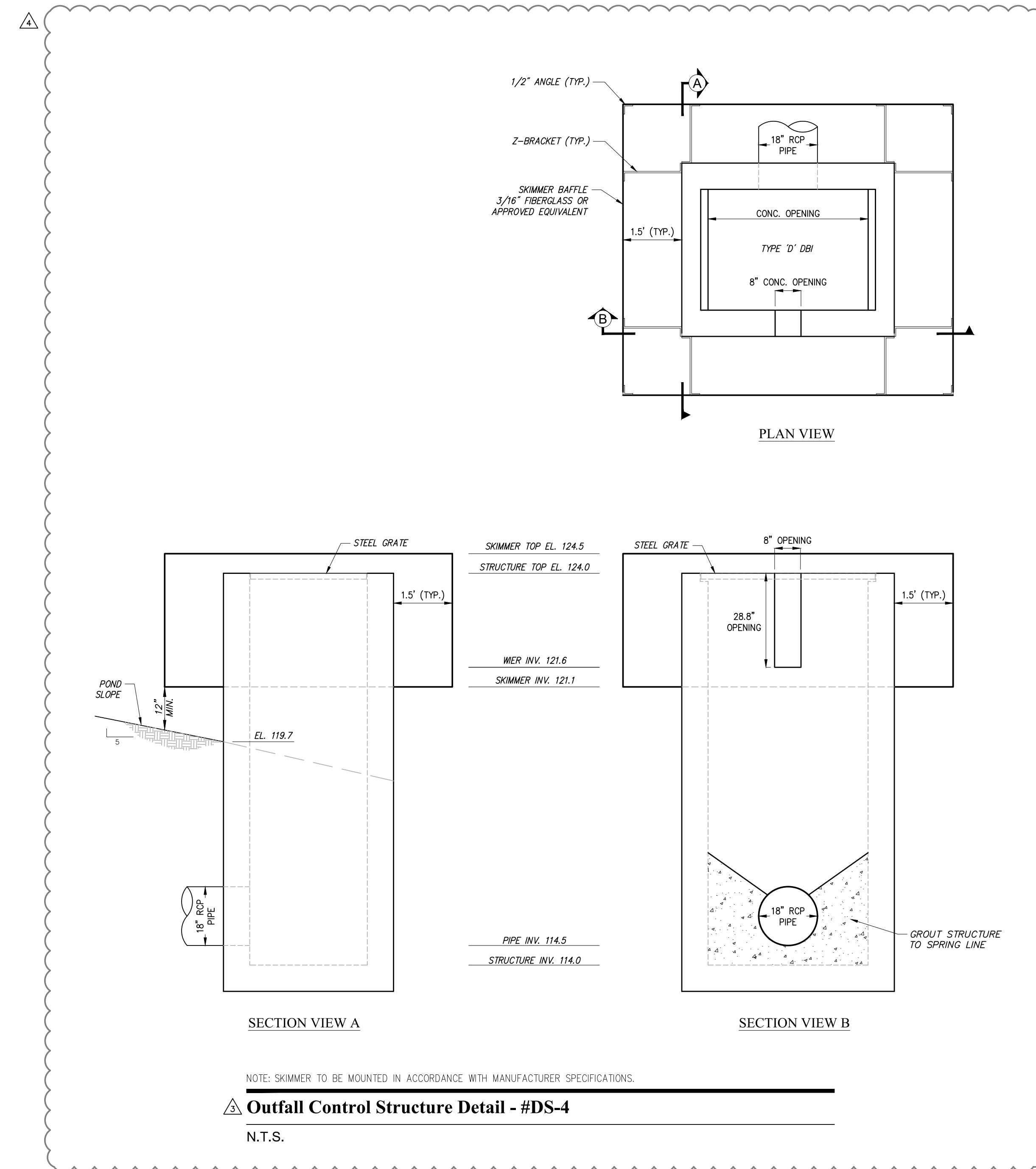
- CONTROL STRUCTURE NOTES (TYP.):**
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO BE REVIEWED BY ENGINEER FOR ALL DRAINAGE STRUCTURES BEFORE FABRICATION.
 - ALL BOX STRUCTURES TO INCLUDE GRATES & CHAINS.
 - A SURVEY BENCHMARK SHALL BE SET INTO THE TOP OF EACH CONTROL STRUCTURE AS REQUIRED BY SFWMD ENVIRONMENTAL RESOURCE PERMIT APPLICANT'S HANDBOOK.



NOTE: SKIMMER TO BE MOUNTED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

Outfall Control Structure Detail - #P-3

N.T.S.



NOTE: SKIMMER TO BE MOUNTED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

Outfall Control Structure Detail - #DS-4

N.T.S.

**Waterleigh PD -
Parcels 10 and 11**

Orange County, Florida

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	Designed by		Checked by
	JRH		JRH
	Issued for		Date
	SFWMD ERP		June 8, 2018

**Control Structure
Details**

Vertical Datum: NAVD88

Drawing Number

C2.06

Sheet of

James Hoffman, P.E.
P.E. # 75623

DATE: Aug. 01, 2018

Project Number
61701.06

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33406

June 7, 2018

RE: DHR Project File No.: 2016-4629-B, Received by DHR: May 7, 2018
Application No.: 48-02575-P
Project: *Waterleigh PD Parcels 10 and 11*
County: Orange

To Whom It May Concern:

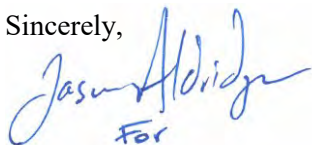
Our office reviewed the referenced project in accordance with Chapters 267.061 and 373.414, *Florida Statutes*, and implementing state regulations, for possible effects on historic properties listed, or eligible for listing, in the *National Register of Historic Places*, or otherwise of historical, architectural or archaeological value.

A review of the Florida Master Site File indicates that the project area has not been surveyed for archaeological and historical properties. Since conditions in the area are favorable for the presence of these kinds of resources, we recommend that the project area be subjected to a professional cultural resources assessment survey. The resultant survey report should conform to the provisions of Chapter 1A-46, *Florida Administrative Code*, and should be sent to our office upon completion. The report will help us complete the review process and provide comments or recommendations to the permitting agency in a timely fashion.

The Division of Historical Resources cannot endorse specific archaeological or historic preservation consultants. However, the American Cultural Resources Association maintains a listing of professional consultants at www.acra-crm.org, and the Register of Professional Archaeologists maintains a membership directory at www.rpanet.org. The Division encourages checking references and recent work history.

If you have any questions, please contact Eric Griffis, Historic Sites Specialist, by email at Eric.Griffis@dos.myflorida.com, or by telephone at 850.245.6366 or 800.847.7278.

Sincerely,

A handwritten signature in blue ink that reads "Jason Aldridge". Below the signature, the word "For" is written in blue ink.

Timothy A Parsons, Ph.D.
Director, Division of Historical Resources
& State Historic Preservation Officer

**DEED OF CONSERVATION EASEMENT
STANDARD**

Prepared by:
Bio-Tech Consulting, Inc.
3025 E. South Street
Orlando, FL 32803

Return original or certified recorded document to:
SFWMD
1707 Central Florida Parkway, Suite 200
Orlando, Florida 32809

THIS DEED OF CONSERVATION EASEMENT is given this 20 day of February, 2017, by Spring Grove Properties, LLC ("Grantor") whose mailing address is 1411 Edgewater Drive, Suite 101, Orlando, FL 32804 to SFWMD ("Grantee"). As used herein, the term "Grantor" shall include any and all heirs, successors or assigns of the Grantor, and all subsequent owners of the "Conservation Easement Area" (as hereinafter defined) and the term "Grantee" shall include any successor or assignee of Grantee.

WITNESSETH

WHEREAS, the Grantor is the fee simple owner of certain lands situated in Orange County, Florida, and more specifically described on the location map in Exhibit "A" attached hereto and incorporated herein (the "Property"); and

WHEREAS, Permit No. 48-02575-P ("Permit") and any modifications thereto issued by the Grantee authorizes certain activities which could affect wetlands or other surface waters in or of the State of Florida; and

WHEREAS, the Grantor, in consideration of the consent granted by the Permit or other good and valuable consideration provided to Grantor, is agreeable to granting and securing to the Grantee a perpetual Conservation Easement as defined in Section 704.06, Florida Statutes (F.S.), over the area of the Property described on Exhibit "B" ("Conservation Easement Area"); and

WHEREAS, Grantor grants this Conservation Easement as a condition of the Permit, solely to off-set or prevent adverse impacts to natural resources, fish and wildlife, and wetland functions; and

WHEREAS, Grantor desires to preserve the Conservation Easement Area in perpetuity in its natural condition, or, in accordance with the Permit, in an enhanced, restored, or created condition; and

NOW, THEREFORE, in consideration of the issuance of the Permit to construct and operate the permitted activity, and as an inducement to Grantee in issuing the Permit, together with other good and valuable consideration provided to the Grantor, the adequacy and receipt of which are hereby acknowledged, Grantor hereby voluntarily grants, creates, conveys, and establishes a perpetual Conservation Easement for and in favor of the Grantee upon the area of the Property described on Exhibit "B" which shall run with the land and be binding upon the Grantor, and shall remain in full force and effect forever.

The scope, nature, and character of this Conservation Easement shall be as follows:

1. Recitals. The recitals hereinabove set forth are true and correct and are hereby



incorporated into and made a part of this Conservation Easement.

2. Purpose. It is the purpose of this Conservation Easement to retain land or water areas in their existing, natural, vegetative, hydrologic, scenic, open or wooded condition and to retain such areas as suitable habitat for fish, plants, or wildlife in accordance with Section 704.06, F.S. Those wetland and upland areas included in this Conservation Easement which are to be preserved, enhanced, restored, or created pursuant to the Permit (or any modification thereto) and any Management Plan attached hereto as Exhibit "C" ("Management Plan") which has been approved in writing by the Grantee, shall be retained and maintained in the preserved, enhanced, restored, or created condition required by the Permit (or any modification thereto).

To carry out this purpose, the following rights are conveyed to Grantee by this easement:

a. To enter upon the Conservation Easement Area at reasonable times with any necessary equipment or vehicles to inspect, determine compliance with the covenants and prohibitions contained in this easement, and to enforce the rights herein granted in a manner that will not unreasonably interfere with the use and quiet enjoyment of the Conservation Easement Area by Grantor at the time of such entry; and

b. To proceed at law or in equity to enforce the provision of this Conservation Easement and the covenants set forth herein, to prevent the occurrence of any of the prohibited activities set forth herein, and to require the restoration of such areas or features of the Conservation Easement Area that may be damaged by any activity or use that is inconsistent with this Conservation Easement.

3. Prohibited Uses. Except for activities that are permitted or required by the Permit (or any modification thereto) (which may include restoration, creation, enhancement, maintenance, and monitoring activities, or surface water management improvements) or other activities described herein or in the Management Plan (if any), any activity on or use of the Conservation Easement area inconsistent with the purpose of this Conservation Easement is prohibited. Without limiting the generality of the foregoing, the following activities are expressly prohibited in or on the Conservation Easement area:

a. Construction or placing of buildings, roads, signs, billboards or other advertising, utilities, or other structures on or above the ground;

b. Dumping or placing of soil or other substance or material as landfill, or dumping or placing of trash, waste, or unsightly or offensive materials;

c. Removing, destroying or trimming trees, shrubs, or other vegetation, except:
i. The removal of dead trees and shrubs or leaning trees that could cause damage property is authorized;

ii. The destruction and removal of noxious, nuisance or exotic invasive plant species as listed on the most recent Florida Exotic Pest Plant Council's List of Invasive Species is authorized;

iii. Activities authorized by the Permit or described in the Management Plan or otherwise approved in writing by the Grantee are authorized; and

iv. Activities conducted in accordance with a wildfire mitigation plan developed with the Florida Forest Service that has been approved in writing by the Grantee are authorized. No later than thirty (30) days before commencing any activities to implement the approved wildfire mitigation plan, Grantor shall notify the Grantee in writing of its intent to commence such activities. All such activities may only be completed during the time period for which the Grantee approved the plan;

d. Excavation, dredging, or removal of loam, peat, gravel, soil, rock, or other material substance in such manner as to affect the surface;

e. Surface use except for purposes that permit the land or water area to remain in its natural, restored, enhanced, or created condition;

f. Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation including, but not limited to, ditching, diking, clearing, and fencing;

g. Acts or uses detrimental to such aforementioned retention of land or water areas;
and

h. Acts or uses which are detrimental to the preservation of the structural integrity or physical appearance of sites or properties having historical, archaeological, or cultural significance.

4. Grantor's Reserved Rights. Grantor reserves all rights as owner of the Conservation Easement Area, including the right to engage or to permit or invite others to engage in all uses of the Conservation Easement Area that are not prohibited herein and which are not inconsistent with the Permit (or any modification thereto), Management Plan, or the intent and purposes of this Conservation Easement.

5. No Dedication. No right of access by the general public to any portion of the Conservation Easement Area is conveyed by this Conservation Easement.

6. Grantee's Liability. Grantee's liability is limited as provided in Subsection 704.06(10) and Section 768.28, F.S. Additionally, Grantee shall not be responsible for any costs or liabilities related to the operation, upkeep, or maintenance of the Conservation Easement Area.

7. Enforcement. Enforcement of the terms, provisions and restrictions of this Conservation Easement shall be at the reasonable discretion of Grantee, and any forbearance on behalf of Grantee to exercise its rights hereunder in the event of any breach hereof by Grantor, shall not be deemed or construed to be a waiver of Grantee's rights hereunder. Grantee shall not be obligated to Grantor, or to any other person or entity, to enforce the provisions of this Conservation Easement.

8. Taxes. When perpetual maintenance is required by the Permit, Grantor shall pay before delinquency any and all taxes, assessments, fees, and charges of whatever description levied on or assessed by competent authority on the Conservation Easement Area, and shall furnish the Grantee with satisfactory evidence of payment upon request.

9. Assignment. Grantee will hold this Conservation Easement exclusively for conservation purposes. Grantee will not assign its rights and obligations under this Conservation Easement except to another organization or entity qualified to hold such interests under the applicable state laws.

10. Severability. If any provision of this Conservation Easement or the application thereof to any person or circumstances is found to be invalid, the remainder of the provisions of this Conservation Easement shall not be affected thereby, as long as the purpose of the Conservation Easement is preserved.

11. Terms and Restrictions. Grantor shall insert the terms and restrictions of this Conservation Easement in any subsequent deed or other legal instrument by which Grantor divests itself of any interest in the Conservation Easement.

12. Written Notice. All notices, consents, approvals or other communications hereunder shall be in writing and shall be deemed properly given if sent by United States certified mail, return receipt requested, addressed to the appropriate party or successor-in-interest.

13. Modifications. This Conservation Easement may be amended, altered, released or revoked only by written agreement between the parties hereto or their heirs, assigns or successors-in-interest, which shall be filed in the public records in Orange County, Florida.

14. Recordation. Grantor shall record this Conservation Easement in timely fashion in the Official Records of Orange County, Florida, and shall rerecord it at any time Grantee may require to preserve its rights. Grantor shall pay all recording costs and taxes necessary to record this Conservation Easement in the public records. Grantor will hold Grantee harmless from any recording costs or taxes necessary to record this Conservation Easement in the public records.

TO HAVE AND TO HOLD unto Grantee forever. The covenants, terms, conditions, restrictions and purposes imposed with this Conservation Easement shall be binding upon Grantor, and shall continue as a servitude running in perpetuity with the Conservation Easement Area.

Grantor hereby covenants with Grantee that Grantor is lawfully seized of said Conservation Easement Area in fee simple; that the Conservation Easement is free and clear of all encumbrances that are inconsistent with the terms of this Conservation Easement; all mortgages and liens on the Conservation Easement area, if any, have been subordinated to this Conservation Easement; that Grantor has good right and lawful authority to convey this Conservation Easement; and that it hereby fully warrants and defends record title to the Conservation Easement Area hereby conveyed against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, Spring Grove Properties, LLC ("Grantor") has hereunto set its authorized hand this 2 day of February, 2017.

A Florida corporation or Partnership (choose one)

By: Robert Hewitt
(Signature)

Name: Robert Hewitt
(Print)

Title: Managing Member

Signed, sealed and delivered in our presence as witnesses:

By: Caren J. Hewitt
(Signature)

Name: Caren J. Hewitt
(Print)

By: Robert M. Hewitt
(Signature)

Name: Robert M. Hewitt
(Print)

STATE OF FLORIDA
COUNTY OF Orange

On this Feb-2 day of 2017, before me, the undersigned notary public, personally appeared Robert C. Hewitt, the person who subscribed to the foregoing instrument, as the Managing member (title), of Spring Grove Properties, LLC (corporation), a Florida corporation, or Partnership (choose one) and acknowledged that he/she executed the same on behalf of said corporation, or Partnership (choose one) and the he/she was duly authorized to do

so. He/She is personally known to me or has produced a _____ (state) driver's license as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

NOTARY PUBLIC, STATE OF FLORIDA

Janet L. Pierce
(Signature)

Janet L. Pierce
(Name)



My Commission Expires: 3/11/19

AFFIDAVIT OF NO MORTGAGE OR LIEN

This Affidavit of No Mortgage or Lien is made this 2 day of February, 2017, by Spring Grove Properties LLC {property owner(s)} {Name(s) should be listed the same way as the deed identifying the property owner(s)} (hereinafter referred to as "Owner" or collectively as "Owner"; and

Owner owns the property located in Orange County, Florida, which is more fully described in Exhibit "A" attached hereto and made a part hereof {attach as Exhibit "A" the legal description for the Conservation Easement}; and

Owner hereby swears and affirms that the property described in Exhibit A is not encumbered by a mortgage, lien, or other encumbrance which would interfere with the purposes or intent of the Conservation Easement.

IN WITNESS WHEREOF, Owner herein has caused these presents to be executed in Owner's name(s) on the day and year first above written.

(Remainder of page left intentionally blank)

Note: If a corporation, use the Corporate Notary Page. If an individual(s), use the Individual Notary Page.

INDIVIDUAL NOTARY PAGE

IN WITNESS WHEREOF, Declarant has hereunto set its authorized hand the day and year first above written.

By: *[Signature]*

Print Name: Robert C Hewitt

(Add or modify signature lines as necessary to represent all Declarants)

Signed, sealed and delivered in our presence as witnesses:

By: *[Signature]*

By: *[Signature]*

Print Name: Rebecca M Henn

Print Name: Dylan B. Light

State of Florida

County of orange

The foregoing instrument was acknowledged before me this 2 day of February, 2017, by Robert C Hewitt, who is personally known to me or produced _____ as proper identification.

Notary Public, State of Florida

[Signature]
Signature of Notary Public

Janet L. Pierce
Print Name of Notary Public

Commission Expires:



(Modify notary block as necessary to represent all Declarants)

Note: If a corporation, use the Corporate Notary Page. If an individual(s), use the Individual Notary Page.

CORPORATE NOTARY PAGE

IN WITNESS WHEREOF, Declarant has hereunto set its authorized hand the day and year first above written.

Spring Grove Properties LLC
(a Florida corporation) Partnership

By: [Signature]

Print Name: Robert C. Hewitt

Title: Managing member

(Add or modify signature lines as necessary to represent all Declarants)

Signed, sealed and delivered in our presence as witnesses:

By: [Signature] By: [Signature]

Print Name: Roberta M. Hann Print Name: Dylan B. Light

STATE OF Florida)
COUNTY OF Orange)

On this 2 day of February, 2017, before me, the undersigned notary public, personally appeared Robert C. Hewitt, the person who subscribed to the foregoing instrument, as the Spring Grove Properties LLC (title), of Managing member (corporation), Partnership a Florida corporation, and acknowledged that he/she executed the same on behalf of said corporation and the he/she was duly authorized to do so. He/She is personally known to me or has produced a _____ (state) driver's license as identification.

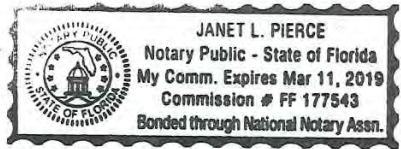
NOTARY PUBLIC, STATE OF FLORIDA

[Signature]

Signature of Notary Public

Janet L. Pierce

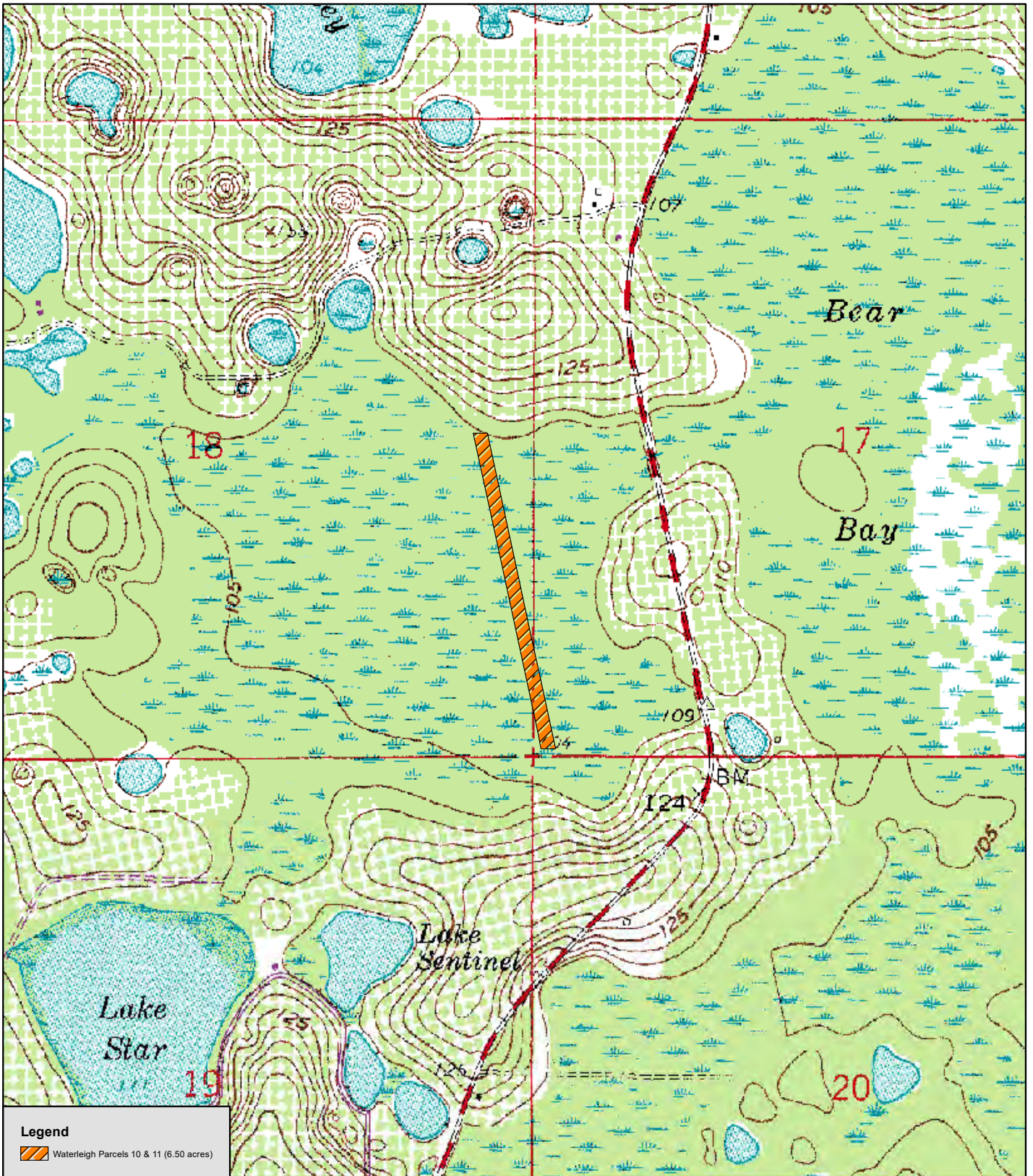
Print Name of Notary Public



Commission Expires:
(Modify notary block as necessary to represent all Declarants)

EXHIBIT A

[LOCATION MAP]

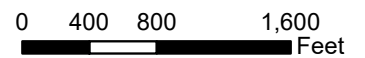


Waterleigh Parcels Mitigation Tract

Orange County, Florida

Exhibit A

Location Map



Bio-Tech Consulting Inc.
 Environmental and Permitting Services
 3025 E. South Street Orlando, FL 32803
 Ph: 407-894-5969 Fax: 407-894-5970
 www.bio-techconsulting.com



Project #: 434-05
 Produced By: JDH
 Date: 7/18/2018

EXHIBIT B

[LEGAL DESCRIPTION AND SKETCH OF CONSERVATION EASEMENT AREA]

LEGAL DESCRIPTION

LEGAL DESCRIPTION: WETLAND PRESERVATION / CONSERVATION AREA – SPRING GROVE

A portion of Sections 17 and 18, Township 24 South, Range 27 East, Orange County, Florida. Being more particularly described as follows:

Commence at the West 1/4 corner of aforesaid Section 17; thence run South 89°04'08" West along the North line of the Southeast 1/4 of said Section 18, for a distance of 409.65 feet to the Point of Beginning; thence departing said North line run South 11°44'02" East, for a distance of 2671.56 feet to a point on the Northerly right-of-way line of Lake Star Road per Official Records Book 1790, Page 704, Official Records Book 1905, Page 920 and Official Records Book 1790, Page 704 of aforesaid Public Records; thence run South 89°48'52" West along said Northerly right-of-way line, for a distance of 108.20 feet; thence departing said Northerly right-of-way line, run North 11°44'02" West, for a distance of 2670.13 feet to the North line of said Southeast 1/4 of said Section 18; thence run North 89°04'08" East along the North line of said Southeast 1/4 of said Section 18, for a distance of 107.92 feet to aforesaid Point of Beginning.

Contains 6.50 acres more or less.

SHEET 1 OF 2
SEE SHEET 2 FOR SKETCH



16 EAST PLANT STREET
Winter Garden, Florida 34787 * (407) 654-5355

SURVEYOR'S NOTES:

1. THIS IS NOT A SURVEY.
2. THIS LEGAL DESCRIPTION IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
3. BEARINGS SHOWN HEREON ARE ASSUMED AND BASED ON THE NORTH LINE OF THE SOUTHWEST QUARTER OF SECTION 17, TOWNSHIP 24 SOUTH, RANGE 27 EAST, ORANGE COUNTY, FLORIDA BEING NORTH 89°57'03" EAST.

JOB NO. <u>20150307</u>	CALCULATED BY: <u>JLR</u>	FOR THE LICENSED BUSINESS #6723 BY:
DATE: <u>08/27/2018</u>	DRAWN BY: <u>JLR</u>	
SCALE: <u>1" = 400 FEET</u>	CHECKED BY: <u>JLR</u>	
FIELD BY: <u>N/A</u>		<u>JAMES L. RICKMAN, P.S.M. #5633</u>

Drawing name: L:\Data\20150307\sketches\sketch 05 - conservation area - waterleigh parcels 10 - 11 - 6.5 ac.dwg SHEET 1

EXHIBIT C

[MANAGEMENT PLAN OR "INTENTIONALLY LEFT BLANK"]

Management Plan

Waterleigh Parcels 10 & 11 (Apartments) Off-Site Mitigation Tract Orange County, Florida

The Waterleigh Parcels 10 & 11 Off-Site Mitigation Tract is a 6.50-acre portion of a larger 211-acre parcel of wetlands owned by Spring Grove Properties, LLC. As mitigation for on-site impacts, the Waterleigh parcels 10 & 11 project proposes to place the 6.50 acre off-site tract within a conservation easement dedicated to the District. A monitoring and maintenance plan will be implemented to ensure that the mitigation tract remains a viable wetland system in perpetuity.

Monitoring

The wetland preservation areas will be quantitatively monitored for a period of five (5) years. The monitoring events will occur on a semi-annual basis for the entire monitoring period. A baseline monitoring report and five (5) annual reports will be submitted to the South Florida Water Management District (SFWMD).

Permanent monitoring transects will be established throughout the wetland preservation areas and utilized for the collection of sampling data. Each transect will be 100 feet in length have two (2) monitoring stations. Monitoring stations will include a quantitative assessment of vegetation within a 50-foot radius of each monitoring station. At the ends of each transect, photo stations will be established to provide photographic documentation of the preservation areas. A GPS point will be recorded at each photo station and shown on an exhibit. Data collected from these monitoring stations will include a vegetative species listing with wetland status, estimated percent coverage of species, wildlife utilization, and a description of any problems encountered during the evaluation and proposed solutions.

Maintenance

During the five (5) year monitoring period, maintenance events to control nuisance and exotic vegetation will occur monthly for the first two (2) years and quarterly the remaining three (3) years. Maintenance events will be conducted to ensure that the conservation areas are free from invasive exotic vegetation (as defined by the Florida exotic pest plant council) immediately following a maintenance activity and shall constitute no more than 5% of vegetative cover between maintenance activities. Nuisance plant species shall constitute no more than 10% of total cover.

Following the five (5) year monitoring program, per SFWMD conservation easement conditions, a perpetual maintenance plan is proposed for the preserved wetland. A maintenance program shall be implemented for the preserved wetland on a regular basis to ensure the integrity and viability of the conservation areas as permitted. Maintenance shall be conducted in perpetuity to ensure that the conservation areas are free from invasive exotic vegetation (as defined by the Florida exotic pest plant council at the date of permit issuance) immediately following a maintenance activity and shall constitute no more than 5% of vegetative cover between maintenance activities. Nuisance plant species shall constitute no more than 10% of total cover.

To demonstrate that the mitigation is successful, the following criteria must be maintained.

- 1) 0% coverage of Category 1 exotic vegetation immediately following a maintenance activity.
- 2) Coverage of exotic species shall not exceed 5% and coverage of nuisance plant species shall not exceed 10% of total cover between maintenance activities.

Work Schedule

Baseline Monitoring Report	October 2018
1st Annual Monitoring Report	October 2019
2nd Annual Monitoring Report	October 2020
3rd Annual Monitoring Report	October 2021
4th Annual Monitoring Report	October 2022
5th Annual Monitoring Report	October 2023
Initiate On-Going Perpetual Maintenance	October 2023

**South Florida Water Management District
Work Schedule Requirements**

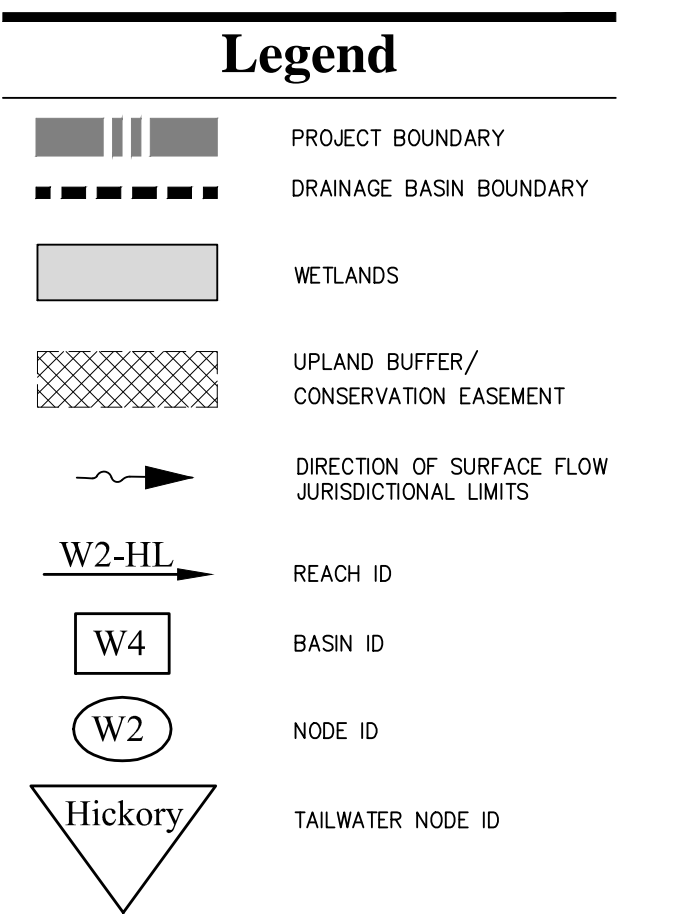
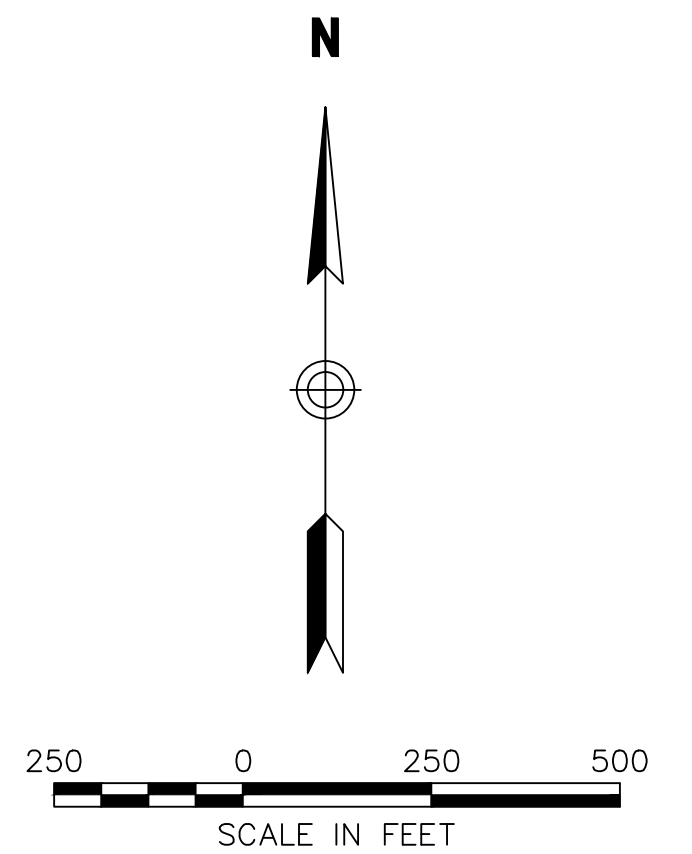
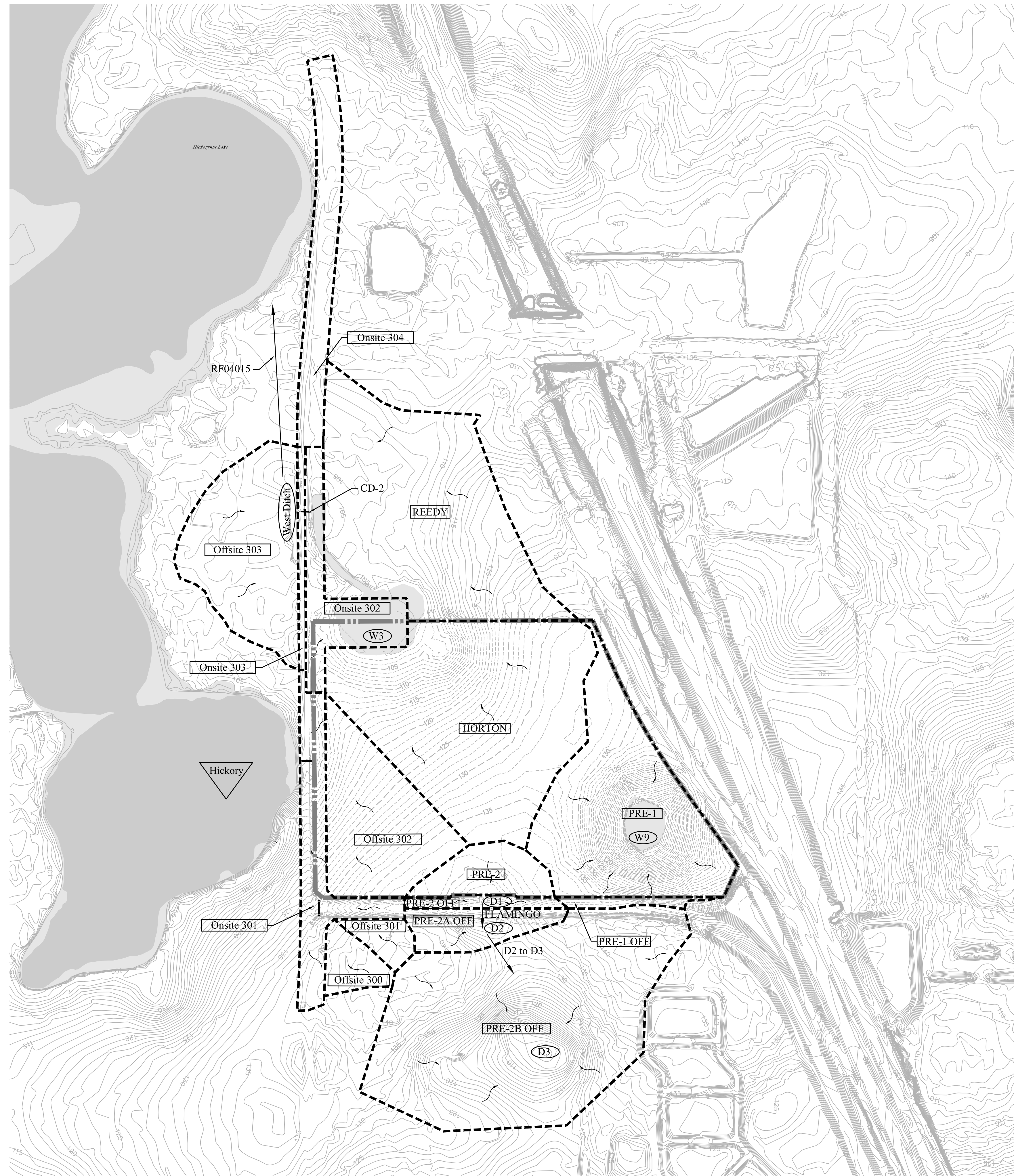
Application No : 180507-1

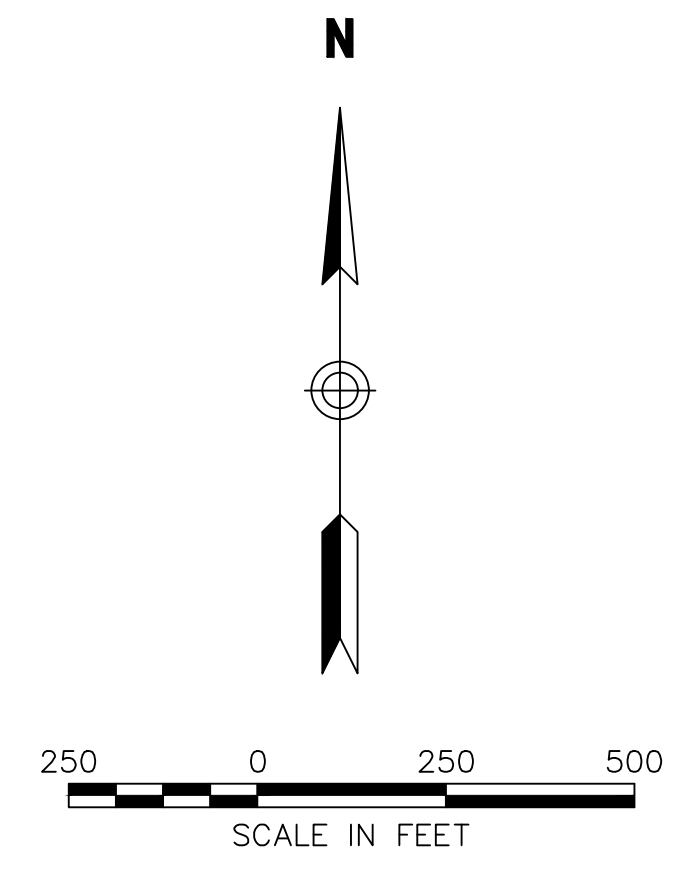
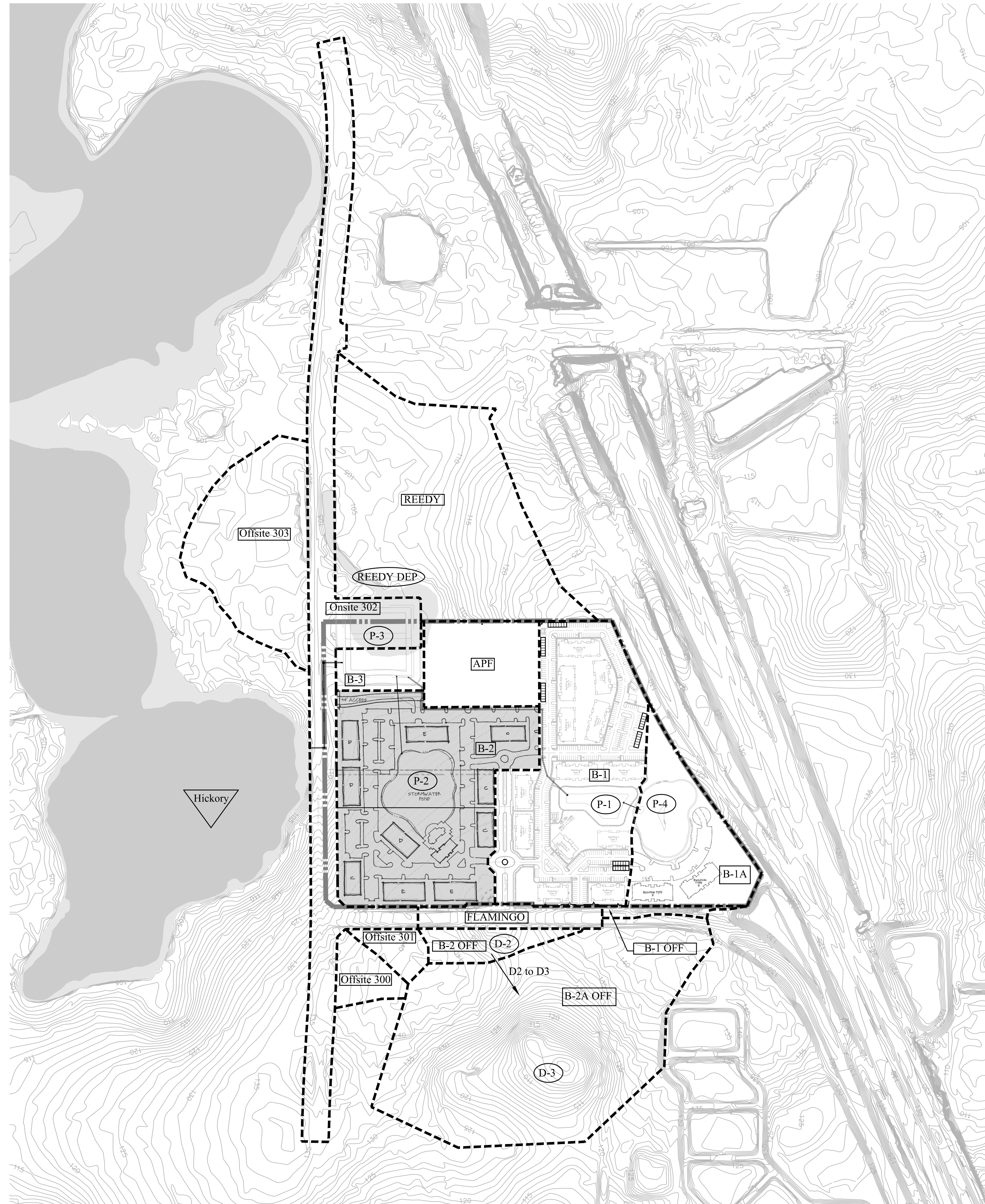
Page 1 of 1

Mitigation Plan ID: SPRING GROVE

Activity	Due Date
SUBMIT CONSERVATION EASEMENT	31-OCT-18
SUBMIT BASELINE MONITORING REPORT	31-OCT-18
SUBMIT FIRST ANNUAL MONITORING REPORT	31-OCT-19
SUBMIT SECOND ANNUAL MONITORING REPORT	31-OCT-20
SUBMIT THIRD ANNUAL MONITORING REPORT	31-OCT-21
SUBMIT FOURTH ANNUAL MONITORING REPORT	31-OCT-22
SUBMIT FIFTH ANNUAL MONITORING REPORT	31-OCT-23

Exhibit No :





Legend	
	PROJECT BOUNDARY
	DRAINAGE BASIN BOUNDARY
	WETLANDS
	UPLAND BUFFER/ CONSERVATION EASEMENT
	DIRECTION OF SURFACE FLOW JURISDICTIONAL LIMITS
	REACH ID
	BASIN ID
	NODE ID
	TAILWATER NODE ID

**TABLE 6
WATERLEIGH P.D. PARCELS 10 & 11
WATER QUALITY DATA**

WET DETENTION TREATMENT METHOD

NODE ID	CONTRIBUTING BASINS	TOTAL DRAINAGE AREA (ac)	TOTAL IMPERVIOUS AREA ¹ (ac)	TOTAL BUILDING AREA (ac)	PERVIOUS AREA (ac)	WATER SURFACE AREA (ac)	1" RUNOFF OVER BASIN (ac-ft)	2.5" OVER IMPERVIOUS (ac-ft)	ADDITIONAL 50% WQ REQUIRED (ac-ft)	MIN. REQ'D TREATMENT VOLUME (ac-ft)	TREATMENT VOLUME PROVIDED (ac-ft)
POND 3	APF	4.52	1.81	0.00	2.71	0.00	2.15	2.86	1.43	4.28	4.46
	FLAMINGO	1.95	1.27	0.00	0.68	0.00					
	ONSITE-302	16.50	10.24	0.00	5.12	1.14					
	OFFSITE-301	1.14	0.00	0.00	1.14	0.00					
	B-3	1.72	0.39	0.00	0.13	1.20					
TOTAL	-----	25.83	13.71	0.00	9.78	2.34	-----	-----	-----	4.28	4.46

DRY RETENTION TREATMENT METHOD

NODE ID	CONTRIBUTING BASINS	TOTAL DRAINAGE AREA (ac)	TOTAL IMPERVIOUS AREA ¹ (ac)	TOTAL BUILDING AREA (ac)	PERVIOUS AREA (ac)	POND BOTTOM AREA (ac)	0.5" RUNOFF OVER BASIN (ac-ft)	1.25" OVER IMPERVIOUS (ac-ft)	ADDITIONAL 50% WQ REQUIRED (ac-ft)	MIN. REQ'D TREATMENT VOLUME (ac-ft)	TREATMENT VOLUME PROVIDED (ac-ft)
P-1	B-1	15.41	7.24	3.24	4.49	0.44	0.64	0.96	0.48	1.44	1.45
P-2	B-2	16.34	6.93	3.50	4.47	1.44	0.68	0.94	0.47	1.42	2.30
P-4	B-1A	6.76	1.95	1.13	3.65	0.03	0.28	0.24	0.14	0.42	17.19
TOTAL	-----	38.51	16.12	7.86	12.61	1.91	-----	-----	-----	3.28	20.94

Note:

1. Total Impervious Area values include all non-building impervious area.

**TABLE 7
WATERLEIGH P.D. PARCELS 10 & 11
STAGE - STORAGE DATA**

P-1				STAGE	AREA	STORAGE	TOT. STORAGE
	Volume	Stage	Bottom Elev.	(ft)	(ac)	(ac-ft)	(ac-ft)
Water Quality Required:	1.44	121.58	WQ Req'd	119.00	0.44	0.00	0.00
Water Quality Provided:	1.45	121.60	WQ Prov'd	121.58	0.68	1.44	1.44
1/2 Orange Co. Req'd PAV ²	0.32	119.45	Top of Bank	121.60	0.68	0.01	1.45
				125.00	0.99	2.84	4.29

P-2				STAGE	AREA	STORAGE	TOT. STORAGE
	Volume	Stage	Bottom Elev.	(ft)	(ac)	(ac-ft)	(ac-ft)
Water Quality Required:	1.42	117.95	WQ Req'd	117.00	1.44	0.00	0.00
Water Quality Provided:	2.30	118.50	WQ Prov'd	117.95	1.56	1.42	1.42
1/2 Orange Co. Req'd PAV ²	0.34	117.19	Top of Bank	118.50	1.63	0.88	2.30
				122.50	2.14	7.54	9.85

POND 3				STAGE	AREA	STORAGE	TOT. STORAGE
	Volume	Stage	NCL Elev.	(ft)	(ac)	(ac-ft)	(ac-ft)
Water Quality Required:	4.28	103.13	WQ Req'd	101.40	2.34	0.00	0.00
Water Quality Provided:	4.46	103.20	WQ Prov'd	103.13	2.61	4.28	4.28
1/2 Orange Co. Req'd PAV ²	0.54	101.59	Top of Bank	103.20	2.62	0.18	4.46
				107.00	3.21	11.08	15.54

P-4				STAGE	AREA	STORAGE	TOT. STORAGE
	Volume	Stage	Bottom Elev.	(ft)	(ac)	(ac-ft)	(ac-ft)
Water Quality Required:	0.42	104.94	WQ Req'd	102.00	0.03	0.00	0.00
Water Quality Provided:	17.19	123.00	WQ Prov'd	104.94	0.25	0.42	0.42
1/2 Orange Co. Req'd PAV ²	0.14	102.17	Top of Bank	123.00	1.60	16.77	17.19
				123.00	1.60	0.00	17.19

REEDY DEPRESSION⁴				STAGE	AREA	STORAGE	TOT. STORAGE
				(ft)	(ac)	(ac-ft)	(ac-ft)
		Initial Stage		101.40	0.39	0.00	0.00
				102.00	0.50	0.27	0.27
				103.00	0.68	0.59	0.86
				104.00	0.87	0.78	1.63
				105.00	1.14	1.01	2.64
				106.00	3.98	2.56	5.20
				107.00	6.62	5.30	10.50

Note:

1. All elevations shown are NAVD 88.
2. Orange County Required Pollution Abatement Volume (PAV) calculated in accordance with Section 34-226(1), Orange County Code
3. Reedy Depression stage-area information based on remaining storage available after pond P-3 construction

**TABLE 9
WATERLEIGH P.D. PARCELS 10 & 11
DISCHARGE RESULTS SUMMARY**

Total Basin Area¹ (acres)	Discharge Rate² (cfs)	Discharge Rate/Area (cfs/acre)	Discharge Rate (CSM)
64.34	22.10	0.343	219.8

Notes:

1. Total basin area reflects the developed on-site and off-site basins that discharge to the proposed stormwater ponds.

2. Discharge Rate from Stormwater Management System based on Peak Outflow Rate from Pond 3.

**TABLE 10
WATERLEIGH P.D. PARCELS 10 & 11
DESIGN STORM STAGES**

Basin ID	Node ID	NCL/Pond Bottom	10yr/24hr Stage	25yr/24hr Stage	100yr/24hr Stage	100yr/72hr Stage	Minimum Road Elev. ¹	Minimum FFE ²
B-1	P-1	119.0	123.2	123.5	123.9	124.4	123.5	125.4
B-2	P-2	117.0	120.3	120.9	121.9	122.4	121.0	123.4
B-1A	P-4	102.0	111.8	113.0	115.0	117.3	113.1	118.3
B-1B								
APF	POND 3	101.4	104.5	104.9	105.8	106.6	105.0	107.6
ONSITE-302								
FLAMINGO								
OFFSITE-301								
HORTON-INT								

Total Runoff Volume to P-4 in back-to-back 100-Year/72-Hour Design Storms:	16.8 ac-ft
Total Volume provided in P-4:	17.2 ac-ft

Notes:

1. Minimum roadway elevations set at 25yr/24hr peak stage or two (2) feet above Wet Pond NCL or Dry Pond Bottom, whichever is greater as per SFWMD and O.C. criteria.
2. Minimum finished floor elevations set 1' above 100yr/24hr peak stage or at the 100yr/72hr peak stage, whichever is greater.
3. All elevations are NAVD, 1988

**TABLE 11
WATERLEIGH P.D. PARCELS 10 & 11
CONTROL STRUCTURES SUMMARY**

Pond	Control Structure	Type	Circular Bleeder Orifice		Weir			Drop Structure		Skimmer		
		(DS- Drop Structure) (VW - Vertical Weir)	Invert Elev. (ft NAVD)	Diameter (in)	Crest Elev. (ft NAVD)	Geometry	Span (in)	Rise (in)	Type	Top Elev. (ft NAVD)	Top Elevation (ft NAVD)	Bottom Elevation (ft NAVD)
P-1	DS-1	DS	-	-	121.60	Rectangular	17.0	28.8	E DBI	124.00	124.50	121.10
	DS-4	DS	-	-	121.60	Rectangular	8.0	28.8	D DBI	124.00	124.50	121.10
P-2	DS-2	DS	-	-	118.50	Rectangular	6.0	12.0	D DBI	122.00	122.50	118.00
POND 3	DS-3	DS	101.40	4.0	103.20	Rectangular	48.0	12.0	H DBI	105.60	106.10	102.70

STAFF REPORT DISTRIBUTION LIST

WATERLEIGH P D PARCELS 10 AND 11

Application No: 180507-1

Permit No: 48-02575-P

INTERNAL DISTRIBUTION

- X David Howe
- X Debra Laisure
- X Marc S. Ady
- X Mark S. Daron, P.E.
- X A. Waterhouse, P.E.

EXTERNAL DISTRIBUTION

- X Permittee - D R Horton
- X Permittee - D H I C - Waterleigh L L C
- X Permittee - Spring Grove Properties L L C
- X Agent - D H I Communities
- X Engr Consultant - V H B

GOVERNMENT AGENCIES

- X City Engineer, City of Winter Garden
- X Div of Recreation and Park - District 3 - Chelsey Sprouse, FDEP
- X Orange County Engineer Public Works Division Dvlpmnt Engineering Dept.
- X US Army Corp of Engineers Cocoa Regulatory Field Office

ERP No. 48-02363-P
(Seidel Road East)

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01



**SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE PERMIT NO. 48-02363-P**

DATE ISSUED: SEPTEMBER 8, 2014

PERMITTEE: TOLL BROTHERS INCORPORATED
(SEIDEL EAST)
2966 COMMERCE PARK DR STE 100.
ORLANDO, FL 32819

SEIDEL EAST L L C
(SEIDEL EAST)
617 WYMORE RD.
WINTER PARK, FL 32789

PROJECT DESCRIPTION: CONCEPTUAL APPROVAL OF A 186.54 ACRE RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL DEVELOPMENT KNOWN AS SEIDEL EAST. CONSTRUCTION AND OPERATION OF THE RESIDENTIAL PORTION OF THE DEVELOPMENT.

PROJECT LOCATION: ORANGE COUNTY , SECTION 05 TWP 24S RGE 27E

PERMIT DURATION: See Special Condition No:1.

This is to notify you of the District's agency action concerning Permit Application No. 140509-9, dated May 9, 2014. This action is taken pursuant to the provisions of Chapter 373, Part IV, Florida Statutes (F.S.).

Based on the information provided, District rules have been adhered to and an Environmental Resource Permit is in effect for this project subject to:

1. Not receiving a filed request for an administrative hearing pursuant to Section 120.57 and Section 120.569, or request a judicial review pursuant Section 120.68, Florida Statutes.
2. The attached 18 General Conditions.
3. The attached 10 Special Conditions.
4. The attached 4 Exhibits.

Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Should you wish to object to the proposed agency action or file a petition, please provide written objections, petitions and/or waivers to:

Office of the District Clerk
South Florida Water Management District
Post Office Box 24680
West Palm Beach, FL 33416-4680
e-mail: clerk@sfwmd.gov

Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights", we will assume that you concur with the District's action.

CERTIFICATION OF SERVICE

I HEREBY CERTIFY THAT this written notice has been mailed or electronically submitted to the Permittee (and the persons listed on the attached distribution list) this 9th day of September, 2014, in accordance with Section 120.60(3), F.S. Notice was also electronically posted on this date through a link on the home page of the District's website (my.sfwmd.gov/ePermitting).

By 
DEPUTY CLERK
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Attachments

SPECIAL CONDITIONS

1. The conceptual phase of this permit shall expire on September 8, 2034.
The construction phase of this permit shall expire on September 8, 2019.
2. Operation of the stormwater management system shall be the responsibility of HOMEOWNERS ASSOC. AND ORANGE COUNTY. Within one year of permit issuance or concurrent with the engineering certification of construction completion, whichever comes first, the permittee shall submit a copy of the recorded deed restrictions (or declaration of condominium, if applicable), a copy of the filed articles of incorporation, and a copy of the certificate of incorporation for the association.
3. Discharge Facilities:

Structure: CS-1

1-10.17' WIDE SHARP CRESTED weir with crest at elev. 101.5' NAVD 88.
1-.25' dia. CIRCULAR ORIFICE with invert at elev. 99.6' NAVD 88.

Receiving body : Panther Lake
Control elev : 99.6' NAVD 88.

Structure: CS-2

1-1.5' WIDE SHARP CRESTED weir with crest at elev. 101.4' NAVD 88.
1-.25' dia. CIRCULAR ORIFICE with invert at elev. 98.5' NAVD 88.

Receiving body : Panther Lake
Control elev : 98.5' NAVD 88.

Structure: CS-6

1-2' W X 3.08' L drop inlet with crest at elev. 114' NAVD 88.

Receiving body : Panther Lake
Control elev : 108' NAVD 88.
4. Lake side slopes shall be no steeper than 5:1 (horizontal:vertical) to a depth of two feet below the control elevation. Side slopes shall be nurtured or planted from 2 feet below to 1 foot above control elevation to insure vegetative growth, unless shown on the plans.
5. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
6. Minimum building floor elevation: See Exhibit 3
7. Minimum road crown elevation: See Exhibit 3
8. Prior to commencement of construction and in accordance with the work schedule in Exhibit No. 4, the permittee shall submit documentation that 0.10 of freshwater forested credits have been deducted from the ledger for Reedy Creek Mitigation Bank.
9. A maintenance program shall be implemented for the preserved wetland areas on a regular basis to ensure the integrity and viability of those areas as permitted. Maintenance shall be conducted in perpetuity to ensure that the conservation areas are maintained free from Category 1 exotic vegetation (as defined by the Florida Exotic Pest Plant Council at the

time of permit issuance) immediately following a maintenance activity. Maintenance in perpetuity shall also insure that conservation areas, including buffers, maintain the species and coverage of native, desirable vegetation specified in the permit. Coverage of exotic plant species shall not exceed 5% of total cover between maintenance activities. Coverage of nuisance plant species shall not exceed 10% of total cover between maintenance activities. In addition, the permittee shall manage the conservation areas such that exotic/nuisance plant species do not dominate any one section of those areas.

10. Prior to October 26, 2014 and prior to the commencement of construction, whichever occurs first, the permittee shall submit the following via ePermitting or to the Environmental Compliance staff at the local District office:
 - A. One certified copy of the recorded conservation easement document including exhibits.
 - B. A CD or DVD containing the easement data in a digital ESRI Geodatabase (mdb), ESRI Shapefile (shp) or AutoCAD Drawing Interchange (dxf) file format using Florida State Plane coordinate system, East Zone (3601), Datum NAD83, HARN with the map units in feet.
 - C. A map depicting the Conservation Easement over the best available satellite or aerial imagery.
 - D. Form 1001 ERP REG: Title, Possession, and Lien Affidavit, fully executed by the owner and notarized.The recorded easement shall utilize the form attached as Exhibit No. 4. This Exhibit may not be modified. The easement must be free of mortgages, liens, easements or other encumbrances or interests in the easement which District staff states are contrary to the intent of the easement. In the event it is later determined that there are encumbrances or interests in the easement which the District determines are contrary to the intent of the easement, the permittee shall be required to provide release or subordination of such encumbrances or interests.

GENERAL 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 shall subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S. (2012).
2. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with Rule 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.
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), and the "Florida Stormwater Erosion and Sedimentation Control Inspector's Manual" (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), 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" indicating the expected start and completion dates. 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)].
 - 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 Applicant's Handbook Volume 1) 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 required by any other regulatory agency that require changes to the permitted activity, and 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 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.

NOTICE OF RIGHTS

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., the following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a SFWMD decision which does or may affect their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: 1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or 2) within 14 days of service of an Administrative Order pursuant to Subsection 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of either written notice through mail, electronic mail, or posting that the SFWMD has or intends to take final agency action, or publication of notice that the SFWMD has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

FILING INSTRUCTIONS

The Petition must be filed with the Office of the District Clerk of the SFWMD. Filings with the District Clerk may be made by mail, hand-delivery, or e-mail. **Filings by facsimile will not be accepted after October 1, 2014.** A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Any document received by the office of the District Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must be delivered to the Office of the District Clerk. **Delivery of a petition to the SFWMD's security desk does not constitute filing. To ensure proper filing, it will be necessary to request the SFWMD's security officer to contact the Clerk's office.** An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by e-mail must be transmitted to the District Clerk's Office at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the District Clerk receives the complete document. A party who files a document by e-mail shall (1) represent that the original physically signed document will be retained by that party for the duration of the proceeding and of any subsequent appeal or subsequent proceeding in that cause and that the party shall produce it upon the request of other parties; and (2) be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed.

INITIATION OF AN ADMINISTRATIVE HEARING

Pursuant to Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 and 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, SFWMD file number or any other SFWMD identification number, if known.
2. The name, address and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency decision.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. 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.

If the SFWMD takes action with substantially different impacts on water resources from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law.

MEDIATION

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the District Clerk within 30 days of rendering of the final SFWMD action.

**FINAL APPROVED BY
EXECUTIVE DIRECTOR
SEPTEMBER 8, 2014**

Last Date For Agency Action: September 26, 2014

INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Seidel East

Permit No.: 48-02363-P

Application No.: 140509-9

Application Type: Environmental Resource (Conceptual Approval And New Construction/Operation)

Location: Orange County, S05/T24S/R27E

Permittee : Toll Brothers Incorporated
Seidel East L L C

Operating Entity : Homeowners Assoc. And Orange County

Project Area: 154.81 acres

Permit Area: 186.54 acres

Project Land Use: Residential

Drainage Basin: REEDY CREEK

Receiving Body: Panther Lake

Class: CLASS III

Special Drainage District: NA

Total Acres Wetland Onsite: .87

Total Acres Wetland Preserved Onsite: .82

Total Acres Impacted Onsite : .05

Total Acres Presv/Mit Compensation Onsite: 31.73

Offsite Mitigation Credits-Mit.Bank: .10 Reedy Creek Mitigation Bank

Conservation Easement To District : Yes

Sovereign Submerged Lands: No

PROJECT PURPOSE:

This application is a request for an Environmental Resource Permit to authorize conceptual approval of a 186.54 acre residential, commercial and institutional development known as Seidel East. In addition, construction and operation of the residential portion of the development is requested.

PROJECT EVALUATION:**PROJECT SITE DESCRIPTION:**

The 186.54 acre site is located at the northeast corner of the intersection of Lake Seidel Road and State Road 429 in Orange County.

There are no permitted water management facilities within the project area. The site consists primarily of improved pasture and several lobes and connecting waterways of Panther Lake. For more information please see the "Wetlands" section.

PROPOSED PROJECT:

Proposed is conceptual approval of a stormwater management system to serve a 186.54 acre residential, commercial and institutional development known as Seidel East. Proposed construction under this application is the residential component with future development planned for the commercial and institutional development. The proposed stormwater management system will consist of inlets, culverts and swales to direct runoff into dry and wet detention and retention ponds. Discharge from the stormwater management system will be into Panther Lake through three proposed control structures. Calculations were submitted to demonstrate that post-development discharge for the 25-year 24-hour event will not exceed existing conditions. In addition, calculations were submitted to demonstrate that compensating storage will be provided for the minor encroachment into the Lake Panther floodplain.

LAND USE:**Construction****Project:**

	Total Project	
Impervious	62.55	acres
Pervious	80.19	acres
Preserved	31.73	acres
Water Mgnt Acreage	12.07	acres
Total:	186.54	

WATER QUANTITY :**Discharge Rate :**

Post development discharge for the 25-year 24-hour design event will be less than existing conditons.

Finished Floors :

Minimum finished floor elevations will be set at or above the calculated design storm flood elevation as shown on Exhibit 3.

Road Design :

Minimum road center lines will be set at or above the calculated design storm flood elevation as shown on Exhibit 3.

Receiving Body :

Basin	Str.#	Receiving Body
Seidel East	CS-1	Panther Lake
Seidel East	CS-2	Panther Lake
Seidel East	CS-6	Panther Lake

Discharge Structures: Note: The units for all the elevation values of structures are (ft, NAVD 88)

Bleeders:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Invert Angle	Invert Elev.
Seidel East	CS-1	1	Circular Orifice				.25'		99.6
Seidel East	CS-2	1	Circular Orifice				.25'		98.5

Inlets:

Basin	Str#	Count	Type	Width	Length	Dia.	Crest Elev.
Seidel East	CS-6	1	Drop Inlet	2'	3.08'		114

Weirs:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Elev.
Seidel East	CS-1	1	Sharp Crested	10.17'				101.5 (crest)
Seidel East	CS-2	1	Sharp Crested	1.5'				101.4 (crest)

WATER QUALITY :

Water quality treatment will be provided in dry and wet detention and retention areas. A nutrient loading analysis was submitted to demonstrate that post-development nutrient loads will be less than existing conditions, and an additional 50% treatment is provided. No adverse water quality impacts are anticipated as a result of the proposed project.

WETLANDS:

The site contains several lobes of Panther Lake with associated connecting waterways and littoral wetland vegetation. Both the waterways and lobes of the lake reflect reduced hydrology from the historic ditching and maintenance of the lake edges and the waterways. A total 36.43 acres of wetlands and surface waters occur on site. The connecting waterways are vegetated with cattail, torpedograss, pickerelweed, and duck potato. A few scattered cypress, Chinese tallow, and wax myrtle exist along the perimeter of the ditches. The lakefront littoral areas includes wax myrtle, buttonbush and saltbush. A few scattered cypress and laurel oak exist along the shoreline of the lakes.

Wetland Impacts:

Of the total 36.43 acres of wetland and surface waters on site, direct impacts are proposed for a 0.05 acre wetland area. Secondary impacts are proposed to 0.82 acres of the connecting wetlands between the lobes of Panther Lake. An upland cut ditch and borrow area (surface waters) of 4.65 acres are proposed for filling.

The proposed direct impact (0.05 acre) results from the construction of a roadway to access uplands on the opposite side of the waterbodies. The roadway is being constructed at a constriction of the waterway between two lobes of the lake. Without this roadway the uplands would be otherwise inaccessible. No alternative access -ways are available to access the upland areas.

The cumulative 0.82 acres of secondary impact results from the regular maintenance of the of the waterways between the lake's lobes to keep them accessible to canoes, kayaks and other non-motorized boats.

The Homeowners Declaration includes a section establishing that only non-motorized vessels are permitted on the lake and waterways with the exception of motorized boats required for maintenance. A Riparian Rights Conservation Easement is provided over the remaining wetlands so no additional secondary impacts are anticipated as the result of the recreational uses of the lake and the littoral zones.

Mitigation Proposal:

The borrow pond and associated ditch are both upland cut and no mitigation will be required to offset the impacts. The proposed direct and secondary impacts (0.05 and 0.82 respectively), total 0.10 units of functional loss. Mitigation will be provided through the purchase of 0.10 UMAM credits from the Reedy Creek Mitigation Bank. The remainder of the wetlands are being preserved under a conservation easement to protect against future secondary impacts but no mitigation value is being assigned and no monitoring is required.

The impacts and mitigation are within the same cumulative impact basin (Reedy Creek) so no unacceptable cumulative impacts to the basin are anticipated. A copy of the letter of reservation is attached as a part of Exhibit 4. A copy of the riparian rights Conservation Easement is attached as a part of Exhibit 4. Title Insurance has been provided which demonstrates that there are no liens or encumbrances that conflict with the proposed conservation status of the remaining wetlands and surface waters.

Wetland Inventory :

CONSTRUCTION MOD -Seidel East

Site Id	Site Type	Pre-Development				Post-Development						
		Pre Fluc cs	AA Type	Acreage (Acres)	Current Wo Pres	With Project	Time Lag (Yrs)	Risk Factor	Pres. Adj. Factor	Post Fluc cs	Adj Delta	Functional Gain / Loss
SW 1-5 ON	510	Preservation		30.91								
SW 3 ON	600	Secondary		.13	.43	.37					-.060	-.008
SW-2 o ON	644	Secondary		.27	.47	.37					-.100	-.027
SW-2 ON	644	Direct		.05	.47	.00					-.470	-.024
SW-2 RcON	644	Secondary		.05	.47	.43					-.040	-.002
SW-4 ON	644	Secondary		.37	.47	.37					-.100	-.037
SW-6 ON	500	Direct		.78							.000	.000
SW-7 ON	500	Direct		3.87							.000	.000
Total:				36.43								-.10

<u>Fluccs Code</u>	<u>Description</u>
500	Water
510	Streams And Waterways
600	Wetlands
644	Emergent Aquatic Vegetation

MITBANK		REEDY CREEK MITIGATION BANK	
Type Of Credits		Number Of Credits	
		Mitigation Bank Cr Used	
Fresh Water Forested		.10	
Total:		.10	

LEGAL ISSUES:

A copy of the proposed Conservation Easement is attached as a part of Exhibit 4.

CERTIFICATION, OPERATION, AND MAINTENANCE:

Pursuant to Chapter 62-330.310 Florida Administrative Code (F.A.C.), Individual Permits will not be converted from the construction phase to the operation phase until construction completion certification of the project is submitted to and accepted by the District. This includes compliance with all permit conditions, except for any long term maintenance and monitoring requirements. It is suggested that the permittee retain the services of an appropriate professional registered in the State of Florida for periodic observation of construction of the project.

For projects permitted with an operating entity that is different from the permittee, it should be noted that until the construction completion certification is accepted by the District and the permit is transferred to an acceptable operating entity pursuant to Sections 12.1-12.3 of the Applicant's Handbook Volume I and Section 62-330.310, F.A.C., the permittee is liable for operation and maintenance in compliance with the terms and conditions of this permit.

In accordance with Section 373.416(2), F.S., unless revoked or abandoned, all stormwater management systems and works permitted under Part IV of Chapter 373, F.S., must be operated and maintained in perpetuity.

The efficiency of stormwater management systems, dams, impoundments, and most other project components will decrease over time without periodic maintenance. The operation and maintenance entity 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 in a timely manner to prevent compromises to flood protection and water quality. See Section 12.4 of Applicant's Handbook Volume I for Minimum Operation and Maintenance Standards.

RELATED CONCERNS:

Water Use Permit Status:

The applicant has indicated that reclaimed water will be used as a source for irrigation water for the project. The applicant has indicated that dewatering is not required for construction of this project.

This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation.

CERP:

The proposed project is not located within or adjacent to a Comprehensive Everglades Restoration Project component.

Potable Water Supplier:

Orange County Utilities

Waste Water System/Supplier:

Orange County Utilities

Right-Of-Way Permit Status:

A District Right-of-Way Permit is not required for this project.

DRI Status:

This project is not a DRI.

Historical/Archeological Resources:

The District has received correspondence from the Florida Department of State, Division of Historical Resources indicating that no significant archaeological or historical resources are recorded in the project area and the project is therefore unlikely to have an effect upon any such properties.

DEO/CZM Consistency Review:

The issuance of this permit constitutes a finding of consistency with the Florida Coastal Management Program.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF RECOMMENDATION TO EXECUTIVE DIRECTOR:

The Staff recommends that the following be issued :

Conceptual approval of a 186.54 acre residential, commercial and institutional development known as Seidel East. Construction and operation of the residential portion of the development.

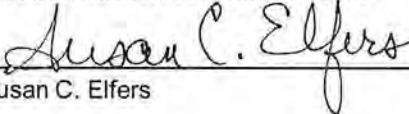
Based on the information provided, District rules have been adhered to.

Staff recommendation is for approval subject to the attached General and Special Conditions.

STAFF REVIEW:

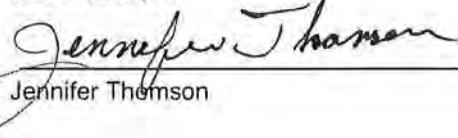
NATURAL RESOURCE MANAGEMENT APPROVAL

ENVIRONMENTAL EVALUATION



Susan C. Elfers


SUPERVISOR



Jennifer Thomson


SURFACE WATER MANAGEMENT APPROVAL

ENGINEERING EVALUATION




P.E. "Rett" Thompson, P.E.

SUPERVISOR



Carlos A. de Rojas, P.E.

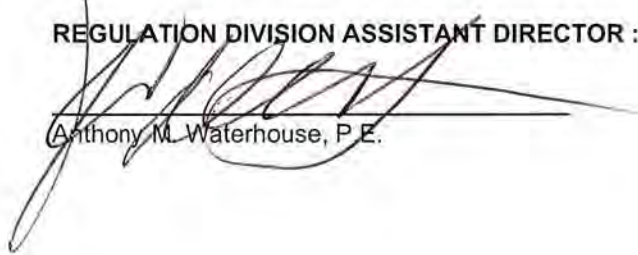
ENVIRONMENTAL RESOURCE PERMITTING BUREAU CHIEF :



Anita R. Bain

DATE: 9/13/14

REGULATION DIVISION ASSISTANT DIRECTOR :



Anthony M. Waterhouse, P.E.

DATE: 9/14/14

GENERAL 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 shall subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S. (2012).
2. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with Rule 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.
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), and the "Florida Stormwater Erosion and Sedimentation Control Inspector's Manual" (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), 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" indicating the expected start and completion dates. 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)].
 - 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 Applicant's Handbook 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.

GENERAL CONDITIONS

8. The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and 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.

GENERAL CONDITIONS

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 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.

SPECIAL CONDITIONS

1. The conceptual phase of this permit shall expire on September 8, 2034.
The construction phase of this permit shall expire on September 8, 2019.
2. Operation of the stormwater management system shall be the responsibility of HOMEOWNERS ASSOC. AND ORANGE COUNTY. Within one year of permit issuance or concurrent with the engineering certification of construction completion, whichever comes first, the permittee shall submit a copy of the recorded deed restrictions (or declaration of condominium, if applicable), a copy of the filed articles of incorporation, and a copy of the certificate of incorporation for the association.

3. Discharge Facilities:

Structure: CS-1

1-10.17' WIDE SHARP CRESTED weir with crest at elev. 101.5' NAVD 88.
1-.25' dia. CIRCULAR ORIFICE with invert at elev. 99.6' NAVD 88.

Receiving body : Panther Lake
Control elev : 99.6' NAVD 88.

Structure: CS-2

1-1.5' WIDE SHARP CRESTED weir with crest at elev. 101.4' NAVD 88.
1-.25' dia. CIRCULAR ORIFICE with invert at elev. 98.5' NAVD 88.

Receiving body : Panther Lake
Control elev : 98.5' NAVD 88.

Structure: CS-6

1-2' W X 3.08' L drop inlet with crest at elev. 114' NAVD 88.

Receiving body : Panther Lake
Control elev : 108' NAVD 88.

4. Lake side slopes shall be no steeper than 5:1 (horizontal:vertical) to a depth of two feet below the control elevation. Side slopes shall be nurtured or planted from 2 feet below to 1 foot above control elevation to insure vegetative growth, unless shown on the plans.
5. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
6. Minimum building floor elevation: See Exhibit 3
7. Minimum road crown elevation: See Exhibit 3
8. Prior to commencement of construction and in accordance with the work schedule in Exhibit No. 4, the permittee shall submit documentation that 0.10 of freshwater forested credits have been deducted from the ledger for Reedy Creek Mitigation Bank.
9. A maintenance program shall be implemented for the preserved wetland areas on a regular basis to ensure the integrity and viability of those areas as permitted. Maintenance shall be conducted in perpetuity to ensure that the conservation areas are maintained free from Category 1 exotic vegetation (as defined by the Florida Exotic Pest Plant Council at the time of permit issuance)

SPECIAL CONDITIONS

immediately following a maintenance activity. Maintenance in perpetuity shall also insure that conservation areas, including buffers, maintain the species and coverage of native, desirable vegetation specified in the permit. Coverage of exotic plant species shall not exceed 5% of total cover between maintenance activities. Coverage of nuisance plant species shall not exceed 10% of total cover between maintenance activities. In addition, the permittee shall manage the conservation areas such that exotic/nuisance plant species do not dominate any one section of those areas.

10. Prior to October 26, 2014 and prior to the commencement of construction, whichever occurs first, the permittee shall submit the following via ePermitting or to the Environmental Compliance staff at the local District office:

- A. One certified copy of the recorded conservation easement document including exhibits.

- B. A CD or DVD containing the easement data in a digital ESRI Geodatabase (mdb), ESRI Shapefile (shp) or AutoCAD Drawing Interchange (dxf) file format using Florida State Plane coordinate system, East Zone (3601), Datum NAD83, HARN with the map units in feet.

- C. A map depicting the Conservation Easement over the best available satellite or aerial imagery.

- D. Form 1001 ERP REG: Title, Possession, and Lien Affidavit, fully executed by the owner and notarized.

The recorded easement shall utilize the form attached as Exhibit No. 4. This Exhibit may not be modified. The easement must be free of mortgages, liens, easements or other encumbrances or interests in the easement which District staff states are contrary to the intent of the easement. In the event it is later determined that there are encumbrances or interests in the easement which the District determines are contrary to the intent of the easement, the permittee shall be required to provide release or subordination of such encumbrances or interests.

Table of Contents for Staff Report Exhibits

Application No. 140509-9

Seidel East

- Exhibit 1: Location map
- Exhibit 2: Paving, grading and drainage plans
- Exhibit 3: Stormwater calculations summary table
- Exhibit 4: Letter of Reservation and Conservation Easement



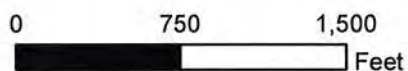
Exhibit No: 1

Exhibit Created On:
2014-08-26

ORANGE COUNTY, FL

REGULATION DIVISION

Project Name: SEIDEL EAST
Created by Regulation GIS Section



 Application



Application Number: 140509-9

sfwmd.gov

South Florida Water Management District

Construction Plans for Horizon West - Village F Seidel East

Orange County, FL
May 9, 2014

Parcel Id. No.:
05-24-27-0000-00-005

Owner/Developer/Applicant:
Toll Brothers, Inc
2966 Commerce Park Drive, Suite 100
Orlando, FL 32819
407.345.6006



Vicinity Map
Scale: 1" = 3,000'

Sheet Index		Subm./Rev.					
Sheet Id.	Sheet Title	1	2	3	4	5	6
C0.01	Construction Notes	■	■				
C0.02	Master Site Plan	■	■				
C0.03	Land Use Tables	■	■				
C0.04	Erosion Control Plan	■	■				
C0.05	Wetland Impacts/Preservation	■	■				
C1.00 - C1.01	Typical Sections & Details	■	■				
C2.00 - C2.03	Drainage & Grading Plan	■	■				
C2.10	Grading Sections & Details	■	■				
C2.20	Control Structure Details	■	■				
C9.00 - C9.01	Standard F.D.O.T. Details	■	■				
	<u>Survey Sheets</u>						
	Boundary And Topography Survey	■	■				
	<u>Date</u>						
	<u>Description</u>						
1	5/9/2014	Submit To SPWDAD					
2	7/25/2014	Submit To SPWDAD					

Civil Engineer:
Poulos & Bennett, LLC
4625 Holder Ln., Suite B
Orlando, FL 32814
407.487.2594

Environmental:
Bio-Tech Consulting, Inc
2002 East Robinson Street
Orlando, FL 32803
407.894.5969
407.894.5970

Supervisor:
Allen & Company
16 East Platt St
Winter Garden, FL 34787
407.654.5355
407.654.5356

Geotechnical Engineer:
Universal Engineering Sciences
3532 Maggie Blvd
Orlando, FL 32811
407.423.0504
407.423.5106



4625 Holder Lane, Suite B, Orlando, FL 32814
Tel. 407.487.2594 www.poulosandbennett.com
Eng. Bus. No. 28567
P&B Job No.: 13-041

DEVELOPMENT INFORMATION

Table with 2 columns: Item and Value. Includes items like ZONING, TOTAL NUMBER OF UNITS, TOTAL AREA, etc.

USE ADJUSTMENT

Table with 4 columns: Use, Area, Density, and Other metrics. Lists various residential and commercial uses.

- List of conditions and notes regarding the use adjustment, including references to zoning codes and regulations.

OWNERSHIP / MAINTENANCE

Table with 3 columns: Item, Responsibility, and Description. Details ownership and maintenance for various project components.

UTILITIES

Table with 3 columns: Item, Responsibility, and Description. Details utility services like water, sewer, and gas.

NOTES

- Notes regarding the project, including references to zoning codes, regulations, and specific project requirements.

TRAFFIC IMPROVEMENTS CALCULATIONS

Table showing traffic improvement calculations, including metrics like peak hour volume, delay, and level of service.

Summary table for traffic improvement calculations, showing total values for various metrics.

OPEN SPACE REQUIREMENTS

Table detailing open space requirements, categorized by type (e.g., public park, recreation) and showing acreage and percentage.

- Notes and conditions related to the open space requirements, including references to zoning codes.

Table showing acreage and other metrics for various tracts or areas.

Table showing acreage and other metrics for various tracts or areas.

Key Map



Countdown

Table with 2 columns: Item and Value. Includes items like Date, Time, and other project details.

Project Name: HORIZON WEST VILLAGE F SEIDEL EAST CDR 13-09-239 PSP 13-11-293

Submittal To: ORANGE COUNTY, FL

Sheet Title: LAND USE TABLES

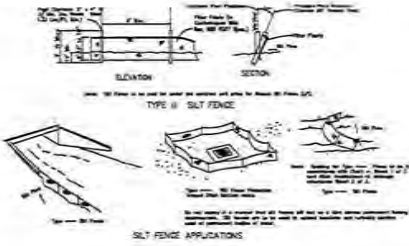
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Poulos & Bennett, LLC

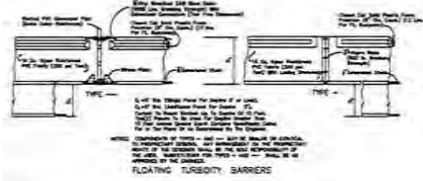
Project Address: 4025 Mahan Lane, Suite 3, Orlando, FL 32814

EROSION CONTROL NOTES:

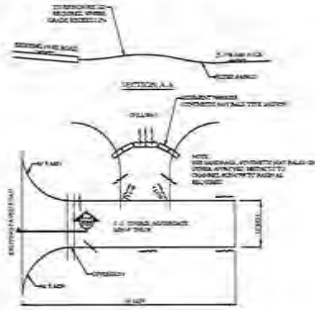
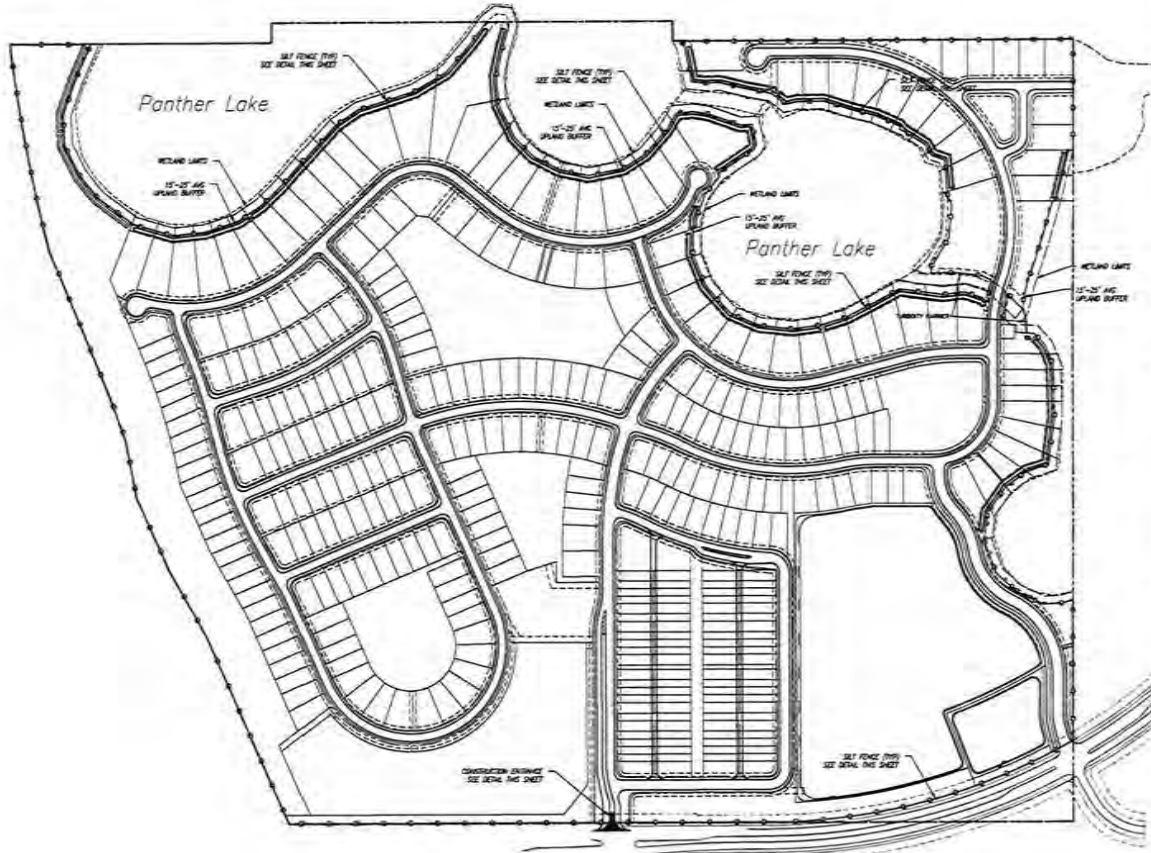
1. DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO INSURE AGAINST POLLUTING, SILING OR DISTURBING TO SUCH AN EXTENT AS TO CAUSE AN INCREASE IN TURBIDITY TO THE EXISTING SURFACE WATERS. SUCH MEASURES SHALL BE APPROVED BY THE PROJECT ENGINEER AND MUST INCLUDE, BUT NOT LIMITED TO, CONSTRUCTION OF TEMPORARY EROSION CONTROL STRUCTURES, SUCH AS SEDIMENT BASINS, SEDIMENT CHECKS OR SILT BARRIERS.
2. SODDING OF DETENTION PONDS AND OTHER AREAS DESIGNATED FOR SOD, SHOULD BE ACCOMPLISHED WITHIN SEVEN (7) DAYS FOLLOWING COMPLETION OF GRADING TO MINIMIZE EROSION POTENTIAL.
3. AT A MINIMUM, THE RETENTION/STORAGE AREA MUST BE EXCAVATED TO ROUGH GRADE PRIOR TO BUILDING CONSTRUCTION OR PLACEMENT OF IMPERVIOUS SURFACES WITHIN THE AREA TO BE SERVED BY THOSE FACILITIES TO PREVENT REDUCTION IN STORAGE VOLUME AND PERCOLATION RATES. ALL ACCUMULATED SEDIMENT MUST BE REMOVED FROM THE STORAGE AREA PRIOR TO FINAL GRADING AND STABILIZATION.
4. IF DURING CONSTRUCTION, THE PROPOSED EROSION CONTROL SYSTEM DOES NOT PERFORM SATISFACTORILY, ALTERNATIVES AND ADDITIONAL METHODS OF PROTECTION SHALL BE IMPLEMENTED BY THE CONTRACTOR IN ORDER TO COMPLY WITH FLORIDA AND ORANGE COUNTY EROSION PROTECTION STANDARDS. CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR ALL EROSION CONTROL COSTS INCLUDING ANY COSTS ASSOCIATED WITH COMPLIANCE ISSUES AND ENFORCEMENT ACTIONS.
5. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT A DETAILED EROSION CONTROL PLAN TO ORANGE COUNTY FOR REVIEW AND APPROVAL A MINIMUM OF 14 WORKING DAYS PRIOR TO THE RECONSTRUCTION METHOD. THE EROSION CONTROL PLAN SHALL PROPOSE SILT SCREENS OR SYNTHETIC HAY SALES AND TURBIDITY BARRIERS, IN ACCORDANCE WITH THE CONSTRUCTION PLANS.
6. 2' STRIP OF SOD SHALL BE PLACED BEHIND BACK OF CURB.
7. ALL PERMANENT EROSION CONTROL MEASURES SHALL BE COMPLETED WITHIN 7 DAYS OF FINAL GRADING. ALL TEMPORARY EROSION CONTROL SHALL BE MAINTAINED UNTIL PERMANENT MEASURES ARE COMPLETED AND ESTABLISHED.
8. AT A MINIMUM SILT BARRIERS SHALL BE PLACED AS SHOWN ON THE CONSTRUCTION PLANS TO INSURE AGAINST POLLUTING, SILING OR DISTURBING TO SUCH AN EXTENT AS TO CAUSE AN INCREASE IN TURBIDITY, OR DISCHARGE OF MATERIAL, DEBRIS OR TO EXISTING WETLANDS. IF DURING CONSTRUCTION THE PROPOSED EROSION CONTROL SYSTEM DOES NOT PERFORM SATISFACTORILY ALTERNATIVES AND ADDITIONAL MEASURES SHALL BE IMPLEMENTED BY THE CONTRACTOR IN ORDER TO COMPLY WITH ORANGE COUNTY AND S.F.W.M.D. EROSION PROTECTION STANDARDS.
9. CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR ALL EROSION PROTECTION COSTS, INCLUDING ANY COST ASSOCIATED WITH COMPLIANCE ISSUES AND ENFORCEMENT ACTIONS.
10. CONTRACTOR IS RESPONSIBLE FOR PREPARING AND ADHERING TO A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH THE FLORIDA STORMWATER, EROSION, AND SEDIMENTATION CONTROL INSTRUCTIONS MANUAL PUBLISHED BY DEP.
11. CONTRACTOR SHALL STAKE IN ALL SOD UNTIL SUCH TIME THAT GROUND IS STABILIZED IN ORDER TO PREVENT EROSION.
12. WORK SHALL BE DONE IN ACCORDANCE WITH EPA, FDEP, SWFWMD, AND ORANGE COUNTY BEST MANAGEMENT PRACTICES AND EROSION CONTROL SPECIFICATIONS.
13. THE SITE SHALL BE STABILIZED FOLLOWING GRUBBING, CLEARING, SAWTH WORK OR MASS GRADING TO ESTABLISH A DENSE STAND OF GRASS OR SHALL INCORPORATE OTHER APPROVED BEST MANAGEMENT PRACTICES. ON ALL DISTURBED AREAS IF DEVELOPMENT DOES NOT BEGIN WITHIN 7 DAYS, FINAL STABILIZATION SHALL ACHIEVE A MINIMUM OF 70% COVERAGE OF THE DISTURBED LAND AREA AND SHALL INCLUDE A MAINTENANCE PROGRAM TO MAINTAIN MINIMUM COVERAGE SURVIVAL AND OVERALL SITE STABILIZATION UNTIL SITE DEVELOPMENT.



EROSION CONTROL DETAILS FOR SILT FENCE



EROSION CONTROL DETAILS FOR TURBIDITY BARRIERS

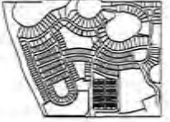


TEMPORARY GRAVEL CONSTRUCTION ACCESS DETAIL

100' 0 200' 400'
SCALE IN FEET



Key Map



Clipboard

PROJECT NO.	140509-9
PROJECT NAME	ALBERT TOWN
DATE	REVISION
REVISION	REVISION
DATE	May 8, 2014
REVISION	13-M
DESIGNED BY	ICB
CHECKED BY	CSL/RSB/CSK
APPROVED BY	DEP/ICB
SCALE IN FEET	1" = 30'

Project Name:
**HORIZON WEST
 VILLAGE F
 SEIDEL EAST
 CDR 13-09-239
 PSP 13-11-293**

Submitted To:
ORANGE COUNTY, FL.

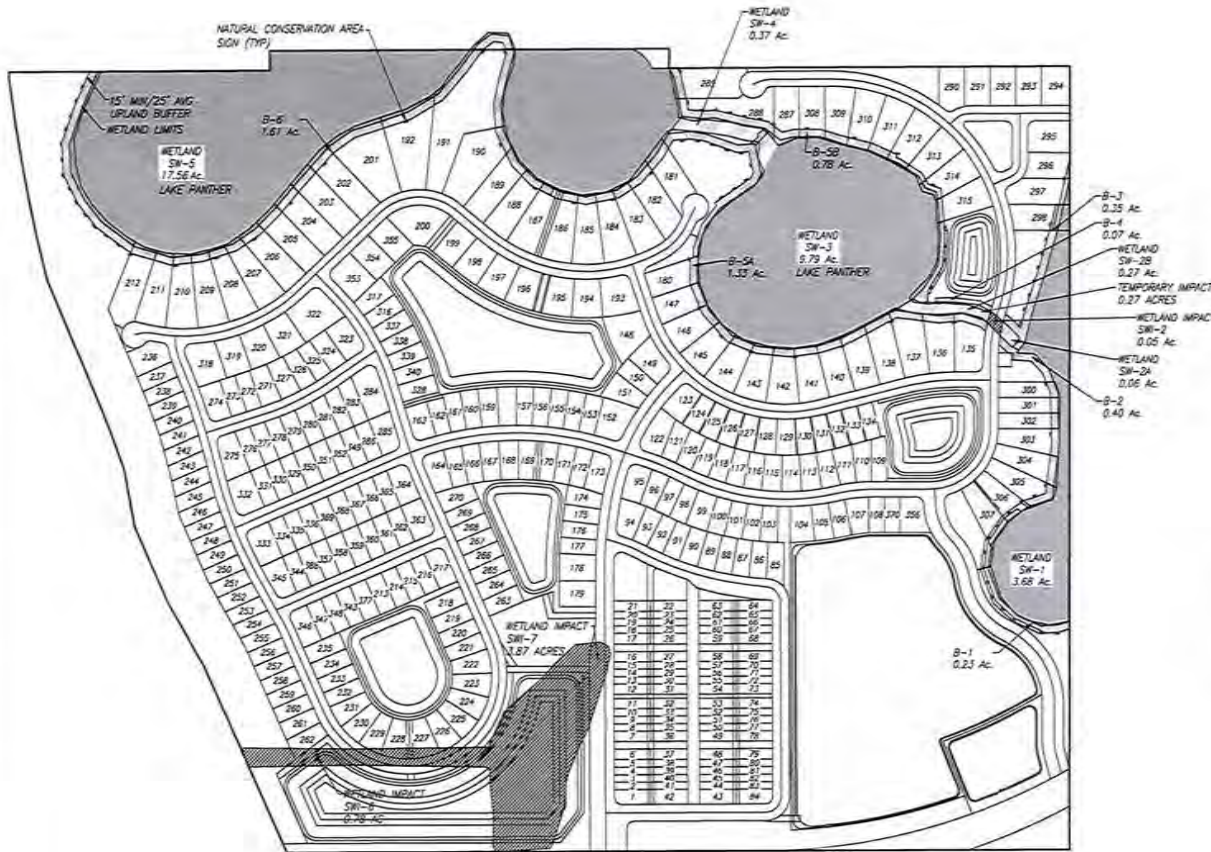
Sheet Title:
**EROSION
 CONTROL
 PLAN**

Sheet No.:
C0.04

DATE: **JUL 29, 2014**



Poulos & Bennett, LLC
 4025 Walker Lane, Suite B, Orlando, FL 32811
 TEL: 407-847-2000 www.poulosandbennett.com
 REG. NO. 04-20007



TRACT ID	WETLAND CLASS	ACREAGE
SW-1	I	3.08
SW-2	I	0.05
SW-3	I	5.79
SW-4	I	0.37
SW-5	I	17.56
SW-6	II	0.78
SW-7	III	3.67
TOTAL		36.43

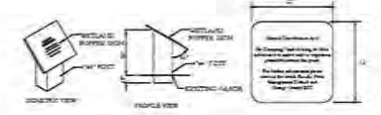
TRACT ID	WETLAND CLASS	ACREAGE
SW-1	I	3.08
SW-2	I	0.03
SW-3	I	5.79
SW-4	I	0.37
SW-5	I	17.56
TOTAL		32.23

TRACT ID	WETLAND CLASS	ACREAGE
SW-2	II	0.02
SW-6	II	0.78
SW-7	III	3.87
TOTAL		4.67

CATEGORY	ACREAGE
EXISTING SURFACE WATER	36.43
CONSERVATION TRACTS	31.73
PROPOSED IMPACTS	4.70
BALANCE	0.00

TRACT ID	ACREAGE
B-1	0.23
B-2	0.40
B-3	0.05
B-4	0.07
B-5A	1.33
B-5B	0.27
B-5	1.61
TOTAL	4.73

NOTES:
 1. A CONSERVATION AREA IMPACT PERMIT APPLICATION TO BE SUBMITTED TO ORANGE COUNTY, UNLESS AN IMPACT PERMIT IS APPROVED CONSISTENT WITH ORANGE COUNTY CODE CHAPTER 15. NO CONSERVATION AREA OR BUFFER ENCROACHMENTS SHALL BE PERMITTED.
 2. CONSERVATION AREAS SHALL BE CLEARLY MARKED WITH SIGNAGE ON FIFTY FOOT CENTERS IN COMMON AREAS AND AT EVERY OTHER LOT LINE IN RESIDENTIAL AREAS. SEE SHEETS 04-00-04-02 AND DETAIL ON SHEET 05-00.
 3. APPROVAL OF THIS PLAN DOES NOT CONSTITUTE APPROVAL OF A PERMIT FOR THE CONSTRUCTION OF A BOAT DOCK (INCLUDING BUT NOT LIMITED TO BOARDWALKS OR OBSERVATION PIERS) OR A BOAT RAMP. ANY PERSON DESIRING TO CONSTRUCT A BOAT DOCK OR BOAT RAMP WITHIN UNINCORPORATED ORANGE COUNTY SHALL FIRST APPLY FOR A PERMIT PRIOR TO THE INSTALLATION. A BOAT DOCK SHALL REQUIRE ADDITIONAL PERMITTING UNDER CHAPTER 15, ARTICLE IX, DOCK CONSTRUCTION AND A BOAT RAMP SHALL REQUIRE ADDITIONAL PERMITTING UNDER CHAPTER 15, ARTICLE IX. BOAT RAMP APPLICATION SHALL BE SUBMITTED TO THE ORANGE COUNTY ENVIRONMENTAL PROTECTION DIVISION.



TYPICAL "WETLAND BUFFER" SIGN



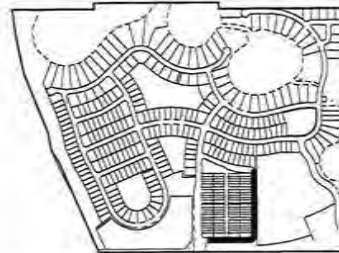
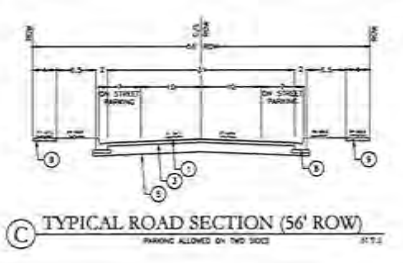
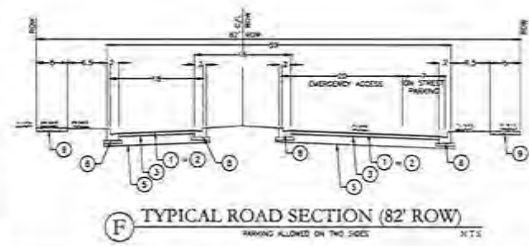
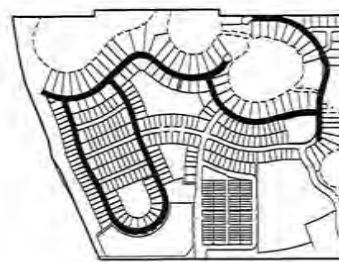
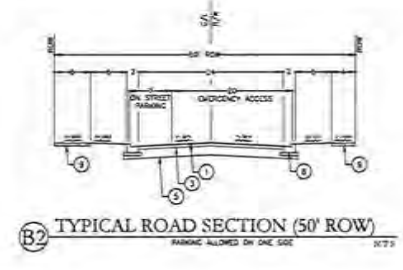
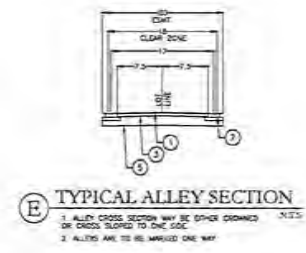
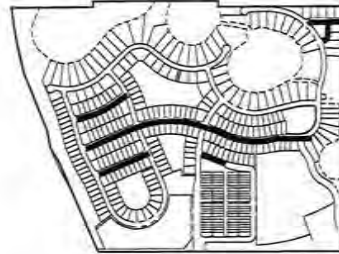
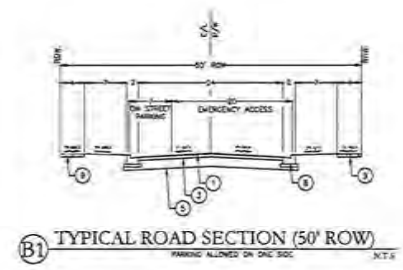
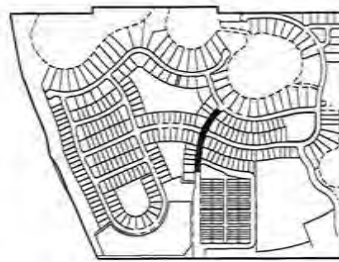
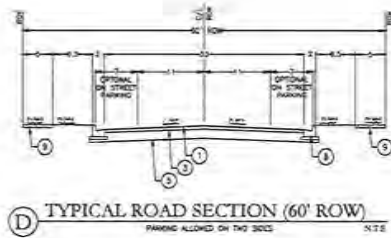
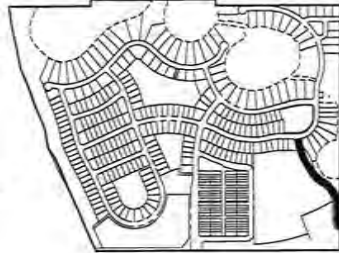
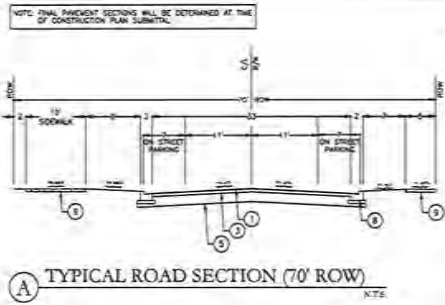
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 3. 0.0000 - INITIAL CHECKLIST
 1. 0.0000 - REVISED PLAN/COMMENTS
 1. 0.0000 - REVISED PLAN/COMMENTS
 2. 0.0000 - REVISED PLAN/COMMENTS
 1. 0.0000 - REVISED PLAN/COMMENTS
 MR. DATE: 08/08/2018
 SUBMITTED TO: SEIDEL EAST VILLAGE EAST
 DATE: November 13, 2015
 JOB NO.: 13-01
 DESIGNED BY: EBF
 CHECKED BY: CSK
 DRAWN BY: EBF
 APPROVED BY: TTT
 SCALE IN FEET: 1" = 20'
 Project Name:
HORIZON WEST VILLAGE F SEIDEL EAST CDR 13-09-239 PSP 13-11-293

Submitted To:
ORANGE COUNTY, FL
 Sheet Title:
SFWMW WETLAND IMPACTS/PRESERVATIONS

Sheet No.:
C0.05



Foullos & Bennett, LLC
 4625 Hialeah Lane, Suite 10, Orlando, FL 32814
 Tel: 407.647.2014 www.foullosandbennett.com
 Eng. No. 14-2947



NOTE:
1. A 12" UTILITY EASEMENT WILL BE PROVIDED ALONG ALL PUBLIC RIGHT-OF-WAY.
2. MARSHALL MIX WILL REQUIRE A MIX DESIGN APPROVAL BY ORANGE COUNTY.

- LEGEND:**
- ① 1" (IN.) TYPE 9-H ASPHALT SEE NOTE NO. 2 BELOW
 - ② 1.5" (IN.) TYPE SP-3.5
 - ③ 6" (IN.) SOL. CEMENT BASE
 - ④ 8" (IN.) SOL. CEMENT BASE
 - ⑤ 12" (IN.) COMPACTED SUBGRADE TO SOE HEIGHT MOORED PROCTOR T-100
 - ⑥ 6" (IN.) STABILIZED SUBGRADE IN CURB AREA TO DRENCH
 - ⑦ 12" (IN.) EACH SIDE TO 50' FBW
 - ⑧ WARR CONC. CURB
 - ⑨ TYPE 'Y' CONC. CURB
 - ⑩ 4" (IN.) THICK CONC. SOLIDUM (3000 P.S.I.)



DESIGNED BY	SCOTT/STANLEY
CHECKED BY	SCOTT/STANLEY
DATE	May 2, 2014
SCALE	AS SHOWN
PROJECT NO.	140509-9
DATE	May 2, 2014
SCALE	AS SHOWN
PROJECT NO.	140509-9
DATE	May 2, 2014

HORIZON WEST VILLAGE F SEIDEL EAST
CDR 13-09-239
PSP 13-11-293

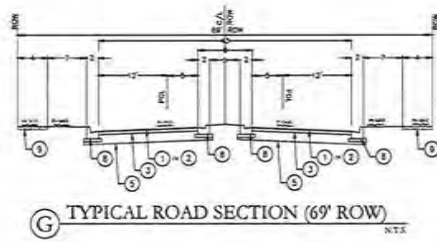
Submitted To:
ORANGE COUNTY, FL

Sheet Title:
TYPICAL SECTIONS & DETAILS

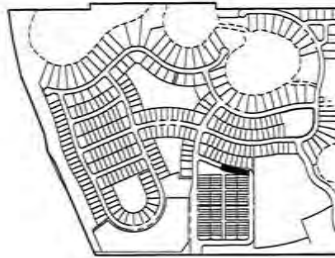
Sheet No.:
C1.00



Foulon & Bennett, LLC
1625 Florida Lane, Suite 70, Orlando, FL 32814
Tel: 407-204-1111 www.foulonbennett.com
Exp. Date: 06/29/2017



G TYPICAL ROAD SECTION (69' ROW)
N.T.S.



LEGEND:

- ① 1" (N.) TYPE S-II ASPHALT SEE NOTE NO. 2 BELOW
- ② 1.5" (N.) TYPE SP-9.5
- ③ 6" (N.) SOIL CEMENT BASE
- ④ 8" (N.) SOIL CEMENT BASE
- ⑤ 12" (N.) COMPACTED SUBGRADE TO 95% AASH TO MODIFIED PROCTOR T-100
- ⑥ 6" (N.) STABILIZED SUBGRADE IN CURB AREA TO EXISTING
- ⑦ 12" (N.) EACH SIDE TO 50 P.S.V.
- ⑧ 4" (N.) THICK CONC. SIDEWALK (3000 P.S.I.)
- ⑨ 4" (N.) THICK CONC. CURB
- ⑩ 4" (N.) THICK CONC. CURB
- ⑪ 4" (N.) THICK CONC. CURB

NOTE:

- 1. A 10' UTILITY EASEMENT WILL BE PROVIDED ALONG ALL PUBLIC RIGHT-OF-WAY
- 2. MARSHALL MIX WILL REQUIRE A MIX DESIGN APPROVAL BY ORANGE COUNTY.

Key Map



Client/Owner

1	4/2/2014	SUBMIT TO PERM
2	4/2/2014	SUBMIT TO PERM
3	4/2/2014	PERM REVIEW
4	4/2/2014	PERM REVIEW
5	4/2/2014	PERM REVIEW
6	4/2/2014	PERM REVIEW
7	4/2/2014	PERM REVIEW
8	4/2/2014	PERM REVIEW
9	4/2/2014	PERM REVIEW
10	4/2/2014	PERM REVIEW
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99	4/2/2014	PERM REVIEW
100	4/2/2014	PERM REVIEW

Project Name:
**HORIZON WEST
 VILLAGE F
 SEIDEL EAST
 CDR 13-09-239
 PSP 13-11-293**

Site/Parcel To:
 ORANGE COUNTY, FL

Sheet Title:
**TYPICAL
 SECTIONS &
 DETAILS**

Sheet No.:
C1.01

DATE: July 26, 2014
 TIME: 10:00 AM
 BY: [Signature]

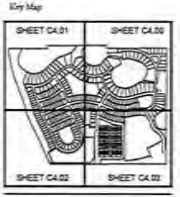


Foulos & Bennett, LLC
 4625 Major Lane, Suite B, Orlando, FL 32814
 704.487.4724 www.foulosandbennett.com
 Eng. Seal No. 20447



Match Line
For Cont. See Sheet C2.02

Match Line
For Cont. See Sheet C2.00



Revision

NO.	DESCRIPTION	DATE
1	ADD SIGN - SIGNETTY/SHIELD	May 1, 2014
2	ADD SIGN - SIGNETTY/SHIELD	11-01
3	ADD SIGN - SIGNETTY/SHIELD	11-01
4	ADD SIGN - SIGNETTY/SHIELD	11-01
5	ADD SIGN - SIGNETTY/SHIELD	11-01
6	ADD SIGN - SIGNETTY/SHIELD	11-01
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8	ADD SIGN - SIGNETTY/SHIELD	11-01
9	ADD SIGN - SIGNETTY/SHIELD	11-01
10	ADD SIGN - SIGNETTY/SHIELD	11-01

HORIZON WEST VILLAGE F SEIDEL EAST CDR 13-09-239 PSP 13-11-293

Submitted To:
ORANGE COUNTY, FL

Submitted Title:
DRAINAGE & GRADING PLAN

Sheet No.:
C2.01

LEGEND

- BASIN DIVIDE
 - X 100.00 EXISTING ELEVATION
 - 104.00 PROPOSED ELEVATION
 - EXISTING CONTOUR
 - PROPOSED CONTOUR
 - PROPOSED POND CONTOUR
-
- LOT NUMBER
 - PROP. MIN. FIN. FL. ELEV.
 - LOT GRADE TYPE

GRADE REQUIREMENTS
 MINIMUM ROAD GRADE - 10YR/24HR STAGE
 MINIMUM FINISH FLOOR - GREATER OF 1FT ABOVE 100YR/24HR OR 100YR/72HR

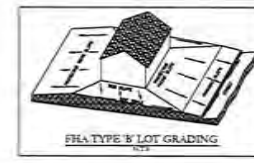
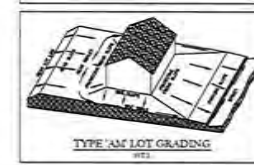
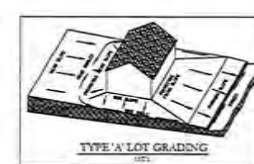
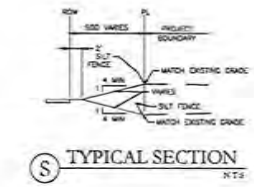
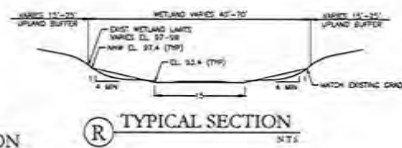
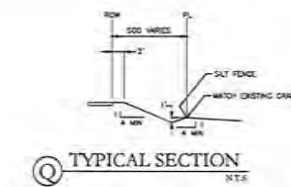
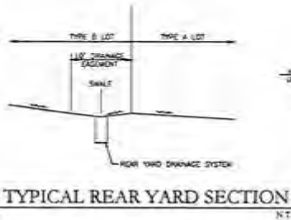
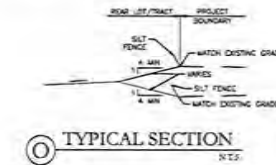
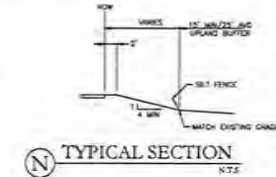
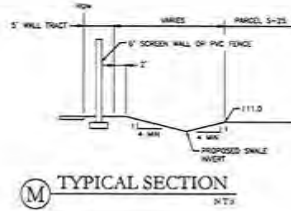
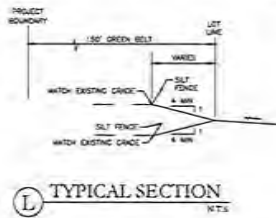
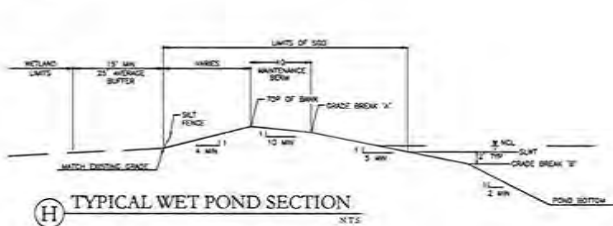
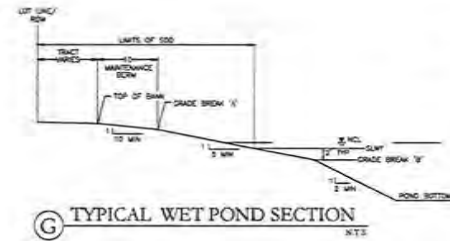
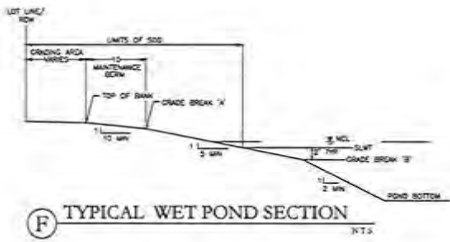
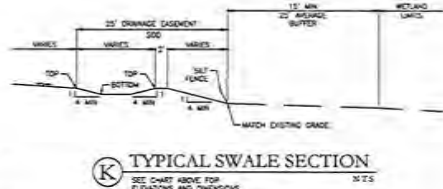
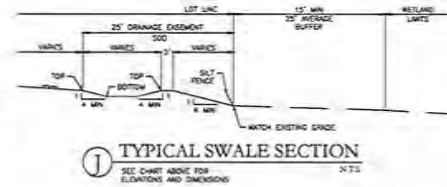
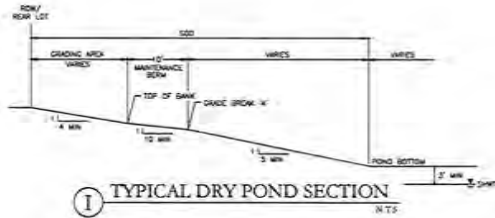
DATE: 10/25/2014

FOULOS & BENNETT

Foulos & Bennett, LLC
 8655 Main Lane, Suite B, Orlando, FL 32814
 Tel: 407.647.2004 www.foulosandbennett.com
 Eng. No. 26547

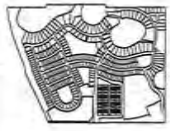
POND STAGES											
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POND 1 (WET)	104.0	103.0	99.6	101.84	101.91	102.25	103.06	97.8	98.6	95.0	N/A
POND 2 (WET)	106.0	105.0	98.5	103.38	103.91	105.08	105.88	96.3	94.5	84.5	N/A
POND 3 (WET)	112.0	111.0	103.0	107.37	108.41	109.90	110.88	101.0	99.0	89.0	N/A
POND 4 (DRY)	113.0	112.0	N/A	109.39	110.22	111.32	112.85	N/A	N/A	106.0	100.3
POND 5 (DRY)	114.0	113.0	N/A	111.54	112.04	112.82	113.29	N/A	N/A	108.0	100.4
POND 6 (DRY)	115.0	114.0	N/A	111.72	112.80	114.20	N/A	N/A	N/A	108.0	100.9

SWALE DIMENSIONS			
NODE ID	TOP ELEVATION	BOTTOM ELEVATION	BOTTOM WIDTH
SE-S1 (A)	100.0	99.5	3.0
SE-S2 (A)	100.0	99.0	3.0
SE-S3 (A)	100.0	99.0	3.0
SE-S4 (A)	102.0	101.0	4.0
SE-S4 (B)	100.0	104.0	4.0
SE-S5 (A)	101.0	100.0	3.0
SE-S5 (B)	100.7	99.7	3.0
SE-S5 (C)	103.8	102.8	3.0
SE-S6 (A)	104.3	103.0	3.0
SE-S6 (B)	103.0	101.5	3.0



TYPICAL LOT GRADING

Key Map



Continued

2 4" X 20" SHEET TO BE USED	
1 SHEET TO BE USED TO BE USED	
NO DATE REVISIONS	
REVISIONS TO BE USED	

DATE:	May 5, 2014
SCALE:	1" = 40'
DESIGNED BY:	KOL
CHECKED BY:	CS/RS/KOL
APPROVED BY:	ESW/KOL
SCALE IN DETAIL:	1" = N.T.S.

Project Name:
HORIZON WEST VILLAGE F SEIDEL EAST
CDR 13-09-239
PSP 13-11-293

Submittal To:
ORANGE COUNTY, FL

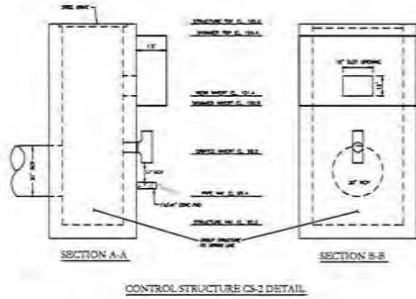
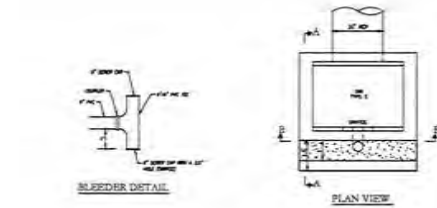
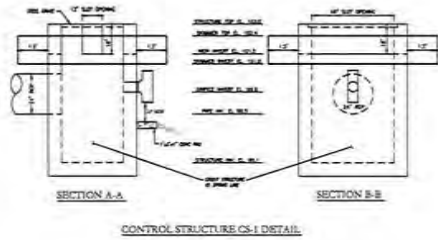
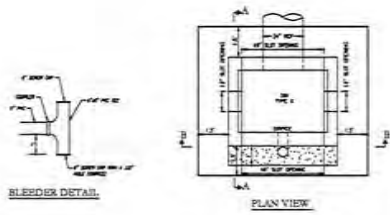
Sheet Title:
GRADING SECTIONS & DETAILS

C2.10

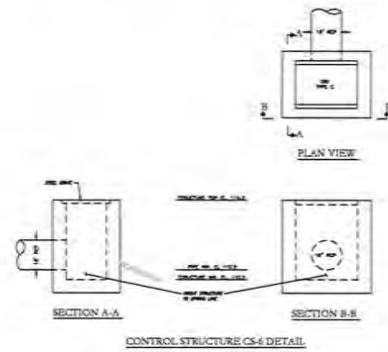
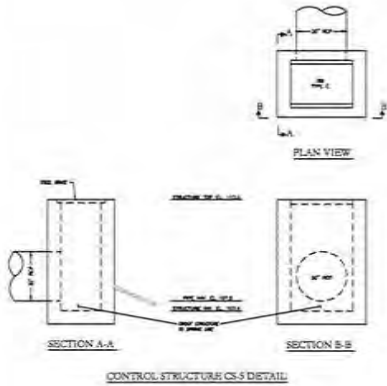
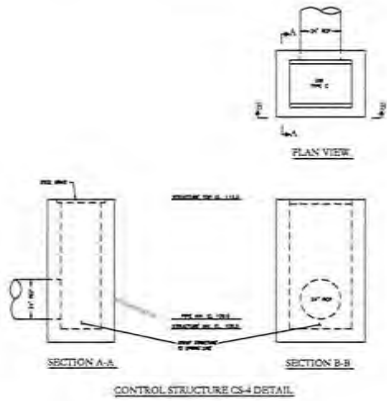
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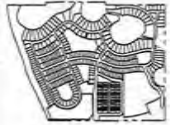
Poulos & Bennett, LLC
4025 Tilden Lane, Suite B, Orlando, FL 32814
Tel: 407-477-2244 www.poulosandbennett.com
Fax: 407-477-2244



- NOTES**
1. A BENCH MARK IS TO BE SET ON TOP OF THE OUTFALL STRUCTURES.
 2. SKIMMER TO BE MOUNTED TO DBI IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS
 3. THE CONTROL STRUCTURES ARE TO BE LOCATED IN THE POND PER THE CONTROL STRUCTURE DETAIL.
 4. ALL BOX STRUCTURES ARE TO INCLUDE GRATES AND CHAINS.



Key Map:



Contract:

2	4/2/2014	FOR SET
1	1/20/2014	FOR SET
CD	DATE	DESCRIPTION
HORIZON WEST, VILLAGE F		
DATE:	Mar 9, 2014	
JOB NO.:	1340	
DESIGNED BY:	KMB	
DRAWN BY:	CH, JSH, JAG	
CHECKED BY:	EDW, JAG	
APPROVED BY:	EDW	
SCALE IN FEET:	N/A	

Project Name:
HORIZON WEST
VILLAGE F
SEIDEL EAST
CDR 13-09-239
PSP 13-11-293

Submitted To:
ORANGE COUNTY, FL

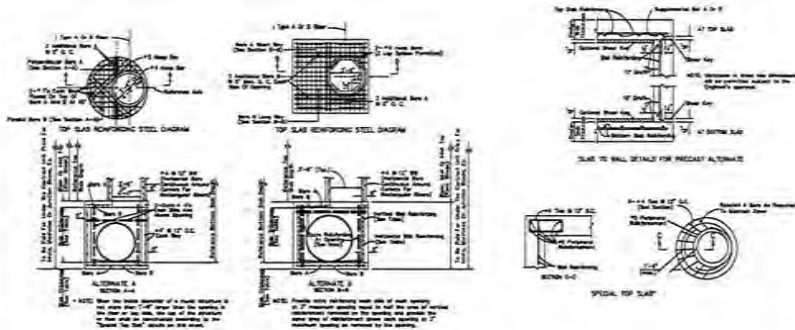
Sheet Title:
CONTROL STRUCTURE DETAILS

Sheet No.:
C2.20

Date:
 10/1/2014
 10/1/2014
 10/1/2014

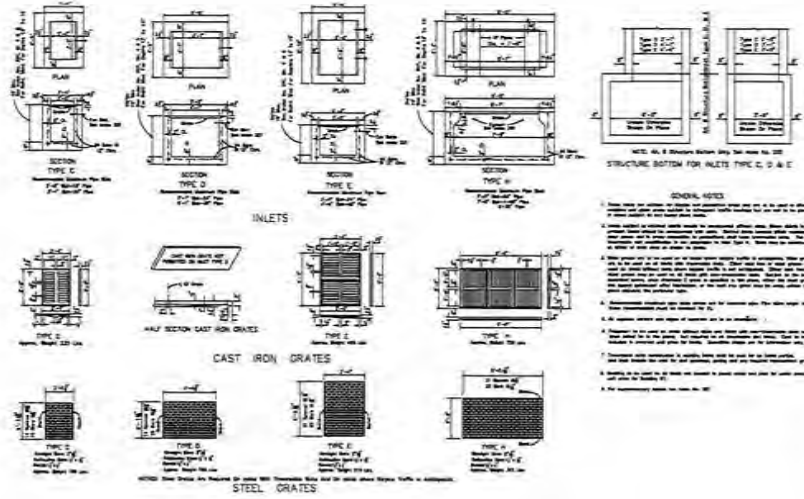


Poulos & Bennett, LLC
 4625 Paddock Lane, Suite B, Orlando, FL 32814
 Tel: 407-687-2264 www.poulosandbennett.com
 Reg. No. 20167



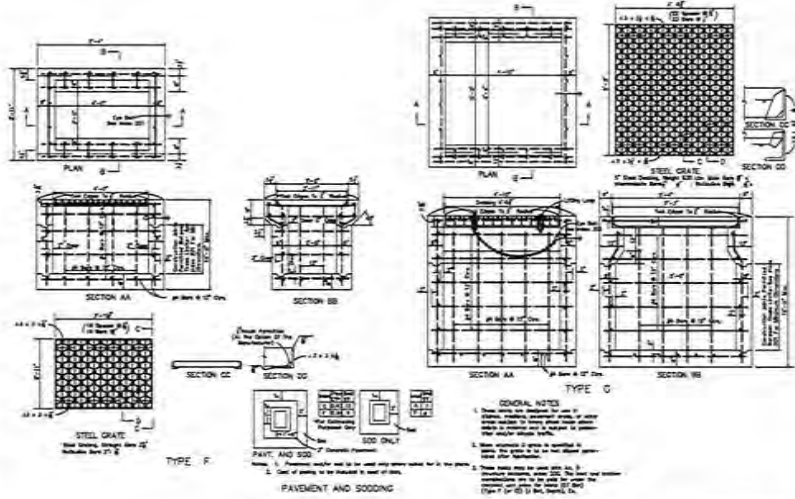
GENERAL NOTES:
 1. Structure shall be constructed of precast concrete with cast-in-place concrete for the top slab and walls. The structure shall be designed for a design life of 100 years.
 2. All dimensions shall be in feet and inches, unless otherwise noted.
 3. The structure shall be constructed in accordance with the Florida Building Code, Chapter 6, and the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 600.
 4. The structure shall be designed for a design load of 100 psf for the top slab and walls.
 5. The structure shall be designed for a design wind speed of 150 mph.
 6. The structure shall be designed for a design seismicity of 0.25g.
 7. The structure shall be designed for a design temperature of 70°F.
 8. The structure shall be designed for a design humidity of 75%.

STRUCTURE BOTTOMS
TYPE J AND P
200 of 2



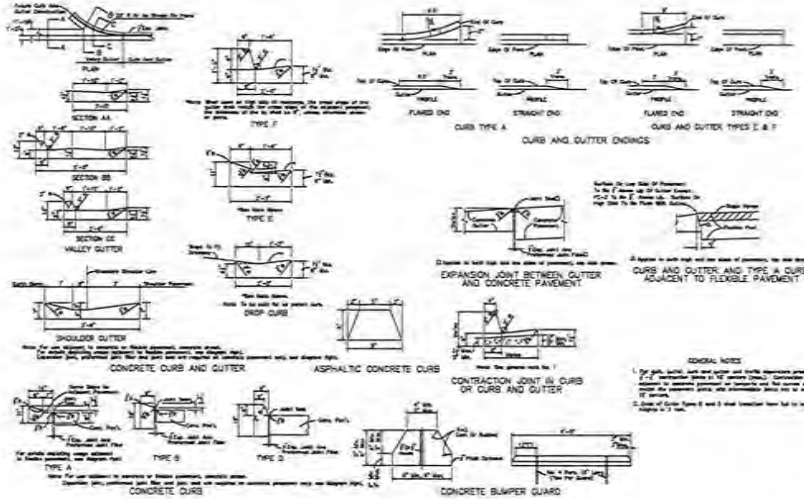
GENERAL NOTES:
 1. Inlets shall be constructed of precast concrete with cast-in-place concrete for the top slab and walls. The inlet shall be designed for a design life of 100 years.
 2. All dimensions shall be in feet and inches, unless otherwise noted.
 3. The inlet shall be constructed in accordance with the Florida Building Code, Chapter 6, and the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 600.
 4. The inlet shall be designed for a design load of 100 psf for the top slab and walls.
 5. The inlet shall be designed for a design wind speed of 150 mph.
 6. The inlet shall be designed for a design seismicity of 0.25g.
 7. The inlet shall be designed for a design temperature of 70°F.
 8. The inlet shall be designed for a design humidity of 75%.

DITCH BOTTOM INLETS
TYPES C, D, E & H
232 of 4



GENERAL NOTES:
 1. Inlets shall be constructed of precast concrete with cast-in-place concrete for the top slab and walls. The inlet shall be designed for a design life of 100 years.
 2. All dimensions shall be in feet and inches, unless otherwise noted.
 3. The inlet shall be constructed in accordance with the Florida Building Code, Chapter 6, and the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 600.
 4. The inlet shall be designed for a design load of 100 psf for the top slab and walls.
 5. The inlet shall be designed for a design wind speed of 150 mph.
 6. The inlet shall be designed for a design seismicity of 0.25g.
 7. The inlet shall be designed for a design temperature of 70°F.
 8. The inlet shall be designed for a design humidity of 75%.

DITCH BOTTOM INLETS
TYPES F & G
233 of 1



EXPANSION JOINT BETWEEN GUTTER AND CONCRETE PAVEMENT.
 CURB AND GUTTER AND TYPE A CURB ADJACENT TO FLEXIBLE PAVEMENT.

GENERAL NOTES:
 1. Curbs shall be constructed of precast concrete with cast-in-place concrete for the top slab and walls. The curb shall be designed for a design life of 100 years.
 2. All dimensions shall be in feet and inches, unless otherwise noted.
 3. The curb shall be constructed in accordance with the Florida Building Code, Chapter 6, and the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 600.
 4. The curb shall be designed for a design load of 100 psf for the top slab and walls.
 5. The curb shall be designed for a design wind speed of 150 mph.
 6. The curb shall be designed for a design seismicity of 0.25g.
 7. The curb shall be designed for a design temperature of 70°F.
 8. The curb shall be designed for a design humidity of 75%.

CURB & CURB AND GUTTER
300 of 1



Client: HORIZON DEVELOPMENT

Project Name: VILLAGE F SEIDEL EAST CDR 13-09-239 PSP 13-11-293

DATE: May 5, 2014

DESIGNED BY: P&B

CHECKED BY: EBF/ACM

APPROVED BY: EBF

SCALE: AS SHOWN

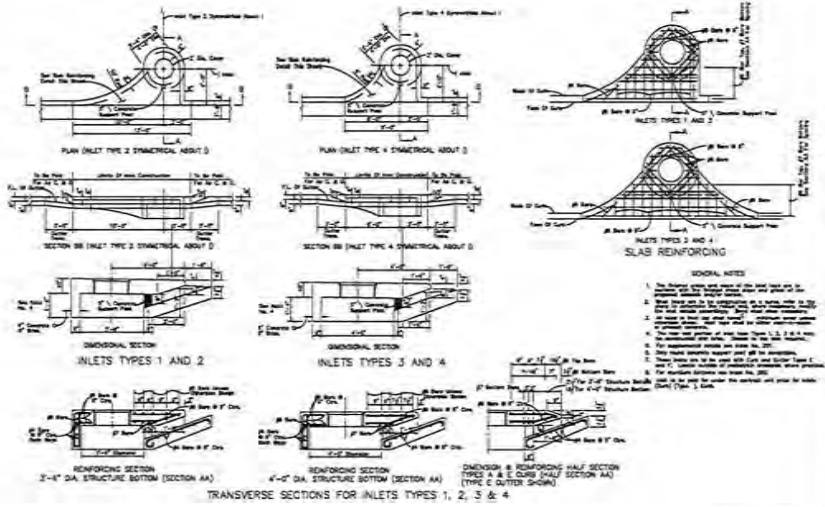
Submitted To: ORANGE COUNTY, FL

Standard: STANDARD F.D.O.T. DETAILS

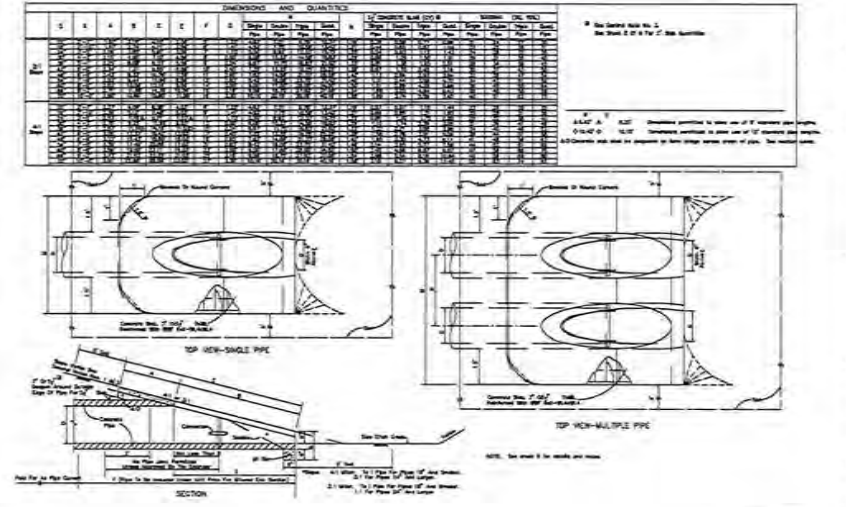
Sheet No: C9.00



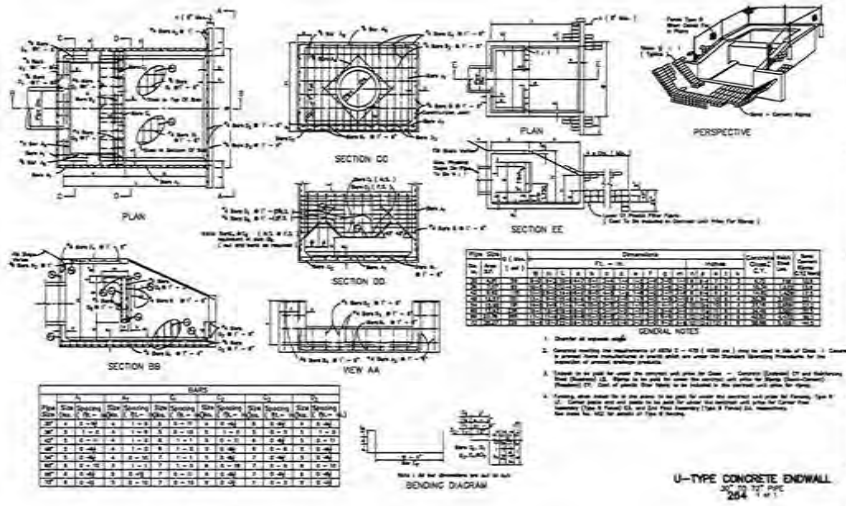
Poulos & Bennett, LLC
 428 Hobbs Lane, Suite 5, Orlando, FL 32811
 Tel: 407-877-2244 www.poulosandbennett.com
 Reg. Prof. No. 20007



CURB INLET TOPS
TYPES 1, 2, 3, & 4
210 of 1



CROSS DRAIN MITERED END SECTION
212 of 1



U-TYPE CONCRETE ENDWALL
204 of 1

Key Map



Revision

NO.	DATE	BY	CHKD.	REVISION
1	08/20/2014	ESL/ESH/JMK	ESL	ISSUED FOR PERMIT
2	08/20/2014	ESL/ESH/JMK	ESL	ISSUED FOR PERMIT
3	08/20/2014	ESL/ESH/JMK	ESL	ISSUED FOR PERMIT
4	08/20/2014	ESL/ESH/JMK	ESL	ISSUED FOR PERMIT
5	08/20/2014	ESL/ESH/JMK	ESL	ISSUED FOR PERMIT
6	08/20/2014	ESL/ESH/JMK	ESL	ISSUED FOR PERMIT
7	08/20/2014	ESL/ESH/JMK	ESL	ISSUED FOR PERMIT
8	08/20/2014	ESL/ESH/JMK	ESL	ISSUED FOR PERMIT
9	08/20/2014	ESL/ESH/JMK	ESL	ISSUED FOR PERMIT
10	08/20/2014	ESL/ESH/JMK	ESL	ISSUED FOR PERMIT

HORIZON WEST VILLAGE F SEIDEL EAST
CDR 13-09-239
PSP 13-11-293

Submitted To: **ORANGE COUNTY, FL**
Sheet Title: **STANDARD F.D.O.T. DETAILS**

C9.01

POULOS & BENNETT

Poulos & Bennett, LLC
4025 Shalby Lane, Suite 8, Orlando, FL 32814
Tel: 407.487.2504 www.poulosandbenett.com
Fax: 407.487.2507

**TABLE POST-1
SEIDEL EAST**

POST-DEVELOPMENT HYDROLOGIC DATA

BASIN ID	NODE ID	TOTAL DRAINAGE AREA(ac)	EFFECTIVE DRAINAGE AREA (Ac.)	PERCENT IMPERVIOUS (%)	PROPOSED LAND USE					WEIGHTED RUNOFF CN	TIME OF CONC. (min)	
					IMPROVED PERVIOUS (Ac.)			IMPERVIOUS AREA (Ac.)	NCL / BOT (Ac.)			
					SOIL->	A	B					C
					CN->	39	61	74	98	98		
SE-P1	POND 1	8.32	7.78	48.9%		3.97			3.81	0.54	70	15.0
SE-P2	POND 2	21.20	20.03	55.2%		8.97			11.07	1.16	73	15.0
SE-P3	POND 3	54.70	48.82	41.1%		28.76			20.06	5.89	67	15.0
SE-P4	POND 4	11.92	10.77	57.7%		4.55			6.21	1.15	75	15.0
SE-P5	POND 5	6.90	6.18	77.7%		1.38			4.81	0.72	86	15.0
SE-P6	POND 6	26.55	23.93	41.9%		13.91			10.02	2.62	67	15.0
SE-S1	SE-S1	2.42	2.42	33.4%		1.61			0.81		59	15.0
SE-S2	SE-S2	1.04	1.04	15.7%		0.87			0.16		48	15.0
SE-S3	SE-S3	1.87	1.87	22.6%		1.45			0.42		52	15.0
SE-S4	SE-S4	3.10	3.10	36.6%		1.97			1.13		61	15.0
SE-S5	SE-S5	9.18	9.18	20.3%		7.31			1.86		51	15.0
SE-S6	SE-S6	3.73	3.73	0.0%		3.73			0.00		39	15.0
SE-R1	POND 3	3.88	3.88	56.2%		1.70			2.18		72	10.0
SE-OFF1	PANTHER	3.81	3.81	0.0%		3.81			0.00		39	15.0
Total ⁽³⁾⁽⁴⁾		154.81	142.74			80.18	0.00	0.00	62.55	12.07		

Notes:

- Existing soils were considered A soils in the post-development conditions.
- Basin SE-P3 impervious area allows for 40% imperviousness for the 13.58 ac. school parcel and 80% imperviousness for the 1.70 ac. commercial parcel
- Total Drainage Area does not include the 3.81 acre offsite EB-6 which will bypass the project and discharge directly into Panther Lake
- The Pre-Development and Post-Development Total Drainage Areas differ by the area of wetland impacts, 0.05 acres.

**TABLE POST-2B
SEIDEL EAST
SOUTH FLORIDA WATER QUALITY DATA
DETENTION TREATMENT METHOD**

RECEIVING NODE	TOTAL DRAINAGE AREA (ac)	POND NCL AREA (ac)	ROOF AREA (ac)	PERVIOUS AREA (ac)	SITE AREA FOR WQ (ac)	IMPERVIOUS AREA FOR WQ (ac)	% IMPERVIOUSNESS (ac)	1.5" RUNOFF OVER BASIN(S) (ac-ft)	3.75" Times %IMPERVIOUSNESS (ac-ft)	DETENTION VOLUME REQUIRED (ac-ft)	DETENTION VOLUME PROVIDED (ac-ft)
POND 1	8.32	0.54	1.95	3.97	5.83	1.85	0.32	1.04	0.77	1.04	1.14
POND 2	21.20	1.16	6.13	8.97	13.91	4.94	0.36	2.65	2.22	2.65	2.75
TOTAL	29.52	1.70	8.08	12.94	19.73	6.80		3.69	3.00	3.69	3.89

**SOUTH FLORIDA WATER QUALITY DATA
RETENTION TREATMENT METHOD**

BASIN ID	RECEIVING NODE	TOTAL DRAINAGE AREA (ac)	ROOF AREA (ac)	PERVIOUS AREA (ac)	SITE AREA FOR WQ (ac)	IMPERVIOUS AREA FOR WQ (ac)	% IMPERVIOUSNESS (ac)	0.75" RUNOFF OVER BASIN (ac-ft)	1.875" Times %IMPERVIOUSNESS (ac-ft)	RETENTION VOLUME REQUIRED (ac-ft)	RETENTION VOLUME PROVIDED (ac-ft)
SE-P3	POND 3	58.59	7.50	30.46	51.09	20.63	0.40	3.66	3.70	3.70	46.83
SE-P4	POND 4	11.92	4.00	4.55	7.92	3.37	0.43	0.74	0.79	0.79	9.77
SE-P5	POND 5	6.90	3.72	1.38	3.19	1.81	0.57	0.43	0.61	0.61	6.10
SE-P6	POND 6	26.55	6.11	13.91	20.44	6.53	0.32	1.66	1.33	1.66	21.73
SE-S1	SE-S1	2.42	0.75	1.61	1.67	0.06	0.04	0.15	0.01	0.15	0.15
SE-S2	SE-S2	1.04	0.15	0.87	0.89	0.01	0.01	0.06	0.00	0.06	0.07
SE-S3	SE-S3	1.87	0.37	1.45	1.50	0.05	0.04	0.12	0.01	0.12	0.14
SE-S4	SE-S4	3.10	1.05	1.97	2.05	0.08	0.04	0.19	0.02	0.19	0.22
SE-S5	SE-S5	9.18	1.73	7.31	7.45	0.14	0.02	0.57	0.03	0.57	0.62
SE-S6	SE-S6	3.73	0.00	3.73	3.73	0.00	0.00	0.23	0.00	0.23	0.25
TOTAL		66.71	17.87	36.78	48.84	12.05		4.17	2.80	4.40	39.04

**TABLE POST-3
SEIDEL EAST**

POND CONTROL ELEVATIONS

NODE ID	POND TYPE	AVERAGE WATER TABLE	SEASONAL HIGH WATER TABLE	LOWEST DISCHARGE	NORMAL CONTROL / POND BOTTOM ELEVATION	PROPOSED WEIR ELEV
POND 1	Wet Pond	99.1	-	99.0	99.6	101.5
POND 2	Wet Pond	98.5	-	96.5	98.5	101.4
POND 3	Wet Pond	101.1	-	-	103.0	-
POND 4	Dry Pond	-	100.5	-	106.0	112.0
POND 5	Dry Pond	-	100.4	-	108.0	113.0
POND 6	Dry Pond	-	100.9	102.0	108.0	114.0

**TABLE POST-6
SEIDEL EAST**

WATER QUALITY SWALES

Basin	Drainage Area (ac)	Volume 0.75" over area (ac-ft)	Req'd. Treatment Volume (ft ³)	Top Elevation			Top Area (ac)	Bottom Elevation			Bottom Area (ac)	Swale Dimensions			Provided Treatment Volume (ft ³)
				A	B	C		A	B	C		Length (ft)	Bot. Width (ft)	Depth (ft)	
SE-S1	2.42	0.15	6,599	100.5			0.28	99.5			0.08	1100	3.0	1.0	7,700
SE-S2	1.04	0.06	2,820	100.0			0.10	99.0			0.04	350	5.0	1.0	3,150
SE-S3	1.87	0.12	5,103	100.0			0.21	99.0			0.06	850	3.0	1.0	5,950
SE-S4	3.10	0.19	8,444	102.0	105.0		0.33	101.0	104.0		0.11	1200	4.0	1.0	9,600
SE-S5	9.18	0.57	24,982	101.0	100.7	103.8	0.90	100.0	99.7	102.8	0.34	3000	5.0	1.0	27,000
SE-S6	3.73	0.23	10,155	104.5	103.0		0.25	103.0	101.5		0.07	650	5.0	1.5	10,725

**TABLE POST-7
SEIDEL EAST**

SPREADER SWALE CALCULATIONS

Spreader Swale ID	From Node	To Node	Length ₃ (ft)	Q ₂ 25 Yr/24 Hr (cfs)	C	H ₁ (ft)	Area (sf)	Velocity (fps)
SSDB1	POND 1	PANTHER	8	8.98	2.5	0.59	4.69	1.9
SSDB2	POND 2	PANTHER	10	10.77	2.5	0.57	5.70	1.9

NOTES:

- (1) Based on broad crested weir equation: $Q = C L H^{3/2}$
- (2) Flow from 25-Year / 24-Hour design storm event
- (3) Minimum length required for discharge velocity ≤ 2.0 fps (SFWMD B.O.R 7.1(g))

**TABLE POST-8
SEIDEL EAST
CONTROL STRUCTURES**

Control Structure	Type	Circular Bleeder Orifice		Weir/Orifice			Drop Structure		Skimmer			Exit Pipe		STR Bot
		Invert Elev. (ft NGVD)	Diameter (in)	Crest Elev. (ft NGVD)	Length ⁽¹⁾ (in)	Height (in)	Type	Top Elev. (ft NGVD)	Top Elev. (ft NGVD)	Bottom Elev. (ft NGVD)	Diameter (in)	Upstream Invert (ft NGVD)	Downstream Invert (ft NGVD)	Bottom Invert
CS-1	DROP STRUCTURE	99.6'	3.0	101.5	122	18	D	103.0	102.4	102.5	24.0	98.5	98.0	96.1
CS-2	DROP STRUCTURE	98.5'	3.0	101.4	18	12	E	105.0	104.4	100.9	30.0	96.4	95.5	95.0

1) The weir length for CS-1 is a combined weir length that includes two 49" weirs and two 12" weirs

**TABLE POST-9
SEIDEL EAST**

POND STAGES

Node ID	Control / Bottom Elevation	Top of Bank Elevation	10yr/24hr Stage	25yr/24hr Stage	100yr/24hr Stage	100yr/72hr Stage	100yr/24hr Stacked Storm
POND 1	99.6	104.00	101.84	101.91	102.05	103.06	
POND 2	98.5	106.00	103.28	103.91	105.08	105.98	
POND 3	103.0	112.00	107.57	108.41	109.90	112.85	110.85
POND 4	106.0	113.00	109.59	110.22	111.32	112.85	
POND 5	108.0	114.00	111.54	112.04	112.92	113.29	
POND 6	108.0	115.00	111.12	111.72	112.80	114.25	113.97
SE-S1	99.5	100.5	101.0	101.0	101.0	101.0	
SE-S2	99.0	100.0	100.5	100.5	100.5	100.5	
SE-S3	99.0	100.0	100.5	100.5	100.5	100.5	
SE-S4	101.0	102.0	102.5	102.5	102.5	102.5	
SE-S5	100.0	101.0	101.5	101.5	101.5	101.5	
SE-S6	103.0	104.5	105.0	105.0	105.0	105.0	

PEAK DISCHARGE RATE (25 yr/24 hr)

DISCHARGE NODE	PRE-DEVELOPMENT DISCHARGE (cfs)	POST-DEVELOPMENT DISCHARGE ⁽²⁾ (cfs)
PANTHER	32.81	31.34

Notes:

(1) Post-Development peak discharge equals the peak inflow to PANTHER LAKE.

(2) Maximum allowable discharge to Reedy Creek is 0.4 cfs/ac, therefore the 154.81 acre site is allowed to discharge 61.92 cfs.

**TABLE POST-10
SEIDEL EAST**

ON-SITE LAND USE BREAKDOWN

Basin ID	Impervious	Water Mgmt	Pervious	Wetland	Total (acres)
	(acres)	(acres)	(acres)	(acres)	
SE-P1	3.81	0.54	3.97		8.32
SE-P2	11.07	1.16	8.97		21.20
SE-P3	20.06	5.89	28.76		54.70
SE-P4	6.21	1.15	4.55		11.92
SE-P5	4.81	0.72	1.38		6.90
SE-P6	10.02	2.62	13.91		26.55
SE-S1	0.81		1.61		2.42
SE-S2	0.16		0.87		1.04
SE-S3	0.42		1.45		1.87
SE-S4	1.13		1.97		3.10
SE-S5	1.86		7.31		9.18
SE-S6	0.00		3.73		3.73
SE-R1	2.18		1.70		3.88
TOTAL	62.55	12.07	80.18	0.00	154.81

**South Florida Water Management District
Work Schedule Requirements**

Application No : 140509-9

Page 1 of 1

Mitigation Plan ID: SEIDEL EAST

Activity

Due Date

SUBMIT MITIGATION BANK DOCUMENTATION

25-OCT-14

Exhibit No :

July 18, 2014

Mr. Steve Butler
Bio-Tech Consulting, Inc.
2002 East Robinson Street
Orlando, Florida 32801

Subject: Reservation of Credits for Seidel East

Steve,

I am writing in reference to Toll Brothers, Inc. need for 0.1 Forested UMAM mitigation credits from Reedy Creek Mitigation Bank. This letter confirms that Reedy Creek Mitigation Bank; SFWMD permit number 53-0002-M has 0.1 UMAM freshwater forested wetland credits reserved for the Seidel East project.

It is agreed that the credits will be reserved until the final permits are received. Once payment has been paid in full the credits will be transferred.

If you should have questions or require additional information, please do not hesitate to contact me.

Sincerely,



Victoria K. Colangelo
Mitigation Marketing, LLC
Phone: 407-481-0677 Fax: 407-648-3866
Victoria@mitigationmarketing.com
Providing Mitigation Solutions Throughout Florida

PO Box 540285
Orlando, Florida 32854
Telephone 407.481.0677
Facsimile 407.648.3866

MitigationMarketing.com

**DEED OF CONSERVATION EASEMENT
RIPARIAN USES**

Prepared by:
S. Butler
Bio-Tech Consulting, Inc.
2002 East Robinson Street
Orlando, Florida 32801

Return original or certified recorded document to:
SFWMD
Orlando Service Center
1707 Orlando Central Parkway, Suite 200
Orlando, Florida 32809

THIS DEED OF CONSERVATION EASEMENT is given this _____ day of _____, 20____, by TOLL FL XII LIMITED PARTNERSHIP, a Florida limited liability company ("Grantor") whose mailing address is 250 Gibraltar Road, Horsham, Pennsylvania 19044 to SFWMD ("Grantee"). As used herein, the term "Grantor" shall include any and all heirs, successors or assigns of the Grantor, and all subsequent owners of the "Conservation Easement Area" (as hereinafter defined) and the term "Grantee" shall include any successor or assignee of Grantee.

WITNESSETH

WHEREAS, the Grantor is the fee simple owner of certain lands situated in Orange County, Florida, and more specifically described on the location map in Exhibit "A" attached hereto and incorporated herein (the "Property"); and

WHEREAS, Permit No. 140509-9 ("Permit") and any modifications thereto issued by the Grantee authorizes certain activities which could affect wetlands or other surface waters in or of the State of Florida; and

WHEREAS, the Grantor, in consideration of the consent granted by the Permit or other good and valuable consideration provided to Grantor, is agreeable to granting and securing to the Grantee a perpetual Conservation Easement as defined in Section 704.06, Florida Statutes (F.S.), over the area of the Property described on Exhibit "B" ("Conservation Easement Area"); and

WHEREAS, Grantor grants this Conservation Easement as a condition of the Permit, solely to off-set or prevent adverse impacts to natural resources, fish and wildlife, and wetland functions; and

WHEREAS, Grantor desires to preserve the Conservation Easement Area in perpetuity in its natural condition, or, in accordance with the Permit, in an enhanced, restored, or created condition; and

NOW, THEREFORE, in consideration of the issuance of the Permit to construct and operate the permitted activity, and as an inducement to Grantee in issuing the Permit, together with other good and valuable consideration provided to the Grantor, the adequacy and receipt of which are hereby acknowledged, Grantor hereby voluntarily grants, creates, conveys, and establishes a perpetual Conservation Easement for and in favor of the Grantee upon the area of the Property described on Exhibit "B" which shall run with the land and be binding upon the Grantor, and shall remain in full force and effect forever.

The scope, nature, and character of this Conservation Easement shall be as follows:

1. Recitals. The recitals hereinabove set forth are true and correct and are hereby



Form 62-330.301(11) – Deed of Conservation Easement - Riparian Uses
Incorporated by reference in paragraph 62-330.301(6)(d), F.A.C. (Effective Date)

incorporated into and made a part of this Conservation Easement.

2. Purpose. It is the purpose of this Conservation Easement to retain land or water areas in their existing, natural, vegetative, hydrologic, scenic, open or wooded condition and to retain such areas as suitable habitat for fish, plants, or wildlife in accordance with Section 704.06, F.S. Those wetland and upland areas included in this Conservation Easement which are to be preserved, enhanced, restored, or created pursuant to the Permit (or any modification thereto) and any Management Plan attached hereto as Exhibit "C" ("Management Plan") which has been approved in writing by the Grantee, shall be retained and maintained in the preserved, enhanced, restored, or created condition required by the Permit (or any modification thereto). It is the further purpose of this Conservation Easement to prevent the construction and operation of docks, piers, boardwalks, or other preemptive structures that would extend through the Conservation Easement Area onto adjacent sovereignty submerged lands except as approved in the Permit (or any modification thereto) or Management Plan.

To carry out this purpose, the following rights are conveyed to Grantee by this easement:

a. To enter upon the Conservation Easement Area at reasonable times with any necessary equipment or vehicles to inspect, determine compliance with the covenants and prohibitions contained in this easement, and to enforce the rights herein granted in a manner that will not unreasonably interfere with the use and quiet enjoyment of the Conservation Easement Area by Grantor at the time of such entry; and

b. To proceed at law or in equity to enforce the provision of this Conservation Easement and the covenants set forth herein, to prevent the occurrence of any of the prohibited activities set forth herein, and to require the restoration of such areas or features of the Conservation Easement Area that may be damaged by any activity or use that is inconsistent with this Conservation Easement.

3. Prohibited Uses. Except for activities that are permitted or required by the Permit (or any modification thereto) (which may include restoration, creation, enhancement, maintenance, and monitoring activities, or surface water management improvements) or other activities described herein or in the Management Plan (if any), any activity on or use of the Conservation Easement area inconsistent with the purpose of this Conservation Easement is prohibited. Without limiting the generality of the foregoing, the following activities are expressly prohibited in or on the Conservation Easement area:

a. Construction or placing of buildings, roads, signs, billboards or other advertising, utilities, or other structures on or above the ground;

b. Dumping or placing of soil or other substance or material as landfill, or dumping or placing of trash, waste, or unsightly or offensive materials;

c. Removing, destroying or trimming trees, shrubs, or other vegetation, except:
i. The removal of dead trees and shrubs or leaning trees that could cause damage property is authorized;
ii. The destruction and removal of noxious, nuisance or exotic invasive plant species as listed on the most recent Florida Exotic Pest Plant Council's List of Invasive Species is authorized;
iii. Activities authorized by the Permit or described in the Management Plan or otherwise approved in writing by the Grantee are authorized; and
iv. Activities conducted in accordance with a wildfire mitigation plan developed with the Florida Forest Service that has been approved in writing by the Grantee are authorized. No later than thirty (30) days before commencing any activities to implement the approved wildfire mitigation plan, Grantor shall notify the Grantee in writing of its intent to commence such activities. All such activities may only be completed during the time period for which the Grantee approved the plan;

d. Excavation, dredging, or removal of loam, peat, gravel, soil, rock, or other material substance in such manner as to affect the surface;

e. Surface use except for purposes that permit the land or water area to remain in its natural, restored, enhanced, or created condition;

f. Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation including, but not limited to, ditching, diking, clearing, and fencing;

g. Acts or uses detrimental to such aforementioned retention of land or water areas;
and

h. Acts or uses which are detrimental to the preservation of the structural integrity or physical appearance of sites or properties having historical, archaeological, or cultural significance.

4. Grantor's Reserved Rights. Grantor reserves all rights as owner of the Conservation Easement Area, including the right to engage or to permit or invite others to engage in all uses of the Conservation Easement Area that are not prohibited herein and which are not inconsistent with the Permit (or any modification thereto), Management Plan, or the intent and purposes of this Conservation Easement.

5. No Dedication. No right of access by the general public to any portion of the Conservation Easement Area is conveyed by this Conservation Easement.

6. Grantee's Liability. Grantee's liability is limited as provided in Subsection 704.06(10) and Section 768.28, F.S. Additionally, Grantee shall not be responsible for any costs or liabilities related to the operation, upkeep, or maintenance of the Conservation Easement Area.

7. Enforcement. Enforcement of the terms, provisions and restrictions of this Conservation Easement shall be at the reasonable discretion of Grantee, and any forbearance on behalf of Grantee to exercise its rights hereunder in the event of any breach hereof by Grantor, shall not be deemed or construed to be a waiver of Grantee's rights hereunder. Grantee shall not be obligated to Grantor, or to any other person or entity, to enforce the provisions of this Conservation Easement.

8. Taxes. When perpetual maintenance is required by the Permit, Grantor shall pay before delinquency any and all taxes, assessments, fees, and charges of whatever description levied on or assessed by competent authority on the Conservation Easement Area, and shall furnish the Grantee with satisfactory evidence of payment upon request.

9. Assignment. Grantee will hold this Conservation Easement exclusively for conservation purposes. Grantee will not assign its rights and obligations under this Conservation Easement except to another organization or entity qualified to hold such interests under the applicable state laws.

10. Severability. If any provision of this Conservation Easement or the application thereof to any person or circumstances is found to be invalid, the remainder of the provisions of this Conservation Easement shall not be affected thereby, as long as the purpose of the Conservation Easement is preserved.

11. Terms and Restrictions. Grantor shall insert the terms and restrictions of this Conservation Easement in any subsequent deed or other legal instrument by which Grantor divests itself of any interest in the Conservation Easement.

12. Written Notice. All notices, consents, approvals or other communications hereunder shall be in writing and shall be deemed properly given if sent by United States certified mail, return receipt requested, addressed to the appropriate party or successor-in-interest.

13. Modifications. This Conservation Easement may be amended, altered, released or revoked only by written agreement between the parties hereto or their heirs, assigns or

successors-in-interest, which shall be filed in the public records in Orange County, Florida.

14. Recordation. Grantor shall record this Conservation Easement in timely fashion in the Official Records of Orange County, Florida, and shall rerecord it at any time Grantee may require to preserve its rights. Grantor shall pay all recording costs and taxes necessary to record this Conservation Easement in the public records. Grantor will hold Grantee harmless from any recording costs or taxes necessary to record this Conservation Easement in the public records.

15. Riparian Rights. This Conservation Easement shall convey to Grantee Grantor's riparian rights of ingress and egress for boat docks, piers, boardwalks, and other preemptive structures and activities associated with the Conservation Easement Area except as necessary to construct, use, and maintain the structures and activities approved in the Permit (or any modification thereto) or Management Plan. The Grantor specifically reserves the right to conduct limited vegetation removal and clearing necessary for constructing boat docks, piers, adjoining boardwalks, and other preemptive structures and activities described in the Permit (or any modification thereto) or Management Plan. Grantor shall minimize and avoid, to the fullest extent possible, impact to any wetland or buffer areas within the Conservation Easement Area. This reservation does not release the Grantor from the duty of obtaining any necessary SFWMD, federal, state or local government permit authorizations or state-owned lands approvals for construction of the structures. The Grantor specifically reserves its riparian rights of swimming, wading, and fishing, and, to the extent consistent with this Conservation Easement, its riparian right of boating.

TO HAVE AND TO HOLD unto Grantee forever. The covenants, terms, conditions, restrictions and purposes imposed with this Conservation Easement shall be binding upon Grantor, and shall continue as a servitude running in perpetuity with the Conservation Easement Area.

Grantor hereby covenants with Grantee that Grantor is lawfully seized of said Conservation Easement Area in fee simple; that the Conservation Easement is free and clear of all encumbrances that are inconsistent with the terms of this Conservation Easement; all mortgages and liens on the Conservation Easement area, if any, have been subordinated to this Conservation Easement; that Grantor has good right and lawful authority to convey this Conservation Easement; and that it hereby fully warrants and defends record title to the Conservation Easement Area hereby conveyed against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, Toll FL XII Limited Partnership ("Grantor") has hereunto set its authorized hand this 17th day of July, 2014.

A Florida corporation or _____ (choose one)

By: [Signature]
(Signature)

Name: Andre Vidrine
(Print)

Title: Division VP

Signed, sealed and delivered in our presence as witnesses:

By: [Signature]

By: [Signature]

(Signature)
Name: Janet Castillo
(Print)

(Signature)
Name: MARK McINTOSH
(Print)

STATE OF FLORIDA

COUNTY OF Orange

On this day of 7/18, 2014, before me, the undersigned notary public, personally appeared Anche Vidrine, the person who subscribed to the foregoing instrument, as the Vice President (title), of 10LL FL XII LP (corporation), a Florida corporation, or (choose one) and acknowledged that he/she executed the same on behalf of said corporation, or (choose one) and the he/she was duly authorized to do so. He/She is personally known to me or has produced a driver's license as identification (state)

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

NOTARY PUBLIC, STATE OF FLORIDA

Janet Castillo
(Signature)



(Name)
My Commission Expires: _____

MORTGAGEE JOINDER, CONSENT AND SUBORDINATION

For Ten Dollars (\$10.00) and other good and valuable consideration, the adequacy and receipt of which are hereby acknowledged, _____, the owner and holder of a mortgage dated _____, in the original principal amount of \$ _____, given by _____ ("Grantor") to _____ ("Mortgagee"), encumbering the real property described on Exhibit "B" attached hereto ("Conservation Easement Area"), which is recorded in Official Records Book _____ at Page _____, (together with that certain Assignment of Leases and Rents recorded in Official Records Book _____, at Page _____, and those certain UCC-1 Financing Statement(s) recorded in Official Records Book _____, at Page _____, all of the Public Records of _____ County, Florida (said mortgage, assignment of leases and rents, and UCC-1 Financing Statements, as modified, are hereinafter referred to as the "Mortgage"), hereby joins in, consents to and subordinates the lien of its Mortgage, as it has been, and as it may be, modified, amended and assigned from time to time, to the foregoing Conservation Easement, executed by _____, in favor of _____ (*Note: insert name of WMD or DEP*) applicable to the Conservation Easement, as said Conservation Easement may be modified, amended, and assigned from time to time, with the intent that the Mortgage shall be subject and subordinate to the Conservation Easement.

IN WITNESS WHEREOF, this Mortgagee Joinder, Consent and Subordination is made this

_____ day of _____, 20_____.

By: _____ (Signature) _____ (Mortgagee)

Name: _____

Title: _____ (Print)

WITNESSES:

By: _____ (Signature) By: _____ (Signature)

Name: _____ (Print)

Name: _____ (Print)

STATE OF FLORIDA

COUNTY OF _____

The foregoing instrument was acknowledged before me this ____ day of _____, 20____, by _____ (print name), as _____ (title) of _____ (Grantor of Mortgage), on behalf of the _____ (Mortgagee, Grantor of the conservation Easement). He/She is personally known to me or has produced a _____ (state) driver's license as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

NOTARY PUBLIC, STATE OF FLORIDA

_____ (Signature) _____ (Name)

My Commission Expires: _____

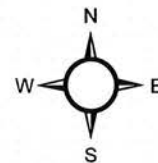
EXHIBIT A

[LOCATION MAP]



Bio-Tech Consulting Inc.
 Environmental and Permitting Services
 2002 E. Robinson St. Orlando, FL 32803
 Ph: 407-894-5969 Fax: 407-894-5970
 www.bio-techconsulting.com

Seidel East
 Orange County, Florida
 Figure 1
 Location Map



5,600
 Feet

Project #: 690-06
 Produced By: SEB
 Date: 9/26/2013

EXHIBIT B

[LEGAL DESCRIPTION AND SKETCH OF CONSERVATION EASEMENT AREA]

LEGAL DESCRIPTION

SHEET 1 OF 12

Legal Description (Conservation Easements):

A parcel of land comprising a portion of Section 5, Township 24 South, Range 27 East, Orange County, Florida.

Being more particularly described as follows:

Parcel 1:

Commence at the Southeast Corner of Section 5, Township 24 South, Range 27 East, Said point also being along the Centerline of Seidel Road, a roadway with a right of way of 60.00 feet; thence departing said centerline of said Seidel Road run North 00°05'36" East along the East line of the Southeast ¼ of said Section 5 for a distance of 769.80 feet to the POINT OF BEGINNING of Parcel 1; thence departing said East line of the Southeast ¼ of Section 5 run the following courses; South 70°56'53" West for a distance of 34.89 feet; thence run South 86°34'24" West for a distance of 66.44 feet; thence run North 64°25'16" West for a distance of 95.80 feet; thence run North 47°17'07" West for a distance of 93.39 feet; thence run North 20°06'56" West for a distance of 115.47 feet; thence run North 07°49'04" East for a distance of 95.45 feet; thence run North 34°07'14" East for a distance of 102.21 feet; thence run North 53°50'03" East for a distance of 89.75 feet; thence run North 71°27'42" East for a distance of 75.90 feet; thence run North 07°17'26" East for a distance of 167.13 feet; thence run North 01°35'34" West for a distance of 168.31 feet; thence run North 21°40'50" West for a distance of 69.78 feet; thence run North 43°17'13" West for a distance of 54.61 feet; thence run North 86°11'38" West for a distance of 59.95 feet; thence run North 00°00'00" East for a distance of 23.02 feet; thence run North 89°54'24" West for a distance of 17.22 feet; thence run North 45°41'33" West for a distance of 42.33 feet to a point herein after referred to as POINT A, also being a point on a non-tangent curve, Concave Westerly having a radius of 475.00 feet, with a chord bearing of North 12°16'28" East, and a chord distance of 105.46 feet, thence run Northerly along the arc of said curve through a central angle of 12°44'52" for an arc distance of 105.68 feet; thence run South 48°02'26" East for a distance of 34.76 feet; thence run South 44°56'52" East for a distance of 33.69 feet; thence run North 14°12'31" East for a distance of 59.58 feet; thence run North 17°56'09" East for a distance of 143.24 feet; thence run North 15°45'32" East for a distance of 137.90 feet; thence run South 89°54'25" East for a distance of 10.39 feet; thence run North 15°45'32" East for a distance of 21.32 feet; thence run North 13°28'08" East for a distance of 153.64 feet; thence run South 89°54'25" East for a distance of 15.57 feet to a point on the Said East line of the Southeast ¼ of Section 5; thence run South 00°05'36" West for a distance of 1,501.88 feet to the POINT OF BEGINNING. (CONTAINING 31.82 ACRES +/-)

together with;

A parcel of land comprising a portion of Section 5, Township 24 South, Range 27 East, Orange County, Florida.

Parcel 2:

Commence at the aforesaid POINT A thence run North 45°41'33" West for a distance of 104.33 feet to the POINT OF BEGINNING; thence run the following courses; North 45°41'33" West for a distance of 23.23 feet; thence run North 71°57'42" West for a distance of 64.51 feet; thence run South 83°40'34" West for a distance of 73.85 feet; thence run North 82°35'46" West for a distance of 143.86 feet; thence run South 61°34'15" West for a distance of 91.37 feet; thence run South 62°18'39" West for a distance of 104.90 feet; thence run South 72°13'22" West for a distance of 86.51 feet; thence run South 82°20'37" West for a distance of 98.60 feet; thence run North 84°03'21" West for a distance of 109.90 feet; thence run North 67°18'02" West for a distance of 104.18 feet; thence run North 42°00'02" West for a distance of 123.07 feet; thence run North 21°48'31" West for a distance of 112.39 feet; thence run North 00°40'20" East for a distance of 83.12 feet; thence run North 71°34'43" East for a distance of 10.58 feet; thence run North 00°40'20" East for a distance of 30.24 feet; thence run North 19°17'38" East for a distance of 83.90 feet; thence run North 37°44'53" East for a distance of 80.62 feet; thence run North 34°08'16" West for a distance of 10.00 feet; thence run North 55°51'44" East for a distance of 143.18 feet; thence run North 28°52'46" East for a distance of 19.34 feet; thence run North 11°59'15" West for a distance of 70.64 feet; thence run South 86°57'49" West for a distance of 40.42 feet; thence run North 70°55'14" West for a distance of 113.95 feet; thence run North 81°32'26" West for a distance of 47.61 feet; thence run South 85°28'33" West for a distance of 56.89 feet; thence run South 30°07'00" West for a distance of 64.77 feet; thence run South 40°43'06" West for a distance of 108.65 feet; thence run South 57°20'14" West for a distance of 89.12 feet; thence run South 78°19'30" West for a distance of 114.08 feet; thence run North 78°31'50" West for a distance of 97.42 feet; thence run North 62°45'33" West for a distance of 97.96 feet; thence run North 44°23'39" West for a distance of 88.36 feet; thence run North 25°36'50" West for a distance of 122.28 feet; thence run North 04°37'26" West for a distance of 93.40 feet; thence run North 12°17'35" East for a distance of 93.32 feet; thence run North 16°11'57"



16 EAST PLANT STREET
Winter Garden, Florida 34787 • (407) 654-5355

SURVEYOR'S NOTES:

1. THIS IS NOT A SURVEY.
2. THIS SKETCH IS NOT VALID UNLESS SEALED WITH AN EMBOSSED SURVEYOR'S SEAL.
3. BEARINGS SHOWN HEREON ARE BASED ON THE EAST LINE OF THE SOUTHEAST 1/4 OF SECTION 5-24-27 AS BEING N 00°05'36" E

JOB NO. 20130148

DATE: 4-14-14

SCALE: 1" = 100 FEET

FIELD BY: N/A

CALCULATED BY: EJ

DRAWN BY: DM

CHECKED BY: JLR

FOR THE LICENSED BUSINESS #6723 BY:

JAMES L. RICKMAN, P.S.M. #5633

Drawing name: L:\Data\20130148 SEIDEL EAST\dwg\20130148 - SKETCH - CONSERVATION - 4-11-14.dwg SHEET 1

LEGAL DESCRIPTION

SHEET 2 OF 12

East for a distance of 82.46 feet; thence run North 16°40'56" West for a distance of 35.81 feet; thence run North 83°45'47" West for a distance of 31.86 feet; thence run South 53°50'04" West for a distance of 40.44 feet; thence run South 35°58'14" West for a distance of 88.64 feet; thence run South 40°26'26" West for a distance of 129.47 feet; thence run South 59°11'14" West for a distance of 121.98 feet; thence run South 71°24'03" West for a distance of 91.20 feet; thence run South 72°02'17" West for a distance of 105.16 feet; thence run South 55°09'23" West for a distance of 89.14 feet; thence run South 41°58'05" West for a distance of 157.09 feet; thence run South 40°17'56" West for a distance of 110.78 feet; thence run South 45°05'51" West for a distance of 96.00 feet; thence run South 55°14'55" West for a distance of 91.74 feet; thence run South 71°26'01" West for a distance of 118.64 feet; thence run South 84°03'58" West for a distance of 105.53 feet; thence run North 73°43'16" West for a distance of 136.94 feet; thence run North 53°02'25" West for a distance of 147.94 feet; thence run North 38°22'54" West for a distance of 96.47 feet; thence run North 26°22'03" West for a distance of 109.32 feet; thence run North 02°49'09" West for a distance of 103.29 feet; thence run North 19°15'37" East for a distance of 127.80 feet; thence run North 23°33'49" East for a distance of 125.77 feet to a point on the North line of the Southwest ¼ of said Section 5; thence run North 89°43'21" East along said North line for a distance of 598.52 feet to a point on the East line of the Northwest ¼ of said Section 5; thence run North 00°05'47" East along said East line for a distance of 66.00 feet to a point on the North line of the South 66.00 feet of the Southwest ¼ of the Northeast ¼ of said Section 5; thence run North 89°43'21" East along said North line for a distance of 664.85 feet; thence departing said North line run the following courses; North 36°24'19" East for a distance of 18.27 feet; thence run North 48°52'17" East for a distance of 66.36 feet; thence run South 87°38'04" East for a distance of 66.26 feet; thence run South 23°33'48" East for a distance of 55.15 feet; thence run South 05°12'44" West for a distance of 4.37 feet to the aforesaid North line of the South 66.00 feet of the Southwest ¼ of the Northeast ¼ of said Section 5 thence run North 89°43'21" East along said North line for a distance of 414.18 feet to a point on the Normal High Water line of Panther Lake; thence departing said Northerly line run South 50°41'26" East for a distance of 49.86 feet; thence run South 41°39'25" East for a distance of 45.61 feet; thence run North 89°43'21" East for a distance of 56.48 feet; thence run South 27°10'34" East for a distance of 23.28 feet; thence run South 12°31'03" East for a distance of 77.21 feet; thence run South 10°18'37" East for a distance of 41.69 feet; thence run South 84°22'19" East for a distance of 42.81 feet; thence run North 88°09'19" East for a distance of 50.85 feet; thence run South 76°41'12" East for a distance of 100.07 feet; thence run South 79°50'11" East for a distance of 74.36 feet; thence run South 52°29'00" East for a distance of 59.31 feet; thence run North 76°47'49" East for a distance of 39.50 feet; thence run North 89°15'43" East for a distance of 88.56 feet; thence run South 72°39'59" East for a distance of 96.10 feet; thence run South 76°16'10" East for a distance of 80.74 feet; thence run South 66°03'57" East for a distance of 90.40 feet; thence run South 32°07'25" West for a distance of 10.10 feet; thence run South 66°03'57" East for a distance of 16.90 feet; thence run South 58°00'25" East for a distance of 85.02 feet; thence run South 28°29'31" East for a distance of 40.84 feet; thence run South 71°06'35" East for a distance of 44.63 feet; thence run South 05°40'03" East for a distance of 71.91 feet; thence run South 04°15'36" East for a distance of 85.58 feet; thence run South 04°32'56" West for a distance of 101.56 feet; thence run South 32°22'24" West for a distance of 93.71 feet; thence run South 00°29'52" East for a distance of 39.92 feet; thence run North 89°30'08" East for a distance of 25.00 feet; thence run North 00°29'52" West for a distance of 15.00 feet; thence run North 89°30'08" East for a distance of 55.56 feet; thence run South 83°42'49" East for a distance of 90.28 feet; thence run South 63°23'34" East for a distance of 46.66 feet; thence run South 18°36'23" West for a distance of 5.86 feet to the point on a non-tangent curve, concave Easterly having a radius of 525.00 feet, with a chord bearing of South 14°30'30" West, and a chord distance of 80.56 feet, thence run Southerly along the arc of said curve through a central angle of 08°48'01" for an arc distance of 80.64 feet to the aforesaid POINT OF BEGINNING.
(CONTAINING 4.85 ACRES +/-)

CURVE TABLE					
CURVE	RADIUS	LENGTH	CHORD	BEARING	DELTA
C1	475.00	105.68	105.46	N12°16'28"E	12°44'52"
C2	525.00	80.64	80.56	S14°30'30"W	8°48'01"



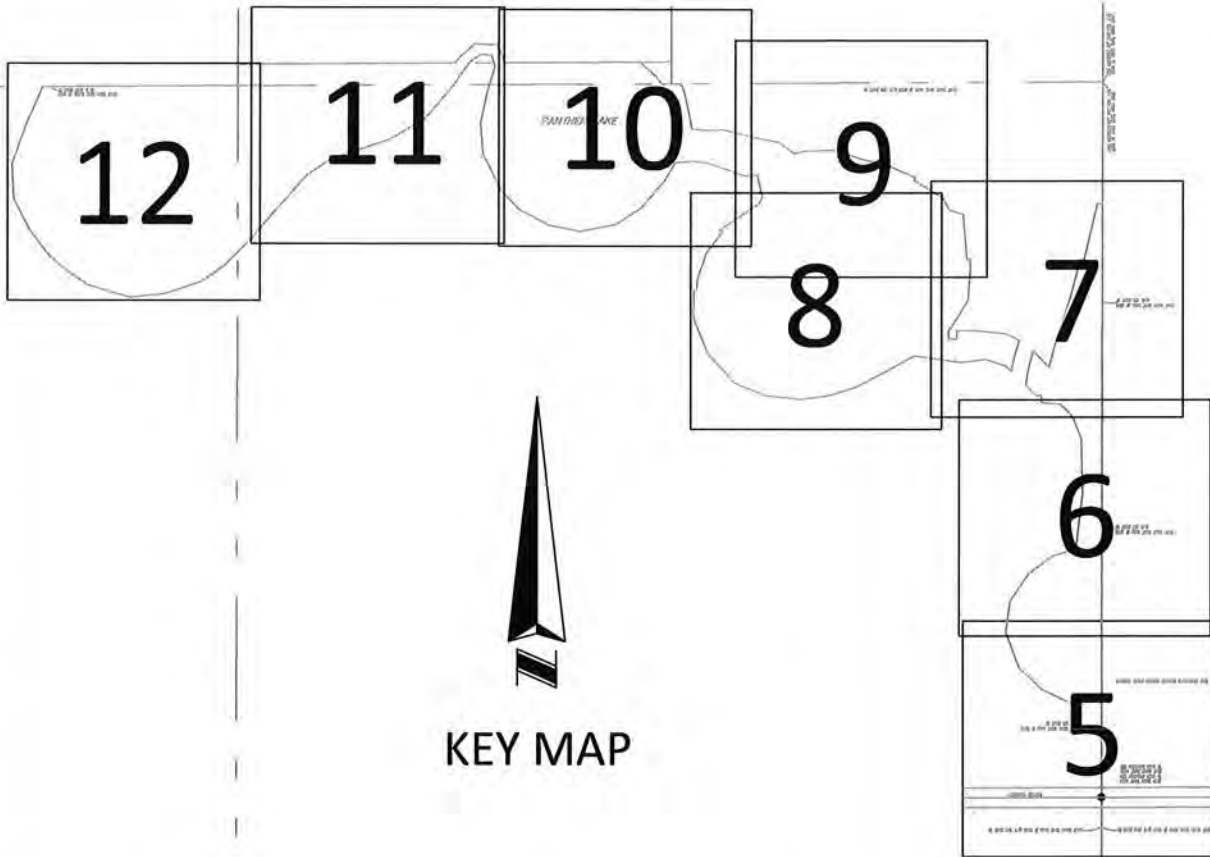
16 EAST PLANT STREET
Winter Garden, Florida 34787 • (407) 654-5355

JOB NO.: 20130148	CALCULATED BY: EJ
DATE: 4-14-14	DRAWN BY: DM
SCALE: 1" = 100 FEET	CHECKED BY: JLR
FIELD BY: N/A	

Drawing name: L:\Data\20130148 SEIDEL EAST\dwg\20130148 - SKETCH - CONSERVATION - 4-11-14.dwg SHEET 2

KEY MAP

SHEET 3 OF 12



16 EAST PLANT STREET
Winter Garden, Florida 34787 • (407) 654-5355

JOB NO.: 20130148

DATE: 4-14-14

SCALE: 1" = 100 FEET

FIELD BY: N/A

CALCULATED BY: EJ

DRAWN BY: DM

CHECKED BY: JLR

Drawing name: L:\Data\20130148 SEIDEL EAST\dwg\20130148 - SKETCH - CONSERVATION - 4-11-14.dwg SHEET 3

LINE TABLE

SHEET 4 OF 12

LINE TABLE		
LINE	LENGTH	BEARING
L1	34.89	S70°56'53"W
L2	66.44	S86°34'24"W
L3	95.80	N64°25'16"W
L4	93.39	N47°17'07"W
L5	115.47	N20°06'56"W
L6	95.45	N07°49'04"E
L7	102.21	N34°07'14"E
L8	89.75	N53°50'03"E
L9	75.90	N71°27'42"E
L10	167.13	N07°17'26"E
L11	168.31	N01°35'34"W
L12	69.78	N21°40'50"W
L13	54.61	N43°17'13"W
L14	59.95	N86°11'38"W
L15	23.02	N00°00'00"E
L16	17.22	N89°54'24"W
L17	42.33	N45°41'33"W
L18	34.76	S48°02'26"E
L19	33.69	S44°58'52"E
L20	59.58	N14°12'31"E
L21	143.24	N17°56'09"E
L22	137.90	N15°45'32"E
L23	10.39	S89°54'25"E
L24	21.32	N15°45'32"E
L25	153.64	N13°28'08"E
L26	15.57	S89°54'25"E
L27	23.23	N45°41'33"W
L28	64.51	N71°57'42"W
L29	73.85	S83°40'34"W
L30	143.86	N82°35'46"W
L31	91.37	S61°34'15"W
L32	104.90	S62°18'39"W
L33	86.51	S72°13'22"W
L34	98.60	S82°20'37"W
L35	109.90	N84°03'21"W
L36	104.18	N67°18'02"W
L37	123.07	N42°00'02"W
L38	112.39	N21°48'31"W
L39	83.12	N00°40'20"E
L40	10.58	N71°34'43"E
L41	30.24	N00°40'20"E
L42	83.90	N19°17'38"E
L43	80.62	N37°44'53"E
L44	10.00	N34°08'16"W
L45	143.18	N55°51'44"E
L46	19.34	N28°52'46"E
L47	70.64	N11°59'15"W
L48	40.42	S86°57'49"W
L49	113.95	N70°55'14"W
L50	47.61	N81°32'26"W
L51	56.89	S85°28'33"W
L52	64.77	S30°07'00"W

LINE TABLE		
LINE	LENGTH	BEARING
L53	108.65	S40°43'06"W
L54	89.12	S57°20'14"W
L55	114.08	S78°19'30"W
L56	97.42	N78°31'50"W
L57	97.96	N62°45'33"W
L58	88.36	N44°23'39"W
L59	122.28	N25°36'50"W
L60	93.40	N04°37'26"W
L61	93.32	N12°17'35"E
L62	82.46	N16°11'57"E
L63	35.81	N16°40'56"W
L64	31.86	N83°45'47"W
L65	40.44	S53°50'04"W
L66	88.64	S35°58'14"W
L67	129.47	S40°26'26"W
L68	121.98	S59°11'14"W
L69	91.20	S71°24'03"W
L70	105.16	S72°02'17"W
L71	89.14	S55°08'23"W
L72	157.09	S41°58'05"W
L73	110.78	S40°17'56"W
L74	96.00	S45°05'51"W
L75	91.74	S55°14'55"W
L76	118.64	S71°26'01"W
L77	105.53	S84°03'58"W
L78	136.94	N73°43'16"W
L79	147.94	N53°02'25"W
L80	96.47	N38°22'54"W
L81	109.32	N26°22'03"W
L82	103.29	N02°49'09"W
L83	127.80	N19°15'37"E
L84	125.77	N23°33'49"E
L85	66.00	N00°05'47"E
L86	18.27	N36°24'19"E
L87	66.36	N48°52'17"E
L88	66.26	S87°38'04"E
L89	55.15	S23°33'48"E
L90	4.37	S05°12'44"W
L91	49.86	S50°41'26"E
L92	45.61	S41°39'25"E
L93	56.48	N89°43'21"E
L94	23.28	S27°10'34"E
L95	77.21	S12°31'03"E
L96	41.69	S10°18'37"E
L97	42.81	S84°22'19"E
L98	50.85	N88°09'19"E
L99	100.07	S76°41'12"E
L100	74.36	S79°50'11"E
L101	59.31	S52°29'00"E
L102	39.50	N76°47'49"E
L103	88.56	N89°15'43"E
L104	96.10	S72°39'59"E

LINE TABLE		
LINE	LENGTH	BEARING
L104	96.10	S72°39'59"E
L105	80.74	S76°16'10"E
L106	90.40	S66°03'57"E
L107	10.10	S32°07'25"W
L108	16.90	S66°03'57"E
L109	85.02	S58°00'25"E
L110	40.84	S28°29'31"E
L111	44.63	S71°06'35"E
L112	71.91	S05°40'03"E
L113	85.58	S04°15'36"E
L114	101.56	S04°32'56"W
L115	93.71	S31°22'24"W
L116	39.92	S00°29'52"E
L117	25.00	N89°30'08"E
L118	15.00	N00°29'52"W
L119	55.56	N89°30'08"E
L120	90.28	S83°42'49"E
L121	46.66	S63°23'34"E
L122	5.86	S18°36'23"W



16 EAST PLANT STREET
Winter Garden, Florida 34787 (407) 654-5355

JOB NO. 20130148

DATE: 4-14-14

SCALE: 1" = 100 FEET

FIELD BY: N/A

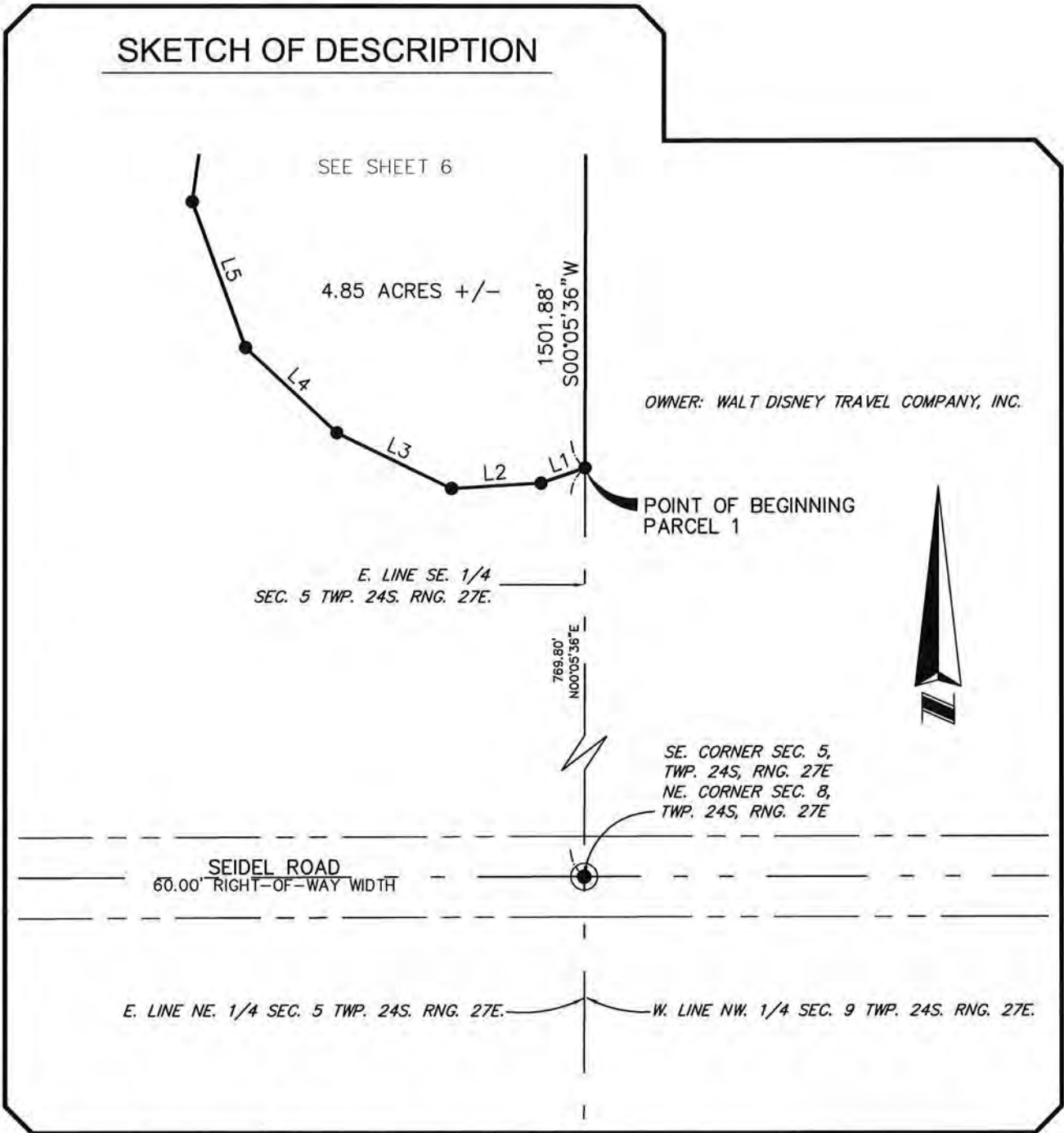
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DRAWN BY: DM

CHECKED BY: JLR

Drawing name: L:\Data\20130148 SEIDEL EAST\dwg\20130148 - SKETCH - CONSERVATION - 4-11-14.dwg SHEET 4

SKETCH OF DESCRIPTION



16 EAST PLANT STREET
Winter Garden, Florida 34787 * (407) 654-3355

LEGEND

- N. = NORTH
- S. = SOUTH
- E. = EAST
- W. = WEST
- SEC. = SECTION
- TWP. = TOWNSHIP
- RNG. = RANGE

JOB NO. 20130148

DATE: 4-14-14

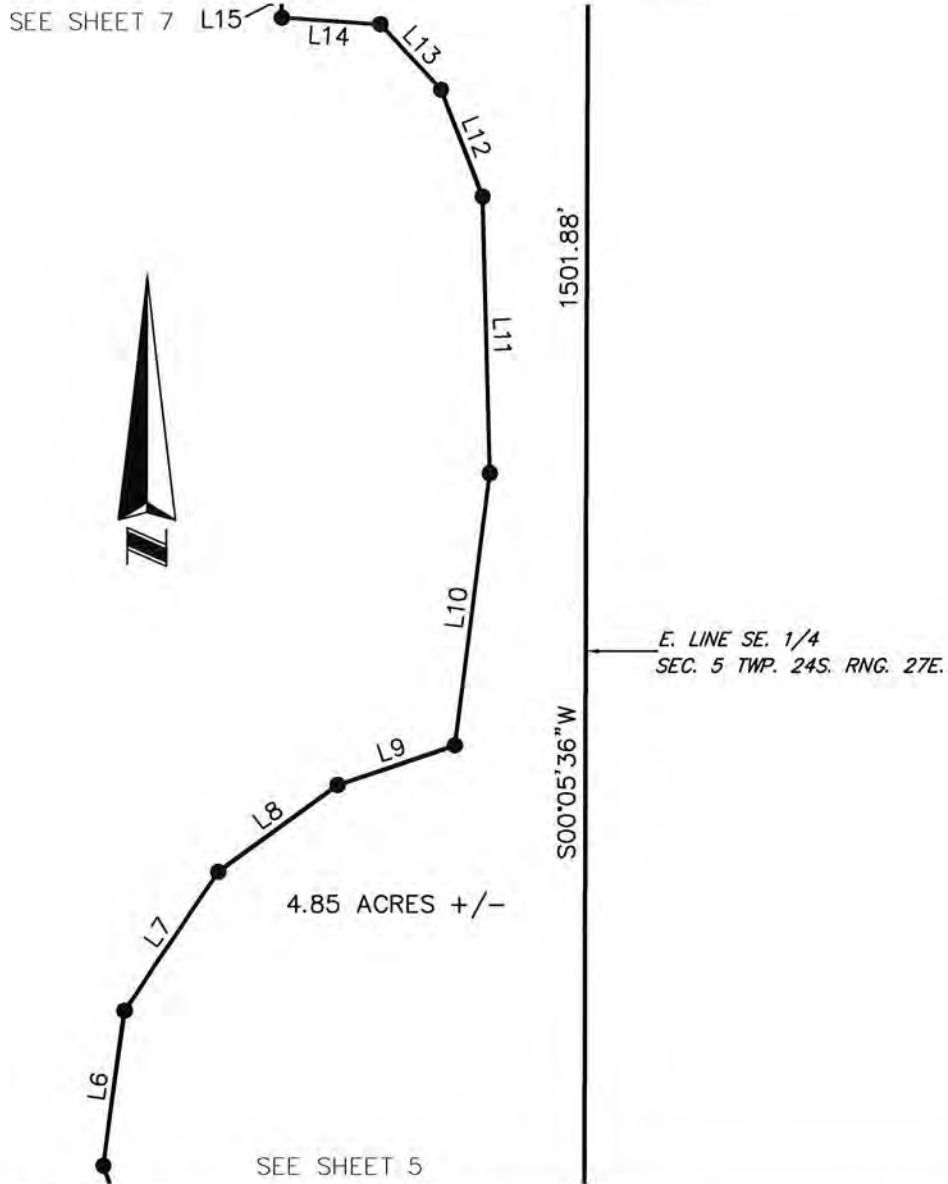
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SHEET 5 OF 12
SEE SHEET 1 FOR DESCRIPTION

Drawing name: L:\Data\20130148 SEIDEL EAST\dwg\20130148 - SKETCH - CONSERVATION - 4-11-14.dwg SHEET 5

SKETCH OF DESCRIPTION



16 EAST PLANT STREET
Winter Garden, Florida 34787 • (407) 654-5355

LEGEND

N. = NORTH
S. = SOUTH
E. = EAST
W. = WEST
SEC. = SECTION
TWP. = TOWNSHIP
RNG. = RANGE

JOB NO. 20130148

DATE: 4-14-14

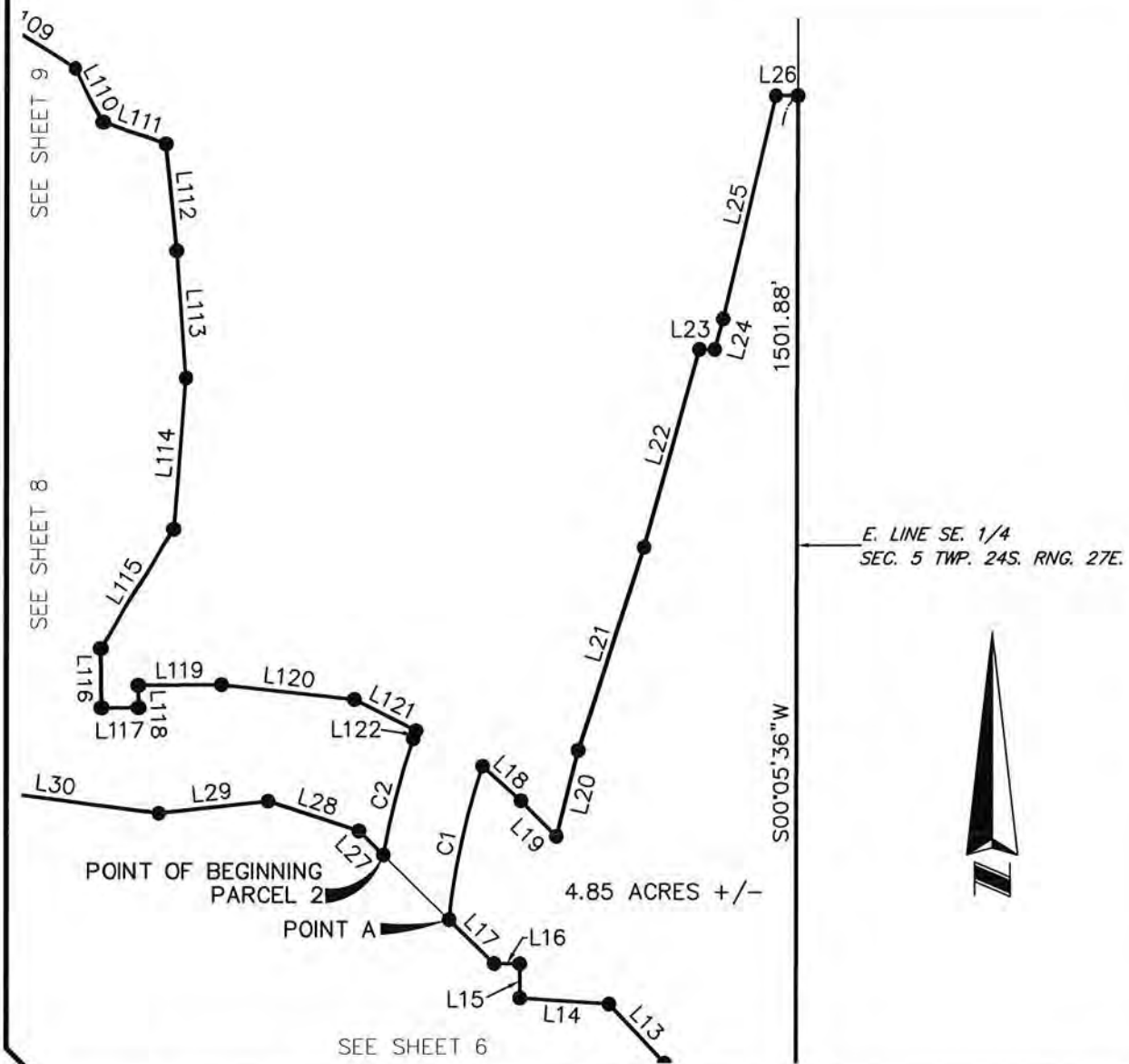
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SHEET 6 OF 12
SEE SHEET 1 FOR DESCRIPTION

Drawing name: L:\Data\20130148 SEIDEL EAST\dwg\20130148 - SKETCH - CONSERVATION - 4-11-14.dwg SHEET 6

SKETCH OF DESCRIPTION



16 EAST PLANT STREET
Winter Garden, Florida 34787 • (407) 854-5355

LEGEND

N. = NORTH
S. = SOUTH
E. = EAST
W. = WEST
SEC. = SECTION
TWP. = TOWNSHIP
RNG. = RANGE

JOB NO. 20130148

DATE: 4-14-14

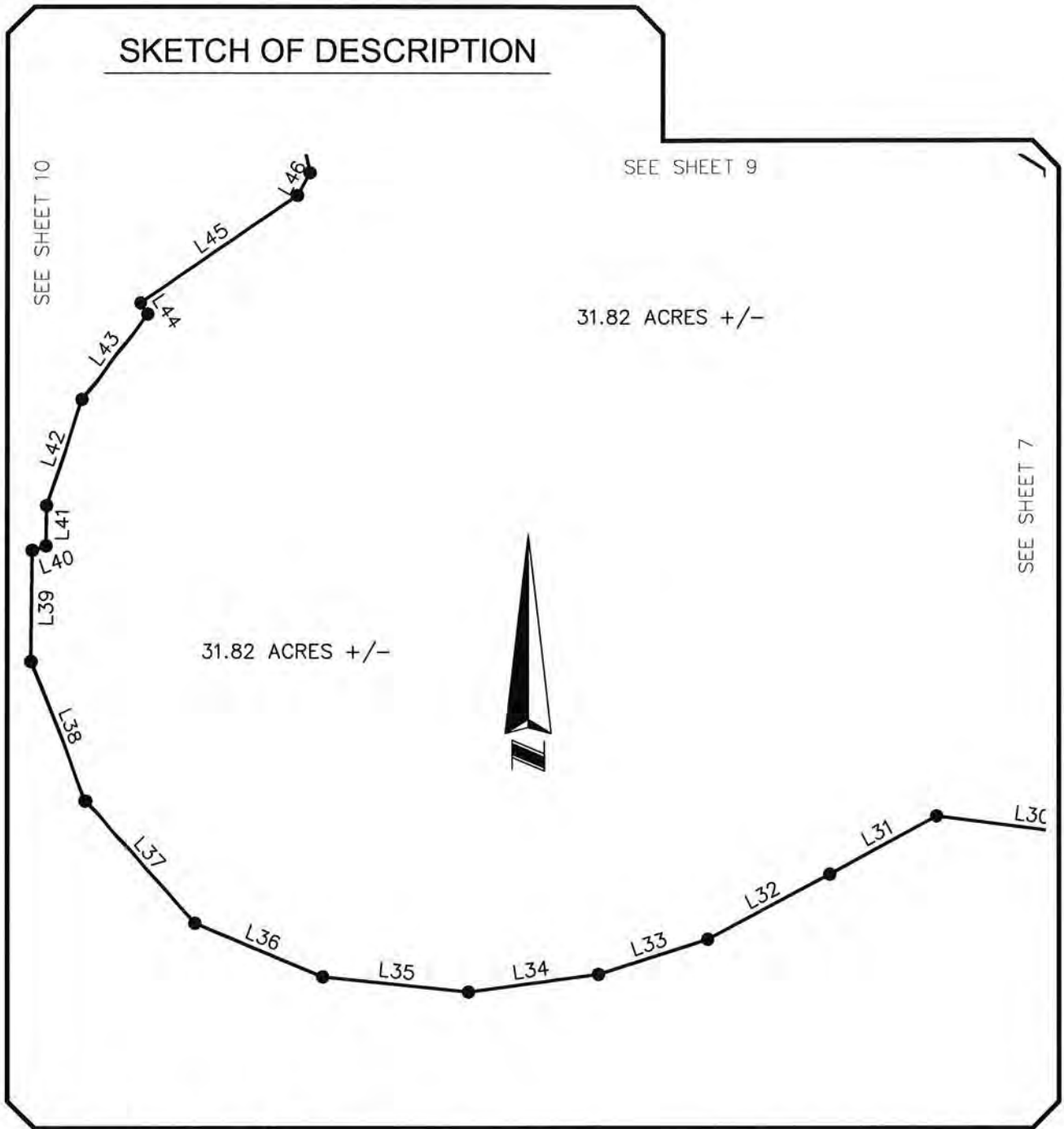
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DRAWN BY: DM

SHEET 7 OF 12
SEE SHEET 1 FOR DESCRIPTION

Drawing name: L:\Data\20130148 SEIDEL EAST\dwg\20130148 - SKETCH - CONSERVATION - 4-11-14.dwg SHEET 7

SKETCH OF DESCRIPTION



16 EAST PLANT STREET
Winter Garden, Florida 34787 * (407) 654-5355

LEGEND

- N. = NORTH
- S. = SOUTH
- E. = EAST
- W. = WEST
- SEC. = SECTION
- TWP. = TOWNSHIP
- RNG. = RANGE

SHEET 8 OF 12
SEE SHEET 1 FOR DESCRIPTION

JOB NO. 20130148

DATE: 4-14-14

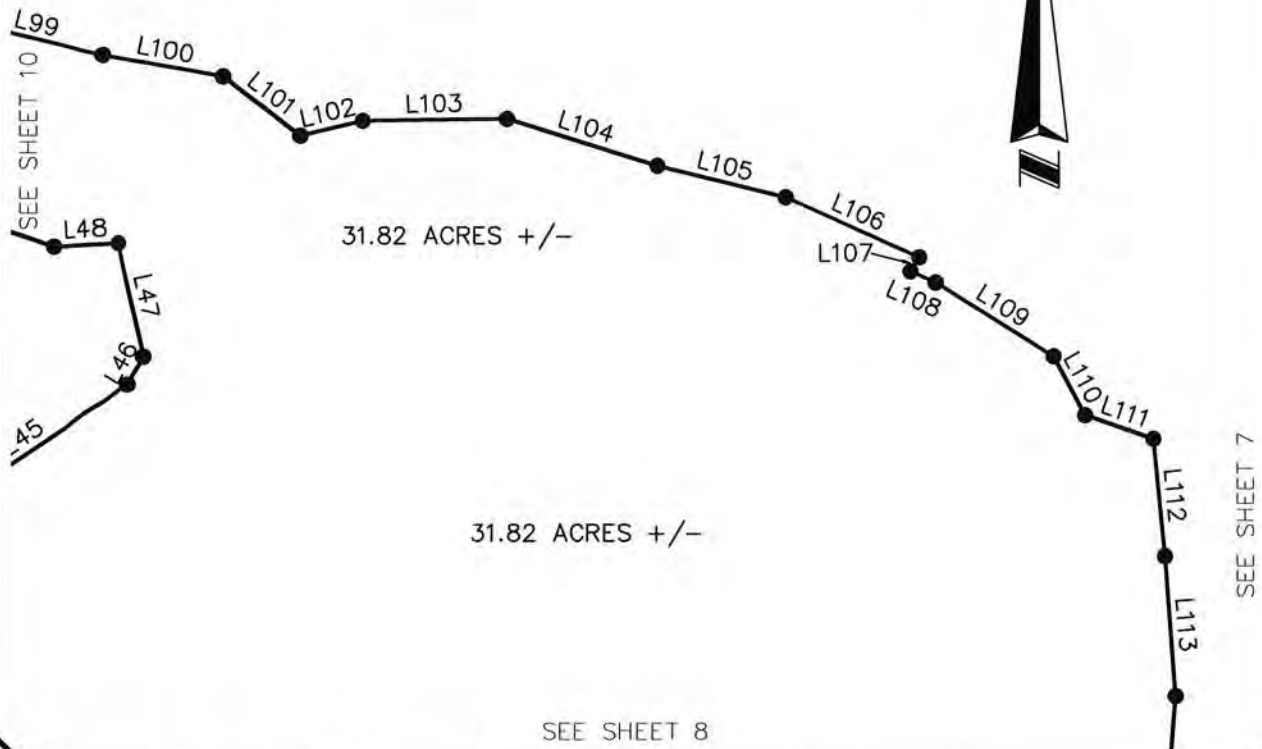
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SKETCH OF DESCRIPTION

N. LINE SE. 1/4 SEC. 5 TWP. 24S. RNG. 27E.



16 EAST PLANT STREET
Winter Garden, Florida 34787 * (407) 854-5355

LEGEND

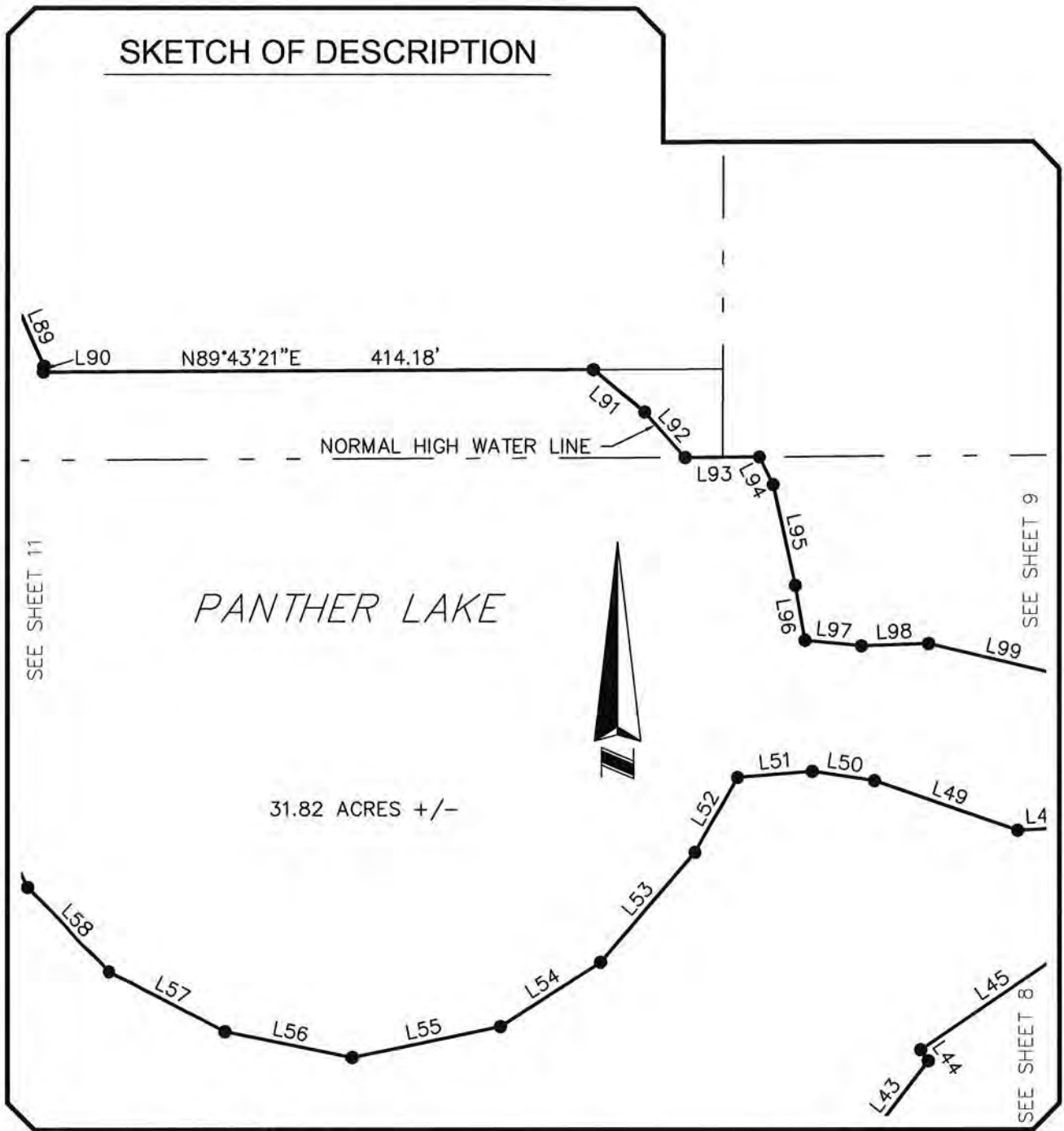
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E. = EAST
W. = WEST
SEC. = SECTION
TWP. = TOWNSHIP
RNG. = RANGE

SHEET 9 OF 12
SEE SHEET 1 FOR DESCRIPTION

JOB NO. 20130148
DATE: 4-14-14
SCALE: 1" = 100 FEET
DRAWN BY: DM

Drawing name: L:\Data\20130148 SEIDEL EAST\dwg\20130148 - SKETCH - CONSERVATION - 4-11-14.dwg SHEET 9

SKETCH OF DESCRIPTION



16 EAST PLANT STREET
Winter Garden, Florida 34787 * (407) 654-5355

LEGEND

N. = NORTH
S. = SOUTH
E. = EAST
W. = WEST
SEC. = SECTION
TWP. = TOWNSHIP
RNG. = RANGE

SHEET 10 OF 12
SEE SHEET 1 FOR DESCRIPTION

JOB NO. 20130148

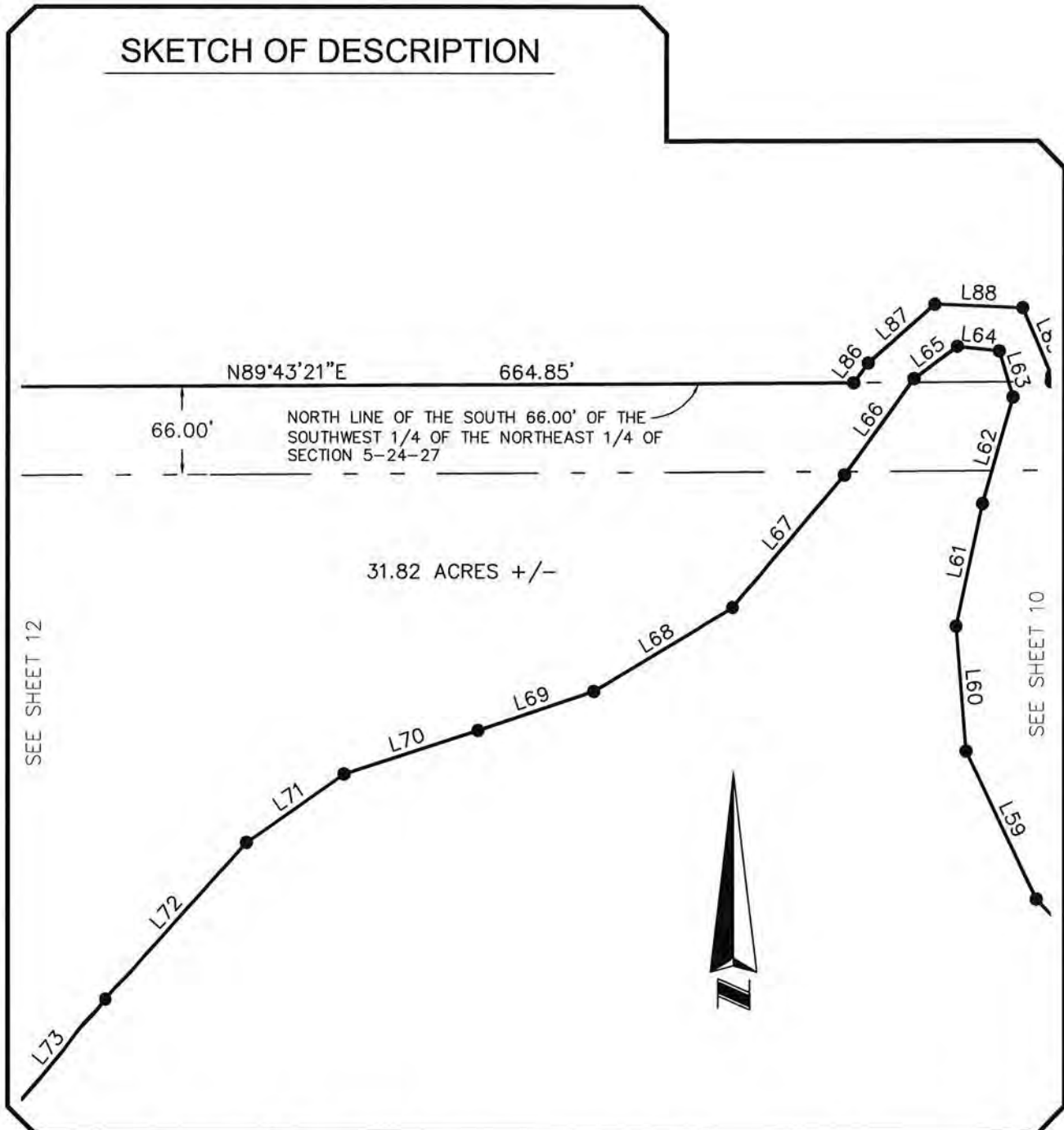
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SKETCH OF DESCRIPTION



SEE SHEET 12

SEE SHEET 10



16 EAST PLANT STREET
Winter Garden, Florida 34787 * (407) 854-5355

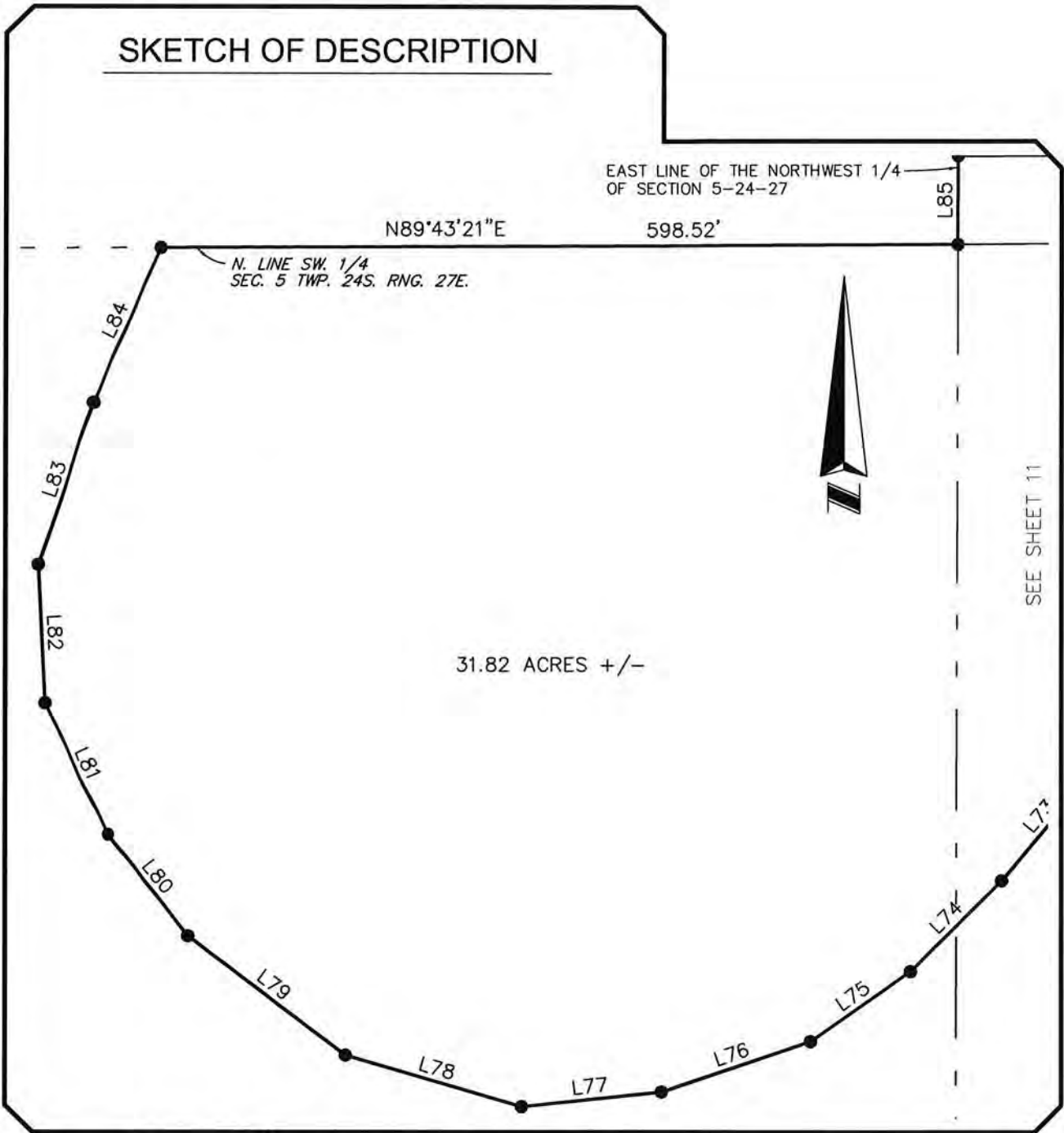
LEGEND
 N. = NORTH
 S. = SOUTH
 E. = EAST
 W. = WEST
 SEC. = SECTION
 TWP. = TOWNSHIP
 RNG. = RANGE

JOB NO. 20130148
 DATE: 4-14-14
 SCALE: 1" = 100 FEET
 DRAWN BY: DM

SHEET 11 OF 12
 SEE SHEET 1 FOR DESCRIPTION

Drawing name: L:\Data\20130148 SEIDEL EAST\dwg\20130148 - SKETCH - CONSERVATION - 4-11-14.dwg SHEET 11

SKETCH OF DESCRIPTION



16 EAST PLANT STREET
Winter Garden, Florida 34787 * (407) 654-5356

LEGEND

N. = NORTH
S. = SOUTH
E. = EAST
W. = WEST
SEC. = SECTION
TWP. = TOWNSHIP
RNG. = RANGE

SHEET 12 OF 12
SEE SHEET 1 FOR DESCRIPTION

JOB NO. 20130148

DATE: 4-14-14

SCALE: 1" = 100 FEET

DRAWN BY: DM

Drawing name: L:\Data\20130148 SEIDEL EAST\dwg\20130148 - SKETCH - CONSERVATION - 4-11-14.dwg SHEET 12

EXHIBIT C

[MANAGEMENT PLAN OR "INTENTIONALLY LEFT BLANK"]

AFFIDAVIT OF NO MORTGAGE OR LIEN

This Affidavit of No Mortgage or Lien is made this 17th day of July , 2014 , by Toll FL XII Limited Partnership {property owner(s)} {Name(s) should be listed the same way as the deed identifying the property owner(s)} (hereinafter referred to as "Owner" or collectively as "Owner"; and

Owner owns the property located in Orange County, Florida, which is more fully described in Exhibit "A" attached hereto and made a part hereof {attach as Exhibit "A" the legal description for the Conservation Easement}; and

Owner hereby swears and affirms that the property described in Exhibit A is not encumbered by a mortgage, lien, or other encumbrance which would interfere with the purposes or intent of the Conservation Easement.

IN WITNESS WHEREOF, Owner herein has caused these presents to be executed in Owner's name(s) on the day and year first above written.

(Remainder of page left intentionally blank)

STAFF REPORT DISTRIBUTION LIST

SEIDEL EAST

Application No: 140509-9

Permit No: 48-02363-P

INTERNAL DISTRIBUTION

- X P.E."Rett" Thompson, P.E.
- X Susan C. Elfers
- X Carlos A. de Rojas, P.E.
- X Jennifer Thomson

EXTERNAL DISTRIBUTION

- X Permittee - Toll Brothers Incorporated
- X Permittee - Seidel East L L C
- X Engr Consultant - Poulos And Bennett
- X Engr Consultant - Poulos And Bennett
- X Env Consultant - Bio-Tech Consulting Incorporated

ERP No. 48-101923-P
(Horizon High School)

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01



South Florida Water Management District
Individual Environmental Resource Permit No. 48-101923-P
Date Issued: September 5, 2019

Permittee: The School Board of Orange County, Florida
3909 Summerlin Avenue Building 50
Orlando, FL 32806

Project: Site 113-H-W-4 High School

Application No. 190723-1633

Location: Orange County, See Exhibit 1

Your application for an Individual Environmental Resource Permit is approved. This action is taken based on Chapter 373, Part IV, of Florida Statutes (F.S.) and the rules in Chapter 62-330, Florida Administrative Code (F.A.C.). Unless otherwise stated, this permit constitutes certification of compliance with state water quality standards under section 401 of the Clean Water Act, 33 U.S.C. 1341, and a finding of consistency with the Florida Coastal Management Program. Please read this entire agency action thoroughly and understand its contents.

This permit is subject to:

- Not receiving a filed request for a Chapter 120, F.S., administrative hearing.
- The attached General Conditions for Environmental Resource Permits.
- The attached Special Conditions.
- All referenced Exhibits.

All documents are available online through the District's ePermitting site at www.sfwmd.gov/ePermitting.

If you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights", we will assume that you concur with the District's action.

The District does not publish notices of action. If you wish to limit the time within which a person may request an administrative hearing regarding this action, you are encouraged to publish, at your own expense, a notice of agency action in the legal advertisement section of a newspaper of general circulation in the county or counties where the activity will occur. Legal requirements and instructions for publishing a notice of agency action, as well as a noticing format that can be used, are available upon request. If you publish a notice of agency action, please send a copy of the affidavit of publication provided by the newspaper to the District's West Palm Beach office for retention in this file.

If you have any questions regarding your permit or need any other information, please call us at 1-800-432-2045 or email ERP@sfwmd.gov.


Ricardo A. Valera, P.E.
Bureau Chief, Environmental Resource Bureau

**South Florida Water Management District
Individual Environmental Resource Permit No. 48-101923-P**

Date Issued:	September 5, 2019	Expiration Date:	September 5, 2024
Project Name:	Site 113-H-W-4 High School		
Permittee:	The School Board of Orange County, Florida 3909 Summerlin Avenue Building 50 Orlando, FL 32806		
Operating Entity:	The School Board of Orange County, Florida 3909 Summerlin Avenue Building 50 Orlando, FL 32806		
Location:	Orange County		
Permit Acres:	62.66 acres		
Project Land Use:	Government or Institutional		
Special Drainage District:	Reedy Creek Improvement District		
Water Body Classification:	CLASS III CLASS III		
FDEP Water Body ID:	3170IA 3170F4		
Conservation Easement to District:	No		
Sovereign Submerged Lands:	No		

Project Summary

This Environmental Resource Permit authorizes Construction and Operation of a stormwater management (SWM) system serving 62.66 acres of institutional development known as Site 113-H-W-4 High School.

The project is for the development of a new public high school building, parking lot, sports fields, utilities and associated stormwater management system consisting of three dry retention ponds for the required water quality treatment and attenuation prior to discharge from the site.

Issuance of this permit constitutes certification of compliance with state water quality standards in accordance with Rule 62-330.062, F.A.C.

Site Description

The site is vacant agricultural lands.

For information on wetland and surface water impacts, please see the Wetlands and Other Surface Water section of this permit.

Ownership, Operation and Maintenance

Perpetual operation and maintenance of the stormwater management system is the responsibility of The School Board of Orange County, Florida. Upon conveyance or division of ownership or

control of the property or the system, the permittee must notify the Agency in writing within 30 days, and the new owner must request transfer of the permit.

Engineering Evaluation:

Land Use

Please reference the Land Use Table.

Water Quality

Water quality treatment is provided in 3.44 acres of dry retention ponds. The project provides 5.19 acre-feet of required water quality treatment volume based on the greater of one inch over the controlled basin area(s) or 2.5 inches times the percent impervious coverage with a 50 percent credit for the dry retention scenario.

Pursuant to Appendix E of Environmental Resource Permit Applicant's Handbook Volume II, the provided water quality treatment includes an additional 50% treatment volume above the requirements in Section 4.2 of Volume II as reasonable assurance that the project will not have an adverse impact on the downstream waterbody.

In addition to the required water quality treatment volume, the applicant provided site specific pollutant loading calculations demonstrating that the SWM system reduces the post development loading of pollutants, specifically phosphorus, to levels less than the loadings generated under the pre-development condition. The pollutant loading calculations are based upon the removal characteristics associated with the system.

The project includes an Erosion Control Plan (Exhibit No. 2.0) as additional reasonable assurance of compliance with water quality criteria during construction and operation.

Water Quantity

Discharge

As found in the Water Quantity Data Table, the project discharge is within the allowable limit for the area.

Parking Lot Design

As found in the Water Quantity Data Table, minimum parking lot elevations have been set at or above the calculated design storm flood elevation.

Road Design

As found in the Water Quantity Data Table, minimum road center line elevations have been set at or above the calculated design storm flood elevation.

Finished Floors

As found in the Water Quantity Data Table, minimum finished floor elevations have been set at or above the calculated design storm flood elevation.

Certification, Operation, and Maintenance

Pursuant to Chapter 62-330.310, F.A.C., Individual Permits will not be converted from the construction phase to the operation phase until construction completion certification of the project is submitted to and accepted by the District. This includes compliance with all permit conditions, except for any long term maintenance and monitoring requirements. It is suggested that the permittee retain the services of an appropriate professional registered in the State of Florida for periodic observation of construction of the project.

For projects permitted with an operating entity that is different from the permittee, it should be noted that until the construction completion certification is accepted by the District and the permit is transferred to an acceptable operating entity pursuant to Sections 12.1-12.3 of the Applicant's Handbook Volume I and Section 62-330.310, F.A.C., the permittee is liable for operation and

maintenance in compliance with the terms and conditions of this permit.

In accordance with Section 373.416(2), F.S., unless revoked or abandoned, all SWM systems and works permitted under Part IV of Chapter 373, F.S., must be operated and maintained in perpetuity.

The efficiency of SWM systems, dams, impoundments, and most other project components will decrease over time without periodic maintenance. The operation and maintenance entity 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 is responsible for correcting the deficiencies in a timely manner to prevent compromises to flood protection and water quality. See Section 12.4 of the Applicant's Handbook Volume I for Minimum Operation and Maintenance Standards.

**Engineering Evaluation Tables:
Land Use**

Basin	Land Type	Area (ac)	% of Total Basin
1 N	Building Cover New	3.15	11.91
	Impervious	13.50	51.04
	Dry Retention Areas	1.86	7.03
	Pervious	7.94	30.02
	Total:	26.45	100%
2 SW	Building Cover New	1.64	6.53
	Impervious	8.49	33.78
	Pervious	13.90	55.31
	Dry Retention Areas	1.10	4.38
	Total:	25.13	100%
3 SE	Building Cover New	0.66	7.57
	Impervious	1.57	18.00
	Pervious	6.01	68.92
	Dry Retention Areas	0.48	5.50
	Total:	8.72	100%
4 S	Pervious	2.36	100.00
	Total:	2.36	100%

Water Quality

Basin	Treatment Type	Treatment System	Volume Required (ac-ft)	Volume Provided (ac-ft)	Area (ac)	Overflow Elevation (ft NAVD88)
1 N	Treatment	DRY RETENTION	2.90	6.04	1.86	116.25
2 SW	Treatment	DRY RETENTION	1.75	3.11	1.10	115.10
3 SE	Treatment	DRY RETENTION	0.55	1.14	0.48	117.35

Water Quantity

Basin	Elevation Type	Storm Event (Yr/Day)	Precipitation Depth (in)	Peak Stage (ft NAVD88)	Min. EL (ft NAVD88)	Peak Discharge Rate (cfs)	Allowable Discharge Rate (cfs)
1 N	Finished Floor	100Y3D	14.40	118.74	127.50	N/A	N/A
	Discharge	25YR1D	8.60	117.13	N/A	5.20	5.20
	Road Crown	10YR1D	7.50	116.62	116.62	N/A	N/A
	Parking Lot	10YR1D	7.50	116.62	116.62	N/A	N/A
2 SW	Finished Floor	100Y3D	14.40	119.59	127.50	N/A	N/A
	Discharge	25YR1D	8.60	117.02	N/A	5.56	5.56
	Road Crown	10YR1D	7.50	116.36	116.36	N/A	N/A
	Parking Lot	10YR1D	7.50	116.36	116.36	N/A	N/A
3 SE	Finished Floor	100Y3D	14.40	118.52	127.50	N/A	N/A
	Discharge	25YR1D	8.60	116.43	N/A	0.00	0.00
	Road Crown	10YR1D	7.50	115.49	115.49	N/A	N/A

Parking Lot	10YR1D	7.50	115.49	115.49	N/A	N/A
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Inlets

Basin	Structure #	Structure Type	Count	Type	Length (in)	Width (in)	Crest EL (ft NAVD88)	Receiving Body
1 N	CS-1	Discharge	1	DOT2	37.0	24.0	117.50	Seidel Road right-of-way
2 SW	CS-2	Discharge	1	DOT2	37.0	24.0	118.00	Offsite Wetland
3 SE	CS-3	Discharge	1	DOT2	37.0	24.0	118.00	Offsite Wetland

Weir

Basin	Structure #	Structure Type	Count	Type	Width (in)	Height (in)	Crest EL (ft NAVD88)	Receiving Body
1 N	CS-1	Water Quality	1	Sharp Crested	24.00	15.00	116.25	Seidel Road right-of-way
2 SW	CS-2	Water Quality	1	Sharp Crested	8.00	35.00	115.10	Offsite Wetland
3 SE	CS-3	Water Quality	1	Sharp Crested	6.00	8.00	117.35	Offsite Wetland

Culvert

Basin	Structure #	Structure Type	Count	Dia.(in)	Length (ft)	Material	Receiving Body
1 N	CS-1	Discharge	1	15.00	60.0	Reinforced Concrete Pipe	Seidel Road right-of-way
2 SW	CS-2	Discharge	1	15.00	70.0	Reinforced Concrete Pipe	Offsite Wetland
3 SE	CS-3	Discharge	1	15.00	194.0	Reinforced Concrete Pipe	Offsite Wetland

Environmental Evaluation:

Wetlands and Other Surface Waters

There are no wetlands or other surface waters located within the project site or affected by this project.

Related Concerns:**Historical/ Archeological Resources**

No information has been received that indicates the presence of archaeological or historical resources on the project site or indicating that the project will have any effect upon significant historic properties listed, or eligible for listing in the National Register of Historic Places. This permit does not release the permittee from complying with any other agencies requirements in the event that historical and/or archaeological resources are found on the site.

Water Use Permit Status

The applicant has indicated that Orange County Utilities will be used as a source for reclaim irrigation water for the project.

The applicant has indicated that dewatering is not required for construction of this project.

This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation.

Water and Wastewater Service

Orange County Utilities

General Conditions for Individual Environmental Resource Permits, 62-330.350, F.A.C.

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), and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), 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), (<http://www.flrules.org/Gateway/reference.asp?No=Ref-02505>), incorporated by reference herein, 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., and shall be submitted electronically or by mail to the Agency. However, for activities involving more than one acre of construction that also require a NPDES stormwater construction general permit, submittal of the Notice of Intent to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities, DEP Form 62-621.300(4)(b), shall also serve as notice of commencement of construction under this chapter and, in such a case, submittal of Form 62-330.350(1) is not required.
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)].
 - 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 12.3.4 of Volume I) as filed with the Florida 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 and Maintenance 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 required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.
9. This permit does not:
- 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.;
 - Convey to the permittee or create in the permittee any interest in real property;
 - Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
 - 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:
- Immediately if any previously submitted information is discovered to be inaccurate; and
 - 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 prehistoric or historic artifacts, such as pottery or ceramics, projectile points, stone tools, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section (DHR), at (850)245-6333, as well as the appropriate permitting agency office. Project activities 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 the proper authorities notified in accordance with section 872.05, F.S. For project activities subject to prior consultation with the DHR and as an alternative to the above requirements, the permittee may follow procedures for unanticipated discoveries as set forth within a cultural resources assessment survey determined complete and sufficient by DHR and included as a specific permit condition herein.

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 Rule 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

Special Conditions for Individual Environmental Resource Permits, 62-330.350, F.A.C.

1. The construction authorization for this permit shall expire on the date shown on page 2.
2. Operation and maintenance of the stormwater management system shall be the responsibility of The School Board of Orange County, Florida. The permittee shall notify the Agency in writing within 30 days of any conveyance or division of ownership or control of the property or the system, and the new owner must request transfer of the permit in accordance with Rule 62-330.340, F.A.C.
3. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
4. Prior to initiating construction activities associated with this Environmental Resource Permit (ERP), the permittee is required to hold a pre-construction meeting with field representatives, consultants, contractors, District Environmental Resource Bureau (ERB) staff, and any other local government entities as necessary.

The purpose of the pre-construction meeting is to discuss construction methods, sequencing, best management practices, identify work areas, staking and roping of preserves where applicable, and to facilitate coordination and assistance amongst relevant parties.

To schedule a pre-construction meeting, please contact ERB staff from the Orlando Service Center at (407) 858-6100 or via e-mail at: pre-con@sfwmd.gov. When sending a request for a pre-construction meeting, please include the application number, permit number, and contact name and phone number.

5. This permit does not authorize the permittee to cause any adverse impact to or “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. If listed species are observed onsite, FWC staff are available to provide decision support information or assist in obtaining the appropriate FWC permits. Most marine endangered and threatened species are statutorily protected and a “take” permit cannot be issued. Requests for further information or review can be sent to: FWCConservationPlanningServices@MyFWC.com.

Project Work Schedule for Permit No. 48-101923-P

The following activities are requirements of this Permit and shall be completed in accordance with the Project Work Schedule below. Please refer to both General and Special Conditions for more information. Any deviation from these time frames will require prior approval from the District's Environmental Resources Bureau and may require a minor modification to this permit. Such requests must be made in writing and shall include: (1) reason for the change, (2) proposed start/finish and/or completion dates, and (3) progress report on the status of the project.

Condition No.	Date Added	Description	Due Date	Date Satisfied
GC 4	09/05/2019	Construction Commencement Notice	48 hours prior to Construction	
GC 6	09/05/2019	Submit Certification	30 Days After Construction Completion	
GC 7	09/05/2019	Submit Operation Entity Documentation	Within 30 days of Certification	
SC 4	09/05/2019	Pre-Construction Meeting	Prior to Construction	

GC = General Condition

SC = Special Condition

Distribution List

Aldo Mejias PE, Avcon, Inc

Darin Lockwood PE, Avcon, Inc

Div of Recreation and Park - District 3

Orange County Engineer

Exhibits

The following exhibits to this permit are incorporated by reference. The exhibits can be viewed by clicking on the links below or by visiting the District's ePermitting website at <http://my.sfwmd.gov/ePermitting> and searching under this application number 190723-1633.

[Exhibit No. 1.0 Location Map](#)

[Exhibit No. 2.0 - Construction Plans](#)

NOTICE OF RIGHTS

As required by Sections 120.569 and 120.60(3), Fla. Stat., the following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all of the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a SFWMD decision which affects or may affect their substantial interests shall file a petition for hearing with the Office of the District Clerk of the SFWMD, in accordance with the filing instructions set forth herein, within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: (1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or (2) within 14 days of service of an Administrative Order pursuant to Section 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of written notice through mail, electronic mail, or posting that the SFWMD has or intends to take final agency action, or publication of notice that the SFWMD has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

If the District takes final agency action which materially differs from the noticed intended agency decision, persons who may be substantially affected shall, unless otherwise provided by law, have an additional Rule 28-106.111, Fla. Admin. Code, point of entry.

Any person to whom an emergency order is directed pursuant to Section 373.119(2), Fla. Stat., shall comply therewith immediately, but on petition to the board shall be afforded a hearing as soon as possible.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for an extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

FILING INSTRUCTIONS

A petition for administrative hearing must be filed with the Office of the District Clerk of the SFWMD. Filings with the Office of the District Clerk may be made by mail, hand-delivery, or e-mail. Filings by facsimile will not be accepted. A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the Office of the District Clerk at SFWMD headquarters in West Palm Beach, Florida. The District's normal business hours are 8:00 a.m. – 5:00 p.m., excluding weekends and District holidays. Any document received by the Office of the District Clerk after 5:00 p.m. shall be deemed filed as of 8:00 a.m. on the next regular business day.

Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, 3301 Gun Club Road, West Palm Beach, Florida 33406.
- Filings by hand-delivery must be delivered to the Office of the District Clerk. Delivery of a petition to the SFWMD's security desk does not constitute filing. It will be necessary to request that the SFWMD's security officer contact the Office of the District Clerk. An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by e-mail must be transmitted to the Office of the District Clerk at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the Office of the District Clerk receives the complete document. A party who files a document by e-mail shall (1) represent that the original physically signed document will be retained by that party for the duration of the proceeding and of any subsequent appeal or subsequent proceeding in that cause and that the party shall produce it upon the request of other parties; and (2) be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed.

INITIATION OF ADMINISTRATIVE HEARING

Pursuant to Sections 120.54(5)(b)4. and 120.569(2)(c), Fla. Stat., and Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, SFWMD file number or any other SFWMD identification number, if known.
2. The name, address, any email address, any facsimile number, and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

MEDIATION

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401–.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Section 120.68, Fla. Stat., and in accordance with Florida Rule of Appellate Procedure 9.110, a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal with the Office of the District Clerk of the SFWMD in accordance with the filing instructions set forth herein within 30 days of rendition of the order to be reviewed, and by filing a copy of the notice with the clerk of the appropriate district court of appeal.

ORANGE COUNTY PUBLIC SCHOOLS PARCEL S-28/SITE 113-H-SW-4 HIGH SCHOOL

PARCEL ID(S)#: 08-24-27-0000-00-0011, 08-24-27-0000-00-013

LEGAL DESCRIPTION

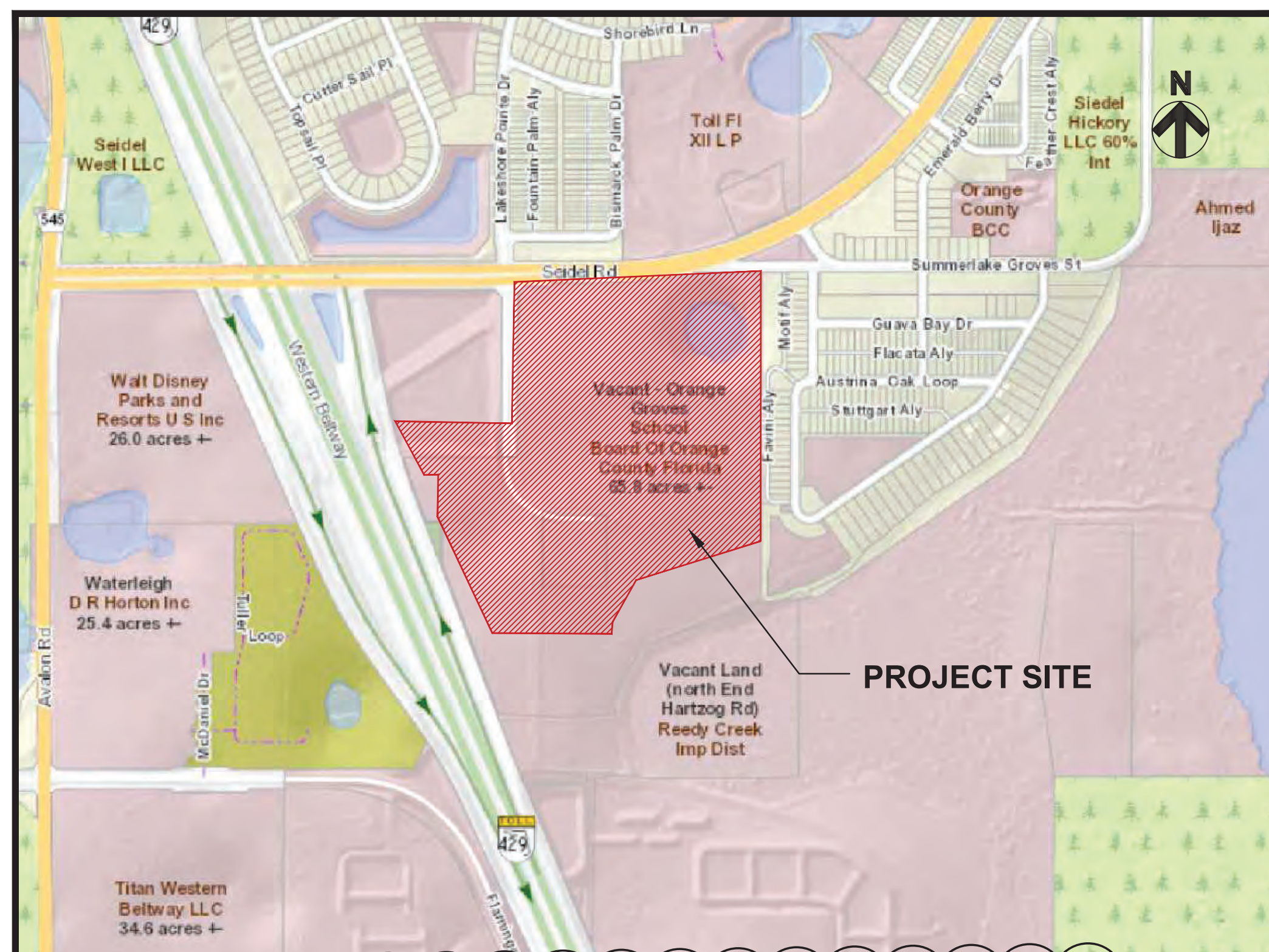
A portion of the Northeast quarter of Section 8, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:
Commencing at the Northeast Corner of Section 8, Township 24 South, Range 27 East, Orange County, Florida; thence South 07°12'29" West along the East line of said Northeast quarter, a distance of 30.00 feet to a point on the South right of way line of Seidel Road as recorded in Official Records Book 789, Page 243 of the Public Records of Orange County, Florida and as shown on State Road 429, Florida Department of Transportation right of way map Financial Project Identification No. 403498-3; thence South 89°50'04" West, a distance of 197.71 feet to the POINT OF BEGINNING; thence departing said South right of way line South 07°12'25" West, a distance of 1713.14 feet; thence South 69°42'08" West, a distance of 659.82 feet; thence South 29°04'07" West, a distance of 302.51 feet; thence South 06°15'54" East, a distance of 91.49 feet; thence South 86°56'07" West, a distance of 142.53 feet; thence South 89°01'00" West, a distance of 166.97 feet; thence North 87°12'55" West, a distance of 291.28 feet to a line 10 feet East of and parallel to the Easterly Limited Access Right of Way line of State Road 429 as shown on said Florida Department of Transportation right of way map Financial Project Identification No. 403498-3; thence North 20°36'26" West, a distance of 836.09 feet along said parallel line to the West line of the East 520 feet of the Southwest quarter of said Section 8; thence North 07°19'05" East, a distance of 219.88 feet along said West line to a line 10 feet North of and parallel with the South line of the Northwest quarter of the Northeast quarter of said Section 8; thence South 89°51'58" West, a distance of 83.83 feet along said parallel line to a point aforesaid line 10 feet East of and parallel to said East limited access Right of Way line of State Road 429; thence along said parallel line the following two (2) courses and distances: North 29°36'29" West, a distance of 96.30 feet to a point of curvature of a curve concave Easterly, having a radius of 3721.72 feet and a central angle of 03°53'37"; thence Northerly along the arc of said curve a distance of 252.91 feet to a point on the Southerly line of Ponds 15A and 15B as shown on said Florida Department of Transportation right of way map Financial Project Identification No. 403498-3; thence along said Southerly line North 89°52'58" East, a distance of 583.73 feet to a point on the Easterly Right of Way line of Frontage Road as shown on said Florida Department of Transportation right of way map Financial Project Identification No. 403498-3; thence along said Easterly Right of Way line North 07°13'41" East, a distance of 848.86 feet to a point on the South Right of Way line of Seidel Road as shown on said Florida Department of Transportation right of way map Financial Project Identification No. 403498-3; and Sketch of Description Job No 20130051 by Allen and Company, dated May 14, 2013; thence along said South right of way line the following eight (8) courses and distances: North 42°31'17" East, a distance of 55.10 feet; thence North 89°50'04" East, a distance of 138.86 feet; thence North 07°09'51" West, a distance of 14.97 feet; thence North 84°48'57" East, a distance of 28.54 feet; thence North 89°50'04" East, a distance of 249.69 feet to a point of curvature of a curve concave Northerly, having a radius of 2133.00 feet and a central angle of 122°04'48"; thence Easterly along the arc of said curve a distance of 459.62 feet; thence North 07°09'51" West, a distance of 0.72 feet; thence North 89°50'04" East, a distance of 356.21 feet to the POINT OF BEGINNING.

Containing 68.63 acres, more or less.

**SEIDEL RD.
WINTER GARDEN, FLORIDA 34787**

AUGUST 15, 2019

LOCATION MAP:



NOTE: ALL ELEVATIONS SHOWN ON PLANS ARE BASED ON NAVD88

INDEX OF DRAWINGS:

C000	COVER
C001	GENERAL NOTES
T001	TOPOGRAPHIC SURVEY
V002	TOPOGRAPHIC SURVEY
C100	DEMO AND EROSION PLAN
C101	DEMO AND EROSION PLAN
C200	SITE AND GEOMETRY PLAN
C201	SITE AND GEOMETRY PLAN
C300	GRADING AND DRAINAGE PLAN
C301	GRADING AND DRAINAGE PLAN
C302	DRAINAGE STRUCTURE TABLE
G400	UTILITY PLAN
C500	DEMO AND EROSION CONTROL DETAILS
C600	CIVIL DETAILS
C601	CIVIL DETAILS
C700	CROSS SECTIONS
C701	GRADING AND DRAINAGE DETAILS
C702	GRADING AND DRAINAGE DETAILS
C703	GRADING AND DRAINAGE DETAILS
G800	UTILITY DETAILS

PROJECT TEAM:

OWNER
SCHOOL BOARD OF ORANGE COUNTY
445 W. AMELIA ST.
ORLANDO FL, 32801
(407) 317 - 3974

APPLICANT
SCHOOL BOARD OF ORANGE COUNTY
445 W. AMELIA ST.
ORLANDO FL, 32801
(407) 317 - 3974

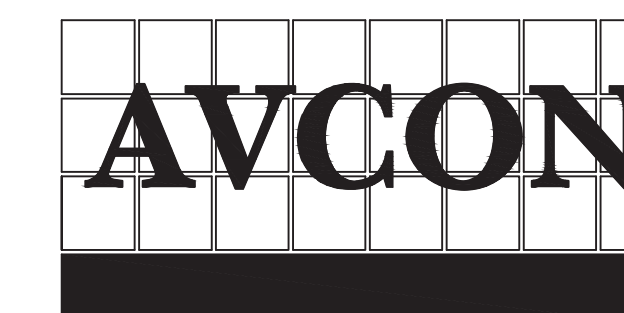
CIVIL ENGINEER
AVCON, INC.
5555 EAST MICHIGAN STREET, SUITE 200
ORLANDO, FL 32822
(407) 599 - 1122

SURVEYOR
SOUTHEASTERN SURVEYING & MAPPING CORP.
8500 ALL AMERICAN BLVD.
ORLANDO, FL 32810
(407) 292 - 8580

UTILITY PROVIDERS

WATER	SEWER/WASTEWATER	RECLAIMED WATER
ORANGE COUNTY UTILITIES 9150 CURRY FORD RD. ORLANDO, FLORIDA 32825	ORANGE COUNTY UTILITIES 9150 CURRY FORD RD. ORLANDO, FLORIDA 32825	ORANGE COUNTY UTILITIES 9150 CURRY FORD RD. ORLANDO, FLORIDA 32825

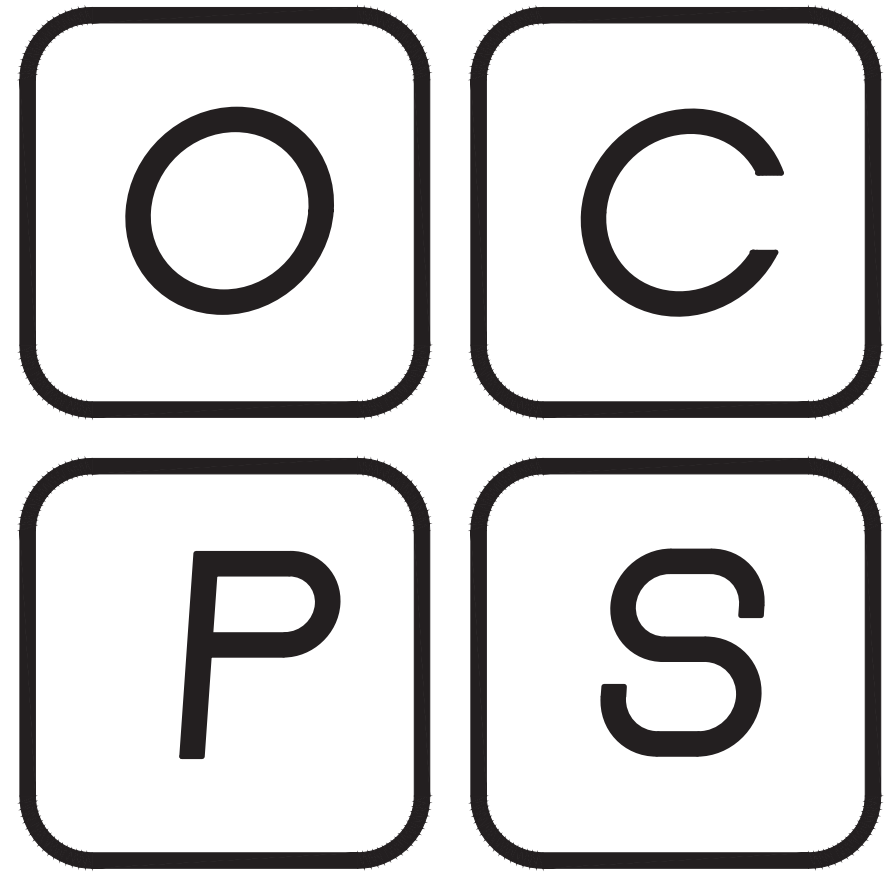
AVCON PROJECT NO.	2018.0097.004		
DATE	08/15/19		
REVISIONS			
NO.	DATE	DESCRIPTION	BY
△	08/23/19	REVISED PER SFWMD RAI #1	C-000



AVCON, INC.
ENGINEERS & PLANNERS
5555 East Michigan Street, Suite #200 Orlando, FL 32822-2779
Office: (407) 599-1122 • Fax: (407) 599-1133
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avcon.com

ENGINEER OF RECORD:

DARIN ALEX LOCKWOOD, P.E.
FLORIDA P.E. # 63504



ORANGE COUNTY PUBLIC SCHOOLS

LEGEND AND ABBREVIATIONS

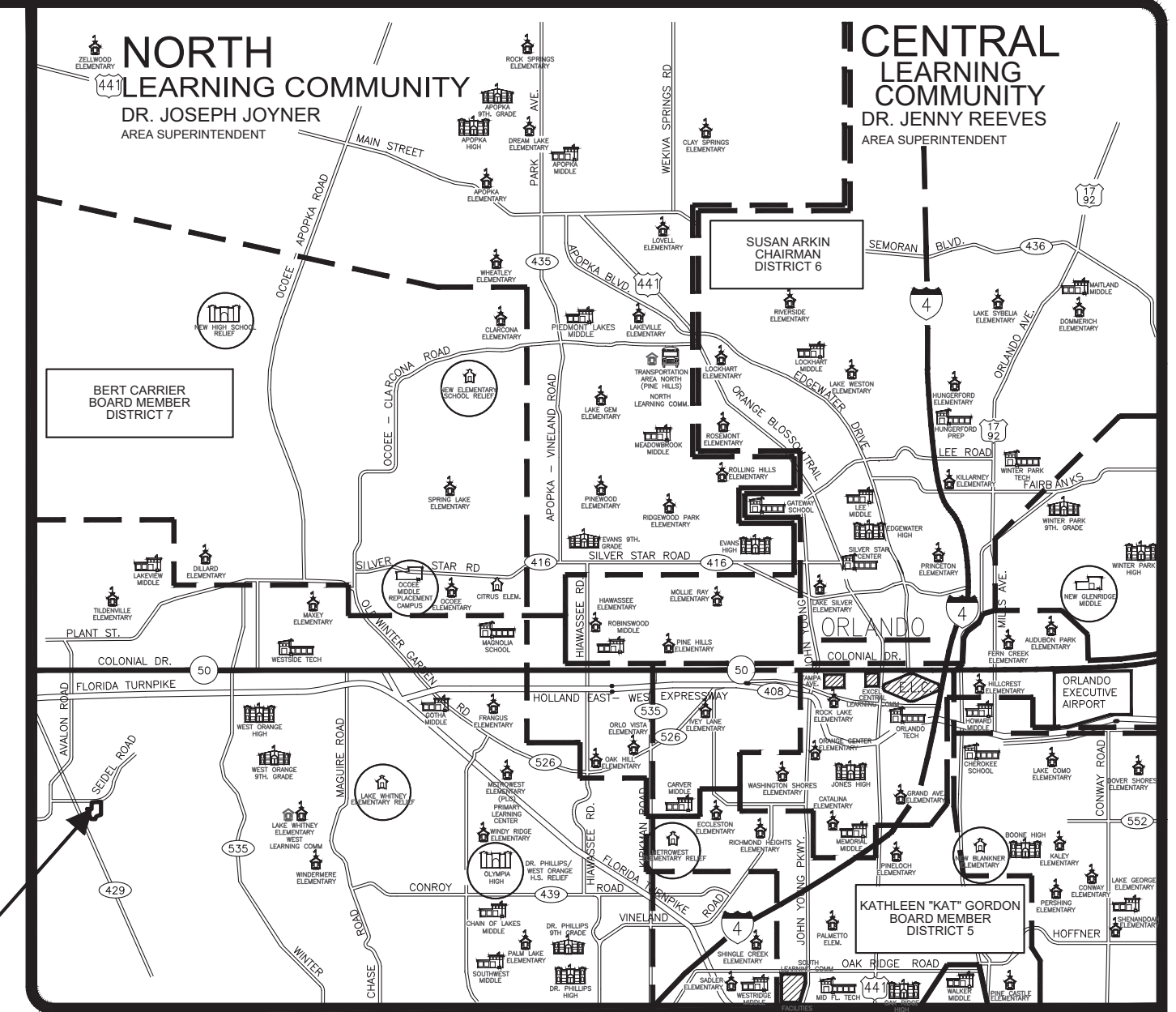
- X— = BURIED CABLE TV PEDESTAL
- B— = BENCHMARK
- DHL— = BURIED TELEPHONE PEDESTAL
- DMH— = DRAINAGE MANHOLE
- FGI— = FLAT GRADE INLET
- MERS— = MITERED END SECTION
- NWD/— = NAIL W/DISC
- UP— = UTILITY POLE
- NTS— = NON-TRAFFIC SIGN
- SP— = SERVICE POLE
- TS— = TRAFFIC SIGN
- V— = VAULT
- INV— = INVERT
- ELEV— = ELEVATION
- W-X— = WETLAND FLAG WITH DESIGNATION NUMBER
- X— = CHAINLINK FENCE
- W— = WIRE FENCE
- OHL— = OVERHEAD UTILITY LINE
- TL— = TREE/HEDGE LINE
- RCP— = REINFORCED CONCRETE PIPE
- NAV— = NORTH AMERICAN VERTICAL DATUM
- TRAV.PT.— = TRAVERSE POINT
- SSMC— = SOUTHEASTERN SURVEYING & MAPPING CORPORATION
- NO.— = NUMBER
- F.P.— = FINANCIAL PROJECT
- E/P— = EDGE OF PAVEMENT
- C&G— = CURB & GUTTER
- BM— = BENCHMARK
- ID— = IDENTIFICATION
- L— = LENGTH
- R— = RADIUS
- Δ— = DELTA
- CH— = CHORD
- CB— = CHORD BEARING
- DMH— = DRAINAGE MANHOLE
- IR— = IRON ROD
- DGL— = DOWN GUY
- FH— = FIRE HYDRANT
- H— = HAND HOLE
- LL— = LANDSCAPE LIGHTING
- LP— = LIGHT POLE
- RWM— = RECLAIMED WATER METER
- RWMV— = RECLAIMED WATER VALVE
- P— = PALM
- O— = OAK

DESCRIPTION (PER TITLE COMMITMENT)

A portion of the Northeast quarter of Section 8, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:
 Commencing at the Northeast Corner of Section 8, Township 24 South, Range 27 East, Orange County, Florida; thence South 00°12'29" West along the East line of said Northeast quarter, a distance of 30.00 feet to a point on the South right of way line of Seidel Road as recorded in Official Records of Orange County, Florida and as shown on State Road 429, Florida Department of Transportation right of way map Financial Project Identification No. 403498-3; thence South 89°50'04" West, a distance of 197.71 feet to the POINT OF BEGINNING; thence departing said South right of way line South 07°11'25" West, a distance of 1713.14 feet; thence South 69°42'08" West, a distance of 659.82 feet; thence South 29°24'07" West, a distance of 302.51 feet; thence South 06°15'54" East, a distance of 91.49 feet; thence South 86°50'07" West, a distance of 142.53 feet; thence South 89°01'00" West, a distance of 166.97 feet; thence North 87°12'55" West, a distance of 291.28 feet to a line 10 feet East of and parallel to the East line of State Road 429 as shown on said Florida Department of Transportation right of way map Financial Project Identification No. 403498-3; thence North 20°38'26" West, a distance of 836.09 feet along said parallel line to the West line of the East 520 feet of the Southwest quarter of the Northeast quarter of said Section 8; thence North 00°19'05" East, a distance of 219.88 feet along said West line to a line 10 feet North of and parallel with the South line of the Northwest quarter of the Northeast quarter of said Section 8; thence South 89°51'58" West, a distance of 83.83 feet along said parallel line to a point at the East line of said East limited access Right of Way line of State Road 429; thence along said parallel line the following two (2) courses and distances: North 20°38'26" West, a distance of 96.30 feet to a point of curvature of a curve concave East, having a radius of 3721.72 feet and a central angle of 03°53'37"; thence Northerly along the arc of said curve a distance of 232.91 feet to a point on the Southerly line of Ponds 154 and 158 as shown on said Florida Department of Transportation right of way map Financial Project Identification No. 403498-3; thence along said Southerly line North 89°52'58" East, a distance of 583.73 feet to a point on the Easterly Right of Way line of Frontage Road as shown on said Florida Department of Transportation right of way map Financial Project Identification No. 403498-3, thence along said Easterly Right of Way line North 00°13'41" East, a distance of 848.86 feet to a point on the South Right of Way line of Seidel Road as shown on said Florida Department of Transportation right of way map Financial Project Identification No. 403498-3 and Sketch of Description Job No. 20130051 by Allen and Company, dated May 14, 2013; thence along said South right of way line the following eight (8) courses and distances: North 42°31'17" East, a distance of 50.10 feet; thence North 89°50'04" East, a distance of 138.86 feet; thence North 00°09'51" West, a distance of 14.97 feet; thence North 84°48'57" East, a distance of 28.54 feet; thence North 89°50'04" East, a distance of 249.69 feet to a point of curvature of a curve concave Northerly, having a radius of 2133.00 feet and a central angle of 12°20'46"; thence Easterly along the arc of said curve a distance of 458.73 feet; thence North 00°09'51" West, a distance of 0.72 feet; thence North 89°50'04" East, a distance of 356.21 feet to the POINT OF BEGINNING LESS AND EXCEPT THAT PORTION CONVEYED IN INSTRUMENT NO. 20180461207, PUBLIC RECORDS OF ORANGE COUNTY, FLORIDA.

SURVEYOR'S REPORT:

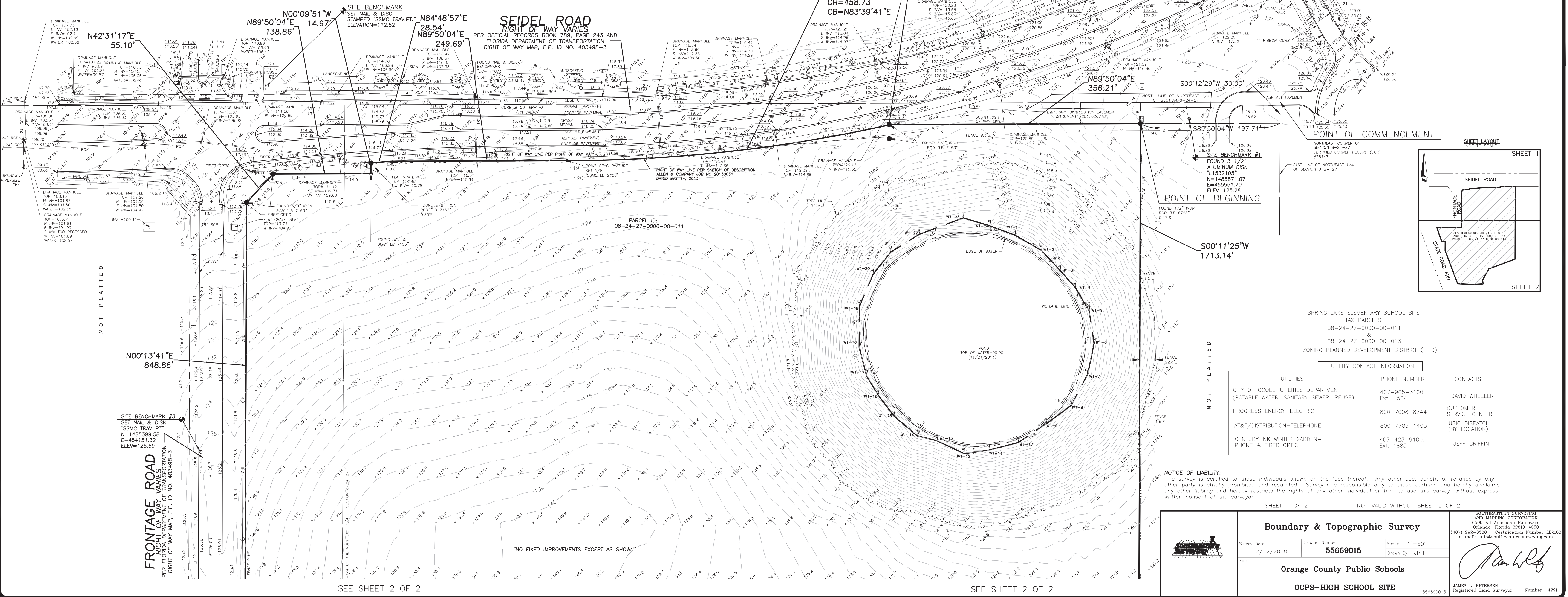
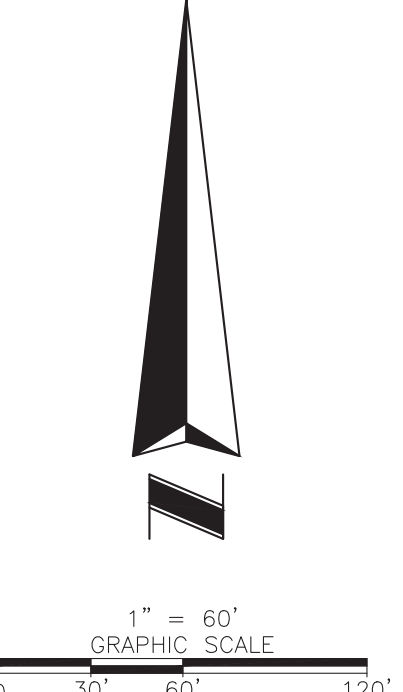
- Utility locations if shown hereon are based on field location of markings by utility company representatives, surface features and construction plans furnished to the surveyor. Additional sub-surface utilities may exist that have not been field located.
- Easements or rights of way that appear on recorded plans or that have been furnished to the surveyor by others have been incorporated into this drawing with appropriate notation. Other easements may be discovered by a search of the Public Records.
- Minimum Horizontal Accuracy for this survey is in accordance with the STANDARDS OF PRACTICE set forth by the Board of Professional Surveyors and Mappers in Chapter 5J-17 requirements of Florida Administration Code. The map and measurement methods used for this survey meet or exceed this requirement. The dimensions shown hereon are in United States survey feet and decimals thereof.
- This survey does not determine ownership of the lands shown hereon.
- Underground foundations have not been located.
- Survey map and report or the copies thereof are not valid without the signature and the original raised seal of a Florida Licensed Surveyor and Mapper.
- Features shown by symbol as indicated in the legend are not to scale.
- Additions or deletions to survey maps or reports by other than the signing party or parties is prohibited without written consent of the signing party or parties.
- Bearings shown hereon are based on the East line of the Northeast Quarter of Section 8, Township 24 South, Range 27 East, being South 00°12'29" West. Bearings and distances shown hereon are measured unless otherwise noted.
- Vertical information shown hereon refers to National Geodetic Survey (NGS) point #D9160 with a published elevation of 131.44 feet, North American Vertical Datum 1988 (NAVD88).
- Horizontal features shown on the map refer to a National Geodetic Survey point with designation "015 0131 KAREN MCKEE", PID number AK7129 and is relative to North American Datum of 1983 (NAD83), 2011 adjustment, State Plane Coordinate System, Florida East Zone. Distances shown are GRID distances.
- I have reviewed First American Title Insurance Company Commitment for Title Insurance #2037-4137975, dated September 24, 2018 at 8:00am and all recorded survey related encumbrances, except liens, identified in Schedule B-III of the title insurance commitment have been shown or noted on the survey. Title Commitment Schedule B-III Exceptions that are not a survey matter may require a legal opinion as to their affecting or not affecting the subject parcel therefore the surveyor is not qualified by law to render a conclusive legal opinion as to those non-survey matter exceptions.
- Improvements & Topographic features shown hereon are limited to areas per specific instructions of the client.
- Right of Way information shown hereon was determined by deed monumentation, recorded plats, recorded Right of Way Maps, and information obtained on the Orange County Property Appraisers web site.
- The above described parcel contains 68.63 acres, more or less.
- Adjacent property information shown hereon was not furnished to this surveyor, and was compiled using latest available data. No attempt was made by this Surveyor to verify its accuracy.
- Based on the Federal Emergency Management Agency, Flood Insurance Rate Map (FIRM), map numbers 12095C0390F, dated 09/25/2009, and 12095C0375F, dated 09/25/2009, the above described property is within Zone "X".
- Wetland areas depicted hereon were flagged or marked by Environmental Management and Design, Inc. and were field located by Southeastern Surveying & Mapping, Corp. on 12/05/2014.



Work Location Map
NOT TO SCALE

SCHEDULE B-III ITEMS:

- NOT A SURVEY MATTER
- Covenants, reservations and easements as set forth and described in that Special Warranty Deed recorded August 27, 2003 in Book 7070, Page 2553. (OUTSIDE SUBJECT PROPERTY)
- Easement Agreement by and between Reedy Creek Improvement District and the State of Florida Department of Transportation recorded February 11, 2004 in Book 7301, Page 2462. (AS SHOWN)
- Covenants, conditions and restrictions as set forth and described in that Quit Claim Deed recorded January 9, 2007 in Book 9056, Page 1496. (OUTSIDE SUBJECT PROPERTY)
- Horizon West Town Center High School Site APF Agreement by and between Orange County and Seidel Investments, LLC recorded May 31, 2007 in Book 9281, Page 1081. (NOT A SURVEY MATTER)
- Non-Exclusive Utility Easement Agreement by and between Reedy Creek Improvement District and Florida Power Corporation d/b/a Progress Energy Florida, Inc. recorded June 28, 2007 in Book 9327, Page 339. (AS SHOWN)
- Declaration of Covenants, Conditions, Restrictions and Easements recorded June 28, 2007 in Book 9327, Page 356 and First Amendment to Covenants, Conditions, Restrictions and Easements recorded April 23, 2018 in Instrument No. 20180238448, but deleting any covenant, condition or restriction indicating a preference, limitation or discrimination based on race, color, religion, sex, handicap, familial status or national origin to the extent such covenants, conditions or restrictions violate 42 USC 3604(c). (ENCUMBRANCES SUBJECT PROPERTY)
- School Impact Fee Credit Agreement (Project Name: Horizon West Town Center High School Site) Recorded July 2, 2007 in Book 9329, Page 4179 and recorded August 16, 2007 in Book 9398, Page 2677. (ENCUMBRANCES SUBJECT PROPERTY)
- Memorandum of Lease and Access and Utility Easement by and between The School Board of Orange County, Florida (Grantor) and T-Mobile South, LLC (Grantee) recorded May 5, 2011 in Book 10009, Page 6121. (AS SHOWN)
- Temporary Distribution Easement in favor of Duke Energy Florida, LLC, d/b/a Duke Energy, a Florida limited liability company recorded May 12, 2017 in Instrument No. 20170267181. (AS SHOWN)



SPRING LAKE ELEMENTARY SCHOOL SITE
 TAX PARCELS
 08-24-27-0000-00-011
 &
 08-24-27-0000-00-013
 ZONING PLANNED DEVELOPMENT DISTRICT (P-D)

UTILITY CONTACT INFORMATION		
UTILITIES	PHONE NUMBER	CONTACTS
CITY OF OCOCOE-UTILITIES DEPARTMENT (POTABLE WATER, SANITARY SEWER, REUSE)	407-905-3100 Ext. 1504	DAVID WHEELER
PROGRESS ENERGY-ELECTRIC	800-7008-8744	CUSTOMER SERVICE CENTER
AT&T/DISTRIBUTION-TELEPHONE	800-7789-1405	JUSIC DISPATCH (BY LOCATION)
CENTURYLINK WINTER GARDEN-PHONE & FIBER OPTIC	407-423-9100, Ext. 4885	JEFF GRIFFIN

NOTICE OF LIABILITY:
 This survey is certified to those individuals shown on the face thereof. Any other use, benefit or reliance by any other party is strictly prohibited and restricted. Surveyor is responsible only to those certified and hereby disclaims any other liability and hereby restricts the rights of any other individual or firm to use this survey, without express written consent of the surveyor.

SHEET 1 OF 2 NOT VALID WITHOUT SHEET 2 OF 2

Boundary & Topographic Survey

Survey Date: 12/12/2018 Drawing Number: 55669015 Scale: 1"=60'
 For: Orange County Public Schools Drawn By: JRH

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
 6500 Alvarado Boulevard
 Orlando, Florida 32817-2900
 (407) 295-8886 Certification Number LB2108
 E-mail: info@seasurveysurveying.com

JAMES L. PETERSEN
 Registered Land Surveyor Number 4791

55669015.dwg

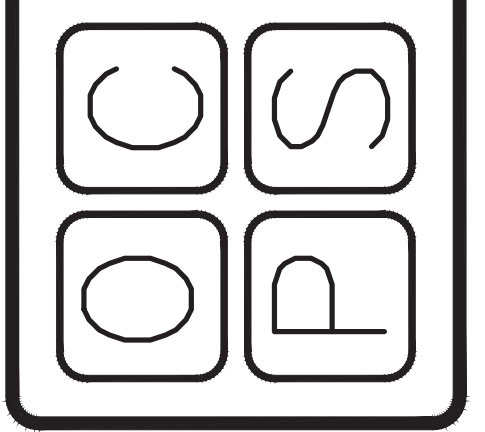
T001

Document Name: 55669015.DWG
 Document Issue Date: DECEMBER, 2018

REVISIONS	DATE	BY

OCPS-HIGH SCHOOL SITE-#113-H-W-4
 OCPS PROJECT TITLE
 OCPS PROJ. No.
 TOPOGRAPHIC SURVEY

ORANGE COUNTY PUBLIC SCHOOLS
 DESIGN & CONSTRUCTION
 FACILITIES & ENVIRONMENTAL SERVICES
 BLDG. 200, 6501 MAGIC WAY ORLANDO, FLORIDA 32809



DRAWN BY: JRH
 CHECKED BY: JRM
 DATE: 12/12/2018
 PLOT SCALE: 1"=60'
 OCPS DRAWING FILE NAME: 55669015.dwg
 SHEET NUMBER: T001
 1 OF (2):



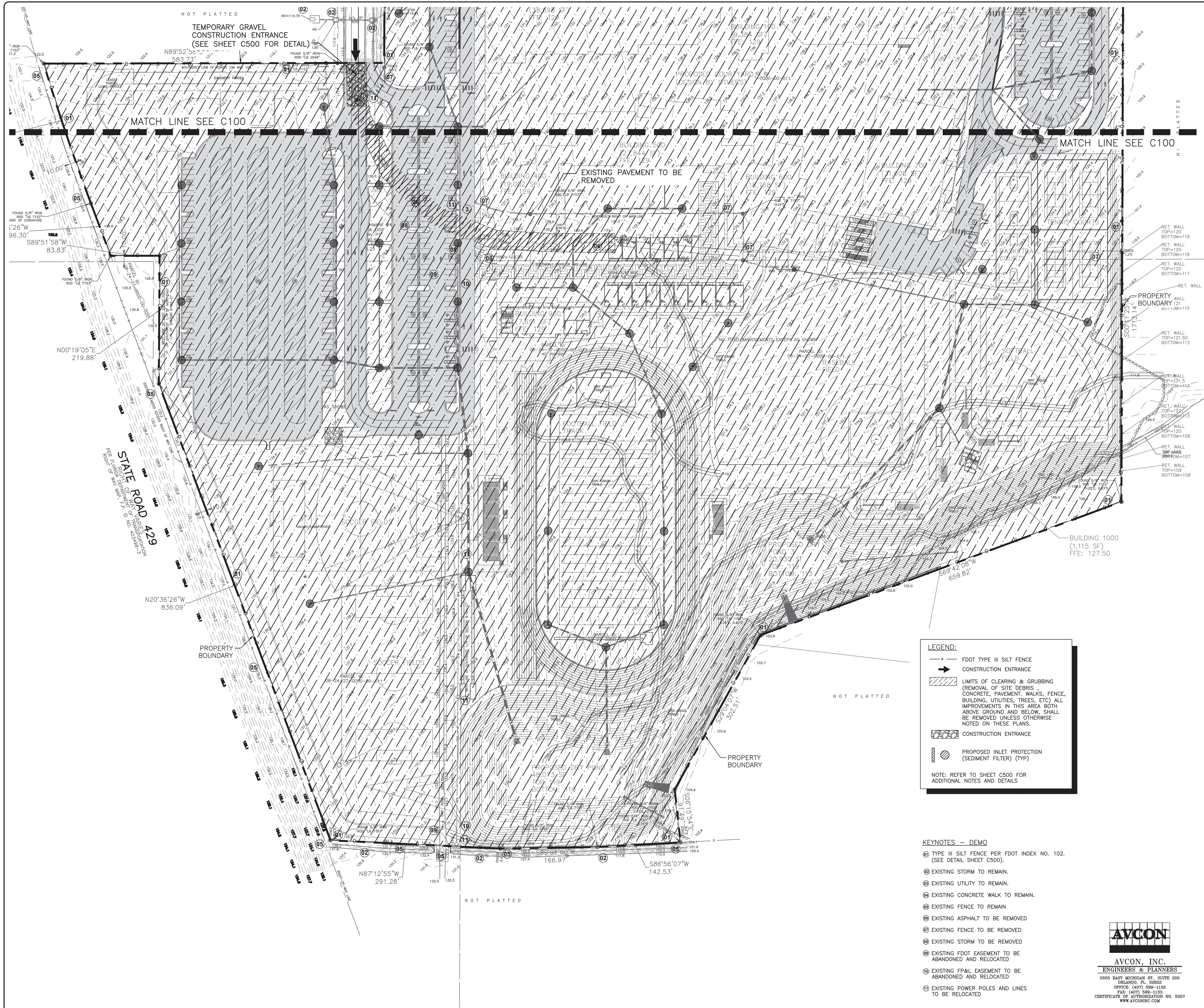
REVISIONS	DATE	BY

SouthEast Surveying
 SOUTHEASTERN SURVEYING & MAPPING CORP.
 10000 W. Colonial Parkway, Suite 100
 Orlando, Florida 32817-1500
 (407) 292-1880 fax (407) 292-0141
 email: info@southeasternsurveying.com
 Registered Land Surveyor No. 4791

OCPS-HIGH SCHOOL SITE-#113-H-W-4
 OCPS PROJECT TITLE
 OCPS PROJ. No. _____

OCPS
 ORANGE COUNTY PUBLIC SCHOOLS
 DESIGN & CONSTRUCTION
 FACILITIES & ENVIRONMENTAL SERVICES
 BLDG. 200, 6501 MAGIC WAY ORLANDO, FLORIDA 32809

DRAWN: JRH
 CHECKED: JM
 DATE: 12/18/18 PLOT SCALE: 1"=1'
 OCPS DRAWING FILE NAME: 55669015.DWG
 SHEET NUMBER:
V001
 OF (2):



REVISIONS	DATE	BY

SCHENKELSHULTZ
 ARCHITECTURE
 200 east robinson street
 suite 300, 32801
 orlando, florida 32803
 phone 407-872-3322
 fax 407-872-3303
 schenkelsultz.com
 SS Lic No - AA-C008937

ORANGE COUNTY PUBLIC SCHOOLS DESIGN & CONSTRUCTION FACILITIES SERVICES BLDG. 200, 6501 MAGIC WAY ORLANDO, FLORIDA 32809

113-H-W-4 High School
 OPCS PROJ. No.: S0088
DEMO & EROSION PLAN

ORANGE COUNTY PUBLIC SCHOOLS
 DESIGN & CONSTRUCTION
 FACILITIES SERVICES
 BLDG. 200, 6501 MAGIC WAY
 ORLANDO, FLORIDA 32809



AOR PN: 1920101
 DRAWN: DJ
 CHECKED: DAL
 DATE: 8/5/19 PLOT SCALE: 48x20@10
 OPCS DRAWING FILE NAME: S0088_C100 Demo & Erosion Plan
 SHEET NUMBER:
C101
 Phase III Submittal

LEGEND:

- FDOT TYPE III SILT FENCE
- ➔ CONSTRUCTION ENTRANCE
- ▨ LIMITS OF CLEARING & GRUBBING (REMOVAL OF SITE DEBRIS, CONCRETE, PAVEMENT, WALKS, FENCE, BUILDING, UTILITIES, TREES, ETC) ALL IMPROVEMENTS IN THIS AREA BOTH ABOVE GROUND AND BELOW, SHALL BE REMOVED UNLESS OTHERWISE NOTED ON THESE PLANS.
- ▨ CONSTRUCTION ENTRANCE
- ▨ PROPOSED INLET PROTECTION (SEDIMENT FILTER) (TYP)

NOTE: REFER TO SHEET C500 FOR ADDITIONAL NOTES AND DETAILS

- KEYNOTES — DEMO**
- 01 TYPE III SILT FENCE PER FDOT INDEX NO. 102. (SEE DETAIL SHEET C500).
 - 02 EXISTING STORM TO REMAIN.
 - 03 EXISTING UTILITY TO REMAIN.
 - 04 EXISTING CONCRETE WALK TO REMAIN.
 - 05 EXISTING FENCE TO REMAIN
 - 06 EXISTING ASPHALT TO BE REMOVED
 - 07 EXISTING FENCE TO BE REMOVED
 - 08 EXISTING STORM TO BE REMOVED
 - 09 EXISTING FDOT EASEMENT TO BE ABANDONED AND RELOCATED
 - 10 EXISTING FP&L EASEMENT TO BE ABANDONED AND RELOCATED
 - 11 EXISTING POWER POLES AND LINES TO BE RELOCATED

AVCON
 ENGINEERS & PLANNERS
 5555 EAST MICHIGAN ST., SUITE 200
 ORLANDO, FL 32822
 OFFICE: (407) 599-1122
 FAX: (407) 599-1133
 CERTIFICATE OF AUTHORIZATION NO. 5057
 WWW.AVCONINC.COM

8/5/19
 DARIN ALEX
 LOCKWOOD, P.E.
 FL P.E. #63504

STORM PIPE SCHEDULE

P-01	304 LF	15" RCP	@ 0.99%
P-02	145 LF	15" RCP	@ 1.03%
P-03	128 LF	15" RCP	@ 0.57%
P-04	65 LF	18" RCP	@ 0.51%
P-05	29 LF	18" RCP	@ 0.35%
P-06	115 LF	24" RCP	@ 0.35%
P-07	126 LF	24" RCP	@ 0.20%
P-08	58 LF	-	SLOT CHANNEL CONNECTOR PIPE
P-09	173 LF	30" RCP	@ 0.70%
P-10	97 LF	30" RCP	@ 0.70%
P-11	97 LF	30" RCP	@ 0.70%
P-12	196 LF	36" RCP	@ 0.30%
P-13	92 LF	36" RCP	@ 0.30%
P-14	107 LF	15" RCP	@ 0.40%
P-15	96 LF	36" RCP	@ 0.30%
P-16	118 LF	36" RCP	@ 0.30%
P-17	163 LF	36" RCP	@ 0.30%
P-18	148 LF	36" RCP	@ 0.30%
P-19	195 LF	36" RCP	@ 1.52%
P-20	193 LF	24" RCP	@ 1.00%
P-21	150 LF	24" RCP	@ 1.13%
P-22	126 LF	30" RCP	@ 1.30%
P-23	68 LF	15" RCP	@ 1.00%
P-24	131 LF	30" RCP	@ 1.50%
P-25	101 LF	15" RCP	@ 1.00%
P-26	36 LF	36" RCP	@ 1.75%
P-27	146 LF	15" RCP	@ 0.50%
P-28	38 LF	36" RCP	@ 3.81%
P-29	97 LF	15" RCP	@ 1.00%
P-30	133 LF	15" RCP	@ 1.00%
P-31	97 LF	15" RCP	@ 1.00%
P-32	41 LF	24" RCP	@ 1.00%
P-33	141 LF	24" RCP	@ 1.00%
P-34	96 LF	30" RCP	@ 1.00%
P-35	65 LF	15" RCP	@ 0.51%
P-36	99 LF	15" RCP	@ 1.00%
P-37	50 LF	24" RCP	@ 1.00%
P-38	256 LF	30" RCP	@ 0.66%
P-39	190 LF	30" RCP	@ 1.00%
P-40	20 LF	15" RCP	@ 1.00%
P-41	92 LF	36" RCP	@ 0.50%
P-42	101 LF	15" RCP	@ 1.00%
P-43	36 LF	29x45 ELLIPTICAL PIPE	@ 0.50%
P-44	38 LF	29x45 ELLIPTICAL PIPE	@ 0.50%
P-45	98 LF	15" RCP	@ 0.50%
P-46	97 LF	18" RCP	@ 0.40%

P-47	98 LF	24" RCP	@ 0.40%
P-48	267 LF	24" RCP	@ 0.40%
P-49	134 LF	15" RCP	@ 0.50%
P-50	98 LF	18" RCP	@ 0.50%
P-51	99 LF	18" RCP	@ 0.50%
P-52	98 LF	24" RCP	@ 0.50%
P-53	74 LF	30" RCP	@ 0.20%
P-54	98 LF	15" RCP	@ 0.40%
P-55	110 LF	15" RCP	@ 0.40%
P-56	131 LF	30" RCP	@ 0.20%
P-57	97 LF	15" RCP	@ 1.00%
P-58	124 LF	24" RCP	@ 1.00%
P-59	81 LF	24" RCP	@ 0.20%
P-60	73 LF	24" RCP	@ 0.20%
P-61	122 LF	24" RCP	@ 0.50%
P-62	95 LF	18" RCP	@ 0.30%
P-63	110 LF	30" RCP	@ 1.00%
P-64	145 LF	42" RCP	@ 0.20%
P-65	24 LF	15" RCP	@ 0.50%
P-66	81 LF	18" RCP	@ 0.50%
P-67	209 LF	42" RCP	@ 0.20%
P-68	275 LF	15" RCP	@ 1.00%
P-69	297 LF	42" RCP	@ 0.54%
P-70	93 LF	15" RCP	@ 1.50%
P-71	96 LF	15" RCP	@ 2.79%
P-72	200 LF	24" RCP	@ 0.50%
P-73	158 LF	30" RCP	@ 1.00%
P-74	104 LF	30" RCP	@ 1.00%
P-75	198 LF	18" RCP	@ 0.50%
P-76	158 LF	24" RCP	@ 1.00%
P-77	104 LF	24" RCP	@ 1.00%
P-78	162 LF	30" RCP	@ 3.25%
P-79	127 LF	15" RCP	@ 0.75%
P-80	93 LF	15" RCP	@ 0.75%
P-81	119 LF	15" RCP	@ 0.83%
P-82	66 LF	15" RCP	@ 1.00%
P-83	294 LF	15" RCP	@ 1.00%
P-84	180 LF	24" RCP	@ 1.00%
P-85	64 LF	15" RCP	@ 2.55%
P-86	300 LF	24" RCP	@ 1.55%
P-87	89 LF	15" RCP	@ 1.00%
P-88	OMITED		
P-89	36 LF	18" RCP	@ 1.50%
P-90	26 LF	15" RCP	@ 1.50%
P-91	146 LF	24" RCP	@ 1.16%
P-92	274 LF	15" RCP	@ 0.50%

D-01	D-01	D-11	D-21	D-31	D-41	D-51	D-61	D-71	D-81	D-91	D-101
N: 1485861.58 E: 455378.10 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 122.00 SW INV: 117.56	N: 1484942.32 E: 455270.71 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 126.50	N: 1485561.87 E: 454747.44 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 121.00 NW INV: 118.79 E INV: 112.16 S INV: 116.04	N: 1485551.87 E: 454339.21 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 119.50	N: 1485551.87 E: 454339.21 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 119.50	N: 1485551.87 E: 454339.21 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 119.50	N: 1485551.87 E: 454339.21 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 119.50	N: 1485551.87 E: 454339.21 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 119.50	N: 1485551.87 E: 454339.21 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 119.50	N: 1485551.87 E: 454339.21 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 119.50	N: 1485551.87 E: 454339.21 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 119.50	N: 1485551.87 E: 454339.21 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 119.50
D-02	D-12	D-22	D-32	D-42	D-52	D-62	D-72	D-82	D-92	D-102	
N: 1485776.64 E: 455084.21 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 119.00 NE INV: 114.56 W INV: 119.97	N: 1484857.62 E: 455255.50 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 126.50 SE INV: 119.97 W INV: 119.97	N: 1485556.22 E: 454925.84 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 122.00 NW INV: 114.96	N: 1485551.87 E: 454282.82 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 119.50 N INV: 115.09	N: 1485551.87 E: 454282.82 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 119.50 SE INV: 117.38	N: 1485551.87 E: 454349.60 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 119.00 N INV: 112.37	N: 1484594.05 E: 454310.79 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.20 NW INV: 120.58	N: 1484439.67 E: 454633.63 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.50 NW INV: 120.58	N: 1484444.37 E: 454616.60 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.00 SW INV: 122.50	N: 1484617.86 E: 455327.05 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 126.15 S INV: 121.30	N: 1484212.11 E: 454439.20 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 128.00 E INV: 122.14	
D-03	D-13	D-23	D-33	D-43	D-53	D-63	D-73	D-83	D-93	D-103	
N: 1485776.64 E: 454937.82 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 117.50 E INV: 113.06 SW INV: 113.06	N: 1484889.91 E: 455426.05 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 124.25 N INV: 118.76 SW INV: 118.76	N: 1485551.87 E: 454743.09 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 119.00 N INV: 114.08 S INV: 114.08	N: 1485551.87 E: 454743.09 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 119.00 N INV: 114.08 S INV: 114.08	N: 1484981.53 E: 454548.63 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 121.50 NE INV: 116.75	N: 1485693.82 E: 454349.60 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 117.70 N INV: 112.19 S INV: 112.19	N: 1484494.05 E: 454204.64 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 128.40 N INV: 113.21 S INV: 113.21	N: 1484518.26 E: 454272.23 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 126.70 NE INV: 121.19 SE INV: 121.19	N: 1484383.03 E: 45419.36 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 127.00 NE INV: 121.57 SW INV: 121.57	N: 1484458.82 E: 455419.36 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 126.00 NW INV: 121.04	N: 1484458.82 E: 455419.36 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 126.00 NW INV: 121.04	
D-04	D-14	D-24	D-34	D-44	D-54	D-64	D-74	D-84	D-94	D-104	
N: 1485721.37 E: 454819.50 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 117.50 NE INV: 112.33 W INV: 112.33	N: 1484989.91 E: 455426.05 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 124.25 N INV: 118.08 S INV: 118.08	N: 1485693.82 E: 446777.32 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 118.00 E INV: 114.18	N: 1485693.82 E: 446777.32 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 118.00 E INV: 114.18	N: 1484927.85 E: 454343.13 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 127.60 NE INV: 116.75	N: 1485640.04 E: 454349.63 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 129.30 N INV: 112.72 W INV: 112.72 E INV: 112.72	N: 1484394.05 E: 454310.79 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 129.30 N INV: 112.72 W INV: 112.72 E INV: 112.72	N: 1484494.17 E: 454339.22 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.50 N INV: 113.41 S INV: 113.41	N: 1484301.73 E: 454687.92 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.60 NE INV: 118.89 NW INV: 118.89 S INV: 118.89	N: 1484301.73 E: 454687.92 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.60 NE INV: 118.89 NW INV: 118.89 S INV: 118.89	N: 1484488.90 E: 455328.76 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 120.34 SE INV: 120.34 W INV: 120.34	
D-05	D-15	D-25	D-35	D-45	D-55	D-65	D-75	D-85	D-95	D-105	
N: 1485721.37 E: 454744.85 INV.= 112.00	N: 1485089.91 E: 455426.05 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 124.25 NW INV: 117.40 S INV: 120.20	N: 1492020.12 E: 451120.64 TYPE "3" INLET FOOT INDEX#214 GRATE EL: 126.00 NW INV: 120.20 S INV: 120.20	N: 1485693.82 E: 446777.32 TYPE "3" INLET FOOT INDEX#214 GRATE EL: 118.00 N INV: 113.45 W INV: 113.45	N: 1479681.84 E: 448767.18 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 128.95 SW INV: 117.89	N: 1485027.85 E: 454349.63 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 127.20 N INV: 115.06	N: 1484594.05 E: 454204.64 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 127.50 S INV: 113.40	N: 1484380.69 E: 454692.67 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 127.30 N INV: 112.31 W INV: 112.31 S INV: 112.31	N: 1484100.84 E: 454938.68 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 124.50 S INV: 117.89	N: 1484549.77 E: 455238.68 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 124.50 SW INV: 120.11	N: 1484549.77 E: 455238.68 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 124.50 SW INV: 120.11	
D-06	D-16	D-26	D-36	D-46	D-56	D-66	D-76	D-86	D-96	D-106	
N: 1484742.57 E: 455327.42 24" YARD DRAIN GRATE EL: 126.15 NE INV: 120.47	N: 1485269.73 E: 455243.67 TYPE "3" INLET FOOT INDEX#214 GRATE EL: 126.00 SE INV: 116.81 W INV: 116.81	N: 1485105.42 E: 454720.49 RIM EL: 128.75 N INV: 119.92 E INV: 124.00 W INV: 119.92	N: 1485640.01 E: 454293.88 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 122.00 INV.= 112.00	N: 1485027.85 E: 454349.63 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 127.60 NE INV: 116.90 W INV: 116.90 E INV: 116.90	N: 1484694.06 E: 453861.72 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.20 S INV: 115.06	N: 1484494.05 E: 454204.64 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.50 S INV: 113.01	N: 1484260.89 E: 454272.23 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 126.70 S INV: 115.23	N: 1484304.43 E: 454916.17 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.60 N INV: 116.31 SW INV: 116.31	N: 1484549.77 E: 455238.68 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.50 SE INV: 122.39	N: 1484549.77 E: 455238.68 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.50 SE INV: 122.39	
D-07	D-17	D-27	D-37	D-47	D-57	D-67	D-77	D-87	D-97	D-107	
N: 1484875.48 E: 447533.13 TYPE "3" INLET FOOT INDEX#214 GRATE EL: 125.35 NW INV: 120.37 SW INV: 120.37	N: 1485161.09 E: 455221.98 TYPE "3" INLET FOOT INDEX#214 GRATE EL: 125.50 NE INV: 116.96	N: 1485143.19 E: 454466.33 SLOT CHANNEL BOX (BY OTHERS) GRATE EL: 127.40	N: 1484894.39 E: 454204.50 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 127.50 N INV: 121.09	N: 1477227.81 E: 454188.59 TYPE "3" INLET FOOT INDEX#214 GRATE EL: 126.50 N INV: 116.42 E INV: 116.42 S INV: 116.42 SW INV: 116.42	N: 1484593.59 E: 453861.72 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 127.70 N INV: 114.57 S INV: 114.57	N: 1484380.48 E: 454204.63 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 127.50 N INV: 112.57 NW INV: 112.57 E INV: 112.57	N: 1484234.12 E: 454272.23 RIM EL: 128.50 N INV: 114.99 E INV: 114.99 W INV: 114.99	N: 1484301.73 E: 45498.61 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 127.60 S INV: 121.61	N: 1484549.77 E: 455238.68 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 126.00 NE INV: 119.45 S INV: 119.45 W INV: 119.45	N: 1484549.77 E: 455238.68 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 126.00 NE INV: 119.45 S INV: 119.45 W INV: 119.45	
D-08	D-18	D-28	D-38	D-48	D-58	D-68	D-78	D-88	D-98	D-108	
N: 1484742.57 E: 455129.53 COURTYARD CONNECTOR (BY OTHERS) GRATE EL: 120.22	N: 1485269.73 E: 455243.67 TYPE "3" INLET FOOT INDEX#214 GRATE EL: 126.00 E INV: 116.54 SW INV: 116.54	N: 1485105.42 E: 454720.49 RIM EL: 128.75 N INV: 119.92 E INV: 124.00 W INV: 119.92	N: 1484794.40 E: 454204.50 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 128.40 N INV: 114.73 S INV: 114.73	N: 1485200.37 E: 454286.54 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 128.80 N INV: 114.73 S INV: 114.73	N: 1484494.06 E: 453861.72 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.20 S INV: 114.18	N: 1484594.05 E: 454204.64 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.50 S INV: 113.01	N: 1484260.89 E: 454272.23 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 126.70 S INV: 115.23	N: 1484304.43 E: 454916.17 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.60 N INV: 116.31 SW INV: 116.31	N: 1484549.77 E: 455238.68 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.50 SE INV: 122.39	N: 1484549.77 E: 455238.68 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.50 SE INV: 122.39	
D-09	D-19	D-29	D-39	D-49	D-59	D-69	D-79	D-89	D-99	D-109	
N: 1485056.02 E: 455275.85 SLOT CHANNEL BOX (BY OTHERS) GRATE EL: 126.50	N: 1485269.73 E: 455243.67 TYPE "3" INLET FOOT INDEX#214 GRATE EL: 116.25 W INV: 116.25	N: 1485291.87 E: 454747.44 TYPE "3" INLET FOOT INDEX#210 GRATE EL: 123.50 N INV: 117.68 SE INV: 117.68	N: 1484694.39 E: 454339.21 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 127.50 N INV: 119.76	N: 1485482.37 E: 454339.21 TYPE "3" INLET FOOT INDEX#232 GRATE EL: 120.00 E INV: 113.03	N: 1484394.06 E: 453861.72 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.20 N INV: 113.79 E INV: 113.79	N: 1484594.05 E: 454204.64 TYPE "4" INLET FOOT INDEX#210 GRATE EL: 127.50 W INV: 122.74	N: 1484260.89 E: 454272.23 TYPE				

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

AN EROSION CONTROL PLAN SHALL BE PREPARED BY THE CONTRACTOR AND APPROVED BY OPCS PRIOR TO SCHEDULING OF PRE-CONSTRUCTION CONFERENCE. THE CONTRACTOR SHALL EXECUTE ALL MEASURES NECESSARY TO LIMIT THE TRANSPORT OF SEDIMENTS OUTSIDE THE LIMITS OF THE PROJECT TO THE VOLUME AND AMOUNT AS ARE EXISTING PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THIS CONDITION WILL BE SATISFIED FOR THE TOTAL ANTICIPATED CONSTRUCTION PERIOD. PROVISION MUST BE MADE TO PRESERVE THE INTEGRITY AND CAPACITY OF CHECK WEIRS, SEDIMENTS BASINS, SLOPE DRAINS, GRADING PATTERNS, ETC. REQUIRED TO MEET THIS PROVISION THROUGHOUT THE LIFE OF THE CONSTRUCTION. CONTRACTOR SHALL PROVIDE SYNTHETIC HAY BALES, TEMPORARY GRASSING ETC. AS REQUIRED TO FULLY COMPLY WITH THE INTENT OF THIS SPECIFICATION.

- STOCKPILING MATERIAL:**
NO EXCAVATED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER AS TO DRAIN DIRECTLY OFF THE PROJECT SITE OR INTO ANY ADJACENT WATER BODY OR STORMWATER COLLECTION FACILITY.
- EXPOSED MATERIAL:**
THE SURFACE AREA OF OPEN, RAW ERODIBLE SOIL EXPOSED BY CLEARING AND GRUBBING, OPERATIONS OR EXCAVATION AND FILLING OPERATIONS SHALL NOT EXCEED 40 ACRES SO LONG AS THIS OPERATION WILL NOT SIGNIFICANTLY AFFECT OFF-SITE DEPOSIT OF SEDIMENTS.
- INLET PROTECTION:**
THE CONSTRUCTION OF SWALES AND THE STORMWATER COLLECTION SYSTEM SHALL BE PERFORMED PRIOR TO CONSTRUCTION OF IMPERVIOUS AREAS. INLETS AND CATCH BASINS SHALL BE PROTECTED FROM SEDIMENT LADEN STORM RUNOFF UNTIL THE COMPLETION OF ALL CONSTRUCTION OPERATIONS THAT MAY CONTRIBUTE SEDIMENT TO THE INLET.
- TEMPORARY SEEDING:**
AREAS OPENED BY CONSTRUCTION OPERATIONS AND THAT ARE NOT ANTICIPATED TO BE DRESSED AND RECEIVE FINAL GRASSING TREATMENT WITHIN SEVEN DAYS, SHALL BE SEEDED WITH A QUICK GROWING GRASS SPECIES WHICH WILL PROVIDE AN EARLY COVER DURING THE SEASON IN WHICH IT IS PLANTED AND WILL NOT LATER COMPETE WITH THE PERMANENT GRASSING. THE RATE OF SEEDING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
- TEMPORARY GRASSING:**
SLOPES STEEPER THAN 6:1 THAT FALL WITHIN THE CATEGORY ESTABLISHED IN 4 ABOVE, SHALL ADDITIONALLY RECEIVE MULCHING OF APPROXIMATELY 2 INCHES LOOSE MEASURE OF MULCH MATERIAL CUT INTO THE SOIL OF THE SEEDED AREA TO A DEPTH OF FOUR INCHES.
- TEMPORARY GRASSING:**
THE SEEDED OR SEEDED AND MULCHED AREA(S) SHALL BE ROLLED AND WATERED AS REQUIRED TO ASSURE OPTIMUM GROWING CONDITIONS FOR COVER.
- TEMPORARY RE-GRASSING:**
IF AFTER FOURTEEN DAYS, THE TEMPORARY GRASSED AREAS HAVE NOT ATTAINED A MINIMUM OF 75% COVERAGE, AREAS WILL BE REWORKED AND ADDITIONAL SEED APPLIED SUFFICIENT TO ESTABLISH THE DESIRED VEGETATION COVER.
- MAINTENANCE:**
ALL FEATURES OF THE PROJECT WILL BE CONSTRUCTED TO PREVENT EROSION AND SEDIMENT AND SHALL BE MAINTAINED DURING THE LIFE OF THE CONSTRUCTION SO AS TO FUNCTION PROPERLY WITHOUT THE TRANSPORT OF SEDIMENTS OUTSIDE THE LIMITS OF THE PROJECT.
- DUST ABATEMENT:**
DUST SHALL BE CONTROLLED WITH USE OF WATER AND CALCIUM CHLORIDE.
- STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE, BUT IN NO CASE MORE THAN 7 DAYS, IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED.**

EROSION CONTROL NOTES:

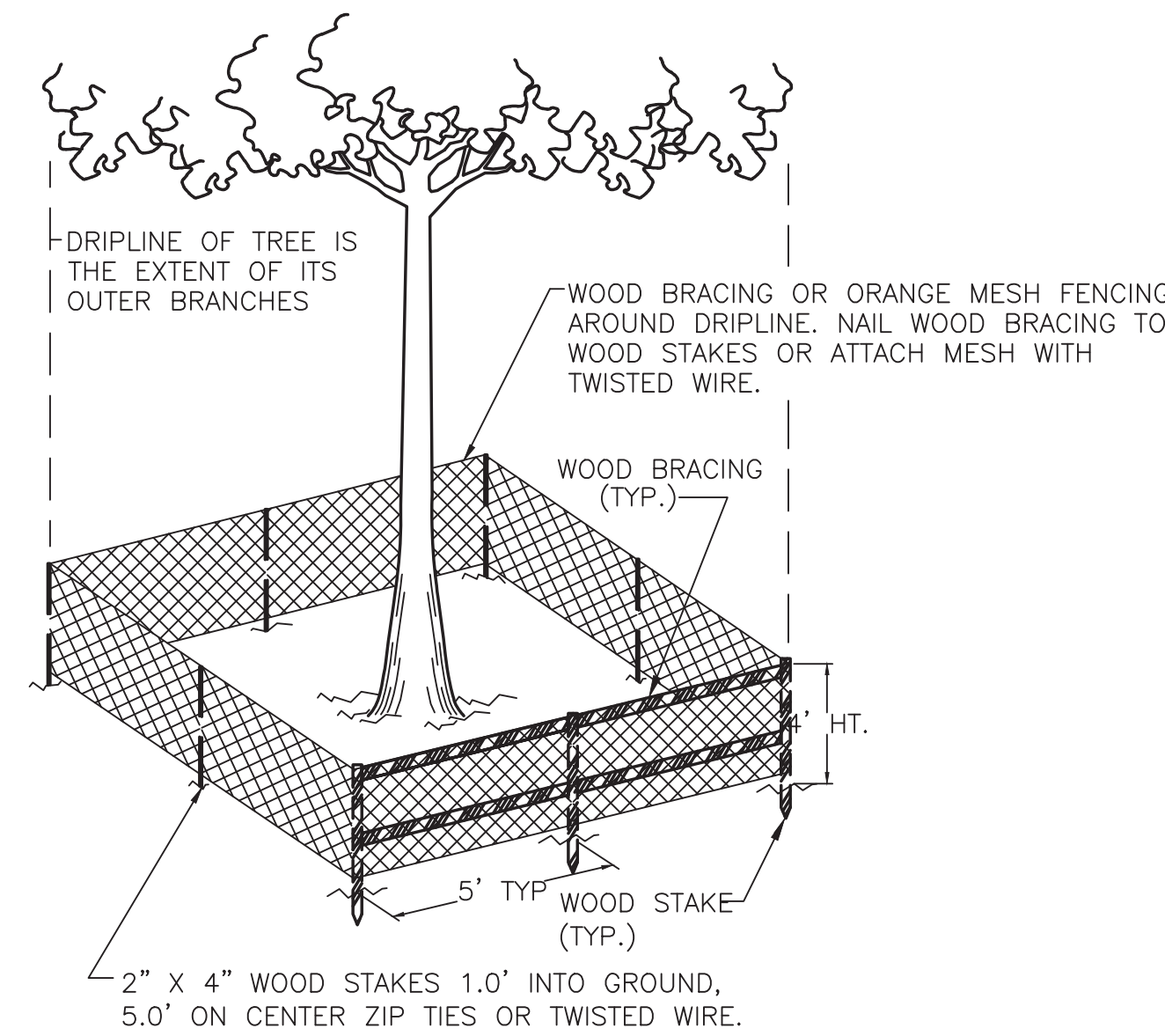
- THE CONSTRUCTION OF SWALES AND THE STORM SEWER SYSTEM SHALL BE PERFORMED PRIOR TO CONSTRUCTION OF IMPERVIOUS AREAS.
- INLET OPENINGS SHALL BE COVERED WITH FILTER FABRIC OR SURROUNDED BY SYNTHETIC HAY BALES.
- THE CONTRACTOR SHALL MINIMIZE THE AERIAL EXTENT OF EXPOSED EARTH AT ONE TIME DURING CONSTRUCTION AND UTILIZE WATERING TRUCKS TO WET THE EARTH DURING DRY MONTHS TO MINIMIZE EROSION DUE TO WIND.
- SILT FENCE MUST REMAIN IN PLACE AND BE MAINTAINED IN GOOD CONDITION AT ALL LOCATIONS SHOWN UNTIL CONSTRUCTION IS COMPLETE. SOILS ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED.
- THE EROSION CONTROL MEASURES SHOWN HEREON ARE INTENDED AS MINIMUM STANDARDS. ANY EROSION CONTROL REQUIRED BEYOND THAT SPECIFIED SHALL BE CONSIDERED AS INCLUDED WITHIN THIS CONTRACT.
- ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO THE LOCAL WATER MANAGEMENT DISTRICT AND FLORIDA DEPT. OF ENVIRONMENTAL PROTECTION STANDARDS.
- EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN CONSTRUCTION. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTATION OF SILT OFF THE SITE.
- SEDIMENT MATERIALS FROM WORK ON THIS PROJECT SHALL BE CONTAINED AND NOT ALLOWED TO COLLECT ON ANY OFF-PERIMETER AREAS OR IN WATERWAYS. THESE INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES, AND PONDS.
- DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR TO DETERMINE THE EFFECTIVENESS OF EROSION/SEDIMENT CONTROL EFFORTS. ANY NECESSARY REMEDIES SHALL BE PERFORMED WITHOUT DELAY.
- ALL MUD, DIRT OR OTHER MATERIALS TRACKED OR SPILLED ONTO EXISTING PUBLIC ROADS AND FACILITIES, DUE TO CONSTRUCTION SHALL BE PROMPTLY REMOVED AND NOT ALLOWED TO REMAIN ON THE ROADWAY OVERNIGHT BY THE CONTRACTOR.
- ALL PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, AND ANY DISTURBED LAND AREAS SHALL BE COMPLETED WITHIN 7 CALENDAR DAYS AFTER FINAL GRADING. ALL TEMPORARY PROTECTION SHALL BE MAINTAINED UNTIL PERMANENT MEASURES ARE IN PLACE AND ESTABLISHED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR:
 - PREPARING FDEP NOTICE OF INTENT APPLICATIONS. (NOI & NOT)
 - FDEP NOTICE OF INTENT APPLICATION FEES.
 - PREPARING THE FDEP STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
 - SUBMITTAL OF THE FDEP NOTICE OF INTENTS APPLICATIONS (NOI & NOT)
- THE SUBMITTAL OF THE FDEP NOI MUST BE DONE PRIOR TO COMMENCING WORK FOR THIS PROJECT.
- PRIOR TO EARTH WORK OR CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NPDES NOTICE OF INTENT (NOI) FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES TO THE ENGINEER OF RECORD.
- THE CONTRACTOR SHALL OBTAIN WATER MANAGEMENT DISTRICT PERMITS PRIOR TO COMMENCING WORK FOR THIS PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL DEWATERING PERMITS.
- UPON COMPLETION OF CONSTRUCTION ALL DISTURBED AREAS, AS A MINIMUM, SHALL BE SEEDED AND MULCHED AND COMPACTED EQUIVALENT TO THAT OF NATIVE SURROUNDING EARTH.

SEDIMENT CONTROL NOTES:

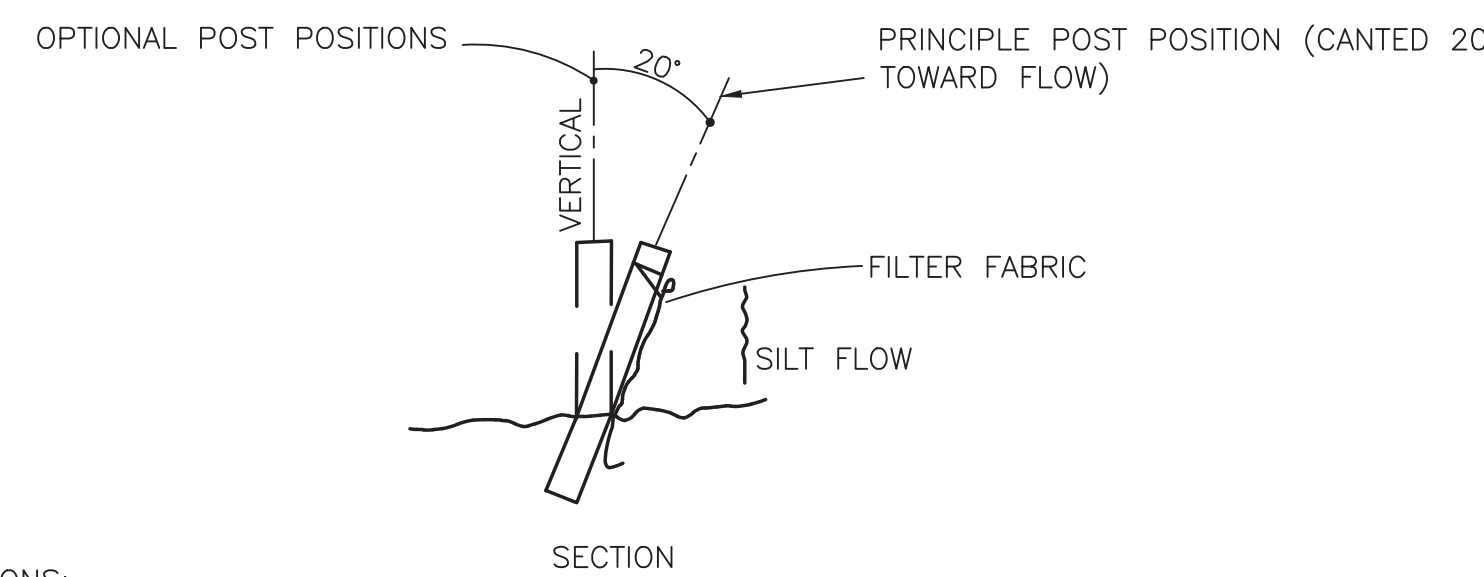
- ALL SEDIMENT CONTROL MEASURES SHOWN ON THESE PLANS SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND SHALL BE CONSTRUCTED PRIOR TO ANY GRADING OR DISTURBANCE OR EXISTING SURFACE MATERIAL ON THE BALANCE OF THE SITE.
- PERIODIC INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES SHALL BE PROVIDED TO INSURE INTENDED PURPOSE IS ACCOMPLISHED.
- ALL TEMPORARY EARTH BERMS AND DIVERSIONS SHALL BE MACHINE COMPACTED, SEEDED, AND MULCHED FOR TEMPORARY VEGETATIVE COVER WITHIN 7 DAYS AFTER GRADING.
- CONSTRUCTED BERMS, DIKES, ETC., SHALL BE COMPACTED BY SEVERAL PASSES WITH CONSTRUCTION EQUIPMENT (BULLDOZER, BACKHOE, OR OTHER HEAVY EQUIPMENT, OR BY USE OF A SUITABLE ROLLER).
- AFTER ANY SIGNIFICANT RAINFALL, SEDIMENT CONTROL STRUCTURES SHALL BE INSPECTED FOR INTEGRITY, ANY DAMAGED DEVICES SHALL BE CORRECTED IMMEDIATELY.
- THE IN PLACE SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.

DEMOLITION NOTES:

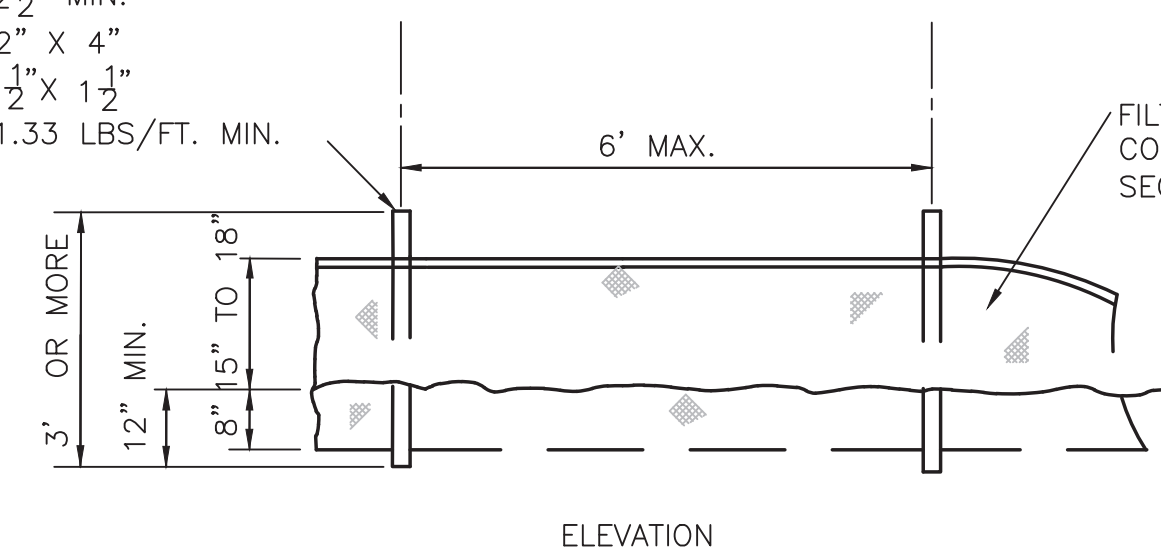
- CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION ACTIVITY FOR DIG PERMITS, ELECTRICAL PERMITS OR OTHER PERMITS AS APPLICABLE. CONTRACTOR IS TO COORDINATE FULLY WITH UTILITY COMPANIES ON EXACT LOCATION OF UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
- ALL DEBRIS AND WASTE MATERIALS GENERATED BY DEMOLITION OR SUBSEQUENT CONSTRUCTION ACTIVITIES SHALL BE DISPOSED OFF-SITE IN A LEGAL MANNER AT AN APPROVED DISPOSAL FACILITY. THE CONTRACTOR SHALL OBTAIN ANY AND ALL PERMITS REQUIRED FOR DEMOLITION, CONSTRUCTION WORK AND HAULING WASTE MATERIAL. ALL ASSOCIATED COSTS AND PERMIT FEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ASPHALT RESURFACING TO ALL EXISTING ROADS WHICH ARE SAW-CUT OR DAMAGED DURING CONSTRUCTION. ALL REPAIRS TO BE MADE IN ACCORDANCE WITH FDOT REQUIREMENTS.
- ANY ENCOUNTERED CONTAMINATED MATERIALS SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
- THE CONTRACTOR IS ADVISED THAT UNCHARTED UTILITIES MAY BE FOUND TO EXIST WITHIN THE CONSTRUCTION AREA AND THAT CONSTRUCTION OPERATIONS SHOULD BE CONDUCTED WITH CAUTION.
- ANY MISCELLANEOUS GARBAGE, YARD WASTE AND CONSTRUCTION DEBRIS PRESENTLY ON-SITE DUE TO ILLEGAL DUMPING SHALL BE DISPOSED OF OFF-SITE ACCORDING TO THE SOLID WASTE AND HAZARDOUS WASTE REGULATIONS. USE CAUTION IF ANY HAZARDOUS WASTE IS PRESENT.
- EXISTING IRRIGATION SYSTEMS ADJACENT TO CONSTRUCTION ACTIVITIES SHALL BE PROTECTED. ANY IRRIGATION SYSTEM COMPONENTS REMOVED DUE TO CONSTRUCTION ACTIVITIES SHALL BE RESTORED AS QUICKLY AS POSSIBLE.



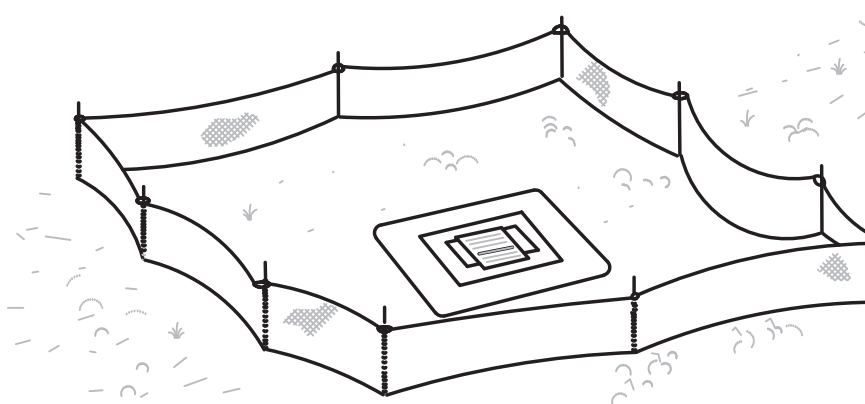
TREE PROTECTION BARRIAGE DETAIL
N.T.S.



POST OPTIONS:
WOOD 2 1/2" MIN.
WOOD 2" x 4"
OAK 1 1/2" x 1 1/2"
STEEL 1.33 LBS/FT. MIN.



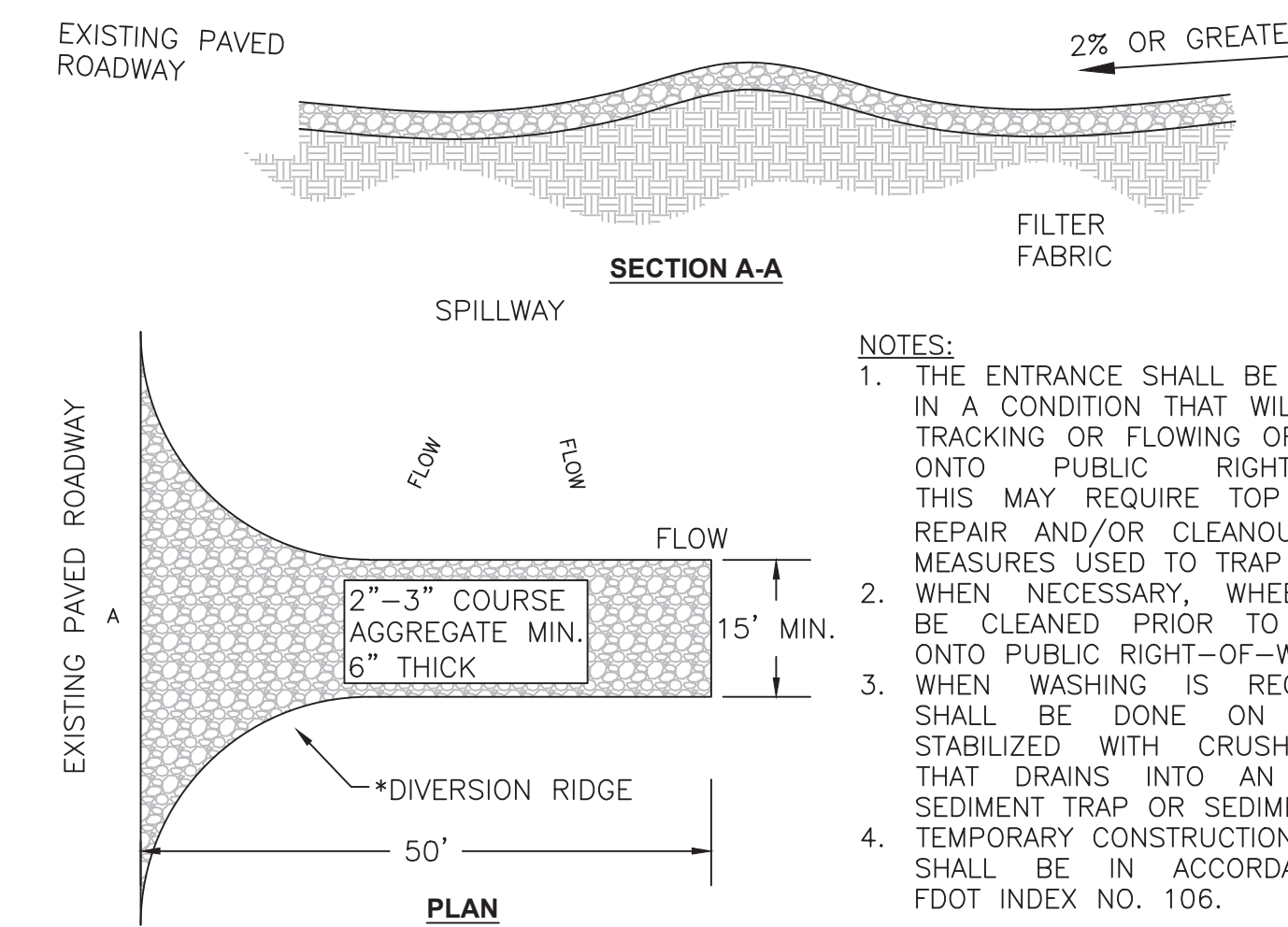
TYPE III SILT FENCE
N.T.S.



TYPE III SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS.

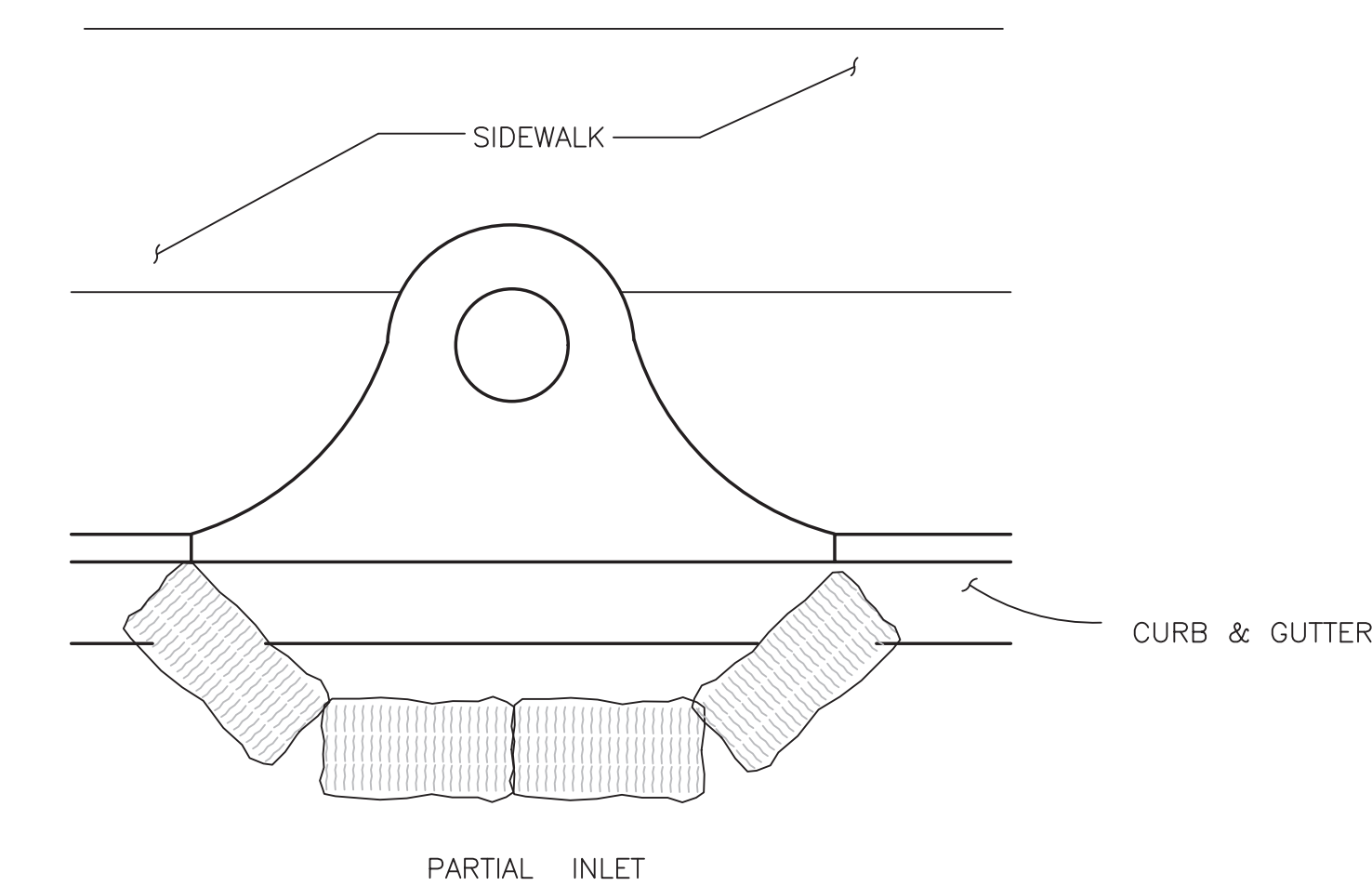
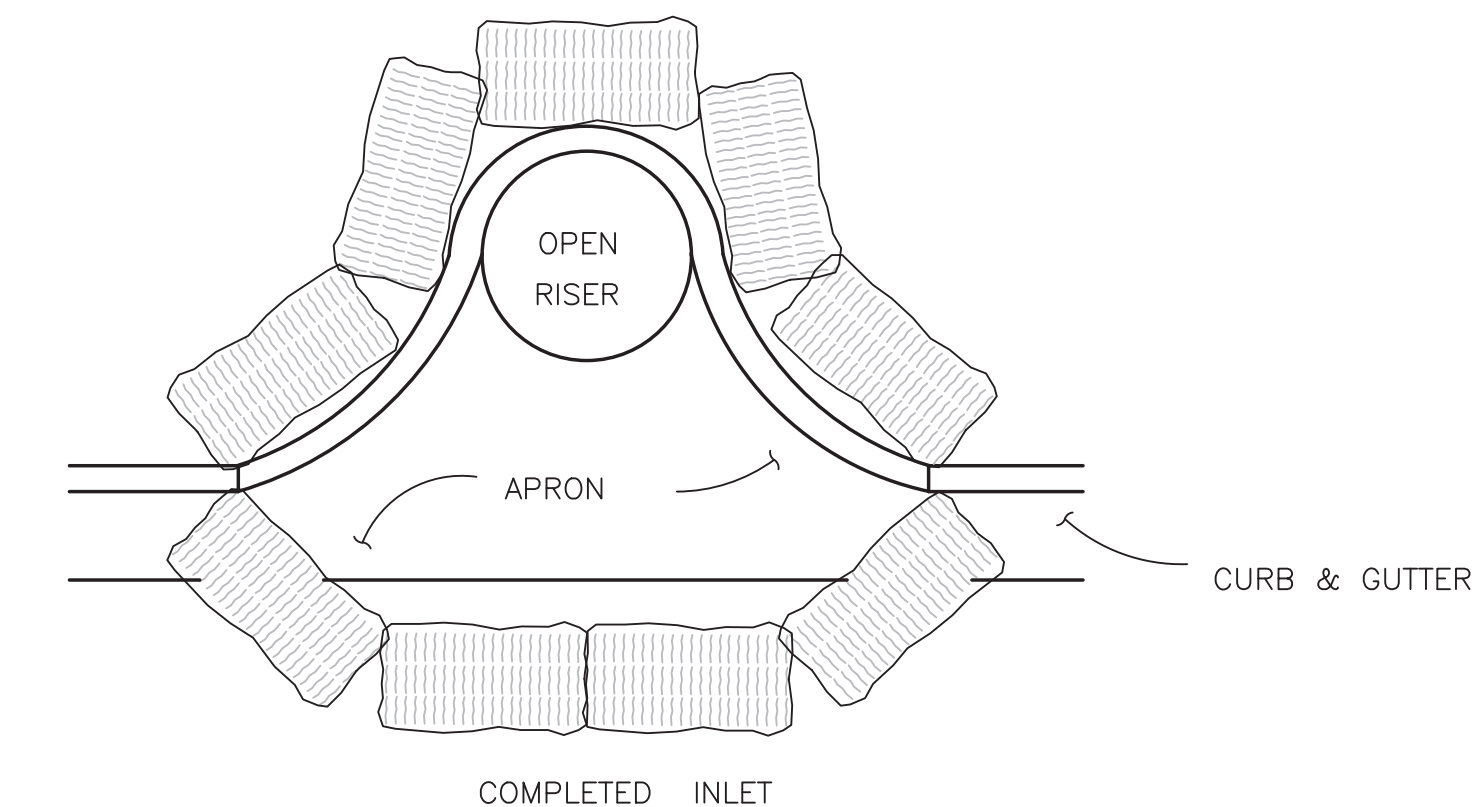
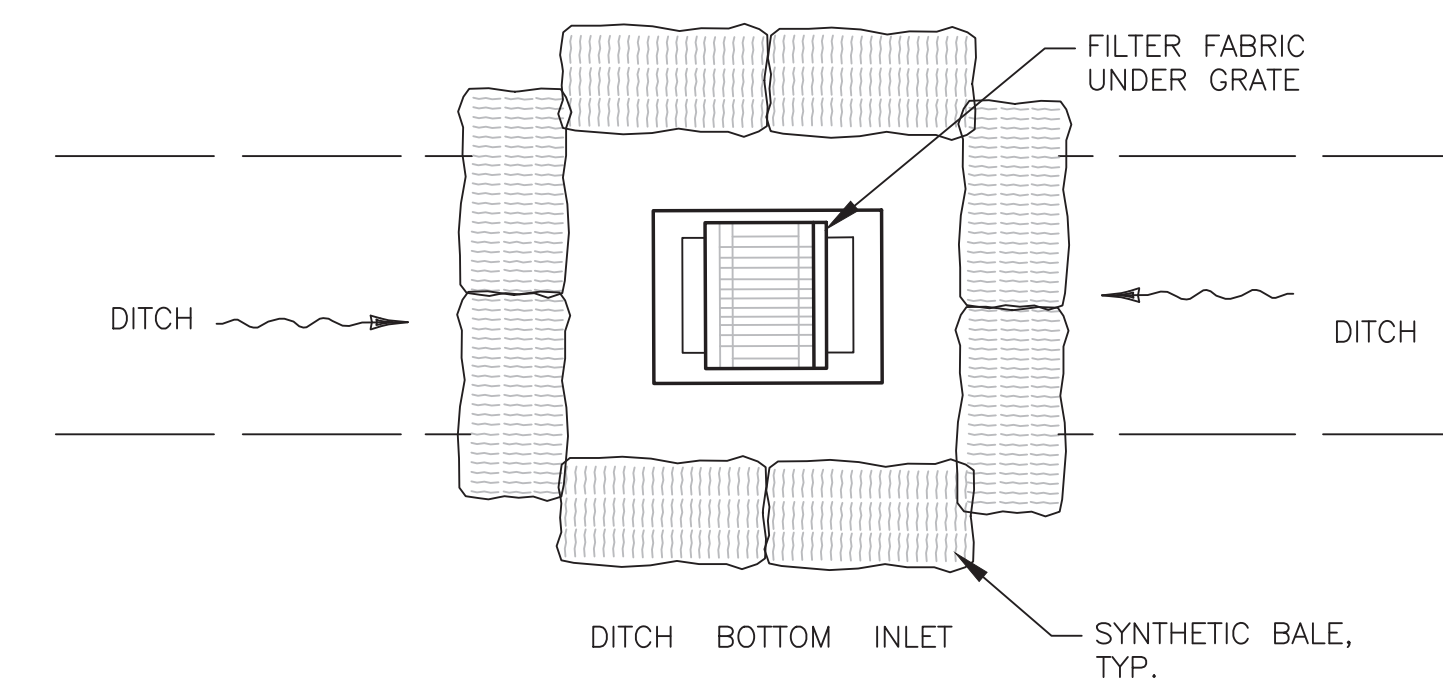
NOTE: DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UNPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

SILT FENCE APPLICATIONS
N.T.S.



- NOTES:**
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 - WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
 - WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
 - TEMPORARY CONSTRUCTION ENTRANCE SHALL BE IN ACCORDANCE WITH FDOT INDEX NO. 106.

*DIVERSION RIDGE REQUIRED WHERE GRADE EXCEEDS 2%
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE



NOTE: ANCHOR SYNTHETIC BALES WITH 2 - 2" x 2" x 4" STAKES PER BALE.

PROTECTION AROUND INLETS OR SIMILAR STRUCTURES
N.T.S.

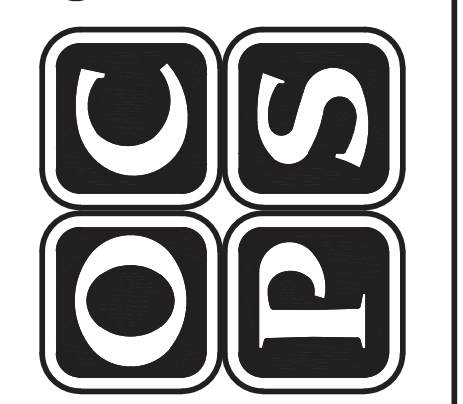
REVISIONS	DATE	BY

SCHENKELSHULTZ
ARCHITECTURE
200 east robinson street
orlando, fl 32801
voice 407-972-3322
fax 407-972-3303
SS Lic No - AA-C000937

CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES.

113-H-W-4 High School
OCPS PROJ. No: S0088
DEMOLITION & EROSION CONTROL DETAILS

ORANGE COUNTY PUBLIC SCHOOLS DESIGN & CONSTRUCTION FACILITIES SERVICES
BLDG. 200, 6501 MAGIC WAY
ORLANDO, FLORIDA 32809

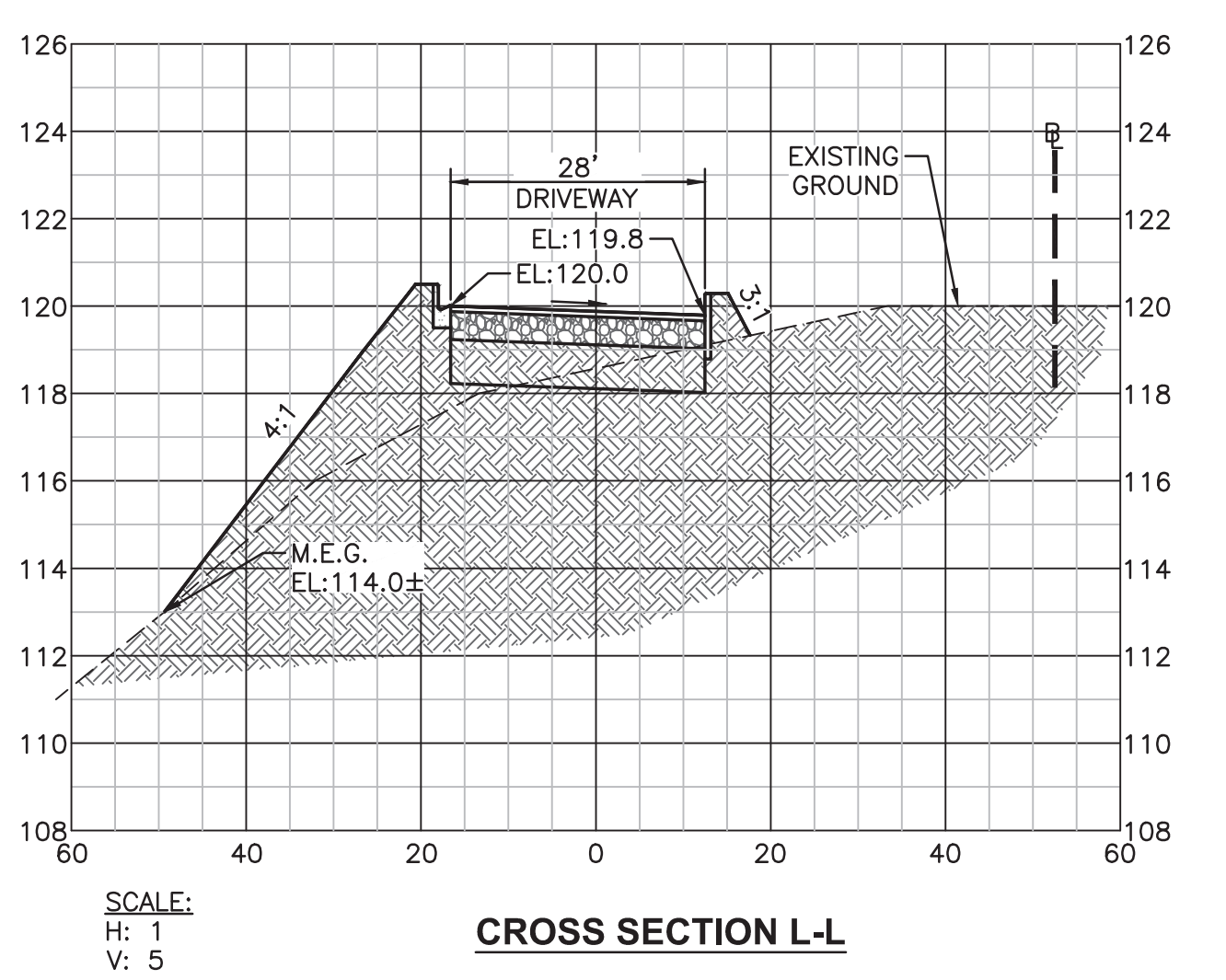
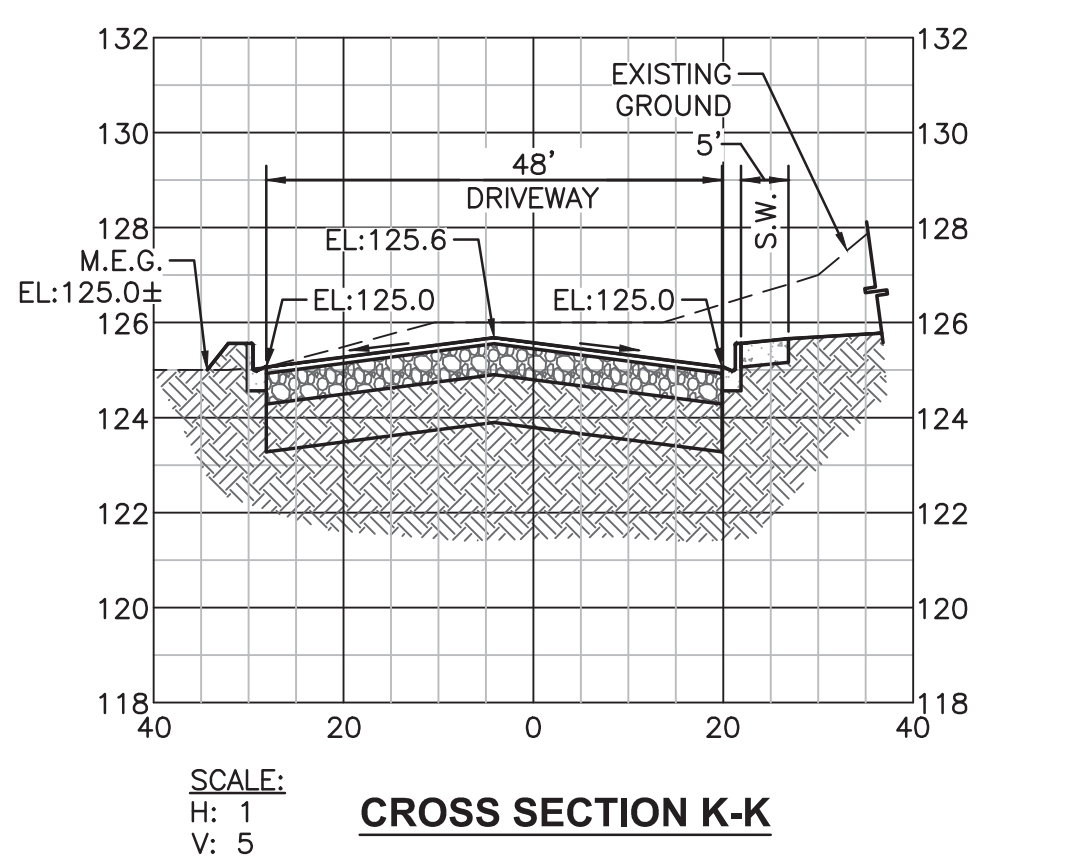
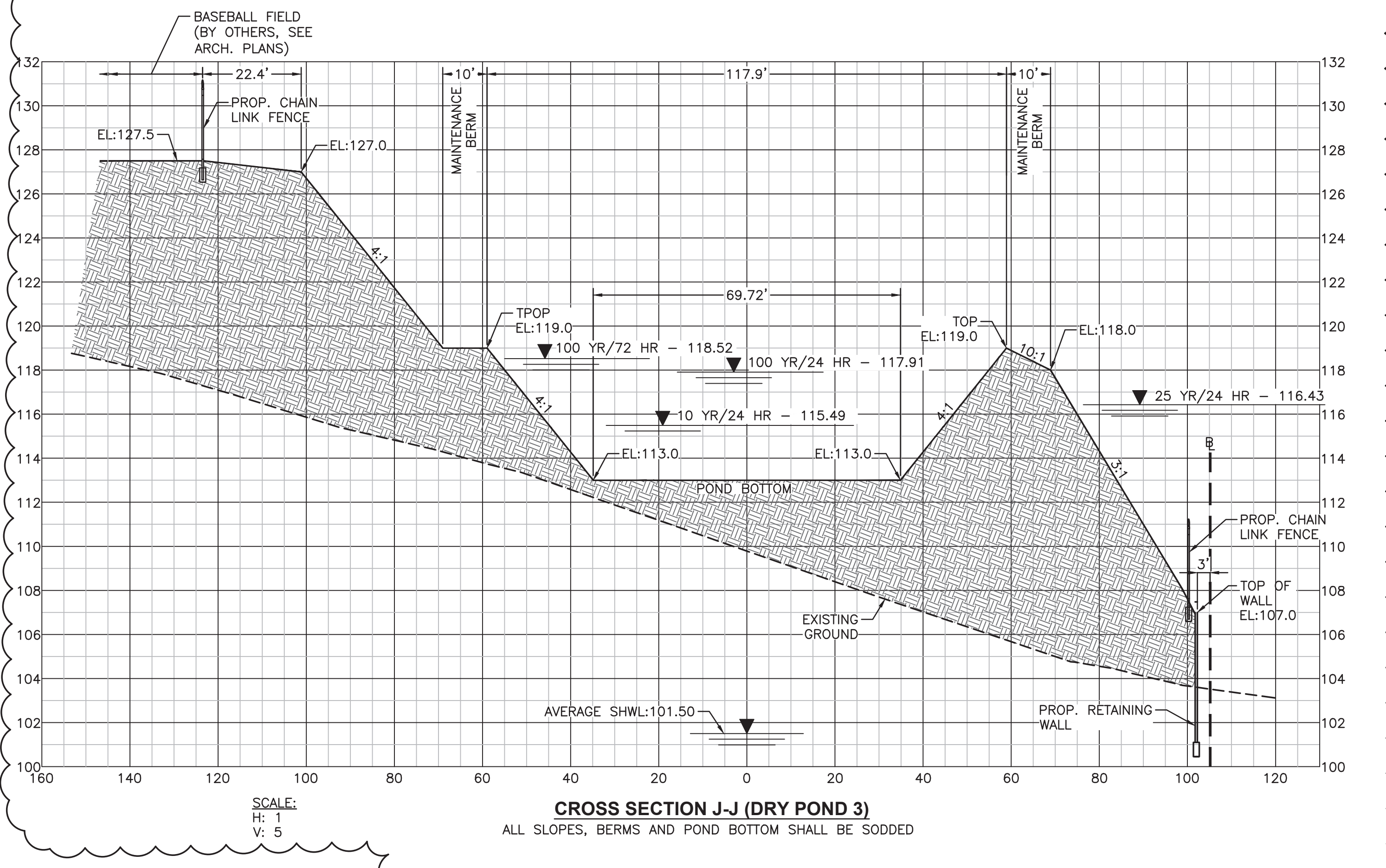
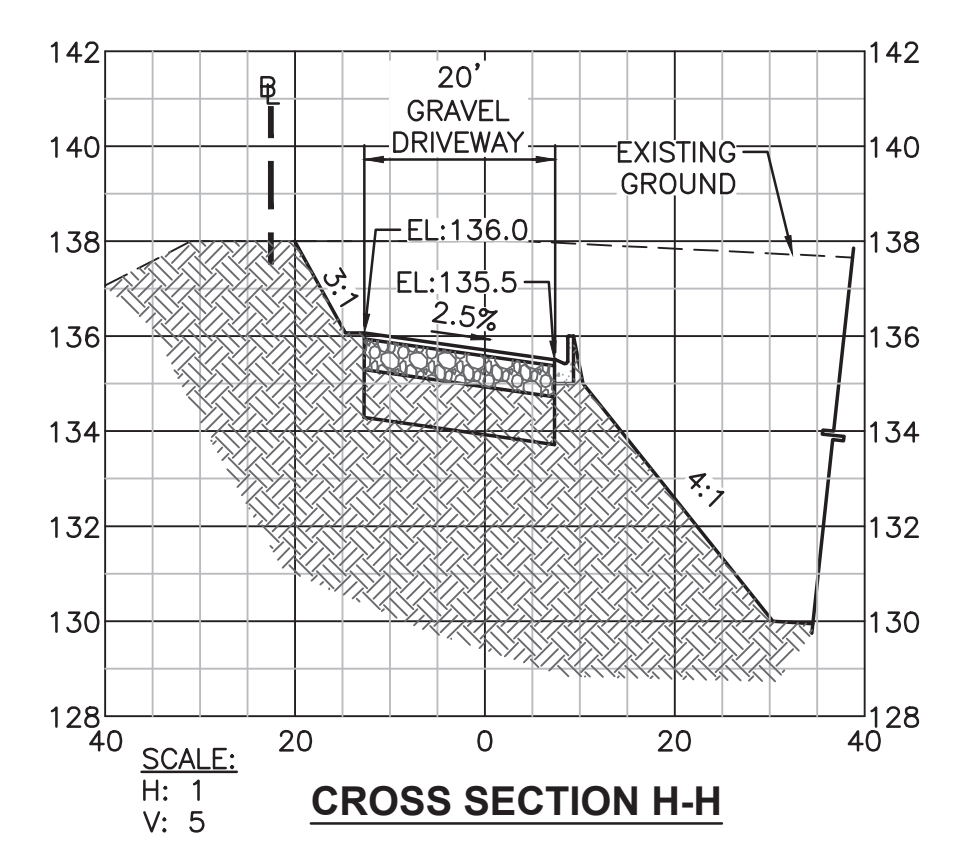
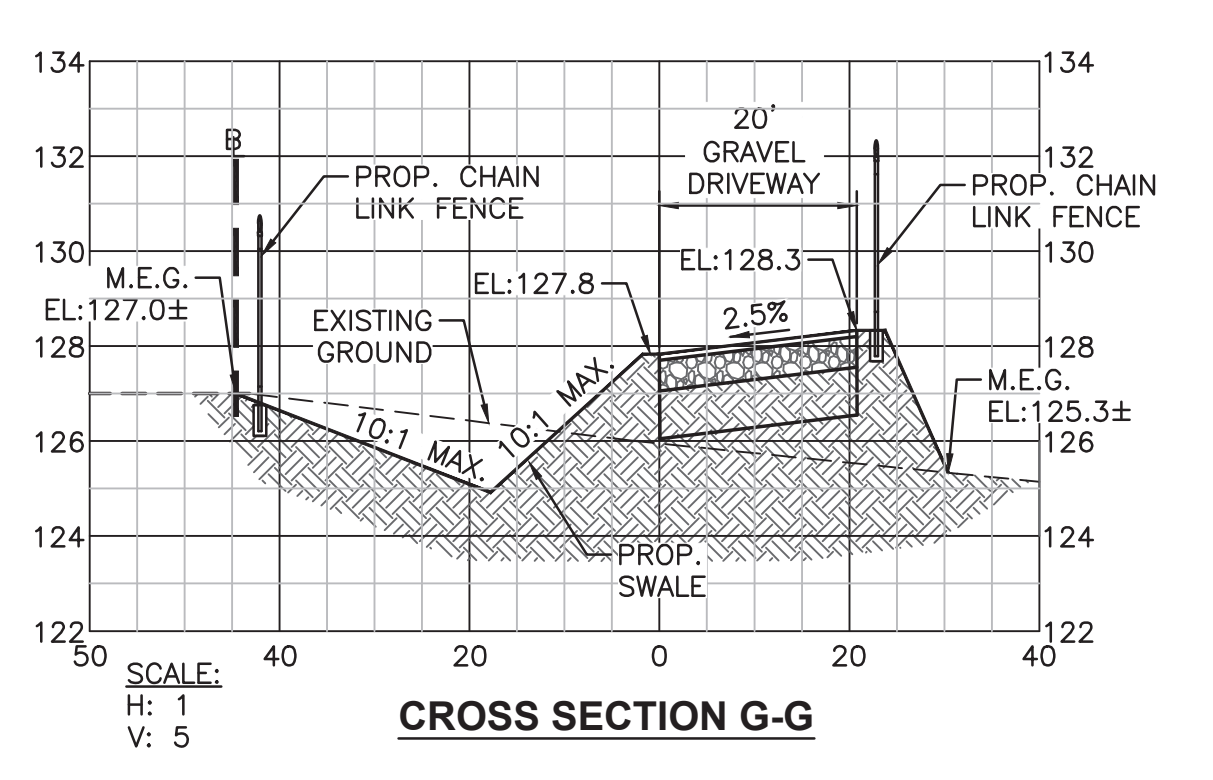
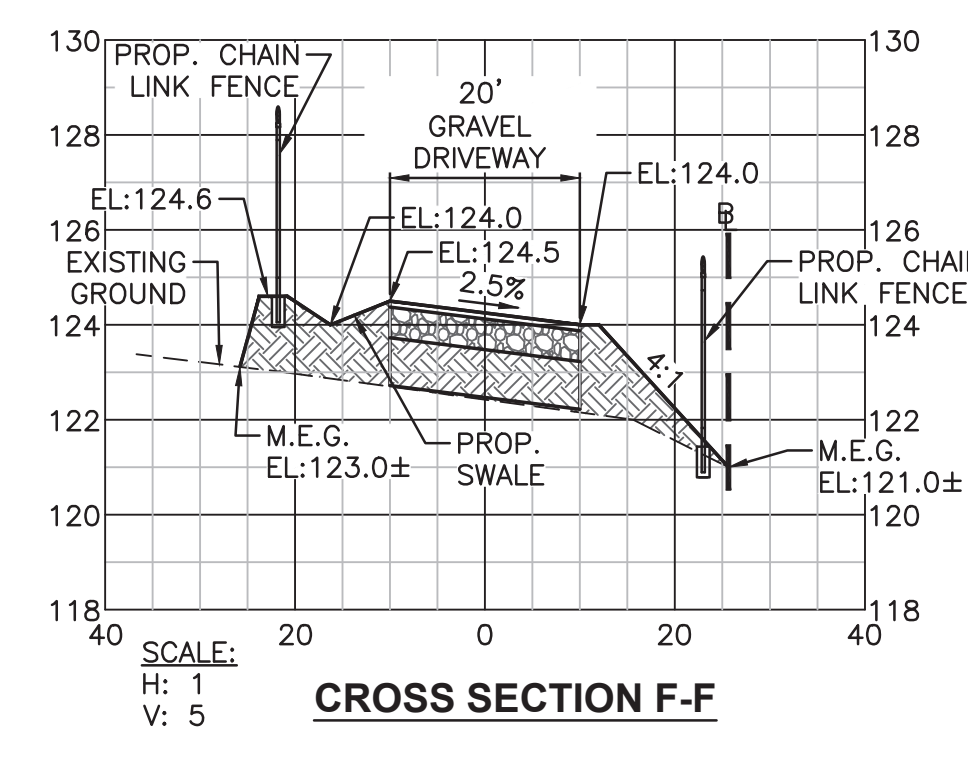
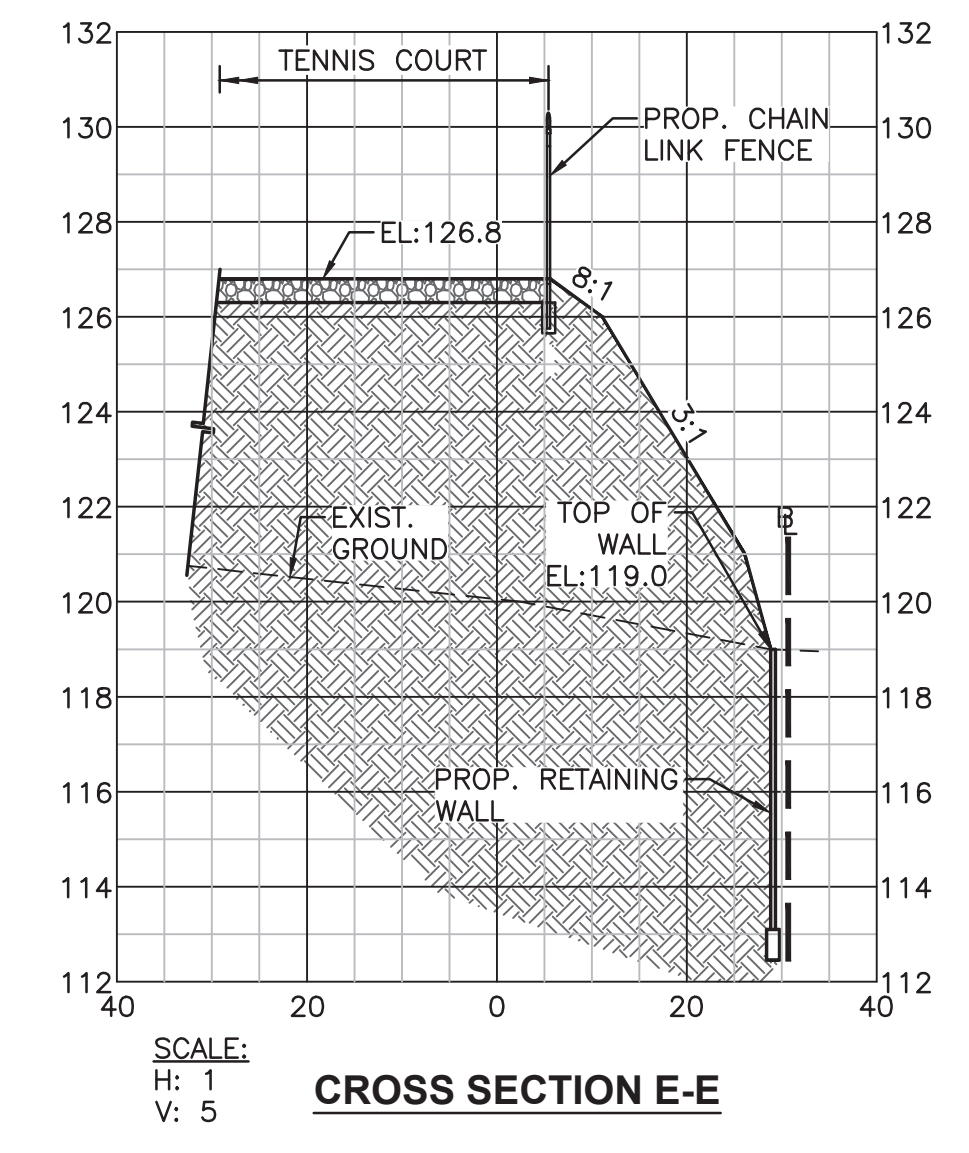
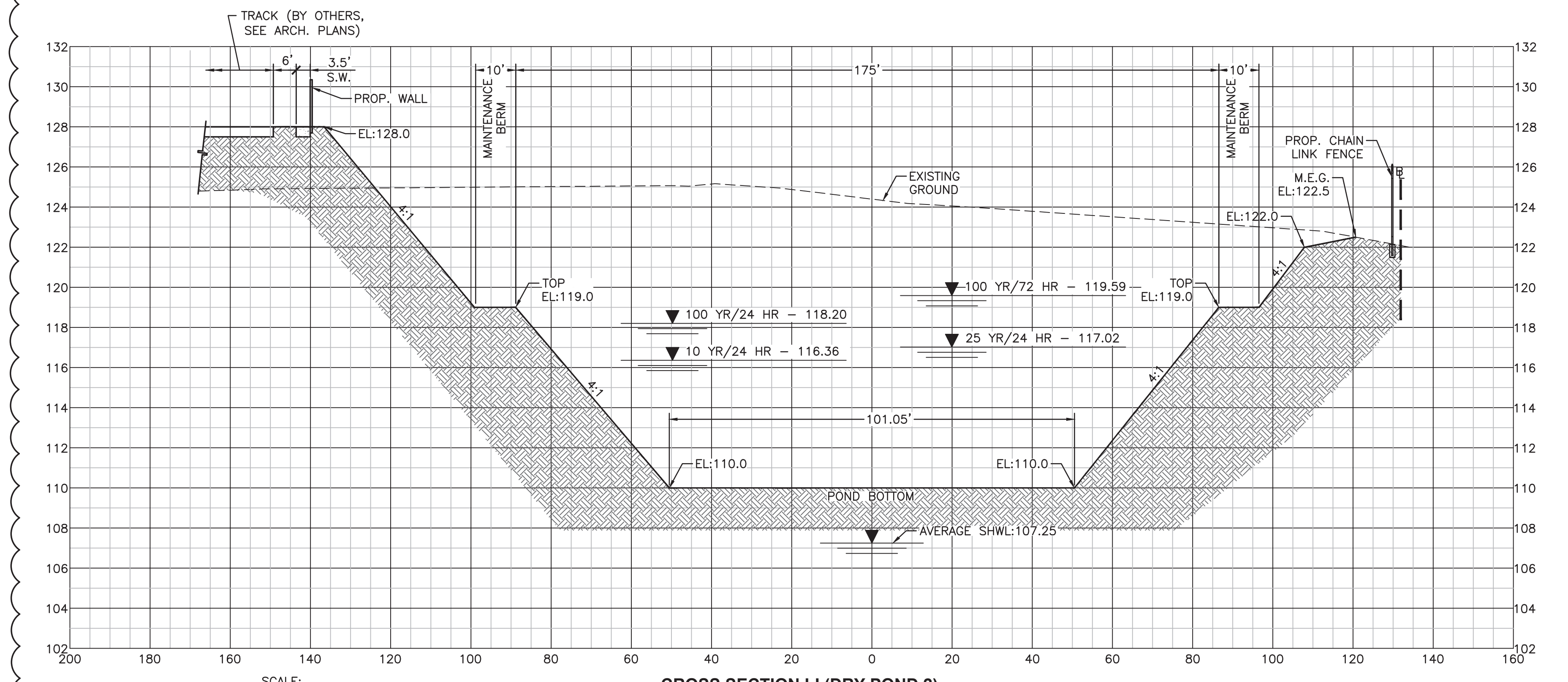
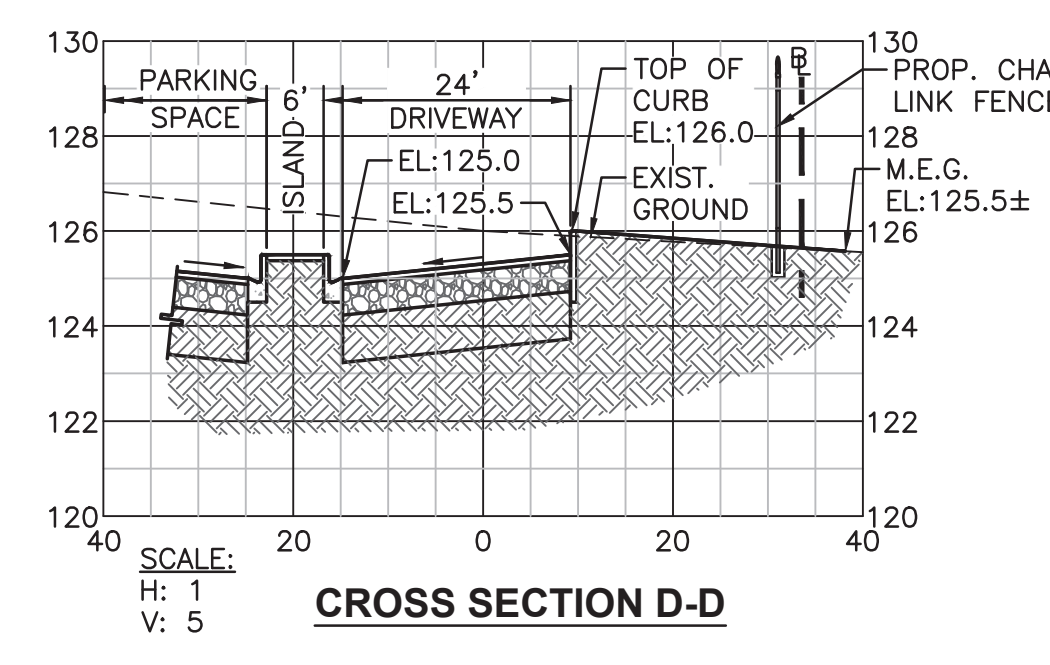
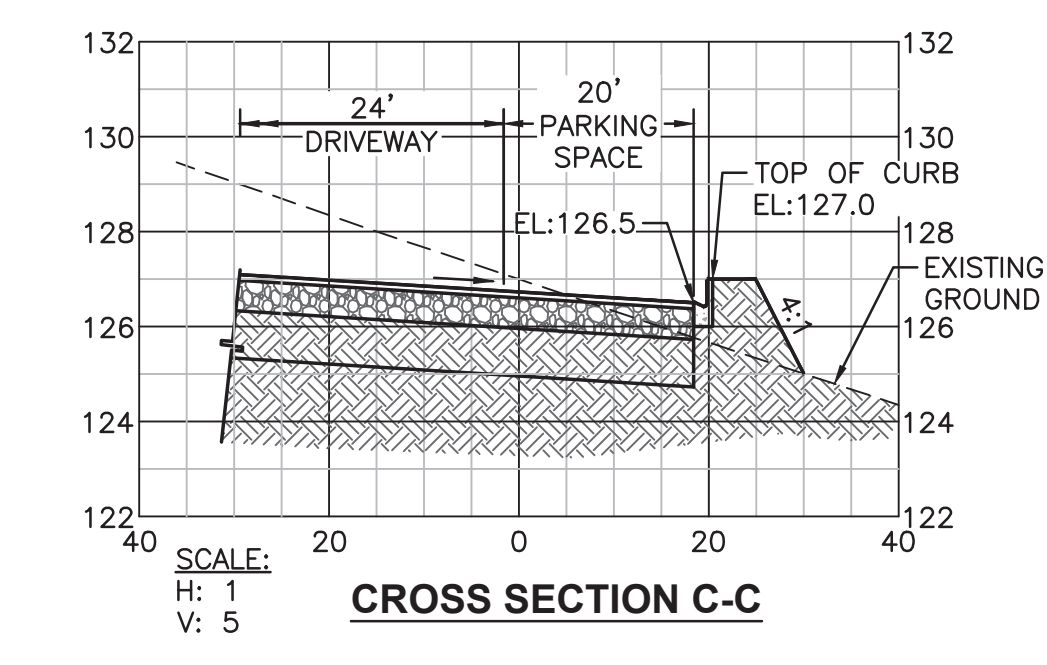
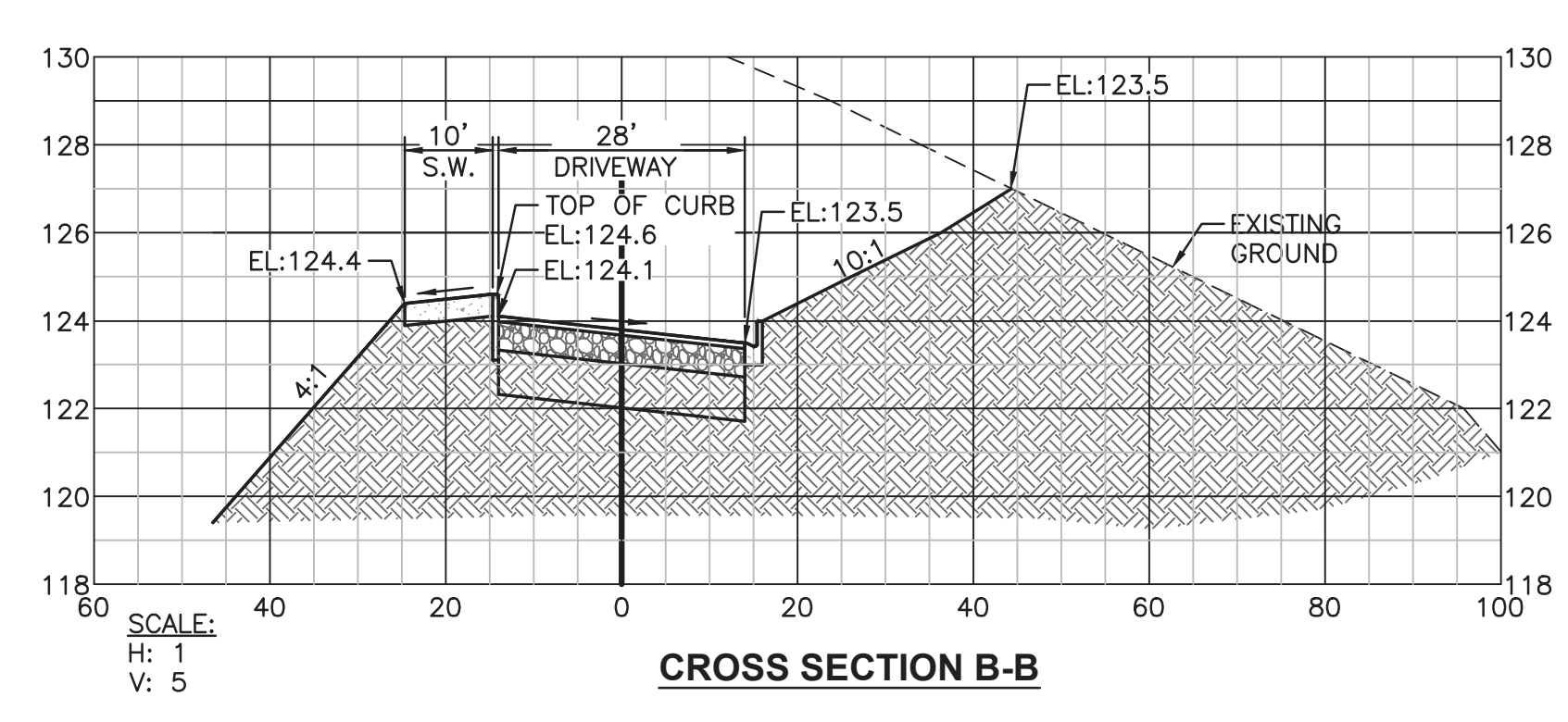
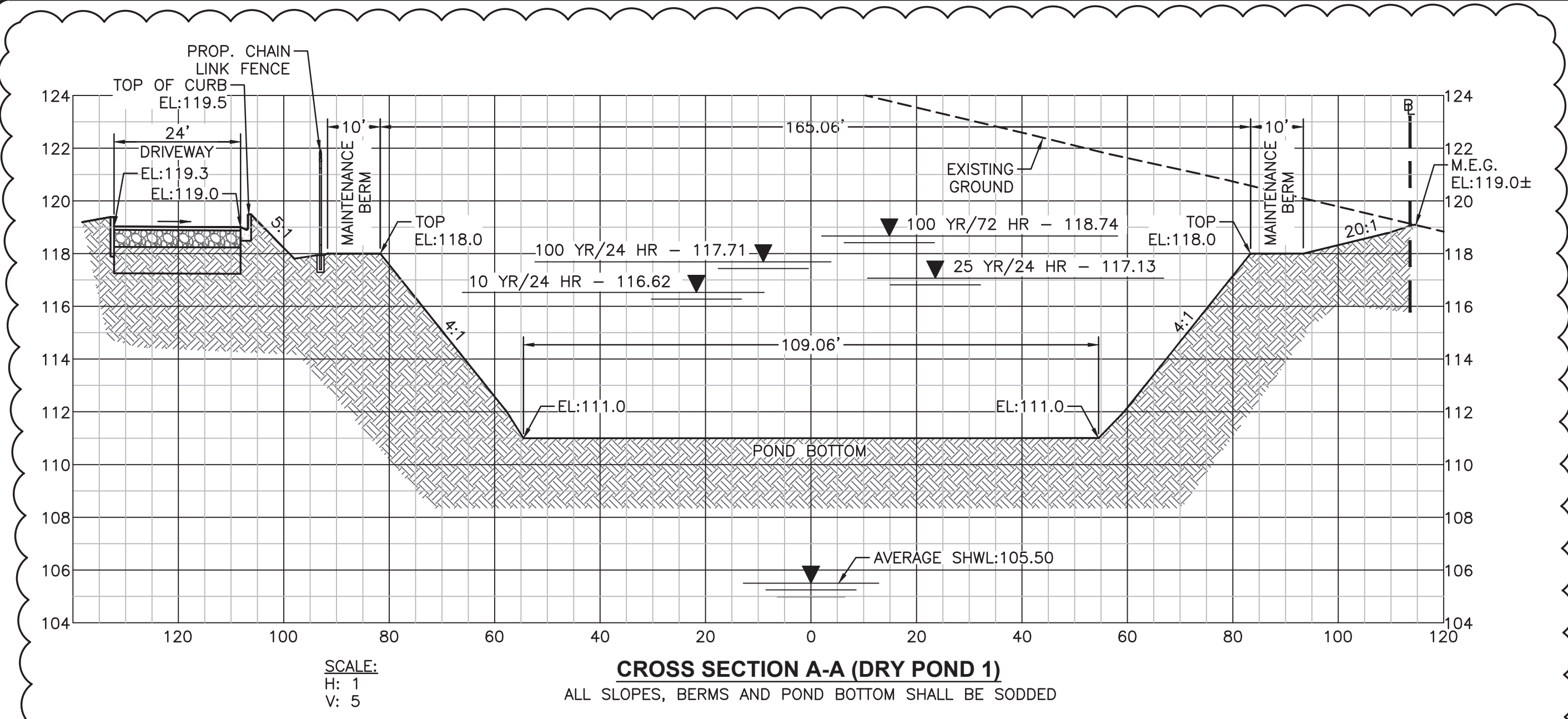


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CERTIFICATES OF AUTHORIZATION NO. 5067
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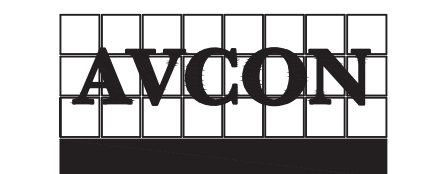
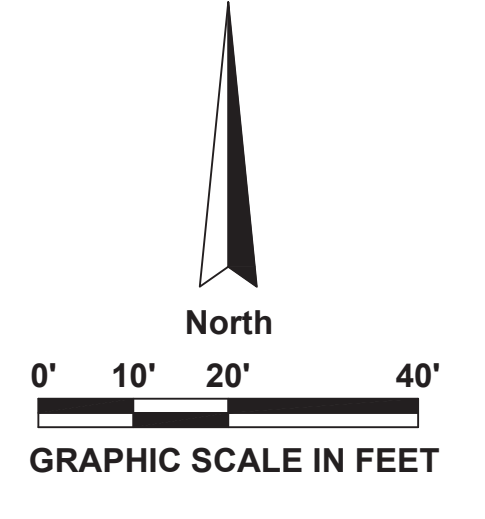
8/5/19

ADR PN: 1920101
DRAWN: DJ
CHECKED: DAL
DATE: 8/5/19 PLOT SCALE: AS SHOWN
OCPS DRAWING FILE NAME:
5008_2000 Demolition & Erosion Control Details

C500
Phase III Submittal



NOTES:
1. SEE SHEET C600 FOR PAVEMENT AND GRAVEL DRIVEWAY TYPICAL SECTIONS.
2. ALL ELEVATIONS ARE BASED ON NAVD88



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8/27/19

DARIN ALEX
LOCKWOOD, P.E.
FL P.E. #63504

REVISIONS	DATE	BY	APP
1	08/27/19	ASB	

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113-H-W-4 High School
OCPS PROJ. No: S0088

ORANGE COUNTY PUBLIC SCHOOLS
DESIGN & CONSTRUCTION
FACILITIES SERVICES
BLDG. 200, 6501 MAGIC WAY
ORLANDO, FLORIDA 32809

ACR PN: 1920101
DRAWN: DJ
CHECKED: DAL
DATE: 8/27/19
OCPS DRAWING FILE NAME:
SHEET NUMBER:
C700
Phase 3R1 Submittal

ERP No. 187636-005-EI
(I-4 Auxiliary Lane)

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01



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 Five
Casey Lyon, Environmental Permits Coordinator

Casey.Lyon@dot.state.fl.us

719 South Woodland Boulevard
DeLand, Florida 32720-6832

**Florida State Road (SR-429)
From Interstate 4 (I-4) To Sinclair Road Auxiliary Lanes
Stormwater Management System Conveyance**

Authorized Agent:

Horizon Engineering Group, Inc.
Lisa Olivera, P.E.

LHOlivera@horizoncivil.com

1051 Winderley Place Suite 400
Maitland, Florida 32751

Environmental Resource Permit – Individual

State-Owned Submerged Lands Authorization – Not Applicable

U.S. Army Corps of Engineers – Not Applicable

Permit No.: [187636-005-EI](#)

Oculus Facility-Site ID Search: [ERP 187636](#)

**Permit Issuance Date: February 5, 2021
Permit Construction Expiration Date: February 5, 2026**



FLORIDA DEPARTMENT OF Environmental Protection

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

CENTRAL DISTRICT OFFICE
3319 MAGUIRE BLVD., SUITE 232
ORLANDO, FLORIDA 32803

Environmental Resource Permit (ERP)

Permittee: FDOT

Attention: Casey Lyon, Environmental Permits Coordinator

Permit No.: [187366-005-EI](#)

PROJECT LOCATION

The activities authorized by this permit are located along Florida State Road 429 (SR-429) from Interstate 4 (I-4) to Sinclair Road in Sections 22, 26 and 27, Township 25 South, Range 27 East, Kissimmee, Osceola County.

PROJECT DESCRIPTION

The permittee will be expanding SR-429 from I-4 to Sinclair Road, Kissimmee, Osceola County. The stormwater runoff associated with the expansion and/or proposed roadway improvements to SR-429 will be treated and attenuated by the existing stormwater management system (SWMS). Currently, the existing SWMS has enough water quality and quality volume to capture, treat and attenuate the runoff from the proposed SR-429 expansion; therefore, is not proposed to be modified as part of this authorization.

AUTHORIZATIONS

The permittee is authorized to construct the stormwater management conveyance system to route the stormwater runoff from the proposed SR-429 expansion and/or improvements to the existing SWMS, as depicted and described in Exhibits [1](#), [2](#) and [3](#).

There are no wetlands, surface waters nor floodplain impacts authorized.

PERMIT HISTORY

- [187636-004-SFI](#) is a state 404 individual permit application associated with the stormwater management system modification to capture, treat and attenuate the runoff from the I-4 and SR-429 auxiliary lanes. The application was received on January 4, 2021 and a permit has not been issued.
- [ERP49-187636-003-EI](#) is an individual permit that authorized the construction of the stormwater management system associated with the widening from an existing six lanes to ten lanes divided urban highway. There were 5.79 acres of direct wetland impacts and 1.57 acres of secondary wetland impacts proposed. Mitigation to offset these direct and secondary wetlands impacts included the purchase of 2.79 forested wetland credits and 0.05 herbaceous wetland credits from Bullfrog Mitigation Bank (SFWMD Permit No 53-0004-M). Also, 10.14 acres of surface water impacts were authorized without any mitigation due to in-kind replacement and construction of new stormwater management features to sufficiently offset the surface water impacts. The individual permit was issued on August 19, 2019, with an expiration date of August 19, 2024.
- [ERP49-187636-002-EM](#) is a permit modification to construct a temporary dry detention pond in the vicinity of Pond B6-B of [ERP49-187636-001-EI](#) to capture the runoff from the Sinclair Road Bridge drainage basin area during the construction of the State Road

429 mainline. Such dry detention pond was planned to be removed once the stormwater management system, authorized in [ERP49-187636-001-EI](#), was constructed and placed in operation as designed and permitted. The permit was issued on November 1, 2002, with an expiration date of May 15, 2007.

- [ERP49-187636-001-EI](#) is an individual permit that authorized the construction of the stormwater management system associated with SR-429 from Interstate 4 to County Road 545. There were 61.28 acres of wetland impacts proposed that were mitigated under the Central Florida Mitigation Bill, Section 338.250 Florida Statutes. The permit was issued on August 21, 2002, with an expiration date of May 15, 2007.

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.

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 ANY 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\(1\)](#)

SPECIFIC CONDITIONS – ADDITIONAL REGULATED ACTIVITIES

2. 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 – DEWATERING

3. 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.
4. If dewatering is to occur any time, a water use permit may be required from the South Florida Water Management District prior to beginning any dewatering in accordance with [40E-2.041](#), F.A.C.

SPECIFIC CONDITIONS – CONSTRUCTION ACTIVITIES

5. Turbidity must be controlled to prevent violations of water quality pursuant to Rule 62-302.530(70), Florida Administrative Code (F.A.C.). Turbidity shall not exceed 29 Nephelometric Turbidity Units above natural background conditions. Turbidity barriers shall be correctly installed at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the proposed work. It is understood that "receiving waterbody" shall not be construed to mean the permittee's settling pond, dredge lake, or other parts of the permittee's closed water system. Turbidity barriers shall remain in place at all locations until construction is completed, soils are stabilized, and vegetation has been established.

Upon final completion of the project and upon reasonable assurance that the project is no longer a potential turbidity source, the permittee will be responsible for the removal of the barriers.

6. Adequate measures must be taken to prevent sedimentation to these treatment systems and control structures during construction. Sediment and debris must be removed prior to final grading and stabilization.
7. The following measures shall be taken to minimize erosion:
 - A. Swales and dry ponds: sodding of all side slopes; seeding and mulching of flat-lying bottom areas;
 - B. Berms and other disturbed flat-lying areas: seed and mulch.

Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than seven (7) days after the construction activity in that portion of the site has temporarily or permanently ceased.

8. All turbidity control devices shall be removed from the project area once the disturbed areas have been stabilized or revegetated so that erosion will not occur. The turbidity control devices shall be removed no later than one year from completion of the project. All turbidity control devices shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapters 62-330 or 62-701, F.A.C., or cause violations of state water quality standards.
9. Unauthorized impacts to wetlands or surface waters as a result of the activities authorized by this permit shall be reported within 24 hours to the Department.
10. Outside the specific limits of construction authorized by this permit, any disturbance of or damage to the adjacent wetlands or surface waters shall be corrected by restoring pre-construction elevations and planting vegetation of the same species, size, and density that exist in adjacent undisturbed wetland areas. The restoration shall be complete and the Department so notified within 30 days of completion of construction and shall be done to the satisfaction of the Department.
11. All material used as fill shall be clean material and shall not be contaminated with vegetation, garbage, trash, tires, hazardous, toxic waste or other materials that are not suitable for road construction within waters of the State as so determined by the Department.
12. Best management practices (primarily turbidity screens and floating turbidity barriers) for erosion and turbidity control shall be implemented and maintained at all times during construction and operation of the permitted activity to prevent siltation and turbid discharges in excess of State water standards pursuant to Chapter 62-302, F.A.C. The permittee shall be responsible for ensuring that erosion and turbidity control devices and procedures are inspected and maintained daily during all phases of construction authorized by this permit until all areas that were disturbed during construction are sufficiently stabilized to prevent erosion, siltation, and turbid discharges.
13. Upon final completion of the project and upon reasonable assurance that the project is no longer a potential turbidity source, the permittee will be responsible for the removal of the turbidity barriers. The turbidity control devices shall be removed no later than one year from

completion of the project. All turbidity control devices shall be disposed of in an upland disposal area.

14. There shall be no stockpiling of tools, materials (i.e., lumber, pilings, riprap, and debris) within wetlands, along the shoreline within the littoral zone, or elsewhere within wetlands/waters of the state unless specifically approved in this permit.
15. Construction equipment shall not be repaired or refueled in wetlands or elsewhere within waters of the state.

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 – POST ISSUANCE SUBMITTALS

17. 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 – SWMS OPERATION AND MAINTENANCE ACTIVITIES

18. 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, 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.
19. In accordance with Section 373.416(2), F.S., unless revoked or abandoned, all, SWMSs, dams, impoundments, reservoirs, appurtenant works, or works permitted under Part IV of Chapter 373, F.S., must be operated and maintained in perpetuity.

20. If the 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 a 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.
21. 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.
22. 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.
23. 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.
24. 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 AH Vol. 1.

SPECIFIC CONDITIONS – CONSTRUCTED ACTIVITY

25. 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.

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



Reggie Phillips
Interim Program Administrator
Permitting and Waste Cleanup Program

Attachments:

- Exhibit 1: [Oculus Link to 187636-005-EI Engineering Drawings, 284 pages](#)
- Exhibit 2: [Oculus Link to 187636-005-EI Drainage Basin Maps, 6 pages](#)
- Exhibit 3: [Oculus Link to 187636-005-EI Drainage Basin Summary Table, 284 pages](#)
- Exhibit 4: [Oculus Link to ERP_187636 Permitting Files](#)
- Exhibit 5: [Oculus Link to ERP_166214 Permitting Files](#)
- Exhibit 6: [SFWMD Permit # 49-00792-S; Application # 101124-20 Permitting Files](#)
- Exhibit 7: [SFWMD Permit # 49-00792-S; Application # 020204-8 Permitting Files](#)
- Exhibit 8: [SFWMD Permit # 49-104624-P; Application # 210105-5031 Permitting Files](#)
- Exhibit 9: [SFWMD Permit # 49-100365-P; Application # 180511-574 Permitting Files](#)
- Exhibit 10: 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\(1\)](#)
 - [Link to the Recorded Notice of Environmental Resource Permit/Form 62-330.090\(1\)](#)


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:

- Kim Tuy Duong, P.E., Horizon Engineering Group, Inc., KDuong@horizoncivil.com
- Josh Aries, Horizon Engineering Group, Inc., JEaries@horizoncivil.com
- Richard Lott, Section Leader, SFWMD, RLott@sfwmd.gov
- Lisa Prather, Section Leader, SFWMD, LPrather@sfwmd.gov
- Osceola County, RKec@osceola.org
- Douglas Skurski, ESA, Director, DSkurski@esassoc.com
- Florida Fish and Wildlife, FWCConservationPlanningServices@myfwc.com
- Reggie Phillips, FDEP, Reggie.Phillips@FloridaDEP.gov
- Teayann Duclos, FDEP, Teayann.Duclos@FloridaDEP.gov
- Leo Angleró, FDEP, Leo.Anglero@FloridaDEP.gov
- Dan Shideler, FDEP, Dan.Shideler@FloridaDEP.gov

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

February 5, 2021

 Date

RCID DATA

Pond Siting Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1-22-01



**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

49-1876360-001

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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

Sandra Wilde
Signature of witness

Sandra Wilde
Name of witness printed or typed

**FLORIDA DEPARTMENT OF
TRANSPORTATION,
FLORIDA'S TURNPIKE ENTERPRISE**

By: James L. Ely
for James L. Ely, DPA
Executive Director and
Chief Executive Officer

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:

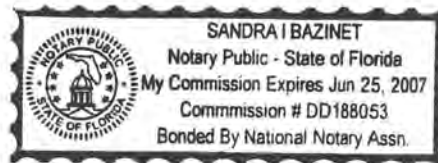


EXHIBIT "A"

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:

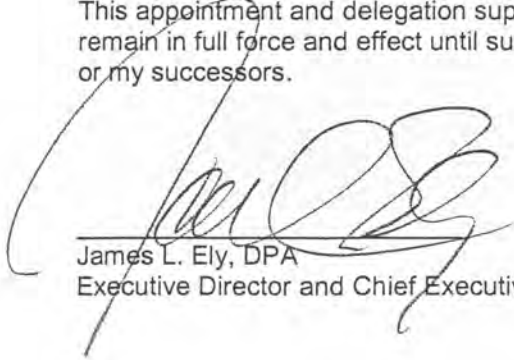
CHRISTOPHER WARREN, Deputy Executive Director and Chief Operating Officer
NANCY CLEMENTS, Director of Planning and Production
WILLIAM THORP, Chief Financial Officer
RICHARD NELSON, Director of Business Development and Concessions Management
BRUCE SEILER, Director of Highway Operations
KIM POULTON, Director 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.

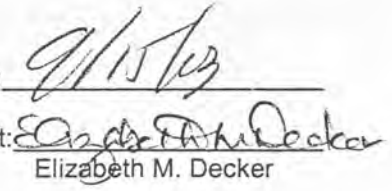
Anytime during my absence from the office, I hereby delegate authority to sign correspondence and execute documents that require my signature to Christopher Warren, Deputy Executive Director and Chief Operating Officer; or in his absence, Nancy Clements, Director of Planning and Production; or in her 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

ALLOCATION OF R.C.I.D. FEES BETWEEN DISTRICT 5 AND TURNPIKE DISTRICT
FOR I-4 BASINS OF BELTWAY PROJECT

BASIN	BASIN AREA (acre)	I-4 PAVT (acre)	BELTWAY PAVT (acre)	TOTAL PAVT (acre)	Q50YR (cfs)	Q50YR (csm)	R.C.I.D. FEE (\$)	DIST. 5 SHARE (\$)	TURNPIKE SHARE (\$)
F-2	20.87	3.57	3.06	6.63	5.66	173.57	\$13,907	\$7,488	\$6,419
F-4	36.32	1.37	12.76	14.13	7.74	136.39	\$18,598	\$1,803	\$16,795
F-7	8.53	1.00	0.02	1.02	1.96	147.06	\$4,746	\$4,653	\$93
G-1	20.34	4.17	4.07	8.24	17.45	549.07	\$45,250	\$22,900	\$22,350
B-2	14.78	0.00	7.56	7.56	2.37	102.63	\$5,497	\$0	\$5,497
B-3/B-5	39.96	0.00	14.67	14.67	5.90	94.49	\$13,515	\$0	\$13,515
B-4	22.90	0.00	10.85	10.85	4.80	134.15	\$11,513	\$0	\$11,513
B-6	21.37	0.00	6.32	6.32	8.20	245.58	\$20,626	\$0	\$20,626
TOTALS	185.07	10.11	59.31	69.42			\$133,652	\$36,844	\$96,808

DISTRICT 5'S SHARE OF R.C.I.D. FEES FOR THE I-4 / BELTWAY INTERCHANGE IS:

\$36,844

NOTES:

1. R.C.I.D. = Reedy Creek Improvement District
2. R.C.I.D. Fee = \$4.15 / acre x Project Area (acre) x (Q50 csm -13 csm)
CSM = cubic feet per second per square mile
3. District 5's share of R.C.I.D. fees is based on the ratio of I-4 pavement to total pavement draining to each pond in the interchange.
4. I-4 Pavement includes existing and proposed I-4 pavement for the 6-laning project within the limits of the Beltway Permit.
5. Beltway pavement is based on future pavement areas:
6-lane Beltway with paved median & 2-lane ramps A,B,C,D.

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

By: _____
John H. Classe, Jr., District Administrator

Printed Name

Witness

Printed Name

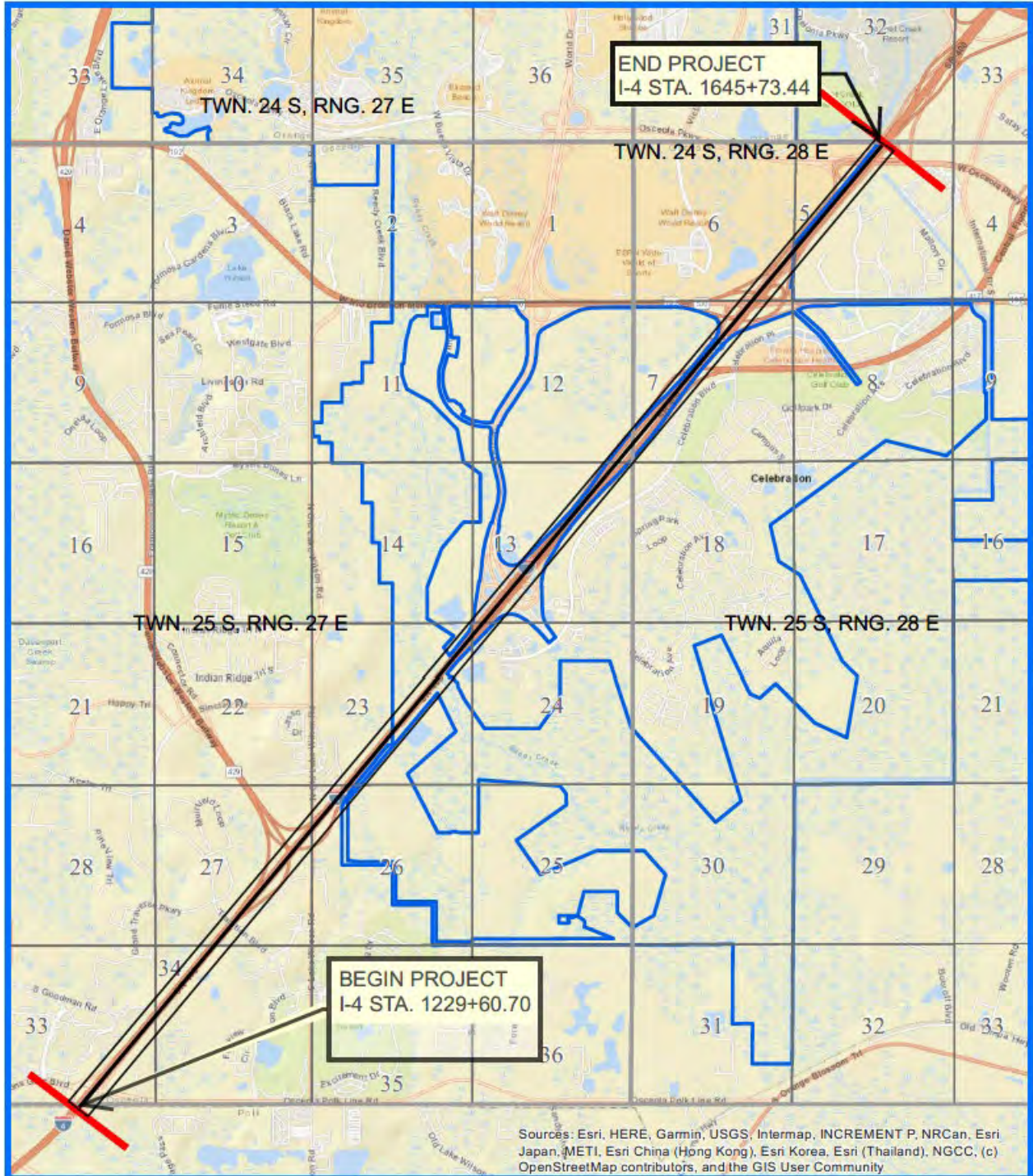
STATE OF FLORIDA)
) SS.
COUNTY OF ORANGE)

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)



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Project Area:	INTERSTATE No. 4 IN OSCEOLA COUNTY	Date:	7/11/21
Unit Name:	DRAINAGE AGREEMENT	Scale:	
Sheet Title:	GRAPHIC DEPICTION	Drawn By:	
Comments:		File Name:	