DRAFT POND SITING REPORT

Florida Department of Transportation

District Seven

SR 56 Southbound C-D Road/Ramps to I-75/I-275

Project Development and Environment (PD&E) Study

Limits of Project: South of the I-75/I-275 Apex to SR 56

Hillsborough and Pasco Counties, Florida

Financial Management Number: 430573-4

ETDM Number: 14330

Date: May 2021

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016 and executed by FHWA and FDOT.

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Project Development & Environment (PD&E) Study

Draft Pond Siting Report

Work Program Item Segment No. 430573-4
ETDM Project No. 14330
Hillsborough and Pasco Counties, Florida

Prepared for:

Florida Department of Transportation
District Seven

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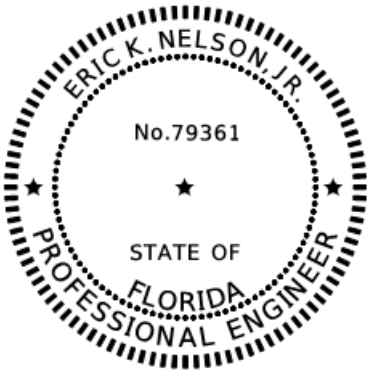
May 2021



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EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT), District Seven, is conducting a Project Development and Environment (PD&E) study to evaluate location and design concepts for constructing a southbound collector-distributor (C-D) road system to carry the southbound on-ramps from State Road (SR) 56 to Interstate 75 (I-75) and I-275. The limits of the study are along I-75 from south of the I-75/I-275 Apex to SR 56 in Hillsborough and Pasco Counties. The project will improve the southbound operations between the I-75/I-275 and I-75/SR 56 interchanges and eliminate undesirable weaving movements. The design year for the improvements is 2045.

The PD&E study objectives include: determine proposed typical sections and develop preliminary conceptual design plans for proposed improvements, while minimizing impacts to the environment; consider agency and public comments; and ensure project compliance with all applicable federal and state laws. A Type 2 Categorical Exclusion is being prepared as part of this study. The proposed improvements will include construction of stormwater management and floodplain compensation facilities. The PD&E study satisfies all applicable requirements, including the National Environmental Policy Act (NEPA), to qualify for federal-aid funding of subsequent development phases (design, right-of-way acquisition, and construction).

This Pond Siting Report (PSR) has been prepared to evaluate and identify stormwater management requirements for attenuation and treatment of surface water runoff from proposed impervious areas, and for compensation of any impacts to the 100-year floodplain associated with the proposed build alternative. Existing Southwest Florida Water Management District (SWFWMD) permits and the effective 2011 Cypress Creek watershed model were used to determine stormwater management and floodplain compensation needs.

For the build alternative, conversion of three existing ponds to conservation wet detention ponds, a new wet detention pond denoted SMF 800A-1, and three FPC sites, referred to as FPC-1, FPC-2, and FPC-3B, are recommended to provide the required stormwater management and “cup-for-cup” floodplain compensation. Three previously permitted ponds will be converted to conservation ponds, and the proposed wet detention pond will be located within the existing right of way, therefore no right of way acquisition is anticipated for the stormwater management facilities. Suitable floodplain compensation site locations are limited due to wetland presences, thus right of way acquisition will be necessary for these sites.

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SECTION 1 INTRODUCTION

1.1 PD&E STUDY PURPOSE

The objective of the PD&E study is to assist the FDOT's Office of Environmental Management (OEM) in reaching a decision on the type, location, and conceptual design of the necessary improvements for the southbound on-ramps from State Road (SR) 56 to Interstate 75 (I-75) and I-275 to safely and efficiently accommodate future travel demand. This study documents the need for the improvements as well as the procedures utilized to develop and evaluate various improvements, including elements such as proposed typical sections, preliminary horizontal alignments, and interchange enhancement alternatives.

The PD&E study satisfies all applicable requirements, including the National Environmental Policy Act (NEPA), to qualify for federal-aid funding of subsequent development phases (design, right-of-way acquisition, and construction). This project was screened through the FDOT's Efficient Transportation Decision Making (ETDM) process as ETDM Project No. 14330. An ETDM Programming Screen Summary Report was published on February 21, 2018, containing comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical, and social resources. A Type 2 Categorical Exclusion will be prepared as part of this PD&E study.

1.2 PROJECT PURPOSE AND NEED

The purpose of the project is to improve operations on southbound I-75 between SR 56 and the southbound off-ramp to I-275 (I-75/I-275 interchange). This project is needed to address the effect on safety and operations by eliminating the need for southbound vehicles to weave in the project area. The proposed improvements are expected to enhance the overall safety and improve the operating conditions within the project limits, as well as improve level of service (LOS) for the southbound I-75 ramp junction with I-275.

1.3 PROJECT DESCRIPTION

This project consists of operational improvements on I-75/I-275 from south of County Line Road to SR 56 in Hillsborough and Pasco Counties, a distance of approximately 2.2 miles. See **Figure 1-1** for project location. This project consists of the construction of a southbound collector-distributor (C-D) road and the addition of new ramps to improve the southbound operations between the I-75/I-275 and I-75/SR 56 interchanges and eliminate undesirable weaving movements. This portion of I-75/I-275 is functionally classified by the FDOT as an urban principal arterial/interstate and is part of FDOT's Strategic Intermodal System (SIS).

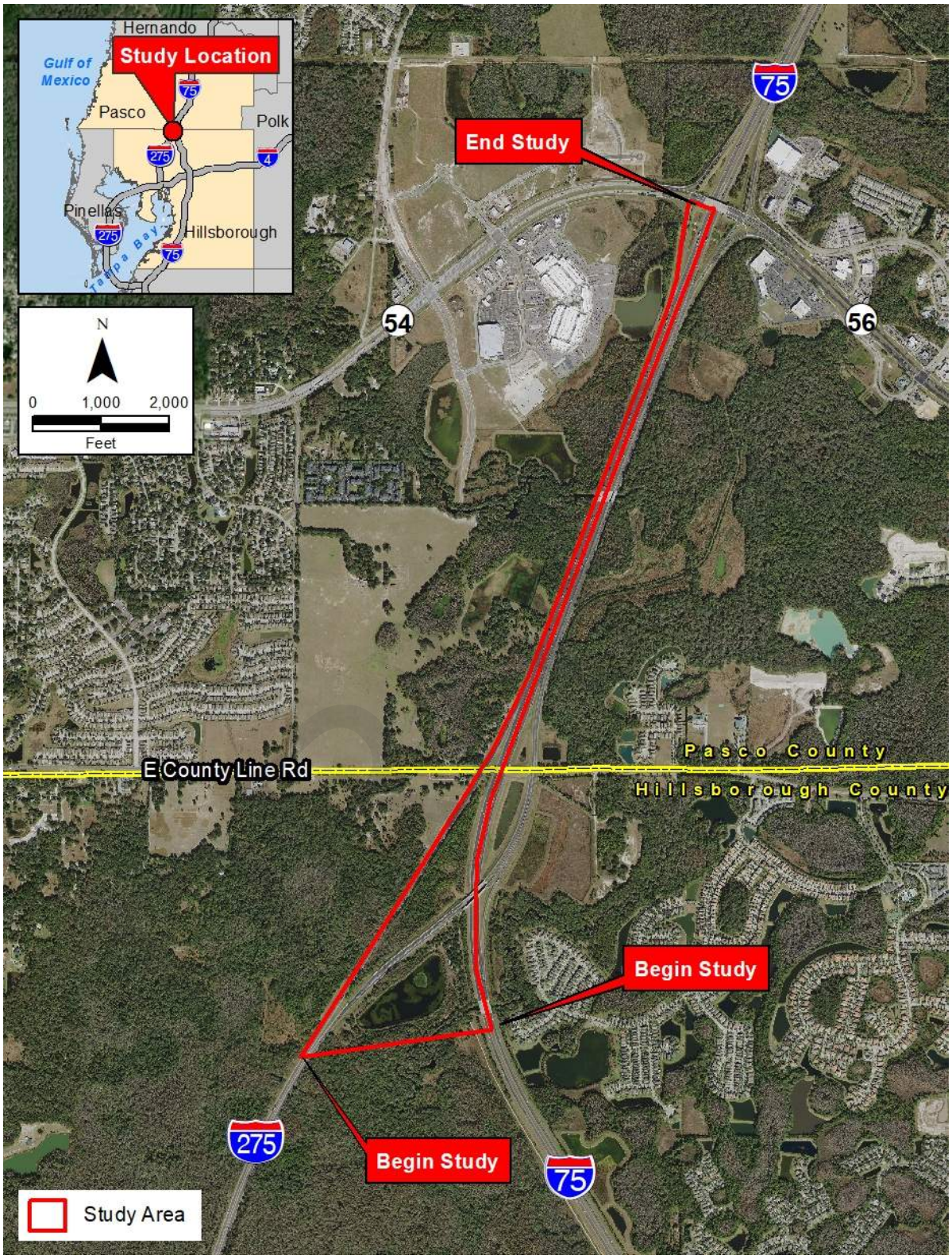


Figure 1-1 Project Location Map

1.4 EXISTING FACILITY AND PROPOSED IMPROVEMENTS

Southbound I-75 from north of SR 56 consists of four through lanes. At the connection of the SR 56 southbound ramps to I-75, there are six lanes of traffic. The six lanes of traffic separate to four lanes that continue southbound on I-75 and three lanes that exit to southbound I-275. For vehicles entering I-75 from SR 56 to proceed on southbound I-75, they must weave with southbound I-75 vehicles that are exiting onto southbound I-275. The crash types in this area are indicative of an inadequate weave segment.

The Build Alternative proposes separating vehicles from the SR 56 southbound ramp and I-75 to eliminate the weave condition. Traffic from SR 56 would enter a southbound C-D road, separated from I-75 traffic. Lanes on the southbound C-D road would split traffic to I-75 and I-275 and enter the interstates downstream from the existing apex of the I-75/I-275 lane split. Southbound I-75 traffic would exit to southbound I-275 without the influence of southbound traffic from SR 56. A new bridge would be constructed south of County Line Road to carry the I-75 ramp to I-275 over the C-D road ramp to I-75. The proposed improvements would eliminate the traffic weave along I-75 between the entrance ramp to SR 56 and the exit to I-275. **Figure 2** shows a simplified schematic of the differences between the existing and proposed traffic routes for southbound I-75 and SR 56 ramp to I-275 and I-75 and the elimination of the existing weave zone. Additional details are found in the Preliminary Engineering Report (PER) and concept plans developed for this PD&E study.

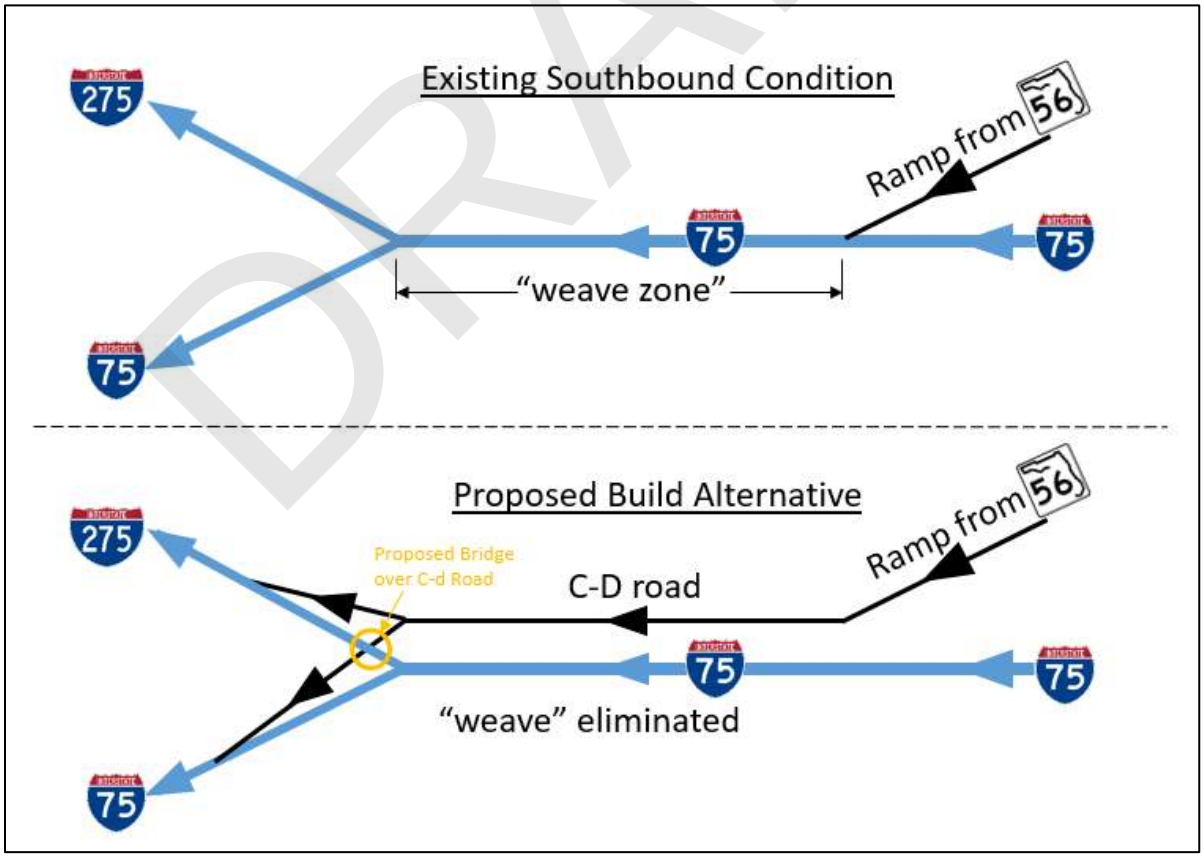


Figure 1-2 Existing and Proposed Traffic Routes for I-75, I-275 & SR 56 Ramp

1.5 REPORT PURPOSE

As part of the PD&E Study, this Pond Siting Report identifies stormwater management facility (SMF) and floodplain compensation (FPC) site alternatives, and includes the analysis for selection of preferred sites. This study analyzed SMF site alternatives that are hydraulically feasible and environmentally permissible based on the best available information. These alternatives were then compared based on relocations and community impacts; environmental impacts including wetlands, upland habitat and protected species involvement; petroleum and hazardous materials contamination; and economic factors including right of way costs.

SECTION 2 EXISTING CONDITIONS

2.1 SOILS

Per National Resource Conservation Service (NRCS) soils data, soils within the project limits are described by various Hillsborough County and Pasco County map units, as listed in **Table 2-1** below. See **Figure B-1** in **Appendix B** for a map of the soils within the project area.

Table 2-1 USDA Soils

Map #	Soil Name	County	Hydrologic Group	Depth to High Water Table (ft)	Description
5	Basinger, Holopaw, and Samsula soils, depressional	Hillsborough	A/D	0”	Depressional, very poorly drained
15	Felda Fine Sand, 0 to 2 percent slopes	Hillsborough	A/D	3”-18”	Poorly drained
16	Felda Fine Sand, 0 to 2 percent slopes	Hillsborough	A/D	3”-18”	Poorly drained, occasionally flooded
21	Immokalee Fine Sand, 0 to 2 percent slopes	Hillsborough	B/D	6”-18”	Poorly drained
27	Malabar Fine Sand, 0 to 2 percent slopes	Hillsborough	A/D	3”-18”	Poorly drained
29	Myakka fine sand, 0 to 2 percent slopes	Hillsborough	A/D	6”-18”	Poorly drained
60	Winder fine sand, 0 to 2 percent slopes	Hillsborough	C/D	0”-12”	Poorly drained, frequently flooded
61	Zolfo fine sand, 0 to 2 percent slopes	Hillsborough	A	18”-42”	Somewhat poorly drained
4	Felda fine sand, 0 to 2 percent slopes	Pasco	A/D	3”-18”	Poorly drained
5	Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes	Pasco	A/D	3”-18”	Poorly drained
6	Tavares sand, 0 to 5 percent slopes	Pasco	A	42”-72”	Moderately well drained
10	Wabasso-Wabasso, wet, fine sand, 0 to 2 percent slopes	Pasco	B/D	3”-18”	Poorly drained
11	Adamsville fine sand, 0 to 2 percent slopes	Pasco	A/D	18”-42”	Somewhat poorly drained
22	Basinger fine sand, 0 to 2 percent slopes	Pasco	A/D	0”-12”	Poorly drained
26	Narcoossee fine sand, 0 to 2 percent slopes	Pasco	A	24”-42”	Moderately well drained

Map #	Soil Name	County	Hydrologic Group	Depth to High Water Table (ft)	Description
27	Anclote fine sand, 0 to 2 percent slopes	Pasco	A	0”	Very poorly drained, ponded
30	Okeelanta-Terra Ceia Association, 0 to 2 percent slopes	Pasco	A/D	0”	Very poorly drained
35	EauGallie fine sand, 0 to 2 percent slopes	Pasco	A/D	6”-18”	Poorly drained
39	Chobee soils, 0 to 2 percent slopes	Pasco	C/D	0”-6”	Very poorly drained, frequently flooded
59	Newnan fine sand, 0 to 5 percent slopes	Pasco	A/D	18”-42”	Somewhat poorly drained
63	Delray mucky fine sand, 0 to 2 percent slopes	Pasco	A/D	0”	Very poorly drained

2.2 LAND USE

This project lies within both Hillsborough and Pasco Counties. The existing land use within the project vicinity is primarily stream swamps (bottomland) and forested areas. **Figure B-2** in **Appendix B** displays the various land use types within 500-ft of the project area.

2.3 CROSS DRAINS

There are 7 cross drains within the project limits, which are responsible for draining the wetlands to Cypress Creek. **Table 2-2** lists the properties and locations of the cross drains. Approximate locations are shown on the attached Straight Line Diagrams (SLD) found in **Appendix A**, as well as on **Figure B-3** in **Appendix B**. More details of the cross drains can be found in the existing environmental resource permits (ERP), from which excerpts are included in **Appendix E**.

Table 2-2 Cross Drains

Cross Drain Number	Roadway ID	Milepost (mi)	Description	Number of Barrels	Length (ft)	Apparent Flow Direction
CD-1	10075000	39.494	24” RCP	1	343	W to E
CD-2A*	10075000	39.652	30” RCP	1	104	W to E
CD-2B*	10075000	39.681	30” RCP	1	108	W to E
CD-3	14140000	0.270	10’ x 4’ CBC	1	338	W to E
CD-4	14140000	1.032	10’ x 10’ CBC	1	288	W to E
CD-5A	14140000	1.605	4’ x 4’ CBC	1	235	W to E
CD-5B	14140000	1.61	54” RCP	1	235	W to E

*Cross drains 2A and 2B are connected via 293-ft of 30” pipe

2.4 BRIDGE STRUCTURES

There are two existing bridge pairs over Cypress Creek within the study limits. The first pair is the I-75 SB and NB lanes over Cypress Creek in Hillsborough County (Bridge Nos. 100412 and 100413, respectively). This bridge pair is approximately 0.6 miles south of County Line Road. The second bridge pair, located approximately 0.8 miles north of County Line Road, is the I-75 SB and NB lanes over Cypress Creek in Pasco County (Bridge Nos. 140061 and 140062, respectively). The Hillsborough County bridge pair was built in 1982 and the Pasco County bridge pair was built in 1963. According to the bridge inspection reports, both are in very good condition, as shown in **Table 2-3.** The locations of these two bridges are shown on **Figure B-3** in **Appendix B**.

Table 2-3 Bridge Sufficiency Rating and Health Index

Bridge Number	Roadway ID	Milepost	Sufficiency Rating	Health Index
100412	10075000	39.219	96	94.82
100413	10075000	39.216	96	96.85
140061	14140000	0.770	94	93.42
140062	14140000	0.782	93.5	89.66

2.5 FLOODPLAINS AND FLOODWAYS

FEMA Flood Insurance Rate Map panels 12057C0070H, 12101C0417F, and 12101C0409F identify the flood zone information for the project area, and can be seen in **Appendix A**. The I-75 and I-275 interchange south of County Line Road, including the infield areas, are not within a floodplain. Other than the interchange, zone AE floodplains, ranging in elevation from 42-ft NAVD to 53.8-ft NAVD, exist within the I-75 right of way or adjacent to it for the entirety of the project limits. The I-75 roadway is above the 100-year floodplain, and no history of flooding has been identified within the project limits. The build alternative will not substantially change the elevation of the existing roadway or bridges. Impacts to floodplain storage will require cup-for-cup compensation and will be incorporated into the effective Cypress Creek Watershed model to ensure there are no flood risks associated with the build alternative.

2.6 EXISTING DRAINAGE PATTERNS

At the regional level, stormwater within the project area is collected in wetlands that connect to Cypress Creek via natural weirs and cross drains. Cypress Creek is a tributary of the Hillsborough River, which is classified as an Outstanding Florida Water (OFW). The Cypress Creek floodplains lie just outside of the I-75 right of way on both the east and west sides for the entirety of the project. Refer to **Appendix A** for Straight Line Diagrams (SLD) that depict the cross drains and FEMA FIRM Panels that identify the flood zone and location of the floodplains. Within the project limits, the existing drainage system is comprised of four basins and includes a combination of inlets, pipes, ditches, and wet detention ponds that treat roadway runoff prior to discharge to the receiving waters. Generally, the runoff from I-75 and the I-75/I-275 interchange is conveyed via shoulder gutter to gutter inlets, after which pipes of varying size drain the runoff to one of five permitted wet detention ponds.

Segments of median and side swales supplement the shoulder gutter drainage by collecting runoff in ditch bottom inlets and connecting to the gutter inlet pipe networks. South of County Line Road, two of the existing SMFs connect to a roadside ditch adjacent to the I-75 NB lanes and drain south to Cypress Creek. The other SMF drains west via 24" and 30" culverts to wetlands adjacent to the I-275 SB ramp. North of County Line Road, a pair of ponds interconnected by an 18" equalizer pipe outflow east via 48" pipe to adjacent wetland.

2.7 EXISTING ENVIRONMENTAL PERMITS

The drainage design for the project location was originally permitted as part of SWFWMD ERP No. 43024745, but has since been revised under SWFWMD ERP Nos. 43033020.002, 43033020.004, and 43033020.006. ERP No. 43033020.002 documents revisions to NB I-75 from south of the I-275 interchange to State Road 56, revisions to two previously permitted SMFs, and the addition of two SMFs. Information on the cross drains, bridges, existing drainage conditions, and details regarding SMF I, SMF J1-1, SMF J1-2, and SMF J2 were retrieved from this permit. ERP No. 43033020.004 permitted revisions to SB I-75 from Bruce B. Downs Boulevard to State Road 56 and segments of the I-275 SB and NB ramps at the interchange. Supplementary information about the existing drainage conditions of I-75 was gathered from this permit. ERP No. 43033020.006 includes revisions to the I-275 ramps at the interchange and to the existing SMF within the infield between the NB and SB ramps. This permit provides further details about the existing drainage within the interchange and information about SMF 800A. Modifications to permitted facilities may require changes to the control device and elevation in order to meet SWFWMD criteria. Refer to **Appendix E** for excerpts from the aforementioned permits.

2.8 SPECIAL BASIN CRITERIA

The project is within the Cypress Creek watershed, associated with water body ID (WBID) No. 1402. This water body is not nutrient impaired, thus a nutrient loading evaluation is not necessary. Cypress Creek is a tributary of the Hillsborough River, which is classified as an Outstanding Florida Water (OFW). The study basins discharge directly to Cypress Creek or to its wetlands, thus the SMFs require an additional 50% of runoff from the contributing basin area to be treated. Information about the waterbody associated with this project is given in **Table 2-4.** Refer to **Figure B-4** in **Appendix B** for the Hillsborough River OFW boundary and associated drainage patterns.

Table 2-4 Impaired WBIDs

WBID Name	WBID	Impairments
Cypress Creek	1402	Fecal Coliform

2.9 ENVIRONMENTAL CONSIDERATIONS

The following sections identify and discuss environmental considerations.

2.9.1 WETLANDS/SURFACE WATER

There are forested and herbaceous wetlands located west of I-75 immediately adjacent to existing right of way along the project corridor. Additionally, the project crosses Cypress Creek approximately one-half mile south of the existing southbound ramp tie-in. No wetland impacts are anticipated through the construction of stormwater management facilities or floodplain compensation sites. Mitigation is available through the purchase of mitigation credits at the North Tampa and Hillsborough River Mitigation Banks. If any unforeseen impacts from drainage pond sites arise, mitigation will be accounted for. A discussion of the resources and impacts will be documented in the *Natural Resources Evaluation*. The Cypress Creek Preserve, Cypress Creek Conservation Easement, and Cypress Creek Conservation Area border the project area, refer to **Figure B-5** in **Appendix B**. These conservation and preservation areas will not be impacted by the proposed drainage improvements.

2.9.2 SOCIO-CULTURAL FEATURES

No community or cultural services were identified within a 500-ft buffer of the project area. There are no impacts anticipated by the proposed improvements.

2.9.3 HISTORICAL/ARCHAEOLOGICAL

Based on a desktop review of the known historical and archaeological resources within the vicinity of the project, none are located within 1,000 feet of the project area. Detailed information regarding potential historical and archaeological resources will be documented in the *Cultural Resource Assessment Survey*.

2.9.4 PARKS AND RECREATION

There are no parks or recreational facilities directly adjacent to the project limits. No impacts are anticipated by the improvements.

2.9.5 THREATENED AND ENDANGERED SPECIES

Large areas of undeveloped/natural land are adjacent to the project, providing habitat that would support listed species. The project is within the United states Fish and Wildlife Service (USFWS) Consultation Area for the Florida scrub-jay (*Aphelocoma coerulescens*). This species prefers dry, xeric habitats with open patches of exposed sand and small oak shrubs. No supporting habitat for the FL scrub-jay was identified within the project area or on adjacent lands. The project falls within the USFWS core-foraging area (CFA) of at least nine active wood stork (*Mycteria americana*) colonies: Anclote River, Cross Creek, Cypress Creek I-75, East Lake – Bellows Lake, Heron Point – Land O Lakes, Lake Forest, Northlakes – Sagebrush, Saddlebrook Resort, and Sheldon Rd – Citrus Park. The Cypress Creek I-75 colony is located southwest of the I-275 overpass and is within 2,500 feet of SMF 800A-1. Suitable foraging habitat and wetland impacts from the construction of drainage pond sites and roadway improvements will be accounted for through the purchase of mitigation credits at a Florida Department of Environmental Protection (FDEP) approved wetland mitigation bank. The state-designated threatened and federal candidate species gopher tortoise (*Gopherus polyphemus*) has the

potential to occur within the project area. Four burrows were identified adjacent to FPC-1, where the habitat is xeric and contains sandy soils. FPC-1 is designed to be constructed in preferred habitat with field indications of gopher tortoise presence. A discussion of the resources and impacts will be documented in the *Natural Resources Evaluation*.

2.9.6 HAZARDOUS MATERIAL AND CONTAMINATION IMPACT

Based on a review of the FDEP GIS data, the FDEP contamination locator map, and the FDEP OCULUS and Nexus databases, one potential contamination site was identified within the vicinity of the project. The Risser Petroleum Products Inc Spill site is located approximately 60 feet north of Mile Marker #57, on the east side of Interstate 275. **Figure A-1** in **Appendix A** shows the location of the contamination site. SMF 800A-1 is located approximately 300 feet northwest of this site. Based on the current status of the site and its generally far distance from the improvements, we anticipate minimal to no impacts. A discussion of the potential contamination involvement will be documented in the *Contamination Screening Evaluation Report*.

SECTION 3 PROPOSED CONDITIONS

3.1 PROPOSED ROADWAY

The build alternative proposes the construction of a separated, southbound collector-distributor (C-D) road adjacent to the I-75 SB lanes. The C-D road would tie into the existing SB I-75 entrance ramp at State Road 56 and extend south to County Line Road, at which point the lanes would diverge into two ramps. One ramp would head southwest and tie into the existing I-275 SB lanes. The second ramp would continue south and connect to the existing I-75 SB lanes south of the interchange. A new bridge would be constructed south of County Line Road to carry the I-75 ramp to I-275 over the C-D road ramp to I-75. Refer to the drainage maps in **Appendix A** for a conceptual plan view of the build alternative. Other than a No-build alternative, there are no additional build alternatives being considered.

3.2 CROSS DRAINS

The existing cross drains will be extended as required to accommodate the C-D road width. Cross drain analysis is to be performed during the design phase of this project.

3.3 BRIDGE STRUCTURES

Bridge pair No. 100412/100413 is within the project limits, however, no bridge modifications are proposed with the build alternative. Bridge pair No. 140061/140062 lies within FEMA Flood Zone AE (BFE 48.7'-53.4'), and will therefore require a bridge hydraulic evaluation. The Bridge hydraulic evaluation will be performed during the design phase.

3.4 FLOODPLAINS AND FLOODWAYS

The build alternative is associated with minimal longitudinal encroachments within the floodplains on the west side of I-75. The proposed C-D road will require fill to be placed below the base flood elevations (BFE) of several floodplains, ranging in elevation from 49.1' to 52', thus requiring equivalent floodplain compensation. Equivalent cup-for-cup volumes of cut will be provided to compensate for the anticipated fill volumes. This will be achieved by identifying potential compensation sites, calculating cut and fill volumes between the estimated seasonal high water table (SHWT) elevation and the BFE, and verifying that the proposed conditions 100-year flood stages are unchanged within the impacted watershed basins.

SECTION 4 STORMWATER MANAGEMENT ALTERNATIVES

4.1 STORMWATER MANAGEMENT CRITERIA

The following subsections describe water quality and quantity requirements for the project.

4.1.1 WATER QUALITY

The SWFWMD ERP Applicant's Handbook Vol. II, Part IV – Stormwater Quality identifies water quality treatment criteria. The selected systems for treating runoff associated with the build alternative are wet detention and conservation method wet detention. Wet detention facilities require treatment of one inch of runoff from the contributing area, according to Part IV, Section 4.1.a.1. Projects discharging directly into Outstanding Florida Waters, in this case the Hillsborough River and its wetlands, are required to provide treatment for a volume 50% more than required for the selected treatment system, per Part IV, Section 4.1.f. Therefore, the total treatment criteria for wet detention facilities is one and one-half inches (1.5 in.) of runoff from the contributing basin area.

Per Appendix B of the ERP Applicant's Handbook, conservation method wet detention facilities must meet certain special water quality treatment criteria, as follows:

a. The minimum design pool volume below the control elevation must be no less than 1.667 inches of runoff from the contributing area. Discharging to an OFW requires treatment volume to be increased by 50%, for a minimum of two and one-half inches (2.5 in.) for conservation method wet detention facilities.

b. Design pool volume below the control elevation must be equal to the greater volume of either the minimum specified above, or the sum of the volume calculated using one inch of runoff and the volume calculated based on an average residence time of 14 days and average total rainfall of 122 days.

4.1.2 DISCHARGE ATTENUATION

The SWFWMD ERP Applicant's Handbook Vol. II, Part III – Stormwater Quantity/Flood Control identifies runoff attenuation and discharge criteria. In general, runoff associated with the build alternative must not cause adverse water quantity impacts to receiving waters or adjacent lands, must not cause adverse flooding to on-site or off-site properties, and must not adversely impact existing surface water storage and conveyance capabilities (Part III, Section 3.a-d).

The project is located entirely within open drainage basins, thus the allowable discharge is equal to either the historical discharge or to amounts determined in previous District permit actions, as stated in Part III, Section 3.1.a.1-2.

Per Part III, Section 3.1.b, the post development peak discharge shall be no greater than pre-development peak discharge for the 25-year, 24-hour storm event, and computed using the SCS type

II Florida Modified 24-hour rainfall distribution. The previous permits, as described in Section 2.7 of this report, followed this same stormwater quantity criteria.

Per Appendix B of the ERP Applicant's Handbook, a special attenuation requirement applies to conservation method wet detention facilities, which is that the control device must be sized to discharge 0.5 inches of runoff from the contributing area in 24 hours with 10 inches maximum head.

4.2 AGENCY COORDINATION

A meeting was held with the Southwest Florida Water Management District (SWFWMD) on September 16, 2020 in order to discuss the project's environmental, water quality, and water quantity considerations. Two meetings have been held with FDOT District 7 representatives. The first was a Pond Siting Longlist meeting held September 16, 2020. The second was a Pond Siting Shortlist held on October 21, 2020. Both were conducted to discuss and narrow down the SMF and FPC site alternatives. Meeting minutes for the SWFWMD and longlist meeting can be found in **Appendix F.**

4.3 PROJECT STORMWATER MANAGEMENT ALTERNATIVES

4.3.1 STORMWATER MANAGEMENT REQUIREMENTS

The I-75 drainage system within the project limits consists of four basins. As depicted on the drainage maps in **Appendix A**, these basins are referred to as Basin 800A, Basin I, Basin J1, and Basin J2. As stated in the existing permits found in **Appendix E**, Basins I, J1, and J2 were modeled such that the entire contributing area within the I-75 right of way is considered impervious area. Basin 800A was not modeled this way and instead considered both impervious and pervious areas. Therefore, the runoff from all new impervious area within Basin 800A requires water quality treatment and discharge attenuation. The other three basins will require discharge attenuation and water quality treatment only if the construction associated with the build alternative is outside of the existing I-75 right of way. All construction associated with the build alternative occurring in Basin I is within the existing I-75 right of way, thus no additional treatment or attenuation is required for this basin. Construction of the build alternative will require right of way expansion within basins J1 and J2. The boundaries of these basins will expand under proposed conditions to the proposed right of way shown in the drainage maps of **Appendix A**. To maintain the original modeling assumptions, these two basins, under proposed conditions, will continue to treat all contributing area within the proposed I-75 right of way as impervious area. Therefore, the area between the existing and proposed rights of way will be considered entirely impervious area and will require discharge attenuation and water quality treatment. The estimated required additional stormwater management volumes for the four basins are given in **Table 4-1.**

Table 4-1 Stormwater Management Requirements

Basin No.	Permitted Basin Name	Estimated Required Additional Water Quality Treatment (ac-ft)	Estimated Required Additional Discharge Attenuation Volume (ac-ft)	Estimated Required Additional Stormwater Management Volume (ac-ft)
1	I	0	0	0
2	800A	0.33	0.27	0.60
3	J1	0.09	1.02	1.11
4	J2	0.54	4.33	4.87

4.3.2 PROPOSED LAND USE

Pre- and post-conditions impervious and pervious coverages were determined for each basin using information from the existing ERPs and by computing roadway areas in AutoCAD Civil3D using concept plans of the C-D road. **Table 4-2** below summarizes the proposed land use.

Table 4-2 Land Use Summary

Basin No.	Permitted Basin Name	Permitted Land Use (Ac)			Proposed Land Use (Ac)		
		Pervious	Impervious	Total	Pervious	Impervious	Total
1	I	7.36	43.04	50.40	7.36	43.04	50.40
2	800A	43.35	11.42	54.77	39.38	15.39	54.77
3	J1	5.45	28.38	33.83	5.45	29.46	34.91
4	J2	10.59	70.20	80.79	10.59	76.65	87.24

4.3.3 BASIN CONSIDERATIONS

The areas surrounding the project limits are primarily wetland. To avoid both wetland impacts and acquisition of property for stormwater management, conversion of existing SMFs to conservation method wet detention ponds is recommended, where feasible. Each basin and its associated SMF is described below.

Basin 1 (Basin I, Permit No. 43033020.002)

Beginning at bridge No. 100412/100413 and ending at County Line Road, this basin consists of the I-75 lanes from right of way to right of way and a segment of the I-275 NB ramp. Shoulder gutter and shoulder inlets collect runoff and route it via pipe of varying size to permitted SMF I, an infield wet detention pond. The runoff is treated and subsequently routed via 30" pipe to an existing ditch running south alongside the I-275 NB ramp to Cypress Creek. SMF I was designed to accommodate 100% impervious coverage within the basin boundaries. All new impervious area associated with the build alternative in this basin is within the existing right of way, thus no SMF alternatives were evaluated.

Basin 2 (Basin 800A, Permit No. 43033020.006)

This basin is located at the I-75 and I-275 interchange and includes a triangular area around the I-275 NB lanes, the I-275 SB lanes, and the infield area that their paths outline. The proposed ramps connecting the C-D road to I-275 S and to I-75 S will add impervious coverage to this basin. There is

an existing facility within this basin, known as SMF 800A, which was last revised under ERP 4433020.006. Runoff is conveyed to SMF 800A via swale and shoulder gutter inlets. There are two existing culverts along the I-275 SB ramp, 24" and 30" pipes, through which treated runoff is discharged to wetlands on the west side of I-275 S. The infield area where SMF800A is located is large enough to construct a second SMF to provide treatment and attenuation for the proposed improvements within basin 800A. One SMF alternative was identified, referred to as SMF 800A-1, and will be a wet detention pond. SMF 800A-1 is sited adjacent to the wetland boundary that contains SMF 800A, and would need to be connected to permitted SMF 800A in order to route the treated runoff to the existing culverts and maintain existing drainage patterns. Since the proposed SMF alternative is a viable site within the FDOT right of way, no other alternatives were evaluated. The SHWT is relatively low compared to the edge of pavement elevations of the bounding roadways, thereby allowing for greater stage-storage capacity and reducing the overall area of SMF 800A-1. See **Appendix C** for stage-storage data, volume calculations, and a detail view of this SMF.

Basin 3 (Basin J1, Permit No. 43033020.002)

This basin collects runoff from I-75 between County Line Road and bridge pair No. 140061/140062. The permitted SMF within this basin consists of two wet detention ponds, SMF J1-1 and SMF J1-2, interconnected by an 18" equalizer pipe. SMF J1-1 is located north of County Line Road in the infield between I-75 and the I-275 NB ramp. SMF J1-1 treats runoff from the I-275 SB lanes and I-75 SB lanes from County Line Road to bridge pair 140061/140062, which is captured by shoulder gutter inlets and median ditch bottom inlets. A 60" culvert under I-75 discharges the runoff collected by the shoulder gutter inlets to SMF J1-1. On the other hand, SMF J1-2 treats the runoff from I-75 N and the I-275 NB ramp between County Line Road and station 2385+40, just north of Cross Drain 3. A network of shoulder gutter inlets and various pipes lead to a 36" pipe that discharges to SMF J1-2. Following treatment, runoff outflows east from SMF J1-2 via 48" pipe to adjacent wetlands. Under proposed conditions, this basin will be expanded to the proposed right of way shown in the drainage maps of **Appendix A** and will increase in size by 4.95 Ac. A preliminary evaluation was performed which determined that the existing ponds can be converted to conservation method wet detention ponds in order to provide additional capacity within the footprint of the existing stormwater management facilities. In order for this conversion to meet the discharge attenuation criteria, it was determined that 3.87 acres of impervious area must be rerouted from SMF J1-1 and J1-2 to SMF J2 (see **Figure A-2** in Appendix A). No right of way acquisition for pond sites is required for this basin. For calculations and conservation pond conversion details, see **Appendix C**.

Basin 4 (Basin J2, Permit No. 43033030.002)

The northern-most basin within the project limits begins along I-75 north of County Line Road at Cross Drain 3 and extends to approximately 600' north of State Road 56. Similar to the other basins, J2 is associated with a permitted wet detention pond, in this case SMF J2. This SMF is designed to treat the entire contributing area within the existing right of way as impervious coverage. The contributing area includes I-75 N from Cross Drain 19 to SR 56, and I-75 S from bridge pair 140061/140062 to SR 56 including the entrance and exit ramps at SR 56. SMF J2 is located southeast of the County Line Road

bridge over the I-275 NB ramp, adjacent to the I-275 NB ramp right of way. This SMF is outside of the boundary of its associated basin. Approximately 5000 feet of 84" and similar sized pipes convey the runoff collected by shoulder gutter inlets and ditch bottom inlets to SMF J2. After treatment, runoff is discharged via 36" pipe to an adjacent roadside ditch that flows south to Cypress Creek. In proposed conditions, the western boundary of this basin will expand to the proposed right of way shown in the drainage maps of **Appendix A**, adding 2.58 acres to basin J2. This additional area will be treated and attenuated by converting SMF J2 to a Conservation Method Wet Detention Pond. Conversion of SMF J2 from a wet detention pond to a conservation wet detention pond was evaluated and deemed feasible. Deepening SMF J2 and modifying its control structure will allow it to meet all treatment and attenuation criteria set by SWFWMD. There is no need for expansion or alternative SMF sites, and no right of way acquisition for pond sites is required for this basin. See **Appendix C** for more information regarding modified, conservation SMF J2.

4.4 FLOODPLAIN COMPENSATION SITE ALTERNATIVES

4.4.1 FLOODPLAIN COMPENSATION REQUIREMENTS

Construction of the C-D road will require fill to be placed within the floodplains to the west of I-75. Five floodplains associated with the Cypress Creek Watershed will be impacted by the build alternative. These encroachments are listed in **Table 4-3**, and can be seen in **Figure B-6** of **Appendix B**.

Per Part III, Section 3.3 of the SWFWMD ERP Applicant's Handbook Vol. II, compensating floodplain storage between the lowest level of encroachment and the 100-year floodplain level must be provided when encroachment into the floodplain occurs. Existing and proposed 100-year flood levels have been determined using FEMA FIRM panels as well as hydrologic modeling of the Cypress Creek watershed using the Interconnected Channel and Pond Routing Model Version 4 (ICPR 4) software. Refer to **Appendix A** for the relevant FEMA FIRM panels.

For encroachments 1, 2, and 3 (see **Table 4-3**), compensation has been provided on a cup-for-cup basis. The FPC sites provide cut equivalent to the fill at the encroachment site between the SHWT and the BFE. For encroachments 4 and 5, compensation can be provided at one of two alternative sites located upstream of the impacted floodplains. This has been evaluated and deemed feasible by developing existing conditions and post conditions Cypress Creek Watershed Models, the results of which can be found in **Appendix C**. The SHWT elevation varies throughout the project limits. Refer to **Appendix E** for SHWT elevations provided in the existing ERPs. SHWT elevations not provided in the existing permits were estimated using the 2011 LiDAR elevation data in conjunction with the site's soil data. A SHWT elevation evaluation should be performed at the time of design. SHWT elevations used for the floodplain calculations can be found in **Appendix C**. **Table 4-3** summarizes the floodplain impacts.

Table 4-3 Floodplain Encroachment Summary

Floodplain Encroachment	Cypress Creek Watershed Subbasin	Project Floodplain Limits	Base Flood Elev. (ft-NAVD)	Estimated Floodplain Encroachment Area (ac)	Estimated Floodplain Encroachment Volume (ac-ft)
1	M3860	Sta.2372+00 to Sta. 620+00	49.1	0.78	1.41
2	M2920	Sta. 620+00 to Sta. 627+00	49.1	0.44	0.38
3	M2940	Sta. 627+00 to Sta. 635+00	50-52	1.22	4.46
4	M2960	Sta 642+00 to Sta. 686+00	50-51	0.55	1.61
5	M2950	Sta. 635+00 to Sta. 642+00	49.7	2.09	7.65

4.4.2 FLOODPLAIN CONSIDERATIONS

The following paragraphs describe the Cypress Creek Watershed subbasins within the project area, as well as the size and location of compensation alternatives for each impacted floodplain. Refer to **Appendix C** for detailed stage-storage areas, compensation volumes, and a comparison of the pre- and post-conditions ICPR results.

Encroachment 1 (Cypress Creek Model Subbasin M3860)

Per **Table 4-3**, this basin will lose approximately 1.41 ac-ft of storage as a result of the construction of the build alternative. Only one FPC alternative, FPC-1, has been evaluated due to limited upland area within this floodplain subbasin. FPC-1, located adjacent to the proposed right of way at station 2390+00, can provide 1.89 ac-ft of storage between the estimated SHWT elevation and the BFE. FPC-1 is located on a privately owned parcel (34-26-19-0000-00100-0000). There are no wetland impacts associated with this site.

Encroachment 2 (Cypress Creek Model Subbasin M2920)

This basin borders M3860 to the north. Approximately 0.38 ac-ft of floodplain encroachment is anticipated within this basin. Due to limited upland area within this basin, only one FPC alternative, FPC-2, has been evaluated. FPC-2 can provide 0.46 ac-ft of compensation, and is located on the same property as FPC-1 (Parcel ID: 34-26-19-0000-00100-0000). In order to consolidate the land acquired from this parcel to a single site and minimize property acquisition, FPC-2 has been located as close as possible to FPC-1. FPC-2 will be adjacent to the proposed right of way just north of FPC-1, separated from FPC-1 by a 20-ft berm in order to maintain the existing watershed basin boundaries. There are no wetland impacts associated with FPC-2.

Encroachment 3 (Cypress Creek Model Subbasin M2940)

This watershed basin is directly north of M2920. Two alternatives have been evaluated for this subbasin. The 4.46 ac-ft of floodplain encroachment can be compensated by implementing either FPC-3A or FPC-3B, which have 13.28 ac-ft and 13.89 ac-ft of storage, respectively. FPC-3A is within the same privately-owned parcel as FPC-1 and FPC-2. It is located southeast of the termination of Wesley Chapel Blvd at Cypress Creek, and is approximately 1000-ft west of the proposed right of way. Therefore, it will require an access easement through parcel 34-26-19-0000-00100-0000 connecting it to Cypress Creek Road. FPC-3B is located adjacent to the proposed right of way at station 630+00. This alternative would also require land acquisition from parcel 34-26-19-0000-00100-0000 in addition to the total acquisition of parcel 34-26-19-0000-00100-0060, both of which are owned by the same entity. These FPC alternatives have been sized to compensate for the encroachments within this basin, as well as downstream encroachments within watershed basins M2960 and M2950. There are no wetland impacts associated with either FPC-3A or FPC-3B.

Encroachment 4 (Cypress Creek Model Subbasin M2960)

This basin borders M2940 to the north. The anticipated encroachment volume within this basin is 1.61 ac-ft. Either FPC-3A or FPC-3B will provide adequate compensation for this encroachment. This basin is comprised entirely of designated wetland area, therefore providing compensation upstream in basin M2940 avoids wetland impacts.

Encroachment 5 (Cypress Creek Model Subbasin M2950)

Basin M2950 is the northern-most impacted basin within the project area, and spans from bridge pair 140061/140062 to the I-75 SB entrance ramp at SR 56. The anticipated encroachment volume within this basin is 7.65 ac-ft. Similar to M2960, the floodplain impact in this basin will be compensated upstream of it by either FPC-3A or FPC-3B. This basin is almost entirely designated wetland area. Providing compensation upstream in basin M2940 avoids wetland impact.

Other Cypress Creek Subbasins

In addition to the subbasins listed in Table 4-3, there are four additional subbasins that were updated in the Cypress Creek model in order to ensure the encroachments did not affect adjacent or downstream basins. The stage-storage areas for subbasins M3000, M3040, M3520, and M3900 are revised under existing conditions to reflect the presence of the I-75 drainage system and permitted basin boundaries. There are no floodplain encroachments associated with these subbasins resulting from the build alternative, and they are unchanged from existing to post conditions. See **Figure B-7** of **Appendix B** for the effective, existing, and post conditions subbasin boundaries.

SECTION 5 SUMMARY AND RECOMMENDATIONS

This evaluation finds that acquisition of right of way for three floodplain compensation sites will be required to construct the build alternative. **Table 5-1** on the following page presents a site matrix indicating the preferred SMF and FPC alternatives. FPC-1 and FPC-2 will require a single site to be acquired from a privately owned parcel (Parcel ID: 34-26-19-0000-00100-0000). FPC-3A would require land to be acquired from within the same parcel. FPC-3B would require a smaller area of land to be acquired from the aforementioned parcel in addition to the total acquisition of parcel 34-26-19-0000-00100-0060, both of which are owned by the same entity. FPC-3B is the preferred alternative due to its ease of access adjacent to the I-75 right of way, and because of the potential for future developments at the location of FPC-3A. See **Appendix D** for the right of way cost estimate at each floodplain compensation site. Right of way acquisition will not be required for any of the stormwater management facilities. The stormwater management requirements can be achieved through the modification of three existing stormwater management facilities and construction of a new stormwater management pond (SMF) within existing right of way. The following table summarizes the evaluation.

Table 5-1 SMF and FPC Site Matrix

Site Name	Site Area (Ac)	Conveyance Easement (Ac)	Est. Wetland Impacts (Ac)	Wildlife and Habitat	Contamination	Cultural Resources	Potential Relocations	Est. Construction Cost	Est. Wetland Mitigation Cost	Est. Right of Way Cost	Est. Total Cost	Comments
SMF J1-1	1.82	0	0	Low	None	Low	0	$56,127	0	N/A	$56,127	Preferred Alternative
SMF J1-2	3.65	0	0	Low	None	Low	0	$140,754	0	N/A	$140,754	Preferred Alternative
SMF J2	10.59	0	0	Low	None	Low	0	$850,482	0	N/A	$850,482	Preferred Alternative
SMF 800A-1	1.40	0	0	Low	None	Low	0	$119,443	0	N/A	$119,443	Preferred Alternative
FPC-1*	1.41	0	0	High	None	Low	0	$70,080	0	$124,900	$235,427	Preferred Alternative
FPC-2*	0.76	0	0	Medium	None	Low	0	$40,447	0			Preferred Alternative
FPC-3A	5.98	1.74	0	Low	None	Low	0	$488,045	0	$414,500	$902,545	
FPC-3B	9.43	0	0	Low	None	Low	0	$544,683	0	$877,200	$1,421,883	Preferred Alternative

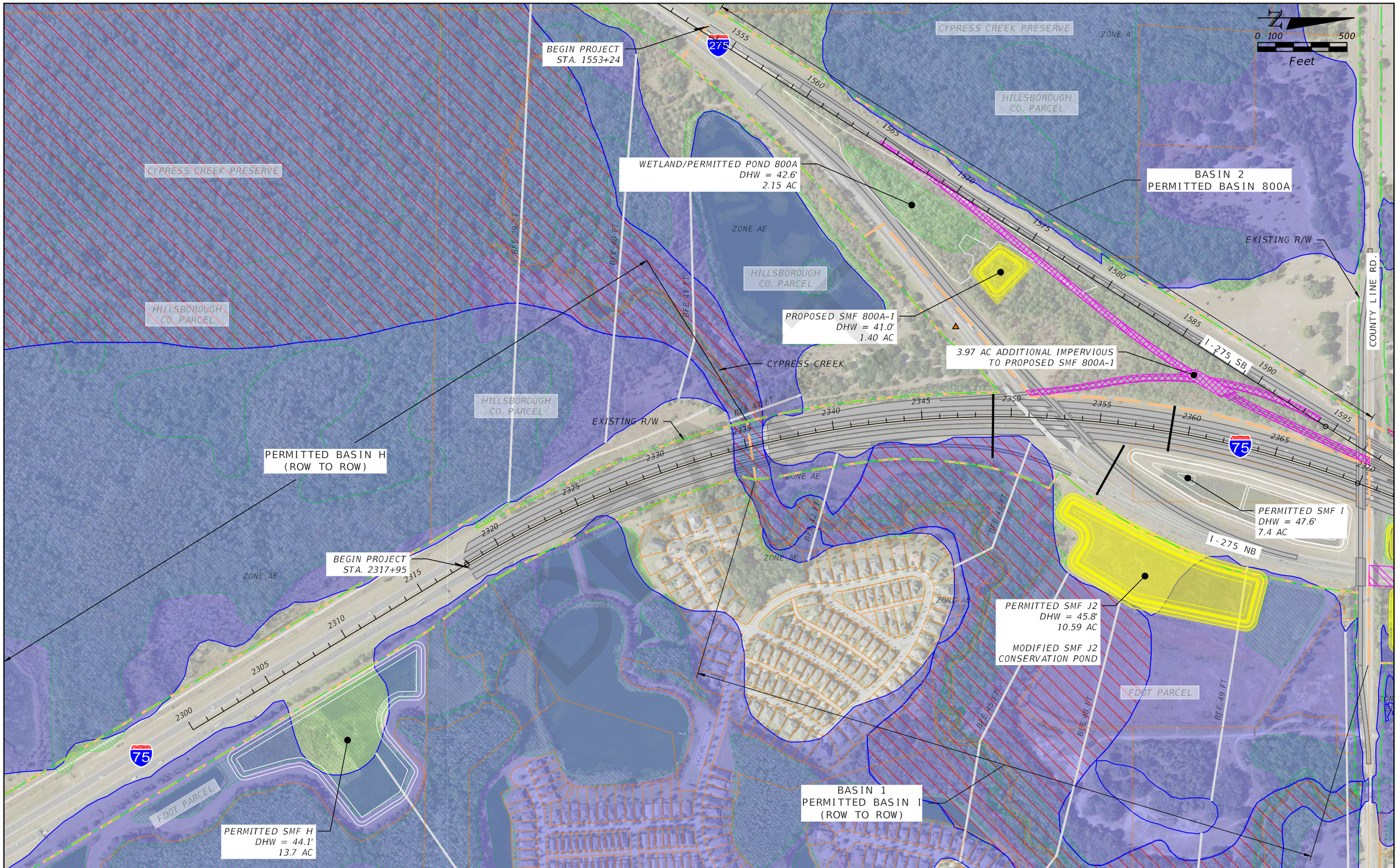
* FPC-1 and FPC-2 will be located on one site

APPENDICES

APPENDIX A	Conceptual Drainage Maps, FEMA FIRM Maps, and Straight Line Diagram (SLD)
APPENDIX B	Figures
APPENDIX C	Calculations
APPENDIX D	FDOT District 7 Right of Way Cost Estimates
APPENDIX E	Supporting Documentation
APPENDIX F	Meeting Minutes

APPENDIX A

Conceptual Drainage Maps, FEMA FIRM Maps, and Straight Line Diagram (SLD)



PROPOSED ROADWAY
PROPOSED SMF/FPC SITE
FLOODPLAINS
FLOODWAY
NEW IMPERVIOUS AREA
REROUTED IMPERVIOUS AREA
WETLANDS
EXISTING PARCEL LINES
CROSS DRAINS
DRAINAGE BASIN
CONTAMINATION SITE
EXISTING R/W
PROPOSED R/W
FEMA BFE CROSS SECTION

SMF = STORMWATER MANAGEMENT FACILITY
FPC = FLOODPLAIN COMPENSATION SITE
BFE = BASE FLOOD ELEVATION

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2818 Cypress Ridge Blvd, Suite 200
Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
Certificate of Authorization No. 9302
Eric K. Nelson, P.E. No. 79361

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93	HILLSBOROUGH/ PASCO	430573-4

CONCEPTUAL SMF & FPC MAP (1)

SHT. NO.
A-1

CYPRESS CREEK ROAD

PARCEL ID: 34-26-19-0000-00100-0000

COUNTY LINE RD.

4.95 AC. ADDITIONAL IMPERVIOUS TO MODIFIED SMF J1-1

PERMITTED SMF J1-1
DHW = 51.8'
1.82 AC

MODIFIED SMF J1-1
CONSERVATION POND

1.00 AC ADDITIONAL IMPERVIOUS TO MODIFIED SMF J1-1

PROP. R/W

END STA. 1617+64.02

PARCEL ID: 34-26-19-0000-00100-0060

STA. AHEAD = 617+73.37 BL75
STA. BACK = 2390+10.04 BL75

FPC-1 & FPC-2
2.17 AC

FPC-3A
ACCESS EASEMENT
1.74 AC

FPC-3A
5.98 AC

FPC-3B
9.43 AC

3.87 AC PERMITTED IMPERVIOUS REROUTED TO MODIFIED SMF J2

PERMITTED SMF J1-2
DHW = 50.6'
3.65 AC

MODIFIED SMF J1-2
CONSERVATION POND

BASIN 3
PERMITTED BASIN J1
(ROW TO ROW)

CYPRESS CREEK

WESLEY CHAPEL BLVD.

FDOT PARCEL

PASCO CO. PARCEL

CYPRESS CREEK CONSERVATION EASEMENT

CYPRESS CREEK CONSERVATION AREA

0 100 500 Feet

PROPOSED ROADWAY	WETLANDS	CONTAMINATION SITE
PROPOSED SMF/FPC SITE	EXISTING PARCEL LINES	EXISTING R/W
FLOODPLAINS	CROSS DRAINS	PROPOSED R/W
FLOODWAY	DRAINAGE BASIN	FEMA BFE CROSS SECTION
NEW IMPERVIOUS AREA		
REROUTED IMPERVIOUS AREA		

SMF = STORMWATER MANAGEMENT FACILITY
FPC = FLOODPLAIN COMPENSATION SITE
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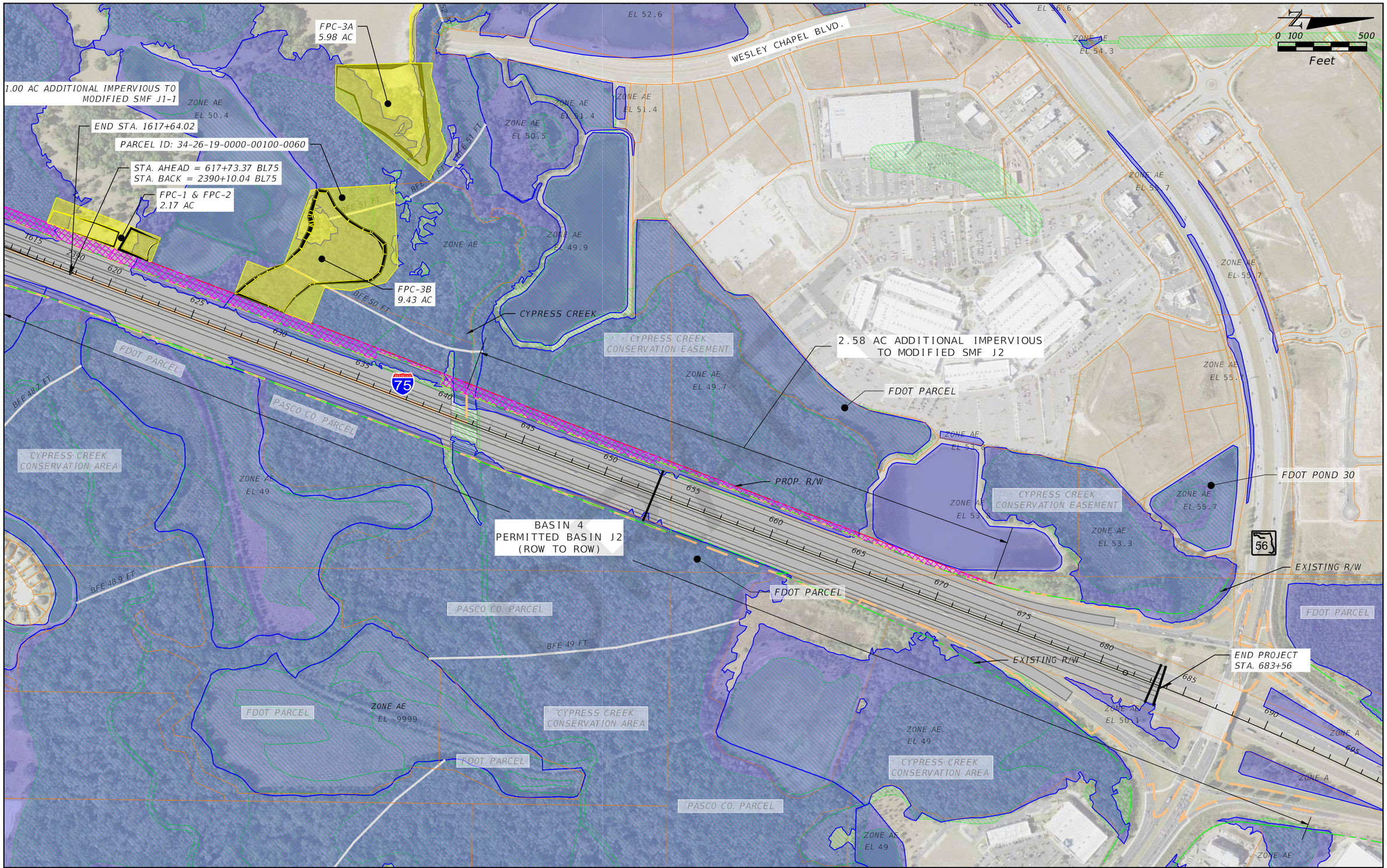
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93	HILLSBOROUGH/ PASCO	430573-4

CONCEPTUAL SMF & FPC MAP (2)

SHT. NO. A-2



PROPOSED ROADWAY
PROPOSED SMF/FPC SITE
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FLOODWAY
NEW IMPERVIOUS AREA
REROUTED IMPERVIOUS AREA
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DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93	HILLSBOROUGH/ PASCO	430573-4

CONCEPTUAL SMF & FPC MAP (3)

SHT. NO.
A-3

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

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 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 Coastal Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Coastal 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 Florida State Plane west zone (FIPSZONE 0902). The **horizontal datum** was NAD 83, GRS80 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, N/NGS12
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 www.ngs.noaa.gov. Information on elevation reference marks is readily available through a variety of sources: the NGS website, www.ngs.noaa.gov/cgi-bin/datasheet.prl, the Land Boundary Information System (LABINS) maintained by the Florida Department of Environmental Protection www.labins.org, and the Hillsborough County Survey Division www.hillsboroughcounty.org/publicworks/survey/.

Base map information shown on this FIRM was derived from multiple sources. Road centerlines were provided by the City of Tampa Geographic Information System (GIS) group. These data were aligned to aerial imagery at 6-inch pixel resolution dated 2004. Surface water features were provided by the Hillsborough County Information Technology & Services GIS Section. These data were digitized from aerial imagery at 1-foot and 6-inch pixel resolution dated February 2000 and April 2004. Political boundaries were provided by the Hillsborough County Real Estate Department, Survey Division, GIS Section. These data were compiled in 2003. Public Land Survey System (range, township, and sections) were provided by the Florida Geographic Data Library. These data were produced at a scale of 1:24,000.

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.

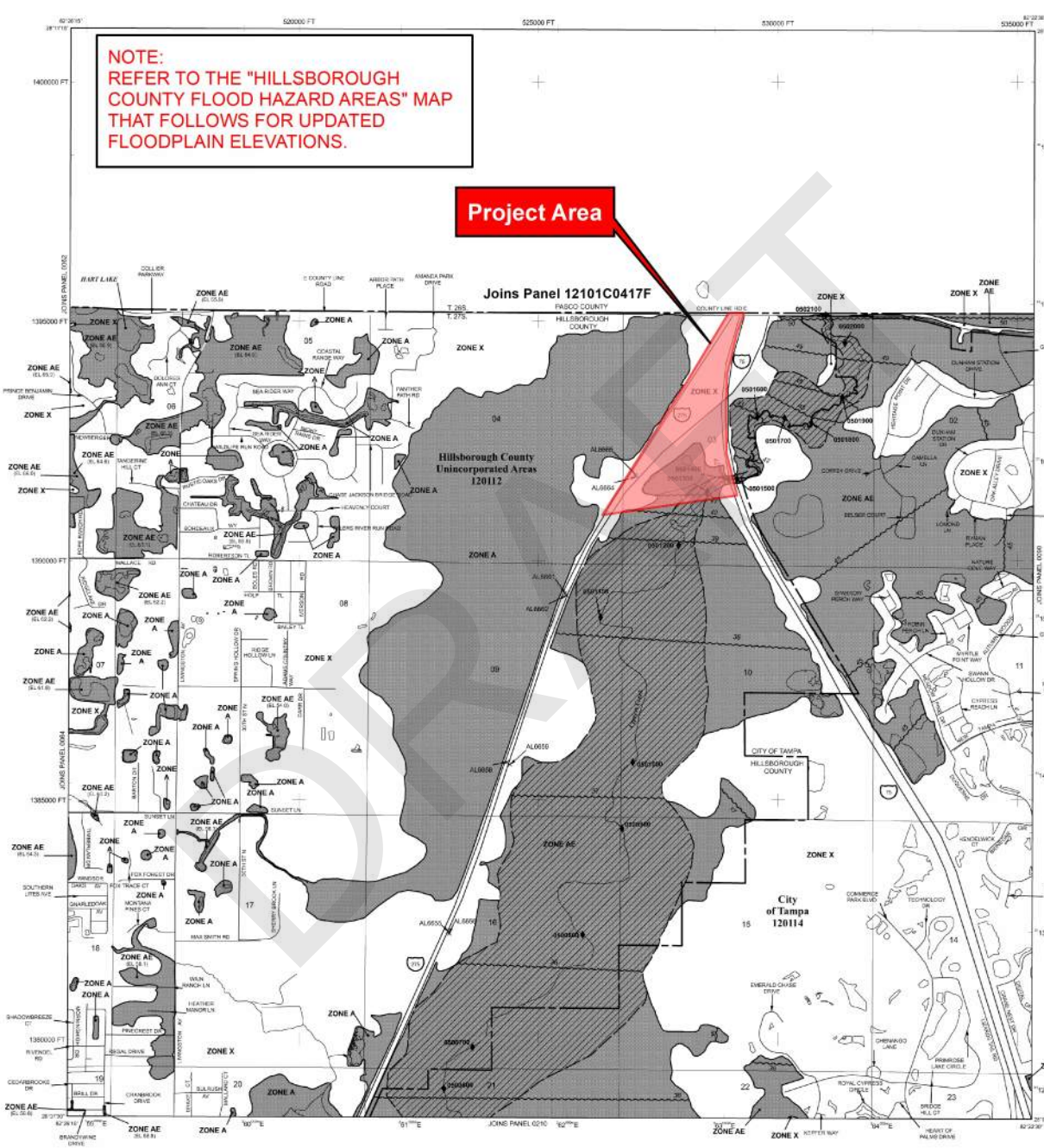
Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also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

Hillsborough County

In cooperation with the Federal Emergency Management Agency (FEMA), Hillsborough County developed this Flood Insurance Rate Map in a digital countywide format to assist communities in their efforts to minimize the loss of property and life through effectively management development in floodprone areas. Hillsborough County has implemented a long term approach to floodplain management to reduce the impacts of flooding. This is demonstrated by the County's commitment to map floodplain areas at the local level. As part of this effort, Hillsborough County is working closely with FEMA as a Cooperating Technical Partner to produce and maintain this digital FIRM.

NOTE:
REFER TO THE "HILLSBOROUGH COUNTY FLOOD HAZARD AREAS" MAP THAT FOLLOWS FOR UPDATED FLOODPLAIN ELEVATIONS.



LEGEND

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

The 1% annual 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** Special Flood Hazard Area formerly protected from the 1% annual chance flood 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** Area to be protected from 1% annual chance flood 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.

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

* Referenced to the North American Vertical Datum of 1988

- (A)–(A) Cross section Line
- (23)–(23) Transect line
- 87°07'45", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 1000-meter Universal Transverse Mercator grid values, zone 16N (UTM Zone 17)
- 6000000 FT 5000-foot grid ticks: Florida State Plane coordinate system, West zone (FIPSZONE 0902), Transverse Mercator projection
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile
- 416205 Junction

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 28, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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 1000 2000 FEET
150 0 300 600 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0070H

FIRM
FLOOD INSURANCE RATE MAP

HILLSBOROUGH COUNTY, FLORIDA
AND INCORPORATED AREAS

PANEL 70 OF 801

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

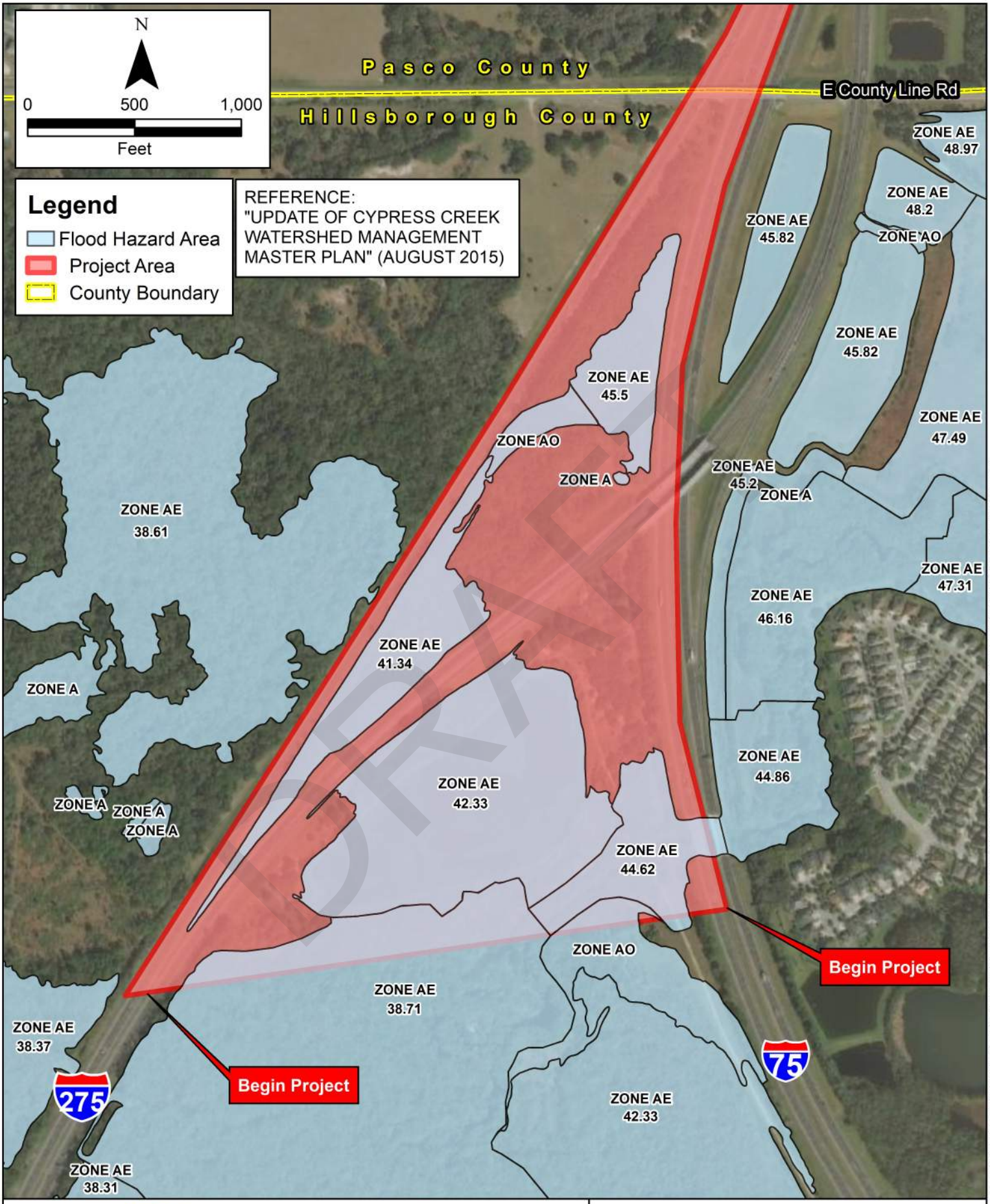
COMMUNITY	NUMBER	PANEL	SUFFIX
HILLSBOROUGH COUNTY	120112	0070	H
TAMPA, CITY OF	120114	0070	H

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
12057C0070H

EFFECTIVE DATE
AUGUST 28, 2008

Federal Emergency Management Agency



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FDOT

SB I-75/I-275 South of County Line Road to SR 56 (SB) C-D Road with Flyover Ramp
FPID: 254552-1-22-19 // WPI No.: 430573-4
Hillsborough and Pasco Counties

HILLSBOROUGH COUNTY FLOOD HAZARD AREAS

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. BFEs in detailed watersheds are rounded to tenth-foot elevations; see Watershed Table below. 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.

Base map information shown on this FIRM was provided in digital format by the Southwest Florida Water Management District. The original orthophotographic base imagery was provided in color with a one-foot pixel resolution at a scale of 1" = 1' from photography from January 2009.

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 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/. A FIRMETTE (full scale section of a FIRM) is also available at this website.

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.

DATUM INFORMATION

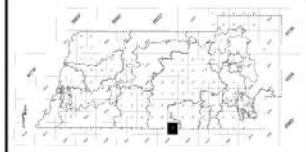
The projection used in the preparation of this map was State Plane Florida West. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane Zone used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map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

Base Flood Elevations (BFEs) 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:

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

Example Datum Offset Calculation
using datum offset table below
NAVD88 = WGV1929 + (datum offset value)

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/



Watershed Boundary
Coastal Construction Control Line

Watershed Table

Watershed	Datum Offset (ft)	Study Type	1 Day 100yr Total Rainfall Volume (in)	Multi-Day Rainfall Used*	Date of Model
1. Bear Creek	-0.64	Effective Transfer	12.0	NO	06/09/92
2. Bowlers Lake	-0.64	Effective Transfer	11.8	NO	06/09/92
3. Cypress Creek	-0.64	Detailed	12.4	YES	04/27/00
4. Double Hammock Creek	-0.64	Effective Transfer	12.0	NO	06/09/92
5. Duck Lake	-0.64	Effective Transfer	11.8	NO	06/09/92
6. East Pasco	-0.64	Detailed	12.0	YES	02/23/99
7. Hard Pinellas Anclote	-0.64	Detailed	12.0	NO	04/06/11
8. Hercules Creek	-0.64	Effective Transfer	12.0	NO	06/09/92
9. Lower Coastal	-0.64	Effective Transfer	12.1	NO	06/09/92
10. Map River	-0.64	Effective Transfer	11.1	NO	06/09/92
11. North Lakes	-0.64	Effective Transfer	N/A	NO	06/09/92
12. Pithlachascotee	-0.64	Effective Transfer	12.0	NO	06/09/92
13. Trout Creek	-0.64	Detailed	12.4	YES	06/09/10
14. Upper Hillsborough	-0.64	Effective Transfer	11.8	NO	06/01/79
15. Upper Pithlachascotee	-0.64	Effective Transfer	12.0	NO	06/09/92
16. Upper Withlacoochee	-0.64	Effective Transfer	10.8	NO	06/01/79
17. West Pinellas Anclote	-0.64	Effective Transfer	12.0	NO	06/09/92

*Multi-Day rainfall used only in specific sub-basins, refer to the FIS report.

†Zone X (protected) 0.2% annual chance floodplain is delineated only in watersheds where the Study Type is Redelineation or Coastal. The 0.2% annual chance floodplain is not delineated in watersheds where the Study Type is Detailed. Refer to the Watershed Table for Study Type.

This digital Flood Insurance Rate Map (FIRM) was produced through a cooperative partnership between the Southwest Florida Water Management District and the Federal Emergency Management Agency.

Joins Panel 12101C0409F

Joins Panel 12101C0417F

Project Area

ZONE AE
ZONE A
ZONE X

Pasco County Unincorporated Areas 120230

Cypress Creek Watershed

1400000 FT
1395000 FT
1390000 FT
530000 FT
535000 FT

JOINS PANEL 0409
JOINS PANEL 0420

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 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 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 — Area 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 areas protected by levees from 1% annual chance flood. See additional note in Watershed Table on left collar.

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

* Referenced to the North American Vertical Datum of 1988

A — A — Cross section line
23 — 23 — Transect line

97°07'30", 32°22'30" — 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, West Zone (FIPSZONE 0902), Transverse Mercator projection
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5 — River Mile
222218 — Section - Township - Range
7140000 — Junction - Points defining beginning of flow accumulations or hydraulic connections. The first two characters of the number (e.g. 14 represents the second watershed) as shown in the map index located in the Flood Insurance Study report for this jurisdiction.

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 26, 2014

EFFECTIVE DATES OF REVISION(S) TO THIS PANEL

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" = 500'

PANEL 0417F

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

PASCO COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 417 OF 500

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PASCO COUNTY	120230	0417	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
12101C0417F

EFFECTIVE DATE
SEPTEMBER 26, 2014

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. BFEs in detailed watersheds are rounded to tenth-foot elevations, see Watershed table below. 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.

Base map information shown on this FIRM was provided in digital format by the Southwest Florida Water Management District. The original orthophotographic base imagery was provided in color with a one-foot pixel resolution at a scale of 1" = 1' from photography flown January 2009.

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 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. A FIRMETTE (full scale section of a FIRM) is also available at this website.

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.

DATUM INFORMATION

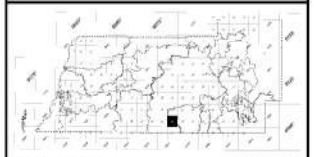
The projection used in the preparation of this map was State Plane Florida West. The horizontal datum was North American Datum of 1983 (NAD83) spheroid. Differences in datum, spheroid, projection or State Plane Zone used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Base Flood Elevation (BFEs) 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

Example Datum Offset Calculation
using datum offset table below
NAVD88 = NGVD29 + (datum offset value)

To obtain current elevation, description, and/or location information for benchmarks 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/.



Watershed Boundary
Coastal Construction Control Line

Watershed Table

Watershed	Datum Offset (ft)	Study Type	Total Rainfall Volume (in) Multi-Day 1 Day 100yr	Rainfall Used?	Date of Model
1. Bear Creek	-0.04	Effective Transfer	10.0	NO	09/30/02
2. Bartow Lake	-0.04	Effective Transfer	11.0	NO	09/30/02
3. Cypress Creek	-0.04	Detailed	12.4	YES	04/27/10
4. Durdon Reservoir Creek	-0.04	Effective Transfer	12.0	NO	09/30/02
5. Duck Lake	-0.04	Effective Transfer	11.0	NO	09/30/02
6. Lake Parker	-0.04	Detailed	12.0	YES	07/30/09
7. East Pinellas Anclote	-0.04	Detailed	12.0	NO	04/28/11
8. Hammock Creek	-0.04	Effective Transfer	12.0	NO	09/30/02
9. Lower Coastal	-0.04	Effective Transfer	10.1	NO	09/30/02
10. New River	-0.04	Effective Transfer	11.1	NO	09/30/02
11. North Lakes	-0.04	Effective Transfer	N/A	NO	09/30/02
12. Pithlachascotee	-0.04	Effective Transfer	10.0	NO	09/30/02
13. Trout Creek	-0.04	Detailed	12.4	YES	08/29/08
14. Upper Hillsborough	-0.04	Effective Transfer	11.0	NO	09/17/09
15. Upper Pithlachascotee	-0.04	Effective Transfer	12.0	NO	09/30/02
16. Upper Withlacoochee	-0.04	Effective Transfer	10.9	NO	09/17/09
17. West Pinellas Anclote	-0.04	Effective Transfer	12.0	NO	09/30/02

*Transfer from or performed for coastal flood zones
Multi-Day event used only in coastal sub-basins, refer to the FIS report.

Zone X (shaded) 0.2% annual chance floodplain is de-nested only in watersheds where the Study Type is Redistribution or Coastal. The 0.2% annual chance floodplain is not delineated in watersheds where the Study Type is Detailed. Refer to the Watershed Table for Study Type.

This digital Flood Insurance Rate Map (FIRM) was produced through a cooperative partnership between the Southwest Florida Water Management District and the Federal Emergency Management Agency

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 equalled 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 — Special Flood Hazard Area formerly protected from the 1% annual chance flood 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 — Area to be protected from 1% annual chance flood events 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; and areas protected by levees from 1% annual chance flood. See additional zone in Watershed Table on left collar.

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.
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

Cross section line
Transect line
Geographic coordinates referenced to the North American Datum of 1983 (NAD83), Western Hemisphere
1000-meter Universal Transverse Mercator grid ticks, zone 17
5000-foot grid values: Florida State Plane coordinate system, West Zone (FIPSZONE = 0902), Transverse Mercator projection
Bench mark (see explanation in Notes to Users section of this FIRM panel)
River Mile
Section - Township - Range
Junction - North defining numbers of flow accumulation or hydraulic connectivity. The first two characters of the Junction name represents the specific watershed as shown in the map cellar locator map) in which the Junction is located (note that boundary Junctions, without an associated floodplain, are also shown).
Hydraulic Connectivity - Flow pathway between junctions.

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 26, 2014
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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" = 500'

PANEL 0409F

NFIP NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

PASCO COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 409 OF 500

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	NUMBER	PANEL	SUFFIX
PASCO COUNTY	125030	0409	F

MAP NUMBER
12101C0409F

EFFECTIVE DATE
SEPTEMBER 26, 2014

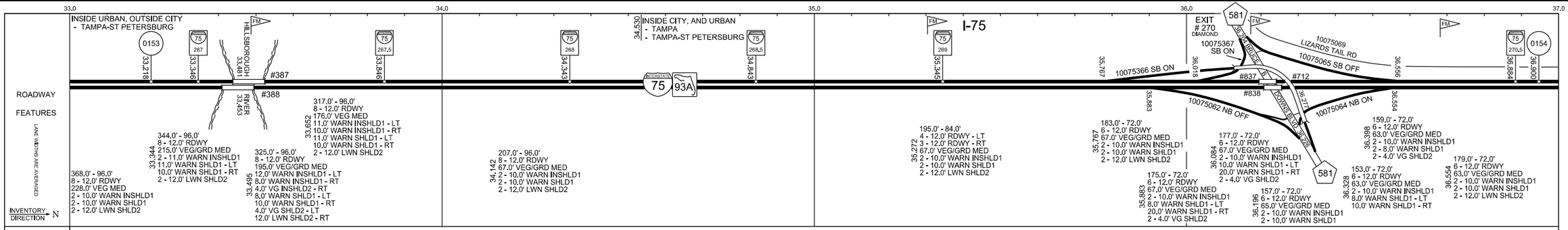
Federal Emergency Management Agency

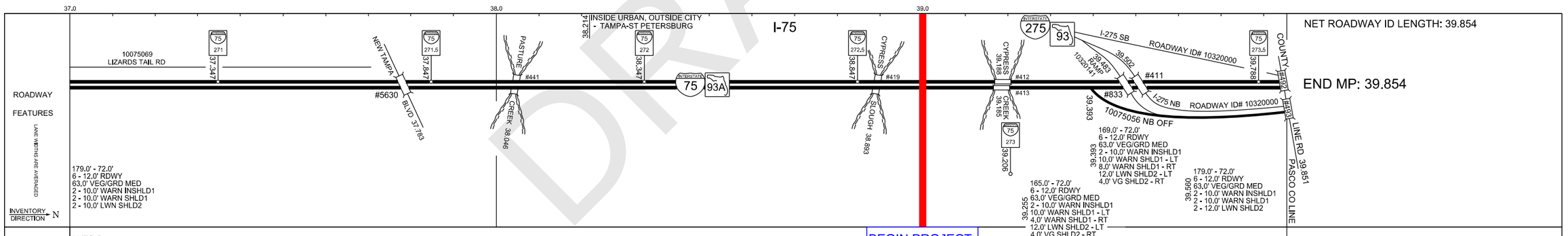
	5 YR INV	SLD REV	INTERIM REVISIONS BMP	EMP	INV	SLD REV
DATE	08 / 24 / 2012	09 / 27 / 2012	5.803	37.624	03 / 24 / 2020	05 / 22 / 2020
BY	FTE / JW-KA	FTE / KA	CONSTRUCTION ACCEPT & ADD FRONTAGE ROADS		FTE / KA-RL	FTE / KA

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
02	I-75	SR 93A	HILLSBOROUGH	07	10 075 000	4 OF 4



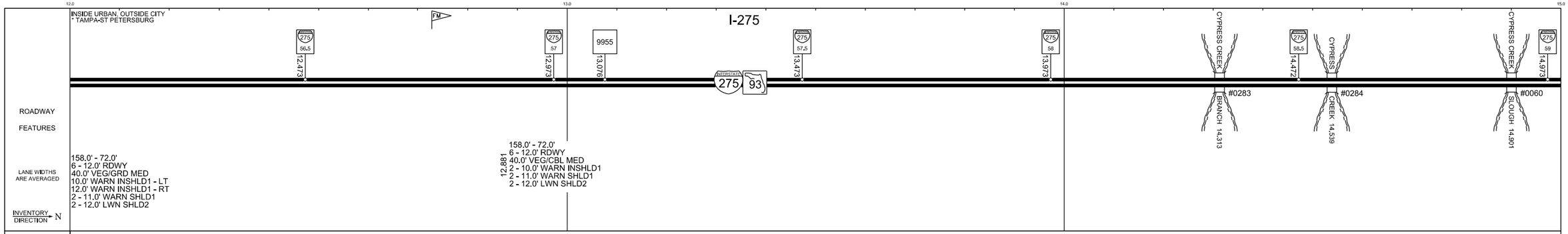


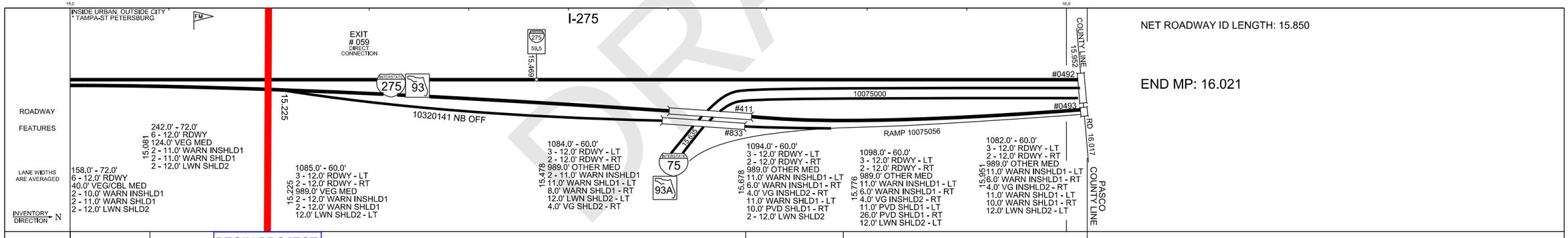
	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	01/24/2018	02/26/2018	0.368	0.465		08/05/2020
BY	FTE / IM-BK	FTE / KA	REVISED F252			FTE/KA
			EXIT 45A & 45B			

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
12	I 275	SR 93	HILLSBOROUGH	07	10 320 000	4 OF 5





Version: 1.4.2.27 02/23/2018

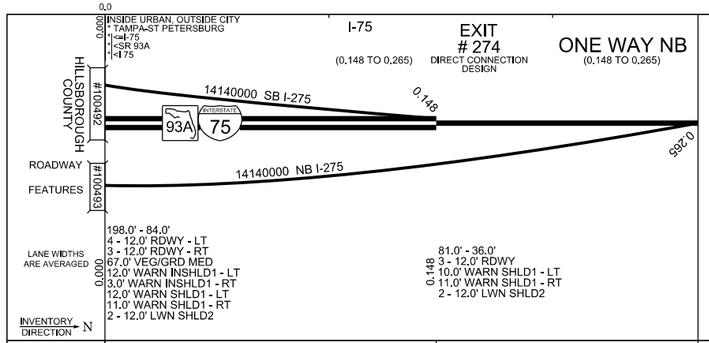
	5 YR INV	SLD REV
DATE	05/01/2017	06/22/2017
BY	FTE / JR-IM	FTE / KA

BMP	EMP	INV	SLD REV
0.000	0.265		12/11/2017
EMP SHORTENED			FTE / KA
TO 0.265			

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
02	I 75	SR 93A	PASCO	07	14 075 000	1 OF 1



NET ROADWAY ID LENGTH: 0.265

END MP: 0.265

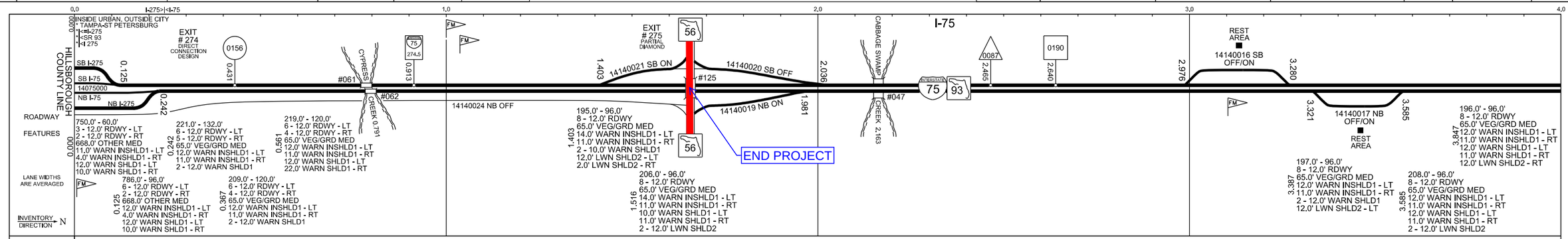
ROADWAY COMPOSITION	0.000 28/FC-2 28/FC-2	0.148 28/FC-2
HORIZONTAL ALIGNMENT	Δ=11°35'00" CURVE DATA NOT FIELD VERIFIED D=0°00'01" PC=0.000 P=0.156 PT=0.311 B=N20°32'24E	
STRUCTURE DESCRIPTION	0.102 1 - 18" X 182' CC	
DISTRICT USE		
SIS	0.000 SIS CORRIDOR	SIS CORRIDOR 0.265
FUN CLASS	0.000,0.000 URBAN PRIN ART INT.	
SPEED LIMIT	0.000 65MPH	

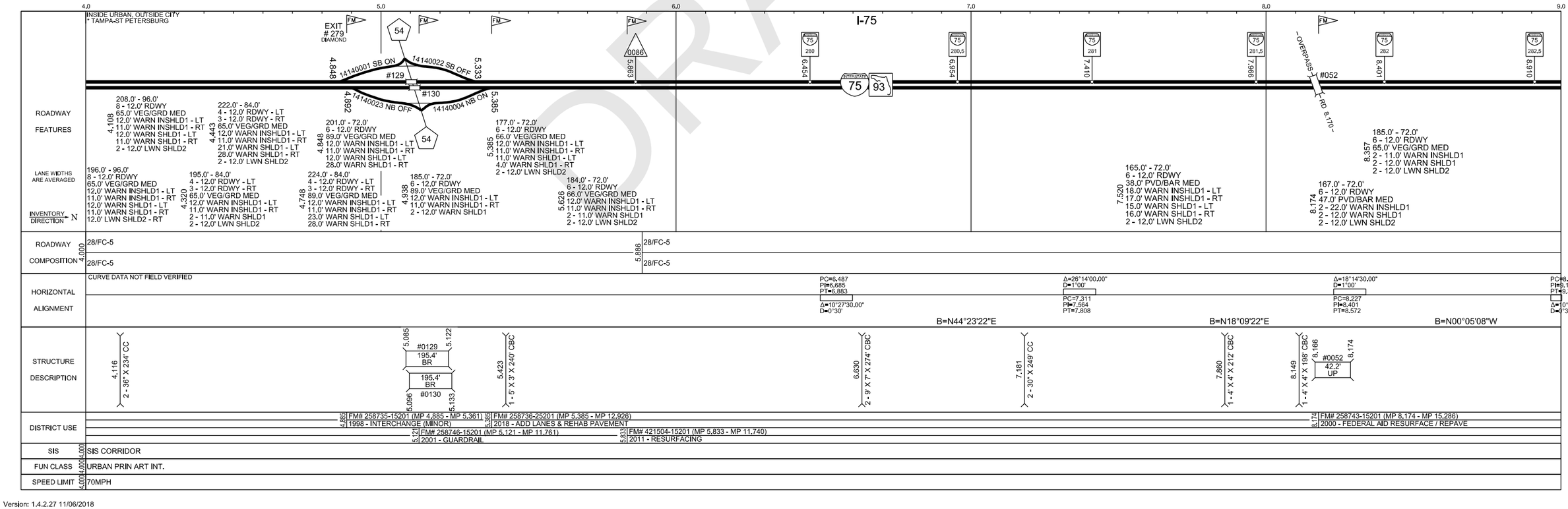
	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	08/28/2018	11/06/2018				
BY	FTE / IM-BK	FTE / KA				

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
02	I 275/I 75	SR 93	PASCO	07	14 140 000	1 OF 3





Version: 1.4.2.27 11/06/2018

APPENDIX B

Figures

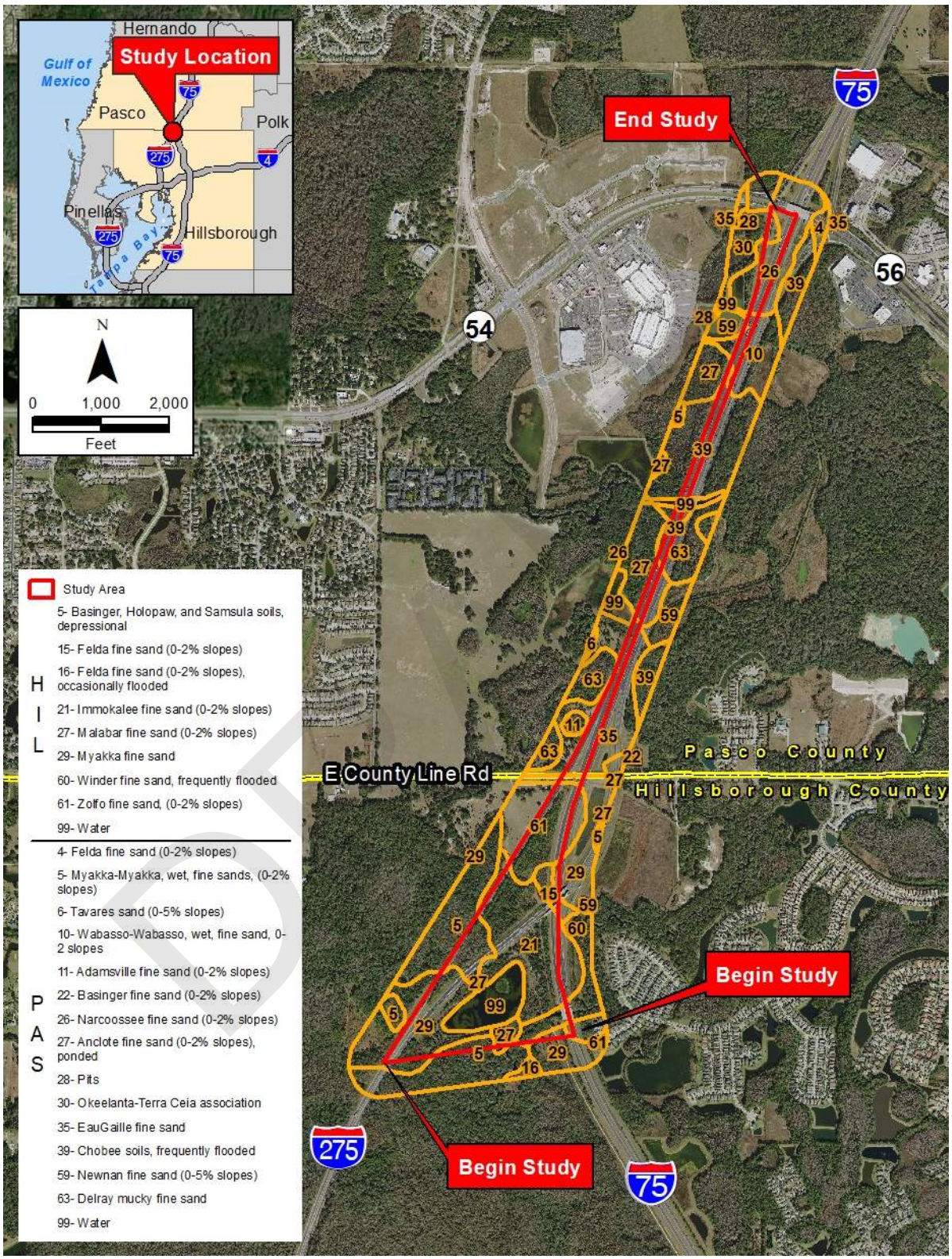


Figure B-1 Soils Map

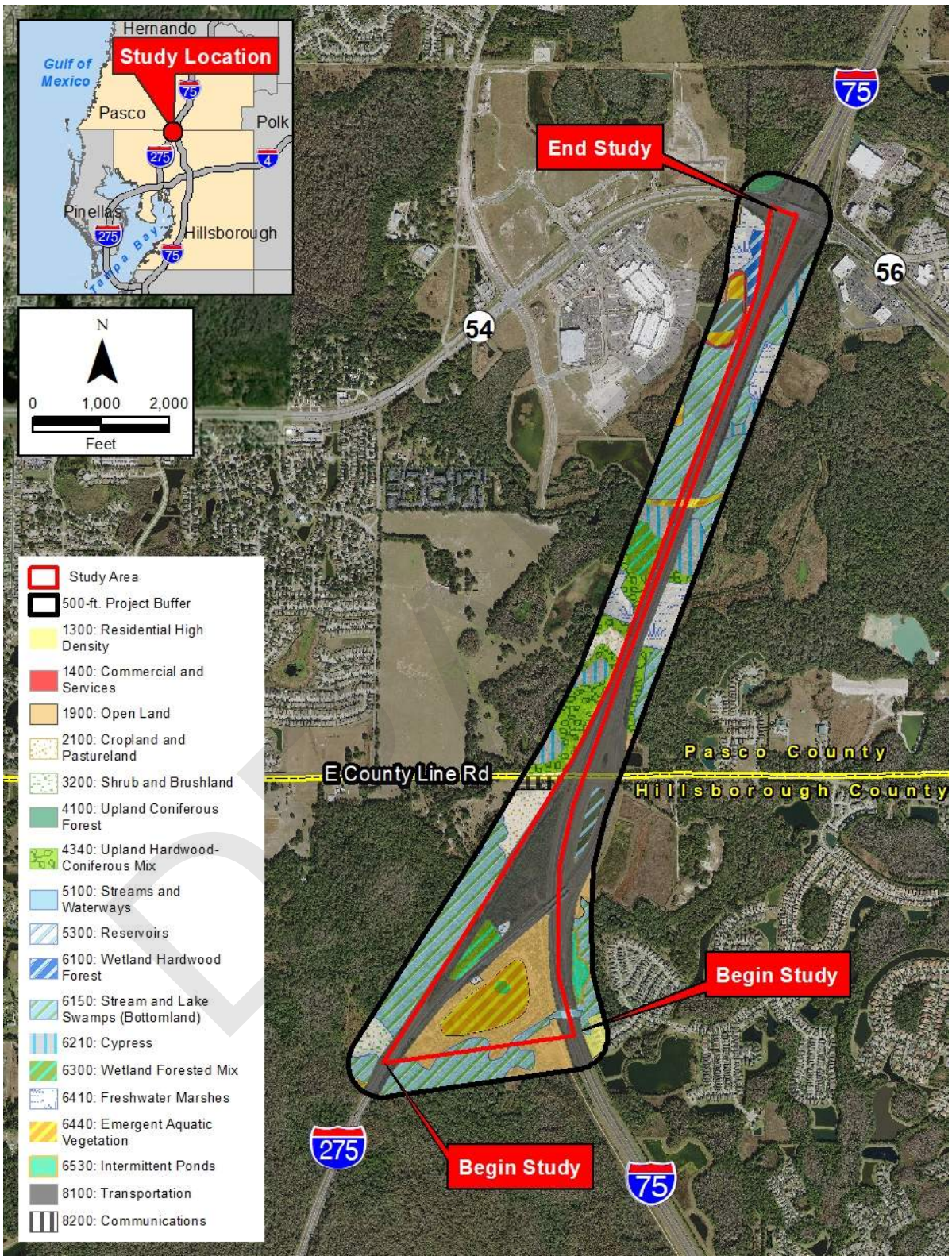


Figure B-2 Land Use Map

Figure B-3 Cross Drain and Bridge Map

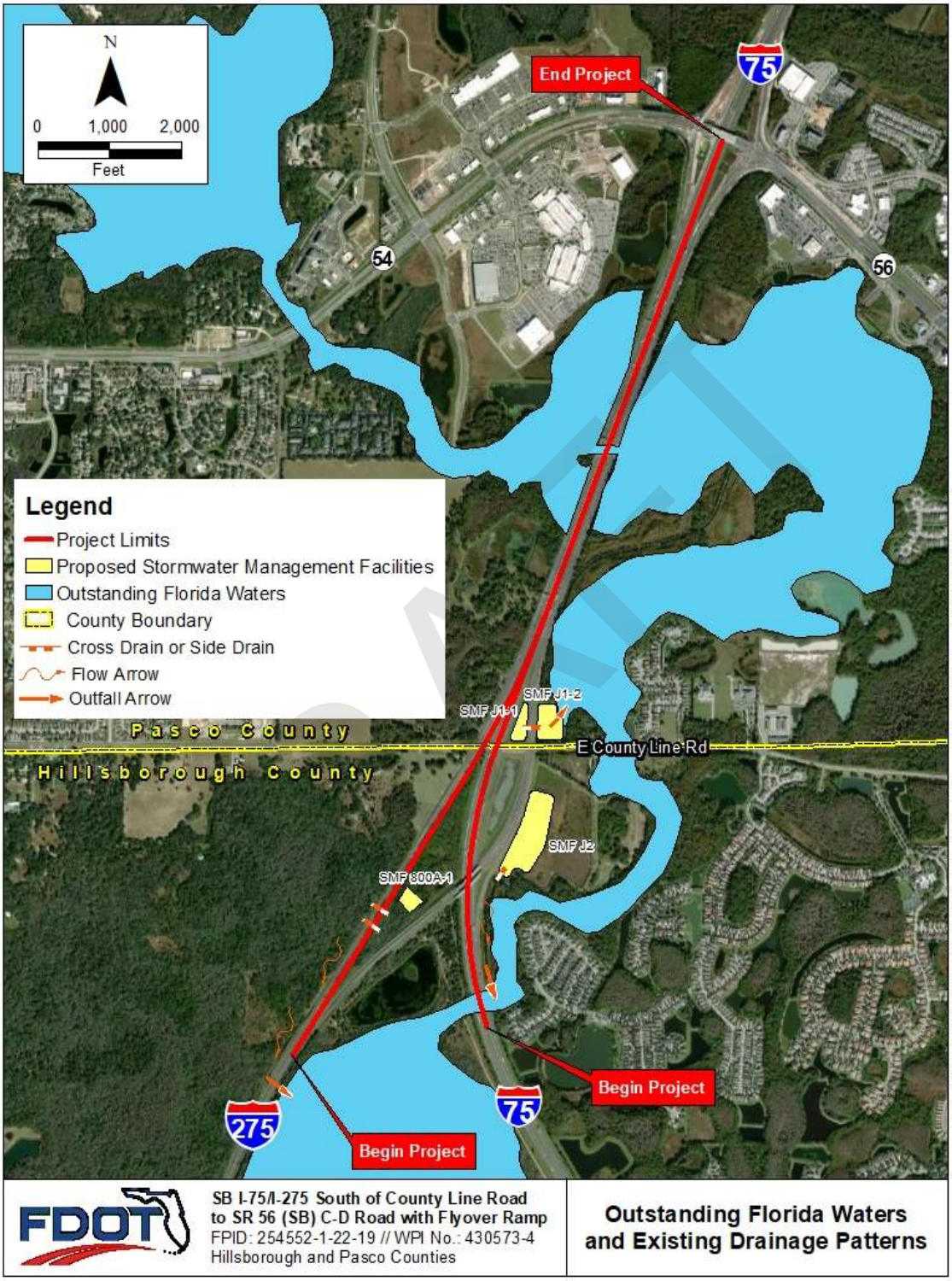


Figure B-4 OFW Map

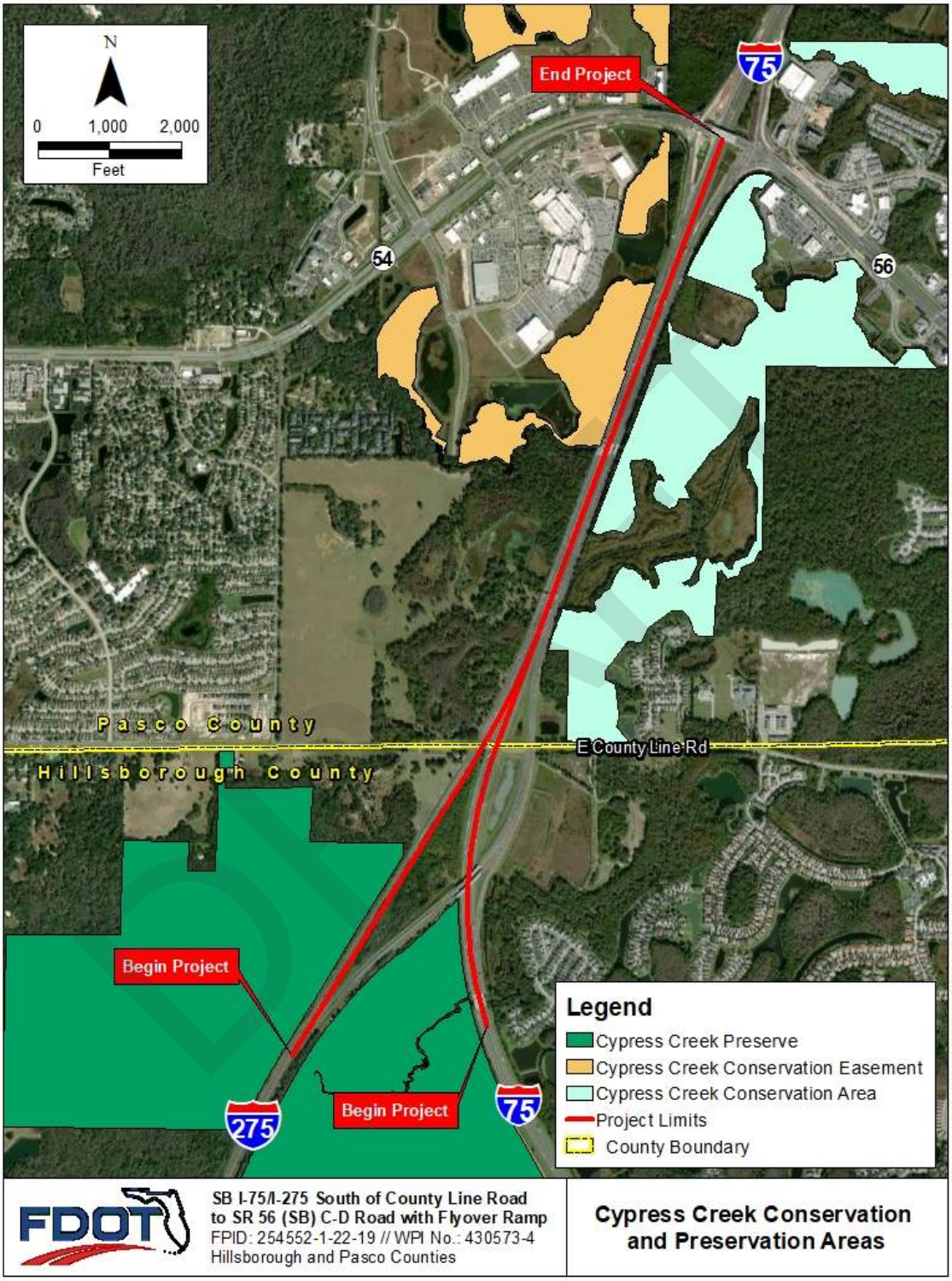


Figure B-5 Cypress Creek Preserve and Conservation Areas

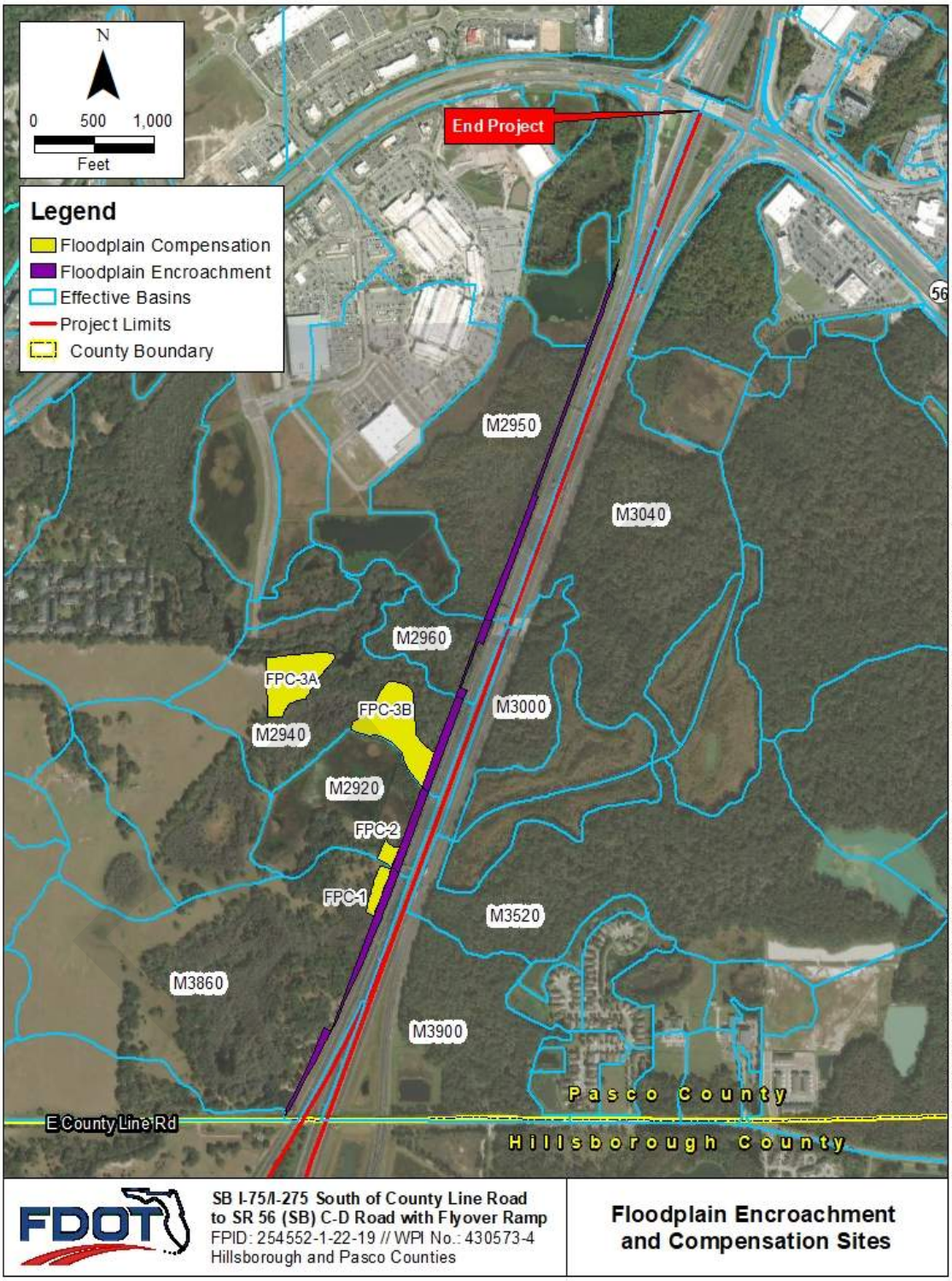


Figure B-6 Floodplain Encroachment and Compensation Map

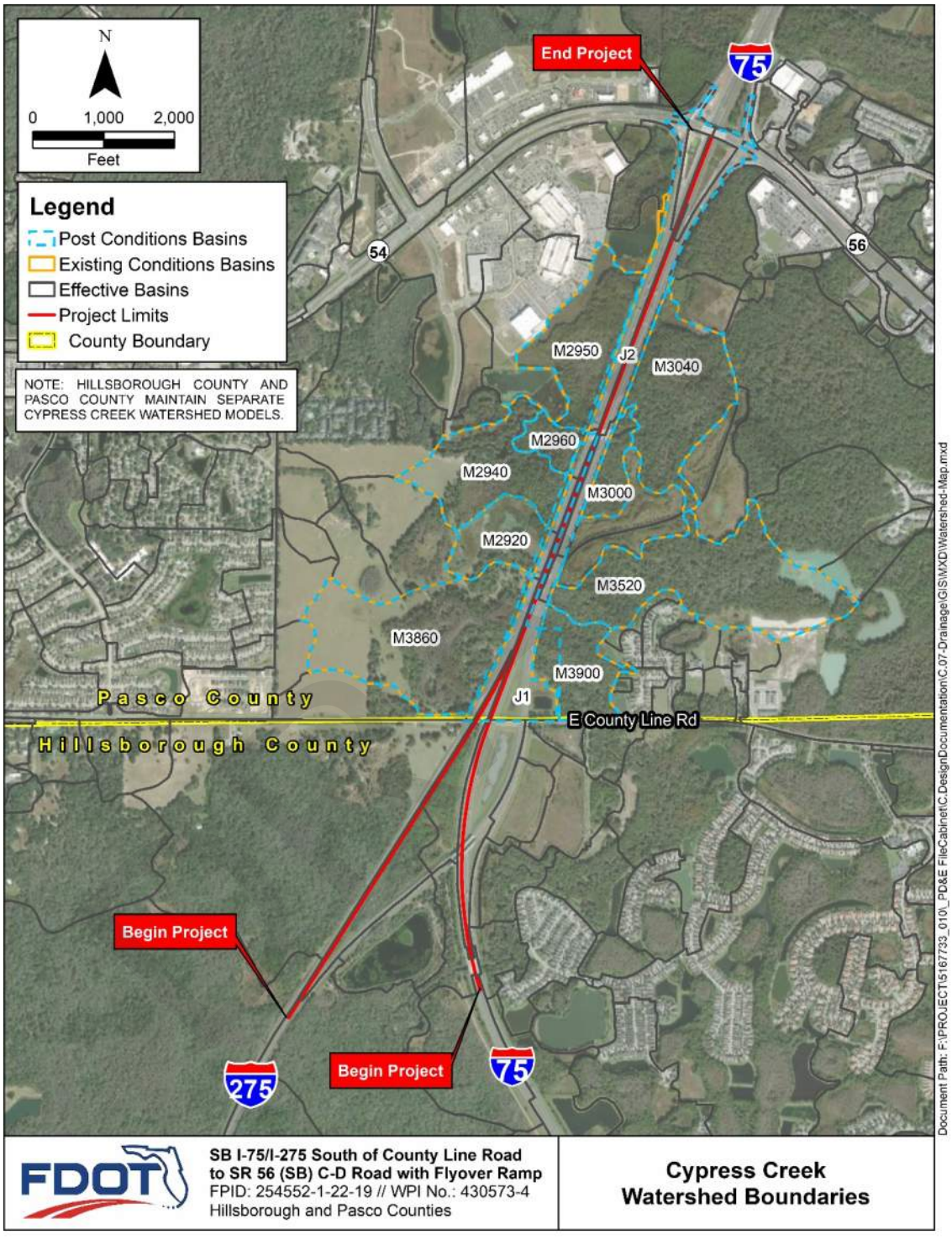


Figure B-7 Cypress Creek Watershed Subbasins

APPENDIX C

Calculations

Table C-1 Summary of Basins

PROJECT: SB I-75/275 from South of County Line Road to SR 56 (SB C-D Road with Flyover Ramp)
DATE: 10/20/2020
CREATED BY: EKN
CHECKED BY: WA

Previously Permitted Basins								REQUIRED TREATMENT	REQUIRED ATTENUATION
BASIN	Permitted Basin Area	Permitted Impervious Area	Permitted Curve Number	Added Impervious Area	Proposed Basin Area	Proposed Curve Number	DESCRIPTION	VOLUME	VOLUME
	acre	*acre*	-	*acre*	*acre*	-		*acre-feet*	*acre-feet*
J1	33.83	28.38	96.4	1.08	34.91	97.3	Discharge to modified SMF J1-1 & J1-2	0.09	1.02
J2	80.79	70.20	97.1	6.45	87.24	97.2	Discharge to modified SMF J2	0.54	4.33
800A	54.77	11.42	89.0	3.97	54.77	89.5	Discharge to proposed pond 800A-1	0.33	0.27
							Total:	0.96	5.62

Table C-2 Estimated Construction Costs

Site Name	Site Area	Conveyance Easement	Clearing & Grubbing Cost	Excavation	Excavation Cost	Embankment	Embankment Cost	Online of Offline	Conveyance (ft)	Total Construction Cost
Units	*Acre*	*Acre*	*Acre*	*Cubic Yard*	*Cubic Yard*	*Cubic Yard*	*Cubic Yard*	-	*Feet*	*U.S. Dollars*
Unit Costs	-	-	*$ 30,333.53*	-	*$ 9.75*	-	*$ 6.29*	-	-	-
SMF 800A-1	1.4	0	$ 42,466.94	7895	$ 76,976.25	0	$ -	Online	0	$ 119,443.19
SMF J1-1	1.82	0	$ 55,207.02	94	$ 920.19	0	$ -	Online	0	$ 56,127.21
SMF J1-2	3.65	0	$ 110,717.38	3081	$ 30,036.94	0	$ -	Online	0	$ 140,754.32
SMF J2	10.59	0	$ 321,232.08	54282	$ 529,249.50	0	$ -	Online	0	$ 850,481.58
FPC-1	1.41	0	$ 42,770.28	2801	$ 27,309.75	0	$ -	N/A	0	$ 70,080.03
FPC-2	0.76	0	$ 23,053.48	1784	$ 17,394.00	0	$ -	N/A	0	$ 40,447.48
FPC-3A	5.98	1.74	$ 234,174.85	26038	$ 253,870.50	0	$ -	N/A	0	$ 488,045.35
FPC-3B	9.43	0	$ 286,045.19	26527	$ 258,638.25	0	$ -	N/A	0	$ 544,683.44

Table C-3 SMF J1-1 and J1-2 Conservation Method

WET POND CONSERVATION METHOD (ALTERNATIVE 3) BASE DESIGN DATA

Basin Data

On Site Drainage Area Serviced (Aon)		Runoff Coeff, C
Impervious Area	29.460 acres	0.95
Pervious Area	2.570 acres	0.3
Pond Area at CWL	2.880 acres	1
Other	0.000 acres	0.7
Total On Site Area (Aon)	**34.910 acres**	**0.906**

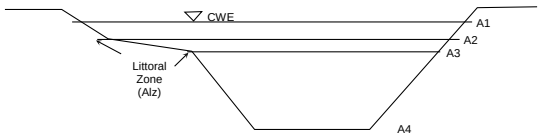
Off Site Drainage Area Serviced (Aoff)		Runoff Coeff, C
Impervious Area	0.000 acres	0.98
Pond Area at CWL	0.000 acres	0.98
Pervious Area	0.000 acres	0.2
Total Offsite Area (Aoff)	**0.000 acres**	**0.000**

Upstream Drainage Basin Area (Aup) **For Cascading Systems**	0.00 acres
Historic Average Wet Season Rainfall Rate (P)	31.04 inches/122 days
Composite Runoff Coefficient for Entire Drainage Area Serviced (Cd)	**0.906**

Pond Data

		Area (s.f.)	Area (ac)
Pond area at Control Weir Elevation (CWE), (A1)	El= 46.5 feet	125459 sf	2.880 ac
Pond Water Area at Higher Elev. of Littoral Zone (A2)	El= 45.5 feet	118380 sf	2.718 ac
Pond Water Area at Lower Elev. of Littoral Zone * (A3)	El= 44.5 feet	68628 sf	1.575 ac
Pond Bottom Deep Pool Area (A4)	El= 38.5 feet	38593 sf	0.886 ac
Littoral Zone Planting Area (Alz)	El= 44.5 feet	41083 sf	0.943 ac
Depth to Pond Bottom From Control Elevation (Dt) **This value cannot exceed 8 feet**	8.0 feet		
Maximum Littoral Zone Depth (Dlz) **This value cannot exceed 2 feet**	2.0 feet		

* Area excludes area occupied by the littoral plantings



MODIFY YELLOW HIGHLIGHTED CELLS ONLY!!!

REQUIRED PERMANENT POOL VOLUME, LAKE AREA AND LITTORAL ZONE

Treatment Volume as 1 inch of Runoff for On Site Drainage Area
Von= Aon * (1 in) * (1 ft/12 in) — Von = 2.909 ac-ft or 126,724 cf

Treatment Volume as 1 inch of Rainfall for Off Site Drainage Area
Voff = Aoff * (1 in) * (1 ft/12 in) * Cdoff — Voff = 0.000 ac-ft or 0 cf

Upstream Basin Volume as 1/2 inch of Runoff
Vup = Aup * (1/2 in) * (1ft/12 in) — Vup = 0.000 ac-ft or 0 cf

14-Day Residence Volume
Vr = (Aon + Aoff) * Cd * (P/122 days) * 14 d * (1ft/12in) — Vr = 9.391 ac-ft or 409,079 cf

Treatment Volume as 0.6667 inches of Runoff from Entire Drainage Area
Vmin = (Aon + Aoff) * (0.667 in) * (1ft/12in) — Vmin = 1.940 ac-ft or 84,525 cf

Required Design Pool Volume
Vreq = Von + Voff + Vup + (the greater of Vr and Vmin) — **Vreq = 12.300 ac-ft or 535,803 cf**

Minimum Lake Area Based on 1/2 inch Treatment Volume with 10 Inch Head
Aminvt = ((Aon +Aoff) * (1/2 in) * (1 ft/12 in)) / (10 in * (1ft/12in)) — Aminvt = 1.746 acres or 76,034 sf

Minimum Lake Area Based Required Permanent Pool Volume
Aminreq = Vreq / (0.35x2+0.65x8) (Assumes 35% at 2 feet and 65% at 8 feet) — Aminreq = 2.085 acres or 90,814 sf

Required Lake Area
Areq = (the greater of Aminvt and Aminreq) — **Areq = 2.085 acres or 90,814 sf**

Minimum Littoral Zone Required
Alzmin = (the greater of Aminvt and Aminreq) x 0.35 — **Alzmin = 0.730 acres or 31,785 sf**

PROVIDED PERMANENT POOL VOLUME

Deep Pool Volume Below the Base of Littoral Zone)
Vdp = (Volume between A3, A4) — Vdp = 7.384 ac-ft or 321,663 cf

Volume above the Base of Littoral Zone
Vlz =(Vol between A1, A2) + (Vol between A2, A3) — Vlz = 4.945 ac-ft or 215,424 cf

Provided Design Pool Volume
Vpvd = Vdp + Vlz — **Vpvd = 12.330 ac-ft or 537,086 cf**

Maximum Head for Design Pond
Hmax = ((Aon +Aoff) * (1/2 in) * (1 ft/12 in)) / Acwe — **Hmax = 0.505 ft or 6.06 in**

CONCLUSIONS

		Provided	Required
Is the Maximum Head < 10 Inches?	**MEETS DESIGN CRITERIA**	**6.06 inches**	**< 10 inches**
Is the Provided CWE Area > or = Than the Minimum Required CWE Area?	**MEETS DESIGN CRITERIA**	**2.880 acres**	**2.085 acres**
Is the Provided Design Pool Volume > or = the Required Design Pool Volume?	**MEETS DESIGN CRITERIA**	**12.330 ac-ft**	**12.300 ac-ft**

Table C-4 SMF J2 Conservation Method

WET POND CONSERVATION METHOD (ALTERNATIVE 3) BASE DESIGN DATA

Basin Data

On Site Drainage Area Serviced (Aon)		Runoff Coeff, C
Impervious Area	76.650 acres	0.95
Pervious Area	3.070 acres	0.3
Pond Area at CWL	7.520 acres	1
Other	0.000 acres	0.7
Total On Site Area (Aon)	**87.240 acres**	**0.931**

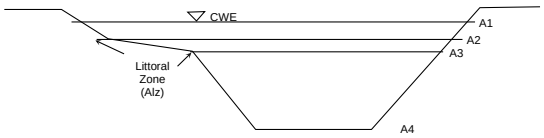
Off Site Drainage Area Serviced (Aoff)		Runoff Coeff, C
Impervious Area	0.000 acres	0.98
Pond Area at CWL	0.000 acres	0.98
Pervious Area	0.000 acres	0.2
Total Offsite Area (Aoff)	**0.000 acres**	**0.000**

Upstream Drainage Basin Area (Aup) **For Cascading Systems**	0.00 acres
Historic Average Wet Season Rainfall Rate (P)	31.04 inches/122 days
Composite Runoff Coefficient for Entire Drainage Area Serviced (Cd)	**0.931**

Pond Data

		Area (s.f.)	Area (ac)
Pond area at Control Weir Elevation (CWE), (A1)	El= 39.5 feet	327571 sf	7.520 ac
Pond Water Area at Higher Elev. of Littoral Zone (A2)	El= 38.5 feet	293169 sf	6.730 ac
Pond Water Area at Lower Elev. of Littoral Zone * (A3)	El= 37.5 feet	276447 sf	1.853 ac
Pond Bottom Deep Pool Area (A4)	El= 31.5 feet	212091 sf	1.235 ac
Littoral Zone Planting Area (Alz)	El= 37.5 feet	16722 sf	0.384 ac
Depth to Pond Bottom From Control Elevation (Dt) **This value cannot exceed 8 feet**	8.0 feet		
Maximum Littoral Zone Depth (Dlz) **This value cannot exceed 2 feet**	2.0 feet		

* Area excludes area occupied by the littoral plantings



MODIFY YELLOW HIGHLIGHTED CELLS ONLY!!!

REQUIRED PERMANENT POOL VOLUME, LAKE AREA AND LITTORAL ZONE

Treatment Volume as 1 inch of Runoff for On Site Drainage Area
Von= Aon * (1 in) * (1 ft/12 in)
Von = 7.270 ac-ft or 316,681 cf

Treatment Volume as 1 inch of Rainfall for Off Site Drainage Area
Voff = Aoff * (1 in) * (1 ft/12 in) * Cdoff
Voff = 0.000 ac-ft or 0 cf

Upstream Basin Volume as 1/2 inch of Runoff
Vup = Aup * (1/2 in) * (1ft/12 in)
Vup = 0.000 ac-ft or 0 cf

14-Day Residence Volume
Vr = (Aon + Aoff) * Cd * (P/122 days) * 14 d * (1ft/12in)
Vr = 24.120 ac-ft or 1,050,668 cf

Treatment Volume as 0.6667 inches of Runoff from Entire Drainage Area
Vmin = (Aon + Aoff) * (0.667 in) * (1ft/12in)
Vmin = 4.849 ac-ft or 211,226 cf

Required Design Pool Volume
Vreq = Von + Voff + Vup + (the greater of Vr and Vmin)
Vreq = 31.390 ac-ft or 1,367,349 cf

Minimum Lake Area Based on 1/2 inch Treatment Volume with 10 Inch Head
Aminvt = ((Aon +Aoff) * (1/2 in) * (1 ft/12 in)) / (10 in * (1ft/12in))
Aminvt = 4.362 acres or 190,009 sf

Minimum Lake Area Based Required Permanent Pool Volume
Aminreq = Vreq / (0.35x2+0.65x8) (Assumes 35% at 2 feet and 65% at 8 feet)
Aminreq = 5.320 acres or 231,754 sf

Required Lake Area
Areq = (the greater of Aminvt and Aminreq)
Areq = 5.320 acres or 231,754 sf

Minimum Littoral Zone Required
Alzmin = (the greater of Aminvt and Aminreq) x 0.35
Alzmin = 1.862 acres or 81,114 sf

PROVIDED PERMANENT POOL VOLUME

Deep Pool Volume Below the Base of Littoral Zone)
Vdp = (Volume between A3, A4)
Vdp = 33.646 ac-ft or 1,465,614 cf

Volume above the Base of Littoral Zone
Vlz =(Vol between A1, A2) + (Vol between A2, A3)
Vlz = 13.663 ac-ft or 595,178 cf

Provided Design Pool Volume
Vpvd = Vdp + Vlz
Vpvd = 47.309 ac-ft or 2,060,792 cf

Maximum Head for Design Pond
Hmax = ((Aon +Aoff) * (1/2 in) * (1 ft/12 in)) / Acwe
Hmax = 0.483 ft or 5.80 in

CONCLUSIONS

		Provided	Required
Is the Maximum Head < 10 Inches?	**MEETS DESIGN CRITERIA**	**5.80 inches**	**< 10 inches**
Is the Provided CWE Area > or = Than the Minimum Required CWE Area?	**MEETS DESIGN CRITERIA**	**7.520 acres**	**5.320 acres**
Is the Provided Design Pool Volume > or = the Required Design Pool Volume?	**MEETS DESIGN CRITERIA**	**47.309 ac-ft**	**31.390 ac-ft**

Table C-5 Proposed SMF 800A-1

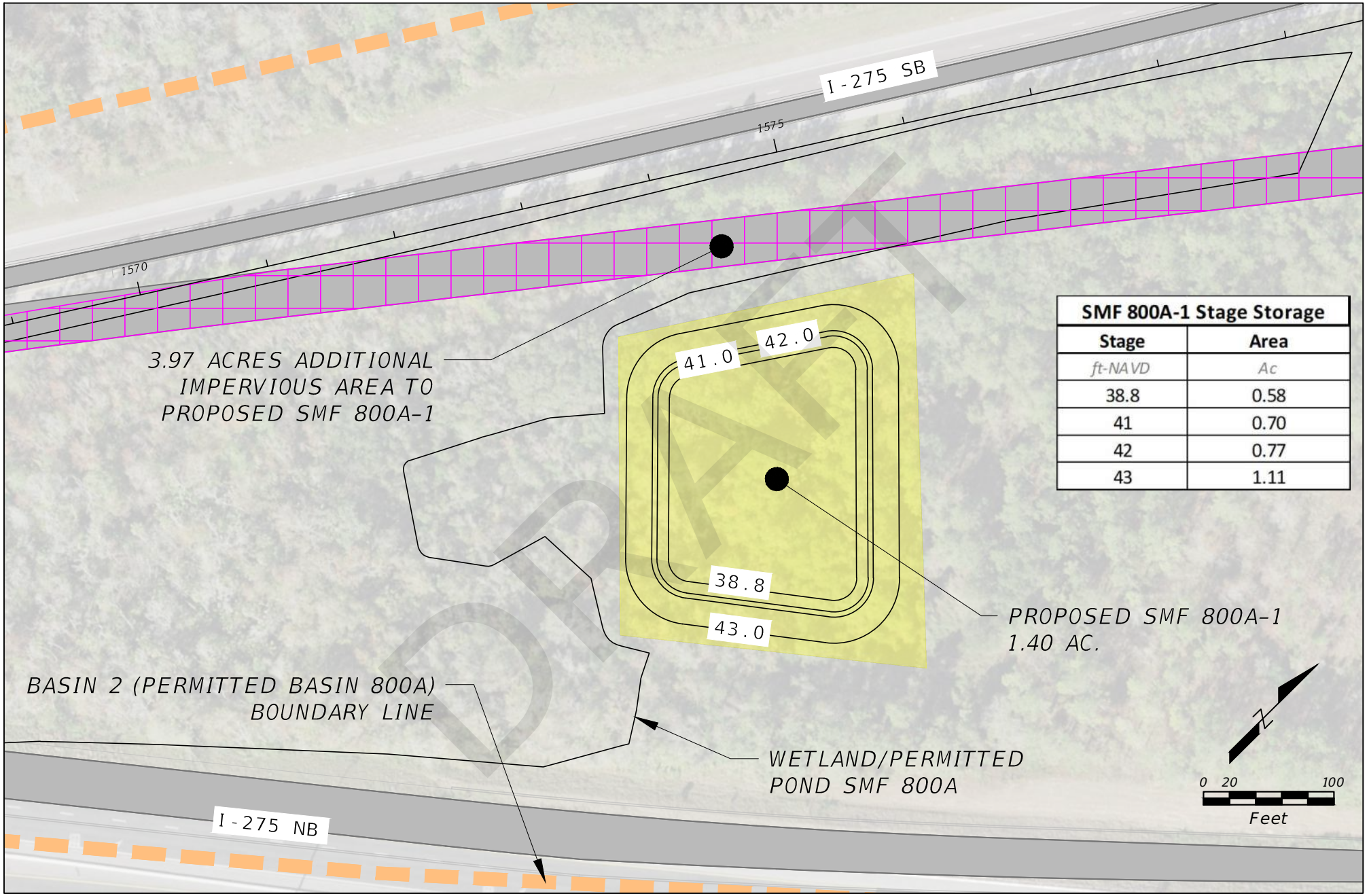
SMF No. 800A-1
Type Wet Detention Pond
Soils 21 - Immokalee Fine Sand
Floodzone N/A
SHWT 38.8 *ft-NAVD*

SHWT based on permitted plans for SMF 800A

Stage Storage Calculations

Stage	Decription	Area	Area	Volume
ft-NAVD		*sf*	*ac*	*ac-ft*
38.8	SHWT	25,059	0.58	
41	25 yr DHW	30,693	0.70	0.64
42	Inside Berm	33,415	0.77	1.38
43	Outside Berm	48,531	1.11	2.32

Required WQ Vol.	**0.33**	*ac-ft*
Provided WQ Vol.	**0.33**	*ac-ft*
Required Att. Vol.	**0.27**	*ac-ft*
Provided Att. Vol.	**0.31**	*ac-ft*
Total Vol. Required	**0.60**	*ac-ft*
Total Vol. Provided	**0.91**	*ac-ft*



SMF 800A-1 Stage Storage	
Stage	Area
ft-NAVD	*Ac*
38.8	0.58
41	0.70
42	0.77
43	1.11

SMF 800A-1 POND DETAIL SHEET

Table C-6.1 Floodplain Impacts and Compensation

M3860					
Flood Zone: AE					
BFE: 49.1					
SHWT: 46					
Compensation Site: FPC-1					
Floodplain Impacts			**Floodplain Compensation**		
Elev. (ft-NAVD)	Area (Ac)	Vol. (Ac-ft)	Elev. (ft-NAVD)	Area (Ac)	Vol. (Ac-ft)
46.74	0.09	0.00	46.74	0.00	0.00
47.00	0.18	0.04	47	0.68	0.09
47.74	0.41	0.22	47.74	0.68	0.50
48.74	0.56	0.48	48.74	0.68	0.68
49.74	0.78	0.67	49.74	0.55	0.62

Table C-6.2 Floodplain Impacts and Compensation

M2920					
Flood Zone: AE					
BFE: 49.1					
SHWT: 48					
Compensation Site: FPC-2					
Floodplain Impacts			**Floodplain Compensation**		
Elev. (ft-NAVD)	Area (Ac)	Vol. (Ac-ft)	Elev. (ft-NAVD)	Area (Ac)	Vol. (Ac-ft)
48.00	0.32	0.00	48.00	0.41	0.00
49.00	0.44	0.38	49.00	0.43	0.42

Table C-6.3 Floodplain Impacts and Compensation

M2940					
Flood Zone: AE BFE: 50-52 SHWT: 46 Compensation Site: FPC-3A					
Floodplain Impacts			**Floodplain Compensation**		
Elev. (ft-NAVD)	Area (Ac)	Vol. (Ac-ft)	Elev. (ft-NAVD)	Area (Ac)	Vol. (Ac-ft)
46.00	0.01	0.00	46.00	0.00	0.00
47.00	0.18	0.09	47.00	0.00	0.00
48.00	0.47	0.32	48.00	3.84	0.00
48.69	0.74	0.42	48.69	3.89	2.67
49.00	0.85	0.25	49.00	3.87	1.20
50.00	1.12	0.99	50.00	3.51	3.69
51.00	1.22	1.17	51.00	3.00	3.25
52.00	1.22	1.22	52.00	1.92	2.46

Table C-6.4 Floodplain Impacts and Compensation

M2940					
Flood Zone: AE					
BFE: 50-52					
SHWT: 46					
Compensation Site: FPC-3B					
Floodplain Impacts			**Floodplain Compensation**		
Elev. (ft-NAVD)	Area (Ac)	Vol. (Ac-ft)	Elev. (ft-NAVD)	Area (Ac)	Vol. (Ac-ft)
46.00	0.01	0.00	46.00	0.00	0.00
47.00	0.18	0.09	47.00	4.96	2.48
48.00	0.47	0.32	48.00	4.22	4.59
48.69	0.74	0.42	48.69	3.10	2.53
49.00	0.85	0.25	49.00	2.61	0.88
50.00	1.12	0.99	50.00	1.46	2.03
51.00	1.22	1.17	51.00	0.59	1.02
52.00	1.22	1.22	52.00	0.13	0.36

Table C-6.5 Floodplain Impacts and Compensation

M2960					
Flood Zone: AE BFE: 50-51 SHWT: 47 Compensation Site: FPC-3A or FPC-3B					
Floodplain Impacts			**Floodplain Compensation**		
Elev. (ft-NAVD)	Area (Ac)	Vol. (Ac-ft)	Elev. (ft-NAVD)	Area (Ac)	Vol. (Ac-ft)
47.00	0.21	0.00	47.00	*	*
48.00	0.33	0.27	48.00		
49.00	0.42	0.38	48.69		
50.00	0.48	0.45	49.00		
51.00	0.55	0.51	50.00		
*Note: Alternatives FPC-3A and FPC-3B are located upstream of this basin and sized to compensate for the above impacts.					

Table C-6.6 Floodplain Impacts and Compensation

M2950					
Flood Zone: AE BFE: 49.7 SHWT: 46 Compensation Site: FPC-3A or FPC-3B					
Floodplain Impacts			**Floodplain Compensation**		
Elev. (ft-NAVD)	Area (Ac)	Vol. (Ac-ft)	Elev. (ft-NAVD)	Area (Ac)	Vol. (Ac-ft)
46.00	1.35	0.00	46.00	*	*
47.00	1.86	1.60	47.00		
48.00	2.02	1.94	48.00		
49.00	2.06	2.04	49.00		
50.00	2.09	2.07	50.00		
*Note: Alternatives FPC-3A and FPC-3B are located upstream of this basin and sized to compensate for the above impacts.					

Table C-7.1 ICPR Stage-Storage Data

M3860			
Effective Model		**Existing Conditions Model**	**Post Conditions Model**
Stage (ft)	*Area (Ac)*	*Area (Ac)*	*Area (Ac)*
44.98	0.10	0.10	0.10
45.24	1.00	1.00	1.00
45.74	10.71	10.70	10.70
46.74	28.67	28.65	28.56
47.00	30.32	31.03	31.52
47.74	35.02	34.97	35.25
48.74	42.58	42.42	42.54
49.74	52.38	51.78	51.56
50.74	63.62	62.36	61.34
51.74	71.34	69.13	67.32
52.74	76.81	73.84	71.71
53.74	80.96	77.06	74.92
54.74	83.55	78.45	76.31
55.74	85.11	79.25	77.11
56.74	86.52	80.64	78.50
57.74	88.09	82.21	80.07
58.74	89.56	83.68	81.54
59.74	91.01	85.12	82.98
60.74	92.18	86.29	84.15
61.74	93.35	87.46	85.31
62.74	94.50	88.60	86.46
63.74	95.65	89.75	87.61
64.74	96.69	90.79	88.65
65.74	97.93	92.02	89.88
66.74	99.56	93.65	91.51
67.74	100.89	94.98	92.84
68.74	101.95	96.04	93.90
69.74	102.59	96.68	94.53
70.74	103.15	97.23	95.09
71.74	103.54	97.62	95.48
72.74	103.73	97.81	95.67
73.74	103.89	97.97	95.83
74.62	104.00	98.07	95.93

Table C-7.2 ICPR Stage-Storage Data

M2920					
Effective Model		**Existing Conditions Model**		**Post Conditions Model**	
Stage (ft)	*Area (Ac)*	*Stage (ft)*	*Area (Ac)*	*Stage (ft)*	*Area (Ac)*
46.83	0.01	46.83	12.64	46.83	12.64
47.00	0.01	47.00	13.41	47.00	13.41
47.25	16.75	47.25	16.74	47.25	16.74
48.00	17.58	48.00	17.58	48.00	17.67
49.00	18.98	49.00	18.96	49.00	18.95
50.00	20.45	50.00	20.35	50.00	20.03
51.00	22.37	51.00	22.00	51.00	21.11
52.00	23.40	52.00	22.73	52.00	21.65
53.00	23.97	53.00	23.19	53.00	22.12
54.00	24.50	54.00	23.62	54.00	22.54
55.00	25.19	55.00	24.14	55.00	23.07
56.00	26.03	56.00	24.51	56.00	23.44
57.00	26.38	57.00	24.67	57.00	23.60
58.00	26.76	58.00	25.05	58.00	23.97
59.00	27.08	59.00	25.37	59.00	24.30
60.00	27.41	60.00	25.70	60.00	24.62
60.57	27.43	60.57	25.72	60.57	24.64
		61.00	25.72	61.00	24.65
		61.33	25.72	61.33	24.65

Table C-7.3 ICPR Stage-Storage Data

M2940 (3A)			
Effective Model		**Existing Conditions Model**	**Post Conditions Model***
Stage (ft)	*Area (Ac)*	*Area (Ac)*	*Area (Ac)*
43.38	0.08	0.30	0.30
44.00	0.09	0.98	0.98
45.00	0.10	2.09	2.09
46.00	0.30	3.22	3.21
47.00	1.54	5.37	5.19
48.00	4.90	9.87	13.24
48.69	12.83	16.46	19.61
49.00	15.10	20.01	23.03
50.00	21.21	27.94	30.33
51.00	24.31	34.34	36.12
52.00	25.89	39.15	39.85
53.00	26.85	41.86	41.61
54.00	27.56	43.43	42.69
55.00	28.08	45.33	44.18
56.00	28.94	46.75	45.52
57.00	29.85	47.61	46.39
58.00	30.14	48.48	47.26
59.00	30.36	48.90	47.68
60.00	30.57	49.16	47.94
61.00	30.82	49.39	48.17
62.00	31.01	49.58	48.36
63.00	31.20	49.74	48.52
64.00	31.35	49.89	48.66
65.00	31.44	49.99	48.77
65.56	31.50	50.00	48.78

*Post Conditions with FPC-3A incorporated

Table C-7.4 ICPR Stage-Storage Data

M2940 (3B)			
Effective Model		**Existing Conditions Model**	**Post Conditions Model***
Stage (ft)	*Area (Ac)*	*Area (Ac)*	*Area (Ac)*
43.38	0.08	0.30	0.30
44.00	0.09	0.98	0.98
45.00	0.10	2.09	2.09
46.00	0.30	3.22	3.21
47.00	1.54	5.37	10.15
48.00	4.90	9.87	13.62
48.69	12.83	16.46	18.82
49.00	15.10	20.01	21.76
50.00	21.21	27.94	28.28
51.00	24.31	34.34	33.70
52.00	25.89	39.15	38.06
53.00	26.85	41.86	40.64
54.00	27.56	43.43	42.20
55.00	28.08	45.33	44.11
56.00	28.94	46.75	45.52
57.00	29.85	47.61	46.39
58.00	30.14	48.48	47.26
59.00	30.36	48.90	47.68
60.00	30.57	49.16	47.94
61.00	30.82	49.39	48.17
62.00	31.01	49.58	48.36
63.00	31.20	49.74	48.52
64.00	31.35	49.89	48.66
65.00	31.44	49.99	48.77
65.56	31.50	50.00	48.78
*Post Conditions with FPC-3B incorporated			

Table C-7.5 ICPR Stage-Storage Data

M2960				
Effective Model		**Existing Conditions Model**		**Post Conditions Model**
Stage (ft)	*Area (Ac)*	*Stage (ft)*	*Area (Ac)*	*Area (Ac)*
43.35	0.03	43.35	0.29	0.29
44.00	0.05	44.00	0.73	0.73
45.00	0.13	45.00	1.20	1.20
46.00	0.36	46.00	2.48	2.48
47.00	0.87	47.00	3.94	3.73
48.00	1.34	48.00	5.14	4.81
49.00	1.65	49.00	6.53	6.11
50.00	2.42	50.00	9.13	8.65
51.00	2.78	51.00	10.76	10.21
52.00	2.90	52.00	10.94	10.39
53.00	2.94	53.00	10.95	10.40
54.00	2.98	54.00	10.95	10.40
55.00	3.02			
56.00	3.12			
57.00	3.36			
58.00	3.40			
59.00	3.74			
59.73	3.74			

Table C-7.6 ICPR Stage-Storage Data

M2950				
Effective Model		**Existing Conditions Model**		**Post Conditions Model**
Stage (ft)	*Area (Ac)*	*Stage (ft)*	*Area (Ac)*	*Area (Ac)*
43.25	0.00	43.25	0.00	0.00
44.00	0.17	44.00	0.02	0.02
45.00	18.65	45.00	21.46	21.46
46.00	39.45	46.00	39.21	37.86
47.00	43.14	47.00	42.41	40.55
48.00	44.87	48.00	43.88	41.87
49.00	45.83	49.00	44.60	42.54
50.00	46.74	50.00	45.34	43.25
51.00	47.41	51.00	45.94	43.82
52.00	48.84	52.00	46.34	44.21
53.00	50.26	53.00	46.61	44.45
54.00	52.92	54.00	47.32	45.07
55.00	54.85	55.00	48.07	45.58
56.00	56.61	56.00	48.38	45.89
57.00	59.72	57.00	48.64	46.15
58.00	60.54	58.00	48.83	46.34
59.00	61.03	59.00	48.87	46.38
60.00	61.16	60.00	48.87	48.87
61.00	61.25			
62.00	61.34			
63.00	61.41			
64.00	61.46			
65.00	61.52			
66.00	61.58			
67.00	61.64			
68.00	61.72			
69.00	61.79			
70.00	61.87			
71.00	61.96			
72.00	62.08			
73.00	62.24			
74.00	62.44			
75.00	62.69			
76.00	62.92			
77.00	63.14			
78.00	63.31			
79.00	63.46			
80.00	63.60			
81.00	63.71			
82.00	63.83			
83.00	64.03			
84.00	64.26			
85.00	64.50			
86.00	64.72			
87.00	64.93			
88.00	65.07			
89.00	65.15			
90.00	65.22			
91.00	65.30			
92.00	65.35			
92.36	65.36			

Table C-7.7 ICPR Stage-Storage Data

M3000			
Effective Model		**Existing and Post Conditions Model**	
Stage (ft)	*Area (Ac)*	*Stage (ft)*	*Area (Ac)*
39.16	0.01	39.16	0.00
43.00	0.01	43.00	0.03
44.00	0.02	44.00	2.52
45.00	0.06	45.00	4.70
46.00	1.92	46.00	7.06
47.00	7.94	47.00	10.23
48.00	10.03	48.00	12.46
49.00	10.82	49.00	13.17
50.00	11.27	50.00	13.26
51.00	11.76	51.00	13.31
52.00	12.33	52.00	13.36
53.00	12.57	53.00	13.41
54.00	12.81	54.00	13.49
55.00	13.12	55.00	13.56
56.00	14.15	56.00	13.57
57.00	15.03	57.00	13.57
58.00	15.28	58.00	13.57
59.00	15.50		
59.17	15.50		

Table C-7.8 ICPR Stage-Storage Data

M3040			
Effective Model		**Existing and Post Conditions Model**	
Stage (ft)	*Area (Ac)*	*Stage (ft)*	*Area (Ac)*
38.72	0.01	38.72	0.00
41.15	0.01	41.15	0.00
42.00	0.01	42.00	0.06
43.00	0.23	43.00	3.52
44.00	3.30	44.00	23.25
45.00	8.44	45.00	37.43
46.00	12.85	46.00	49.14
47.00	15.22	47.00	57.34
48.00	16.44	48.00	60.92
49.00	17.24	49.00	61.60
50.00	17.99	50.00	61.69
51.00	18.53	51.00	61.73
52.00	19.69	52.00	61.78
53.00	21.00	53.00	61.83
54.00	22.11	54.00	61.89
55.00	23.56	55.00	61.99
56.00	26.05	56.00	62.04
57.00	29.54	57.00	62.04
58.00	29.81		
59.00	30.15		
60.00	30.29		
61.00	30.38		
62.00	30.48		
63.00	30.56		
64.00	30.64		
65.00	30.72		
66.00	30.8		
67.00	30.9		
68.00	31.01		
69.00	31.13		
70.00	31.28		
71.00	31.48		
72.00	31.74		
73.00	32		
74.00	32.22		
75.00	32.41		
76.00	32.56		
77.00	32.71		
78.00	32.85		
79.00	33		
80.00	33.13		
81.00	33.26		
82.00	33.43		
83.00	33.69		
84.00	33.92		
85.00	34.2		
86.00	34.5		
87.00	34.74		
88.00	34.91		
89.00	35.03		
90.00	35.16		
90.93	35.24		

Table C-7.9 ICPR Stage-Storage Data

M3520			
Effective Model		**Existing and Post Conditions Model**	
Stage (ft)	*Area (Ac)*	*Stage (ft)*	*Area (Ac)*
37.00	0.00	37.00	0.01
38.00	0.00	38.00	0.60
39.00	0.00	39.00	1.76
39.59	0.00	39.59	2.83
40.00	0.01	40.00	4.28
41.00	0.15	41.00	15.33
42.00	2.00	42.00	33.34
43.00	5.62	43.00	51.30
44.00	8.79	44.00	65.28
45.00	11.53	45.00	74.02
46.00	15.14	46.00	81.36
47.00	18.43	47.00	86.86
48.00	21.16	48.00	92.21
49.00	22.03	49.00	93.65
50.00	22.73	50.00	94.29
51.00	23.29	51.00	94.76
52.00	23.52	52.00	94.86
53.00	23.59	53.00	94.87
54.00	23.67		
55.00	23.83		
56.00	24.36		
56.55	24.45		

Table C-7.10 ICPR Stage-Storage Data

M3900			
Effective Model		**Existing and Post Conditions Model**	
Stage (ft)	*Area (Ac)*	*Stage (ft)*	*Area (Ac)*
36.76	0.00	36.76	0.04
37.00	0.02	37.00	0.11
38.00	0.06	38.00	0.71
39.00	0.07	39.00	1.49
40.00	0.08	40.00	2.16
41.00	0.08	41.00	3.15
42.00	0.09	42.00	6.05
43.00	0.09	43.00	10.94
44.00	0.11	44.00	15.25
45.00	0.21	45.00	19.15
46.00	1.88	46.00	23.55
47.00	3.50	47.00	27.34
48.00	5.35	48.00	29.26
49.00	6.96	49.00	30.73
50.00	8.14	50.00	31.34
51.00	8.92	51.00	31.64
52.00	9.60	52.00	31.75
53.00	10.79	53.00	31.83
54.00	13.28	54.00	31.98
55.00	16.51	55.00	32.13
56.00	19.91	56.00	32.26
57.00	22.18	57.00	32.30
58.00	22.48	58.00	32.33
59.00	22.74	59.00	32.36
60.00	22.83	60.00	32.38
61.00	22.88	61.00	32.40
62.00	22.93	62.00	32.42
63.00	22.98	63.00	32.43
64.00	23.03	64.00	32.43
65.00	23.08		
66.00	23.12		
67.00	23.17		
68.00	23.21		
69.00	23.25		
70.00	23.29		
71.00	23.32		
72.00	23.35		
73.00	23.39		
74.00	23.42		
75.00	23.45		
76.00	23.48		
77.00	23.51		
78.00	23.52		
79.00	23.54		
80.00	23.55		
81.00	23.58		
82.00	23.62		
82.53	23.63		

Node Max Conditions [Effective]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NM2920	100YR1D	0.00000	50.25419	0.0000	124.54	60.06	912061
NM2940	100YR1D	0.00000	50.25452	0.0002	1887.23	1885.74	1588555
NM2950	100YR1D	0.00000	48.49949	0.0002	435.67	277.84	1976624
NM2960	100YR1D	0.00000	48.65693	0.0001	1848.20	1847.48	323895
NM3000	100YR1D	0.00000	48.14128	0.0001	1566.56	1563.27	1127328
NM3040	100YR1D	0.00000	47.97565	0.0001	1700.57	1688.88	2459479
NM3520	100YR1D	0.00000	47.86892	0.0002	1764.49	1762.90	4338761
NM3900	100YR1D	0.00000	47.36911	0.0002	1795.09	1794.81	1795760

Node Max Conditions [Existing Conditions]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NM2920	100YR1D	0.00000	50.23794	0.0000	116.39	54.62	903548
NM2940	100YR1D	0.00000	50.23826	0.0002	1886.68	1884.96	1912140
NM2950	100YR1D	0.00000	48.44983	0.0007	389.83	275.92	1926721
NM2960	100YR1D	0.00000	48.62255	0.0001	1849.16	1848.05	517620
NM3000	100YR1D	0.00000	48.10180	0.0001	1569.81	1566.19	1230793
NM3040	100YR1D	0.00000	47.92926	0.0001	1723.16	1703.08	4384724
NM3520	100YR1D	0.00000	47.81916	0.0002	1750.12	1745.91	7365301
NM3900	100YR1D	0.00000	47.31108	0.0003	1774.84	1774.26	2826935

Node Max Conditions [Proposed-FPC 3A]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NM2920	100YR1D	0.00000	50.29707	0.0005	111.34	51.24	886483
NM2940	100YR1D	0.00000	50.29740	0.0005	1922.76	1920.78	2033275
NM2950	100YR1D	0.00000	48.53904	0.3206	380.95	283.65	1840789
NM2960	100YR1D	0.00000	48.68698	0.0006	1878.82	1877.65	505685
NM3000	100YR1D	0.00000	48.16867	0.0005	1592.32	1588.55	1233997
NM3040	100YR1D	0.00000	48.00719	0.0007	1728.61	1707.63	4400279
NM3520	100YR1D	0.00000	47.90251	0.0005	1777.27	1774.34	7442387
NM3900	100YR1D	0.00000	47.40820	0.0007	1809.34	1808.65	2841226

Node Max Conditions [Proposed-FPC 3B]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NM2920	100YR1D	0.00000	50.23782	0.0000	111.34	51.23	883695
NM2940	100YR1D	0.00000	50.23814	0.0001	1886.52	1884.80	1916734
NM2950	100YR1D	0.00000	48.44971	0.0007	380.95	276.00	1838182
NM2960	100YR1D	0.00000	48.62246	0.0001	1849.03	1847.95	500799
NM3000	100YR1D	0.00000	48.10167	0.0001	1569.96	1566.31	1230787
NM3040	100YR1D	0.00000	47.92911	0.0001	1723.84	1703.69	4384692
NM3520	100YR1D	0.00000	47.81900	0.0002	1750.10	1745.84	7365063
NM3900	100YR1D	0.00000	47.31091	0.0003	1774.78	1774.20	2826907

Scenario Difference Summary

Existing Project:	F:\PROJECT\5167733_010_PD&E FileCabinet\C.DesignDocumentation\C.07-Drainage\ICPR\CypressCk-Existing-Mod\Project.i4p
Existing Scenario:	Existing Conditions
Proposed Project:	F:\PROJECT\5167733_010_PD&E FileCabinet\C.DesignDocumentation\C.07-Drainage\ICPR\CypressCk-Proposed\Project.i4p
Proposed Scenario:	Proposed-FPC 3A

Additions

Data Type (Additions)	Count
<N/A>	0

Deletions

Data Type (Deletions)	Count
<N/A>	0

Modifications

Data Type (Modifications)	Count
Simple Basin	3
Manual Basin	5
Node (Stage Area)	8
Link (Pipe)	1
Simulation	2

Simple Basin (Modifications)
J1-1
J1-2
J2

Manual Basin (Modifications)
M2920
M2940
M2950

Manual Basin (Modifications)
M2960
M3860

Node (Stage Area) (Modifications)
NM2920
NM2940
NM2950
NM2960
NM3860
SMFJ1-1
SMFJ1-2
SMFJ2

Link (Pipe) (Modifications)
RJ1

Simulation (Modifications)
100YR1D
Frances

Duplicates

Data Type (Duplicates)	Count
<N/A>	0

APPENDIX D

FDOT District 7 Right of Way Cost Estimates

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

HDR#: 10243439-10.21

FM#:	430573-4	Alternate:	FPC 1 & 2	District:	Seven
County:	Pasco	Segment:	N/A	Date:	28-Oct-20
State Rd.:	SR93/SR93A	FAP#:	N/A	C.E. Sequence	N/A
Project Des.	I-75/I-275 from S. of County Line to SR 56				

Parcels	Gross	Net
Commercial	0	0
Residential	0	0
Unimproved	0	0
Total Parcels	0	0

Estimated Relocatees:	
Business	0
Residential	0
Signs	0
Special	0
Total Relocatees	0

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	0	x	20,000 =	Rate)		0
2. Indirect Overhead	(Parcels	0	x	0 =	Rate)		0
3.						TOTAL PHASE 41	$0

R/W OPS (PHASE 4B)

								Amount
4. Appraisal Fees Through Trial					0	Parcels	x 20,000 =	0
5. Business Damage CPA Fees Through Trial					0	Claims	x 19,000 =	0
6. Court Reporter & Process Servers	50%	x	0	=	0	Parcels	x 500 =	0
7. Expert Witness	75%	x	0	=	0	Parcels	x 30,000 =	0
8. Mediators	75%	x	0	=	0	Parcels	x 2,400 =	0
9. Demolition, Asb. Abate., Survey, etc.					0	Imprvmet	x 15,000 =	0
10. Miscellaneous Contracts					0	Per Project	x 15,000 =	0
11. Appraisal Fee Review					0	Parcels	x 5,000 =	0
12.							TOTAL PHASE 4B	$0

R/W LAND COSTS (PHASE 43)

						Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	74,441	x	120%	* Design plan stage	=	89,300	
14. Water Retention & Mit. (0 Ponds)	0	x	120%	(0 Parcels w/o R/W Acq)	=	0	
15. SUBTOTAL (XXX)				(Lines 13 &14)			89,300
16. Admin. Settlements (Factor	20%	x	60%	of Line 15)	=	10,700	
17. Litigation Awards (Factor	45%	x	40%	of Line 15)	=	16,100	
18. Business Damages (Claims	0	x	0	)	=	0	
19. Bus. Damages Incr (Factor	25%	x	$ -	)	=	0	
20. Owner Appr. Fees (Parcels	0	x	$15,000	)	=	0	
21. Owner CPA Fees (Claims	0	x	$16,000	)	=	0	
22. Defend.Atty Fees (Sum of Lines 16, 17 & 19)	26,800	x	33%	)	=	8,800	
23. Owner Expert Witn (Comm.+Unimp.)	0	+	0	) x 18,000	=	0	
24. Other Condemn. Costs	0	x	$1,000		=	0	
25. SUBTOTAL				(Lines 16 thru 24)	=		35,600
26.						TOTAL PHASE 43	$124,900

* *Design contingency for design plan stage:*
(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans -105% (5) 268 Date -100%

R/W ACQUISITION CONSULTANT (PHASE 42)

27. Acquisition Consultant-50% of parcels	$20,000	x	0	TOTAL PHASE 42	$0

RELOCATION COSTS (PHASE 45)

	Replacement Housing		Number		Amount
28. Owner	$30,000	x	0	=	0
29. Tenant	$25,000	x	0	=	0
Move Costs					
30. Residential	$5,000	x	0	=	0
31. Business/Farm	$40,000	x	0	=	0
32. Personal Property	$3,000	x	0	=	0
33. (Lines 28 thru 32)					TOTAL PHASE 45 $0
34. Relocation Services Cost			$0	(Not in Phase Total)	
35.					
36.					
37.				(All Phases)	TOTAL ESTIMATE $124,900

Real Estate:	Roger D. Patton	Signed:		Date: 10/30/20
Bus. Dam. :	Alfred J. Thompson	Signed:	A. J. Thompson	Date: 10/30/20
Relocation:	Roger D. Patton	Signed:		Date: 10/30/20
Overall Review:	Alfred J. Thompson	Signed:	A. J. Thompson	Date: 10/30/20

Cost Estimate Sequence #: Dated: In the Amount of $ Data Input Completion Date:

REMARKS:

This estimate is for FPC 1 & 2.

While this is a single parcel estimate, the administrative settlement and litigation awards factors would still apply when considering this parcel would be part of the mainline acquisition.

The following indicates the estimator's confidence in the above estimate:

- ____ Type A - indicates the most confidence
- ____ Type B - indicates above average confidence
- X Type C - indicates below average confidence
- ____ Type D - indicates the least or no confidence

The following indicates the Department's purpose for this estimate:

Work Program Update: ____ Gaming 1: ____ Special Purpose: X Docs to RW: ____

Comments: ____

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

HDR#: 10243439-10.21

FM#:	430573-4	Alternate:	FPC 3A	District:	Seven
County:	Pasco	Segment:	N/A	Date:	28-Oct-20
State Rd.:	SR93/SR93A	FAP#:	N/A	C.E. Sequence	N/A
Project Des.	I-75/I-275 from S. of County Line to SR 56				

Parcels	Gross	Net
Commercial	0	0
Residential	0	0
Unimproved	0	0
Total Parcels	0	0

Estimated Relocatees:	
Business	0
Residential	0
Signs	0
Special	0
Total Relocatees	0

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	0	x	20,000	=	Rate)	0
2. Indirect Overhead	(Parcels	0	x	0	=	Rate)	0
3.							
						TOTAL PHASE 41	$0

R/W OPS (PHASE 4B)

								Amount
4. Appraisal Fees Through Trial					0	Parcels	x 20,000 =	0
5. Business Damage CPA Fees Through Trial					0	Claims	x 19,000 =	0
6. Court Reporter & Process Servers	50%	x	0	=	0	Parcels	x 500 =	0
7. Expert Witness	75%	x	0	=	0	Parcels	x 30,000 =	0
8. Mediators	75%	x	0	=	0	Parcels	x 2,400 =	0
9. Demolition, Asb. Abate., Survey, etc.					0	Imprvmet	x 15,000 =	0
10. Miscellaneous Contracts					0	Per Project	x 15,000 =	0
11. Appraisal Fee Review					0	Parcels	x 5,000 =	0
12.								
							TOTAL PHASE 4B	$0

R/W LAND COSTS (PHASE 43)

						Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	246,955	x	120%	* Design plan stage	=	296,300	
14. Water Retention & Mit. (0 Ponds)	0	x	120%	(0 Parcels w/o R/W Acq)	=	0	
15. SUBTOTAL (XXX)				(Lines 13 &14)			296,300
16. Admin. Settlements (Factor	20%	x	60%	of Line 15)	=	35,600	
17. Litigation Awards (Factor	45%	x	40%	of Line 15)	=	53,300	
18. Business Damages (Claims	0	x	0	)	=	0	
19. Bus. Damages Incr (Factor	25%	x	$ -	)	=	0	
20. Owner Appr. Fees (Parcels	0	x	$15,000	)	=	0	
21. Owner CPA Fees (Claims	0	x	$16,000	)	=	0	
22. Defend.Atty Fees (Sum of Lines 16, 17 & 19)	88,900	x	33%	)	=	29,300	
23. Owner Expert Witn (Comm.+Unimp.)	0	+	0	) x 18,000	=	0	
24. Other Condemn. Costs	0	x	$1,000		=	0	
25. SUBTOTAL							
26.				(Lines 16 thru 24)	=		118,200
						TOTAL PHASE 43	$414,500

* *Design contingency for design plan stage:*
(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans -105% (5) 268 Date -100%

R/W ACQUISITION CONSULTANT (PHASE 42)

27. Acquisition Consultant-50% of parcels	$20,000	x	0	TOTAL PHASE 42 $0

RELOCATION COSTS (PHASE 45)

	Replacement Housing		Number		Amount
28. Owner	$30,000	x	0	=	0
29. Tenant	$25,000	x	0	=	0
	Move Costs				
30. Residential	$5,000	x	0	=	0
31. Business/Farm	$40,000	x	0	=	0
32. Personal Property	$3,000	x	0	=	0
33. (Lines 28 thru 32)					
34. Relocation Services Cost			$0	(Not in Phase Total)	TOTAL PHASE 45 $0

35.			
36.			
37.		(All Phases)	TOTAL ESTIMATE $414,500

Real Estate:	Roger D. Patton	Signed:		Date: 10/30/20
Bus. Dam. :	Alfred J. Thompson	Signed:	A.J. Thompson	Date: 10/30/20
Relocation:	Roger D. Patton	Signed:		Date: 10/30/20
Overall Review:	Alfred J. Thompson	Signed:	A.J. Thompson	Date: 10/30/20

Cost Estimate Sequence #: Dated: In the Amount of $ Data Input Completion Date:

REMARKS:

This estimate is for FPC 3A.

While this is a single parcel estimate, the administrative settlement and litigation awards factors would still apply when considering this parcel would be part of the mainline acquisition.

The following indicates the estimator's confidence in the above estimate:

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

The following indicates the Department's purpose for this estimate:

Work Program Update: _____ Gaming 1: _____ Special Purpose: X Docs to RW: _____

Comments: _____

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

HDR#: 10243439-10.21

FM#:	430573-4	Alternate:	FPC 3B	District:	Seven
County:	Pasco	Segment:	N/A	Date:	28-Oct-20
State Rd.:	SR93/SR93A	FAP#:	N/A	C.E. Sequence	N/A
Project Des.	I-75/I-275 from S. of County Line to SR 56				

Parcels	Gross	Net
Commercial	0	0
Residential	0	0
Unimproved	1	1
Total Parcels	1	1

Estimated Relocatees:	
Business	0
Residential	0
Signs	0
Special	0
Total Relocatees	0

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	1	x	20,000 =	Rate)		20,000
2. Indirect Overhead	(Parcels	1	x	0 =	Rate)		0
3.						TOTAL PHASE 41	$20,000

R/W OPS (PHASE 4B)

								Amount
4. Appraisal Fees Through Trial					1	Parcels	x 20,000 =	20,000
5. Business Damage CPA Fees Through Trial					0	Claims	x 19,000 =	0
6. Court Reporter & Process Servers	50%	x	1	=	1	Parcels	x 500 =	500
7. Expert Witness	75%	x	1	=	1	Parcels	x 30,000 =	30,000
8. Mediators	75%	x	1	=	1	Parcels	x 2,400 =	2,400
9. Demolition, Asb. Abate., Survey, etc.					0	Imprvmet	x 15,000 =	0
10. Miscellaneous Contracts					0	Per Project	x 15,000 =	0
11. Appraisal Fee Review					0	Parcels	x 5,000 =	0
12.							TOTAL PHASE 4B	$52,900

R/W LAND COSTS (PHASE 43)

						Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	458,827	x	120%	* Design plan stage	=	550,600	
14. Water Retention & Mit. (0 Ponds)	0	x	120%	(0 Parcels w/o R/W Acq)	=	0	
15. SUBTOTAL (57,648 SF)				(Lines 13 &14)			550,600
16. Admin. Settlements (Factor	20%	x	60%	of Line 15)	=	66,100	
17. Litigation Awards (Factor	45%	x	40%	of Line 15)	=	99,100	
18. Business Damages (Claims	0	x	0	)	=	0	
19. Bus. Damages Incr (Factor	25%	x	$ -	)	=	0	
20. Owner Appr. Fees (Parcels	1	x	$15,000	)	=	15,000	
21. Owner CPA Fees (Claims	0	x	$16,000	)	=	0	
22. Defend.Atty Fees (Sum of Lines 16, 17 & 19)	165,200	x	33%	)	=	54,500	
23. Owner Expert Witn (Comm.+Unimp.)	0	+	1	) x 18,000	=	18,000	
24. Other Condemn. Costs	1	x	$1,000		=	1,000	
25. SUBTOTAL				(Lines 16 thru 24)	=		253,700
26.						TOTAL PHASE 43	$804,300

* *Design contingency for design plan stage:*
(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans -105% (5) 268 Date -100%

R/W ACQUISITION CONSULTANT (PHASE 42)

27. Acquisition Consultant-50% of parcels	$20,000	x	0	TOTAL PHASE 42	$0

RELOCATION COSTS (PHASE 45)

	Replacement Housing		Number		Amount	
28. Owner	$35,000	x	0	=	0	
29. Tenant	$25,000	x	0	=	0	
	Move Costs					
30. Residential	$5,000	x	0	=	0	
31. Business/Farm	$40,000	x	0	=	0	
32. Personal Property	$3,000	x	0	=	0	
33. (Lines 28 thru 32)						TOTAL PHASE 45 $0
34. Relocation Services Cost			$0	(Not in Phase Total)		
35.						
36.						
37.					(All Phases)	TOTAL ESTIMATE $877,200

Real Estate:	Roger D.Patton	Signed:		Date: 10/30/20
Bus. Dam. :	Alfred J. Thompson	Signed:	A.J. Thompson	Date: 10/30/20
Relocation:	Roger D.Patton	Signed:		Date: 10/30/20
Overall Review:	Alfred J. Thompson	Signed:	A.J. Thompson	Date: 10/30/20

Cost Estimate Sequence #: Dated: In the Amount of $ Data Input Completion Date:

REMARKS: The total for all phases of right of way acquisition is $877,200 and it is the first estimate we have provided for this project.

This right of way cost estimate is for proposed FPC 3B. Damages associated with this FPC includes an isolated area on Parcel 1.

The following indicates the estimator's confidence in the above estimate:

- ____ Type A - indicates the most confidence
- ____ Type B - indicates above average confidence
- x Type C - indicates below average confidence
- ____ Type D - indicates the least or no confidence

The following indicates the Department's purpose for this estimate:

Work Program Update: x Gaming 1: ____ Special Purpose: ____ Docs to RW: ____

Comments: ____

APPENDIX E

Supporting Documentation

COMPONENTS OF CONTRACT PLANS SET
ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS
LIGHTING PLANS
STRUCTURE PLANS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID 421831-1-52-01
(FEDERAL FUNDS)
PASCO COUNTY (14140)

STATE ROAD NO. SR 93 (I-75) FROM SOUTH OF I-75/I-275 INTERCHANGE TO SR 56

43033020.002

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS

FIELD PLANS

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT

INDEX OF ROADWAY PLANS

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED 2008,
AND STANDARD SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION DATED 2007,
AS AMENDED BY CONTRACT DOCUMENTS.

APPLICABLE DESIGN STANDARDS MODIFICATIONS: 7-1-08

For Design Standards Modifications click on
"Design Standards" at the following web site:
http:www.dot.state.fl.us/rddesign/

REVISIONS

END PROJECT
STA. 687+30.00
(℄ Survey 93)

END BRIDGE
STA. 642+61.61
(℄ SURVEY 93)

BEGIN BRIDGE
STA. 641+02.34
(℄ SURVEY 93)

EQUATION:
STA. 2390+10.04 BK =
STA. 617+73.37 AH

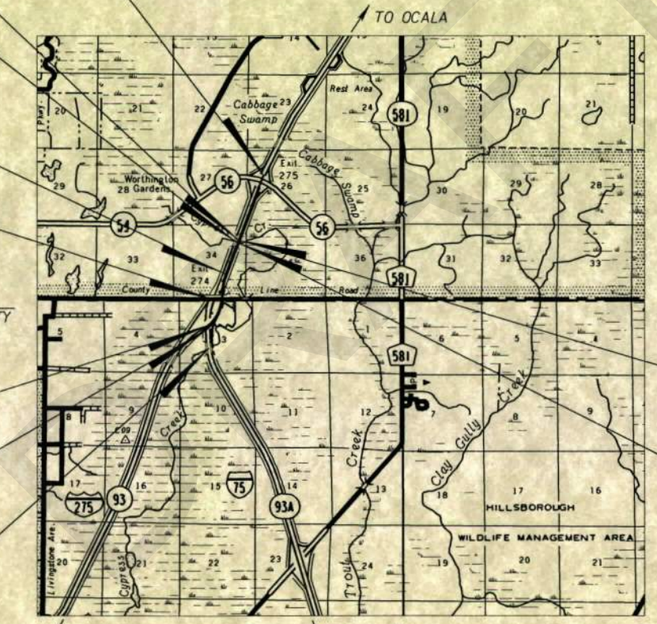
EQUATION:
STA. 2370+59.17 BK =
STA. 2370+60.50 AH

PASCO COUNTY
HILLSBOROUGH COUNTY

END BRIDGE
STA. 1583+92.14
(℄ RAMP B-56)

BEGIN BRIDGE
STA. 1579+23.89
(℄ RAMP B-56)

BEGIN PROJECT
STA. 2336+34.20
(℄ Survey 93A)
MP 39.188



T-26-S
T-27-S

END BRIDGE
STA. 6642+74.44
(℄ RAMP A-56)

BEGIN BRIDGE
STA. 6641+18.44
(℄ RAMP A-56)

R-19-E
R-20-E

LENGTH OF PROJECT		
	LINEAR FEET	MILES
ROADWAY	12172	2.305
BRIDGES	159	0.030
NET LENGTH OF PROJECT	12331	2.335
EXCEPTIONS	0	0.000
GROSS LENGTH OF PROJECT	12331	2.335

FDOT PROJECT MANAGER: ADAM PEREZ, P.E.

Imaged As Is

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

ROADWAY SHOP DRAWINGS
TO BE SUBMITTED TO:

PAUL SCHMID, P.E.
URS CORPORATION
7650 W. COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711

PLANS PREPARED BY:

URS

URS CORPORATION
7650 W. COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711

VENDOR NO. F592087895002

CERTIFICATE OF AUTHORIZATION NO. 00000002

CONTRACT NO. C-8D10

NOTE: THIS PROJECT TO BE LET TO
WITH FINANCIAL PROJECT
ID 407233-7-52-01

NOTE: THE SCALE OF THESE PLANS MAY
HAVE CHANGED DUE TO REPRODUCTION.

PHASE III SUBMITTAL
04-10-08

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
RECEIVED
APR 17 2008
REGULATORY-TAMPA

ROADWAY PLANS
ENGINEER OF RECORD: PAUL SCHMID, P.E.

P.E. NO.: 50091

Not Sealed

FISCAL YEAR	SHEET NO.
10	1

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

raleigh_sanders 4/9/2008 15:16:58 G:\Proj\FDOT\W8\421831\5201\roadway\keysrd01.dgn

℄ COUNTY LINE RD
STA. 315+28.20 =
℄ CONST. I-275 NB
STA. 902+52.70

CONST. 59' OF 18" PIPE

1" = 50'

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-41)

S-499D

S-499C

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-41)

CONST. 447' OF 60" PIPE

S-499A

SMF JI-1

COUNTY LINE RD

S 89° 51' 30" E

314

ER INLET

6' PAVED SHLDR.

HALF BARRIER WALL-1

BRIDGE NO. 100493

10' PAVED SHLDR.

+20.00
30.00' LT

+20.00
28.00' LT

4' PAVED SHLDR.

PC STA. 903+03.29

PC STA. 904+89.67

TO BE REMOVED

℄ CONST. I-275 NB

SHLDR. LINE

PC STA. 906+96.96

VAR. HT. CONC. BARRIER WALL (MED.)-2

CURVE CON275NB3

CURVE CON275NB2

℄ EXIST. I-275 NB

+05.34
10.50' RT

3800' R

S-408

18" PIPE

S-345

N 4° 46' 38.83" E

N 1° 37' 11" E

9.5' PAVED SHLDR.

6' PAVED SHLDR.

BEGIN 10'-12' SHLDR. TRANSITION
STA. 904+82.14, 10.00' RT

+04.92
30.00' LT

N 4° 46' 38.83" E

CONST. 33' OF 18" PIPE

S-344

N 1° 47' 32" E

CONST. 47' OF 18" PIPE IN 45' OF 36" STEEL CASING

CURVE RAMPA56-6

S-412

+90.00
9.50' RT

+15.00
10.00' RT

END HALF BARRIER WALL-2
STA. 6600+40.00, 10.00' RT

S-502

CONST. 358' OF 84" PIPE

TO BE REMOVED

℄ RAMP A-56

S-503

SHLDR. LINE

30" PIPE

HALF WALL-2

CURVE RAMPA56-5

JACK & BORE
300' OF 18" PIPE
IN 77' OF 36"
STEEL CASING

10' PAVED SHLDR.

SHLDR. LINE

84" PIPE

PC STA. 6603+94.18

END 54" PIER PROTECTION BARRIER WALL WITH FRONT CANTILEVER FOOTING
STA. 6599+78.00, 9.5' RT
BEGIN 3' TRANS. FROM PIER PROTECTION BARRIER WALL TO HALF BARRIER WALL-2

S-404

BEGIN 6'-8' SHLDR. TRANSITION
STA. 6601+81.81, 30.00' LT

CONST. 38' OF 30" PIPE

CONST. 368' OF 36" PIPE

S-407

CONST. 27' OF 36" PIPE

MATCH LINE STA. 6599+00

MATCH LINE STA. 6606+00

℄ COUNTY LINE RD
STA. 315+70.39 =
℄ RAMP A-56
STA. 6599+53.57

S-499B

S-499

EXIST. LA R/W LINE

2374+64.74
459.12' RT
O/S SURVEY LINE RT.

84" PIPE IN 102" STEEL CASING

317

TO BE REMOVED

BEGIN 54" PIER PROTECTION CONC. BARRIER WALL WITH FRONT CANTILEVER FOOTING
STA. 6599+28.00, 9.5' RT

BEGIN 3' TRANS. FROM GRAVITY WALL-1 WALL TO PIER PROTECTION BARRIER WALL
STA. 6599+25.00, 9.5' RT.

+00.00
10.00' RT

GRAVITY WALL-1

℄ COUNTY LINE RD

SMF JI-2

Imaged As Is

PAUL A. SCHMID LICENSE 50091 STATE OF FLORIDA PROFESSIONAL ENGINEER

Paul A. Schmid 8-4-08

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT RECEIVED AUG 7 2008 RRD-TAMPA

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

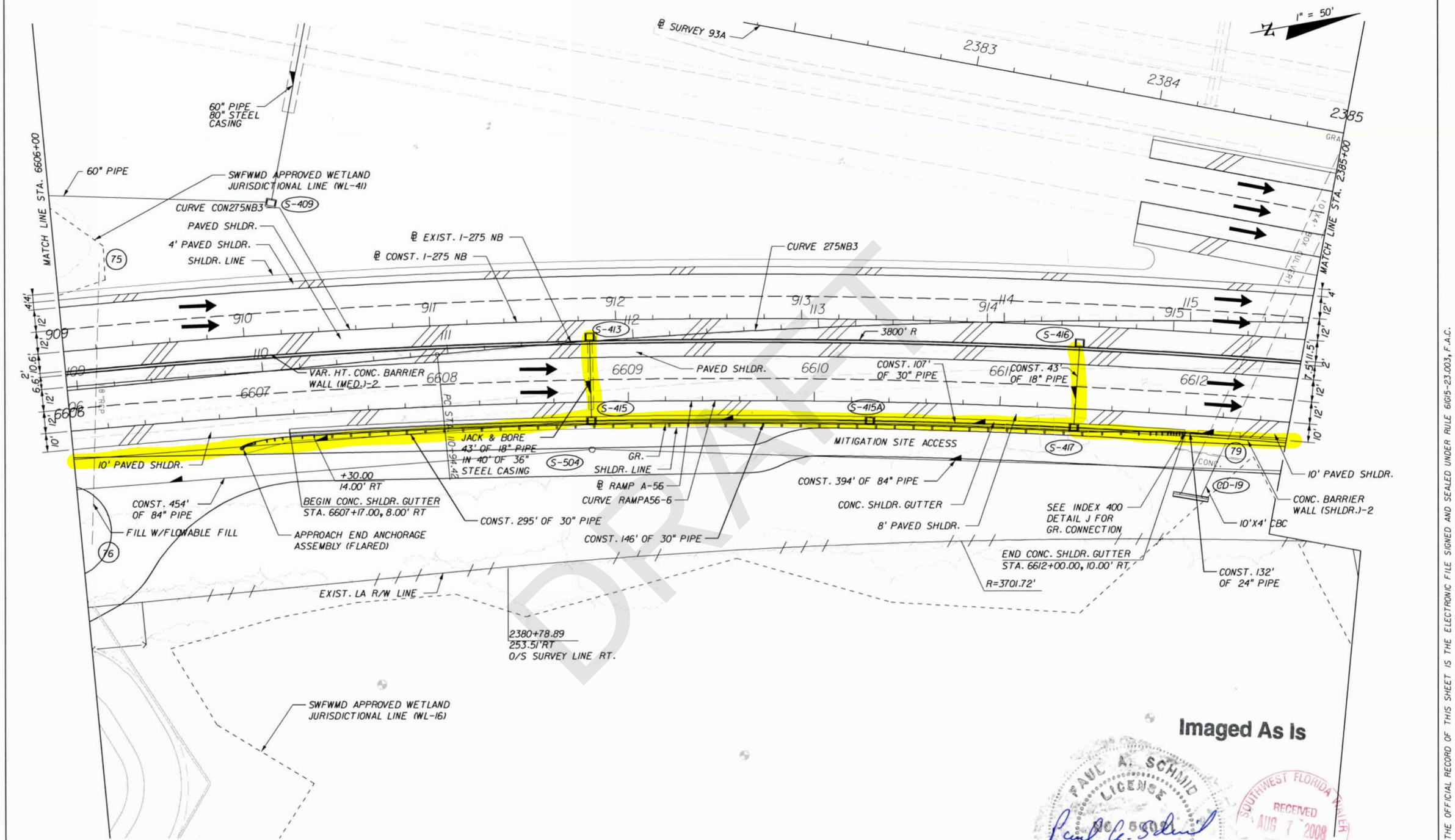
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A & 93	HILLSBOROUGH & PASCO	421831-1-52-01

PLAN SHEET (6)

SHEET NO. 60

raleigh_sanders 4/9/2008 11:44:13 D:\Proj\Fdot\w8\421831\5201\roadway\plan\rd06.dgn



Imaged As Is

PAUL A. SCHMID LICENSE 50091 STATE OF FLORIDA PROFESSIONAL ENGINEER
Paul C. Schmid 8-4-08

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT RECEIVED AUG 7 2008 RRD-TAMPA

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS Corporation Southern
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

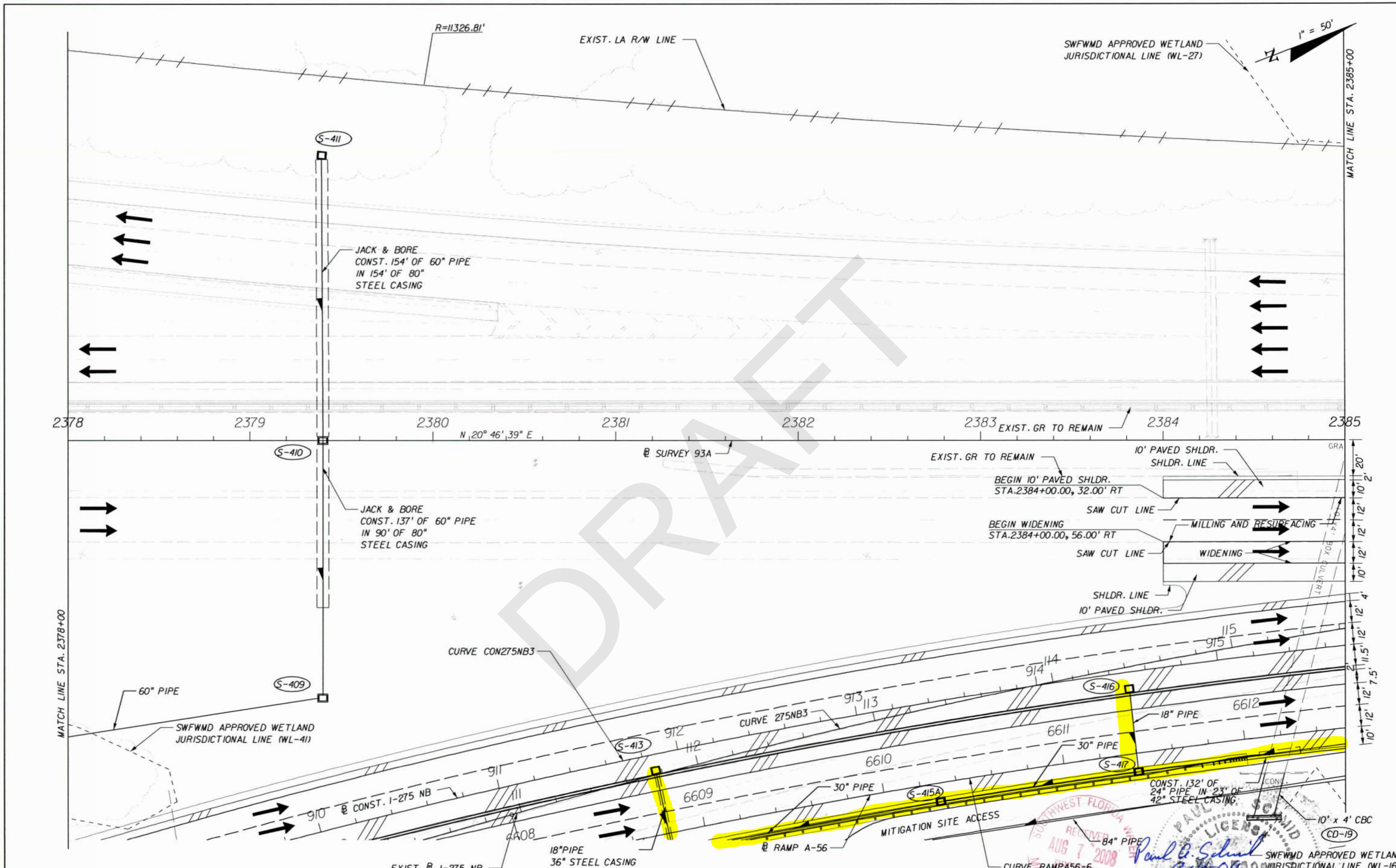
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A & 93	HILLSBOROUGH & PASCO	421831-1-52-01

PLAN SHEET (7)

SHEET NO. 61

raleigh_sanders 4/9/2008 11:44:17 D:\Proj\FDot\D8\421831\1520\roadway\planrd07.dgn



R=11326.81'
EXIST. LA R/W LINE
SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-27)
1" = 50'
MATCH LINE STA. 2385+00
S-411
JACK & BORE CONST. 154' OF 60" PIPE IN 154' OF 80" STEEL CASING
2378
2379
2380
2381
2382
2383
2384
2385
N 20° 46' 39" E
EXIST. GR TO REMAIN
S-410
℄ SURVEY 93A
EXIST. GR TO REMAIN
10' PAVED SHLDR.
SHLDR. LINE
BEGIN 10' PAVED SHLDR. STA.2384+00.00, 32.00' RT
SAW CUT LINE
MILLING AND RESURFACING
BEGIN WIDENING STA.2384+00.00, 56.00' RT
SAW CUT LINE
WIDENING
SHLDR. LINE
10' PAVED SHLDR.
JACK & BORE CONST. 137' OF 60" PIPE IN 90' OF 80" STEEL CASING
CURVE CON275NB3
MATCH LINE STA. 2378+00
S-409
60" PIPE
SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-41)
S-413
CURVE 275NB3
S-416
18" PIPE
30" PIPE
S-417
S-415A
30" PIPE
CONST. 132' OF 24" PIPE IN 23' OF 42" STEEL CASING
MITIGATION SITE ACCESS
℄ CONST. I-275 NB
℄ RAMP A-56
18"PIPE 36" STEEL CASING
EXIST. ℄ I-275 NB
84" PIPE
CURVE RAMPA56-6
10' x 4' CBC
CD-19
SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-16)
DRAFT

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A & 93	HILLSBOROUGH & PASCO	421831-1-52-01

PLAN SHEET (8)

SHEET NO. 62

Imaged As Is

Paul A. Schmid 8-4-08

raleigh_sonders 4/9/2008 11:44:20 D:\ProjFooPay\421831\...\plonrd08.dgn

MATCH LINE STA. 2385+00

MATCH LINE STA. 619+00

R=11326.81'

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-27)

PT=2390+10.04
38.00'LT
O/S SURVEY LINE LT

EXIST. LA R/W LINE

1" = 50'

EQUATION:
℄ SURVEY 93A
STA. 2390+10.04 BK =
℄ SURVEY 93
STA. 617+73.37 AH

END EXIST. ℄ I-275 NB
STA. 121+68.69 =
℄ SURVEY 93
STA. 618+66.30,
56.00' RT.

(77) L CONC.

2385 2386 2387 2388 2389 2390 618 619

PT STA. 617+73.37

N 20° 46' 39" E

℄ SURVEY 93A

℄ SURVEY 93

PT STA. 121+68.69

PT STA. 921+83.29

(78) S-420 JACK & BORE 121' OF 18" PIPE IN 113' OF 36" STEEL CASING

SHLDR. LINE

10' PAVED SHLDR.

EXISTING GUARDRAIL TO REMAIN

MILLING & RESURFACING

CURVE 275NB3

END 10'-12' SHLDR. TRANSITION
STA. 919+68.17, 12.00' RT

+41.45
68.00' RT

SAW CUT LINE

℄ EXIST. I-275 NB

12' PAVED SHLDR.

VAR. HT. CONC. BARRIER WALL (MED.)-2

WIDENING

+14.80
24.00' LT

CURVE CON275NB3

℄ CONST. I-275 NB

S-506

3800' R

SAW CUT LINE

S-509

S-418

CONST. 299' OF 54" PIPE

CONST. 42' OF 18" PIPE

END 6'-8' SHLDR. TRANSITION
STA. 6616+53.13, 32.00' LT

8' PAVED SHLDR.

CURVE RAMPA56-6

℄ RAMP A-56

PT STA. 99+74.19

S-507

S-510

MITIGATION SITE ACCESS

CONST. 8' OF 30" PIPE

GRAVITY WALL-2

S-508

S-419

CONST. 41' OF 18" PIPE

S-505

84" PIPE

24" PIPE

S-511

18" PIPE

CONST. 41' OF 18" PIPE

24" PIPE

84" PIPE

CONST. 288' OF 84" PIPE

10' PAVED SHLDR.

CONST. 296' OF 84" PIPE

R=3701.72'

EXIST. LA R/W LINE

CONST. 296' OF 24" PIPE

CONC. BARRIER WALL (SHLDR.)-2

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-27)

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-16)

END ℄ CONST. I-275 NB
STA. 921+83.29 =
℄ SURVEY 93
STA. 618+75.00, 92.00' RT.

PT=618+66.42
85.00'RT
O/S SURVEY LINE RT

DRAFT

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PAUL A. SCHMID LICENSE NO. 50091 STATE OF FLORIDA PROFESSIONAL ENGINEER

Paul A. Schmid 4-4-08

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Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A & 93	HILLSBOROUGH & PASCO	421831-1-52-01

PLAN SHEET (9)

SHEET NO. 63

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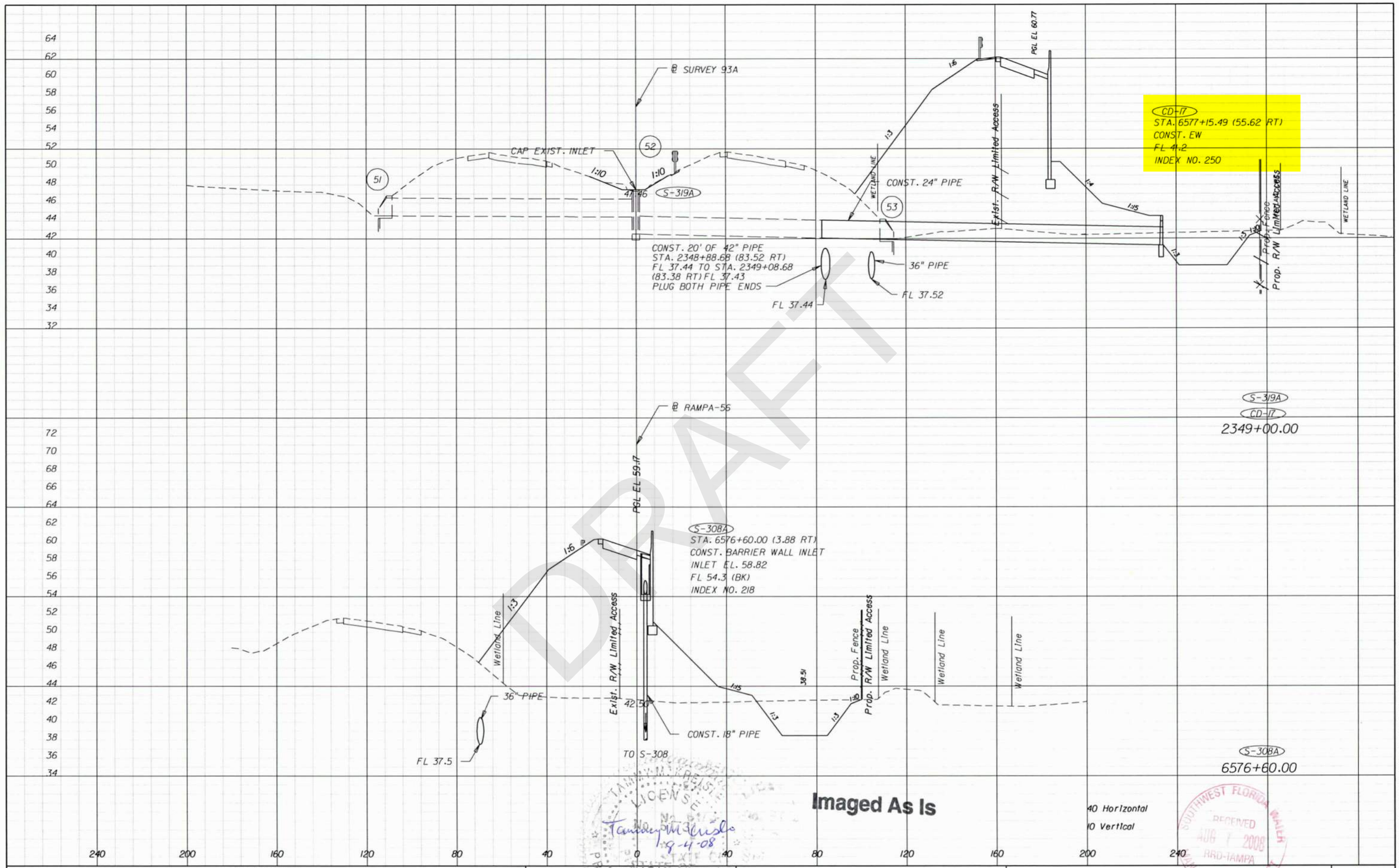

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93 & 93A	HILLSBOROUGH & PASCO	421831-1-52-01

DRAINAGE STRUCTURES (6)

SHEET NO. 131

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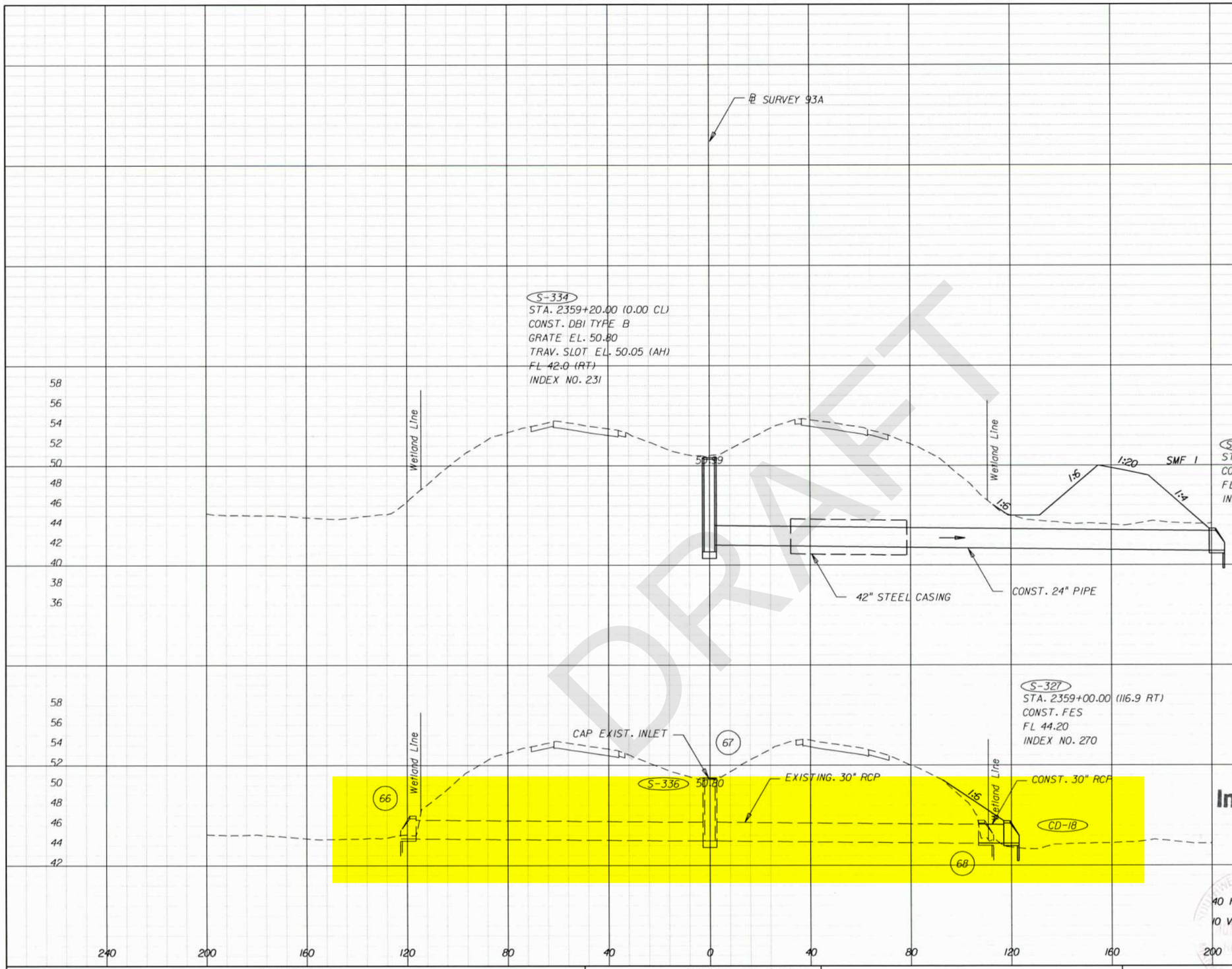

REVISIONS			
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Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93 & 93A	HILLSBOROUGH & PASCO	421831-1-52-01

DRAINAGE STRUCTURES (14)

SHEET NO. 139

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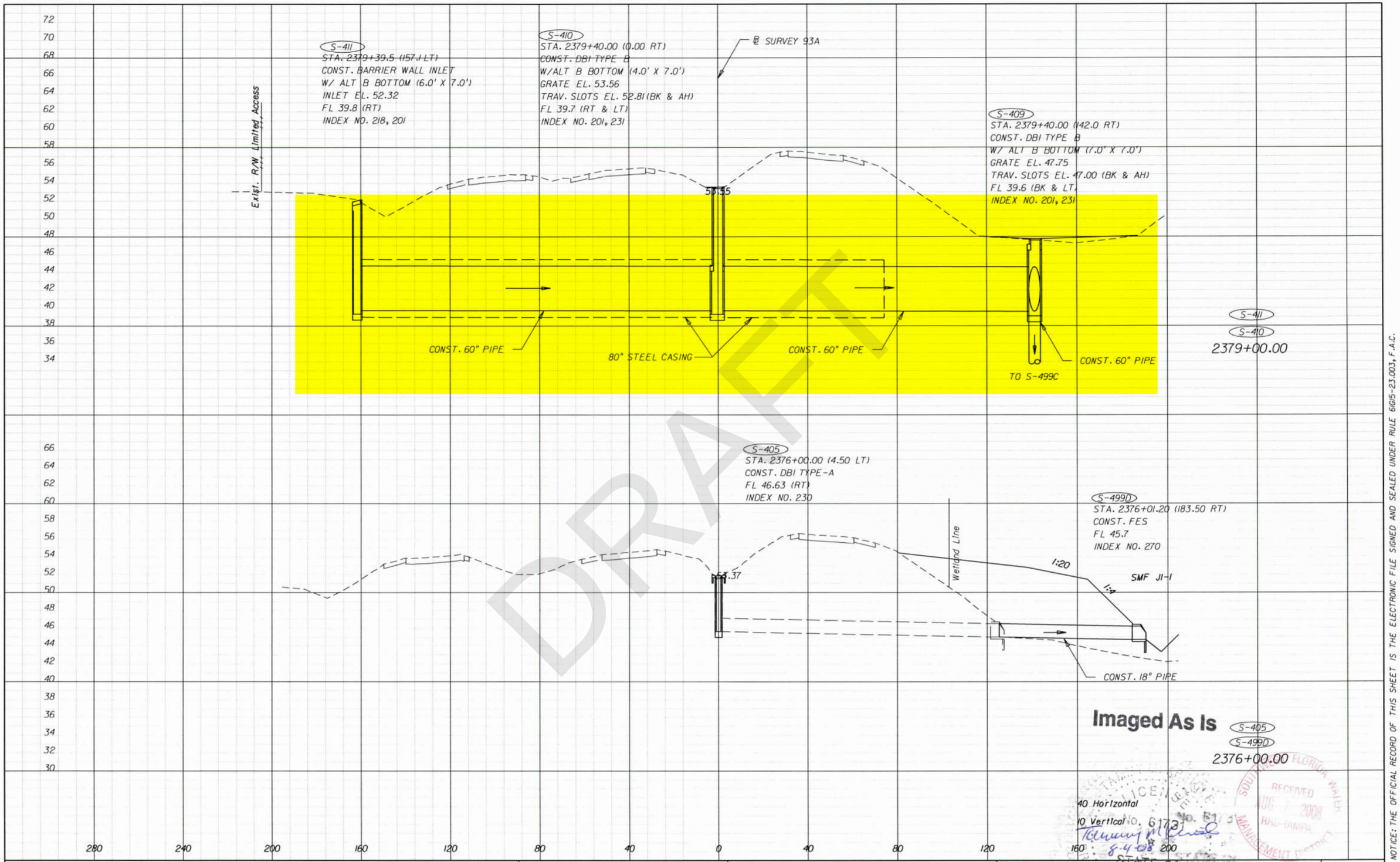

REVISIONS			
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URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93 & 93A	HILLSBOROUGH & PASCO	421831-1-52-01

DRAINAGE STRUCTURES (37)

SHEET NO. 162

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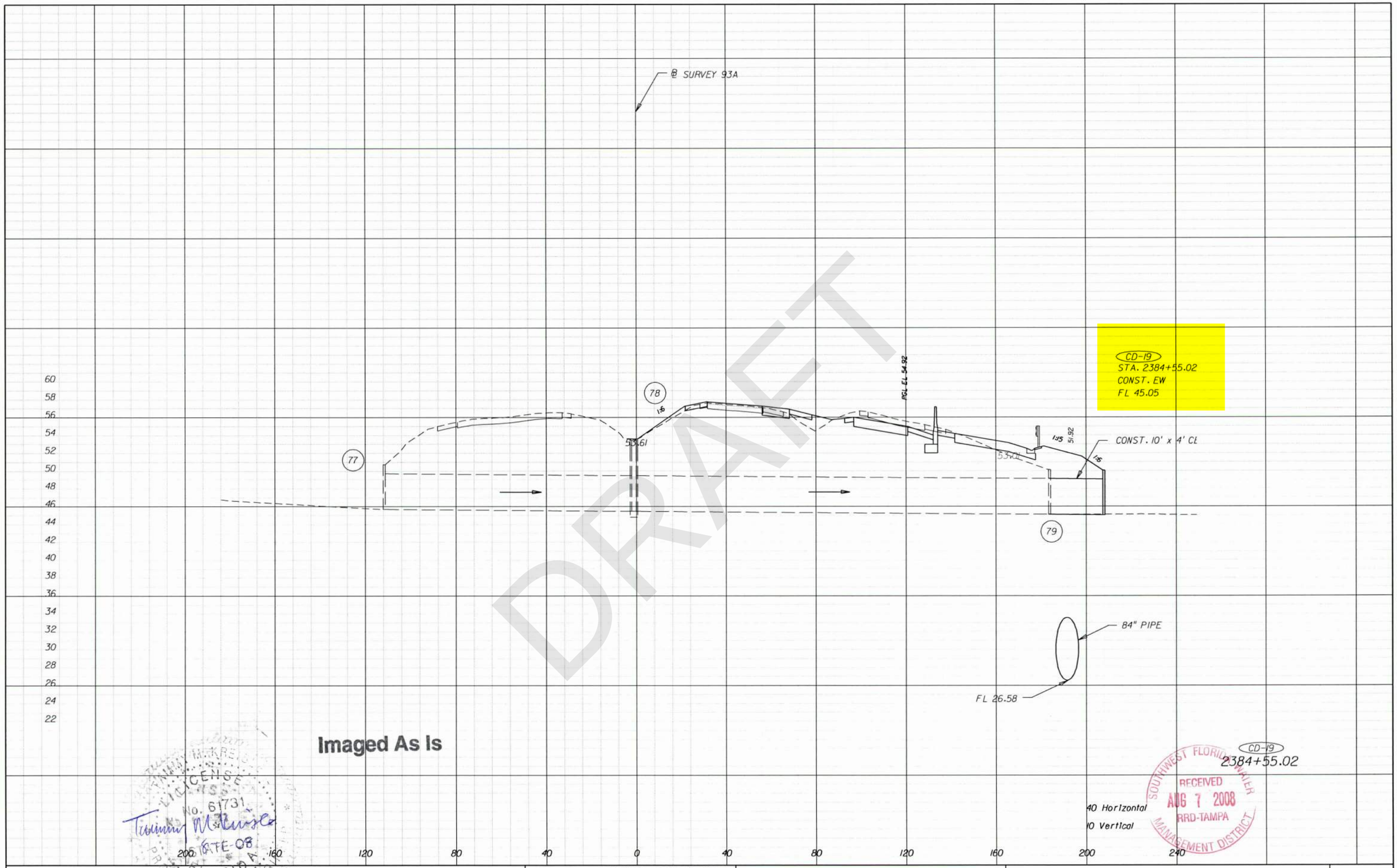

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Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93 & 93A	HILLSBOROUGH & PASCO	421831-1-52-01

DRAINAGE STRUCTURES (41)

SHEET NO. 166

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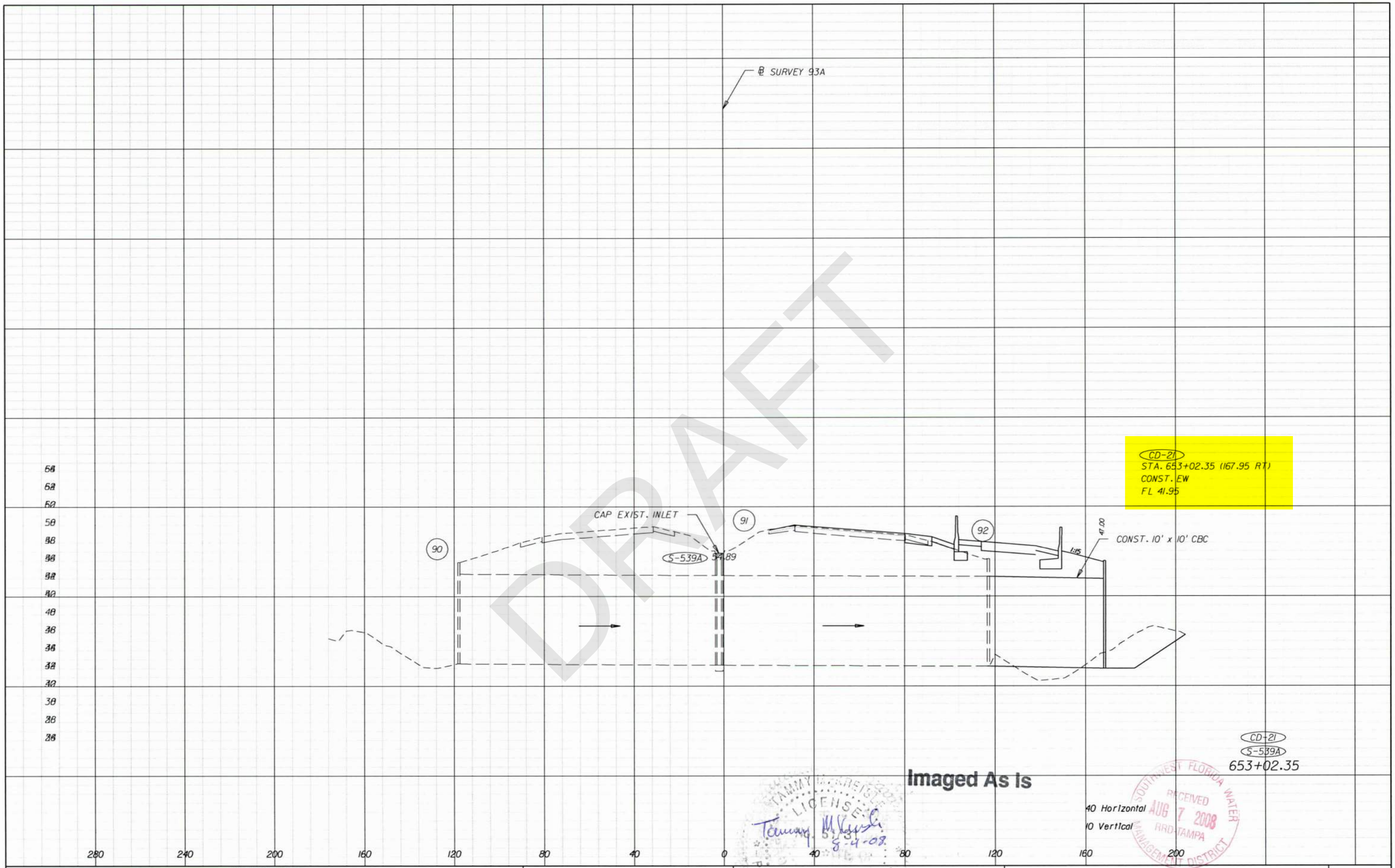

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Tampa, FL 33607-1462
C.A. No. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93 & 93A	HILLSBOROUGH & PASCO	421831-1-52-01

DRAINAGE STRUCTURES (60)

SHEET NO. 185

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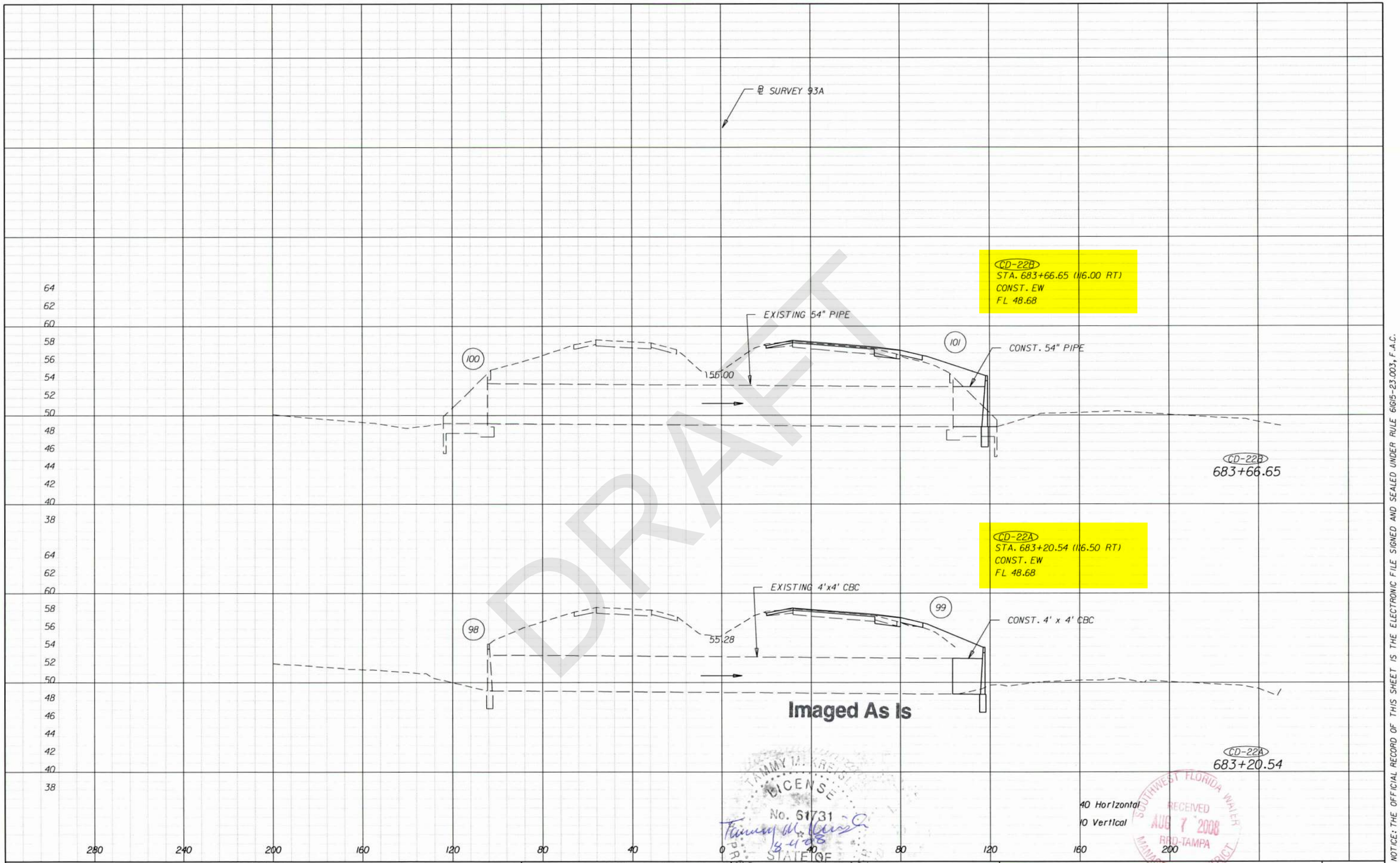

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Tampa, FL 33607-1462
C.A. No. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93 & 93A	HILLSBOROUGH & PASCO	421831-1-52-01

DRAINAGE STRUCTURES (73)

SHEET NO. 198

S-399A
STA. 2359+01.47 (231.48' RT.)
CONST. FES
FL. 34.6
INDEX 270

S-399J
STA. 2370+06.09 (338.55' RT.)
CONST. FES
FL. 40.9
INDEX 270

S-343
STA. 901+49.50 (117.60' LT.)
℄ CONST. I-275 NB
CONST. MANHOLE TYPE P-8
FL. 46.0 BK.
INDEX 200, 201

CD-18

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-39)

℄ SURVEY 93A

℄ COUNTY LINE RD

S-336 S-334 S-327 S-335 S-333 S-332 S-331 S-338 S-337 S-339 S-339A S-340 S-342 S-341 S-501

2360+99
24' STABILIZED POND ACCESS

2361+62.72
119.84' RT.

2360+36.06
120.42' RT.

2361+05.91
224.43' RT.

2370+17.61
141.52' RT.

2369+77.88
203.49' RT.

2370+40.78
222.10' RT.

AS-501 AS-502 AS-503 AS-504 AS-505 AS-506 AS-507 AS-508 AS-509 AS-510 AS-511 AS-512 AS-513 AS-514 AS-515

54" PIPE
24" PIPE
30" PIPE
18" PIPE
84" PIPE

EL. 50.0
EL. 49.0
EL. 39.0
EL. 32.0 SUMP

1:20 20.0'
1:4 40.0'

2363+97.33
202.87' RT.

MAINTENANCE BERM

TYPE B FENCE

S-399D S-399P S-399E S-399A S-399F S-399K S-399G S-399H S-399I S-399J S-399L S-399M S-399N

2358+40.41
223.23' RT.

2361+49.29
359.94' RT.

2361+07.87
324.38' RT.

2363+45.01
412.98' RT.

2367+74.38
415.72' RT.

2370+08.02
370.99' RT.

2370+84.00
397.92' RT.

R 50 TYP.

CD-18A

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-40) AS-502

EXISTING I.A R/W LINE

℄ RAMP B-56

℄ CONST. I-275 NB

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-14)

℄ RAMP A-56

S-599 S-500 S-3990

STA. 6581+56.57 (98.81' RT.)
℄ RAMP A56
CONST. FES
FL. 39.0
INDEX 270

J2-010 J2-014 J2-017 J2-020

LITTORAL SHELF

SMF 1

OBTAIN APPROVAL FROM THE DISTRICT DRAINAGE ENGINEER 813-975-6000 PRIOR TO LOWERING THE WATER LEVEL IN THIS POND

1" EPIC1000

0 20 100 Feet

SMF 1 DATA	
BERM EL. (BACK)	50.0
BERM EL. (FRONT)	49.0
HW (100 YR) EL.	48.6
HW (25 YR) EL.	47.6
WEIR EL.	42.4
CONTROL EL.	40.9
LITTORAL SHELF EL.	39.0
BOT. EL.	39.0
SUMP EL.	32.0
SHWT	44.4
AREA @ BERM EL. (BACK)	7.4
AREA @ BERM EL. (FRONT)	6.1
AREA @ WEIR EL.	4.4
AREA @ CONTROL EL.	4.0

NOTES:

1. STA/OFF REFERENCES ARE FROM THE ℄ SURVEY 93A UNLESS INDICATED OTHERWISE.
2. FOR CONTROL STRUCTURE DETAIL, SEE DRAINAGE STRUCTURE DETAILS.
3. FOR SOILS DATA, SEE POND BORINGS SHEET.

Imaged As Is

TAMMY M. KREISLE LICENSE No. 61731 STATE OF FLORIDA PROFESSIONAL ENGINEER

Tammy M Kreisle 8-5-08

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URS Corporation Southern
7650 West Courtney
Campbell Causeway
TAMPA, FL 33607-1462
C.A. NO. 00000002
Tammy Kreisle P.E. NO. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A & 93	HILLSBOROUGH & PASCO	421831-1-52-01

STORMWATER MANAGEMENT FACILITY I PLAN

SHEET NO. 204

craig_janne 8/5/2008 10:07:18 AM \\RDWY\Proj\FDOT\Proj\FDOT\w8\421831l520l\drainage\drdtrd06.dgn

S-499

STA. 6602+06.38 (92.42' RT.)
CONST. FES
FL. 41.20
INDEX 270

S-499A

STA. 6601+89.01 (159.85' LT.)
CONST. FES
FL. 43.30
INDEX 270

S-499B

STA. 6601+86.47 (83.74' RT.)
CONST. FES
FL. 43.30
INDEX 270

S-499C

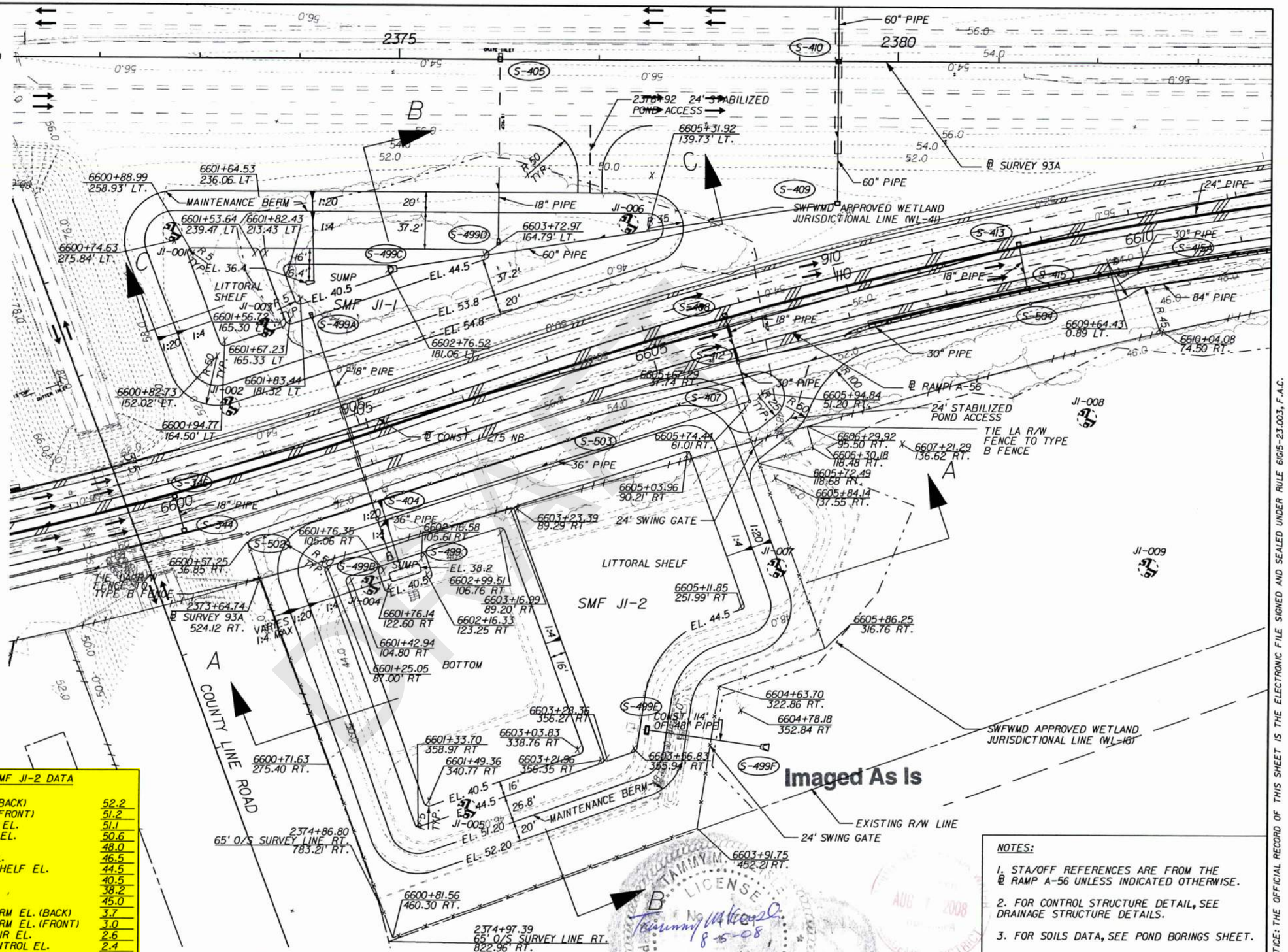
℄ SURVEY 93A
STA. 2374+95.81 (210.50' RT.)
CONST. FES
FL. 39.40
INDEX 270

S-499D

℄ SURVEY 93A
STA. 2376+01.24 (183.51' RT.)
CONST. FES
FL. 45.70
INDEX 270

S-499F

STA. 6604+91.61 (394.99' RT.)
CONST. FES
FL. 44.80
INDEX 270



SMF JI-1 DATA	
BERM EL. (BACK)	54.8
BERM EL. (FRONT)	53.8
HW (100 YR) EL.	52.9
HW (25 YR) EL.	51.8
WEIR EL.	48.0
CONTROL EL.	46.5
LITTORAL SHELF EL.	44.5
BOT. EL.	40.5
SUMP EL.	36.4
SHWT	46.1
AREA @ BERM EL. (BACK)	1.8
AREA @ BERM EL. (FRONT)	1.3
AREA @ WEIR EL.	0.7
AREA @ CONTROL EL.	0.5

SMF JI-2 DATA	
BERM EL. (BACK)	52.2
BERM EL. (FRONT)	51.2
HW (100 YR) EL.	51.1
HW (25 YR) EL.	50.6
WEIR EL.	48.0
CONTROL EL.	46.5
LITTORAL SHELF EL.	44.5
BOT. EL.	40.5
SUMP EL.	38.2
SHWT	45.0
AREA @ BERM EL. (BACK)	3.7
AREA @ BERM EL. (FRONT)	3.0
AREA @ WEIR EL.	2.6
AREA @ CONTROL EL.	2.4

NOTES:

1. STA/OFF REFERENCES ARE FROM THE ℄ RAMP A-56 UNLESS INDICATED OTHERWISE.
2. FOR CONTROL STRUCTURE DETAIL, SEE DRAINAGE STRUCTURE DETAILS.
3. FOR SOILS DATA, SEE POND BORINGS SHEET.

Tammy M. Kreisle
LICENSE NO. 61731
STATE OF FLORIDA
8-5-08

AUG 7 2008
ENGINEER DISTRICT

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7650 West Courtney
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TAMPA, FL 33607-1462
C.A. NO. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A & 93	HILLSBOROUGH & PASCO	421831-1-52-01

STORMWATER MANAGEMENT FACILITY JI-1/JI-2 PLAN

SHEET NO. 206

craig_jenne 8/5/2008 10:09:58 AM \\RDWY\Proj\FDOT\Proj\FDOT\w8\421831\520\drainage\drdtrd07.dgn

FOR MAINTENANCE ACCESS ROAD INFORMATION, SEE FPC I TYPICAL SECTIONS

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-14)

PROPOSED L/A R/W LINE

EXISTING R/W LINE

OBTAIN APPROVAL FROM THE DISTRICT DRAINAGE ENGINEER 813-975-6000 PRIOR TO LOWERING THE WATER LEVEL IN THIS POND

FOR MAINTENANCE ACCESS ROAD INFORMATION, SEE FPC I TYPICAL SECTIONS

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-15)

SMF J2

LITTORAL SHELF

MAINTENANCE BERM

TYPE B FENCE

SUMP

CURVE SMFJ2-3-1
P.I.STA.512+11.12
Δ = 13° 5' 56"
D = 1° 28' 36"
T = 445.46'
L = 887.05'
R = 3880.00'
P.C.STA.507+65.66
P.T.STA.516+52.70

N 26° 58' 49" E

NOTES:

1. STA/OFF REFERENCES ARE FROM THE ℄ SMFJ2-3 UNLESS INDICATED OTHERWISE.
2. FOR CONTROL STRUCTURE DETAIL, SEE DRAINAGE STRUCTURE DETAILS.
3. FOR SOILS DATA, SEE POND BORINGS SHEET.
4. SEE PROJECT LAYOUT SHEET FOR GEOMETRIC TIE TO ℄ SURVEY 93A.

SMF J2 DATA	
BERM EL. (BACK)	48.0
BERM EL. (FRONT)	47.0
HW (100 YR) EL.	46.7
HW (25 YR) EL.	45.8
WEIR EL.	41.0
CONTROL EL.	39.5
LITTORAL SHELF EL.	37.5
BOT. EL.	37.5
SUMP EL.	22.9
SHWT	44.4
AREA @ BERM EL. (BACK)	10.6
AREA @ BERM EL. (FRONT)	9.2
AREA @ WEIR EL.	7.5
AREA @ CONTROL EL.	7.1

TAMMY M. KREISLE LICENSE FPC I No. 61731 STATE OF FLORIDA

RECEIVED AUG 7 2008 SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT RRD-TAMPA

0 20 100 Feet

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REVISIONS

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TAMPA, FL 33607-1462
C.A. NO. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A & 93	HILLSBOROUGH & PASCO	421831-1-52-01

STORMWATER MANAGEMENT FACILITY J2 PLAN

SHEET NO. 208

craig_jenne 8/5/2008 10:14:06 AM \\RDWY\Proj\FDOT\Proj\FDOT\w8\421831\5201\drainage\drdtrd08.dgn

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION/

WATER MANAGEMENT DISTRICTS/

U.S. ARMY CORPS OF ENGINEERS

I-75 (SR 93) FROM SOUTH OF I-75 / I-275 INTERCHANGE TO SOUTH OF SR 56 (SR 56 NORTHBOUND EXIT RAMPS)

Hillsborough and Pasco Counties, Florida

FPID 421831-1-52-01

JOINT APPLICATION FOR

ENVIRONMENTAL RESOURCE PERMIT/

AUTHORIZATION TO USE STATE OWNED SUBMERGED LANDS/

FEDERAL DREDGE AND FILL PERMIT

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PHASE III

DRAINAGE DESIGN DOCUMENTATION REPORT

I-75 (SR 93)
From S. of I75/I275 Interchange to S. of SR 56
(SR 56 Northbound Exit Ramps)
Financial Project ID: 421831-1-52-01
Hillsborough County and Pasco County

Prepared For:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN

Prepared By:

URS
URS Corporation Southern
7650 West Courtney Campbell Causeway
Tampa, Florida 33607-1462
Certificate of Authorization No. 00000002

Engineer of Record:
Tammy M. Kreisle, P.E., No. 61731

April 8, 2008

TABLE OF CONTENTS

APPENDICES

1. INTRODUCTION

The project, I-75 (SR 93), is being undertaken by the Florida Department of Transportation (FDOT) District 7, which has contracted with URS Corporation Southern (URS) to perform engineering services for the project.

The purpose of this report is to document the design decisions and calculations that are the basis of project stormwater and drainage conveyance design. Other related reports prepared for this project include the Final Base Clearance Water Elevation Report FPID 408459-3 (January 10, 2006) and the Alternative Stormwater Management Facility Report FPID 408459-3 (June, 2006).

2. PROJECT DESCRIPTION

The project is located in Hillsborough and Pasco counties, within the jurisdiction of the Southwest Florida Water Management District (SWFWMD). It is located in the Cypress Creek Watershed of the Hillsborough River Basin and will discharge runoff to Cypress Creek and associated wetlands. It is located in Sections 3 of Township 27 S, Range 19 E and Sections 26, 27 and 34 of Township 26 S, Range 19 E. A Location Map is provided in Appendix A.

The existing land use within the project limits ranges from forested wetlands to residential.

The original intent was for the following to be built as a single project under FPID 408459-3-52-01. From Bruce B. Downs Blvd. to the I-75/I-275 Apex, the proposed roadway typical section will consist of six 12-foot through lanes (three northbound and three southbound), 12-foot inside and outside shoulders (10 feet paved), and a 64-foot median. From the I-75/I-275 Apex to SR 56, the proposed ultimate improvements will consist of ten 12-foot through lanes (four northbound and six southbound), 12 foot inside and outside shoulders (10 feet paved), and a 64-foot median. The proposed ultimate improvements will include new I-75 and I-275 exit ramps starting south of the I-75/I-275 Apex, then converging to develop a 2-lane northbound ramp with 12-foot lanes and a 12-foot outside shoulder (10-foot paved) and an 8-foot inside shoulder (4-foot paved), which will continue north to the I-75 northbound exit ramp at SR 56. On northbound I-275, the proposed typical section will consist of two 12-foot lanes with a 12-foot outside shoulder (10-foot paved) and an 8-foot inside shoulder (4-foot paved).

The original project (FPID 408459-3-52-01) has been split into the FPID 421831-1-52-01 project which is addressed in this report and the FPID 408459-3-52-01 which will be addressed under separate cover.

The project (FPID 421831-1-52-01) consists of new northbound exit ramps to SR 56 from both I-75 (Ramp A-56) and I-275 (Ramp B-56). The purpose of these ramps is to

improve traffic operations by reducing the need for lane changes on I-75 Northbound. Some minor widening along I-75 and I-275 northbound will be included in this project to facilitate the ramp tie-ins.

The right-of-way width generally varies between 324 feet and 364 feet. The drainage systems for the project drainage will include ditches and storm sewer for conveyance of the project runoff to Stormwater Management Facilities (SMF's) for treatment and attenuation. The Stormwater Management Facilities are sized to treat and attenuate for runoff over the right-of-way width as if it is 100% impervious as directed by FDOT. The storm sewer is not designed to convey runoff in excess of the typical section being constructed with the 421831-1 and 408459-3 projects. See Appendix A for a Drainage Map.

3. COORDINATION

The following is a summary of the coordination that has occurred during the preparation of this report. Specific information is provided in Appendix B – Correspondence.

- FDOT District 7 Drainage and Environmental Permits: Design criteria and potential design concepts were coordinated with Megan Arasteh in telephone conversations, meetings and emails.
- SWFWMD Resource Regulation, Tampa: Pre-application meetings were held with Michelle Hopkins to present the project to SWFWMD and to discuss design criteria.
- FDOT District 7: Tom Gaffney provided information regarding past flooding along I-75 within the project limits as well as a contact name and number for the contractor that maintains I-75.
- ICA: David Buser provided current information regarding flooding along I-75 within the project limits.
- ICON: Mike Mills provided a copy of the Pond Siting Supplemental Report: Basins H and I, January 2005.
- Parsons, Brinckerhoff, Quade & Douglas: Coordination of SMF and storm sewer requirements at the begin project location.

4. REFERENCES / RESOURCES

The following is a listing of the references and resources utilized during the preparation of this report:

Existing Studies / Plans / Reports

- Cypress Creek Watershed Management Plan, by URS, 2000.

- Existing Plans FPN I-75-(181)478
- Existing Plans FPN I-75-(180)476
- Existing Plans FPID 258667-1-52-01
- Existing Plans FPID 258413-2-52-01
- Pond Siting Report (PD&E), by ICON, 2003.
- Pond Siting Supplemental Report Basins H & I, by ICON, 2005.
- Final Preliminary Engineering Report for FDOT, by Parsons, Brinckerhoff, Quade and Douglas, Inc., 2004.
- 100% Design Hydraulics Study for S.R. 93 (Interstate 275), by PBS&J, 2005

Technical Reference and Regulation Material

- FDOT Drainage Manual.
- FDOT Drainage Handbooks.
- SWFWMD Environmental Resource Permitting Information Manual.
- Soil Survey for Pasco County, by NRCS.
- Soil Survey for Hillsborough County, by NRCS.
- Flood Insurance Study and Flood Insurance Rate Panels, by FEMA.

Aerial Photography and Survey

- Aerial Photographic Maps (1" = 200' scale, one-foot contours), by SWFWMD.
- REDI Aerial Photographic Maps (2003).
- Electronic topographic files from AIM Engineering and Survey, Inc. and Cumbey & Fair, Inc.
- Field reviews conducted by URS staff on 3-9-05, 3-14-05, and 4-12-05.

All references / resources as well as the project design utilize the NGVD 1929 datum.

5. SOILS INFORMATION

Soils information was obtained from the Soil Conservation Service (NRCS) Soil Survey of Pasco and Hillsborough Counties, Florida.

Project Basins: Generally, the soils are poorly drained (primarily hydrologic group B/D).

SMF Locations: Generally, the soils are poorly drained (primarily hydrologic group B/D).
See Appendix C – Soils Information for specific information.

6. RAINFALL DATA

Rainfall data was obtained from several sources. The 24-hour rainfall depths were obtained from the SWFWMD Environmental Resource Permitting Information Manual, Part D. These rainfall depths are used for the SWFWMD water quantity modeling of the stormwater management facilities and for the modeling of Cross Drains.

The Precipitation Depth Data maps and the Rainfall Distribution Curves found on pages B-13 through B-25 in the FDOT Drainage Manual are used for the FDOT Rule 14-86 modeling of the stormwater management facilities.

The Rainfall Intensity-Duration-Frequency Curve for Zone 6 on page B-7 in the FDOT Drainage Manual is used for the FDOT Critical Duration (Rule 14-86) modeling of the stormwater management facilities and the design of other features of the project (Cross Drains, side ditches, storm drains, etc.).

Copies of the above items are provided in Appendix D – Rainfall Data.

7. FEMA FLOODPLAINS

Floodplain information was obtained from the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels 1201120070E (August 15, 1989) Hillsborough County and Firm Panels 1202300425E and 1202300410E (September 30, 1992) Pasco County. These panels show that much of the project falls in floodplain areas. See Appendix E – FEMA Floodplain Information for more information.

8. DESIGN TAILWATER ELEVATIONS

The following is a summary of the sources of design tailwater elevations.

Seasonal high water (SHW) elevations in wetlands were obtained from URS environmental scientist – Crystal Clark. The elevations were confirmed and approved by SWFWMD environmental scientist – Rick Perry.

Various permits were obtained from SWFWMD for the purposes of comparing SHW elevations for accuracy.

Seasonal high water table (SHWT) elevations were obtained from Nodarse & Associates geotechnical engineer – Chetana Kommireddi.

Cross drain stain lines were observed during field reviews by Tammy Kreisle (URS) and Craig Jenne (URS) on March 9, 2005, March 14, 2005 and April 12, 2005.

9. DRAINAGE DESIGN CRITERIA

- NWL Establishment – The control elevation for the SMF sites is generally the Seasonal High Water (SHW) elevation for the outfall. The elevations of the SHGWT and the control elevation have been compared at most of the SMF sites. In locations where the SHGWT is above the control elevation, SMF liners will be required.

- Water Quality Treatment – Water quality criteria for the project is as specified in Part B, Chapter 5 of the Southwest Florida Water Management District Environmental Resource Permitting Information Manual.

- Attenuation

SWFWMD Analysis: Water Quantity criteria for the project is as specified in Part B, Chapter 4 of the Southwest Florida Water Management District Environmental Resource Permitting Information Manual.

- Critical Duration (FDOT Rule Chapter 14-86)

FDOT Critical Duration Analysis: For each frequency and duration, the post-development peak discharge rate will be no greater than the pre-development peak discharge rate (Storm for Storm Approach). The analysis will include six frequencies (2-year through 100-year) and five durations (1-hour through 24-hour). The SCS Curve Number Method will be utilized with the FDOT rainfall distributions. For the pre-development analysis, a PRF of 256 will be used. For the post-development analysis, a PRF of 323 will be used. For wet detention, the initial stage in the SMF will be the top of the water quality treatment volume.

- SMF Design:

SMF berms will have 20' width at 1:20 slope. Side slopes will be 1:4. Back slopes and tie-down slopes will be 1:4. Desirable inside berm radius will be 50' (35' minimum). Wet SMFs located outside the interstate infield areas will be fenced, regardless of side slopes. Skimmer devices will be used on all SMF control structures from 6" below the control elevation to at or above the 100-year SMF peak stage. Turn-down bleeder devices will be used to discharge the water quality treatment volume. The back of berm elevation will be set to provide one foot of freeboard above the 100-year SMF peak stage.

- Lined SMF

It is anticipated that SWFWMD will require liners for the SMF's in each basin where the control elevations are lower than the ground water at the SMF site.

- Tailwater and Outfall Conditions

Tailwater elevations from the Cypress Creek Watershed Management Plan were found to peak well after 24 hours for the SMF's and at significantly lower elevations than indicated in the BHR. Therefore, conservatively a constant tailwater equal to the NHW from the BHR for Cypress Creek near station 2335+00 was utilized in the ICPR model. The NHW elevation is 40.9, the 100YR HW is 42.8 and the wetland SHW is equal to 39.5. The tailwater elevation is below the weir in all SMF's.

- Flood Plain Encroachment Volume

Flood Plain Encroachment criteria for the project is as specified in Part B, Chapter 4 of the Southwest Florida Water Management District Environmental Resource Permitting Information Manual.

10. BASIN DESCRIPTIONS

Since this project (FPID 421831-1-52-01) was originally a portion of FPID 408459-3-52-01, the basin descriptions below indicate the information that is applicable and inclusive of both projects since the SMF's constructed by this project will treat and attenuate runoff for FPID 408459-3 as well as for FPID 421831-1.

Basin I

The basin limits are from the Cypress Creek crossing in Hillsborough County (Station 2335+00) to County Line Road (Station 2370+00). Widening within these limits is part of FPID 408459-3 and construction of the new northbound exit ramps is a part of this project.

Basin I is bounded by ELAPP lands and wetlands to the west and proposed subdivisions and SMF sites to the east. Basin I outfalls to Cypress Creek which eventually flows southwest to the Hillsborough River. This basin contains jurisdictional wetlands and FEMA Zone A 100-year floodplains. This area is considered an "open" drainage basin and the receiving waters are Class III. Cypress Creek is classified as an Outstanding Florida Water (OFW).

In the pre-development condition, the runoff from the project area is conveyed by sheet-flow and shallow concentrated flow in side ditches along I-75, I-275 and all ramps to either the infield areas, or directly to one of the three outfalls where it continues on to Cypress Creek. In the proposed condition, the runoff will flow through side ditches and storm drains to the SMF, which will provide treatment and attenuation of the runoff and will discharge to the proposed ditch along the East side of Ramp A-56 where it will flow downstream to Cypress Creek.

Basin J-1

The basin limits are from County Line Road (Station 2370+00) to the Cypress Creek crossing in Pasco County (Station 641+00). Widening within these limits will be a part of FPID 408459-3-52-01 and construction of the new northbound exit ramps is a part of this project.

Basin J-1 is bounded by proposed development to the west and wetlands and mitigation sites to the east. It outfalls to wetlands adjacent to Cypress Creek, which eventually flow southwest to the Hillsborough River. This basin contains jurisdictional wetlands and FEMA Zone A 100-year floodplains. This area is considered an "open" drainage basin and the receiving waters are Class III. Cypress Creek is classified as an Outstanding Florida Water (OFW).

In the pre-development condition, the runoff from the project area is conveyed by sheet-flow and shallow concentrated flow in side ditches along I-75, I-275 and all ramps to either the infield areas, or directly to one of the two outfalls where it continues on to Cypress Creek. In the proposed condition, the runoff will flow through side ditches and storm drains to the SMF, which will provide treatment and attenuation of the runoff and will discharge to the outfall located near Station 2378+00 where it will flow downstream to Cypress Creek.

Basin J-2

The basin limits are from the Cypress Creek crossing in Pasco County (Station 641+00) to the End Project (Station 687+30) just South of SR 56. Widening within these limits will be a part of FPID 408459-3-52-01 and construction of the new northbound exit ramps is a part of this project.

Basin J-2 is bounded by proposed development to the west and wetlands and mitigation sites to the east. It outfalls to Cypress Creek which eventually flows southwest to Hillsborough River. This basin contains jurisdictional wetlands and FEMA Zone A 100-year floodplains. This area is considered an "open" drainage basin and the receiving waters are Class III. Cypress Creek is classified as an Outstanding Florida Water (OFW).

In the pre-development condition, the runoff from the project area is conveyed by sheet-flow and shallow concentrated flow in side ditches along I-75. Portions of the runoff are treated and attenuated before discharging to the outfall near station 653+00 where it continues on to Cypress Creek. In the proposed condition, the runoff will flow through side ditches and storm drains to the SMF, which will provide treatment and attenuation of the runoff prior to discharge to Cypress Creek. In the proposed condition the current swales adjacent to I-75 will be displaced. The proposed SMF's are sized to replace the current treatment and attenuation.

11. RECOMMENDED LOW PAVEMENT ELEVATIONS

Below is a table summarizing the recommended minimum pavement elevations. For more information on the development of this information, see the Final Base Clearance Water Elevation Report FPID 408459-3, dated January 10, 2006.

Minimum Pavement Elevation Summary

Basin / Station Range	BCWE (ft.)	*Proposed Minimum Pavement Elevation (ft.)
Basin I Sta. 2335+00 to Sta. 2355+00	44.6	49.10
Basin I Sta. 2355+00 to Sta. 2365+00	46.42	51.00
Basin I Sta. 2365+00 to Sta. 2375+00	50.19	54.70
Basin J Sta. 2375+00 to Sta. 2385+00	48.59	53.10
Basin J Sta. 2385+00 to Sta. 627+00	49.15	53.70
Basin J Sta. 627+00 to Sta. 658+00	51.5	56.00
Basin J Sta. 658+00 to Sta. 670+00	51.7	56.20
Basin J Sta. 670+00 to Sta. 680+00	52.04	56.60

*Based on 3-foot base clearance and 1.5-foot pavement thickness.

12. CROSS DRAINS

The FDOT Allowable High Water (AHW) criteria requires cross drain 50-year headwater to be no higher than the low edge of travel lane and the 100-year headwater to leave one lane dry.

There are no new cross drains proposed by this project. The existing cross drains have been extended as necessary. Preliminary indications (i.e. pavement condition above the pipe and no reports of flooding by District VII maintenance or their maintenance contractor) are that the pipes are in good condition and are of adequate size. Proposed

storm sewer pipes will pass over or under the cross drains. The AHW's will be no higher than they are in the existing condition.

Cross Drain calculations are included in Appendix F.

Basin I

This basin includes cross drains 17, 18 and 18A. Cross drain 17 is located at Station 2349+00 with a drainage area of 11.2 acre. Cross drain 18 was located at Station 2359+00 with a drainage area of 22.3 acres. Cross drain 18A is located at Station 95+00 with a drainage area of 18.7 Ac. Cross drain 18A will be plugged and it's contributing area rerouted to SMF I.

Basin J

This basin includes cross drains 19, 19A, 20 and 21. Cross drain 19 is located at Station 613+70 with a drainage area of 562.6 acres and flows from west to east. Cross drain 19A is located at Station 109+00 with a drainage area of 9.9 acres. Cross drain 19A will be plugged and it's contributing area rerouted to SMF J1-1. Cross drain 20 is a bridge over Cypress Creek located at 640+60 with a drainage area of 76,800 acres and the flow under the bridge is from west to east. Cross drain 21 is located at Station 653+00 with a drainage area of 94.3 acres and flows from west to east. Cross drain 22 is located at Station 683+27 (4 x 4 CBC) and at 683+50 (54" RCP) with a drainage area of 108.8 Ac. and flows from west to east.

13. FLOODPLAIN ENCROACHMENT / COMPENSATION

FEMA Zone A 100-year floodplains will be impacted by roadway embankment in Basins I and J where the roadway alignment will traverse the floodplain. Floodplain volume filled between the SHW elevation and the 100-year flood elevation will require compensating volume within those same elevation limits.

See Appendix H for floodplain encroachment and compensation calculations.

Basin I

A significant portion of Basin I is located within the 100-year FEMA floodplain. Encroachments due to SMF berms \ volume, ditch berms and roadway embankment will require compensation. Compensation volume will be provided within FPC I. FPC I will be connected to Cypress Creek via a proposed ditch along the East side of Ramp A-56. As Cypress Creek stages up during a flood event, the ditch will allow the water to flow into FPC I. SMF I and SMF J2 will outfall into this ditch.

Basin J

The majority of Basin J is located within the 100-year FEMA floodplain. Encroachments due to SMF berms \ volume, ditch berms and roadway embankment will require compensation. With the use of retaining walls and the location of the majority of the J-2 SMF site being outside of the floodplain, it will be possible to avoid the requirement for a floodplain compensation site for this basin. It will be possible to compensate for the volume of FEMA floodplain encroachment due to the roadway for the Ultimate PD&E typical section by claiming the excess volume available in the mitigation site constructed with the SR 56 project (FPID 256350-1-52-01).

14. STORMWATER QUALITY / QUANTITY

Stormwater quality treatment and quantity attenuation is required for the project in accordance with the SWFWMD Environmental Resource Permitting Manual Basis of Review Chapters 4 through 7 and the FDOT Drainage Manual Chapter 5. Calculations can be found in Appendix I.

Stormwater Quality

Due to the shallow depths to the SHWTs and the SHWs in the outfalls, the stormwater management facilities will use the wet detention method of treatment. Therefore, the required water quality volume is one and one-half inch of runoff for the contributing area for Basins I and J. Basins I and J discharge directly to Cypress Creek which is an OFW. The project is an alteration to an existing public roadway; however, the contributing area is the entire right-of-way as required by FDOT. Off-site runoff will remain separate from the on-site runoff and will be conveyed directly to the outfalls. The FDOT has elected to consider the entire right-of-way as contributing impervious area for water quality volume calculations.

Stormwater Quantity

The stormwater quantity design complies with the applicable SWFWMD criteria and the FDOT Critical Duration (Rule 14-86) criteria. All drainage basins are considered "open."

SWFWMD Analysis: The post-development peak discharge is no greater than pre-development peak discharge for the 25-year, 24-hour storm event. The SCS Curve Number Method is utilized with the SCS Type II Florida Modified rainfall distribution.

FDOT Critical Duration (Rule 14-86) Analysis: For each frequency and duration, the post-development peak discharge rate will be no greater than the pre-development peak discharge (Storm for Storm Approach). The analysis includes six frequencies (2-year through 100-year) and five durations (1-hour through 24-hour). The SCS Curve Number Method is utilized with the FDOT rainfall distributions.

For the pre-development analysis, a peak rate factor of 256 is used. A peak rate factor of 323 is used in the post-development analyses for the entire project. For all analyses, the initial stage in the stormwater management facility is equal to the weir elevation.

The Cypress Creek Watershed Management Plan was consulted for tailwater values which were found to peak much later than 24 hours and at significantly lower elevations than the normal high water (NHW) in the Bridge Hydraulic Recommendations (BHR). Therefore, conservatively a constant tailwater equal to the NHW from the BHR for Cypress Creek near station 2335+00 was utilized in the ICPR model. The NHW elevation is 40.9, the 100YR HW is 42.8 and the wetland SHW is equal to 39.5. The tailwater elevation is below the weir in all SMF's.

Stormwater Management Facility Descriptions

Since all stormwater management facilities are adjacent to I-75 a turnout from the roadway will provide access to the site. SMF J2 access is within an existing easement from County Line Road All sites will be fenced with 6-foot Type B (chain-link) fence. A 24-foot swing gate will be provided at each turnout.

A 20-foot wide maintenance berm with a 1:20 side slope is provided around all facilities. Side slopes down into the facility are 1:4.

A minimum of 35% of the water surface area at the control elevation is littoral zone with a maximum depth of 3.5 feet below overflow (weir) elevation. The treatment volume bleeder will discharge no more than one-half of the treatment volume in the first 60 hours and discharge the entire treatment volume in no less than 120 hours. DIP turn-down devices will be used for the bleeder and skimmers will be used on the control structures for the overflow.

SMF I (formerly known as I2) is located in the infield between northbound I-75 and northbound I-275 south of County Line Road. The inflows to the facility are from various locations with two main storm drain systems and the outflow is via a pipe system flowing east to the proposed ditch for FPC I which flows south to Cypress Creek. The control elevation (40.9) is equal to the NWL elevation at Cypress Creek crossing south of the interchange. The control elevation is above the wetland SHW (39.5 feet) in Cypress Creek. The control elevation is below the average SHWT elevation (44.4) at the site. SMF I will require a liner.

SMF J1-1 is located in the infield located between northbound I-75 and northbound I-275 north of County Line Road. The inflows to the facility are via a storm drain system. The outflow is via an equalizer pipe flowing east to SMF J1-2. The control elevation (46.5) is equal to the SHW elevation (46.5 feet) in the adjacent wetland. The control elevation is above the average SHWT elevation (46.1) at the site, therefore a liner will not be required.

SMF J1-2 is located north of County Line Road adjacent to I-275 northbound. The inflows to the facility are via a storm drain system and equalizer pipe connection with SMF J1-1. The outflow is via a pipe flowing east to the adjacent wetland. The control elevation (46.5) is equal to the SHW elevation (46.5 feet) in the adjacent wetland. The control elevation is above the average SHWT elevation (45.0) at the site, therefore a liner will not be required.

SMF J2 (formerly known as J2-3) is located south of County Line Road adjacent to Ramp A. The inflows to the facility are via a storm drain system and the outflow is via a pipe flowing west to a proposed ditch which connects FPC I to Cypress Creek. The control elevation (39.5) is equal to the SHW elevation (39.5 feet) in Cypress Creek. The control elevation is below the average SHWT elevation (44.41) at the site. A liner is required for SMF J2.

Stormwater Quality / Quantity calculations are included in Appendix I.

15. DITCHES

Where feasible, side ditches and median ditches are used to collect and convey the project runoff. The ditches are designed to keep the hydraulic grade line elevation below the shoulder hinge for the 10-year storm frequency. Where necessary, a berm at the top of the back slope of side ditches will provide a minimum of one foot of freeboard for the 10-year frequency flow. The berm will also provide a minimum of one foot of freeboard for the 100-year high water in the downstream stormwater management facility to prevent water backing into the ditches and overtopping the berm.

The side ditches are typically 3.5 feet deep below the shoulder hinge point. The depth will vary based on the special ditch profiles, which are necessary to provide positive drainage to the stormwater management facilities. To avoid long-duration standing water in the ditches, the minimum ditch elevation in each basin is the downstream stormwater management facility weir elevation.

Collection / conveyance calculations are included in Appendix J.

16. STORM DRAINS

Storm drain systems are used to convey the runoff from the side ditches and median ditches to the SMF's. Since the storm drain systems are outfalls for the ditch systems, the storm drains will be sized for the 10-year storm frequency. The highest Critical Duration (Rule 14-86) 10-year peak stage in the stormwater management facility is used for the storm drain system tailwater. For Basins I and J, the 50-year design frequency criteria was checked and pipes were sized to keep the runoff from infringing upon the travel lanes.

The storm drain systems will be long systems conveying the runoff from the ditches to the SMF's.

Collection / conveyance calculations are included in Appendix J

17. GUTTER SPREAD

Gutter spread has been evaluated for shoulder gutter and barrier walls along I-75, I-275, Ramp B-56 and Ramp A-56. For the shoulder gutter section, the spread resulting from 4.0 inch per hour intensity will not exceed 1'-3" outside the gutter. Spread adjacent to a barrier wall has been limited to the shoulder width. Some areas in Basin J required rocking the shoulder to provide minimum gutter grades (+/- 0.300%).

Gutter spread calculations can be found in Appendix J.

18. OPTIONAL CULVERT MATERIALS

Selection of optional culvert materials follows Chapter 6 of the FDOT Drainage Manual, the FDOT Standard Indexes, the FDOT Plans Preparation Manual and District VII Design Directives. The roadway will considered "Major" for the purpose of selecting the Design Service Life (DSL). Therefore, the DSL for storm drains and cross drains will be 100 years and the DSL for side drains will be 25 years. Refer to FDOT Design Standards, Index 205 for maximum fill height over various pipe materials. See Appendix K for Culvert Service Life Estimator output.

19. EROSION AND SEDIMENT CONTROL

Permanent erosion control:

- Side ditches and median ditches: 10-year velocities are anticipated to be low enough to use sod or seed and mulch.
- Storm drain outfalls to stormwater management facilities: 10-year velocities are anticipated to be low and pipes will be submerged under peak flow conditions, no special measures required.
- Stormwater management facility outfalls: 25-year outlet velocities are low; outlets are submerged under peak flow conditions, no special measures required.
- Cross drains: 100-year velocities are low, no special measures required.

Permanent sediment control:

- The stormwater management facilities will provide sediment sumps and/or permanent pools to allow for sediment fall-out.

Temporary erosion and sediment control:

- Appropriate measures will be provided in the plans per the FDOT Erosion and Sediment Control Handbook.

20. TEMPORARY DRAINAGE

Construction of the drainage systems should generally be from downstream to upstream, prior to or concurrent with, any construction that will alter drainage patterns.

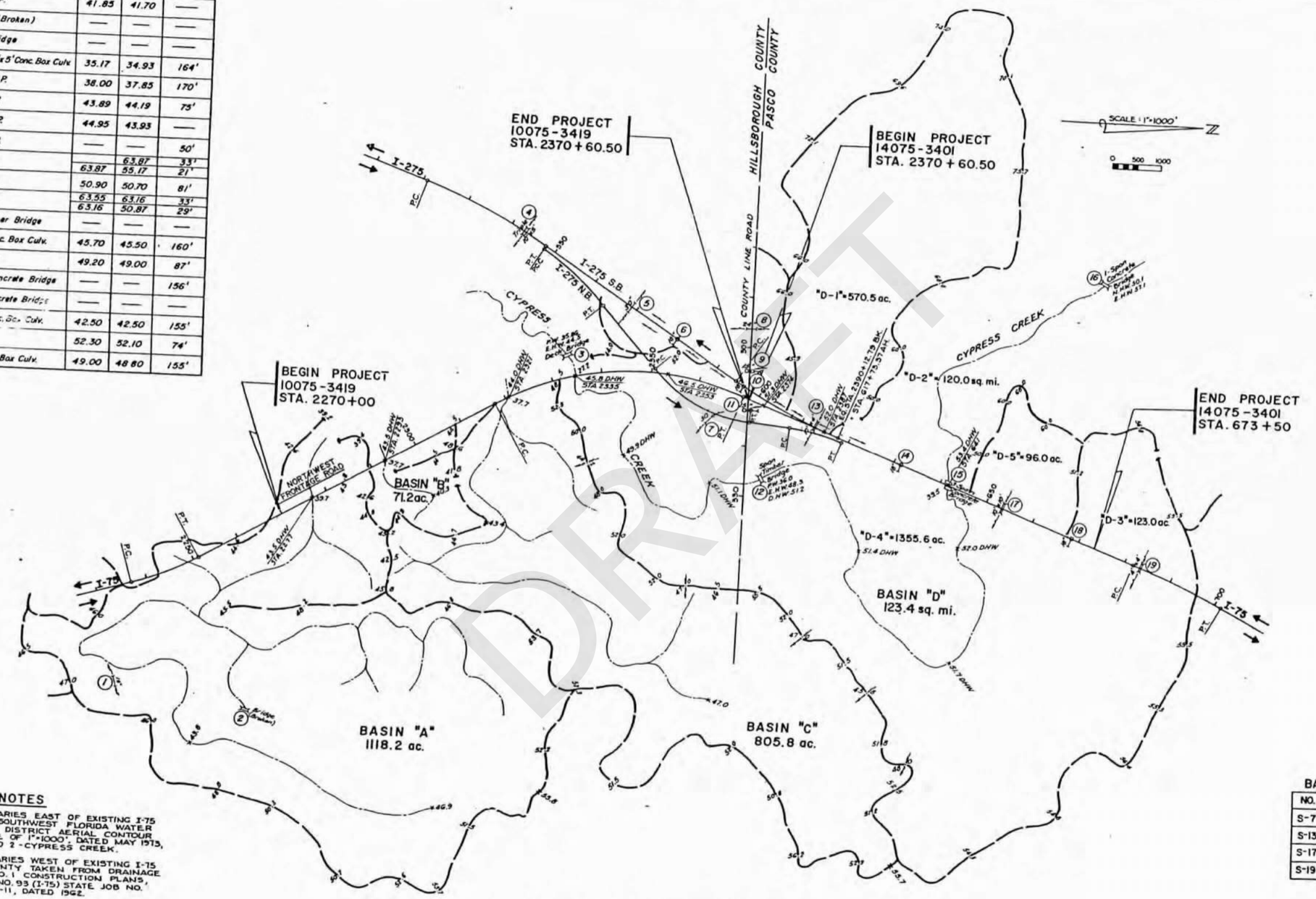
Construct in the following order.
1) stormwater management facilities' outfalls;
2) stormwater management facilities;
3) ditches, side drains and storm drains from downstream to upstream.

Refer to the Traffic Control sheets in the contract plans for specific information regarding pipe construction.

STATE PROJ. NO.	SH. NO.
10075 – 3419	4
14075 – 3401	

EXISTING DRAINAGE STRUCTURES

NO.	DESCRIPTION	INV. IN	INV. OUT	LENGTH
(1)	18" R.C.P.	41.85	41.70	—
(2)	Bridge (Broken)	—	—	—
(3)	Deck Bridge	—	—	—
(4)	Triple 10'x5' Conc. Box Culv.	35.17	34.93	164'
(5)	30" R.C.P.	38.00	37.85	170'
(6)	18" R.C.P.	43.89	44.19	75'
(7)	30" R.C.P.	44.95	43.93	—
(8)	24" R.C.P.	—	—	50'
(9)	15" C.M.P.	63.87	63.87	33'
			55.17	21'
(10)	18" R.C.P.	50.90	50.70	81'
(11)	15" C.M.P.	63.55	63.16	33'
		63.16	50.87	29'
(12)	Span Timber Bridge	—	—	—
(13)	10'x 4' Conc. Box Culv.	45.70	45.50	160'
(14)	18" R.C.P.	49.20	49.00	87'
(15)	3 Span Concrete Bridge	—	—	156'
(16)	1 Span Concrete Bridge	—	—	—
(17)	10'x10' Conc. Box Culv.	42.50	42.50	155'
(18)	18" R.C.P.	52.30	52.10	74'
(19)	4'x 4' Conc. Box Culv.	49.00	48.80	155'



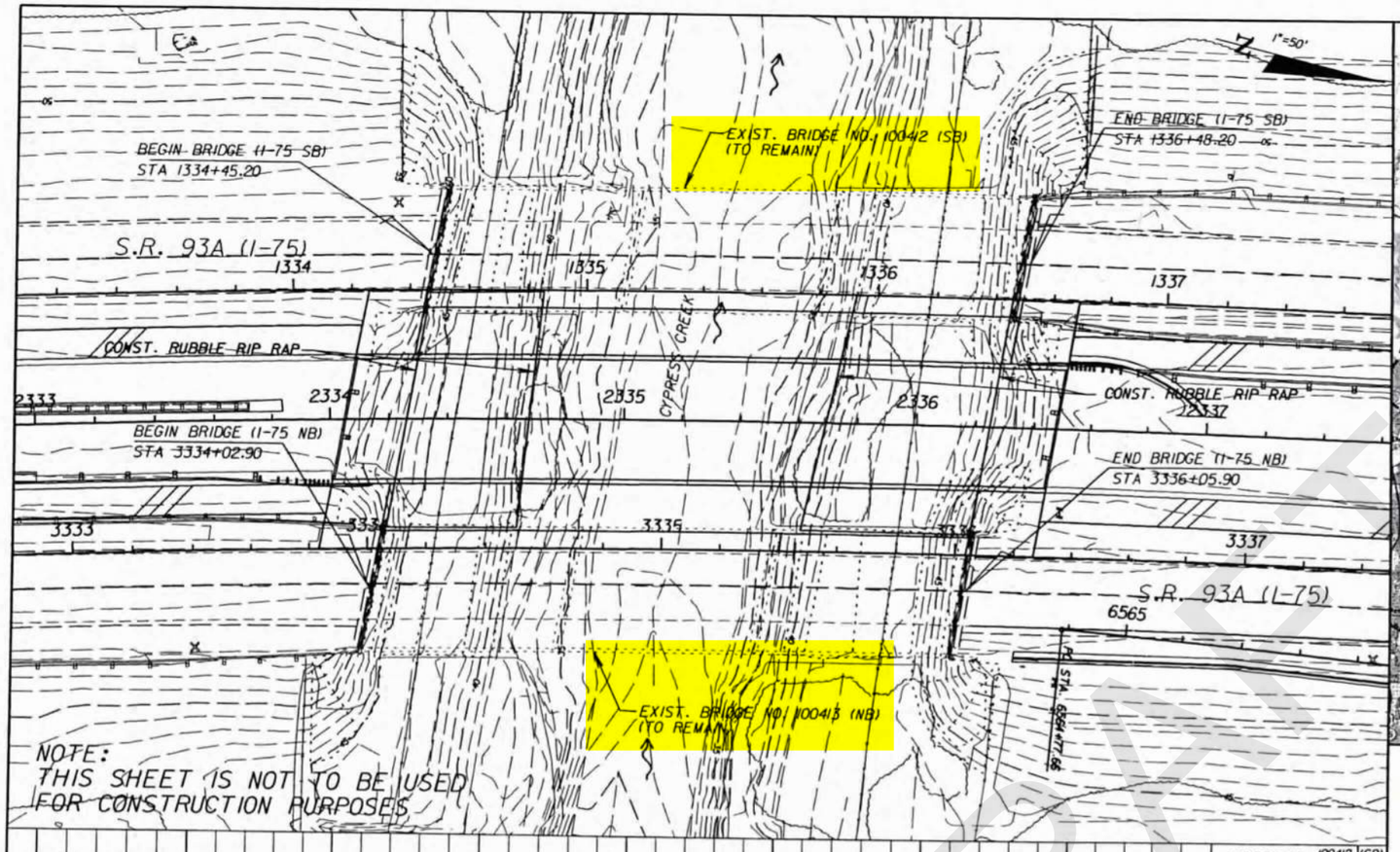
NOTES

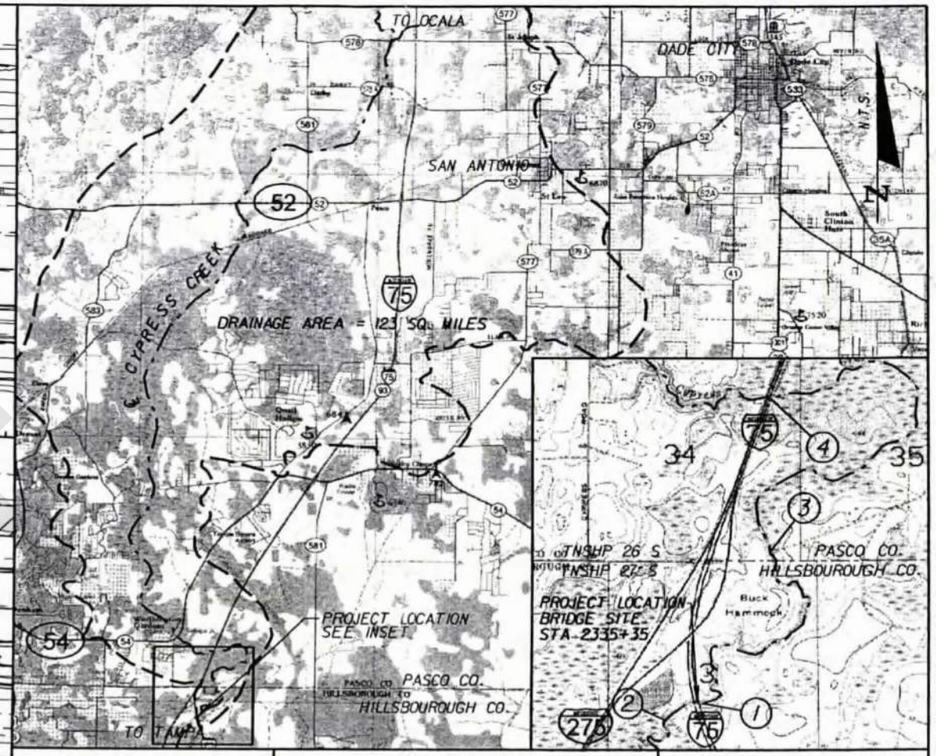
1. BASIN BOUNDARIES EAST OF EXISTING I-75 TAKEN FROM SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT AERIAL CONTOUR MAP AT SCALE OF 1"=1000', DATED MAY 1973, SHEETS 1 AND 2 - CYPRESS CREEK.
2. BASIN BOUNDARIES WEST OF EXISTING I-75 IN PASCO COUNTY TAKEN FROM DRAINAGE MAP SHEET NO. 1 CONSTRUCTION PLANS, STATE ROAD NO. 93 (I-75) STATE JOB NO. 14140-3401-41-11, DATED 1962.

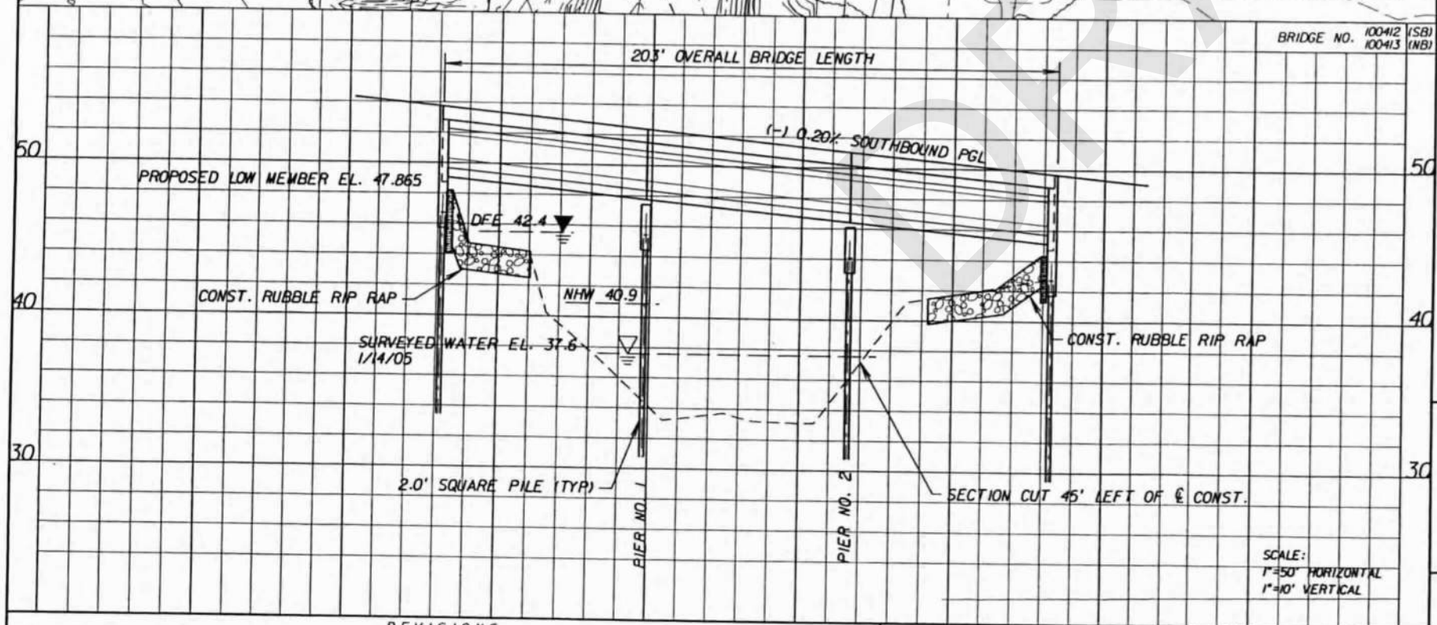
BASIC FLOOD DATA - EXISTING CULVERTS

NO.	Q (50 YR.)	Q (100 YR.)	D.H.W. (50 YR.)	E.H.W. (100 YR.)
S-7	NOT INVOLVED			
S-13	205 CFS	231 CFS	52.0	52.2
S-17	129 CFS	145 CFS	53.4	53.6
S-19	150 CFS	169 CFS	53.4	53.7

OVERALL AREA DRAINAGE LAYOUT







EXISTING STRUCTURES

(REFERENCE)	(1)	(2)	(3)	(4)	PROPOSED STRUCTURE
FOUNDATION	CONC. PILES	MASONRY	TIMBER	CONC.	CONC. PILES
OVERALL LENGTH	203'	50'	50'	156'	203
SPAN LENGTH	3 @ 68'	50'	50'	32'	3 @ 68'
TYPE CONSTRUCTION	CONC.	2-24" I-BEAM	TIMBER	PRESTRESSED	CONC.
AREA OF OPENING @ D.F.					
BRIDGE WIDTH	2 @ 40'	12'	12'	24'	2 @ 56'
ELEV. LOW MEMBER	48.5'	42.5'		56.0	47.9

HYDRAULIC DESIGN DATA

NOTE:
The hydraulic data is shown for informational purposes only to indicate the flood discharges and water surface elevations which may be anticipated in any given year. This data was generated using highly variable factors determined by a study of the watershed. Many judgements and assumptions are required to establish these factors. The resultant hydraulic data is sensitive to changes, particularly antecedent conditions, urbanization, channelization and land use. Users of this data are cautioned against the assumption of precision which cannot be obtained.

TERMS:
Design Flood: Utilized to assure a desired level of hydraulic performance.
Base Flood: Has a 1% chance of being exceeded in any given year (100 year frequency)
Overtopping Flood: Causes flow over the highway, over a watershed divide, or thru emergency relief structures.
Greatest Flood: The most severe that can be predicted where overtopping is not practicable.

WATER SURFACE ELEVATIONS: N.H.W. (Non-Tidal) 40.9 M.H.W. (Tidal) ____
CONTROL (Non-Tidal) ____ M.L.W. (Tidal) ____

FLOOD DATA:	MAX. EVENT OF RECORD	DESIGN FLOOD	BASE FLOOD	☐ OVERTOPPING or ☒ GREATEST FLOOD
STAGE ELEV. NGVD (ft)	NO RECORD	42.4	42.9	44.1
DISCHARGE (cfs)		3000	3300	5000
AVERAGE VELOCITY (f/s)		4.6	4.7	5.9
EXCEEDANCE PROB. (%)		2	1	0.2
FREQUENCY (yr.)		50	100	500

SCOUR PREDICTIONS FOR PROPOSED STRUCTURE DESCRIBED ABOVE:

PIER INFORMATION			TOTAL SCOUR ELEVATION		
NUMBERS	SIZE AND TYPE	LONG TERM SCOUR ELEV.	WORST CASE < 100 yr. FREQ. (yr.) 100	WORST CASE < 500 yr. FREQ. (yr.) 500
1	2.0' SQUARE		DEPTH = 5.1	DEPTH = 6.3
2	2.0' SQUARE		DEPTH = 5.1	DEPTH = 6.3

HYDRAULIC RECOMMENDATIONS

1. BEGIN BRIDGE STATION 3334+45.20 (SB) 3334+02.90 (NB) END BRIDGE STATION 3336+48.20 (SB) 3336+05.90 (NB) SKEW ANGLE 10° RT
2. CLEARANCE PROVIDED: NAV: HORIZ. N/A VERT. N/A ABOVE EL. N/A DRIFT: HORIZ. 56' VERT. 5.5' ABOVE EL. 42.4
3. MINIMUM CLEARANCE: NAV: HORIZ. N/A VERT. N/A ABOVE EL. N/A DRIFT: HORIZ. 10' VERT. 2.0' ABOVE EL. 42.0
4. ABUTMENTS:

	BEGIN BRIDGE BANK AND SHORE	END BRIDGE BANK AND SHORE
RUBBLE GRADE:		
SLOPE:	1:1.5	1:1.5
BURIED OR NON-BURIED HORIZ. TOE:	NON-BURIED	NON-BURIED
TOE HORIZ. DISTANCE:	10'	10'
LIMIT OF PROTECTION:	36' LT, 37' RT	37' LT, 36' RT

5. DECK DRAINAGE: SPREAD IS CONTAINED IN SHOULDER.

REMARKS: ALL ELEVATIONS BASED ON 1929 DATUM (NGVD)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
					Imaged As Is

DRMP
ENGINEERS · SURVEYORS · PLANNERS · SCIENTISTS
DYER, RIDDLE, MILLS & PRECOURT, INC.
941 LAKE BALDWIN LANE, ORLANDO, FLORIDA 32814
PHONE: (407) 896-0594 FAX: (407) 896-4836
CERTIFICATE OF AUTHORIZATION NO. 2648
SCOTT GARTH, PE LICENSE NO. 54018

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 93A	HILLSBOROUGH	408459-3-52-01

Cross Drain 16
BRIDGE HYDRAULIC RECOMMENDATIONS

SHEET NO.

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

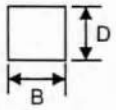
URS

POST Cross Drain 17 EXTENSION

PREPARED BY: CAJ DATE: 3-19-08

CHECKED BY: TMK DATE: 3-19-08

HYDROLOGIC AND CHANNEL INFORMATION



D = Diameter or Height
B = Span
N = Number of Barrels

Q_{50} = 9 TW EL. $_{50}$ = 43.92

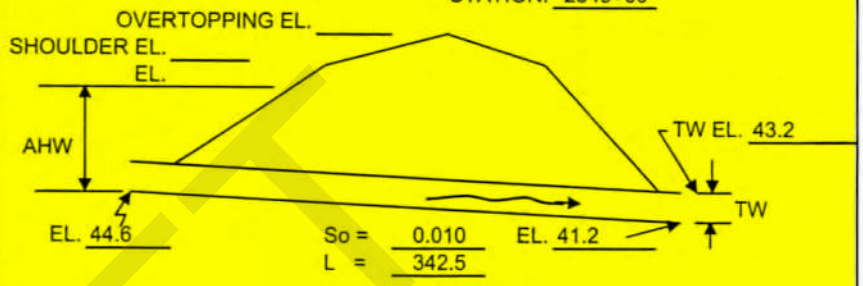
Q_{100} = 11 TW EL. $_{100}$ = 43.92

Q_{500} = 18 TW EL. $_{500}$ = 43.92

Cd = 0.62

SKETCH: CROSS DRAIN 17

STATION: 2349+00



CULVERT DESCRIPTION (ENTRANCE TYPE)	Q	N	SIZE		HEADWATER COMPUTATION											CONTROLLING HW ELEV.	OUTLET VELOCITY	COST	COMMENTS
					INLET CONTROL			OUTLET CONTROL											
	(cfs)		D (ft)	B (ft)	Q/B	HW/D	HW	K_e	H (ft)	d_c (ft)	$(d_c+D)/2$ (ft)	TW (ft)	DTW (ft)	LS_o (ft)	HW (ft)	(ft ngvd)	(fps)	($)	
24" RCP	9	1	2.0	n/a	n/a	0.40	0.79	0.2	0.66			2.72	2.72	3.35	0.03	45.34	2.97		50 year frequency
24" RCP	11	1	2.0	n/a	n/a	0.51	1.02	0.2	0.85			2.72	2.72	3.35	0.22	45.57	3.38		100 year frequency
24" RCP	18	1	2.0	n/a	n/a	1.48	2.96	0.2	2.46			2.72	2.72	3.35	1.83	47.51	5.74		500 year frequency

SUMMARY & RECOMMENDATION:

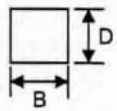
Notes:
1. The tailwater elevations were assumed to be the existing crown of the 24" pipe.

URS

Cross Drain 18 - Post

PREPARED BY: CAJ DATE: 3-1-08
CHECKED BY: TMC DATE: 3-1-08

HYDROLOGIC AND CHANNEL INFORMATION



D = Diameter or Height
B = Span
N = Number of Barrels

Q_{50} = 18 TW EL. $_{50}$ = 46.70

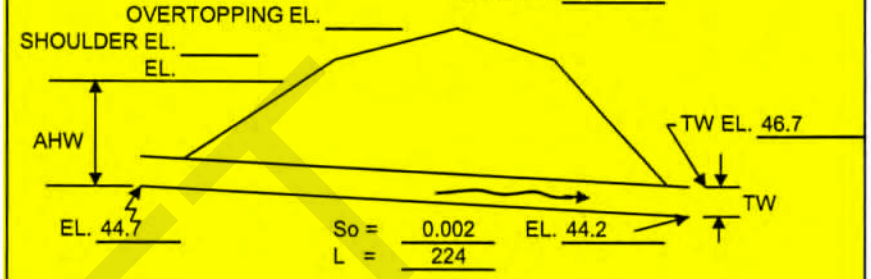
Q_{100} = 21 TW EL. $_{100}$ = 46.70

Q_{500} = 36 TW EL. $_{500}$ = 46.70

C_d = 0.62

SKETCH: CROSS DRAIN 18

STATION: 2359+00

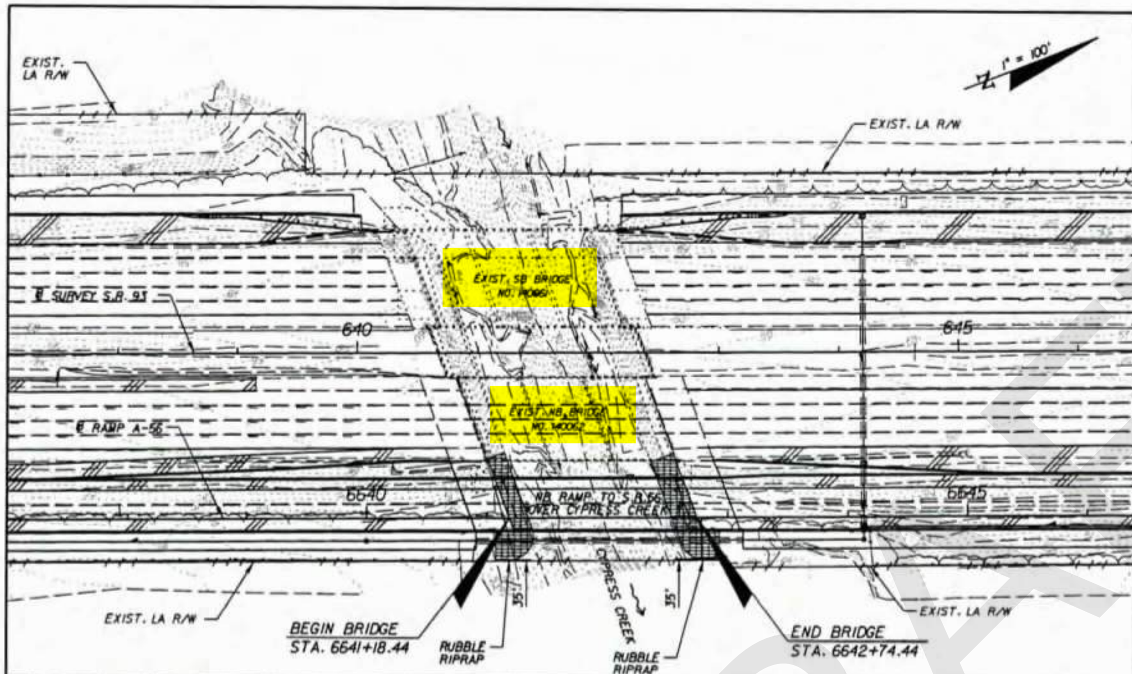


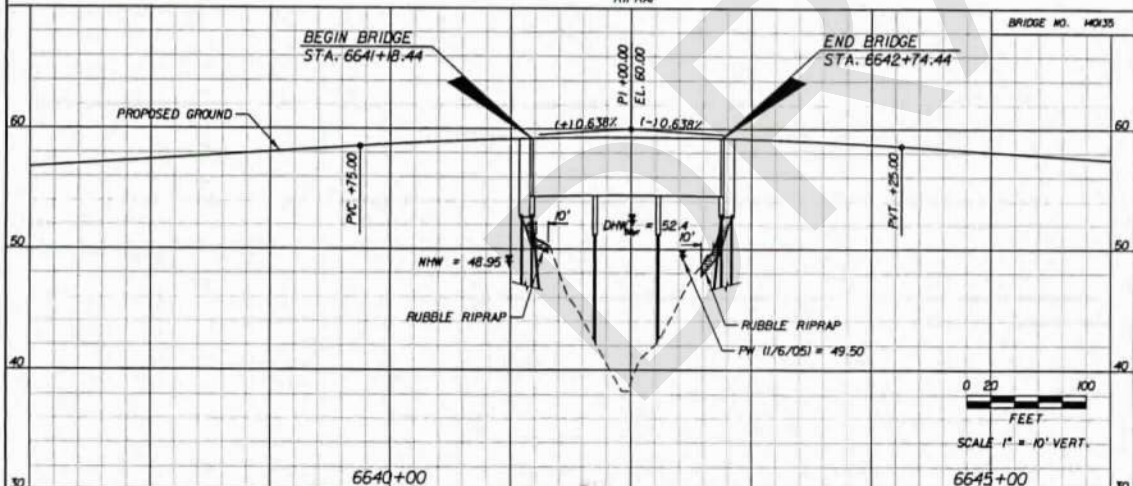
CULVERT DESCRIPTION (ENTRANCE TYPE)	Q	N	SIZE		HEADWATER COMPUTATION											CONTROLLING HW ELEV.	OUTLET VELOCITY	COST	COMMENTS
					INLET CONTROL			OUTLET CONTROL											
	(cfs)		D (ft)	B (ft)	Q/B	HW/D	HW	K_e	H (ft)	d_c (ft)	$(d_c+D)/2$ (ft)	TW (ft)	DTW (ft)	LS_o (ft)	HW (ft)	(ft ngvd)	(fps)	($)	
30" RCP	18	1	2.5	n/a	n/a	0.23	0.57	0.5	0.71			2.50	2.50	0.50	2.71	47.41	3.76		50 year frequency
30" RCP	21	1	2.5	n/a	n/a	0.31	0.77	0.5	0.96			2.50	2.50	0.50	2.96	47.66	4.36		100 year frequency
30" RCP	36	1	2.5	n/a	n/a	0.89	2.22	0.5	2.77			2.50	2.50	0.50	4.77	49.47	7.41		500 year frequency

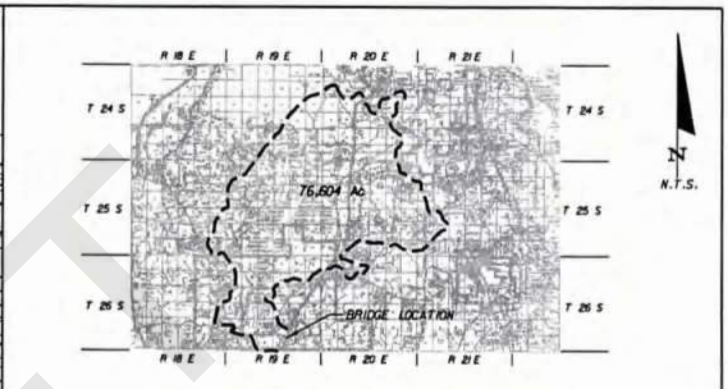
SUMMARY & RECOMMENDATION:

Notes:
1. The tailwater elevations were assumed to be the crown of the cross drain.

F-25







(REFERENCE)	EXISTING STRUCTURES (1)	(2)	(3)	(4)	PROPOSED STRUCTURE
FOUNDATION	PILES	PILES			PILES
OVERALL LENGTH	156.00'	156.00'			156.00'
SPAN LENGTH	3 @ 52.00'	3 @ 52.00'			3 @ 52.00'
TYPE CONSTRUCTION	CONCRETE	CONCRETE			CONCRETE
AREA OF OPENING @ D.F.	638	638			638
BRIDGE WIDTH	94.3	91			45
ELEV. LOW MEMBER	50.46	50.46			54.40

HYDRAULIC DESIGN DATA

NOTE:
The hydraulic data is shown for informational purposes only to indicate the flood discharges and water surface elevations which may be anticipated in any given year. This data was generated using highly variable factors determined by a study of the watershed. Many judgements and assumptions are required to establish these factors. The resultant hydraulic data is sensitive to changes, particularly antecedent conditions, urbanization, channelization and land use. Users of this data are cautioned against the assumption of precision which cannot be obtained.

TERMS:
Design Flood: Utilized to assure a desired level of hydraulic performance.
Base Flood: Has a 1% chance of being exceeded in any given year (100 year frequency)
Overtopping Flood: Causes flow over the highway, over a watershed divide, or thru emergency relief structures.
Greatest Flood: The most severe that can be predicted where overtopping is not practicable.

WATER SURFACE ELEVATIONS: N.H.W. (Non-Tidal) 48.95 M.H.W. (Tidal) ____
CONTROL (Non-Tidal) ____ M.L.W. (Tidal) ____

FLOOD DATA:	MAX. EVENT OF RECORD *	DESIGN FLOOD	BASE FLOOD	☐ OVERTOPPING or ☐ GREATEST FLOOD
STAGE ELEV. NGVD (ft)	-	52.4	53.0	54.2
DISCHARGE (cfs)	1770	2596	3259	4776
AVERAGE VELOCITY (f/s)	-	2.29	2.65	3.51
EXCEEDANCE PROB. (%)	0.07	0.02	0.01	0.002
FREQUENCY (yr.)	15	50	100	500

SCOUR PREDICTIONS FOR PROPOSED STRUCTURE DESCRIBED ABOVE:

PIER INFORMATION: NUMBERS	SIZE AND TYPE	LONG TERM SCOUR ELEV.	TOTAL SCOUR ELEVATION: WORST CASE ≤ 100 yr. FREQ. (yr.)	WORST CASE ≤ 500 yr. FREQ. (yr.)
2-3	24" CONCRETE PILE	34.8	26.7	25.2

HYDRAULIC RECOMMENDATIONS

1. BEGIN BRIDGE STATION 6641+18.44 END BRIDGE STATION 6642+74.44 SKEW ANGLE 30°
2. CLEARANCE PROVIDED: NAV: HORIZ. 44.88 VERT. 5.5 ABOVE EL. 48.30 DRIFT: HORIZ. 44.88 VERT. 2.12 ABOVE EL. 52.33
3. MINIMUM CLEARANCE: NAV: HORIZ. ____ VERT. ____ ABOVE EL. 48.30 DRIFT: HORIZ. ____ VERT. 2 ABOVE EL. 52.33
4. ABUTMENTS:

	BEGIN BRIDGE	END BRIDGE
RUBBLE GRADE:	STANDARD BANK & SHORE	STANDARD BANK & SHORE
SLOPE:	1.5:1	1.5:1
BURIED OR NON-BURIED HORIZ. TOE:	BURIED TOE	BURIED TOE
TOE HORIZ. DISTANCE:	10'	10'
LIMIT OF PROTECTION:	EXISTING BANK, LT; 35' RT	EXISTING BANK, LT; 35' RT

5. DECK DRAINAGE: GUTTER FLOW TO ENDS OF BRIDGE TO INLETS

REMARKS: STANDARD BANK & SHORE RUBBLE RIPRAP WITH D2 FILTER FABRIC, TO EL 52.0 AT 1.5:1 SLOPE AND EXTEND RUBBLE BLANKET ALONG EXISTING SLOPE TO 10' BEYOND TOE OF SLOPE
* MAX. EVENT AT WORTHINGTON GARDENS (1954) STREAM GAGE 0 MILE UPSTREAM

REVISIONS: DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBSJ
5300 West Cypress Street
Suite 200
Tampa, Florida 33607-1768
FBPE Certificate of Authorization No. 24
Timothy A. Polk, P.E. # 38784

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 93	HILLSBOROUGH PASCO	421831-1-52-01

CROSS DRAIN 20
BRIDGE HYDRAULIC RECOMMENDATION SHEET

SHEET NO.

USER: 10597 3/20/2008 4:51:38 PM

DRAFT

Imaged As Is

POST

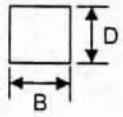
URS

Cross Drain 21 EXTENSION

PREPARED BY: SAJ DATE: 3-17-08

CHECKED BY: TMK DATE: 3-17-08

HYDROLOGIC AND CHANNEL INFORMATION



D = Diameter or Height
B = Span
N = Number of Barrels

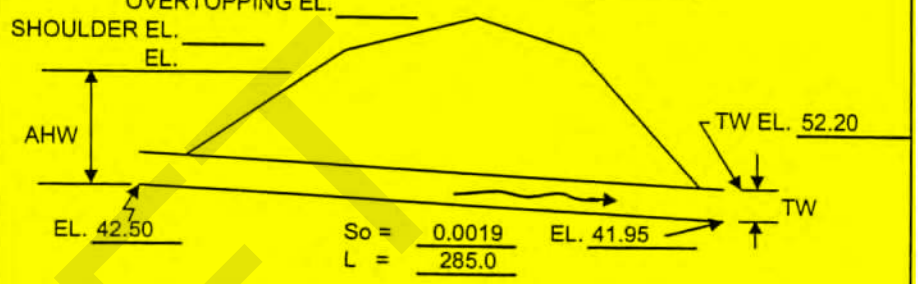
Q_{50} = 84 TW EL. $_{50}$ = 52.20

Q_{100} = 99 TW EL. $_{100}$ = 52.20

Q_{500} = 168 TW EL. $_{500}$ = 52.20

SKETCH: CROSS DRAIN 21

STATION: 653+00



CULVERT DESCRIPTION (ENTRANCE TYPE)	Q (cfs)	N	SIZE D (ft)	SIZE B (ft)	HEADWATER COMPUTATION: INLET CONTROL Q/B	INLET CONTROL HW/D	INLET CONTROL HW	OUTLET CONTROL K_e	OUTLET CONTROL H (ft)	OUTLET CONTROL d_c (ft)	OUTLET CONTROL $(d_c+D)/2$ (ft)	OUTLET CONTROL TW (ft)	OUTLET CONTROL DTW (ft)	OUTLET CONTROL LS_o (ft)	OUTLET CONTROL HW (ft)	CONTROLLING HW ELEV. (ft ngvd)	OUTLET VELOCITY (fps)	COST ($)	COMMENTS
Single 10' x 10'	84	1	10.0	10.0	8.426	0.20	2.0	0.2	0.02	1.30	5.65	10.25	10.25	0.55	9.72	52.22	0.84		50 year frequency
Single 10' x 10'	99	1	10.0	10.0	9.874	0.23	2.3	0.2	0.02	1.45	5.72	10.25	10.25	0.55	9.72	52.22	0.99		100 year frequency
Single 10' x 10'	168	1	10.0	10.0	16.79	0.35	3.5	0.2	0.07	2.06	6.03	10.25	10.25	0.55	9.77	52.27	1.68		500 year frequency

SUMMARY & RECOMMENDATION:

Notes:
1. The tailwater elevations were assumed to be the PRE-DEVELOPMENT top of the 10' x 10' CBC.
2. The HW/D from Inlet and Outlet Nomographs for Concrete Box Culverts (Chart 10 Federal Highway Administration Hydraulic Design Series No. 5)

Post

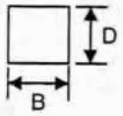
URS

Cross Drain 22 EXTENSION

PREPARED BY: CAT DATE: 6-4-06

CHECKED BY: TWK DATE: 6-7-06

HYDROLOGIC AND CHANNEL INFORMATION

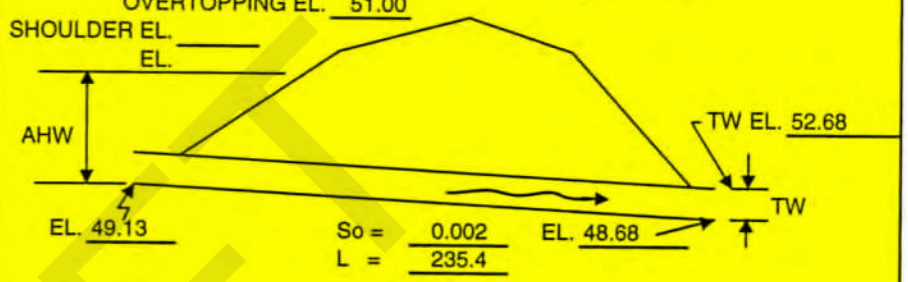


D = Diameter or Height
B = Span
N = Number of Barrels

Q_{50} =	78	TW EL. $_{50}$ = 52.68
Q_{100} =	91	TW EL. $_{100}$ = 52.68
Q_{500} =	154	TW EL. $_{500}$ = 52.68

SKETCH: CROSS DRAIN 21

STATION: 683+27 / 683+50



CULVERT DESCRIPTION (ENTRANCE TYPE)	Q (cfs)	N	SIZE D (ft)	SIZE B (ft)	HEADWATER COMPUTATION: INLET CONTROL Q/B	INLET CONTROL HW/D	INLET CONTROL HW	OUTLET CONTROL K_e	OUTLET CONTROL H (ft)	OUTLET CONTROL d_c (ft)	OUTLET CONTROL $(d_c+D)/2$ (ft)	OUTLET CONTROL TW (ft)	OUTLET CONTROL DTW (ft)	OUTLET CONTROL LS_o (ft)	OUTLET CONTROL HW (ft)	CONTROLLING HW ELEV. (ft ngvd)	OUTLET VELOCITY (fps)	COST ($)	COMMENTS
Double 4' x 4' ^{2}	78	2	4.0	4.0	19.53	0.20	0.8	0.2	0.20	1.44	2.72	4.00	4.00	0.45	3.75	52.88	2.44		50 year frequency
Double 4' x 4' ^{2}	91	2	4.0	4.0	22.69	0.23	0.9	0.2	0.27	1.59	2.79	4.00	4.00	0.45	3.82	52.95	2.84		100 year frequency
Double 4' x 4' ^{2}	154	2	4.0	4.0	38.58	0.35	1.4	0.2	0.79	2.26	3.13	4.00	4.00	0.45	4.34	53.47	4.82		500 year frequency

SUMMARY & RECOMMENDATION:

Notes:
1. The tailwater elevations were assumed to be the top of the 4' x 4' CBC.
2. There is a 54" RCP @ 683+50 and a 4'x4' CBC @ 683+27 (both modeled as 2 - 4'x4' CBC using original 4'x'4' CBC flowlines).
3. The HW/D from Inlet and Outlet Nomographs for Concrete Box Culverts (Chart 10 Federal Highway Administration Hydraulic Design Series No. 5)

F-59

URS

STORMWATER SUMMARY TABLE

Computed: CAJ Date: 4-3-08
Checked: TMK Date: 4-3-08

PRE/POST SUMMARY

	Basin I	Basin J1	Basin J2
Total Area (AC.)	50.40	33.85	80.79
Impervious Area (AC.)	43.04	28.38	70.20
Water Area (AC.)	4.40	3.23	7.52
Pervious Area (AC.)	2.96	2.24	3.07
Water Quality Volume Required (AC. FT.)	6.30	4.23	10.10
Water Quality Volume Provided (AC. FT.)	6.33	4.59	10.97
Pre 25YR Discharge (CFS)	35.8	80.3	42.8
Post 25 YR Discharge (CFS)	15.5	42.8	28.3
25YR DHW (FT.)	47.57	50.64*	45.83
100YR DHW (FT.)	48.60	51.10*	46.70

* - refers to SMF J1-2

URS

Basin J1 - Basin Area Calculations

Computed: CAS Date: 2-4-08
Checked: TML Date: 2-7-08

Pre-Development

Runoff going to J1 Outfall (see Pre Development Plan Map)

Cover Description	CN	Area (Ac)	CN x Area (Ac)
Roadway			
Pavement	98	12.83	1257.34
Open Space, good cond. (B/D Soils)	70.5	31.28	2205.24
Subtotal	78.5	44.11	3462.58
SMF Site			
Water	100	0.00	0.00
Open Space, good cond. (B/D Soils)	70.5	3.65	257.33
Subtotal	70.5	3.65	257.33
Total	77.9	47.76	3719.91

BASIN J1

(STA. 6599+53.31 TO STA. 6641+54.31)

℄ COUNTY LINE RD

31.28 AC.
PERVIOUS

12.83 AC.
IMPERVIOUS
(PAVEMENT)

50.40

℄ SURVEY 93A

EX. DHW100 = 47.7'

℄ RAMP A-56

3.65 AC.
PERVIOUS
(PROP. SMF SITES)

0 300
Feet

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy Kreisle P.E. NO. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A &	HILLSBOROUGH & PASCO	421831-2-52-01

BASIN J1 (PRE-DEVELOPMENT)

SHEET NO. 3

$USER$

3/24/2008 9:35:42 AM G:\Proj\FDOT\V8\421831\5201\drainage\Exhibits\basin_J1.dgn

SHOULD SAY J2

BASIN J1

(STA. 641+46.22 TO STA. 687+30.00)

53.62 AC.
PERVIOUS

4.31 AC.
IMPERVIOUS
(PAVEMENT)

℄ SURVEY 93A

END PROJECT
℄ SURVEY 93A
STA. 687+30.00

8.91 AC.
PERVIOUS
(PROP. SMF SITE)
LOCATED AT BASIN 1

0 100 400
Feet

Imaged As Is

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy Kreisle P.E. NO. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A &	HILLSBOROUGH & PASCO	421831-1-52-01

BASIN J2 (PRE-DEVELOPMENT)

SHEET NO. 5

#USER# 3/20/2008 7:30:27 AM G:\Proj\FDOT\W8\421831\5201\drainage\Exhibits\basin_J2.dgn

BASIN 1

(STA. 2336+34.20 TO STA. 2370+29.78)

43.04 AC.
IMPERVIOUS
(ROW TO ROW)

℄ RAMP B-56

47.80

DHW00 = 48.6'

SMF 1

7.36 AC.
PERVIOUS
(PROP. SMF SITE)

BEGIN PROJECT
STA. 2336+34.20

℄ RAMP A-56

NOTE:
8.91 AC. PERVIOUS
(PROP BASIN J2 SMF)

0 300
Feet

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy Kreisle P.E. NO. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A & 93	HILLSBOROUGH & PASCO	421831-1-52-01

BASIN I (POST-DEVELOPMENT)

SHEET NO. 2

#USER#
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URS

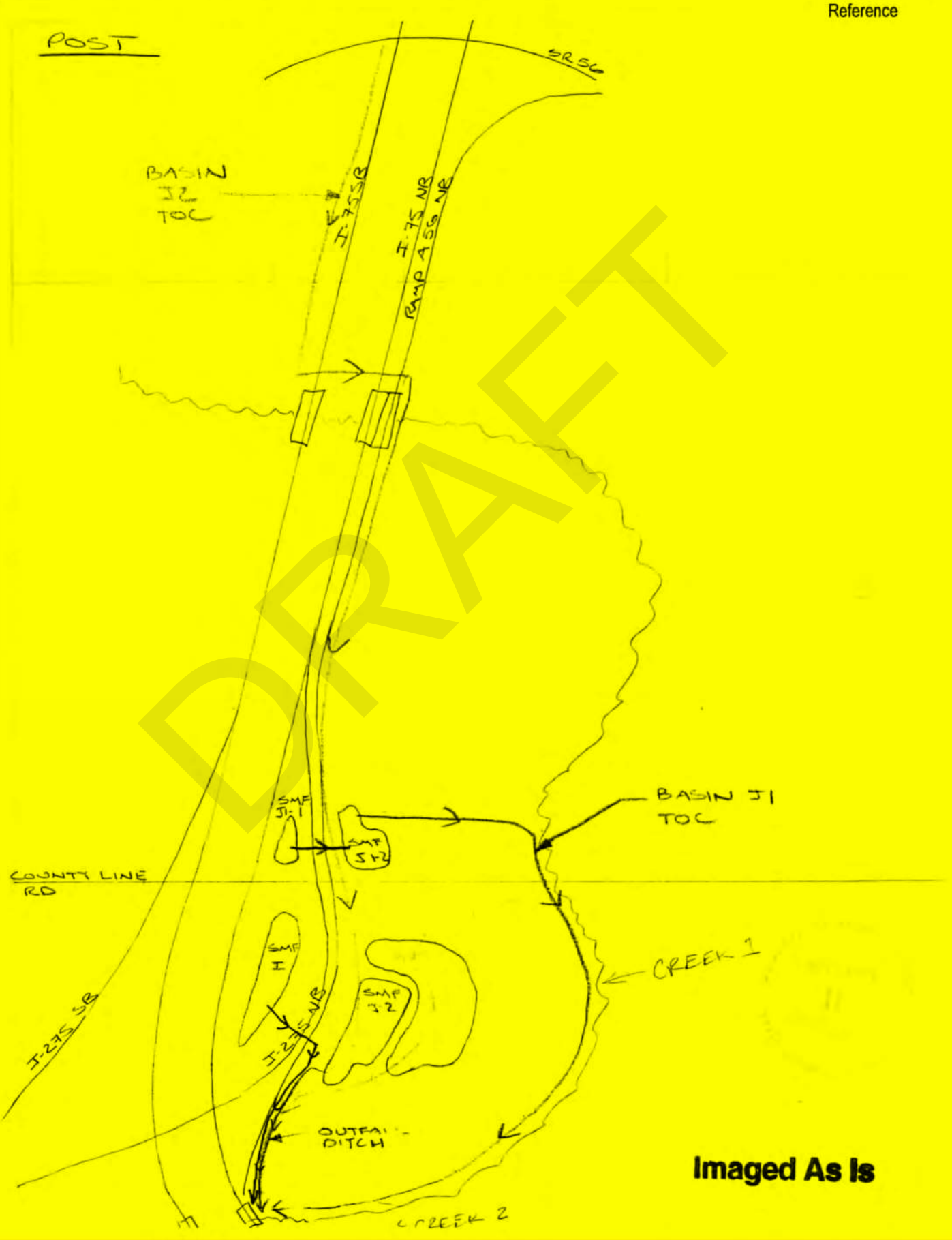
Job I-75 Project No. _____ Page ____ of ____

Description CYPRESS CREEK Computed by CAJ Sheet ____ of ____

ANALYSIS Checked by TMK Date 10-1-07 Date 1-16-08

Reference

POST



URS

Job I-75 Project No. _____ Page ____ of ____

Description CYPRESS CREEK ANALYSIS Computed by CAJ Sheet ____ of ____

Checked by TMK Date 10-1-07 Date 1-16-08

Reference

BASIN J2 (BASIN SHIFTING)

A = 80.79 AC (INCLUDES POND)

CN = 97.1

TOC to SMF J2 = 52.25 mins

BASIN J1 (BASIN SHIFTING)

A = 33.85 AC (INCLUDES PONDS)

CN = 96.4

TOC in Basin = 10 min

TOC in Cypress Creek = 66.7 min (SEE PRE)

76.7 min

FOOT

A = 39.38 AC - 10.59 AC (SMF J2) = 28.79 AC

CN = 70.5

TOC = 204.8 min

BASIN I

A = 50.40 AC

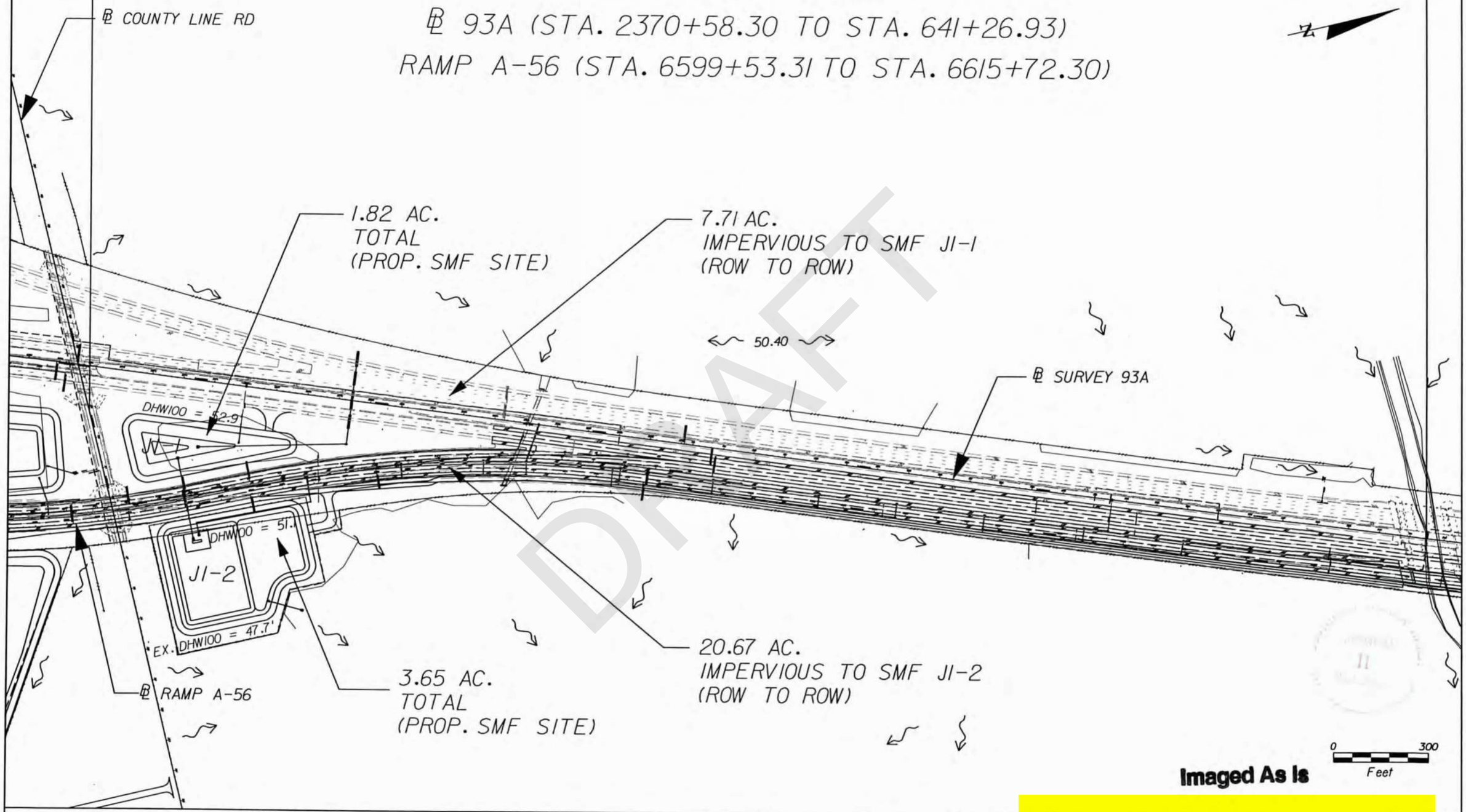
CN = 96.6

TOC TO SMF I = 10 mins

BASIN JI

℄ 93A (STA. 2370+58.30 TO STA. 641+26.93)

RAMP A-56 (STA. 6599+53.31 TO STA. 6615+72.30)



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REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy Kreisle P.E. NO. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A &	HILLSBOROUGH & PASCO	421831-2-52-01

BASIN JI (POST-DEVELOPMENT)

SHEET NO. 4

#USER#

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URS

Basin J1 - Basin Area Calculations

Computed: CAS Date: 2-5-08
Checked: TMIC Date: 2-5-08

Post-Development (ROW to ROW Impervious)

Runoff going to Basin J1-2 Outfall (see Post Development Plan Map) via SMF J1-1

Cover Description	CN	Area (Ac)	CN x Area (Ac)
Roadway			
Pavement	98	7.71	755.58
Open Space, good cond. (B/D Soils)	70.5	0.00	0.00
Subtotal	98.0	7.71	755.58
SMF Site J1-1			
Water	100	0.66	66.00
Open Space, good cond. (B/D Soils)	70.5	1.16	81.78
Subtotal	81.2	1.82	147.78
Total	94.8	9.53	903.36

Runoff going to Basin J1-2 Outfall (see Post Development Plan Map) via SMF J1-2

Cover Description	CN	Area (Ac)	CN x Area (Ac)
Roadway			
Pavement	98	20.67	2025.66
Open Space, good cond. (B/D Soils)	70.5	0.00	0.00
Subtotal	98.0	20.67	2025.66
SMF Site J1-2			
Water	100	2.57	257.00
Open Space, good cond. (B/D Soils)	70.5	1.08	76.14
Subtotal	91.3	3.65	333.14
Total	97.0	24.32	2358.80
TOTAL	96.4	33.85	3262.16

BASIN J1

(STA. 641+46.22 TO STA. 687+30.00)
(STA. 6615+72.320 TO STA. 287+36.97)

70.20 AC.
IMPERVIOUS
(ROW TO ROW)

℄ SURVEY 93A

END PROJECT
℄ SURVEY 93A
STA. 687+30.00

10.59 AC.
TOTAL
(PROP. SMF SITE)
LOCATED AT BASIN 1

N

0 100 400
Feet

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy Kreisle P.E. NO. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A &	HILLSBOROUGH & PASCO	421831-1-52-01

BASIN J2 (POST-DEVELOPMENT)

SHEET NO. 6

#USER#

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URS

Basin J2 - Basin Area Calculations

Computed: CAS Date: 2-12-08
Checked: TMK Date: 2-18-08

Post-Development (ROW to ROW Impervious)

Runoff going to J2 Outfall

Cover Description	CN	Area (Ac)	CN x Area (Ac)
Roadway			
Pavement	98	70.20	6879.60
Open Space, good cond. (B/D Soils)	70.5	0.00	0.00
Subtotal	98.0	70.20	6879.60
SMF Site J2			
Water	100	7.52	752.00
Open Space, good cond. (B/D Soils)	70.5	3.07	216.44
Subtotal	91.4	10.59	968.44
Total	97.1	80.79	7848.04

URS

Basin J2 - SMF Calculations

Computed: CAS Date: 3-3-08
Checked: TMK Date: 3-24-08

SMF J2 Data

Stage	Elevation (Ft)	Area (Ac)	Volume (Ac-Ft)
Berm (Back)	48.00	10.59	70.89
Berm (Front)	47.00	9.16	61.01
Design High Water	45.83	8.84	50.48
Weir (Design Low Water)	41.00	7.52	10.97
Control *	39.50	7.11	0.00

Required Treatment Volume

Contributing Area (ROW & Surface Water) x 1.5" (OFW) = 10.10 ac-ft

Provided Treatment Volume

Volume between Control and Weir = 10.97 ac-ft

Pre / Post Development Discharge Comparison (25-Year, 24-Hour)

Pre Development Discharge = 42.8 cfs

Post Development Discharge = 28.3 cfs

* - Control El. = 39.5' (SHW from Cypress Creek)

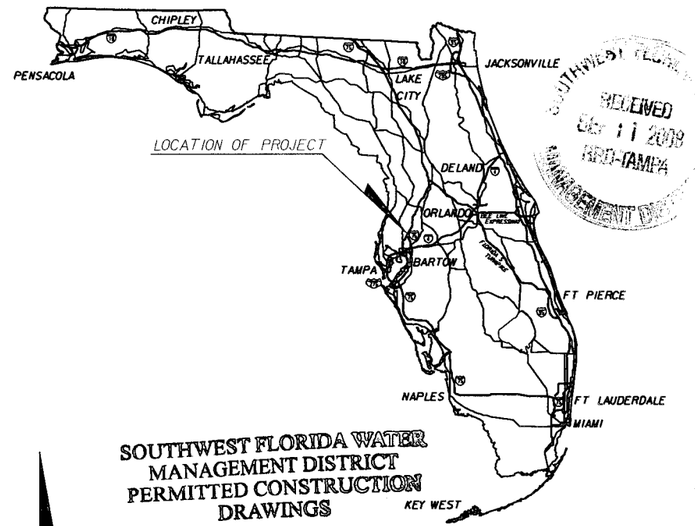
COMPONENTS OF CONTRACT PLANS SET

ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS
LIGHTING PLANS
STRUCTURE PLANS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID 408459-3-52-01
(FEDERAL FUNDS)
HILLSBOROUGH COUNTY (10075) & PASCO COUNTY (14140)
STATE ROAD NO. 93A & 93



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS

FILE OF RECORD

N

0 1 2
Miles

ROADWAY SHOP DRAWINGS TO BE SUBMITTED TO:

PAUL SCHMID, P.E.
URS CORPORATION
7650 W. COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711

PLANS PREPARED BY:

URS

URS CORPORATION
7650 W. COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
(813) 286-1711

VENDOR NO. F592087895002

CERTIFICATE OF AUTHORIZATION NO. 00000002

CONTRACT NO. C-8D10

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

43033020.004

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT

INDEX OF ROADWAY PLANS

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION, DESIGN STANDARDS DATED JANUARY 2008, AND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2007, AS AMENDED BY CONTRACT DOCUMENTS.

APPLICABLE DESIGN STANDARDS MODIFICATIONS: 7-1-08

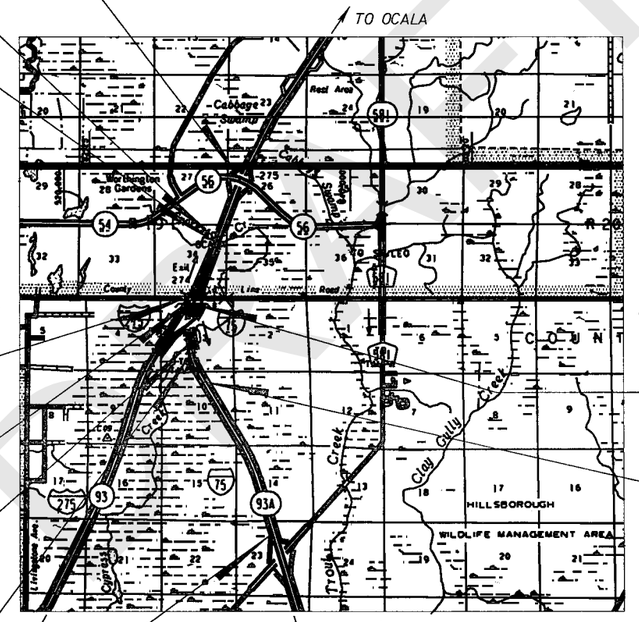
For Design Standards Modifications click on "Design Standards" at the following web site: http:www.dot.state.fl.us/rddesign/

REVISIONS

END PROJECT
STA. 687+30.00
℄ SURVEY 93

END BRIDGE
STA. 641+89.09
(℄ SURVEY 93)

BEGIN BRIDGE
STA. 640+33.21
(℄ SURVEY 93)



PASCO COUNTY
HILLSBOROUGH COUNTY

T-26-S
T-27-S

R-19-E
R-20-E

EQUATION:
STA. 2390+10.04 ℄ SURVEY 93A BK =
STA. 617+73.37 ℄ SURVEY 93 AH

EQUATION:
STA. 2370+59.17 ℄ SURVEY 93A BK =
STA. 2370+60.50 ℄ SURVEY 93A AH

EQUATION:
STA. 1369+96.40 ℄ I-75 SB RDWY BK =
STA. 2369+59.54 ℄ SURVEY 93A AH

EQUATION:
STA. 2315+00 ℄ SURVEY 93A BK =
STA. 1315+00 ℄ I-75 SB RDWY

END BRIDGE
STA. 1336+49.00 (℄ I-75 SB RDWY)

BEGIN BRIDGE
STA. 1334+46.00 (℄ I-75 SB RDWY)

BEGIN PROJECT
STA. 2207+00.00
℄ SURVEY 93A
MP 36.779

PROJECT LENGTH BASED ON ℄ SURVEY 93A, ℄ I-75 SB RDWY, AND ℄ SURVEY 93

LENGTH OF PROJECT

	LINEAR FEET	MILES
ROADWAY	24,943.32	4.724
BRIDGES	358.88	0.068
NET LENGTH OF PROJECT	25,302.20	4.792
EXCEPTIONS	0	0.000
GROSS LENGTH OF PROJECT	25,302.20	4.792

FDOT PROJECT MANAGER: ADAM PEREZ, P.E.

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

PHASE III (90%) SUBMITTAL
07-11-08

ROADWAY PLANS
ENGINEER OF RECORD: PAUL SCHMID, P.E.
NO. 58091
P.E. NO. 58091

PAUL A. SCHMID LICENSE STATE OF FLORIDA PROFESSIONAL ENGINEER

FISCAL	SHEET NO.
14	1

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raleigh_sanders 7/14/2008 14:08:24 D:\ProjFdot\v8\40845935201\roadway\KEYSR001.DGN

BASIN G

BASIN H

S-115 S-119 S-121 S-122 S-200 S-201 S-202 S-203 S-203A S-204 S-205 S-206 S-208 S-211 S-214

EXIST. GROUND @ B SURVEY 93A

50

40

30

BCWE EL 44.20

24" PIPE

45.43

FL 41.70

FL 41.30

18" PIPE

FL 44.70

FL 44.20

BCWE EL 44.20

FL 45.20

FL 45.00

BCWE EL 43.10

FL 44.5

FL 38.70

DHW EL 44.84

CD-11

EXIST. 30" RCP INV. EL. 41.99'

FL 38.20

24" PIPE

FL 37.70

FL 37.30

BCWE EL 43.40

FL 37.60

DHW EL 45.05

CD-12

EXIST. 24" RCP INV. EL. 42.11'

30" PIPE

FL 36.90

F.L. 36.60

BCWE EL 40.97

42" PIPE

FL 36.30

FL 43.60

FL 43.00

24" PIPE

42" PIPE

DHW EL 41.61

CD-13

EXIST. (2) 10' x 4' CBC INV. EL. 37.25'

BCWE EL 40.30

EXIST. 18" RCP INV. EL. 40.57'

24" PIPE

45.43

FL 39.80

0 HORIZ. 400

0 VERT. 10

2230+00 2240+00 2250+00 2260+00 2270+00 2280+00

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

RECEIVED
SWFWMD
TAMPA

S-199W S-199X S-199AA S-199Z S-199Y S-117 S-118 S-123

NP = 42.50'
SH = 42.90'

SMF G3
DHW 100 = 47.2'

PW EL 42.2' (3-9-05)
STAIN EL 43.1'

MATCH LINE STA. 2231+00

S-115 S-119 S-116 S-120 S-121 S-122

@ SURVEY 93A

4.6 AC

2240+00 2250+00 2260+00 2270+00 2280+00

NW FRONTAGE RD

I-75 SB

I-75 NB

S-202 S-203 S-204 S-203A S-204A S-205 S-206 S-207 S-208 S-209 S-210 S-211 S-212 S-213 S-213A S-214

CD-11 CD-12 CD-13

PW EL 42.4' (3-9-05)
STAIN EL 43.4'

NP = 42.10'
SH = 42.57'

S10, T27S, R19E
S11, T27S, R19E

39 AC

NW 42.95'

SH 42.95'
NP 42.73'

1052.0 AC

PW EL 39.2' (3-9-05)
STAIN EL 40.3'

SH 41.42'
NP 41.07'

NP 43.80'

SH 42.85'
NP 42.66'

NP 43.31'

MATCH LINE STA. 2287+23

N 1" = 400'

45033020.004

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION DRAWINGS

FILE OF RECORD

LICENSED PROFESSIONAL ENGINEER No. 61731 Tammy M. Kreisle STATE OF FLORIDA 7-9-08

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS Corporation Southern
7650 West Courtney
Campbell Causeway
TAMPA, FL 33607-1462
C.A. NO. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

DRAINAGE MAP (2 OF 5)

SHEET NO. 4

craig_jenne 7/10/2008 9:44:09 AM \\RDWY\Proj\FDOT\Proj\FDOT\v8\408459.3.52.01\drainage\drmprd02.dgn

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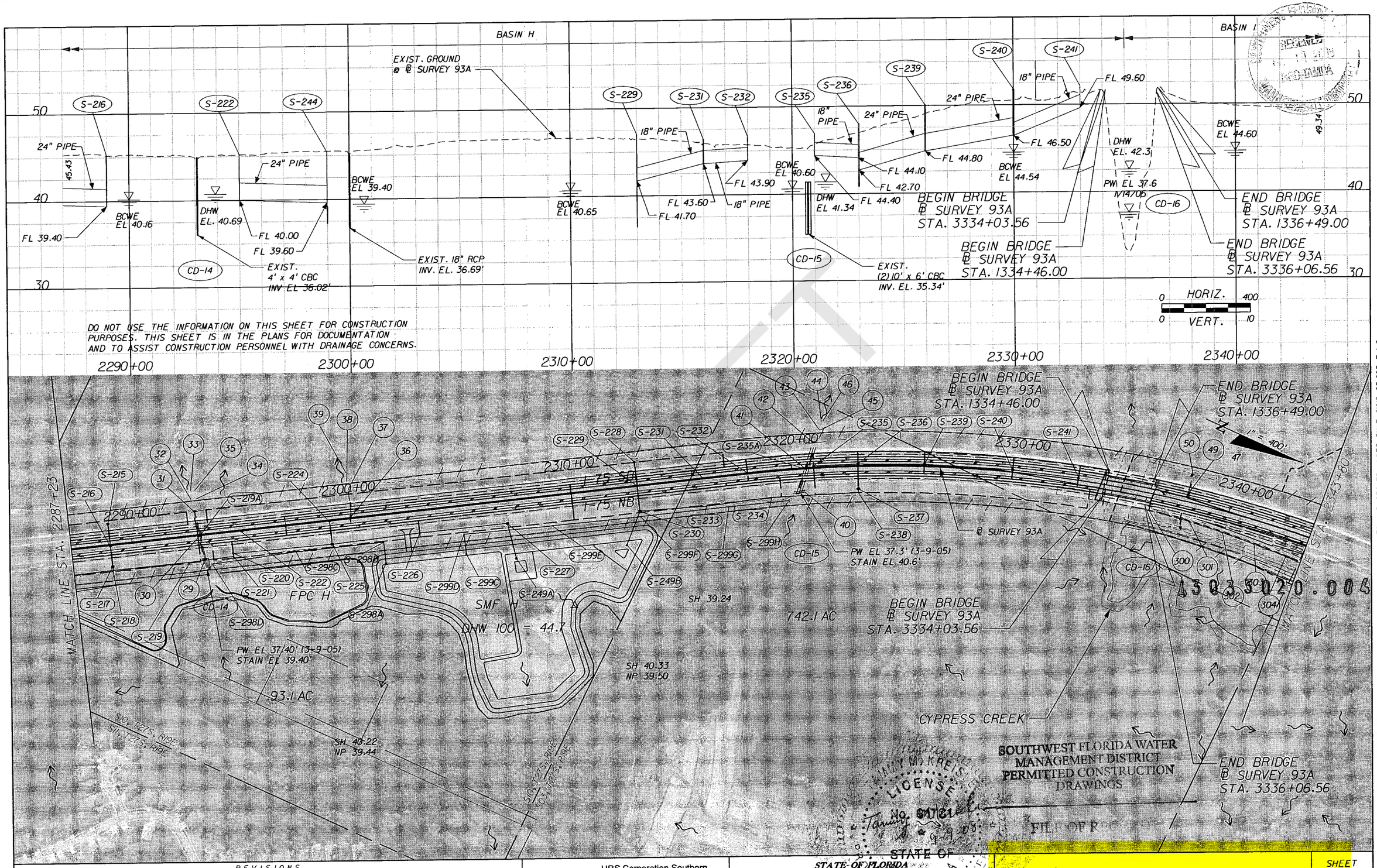

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
TAMPA, FL 33607-1462
C.A. NO. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

DRAINAGE MAP (3 OF 5)

SHEET NO. 5

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BASIN I

BASIN J-1

EXIST. GROUND
@ ℄ SURVEY 93A

EXIST. 18" RCP
INV. EL. 45.78'

DHW
EL 49.67

BCWE
EL 46.42

BCWE = 50.19

BCWE
EL 48.59

DHW
EL 50.39

BCWE
EL 49.15

49.34

54.57

60

50

40

DHW
EL 47.91

CD-17

BCWE
EL 44.60

EXIST. 24" RCP
INV. EL. 42.52'

CD-18

EXIST. 30" RCP
INV. EL. 42.52'

EXIST. 18" RCP
INV. EL. 46.63'

CD-19

EXIST.
10' x 4' CBC
INV. EL. 45.89'

0 HORIZ. 400
0 VERT. 10

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

2350+00 2360+00 2370+00 2380+00 2390+00 620+00

EQUATION:
STA 2370+59.17 BK.
= STA 2370+60.50 AH.

EQUATION:
STA 2390+10.04 BK.
= STA 617+73.37 AH.

1" = 400'

DHW 100 = 43.3

PW EL 44.5' (3-9-05)
STAIN EL 44.6'

I-275 SB

PW EL 44.6' (3-9-05)
STAIN EL 45.8'

22.3 AC.

℄ SURVEY 93A

I-75 SB

I-75 NB

18.7 AC.

SMF I

DHW 100 = 48.6'

SMF J2

DHW 100 = 46.7'

SMF J-1

DHW 100 = 52.9'

SMF J-2

DHW 100 = 51.1'

562.6 AC.

PW EL 45.7' (3-9-05)
STAIN EL 47.1'

9.9 AC.

4X1.80

5.9 AC.

COUNTY LINE ROAD

MATCH LINE STA. 2345+00

MATCH LINE STA. 628+03

S34, T26S, R19E
S03, T27S, R19E

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION DRAWINGS

FILE OF RECORD

TAMMY M. KREISLE
LICENSED
No. 61731
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS Corporation Southern
7650 West Courtney
Campbell Causeway
TAMPA, FL 33607-1462
C.A. NO. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

DRAINAGE MAP (4 OF 5)

SHEET NO. 6

craig_jenne 7/10/2008 9:59:26 AM \\RDWY\Proj\FDOT\Proj\FDOT\WB\408459320i\drainage\drmprd04.dgn

BASIN J-1

BEGIN BRIDGE
℄ SURVEY 93
STA. 640+33.21

END BRIDGE
℄ SURVEY 93
STA. 641+89.09

BASIN J-2

EXIST. GROUND
ø ℄ SURVEY 93

END PROJECT
STA. 687+30

60

50

40

54.57

BCWE
EL 51.50

CD-20

DHW
EL 52.40

BCWE
EL 51.50

CD-21

DHW
EL 52.22

BCWE
EL 51.50

BCWE = 51.70

EXIST. 18" PIPE
FL 52.38

BCWE
EL 52.04

CD-22A

CD-22

55.50

36" PIPE
FL 50.5

EXIST. 54"
PIPE
FL 49.02

EXIST.
10' x 10' CBC
INV. EL. 42.30'

EXIST.
4' x 4' CBC
INV EL 48.83'

0 HORIZ. 400
0 VERT. 10

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

630+00 640+00 650+00 660+00 670+00 680+00

MATCH LINE STA. 628+03

BEGIN BRIDGE
℄ SURVEY 93
STA. 640+33.21

END BRIDGE
℄ SURVEY 93
STA. 641+89.09

94.3 AC.

108.8 AC.

1"=400'

PW EL 47.3' (3-9-05)
STAIN EL 51.5'

℄ SURVEY 93

I-75 SB

I-75 NB

S-426 S-427 S-428 108 109 S-534 S-537 S-540 S-544 S-547 S-550 S-554 S-558 S-563 S-564 S-567 S-569

CD-20 CD-21 CD-22 CD-22A

BEGIN BRIDGE
℄ SURVEY 93
STA. 6641+18.36

EXISTING
SR 56
MITIGATION SITE

CYPRESS CREEK

END BRIDGE
℄ SURVEY 93
STA. 6642+74.36

END PROJECT
℄ SURVEY 93
STA. 687+30.00

SR 56

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION
DRAWINGS

FILE OF RECORD

TAMMY M. KREISLE LICENSE No. 61731 STATE OF FLORIDA PROFESSIONAL ENGINEER

7-9-08

43033020.004

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS Corporation Southern
7650 West Courtney
Campbell Causeway
TAMPA, FL 33607-1462
C.A. NO. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

DRAINAGE MAP
(5 OF 5)

SHEET NO. 7

craig_jenne

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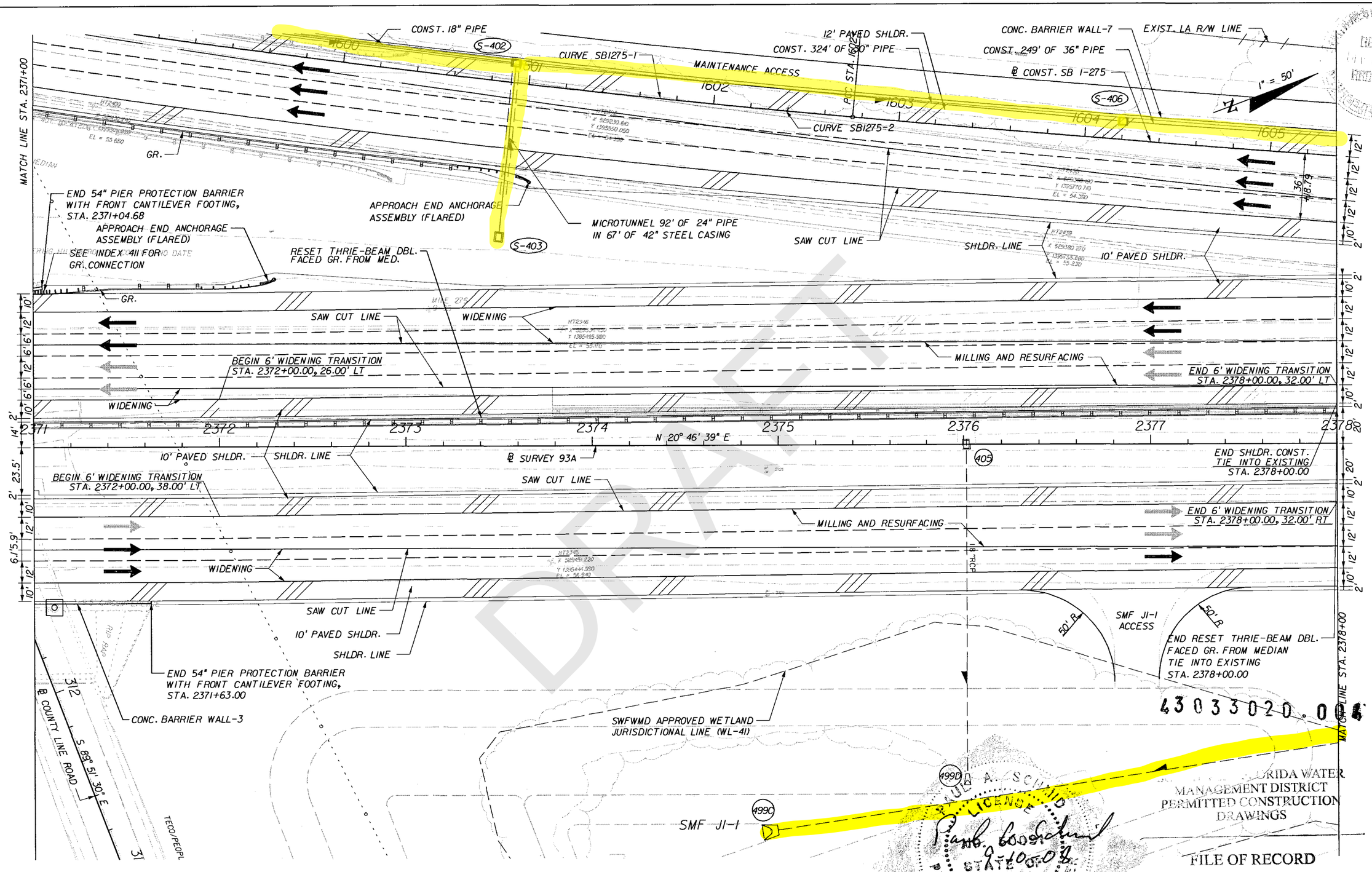

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

PLAN SHEET (29)

SHEET NO. 74

raleigh_sanders 7/11/2008 16:52:38 D:\Proj\fdot\8\408459352\01\roadway\planrd29.dgn

R=11326.81'

EXIST. LA R/W LINE

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-27)

1" = 50'

4' HOG WIRE WITH 2 STRAND BARB WIRE

CURVE SB1275-2

12' PAVED SHLDR.

CONC. BARRIER WALL-7

CONST. 311' OF 48" PIPE

36" PIPE

MAINTENANCE ACCESS

℄ CONST. I-275 SB

GRAVITY WALL- 1

CONST. 324' OF 42" PIPE

MATCH LINE STA. 2385+00

SHLDR. LINE

10' PAVED SHLDR.

SAW CUT LINE

MILLING AND RESURFACING

WIDENING

+79.03
43.00' RT

+40.55
80.00' LT

MILLING AND RESURFACING

EXIST. GR. TO REMAIN

N 20° 46' 39" E

℄ SURVEY 93A

10' PAVED SHLDR.

SHLDR. LINE

REMOVE EXIST. GR.

END 10' PAVED SHLDR.
STA. 2384+00.00, 32.00' RT
MATCH EXIST.

MILLING AND RESURFACING

WIDENING

SAW CUT LINE

SHLDR. LINE

10' PAVED SHLDR.

END WIDENING
STA. 2384+00.00, 56.00' RT
MATCH EXIST.

MATCH LINE STA. 2378+00

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-41)

I 275 & I 75 JUNCTION -NO DATE

NB I-275 RAMP

RAMP A-56

END I 275 & I 75 NORTH NO DATE

MITIGATION SITE ACCESS

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION DRAWINGS

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-16)

430330 20.004

PAUL A. SCHMID
LICENSE
No. 50091
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

Paul A. Schmid
4-10-08

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

FILE OF RECORD

PLAN SHEET (30)

SHEET NO. 75

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MATCH LINE STA. 2385+00

CONST. 21' OF 10' X 4' CBC

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-27)

CONST. 42" PIPE

CD-19

S-421

CURVE SB1275-2

R=11326.81'

STA. 1614+69.72

GRAVITY WALL-1

12' PAVED SHLDR.

MAINTENANCE ACCESS

EXIST. LA R/W LINE

CONST. 343' OF 42" PIPE

S-422

42" PIPE

PT=2390+10.04
38.00' LT
112' O/S SURVEY LINE LT

EQUATION:
℄ SURVEY 93A
STA. 2390+10.04 BK =
℄ SURVEY 93
STA. 617+73.37 AH

MATCH LINE STA. 619+00

1" = 50'

CONC.

WIDENING

℄ CONST. SB I-275

N 21° 27' 54" E

SAW CUT LINE

MILLING AND RESURFACING

PT STA. 617+73.37

2385 420 2386 2387 2388 2389 2390 618 619

N 20° 46' 39" E

℄ SURVEY 93A

EXISTING GUARDRAIL TO REMAIN

℄ SURVEY 93

END CONCRETE BOX CULVERT
STA. 2385+12.87 R 2

MILLING AND RESURFACING

END MILLING AND RESURFACING
STA. 2389+74.94

BEGIN CONCRETE BOX CULVERT
STA. 2385+02.25 R 2

418 419 505 506 507 508 509 510 511

EXIST. LA R/W LINE

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-16)

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-16)

PT= 618+66.42
85.00' RT
89' O/S SURVEY LINE RT

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION DRAWINGS

FILE OF RECORD

430033020.004

PAUL A. SCHMID LICENSE STATE OF FLORIDA PROFESSIONAL ENGINEER

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REVISIONS			
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URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

PLAN SHEET (31)

SHEET NO. 76

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END ℄ CONST. I-275 SB
STA. 1624+73.32 =
℄ SURVEY 93
STA. 625+00.00, 104.00' LT.

1" = 50'

PRESENT WATER=48.32'
12:12 PM 2-22-05

EXIST. LA R/W LINE

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-26)

GRAVITY WALL-1

MAINTENANCE ACCESS

CONST. 382' OF 42" PIPE

S-423

12' PAVED SHLDR.

CONST. 416' OF 42" PIPE

STA. 1624+73.32

S-424

36" PIPE

1619 1620 1621 1622 1623 1624

N 21° 27' 54" E

℄ CONST. SB I-275

WIDENING

SAW CUT LINE

MILLING AND RESURFACING

12' 12' 12' 19.2' 12' 12' 12' 2' 10' 12' 20'

12' 12' 12' 12' 12' 12' 2' 10' 12' 20'

619 620 621 622 623 624 625 626

N 20° 46' 39" E

℄ SURVEY 93

EXISTING GUARDRAIL TO REMAIN

MATCH LINE STA. 619+00

MATCH LINE STA. 626+00

512 513 514 515 516 517 517A

619+17.79
85.00' RT
89' O/S SURVEY LINE RT

EXIST. LA R/W LINE

MITIGATION AREA 04-03

430330020.004

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS

PAUL A. SCHMID LICENSE 50091 STATE OF FLORIDA PROFESSIONAL ENGINEER
Paul A. Schmid 9-16-08

FILE OF RECORD

DRAFT

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

PLAN SHEET (32)

SHEET NO. 77

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1" = 50'

4' HOG WIRE WITH 2 STRAND BARB WIRE

EXIST. LA R/W LINE

GRAVITY WALL-1

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-25)

MAINTENANCE ACCESS

CONST. 256' OF 36" PIPE

S-425

CONST. 316' OF 30" PIPE

12' PAVED SHLDR.

30" PIPE

S-426

WIDENING

SAW CUT LINE

MILLING AND RESURFACING

32'

12' 12' 12' 12' 12' 12' 12'

12' 12' 12' 12' 12' 12' 12'

2' 10'

626 627 628 629 630 631 523A 632 633

N 20° 46' 39" E

℄ SURVEY 93

EXISTING GUARDRAIL TO REMAIN

MATCH LINE STA. 626+00

MATCH LINE STA. 633+00

18" RCP

518 519 520 521 522 523 524

630+13.48
174.00' RT

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-42)

EXIST. LA R/W LINE

430330 20.004

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS

FILE OF RECORD

DRAFT

PAUL A. SCHMID LICENSED Paul A. Schmid NO. 50091 10-08 STATE OF FLORIDA REGISTERED PROFESSIONAL ENGINEER

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URS Corporation Southern
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

PLAN SHEET (33)

SHEET NO. 78

raleigh_sanders 7/11/2008 16:52:54 D:\Proj\fdot\w8\408459352\01\roadway\planrd33.dgn

635+57.27
123.00' LT
77' O/S SURVEY LINE LT

EXIST. LA R/W LINE

635+57.27
73.00' LT
77' O/S SURVEY LINE LT

EXIST. LA R/W LINE

SWFWMD APPROVED WETLAND
JURISDICTIONAL LINE (WL-25)

CONST. 316' OF 30" PIPE

CONST. 270' OF 24" PIPE

12' PAVED SHLDR.

PRESENT WATER=44.94'
2/21/05 2:00 P.M.

PRESENT WATER=44.82'
11:01 AM, 2-23-05

GRAVITY WALL-1

4' HOG WIRE WITH 2 STRAND BARB WIRE

OAKS

SWFWMD APPROVED WETLAND
JURISDICTIONAL LINE (WL-45)

639+57.27
123.00' LT
77' O/S SURVEY LINE LT

639+57.27
73.00' LT
77' O/S SURVEY LINE LT

EXIST. LA R/W LINE

109 MAINTENANCE ACCESS

+63.78
116.00' LT

S-427

S-428

WIDENING

SAW CUT LINE

TO BE REMOVED

108

MILLING AND RESURFACING

EXIST. GR TO REMAIN

633 634 635 636 637 638 639 640

N 20° 46' 39" E

℄ SURVEY 93

MATCH LINE STA. 633+00

MATCH LINE STA. 640+00

526 525 525A 527 528

PINES & PALMETTOS

PRESENT WATER=45.95'
9:42 AM, 2-23-05

EXIST. LA R/W LINE

PRESENT WATER=45.93'
10:47 AM, 2-23-05

SWFWMD APPROVED WETLAND
JURISDICTIONAL LINE (WL-42)

SOUTHWEST FLORIDA WATER
MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION
DRAWINGS

PAUL A. SCHMID
LICENSE
NO. 50091
9-10-08
STATE OF
FLORIDA

43033020.004

DRAFT

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

PLAN SHEET (34)

SHEET NO. 79

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BEGIN APPROACH SLAB
℄ SURVEY 93
STA. 640+03.22
115.55' LT

BEGIN BRIDGE
℄ SURVEY 93
STA. 640+33.21
115.55' LT

CYPRESS CREEK

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE

END BRIDGE
℄ SURVEY 93
STA. 641+89.09
115.55' LT

END APPROACH SLAB
℄ SURVEY 93
STA. 642+19.09
115.55' LT

EXIST. LA R/W LINE

GRAVITY WALL-2

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-24)

4' 2-STRAND BARB WIRE

E-530

PINES, PALMS, OAKS

12' PAVED SHLDR.

CONST. 315' OF 54" PIPE

MAINTENANCE ACCESS

+03.78
114.00' LT

+19.65
114.00' LT

+19.65
116.00' LT

SAW CUT LINE

WIDENING

SAW CUT LINE

TO BE REMOVED

CONCRETE DECK

BRIDGE NO. 140061

FLOWLINE

MILLING AND RESURFACING

640 641 642 643 644 645 646 647

N 20° 46' 39" E

℄ SURVEY 93

MATCH LINE STA. 640+00

MATCH LINE STA. 647+00

BRIDGE NO. 140062

OUTSIDE WALL

529 531 532 533

642+99.77
85.00' RT
89' O/S SURVEY LINE RT

643+00.24
86.29' RT
89' O/S SURVEY LINE RT

643+06.23
90.75' RT
89' O/S SURVEY LINE RT

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-42)

EXIST. LA R/W LINE

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-19)

430330 20.004

1" = 50'

DRAFT

PERMITTED CONSTRUCTION DRAWINGS

FILE OF RECORD

PAUL A. SCHMID LICENSE STATE OF FLORIDA PROFESSIONAL ENGINEER
Paul Schmid
9/16/08

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

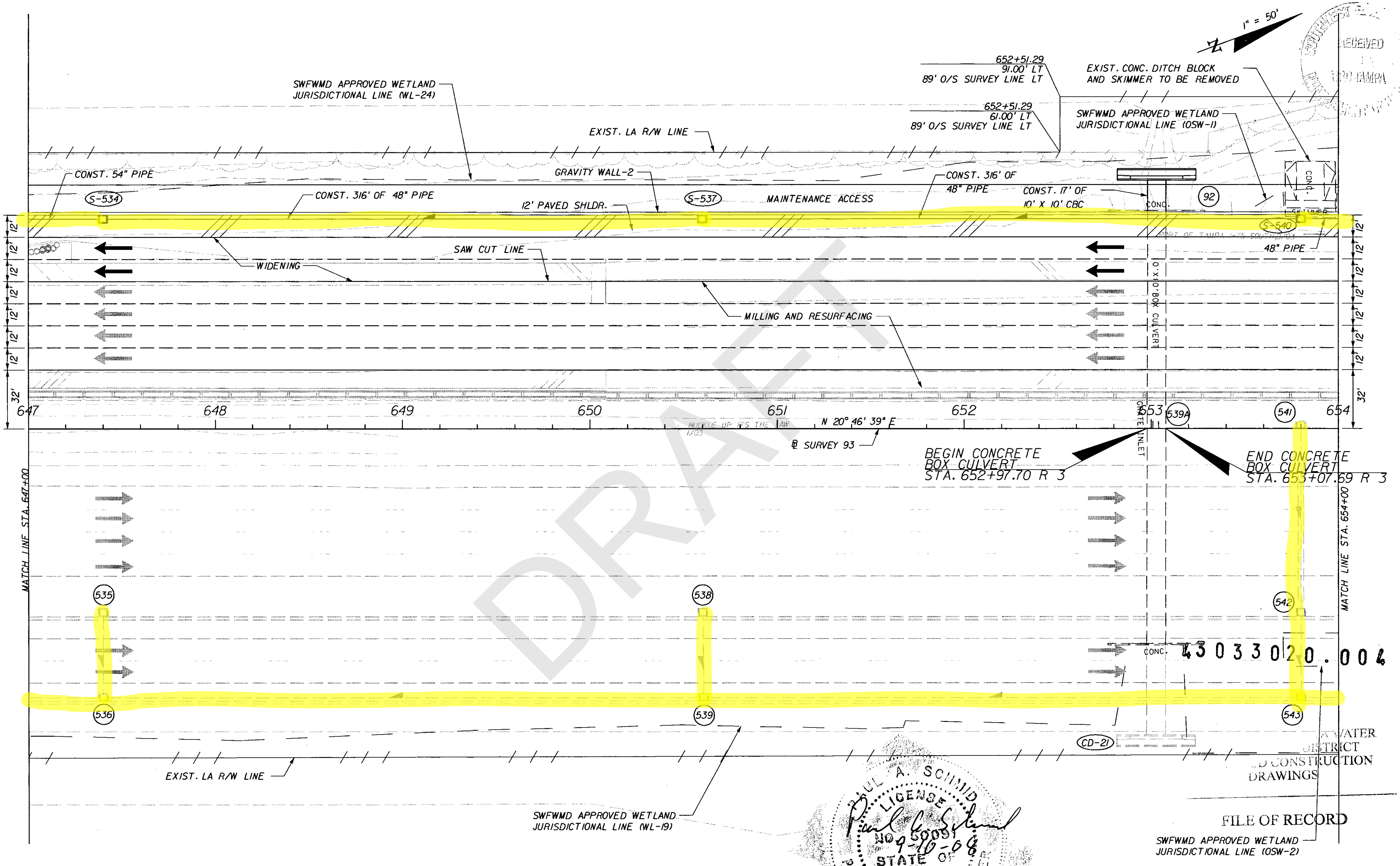
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

PLAN SHEET (35)

SHEET NO. 80

raleigh_sanders 7/11/2008 16:53:03 D:\Proj\fdot\8\408459352\01\roadway\planrd35.dgn



1" = 50'
652+51.29
91.00' LT
89' O/S SURVEY LINE LT
652+51.29
61.00' LT
89' O/S SURVEY LINE LT
EXIST. CONC. DITCH BLOCK AND SKIMMER TO BE REMOVED
SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-24)
EXIST. LA R/W LINE
SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (OSW-1)
CONST. 54" PIPE
GRAVITY WALL-2
CONST. 316' OF 48" PIPE
CONST. 17' OF 10' X 10' CBC
S-534
CONST. 316' OF 48" PIPE
S-537
MAINTENANCE ACCESS
12' PAVED SHLDR.
92
S-540
48" PIPE
SAW CUT LINE
WIDENING
MILLING AND RESURFACING
10' X 10' BOX CULVERT
647
648
649
650
651
652
653
654
N 20° 46' 39" E
SURVEY 93
539A
541
BEGIN CONCRETE BOX CULVERT STA. 652+97.70 R 3
END CONCRETE BOX CULVERT STA. 653+07.69 R 3
MATCH LINE STA. 647+00
MATCH LINE STA. 654+00
535
538
542
536
539
543
CONC.
43033020.004
CD-21
EXIST. LA R/W LINE
SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-19)
SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (OSW-2)
FILE OF RECORD

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS Corporation Southern
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

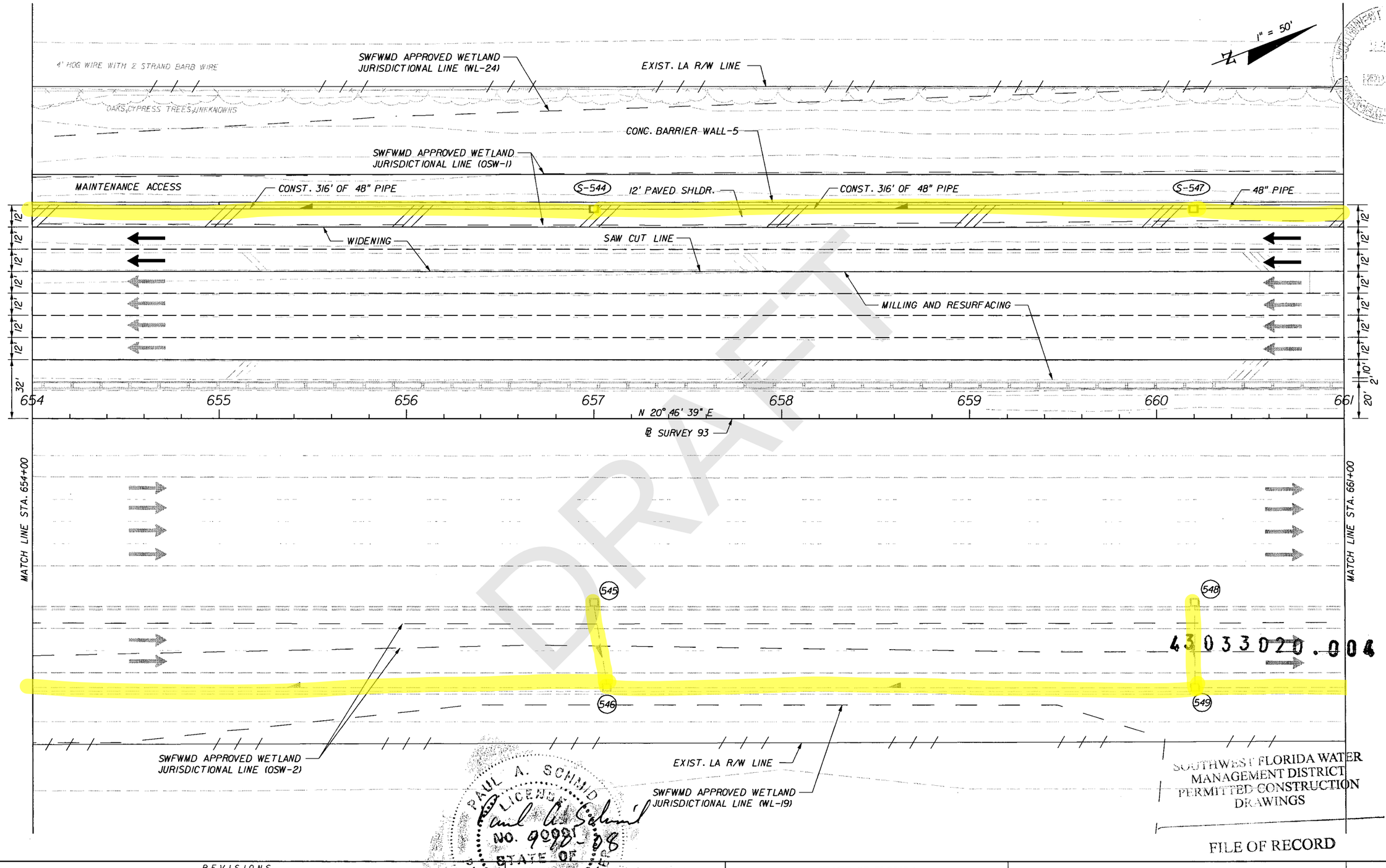
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

PLAN SHEET (36)

SHEET NO. 81

raleigh_sanders 7/11/2008 16:53:07 D:\ProjFdot\w8\40845935201\roadway\PLANRD36.DGN

DRAFT



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PAUL A. SCHMID LICENSED PROFESSIONAL ENGINEER No. 50091 STATE OF FLORIDA

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

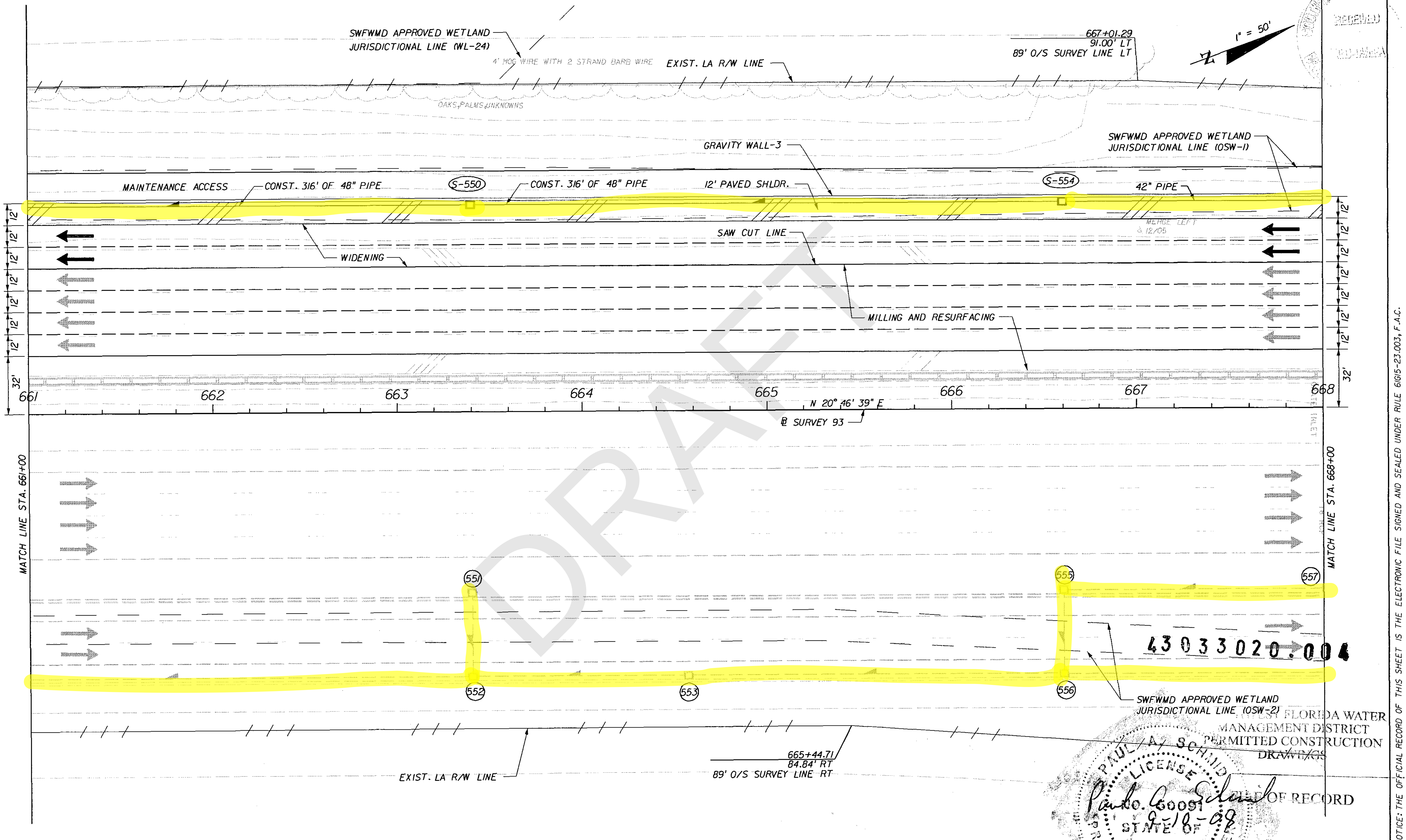
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

PLAN SHEET (37)

SHEET NO. 82

raleigh_sanders 7/11/2008 16:53:11 D:\Projdot\d8\408459352011\roadway\planrd37.dgn



SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-24)
4' HOG WIRE WITH 2 STRAND BARB WIRE
EXIST. LA R/W LINE
667+01.29
91.00' LT
89' O/S SURVEY LINE LT
1" = 50'
OAKS,PALMS,UNKNOWNS
GRAVITY WALL-3
SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (OSW-1)
MAINTENANCE ACCESS
CONST. 316' OF 48" PIPE
S-550
CONST. 316' OF 48" PIPE
12' PAVED SHLDR.
S-554
42" PIPE
SAW CUT LINE
WIDENING
MILLING AND RESURFACING
12'
32'
661
662
663
664
665
666
667
668
N 20° 46' 39" E
℄ SURVEY 93
MATCH LINE STA. 661+00
MATCH LINE STA. 668+00
551
552
553
555
556
557
43033020.004
SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (OSW-2)
665+44.71
84.84' RT
89' O/S SURVEY LINE RT
EXIST. LA R/W LINE
DRAFT
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS
ENGINEER OF RECORD
PAUL A. SCHMID
LICENSE No. 50091
STATE OF FLORIDA
PROFESSIONAL ENGINEER
9-18-08
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS URS Corporation Southern
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

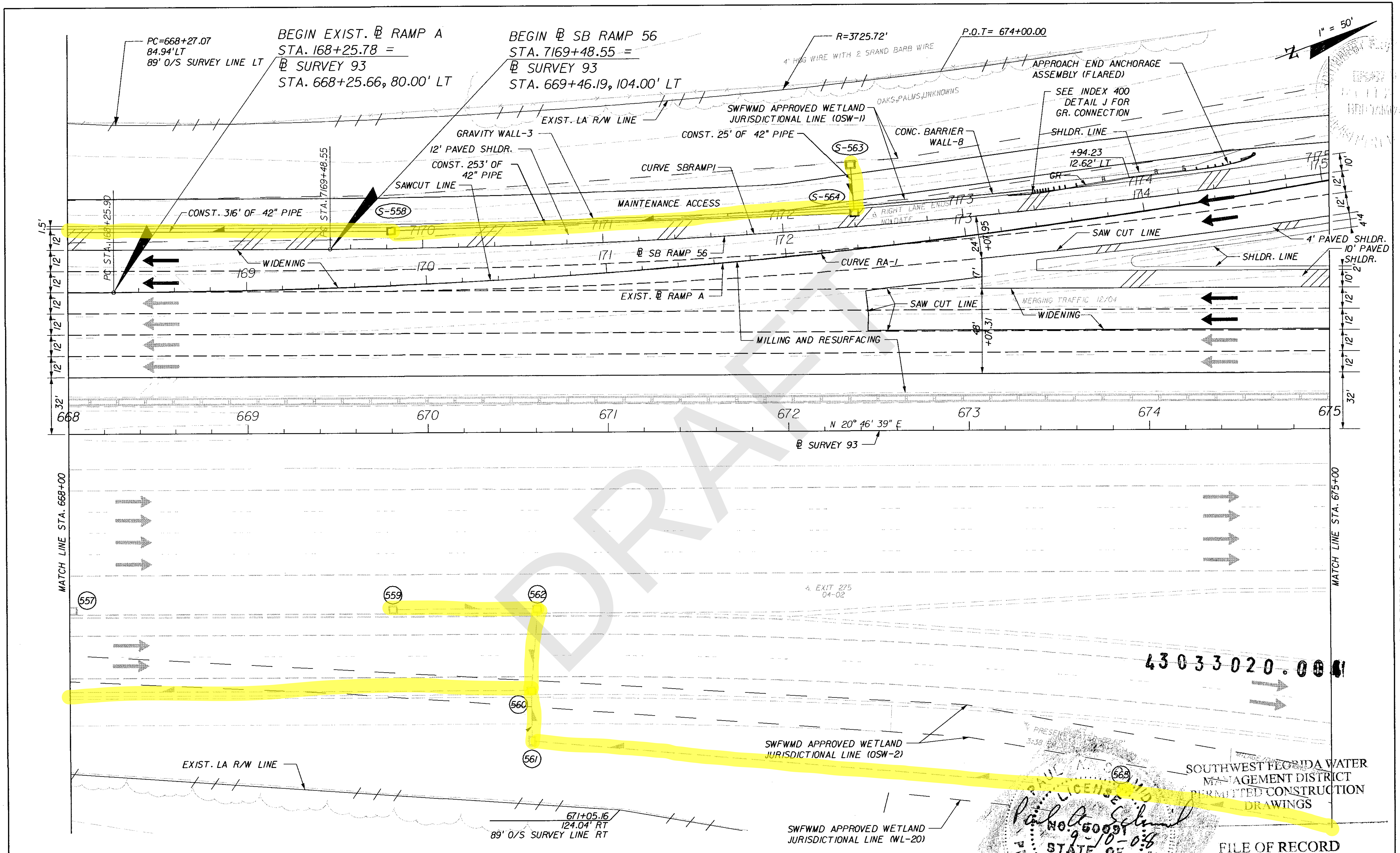
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

PLAN SHEET (38)

SHEET NO. 83

raleigh_sanders 7/11/2008 16:53:14 D:\ProjFdot\8\40845935201\roadway\planrd38.dgn


PC=668+27.07
84.94'LT
89' O/S SURVEY LINE LT
BEGIN EXIST. ℄ RAMP A
STA. 168+25.78 =
℄ SURVEY 93
STA. 668+25.66, 80.00' LT
BEGIN ℄ SB RAMP 56
STA. 7169+48.55 =
℄ SURVEY 93
STA. 669+46.19, 104.00' LT
R=3725.72'
P.O.T= 674+00.00
1" = 50'
4' HOG WIRE WITH 2 STRAND BARB WIRE
APPROACH END ANCHORAGE
ASSEMBLY (FLARED)
SEE INDEX 400
DETAIL J FOR
GR. CONNECTION
OAKS,PALMS,UNKNOWNS
SWFWMD APPROVED WETLAND
JURISDICTIONAL LINE (OSW-1)
EXIST. LA R/W LINE
CONST. 25' OF 42" PIPE
CONC. BARRIER
WALL-8
SHLDR. LINE
GRAVITY WALL-3
12' PAVED SHLDR.
CONST. 253' OF
42" PIPE
SAWCUT LINE
CURVE SBRAMP1
MAINTENANCE ACCESS
+94.23
12.62' LT
GR
S-563
S-564
S-558
CONST. 316' OF 42" PIPE
PC STA. 168+25.90
PC STA. 7169+48.55
WIDENING
℄ SB RAMP 56
CURVE RA-1
SAW CUT LINE
4' PAVED SHLDR.
10' PAVED SHLDR.
SHLDR. LINE
EXIST. ℄ RAMP A
SAW CUT LINE
WIDENING
MILLING AND RESURFACING
668
669
670
671
672
673
674
675
N 20° 46' 39" E
℄ SURVEY 93
MATCH LINE STA. 668+00
MATCH LINE STA. 675+00
557
559
562
560
561
565
43033020.001
SWFWMD APPROVED WETLAND
JURISDICTIONAL LINE (OSW-2)
EXIST. LA R/W LINE
671+05.16
124.04' RT
89' O/S SURVEY LINE RT
SWFWMD APPROVED WETLAND
JURISDICTIONAL LINE (WL-20)
DRAFT
SOUTHWEST FLORIDA WATER
MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION
DRAWINGS
FILE OF RECORD
PAUL A. SCHMID
LICENSE
No. 50091
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
9-10-08

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS URS Corporation Southern
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

PLAN SHEET (39)

SHEET NO. 84

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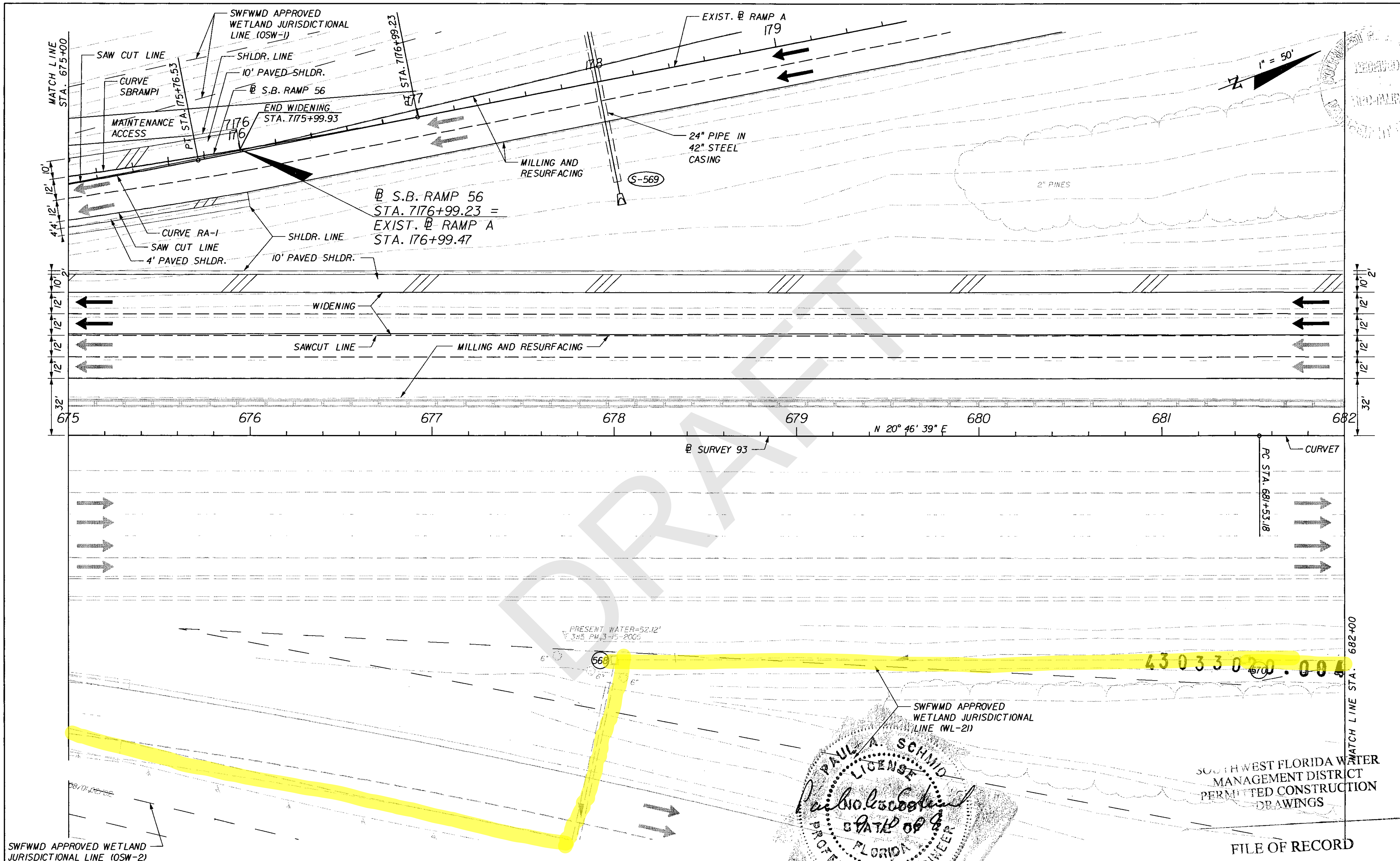
MATCH LINE STA. 675+00
SAW CUT LINE
CURVE SBRAMP1
MAINTENANCE ACCESS
PT STA. 175+76.53
SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (OSW-1)
SHLDR. LINE
10' PAVED SHLDR.
℄ S.B. RAMP 56
END WIDENING STA. 7175+99.93
STA. 7176+99.23
EXIST. ℄ RAMP A
179
178
177
7176
176
24" PIPE IN 42" STEEL CASING
MILLING AND RESURFACING
S-569
℄ S.B. RAMP 56 STA. 7176+99.23 = EXIST. ℄ RAMP A STA. 176+99.47
CURVE RA-1
SAW CUT LINE
4' PAVED SHLDR.
SHLDR. LINE
10' PAVED SHLDR.
1" = 50'
2" PINES
WIDENING
SAWCUT LINE
MILLING AND RESURFACING
675
676
677
678
679
680
681
682
N 20° 46' 39" E
℄ SURVEY 93
CURVE7
PC STA. 681+53.18
PRESENT WATER=52.12' 3:15 PM 3-15-2005
568
570
43033020.004
SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-21)
MATCH LINE STA. 682+00
SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (OSW-2)
PAUL A. SCHMID LICENSE No. 50091 STATE OF FLORIDA PROFESSIONAL ENGINEER
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS
FILE OF RECORD

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS URS Corporation Southern
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

PLAN SHEET (40)

SHEET NO. 85

raleigh_sanders 7/11/2008 16:53:22 D:\ProjFdot\v8\40845935201\roadway\planrd40.dgn

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

1" = 50'

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-22)

CONST. 11' OF 54" PIPE

CONST. 13' OF 4' X 4' CBC

10' PAVED SHLDR.

SHLDR. LINE

END SHLDR. CONSTRUCTION
END WIDENING
STA. 687+30.00

WIDENING

SAWCUT LINE

MILLING AND RESURFACING

32' | 12' | 12' | 12' | 12' | 10' | 2'

682 683 684 685 686 687 688 689

℄ SURVEY 93

CURVE 7

BRIDGE NO. 140125

BEGIN CONCRETE BOX CULVERT
STA. 683+27.45 R 3

END CONCRETE BOX CULVERT
STA. 683+31.42 R 3

571

572

CD-22

CD-22A

S.R. 56

END PROJECT
℄ SURVEY 93
STA. 687+30.00

MATCH LINE STA. 682+00

MATCH LINE STA. 689+00

SWFWMD APPROVED WETLAND JURISDICTIONAL LINE (WL-21)

PAUL A. SCHMID
LICENSED
No. 50091
STATE OF FLORIDA
PROFESSIONAL ENGINEER

9-10-2008

43033020.0041

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION DRAWINGS

FILE OF RECORD

DRAFT

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Paul Schmid, P.E. No. 50091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

PLAN SHEET (41)

SHEET NO. 86

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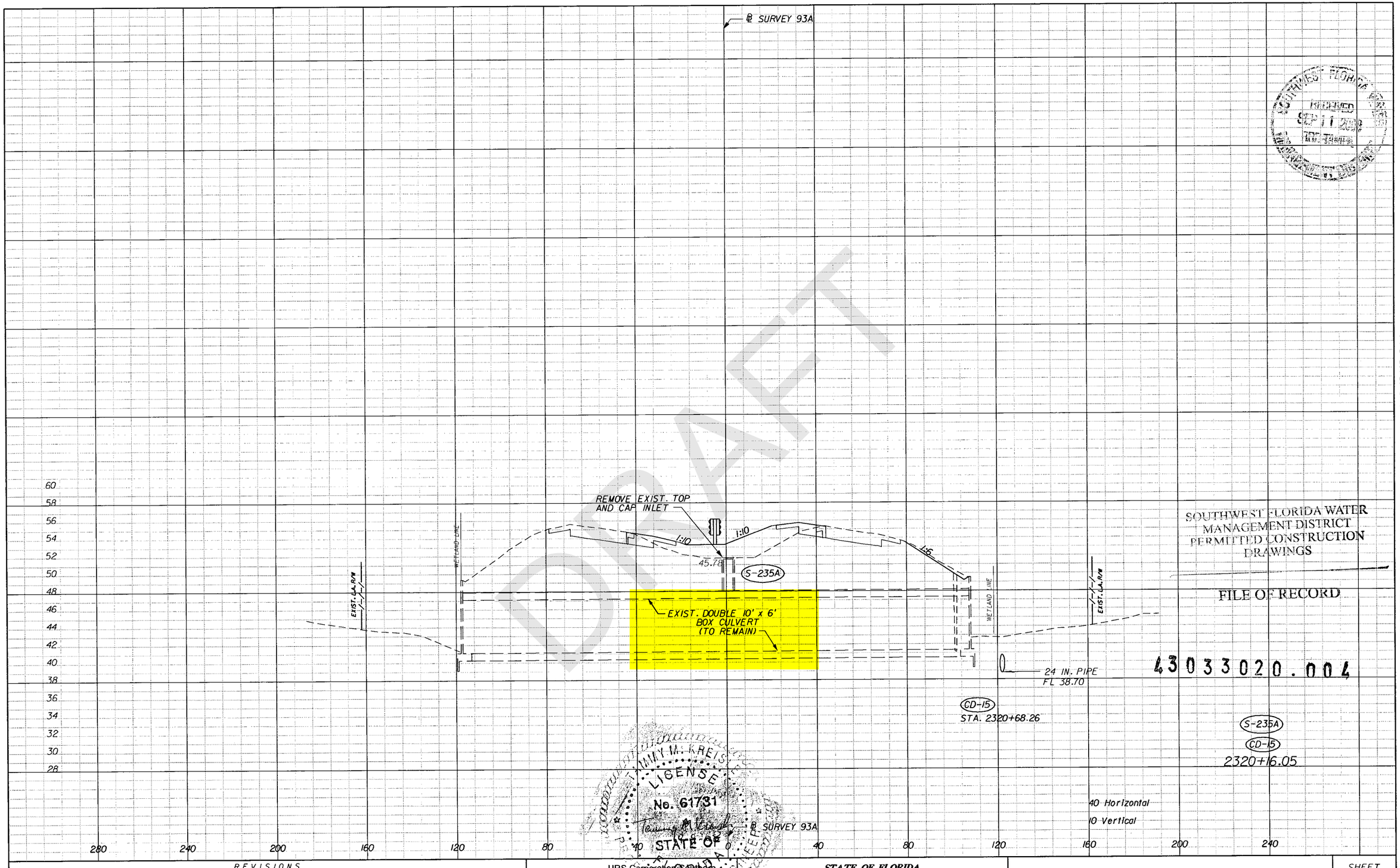

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION DRAWINGS

FILE OF RECORD

43033020.004

TAMMY M. KREISLE
LICENSED
No. 61731
STATE OF FLORIDA
℄ SURVEY 93A

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

DRAINAGE STRUCTURES

SHEET NO. 189

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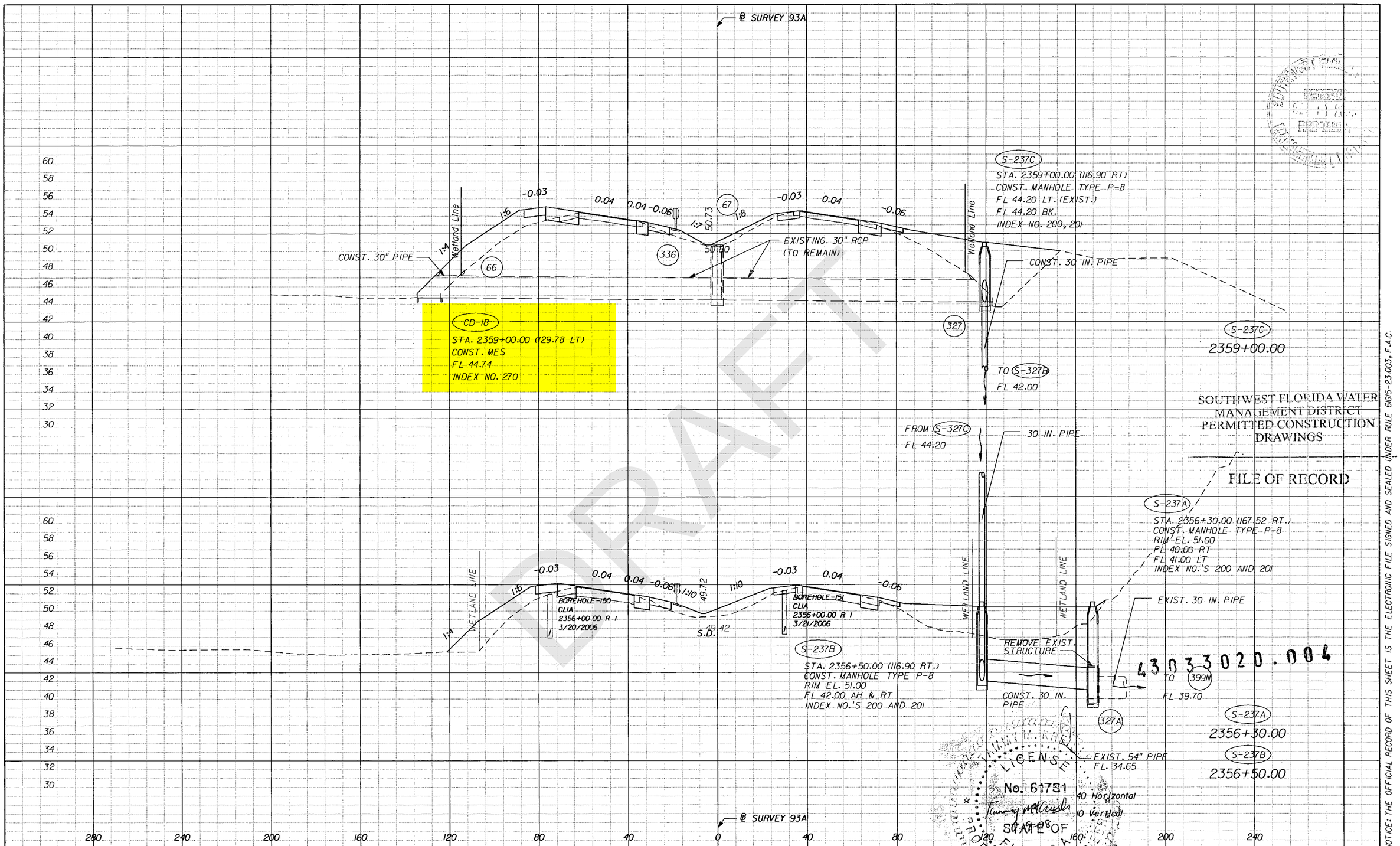

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

DRAINAGE STRUCTURES

SHEET NO. 201

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℄ SURVEY 93A

CD-19
STA. 2385+45.39 (150.4' LT.)
CONST. STRAIGHT CONC. EW
FL 45.70
INDEX NO. 290

-0.03 0.03 0.02 -0.05

78 54.69 53.81

77

CONST. 10' x 4' CBC 1:15

42" PIPE
FL. 40.75

64 62 60 58 56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26 24 22

280 240 200 160 120 80 40 0 40 80 120 160 200 240

℄ SURVEY 93A

40 Horizontal
10 Vertical

CD-19
2385+45.39

RECEIVED
SEP 16 2008
SWFWMD-TAMPA

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION DRAWINGS
FILE OF RECORD

43033020.004

STATE OF FLORIDA
LICENSE
No. 61781
Tammy M. Kreisle
9-9-08
PROFESSIONAL ENGINEER

DRAFT

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

DRAINAGE STRUCTURES

SHEET NO. 208

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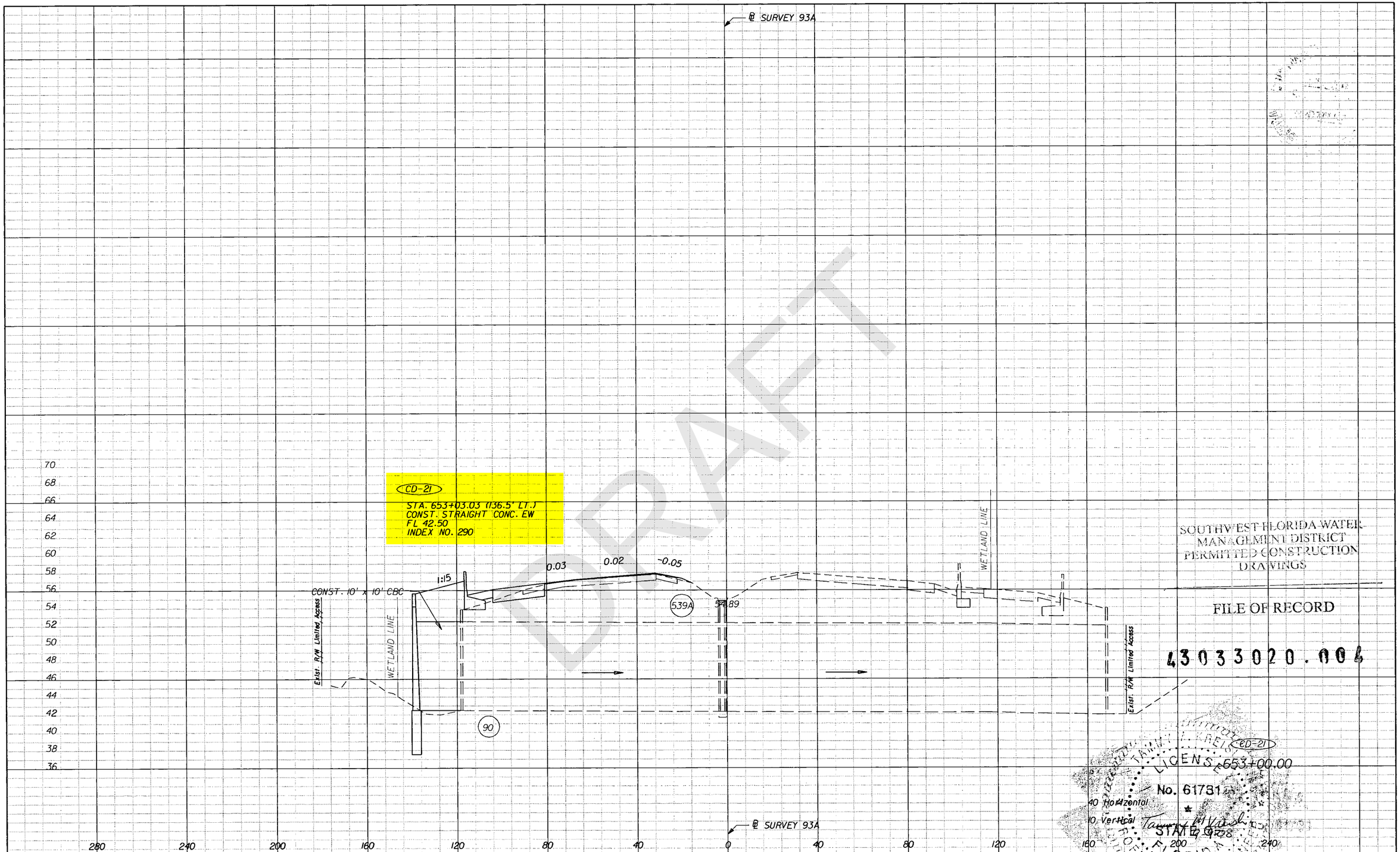

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION DRAWINGS

FILE OF RECORD

43033020.004

CD-21
653+00.00

TAMMY L. KREISLE
LICENSE
No. 61731
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

40 Horizontal
10 Vertical

Tammy M. Kreisle

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

DRAINAGE STRUCTURES

SHEET NO. 220

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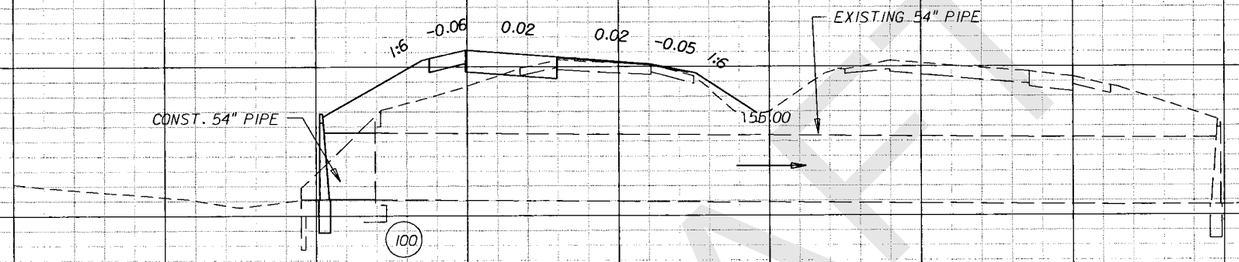
℄ SURVEY 93A

CD-22B

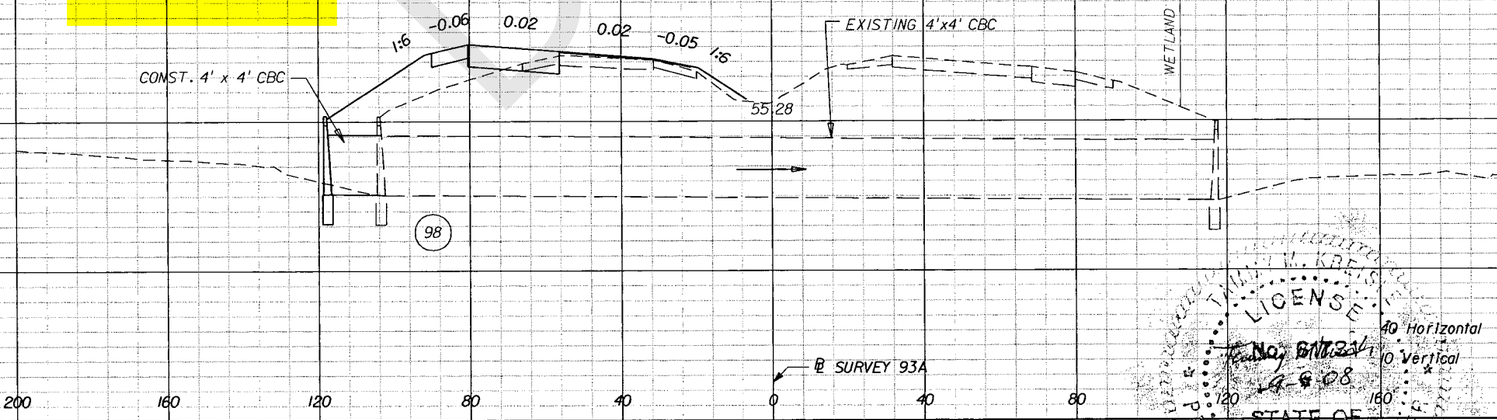
STA. 683+67.17 (116.0' LT.)
CONST. STRAIGHT CONC. ENDWALL
FL 49.25
INDEX NO. 250



CD-22B
683+67.17

CD-22A

STA. 683+37.47 (116.5' LT.)
CONST. STRAIGHT CONC. EW
FL 49.13
INDEX NO. 290



CD-22A
683+37.47

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION DRAWINGS

FILE OF RECORD

43033070.001

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
Tammy M. Kreisle, P.E. No. 61731

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93/93A	HILLSBOROUGH PASCO	408459-3-52-01

STATE OF FLORIDA

DRAINAGE STRUCTURES

SHEET NO. 229

raleigh_sanders 7/11/2008 14:58:07 D:\Proj\dot\w8\408459352\01\drainage\DRXSR001.DGN

DESIGN HYDRAULICS STUDY

Revision 6

For
S.R. 93 (Interstate 275)
From 1.8 miles north of Livingston Avenue to south of the Hillsborough/Pasco County Line
Hillsborough County
FPID 258413-3-52-01

Prepared for:
FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN
TAMPA, FL

Prepared by:
ATKINS
4030 WEST BOY SCOUT BOULEVARD, SUITE 700
TAMPA, FL 33607

January 2012

The remaining roadway drains to an existing infield area, SMF 800A, also designated as Wetland 11. SMF 800A was initially modified during the construction of other FDOT projects (S.P.N. 10075-3419 and 14075-3401). Under the current permit, and constructed under FPID 258413-2-52-01, SMF 800A was minimally modified by construction of a control structure (S-800) at the existing 30" cross drain (CD 24), located at Sta 1569+00.00. The existing 30" cross drain connects SMF 800A (Wetland 11) with other adjacent wetlands along the west side of I-275. In the permitted conditions, SMF 800A provides treatment and attenuation for an area equivalent to the new impervious area within Basin 800A. Please refer to the original DHS for FPID 258413-3-52-01, and excerpts from the original documentation provided in Appendix E for additional information.

4.3 PROPOSED BASIN 800A

In the original model, a total of 8.57 acres of pavement drained to SMF 800A, of which 2.78 acres was from the northbound lanes. In addition, 2.15 acres of the pond at the top of treatment was counted for treatment. A required treatment volume of 1.4 ac-ft was calculated using 1.5 inches of treatment over the impervious area. Pond 800A provided 1.6 ac-ft of treatment based on the original design. Please refer to the attached excerpt in Appendix E from the original design hydraulics study.

For this project, the model was converted from BRN to ICPR, the drainage sub basin areas were adjusted and updated contours were used based on additional survey since the project was originally permitted. The pavement area draining to 800A was increased by 0.32 acres, for a total of 8.89 acres, and the top of treatment was increased to 2.70 acres based on the newly available contours. This resulted in a new required treatment volume of 1.45 ac-ft. New stage areas were determined based on the new contours and the new alignment. Part of the alignment encroaches into the treatment area, reducing the available volume. However, based on the new contours, the resulting pond provides 1.59 ac-ft of

treatment, which is greater than the required treatment volume. Treatment volumes are summarized in Table 4.3.3. The flow at the downstream end of the 30" cross drain was compared in existing and proposed conditions, insuring that the existing flow rate will not be increased.

Table 4.3.1 – Pond Design Summary

Pond	Size (Ac)	TOB EL. (ft)	SHW EL. (ft)	Weir EL (ft)	Q_{25} Pre (ft^3/s)		Q_{25} Post (ft^3/s)		DHW_{25} EL (ft)	
					Permitted	Revised	Permitted	Proposed	Permitted	Proposed
800A	11.5	44	38.8	39.9	38.36	35.61	19.87	25.94	42.56	42.58

Table 4.3.2 – Tailwater Determinations

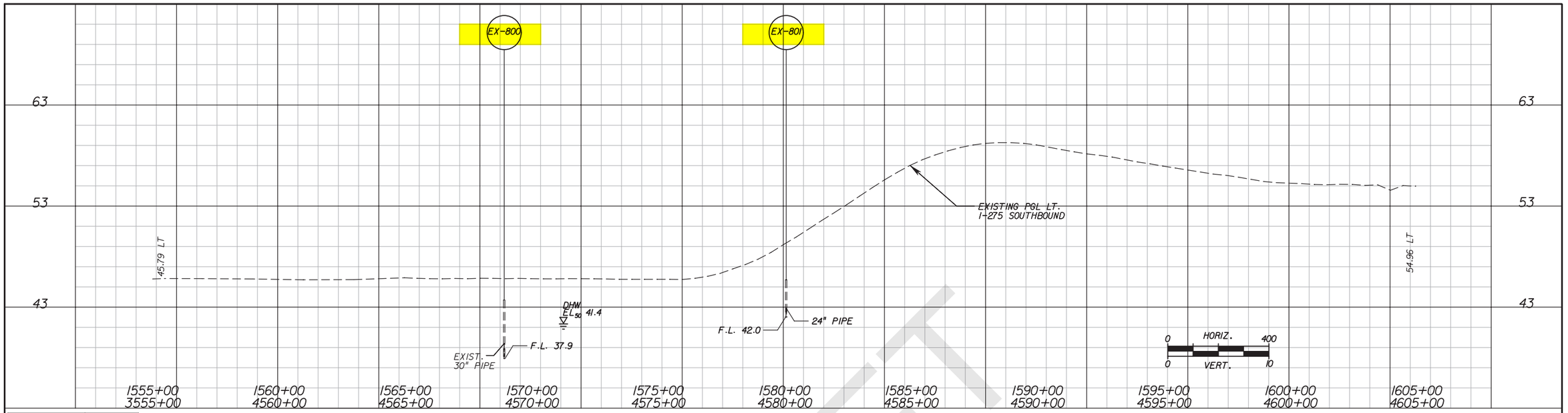
Basin	TW EL. (ft)	Location	Engineering Justification
800A	38.8-40.0	Cypress Creek west	Based on wetland area elevations

Table 4.3.3 – Treatment Volumes for Roadway Improvements

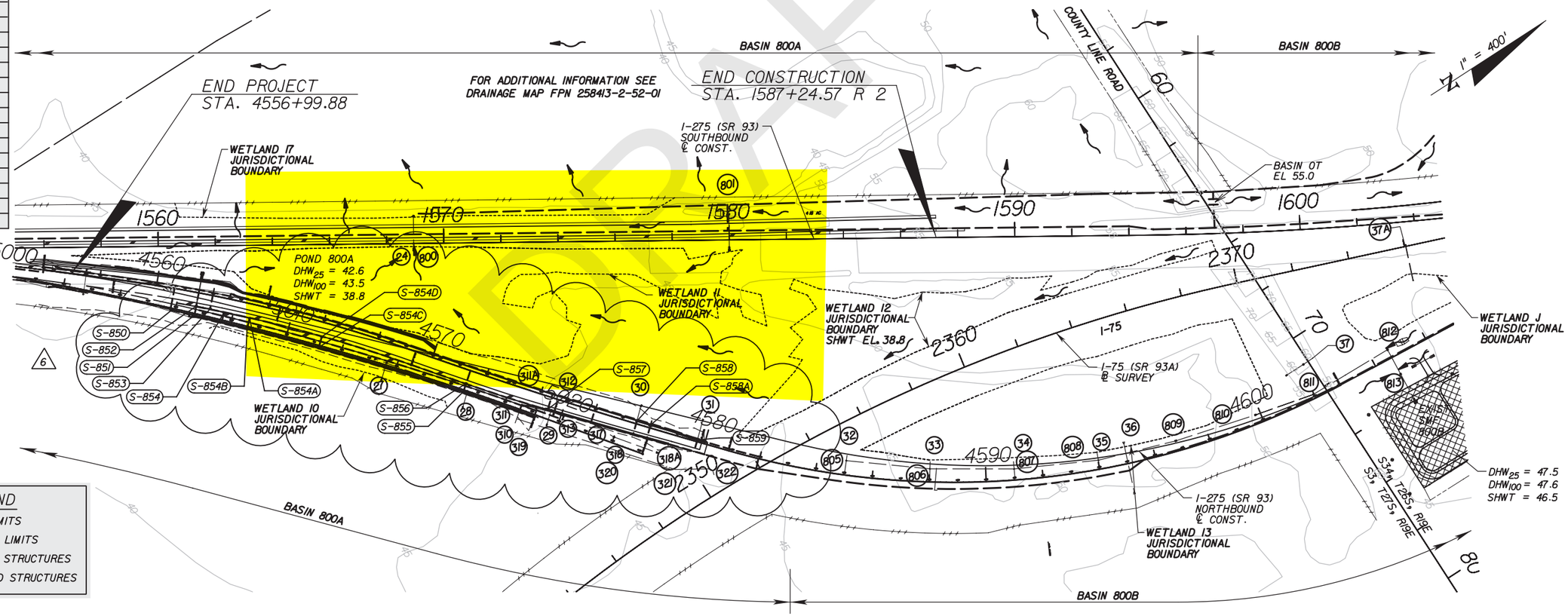
Basin	Required Treatment (Ac-Ft)		Proposed Treatment (Ac-Ft)		Description
800A	Permitted	Proposed	Permitted	Proposed	Treat 1.5" over pavt. area - discharges into OFW. 8.89 ac of impervious area, plus 2.70 ac at the top of treatment.
	1.34	1.45	1.60	1.59	

Table 4.3.4 – Critical Duration Rainfall Depths

FDOT Storm	Rainfall Depth (in)
100Yr/1Hr	4.5
100Yr/2Hr	6
100Yr/4Hr	7.3
100Yr/8Hr	9.2
100Yr/24Hr	12
100Yr/72Hr	15
100Yr/168Hr	20
100Yr/240Hr	24



STRUCTURE NO.	AREA (AC.)
S-850	0.17
S-851	0.14
S-852	0.07
S-853	1.36
S-854	0.03
S-854A	0.11
S-854B	0.15
S-854C	0.31
S-854D	0.16
S-855	0.10
S-856	0.48
S-857	0.22
S-858	0.06
S-858A	0.20
S-859	0.22



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
09/02/11	CLC	6 ADDED STRUCTURES AND EXTENDED ROADWAY			

PBS&J
4030 West Boy Scout Blvd.
Suite 700
Tampa, Florida 33607
FBPE Certificate of
Authorization No. 24
CAROLINE L. CATION, P.E. #69880

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93	HILLSBOROUGH	258413-3-52-01

DRAINAGE MAP
(4 OF 4)

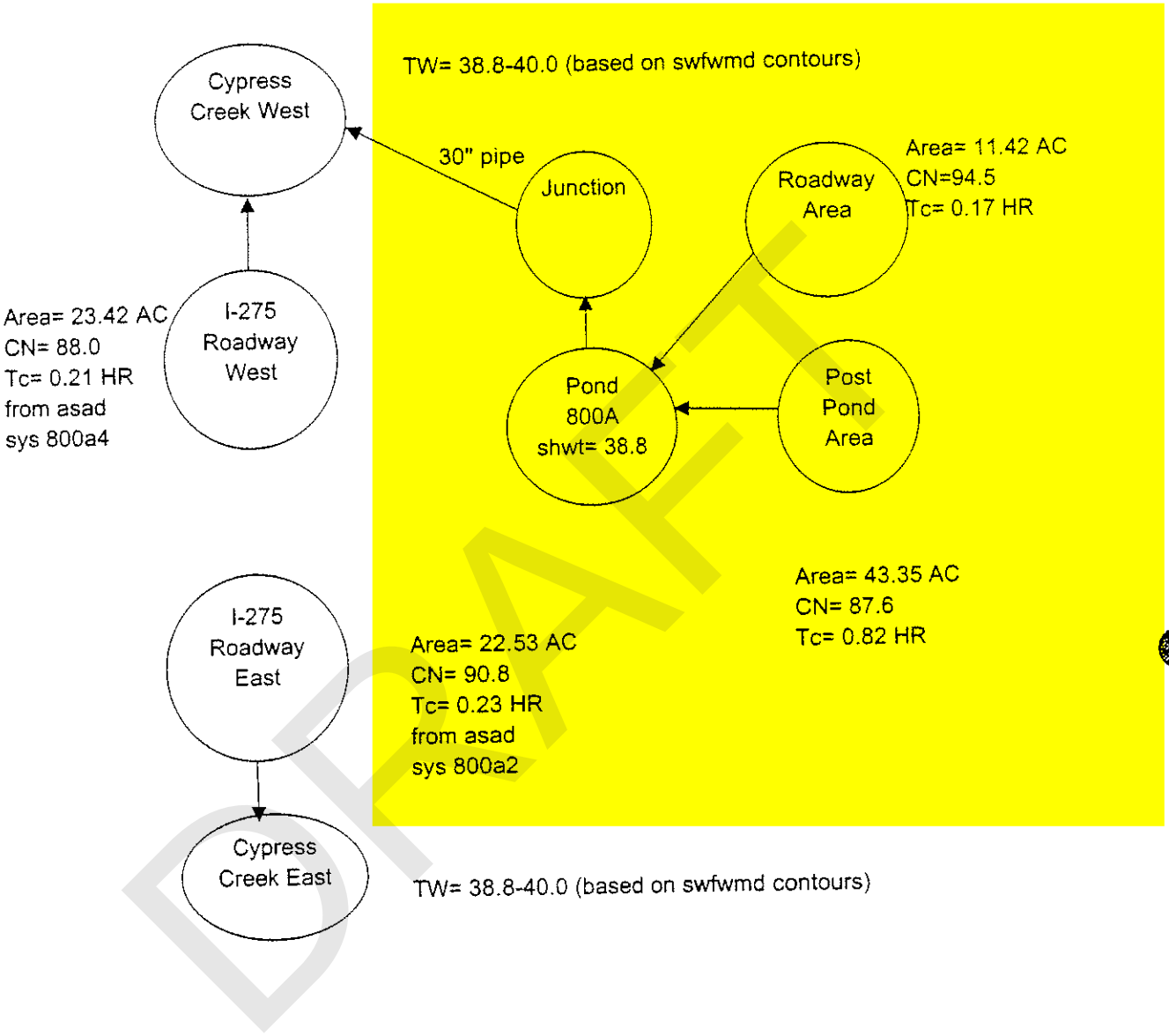
SHEET NO. 5

USER: 24734 11/10/2011 11:40:24 AM J:\projects\E-Delivery\258413\520\ETCRev6\258413352O1\drainage\drmprd07_rev6.dgn

PBS&J

COMP. BY: LPF
CHK. BY: MDM
DATE: 6/19/01

Subject: I-275 North
Proposed Node Diagram Basin 800A



800-27

APPENDIX F

Meeting Minutes

MEETING MINUTES

Meeting Date:	9/16/2020	**Date Issued:**	9/16/2020
Location:	Virtual (Teams Meeting)		
Project Name:	430573-4/I75/I275 SB FROM S OF COUNTY LINE RD TO SR 56		
Purpose:	Pond Siting Longlist Meeting		
Notes by:	Eric Nelson	**American Project #:**	5167733-010
Copies to:	Attendees		

Attendees	Representing	Fax or e-mail
Henzel, Ashley	FDOT D7	Ashley.Henzel@dot.state.fl.us
Bogen, Kirk	FDOT D7	Kirk.Bogen@dot.state.fl.us
Waris, Abdul	FDOT D7	Abdul.Waris@dot.state.fl.us
McTeer, Bill	FDOT D7	Bill.Mcteer@dot.state.fl.us
Rhinesmith, Robin	FDOT D7	Robin.Rhinesmith@dot.state.fl.us
Conner, Allison	FDOT D7	Allison.Conner@dot.state.fl.us
Geiger, Crystal	FDOT D7	Crystal.Geiger@dot.state.fl.us
Goss, Marcel	FDOT D7	Marcel.Goss@dot.state.fl.us
Novotny, Jeff	American	JNovotny@acp-fl.com
Salicco, Chris	American	CSalicco@acp-fl.com
Nelson, Eric	American	ENelson@acp-fl.com

The following notes reflect our understanding of the discussions and decisions made at this meeting. If you have any questions, additions or comments, please contact us at the above address. We will consider the minutes to be accurate unless written notice is received within 10 working days of the date issued.

The purpose of this meeting was to discuss the pond and floodplain compensation site alternatives for the proposed southbound CD ramp on I-75, between from the I-275 interchange to the SR 56 interchange.

- JN briefly discussed the proposed roadway concept. Discussed both build alternatives and the consideration of future accommodation of express lanes along I-75. Discussed the need for pond siting and floodplain impacts. The project spans both in Pasco County and Hillsborough County. The maps show the footprint of the potential future express lanes and other future accommodations would be to replace the County Line Rd bridge over I-75/275 and to replace the I-275 NB bridge over I-75. Neither of these elements are required for the SB CD Road work, so are not included in this project, only shown for information and so any drainage needs are considered and pond footprints consider them.
- EN then went through the pond needs and FPC needs – reference the attached memo and map that were discussed at the meeting. The following items were noted during this discussion:

- SMF J1 and J2 will be converted from wet detention to conservation pond. These ponds would handle the stormwater from the SB CD road north of County Line Rd.
    - Those existing ponds will need to be excavated to make each pond deeper and modify the control structures.
    - This eliminates the need for additional pond sites within these basins.
- With future express lanes, the County Line Rd bridge would need to be replaced. It would be a future in kind replacement (not adding lanes). The map will be changed to eliminate this area from drainage consideration.
    - SMF B-1 and B-2 can be eliminated. This County Line Rd work is most likely exempt from permitting
- I-275 NB Ramp work is also only needed if express lanes are added to I-75 and it too would be an in-kind replacement
    - American will need to adjust calculations for SMF 800A-1 accordingly.
    - No alternative sites were needed for SMF 800A-1 because it is in the infield of the FDOT r/w.
- There was discussion about the floodplain compensation area including parcels owned by FDOT and Pasco County and where the elevations differed in the respective floodplain impact areas.
- American will look at expanding the area for FPC J2-1 to also accommodate FPC J1-2 as an alternative. Both sites are on land owned by the same property owner.
    - EN mentioned that it will still need to be divided into two FPC sites utilizing a berm to address different floodplain elevations.
- American will attempt bring J2-2 closer to the I-75 r/w for access purposes.
- American will move J2-3 to the east out of the way of the future Wesley Chapel Blvd extension.
- American will label County and FDOT owned land
    - Also review further if they could be used for FPC sites
- American will label Cypress Creek Preserve on east side of the I-75
- AW questioned if net improvement is required
    - EN answered that there are no impaired WBIDs
    - *Correction to statement: Cypress Creek is an OFW. Therefore 50% net improvement is required. However, the affected ponds will still have sufficient capacity and no expansion is necessary.*
- FDOT questioned whether we would look at modeling the FPC
    - *Confirmed after meeting - this was not included in American's scope and fee for this TWO.*
- *Other items emailed immediately following the meeting (per AH):*
    - *Include the existing and proposed R/W lines*
    - *Change the FPID number from the CSC contract to the project number*
    - *If there is a FPC site that is not adjacent to the R/W, we need to show an access easement*
    - *Add roadway labels*

THIS FORM IS INTENDED TO FACILITATE AND GUIDE THE DIALOGUE DURING A PRE-APPLICATION MEETING BY PROVIDING A PARTIAL "PROMPT LIST" OF DISCUSSION SUBJECTS. IT IS NOT A LIST OF REQUIREMENTS FOR SUBMITTAL BY THE APPLICANT.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
RESOURCE REGULATION DIVISION
PRE-APPLICATION MEETING NOTES

FILE NUMBER:

PA 407927

Date:	09/16/2020		
Time:	11:00		
Project Name:	SB I-75/I-275 Ramps from SR 56 PD&E Study		
District Engineer:	Scott VanOrsdale		
District ES:	Lauren Greenawalt		
Attendees:	Eric Nelson, PE, Chris Salicco		
County:	Pasco	**Sec/Twp/Rge:**	26, 27, 34 & 35/26/19, 3 & 4/27/19
Total Land Acreage:	N/A	**Project Acreage:**	unknown acres

Prior On-Site/Off-Site Permit Activity:

- ERP – 43033020.004

Project Overview:

- PD&E/PSR phase of project. Proposing to widen I-75 r/w to the west to accommodate new SB Ramp from SR 56 to I-275, modifications to existing ramps at I-75/I-275 interchange. Will require SMF(s) to treat new impervious. Three permitted in the interchange will be modified from wet treatment to conservation ponds. FPC sites also required.
- Project will modify existing permit, Individual Major Modification.
- Discussed utilizing storage modeling to show no adverse floodplain impacts where cup for cup cannot be provided.
- Discussed digging three existing ponds deeper to function better and reduce maintenance issues. Provide justification for removing the littoral zone.

Environmental Discussion: (Wetlands On-Site, Wetlands on Adjacent Properties, Delineation, T&E species, Easements, Drawdown Issues, Setbacks, Justification, Elimination/Reduction, Permanent/Temporary Impacts, Secondary and Cumulative Impacts, Mitigation Options, SHWL, Upland Habitats, Site Visit, etc.)

- Provide the limits of jurisdictional wetlands and surface waters. Roadside ditches or other water conveyances, including permitted and constructed water conveyance features, can be claimed as surface waters per Chapter 62-340 F.A.C. if they do not meet the definition of a swale as stated under Rule 403.803 (14) F.S.
- Provide appropriate mitigation using UMAM for impacts, if applicable.
- The site is located in the Hillsborough River ERP Basin. Mitigation Banks that serve this area include Hillsborough River and North Tampa. For an interactive map of permitted mitigation banks and their service areas, use this LINK.
- If the wetland mitigation is appropriate and the applicant is proposing to utilize mitigation bank credit as wetland mitigation, the following applies: Provide letter or credit availability or, if applicable, a letter of reservation from the wetland mitigation bank. The wetland mitigation bank current credit ledgers can be found out the following link: https://www.swfwmd.state.fl.us/business/epermitting/environmental-resource-permit, Go to “ERP Mitigation Bank Wetland Credit Ledgers”
- Demonstrate elimination and reduction of wetland impacts.
- Maintain minimum 15 foot, average 25 foot wetland conservation area setback or address secondary impacts.
- The project is proposing to attenuate/treat in wetlands. Please demonstrate that adverse impacts to the wetland hydro-periods will not occur by providing hydrographs of the 2.33 year mean annual storm. The graph should start and end at the pop-off elevation with Existing Condition and Proposed Condition hydrographs superimposed for comparison. Please provide a supporting narrative for the hydrographs explaining any variations that are shown. The invert of the agricultural ditches may be the existing ‘pop-off’ elevation, or SHWL of the wetland and may need to be considered when designing the storm water management system.
- Determine SHWL’s at pond locations, wetlands, and OSWs.
- Determine normal pool elevations of wetlands.

- Determine 'pop-off' locations and elevations of wetlands.
- As of October 1, 2017, the District will no longer send a copy of an application that does not qualify for a State Programmatic General Permit (SPGP) to the U.S. Army Corps of Engineers. If a project does not qualify for a SPGP, you will need to apply separately to the Corps using the appropriate federal application form for activities under federal jurisdiction. Please see the Corps' Jacksonville District Regulatory Division Sourcebook for more information about federal permitting. Please call your local Corps office if you have questions about federal permitting. Link: http://www.saj.usace.army.mil/Missions/Regulatory/Source-Book/

Site Information Discussion: (SHW Levels, Floodplain, Tailwater Conditions, Adjacent Off-Site Contributing Sources, Receiving Waterbody, etc.)

- Existing roadway/intersections – I-75, I-275; SR 54
- Watersheds – Cypress Creek
- WBIDs need to be independently verified by the consultant - WBID 1402 – Cypress Creek; not impaired at this time. Possible WBID 1440E – Cypress Creek (North); not impaired at this time. Possible WBID 1455 – Trout Creek; TMDL for Fecal Coliform and impaired for Escherichia.
- OFW – Cypress Creek, at least one pond will have a direct discharge.
- Document/justify SHWE's at pond locations, wetlands, and OSWs.
- Determine normal pool elevations of wetlands.
- Determine 'pop-off' locations and elevations of wetlands.
- Provide documentation to support tailwater conditions for quality and quantity design
- Proposed control structures in wetlands should be consistent with existing 'pop-off' elevations of wetlands; demonstrate no adverse impacts to wetland hydroperiod for up to 2.33yr mean annual storm.
- Minimum flows and levels of receiving waters shall not be disrupted.
- Contamination issues need to be resolved with the FDEP. Check FDEP MapDirect layer for possible contamination points within/adjacent to the project area. FDEP MapDirect Link
  - FDEP Site ID No. **9101790** located within or adjacent to site. Please verify with FDEP if any have current contamination issues.
  For known contamination within the site or within 500' beyond the proposed stormwater management system:
  - after the application is submitted, please contact FDEP staff listed below and provide them with the ERP Application ID # along with a mounding analysis (groundwater elevation versus distance) of the proposed stormwater management system that shows the proposed groundwater mound will not adversely impact the contaminated area. FDEP will review the plans submitted to the District and mounding analysis to determine any adverse impacts. Provide documentation from FDEP that the proposed construction will not result in adverse impacts. This is required prior to the ERP Application being deemed complete.
  - If a SWMS is to be constructed within a contamination zone area, a groundwater sample collected from the first aquifer water bearing zone (i.e. zone of saturation or first zone that the water table is encountered) will most likely be required.
  FDEP Contacts:
  - For projects located within Citrus, Hernando, Pasco, Hillsborough, Pinellas, Manatee, Polk and Hardee Counties: Yanisa Angulo yanisa.angulo@floridadep.gov
- Check for District owned lands over and adjacent to project area.
- Stormwater retention and detention systems are classified as moderate sanitary hazards with respect to public and private drinking water wells. Stormwater treatment facilities shall not be constructed within 100 feet of an existing public water supply well and shall not be constructed within 75 feet of an existing private drinking water well. Subsection 4.2, A.H.V.II.
- Any wells on site should be identified and their future use/abandonment must be designated.
- Are there any high water data, flooding complaints or issues onsite or nearby?
- District data collection site may be impacted by proposed construction. Contact data.maps@watermatters.org to coordinate relocation of District data collection site.

Water Quantity Discussions: (Basin Description, Storm Event, Pre/Post Volume, Pre/Post Discharge, etc.)

- Demonstrate that post development peak discharges from proposed project area will not cause an adverse impact for a 25-year, 24-hour storm event.
- Demonstrate that site will not impede the conveyance of contributing off-site flows.
- Demonstrate that the project will not increase flood stages up- or down-stream of the project area(s).
- Provide equivalent compensating storage for all 100-year, 24-hour riverine floodplain impacts if applicable. Providing cup-for-cup storage in dedicated areas of excavation is the preferred method of compensation~~.~~ if no impacts to flood conveyance are proposed and storage impacts and compensation occur within the same

basin. In this case, tabulations should be provided at 0.5-foot increments to demonstrate encroachment and compensation occur at the same levels. Otherwise, storage modeling will be required to demonstrate no increase in flood stages will occur on off-site properties, using the mean annual, 10-year, 25-year, and 100-year storm events for the pre- and post-development conditions.

- Please be aware that if there is credible historical evidence of past flooding or the physical capacity of the downstream conveyance or receiving waters indicates that the conditions for issuance will not be met without consideration of storm events of different frequency or duration, applicants shall be required to provide additional analyses using storm events of different duration or frequency than the 25-year 24-hour storm event, or to adjust the volume, rate or timing of discharges. [Section 3.0 Applicant's Handbook Volume II]

Water Quality Discussions: (Type of Treatment, Technical Characteristics, Non-presumptive Alternatives, etc.)

- Replace treatment function of existing ditches to be filled.
- Presumptive Water Quality Treatment for Alterations to Existing Public Roadway Projects:
  -Refer to Section 4.5 A.H.V.II for Alterations to Existing Public Roadway Projects.
  -Refer to Sections 4.8, 4.8.1 and 4.8.2 A.H.V.II for Compensating Stormwater Treatment, Overtreatment, and Offsite Compensation.
  -All co-mingled existing & new impervious that is proposed to be connected to a treatment pond will require treatment for an area equal to the co-mingled existing & new impervious (times ½" for dry treatment or 1" for wet treatment). This applies whether or not equivalent treatment concepts are used.
  -However, if equivalent treatment concepts are used it is possible to strategically locate the pond(s) so that the minimum treatment requirement may be for an area equivalent to the new impervious area only. That is, co-mingled existing & new impervious that is not connected to a treatment pond may bypass treatment (as per Section 4.5(2), A.H.V.II); if the 'total impervious area' that is connected to the treatment pond(s) is at least equivalent to the area of new impervious only. The 'total impervious area' that is connected to the pond(s) may be composed of co-mingled existing & new impervious.
  -Offsite impervious not required to be treated; but may be useful to be treated when using equivalent treatment concepts.
  -Existing treatment capacity displaced by any road project will require additional compensating volume. Refer to Subsection 4.5(c), A.H.V.II.
- Will acknowledge compensatory treatment to offset pollutant loads associated with portions of the project area that cannot be physically treated.
- Provide additional 50% treatment for any direct discharges to OFW. Refer to ERP Applicant's Handbook Vol. II Subsection 4.1(f).
- Please be advised that although use of isolated wetlands for ERP treatment purposes is permittable as per Section 4.1(a)(3), A.H.V.II, use of isolated wetlands for treatment purposes may not necessarily meet US Army Corps criteria.

Sovereign Lands Discussion: (Determining Location, Correct Form of Authorization, Content of Application, Assessment of Fees, Coordination with FDEP)

- The project may be located within state owned sovereign submerged lands (SSSL). Be advised that a title determination will be required from FDEP to verify the presence and/or location of SSSL.
- If use of SSSL is proposed, authorization will be required. Refer to Chapter 18-21, F.A.C. and Chapter 18-20, F.A.C. for guidance on projects that impact SSSL and Aquatic Preserves.

Operation and Maintenance/Legal Information: (Ownership or Perpetual Control, O&M Entity, O&M Instructions, Homeowner Association Documents, Coastal Zone requirements, etc.)

- The permit must be issued to entity that owns or controls the property.
- Provide evidence of ownership or control by deed, easement, contract for purchase, etc. Evidence of ownership or control must include a legal description. A Property Appraiser summary of the legal description is NOT acceptable.

Application Type and Fee Required:

- SWERP Individual Major Modification – Sections A, C, and E of the ERP Application.
- < 40 acres of project area and < 3 wetland or surface water impacts - $1,082.00 Online Submittal
- < 100 acres of project area and <10 acre of wetland or surface water impacts - $1,245.75
- Consult the fee schedule for different thresholds.

Other: (Future Pre-Application Meetings, Fast Track, Submittal Date, Construction Start Date, Required District Permits – WUP, WOD, Well Construction, etc.)

- An application for an individual permit to construct or alter a dam, impoundment, reservoir, or appurtenant work, requires that a notice of receipt of the application must be published in a newspaper within the affected area. Provide documentation that such noticing has been accomplished. Note that the published notices of receipt for an ERP can be in accordance with the language provided in Rule 40D-1.603(10), F.A.C.

- Provide a copy of the legal description (of all applicable parcels within the project area) in one of the following forms:
  a. Deed with complete Legal Description attachment.
  b. Plat.
  c. Boundary survey of the property(ies) with a sketch.

- The plans and drainage report submitted electronically must include the appropriate information required under Rules 61G15-23.005 and 61G15-23.004 (Digital), F.A.C. The following text is required by the Florida Board of Professional Engineers (FBPE) to meet this requirement when a digitally created seal is not used and must appear where the signature would normally appear:

  ELECTRONIC (Manifest): *[NAME] State of Florida, Professional Engineer, License No. [NUMBER] This item has been electronically signed and sealed by [NAME] on the date indicated here using a SHA authentication code. Printed copies of this document are not considered signed and sealed and the SHA authentication code must be verified on any electronic copies*

  DIGITAL: *[NAME] State of Florida, Professional Engineer, License No. [NUMBER]; This item has been digitally signed and sealed by [NAME] on the date indicated here; Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.*
- Provide soil erosion and sediment control measures for use during construction. Refer to ERP Applicant's Handbook Vol. 1 Part IV Erosion and Sediment Control.
- Demonstrate that excavation of any stormwater ponds does not breach an aquitard (see Subsection 2.1.1, A.H.V.II) such that it would allow for lesser quality water to pass, either way, between the two systems. In those geographical areas of the District where there is not an aquitard present, the depth of the pond(s) shall not be excavated to within two (2) feet of the underlying limestone which is part of a drinking water aquifer. [Refer to Subsection 5.4.1(b), A.H.V.II]
- If lowering of SHWE is proposed, then burden is on Applicant to demonstrate no adverse onsite or offsite impacts as per Subsection 3.6, A.H.V.II. Groundwater drawdown 'radius of influence' computations may be required to demonstrate no adverse onsite or offsite impacts. Please note that new roadside swales or deepening of existing roadside swales may result in lowering of SHWE. Proposed ponds with control elevation less than SHWE may result in adverse lowering of onsite or offsite groundwater.