SR 9 / I-95 AT SR 80 / SOUTHERN BOULEVARD PROJECT DEVELOPMENT & ENVIRONMENT STUDY

PRELIMINARY DRAINAGE REPORT

Financial Project ID: 435516-1-22-02
FAP No.: TBD / ETDM No.: 14183
Palm Beach County

Prepared For:
FDOT District Four
3400 W. Commercial Blvd.
Ft. Lauderdale, FL 33309

June 2017

PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify that I am a registered professional engineer in the State of Florida practicing with RS&H, Inc., a Florida corporation authorized to operate as an engineering business (EB No. EB0005620) by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have supervised the preparation and approve the evaluation, findings, opinions, conclusions, and technical advice hereby reported for:

Project: SR 9 / I-95 at SR 80 / Southern Boulevard PD&E Study
Location: I-95 / SR 80 Interchange, Palm Beach County, Florida

Report: Preliminary Drainage Report
Financial Project ID No.: 435516-1-22-02

This report includes a summary of data collection efforts, traffic analysis, alternative roadway analysis, discussion of preferred alternative, discussion of environmental impacts, and summary of conclusions. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering and planning as applied through professional judgment and experience.

Name:
Florida PE Registration No.:

Signature: _____
Date: _____

Draft

EXECUTIVE SUMMARY

This Preliminary Drainage Report is part of the Preliminary Engineering Report for the Project Development and Environment (PD&E) Study for the SR 9 (I-95) at SR 80 (Southern Boulevard) Interchange in Palm Beach County, Florida.

This Report defines the conceptual drainage design, identifies the existing drainage systems within the proposed limits of work, and analyze the stormwater management facility options available to meet FDOT and environmental permitting agencies criteria. The proposed improvements are based on Alternative 4 (EB-NB and NB-WB Dual 3rd Level Flyover Ramps), which is the alternative with the largest increase in impervious area and greatest impact on existing drainage facilities.

The project is located in Palm Beach County, Florida, within the jurisdictional boundary of the South Florida Water Management District (SFWMD).

SFWMD has established several criteria for water quality, depending on the proposed type of stormwater treatment facility. All proposed stormwater management facilities will provide the necessary water quality treatment volume and limit the post-development peak discharge rate into the SFWMD C-51 Canal to the pre-development peak discharge rate. Water quality treatment and discharge attenuation is provided via modifications to the existing dry and wet detention ponds.

Based on the conceptual drainage design evaluation for Alternative 4, the stormwater management facilities required to meet FDOT drainage criteria, as well as SFWMD permit criteria, can be fully accommodated within the existing I-95 and Southern Boulevard wet and dry detention ponds and existing right-of-way, with no additional offsite right-of-way acquisition due solely for drainage purposes.

Draft

Preliminary Drainage Report
SR 9 / I-95 at SR 80 / Southern Boulevard PD&E Study

TABLE OF CONTENTS

1.0 Introduction 1

2.0 Location and Description of Project 2

2.1 Existing Typical Sections 2
2.1.1 Southern Boulevard Typical Sections 2
2.1.2 I-95 Typical Section 3

2.2 Proposed Typical Sections 3
2.2.1 Southern Boulevard Typical Sections 3
2.2.2 I-95 Typical Section 4
2.2.3 Parker Avenue Typical Section 4

3.0 Roadway Drainage 5

3.1 Existing Drainage Systems 5
3.1.1 Existing Drainage System 1 5
3.1.2 Existing Drainage System 2 6
3.1.3 Existing Drainage System 3 7
3.1.4 Existing Drainage System 4 8

3.2 Proposed Drainage Systems 9

3.3 Alternatives Analysis 10

4.0 Geotechnical Characteristics 10

4.1 Soils Information 10

5.0 Stormwater Management Permitting 10

5.1 Stormwater Quality Criteria 10

Draft

5.1.1 Proposed Water Quality Treatment....11

5.2 Stormwater Quantity Criteria....12

5.3 Total Maximum Daily Load (TMDLs) and Nutrient Impaired Water Bodies....12

5.4 Floodplain Encroachment....13

5.5 Roadway Base Protection....13

6.0 Stormwater Management Facilities Evaluation....14

7.0 Stormwater Management System Design....15

7.1 Project Datum....15

7.2 Control Elevations....15

7.2.1 Tailwater Elevations....15

7.2.2 Seasonal High Groundwater Table Elevation (SHGWT)....16

7.2.3 Design Storms and Rainfall Depths....16

7.2.4 Pre-Development and Post-Development Models....16

7.3 Conceptual Drainage Design Recommendations....17

8.0 Conclusion....18

Draft

LIST OF APPENDICES

APPENDIX A Design Aids

Figure 1 – Project Location Map
Figure 2 – USGS Quadrangle Map
Figure 3 – Land Use Map
Figure 4 – Soils Map
Figure 5 – SFWMD Drainage Basin Map
Figure 6 – LWDD Boundary and Canal Network
Figure 7 – FEMA Firmette and Flood Zone Map
Figure 8 – Datum Conversion
Figure 9 – SFWMD Rainfall Maps
Figure 10 – Verified Impaired WBID and TMDLs Map
Figure 11 – Impaired Waters (Verified List)
Figure 12 – FDOT Criteria for Grade Datum
Figure 13 – Alternative 1
Figure 14 – Alternative 3
Figure 15 – Alternative 4
Figure 16 – Alternative 5

APPENDIX B Pre-Development Analysis

Pre-Development Drainage Maps
Pre-Development Land Use
System 1 - Pre-Development ICPR Model
System 2 - Pre-Development ICPR Model
System 3 - Pre-Development ICPR Model
System 4 - Pre-Development ICPR Model

APPENDIX C Post-Development Analysis – Alternative 1

Post-Development Drainage Maps
Post-Development Land Use

APPENDIX D Post-Development Analysis – Alternative 3

Post-Development Drainage Maps
Post-Development Land Use

APPENDIX E Post-Development Analysis – Alternative 4 (Preferred)

Post-Development Drainage Maps
Post-Development Land Use
Water Quality Calculations
Nutrient Loading Analysis
System 1 - Post-Development ICPR Model
System 2 - Post-Development ICPR Model

Draft

System 3 - Post-Development ICPR Model
System 4 - Post-Development ICPR Model
Drainage System Summary Tables

APPENDIX F Post-Development Analysis – Alternative 5

Post-Development Drainage Maps
Post-Development Land Use

APPENDIX G Existing Permit

Draft

1.0 Introduction

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study for the SR 9 (I-95) at SR 80 (Southern Boulevard) Interchange in Palm Beach County, Florida. The major improvements being considered under the PD&E Study include two new flyover ramps and improvements of existing ramps at I-95 and Southern Boulevard, widening of Southern Boulevard, and intersection improvements at Southern Boulevard and Parker Avenue.

The purpose of this report is to define the conceptual drainage design, and to evaluate and identify the recommended stormwater management facility locations. This report identifies the existing drainage systems within the proposed limits of work, FDOT drainage criteria and environmental permitting agency requirements that govern the final design, and the stormwater management facility options available to meet such criteria. Additionally, the report identifies the outfall locations and preliminary sizes (volume and area) of required stormwater management facilities, and provides conclusions and recommendations for the proposed drainage systems. The proposed improvements are based on Alternative 4 (EB-NB and NB-WB Dual 3rd Level Flyover), which is the alternative with the largest increase in impervious area and greatest impact on existing drainage facilities.

The Department would be willing to conduct on-site reviews of the project with regulatory agency personnel and/or would be pleased to answer any questions from regulatory agency personnel related to this project. For further information regarding this project, please contact:

Anson Sonnett, P.E.
FDOT Project Manager, FDOT District 4
3400 W. Commercial Blvd
Fort Lauderdale, FL 33309
(954) 777- 4474
anson.sonnett@dot.state.fl.us

Draft

2.0 Location and Description of Project

The project is located in Palm Beach County, Florida in Sections 32 and 33 of Township 43S and Range 43E, and Sections 4 and 5 of Township 44S and Range 43E. Refer to Figure 1 of **Appendix A** for the Project Location Map and Figure 2 of **Appendix A** for the USGS Quadrangle Map. The surrounding lands of the project area consist of residential, commercial and institutional use, as illustrated in the Land Use Map in Figure 3 of **Appendix A**.

The project is located within the jurisdictional boundary of the South Florida Water Management District (SFWMD). The project lies within the C-51 (West Palm Beach Canal) East Basin, see Figure 5 of **Appendix A** for the SFWMD Drainage Basin Map, just north and east of the Lake Worth Drainage District service area. Refer to Figure 6 of **Appendix A** for the LWDD Boundary and Canal Network.

The PD&E study limits begin along Southern Boulevard at Australian Avenue (to the west) and end the intersection of Southern Boulevard and Parker Avenue (to the east). Along I-95, the study limits are between the Summit Boulevard overpass (to the south) and the Belvedere Road Interchange (to the north), approximately 1,000 feet north and south of SR 80 Interchange, respectively. The total onsite area of the project is approximately 123.67 acres, based on the EB-NB and NB-WB Dual 3rd Level Flyover Concept used for this analysis.

2.1 Existing Typical Sections

2.1.1 Southern Boulevard Typical Sections

SR 80 is an eight-lane divided, urban principal arterial designated as a SIS facility west of I-95 and a four-lane divided, urban principal arterial east of I-95. The east-west facility bridges over the South Florida Rail Corridor (SFRC) / CSX Railroad and I-95. Sidewalks and designated bicycle lanes are provided along both sides of SR 80 within the project corridor.

SR 80, west of I-95, has the following characteristics:

- Four 12-foot travel lanes in each direction;
- 4-foot bicycle lane in each direction;

Draft

- Curb and gutter, inside and outside;
- 7-foot sidewalks adjacent to the outside curb and gutter;
- 40 to 56-foot landscaped median; and
- Right-of-way varies from 170 to 290 feet.

SR 80, east of I-95, has the following characteristics:

- Two 12-foot travel lanes in each direction;
- 4-foot bicycle lane in each direction;
- Curb and gutter, inside and outside;
- 6-foot sidewalks adjacent to the outside curb and gutter;
- 15 to 56-foot landscaped median; and
- Right-of-way varies from 100 to 285 feet.

2.1.2 I-95 Typical Section

I-95 is currently a ten-lane, divided interstate freeway providing four general purpose lanes and one High Occupancy Vehicle (HOV) lane in each direction. Auxiliary lanes are also provided in both the northbound and southbound directions on various segments throughout the corridor.

2.2 Proposed Typical Sections

2.2.1 Southern Boulevard Typical Sections

SR 80, west of I-95, will have the following characteristics:

- Four 12-foot travel lanes in each direction;
- 4 to 7-foot bicycles lane on both sides of SR 80;
- Curb and gutter, inside and outside;
- 6 to 7-foot sidewalks on both sides of the roadway;
- Single lane flyovers with 6-foot inside and outside shoulders located in the existing median area. Alternatives 1 and 3 have a single flyover and Alternative 4 has two flyovers proposed in the median area; and
- Right-of-way varies from 170 to 290 feet.

Draft

SR 80, east of I-95, will have the following characteristics:

- Two 12-foot travel lanes in each direction;
- 4-foot bicycle lane in each direction;
- Curb and gutter, inside and outside;
- 6-foot sidewalks adjacent to the outside curb and gutter;
- 15 to 56-foot landscaped median;
- An 11-foot right-turn lane will be added at the intersection of SR 80 and Parker Avenue; and
- Right-of-way varies from 100 to 285 feet.

The bridges over I-95 and the railroad will be widened slightly but will share the following characteristics:

- Four 12-foot travel lanes in each direction separated by a concrete median;
- 4 to 7-foot bicycle lane in each direction;
- Curb and gutter, inside and outside;
- 6-foot sidewalks adjacent to the outside curb and gutter; and

Varying number of turn lanes to access the I-95 entrance ramps.

2.2.2 I-95 Typical Section

No changes are proposed for the I-95 typical section.

2.2.3 Parker Avenue Typical Section

Parker Avenue, south of the intersection of SR 80, will receive minor improvements within the existing right-of-way and have the following characteristics:

- Two 10-foot left-turn lanes, one 11-foot through lane and one 11-foot shared through and right-turn lane in the north bound direction;
- One 11-foot lane in the south bound direction;
- Sharrows, 5-foot sidewalks adjacent to the curb and gutter on both sides; and
- Curb and gutter, inside and outside.

Draft

3.0 Roadway Drainage

3.1 Existing Drainage Systems

The existing drainage within the project limits can be divided into four distinct systems based on existing collection and conveyance systems, interconnected stormwater management facilities, and outfalls. Refer to **Appendix B** for pre-development drainage maps. The existing drainage systems have been delineated as follows:

3.1.1 Existing Drainage System 1

The first drainage system includes the contributing areas from Southern Boulevard, Australian Avenue, and the southeastern portion Palm Beach International Airport (PBIA), also known as PBIA Basin 3. The system extends from west of the intersection of Southern Boulevard and Australian Avenue to the entrance of the Hilton Palm Beach Airport Hotel on the north side of Southern Boulevard, and to Lang Road on the south side of Southern Boulevard. Runoff from Southern Boulevard and Australian Avenue is collected by curb inlets, as well as ditch bottom inlets located within the grassed medians of Southern Boulevard. Stormwater is then conveyed to dry detention swales (Swales 1-1, 1-4, 1-5, and 1-6) along the north side of Southern Boulevard, between Southern Boulevard and Australian Avenue. Runoff from PBIA is collected by a closed drainage system located within the airport property and conveyed to a wet detention pond located between Southern Boulevard and Australian Avenue (Wet Pond 1-8) via a 72" pipe. Stormwater from the roadways and the airport share a common outfall, but have clearly defined and separate detention systems.

Runoff from the eastern portions of System 1 is conveyed to Dry Detention Swale 1-6, which surrounds Wet Detention Pond 1-8, with a berm separating the swale and wet pond. A raised ditch bottom inlet (S-208) with an internal weir is used as an outlet control structure for the swale and wet detention pond, where the raised elevation of the inlet provides water quality treatment and discharge attenuation for runoff detained in Swale 1-6 from Southern Boulevard and Australian Avenue, while the internal weir serves to provide water quality treatment and discharge attenuation for runoff detained in Wet Detention Pond 1-8 from PBIA Basin 3. Stormwater from these detention systems comingles at S-208 and is conveyed via an 18" pipe towards the outfall.

Draft

Runoff from the central and western portions of System 1 is conveyed to Dry Detention Swales 1-4, 1-5, and 1-1, which surrounds Wet Detention Pond 1-2 with a berm separating the swale and wet pond. A raised ditch bottom inlet (S-211) with an internal weir is used as an outlet control structure for the swale, where the raised elevation of the inlet provides water quality treatment and discharge attenuation for runoff detained in Swale 1-1. The internal weir serves to provide additional discharge attenuation for the system by allowing excess runoff to be stored and detained in Wet Pond 1-2 for storm events of greater magnitude.

Stormwater from Swales 1-1, 1-4, and 1-5, as well as Wet Detention Pond 1-2, comingles with stormwater from Swale 1-6 and Wet Detention Pond 1-8 at the control structure located in Swale 1-1 (S-211) and is eventually conveyed via a 72" outfall pipe that discharges to the SFWMD C-51 Canal at the southwestern quadrant of the intersection of Southern Boulevard and Australian Avenue.

Drainage systems serving Southern Boulevard and Australian Avenue were permitted under SFWMD Permit No. 50-04106-P and constructed under FPIDs 229621-1-52-01, 228987-1-52-01, and 229713-1-52-01. Drainage systems serving PBIA were originally permitted under SFWMD Permit No. 50-00471-S and later modified for PBIA Basin 3 under SFWMD Permit No. 50-04106-P. Refer to **Appendix G** for permit documentation.

3.1.2 Existing Drainage System 2

The second drainage system includes the contributing area from Southern Boulevard, between the entrance to the Hilton Palm Beach Airport Hotel on the north side and Lang Road on the south side, eastward to the southbound on and off ramps for I-95 (Ramps L and I). The system also includes some offsite contributing area from residences within the Town of Cloud Lake, and from Lang Road. Within the system boundaries, runoff is collected by curb inlets and ditch bottom inlets in the median of Southern Boulevard and conveyed to a wet detention pond (Wet Detention Pond 2-1) at the southeast quadrant of the intersection of Southern Boulevard and Lang Road. The wet detention pond provides water quality treatment and discharge attenuation for the upstream system serving Southern Boulevard, Lang Road, and a portion of the Town of Cloud Lake. Stormwater is discharged via a control structure (S-7) and a 48" pipe to the Stub Canal, a direct tributary to the C-51 Canal, on the south side of Southern Boulevard.

The drainage system including the wet detention pond serving Southern Boulevard, Lang Road, and a portion of the Town of Cloud Lake was most recently permitted under SFWMD Permit No. 50-05327-P and constructed under FPID 229966-4-32-01. Refer to **Appendix G** for permit documentation.

3.1.3 Existing Drainage System 3

The third drainage system includes the contributing area within the I-95 right-of-way between Summit Boulevard and Southern Boulevard. The contributing drainage area also includes some offsite area between the limited access right-of-way line and the CSX Railroad to the west and a portion of Dreher Park to the east. Within this system, there are several individual sub-systems that collect runoff from I-95 and ultimately discharges into the Stub Canal via a 48-inch outfall pipe approximately 1,700 feet north of Summit Boulevard.

For the first 1,700 feet along I-95, runoff is collected by median barrier wall inlets and shoulder gutter inlets and conveyed to a dry detention swale (Swale 3-2) at the southeast limits of the project drainage area. At the northern terminus of the swale, a raised ditch bottom inlet control structure (EXCS_3-2) provides water quality treatment and discharge attenuation, prior to conveying stormwater runoff through a conveyance swale (Swale 3-3) towards the outfall via a 48-inch cross drain at STA. 1310+20. North of the cross drain, runoff from the I-95 northbound lanes and the northbound off-ramp to Southern Boulevard (Ramp K), runoff is collected by shoulder gutter inlets and conveyed to the triangular infield pond between the ramp, I-95, and Southern Boulevard (Dry Pond 3-7), where water quality treatment and discharge attenuation is provided by a raised ditch bottom inlet control structure (EXCS_3-7), prior to conveying stormwater runoff through Swale 3-3 towards the outfall via the existing 48-inch cross drain.

Along the I-95 southbound lanes, for the first 1,700 feet north of Summit Boulevard, runoff from the shoulder is collected and conveyed by the adjacent swale (Swale 3-1) discharged to the outfall via a straight concrete endwall (EXCS_3-1) fitted with a skimmer, through an 18-inch pipe into a ditch (Ditch_3-4) downstream of the 48-inch cross drain. In this ditch, runoff from all of the subsystems within System 3 comingles before being discharged to the Stub Canal via a 48-inch outfall pipe. Runoff from the southbound I-95 lanes and from the southbound on-ramp from Southern Boulevard (Ramp L) between the 48-inch cross-drain and Southern Boulevard is collected in the dry pond (Dry Pond 3-6) between Ramp L and I-

95 southbound lanes, and by the dry pond (Dry Pond 3-5) west of Ramp L. For this sub-system, water quality treatment and discharge attenuation is provided by a raised ditch bottom inlet control structure located at the southern terminus of Dry Pond 3-5, prior to discharging into Ditch_3-4, and ultimately into the Stub Canal.

The drainage system serving I-95 south of Southern Boulevard, between Summit Boulevard and Southern Boulevard was constructed under State Project No. 93220-3440. Refer to **Appendix G** for documentation.

3.1.4 Existing Drainage System 4

The fourth drainage system includes the contributing area within the I-95 right-of-way between Southern Boulevard and approximately 2,000 feet south of the PBIA interchange, as well as the area along Southern Boulevard between I-95 and Parker Avenue. The contributing area also includes area from the neighborhood adjacent to the I-95 northbound on-ramp (Ramp J) between the ramp and Merrill Avenue. Within this system, there are several individual sub-systems that collect runoff from I-95 and Southern Boulevard and convey it to the Stub Canal via a 48-inch outfall pipe.

Within this system, runoff from the I-95 southbound off-ramp to Southern Boulevard (Ramp I), runoff is collected in the grassed area adjacent to the ramp and conveyed to an at-grade swale (Swale_4-1) between the ramp and CSX railroad. From the at-grade swale, it is conveyed to the Stub Canal without any formal treatment or discharge attenuation provided via a 24-inch outfall pipe.

Runoff from portions of the I-95 southbound and northbound lanes between Southern Boulevard and the northern project drainage divide either sheet flows into or is collected by median barrier wall inlets and shoulder gutter inlets where it is conveyed to the infield dry ponds between Ramp I and the I-95 southbound lanes, Dry Pond 4-2 and Dry Pond 4-3. Raised ditch bottom inlet control structures (S-31B, S-18, and S-19) provide water quality treatment and discharge attenuation within the dry ponds prior to discharge into the Stub Canal via a 48-inch outfall pipe that is shared with the drainage systems serving the eastern portion of the interchange, as well as Southern Boulevard east of I-95.

Draft

Stormwater from Ramp J, as well as offsite residential areas east of the ramp, is collected in the triangular dry pond (Dry Pond 4-5) located between the I-95 northbound lanes and Ramp J. A raised ditch bottom inlet control structure (S-6A) provides water quality treatment and discharge attenuation for stormwater runoff within the sub-system, prior to conveyance via the shared 48-inch outfall pipe to the Stub Canal.

Runoff from the Southern Boulevard overpass over I-95, Southern Boulevard between I-95 and Parker Avenue, as well as offsite residential and commercial areas on the south and north sides of Southern Boulevard is collected and conveyed by a series of curb inlets and manholes to two dry ponds (Dry Pond 4-4 and Dry Pond 4-6) on the north and south sides of Southern Boulevard A raised ditch bottom inlet control structure (S-87) provides water quality treatment and discharge attenuation for stormwater runoff within the sub-system, prior to conveyance via the shared 48-inch outfall pipe to the Stub Canal.

The drainage systems serving Southern Boulevard and I-95 within System 4 were permitted under SFWMD Permit No. 50-05327-P and constructed under FPIDs 231835-1-52-01, 231919-1-52-01, and 231878-1-52-01. Refer to **Appendix G** for permit documentation.

3.2 Proposed Drainage Systems

The proposed drainage design consists of closed collection and conveyance drainage systems interconnected by piping to modified existing stormwater treatment facilities to collect, convey, treat, and attenuate stormwater runoff for the controlling design storm events. The proposed treatment facilities, consisting of wet and dry detention ponds, have been determined based on an analysis of various factors which is discussed later in **Section 6.0** of this report. The proposed stormwater management facility type is based on the facility type that provides the most practical, cost-effective solution for the Department to achieve the treatment and attenuation permitting requirements associated with the proposed improvements, while also minimizing impacts to the public. The recommended drainage design and stormwater management facility type is discussed later in **Section 7.3** of this report.

3.3 Alternatives Analysis

Five different alternatives were proposed for the project; however, only Alternative 4 was fully analyzed to assess water quality volumes, peak stages and peak discharge rates. Alternative 4 was analyzed because of the fact that it proposed the largest increase of impervious area and had the greatest impact to existing stormwater management facilities. Land use tables and drainage maps were also prepared for Alternatives 1, 3, and 5, and are included in Appendices C, D, and F. Alternative 2 was rejected and eliminated from any further analysis due to public opinion and impacts to Dreher Park.

4.0 Geotechnical Characteristics

4.1 Soils Information

Review of the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soils Map for Palm Beach County, the project area is underlain by Urban Land, Myakka Fine Sand, Myakka-Urban Land Complex, Arents-Urban Land Complex, Basinger Fine Sand, Basinger-Urban Land Complex, and St. Lucie-Paola-Urban Land Complex. See Figure 4 in **Appendix A** for the USDA NRCS Soil Map of the project.

5.0 Stormwater Management Permitting

The agencies having stormwater permitting jurisdiction over the proposed improvements include:

- South Florida Water Management District (SFWMD)

SFWMD is the state permitting authority and has jurisdiction over the canal receiving stormwater runoff from the project area. The most recent SFWMD permit criteria are established in the SFWMD Environmental Resource Permit Information Manual, updated August 2016.

5.1 Stormwater Quality Criteria

The SFWMD has the lead jurisdiction over the stormwater quality criteria for the project and generally requires that all projects meet state water quality standards, as set forth in

Chapter 17-302, Florida Administrative Code (FAC). According to the SFWMD Permit Volume IV, all projects must meet the following volumetric retention/detention requirements:

1. For wet detention systems, the first inch of runoff from the project or the total runoff from 2.5 inches times the percent of imperviousness, whichever is greater, must be detained on site. A wet detention system is a system that maintains the control elevation at the seasonal high groundwater elevation and does not bleed down more than one-half inch of detention volume in 24 hours;

2. Dry detention systems must provide 75 percent (75%) of the required wet detention volume. Dry detention systems must maintain the control elevation at or above one foot above the seasonal high groundwater elevation;

3. Retention systems must provide 50 percent (50%) of the wet detention volume; and

4. For projects with more than 50 percent (50%) of imperviousness, discharge to the receiving water bodies must be made through baffles, skimmers, or other mechanisms suitable from preventing oil and grease from discharging to or from the retention/detention areas.

5.1.1 Proposed Water Quality Treatment

The proposed land use breakdowns for the various alternatives are provided in **Appendix C-F**. Using the calculated land use areas within the proposed drainage systems, the required water quality volumes were determined for each system. The proposed drainage analysis is based on Alternative 4 (EB-NB and NB-WB Dual 3rd Level Flyovers), which is the alternative with the largest increase in impervious area and the greatest impact on existing drainage facilities, the water quality treatment volume calculations are based on the required treatment volumes for Alternative 4. The required water quality volume calculations for Alternative 4 are shown in **Appendix E**.

Draft

5.2 Stormwater Quantity Criteria

SFWMD criteria govern peak discharge rate attenuation. SFWMD criteria govern attenuation volume by limiting the post-development peak discharge rate to the pre-development peak discharge rate for the 10-year, 72-hour design rainfall event using SFWMD 72-hour rainfall distribution. SFWMD requires that offsite discharge rates be limited to rates not causing adverse impacts to existing off-site properties, and:

1. Historic discharge rates,
2. Rates determined in previous SFWMD permit action, or
3. Basin allowable discharge rates.

5.3 Total Maximum Daily Load (TMDLs) and Nutrient Impaired Water Bodies

The Florida Department of Environmental Protection (FDEP) has developed a Basin Management Action Plan (BMAP) which implements certain measures in order to restore and protect state waters and addresses Total Maximum Daily Load (TMDLs) requirements for impaired waterbodies. TMDLs represent the maximum amount of a given pollutant that a waterbody can assimilate and still meet water quality standards, including its applicable water quality criteria and its designated uses. TMDLs are developed for waterbodies that are verified as not meeting their water quality standards.

Section 303(d) of the Federal Clean Water Act requires states to submit to the United States Environmental Protection Agency (EPA) lists of surface waters that do not meet applicable water quality standards (impaired waters) and establish a TMDL for each pollutant causing the impairment of listed waters on a schedule. The FDEP has developed such lists, commonly referred to as 303(d) lists, since 1992. The list of impaired waters in each basin, referred to as the Verified List, is also required by the FWRA (Subsection 403.067[4], Florida Statutes [F.S.]); the state's 303(d) list is amended annually to include basin updates.

For assessment purposes, the FDEP has divided the Canal C-51 Basin into water assessment polygons with a unique waterbody identification (WBID) number for each watershed or

Draft

stream reach. There is one WBID identified within the C-51 East Basin with TMDLs – for Dissolved Oxygen. FDEP listed the C-51 East Basin Canal, WBID No. 3245F, as an impaired waterbody under the Verified List of 2014. Refer to Figure 10 and Figure 11 of **Appendix A** for limits of WBID No. 3245F and the Verified List of 2014, respectively.

Since the WBID identified within the C-51 East Basin is not impaired for Nitrogen or Phosphorous, a nutrient loading analysis is not required.

5.4 Floodplain Encroachment

The project falls within the Federal Emergency Management Administration (FEMA) defined Zones X and AE. Zone X is an area considered to be outside of the 500-year flood. The portion of the PD&E study limits that falls within Zone AE is located along the north and south boundaries of Southern Boulevard, within the grassed swales, adjacent commercial and residential areas, and within the infield ponds at the I-95 interchange. Zone AE is a special flood hazard area with determined base flood elevations. Refer to Figure 7 in **Appendix A** for the FEMA FIRMETTE and FEMA Flood Zone Map.

No work is being performed below the 100-year flood elevation, and as a result, this project does not encroach upon the base floodplain.

5.5 Roadway Base Protection

FDOT has established the following criterion for base protection of roads:

- Freeways and Rural Multilane Mainline facilities shall provide a 3-ft clearance for the roadway base course above the base clearance water elevation (i.e. seasonal high ground water table, SHGWT). Using a base clearance water elevation (SHGWT) of 8.50 ft NGVD (6.92 ft NAVD), the minimum roadway base elevation allowable for the project along I-95 mainline is 11.50 ft NGVD (9.92 ft NAVD).

- Ramps shall provide a 2-ft clearance for the roadway base course above the base clearance water elevation (SHGWT). Using a base clearance water elevation (SHGWT) of

8.50 ft NGVD (6.92 ft NAVD), the minimum roadway base elevation allowable for the ramps is 10.50 ft NGVD (8.92 ft NAVD).

- All other facilities shall provide a 1-ft clearance for the roadway base course above the base clearance water elevation (SHGWT). Using a base clearance water elevation (SHGWT) of 8.50 ft NGVD (6.92 ft NAVD), the minimum roadway base elevation allowable for all other facilities is 9.50 ft NGVD (7.92 ft NAVD).

Refer to Figure 11 in **Appendix A** for the FDOT Criteria for Grade Datum. The SHGWT determination is discussed in **Section 7.0** of this report.

6.0 Stormwater Management Facilities Evaluation

Several types of stormwater management facilities alternatives are commonly used on roadway projects. The more commonly used alternatives in south Florida, particularly for roadway projects, include wet detention ponds, dry detention ponds, retention ponds, and exfiltration trenches. However, each of these stormwater management facility types has different design criteria and application. Since the stormwater criteria of all applicable stakeholder agencies must be met, the controlling criterion for the proposed facilities is the most stringent.

Based on the proposed improvements, available right-of-way, and impacts to existing stormwater management facilities, modification of the existing dry detention stormwater management facilities to create additional storage volume will be necessary in order to accommodate for additional water quality treatment and discharge attenuation. In addition to modification of existing dry detention stormwater management facilities, an existing control structure located in Dry Pond 4-5 will be modified by replacing the top of the existing structure.

Draft

7.0 Stormwater Management System Design

7.1 Project Datum

The existing survey data is referenced to the datum of NAVD 1988. However, tailwater information obtained from SFWMD is referenced to the datum of NGVD 1929. The conversion between the two datum within the project location is as follows: NGVD = NAVD + 1.58 ft. Elevations throughout this Report refer primarily to NAVD 1988. Refer to Figure 8 of **Appendix A** for the datum conversion.

7.2 Control Elevations

7.2.1 Tailwater Elevations

Review of the SFWMD Technical Memorandum "An Atlas of Eastern Palm Beach County Surface Water Management Basins" was used in determining the controlling tailwater elevation(s) of the C-51 Canal and the Stub Canal. The maintained elevation of the C-51 Canal was determined to be 8.50 ft NGVD (6.92 ft NAVD). Refer to Figure 5 of **Appendix A** for tailwater documentation.

Based on existing permits for the various drainage systems with the project limits, there are varying tailwater and SHGWT elevations defined for the project.

For System 1, permitted under SFWMD Permit Number 50-04106-P, the SHGWT/Wet Season Water Table Elevation was defined as 8.50 ft NGVD (6.92 ft NAVD). Similar to the methodology for this project, this elevation was defined as the same as the adjacent canal's control elevation, which is the C-51 Canal.

For System 2, permitted under SFWMD Permit Number 50-05327-P, the SHGWT/Wet Season Water Table Elevatio/n and control elevation for the drainage system's receiving body, the Stub Canal, is defined as 8.94 ft NGVD (7.36 ft NAVD).

For Systems 3 and 4, permitted under SFWMD Permit Number 50-04154-P, the SHGWT/Wet Season Water Table Elevation for the drainage system's receiving body, the Stub Canal, is defined as 8.50 ft NGVD (6.92 ft NAVD).

Draft

7.2.2 Seasonal High Groundwater Table Elevation (SHGWT)

Although no in-situ geotechnical data has been provided by FDOT for this project, preliminary research was performed to determine the seasonal high groundwater table elevation (SHGWT) within the study limits. Specifically, the tailwater data for the adjacent C-51 Canal and Stub Canal, which control and influence groundwater table elevations throughout the project area, was used to determine the assumed SHGWT elevation of 8.50 ft NGVD (6.92 ft NAVD).

7.2.3 Design Storms and Rainfall Depths

The rainfall depths for the various design storms simulated in the pre-development and post-development AdICPR models developed for this study include:

- 3-year, 24-hour: 5.50"
- 10-year, 24-hour: 8.00"
- 10-year, 72-hour: 10.50"

Refer to Figure 9 of **Appendix A** for the SFWMD rainfall maps.

7.2.4 Pre-Development and Post-Development Models

The pre-development and post-development models were developed using the software Advanced Integrated Channel and Pond Routing (AdICPR) version 3.1. The majority of the input used to model existing features was acquired from topographic survey and existing drainage information obtained by existing plans and permits. In areas where topographic survey data was insufficient, other sources such as existing plans or permit documents were used to generate the input.

For the pre-development and post-development models, swales and ponds were modeled as separate stage-storage nodes in AdICPR, with assigned basins delineated for each node based on their direct contributing runoff area. Elevation contours were created for the swales and ponds in Microstation using the DTM feature of Geopak. These areas were measured at half foot contours and input into AdICPR as stage-storage nodes. Boundary conditions were modeled as static time-stage nodes with elevations based on SFWMD Basin Atlas information.

Draft

Nodes are generally interconnected by links consisting of pipes or culverts, weirs, or drop structures. Pipe and culvert links have been input based on review of existing plans and permit. Weirs and drop structures have also been modeled based on existing plans and permit, depending on intended type of flow simulation and downstream conveyance and node type.

The calculations, AdlCPR flood routing input, and results for pre-development conditions and post-development conditions are found in **Appendix B and E**, respectively.
The following design storm events were simulated in AdlCPR for each of the following criteria:

- 3-year, 24-hour: Roadway and open swale drainage design storm event (SR 80)
- 10-year, 24-hour: Roadway and open swale drainage design storm event (I-95)
- 10-year, 72-hour: Pre-versus–post discharge, and maximum stages design storm event

7.3 Conceptual Drainage Design Recommendations

Based on the proposed roadway improvements, the existing dry detention swales and ponds will be impacted and reduced by roadway widening along Southern Boulevard and by proposed embankment for the two new ramps. However, the portions of select stormwater management facilities that will remain, will be modified, expanded, deepened, and/or have their side slopes steepened in order to accommodate the increased runoff from the roadway and new ramps, as well as any loss of existing storage. Existing control structures and outfalls will remain in place and will continue to function as in the existing condition. Based on available detention storage, water quality treatment volumes are adequately met. Based on stormwater retention volumes between existing bleeders and detention pond bottoms, adequate retention volumes for nutrient loading ensure that Phosphorous and Nitrogen loads to the C-51 Canal Basin will not be increased by the project. AdICPR hydrologic and hydraulic models demonstrate that pre-vs-post discharge requirements are met, and that peak stages are not increased by the project.

The proposed stormwater management facilities meet FDOT drainage criteria, as well as SFWMD permit (water quality and quantity) criteria. Refer to **Appendix E** for the Post-

Development Drainage Maps for the Preferred Alternative (Alternative 4). Refer to the Post-Development Land-Use Table included in **Appendix E** for pre-development and post-development curve number calculations and area breakdowns. The peak discharge rates and peak stages for the 10-year – 24-hour and 10-year – 72-hour design storms are shown in the Drainage System Summary Tables, included in **Appendix E**.

A Contamination Screening Evaluation Report was prepared for this PD&E Study in accordance with Part 2, Chapter 22 "Contamination Impacts" of the FDOT PD&E Manual, revised September 1, 2016. The objective of this contamination screening was to identify and evaluate contamination sources that can potentially impact the proposed project schedule and costs. Through this process, 27 potential contamination sources were identified within 500 feet of the project corridor. In general, the environmental databases indicated these sources were associated with hazardous waste generators, former or current petroleum / spill sites containing UST and / or AST systems, and known or former cleaning / dry cleaning facilities.

Contaminated soil and groundwater has the potential to exist at or in close proximity to the project corridor, further site-specific Level II Assessments are recommended around the following locations: proposed piers and bridge expansion areas, proposed MSE wall, areas with right-of-way acquisition and the southwest corner of Southern Boulevard and Parker Avenue. Level II Assessments include: the advancement of soil borings and the collection of soil and discrete groundwater samples in areas where excavation and/or dewatering activities are anticipated to accommodate MSE walls, noise walls, ponds, storm water drainage, and bridge expansion. More detailed information on testing parameters and site specific information, can be found in the *Contamination Screening Evaluation Report*.

8.0 Conclusion

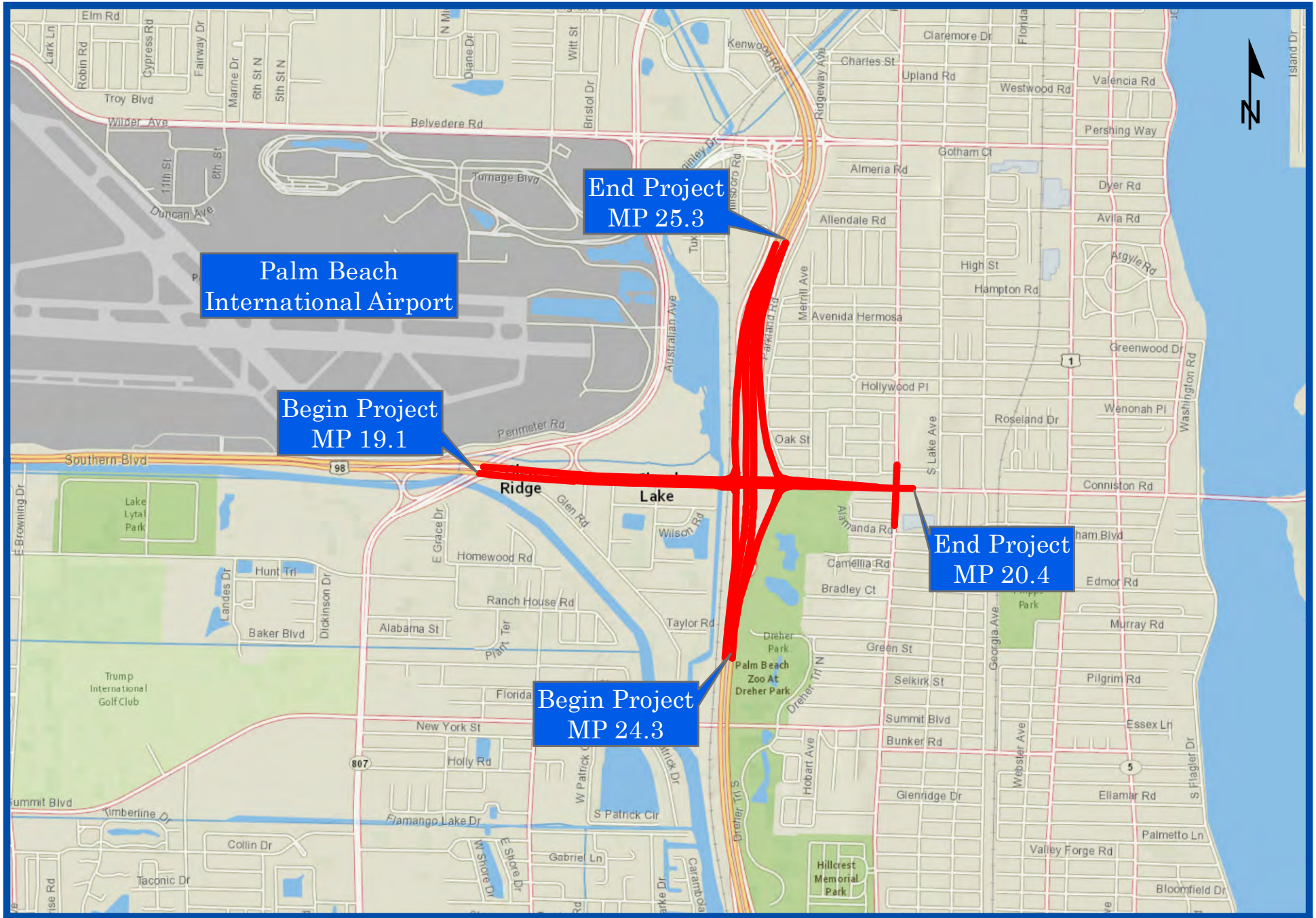
Based on the conceptual drainage design evaluation for Alternative 4, the stormwater management facilities required to meet FDOT drainage criteria, as well as SFWMD permit criteria, can be fully accommodated within the I-95 and Southern Boulevard roadway rights-of-way, with no additional offsite right-of-way acquisition required solely for drainage purposes.

APPENDIX A

Design Aids

Figure 1

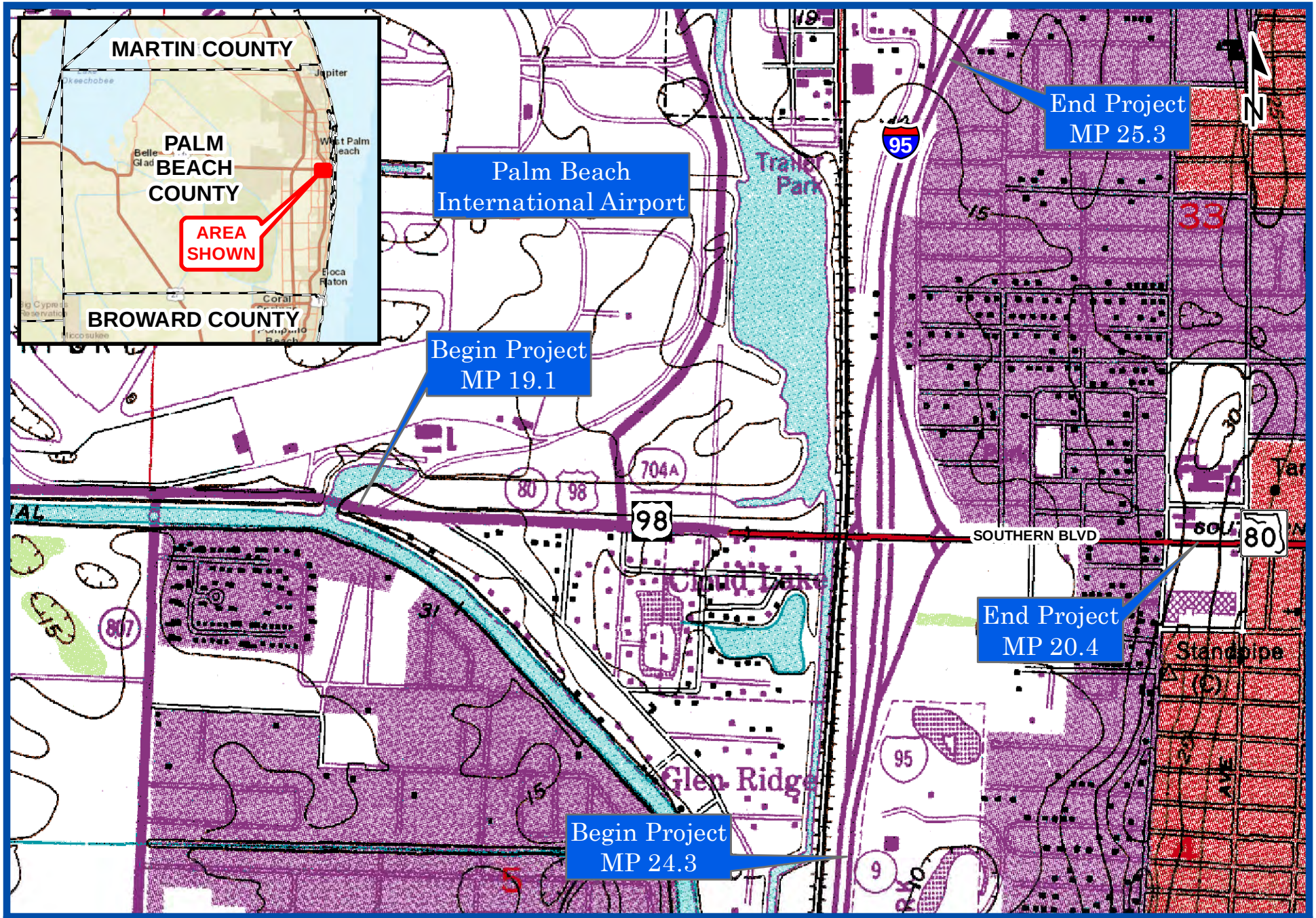
Project Location Map



FDOT	**SR 9/I-95 at SR 80/Southern Boulevard Interchange** **Project Development and Environment Study** **Financial Project ID: 435516-1-22-02, ETDM No: 14183**	**Figure 1** **Project Location Map**	**Page No.** **1**

Figure 2

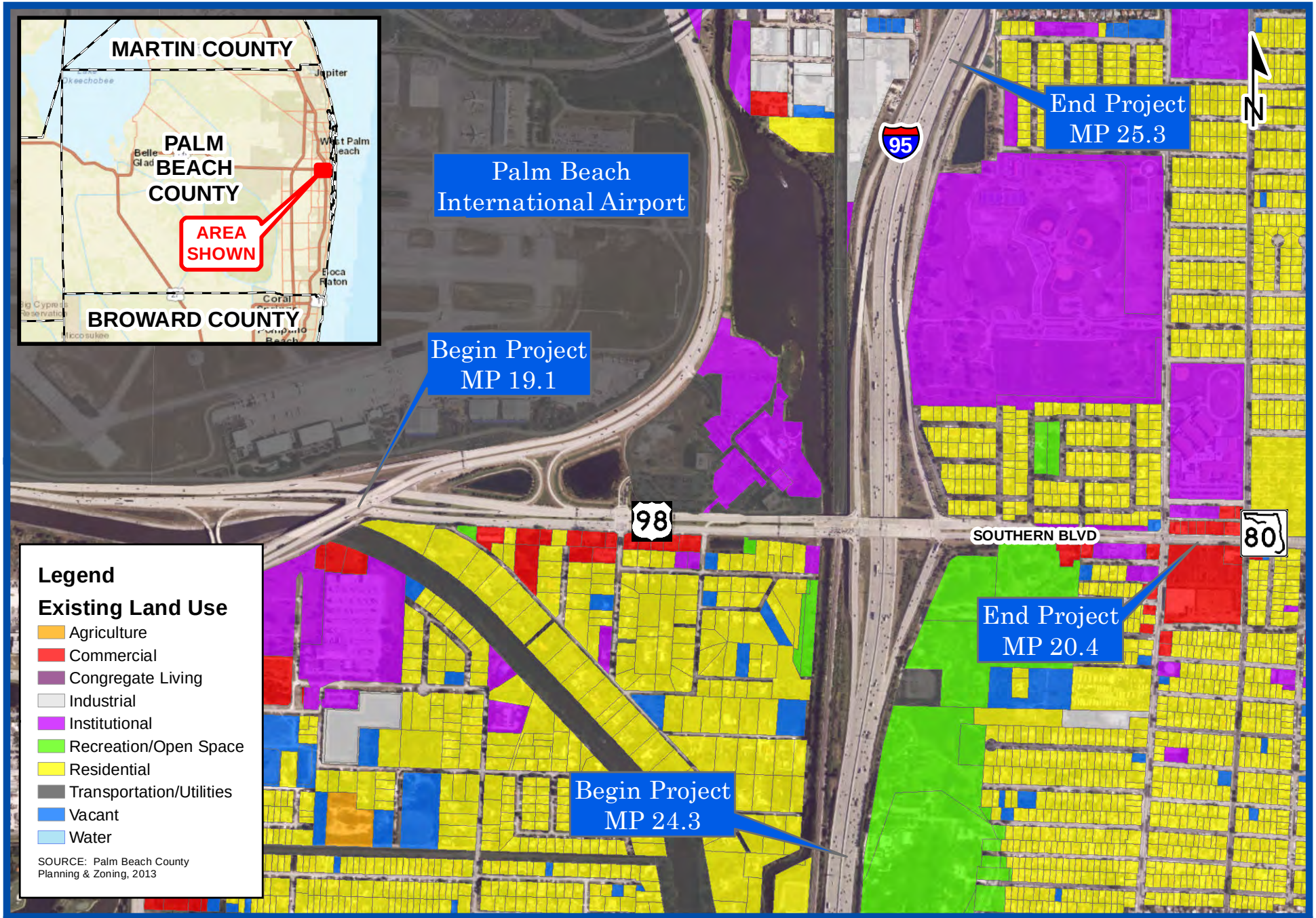
USGS Quadrangle Map



FDOT	SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study Financial Project ID: 435516-1-22-02, ETDM No: 14183	Figure 2 USGS Quadrangle Map	Page No. 1

Figure 3

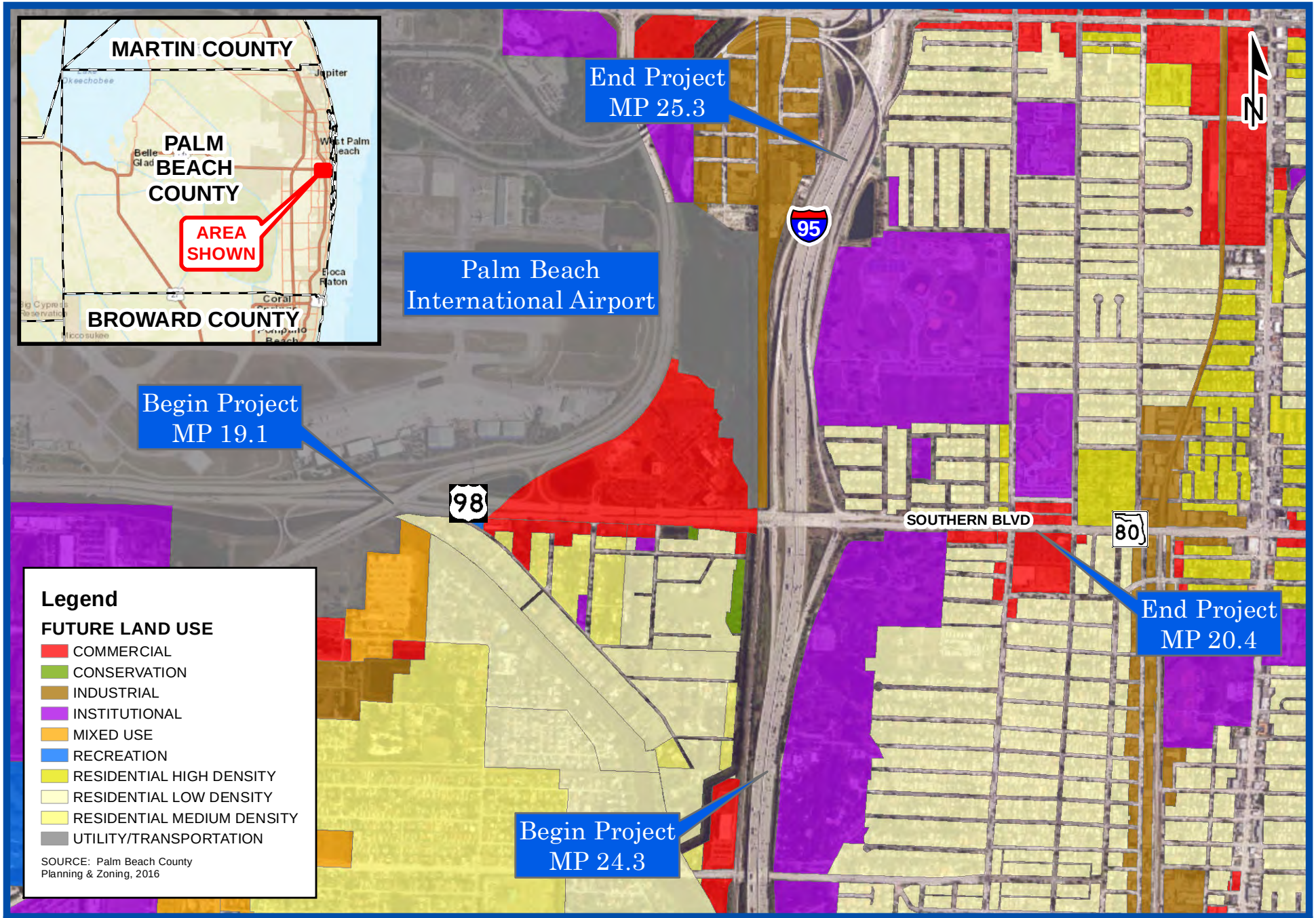
Land Use Map



FDOT

SR 9/I-95 at SR 80/Southern Boulevard Interchange
Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No: 14183

Figure 3.1
Existing Land Use Map



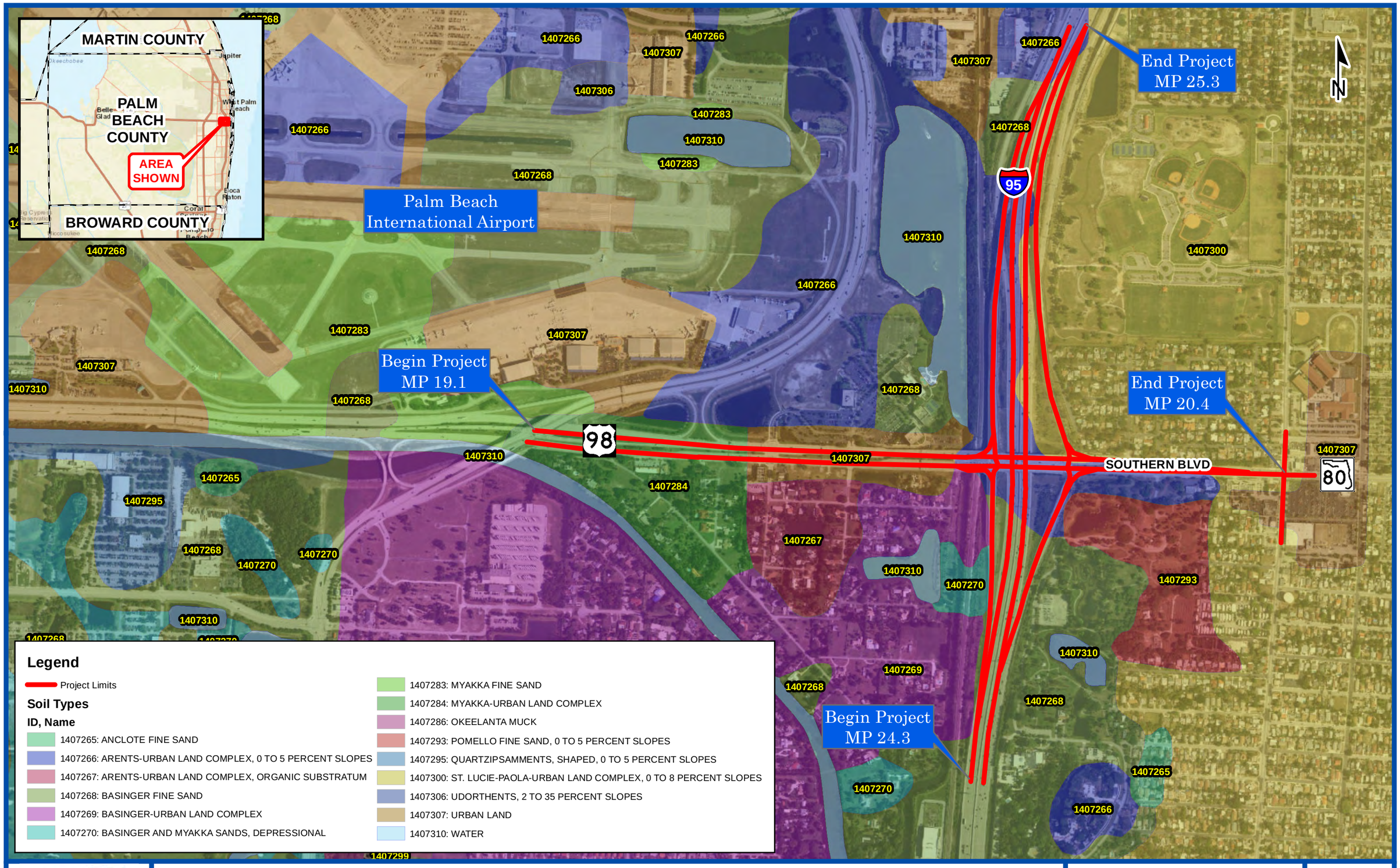
FDOT

SR 9/I-95 at SR 80/Southern Boulevard Interchange
Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No: 14183

Figure 3.2
Future Land Use Map

Figure 4

Soils Map



Legend

Project Limits

Soil Types

ID, Name

- 1407265: ANCLOTE FINE SAND
- 1407266: ARENTS-URBAN LAND COMPLEX, 0 TO 5 PERCENT SLOPES
- 1407267: ARENTS-URBAN LAND COMPLEX, ORGANIC SUBSTRATUM
- 1407268: BASINGER FINE SAND
- 1407269: BASINGER-URBAN LAND COMPLEX
- 1407270: BASINGER AND MYAKKA SANDS, DEPRESSIONAL
- 1407283: MYAKKA FINE SAND
- 1407284: MYAKKA-URBAN LAND COMPLEX
- 1407286: OKEELANTA MUCK
- 1407293: POMELLO FINE SAND, 0 TO 5 PERCENT SLOPES
- 1407295: QUARTZIPSAMMENTS, SHAPED, 0 TO 5 PERCENT SLOPES
- 1407300: ST. LUCIE-PAOLA-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES
- 1407306: UDORTHENTS, 2 TO 35 PERCENT SLOPES
- 1407307: URBAN LAND
- 1407310: WATER

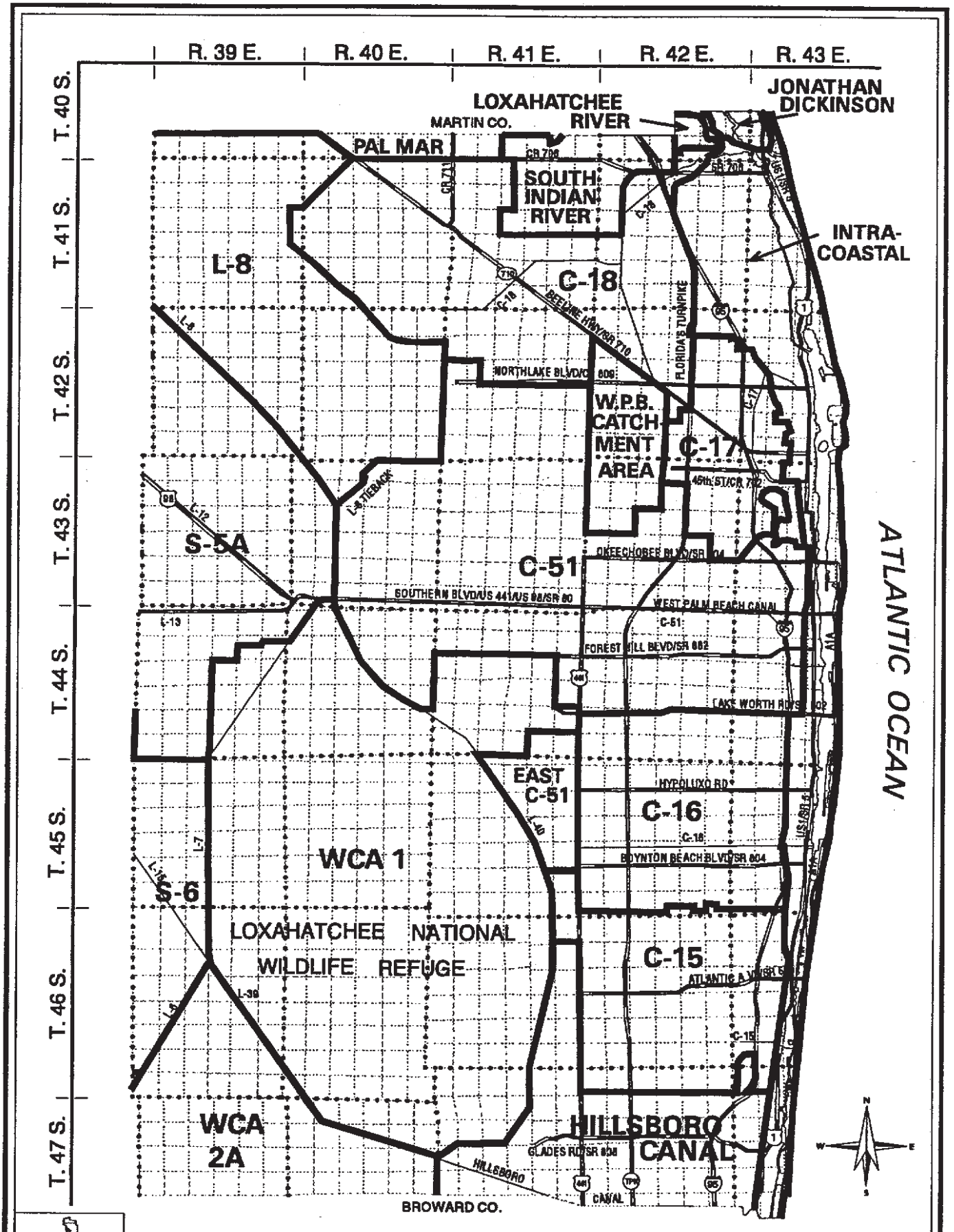
FDOT

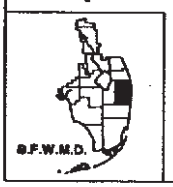
SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No:14183

Figure 4
Soils Map

Figure 5

SFWMD Drainage Basin Map





0 1 2 3 4
Miles

DRAINAGE BASINS for EASTERN PALM BEACH COUNTY, FL.

Figure B-18

TECHNICAL MEMORANDUM

AN ATLAS OF EASTERN PALM BEACH COUNTY SURFACE WATER MANAGEMENT BASINS

By

Richard M. Cooper
Jim Lane

#244

June 1988

Water Resources Division
Resource Planning Department
South Florida Water Management District

C-51 (WEST PALM BEACH CANAL) BASIN

Description of the Basin

The C-51 basin has an area of approximately 164.3 square miles and is located in eastern Palm Beach County. The basin is comprised of two subbasins, C-51 West (79.5 square miles, Figure 8) and C-51 East (84.8 square miles, Figure 8). State Road 7 is generally the boundary between the basins. The basin boundaries relative to local roads and land marks are shown in Map A. Schematic maps showing the basin boundaries, canals, and control structures are given in Figures 7 and 9.

The Project canal and the control structures in the C-51 basin have four functions: (1) to provide flood protection and drainage for the basin, (2) to discharge, under certain conditions, flood flows from the L-8 basin to tidewater, (3) to supply water to the basin during periods of low natural flow, and (4) to maintain a groundwater table elevation west of S-155 adequate to prevent intrusion of saltwater into local groundwater. Excess water in the east basin is discharged to tidewater in the Intracoastal Waterway by way of C-51 and S-155. Excess water in the west basin is discharged to tidewater by way of G-124 and S-155 or to Water Conservation Area (WCA) 1 by way of S-5AE, S-5AW, and S-5A. Excess water in the L-8 basin is discharged to tidewater through the C-51 basin by way of S-5AE, G-124, and S-155. Water surface elevations in the eastern reach of C-51 are controlled by S-155 and in the western reach by G-124 and S-5A. Water supply to the basin is made in one of three ways: (1) from WCA 1 by way of S-5AS and S-5AE, (2) from Lake Okeechobee by way of Hurricane Gate Five (HG-5), the L-10/L-12 borrow canal, S-5AW, and S-5AE; or (3) from Lake Okeechobee by way of Culvert #10A, the L-8 borrow canal, and S-5AE.

C-51 is the only Project canal in the C-51 basin. It is that part of the West Palm Beach Canal east of L-40. C-51 is aligned parallel to and south of State Road 80 from L- 40 to Congress Avenue. East of Congress Avenue the canal extends to the south and then to the east, connecting to the Intracoastal Waterway east of Lake Clarke.

There are six Project structures controlling flow in the C-51 basin: S-155, G-124, S-5AE, S-5AW, S-5AS, and S-5A. Design criteria for the control structures in the C-51 basin are given in Table 3.

S-155 is a gated spillway located in the alignment of C-51 at Dixie Highway. The structure controls water surface elevations in C-51, and it regulates the discharge to the Intracoastal Waterway. Under normal operation, S-155 maintains a headwater stage of 8.0 ft NGVD. During periods of heavy rainfall, the headwater stage at S-155 is lowered to 7.3 ft NGVD or less. These stages are adequate to prevent saltwater intrusion into local groundwater.

G-124 is a set of culverts located in the alignment of C-51, 3.5 miles west of State Road 7. Both gates and flash boards are used to control water flow through the structure. The structure is normally closed and acts as a divide between the east and west basins. The gates are opened for either of two reasons: (1) to discharge excess water from the western C-51 basin or the L-8 basin to tidewater when S-5A is unable to discharge the excess flows to WCA 1, and C-51 can accept the flows without flooding occurring in the eastern basin; or (2) to permit water supply to the eastern C-51 basin from the western basin or from WCA 1.

S-5AW, S-5AS, S-5AE, and S-5A are located at the west end of C-51 near its junction with the L-10/L-12 borrow canal and the L-8 borrow canal. These structures are operated in conjunction with one another to control runoff into or from the C-51 basin, and to supply water to the C-51 basin from WCA 1 and Lake Okeechobee for irrigation and to maintain the optimum stage in C-51.

S-5AE is a gated spillway located in the east levee of L-8 at the west end of C-51. The gates are closed whenever flood conditions are imminent downstream in C-51 (i.e., the headwater stage at G-124 in C-51 is greater than 13.0 ft NGVD, or the tailwater stage at S-5AE is greater than 13.0 ft NGVD and the headwater stage is greater than the tailwater stage). The gates can be opened to discharge water from the L-8 and C-51 basins to the S-5A basin if the above conditons do not exist and flood conditions exist in the western part of the C-51 basin and if S-5A has capacity in excess of the water being removed from the S-5A basin. During periods of low natural flow (i.e., when the headwater stage at S-155 in C-51 is below 8.0 ft NGVD), S-5AE is opened to supply water to the C-51 basin from Lake Okeechobee by way of Culvert 10A and the L-8 borrow canal, and Hurricane Gate Five (HG-5) and the L-10/L-12 borrow canals. (Note: HG-5 is scheduled to be replaced with a gated spillway, S-352.)

S-5AS is a gated spillway located at the junction of L-7 and L-40 at the southern end of the L-8 borrow canal. It controls flows between WCA 1 and the L-8 borrow canal, the L-10/L-12 borrow canal, and C-51. Subject to availability of water in WCA 1, the gates can be opened to supply water to C-51, to the L-10/L-12 borrow canal, and to the L-8 borrow canal as necessary to meet agricultural requirements for irrigation and to maintain the optimum stages in the canals. The gates can also be opened to pass flood flows from the L-8 borrow canal to WCA 1 when the canal stage exceeds the stage in WCA 1; however, this is a rare occurrence.

S-5AW is a gated spillway located in the west levee of L-8 at the east end of the L-10/L-12 borrow canal. The gates are closed whenever a flood condition exists in the S-5A basin (i.e., S-5A cannot lower the stage in the L-10/L-12 borrow canal at Canal Point below 12.5 ft NGVD). The gates can be opened, in the absence of the above conditions, whenever a flood condition exists in the L-8 basin or in the western portion of the C-51 basin (see S-5AE, above). The excess flows in these

basins are then pumped to WCA 1 by S-5A. During periods of low natural flow, the gates can be opened to supply water, if available, from the S-5A basin to the L-8 and C-51 basins.

S-5A is a pump station located on the south side of the L- 10/L-12 borrow canal just west of S-5AW and the L-8 borrow canal. It discharges to WCA 1. The pump station has three functions: (1) to mitigate flooding by removing excess water from the S-5A basin at a maximum rate of three-quarters of an inch of runoff per day, (2) to transfer to WCA 1 regulatory releases of water discharged from Lake Okeechobee to the L-10/L-12 borrow canal, and (3) to remove, when capacity is available, flood flows from the L-8 basin and western portion of the C-51 basin to WCA 1.

Comments on Design and Historic Operation

C-51 provides less than 1 - 10 year flood protection for the C-51 basin. Considerable flooding occurs in both the eastern and western basins with a 1 - 30 year storm. S-155 in the eastern basin was designed to give the eastern basin 1 - 30 year flood protection. However, without a divide structure just west of U. S. Highway 441 and a pump station to remove water from the western basin, there will continue to be flooding in the basin during storms of severity equal to or greater than a 1 - 10 year storm. The Army Corps of Engineers has studied the feasibility of constructing a divide structure at U. S. Highway 441 and of constructing a pump station at the western end of C-51 to pump 3400 to 3800 cfs of runoff from the western basin. However, a decision as to where the runoff from the western basin should be pumped has not been made. Presumably, if a suitable location to receive the pumped discharge from the western C-51 basin can be determined, a final design will be made and implemented.

Inflows to C-51 are by various Lake Worth Drainage District (LWDD) canals. These canals (e.g., E-1, E-2, E-3, E-4, and the Stub Canal) can have very large inflows to C-51. Depending on the stages in C-51,the Stub Canal alone can have inflows to C-51 of up to 1500 cfs. This is approximately 30 percent of the capacity of S-155.

Clear Lake and Lake Mangonia at the northeast corner of the C-51 basin are part of the City of West Palm Beach water supply system. Under operation as a water supply system, these lakes are hydrologically independent of the C-51 basin. Regulated inflows to the lakes from the M-Canal replenish water withdrawn, for the City of West Palm Beach municipal water supply, in excess of water supplied by rainfall. Rainfall is an unregulated inflow to the lakes. If a severe storm causes enough rainfall on the lakes to raise the stage in Clear Lake above 14.5 ft NGVD, up to 250 cfs of flow can be passed from Clear Lake to the Stub Canal. The 250 cfs discharge to the Stub Canal allows the 14.5 ft NGVD stage in Clear Lake to be maintained for rainfall from at least a 1 - 100 year storm.

The drainage area of the C-51 basin has recently been decreased. Lands formerly in the north central part of the basin that are in the Indian Trail Water Control District (M-1 Acreage, Figure 9) now normally drain to the L-8 basin. Under an emergency situation, however, water can be discharged from these lands to the C-51 basin with the approval of the Executive Director of the District.

Prior to the construction of S-155, the control at Dixie Highway consisted of a gated spillway and a set of culverts with risers and flashboards. The peak discharge for this control was 5800 cfs on March 29, 1982. The peak headwater stage was 10.86 ft NGVD.

The worst flooding in the basin was caused by Hurricane Donna and Tropical Storm Florence in September 1960. The stage at Forest Hill Boulevard was 11.3 ft NGVD, and the stage at the Village of Royal Palm Beach was 16.7 ft NGVD.

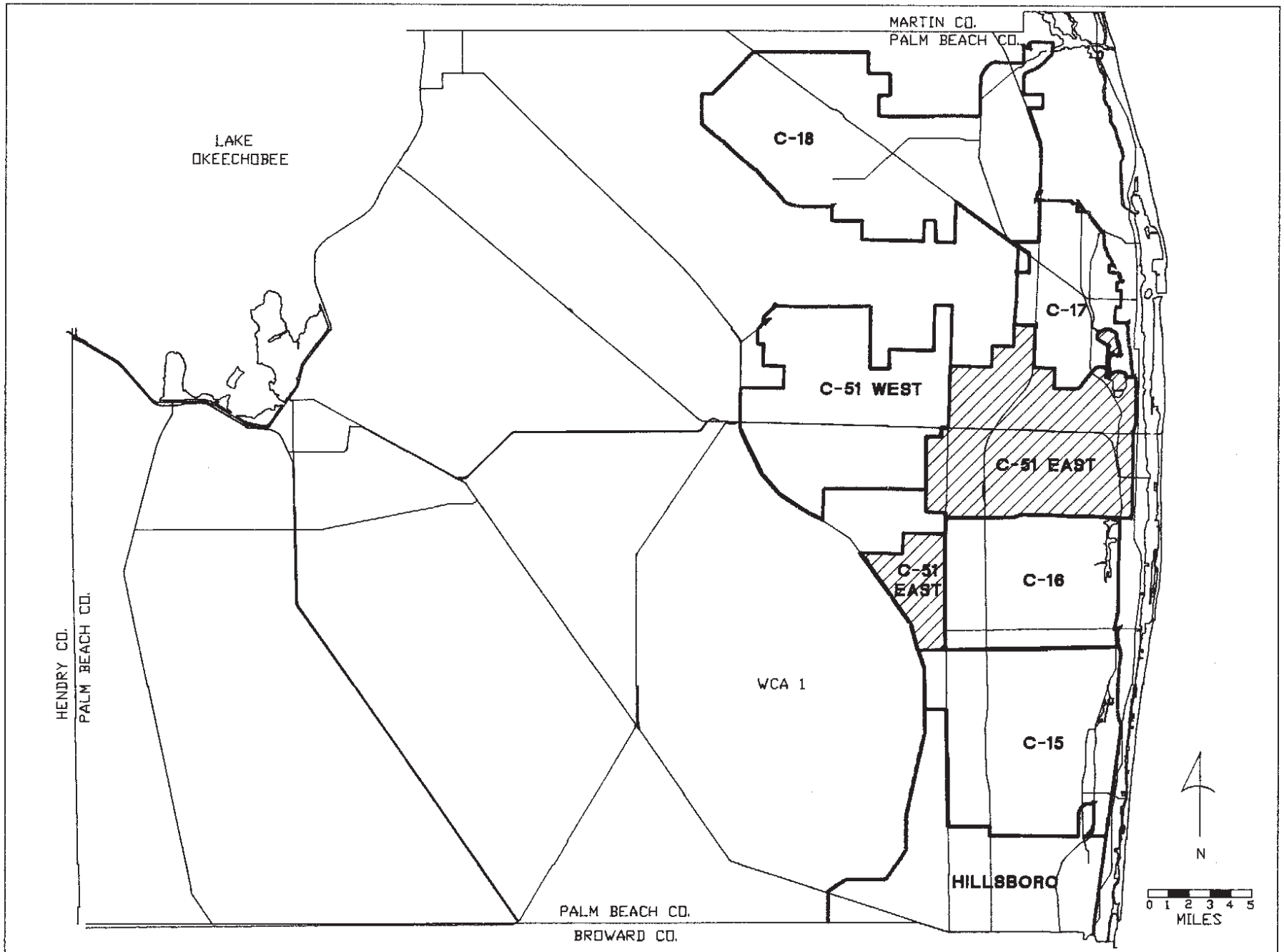


FIGURE 6 C-51 EAST BASIN LOCATION MAP

C-51 EAST BASIN

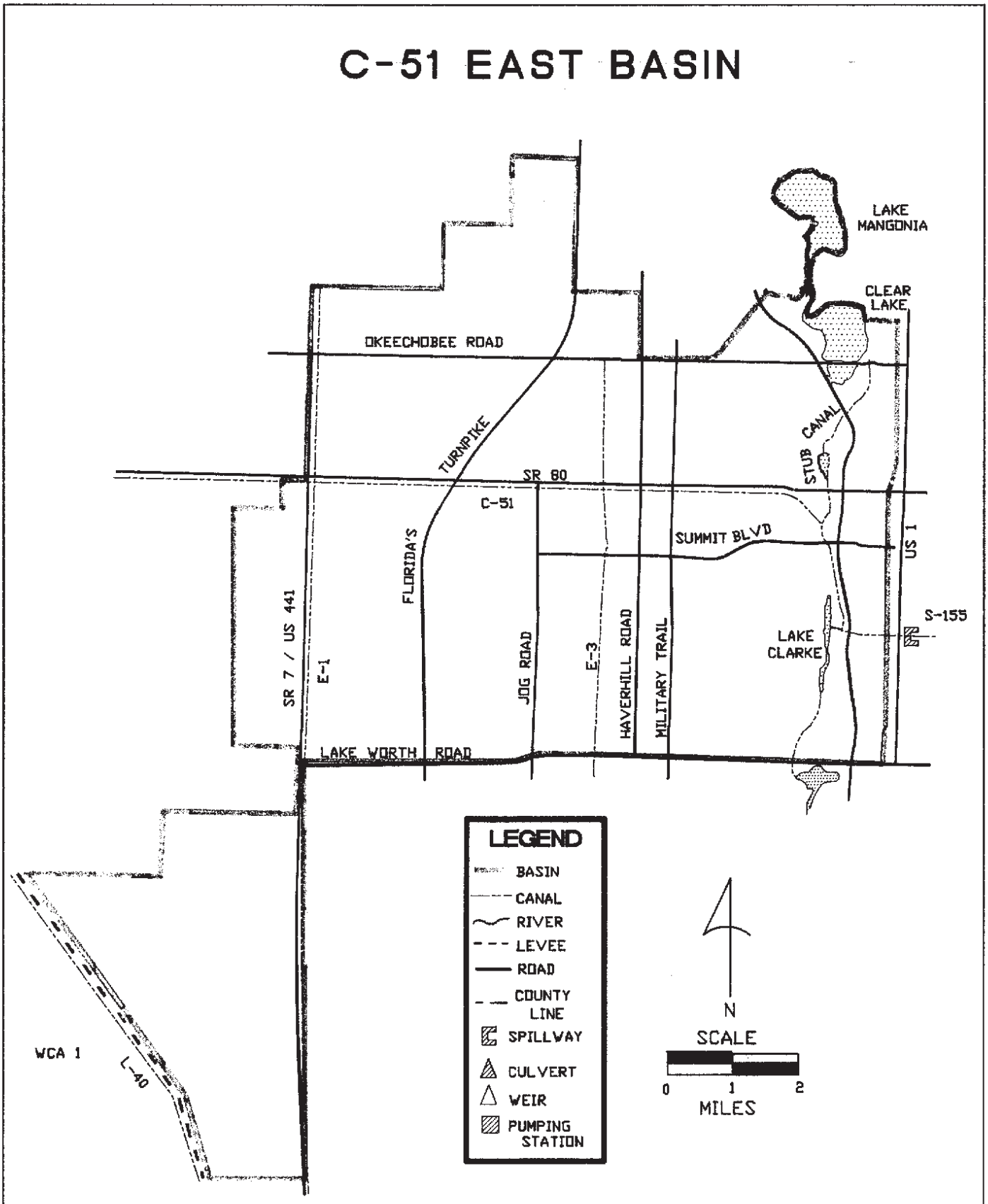


FIGURE 7. THE C-51 EAST BASIN

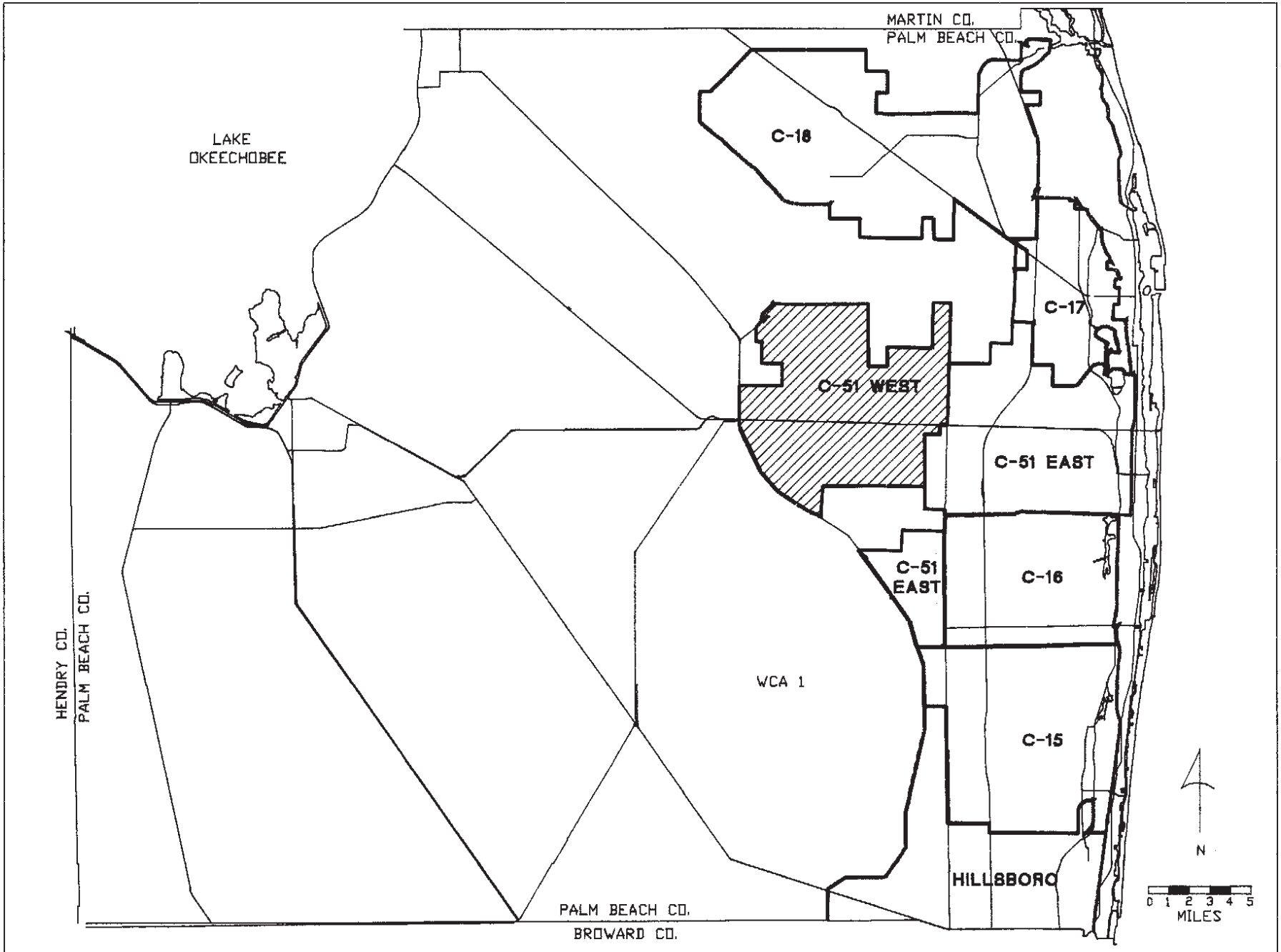


FIGURE 8 C-51 WEST BASIN LOCATION MAP

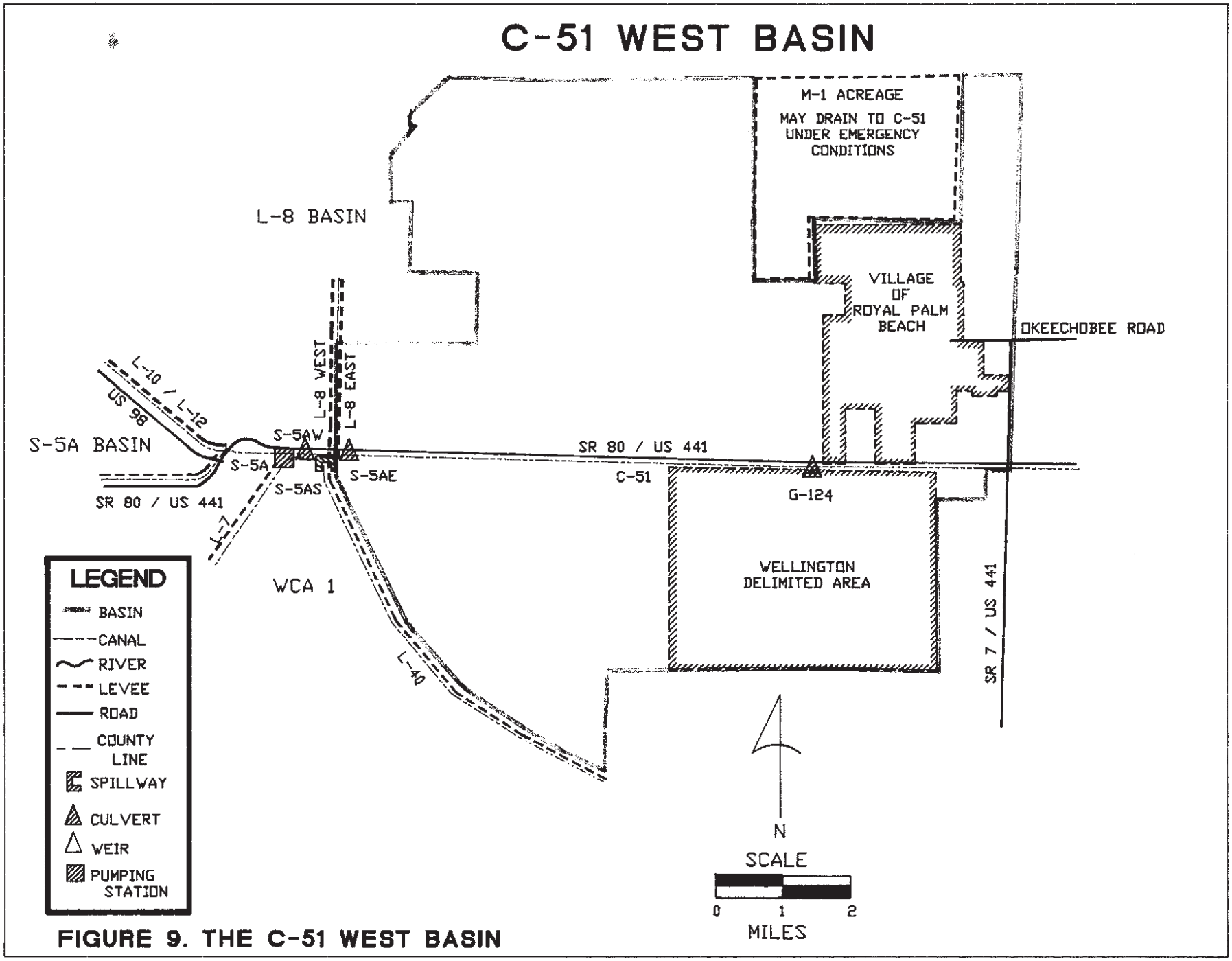


FIGURE 9. THE C-51 WEST BASIN

TABLE 3. C-51 Basin Structures - Design Criteria

Structure	Type	Design HW Stage (ft NGVD)	Design TW Stage (ft NGVD)	Optimum Stage (ft NGVD)	Design Discharge (cfs)	Peak Stage (ft NGVD) Peak Discharge (cfs)	Date of Peak
S-155 Stage divide	Spillway, 3 gates 25ft x 9.7ft Weir lgth = 75ft Weir elev = 1.8ft NGVD	8.5	-1.0 to 2.0	HW = 8.0	4800	HW = 10.68 Q = 5800	3/29/82 3/29/82
G-124 Divide structure-east and west basins. Water supply, flood discharges-west to east basins	Culvert 1-36in CMP,2-66in CMP 4-72in CMP (2-72in CMP's have slide gates and 2 have risers and boards) Invert elevs : 36in CMP = 7.0ft NGVD 66in CMP = 5.0ft NGVD 72in CMP = 5.0 ft NGVD			H W = 12.5			
S-5AE Water supply to C-51. Flood discharge, L-8 borrow canal to C-51.	Box culvert, 2-7ft x 7 ft box x 65ft reinforced concrete with slide gates Invert elev = 1.0ft NGVD	11.5	10.0	Not used to control stage	700	Q (east) = 960 Q (west) = 930 TW = 16.37 HW = 19.34	10/3/59 3/29/82 9/26/60 9/27/60
S-5A	Pump Station 6 units: 800 cfs each	13.0	24.1	HW = 10.5 (wet season) HW = 11.5 (dry season)	4800		
S-5AW Divide structure	Gated culvert 2-7 ft x 7 ft box × 80 ft Reinforced concrete box Invert elev = -1.75 to 0.3 ft NGVD	13.0	11.5	Not used to control stage	700		
S-5AS	Gated spillway 2 Gates 19.3 ft high × 22.8 ft wide Net crest length = 44.0 ft Crest elev = 1.0 ft NGVD	18.0	17.9	Not used to control stage	2000		

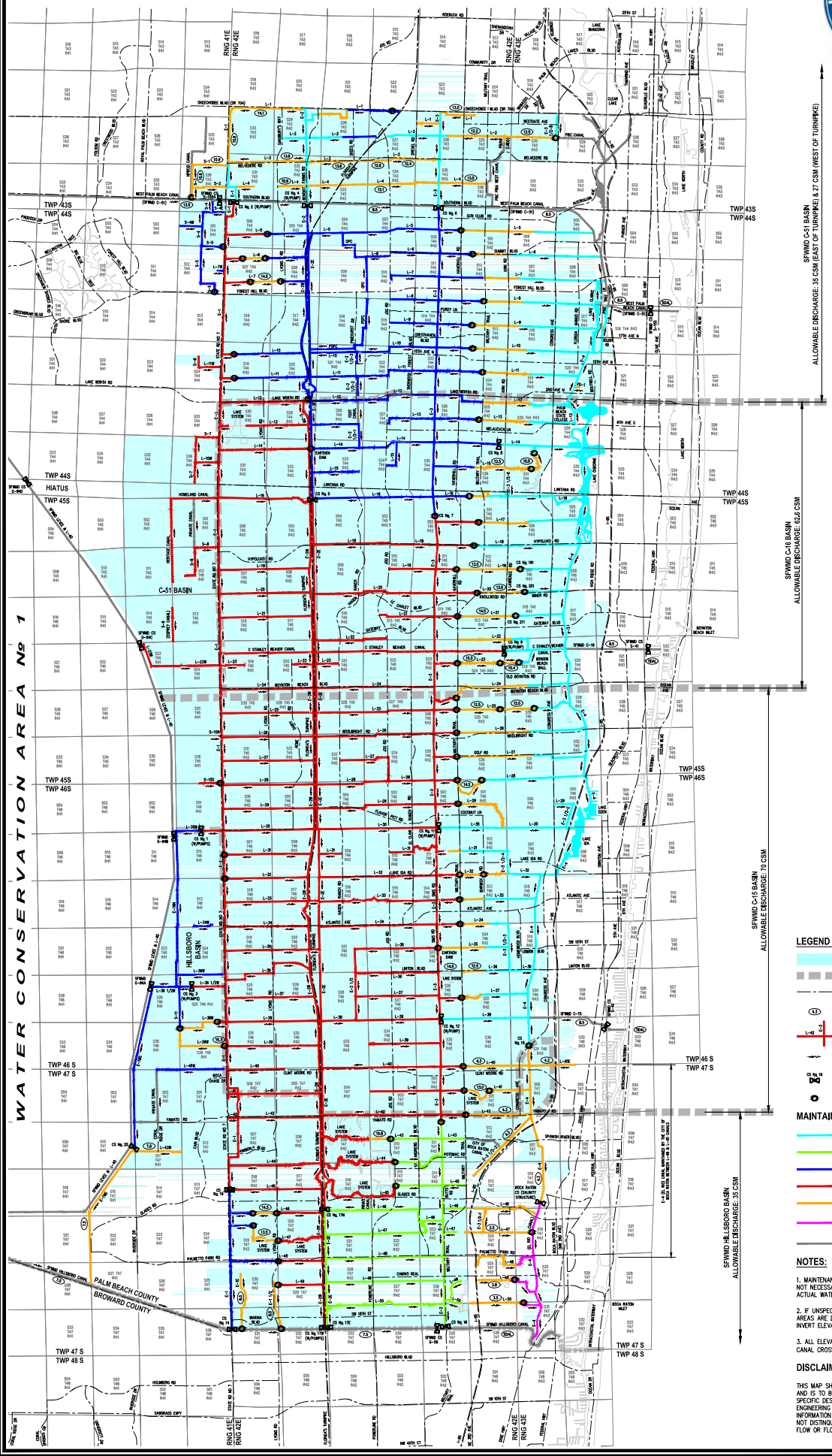
in = inches
ft = feet
elev = elevation
lgth = Length
TW = Tail water
Q = discharge in cfs
CMP = Corrugated metal pipe
RCP = Reinforced concrete pipe
ft NGVD = Feet relative to National Geodetic Vertical Datum
HW = Head water
CFS = Cubic feet per second
ds = downstream
ups = upstream

Figure 6

LWDD Boundary and Canal Network

LAKE WORTH DRAINAGE DISTRICT

MAINTAINED CANAL ELEVATIONS MAP



LEGEND

- LWDD SERVICE AREA
- BOUNDARY LINE FOR SFWMD BASIN AREAS
- PRINCIPAL ROADWAY
- DENOTES SOME SPECIFIC CANAL MAINTENANCE ELEVATIONS
- LWDD CANAL DESIGNATIONS (UNLESS OTHERWISE NOTED)
- DIRECTION OF FLOW
- MAJOR LWDD (UNLESS OTHERWISE NOTED) DRAINAGE CONTROL STRUCTURE
- LWDD MINOR CONTROL STRUCTURE

MAINTAINED CANAL ELEVATIONS:

- CANAL ELEVATION = 8.5' NGVD (SEE NOTE No. 1)
- CANAL ELEVATION = 9.3' NGVD (SEE NOTE No. 1)
- CANAL ELEVATION = 13.0' NGVD (SEE NOTE No. 1)
- CANAL ELEVATION = 16.0' NGVD (SEE NOTE No. 1)
- CANAL ELEVATION VARIES (SEE NOTES No. 1 & 2)
- DENOTES AREAS WHERE CANAL ELEVATIONS ARE AFFECTED BY TIDAL CURRENT
- OTHER CANALS (NOT MAINTAINED BY LWDD)

NOTES:

1. MAINTENANCE ELEVATION OF THE CONTROL STRUCTURE AND NOT NECESSARILY THE CANAL WATER SURFACE ELEVATION. ACTUAL WATER ELEVATION IN THE CANAL WILL VARY.

2. IF UNSPECIFIED, THE MAINTENANCE ELEVATIONS IN THESE AREAS ARE DEPENDENT ON CANAL BOTTOM ELEVATIONS, CULVERT INVERT ELEVATIONS OR GROUNDWATER INTRUSION.

3. ALL ELEVATIONS ARE SUBJECT TO VERIFICATION BY A CURRENT CANAL CROSS SECTION(S) TO LWDD SPECIFICATIONS.

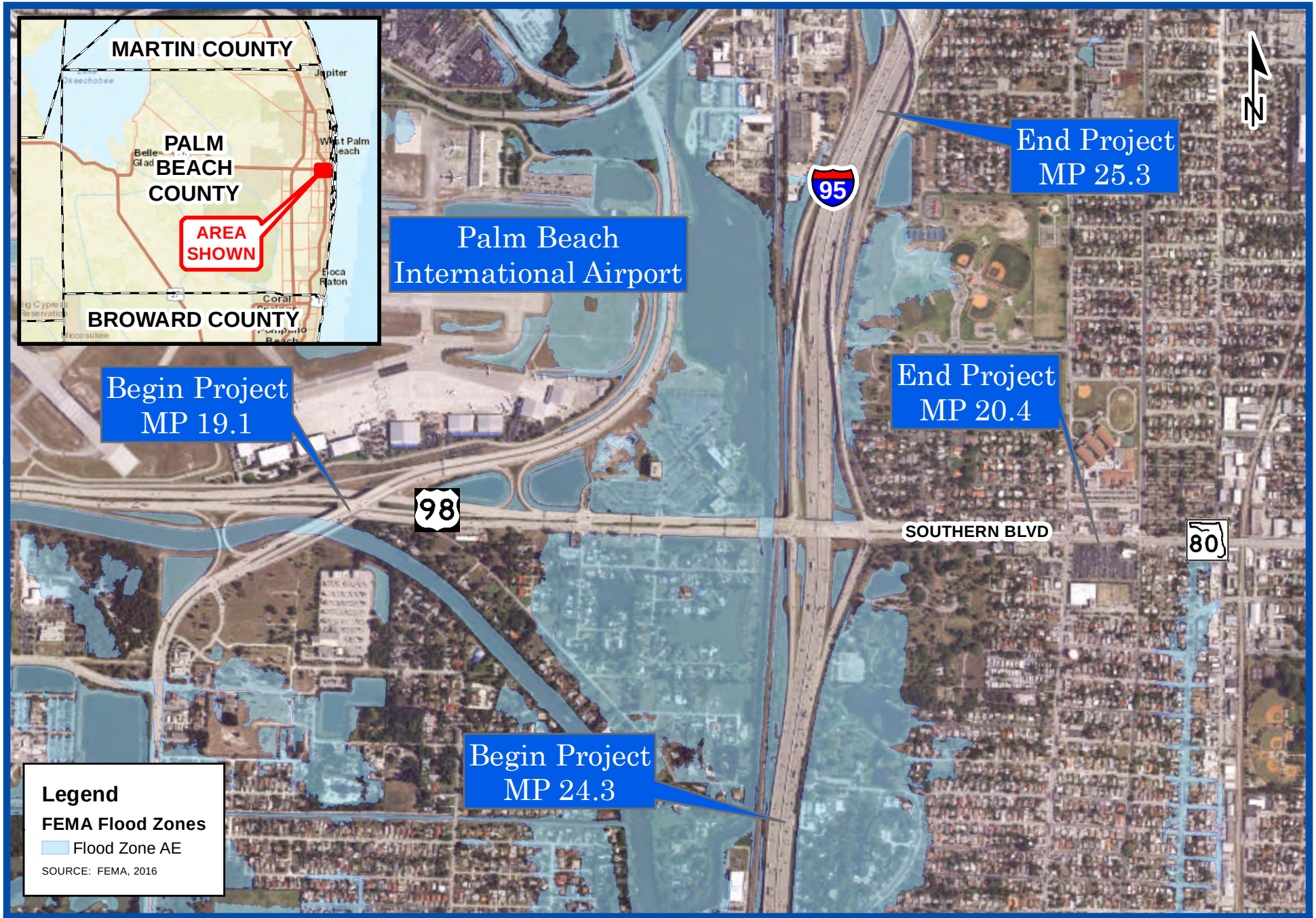
DISCLAIMER:

THIS MAP SHOWS THE MAINTAINED ELEVATIONS OF LWDD CANALS AND IS TO BE USED FOR INFORMATIONAL PURPOSES ONLY. FOR SPECIFIC DESIGN REQUIREMENTS, PLEASE CONTACT THE LWDD ENGINEERING DEPARTMENT DIRECTLY. CANAL RIGHT-OF-WAY INFORMATION IS NOT SHOWN ON THIS MAP. ALSO, THIS MAP DOES NOT DISTINGUISH CONVEYANCE METHODS BETWEEN OPEN CHANNEL FLOW OR FLOW THROUGH CLOSED CULVERTS.

MAP CREATED BY: RWW • MAP CHECKED BY: JWF • MAP UPDATED: FEBRUARY 2014 • CAD FILE: LWDD_CANAL_MAINT_ELEV_MAP.DWG

Figure 7

FEMA Firmette and Flood Zone Map



FDOT

SR 9/I-95 at SR 80/Southern Boulevard Interchange
Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No: 14183

Figure 7.1
FEMA Flood Zone Map

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 tenth-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

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

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

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

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

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

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 http://www.ngs.noaa.gov/.

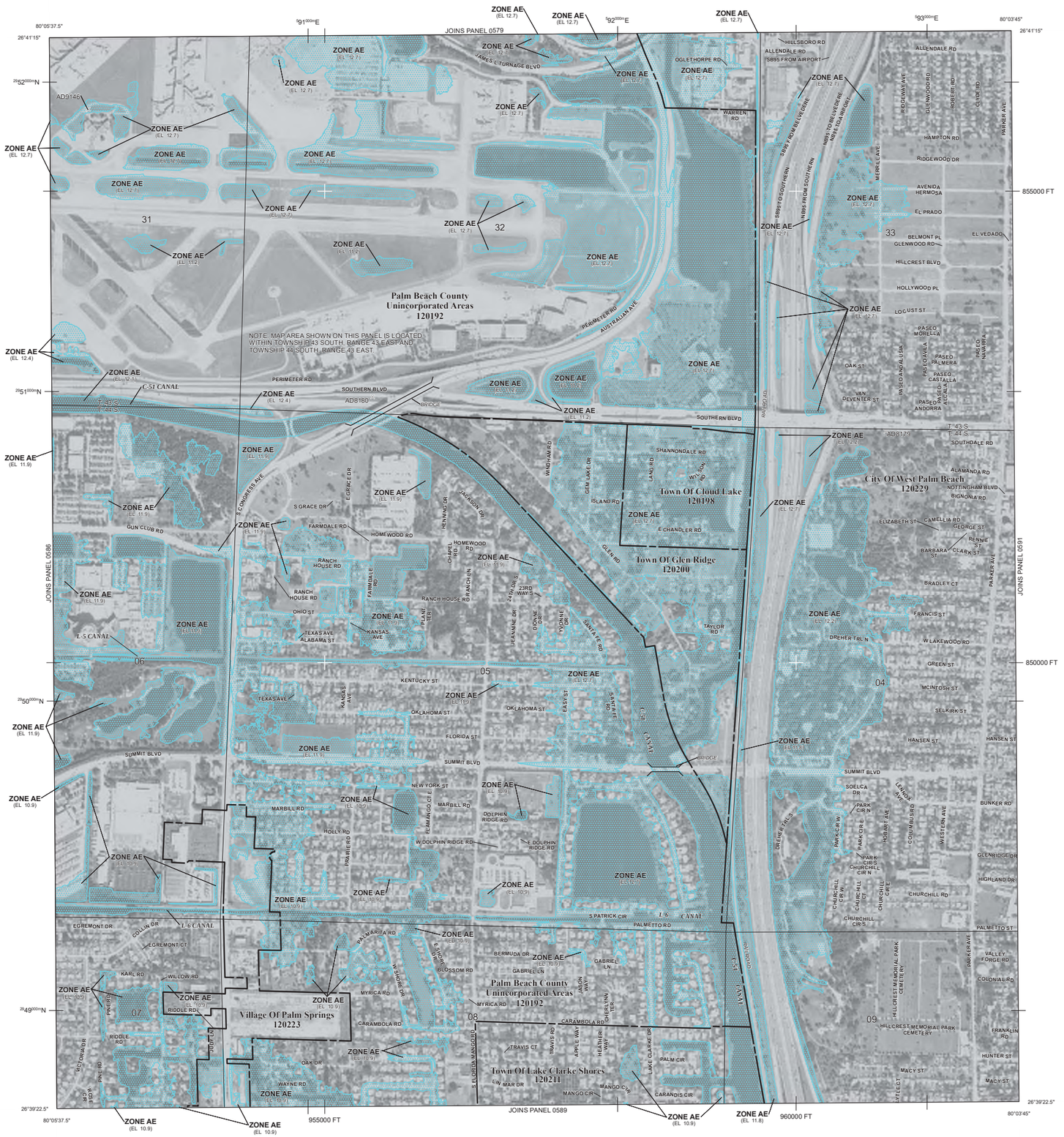
Base map information shown on this FIRM was provided in digital format by Palm Beach County. The original orthophotographic base imagery was provided in color with a one-foot pixel resolution at a scale of 1" = 200' from photography flown November 2010 - January 2011.

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

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

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

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.



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	Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

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

OTHER AREAS

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

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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

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

* Referenced to the North American Vertical Datum of 1988

- 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
- 4275000mE — 1000-meter Universal Transverse Mercator grid ticks, zone 17
- 6000000 FT — 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 901), Transverse Mercator projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

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'

250 0 250 500 750 1,000 FEET
100 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0587F

FIRM

FLOOD INSURANCE RATE MAP

PALM BEACH COUNTY, FLORIDA

AND INCORPORATED AREAS

PANEL 587 OF 1200

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLOUD LAKE, TOWN OF	120198	0587	F
GLEN RIDGE, TOWN OF	120200	0587	F
LAKE CLARKE SHORES, TOWN OF	120211	0587	F
PALM BEACH COUNTY	120192	0587	F
PALM SPRINGS, VILLAGE OF	120223	0587	F
WEST PALM BEACH, CITY OF	120229	0587	F

REVISED: AUG 18 2014

PRELIMINARY

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
12099C0587F

EFFECTIVE DATE

Federal Emergency Management Agency

Figure 8

Datum Conversion

Office

Project

16 February 2016

INPUT	OUTPUT
Geographic, NAD83	Geographic, NAD83
Vertical - NGVD29 (Vertcon94), U.S. Feet	Vertical - NAVD88, U.S. Feet

Southern Blvd

1/1

INPUT		OUTPUT	
Latitude:	26°40'33.99"	**Latitude:**	26 00 00.00000
Longitude:	80° 4'11.53"	**Longitude:**	80 00 00.00000
Elevation/Z:	0	**Elevation/Z:**	-1.575

Remark:

Figure 9

SFWMD Rainfall Maps

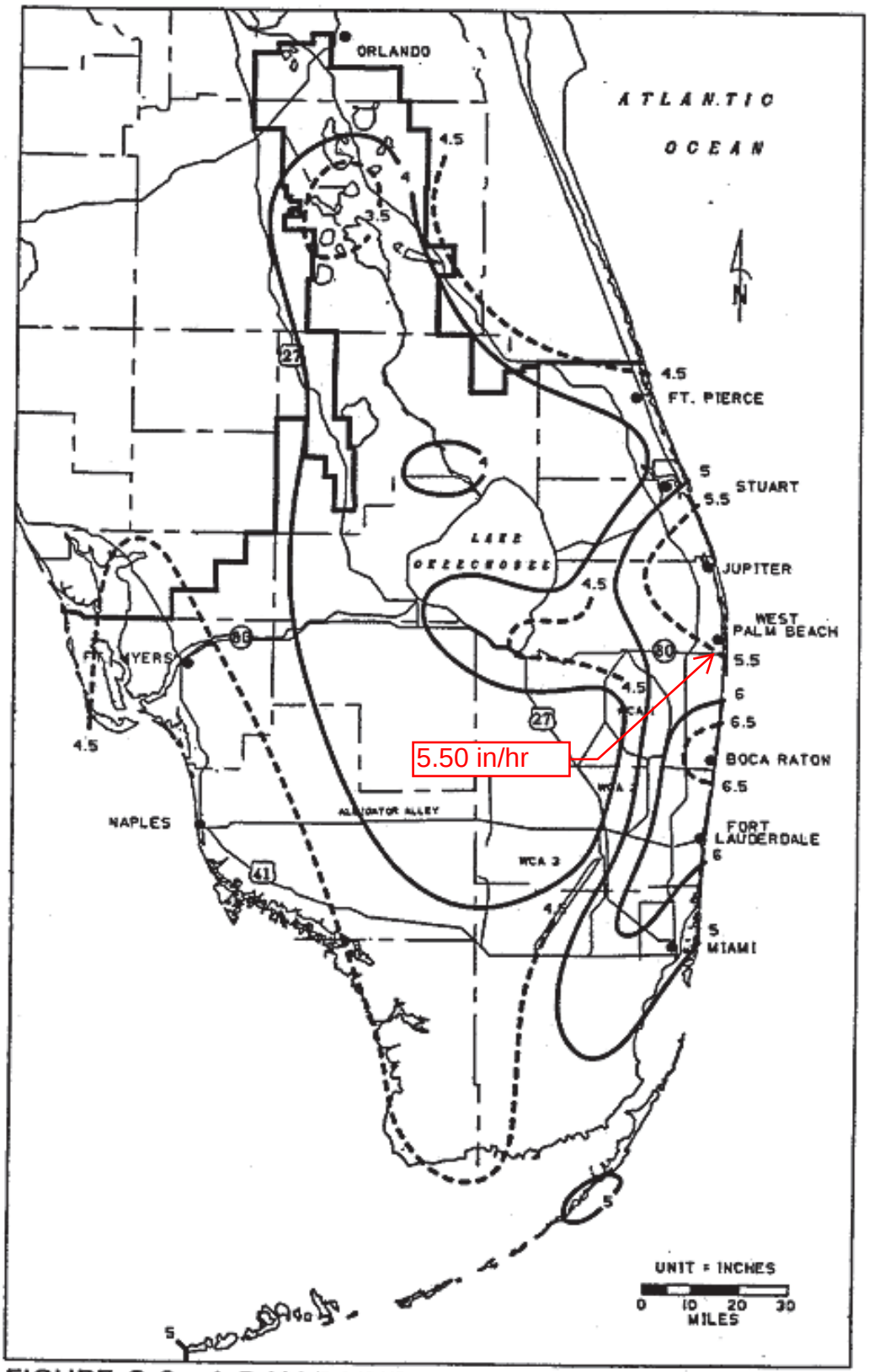


FIGURE C-2. 1-DAY RAINFALL: 3-YEAR RETURN PERIOD

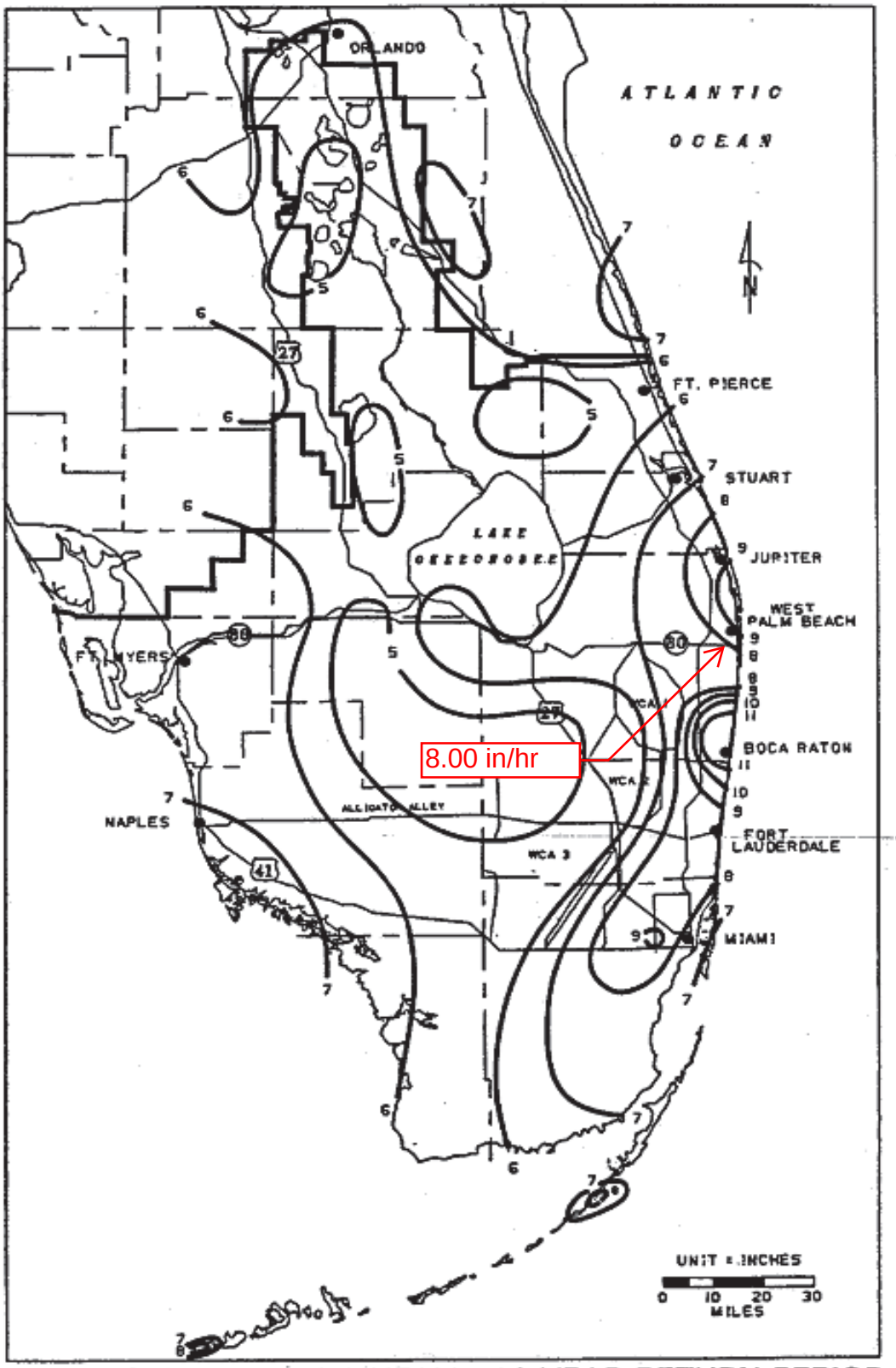


FIGURE C-4. 1-DAY RAINFALL: 10-YEAR RETURN PERIOD

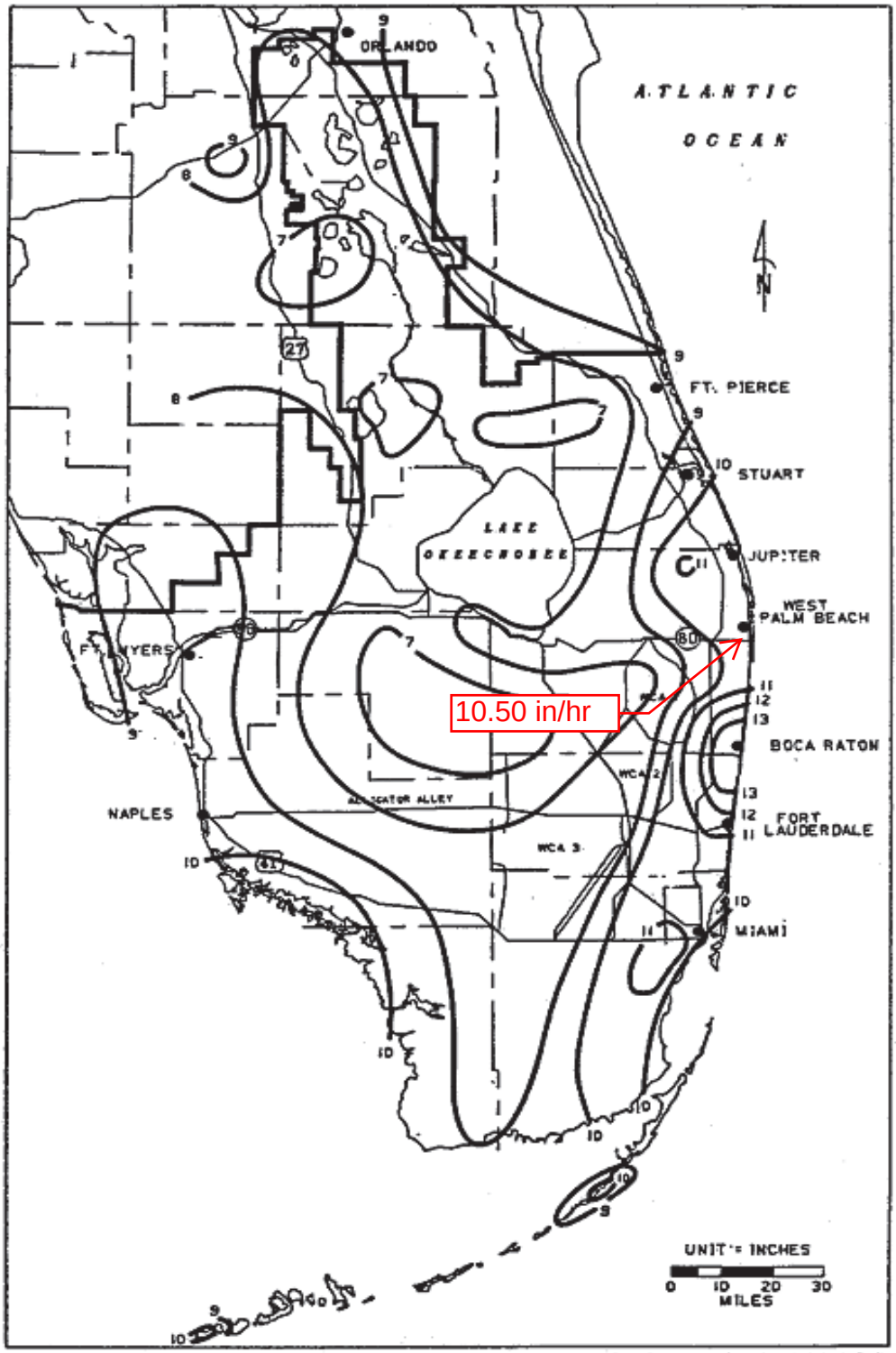


FIGURE C-7. 3-DAY RAINFALL: 10-YEAR RETURN PERIOD

Figure 10

Verified Impaired WBID and TMDLs Maps

Palm Beach International Airport

PINE LAKE
- Dissolved Oxygen
- Fecal Coliform
- Nutrients (TSI)

Begin Project MP 19.1

End Project MP 25.3

End Project MP 20.4

95

98

SOUTHERN BLVD

80

N

C-51 EAST
- Dissolved Oxygen

ICWW ABOVE POMPANO
- Copper
- Mercury (in fish tissue)
- Nutrients (Historic Chlorophyll-A)

Begin Project MP 24.3

Legend

Project Limits

Impaired Water Bodies

WBID: NAME

- 3245F: C-51 EAST
- 3245C4: PINE LAKE
- 3226F: ICWW ABOVE POMPANO

FDOT

SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No:14183

Figure 10
Impaired Water Bodies Map

Figure 11

Impaired Waters (Verified List)

Cycle	Group	OGC Case Number	Group Name	Planning Unit	County (-ies)	WBID	Water Segment Name	Water-body Type	Water-body Class[1]	1998 303(d) Parameters of Concern	Parameters Assessed Using the Impaired Waters Rule (IWR)	Dissolved Oxygen/Biology Pollutant of Concern	DO / Nutrient / Biology - TN , TP , BOD Median Values (mg/L)[2]	Concentration of Criterion or Threshold Not Met	Priority for TMDL Development[3]	Projected Year For TMDL Development[3]	Verified Period Assessment Data[8]	Comments[7,8]
1	5	09-0997	Everglades	Everglades Agricultural Area	Palm Beach	3244	East Beach	Stream	3F	Nutrients	Nutrients (Chlorophyll-a)			Median TN = 2.0045 µg/L	High			The annual average Chl-a values did exceed IWR threshold of 20.0 µg/L in 2005 (71.07 µg/L). TN (2.011 mg/L) did exceed threshold of 1.6 mg/L. TP (0.16 mg/L) did not exceed threshold of 0.22 mg/L. BOD (2.3 mg/L) did exceed threshold of 2.0 mg/L. Data indicate that the WBID was nitrogen and phosphorous limited (TN/TP median = 14.317, standard deviation of 10.035, range 5.213 - 72.82, 107 observations).
2	5	12-0376	Everglades	Everglades Agricultural Area	Palm Beach	3244	East Beach	Stream	3F		Fecal Coliform			≤ 400 Counts / 100 mL	Low		10/13	This parameter is impaired for this waterbody based on the number of exceedances for a sample size less than 20. Fewer than twenty samples may be used to identify a waterbody as impaired if there are at least five exceedances, per Rule 62-303.420(7)(a). This parameter is being added to the 303(d) list.
1	3	05-1165	Lake Worth Lagoon - Palm Beach Coast	C-51	Palm Beach	3245	C-51	Stream	3F	Dissolved Oxygen	Dissolved Oxygen	Nutrients (added from comments)		< 5.0 mg/l	Medium	2010		PP = 455 / 757 Potentially Impaired; VP = 393 / 620 Impaired Linked to elevated TN level. TN above the screening level for both the PP and VP. (TN during PP median 1.706 mg/l and; TN during VP median 1.89 mg/l).
1	3	05-1166	Lake Worth Lagoon - Palm Beach Coast	C-51	Palm Beach	3245B	Lake Clarke	Lake	3F		Dissolved Oxygen	Nutrients (added from comments)		< 5.0 mg/l	Medium	2010		PP = 57 / 113 Potentially Impaired; VP = 40 / 86 Impaired No BOD or Biological data available. Linked to nutrients, co-limiting of nitrogen and phosphorus. During PP TN median = 1.336 mg/L, TP median = 0.079 mg/L, during VP TN median = 1.379 mg/L, TP median = 0.081 mg/L.
2	3	10-0069	Lake Worth Lagoon - Palm Beach Coast	C-51	Palm Beach	3245B	Lake Clarke	Lake	3F		Fecal Coliform			≤ 400 Counts / 100 mL	Low		9/53	Impaired based on the number of exceedances and will be added to the 303(d) list. New listing from cycle 2.
2	3	10-0070	Lake Worth Lagoon - Palm Beach Coast	C-51	Palm Beach	3245C2	Clear Lake	Lake	1		Nutrients (TSI)		TN = 0.959 (n = 17) TP = 0.02 (n = 23) BOD = 2 (n = 7)	TSI < 40, Color < 40	High		2002 (44.8 TSI - 40 PCU)	This waterbody is impaired because one TSI annual mean exceeded the threshold in 2002. Based on TN/TP ratio median of 69.08, TP was identified as the limiting nutrient. Excluded from period of record assessment, as it is impaired according to more recent data. New listing from cycle 2.
2	3	10-0071	Lake Worth Lagoon - Palm Beach Coast	C-51	Palm Beach	3245C4	Pine Lake	Lake	3F		Dissolved Oxygen	Biochemical Oxygen Demand	TN = 0.982 (n = 43) TP = 0.062 (n = 51) BOD = 3.1 (n = 13)	≥ 5.0 mg/L	Medium		9/47	Impaired based on number of exceedances and BOD was found to be the causative pollutant. New listing from cycle 2.
2	3	10-0072	Lake Worth Lagoon - Palm Beach Coast	C-51	Palm Beach	3245C4	Pine Lake	Lake	3F		Fecal Coliform			≤ 400 Counts / 100 mL	Low		14/49	Impaired based on the number of exceedances and will be added to the 303(d) list. New listing from cycle 2.
2	3	10-0073	Lake Worth Lagoon - Palm Beach Coast	C-51	Palm Beach	3245C4	Pine Lake	Lake	3F		Nutrients (TSI)		TN = 0.98 (n = 43) TP = 0.062 (n = 51) BOD = 3.1 (n = 13)	TSI < 60, No Color or TSI < 60, Color > 40	Medium		2006 (57.5 TSI - No Color) 2008 (62.2 TSI - 54.4 PCU)	This waterbody is impaired because one TSI annual mean exceeded the threshold in 2008. Based on TN/TP ratio median of 17.97, TN-TP were identified as co-limiting nutrients. New listing from cycle 2.
2	3	10-0074	Lake Worth Lagoon - Palm Beach Coast	C-51	Palm Beach	3245D	M Canal (West)	Stream	1		Dissolved Oxygen	Biochemical Oxygen Demand	TN = 1.52 (n = 185) TP = 0.108 (n = 187) BOD = 2.4; (n = 12)	≥ 5.0 mg/L	High		151/597	Impaired based on the listing threshold and BOD was found to be the causative pollutant. New listing from cycle 2.
2	3	10-0075	Lake Worth Lagoon - Palm Beach Coast	C-51	Palm Beach	3245F	C-51 East	Stream	3F	Dissolved Oxygen	Dissolved Oxygen	Biochemical Oxygen Demand	TN = 1.24 (n = 156) TP = 0.067 (n = 207) BOD = 2.3 (n = 12)	≥ 5.0 mg/L		2010	674/1132	Impaired based on number of exceedances and BOD was found to be the causative pollutant.
2	3	10-0077	Lake Worth Lagoon - Palm Beach Coast	C-51	Palm Beach	3245G	C-51 West	Stream	3F	Nutrients	Nutrients (Chlorophyll-a)		TN = 1.61 (n = 276) TP = 0.104 (n = 300) BOD = 1.5 (n = 5)	≤ 20 µg/L		2010	2003 (19.8 µg/l) 2004 (5.3 µg/l) 2005 (4.28 µg/l) 2006 (6.6 µg/l) 2007 (35.2 µg/l) 2008 (15.1 µg/l)	This waterbody is impaired because the annual average Chl-a value exceeded the listing threshold of 20.0 µg/L in 2007. Based on TN/TP ratio median of 16.64, TN-TP were identified as co-limiting nutrients.
2	3	12-0590	Caloosahatchee	East Caloosahatchee	Glades, Hendry	3246	S-4 Basin	Stream	3F	Dissolved Oxygen	Dissolved Oxygen (Nutrients)	Total Nitrogen, Biochemical Oxygen Demand	TN = 1.785 (n = 251) TP = 0.112 (n = 273) BOD = 2.5 (n = 25)	≥ 5.0 mg/L		2011	107/271	This parameter is impaired for this waterbody and was mistakenly excluded from the adopted Cycle 2 Verified List. DO exceeds the IWR threshold with TN and BOD identified as the causative pollutants. Based on TN/TP Ratio Median of 17.69, TN and TP were identified as co-limiting nutrients.
2	3	10-0418	Caloosahatchee	East Caloosahatchee	Glades, Hendry	3246	S-4 Basin	Stream	3F	Nutrients	Nutrients (Chlorophyll-a)		TN = 1.785 (n = 251) TP = 0.112 (n = 273) BOD = 2.5 (n = 25)	≤ 20 µg/L		2011	2002 (20.68 µg/L) 2004 (15.7 µg/L) 2008 (31.06 µg/L)	This waterbody is impaired because annual average Chl a (µg/L) values exceeded 20 µg/L in 2002 and 2008. Based on TN/TP Ratio Median of 17.69, TN and TP were identified as co-limiting nutrients.
1	5	09-1001	Everglades	Everglades Agricultural Area	Palm Beach	3247	715 Farms	Stream	3F	Dissolved Oxygen	Dissolved Oxygen	Nutrients (added from comments)		< 5.0 mg/l	High			PP = 162 / 245; VP = 137 / 203 Impaired by the IWR threshold and nutrients were found to be the causative pollutant. TN (2.816 mg/L) did exceed threshold of 1.6 mg/L, BOD (2.9 mg/L) did exceed threshold of 2.0 mg/L, TN/TP median = 29.939, standard deviation of 20.712, range 7.758 - 192.5, 213 observations.
1	5	09-1002	Everglades	Everglades Agricultural Area	Palm Beach	3247	715 Farms	Stream	3F	Un-ionized Ammonia	Un-ionized Ammonia			> 0.02 mg/L	High			PP = 35 / 247; VP = 30 / 195
2	5	12-0377	Everglades	Everglades Agricultural Area	Palm Beach	3247	715 Farms	Stream	3F	Nutrients	Nutrients (Chlorophyll-a)		TN = 2.699 (n = 185) TP = 0.083 (n = 191) BOD = 1 (n = 9)	≤ 20 µg/L		2005	2006 (43 µg/L)	This parameter is impaired for this waterbody because the annual average chlorophyll-a values exceeded the IWR threshold of 20 µg/L in 2006. Based on the median TN/TP ratio of 32.61, total phosphorus is the limiting nutrient. The period of record assessment, which uses all available data regardless of age, indicated potential impairment. However, data older than the verified period were excluded from the final assessment based on the availability of more recent data, and the final assessment was based on the recent data. Dissolved oxygen is impaired and historic chlorophyll-a has insufficient. This parameter will remain on the 303(d) list.
1	5	09-1004	Everglades	Everglades Agricultural Area	Palm Beach	3248	N. New River Canal	Stream	3F	Dissolved Oxygen	Dissolved Oxygen	Nutrients (added from comments)		< 5.0 mg/l	High			PP = 76 / 164; VP = 69 / 137 Impaired by the IWR threshold and nutrients were found to be the causative pollutant. TN (3.615 mg/L) did exceed threshold of 1.6 mg/L, TN/TP median = 30.3, standard deviation of 11.93, range 8.209 - 63.48, 269 observations.
1	5	09-1005	Everglades	Everglades Agricultural Area	Palm Beach	3248	N. New River Canal	Stream	3F	Nutrients	Nutrients (Chlorophyll-a)			Median TN = 3.615 µg/L	High			The annual average Chl-a values did exceed IWR threshold of 20.0 µg/L in 2002 (25.76 µg/L). TN (3.615 mg/L) did exceed threshold of 1.6 mg/L. TP (0.113 mg/L) did not exceed threshold of 0.22 mg/L. BOD (2.0 mg/L) did not exceed threshold of 2.0 mg/L. Data indicate that the WBID was phosphorous limited (TN/TP median = 30.3, standard deviation of 11.93, range 8.209 - 63.48, 269 observations).

Figure 12

FDOT Criteria for Grade Datum

Table 2.6.3 Criteria for Grade Datum

CLEARANCE FOR THE ROADWAY BASE COURSE ABOVE THE BASE CLEARANCE WATER ELEVATION	
TYPE FACILITY	**REQUIRED CLEARANCE**
Freeways and Rural Multilane Mainline	3 ft.
Ramps (proper)	2 ft. [1]
Low Point on Ramps at Cross Roads	1 ft. [1]
Rural Two-lane with Design Year ADT Greater than 1500 VPD	2 ft. [1]
All Other Facilities Including Urban	1 ft. [1]

1. This clearance requires a reduction in the design resilient modulus (see the ***Flexible Pavement Design Manual***). Notify the Pavement Design Engineer that the clearance is less than 3 feet.

Table 2.6.4 Grade Criteria for Curb and Gutter Sections

GRADES ON CURB AND GUTTER SECTIONS	
Minimum Distance Required between VPI's	250 ft.
Minimum Grade (%)	0.3 %

(See ***Table 2.6.1*** for Maximum Grades)

Figure 13

Alternative 1

\\Jaxfile01\Transportation\PV\060003000 SR 80 PD&E (FTL)\emo\4 - Reports - Engineering\PER\Figures and Tables\Alternative6_1_Alt1_NB-WB.dgn
1/19/2017 1:50:07 PM
lucask

CITY OF WEST PALM BEACH

INTERSTATE 95

VEDADO HISTORIC DISTRICT

TOWN OF GLEN RIDGE

TOWN OF CLOUD LAKE

DREHER PARK

80

98

Southern Blvd

N

0 120 600

Feet

Existing ROW	City / Town Limits	3rd Level Bridge
Existing Limited Access ROW	Property Line	Special Bicycle Lane Treatment
Proposed ROW	Pavement	Sidewalk
Proposed Limited Access ROW	2nd Level Bridge	Retaining Wall

FDOT

SR 9 / I-95 AT SR 80 / SOUTHERN BOULEVARD
INTERCHANGE PD&E STUDY
FPID: 435516-1-22-02; ETDM No: 14183

ALTERNATIVE 1 -
NB - WB FLYOVER

SHEET NO.

6-7

Figure 14

Alternative 3

\\Jaxfile01\Transportation\V060003000 SR 80 PD&E (FTL)\emo4 - Reports - Engineering\PER\Figures and Tables\Alt4em68_J_Alt3_EB-NBI.dgn
2:05:50 PM
1/19/2017
lucask

CITY OF WEST PALM BEACH

INTERSTATE 95

VEDADO HISTORIC DISTRICT

TOWN OF GLEN RIDGE

TOWN OF CLOUD LAKE

DREHER PARK

80 98 Southern Blvd

N

0 120 600
Feet

FDOT

SR 9 / I-95 AT SR 80 / SOUTHERN BOULEVARD INTERCHANGE PD&E STUDY
FPID: 435516-1-22-02; ETDM No: 14183

Existing ROW	City / Town Limits	3rd Level Bridge
Existing Limited Access ROW	Property Line	Special Bicycle Lane Treatment
Proposed ROW	Pavement	Sidewalk
Proposed Limited Access ROW	2nd Level Bridge	Retaining Wall

ALTERNATIVE 3 - EB - NB FLYOVER

SHEET NO.
6-12

Figure 15

Alternative 4

\\axfile01\Transportation\V060003000 SR 80 PD&E (FTL)\emo4 - Reports - Engineering\PER\Figures and Tables\alt4em69_J_Alt4_Dual3rdLevel.dgn
1/19/2017 2:24:36 PM
lucask

CITY OF WEST PALM BEACH

INTERSTATE 95

VEDADO HISTORIC DISTRICT

80 98 Southern Blvd

TOWN OF GLEN RIDGE

TOWN OF CLOUD LAKE

DREHER PARK

N

0 120 600
Feet

Existing ROW	City / Town Limits	3rd Level Bridge	
Existing Limited Access ROW	Property Line	Special Bicycle Lane Treatment	
Proposed ROW	Pavement	Sidewalk	
Proposed Limited Access ROW	2nd Level Bridge	Retaining Wall	

FDOT

SR 9 / I-95 AT SR 80 / SOUTHERN BOULEVARD
INTERCHANGE PD&E STUDY
FPID: 435516-1-22-02; ETDM No: 14183

ALTERNATIVE 4 -
NB - WB & EB - NB
DUAL 3rd-LEVEL FLYOVERS

SHEET NO.
6-15

Figure 16

Alternative 5

\\oxfile01\Transportation\P\V060003000 SR 80 PD&E (FTL)\emo\4 - Reports - Engineering\PER\Figures and Tables\planen6il_J_Alt5_EL_Median.dgn
1/9/2017 2:36:51 PM
lucask

FDOT	SR 9 / I-95 AT SR 80 / SOUTHERN BOULEVARD INTERCHANGE PD&E STUDY FPID: 435516-1-22-02; ETDM No: 14183	Existing ROW	City / Town Limits	3rd Level Bridge	ALTERNATIVE 5 - EB - NB & NB - WB DUAL 3rd LEVEL FLYOVERS W/ EXPRESS LANES	SHEET NO.
		Existing Limited Access ROW	Property Line	Special Bicycle Lane Treatment		
		Proposed ROW	Pavement	Sidewalk		6-19
		Proposed Limited Access ROW	2nd Level Bridge	Retaining Wall		

APPENDIX B

Pre-Development Analysis

Pre-Development Drainage Maps

PALM BEACH INTERNATIONAL AIRPORT

0-1-7
135.60 AC.

B-1-1
21.71 AC.

B-1-2
2.12 AC.

B-1-5
0.57 AC.

B-1-7
2.92 AC.

EXIST. CONTROL STRUCTURE
(S-201)

EXIST. STRUCTURE
(S-205)

EXIST. 72" PIPE

SWALE 1-5

EXIST. 54" PIPE

EXIST. 24" PIPE

EXIST. 84" PIPE

EXIST. 84" PIPE

EXIST. R/W LINE

PERIMETER RD.

WB SR 80 (SOUTHERN BLVD.)

℄ CONST. SR 80

℄ SURVEY AUSTRALIAN AVE.

SB AUSTRALIAN AVENUE

NB AUSTRALIAN AVENUE

EB SR 80 (SOUTHERN BLVD.)

SWALE 1-1

WET POND 1-2

RAMP C

RAMP C-1

SWALE 1-6

3165

3170

3175

3180

3185

3190

115

110

105

100

95

90

EXIST. 84" OUTFALL

RAMP A

RAMP A-1

EXIST. R/W LINE

RAMP D

EXIST. LA R/W LINE

EXIST. STRUCTURE
(S-213)

0-1-1
0.35 AC.

EXIST. CONTROL STRUCTURE
(S-211)

B-1-3
2.28 AC.

EXIST. STRUCTURE 1-3
(S-91)

B-1-4
0.60 AC.

SWALE 1-4

EXIST. 18" PIPE

EXIST. CONTROL STRUCTURE
(S-208)

EXIST. 18" PIPE

C-51 CANAL

MATCHLINE A-A

N

0 50 200

Feet

LEGEND

EXISTING DRAINAGE FEATURES

SYSTEM 1 BASIN BOUNDARIES

FLOW DIRECTION

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

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

PRE-DEVELOPMENT DRAINAGE MAPS

SHEET NO. 1

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 5

MATCHLINE A-A

SEE SHEET 3

LEGEND

- EXISTING DRAINAGE FEATURES
- SYSTEM 1 BASIN BOUNDARIES
- SYSTEM 2 BASIN BOUNDARIES
- SYSTEM 3 BASIN BOUNDARIES
- SYSTEM 4 BASIN BOUNDARIES
- FLOW DIRECTION

N

0 50 200

Feet

℄ SURVEY AUSTRAILIAN AVE.

120 125 130

B-1-8
4.33 AC.

SWALE 1-6

WET POND 1-8

HILTON PALM BEACH AIRPORT HOTEL

EXIST. R/W LINE

GEM LAKE DR.

B-1-6
11.42 AC.

SWALE 1-6

WB SR 80 (SOUTHERN BLVD.)

EB SR 80 (SOUTHERN BLVD.)

℄ CONST. SR 80

3195 3200 3205 3210 3215 3220

EXIST. R/W LINE

WET POND 2-1

0-1-6
1.07 AC.

B-2-3
0.10 AC.

B-2-1
1.26 AC.

LANG RD.

OS-2-1
1.52 AC.

EXIST. CONTROL STRUCTURE
(S-7)

B-1-1
2.34 AC.

B-1-3
10.85 AC.

0-1-1
0.81 AC.

EXIST. 24" PIPE

EXIST. 24" OUTFALL

EXIST. CONTROL STRUCTURES
(S-18 AND S-19)

EXIST. 36" PIPE

EXIST. 48" PIPE

EXIST. CONTROL STRUCTURE
(S-6)

EXIST. 48" OUTFALL

EXIST. CONTROL STRUCTURE
(S-87)

B-1-2
1.73 AC.

CSX RAILROAD

B-2-2
4.74 AC.

EXIST. 48" OUTFALL

B-2-4
0.50 AC.

DITCH 2-4

EXIST. RR R/W LINE

EXIST. 48" PIPE

EXIST. LA R/W LINE

B-1-3A
0.05 AC.

SWALE 1-1

RAMP I

DRY POND 1-3

℄ SURVEY SR 9

SB SR 9 (I-95)

NB SR 9 (I-95)

105 110 1335 1340

EXIST. 48" PIPE

EXIST. 48" PIPE

EXIST. CONTROL STRUCTURE
(S-6A)

DRY POND 1-2

DRY POND 4-4

B-1-5
5.62 AC.

DRY POND 1-5

RAMP J

PARKLAND RD

75

℄ CONST. SR 80

100 1330

B-1-4
3.04 AC.

B-1-7
10.19 AC.

DRY POND 3-7

B-1-3
3.21 AC.

RAMP K

55

B-1-6
5.51 AC.

DRY POND 3-6

RAMP L

℄ SURVEY SR 9

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

SEE SHEET 4

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

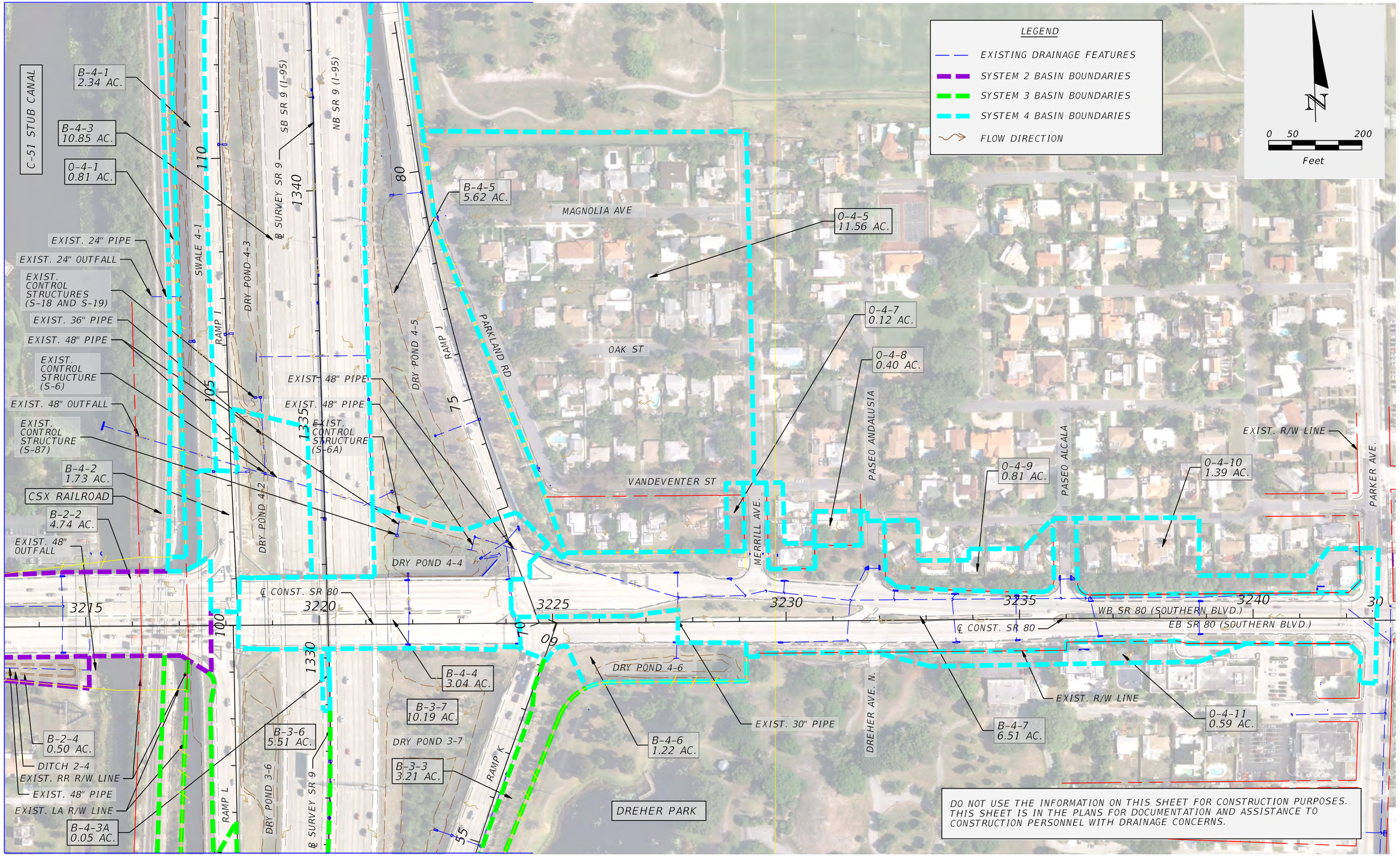
PRE-DEVELOPMENT DRAINAGE MAPS

SHEET NO. 2

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 5

SEE SHEET 2



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

SEE SHEET 4

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

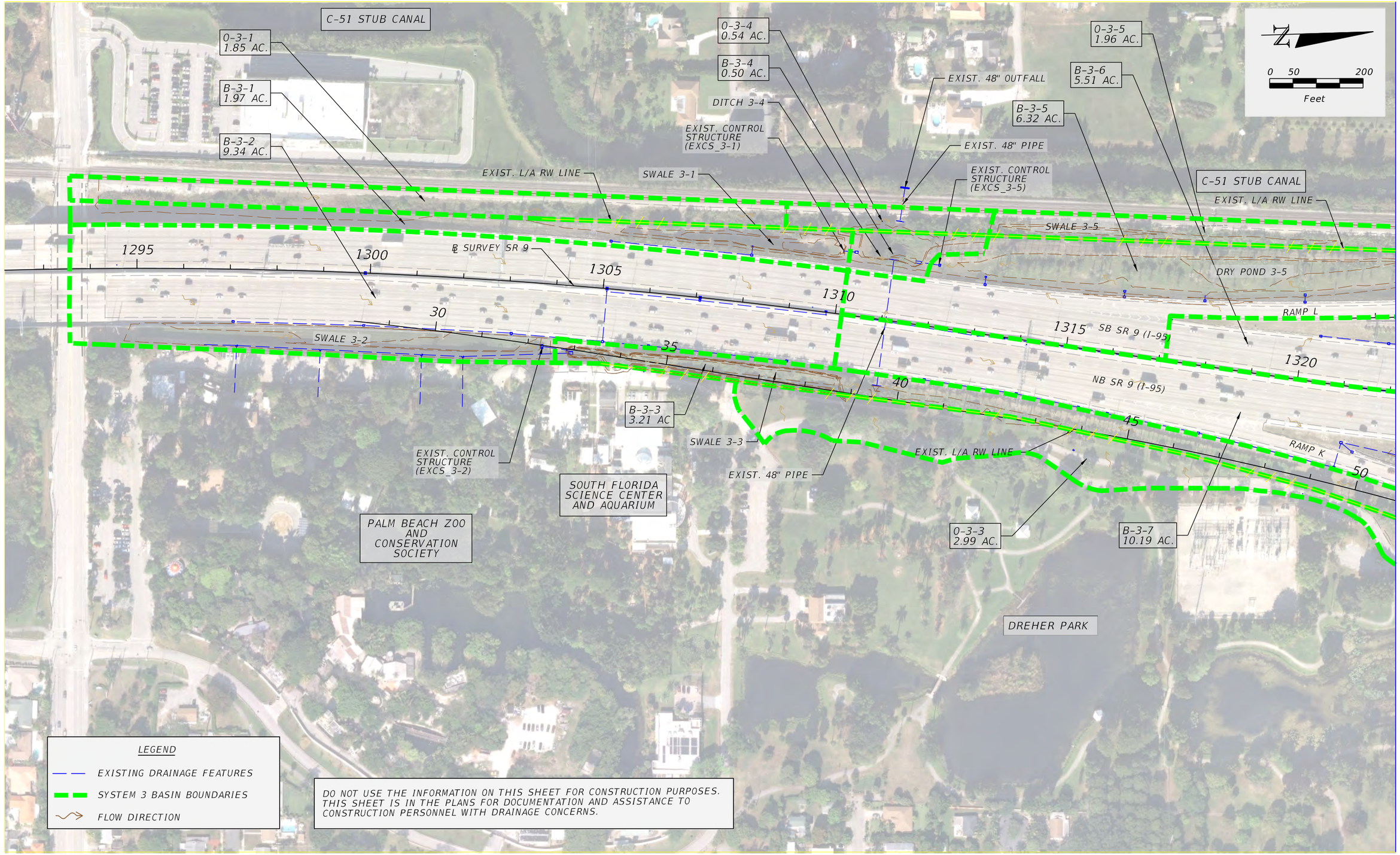
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

PRE-DEVELOPMENT DRAINAGE MAPS

SHEET NO. 3

$USER$ $DATE$ $TIME$ $FILE$



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

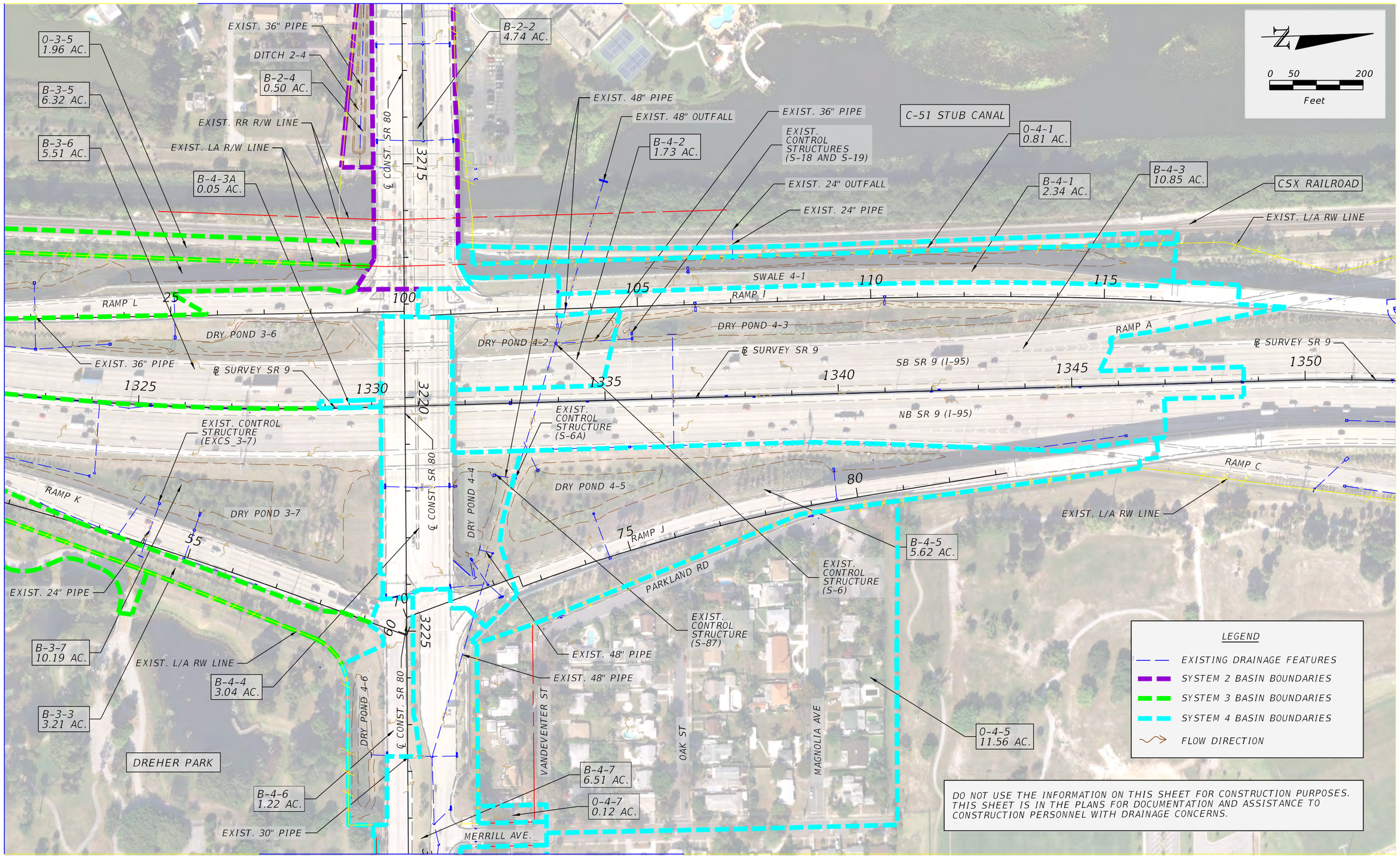
PRE-DEVELOPMENT DRAINAGE MAPS

SHEET NO. 4

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 2

MATCHLINE B-B



SEE SHEET 3

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

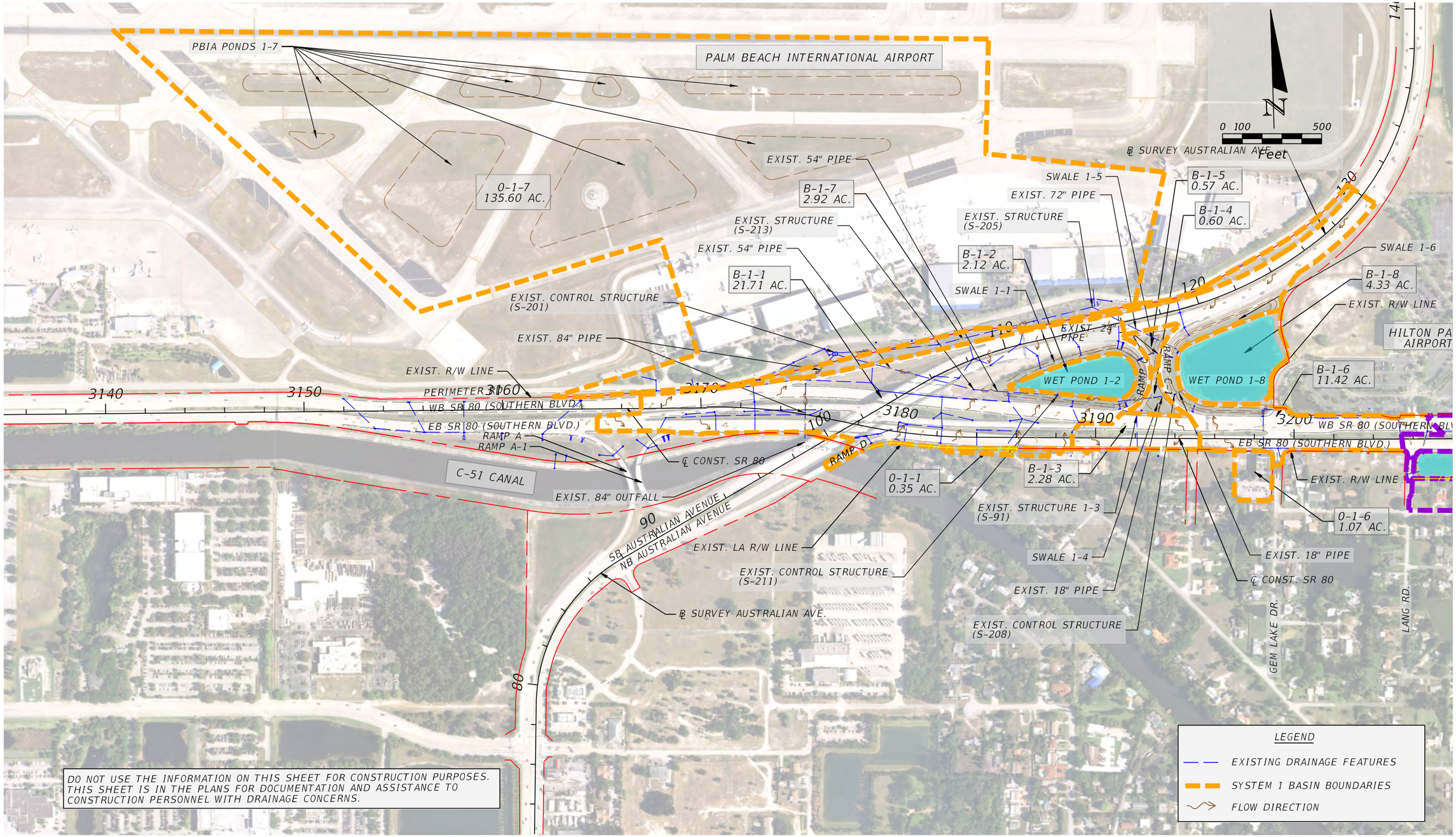
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

PRE-DEVELOPMENT DRAINAGE MAPS

SHEET NO. 5

$USER$ $DATE$ $TIME$ $FILE$



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

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

PRE-DEVELOPMENT DRAINAGE MAPS

SHEET NO.
6

$USER$ $DATE$ $TIME$ $FILE$

Pre-Development Land Use

SR-80 DRAINAGE CALCULATIONS

PRE-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 1 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-1-1	**10**	**21.71**	**21.71**	14.40	0.00	7.31	**0.00**	0.00	0.00	0.00	**12.00**	5.00	8.18	**78.40**
B-1-2	**10**	**2.12**	**2.12**	0.37	1.75	0.00	**0.00**	0.00	0.00	0.00	**9.00**	2.00	1.88	**100.00**
B-1-3	**10**	**2.28**	**2.28**	1.83	0.00	0.45	**0.00**	0.00	0.00	0.00	**15.00**	8.00	8.18	**86.10**
B-1-4	**10**	**0.60**	**0.60**	0.00	0.00	0.60	**0.00**	0.00	0.00	0.00	**11.00**	4.00	8.18	**55.01**
B-1-5	**10**	**0.57**	**0.57**	0.00	0.00	0.57	**0.00**	0.00	0.00	0.00	**12.00**	5.00	8.18	**55.01**
B-1-6	**10**	**11.42**	**11.42**	7.93	0.00	3.49	**0.00**	0.00	0.00	0.00	**13.00**	6.00	8.18	**80.00**
B-1-7	**10**	**2.92**	**2.92**	0.26	0.00	2.66	**0.00**	0.00	0.00	0.00	**17.00**	10.00	8.18	**57.30**
B-1-8*	**10**	**4.33**	**4.33**	0.38	3.45	0.50	**0.00**	0.00	0.00	0.00	**-**	-	-	**98.00**
O-1-1	**10**	**0.35**	**0.00**	0.00	0.00	0.00	**0.35**	0.12	0.00	0.23	**15.50**	9.00	8.18	**65.04**
O-1-6	**10**	**1.07**	**0.00**	0.00	0.00	0.00	**1.07**	0.68	0.00	0.39	**13.00**	6.00	8.18	**77.03**
O-1-7*	**10**	**135.60**	**0.00**	0.00	0.00	0.00	**135.60**	83.40	0.00	52.20	**-**	-	-	**70.56**
SYSTEM TOTALS		**182.97**	**45.95**	25.17	5.20	15.58	**137.02**	84.20	0.00	52.82	**--**	**--**	**--**	**--**

* - Basin B-1-8 & O-1-7 Land Use breakdown taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

SR-80 DRAINAGE CALCULATIONS

PRE-DEVELOPMENT LAND-USE

O-1-7 - Summary --> PBIA Basin 3				
Basin	**Area (Ac.)**	**CN**	**Weighted CN**	**Perv. Area (Ac.)**
B3A1	12.3	77		4.5
B3A2	5.7	80		1.7
B3A3	6.4	76		2.5
B3A4	16.3	64		11.2
B3A5	2.6	75		1.1
B3A6	17.9	61		13.8
B3A7	15.5	72		7.4
B3A8	9.7	66		6.1
B3A9	49.2	73		3.9
Total Area	**135.6**	**CN**	**70.56**	**52.2**

B-1-8 - Summary --> PBIA Basin 3				
Basin	**Area (Ac.)**	**CN**	**Water Surface Area (Ac.)**	**Perv. Area (Ac.)**
B3B	4.33	98	3.45	0.5

All information based on Water Management Analysis Report, PBIA Basin 3.
Basin Areas & Curve Numbers (CN) based on AdICPR Model included in report.
Pervious Areas based on Basin 3 Soil Storage / CN Calculations included in report.

SR-80 DRAINAGE CALCULATIONS

PRE-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 2 **SHGWT EL. (ft-NAVD): 6.92**

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-2-1	**10.00**	**1.26**	**1.26**	0.00	0.76	0.50	**0.00**	0.00	0.00	0.00	9.36	2.00	1.88	**93.04**
B-2-2	**11.66**	**4.74**	**4.74**	4.26	0.00	0.48	**0.00**	0.00	0.00	0.00	11.30	4.00	8.18	**92.35**
B-2-3	**10.00**	**0.10**	**0.10**	0.10	0.00	0.00	**0.00**	0.00	0.00	0.00	10.50	4.00	5.40	**100.00**
B-2-4	**10.00**	**0.50**	**0.50**	0.00	0.00	0.50	**0.00**	0.00	0.00	0.00	10.64	4.00	5.50	**64.52**
OS-2-1	**18.85**	**1.52**	**0.00**	0.00	0.00	0.00	**1.52**	0.29	0.00	1.23	11.50	5.00	8.18	**60.09**
SYSTEM TOTALS		**8.12**	**6.60**	4.36	0.76	1.48	**1.52**	0.29	0.00	1.23	--	--	--	--

SR-80 DRAINAGE CALCULATIONS

PRE-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 3 **SHGWT EL. (ft-NAVD): 6.92**

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-3-1	**10**	**1.97**	**1.97**	0.46	0.00	1.51	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**61.46**
B-3-2	**10**	**9.34**	**9.34**	8.48	0.00	0.86	**0.00**	0.00	0.00	0.00	9.00	2.00	1.88	**98.30**
B-3-3	**10**	**3.21**	**3.21**	0.02	0.00	3.19	**0.00**	0.00	0.00	0.00	8.00	1.00	0.45	**95.72**
B-3-4	**10**	**0.50**	**0.50**	0.05	0.00	0.45	**0.00**	0.00	0.00	0.00	8.50	2.00	1.88	**85.53**
B-3-5	**10**	**6.32**	**6.32**	2.69	0.00	3.63	**0.00**	0.00	0.00	0.00	9.50	3.00	4.95	**77.86**
B-3-6	**10**	**5.51**	**5.51**	3.76	0.00	1.75	**0.00**	0.00	0.00	0.00	13.00	6.00	8.18	**79.38**
B-3-7	**10**	**10.19**	**10.19**	6.96	0.00	3.23	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**79.41**
O-3-1	**10**	**1.85**	**0.00**	0.00	0.00	0.00	**1.85**	0.56	0.00	1.29	10.50	4.00	8.18	**63.68**
O-3-3	**10**	**2.99**	**0.00**	0.00	0.00	0.00	**2.99**	1.32	0.00	1.67	8.00	1.00	0.45	**97.55**
O-3-4	**10**	**0.54**	**0.00**	0.00	0.00	0.00	**0.54**	0.16	0.00	0.38	8.50	2.00	1.88	**88.32**
O-3-5	**10**	**1.96**	**0.00**	0.00	0.00	0.00	**1.96**	0.68	0.00	1.28	9.50	3.00	4.95	**75.57**
SYSTEM TOTALS		**44.38**	**37.04**	22.42	0.00	14.62	**7.34**	2.72	0.00	4.62	--	--	--	--

SR-80 DRAINAGE CALCULATIONS

PRE-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 4 **SHGWT EL. (ft-NAVD): 6.92**

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-4-1	**10**	**2.34**	**2.34**	0.17	0.00	2.17	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**56.86**
B-4-2	**10**	**1.73**	**1.73**	0.95	0.00	0.78	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**73.06**
B-4-3	**10**	**10.85**	**10.85**	8.74	0.00	2.11	**0.00**	0.00	0.00	0.00	13.00	6.00	8.18	**86.28**
B-4-3A	**10**	**0.05**	**0.05**	0.05	0.00	0.00	**0.00**	0.00	0.00	0.00	16.00	9.00	8.18	**100.00**
B-4-4	**10**	**3.04**	**3.04**	2.19	0.00	0.85	**0.00**	0.00	0.00	0.00	9.50	3.00	4.95	**87.84**
B-4-5	**10**	**5.62**	**5.62**	1.34	0.00	4.28	**0.00**	0.00	0.00	0.00	10.00	3.00	4.95	**72.62**
B-4-6	**10**	**1.22**	**1.22**	0.56	0.00	0.66	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**69.32**
B-4-7	**10**	**6.51**	**6.51**	4.96	0.00	1.55	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**83.70**
O-4-1	**10**	**0.81**	**0.00**	0.00	0.00	0.00	**0.81**	0.00	0.00	0.81	11.00	4.00	8.18	**55.01**
O-4-5	**10**	**11.56**	**0.00**	0.00	0.00	0.00	**11.56**	11.15	0.00	0.41	10.00	3.00	4.95	**98.27**
O-4-7	**10**	**0.12**	**0.00**	0.00	0.00	0.00	**0.12**	0.04	0.00	0.08	15.00	8.00	8.18	**64.71**
O-4-8	**10**	**0.40**	**0.00**	0.00	0.00	0.00	**0.40**	0.14	0.00	0.26	15.00	8.00	8.18	**65.29**
O-4-9	**10**	**0.81**	**0.00**	0.00	0.00	0.00	**0.81**	0.22	0.00	0.59	15.00	8.00	8.18	**62.66**
O-4-10	**10**	**1.39**	**0.00**	0.00	0.00	0.00	**1.39**	0.76	0.00	0.63	15.00	8.00	8.18	**72.95**
O-4-11	**10**	**0.59**	**0.00**	0.00	0.00	0.00	**0.59**	0.45	0.00	0.14	15.00	8.00	8.18	**83.74**
SYSTEM TOTALS		**47.04**	**31.36**	18.96	0.00	12.40	**15.68**	12.76	0.00	2.92	--	--	--	--

Pre-Development ICPR Model

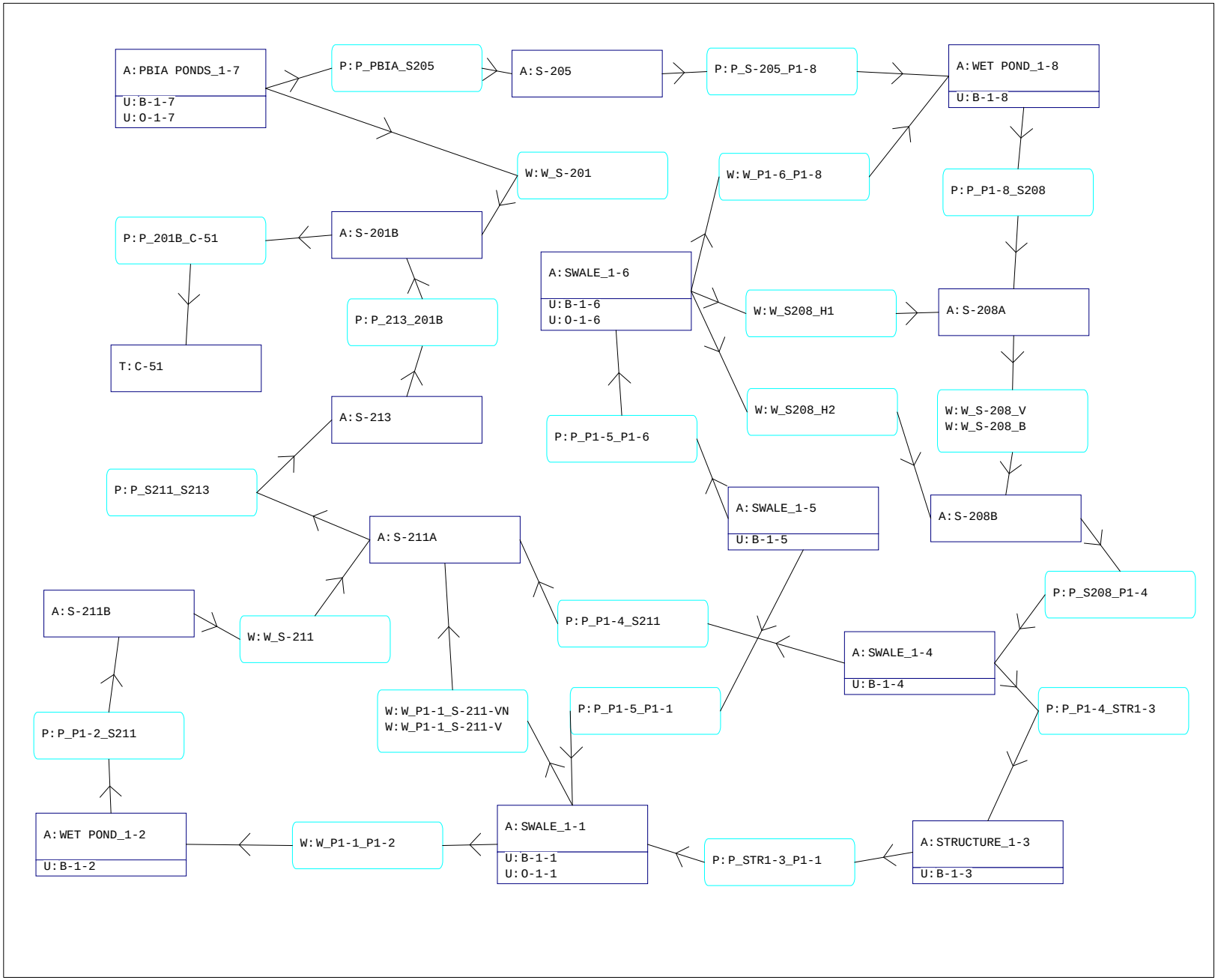
(Systems 1-4)

I-95 at Southern Boulevard
Drainage System 1
Pre-Development
Node-Link Diagram

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



I-95 at Southern Boulevard
Drainage System 1
Pre-Development
Node Maximum Conditions Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
C-51	BASE	10YR-24HR	0.00	6.92	7.00	0.0000	78	12.56	206.87	0.00	0.00
PBIA PONDS_1-7	BASE	10YR-24HR	12.53	10.53	18.42	-0.0064	356831	12.25	452.34	12.45	255.66
S-201B	BASE	10YR-24HR	12.56	7.99	15.32	0.0246	220	12.57	207.60	12.56	206.87
S-205	BASE	10YR-24HR	12.92	10.33	14.42	-0.0062	392	12.29	78.51	12.29	78.27
S-208A	BASE	10YR-24HR	12.98	10.32	12.62	0.0056	115	22.05	1.78	22.07	1.78
S-208B	BASE	10YR-24HR	13.02	10.33	12.62	-0.0052	117	22.07	1.78	24.38	1.95
S-211A	BASE	10YR-24HR	12.62	8.21	12.42	0.0111	230	13.61	27.67	13.94	27.74
S-211B	BASE	10YR-24HR	12.78	8.35	12.42	0.0043	113	13.60	8.53	13.61	8.54
S-213	BASE	10YR-24HR	12.59	8.07	12.82	0.0141	241	13.94	27.74	13.69	28.84
STRUCTURE_1-3	BASE	10YR-24HR	12.29	10.96	13.63	0.0138	120	7.69	0.06	7.68	0.06
SWALE_1-1	BASE	10YR-24HR	12.30	10.98	12.00	0.0027	51555	12.29	84.61	12.30	83.77
SWALE_1-4	BASE	10YR-24HR	13.02	10.33	13.50	0.0023	10173	24.38	1.96	19.91	1.99
SWALE_1-5	BASE	10YR-24HR	12.97	11.42	14.00	0.0025	7281	12.25	1.13	16.47	0.78
SWALE_1-6	BASE	10YR-24HR	12.94	11.93	13.00	0.0025	55815	12.19	45.79	0.00	0.00
WET POND_1-2	BASE	10YR-24HR	13.28	8.84	9.92	0.0025	81921	12.30	81.04	13.60	8.53
WET POND_1-8	BASE	10YR-24HR	12.97	10.33	11.43	0.0016	169435	12.25	98.60	22.05	1.78
C-51	BASE	10YR-72HR	0.00	6.92	7.00	0.0000	78	60.31	258.11	0.00	0.00
PBIA PONDS_1-7	BASE	10YR-72HR	60.27	10.92	18.42	0.0066	400716	60.00	530.65	60.19	301.81
S-201B	BASE	10YR-72HR	60.31	8.59	15.32	0.0247	220	60.34	259.58	60.31	258.11
S-205	BASE	10YR-72HR	60.60	10.75	14.42	0.0087	392	60.08	68.68	60.08	68.47
S-208A	BASE	10YR-72HR	60.65	10.72	12.62	0.0055	115	56.21	1.89	56.21	1.88
S-208B	BASE	10YR-72HR	60.70	10.68	12.62	-0.0050	117	56.21	1.88	72.66	1.93
S-211A	BASE	10YR-72HR	60.38	8.78	12.42	0.0111	230	61.61	29.92	61.48	30.22
S-211B	BASE	10YR-72HR	60.48	8.87	12.42	0.0047	113	61.55	10.87	61.61	10.88
S-213	BASE	10YR-72HR	60.34	8.66	12.82	-0.0123	241	61.48	30.22	61.61	31.02
STRUCTURE_1-3	BASE	10YR-72HR	60.00	10.99	13.63	0.0119	120	60.00	0.32	24.37	0.02
SWALE_1-1	BASE	10YR-72HR	60.01	10.99	12.00	0.0028	51717	60.00	98.91	60.01	99.03
SWALE_1-4	BASE	10YR-72HR	60.75	10.65	13.50	0.0017	10864	60.56	2.10	68.27	1.98
SWALE_1-5	BASE	10YR-72HR	60.71	11.55	14.00	0.0026	7458	60.00	1.64	64.36	0.90
SWALE_1-6	BASE	10YR-72HR	60.68	12.18	13.00	0.0025	58530	59.87	46.11	0.00	0.00
WET POND_1-2	BASE	10YR-72HR	61.13	9.50	9.92	0.0028	83629	60.01	96.57	61.55	10.87
WET POND_1-8	BASE	10YR-72HR	60.65	10.75	11.43	0.0012	171817	60.04	87.40	56.21	1.89
C-51	BASE	3YR-24HR	0.00	6.92	7.00	0.0000	78	12.50	100.35	0.00	0.00
PBIA PONDS_1-7	BASE	3YR-24HR	12.48	9.69	18.42	-0.0064	218722	12.25	245.69	12.39	160.67
S-201B	BASE	3YR-24HR	12.50	7.17	15.32	0.0245	220	12.49	101.65	12.50	100.35
S-205	BASE	3YR-24HR	12.99	9.50	14.42	0.0061	392	12.21	84.00	12.22	83.75
S-208A	BASE	3YR-24HR	13.04	9.57	12.62	0.0015	115	19.01	1.71	19.01	1.72
S-208B	BASE	3YR-24HR	13.07	9.74	12.62	0.0015	117	19.01	1.72	21.62	1.90
S-211A	BASE	3YR-24HR	12.60	7.30	12.42	0.0111	230	13.00	19.36	13.00	19.37
S-211B	BASE	3YR-24HR	13.19	7.29	12.42	0.0039	113	14.48	1.21	14.48	1.21
S-213	BASE	3YR-24HR	12.55	7.22	12.82	0.0124	241	13.00	19.37	12.93	20.57
STRUCTURE_1-3	BASE	3YR-24HR	12.78	10.58	13.63	0.0078	120	9.03	0.06	9.01	0.06
SWALE_1-1	BASE	3YR-24HR	12.83	10.89	12.00	0.0016	49747	12.25	41.12	12.83	11.51
SWALE_1-4	BASE	3YR-24HR	13.09	9.82	13.50	0.0016	9142	21.62	1.92	17.92	2.02
SWALE_1-5	BASE	3YR-24HR	12.95	10.98	14.00	0.0017	6499	12.25	0.46	14.64	0.76
SWALE_1-6	BASE	3YR-24HR	13.08	11.09	13.00	0.0017	45566	12.25	30.34	0.00	0.00
WET POND_1-2	BASE	3YR-24HR	13.36	7.29	9.92	0.0002	77428	12.25	6.99	14.48	1.21
WET POND_1-8	BASE	3YR-24HR	13.04	9.51	11.43	0.0014	164785	12.25	97.86	19.01	1.71

I-95 at Southern Boulevard
Drainage System 1
Pre-Development
Link Maximum Conditions Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
P_201B_C-51	BASE	10YR-24HR	12.56	206.87	-24.809	12.56	7.99	0.00	6.92
P_213_201B	BASE	10YR-24HR	13.69	28.84	12.415	12.59	8.07	12.56	7.99
P_P1-2_S211	BASE	10YR-24HR	13.60	8.53	-0.697	13.28	8.84	12.78	8.35
P_P1-4_S211	BASE	10YR-24HR	16.07	7.47	0.138	13.02	10.33	12.62	8.21
P_P1-4_STR1-3	BASE	10YR-24HR	0.00	0.00	3.380	13.02	10.33	12.29	10.96
P_P1-5_P1-1	BASE	10YR-24HR	13.02	11.73	0.576	12.97	11.42	12.30	10.98
P_P1-5_P1-6	BASE	10YR-24HR	9.10	0.31	0.088	12.97	11.42	12.94	11.93
P_P1-8_S208	BASE	10YR-24HR	22.05	1.78	-0.766	12.97	10.33	12.98	10.32
P_PBIA_S205	BASE	10YR-24HR	12.29	78.51	10.301	12.53	10.53	12.92	10.33
P_S-205_P1-8	BASE	10YR-24HR	12.29	78.27	-14.065	12.92	10.33	12.97	10.33
P_S208_P1-4	BASE	10YR-24HR	24.38	1.95	-0.656	13.02	10.33	13.02	10.33
P_S211_S213	BASE	10YR-24HR	13.94	27.74	4.565	12.62	8.21	12.59	8.07
P_STR1-3_P1-1	BASE	10YR-24HR	7.68	0.06	0.315	12.29	10.96	12.30	10.98
W_P1-1_P1-2	BASE	10YR-24HR	12.30	71.49	1.111	12.30	10.98	13.28	8.84
W_P1-1_S-211-V	BASE	10YR-24HR	0.00	0.00	0.000	12.30	10.98	12.62	8.21
W_P1-1_S-211-VN	BASE	10YR-24HR	12.26	12.30	0.021	12.30	10.98	12.62	8.21
W_P1-6_P1-8	BASE	10YR-24HR	0.00	0.00	0.000	12.94	11.93	12.97	10.33
W_S-201	BASE	10YR-24HR	12.53	185.08	0.218	12.53	10.53	12.56	7.99
W_S-208_B	BASE	10YR-24HR	22.07	1.78	-1.323	12.98	10.32	13.02	10.33
W_S-208_V	BASE	10YR-24HR	0.00	0.00	0.000	12.98	10.32	13.02	10.33
W_S-211	BASE	10YR-24HR	13.61	8.54	0.177	12.78	8.35	12.62	8.21
W_S208_H1	BASE	10YR-24HR	0.00	0.00	0.000	12.94	11.93	12.98	10.32
W_S208_H2	BASE	10YR-24HR	0.00	0.00	0.000	12.94	11.93	13.02	10.33
P_201B_C-51	BASE	10YR-72HR	60.31	258.11	-25.447	60.31	8.59	0.00	6.92
P_213_201B	BASE	10YR-72HR	61.61	31.02	13.798	60.34	8.66	60.31	8.59
P_P1-2_S211	BASE	10YR-72HR	61.55	10.87	-0.949	61.13	9.50	60.48	8.87
P_P1-4_S211	BASE	10YR-72HR	63.93	7.41	-0.137	60.75	10.65	60.38	8.78
P_P1-4_STR1-3	BASE	10YR-72HR	0.00	0.00	2.747	60.75	10.65	60.00	10.99
P_P1-5_P1-1	BASE	10YR-72HR	60.76	13.13	0.690	60.71	11.55	60.01	10.99
P_P1-5_P1-6	BASE	10YR-72HR	0.00	0.00	-0.054	60.71	11.55	60.68	12.18
P_P1-8_S208	BASE	10YR-72HR	56.21	1.89	-0.897	60.65	10.75	60.65	10.72
P_PBIA_S205	BASE	10YR-72HR	60.08	68.68	-10.113	60.27	10.92	60.60	10.75
P_S-205_P1-8	BASE	10YR-72HR	60.08	68.47	17.808	60.60	10.75	60.65	10.75
P_S208_P1-4	BASE	10YR-72HR	72.66	1.93	-0.747	60.70	10.68	60.75	10.65
P_S211_S213	BASE	10YR-72HR	61.48	30.22	-8.733	60.38	8.78	60.34	8.66
P_STR1-3_P1-1	BASE	10YR-72HR	24.37	0.02	0.671	60.00	10.99	60.01	10.99
W_P1-1_P1-2	BASE	10YR-72HR	60.01	86.79	1.692	60.01	10.99	61.13	9.50
W_P1-1_S-211-V	BASE	10YR-72HR	0.00	0.00	0.000	60.01	10.99	60.38	8.78
W_P1-1_S-211-VN	BASE	10YR-72HR	59.92	12.30	0.022	60.01	10.99	60.38	8.78
W_P1-6_P1-8	BASE	10YR-72HR	0.00	0.00	0.000	60.68	12.18	60.65	10.75
W_S-201	BASE	10YR-72HR	60.25	238.59	0.247	60.27	10.92	60.31	8.59
W_S-208_B	BASE	10YR-72HR	56.21	1.88	-1.298	60.65	10.72	60.70	10.68
W_S-208_V	BASE	10YR-72HR	0.00	0.00	0.000	60.65	10.72	60.70	10.68
W_S-211	BASE	10YR-72HR	61.61	10.88	0.125	60.48	8.87	60.38	8.78
W_S208_H1	BASE	10YR-72HR	0.00	0.00	0.000	60.68	12.18	60.65	10.72
W_S208_H2	BASE	10YR-72HR	0.00	0.00	0.000	60.68	12.18	60.70	10.68
P_201B_C-51	BASE	3YR-24HR	12.50	100.35	-24.799	12.50	7.17	0.00	6.92
P_213_201B	BASE	3YR-24HR	12.93	20.57	12.365	12.55	7.22	12.50	7.17
P_P1-2_S211	BASE	3YR-24HR	14.48	1.21	-0.691	13.36	7.29	13.19	7.29
P_P1-4_S211	BASE	3YR-24HR	14.12	7.61	-0.146	13.09	9.82	12.60	7.30
P_P1-4_STR1-3	BASE	3YR-24HR	0.00	0.00	1.924	13.09	9.82	12.78	10.58
P_P1-5_P1-1	BASE	3YR-24HR	15.03	8.40	0.093	12.95	10.98	12.83	10.89
P_P1-5_P1-6	BASE	3YR-24HR	12.18	0.81	-0.074	12.95	10.98	13.08	11.09
P_P1-8_S208	BASE	3YR-24HR	19.01	1.71	0.199	13.04	9.51	13.04	9.57
P_PBIA_S205	BASE	3YR-24HR	12.21	84.00	10.371	12.48	9.69	12.99	9.50
P_S-205_P1-8	BASE	3YR-24HR	12.22	83.75	13.037	12.99	9.50	13.04	9.51
P_S208_P1-4	BASE	3YR-24HR	21.62	1.90	0.271	13.07	9.74	13.09	9.82
P_S211_S213	BASE	3YR-24HR	13.00	19.37	-4.646	12.60	7.30	12.55	7.22
P_STR1-3_P1-1	BASE	3YR-24HR	9.01	0.06	0.177	12.78	10.58	12.83	10.89

I-95 at Southern Boulevard
Drainage System 1
Pre-Development
Link Maximum Conditions Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
W_P1-1_P1-2	BASE	3YR-24HR	0.00	0.00	0.000	12.83	10.89	13.36	7.29
W_P1-1_S-211-V	BASE	3YR-24HR	0.00	0.00	0.000	12.83	10.89	12.60	7.30
W_P1-1_S-211-VN	BASE	3YR-24HR	12.83	11.51	0.010	12.83	10.89	12.60	7.30
W_P1-6_P1-8	BASE	3YR-24HR	0.00	0.00	0.000	13.08	11.09	13.04	9.51
W_S-201	BASE	3YR-24HR	12.48	83.93	0.105	12.48	9.69	12.50	7.17
W_S-208_B	BASE	3YR-24HR	19.01	1.72	-0.020	13.04	9.57	13.07	9.74
W_S-208_V	BASE	3YR-24HR	0.00	0.00	0.000	13.04	9.57	13.07	9.74
W_S-211	BASE	3YR-24HR	14.48	1.21	0.089	13.19	7.29	12.60	7.30
W_S208_H1	BASE	3YR-24HR	0.00	0.00	0.000	13.08	11.09	13.04	9.57
W_S208_H2	BASE	3YR-24HR	0.00	0.00	0.000	13.08	11.09	13.07	9.74

I-95 at Southern Boulevard
Drainage System 1
Pre-Development
Basin Maximum Conditions Report

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
10YR-24HR	B-1-1	BASE	12.27	84.50	5.436	428390
10YR-24HR	B-1-2	BASE	12.27	10.17	7.997	61544
10YR-24HR	B-1-3	BASE	12.27	9.96	6.341	52481
10YR-24HR	B-1-4	BASE	12.29	1.21	2.784	6064
10YR-24HR	B-1-5	BASE	12.29	1.15	2.784	5761
10YR-24HR	B-1-6	BASE	12.27	45.68	5.623	233103
10YR-24HR	B-1-7	BASE	12.29	6.48	3.034	32160
10YR-24HR	B-1-8	BASE	12.27	20.72	7.758	121933
10YR-24HR	O-1-1	BASE	12.27	1.00	3.897	4952
10YR-24HR	O-1-6	BASE	12.27	4.06	5.276	20493
10YR-24HR	O-1-7	BASE	12.27	449.25	4.527	2228358
10YR-72HR	B-1-1	BASE	60.02	91.67	7.789	613801
10YR-72HR	B-1-2	BASE	60.02	9.89	10.496	80776
10YR-72HR	B-1-3	BASE	60.02	10.20	8.781	72672
10YR-72HR	B-1-4	BASE	60.02	1.74	4.609	10038
10YR-72HR	B-1-5	BASE	60.02	1.66	4.609	9536
10YR-72HR	B-1-6	BASE	60.02	48.91	7.997	331521
10YR-72HR	B-1-7	BASE	60.02	8.96	4.929	52248
10YR-72HR	B-1-8	BASE	60.02	20.17	10.255	161194
10YR-72HR	O-1-1	BASE	60.02	1.25	6.000	7623
10YR-72HR	O-1-6	BASE	60.02	4.46	7.609	29554
10YR-72HR	O-1-7	BASE	60.02	524.57	6.749	3321967
3YR-24HR	B-1-1	BASE	12.27	50.41	3.178	250455
3YR-24HR	B-1-2	BASE	12.27	6.99	5.498	42312
3YR-24HR	B-1-3	BASE	12.27	6.37	3.945	32652
3YR-24HR	B-1-4	BASE	12.29	0.50	1.240	2700
3YR-24HR	B-1-5	BASE	12.29	0.48	1.240	2565
3YR-24HR	B-1-6	BASE	12.27	27.68	3.332	138135
3YR-24HR	B-1-7	BASE	12.29	2.85	1.402	14863
3YR-24HR	B-1-8	BASE	12.27	14.21	5.261	82687
3YR-24HR	O-1-1	BASE	12.29	0.51	1.997	2538
3YR-24HR	O-1-6	BASE	12.27	2.39	3.048	11840
3YR-24HR	O-1-7	BASE	12.27	245.67	2.462	1211920

==========
==== Basins ==========
==========

Name: B-1-1 Node: SWALE_1-1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 21.710 Time Shift(hrs): 0.00
Curve Number: 78.40 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B-1-2 Node: WET POND_1-2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.120 Time Shift(hrs): 0.00
Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B-1-3 Node: STRUCTURE_1-3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.280 Time Shift(hrs): 0.00
Curve Number: 86.10 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B-1-4 Node: SWALE_1-4 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.600 Time Shift(hrs): 0.00
Curve Number: 55.01 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B-1-5 Node: SWALE_1-5 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.570 Time Shift(hrs): 0.00
Curve Number: 55.01 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B-1-6 Node: SWALE_1-6 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 11.420 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B-1-7 Node: PBIA PONDS_1-7 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

```
        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
              Area(ac): 2.920                   Time Shift(hrs): 0.00
          Curve Number: 57.30               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



-------------------------------------------------------------------------------------------------
         Name: B-1-8                    Node: WET POND_1-8          Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
              Area(ac): 4.330                   Time Shift(hrs): 0.00
          Curve Number: 98.00               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



-------------------------------------------------------------------------------------------------
         Name: O-1-1                    Node: SWALE_1-1             Status: Offsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
              Area(ac): 0.350                   Time Shift(hrs): 0.00
          Curve Number: 65.04               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



-------------------------------------------------------------------------------------------------
         Name: O-1-6                    Node: SWALE_1-6             Status: Offsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
              Area(ac): 1.070                   Time Shift(hrs): 0.00
          Curve Number: 77.03               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



-------------------------------------------------------------------------------------------------
         Name: O-1-7                    Node: PBIA PONDS_1-7        Status: Offsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
              Area(ac): 135.600                 Time Shift(hrs): 0.00
          Curve Number: 70.56               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



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

      Name: C-51                Base Flow(cfs): 0.000          Init Stage(ft): 6.920
     Group: BASE                                               Warn Stage(ft): 7.000
      Type: Time/Stage

C-51 Canal Stage based on:
An Atlas of Eastern Palm Beach County Surface Water Management Basins - 1988 (SFWMD)
Structure S-155
Design HW Stage (8.50' NGVD, 6.92' NAVD)

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00           6.920
         999.00           6.920

-------------------------------------------------------------------------------------------------
      Name: PBIA PONDS_1-7      Base Flow(cfs): 0.000          Init Stage(ft): 6.920
     Group: BASE                                               Warn Stage(ft): 18.420
      Type: Stage/Area

Stage/Area relationship, Warning Stage information taken from Water Management Analysis Report, PBIA Basin 3
SFWMD ERP No. 50-04106-P, Application No. 150330-18.
```

PBIA Ponds Included in Stage-Area Relationship: B3A1 - B3A9

Stage(ft)	Area(ac)
6.920	0.0001
8.410	0.0001
8.420	0.5000
8.920	1.4000
9.420	3.5000
9.920	6.3000
10.420	7.9000
10.920	9.2000
11.420	10.7000
11.920	13.7000
12.420	18.7000
12.920	26.5000
13.920	44.7000
14.920	71.2000
15.920	99.2000
16.920	127.6000
17.920	129.7000
18.920	129.7000
19.920	129.7000
20.920	129.7000

Name: S-201B Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 15.320
Type: Stage/Area

Stage(ft)	Area(ac)
-0.580	0.0001
15.320	0.0001

Name: S-205 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 14.420
Type: Stage/Area

Stage(ft)	Area(ac)
-0.580	0.0001
14.420	0.0001

Name: S-208A Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 12.620
Type: Stage/Area

Stage(ft)	Area(ac)
5.760	0.0001
12.620	0.0001

Name: S-208B Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 12.620
Type: Stage/Area

Stage(ft)	Area(ac)
5.870	0.0001
12.620	0.0001

Name: S-211A Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 12.420
Type: Stage/Area

Stage(ft)	Area(ac)
2.220	0.0001
12.420	0.0001

Name: S-211B Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 12.420
Type: Stage/Area

Stage(ft)	Area(ac)
2.220	0.0001
12.420	0.0001

Name: S-213 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 12.820
Type: Stage/Area

Stage(ft)	Area(ac)
1.770	0.0001
12.820	0.0001

Name: STRUCTURE_1-3 Base Flow(cfs): 0.000 Init Stage(ft): 8.140
Group: BASE Warn Stage(ft): 13.630
Type: Stage/Area

Warning Stage = Rim Elev.

Stage(ft)	Area(ac)
8.140	0.0001
13.630	0.0001

Name: SWALE_1-1 Base Flow(cfs): 0.000 Init Stage(ft): 7.220
Group: BASE Warn Stage(ft): 12.000
Type: Stage/Area

Warning Stage = EOP Elev. minus 0.5 ft (Freeboard)
EOP Elev. = 12.50'

Stage(ft)	Area(ac)
7.220	0.0001
8.490	0.0001
8.500	0.1500
9.000	0.4000
9.500	0.6800
10.000	0.8300
10.500	0.9800
11.000	1.1900
11.500	1.2900
12.000	1.3900
12.500	1.5200

Name: SWALE_1-4 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 13.500
Type: Stage/Area

Warning Stage = EOP Elev. minus 0.5 ft (Freeboard)
EOP Elev. = 14.00'

Stage(ft)	Area(ac)
5.690	0.0001
8.240	0.0001
8.500	0.0900
9.000	0.1600
9.500	0.1900
10.000	0.2200
10.500	0.2400
11.000	0.2700
11.500	0.2900
12.000	0.3200
12.500	0.3500
13.000	0.3800
13.500	0.4100

Name: SWALE_1-5 Base Flow(cfs): 0.000 Init Stage(ft): 8.250
Group: BASE Warn Stage(ft): 14.000
Type: Stage/Area

Warning Stage = EOP Elev. minus 0.5 ft (Freeboard)
EOP Elev. = 14.50'

Stage(ft)	Area(ac)
8.250	0.0001
8.490	0.0001
8.500	0.0100
9.000	0.0800
9.500	0.1000
10.000	0.1200
10.500	0.1300
11.000	0.1500
11.500	0.1700
12.000	0.1800
12.500	0.2000
13.000	0.2300
13.500	0.2500
14.000	0.2800
14.500	0.3100

Name: SWALE_1-6 Base Flow(cfs): 0.000 Init Stage(ft): 8.000
Group: BASE Warn Stage(ft): 13.000
Type: Stage/Area

Warning Stage = EOP Elev. minus 0.5 ft (Freeboard)
EOP Elev. = 13.50'

Stage(ft)	Area(ac)
8.000	0.2100
9.000	0.4500
10.000	0.7500
11.000	1.0200
12.000	1.3000
13.000	1.5400

Name: WET POND_1-2 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 9.920
Type: Stage/Area

Warning Stage = Berm Elev. minus 1.00 ft (Freeboard)
Berm Elev. = 10.92

Stage(ft)	Area(ac)
-8.000	0.9300
6.500	1.7300
6.920	1.7500
7.000	1.7600
7.500	1.7900
8.000	1.8200
8.500	1.8600
9.000	1.8900
9.500	1.9200
10.000	1.9600
10.500	1.9900
10.920	2.0200
12.500	2.0200

Name: WET POND_1-8 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 11.430
Type: Stage/Area

Warning Stage = Berm Elev. minus 1.00 ft
Berm Elev. = 12.43'

Stage/Area relationship taken from Water Management Analysis Report, PBIA Basin 3
SFWMD ERP No. 50-04106-P, Application No. 150330-18.

Stage(ft)	Area(ac)
-8.000	2.5100
6.920	3.4500
7.420	3.5000
8.420	3.6400
9.420	3.7700
10.420	3.9000
11.420	4.0300
12.420	4.2600
13.420	4.3300

==========

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

Name: WEIR_S-201 Group: BASE
Encroachment: No

* - Weir information taken from Palm Beach International Airport Taxiway D & E Rehabilitation / Reconstruction Phase 4 Bid Docum
SFWMD ERP No. 50-04106-P, Application No. 150330-18.
Weir-4A

Station(ft)	Elevation(ft)	Manning's N
0.000	9.320	0.012000
1.000	9.320	0.012000
1.000	8.420	0.012000
19.000	8.420	0.012000
19.000	9.320	0.012000
20.000	9.320	0.012000

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

Name: P_201B_C-51 From Node: S-201B Length(ft): 445.00
Group: BASE To Node: C-51 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	84.00	84.00	Flow:	Both
Rise(in):	84.00	84.00	Entrance Loss Coef:	0.50
Invert(ft):	-0.580	-0.580	Exit Loss Coef:	1.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

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

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

* - Pipe information taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330

Name: P_213_201B From Node: S-213 Length(ft): 255.00
Group: BASE To Node: S-201B Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	54.00	54.00	Flow:	Both
Rise(in):	54.00	54.00	Entrance Loss Coef:	0.50
Invert(ft):	1.770	0.020	Exit Loss Coef:	0.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

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

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

* - Pipe information taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330

Name: P_P1-2_S211 From Node: WET POND_1-2 Length(ft): 10.00
Group: BASE To Node: S-211B Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	18.00	18.00	Flow:	Both
Rise(in):	18.00	18.00	Entrance Loss Coef:	0.50
Invert(ft):	3.040	2.920	Exit Loss Coef:	0.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

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

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

Name:	P_P1-4_S211	From Node:	SWALE_1-4	Length(ft):	483.00
Group:	BASE	To Node:	S-211A	Count:	1
				Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	18.00	18.00		Entrance Loss Coef:	0.50
Rise(in):	18.00	18.00		Exit Loss Coef:	0.00
Invert(ft):	5.690	4.580		Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

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

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

* - Downstream invert pipe information taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Appl

---

Name:	P_P1-4_STR1-3	From Node:	SWALE_1-4	Length(ft):	32.00
Group:	BASE	To Node:	STRUCTURE_1-3	Count:	1
				Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	18.00	18.00		Entrance Loss Coef:	0.50
Rise(in):	18.00	18.00		Exit Loss Coef:	0.00
Invert(ft):	8.250	8.140		Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

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

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

Name:	P_P1-5_P1-1	From Node:	SWALE_1-5	Length(ft):	69.00
Group:	BASE	To Node:	SWALE_1-1	Count:	1
				Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	24.00	24.00		Entrance Loss Coef:	0.50
Rise(in):	24.00	24.00		Exit Loss Coef:	0.00
Invert(ft):	8.250	8.130		Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

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

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

Name:	P_P1-5_P1-6	From Node:	SWALE_1-5	Length(ft):	92.00
Group:	BASE	To Node:	SWALE_1-6	Count:	1
				Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	24.00	24.00		Entrance Loss Coef:	0.50
Rise(in):	24.00	24.00		Exit Loss Coef:	0.00
Invert(ft):	8.260	8.220		Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

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

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

Name:	P_P1-8_S208	From Node:	WET POND_1-8	Length(ft): 54.50
Group:	BASE	To Node:	S-208A	Count: 1
				Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular		Flow: Both
Span(in):	18.00	18.00		Entrance Loss Coef: 0.50
Rise(in):	18.00	18.00		Exit Loss Coef: 0.00
Invert(ft):	5.920	5.760		Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option: None

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

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

* - Pipe information taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330

Name:	P_PBIA_S205	From Node:	PBIA PONDS_1-7	Length(ft): 1320.00
Group:	BASE	To Node:	S-205	Count: 1
				Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular		Flow: Both
Span(in):	72.00	72.00		Entrance Loss Coef: 0.50
Rise(in):	72.00	72.00		Exit Loss Coef: 0.00
Invert(ft):	-0.180	-0.560		Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option: None

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

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

* - Pipe information taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330

Name:	P_S-205_P1-8	From Node:	S-205	Length(ft): 537.00
Group:	BASE	To Node:	WET POND_1-8	Count: 1
				Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular		Flow: Both
Span(in):	72.00	72.00		Entrance Loss Coef: 0.50
Rise(in):	72.00	72.00		Exit Loss Coef: 1.00
Invert(ft):	-0.580	-0.720		Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option: None

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

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

* - Pipe information taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330

Name:	P_S208_P1-4	From Node:	S-208B	Length(ft): 102.00
Group:	BASE	To Node:	SWALE_1-4	Count: 1
				Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular		Flow: Both

Span(in):	18.00	18.00	Entrance Loss Coef: 0.50
Rise(in):	18.00	18.00	Exit Loss Coef: 0.00
Invert(ft):	5.870	5.720	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

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

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

Name: P_S211_S213 From Node: S-211A Length(ft): 880.00
Group: BASE To Node: S-213 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM	
Geometry:	Circular	Circular	Solution Algorithm: Most Restrictive
Span(in):	54.00	54.00	Flow: Both
Rise(in):	54.00	54.00	Entrance Loss Coef: 0.50
Invert(ft):	2.220	1.770	Exit Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Bend Loss Coef: 0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
			Stabilizer Option: None

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

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

* - Pipe information taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330

Name: P_STR1-3_P1-1 From Node: STRUCTURE_1-3 Length(ft): 107.00
Group: BASE To Node: SWALE_1-1 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM	
Geometry:	Circular	Circular	Solution Algorithm: Most Restrictive
Span(in):	24.00	24.00	Flow: Both
Rise(in):	24.00	24.00	Entrance Loss Coef: 0.50
Invert(ft):	8.310	8.140	Exit Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Bend Loss Coef: 0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
			Stabilizer Option: None

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

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

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

Name: W_P1-1_P1-2 From Node: SWALE_1-1
Group: BASE To Node: WET POND_1-2
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

Span(in): 16500.00
Rise(in): 999.00
Invert(ft): 10.920
Control Elevation(ft): 10.920
TABLE
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Berm length between swale/ditch & pond = 1375 ft = 16500 in

* - Berm information taken from SFWMD ERP No. 50-04106-P, Application No. 980625-8

```
-------------------------------------------------------------------------------------------------
         Name: W_P1-1_S-211-V      From Node: SWALE_1-1
        Group: BASE                  To Node: S-211A
         Flow: Both                    Count: 1
         Type: Vertical: Mavis      Geometry: Rectangular

                    Span(in): 204.00
                    Rise(in): 99999.00
                  Invert(ft): 12.420
       Control Elevation(ft): 12.420
                                          TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
           Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

* - Weir information taken from SFWMD ERP No. 50-04106-P, Application No. 980625-8
54" x 48" Structure
Span = Perimeter of structure top (S-211) = (54"+48"+54"+48") = 204"



-------------------------------------------------------------------------------------------------
         Name: W_P1-1_S-211-VN     From Node: SWALE_1-1
        Group: BASE                  To Node: S-211A
         Flow: Both                    Count: 1
         Type: Vertical: Mavis      Geometry: Trapezoidal

            Bottom Width(ft): 0.00
        Left Side Slope(h/v): 0.18
       Right Side Slope(h/v): 0.18
                  Invert(ft): 7.220
       Control Elevation(ft): 7.220
      Struct Opening Dim(ft): 9999.00
                                          TABLE
              Bottom Clip(ft): 0.000
                 Top Clip(ft): 0.000
           Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

* - V-Notch weir information taken from SFWMD ERP No. 50-04106-P, Application No. 980625-8, Permit Staff Report
S-211

-------------------------------------------------------------------------------------------------
         Name: W_P1-6_P1-8         From Node: SWALE_1-6
        Group: BASE                  To Node: WET POND_1-8
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 12720.00
                    Rise(in): 999.00
                  Invert(ft): 12.430
       Control Elevation(ft): 12.430
                                          TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
           Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

Berm length between ditch & pond = 1060 ft = 12720 in

* - Berm information taken from SFWMD ERP No. 50-04106-P, Application No. 980625-8

-------------------------------------------------------------------------------------------------
         Name: W_S-201             From Node: PBIA PONDS_1-7
        Group: BASE                  To Node: S-201B
         Flow: Both                    Count: 1
         Type: Vertical: Mavis      Geometry: Irregular

                        XSec: WEIR_S-201
                  Invert(ft): 8.420
       Control Elevation(ft): 8.420
      Struct Opening Dim(ft): 9999.00
                                          TABLE
              Bottom Clip(ft): 0.000
                 Top Clip(ft): 0.000
           Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

* - Weir information taken from Palm Beach International Airport Taxiway D & E Rehabilitation / Reconstruction Phase 4 Bid Docum
SFWMD ERP No. 50-04106-P, Application No. 150330-18.
Weir-4A

-------------------------------------------------------------------------------------------------
         Name: W_S-208_B           From Node: S-208A
        Group: BASE                  To Node: S-208B
```

```
         Flow: Both                    Count: 1
         Type: Vertical: Mavis      Geometry: Trapezoidal

            Bottom Width(ft): 0.00
        Left Side Slope(h/v): 0.17
       Right Side Slope(h/v): 0.17
                  Invert(ft): 6.920
       Control Elevation(ft): 6.920
      Struct Opening Dim(ft): 2.90
                                          TABLE
              Bottom Clip(ft): 0.000
                 Top Clip(ft): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

* - Weir information taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330
V-Notch Bleeder
Weir-4B-1

-------------------------------------------------------------------------------------------------
         Name: W_S-208_V           From Node: S-208A
        Group: BASE                  To Node: S-208B
         Flow: Both                    Count: 1
         Type: Vertical: Mavis      Geometry: Rectangular

                    Span(in): 36.00
                    Rise(in): 12.00
                  Invert(ft): 11.700
       Control Elevation(ft): 11.700
                                          TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

* - Weir information taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330
Vertical Rectangular Weir
Weir-4B-2

-------------------------------------------------------------------------------------------------
         Name: W_S-211             From Node: S-211B
        Group: BASE                  To Node: S-211A
         Flow: Both                    Count: 1
         Type: Vertical: Mavis      Geometry: Rectangular

                    Span(in): 30.00
                    Rise(in): 99999.00
                  Invert(ft): 6.920
       Control Elevation(ft): 6.920
                                          TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

* - Weir information taken from SFWMD ERP No. 50-04106-P, Application No. 980625-8




-------------------------------------------------------------------------------------------------
         Name: W_S208_H1           From Node: SWALE_1-6
        Group: BASE                  To Node: S-208A
         Flow: Both                    Count: 1
         Type: Horizontal           Geometry: Rectangular

                    Span(in): 32.00
                    Rise(in): 36.00
                  Invert(ft): 12.620
       Control Elevation(ft): 12.620
                                          TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

S-208 Horizontal Weir @ Rim of Structure - Upstream of Vertical Internal Weir

-------------------------------------------------------------------------------------------------
         Name: W_S208_H2           From Node: SWALE_1-6
        Group: BASE                  To Node: S-208B
         Flow: Both                    Count: 1
         Type: Horizontal           Geometry: Rectangular

                    Span(in): 22.00
                    Rise(in): 36.00
```

```
                  Invert(ft): 12.620
       Control Elevation(ft): 12.620
                                          TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

S-208 Horizontal Weir @ Rim of Structure - Downstream of Vertical Internal Weir

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

         Name: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 1\10YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 8.00

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

--------------------------------------------------------------------------------------------------------
         Name: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 1\10YR-72HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Sfwmd72
    Rainfall Amount(in): 10.50

Time(hrs)       Print Inc(min)
--------------- ---------------
72.000          5.00
84.000          15.00

--------------------------------------------------------------------------------------------------------
         Name: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 1\3YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 5.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

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

         Name: 10YR-24HR           Hydrology Sim: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 1\10YR-24HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
       Start Time(hrs): 0.000                     End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:



Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.000

Group           Run
--------------- -----
BASE            Yes


--------------------------------------------------------------------------------------------------------
         Name: 10YR-72HR           Hydrology Sim: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 1\10YR-72HR.I32

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

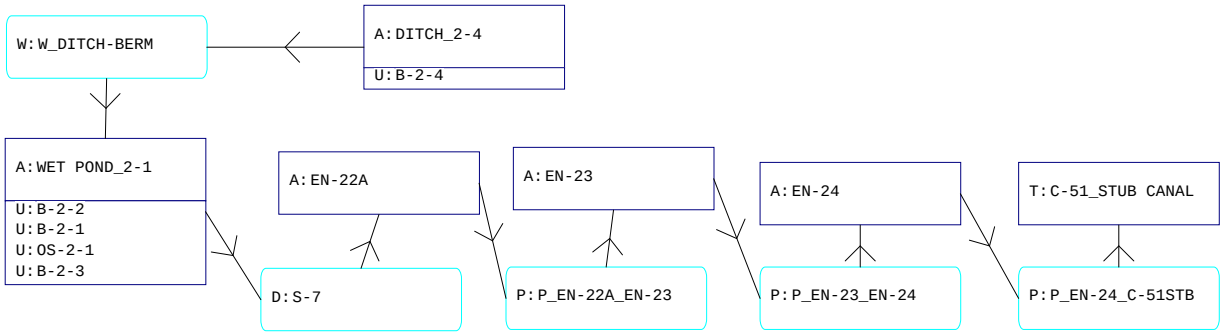
```
        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 84.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
48.000          15.000
72.000          5.000
84.000          15.000

Group           Run
--------------- -----
BASE            Yes


-------------------------------------------------------------------------------------------------
         Name: 3YR-24HR            Hydrology Sim: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 1\3YR-24HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.000

Group           Run
--------------- -----
BASE            Yes
```

I-95 at Southern Boulevard
Drainage System 2
Pre-Development
Node-Link Diagram

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



I-95 at Southern Boulevard
Drainage System 2
Pre-Development
Node Maximum Conditions Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
C-51_STUB CANAL	BASE	10YR-24HR	0.00	6.92	7.00	0.0000	2	12.48	19.95	0.00	0.00
DITCH_2-4	BASE	10YR-24HR	25.00	11.17	12.00	0.0002	14177	12.25	1.40	0.00	0.00
EN-22A	BASE	10YR-24HR	12.48	7.19	11.30	0.0136	142	12.48	19.95	12.48	19.95
EN-23	BASE	10YR-24HR	12.47	7.09	10.64	0.0126	169	12.48	19.95	12.47	20.72
EN-24	BASE	10YR-24HR	12.48	6.98	13.26	0.0179	141	12.47	20.72	12.48	19.95
WET POND_2-1	BASE	10YR-24HR	12.48	9.01	9.65	0.0030	40348	12.25	29.89	12.48	19.95
C-51_STUB CANAL	BASE	10YR-72HR	0.00	6.92	7.00	0.0000	2	60.13	26.17	0.00	0.00
DITCH_2-4	BASE	10YR-72HR	64.07	11.31	12.00	0.0004	14741	60.00	1.76	64.07	0.09
EN-22A	BASE	10YR-72HR	60.13	7.39	11.30	0.0161	142	60.13	26.17	60.13	26.17
EN-23	BASE	10YR-72HR	60.12	7.20	10.64	0.0127	169	60.13	26.17	60.12	26.72
EN-24	BASE	10YR-72HR	60.13	7.03	13.26	0.0179	141	60.12	26.72	60.13	26.17
WET POND_2-1	BASE	10YR-72HR	60.13	9.10	9.65	0.0006	40682	60.00	30.54	60.13	26.17
C-51_STUB CANAL	BASE	3YR-24HR	0.00	6.92	7.00	0.0000	2	13.18	13.92	0.00	0.00
DITCH_2-4	BASE	3YR-24HR	25.00	10.92	12.00	0.0001	13164	12.25	0.70	0.00	0.00
EN-22A	BASE	3YR-24HR	12.81	6.98	11.30	0.0162	142	12.94	5.45	12.94	12.04
EN-23	BASE	3YR-24HR	12.95	6.95	10.64	-0.0111	169	12.94	12.04	12.95	8.23
EN-24	BASE	3YR-24HR	13.18	6.95	13.26	0.0179	141	12.95	8.23	13.18	13.92
WET POND_2-1	BASE	3YR-24HR	12.94	8.73	9.65	0.0036	39366	12.25	19.39	12.94	5.45

I-95 at Southern Boulevard
Drainage System 2
Pre-Development
Link Maximum Conditions Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
P_EN-22A_EN-23	BASE	10YR-24HR	12.48	19.95	-9.038	12.48	7.19	12.47	7.09
P_EN-23_EN-24	BASE	10YR-24HR	12.47	20.72	8.864	12.47	7.09	12.48	6.98
P_EN-24_C-51STB	BASE	10YR-24HR	12.48	19.95	10.375	12.48	6.98	0.00	6.92
S-7	BASE	10YR-24HR	12.48	19.95	0.039	12.48	9.01	12.48	7.19
W_DITCH-BERM	BASE	10YR-24HR	0.00	0.00	0.000	25.00	11.17	12.48	9.01
P_EN-22A_EN-23	BASE	10YR-72HR	60.13	26.17	-9.038	60.13	7.39	60.12	7.20
P_EN-23_EN-24	BASE	10YR-72HR	60.12	26.72	8.572	60.12	7.20	60.13	7.03
P_EN-24_C-51STB	BASE	10YR-72HR	60.13	26.17	10.205	60.13	7.03	0.00	6.92
S-7	BASE	10YR-72HR	60.13	26.17	0.039	60.13	9.10	60.13	7.39
W_DITCH-BERM	BASE	10YR-72HR	64.07	0.09	0.000	64.07	11.31	60.13	9.10
P_EN-22A_EN-23	BASE	3YR-24HR	12.94	12.04	4.904	12.81	6.98	12.95	6.95
P_EN-23_EN-24	BASE	3YR-24HR	12.95	8.23	-9.097	12.95	6.95	13.18	6.95
P_EN-24_C-51STB	BASE	3YR-24HR	13.18	13.92	7.578	13.18	6.95	0.00	6.92
S-7	BASE	3YR-24HR	12.94	5.45	0.003	12.94	8.73	12.81	6.98
W_DITCH-BERM	BASE	3YR-24HR	0.00	0.00	0.000	25.00	10.92	12.94	8.73

I-95 at Southern Boulevard
Drainage System 2
Pre-Development
Basin Maximum Conditions Report

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
10YR-24HR	B-2-1	BASE	12.27	5.89	7.165	32771
10YR-24HR	B-2-2	BASE	12.26	21.02	7.082	121861
10YR-24HR	B-2-3	BASE	12.27	0.48	7.997	2903
10YR-24HR	B-2-4	BASE	12.27	1.41	3.839	6967
10YR-24HR	OS-2-1	BASE	12.36	2.81	3.340	18430
10YR-72HR	B-2-1	BASE	60.02	5.81	9.649	44134
10YR-72HR	B-2-2	BASE	60.03	20.76	9.562	164532
10YR-72HR	B-2-3	BASE	60.02	0.47	10.496	3810
10YR-72HR	B-2-4	BASE	60.02	1.77	5.929	10760
10YR-72HR	OS-2-1	BASE	60.07	3.83	5.315	29326
3YR-24HR	B-2-1	BASE	12.27	3.95	4.693	21463
3YR-24HR	B-2-2	BASE	12.26	14.04	4.615	79415
3YR-24HR	B-2-3	BASE	12.27	0.33	5.498	1996
3YR-24HR	B-2-4	BASE	12.29	0.71	1.955	3549
3YR-24HR	OS-2-1	BASE	12.36	1.27	1.608	8871

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

         Name: B-2-1                   Node: WET POND_2-1          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 1.260                Time Shift(hrs): 0.00
          Curve Number: 93.04            Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



--------------------------------------------------------------------------------------------------
         Name: B-2-2                   Node: WET POND_2-1          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 11.66
              Area(ac): 4.740                Time Shift(hrs): 0.00
          Curve Number: 92.35            Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Combined basin including EB-6, EB-7, EB-8, EB-10, EB-11, EB-13, EB-14, EB-17, PB-21A, and PB-21B.
Basin areas determined from SR 80 plans (using profiles and cross-sections to determine
longitudinal and cross-slopes).

Tc estimated from Storm Tabulations found in the 2002 Drainage Report.

--------------------------------------------------------------------------------------------------
         Name: B-2-3                   Node: WET POND_2-1          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 0.100                Time Shift(hrs): 0.00
          Curve Number: 100.00           Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



--------------------------------------------------------------------------------------------------
         Name: B-2-4                   Node: DITCH_2-4             Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 0.500                Time Shift(hrs): 0.00
          Curve Number: 64.52            Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

EB-SR 80 Ditch
Basin limits determined from plans and field reviews.

--------------------------------------------------------------------------------------------------
         Name: OS-2-1                  Node: WET POND_2-1          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 18.85
              Area(ac): 1.520                Time Shift(hrs): 0.00
          Curve Number: 60.09            Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Basin limits determined from plans and field reviews.
See Tc Calcs.

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

      Name: C-51_STUB CANAL     Base Flow(cfs): 0.000          Init Stage(ft): 6.920
     Group: BASE                                               Warn Stage(ft): 7.000
      Type: Time/Stage

C-51 Stub Canal Stage based on:
An Atlas of Eastern Palm Beach County Surface Water Management Basins - 1988 (SFWMD)
Structure S-155
```

Design HW Stage (8.50' NGVD, 6.92' NAVD)

Time(hrs)	Stage(ft)
0.00	6.920
999.00	6.920

Name: DITCH_2-4 Base Flow(cfs): 0.000 Init Stage(ft): 10.640
Group: BASE Warn Stage(ft): 12.000
Type: Stage/Area

SR 80 Ditch (EB)

Apprx. stage-areas determined from plans, survey, aerial, and field reviews.

Stage(ft)	Area(ac)
10.640	0.2760
11.640	0.3690

Name: EN-22A Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 11.300
Type: Stage/Area

S-22A from the SR 80 Plans. Elevations were taken from SR 80 Plans.

Stage(ft)	Area(ac)
-0.550	0.0008
11.300	0.0008

Name: EN-23 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 10.640
Type: Stage/Area

S-23 from the SR 80 Plans. Elevations were taken from SR 80 Plans.

Stage(ft)	Area(ac)
-0.680	0.0008
10.640	0.0008

Name: EN-24 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 13.260
Type: Stage/Area

S-24 from the SR 80 Plans. Elevations were taken from SR 80 Plans.

Stage(ft)	Area(ac)
-1.340	0.0008
13.260	0.0008

Name: WET POND_2-1 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 9.650
Type: Stage/Area

Pond 1 (FPID No 429082-1-52-01)

Stage(ft)	Area(ac)
6.920	0.7600
7.360	0.7930
9.360	0.9550
10.360	1.0400

==== Pipes ====

Name: P_EN-22A_EN-23 From Node: EN-22A Length(ft): 294.00
Group: BASE To Node: EN-23 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	48.00	48.00
Rise(in):	48.00	48.00
Invert(ft):	-0.550	-0.680
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.50
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

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

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

Elevations and length taken from the SR 80 Plans.

Name:	P_EN-23_EN-24	From Node: EN-23	Length(ft): 264.00
Group:	BASE	To Node: EN-24	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	48.00	48.00	Entrance Loss Coef: 0.50
Rise(in):	48.00	48.00	Exit Loss Coef: 0.00
Invert(ft):	-0.680	-1.340	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

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

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

Elevations and length taken from the SR 80 Plans.

Name:	P_EN-24_C-51STB	From Node: EN-24	Length(ft): 20.00
Group:	BASE	To Node: C-51_STUB CANAL	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	48.00	48.00	Entrance Loss Coef: 0.50
Rise(in):	48.00	48.00	Exit Loss Coef: 1.00
Invert(ft):	-1.340	-1.340	Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

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

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

Elevations and length taken from the SR 80 Plans.

Drop Structures

Name:	S-7	From Node: WET POND_2-1	Length(ft): 12.00
Group:	BASE	To Node: EN-22A	Count: 1
			Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	48.00	48.00	Entrance Loss Coef: 0.500
Rise(in):	48.00	48.00	Exit Loss Coef: 1.000
Invert(ft):	-0.540	-0.550	Outlet Ctrl Spec: Use dc or tw
Manning's N:	0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in):	0.000	0.000	Solution Incs: 10
Bot Clip(in):	0.000	0.000	

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

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

*** Weir 1 of 2 for Drop Structure S-7 ***

			TABLE
Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200

```
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 79.00                       Invert(ft): 8.550
              Rise(in): 36.00                  Control Elev(ft): 8.550

*** Weir 2 of 2 for Drop Structure S-7 ***
                                                                      TABLE
                 Count: 1                       Bottom Clip(ft): 0.000
                  Type: Vertical: Mavis            Top Clip(ft): 0.000
                  Flow: Both                     Weir Disc Coef: 3.200
              Geometry: Trapezoidal           Orifice Disc Coef: 0.600

       Bottom Width(ft): 0.00                       Invert(ft): 7.360
       Left Sd Slp(h/v): 0.18                  Control Elev(ft): 7.360
      Right Sd Slp(h/v): 0.18             Struct Opening Dim(ft): 1.19


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

         Name: W_DITCH-BERM        From Node: DITCH_2-4
        Group: BASE                  To Node: WET POND_2-1
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                   Span(in): 300.00
                   Rise(in): 99999.00
                 Invert(ft): 11.300
       Control Elevation(ft): 11.300
                                         TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
           Weir Discharge Coef: 3.200
       Orifice Discharge Coef: 0.600

Berm between SR 80 Ditch and Pond 1.  Elevation taken from SR 80 Plans.  Width measured using aerial and topo.

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

         Name: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 2\10YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 8.00

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

--------------------------------------------------------------------------------------------------------
         Name: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 2\10YR-72HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Sfwmd72
    Rainfall Amount(in): 10.50

Time(hrs)       Print Inc(min)
--------------- ---------------
72.000          5.00
84.000          15.00

--------------------------------------------------------------------------------------------------------
         Name: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 2\3YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 5.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

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

         Name: 10YR-24HR           Hydrology Sim: 10YR-24HR
```

Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 2\10YR-24HR.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	5.000

Group	Run
BASE	Yes

Name: 10YR-72HR Hydrology Sim: 10YR-72HR
Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 2\10YR-72HR.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 84.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
72.000	5.000
84.000	15.000

Group	Run
BASE	Yes

Name: 3YR-24HR Hydrology Sim: 3YR-24HR
Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 2\3YR-24HR.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	5.000

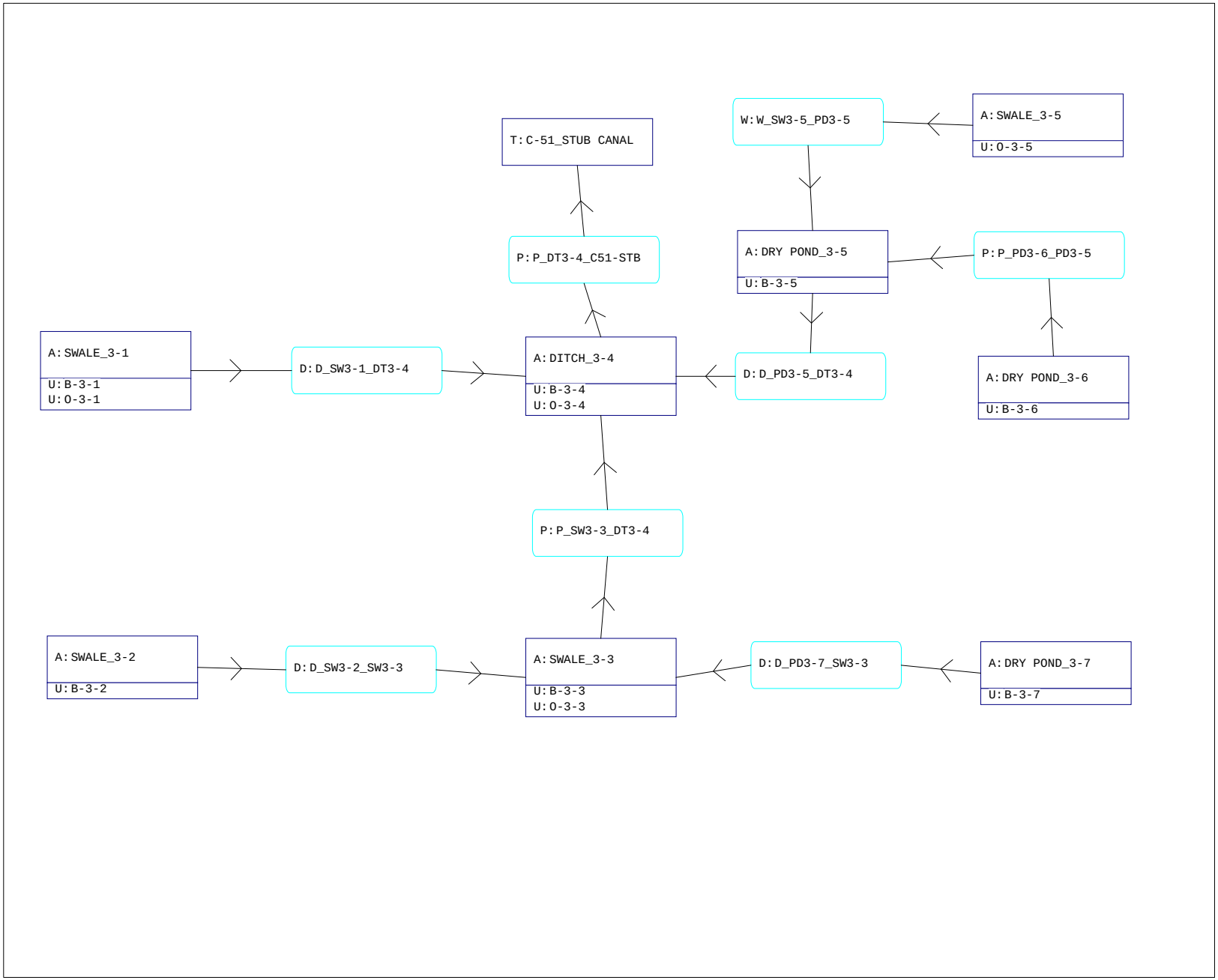
Group	Run
BASE	Yes

I-95 at Southern Boulevard
Drainage System 3
Pre-Development
Node-Link Diagram

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



I-95 at Southern Boulevard
Drainage System 3
Pre-Development
Node Maximum Conditions Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
C-51_STUB CANAL	BASE	10YR-24HR	0.00	6.92	7.00	0.0000	109	12.74	38.03	0.00	0.00
DITCH_3-4	BASE	10YR-24HR	12.74	9.45	15.00	0.0050	4787	12.66	38.18	12.74	38.03
DRY POND_3-5	BASE	10YR-24HR	15.32	11.34	14.00	0.0050	79449	12.25	38.74	15.32	3.68
DRY POND_3-6	BASE	10YR-24HR	15.36	11.35	13.50	-0.0062	179	12.25	21.71	12.25	21.65
DRY POND_3-7	BASE	10YR-24HR	13.15	13.63	19.00	0.0031	53266	12.25	40.18	13.15	6.66
SWALE_3-1	BASE	10YR-24HR	12.76	12.68	15.00	0.0042	20084	12.25	10.05	12.76	3.77
SWALE_3-2	BASE	10YR-24HR	12.59	12.36	14.00	0.0041	44745	12.25	44.69	12.59	20.68
SWALE_3-3	BASE	10YR-24HR	12.73	9.64	10.00	0.0049	16746	12.47	37.19	12.72	32.37
SWALE_3-5	BASE	10YR-24HR	15.33	11.34	14.50	0.0040	37312	12.25	7.19	17.04	0.60
C-51_STUB CANAL	BASE	10YR-72HR	0.00	6.92	7.00	0.0000	109	60.64	70.31	0.00	0.00
DITCH_3-4	BASE	10YR-72HR	60.64	10.88	15.00	-0.0048	11787	60.50	71.25	60.64	70.31
DRY POND_3-5	BASE	10YR-72HR	60.58	11.72	14.00	0.0050	84848	60.00	39.69	60.49	18.32
DRY POND_3-6	BASE	10YR-72HR	60.11	11.84	13.50	0.0196	4402	60.00	23.38	59.92	21.90
DRY POND_3-7	BASE	10YR-72HR	60.38	13.93	19.00	0.0023	55640	60.00	43.25	60.37	19.54
SWALE_3-1	BASE	10YR-72HR	60.47	12.96	15.00	0.0022	32080	60.00	12.94	60.47	5.19
SWALE_3-2	BASE	10YR-72HR	60.13	12.58	14.00	-0.0030	44940	60.00	43.42	60.13	34.71
SWALE_3-3	BASE	10YR-72HR	60.61	11.43	10.00	0.0050	31609	60.12	71.58	60.55	46.13
SWALE_3-5	BASE	10YR-72HR	60.59	11.72	14.50	0.0014	42315	60.00	8.01	60.85	3.74
C-51_STUB CANAL	BASE	3YR-24HR	0.00	6.92	7.00	0.0000	109	12.40	19.03	0.00	0.00
DITCH_3-4	BASE	3YR-24HR	12.40	8.43	15.00	0.0049	2309	12.36	19.20	12.40	19.03
DRY POND_3-5	BASE	3YR-24HR	24.20	10.90	14.00	0.0050	73169	12.27	21.63	24.20	0.29
DRY POND_3-6	BASE	3YR-24HR	24.18	10.90	13.50	-0.0068	239	12.25	13.05	12.27	17.09
DRY POND_3-7	BASE	3YR-24HR	18.37	13.05	19.00	0.0027	48719	12.25	24.15	18.37	0.75
SWALE_3-1	BASE	3YR-24HR	12.91	12.01	15.00	0.0050	8754	12.25	4.86	12.90	1.47
SWALE_3-2	BASE	3YR-24HR	14.10	11.99	14.00	0.0037	44425	12.25	30.66	14.10	2.67
SWALE_3-3	BASE	3YR-24HR	12.39	8.56	10.00	0.0047	12904	12.25	20.95	12.37	16.25
SWALE_3-5	BASE	3YR-24HR	24.19	10.90	14.50	0.0033	31538	12.25	4.16	25.02	0.08

I-95 at Southern Boulevard
Drainage System 3
Pre-Development
Link Maximum Conditions Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
D_PD3-5_DT3-4	BASE	10YR-24HR	15.32	3.68	0.002	15.32	11.34	12.74	9.45
D_PD3-7_SW3-3	BASE	10YR-24HR	13.15	6.66	0.045	13.15	13.63	12.73	9.64
D_SW3-1_DT3-4	BASE	10YR-24HR	12.76	3.77	0.010	12.76	12.68	12.74	9.45
D_SW3-2_SW3-3	BASE	10YR-24HR	12.59	20.68	0.132	12.59	12.36	12.73	9.64
P_DT3-4_C51-STB	BASE	10YR-24HR	12.74	38.03	0.620	12.74	9.45	12.74	8.06
P_PD3-6_PD3-5	BASE	10YR-24HR	12.25	21.65	3.645	15.36	11.35	15.32	11.34
P_SW3-3_DT3-4	BASE	10YR-24HR	12.72	32.37	0.272	12.73	9.64	12.74	9.45
W_SW3-5_PD3-5	BASE	10YR-24HR	17.04	0.60	-0.179	15.33	11.34	15.32	11.34
D_PD3-5_DT3-4	BASE	10YR-72HR	60.49	18.32	0.031	60.58	11.72	60.64	10.88
D_PD3-7_SW3-3	BASE	10YR-72HR	60.37	19.54	-0.093	60.38	13.93	60.61	11.43
D_SW3-1_DT3-4	BASE	10YR-72HR	60.47	5.19	-0.009	60.47	12.96	60.64	10.88
D_SW3-2_SW3-3	BASE	10YR-72HR	60.13	34.71	-0.186	60.13	12.58	60.61	11.43
P_DT3-4_C51-STB	BASE	10YR-72HR	60.64	70.31	0.720	60.64	10.88	60.59	8.76
P_PD3-6_PD3-5	BASE	10YR-72HR	59.92	21.90	-5.270	60.11	11.84	60.58	11.72
P_SW3-3_DT3-4	BASE	10YR-72HR	60.55	46.13	2.486	60.61	11.43	60.64	10.88
W_SW3-5_PD3-5	BASE	10YR-72HR	60.85	3.74	0.243	60.59	11.72	60.58	11.72
D_PD3-5_DT3-4	BASE	3YR-24HR	24.20	0.29	0.000	24.20	10.90	12.40	8.43
D_PD3-7_SW3-3	BASE	3YR-24HR	18.37	0.75	0.002	18.37	13.05	12.39	8.56
D_SW3-1_DT3-4	BASE	3YR-24HR	12.90	1.47	0.007	12.91	12.01	12.40	8.43
D_SW3-2_SW3-3	BASE	3YR-24HR	14.10	2.67	0.003	14.10	11.99	12.39	8.56
P_DT3-4_C51-STB	BASE	3YR-24HR	12.40	19.03	0.726	12.40	8.43	12.40	7.50
P_PD3-6_PD3-5	BASE	3YR-24HR	12.27	17.09	4.310	24.18	10.90	24.20	10.90
P_SW3-3_DT3-4	BASE	3YR-24HR	12.37	16.25	0.285	12.39	8.56	12.40	8.43
W_SW3-5_PD3-5	BASE	3YR-24HR	25.02	0.08	0.172	24.19	10.90	24.20	10.90

I-95 at Southern Boulevard
Drainage System 3
Pre-Development
Basin Maximum Conditions Report

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
10YR-24HR	B-3-1	BASE	12.27	5.06	3.495	24992
10YR-24HR	B-3-2	BASE	12.27	44.71	7.794	264233
10YR-24HR	B-3-3	BASE	12.27	15.24	7.485	87216
10YR-24HR	B-3-4	BASE	12.27	2.17	6.274	11387
10YR-24HR	B-3-5	BASE	12.27	24.36	5.373	123262
10YR-24HR	B-3-6	BASE	12.27	21.81	5.551	111017
10YR-24HR	B-3-7	BASE	12.27	40.36	5.554	205442
10YR-24HR	O-3-1	BASE	12.27	5.10	3.744	25142
10YR-24HR	O-3-3	BASE	12.27	14.29	7.704	83614
10YR-24HR	O-3-4	BASE	12.27	2.42	6.604	12945
10YR-24HR	O-3-5	BASE	12.27	7.24	5.106	36329
10YR-72HR	B-3-1	BASE	60.02	6.59	5.507	39384
10YR-72HR	B-3-2	BASE	60.02	43.53	10.292	348932
10YR-72HR	B-3-3	BASE	60.02	14.91	9.978	116271
10YR-72HR	B-3-4	BASE	60.02	2.23	8.708	15805
10YR-72HR	B-3-5	BASE	60.02	26.55	7.718	177062
10YR-72HR	B-3-6	BASE	60.02	23.47	7.917	158341
10YR-72HR	B-3-7	BASE	60.02	43.42	7.920	292975
10YR-72HR	O-3-1	BASE	60.02	6.44	5.813	39040
10YR-72HR	O-3-3	BASE	60.02	13.92	10.201	110718
10YR-72HR	O-3-4	BASE	60.02	2.45	9.061	17762
10YR-72HR	O-3-5	BASE	60.02	8.05	7.417	52768
3YR-24HR	B-3-1	BASE	12.29	2.43	1.714	12254
3YR-24HR	B-3-2	BASE	12.27	30.69	5.296	179557
3YR-24HR	B-3-3	BASE	12.27	10.37	4.996	58214
3YR-24HR	B-3-4	BASE	12.27	1.38	3.886	7053
3YR-24HR	B-3-5	BASE	12.27	14.46	3.127	71731
3YR-24HR	B-3-6	BASE	12.27	13.14	3.272	65447
3YR-24HR	B-3-7	BASE	12.27	24.32	3.275	121143
3YR-24HR	O-3-1	BASE	12.29	2.54	1.888	12678
3YR-24HR	O-3-3	BASE	12.27	9.79	5.208	56525
3YR-24HR	O-3-4	BASE	12.27	1.57	4.178	8190
3YR-24HR	O-3-5	BASE	12.27	4.19	2.912	20719

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

         Name: B-3-1                   Node: SWALE_3-1             Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
             Area(ac): 1.970                 Time Shift(hrs): 0.00
         Curve Number: 61.46             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-3-2                   Node: SWALE_3-2             Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
             Area(ac): 9.340                 Time Shift(hrs): 0.00
         Curve Number: 98.30             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-3-3                   Node: SWALE_3-3             Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
             Area(ac): 3.210                 Time Shift(hrs): 0.00
         Curve Number: 95.72             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-3-4                   Node: DITCH_3-4             Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
             Area(ac): 0.500                 Time Shift(hrs): 0.00
         Curve Number: 85.53             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-3-5                   Node: DRY POND_3-5          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
             Area(ac): 6.320                 Time Shift(hrs): 0.00
         Curve Number: 77.86             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-3-6                   Node: DRY POND_3-6          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
             Area(ac): 5.510                 Time Shift(hrs): 0.00
         Curve Number: 79.38             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-3-7                   Node: DRY POND_3-7          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN
```

```
       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
           Area(ac): 10.190                    Time Shift(hrs): 0.00
        Curve Number: 79.41               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00


--------------------------------------------------------------------------------------------------
        Name: O-3-1                   Node: SWALE_3-1             Status: Offsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
           Area(ac): 1.850                     Time Shift(hrs): 0.00
        Curve Number: 63.68               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00


--------------------------------------------------------------------------------------------------
        Name: O-3-3                   Node: SWALE_3-3             Status: Offsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
           Area(ac): 2.990                     Time Shift(hrs): 0.00
        Curve Number: 97.55               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00


--------------------------------------------------------------------------------------------------
        Name: O-3-4                   Node: DITCH_3-4             Status: Offsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
           Area(ac): 0.540                     Time Shift(hrs): 0.00
        Curve Number: 88.32               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00


--------------------------------------------------------------------------------------------------
        Name: O-3-5                   Node: SWALE_3-5             Status: Offsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
           Area(ac): 1.960                     Time Shift(hrs): 0.00
        Curve Number: 75.57               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00


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

     Name: C-51_STUB CANAL     Base Flow(cfs): 0.000          Init Stage(ft): 6.920
    Group: BASE                                               Warn Stage(ft): 7.000
     Type: Time/Stage

C-51 Stub Canal Stage based on:
An Atlas of Eastern Palm Beach County Surface Water Management Basins - 1988 (SFWMD)
Structure S-155
Design HW Stage (8.50' NGVD, 6.92' NAVD)

     Time(hrs)       Stage(ft)
-------------- --------------
          0.00           6.920
        999.00           6.920

--------------------------------------------------------------------------------------------------
     Name: DITCH_3-4           Base Flow(cfs): 0.000          Init Stage(ft): 6.920
    Group: BASE                                               Warn Stage(ft): 15.000
     Type: Stage/Area

Warning Stage = Approximate Railroad Elevation
Railroad Elevation = 15.00
```

Stage(ft)	Area(ac)
6.220	0.0001
7.490	0.0001
7.500	0.0100
8.000	0.0200
8.500	0.0400
9.000	0.0700
9.500	0.1000
10.000	0.1500
10.500	0.2000
11.000	0.2900
15.000	0.9500

Name: DRY POND_3-5 Base Flow(cfs): 0.000 Init Stage(ft): 7.360
Group: BASE Warn Stage(ft): 14.000
Type: Stage/Area

Warning Stage = Lowest EOP Elev. minus 1.0 ft (Freeboard)
EOP = 15.00

Stage(ft)	Area(ac)
7.360	0.0001
8.490	0.0001
8.500	0.0800
9.000	0.3700
9.500	1.0400
10.000	1.3800
15.000	3.0300

Name: DRY POND_3-6 Base Flow(cfs): 0.000 Init Stage(ft): 8.480
Group: BASE Warn Stage(ft): 13.500
Type: Stage/Area

Warning Stage = EOP Elev. minus 1.0 ft (Freeboard)
EOP = 14.50

Stage(ft)	Area(ac)
8.480	0.0001
11.490	0.0001
11.500	0.0200
12.000	0.1400
12.500	0.3300
13.000	0.5300
13.500	0.6400

Name: DRY POND_3-7 Base Flow(cfs): 0.000 Init Stage(ft): 10.520
Group: BASE Warn Stage(ft): 19.000
Type: Stage/Area

Warning Stage = EOP Elev. minus 1.0 ft (Freeboard)
EOP = 20.00

Stage(ft)	Area(ac)
9.500	0.0030
10.000	0.0900
10.500	0.4600
11.000	0.6700
11.500	0.7800
12.000	0.8800
12.500	1.0000
13.000	1.1100
13.500	1.2000

Name: SWALE_3-1 Base Flow(cfs): 0.000 Init Stage(ft): 9.500
Group: BASE Warn Stage(ft): 15.000
Type: Stage/Area

Warning Stage = Approximate Railroad Elevation
Railroad Elevation = 15.00

Stage(ft)	Area(ac)
9.500	0.0009
10.000	0.0100
10.500	0.0700
11.000	0.1100
11.500	0.1400

12.000	0.2000
12.500	0.2900
15.000	2.7000

Name: SWALE_3-2 Base Flow(cfs): 0.000 Init Stage(ft): 8.420
Group: BASE Warn Stage(ft): 14.000
Type: Stage/Area

Warning Stage = Top of Berm Elev. minus 0.5 ft (Freeboard)
Top of Berm = 14.50

Stage(ft)	Area(ac)
8.420	0.0001
8.500	0.3500
9.000	0.7400
9.500	0.8100
10.000	0.8200
10.500	0.9300
11.000	1.0000
11.500	1.0100
12.000	1.0200
12.500	1.0300
13.000	1.0400
13.500	1.0500
14.000	1.0600
14.500	1.0700

Name: SWALE_3-3 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 10.000
Type: Stage/Area

Warning Stage = Top of Swale Elev / ROW Elev. minus 0.5 ft (Freeboard)
Top of Swale = 10.5

Stage(ft)	Area(ac)
6.400	0.0001
7.490	0.0001
7.500	0.1800
8.000	0.2300
8.500	0.2800
9.000	0.3100
9.500	0.3600
10.000	0.4100
10.500	0.5200

Name: SWALE_3-5 Base Flow(cfs): 0.000 Init Stage(ft): 8.000
Group: BASE Warn Stage(ft): 14.500
Type: Stage/Area

Swale is offsite

Warning Stage = Lowest EOP Elev. (adjacent to Swale 3-5) minus 0.5 ft (Freeboard)
EOP = 15.00

Stage(ft)	Area(ac)
8.000	0.0100
8.500	0.0600
9.000	0.1500
9.500	0.3000
15.000	1.9600

==========

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

==========

Name: P_DT3-4_C51-STB From Node: DITCH_3-4 Length(ft): 72.00
Group: BASE To Node: C-51_STUB CANAL Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	48.00	48.00	Flow:	Both
Rise(in):	48.00	48.00	Entrance Loss Coef:	0.50
Invert(ft):	6.220	6.220	Exit Loss Coef:	1.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

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

Name:	P_PD3-6_PD3-5	From Node:	DRY POND_3-6
Group:	BASE	To Node:	DRY POND_3-5
	UPSTREAM	DOWNSTREAM	
Geometry:	Circular	Circular	
Span(in):	36.00	36.00	
Rise(in):	36.00	36.00	
Invert(ft):	8.480	7.360	
Manning's N:	0.012000	0.012000	
Top Clip(in):	0.000	0.000	
Bot Clip(in):	0.000	0.000	

Length(ft):	139.00
Count:	1
Friction Equation:	Automatic
Solution Algorithm:	Most Restrictive
Flow:	Both
Entrance Loss Coef:	0.50
Exit Loss Coef:	0.00
Bend Loss Coef:	0.00
Outlet Ctrl Spec:	Use dc or tw
Inlet Ctrl Spec:	Use dc
Stabilizer Option:	None

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

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

Name:	P_SW3-3_DT3-4	From Node:	SWALE_3-3
Group:	BASE	To Node:	DITCH_3-4
	UPSTREAM	DOWNSTREAM	
Geometry:	Circular	Circular	
Span(in):	48.00	48.00	
Rise(in):	48.00	48.00	
Invert(ft):	6.550	6.220	
Manning's N:	0.012000	0.012000	
Top Clip(in):	0.000	0.000	
Bot Clip(in):	0.000	0.000	

Length(ft):	273.00
Count:	1
Friction Equation:	Automatic
Solution Algorithm:	Most Restrictive
Flow:	Both
Entrance Loss Coef:	0.50
Exit Loss Coef:	0.00
Bend Loss Coef:	0.00
Outlet Ctrl Spec:	Use dc or tw
Inlet Ctrl Spec:	Use dc
Stabilizer Option:	None

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

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

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

Name:	D_PD3-5_DT3-4	From Node:	DRY POND_3-5
Group:	BASE	To Node:	DITCH_3-4
	UPSTREAM	DOWNSTREAM	
Geometry:	Circular	Circular	
Span(in):	30.00	30.00	
Rise(in):	30.00	30.00	
Invert(ft):	7.800	6.770	
Manning's N:	0.012000	0.012000	
Top Clip(in):	0.000	0.000	
Bot Clip(in):	0.000	0.000	

Length(ft):	42.00
Count:	1
Friction Equation:	Automatic
Solution Algorithm:	Most Restrictive
Flow:	Both
Entrance Loss Coef:	0.500
Exit Loss Coef:	0.000
Outlet Ctrl Spec:	Use dc or tw
Inlet Ctrl Spec:	Use dc
Solution Incs:	10

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

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

Drop Structure Information taken from State Project No. 93220-3440
S-41
Type D Inlet
3.75" orifice @ 10.12
Rectangular Weir @ 11.17

*** Weir 1 of 2 for Drop Structure D_PD3-5_DT3-4 ***

TABLE

```
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                   Weir Disc Coef: 3.200
               Geometry: Rectangular          Orifice Disc Coef: 0.600

               Span(in): 49.00                       Invert(ft): 11.170
               Rise(in): 37.00                Control Elev(ft): 11.170

*** Weir 2 of 2 for Drop Structure D_PD3-5_DT3-4 ***
                                                                        TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                   Weir Disc Coef: 3.200
               Geometry: Circular             Orifice Disc Coef: 0.600

               Span(in): 3.75                        Invert(ft): 10.120
               Rise(in): 3.75                 Control Elev(ft): 10.120


-------------------------------------------------------------------------------------------------
         Name: D_PD3-7_SW3-3       From Node: DRY POND_3-7       Length(ft): 119.00
        Group: BASE                  To Node: SWALE_3-3             Count: 1

               UPSTREAM       DOWNSTREAM                Friction Equation: Automatic
     Geometry: Circular       Circular                 Solution Algorithm: Most Restrictive
     Span(in): 24.00          24.00                               Flow: Both
     Rise(in): 24.00          24.00                    Entrance Loss Coef: 0.500
   Invert(ft): 10.420         10.060                       Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                   Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Solution Incs: 10

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

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

Drop Structure Information taken from State Project No. 93220-3440
S-53
Type D Inlet
4.375" orifice @ 10.52
Rectangular Weir @ 13.37

*** Weir 1 of 2 for Drop Structure D_PD3-7_SW3-3 ***
                                                                        TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                   Weir Disc Coef: 3.200
               Geometry: Rectangular          Orifice Disc Coef: 0.600

               Span(in): 49.00                       Invert(ft): 13.370
               Rise(in): 37.00                Control Elev(ft): 13.370

*** Weir 2 of 2 for Drop Structure D_PD3-7_SW3-3 ***
                                                                        TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                   Weir Disc Coef: 3.200
               Geometry: Circular             Orifice Disc Coef: 0.600

               Span(in): 4.38                        Invert(ft): 10.520
               Rise(in): 4.38                 Control Elev(ft): 10.520


-------------------------------------------------------------------------------------------------
         Name: D_SW3-1_DT3-4       From Node: SWALE_3-1          Length(ft): 24.00
        Group: BASE                  To Node: DITCH_3-4             Count: 1

               UPSTREAM       DOWNSTREAM                Friction Equation: Automatic
     Geometry: Circular       Circular                 Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                               Flow: Both
     Rise(in): 18.00          18.00                    Entrance Loss Coef: 0.500
   Invert(ft): 11.310         10.400                       Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                   Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Solution Incs: 10

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

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

Drop Structure Information taken from State Project No. 93220-3440
S-39
```

Straight Concrete Endwall
2.75" orifice @ 10.42
18" pipe @ 11.12

*** Weir 1 of 2 for Drop Structure D_SW3-1_DT3-4 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	18.00	Invert(ft):	11.120
Rise(in):	18.00	Control Elev(ft):	11.120

*** Weir 2 of 2 for Drop Structure D_SW3-1_DT3-4 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	2.75	Invert(ft):	10.420
Rise(in):	2.75	Control Elev(ft):	10.420

Name:	D_SW3-2_SW3-3	From Node:	SWALE_3-2
Group:	BASE	To Node:	SWALE_3-3
Length(ft):	52.00		
Count:	1		

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	30.00	30.00
Rise(in):	30.00	30.00
Invert(ft):	8.400	6.400
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Friction Equation:	Automatic
Solution Algorithm:	Most Restrictive
Flow:	Both
Entrance Loss Coef:	0.500
Exit Loss Coef:	0.000
Outlet Ctrl Spec:	Use dc or tw
Inlet Ctrl Spec:	Use dc
Solution Incs:	10

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

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

Drop Structure Information taken from State Project No. 93220-3440
S-40
Type H Inlet
2.75" orifice @ 8.42
Rectangular Weir @ 11.88

*** Weir 1 of 2 for Drop Structure D_SW3-2_SW3-3 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	79.00	Invert(ft):	11.880
Rise(in):	36.00	Control Elev(ft):	11.880

*** Weir 2 of 2 for Drop Structure D_SW3-2_SW3-3 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	2.75	Invert(ft):	8.420
Rise(in):	2.75	Control Elev(ft):	8.420

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

Name:	W_SW3-5_PD3-5	From Node:	SWALE_3-5
Group:	BASE	To Node:	DRY POND_3-5
Flow:	Both	Count:	1
Type:	Vertical: Fread	Geometry:	Rectangular
Span(in):	140.00		
Rise(in):	9999.00		
Invert(ft):	9.500		
Control Elevation(ft):	9.500		

TABLE

Bottom Clip(in):	0.000

```
               Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600



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

         Name: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 3\10YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 8.00

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

------------------------------------------------------------------------------------------------------
         Name: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 3\10YR-72HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Sfwmd72
    Rainfall Amount(in): 10.50

Time(hrs)       Print Inc(min)
--------------- ---------------
72.000          5.00
84.000          15.00

------------------------------------------------------------------------------------------------------
         Name: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 3\3YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 5.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

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

         Name: 10YR-24HR           Hydrology Sim: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 3\10YR-24HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.000

Group           Run
--------------- -----
BASE            Yes


------------------------------------------------------------------------------------------------------
         Name: 10YR-72HR           Hydrology Sim: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 3\10YR-72HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 84.00
```

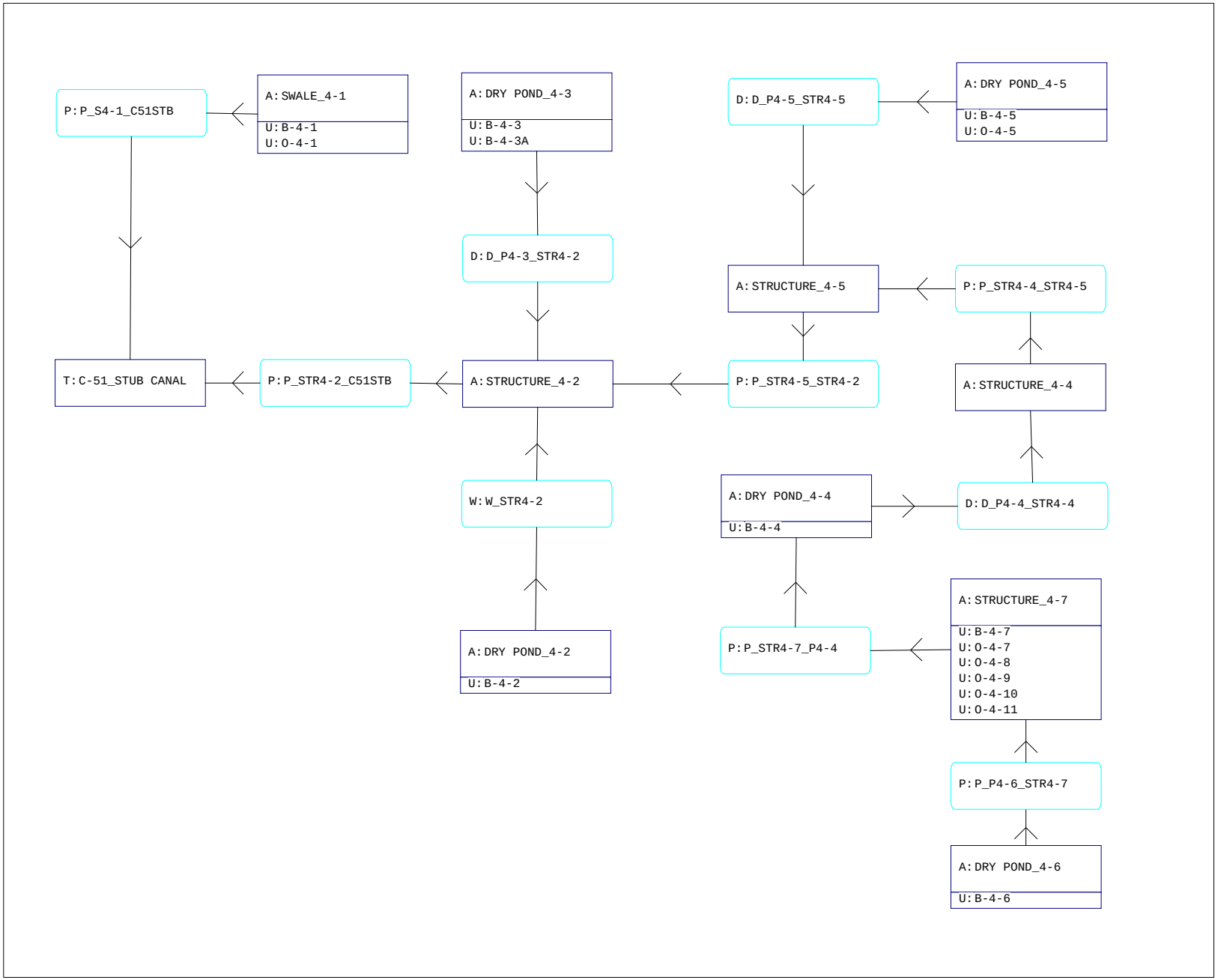
```
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
48.000          15.000
72.000          5.000
84.000          15.000

Group           Run
--------------- -----
BASE            Yes


-------------------------------------------------------------------------------------------------
         Name: 3YR-24HR            Hydrology Sim: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 3\3YR-24HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.000

Group           Run
--------------- -----
BASE            Yes
```

I-95 at Southern Boulevard
Drainage System 4
Pre-Development
Node-Link Diagram

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



I-95 at Southern Boulevard
Drainage System 4
Pre-Development
Node Maximum Conditions Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
C-51_STUB CANAL	BASE	10YR-24HR	0.00	6.92	7.00	0.0000	774	12.41	96.44	0.00	0.00
DRY POND_4-2	BASE	10YR-24HR	12.31	14.89	15.50	-0.0003	9596	12.25	6.03	12.31	5.67
DRY POND_4-3	BASE	10YR-24HR	12.36	14.60	15.00	0.0010	46848	12.25	47.62	12.36	40.17
DRY POND_4-4	BASE	10YR-24HR	12.54	13.65	14.48	0.0016	19479	12.25	43.37	12.53	30.46
DRY POND_4-5	BASE	10YR-24HR	12.69	12.80	14.64	0.0030	46786	12.25	74.69	13.30	37.36
DRY POND_4-6	BASE	10YR-24HR	12.50	13.83	16.00	0.0018	12125	12.25	3.89	12.92	5.94
STRUCTURE_4-2	BASE	10YR-24HR	12.45	11.70	15.50	0.0051	328	12.44	91.17	12.45	91.17
STRUCTURE_4-4	BASE	10YR-24HR	12.55	12.56	13.18	-0.0136	121	12.53	30.46	12.51	31.29
STRUCTURE_4-5	BASE	10YR-24HR	12.58	12.40	14.82	0.0070	147	12.94	60.29	12.90	59.82
STRUCTURE_4-7	BASE	10YR-24HR	12.49	13.83	19.56	-0.0073	170	12.25	30.03	12.25	29.85
SWALE_4-1	BASE	10YR-24HR	12.28	7.93	16.00	-0.0015	867	12.25	6.63	12.28	6.48
C-51_STUB CANAL	BASE	10YR-72HR	0.00	6.92	7.00	0.0000	774	60.15	102.99	0.00	0.00
DRY POND_4-2	BASE	10YR-72HR	60.05	14.91	15.50	-0.0003	9777	60.00	6.87	60.05	6.54
DRY POND_4-3	BASE	10YR-72HR	60.10	14.63	15.00	0.0009	47157	60.00	48.69	60.10	42.30
DRY POND_4-4	BASE	10YR-72HR	60.27	13.92	14.48	0.0015	19949	60.00	47.40	60.23	34.02
DRY POND_4-5	BASE	10YR-72HR	60.48	13.07	14.64	0.0030	49501	60.00	75.95	61.17	38.59
DRY POND_4-6	BASE	10YR-72HR	60.23	14.16	16.00	0.0018	13128	60.00	4.62	60.75	7.03
STRUCTURE_4-2	BASE	10YR-72HR	60.19	11.94	15.50	0.0054	325	60.20	95.42	60.19	95.29
STRUCTURE_4-4	BASE	10YR-72HR	60.30	12.88	13.18	-0.0152	121	60.23	34.02	60.24	34.83
STRUCTURE_4-5	BASE	10YR-72HR	60.32	12.68	14.82	0.0076	147	60.75	63.01	60.71	62.68
STRUCTURE_4-7	BASE	10YR-72HR	60.20	14.15	19.56	-0.0064	170	60.00	33.87	60.00	33.71
SWALE_4-1	BASE	10YR-72HR	60.03	8.23	16.00	0.0024	1333	60.00	9.39	60.03	9.13
C-51_STUB CANAL	BASE	3YR-24HR	0.00	6.92	7.00	0.0000	774	12.49	62.93	0.00	0.00
DRY POND_4-2	BASE	3YR-24HR	12.37	14.81	15.50	0.0002	8937	12.25	3.38	12.37	2.87
DRY POND_4-3	BASE	3YR-24HR	12.46	14.31	15.00	0.0010	42422	12.25	30.48	12.46	19.34
DRY POND_4-4	BASE	3YR-24HR	12.64	12.65	14.48	0.0009	17884	12.25	24.34	12.65	15.00
DRY POND_4-5	BASE	3YR-24HR	12.55	10.97	14.64	-0.0008	30792	12.25	48.79	12.22	34.77
DRY POND_4-6	BASE	3YR-24HR	12.63	12.69	16.00	0.0011	8778	12.25	2.09	12.92	2.17
STRUCTURE_4-2	BASE	3YR-24HR	12.52	10.00	15.50	0.0026	344	12.48	61.10	12.52	61.08
STRUCTURE_4-4	BASE	3YR-24HR	12.55	10.45	13.18	-0.0067	121	12.65	15.00	12.24	27.42
STRUCTURE_4-5	BASE	3YR-24HR	12.54	10.41	14.82	0.0061	147	12.24	60.09	12.73	41.13
STRUCTURE_4-7	BASE	3YR-24HR	12.63	12.69	19.56	-0.0060	170	12.25	15.82	12.25	15.58
SWALE_4-1	BASE	3YR-24HR	12.26	7.44	16.00	0.0014	174	12.25	2.79	12.26	2.78

I-95 at Southern Boulevard
Drainage System 4
Pre-Development
Link Maximum Conditions Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
D_P4-3_STR4-2	BASE	10YR-24HR	12.36	40.17	-0.053	12.36	14.60	12.45	11.70
D_P4-4_STR4-4	BASE	10YR-24HR	12.53	30.46	-0.038	12.54	13.65	12.55	12.56
D_P4-5_STR4-5	BASE	10YR-24HR	13.30	37.36	1.900	12.69	12.80	12.58	12.40
P_P4-6_STR4-7	BASE	10YR-24HR	12.92	5.94	3.076	12.50	13.83	12.49	13.83
P_S4-1_C51STB	BASE	10YR-24HR	12.28	6.48	0.210	12.28	7.93	0.00	6.92
P_STR4-2_C51STB	BASE	10YR-24HR	12.45	91.17	0.742	12.45	11.70	12.41	7.98
P_STR4-4_STR4-5	BASE	10YR-24HR	12.51	31.29	-6.724	12.55	12.56	12.58	12.40
P_STR4-5_STR4-2	BASE	10YR-24HR	12.90	59.82	-1.774	12.58	12.40	12.45	11.70
P_STR4-7_P4-4	BASE	10YR-24HR	12.25	29.85	4.553	12.49	13.83	12.54	13.65
W_STR4-2	BASE	10YR-24HR	12.31	5.67	-0.009	12.31	14.89	12.45	11.70
D_P4-3_STR4-2	BASE	10YR-72HR	60.10	42.30	-0.060	60.10	14.63	60.19	11.94
D_P4-4_STR4-4	BASE	10YR-72HR	60.23	34.02	-0.053	60.27	13.92	60.30	12.88
D_P4-5_STR4-5	BASE	10YR-72HR	61.17	38.59	2.740	60.48	13.07	60.32	12.68
P_P4-6_STR4-7	BASE	10YR-72HR	60.75	7.03	2.832	60.23	14.16	60.20	14.15
P_S4-1_C51STB	BASE	10YR-72HR	60.03	9.13	0.210	60.03	8.23	0.00	6.92
P_STR4-2_C51STB	BASE	10YR-72HR	60.19	95.29	0.742	60.19	11.94	60.17	8.05
P_STR4-4_STR4-5	BASE	10YR-72HR	60.24	34.83	-7.472	60.30	12.88	60.32	12.68
P_STR4-5_STR4-2	BASE	10YR-72HR	60.71	62.68	-1.775	60.32	12.68	60.19	11.94
P_STR4-7_P4-4	BASE	10YR-72HR	60.00	33.71	-4.756	60.20	14.15	60.27	13.92
W_STR4-2	BASE	10YR-72HR	60.05	6.54	-0.012	60.05	14.91	60.19	11.94
D_P4-3_STR4-2	BASE	3YR-24HR	12.46	19.34	0.017	12.46	14.31	12.52	10.00
D_P4-4_STR4-4	BASE	3YR-24HR	12.65	15.00	0.016	12.64	12.65	12.55	10.45
D_P4-5_STR4-5	BASE	3YR-24HR	12.22	34.77	-0.117	12.55	10.97	12.54	10.41
P_P4-6_STR4-7	BASE	3YR-24HR	12.92	2.17	2.857	12.63	12.69	12.63	12.69
P_S4-1_C51STB	BASE	3YR-24HR	12.26	2.78	0.210	12.26	7.44	0.00	6.92
P_STR4-2_C51STB	BASE	3YR-24HR	12.52	61.08	0.741	12.52	10.00	12.48	7.45
P_STR4-4_STR4-5	BASE	3YR-24HR	12.24	27.42	10.331	12.55	10.45	12.54	10.41
P_STR4-5_STR4-2	BASE	3YR-24HR	12.73	41.13	-1.773	12.54	10.41	12.52	10.00
P_STR4-7_P4-4	BASE	3YR-24HR	12.25	15.58	4.601	12.63	12.69	12.64	12.65
W_STR4-2	BASE	3YR-24HR	12.37	2.87	0.003	12.37	14.81	12.52	10.00

I-95 at Southern Boulevard
Drainage System 4
Pre-Development
Basin Maximum Conditions Report

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
10YR-24HR	B-4-1	BASE	12.29	5.10	2.986	25362
10YR-24HR	B-4-2	BASE	12.27	6.06	4.815	30239
10YR-24HR	B-4-3	BASE	12.27	47.50	6.362	250585
10YR-24HR	B-4-3A	BASE	12.27	0.24	7.997	1452
10YR-24HR	B-4-4	BASE	12.27	13.55	6.547	72248
10YR-24HR	B-4-5	BASE	12.27	19.51	4.764	97197
10YR-24HR	B-4-6	BASE	12.27	3.92	4.385	19419
10YR-24HR	B-4-7	BASE	12.27	27.55	6.058	143154
10YR-24HR	O-4-1	BASE	12.29	1.64	2.784	8186
10YR-24HR	O-4-10	BASE	12.27	4.86	4.803	24232
10YR-24HR	O-4-11	BASE	12.27	2.50	6.063	12984
10YR-24HR	O-4-5	BASE	12.27	55.34	7.790	326888
10YR-24HR	O-4-7	BASE	12.27	0.34	3.860	1681
10YR-24HR	O-4-8	BASE	12.27	1.16	3.926	5700
10YR-24HR	O-4-9	BASE	12.27	2.16	3.629	10671
10YR-72HR	B-4-1	BASE	60.02	7.11	4.868	41348
10YR-72HR	B-4-2	BASE	60.02	6.91	7.084	44484
10YR-72HR	B-4-3	BASE	60.02	48.61	8.804	346731
10YR-72HR	B-4-3A	BASE	60.02	0.23	10.496	1905
10YR-72HR	B-4-4	BASE	60.02	13.74	9.001	99325
10YR-72HR	B-4-5	BASE	60.02	22.31	7.025	143311
10YR-72HR	B-4-6	BASE	60.02	4.64	6.582	29148
10YR-72HR	B-4-7	BASE	60.02	28.69	8.475	200267
10YR-72HR	O-4-1	BASE	60.02	2.36	4.609	13551
10YR-72HR	O-4-10	BASE	60.02	5.54	7.069	35668
10YR-72HR	O-4-11	BASE	60.02	2.60	8.480	18161
10YR-72HR	O-4-5	BASE	60.02	53.87	10.288	431717
10YR-72HR	O-4-7	BASE	60.02	0.43	5.955	2594
10YR-72HR	O-4-8	BASE	60.02	1.43	6.034	8761
10YR-72HR	O-4-9	BASE	60.02	2.77	5.673	16680
3YR-24HR	B-4-1	BASE	12.29	2.22	1.370	11641
3YR-24HR	B-4-2	BASE	12.27	3.42	2.683	16851
3YR-24HR	B-4-3	BASE	12.27	30.43	3.964	156118
3YR-24HR	B-4-3A	BASE	12.27	0.16	5.498	998
3YR-24HR	B-4-4	BASE	12.27	8.79	4.127	45547
3YR-24HR	B-4-5	BASE	12.27	10.94	2.644	53938
3YR-24HR	B-4-6	BASE	12.27	2.11	2.355	10429
3YR-24HR	B-4-7	BASE	12.27	17.27	3.699	87416
3YR-24HR	O-4-1	BASE	12.29	0.68	1.240	3645
3YR-24HR	O-4-10	BASE	12.27	2.74	2.673	13489
3YR-24HR	O-4-11	BASE	12.27	1.57	3.703	7931
3YR-24HR	O-4-5	BASE	12.27	37.97	5.292	222087
3YR-24HR	O-4-7	BASE	12.29	0.17	1.971	858
3YR-24HR	O-4-8	BASE	12.29	0.59	2.018	2930
3YR-24HR	O-4-9	BASE	12.29	1.06	1.807	5313

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

         Name: B-4-1                   Node: SWALE_4-1             Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                  Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000              Time of Conc(min): 10.00
             Area(ac): 2.340                  Time Shift(hrs): 0.00
         Curve Number: 56.86              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-4-2                   Node: DRY POND_4-2          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                  Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000              Time of Conc(min): 10.00
             Area(ac): 1.730                  Time Shift(hrs): 0.00
         Curve Number: 73.06              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-4-3                   Node: DRY POND_4-3          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                  Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000              Time of Conc(min): 10.00
             Area(ac): 10.850                 Time Shift(hrs): 0.00
         Curve Number: 86.28              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-4-3A                  Node: DRY POND_4-3          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                  Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000              Time of Conc(min): 10.00
             Area(ac): 0.050                  Time Shift(hrs): 0.00
         Curve Number: 100.00             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-4-4                   Node: DRY POND_4-4          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                  Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000              Time of Conc(min): 10.00
             Area(ac): 3.040                  Time Shift(hrs): 0.00
         Curve Number: 87.84              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-4-5                   Node: DRY POND_4-5          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                  Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000              Time of Conc(min): 10.00
             Area(ac): 5.620                  Time Shift(hrs): 0.00
         Curve Number: 72.62              Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-4-6                   Node: DRY POND_4-6          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN
```

```
       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
             Area(ac): 1.220                    Time Shift(hrs): 0.00
         Curve Number: 69.32               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
        Name: B-4-7                  Node: STRUCTURE_4-7          Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
             Area(ac): 6.510                    Time Shift(hrs): 0.00
         Curve Number: 83.70               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
        Name: O-4-1                  Node: SWALE_4-1              Status: Offsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
             Area(ac): 0.810                    Time Shift(hrs): 0.00
         Curve Number: 55.01               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
        Name: O-4-10                 Node: STRUCTURE_4-7          Status: Offsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
             Area(ac): 1.390                    Time Shift(hrs): 0.00
         Curve Number: 72.95               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
        Name: O-4-11                 Node: STRUCTURE_4-7          Status: Offsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
             Area(ac): 0.590                    Time Shift(hrs): 0.00
         Curve Number: 83.74               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
        Name: O-4-5                  Node: DRY POND_4-5           Status: Offsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
             Area(ac): 11.560                   Time Shift(hrs): 0.00
         Curve Number: 98.27               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
        Name: O-4-7                  Node: STRUCTURE_4-7          Status: Offsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
             Area(ac): 0.120                    Time Shift(hrs): 0.00
         Curve Number: 64.71               Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00
```

```
-----------------------------------------------------------------------------------------------
        Name: O-4-8                   Node: STRUCTURE_4-7          Status: Offsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
            Area(ac): 0.400                Time Shift(hrs): 0.00
        Curve Number: 65.29            Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00



-----------------------------------------------------------------------------------------------
        Name: O-4-9                   Node: STRUCTURE_4-7          Status: Offsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
            Area(ac): 0.810                Time Shift(hrs): 0.00
        Curve Number: 62.66            Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00



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

     Name: C-51_STUB CANAL     Base Flow(cfs): 0.000          Init Stage(ft): 6.920
    Group: BASE                                               Warn Stage(ft): 7.000
     Type: Time/Stage

C-51 Stub Canal Stage based on:
An Atlas of Eastern Palm Beach County Surface Water Management Basins - 1988 (SFWMD)
Structure S-155
Design HW Stage (8.50' NGVD, 6.92' NAVD)

     Time(hrs)       Stage(ft)
-------------- ---------------
          0.00           6.920
        999.00           6.920

-----------------------------------------------------------------------------------------------
     Name: DRY POND_4-2        Base Flow(cfs): 0.000          Init Stage(ft): 14.000
    Group: BASE                                               Warn Stage(ft): 15.500
     Type: Stage/Area

Warning Stage = EOP Elev. minus 1.0 ft (Freeboard)
EOP Elev. = 16.50'

     Stage(ft)        Area(ac)
-------------- ---------------
        14.000          0.0400
        14.500          0.1500
        15.000          0.2400

-----------------------------------------------------------------------------------------------
     Name: DRY POND_4-3        Base Flow(cfs): 0.000          Init Stage(ft): 11.410
    Group: BASE                                               Warn Stage(ft): 15.000
     Type: Stage/Area

Warning Stage = EOP Elev. minus 1.0 ft (Freeboard)
EOP Elev. = 16.00'

     Stage(ft)        Area(ac)
-------------- ---------------
        11.410          0.0001
        11.990          0.0001
        12.000          0.1400
        13.000          0.5600
        14.000          0.8700
        15.000          1.2100

-----------------------------------------------------------------------------------------------
     Name: DRY POND_4-4        Base Flow(cfs): 0.000          Init Stage(ft): 6.920
    Group: BASE                                               Warn Stage(ft): 14.480
     Type: Stage/Area

Warning Stage = Berm Elev. minus 1.00 ft (Freeboard)
Berm Elev. = 15.48

     Stage(ft)        Area(ac)
-------------- ---------------
```

5.310	0.0001
8.990	0.0001
9.000	0.0400
9.500	0.3000
10.000	0.3200
11.000	0.3500
12.000	0.3900
13.000	0.4200
14.000	0.4600

Name: DRY POND_4-5 Base Flow(cfs): 0.000 Init Stage(ft): 7.280
Group: BASE Warn Stage(ft): 14.640
Type: Stage/Area

Warning Stage = Berm Elev. minus 1.00 ft (Freeboard)
Berm Elev. = 15.64

Stage(ft)	Area(ac)
7.280	0.0001
8.490	0.0001
8.500	0.2600
9.000	0.4400
10.000	0.5900
11.000	0.7100
12.000	0.8900
13.000	1.1200
14.000	1.3500

Name: DRY POND_4-6 Base Flow(cfs): 0.000 Init Stage(ft): 9.900
Group: BASE Warn Stage(ft): 16.000
Type: Stage/Area

Warning Stage = EOP Elev. minus 1.0 ft (Freeboard)
EOP Elev. = 17.00'

Stage(ft)	Area(ac)
9.900	0.0001
9.990	0.0001
10.000	0.0400
11.000	0.1100
12.000	0.1600
13.000	0.2200
14.000	0.2900

Name: STRUCTURE_4-2 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 15.500
Type: Stage/Area

Warning Stage = DRY POND_4-2 WARNING STAGE.

S-6
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

Stage(ft)	Area(ac)
5.070	0.0001
14.660	0.0001

Name: STRUCTURE_4-4 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 13.180
Type: Stage/Area

Warning Stage = Rim Elev.

S-88
FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4

Stage(ft)	Area(ac)
5.210	0.0001
13.180	0.0001

Name: STRUCTURE_4-5 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 14.820
Type: Stage/Area

Warning Stage = Rim Elev.

S-7
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

Stage(ft)	Area(ac)
5.210	0.0001
14.820	0.0001

Name: STRUCTURE_4-7 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 19.560
Type: Stage/Area

Warning Stage = Rim Elev.

S-74
FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4

Stage(ft)	Area(ac)
6.000	0.0001
19.560	0.0001

Name: SWALE_4-1 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 16.000
Type: Stage/Area

Warning Stage = CSX Railroad Elev.

Stage(ft)	Area(ac)
6.650	0.0001
7.490	0.0001
7.500	0.0100
8.000	0.0200
9.000	0.0600
10.000	0.1900
11.000	0.5600

==== Pipes ====

Name: P_P4-6_STR4-7 From Node: DRY POND_4-6 Length(ft): 130.00
Group: BASE To Node: STRUCTURE_4-7 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	30.00	30.00	Flow:	Both
Rise(in):	30.00	30.00	Entrance Loss Coef:	0.00
Invert(ft):	9.900	9.570	Exit Loss Coef:	1.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

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

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

FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4

Name: P_S4-1_C51STB From Node: SWALE_4-1 Length(ft): 62.00
Group: BASE To Node: C-51_STUB CANAL Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	24.00	24.00	Flow:	Both
Rise(in):	24.00	24.00	Entrance Loss Coef:	0.50
Invert(ft):	6.650	5.930	Exit Loss Coef:	1.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

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

Information based on:
Survey

Name:	P_STR4-2_C51STB	From Node:	STRUCTURE_4-2	Length(ft): 360.00
Group:	BASE	To Node:	C-51_STUB CANAL	Count: 1
				Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular		Flow: Both
Span(in):	48.00	48.00		Entrance Loss Coef: 0.50
Rise(in):	48.00	48.00		Exit Loss Coef: 1.00
Invert(ft):	5.090	5.090		Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option: None

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

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

S-6
FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4
&
Survey

Name:	P_STR4-4_STR4-5	From Node:	STRUCTURE_4-4	Length(ft): 75.00
Group:	BASE	To Node:	STRUCTURE_4-5	Count: 1
				Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular		Flow: Both
Span(in):	48.00	48.00		Entrance Loss Coef: 0.50
Rise(in):	48.00	48.00		Exit Loss Coef: 0.00
Invert(ft):	5.210	5.210		Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option: None

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

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

S-88
FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4
&
S-7
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

Name:	P_STR4-5_STR4-2	From Node:	STRUCTURE_4-5	Length(ft): 269.00
Group:	BASE	To Node:	STRUCTURE_4-2	Count: 1
				Friction Equation: Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular		Flow: Both
Span(in):	48.00	48.00		Entrance Loss Coef: 0.50
Rise(in):	48.00	48.00		Exit Loss Coef: 0.00
Invert(ft):	5.210	5.090		Bend Loss Coef: 0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option: None

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

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

S-7 & S-6

FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

```
-------------------------------------------------------------------------------------------------
         Name: P_STR4-7_P4-4       From Node: STRUCTURE_4-7      Length(ft): 484.00
        Group: BASE                  To Node: DRY POND_4-4           Count: 1
                                                 Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM         Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                      Flow: Both
     Span(in): 48.00          48.00              Entrance Loss Coef: 0.00
     Rise(in): 48.00          48.00                  Exit Loss Coef: 1.00
   Invert(ft): 6.000          5.310                  Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000             Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                 Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                Stabilizer Option: None


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

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

FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4

```
===============================================================================================
==== Drop Structures ==========================================================================
===============================================================================================

         Name: D_P4-3_STR4-2       From Node: DRY POND_4-3       Length(ft): 160.00
        Group: BASE                  To Node: STRUCTURE_4-2           Count: 1

               UPSTREAM       DOWNSTREAM          Friction Equation: Automatic
     Geometry: Circular       Circular           Solution Algorithm: Most Restrictive
     Span(in): 36.00          36.00                         Flow: Both
     Rise(in): 36.00          36.00              Entrance Loss Coef: 0.500
   Invert(ft): 5.410          5.090                  Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000             Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                 Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                   Solution Incs: 10

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

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

S-18, S-19
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

```
*** Weir 1 of 3 for Drop Structure D_P4-3_STR4-2 ***
                                                                              TABLE
                Count: 2                      Bottom Clip(in): 0.000
                 Type: Horizontal                Top Clip(in): 0.000
                 Flow: Both                   Weir Disc Coef: 3.200
             Geometry: Rectangular           Orifice Disc Coef: 0.600

             Span(in): 49.00                       Invert(ft): 14.490
             Rise(in): 37.00                  Control Elev(ft): 14.490

*** Weir 2 of 3 for Drop Structure D_P4-3_STR4-2 ***
                                                                              TABLE
                Count: 4                      Bottom Clip(in): 0.000
                 Type: Vertical: Mavis           Top Clip(in): 0.000
                 Flow: Both                   Weir Disc Coef: 3.200
             Geometry: Rectangular           Orifice Disc Coef: 0.600

             Span(in): 48.00                       Invert(ft): 13.790
             Rise(in): 8.40                   Control Elev(ft): 13.790

*** Weir 3 of 3 for Drop Structure D_P4-3_STR4-2 ***
                                                                              TABLE
                Count: 1                      Bottom Clip(in): 0.000
                 Type: Vertical: Mavis           Top Clip(in): 0.000
                 Flow: Both                   Weir Disc Coef: 3.200
             Geometry: Circular              Orifice Disc Coef: 0.600

             Span(in): 3.00                        Invert(ft): 11.410
             Rise(in): 3.00                   Control Elev(ft): 11.410


-------------------------------------------------------------------------------------------------
```

```
        Name: D_P4-4_STR4-4       From Node: DRY POND_4-4       Length(ft): 45.00
       Group: BASE                  To Node: STRUCTURE_4-4           Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
    Geometry: Circular       Circular                 Solution Algorithm: Most Restrictive
    Span(in): 48.00          48.00                                 Flow: Both
    Rise(in): 48.00          48.00                    Entrance Loss Coef: 0.500
  Invert(ft): 5.310          5.210                        Exit Loss Coef: 0.000
 Manning's N: 0.012000       0.012000                   Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                       Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000          0.000                         Solution Incs: 10

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

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

S-87
FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4

*** Weir 1 of 3 for Drop Structure D_P4-4_STR4-4 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                   Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 50.00                       Invert(ft): 14.160
              Rise(in): 46.00                  Control Elev(ft): 14.160

*** Weir 2 of 3 for Drop Structure D_P4-4_STR4-4 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                   Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 45.24                       Invert(ft): 11.510
              Rise(in): 31.80                  Control Elev(ft): 11.510

*** Weir 3 of 3 for Drop Structure D_P4-4_STR4-4 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                   Weir Disc Coef: 3.200
              Geometry: Circular              Orifice Disc Coef: 0.600

              Span(in): 3.00                        Invert(ft): 7.930
              Rise(in): 3.00                   Control Elev(ft): 7.930


-------------------------------------------------------------------------------------------------
        Name: D_P4-5_STR4-5       From Node: DRY POND_4-5       Length(ft): 38.00
       Group: BASE                  To Node: STRUCTURE_4-5           Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
    Geometry: Circular       Circular                 Solution Algorithm: Most Restrictive
    Span(in): 36.00          36.00                                 Flow: Both
    Rise(in): 36.00          36.00                    Entrance Loss Coef: 0.500
  Invert(ft): 5.900          5.900                        Exit Loss Coef: 0.000
 Manning's N: 0.012000       0.012000                   Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                       Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000          0.000                         Solution Incs: 10

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

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

S-6A & S-7
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

*** Weir 1 of 3 for Drop Structure D_P4-5_STR4-5 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                   Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 50.00                       Invert(ft): 10.830
              Rise(in): 46.00                  Control Elev(ft): 10.830
```

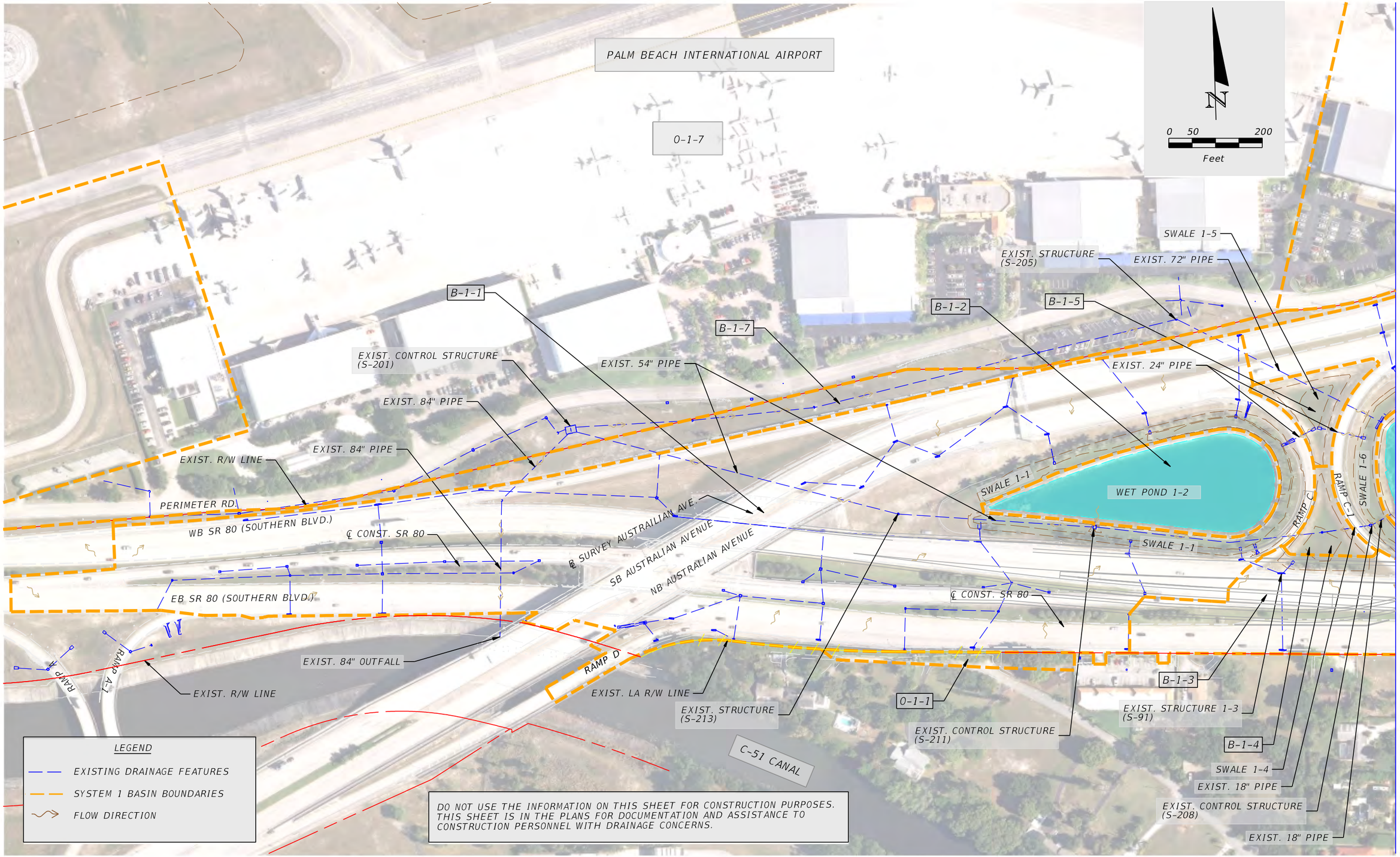
```
*** Weir 2 of 3 for Drop Structure D_P4-5_STR4-5 ***
                                                                                TABLE
                  Count: 2                       Bottom Clip(in): 0.000
                   Type: Vertical: Mavis            Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular            Orifice Disc Coef: 0.600

               Span(in): 48.00                        Invert(ft): 9.340
               Rise(in): 17.88                  Control Elev(ft): 9.340

*** Weir 3 of 3 for Drop Structure D_P4-5_STR4-5 ***
                                                                                TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Vertical: Mavis            Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Circular               Orifice Disc Coef: 0.600

               Span(in): 3.00                         Invert(ft): 7.280
               Rise(in): 3.00                   Control Elev(ft): 7.280


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

         Name: W_STR4-2            From Node: DRY POND_4-2
        Group: BASE                  To Node: STRUCTURE_4-2
         Flow: Both                    Count: 1
         Type: Horizontal          Geometry: Rectangular

                    Span(in): 50.00
                    Rise(in): 46.00
                  Invert(ft): 14.660
       Control Elevation(ft): 14.660
                                       TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
          Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

S-6
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

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

         Name: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 4\10YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 8.00

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

--------------------------------------------------------------------------------
         Name: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 4\10YR-72HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Sfwmd72
    Rainfall Amount(in): 10.50

Time(hrs)       Print Inc(min)
--------------- ---------------
72.000          5.00
84.000          15.00

--------------------------------------------------------------------------------
         Name: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 4\3YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 5.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00
```

```
================================================================================
==== Routing Simulations ======================================================
================================================================================

         Name: 10YR-24HR           Hydrology Sim: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 4\10YR-24HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.000

Group           Run
--------------- -----
BASE            Yes


--------------------------------------------------------------------------------------------------------
         Name: 10YR-72HR           Hydrology Sim: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 4\10YR-72HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 84.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
48.000          15.000
72.000          5.000
84.000          15.000

Group           Run
--------------- -----
BASE            Yes


--------------------------------------------------------------------------------------------------------
         Name: 3YR-24HR            Hydrology Sim: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Pre-Development\System 4\3YR-24HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.000

Group           Run
--------------- -----
BASE            Yes
```

APPENDIX C

Post-Development Analysis (Alternative 1)

Post-Development Drainage Maps



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 1) DRAINAGE MAPS

SHEET NO. 1

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 5

MATCHLINE A-A

SEE SHEET 3

LEGEND

- EXISTING DRAINAGE FEATURES
- SYSTEM 1 BASIN BOUNDARIES
- SYSTEM 2 BASIN BOUNDARIES
- SYSTEM 3 BASIN BOUNDARIES
- SYSTEM 4 BASIN BOUNDARIES
- FLOW DIRECTION

N

0 50 200

Feet

℄ SURVEY AUSTRAILIAN AVE.

B-1-8

WET POND 1-8

SWALE 1-6

HILTON PALM BEACH AIRPORT HOTEL

EXIST. R/W LINE

GEM LAKE DR.

B-1-6

SWALE 1-6

WB SR 80 (SOUTHERN BLVD.)

EB SR 80 (SOUTHERN BLVD.)

℄ CONST. SR 80

EXIST. R/W LINE

GEM LAKE DR.

0-1-6

B-2-3

B-2-1

LANG RD.

0-2-1

EXIST. CONTROL STRUCTURE (S-7)

WET POND 2-1

EXIST. R/W LINE

℄ CONST. SR 80

B-2-5

EXIST. 48" OUTFALL

B-2-4

DITCH 2-4

EXIST. RR R/W LINE

EXIST. 48" PIPE

EXIST. LA R/W LINE

B-4-3A

B-4-1

B-4-3

0-4-1

EXIST. 24" PIPE

EXIST. 24" OUTFALL

EXIST. CONTROL STRUCTURES (S-18 AND S-19)

EXIST. 36" PIPE

EXIST. 48" PIPE

EXIST. CONTROL STRUCTURE (S-6)

EXIST. 48" OUTFALL

EXIST. CONTROL STRUCTURE (S-87)

B-4-2

CSX RAILROAD

B-2-2

SWALE 4-1

RAMP I

DRY POND 4-3

℄ SURVEY SR 9

SB SR 9 (I-95)

NB SR 9 (I-95)

EXIST. 48" PIPE

EXIST. 48" PIPE

EXIST. CONTROL STRUCTURE (S-6A)

DRY POND 4-2

DRY POND 4-4

℄ CONST. SR 80

B-4-5

DRY POND 4-5

RAMP J

PARKLAND RD

B-4-4

B-3-7

DRY POND 3-7

B-3-6

B-3-3

RAMP K

DRY POND 3-6

RAMP L

℄ SURVEY SR 9

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

SEE SHEET 4

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

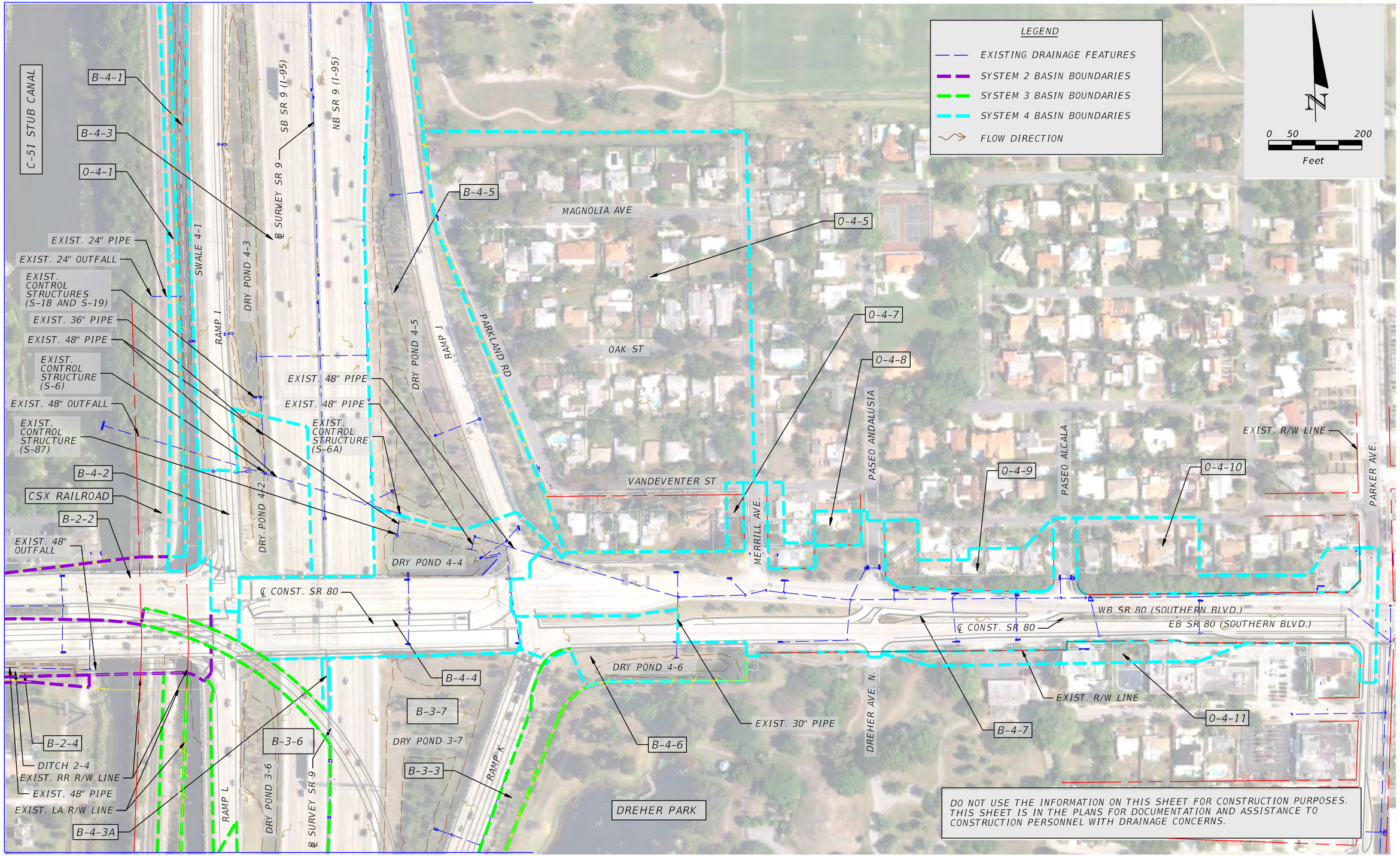
POST-DEVELOPMENT (ALT 1) DRAINAGE MAPS

SHEET NO. 2

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 5

SEE SHEET 2



SEE SHEET 4

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

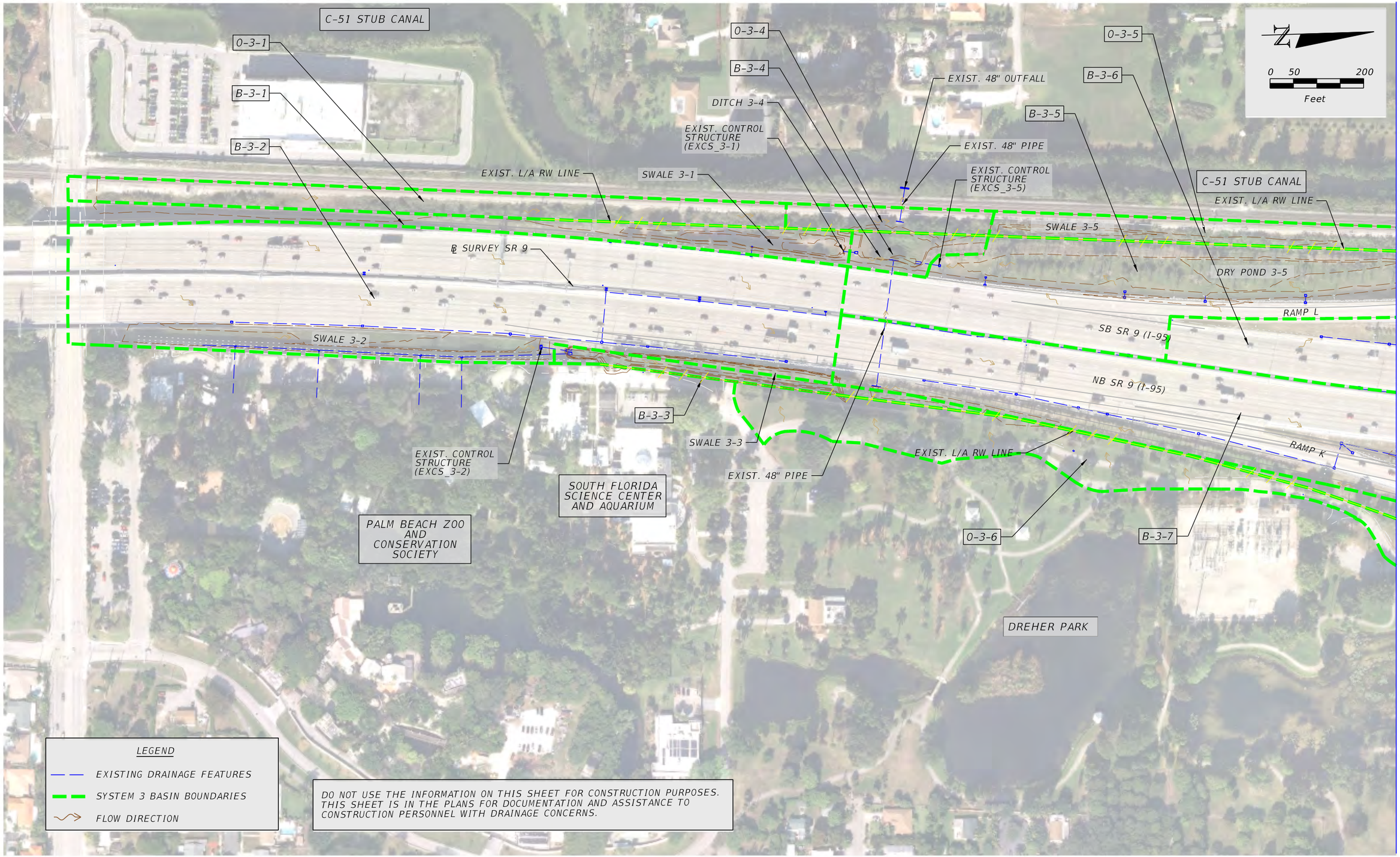
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 1) DRAINAGE MAPS

SHEET NO. 3

$USER$ $DATE$ $TIME$ $FILE$



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

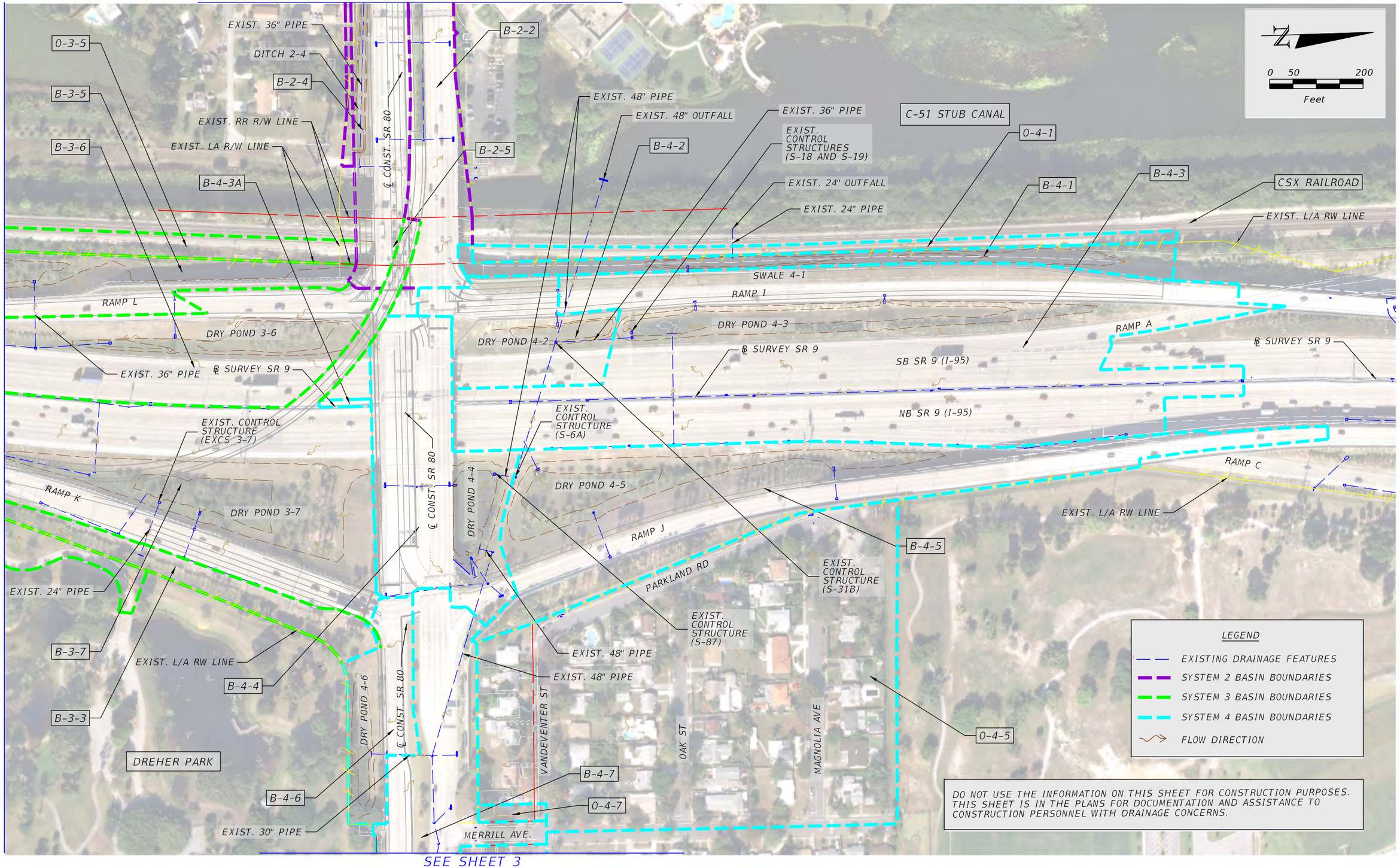
POST-DEVELOPMENT (ALT 1) DRAINAGE MAPS

SHEET NO. 4

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 2

MATCHLINE B-B



SEE SHEET 3

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

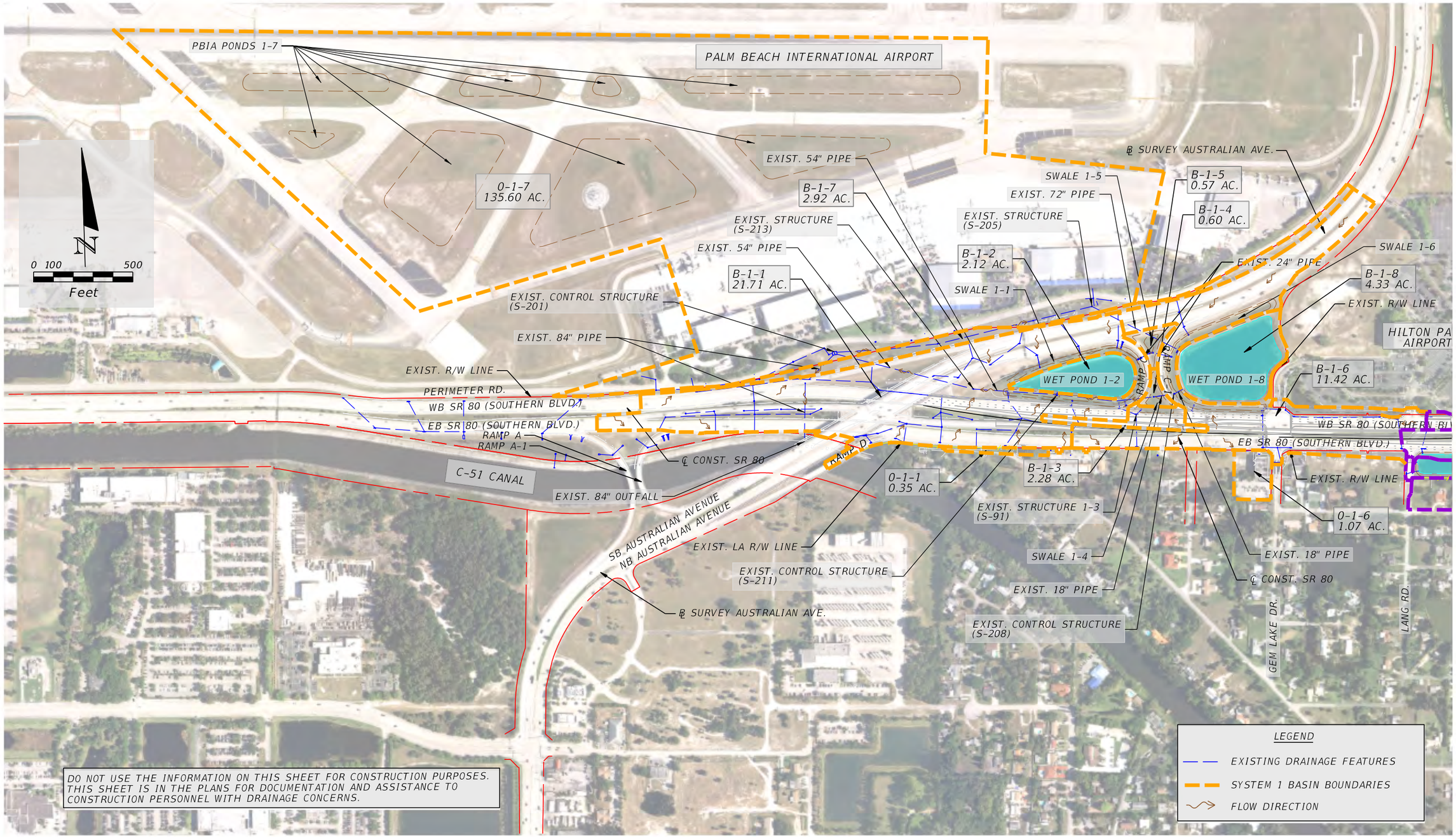
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 1) DRAINAGE MAPS

SHEET NO. 5

$USER$ $DATE$ $TIME$ $FILE$



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 1) DRAINAGE MAPS

SHEET NO. 6

$USER$ $DATE$ $TIME$ $FILE$

Post-Development Land Use

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE - ALT 1

DRAINAGE SYSTEM: 1 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-1-1	**10**	**21.78**	**21.78**	15.26	0.00	6.52	**0.00**	0.00	0.00	0.00	**12.00**	5.00	8.18	**80.33**
B-1-2	**10**	**2.12**	**2.12**	0.37	1.75	0.00	**0.00**	0.00	0.00	0.00	**9.00**	2.00	1.88	**100.00**
B-1-3	**10**	**2.60**	**2.60**	2.19	0.00	0.41	**0.00**	0.00	0.00	0.00	**15.00**	8.00	8.18	**88.57**
B-1-4	**10**	**0.38**	**0.38**	0.01	0.00	0.37	**0.00**	0.00	0.00	0.00	**11.00**	4.00	8.18	**55.66**
B-1-5	**10**	**0.57**	**0.57**	0.00	0.00	0.57	**0.00**	0.00	0.00	0.00	**12.00**	5.00	8.18	**55.01**
B-1-6	**10**	**12.23**	**12.23**	9.61	0.00	2.62	**0.00**	0.00	0.00	0.00	**13.00**	6.00	8.18	**85.09**
B-1-7	**10**	**2.92**	**2.92**	0.26	0.00	2.66	**0.00**	0.00	0.00	0.00	**17.00**	10.00	8.18	**57.30**
B-1-8*	**10**	**4.33**	**4.33**	0.38	3.45	0.50	**0.00**	0.00	0.00	0.00	-	-	8.18	**98.00**
O-1-1	**10**	**0.35**	**0.00**	0.00	0.00	0.00	**0.35**	0.12	0.00	0.23	**15.50**	9.00	8.18	**64.59**
O-1-6	**10**	**1.07**	**0.00**	0.00	0.00	0.00	**1.07**	0.68	0.00	0.39	**13.00**	6.00	8.18	**77.03**
O-1-7*	**10**	**134.94**	**0.00**	0.00	0.00	0.00	**134.94**	134.94	0.00	0.00	-	-	-	**70.56**
SYSTEM TOTALS		**183.29**	**46.93**	**28.08**	**5.20**	**13.65**	**136.36**	**135.74**	**0.00**	**0.62**	**--**	**--**	**--**	**--**

* - Basin B-1-8 & O-1-7 Land Use breakdown taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE - ALT 1

DRAINAGE SYSTEM: 2 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-2-1	**10**	**0.92**	**0.92**	0.00	0.61	0.31	**0.00**	0.00	0.00	0.00	9.00	2.00	1.88	**94.04**
B-2-2	**10**	**2.72**	**2.72**	2.68	0.00	0.04	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**98.81**
B-2-3	**10**	**0.12**	**0.12**	0.12	0.00	0.00	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**100.00**
B-2-4	**10**	**0.16**	**0.16**	0.00	0.00	0.16	**0.00**	0.00	0.00	0.00	10.60	4.00	8.18	**55.01**
B-2-5	**10**	**3.11**	**3.11**	2.84	0.00	0.27	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**93.37**
O-2-1	**10**	**1.52**	**0.00**	0.00	0.00	0.00	**1.52**	0.00	0.00	1.52	11.00	4.00	8.18	**55.01**
SYSTEM TOTALS		**8.55**	**7.03**	**5.64**	**0.61**	**0.78**	**1.52**	**0.00**	**0.00**	**1.52**	--	--	--	--

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE - ALT 1

DRAINAGE SYSTEM: 3 **SHGWT EL. (ft-NAVD): 6.92**

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-3-1	**10**	**1.59**	**1.59**	0.14	0.00	1.45	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**57.27**
B-3-2	**10**	**10.02**	**10.02**	9.16	0.00	0.86	**0.00**	0.00	0.00	0.00	9.00	2.00	1.88	**98.41**
B-3-3	**10**	**1.73**	**1.73**	0.12	0.00	1.61	**0.00**	0.00	0.00	0.00	8.00	1.00	0.45	**95.98**
B-3-4	**10**	**0.46**	**0.46**	0.01	0.00	0.45	**0.00**	0.00	0.00	0.00	8.50	2.00	1.88	**84.47**
B-3-5	**10**	**6.33**	**6.33**	2.95	0.00	3.38	**0.00**	0.00	0.00	0.00	9.50	3.00	4.95	**79.09**
B-3-6	**10**	**4.97**	**4.97**	3.14	0.00	1.83	**0.00**	0.00	0.00	0.00	13.00	6.00	8.18	**76.85**
B-3-7	**10**	**11.57**	**11.57**	8.50	0.00	3.07	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**82.17**
O-3-1	**10**	**1.85**	**0.00**	0.00	0.00	0.00	**1.85**	0.56	0.00	1.29	10.50	4.00	8.18	**63.68**
O-3-4	**10**	**0.54**	**0.00**	0.00	0.00	0.00	**0.54**	0.16	0.00	0.38	8.00	1.00	0.45	**96.93**
O-3-5	**10**	**1.91**	**0.00**	0.00	0.00	0.00	**1.91**	0.66	0.00	1.25	8.50	2.00	1.88	**89.04**
O-3-6	**11**	**2.45**	**0.00**	0.00	0.00	0.00	**2.45**	1.16	0.00	1.29	9.50	3.00	4.95	**79.33**
SYSTEM TOTALS		**40.97**	**36.67**	**24.02**	**0.00**	**12.65**	**4.30**	**1.38**	**0.00**	**2.92**	--	--	--	--

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE - ALT 1

DRAINAGE SYSTEM: 4 **SHGWT EL. (ft-NAVD):** 6.92

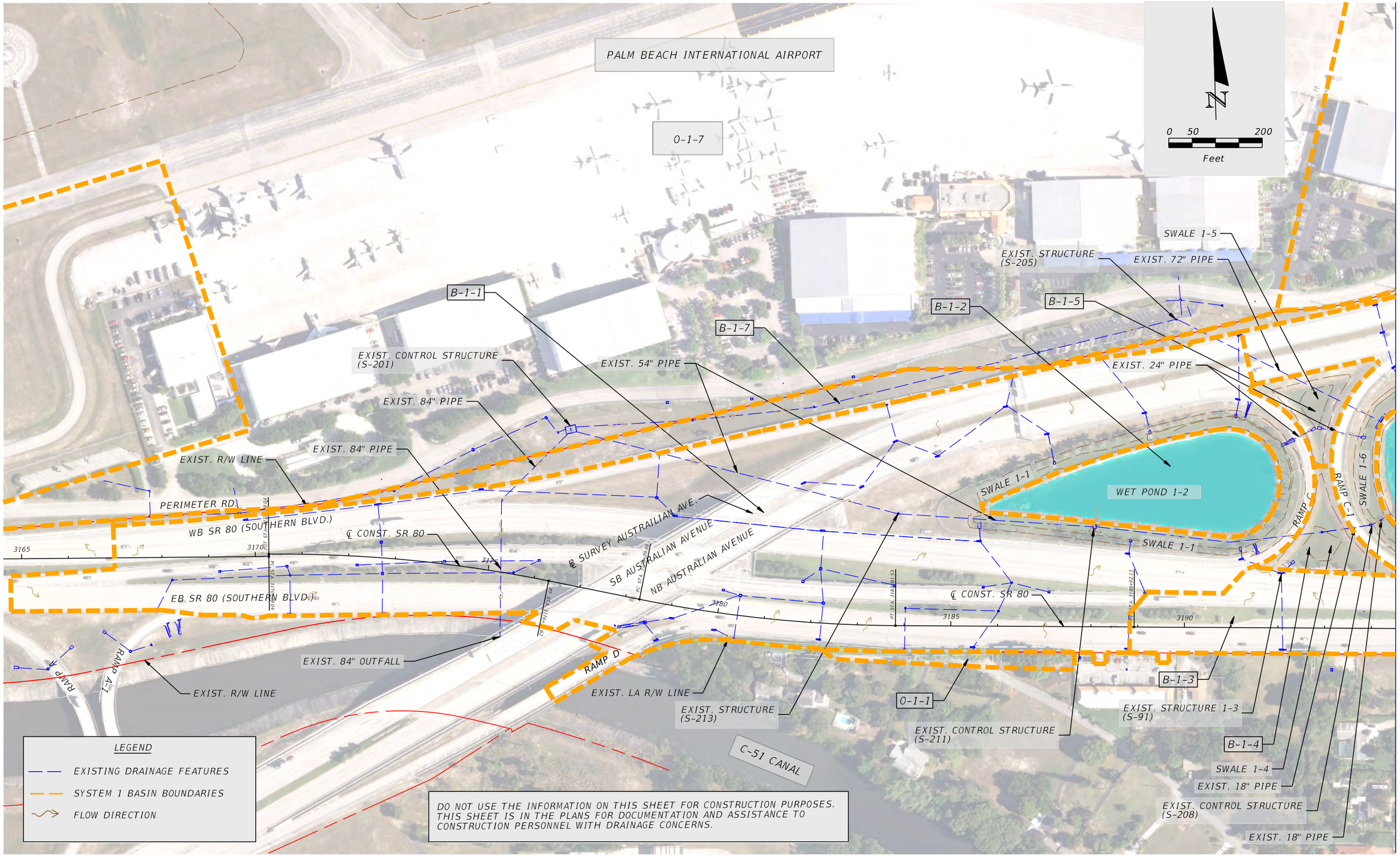
BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-4-1	**10**	**1.28**	**1.28**	1.12	0.00	0.16	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**90.72**
B-4-2	**10**	**1.73**	**1.73**	1.09	0.00	0.64	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**76.77**
B-4-3	**10**	**11.82**	**11.82**	9.71	0.00	2.11	**0.00**	0.00	0.00	0.00	13.00	6.00	8.18	**87.26**
B-4-3A	**10**	**0.04**	**0.04**	0.04	0.00	0.00	**0.00**	0.00	0.00	0.00	16.00	9.00	8.18	**100.00**
B-4-4	**10**	**3.27**	**3.27**	3.27	0.00	0.00	**0.00**	0.00	0.00	0.00	9.50	3.00	4.95	**100.00**
B-4-5	**10**	**5.99**	**5.99**	2.85	0.00	3.14	**0.00**	0.00	0.00	0.00	10.00	3.00	4.95	**79.40**
B-4-6	**10**	**1.23**	**1.23**	0.65	0.00	0.58	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**72.16**
B-4-7	**10**	**6.51**	**6.51**	5.15	0.00	1.36	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**85.40**
O-4-1	**10**	**0.81**	**0.00**	0.00	0.00	0.00	**0.81**	0.81	0.00	0.00	11.00	4.00	8.18	**100.00**
O-4-5	**10**	**11.56**	**0.00**	0.00	0.00	0.00	**11.56**	11.56	0.00	0.00	10.00	3.00	4.95	**100.00**
O-4-7	**10**	**0.12**	**0.00**	0.00	0.00	0.00	**0.12**	0.04	0.00	0.08	15.00	8.00	8.18	**64.71**
O-4-8	**10**	**0.40**	**0.00**	0.00	0.00	0.00	**0.40**	0.14	0.00	0.26	15.00	8.00	8.18	**65.29**
O-4-9	**10**	**0.81**	**0.00**	0.00	0.00	0.00	**0.81**	0.22	0.00	0.59	15.00	8.00	8.18	**62.66**
O-4-10	**10**	**1.39**	**0.00**	0.00	0.00	0.00	**1.39**	0.76	0.00	0.63	15.00	8.00	8.18	**72.95**
O-4-11	**10**	**0.59**	**0.00**	0.00	0.00	0.00	**0.59**	0.44	0.00	0.15	15.00	8.00	8.18	**82.78**
SYSTEM TOTALS		**47.55**	**31.87**	**23.88**	**0.00**	**7.99**	**15.68**	**13.97**	**0.00**	**1.71**	--	--	--	--

APPENDIX D

Post-Development Analysis

(Alternative 3)

Post-Development Drainage Maps



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 3) DRAINAGE MAPS

SHEET NO. 1

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 5

MATCHLINE A-A

SEE SHEET 3

LEGEND

- EXISTING DRAINAGE FEATURES
- SYSTEM 1 BASIN BOUNDARIES
- SYSTEM 2 BASIN BOUNDARIES
- SYSTEM 3 BASIN BOUNDARIES
- SYSTEM 4 BASIN BOUNDARIES
- FLOW DIRECTION

N

0 50 200

Feet

℄ SURVEY AUSTRAILIAN AVE.

B-1-8

WET POND 1-8

SWALE 1-6

EXIST. R/W LINE

GEM LAKE DR.

HILTON PALM BEACH AIRPORT HOTEL

B-1-6

SWALE 1-6

WB SR 80 (SOUTHERN BLVD.)

℄ CONST. SR 80

PI STA 2802+50.00

3195

3200

3205

EB SR 80 (SOUTHERN BLVD.)

EXIST. R/W LINE

GEM LAKE DR.

0-1-6

B-2-3

B-2-1

LANG RD.

0-2-1

EXIST. CONTROL STRUCTURE (S-7)

EXIST. R/W LINE

WET POND 2-1

℄ CONST. SR 80

3210

3215

B-2-5

B-2-4

DITCH 2-4

EXIST. RR R/W LINE

EXIST. 48" PIPE

EXIST. LA R/W LINE

B-4-3A

EXIST. 48" OUTFALL

B-4-1

B-4-3

0-4-1

EXIST. 24" PIPE

EXIST. 24" OUTFALL

EXIST. CONTROL STRUCTURES (S-18 AND S-19)

EXIST. 36" PIPE

EXIST. 48" PIPE

EXIST. CONTROL STRUCTURE (S-6)

EXIST. 48" OUTFALL

EXIST. CONTROL STRUCTURE (S-87)

B-4-2

CSX RAILROAD

B-2-2

SWALE 4-1

RAMP I

DRY POND 4-3

SB SR 9 (I-95)

NB SR 9 (I-95)

℄ SURVEY SR 9

1340

1355

EXIST. 48" PIPE

EXIST. 48" PIPE

EXIST. CONTROL STRUCTURE (S-6A)

DRY POND 4-2

DRY POND 4-4

℄ CONST. SR 80

3220

B-4-5

DRY POND 4-5

RAMP J

PARKLAND RD

B-4-4

B-3-7

DRY POND 3-7

B-3-6

B-3-3

RAMP K

DRY POND 3-6

RAMP L

℄ SURVEY SR 9

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

SEE SHEET 4

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

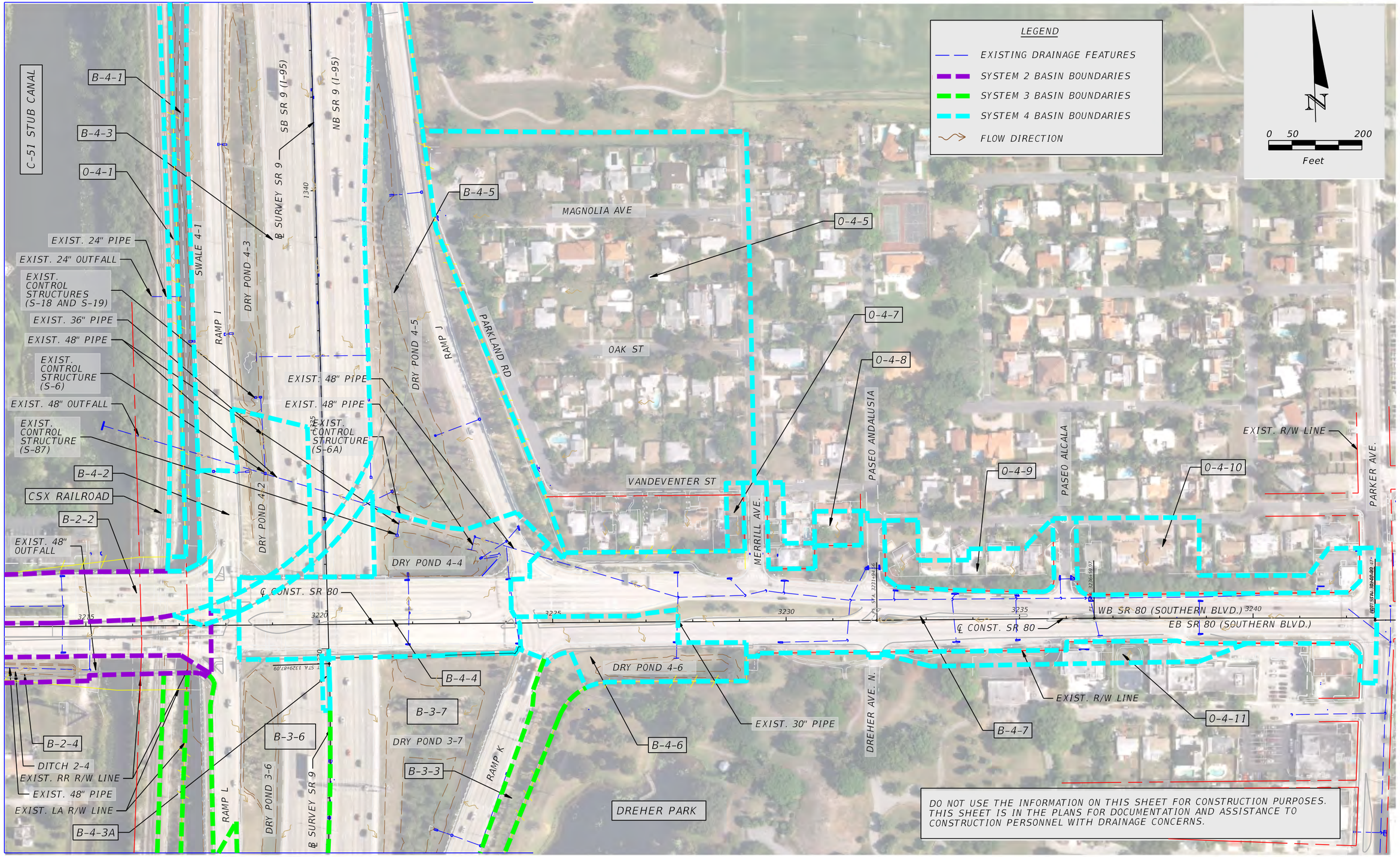
POST-DEVELOPMENT (ALT 3) DRAINAGE MAPS

SHEET NO. 2

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 5

SEE SHEET 2



SEE SHEET 4

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

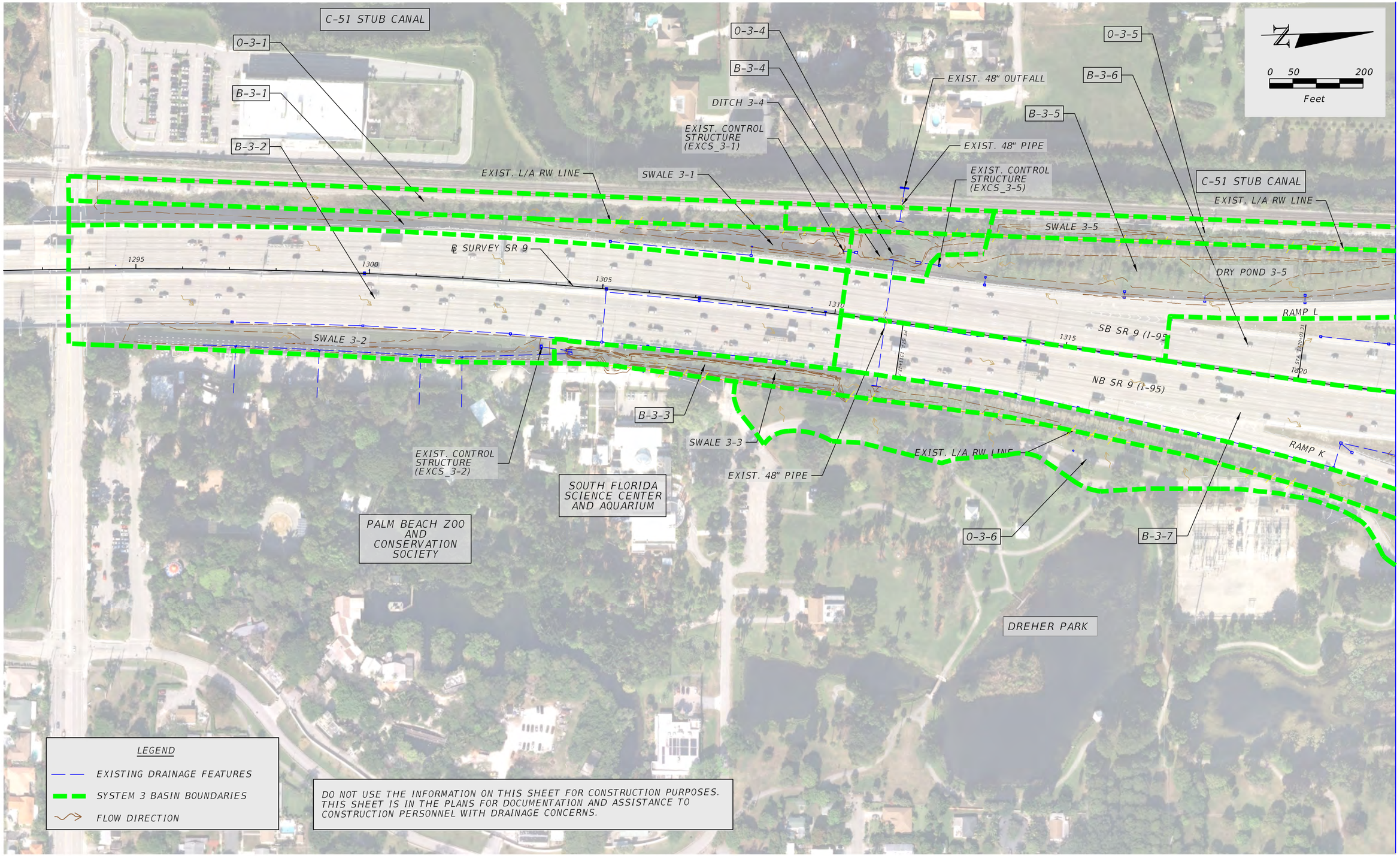
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 3) DRAINAGE MAPS

SHEET NO. 3

$USER$ $DATE$ $TIME$ $FILE$



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

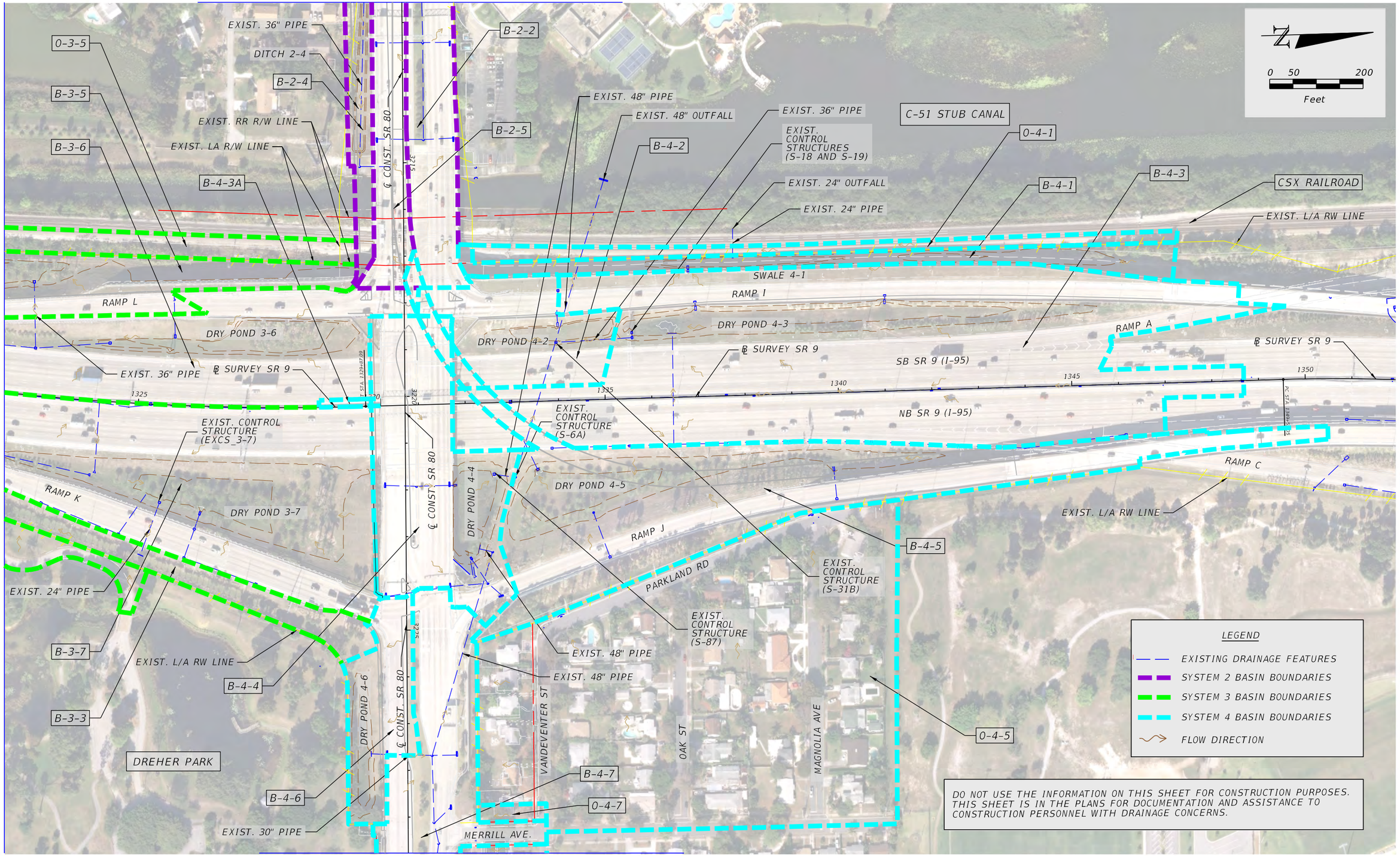
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 3) DRAINAGE MAPS

SHEET NO. 4

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 2



MATCHLINE B-B

SEE SHEET 3

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

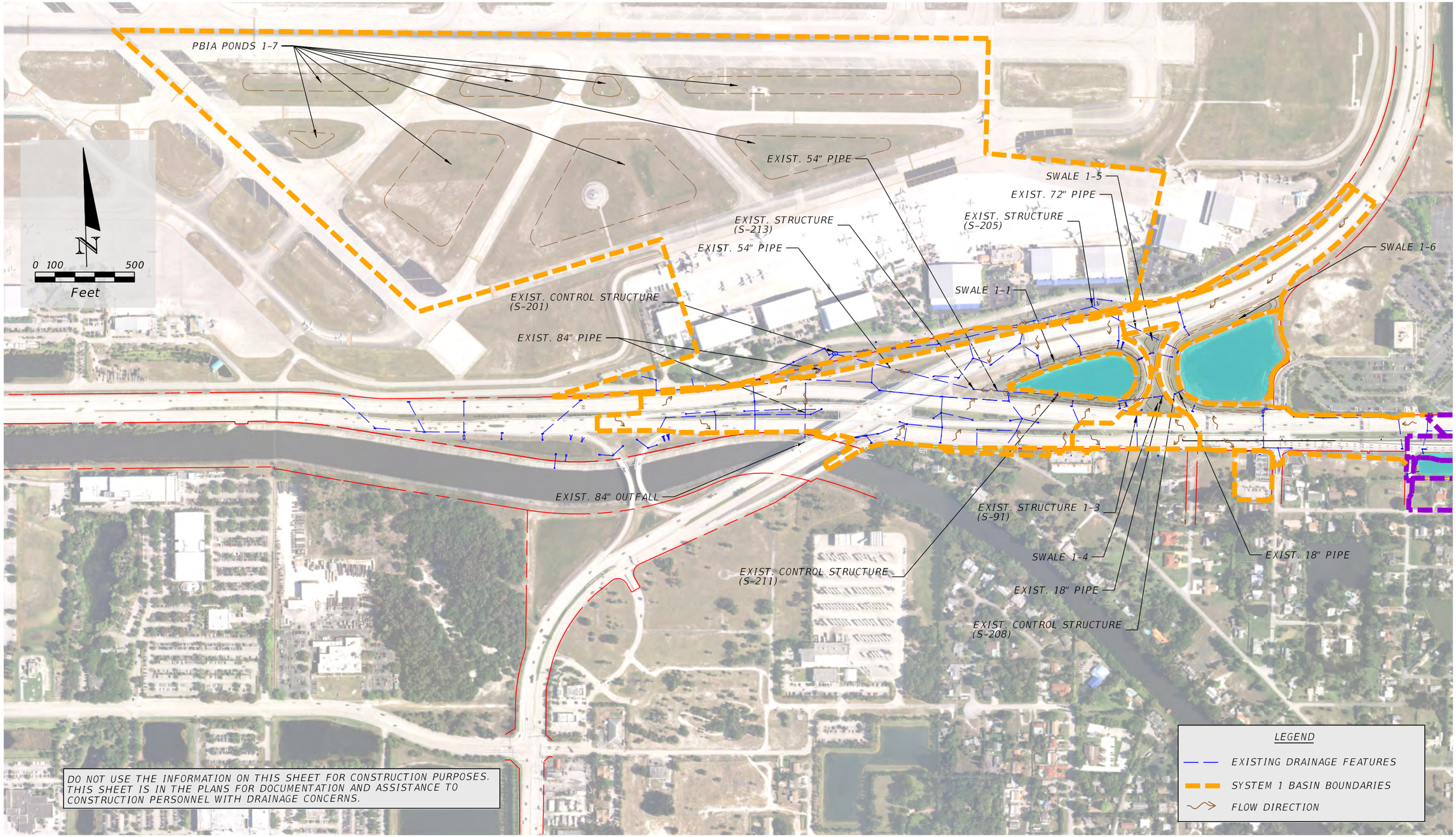
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 3) DRAINAGE MAPS

SHEET NO. 5

$USER$ $DATE$ $TIME$ $FILE$



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 3) DRAINAGE MAPS

SHEET NO. 6

$USER$ $DATE$ $TIME$ $FILE$

Post-Development Land Use

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE - ALT 3

DRAINAGE SYSTEM: 1 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-1-1	**10**	**21.72**	**21.72**	14.41	0.00	7.31	**0.00**	0.00	0.00	0.00	**12.00**	5.00	8.18	**78.41**
B-1-2	**10**	**2.12**	**2.12**	0.37	1.75	0.00	**0.00**	0.00	0.00	0.00	**9.00**	2.00	1.88	**100.00**
B-1-3	**10**	**2.28**	**2.28**	1.83	0.00	0.45	**0.00**	0.00	0.00	0.00	**15.00**	8.00	8.18	**86.00**
B-1-4	**10**	**0.60**	**0.60**	0.00	0.00	0.60	**0.00**	0.00	0.00	0.00	**11.00**	4.00	8.18	**55.01**
B-1-5	**10**	**0.57**	**0.57**	0.00	0.00	0.57	**0.00**	0.00	0.00	0.00	**12.00**	5.00	8.18	**55.01**
B-1-6	**10**	**11.98**	**11.98**	8.32	0.00	3.66	**0.00**	0.00	0.00	0.00	**13.00**	6.00	8.18	**80.00**
B-1-7	**10**	**2.92**	**2.92**	0.26	0.00	2.66	**0.00**	0.00	0.00	0.00	**17.00**	10.00	8.18	**57.30**
B-1-8*	**10**	**4.33**	**4.33**	0.38	3.45	0.50	**0.00**	0.00	0.00	0.00	-	-	8.18	**91.37**
O-1-1	**10**	**0.35**	**0.00**	0.00	0.00	0.00	**0.35**	0.12	0.00	0.24	**15.50**	9.00	8.18	**64.55**
O-1-6	**10**	**1.07**	**0.00**	0.00	0.00	0.00	**1.07**	0.68	0.00	0.39	**13.00**	6.00	8.18	**77.03**
O-1-7*	**10**	**134.94**	**0.00**	0.00	0.00	0.00	**134.94**	134.94	0.00	0.00	-	-	8.18	**70.56**
SYSTEM TOTALS		**182.88**	**46.52**	**25.57**	**5.20**	**15.75**	**136.36**	**135.74**	**0.00**	**0.63**	**--**	**--**	**--**	**--**

* - Basin B-1-8 & O-1-7 Land Use breakdown taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE - ALT 3

DRAINAGE SYSTEM: 2 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-2-1	**10**	**0.85**	**0.85**	0.00	0.00	0.85	**0.00**	0.00	0.00	0.00	9.00	2.00	1.88	**84.18**
B-2-2	**10**	**2.47**	**2.47**	2.11	0.00	0.36	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**89.35**
B-2-3	**10**	**0.10**	**0.10**	0.10	0.00	0.00	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**100.00**
B-2-4	**10**	**0.86**	**0.86**	0.62	0.00	0.24	**0.00**	0.00	0.00	0.00	10.60	4.00	8.18	**81.41**
B-2-5	**10**	**2.52**	**2.52**	2.46	0.00	0.06	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**98.09**
O-2-1	**10**	**1.52**	**0.00**	0.00	0.00	0.00	**1.52**	0.00	0.00	1.52	11.00	4.00	8.18	**55.01**
SYSTEM TOTALS		**8.32**	**6.80**	**5.29**	**0.00**	**1.51**	**1.52**	**0.00**	**0.00**	**1.52**	--	--	--	--

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE - ALT 3

DRAINAGE SYSTEM: 3 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-3-1	**10**	**1.97**	**1.97**	0.50	0.00	1.47	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**62.10**
B-3-2	**10**	**9.34**	**9.34**	8.48	0.00	0.86	**0.00**	0.00	0.00	0.00	9.00	2.00	1.88	**98.30**
B-3-3	**10**	**3.19**	**3.19**	2.48	0.00	0.71	**0.00**	0.00	0.00	0.00	8.00	1.00	0.45	**99.01**
B-3-4	**10**	**0.50**	**0.50**	0.05	0.00	0.45	**0.00**	0.00	0.00	0.00	8.50	2.00	1.88	**85.53**
B-3-5	**10**	**6.31**	**6.31**	2.70	0.00	3.61	**0.00**	0.00	0.00	0.00	9.50	3.00	4.95	**77.93**
B-3-6	**10**	**5.42**	**5.42**	3.69	0.00	1.73	**0.00**	0.00	0.00	0.00	13.00	6.00	8.18	**79.29**
B-3-7	**10**	**10.04**	**10.04**	7.07	0.00	2.97	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**80.52**
O-3-1	**10**	**1.85**	**0.00**	0.00	0.00	0.00	**1.85**	0.56	0.00	1.29	10.50	4.00	8.18	**63.68**
O-3-4	**10**	**0.54**	**0.00**	0.00	0.00	0.00	**0.54**	0.16	0.00	0.38	8.00	1.00	0.45	**96.93**
O-3-5	**10**	**1.91**	**0.00**	0.00	0.00	0.00	**1.91**	0.66	0.00	1.25	8.50	2.00	1.88	**89.04**
O-3-6	**11**	**3.00**	**0.00**	0.00	0.00	0.00	**3.00**	1.33	0.00	1.67	9.50	3.00	4.95	**78.40**
SYSTEM TOTALS		**41.07**	**36.77**	**24.97**	**0.00**	**11.80**	**4.30**	**1.38**	**0.00**	**2.92**	--	--	--	--

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE - ALT 3

DRAINAGE SYSTEM: 4 **SHGWT EL. (ft-NAVD):** 6.92

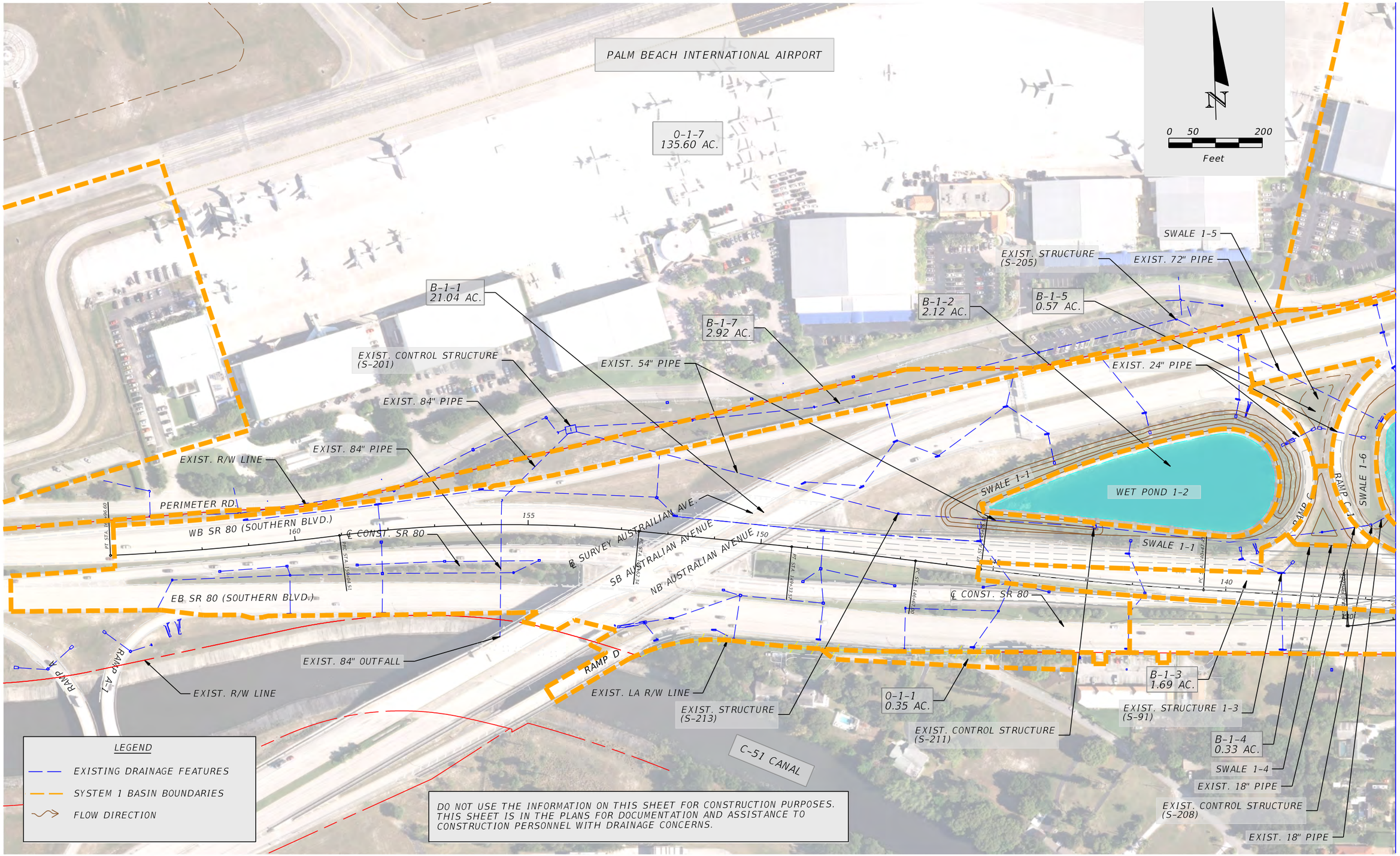
BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-4-1	**10**	**1.30**	**1.30**	1.14	0.00	0.16	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**90.85**
B-4-2	**10**	**1.76**	**1.76**	1.12	0.00	0.64	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**77.07**
B-4-3	**10**	**11.64**	**11.64**	9.53	0.00	2.11	**0.00**	0.00	0.00	0.00	13.00	6.00	8.18	**87.09**
B-4-3A	**10**	**0.05**	**0.05**	0.05	0.00	0.00	**0.00**	0.00	0.00	0.00	16.00	9.00	8.18	**100.00**
B-4-4	**10**	**3.17**	**3.17**	3.17	0.00	0.00	**0.00**	0.00	0.00	0.00	9.50	3.00	4.95	**100.00**
B-4-5	**10**	**6.42**	**6.42**	4.01	0.00	2.41	**0.00**	0.00	0.00	0.00	10.00	3.00	4.95	**84.33**
B-4-6	**10**	**1.23**	**1.23**	0.65	0.00	0.58	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**72.16**
B-4-7	**10**	**6.52**	**6.52**	5.16	0.00	1.36	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**85.42**
O-4-1	**10**	**0.81**	**0.00**	0.00	0.00	0.00	**0.81**	0.81	0.00	0.00	11.00	4.00	8.18	**100.00**
O-4-5	**10**	**11.56**	**0.00**	0.00	0.00	0.00	**11.56**	11.56	0.00	0.00	10.00	3.00	4.95	**100.00**
O-4-7	**10**	**0.12**	**0.00**	0.00	0.00	0.00	**0.12**	0.04	0.00	0.08	15.00	8.00	8.18	**64.71**
O-4-8	**10**	**0.40**	**0.00**	0.00	0.00	0.00	**0.40**	0.14	0.00	0.26	15.00	8.00	8.18	**65.29**
O-4-9	**10**	**0.81**	**0.00**	0.00	0.00	0.00	**0.81**	0.22	0.00	0.59	15.00	8.00	8.18	**62.66**
O-4-10	**10**	**1.39**	**0.00**	0.00	0.00	0.00	**1.39**	0.76	0.00	0.63	15.00	8.00	8.18	**72.95**
O-4-11	**10**	**0.59**	**0.00**	0.00	0.00	0.00	**0.59**	0.44	0.00	0.15	15.00	8.00	8.18	**82.60**
SYSTEM TOTALS		**47.77**	**32.09**	**24.83**	**0.00**	**7.26**	**15.68**	**13.97**	**0.00**	**1.71**	--	--	--	--

APPENDIX E

Post-Development Analysis

(Alternative 4)

Post-Development Drainage Maps



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT DRAINAGE MAPS

SHEET NO. 1

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 5

MATCHLINE A-A

SEE SHEET 3

LEGEND

- EXISTING DRAINAGE FEATURES
- SYSTEM 1 BASIN BOUNDARIES
- SYSTEM 2 BASIN BOUNDARIES
- SYSTEM 3 BASIN BOUNDARIES
- SYSTEM 4 BASIN BOUNDARIES
- FLOW DIRECTION

N

0 50 200

Feet

℄ SURVEY AUSTRAILIAN AVE.

B-1-8
4.33 AC.

SWALE 1-6

WET POND 1-8

HILTON PALM BEACH AIRPORT HOTEL

EXIST. R/W LINE

GEM LAKE DR.

B-1-6
14.08 AC.

SWALE 1-6

WB SR 80 (SOUTHERN BLVD.)

℄ CONST. SR 80

EB SR 80 (SOUTHERN BLVD.)

EXIST. R/W LINE

GEM LAKE DR.

0-1-6
1.07 AC.

B-2-3
0.10 AC.

B-2-1
1.07 AC.

LANG RD.

WET POND 2-1

OS-2-1
1.52 AC.

EXIST. CONTROL STRUCTURE (S-7)

EXIST. R/W LINE

℄ CONST. SR 80

B-2-5
0.27 AC.

EXIST. 48" OUTFALL

B-2-2
5.54 AC.

B-2-4
0.33 AC.

DITCH 2-4

EXIST. RR R/W LINE

EXIST. 48" PIPE

EXIST. LA R/W LINE

B-4-3A
0.05 AC.

B-4-1
2.30 AC.

B-4-3
10.61 AC.

0-4-1
0.82 AC.

EXIST. 24" PIPE

EXIST. 24" OUTFALL

EXIST. CONTROL STRUCTURES (S-18 AND S-19)

EXIST. 36" PIPE

EXIST. 48" PIPE

EXIST. CONTROL STRUCTURE (S-6)

EXIST. 48" OUTFALL

EXIST. CONTROL STRUCTURE (S-87)

B-4-2
1.47 AC.

CSX RAILROAD

SWALE 4-1

RAMP I

RAMP I

DRY POND 4-3

℄ SURVEY SR 9

SB SR 9 (I-95)

NB SR 9 (I-95)

B-4-5
6.16 AC.

EXIST. 48" PIPE

EXIST. 48" PIPE

EXIST. CONTROL STRUCTURE (S-6A)

DRY POND 4-5

RAMP J

RAMP J

PARKLAND RD

DRY POND 4-2

DRY POND 4-4

℄ CONST. SR 80

B-4-4
3.16 AC.

B-3-7
11.63 AC.

DRY POND 3-7

B-3-6
5.23 AC.

B-3-3
1.90 AC.

RAMP K

RAMP L

DRY POND 3-6

℄ SURVEY SR 9

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

SEE SHEET 4

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

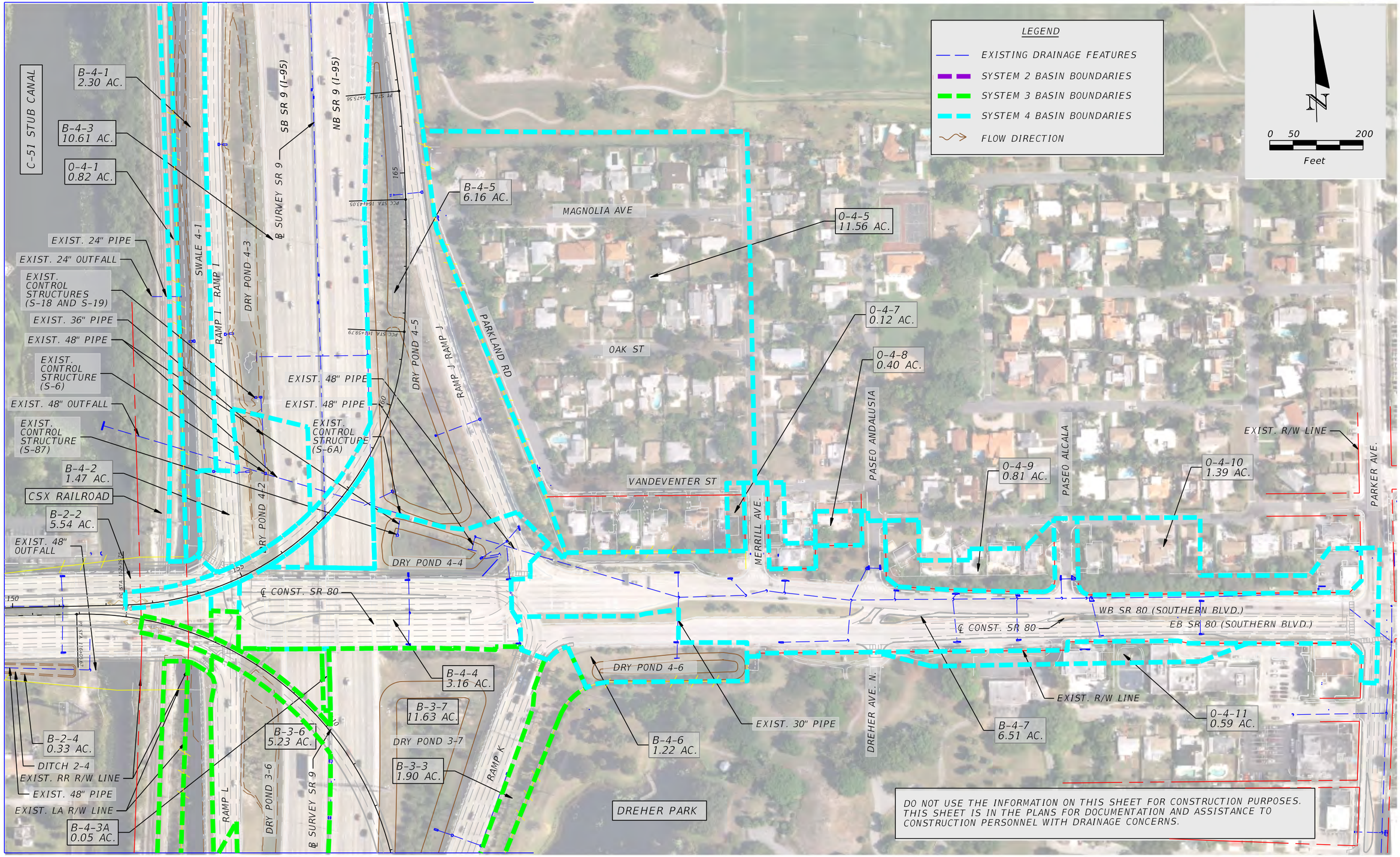
POST-DEVELOPMENT DRAINAGE MAPS

SHEET NO. 2

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 5

SEE SHEET 2



SEE SHEET 4

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT DRAINAGE MAPS

SHEET NO. 3

$USER$ $DATE$ $TIME$ $FILE$

C-51 STUB CANAL

0-3-1
1.85 AC.

B-3-1
1.97 AC.

B-3-2
9.60 AC.

0-3-4
0.54 AC.

B-3-4
0.50 AC.

DITCH 3-4

EXIST. CONTROL STRUCTURE (EXCS_3-1)

EXIST. 48" OUTFALL

EXIST. 48" PIPE

EXIST. CONTROL STRUCTURE (EXCS_3-5)

0-3-5
1.94 AC.

B-3-6
5.51 AC.

B-3-5
6.32 AC.

C-51 STUB CANAL

EXIST. L/A RW LINE

SWALE 3-1

SWALE 3-5

℄ SURVEY SR 9

DRY POND 3-5

RAMP L

SB SR 9 (I-95)

NB SR 9 (I-95)

SWALE 3-2

B-3-3
1.90 AC

SWALE 3-3

EXIST. L/A RW LINE

RAMP K

EXIST. CONTROL STRUCTURE (EXCS_3-2)

EXIST. 48" PIPE

SOUTH FLORIDA SCIENCE CENTER AND AQUARIUM

PALM BEACH ZOO AND CONSERVATION SOCIETY

0-3-3
2.99 AC.

B-3-7
11.63 AC.

DREHER PARK

0 50 200
Feet

MATCHLINE B-B

LEGEND

EXISTING DRAINAGE FEATURES

SYSTEM 3 BASIN BOUNDARIES

FLOW DIRECTION

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

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT DRAINAGE MAPS

SHEET NO. 4

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 2

MATCHLINE B-B

EXIST. 36" PIPE
DITCH 2-4
B-2-4
0.33 AC.
B-2-2
5.54 AC.
0-3-5
1.94 AC.
B-3-5
6.32 AC.
EXIST. RR R/W LINE
B-3-6
5.23 AC.
EXIST. LA R/W LINE
B-4-3A
0.05 AC.
℄ CONST. SR 80
EXIST. 48" PIPE
EXIST. 48" OUTFALL
B-4-2
1.47 AC.
EXIST. 36" PIPE
EXIST.
CONTROL
STRUCTURES
(S-18 AND S-19)
EXIST. 24" OUTFALL
EXIST. 24" PIPE
C-51 STUB CANAL
0-4-1
0.82 AC.
B-4-1
2.30 AC.
B-4-3
10.61 AC.
CSX RAILROAD
EXIST. L/A RW LINE
SWALE 4-1
RAMP I
RAMP L
DRY POND 3-6
DRY POND 4-3
DRY POND 4-2
℄ SURVEY SR 9
SB SR 9 (I-95)
RAMP A
EXIST. 36" PIPE
EXIST.
CONTROL
STRUCTURE
(EXCS 3-7)
EXIST.
CONTROL
STRUCTURE
(S-6)
NB SR 9 (I-95)
RAMP K
DRY POND 3-7
DRY POND 4-5
RAMP C
EXIST. L/A RW LINE
RAMP J
PARKLAND RD
EXIST.
CONTROL
STRUCTURE
(S-31B)
B-4-5
6.16 AC.
EXIST. 24" PIPE
EXIST.
CONTROL
STRUCTURE
(S-87)
EXIST. 48" PIPE
EXIST. 48" PIPE
B-3-7
10.19 AC.
EXIST. L/A RW LINE
B-4-4
3.16 AC.
DRY POND 4-6
℄ CONST. SR 80
VANDEVENTER ST
OAK ST
MAGNOLIA AVE
0-4-5
11.56 AC.
DREHER PARK
B-4-7
6.51 AC.
0-4-7
0.12 AC.
B-4-6
1.22 AC.
EXIST. 30" PIPE
MERRILL AVE.

0 50 200
Feet

LEGEND
EXISTING DRAINAGE FEATURES
SYSTEM 2 BASIN BOUNDARIES
SYSTEM 3 BASIN BOUNDARIES
SYSTEM 4 BASIN BOUNDARIES
FLOW DIRECTION

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

SEE SHEET 3

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

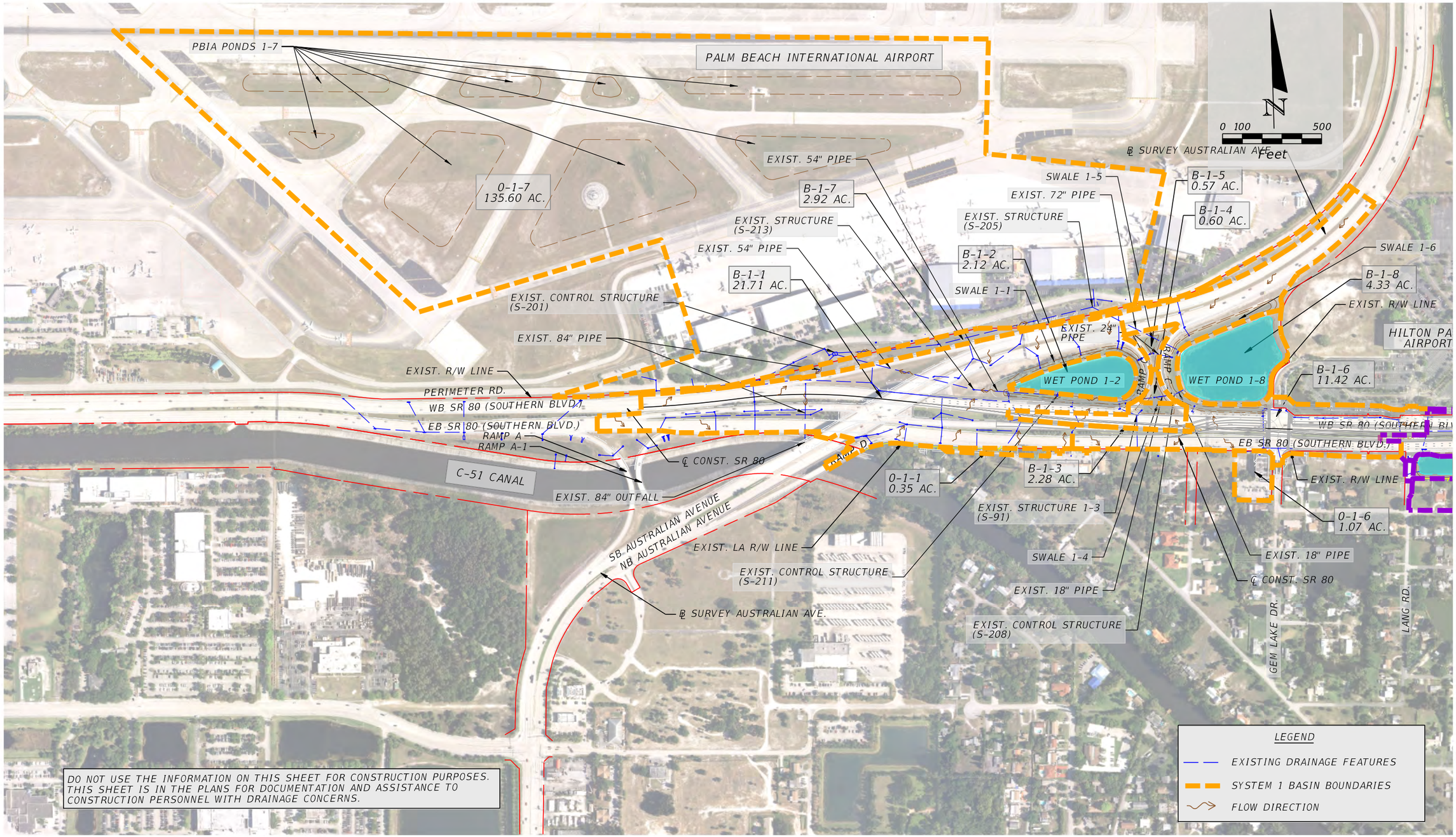
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT DRAINAGE MAPS

SHEET NO. 5

$USER$ $DATE$ $TIME$ $FILE$



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT DRAINAGE MAPS

SHEET NO. 6

$USER$ $DATE$ $TIME$ $FILE$

Post-Development Land Use

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 1 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-1-1	**10**	**21.04**	**21.04**	14.40	0.00	6.64	**0.00**	0.00	0.00	0.00	**12.00**	5.00	8.18	**79.48**
B-1-2	**10**	**2.12**	**2.12**	0.37	1.75	0.00	**0.00**	0.00	0.00	0.00	**9.00**	2.00	1.88	**100.00**
B-1-3	**10**	**1.69**	**1.69**	1.07	0.00	0.62	**0.00**	0.00	0.00	0.00	**15.00**	8.00	8.18	**76.92**
B-1-4	**10**	**0.33**	**0.33**	0.00	0.00	0.33	**0.00**	0.00	0.00	0.00	**11.00**	4.00	8.18	**55.01**
B-1-5	**10**	**0.57**	**0.57**	0.00	0.00	0.57	**0.00**	0.00	0.00	0.00	**12.00**	5.00	8.18	**55.01**
B-1-6	**10**	**14.08**	**14.08**	11.08	0.00	3.00	**0.00**	0.00	0.00	0.00	**13.00**	6.00	8.18	**85.16**
B-1-7	**10**	**2.92**	**2.92**	0.26	0.00	2.66	**0.00**	0.00	0.00	0.00	**17.00**	10.00	8.18	**57.30**
B-1-8*	**10**	**4.33**	**4.33**	0.38	3.45	0.50	**0.00**	0.00	0.00	0.00	**--**	--	--	**98.00**
O-1-1	**10**	**0.35**	**0.00**	0.00	0.00	0.00	**0.35**	0.12	0.00	0.23	**15.50**	9.00	8.18	**65.04**
O-1-6	**10**	**1.07**	**0.00**	0.00	0.00	0.00	**1.07**	0.68	0.00	0.39	**13.00**	6.00	8.18	**77.03**
O-1-7*	**10**	**135.60**	**0.00**	0.00	0.00	0.00	**135.60**	83.40	0.00	52.20	**-**	-	-	**70.56**
SYSTEM TOTALS		**184.10**	**47.08**	27.56	5.20	14.32	**137.02**	84.20	0.00	52.82	**--**	**--**	**--**	**--**

* - Basin B-1-8 & O-1-7 Land Use breakdown taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE

O-1-7 - Summary --> PBIA Basin 3				
Basin	**Area (Ac.)**	**CN**	**Weighted CN**	**Perv. Area (Ac.)**
B3A1	12.3	77		4.5
B3A2	5.7	80		1.7
B3A3	6.4	76		2.5
B3A4	16.3	64		11.2
B3A5	2.6	75		1.1
B3A6	17.9	61		13.8
B3A7	15.5	72		7.4
B3A8	9.7	66		6.1
B3A9	49.2	73		3.9
Total Area	**135.6**	**CN**	**70.56**	**52.2**

B-1-8 - Summary --> PBIA Basin 3				
Basin	**Area (Ac.)**	**CN**	**Weighted CN**	**Perv. Area (Ac.)**
B3B	4.33	98		0.5

All information based on Water Management Analysis Report, PBIA Basin 3.
Basin Areas & Curve Numbers (CN) based on AdICPR Model included in report.
Pervious Areas based on Basin 3 Soil Storage / CN Calculations included in report.

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 2 **SHGWT EL. (ft-NAVD): 6.92**

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-2-1	**10.00**	**1.07**	**1.07**	0.00	0.76	0.31	**0.00**	0.00	0.00	0.00	9.36	2.00	1.88	**94.81**
B-2-2	**11.66**	**5.54**	**5.54**	5.54	0.00	0.00	**0.00**	0.00	0.00	0.00	11.30	4.00	8.18	**100.00**
B-2-3	**10.00**	**0.10**	**0.10**	0.10	0.00	0.00	**0.00**	0.00	0.00	0.00	10.50	4.00	5.40	**100.00**
B-2-4	**10.00**	**0.33**	**0.33**	0.00	0.00	0.33	**0.00**	0.00	0.00	0.00	10.64	4.00	5.50	**64.52**
B-2-5	**10.00**	**0.27**	**0.27**	0.00	0.00	0.27	**0.00**	0.00	0.00	0.00	11.30	4.00	6.50	**60.61**
OS-2-1	**18.85**	**1.52**	**0.00**	0.00	0.00	0.00	**1.52**	0.29	0.00	1.23	11.50	5.00	8.18	**60.09**
SYSTEM TOTALS		**8.83**	**7.31**	5.64	0.76	0.91	**1.52**	0.29	0.00	1.23	--	--	--	--

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 3 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-3-1	**10**	**1.59**	**1.59**	0.51	0.00	1.08	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**64.28**
B-3-2	**10**	**9.97**	**9.97**	9.12	0.00	0.85	**0.00**	0.00	0.00	0.00	9.00	2.00	1.88	**98.42**
B-3-3	**10**	**1.90**	**1.90**	0.00	0.00	1.90	**0.00**	0.00	0.00	0.00	8.00	1.00	0.45	**95.69**
B-3-4	**10**	**0.46**	**0.46**	0.06	0.00	0.40	**0.00**	0.00	0.00	0.00	8.50	2.00	1.88	**85.95**
B-3-5	**10**	**6.36**	**6.36**	3.02	0.00	3.34	**0.00**	0.00	0.00	0.00	9.50	3.00	4.95	**79.37**
B-3-6	**10**	**5.23**	**5.23**	3.53	0.00	1.70	**0.00**	0.00	0.00	0.00	13.00	6.00	8.18	**79.00**
B-3-7	**10**	**11.63**	**11.63**	8.93	0.00	2.70	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**84.04**
O-3-1	**10**	**1.85**	**0.00**	0.00	0.00	0.00	**1.85**	0.56	0.00	1.29	10.50	4.00	8.18	**63.68**
O-3-3	**10**	**2.99**	**0.00**	0.00	0.00	0.00	**2.99**	1.32	0.00	1.67	8.00	1.00	0.45	**97.55**
O-3-4	**10**	**0.54**	**0.00**	0.00	0.00	0.00	**0.54**	0.16	0.00	0.38	8.50	2.00	1.88	**88.32**
O-3-5	**10**	**1.94**	**0.00**	0.00	0.00	0.00	**1.94**	0.67	0.00	1.27	9.50	3.00	4.95	**75.53**
SYSTEM TOTALS		**44.46**	**37.14**	25.17	0.00	11.97	**7.32**	2.71	0.00	4.61	--	--	--	--

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 4 **SHGWT EL. (ft-NAVD): 6.92**

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-4-1	**10**	**2.30**	**2.30**	1.22	0.00	1.08	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**72.25**
B-4-2	**10**	**1.47**	**1.47**	0.93	0.00	0.54	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**76.89**
B-4-3	**10**	**10.61**	**10.61**	8.50	0.00	2.11	**0.00**	0.00	0.00	0.00	13.00	6.00	8.18	**86.01**
B-4-3A	**10**	**0.05**	**0.05**	0.05	0.00	0.00	**0.00**	0.00	0.00	0.00	16.00	9.00	8.18	**100.00**
B-4-4	**10**	**3.16**	**3.16**	2.45	0.00	0.71	**0.00**	0.00	0.00	0.00	9.50	3.00	4.95	**89.99**
B-4-5	**10**	**6.16**	**6.16**	3.35	0.00	2.81	**0.00**	0.00	0.00	0.00	10.00	3.00	4.95	**81.58**
B-4-6	**10**	**1.22**	**1.22**	0.56	0.00	0.66	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**69.32**
B-4-7	**10**	**6.51**	**6.51**	5.16	0.00	1.35	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**85.50**
O-4-1	**10**	**0.81**	**0.00**	0.00	0.00	0.00	**0.81**	0.00	0.00	0.81	11.00	4.00	8.18	**55.01**
O-4-5	**10**	**11.56**	**0.00**	0.00	0.00	0.00	**11.56**	11.15	0.00	0.41	10.00	3.00	4.95	**98.27**
O-4-7	**10**	**0.12**	**0.00**	0.00	0.00	0.00	**0.12**	0.04	0.00	0.08	15.00	8.00	8.18	**64.71**
O-4-8	**10**	**0.40**	**0.00**	0.00	0.00	0.00	**0.40**	0.14	0.00	0.26	15.00	8.00	8.18	**65.29**
O-4-9	**10**	**0.81**	**0.00**	0.00	0.00	0.00	**0.81**	0.22	0.00	0.59	15.00	8.00	8.18	**62.66**
O-4-10	**10**	**1.39**	**0.00**	0.00	0.00	0.00	**1.39**	0.76	0.00	0.63	15.00	8.00	8.18	**72.95**
O-4-11	**10**	**0.59**	**0.00**	0.00	0.00	0.00	**0.59**	0.45	0.00	0.14	15.00	8.00	8.18	**83.74**
SYSTEM TOTALS		**47.16**	**31.48**	22.22	0.00	9.26	**15.68**	12.76	0.00	2.92	--	--	--	--

Water Quality Calculations

SR-80 DRAINAGE CALCULATIONS
WATER QUALITY

Drainage System: ***1A***

[3]BASIN	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) *[POST-DEV.]*	ONSITE IMPERVIOUS AREA (Ac.) *[POST-DEV.]*	ONSITE PERVIOUS AREA (Ac.) *[POST-DEV.]*	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	[1]WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	[2]TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
B-1-1	6.92	21.04	14.40	6.64	1.75	3.00	**3.00**	4.42	0.00	0.00	0.00	**5.89**	**2.59**
B-1-3		1.69	1.07	0.62	0.14	0.22	**0.22**						
B-1-4		0.33	0.00	0.33	0.03	0.00	**0.03**						
B-1-5		0.57	0.00	0.57	0.05	0.00	**0.05**						
SYSTEM TOTAL		23.63	15.47	8.16	1.97	3.22	**3.30**						

[1]Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.
[2]Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.
[3]Basins B-1-2 and B-1-8 not included since these are stormwater management facility basins only.

SWALE 1-1			SWALE 1-4			SWALE 1-5 (EXISTING)		
TYPE:	DRY DETENTION		TYPE:	DRY DETENTION		TYPE:	DRY DETENTION	
STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)
8.00	0.27	--	8.50	0.04	--	8.50	0.01	--
8.50	0.38	0.16	9.00	0.05	0.02	9.00	0.08	0.02
9.00	0.49	0.38	9.50	0.06	0.05	9.50	0.10	0.07
9.50	0.60	0.65	10.00	0.07	0.08	10.00	0.12	0.12
10.00	0.71	0.98	10.50	0.08	0.12	10.50	0.13	0.19
10.50	0.83	1.37	11.00	0.10	0.17	11.00	0.15	0.26
11.00	1.12	1.85	11.50	0.11	0.22	11.50	0.17	0.34
11.50	1.18	2.43	12.00	0.13	0.28	12.00	0.18	0.42
12.00	1.24	3.03	12.50	0.15	0.35	12.50	0.20	0.52
12.50	1.30	3.67	13.00	0.17	0.43	13.00	0.23	0.63
			13.50	0.20	0.52	13.50	0.25	0.75
						14.00	0.28	0.88
						14.50	0.31	1.03

	STAGE-AREA RELATIONSHIP			REQUIRED WATER QUALITY TREATMENT VOLUME	MINIMUM WEIR ELEVATION FOR FULL WATER QUALITY TREATMENT	PROVIDED WATER QUALITY TREATMENT		
	TYPE:	DRY DETENTION						
	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	VOLUME (Ac-ft)	ELEVATION (ft-NAVD)	WEIR ELEVATION (ft-NAVD)	VOLUME PROVIDED (Ac-ft)	SURPLUS VOLUME (Ac-ft)
SYSTEM 1A TOTALS	8.00	0.27	0.00	DRY DETENTION	DRY DETENTION	EXISTING		
	8.50	0.43	0.18	**2.47**	**11.13**	**12.42**	**4.42**	**2.59**
	9.00	0.62	0.44					
	9.50	0.76	0.78					
	10.00	0.90	1.20					
	10.50	1.04	1.68					
	11.00	1.37	2.29					
	11.50	1.46	2.99					
	12.00	1.55	3.75					
	12.50	1.65	4.55					

SR-80 DRAINAGE CALCULATIONS
WATER QUALITY

Drainage System: ***1B***

[3]BASIN	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) *[POST-DEV.]*	ONSITE IMPERVIOUS AREA (Ac.) *[POST-DEV.]*	ONSITE PERVIOUS AREA (Ac.) *[POST-DEV.]*	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	[1]WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	[2]TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
B-1-6	6.92	14.08	11.08	3.00	1.17	2.31	**2.31**	2.68	0.00	0.00	0.00	**3.58**	**1.02**
B-1-7		2.92	0.26	2.66	0.24	0.05	**0.24**						
SYSTEM TOTAL		17.00	11.34	5.66	1.42	2.36	**2.55**						

[1]Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.
[2]Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.
[3]Basins B-1-2 and B-1-8 not included since these are stormwater management facility basins only.

SWALE 1-6		
TYPE:	Dry Detention	
STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**
8.00	0.20	--
9.00	0.36	0.28
10.00	0.53	0.73
11.00	0.69	1.34
12.00	0.85	2.11
13.00	1.01	3.04

	STAGE-AREA RELATIONSHIP			REQUIRED WATER QUALITY TREATMENT VOLUME	MINIMUM WEIR ELEVATION FOR FULL WATER QUALITY TREATMENT	PROVIDED WATER QUALITY TREATMENT		
	TYPE:	**DRY DETENTION**						
	STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**	**VOLUME (Ac-ft)**	**ELEVATION (ft-NAVD)**	**WEIR ELEVATION (ft-NAVD)**	**VOLUME PROVIDED (Ac-ft)**	**SURPLUS VOLUME (Ac-ft)**
SYSTEM 1B TOTALS	8.00	0.20	0.00	DRY DETENTION	DRY DETENTION	EXISTING		
	9.00	0.36	0.28	**1.91**	**11.75**	**12.62**	**2.68**	**1.02**
	10.00	0.53	0.73					
	11.00	0.69	1.34					
	12.00	0.85	2.11					
	13.00	1.01	3.04					

SR-80 DRAINAGE CALCULATIONS
WATER QUALITY

Drainage System: *2*

[3]BASIN	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) *[POST-DEV.]*	ONSITE IMPERVIOUS AREA (Ac.) *[POST-DEV.]*	ONSITE PERVIOUS AREA (Ac.) *[POST-DEV.]*	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	[1]WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	[2]TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
B-2-2	6.92	5.54	5.54	0.00	0.46	1.15	**1.15**	0.00	1.38	0.00	0.00	**1.38**	**0.16**
B-2-3		0.10	0.10	0.00	0.01	0.02	**0.02**						
B-2-4		0.33	0.00	0.33	0.03	0.00	**0.03**						
B-2-5		0.27	0.00	0.27	0.02	0.00	**0.02**						
SYSTEM TOTAL		6.24	5.64	0.60	0.52	1.18	**1.23**						

[1]Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.
[2]Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.
[3]Basin B-2-1 not included since is a stormwater management facility basin only.

WET POND_2-1 (EXISTING)		
TYPE:	WET DETENTION	
STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)
6.92	0.76	--
7.36	0.79	0.34
9.36	0.96	2.09
10.36	1.04	3.09

SYSTEM 2 TOTALS	STAGE-AREA RELATIONSHIP			REQUIRED WATER QUALITY TREATMENT VOLUME	MINIMUM WEIR ELEVATION FOR FULL WATER QUALITY TREATMENT	PROVIDED WATER QUALITY TREATMENT		
	TYPE:	WET DETENTION						
	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	VOLUME (Ac-ft)	ELEVATION (ft-NAVD)	WEIR ELEVATION (ft-NAVD)	VOLUME PROVIDED (Ac-ft)	SURPLUS VOLUME (Ac-ft)
	6.92	0.76	0.00	WET DETENTION	WET DETENTION	EXISTING		
	7.36	0.79	0.34	**1.23**	**8.37**	**8.55**	**1.38**	**0.16**
	9.36	0.96	2.09					
	10.36	1.04	3.09					

SR-80 DRAINAGE CALCULATIONS
WATER QUALITY

Drainage System: ***3A***

[3]BASIN	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) *[POST-DEV.]*	ONSITE IMPERVIOUS AREA (Ac.) *[POST-DEV.]*	ONSITE PERVIOUS AREA (Ac.) *[POST-DEV.]*	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	[1]WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	[2]TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
B-3-1	6.92	1.59	0.51	1.08	0.13	0.11	**0.13**	0.08	0.00	0.00	0.00	**0.11**	**-0.03**
SYSTEM TOTAL		1.59	0.51	1.08	0.13	0.11	**0.13**						

[1]Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.
[2]Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.
*Note: Compensatory treatment to be provided within System 3C.

SWALE_3-1		
TYPE:	**DRY DETENTION**	
STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**
9.50	0.00	--
10.00	0.01	0.00
10.50	0.07	0.02
11.00	0.11	0.07
11.50	0.14	0.13
12.00	0.20	0.21

	STAGE-AREA RELATIONSHIP			REQUIRED WATER QUALITY TREATMENT VOLUME	MINIMUM WEIR ELEVATION FOR FULL WATER QUALITY TREATMENT	PROVIDED WATER QUALITY TREATMENT		
	TYPE:	**DRY DETENTION**						
	STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**	**VOLUME (Ac-ft)**	**ELEVATION (ft-NAVD)**	**WEIR ELEVATION (ft-NAVD)**	**VOLUME PROVIDED (Ac-ft)**	**SURPLUS VOLUME (Ac-ft)**
SYSTEM 3A TOTALS	9.50	0.00	0.00	DRY DETENTION	DRY DETENTION	EXISTING		
	10.00	0.01	0.00	**0.10**	**11.27**	**11.12**	**0.08**	**-0.03**
	10.50	0.07	0.02					
	11.00	0.11	0.07					
	11.50	0.14	0.13					
	12.00	0.20	0.21					

SR-80 DRAINAGE CALCULATIONS
WATER QUALITY

Drainage System: ***3B***

[3]BASIN	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) *[POST-DEV.]*	ONSITE IMPERVIOUS AREA (Ac.) *[POST-DEV.]*	ONSITE PERVIOUS AREA (Ac.) *[POST-DEV.]*	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	[1]WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	[2]TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
B-3-2	6.92	9.97	9.12	0.85	0.83	1.90	**1.90**	2.85	0.00	0.00	0.00	**3.80**	**1.90**
SYSTEM TOTAL		9.97	9.12	0.85	0.83	1.90	**1.90**						

[1]Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.
[2]Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.
[3]Basin B-3-3 not included since this is the outfall / conveyance swale for overflow from Swale 3-2.

SWALE_3-2		
TYPE:	**DRY DETENTION**	
STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**
8.50	0.35	--
9.00	0.74	0.27
9.50	0.80	0.66
10.00	0.81	1.06
10.50	0.92	1.49
11.00	0.99	1.97
11.50	1.00	2.47
12.00	1.01	2.97
12.50	1.02	3.48
13.00	1.03	3.99

	STAGE-AREA RELATIONSHIP			REQUIRED WATER QUALITY TREATMENT VOLUME	MINIMUM WEIR ELEVATION FOR FULL WATER QUALITY TREATMENT	PROVIDED WATER QUALITY TREATMENT		
	TYPE:	**DRY DETENTION**						
	STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**	**VOLUME (Ac-ft)**	**ELEVATION (ft-NAVD)**	**WEIR ELEVATION (ft-NAVD)**	**VOLUME PROVIDED (Ac-ft)**	**SURPLUS VOLUME (Ac-ft)**
SYSTEM 3B TOTALS	8.50	0.35	0.00	DRY DETENTION	DRY DETENTION	EXISTING		
	9.00	0.74	0.27	**1.43**	**10.42**	**11.88**	**2.85**	**1.90**
	9.50	0.80	0.66					
	10.00	0.81	1.06					
	10.50	0.92	1.49					
	11.00	0.99	1.97					
	11.50	1.00	2.47					
	12.00	1.01	2.97					
	12.50	1.02	3.48					
	13.00	1.03	3.99					

SR-80 DRAINAGE CALCULATIONS
WATER QUALITY

Drainage System: ***3C***

[3]BASIN	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) *[POST-DEV.]*	ONSITE IMPERVIOUS AREA (Ac.) *[POST-DEV.]*	ONSITE PERVIOUS AREA (Ac.) *[POST-DEV.]*	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	[1]WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	[2]TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
B-3-5	6.92	6.36	3.02	3.34	0.53	0.63	**0.63**	1.07	0.00	0.00	0.00	**1.43**	**0.06**
B-3-6		5.23	3.53	1.70	0.44	0.74	**0.74**						
SYSTEM TOTAL		11.59	6.55	5.04	0.97	1.36	**1.36**						

[1]Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.
[2]Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.
[3]Basin B-3-4 not included since this is the outfall / conveyance swale for overflow from Swale 3-1 and Swale 3-5.

DRY POND_3-5 (EXISTING)			DRY POND_3-6 (EXISTING)		
TYPE:	DRY DETENTION		TYPE:	DRY DETENTION	
STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)
8.50	0.08	--	11.50	0.02	--
9.00	0.37	0.11	12.00	0.14	0.04
9.50	1.04	0.47	12.50	0.33	0.16
10.00	1.38	1.07	13.00	0.53	0.37
			13.50	0.64	0.67

	STAGE-AREA RELATIONSHIP			REQUIRED WATER QUALITY TREATMENT VOLUME	MINIMUM WEIR ELEVATION FOR FULL WATER QUALITY TREATMENT	PROVIDED WATER QUALITY TREATMENT		
	TYPE:	DRY DETENTION						
	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	VOLUME (Ac-ft)	ELEVATION (ft-NAVD)	WEIR ELEVATION (ft-NAVD)	VOLUME PROVIDED (Ac-ft)	SURPLUS VOLUME (Ac-ft)
SYSTEM 3C TOTALS	8.50	0.08	0.00	DRY DETENTION	DRY DETENTION	EXISTING		
	9.00	0.37	0.11	**1.02**	**9.96**	**11.17**	**1.07**	**0.06**
	9.50	1.04	0.47					
	10.00	1.38	1.07					
	11.50	0.02	1.07					
	12.00	0.14	1.11					
	12.50	0.33	1.23					
	13.00	0.53	1.44					
	13.50	0.64	1.74					

SR-80 DRAINAGE CALCULATIONS
WATER QUALITY

Drainage System: ***3D***

BASIN	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) *[POST-DEV.]*	ONSITE IMPERVIOUS AREA (Ac.) *[POST-DEV.]*	ONSITE PERVIOUS AREA (Ac.) *[POST-DEV.]*	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	[1]WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	[2]TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
B-3-7	6.92	11.63	8.93	2.70	0.97	1.86	**1.86**	6.11	0.00	0.00	0.00	**8.14**	**6.28**
SYSTEM TOTAL		11.63	8.93	2.70	0.97	1.86	**1.86**						

[1]Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.
[2]Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.

DRY POND_3-7		
TYPE:	**DRY DETENTION**	
STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**
8.00	0.92	--
9.00	1.00	0.96
10.00	1.08	2.00
11.00	1.16	3.12
12.00	1.24	4.32
13.00	1.32	5.60
14.00	1.41	6.97

	STAGE-AREA RELATIONSHIP			REQUIRED WATER QUALITY TREATMENT VOLUME	MINIMUM WEIR ELEVATION FOR FULL WATER QUALITY TREATMENT	PROVIDED WATER QUALITY TREATMENT		
	TYPE:	**DRY DETENTION**						
	STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**	**VOLUME (Ac-ft)**	**ELEVATION (ft-NAVD)**	**WEIR ELEVATION (ft-NAVD)**	**VOLUME PROVIDED (Ac-ft)**	**SURPLUS VOLUME (Ac-ft)**
SYSTEM 3D TOTALS	8.00	0.92	0.00	DRY DETENTION	DRY DETENTION	EXISTING		
	9.00	1.00	0.96					
	10.00	1.08	2.00					
	11.00	1.16	3.12					
	12.00	1.24	4.32	**1.40**	**9.45**	**13.37**	**6.11**	**6.28**
	13.00	1.32	5.60					
	14.00	1.41	6.97					

SR-80 DRAINAGE CALCULATIONS
WATER QUALITY

Drainage System: ***4A***

BASIN	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) *[POST-DEV.]*	ONSITE IMPERVIOUS AREA (Ac.) *[POST-DEV.]*	ONSITE PERVIOUS AREA (Ac.) *[POST-DEV.]*	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	[1]WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	[2]TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	*SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
B-4-1	6.92	2.30	1.22	1.08	0.19	0.25	**0.25**	0.00	0.00	0.00	0.00	**0.00**	**-0.25**
SYSTEM TOTAL		2.30	1.22	1.08	0.19	0.25	**0.25**						

[1]Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.

[2]Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.

*Note: Compensatory treatment to be provided within System 4E.

SWALE_4-1 (EXISTING)		
TYPE:	**DRY DETENTION**	
STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**
7.50	0.01	--
8.00	0.02	0.01
9.00	0.06	0.05
10.00	0.19	0.17
11.00	0.56	0.55

SYSTEM 4A TOTALS	STAGE-AREA RELATIONSHIP			REQUIRED WATER QUALITY TREATMENT VOLUME	MINIMUM WEIR ELEVATION FOR FULL WATER QUALITY TREATMENT	PROVIDED WATER QUALITY TREATMENT		
	TYPE:	DRY DETENTION						
	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	VOLUME (Ac-ft)	ELEVATION (ft-NAVD)	WEIR ELEVATION (ft-NAVD)	VOLUME PROVIDED (Ac-ft)	SURPLUS VOLUME (Ac-ft)
	7.50	0.01	0.00	DRY DETENTION	DRY DETENTION	EXISTING		
	8.00	0.02	0.01	**0.19**	**10.05**	**N/A**	**0.00**	**-0.25**
	9.00	0.06	0.05					
	10.00	0.19	0.17					
	11.00	0.56	0.55					

SR-80 DRAINAGE CALCULATIONS
WATER QUALITY

Drainage System: ***4B***

BASIN	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) *[POST-DEV.]*	ONSITE IMPERVIOUS AREA (Ac.) *[POST-DEV.]*	ONSITE PERVIOUS AREA (Ac.) *[POST-DEV.]*	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	[1]WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	[2]TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	*SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
B-4-2	6.92	1.47	0.93	0.54	0.12	0.19	**0.19**	0.08	0.00	0.00	0.00	**0.10**	**-0.09**
SYSTEM TOTAL		1.47	0.93	0.54	0.12	0.19	**0.19**						

[1]Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.

[2]Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.

*Note: Compensatory treatment to be provided within System 4E.

DRY POND_4-2 (EXISTING)		
TYPE:	DRY DETENTION	
STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)
14.00	0.04	--
14.50	0.15	0.05
15.00	0.24	0.15
15.50	0.33	0.29

	STAGE-AREA RELATIONSHIP			REQUIRED WATER QUALITY TREATMENT VOLUME	MINIMUM WEIR ELEVATION FOR FULL WATER QUALITY TREATMENT	PROVIDED WATER QUALITY TREATMENT		
	TYPE:	DRY DETENTION						
	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	VOLUME (Ac-ft)	ELEVATION (ft-NAVD)	WEIR ELEVATION (ft-NAVD)	VOLUME PROVIDED (Ac-ft)	SURPLUS VOLUME (Ac-ft)
SYSTEM 4B TOTALS	14.00	0.04	0.00	DRY DETENTION	DRY DETENTION	EXISTING		
	14.50	0.15	0.05	**0.15**	**15.00**	**14.66**	**0.08**	**-0.09**
	15.00	0.24	0.15					
	15.50	0.33	0.29					

SR-80 DRAINAGE CALCULATIONS
WATER QUALITY

Drainage System: ***4C***

BASIN	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) *[POST-DEV.]*	ONSITE IMPERVIOUS AREA (Ac.) *[POST-DEV.]*	ONSITE PERVIOUS AREA (Ac.) *[POST-DEV.]*	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	[1]WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	[2]TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
B-4-3	6.92	10.61	8.50	2.11	0.88	1.77	**1.77**	0.91	0.00	0.00	0.00	**1.22**	**-0.56**
B-4-3A		0.05	0.05	0.00	0.00	0.01	**0.01**						
SYSTEM TOTAL		10.66	8.55	2.11	0.89	1.78	**1.78**						

[1]Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.

[2]Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.

*Note: Compensatory treatment to be provided within System 4E.

DRY POND_4-3 (EXISTING)		
TYPE:	**DRY DETENTION**	
STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**
12.00	0.14	--
13.00	0.56	0.35
14.00	0.87	1.07
15.00	1.21	2.11

SYSTEM 4C TOTALS	STAGE-AREA RELATIONSHIP			REQUIRED WATER QUALITY TREATMENT VOLUME	MINIMUM WEIR ELEVATION FOR FULL WATER QUALITY TREATMENT	PROVIDED WATER QUALITY TREATMENT		
	TYPE:	**DRY DETENTION**						
	STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**	**VOLUME (Ac-ft)**	**ELEVATION (ft-NAVD)**	**WEIR ELEVATION (ft-NAVD)**	**VOLUME PROVIDED (Ac-ft)**	**SURPLUS VOLUME (Ac-ft)**
	12.00	0.14	0.00	DRY DETENTION	DRY DETENTION	EXISTING		
	13.00	0.56	0.35	**1.34**	**14.26**	**13.79**	**0.91**	**-0.56**
	14.00	0.87	1.07					
	15.00	1.21	2.11					

SR-80 DRAINAGE CALCULATIONS
WATER QUALITY

Drainage System: ***4D***

BASIN	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) *[POST-DEV.]*	ONSITE IMPERVIOUS AREA (Ac.) *[POST-DEV.]*	ONSITE PERVIOUS AREA (Ac.) *[POST-DEV.]*	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	[1]WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	[2]TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
B-4-4	6.92	3.16	2.45	0.71	0.26	0.51	**0.51**	0.74	0.00	0.00	0.00	**0.98**	**-0.72**
B-4-6		1.22	0.56	0.66	0.10	0.12	**0.12**						
B-4-7		6.51	5.16	1.35	0.54	1.08	**1.08**						
SYSTEM TOTAL		10.89	8.17	2.72	0.91	1.70	**1.70**						

[1]Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.
[2]Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.
*Note: Compensatory treatment to be provided within System 4E.

DRY POND_4-4			DRY POND_4-6		
TYPE:	DRY DETENTION		TYPE:	DRY DETENTION	
STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)
8.00	0.16	--	--	--	--
9.00	0.19	0.18	--	--	--
10.00	0.22	0.38	9.90	0.14	--
11.00	0.25	0.62	10.00	0.15	0.01
12.00	0.28	0.88	11.00	0.20	0.19
13.00	0.32	1.18	12.00	0.24	0.41
14.00	0.36	1.52	13.00	0.29	0.68
15.00	0.40	1.90	14.00	0.33	0.99
			15.00	0.38	1.34

	STAGE-AREA RELATIONSHIP			REQUIRED WATER QUALITY TREATMENT VOLUME	MINIMUM WEIR ELEVATION FOR FULL WATER QUALITY TREATMENT	PROVIDED WATER QUALITY TREATMENT		
	TYPE:	DRY DETENTION						
	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	VOLUME (Ac-ft)	ELEVATION (ft-NAVD)	WEIR ELEVATION (ft-NAVD)	VOLUME PROVIDED (Ac-ft)	SURPLUS VOLUME (Ac-ft)
SYSTEM 4D TOTALS	8.00	0.16	0.00	DRY DETENTION	DRY DETENTION	EXISTING		
	9.00	0.19	0.18	**1.28**	**11.84**	**11.51**	**0.74**	**-0.72**
	10.00	0.37	0.46					
	11.00	0.45	0.87					
	12.00	0.52	1.35					
	13.00	0.61	1.92					
	14.00	0.69	2.57					
	15.00	0.78	3.30					

SR-80 DRAINAGE CALCULATIONS
WATER QUALITY

Drainage System: ***4E***

BASIN	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) *[POST-DEV.]*	ONSITE IMPERVIOUS AREA (Ac.) *[POST-DEV.]*	ONSITE PERVIOUS AREA (Ac.) *[POST-DEV.]*	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	[1]WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	[2]TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
B-4-5	6.92	6.16	3.35	2.81	0.51	0.70	**0.70**	1.79	0.00	0.00	0.00	**2.39**	**1.69**
SYSTEM TOTAL		6.16	3.35	2.81	0.51	0.70	**0.70**						

[1]Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.

[2]Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.

DRY POND_4-5		
TYPE:	**DRY DETENTION**	
STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**
8.00	0.78	--
9.00	0.84	0.81
10.00	0.93	1.70
11.00	1.04	2.68
12.00	1.19	3.80
13.00	1.33	5.06
14.00	1.48	6.46
15.00	1.62	8.01

	STAGE-AREA RELATIONSHIP			REQUIRED WATER QUALITY TREATMENT VOLUME	MINIMUM WEIR ELEVATION FOR FULL WATER QUALITY TREATMENT	PROVIDED WATER QUALITY TREATMENT		
	TYPE:	**DRY DETENTION**						
	STAGE (ft-NAVD)	**AREA (Ac.)**	**VOLUME (Ac-ft)**	**VOLUME (Ac-ft)**	**ELEVATION (ft-NAVD)**	**WEIR ELEVATION (ft-NAVD)**	**VOLUME PROVIDED (Ac-ft)**	**SURPLUS VOLUME (Ac-ft)**
SYSTEM 4E TOTALS	8.00	0.78	0.00	DRY DETENTION	DRY DETENTION	MODIFIED		
	9.00	0.84	0.81	**0.52**	**8.65**	**10.10**	**1.79**	**1.69**
	10.00	0.93	1.70					
	11.00	1.04	2.68					
	12.00	1.19	3.80					
	13.00	1.33	5.06					
	14.00	1.48	6.46					
	15.00	1.62	8.01					

Post-Development ICPR Model

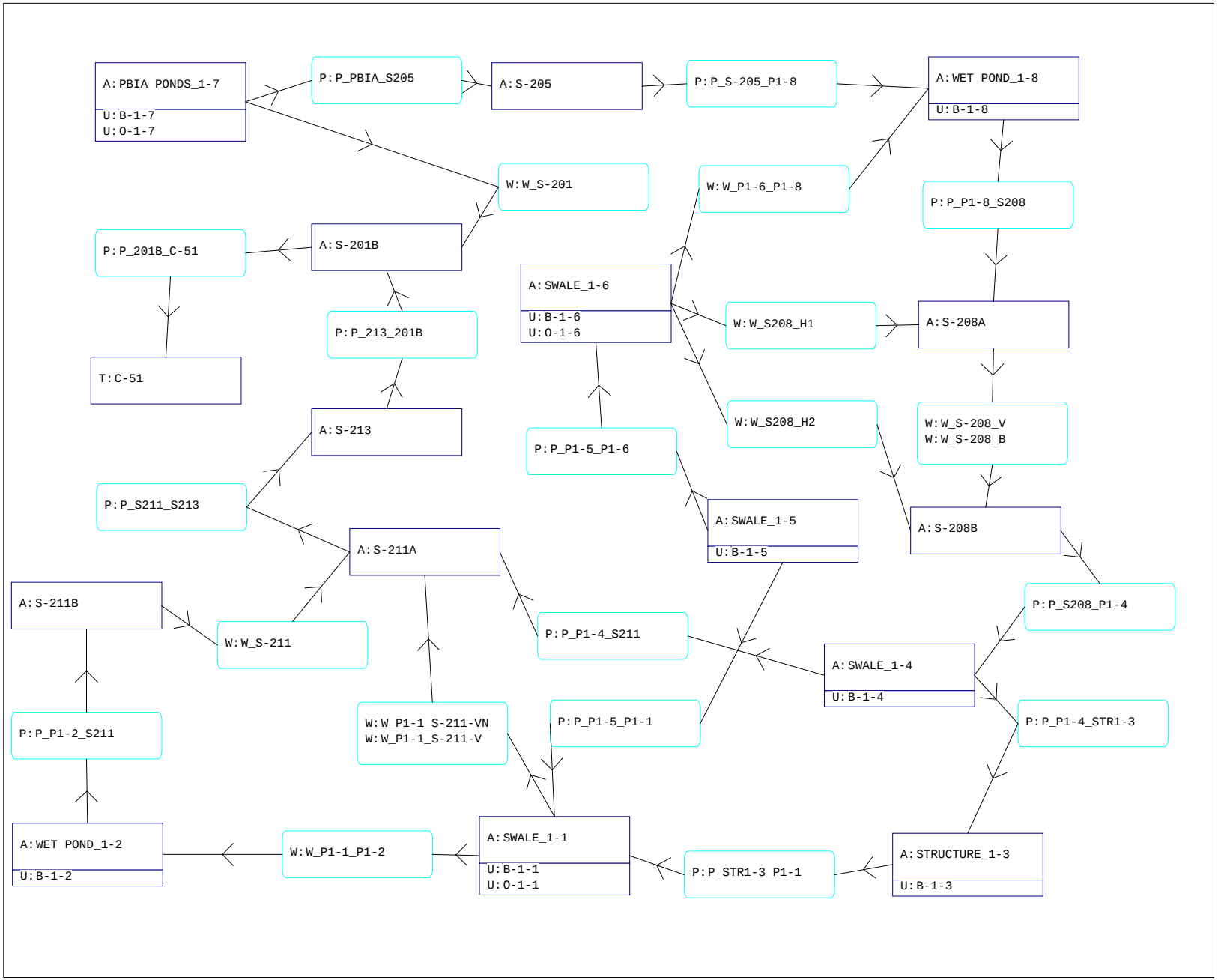
(Systems 1-4)

I-95 at Southern Boulevard
Drainage System 1
Post-Development
Node-Link Diagram

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



I-95 at Southern Boulevard
Drainage System 1
Post-Development
Node Maximum Conditions Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
C-51	BASE	10YR-24HR	0.00	6.92	7.00	0.0000	78	12.57	209.71	0.00	0.00
PBIA PONDS_1-7	BASE	10YR-24HR	12.54	10.54	18.42	-0.0064	357654	12.25	452.32	12.43	252.92
S-201B	BASE	10YR-24HR	12.57	8.02	15.32	0.0246	220	12.56	210.95	12.57	209.71
S-205	BASE	10YR-24HR	12.87	10.41	14.42	-0.0066	392	12.29	77.90	12.29	77.67
S-208A	BASE	10YR-24HR	12.90	10.41	12.62	0.0056	115	21.34	1.79	20.77	1.79
S-208B	BASE	10YR-24HR	12.94	10.41	12.62	-0.0050	117	20.77	1.79	24.43	1.93
S-211A	BASE	10YR-24HR	12.63	8.28	12.42	0.0111	230	13.65	28.70	13.70	28.97
S-211B	BASE	10YR-24HR	12.79	8.45	12.42	0.0040	113	13.68	9.65	13.65	9.66
S-213	BASE	10YR-24HR	12.59	8.11	12.82	0.0136	241	13.70	28.97	13.65	29.92
STRUCTURE_1-3	BASE	10YR-24HR	12.25	10.93	13.63	0.0116	120	8.59	0.03	8.56	0.02
SWALE_1-1	BASE	10YR-24HR	12.26	10.99	12.00	0.0022	48485	12.25	90.32	12.26	89.82
SWALE_1-4	BASE	10YR-24HR	12.92	10.41	13.50	0.0025	3430	24.43	1.94	20.34	1.83
SWALE_1-5	BASE	10YR-24HR	12.64	11.70	14.00	0.0022	7585	12.25	1.13	16.41	0.94
SWALE_1-6	BASE	10YR-24HR	12.38	12.48	13.00	0.0030	40361	12.25	51.48	12.38	35.49
WET POND_1-2	BASE	10YR-24HR	13.35	9.10	9.92	0.0027	82603	12.26	87.57	13.68	9.65
WET POND_1-8	BASE	10YR-24HR	12.89	10.42	11.43	0.0024	169943	12.38	126.87	21.34	1.79
C-51	BASE	10YR-72HR	0.00	6.92	7.00	0.0000	78	60.32	261.07	0.00	0.00
PBIA PONDS_1-7	BASE	10YR-72HR	60.28	10.93	18.42	0.0066	402302	60.00	530.64	60.16	296.35
S-201B	BASE	10YR-72HR	60.32	8.63	15.32	0.0247	220	60.32	262.15	60.32	261.07
S-205	BASE	10YR-72HR	60.54	10.86	14.42	0.0087	392	60.05	67.82	60.05	67.59
S-208A	BASE	10YR-72HR	60.58	10.83	12.62	0.0056	115	55.51	1.84	68.69	1.84
S-208B	BASE	10YR-72HR	60.59	10.77	12.62	-0.0051	117	68.69	1.84	72.73	1.93
S-211A	BASE	10YR-72HR	60.40	8.85	12.42	0.0111	230	61.62	30.40	61.75	30.60
S-211B	BASE	10YR-72HR	60.56	8.96	12.42	0.0048	113	61.59	11.46	61.59	11.47
S-213	BASE	10YR-72HR	60.35	8.70	12.82	-0.0123	241	61.75	30.60	61.70	31.34
STRUCTURE_1-3	BASE	10YR-72HR	60.01	10.98	13.63	0.0064	120	14.79	0.00	24.58	0.00
SWALE_1-1	BASE	10YR-72HR	60.01	10.99	12.00	0.0023	48626	60.00	99.92	60.01	99.46
SWALE_1-4	BASE	10YR-72HR	60.59	10.73	13.50	0.0016	3903	60.53	2.05	60.73	2.12
SWALE_1-5	BASE	10YR-72HR	60.31	11.72	14.00	0.0023	7607	60.00	1.64	62.98	0.97
SWALE_1-6	BASE	10YR-72HR	60.09	12.49	13.00	0.0030	40423	60.00	52.77	60.09	45.80
WET POND_1-2	BASE	10YR-72HR	61.14	9.66	9.92	0.0029	84204	60.01	97.03	61.59	11.46
WET POND_1-8	BASE	10YR-72HR	60.58	10.86	11.43	0.0018	172478	60.08	130.57	55.51	1.84
C-51	BASE	3YR-24HR	0.00	6.92	7.00	0.0000	78	12.53	103.23	0.00	0.00
PBIA PONDS_1-7	BASE	3YR-24HR	12.48	9.69	18.42	-0.0064	218976	12.25	245.69	12.39	160.43
S-201B	BASE	3YR-24HR	12.53	7.19	15.32	-0.0154	220	12.53	103.97	12.53	103.23
S-205	BASE	3YR-24HR	12.98	9.51	14.42	0.0058	392	12.21	83.90	12.21	83.66
S-208A	BASE	3YR-24HR	13.03	9.58	12.62	0.0019	115	18.81	1.73	18.61	1.73
S-208B	BASE	3YR-24HR	13.03	9.75	12.62	0.0022	117	18.61	1.73	21.66	1.87
S-211A	BASE	3YR-24HR	12.62	7.36	12.42	0.0085	230	13.01	21.84	13.01	21.84
S-211B	BASE	3YR-24HR	13.00	7.50	12.42	0.0039	113	13.03	2.52	13.03	2.52
S-213	BASE	3YR-24HR	12.56	7.25	12.82	0.0137	241	13.01	21.84	12.92	23.23
STRUCTURE_1-3	BASE	3YR-24HR	12.40	10.67	13.63	0.0092	120	10.17	0.03	9.91	0.02
SWALE_1-1	BASE	3YR-24HR	12.42	10.95	12.00	0.0019	47516	12.25	44.52	12.42	34.14
SWALE_1-4	BASE	3YR-24HR	13.01	9.84	13.50	0.0027	2931	21.66	1.88	17.67	1.81
SWALE_1-5	BASE	3YR-24HR	12.94	11.34	14.00	0.0022	7131	12.25	0.46	14.93	1.04
SWALE_1-6	BASE	3YR-24HR	12.88	11.78	13.00	0.0025	35525	12.25	33.18	0.00	0.00
WET POND_1-2	BASE	3YR-24HR	13.01	7.55	9.92	0.0009	78109	12.42	27.00	13.03	2.52
WET POND_1-8	BASE	3YR-24HR	13.03	9.51	11.43	0.0015	164826	12.25	97.73	18.81	1.73

I-95 at Southern Boulevard
Drainage System 1
Post-Development
Link Maximum Conditions Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
P_201B_C-51	BASE	10YR-24HR	12.57	209.71	-24.809	12.57	8.02	0.00	6.92
P_213_201B	BASE	10YR-24HR	13.65	29.92	12.229	12.59	8.11	12.57	8.02
P_P1-2_S211	BASE	10YR-24HR	13.68	9.65	-0.780	13.35	9.10	12.79	8.45
P_P1-4_S211	BASE	10YR-24HR	15.97	7.43	0.138	12.92	10.41	12.63	8.28
P_P1-4_STR1-3	BASE	10YR-24HR	0.00	0.00	2.669	12.92	10.41	12.25	10.93
P_P1-5_P1-1	BASE	10YR-24HR	12.71	14.51	-0.436	12.64	11.70	12.26	10.99
P_P1-5_P1-6	BASE	10YR-24HR	0.00	0.00	-0.018	12.64	11.70	12.38	12.48
P_P1-8_S208	BASE	10YR-24HR	21.34	1.79	-0.908	12.89	10.42	12.90	10.41
P_PBIA_S205	BASE	10YR-24HR	12.29	77.90	10.318	12.54	10.54	12.87	10.41
P_S-205_P1-8	BASE	10YR-24HR	12.29	77.67	-15.183	12.87	10.41	12.89	10.42
P_S208_P1-4	BASE	10YR-24HR	24.43	1.93	-0.762	12.94	10.41	12.92	10.41
P_S211_S213	BASE	10YR-24HR	13.70	28.97	4.431	12.63	8.28	12.59	8.11
P_STR1-3_P1-1	BASE	10YR-24HR	8.56	0.02	0.165	12.25	10.93	12.26	10.99
W_P1-1_P1-2	BASE	10YR-24HR	12.26	77.50	1.436	12.26	10.99	13.35	9.10
W_P1-1_S-211-V	BASE	10YR-24HR	0.00	0.00	0.000	12.26	10.99	12.63	8.28
W_P1-1_S-211-VN	BASE	10YR-24HR	12.24	12.32	0.017	12.26	10.99	12.63	8.28
W_P1-6_P1-8	BASE	10YR-24HR	12.38	35.49	1.331	12.38	12.48	12.89	10.42
W_S-201	BASE	10YR-24HR	12.54	186.07	0.191	12.54	10.54	12.57	8.02
W_S-208_B	BASE	10YR-24HR	20.77	1.79	-1.281	12.90	10.41	12.94	10.41
W_S-208_V	BASE	10YR-24HR	0.00	0.00	0.000	12.90	10.41	12.94	10.41
W_S-211	BASE	10YR-24HR	13.65	9.66	0.086	12.79	8.45	12.63	8.28
W_S208_H1	BASE	10YR-24HR	0.00	0.00	0.000	12.38	12.48	12.90	10.41
W_S208_H2	BASE	10YR-24HR	0.00	0.00	0.000	12.38	12.48	12.94	10.41
P_201B_C-51	BASE	10YR-72HR	60.32	261.07	-25.447	60.32	8.63	0.00	6.92
P_213_201B	BASE	10YR-72HR	61.70	31.34	12.493	60.35	8.70	60.32	8.63
P_P1-2_S211	BASE	10YR-72HR	61.59	11.46	-0.949	61.14	9.66	60.56	8.96
P_P1-4_S211	BASE	10YR-72HR	59.70	7.43	-0.137	60.59	10.73	60.40	8.85
P_P1-4_STR1-3	BASE	10YR-72HR	0.00	0.00	1.465	60.59	10.73	60.01	10.98
P_P1-5_P1-1	BASE	10YR-72HR	60.36	14.67	-0.575	60.31	11.72	60.01	10.99
P_P1-5_P1-6	BASE	10YR-72HR	0.00	0.00	-0.020	60.31	11.72	60.09	12.49
P_P1-8_S208	BASE	10YR-72HR	55.51	1.84	-0.777	60.58	10.86	60.58	10.83
P_PBIA_S205	BASE	10YR-72HR	60.05	67.82	-9.845	60.28	10.93	60.54	10.86
P_S-205_P1-8	BASE	10YR-72HR	60.05	67.59	17.808	60.54	10.86	60.58	10.86
P_S208_P1-4	BASE	10YR-72HR	72.73	1.93	-0.657	60.59	10.77	60.59	10.73
P_S211_S213	BASE	10YR-72HR	61.75	30.60	-8.898	60.40	8.85	60.35	8.70
P_STR1-3_P1-1	BASE	10YR-72HR	24.58	0.00	0.186	60.01	10.98	60.01	10.99
W_P1-1_P1-2	BASE	10YR-72HR	60.01	87.24	1.693	60.01	10.99	61.14	9.66
W_P1-1_S-211-V	BASE	10YR-72HR	0.00	0.00	0.000	60.01	10.99	60.40	8.85
W_P1-1_S-211-VN	BASE	10YR-72HR	59.90	12.30	0.018	60.01	10.99	60.40	8.85
W_P1-6_P1-8	BASE	10YR-72HR	60.09	45.80	1.426	60.09	12.49	60.58	10.86
W_S-201	BASE	10YR-72HR	60.27	239.74	0.217	60.28	10.93	60.32	8.63
W_S-208_B	BASE	10YR-72HR	68.69	1.84	-1.295	60.58	10.83	60.59	10.77
W_S-208_V	BASE	10YR-72HR	0.00	0.00	0.000	60.58	10.83	60.59	10.77
W_S-211	BASE	10YR-72HR	61.59	11.47	-0.305	60.56	8.96	60.40	8.85
W_S208_H1	BASE	10YR-72HR	0.00	0.00	0.000	60.09	12.49	60.58	10.83
W_S208_H2	BASE	10YR-72HR	0.00	0.00	0.000	60.09	12.49	60.59	10.77
P_201B_C-51	BASE	3YR-24HR	12.53	103.23	-24.799	12.53	7.19	0.00	6.92
P_213_201B	BASE	3YR-24HR	12.92	23.23	10.449	12.56	7.25	12.53	7.19
P_P1-2_S211	BASE	3YR-24HR	13.03	2.52	-0.691	13.01	7.55	13.00	7.50
P_P1-4_S211	BASE	3YR-24HR	14.40	7.59	-0.145	13.01	9.84	12.62	7.36
P_P1-4_STR1-3	BASE	3YR-24HR	0.00	0.00	2.195	13.01	9.84	12.40	10.67
P_P1-5_P1-1	BASE	3YR-24HR	12.98	10.82	-0.477	12.94	11.34	12.42	10.95
P_P1-5_P1-6	BASE	3YR-24HR	0.00	0.00	0.022	12.94	11.34	12.88	11.78
P_P1-8_S208	BASE	3YR-24HR	18.81	1.73	0.177	13.03	9.51	13.03	9.58
P_PBIA_S205	BASE	3YR-24HR	12.21	83.90	10.267	12.48	9.69	12.98	9.51
P_S-205_P1-8	BASE	3YR-24HR	12.21	83.66	-13.482	12.98	9.51	13.03	9.51
P_S208_P1-4	BASE	3YR-24HR	21.66	1.87	0.246	13.03	9.75	13.01	9.84
P_S211_S213	BASE	3YR-24HR	13.01	21.84	-9.184	12.62	7.36	12.56	7.25
P_STR1-3_P1-1	BASE	3YR-24HR	9.91	0.02	-0.165	12.40	10.67	12.42	10.95

I-95 at Southern Boulevard
Drainage System 1
Post-Development
Link Maximum Conditions Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
W_P1-1_P1-2	BASE	3YR-24HR	12.42	22.12	0.667	12.42	10.95	13.01	7.55
W_P1-1_S-211-V	BASE	3YR-24HR	0.00	0.00	0.000	12.42	10.95	12.62	7.36
W_P1-1_S-211-VN	BASE	3YR-24HR	12.42	12.02	0.014	12.42	10.95	12.62	7.36
W_P1-6_P1-8	BASE	3YR-24HR	0.00	0.00	0.000	12.88	11.78	13.03	9.51
W_S-201	BASE	3YR-24HR	12.48	84.04	0.112	12.48	9.69	12.53	7.19
W_S-208_B	BASE	3YR-24HR	18.61	1.73	0.013	13.03	9.58	13.03	9.75
W_S-208_V	BASE	3YR-24HR	0.00	0.00	0.000	13.03	9.58	13.03	9.75
W_S-211	BASE	3YR-24HR	13.03	2.52	0.085	13.00	7.50	12.62	7.36
W_S208_H1	BASE	3YR-24HR	0.00	0.00	0.000	12.88	11.78	13.03	9.58
W_S208_H2	BASE	3YR-24HR	0.00	0.00	0.000	12.88	11.78	13.03	9.75

I-95 at Southern Boulevard
Drainage System 1
Post-Development
Basin Maximum Conditions Report

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
10YR-24HR	B-1-1	BASE	12.27	83.43	5.562	424815
10YR-24HR	B-1-2	BASE	12.27	10.17	7.997	61544
10YR-24HR	B-1-3	BASE	12.27	6.40	5.263	32288
10YR-24HR	B-1-4	BASE	12.29	0.67	2.784	3335
10YR-24HR	B-1-5	BASE	12.29	1.15	2.784	5761
10YR-24HR	B-1-6	BASE	12.27	60.78	6.230	318419
10YR-24HR	B-1-7	BASE	12.29	6.48	3.034	32160
10YR-24HR	B-1-8	BASE	12.27	20.72	7.758	121933
10YR-24HR	O-1-1	BASE	12.27	1.00	3.897	4952
10YR-24HR	O-1-6	BASE	12.27	4.06	5.276	20493
10YR-24HR	O-1-7	BASE	12.27	449.25	4.527	2228358
10YR-72HR	B-1-1	BASE	60.02	89.71	7.930	605621
10YR-72HR	B-1-2	BASE	60.02	9.89	10.496	80776
10YR-72HR	B-1-3	BASE	60.02	7.04	7.595	46591
10YR-72HR	B-1-4	BASE	60.02	0.96	4.609	5521
10YR-72HR	B-1-5	BASE	60.02	1.66	4.609	9536
10YR-72HR	B-1-6	BASE	60.02	62.65	8.661	442675
10YR-72HR	B-1-7	BASE	60.02	8.96	4.929	52248
10YR-72HR	B-1-8	BASE	60.02	20.17	10.255	161194
10YR-72HR	O-1-1	BASE	60.02	1.25	6.000	7623
10YR-72HR	O-1-6	BASE	60.02	4.46	7.609	29554
10YR-72HR	O-1-7	BASE	60.02	524.57	6.749	3321967
3YR-24HR	B-1-1	BASE	12.27	50.31	3.282	250649
3YR-24HR	B-1-2	BASE	12.27	6.99	5.498	42312
3YR-24HR	B-1-3	BASE	12.27	3.76	3.038	18637
3YR-24HR	B-1-4	BASE	12.29	0.28	1.240	1485
3YR-24HR	B-1-5	BASE	12.29	0.48	1.240	2565
3YR-24HR	B-1-6	BASE	12.27	38.58	3.848	196676
3YR-24HR	B-1-7	BASE	12.29	2.85	1.402	14863
3YR-24HR	B-1-8	BASE	12.27	14.21	5.261	82687
3YR-24HR	O-1-1	BASE	12.29	0.51	1.997	2538
3YR-24HR	O-1-6	BASE	12.27	2.39	3.048	11840
3YR-24HR	O-1-7	BASE	12.27	245.67	2.462	1211920

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

         Name: B-1-1                  Node: SWALE_1-1             Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 21.040               Time Shift(hrs): 0.00
         Curve Number: 79.48             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-1-2                  Node: WET POND_1-2          Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 2.120                Time Shift(hrs): 0.00
         Curve Number: 100.00            Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-1-3                  Node: STRUCTURE_1-3         Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 1.690                Time Shift(hrs): 0.00
         Curve Number: 76.92             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-1-4                  Node: SWALE_1-4             Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 0.330                Time Shift(hrs): 0.00
         Curve Number: 55.01             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-1-5                  Node: SWALE_1-5             Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 0.570                Time Shift(hrs): 0.00
         Curve Number: 55.01             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-1-6                  Node: SWALE_1-6             Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                 Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 14.080               Time Shift(hrs): 0.00
         Curve Number: 85.16             Max Allowable Q(cfs): 999999.000
              DCIA(%): 0.00


--------------------------------------------------------------------------------
         Name: B-1-7                  Node: PBIA PONDS_1-7        Status: Onsite
        Group: BASE                   Type: SCS Unit Hydrograph CN
```

```
        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                      Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
              Area(ac): 2.920                     Time Shift(hrs): 0.00
          Curve Number: 57.30                Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: B-1-8                   Node: WET POND_1-8          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                      Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
              Area(ac): 4.330                     Time Shift(hrs): 0.00
          Curve Number: 98.00                Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: O-1-1                   Node: SWALE_1-1             Status: Offsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                      Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
              Area(ac): 0.350                     Time Shift(hrs): 0.00
          Curve Number: 65.04                Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: O-1-6                   Node: SWALE_1-6             Status: Offsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                      Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
              Area(ac): 1.070                     Time Shift(hrs): 0.00
          Curve Number: 77.03                Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: O-1-7                   Node: PBIA PONDS_1-7        Status: Offsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                      Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
              Area(ac): 135.600                   Time Shift(hrs): 0.00
          Curve Number: 70.56                Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


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

      Name: C-51               Base Flow(cfs): 0.000          Init Stage(ft): 6.920
     Group: BASE                                             Warn Stage(ft): 7.000
      Type: Time/Stage

C-51 Canal Stage based on:
An Atlas of Eastern Palm Beach County Surface Water Management Basins - 1988 (SFWMD)
Structure S-155
Design HW Stage (8.50' NGVD, 6.92' NAVD)

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00           6.920
         999.00           6.920

-------------------------------------------------------------------------------------------------
      Name: PBIA PONDS_1-7      Base Flow(cfs): 0.000          Init Stage(ft): 6.920
     Group: BASE                                             Warn Stage(ft): 18.420
      Type: Stage/Area

Stage/Area relationship, Warning Stage information taken from Water Management Analysis Report, PBIA Basin 3
SFWMD ERP No. 50-04106-P, Application No. 150330-18.
```

Stage(ft)	Area(ac)
6.920	0.0001
8.410	0.0001
8.420	0.5000
8.920	1.4000
9.420	3.5000
9.920	6.3000
10.420	7.9000
10.920	9.2000
11.420	10.7000
11.920	13.7000
12.420	18.7000
12.920	26.5000
13.920	44.7000
14.920	71.2000
15.920	99.2000
16.920	127.6000
17.920	129.7000
18.920	129.7000
19.920	129.7000
20.920	129.7000

Name: S-201B Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 15.320
Type: Stage/Area

Stage(ft)	Area(ac)
-0.580	0.0001
15.320	0.0001

Name: S-205 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 14.420
Type: Stage/Area

Stage(ft)	Area(ac)
-0.580	0.0001
14.420	0.0001

Name: S-208A Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 12.620
Type: Stage/Area

Stage(ft)	Area(ac)
5.760	0.0001
12.620	0.0001

Name: S-208B Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 12.620
Type: Stage/Area

Stage(ft)	Area(ac)
5.870	0.0001
12.620	0.0001

Name: S-211A Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 12.420
Type: Stage/Area

Stage(ft)	Area(ac)
2.220	0.0001
12.420	0.0001

Name: S-211B Base Flow(cfs): 0.000 Init Stage(ft): 6.920

Group: BASE Warn Stage(ft): 12.420
Type: Stage/Area

Stage(ft)	Area(ac)
2.220	0.0001
12.420	0.0001

Name: S-213 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 12.820
Type: Stage/Area

Stage(ft)	Area(ac)
1.770	0.0001
12.820	0.0001

Name: STRUCTURE_1-3 Base Flow(cfs): 0.000 Init Stage(ft): 8.140
Group: BASE Warn Stage(ft): 13.630
Type: Stage/Area

Warning Stage = Rim Elev.

Stage(ft)	Area(ac)
8.140	0.0001
13.630	0.0001

Name: SWALE_1-1 Base Flow(cfs): 0.000 Init Stage(ft): 7.220
Group: BASE Warn Stage(ft): 12.000
Type: Stage/Area

Warning Stage = EOP Elev. minus 0.5 ft (Freeboard)
EOP Elev. = 12.50'

Stage(ft)	Area(ac)
7.220	0.0001
7.990	0.0001
8.000	0.2700
8.500	0.3800
9.000	0.4900
9.500	0.6000
10.000	0.7100
10.500	0.8300
11.000	1.1200
11.500	1.1800
12.000	1.2400
12.500	1.3000

Name: SWALE_1-4 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 13.500
Type: Stage/Area

Warning Stage = EOP Elev. minus 0.5 ft (Freeboard)
EOP Elev. = 14.00'

Stage(ft)	Area(ac)
5.690	0.0001
8.240	0.0001
8.500	0.0400
9.000	0.0500
9.500	0.0600
10.000	0.0700
10.500	0.0800
11.000	0.1000
11.500	0.1100
12.000	0.1300
12.500	0.1500
13.000	0.1700
13.500	0.2000

Name: SWALE_1-5 Base Flow(cfs): 0.000 Init Stage(ft): 8.250
Group: BASE Warn Stage(ft): 14.000
Type: Stage/Area

Warning Stage = EOP Elev. minus 0.5 ft (Freeboard)
EOP Elev. = 14.50'

Stage(ft)	Area(ac)
8.250	0.0001
8.490	0.0001
8.500	0.0100
9.000	0.0800
9.500	0.1000
10.000	0.1200
10.500	0.1300
11.000	0.1500
11.500	0.1700
12.000	0.1800
12.500	0.2000
13.000	0.2300
13.500	0.2500
14.000	0.2800
14.500	0.3100

Name: SWALE_1-6 Base Flow(cfs): 0.000 Init Stage(ft): 8.000
Group: BASE Warn Stage(ft): 13.000
Type: Stage/Area

Warning Stage = EOP Elev. minus 0.5 ft (Freeboard)
EOP Elev. = 13.50'

Stage(ft)	Area(ac)
8.000	0.2000
9.000	0.3600
10.000	0.5300
11.000	0.6900
12.000	0.8500
13.000	1.0100

Name: WET POND_1-2 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 9.920
Type: Stage/Area

Warning Stage = Berm Elev. minus 1.00 ft (Freeboard)
Berm Elev. = 10.92

Stage(ft)	Area(ac)
-8.000	0.9300
6.500	1.7300
6.920	1.7500
7.000	1.7600
7.500	1.7900
8.000	1.8200
8.500	1.8600
9.000	1.8900
9.500	1.9200
10.000	1.9600
10.500	1.9900
10.920	2.0200
12.500	2.0200

Name: WET POND_1-8 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 11.430
Type: Stage/Area

Warning Stage = Berm Elev. minus 1.00 ft
Berm Elev. = 12.43'

Stage/Area relationship taken from Water Management Analysis Report, PBIA Basin 3
SFWMD ERP No. 50-04106-P, Application No. 150330-18.

Stage(ft)	Area(ac)
-8.000	2.5100
6.920	3.4500
7.420	3.5000
8.420	3.6400
9.420	3.7700
10.420	3.9000
11.420	4.0300
12.420	4.2600
13.420	4.3300

==========

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

Name: WEIR_S-201 Group: BASE
Encroachment: No

* - Weir information taken from Palm Beach International Airport
Taxiway D & E Rehabilitation / Reconstruction Phase 4 Bid Documents
(January 19, 2015)
SFWMD ERP No. 50-04106-P, Application No. 150330-18.
Weir-4A

Station(ft)	Elevation(ft)	Manning's N
0.000	9.320	0.012000
1.000	9.320	0.012000
1.000	8.420	0.012000
19.000	8.420	0.012000
19.000	9.320	0.012000
20.000	9.320	0.012000

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

Name: P_201B_C-51 From Node: S-201B Length(ft): 445.00
Group: BASE To Node: C-51 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	84.00	84.00	Flow:	Both
Rise(in):	84.00	84.00	Entrance Loss Coef:	0.50
Invert(ft):	-0.580	-0.580	Exit Loss Coef:	1.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

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

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

* - Pipe information taken from Water Management Analysis Report,
PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

Name: P_213_201B From Node: S-213 Length(ft): 255.00
Group: BASE To Node: S-201B Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	54.00	54.00	Flow:	Both
Rise(in):	54.00	54.00	Entrance Loss Coef:	0.50
Invert(ft):	1.770	0.020	Exit Loss Coef:	0.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

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

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

* - Pipe information taken from Water Management Analysis Report,
PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

Name: P_P1-2_S211 From Node: WET POND_1-2 Length(ft): 10.00
Group: BASE To Node: S-211B Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	18.00	18.00	Flow:	Both
Rise(in):	18.00	18.00	Entrance Loss Coef:	0.50
Invert(ft):	3.040	2.920	Exit Loss Coef:	0.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

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

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

Name:	P_P1-4_S211	From Node:	SWALE_1-4	Length(ft):	483.00
Group:	BASE	To Node:	S-211A	Count:	1
				Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	18.00	18.00		Entrance Loss Coef:	0.50
Rise(in):	18.00	18.00		Exit Loss Coef:	0.00
Invert(ft):	5.690	4.580		Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

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

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

* - Downstream invert pipe information taken from Water Management Analysis Report,
PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

Name:	P_P1-4_STR1-3	From Node:	SWALE_1-4	Length(ft):	32.00
Group:	BASE	To Node:	STRUCTURE_1-3	Count:	1
				Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	18.00	18.00		Entrance Loss Coef:	0.50
Rise(in):	18.00	18.00		Exit Loss Coef:	0.00
Invert(ft):	8.250	8.140		Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

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

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

Name:	P_P1-5_P1-1	From Node:	SWALE_1-5	Length(ft):	69.00
Group:	BASE	To Node:	SWALE_1-1	Count:	1
				Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	24.00	24.00		Entrance Loss Coef:	0.50
Rise(in):	24.00	24.00		Exit Loss Coef:	0.00
Invert(ft):	8.250	8.130		Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

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

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

Name:	P_P1-5_P1-6	From Node:	SWALE_1-5	Length(ft):	92.00
Group:	BASE	To Node:	SWALE_1-6	Count:	1
				Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular		Flow:	Both
Span(in):	24.00	24.00		Entrance Loss Coef:	0.50

Rise(in):	24.00	24.00	Exit Loss Coef:	0.00
Invert(ft):	8.260	8.220	Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

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

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

Name: P_P1-8_S208 From Node: WET POND_1-8 Length(ft): 54.50
Group: BASE To Node: S-208A Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
			Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular	Flow:	Both
Span(in):	18.00	18.00	Entrance Loss Coef:	0.50
Rise(in):	18.00	18.00	Exit Loss Coef:	0.00
Invert(ft):	5.920	5.760	Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

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

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

* - Pipe information taken from Water Management Analysis Report,
PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

Name: P_PBIA_S205 From Node: PBIA PONDS_1-7 Length(ft): 1320.00
Group: BASE To Node: S-205 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
			Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular	Flow:	Both
Span(in):	72.00	72.00	Entrance Loss Coef:	0.50
Rise(in):	72.00	72.00	Exit Loss Coef:	0.00
Invert(ft):	-0.180	-0.560	Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

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

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

* - Pipe information taken from Water Management Analysis Report,
PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

Name: P_S-205_P1-8 From Node: S-205 Length(ft): 537.00
Group: BASE To Node: WET POND_1-8 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
			Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular	Flow:	Both
Span(in):	72.00	72.00	Entrance Loss Coef:	0.50
Rise(in):	72.00	72.00	Exit Loss Coef:	1.00
Invert(ft):	-0.580	-0.720	Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

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

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

* - Pipe information taken from Water Management Analysis Report,

PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

Name:	P_S208_P1-4	From Node:	S-208B
Group:	BASE	To Node:	SWALE_1-4
	UPSTREAM	DOWNSTREAM	
Geometry:	Circular	Circular	
Span(in):	18.00	18.00	
Rise(in):	18.00	18.00	
Invert(ft):	5.870	5.720	
Manning's N:	0.012000	0.012000	
Top Clip(in):	0.000	0.000	
Bot Clip(in):	0.000	0.000	

Length(ft): 102.00
Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

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

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

Name:	P_S211_S213	From Node:	S-211A
Group:	BASE	To Node:	S-213
	UPSTREAM	DOWNSTREAM	
Geometry:	Circular	Circular	
Span(in):	54.00	54.00	
Rise(in):	54.00	54.00	
Invert(ft):	2.220	1.770	
Manning's N:	0.012000	0.012000	
Top Clip(in):	0.000	0.000	
Bot Clip(in):	0.000	0.000	

Length(ft): 880.00
Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

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

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

* - Pipe information taken from Water Management Analysis Report,
PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

Name:	P_STR1-3_P1-1	From Node:	STRUCTURE_1-3
Group:	BASE	To Node:	SWALE_1-1
	UPSTREAM	DOWNSTREAM	
Geometry:	Circular	Circular	
Span(in):	24.00	24.00	
Rise(in):	24.00	24.00	
Invert(ft):	8.310	8.140	
Manning's N:	0.012000	0.012000	
Top Clip(in):	0.000	0.000	
Bot Clip(in):	0.000	0.000	

Length(ft): 107.00
Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

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

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

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

Name:	W_P1-1_P1-2	From Node:	SWALE_1-1
Group:	BASE	To Node:	WET POND_1-2
Flow:	Both	Count:	1
Type:	Vertical: Fread	Geometry:	Rectangular

Span(in):	16500.00
Rise(in):	999.00
Invert(ft):	10.920
Control Elevation(ft):	10.920

TABLE

```
            Bottom Clip(in): 0.000
               Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

Berm length between swale/ditch & pond = 1375 ft = 16500 in

* - Berm information taken from SFWMD ERP No. 50-04106-P, Application No. 980625-8

-------------------------------------------------------------------------------------------------
        Name: W_P1-1_S-211-V      From Node: SWALE_1-1
       Group: BASE                  To Node: S-211A
        Flow: Both                    Count: 1
        Type: Vertical: Mavis      Geometry: Rectangular

                  Span(in): 204.00
                  Rise(in): 99999.00
                Invert(ft): 12.420
      Control Elevation(ft): 12.420
                                          TABLE
            Bottom Clip(in): 0.000
               Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

* - Weir information taken from SFWMD ERP No. 50-04106-P, Application No. 980625-8
54" x 48" Structure
Span = Perimeter of structure top (S-211) = (54"+48"+54"+48") = 204"

-------------------------------------------------------------------------------------------------
        Name: W_P1-1_S-211-VN     From Node: SWALE_1-1
       Group: BASE                  To Node: S-211A
        Flow: Both                    Count: 1
        Type: Vertical: Mavis      Geometry: Trapezoidal

           Bottom Width(ft): 0.00
       Left Side Slope(h/v): 0.18
      Right Side Slope(h/v): 0.18
                Invert(ft): 7.220
      Control Elevation(ft): 7.220
     Struct Opening Dim(ft): 9999.00
                                          TABLE
            Bottom Clip(ft): 0.000
               Top Clip(ft): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

* - V-Notch weir information taken from SFWMD ERP No. 50-04106-P,
Application No. 980625-8, Permit Staff Report
S-211

-------------------------------------------------------------------------------------------------
        Name: W_P1-6_P1-8         From Node: SWALE_1-6
       Group: BASE                  To Node: WET POND_1-8
        Flow: Both                    Count: 1
        Type: Vertical: Fread      Geometry: Rectangular

                  Span(in): 12720.00
                  Rise(in): 999.00
                Invert(ft): 12.430
      Control Elevation(ft): 12.430
                                          TABLE
            Bottom Clip(in): 0.000
               Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

Berm length between ditch & pond = 1060 ft = 12720 in

* - Berm information taken from SFWMD ERP No. 50-04106-P, Application No. 980625-8

-------------------------------------------------------------------------------------------------
        Name: W_S-201             From Node: PBIA PONDS_1-7
       Group: BASE                  To Node: S-201B
        Flow: Both                    Count: 1
        Type: Vertical: Mavis      Geometry: Irregular

                       XSec: WEIR_S-201
                Invert(ft): 8.420
      Control Elevation(ft): 8.420
     Struct Opening Dim(ft): 9999.00
                                          TABLE
            Bottom Clip(ft): 0.000
               Top Clip(ft): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600
```

* - Weir information taken from Palm Beach International Airport Taxiway D & E Rehabilitation / Reconstruction Phase 4 Bid Docum
(January 19, 2015)
SFWMD ERP No. 50-04106-P, Application No. 150330-18.
Weir-4A

Name: W_S-208_B From Node: S-208A
Group: BASE To Node: S-208B
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 0.00
Left Side Slope(h/v): 0.17
Right Side Slope(h/v): 0.17
Invert(ft): 6.920
Control Elevation(ft): 6.920
Struct Opening Dim(ft): 2.90
TABLE
Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

* - Weir information taken from Water Management Analysis Report,
PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.
V-Notch Bleeder
Weir-4B-1

Name: W_S-208_V From Node: S-208A
Group: BASE To Node: S-208B
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Rectangular

Span(in): 36.00
Rise(in): 12.00
Invert(ft): 11.700
Control Elevation(ft): 11.700
TABLE
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

* - Weir information taken from Water Management Analysis Report,
PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.
Vertical Rectangular Weir
Weir-4B-2

Name: W_S-211 From Node: S-211B
Group: BASE To Node: S-211A
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Rectangular

Span(in): 30.00
Rise(in): 99999.00
Invert(ft): 6.920
Control Elevation(ft): 6.920
TABLE
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

* - Weir information taken from SFWMD ERP No. 50-04106-P, Application No. 980625-8

Name: W_S208_H1 From Node: SWALE_1-6
Group: BASE To Node: S-208A
Flow: Both Count: 1
Type: Horizontal Geometry: Rectangular

Span(in): 32.00
Rise(in): 36.00
Invert(ft): 12.620
Control Elevation(ft): 12.620
TABLE
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

S-208 Horizontal Weir @ Rim of Structure - Upstream of Vertical Internal Weir

```
---------------------------------------------------------------------------------------------------
         Name: W_S208_H2           From Node: SWALE_1-6
        Group: BASE                  To Node: S-208B
         Flow: Both                    Count: 1
         Type: Horizontal          Geometry: Rectangular

                   Span(in): 22.00
                   Rise(in): 36.00
                 Invert(ft): 12.620
       Control Elevation(ft): 12.620
                                         TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
           Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600
```

S-208 Horizontal Weir @ Rim of Structure - Downstream of Vertical Internal Weir

```
===================================================================================
==== Hydrology Simulations ========================================================
===================================================================================

         Name: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 1\10YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 8.00

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

---------------------------------------------------------------------------------------------------
         Name: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 1\10YR-72HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Sfwmd72
    Rainfall Amount(in): 10.50

Time(hrs)       Print Inc(min)
--------------- ---------------
72.000          5.00
84.000          15.00

---------------------------------------------------------------------------------------------------
         Name: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 1\3YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 5.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

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

         Name: 10YR-24HR           Hydrology Sim: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 1\10YR-24HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:



Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.000
```

Group	Run
BASE	Yes

Name: 10YR-72HR Hydrology Sim: 10YR-72HR
Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 1\10YR-72HR.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 84.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
72.000	5.000
84.000	15.000

Group	Run
BASE	Yes

Name: 3YR-24HR Hydrology Sim: 3YR-24HR
Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 1\3YR-24HR.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	5.000

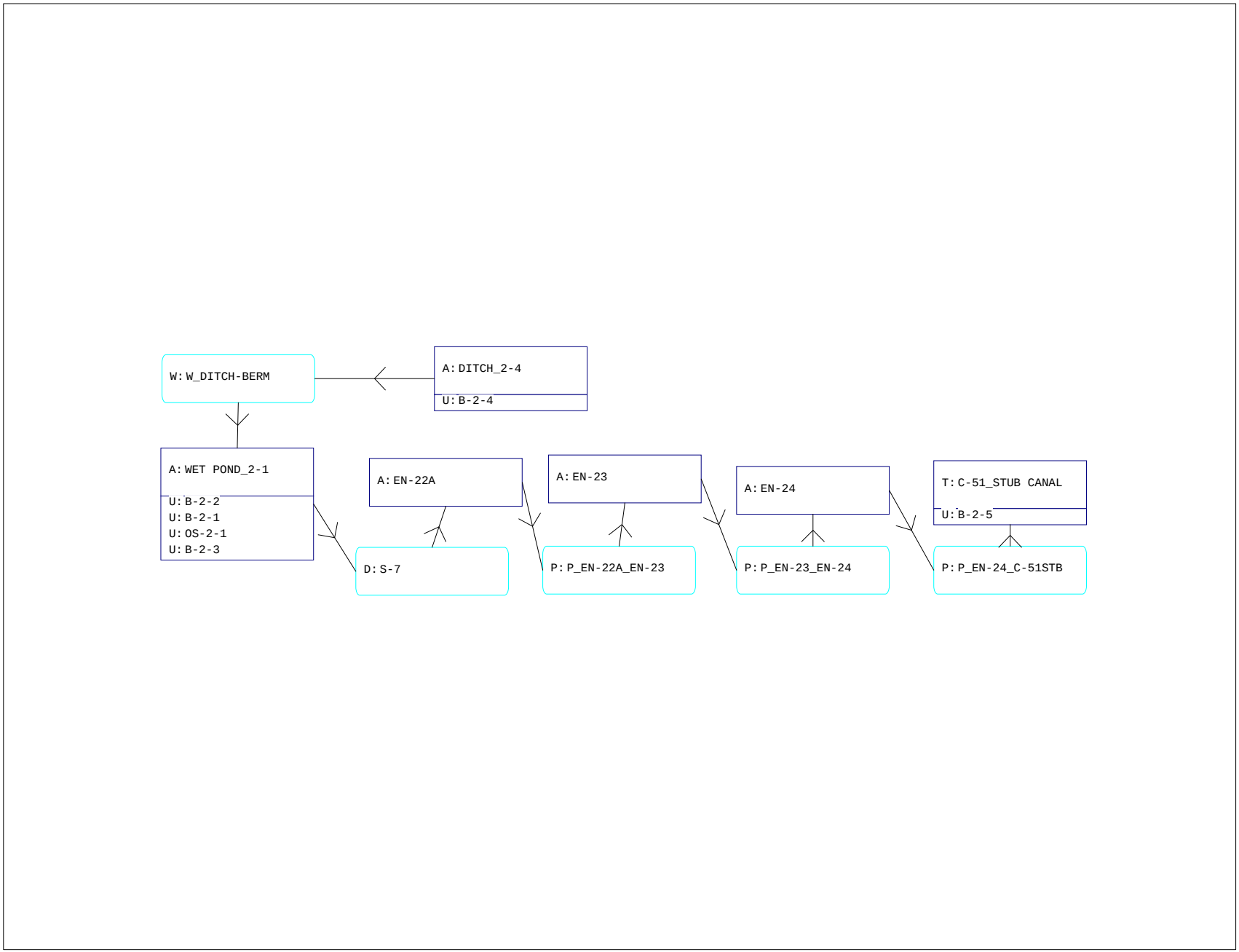
Group	Run
BASE	Yes

I-95 at Southern Boulevard
Drainage System 2
Post-Development
Node-Link Diagram

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



I-95 at Southern Boulevard
Drainage System 2
Post-Development
Node Maximum Conditions

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
C-51_STUB CANAL	BASE	10YR-24HR	0.00	6.92	7.00	0.0000	2	12.38	28.26	0.00	0.00
DITCH_2-4	BASE	10YR-24HR	25.00	11.00	12.00	0.0003	13483	12.25	0.92	0.00	0.00
EN-22A	BASE	10YR-24HR	12.39	7.44	11.30	0.0159	142	12.39	27.73	12.38	27.72
EN-23	BASE	10YR-24HR	12.39	7.24	10.64	0.0126	169	12.38	27.72	12.40	28.04
EN-24	BASE	10YR-24HR	12.38	7.04	13.26	0.0179	141	12.40	28.04	12.38	27.71
WET POND_2-1	BASE	10YR-24HR	12.39	9.12	9.65	0.0017	40761	12.25	33.42	12.39	27.73
C-51_STUB CANAL	BASE	10YR-72HR	0.00	6.92	7.00	0.0000	2	60.13	29.65	0.00	0.00
DITCH_2-4	BASE	10YR-72HR	73.00	11.18	12.00	0.0003	14216	60.00	1.16	0.00	0.00
EN-22A	BASE	10YR-72HR	60.13	7.49	11.30	0.0159	142	60.13	28.94	60.13	28.93
EN-23	BASE	10YR-72HR	60.14	7.27	10.64	0.0126	169	60.13	28.93	60.11	29.35
EN-24	BASE	10YR-72HR	60.13	7.05	13.26	0.0179	141	60.11	29.35	60.13	28.93
WET POND_2-1	BASE	10YR-72HR	60.13	9.14	9.65	0.0007	40821	60.00	33.49	60.13	28.94
C-51_STUB CANAL	BASE	3YR-24HR	0.00	6.92	7.00	0.0000	2	12.27	14.22	0.00	0.00
DITCH_2-4	BASE	3YR-24HR	25.00	10.83	12.00	0.0000	12787	12.25	0.46	0.00	0.00
EN-22A	BASE	3YR-24HR	12.56	7.03	11.30	0.0129	142	12.55	12.79	12.56	12.79
EN-23	BASE	3YR-24HR	12.54	6.99	10.64	0.0127	169	12.56	12.79	13.41	14.26
EN-24	BASE	3YR-24HR	12.27	6.95	13.26	0.0179	141	13.41	14.26	12.27	13.91
WET POND_2-1	BASE	3YR-24HR	12.55	8.88	9.65	0.0020	39915	12.25	22.28	12.55	12.79

I-95 at Southern Boulevard
Drainage System 2
Post-Development
Link Maximum Conditions

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
P_EN-22A_EN-23	BASE	10YR-24HR	12.38	27.72	-9.059	12.39	7.44	12.39	7.24
P_EN-23_EN-24	BASE	10YR-24HR	12.40	28.04	8.592	12.39	7.24	12.38	7.04
P_EN-24_C-51STB	BASE	10YR-24HR	12.38	27.71	10.351	12.38	7.04	0.00	6.92
S-7	BASE	10YR-24HR	12.39	27.73	0.048	12.39	9.12	12.39	7.44
W_DITCH-BERM	BASE	10YR-24HR	0.00	0.00	0.000	25.00	11.00	12.39	9.12
P_EN-22A_EN-23	BASE	10YR-72HR	60.13	28.93	-9.059	60.13	7.49	60.14	7.27
P_EN-23_EN-24	BASE	10YR-72HR	60.11	29.35	8.559	60.14	7.27	60.13	7.05
P_EN-24_C-51STB	BASE	10YR-72HR	60.13	28.93	10.390	60.13	7.05	0.00	6.92
S-7	BASE	10YR-72HR	60.13	28.94	0.047	60.13	9.14	60.13	7.49
W_DITCH-BERM	BASE	10YR-72HR	0.00	0.00	0.000	73.00	11.18	60.13	9.14
P_EN-22A_EN-23	BASE	3YR-24HR	12.56	12.79	-9.014	12.56	7.03	12.54	6.99
P_EN-23_EN-24	BASE	3YR-24HR	13.41	14.26	8.802	12.54	6.99	12.27	6.95
P_EN-24_C-51STB	BASE	3YR-24HR	12.27	13.91	10.331	12.27	6.95	0.00	6.92
S-7	BASE	3YR-24HR	12.55	12.79	0.015	12.55	8.88	12.56	7.03
W_DITCH-BERM	BASE	3YR-24HR	0.00	0.00	0.000	25.00	10.83	12.55	8.88

I-95 at Southern Boulevard
Drainage System 2
Post-Development
Basin Maximum Conditions

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
10YR-24HR	B-2-1	BASE	12.27	5.06	7.376	28650
10YR-24HR	B-2-2	BASE	12.26	25.38	7.997	160819
10YR-24HR	B-2-3	BASE	12.27	0.48	7.997	2903
10YR-24HR	B-2-4	BASE	12.27	0.93	3.839	4598
10YR-24HR	B-2-5	BASE	12.27	0.67	3.400	3332
10YR-24HR	OS-2-1	BASE	12.36	2.81	3.340	18430
10YR-72HR	B-2-1	BASE	60.02	4.96	9.867	38325
10YR-72HR	B-2-2	BASE	60.03	24.57	10.495	211049
10YR-72HR	B-2-3	BASE	60.02	0.47	10.496	3810
10YR-72HR	B-2-4	BASE	60.02	1.17	5.929	7102
10YR-72HR	B-2-5	BASE	60.02	0.89	5.390	5282
10YR-72HR	OS-2-1	BASE	60.07	3.83	5.315	29326
3YR-24HR	B-2-1	BASE	12.27	3.43	4.892	19001
3YR-24HR	B-2-2	BASE	12.26	17.45	5.498	110563
3YR-24HR	B-2-3	BASE	12.27	0.33	5.498	1996
3YR-24HR	B-2-4	BASE	12.29	0.47	1.955	2342
3YR-24HR	B-2-5	BASE	12.29	0.32	1.648	1616
3YR-24HR	OS-2-1	BASE	12.36	1.27	1.608	8871

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

         Name: B-2-1                   Node: WET POND_2-1          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                  Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000              Time of Conc(min): 10.00
              Area(ac): 1.070                 Time Shift(hrs): 0.00
          Curve Number: 94.81             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



--------------------------------------------------------------------------------------------------------
         Name: B-2-2                   Node: WET POND_2-1          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                  Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000              Time of Conc(min): 11.66
              Area(ac): 5.540                 Time Shift(hrs): 0.00
          Curve Number: 100.00            Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Combined basin including EB-6, EB-7, EB-8, EB-10, EB-11, EB-13, EB-14, EB-17, PB-21A, and PB-21B.
Basin areas determined from SR 80 plans (using profiles and cross-sections to determine
longitudinal and cross-slopes).

Tc estimated from Storm Tabulations found in the 2002 Drainage Report.

--------------------------------------------------------------------------------------------------------
         Name: B-2-3                   Node: WET POND_2-1          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                  Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000              Time of Conc(min): 10.00
              Area(ac): 0.100                 Time Shift(hrs): 0.00
          Curve Number: 100.00            Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



--------------------------------------------------------------------------------------------------------
         Name: B-2-4                   Node: DITCH_2-4             Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                  Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000              Time of Conc(min): 10.00
              Area(ac): 0.330                 Time Shift(hrs): 0.00
          Curve Number: 64.52             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

EB-SR 80 Ditch
Basin limits determined from plans and field reviews.

--------------------------------------------------------------------------------------------------------
         Name: B-2-5                   Node: C-51_STUB CANAL       Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                  Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000              Time of Conc(min): 10.00
              Area(ac): 0.270                 Time Shift(hrs): 0.00
          Curve Number: 60.61             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



--------------------------------------------------------------------------------------------------------
         Name: OS-2-1                  Node: WET POND_2-1          Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                   Peaking Factor: 256.0
          Rainfall File:                  Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000              Time of Conc(min): 18.85
              Area(ac): 1.520                 Time Shift(hrs): 0.00
          Curve Number: 60.09             Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00
```

Basin limits determined from plans and field reviews.
See Tc Calcs.

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

Name: C-51_STUB CANAL Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 7.000
Type: Time/Stage

C-51 Stub Canal Stage based on:
An Atlas of Eastern Palm Beach County Surface Water Management Basins - 1988 (SFWMD)
Structure S-155
Design HW Stage (8.50' NGVD, 6.92' NAVD)

Time(hrs)	Stage(ft)
0.00	6.920
999.00	6.920

Name: DITCH_2-4 Base Flow(cfs): 0.000 Init Stage(ft): 10.640
Group: BASE Warn Stage(ft): 12.000
Type: Stage/Area

SR 80 Ditch (EB)

Apprx. stage-areas determined from plans, survey, aerial, and field reviews.

Stage(ft)	Area(ac)
10.640	0.2760
11.640	0.3690

Name: EN-22A Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 11.300
Type: Stage/Area

S-22A from the SR 80 Plans. Elevations were taken from SR 80 Plans.

Stage(ft)	Area(ac)
-0.550	0.0008
11.300	0.0008

Name: EN-23 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 10.640
Type: Stage/Area

S-23 from the SR 80 Plans. Elevations were taken from SR 80 Plans.

Stage(ft)	Area(ac)
-0.680	0.0008
10.640	0.0008

Name: EN-24 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 13.260
Type: Stage/Area

S-24 from the SR 80 Plans. Elevations were taken from SR 80 Plans.

Stage(ft)	Area(ac)
-1.340	0.0008
13.260	0.0008

Name: WET POND_2-1 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 9.650
Type: Stage/Area

Pond 1 (FPID No 429082-1-52-01)

Stage(ft)	Area(ac)
6.920	0.7600
7.360	0.7930
9.360	0.9550
10.360	1.0400

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

```
         Name: P_EN-22A_EN-23      From Node: EN-22A             Length(ft): 294.00
        Group: BASE                  To Node: EN-23                  Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                              Flow: Both
     Span(in): 48.00          48.00                      Entrance Loss Coef: 0.50
     Rise(in): 48.00          48.00                          Exit Loss Coef: 0.00
   Invert(ft): -0.550         -0.680                         Bend Loss Coef: 0.50
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                          Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None


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

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

Elevations and length taken from the SR 80 Plans.

-------------------------------------------------------------------------------------------------------
         Name: P_EN-23_EN-24       From Node: EN-23              Length(ft): 264.00
        Group: BASE                  To Node: EN-24                  Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                              Flow: Both
     Span(in): 48.00          48.00                      Entrance Loss Coef: 0.50
     Rise(in): 48.00          48.00                          Exit Loss Coef: 0.00
   Invert(ft): -0.680         -1.340                         Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                          Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None


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

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

Elevations and length taken from the SR 80 Plans.

-------------------------------------------------------------------------------------------------------
         Name: P_EN-24_C-51STB     From Node: EN-24              Length(ft): 20.00
        Group: BASE                  To Node: C-51_STUB CANAL        Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                              Flow: Both
     Span(in): 48.00          48.00                      Entrance Loss Coef: 0.50
     Rise(in): 48.00          48.00                          Exit Loss Coef: 1.00
   Invert(ft): -1.340         -1.340                         Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                          Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None


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

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

Elevations and length taken from the SR 80 Plans.
```

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

```
         Name: S-7                 From Node: WET POND_2-1       Length(ft): 12.00
        Group: BASE                  To Node: EN-22A                 Count: 1

               UPSTREAM       DOWNSTREAM                  Friction Equation: Automatic
     Geometry: Circular       Circular                   Solution Algorithm: Most Restrictive
     Span(in): 48.00          48.00                                 Flow: Both
     Rise(in): 48.00          48.00                      Entrance Loss Coef: 0.500
   Invert(ft): -0.540         -0.550                         Exit Loss Coef: 1.000
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
```

```
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

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

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



*** Weir 1 of 2 for Drop Structure S-7 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 79.00                       Invert(ft): 8.550
              Rise(in): 36.00                  Control Elev(ft): 8.550

*** Weir 2 of 2 for Drop Structure S-7 ***
                                                                                TABLE
                  Count: 1                      Bottom Clip(ft): 0.000
                   Type: Vertical: Mavis           Top Clip(ft): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Trapezoidal           Orifice Disc Coef: 0.600

       Bottom Width(ft): 0.00                       Invert(ft): 7.360
       Left Sd Slp(h/v): 0.18                  Control Elev(ft): 7.360
      Right Sd Slp(h/v): 0.18             Struct Opening Dim(ft): 1.19


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

         Name: W_DITCH-BERM        From Node: DITCH_2-4
        Group: BASE                  To Node: WET POND_2-1
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Rectangular

                    Span(in): 300.00
                    Rise(in): 99999.00
                  Invert(ft): 11.300
       Control Elevation(ft): 11.300
                                          TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
          Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

Berm between SR 80 Ditch and Pond 1.
Elevation taken from SR 80 Plans.
Width measured using aerial and topo.

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

         Name: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 2\10YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 8.00

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

--------------------------------------------------------------------------------------------------------
         Name: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 2\10YR-72HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Sfwmd72
    Rainfall Amount(in): 10.50

Time(hrs)       Print Inc(min)
--------------- ---------------
72.000          5.00
84.000          15.00
```

```
------------------------------------------------------------------------------------------------
         Name: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 2\3YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 5.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

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

         Name: 10YR-24HR           Hydrology Sim: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 2\10YR-24HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.000

Group           Run
--------------- -----
BASE            Yes


------------------------------------------------------------------------------------------------
         Name: 10YR-72HR           Hydrology Sim: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 2\10YR-72HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 84.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
48.000          15.000
72.000          5.000
84.000          15.000

Group           Run
--------------- -----
BASE            Yes


------------------------------------------------------------------------------------------------
         Name: 3YR-24HR            Hydrology Sim: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 2\3YR-24HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.000
```

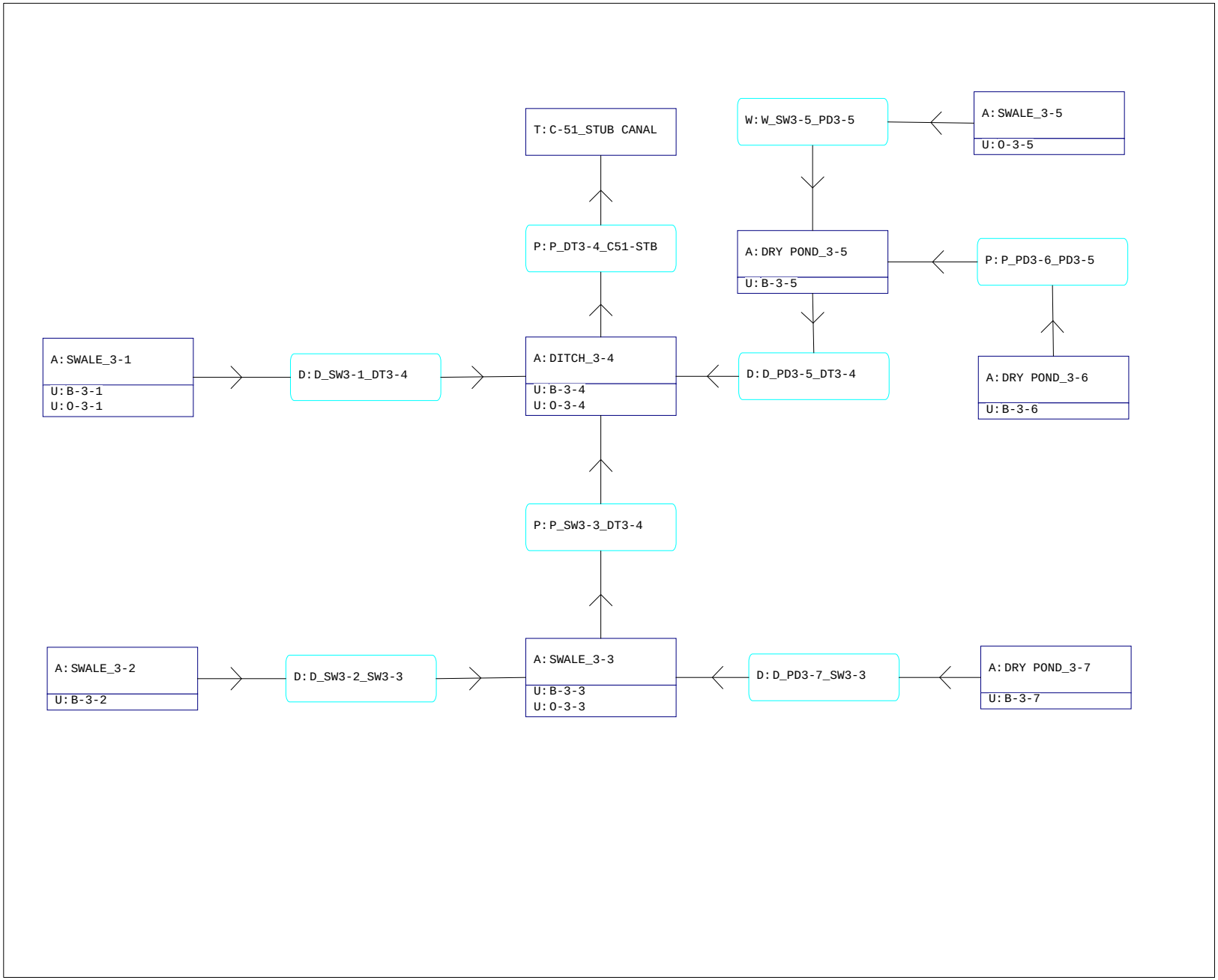
Group	Run
BASE	Yes

I-95 at Southern Boulevard
Drainage System 3
Post-Development
Node-Link Diagram

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



I-95 at Southern Boulevard
Drainage System 3
Post-Development
Node Maximum Conditions Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
C-51_STUB CANAL	BASE	10YR-24HR	0.00	6.92	7.00	0.0000	109	12.64	41.24	0.00	0.00
DITCH_3-4	BASE	10YR-24HR	12.64	9.61	15.00	0.0050	5334	12.57	41.80	12.64	41.24
DRY POND_3-5	BASE	10YR-24HR	15.34	11.34	14.00	0.0050	79404	12.25	38.38	15.34	3.59
DRY POND_3-6	BASE	10YR-24HR	15.33	11.35	13.50	-0.0059	180	12.25	20.48	12.25	20.41
DRY POND_3-7	BASE	10YR-24HR	24.05	12.75	19.00	0.0042	56641	12.25	49.30	24.05	0.70
SWALE_3-1	BASE	10YR-24HR	12.68	12.57	15.00	0.0043	15516	12.25	9.46	12.68	4.03
SWALE_3-2	BASE	10YR-24HR	12.51	12.45	14.00	0.0049	44384	12.25	47.71	12.51	26.32
SWALE_3-3	BASE	10YR-24HR	12.63	9.81	10.00	0.0050	11955	12.44	40.73	12.58	35.35
SWALE_3-5	BASE	10YR-24HR	15.35	11.34	14.50	0.0037	37270	12.25	7.12	17.04	0.59
C-51_STUB CANAL	BASE	10YR-72HR	0.00	6.92	7.00	0.0000	109	60.46	63.61	0.00	0.00
DITCH_3-4	BASE	10YR-72HR	60.46	10.61	15.00	-0.0050	9643	60.35	64.27	60.46	63.61
DRY POND_3-5	BASE	10YR-72HR	60.57	11.71	14.00	0.0050	84690	60.00	39.24	60.57	18.46
DRY POND_3-6	BASE	10YR-72HR	60.11	11.80	13.50	0.0199	3981	60.00	22.12	59.94	20.97
DRY POND_3-7	BASE	10YR-72HR	61.63	13.57	19.00	0.0030	59723	60.00	51.20	61.63	4.74
SWALE_3-1	BASE	10YR-72HR	60.41	12.85	15.00	-0.0020	27213	60.00	11.96	60.41	5.19
SWALE_3-2	BASE	10YR-72HR	60.14	12.66	14.00	0.0035	44569	60.00	46.36	60.11	36.35
SWALE_3-3	BASE	10YR-72HR	60.42	11.00	10.00	0.0050	15708	60.02	58.01	60.08	42.66
SWALE_3-5	BASE	10YR-72HR	60.58	11.71	14.50	0.0012	42172	60.00	7.93	60.85	3.62
C-51_STUB CANAL	BASE	3YR-24HR	0.00	6.92	7.00	0.0000	109	12.36	16.97	0.00	0.00
DITCH_3-4	BASE	3YR-24HR	12.36	8.30	15.00	0.0050	2086	12.33	17.14	12.36	16.97
DRY POND_3-5	BASE	3YR-24HR	24.19	10.90	14.00	0.0050	73109	12.16	19.26	24.19	0.29
DRY POND_3-6	BASE	3YR-24HR	24.17	10.90	13.50	0.0050	239	12.25	12.26	12.25	12.21
DRY POND_3-7	BASE	3YR-24HR	24.13	11.22	19.00	0.0041	51308	12.25	30.93	24.13	0.36
SWALE_3-1	BASE	3YR-24HR	12.83	11.91	15.00	0.0049	8250	12.25	4.68	12.83	1.62
SWALE_3-2	BASE	3YR-24HR	13.33	12.04	14.00	0.0047	44032	12.25	32.74	13.33	4.33
SWALE_3-3	BASE	3YR-24HR	12.35	8.42	10.00	0.0047	7302	12.25	16.22	12.32	13.93
SWALE_3-5	BASE	3YR-24HR	24.19	10.90	14.50	0.0050	31483	12.25	4.11	25.02	0.08

I-95 at Southern Boulevard
Drainage System 3
Post-Development
Link Maximum Conditions Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
D_PD3-5_DT3-4	BASE	10YR-24HR	15.34	3.59	0.002	15.34	11.34	12.64	9.61
D_PD3-7_SW3-3	BASE	10YR-24HR	24.05	0.70	0.003	24.05	12.75	12.63	9.81
D_SW3-1_DT3-4	BASE	10YR-24HR	12.68	4.03	0.012	12.68	12.57	12.64	9.61
D_SW3-2_SW3-3	BASE	10YR-24HR	12.51	26.32	0.164	12.51	12.45	12.63	9.81
P_DT3-4_C51-STB	BASE	10YR-24HR	12.64	41.24	0.594	12.64	9.61	12.64	8.14
P_PD3-6_PD3-5	BASE	10YR-24HR	12.25	20.41	3.830	15.33	11.35	15.34	11.34
P_SW3-3_DT3-4	BASE	10YR-24HR	12.58	35.35	0.277	12.63	9.81	12.64	9.61
W_SW3-5_PD3-5	BASE	10YR-24HR	17.04	0.59	-0.178	15.35	11.34	15.34	11.34
D_PD3-5_DT3-4	BASE	10YR-72HR	60.57	18.46	0.042	60.57	11.71	60.46	10.61
D_PD3-7_SW3-3	BASE	10YR-72HR	61.63	4.74	0.016	61.63	13.57	60.42	11.00
D_SW3-1_DT3-4	BASE	10YR-72HR	60.41	5.19	-0.008	60.41	12.85	60.46	10.61
D_SW3-2_SW3-3	BASE	10YR-72HR	60.11	36.35	-0.135	60.14	12.66	60.42	11.00
P_DT3-4_C51-STB	BASE	10YR-72HR	60.46	63.61	0.728	60.46	10.61	60.41	8.63
P_PD3-6_PD3-5	BASE	10YR-72HR	59.94	20.97	-5.051	60.11	11.80	60.57	11.71
P_SW3-3_DT3-4	BASE	10YR-72HR	60.08	42.66	3.125	60.42	11.00	60.46	10.61
W_SW3-5_PD3-5	BASE	10YR-72HR	60.85	3.62	0.256	60.58	11.71	60.57	11.71
D_PD3-5_DT3-4	BASE	3YR-24HR	24.19	0.29	0.000	24.19	10.90	12.36	8.30
D_PD3-7_SW3-3	BASE	3YR-24HR	24.13	0.36	0.000	24.13	11.22	12.35	8.42
D_SW3-1_DT3-4	BASE	3YR-24HR	12.83	1.62	0.008	12.83	11.91	12.36	8.30
D_SW3-2_SW3-3	BASE	3YR-24HR	13.33	4.33	0.017	13.33	12.04	12.35	8.42
P_DT3-4_C51-STB	BASE	3YR-24HR	12.36	16.97	0.624	12.36	8.30	12.36	7.43
P_PD3-6_PD3-5	BASE	3YR-24HR	12.25	12.21	-2.605	24.17	10.90	24.19	10.90
P_SW3-3_DT3-4	BASE	3YR-24HR	12.32	13.93	0.295	12.35	8.42	12.36	8.30
W_SW3-5_PD3-5	BASE	3YR-24HR	25.02	0.08	0.197	24.19	10.90	24.19	10.90

I-95 at Southern Boulevard
Drainage System 3
Post-Development
Basin Maximum Conditions Report

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
10YR-24HR	B-3-1	BASE	12.27	4.46	3.812	21999
10YR-24HR	B-3-2	BASE	12.27	47.74	7.808	282577
10YR-24HR	B-3-3	BASE	12.27	9.02	7.481	51598
10YR-24HR	B-3-4	BASE	12.27	2.01	6.323	10559
10YR-24HR	B-3-5	BASE	12.27	25.17	5.549	128116
10YR-24HR	B-3-6	BASE	12.27	20.57	5.506	104532
10YR-24HR	B-3-7	BASE	12.27	49.46	6.098	257434
10YR-24HR	O-3-1	BASE	12.27	5.10	3.744	25142
10YR-24HR	O-3-3	BASE	12.27	14.29	7.704	83614
10YR-24HR	O-3-4	BASE	12.27	2.42	6.604	12945
10YR-24HR	O-3-5	BASE	12.27	7.16	5.102	35926
10YR-72HR	B-3-1	BASE	60.02	5.60	5.896	34028
10YR-72HR	B-3-2	BASE	60.02	46.47	10.306	372993
10YR-72HR	B-3-3	BASE	60.02	8.82	9.975	68796
10YR-72HR	B-3-4	BASE	60.02	2.06	8.762	14630
10YR-72HR	B-3-5	BASE	60.02	27.09	7.915	182737
10YR-72HR	B-3-6	BASE	60.02	22.21	7.867	149354
10YR-72HR	B-3-7	BASE	60.02	51.37	8.518	359611
10YR-72HR	O-3-1	BASE	60.02	6.44	5.813	39040
10YR-72HR	O-3-3	BASE	60.02	13.92	10.201	110718
10YR-72HR	O-3-4	BASE	60.02	2.45	9.061	17762
10YR-72HR	O-3-5	BASE	60.02	7.96	7.411	52193
3YR-24HR	B-3-1	BASE	12.29	2.24	1.936	11173
3YR-24HR	B-3-2	BASE	12.27	32.77	5.310	192180
3YR-24HR	B-3-3	BASE	12.27	6.14	4.992	34433
3YR-24HR	B-3-4	BASE	12.27	1.28	3.930	6562
3YR-24HR	B-3-5	BASE	12.27	15.16	3.271	75521
3YR-24HR	B-3-6	BASE	12.27	12.35	3.236	61427
3YR-24HR	B-3-7	BASE	12.27	31.09	3.734	157622
3YR-24HR	O-3-1	BASE	12.29	2.54	1.888	12678
3YR-24HR	O-3-3	BASE	12.27	9.79	5.208	56525
3YR-24HR	O-3-4	BASE	12.27	1.57	4.178	8190
3YR-24HR	O-3-5	BASE	12.27	4.14	2.908	20482

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

        Name: B-3-1                  Node: SWALE_3-1             Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                 Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 1.590               Time Shift(hrs): 0.00
          Curve Number: 64.28           Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



--------------------------------------------------------------------------------
        Name: B-3-2                  Node: SWALE_3-2             Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                 Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 9.970               Time Shift(hrs): 0.00
          Curve Number: 98.42           Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



--------------------------------------------------------------------------------
        Name: B-3-3                  Node: SWALE_3-3             Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                 Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 1.900               Time Shift(hrs): 0.00
          Curve Number: 95.69           Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



--------------------------------------------------------------------------------
        Name: B-3-4                  Node: DITCH_3-4             Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                 Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 0.460               Time Shift(hrs): 0.00
          Curve Number: 85.95           Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



--------------------------------------------------------------------------------
        Name: B-3-5                  Node: DRY POND_3-5          Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                 Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 6.360               Time Shift(hrs): 0.00
          Curve Number: 79.37           Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



--------------------------------------------------------------------------------
        Name: B-3-6                  Node: DRY POND_3-6          Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                 Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
              Area(ac): 5.230               Time Shift(hrs): 0.00
          Curve Number: 79.00           Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00



--------------------------------------------------------------------------------
        Name: B-3-7                  Node: DRY POND_3-7          Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN
```

```
        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
              Area(ac): 11.630                   Time Shift(hrs): 0.00
          Curve Number: 84.04               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: O-3-1                    Node: SWALE_3-1              Status: Offsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
              Area(ac): 1.850                    Time Shift(hrs): 0.00
          Curve Number: 63.68               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: O-3-3                    Node: SWALE_3-3              Status: Offsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
              Area(ac): 2.990                    Time Shift(hrs): 0.00
          Curve Number: 97.55               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: O-3-4                    Node: DITCH_3-4              Status: Offsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
              Area(ac): 0.540                    Time Shift(hrs): 0.00
          Curve Number: 88.32               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: O-3-5                    Node: SWALE_3-5              Status: Offsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
              Area(ac): 1.940                    Time Shift(hrs): 0.00
          Curve Number: 75.53               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


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

      Name: C-51_STUB CANAL     Base Flow(cfs): 0.000          Init Stage(ft): 6.920
     Group: BASE                                               Warn Stage(ft): 7.000
      Type: Time/Stage

C-51 Stub Canal Stage based on:
An Atlas of Eastern Palm Beach County Surface Water Management Basins - 1988 (SFWMD)
Structure S-155
Design HW Stage (8.50' NGVD, 6.92' NAVD)

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00           6.920
         999.00           6.920

-------------------------------------------------------------------------------------------------
      Name: DITCH_3-4           Base Flow(cfs): 0.000          Init Stage(ft): 6.920
     Group: BASE                                               Warn Stage(ft): 15.000
      Type: Stage/Area
```

Warning Stage = Approximate Railroad Elevation
Railroad Elevation = 15.00

Stage(ft)	Area(ac)
6.220	0.0001
7.490	0.0001
7.500	0.0100
8.000	0.0200
8.500	0.0400
9.000	0.0700
9.500	0.1000
10.000	0.1500
10.500	0.2000
11.000	0.2900
15.000	0.9500

Name: DRY POND_3-5 Base Flow(cfs): 0.000 Init Stage(ft): 7.360
Group: BASE Warn Stage(ft): 14.000
Type: Stage/Area

Warning Stage = Lowest EOP Elev. minus 1.0 ft (Freeboard)
EOP = 15.00

Stage(ft)	Area(ac)
7.360	0.0001
8.490	0.0001
8.500	0.0800
9.000	0.3700
9.500	1.0400
10.000	1.3800
15.000	3.0300

Name: DRY POND_3-6 Base Flow(cfs): 0.000 Init Stage(ft): 8.480
Group: BASE Warn Stage(ft): 13.500
Type: Stage/Area

Warning Stage = EOP Elev. minus 1.0 ft (Freeboard)
EOP = 14.50

Stage(ft)	Area(ac)
8.480	0.0001
11.490	0.0001
11.500	0.0200
12.000	0.1400
12.500	0.3300
13.000	0.5300
13.500	0.6400

Name: DRY POND_3-7 Base Flow(cfs): 0.000 Init Stage(ft): 8.000
Group: BASE Warn Stage(ft): 19.000
Type: Stage/Area

Warning Stage = EOP Elev. minus 1.0 ft (Freeboard)
EOP = 20.00

Stage(ft)	Area(ac)
8.000	0.9200
9.000	1.0000
10.000	1.0800
11.000	1.1600
12.000	1.2400
13.000	1.3200
14.000	1.4100

Name: SWALE_3-1 Base Flow(cfs): 0.000 Init Stage(ft): 9.500
Group: BASE Warn Stage(ft): 15.000
Type: Stage/Area

Warning Stage = Approximate Railroad Elevation
Railroad Elevation = 15.00

Stage(ft)	Area(ac)
9.500	0.0009
10.000	0.0100
10.500	0.0700
11.000	0.1100

11.500	0.1400
12.000	0.2000
12.500	0.2900
15.000	2.7000

Name: SWALE_3-2 Base Flow(cfs): 0.000 Init Stage(ft): 8.420
Group: BASE Warn Stage(ft): 14.000
Type: Stage/Area

Warning Stage = Top of Berm Elev. minus 0.5 ft (Freeboard)
Top of Berm = 14.50

Stage(ft)	Area(ac)
8.420	0.0001
8.490	0.0001
8.500	0.3500
9.000	0.7400
9.500	0.8000
10.000	0.8100
10.500	0.9200
11.000	0.9900
11.500	1.0000
12.000	1.0100
12.500	1.0200
13.000	1.0300

Name: SWALE_3-3 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 10.000
Type: Stage/Area

Warning Stage = Top of Swale Elev / ROW Elev. minus 0.5 ft (Freeboard)
Top of Swale = 10.5

Stage(ft)	Area(ac)
6.400	0.0001
7.490	0.0001
7.500	0.0900
8.000	0.1300
8.500	0.1600
9.000	0.2000

Name: SWALE_3-5 Base Flow(cfs): 0.000 Init Stage(ft): 8.000
Group: BASE Warn Stage(ft): 14.500
Type: Stage/Area

Swale is offsite

Warning Stage = Lowest EOP Elev. (adjacent to Swale 3-5) minus 0.5 ft (Freeboard)
EOP = 15.00

Stage(ft)	Area(ac)
8.000	0.0100
8.500	0.0600
9.000	0.1500
9.500	0.3000
15.000	1.9600

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

Name: P_DT3-4_C51-STB From Node: DITCH_3-4 Length(ft): 72.00
Group: BASE To Node: C-51_STUB CANAL Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	48.00	48.00	Flow:	Both
Rise(in):	48.00	48.00	Entrance Loss Coef:	0.50
Invert(ft):	6.220	6.220	Exit Loss Coef:	1.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

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

Downstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

```
         Name: P_PD3-6_PD3-5       From Node: DRY POND_3-6       Length(ft): 139.00
        Group: BASE                  To Node: DRY POND_3-5           Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                Flow: Both
     Span(in): 36.00          36.00                     Entrance Loss Coef: 0.50
     Rise(in): 36.00          36.00                         Exit Loss Coef: 0.00
   Invert(ft): 8.480          7.360                         Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                     Stabilizer Option: None
```

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

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

```
         Name: P_SW3-3_DT3-4       From Node: SWALE_3-3          Length(ft): 273.00
        Group: BASE                  To Node: DITCH_3-4                 Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                Flow: Both
     Span(in): 48.00          48.00                     Entrance Loss Coef: 0.50
     Rise(in): 48.00          48.00                         Exit Loss Coef: 0.00
   Invert(ft): 6.550          6.220                         Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                     Stabilizer Option: None
```

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

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

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

```
         Name: D_PD3-5_DT3-4       From Node: DRY POND_3-5       Length(ft): 40.00
        Group: BASE                  To Node: DITCH_3-4                 Count: 1

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 30.00          30.00                                   Flow: Both
     Rise(in): 30.00          30.00                     Entrance Loss Coef: 0.500
   Invert(ft): 7.800          6.770                         Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10
```

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

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

Drop Structure Information taken from State Project No. 93220-3440
S-41
Type D Inlet
3.75" orifice @ 10.12
Rectangular Weir @ 11.17

*** Weir 1 of 2 for Drop Structure D_PD3-5_DT3-4 ***

TABLE

```
                Count: 1                      Bottom Clip(in): 0.000
                 Type: Horizontal                Top Clip(in): 0.000
```

```
                Flow: Both                    Weir Disc Coef: 3.200
            Geometry: Rectangular           Orifice Disc Coef: 0.600

            Span(in): 49.00                       Invert(ft): 11.170
            Rise(in): 37.00                  Control Elev(ft): 11.170

*** Weir 2 of 2 for Drop Structure D_PD3-5_DT3-4 ***
                                                                        TABLE
               Count: 1                       Bottom Clip(in): 0.000
                Type: Vertical: Mavis            Top Clip(in): 0.000
                Flow: Both                    Weir Disc Coef: 3.200
            Geometry: Circular              Orifice Disc Coef: 0.600

            Span(in): 3.75                        Invert(ft): 10.120
            Rise(in): 3.75                   Control Elev(ft): 10.120


-------------------------------------------------------------------------------------------------
         Name: D_PD3-7_SW3-3       From Node: DRY POND_3-7       Length(ft): 119.00
        Group: BASE                  To Node: SWALE_3-3             Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
    Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
    Span(in): 24.00          24.00                                Flow: Both
    Rise(in): 24.00          24.00                     Entrance Loss Coef: 0.500
   Invert(ft): 10.420        10.060                        Exit Loss Coef: 0.000
  Manning's N: 0.012000      0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000         0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000         0.000                          Solution Incs: 10

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

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

Drop Structure Information taken from State Project No. 93220-3440
S-53
Type D Inlet
4.375" orifice @ 10.52
Rectangular Weir @ 13.37

*** Weir 1 of 2 for Drop Structure D_PD3-7_SW3-3 ***
                                                                        TABLE
               Count: 1                       Bottom Clip(in): 0.000
                Type: Horizontal                 Top Clip(in): 0.000
                Flow: Both                    Weir Disc Coef: 3.200
            Geometry: Rectangular           Orifice Disc Coef: 0.600

            Span(in): 49.00                       Invert(ft): 13.370
            Rise(in): 37.00                  Control Elev(ft): 13.370

*** Weir 2 of 2 for Drop Structure D_PD3-7_SW3-3 ***
                                                                        TABLE
               Count: 1                       Bottom Clip(in): 0.000
                Type: Vertical: Mavis            Top Clip(in): 0.000
                Flow: Both                    Weir Disc Coef: 3.200
            Geometry: Circular              Orifice Disc Coef: 0.600

            Span(in): 4.38                        Invert(ft): 10.520
            Rise(in): 4.38                   Control Elev(ft): 10.520


-------------------------------------------------------------------------------------------------
         Name: D_SW3-1_DT3-4       From Node: SWALE_3-1          Length(ft): 27.00
        Group: BASE                  To Node: DITCH_3-4             Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
    Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
    Span(in): 18.00          18.00                                Flow: Both
    Rise(in): 18.00          18.00                     Entrance Loss Coef: 0.500
   Invert(ft): 11.120        10.400                        Exit Loss Coef: 0.000
  Manning's N: 0.012000      0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000         0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000         0.000                          Solution Incs: 10

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

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

Drop Structure Information taken from State Project No. 93220-3440
S-39
Straight Concrete Endwall
```

2.75" orifice @ 10.42
18" pipe @ 11.12

*** Weir 1 of 2 for Drop Structure D_SW3-1_DT3-4 ***
TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	18.00	Invert(ft):	11.120
Rise(in):	18.00	Control Elev(ft):	11.120

*** Weir 2 of 2 for Drop Structure D_SW3-1_DT3-4 ***
TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	2.75	Invert(ft):	10.420
Rise(in):	2.75	Control Elev(ft):	10.420

Name:	D_SW3-2_SW3-3	From Node:	SWALE_3-2
Group:	BASE	To Node:	SWALE_3-3
Length(ft):	53.00		
Count:	1		

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Automatic
Span(in):	30.00	30.00	Solution Algorithm:	Most Restrictive
Rise(in):	30.00	30.00	Flow:	Both
Invert(ft):	8.400	6.400	Entrance Loss Coef:	0.500
Manning's N:	0.012000	0.012000	Exit Loss Coef:	0.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Solution Incs:	10

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

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

Drop Structure Information taken from State Project No. 93220-3440
S-40
Type H Inlet
2.75" orifice @ 8.42
Rectangular Weir @ 11.88

*** Weir 1 of 2 for Drop Structure D_SW3-2_SW3-3 ***
TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	79.00	Invert(ft):	11.880
Rise(in):	36.00	Control Elev(ft):	11.880

*** Weir 2 of 2 for Drop Structure D_SW3-2_SW3-3 ***
TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	2.75	Invert(ft):	8.420
Rise(in):	2.75	Control Elev(ft):	8.420

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

Name:	W_SW3-5_PD3-5	From Node:	SWALE_3-5
Group:	BASE	To Node:	DRY POND_3-5
Flow:	Both	Count:	1
Type:	Vertical: Fread	Geometry:	Rectangular
Span(in):	140.00		
Rise(in):	9999.00		
Invert(ft):	9.500		
Control Elevation(ft):	9.500		

TABLE

Bottom Clip(in):	0.000

```
               Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600



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

         Name: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 3\10YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 8.00

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

--------------------------------------------------------------------------------------------------------
         Name: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 3\10YR-72HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Sfwmd72
    Rainfall Amount(in): 10.50

Time(hrs)       Print Inc(min)
--------------- ---------------
72.000          5.00
84.000          15.00

--------------------------------------------------------------------------------------------------------
         Name: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 3\3YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 5.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

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

         Name: 10YR-24HR           Hydrology Sim: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 3\10YR-24HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.000

Group           Run
--------------- -----
BASE            Yes


--------------------------------------------------------------------------------------------------------
         Name: 10YR-72HR           Hydrology Sim: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 3\10YR-72HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
```

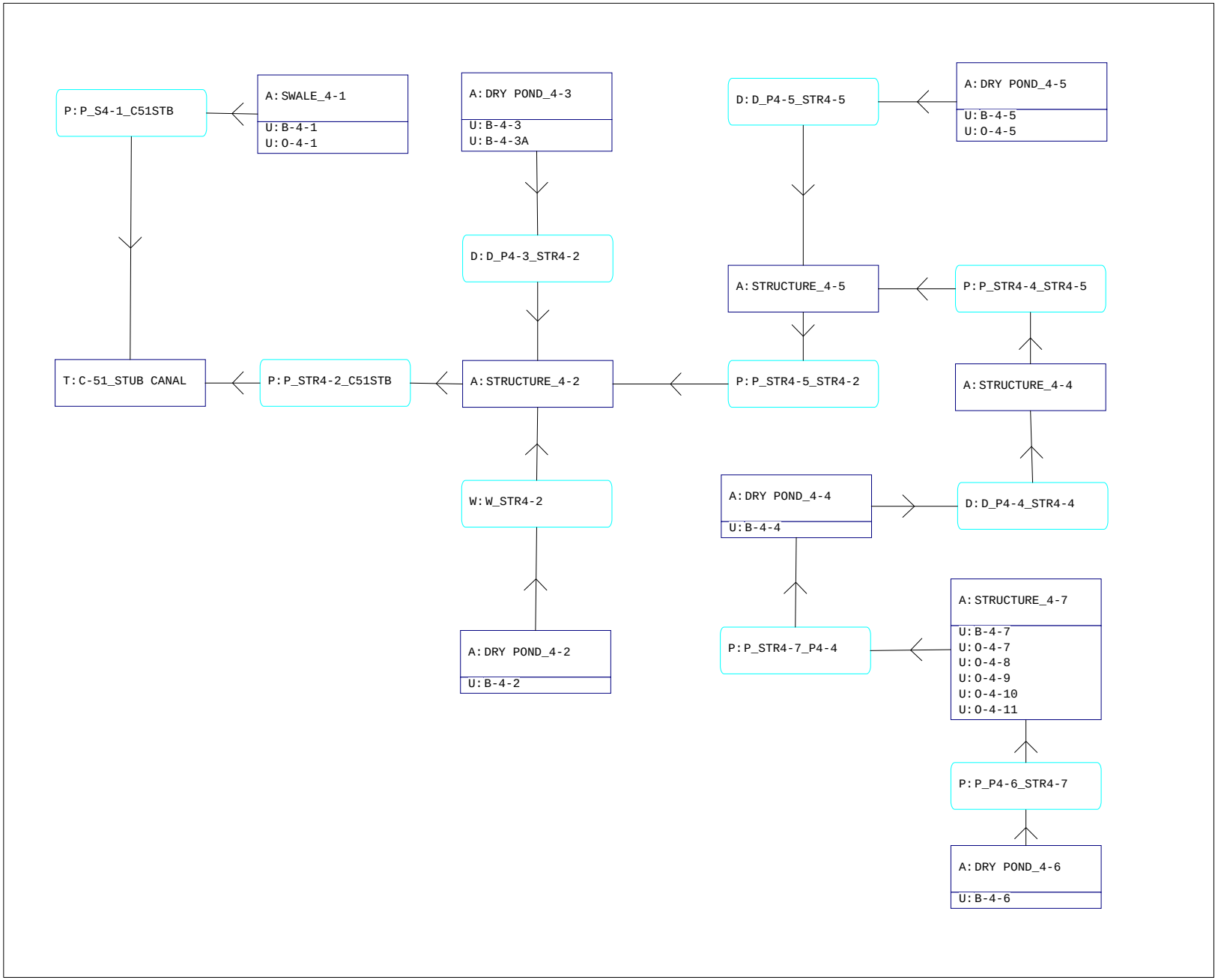
```
        Start Time(hrs): 0.000                   End Time(hrs): 84.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
48.000          15.000
72.000          5.000
84.000          15.000

Group           Run
--------------- -----
BASE            Yes


-------------------------------------------------------------------------------------------------------
         Name: 3YR-24HR            Hydrology Sim: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 3\3YR-24HR.I32

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

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                   End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000              Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.000

Group           Run
--------------- -----
BASE            Yes
```

I-95 at Southern Boulevard
Drainage System 4
Post-Development
Node-Link Diagram

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



I-95 at Southern Boulevard
Drainage System 4
Post-Development
Node Maximum Conditions Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
C-51_STUB CANAL	BASE	10YR-24HR	0.00	6.92	7.00	0.0000	774	12.40	97.61	0.00	0.00
DRY POND_4-2	BASE	10YR-24HR	12.30	14.88	15.50	-0.0003	9498	12.25	5.54	12.30	5.21
DRY POND_4-3	BASE	10YR-24HR	12.36	14.59	15.00	0.0010	46636	12.25	46.42	12.36	38.74
DRY POND_4-4	BASE	10YR-24HR	12.53	13.69	14.48	0.0018	15183	12.25	41.27	12.50	31.94
DRY POND_4-5	BASE	10YR-24HR	12.73	12.75	14.64	0.0030	56433	12.25	80.49	13.42	38.55
DRY POND_4-6	BASE	10YR-24HR	12.51	13.87	16.00	0.0023	14156	12.25	3.89	12.96	7.29
STRUCTURE_4-2	BASE	10YR-24HR	12.44	11.63	15.50	0.0075	329	12.40	89.93	12.44	89.88
STRUCTURE_4-4	BASE	10YR-24HR	12.55	12.49	13.18	-0.0145	121	12.50	31.94	12.52	32.43
STRUCTURE_4-5	BASE	10YR-24HR	12.57	12.32	14.82	-0.0084	147	12.90	59.59	12.94	59.30
STRUCTURE_4-7	BASE	10YR-24HR	12.49	13.87	19.56	-0.0074	170	12.25	27.08	12.25	26.90
SWALE_4-1	BASE	10YR-24HR	12.28	8.24	16.00	-0.0021	1342	12.25	9.48	12.28	9.19
C-51_STUB CANAL	BASE	10YR-72HR	0.00	6.92	7.00	0.0000	774	60.14	102.97	0.00	0.00
DRY POND_4-2	BASE	10YR-72HR	60.05	14.89	15.50	-0.0003	9623	60.00	6.09	60.05	5.79
DRY POND_4-3	BASE	10YR-72HR	60.10	14.61	15.00	0.0009	46988	60.00	47.54	60.10	41.12
DRY POND_4-4	BASE	10YR-72HR	60.25	13.95	14.48	-0.0018	15637	60.00	45.82	60.21	35.89
DRY POND_4-5	BASE	10YR-72HR	60.52	12.97	14.64	0.0030	57740	60.00	80.37	61.26	39.48
DRY POND_4-6	BASE	10YR-72HR	60.23	14.19	16.00	0.0020	14799	60.00	4.62	60.75	8.47
STRUCTURE_4-2	BASE	10YR-72HR	60.19	11.83	15.50	0.0060	326	60.18	93.39	60.19	93.38
STRUCTURE_4-4	BASE	10YR-72HR	60.29	12.78	13.18	0.0067	121	60.21	35.89	60.29	36.35
STRUCTURE_4-5	BASE	10YR-72HR	60.31	12.55	14.82	0.0065	147	60.68	61.96	60.72	61.62
STRUCTURE_4-7	BASE	10YR-72HR	60.22	14.19	19.56	-0.0073	170	60.00	31.60	60.00	31.44
SWALE_4-1	BASE	10YR-72HR	60.03	8.45	16.00	-0.0028	1693	60.00	11.38	60.03	11.02
C-51_STUB CANAL	BASE	3YR-24HR	0.00	6.92	7.00	0.0000	774	12.46	65.45	0.00	0.00
DRY POND_4-2	BASE	3YR-24HR	12.35	14.80	15.50	0.0003	8924	12.25	3.25	12.35	2.82
DRY POND_4-3	BASE	3YR-24HR	12.47	14.29	15.00	0.0010	42137	12.25	29.64	12.47	18.29
DRY POND_4-4	BASE	3YR-24HR	12.66	12.64	14.48	0.0017	13364	12.18	18.61	12.66	14.86
DRY POND_4-5	BASE	3YR-24HR	12.54	11.10	14.64	0.0009	45980	12.25	53.41	12.25	32.98
DRY POND_4-6	BASE	3YR-24HR	12.65	12.68	16.00	0.0023	11943	12.25	2.09	13.00	2.79
STRUCTURE_4-2	BASE	3YR-24HR	12.53	10.06	15.50	0.0063	344	12.52	62.21	12.53	62.21
STRUCTURE_4-4	BASE	3YR-24HR	12.54	10.56	13.18	0.0072	121	12.66	14.86	12.70	16.39
STRUCTURE_4-5	BASE	3YR-24HR	12.55	10.52	14.82	0.0067	147	12.70	44.74	12.72	43.38
STRUCTURE_4-7	BASE	3YR-24HR	12.65	12.68	19.56	-0.0067	170	12.56	11.62	12.56	12.27
SWALE_4-1	BASE	3YR-24HR	12.28	7.74	16.00	0.0016	701	12.25	5.03	12.27	4.92

I-95 at Southern Boulevard
Drainage System 4
Post-Development
Link Maximum Conditions Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
D_P4-3_STR4-2	BASE	10YR-24HR	12.36	38.74	-0.049	12.36	14.59	12.44	11.63
D_P4-4_STR4-4	BASE	10YR-24HR	12.50	31.94	-0.041	12.53	13.69	12.55	12.49
D_P4-5_STR4-5	BASE	10YR-24HR	13.42	38.55	0.215	12.73	12.75	12.57	12.32
P_P4-6_STR4-7	BASE	10YR-24HR	12.96	7.29	3.065	12.51	13.87	12.49	13.87
P_S4-1_C51STB	BASE	10YR-24HR	12.28	9.19	-0.210	12.28	8.24	0.00	6.92
P_STR4-2_C51STB	BASE	10YR-24HR	12.44	89.88	0.742	12.44	11.63	12.41	7.96
P_STR4-4_STR4-5	BASE	10YR-24HR	12.52	32.43	-7.526	12.55	12.49	12.57	12.32
P_STR4-5_STR4-2	BASE	10YR-24HR	12.94	59.30	-1.774	12.57	12.32	12.44	11.63
P_STR4-7_P4-4	BASE	10YR-24HR	12.25	26.90	4.427	12.49	13.87	12.53	13.69
W_STR4-2	BASE	10YR-24HR	12.30	5.21	-0.008	12.30	14.88	12.44	11.63
D_P4-3_STR4-2	BASE	10YR-72HR	60.10	41.12	-0.058	60.10	14.61	60.19	11.83
D_P4-4_STR4-4	BASE	10YR-72HR	60.21	35.89	-0.048	60.25	13.95	60.29	12.78
D_P4-5_STR4-5	BASE	10YR-72HR	61.26	39.48	0.209	60.52	12.97	60.31	12.55
P_P4-6_STR4-7	BASE	10YR-72HR	60.75	8.47	3.084	60.23	14.19	60.22	14.19
P_S4-1_C51STB	BASE	10YR-72HR	60.03	11.02	-0.210	60.03	8.45	0.00	6.92
P_STR4-2_C51STB	BASE	10YR-72HR	60.19	93.38	0.742	60.19	11.83	60.15	8.02
P_STR4-4_STR4-5	BASE	10YR-72HR	60.29	36.35	10.399	60.29	12.78	60.31	12.55
P_STR4-5_STR4-2	BASE	10YR-72HR	60.72	61.62	-1.775	60.31	12.55	60.19	11.83
P_STR4-7_P4-4	BASE	10YR-72HR	60.00	31.44	4.989	60.22	14.19	60.25	13.95
W_STR4-2	BASE	10YR-72HR	60.05	5.79	-0.011	60.05	14.89	60.19	11.83
D_P4-3_STR4-2	BASE	3YR-24HR	12.47	18.29	0.024	12.47	14.29	12.53	10.06
D_P4-4_STR4-4	BASE	3YR-24HR	12.66	14.86	0.015	12.66	12.64	12.54	10.56
D_P4-5_STR4-5	BASE	3YR-24HR	12.25	32.98	-0.114	12.54	11.10	12.55	10.52
P_P4-6_STR4-7	BASE	3YR-24HR	13.00	2.79	2.923	12.65	12.68	12.65	12.68
P_S4-1_C51STB	BASE	3YR-24HR	12.27	4.92	0.210	12.28	7.74	0.00	6.92
P_STR4-2_C51STB	BASE	3YR-24HR	12.53	62.21	0.741	12.53	10.06	12.49	7.47
P_STR4-4_STR4-5	BASE	3YR-24HR	12.70	16.39	-4.028	12.54	10.56	12.55	10.52
P_STR4-5_STR4-2	BASE	3YR-24HR	12.72	43.38	-1.773	12.55	10.52	12.53	10.06
P_STR4-7_P4-4	BASE	3YR-24HR	12.56	12.27	5.703	12.65	12.68	12.66	12.64
W_STR4-2	BASE	3YR-24HR	12.35	2.82	0.005	12.35	14.80	12.53	10.06

I-95 at Southern Boulevard
Drainage System 4
Post-Development
Basin Maximum Conditions Report

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
10YR-24HR	B-4-1	BASE	12.27	7.92	4.722	39421
10YR-24HR	B-4-2	BASE	12.27	5.57	5.260	28067
10YR-24HR	B-4-3	BASE	12.27	46.29	6.330	243813
10YR-24HR	B-4-3A	BASE	12.27	0.24	7.997	1452
10YR-24HR	B-4-4	BASE	12.27	14.40	6.802	78025
10YR-24HR	B-4-5	BASE	12.27	25.27	5.808	129881
10YR-24HR	B-4-6	BASE	12.27	3.92	4.385	19419
10YR-24HR	B-4-7	BASE	12.27	28.22	6.270	148173
10YR-24HR	O-4-1	BASE	12.29	1.64	2.784	8186
10YR-24HR	O-4-10	BASE	12.27	4.86	4.803	24232
10YR-24HR	O-4-11	BASE	12.27	2.50	6.063	12984
10YR-24HR	O-4-5	BASE	12.27	55.34	7.790	326888
10YR-24HR	O-4-7	BASE	12.27	0.34	3.860	1681
10YR-24HR	O-4-8	BASE	12.27	1.16	3.926	5700
10YR-24HR	O-4-9	BASE	12.27	2.16	3.629	10671
10YR-72HR	B-4-1	BASE	60.02	9.09	6.975	58238
10YR-72HR	B-4-2	BASE	60.02	6.12	7.591	40504
10YR-72HR	B-4-3	BASE	60.02	47.46	8.769	337742
10YR-72HR	B-4-3A	BASE	60.02	0.23	10.496	1905
10YR-72HR	B-4-4	BASE	60.02	14.42	9.271	106341
10YR-72HR	B-4-5	BASE	60.02	26.73	8.202	183401
10YR-72HR	B-4-6	BASE	60.02	4.64	6.582	29148
10YR-72HR	B-4-7	BASE	60.02	29.03	8.704	205697
10YR-72HR	O-4-1	BASE	60.02	2.36	4.609	13551
10YR-72HR	O-4-10	BASE	60.02	5.54	7.069	35668
10YR-72HR	O-4-11	BASE	60.02	2.60	8.480	18161
10YR-72HR	O-4-5	BASE	60.02	53.87	10.288	431717
10YR-72HR	O-4-7	BASE	60.02	0.43	5.955	2594
10YR-72HR	O-4-8	BASE	60.02	1.43	6.034	8761
10YR-72HR	O-4-9	BASE	60.02	2.77	5.673	16680
3YR-24HR	B-4-1	BASE	12.27	4.42	2.611	21799
3YR-24HR	B-4-2	BASE	12.27	3.27	3.035	16196
3YR-24HR	B-4-3	BASE	12.27	29.59	3.936	151585
3YR-24HR	B-4-3A	BASE	12.27	0.16	5.498	998
3YR-24HR	B-4-4	BASE	12.27	9.49	4.357	49982
3YR-24HR	B-4-5	BASE	12.27	15.54	3.487	77974
3YR-24HR	B-4-6	BASE	12.27	2.11	2.355	10429
3YR-24HR	B-4-7	BASE	12.27	17.97	3.883	91762
3YR-24HR	O-4-1	BASE	12.29	0.68	1.240	3645
3YR-24HR	O-4-10	BASE	12.27	2.74	2.673	13489
3YR-24HR	O-4-11	BASE	12.27	1.57	3.703	7931
3YR-24HR	O-4-5	BASE	12.27	37.97	5.292	222087
3YR-24HR	O-4-7	BASE	12.29	0.17	1.971	858
3YR-24HR	O-4-8	BASE	12.29	0.59	2.018	2930
3YR-24HR	O-4-9	BASE	12.29	1.06	1.807	5313

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

        Name: B-4-1                  Node: SWALE_4-1             Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
            Area(ac): 2.300                Time Shift(hrs): 0.00
        Curve Number: 72.25            Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00



--------------------------------------------------------------------------------
        Name: B-4-2                  Node: DRY POND_4-2          Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
            Area(ac): 1.470                Time Shift(hrs): 0.00
        Curve Number: 76.89            Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00



--------------------------------------------------------------------------------
        Name: B-4-3                  Node: DRY POND_4-3          Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
            Area(ac): 10.610               Time Shift(hrs): 0.00
        Curve Number: 86.01            Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00



--------------------------------------------------------------------------------
        Name: B-4-3A                 Node: DRY POND_4-3          Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
            Area(ac): 0.050                Time Shift(hrs): 0.00
        Curve Number: 100.00           Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00



--------------------------------------------------------------------------------
        Name: B-4-4                  Node: DRY POND_4-4          Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
            Area(ac): 3.160                Time Shift(hrs): 0.00
        Curve Number: 89.99            Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00



--------------------------------------------------------------------------------
        Name: B-4-5                  Node: DRY POND_4-5          Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                  Peaking Factor: 256.0
         Rainfall File:                 Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000             Time of Conc(min): 10.00
            Area(ac): 6.160                Time Shift(hrs): 0.00
        Curve Number: 81.58            Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00



--------------------------------------------------------------------------------
        Name: B-4-6                  Node: DRY POND_4-6          Status: Onsite
       Group: BASE                   Type: SCS Unit Hydrograph CN
```

```
        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
                Area(ac): 1.220                  Time Shift(hrs): 0.00
            Curve Number: 69.32              Max Allowable Q(cfs): 999999.000
                 DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: B-4-7                    Node: STRUCTURE_4-7          Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
                Area(ac): 6.510                  Time Shift(hrs): 0.00
            Curve Number: 85.50              Max Allowable Q(cfs): 999999.000
                 DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: O-4-1                    Node: SWALE_4-1              Status: Offsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
                Area(ac): 0.810                  Time Shift(hrs): 0.00
            Curve Number: 55.01              Max Allowable Q(cfs): 999999.000
                 DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: O-4-10                   Node: STRUCTURE_4-7          Status: Offsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
                Area(ac): 1.390                  Time Shift(hrs): 0.00
            Curve Number: 72.95              Max Allowable Q(cfs): 999999.000
                 DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: O-4-11                   Node: STRUCTURE_4-7          Status: Offsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
                Area(ac): 0.590                  Time Shift(hrs): 0.00
            Curve Number: 83.74              Max Allowable Q(cfs): 999999.000
                 DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: O-4-5                    Node: DRY POND_4-5           Status: Offsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
                Area(ac): 11.560                 Time Shift(hrs): 0.00
            Curve Number: 98.27              Max Allowable Q(cfs): 999999.000
                 DCIA(%): 0.00


-------------------------------------------------------------------------------------------------
         Name: O-4-7                    Node: STRUCTURE_4-7          Status: Offsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh256                  Peaking Factor: 256.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
                Area(ac): 0.120                  Time Shift(hrs): 0.00
            Curve Number: 64.71              Max Allowable Q(cfs): 999999.000
                 DCIA(%): 0.00
```

```
--------------------------------------------------------------------------------------------------
        Name: O-4-8                   Node: STRUCTURE_4-7          Status: Offsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                   Peaking Factor: 256.0
         Rainfall File:                    Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
              Area(ac): 0.400                   Time Shift(hrs): 0.00
          Curve Number: 65.29               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


--------------------------------------------------------------------------------------------------
        Name: O-4-9                   Node: STRUCTURE_4-7          Status: Offsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh256                   Peaking Factor: 256.0
         Rainfall File:                    Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
              Area(ac): 0.810                   Time Shift(hrs): 0.00
          Curve Number: 62.66               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


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

      Name: C-51_STUB CANAL     Base Flow(cfs): 0.000         Init Stage(ft): 6.920
     Group: BASE                                             Warn Stage(ft): 7.000
      Type: Time/Stage

C-51 Stub Canal Stage based on:
An Atlas of Eastern Palm Beach County Surface Water Management Basins - 1988 (SFWMD)
Structure S-155
Design HW Stage (8.50' NGVD, 6.92' NAVD)

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00           6.920
         999.00           6.920

--------------------------------------------------------------------------------------------------
      Name: DRY POND_4-2        Base Flow(cfs): 0.000         Init Stage(ft): 14.000
     Group: BASE                                             Warn Stage(ft): 15.500
      Type: Stage/Area

Warning Stage = EOP Elev. minus 1.0 ft (Freeboard)
EOP Elev. = 16.50'

      Stage(ft)        Area(ac)
--------------- ---------------
         14.000          0.0400
         14.500          0.1500
         15.000          0.2400

--------------------------------------------------------------------------------------------------
      Name: DRY POND_4-3        Base Flow(cfs): 0.000         Init Stage(ft): 11.410
     Group: BASE                                             Warn Stage(ft): 15.000
      Type: Stage/Area

Warning Stage = EOP Elev. minus 1.0 ft (Freeboard)
EOP Elev. = 16.00'

      Stage(ft)        Area(ac)
--------------- ---------------
         11.410          0.0001
         11.990          0.0001
         12.000          0.1400
         13.000          0.5600
         14.000          0.8700
         15.000          1.2100

--------------------------------------------------------------------------------------------------
      Name: DRY POND_4-4        Base Flow(cfs): 0.000         Init Stage(ft): 6.920
     Group: BASE                                             Warn Stage(ft): 14.480
      Type: Stage/Area

Warning Stage = Berm Elev. minus 1.00 ft (Freeboard)
Berm Elev. = 15.48
```

Stage(ft)	Area(ac)
5.310	0.0001
7.990	0.0001
8.000	0.1600
9.000	0.1900
10.000	0.2200
11.000	0.2500
12.000	0.2800
13.000	0.3200
14.000	0.3600
15.000	0.4000

Name: DRY POND_4-5 Base Flow(cfs): 0.000 Init Stage(ft): 7.280
Group: BASE Warn Stage(ft): 14.640
Type: Stage/Area

Warning Stage = Berm Elev. minus 1.00 ft (Freeboard)
Berm Elev. = 15.64

Stage(ft)	Area(ac)
7.280	0.0001
7.990	0.0001
8.000	0.7800
9.000	0.8400
10.000	0.9300
11.000	1.0400
12.000	1.1900
13.000	1.3300
14.000	1.4800
15.000	1.6200

Name: DRY POND_4-6 Base Flow(cfs): 0.000 Init Stage(ft): 9.900
Group: BASE Warn Stage(ft): 16.000
Type: Stage/Area

Warning Stage = EOP Elev. minus 1.0 ft (Freeboard)
EOP Elev. = 17.00'

Stage(ft)	Area(ac)
9.900	0.1400
10.000	0.1500
11.000	0.2000
12.000	0.2400
13.000	0.2900
14.000	0.3300
15.000	0.3800

Name: STRUCTURE_4-2 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 15.500
Type: Stage/Area

Warning Stage = Dry Pond_4-2 Warning Stage

S-6
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

Stage(ft)	Area(ac)
5.070	0.0001
14.660	0.0001

Name: STRUCTURE_4-4 Base Flow(cfs): 0.000 Init Stage(ft): 6.920
Group: BASE Warn Stage(ft): 13.180
Type: Stage/Area

Warning Stage = Rim Elev.

S-88
FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4

Stage(ft)	Area(ac)
5.210	0.0001
13.180	0.0001

```
------------------------------------------------------------------------------------------
      Name: STRUCTURE_4-5       Base Flow(cfs): 0.000          Init Stage(ft): 6.920
     Group: BASE                                              Warn Stage(ft): 14.820
      Type: Stage/Area

Warning Stage = Rim Elev.

S-7
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

      Stage(ft)        Area(ac)
--------------- ---------------
          5.210          0.0001
         14.820          0.0001

------------------------------------------------------------------------------------------
      Name: STRUCTURE_4-7       Base Flow(cfs): 0.000          Init Stage(ft): 6.920
     Group: BASE                                              Warn Stage(ft): 19.560
      Type: Stage/Area

Warning Stage = Rim Elev.

S-74
FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4

      Stage(ft)        Area(ac)
--------------- ---------------
          6.000          0.0001
         19.560          0.0001

------------------------------------------------------------------------------------------
      Name: SWALE_4-1           Base Flow(cfs): 0.000          Init Stage(ft): 6.920
     Group: BASE                                              Warn Stage(ft): 16.000
      Type: Stage/Area

Warning Stage = CSX Railroad Elev.

      Stage(ft)        Area(ac)
--------------- ---------------
          6.650          0.0001
          7.490          0.0001
          7.500          0.0100
          8.000          0.0200
          9.000          0.0600
         10.000          0.1900
         11.000          0.5600

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

         Name: P_P4-6_STR4-7       From Node: DRY POND_4-6       Length(ft): 130.00
        Group: BASE                  To Node: STRUCTURE_4-7           Count: 1
                                                 Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM               Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                            Flow: Both
     Span(in): 30.00          30.00                    Entrance Loss Coef: 0.00
     Rise(in): 30.00          30.00                        Exit Loss Coef: 1.00
   Invert(ft): 9.900          9.570                        Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                   Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                     Stabilizer Option: None


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

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

FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4

------------------------------------------------------------------------------------------
         Name: P_S4-1_C51STB       From Node: SWALE_4-1          Length(ft): 62.00
        Group: BASE                  To Node: C-51_STUB CANAL         Count: 1
                                                 Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM               Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                            Flow: Both
     Span(in): 24.00          24.00                    Entrance Loss Coef: 0.50
     Rise(in): 24.00          24.00                        Exit Loss Coef: 1.00
   Invert(ft): 6.650          5.930                        Bend Loss Coef: 0.00
```

```
  Manning's N: 0.012000       0.012000                  Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                    Stabilizer Option: None


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

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

Information based on:
Survey

------------------------------------------------------------------------------------------------
         Name: P_STR4-2_C51STB     From Node: STRUCTURE_4-2      Length(ft): 360.00
        Group: BASE                  To Node: C-51_STUB CANAL         Count: 1
                                                            Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 48.00          48.00                      Entrance Loss Coef: 0.50
     Rise(in): 48.00          48.00                          Exit Loss Coef: 1.00
   Invert(ft): 5.090          5.090                          Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                  Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                    Stabilizer Option: None


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

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

S-6
FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4
&
Survey

------------------------------------------------------------------------------------------------
         Name: P_STR4-4_STR4-5     From Node: STRUCTURE_4-4      Length(ft): 75.00
        Group: BASE                  To Node: STRUCTURE_4-5           Count: 1
                                                            Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 48.00          48.00                      Entrance Loss Coef: 0.50
     Rise(in): 48.00          48.00                          Exit Loss Coef: 0.00
   Invert(ft): 5.210          5.210                          Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                  Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                    Stabilizer Option: None


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

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

S-88
FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4
&
S-7
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

------------------------------------------------------------------------------------------------
         Name: P_STR4-5_STR4-2     From Node: STRUCTURE_4-5      Length(ft): 269.00
        Group: BASE                  To Node: STRUCTURE_4-2           Count: 1
                                                            Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 48.00          48.00                      Entrance Loss Coef: 0.50
     Rise(in): 48.00          48.00                          Exit Loss Coef: 0.00
   Invert(ft): 5.210          5.090                          Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                  Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                    Stabilizer Option: None
```

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

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

S-7 & S-6
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

```
         Name: P_STR4-7_P4-4       From Node: STRUCTURE_4-7      Length(ft): 484.00
        Group: BASE                  To Node: DRY POND_4-4           Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                            Flow: Both
     Span(in): 48.00          48.00                     Entrance Loss Coef: 0.00
     Rise(in): 48.00          48.00                         Exit Loss Coef: 1.00
   Invert(ft): 6.000          5.310                         Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                     Stabilizer Option: None
```

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

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

FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4

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

```
         Name: D_P4-3_STR4-2       From Node: DRY POND_4-3       Length(ft): 160.00
        Group: BASE                  To Node: STRUCTURE_4-2           Count: 1

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 36.00          36.00                               Flow: Both
     Rise(in): 36.00          36.00                     Entrance Loss Coef: 0.500
   Invert(ft): 5.410          5.090                         Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                           Solution Incs: 10
```

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

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

S-18, and S-19
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

```
*** Weir 1 of 3 for Drop Structure D_P4-3_STR4-2 ***
                                                                          TABLE
                Count: 2                      Bottom Clip(in): 0.000
                 Type: Horizontal                Top Clip(in): 0.000
                 Flow: Both                   Weir Disc Coef: 3.200
             Geometry: Rectangular           Orifice Disc Coef: 0.600

             Span(in): 49.00                       Invert(ft): 14.490
             Rise(in): 37.00                  Control Elev(ft): 14.490

*** Weir 2 of 3 for Drop Structure D_P4-3_STR4-2 ***
                                                                          TABLE
                Count: 4                      Bottom Clip(in): 0.000
                 Type: Vertical: Mavis           Top Clip(in): 0.000
                 Flow: Both                   Weir Disc Coef: 3.200
             Geometry: Rectangular           Orifice Disc Coef: 0.600

             Span(in): 48.00                       Invert(ft): 13.790
             Rise(in): 8.40                   Control Elev(ft): 13.790

*** Weir 3 of 3 for Drop Structure D_P4-3_STR4-2 ***
                                                                          TABLE
                Count: 1                      Bottom Clip(in): 0.000
```

```
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Circular              Orifice Disc Coef: 0.600

              Span(in): 3.00                        Invert(ft): 11.410
              Rise(in): 3.00                   Control Elev(ft): 11.410


-------------------------------------------------------------------------------------------------
         Name: D_P4-4_STR4-4       From Node: DRY POND_4-4       Length(ft): 45.00
        Group: BASE                  To Node: STRUCTURE_4-4           Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
    Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
    Span(in): 48.00          48.00                                 Flow: Both
    Rise(in): 48.00          48.00                     Entrance Loss Coef: 0.500
  Invert(ft): 5.310          5.210                         Exit Loss Coef: 0.000
 Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000          0.000                          Solution Incs: 10

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

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

S-87
FPID 231835-1-52-01 / 231919-1-52-01
SFWMD Permit No. 50-05327-P, App. No. 010727-4

*** Weir 1 of 3 for Drop Structure D_P4-4_STR4-4 ***
                                                                                    TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Horizontal                Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 50.00                       Invert(ft): 14.160
              Rise(in): 46.00                  Control Elev(ft): 14.160

*** Weir 2 of 3 for Drop Structure D_P4-4_STR4-4 ***
                                                                                    TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular           Orifice Disc Coef: 0.600

              Span(in): 45.24                       Invert(ft): 11.510
              Rise(in): 31.80                  Control Elev(ft): 11.510

*** Weir 3 of 3 for Drop Structure D_P4-4_STR4-4 ***
                                                                                    TABLE
                  Count: 1                      Bottom Clip(in): 0.000
                   Type: Vertical: Mavis           Top Clip(in): 0.000
                   Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Circular              Orifice Disc Coef: 0.600

              Span(in): 3.00                        Invert(ft): 7.930
              Rise(in): 3.00                   Control Elev(ft): 7.930


-------------------------------------------------------------------------------------------------
         Name: D_P4-5_STR4-5       From Node: DRY POND_4-5       Length(ft): 38.00
        Group: BASE                  To Node: STRUCTURE_4-5           Count: 1

              UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
    Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
    Span(in): 36.00          36.00                                 Flow: Both
    Rise(in): 36.00          36.00                     Entrance Loss Coef: 0.500
  Invert(ft): 5.900          5.900                         Exit Loss Coef: 0.000
 Manning's N: 0.012000       0.012000                    Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000          0.000                          Solution Incs: 10

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

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

S-6A and S-7
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4
```

```
*** Weir 1 of 2 for Drop Structure D_P4-5_STR4-5 ***
                                                                                TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Horizontal                 Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
              Geometry: Rectangular            Orifice Disc Coef: 0.600

              Span(in): 50.00                         Invert(ft): 10.100
              Rise(in): 46.00                   Control Elev(ft): 10.100

*** Weir 2 of 2 for Drop Structure D_P4-5_STR4-5 ***
                                                                                TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Vertical: Mavis            Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
              Geometry: Circular               Orifice Disc Coef: 0.600

              Span(in): 3.00                          Invert(ft): 7.280
              Rise(in): 3.00                    Control Elev(ft): 7.280


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

         Name: W_STR4-2            From Node: DRY POND_4-2
        Group: BASE                  To Node: STRUCTURE_4-2
         Flow: Both                    Count: 1
         Type: Horizontal           Geometry: Rectangular

                   Span(in): 50.00
                   Rise(in): 46.00
                 Invert(ft): 14.660
       Control Elevation(ft): 14.660
                                          TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
        Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600

S-6
FPID 231878-1-52-01
SFWMD Permit No. 50-04154-P, App. No. 980805-4

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

         Name: 10YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 4\10YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 8.00

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

--------------------------------------------------------------------------------------------------------
         Name: 10YR-72HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 4\10YR-72HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Sfwmd72
    Rainfall Amount(in): 10.50

Time(hrs)       Print Inc(min)
--------------- ---------------
72.000          5.00
84.000          15.00

--------------------------------------------------------------------------------------------------------
         Name: 3YR-24HR
     Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 4\3YR-24HR.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 5.50

Time(hrs)       Print Inc(min)
--------------- ---------------
```

30.000 5.00

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

Name: 10YR-24HR Hydrology Sim: 10YR-24HR
Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 4\10YR-24HR.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	5.000

Group	Run
BASE	Yes

Name: 10YR-72HR Hydrology Sim: 10YR-72HR
Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 4\10YR-72HR.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 84.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
72.000	5.000
84.000	15.000

Group	Run
BASE	Yes

Name: 3YR-24HR Hydrology Sim: 3YR-24HR
Filename: X:\P\I-95 SR 80 43551612202\drainage\ICPR\Post-Development\System 4\3YR-24HR.I32

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

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	5.000

Group	Run
BASE	Yes

Drainage System Summary Tables

SR-80 DRAINAGE CALCULATIONS

SUMMARY OF PEAK DISCHARGES

System	PRE-DEVELOPMENT			POST-DEVELOPMENT (MODIFIED)			REDUCTION
	ICPR Node	Ultimate Receiving Water Body	10yr-72Hr Peak Discharge (cfs)	ICPR Node	Ultimate Receiving Water Body	10yr-72Hr Peak Discharge (cfs)	10yr-72Hr Peak Discharge (cfs)
1	C-51	C-51 Canal	**258.11**	C-51	C-51 Canal	**261.07**	**-2.96**
2	C-51_STUB CANAL	C-51/Stub Canal	**26.17**	C-51_STUB CANAL	C-51/Stub Canal	**29.65**	**-3.48**
3	C-51_STUB CANAL	C-51/Stub Canal	**70.31**	C-51_STUB CANAL	C-51/Stub Canal	**63.61**	**6.70**
4	C-51_STUB CANAL	C-51/Stub Canal	**102.99**	C-51_STUB CANAL	C-51/Stub Canal	**102.97**	**0.02**
TOTAL	C-51 Canal		**457.58**	C-51 Canal		**457.30**	**0.28**

SR-80 DRAINAGE CALCULATIONS

SUMMARY OF PEAK STAGES

System	ICPR Node	PRE-DEVELOPMENT	POST-DEVELOPMENT	PRE-DEVELOPMENT	POST-DEVELOPMENT	PRE-DEVELOPMENT	POST-DEVELOPMENT	Warning Stage (ft)
		3yr-24Hr Peak Stage (ft)	3yr-24Hr Peak Stage (ft)	10yr-24Hr Peak Stage (ft)	10yr-24Hr Peak Stage (ft)	10yr-72Hr Peak Stage (ft)	10yr-72Hr Peak Stage (ft)	
1	PBIA PONDS_1-7	9.69	9.69	10.53	10.54	10.92	10.93	18.42
	SWALE_1-1	10.89	10.95	10.98	10.99	10.99	10.99	12.00
	SWALE_1-4	9.82	9.84	10.33	10.41	10.65	10.73	13.50
	SWALE_1-5	10.98	11.34	11.42	11.70	11.55	11.72	14.00
	SWALE_1-6	11.09	11.78	11.93	12.48	12.18	12.49	13.00
	WET POND_1-2	7.29	7.55	9.92	9.10	9.50	9.66	9.92
	WET POND_1-8	9.51	9.51	11.43	10.42	10.75	10.86	11.43
2	DITCH_2-4	10.92	10.83	11.17	11.00	11.31	11.18	12.00
	WET POND_2-1	8.73	8.88	9.01	9.12	9.10	9.14	9.65
3	DITCH_3-4	8.43	8.30	9.45	9.61	10.88	10.61	15.00
	DRY POND_3-5	10.90	10.90	11.34	11.34	11.72	11.71	14.50
	DRY POND_3-6	10.90	10.90	11.35	11.35	11.84	11.80	13.50
	DRY POND_3-7	13.05	11.22	13.63	12.75	13.93	13.57	19.00
	SWALE_3-1	12.01	11.91	12.68	12.57	12.96	12.85	15.00
	SWALE_3-2	11.99	12.04	12.36	12.45	12.58	12.66	14.00
	SWALE_3-3	8.56	8.42	9.64	9.81	11.43	11.00	10.00
	SWALE_3-5	10.90	10.90	11.34	11.34	11.72	11.71	14.50
4	DRY POND_4-2	14.81	14.80	14.89	14.88	14.91	14.89	15.50
	DRY POND_4-3	14.31	14.29	14.60	14.59	14.63	14.61	15.00
	DRY POND_4-4	12.65	12.64	13.65	13.65	13.92	13.90	14.48
	DRY POND_4-5	10.97	11.10	12.80	12.75	13.07	12.97	14.64
	DRY POND_4-6	12.69	12.68	13.83	13.84	14.16	14.16	16.00
	SWALE_4-1	7.44	7.74	7.93	8.24	8.23	8.45	16.00

SR-80 DRAINAGE CALCULATIONS

SUMMARY OF WATER QUALITY

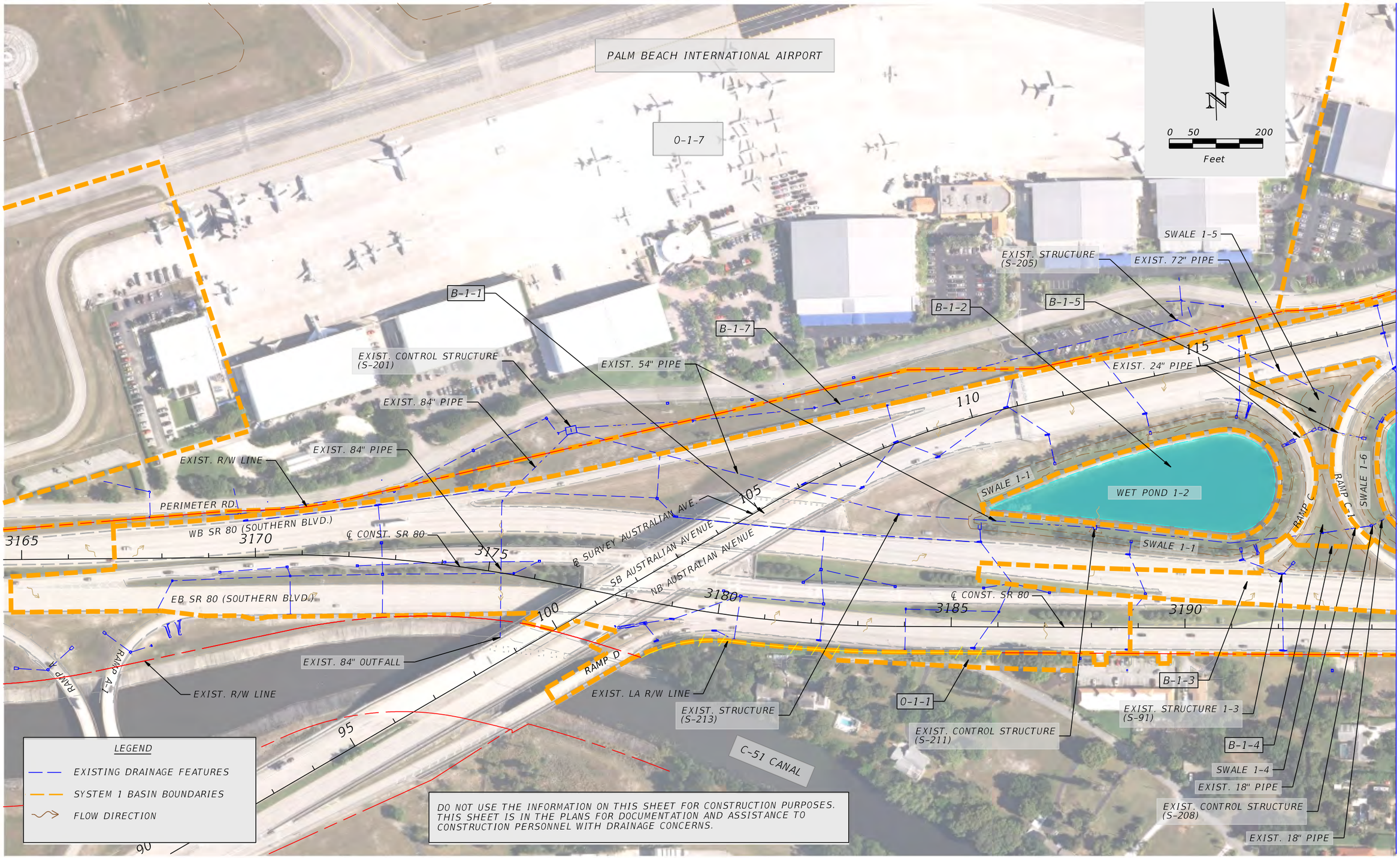
System	Sub-System	Water Quality Treatment Volume Required (ac·ft)	Water Quality Treatment Volume Provided				Total Water Quality Treatment Volume Provided (ac-ft)	Surplus Water Quality Treatment Volume Provided (ac·ft)
			Dry Detention (ac·ft)	Wet Detention (ac·ft)	Retention (ac·ft)	French Drain (ac-ft)		
1	1A	3.30	4.42	0.00	0.00	0.00	5.89	2.59
	1B	2.31	2.68	0.00	0.00	0.00	3.58	1.27
TOTAL		**5.61**	**7.10**	**0.00**	**0.00**	**0.00**	**9.47**	**3.86**
2	N/A	1.23	0.00	1.38	0.00	0.00	1.38	0.16
TOTAL		**1.23**	**0.00**	**1.38**	**0.00**	**0.00**	**1.38**	**0.16**
3	3A	0.13	0.08	0.00	0.00	0.00	0.11	-0.03
	3B	1.90	2.85	0.00	0.00	0.00	3.80	1.90
	3C	1.36	1.07	0.00	0.00	0.00	1.43	0.06
	3D	1.86	6.11	0.00	0.00	0.00	8.14	6.28
TOTAL		**5.25**	**10.10**	**0.00**	**0.00**	**0.00**	**13.47**	**8.21**
4	4A	0.25	0.00	0.00	0.00	0.00	0.00	-0.25
	4B	0.19	0.08	0.00	0.00	0.00	0.10	-0.09
	4C	1.78	0.91	0.00	0.00	0.00	1.22	-0.56
	4D	1.70	0.74	0.00	0.00	0.00	0.98	-0.72
	4E	0.70	1.11	0.00	0.00	0.00	2.39	1.69
TOTAL		**4.62**	**2.84**	**0.00**	**0.00**	**0.00**	**4.70**	**0.07**
GRAND TOTAL		**16.71**	**20.05**	**1.38**	**0.00**	**0.00**	**29.02**	**12.30**

APPENDIX F

Post-Development Analysis

(Alternative 5)

Post-Development Drainage Maps



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 5) DRAINAGE MAPS

SHEET NO. 1

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 5

MATCHLINE A-A

SEE SHEET 3

LEGEND

- EXISTING DRAINAGE FEATURES
- SYSTEM 1 BASIN BOUNDARIES
- SYSTEM 2 BASIN BOUNDARIES
- SYSTEM 3 BASIN BOUNDARIES
- SYSTEM 4 BASIN BOUNDARIES
- FLOW DIRECTION

N

0 50 200

Feet

℄ SURVEY AUSTRAILIAN AVE.

SWALE 1-6

WET POND 1-8

B-1-8

HILTON PALM BEACH AIRPORT HOTEL

EXIST. R/W LINE

GEM LAKE DR.

B-1-6

SWALE 1-6

WB SR 80 (SOUTHERN BLVD.)

EB SR 80 (SOUTHERN BLVD.)

℄ CONST. SR 80

EXIST. R/W LINE

GEM LAKE DR.

O-1-6

B-2-3

B-2-1

LANG RD.

OS-2-1

EXIST. CONTROL STRUCTURE (S-7)

WET POND 2-1

B-2-5

B-2-5

EXIST. R/W LINE

EXIST. 48" OUTFALL

B-2-2

CSX RAILROAD

B-4-2

B-2-4

DITCH 2-4

EXIST. RR R/W LINE

EXIST. 48" PIPE

EXIST. LA R/W LINE

B-4-1

O-4-1

EXIST. 24" PIPE

EXIST. 24" OUTFALL

EXIST. CONTROL STRUCTURES (S-18 AND S-19)

EXIST. 36" PIPE

EXIST. 48" PIPE

EXIST. CONTROL STRUCTURE (S-6)

EXIST. 48" OUTFALL

EXIST. CONTROL STRUCTURE (S-87)

SWALE 4-1

RAMP I

DRY POND 4-3

SB SR 9 (I-95)

NB SR 9 (I-95)

℄ SURVEY SR 9

EXIST. 48" PIPE

EXIST. 48" PIPE

EXIST. CONTROL STRUCTURE (S-6A)

DRY POND 4-2

B-4-5

DRY POND 4-5

RAMP J

PARKLAND RD

DRY POND 4-4

℄ CONST. SR 80

B-4-4

B-3-7

DRY POND 3-7

B-3-6

B-3-3

RAMP K

RAMP L

DRY POND 3-6

℄ SURVEY SR 9

110

105

100

75

55

1340

1335

1330

3195

3200

3205

3210

3215

3220

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

SEE SHEET 4

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

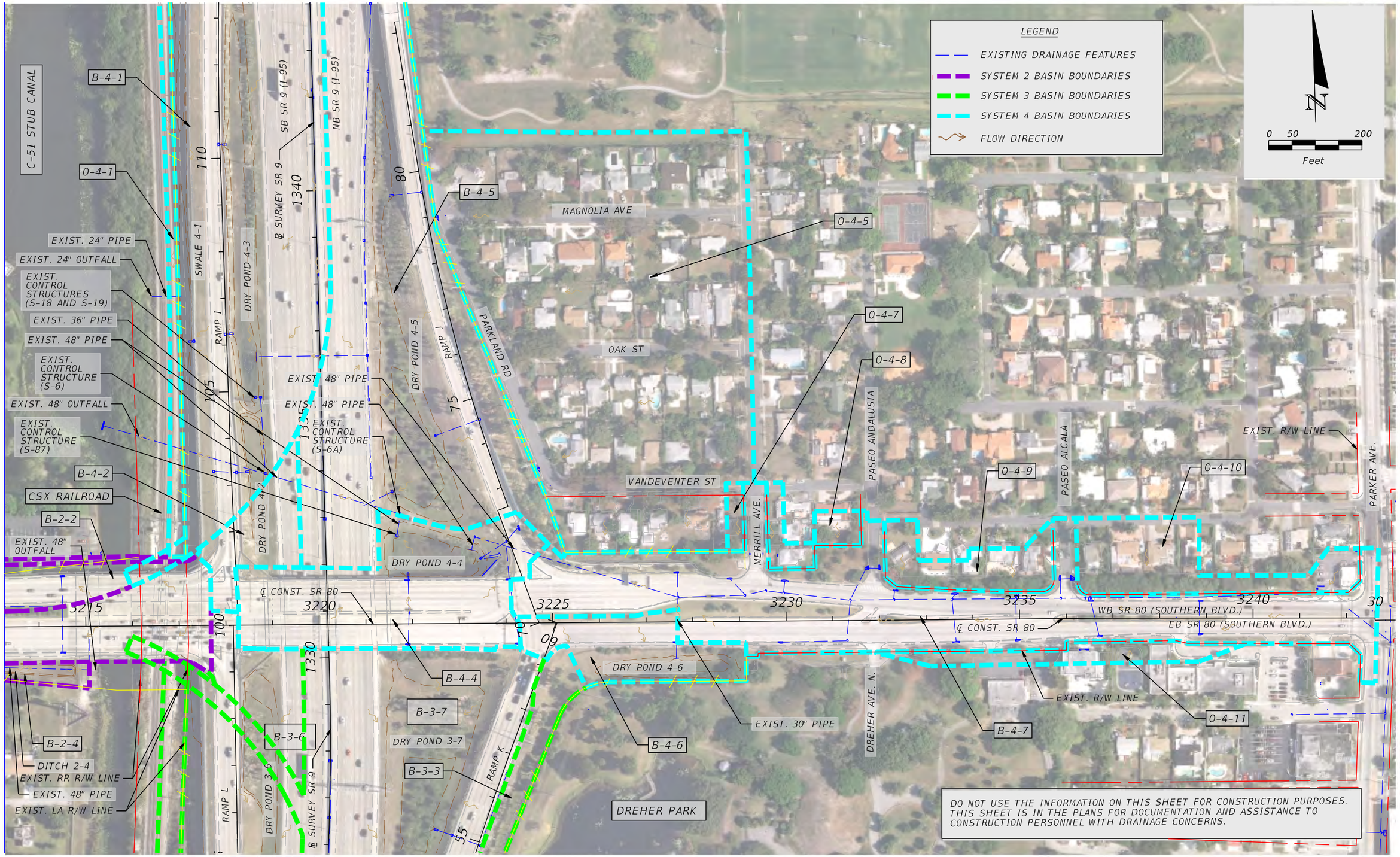
POST-DEVELOPMENT (ALT 5) DRAINAGE MAPS

SHEET NO. 2

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 5

SEE SHEET 2



SEE SHEET 4

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 5) DRAINAGE MAPS

SHEET NO. 3

$USER$ $DATE$ $TIME$ $FILE$

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

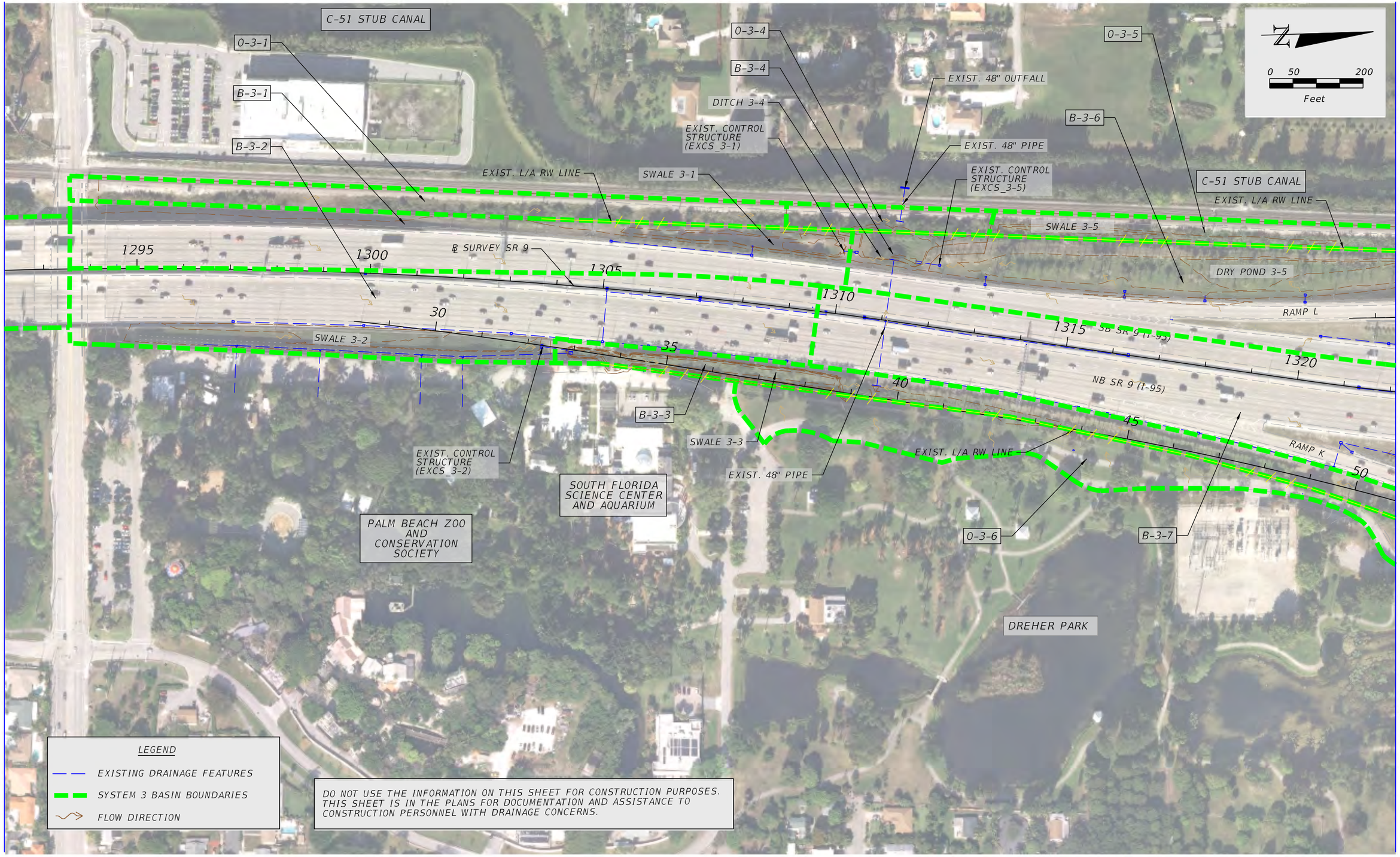
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 5) DRAINAGE MAPS

SHEET NO. 4

$USER$ $DATE$ $TIME$ $FILE$



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

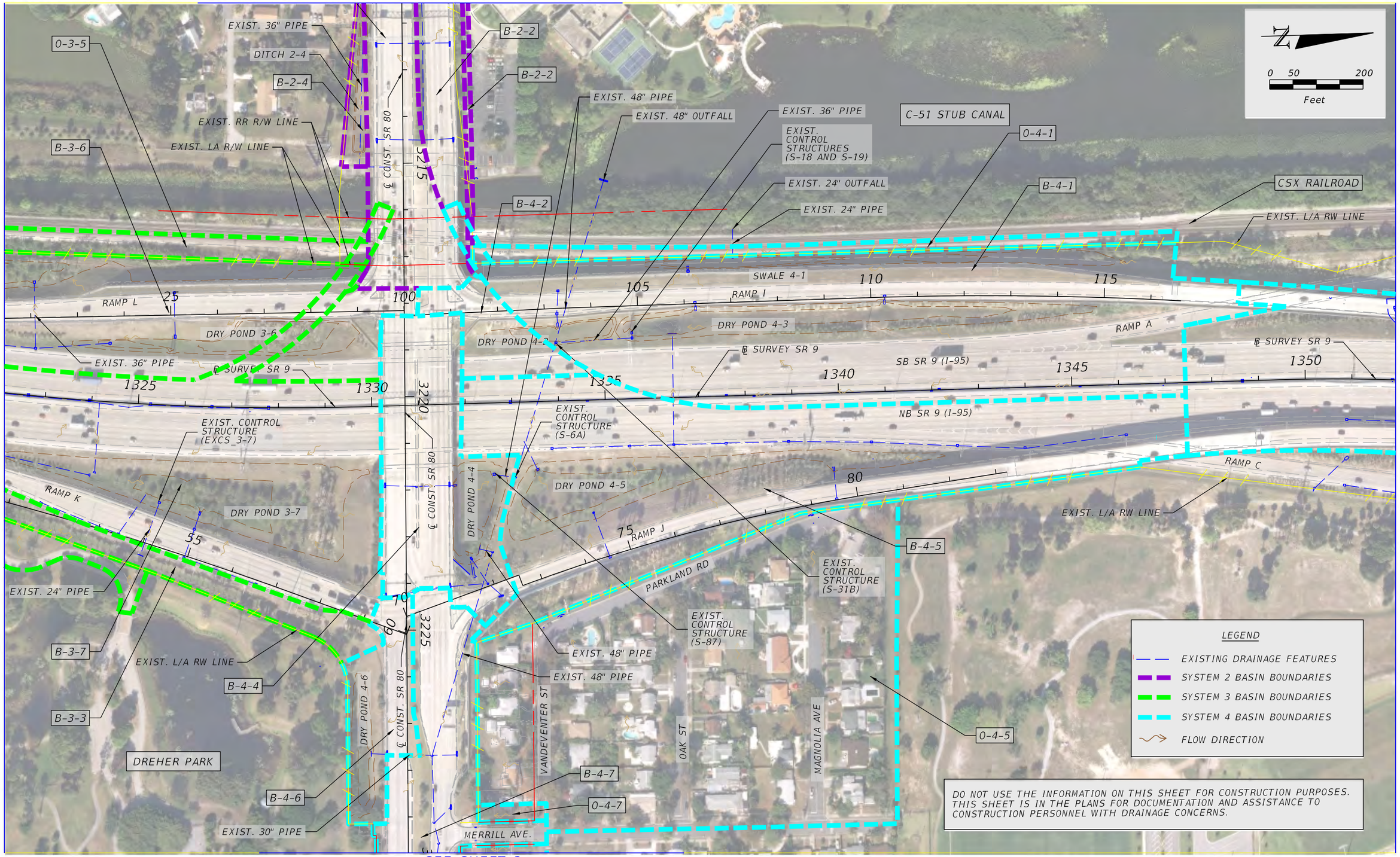
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 5) DRAINAGE MAPS

SHEET NO. 5

$USER$ $DATE$ $TIME$ $FILE$

SEE SHEET 2



MATCHLINE C-C

MATCHLINE D-D

SEE SHEET 3

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 5) DRAINAGE MAPS

SHEET NO. 6

$USERS $DATES $TIMES $FILES

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

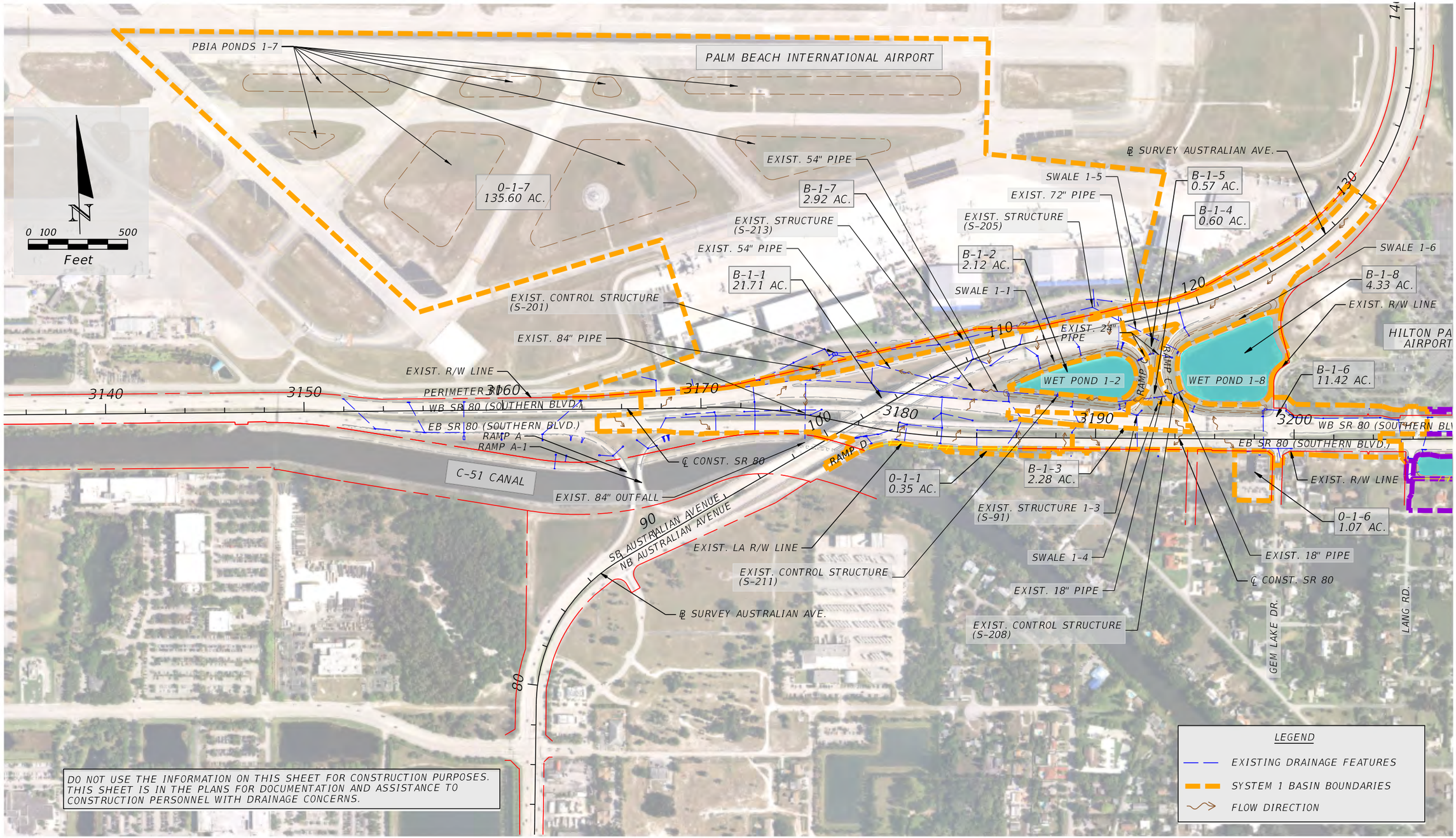
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 5) DRAINAGE MAPS

SHEET NO. 7

$USER$ $DATE$ $TIME$ $FILE$



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3005
FL Cert. No. EB0005620
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	435516-1-22-02

POST-DEVELOPMENT (ALT 5) DRAINAGE MAPS

SHEET NO. 8

$USER$ $DATE$ $TIME$ $FILE$

Pre-Development Land Use

SR-80 DRAINAGE CALCULATIONS

PRE-DEVELOPMENT LAND-USE - ALT 5

DRAINAGE SYSTEM: 1 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-1-1	**10**	**21.71**	**21.71**	14.40	0.00	7.31	**0.00**	0.00	0.00	0.00	**12.00**	5.00	8.18	**78.40**
B-1-2	**10**	**2.12**	**2.12**	0.37	1.75	0.00	**0.00**	0.00	0.00	0.00	**9.00**	2.00	1.88	**100.00**
B-1-3	**10**	**2.28**	**2.28**	1.83	0.00	0.45	**0.00**	0.00	0.00	0.00	**15.00**	8.00	8.18	**86.10**
B-1-4	**10**	**0.60**	**0.60**	0.00	0.00	0.60	**0.00**	0.00	0.00	0.00	**11.00**	4.00	8.18	**55.01**
B-1-5	**10**	**0.57**	**0.57**	0.00	0.00	0.57	**0.00**	0.00	0.00	0.00	**12.00**	5.00	8.18	**55.01**
B-1-6	**10**	**11.42**	**11.42**	7.93	0.00	3.49	**0.00**	0.00	0.00	0.00	**13.00**	6.00	8.18	**80.00**
B-1-7	**10**	**2.92**	**2.92**	0.26	0.00	2.66	**0.00**	0.00	0.00	0.00	**17.00**	10.00	8.18	**57.30**
B-1-8*	**10**	**4.33**	**4.33**	0.38	3.45	0.50	**0.00**	0.00	0.00	0.00	**-**	--	--	**98.00**
O-1-1	**10**	**0.35**	**0.00**	0.00	0.00	0.00	**0.35**	0.12	0.00	0.23	**15.50**	9.00	8.18	**65.04**
O-1-6	**10**	**1.07**	**0.00**	0.00	0.00	0.00	**1.07**	0.68	0.00	0.39	**13.00**	6.00	8.18	**77.03**
O-1-7*	**10**	**135.60**	**0.00**	0.00	0.00	0.00	**135.60**	83.40	0.00	52.20	**-**	-	-	**70.56**
SYSTEM TOTALS		**182.97**	**45.95**	25.17	5.20	15.58	**137.02**	84.20	0.00	52.82	**--**	**--**	**--**	**--**

* - Basin B-1-8 & O-1-7 Land Use breakdown taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

SR-80 DRAINAGE CALCULATIONS

PRE-DEVELOPMENT LAND-USE - ALT 5

DRAINAGE SYSTEM: 2 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-2-1	**10.00**	**1.26**	**1.26**	0.00	0.76	0.50	**0.00**	0.00	0.00	0.00	9.36	2.00	1.88	**93.04**
B-2-2	**11.66**	**4.74**	**4.74**	4.26	0.00	0.48	**0.00**	0.00	0.00	0.00	11.30	4.00	8.18	**92.35**
B-2-3	**10.00**	**0.10**	**0.10**	0.10	0.00	0.00	**0.00**	0.00	0.00	0.00	10.50	4.00	5.40	**100.00**
B-2-4	**10.00**	**0.50**	**0.50**	0.00	0.00	0.50	**0.00**	0.00	0.00	0.00	10.64	4.00	5.50	**64.52**
OS-2-1	**18.85**	**1.52**	**0.00**	0.00	0.00	0.00	**1.52**	0.29	0.00	1.23	11.50	5.00	8.18	**60.09**
SYSTEM TOTALS		**8.12**	**6.60**	4.36	0.76	1.48	**1.52**	0.29	0.00	1.23	--	--	--	--

SR-80 DRAINAGE CALCULATIONS

PRE-DEVELOPMENT LAND-USE - ALT 5

DRAINAGE SYSTEM: 3 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-3-1	**10**	**1.97**	**1.97**	0.46	0.00	1.51	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**61.46**
B-3-2	**10**	**9.34**	**9.34**	8.48	0.00	0.86	**0.00**	0.00	0.00	0.00	9.00	2.00	1.88	**98.30**
B-3-3	**10**	**3.21**	**3.21**	0.02	0.00	3.19	**0.00**	0.00	0.00	0.00	8.00	1.00	0.45	**95.72**
B-3-4	**10**	**0.50**	**0.50**	0.05	0.00	0.45	**0.00**	0.00	0.00	0.00	8.50	2.00	1.88	**85.53**
B-3-5	**10**	**6.32**	**6.32**	2.69	0.00	3.63	**0.00**	0.00	0.00	0.00	9.50	3.00	4.95	**77.86**
B-3-6	**10**	**5.51**	**5.51**	3.76	0.00	1.75	**0.00**	0.00	0.00	0.00	13.00	6.00	8.18	**79.38**
B-3-7	**10**	**10.19**	**10.19**	6.96	0.00	3.23	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**79.41**
B-3-8	**10**	**0.00**	**0.00**	0.00	0.00	0.00	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**#DIV/0!**
O-3-1	**10**	**1.85**	**0.00**	0.00	0.00	0.00	**1.85**	0.56	0.00	1.29	10.50	4.00	8.18	**63.68**
O-3-3	**10**	**2.99**	**0.00**	0.00	0.00	0.00	**2.99**	1.32	0.00	1.67	8.00	1.00	0.45	**97.55**
O-3-4	**10**	**0.54**	**0.00**	0.00	0.00	0.00	**0.54**	0.16	0.00	0.38	8.50	2.00	1.88	**88.32**
O-3-5	**10**	**1.96**	**0.00**	0.00	0.00	0.00	**1.96**	0.68	0.00	1.28	9.50	3.00	4.95	**75.57**
SYSTEM TOTALS		**44.38**	**37.04**	22.42	0.00	14.62	**7.34**	2.72	0.00	4.62	--	--	--	--

SR-80 DRAINAGE CALCULATIONS

PRE-DEVELOPMENT LAND-USE - ALT 5

DRAINAGE SYSTEM: 4 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-4-1	**10**	**2.34**	**2.34**	0.17	0.00	2.17	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**56.86**
B-4-2	**10**	**1.73**	**1.73**	0.95	0.00	0.78	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**73.06**
B-4-3	**10**	**10.85**	**10.85**	8.74	0.00	2.11	**0.00**	0.00	0.00	0.00	13.00	6.00	8.18	**86.28**
B-4-3A	**10**	**0.05**	**0.05**	0.05	0.00	0.00	**0.00**	0.00	0.00	0.00	16.00	9.00	8.18	**100.00**
B-4-4	**10**	**3.04**	**3.04**	2.19	0.00	0.85	**0.00**	0.00	0.00	0.00	9.50	3.00	4.95	**87.84**
B-4-5	**10**	**5.62**	**5.62**	1.34	0.00	4.28	**0.00**	0.00	0.00	0.00	10.00	3.00	4.95	**72.62**
B-4-6	**10**	**1.22**	**1.22**	0.56	0.00	0.66	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**69.32**
B-4-7	**10**	**6.51**	**6.51**	4.96	0.00	1.55	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**83.70**
B-4-8	**10**	**18.24**	**18.24**	18.24	0.00	0.00	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**100.00**
O-4-1	**10**	**0.81**	**0.00**	0.00	0.00	0.00	**0.81**	0.00	0.00	0.81	11.00	4.00	8.18	**55.01**
O-4-5	**10**	**11.56**	**0.00**	0.00	0.00	0.00	**11.56**	11.15	0.00	0.41	10.00	3.00	4.95	**98.27**
O-4-7	**10**	**0.12**	**0.00**	0.00	0.00	0.00	**0.12**	0.04	0.00	0.08	15.00	8.00	8.18	**64.71**
O-4-8	**10**	**0.40**	**0.00**	0.00	0.00	0.00	**0.40**	0.14	0.00	0.26	15.00	8.00	8.18	**65.29**
O-4-9	**10**	**0.81**	**0.00**	0.00	0.00	0.00	**0.81**	0.22	0.00	0.59	15.00	8.00	8.18	**62.66**
O-4-10	**10**	**1.39**	**0.00**	0.00	0.00	0.00	**1.39**	0.76	0.00	0.63	15.00	8.00	8.18	**72.95**
O-4-11	**10**	**0.59**	**0.00**	0.00	0.00	0.00	**0.59**	0.45	0.00	0.14	15.00	8.00	8.18	**83.74**
SYSTEM TOTALS		**65.28**	**49.60**	37.20	0.00	12.40	**15.68**	12.76	0.00	2.92	--	--	--	--

Post-Development Land Use

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE - ALT 5

DRAINAGE SYSTEM: 1 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-1-1	**10**	**18.92**	**18.92**	12.20	0.00	6.72	**0.00**	0.00	0.00	0.00	**12.00**	5.00	8.18	**77.49**
B-1-2	**10**	**2.12**	**2.12**	0.37	1.75	0.00	**0.00**	0.00	0.00	0.00	**9.00**	2.00	1.88	**100.00**
B-1-3	**10**	**1.69**	**1.69**	1.07	0.00	0.62	**0.00**	0.00	0.00	0.00	**15.00**	8.00	8.18	**76.92**
B-1-4	**10**	**0.33**	**0.33**	0.00	0.00	0.33	**0.00**	0.00	0.00	0.00	**11.00**	4.00	8.18	**55.01**
B-1-5	**10**	**0.57**	**0.57**	0.00	0.00	0.57	**0.00**	0.00	0.00	0.00	**12.00**	5.00	8.18	**55.01**
B-1-6	**10**	**14.04**	**14.04**	12.29	0.00	1.75	**0.00**	0.00	0.00	0.00	**13.00**	6.00	8.18	**90.73**
B-1-7	**10**	**2.92**	**2.92**	2.92	0.00	0.00	**0.00**	0.00	0.00	0.00	**17.00**	10.00	8.18	**100.00**
B-1-8*	**10**	**4.33**	**4.33**	0.38	3.45	0.50	**0.00**	0.00	0.00	0.00	-	-	8.18	**98.00**
O-1-1	**10**	**0.35**	**0.00**	0.00	0.00	0.00	**0.35**	0.12	0.00	0.23	**15.50**	9.00	8.18	**64.59**
O-1-6	**10**	**1.07**	**0.00**	0.00	0.00	0.00	**1.07**	0.68	0.00	0.39	**13.00**	6.00	8.18	**77.03**
O-1-7*	**10**	**134.94**	**0.00**	0.00	0.00	0.00	**134.94**	82.74	0.00	52.20	-	-	8.18	**70.56**
SYSTEM TOTALS		**181.28**	**44.92**	**29.23**	**5.20**	**10.49**	**136.36**	**83.54**	**0.00**	**52.82**	**--**	**--**	**--**	**--**

* - Basin B-1-8 & O-1-7 Land Use breakdown taken from Water Management Analysis Report, PBIA Basin 3, SFWMD ERP No. 50-04106-P, Application No. 150330-18.

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE - ALT 5

DRAINAGE SYSTEM: 2 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-2-1	**10**	**1.07**	**1.07**	0.76	0.00	0.31	**0.00**	0.00	0.00	0.00	9.00	2.00	1.88	**94.83**
B-2-2	**10**	**2.10**	**2.10**	2.09	0.00	0.01	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**99.74**
B-2-3	**10**	**0.08**	**0.08**	0.08	0.00	0.00	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**100.00**
B-2-4	**10**	**0.33**	**0.33**	0.00	0.00	0.33	**0.00**	0.00	0.00	0.00	10.60	4.00	8.18	**55.01**
B-2-5	**10**	**3.70**	**3.70**	3.70	0.00	0.00	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**100.00**
B-2-6	**10**	**0.27**	**0.27**	0.00	0.00	0.27	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**55.01**
O-2-1	**10**	**1.52**	**0.00**	0.00	0.00	0.00	**1.52**	0.15	0.00	1.37	11.00	4.00	8.18	**57.56**
SYSTEM TOTALS		**9.07**	**7.55**	**6.63**	**0.00**	**0.92**	**1.52**	**0.15**	**0.00**	**1.37**	--	--	--	--

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE - ALT 5

DRAINAGE SYSTEM: 3 **SHGWT EL. (ft-NAVD): 6.92**

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-3-1	**10**	**4.73**	**4.73**	3.26	0.00	1.47	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**79.73**
B-3-2	**10**	**6.37**	**6.37**	5.73	0.00	0.64	**0.00**	0.00	0.00	0.00	9.00	2.00	1.88	**98.15**
B-3-3	**10**	**3.20**	**3.20**	0.18	0.00	3.02	**0.00**	0.00	0.00	0.00	8.00	1.00	0.45	**95.93**
B-3-6	**10**	**9.46**	**9.46**	5.39	0.00	4.07	**0.00**	0.00	0.00	0.00	13.00	6.00	8.18	**73.97**
B-3-7	**10**	**13.31**	**13.31**	10.34	0.00	2.97	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**84.56**
B-3-8	**10**	**13.25**	**13.25**	13.25	0.00	0.00	**0.00**	0.00	0.00	0.00	10.50	4.00	8.18	**100.00**
O-3-1	**10**	**1.85**	**0.00**	0.00	0.00	0.00	**1.85**	0.56	0.00	1.29	10.50	4.00	8.18	**63.68**
O-3-4	**10**	**0.54**	**0.00**	0.00	0.00	0.00	**0.54**	0.16	0.00	0.38	8.00	1.00	0.45	**96.93**
O-3-5	**10**	**1.94**	**0.00**	0.00	0.00	0.00	**1.94**	0.67	0.00	1.27	8.50	2.00	1.88	**89.04**
O-3-6	**10**	**3.00**	**0.00**	0.00	0.00	0.00	**3.00**	1.33	0.00	1.67	9.50	3.00	4.95	**78.40**
SYSTEM TOTALS		**54.65**	**50.32**	**38.15**	**0.00**	**12.17**	**4.33**	**1.39**	**0.00**	**2.94**	--	--	--	--

SR-80 DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE - ALT 5

DRAINAGE SYSTEM: 4 **SHGWT EL. (ft-NAVD):** 6.92

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B-4-1	**10**	**10.48**	**10.48**	10.32	0.00	0.16	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**98.77**
B-4-2	**10**	**0.85**	**0.85**	0.85	0.00	0.00	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**100.00**
B-4-4	**10**	**3.16**	**3.16**	2.43	0.00	0.73	**0.00**	0.00	0.00	0.00	9.50	3.00	4.95	**89.74**
B-4-5	**10**	**9.47**	**9.47**	6.57	0.00	2.90	**0.00**	0.00	0.00	0.00	10.00	3.00	4.95	**86.84**
B-4-6	**10**	**1.22**	**1.22**	0.56	0.00	0.66	**0.00**	0.00	0.00	0.00	11.00	4.00	8.18	**69.32**
B-4-7	**10**	**6.51**	**6.51**	5.25	0.00	1.26	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**86.36**
B-4-8	**10**	**18.24**	**18.24**	18.24	0.00	0.00	**0.00**	0.00	0.00	0.00	15.00	8.00	8.18	**100.00**
O-4-1	**10**	**0.82**	**0.00**	0.00	0.00	0.00	**0.82**	0.82	0.00	0.00	11.00	4.00	8.18	**100.00**
O-4-5	**10**	**11.56**	**0.00**	0.00	0.00	0.00	**11.56**	11.56	0.00	0.00	10.00	3.00	4.95	**100.00**
O-4-7	**10**	**0.13**	**0.00**	0.00	0.00	0.00	**0.13**	0.13	0.00	0.00	15.00	8.00	8.18	**100.00**
O-4-8	**10**	**0.40**	**0.00**	0.00	0.00	0.00	**0.40**	0.40	0.00	0.00	15.00	8.00	8.18	**100.00**
O-4-9	**10**	**0.81**	**0.00**	0.00	0.00	0.00	**0.81**	0.81	0.00	0.00	15.00	8.00	8.18	**100.00**
O-4-10	**10**	**1.39**	**0.00**	0.00	0.00	0.00	**1.39**	1.39	0.00	0.00	15.00	8.00	8.18	**100.00**
O-4-11	**10**	**0.59**	**0.00**	0.00	0.00	0.00	**0.59**	0.59	0.00	0.00	15.00	8.00	8.18	**100.00**
SYSTEM TOTALS		**65.63**	**49.93**	**44.22**	**0.00**	**5.71**	**15.70**	**15.70**	**0.00**	**0.00**	--	--	--	--

APPENDIX G

Existing Permits

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
District Headquarters: 3301 Gun Club Road, West Palm Beach, Florida 33406 (561) 686-8800 www.sfwmd.gov

App # 150330-18

Regulation
Application No.: 150330-18

May 6, 2015

FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 4
3400 WEST COMMERCIAL BOULEVARD
FORT LAUDERDALE, FL 33309

Dear Permittee:

SUBJECT: **Permit No.: 50-04106-P**
Project : S R 80 AUSTRALIAN AVE P B I A CS 4 B MODIFICATION
Location: Palm Beach County, S32/T43S/R43E

District staff has reviewed the information submitted March 30, 2015, for reconfiguration of the control structure weir in S-201 and orifice in S-208 which cumulatively routes flows generated from Basin 3 of the Palm Beach International Airport through the FDOT Pond 4 located northeast of the intersection of Congress Avenue and Southern Boulevard. Pond 4 provides partial water quality treatment and attenuation for Basin 3 of the airport master system. The engineering analysis was evaluated within application number 150213-13. Pond 4 is expected to have a quicker recovery and lower peak stages as a result of this application.

S-201 (a.k.a. PBIA Basin 3 control structure 4A) will have 19' of the 21' wide concrete weir with a crest elevation of 10.9' NAVD, lowered to 10.0' NAVD.

S-208 (a.k.a. PBIA Basin 3 control structure 4B) will have the existing 0.75' wide by 0.9' high triangular orifice with an invert elevation of 7' NAVD enlarged to a 1.0' wide by 2.9' high triangular orifice with an invert elevation of 7.0' NAVD.

Based on that information, District staff has determined that the proposed activities are in compliance with the original environmental resource permit and appropriate provisions of paragraph 40E-4.331(2)(b) or 62-330.315(2)(g), Florida Administrative Code. Therefore, these changes have been recorded in our files.

Your permit remains subject to the General Conditions and all other Special Conditions not modified and as originally issued.

Should you have any questions or comments regarding this authorization, please contact this office.

Sincerely,

Carlos A. de Rojas, P.E.
Section Leader - Swm
Regulation Division

CD/pt

c: A D A Engineering Inc
Palm Beach County Board Of County Commissioners
Palm Beach County Engineer

NOTICE OF RIGHTS

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., the following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a SFWMD decision which does or may affect their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: 1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or 2) within 14 days of service of an Administrative Order pursuant to Subsection 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of either written notice through mail, electronic mail, or posting that the SFWMD has or intends to take final agency action, or publication of notice that the SFWMD has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

FILING INSTRUCTIONS

The Petition must be filed with the Office of the District Clerk of the SFWMD. Filings with the District Clerk may be made by mail, hand-delivery, or e-mail. **Filings by facsimile will not be accepted after October 1, 2014.** A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Any document received by the office of the District Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must be delivered to the Office of the District Clerk. **Delivery of a petition to the SFWMD's security desk does not constitute filing. To ensure proper filing, it will be necessary to request the SFWMD's security officer to contact the Clerk's office.** An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by e-mail must be transmitted to the District Clerk's Office at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the District Clerk receives the complete document. A party who files a document by e-mail shall (1) represent that the original physically signed document will be retained by that party for the duration of the proceeding and of any subsequent appeal or subsequent proceeding in that cause and that the party shall produce it upon the request of other parties; and (2) be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed.

INITIATION OF AN ADMINISTRATIVE HEARING

Pursuant to Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 and 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, SFWMD file number or any other SFWMD identification number, if known.
2. The name, address and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency decision.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

If the SFWMD takes action with substantially different impacts on water resources from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law.

MEDIATION

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the District Clerk within 30 days of rendering of the final SFWMD action.

Exhibit No: 1	Exhibit Created On: 2015-04-02	PALM BEACH COUNTY, FL

REGULATION DIVISION

Project Name: S R 80 AUSTRALIAN AVE P B I A CS 4 B MODIFICATION

0 2,000 4,000 Feet

N

Application

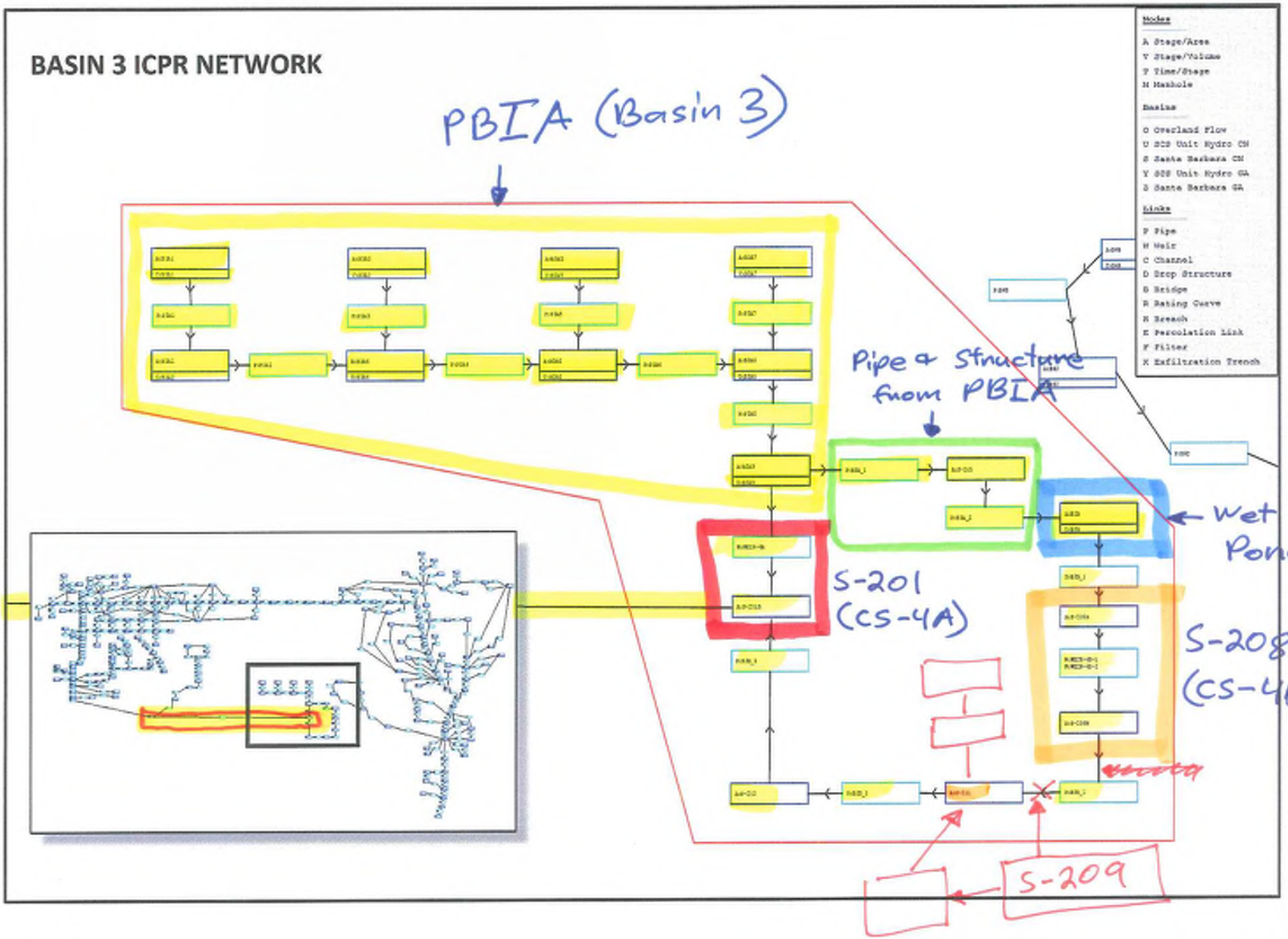
Permit No: 50-04106-P

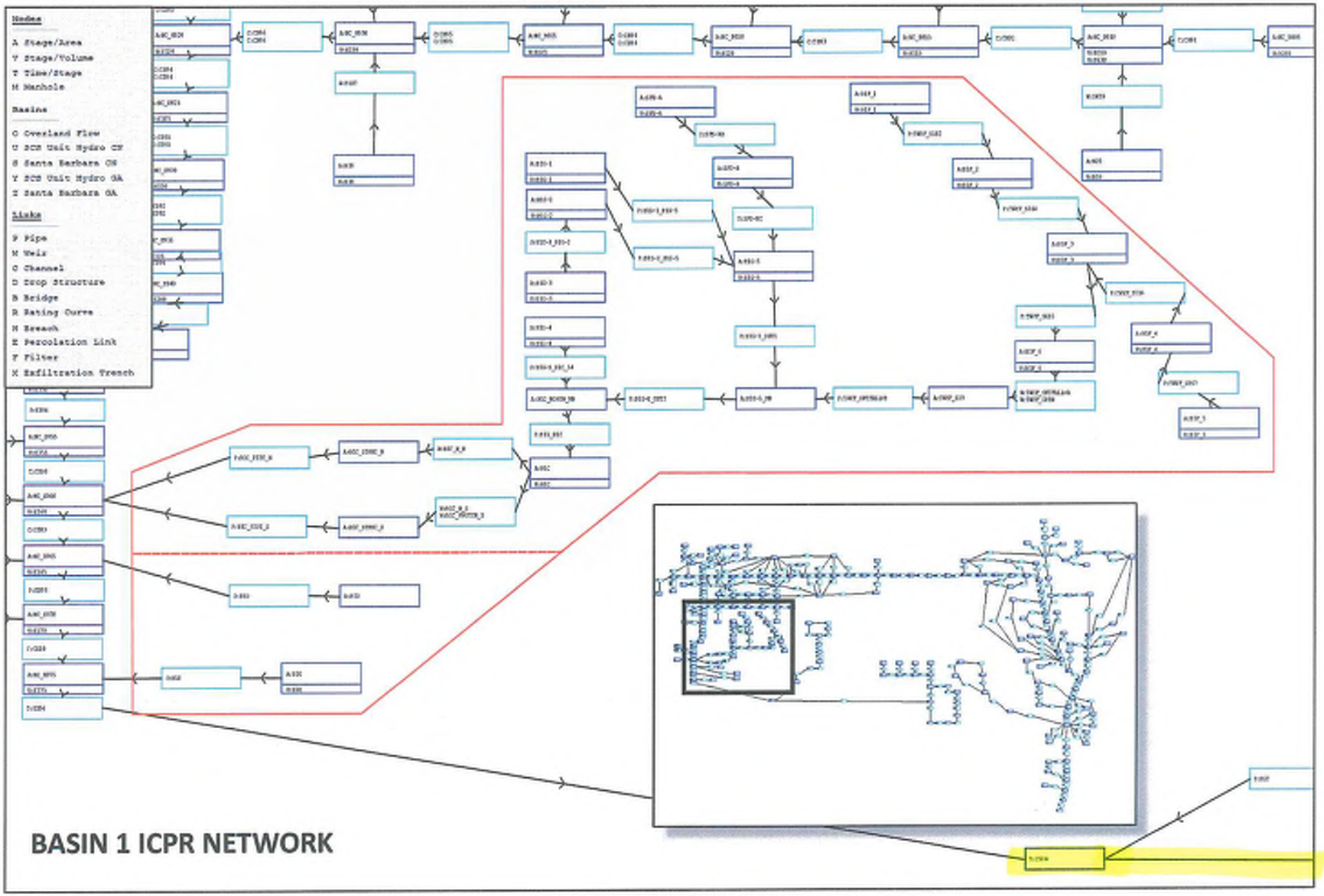
Application Number: 150330-18

sfwmd.gov

Created by Regulation GIS Section

South Florida Water Management District


BASIN 3 ICPR NETWORK
PBIA (Basin 3)
Pipe & Structure from PBIA
Wet Pond
S-201 (CS-4A)
S-208 (CS-4B)
S-209
Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole
Basins
O Overland Flow
U SCS Unit Hydro CN
S Santa Barbara CN
Y SCS Unit Hydro UA
B Santa Barbara UA
Links
P Pipe
H Weir
C Channel
D Drop Structure
G Bridge
R Rating Curve
K Breach
E Percolation Link
F Filter
X Exfiltration Trench



BASIN 1 ICPR NETWORK

Basin 1 Soil Storage/CN Calulations

Basins	Area (ac)	Perv (ac)	% Imperv	Avg Elev	Avail S	S	CN
B1C	39.49	24.52	38%	18.51	8.18	5.08	66
B1G-1	18.73	17.59	6%	15.71	8.18	7.68	57
B1G-2	7.92	6.62	16%	17.00	8.18	6.84	59
B1G-3	7.77	7.25	7%	17.00	8.18	7.63	57
B1G-4	12.74	11.52	10%	17.00	8.18	7.40	57
B1G-5	45.40	41.18	9%	17.00	8.18	7.42	57
SFS-A	2.44	1.54	37%	17.00	8.18	5.16	66
SFS-B	12.93	3.25	75%	18.00	8.18	2.06	83
B1F_1	12.04	11.17	7%	15.00	8.18	7.59	57
B1F_2	13.34	7.46	44%	15.00	8.18	4.57	69
B1F_3	10.18	5.23	49%	14.00	8.18	4.20	70
B1F_4	5.13	2.25	56%	14.50	8.18	3.59	74
B1F_5	7.67	2.89	62%	14.00	8.18	3.08	76
B1F_6	19.15	17.35	9%	14.50	8.18	7.41	57
Total	214.93	159.82					

Basin 3 Soil Storage/CN Calulations

Basins	Area (ac)	Perv (ac)	% Imperv	Avg Elev	Avail S	S	CN
B3A1	12.339	4.5	64%	13.8	8.18	2.98	77
B3A2	5.693 5.7	1.7	70%	13.8	8.18	2.44	80
B3A3	6.386 6.4	2.5	61%	14.2	8.18	3.20	76
B3A4	16.315	11.2	31%	13	8.18	5.62	64
B3A5	2.632	1.1	58%	13.9	8.18	3.42	75
B3A6	17.943	13.8	23%	13.8	8.18	6.29	61
B3A7	15.498 15.5	7.4	52%	14.9	8.18	3.91	72
B3A8	9.698 9.7	6.1	37%	12.7	8.18	5.15	66
B3A9	49.201	3.9	92%	16.5	8.18	0.65	~~94~~ 73
B3B	3.5	0.5	86%	12	8.18	1.17	~~90~~ 98
Total	139.205	52.7					

Per Model
4.33 Total
3.45, Water Surface

Use Model

Land Use Breakdown

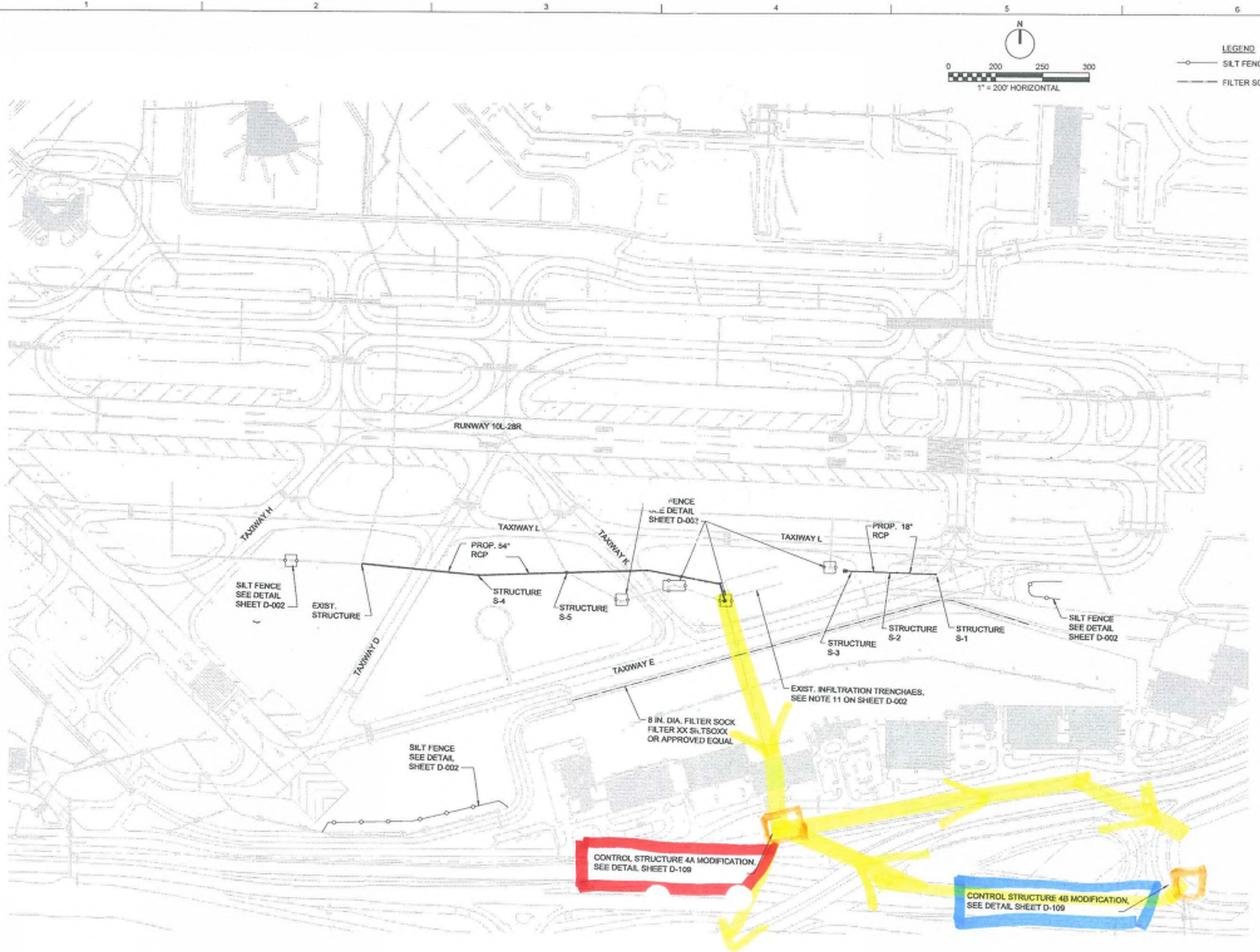
This Project	Impervious	Pervious	Buildings	Total	Dry Det.
Basin 1	6.2	19.9	0.0	26.1	2.5 ac
Basin 3	0.4	10.3	0.0	10.7	0 ac

Drainage Areas

Basin 1	Previously Permitted	Conceptually Permitted	For This Project
Total Drainage Area	203	233.3	222.3 ac
Total Impervious Area		132.7	79.3 ac

Basin 3	Previously Permitted	Conceptually Permitted	For This Project
Total Drainage Area	139.205	236.4	139.205 ac
Impervious Area	83.5	107.5	83.5 ac

Note: Some elements of the conceptually approved Basin 1 water management system are proposed. Basin 3, however, will maintain with the previously permitted hydrology at this time.



DEPARTMENT OF AIRPORTS
PALM BEACH COUNTY

PALM BEACH INTERNATIONAL AIRPORT

CH2MHILL
3001 PGA BLVD, Suite 300
Palm Beach Gardens, Florida 33410
Tel. 561-904-7400 EB 0000072
Fax 561-904-7401 AAC 001992

ADA
1800 Old Okeechobee Rd.
Suite 202
West Palm Beach, Fl. 33409
M 561-615-8881 • Fx 561-615-883
www.oddengineering.com
EB # 00003272

Professional of Record:
Jeffrey G. Hiscock
Florida P.E. No. 43984

NO.	REVISION	DATE
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

TAXIWAY D AND E REHABILITATION / RECONTRUCTION

PROPOSED DRAINAGE IMPROVEMENTS AND STORMWATER POLLUTION PREVENTION PLAN

DATE:	JANUARY 19, 2015
PROJECT:	424394.65
FILE:	65PBICO_D-001.DWG
DESIGN BY:	JH
DRAWN BY:	MR
CHECKED BY:	BW

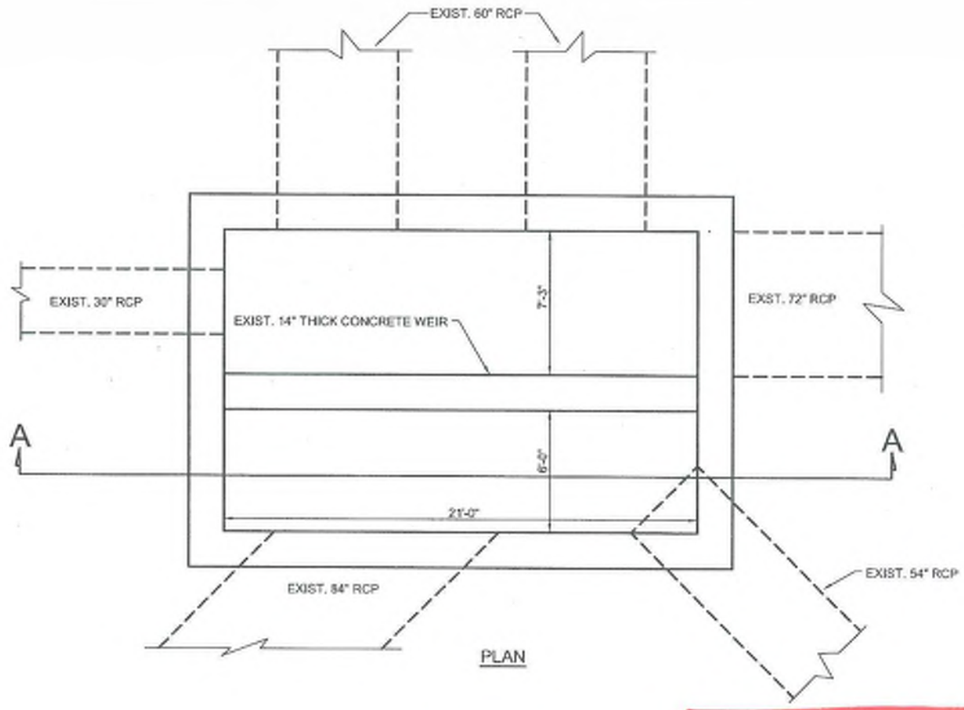
SHEET

D-001

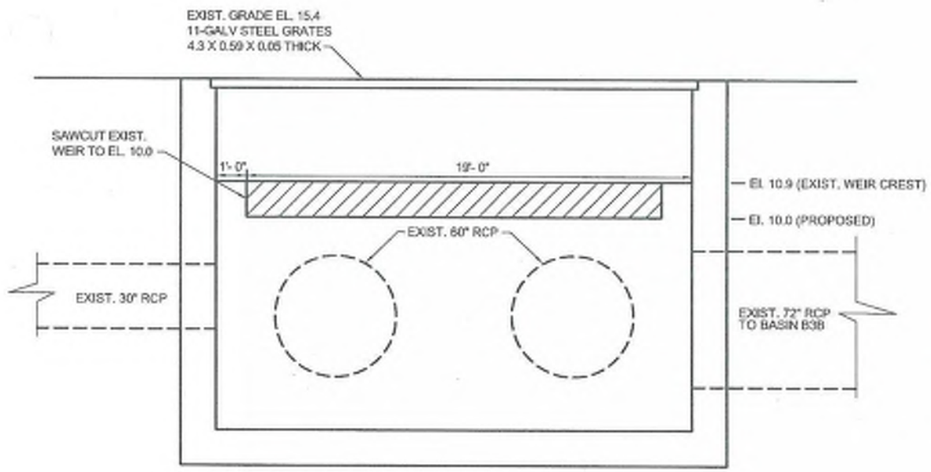
©CH2M HILL 2014. ALL RIGHTS RESERVED.
THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.
REUSE OF DOCUMENTS

ISSUED FOR PHASE 4 - BID DOCUMENTS

PLOT DATE: 9-Jan-15 PLOT TIME: 2:09:37 PM USER: MKAMMER2



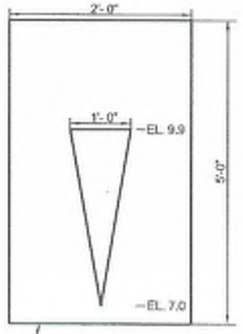
PLAN



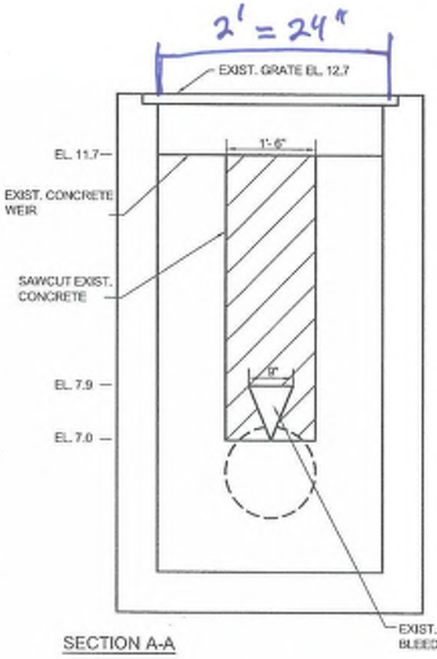
SECTION A-A

BASIN 3 CONTROL STRUCTURE 4A MODIFICATION

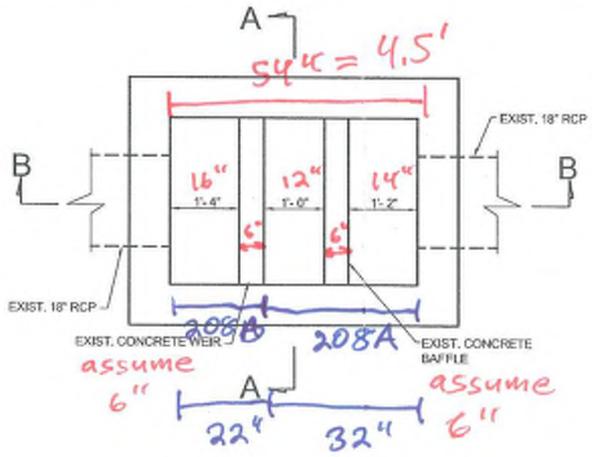
(NTS)



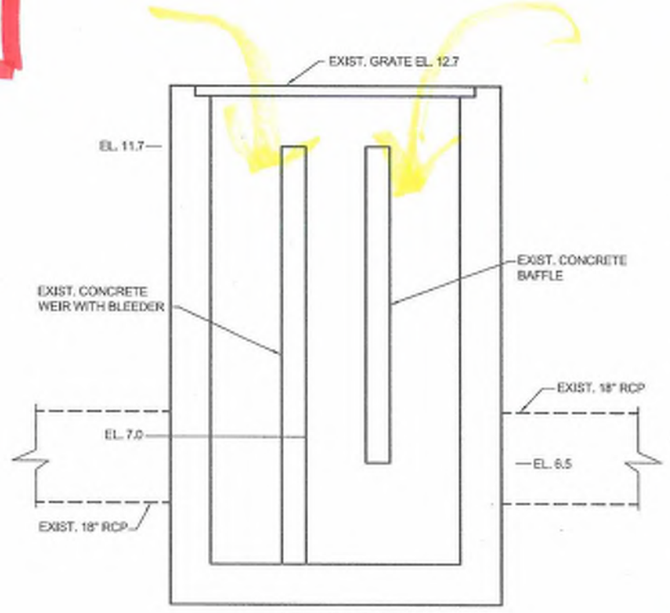
PROPOSED WEIR AND BLEEDER PLATE TO BE MOUNTED OVER SAWCUT. USE 1/4" ALUMINUM WITH NEOPRENE SPACERS BETWEEN PLATE AND CONCRETE. PROVIDE SHOP DRAWING.



SECTION A-A



PLAN



SECTION B-B

BASIN 3 CONTROL STRUCTURE 4B MODIFICATION

(NTS)

NOTES:

1. LOCATIONS OF BOTH CONTROL STRUCTURES ARE SHOWN ON SHEET D-001.
2. CONTRACTOR MAY PROPOSE ALTERNATE DESIGN APPROACH FOR CONTROL STRUCTURE 4B PROVIDED THAT STRUCTURE INCLUDES WEIR, BLEEDER AND BAFFLE SUBJECT TO ENGINEER APPROVAL.

PALM BEACH INTERNATIONAL AIRPORT

CH2MHILL
3001 PGA BLVD, Suite 300
Palm Beach Gardens, Florida 33410
Tel. 561-904-7400 EB 0000072
Fax 561-904-7401 AAC 001992

ADA
8550 N.W. 33rd Street
Suite 202
Doral, Florida 33122
Tel. 305-591-8935 Fax 305-591-8977
www.adaeng.net
EB # 00003212

Profesional of Record:
Jeffrey G.Hiscock
Florida P. E. No. 43984

NO.	REVISION	DATE

TAXIWAY D AND E REHABILITATION / RECONTRUCTION

DRAINAGE DETAILS 2

DATE: JANUARY 19, 2015
PROJECT: 424394.65
FILE: 65PB00_D-109.DWG
DESIGN BY: JH
DRAWN BY: MR
CHECKED BY: BW

SHEET

D-109

ISSUED FOR PHASE 4 - BID DOCUMENTS

©CH2MHILL 2004. ALL RIGHTS RESERVED.
THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF
REUSE OF DOCUMENTS

USER: MKABALAN PLOT DATE: 9-Jan-15 PLOT TIME: 1:43:59 PM

PALM BEACH INTERNATIONAL AIRPORT
PALM BEACH COUNTY, FLORIDA

TAXIWAY D & E REHABILITATION / RECONSTRUCTION

TASK: I-13-PBI-C-018, I-13-PBI-C-020, I-14-PBI-C-030, III-13-PBI-C-001-029

PBC PROJECT NO.: PB 15-5

PHASE 4 - BID DOCUMENTS

JANUARY 19, 2015

VICINITY MAP

LOCATION MAP

BOARD OF COUNTY COMMISSIONERS

SHELLY VANA, MAYOR	DISTRICT 3
MARY LOU BERGER, VICE MAYOR	DISTRICT 5
HAL R. VALECHE	DISTRICT 1
PAULETTE BURDICK	DISTRICT 2
STEVEN L. ABRAMS	DISTRICT 4
MELISSA MCKINLAY	DISTRICT 6
PRISCILLA A. TAYLOR	DISTRICT 7

COUNTY ADMINISTRATOR

ROBERT WEISMAN

DEPARTMENT OF AIRPORTS

BRUCE V. PELLY, DIRECTOR OF AIRPORTS
JERRY L. ALLEN, DEPUTY DIRECTOR OF AIRPORTS
GARY SYPEK, DIRECTOR OF PLANNING

DEPARTMENT OF AIRPORTS
PALM BEACH COUNTY

CH2MHILL.

3001 PGA Blvd., Suite 300
Palm Beach Gardens, Florida 33410
Tel. 561-904-7400 Fax 561-904-7401
EB 0000072 AA 0000656

IN ASSOCIATION WITH

1800 Old Okeechobee Rd.
Suite 202
West Palm Beach, FL 33409
Tel. 561-615-8880 • Fax 615-8858
www.cdaengineering.com
EB # 00003212

HILLERS ELECTRICAL ENGINEERING, INC.
23257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 451-9165
(561) 451-4886 FAX
LICENSE NO: EB 0006877

BROWN & PHILLIPS, INC.
TIERRA SOUTH FLORIDA, INC.
F.R. ALEMAN & ASSOCIATES, INC.

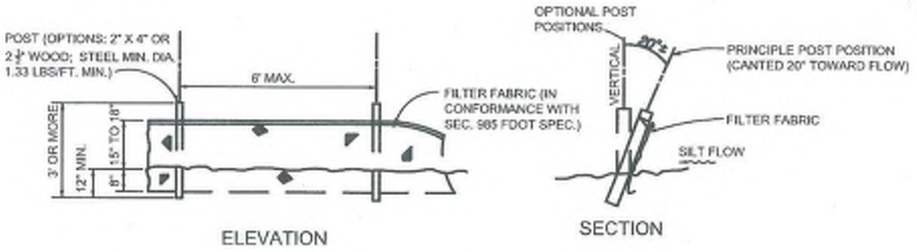
Professional of Record:
John Richard Thompson
Florida P.E. No. 70214

Professional of Record:
Jeffrey G. Hiscock
Florida P.E. No. 43984

Professional of Record:
James W. Kappes
Florida P.E. No. 71499

FILENAME: 63PB600GCS001.dwg PLOT DATE: 1/15/2015 PLOT TIME: 11:14:39 AM

SWPPP - DETAILS



SILT FENCE DETAIL
N.T.S.

TYPE III SILT FENCE

TYPE III SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS.

NOTES:

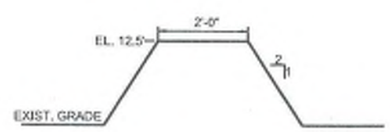
1. SPACING FOR TYPE III FENCE TO BE IN ACCORDANCE WITH CHART I, SHEET 1 OF 3 AND DITCH INSTALLATIONS AT DRAINAGE STRUCTURES SHEET 2 OF 3 PER 2010 FDOT DESIGN STANDARDS INDEX 102.
2. DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

SILT FENCE APPLICATIONS
N.T.S.

DEWATERING NOTES:

A DEWATERING PERMIT FROM THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT WILL BE PROVIDED TO THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL ANTICIPATE THE FOLLOWING REQUIREMENTS AND MUST BE IN COMPLIANCE OF THE GENERAL CONDITION OF THE PERMIT.

1. GROUNDWATER SHALL BE DIRECTED TO PORTIONS OF EXISTING LOW LYING AREAS BETWEEN TAXIWAYS.
2. CONTRACTOR SHALL CONSTRUCT TEMPORARY BERMS IN DESIGNATED LOCATIONS (SEE TYPICAL DETAIL) TO CREATE TEMPORARY IMPOUNDMENT AREAS. BERMS WILL TIE INTO EXISTING EMBANKMENTS. IT IS ESTIMATED THAT 1000 LINEAR FEET OF BERMS WILL BE NEEDED.
3. IT IS ANTICIPATED THAT DEWATERING WILL ONLY BE REQUIRED FOR THE 54" RCP CULVERTS AND ASSOCIATED INLETS AND MANHOLES AND WILL BE PERFORMED IN FOUR PHASES THAT UTILIZE TWO SEPARATE IMPOUNDMENT AREAS.
4. WATER DEPTHS IN THE IMPOUNDMENT AREAS SHALL NOT EXCEED TWO FEET. NO GROUNDWATER EFFLUENT SHALL BE ALLOWED TO DISCHARGE OFFSITE.
5. ANY EXISTING INLETS IN THE IMPOUNDMENT AREAS SHALL BE COVERED WITH MIRAFI 140N OR APPROVED EQUAL DURING DEWATERING ACTIVITIES.
6. IT IS ESTIMATED THAT EACH PHASE OF DEWATERING WILL REQUIRE A 1,000 GPM SUCTION PUMP.
7. DEWATERING SHALL BE INCIDENTAL TO CONSTRUCTION OF CULVERTS, INLETS AND MANHOLES.



TYPICAL TEMPORARY DEWATERING BERM
N.T.S.

STORM WATER POLLUTION PREVENTION PRACTICES:

1. THE STORM WATER POLLUTION PREVENTION PLAN, SWPPP, SHALL DESCRIBE IN DETAIL HOW THE CONSTRUCTION EFFORT WILL BE PHASED WITH REGARDS TO MINIMIZING EROSION PROBLEMS BY THE USE OF TEMPORARY AND PERMANENT EROSION CONTROL MEASURES, FOR THE VARIOUS SEQUENCES OF CONSTRUCTION OPERATIONS. ANY MODIFICATIONS MUST BE APPROVED BY THE EOR.
2. ENVIRONMENTAL CONTROL FEATURES AS PROVIDED IN THE SWPPP, ARE TO BE INSTALLED AT ALL AREAS OF EXCAVATION OR FILL FOR DRAINAGE SYSTEM, OR STRUCTURE CONSTRUCTION PRIOR TO SUCH EXCAVATION OR FILL. INLET ENTRANCES ARE ALSO TO BE PROTECTED FROM SILTATION.
3. ALL ENVIRONMENTAL CONTROL FEATURES ARE TO BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT IN ACCORDANCE WITH N.P.D.E.S. REQUIREMENTS. THE CONTRACTOR MUST INSURE THAT ALL EROSION CONTROL FEATURES FUNCTION PROPERLY AT ALL TIMES.
4. ALL EROSION AND MATERIAL DEPOSITS MUST BE CONTAINED WITHIN THE PROJECT LIMITS.
5. ANY DAMAGED OR INEFFECTIVE SILT FENCE IS TO BE REPLACED WITH NEW ONES. THE LOCATION OF SILT FENCE INSTALLATION IS AS MENTIONED IN THE SWPPP PLANS. THE PROJECT ENGINEER MAY SPECIFY OTHER AREAS AS NECESSARY.
6. DITCH BOTTOM INLETS SHALL BE PROTECTED FROM SEDIMENT INTAKE UNTIL PROJECT IS COMPLETE. ELEVATION OF GROUND OUTSIDE INLET TOP SHALL NOT BE HIGHER THAN INLET TOP. SILT FENCE SHALL BE INSTALLED AROUND INLET TOP. COMPLETED INLETS IN PAVED AREAS SHALL ALSO BE PROTECTED WITH FILTER SOCK FILTER XX SILT XX OR APPROVED EQUAL TO PREVENT SEDIMENT INTAKE.
7. STOCKPILED MATERIAL SHALL NOT BE LEFT IN EROSION PRONE AREAS UNLESS PROTECTED BY COVER OR SILT FENCE.
8. INSPECTION OF EROSION CONTROL MEASURES AND CONDITION OF ADJACENT PROPERTIES, SHALL BE PERFORMED DAILY BY THE CONTRACTOR'S REPRESENTATIVE AND THE PROJECT ENGINEER. DEFICIENCIES SHALL BE NOTED AND CORRECTED.
9. ANY OFFSITE SEDIMENT DISCHARGE TO A MUNICIPAL SEPARATE STORM WATER SYSTEM ARISING FROM THE CONTRACTOR'S ACTIVITIES IS NOT ALLOWED.
10. THE USE OF SANITARY SEWERS, FRENCH DRAINS, COVER DITCHES AND/OR ROCK DRAINS FOR THE DISPOSAL OF WASTEWATER IS EXPRESSLY PROHIBITED.
11. EXISTING UNDERDRAINS SHALL BE COVERED WITH MIRAFI 140 N OR APPROVED EQUAL DURING CONSTRUCTION.

NPDES - NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM.
BMP - Best Management Practice.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) CHECKLIST

A. SEQUENCE OF SOIL DISTURBING ACTIVITIES AND IMPLEMENTATION OF CONTROLS:

1. CLEARING & GRUBBING
2. INSTALL DRAINAGE STRUCTURES
3. STABILIZATION
4. BASE PREPARATION
5. ASPHALT APPLICATION
6. PLACEMENT OF SILT FENCE AROUND INLETS
7. PLACEMENT OF SILT FENCE AROUND MANHOLES
8. APPLICATION OF FRICTION COURSE A.C.
9. PAVEMENT MARKING
10. REMOVE SILT FENCE
11. CLEAN ALL CONSTRUCTION DEBRIS FROM CONSTRUCTION SITE

B. GENERAL

1. APPROVED STATE, LOCAL PLANS OR STORM WATER PERMITS.
2. ALL OF THE CONTROLS SHALL BE MAINTAINED AT ALL TIMES.
3. ALL CONTROLS SHALL BE INSPECTED DAILY.
4. APPLY FERTILIZERS AND PESTICIDES ACCORDING TO STANDARD SPECIFICATIONS, DESIGN AND SPECIAL PROVISIONS.
5. REPORT NON-STORM WATER DISCHARGE (INCLUDING SPILL)
6. VISIT www.dep.state.fl.us/water/stormwater/npdes/

PALM BEACH INTERNATIONAL AIRPORT

CH2MHILL
3301 PGA BLVD, Suite 300
Palm Beach Gardens, Florida 33410
Tel. 561-904-7400 EB 0000072
Fax 561-904-7401 AAC 001992

ADA
1800 Old Okeechobee Rd.
Suite 202
West Palm Beach, FL 33409
M 561-655-8880 - Fax 561-655-885
www.adaengineering.com
EB # 00003212

Profesional of Record:
Jeffrey G. Hiscock
Florida P. E. No. 43984

NO.	REVISION	DATE
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

TAXIWAY D AND E REHABILITATION / RECONTRUCTION

STORMWATER POLLUTION PREVENTION NOTES AND DETAILS

DATE: JANUARY 19, 2015
PROJECT: 424394.65
FILE: 65PBI00_D-002.DWG
DESIGN BY: JH
DRAWN BY: MR
CHECKED BY: BW

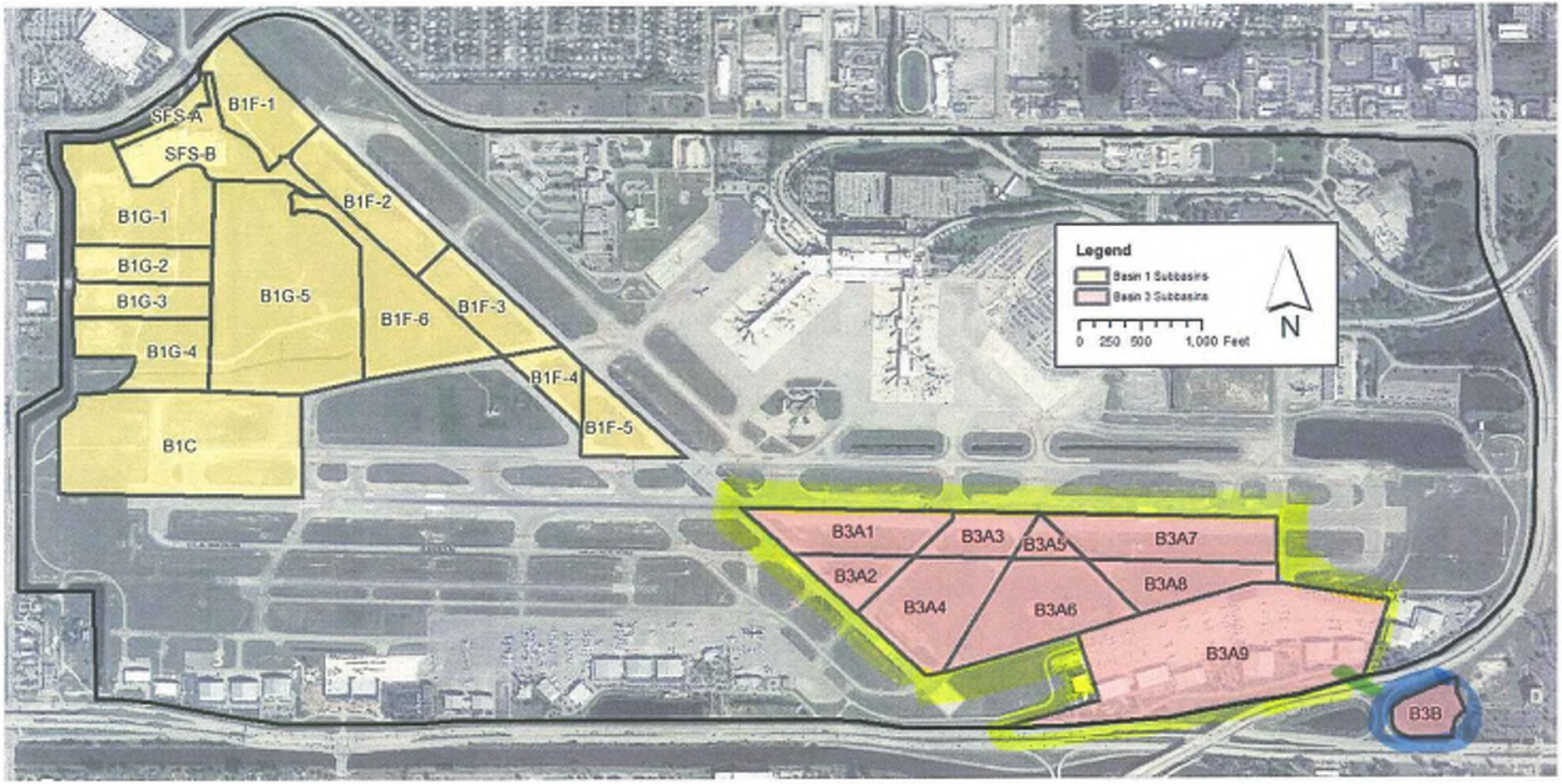
SHEET

D-002

©CH2MHILL 2004. ALL RIGHTS RESERVED.
THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2MHILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL.
REUSE OF DOCUMENTS

ISSUED FOR PHASE 4 - BID DOCUMENTS

USER: MMABALUK PLOT DATE: 15-Jan-15 PLOT TIME: 9:55:25 AM



BASIN 1 AND 3 ICPR SUBBASINS

APPENDIX A:
Palm Beach International Airport
ICPR Model Input Data

Note: Elevations in Feet, NGVD

Name: B1C		Node: B1C	Status: Onsite
Group: BASIN1		Type: SCS Unit Hydrog	CN
Unit Hydrograph:	Uh256	Peaking Factor:	256
Rainfall File:		Storm Duration(hrs):	0
Rainfall Amount(in):	0	Time of Conc(min):	35
Area(ac):	39.49	Time Shift(hrs):	0
Curve Number:	66	Max Allowable Q(cfs):	999999
DCIA(%):	0		

Name: B1D		Node: B1D	Status: Onsite
Group: BASIN1		Type: SCS Unit Hydrog	CN
Unit Hydrograph:	Uh256	Peaking Factor:	256
Rainfall File:		Storm Duration(hrs):	0
Rainfall Amount(in):	0	Time of Conc(min):	10
Area(ac):	5.22	Time Shift(hrs):	0
Curve Number:	60	Max Allowable Q(cfs):	999999
DCIA(%):	0		

Name: B1E		Node: B1E	Status: Onsite
Group: BASIN1		Type: SCS Unit Hydrog	CN
Unit Hydrograph:	Uh256	Peaking Factor:	256
Rainfall File:		Storm Duration(hrs):	0
Rainfall Amount(in):	0	Time of Conc(min):	10
Area(ac):	3.9	Time Shift(hrs):	0
Curve Number:	60	Max Allowable Q(cfs):	999999
DCIA(%):	0		

Name: B1F_1		Node: B1F_1	Status: Onsite
Group: BASIN1		Type: SCS Unit Hydrog	CN
Unit Hydrograph:	Uh256	Peaking Factor:	256
Rainfall File:		Storm Duration(hrs):	0
Rainfall Amount(in):	0	Time of Conc(min):	43.6
Area(ac):	12	Time Shift(hrs):	0
Curve Number:	57	Max Allowable Q(cfs):	999999
DCIA(%):	0		

```
---------- ---------- ---------- ----------
Name: B1F_2                 Node: B1F_2          Status: Onsite
Group: BASIN1               Type: SCS Unit Hydrog CN

Unit Hydrograph:    Uh256   Peaking Factor:          256
Rainfall File:              Storm Duration(hrs):      0
Rainfall Amount(in):      0 Time of Conc(min):     46.3
Area(ac):             13.34 Time Shift(hrs):          0
Curve Number:            69 Max Allowable Q(cfs): 999999
DCIA(%):                  0

---------- ---------- ---------- ----------
Name: B1F_3                 Node: B1F_3          Status: Onsite
Group: BASIN1               Type: SCS Unit Hydrog CN

Unit Hydrograph:    Uh256   Peaking Factor:          256
Rainfall File:              Storm Duration(hrs):      0
Rainfall Amount(in):      0 Time of Conc(min):     40
Area(ac):             10.18 Time Shift(hrs):          0
Curve Number:            70 Max Allowable Q(cfs): 999999
DCIA(%):                  0

---------- ---------- ---------- ----------
Name: B1F_4                 Node: B1F_4          Status: Onsite
Group: BASIN1               Type: SCS Unit Hydrog CN

Unit Hydrograph:    Uh256   Peaking Factor:          256
Rainfall File:              Storm Duration(hrs):      0
Rainfall Amount(in):      0 Time of Conc(min):     33.8
Area(ac):              5.13 Time Shift(hrs):          0
Curve Number:            74 Max Allowable Q(cfs): 999999
DCIA(%):                  0

---------- ---------- ---------- ----------
Name: B1F_5                 Node: B1F_5          Status: Onsite
Group: BASIN1               Type: SCS Unit Hydrog CN

Unit Hydrograph:    Uh256   Peaking Factor:          256
Rainfall File:              Storm Duration(hrs):      0
Rainfall Amount(in):      0 Time of Conc(min):     28.4
Area(ac):              7.67 Time Shift(hrs):          0
```

```
Curve Number:                76 Max Allowable Q(cfs):  999999
DCIA(%):                      0
```

```
Name: B1F_6                      Node: B1F_6          Status: Onsite
Group: BASIN1                    Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256       Peaking Factor:           256
Rainfall File:                   Storm Duration(hrs):        0
Rainfall Amount(in):          0  Time of Conc(min):       28.4
Area(ac):                 19.15  Time Shift(hrs):            0
Curve Number:                57  Max Allowable Q(cfs):  999999
DCIA(%):                      0
```

```
Name: B1G-1                      Node: B1G-1          Status: Onsite
Group: BASIN1                    Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256       Peaking Factor:           256
Rainfall File:                   Storm Duration(hrs):        0
Rainfall Amount(in):          0  Time of Conc(min):       42.9
Area(ac):                  18.7  Time Shift(hrs):            0
Curve Number:                57  Max Allowable Q(cfs):  999999
DCIA(%):                      0

Modified CN and TOC  Access Roa way
```

```
Name: B1G-2                      Node: B1G-2          Status: Onsite
Group: BASIN1                    Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256       Peaking Factor:           256
Rainfall File:                   Storm Duration(hrs):        0
Rainfall Amount(in):          0  Time of Conc(min):       38.8
Area(ac):                   7.9  Time Shift(hrs):            0
Curve Number:                59  Max Allowable Q(cfs):  999999
DCIA(%):                      0

Modified CN and TOC  Access Roa way
```

```
Name: B1G-3                      Node: B1G-3          Status: Onsite
Group: BASIN1                    Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256       Peaking Factor:           256
```

```
Rainfall File:                  Storm Duration(hrs):        0
Rainfall Amount(in):          0 Time of Conc(min):       38.8
Area(ac):                   7.8 Time Shift(hrs):          0
Curve Number:                57 Max Allowable Q(cfs):  999999
DCIA(%):                      0

Modified CN and TOC  Access Roa way

------------------------------ ------------------------------------------
Name: B1G-4                    Node: B1G-4           Status: Onsite
Group: BASIN1                  Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256     Peaking Factor:           256
Rainfall File:                 Storm Duration(hrs):        0
Rainfall Amount(in):          0 Time of Conc(min):         60
Area(ac):                 12.74 Time Shift(hrs):          0
Curve Number:                61 Max Allowable Q(cfs):  999999
DCIA(%):                      0




------------------------------ ------------------------------------------
Name: B1G-5                    Node: B1G-5           Status: Onsite
Group: BASIN1                  Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256     Peaking Factor:           256
Rainfall File:                 Storm Duration(hrs):        0
Rainfall Amount(in):          0 Time of Conc(min):       52.6
Area(ac):                 45.4 Time Shift(hrs):          0
Curve Number:                57 Max Allowable Q(cfs):  999999
DCIA(%):                      0




------------------------------ ------------------------------------------
Name: B3A1                     Node: B3A1            Status: Onsite
Group: BASIN3                  Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256     Peaking Factor:           256
Rainfall File:                 Storm Duration(hrs):        0
Rainfall Amount(in):          0 Time of Conc(min):         15
Area(ac):                 12.3 Time Shift(hrs):          0
Curve Number:                77 Max Allowable Q(cfs):  999999
DCIA(%):                      0




------------------------------ ------------------------------------------
Name: B3A2                     Node: B3A2            Status: Onsite
```

```
Group: BASIN3                    Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256       Peaking Factor:            256
Rainfall File:                   Storm Duration(hrs):         0
Rainfall Amount(in):           0 Time of Conc(min):          15
Area(ac):                    5.7 Time Shift(hrs):             0
Curve Number:                 80 Max Allowable Q(cfs):   999999
DCIA(%):                       0
```

```
Name: B3A3                       Node: B3A3            Status: Onsite
Group: BASIN3                    Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256       Peaking Factor:            256
Rainfall File:                   Storm Duration(hrs):         0
Rainfall Amount(in):           0 Time of Conc(min):          10
Area(ac):                    6.4 Time Shift(hrs):             0
Curve Number:                 76 Max Allowable Q(cfs):   999999
DCIA(%):                       0
```

```
Name: B3A4                       Node: B3A4            Status: Onsite
Group: BASIN3                    Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256       Peaking Factor:            256
Rainfall File:                   Storm Duration(hrs):         0
Rainfall Amount(in):           0 Time of Conc(min):          15
Area(ac):                   16.3 Time Shift(hrs):             0
Curve Number:                 64 Max Allowable Q(cfs):   999999
DCIA(%):                       0
```

```
Name: B3A5                       Node: B3A5            Status: Onsite
Group: BASIN3                    Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256       Peaking Factor:            256
Rainfall File:                   Storm Duration(hrs):         0
Rainfall Amount(in):           0 Time of Conc(min):          10
Area(ac):                    2.6 Time Shift(hrs):             0
Curve Number:                 75 Max Allowable Q(cfs):   999999
DCIA(%):                       0
```

Name: B3A6		Node: B3A6	Status: Onsite
Group: BASIN3		Type: SCS Unit Hydrog	CN
Unit Hydrograph:	Uh256	Peaking Factor:	256
Rainfall File:		Storm Duration(hrs):	0
Rainfall Amount(in):	0	Time of Conc(min):	15
Area(ac):	17.9	Time Shift(hrs):	0
Curve Number:	61	Max Allowable Q(cfs):	999999
DCIA(%):	0		

Name: B3A7		Node: B3A7	Status: Onsite
Group: BASIN3		Type: SCS Unit Hydrog	CN
Unit Hydrograph:	Uh256	Peaking Factor:	256
Rainfall File:		Storm Duration(hrs):	0
Rainfall Amount(in):	0	Time of Conc(min):	15
Area(ac):	15.5	Time Shift(hrs):	0
Curve Number:	72	Max Allowable Q(cfs):	999999
DCIA(%):	0		

Name: B3A8		Node: B3A8	Status: Onsite
Group: BASIN3		Type: SCS Unit Hydrog	CN
Unit Hydrograph:	Uh256	Peaking Factor:	256
Rainfall File:		Storm Duration(hrs):	0
Rainfall Amount(in):	0	Time of Conc(min):	12
Area(ac):	9.7	Time Shift(hrs):	0
Curve Number:	66	Max Allowable Q(cfs):	999999
DCIA(%):	94		

Name: B3A9		Node: B3A9	Status: Onsite
Group: BASIN3		Type: SCS Unit Hydrog	CN
Unit Hydrograph:	Uh256	Peaking Factor:	256
Rainfall File:		Storm Duration(hrs):	0
Rainfall Amount(in):	0	Time of Conc(min):	25
Area(ac):	49.2	Time Shift(hrs):	0
Curve Number:	73	Max Allowable Q(cfs):	999999

```
DCIA(%):                    0
```

```
Name: B3B                       Node: B3B            Status: Onsite
Group: BASIN3                   Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256      Peaking Factor:           256
Rainfall File:                  Storm Duration(hrs):        0
Rainfall Amount(in):          0 Time of Conc(min):         10
Area(ac):                  4.33 Time Shift(hrs):            0
Curve Number:                98 Max Allowable Q(cfs):  999999
DCIA(%):                     0
```

```
Name: B_86                      Node: N86            Status: Onsite
Group: BASIN1                   Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256      Peaking Factor:           256
Rainfall File:                  Storm Duration(hrs):        0
Rainfall Amount(in):          0 Time of Conc(min):         76
Area(ac):                  4.94 Time Shift(hrs):            0
Curve Number:                89 Max Allowable Q(cfs):  999999
DCIA(%):                     0
```

```
Name: B_87                      Node: N87            Status: Onsite
Group: BASIN1                   Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256      Peaking Factor:           256
Rainfall File:                  Storm Duration(hrs):        0
Rainfall Amount(in):          0 Time of Conc(min):         75
Area(ac):                 13.53 Time Shift(hrs):            0
Curve Number:                64 Max Allowable Q(cfs):  999999
DCIA(%):                     0
```

```
Name: SFS-A                     Node: SFS-A          Status: Onsite
Group: BASIN1                   Type: SCS Unit Hydrog CN

Unit Hydrograph:     Uh256      Peaking Factor:           256
Rainfall File:                  Storm Duration(hrs):        0
```

Rainfall Amount(in):	0	Time of Conc(min):	10
Area(ac):	2.44	Time Shift(hrs):	0
Curve Number:	63	Max Allowable Q(cfs):	999999
DCIA(%):	0		

Name: SFS-B Node: SFS-B Status: Onsite
Group: BASIN1 Type: SCS Unit Hydrog CN

Unit Hydrograph:	Uh256	Peaking Factor:	256
Rainfall File:		Storm Duration(hrs):	0
Rainfall Amount(in):	0	Time of Conc(min):	10
Area(ac):	12.93	Time Shift(hrs):	0
Curve Number:	85	Max Allowable Q(cfs):	999999
DCIA(%):	0		

Name: B1C Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 17.600
Type: Stage/Area

Stage(ft)	Area(ac)
0.000	0.0000
8.500	0.0020
9.000	0.0020
10.000	1.2600
10.500	1.3400
11.500	1.5100
12.000	1.8100
12.500	1.9100
13.500	2.1000
15.500	2.4800
17.500	2.8600
17.750	21.1210
18.000	27.7390
18.500	32.0280
19.000	37.3610
19.500	42.2430
20.000	43.0170
20.500	43.7910

Name: B1C_NORTH_MH Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 0.000
Type: Stage/Area

Stage(ft)	Area(ac)
6.500	0.0010
20.000	0.0020

Name: B1C_STRUC_N Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 18.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0120
20.000	0.0120

Name: B1C_STRUC_S Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 0.000
Type: Stage/Area

Stage(ft)	Area(ac)
1.500	0.0120
20.000	0.0120

Name: B1D Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 18.200
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
9.000	0.0010
10.000	0.0040
11.000	0.0140
12.000	0.0310
13.000	0.0580
14.000	0.0890
15.000	0.1200
16.000	0.1830
17.000	0.2910
18.000	0.4850
19.000	2.0630
20.000	4.8610
21.000	5.2000
22.000	5.2000

Name: B1E Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 18.200
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
9.000	0.0000
10.000	0.0020
11.000	0.0130
12.000	0.0380
13.000	0.0730
14.000	0.1230
15.000	0.1910
16.000	0.2640
17.000	0.3730
18.000	0.4990
19.000	1.0540
20.000	3.1820
21.000	3.6740
22.000	3.7050

Name: B1F_1 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 17.500
Type: Stage/Area

Stage(ft)	Area(ac)
8.000	0.0000
9.000	0.2200
10.000	0.2600
11.000	0.2900
12.000	0.3300
13.000	0.3700
14.000	0.4000
15.000	2.3500
16.000	6.2500
25.000	12.0000

Name: B1F_2 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 16.500
Type: Stage/Area

Stage(ft)	Area(ac)
8.000	0.0000
9.000	0.0400
10.000	0.0500
11.000	0.0600
12.000	0.0800
13.000	1.3900
14.000	1.7300
15.000	2.4000
16.000	6.8300
17.000	10.4800
18.000	12.5000
19.000	13.3400
20.000	13.3400
21.000	13.3400
22.000	13.3400
23.000	13.3400
24.000	13.3400
25.000	13.3400

Name: B1F_3 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 15.500
Type: Stage/Area

Stage(ft)	Area(ac)
8.000	0.0000
9.000	0.0500
10.000	0.0600
11.000	0.0800
12.000	0.0900
13.000	1.2200
14.000	2.0700
15.000	5.0700
16.000	8.1800
17.000	10.1800
18.000	10.1800
19.000	10.1800
20.000	10.1800
21.000	10.1800
22.000	10.1800
23.000	10.1800
24.000	10.1800
25.000	10.1800

Name: B1F_4 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 15.500
Type: Stage/Area

Stage(ft)	Area(ac)
8.000	0.0000
9.000	0.0000
10.000	0.0000
11.000	0.0000
12.000	0.0000
13.000	0.5300
14.000	0.6900
15.000	2.1700
16.000	4.2000
17.000	4.9700
18.000	4.9700
19.000	4.9700
20.000	4.9700
21.000	4.9700
22.000	4.9700
23.000	4.9700
24.000	4.9700
25.000	4.9700

Name: B1F_5 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 15.500
Type: Stage/Area

Stage(ft)	Area(ac)
8.000	0.0000
9.000	0.0000
10.000	0.0000
11.000	0.0000
12.000	0.0000
13.000	0.8200
14.000	1.0700
15.000	2.8700
16.000	5.8400
17.000	7.6700
18.000	7.6700
19.000	7.6700
20.000	7.6700
21.000	7.6700
22.000	7.6700
23.000	7.6700
24.000	7.6700
25.000	7.6700

Name: B1F_6 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 15.500
Type: Stage/Area

Stage(ft)	Area(ac)
8.000	0.0000
9.000	0.0000
10.000	0.0000
11.000	0.0000
12.500	2.4500
13.000	2.6600
14.000	4.0000
15.000	10.0100
16.000	13.6900
17.000	17.0100
18.000	18.0000
19.000	19.0000
25.000	19.1500

Name: B1G-1 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 18.000
Type: Stage/Area

Proportional division of stage storage from ALP basins B1A1, B1B1 and B1B2

Stage(ft)	Area(ac)
8.500	0.0000
9.520	0.0000
10.520	0.0050

11.520	0.0150
12.520	0.0550
13.520	0.1060
14.520	0.1650
15.520	0.2370
16.520	0.6080
17.520	2.4480
18.520	5.0220
19.520	7.3990
20.520	17.3220
21.520	18.0260
22.520	18.7300

Name: B1G-2 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
9.520	0.0000
10.520	0.0020
11.520	0.0060
12.520	0.0230
13.520	0.0450
14.520	0.0700
15.520	0.1000
16.520	0.2570
17.520	1.0350
18.520	2.1240
19.520	3.1290
20.520	7.3250
21.520	7.6220
22.520	7.9200

Name: B1G-3 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
9.520	0.0000
10.520	0.2640
11.520	0.4610
12.520	0.6670
13.520	0.9720
14.520	0.9850
15.520	1.3130
16.520	1.6410

17.520	1.9700
18.520	2.2980
19.520	2.6260
20.520	7.7140
21.520	7.7470
22.520	7.7800

□

Name: B1G-4 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 17.500
Type: Stage/Area

Proportional division of stage storage from ALP basins B1A1, B1B1 and B1B2

Stage(ft)	Area(ac)
8.500	0.0000
9.520	0.0000
10.520	0.5390
11.520	0.9430
12.520	1.3640
13.520	1.9890
14.520	2.0150
15.520	2.6870
16.520	3.3590
17.520	4.0300
18.520	4.7020
19.520	5.3740
20.520	15.7860
21.520	15.8530
22.520	15.9200

□

Name: B1G-5 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 0.000
Type: Stage/Area

Proportional division of stage storage from ALP basins B1A1, B1B1 and B1B2

Stage(ft)	Area(ac)
8.000	0.0000
9.000	0.0000
10.000	0.0000
11.000	0.0000
12.000	0.0000
12.520	2.2590
13.520	2.6060
14.520	2.9520
15.520	3.3030
16.520	3.6550
17.000	3.6550
18.000	25.0000
19.000	30.0000
20.000	35.0000
21.000	45.4000

Name: B1G-5_MH Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 18.000
Type: Stage/Area

FALSE MANHOLE TO CONNECT TWY F AND SFS B

Stage(ft)	Area(ac)
8.500	0.0100
15.000	0.0200
20.000	0.0300

Name: B3A1 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
10.500	0.0000
11.000	0.1000
11.500	0.9000
12.000	1.1000
12.500	1.3000
13.000	1.5000
13.500	1.8000
14.000	2.3000
14.500	3.7000
15.500	6.2000
16.500	8.9000
17.500	12.0000
18.500	12.3000
19.500	12.3000
20.500	12.3000
21.500	12.3000
22.500	12.3000

Name: B3A2 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
10.500	0.0000
11.000	0.0000
11.500	0.4000
12.000	0.5000

12.500	0.6000
13.000	0.7000
13.500	0.7000
14.000	0.9000
14.500	1.1000
15.500	2.4000
16.500	4.6000
17.500	5.7000
18.500	5.7000
19.500	5.7000
20.500	5.7000
21.500	5.7000
22.500	5.7000

Name: B3A3 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
10.500	0.0000
11.000	0.0000
11.500	0.0000
12.000	0.0000
12.500	0.0000
13.000	0.0000
13.500	0.0000
14.000	0.9000
14.500	1.5000
15.500	2.5000
16.500	4.9000
17.500	6.0000
18.500	6.4000
19.500	6.4000
20.500	6.4000
21.500	6.4000
22.500	6.4000

Name: B3A4 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
10.500	0.0000
11.000	1.1000
11.500	1.8000
12.000	2.4000

12.500	2.8000
13.000	3.2000
13.500	4.3000
14.000	5.7000
14.500	7.0000
15.500	10.4000
16.500	14.7000
17.500	16.3000
18.500	16.3000
19.500	16.3000
20.500	16.3000
21.500	16.3000
22.500	16.3000

Name: B3A5 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
10.500	0.0000
11.000	0.0000
11.500	0.0000
12.000	0.0000
12.500	0.0000
13.000	0.0000
13.500	0.0000
14.000	0.3000
14.500	0.5000
15.500	1.4000
16.500	2.4000
17.500	2.6000
18.500	2.6000
19.500	2.6000
20.500	2.6000
21.500	2.6000
22.500	2.6000

Name: B3A6 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
10.500	0.0000
11.000	0.4000
11.500	1.0000
12.000	1.4000

12.500	1.8000
13.000	2.3000
13.500	3.2000
14.000	4.2000
14.500	5.3000
15.500	8.3000
16.500	14.0000
17.500	17.4000
18.500	17.9000
19.500	17.9000
20.500	17.9000
21.500	17.9000
22.500	17.9000

Name: B3A7 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
10.500	0.0000
11.000	0.0000
11.500	0.0000
12.000	0.0000
12.500	0.0000
13.000	0.0000
13.500	0.0000
14.000	0.3000
14.500	1.8000
15.500	4.9000
16.500	8.6000
17.500	11.6000
18.500	13.4000
19.500	15.5000
20.500	15.5000
21.500	15.5000
22.500	15.5000

Name: B3A8 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
10.000	0.5000
10.500	1.4000
11.000	1.9000
11.500	2.2000

12.000	2.5000
12.500	2.7000
13.000	3.0000
13.500	3.7000
14.000	4.1000
14.500	5.5000
15.500	8.2000
16.500	9.7000
17.500	9.7000
18.500	9.7000
19.500	9.7000
20.500	9.7000
21.500	9.7000
22.500	9.7000

Name: B3A9 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.500	0.0000
10.500	0.0000
11.000	0.0000
12.000	0.0000
13.000	0.0000
14.500	0.1000
15.500	0.4000
16.500	3.4000
17.500	17.9000
18.500	43.3000
19.500	43.3000
20.500	43.3000
21.500	43.3000
22.500	43.3000

Name: B3B Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): 14.200
Type: Stage/Area

SBAI Wet Detention Basin B-4

Stage(ft)	Area(ac)
8.500	3.4500
9.000	3.5020
10.000	3.6360
11.000	3.7670
12.000	3.9000
13.000	4.0290
14.000	4.2600
15.000	4.3810

16.000	4.3830
17.000	4.3830
18.000	4.3830
19.000	4.3830
20.000	4.3830
21.000	4.3830
22.000	4.3830

Name: S-201B Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): ~~16.900~~ 15.32
Type: Stage/Area

Stage(ft)	Area(ac)

Name: S-205 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): ~~16.000~~ 14.42
Type: Stage/Area

Stage(ft)	Area(ac)

Name: S-208A Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): ~~14.200~~ 12.62
Type: Stage/Area

Stage(ft)	Area(ac)

Name: S-208B Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): ~~14.200~~ 12.62
Type: Stage/Area

Stage(ft)	Area(ac)

Name: S-211 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): ~~14.000~~ 12.42
Type: Stage/Area

Stage(ft)	Area(ac)

Name: S-213 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN3 Warn Stage(ft): 14.400
Type: Stage/Area

12.82

Stage(ft)	Area(ac)

Name: SFS-A Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 0.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.000	0.0000
9.000	0.0000
10.000	0.0000
11.000	0.0000
12.000	0.0000
13.000	0.0000
14.000	0.0000
15.020	0.0960
16.020	0.1266
17.020	0.1610
18.000	0.1610
19.000	0.1610
20.000	0.1610
21.000	0.1610
22.000	0.1610

Name: SFS-B Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 0.000
Type: Stage/Area

Stage(ft)	Area(ac)
8.000	0.0000
9.000	0.0000
10.000	0.0000
11.000	0.0000
12.000	0.0000
13.000	0.0000
13.520	0.3930
14.520	0.5760
15.520	0.7600
16.520	0.9460

17.000	0.9460
18.000	0.9460
19.000	0.9460
20.000	0.9460
21.000	0.9460

Name: TWYF_S10 Base Flow(cfs): 0.000 Init Stage(ft): 8.500
Group: BASIN1 Warn Stage(ft): 14.150
Type: Stage/Area

Stage(ft)	Area(ac)
0.000	0.0000
8.400	0.0000
8.500	0.0006
13.730	0.0006
20.000	0.0006

```
Name: B1C_PIPE_N          From Node:      B1C_STRUC_N       Length(ft)195
Group: BASIN1               To Node:      NC_E060   Count:              1
                                                    Friction Equation:  AverageConveyance
UPSTREAM       DOWNSTREAM                           Solution Algorithm: Automatic
Geometry: Circular       Circular                   Flow:               Both
Span(in): 48.00          48.00                      Entrance Loss Coef: 0.5
Rise(in): 48.00          48.00                      Exit Loss Coef:     1
Invert(ft): 8.500          8.500                    Bend Loss Coef:     0
Manning's N: 0.012000      0.012000                 Outlet Ctrl Spec:   Use dcortw
Top Clip(in): 0.000        0.000                    Inlet Ctrl Spec:    Use dn
Bot Clip(in): 0.000        0.000                    Stabilizer Option:  None


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

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

Proposed outfall pipe from north structure

-------------------------------------------------------------------------------------------
Name: B1C_PIPE_S          From Node:      B1C_STRUC_S       Length(ft)385
Group: BASIN1               To Node:      NC_E060   Count:              1
                                                    Friction Equation:  AverageConveyance
UPSTREAM       DOWNSTREAM                           Solution Algorithm: Automatic
Geometry: Circular       Circular                   Flow:               Both
Span(in): 54.00          54.00                      Entrance Loss Coef: 0.5
Rise(in): 54.00          54.00                      Exit Loss Coef:     1
Invert(ft): 2.650          1.150                    Bend Loss Coef:     0
Manning's N: 0.012000      0.012000                 Outlet Ctrl Spec:   Use dcortw
Top Clip(in): 0.000        0.000                    Inlet Ctrl Spec:    Use dn
Bot Clip(in): 0.000        0.000                    Stabilizer Option:  None


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

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

Proposed outfall pipe from south structure

-------------------------------------------------------------------------------------------
Name: B1G-1_B1G-5         From Node:      B1G-1     Length(ft):         50
Group: BASIN1               To Node:      B1G-5     Count:              1
                                                    Friction Equation:  Automatic
UPSTREAM       DOWNSTREAM                           Solution Algorithm: Most Restrictive
Geometry: Circular       Circular                   Flow:               Both
Span(in): 48.00          48.00                      Entrance Loss Coef: 0.5
Rise(in): 48.00          48.00                      Exit Loss Coef:     0.5
Invert(ft): 8.500          8.500                    Bend Loss Coef:     0
Manning's N: 0.012000      0.012000                 Outlet Ctrl Spec:   Use dcortw
Top Clip(in): 0.000        0.000                    Inlet Ctrl Spec:    Use dc
```

```
Bot Clip(in): 0.000          0.000                  Stabilizer Option:  None


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

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


-------------------------------------------------------------------------------
Name: B1G-2_B1G-5          From Node:      B1G-2     Length(ft):          500
Group: BASIN1                 To Node:     B1G-5     Count:               1
                                                     Friction Equation:   Automatic
UPSTREAM       DOWNSTREAM                            Solution Algorithm:  Most Restrictive
Geometry: Circular       Circular                    Flow:                Both
Span(in): 48.00          48.00                       Entrance Loss Coef:  0.5
Rise(in): 48.00          48.00                       Exit Loss Coef:      0.5
Invert(ft): 8.500          8.500                     Bend Loss Coef:      0
Manning's N: 0.012000       0.012000                 Outlet Ctrl Spec:    Use dcortw
Top Clip(in): 0.000          0.000                   Inlet Ctrl Spec:     Use dc
Bot Clip(in): 0.000          0.000                   Stabilizer Option:   None


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

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


-------------------------------------------------------------------------------
Name: B1G-3_B1G-2          From Node:      B1G-3     Length(ft):          55
Group: BASIN1                 To Node:     B1G-2     Count:               1
                                                     Friction Equation:   Automatic
UPSTREAM       DOWNSTREAM                            Solution Algorithm:  Most Restrictive
Geometry: Circular       Circular                    Flow:                Both
Span(in): 18.00          18.00                       Entrance Loss Coef:  0.5
Rise(in): 18.00          18.00                       Exit Loss Coef:      0.5
Invert(ft): 10.000         10.000                    Bend Loss Coef:      0
Manning's N: 0.012000       0.012000                 Outlet Ctrl Spec:    Use dcortw
Top Clip(in): 0.000          0.000                   Inlet Ctrl Spec:     Use dc
Bot Clip(in): 0.000          0.000                   Stabilizer Option:   None


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

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

Name: B1G-5_OUT1	From Node:	B1G-5	Length(ft):	64
Group: BASIN1	To Node:	B1G-5_MH	Count:	2
			Friction Equation:	Automatic
UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry: Circular	Circular		Flow:	Both
Span(in): 42.00	42.00		Entrance Loss Coef:	0
Rise(in): 42.00	42.00		Exit Loss Coef:	1
Invert(ft): 10.000	10.000		Bend Loss Coef:	0
Manning's N: 0.012000	0.012000		Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in): 0.000	0.000		Stabilizer Option:	None

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

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

Name: B1G-S_B1C_54	From Node:	B1G-4	Length(ft):	600
Group: BASIN1	To Node:	B1C_NORTH_MH	Count	1
			Friction Equation:	AverageConveyance
UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry: Circular	Circular		Flow:	Both
Span(in): 54.00	54.00		Entrance Loss Coef:	0.5
Rise(in): 54.00	54.00		Exit Loss Coef:	0.5
Invert(ft): 10.000	10.000		Bend Loss Coef:	0
Manning's N: 0.012000	0.012000		Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000	0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in): 0.000	0.000		Stabilizer Option:	None

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

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

Connection to Ditch

Name: B1G_B1C	From Node:	B1C_NORTH_MH	Length(ft)	286
Group: BASIN1	To Node:	B1C	Count:	1
			Friction Equation:	Automatic
UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry: Rectangular	Rectangular		Flow:	Both
Span(in): 72.00	72.00		Entrance Loss Coef:	0.5
Rise(in): 48.00	48.00		Exit Loss Coef:	1

Invert(ft):	10.000	10.000	
Manning's N:	0.012000	0.012000	
Top Clip(in):	0.000	0.000	
Bot Clip(in):	0.000	0.000	

Bend Loss Coef:	0
Outlet Ctrl Spec:	Use dcortw
Inlet Ctrl Spec:	Use dc
Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

Name: B3A | From Node: S-201B | Length(ft): 445
Group: BASIN3 | To Node: C51W | Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	84.00	84.00
Rise(in):	84.00	84.00
Invert(ft):	~~1.000~~ -0.58	~~1.000~~ -0.58
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Friction Equation:	AverageConveyance
Solution Algorithm:	Automatic
Flow:	Both
Entrance Loss Coef:	0.5
Exit Loss Coef:	1
Bend Loss Coef:	0
Outlet Ctrl Spec:	Use dcortw
Inlet Ctrl Spec:	Use dn
Stabilizer Option:	None

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

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

BASIN 3 Outfall.
Length, size, and inverts obtained from the I ntersectio n at Southern Bouleva rd (SR 80)and Souther

---

Name: B3A_1 | From Node: B3A9 | Length(ft): 1320
Group: BASIN3 | To Node: S-205 | Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	72.00	72.00
Rise(in):	72.00	72.00
Invert(ft):	~~1.400~~ -0.18	~~1.020~~ -0.56
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Friction Equation:	AverageConveyance
Solution Algorithm:	Automatic
Flow:	Both
Entrance Loss Coef:	0.5
Exit Loss Coef:	0
Bend Loss Coef:	0
Outlet Ctrl Spec:	Use dcortw
Inlet Ctrl Spec:	Use dn
Stabilizer Option:	None

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

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

Name: B3A_2	From Node: S-205	Length(ft):	537
Group: BASIN3	To Node: B3B	Count:	1
		Friction Equation:	AverageConveyance
UPSTREAM DOWNSTREAM		Solution Algorithm:	Automatic
Geometry: Circular Circular		Flow:	Both
Span(in): 72.00 72.00		Entrance Loss Coef:	0.5
Rise(in): 72.00 72.00		Exit Loss Coef:	0
Invert(ft): ~~1.000~~ -0.58 ~~0.860~~ -0.72		Bend Loss Coef:	0
Manning's N: 0.012000 0.012000		Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000 0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in): 0.000 0.000		Stabilizer Option:	None

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

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

Length, size, and inverts obtained from the I ntersectio n at Southern Bouleva rd (SR 80)and Souther

---

Name: B3B_1	From Node: B3B	Length(ft):	54.5
Group: BASIN3	To Node: S-208A	Count:	1
		Friction Equation:	AverageConveyance
UPSTREAM DOWNSTREAM		Solution Algorithm:	Automatic
Geometry: Circular Circular		Flow:	Both
Span(in): 18.00 18.00		Entrance Loss Coef:	0.5
Rise(in): 18.00 18.00		Exit Loss Coef:	0
Invert(ft): ~~7.500~~ 5.92 ~~7.360~~ 5.76		Bend Loss Coef:	0
Manning's N: 0.012000 0.012000		Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000 0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in): 0.000 0.000		Stabilizer Option:	None

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

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

Length, size, and inverts obtained from the I ntersectio n at Southern Bouleva rd (SR 80)and Souther

---

Name: B3B_2	From Node: S-208B	Length(ft):	584 → 483
Group: BASIN3	To Node: S-211	Count:	1
		Friction Equation:	AverageConveyance
UPSTREAM DOWNSTREAM		Solution Algorithm:	Automatic
Geometry: Circular Circular		Flow:	Both

Span(in): 18.00	18.00	Entrance Loss Coef:	0.5
Rise(in): 18.00	18.00	Exit Loss Coef:	0
Invert(ft): 7.360 5.78	6.160 4.58	Bend Loss Coef:	0
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in): 0.000	0.000	Stabilizer Option:	None

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

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

Length, size, and inverts obtained from th ntersecti n at Southern Boule rd (SR 80) and South

---

Name: B3B_3	From Node: S-211	Length(ft):	880
Group: BASIN3	To Node: S-213	Count:	1
		Friction Equation:	AverageConveyance
UPSTREAM DOWNSTREAM		Solution Algorithm:	Automatic
Geometry: Circular	Circular	Flow:	Both
Span(in): 54.00	54.00	Entrance Loss Coef:	0.5
Rise(in): 54.00 2.22	54.00	Exit Loss Coef:	0
Invert(ft): 3.800	3.350 1.77	Bend Loss Coef:	0
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in): 0.000	0.000	Stabilizer Option:	None

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

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

Length, size, and inverts obtained from th ntersecti n at Southern Boule rd (SR 80) and South

---

Name: B3B_4	From Node: S-213	Length(ft):	255
Group: BASIN3	To Node: S-201B	Count:	1
		Friction Equation:	AverageConveyance
UPSTREAM DOWNSTREAM		Solution Algorithm:	Automatic
Geometry: Circular	Circular	Flow:	Both
Span(in): 54.00	54.00	Entrance Loss Coef:	0.5
Rise(in): 54.00	54.00	Exit Loss Coef:	0
Invert(ft): 3.350 1.77	1.600 0.02	Bend Loss Coef:	0
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in): 0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

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

Length, size, and inverts obtained from thntersectiin at Southern Boulevrd (SR 80)and South

---

Name: P3A1	From Node:	B3A1	Length(ft):	305
Group: BASIN3	To Node:	B3A2	Count:	1
			Friction Equation:	Automatic
UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry: Circular	Circular		Flow:	Both
Span(in): 48.00	48.00		Entrance Loss Coef:	0.5
Rise(in): 48.00	48.00		Exit Loss Coef:	0.5
Invert(ft): 5.400	4.700		Bend Loss Coef:	0
Manning's N: 0.012000	0.012000		Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in): 0.000	0.000		Stabilizer Option:	None

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

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

From LPA Group's Taxiway "L" Extension drags DOA Project No. 11-4, March 2011, Adjusted to N

Name: P3A2	From Node:	B3A2	Length(ft):	804
Group: BASIN3	To Node:	B3A4	Count:	1
			Friction Equation:	Automatic
UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry: Circular	Circular		Flow:	Both
Span(in): 54.00	54.00		Entrance Loss Coef:	0.5
Rise(in): 54.00	54.00		Exit Loss Coef:	0.5
Invert(ft): 4.200	4.200		Bend Loss Coef:	0
Manning's N: 0.012000	0.012000		Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in): 0.000	0.000		Stabilizer Option:	None

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

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

From LPA Group's Taxiway "L" Extension drags DOA Project No. 11-4, March 2011, Adjusted to N

Name: P3A3	From Node:	B3A3	Length(ft):	317
Group: BASIN3	To Node:	B3A4	Count:	1

UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular
Span(in): 36.00	36.00
Rise(in): 36.00	36.00
Invert(ft): 6.100	5.500
Manning's N: 0.012000	0.012000
Top Clip(in): 0.000	0.000
Bot Clip(in): 0.000	0.000

Friction Equation:	Automatic
Solution Algorithm:	Most Restrictive
Flow:	Both
Entrance Loss Coef:	0.5
Exit Loss Coef:	0.5
Bend Loss Coef:	0
Outlet Ctrl Spec:	Use dcortw
Inlet Ctrl Spec:	Use dc
Stabilizer Option:	None

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

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

From LPA Group's Taxiway "L" Extension drags DOA Project No. 11-4, March 2011, Adjusted to N

Name: P3A4	From Node:	B3A4	Length(ft):	400
Group: BASIN3	To Node:	B3A6	Count:	1

UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular
Span(in): 54.00	54.00
Rise(in): 54.00	54.00
Invert(ft): 4.200	3.800
Manning's N: 0.012000	0.012000
Top Clip(in): 0.000	0.000
Bot Clip(in): 0.000	0.000

Friction Equation:	Automatic
Solution Algorithm:	Most Restrictive
Flow:	Both
Entrance Loss Coef:	0.5
Exit Loss Coef:	0.5
Bend Loss Coef:	0
Outlet Ctrl Spec:	Use dcortw
Inlet Ctrl Spec:	Use dc
Stabilizer Option:	None

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

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

New Pipe

Name: P3A5	From Node:	B3A5	Length(ft):	339
Group: BASIN3	To Node:	B3A6	Count:	1

UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular
Span(in): 36.00	36.00
Rise(in): 36.00	36.00
Invert(ft): 8.500	7.800
Manning's N: 0.012000	0.012000
Top Clip(in): 0.000	0.000
Bot Clip(in): 0.000	0.000

Friction Equation:	Automatic
Solution Algorithm:	Most Restrictive
Flow:	Both
Entrance Loss Coef:	0.5
Exit Loss Coef:	0.5
Bend Loss Coef:	0
Outlet Ctrl Spec:	Use dcortw
Inlet Ctrl Spec:	Use dc
Stabilizer Option:	None

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

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

From LPA Group's Taxiway "L" Extension drags DOA Project No. 11-4, March 2011, Adjusted to N

Name: P3A6		From Node:	B3A6	Length(ft): 240
Group: BASIN3		To Node:	B3A8	Count: 1
				Friction Equation: Automatic
UPSTREAM	DOWNSTREAM			Solution Algorithm: Most Restrictive
Geometry: Circular	Circular			Flow: Both
Span(in): 54.00	54.00			Entrance Loss Coef: 0.5
Rise(in): 54.00	54.00			Exit Loss Coef: 0.5
Invert(ft): 3.500	2.500			Bend Loss Coef: 0
Manning's N: 0.012000	0.012000			Outlet Ctrl Spec: Use dcortw
Top Clip(in): 0.000	0.000			Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000			Stabilizer Option: None

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

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

Name: P3A7		From Node:	B3A7	Length(ft): 200
Group: BASIN3		To Node:	B3A8	Count: 1
				Friction Equation: Automatic
UPSTREAM	DOWNSTREAM			Solution Algorithm: Most Restrictive
Geometry: Circular	Circular			Flow: Both
Span(in): 60.00	60.00			Entrance Loss Coef: 0.5
Rise(in): 60.00	60.00			Exit Loss Coef: 0.5
Invert(ft): 3.500	3.100			Bend Loss Coef: 0
Manning's N: 0.012000	0.012000			Outlet Ctrl Spec: Use dcortw
Top Clip(in): 0.000	0.000			Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000			Stabilizer Option: None

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

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

From LPA Group's Taxiway "L" Extension drags DOA Project No. 11-4, March 2011, Adjusted to N

Name: P3A8	From Node:	B3A8	Length(ft):	365
Group: BASIN3	To Node:	B3A9	Count:	1
			Friction Equation:	Automatic
UPSTREAM	DOWNSTREAM		Solution Algorithm:	Most Restrictive
Geometry: Circular	Circular		Flow:	Both
Span(in): 66.00	66.00		Entrance Loss Coef:	0.5
Rise(in): 66.00	66.00		Exit Loss Coef:	0.5
Invert(ft): 2.500	1.500		Bend Loss Coef:	0
Manning's N: 0.012000	0.012000		Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000	0.000		Inlet Ctrl Spec:	Use dc
Bot Clip(in): 0.000	0.000		Stabilizer Option:	None

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

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

Name: TWYF_OUTFALL+B	From Node:	TWYF_S10	Length(ft):	170
Group: BASIN1	To Node:	B1G-5_MH	Count:	2
			Friction Equation:	AverageConveyance
UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry: Circular	Circular		Flow:	Both
Span(in): 24.00	24.00		Entrance Loss Coef:	0.5
Rise(in): 24.00	24.00		Exit Loss Coef:	1
Invert(ft): 10.690	9.670		Bend Loss Coef:	0
Manning's N: 0.012000	0.012000		Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000	0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in): 0.000	0.000		Stabilizer Option:	None

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

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

As-built 24" pipes under access road conneng Twy F outfall with Basin B1

Name: TWYF_S1S2	From Node:	B1F_1	Length(ft):	352
Group: BASIN1	To Node:	B1F_2	Count:	1
			Friction Equation:	AverageConveyance
UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry: Circular	Circular		Flow:	Both
Span(in): 24.00	24.00		Entrance Loss Coef:	0.5
Rise(in): 24.00	24.00		Exit Loss Coef:	1
Invert(ft): 9.500	9.500		Bend Loss Coef:	0
Manning's N: 0.012000	0.012000		Outlet Ctrl Spec:	Use dcortw

Top Clip(in): 0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in): 0.000	0.000	Stabilizer Option:	None

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

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

Name: TWYF_S3S4		From Node:	B1F_2	Length(ft):	260
Group: BASIN1		To Node:	B1F_3	Count:	1
				Friction Equation:	AverageConveyance
UPSTREAM	DOWNSTREAM			Solution Algorithm:	Automatic
Geometry: Circular	Circular			Flow:	Both
Span(in): 36.00	36.00			Entrance Loss Coef:	0.5
Rise(in): 36.00	36.00			Exit Loss Coef:	1
Invert(ft): 7.500	7.500			Bend Loss Coef:	0
Manning's N: 0.012000	0.012000			Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000	0.000			Inlet Ctrl Spec:	Use dn
Bot Clip(in): 0.000	0.000			Stabilizer Option:	None

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

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

Name: TWYF_S6S5		From Node:	B1F_3	Length(ft):	360
Group: BASIN1		To Node:	B1F_6	Count:	1
				Friction Equation:	AverageConveyance
UPSTREAM	DOWNSTREAM			Solution Algorithm:	Automatic
Geometry: Circular	Circular			Flow:	Both
Span(in): 60.00	60.00			Entrance Loss Coef:	0.5
Rise(in): 60.00	60.00			Exit Loss Coef:	1
Invert(ft): 3.500	3.500			Bend Loss Coef:	0
Manning's N: 0.012000	0.012000			Outlet Ctrl Spec:	Use dcortw
Top Clip(in): 0.000	0.000			Inlet Ctrl Spec:	Use dn
Bot Clip(in): 0.000	0.000			Stabilizer Option:	None

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

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

```
------------------------------------------------------------------------------------------
Name: TWYF_S7S6          From Node:      B1F_4     Length(ft):          500
Group: BASIN1              To Node:      B1F_3     Count:               1
                                                   Friction Equation:   AverageConveyance
UPSTREAM       DOWNSTREAM                          Solution Algorithm:  Automatic
Geometry: Circular       Circular                  Flow:                Both
Span(in): 60.00          60.00                     Entrance Loss Coef:  0.5
Rise(in): 60.00          60.00                     Exit Loss Coef:      1
Invert(ft): 3.500          3.500                   Bend Loss Coef:      0
Manning's N: 0.012000      0.012000                Outlet Ctrl Spec:    Use dcortw
Top Clip(in): 0.000        0.000                   Inlet Ctrl Spec:     Use dn
Bot Clip(in): 0.000        0.000                   Stabilizer Option:   None


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

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


------------------------------------------------------------------------------------------
Name: TWYF_S9S7          From Node:      B1F_5     Length(ft):          790
Group: BASIN1              To Node:      B1F_4     Count:               1
                                                   Friction Equation:   AverageConveyance
UPSTREAM       DOWNSTREAM                          Solution Algorithm:  Automatic
Geometry: Circular       Circular                  Flow:                Both
Span(in): 60.00          60.00                     Entrance Loss Coef:  0.5
Rise(in): 60.00          60.00                     Exit Loss Coef:      1
Invert(ft): 3.500          3.500                   Bend Loss Coef:      0
Manning's N: 0.012000      0.012000                Outlet Ctrl Spec:    Use dcortw
Top Clip(in): 0.000        0.000                   Inlet Ctrl Spec:     Use dn
Bot Clip(in): 0.000        0.000                   Stabilizer Option:   None


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

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

```
1C_VNOTCH_S          From Node: B1C
ASIN1                  To Node: B1C_STRUC_S
oth                      Count: 1
ertical: Mavis        Geometry: Trapezoidal

          Bottom Width(ft): 0.00
      Left Side Slope(h/v): 0.36
     Right Side Slope(h/v): 0.36
                Invert(ft): 8.500
    Control Elevation(ft): 8.500
   Struct Opening Dim(ft): 1.50
                                      TABLE
     Bottom Clip(ft): 0.000
        Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
.fice Discharge Coef: 0.600

Vnotch for outfall structure

-------------------------------------------------------------------
1C_W_N               From Node: B1C
ASIN1                  To Node: B1C_STRUC_N
oth                      Count: 1
ertical: Mavis        Geometry: Rectangular

                  Span(in): 144.00
                  Rise(in): 33.60
                Invert(ft): 13.100
    Control Elevation(ft): 13.100
                                      TABLE
     Bottom Clip(in): 0.000
        Top Clip(in): 0.000
Weir Discharge Coef: 3.200
.fice Discharge Coef: 0.600

outh Outfall Weir from Basin 1

-------------------------------------------------------------------
1C_W_S               From Node: B1C
ASIN1                  To Node: B1C_STRUC_S
oth                      Count: 1
ertical: Mavis        Geometry: Rectangular

                  Span(in): 144.00
                  Rise(in): 33.60
                Invert(ft): 13.100
    Control Elevation(ft): 13.100
                                      TABLE
     Bottom Clip(in): 0.000
        Top Clip(in): 0.000
Weir Discharge Coef: 3.200
.fice Discharge Coef: 0.600

outh Outfall weir from Basin 1

-------------------------------------------------------------------
```

```
WYF_OPEN            From Node: B1F_6
ASIN1                 To Node: TWYF_S10
oth                     Count: 1
ertical: Mavis       Geometry: Rectangular

                  Span(in): 72.00
                  Rise(in): 24.00
                Invert(ft): 11.000
    Control Elevation(ft): 11.000
                                      TABLE
     Bottom Clip(in): 0.000
        Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
.fice Discharge Coef: 0.600


-----------------------------------------------------------------
WYF_OUTFALL+A       From Node: B1F_6
ASIN1                 To Node: TWYF_S10
oth                     Count: 1
orizontal            Geometry: Rectangular

                  Span(in): 104.00
                  Rise(in): 40.00
                Invert(ft): 13.500
    Control Elevation(ft): 13.500
                                      TABLE
     Bottom Clip(in): 0.000
        Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
.fice Discharge Coef: 0.600


-----------------------------------------------------------------
EIR-4A              From Node: B3A9
ASIN3                 To Node: S-201B
oth                     Count: 1
ertical: Mavis       Geometry: Rectangular

                  Span(in): 228.00
                  Rise(in): 52.00
                Invert(ft): 11.500   9.92
    Control Elevation(ft): 11.500
                                      TABLE
     Bottom Clip(in): 0.000
        Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
.fice Discharge Coef: 0.600

Weir size and invert obtained from the Intersection at Southern
Boulevard (SR 80) and Southern Boulevard project, February 2001.
SFWMD Permit Mod. No. 50-04106-P; App. No. 001012-5.

-----------------------------------------------------------------
```

EIR-4B-1 From Node: S-208A
ASIN3 To Node: S-208B
oth Count: 1
ertical: Mavis Geometry: Irregular

XSec: X-WEIR-4B
Invert(ft): 8.500
Control Elevation(ft): 8.500
Struct Opening Dim(ft): 2.90
TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
.fice Discharge Coef: 0.600

Weir size and invert obtained from the Intersection at Southern Boulevard (SR 80) and Southern Boulevard project, February 2001. SFMWD Permit Mod. No. 50-04106-P; App. No. 001012-5.

V-notch
1.0'
0.5'
9.82
6.92
6.92
Slope = H/V = 0.5 / 2.90 = 0.172

EIR-4B-2 From Node: S-208A
ASIN3 To Node: S-208B
oth Count: 1
ertical: Mavis Geometry: Rectangular

Span(in): 36.00
Rise(in): 9999.00
Invert(ft): 14.200
Control Elevation(ft): 14.200
TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
.fice Discharge Coef: 0.600

Weir size and invert obtained from the Intersection at Southern Boulevard (SR 80) and Southern Boulevard project, February 2001. SFMWD Permit Mod. No. 50-04106-P; App. No. 001012-5.

14.2 ≈ 12.62 = Rim
12
Rise = 12.7 - 11.7 = 1.00'
= 12"
Plans show 11.7
* Plans are in NAVD

```
        Name: B1D                From Node: B1D              Length(ft): 64.00
       Group: BASIN1               To Node: NC_E065             Count: 1

              UPSTREAM       DOWNSTREAM              Friction Equation: Average Conveyance
    Geometry: Circular       Circular           Solution Algorithm: Automatic
    Span(in): 18.00          18.00                        Flow: Both
    Rise(in): 18.00          18.00              Entrance Loss Coef: 0.500
  Invert(ft): 13.800         13.300                 Exit Loss Coef: 1.000
 Manning's N: 0.012000       0.012000             Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                 Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000          0.000

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

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

Pipe sizes and inverts from road reconstruction plans and Boeing
Extension, February 2002.  SFWMD Permit Mod. No. 50-00471-S; App. No.
011023-3.
*** Weir 1 of 2 for Drop Structure B1D ***
                                                                        TABLE
                 Count: 1                    Bottom Clip(in): 0.000
                  Type: Vertical: Mavis        Top Clip(in): 0.000
                  Flow: Both                 Weir Disc Coef: 3.200
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 36.00                     Invert(ft): 16.500
              Rise(in): 10.00                  Control Elev(ft): 16.500

*** Weir 2 of 2 for Drop Structure B1D ***
                                                                        TABLE
                 Count: 1                    Bottom Clip(in): 0.000
                  Type: Vertical: Mavis        Top Clip(in): 0.000
                  Flow: Both                 Weir Disc Coef: 3.200
              Geometry: Circular             Orifice Disc Coef: 0.600

              Span(in): 3.00                      Invert(ft): 16.000
              Rise(in): 3.00                   Control Elev(ft): 16.000


--------------------------------------------------------------------------------

        Name: B1E                From Node: B1E              Length(ft): 33.00
       Group: BASIN1               To Node: NC_E075             Count: 1

              UPSTREAM       DOWNSTREAM              Friction Equation: Average Conveyance
    Geometry: Circular       Circular           Solution Algorithm: Automatic
    Span(in): 18.00          18.00                        Flow: Both
    Rise(in): 18.00          18.00              Entrance Loss Coef: 0.500
  Invert(ft): 11.800         11.500                 Exit Loss Coef: 1.000
 Manning's N: 0.012000       0.012000             Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                 Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000          0.000

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

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

Pipe sizes and inverts from road reconstruction plans and Boeing
Extension, February 2002.  SFWMD Permit Mod. No. 50-00471-S; App. No.
011023-3.
```

```
*** Weir 1 of 2 for Drop Structure B1E ***
                                                                        TABLE
                Count: 1                      Bottom Clip(in): 0.000
                 Type: Vertical: Mavis          Top Clip(in): 0.000
                 Flow: Both                   Weir Disc Coef: 3.200
             Geometry: Rectangular          Orifice Disc Coef: 0.600

             Span(in): 36.00                      Invert(ft): 14.600
             Rise(in): 8.80                 Control Elev(ft): 14.600

*** Weir 2 of 2 for Drop Structure B1E ***
                                                                        TABLE
                Count: 1                      Bottom Clip(in): 0.000
                 Type: Vertical: Mavis          Top Clip(in): 0.000
                 Flow: Both                   Weir Disc Coef: 3.200
             Geometry: Circular             Orifice Disc Coef: 0.600

             Span(in): 3.00                       Invert(ft): 14.000
             Rise(in): 3.00                 Control Elev(ft): 14.000


--------------------------------------------------------------------------------------------
        Name: EI06              From Node: NC_E075          Length(ft): 500.00
       Group: BASIN1              To Node: C51W                Count: 2

             UPSTREAM      DOWNSTREAM              Friction Equation: Average Conveyance
    Geometry: Rectangular  Rectangular          Solution Algorithm: Automatic
    Span(in): 120.00       120.00                         Flow: Both
    Rise(in): 96.00        96.00               Entrance Loss Coef: 0.500
  Invert(ft): 1.000        1.000                  Exit Loss Coef: 1.000
 Manning's N: 0.012000     0.012000             Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000        0.000                 Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000        0.000

Upstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

E-3 1/2 Canal in-line discharge to C-51 Canal
Source:  DWG (KHA, 2002)
modeled with operating tables  to simulate gate operation
*** Weir 1 of 2 for Drop Structure EI06 ***
                                                                        TABLE
                Count: 1                      Bottom Clip(in): 0.000
                 Type: Vertical: Mavis          Top Clip(in): 0.000          E-3 GATEa
                 Flow: Both                   Weir Disc Coef: 3.200
             Geometry: Rectangular          Orifice Disc Coef: 0.600

             Span(in): 120.00                     Invert(ft): 1.000
             Rise(in): 96.00                Control Elev(ft): 1.000

*** Weir 2 of 2 for Drop Structure EI06 ***
                                                                        TABLE
                Count: 1                      Bottom Clip(in): 0.000
                 Type: Vertical: Mavis          Top Clip(in): 0.000          E-3 GATEb
                 Flow: Both                   Weir Disc Coef: 3.200
             Geometry: Rectangular          Orifice Disc Coef: 0.600

             Span(in): 120.00                     Invert(ft): 1.000
             Rise(in): 96.00                Control Elev(ft): 1.000
```

Name: SFS-AB From Node: SFS-A Length(ft): 75.00
Group: BASIN1 To Node: SFS-B Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	18.00	18.00
Rise(in):	18.00	18.00
Invert(ft):	13.870	13.520
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.000
Exit Loss Coef: 1.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn

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

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

L-2 East Canal secondary control structure connection from sub-basin 76 to sub-basin 85
Source: PBC DWG PRJ NO. 91503, SHEET 2 BY PBSJ; length measured off aerial
d/s invert from PBC survey 6/8/05.
*** Weir 1 of 1 for Drop Structure SFS-AB ***

TABLE

Count: 1 Bottom Clip(in): 0.000
Type: Horizontal Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600

Span(in): 29.60 Invert(ft): 16.020
Rise(in): 39.20 Control Elev(ft): 16.020

Name: SFS-BC From Node: SFS-B Length(ft): 165.00
Group: BASIN1 To Node: B1G-5 Count: 2

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	12.520	12.020
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.000
Exit Loss Coef: 1.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc

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

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

*** Weir 1 of 1 for Drop Structure SFS-BC ***

TABLE

Count: 1 Bottom Clip(in): 0.000
Type: Horizontal Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600

Span(in): 63.20 Invert(ft): 15.020
Rise(in): 28.80 Control Elev(ft): 15.020

LAST DATE FOR GOVERNING BOARD ACTION:
DECEMBER 10, 1998

Nov 12

ENVIRONMENTAL RESOURCE PERMIT STAFF REVIEW SUMMARY

Subject to Governing

I.ADMINISTRATIVE

APPLICATION NUMBER: 980625-8

PERMIT NUMBER: 50-04106-P

PROJECT NAME: STATE ROAD 80 AND AUSTRALIAN AVENUE

LOCATION: PALM BEACH COUNTY, S5,6/T44S/R43E
S31,32/T43S/R43E

APPLICANT'S NAME: FLORIDA DEPARTMENT OF TRANSPORTATION

OWNER'S NAME AND ADDRESS: FLORIDA DEPARTMENT OF TRANSPORTATION
3400 WEST COMMERCIAL BOULEVARD
FORT LAUDERDALE, FL 33309

ENGINEER: ADAIR AND BRADY INC

II. PROJECT DESCRIPTION

PROJECT AREA: 106.20 acres DRAINAGE AREA: 106.20 acres

DISTRICT DRAINAGE BASIN: C-51

RECEIVING BODY: C-51 CANAL

CLASSIFICATION: CLASS III

SPECIAL DRAINAGE DISTRICT: LAKE WORTH DRAINAGE DISTRICT

PURPOSE:

This application is a request for construction and operation approval for a surface water management system serving 106.2 acres of roadway widening and improvements associated with the Australian Avenue, Southern Boulevard and Congress Avenue interchange project. Staff recommends approval of the request with conditions.

3.8
5.15

EXISTING FACILITIES:

The project is existing as the general intersections of Australian Avenue, Southern Boulevard and Congress Avenue and is located just south of the Palm Beach International Airport and north of the C-51 Canal (please refer to Exhibit 1). The existing stormsewer system which serves the referenced sections of roadway does not provide any water quality treatment and has unrestricted discharge to the C-51 Canal.

PROPOSED FACILITIES:

Reference is made to Exhibit 3, by the Florida Department of Transportation, consisting of Plan/Profile Sheets, Drainage Maps & Structures and Cross Sections. The drawings have been signed and sealed by Douglas D. O'Laughlin, P.E., of Adair & Brady, Inc. on June 11, 1998 and are included in this permit by reference (please see permit file).

Authorization for construction and operation has been requested for a surface water management (SWM) system serving 106.2 acres of highway development to be known as the Southern Boulevard/Australian Avenue Interchange. Proposed development entails widening and reconstructing sections of the existing roadway in an effort to improve the present traffic conditions. The improvements include a grade separation interchange to connect Congress Avenue, Australian Avenue and Southern Boulevard. A section of the C-51 Canal will be realigned to the south as the proposed widening of Southern Boulevard will extend the roadway into the existing canal right-of-way. The project has been divided into five drainage basins and are described as follows:

BASIN 1 - This basin contains 29.6 acres, which includes 12.96 acres of off-site area from the adjoining Southern Boulevard project. Full water quality treatment is achieved in dry detention ponds which connect through a 24" subaqueous crossing of the C-51 Canal to dry ponds within Basin 3. Eventually, this system will overflow the proposed control structure to the C-51 Canal. The interconnection of the Basins 1 & 3 dry ponds will allow the Basin 3 bleeder device to serve both ponds.

BASIN 2 - This basin area is 52.0 acres and has been designed to include off-site area from adjoining Southern Boulevard, Gem Lake Road and Australian Avenue (please refer to Exhibit 2). Remnants of the old Spur Canal will be filled as part of this basin development. Compensating storage will be provided in the proposed detention ponds. FAA regulations for pond construction requires side slopes which exceed the District's maximum criteria, therefore, credit for water quality treatment has not been taken for Pond No. 2. Water quality treatment for this basin is achieved in the dry detention swales that border the wet detention areas (Ponds 2 & 4).

BASIN 3 - This basin totals 13.5 acres and, as previously described, water quality treatment will be provided in dry detention ponds which connect directly to those within Basin 1. Compensating storage has also been provided for this basin as a portion of the fill for Congress Avenue encroaches into

the floodplain.

PBIA

BASIN 4 - This basin consists, primarily, of Wet Detention Pond No. 4 which is intended to provide water quality treatment for Basin 3 of the overall PBIA project. The development included with this application proposes to fill remaining segments of the old Spur Canal, which were previously permitted as water quality treatment ponds for PBIA's Basin 3 (permit no. 50-00471-S). The water quality treatment volume and discharge rate will be provided and maintained within Pond No. 4 as previously permitted for PBIA's Basin 3.

BASIN 5 - Development within this basin will entail milling and resurfacing of 2.2 acres of Congress Avenue with only minor additions of impervious area. Treatment for the additional impervious area will be provided in the proposed 200 LF of exfiltration trench.

Calculations have been submitted with this application, which demonstrate that the proposed SR 80/Australian Avenue Interchange project meets the C-51 fill encroachment criteria.

BASIN INFORMATION:

Basin	Area Acres	WSWT Elev (ft. NGVD)	Normal/Dry Ctrl Elev (ft. NGVD)	Method of Determination
NO. 1	29.60	8.50	8.5	ADJACENT CANAL CONTROL ELEVATION
NO. 2	52.00	8.50	8.8	ADJACENT CANAL CONTROL ELEVATION
NO. 3	13.50	8.50	8.8	ADJACENT CANAL CONTROL ELEVATION
NO. 4	139.20	8.50	8.5	ADJACENT CANAL CONTROL ELEVATION
NO. 5	2.20	8.50	8.5	ADJACENT CANAL CONTROL ELEVATION

DISCHARGE STRUCTURE INFORMATION:

Water Quality Structures:

Basin	Str. #	Bleeder Type	Dimensions	Invert Elev. (ft. NGVD)
NO. 4	1	TRIANGULAR ORIFICE	.75' wide X .9' high	8.50
NO. 2	1	V-NOTCH	20 degrees	8.80 = 7.22' NAVD
NO. 3	1	V-NOTCH	35 degrees	8.80

Major Discharge Structures:

Basin	Str. #	Description	Crest Elev. (ft. NGVD)
NO. 4	1	3' wide SHARP CRESTED weir	14.20
NO. 4	1	21' wide SHARP CRESTED weir	12.40
NO. 5	1	3.5' wide SHARP CRESTED weir	11.20
NO. 1	1	4.5' wide X 4' long drop inlet	12.20
NO. 2	1	4.5' wide X 4' long drop inlet	14.00
NO. 2	1	4.5' wide X 4' long drop inlet	14.20
NO. 3	1	2' wide SHARP CRESTED weir	11.00
NO. 3	1	4' wide X 3' long drop inlet	12.00

Receiving Body:

Basin	Str. #	Receiving Body
NO. 4	1	C-51 CANAL
NO. 5	1	C-51 CANAL VIA LWDD'S L-5
NO. 1	1	C-51 CANAL
NO. 2	1	C-51 CANAL
NO. 3	1	C-51 CANAL

III. PROJECT EVALUATION

Discharge Rate:

The allowable discharge for this project was calculated based on the combined pre-development vs. post-development methodology for the existing roadway plus 35 cfs per square mile (C-51 Basin criteria) for any additional right-of-way. The design discharge for Basins 2 & 3 exceeds the calculated allowable discharge, however, the cumulative design discharge for the overall project of 113.6 cfs is significantly less than the allowable discharge of 132.6 cfs. Also, please note that the Basin 4 discharge was not included in these totals as it was previously permitted as part of the PBIA surface water management system (permit no. 50-00471-S).

Discharge Storm Frequency: 10YR-3DAY Design Rainfall: 10.46

Basin	Allow Disch (cfs)	Method of Determination	Design Disch (cfs)	Design Stage (ft. NGVD)
NO. 1	48.2	PRE VS. POST	16.5	12.67
NO. 2	66.2	PRE VS. POST	76.5	12.67
NO. 3	13.2	PRE VS. POST	15.7	12.18
NO. 4	137.4	PREVIOUSLY PERMITTED	137.4	14.1

Basin	Allow Disch (cfs)	Method of Determination	Design Disch (cfs)	Design Stage (ft. NGVD)
NO. 5	5	PRE VS. POST	4.9	n/a

WATER QUALITY:

Full water quality treatment is provided for the entire project area as calculated by 2.5" times the percentage of impervious groundcover, except for Basin 5, where only the additional impervious area will be treated in the proposed exfiltration trench. The dry detention ponds serving Basins 1 & 3 are interconnected and have been designed to provide full water quality treatment for the contributing basin areas. Also, dry detention pond no. 2 has not been included with the water quality calculations as its proposed side slopes do not meet the District's minimum criteria.

Basin	Treatment Method	Vol Req'd. (ac-ft)	Vol Prov'd (ac-ft)
NO. 4	3.45 acres WET DETENTION	15.40	15.40
NO. 1	3 acres DRY DETENTION	3.50	3.50
NO. 2	1.95 acres DRY DETENTION	5.10	5.30
NO. 5	200 LF EXFILTRATION TRENCH	0.07	0.07
NO. 3	4 acres DRY DETENTION	1.10	1.10

ROAD DESIGN:

As shown in the following table, minimum road center lines have been set at or above the calculated design storm flood elevation.

Design Storm Freq: 10YR-1DAY Design Rainfall: 8.50 inches

Basin	Flood Elevation (ft., NGVD)	Minimum Centerline Elevation (ft. NGVD)
NO. 4	13.8	13.8
NO. 1	12.67	13
NO. 2	12.67	13
NO. 3	12.18	13.1

IV. ENVIRONMENTAL ASSESSMENT

PROJECT SITE DESCRIPTION:

The proposed project area incorporates SR 80 (Southern Blvd.) between Congress

Ave. and Australian Ave., plus adjacent areas of Congress Ave. and Australian Ave. This area consists primarily of existing roads and other development. A portion of the project area includes wetlands in the borrow pit at the intersection of SR 80 and Australian Ave. and along the littoral edge of the Spur Canal from the C-51 Canal. These wetlands are poor-quality wetlands consisting primarily of exotic and nuisance species (ludwigia, cattail, Brazilian Pepper).

EXISTING ON SITE WETLAND COMMUNITIES AND OTHER SURFACE WATERS:

ID NO	TOTAL ACREAGE	BIOLOGICAL CONDITION	COMMUNITY TYPE	COMMUNITY ACREAGE
OSW	11.77	POOR	CANALS AND LOCKS	11.77
W-1	6.04	POOR	HERBACEOUS	6.04

TOTAL ON SITE WETLAND/SURFACE WATER ACREAGE: 17.81

EXISTING ON SITE UPLAND COMMUNITIES:

ID NO	TOTAL ACREAGE	BIOLOGICAL CONDITION	COMMUNITY TYPE	COMMUNITY ACREAGE
Up	88.39	POOR	URBAN AND BUILT-UP	9.31
			COMMERCIAL AND SERVICES	21.75
			AIRPORTS	3.40
			ROADS AND HIGHWAYS	53.93

TOTAL ON SITE UPLAND ACREAGE: 88.39

ENDANGERED, THREATENED & SPECIES OF SPECIAL CONCERN SUMMARY:

The project area includes a portion of the C-51 canal. Structural barriers at the upstream and discharge points of the C-51 prevent manatee access to this canal. This permit does not relieve the applicant from complying with all applicable rules and any other agencies' requirements if in the future, endangered/threatened species or species of special concern are discovered on the site.

WETLAND PRESERVATION AND IMPACT SUMMARY:

The proposed project activities will include dredging and filling of 6.04 acres of poor quality wetlands. Total dredging and filling, including other surface waters, is shown on Exhibit 4.

MITIGATION MONITORING:

The applicant is requesting authorization to dredge and fill a total of 6.04 acres of herbaceous wetlands on the project site. On-site mitigation was deemed inappropriate because of the density of development and surrounding land uses. Review of projects proposing off-site mitigation is done on a project-by-project basis. Determinations on the ability of project impacts to be mitigated for off-site is incorporated into the specific review of each project.

The applicant proposes to utilize existing mitigation at the DuPuis Reserve to offset proposed impacts. Through an interagency agreement and contract, the District is restoring wetlands at DuPuis Reserve to offset future wetland impacts from certain FDOT projects. The applicant proposes to utilize 14.49 acres of wetland restoration at DuPuis Reserve to offset 6.04 acres of proposed impacts at the project site.

The DuPuis Reserve wetlands consisted of drained marshes which had been converted to pasture. Restoration of 14.49 acres of wetlands provides adequate compensation for the filling of 6.04 acres of herbaceous wetlands on the project site.

WETLAND INVENTORY:

NEW PHASE-SR 80/AUSTRALIAN AVE/SR 807 INTERCHANGE ONSITE

Pre-Development		Post-Development				
	TOTAL EXISTING	PRESERVED	UNDISTURBED	IMPACTED	ENHANCED	RESTORED/ CREATED
HERBACEOUS/SHRUB	6.04	0	0	6.04	0	0
OSW	9.77	0	0	9.77	0	0
TOTALS	15.81	0	0	15.81	0	0

UPLAND COMP: PRESERVED: N/A ENHANCED: N/A

WETLAND INVENTORY:

NEW PHASE-DUPUIS RESERVE OFFSITE

Pre-Development		Post-Development				
	TOTAL EXISTING	PRESERVED	UNDISTURBED	IMPACTED	ENHANCED	RESTORED/ CREATED
HERBACEOUS/SHRUB	14.49	14.49	0	0	14.49	0
TOTALS	14.49	14.49	0	0	14.49	0

UPLAND COMP: PRESERVED: N/A ENHANCED: N/A

OTHER COMPENSATION

MITIGATION BANK:
NAME: N/A
CREDITS USED: N/A

REGIONAL OFFSITE MITIGATION:
AREA: DUPUIS RESERVE
AMOUNT CONTRIBUTED:

ENVIRONMENTAL SUMMARY:

The project area consists of SR80 between Congress Avenue and Australian Avenue, plus adjacent areas of Congress Avenue, C-51 Canal, Palm Beach International Airport, and Australian Avenue. The applicant proposes to reconstruct the intersection of these roads to provide a "fly-over" from Congress Avenue to Australian Avenue to improve traffic conditions.

The project area includes 17.81 acres of wetlands and other surface waters. The applicant proposes to offset the 6.04 acres of wetland impacts through existing mitigation at DuPuis Reserve. No environmentally sensitive uplands will be impacted due to proposed project activities.

The proposed activities have been evaluated for potential secondary and cumulative impacts and to determine if the project is contrary to the public interest. Based upon the proposed project design and mitigation plan, the District has determined that the project will not cause adverse secondary or cumulative impacts to the water resources and is not contrary to the public interest.

SYSTEM OPERATION:

Permittee

PROPOSED LAND USE(S):

Highway

WATER USE PERMIT STATUS:

A Water Use permit is not required at this time. Any future dewatering activities will require the permittee to submit an application for a Water Use permit prior to construction.

POTABLE WATER SUPPLIER:

Not Applicable

WASTE WATER SYSTEM/SUPPLIER:

Not Applicable

DRI STATUS:

This project is not a DRI.

SAVE OUR RIVERS:

The project is not within or adjacent to lands under consideration by the Save Our Rivers program.

SWIM BASIN:

The project is not within nor does it discharge directly to a designated SWIM basin.

RIGHT-OF-WAY PERMIT STATUS:

Right-of-Way Permit No. 10954 is scheduled for presentation at the November Governing Board meeting with a staff recommendation for approval.

ENFORCEMENT ACTIVITY:

There has been no enforcement activity associated with this application.

THIRD PARTY INTEREST:

No third party has contacted the District with concerns about this application.

WELL FIELD ZONE OF INFLUENCE:

The project is not located within the zone of influence of a wellfield.

V. APPLICABLE LAND AREA

The category listed as OTHER includes the acreage associated with the realignment of the C-51 Canal.

PROJECT

	TOTAL PROJECT	PREVIOUSLY PERMITTED	THIS PHASE	
TOTAL ACRES	106.20		106.20	acres
WTRM ACREAGE	14.90		14.90	acres
PAVEMENT	65.20		65.20	acres
PERVIOUS	17.30		17.30	acres
OTHER	8.90		8.90	acres

DRAFT
Subject to Governing

VI. STAFF RECOMMENDATION

The Staff recommends that the following be issued:

Authorization for construction and operation of a surface water management system serving 106.2 acres of roadway widening and improvements associated with the proposed interchange to connect Australian Avenue, Southern Boulevard and Congress Avenue.

Based on the information provided, District rules have been adhered to.

Staff recommendation is for approval subject to the attached General and Special Conditions.

VII. STAFF REVIEW

NATURAL RESOURCE MANAGEMENT DIVISION APPROVAL

ENVIRONMENTAL EVALUATION

Edward Cronyn

SUPERVISOR

for Anita R. Bain

DIVISION DIRECTOR:

Robert G. Robbins

DATE: 11-6-98

SURFACE WATER MANAGEMENT DIVISION APPROVAL

ENGINEERING EVALUATION

Kevin P. Snell

SUPERVISOR

Maria C. Clemente, P.E.

DIVISION DIRECTOR:

Anthony M. Waterhouse, P.E.

DATE: 11/10/98

GENERAL CONDITIONS

1. ALL ACTIVITIES AUTHORIZED BY THIS PERMIT SHALL BE IMPLEMENTED AS SET FORTH IN THE PLANS, SPECIFICATIONS AND PERFORMANCE CRITERIA AS APPROVED BY THIS PERMIT. ANY DEVIATION FROM THE PERMITTED ACTIVITY AND THE CONDITIONS FOR UNDERTAKING THAT ACTIVITY SHALL CONSTITUTE A VIOLATION OF THIS PERMIT AND PART IV, CHAPTER 373, F.S.

2. THIS PERMIT OR A COPY THEREOF, COMPLETE WITH ALL CONDITIONS, ATTACHMENTS, EXHIBITS, AND MODIFICATIONS SHALL BE KEPT AT THE WORK SITE OF THE PERMITTED ACTIVITY. THE COMPLETE PERMIT SHALL BE AVAILABLE FOR REVIEW AT THE WORK SITE UPON REQUEST BY THE DISTRICT STAFF. THE PERMITTEE SHALL REQUIRE THE CONTRACTOR TO REVIEW THE COMPLETE PERMIT PRIOR TO COMMENCEMENT OF THE ACTIVITY AUTHORIZED BY THIS PERMIT.

3. ACTIVITIES APPROVED BY THIS PERMIT SHALL BE CONDUCTED IN A MANNER WHICH DOES NOT CAUSE VIOLATIONS OF STATE WATER QUALITY STANDARDS. THE PERMITTEE SHALL IMPLEMENT BEST MANAGEMENT PRACTICES FOR EROSION AND POLLUTION CONTROL TO PREVENT VIOLATION OF STATE WATER QUALITY STANDARDS. TEMPORARY EROSION CONTROL SHALL BE IMPLEMENTED PRIOR TO AND DURING CONSTRUCTION, AND PERMANENT CONTROL MEASURES SHALL BE COMPLETED WITHIN 7 DAYS OF ANY CONSTRUCTION ACTIVITY. TURBIDITY BARRIERS SHALL BE INSTALLED AND MAINTAINED AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATERBODY EXISTS DUE TO THE PERMITTED WORK. TURBIDITY BARRIERS SHALL REMAIN IN PLACE AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND SOILS ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE GUIDELINES AND SPECIFICATIONS DESCRIBED IN CHAPTER 6 OF THE FLORIDA LAND DEVELOPMENT MANUAL; A GUIDE TO SOUND LAND AND WATER MANAGEMENT (DEPARTMENT OF ENVIRONMENTAL REGULATION, 1988), INCORPORATED BY REFERENCE IN RULE 40E-4.091, F.A.C. UNLESS A PROJECT-SPECIFIC EROSION AND SEDIMENT CONTROL PLAN IS APPROVED AS PART OF THE PERMIT. THEREAFTER THE PERMITTEE SHALL BE RESPONSIBLE FOR THE REMOVAL OF THE BARRIERS. THE PERMITTEE SHALL CORRECT ANY EROSION OR SHOALING THAT CAUSES ADVERSE IMPACTS TO THE WATER RESOURCES.

4. THE PERMITTEE SHALL NOTIFY THE DISTRICT OF THE ANTICIPATED CONSTRUCTION START DATE WITHIN 30 DAYS OF THE DATE THAT THIS PERMIT IS ISSUED. AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ACTIVITY AUTHORIZED BY THIS PERMIT, THE PERMITTEE SHALL SUBMIT TO THE DISTRICT AN ENVIRONMENTAL RESOURCE PERMIT CONSTRUCTION COMMENCEMENT NOTICE FORM NO. 0960 INDICATING THE ACTUAL START DATE AND THE EXPECTED COMPLETION DATE.

5. WHEN THE DURATION OF CONSTRUCTION WILL EXCEED ONE YEAR, THE PERMITTEE SHALL SUBMIT CONSTRUCTION STATUS REPORTS TO THE DISTRICT ON AN ANNUAL BASIS UTILIZING AN ANNUAL STATUS REPORT FORM. STATUS REPORT FORMS SHALL BE SUBMITTED THE FOLLOWING JUNE OF EACH YEAR.

6. WITHIN 30 DAYS AFTER COMPLETION OF CONSTRUCTION OF THE PERMITTED ACTIVITY, THE PERMITTEE SHALL SUBMIT A WRITTEN STATEMENT OF COMPLETION AND CERTIFICATION BY A REGISTERED PROFESSIONAL ENGINEER OR OTHER APPROPRIATE INDIVIDUAL AS AUTHORIZED BY LAW, UTILIZING THE SUPPLIED ENVIRONMENTAL

RESOURCE PERMIT CONSTRUCTION COMPLETION/CONSTRUCTION CERTIFICATION FORM NO.0881. THE STATEMENT OF COMPLETION AND CERTIFICATION SHALL BE BASED ON ONSITE OBSERVATION OF CONSTRUCTION OR REVIEW OF ASBUILT DRAWINGS FOR THE PURPOSE OF DETERMINING IF THE WORK WAS COMPLETED IN COMPLIANCE WITH PERMITTED PLANS AND SPECIFICATIONS. THIS SUBMITTAL SHALL SERVE TO NOTIFY THE DISTRICT THAT THE SYSTEM IS READY FOR INSPECTION. ADDITIONALLY, IF DEVIATION FROM THE APPROVED DRAWINGS ARE DISCOVERED DURING THE CERTIFICATION PROCESS, THE CERTIFICATION MUST BE ACCOMPANIED BY A COPY OF THE APPROVED PERMIT DRAWINGS WITH DEVIATIONS NOTED. BOTH THE ORIGINAL AND REVISED SPECIFICATIONS MUST BE CLEARLY SHOWN. THE PLANS MUST BE CLEARLY LABELED AS "ASBUILT" OR "RECORD" DRAWING. ALL SURVEYED DIMENSIONS AND ELEVATIONS SHALL BE CERTIFIED BY A REGISTERED SURVEYOR.

7. THE OPERATION PHASE OF THIS PERMIT SHALL NOT BECOME EFFECTIVE: UNTIL THE PERMITTEE HAS COMPLIED WITH THE REQUIREMENTS OF CONDITION (6) ABOVE, HAS SUBMITTED A REQUEST FOR CONVERSION OF ENVIRONMENTAL RESOURCE PERMIT FROM CONSTRUCTION PHASE TO OPERATION PHASE, FORM NO.0920; THE DISTRICT DETERMINES THE SYSTEM TO BE IN COMPLIANCE WITH THE PERMITTED PLANS AND SPECIFICATIONS; AND THE ENTITY APPROVED BY THE DISTRICT IN ACCORDANCE WITH SECTIONS 9.0 AND 10.0 OF THE BASIS OF REVIEW FOR ENVIRONMENTAL RESOURCE PERMIT APPLICATIONS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT - AUGUST 1995, ACCEPTS RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF THE SYSTEM. THE PERMIT SHALL NOT BE TRANSFERRED TO SUCH APPROVED OPERATION AND MAINTENANCE ENTITY UNTIL THE OPERATION PHASE OF THE PERMIT BECOMES EFFECTIVE. FOLLOWING INSPECTION AND APPROVAL OF THE PERMITTED SYSTEM BY THE DISTRICT, THE PERMITTEE SHALL INITIATE TRANSFER OF THE PERMIT TO THE APPROVED RESPONSIBLE OPERATING ENTITY IF DIFFERENT FROM THE PERMITTEE. UNTIL THE PERMIT IS TRANSFERRED PURSUANT TO SECTION 40E-1.6107, F.A.C., THE PERMITTEE SHALL BE LIABLE FOR COMPLIANCE WITH THE TERMS OF THE PERMIT.

8. EACH PHASE OR INDEPENDENT PORTION OF THE PERMITTED SYSTEM MUST BE COMPLETED IN ACCORDANCE WITH THE PERMITTED PLANS AND PERMIT CONDITIONS PRIOR TO THE INITIATION OF THE PERMITTED USE OF SITE INFRASTRUCTURE LOCATED WITHIN THE AREA SERVED BY THAT PORTION OR PHASE OF THE SYSTEM. EACH PHASE OR INDEPENDENT PORTION OF THE SYSTEM MUST BE COMPLETED IN ACCORDANCE WITH THE PERMITTED PLANS AND PERMIT CONDITIONS PRIOR TO TRANSFER OF RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF THE PHASE OR PORTION OF THE SYSTEM TO A LOCAL GOVERNMENT OR OTHER RESPONSIBLE ENTITY.

9. FOR THOSE SYSTEMS THAT WILL BE OPERATED OR MAINTAINED BY AN ENTITY THAT WILL REQUIRE AN EASEMENT OR DEED RESTRICTION IN ORDER TO ENABLE THAT ENTITY TO OPERATE OR MAINTAIN THE SYSTEM IN CONFORMANCE WITH THIS PERMIT, SUCH EASEMENT OR DEED RESTRICTION MUST BE RECORDED IN THE PUBLIC RECORDS AND SUBMITTED TO THE DISTRICT ALONG WITH ANY OTHER FINAL OPERATION AND MAINTENANCE DOCUMENTS REQUIRED BY SECTIONS 9.0 AND 10.0 OF THE BASIS OF REVIEW FOR ENVIRONMENTAL RESOURCE PERMIT APPLICATIONS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT - AUGUST 1995, PRIOR TO LOT OR UNIT SALES OR PRIOR TO THE COMPLETION OF THE SYSTEM, WHICHEVER OCCURS FIRST. OTHER DOCUMENTS CONCERNING THE ESTABLISHMENT AND AUTHORITY OF THE OPERATING ENTITY MUST BE FILED WITH THE SECRETARY OF STATE WHERE APPROPRIATE. FOR THOSE SYSTEMS WHICH ARE PROPOSED TO BE MAINTAINED BY THE

COUNTY OR MUNICIPAL ENTITIES, FINAL OPERATION AND MAINTENANCE DOCUMENTS MUST BE RECEIVED BY THE DISTRICT WHEN MAINTENANCE AND OPERATION OF THE SYSTEM IS ACCEPTED BY THE LOCAL GOVERNMENT ENTITY. FAILURE TO SUBMIT THE APPROPRIATE FINAL DOCUMENTS WILL RESULT IN THE PERMITTEE REMAINING LIABLE FOR CARRYING OUT MAINTENANCE AND OPERATION OF THE PERMITTED SYSTEM AND ANY OTHER PERMIT CONDITIONS.

10. SHOULD ANY OTHER REGULATORY AGENCY REQUIRE CHANGES TO THE PERMITTED SYSTEM, THE PERMITTEE SHALL NOTIFY THE DISTRICT IN WRITING OF THE CHANGES PRIOR TO IMPLEMENTATION SO THAT A DETERMINATION CAN BE MADE WHETHER A PERMIT MODIFICATION IS REQUIRED.

11. THIS PERMIT DOES NOT ELIMINATE THE NECESSITY TO OBTAIN ANY REQUIRED FEDERAL, STATE, LOCAL AND SPECIAL DISTRICT AUTHORIZATIONS PRIOR TO THE START OF ANY ACTIVITY APPROVED BY THIS PERMIT. THIS PERMIT DOES NOT CONVEY TO THE PERMITTEE OR CREATE IN THE PERMITTEE ANY PROPERTY RIGHT, OR ANY INTEREST IN REAL PROPERTY, NOR DOES IT AUTHORIZE ANY ENTRANCE UPON OR ACTIVITIES ON PROPERTY WHICH IS NOT OWNED OR CONTROLLED BY THE PERMITTEE, OR CONVEY ANY RIGHTS OR PRIVILEGES OTHER THAN THOSE SPECIFIED IN THE PERMIT AND CHAPTER 40E-4 OR CHAPTER 40E-40, F.A.C.

12. THE PERMITTEE IS HEREBY ADVISED THAT SECTION 253.77, F.S. STATES THAT A PERSON MAY NOT COMMENCE ANY EXCAVATION, CONSTRUCTION, OR OTHER ACTIVITY INVOLVING THE USE OF SOVEREIGN OR OTHER LANDS OF THE STATE, THE TITLE TO WHICH IS VESTED IN THE BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND WITHOUT OBTAINING THE REQUIRED LEASE, LICENSE, EASEMENT, OR OTHER FORM OF CONSENT AUTHORIZING THE PROPOSED USE. THEREFORE, THE PERMITTEE IS RESPONSIBLE FOR OBTAINING ANY NECESSARY AUTHORIZATIONS FROM THE BOARD OF TRUSTEES PRIOR TO COMMENCING ACTIVITY ON SOVEREIGNTY LANDS OR OTHER STATE-OWNED LANDS.

13. THE PERMITTEE MUST OBTAIN A WATER USE PERMIT PRIOR TO CONSTRUCTION DEWATERING, UNLESS THE WORK QUALIFIES FOR A GENERAL PERMIT PURSUANT TO SUBSECTION 40E-20.302(4), F.A.C., ALSO KNOWN AS THE "NO NOTICE" RULE.

14. THE PERMITTEE SHALL HOLD AND SAVE THE DISTRICT HARMLESS FROM ANY AND ALL DAMAGES, CLAIMS, OR LIABILITIES WHICH MAY ARISE BY REASON OF THE CONSTRUCTION, ALTERATION, OPERATION, MAINTENANCE, REMOVAL, ABANDONMENT OR USE OF ANY SYSTEM AUTHORIZED BY THE PERMIT.

15. ANY DELINEATION OF THE EXTENT OF A WETLAND OR OTHER SURFACE WATER SUBMITTED AS PART OF THE PERMIT APPLICATION, INCLUDING PLANS OR OTHER SUPPORTING DOCUMENTATION, SHALL NOT BE CONSIDERED BINDING UNLESS A SPECIFIC CONDITION OF THIS PERMIT OR A FORMAL DETERMINATION UNDER SECTION 373.421(2), F.S., PROVIDES OTHERWISE.

16. THE PERMITTEE SHALL NOTIFY THE DISTRICT IN WRITING WITHIN 30 DAYS OF ANY SALE, CONVEYANCE, OR OTHER TRANSFER OF OWNERSHIP OR CONTROL OF A PERMITTED SYSTEM OR THE REAL PROPERTY ON WHICH THE PERMITTED SYSTEM IS LOCATED. ALL TRANSFERS OF OWNERSHIP OR TRANSFERS OF A PERMIT ARE SUBJECT TO THE REQUIREMENTS OF RULES 40E-1.6105 AND 40E-1.6107, F.A.C. THE PERMITTEE

TRANSFERRING THE PERMIT SHALL REMAIN LIABLE FOR CORRECTIVE ACTIONS THAT MAY BE REQUIRED AS A RESULT OF ANY VIOLATIONS PRIOR TO THE SALE, CONVEYANCE OR OTHER TRANSFER OF THE SYSTEM.

17. UPON REASONABLE NOTICE TO THE PERMITTEE, DISTRICT AUTHORIZED STAFF WITH PROPER IDENTIFICATION SHALL HAVE PERMISSION TO ENTER, INSPECT, SAMPLE AND TEST THE SYSTEM TO INSURE CONFORMITY WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE PERMIT.

18. IF HISTORICAL OR ARCHAEOLOGICAL ARTIFACTS ARE DISCOVERED AT ANY TIME ON THE PROJECT SITE, THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE APPROPRIATE DISTRICT SERVICE CENTER.

19. THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DISTRICT IN WRITING OF ANY PREVIOUSLY SUBMITTED INFORMATION THAT IS LATER DISCOVERED TO BE INACCURATE.

SPECIAL CONDITIONS

1. DISCHARGE FACILITIES:

BASIN: NO. 1:

1-4.5' W X 4' L DROP INLET WITH CREST AT ELEV. 12.2' NGVD.

RECEIVING BODY : C-51 CANAL

CONTROL ELEV : 8.5 FEET NGVD.

Rim = 12.42' ✓
Weir = 7.22'
V-notch =
7.22' NAVD

BASIN: NO. 2:

1-20 DEG. V-NOTCH WITH INVERT AT ELEV. ~~8.8'~~ NGVD.
1-4.5' W X 4' L DROP INLET WITH CREST AT ELEV. 14' NGVD. 12.42'
1-4.5' W X 4' L DROP INLET WITH CREST AT ELEV. 14.2' NGVD. 12.62'

RECEIVING BODY : C-51 CANAL

CONTROL ELEV : 8.8 FEET NGVD.

BASIN: NO. 3:

1-2' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 11' NGVD.
1-35 DEG. V-NOTCH WITH INVERT AT ELEV. 8.8' NGVD.
1-4' W X 3' L DROP INLET WITH CREST AT ELEV. 12' NGVD.

RECEIVING BODY : C-51 CANAL

CONTROL ELEV : 8.8 FEET NGVD.

BASIN: NO. 4:

1-3' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 14.2' NGVD.
1-21' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 12.4' NGVD.
1-.75' W X .9' H TRIANGULAR ORIFICE WITH INVERT AT ELEV. 8.5' NGVD.

RECEIVING BODY : C-51 CANAL

CONTROL ELEV : 8.5 FEET NGVD.

BASIN: NO. 5:

1-3.5' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 11.2' NGVD.

RECEIVING BODY : C-51 CANAL VIA LWDD'S L-5

CONTROL ELEV : 8.5 FEET NGVD.

2. THE PERMITTEE SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY EROSION, SHOALING OR WATER QUALITY PROBLEMS THAT RESULT FROM THE CONSTRUCTION OR

OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM.

3. MEASURES SHALL BE TAKEN DURING CONSTRUCTION TO INSURE THAT SEDIMENTATION AND/OR TURBIDITY PROBLEMS ARE NOT CREATED IN THE RECEIVING WATER.

4. THE DISTRICT RESERVES THE RIGHT TO REQUIRE THAT ADDITIONAL WATER QUALITY TREATMENT METHODS BE INCORPORATED INTO THE DRAINAGE SYSTEM IF SUCH MEASURES ARE SHOWN TO BE NECESSARY.

5. LAKE SIDE SLOPES SHALL BE NO STEEPER THAN 4:1 (HORIZONTAL:VERTICAL) TO A DEPTH OF TWO FEET BELOW THE CONTROL ELEVATION. SIDE SLOPES SHALL BE NURTURED OR PLANTED FROM 2 FEET BELOW TO 1 FOOT ABOVE CONTROL ELEVATION TO INSURE VEGETATIVE GROWTH.

6. FACILITIES OTHER THAN THOSE STATED HEREIN SHALL NOT BE CONSTRUCTED WITHOUT AN APPROVED MODIFICATION OF THIS PERMIT.

7. OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL BE THE RESPONSIBILITY OF THE PERMITTEE. PRIOR TO TRANSFER OF TITLE FOR ANY PORTION OF THE PROJECT TO A THIRD PARTY, MODIFICATION OF THE PERMIT WILL BE REQUIRED TO VERIFY CONTINUED COMPLIANCE WITH LIMITING CONDITION NO. 8.

8. SILT SCREENS, HAY BALES OR OTHER SUCH SEDIMENT CONTROL MEASURES SHALL BE UTILIZED DURING CONSTRUCTION. THE SELECTED SEDIMENT CONTROL MEASURES SHALL BE INSTALLED LANDWARD OF THE UPLAND BUFFER ZONES AROUND ALL PROTECTED WETLANDS. ALL AREAS SHALL BE STABILIZED AND VEGETATED IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION INTO THE WETLANDS AND UPLAND BUFFER ZONES.

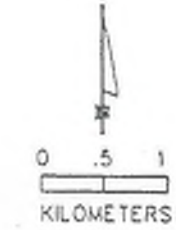
9. ANY FUTURE CHANGES IN LAND USE OR TREATMENT OF WETLANDS AND/OR UPLAND BUFFER/COMPENSATION AREAS MAY REQUIRE A SURFACE WATER MANAGEMENT PERMIT MODIFICATION AND ADDITIONAL ENVIRONMENTAL REVIEW BY DISTRICT STAFF. PRIOR TO THE PERMITTEE INSTITUTING ANY FUTURE CHANGES NOT AUTHORIZED BY THIS PERMIT, THE PERMITTEE SHALL NOTIFY THE SFWMD OF SUCH INTENTIONS FOR A DETERMINATION OF ANY NECESSARY PERMIT MODIFICATIONS.

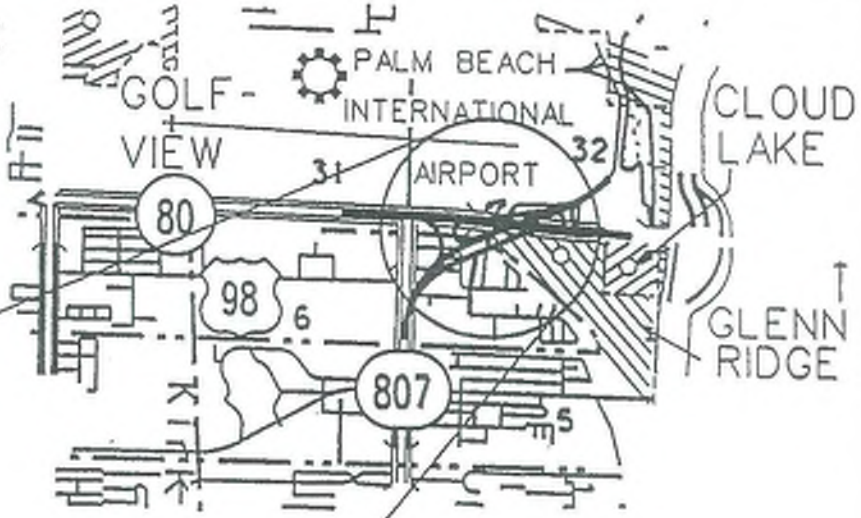
10. REFERENCE IS MADE TO EXHIBIT 3, BY THE FLORIDA DEPARTMENT OF TRANSPORATION, CONSISTING OF PLAN/PROFILE SHEETS, DRAINAGE MAPS & STRUCTURES AND CROSS SECTIONS. THE DRAWINGS HAVE BEEN SIGNED AND SEALED BY DOUGLAS D. O'LAUGHLIN, P.E., OF ADAIR & BRADY, INC. ON JUNE 11, 1998 AND ARE INCLUDED IN THIS PERMIT BY REFERENCE (PLEASE SEE PERMIT FILE).

11. CONVEYANCE OF FLOWS IN THE C-51 CANAL SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE SFWMD RIGHT-OF-WAY AUTHORIZATION.

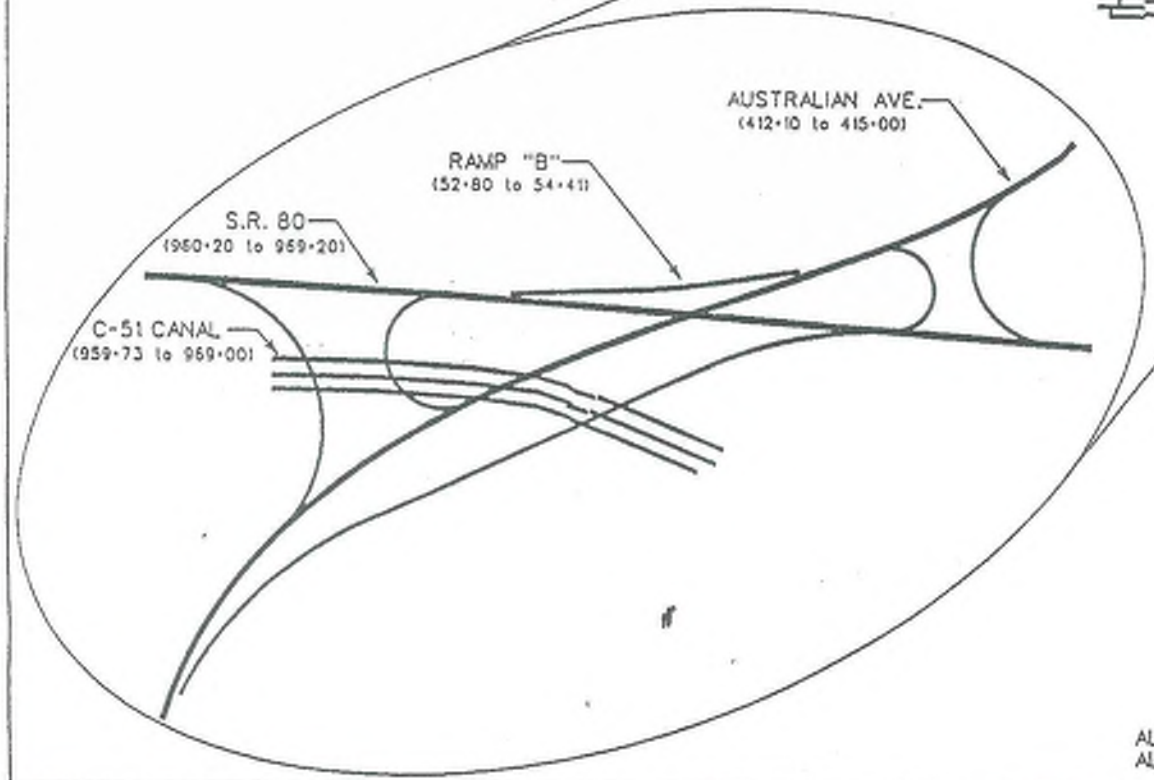
12. PRIOR TO CONSTRUCTION, ANY PROPOSED DEWATERING ACTIVITIES WILL REQUIRE THE PERMITTEE TO SUBMIT AN APPLICATION FOR A WATER USE PERMIT.

S.R. 80 (SOUTHERN BLVD.) AND AUSTRALIAN AVE./S.R. 807 (CONGRESS AVE.) INTERCHANGE





PROJECT LOCATION MAP



ALL ELEVATIONS ARE IN METRIC UNITS
ALL DIMENSIONS ARE IN METRIC UNITS UNLESS OTHERWISE NOTED

EXHIBIT 1

SUMMARY OF DETENTION BASINS
SOUTHERN BOULEVARD/AUSTRALIAN AVENUE INTERCHANGE

BASIN #	C.S. #	TOTAL AREA (AC)	WATER MANAGEMENT AREA (AC)	PERVIOUS (AC)	IMPERVIOUS (AC)	WATER QUALITY REQUIRED (AC-FT)	WATER QUALITY PROVIDED (AC-FT)	Q ALLOWABLE (CFS)	Q ACTUAL (CFS)	MAXIMUM STAGE (FT NGVD)
1	S-31	29.6	3.3	3.7	22.6	3.5	1.1	48.2	16.5	12.67
2	S-211	52.0	7.6	11.9	32.5	5.1	5.3	66.2	76.5	12.67
3	S-215	13.5	4.0	2.0	7.5	1.1	3.7	13.2	15.7	12.18
4 Airport	S-201 S-208	139.2	3.6	55.7±	83.5±	15.4	15.4	137.4	137.4	14.1
5	S-154	2.2	340' Exfil. trench	0.2	2.0	0.065	0.065	5.0	4.9	N/A
SBAI Total Basins -1, 2, 3 & 5		97.3	14.9	17.8	64.6	9.765	10.165	132.6	113.6	N/A

Basin 1

SBAI	16.7 ac
Off-site Southern (west)	12.9 ac
	29.6 ac

Basin 2

SBAI	40.9 ac
Offsite Australian Avenue (north)	3.0 ac
Offsite Southern Blvd. (east)	6.0 ac
Gem Lake Road	2.1 ac
	52.0 ac

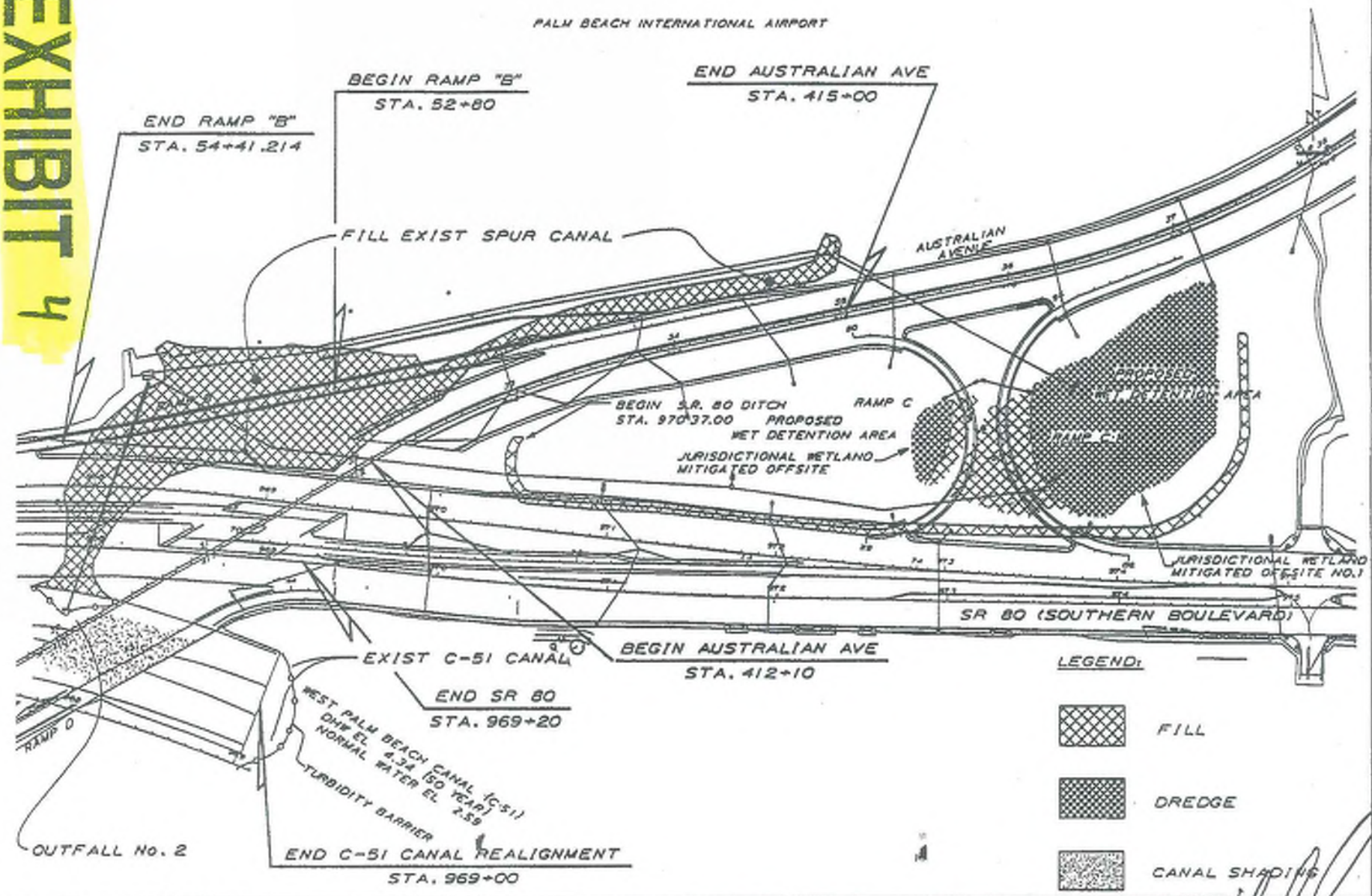
NOTE: Basins #1 and #3 are interconnected with a 24" D.I.P. crossing under C-51 Canal.
Basin #4 permitted under Permit #50-00471-S (PBIA) and not included in this project.
Permit modification to be applied for concurrently with this project.

U:\USERS\DAY\DDO\SBAI96049.BAS

Revised 9/9/98
9.11.98

EXHIBIT 2

EXHIBIT h



PROJECT DESCRIPTION S.R. 80/AUST AVE INTERCHANGE & WEST PALM BEACH CANAL (C-51) REALIGNMENT	FLORIDA DEPARTMENT OF TRANSPORTATION	STATE PROJECT NO. 93006-3506
TWP: 43S, 44S RNG: 42E, 43E	NAME:	COUNTY PALM BEACH
SEC 5, 6, 31, 32	SIGNATURE	DER CG SHEET 3 OF 87
	CERTIFICATE NO.: DATE:	COE WMD DATE 7/15/98

h:\drawings\dgn\sr80\sr80merl\per mp\n2.plg 14 JUL 98 05:53:48

STAFF REPORT DISTRIBUTION LIST

PROJECT: STATE ROAD 80 AND AUSTRALIAN AVENUE
APPLICATION NUMBER: 980625-8
PERMIT MODIFICATION NUMBER: 50-04106-P

INTERNAL DISTRIBUTION
Reviewer:
X Edward Cronyn
X Kevin P. Snell
X Anita R. Bain
X Maria C. Clemente, P.E.
M. Elsner - UDP
J. Giddings - LEC
J. Golden - REG
F. Lund - UDP
X R. Robbins - NRM
X P. Walker - GPA
X A. Waterhouse - REG
X P. Bell - LEG
X Enforcement
X Environmental PPC Reviewer
X Field Engineering
X Permit File

GOVERNING BOARD MEMBERS
Mr. Mitchell W. Berger
Ms. Vera Carter
Mr. William Graham
Mr. William Hammond
Mr. Richard Machek
Mr. Michael Minton
Mr. Eugene K. Pettis
Ms. Miriam Singer
Mr. Frank Williamson, Jr.

DEPT. OF ENVIRONMENTAL PROTECTION
X West Palm Beach

EXTERNAL DISTRIBUTION

X Owner:
FLORIDA DEPARTMENT OF TRANSPORTATION

X Applicant:
FLORIDA DEPARTMENT OF TRANSPORTATION

X Applicant's Consultant
ADAIR AND BRADY INC

X Engineer, County of:
PALM BEACH

X Engineer, City of:
West Palm Beach

X Local Drainage District:
LAKE WORTH DRAINAGE DISTRICT

COUNTY
X Palm Beach -Building Division
-Environmental Res Mgmt.
-Health Dept.
-Land Development Div.
-School Brd., Growth Mgt.

BUILDING AND ZONING

OTHER
X David Sinclair
X F.G.F.W.F.C.
X FDEP
X FDEP - Carol A. Knox
X Florida Audubon - Charles Lee
Indian Trail Water Control District
Mr. Ed Dailey, President

EXHIBIT 5

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

MAPS FOR PERMIT NO.

50-04106-P

APPLICATION NO. 980625-8

8 OF 22

(BOX NO.)

THIS CONTRACT PLAN SET INCLUDES:

ROADWAY PLANS
SUMMARY OF PAY ITEMS (1 SHEETS)
SIGNING & PAVEMENT MARKING PLANS
ESCALLATION PLANS
ROADWAY LOCATION PLANS
STRUCTURE PLANS

A DETAILED INDEX APPEARS ON THE 1ST SHEET OF EACH COMPONENT SET OF PLANS.

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION	SHEET NO.	SHEET DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY

FINANCIAL PROJECT NO. 229621-1-52-01
STATE PROJECT NO. 93006-3506
PALM BEACH COUNTY
S.R. 80 (SOUTHERN BLVD.) AND AUSTRALIAN AVE /
S.R. 807 (CONGRESS AVE.) INTERCHANGE

FOR CONSTRUCTION OF PAVING, GRADING, AND DRAINAGE FACILITIES ONLY.

50-04106-P
APPLICATION NUMBER
980625-8
WPB

ORIGINAL SUBMITTAL
JUN 25 1998
WPB

END BRIDGE - AUSTRALIAN AVE.
STA. 412+20.350 SHEET No.
BEGIN BRIDGE - AUSTRALIAN AVE.
STA. 411+56.950 SHEET No.
END BRIDGE - AUSTRALIAN AVE.
STA. 411+06.325 SHEET No.
BEGIN BRIDGE - AUSTRALIAN AVE.
STA. 409+48.525 SHEET No.
BEGIN PROJECT - S.R. 80
STA. 950+89.887 SHEET No.
kp 20.071 = MP 18.064

END BRIDGE - RAMP A
STA. 22+18.556 SHEET No.
BEGIN BRIDGE - RAMP A
STA. 21+48.906 SHEET No.
END BRIDGE - RAMP A1
STA. 31+47.311 SHEET No.
BEGIN BRIDGE - RAMP A1
STA. 30+78.553 SHEET No.
BEGIN PROJECT - S.R. 807
STA. 450+00.000 SHEET No.
kp 5.62 = MP 5.28

END PROJECT - AUSTRALIAN AVE
STA. 421+30.900 SHEET No.
kp 10.65 = MP 6.62
END PROJECT - S.R. 80
STA. 978+82.006 SHEET No.
kp 31.783 = MP 19.76

END BRIDGE - RAMP D
STA. 43+48.323 SHEET No.
BEGIN BRIDGE - RAMP D
STA. 42+69.195 SHEET No.

PALM BEACH INTERNATIONAL AIRPORT
GOLF-VIEW
CLOUD LAKE
GLENN RIDGE
80
98
95
809
807
31
32
6
5

ROADWAY PLANS
ENGINEER OF RECORD
DAVID JESS CLIFF P.E. No. 52211

PLANS PREPARED BY:
ADAIR & BRADY, INC.
1958 SOUTH CONGRESS AVENUE
WEST PALM BEACH, FLORIDA 33406
(561) 964-1221
VENDOR No. VF-591-056-656-001

0 .5 1
KILOMETERS

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE OF REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS DATED 1996 AND SUPPLEMENTS THERETO IF NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT.

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, ROADWAY AND TRAFFIC DESIGN STANDARDS INDEXES DATED JANUARY, 1998.

FINAL APPROVED BY GB
NOV 12 1998
WPB

LENGTH OF PROJECT	METRIC
BRIDGE	
ROADWAY	
RAMPS	
NET LENGTH	
EXCEPTIONS	
GROSS LENGTH	

NOTE: THIS IS A METRIC UNIT PROJECT

KEY SHEET REVISIONS

NO.	#	DESCRIPTION

S.F.W.M.D. SUBMITTAL
DOUGLAS D. O'LAUGHLIN
6/11/98

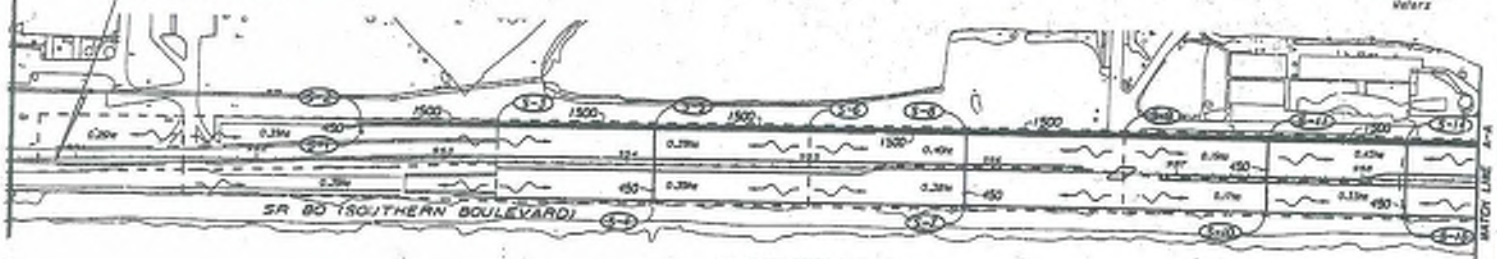
EXHIBIT 3

STATE PROJ NO. | SHEET NO.
93006-3506 | 2

PALM BEACH INTERNATIONAL AIRPORT

FOR CONSTRUCTION OF PAVING, GRADING, AND DRAINAGE FACILITIES ONLY.

BEGIN PROJECT
STA 950+69.867



STRUCTURE NO.	STATION	DESIGN FLOOD		BASE FLOOD		OVERTOPPING FLOOD				GREATEST FLOOD			
		ELEVATION	STAGE	ELEVATION	STAGE	ELEVATION	STAGE	FREQ.	Q	ELEVATION	STAGE	FREQ.	Q

NOTES: THE HYDRAULIC DATA IS SHOWN FOR INFORMATIONAL PURPOSES ONLY. IT INCLUDES THE FLOOD DISCHARGES AND WATER SURFACE ELEVATIONS WHICH MAY BE ANTICIPATED DURING THE INDICATED FLOOD YEAR. THIS DATA HAS DEMONSTRATED REASONABLE SAFETY, PERFORMANCE AND ECONOMY OF DESIGN FOR ROADWAYS AND DRAINAGE FACILITIES WHERE JURISDICTIONAL AND OTHER CONSIDERATIONS WARRANT. ADDITIONAL AND MORE DETAILED HYDRAULIC DATA IS AVAILABLE IN THE DRAINAGE DESIGN FILES. THE DESIGN AND HYDROLOGIC DATA IS SUBJECT TO CHANGE AS ADDITIONAL SURVEYS, INVESTIGATIONS, STUDIES, CLARIFICATIONS AND A MORE THOROUGH EVALUATION OF THE DRAINAGE AREA MAY BE WARRANTED. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL DATUM OF 1929 UNLESS OTHERWISE NOTED. DISCHARGES ARE IN CUBIC FEET PER SECOND AND STAGES ARE IN FEET, MEAN SEA LEVEL DATUM.

DEFINITIONS:

DESIGN FLOOD: THE FLOOD SELECTED BY F.D.O.T. TO BE USED AS THE BASIS FOR DESIGN & STANDARD LEVEL OF HYDRAULIC PERFORMANCE.

BASE FLOOD: THE FLOOD HAVING A 1% CHANCE OF BEING EXCEEDED IN ANY YEAR. (100 YR. FREQUENCY)

OVERTOPPING FLOOD: THE FLOOD WHICH FLOW BEGINS TO FLOW OVER THE HIGHEST ELEVATION OF ROADWAY ALONG THE CREST VERTICAL & WATERSHED DIVIDE OR (C) THRU EMBANKMENT RELIEF STRUCTURES.

GREATEST FLOOD: THE FLOOD WHICH GIVES THE MAXIMUM PRACTICABLE DISCHARGE BEFORE OVERTOPPING IS NOT PRACTICABLE. NORMALLY USE 50% A.E.P. (2 YR. FREQUENCY) OR FLOOD EXCEEDED IN ANY YEAR.

DATA ADAPTED FROM:

PREPARED BY:

DATE:

APPROVED FOR USE ON THIS PROJECT BY: _____

DATE:

NO.	DESCRIPTION	DATE	BY	REVISIONS	DATE	BY	DESCRIPTION

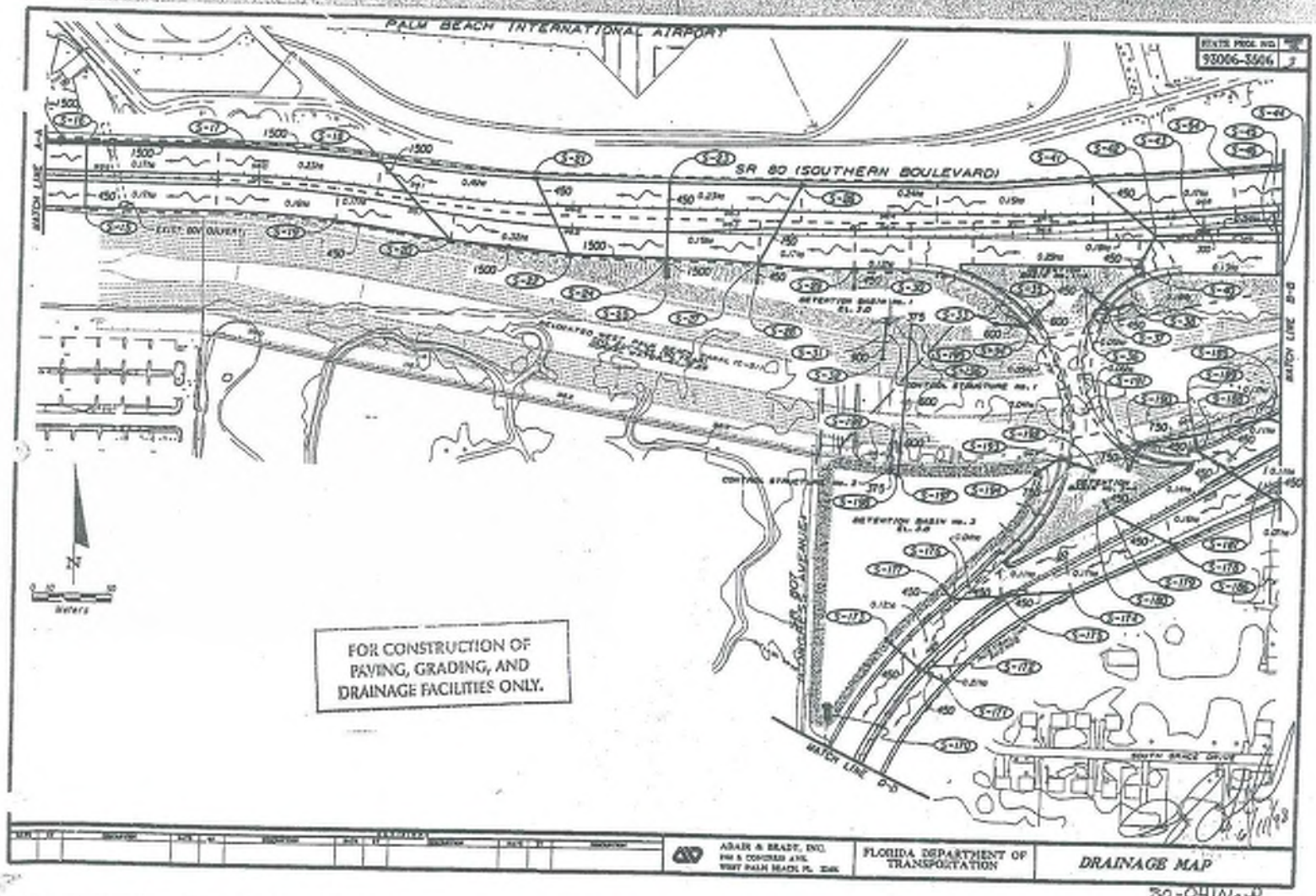
KRAMER BEADY, INC.
ENGINEERS
WEST PALM BEACH, FL

FLORIDA DEPARTMENT OF TRANSPORTATION

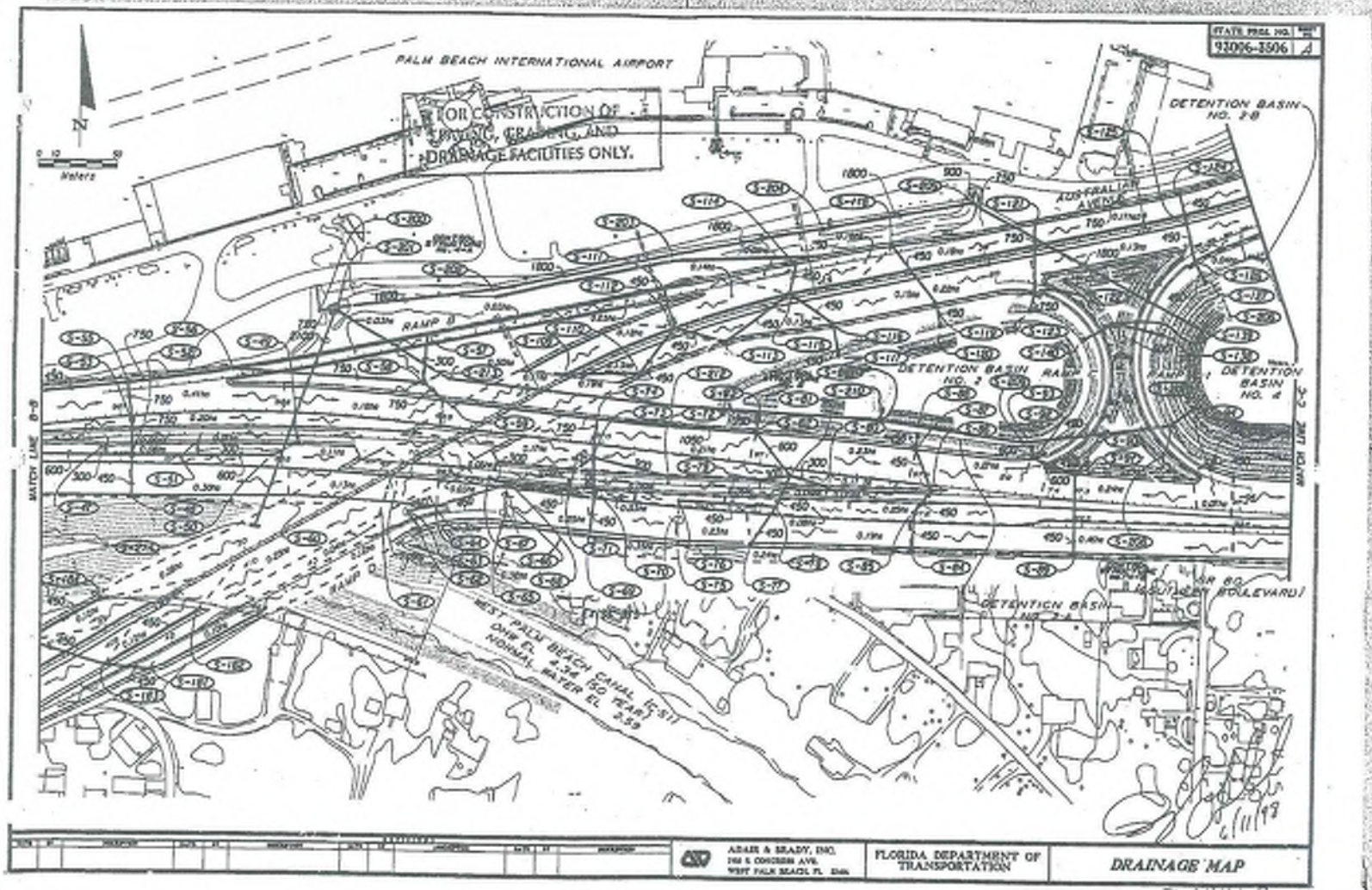
DRAINAGE MAP

6/11/98

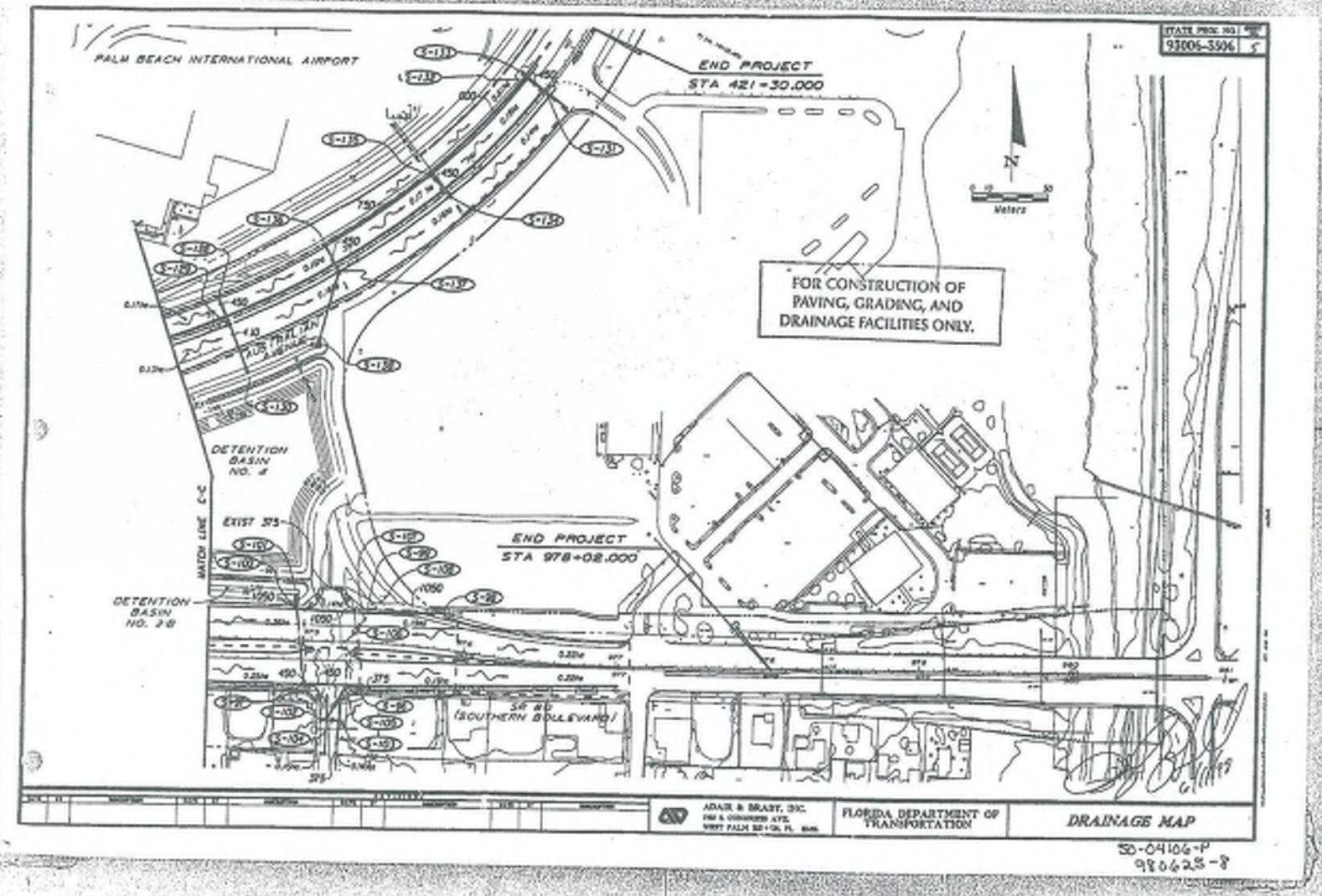
50-04106-P
980623-8

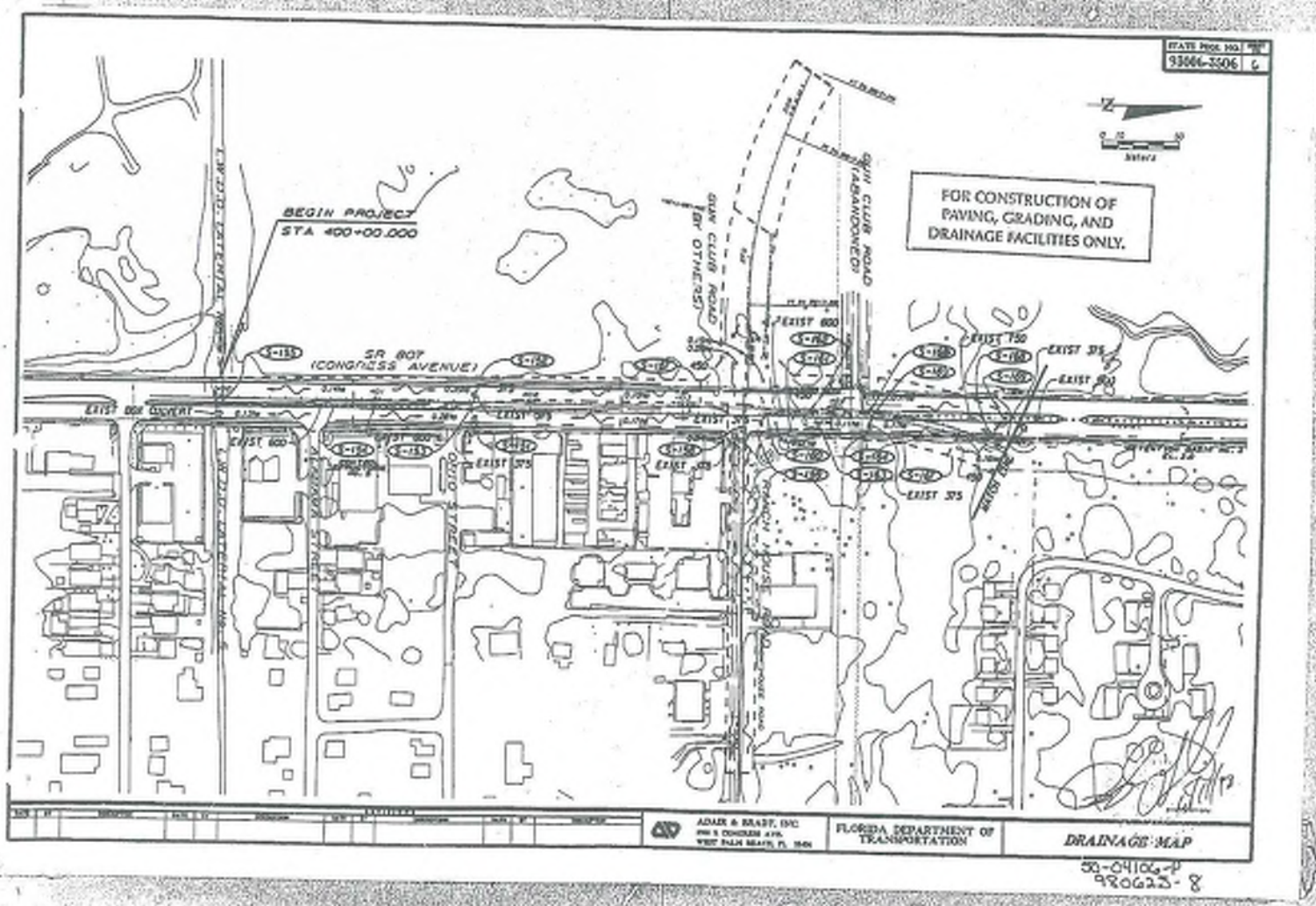


30-041060-P
990623-8



50-04106-P
9906235-8


PALM BEACH INTERNATIONAL AIRPORT
END PROJECT
STA 421+30.000
STATE PROJ. NO.
93006-3506
FOR CONSTRUCTION OF
PAVING, GRADING, AND
DRAINAGE FACILITIES ONLY.
DETENTION
BASIN
NO. 4
EXIST 375
MATCH LINE C-C
END PROJECT
STA 978+02.000
DETENTION
BASIN
NO. 2B
SR 80
(SOUTHERN BOULEVARD)
ADAIR & BRADY, INC.
FLORIDA DEPARTMENT OF
TRANSPORTATION
DRAINAGE MAP
50-04106-P
98042S-8



50-04106-P
980623-8

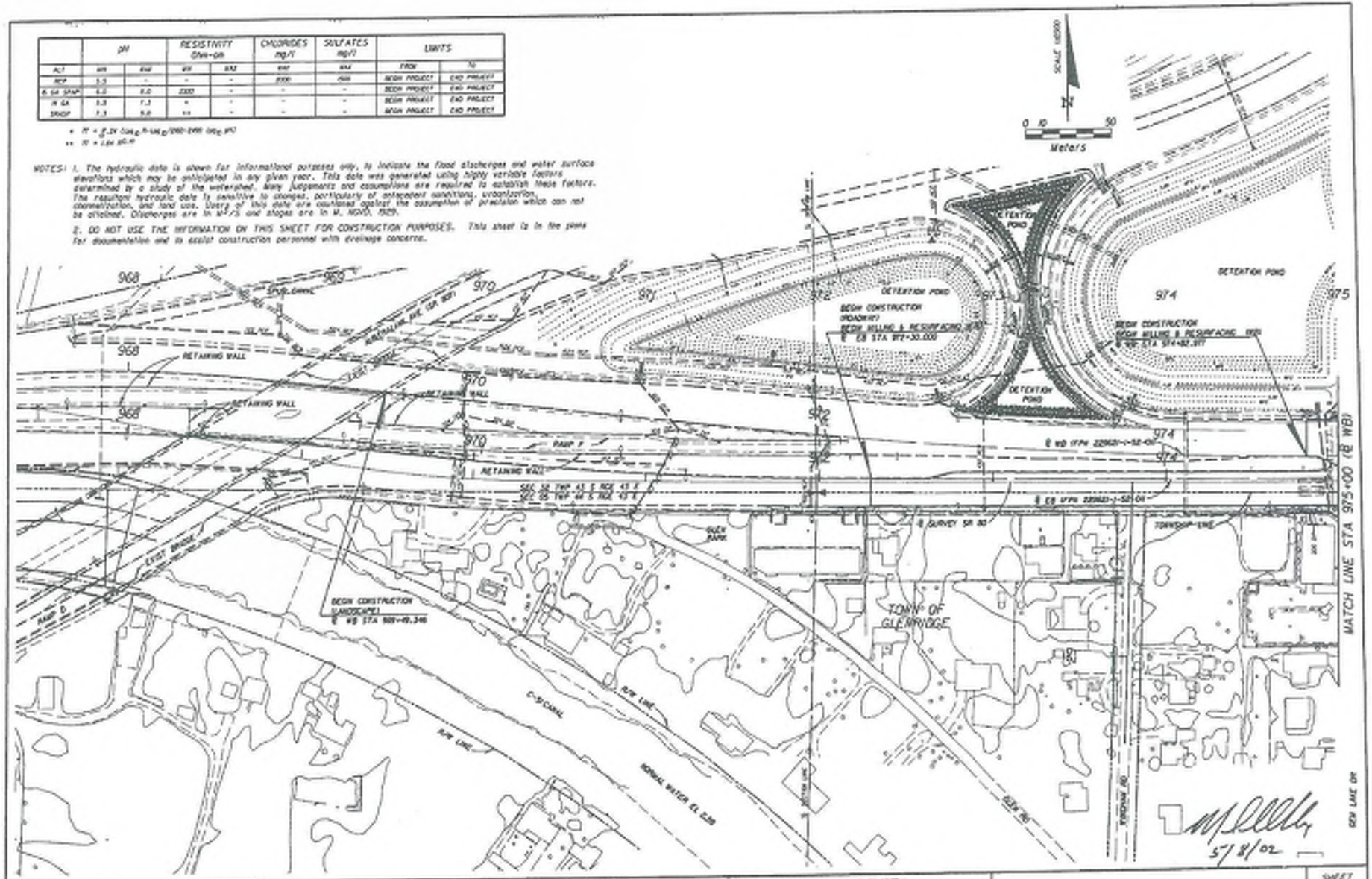
	pH		RESISTIVITY Ohm-cm		CHLORIDES mg/l	SULFATES mg/l	LIMITS	
ACT	MIN	MAX	MIN	MAX	MAX	MAX	FROM	TO
RCP	5.5	-	-	-	2000	1500	BEGIN PROJECT	END PROJECT
S.S.H. SPAN*	5.0	8.0	2000	-	-	-	BEGIN PROJECT	END PROJECT
H.S.A.	5.5	7.5	*	-	-	-	BEGIN PROJECT	END PROJECT
SPHCP	7.5	9.0	**	-	-	-	BEGIN PROJECT	END PROJECT

* $R = \frac{3.5 \times 10^3}{(mg/l\ Cl^-) + (mg/l\ SO_4^{-2}) \times 10}$ (Ohm-cm)

** $R = 1.1 \times 10^{(0.98-pH)}$

NOTES: 1. 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 judgments and assumptions are required to establish these factors. The resultant hydraulic data is sensitive to changes, particularly of antecedent conditions, urbanization, channelization, and land use. Users of this data are cautioned against the assumption of precision which can not be attained. Discharges are in ft^3/s and stages are in M. NGVD, 1929.

2. DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. This sheet is in the plans for documentation and to assist construction personnel with drainage concerns.



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Carlos-Horn and Associates, Inc.
6431 Edgewaters Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23835-1-52-01 23919-1-52-01

DRAINAGE MAP

SHEET NO. 3

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
FINAL AS-BUILT PLANS

FINANCIAL PROJECT ID 231835-1-52-01
FINANCIAL PROJECT ID 231919-1-52-01
(FEDERAL FUNDS)
PALM BEACH COUNTY (93120)
STATE ROAD NO. 80
(SOUTHERN BLVD)
FROM WEST OF SR-9 (I-95) TO PARKER AVENUE

W.P.I.NO. 4147472
W.P.I.NO. 4147556

COMPONENTS OF CONTRACT PLANS SET

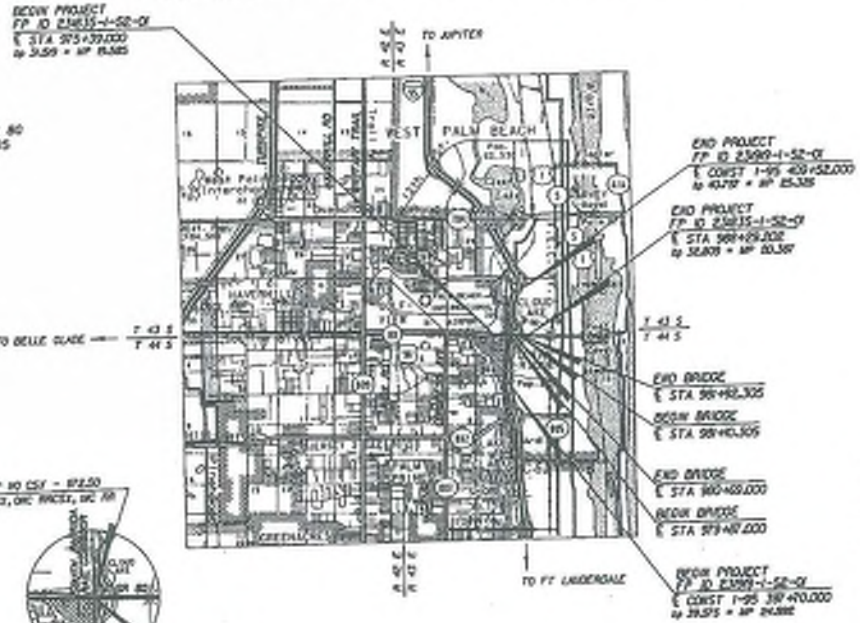
ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS
SIGNALIZATION PLANS
COMMUNICATION PLANS
LIGHTING PLANS
LANDSCAPE PLANS
STRUCTURE PLANS

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
1A,1B	REVISION INDEX SHEET
2, 2A - 2Y	SUMMARY OF PAY ITEMS
3-8	DRAINAGE MAP
9-20	TYPICAL SECTION
21-28	MISCELLANEOUS DETAILS
29-31	DETENTION POND DETAILS
32	POND MODIFICATION DETAIL
33	STUB CANAL CONSTRUCTION
34-35	VERIFIED UTILITY LOCATIONS
36-45	SUMMARY OF QUANTITIES
46-55	SUMMARY OF DRAINAGE STRUCTURES SR 80
56-57	SUMMARY OF DRAINAGE STRUCTURES I-95
58	DATUM COORDINATION
59-64	PROJECT NETWORK CONTROL
65-66	REFERENCE POINTS
67	GENERAL NOTES
68	PROJECT LAYOUT SR 80
69	PROJECT LAYOUT I-95
70-79	SR 80 - PLAN
80	LANG ROAD - PLAN
81-84	I-95 - PLAN
85-89	PROFILES - SR 80
90-93	PROFILES - I-95
94	I-95 RAMP A PROFILES
95	I-95 RAMP I PROFILES
96	I-95 RAMP J PROFILES
97-98	I-95 RAMP K PROFILES
99	I-95 RAMP K & L PROFILE
100-102	I-95 RAMP L PROFILES
103	SIDE STREET PROFILES
104-105	DRIVEWAY PROFILES
106-107	INTERSECTION DETAIL
108-109	SPECIAL DETAILS
110	OPTIONAL MATERIALS TABULATION
111-128	DRAINAGE STRUCTURES SR 80
⚠129-130,130A	DRAINAGE STRUCTURES LANG ROAD
⚠131,131A,132-138	DRAINAGE STRUCTURES RAMPS
139-152	DRAINAGE STRUCTURES I-95
153	ROADWAY SOIL SURVEY
154-155	CROSS SECTION PATTERN SHEET
156-181	CROSS SECTIONS SR 80
182-206	CROSS SECTIONS I-95
⚠207-211,211A,211B,211C,211D	CROSS SECTIONS - RAMP I
212-214	CROSS SECTIONS - RAMP J
215-220	CROSS SECTIONS - RAMP K
221-228	CROSS SECTIONS - RAMP L
229-234	CROSS SECTIONS - STUB CANAL
235-239	CROSS SECTIONS - DETENTION POND 1
240-249	SIGNING PLANS
250-251	AIRPORT APPROACH SLOPES
252-375	TRAFFIC CONTROL PLAN
376-386	SR 80 - UTILITY ADJUSTMENTS
387-390	I-95 - UTILITY ADJUSTMENTS
391-411	INTERIM STANDARDS

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION, ROADWAY AND TRAFFIC DESIGN STANDARDS DATED JANUARY 2000, AND STANDARDS SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2000, AS AMENDED BY CONTRACT DOCUMENTS.



0 1 2
Kilometers
1:133 000

NOTE: THIS IS A METERIC UNIT PROJECT

NOTE: LENGTH OF PROJECT BASED ON SR-80 ℄ CONSTRUCTION

LENGTH OF PROJECT	METERS	
	FPID 231835-1-52-01	FPID 231919-1-52-01
ROADWAY	1 128.202	1 182.000
BRIDGES	164.000	0.000
NET LENGTH OF PROJECT	1 290.202	1 182.000
EXCEPTIONS	0.000	0.000
GROSS LENGTH OF PROJECT	1 290.202	1 182.000

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION
09/03/02	MB	⚠ REVISED INDEX OF ROADWAY PLANS
03/11/04	DP	⚠ ADDED SHEETS 129A, 211A, 211B, 211C, 211D
01/04/06	MDT	⚠ ADDED SHEETS 139A

NAME OF CONTRACTOR ARCHER WESTERN CONTRACTORS, LTD
NAME OF ALL CONSULTANTS INVOLVED THE CORRADINO GROUP
REYNOLDS SMITH & HILLS CE
RESIDENT ENGINEER EDUARDO PEREZ de MORALES, PE
PROJECT ADMINISTRATOR ROWAN CARTER, PE
DISTRICT SECRETARY JAMES WOLFE, PE
DATE WORK STARTED 4/08/2004
DATE WORK CONDITIONALLY ACCEPTED N/A
DATE WORK FINAL ACCEPTANCE OR COMPLETED 10/06/2006

THIS PROJECT WAS CONSTRUCTED IN SUBSTANCIAL COMPLIANCE WITH THESE PLANS AS PROVIDED BY THE ENGINEER OF RECORD. THESE PLANS REFLECT "AS-BUILT" CONDITIONS AND NO CHANGES WERE MADE TO THE PLAN SHEETS.

ROWAN CARTER, PE — 11/21/2006
PROJECT ENGINEER — DATE

ROADWAY PLANS
ENGINEER OF RECORD: MURRAY D. THORNBURG, JR.
P.E. NO.: 15818

FISCAL YEAR	SHEET NO.
03	1

FDOT PROJECT MANAGER: JOHN THOMPSON, P.E.

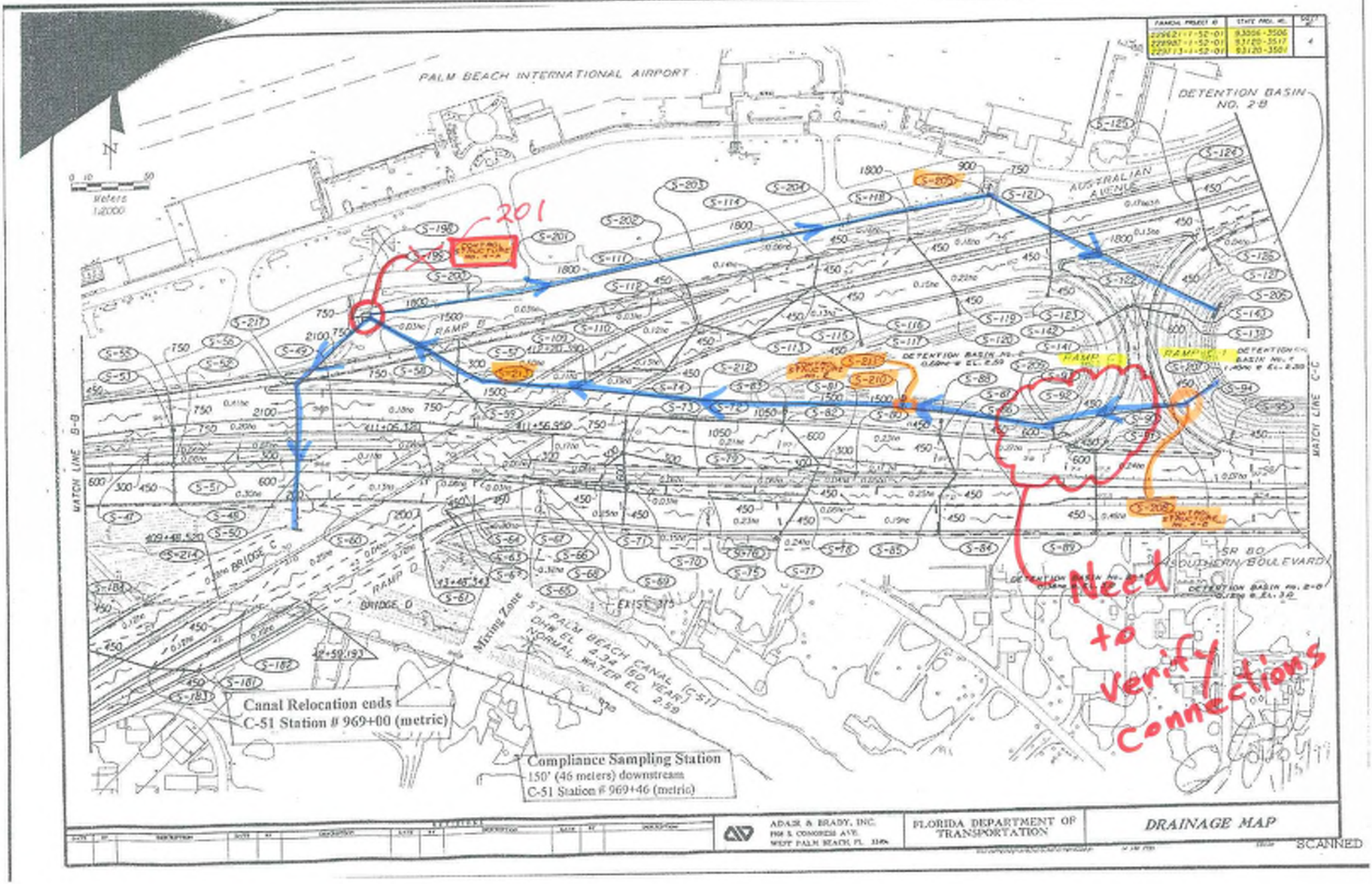
ROADWAY SHOP DRAWINGS TO BE SUBMITTED TO:
KIMLEY-HORN AND ASSOCIATES, INC.
MURRAY D. THORNBURG, JR., P.E.
1401 CORPORATE DRIVE
WEST PALM BEACH, FLORIDA 33407

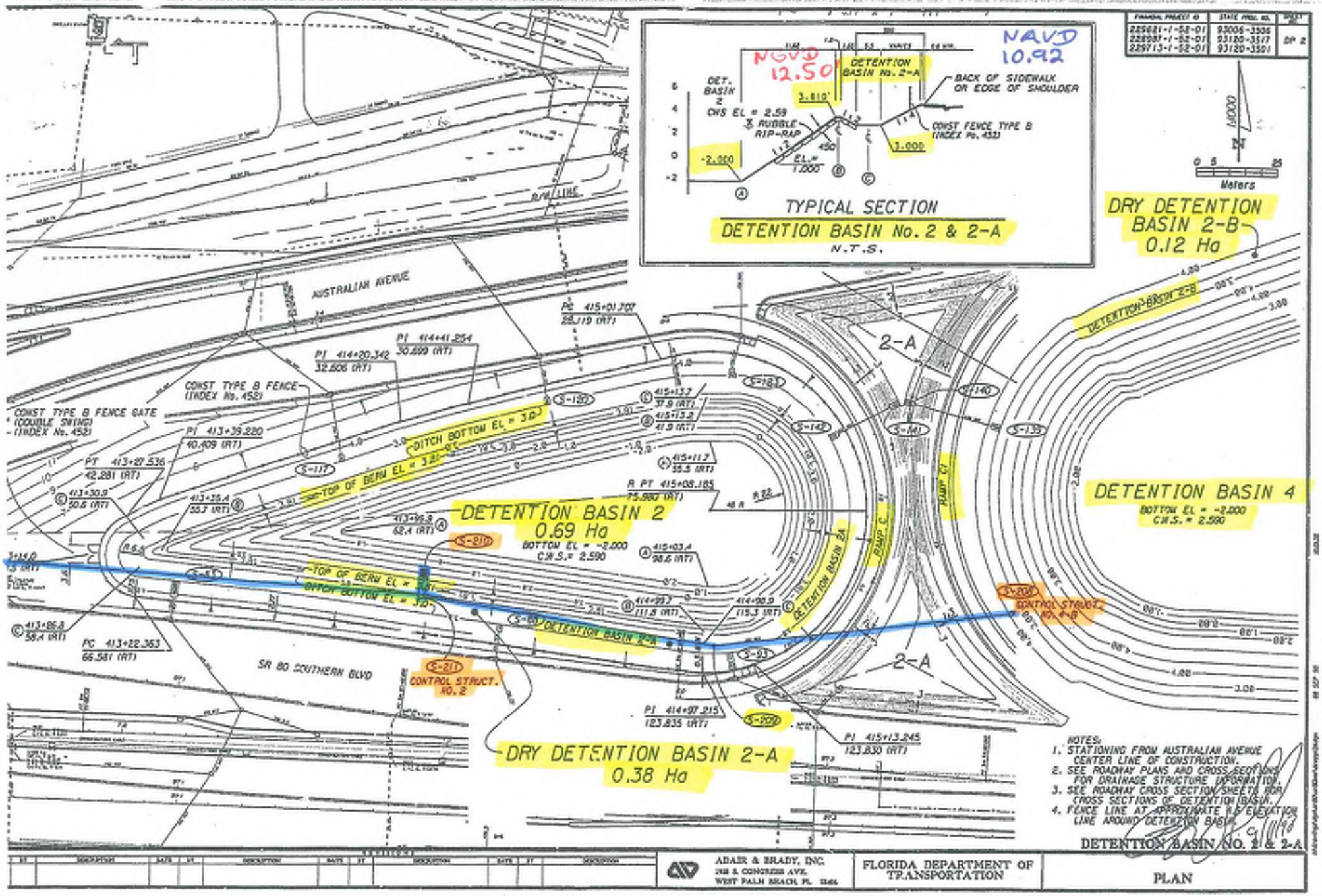
PLANS PREPARED BY:
KIMLEY-HORN AND ASSOCIATES, INC.
CONSULTING ENGINEERS AND PLANNERS
LICENSE NO. 5265
1401 CORPORATE DRIVE
WEST PALM BEACH, FLORIDA 33407
(561) 845-0665 (561) 478-0039
CONTRACT NO. E-4B58

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

NOTE: THIS PROJECT IS TO BE LET TO CONTRACT WITH FINANCIAL PROJECT ID 231835-1-52-01

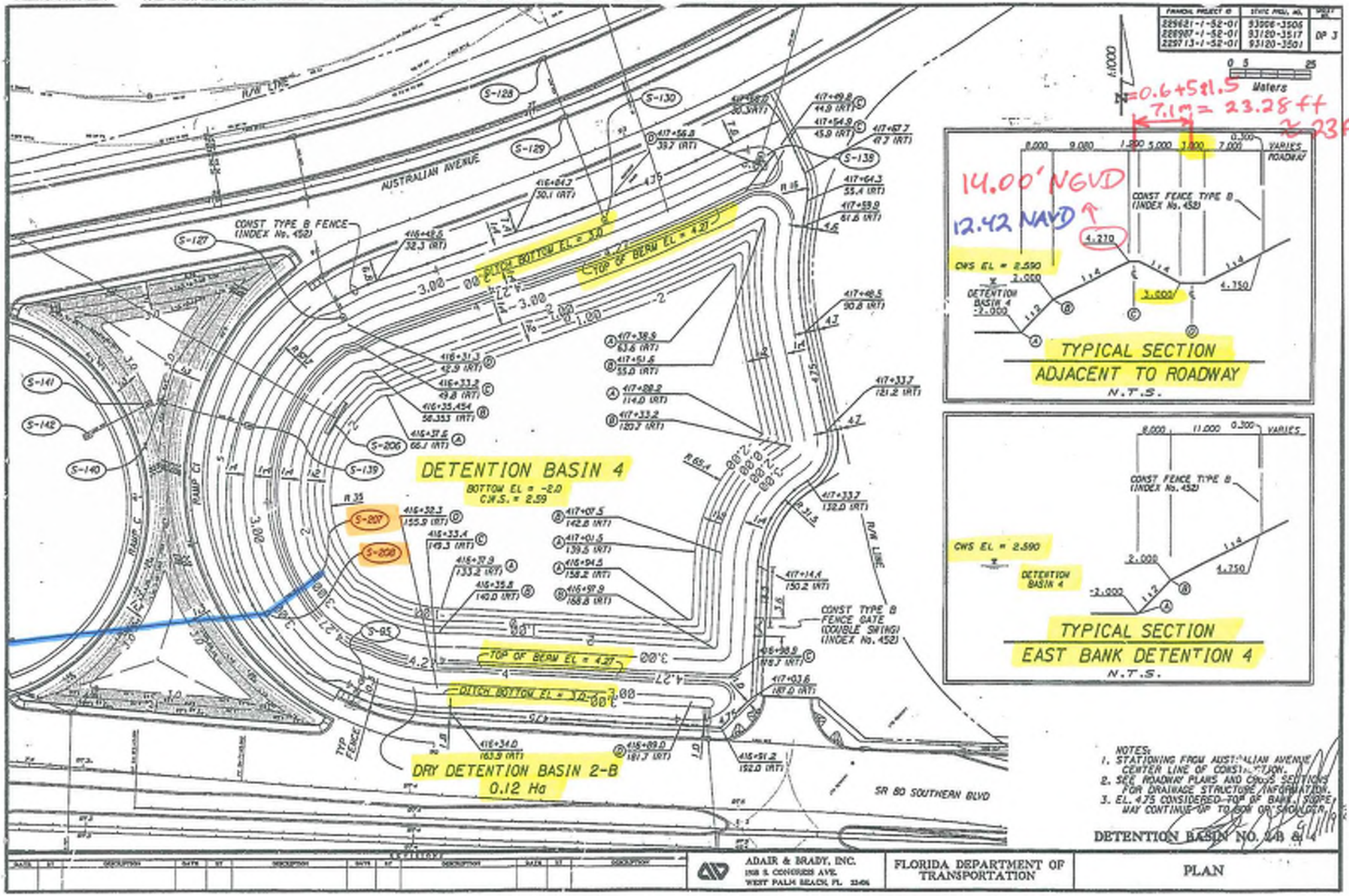
NOTE: FINANCIAL PROJECT ID 231919-1-52-01 IS FOR FISCAL PURPOSES ONLY.


PALM BEACH INTERNATIONAL AIRPORT
DETENTION BASIN NO. 2-B
AUSTRALIAN AVENUE
SR 80 SOUTHERN BOULEVARD
RAMP B
RAMP C
RAMP D
BRIDGE C
BRIDGE D
CONTROL STRUCTURE NO. 2-A
CONTROL STRUCTURE NO. 2-C
DETENTION BASIN NO. 2-C
DETENTION BASIN NO. 2-D
MATCH LINE B-B
MATCH LINE C-C
Mixing Zone
ST PALM BEACH CANAL (C-51)
OHW EL 4.34 (50 YEAR)
NORMAL WATER EL 2.59
EXIST. 375
Canal Relocation ends
C-51 Station # 969+00 (metric)
Compliance Sampling Station
150' (46 meters) downstream
C-51 Station # 969+46 (metric)
201
Need to verify Connections
ADAIR & BRADY, INC.
FLORIDA DEPARTMENT OF TRANSPORTATION
DRAINAGE MAP
SCANNED



FINANCIAL PROJECT ID	STATE PROJ. NO.	SHEET NO.
229621-1-52-01	93006-3506	DP 2
228987-1-52-01	93120-3517	
229713-1-52-01	93120-3501	

8-25-98 dp 98040104

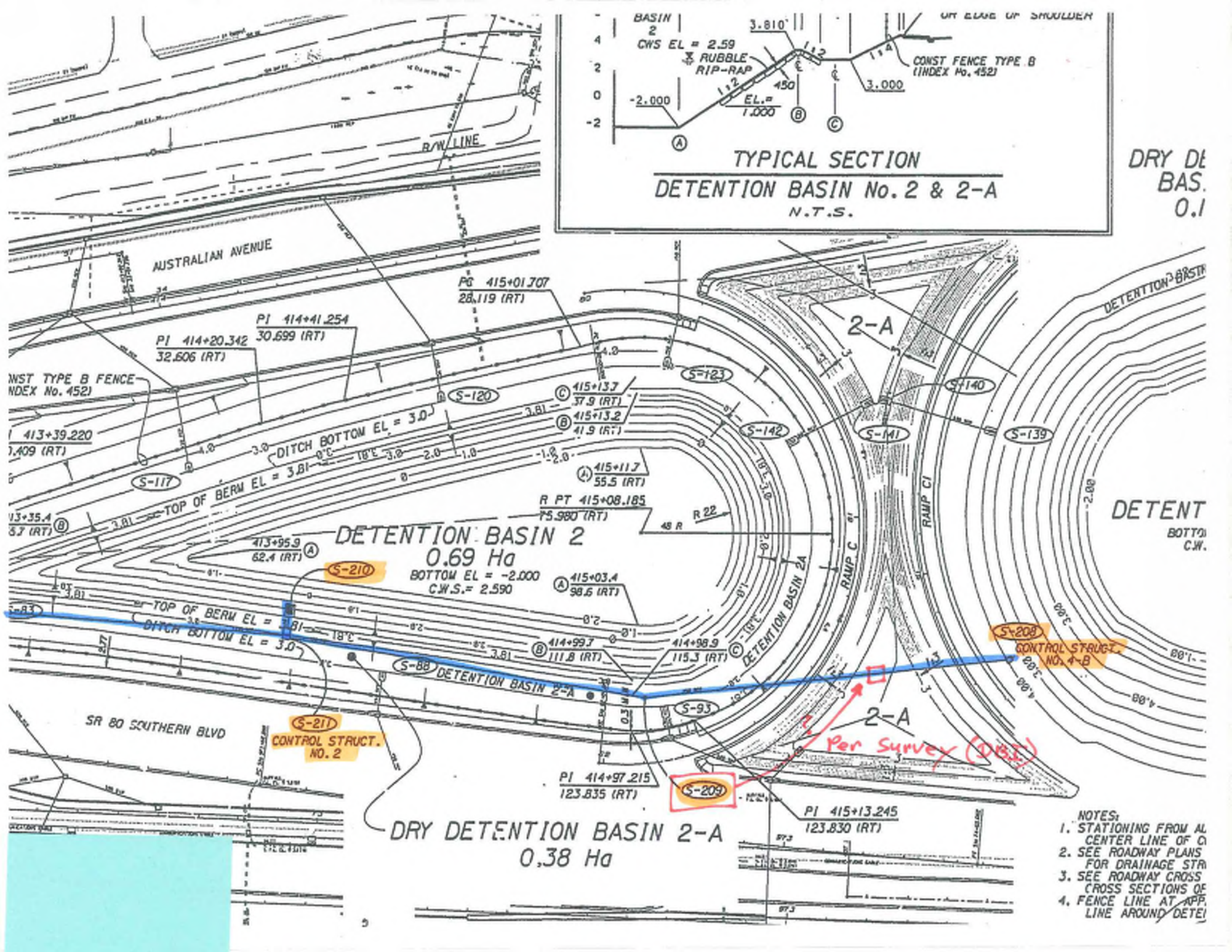


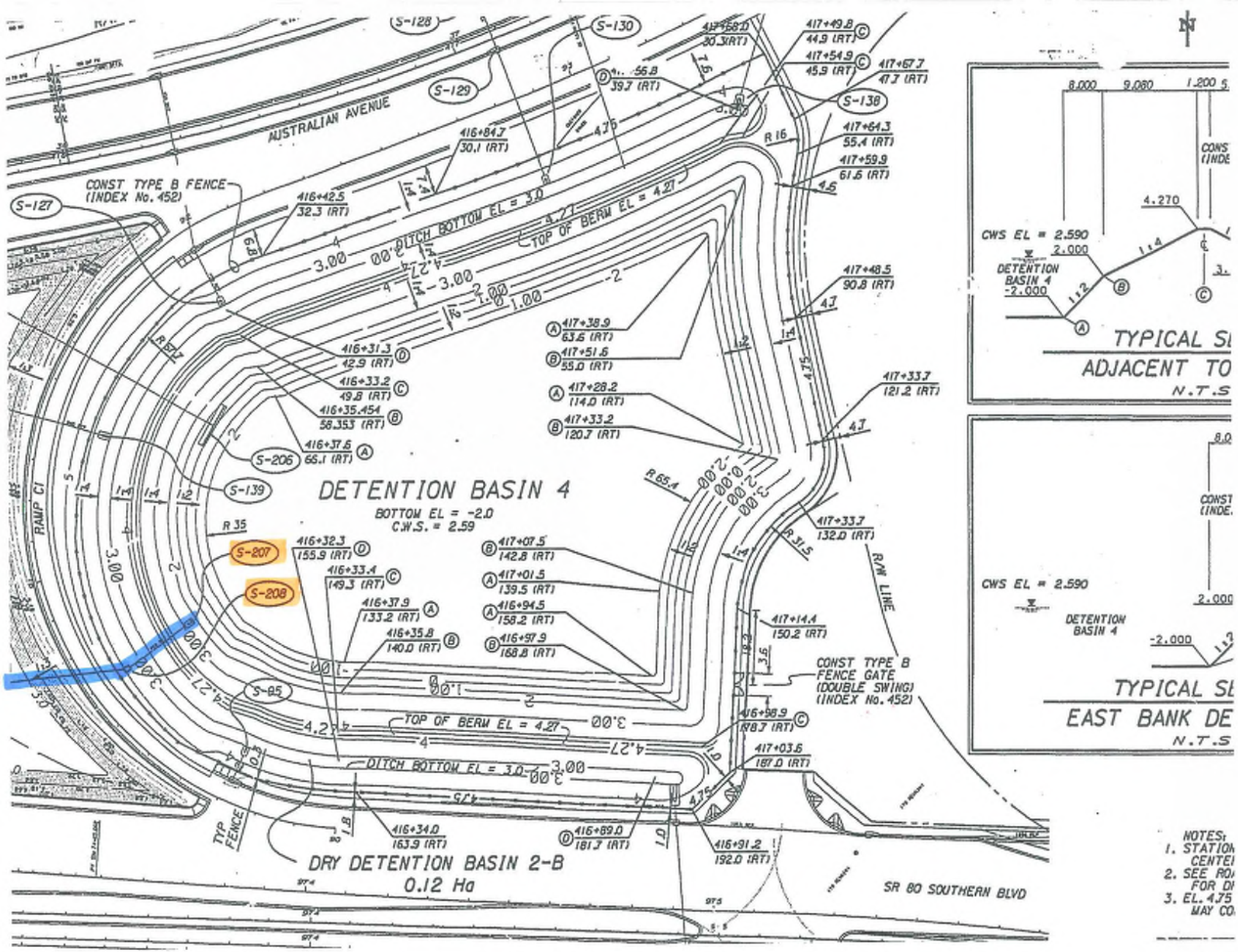
FINANCIAL PROJECT ID	STATE PROJ. NO.	SHEET NO.
228621-1-52-01	93006-3506	DP 3
228987-1-52-01	93120-3517	
229713-1-52-01	93120-3501	

NOTES:
1. STATIONING FROM AUSTRALIAN AVENUE CENTER LINE OF CONSTRUCTION.
2. SEE ROADWAY PLANS AND CROSS SECTIONS FOR DRAINAGE STRUCTURE INFORMATION.
3. EL. 4.75 CONSIDERED TOP OF BANK. SLOPE MAY CONTINUE UP TO 4.00 OR SHOULDER.

DETENTION BASIN NO. 2B & 4

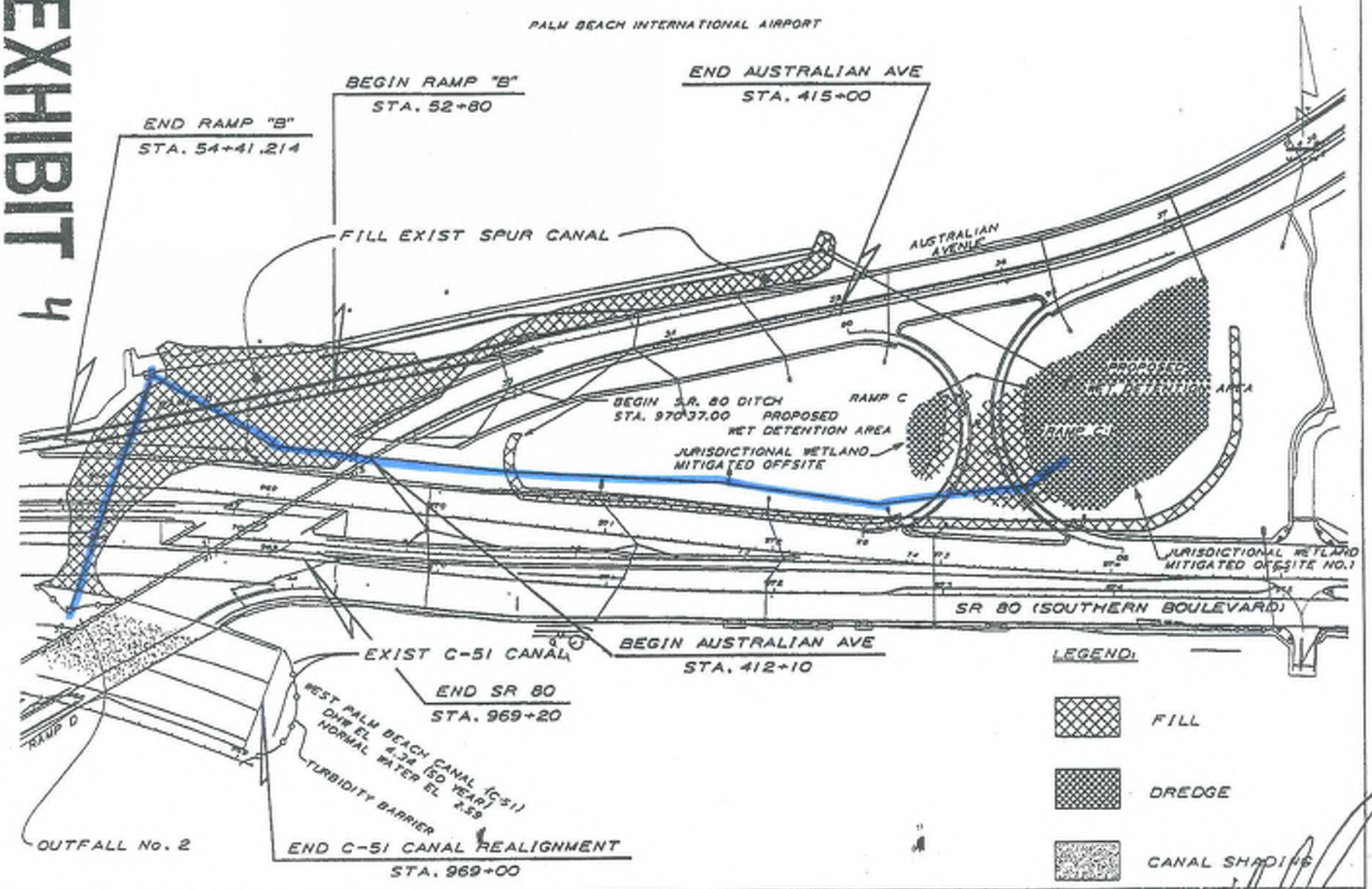
ADAIR & BRADY, INC. 1108 S. CONGRESS AVE. WEST PALM BEACH, FL. 33406	FLORIDA DEPARTMENT OF TRANSPORTATION	PLAN


BASIN 2
CWS EL = 2.59
RUBBLE RIP-RAP
-2.000
EL.= 1.000
3.810
450
3.000
CONST FENCE TYPE B (INDEX No. 452)
TYPICAL SECTION
DETENTION BASIN No. 2 & 2-A
N.T.S.
AUSTRALIAN AVENUE
B/W LINE
PC 415+01.707
28.119 (RT)
PI 414+41.254
30.699 (RT)
PI 414+20.342
32.606 (RT)
DITCH BOTTOM EL = 3.0
TOP OF BERM EL = 3.81
S-120
S-117
S-123
S-140
S-142
S-141
S-139
2-A
RAMP C1
DETENTION BASIN 2A
R PT 415+08.185
75.980 (RT)
R 22
DETENTION BASIN 2
0.69 Ha
BOTTOM EL = -2.000
C.W.S.= 2.590
S-210
S-88
DETENTION BASIN 2-A
S-93
S-209
CONTROL STRUCT. NO. 4-B
S-211
CONTROL STRUCT. NO. 2
SR 80 SOUTHERN BLVD
Per Survey (DBI)
PI 414+97.215
123.835 (RT)
PI 415+13.245
123.830 (RT)
DRY DETENTION BASIN 2-A
0.38 Ha
NOTES:
1. STATIONING FROM AL
CENTER LINE OF C
2. SEE ROADWAY PLANS
FOR DRAINAGE STR
3. SEE ROADWAY CROSS
CROSS SECTIONS OF
4. FENCE LINE AT APP.
LINE AROUND DETE


AUSTRALIAN AVENUE
S-127
S-128
S-129
S-130
S-138
S-139
S-206
S-207
S-208
S-85
CONST TYPE B FENCE (INDEX No. 452)
DETENTION BASIN 4
BOTTOM EL = -2.0
C.W.S. = 2.59
DITCH BOTTOM EL = 3.0
TOP OF BERM EL = 4.27
RAMP CI
R 16
R 67.7
R 35
R 65.4
R 31.5
RW LINE
CONST TYPE B FENCE GATE (DOUBLE SWING) (INDEX No. 452)
TYP FENCE
DRY DETENTION BASIN 2-B
0.12 Ha
SR 80 SOUTHERN BLVD
416+42.5 32.3 (RT)
416+84.7 30.1 (RT)
417+49.8 44.9 (RT)
417+54.9 45.9 (RT)
417+67.7 47.7 (RT)
417+64.3 55.4 (RT)
417+59.9 61.5 (RT)
417+48.5 90.8 (RT)
417+38.9 63.6 (RT)
417+51.6 55.0 (RT)
416+31.3 42.9 (RT)
416+33.2 49.8 (RT)
416+35.454 58.353 (RT)
416+37.6 66.1 (RT)
417+28.2 114.0 (RT)
417+33.2 120.7 (RT)
417+33.7 121.2 (RT)
417+33.7 132.0 (RT)
416+32.3 155.9 (RT)
416+33.4 149.3 (RT)
416+37.9 133.2 (RT)
416+35.8 140.0 (RT)
417+07.5 142.8 (RT)
417+01.5 139.5 (RT)
416+94.5 158.2 (RT)
416+97.9 168.8 (RT)
417+14.4 150.2 (RT)
416+98.9 178.7 (RT)
417+03.6 187.0 (RT)
416+34.0 163.9 (RT)
416+89.0 181.7 (RT)
416+91.2 192.0 (RT)
8.000
9.060
1.200 S
4.270
CWS EL = 2.590
2.000
DETENTION BASIN 4
-2.000
1:4
1:2
TYPICAL SI
ADJACENT TO
N.T.S
CWS EL = 2.590
2.000
DETENTION BASIN 4
-2.000
TYPICAL SI
EAST BANK DE
N.T.S
NOTES:
1. STATION
CENTEI
2. SEE RO
FOR DI
3. EL. 4.75
MAY CO

48U625-8

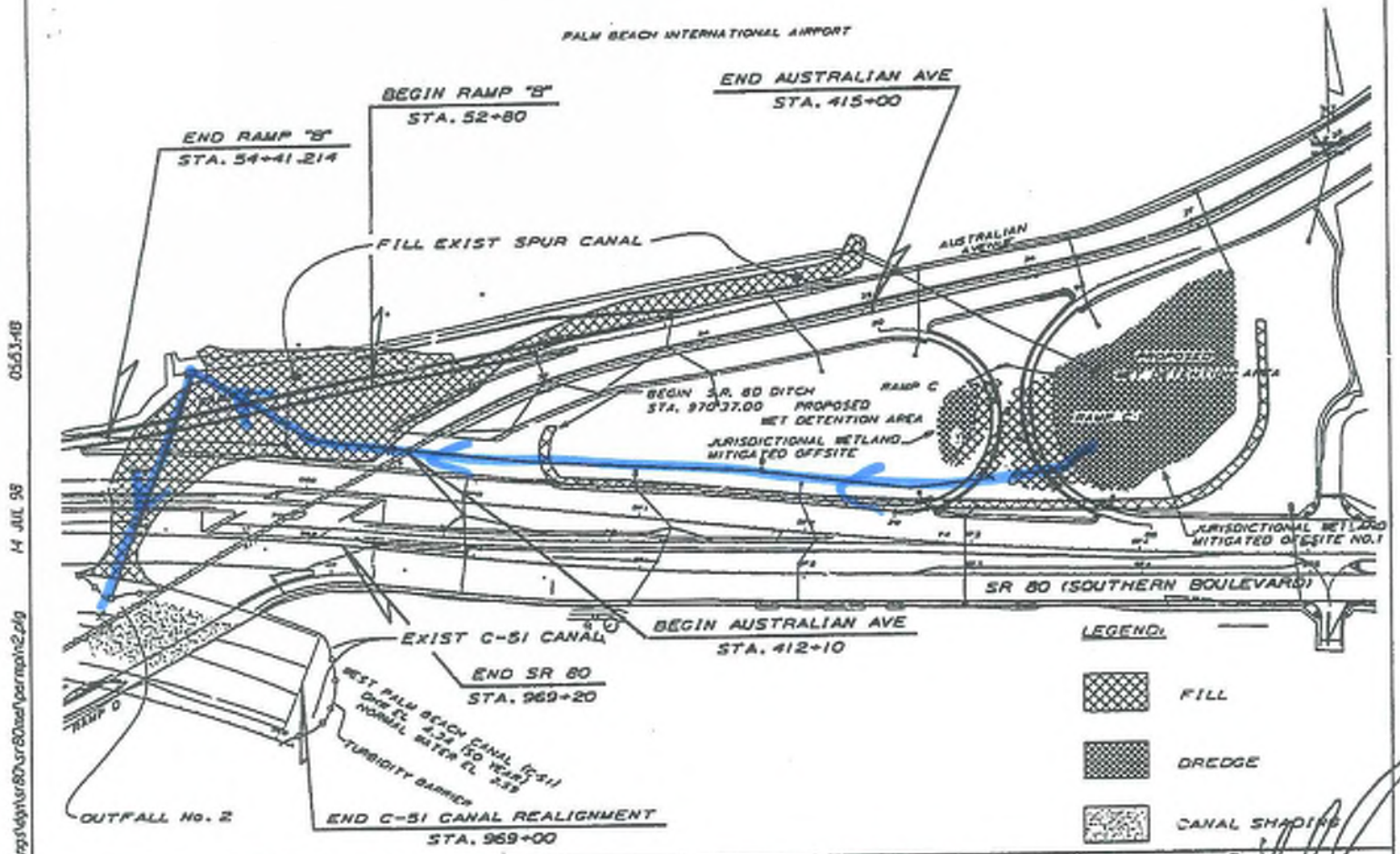
EXHIBIT h



PROJECT DESCRIPTION S.R. 80/AUST AVE INTERCHANGE & WEST PALM BEACH CANAL (C-51) REALIGNMENT	FLORIDA DEPARTMENT OF TRANSPORTATION	STATE PROJECT NO. 93006-3506
TWP: 43S, 44S RNG: 42E, 43E	NAME:	COUNTY PALM BEACH
SEC 5, 6, 31, 32	SIGNATURE	DER CO SHEET 3 OF 87
	CERTIFICATE NO.: DATE:	CODE DATE 7/15/98

h:\drawings\dgn\sr80\sr80merkpermpln2.plg 14 JUL 98 05:53:48

980625-8 - Permit file



N:\drawings\wpi\sr80\sr80ae\permpln2.dgn 14 JUL 98 05:53:48

PROJECT DESCRIPTION S.R. 80/AUST AVE INTERCHANGE & WEST PALM BEACH CANAL (C-51) REALIGNMENT	FLORIDA DEPARTMENT OF TRANSPORTATION	STATE PROJECT NO. 93006-3506
TWP: 43S, 44S RNG: 42E, 43E	NAME:	COUNTY PALM BEACH
SEC 5, 6, 31, 32	SIGNATURE	DES CG SHEET 3 OF 8?
	CERTIFICATE NO.: DATE:	EOE DATE 7/15/98

THIS CONTRACT PLAN SET INCLUDES

ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS
SIGNALIZATION PLANS
ROADWAY LIGHTING PLANS
STRUCTURE PLANS
LANDSCAPE PLANS
SUMMARY OF PAY ITEMS (10 SHEETS)

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT SET OF PLANS

RECEIVED
MAY 17 1999
4th DISTRICT
DISTRICT CONSTRUCTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID 229621-1-52-01
FINANCIAL PROJECT ID 228987-1-52-01
FINANCIAL PROJECT ID 229713-1-52-01
STATE PROJECT NO. 93000-3566
STATE PROJECT NO. 93120-3517
STATE PROJECT NO. 93120-3501

PALM BEACH COUNTY

STATE ROAD NO. 80 (SOUTHERN BOULEVARD AND AUSTRALIAN AVENUE
S.R. 807 (CONGRESS AVENUE) INTERCHANGE

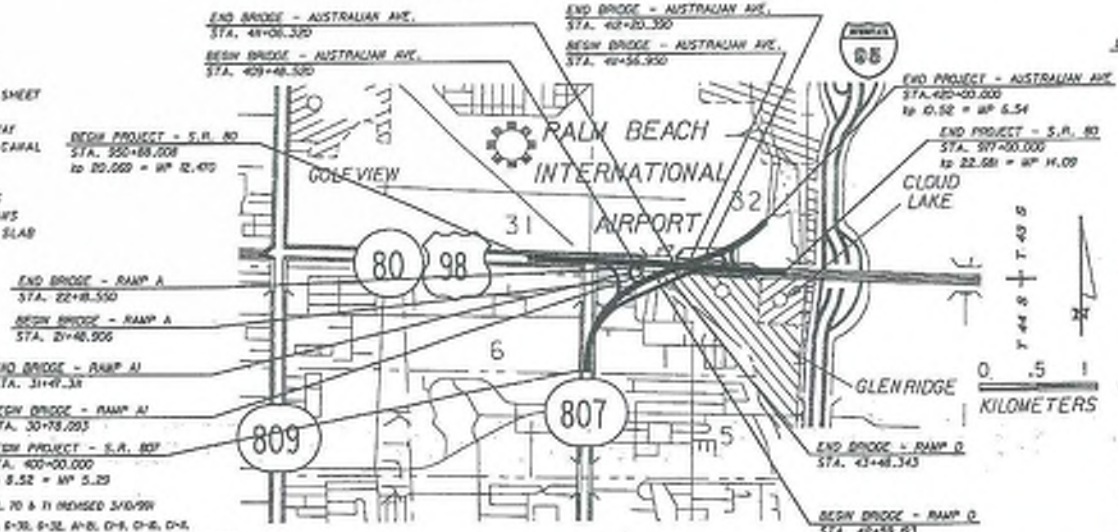
W.P.I. No. 4108665
4108031
4108757

SHEET	SHEET NO.
99	1

ROADWAY SHOP DRAWINGS TO BE SUBMITTED TO:

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2 - 6	DRAINAGE MAP
7 - 17	TYPICAL SECTIONS
18	GENERAL NOTES
19 - 20	SUMMARY OF QUANTITIES
21 - 29	SUMMARY OF DRAINAGE STRUCTURES
30 - 31	PROJECT LAYOUT
32 - 76	ROADWAY PLAN SHEETS
77 - 130	ROADWAY PROFILES
131	LANDSCAPE DETAILS
132 - 134	INTERCHANGE LAYOUT
135 - 208	DRAINAGE STRUCTURES
209 - 212	DETENTION PONDS
213	CROSS SECTION PATTERN SHEET
214 - 216	ROADWAY SOIL SURVEY
217 - 384	CROSS SECTIONS - ROADWAY
385 - 410	CROSS SECTIONS - C-51 CANAL
411	CROSS SLOPE DATA
412 - 417	REFERENCE POINTS
418 - 513	TRAFFIC CONTROL SHEETS
514 - 559	UTILITY ADJUSTMENT PLANS
560 - 561	INTERSECTION APPROACH SLAB
562 - 564	BOX CULVERT
565 - 569	INTERIM STANDARDS



PLANS PREPARED BY

ADAIR & BRADY, INC.
1958 SOUTH CONGRESS AVENUE
WEST PALM BEACH, FLORIDA 33406
(561) 964-1221
VENDOR No. VF-591-086-656-001

NOTE: THIS PROJECT TO BE LET TO CONTRACT WITH FINANCIAL PROJECT ID 229713-1-52-02

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DATED 1999, SUPPLEMENTS AND SPECIAL PROVISIONS THERETO IF NOTED IN THE CONTRACT SPECIFICATIONS FOR THIS PROJECT.

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, ROADWAY AND TRAFFIC DESIGN STANDARDS BOOKLET DATED JANUARY , 1999.

REVISIONS

1.) ROADWAY PLAN SHEETS 1, 9, 13, 16, 18, 19, 45, 47, 57, 58, 61, 62, 70 & 71 REVISED 5/10/99

2.) STRUCTURAL PLAN SHEETS D-3, D-23, D-24, D-25, D-27, D-28, D-29, D-30, D-32, A-1, D-9, D-6, D-5, D-12, D-13, D-14, D-16, D-15, D-17, D-18, D-19, D-31, D-33, D-35, D-39, D-37, D-38, D-40, D-42, D-45, D-46, D-47, CE-3, CE-4, CE-6, CE-9, CE-8, CE-7, CE-11, CE-14, CE-15, CE-16, VSE-1, VSE-2, VSE-9, VSE-8, VSE-10, R405E TR-1, TR-3 AND TR-4 REVISED 5/10/99

3.) SIGNALIZATION PLAN SHEETS T-1, T-4, T-21, T-22, T-25, T-27, T-28, T-29 AND T-30 REVISED 5/10/99

4.) SIGNING & PAVEMENT MARKING PLAN SHEET S-12 REVISED 5/10/99

5.) LANDSCAPE PLAN SHEETS LS-5, LS-6 & LS-7 REVISED 5/10/99

6.) SUMMARY OF PAY ITEMS REVISED 5/10/99

7.) ROADWAY PLAN SHEETS 1, 18, 19 & 45 REVISED 4/8/99

8.) SUMMARY OF PAY ITEMS REVISED 4/8/99

9.) STRUCTURAL PLAN SHEET D-3 REVISED 4/8/99

[redacted]

R405E

LENGTH OF PROJECT	METERS
RAMPS	2 740.737
ROADWAY	4 390.758
BRIDGES	449.252
NET LENGTH OF PROJ.	7 580.747
EXCEPTIONS	0
GROSS LENGTH OF PROJ	7 580.747

KEY SHEET REVISIONS

NO.	BY	DESCRIPTION

NOTE: THIS IS A METRIC UNIT PROJECT

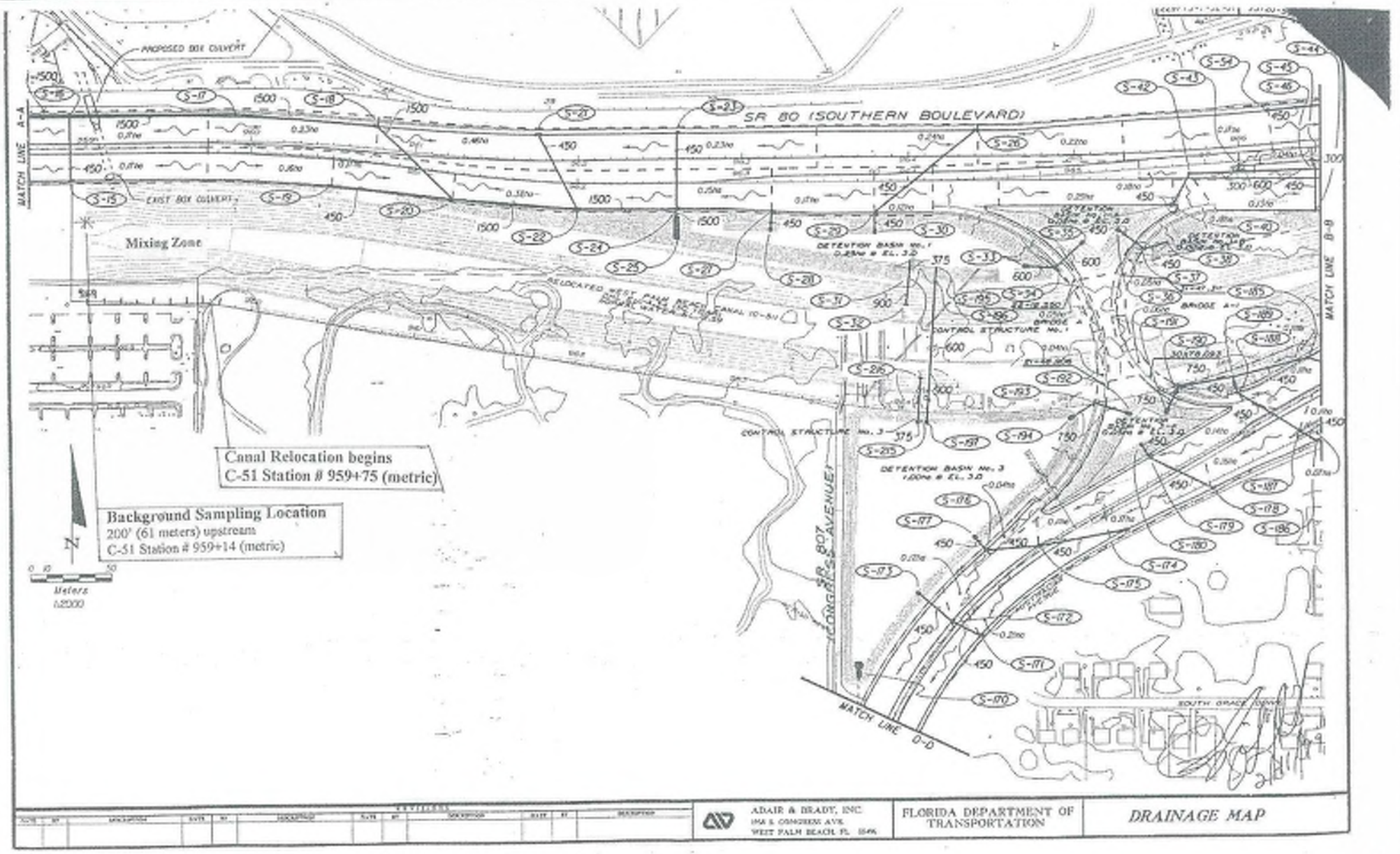
5/14/99

ROADWAY PLANS ENGINEER OF RECORD: DOUGLAS O'LAUGHLIN, P.E.

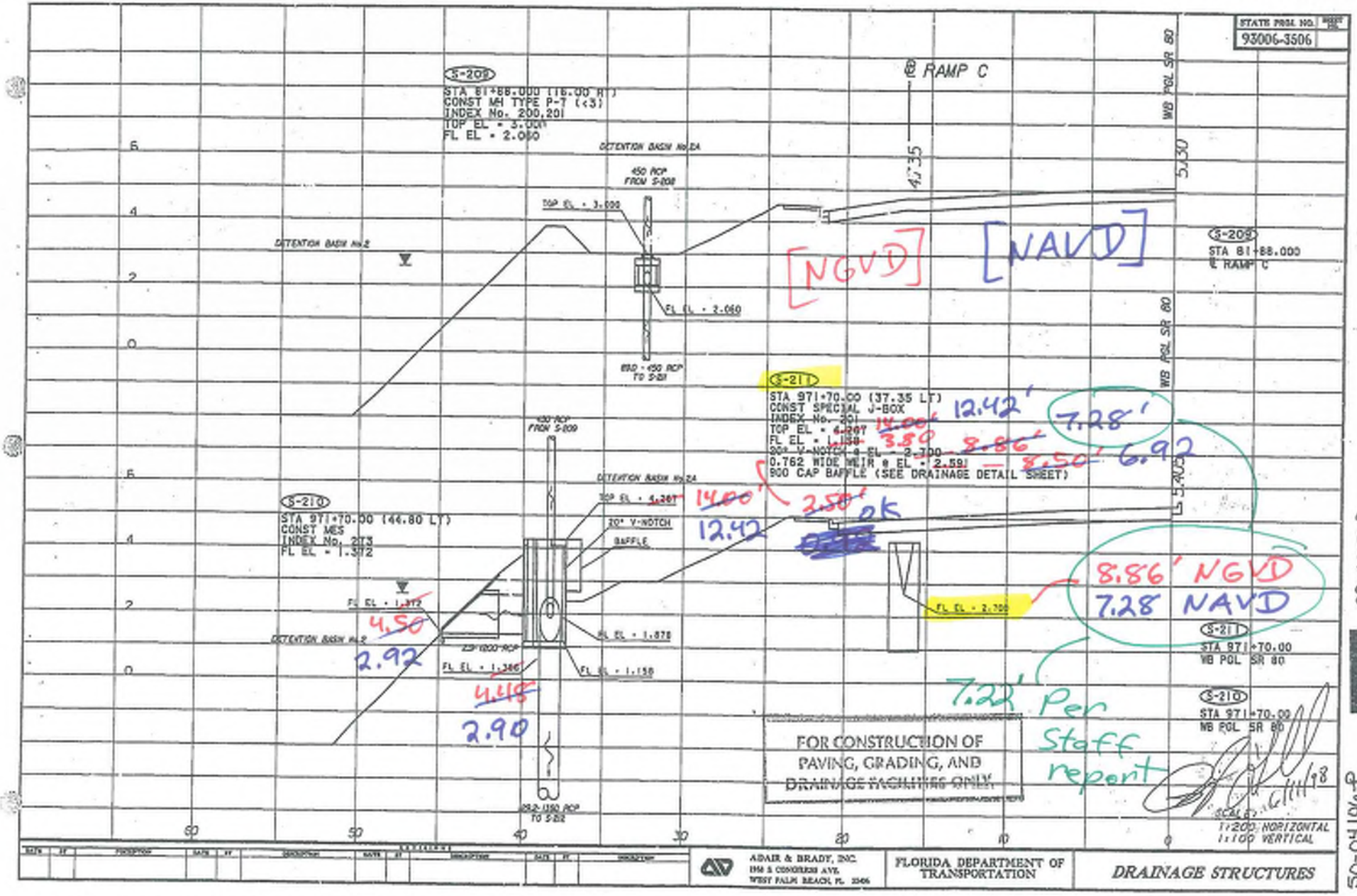
P.E. NO.: 35426

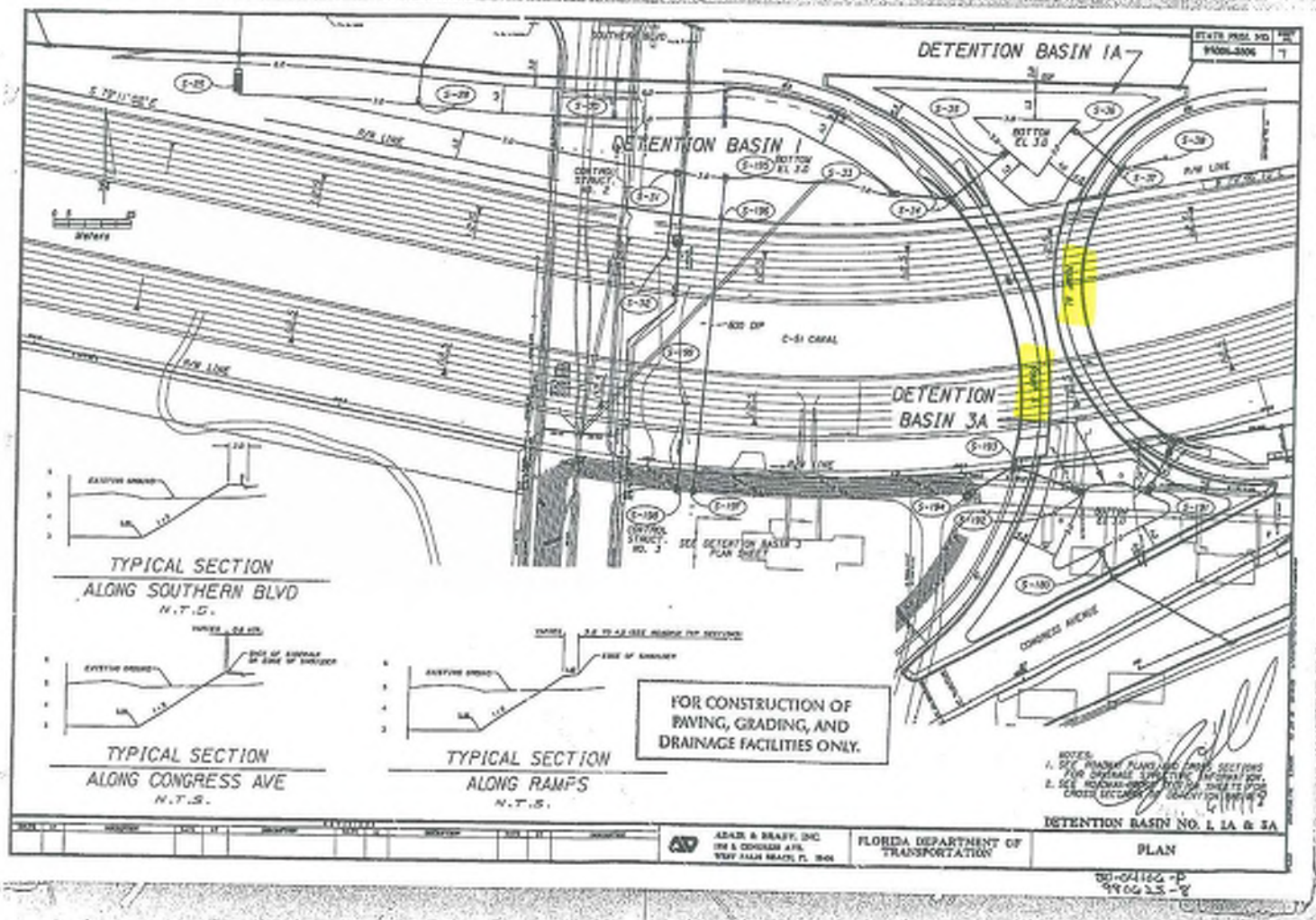
FDOT PROJECT MANAGER : JOHN THOMPSON, P.E.

SCANNED



ADAIR & BRADY, INC. 1908 S. CONGRESS AVE. WEST PALM BEACH, FL. 33406	FLORIDA DEPARTMENT OF TRANSPORTATION	DRAINAGE MAP	


STATE PROJ. NO.
93006-3506
S-209
STA 81+88.000 (16.00 RT)
CONST MH TYPE P-T (<3)
INDEX No. 200,201
TOP EL = 3.000
FL EL = 2.060
@ RAMP C
WB POL SR 80
4.735
5.30
DETENTION BASIN No.2A
450 RCP FROM S-208
TOP EL = 3.000
DETENTION BASIN No.2
FL EL = 2.060
BRD = 450 RCP TO S-211
[NGVD]
[NAVD]
S-209
STA 81+88.000
℄ RAMP C
S-211
STA 971+70.00 (37.35 LT)
CONST SPECIAL J-BOX
INDEX No. 201
TOP EL = 4.267
FL EL = 1.158
30° V-NOTCH @ EL = 2.700
0.762 WIDE WEIR @ EL = 2.591
90° CAP BAFFLE (SEE DRAINAGE DETAIL SHEET)
12.42'
7.28'
3.50
8.86'
8.50'
6.92
14.00'
2.50'
OK
12.42
450 RCP FROM S-209
DETENTION BASIN No.2A
TOP EL = 4.267
30° V-NOTCH BAFFLE
S-210
STA 971+70.00 (44.80 LT)
CONST MES
INDEX No. 273
FL EL = 1.372
FL EL = 1.372
4.50
2.92
DETENTION BASIN No.2
2@1200 RCP
FL EL = 1.346
4.415
2.90
FL EL = 1.878
FL EL = 1.158
2@1.150 RCP TO S-212
FL EL = 2.700
8.86' NGVD
7.28 NAVD
S-211
STA 971+70.00
WB POL SR 80
S-210
STA 971+70.00
WB POL SR 80
7.28' Per Staff report
FOR CONSTRUCTION OF PAVING, GRADING, AND DRAINAGE FACILITIES ONLY
SCALE:
1:200 HORIZONTAL
1:100 VERTICAL
ADAIR & BRADY, INC.
1551 S. CONGRESS AVE.
WEST PALM BEACH, FL. 33406
FLORIDA DEPARTMENT OF TRANSPORTATION
DRAINAGE STRUCTURES
96025-8
50-04106-P


DETENTION BASIN 1A
DETENTION BASIN 1
DETENTION BASIN 3A
C-51 CANAL
SOUTHERN BLVD
CONGRESS AVENUE
TYPICAL SECTION
ALONG SOUTHERN BLVD
N.T.S.
TYPICAL SECTION
ALONG CONGRESS AVE
N.T.S.
TYPICAL SECTION
ALONG RAMPS
N.T.S.
FOR CONSTRUCTION OF
PAVING, GRADING, AND
DRAINAGE FACILITIES ONLY.
ADAIR & BRADY, INC.
FLORIDA DEPARTMENT OF TRANSPORTATION
DETENTION BASIN NO. 1, 1A & 3A
PLAN

DETENTION BASIN #2

ADAIR & BRADY, INC.
Consulting Engineers Land Surveyors
1958 South Congress Avenue
West Palm Beach, Florida 33406
Telephone: (561) 964-1221 • Fax: (561) 964-0413

SUBJECT _____

BY _____ DATE _____ CK. _____

W.O. _____ SHEET ____ OF ____

SBAI BASIN = 2

2-A & 2-B DRY DETENTION

WATER QUALITY

TOTAL IMPERVIOUS DISCHARGING TO 2-A & 2B

So. BLVD	20.8 Ac
Aust. Pk	8.2 Ac
No. Aust. Pk. (County)	3.7 Ac
TOTAL IMP.	32.7 Ac

REQUIRED WATER QUALITY = 32.7 Ac × 2.5" × 1Ft/12" × .75 (Assumed)

= 5.1 AC-FT

VOL = 5.1 AC-FT × 43,560 = 222,156 FT³

– VOLUME AVAILABLE IN DRY DETENTION AREAS BEHIND RAMPS "C" & "C-1"

AREA @ EL 9.5	12,028 FT²	= 15,742.5 × 2.7'
AREA @ EL 12.5	19,397 FT²	

= 42,505 FT³

– VOL. AVAIL. 2-B DRY DET. (PLANTED)

AREA @ EL 9.8	13,000	< 27,000 × 2.7 =
AREA @ EL. 12.5	41,000	

72,900 FT³

ADAIR & BRADY, INC.
Consulting Engineers *Land Surveyors*
1958 South Congress Avenue
West Palm Beach, Florida 33406
Telephone: (561) 964-1221 • Fax: (561) 964-0413

SUBJECT _____

BY _____ DATE _____ CK. _____
W.O. _____ SHEET ____ OF ____

- VOLUME AVAIL 2-A DRY DET. (PERIMETER

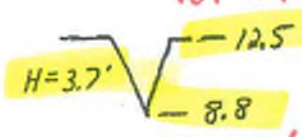
AREA @ EL. 9.5 — 2 PYR: 2 43047 x 2.7
AREA @ EL 12.5 — 56,672

= 116,227 FT³

- AVAIL. TOTAL WATER QUALITY = 231,632 FT³
= 5.3 AC-FT

- BLEEDER - USE V-NOTCH

DET. VOL = 5.1 AC. FT.
TOTAL HEAD = 3.7 FT



$\Theta = 2 \tan^{-1}(0.492) \frac{V_{DET}}{H^{2.5}}$

$\Theta = 2 \tan^{-1}(0.492) \frac{5.1}{(3.7)^{2.5}} = 12.1°$ USE 20° V-NOTCH

- BASIN 2 TOTAL AREA 49.7 AC
PUTNAM (OFF-SITE) 4.5 AC
LESS DETAY LAKE - 3.6 AC (AIRPORT CALCULATIONS)

TOTAL 50.6 AC

IMP.	32.7	
PERV.	10.3	14.1 - 16
LAKE B-1	1.7	8.5
LAKE BANK	0.3	8.5 - 12.5
DRY DET BOTTOM	1.3	9.8
DRY DET. BANKS	1.6	9.8 - 12.5
BANK SLOPES	2.6	12.5 - 14.1

$Q_{ALLOWABLE}$ = 88.6 CFS

ADAIR & BRADY, INC.
Consulting Engineers Land Surveyors
1958 South Congress Avenue
West Palm Beach, Florida 33406
Telephone: (561) 964-1221 • Fax: (561) 964-0413

SUBJECT SBAT

BY SJR DATE ____ CK. ____
W.O. ____ SHEET ____ OF ____

Curve Number

$S = 3.18''$

$I = \frac{32.7}{43.0} = 76$

$S = 8.1'' \cdot (1-.76) \approx 1.9C$

$CN = \frac{1000}{S+10} = \frac{1000}{11.9C}$ 84

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
Copyright 1989, Streamline Technologies, Inc.

BASIN NO. 2
5/20/98

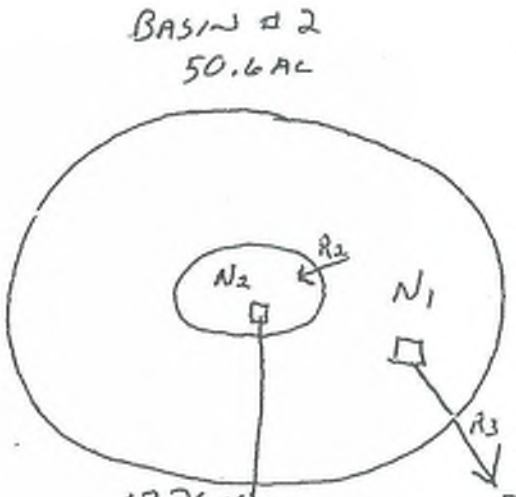
CONTROL PARAMETERS

START TIME: .00
END TIME: 72.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
50.00	2.00	120.00
60.00	2.00	30.00
65.00	2.00	15.00
70.00	2.00	30.00
72.00	2.00	60.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:



Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
Copyright 1989, Streamline Technologies, Inc.

BASIN NO. 2
5/20/98

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
N1	STRG	8.800	.000	.000	.000	8.800	.000
						9.800	.001
						10.300	.710
						10.800	1.560
						11.800	3.640
						12.300	4.870
						12.800	6.280
						13.300	8.080
						14.300	12.970
						15.300	22.060
N2	STRG	8.500	.000	.000	.000	8.500	.000
						9.500	1.740
						10.000	2.630
						10.500	3.550
						11.500	5.440
						12.000	6.410
						12.500	7.400
						14.000	10.400
END	TIME	8.500	.000	.000	.000	8.500	.000
						8.500	100.000
END2	TIME	8.500	.000	.000	.000	8.500	.000
						8.500	100.000

```
        Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
                  Copyright 1989, Streamline Technologies, Inc.

        BASIN NO. 2
        5/20/98

>>REACH NAME       : R1
  FROM NODE        : N2
  TO NODE          : END2
  REACH TYPE       : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTE EQ.
  FLOW DIRECTION   : POSITIVE AND NEGATIVE FLOWS ALLOWED
    CREST EL. (ft):   8.500  CREST LN. (ft):   2.500    OPENING (ft): 999.000
        WEIR COEF.:   3.000       GATE COEF.:    .600 NUMBER OF ELEM.:   1.000
              NOTE: WEIR IN LAKE

>>REACH NAME       : R2
  FROM NODE        : N1
  TO NODE          : N2
  REACH TYPE       : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTE EQ.
  FLOW DIRECTION   : POSITIVE AND NEGATIVE FLOWS ALLOWED
    CREST EL. (ft):  12.500  CREST LN. (ft):1400.000    OPENING (ft): 999.000
        WEIR COEF.:   3.000       GATE COEF.:    .600 NUMBER OF ELEM.:   1.000
              NOTE: TOP SWALE BANK TO LAKE AS WEIR

>>REACH NAME       : R3
  FROM NODE        : N1
  TO NODE          : END
  REACH TYPE       : TRIANGULAR WEIR/GATE/ORIFICE, VILLEMONTE EQ.
  FLOW DIRECTION   : POSITIVE AND NEGATIVE FLOWS ALLOWED
    CREST EL. (ft):   8.500 VERTX ANG (deg):  20.000    OPENING (ft):   3.700
        WEIR COEF.:   2.500       GATE COEF.:    .600 NUMBER OF ELEM.:   1.000
              NOTE: BLEEDER FROM SWALE TO CANAL
```

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
Copyright 1989, Streamline Technologies, Inc.

BASIN NO. 2
5/20/98

REACH SUMMARY

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	R1	N2	END2	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTE EQ
2	R2	N1	N2	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTE EQ
3	R3	N1	END	TRIANGULAR WEIR/GATE/ORIFICE, VILLEMONTE EQ.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Permit #50-00471-S

April 1, 2009

Palm Beach County Board of County Commissioners
846 Palm Beach International Airport
West Palm Beach, FL 33406

Subject: Application No. 080417-15, **PBIA Conceptual Stormwater Plan**
Palm Beach County, S29-32/T43S/R43E, S25,36/T43S/R42E, S5,6/T44S/R43E

Enclosed is a copy of the South Florida Water Management District's staff report covering the permit application referenced therein. It is requested that you read this staff report thoroughly and understand its contents. The recommendations as stated in the staff report will be presented to our Governing Board for consideration on **Thursday, April 9, 2009. Please note, the meeting will be held at the St. Cloud City Hall, Council Chambers, 1300 Ninth Street in St. Cloud.**

Should you wish to object to the staff recommendation or file a petition, please provide written objections, petitions and/or waivers (refer to the attached "Notice of Rights") to:

Elizabeth Veguilla, Deputy Clerk
South Florida Water Management District
Post Office Box 24680
West Palm Beach, Florida 33416-4680

The "Notice of Rights" addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. You are advised, however, to be prepared to defend your position regarding the permit application when it is considered by the Governing Board for final agency action, even if you agree with the staff recommendation, as the Governing Board may take final agency action which differs materially from the proposed agency action.

Please contact the District if you have any questions concerning this matter.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the addressee this 1st day of April, 2009 in accordance with Section 120.60 (3), Florida Statutes.

Sincerely,

Anthony M. Waterhouse, P.E., Deputy Director
Environmental Resource Regulation Department

AMW/ja

CERTIFIED #7003 2260 0007 1914 3173
RETURN RECEIPT REQUESTED

NOTICE OF RIGHTS

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a District decision which does or may determine their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: 1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or 2) within 14 days of service of an Administrative Order pursuant to Subsection 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of either written notice through mail, or electronic mail, or posting that the District has or intends to take final agency action, or publication of notice that the District has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

Filing Instructions

The Petition must be filed with the Office of the District Clerk of the SFWMD. Filings with the District Clerk may be made by mail, hand-delivery or facsimile. **Filings by e-mail will not be accepted.** Any person wishing to receive a clerked copy with the date and time stamped must provide an additional copy. A petition for administrative hearing is deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Any document received by the office of the SFWMD Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the SFWMD Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must be delivered to the Office of the SFWMD Clerk. **Delivery of a petition to the SFWMD's security desk does not constitute filing. To ensure proper filing, it will be necessary to request the SFWMD's security officer to contact the Clerk's office.** An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by facsimile must be transmitted to the SFWMD Clerk's Office at (561) 682-6010. Pursuant to Subsections 28-106.104(7), (8) and (9), Fla. Admin. Code, a party who files a document by facsimile represents that the original physically signed document will be retained by that party for the duration of that proceeding and of any subsequent appeal or subsequent proceeding in that cause. Any party who elects to file any document by facsimile shall be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed with the clerk as a result. The filing date for a document filed by facsimile shall be the date the SFWMD Clerk receives the complete document.

Initiation of an Administrative Hearing
Pursuant to Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 and 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, District file number or any other SFWMD identification number, if known.
2. The name, address and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

If the District's Governing Board takes action with substantially different impacts on water resources from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law.

Mediation
The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW
Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the SFWMD Clerk within 30 days of rendering of the final SFWMD action.

Last Date For Agency Action: 09-APR-2009

INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Pbia Conceptual Stormwater Plan

Permit No.: 50-00471-S

Application No.: 080417-15

DRAFT
Subject to Governing Board Approval

Application Type: Environmental Resource (Conceptual Approval Modification)

Location: Palm Beach County, S29-32/T43S/R43E
S25,36/T43S/R42E
S5,6/T44S/R43E

Permittee : Palm Beach County Board Of County Commissioners

Operating Entity : Palm Beach County Department Of Airports

Project Area: 1,568.70 acres

Project Land Use: Airport Related Facilities
Commercial
Industrial

Drainage Basin: C-51 **Sub Basin:** 23, 25a, 25b, 26, 27, 28, 30

Receiving Body: C-51Canal and Stub Canal **Class:** CLASS III

Special Drainage District: Lake Worth Drainage District

Total Acres Wetland Onsite:	1.04
Total Acres Wetland Preserved Onsite:	1.04
Total Acres Presv/Mit Compensation Onsite:	1.04

Conservation Easement To District : No

Sovereign Submerged Lands: No

PROJECT PURPOSE:

This application is a request for modification of Permit No. 50-00471-S for the conceptual approval of a surface water management system to serve 1,568.70 acres of airport and airport related commercial and industrial developments known as PBIA Conceptual Stormwater Plan. Staff recommends approval with conditions.

PROJECT EVALUATION:

PROJECT SITE DESCRIPTION:

The site is the Palm Beach International Airport which is bordered by Belvedere Road to the north, Southern Boulevard to the south, Australian Avenue on the east and Military Trail on the west. Please refer to the location map shown as Exhibit 1. The airport and Outparcel Groups 1 through 5 are part of the Stub & L-2 Canal Drainage Basin. The existing surface water management (SWM) system is a combination of wet and dry facilities, detention and retention systems that ultimately discharge to the C-51 Canal and Stub Canal via gravity and pumped discharge structures. Please refer to Exhibit 2, the existing stormwater model node-link schematic overlaid on top of an aerial photograph of the airport limits. As shown in the exhibit there are four major surface water management basins. Basins 1, 2 and 3 all discharge directly to the C-51 Canal. Basin 4 discharges to the Stub Canal (aka Pine Lake) via the East Pump Station. The existing conditions of the individual basins are described in greater detail below.

Basin 1 is the westernmost basin consisting of approximately 203 acres and it includes the northwest portion of /Runway 13/31; western portion of Runway 9L/27R; the Golfview area (the former low density residential development), and associated taxiways and aprons.

Basin 2 encompasses approximately 376 acres and it includes a portion of Runway 13/31, the western portion of Runway 9L/27R, Runway 9R/27L, airport support facilities located at the southwest end of the airport, and associated taxiways and aprons.

Basin 3 encompasses approximately 140 acres and it includes the southeast portion of Runway 13/31, the southeast portion of Runway 9L/27R, airport support facilities located at the southeast end of the airport, and associated taxiways and aprons. This basin also includes an off-site wet detention pond that was constructed purely for stormwater quantity and quality for the PBIA's Basin 3. This pond was permitted and constructed under Permit No. 50-04106-P, the authorization for the Australian Avenue, Southern Boulevard and Congress Avenue improvements.

Basin 4 encompasses approximately 675 acres and it includes the northeast portion of Runway 13/31, the northeast portion of Runway 9L/27R, terminal areas, parking facilities, airport operation facilities, and associated taxiways and aprons.

This application also addresses stormwater management systems for applicant-owned property located in the northeast quadrant of Belvedere Road and Military Trail (Outparcel Groups 1 - 5); property located in the northwest quadrant of Southern Boulevard and Military Trail, (Outparcel Group 9); property located at the northwest corner of Congress Avenue and Gun Club Road (Outparcel Group 7); and property located in the northeast quadrant of Congress Avenue and Ranch Road (Outparcel Group 8). Please refer to Exhibit 3, showing the location of the airport and the outparcel groups.

Outparcel 7 located in the northwest quadrant of Congress and Gun Club contains 3 isolated wetlands totaling 1.04 acres. Per Exhibit 3, the applicant does not propose to impact these wetlands as part of the current conceptual permit authorization.

PROPOSED PROJECT:

Palm Beach County's Department of Airports is proposing a new Airport Layout Plan (ALP) and has requested a conceptual modification of the surface water management system to serve the reconfiguration of the airport and associated outparcel development. Please refer to Exhibits 4 and 6, the proposed condition nodal diagram of the on-site improvements and the typical details of the water control structures respectively. Reference is made to Exhibit No. 5 consisting of conceptual drainage plans and detail sheets (Pages 1 through 70) . The drawings have been signed and sealed by Daniel C. Tompkins, P.E., of CH2MHILL on August 11, 2008 and March 26, 2009 and have been included in this permit by reference (please see permit file).

The major elements of this project include the following:
-Expansion of Concourse A apron;
-Relocation of the air traffic control tower;
-Taxiway C4 and D high-speed exits: Convert existing taxiway connectors to high-speed exits to serve existing Runway 9L/27R;
-Extension of Taxiway F: Extension of Taxiway F northwest from Taxiway C to Runway 13 end;
-Extension Taxiway L: Extension of Taxiway L east from Taxiway F to Runway 27R end;
-Golfview general aviation apron, taxilanes and infrastructure: Construct Golfview apron, taxilanes and infrastructure to support south side FBO relocation;
-Golfview general aviation support facilities: Construct FBO hangars and terminals to support south side FBO relocation;
-Demolition east of Runway 13/31: Demolish south side FBO facilities and associated apron and taxilane pavement within new Runway 9R/27L Part 77 surface, Runway Protection Zone (RPZ), Runway Safety Area (RSA), and/or Runway Object Free Area (OFA);
-Demolition west of Runway 13/3: Demolish south side FBO facilities and associated apron and taxilane pavement within new Runway 9R/27L Part 77 surface, Runway Protection Zone (RPZ), Runway Safety Area (RSA), and/or Runway Object Free Area (OFA);
-Extend, relocate, and upgrade Runway 9R/27L to 8,000 feet long by 150 feet wide with an 800 foot separation from parallel Runway 9L/27R;
-Widen and upgrade Taxiway L to 75 feet wide to serve the full length of runways 9L/27R and 9R/27L;
-Shorten and shift Runway 13/31 to 4,000 feet long with standard Runway Safety Areas including the extension of Taxiway B & F from existing Runway 13 end to relocated/shifted end;
-New Taxiway R, 50 feet wide, to serve the full length of runway 9R/27L and south side FBOs to remain;
-Future terminal expansion: Future Concourse D and apron;
-Future Belly Cargo facility and apron.
-Outparcel development

The proposed surface water management design includes reconfiguration of the four main basin boundaries resulting in new acreages in the post developed design. Land use and site grading assumptions were developed for the future conditions as well as an ADICPR Model. Please refer to Exhibit 7, a summary of the assumptions and model results. The model was generated to characterize the proposed and existing conditions. The overall post development discharge rate for the 10-year 3-day design event to the C-51 and Stub Canals has been limited to less than the pre-development rate, please refer to Exhibit 7, Page 12 of 12.

Basin 1 area will be approximately 233 acres and is the location of the new FBO terminal buildings and corporate hangar facilities. Runoff will be directed to dry depressed areas adjacent to taxiways and runway and to two proposed dry ponds which will provide water quality treatment and attenuation prior to discharge to the west airport canal (also referred to as the E-3 1/2 Canal). Ultimate discharge is into the C-51 Canal via the existing gated structure at Southern Boulevard. The southern leg of the west airport canal (aka E-3 1/2 Canal) will be re-reconfigured, increasing the total area of PBIA limits by 7.4 acres.

Basin 2 total area will become approximately 252 acres. Runoff will be directed to dry depressed areas adjacent to taxiways and runway and to an existing wet pond which will provide water quality treatment and attenuation prior to discharge to the C-51 Canal via the existing South Pump Station. The pump's operating schedule will be revised to provide the required water quality treatment for this basin.

Basin 3 total area will be approximately 236 acres. Runoff will be directed to dry depressed areas adjacent to taxiways and runway and to three proposed dry ponds and to the existing offsite wet pond. Discharge from the offsite wet pond is to the C-51 Canal via an existing gravity structure which will be modified to provide the required water quality treatment and attenuation.

Basin 4 total area will be approximately 648 acres. Runoff will be directed to dry depressed areas adjacent to taxiways and runways and to wet ponds which will provide water quality treatment and

attenuation prior to discharge to the Stub Canal through the existing east pump station. The pump's operating schedule will be revised to provide the required water quality treatment for this basin.

In addition to the on-site improvements to PBIA, the applicant submitted conceptual plans and assumptions for the future development of outparcel groups located beyond the boundaries of the airport. The conceptual surface water management systems for these outparcels will consist of providing on-site water quality treatment for 2.5 inches times the percent impervious prior to offsite discharge. For Outparcel Groups 1-5, discharge will be limited to an allowable rate based on the post-development discharge not exceeding the existing condition. Outparcel Group 6 is actually on-site within Basin 4 and attenuation is provided within the overall Basin 4 system. The remaining Outparcel Groups 7, 8 and 9 will be limited to the C-51 allowable rate.

The airport and Outparcel Groups 1 through 5 are part of a special watershed study, the Stub & L-2 Canal Drainage Basin Study. The purpose of the study is to investigate flood protection within the watershed. One concern of any proposed changes to PBIA and out parcel development is potential impact to flood protection in the L-2 and Stub Canal basins. As a stakeholder in the Stub Canal Task Force, the applicant designed a modified surface water management system that balances future development, historical flows and storage for the basin. The expansion of the Belvedere Road Ditch which would serve to redirect runoff westward, away from the Stub Canal, and the acceptance of historical flows along with an allocation of 203 cfs of off-site flows from the Westgate CRA into the west airport canal, (E3 1/2 Canal) are part of the recommendations from the Stub Canal Task Force.

WATER QUANTITY :

Discharge Rate :

Post-development discharge for the 10-year/3-day design event will be not be increased from existing conditions to the C-51 and Stub Canals. For the west airport canal, the applicant calculated a post-development discharge of 601.6 cfs from the combined PBIA Basin 1 and L-2 Basin contributing drainage area with an allowance of an additional 203 cfs as a result of planned improvements within the L-2 Basin and Westgate area recommended in the Stub & L-2 Canal Drainage Basin Study. This results in a peak discharge for the 10 year/3-day event from the west airport canal into the C-51 canal of 804.6 cfs.

Basin	Allow Disch (cfs)	Method Of Determination	Peak Disch (cfs)	Peak Stage (ft, NAVD 88)
1D-E	196.5	Pre Vs Post	241.6	14.08
2	320	Pre Vs Post	320.1	10.98
3	137.4	Pre Vs Post	66	11.78
4	320	Pre Vs Post	320	11.88
OPGRP1	12.9	Pre Vs Post	0	13.18
OPGRP2	0	Pre Vs Post	0	9.98
OPGRP3	12.4	Pre Vs Post	11.9	10.48
OPGRP4	0	Pre Vs Post	13	11.18
OPGRP5	77	Pre Vs Post	75.9	11.18
OPGRP7	.3	Discharge Formula	.3	11.18
OPGRP8	.8	Discharge Formula	.8	13.28
OPGRP9	4.1	Discharge Formula	4.1	15.48

Flood Plain/Compensating Storage:

The on-site airport project area encompasses Sub-basins 25A, where the 1-in-100 year elevation is 14.6 and sub-basin 26 where the 1-in-100 year elevation is 13.8'NGVD; sub-basin 27 where the 1-in-100 year elevation is-13.2'NGVD and sub-basin 28 where the 1-in-100 year elevation is12.4'NGVD. Outparcel groups 1-5, encompass sub-basin 25 B where the 1-in-100 year elevation is 14.7' NGVD. Outparcel groups 7 and 8 are within sub-basin 30 where the 1-in-100 year elevation is 14.1' NGVD. Outparcel Group 9 is within sub-basin 23 where the 1-in-100 year elevation is 17.1 NGVD. The applicant has submitted topography, plans and calculations to demonstrate that the proposed project will not impact the C-51 floodplain. The applicant stated that the conversion from NGVD to NAVD is a 1.52 difference.

Displaced Volume	Compensating Volume	100-Year Stage Elevation
927.6 ac-ft	937.5 ac-ft	ft-NGVD

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NAVD 88)	WSWT Ctrl Elev (ft, NAVD 88)	Method Of Determination
1A-C	176.80	6.98		Previously Permitted
1D-E	56.40	6.98		Previously Permitted
2	251.70	6.98		Previously Permitted
3	236.40	6.98		Previously Permitted
4	647.80	6.98		Previously Permitted
OPGRP1	31.49	6.98		Surrounding Projects
OPGRP2	3.35	6.98		Surrounding Projects
OPGRP3	8.27	6.98		Surrounding Projects
OPGRP4	4.69	6.98		Surrounding Projects
OPGRP5	24.47	6.98		Surrounding Projects
OPGRP7	15.29	6.98		Surrounding Projects
OPGRP8	12.36	6.98		Surrounding Projects
OPGRP9	99.61	7.48		Surrounding Projects

Receiving Body :

Basin	Str.#	Receiving Body
1a-C	B1C-W	E 31/2 Canal
1d-E	B1D	E 31/2 Canal
2	South Pum	C-51
3	S-208	S-201
4	East Pump	Pine Lake (Stub Canal)
Opgrp1	EL02	Belevedere Ditch
Opgrp1	LL02d	Belvedere Ditch
Opgrp3	0W39-A	Belvedere Ditch
Opgrp4	0W39-B	Belevedere Ditch
Opgrp5	LL14-B	Belevedere Ditch
Opgrp7	N37_C51	C-51
Opgrp8	N35_C51	C-51
Opgrp9	OPCS#9	LWDD L-4

Discharge Structures: Note: The units for all the elevation values of structures are (ft, NAVD 88)

Bleeders:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Invert Angle	Invert Elev.
1A-C	B1C-W	2	Circular Orifice				.25'		6.98
1D-E	B1D	1	Circular Orifice				.4'		6.98
3	S-208	1	Triangular Orifice	.9'	.75'				8.88
OPGRP1	EL02	1	Circular Orifice				.25'		6.98
OPGRP1	LL02d	1	Circular Orifice				.25'		6.98
OPGRP3	0W39-A	1	Circular Orifice				.25'		6.98
OPGRP4	0W39-B	1	Circular Orifice				.25'		6.98
OPGRP5	LL14-B	1	Circular Orifice				.25'		6.98
OPGRP7	N37_C51	1	Circular Orifice				.25'		6.98
OPGRP8	N35_C51	1	Circular Orifice				.25'		6.98
OPGRP9	OPCS#9	1	Triangular Orifice	.5'	.5'				7.48

Inlets:

Basin	Str#	Count	Type	Width	Length	Dia.	Crest Elev.
1A-C	B1C-W	2	Inlet	10'	12'		14.08
1D-E	B1D	1	Inlet	5'	5'		12.28
OPGRP1	EL02	1	Inlet	7'	8'		13.48
OPGRP1	LL02d	1	Inlet	6'	8'		14.28
OPGRP3	0W39-A	1	Inlet	8'	10'		11.48
OPGRP4	0W39-B	1	Inlet	8'	10'		11.78
OPGRP5	LL14-B	1	Inlet	8'	10'		11.78
OPGRP7	N37_C51	1	Inlet	3'	6.6'		11.48
OPGRP8	N35_C51	1	Inlet	3'	6.6'		13.73
OPGRP9	OPCS#9	1	Inlet	3'	6.6'		11.48

Pumps:

Basin	Str#	Count	Type	Capacity	Elev.
2	South Pump	1	Electric Turbine	106.67cfs	10.28 (on) / 7.48 (off)
2	South Pump	1	Electric Turbine	106.67cfs	10.48 (on) / 7.23 (off)
2	South Pump	1	Electric Turbine	106.67cfs	10.68 (on) / 6.98 (off)
4	East Pump	1	Electric Turbine	106.67cfs	8.68 (on) / 7.48 (off)
4	East Pump	1	Electric Turbine	106.67cfs	8.88 (on) / 7.23 (off)
4	East Pump	1	Electric Turbine	106.67cfs	9.08 (on) / 6.98 (off)

Weirs:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Elev.
1A-C	B1C-W	2	Rectangular Notch	10'				12.58 (crest)
1D-E	B1D	2	Rectangular Notch	5'				10.78 (crest)
OPGRP1	EL02	1	Rectangular Notch	5'				12.08 (crest)
OPGRP1	LL02d	1	Rectangular Notch	6'				12.28 (crest)
OPGRP3	0W39-A	1	Rectangular Notch	10'				10.48 (crest)
OPGRP4	0W39-B	1	Rectangular Notch	10'				10.78 (crest)
OPGRP5	LL14-B	1	Rectangular Notch	10'				10.78 (crest)
OPGRP7	N37_C51	1	Rectangular Notch	4'				10.98 (crest)

Discharge Structures:

Weirs:

OPGRP8	N35_C51	1	Rectangular Notch	4'	13.23 (crest)
OPGRP9	OPCS#9	1	Rectangular Notch	4'	10.98 (crest)

WATER QUALITY :

The table shows the required water quality treatment is equivalent to 2.5 inches times the percent impervious area. As the project is commercial and industrial land use, at least a half inch of dry pre-treatment is required. Water quality treatment will be provided in the depressed dry areas of the project, dry ponds and wet ponds. Outparcel 2 will be used purely for compensating storage.

Basin		Treatment Method	Vol Req.d (ac-ft)	Vol Prov'd
1A-C	Treatment	Dry Detention	17.7	17.7
1D-E	Treatment	Dry Detention	3.5	3.5
2	Treatment	Wet Retention	31.6	31.6
3	Treatment	Dry Detention	16.8	16.8
4	Treatment	Wet Retention	89.3	89.3
OPGRP1	Treatment	Dry Detention	4.06	37.9
OPGRP3	Treatment	Dry Detention	1.03	3.9
OPGRP4	Treatment	Dry Detention	.59	2.2
OPGRP5	Treatment	Dry Detention	3.06	6.9
OPGRP7	Treatment	Dry Detention	1.91	9.24
OPGRP8	Treatment	Dry Detention	1.55	10.6
OPGRP9	Treatment	Dry Detention	7.63	37.02

WETLANDS:

Out Parcel No. 7 contains three hydrologically isolated and degraded wetlands (Exhibit 3, page 4). These wetlands are 0.20 acre, 0.80 acre, and 0.04 acre in size and have a combined total of 1.04 acres. Uniform Mitigation Assessment Method (UMAM) scores for each wetland have been compiled and are included in the project permit file. No wetland impacts, however, are proposed or authorized as part of the current conceptual application.

Wetland Inventory :

CONCEPTUAL MOD -PBIA CONCEPTUAL STORMWATER PLAN

Site Id	Site Type	Pre-Development						Post-Development				
		Pre Flucs	AA Type	Acreage (Acres)	Current Wo Pres	With Project	Time Lag (Yrs)	Risk Factor	Pres. Adj. Factor	Post Flucss	Adj Delta	Functional Gain / Loss
1	ON	641	Preservation	.20	.30	.30	1	1.00		641		
2	ON	641	Preservation	.80	.43	.43	1	1.00		641		
3	ON	641	Preservation	.04	.33	.33	1	1.00		641		
			Total:	1.04								

Fluccs Code	Description
641	Freshwater Marshes

RELATED CONCERNS:

Water Use Permit Status:

The proposed project is a conceptual modification and there are no plans to irrigate or dewater. Future construction applications may require irrigation or dewatering authorizations from the District.

This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation, unless the work qualifies for a No-Notice Short-Term Dewatering permit pursuant to Chapter 40E-20.302(3) or is exempt pursuant to Section 40E-2.051, FAC.

CERP:

The proposed project is not located within or adjacent to a Comprehensive Everglades Restoration Project component.

Potable Water Supplier:

Palm Beach County Utilities

Waste Water System/Supplier:

Palm Beach County Utilities

Right-Of-Way Permit Status:

A Right-of-Way Permit is not required for this project.

DRI Status:

This project is a DRI (SFWMD ID No. 81-125). The original Development Order for this DRI was issued by Palm Beach County on February 16, 1982.

Historical/Archeological Resources:

The District has received correspondence from the Florida Department of State, Division of Historical Resources indicating that the agency has no objections to the issuance of this permit.

DCA/CZM Consistency Review:

The District has not received a finding of inconsistency from the Florida Department of Environmental Protection or other commenting agencies regarding the provisions of the federal Coastal Zone Management Plan.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF RECOMMENDATION:

The Staff recommends that the following be issued :

Conceptual Approval of a modified surface water management system to serve 1568.7 acres of improvement to the existing airport and outparcels known as PBIA Conceptual Stormwater Plan.

Based on the information provided, District rules have been adhered to.

Staff recommendation is for approval subject to the attached General and Special Conditions.

DRAFT
Subject to Governing Board Approval

STAFF REVIEW:

NATURAL RESOURCE MANAGEMENT APPROVAL

ENVIRONMENTAL EVALUATION

Robert F. Hopper

SUPERVISOR

Barbara J. Conmy

SURFACE WATER MANAGEMENT APPROVAL

ENGINEERING EVALUATION

Rosalyn W. Ellington

SUPERVISOR

Carlos A. DeRojas, P.E.

ENVIRONMENTAL RESOURCE PERMITTING DIVISION DIRECTOR :

Anita R. Bain

DATE: 3/31/09

ENVIRONMENTAL RESOURCE REGULATION DEPUTY DEPARTMENT DIRECTOR :

Anthony M. Waterhouse, P.E.

DATE: 3/31/09

GENERAL CONDITIONS

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit and Part IV, Chapter 373. F.S.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. Activities approved by this permit shall be conducted in a manner which does not cause violations of State water quality standards. The permittee shall implement best management practices for erosion and pollution control to prevent violation of State water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. All practices shall be in accordance with the guidelines and specifications described in Chapter 6 of the Florida Land Development Manual; A Guide to Sound Land and Water Management (Department of Environmental Regulation, 1988), incorporated by reference in Rule 40E-4.091, F.A.C. unless a project-specific erosion and sediment control plan is approved as part of the permit. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

4. The permittee shall notify the District of the anticipated construction start date within 30 days of the date that this permit is issued. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District an Environmental Resource Permit Construction Commencement Notice Form Number 0960 indicating the actual start date and the expected construction completion date.

5. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual status report form. Status report forms shall be submitted the following June of each year.

6. Within 30 days after completion of construction of the permitted activity, the permitee shall submit a written statement of completion and certification by a professional engineer or other individual authorized by law, utilizing the supplied Environmental Resource/Surface Water Management Permit Construction Completion/Certification Form Number 0881A, or Environmental Resource/Surface Water Management Permit Construction Completion Certification - For Projects Permitted prior to October 3, 1995 Form No. 0881B, incorporated by reference in Rule 40E-1.659, F.A.C. The statement of completion and certification shall be based on onsite observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and specifications. This submittal shall serve to notify the District that the system is ready for inspection. Additionally, if deviation from the approved drawings are discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawings. All surveyed dimensions and elevations shall be certified by a registered surveyor.

7. The operation phase of this permit shall not become effective: until the permittee has complied with the requirements of condition (6) above, and submitted a request for conversion of Environmental Resource Permit from Construction Phase to Operation Phase, Form No. 0920; the District determines the system to be in compliance with the permitted plans and specifications; and the entity

GENERAL CONDITIONS

approved by the District in accordance with Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, accepts responsibility for operation and maintenance of the system. The permit shall not be transferred to such approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall initiate transfer of the permit to the approved responsible operating entity if different from the permittee. Until the permit is transferred pursuant to Section 40E-1.6107, F.A.C., the permittee shall be liable for compliance with the terms of the permit.

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of the phase or portion of the system to a local government or other responsible entity.

9. For those systems that will be operated or maintained by an entity that will require an easement or deed restriction in order to enable that entity to operate or maintain the system in conformance with this permit, such easement or deed restriction must be recorded in the public records and submitted to the District along with any other final operation and maintenance documents required by Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit applications within the South Florida Water Management District, prior to lot or units sales or prior to the completion of the system, whichever comes first. Other documents concerning the establishment and authority of the operating entity must be filed with the Secretary of State, county or municipal entities. Final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system and any other permit conditions.

10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the District in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.

11. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40E-4 or Chapter 40E-40, F.A.C..

12. The permittee is hereby advised that Section 253.77, F.S. states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the State, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.

13. The permittee must obtain a Water Use permit prior to construction dewatering, unless the work qualifies for a general permit pursuant to Subsection 40E-20.302(3), F.A.C., also known as the "No Notice" Rule.

14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal,

GENERAL CONDITIONS

abandonment or use of any system authorized by the permit.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding, unless a specific condition of this permit or a formal determination under Section 373.421(2), F.S., provides otherwise.

16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of a permitted system or the real property on which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rules 40E-1.6105 and 40E-1.6107, F.A.C.. The permittee transferring the permit shall remain liable for corrective actions that may be required as a result of any violations prior to the sale, conveyance or other transfer of the system.

17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the appropriate District service center.

19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

SPECIAL CONDITIONS

1. The conceptual phase of this permit shall expire on April 9, 2011.
2. Operation of the surface water management system shall be the responsibility of PALM BEACH COUNTY DEPARTMENT OF AIRPORTS.
3. Discharge Facilities:

Basin: 1A-C

2-10' WIDE RECTANGULAR NOTCH weirs with crest at elev. 12.58' NAVD 88.
2-.25' dia. CIRCULAR ORIFICEs with invert at elev. 6.98' NAVD 88.
2-10' W X 12' L drop inletS with crest at elev. 14.08' NAVD 88.

Receiving body : E 31/2 Canal
Control elev : 6.98 feet NAVD 88.

Basin: 1D-E

2-5' WIDE RECTANGULAR NOTCH weirs with crest at elev. 10.78' NAVD 88.
1-.4' dia. CIRCULAR ORIFICE with invert at elev. 6.98' NAVD 88.
1-5' W X 5' L drop inlet with crest at elev. 12.28' NAVD 88.

Receiving body : E 31/2 Canal
Control elev : 6.98 feet NAVD 88.

Basin: 2

1-106.67cfs with pump on at elev. 10.28' NAVD 88 and with pump off at elev. 7.48'NAVD 88.

1-106.67cfs with pump on at elev. 10.48' NAVD 88 and with pump off at elev. 7.23'NAVD 88.

1-106.67cfs with pump on at elev. 10.68' NAVD 88 and with pump off at elev. 6.98'NAVD 88.

Receiving body : C-51
Control elev : 6.98 feet NAVD 88.

Basin: 3

1-.9' W X .75' H TRIANGULAR ORIFICE with invert at elev. 8.88' NAVD 88.

Receiving body : S-201
Control elev : 6.98 feet NAVD 88.

Basin: 4

1-106.67cfs with pump on at elev. 8.68' NAVD 88 and with pump off at elev. 7.48'NAVD 88.

1-106.67cfs with pump on at elev. 8.88' NAVD 88 and with pump off at

SPECIAL CONDITIONS

elev. 7.23'NAVD 88.

1-106.67cfs with pump on at elev. 9.08' NAVD 88 and with pump off at elev. 6.98'NAVD 88.

Receiving body : Pine Lake (Stub Canal)
Control elev : 6.98 feet NAVD 88.

Basin: OPGRP1, Structure: EL02

1-5' WIDE RECTANGULAR NOTCH weir with crest at elev. 12.08' NAVD 88.
1-.25' dia. CIRCULAR ORIFICE with invert at elev. 6.98' NAVD 88.
1-7' W X 8' L drop inlet with crest at elev. 13.48' NAVD 88.

Receiving body : Belevedere Ditch
Control elev : 6.98 feet NAVD 88.

Basin: OPGRP1, Structure: LL02d

1-6' WIDE RECTANGULAR NOTCH weir with crest at elev. 12.28' NAVD 88.
1-.25' dia. CIRCULAR ORIFICE with invert at elev. 6.98' NAVD 88.
1-6' W X 8' L drop inlet with crest at elev. 14.28' NAVD 88.

Receiving body : Belvedere Ditch
Control elev : 6.98 feet NAVD 88.

Basin: OPGRP3

1-10' WIDE RECTANGULAR NOTCH weir with crest at elev. 10.48' NAVD 88.
1-.25' dia. CIRCULAR ORIFICE with invert at elev. 6.98' NAVD 88.
1-8' W X 10' L drop inlet with crest at elev. 11.48' NAVD 88.

Receiving body : Belvedere Ditch
Control elev : 6.98 feet NAVD 88.

Basin: OPGRP4

1-10' WIDE RECTANGULAR NOTCH weir with crest at elev. 10.78' NAVD 88.
1-.25' dia. CIRCULAR ORIFICE with invert at elev. 6.98' NAVD 88.
1-8' W X 10' L drop inlet with crest at elev. 11.78' NAVD 88.

Receiving body : Belevedere Ditch
Control elev : 6.98 feet NAVD 88.

Basin: OPGRP5

1-10' WIDE RECTANGULAR NOTCH weir with crest at elev. 10.78' NAVD 88.
1-.25' dia. CIRCULAR ORIFICE with invert at elev. 6.98' NAVD 88.
1-8' W X 10' L drop inlet with crest at elev. 11.78' NAVD 88.

Receiving body : Belevedere Ditch
Control elev : 6.98 feet NAVD 88.

SPECIAL CONDITIONS

Basin: OPGRP7

1-4' WIDE RECTANGULAR NOTCH weir with crest at elev. 10.98' NAVD 88.
1-.25' dia. CIRCULAR ORIFICE with invert at elev. 6.98' NAVD 88.
1-3' W X 6.6' L drop inlet with crest at elev. 11.48' NAVD 88.

Receiving body : C-51
Control elev : 6.98 feet NAVD 88.

Basin: OPGRP8

1-4' WIDE RECTANGULAR NOTCH weir with crest at elev. 13.23' NAVD 88.
1-.25' dia. CIRCULAR ORIFICE with invert at elev. 6.98' NAVD 88.
1-3' W X 6.6' L drop inlet with crest at elev. 13.73' NAVD 88.

Receiving body : C-51
Control elev : 6.98 feet NAVD 88.

Basin: OPGRP9

1-4' WIDE RECTANGULAR NOTCH weir with crest at elev. 10.98' NAVD 88.
1-.5' W X .5' H TRIANGULAR ORIFICE with invert at elev. 7.48' NAVD 88.
1-3' W X 6.6' L drop inlet with crest at elev. 11.48' NAVD 88.

Receiving body : LWDD L-4
Control elev : 7.48 feet NAVD 88.

4. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.
5. Measures shall be taken during construction to insure that sedimentation and/or turbidity violations do not occur in the receiving water.
6. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.
7. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.
8. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
9. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments/debris. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.
10. This permit is issued based on the applicant's submitted information which reasonably demonstrates that adverse water resource related impacts will not be caused by the completed permit activity. Should any adverse impacts caused by the completed surface water management system occur, the District will require the permittee to provide appropriate mitigation to the District or other impacted party. The District will require the permittee to modify the surface water management system, if necessary, to eliminate the cause of the adverse impacts.
11. The permittee acknowledges, that pursuant to Rule 40E-4.101(2), F.A.C., a notice of Environmental

SPECIAL CONDITIONS

Resource or Surface Water Management Permit may be recorded in the county public records. Pursuant to the specific language of the rule, this notice shall not be considered an encumbrance upon the property.

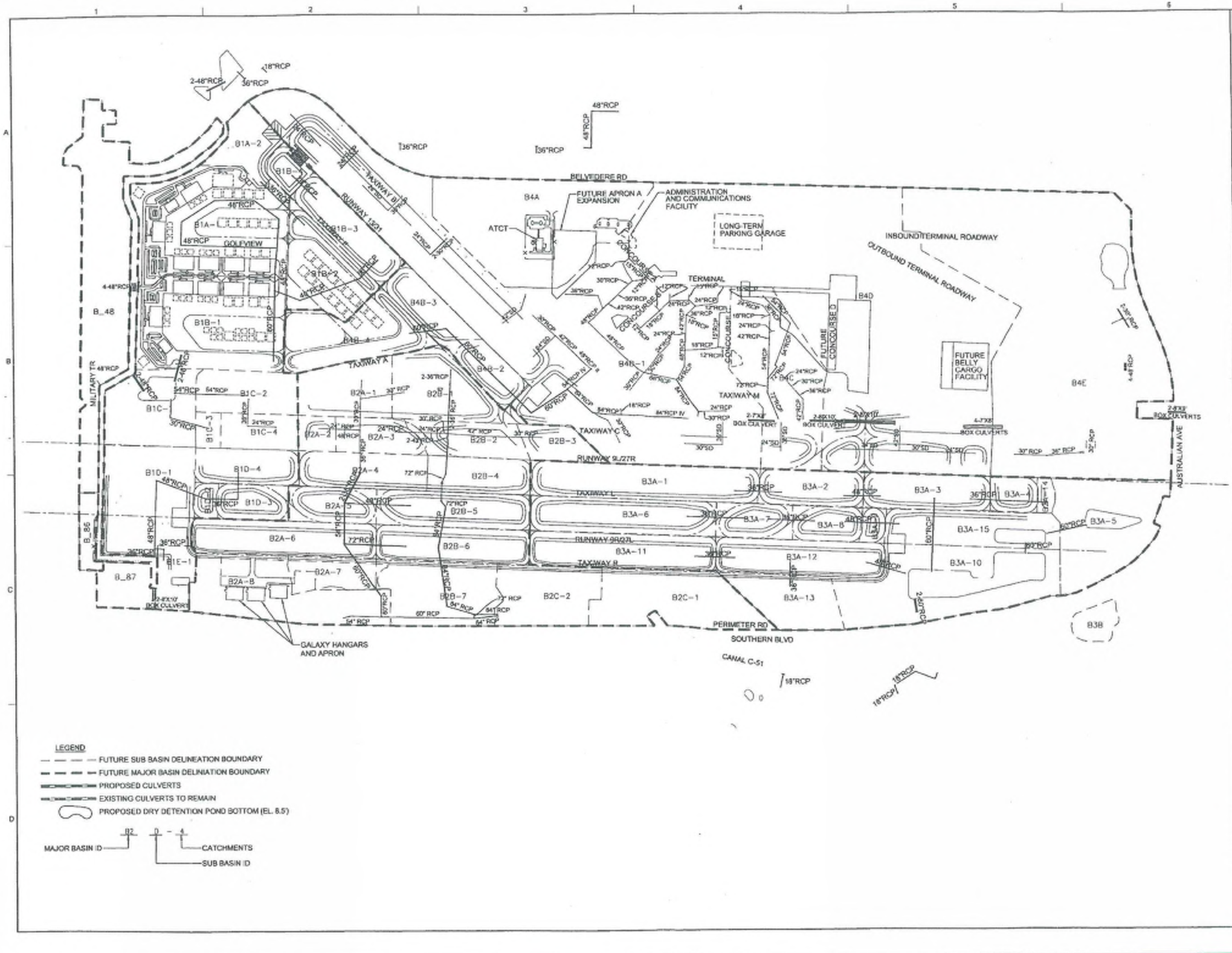
12. The permittee and all designated contractors shall adhere to all project and mitigation construction details and methodology indicated on the enclosed permit Exhibits and described herein.

13. Upon submittal of an application for construction approval involving wetland impacts , the permittee shall submit a mitigation plan subject to District staff review and approval, specifying proposed completion dates for each task.

14. Prior to any future construction, the permittee shall apply for and receive a permit modification. As part of the permit application, the applicant for that phase shall provide documentation verifying that the proposed construction is consistent with the design of the master surface water management system, including the land use and site grading assumptions.

15. The exhibits and special conditions in this permit apply only to this application. They do not supersede or delete any requirements for other applications covered in Permit No. 50-00471-S unless otherwise specified herein.

16. Reference is made to Exhibit No. 5 consisting of conceptual drainage plans and detail sheets (Pages 1 through 70) . The drawings have been signed and sealed by Daniel C. Tompkins, P.E., of CH2MHILL on August 11, 2008 and March 26, 2009 and have been included in this permit by reference (please see permit file).



DEPARTMENT OF AIRPORTS
PALM BEACH COUNTY

PALM BEACH INTERNATIONAL AIRPORT

CH2MHILL

3001 PGA BLVD, Suite 300
Palm Beach Gardens, Florida 33410
Tel. 561-904-7400
Fax 561-904-7401
LB 000072
AA C01992

©CH2M HILL 2004 - ALL RIGHTS RESERVED

THE DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

REUSE OF DOCUMENTS

0 500 1000 1500
1"=500'

STORMWATER MANAGEMENT MASTER PLAN AND SFWMD CONCEPTUAL ERP APPLICATION

PROPOSED DRAINAGE CULVERT MAP

DATE: FEBRUARY 18, 2008
PROJECT: 328417.87
FILE: 87P@00SW003
DESIGN BY: D. TOMPKINS
DRAWN BY: H. FLORES
CHECKED BY: P. PARTENHEIMER

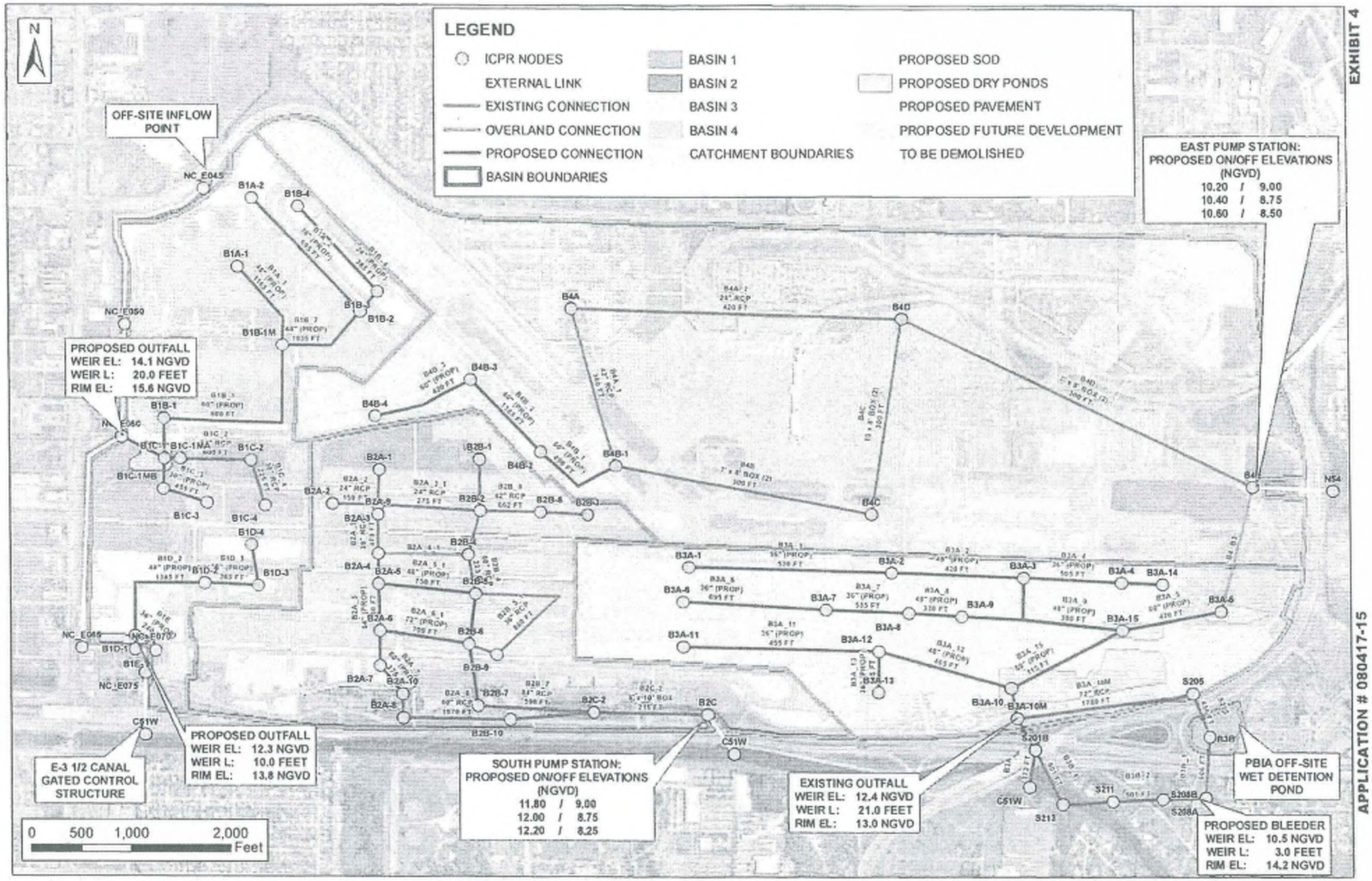
SHEET

SW-3

ISSUED FOR CONCEPTUAL ERP APPLICATION

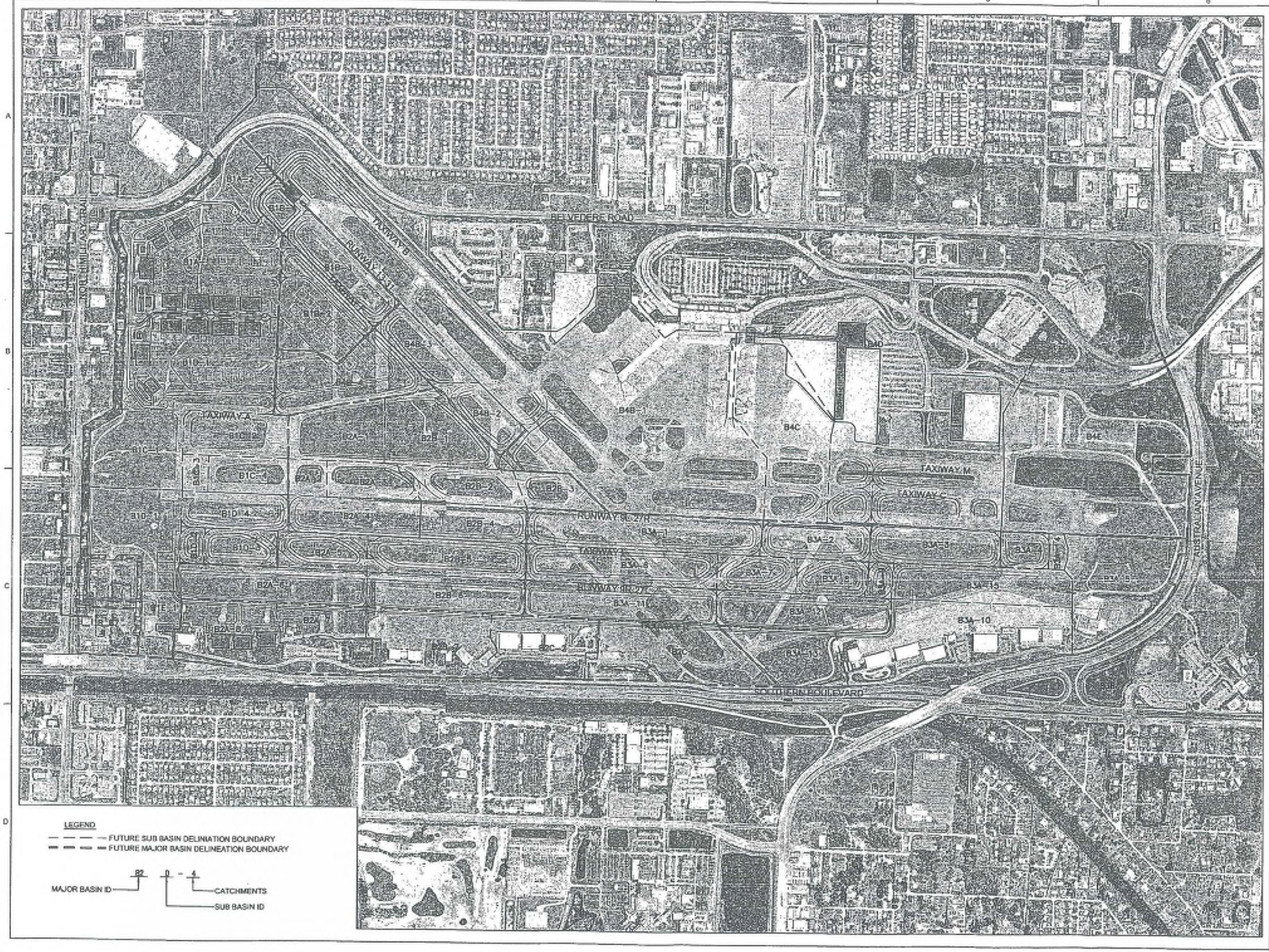
S$$USERNAME$$$ $$$DATE$$$$$$$$TIME$$$ $$$FILE$$$

EXHIBIT 4



APPLICATION # 080417-15

SCANNED 04/01/2009 09:42 JA



DEPARTMENT OF AIRPORTS
PALM BEACH COUNTY

PALM BEACH INTERNATIONAL AIRPORT

CH2MHILL

3001 PGA BLVD, Suite 300
Palm Beach Gardens, Florida 33410
Tel. 561-904-7400
Fax 561-904-7401
LB 000072
AA 001992

A.D.A. ENGINEERING, INC.
CONSULTING ENGINEERS AND PLANNERS

N

0 500 1000 1500
1"=500'

STORMWATER MANAGEMENT MASTER PLAN AND SFWMD CONCEPTUAL ERP APPLICATION

CONCEPTUAL STORMWATER BASIN DELINIATION MAP

DATE:	FEBRUARY 18, 2008
PROJECT:	326417.87
FILE:	87PBI108W001.DWG
DESIGN BY:	D. TOMPKINS
DRAWN BY:	H. FLORES
CHECKED BY:	P. PARTENHEIMER

SHEET

SW-1

© CH2M HILL 2004. ALL RIGHTS RESERVED.
THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL
REUSE OF DOCUMENTS

ISSUED FOR CONCEPTUAL ERP APPLICATION

$$$USERNAME$$$ $$$DATE$$$$$$$TIME$$$ $$$FILE$$$

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE
STANDARD GENERAL PERMIT NO. 50-05327-P
DATE ISSUED:November 12, 2010

Form #0941
08/95

App #100706-17

PERMITTEE: FLORIDA DEPARTMENT OF TRANSPORTATION
3400 W COMMERCIAL BLVD
FORT LAUDERDALE, FL 33309-3421

PROJECT DESCRIPTION: Modification of a surface water management system to serve a 7.95-acre project known as Pond Conversion at S.R. 80 and Lang Road.

PROJECT LOCATION: PALM BEACH COUNTY, SEC 5 TWP 44S RGE 43E

PERMIT DURATION: See Special Condition No:1. See attached Rule 40E-4.321, Florida Administrative Code.

This is to notify you of the District's agency action concerning Notice of Intent for Permit Application No. 100706-17, dated July 6, 2010. This action is taken pursuant to Rule 40E-1.603 and Chapter 40E-40 , Florida Administrative Code (F.A.C.).

Based on the information provided, District rules have been adhered to and an Environmental Resource General Permit is in effect for this project subject to:

1. Not receiving a filed request for a Chapter 120, Florida Statutes, administrative hearing.
2. the attached 19 General Conditions (See Pages : 2 - 4 of 6).
3. the attached 13 Special Conditions (See Pages : 5 - 6 of 6) and
4. the attached 2 Exhibit(s)

Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights," we will assume that you concur with the District's action.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the Permittee (and the persons listed in the attached distribution list) no later than 5:00 p.m. on this 12th day of November, 2010, in accordance with Section 120.60(3), Florida Statutes.

BY: Anita R. Bain

Anita R. Bain
Director - Environmental Resource Permitting Division
Palm Beach Service Center

Certified mail number 7005 0390 0005 9821 3480

GENERAL CONDITIONS

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit and Part IV, Chapter 373. F.S.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. Activities approved by this permit shall be conducted in a manner which does not cause violations of State water quality standards. The permittee shall implement best management practices for erosion and pollution control to prevent violation of State water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. All practices shall be in accordance with the guidelines and specifications described in Chapter 6 of the Florida Land Development Manual; A Guide to Sound Land and Water Management (Department of Environmental Regulation, 1988), incorporated by reference in Rule 40E-4.091, F.A.C. unless a project-specific erosion and sediment control plan is approved as part of the permit. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

4. The permittee shall notify the District of the anticipated construction start date within 30 days of the date that this permit is issued. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District an Environmental Resource Permit Construction Commencement Notice Form Number 0960 indicating the actual start date and the expected construction completion date.

5. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual status report form. Status report forms shall be submitted the following June of each year.

6. Within 30 days after completion of construction of the permitted activity, the permitee shall submit a written statement of completion and certification by a professional engineer or other individual authorized by law, utilizing the supplied Environmental Resource/Surface Water Management Permit Construction Completion/Certification Form Number 0881A, or Environmental Resource/Surface Water Management Permit Construction Completion Certification - For Projects Permitted prior to October 3, 1995 Form No. 0881B, incorporated by reference in Rule 40E-1.659, F.A.C. The statement of completion and certification shall be based on onsite observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and specifications. This submittal shall serve to notify the District that the system is ready for inspection. Additionally, if deviation from the approved drawings are discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawings. All surveyed dimensions and elevations shall be certified by a registered surveyor.

7. The operation phase of this permit shall not become effective: until the permittee has complied with the requirements of condition (6) above, and submitted a request for conversion of Environmental Resource Permit from Construction Phase to Operation Phase, Form No. 0920; the District determines the system to be in compliance with the permitted plans and specifications; and the entity approved by the District in accordance with Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit

GENERAL CONDITIONS

Applications within the South Florida Water Management District, accepts responsibility for operation and maintenance of the system. The permit shall not be transferred to such approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall initiate transfer of the permit to the approved responsible operating entity if different from the permittee. Until the permit is transferred pursuant to Section 40E-1.6107, F.A.C., the permittee shall be liable for compliance with the terms of the permit.

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of the phase or portion of the system to a local government or other responsible entity.

9. For those systems that will be operated or maintained by an entity that will require an easement or deed restriction in order to enable that entity to operate or maintain the system in conformance with this permit, such easement or deed restriction must be recorded in the public records and submitted to the District along with any other final operation and maintenance documents required by Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit applications within the South Florida Water Management District, prior to lot or units sales or prior to the completion of the system, whichever comes first. Other documents concerning the establishment and authority of the operating entity must be filed with the Secretary of State, county or municipal entities. Final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system and any other permit conditions.

10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the District in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.

11. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40E-4 or Chapter 40E-40, F.A.C..

12. The permittee is hereby advised that Section 253.77, F.S. states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the State, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.

13. The permittee must obtain a Water Use permit prior to construction dewatering, unless the work qualifies for a general permit pursuant to Subsection 40E-20.302(3), F.A.C., also known as the "No Notice" Rule.

14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the permit.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit

GENERAL CONDITIONS

application, including plans or other supporting documentation, shall not be considered binding, unless a specific condition of this permit or a formal determination under Section 373.421(2), F.S., provides otherwise.

16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of a permitted system or the real property on which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rules 40E-1.6105 and 40E-1.6107, F.A.C.. The permittee transferring the permit shall remain liable for corrective actions that may be required as a result of any violations prior to the sale, conveyance or other transfer of the system.

17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the appropriate District service center.

19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

SPECIAL CONDITIONS

1. The construction phase of this permit shall expire on November 26, 2015.

2. Operation of the surface water management system shall be the responsibility of FLORIDA DEPARTMENT OF TRANSPORTATION.

3. Discharge Facilities:

   1-20 deg. V-NOTCH with invert at elev. 7.36' NAVD 88.
   1-3' W X 6.58' L drop inlet with crest at elev. 8.55' NAVD 88.

   Receiving body : Stub Canal
   Control elev : 7.36 feet NAVD 88.

4. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.

5. Measures shall be taken during construction to insure that sedimentation and/or turbidity violations do not occur in the receiving water.

6. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.

7. Lake side slopes shall be no steeper than 4:1 (horizontal:vertical) to a depth of two feet below the control elevation. Side slopes shall be nurtured or planted from 2 feet below to 1 foot above control elevation to insure vegetative growth, unless shown on the plans.

8. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.

9. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.

10. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments/debris. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.

11. This permit is issued based on the applicant's submitted information which reasonably demonstrates that adverse water resource related impacts will not be caused by the completed permit activity. Should any adverse impacts caused by the completed surface water management system occur, the District will require the permittee to provide appropriate mitigation to the District or other impacted party. The District will require the permittee to modify the surface water management system, if necessary, to eliminate the cause of the adverse impacts.

12. The permittee acknowledges that, pursuant to Rule 40E-4.101(2), F.A.C., a notice of Environmental Resource or Surface Water Management Permit may be recorded in the county public records. Pursuant to the specific language of the rule, this notice shall not be considered an encumbrance upon the property.

13. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the permitted project should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The permittee, or other designee, should contact the Florida Department of State, Division of

SPECIAL CONDITIONS

Historical Resources, Review and Compliance Section at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Project activities should not resume without verbal and/or written authorization from the Division of Historical Resources. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

40E-4.321 Duration of Permits.

(1) Unless revoked or otherwise modified the duration of an environmental resource permit issued under this chapter or Chapter 40E-40, F.A.C., is as follows:

(a) For a conceptual approval, two years from the date of issuance or the date specified as a condition of the permit, unless within that period an application for an individual or standard general permit is filed for any portion of the project. If an application for an environmental resource permit is filed, then the conceptual approval remains valid until final action is taken on the environmental resource permit application. If the application is granted, then the conceptual approval is valid for an additional two years from the date of issuance of the permit. Conceptual approvals which have no individual or standard general environmental resource permit applications filed for a period of two years shall expire automatically at the end of the two year period.

(b) For a conceptual approval filed concurrently with a development of regional impact (DRI) application for development approval (ADA) and a local government comprehensive plan amendment, the duration of the conceptual approval shall be two years from whichever one of the following occurs at the latest date:

1. The effective date of the local government's comprehensive plan amendment,
2. The effective date of the local government development order,
3. The date on which the District issues the conceptual approval, or
4. The date on which the District issues a final order pertaining to the resolution of any Section 120.57, F.S., administrative proceeding or other legal appeals.

(c) For an individual or standard general environmental resource permit, the construction phase authorizing construction, removal, alteration or abandonment of a system shall expire five years from the date of issuance or such amount of time as made a condition of the permit.

(d) For an individual or standard general environmental resource permit, the operational phase of the permit is perpetual for operation and maintenance.

(e) For a noticed general permit issued pursuant to Chapter 40E-400, F.A.C., five years from the date the notice of intent to use the permit is provided to the District.

(2)(a) Unless prescribed by special permit condition, permits expire automatically according to the timeframes indicated in this rule. If application for extension is made by electronic mail at the District's e-Permitting website or in writing pursuant to subsection (3), the permit shall remain in full force and effect until:

1. The Governing Board takes action on an application for extension of an individual permit, or
2. Staff takes action on an application for extension of a standard general permit.

(b) Installation of the project outfall structure shall not constitute a vesting of the permit.

(3) The permit extension shall be issued provided that a permittee files a written request with the District showing good cause prior to the expiration of the permit. For the purpose of this rule, good cause shall mean a set of extenuating circumstances outside of the control of the permittee. Requests for extensions, which shall include documentation of the extenuating circumstances and how they have delayed this project, will not be accepted more than 180 days prior to the expiration date.

(4) Substantial modifications to Conceptual Approvals will extend the duration of the Conceptual Approval for two years from the date of issuance of the modification. For the purposes of this section, the term "substantial modification" shall mean a modification which is reasonably expected to lead to substantially different water resource or environmental impacts which require a detailed review.

(5) Substantial modifications to individual or standard general environmental resource permits issued pursuant to a permit application extend the duration of the permit for three years from the date of issuance of the modification. Individual or standard general environmental resource permit modifications do not extend the duration of a conceptual approval.

(6) Permit modifications issued pursuant to paragraph 40E-4.331(2)(b), F.A.C. (letter modifications) do not extend the duration of the permit.

(7) Failure to complete construction or alteration of the surface water management system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization in order to continue construction unless a permit extension is granted.

Specific Authority 373.044, 373.113, 668.003, 668.004, 668.50 FS. Law Implemented 373.413, 373.416, 373.419, 373.426, 668.003, 668.004, 668.50 FS. History–New 9-3-81, Amended 1-31-82, 12-1-82, Formerly 16K-4.07(4), Amended 7-1-86, 4-20-94, 10-3-95, 5-28-00, 10-1-06.

NOTICE OF RIGHTS

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a District decision which does or may determine their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: 1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or 2) within 14 days of service of an Administrative Order pursuant to Subsection 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of either written notice through mail, or electronic mail, or posting that the District has or intends to take final agency action, or publication of notice that the District has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

Filing Instructions

The Petition must be filed with the Office of the District Clerk of the SFWMD. Filings with the District Clerk may be made by mail, hand-delivery or facsimile. **Filings by e-mail will not be accepted.** Any person wishing to receive a clerked copy with the date and time stamped must provide an additional copy. A petition for administrative hearing is deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Any document received by the office of the SFWMD Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the SFWMD Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must be delivered to the Office of the SFWMD Clerk. **Delivery of a petition to the SFWMD's security desk does not constitute filing. To ensure proper filing, it will be necessary to request the SFWMD's security officer to contact the Clerk's office.** An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by facsimile must be transmitted to the SFWMD Clerk's Office at (561) 682-6010. Pursuant to Subsections 28-106.104(7), (8) and (9), Fla. Admin. Code, a party who files a document by facsimile represents that the original physically signed document will be retained by that party for the duration of that proceeding and of any subsequent appeal or subsequent proceeding in that cause. Any party who elects to file any document by facsimile shall be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed with the clerk as a result. The filing date for a document filed by facsimile shall be the date the SFWMD Clerk receives the complete document.

Initiation of an Administrative Hearing

Pursuant to Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 and 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, District file number or any other SFWMD identification number, if known.
2. The name, address and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

If the District takes action with substantially different impacts on water resources from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law.

Mediation

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the SFWMD Clerk within 30 days of rendering of the final SFWMD action.

Last Date For Agency Action: November 26, 2010

GENERAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Pond Conversion @ Sr 80 And Lang Rd

Permit No.: 50-05327-P

Application No.: 100706-17

Application Type: Environmental Resource (General Permit Modification)

Location: Palm Beach County, S5/T44S/R43E

Permittee : Florida Department Of Transportation

Operating Entity : Florida Department Of Transportation

Project Area: 7.95 acres

Project Land Use: Highway

Drainage Basin: C-51 EAST

Receiving Body: Stub Canal(aka Spur Canal) **Class:** CLASS III

Special Drainage District: Lake Worth Drainage District

Conservation Easement To District : No

Sovereign Submerged Lands: No

PROJECT PURPOSE:

This application is a request for modification of an Environmental Resource Permit to authorize construction and operation of a surface water management system to serve a 7.95-acre roadway project known as Pond Conversion @ S.R. 80 and Lang Road.

PROJECT EVALUATION:

PROJECT SITE DESCRIPTION:

The site is SR 80, (Southern Boulevard) and Lang Road located west of I-95. Staff issued a construction authorization March 19, 2002 for a surface water management permit to serve SR 80 between Lang Road and Parker Avenue. System 1 is the portion of the project relative to this application that was permitted, constructed and certified, please refer to App. No. 010727-4 and the pond proposed for conversion is the dry detention pond that was previously permitted to serve System 1.

There are no wetlands or other surface waters located within or affected by the proposed project.

PROPOSED PROJECT:

The applicant proposes to modify the surface water management system by converting the dry pond to a wet pond and eliminating portions of the permitted water management system that were incorrectly installed, or were later determined to be ineffective. The improvements associated with the project include the expansion and excavation of Pond 1 (the existing dry detention pond) to make it a wet detention facility. This will increase the storage capacity of the pond consequently lowering the peak stages in the pond and alleviating flooding problems on Lang Road. A 168-ft section of Lang Road will be overbuilt to create minimum cross slopes of 2%. Currently the cross slopes are 0% or in some cases negative. The wet pond (0.79 acres measured at the control elevation), will be lined with a PVC geomembrane to prevent seepage from adjacent residential septic tank drain fields.

The Type 9 Curb Inlets and a concrete flume along Lang Road will be replaced with Type 5 and 6 Curb inlets which have more capacity to collect runoff from SR80 and Lang Road. The existing control structure will be replaced by Control Structure S-8, a Type H Ditch Bottom Inlet that has weir elevation of 8.55-ft NAVD and a v-notch orifice at control elevation of 7.36 FT NAVD. Discharge will continue to be into the Stub Canal. A flap gate will be added to the outfall to prevent backflow from the Stub Canal.

LAND USE:

The table contains an accounting of the land use that will result upon completion of the project.

Construction:
Project:

	Total Project	
Impervious	4.83	acres
Lake	.79	acres
Pervious	2.33	acres
Total:	**7.95**	

WATER QUANTITY :

Discharge Rate :

As shown in the table below, the proposed project discharge is within the allowable limit for the area. The post development discharge rate is less than the previously permitted discharge rate.

Basin

Basin	Allow Disch (cfs)	Method Of Determination	Peak Disch (cfs)	Peak Stage (ft, NAVD 88)
Basin 1	24.2	Previously Permitted	22.9	9.63

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NAVD 88)	WSWT Ctrl Elev (ft, NAVD 88)	Method Of Determination
Basin 1	7.95	7.36	7.36	Previously Permitted

Receiving Body :

Basin	Str.#	Receiving Body
Basin 1	S-8	Stub Canal

Discharge Structures: Note: The units for all the elevation values of structures are (ft, NAVD 88)

Bleeders:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Invert Angle	Invert Elev.
Basin 1	S-8	1	V-Notch					20 deg.	7.36

Inlets:

Basin	Str#	Count	Type	Width	Length	Dia.	Crest Elev.
Basin 1	S-8	1	Fdot Mod H Drop Inlet	3'	6.58'		8.55

WATER QUALITY :

Water quality treatment equivalent to 2.5 inches times the impervious percentage is provided in the proposed wet detention pond. No adverse water quality impacts are anticipated as a result of the proposed project.

Basin	Treatment Method			Vol Req.d (ac-ft)	Vol Prov'd
Basin 1	Treatment	Wet Detention	.79 acres	1	1

CERTIFICATION AND MAINTENANCE OF THE WATER MANAGEMENT SYSTEM:

It is suggested that the permittee retain the services of a Professional Engineer registered in the State of Florida for periodic observation of construction of the surface water management (SWM) system. This will facilitate the completion of construction completion certification Form #0881 which is required pursuant to Section 10 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, and Rule 40E-4.361(2), Florida Administrative Code (F.A.C.).

Pursuant to Chapter 40E-4 F.A.C., this permit may not be converted from the construction phase to the operation phase until certification of the SWM system is submitted to and accepted by this District. Rule 40E-4.321(7) F.A.C. states that failure to complete construction of the SWM system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization unless a permit extension is granted.

For SWM systems permitted with an operating entity who is different from the permittee, it should be noted that until the permit is transferred to the operating entity pursuant to Rule 40E-1.6107, F.A.C., the

permittee is liable for compliance with the terms of this permit.

The permittee is advised that the efficiency of a SWM system will normally decrease over time unless the system is periodically maintained. A significant reduction in flow capacity can usually be attributed to partial blockages of the conveyance system. Once flow capacity is compromised, flooding of the project may result. Maintenance of the SWM system is required to protect the public health, safety and the natural resources of the state. Therefore, the permittee must have periodic inspections of the SWM system performed to ensure performance for flood protection and water quality purposes. If deficiencies are found, it is the responsibility of the permittee to correct these deficiencies in a timely manner.

RELATED CONCERNS:

Water Use Permit Status:

The applicant has indicated that irrigation is not proposed. The applicant has indicated that dewatering is not required for construction of this project. This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation.

CERP:

The proposed project is not located within or adjacent to a Comprehensive Everglades Restoration Project component.

Right-Of-Way Permit Status:

A District Right-of-Way Permit is not required for this project.

DRI Status:

This project is not a DRI.

Historical/Archeological Resources:

The District has received correspondence from the Florida Department of State, Division of Historical Resources indicating that the agency has no objections to the issuance of this permit.

DCA/CZM Consistency Review:

The issuance of this permit constitutes a finding of consistency with the Florida Coastal Management Program.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF REVIEW:

DIVISION APPROVAL:

NATURAL RESOURCE MANAGEMENT:

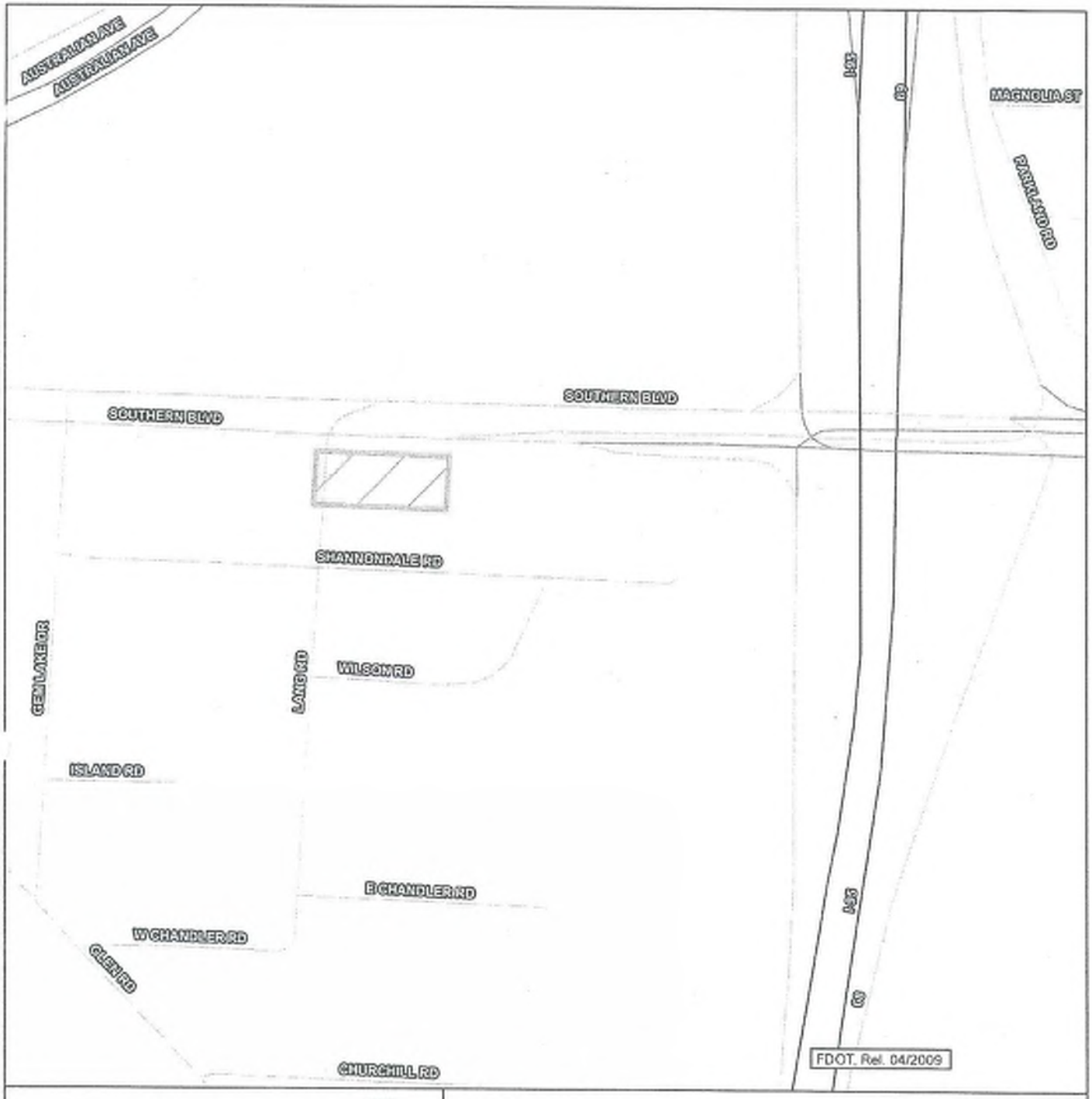
Barbara J. Conmy

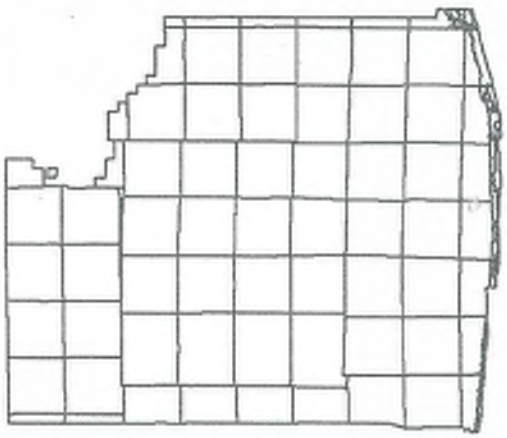
DATE: 11/10/10

SURFACE WATER MANAGEMENT:

Carlos A. de Rojas, P.E.

DATE: 11/9/10





PALM BEACH COUNTY, FLORIDA

N

Legend

Application

Map Date: 11/8/2010

Application Number: 100706-17

Permit Number: 50-05327-P

Project Name: POND CONVERSION @ SR 80 AND LANG RD

0 430 860

Feet

Exhibit : 1

COMPONENTS OF CONTRACT PLANS SET

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

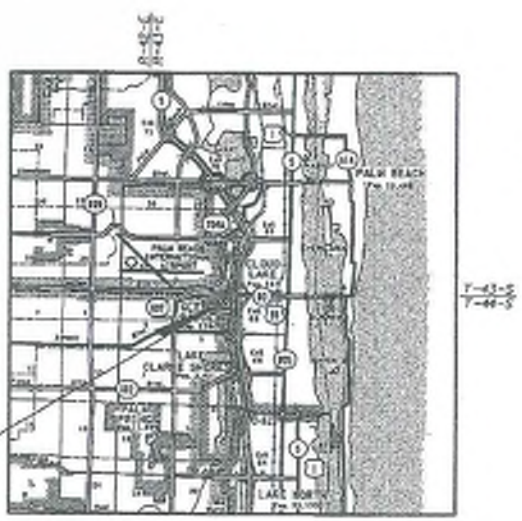
FINANCIAL PROJECT ID 229966-4-32-01

PALM BEACH COUNTY

LANG ROAD

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	DRAINAGE MAP
3	TYPICAL SECTION
4	SUMMARY OF QUANTITIES
5	SUMMARY OF DRAINAGE STRUCTURES
6	GENERAL NOTES
7	ROADWAY PLAN
8-10	DRAINAGE STRUCTURES
11	POND DETAILS
12	DRAINAGE DETAILS
13-14	POND CROSS SECTIONS
15-18	STORM WATER POLLUTION PREVENTION PLAN
19-20	TRAFFIC CONTROL PLANS
CTL-1	PROJECT SURVEY CONTROL - SPECIFIC PURPOSE SURVEY



GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED 2010,
AND STANDARD SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION DATED 2010,
AS AMENDED BY CONTRACT DOCUMENTS.

APPLICABLE DESIGN STANDARDS MODIFICATIONS: 7/2010
For Design Standards Modifications click on
"Design Standards" at the following web site
http://www.dot.state.fl.us/rddesign/

REVISIONS

ROADWAY SHOP DRAWINGS
TO BE SUBMITTED TO:

CHRISTIAN B. JACKSON, PE
REYNOLDS, SMITH AND HILLS, INC.
3125 W. COMMERCIAL BLVD. - SUITE 130
FORT LAUDERDALE, FLORIDA 33309-3448

PLANS PREPARED BY:

REYNOLDS, SMITH AND HILLS, INC.
3125 W. COMMERCIAL BLVD. - SUITE 130
FORT LAUDERDALE, FLORIDA 33309-3448
TEL: (954) 474-3005
FAX (954) 474-3006
CONTRACT NO. C-5453
VENDOR NO. F59-2580406
FL. CERTIFICATE NO. EB0005820

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

CHRISTIAN B. JACKSON
LICENSE
No. 61898
STATE OF FLORIDA
PROFESSIONAL ENGINEER

PROJECT LENGTH IS BASED ON ℄ OF CONSTRUCTION

LENGTH OF PROJECT	LINEAR FEET	MILES
ROADWAY	N/A	N/A
BRIDGES	N/A	N/A
KEY LENGTH OF PROJECT	N/A	N/A
EXCEPTIONS	N/A	N/A
GROSS LENGTH OF PROJECT		

KEY SHEET REVISIONS	
DATE	DESCRIPTION

ROADWAY PLANS
ENGINEER OF RECORD: CHRISTIAN B. JACKSON, PE

P.E. NO.: 61898

FDOT PROJECT MANAGER: FRANCIS LEWIS, PE

FISCAL YEAR	SHEET NO.
0	1

APPLICATION NO. 100706-17

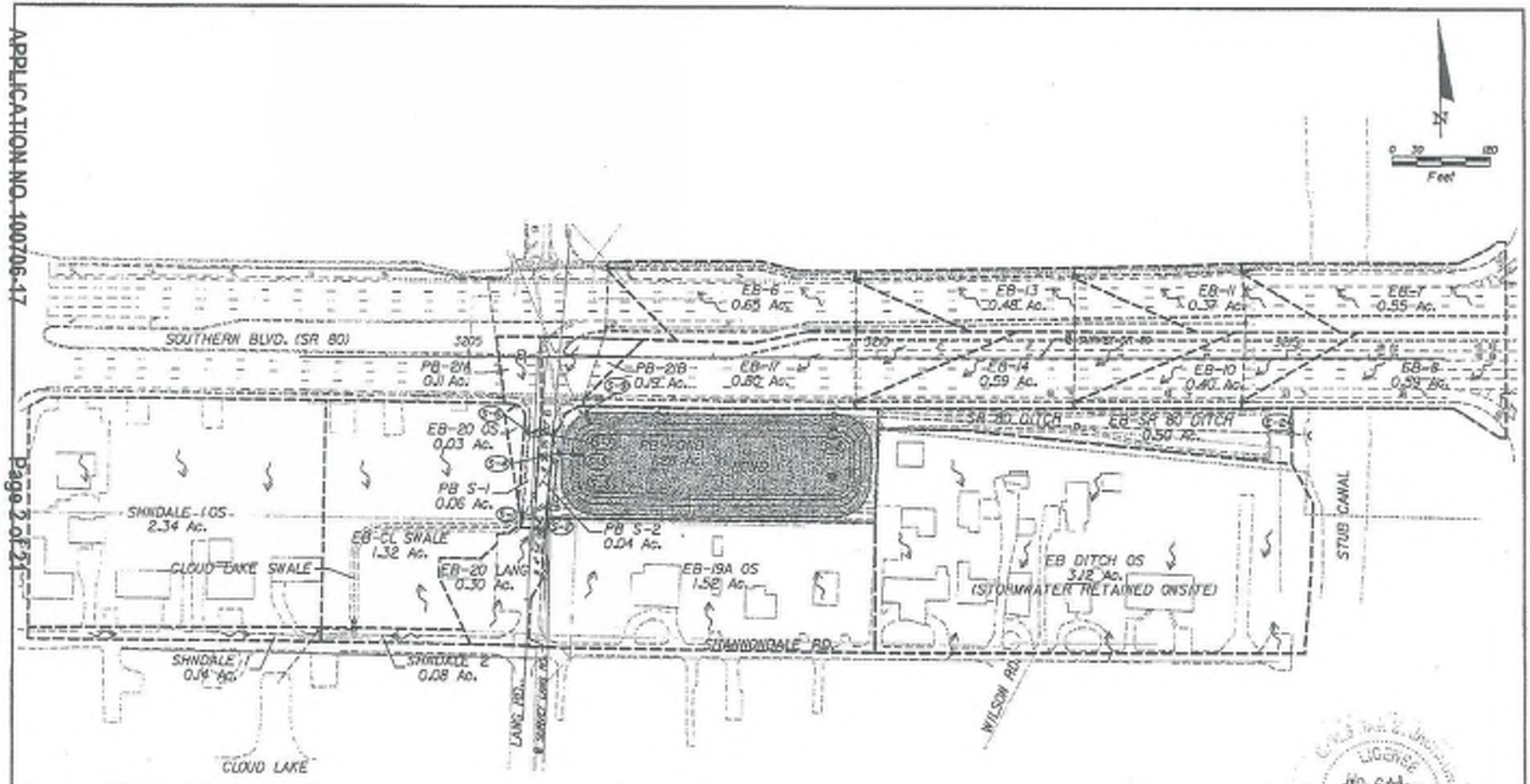
Page 1 of 21

EXHIBIT 2

APPLICATION NO. 100706-47

Page 2 of 21

EXHIBIT 2



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

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

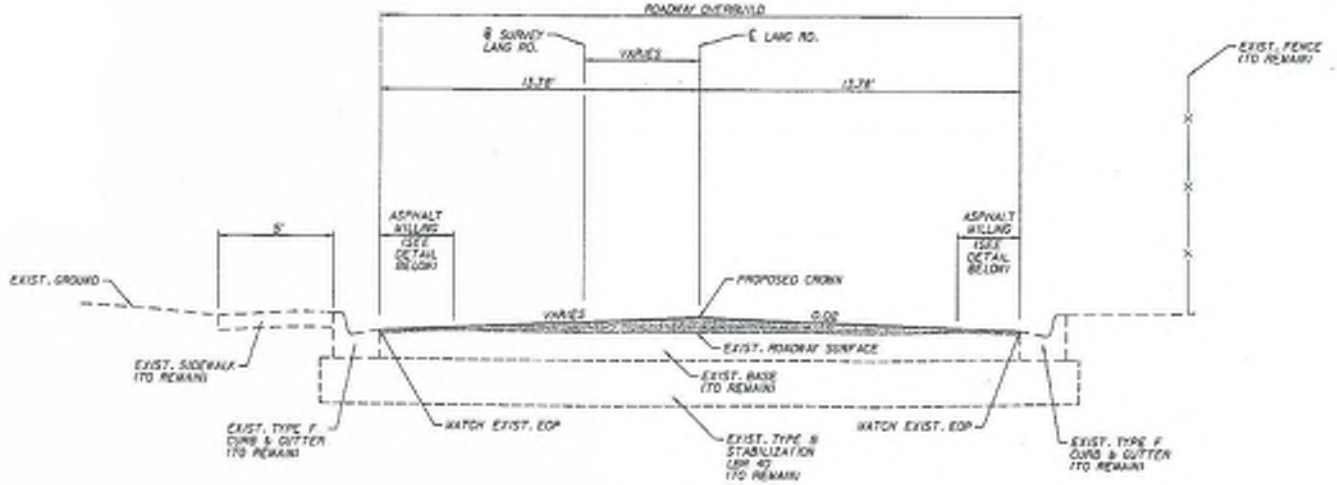
RS+H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

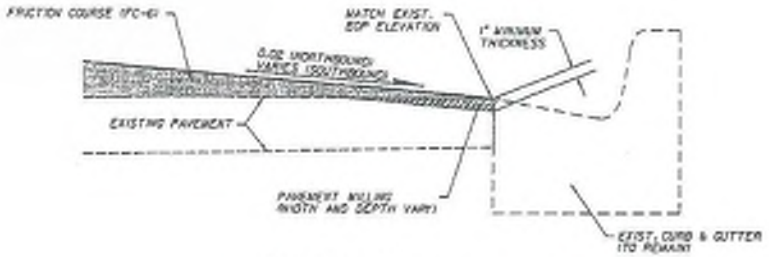
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

DRAINAGE MAP

SHEET NO. 2



LANG RD.
STA. 27+88.36 TO STA. 29+29.36
℄ SURVEY LANG RD.



FEATHERING DETAIL
(ALONG LANE RD. EXIST. EOP)
N.T.S.

EXISTING PAVEMENT

OPTIONAL BASE GROUP 9
TYPE SP-9.5 STRUCTURAL COURSE (TRAFFIC C)
FRICTION COURSE (FC-6)

OVERBUILD PAVEMENT

FRICTION COURSE (FC-12.5)

PAVEMENT RECONSTRUCTION

OPTIONAL BASE GROUP 9
TYPE SP-9.5 STRUCTURAL COURSE (TRAFFIC C)
FRICTION COURSE (FC-12.5)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229366-4-32-01

TYPICAL SECTION

SHEET NO. 3

APPLICATION NO. 100706-17 Page 4 of 21 EXHIBIT 2

TABULATION OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY P	QUANTITY F	REMARKS
101-1	MOBILIZATION	LS	1		
102-1	MAINTENANCE OF TRAFFIC	LS	1		
104-10-3	SEDIMENT BARRIER	LF	600		
110-1	CLEARING & GRUBBING	AC	1.25		
110-4	REMOVAL OF EXISTING CONCRETE PAVEMENT	SY	13.44		
120-1	REGULAR EXCAVATION	CY	6852		
120-6	EMBANKMENT	CY	60		
327-70-1	MILLING EXISTING ASPHALT PAVEMENT 1" AVG. DEPTH	SY	562		
337-7-33	ASPHALTIC CONCRETE FRICTION COURSE (FC-12.5+RUBBER)	TN	77		
337-70-1	MILLING EXISTING ASPHALT PAVEMENT 1" AVG. DEPTH	SY	562		
425-1-351	INLETS, CURB, TYPE P-5, < 10'	EA	1		
425-1-451	INLETS, CURB, TYPE J-5, < 10'	EA	1		
425-1-461	INLETS, CURB, TYPE J-6, < 10'	EA	2		
425-1-561	INLETS, DT BOT, TYPE N, < 10'	EA	1		
425-2-61	MANHOLES, TYPE P-8, < 10'	EA	1		
430-175-101	PIPE CULVERT OPTIONAL MATERIAL (REQUIRED) 12" TO 24")	LF	107		
430-175-103	PIPE CULVERT OPTIONAL MATERIAL (REQUIRED) 30" TO 48")	LF	4		
430-181-125	U-ENDWALL, BAFFLES, STD 281, 1:4 SLP, 24"	EA	1		
430-880-03	FLAP GATES, 30" TO 48"	EA	1		
430-982-125	MITERED END SECT., CO, 1:6 SLP, 18"	EA	1		
430-984-125	MITERED END SECT., SO, 1:4 SLP, 18"	EA	1		
514-72	LINER IMPERMEABLE, PVC	SY	5515		
570-1-1	PERFORMANCE TURF	SY	2804		
711-11-125	THERMOPLASTIC (STD-WHITE SOLID-12")	LF	100		
711-11-125	THERMOPLASTIC (STD-WHITE-SOLID-24")	LF	88		
711-11-160	PAVEMENT MESSAGE, (THERMOPLASTIC=STD=WHITE)	EA	2		
711-11-170	DIRECTIONAL ARROW, (THERMOPLASTIC=STD=WHITE)	EA	2		
711-11-211	THERMOPLASTIC (STD-YELLOW-SOLID-6")	LF	200		

PAY ITEM FOOTNOTES:

101-1 — INCLUDES THE COST OF REFERENCING, RESTORING AND PRESERVING ALL PUBLIC LAND CORNERS AND MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION.

INCLUDES THE COST OF REFERENCING AND PROTECTING ALL NAVD BEACH MARK MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION.

102-1 — INCLUDES THE COST FOR MAINTENANCE OF SIGNS FOR MAINTAINING ACCESS TO EXISTING STREETS, COMMERCIAL, AND PRIVATE ENTRANCES.

INCLUDES THE COST OF COVERING AND UNCOVERING WORK ZONE SIGNS WHEN CONDITIONS NO LONGER WARRANT THEIR USE.

INCLUDES THE COST OF REMOVING, RELOCATING, COVERING, AND RESTORING EXISITNG AND PROPOSED SIGNS THAT ARE IN CONFLICT.

INCLUDES THE COST OF ELIMINATING ANY DROP OFF GREATER THAN 6 INCHES AT THE END OF EACH WORK DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE.

INCLUDES THE COST OF CONSTRUCTING AND MAINTAINING A TEMPORARY TRAVEL PATH WHERE EXISTING PATHWAY CONDITIONS OCCUR TO ACCOMMODATE PEDESTRIAN, BICYCLE, AND WHEELCHAIR TRAFFIC.

SUMMARY OF SEDIMENT BARRIER

LOCATION BEGIN STA.	LOCATION END STA.	SIDE	LENGTH (FT) P	LENGTH (FT) F	REMARKS
698+01.57	699+65.76	RT	540		
698+70.33	698+84.70	RT	60		
		TOTAL:	600		

SUMMARY OF PERFORMANCE TURF

LOCATION BEGIN STA.	LOCATION END STA.	AREA (SY) P	AREA (SY) F	REMARKS
698+01.10	699+10.05	2804		
	TOTAL:	2804		

SUMMARY OF EARTHWORK

DESCRIPTION	CY P	CY F
REGULAR EXCAVATION	6852	
EMBANKMENT	60	

SUMMARY OF CONCRETE PAVEMENT REMOVAL

LOCATION BEGIN STA.	LOCATION END STA.	SIDE	AREA (SY) P	AREA (SY) F	REMARKS
697+92.25	698+08.25	LT	2.22		EXISTING CURB & GUTTER
698+07.16	698+21.16	RT	9		EXISTING CONCRETE SPILLWAY
697+10.45	698+20.71	RT	2.22		EXISTING CURB & GUTTER
		TOTAL:	13.44		

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RS&H Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	225966-4-32-01

SUMMARY OF QUANTITIES

SHEET NO. 4

QUANTITY	STR. NO.	STATION	SIDE	DESCRIPTION	BARRELS	STORM DRAIN OPTIONAL MATERIAL							CURB INLETS J-5 (10')	CURB INLETS P-5 (10')	CURB INLETS J-6 (10')	MANHOLES P-8 (10')	DITCH BOTTOM INLETS TYPE N (SPECIAL) (10')	MES (5:2 CD) 18"	MES (5:4 SD) 18"	U-TYPE ENDWALLS W/ BAFFLES (5:4) 24"	REMARKS
						15"	18"	24"	30"	36"	42"	48"									
P	S-1	698+00.24	LT	INLET, PIPE	1		28'								1						
P	S-2	699+15.36	RT	INLET, PIPE	1		40'								1						
P	S-3	698+40.84	RT	MITERED END SECTION														1			
P	S-4	698+81.85	RT	MANHOLE, PIPE	1		5'									1					
P	S-5	698+81.71	RT	MITERED END SECTION															1		
P	S-6	699+04.32	LT	INLET, PIPE	1		28'							1							
P	S-7	699+03.19	RT	INLET, PIPE	1		12'						1								
P	S-8	3209+47.32 (E SR 80)	RT	INLET, PIPE	1							4'					1				CONC. COLLAR
P	S-9	3208+30.91 (E SR 80)	RT	ENDWALL																1	
P	E-24	3209+08.54 (E SR 80)	RT	FLAP GATE																	
																					FLAP GATE
PROJECT TOTALS				PLAN QUANTITY			127'					4'	1	1	2	1	1	1	1	1	
				FINAL QUANTITY																	

APPLICATION NO. 100706-17 Page 5 of 21 EXHIBIT 2

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID.
SR 80	PALM BEACH	229366-4-32-01

SUMMARY OF DRAINAGE STRUCTURES

SHEET NO. 5

APPLICATION NO. 100709417

Page 6 of 24

EXHIBIT 2

ROADWAY NOTES:

1. B.M. DATA IS NORTH AMERICAN VERTICAL DATUM (NAVD)1988.
2. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO CURRENT APPLICABLE STANDARDS AND SPECIFICATIONS OF THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
3. ALL PUBLIC LAND CORNERS AND MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE PROTECTED BY THE CONTRACTOR AS FOLLOWS: CORNERS AND MONUMENTS IN CONFLICT WITH THE WORK AND IN DANGER OF BEING DAMAGED, DESTROYED OR COVERED SHALL BE PROPERLY REFERENCED BY A REGISTERED LAND SURVEYOR IN ACCORDANCE WITH THE MINIMUM TECHNICAL STANDARDS OF THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS PRIOR TO BEGINNING WORK AT THAT SITE. THE CONTRACTOR SHALL RETAIN THE LAND SURVEYOR TO REFERENCE, AND RESTORE UPON COMPLETION OF THE WORK, ALL SUCH CORNERS AND MONUMENTS AND SHALL FURNISH TO THE DISTRICT LOCATION ENGINEER A SIGNED AND SEALED COPY OF THE LAND SURVEYORS REFERENCE DRAWING. INCLUDES ALL COST OF REFERENCING, RESTORING AND PRESERVING IN THE BID PRICE FOR ITEM 101-1 MOBILIZATION.
4. ALL HARD BEARCH MARK MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED AND REFERENCED BY THE CONTRACTOR IN THE SAME WAY AS PUBLIC LAND CORNERS EXCEPT THAT THE LAND SURVEYORS SHALL NOT BE REQUIRED TO RESTORE THE HARD BENCH MARK UPON COMPLETION OF THE WORK. THE CONTRACTOR SHALL PROMPTLY TRANSMIT ALL DISPLACED OR DAMAGED HARD DISKS TO THE DISTRICT LOCATION SURVEYOR, WHO SHALL NOTIFY THE GEODETIC INFORMATION CENTER. INCLUDES ALL COST OF REFERENCING AND PROTECTING IN THE BID PRICE FOR ITEM 101-1 MOBILIZATION.
5. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL APPLICABLE CONSTRUCTION PERMITS PRIOR TO START OF CONSTRUCTION.
6. THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY OF ANY CONFLICT ARISING DURING CONSTRUCTION OF ANY IMPROVEMENTS SHOWN ON THESE DRAWINGS.
7. IN THE EVENT THAT CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED, WORK SHALL CEASE IMMEDIATELY IN THAT AREA. THE CONTRACTOR SHALL NOTIFY THE FDOT PROJECT ENGINEER, WHO WILL CONTACT THE DISTRICT CONTAMINATION IMPACT COORDINATOR.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF AND MAKING THE REPAIRS OF EXISTING PAVEMENT, SIDEWALKS, PIPES, CONDUITS, CURBS, INLETS, ETC., WHETHER OR NOT SHOWN ON THE PLANS DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS AND/OR THOSE OF HIS/HER SUBCONTRACTORS, AND SHALL RESTORE THEM PROMPTLY AT NO ADDITIONAL EXPENSE TO THE DEPARTMENT. CONTRACTOR SHALL REPORT ANY DAMAGE TO SIDEWALK, DRIVEWAY, ETC., PRIOR TO BEGINNING WORK IN ANY AREA.
9. ALL EXCESS MATERIAL AS DESIGNATED BY THE ENGINEER IS TO BE DISPOSED OF BY THE CONTRACTOR IN AREAS PROVIDED BY HIM/HER WITHIN 72 HOURS OF BEING DEPOSITED IN THE CONSTRUCTION AREA AND AT THE CONTRACTOR'S EXPENSE
10. STAGING AND MATERIAL STORAGE SHALL NOT BE CONDUCTED ON ADJOINING PRIVATE PROPERTY WITHOUT APPROVAL FROM THE OWNER.
11. ANY MATERIAL TO BE STOCKPILED FOR PERIODS GREATER THAN 24 HOURS SHALL BE PROTECTED BY APPROPRIATE EROSION CONTROL DEVICES. COST TO BE INCLUDED IN THE RELATED BID ITEM.
12. THE CONTRACTOR SHALL NOT STORE EQUIPMENT OR STOCKPILE MATERIALS WITHIN THE CLEAR ZONE.
13. THE CONTRACTOR SHALL PROVIDE SAFE PEDESTRIAN ACCESS AND PROTECTION ADJACENT TO CONSTRUCTION THROUGHOUT THE PROJECT.
14. THE CONTRACTOR SHALL COORDINATE SELECTION AND REVIEW OF ANY PROPOSED STAGING AREAS ASSOCIATED WITH THIS PROJECT WITH THE DISTRICT CONSTRUCTION ENVIRONMENTAL COORDINATOR AT (954)777-4665 AT LEAST 72 HOURS PRIOR TO USE. THE STAGING AREA SHALL BE RESTORED TO ITS ORIGINAL CONDITION OR BETTER AT NO ADDITIONAL COST TO THE DEPARTMENT.
15. ALL STATIONS AND OFFSETS ARE FROM THE CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE NOTED.
16. DURING CONSTRUCTION, ANY GENERATED DEBRIS SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA. APPROPRIATE SCREENS AND BARRIERS SHALL BE ERECTED TO PROTECT PEDESTRIANS AND VEHICULAR TRAFFIC.
17. CLEARING AND GRUBBING, GRADING AND OTHER INCIDENTAL WORK NECESSARY FOR HARMONIZATION OUTSIDE R/W SHALL BE INCLUDED IN RELATED BID ITEMS (ASPHALT, SOD, CONCRETE, ETC.).
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEWATERING PERMITS THAT ARE REQUIRED FOR THE PROJECT INCLUDING SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD) DEWATERING PERMITS FOR ANY WELL-POINTING OR OTHER DEWATERING ACTIVITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITTING COSTS AND DESIGN/CONSTRUCTION COSTS RELATED TO THE ISSUANCE OF THESE PERMITS. SUCH COSTS SHALL BE INCLUDED IN RELATED BID PAY ITEM(S) FOR WORK BEING DONE.
19. ALL ACTIVITIES REQUIRING WELL-POINTING OR OTHER PUMPING OF GROUNDWATER OR SURFACE WATER SHALL BE COORDINATED WITH THE DISTRICT CONSTRUCTION ENVIRONMENTAL COORDINATOR (DCEC) TO ENSURE ALL ASPECTS OF THE ARSES PERMIT REQUIREMENTS ARE SATISFIED. THE DCEC CAN BE CONTACTED AT (954)777-4665.
20. SPECIAL PRECAUTIONS WHEN DEWATERING, SUCH AS THE USE OF RECHARGE TRENCHES, MAY BE REQUIRED AT THE REQUEST OF SFWMD. ALL COSTS ASSOCIATED WITH MEETING THESE REQUIREMENTS SHALL BE INCLUDED IN THE RELATED BID PAY ITEM(S).
21. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK AND COSTS RELATED TO PREPARING THIS AREA FOR DEWATERING ACTIVITIES AND RESTORING THE AREA TO ITS ORIGINAL CONDITIONS AFTER THE MATERIAL IS HAULED OFFSITE.
22. THE CONTRACTOR SHALL NOT STORE EQUIPMENT OR STOCKPILE MATERIALS WITHIN ADJACENT PRIVATE PROPERTIES WITHOUT WRITTEN PERMISSION FROM THE APPLICABLE OWNER. CONTRACTOR MAY STORE EQUIPMENT WITHIN FDOT RIGHT-OF-WAY BETWEEN WSE WALL AND FENCE.
23. ANY MATERIAL TO BE STOCKPILED FOR PERIODS GREATER THAN 24 HOURS SHALL BE PROTECTED BY APPROPRIATE EROSION CONTROL DEVICES. COST TO BE INCLUDED IN THE RELATED BID PAY ITEM(S).
24. THE CONTRACTOR SHALL NOT BRING ANY HAZARDOUS MATERIALS ONTO THE PROJECT. SHOULD THE CONTRACTOR REQUIRE SUCH FOR PERFORMING THE CONTRACTED WORK, THE CONTRACTOR SHALL REQUEST, IN WRITING, WRITTEN PERMISSION FROM THE PROJECT ENGINEER. THE CONTRACTOR SHALL PROVIDE A COPY OF THE REQUEST TO THE DISTRICT CONTAMINATION IMPACT COORDINATOR (DCIC). THE CONTRACTOR SHALL PROVIDE THE DCIC WITH A COPY OF THE MATERIAL SAFETY DATA SHEET (MSDS) FOR EACH HAZARDOUS MATERIAL PROPOSED FOR USE, AND PROVIDE A DESCRIPTION OF THE SPECIFIC MANNER IN WHICH THE MATERIAL WILL BE USED. THE PROJECT ENGINEER SHALL COORDINATE WITH THE DCIC PRIOR TO ISSUING WRITTEN APPROVAL TO THE CONTRACTOR. BECAUSE STATE LAW DOES NOT TREAT PETROLEUM PRODUCTS THAT ARE PROPERLY CONTAINERIZED AS HAZARDOUS MATERIALS, SUCH PRODUCTS DO NOT REQUIRE AN MSDS SUBMITTAL. ALL BULK PETROLEUM PRODUCTS STORED ON SITE SHALL REQUIRE PROPER STORAGE WHICH INCLUDES SECONDARY CONTAINMENT.

DRAINAGE NOTES:

1. EXISTING DRAINAGE STRUCTURES AND EXISTING DRAINAGE PIPES WITHIN THE CONSTRUCTION LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING INLETS CLEAN OF CONSTRUCTION MATERIALS, DEBRIS, ETC. DURING THE CONSTRUCTION AT NO ADDITIONAL COST.
2. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING WITH OR ADJACENT TO THE EXISTING DRAINAGE INLETS. DRAINAGE STRUCTURES DAMAGED BY THE CONTRACTOR SHALL BE REPLACED WITH COMPARABLE STRUCTURES AT NO ADDITIONAL COST TO THE DEPARTMENT.
3. EXISTING STORM SEWERS (PIPES), FRENCH DRAINS AND/OR SLAB COVERED TRENCHES CALLED OUT TO BE REMOVED MAY REMAIN IN PLACE IF NOT IN CONFLICT WITH PROPOSED CONSTRUCTION, HOWEVER, SHALL BE FILLED AND PLUGGED PER SPECIFICATION 450-4.5. SUCH COST OF FILLING AND PLUGGING SHALL BE INCLUDED IN ITEM 110-1-1 CLEARING AND GRUBBING. EXISTING STORM SEWERS (PIPES), FRENCH DRAINS AND/OR SLAB COVERED TRENCHES IN CONFLICT WITH PROPOSED CONSTRUCTION SHALL BE REMOVED. COST OF REMOVAL, DISPOSAL, BACKFILLING AND COMPACTING SHALL ALSO BE INCLUDED IN ITEM 110-1-1 CLEARING AND GRUBBING AS PER 110-6 OF STANDARD SPECIFICATIONS.
4. AS NOTED, THE EXISTING STORM WATER SYSTEM WITHIN THE PROJECT TO REMAIN SHALL BE CLEANED OF ALL SILT, DEBRIS, AND SEDIMENT BY THE CONTRACTOR AFTER THE CONSTRUCTION PHASE IS COMPLETE. CLEANOUT OF THE STORMWATER SYSTEM SHALL BE PAID FOR UNDER THE ITEM FOR PIPE DESILTING FOR THE REQUIRED PIPE SIZE. FOR THE PROPOSED STORM WATER SYSTEM, THE CONTRACTOR IS RESPONSIBLE FOR KEEPING INLETS CLEAR OF MIXED MATERIAL, LIMEROCK, AND DEBRIS DURING THE CONSTRUCTION AT NO ADDITIONAL COST.

UTILITIES NOTES:

1. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS, BUT DO NOT IMPLY TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC., WHICH ARE WITHIN THE PROJECT AREA AND WHICH HAVE BEEN INSTALLED AND CONSTRUCTED SINCE THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (SHOWN OR NOT SHOWN ON THE PLANS) AFFECTING HIS/HER WORK. EXISTING UTILITIES SHALL BE MAINTAINED IN SERVICE DURING CONSTRUCTION UNLESS OTHERWISE APPROVED BY THE UTILITY OWNER.
2. PRE-TRENCHING IN THE ALIGNMENT AND GRADE OF PROPOSED PIPES, STRUCTURES, FRENCH DRAINS, SLAB COVERED TRENCHES, CONDUITS AND/OR SUB-GRADE SHALL BE PERFORMED SEVEN DAYS IN ADVANCE OF ITS CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE UNDERGROUND UTILITY OWNERS AND THE DEPARTMENT WITH A SEVEN DAYS ADVANCE NOTICE OF ANY CONFLICT WITH PROPOSED CONSTRUCTION. THIS NOTIFICATION SHALL PROVIDE SURVEY INFORMATION ABOUT EXISTING UTILITY ALIGNMENT, GRADE, AND POSSIBLE CONFLICTS. PAYMENT FOR PRE-TRENCHING, SURVEY AND BACKFILLING SHALL BE INCLUDED IN THE COST OF THE RELATED BID ITEM FOR THE WORK BEING DONE.
3. THE CONTRACTOR IS TO USE EXTREME CAUTION WHEN WORKING IN OR AROUND AREAS OF OVERHEAD TRANSMISSION LINES AND UNDERGROUND UTILITIES.
4. ALL EXISTING UTILITIES ARE TO REMAIN UNLESS OTHERWISE NOTED.
5. TWO FULL BUSINESS DAYS PRIOR TO DIGGING THE CONTRACTOR SHALL CALL SUNSHINE STATE ONE CALL OF FLORIDA, TELEPHONE NUMBER 1-800-432-4770, AND THE UTILITY OWNERS AND REQUEST UTILITY LOCATIONS. A CONTRACTOR'S REPRESENTATIVE MUST BE PRESENT WHEN UTILITY COMPANIES LOCATE THEIR FACILITIES. THE LOCATION OF EXISTING UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR AND THE UTILITY OWNER DURING THE CONSTRUCTION.
6. PRIOR TO COMMENCEMENT OF ANY EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH FLORIDA STATUTE 553.851 FOR THE PROTECTION OF UNDERGROUND GAS PIPELINES.
7. THE CONTRACTOR SHALL USE HAND DIGGING WHEN EXCAVATING NEAR EXISTING UTILITIES. EXTREME CAUTION WILL BE EXERCISED BY THE CONTRACTOR WHILE EXCAVATING, INSTALLING, BACKFILLING AND COMPACTING AROUND UTILITIES AND HE/SHE WILL BE RESPONSIBLE FOR DAMAGE TO A UTILITY THAT HAS BEEN PROPERLY LOCATED. COST TO BE INCLUDED IN RELATED BID ITEM FOR WORK BEING DONE.
8. THE CONTRACTOR SHALL ADJUST UTILITY POLES GUY WIRE ANCHORS AND COMPLY WITH THE HORIZONTAL CLEARANCE AND OTHER REQUIREMENTS OF THE 2007 FDOT UTILITY ACCOMMODATION MANUAL.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ANY AND ALL EXISTING UTILITIES ON THIS PROJECT.
10. UTILITY OWNERS:

AT&T COMMUNICATIONS
OTIS REEVE
860 W. SUNRISE BLVD.
PLANTATION, FL 33322
(954)723-2340

CITY OF WEST PALM BEACH
(ELECTRIC & STREET LIGHTS)
KAIM TAHITI
1000 45 STREET,
WEST PALM BEACH, FL 33407
(561)494-1040

CITY OF WEST PALM BEACH
(WATER DIST. & SAN. COLLECTION)
ISAAC ROSHER
1000 45 STREET, SUITE 15
WEST PALM BEACH, FL 33407
(561)494-1040

CITY OF WEST PALM BEACH
JONATHAN BRAMLEY
1000 45 STREET, SUITE 16
WEST PALM BEACH, FL 33407
(561)494-1040 EXT. 1288
FAX: (561)494-1118
jbramley@wpb.org
jbramley@wpb.org

COMCAST - WPB
(CABLE TV)
HENRY PATINO
7201 S. FEDERAL HWY.
BOCA RATON, FL 33487
(561)454-5803
FAX: (561) 393-6809

FLORIDA POWER & LIGHT
(ELECTRIC)
MR. TRACY STERN
303 HASTINGS ROAD
ST. AUGUSTINE, FL 32084
(800)868-9554
tracy.stern@fpl.com

FLORIDA PUBLIC UTILITIES CO.
(GAS)
CHRIS CANINO
401 S. DIXIE HWY.
WEST PALM BEACH, FL 33401
(561)838-1760
FAX: (561)868-1769

QCI
(COMMUNICATIONS/FIBER OPTIC)
INVESTIGATIONS
2400 W. DORVILLE
ATLANTA, GA 75082
(972)729-5015
FAX: (561)656-8022
investigations@qcibusiness.com

PALM BEACH COUNTY
TRAFFIC OPERATIONS
(TRAFFIC)
ROD FRIEDEL
2300 JOG ROAD
WEST PALM BEACH, FL 3340
(561)681-4351
FAX: (561)478-5570
rfriedel@pbcgov.org

PALM BEACH COUNTY
WATER UTILITIES
(WATER)
BRIAN SHIELDS
8100 FORREST HILL BLVD.
WEST PALM BEACH, FL 33413
(561)493-6018
FAX: (561)493-6085
HENRY MELENDEZ
(561)493-6020
hmelendez@pbcwater.org

Call 48 hours before you dig in Florida
811
It's the Law!
1-800-432-4770
Sunshine State One Call of Florida, Inc.
www.callsunshine.com

9/15/10

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
1001 W. Cypresswood Blvd., Suite 100
Fort Lauderdale, Florida 33309-1931
954-777-5000
F.C.A. No. 00000205
Charter S. Jackson, FL No. 8184

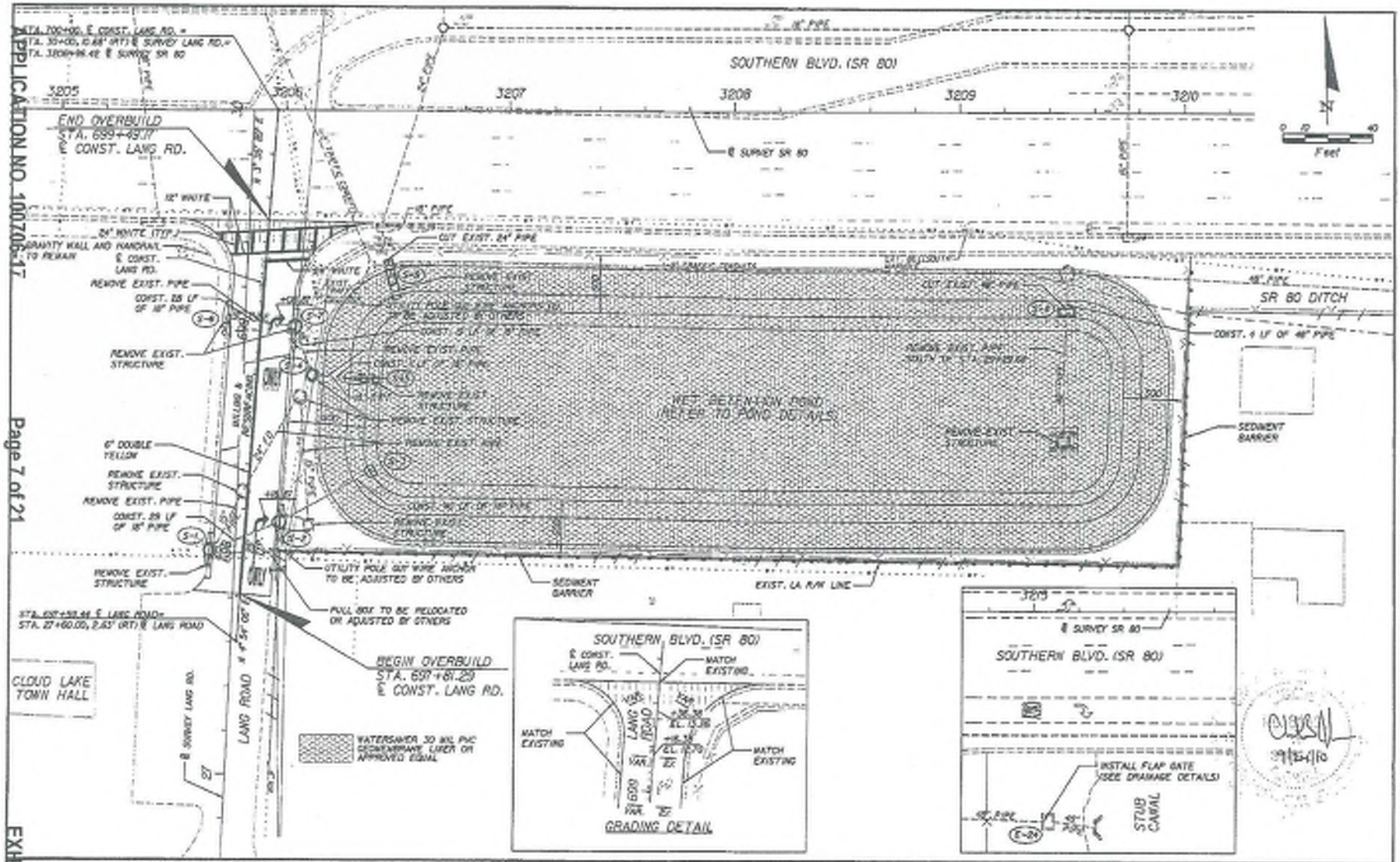
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

GENERAL NOTES

SHEET NO. 6

APPLICATION NO. 100705-17 Page 7 of 21 EXHIBIT 2



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.

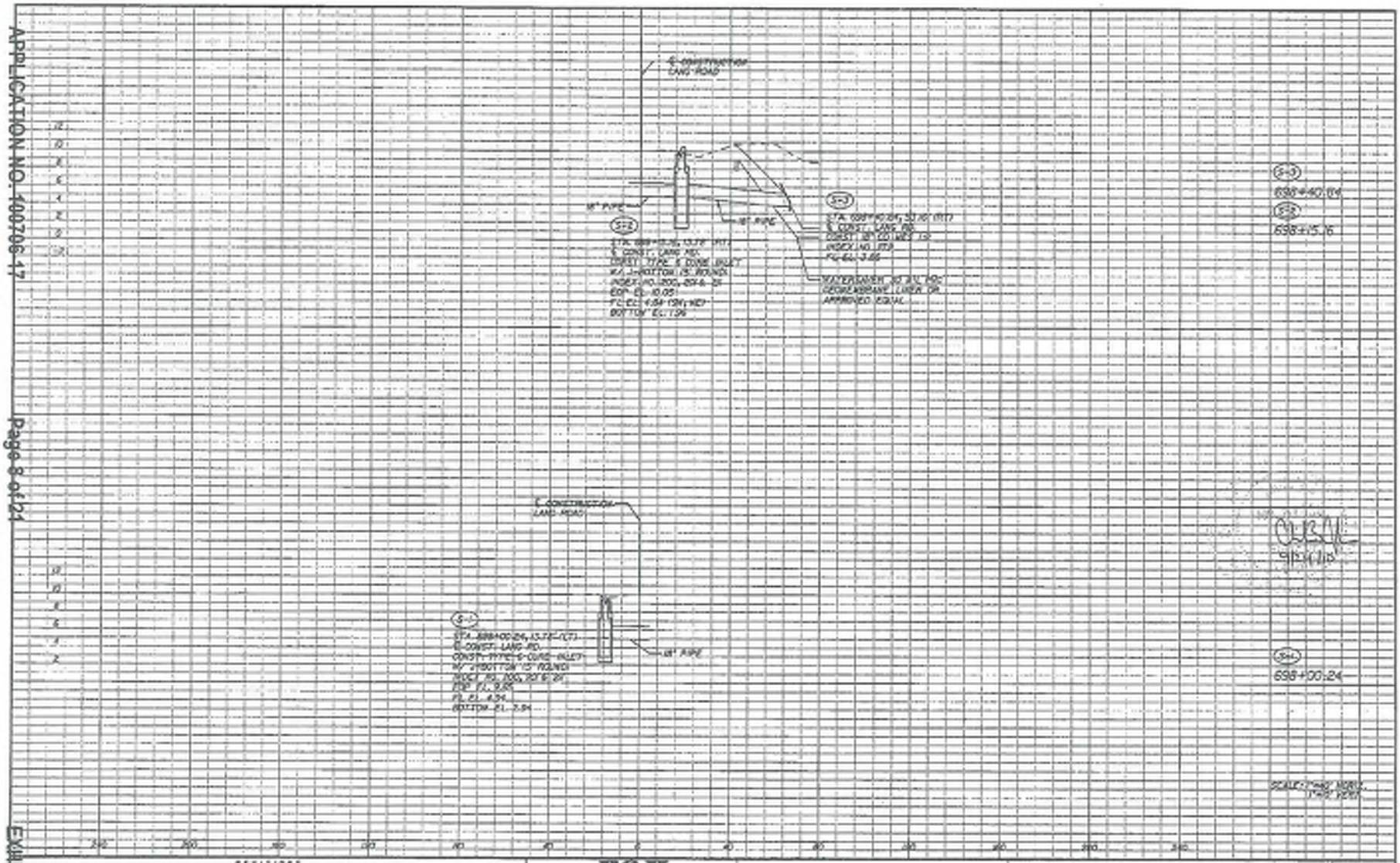
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

ROADWAY PLAN

SHEET NO. 7

APPLICATION NO. 100706-17
Page 8 of 21
EXHIBIT 2



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.

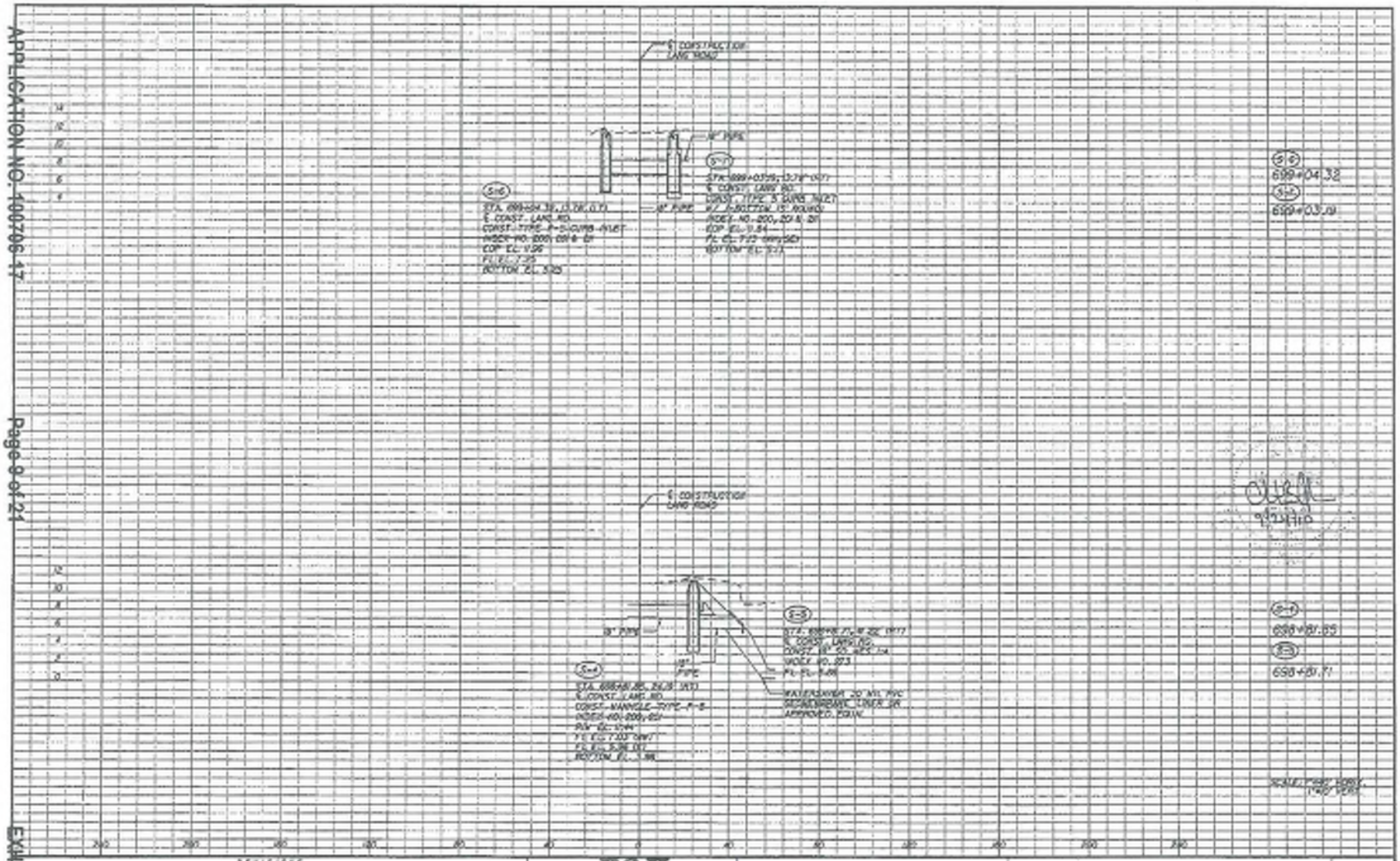
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229965-4-32-01

DRAINAGE STRUCTURES

SHEET NO. 6

APPLICATION NO. 100706 47
Page 9 of 21
EXHIBIT 2



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

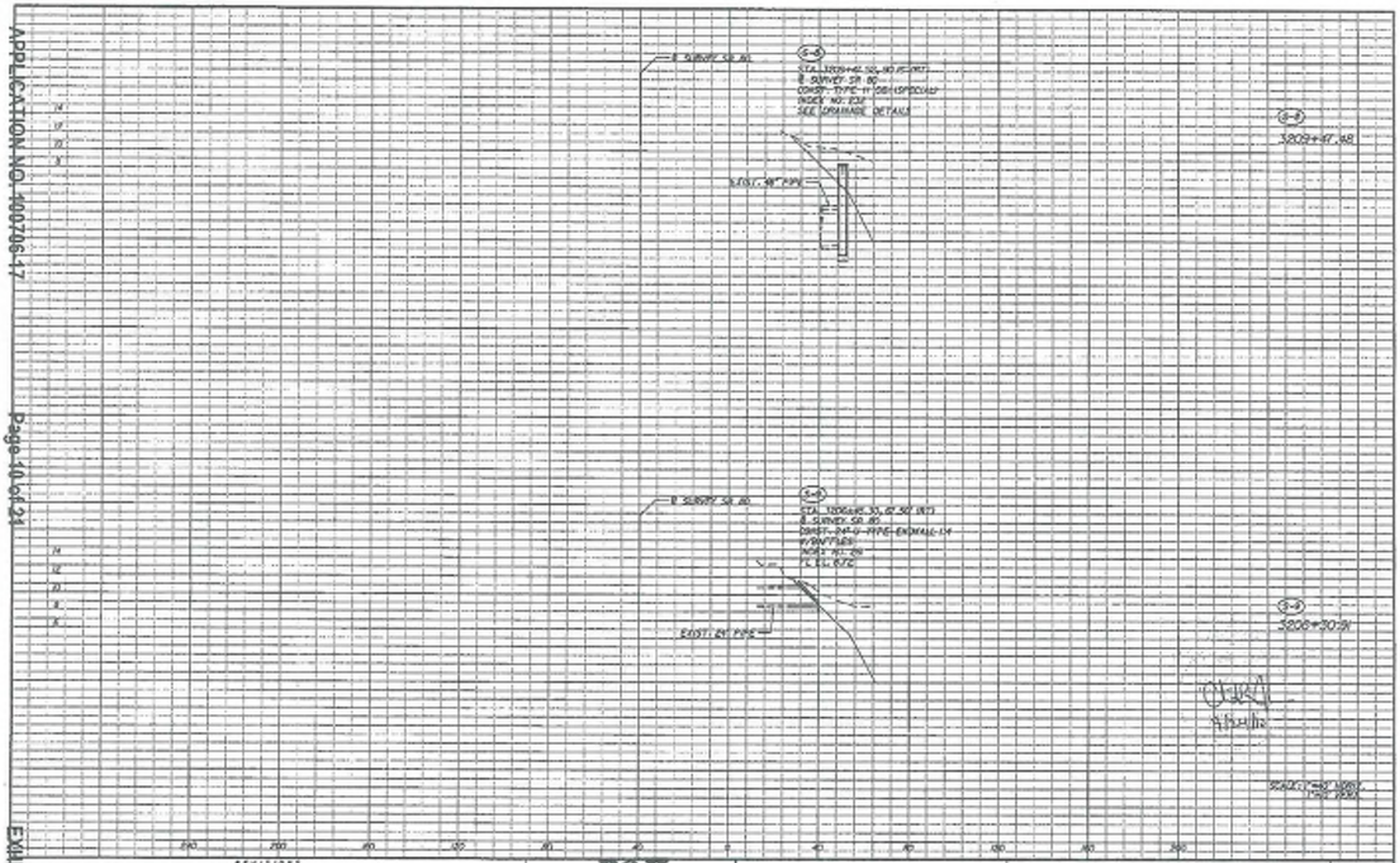
RS+H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

DRAINAGE STRUCTURES

SHEET NO. 9



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

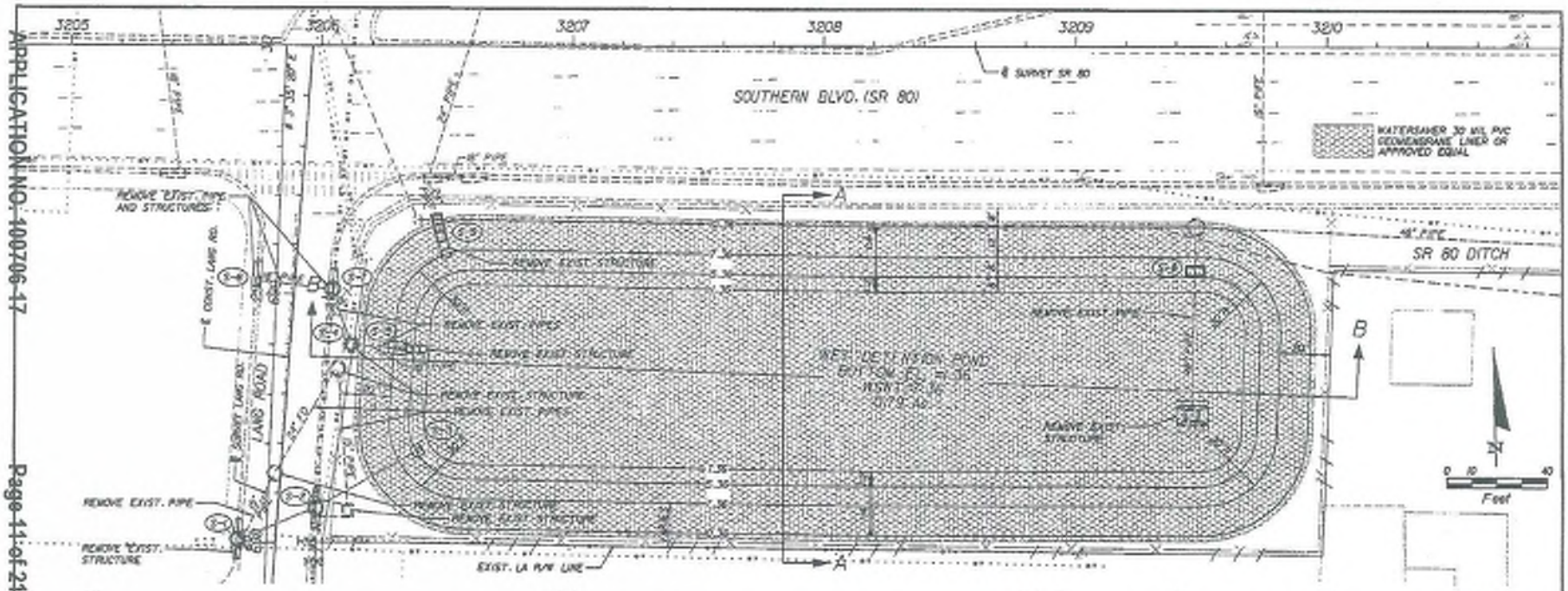
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

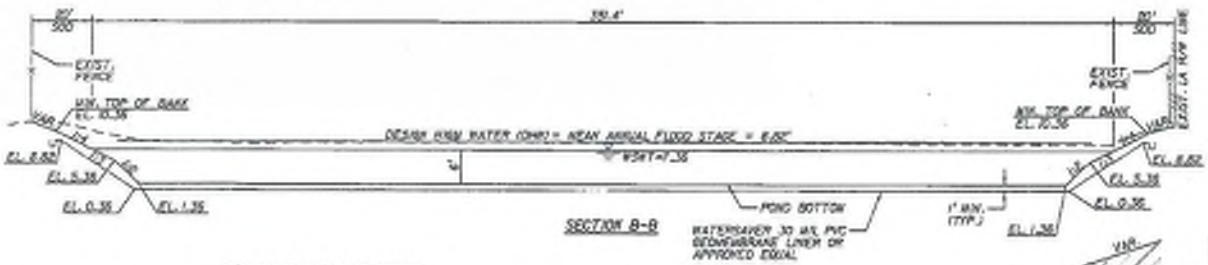
DRAINAGE STRUCTURES

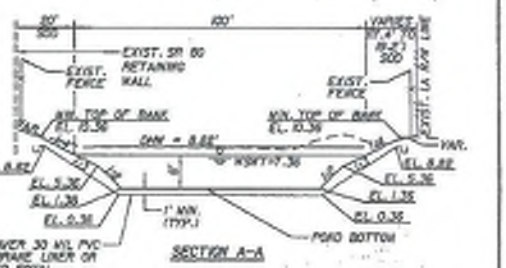
SHEET NO. 10

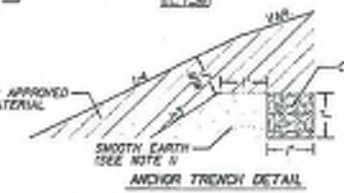
APPLICATION NO. 100706117
Page 10 of 21
EXHIBIT 2

APPLICATION NO. 100706-17 Page 11 of 21 EXHIBIT 2









GEOMEMBRANE LINER NOTES:

1. THE LINER SHALL BE PLACED ON EARTH THAT IS SMOOTH, DRY, AND FREE FROM SHARP ROOTS, ROCKS, VEGETATION, AND OTHER FOREIGN MATERIAL.
2. PROPOSED DRAINAGE STRUCTURES INCLUDING PIPES, ENDWALLS, CONTROL STRUCTURES, AND MITERED END SECTIONS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF THE LINER.
3. THE LINER SHALL BE PLACED ON SLOPES NO STEEPER THAN 1:3 WITH A MINIMUM COVER FROM POND BOTTOM AND SIDESLOPES OF 1'.

9/24/10

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.

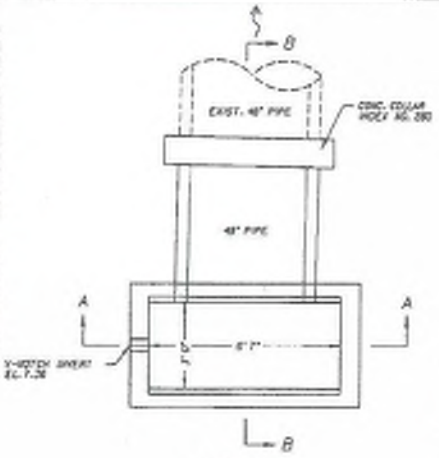
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	222966-4-32-01

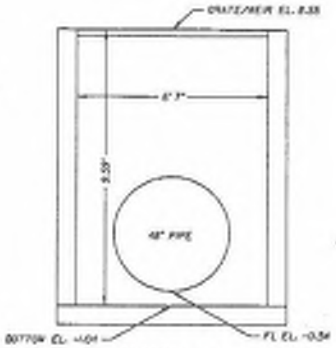
POND DETAILS

SHEET NO. 11

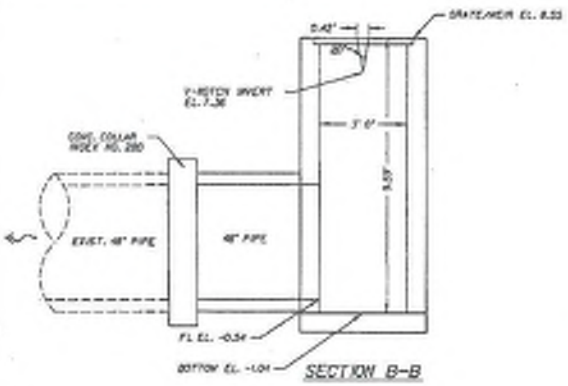
APPLICATION NO. 100706-47
Page 12 of 21
EXHIBIT 2



PLAN VIEW

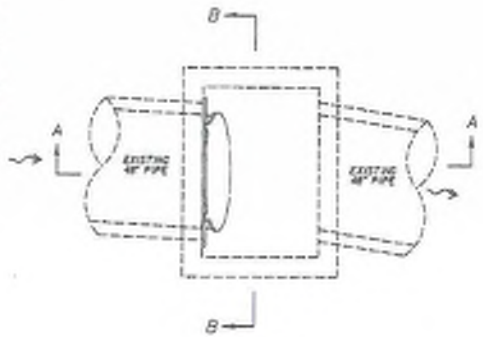


SECTION A-A

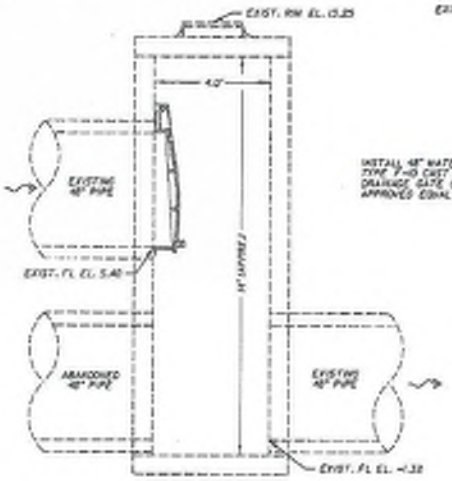


SECTION B-B

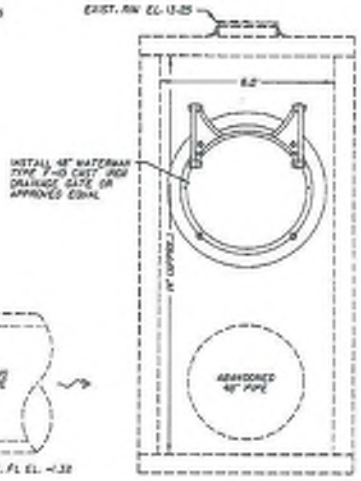
CONTROL STRUCTURE S-8
STA. 3209+47.52 (90.16' RT'), @ SR 80
TYPE "H" DBI (SPECIAL)
INDEX NO. 232



PLAN VIEW

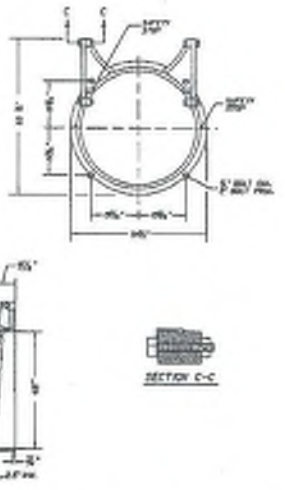


SECTION A-A



SECTION B-B

EXISTING STRUCTURE E-24
STA. 3205+06.54 (94.75' RT), @ SR 80



WATERMAN USA TYPE F-10 LIGHT-DUTY
CAST IRON DRAINAGE GATE

(NOT TO SCALE)

NOTES:

1. ADD GROUT PAD THICKNESS TO ANCHOR BOLT PROTECTION.
2. THE DRAINAGE GATE SHALL BE DESIGNED TO ALLOW FREE OUTFLOW AND PREVENT BACKFLOW FOR MAXIMUM SEATING HEADS OF 10 FEET. GATES SHALL BE WATERMAN MODEL F-10 OR EQUAL.
3. THE FRAME SHALL BE CAST IRON OF FLAT BACK DESIGN WITH SEATING SURFACE INCLINED FROM VERTICAL AT A MINIMUM OF 2.5° TO ASSURE POSITIVE CLOSURE. THE CAST IRON COVER, WITH DOMED CONSTRUCTION TO WITHSTAND MAXIMUM SEATING HEAD, SHALL HAVE MACHINED SEATS, AND BE ATTACHED TO THE FRAME BY SUCH A MANNER AS TO ALLOW PROPER SEATING AND FULL OPENING OF COVER. BUILT IN STOPS SHALL BE PROVIDED TO PREVENT THE COVER FROM ROTATING SUFFICIENTLY TO BECOME WEDGED IN THE OPEN POSITION. THE LINKAGE SYSTEM SHALL BE OF STRUCTURAL STEEL, WHICH ALONG WITH THE ASSEMBLY HARDWARE SHALL BE GALVANIZED.
4. CAST IRON FRAME AND COVER SHALL BE COATED WITH MANUFACTURER'S STANDARD SHOP COAT PAINT. GALVANIZED STEEL DOES NOT REQUIRE FURTHER FINISH.
5. FRAME AND COVER SHALL BE CAST IRON PER ASTM A-126, CLASS B. HINGE LINK SHALL BE STRUCTURAL STEEL PER ASTM A-36, GALVANIZED PER ASTM A-123. ASSEMBLY HARDWARE SHALL BE STEEL PER ASTM A-307, GALVANIZED PER ASTM A-153. BRONZE BUSHINGS SHALL BE COMMERCIAL BRONZE.
6. CONTRACTOR SHALL EVALUATE DRAINAGE STRUCTURE WALL AND WE-WORK IF NECESSARY TO PROVIDE ADEQUATE STRUCTURAL SUPPORT FOR ANCHOR BOLTS. RE-WORKING MAY INCLUDE, BUT NOT BE LIMITED TO PARTIAL REMOVAL OF BRICK, CONCRETE, GROUT, ETC. AND REGROUTING AND/OR REINFORCEMENT.

9/24/10

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

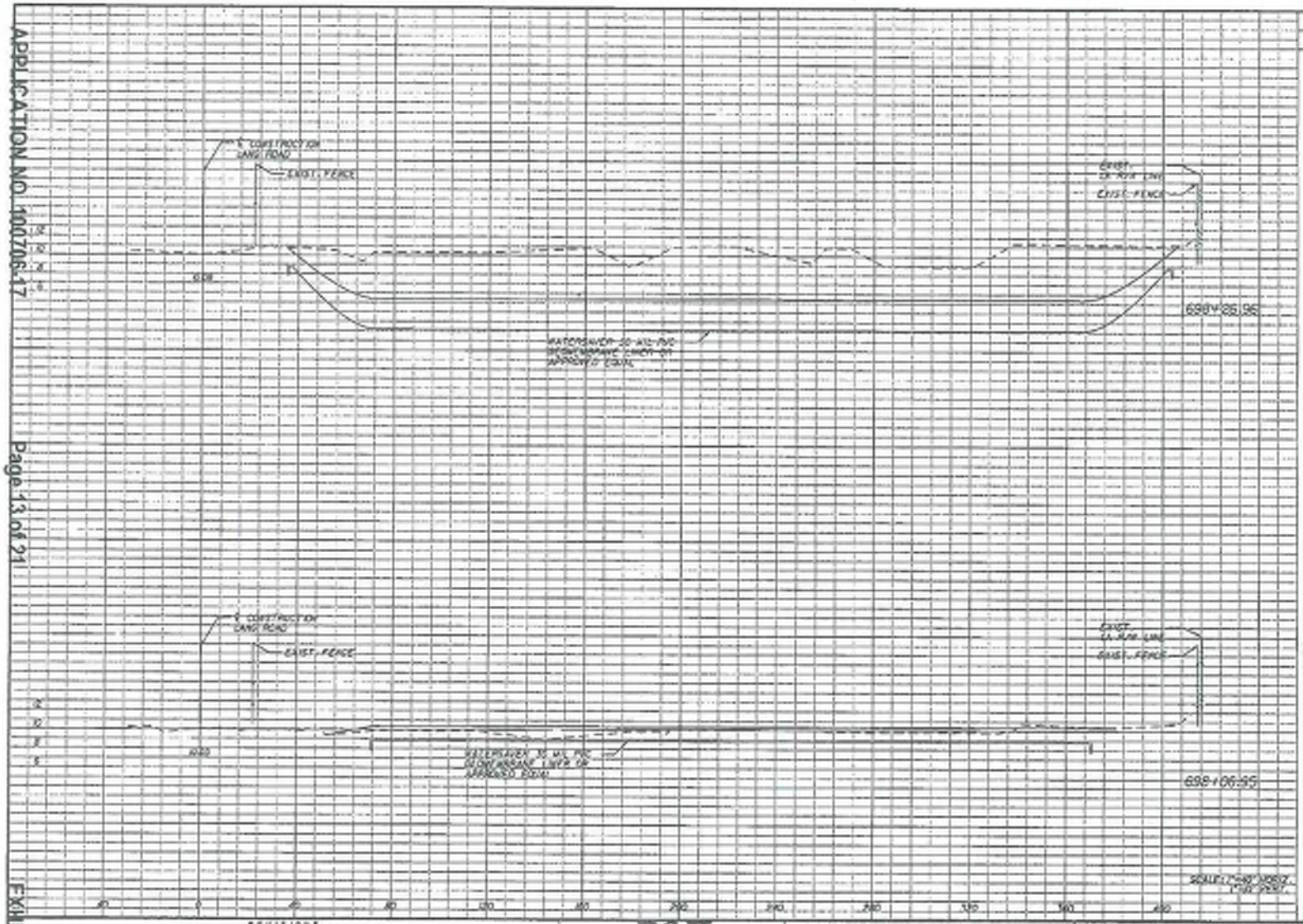
DRAINAGE DETAILS

SHEET NO. 12

APPLICATION NO. 1400706-17

Page 13 of 21

EXHIBIT 2



Regular Exc.		Embankment	
A	V	A	V
	504		0
NAP		0	
	627		60
7		86	

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

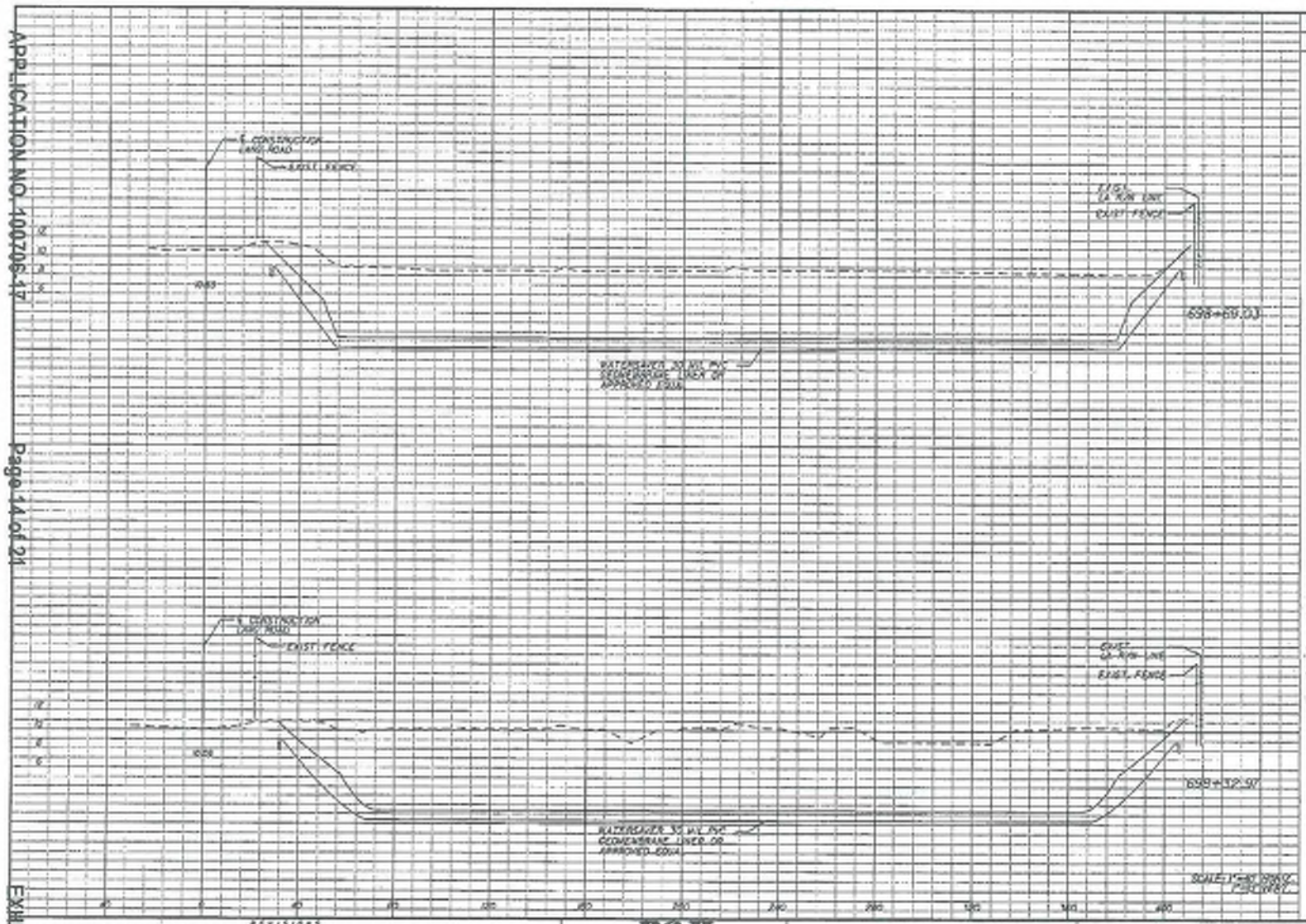
POND CROSS SECTIONS

SHEET NO. 13

APPLICATION NO. 100206147

Page 14 of 21

EXHIBIT 2



Regular Exc.		Embankment	
A	V	A	V
	3255		0
8450		0	
	3535		0
8853		0	

9/24/10

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

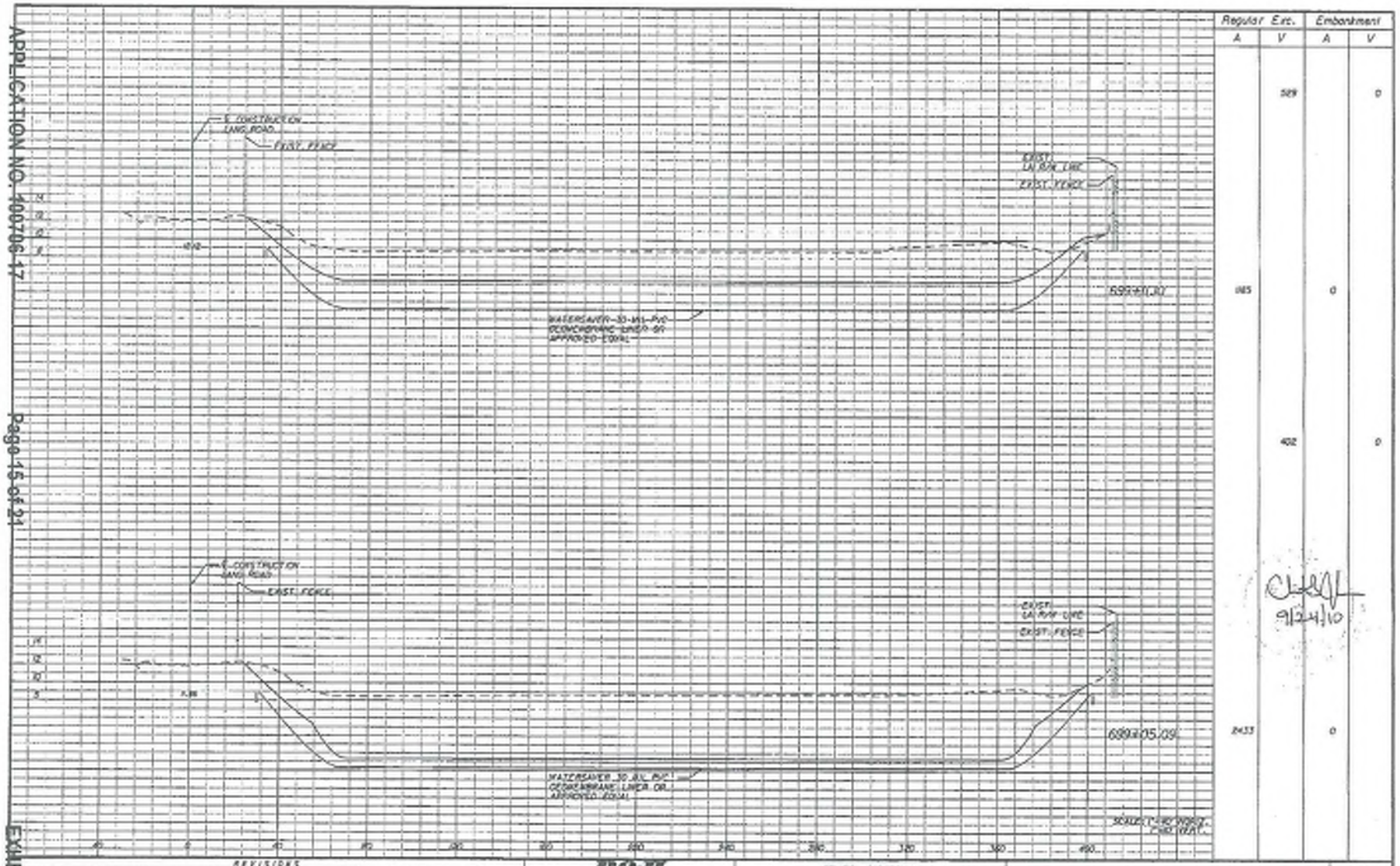
RS&H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

POND CROSS SECTIONS

SHEET NO. 14



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

POND CROSS SECTIONS

SHEET NO.
15

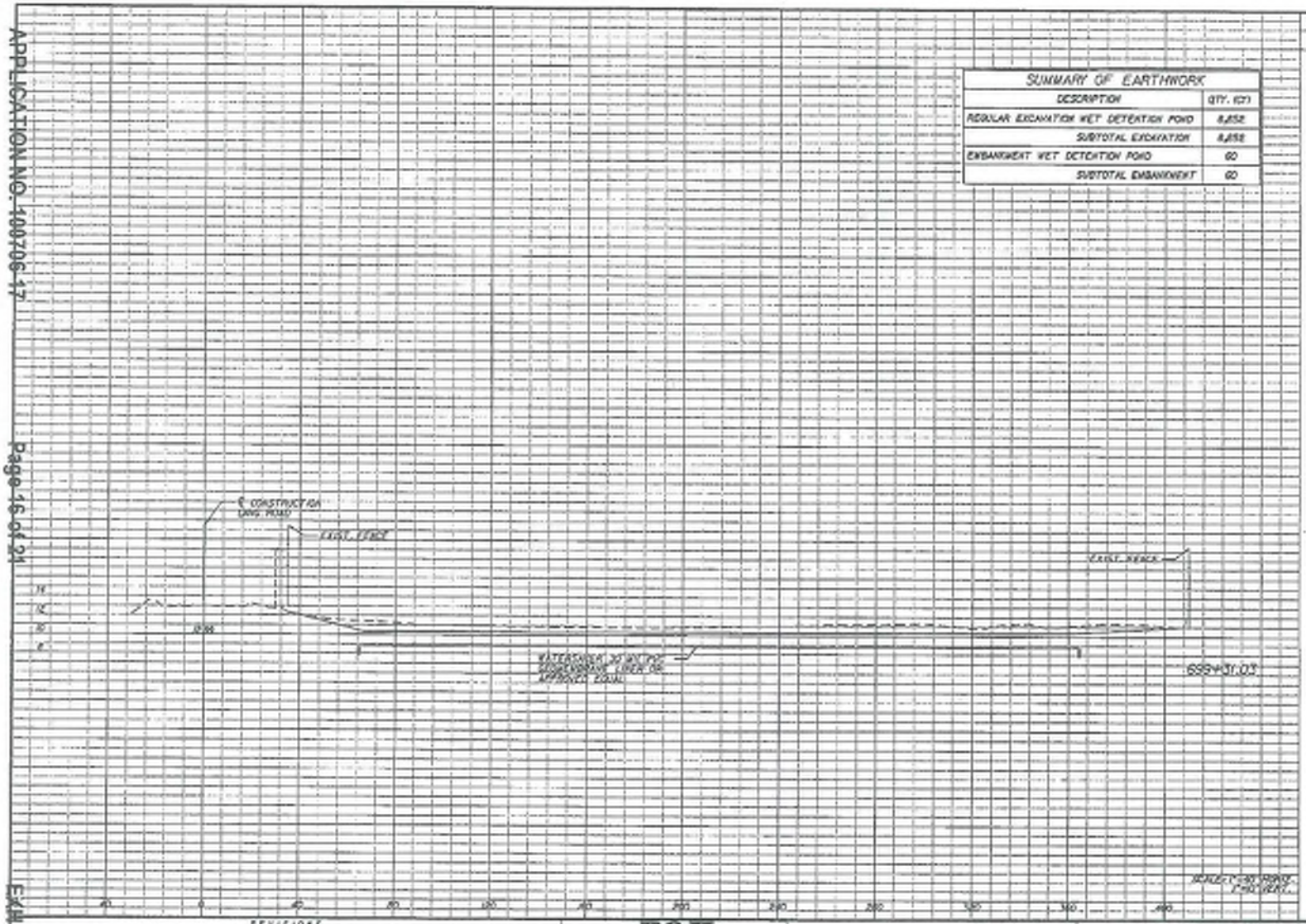
APPLICATION NO. 100706-17

Page 16 of 21

EXHIBIT 2

Regulat Exc.		Embankment	
A	V	A	V
243		0	

SUMMARY OF EARTHWORK	
DESCRIPTION	QTY. (CY)
REGULAR EXCAVATION WET DETENTION POND	8,852
SUBTOTAL EXCAVATION	8,852
EMBANKMENT WET DETENTION POND	60
SUBTOTAL EMBANKMENT	60



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

POND CROSS SECTIONS

SHEET NO. 16

APPLICATION NO. 100706-17 Page 17 of 24 EXHIBIT 2

THE FOLLOWING NARRATIVE OF THE STORMWATER POLLUTION PREVENTION PLAN CONTAINS REFERENCES TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, THE DESIGN STANDARDS, AND OTHER SHEETS OF THESE CONSTRUCTION PLANS. THE FIRST SHEET OF THE CONSTRUCTION PLANS (CALLED THE KEY SHEET) CONTAINS AN INDEX TO THE OTHER SHEETS. THE COMPLETE STORMWATER POLLUTION PREVENTION PLAN INCLUDES SEVERAL ITEMS: THIS NARRATIVE DESCRIPTION, THE DOCUMENTS REFERENCED IN THIS NARRATIVE, THE CONTRACTOR'S APPROVED EROSION CONTROL PLAN REQUIRED BY SPECIFICATION SECTION 104, AND REPORTS OF INSPECTIONS MADE DURING CONSTRUCTION.

1.0. SITE DESCRIPTION:

1.A NATURE OF CONSTRUCTION ACTIVITIES:
LAKE ROAD IS LOCATED DIRECTLY WEST OF I-95, SOUTH OF SR 80 (SOUTHERN BLVD.) IN THE TOWN OF CLOUD LAKE IN PALM BEACH COUNTY, FLORIDA. THE PROJECT INVOLVES UNDERGROUND STORM DRAIN SYSTEMS, AND STORMWATER MANAGEMENT FACILITIES ON AND ADJACENT TO LAKE ROAD SOUTH OF SR 80. ALSO, PAVEMENT OVERBUILDING IS PROPOSED ON LAKE ROAD FROM SR 80 TO 167.88 FEET SOUTH OF SR 80. POND 1 (LOCATED ON THE SOUTHEAST CORNER OF SR 80 AND LAKE ROAD) WILL BE REGRADED AND EXCAVATED TO MAKE IT A WET DETENTION FACILITY.

1.B SEQUENCE OF MAJOR SOIL DISTURBING ACTIVITIES:
IN THE SEDIMENT AND EROSION CONTROL PLAN, THE CONTRACTOR SHALL PROVIDE A DETAILED SEQUENCE OF CONSTRUCTION FOR ALL CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF MAJOR ACTIVITIES DESCRIBED BELOW, UNLESS THE CONTRACTOR PROPOSES A DIFFERENT SEQUENCE THAT IS EQUAL OR BETTER AT CONTROLLING EROSION AND TRAPPING SEDIMENT AND IS APPROVED BY THE ENGINEER.

FOR EACH CONSTRUCTION PHASE, INSTALL PERIMETER CONTROLS AFTER CLEARING AND GRUBBING NECESSARY FOR INSTALLATION OF CONTROLS BUT BEFORE BEGINNING OTHER WORK FOR THE CONSTRUCTION PHASE. REMOVE PERIMETER CONTROLS ONLY AFTER ALL UPSTREAM AREAS ARE STABILIZED.

1. CLEARING AND GRUBBING, EARTHWORK FOR POND CONSTRUCTION.
2. STORM DRAIN AND ROADWAY CONSTRUCTION, CONSTRUCT THE STORM DRAIN PIPE IN THE UPSTREAM DIRECTION.

1.C AREA ESTIMATES:
TOTAL SITE AREA: 1.45 ACRES
TOTAL AREA TO BE DISTURBED: 1.25 ACRES

1.D QUALITY OF EXISTING STORMWATER DISCHARGE

IN THE EXISTING CONDITION, ALL RUNOFF IS COLLECTED IN THE EXISTING DRY DETENTION POND WITH A CONTROL STRUCTURE IN POND 1 BEFORE IT OUTFALLS INTO THE STUB CANAL.

SOILS DATA: SOIL BORINGS ARE AVAILABLE IN THE SR 80 PLANS (FPID NO. 231835-1-52-01).

1.E SITE MAP:
THE CONTRACT PLANS ARE BEING USED AS THE SITE MAPS. THE LOCATION OF THE REQUIRED INFORMATION IS DESCRIBED BELOW. THE SHEET NUMBERS FOR THE SHEETS REFERENCED ARE IDENTIFIED ON THE KEY SHEETS OF THE COMPONENTS OF THE CONTRACT PLANS SET.

DRAINAGE PATTERNS:
THE DRAINAGE BASIN DIVIDES AND FLOW AREAS ARE SHOWN ON THE DRAINAGE MAPS.

APPROXIMATE SLOPES:
THE SLOPES OF THE SITE CAN BE SEEN IN THE PLANS.

AREAS OF SOIL DISTURBANCE:
THE AREAS TO BE DISTURBED ARE INDICATED ON THE PLANS. ANY AREAS WHERE PERMANENT FEATURES ARE SHOWN TO BE CONSTRUCTED ABOVE OR BELOW GROUND WILL BE DISTURBED.

AREAS NOT TO BE DISTURBED:
ESSENTIALLY THE WHOLE PROJECT WILL BE DISTURBED DURING CONSTRUCTION.

LOCATIONS OF TEMPORARY AND PERMANENT CONTROLS:
TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AND THEIR LOCATIONS ARE SHOWN ON THE PLANS.

AREAS TO BE STABILIZED:
TEMPORARY STABILIZATION PRACTICES ARE SHOWN IN THE SAME LOCATION AS THE TEMPORARY CONTROLS MENTIONED ABOVE.

SURFACE WATERS:
THERE IS ONE SURFACE WATER: STUB CANAL.

1.F RECEIVING WATERS:
OUTFALL INFORMATION: THERE IS ONE OUTFALL INTO SURFACE WATERS:
"1: DESCRIPTION: EXIST. 48" OUTFALL FROM CONTROL STRUCTURE W/ 48" OUTFALL
LOCATION: LATITUDE 26°59'86" LONGITUDE 80°15'49"
TOTAL DRAINAGE AREA = 1.25 AC (OUTFALLS IN PARALLEL)
RECEIVING WATER NAME: STUB CANAL
THERE ARE NO WETLAND AREAS ON THE PROJECT SITE.

2.0 CONTROLS:

2.A EROSION AND SEDIMENT CONTROLS

IT IS THE CONTRACTOR RESPONSIBILITY TO IMPLEMENT THE EROSION AND TURBIDITY CONTROLS AS SHOWN ON THE EROSION CONTROL PLANS. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THESE CONTROLS ARE PROPERLY INSTALLED, MAINTAINED, FUNCTIONING PROPERLY, TO PREVENT TURBID OR POLLUTED WATER FROM LEAVING THE PROJECT SITE. THE CONTRACTOR WILL ADJUST THE EROSION AND TURBIDITY CONTROLS SHOWN ON THE SEDIMENT AND EROSION CONTROL PLAN AND ADD ADDITIONAL CONTROL MEASURES, AS REQUIRED, TO ENSURE THE SITE MEETS ALL FEDERAL, STATE AND LOCAL EROSION AND TURBIDITY CONTROL REQUIREMENTS. THE FOLLOWING BEST MANAGEMENT PRACTICES WILL BE IMPLEMENTED BY THE CONTRACTOR AS REQUIRED BY THE EROSION CONTROL PLAN AND AS REQUIRED TO MEET THE SEDIMENT AND TURBIDITY REQUIREMENTS IMPOSED ON THE PROJECT SITE BY THE REGULATORY AGENCIES.

2.A.1 STABILIZATION PRACTICES

IN THE SECTION 104 EROSION CONTROL PLAN, THE CONTRACTOR SHALL DESCRIBE THE STABILIZATION PRACTICES PROPOSED TO CONTROL EROSION. THE CONTRACTOR SHALL INITIATE ALL STABILIZATION MEASURES AS SOON AS PRACTICAL, BUT IN NO CASE MORE THAN 7 DAYS, IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. THE STABILIZATION PRACTICES SHALL INCLUDE AT LEAST THE FOLLOWING, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

TEMPORARY:

* ARTIFICIAL COVERINGS IN ACCORDANCE WITH SPECIFICATION SECTION 104
* SEED AND MULCH, AND SOD IN ACCORDANCE WITH SPECIFICATION SECTION 104

PERMANENT:

* ASPHALT OR CONCRETE SURFACE
* SOD, VEGETATION, OR LANDSCAPE

2.A.2 STRUCTURAL PRACTICES

IN THE SECTION 104 EROSION CONTROL PLAN, THE CONTRACTOR SHALL DESCRIBE THE PROPOSED STRUCTURAL PRACTICES TO CONTROL OR TRAP SEDIMENT AND OTHERWISE PREVENT THE DISCHARGE OF POLLUTANTS FROM EXPOSED AREAS OF THE SITE. SEDIMENT CONTROLS SHALL BE IN PLACE BEFORE DISTURBING SOIL UPSTREAM OF THE CONTROL. THE STRUCTURAL PRACTICES SHALL INCLUDE AT LEAST THE FOLLOWING, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

TEMPORARY:

* SILT FENCE IN ACCORDANCE WITH DESIGN STANDARD 102
* SOIL TRACKING PREVENTION DEVICES IN ACCORDANCE WITH DESIGN STANDARD 106
* FLOATING TURBIDITY BARRIERS IN ACCORDANCE WITH DESIGN STANDARD 103
* SYNTHETIC BALES OR STRAW IN ACCORDANCE WITH DESIGN STANDARD 102
* INLET PROTECTION IN ACCORDANCE WITH DESIGN STANDARD 102

PERMANENT:

* STORMWATER POND

2.B STORMWATER MANAGEMENT

A STORM DRAIN SYSTEM WILL BE CONSTRUCTED TO CONVEY RUNOFF TO ONE (1) STORMWATER WET DETENTION POND. THE CONTROL STRUCTURE IN THE POND WILL CONTAIN A WEIR, BAFFLE, AND ORIFICE TO PROVIDE THE REQUIRED TREATMENT VOLUME AND DISCHARGE AFTERWARDS.

2.C OTHER CONTROLS

THE CONTRACTOR SHALL PRACTICE GOOD HOUSEKEEPING BY INSTITUTING A CLEAN, ORDERLY, CONSTRUCTION SITE. THE FOLLOWING CONTROLS SHALL BE IMPLEMENTED TO FURTHER REDUCE POLLUTION AT THE PROJECT SITE:

2.C.1 DISCHARGE OF MATERIALS TO SURFACE WATERS
NO CONSTRUCTION MATERIAL SHALL BE DISCHARGED TO WATERS OF THE STATE UNLESS AUTHORIZED BY A SECTION 404 PERMIT AND/OR THE STATE OF FLORIDA ENVIRONMENTAL RESOURCE PERMIT. ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF IN AN APPROVED UPLAND LOCATION. BUILDING MATERIAL SHALL NOT BE DISPOSED OF IN WETLANDS, PONDS, OR CANALS.

9/24/10

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229986-4-32-01

STORMWATER POLLUTION PREVENTION PLAN

SHEET NO. 17

APPLICATION NO. 100706-17 Page 18 of 21 EXHIBIT 2

2.C.2 OFF-SITE VEHICLE TRACKING & DUST CONTROL
THE CONTRACTOR SHALL TAKE MEASURES TO INSURE THE CLEANUP OF SEDIMENTS THAT HAVE BEEN TRACKED BY VEHICLES OR HAVE BEEN TRANSPORTED BY WIND OR STORM WATER ABOUT THE SITE OR ONTO NEARBY ROADWAYS. STABILIZED CONSTRUCTION ENTRANCES AND CONSTRUCTION ROADS SHALL BE IMPLEMENTED IN ORDER TO REDUCE OFFSITE TRACKING. LOADED HAUL TRUCKS SHALL BE COVERED WITH TARPAULIN. EXCESS DUST ON THE ROAD SHALL BE REMOVED DAILY. CONTRACTOR SHALL ABIDE BY ALL FEDERAL, STATE, AND LOCAL LAWS PERTAINING TO DUST CONTROL.

2.C.3 WASTE DISPOSAL
THE CONTRACTOR SHALL DEMONSTRATE THE PROPER DISPOSAL OF ALL CONSTRUCTION WASTE GENERATED WITHIN THE PROJECT LIMITS. WASTE MAY INCLUDE, BUT NOT BE LIMITED TO, VEGETATION FROM CLEARING AND GRUBBING ACTIVITIES, PACKAGING MATERIALS, SCRAP BUILDING MATERIALS, LITTER, DEBRIS FROM SANITARY FACILITIES, HERBICIDES AND PESTICIDES AND THEIR CONTAINERS, AND HYDROCARBON PRODUCTS. CONTRACTOR SHALL DESIGNATE A WASTE COLLECTION AREA ONSITE AND DELINEATE THE AREA ON THE SWPPP SITE MAP.

SANITARY/SEPTIC FACILITIES SHALL BE PROVIDED AND MAINTAINED IN A NEAT AND SANITARY CONDITION. FOR THE USE OF THE CONSTRUCTION'S EMPLOYEES AS NECESSARY TO COMPLY WITH THE REQUIREMENTS AND REGULATIONS OF THE STATE AND LOCAL BOARDS OF HEALTH. A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR AS REQUIRED BY STATE REGULATIONS WILL COLLECT ALL SANITARY WASTE FROM PORTABLE UNITS.

THE CONTRACTOR WILL PROVIDE LITTER CONTROL AND COLLECTION WITHIN THE PROJECT LIMITS DURING CONSTRUCTION ACTIVITIES. CONTRACTOR WILL PROVIDE AN ADEQUATE NUMBER OF LITTER CONTAINERS WITH LIDS AT THE SPACING, STOCKPILE AND FIELD OFFICE AREAS. WASTE COLLECTION WILL BE SCHEDULED SO THAT CONTAINERS ARE EMPTIED PRIOR TO OVERFLOW. SPILLED LITTER CONTAINERS SHALL BE CLEANED UP IMMEDIATELY.

2.C.4 FERTILIZERS AND PESTICIDES
THE APPLICATION AND HANDLING OF HERBICIDES AND PESTICIDES SHALL BE IN COMPLIANCE WITH THE MANUFACTURER RECOMMENDED METHOD AND IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. HERBICIDE AND PESTICIDES SHALL BE STORED ONSITE IN THEIR ORIGINAL CONTAINERS WITH PRODUCT LABEL INTACT. COPY OF MSD SHEETS AS WELL AS A COPY OF FLORIDA LICENSE FOR HERBICIDE APPLICATOR WITH PROPER ENDORSEMENTS FOR CHEMICAL USED AS WELL AS AQUATICS MUST BE PROVIDED.

2.C.5 TOXIC/HAZARDOUS MATERIAL HANDLING
CONTRACTOR SHALL PROVIDE THE EQUIPMENT NECESSARY TO CONTAIN AND CLEAN UP SPILLS OF HAZARDOUS MATERIALS, INCLUDING PETROLEUM PRODUCTS. SPILLS SHALL BE CONTAINED AND CLEANED UP IMMEDIATELY AFTER THEY OCCUR. SPILLED MATERIAL AND THE EQUIPMENT USED TO CLEAN UP THE SPILLS SHALL NOT COME IN CONTACT WITH SURFACE WATERS OR BE INTRODUCED INTO STORM WATER. DISPOSAL OF SURPLUS PRODUCT WILL BE DONE ACCORDING TO MANUFACTURER RECOMMENDED METHOD.

CONTRACTOR SHALL PROVIDE A PROJECT SPECIFIC HAZARDOUS MATERIALS SPILL CONTROL PLAN IN ORDER TO ADDRESS THE HANDLING OF HYDROCARBON AND HAZARDOUS MATERIALS.

PETROLEUM PRODUCTS SHALL BE STORED IN COVERED AREAS WITH SECONDARY CONTAINMENT SURROUNDING CONTAINER.

TOXIC/HAZARDOUS MATERIALS EXPOSED DURING CONSTRUCTION ACTIVITIES SHALL BE HANDLED AS PER THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

3.0 MAINTENANCE
THE CONTRACTOR WILL BE RESPONSIBLE FOR THE MAINTENANCE AND REPAIRS OF EROSION AND SEDIMENT CONTROL DEVICES AS PER SECTION 104 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. THE MAINTENANCE OF THESE DEVICES WILL OCCUR UNTIL THE ENGINEER HAS DEEMED AN AREA PERMANENTLY STABILIZED. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES ONCE THEY HAVE SERVED THEIR PURPOSE. THE CONTRACTOR SHALL INSTALL AND MAINTAIN RAIN GAUGES ON THE SITE.

ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT. THE CONTRACTOR SHALL PROVIDE A CONTACT NAME AND TELEPHONE NUMBER FOR 24-HOUR RESPONSE FOR REPAIRS AFTER HOURS DUE TO EMERGENCIES THAT MAY ARISE.

IN SECTION 104 EROSION & SEDIMENT CONTROL PLAN, THE CONTRACTOR SHALL PROVIDE A PLAN FOR MAINTAINING ALL EROSION AND SEDIMENT CONTROLS THROUGHOUT CONSTRUCTION.

THE FOLLOWING PRACTICES WILL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROLS:

- SILT FENCE: MAINTAIN PER SPECIFICATION SECTION 104. THE CONTRACTOR SHOULD ANTICIPATE REPLACING SILT FENCE EVERY 12 MONTHS.
- SOIL TRACKING PREVENTION DEVICES: MAINTAIN AGGREGATES AND SHALE PER DESIGN STANDARD 106.
- FLOATING TURBIDITY BARRIER: REPLACE DAMAGED CURTAIN(S) AS REQUIRED TO ENSURE TURBIDITY LEVELS IN RECEIVING WATERS REMAIN STAY BELOW REQUIRED NTU THRESHOLDS.
- SYNTHETIC BALES OR STRAW: REMOVE SEDIMENT WHEN IT REACHES ½ HEIGHT OF BALES OR WHEN WATER POOLS IN UNACCEPTABLE AMOUNTS OR AREAS.

4.0 INSPECTIONS

QUALIFIED PERSONNEL SHALL INSPECT THE FOLLOWING ITEMS AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.50 INCHES OR GREATER. WHERE SITES HAVE BEEN PERMANENTLY STABILIZED, INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH. THE CONTRACTOR SHALL ALSO INSPECT THAT CONTROLS INSTALLED IN THE FIELD ARE IN ACCORDANCE WITH THE LATEST STORMWATER POLLUTION PREVENTION PLAN. THE FOLLOWING ITEMS WILL BE INSPECTED:

- POINTS OF DISCHARGE TO WATERS OF THE UNITED STATES
- POINTS OF DISCHARGE TO MUNICIPAL SEPARATED STORM SEWER SYSTEMS
- DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED
- AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION
- STRUCTURAL CONTROLS
- STORMWATER MANAGEMENT SYSTEMS
- LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE

THE CONTRACTOR SHALL INITIATE REPAIRS WITHIN 24 HOURS OF INSPECTIONS THAT INDICATE ITEMS ARE NOT IN GOOD WORKING ORDER.

IF INSPECTIONS INDICATE THAT THE INSTALLED STABILIZATION AND STRUCTURAL PRACTICES ARE NOT SUFFICIENT TO MINIMIZE EROSION, RETAIN SEDIMENT, AND PREVENT DISCHARGING POLLUTANTS, THE CONTRACTOR SHALL PROVIDE ADDITIONAL MEASURES, AS APPROVED BY THE ENGINEER.

5.0 NON-STORM WATER DISCHARGES

IF UNFORESEEN CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR IS TO CEASE OPERATIONS IN THAT AREA. THE CONTRACTOR SHALL CONTACT THE FDOT PROJECT ENGINEER WHO WILL NOTIFY THE DISTRICT CONTAMINATION IMPACT COORDINATOR, VINCENT FUSCONI, AT (954) 777-4266.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO DEVELOP A DEWATERING SYSTEM THAT PROVIDES PRETREATMENT OF EFFLUENT PRIOR TO DISCHARGE INTO ADJACENT SURFACE WATERS. THE CONTRACTOR'S DEWATERING METHOD MUST MEET ALL FEDERAL, STATE, AND LOCAL LAWS, RULES, AND REGULATIONS CONCERNING THIS PRACTICE INCLUDING THE USE OF PERMITTED OUTFALL STRUCTURES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE AND APPLY FOR A DEWATERING PERMIT WITH THE APPROPRIATE WATER MANAGEMENT DISTRICT.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO DESIGNATE AN AREA WITHIN THE PROJECT LIMITS FOR CONCRETE TRUCK WASHOUT ACTIVITIES. THIS AREA SHALL PROVIDE EROSION CONTROL DEVICES THAT PREVENT CONTACT BETWEEN CONCRETE WASHOUT MATERIALS AND STORMWATER AND/OR SURFACE WATERS.

6.0 CONTRACTOR SUBMITTAL

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DEVELOP AN EROSION CONTROL PLAN THAT PROVIDES A DETAILED DESCRIPTION OF ALL EROSION AND SEDIMENT CONTROLS, BEST MANAGEMENT PRACTICES, AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE FOR EACH ACTIVITY IDENTIFIED IN SECTION 1.B. SEQUENCE OF SOIL DISTURBING ACTIVITIES. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TIMEFRAMES IN WHICH THE CONTROLS WILL BE IMPLEMENTED, MAINTAINED AND REMOVED. THIS INFORMATION SHALL BE SENT AT THE PROJECT FIELD OFFICE IN ORDER FOR THE PROJECT TO BE CONSIDERED IN COMPLIANCE WITH THE FDEP GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION SITES.

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE FOLLOWING ITEMS ARE ON SITE:

1. COPY OF THE STORMWATER POLLUTION PREVENTION PLAN WITH THE ORIGINAL CERTIFICATION SIGNATURES.
2. COPY OF THE CONTRACTOR'S EROSION CONTROL PLAN.
3. HAZARDOUS SPILL CONTROL PLAN WITH GUIDELINES ON CONTACTING THE 24 HOUR EMERGENCY RESPONSE PROGRAM FOR HAZARDOUS MATERIAL SPILLS. THIS SHALL INCLUDE COPIES OF DISCHARGE NOTIFICATIONS THAT HAVE OCCURRED WITHIN THE PROJECT LIMITS.
4. COMPLETED INSPECTION FORMS.

THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE FOLLOWING ITEMS TO FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION IN ORDER FOR THE NPDES PERMIT TO BE PROCESSED:

1. FDEP FORM 62-621.300(4)(b) - NOTICE OF INTENT TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES. THIS NOTICE OF INTENT SHALL BE SIGNED BY THE CONTRACTOR.
2. THE PERMITTING FEE OF $400.00 FOR PROJECTS THAT CLEAR AND GRUB MORE THAN FIVE ACRES. $250.00 FOR PROJECTS THAT CLEAR AND GRUB BETWEEN 1 AND 5 ACRES.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUBMIT THE NOI TO FDEP NO LESS THAN 48 HOURS PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PROOF OF MAILDATE TO THE ENGINEER.

9/24/10

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

STORMWATER POLLUTION PREVENTION PLAN

SHEET NO. 18

APPLICATION NO. 100706-17 Page 19 of 21 EXHIBIT 2

GENERAL:

1. TRAFFIC CONTROLS SHALL BE IN ACCORDANCE WITH THE PROJECT PLANS, CURRENT EDITION OF THE FLORIDA DEPARTMENT OF DOT TRANSPORTATION DESIGN STANDARDS 1000 SERIES), THE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, AND THE MANUAL OR UNIFORM TRAFFIC CONTROL DEVICES AS MINIMUM CRITERIA.
2. AT THE DISCRETION OF THE ENGINEER, IF A LANE CLOSURE CAUSES EXTENDED CONGESTION OR DELAY, THE CONTRACTOR SHALL BE DIRECTED TO REOPEN THE CLOSED LANES/UNTIL SUCH TIME THAT THE TRAFFIC FLOW HAS RETURNED TO AN ACCEPTABLE LEVEL.
3. THE TRAFFIC AND TRAVEL WAYS SHALL NOT BE ALTERED BY THE CONTRACTOR TO CREATE A WORK ZONE UNTIL ALL LABOR AND MATERIAL ARE AVAILABLE FOR THE CONSTRUCTION IN THAT AREA.
4. THE CONTRACTOR SHALL MAINTAIN THE EXISTING DRIVEWAY CONNECTION AND ACCESS TO THE TOWN OF CLOUD LAKE MUNICIPAL BUILDING. THE COST IS TO BE INCLUDED IN PAY ITEM NO. 102-1, MAINTENANCE OF TRAFFIC.
5. WHEN ANY VEHICLE, EQUIPMENT WORKERS OR THEIR ACTIVITIES ENCROACH ON THE OUTSIDE LANE OR THE AREA WITHIN 2' OUTSIDE THE EDGE OF TRAVEL WAY, THE CONTRACTOR SHALL CLOSE SR 80 OUTSIDE LANE FOLLOWING FDOT DESIGN STANDARDS INDEX NO. 613, SHEET 1 OF 2.
6. SR 80 LANE CLOSURE SHALL OCCUR ONLY DURING NON-PEAK HOURS ON NON-EVENT DAYS/NIGHTS/ WEEKENDS. NON-PEAK HOURS ARE:

   9:00 AM TO 3:00 PM - WEEKDAYS AND WEEKENDS
7. AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL COVER WORK ZONE SIGNS WHEN CONDITIONS NO LONGER WARRANT THEIR USE. COST OF COVERING AND UNCOVERING THE SIGNS SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.
8. CONTRACTOR SHALL REMOVE, RELOCATE OR COVER ANY EXISTING OR PROPOSED SIGNS THAT CONFLICT WITH THE WORK BEING PERFORMED TRAFFIC CONTROL PLANS. WHEN THE CONFLICT NO LONGER EXISTS, THE CONTRACTOR SHALL RESTORE THE SIGNS TO THEIR ORIGINAL POSITION. COST OF TEMPORARILY REMOVING, RELOCATING, COVERING AND RESTORING THE SIGNS SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.
9. TRAFFIC CONTROL DEVICES (I.E. TEMPORARY BARRIER, BARRICADES, ETC.) SHALL BE A MINIMUM OF 2 FEET FROM TRAVEL LANE. VARIANCE FROM THIS CRITERIA SHALL REQUIRE WRITTEN APPROVAL BY THE ENGINEER.
10. ANY EROSION CONTROL ITEMS NOT SHOWING IN THE PLANS, BUT NECESSARY UNDER THE CONTRACTOR'S SEQUENCE OF CONSTRUCTION SHALL BE INCLUDED IN THE RELATED PAY ITEM.
11. IF THE CONTRACTOR ELECTS TO DO NIGHT WORK, THEN HE/SHE MUST OBTAIN A PERMIT FROM FDOT, CITY OF WEST PALM BEACH, TOWN OF CLOUD LAKE, AND TOWN OF GLEN RIDGE.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING AND CONDUCTING MEETINGS WITH PALM BEACH COUNTY, THE TOWN OF CLOUD LAKE, TOWN OF GLEN RIDGE AND ADJACENT PROPERTY TO COORDINATE CONSTRUCTION ACTIVITIES.
13. ALL TRAVEL LANES OF SR 80 MUST BE OPEN TO TRAFFIC DURING AN EVACUATION NOTICE OF HURRICANE OR OTHER CATASTROPHIC EVENT AND WILL REMAIN OPEN AND MUST REMAIN OPEN FOR THE DURATION OF THE EVENT AS DIRECTED BY THE ENGINEER.
14. THE CONTRACTOR SHALL NOT EXCAVATE ANY AREA ALONG THE PROPOSED SIDEWALK ALIGNMENT WHICH CANNOT BE BACKFILLED WITHIN THE SAME WORK PERIOD. THE POURING OF THE PROPOSED CONCRETE SIDEWALK CAN OCCUR DURING A SUBSEQUENT WORK PERIOD.
15. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL APPLICABLE CONSTRUCTION PERMITS PRIOR TO START OF CONSTRUCTION.

PEDESTRIANS, BICYCLES AND WHEELCHAIRS:

1. AT THE END OF EACH WORK DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE, ANY DROP OFF GREATER THAN 6 INCHES ADJACENT TO THE PEDESTRIAN, BICYCLE, AND WHEELCHAIR TRAVEL PATHS SHALL BE BACKFILLED FLUSH WITH THE SAID PATHS OR PROTECTED WITH TEMPORARY FENCE, CONCRETE BARRIER WALL OR APPROVED HANDRAIL. COST SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.
2. PEDESTRIAN, BICYCLE, AND WHEELCHAIR TRAFFIC SHALL BE MAINTAINED AND GUIDED USING APPROVED WARNING LIGHTS, SIGNING, AND DELINEATION DEVICES ON AT LEAST ONE SIDE OF THE PROJECT AT ALL TIMES THROUGHOUT THE PROJECT LIMITS. THE TRAVEL PATH SHALL BE A MINIMUM OF 4 FEET WIDE WITH A SMOOTH SURFACE THAT IS NOT SLICK AND IT SHOULD BE RAMPED AS NECESSARY FOR CONTINUITY. COST TO CONSTRUCT AND MAINTAIN THE TRAVEL PATH AS REQUIRED SHALL BE INCLUDED IN PAY ITEM NO. 102-1, MAINTENANCE OF TRAFFIC.
3. THE CONTRACTOR SHALL MAINTAIN A SAFE PEDESTRIAN PATHWAY FOR LAKE ROAD PEDESTRIAN MOVEMENTS, CEASING CONSTRUCTION ACTIVITIES TEMPORARILY IF NECESSARY.

ADVANCE CONSTRUCTION NOTICE

1. THE CONTRACTOR SHALL FURNISH AND MAINTAIN PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) AT LOCATIONS SHOWN ON THE PLANS. MESSAGES FOR THE PCMS SHALL BE AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE IN PLACE ONE WEEK BEFORE START OF ANY WORK ITEMS AFFECTING THE EXISTING VEHICULAR AND PEDESTRIAN TRAFFIC. PCMS INSTALLATION, OPERATION, AND REMOVAL BEFORE CONSTRUCTION BEGINS SHALL BE PAID FOR UNDER PAY ITEM NO. 102-1, MAINTENANCE OF TRAFFIC. PCMS INSTALLATION, OPERATION, AND REMOVAL DURING CONSTRUCTION SHALL BE PAID UNDER PAY ITEM NO. 102-99, CHANGEABLE (PCMS) MESSAGE SIGN.

ADVANCE CONSTRUCTION NOTICE (CONT.)

2. THE CONTRACTOR SHALL IMMEDIATELY REPAIR ALL POTHOLES THAT DEVELOP WITHIN THE PROJECT LIMITS AND WILL MAINTAIN A SUPPLY OF COLD MIX ON THE PROJECT SITE TO EXPEDITE THOSE REPAIRS. COST OF REPAIR TO BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.
3. NOTIFICATION OF LANE CLOSURES OR TEMPORARY DETOURS SHALL BE ACCOMPLISHED 14 WORKING DAYS PRIOR TO CLOSURE, DETOUR OR NOT PHASE CHANGE BY SUBMITTING THE REQUIRED LANE CLOSURE FORM, SKETCHES, CALCULATIONS, AND OTHER DATA THROUGH THE ENGINEER TO THE FDOT DISTRICT OFFICE FOR LANE CLOSURE APPROVAL.

   NOTIFY:
   FDOT
   BRETT DROUIN
   561-432-4666

   9/24/10
4. SR 80 THRU LANES SHALL BE MAINTAINED DURING THE CONTRACT TIME WHEN CONSTRUCTION IS NOT UNDERWAY.
5. THE CONTRACTOR SHALL NOT MILL ANY AREA WHICH CANNOT BE RESURFACED AND TEMPORARILY STRIPED WITHIN THE SAME WORK PERIOD.
6. ALL TRENCHING OR EXCAVATION WITHIN THE PAVEMENT ARE SHALL BE PERFORMED PRIOR TO MILLING AND RESURFACING OPERATION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REMOVAL OF STORM WATER FROM ROADWAYS UTILIZED FOR MAINTAINING TRAFFIC IN A MANNER APPROVED BY THE ENGINEER. COST FOR REMOVING THE WATER SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.

DROP OFFS:

1. FOR DROP OFFS, THE CONTRACTOR'S ATTENTION IS DIRECTED TO STANDARD INDEX NO. 600, SHEET 10 OF 12. THE CONTRACTOR SHALL USE SHOULDER TREATMENT DETAIL WHEN NO BARRIERS ARE REQUIRED IN THE PLANS.

SIGNING & MARKINGS:

1. THE CONTRACTOR SHALL REMOVE ANY EXISTING OR PROPOSED PAVEMENT MARKINGS WHICH CONFLICT WITH THE TRAFFIC CONTROL THROUGH THE WORK ZONE. REMOVAL OF EXISTING OR TEMPORARY PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY MILLING, GRINDING, SAND OR HYDRO BLASTING OR BY OTHER METHOD APPROVED BY THE ENGINEER. USE OF BLACK PAINT TO COVER EXISTING PAVEMENT MARKINGS IS PROHIBITED. WHEN THE CONFLICT NO LONGER EXISTS THE CONTRACTOR SHALL RESTORE THE PAVEMENT MARKING TO THEIR ORIGINAL POSITION OR TO THE PROPOSED POSITION WHICH EVER ONE GOVERNS. COST OF REMOVAL OF CONFLICT MARKINGS, REGARDLESS OF METHOD, IS INCLUDED IN THE RELATED PAVEMENT MARKING PAY ITEMS.
2. ALL TEMPORARY STRIPES AND MARKINGS SHALL BE PAINT ONLY, UNLESS OTHERWISE SPECIFIED ON THE PLANS OR APPROVED BY THE ENGINEER.
3. AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL COVER WORK ZONE SIGNS WHEN CONDITIONS NO LONGER WARRANT THEIR USE. COST OF COVERING AND UNCOVERING THE SIGNS SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.
4. CONTRACTOR SHALL REMOVE, RELOCATE OR COVER ANY EXISTING OR PROPOSED SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL PLANS. WHEN THE CONFLICT NO LONGER EXISTS, THE CONTRACTOR SHALL RESTORE THE SIGNS TO THEIR ORIGINAL POSITION. COST OF TEMPORARILY REMOVING, RELOCATING, COVERING AND RESTORING THE SIGNS SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.
5. BEFORE OPENING ANY LANE TO TRAFFIC, THE CONTRACTOR SHALL REPLACE ANY OBLITERATED OR REMOVED PAVEMENT MARKINGS WITH TEMPORARY PAVEMENT MARKINGS AND REFLECTIVE PAVEMENT MARKINGS (TEMPORARY) (I.E. LANE LINES, ARROWS, CROSS WALKS, STOP BARS).
6. PERMANENT RPM'S AS REQUIRED FOR LANE LINES SHALL BE PLACED WITHIN 72 HOURS OF COMPLETION OF THE FRICTION COURSE.

TABULATION OF QUANTITIES (TRAFFIC CONTROL PLANS)

LOCATION		UNIT	QUANTITY		REMARKS
ITEM NO.	DESCRIPTION		P	F	
102-40	WORK ZONE SIGN	EA	670		
102-71-1	TEMPORARY BARRICADE / CHANNELIZING DEVICE (TYPE II	EA	135		
102-71-2	TEMPORARY BARRICADE / CHANNELIZING DEVICE (TYPE III)	EA	120		
102-75	ADVANCE WARNING ARROW PANEL	EA	5		
102-77	HIGH INTENSITY FLASHING LIGHT, TEMPORARY, TYPE B	EA	240		
102-99	PORTABLE CHANGEABLE MESSAGE SIGN - TEMPORARY	EA	60		

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	N/A

TRAFFIC CONTROL PLANS

SHEET NO. 18

APPLICATION NO. 100706-17

Page 20 of 21

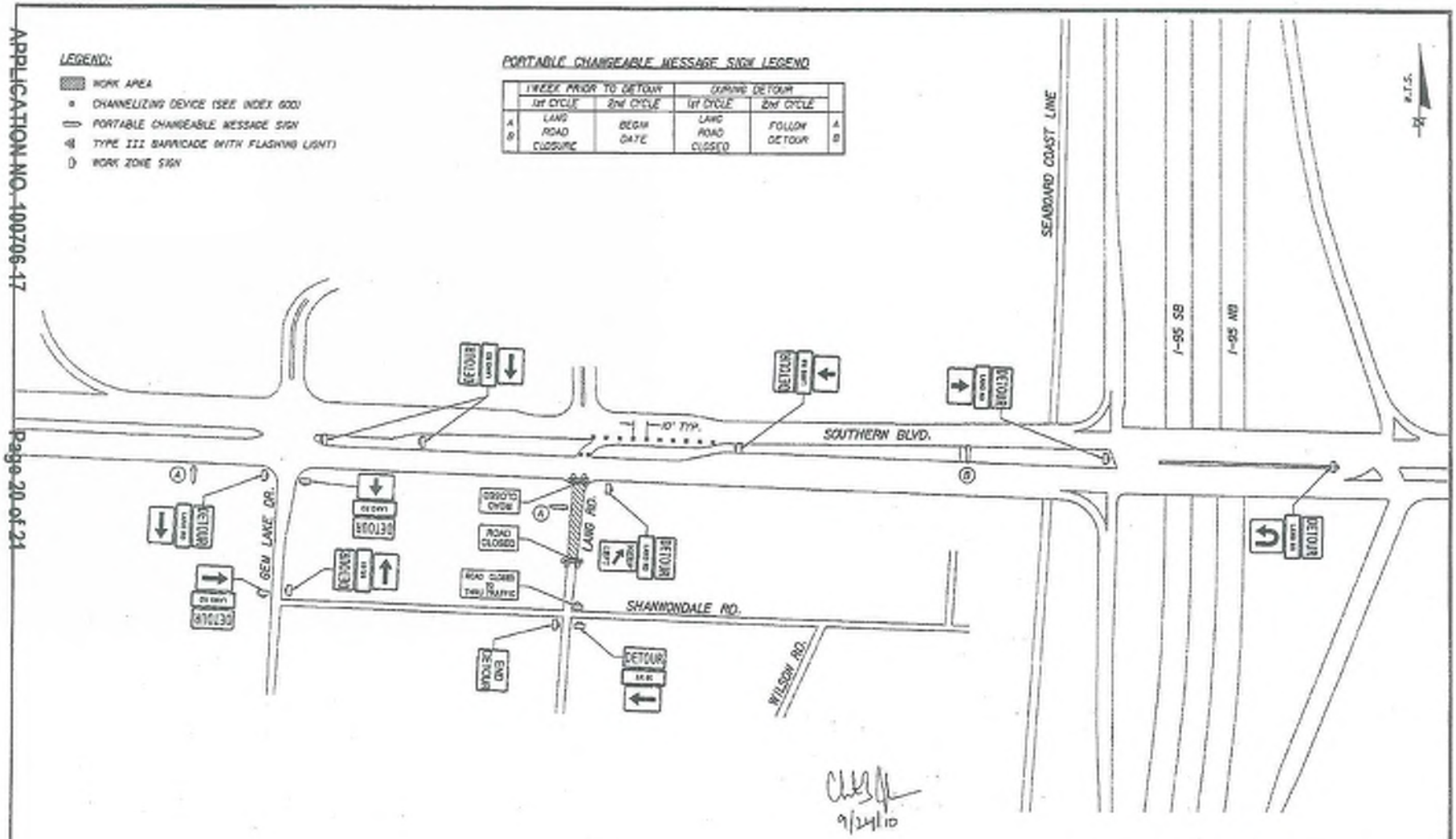
EXHIBIT 2

LEGEND:

- WORK AREA
- CHANNELIZING DEVICE (SEE INDEX 600)
- PORTABLE CHANGEABLE MESSAGE SIGN
- TYPE III BARRICADE (WITH FLASHING LIGHT)
- WORK ZONE SIGN

PORTABLE CHANGEABLE MESSAGE SIGN LEGEND

	1 WEEK PRIOR TO DETOUR		DURING DETOUR		
	1st CYCLE	2nd CYCLE	1st CYCLE	2nd CYCLE	
A	LANE ROAD CLOSURE	BEGIN DATE	LANE ROAD CLOSED	FOLLOW DETOUR	A
B					B



9/24/10

OFF-SITE DETOUR PLAN

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.

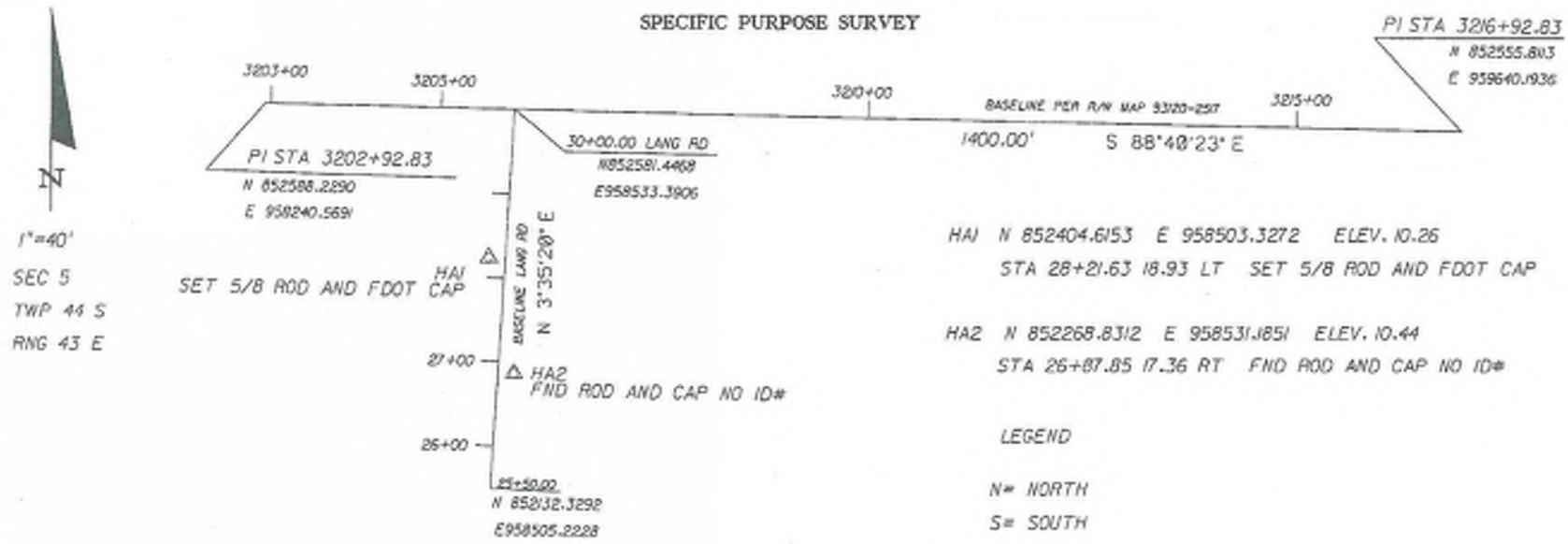
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229366-4-32-01

TRAFFIC CONTROL PLANS

SHEET NO. 20

SPECIFIC PURPOSE SURVEY



HA1 N 852404.6153 E 958503.3272 ELEV. 10.26
STA 28+21.63 18.93 LT SET 5/8 ROD AND FDOT CAP

HA2 N 852268.8312 E 958531.1851 ELEV. 10.44
STA 26+87.85 17.36 RT FND ROD AND CAP NO ID#

LEGEND

N= NORTH
S= SOUTH
E= EAST
W= WEST
SR = STATE ROAD
R/W = RIGHT OF WAY
△ = ROD AND CAP

BASELINE PER R/W MAP 93120-2517
BASELINE NOT STAKED
RTK LOCALIZED HA 1 AND HA2 FROM 930476 AND NGS MF 4I
930476 LAT 26°-40'-37.06294" LONG 80°-4'-54.54554"
MF4I LAT 26°-40'-39.67498" LONG 80°-6'-14.15607"

BEARINGS AND COORDINATES ARE RELATIVE TO THE STATE PLANE COORDINATES, FLORIDA EAST ZONE, NORTH AMERICAN DATUM (NAD) OF 1983/2007 ADJUSTMENT
A BEARING OF S 3°-35'-19" E HAS BEEN ESTABLISHED BETWEEN MONUMENTS
HA1 STAMPED N/A TO
HA2 STAMPED N/A
VERTICAL DATUM 1988 NAVD
PROJECT UNITS ENGLISH
FIELD BOOK REFERENCES N/A
ELECTRONIC DATABASE 6608.21*

LIMITS: SR 80 AT LANG RD

SURVEYOR'S CERTIFICATION
I HEREBY CERTIFY THIS SPECIFIC PURPOSE SURVEY WAS MADE FOR THE PURPOSE OF SURVEYING, REFERENCING, DESCRIBING AND MAPPING THE PRIMARY NETWORK CONTROL OR BASELINE FOR THE TRANSPORTATION FACILITY DEPICTED HEREON AND THAT SAID SURVEY WAS DONE UNDER MY RESPONSIBLE CHARGE AND MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 61G 17 FLORIDA ADMINISTRATIVE CODE PURSUANT TO SECTION 472.027 FLORIDA STATUTES. THIS MAP CONSISTING OF SHEETS CTL-1 THROUGH CTL-1 IS A TRUE, ACCURATE AND COMPLETE DEPICTION OF THE RESULTS OF A FIELD SURVEY PERFORMED UNDER MY DIRECTION AND COMPLETED ON JULY 29, 2009

SURVEYOR Paul E. Doll PLS NUMBER 6726

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PAUL E. DOLL
PSM 6726
FLORIDA DEPT OF TRANSPORTATION
3400 W COMMERCIAL BLVD
FT. LAUDERDALE, FL 33309

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23835-1-52-01

PROJECT SURVEY CONTROL
SPECIFIC PURPOSE SURVEY

SHEET NO. CTL-1

STAFF REPORT DISTRIBUTION LIST

POND CONVERSION @ SR 80 AND LANG RD

Application No: 100706-17

Permit No: 50-05327-P

INTERNAL DISTRIBUTION

X Rosalyn W. Ellington
X Trisha Stone
X Barbara J. Conmy
X Carlos A. de Rojas, P.E.
X ERC Engineering
X ERC Environmental
X H. Azizi
X H. Bittaker, PBCSC
X Permit File

EXTERNAL DISTRIBUTION

X Permittee - Florida Department Of Transportation
X Engr Consultant - Reynolds Smith And Hills Inc

GOVERNMENT AGENCIES

X Div of Recreation and Park - District 7 - FDEP
X Lake Worth Drainage District
X Palm Beach County - Environmental Res Management
X Palm Beach County - Health Dept Environmental Health & Engineering
X Palm Beach County - School Board Growth Mgmt
X Palm Beach County - Water Utilities Operations Center
X Palm Beach County Engineer

OTHER INTERESTED PARTIES

X Water Catchment Area Advisory Committee - Ed Dailey

Town of Cloud Lake
Drainage Inquiry
DRAINAGE EVALUATION REPORT

Financial Project ID: 229966-4-32-01
Task Work Order No. 12

Prepared for:
FDOT District Four

Prepared by:
Reynolds, Smith and Hills, Inc.
3125 W. Commercial Blvd., Suite 130
Fort Lauderdale, FL 33304

June 2010

TABLE OF CONTENTS

1.0 INTRODUCTION 1
2.0 PROJECT LOCATION 1
3.0 PROJECT BACKGROUND 1
4.0 EXISTING PERMITS 2
5.0 EXISTING DRAINAGE 2
6.0 EXISTING CONDITIONS H&H MODELING 5
7.0 EXISTING CONDITIONS H&H MODELING RESULTS 8
8.0 EXISTING UTILITIES 8
9.0 ALTERNATIVES 9
10.0 RECOMMENDATIONS 12
11.0 COST ESTIMATE 12

APPENDICES

Appendix A PROJECT LOCATION MAP
Appendix B PHOTO LOG
Appendix C LAND-USE & CURVE NUMBER TABLES
Appendix D 2002 PERMITTED CONDITIONS ICPR INPUT & RESULTS
Appendix E 2010 ACTUAL CONDITIONS EXHIBITS, ICPR INPUT & RESULTS
Appendix F SPREAD CALCULATIONS AND DOCUMENTATION
Appendix G ALT. 3 – EXHIBITS, CALCULATIONS, ICPR INPUT & RESULTS
Appendix H PROPOSED ALTERNATIVE PLANS
Appendix I ALT. 4 TECHNICAL MEMORANDUM & BACK-UP INFO.
Appendix J COST ESTIMATE
Appendix K UTILITY DESIGN TICKET
Appendix L EXISTING PERMITS
Appendix M 2008 MOCK ROOS, INC. REPORT ON STUB & L-2 CANALS
Appendix N 2002 DRAINAGE REPORT AND DOCUMENTATION (Only portions pertaining to this Drainage Inquiry)
Appendix O FINAL AS-BUILT PLANS – SR 80 FROM I-95 TO PARKER AVE (Only portions pertaining to this Drainage Inquiry)
Appendix P FINAL AS-BUILT PLANS – SHANNONDALE ROAD
Appendix Q LANE CLOSURE ANALYSIS REPORT (SR 80/SOUTHERN BLVD)

using the compacted ground storage as well as the measured impervious and pervious areas within each sub-basin.

The SCS Unit Hydrograph method with a peak factor of 256 was used to calculate the runoff from each sub-basin. Appendix C contains the Land-Use and Curve Number tables developed for these analyses, which shows the amount of pervious and impervious area within each sub-basin as well as the average ground elevation, depth to the water table, amount of compacted soil storage, the "S" value, and the curve number for each of the sub-basins within the study limits. A groundwater table elevation of 8.86-ft NGVD was used for this analysis. This elevation was obtained from the SFWMD Permit No. 50-05327-P, which can be found in Appendix L.

The time of concentration (TC) values were obtained for most of the sub-basins from the 2002 KHA ASAD Storm Tabulations, which can be found in their Drainage Report included in Appendix N. In the 2010 model, the minimum TC value of 10 minutes was used for the smaller sub-basins. For the larger offsite basins, the TC's were calculated using equations found in the FDOT Hydrology Handbook. See Appendix C for the TC calculations.

As mentioned previously, two existing conditions ICPR models were created; one to simulate the permitted drainage system, and the other to simulate the drainage system which exists today. The following sub-sections describe the ICPR models created for each case.

6.1 Permitted Drainage Design Model

The permitted conditions ICPR model is a simplistic model consisting of 2 nodes (Pond 1 and the Stub Canal), and 1 Basin (SR 80). This model was created to match the Cascade Simulation included in the KHA 2002 Drainage Report.

The basin delineations for this evaluation were developed using 2002 existing plans (Appendix O), permits (Appendix L), and the KHA 2002 Drainage Report (Appendix N), which were provided by FDOT. The storage in Pond 1 was entered as Stage-Volume and the values were taken from the 2002 KHA Drainage Report. No pipe networks were modeled because storage within pipes and pipe losses are neglected in a Cascade Analysis. The orifice and vertical weirs of EN-22 were modeled as weirs in ICPR while in the Cascade Analysis, a Stage-Discharge Relationship was developed and input to simulate runoff exiting through the weirs within EN-22. For the Stub Canal Tailwater Elevation, a constant elevation of 8.50-ft NGVD was used.

The areas draining to the two northern most inlets on Lang Road (EN-21A and EN-21B) which include portions of SR 80 and Lang Road were not accounted for in the KHA Cascade Analysis even though runoff from these areas is discharged into Pond 1. Therefore, to match the permitted model, they were not accounted for in the permitted conditions ICPR model either. Also, no analysis was performed for the small Lang Road isolated French Drain system.

A constant tailwater elevation in the Stub Canal of 7.00-ft NAVD was assumed for the permitted conditions drainage analyses. This matches what was assumed in the Cascade model developed for the SR 80 Widening permit.

APPENDIX C

Land Use & Curve Number Tables

Remove from Model

Missing Basins attach to Dry Pond_2-1?
add area to OS-2-1?

System 2

N

0 30 120
Feet

B-2-3

B-2-3

B-2-1

B-2-4

Ditch_2-4

Wet Pond_2-1

OS-2-1

SOUTHERN BLVD. (SR 80)

3205

3210

3215

@ SURVEY SR 80

EB-6 0.65 Ac.

EB-13 0.48 Ac.

EB-11 0.37 Ac.

EB-7 0.55 Ac.

PB-21A 0.11 Ac.

PB-21B 0.19 Ac.

EB-17 0.80 Ac.

EB-14 0.59 Ac.

EB-10 0.40 Ac.

EB-8 0.59 Ac.

SR 80 DITCH

EB-SR 80 DITCH 0.50 Ac.

EB-20 OS 0.03 Ac.

PB-POND 1 1.26 Ac.

POND 1

PB S-1 0.06 Ac.

PB S-2 0.04 Ac.

SHNDALE 1OS 2.34 Ac.

EB-CL SWALE 1.32 Ac.

EB-20 LANG 0.30 Ac.

EB-19A OS 1.52 Ac.

CLOUD LAKE SWALE

EB DITCH OS 3.12 Ac.
(STORMWATER RETAINED ONSITE)

SHNDALE 1 0.14 Ac.

SHNDALE 2 0.08 Ac.

SHANNONDALE RD.

LANG RD.

@ SURVEY LANG RD.

WILSON RD.

STUB CANAL

CLOUD LAKE

Removed from Model ✓

LEGEND

- PROPOSED DRAINAGE STRUCTURE
- DRAINAGE DIVIDE
- FLOW DIRECTION
- LINER IMPERMEABLE PVC (SEE POND DETAILS AND DRAINAGE DETAILS FOR MORE INFORMATION)

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

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.
3125 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3446
954-474-3305
Certificate of Authorization No. 5626
Christian B. Jackson, P.E. No. 61898

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	429082-1-52-01

DRAINAGE MAP

SHEET NO. 3

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

#USER# 1/25/2011 11:37:30 AM \\RHWGFS\transportation\p\429082\520\drainage\drnpmp01.dgn

– included in model (Alt 3 – [redacted] preferred - lt.)

– not included in model

Cloud Lake Drainage Study - Post Development Conditions Land-Use and CN Calculations

GWT Elevation: 7.36 ft-NAVD (8.86-ft NGVD)

System	Sub-Basin	Impervious Area (Ac.) Roadway / Sidewalk, etc.	Impervious Area (Ac.) Wet Storage	Pervious Area (Ac.)	Offsite Areas (Ac.) Impervious	Offsite Areas (Ac.) Pervious	Total Area (Ac.)	GROUND ELEV. (ft NAVD)	Soil Depth (ft)	Ground Storage (S_o)	S	CN
Pond 1 System	EB-6	0.56	0.00	0.09	0.00	0.00	0.65	--	--	--	--	--
	EB-7	0.55	0.00	0.00	0.00	0.00	0.55	--	--	--	--	--
	EB-8	0.59	0.00	0.00	0.00	0.00	0.59	--	--	--	--	--
	EB-10	0.39	0.00	0.01	0.00	0.00	0.40	--	--	--	--	--
	EB-11	0.33	0.00	0.04	0.00	0.00	0.37	--	--	--	--	--
	EB-13	0.39	0.00	0.09	0.00	0.00	0.48	--	--	--	--	--
	EB-14	0.54	0.00	0.06	0.00	0.00	0.59	--	--	--	--	--
	EB-17	0.67	0.00	0.13	0.00	0.00	0.80	--	--	--	--	--
	PB-21A[3]	0.09	0.00	0.03	0.00	0.00	0.11	--	--	--	--	--
	PB-21B[3]	0.15	0.00	0.04	0.00	0.00	0.19	--	--	--	--	--
	Sub-Total	4.26	0.00	0.48	0.00	0.00	4.74	11.30+	4.00+	8.18	0.83	92.35
	PB S-1[2]	0.06	0.00	0.00	0.00	0.00	0.06	10.50	3.14	5.40	0.00	100.00
	PB S-2[3]	0.04	0.00	0.00	0.00	0.00	0.04	10.50	3.14	5.40	0.00	100.00
	EB-19A OS	0.00	0.00	0.00	0.29	1.23	1.52	11.50	4.00+	8.18	6.64	60.09
	EB-20 OS	0.00	0.00	0.00	0.00	0.03	0.03	11.50	4.00+	8.18	8.18	55.01
	EB-20 LANG	0.00	0.00	0.00	0.18	0.12	0.30	10.50	3.14	5.40	2.12	82.48
	PB-POND 1[4]	0.00	0.79	0.46	0.00	0.00	1.26	9.36	2.00	1.88	0.69	93.52
Pond 1 System Totals		4.36	0.79	0.94	0.47	1.39	7.95	--	--	--	--	--
Ditch System	EB-SR 80 DITCH	0.00	0.00	0.50	0.00	0.00	0.50	10.64	3.28	5.50	5.50	64.52
Ditch System Totals		0.00	0.00	0.50	0.00	0.00	0.50	--	--	--	--	--
Swales & Lake System	SHNDALE 1	0.00	0.00	0.00	0.10	0.03	0.14	10.50	3.14	5.40	1.24	88.97
	SHNDALE 1 OS	0.00	0.00	0.00	0.71	1.63	2.34	11.50	4.00+	8.18	5.70	63.71
	SHNDALE 2	0.00	0.00	0.00	0.04	0.03	0.08	10.50	3.14	5.40	2.45	80.33
	EB-CL SWALE	0.00	0.00	0.00	0.05	1.26	1.32	11.50	4.00+	8.18	7.86	55.98
Swale System Sub-Total		0.00	0.00	0.00	0.91	2.96	3.86	--	--	--	--	--
Project Totals		4.36	0.79	1.44	1.37	4.34	12.31	--	--	--	--	--

B-2-2 SR-80

B-2-3 Lang

B-2-1 pond

B-2-4 Ditch

had to edit formula to get same values

Notes:

1. As part of this alternative, the Lang Rd. cross-slopes will be corrected which will allow S-21A and S-21B to capture all runoff from SR 80 draining down Lang Rd.
2. There is an existing low-point on Lang Rd. north of EN-20. Therefore, EN-20 will be removed, and a Type 6 Curb Inlet (S-1) will be placed just north of EN-20 at the low-point elevation.
3. There is an existing concrete flume which allows runoff along the east side of Lang Rd. to drain into Swale 1. As part of Alternative 1, Swale 1 is being removed and Pond 1 is being expanded and excavated. A Type 6 Curb Inlet (S-2) will be placed in the location of the concrete flume to collect runoff from Lang Rd. previously draining to Swale 1.
4. Pond 1 is being expanded and excavated as part of Alternative 1. It will be a wet detention facility.

APPENDIX G

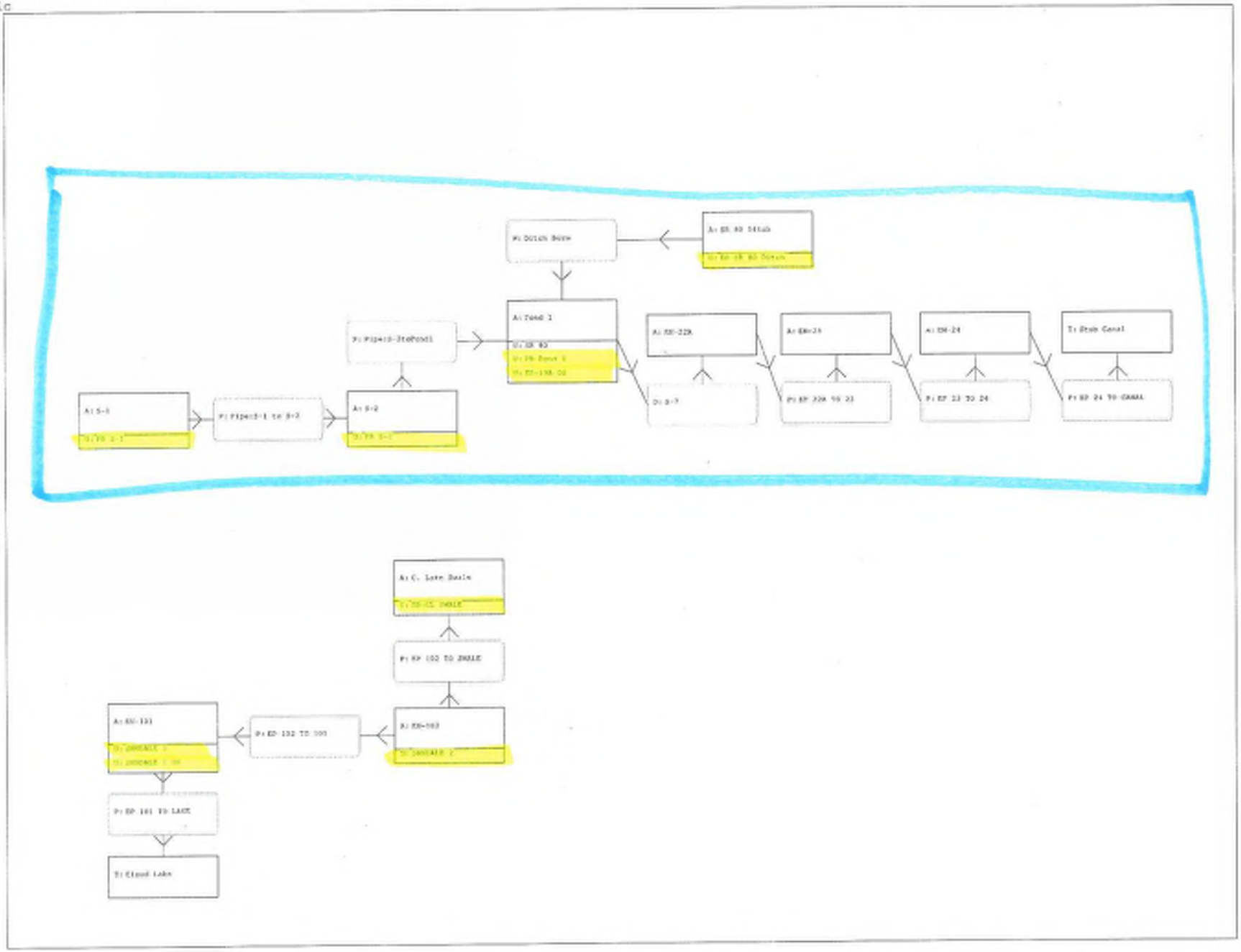
Alt. 3 – ICPR Input & Results

Cloud Lake D sge Study
Proposed Solution Alternative (Wet Pond)
Nodal Link Schematic

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



Cloud Lake D sge Study
Proposed Solution Alternative (Wet Pond)
Node-Max Conditions

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
C. Lake Swale	BASE	10yr72hr	60.27	9.91	9.50	0.0004	8503	59.92	1.99	0.00	0.00
Cloud Lake	BASE	10yr72hr	60.00	7.50	8.00	0.0001	35	60.29	6.65	0.00	0.00
EN-101	BASE	10yr72hr	60.26	7.82	11.30	0.0037	159	60.29	6.65	60.29	6.65
EN-102	BASE	10yr72hr	60.24	9.21	11.50	-0.0007	152	60.00	0.34	60.01	0.31
EN-22A	BASE	10yr72hr	60.18	9.47	11.30	0.0142	142	60.22	22.89	60.23	22.89
EN-23	BASE	10yr72hr	60.15	9.33	10.64	0.0105	169	60.23	22.89	60.23	22.90
EN-24	BASE	10yr72hr	60.03	9.21	13.26	-0.0067	141	60.23	22.90	60.23	22.91
Pond 1	BASE	10yr72hr	60.19	9.63	9.65	0.0004	42588	60.00	30.79	60.22	22.89
S-1	BASE	10yr72hr	60.19	9.63	9.65	0.0032	114	60.00	0.28	59.97	0.88
S-2	BASE	10yr72hr	60.19	9.63	10.05	0.0046	116	59.97	1.06	60.00	0.74
SR 80 Ditch	BASE	10yr72hr	64.07	11.31	12.00	0.0002	14741	60.00	1.76	64.07	0.09
Stub Canal	BASE	10yr72hr	60.00	9.15	9.50	0.3600	2	60.23	22.91	0.00	0.00
C. Lake Swale	BASE	Mean Annual	13.01	9.43	9.50	0.0002	5439	12.08	0.93	0.00	0.00
Cloud Lake	BASE	Mean Annual	30.00	7.25	8.00	0.0001	63	12.58	1.77	0.00	0.00
EN-101	BASE	Mean Annual	30.00	7.25	11.30	0.0037	190	12.58	1.77	12.58	1.77
EN-102	BASE	Mean Annual	12.95	8.70	11.50	-0.0006	141	12.08	0.18	12.21	0.32
EN-22A	BASE	Mean Annual	30.00	7.68	11.30	0.0150	142	12.52	9.45	13.05	11.70
EN-23	BASE	Mean Annual	30.00	7.66	10.64	-0.0094	169	13.05	11.70	12.46	10.54
EN-24	BASE	Mean Annual	30.00	7.68	13.26	0.0073	141	12.46	10.54	12.27	10.58
Pond 1	BASE	Mean Annual	12.52	8.82	9.65	0.0002	39686	12.08	18.71	12.52	9.45
S-1	BASE	Mean Annual	12.49	8.82	9.65	-0.0022	114	12.00	0.19	12.37	0.67
S-2	BASE	Mean Annual	12.52	8.82	10.05	0.0038	116	12.34	0.75	0.01	0.60
SR 80 Ditch	BASE	Mean Annual	25.00	10.92	12.00	0.0000	13164	12.08	0.65	0.00	0.00
Stub Canal	BASE	Mean Annual	30.00	7.68	9.50	0.3600	2	12.27	10.58	0.00	0.00

Cloud Lake D age Study
Proposed Solution Alternative (Wet Pond)
Link-Max Conditions

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
Ditch Berm	BASE	10yr72hr	64.07	0.09	0.000	64.07	11.31	60.19	9.63
EP 101 TO LAKE	BASE	10yr72hr	60.29	6.65	0.523	60.26	7.82	60.00	7.50
EP 102 TO 101	BASE	10yr72hr	60.24	2.50	0.002	60.24	9.21	60.24	8.85
EP 102 TO SWALE	BASE	10yr72hr	0.00	0.00	0.194	60.27	8.81	60.27	9.91
EP 22A TO 23	BASE	10yr72hr	60.23	22.89	-6.031	60.18	9.47	60.15	9.33
EP 23 TO 24	BASE	10yr72hr	60.23	22.90	6.929	60.15	9.33	60.03	9.21
EP 24 TO CANAL	BASE	10yr72hr	60.23	22.91	4.650	60.03	9.21	60.00	9.15
Pipe:S-1 to S-2	BASE	10yr72hr	59.97	0.88	0.875	60.19	9.63	60.19	9.63
Pipe:S-2toPond1	BASE	10yr72hr	60.00	0.74	0.912	60.19	9.63	60.19	9.63
S-7	BASE	10yr72hr	60.22	22.89	-1.366	60.19	9.63	60.18	9.47
Ditch Berm	BASE	Mean Annual	0.00	0.00	0.000	25.00	10.92	12.52	8.82
EP 101 TO LAKE	BASE	Mean Annual	12.58	1.77	0.523	30.00	7.25	30.00	7.25
EP 102 TO 101	BASE	Mean Annual	12.95	0.33	-0.001	12.95	8.70	12.95	8.50
EP 102 TO SWALE	BASE	Mean Annual	0.00	0.00	0.194	12.05	8.62	13.01	9.43
EP 22A TO 23	BASE	Mean Annual	13.05	11.70	4.787	30.00	7.68	30.00	7.66
EP 23 TO 24	BASE	Mean Annual	12.46	10.54	9.283	30.00	7.66	30.00	7.68
EP 24 TO CANAL	BASE	Mean Annual	12.27	10.58	4.719	30.00	7.68	30.00	7.68
Pipe:S-1 to S-2	BASE	Mean Annual	12.37	0.67	-0.780	12.49	8.82	12.52	8.82
Pipe:S-2toPond1	BASE	Mean Annual	0.01	0.60	0.649	12.52	8.82	12.52	8.82
S-7	BASE	Mean Annual	12.52	9.45	0.007	12.52	8.82	30.00	7.68

Cloud Lake D ige Study
Proposed Solution Alternative (Wet Pond)
Basin-Max Conditions

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
10yr72hr	EB-19A OS	BASE	60.07	3.83	5.315	29326
10yr72hr	EB-CL SWALE	BASE	60.04	3.68	4.745	22735
10yr72hr	EB-SR 80 Ditch	BASE	60.02	1.77	5.929	10760
10yr72hr	PB S-1	BASE	60.02	0.28	10.496	2286
10yr72hr	PB S-2	BASE	60.02	0.19	10.496	1524
10yr72hr	PB-Pond 1	BASE	60.02	5.82	9.709	44405
10yr72hr	SHNDALE 1	BASE	60.02	0.64	9.143	4646
10yr72hr	SHNDALE 1 OS	BASE	60.33	3.87	5.811	49358
10yr72hr	SHNDALE 2	BASE	60.02	0.34	8.040	2335
10yr72hr	SR 80	BASE	60.03	20.76	9.562	164532
Mean Annual	EB-19A OS	BASE	12.19	1.15	1.607	8869
Mean Annual	EB-CL SWALE	BASE	12.09	0.95	1.308	6266
Mean Annual	EB-SR 80 Ditch	BASE	12.07	0.66	1.955	3549
Mean Annual	PB S-1	BASE	12.04	0.20	5.498	1197
Mean Annual	PB S-2	BASE	12.04	0.13	5.498	798
Mean Annual	PB-Pond 1	BASE	12.04	3.97	4.746	21708
Mean Annual	SHNDALE 1	BASE	12.04	0.41	4.248	2159
Mean Annual	SHNDALE 1 OS	BASE	12.58	1.34	1.890	16056
Mean Annual	SHNDALE 2	BASE	12.04	0.19	3.364	977
Mean Annual	SR 80	BASE	12.05	13.82	4.615	79414

--- Basins ---

Name: EB-19A OS | Node: Pond 1 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 | Peaking Factor: 256.0
Rainfall File: | Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 | Time of Conc(min): 18.85
Area(ac): 1.520 | Time Shift(hrs): 0.00
Curve Number: 60.09 | Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Basin limits determined from plans and field reviews.
See Tc Calcs.

Name: EB-CL SWALE | Node: C. Lake Swale | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 | Peaking Factor: 256.0
Rainfall File: | Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 | Time of Conc(min): 12.04
Area(ac): 1.320 | Time Shift(hrs): 0.00
Curve Number: 55.98 | Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Basin limits determined from field reviews.
See Tc Calcs.

Name: EB-SR 80 Ditch | Node: SR 80 Ditch | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 | Peaking Factor: 256.0
Rainfall File: | Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 | Time of Conc(min): 10.00
Area(ac): 0.500 | Time Shift(hrs): 0.00
Curve Number: 64.52 | Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

sin limits determined from plans and field reviews.

Name: PB S-1 | Node: S-1 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 | Peaking Factor: 256.0
Rainfall File: | Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 | Time of Conc(min): 10.00
Area(ac): 0.060 | Time Shift(hrs): 0.00
Curve Number: 100.00 | Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PB S-2 | Node: S-2 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 | Peaking Factor: 256.0
Rainfall File: | Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 | Time of Conc(min): 10.00
Area(ac): 0.040 | Time Shift(hrs): 0.00
Curve Number: 100.00 | Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PB-Pond 1 | Node: Pond 1 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 | Peaking Factor: 256.0
Rainfall File: | Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 | Time of Conc(min): 10.00
Area(ac): 1.260 | Time Shift(hrs): 0.00
Curve Number: 93.52 | Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: SHNDALE 1 | Node: EN-101 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

```
      Unit Hydrograph: Uh256                  Peaking Factor: 256.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
         Area(ac): 0.140                      Time Shift(hrs): 0.00
       Curve Number: 88.97                  Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00

Basin limits determined from Shannondale Plans and field reviews.

-------------------------------------------------------------------------------------------------
      Name: SHNDALE 1 OS          Node: EN-101                  Status: Onsite
     Group: BASE                  Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh256                  Peaking Factor: 256.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 45.08
         Area(ac): 2.340                      Time Shift(hrs): 0.00
       Curve Number: 63.71                  Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00

Basin limits determined from Shannondale Plans and field reviews.
See Tc Calcs.

-------------------------------------------------------------------------------------------------
      Name: SHNDALE 2             Node: EN-102                  Status: Onsite
     Group: BASE                  Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh256                  Peaking Factor: 256.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
         Area(ac): 0.080                      Time Shift(hrs): 0.00
       Curve Number: 80.33                  Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00

Basin limits determined from Shannondale Plans and field reviews.

-------------------------------------------------------------------------------------------------
      Name: SR 60                 Node: Pond 1                  Status: Onsite
     Group: BASE                  Type: SCS Unit Hydrograph CN

      Unit Hydrograph: Uh256                  Peaking Factor: 256.0
        Rainfall File:                      Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                  Time of Conc(min): 11.66
         Area(ac): 4.740                      Time Shift(hrs): 0.00
       Curve Number: 92.35                  Max Allowable Q(cfs): 999999.000
            DCIA(%): 0.00

Combined basin including EB-6, EB-7, EB-8, EB-10, EB-11, EB-13, EB-14, EB-17, PB-21A, and PB-21B.  Basin areas determined from S

Tc estimated from Storm Tabulations found in the 2002 Drainage Report.

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

     Name: C. Lake Swale       Base Flow(cfs): 0.000          Init Stage(ft): 8.400
    Group: BASE                                              Warn Stage(ft): 9.500
     Type: Stage/Area

Apprx. stage-areas determined from plans, survey, aerial, and field reviews.

     Stage(ft)        Area(ac)
-------------- ---------------
         8.400          0.0000
         8.500          0.0060
         9.000          0.0470
         9.500          0.1380
        10.000          0.2080
        10.500          0.3280
        11.000          0.5190

-----------------------------------------------------------------------------------------------
     Name: Cloud Lake          Base Flow(cfs): 0.000          Init Stage(ft): 7.000
    Group: BASE                                              Warn Stage(ft): 8.000
     Type: Time/Stage

Lake Control Elevation is 7.00-ft NAVD.
Cloud Lake is controlled by a pump station which discharges runoff from Cloud Lake into the Stub Canal.  The pump station has th
(Gravity discharge when stages are between 7.00-ft and 7.10-ft NAVD.)
-Stages above 7.10-ft NAVD: Pump runs at 1,200 RPM's.
-Stages above 7.20-ft NAVD: Pump runs at 1,400 RPM's.
-Stages above 7.30-ft NAVD: Pump runs at 1,600 RPM's.
 Stages above 7.40-ft NAVD: Pump runs at 1,800 RPM's.
```

Time(hrs)	Stage(ft)
0.00	7.000
60.00	7.500
72.00	7.000
84.00	7.000

Name: EN-101 Base Flow(cfs): 0.000 Init Stage(ft): 7.000
Group: BASE Warn Stage(ft): 11.300
Type: Stage/Area

S-1 from the Shannondale Rd. Plans.

Stage(ft)	Area(ac)
3.800	0.0003
11.300	0.0003

Name: EN-102 Base Flow(cfs): 0.000 Init Stage(ft): 7.000
Group: BASE Warn Stage(ft): 11.500
Type: Stage/Area

S-2 from the Shannondale Rd. Plans.

Stage(ft)	Area(ac)
6.300	0.0003
11.500	0.0003

Name: EN-22A Base Flow(cfs): 0.000 Init Stage(ft): 7.360
Group: BASE Warn Stage(ft): 11.300
Type: Stage/Area

S-22A from the SR 80 Plans. Elevations were taken from SR 80 Plans.

Stage(ft)	Area(ac)
-0.550	0.0008
11.300	0.0008

Name: EN-23 Base Flow(cfs): 0.000 Init Stage(ft): 7.360
Group: BASE Warn Stage(ft): 10.640
Type: Stage/Area

S-23 from the SR 80 Plans. Elevations were taken from SR 80 Plans.

Stage(ft)	Area(ac)
-0.680	0.0008
10.640	0.0008

Name: EN-24 Base Flow(cfs): 0.000 Init Stage(ft): 7.360
Group: BASE Warn Stage(ft): 13.260
Type: Stage/Area

S-24 from the SR 80 Plans. Elevations were taken from SR 80 Plans.

Stage(ft)	Area(ac)
-1.340	0.0008
13.260	0.0008

Name: Pond 1 Base Flow(cfs): 0.000 Init Stage(ft): 7.360
Group: BASE Warn Stage(ft): 9.650
Type: Stage/Area

Stage(ft)	Area(ac)
7.360	0.7930
9.360	0.9550
10.360	1.0400

Name: S-1 Base Flow(cfs): 0.000 Init Stage(ft): 7.360
Group: BASE Warn Stage(ft): 9.650
Type: Stage/Area

Stage(ft)	Area(ac)
2.940	0.0002
9.650	0.0002

Name: S-2 Base Flow(cfs): 0.000 Init Stage(ft): 7.360
Group: BASE Warn Stage(ft): 10.050
Type: Stage/Area

Stage(ft)	Area(ac)
1.960	0.0002
10.050	0.0002

Name: SR 80 Ditch Base Flow(cfs): 0.000 Init Stage(ft): 10.640
Group: BASE Warn Stage(ft): 12.000
Type: Stage/Area

Apprx. stage-areas determined from plans, survey, aerial, and field reviews.

Stage(ft)	Area(ac)
10.640	0.2760
11.640	0.3690

Name: Stub Canal Base Flow(cfs): 0.000 Init Stage(ft): 7.000
Group: BASE Warn Stage(ft): 9.500
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	7.000
60.00	9.150
72.00	7.000
84.00	7.000

==== Cross Sections ====

Name: Group: BASE
Encroachment: No

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

==== Pipes ====

Name: EP 101 TO LAKE From Node: EN-101 Length(ft): 80.00
Group: BASE To Node: Cloud Lake Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	5.800	5.600
Manning's N:	0.024000	0.024000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.50
Exit Loss Coef: 1.00
Bend Loss Coef: 0.70
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Elevations and length taken from the Shannondale Road Plans.

Name: EP 102 TO 101 From Node: EN-102 Length(ft): 37.00
Group: BASE To Node: EN-101 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular

Solution Algorithm: Most Restrictive
Flow: Both

Span(in):	24.00	24.00	Entrance Loss Coef:	0.50
Rise(in):	24.00	24.00	Exit Loss Coef:	0.00
Invert(ft):	8.370	8.300	Bend Loss Coef:	0.00
Manning's N:	0.024000	0.024000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:
Circular CMP: Headwall

Elevations and length taken from the Shannondale Road Plans.

Name:	EP 102 TO SWALE	From Node: EN-102	Length(ft):	4.00
Group:	BASE	To Node: C. Lake Swale	Count:	1
			Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular	Flow:	Both
Span(in):	24.00	24.00	Entrance Loss Coef:	0.50
Rise(in):	24.00	24.00	Exit Loss Coef:	0.00
Invert(ft):	8.500	9.000	Bend Loss Coef:	0.00
Manning's N:	0.024000	0.024000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:
Circular CMP: Mitered to slope

Elevations and length taken from the Shannondale Road Plans.

Name:	EP 22A TO 23	From Node: EN-22A	Length(ft):	294.00
Group:	BASE	To Node: EN-23	Count:	1
			Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular	Flow:	Both
Span(in):	48.00	48.00	Entrance Loss Coef:	0.50
Rise(in):	48.00	48.00	Exit Loss Coef:	0.00
Invert(ft):	-0.550	-0.680	Bend Loss Coef:	0.50
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

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

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

Elevations and length taken from the SR 80 Plans.

Name:	EP 23 TO 24	From Node: EN-23	Length(ft):	264.00
Group:	BASE	To Node: EN-24	Count:	1
			Friction Equation:	Automatic
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Most Restrictive
Geometry:	Circular	Circular	Flow:	Both
Span(in):	48.00	48.00	Entrance Loss Coef:	0.50
Rise(in):	48.00	48.00	Exit Loss Coef:	0.00
Invert(ft):	-0.680	-1.340	Bend Loss Coef:	0.00
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

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

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

evations and length taken from the SR 80 Plans.

```
        Name: EP 24 TO CANAL       From Node: EN-24          Length(ft): 20.00
       Group: BASE                   To Node: Stub Canal         Count: 1
                                                      Friction Equation: Automatic
              UPSTREAM       DOWNSTREAM          Solution Algorithm: Most Restrictive
    Geometry: Circular       Circular                          Flow: Positive
     Span(in): 48.00         48.00             Entrance Loss Coef: 0.50
     Rise(in): 48.00         48.00                Exit Loss Coef: 1.00
   Invert(ft): -1.340        -1.340               Bend Loss Coef: 0.00
  Manning's N: 0.012000      0.012000           Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000         0.000               Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000         0.000            Stabilizer Option: None


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

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

Elevations and length taken from the SR 80 Plans.

--------------------------------------------------------------------------------
        Name: Pipe:S-1 to S-2      From Node: S-1            Length(ft): 30.00
       Group: BASE                   To Node: S-2                Count: 1
                                                      Friction Equation: Automatic
              UPSTREAM       DOWNSTREAM          Solution Algorithm: Most Restrictive
    Geometry: Circular       Circular                          Flow: Both
     Span(in): 18.00         18.00             Entrance Loss Coef: 0.50
     Rise(in): 18.00         18.00                Exit Loss Coef: 0.00
   Invert(ft): 4.940         4.840                Bend Loss Coef: 0.00
  Manning's N: 0.012000      0.012000           Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000         0.000               Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000         0.000            Stabilizer Option: None


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

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


--------------------------------------------------------------------------------
        Name: Pipe:S-2toPond1      From Node: S-2            Length(ft): 40.00
       Group: BASE                   To Node: Pond 1             Count: 1
                                                      Friction Equation: Automatic
              UPSTREAM       DOWNSTREAM          Solution Algorithm: Most Restrictive
    Geometry: Circular       Circular                          Flow: Both
     Span(in): 18.00         18.00             Entrance Loss Coef: 0.50
     Rise(in): 18.00         18.00                Exit Loss Coef: 1.00
   Invert(ft): 3.960         3.860                Bend Loss Coef: 0.00
  Manning's N: 0.012000      0.012000           Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000         0.000               Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000         0.000            Stabilizer Option: None


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

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


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

        Name: S-7                  From Node: Pond 1         Length(ft): 12.00
       Group: BASE                   To Node: EN-22A             Count: 1

              UPSTREAM       DOWNSTREAM          Friction Equation: Automatic
    Geometry: Circular       Circular            Solution Algorithm: Most Restrictive
     Span(in): 48.00         48.00                             Flow: Both
     Rise(in): 48.00         48.00             Entrance Loss Coef: 0.500
   Invert(ft): -0.540        -0.550               Exit Loss Coef: 1.000
  Manning's N: 0.012000      0.012000           Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000         0.000               Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000         0.000                Solution Incs: 10

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

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

*** Weir 1 of 2 for Drop Structure S-7 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	79.00	Invert(ft):	8.550
Rise(in):	36.00	Control Elev(ft):	8.550

*** Weir 2 of 2 for Drop Structure S-7 ***

TABLE

Count:	1	Bottom Clip(ft):	0.000
Type:	Vertical: Mavis	Top Clip(ft):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Trapezoidal	Orifice Disc Coef:	0.600
Bottom Width(ft):	0.00	Invert(ft):	7.360
Left Sd Slp(h/v):	0.18	Control Elev(ft):	7.360
Right Sd Slp(h/v):	0.18	Struct Opening Dim(ft):	1.19

==== Weirs ====

Name:	Ditch Berm	From Node:	SR 80 Ditch
Group:	BASE	To Node:	Pond 1
Flow:	Both	Count:	1
Type:	Vertical: Fread	Geometry:	Rectangular
Span(in):	300.00		
Rise(in):	99999.00		
Invert(ft):	11.300		
Control Elevation(ft):	11.300		

TABLE

Bottom Clip(in):	0.000
Top Clip(in):	0.000
Weir Discharge Coef:	3.200
Orifice Discharge Coef:	0.600

Berm between SR 80 Ditch and Pond 1. Elevation taken from SR 80 Plans. Width measured using aerial and topo.

==== Hydrology Simulations ====

Name: 10yr72hr
Filename: X:\P\D4 Districtwide Drainage_2008\TWO 11 (Cloud Lake)\ICPR\10yr72hr.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Sfwmd72
Rainfall Amount(in): 10.50

Time(hrs)	Print Inc(min)
72.000	5.00
84.000	15.00

Name: Mean Annual
Filename: X:\P\D4 DISTRICTWIDE DRAINAGE_2008\TWO 11 (CLOUD LAKE)\ICPR\Mean Annual.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 5.50

Time(hrs)	Print Inc(min)
30.000	5.00

==== Routing Simulations ====

Name: 10yr72hr Hydrology Sim: 10yr72hr
Filename: X:\P\D4 Districtwide Drainage_2008\TWO 11 (Cloud Lake)\ICPR\10yr72hr.I32

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

Max Delta Z(ft): 1.00 Delta % Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 84.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: 10yr-72hr Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000
84.000	15.000

Group	Run
BASE	Yes

Name: Mean Annual Hydrology Sim: Mean Annual
Filename: X:\P\D4 DISTRICTWIDE DRAINAGE_2008\TWO 11 (CLOUD LAKE)\ICPR\Mean Annual.132

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

Max Delta Z(ft): 1.00 Delta % Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Mean Annual Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	5.000

Group	Run
BASE	Yes

Boundary Conditions

Name: 10yr-72hr Node: Stub Canal Type: Stage

Time(hrs)	Stage(ft)
0.000	7.360
60.000	9.150
72.000	7.000
84.000	7.000

Name: Mean Annual Node: Stub Canal Type: Stage

Time(hrs)	Stage(ft)
0.000	7.360
60.000	8.000
72.000	7.000
84.000	7.000

APPENDIX H

Proposed Alternative Plans

COMPONENTS OF CONTRACT PLANS SET

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

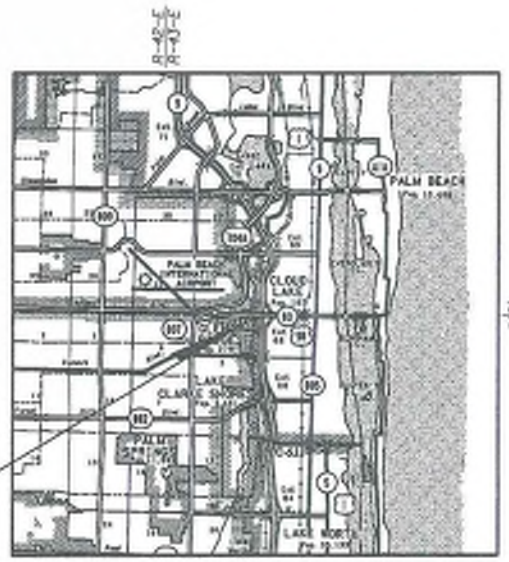
FINANCIAL PROJECT ID 229966-4-32-01

PALM BEACH COUNTY

LANG ROAD

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	DRAINAGE MAP
3	TYPICAL SECTION
4	SUMMARY OF QUANTITIES
5	SUMMARY OF DRAINAGE STRUCTURES
6	GENERAL NOTES
7	ROADWAY PLAN
8-10	DRAINAGE STRUCTURES
11	POND DETAILS
12	DRAINAGE DETAILS
13-16	POND CROSS SECTIONS
17-18	STORM WATER POLLUTION PREVENTION PLAN
19-20	TRAFFIC CONTROL PLANS
CTC-1	PROJECT SURVEY CONTROL - SPECIFIC PURPOSE SURVEY



7-43-S
7-44-S

ROADWAY SHOP DRAWINGS TO BE SUBMITTED TO:

CHRISTIAN B. JACKSON, PE
REYNOLDS, SMITH AND HILLS, INC.
3125 W. COMMERCIAL BLVD. - SUITE 130
FORT LAUDERDALE, FLORIDA 33309-3446

PLANS PREPARED BY:

REYNOLDS, SMITH AND HILLS, INC.
3125 W. COMMERCIAL BLVD. - SUITE 130
FORT LAUDERDALE, FLORIDA 33309-3446
TEL. (954) 474-3005
FAX (954) 474-3006
CONTRACT NO. C-5453
VENDOR NO. F59-6986466
FL. CERTIFICATE NO. E80005620

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED 2010,
AND STANDARD SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION DATED 2010,
AS AMENDED BY CONTRACT DOCUMENTS.

APPLICABLE DESIGN STANDARDS MODIFICATIONS: 7/01/10
For Design Standards Modifications refer to
"Design Standards" at the following web site:
https://www.dot.state.fl.us/rddesign/

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

REVISIONS

PROJECT LENGTH IS BASED ON ℄ OF CONSTRUCTION

LENGTH OF PROJECT		
	LINEAR FEET	MILES
ROADWAY	N/A	N/A
BRIDGES	N/A	N/A
NET LENGTH OF PROJECT	N/A	N/A
EXCEPTIONS	N/A	N/A
GROSS LENGTH OF PROJECT		

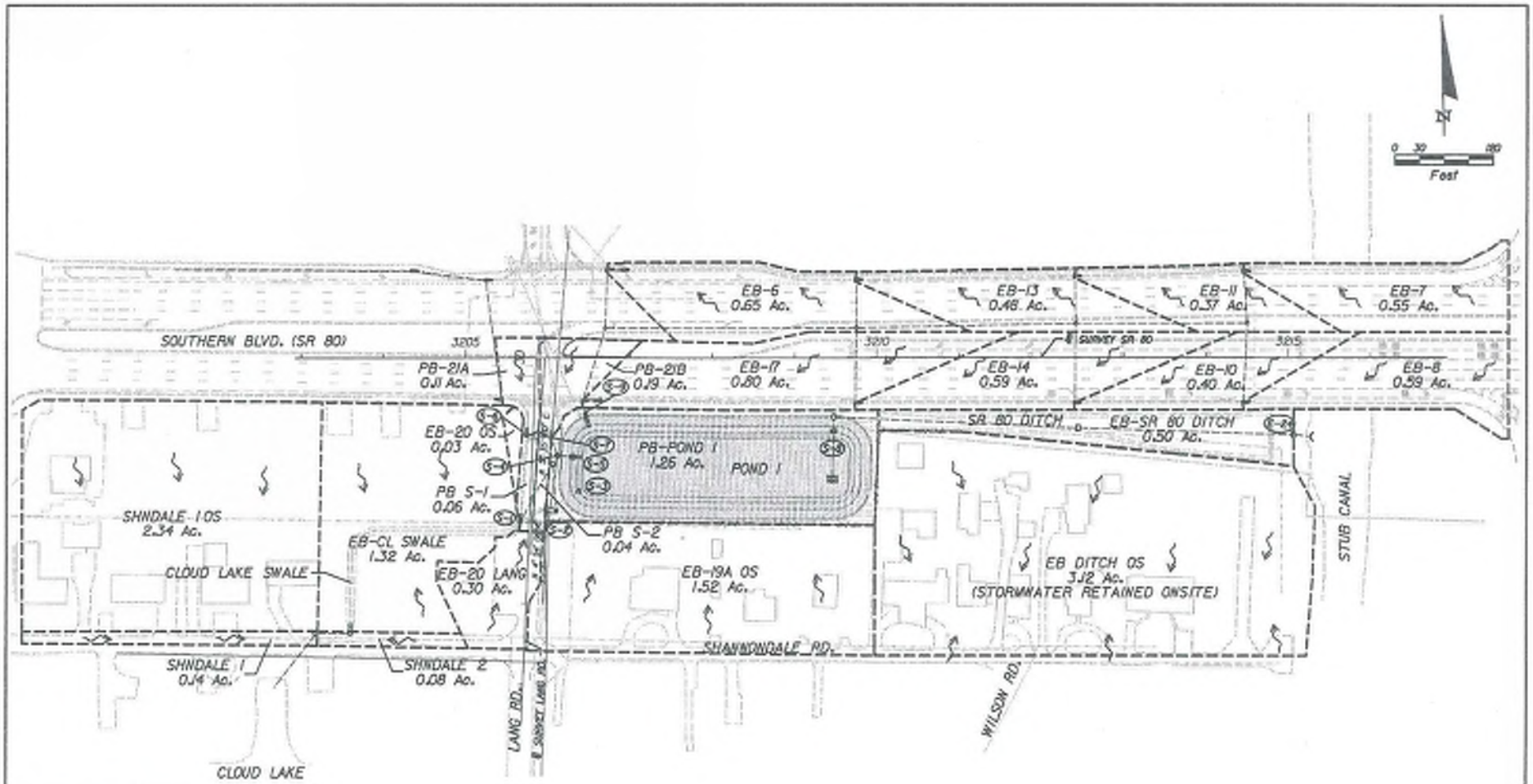
KEY SHEET REVISIONS	
DATE	DESCRIPTION

FDOT PROJECT MANAGER: FRANCIS LEWIS, PE

ROADWAY PLANS
ENGINEER OF RECORD: CHRISTIAN B. JACKSON, PE

P.E. NO.: 61888

FISCAL YEAR	SHEET NO.
11	1



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

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

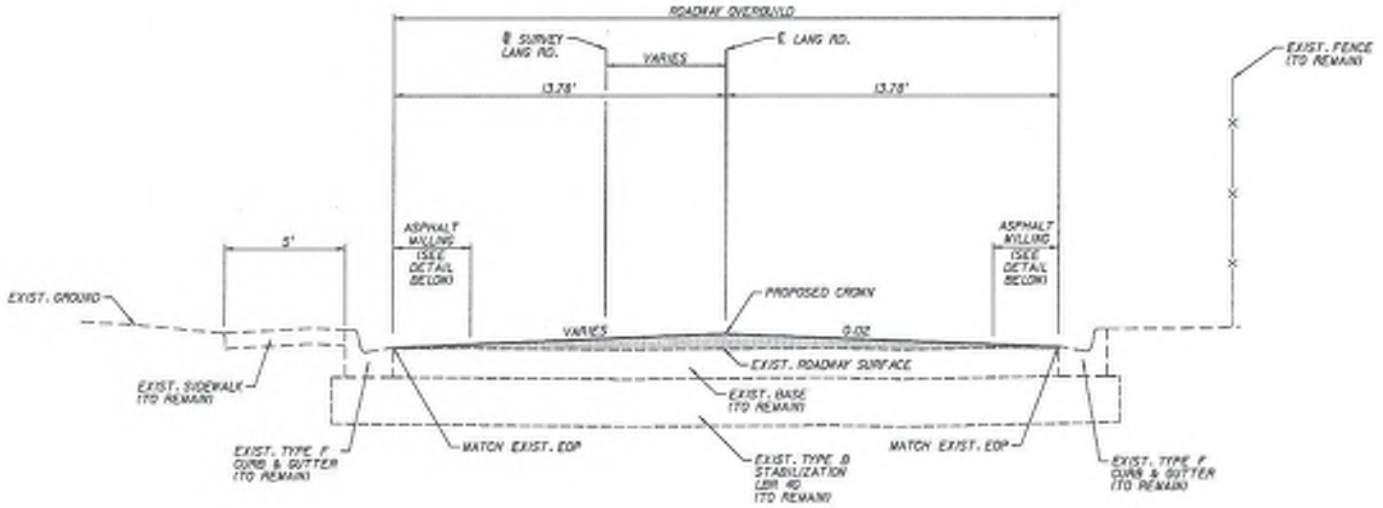
RS&H
Raynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

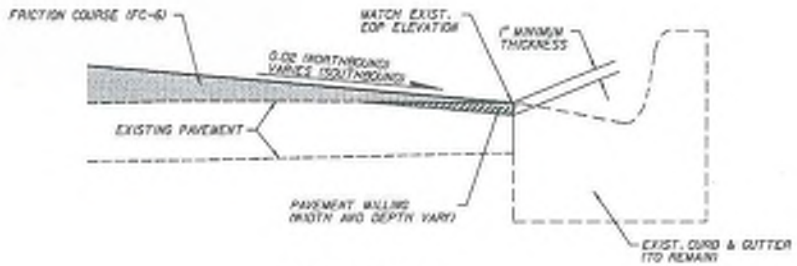
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

DRAINAGE MAP

SHEET NO. 2



LANE RD.
STA. 27+58.39 TO STA. 29+29.25
℄ SURVEY LANE RD.



FEATHERING DETAIL
(ALONG LANE RD. EXIST. EOP)
N.T.S.

EXISTING PAVEMENT

OPTIONAL BASE GROUP 9
TYPE SP-9.5 STRUCTURAL COURSE (TRAFFIC C)
FRICTION COURSE (FC-6)

OVERBUILD PAVEMENT

FRICTION COURSE (FC-12.5)

PAVEMENT RECONSTRUCTION

OPTIONAL BASE GROUP 9
TYPE SP-9.5 STRUCTURAL COURSE (TRAFFIC C)
FRICTION COURSE (FC-12.5)

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

TYPICAL SECTION

SHEET NO. 3

TABULATION OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY P	QUANTITY F	REMARKS
101-1	MOBILIZATION	LS	1		
102-1	MAINTENANCE OF TRAFFIC	LS	1		
104-10-3	SEDIMENT BARRIER	LF	600		
110-1	CLEARING & GRUBBING	AC	1.25		
110-4	REMOVAL OF EXISTING CONCRETE PAVEMENT	SY	13.44		
120-1	REGULAR EXCAVATION	CY	8,852		
120-6	EMBANKMENT	CY	60		
327-70-1	MILLING EXISTING ASPHALT PAVEMENT 1" AVG. DEPTH	SY	562		
337-7-33	ASPHALTIC CONCRETE FRICTION COURSE (FC-12.5-RUBBER)	TN	77		
327-70-1	MILLING EXISTING ASPHALT PAVEMENT 1" AVG. DEPTH	SY	562		
425-1-351	INLETS, CURB, TYPE P-5, < 10'	EA	1		
425-1-451	INLETS, CURB, TYPE J-5, < 10'	EA	1		
425-1-461	INLETS, CURB, TYPE J-6, < 10'	EA	2		
425-1-581	INLETS, DT BOT, TYPE H, < 10'	EA	1		
425-2-61	MANGOLES, TYPE P-8, < 10'	EA	1		
430-175-101	PIPE CULVERT OPTIONAL MATERIAL URDNSI (18" TO 24")	LF	127		
430-175-103	PIPE CULVERT OPTIONAL MATERIAL URDNSI (27" TO 48")	LF	4		
430-851-125	U-ENDWALL, BAFFLES, STD 281, 1:4 SLP, 24"	EA	1		
430-880-03	FLAP GATES, (27" TO 48")	EA	1		
430-982-125	MITERED END SECT., CD, 1:2 SLP, 18"	EA	1		
430-984-125	MITERED END SECT., SD, 1:4 SLP, 18"	EA	1		
514-72	LINER IMPERMEABLE, PVC	SY	555		
570-1-1	PERFORMANCE TURF	SY	2804		
711-11-123	THERMOPLASTIC (STD-WHITE SOLID-12")	LF	100		
711-11-125	THERMOPLASTIC (STD-WHITE-SOLID-24")	LF	88		
711-11-160	PAVEMENT MESSAGE, (THERMOPLASTIC-STD-WHITE)	EA	2		
711-11-170	DIRECTIONAL ARROW, (THERMOPLASTIC-STD-WHITE)	EA	2		
711-11-201	THERMOPLASTIC (STD-YELLOW-SOLID-6")	LF	330		

PAY ITEM FOOTNOTES:

101-1 — INCLUDES THE COST OF REFERENCING, RESTORING AND PRESERVING ALL PUBLIC LAND CORNERS AND MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION.

INCLUDES THE COST OF REFERENCING AND PROTECTING ALL BMID BENCH MARK MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION.

102-1 — INCLUDES THE COST FOR MAINTENANCE OF SIGNS FOR MAINTAINING ACCESS TO EXISTING STREETS, COMMERCIAL, AND PRIVATE ENTRANCES.

INCLUDES THE COST OF COVERING AND UNCOVERING WORK ZONE SIGNS WHEN CONDITIONS NO LONGER WARRANT THEIR USE.

INCLUDES THE COST OF REMOVING, RELOCATING, COVERING, AND RESTORING EXISITNG AND PROPOSED SIGNS THAT ARE IN CONFLICT.

INCLUDES THE COST OF ELIMINATING ANY DROP OFF GREATER THAN 6 INCHES AT THE END OF EACH WORK DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE.

INCLUDES THE COST OF CONSTRUCTING AND MAINTAINING A TEMPORARY TRAVEL PATH WHERE EXISTING PATHWAY CONDITIONS OCCUR TO ACCOMMODATE PEDESTRIAN, BICYCLE, AND WHEELCHAIR TRAFFIC.

SUMMARY OF PERFORMANCE TURF

LOCATION BEGIN STA.	LOCATION END STA.	AREA (SY) P	AREA (SY) F	REMARKS
698+04.10	699+40.05	2804		
	TOTAL:	2804		

SUMMARY OF EARTHWORK

DESCRIPTION	CY P	CY F
REGULAR EXCAVATION	8852	
EMBANKMENT	60	

SUMMARY OF SEDIMENT BARRIER

LOCATION BEGIN STA.	LOCATION END STA.	SIDE	LENGTH (FT) P	LENGTH (FT) F	REMARKS
698+01.57	699+65.76	RT	540		
698+70.23	698+84.70	RT	60		
		TOTAL:	600		

SUMMARY OF CONCRETE PAVEMENT REMOVAL

LOCATION BEGIN STA.	LOCATION END STA.	SIDE	AREA (SY) P	AREA (SY) F	REMARKS
697+92.25	698+08.25	LT	2.22		EXISTING CURB & GUTTER
698+07.16	698+23.16	RT	9		EXISTING CONCRETE SPILLWAY
697+10.45	698+29.71	RT	2.22		EXISTING CURB & GUTTER
		TOTAL:	13.44		

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.
2161 W. Commercial Blvd. - Suite 130
Fort Lauderdale, Florida 33309-3447
Ph. (954) 739-1400
FL Cert. No. EB0000865
Christin E. Jackson, P.E. No. 71188

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

SUMMARY OF QUANTITIES

SHEET NO. 4

7/6/2015 3:55:58 PM

QUANTITY	STR. NO.	STATION	SIDE	DESCRIPTION	BARRELS	STORM DRAIN OPTIONAL MATERIAL							CURB INLETS J-5	CURB INLETS P-5	CURB INLETS J-6	MANHOLES P-8	DITCH BOTTOM INLETS TYPE 'H' (SPECIAL)	MES (0:2 CD)	MES (0:4 SD)	U-TYPE ENDWALLS W/ BAFFLES (1:4)	REMARKS
						15"	18"	24"	30"	36"	48"	48"	(0')	(0')	(0')	(0')	(0')	18"	18"	24"	
P	S-1	698+00.24	LT	INLET, PIPE	1		29'								1						
P	S-2	698+15.36	RT	INLET, PIPE	1		40'								1						
P	S-3	698+40.84	RT	MITERED END SECTION														1			
P	S-4	698+81.85	RT	MANHOLE, PIPE	1		5'									1					
P	S-5	698+81.71	RT	MITERED END SECTION															1		
P	S-6	699+04.32	LT	INLET, PIPE	1		28'							1							
P	S-7	699+03.19	RT	INLET, PIPE	1		19'						1								
P	S-8	3209+47.52 18" SPA 801	RT	INLET, PIPE	1							4'					1				CONC. COLLAR
P	S-9	3208+33.38 18" SPA 803	RT	ENDWALL																1	
P	E-24	3209+06.54 18" SPA 801	RT	FLAP GATE																	
																					FLAP GATE
PROJECT TOTALS				PLAN QUANTITY			107'					4'	1	1	2	1	1	1	1	1	
				FINAL QUANTITY																	

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RS&H
Raynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	22936G-4-32-01

SUMMARY OF DRAINAGE STRUCTURES

SHEET NO. 5

AUTOCAD 6/28/2010 12:00:00 PM N:\FP22936G4\DGN\22936G4_SHT 12_SUMO LAYOUT.dgn

ROADWAY NOTES:

1. B.M. DATA IS NORTH AMERICAN VERTICAL DATUM (NAVD) 1988.
2. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO CURRENT APPLICABLE STANDARDS AND SPECIFICATIONS OF THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
3. ALL PUBLIC LAND CORNERS AND MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE PROTECTED BY THE CONTRACTOR AS FOLLOWS: CORNERS AND MONUMENTS IN CONFLICT WITH THE WORK AND IN DANGER OF BEING DAMAGED, DESTROYED OR COVERED SHALL BE PROPERLY REFERENCED BY A REGISTERED-LAND SURVEYOR IN ACCORDANCE WITH THE MINIMUM TECHNICAL STANDARDS OF THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS PRIOR TO BEGINNING WORK AT THAT SITE. THE CONTRACTOR SHALL RETAIN THE LAND SURVEYOR TO REFERENCE, AND RESTORE UPON COMPLETION OF THE WORK, ALL SUCH CORNERS AND MONUMENTS AND SHALL FURNISH TO THE DISTRICT LOCATION ENGINEER A SIGNED AND SEALED COPY OF THE LAND SURVEYORS REFERENCE DRAWING. INCLUDES ALL COST OF REFERENCING, RESTORING AND PRESERVING IN THE BID PRICE FOR ITEM 101-1 MOBILIZATION.
4. ALL NAVD BENCH MARK MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED AND REFERENCED BY THE CONTRACTOR IN THE SAME WAY AS PUBLIC LAND CORNERS EXCEPT THAT THE LAND SURVEYORS SHALL NOT BE REQUIRED TO RESTORE THE NAVD BENCH MARK UPON COMPLETION OF THE WORK. THE CONTRACTOR SHALL PROMPTLY TRANSMIT ALL DISPLACED OR DAMAGED NAVD DISCS TO THE DISTRICT LOCATION SURVEYOR, WHO SHALL NOTIFY THE GEODETIC INFORMATION CENTER. INCLUDES ALL COST OF REFERENCING AND PROTECTING IN THE BID PRICE FOR ITEM 101-1 MOBILIZATION.
5. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL APPLICABLE CONSTRUCTION PERMITS PRIOR TO START OF CONSTRUCTION.
6. THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY OF ANY CONFLICT ARISING DURING CONSTRUCTION OF ANY IMPROVEMENTS SHOWN ON THESE DRAWINGS.
7. IN THE EVENT THAT CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED, WORK SHALL CEASE IMMEDIATELY IN THAT AREA. THE CONTRACTOR SHALL NOTIFY THE FDOT PROJECT ENGINEER, WHO WILL CONTACT THE DISTRICT CONTAMINATION IMPACT COORDINATOR.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF AND MAKING THE REPAIRS OF EXISTING PAVEMENT, SIDEWALKS, PIPES, CONDUITS, CURBS, CABLES, ETC., WHETHER OR NOT SHOWN ON THE PLANS DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS AND/OR THOSE OF HIS/HER SUBCONTRACTORS, AND SHALL RESTORE THEM PROMPTLY AT NO ADDITIONAL EXPENSE TO THE DEPARTMENT. CONTRACTOR SHALL REPORT ANY DAMAGE TO SIDEWALK, DRIVEWAY, ETC., PRIOR TO BEGINNING WORK IN ANY AREA.
9. ALL EXCESS MATERIAL AS DESIGNATED BY THE ENGINEER IS TO BE DISPOSED OF BY THE CONTRACTOR IN AREAS PROVIDED BY HIM/HER WITHIN 72 HOURS OF BEING DEPOSITED IN THE CONSTRUCTION AREA AND AT THE CONTRACTOR'S EXPENSE
10. STAGING AND MATERIAL STORAGE SHALL NOT BE CONDUCTED ON ABUTTING PRIVATE PROPERTY WITHOUT APPROVAL FROM THE OWNER.
11. ANY MATERIAL TO BE STOCKPILED FOR PERIODS GREATER THAN 24 HOURS SHALL BE PROTECTED BY APPROPRIATE EROSION CONTROL DEVICES. COST TO BE INCLUDED IN THE RELATED BID ITEM.
12. THE CONTRACTOR SHALL NOT STORE EQUIPMENT OR STOCKPILE MATERIALS WITHIN THE CLEAR ZONE.
13. THE CONTRACTOR SHALL PROVIDE SAFE PEDESTRIAN ACCESS AND PROTECTION ADJACENT TO CONSTRUCTION THROUGHOUT THE PROJECT.
14. THE CONTRACTOR SHALL COORDINATE SELECTION AND REVIEW OF ANY PROPOSED STAGING AREAS ASSOCIATED WITH THIS PROJECT WITH THE DISTRICT CONSTRUCTION ENVIRONMENTAL COORDINATOR AT (954)777-4665 AT LEAST 72 HOURS PRIOR TO USE. THE STAGING AREA SHALL BE RESTORED TO ITS ORIGINAL CONDITION OR BETTER AT NO ADDITIONAL COST TO THE DEPARTMENT.
15. ALL STATIONS AND OFFSETS ARE FROM THE CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE NOTED.
16. DURING CONSTRUCTION, ANY GENERATED DEBRIS SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA. APPROPRIATE SCREENS AND BARRIERS SHALL BE ERECTED TO PROTECT PEDESTRIANS AND VEHICULAR TRAFFIC.
17. CLEARING AND GRUBBING, GRADING AND OTHER INCIDENTAL WORK NECESSARY FOR HARMONIZATION OUTSIDE R/W SHALL BE INCLUDED IN RELATED BID ITEMS (ASPHALT, SOD, CONCRETE, ETC.).
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEWATERING PERMITS THAT ARE REQUIRED FOR THE PROJECT INCLUDING SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD) DEWATERING PERMITS FOR ANY WELL-POINTING OR OTHER DEWATERING ACTIVITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITTING COSTS AND DESIGN/CONSTRUCTION COSTS RELATED TO THE ISSUANCE OF THESE PERMITS. SUCH COSTS SHALL BE INCLUDED IN RELATED BID PAY-ITEM(S) FOR WORK BEING DONE.
19. ALL ACTIVITIES REQUIRING WELL-POINTING OR OTHER PUMPING OF GROUNDWATER OR SURFACE WATER SHALL BE COORDINATED WITH THE DISTRICT CONSTRUCTION ENVIRONMENTAL COORDINATOR (DCEC) TO ENSURE ALL ASPECTS OF THE NPDES PERMIT REQUIREMENTS ARE SATISFIED. THE DCEC CAN BE CONTACTED AT (954) 777-4665.
20. SPECIAL PRECAUTIONS WHEN DEWATERING, SUCH AS THE USE OF RECHARGE TRENCHES, MAY BE REQUIRED AT THE REQUEST OF SFWMD. ALL COSTS ASSOCIATED WITH MEETING THESE REQUIREMENTS SHALL BE INCLUDED IN THE RELATED BID PAY ITEM(S).
21. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK AND COSTS RELATED TO PREPARING THIS AREA FOR DEWATERING ACTIVITIES AND RESTORING THE AREA TO ITS ORIGINAL CONDITIONS AFTER THE MATERIAL IS HAULED OFFSITE.
22. THE CONTRACTOR SHALL NOT STORE EQUIPMENT OR STOCKPILE MATERIALS WITHIN ADJACENT PRIVATE PROPERTIES WITHOUT WRITTEN PERMISSION FROM THE APPLICABLE OWNER. CONTRACTOR MAY STORE EQUIPMENT WITHIN FOOT RIGHT-OF-WAY BETWEEN NSE WALL AND FENCE.
23. ANY MATERIAL TO BE STOCKPILED FOR PERIODS GREATER THAN 24 HOURS SHALL BE PROTECTED BY APPROPRIATE EROSION CONTROL DEVICES. COST TO BE INCLUDED IN THE RELATED BID PAY ITEM(S).
24. THE CONTRACTOR SHALL NOT BRING ANY HAZARDOUS MATERIALS ONTO THE PROJECT. SHOULD THE CONTRACTOR REQUIRE SUCH FOR PERFORMING THE CONTRACTED WORK, THE CONTRACTOR SHALL REQUEST, IN WRITING, WRITTEN PERMISSION FROM THE PROJECT ENGINEER. THE CONTRACTOR SHALL PROVIDE A COPY OF THE REQUEST TO THE DISTRICT CONTAMINATION IMPACT COORDINATOR (DCIC). THE CONTRACTOR SHALL PROVIDE THE DCIC WITH A COPY OF THE MATERIAL SAFETY DATA SHEET (MSDS) FOR EACH HAZARDOUS MATERIAL PROPOSED FOR USE, AND PROVIDE A DESCRIPTION OF THE SPECIFIC MANNER IN WHICH THE MATERIAL WILL BE USED. THE PROJECT ENGINEER SHALL COORDINATE WITH THE DCIC PRIOR TO ISSUING WRITTEN APPROVAL TO THE CONTRACTOR. BECAUSE STATE LAW DOES NOT TREAT PETROLEUM PRODUCTS THAT ARE PROPERLY CONTAINERIZED AS HAZARDOUS MATERIALS, SUCH PRODUCTS DO NOT REQUIRE AN MSDS SUBMITTAL. ALL BULK PETROLEUM PRODUCTS STORED ON SITE SHALL REQUIRE PROPER STORAGE WHICH INCLUDES SECONDARY CONTAINMENT.

DRAINAGE NOTES:

1. EXISTING DRAINAGE STRUCTURES AND EXISTING DRAINAGE PIPES WITHIN THE CONSTRUCTION LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING INLETS CLEAN OF CONSTRUCTION MATERIALS, DEBRIS, ETC. DURING THE CONSTRUCTION AT NO ADDITIONAL COST.
2. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING WITH OR ADJACENT TO THE EXISTING DRAINAGE INLETS. DRAINAGE STRUCTURES DAMAGED BY THE CONTRACTOR SHALL BE REPLACED WITH COMPARABLE STRUCTURES AT NO ADDITIONAL COST TO THE DEPARTMENT.
3. EXISTING STORM SEWERS (PIPES, FRENCH DRAINS AND/OR SLAB COVERED TRENCHES) CALLED OUT TO BE REMOVED MAY REMAIN IN PLACE IF NOT IN CONFLICT WITH PROPOSED CONSTRUCTION, HOWEVER, SHALL BE FILLED AND PLUGGED PER SPECIFICATION 430-4.5. SUCH COST OF FILLING AND PLUGGING SHALL BE INCLUDED IN ITEM 110-1-1 CLEARING AND GRUBBING. EXISTING STORM SEWERS (PIPES, FRENCH DRAINS AND/OR SLAB COVERED TRENCHES) IN CONFLICT WITH PROPOSED CONSTRUCTION SHALL BE REMOVED. COST OF REMOVAL, DISPOSAL, BACKFILLING AND COMPACTING SHALL ALSO BE INCLUDED IN ITEM 110-1-1 CLEARING AND GRUBBING AS PER 110-6 OF STANDARD SPECIFICATIONS.
4. AS NOTED, THE EXISTING STORM WATER SYSTEM WITHIN THE PROJECT TO REMAIN SHALL BE CLEANED OF ALL SILT, DEBRIS, AND SEDIMENT BY THE CONTRACTOR AFTER THE CONSTRUCTION PHASE IS COMPLETE. CLEANOUT OF THE STORMWATER SYSTEM SHALL BE PAID FOR UNDER THE ITEM FOR PIPE DESILTING FOR THE REQUIRED PIPE SIZE. FOR THE PROPOSED STORM WATER SYSTEM, THE CONTRACTOR IS RESPONSIBLE FOR KEEPING INLETS CLEAN OF MILLED MATERIAL, LIMEROCK, AND DEBRIS DURING THE CONSTRUCTION AT NO ADDITIONAL COST.

UTILITIES NOTES:

1. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS, BUT DO NOT IMPLY TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC., WHICH ARE WITHIN THE PROJECT AREA AND WHICH HAVE BEEN INSTALLED AND CONSTRUCTED SINCE THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (SHOWN OR NOT SHOWN ON THE PLANS) AFFECTING HIS/HER WORK. EXISTING UTILITIES SHALL BE MAINTAINED IN SERVICE DURING CONSTRUCTION UNLESS OTHERWISE APPROVED BY THE UTILITY OWNER.
2. PRE-TRENCHING IN THE ALIGNMENT AND GRADE OF PROPOSED PIPES, STRUCTURES, FRENCH DRAINS, SLAB COVERED TRENCHES, CONDUITS AND/OR SUB-GRADE SHALL BE PERFORMED SEVEN DAYS IN ADVANCE OF ITS CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE UNDERGROUND UTILITY OWNERS AND THE DEPARTMENT WITH A SEVEN DAYS ADVANCE NOTICE OF ANY CONFLICT WITH PROPOSED CONSTRUCTION. THIS NOTIFICATION SHALL PROVIDE SURVEY INFORMATION ABOUT EXISTING UTILITY ALIGNMENT, GRADE, AND POSSIBLE CONFLICTS. PAYMENT FOR PRE-TRENCHING, SURVEY AND BACKFILLING SHALL BE INCLUDED IN THE COST OF THE RELATED BID ITEM FOR THE WORK BEING DONE.
3. THE CONTRACTOR IS TO USE EXTREME CAUTION WHEN WORKING IN OR AROUND AREAS OF OVERHEAD TRANSMISSION LINES AND UNDERGROUND UTILITIES.
4. ALL EXISTING UTILITIES ARE TO REMAIN UNLESS OTHERWISE NOTED.
5. TWO FULL BUSINESS DAYS PRIOR TO DIGGING THE CONTRACTOR SHALL CALL SUNSHINE STATE ONE CALL OF FLORIDA, TELEPHONE NUMBER 1-800-432-4770, AND THE UTILITY OWNERS AND REQUEST UTILITY LOCATIONS. A CONTRACTOR'S REPRESENTATIVE MUST BE PRESENT WHEN UTILITY COMPANIES LOCATE THEIR FACILITIES. THE LOCATION OF EXISTING UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR AND THE UTILITY OWNER DURING THE CONSTRUCTION.
6. PRIOR TO COMMENCEMENT OF ANY EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH FLORIDA STATUTE 553.851 FOR THE PROTECTION OF UNDERGROUND GAS PIPELINES.
7. THE CONTRACTOR SHALL USE HAND DIGGING WHEN EXCAVATING NEAR EXISTING UTILITIES. EXTREME CAUTION WILL BE EXERCISED BY THE CONTRACTOR WHILE EXCAVATING, INSTALLING, BACKFILLING AND COMPACTING AROUND UTILITIES AND HE/SHE WILL BE RESPONSIBLE FOR DAMAGE TO A UTILITY THAT HAS BEEN PROPERLY LOCATED. COST TO BE INCLUDED IN RELATED BID ITEM FOR WORK BEING DONE.
8. THE CONTRACTOR SHALL ADJUST UTILITY POLES OR WIRE ANCHORS AND COMPLY WITH THE HORIZONTAL CLEARANCE AND OTHER REQUIREMENTS OF THE 2007 FDOT UTILITY ACCOMODATION MANUAL.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ANY AND ALL EXISTING UTILITIES ON THIS PROJECT.
10. UTILITY OWNERS:

AT&T COMMUNICATIONS
OTIS REEVE
8601 W. SUNRISE BLVD.
PLANTATION, FL 33322
(954) 723-6340

CITY OF WEST PALM BEACH
(ELECTRIC & STREET LIGHTS)
KAVIN TAHERI
1000 45 STREET.
WEST PALM BEACH, FL 33407
(561) 494-1040

CITY OF WEST PALM BEACH
WATER DISTR. & SWR. COLLECTION
ISAAC KONETA
1000 45 STREET, SUITE 15
WEST PALM BEACH, FL 33407
(561) 494-1040

CITY OF WEST PALM BEACH
JONATHAN BRANLEY
1000 45 STREET, SUITE 16
WEST PALM BEACH, FL 33407
(561) 494-1040 EXT. 10881
FAX: (561) 494-116
jbranley@wpb.org
jbrantley@wpb.org

COMCAST - WPB
(CABLE TV)
HENRY PATINO
7201 W. FEDERAL HWY.
BOCA RATON, FL 33487
(561) 454-5827
FAX: (561) 393-6209

FLORIDA POWER & LIGHT
(ELECTRIC)
MS. TRACY STERN
503 MARTINEZ ROAD
ST. AUGUSTINE, FL 32084
(800) 868-9554
tracy.stern@fpl.com

FLORIDA PUBLIC UTILITIES CO.
(GAS)
CHRIS CAIRO
401 S. DIXIE HWY.
WEST PALM BEACH, FL 33401
(561) 838-1768
FAX: (561) 868-0188

BCI
(COMMUNICATIONS/FIBER OPTIC)
INVESTIGATIONS
2400 N. GLENVILLE
RICHARDSON, TX 75082
(972) 729-4061
FAX: (561) 656-6052
brad.lyle@broadwaveinfrastructure.com

PALM BEACH COUNTY
TRAFFIC OPERATIONS
(TRAFFIC)
ROD FRIEDEL
2300 JOG ROAD
WEST PALM BEACH, FL 3346
(561) 681-4171
FAX: (561) 478-5770
rfriedel@pbcgov.org

PALM BEACH COUNTY
WATER UTILITIES
(WATER)
BRUNO SHIELDS
8100 FORREST HILL BLVD.
WEST PALM BEACH, FL 3343
(561) 493-6085
FAX: (561) 493-6085
PEDRO VELAZQUEZ
(561) 493-6120
bshields@pbcwater.org

CALL 48 HOURS BEFORE YOU DIG IN FLORIDA
811
IT'S THE LAW!!
1-800-432-4770
SUNSHINE STATE ONE CALL OF FLORIDA, INC.
www.callsunshine.com

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.
2035 W. Commercial Blvd., Suite 230
Fort Lauderdale, Florida 33309-2040
954-474-9300
F.L. Cert. No. 00000809
Charles B. Gilbert, P.E. No. 61868

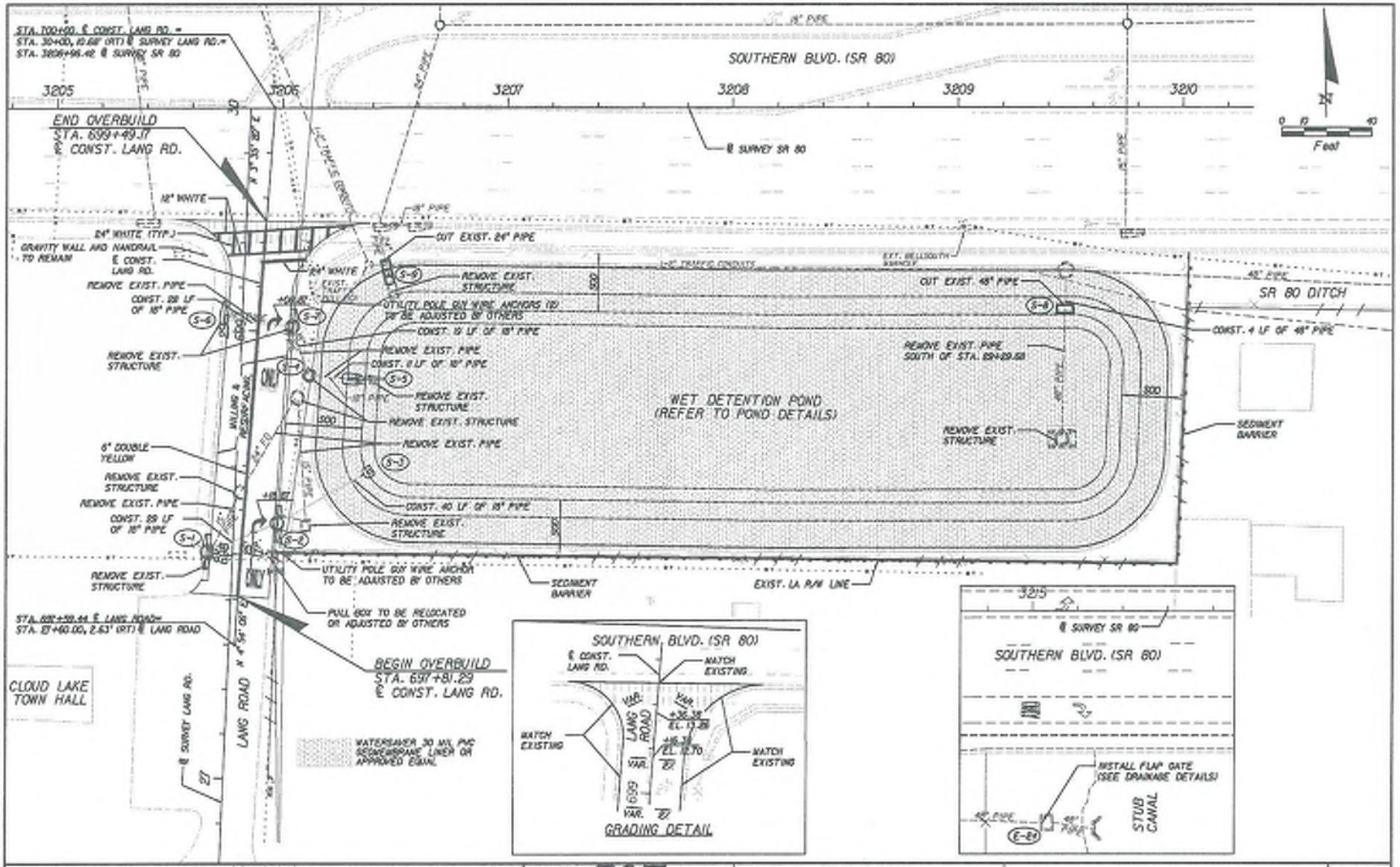
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	225966-4-32-01

GENERAL NOTES

SHEET NO. 6

WSEN 9/25/2009 3:48:00 PM I:\P-Roadway\Sr80\Design\225966.dgn



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

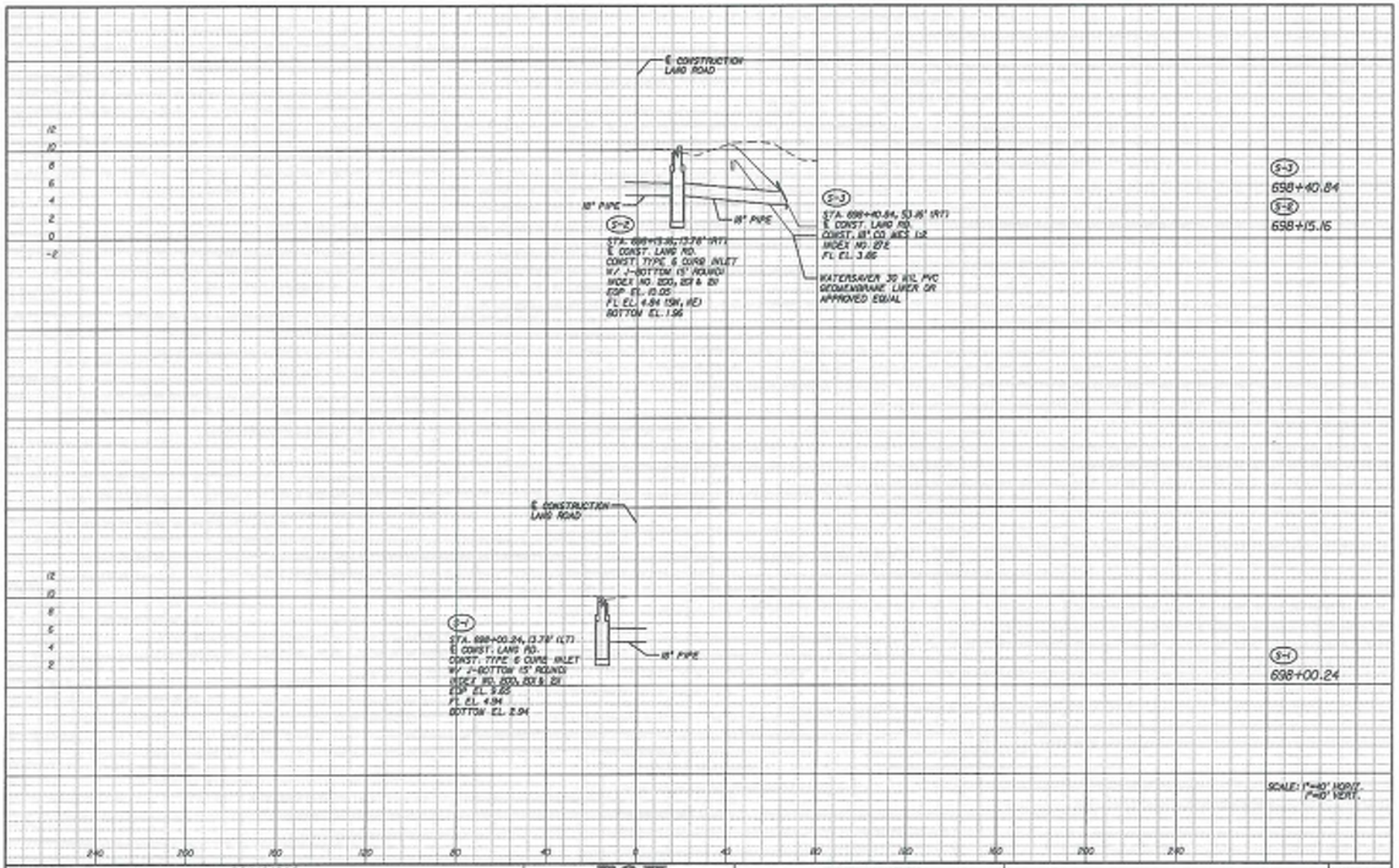
RS+H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

ROADWAY PLAN

SHEET NO. 7



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

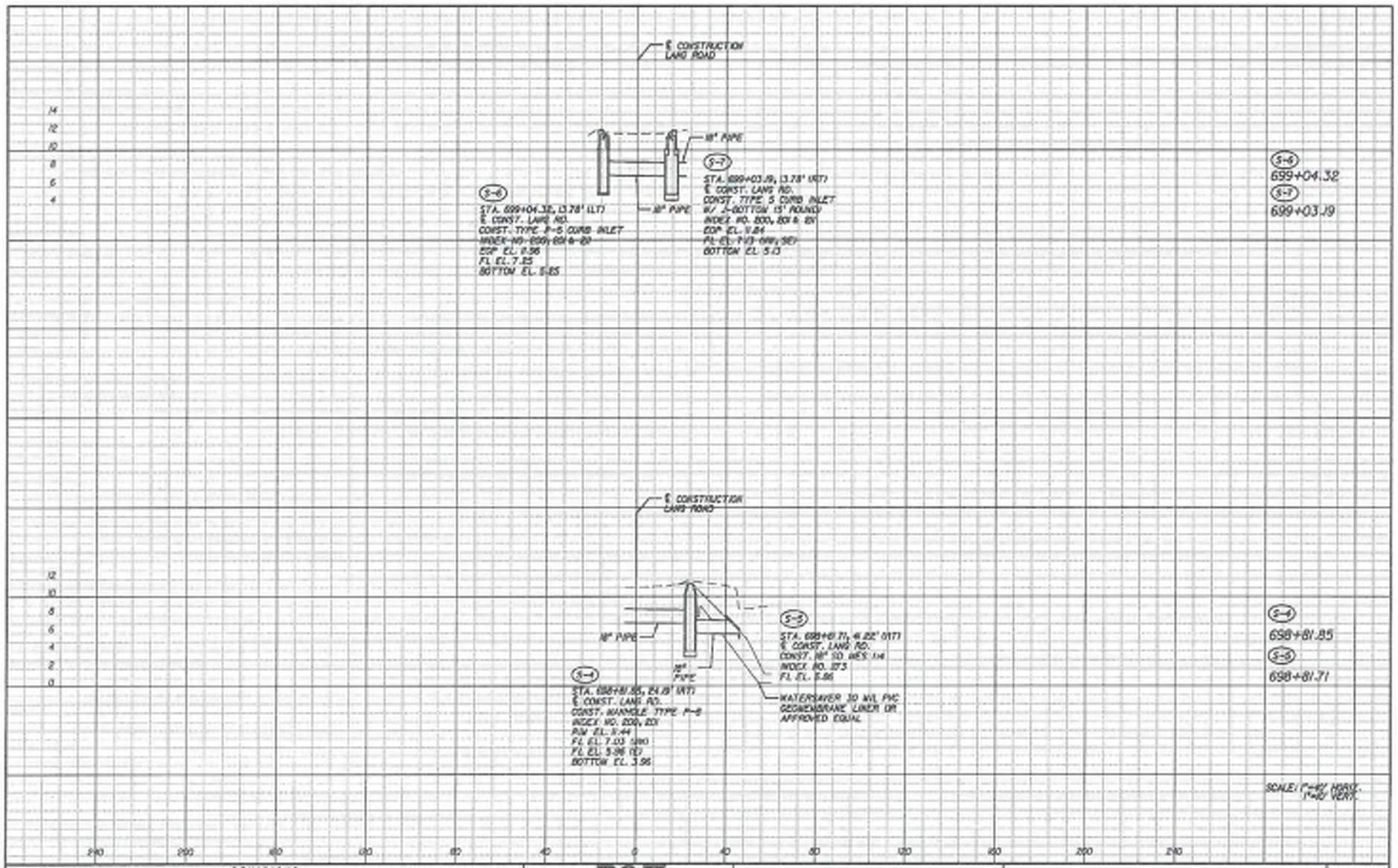
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

DRAINAGE STRUCTURES

SHEET NO. 8



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

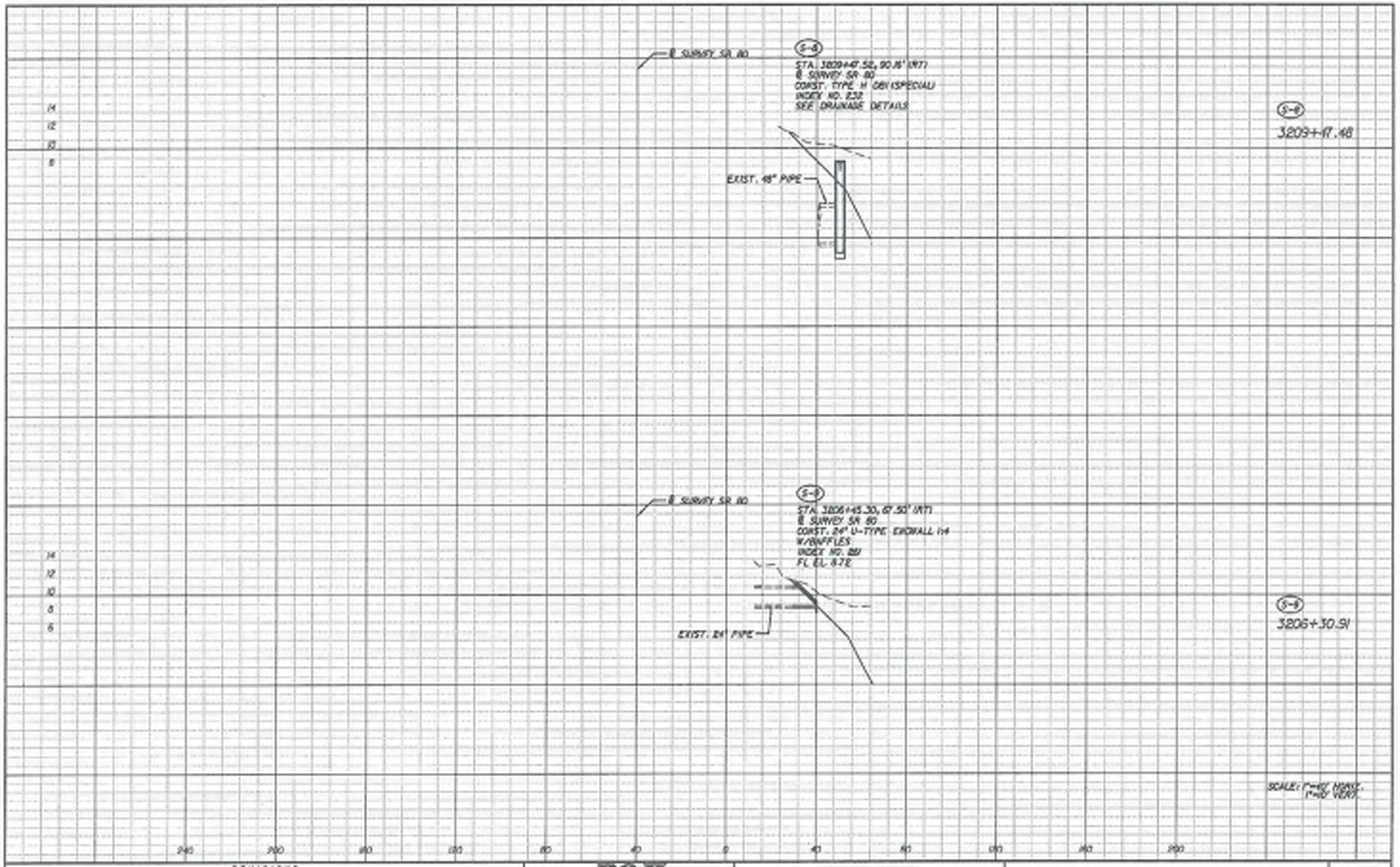
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

DRAINAGE STRUCTURES

SHEET NO. 9



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

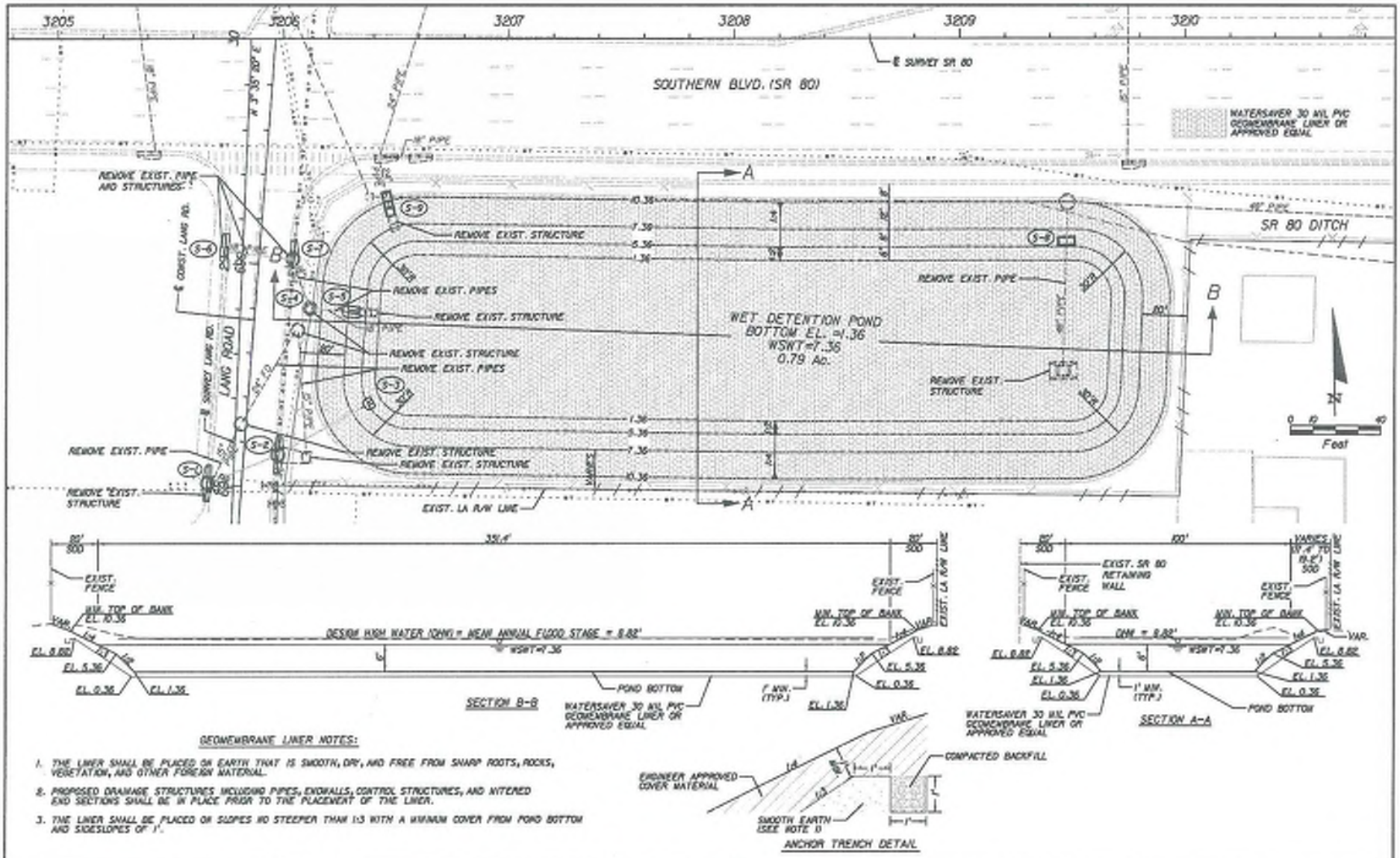
RS+H
Reynolds, Smith and Hills, Inc.
2100 W. Commerce Blvd - Suite 100
Fort Lauderdale, Florida 33309-3648
954-474-3600
FL Cert. No. 00000622
Civilian & Defense, P.E. No. 11986

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

DRAINAGE STRUCTURES

SHEET NO.
10



GEOMEMBRANE LINER NOTES:

1. THE LINER SHALL BE PLACED ON EARTH THAT IS SMOOTH, DRY, AND FREE FROM SHARP ROOTS, ROCKS, VEGETATION, AND OTHER FOREIGN MATERIAL.
2. PROPOSED DRAINAGE STRUCTURES INCLUDING PIPES, ENDWALLS, CONTROL STRUCTURES, AND MITERED END SECTIONS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF THE LINER.
3. THE LINER SHALL BE PLACED ON SLOPES NO STEEPER THAN 1:3 WITH A MINIMUM COVER FROM POND BOTTOM AND SIDESLOPES OF 1'.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

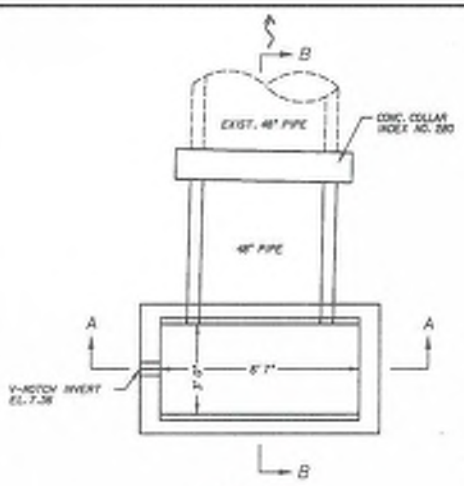
RS&H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

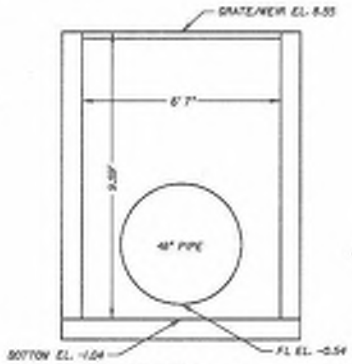
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

POND DETAILS

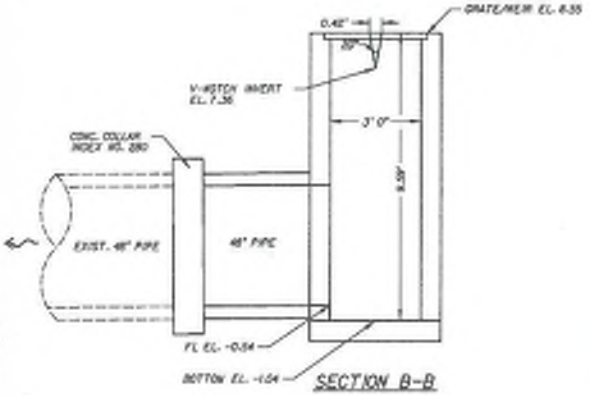
SHEET NO. 11



PLAN VIEW

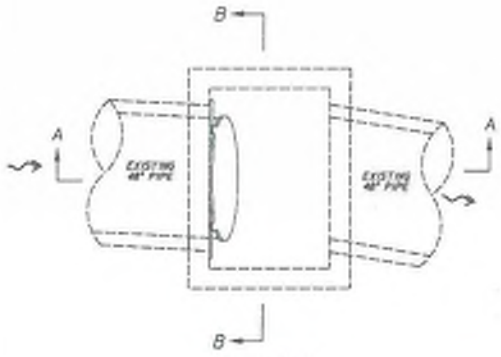


SECTION A-A

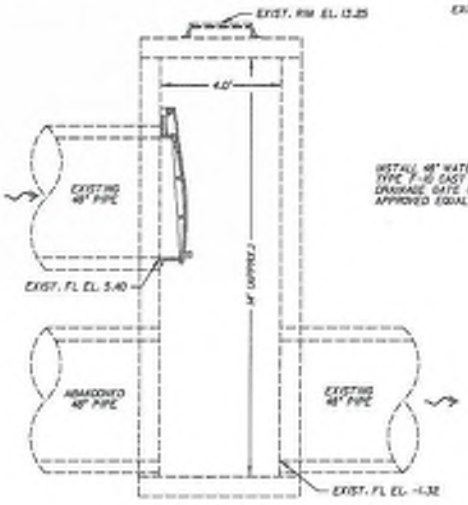


SECTION B-B

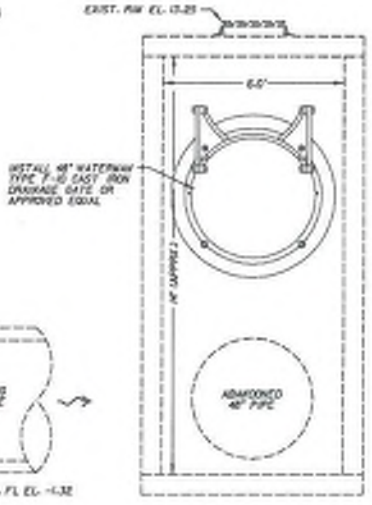
CONTROL STRUCTURE S-8
STA. 3209+47.52 (190.16' RT'), @ SR 80
TYPE 'H' DBI (SPECIAL)
INDEX NO. 232



PLAN VIEW

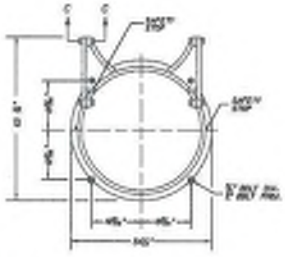


SECTION A-A



SECTION B-B

EXISTING STRUCTURE E-24
STA. 3215+06.54 (94.75' RT), @ SR 80



SECTION C-C

WATERMAN USA TYPE F-10 LIGHT-DUTY
CAST IRON DRAINAGE GATE

(NOT TO SCALE)

NOTES:

1. ADD GROUT PAD THICKNESS TO ANCHOR BOLT PROTECTION.
2. THE DRAINAGE GATE SHALL BE DESIGNED TO ALLOW FREE OUTFLOW AND PREVENT BACKFLOW FOR MAXIMUM SEATING HEADS OF 10 FEET. GATES SHALL BE WATERMAN MODEL F-10 OR EQUAL.
3. THE FRAME SHALL BE CAST IRON OF FLAT BACK DESIGN WITH SEATING SURFACE INCLINED FROM VERTICAL AT A MINIMUM OF 2.5° TO ASSURE POSITIVE CLOSURE. THE CAST IRON COVER, WITH GRATED CONSTRUCTION TO WITHSTAND MAXIMUM SEATING HEAD, SHALL HAVE MACHINED SEATS, AND BE ATTACHED TO THE FRAME IN SUCH A MANNER AS TO ALLOW PROPER SEATING AND FULL OPENING OF COVER. BUILT IN STOPS SHALL BE PROVIDED TO PREVENT THE COVER FROM ROTATING SUFFICIENTLY TO BECOME WEDGED IN THE OPEN POSITION. THE LINKAGE SYSTEM SHALL BE OF STRUCTURAL STEEL, WHICH ALONG WITH THE ASSEMBLY HARDWARE SHALL BE GALVANIZED.
4. CAST IRON FRAME AND COVER SHALL BE COATED WITH MANUFACTURER'S STANDARD SHOP COAT PAINT. GALVANIZED STEEL DOES NOT REQUIRE FURTHER FINISH.
5. FRAME AND COVER SHALL BE CAST IRON PER ASTM A-126, CLASS B. HINGE LUG SHALL BE STRUCTURAL STEEL PER ASTM A-36, GALVANIZED PER ASTM A-123. ASSEMBLY HARDWARE SHALL BE STEEL PER ASTM A-307, GALVANIZED PER ASTM A-153. BRONZE BUSHINGS SHALL BE COMMERCIAL BRONZE.
6. CONTRACTOR SHALL EVALUATE DRAINAGE STRUCTURE WALL AND RE-WORK IF NECESSARY TO PROVIDE ADEQUATE STRUCTURAL SUPPORT FOR ANCHOR BOLTS. RE-WORKING MAY INCLUDE, BUT NOT BE LIMITED TO PARTIAL REMOVAL OF BRICK, CONCRETE, GROUT, ETC, AND REGROUTING AND/OR REINFORCEMENT.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

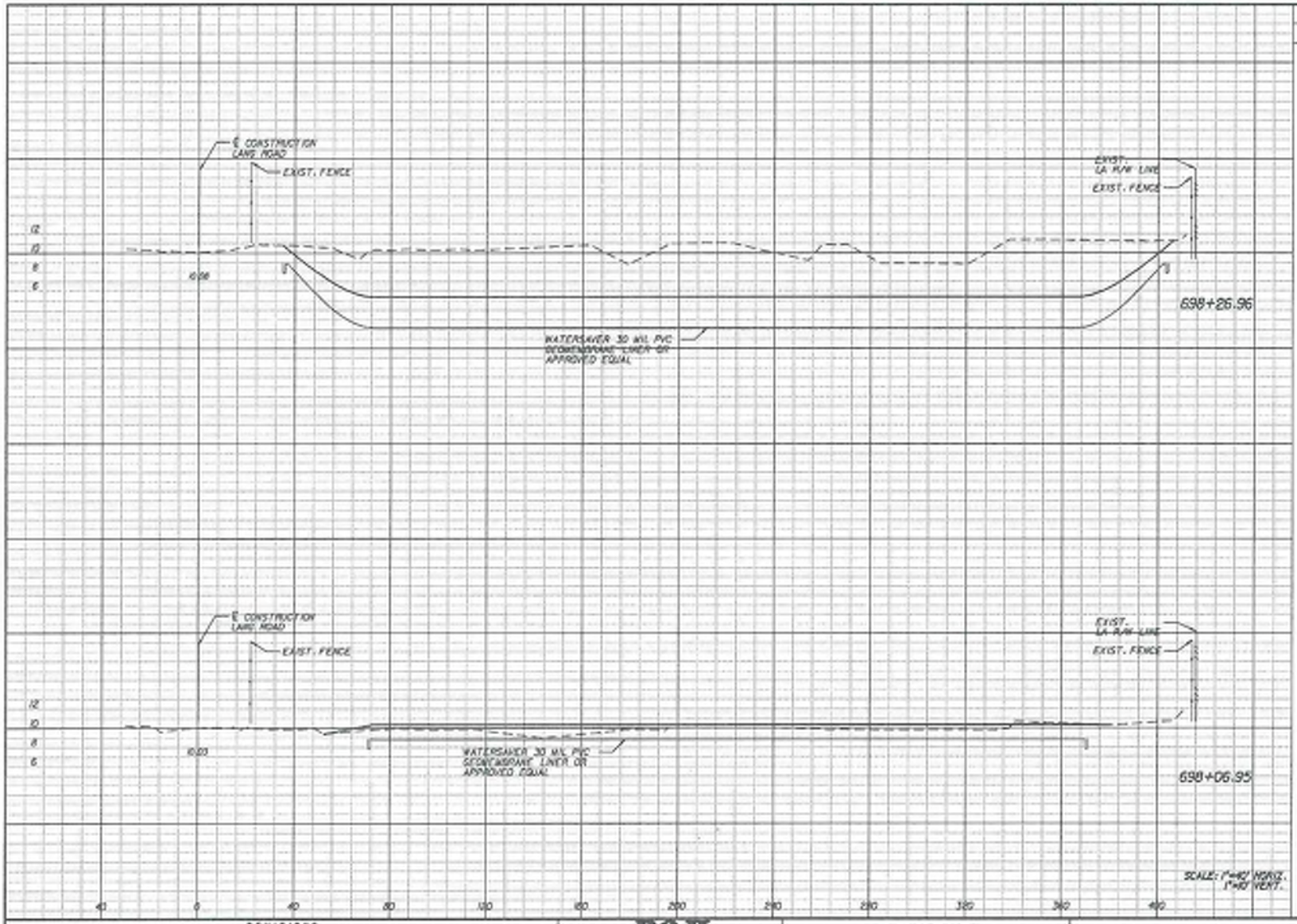
RS&H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

DRAINAGE DETAILS

SHEET NO. 12



	Regular Exc.		Embankment	
	A	V	A	V
		504		0
698+26.96	168		0	
		627		60
698+06.95	7		10	

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

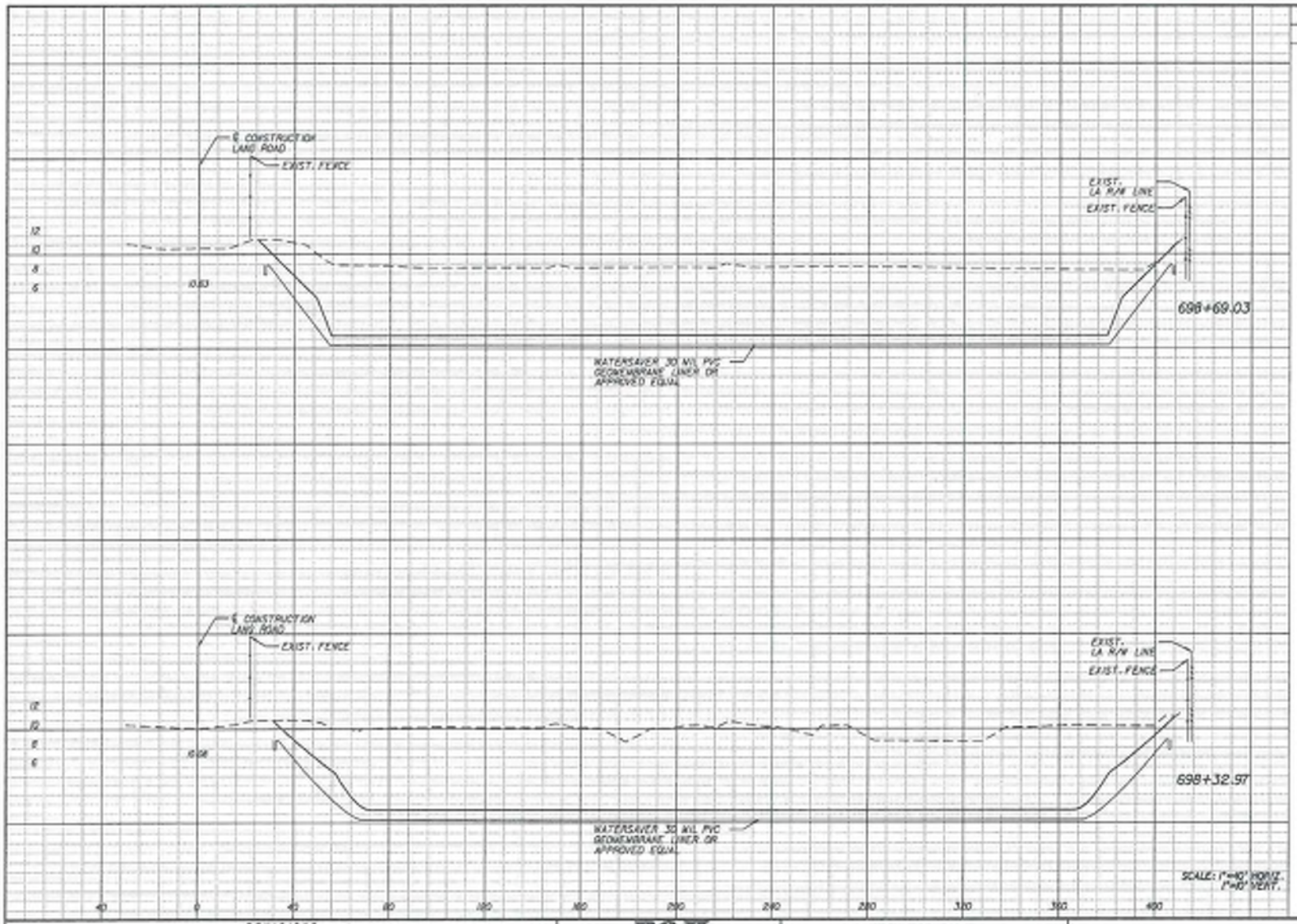
RS&H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

POND CROSS SECTIONS

SHEET NO. 13



Regular Exc.		Embankment	
A	V	A	V
	3855		0
2450		0	
	3535		0
2853		0	

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

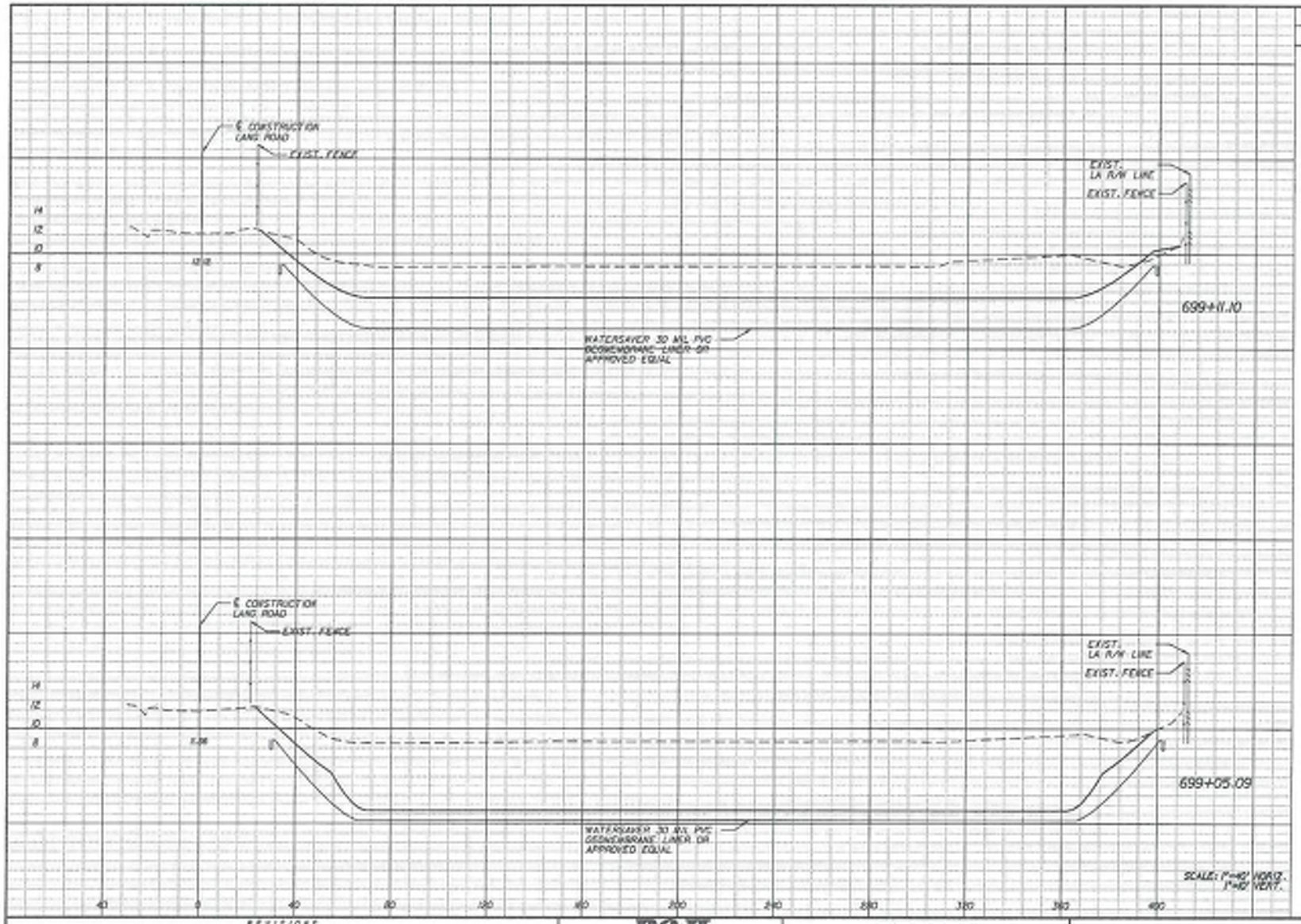
RS&H
Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	223986-4-32-01

POND CROSS SECTIONS

SHEET NO. 14



Regular Exc.		Embankment	
A	V	A	V
	529		0
985		0	
	402		0
2433		0	

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS+H
Raynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

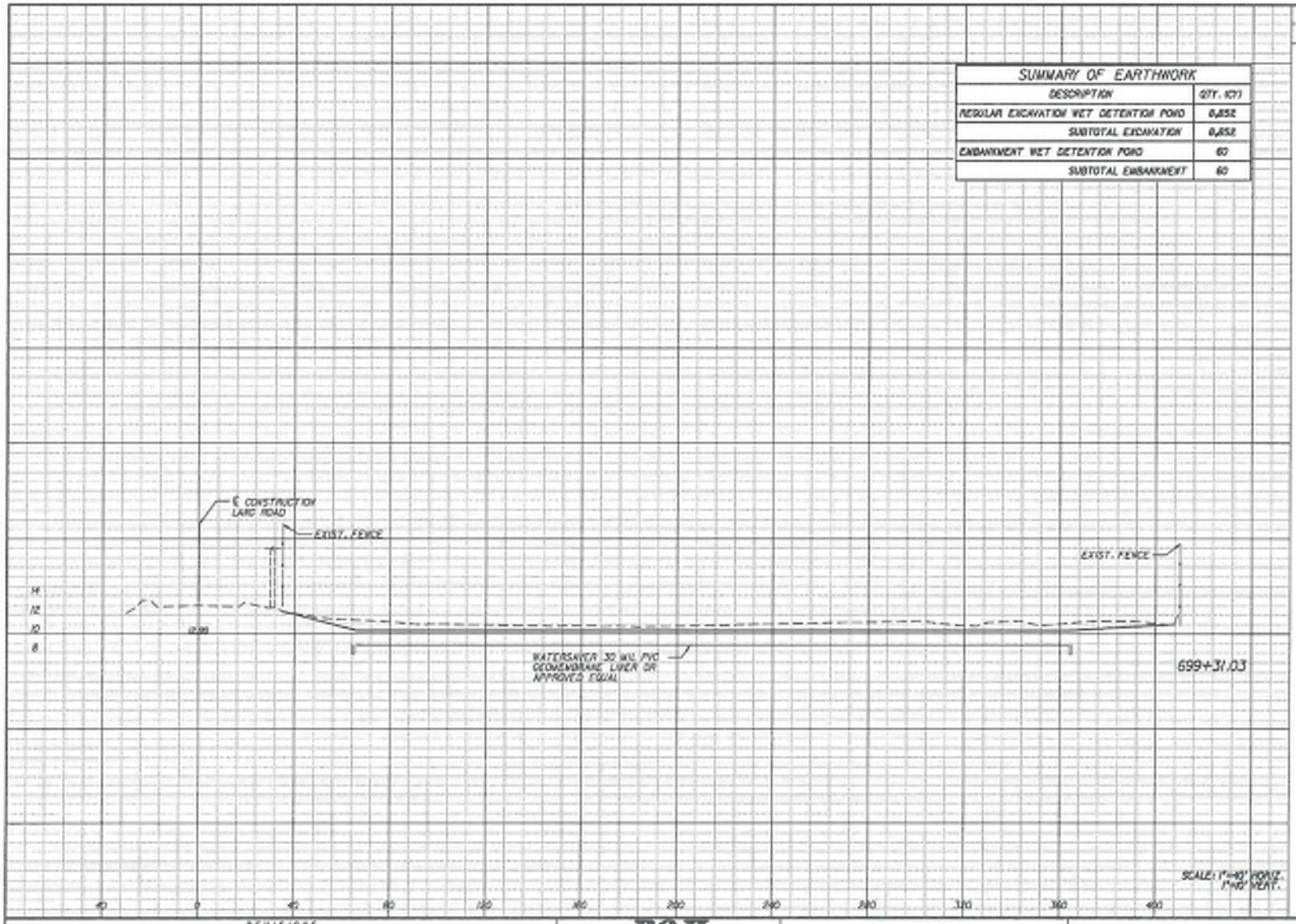
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

POND CROSS SECTIONS

SHEET NO. 15

SUMMARY OF EARTHWORK	
DESCRIPTION	QTY. (CY)
REGULAR EXCAVATION WET DETENTION POND	0,852
SUBTOTAL EXCAVATION	0,852
EMBANKMENT WET DETENTION POND	60
SUBTOTAL EMBANKMENT	60

Regular Exc.		Embankment	
A	V	A	V
243		0	



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

Reynolds, Smith and Hills, Inc.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

POND CROSS SECTIONS

SHEET NO. 16

THE FOLLOWING NARRATIVE OF THE STORMWATER POLLUTION PREVENTION PLAN CONTAINS REFERENCES TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, THE DESIGN STANDARDS, AND OTHER SHEETS OF THESE CONSTRUCTION PLANS. THE FIRST SHEET OF THE CONSTRUCTION PLANS (CALLED THE KEY SHEET) CONTAINS AN INDEX TO THE OTHER SHEETS. THE COMPLETE STORMWATER POLLUTION PREVENTION PLAN INCLUDES SEVERAL ITEMS: THIS NARRATIVE DESCRIPTION, THE DOCUMENTS REFERENCED IN THIS NARRATIVE, THE CONTRACTOR'S APPROVED EROSION CONTROL PLAN REQUIRED BY SPECIFICATION SECTION 104, AND REPORTS OF INSPECTIONS MADE DURING CONSTRUCTION.

1.0. SITE DESCRIPTION:

1.A NATURE OF CONSTRUCTION ACTIVITIES:
LANE ROAD IS LOCATED DIRECTLY WEST OF I-95, SOUTH OF SR 80 (SOUTHERN BLVD.) IN THE TOWN OF GLOSS LAKE IN PALM BEACH COUNTY, FLORIDA. THE PROJECT INVOLVES UNDERGROUND STORM DRAIN SYSTEMS, AND STORMWATER MANAGEMENT FACILITIES ON AND ADJACENT TO LANE ROAD SOUTH OF SR 80. ALSO, PAVEMENT OVERBUILDING IS PROPOSED ON LANE ROAD FROM SR 80 TO 187.89 FEET SOUTH OF SR 80. POND 1 (LOCATED ON THE SOUTHEAST CORNER OF SR 80 AND LANE ROAD) WILL BE REGRADED AND EXCAVATED TO MAKE IT A WET DETENTION FACILITY.

1.B SEQUENCE OF MAJOR SOIL DISTURBING ACTIVITIES:
IN THE SEDIMENT AND EROSION CONTROL PLAN, THE CONTRACTOR SHALL PROVIDE A DETAILED SEQUENCE OF CONSTRUCTION FOR ALL CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF MAJOR ACTIVITIES DESCRIBED BELOW, UNLESS THE CONTRACTOR PROPOSES A DIFFERENT SEQUENCE THAT IS EQUAL OR BETTER AT CONTROLLING EROSION AND TRAPPING SEDIMENT AND IS APPROVED BY THE ENGINEER.

FOR EACH CONSTRUCTION PHASE, INSTALL PERIMETER CONTROLS AFTER CLEARING AND GRUBBING NECESSARY FOR INSTALLATION OF CONTROLS BUT BEFORE BEGINNING OTHER WORK FOR THE CONSTRUCTION PHASE. REMOVE PERIMETER CONTROLS ONLY AFTER ALL UPSTREAM AREAS ARE STABILIZED.

1. CLEARING AND GRUBBING, EARTHWORK FOR POND CONSTRUCTION.

2. STORM DRAIN AND ROADWAY CONSTRUCTION. CONSTRUCT THE STORM DRAIN PIPE IN THE UPSTREAM DIRECTION.

1.C AREA ESTIMATES:
TOTAL SITE AREA: 1.45 ACRES
TOTAL AREA TO BE DISTURBED: 1.25 ACRES

1.D QUALITY OF EXISTING STORMWATER DISCHARGE

IN THE EXISTING CONDITION, ALL RUNOFF IS COLLECTED IN THE EXISTING DRY DETENTION POND WITH A CONTROL STRUCTURE IN POND 1 BEFORE IT OUTFALLS INTO THE STUB CANAL.

SOILS DATA: SOIL BORINGS ARE AVAILABLE IN THE SR 80 PLANS (FPID NO. 231835-1-52-01).

1.E SITE MAP:
THE CONTRACT PLANS ARE BEING USED AS THE SITE MAPS. THE LOCATION OF THE REQUIRED INFORMATION IS DESCRIBED BELOW. THE SHEET NUMBERS FOR THE SHEETS REFERENCED ARE IDENTIFIED ON THE KEY SHEETS OF THE COMPONENTS OF THE CONTRACT PLANS SET.

DRAINAGE PATTERNS:
THE DRAINAGE BASIN DIVIDES AND FLOW AREAS ARE SHOWN ON THE DRAINAGE MAPS.

APPROXIMATE SLOPES:
THE SLOPES OF THE SITE CAN BE SEEN IN THE PLANS.

AREAS OF SOIL DISTURBANCE:
THE AREAS TO BE DISTURBED ARE INDICATED ON THE PLANS. ANY AREAS WHERE PERMANENT FEATURES ARE SHOWN TO BE CONSTRUCTED ABOVE OR BELOW GROUND WILL BE DISTURBED.

AREAS NOT TO BE DISTURBED:
ESSENTIALLY THE WHOLE PROJECT WILL BE DISTURBED DURING CONSTRUCTION.

LOCATIONS OF TEMPORARY AND PERMANENT CONTROLS:
TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AND THEIR LOCATIONS ARE SHOWN ON THE PLANS.

AREAS TO BE STABILIZED:
TEMPORARY STABILIZATION PRACTICES ARE SHOWN IN THE SAME LOCATION AS THE TEMPORARY CONTROLS MENTIONED ABOVE.

SURFACE WATERS:
THERE IS ONE SURFACE WATER: STUB CANAL.

1.F RECEIVING WATERS:
OUTFALL INFORMATION: THERE IS ONE OUTFALL INTO SURFACE WATERS:
#1 DESCRIPTION: EXIST. 48" OUTFALL/ PROP. CONTROL STRUCTURE W/ 48" OUTFALL
LOCATION: LATITUDE 26°05'26" LONGITUDE 80°15'40"
TOTAL DRAINAGE AREA = 1.25 AC 1OUTFALLS (1 PARALLEL)
RECEIVING WATER NAME: STUB CANAL
THERE ARE NO WETLAND AREAS ON THE PROJECT SITE.

2.0 CONTROLS:

2.A EROSION AND SEDIMENT CONTROL:

IT IS THE CONTRACTOR RESPONSIBILITY TO IMPLEMENT THE EROSION AND TURBIDITY CONTROLS AS SHOWN ON THE EROSION CONTROL PLANS. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THESE CONTROLS ARE PROPERLY INSTALLED, MAINTAINED, FUNCTIONING PROPERLY, TO PREVENT TURBID OR POLLUTED WATER FROM LEAVING THE PROJECT SITE. THE CONTRACTOR WILL ADJUST THE EROSION AND TURBIDITY CONTROLS SHOWN ON THE SEDIMENT AND EROSION CONTROL PLAN AND ADD ADDITIONAL CONTROL MEASURES, AS REQUIRED, TO ENSURE THE SITE MEETS ALL FEDERAL, STATE AND LOCAL EROSION AND TURBIDITY CONTROL REQUIREMENTS. THE FOLLOWING BEST MANAGEMENT PRACTICES WILL BE IMPLEMENTED BY THE CONTRACTOR AS REQUIRED BY THE EROSION CONTROL PLAN AND AS REQUIRED TO MEET THE SEDIMENT AND TURBIDITY REQUIREMENTS IMPOSED ON THE PROJECT SITE BY THE REGULATORY AGENCIES.

2.A.1 STABILIZATION PRACTICES

IN THE SECTION 104 EROSION CONTROL PLAN, THE CONTRACTOR SHALL DESCRIBE THE STABILIZATION PRACTICES PROPOSED TO CONTROL EROSION. THE CONTRACTOR SHALL INITIATE ALL STABILIZATION MEASURES AS SOON AS PRACTICAL, BUT IN NO CASE MORE THAN 7 DAYS, IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. THE STABILIZATION PRACTICES SHALL INCLUDE AT LEAST THE FOLLOWING, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

TEMPORARY:

* ARTIFICIAL COVERINGS IN ACCORDANCE WITH SPECIFICATION SECTION 104
* SEED AND MULCH, AND SOD IN ACCORDANCE WITH SPECIFICATION SECTION 104

PERMANENT:

* ASPHALT OR CONCRETE SURFACE
* SOD, VEGETATION, OR LANDSCAPE

2.A.2 STRUCTURAL PRACTICES

IN THE SECTION 104 EROSION CONTROL PLAN, THE CONTRACTOR SHALL DESCRIBE THE PROPOSED STRUCTURAL PRACTICES TO CONTROL OR TRAP SEDIMENT AND OTHERWISE PREVENT THE DISCHARGE OF POLLUTANTS FROM EXPOSED AREAS OF THE SITE. SEDIMENT CONTROLS SHALL BE IN PLACE BEFORE DISTURBING SOIL UPSTREAM OF THE CONTROL. THE STRUCTURAL PRACTICES SHALL INCLUDE AT LEAST THE FOLLOWING, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

TEMPORARY:

* SILT FENCE IN ACCORDANCE WITH DESIGN STANDARD 102
* SOIL TRACKING PREVENTION DEVICES IN ACCORDANCE WITH DESIGN STANDARD 106
* FLOATING TURBIDITY BARRIERS IN ACCORDANCE WITH DESIGN STANDARD 103
* SYNTHETIC BALES OR STRAW IN ACCORDANCE WITH DESIGN STANDARD 102
* INLET PROTECTION IN ACCORDANCE WITH DESIGN STANDARD 102

PERMANENT:

* STORMWATER POND

2.B STORMWATER MANAGEMENT

A STORM DRAIN SYSTEM WILL BE CONSTRUCTED TO CONVEY RUNOFF TO ONE (1) STORMWATER WET DETENTION POND. THE CONTROL STRUCTURE IN THE POND WILL CONTAIN A WEIR, BAFFLE, AND BLEEDER ORIFICE TO PROVIDE THE REQUIRED TREATMENT VOLUME AND DISCHARGE ATTENUATION.

2.C OTHER CONTROLS

THE CONTRACTOR SHALL PRACTICE GOOD HOUSEKEEPING BY INSTITUTING A CLEAN, ORDERLY, CONSTRUCTION SITE. THE FOLLOWING CONTROLS SHALL BE IMPLEMENTED TO FURTHER REDUCE POLLUTION AT THE PROJECT SITE:

2.C.1 DISCHARGE OF MATERIALS TO SURFACE WATERS
NO CONSTRUCTION MATERIAL SHALL BE DISCHARGED TO WATERS OF THE STATE UNLESS AUTHORIZED BY A SECTION 404 PERMIT AND/OR THE STATE OF FLORIDA ENVIRONMENTAL RESOURCE PERMIT. ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF IN AN APPROVED UPLAND LOCATION. BUILDING MATERIAL SHALL NOT BE DISPOSED OF IN WETLANDS, PONDS, OR CANALS.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
[illegible]

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

STORMWATER POLLUTION PREVENTION PLAN

SHEET NO. 17

[illegible] 8/08/2005 8:58:50 PM [illegible]

2.C.2 OFF-SITE VEHICLE TRACKING & DUST CONTROL
THE CONTRACTOR SHALL TAKE MEASURES TO ENSURE THE CLEANUP OF SEDIMENTS THAT HAVE BEEN TRACKED BY VEHICLES OR HAVE BEEN TRANSPORTED BY WIND OR STORM WATER ABOUT THE SITE OR ONTO NEARBY ROADWAYS. STABILIZED CONSTRUCTION ENTRANCES AND CONSTRUCTION ROADS SHALL BE IMPLEMENTED IN ORDER TO REDUCE OFFSITE TRACKING. LOADED HAUL TRUCKS SHALL BE COVERED WITH TARPAULIN, CROSS CUT ON THE ROAD SHALL BE REMOVED DAILY. CONTRACTOR SHALL ABIDE BY ALL FEDERAL, STATE, AND LOCAL LAWS PERTAINING TO DUST CONTROL.

2.C.3 WASTE DISPOSAL
THE CONTRACTOR SHALL DEMONSTRATE THE PROPER DISPOSAL OF ALL CONSTRUCTION WASTE GENERATED WITHIN THE PROJECT LIMITS. WASTE MAY INCLUDE, BUT NOT BE LIMITED TO, VEGETATION FROM CLEARING AND GRUBBING ACTIVITIES, PACKAGING MATERIALS, SCRAP BUILDING MATERIALS, LITTER, DEBRIDE FROM SANITARY FACILITIES, HERBICIDES AND PESTICIDES AND THEIR CONTAINERS, AND HYDROCARBON PRODUCTS. CONTRACTOR SHALL DESIGNATE A WASTE COLLECTION AREA ONSITE AND DELINEATE THE AREA ON THE SWPPP SITE MAP.

SANITARY/SEPTIC FACILITIES SHALL BE PROVIDED AND MAINTAINED IN A NEAT AND SANITARY CONDITION, FOR THE USE OF THE CONTRACTOR'S EMPLOYEES AS NECESSARY TO COMPLY WITH THE REQUIREMENTS AND REGULATIONS OF THE STATE AND LOCAL BOARDS OF HEALTH. A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR AS REQUIRED BY STATE REGULATIONS WILL COLLECT ALL SANITARY WASTE FROM PORTABLE UNITS.

THE CONTRACTOR WILL PROVIDE LITTER CONTROL AND COLLECTION WITHIN THE PROJECT LIMITS DURING CONSTRUCTION ACTIVITIES. CONTRACTOR WILL PROVIDE AN ADEQUATE NUMBER OF LITTER CONTAINERS WITH LIDS AT THE STAGING, STOCKPILE AND FIELD OFFICE AREAS. WASTE COLLECTION WILL BE SCHEDULED SO THAT CONTAINERS ARE EMPTIED PRIOR TO OVERFLOW. SPILLED LITTER CONTAINERS SHALL BE CLEANED UP IMMEDIATELY.

2.C.4 FERTILIZERS AND PESTICIDES
THE APPLICATION AND HANDLING OF HERBICIDES AND PESTICIDES SHALL BE IN COMPLIANCE WITH THE MANUFACTURER RECOMMENDED METHOD AND IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. HERBICIDE AND PESTICIDES SHALL BE STORED ONSITE IN THEIR ORIGINAL CONTAINERS WITH PRODUCT LABEL INTACT. COPY OF MSD SHEETS AS WELL AS A COPY OF FLORIDA LICENSE FOR HERBICIDE APPLICATION WITH PROPER ENDORSEMENTS FOR CHEMICAL USED AS WELL AS AQUATICS MUST BE PROVIDED.

2.C.5 TOXIC/HAZARDOUS MATERIAL HANDLING
CONTRACTOR SHALL PROVIDE THE EQUIPMENT NECESSARY TO CONTAIN AND CLEAN UP SPILLS OF HAZARDOUS MATERIALS, INCLUDING PETROLEUM PRODUCTS. SPILLS SHALL BE CONTAINED AND CLEANED UP IMMEDIATELY AFTER THEY OCCUR. SPILLED MATERIAL AND THE EQUIPMENT USED TO CLEAN UP THE SPILL SHALL NOT COME IN CONTACT WITH SURFACE WATERS OR BE INTRODUCED INTO STORM WATER. DISPOSAL OF SURPLUS PRODUCT WILL BE DONE ACCORDING TO MANUFACTURER RECOMMENDED METHOD.

CONTRACTOR SHALL PROVIDE A PROJECT SPECIFIC HAZARDOUS MATERIALS SPILL CONTROL PLAN IN ORDER TO ADDRESS THE HANDLING OF HYDROCARBON AND HAZARDOUS MATERIALS.

PETROLEUM PRODUCTS SHALL BE STORED IN COVERED AREAS WITH SECONDARY CONTAINMENT SURROUNDING CONTAINER.

TOXIC/HAZARDOUS MATERIALS EXPOSED DURING CONSTRUCTION ACTIVITIES SHALL BE HANDLED AS PER THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

3.0 MAINTENANCE

THE CONTRACTOR WILL BE RESPONSIBLE FOR THE MAINTENANCE AND REPAIRS OF EROSION AND SEDIMENT CONTROL DEVICES AS PER SECTION 104 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. THE MAINTENANCE OF THESE DEVICES WILL OCCUR UNTIL THE ENGINEER HAS DEEMED AN AREA PERMANENTLY STABILIZED. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES ONCE THEY HAVE SERVED THEIR PURPOSE. THE CONTRACTOR SHALL INSTALL AND MAINTAIN RAIN GAUGES ON THE SITE.

ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT. THE CONTRACTOR SHALL PROVIDE A CONTACT NAME AND TELEPHONE NUMBER FOR 24-HOUR RESPONSE FOR REPAIRS AFTER HOURS DUE TO EMERGENCIES THAT MAY ARISE.

IN SECTION 104 EROSION & SEDIMENT CONTROL PLAN, THE CONTRACTOR SHALL PROVIDE A PLAN FOR MAINTAINING ALL EROSION AND SEDIMENT CONTROLS THROUGHOUT CONSTRUCTION.

THE FOLLOWING PRACTICES WILL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROLS:

* SILT FENCE: MAINTAIN PER SPECIFICATION SECTION 104. THE CONTRACTOR SHOULD ANTICIPATE REPLACING SILT FENCE EVERY 12 MONTHS.
* SOIL TRACKING PREVENTION DEVICES: MAINTAIN AGGREGATES AND SHALE PER DESIGN STANDARD 106.
* FLOATING TURBIDITY BARRIER: REPLACE DAMAGED CONTAINYS) AS REQUIRED TO ENSURE TURBIDITY LEVELS IN RECEIVING WATERS REMAINS STAY BELOW REQUIRED NTU THRESHOLDS.
* SYNTHETIC BALES OR STRAW: REMOVE SEDIMENT WHEN IT REACHES ½ HEIGHT OF BALES OR WHEN WATER PONDS IN UNACCEPTABLE AMOUNTS OR AREAS.

4.0 INSPECTIONS

QUALIFIED PERSONNEL SHALL INSPECT THE FOLLOWING ITEMS AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.50 INCHES OR GREATER. WHERE SITES HAVE BEEN PERMANENTLY STABILIZED, INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH. THE CONTRACTOR SHALL ALSO INSPECT THAT CONTROLS INSTALLED IN THE FIELD AGREE WITH THE LATEST STORMWATER POLLUTION PREVENTION PLAN. THE FOLLOWING ITEMS WILL BE INSPECTED:

* POINTS OF DISCHARGE TO WATERS OF THE UNITED STATES
* POINTS OF DISCHARGE TO MUNICIPAL SEPARATED STORM SEWER SYSTEMS
* DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED
* AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION
* STRUCTURAL CONTROLS
* STORMWATER MANAGEMENT SYSTEMS
* LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE

THE CONTRACTOR SHALL INITIATE REPAIRS WITHIN 24 HOURS OF INSPECTIONS THAT INDICATE ITEMS ARE NOT IN GOOD WORKING ORDER.

IF INSPECTIONS INDICATE THAT THE INSTALLED STABILIZATION AND STRUCTURAL PRACTICES ARE NOT SUFFICIENT TO MINIMIZE EROSION, RETAIN SEDIMENT, AND PREVENT DISCHARGING POLLUTANTS, THE CONTRACTOR SHALL PROVIDE ADDITIONAL MEASURES, AS APPROVED BY THE ENGINEER.

5.0 NON-STORM WATER DISCHARGES

IF UNFORESEEN CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR IS TO CEASE OPERATIONS IN THAT AREA. THE CONTRACTOR SHALL CONTACT THE FDOT PROJECT ENGINEER WHO WILL NOTIFY THE DISTRICT CONTAMINATION IMPACT COORDINATOR, VINCENT FUSCONI, AT (954) 777-4286.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO DEVELOP A DEWATERING SYSTEM THAT PROVIDES PRETREATMENT OF EFFLUENT PRIOR TO DISCHARGE INTO ADJACENT SURFACE WATERS. THE CONTRACTOR'S DEWATERING METHOD MUST MEET ALL FEDERAL, STATE, AND LOCAL LAWS, RULES, AND REGULATIONS CONCERNING THIS PRACTICE INCLUDING THE USE OF PERMITTED OUTFALL STRUCTURES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE AND APPLY FOR A DEWATERING PERMIT WITH THE APPROPRIATE WATER MANAGEMENT DISTRICT.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO DESIGNATE AN AREA WITHIN THE PROJECT LIMITS FOR CONCRETE TRUCK WASHOUT ACTIVITIES. THIS AREA SHALL PROVIDE EROSION CONTROL DEVICES THAT PREVENT CONTACT BETWEEN CONCRETE WASHOUT MATERIALS AND STORMWATER AND/OR SURFACE WATERS.

6.0 CONTRACTOR SUBMITTAL

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DEVELOP AN EROSION CONTROL PLAN THAT PROVIDES A DETAILED DESCRIPTION OF ALL EROSION AND SEDIMENT CONTROLS, BEST MANAGEMENT PRACTICES, AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE FOR EACH ACTIVITY LOCATED IN SECTION 7.0, SEQUENCE OF SOIL DISTURBING ACTIVITIES. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TIMEFRAMES IN WHICH THE CONTROLS WILL BE IMPLEMENTED, MAINTAINED AND REMOVED. THIS INFORMATION SHALL BE KEPT AT THE PROJECT FIELD OFFICE IN ORDER FOR THE PROJECT TO BE CONSIDERED IN COMPLIANCE WITH THE FDEP GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION SITES.

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE FOLLOWING ITEMS ARE ON SITE:

1. COPY OF THE STORMWATER POLLUTION PREVENTION PLAN WITH THE ORIGINAL CERTIFICATION SIGNATURES.
2. COPY OF THE CONTRACTOR'S EROSION CONTROL PLAN.
3. HAZARDOUS SPILL CONTROL PLAN WITH GUIDELINES ON CONTACTING THE 24 HOUR EMERGENCY RESPONSE PROGRAM FOR HAZARDOUS MATERIAL SPILLS. THIS SHALL INCLUDE COPIES OF DISCHARGE NOTIFICATIONS THAT HAVE OCCURRED WITHIN THE PROJECT LIMITS.
4. COMPLETED INSPECTION FORMS.

THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE FOLLOWING ITEMS TO FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION IN ORDER FOR THE NPDES PERMIT TO BE PROCESSED:

1. FDEP FORM 62-621.300(4)(b) - NOTICE OF INTENT TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES. THIS NOTICE OF INTENT SHALL BE SIGNED BY THE CONTRACTOR.
2. THE PERMITTING FEE OF $400.00 FOR PROJECTS THAT CLEAR AND GRUB MORE THAN FIVE ACRES, $250.00 FOR PROJECTS THAT CLEAR AND GRUB BETWEEN 1 AND 5 ACRES.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUBMIT THE NOI TO FDEP NO LESS THAN 48 HOURS PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PROOF OF MAIL DATE TO THE ENGINEER.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Raynolds, Smith and Hills, Inc.
[illegible]

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	229966-4-32-01

STORMWATER POLLUTION PREVENTION PLAN

SHEET NO. 10

8/22/04 8:08:50 AM 8/20/04 PM X:\FP\229966\430\JRS 12.2.0.0\2 LAKE \\raidarray\GIS\PROJECT.apr

GENERAL:

1. TRAFFIC CONTROLS SHALL BE IN ACCORDANCE WITH THE PROJECT PLANS, CURRENT EDITION OF THE FLORIDA DEPARTMENT OF DOT TRANSPORTATION DESIGN STANDARDS (600 SERIES), THE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AS MINIMUM CRITERIA.
2. AT THE DISCRETION OF THE ENGINEER, IF A LANE CLOSURE CAUSES EXTENDED CONGESTION OR DELAY, THE CONTRACTOR SHALL BE DIRECTED TO REOPEN THE CLOSED LANE(S) UNTIL SUCH TIME THAT THE TRAFFIC FLOW HAS RETURNED TO AN ACCEPTABLE LEVEL.
3. THE TRAFFIC AND TRAVEL WAYS SHALL NOT BE ALTERED BY THE CONTRACTOR TO CREATE A WORK ZONE UNTIL ALL LABOR AND MATERIAL ARE AVAILABLE FOR THE CONSTRUCTION IN THAT AREA.
4. THE CONTRACTOR SHALL MAINTAIN THE EXISTING DRIVEWAY CONNECTION AND ACCESS TO THE TOWN OF CLOUD LAKE MUNICIPAL BUILDING. THE COST IS TO BE INCLUDED IN PAY ITEM NO. 102-1, MAINTENANCE OF TRAFFIC.
5. WHEN ANY VEHICLE, EQUIPMENT WORKERS OR THEIR ACTIVITIES ENCROACH ON THE OUTSIDE LANE OR THE AREA WHITHIN 2' OUTSIDE THE EDGE OF TRAVEL WAY, THE CONTRACTOR SHALL CLOSE SR 80 OUTSIDE LANE FOLLOWING FDOT DESIGN STANDARDS INDEX NO. 613, SHEET 1 OF 2.
6. SR 80 LANE CLOSURE SHALL OCCUR ONLY DURING NON-PEAK HOURS OR NON-EVENT DAYS/NIGHTS/ WEEKENDS. NON-PEAK HOURS ARE:

   9:00 AM TO 3:00 PM - WEEKDAYS AND WEEKENDS
7. AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL COVER WORK ZONE SIGNS WHEN CONDITIONS NO LONGER WARRANT THEIR USE. COST OF COVERING AND UNCOVERING THE SIGNS SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.
8. CONTRACTOR SHALL REMOVE, RELOCATE OR COVER ANY EXISTING OR PROPOSED SIGNS THAT CONFLICT WITH THE WORK BEING PERFORMED TRAFFIC CONTROL PLANS. WHEN THE CONFLICT NO LONGER EXISTS, THE CONTRACTOR SHALL RESTORE THE SIGNS TO THEIR ORIGINAL POSITION. COST OF TEMPORARILY REMOVING, RELOCATING, COVERING AND RESTORING THE SIGNS SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.
9. TRAFFIC CONTROL DEVICES (I.E. TEMPORARY BARRIER, BARRICADES, ETC.) SHALL BE A MINIMUM OF 2 FEET FROM TRAVEL LANE. VARIANCE FROM THIS CRITERIA SHALL REQUIRE WRITTEN APPROVAL BY THE ENGINEER.
10. ANY EROSION CONTROL ITEMS NOT SHOWING IN THE PLANS, BUT NECESSARY UNDER THE CONTRACTOR'S SEQUENCE OF CONSTRUCTION SHALL BE INCLUDED IN THE RELATED PAY ITEM.
11. IF THE CONTRACTOR ELECTS TO DO NIGHT WORK, THEN HE/SHE MUST OBTAIN A PERMIT FROM FDOT, CITY OF WEST PALM BEACH, TOWN OF CLOUD LAKE, AND TOWN OF GLEN RIDGE.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING AND CONDUCTING MEETINGS WITH PALM BEACH COUNTY, THE TOWN OF CLOUD LAKE, TOWN OF GLEN RIDGE AND ADJACENT PROPERTY TO COORDINATE CONSTRUCTION ACTIVITIES.
13. ALL TRAVEL LANES OF SR 80 MUST BE OPEN TO TRAFFIC DURING AN EVACUATION NOTICE OF HURRICANE OR OTHER CATASTROPHIC EVENT AND WILL REMAIN OPEN AND MUST REMAIN OPEN FOR THE DURATION OF THE EVENT AS DIRECTED BY THE ENGINEER.
14. THE CONTRACTOR SHALL NOT EXCAVATE ANY AREA ALONG THE PROPOSED SIDEWALK ALIGNMENT WHICH CANNOT BE BACKFILLED WITHIN THE SAME WORK PERIOD. THE POURING OF THE PROPOSED CONCRETE SIDEWALK CAN OCCUR DURING A SUBSEQUENT WORK PERIOD.
15. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL APPLICABLE CONSTRUCTION PERMITS PRIOR TO START OF CONSTRUCTION.

PEDESTRIANS, BICYCLES AND WHEELCHAIRS:

1. AT THE END OF EACH WORK DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE, ANY DROP OFF GREATER THAN 6 INCHES ADJACENT TO THE PEDESTRIAN, BICYCLE, AND WHEELCHAIR TRAVEL PATHS SHALL BE BACKFILLED FLUSH WITH THE SAID PATHS OR PROTECTED WITH TEMPORARY FENCE, CONCRETE BARRIER WALL OR APPROVED HANDRAIL. COST SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.
2. PEDESTRIAN, BICYCLE, AND WHEELCHAIR TRAFFIC SHALL BE MAINTAINED AND GUIDED USING APPROVED WARNING LIGHTS, SIGNING, AND DELINEATION DEVICES ON AT LEAST ONE SIDE OF THE PROJECT AT ALL TIMES THROUGHOUT THE PROJECT LIMITS. THE TRAVEL PATH SHALL BE A MINIMUM OF 4 FEET WIDE WITH A SMOOTH SURFACE THAT IS NOT SLICK AND IT SHOULD BE RAMPED AS NECESSARY FOR CONTINUITY. COST TO CONSTRUCT AND MAINTAIN THE TRAVEL PATH AS REQUIRED SHALL BE INCLUDED IN PAY ITEM NO. 102-1, MAINTENANCE OF TRAFFIC.
3. THE CONTRACTOR SHALL MAINTAIN A SAFE PEDESTRIAN PATHWAY FOR LAND ROAD PEDESTRIAN MOVEMENTS, CEASING CONSTRUCTION ACTIVITIES TEMPORARILY IF NECESSARY.

ADVANCE CONSTRUCTION NOTICE

1. THE CONTRACTOR SHALL FURNISH AND MAINTAIN PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) AT LOCATIONS SHOWN ON THE PLANS. MESSAGES FOR THE PCMS SHALL BE AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE IN PLACE ONE WEEK BEFORE START OF ANY WORK ITEMS AFFECTING THE EXISTING VEHICULAR AND PEDESTRIAN TRAFFIC. PCMS INSTALLATION, OPERATION, AND REMOVAL BEFORE CONSTRUCTION BEGINS SHALL BE PAID FOR UNDER PAY ITEM NO. 102-1, MAINTENANCE OF TRAFFIC. PCMS INSTALLATION, OPERATION, AND REMOVAL DURING CONSTRUCTION SHALL BE PAID UNDER PAY ITEM NO. 102-99, CHANGEABLE (PCMS) MESSAGE SIGN.

ADVANCE CONSTRUCTION NOTICE (CONT.)

2. THE CONTRACTOR SHALL IMMEDIATELY REPAIR ALL POTHOLES THAT DEVELOP WITHIN THE PROJECT LIMITS AND WILL MAINTAIN A SUPPLY OF COLD MIX ON THE PROJECT SITE TO EXPEDITE THOSE REPAIRS. COST OF REPAIR TO BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.
3. NOTIFICATION OF LANE CLOSURES OR TEMPORARY DETOURS SHALL BE ACCOMPLISHED (4 WORKING DAYS PRIOR TO CLOSURE, DETOUR OR NOT PHASE CHANGE BY SUBMITTING THE REQUIRED LANE CLOSURE FORM, SKETCHES, CALCULATIONS, AND OTHER DATA THROUGH THE ENGINEER TO THE FDOT DISTRICT OFFICE FOR LANE CLOSURE APPROVAL.

   NOTIFY:
   FDOT
   BRETT DROUIN
   561-433-4966
4. SR 80 (4) LANES SHALL BE MAINTAINED DURING THE CONTRACT TIME WHEN CONSTRUCTION IS NOT UNDERWAY.
5. THE CONTRACTOR SHALL NOT MILL ANY AREA WHICH CANNOT BE RESURFACED AND TEMPORARILY STRIPED WITHIN THE SAME WORK PERIOD.
6. ALL TRENCHING OR EXCAVATION WITHIN THE PAVEMENT ARE SHALL BE PERFORMED PRIOR TO MILLING AND RESURFACING OPERATION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REMOVAL OF STORM WATER FROM ROADWAYS UTILIZED FOR MAINTAINING TRAFFIC IN A MANNER APPROVED BY THE ENGINEER. COST FOR REMOVING THE WATER SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.

DROP OFFS:

1. FOR DROP OFFS, THE CONTRACTOR'S ATTENTION IS DIRECTED TO STANDARD INDEX NO. 600, SHEET 10 OF 13. THE CONTRACTOR SHALL USE SHOULDER TREATMENT DETAIL WHEN NO BARRIERS ARE REQUIRED IN THE PLANS.

SIGNING & MARKINGS:

1. THE CONTRACTOR SHALL REMOVE ANY EXISTING OR PROPOSED PAVEMENT MARKINGS WHICH CONFLICT WITH THE TRAFFIC CONTROL THROUGH THE WORK ZONE. REMOVAL OF EXISTING OR TEMPORARY PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY MILLING, GRINDING, SAND OR HYDRO BLASTING OR BY OTHER METHOD APPROVED BY THE ENGINEER. USE OF BLACK PAINT TO COVER EXISTING PAVEMENT MARKINGS IS PROHIBITED. WHEN THE CONFLICT NO LONGER EXISTS THE CONTRACTOR SHALL RESTORE THE PAVEMENT MARKING TO THEIR ORIGINAL POSITION OR TO THE PROPOSED POSITION WHEN EVER ONE GOVERNS. COST OF REMOVAL OF CONFLICT MARKINGS, REGARDLESS OF METHOD, IS INCLUDED IN THE RELATED PAVEMENT MARKING PAY ITEMS.
2. ALL TEMPORARY STRIPES AND MARKINGS SHALL BE PAINT ONLY, UNLESS OTHERWISE SPECIFIED ON THE PLANS OR APPROVED BY THE ENGINEER.
3. AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL COVER WORK ZONE SIGNS WHEN CONDITIONS NO LONGER WARRANT THEIR USE. COST OF COVERING AND UNCOVERING THE SIGNS SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.
4. CONTRACTOR SHALL REMOVE, RELOCATE OR COVER ANY EXISTING OR PROPOSED SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL PLANS. WHEN THE CONFLICT NO LONGER EXISTS, THE CONTRACTOR SHALL RESTORE THE SIGNS TO THEIR ORIGINAL POSITION. COST OF TEMPORARILY REMOVING, RELOCATING, COVERING AND RESTORING THE SIGNS SHALL BE INCLUDED IN PAY ITEM 102-1, MAINTENANCE OF TRAFFIC.
5. BEFORE OPENING ANY LANE TO TRAFFIC, THE CONTRACTOR SHALL REPLACE ANY OBLITERATED OR REMOVED PAVEMENT MARKINGS WITH TEMPORARY PAVEMENT MARKINGS AND REFLECTIVE PAVEMENT MARKINGS (TEMPORARY) (I.E. LANE LINES, ARROWS, CROSS WALKS, STOP BARS).
6. PERMANENT RPM'S AS REQUIRED FOR LANE LINES SHALL BE PLACED WITHIN 72 HOURS OF COMPLETION OF THE FRICTION COURSE.

TABULATION OF QUANTITIES (TRAFFIC CONTROL PLANS)

ITEM NO.	DESCRIPTION	UNIT	QUANTITY P	QUANTITY F	REMARKS
102-60	WORK ZONE SIGN	ED	670		
102-74-1	TEMPORARY BARRICADE / CHANNELIZING DEVICE (TYPE I)	ED	435		
102-74-2	TEMPORARY BARRICADE / CHANNELIZING DEVICE (TYPE II)	ED	120		
102-76	ADVANCE WARNING ARROW PANEL	ED	3		
102-77	HIGH INTENSITY FLASHING LIGHT, TEMPORARY, TYPE B	ED	240		
102-99	PORTABLE CHANGEABLE MESSAGE SIGN - TEMPORARY	ED	60		

REVISIONS DATE	DESCRIPTION	DATE	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.
3128 W. Commercial Blvd., Suite 170
Fort Lauderdale, Florida 33309-3668
954-479-3200
F.L. Cert. No. 00000650
Orlando & Tampa, FL No. 27868

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	N/A

TRAFFIC CONTROL PLANS

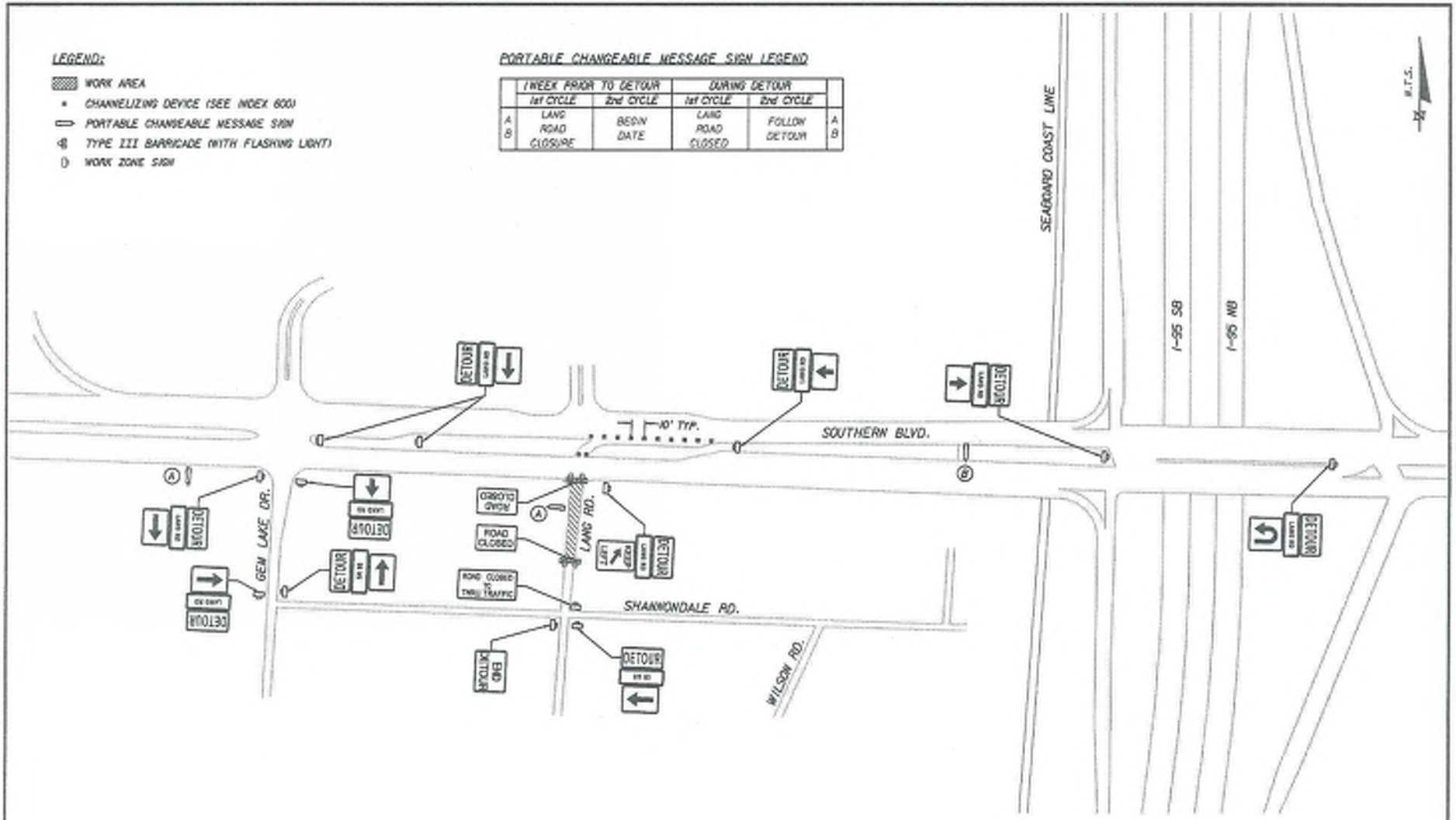
SHEET NO. 19

LEGEND:

- WORK AREA
- CHANNELIZING DEVICE (SEE INDEX 600)
- PORTABLE CHANGEABLE MESSAGE SIGN
- TYPE III BARRICADE (WITH FLASHING LIGHT)
- WORK ZONE SIGN

PORTABLE CHANGEABLE MESSAGE SIGN LEGEND

	1 WEEK PRIOR TO DETOUR		DURING DETOUR		
	1st CYCLE	2nd CYCLE	1st CYCLE	2nd CYCLE	
A or B	LANE ROAD CLOSURE	BEGIN DATE	LANE ROAD CLOSED	FOLLOW DETOUR	A or B



OFF-SITE DETOUR PLAN

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.

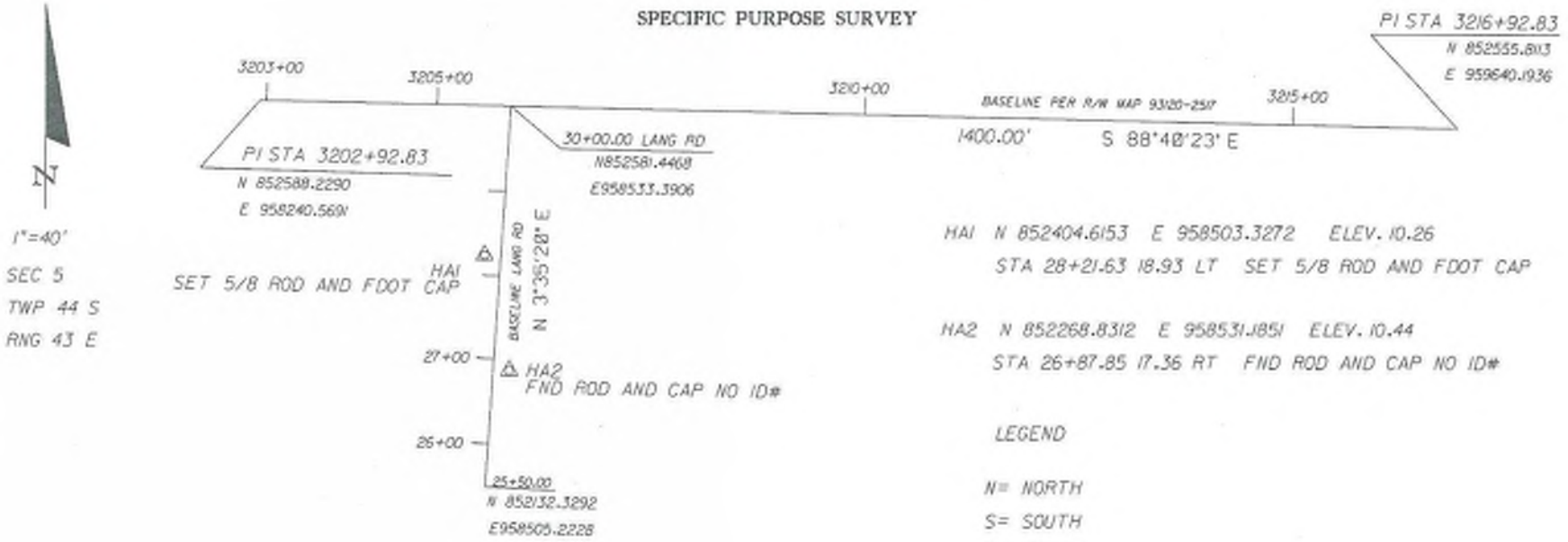
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	225965-4-32-01

TRAFFIC CONTROL PLANS

SHEET NO. 20

SPECIFIC PURPOSE SURVEY



1"=40'

SEC 5

TWP 44 S

RNG 43 E

HA1 N 852404.6153 E 958503.3272 ELEV. 10.26

STA 28+21.63 18.93 LT SET 5/8 ROD AND FDOT CAP

HA2 N 852268.8312 E 958531.1851 ELEV. 10.44

STA 26+87.85 17.36 RT FND ROD AND CAP NO ID#

LEGEND

N= NORTH

S= SOUTH

E= EAST

W= WEST

SR = STATE ROAD

R/W = RIGHT OF WAY

△ = ROD AND CAP

BASELINE PER R/W MAP 93120-2517

BASELINE NOT STAKED

RTK LOCALIZED HA 1 AND HA2 FROM 930476 AND NGS MF 41

930476 LAT 26°-40'-37.06294" LONG 80°-4'-54.54554"

MF41 LAT 26°-40'-39.67498" LONG 80°-6'-14.15607"

BEARINGS AND COORDINATES ARE RELATIVE TO THE STATE PLANE COORDINATES, FLORIDA EAST ZONE, NORTH AMERICAN DATUM (NAD) OF 1983/2007 ADJUSTMENT

A BEARING OF S 9°-35'-39" E HAS BEEN ESTABLISHED BETWEEN MONUMENTS

HA1 STAMPED N/A TO

HA2 STAMPED N/A

VERTICAL DATUM 1988 NAVD

PROJECT UNITS ENGLISH

FIELD BOOK REFERENCES N/A

ELECTRONIC DATABASE 0609.fbk

LIMITS: SR 80 AT LANG RD

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THIS SPECIFIC PURPOSE SURVEY WAS MADE FOR THE PURPOSE OF SURVEYING, REFERENCING, DESCRIBING AND MAPPING THE PRIMARY NETWORK CONTROL OR BASELINE FOR THE TRANSPORTATION FACILITY DEPICTED HEREON AND THAT SAID SURVEY WAS DONE UNDER MY RESPONSIBLE CHARGE AND MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 61G 17 FLORIDA ADMINISTRATIVE CODE PURSUANT TO SECTION 472.027 FLORIDA STATUTES. THIS MAP CONSISTING OF SHEETS CTL-1 THROUGH CTL-1 IS A TRUE, ACCURATE AND COMPLETE DEPICTION OF THE RESULTS OF A FIELD SURVEY PERFORMED UNDER MY DIRECTION AND COMPLETED ON JULY 22, 2009

SURVEYOR Paul E Doll PLS NUMBER 6726

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PAUL E DOLL
PSM 6726
FLORIDA DEPT OF TRANSPORTATION
3400 W COMMERCIAL BLVD
FT. LAUDERDALE, FL 33309

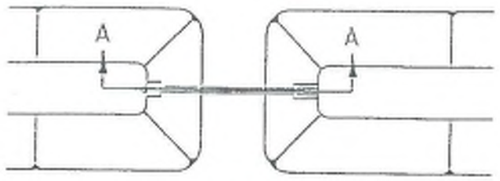
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	2518S5-1-52-01

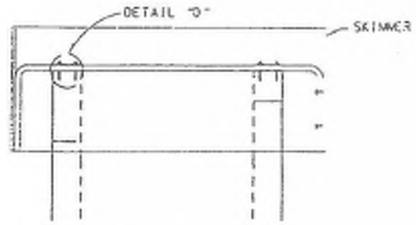
PROJECT SURVEY CONTROL
SPECIFIC PURPOSE SURVEY

SHEET NO. CTL-1

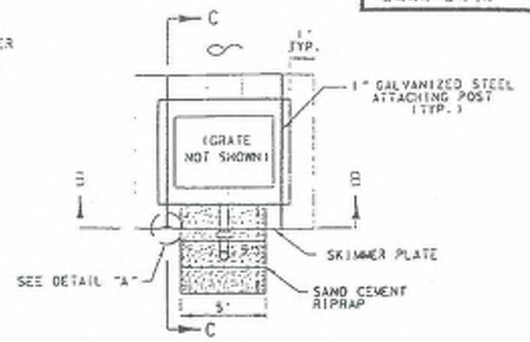
STATE PROJ. NO.	SHEET NO.
93220-3410	46



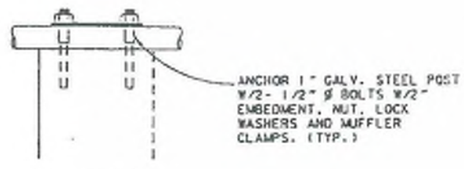
PLAN



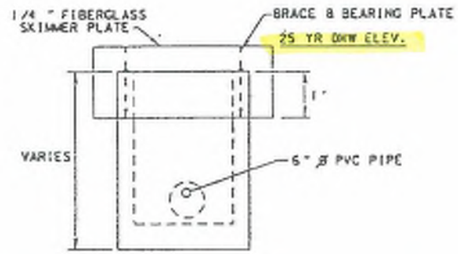
SECTION C-C



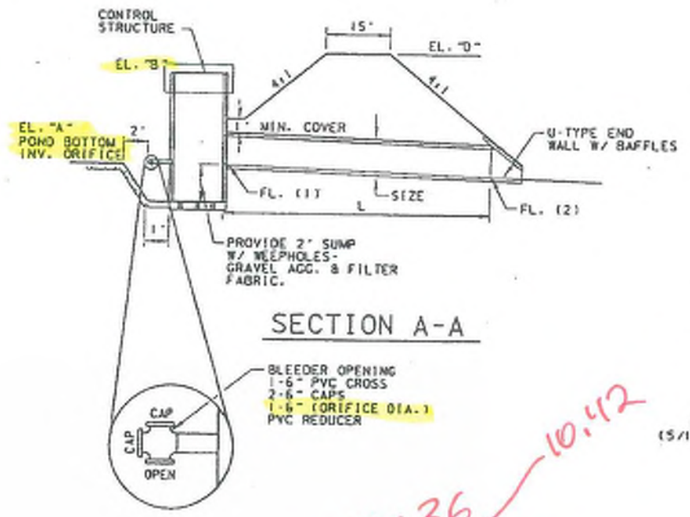
PLAN



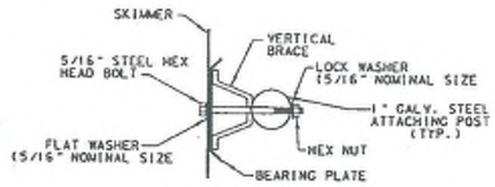
DETAIL "D"



SECTION B-B



SECTION A-A



SKIMMER ATTACHMENT DETAIL TO VERTICAL BRACE

DETAIL "A"

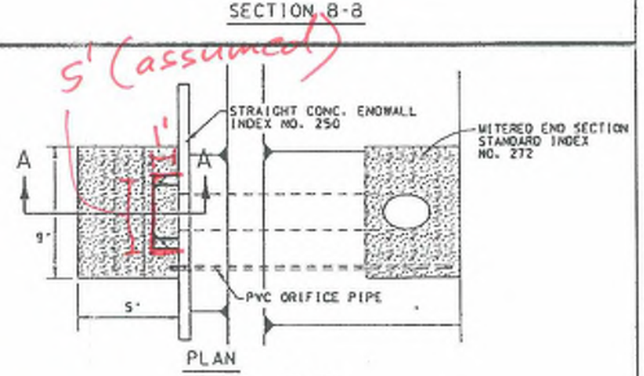
SWTF TYPE D & H (MODIFIED) CONTROL STRUCTURE (S-21A, S-40, S-41, S-53)

SWTF NO.	STR NO.	LOCATION	STR. TYPE	POND BOTTOM EL. "A"	INV. ORIF. EL. "A"	TOP EL. EL. "B"	TOP OF BANK EL. "D"	LENGTH OF PIPE "L"	SIZE OF PIPE DIA. (IN.)	SIZE OF MES INDEX 272	EL.FL.(1)	EL.FL.(2)	25 YR. DHW	ORIFICE DIA.
182	S-17	STA. 1264+00 RT.	TRAP. WEIR	9.5					SEE DETAIL				13.08	3.50
3	S-21A	STA. 1281+00 RT.	MOD. 232.TY.D	9.75	9.75	12.20	15.25	230**	30		8.5	7.5	14.30	2.75
4	S-18	STA. 1275+00 LT.	MOD. 250.E.W.	9.5	9.50	—	14.25	31	2@29"x45"	2@29"x45"	11.10	8.19	13.26	3.00
5	S-40	STA. 1299+00 RT.	MOD. 232.TY.H	10	10	13.30	16.10	52	30	30	10.08	8.0	15.10	2.75
6	S-39	STA. 1305+00 LT.	MOD. 250.E.W.	13	12	—	15.0	24	18	18	12.36	11.0	13.80	2.75
7	S-41	STA. 1307+00 LT.	MOD. 232.TY.D	11.7	11.7	12.75	15.0	42	30	30	8.50	8.35	14.15	3.75
8	S-53	STA. 1320+50 RT.	MOD. 232.TY.D	12.1	12.1	15.08		95**	24	24	12.11	11.86	15.45	4.375

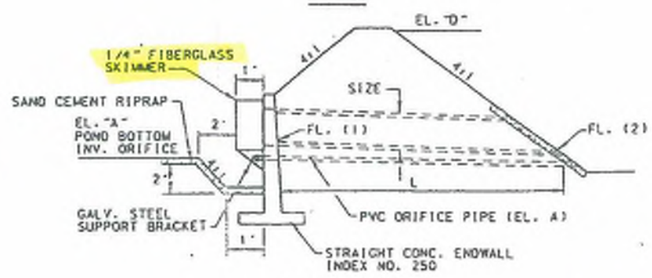
* - FURNISH 4" NOTCH @ EL. 14.0
** - EXISTING PIPE

NOTE: COST OF SKIMMERS, CONC. DITCH PAV'T, BRACKETS, PVC ORIFICE PIPE, AND ALL APPURTANCES TO BE INCLUDED IN THE CONTRACT UNIT PRICE OF THE ASSOCIATED STRCUTURE.

SCHEDULE OF CONTROL STRUCTURES



PLAN



SECTION A-A

SWTF ENDWALL CONTROL STRUCTURE (S-18, S-39)

DATE	BY	DESCRIPTION
9/30/98	JEM	2 REVISED INVERT

REVISIONS

NAME	DATE
DESIGNED BY JEM	4/95
DRAWN BY MKW	4/95
CHECKED BY OBL	5/95
CHECKED BY JEM	4/95
SUPERVISED BY: MARK A. OWEN, P.E.	

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY:
DATE:

DRAINAGE DETAILS
CONTROL STRUCTURES

h:\auxi\roadway\drdtrd01.dgn Apr. 04, 1998 16:22:53

STATE PROJ. NO.	SHEET NO.
95220-3440	14

CURVE 195CL1
PI Sta 1285-58.34
Δ - 21° 04' 09" (RT)
D - 0° 30' 00"
L - 4,213.84'
T - 2,130.99'
R - 11,459.16'
PC Sta 1264-27.35
PT Sta 1306-41.20
e - 0.0208 % (EXIST)

TRI-RAIL

STA. 1296-00 - END RETAINING WALL
BEGIN GUARDRAIL
BEGIN SHLDR. GUTTER

PROPOSED COUNT STATION (SEE SHEET NO. 24)

℄ R/W

BEGIN ℄ RAMP 'G'
STA. 305+00 ℄ RAMP 'G'
STA. 1305+00 ℄ SURVEY
I-95 192' LT.)

50'

REMOVE EXIST. DRAINAGE STRUCTURES, CAP EXIST PIPE SEE DRAINAGE STRUCTURE SHEET

CONST. DITCH BLOCK MATCHL. SER.

CONST. DITCH BLOCK MATCHED CURB SER.

PC +13.86

GUARDRAIL

S-32

SWTF NO.6

12 LF 8" PIPE

S-36

S-39

24 LF 18" PIPE

12 LF 30" PIPE

S-41

S-42B

SWTF NO.7

℄ RAMP 'G'

295 LF 18" PIPE

WIDENING
RESURFACING

TO BE PLUGGED

SHOULDER GUTTER

8' PAVED SHOULDER

RESET 275 LF DBL FACE GUARDRAIL (WITH RUB RAIL)

200 LF 24" PIPE

REMOVE 200 LF GUARDRAIL

1295

CURVE 195CL1

S-33

1300

℄ SURVEY & ℄ CONST. I-95

1305

S-29A

111 LF 30" PIPE

195 LF 24" RCP

S-35

S-42

N 09°56'35" E

PT +41.20

S-42A

95 LF 18" PIPE

TO BE REMOVED

REMOVE EXIST. DRAINAGE STRUCTURES CAP EXIST PIPE- SEE DRAINAGE STRUCTURE SHEET

STA. 1299-25
END RETAINING WALL
BEGIN GUARDRAIL
WITH SHLDR. GUTTER

RESET 400 LF DBL FACE GUARDRAIL (WITH RUB RAIL)

RESURFACING
WIDENING

12' PAVED SHLDR. (FULL DEPTH)

75, CONST. 400 LF GUARDRAIL (W/RUB RAIL) CONNECT TO EXIST. GUARDRAIL

CONST. 109 LF 24" PIPE

200 LF 53"x34" ELLIP.

195 LF 24" RCP

S-29

S-31

3'-53"x34" ELLIP.

S-33A

S-34

295 LF 24" PIPE

S-37

TO BE REMOVED

SWTF NO.5

52 LF 30" PIPE W/DROP CTL. STRUCTURE

S-40

EXIST. COUNT STATION

PROPOSED COUNT STATION (SEE SHEET NO. 24)

ERECT GUARDRAIL

SHOULDER GUTTER

8' PAVED SHLDR.

REMOVE EXIST. ENDWALL

9 LF 48" RCP

S-49A

S-48

195 LF 18" PIPE

℄ RAMP 'H'

S-49

195 LF 24" PIPE

CONST. DITCH BLOCK

-25

MANHOLE

CONST. SOUND BARRIER WALL NO. 17-ROW
STA 1289-95.85 TO STA 1299-89.67
(REFER TO STRUCTURES PLANS FOR DETAILS)

CONST. STD. GRAVITY WALL INDEX 520, SEE CONTROL DRAWING ON SHT. NO. 23

CURVE RG-1
PI Sta 311+47.13
Δ- 8° 38' 56" (LT)
D - 1° 00' 00"
L - 864.90'
T - 433.27'
R - 5,729.58'
PC Sta 307+13.86
PT Sta 315+78.76

BEGIN ℄ RAMP 'H'
STA. 307+00 ℄ RAMP 'H'
STA. 1307+00
℄ SURVEY (95(92° RT.)

NOTE: FOR STORM SEWER LOCATION AT SOUND BARRIER WALL NO. 17 ROW SEE SHEET NO. 23

-81.29

-47.64

366.35' SUPERELEVATION TRANSTION TO MATCH EXISTING TRANSITION ON SOUTHBOUND LANES. -0.0208 % (EXISTING) TO NORMAL CROWN

SE - -0.0208% ON SOUTHBOUND LANES
OUTSIDE SHOULDER AT -0.0492%

NORMAL CROWN FOR NORTHBOUND LANES

40
35
30
25
20
15
10

EXISTING GRADE SOUTH BOUND INSIDE E.O.P.

+00 SP. GUTTER LT. 19.10
-0.33%
+00 SP. GUTTER LT. 19.43
-0.30%
+00 SP. GUTTER LT. 19.13
-0.32%
-0.30%
+00 SP. GUTTER RT. 17.10
+00 SP GUTTER RT 16.80
CONST. MEDIAN DITCH BLK. 1' HEIGHT WITH 20:1 SLOPES
+00 SP GUTTER RT. 17.25
+00 SP GUTTER RT. 17.10
-0.30%
-0.30%
+00 SPECIAL DITCH ℄ 16.25
+00 SPECIAL DITCH ℄ 16.31

CONST. DITCH BLK. RT. TOP EL. 16.0
-0.49%
+40 O.P.I. RT. EL. 8.0
+00 O.P.I. LT. EL. 12.0
+50 SP. GUTTER RT 16.30
+50 SP. GUTTER RT 16.91
+00 SP. GUTTER RT. 16.46
CONST. DITCH BLK. LT. INV. EL. 15.0
48" RCP INV. 7.90 ℄
ONW 50-13.4
CONST. DITCH BLK. LT TOP EL. 15.0
+00 O.P.I. LT. EL. 12.0
+00 O.P.I. RT. EL. 9.5
+00 O.P.I. LT. EL. 7.7
+25 O.P.I. RT. EL. 10.0
0.00%
RT. DITCH
LT. DITCH
27.83
18.44

1295 6 7 8 9 1300 1 2 3 4 1305 6 7 8 9 1310

REVISIONS									
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
8/31/97	GL	⚠1 REVISED GUARDRAIL									
3/30/98	JEW	⚠2 ADDED STORM SEWER NOTE REVISED AT DITCH PROFILE									

DESIGNED BY	GAL	4/95	DRAWN BY	RPS	4/95
CHECKED BY	MAO	5/95	CHECKED BY	GAL	4/95
SUPERVISED BY:	MARK A. OWEN, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY:
DATE

RS+H
Reynolds, Smith and Hills Inc.
ARCHITECTURE, ENGINEERING AND PLANNING
JACKSONVILLE, FLORIDA

I-95 PLAN AND PROFILE
STA 1295+00 TO STA 1310+00

h:\aux\roadway\plprd01.dgn - Apr. 04, 1998 16:43:28

STATE PROJ. NO.	SHEET NO.
93220-3440	2

BEGIN PROJECT
STA. 1250+55.00
EL. 38.0

EXISTING
PROFILE GRADE I-95

50 YR. DHW 14.2

BEGIN BRIDGE
STA. 1287+71.38

END BRIDGE
STA. 1289+23.38

STA. 1300+00
EL. 19.0

SCALE: HORIZ. 1"=400'
VERT. 1"=20'

40 30 20 10

1240 1245 1250 1255 1260 1265 1270 1275 1280 1285 1290 1295 1300

SWTF NO. 4

SWTF NO. 3

SWTF NO. 5

SWTF NO. 1 & 2

BEGIN PROJECT
STA. 1250+55.00

FOREST HILL BLVD.

SUMMIT BLVD.

DREHER PARK

0.4 325 Ac.

INLET ①
18" RCP
TOP GRATE 14.84
N. INV. 11.59

INLET ②
TOP GRATE 15.42
S. INV. 18" RCP 11.18
W. INV. 24" RCP 10.02
W. INV OUTFALL, E.W. 10.00

INLET ③
TOP GRATE 34.72
W. INV. 18" RCP 32.91
W. INV. OUTFALL 14.35

INLET ④
TOP GRATE 34.62
E. INV. 15" CMP 31.04
E. INV. OUTFALL 11.40

24" RCP ⑤
W. INV. H.W. 10.31
E. INV. H.W. 9.59

INLET ⑥
TOP GRATE 26.38
E. INV. 18" RCP 23.44

INLET ⑦
TOP GRATE 26.61
W. INV. 18" RCP 22.58
E. INV. 15" CMP 22.33
E. INV. OUTFALL 11.52

INLET ⑧
TOP GRATE 19.68
E. INV. 18" RCP 16.50

INLET ⑨
TOP GRATE 19.38
W. INV. 18" RCP, 15.82
E. INV. 18" RCP 15.80

INLET ⑩
TOP GRATE 19.53
W. INV. 18" RCP 15.30
E. INV. 18" RCP 9.91
E. INV. OUTFALL N.W. 9.50

INLET ⑪
TOP GRATE 15.23
W. INV. 18" RCP 11.61
W. INV. OUTFALL 9.19

INLET ⑫
TOP GRATE 15.28
W. INV. 18" RCP 10.53
W. INV. N.W. 9.07

60" RCP ⑬
N.W. INV. 2.66, N.E. 3.67
W. INV. 2.65, E. INV. 3.30
S.W. INV. 2.62, S.E. INV. 3.71
MEDIAN INLET.
TOP OF GRATE 16.31

30" RCP ⑭
W. INV. H.W. 7.50
E. INV. H.W. 8.50

INLET ⑮
TOP GRATE 25.76
E. INV. 18" RCP 23.66

INLET ⑯
TOP GRATE 26.60
W. INV. 18" RCP 22.64
E. INV. 18" RCP 22.23
E. INV. OUTFALL 11.54

INLET ⑰
TOP GRATE 31.84
E. INV. 18" CMP, 28.12
(MISSING OUTFALL DATA)

INLET ⑱
TOP GRATE 31.78
E. INV. 18" CMP 28.32
E. INV. OUTFALL 9.62

INLET ⑲
TOP GRATE 25.58
E. INV. 18" RCP 22.93

INLET ⑳
TOP GRATE 26.01
W. INV. 18" RCP 22.47
E. INV. 18" RCP 22.14
E. INV. OUTFALL 9.64

REVISIONS							
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY	JEM	4/95	DRAWN BY	MKW	4/95
CHECKED BY	DBL	5/95	CHECKED BY	JEM	4/95
SUPERVISED BY :	MARK A. OWEN, P.E.				

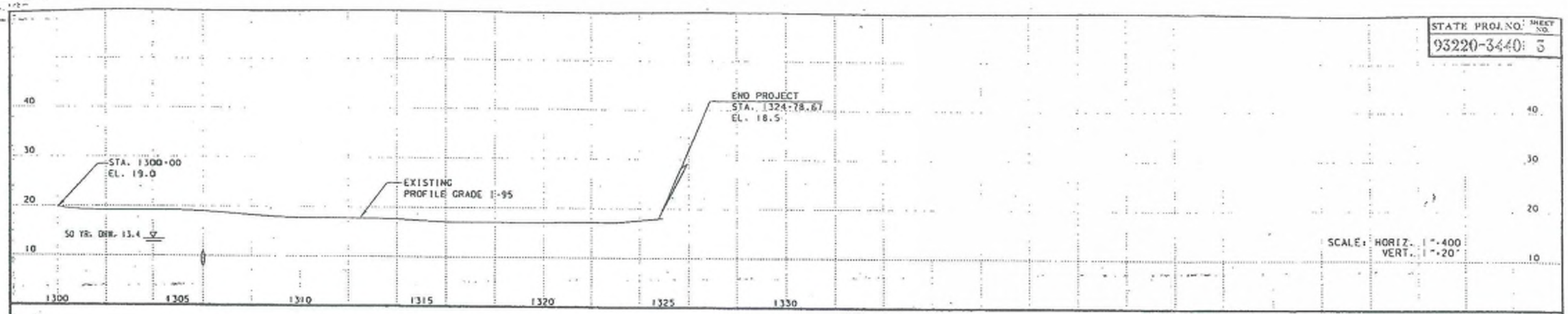
FLORIDA DEPARTMENT OF TRANSPORTATION

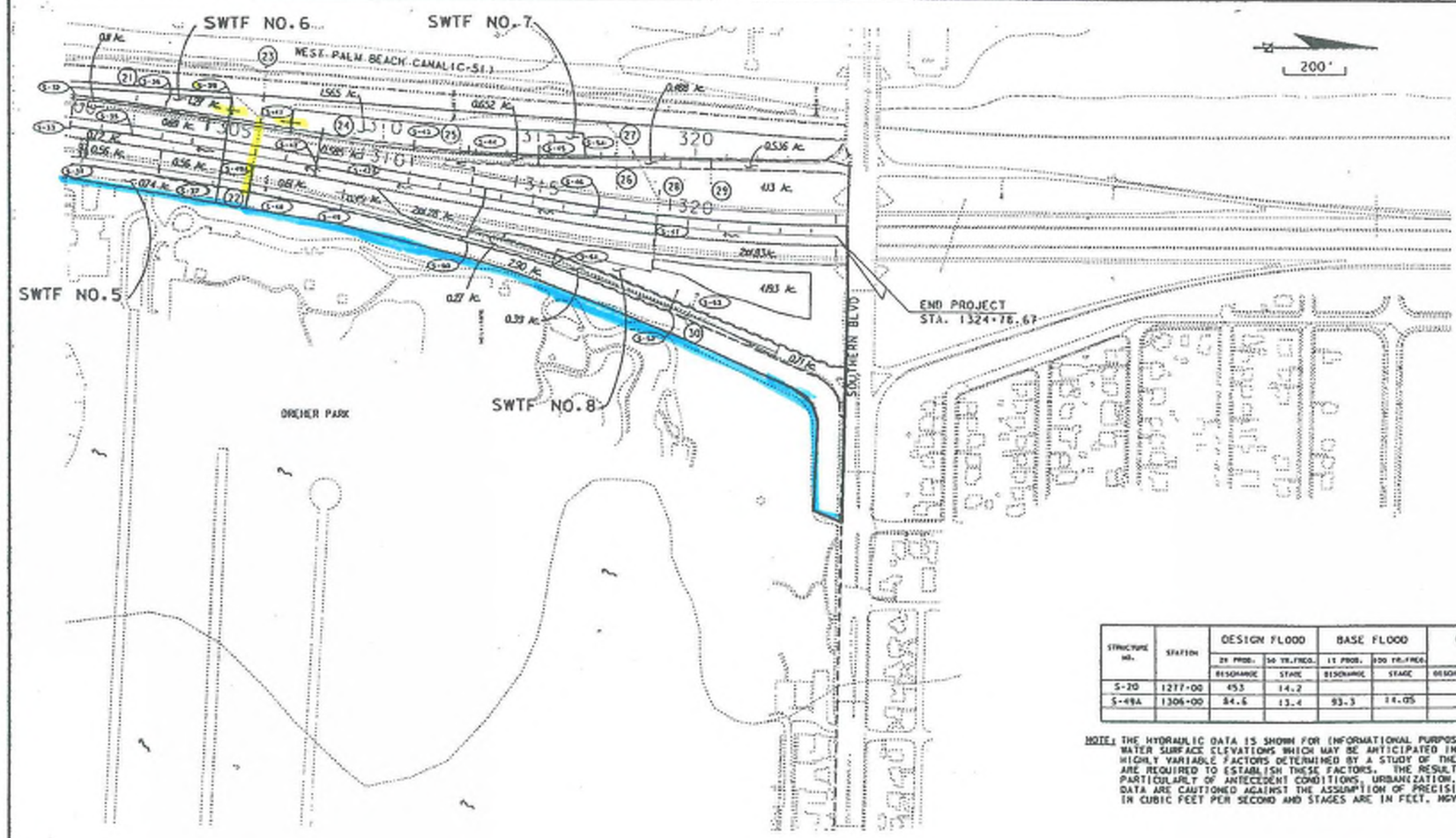
APPROVED BY :

DATE :

DRAINAGE MAP

Fileux -d- drnord02.dgn Jun. 24, 1996 08:38:07





INLET (21)
TOP GRATE 16.19
W. INV. 18" CMP 13.41
W. INV. OUTFALL 12.22

INLET (24)
TOP GRATE 16.31
W. INV. 18" CMP 12.86
W. INV. OUTFALL 8.29

INLET (27)
TOP GRATE 13.11
W. INV. 30" RCP 10.02
W. INV. HEAD WALL 9.59

(30)
24" RCP
W. INV 12.11
E. INV. 11.66

(22)
48" RCP
E. INV 8.00
W. INV. 7.80

INLET (25)
TOP GRATE 16.86
W. INV. 18" CMP 14.66
W. INV. OUTFALL 8.32

INLET (28)
TOP GRATE 16.43
W. INV 18" RCP 14.06
W. INV. OUTFALL 13.34

(23)
48" RCP
E. INV. 7.60
W. INV. 7.40

CB. (26)
INVERT EL. 25.24
W. INV. 18" CMP 22.22
W. INV. W. END WALL 8.95

INLET (29)
TOP GRATE 34.59
E. INV 18" RCP 31.14
E. INV. WING WALL 13.57

DEFINITIONS:

DESIGN FLOOD: THE FLOOD SELECTED BY F.D.O.T. TO BE UTILIZED TO ASSURE A STANDARD LEVEL OF HYDRAULIC PERFORMANCE.

BASE FLOOD: THE FLOOD HAVING A 1% CHANCE OF BEING EXCEEDED IN ANY YEAR. (100 YR. FREQUENCY)

OVERTOPPING FLOOD: THE FLOOD WHERE FLOW OCCURS (A) OVER THE HIGHWAY (B) OVER A WATERSHED DIVIDE OR (C) THRU EMERGENCY RELIEF STRUCTURES.

GREATEST FLOOD: THE MOST SEVERE FLOOD WHICH CAN BE PREDICTED WHERE OVERTOPPING IS NOT PRACTICABLE, NORMALLY ONE WITH A 0.2% CHANCE OF BEING EXCEEDED IN ANY YEAR. (500 YR. FREQUENCY)

STRUCTURE NO.	STATION	DESIGN FLOOD		BASE FLOOD		OVERTOPPING FLOOD				GREATEST FLOOD			
		25 PROB. DISCHARGE	50 YR. FREQ. STAGE	1% PROB. DISCHARGE	100 YR. FREQ. STAGE	DISCHARGE	STAGE	PROB. %	FREQ. YR.	DISCHARGE	STAGE	PROB. %	FREQ. YR.
S-20	1277+00	453	14.2										
S-49A	1306+00	84.6	13.4	93.3	14.05								

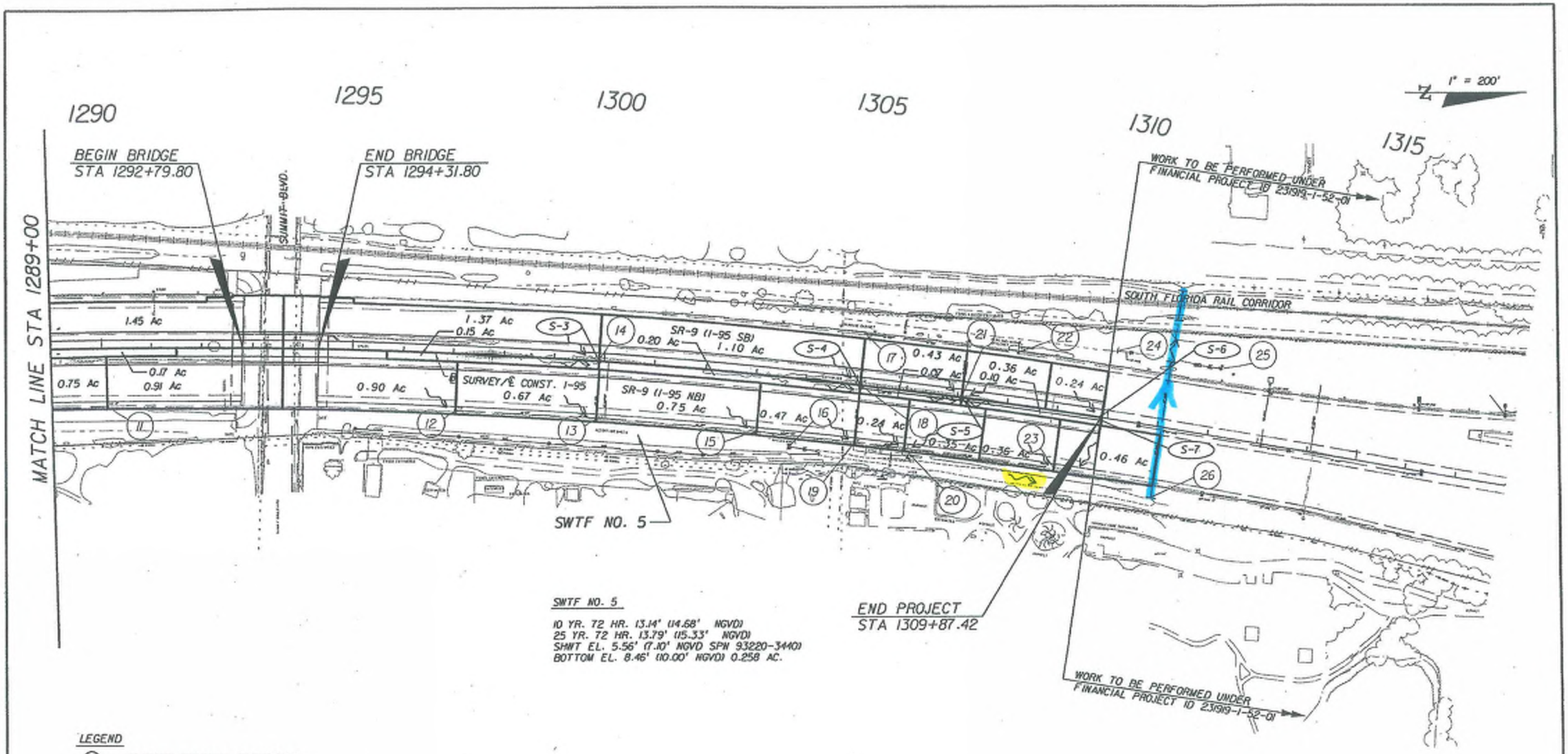
NOTE: THE HYDRAULIC DATA IS SHOWN FOR INFORMATIONAL PURPOSES ONLY, TO INDICATE THE FLOOD DISCHARGES AND WATER SURFACE ELEVATIONS WHICH MAY BE ANTICIPATED IN ANY GIVEN YEAR. THIS DATA WAS GENERATED USING HIGHLY VARIABLE FACTORS DETERMINED BY A STUDY OF THE WATERSHED. MANY JUDGEMENTS AND ASSUMPTIONS ARE REQUIRED TO ESTABLISH THESE FACTORS. THE RESULTANT HYDRAULIC DATA IS SENSITIVE TO CHANGES, PARTICULARLY OF ANTECEDENT CONDITIONS, URBANIZATION, CHANNELIZATION, AND LAND USE. USERS OF THIS DATA ARE CAUTIONED AGAINST THE ASSUMPTION OF PRECISION WHICH CAN NOT BE ATTAINED. DISCHARGES ARE IN CUBIC FEET PER SECOND AND STAGES ARE IN FEET, NGVD, 1929.

REVISIONS													
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		

	NAME	DATE		NAME	DATE
DESIGNED BY	JEM	4/95	DRAWN BY	MKW	4/95
CHECKED BY	DDB	5/95	CHECKED BY	JEM	4/95
SUPERVISED BY:	MARK A. OWEN, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY:
DATE:

DRAINAGE MAP



SWTF NO. 5

10 YR. 72 HR. 13.14' (14.68' NGVD)
25 YR. 72 HR. 13.79' (15.33' NGVD)
SHWT EL. 5.56' (7.10' NGVD SPN 93220-3440)
BOTTOM EL. 8.46' (10.00' NGVD) 0.258 AC.

LEGEND

- (X) EXISTING DRAINAGE STRUCTURE
- (S-X) PROPOSED DRAINAGE STRUCTURE
- DRAINAGE DIVIDE
- FLOW DIRECTION

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.

P. Schwab 2-20-03

0 100 200
Feet

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.
300 S. Pine Island Road, Suite 300
Plantation, Florida 33324-2019
954-474-3005
Phil Schwab, P.E.
P.E. No. 47555

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	PALM BEACH	23919-2-52-01

STATE ROAD 9
DRAINAGE MAP
STA 1289+00 TO STA 1309+87.42

SHEET NO. 3

(1) INLET STA. 1281+08.38, 114.46' RT.
GRATE EL. 13.71
FL. EL. 10.86 (S) - 24" PIPE

(2) INLET STA. 1281+57.74, 0.37' RT.
GRATE EL. 14.85
FL. EL. 2.73 (E & W) - 3-60" PIPE

(3) EW STA. 1281+56.88, 131.03' RT.
FL. EL. 1.77, 1.78, 1.73 - 3-60" PIPE

(4) EW STA. 1281+58.95, 133.59' LT.
FL. EL. 2.24, 2.29, 2.33 - 3-60" PIPE

(5) INLET STA. 1281+71.63, 101.95' LT.
GRATE EL. 17.25
FL. EL. 8.74 (SW) - 18" PIPE

(6) INLET 1284+08.26, 114.26' RT.
GRATE EL. 16.76
FL. EL. 8.32 (E) - 24" PIPE
FES STA. 1284+08.36, 115.79' RT.
FL. EL. 8.53 (W) - 24" PIPE

(7) CONTROL STR., PIPE, EW STA. 1286+09.33, 142.36' RT.
TOP EL. 10.66 (12.20 NGVD)
POND BOT EL. 8.21 (9.75 NGVD)
FL. EL. (1) 7.96 (9.50 NGVD) (W) - 30" PIPE
FL. EL. (2) 6.20 (7.74 NGVD) (E) - 30" PIPE

(8) INLET STA. 1287+08.83, 101.71' LT.
GRATE EL. 26.67
FL. EL. 13.78 (W) - 18" PIPE
FES STA. 1287+07.79, 121.69' LT.
FL. EL. 5.46 - 18" PIPE

(9) INLET STA. 1286+93.32, 4.19' LT.
GRATE EL. 24.16
FL. EL. 20.23 (E) - 24" PIPE

(10) INLET STA. 1286+88.76, 114.20' RT.
GRATE EL. 23.58
FL. EL. 20.64 (N) - 18" PIPE
FL. EL. 19.18 (W) - 24" PIPE
FL. EL. 12.74 (E) - 24" PIPE
FES STA. 1286+89.62, 149.40' RT.
FL. EL. 9.23 - 24" PIPE

(11) INLET STA. 1290+09.12, 114.97' RT.
GRATE EL. 29.23
FL. EL. 26.43 (S) - 18" PIPE

(12) INLET STA. 1297+07.95, 112.22' RT.
GRATE EL. 29.69
FL. EL. 24.45 (N) - 18" PIPE

(13) INLET STA. 1299+90.71, 111.57' RT.
GRATE EL. 24.01
FL. EL. 19.44 (S) - 18" PIPE
FL. EL. 19.48 (W) - 24" PIPE
FL. EL. 18.34 (N) - 24" PIPE

(14) INLET STA. 1299+89.37, 2.47' LT.
GRATE EL. 24.11
FL. EL. 21.60 (E) - 24" PIPE

(15) INLET STA. 1303+10.00, 112.11' RT.
GRATE EL. 17.24
FL. EL. 11.74 (S) - 24" PIPE
FL. EL. 8.56 (N) - 53"X34" PIPE
FL. EL. 8.46 (E) - 53"X34" PIPE

(16) CONTROL STR., PIPE, EW STA. 1303+78.59, 135.14' RT.
TOP EL 11.86 (13.40 NGVD)
POND BOT EL. 8.46 (10.00 NGVD)
FL. EL. (1) 8.29 (N) (9.83 NGVD) - 30" PIPE
EW FL. EL. (2) 7.42 (8.96 NGVD) - 30" PIPE

(17) INLET STA. 1305+07.80, 101.88' LT.
GRATE EL. 18.23
FL. EL. 14.36 (N) - 18" PIPE

(18) INLET STA. 1305+08.21, 0.89 LT.
GRATE EL. 14.80
FL. EL. 10.63 (N) - 30" PIPE
FL. EL. 10.57 (E) - 36" PIPE

(19) INLET STA.1305+08.23, 114.14' RT.
GRATE EL. 15.16
FL. EL. 9.90 (N) - 38"X24" PIPE
FL. EL. 9.06 (W) - 36" PIPE
FL. EL. 9.06 (S) - 53"X34" PIPE

(20) INLET STA. 1306+08.17, 113.82' RT.
GRATE EL. 14.85
FL. EL. 10.21 (S) - 38"X24" PIPE
FL. EL. 10.20 (N) - 24" PIPE

(21) INLET STA. 1307+08.55, 0.00' RT.
GRATE EL. 14.74
FL. EL. 11.31 (S) - 30" PIPE

(22) INLET STA. 1308+08.04, 102.31' LT.
GRATE EL. 17.44
FL. EL. 10.71 (S) - 18" PIPE
FES STA. 1308+07.89, 120.22' LT
FL EL. 10.46 (W) - 18" PIPE

(23) INLET STA. 1309+09.08, 113.81' RT.
GRATE EL. 14.73
FL. EL. 11.18 (S) - 24" PIPE

(24) CONTROL STR., PIPE, EW, MES
STA. 1310+01.46, 134.66' LT.
POND BOT EL. 10.46 (12.00 NGVD)
EW FL. EL. 11.15 (12.69 NGVD) - 15" PIPE
MES FL. EL. 10.50 (12.04 NGVD) - 15" PIPE

(25) CONTROL STR., PIPE, EW
STA. 1312+06.64, 132.73' LT.
POND BOT EL. 10.16 (11.70 NGVD)
FL. EL. 6.92 (8.46 NGVD) - 24" PIPE
EW FL. EL. 6.72 (8.26 NGVD) - 24" PIPE

(26) EW STA. 1311+08.94, 140.80' RT.
FL. EL. 6.23 - 42" PIPE

Phil Schwab 2-20-03

NOTE:

ALL STATIONS AND OFFSETS REFER TO THE I-95 BASELINE OF SURVEY.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
300 S. Pine Island Road, Suite 300
Plantation, Florida 33324-2619
954-474-3005
Phil Schwab, P.E.
P.E. No. 47555

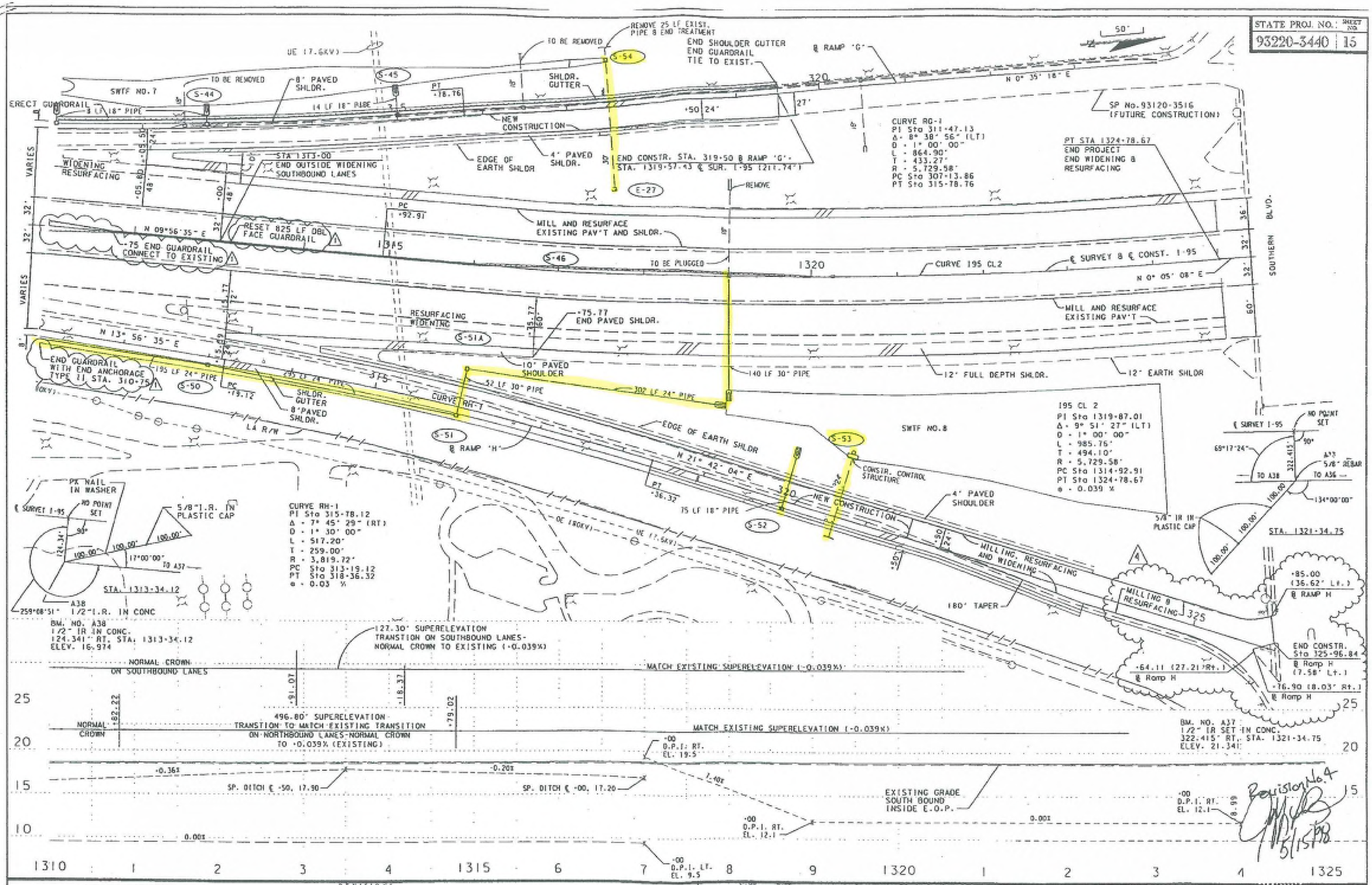
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	PALM BEACH	23191 9-2-52-01

STATE ROAD 9
EXISTING DRAINAGE STRUCTURES

SHEET NO. 4

STATE PROJ. NO.	SHEET NO.
93220-3440	15



REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
8/4/97	GL	⚠ REVISED GUARDRAIL									
5/15/98	GL	⚠ EXTENDED LIMITS OF MILLING AND RESURFACING OR RAMP H									

	NAME	DATE		NAME	DATE
DESIGNED BY	GAL	4/95	DRAWN BY	RPS	4/95
CHECKED BY	MAO	5/95	CHECKED BY	GAL	4/95
SUPERVISED BY	MARK A. OWEN, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY:

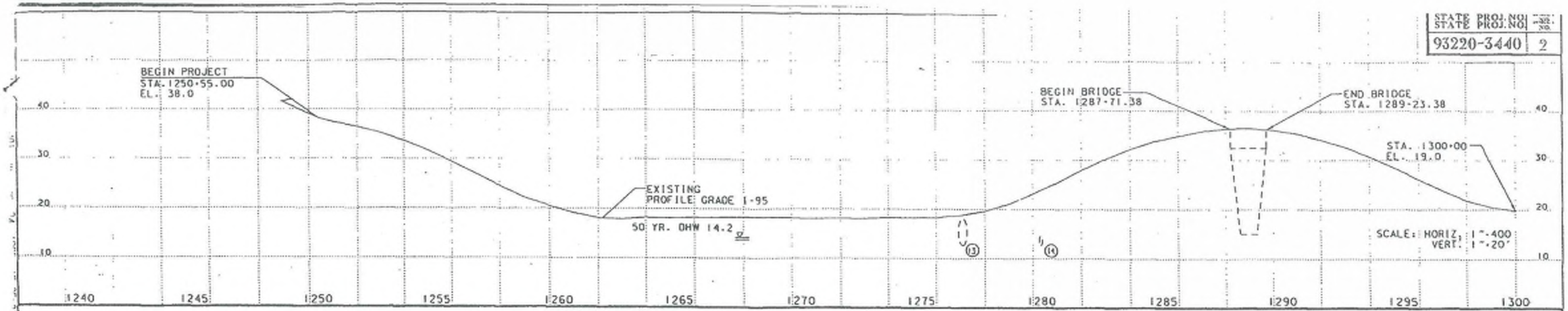
DATE:

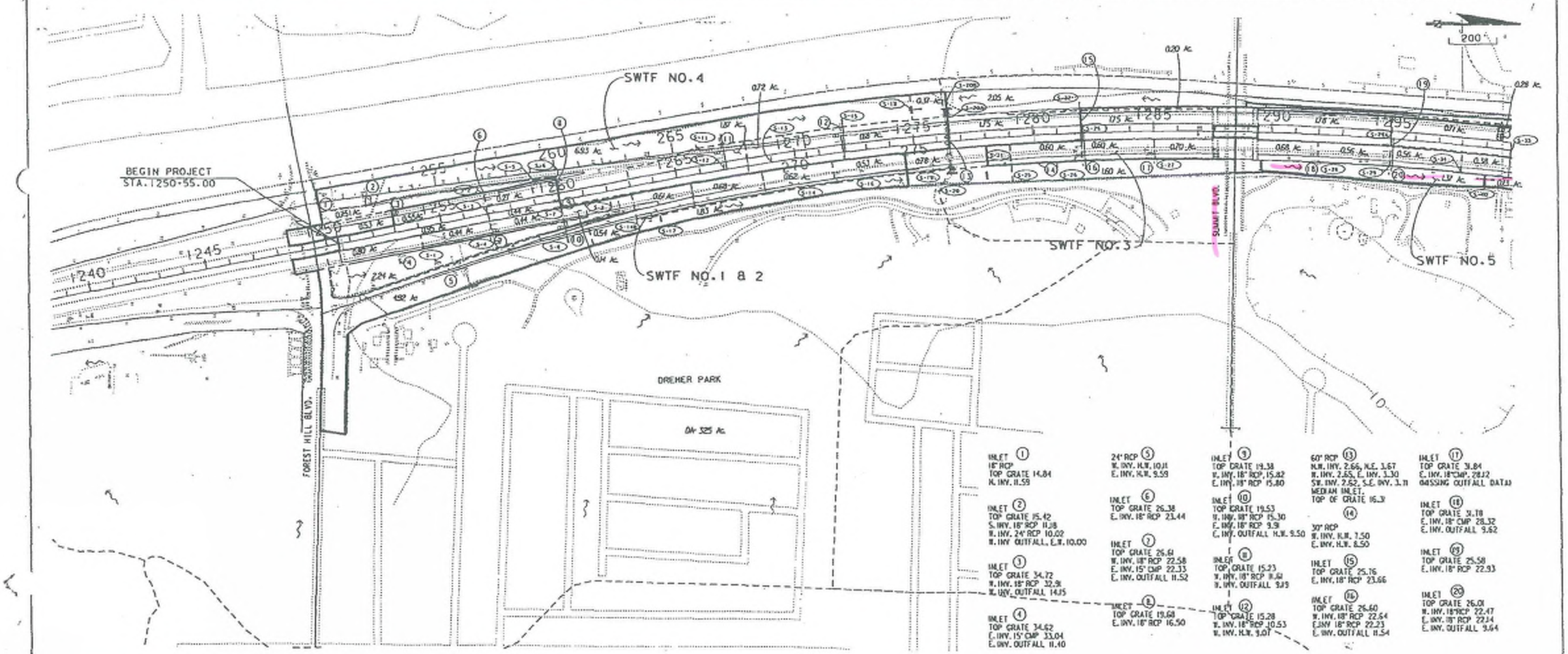
R&H
Reynolds, Smith and Hills Inc.
ARCHITECTURE, ENGINEERING AND PLANNING
JACKSONVILLE, FLORIDA

I-95 PLAN AND PROFILE
STA 1310+00 TO STA 1325+00

h:\aux1\roadway\plprrd02.dgn May 15, 1998 11:31:45

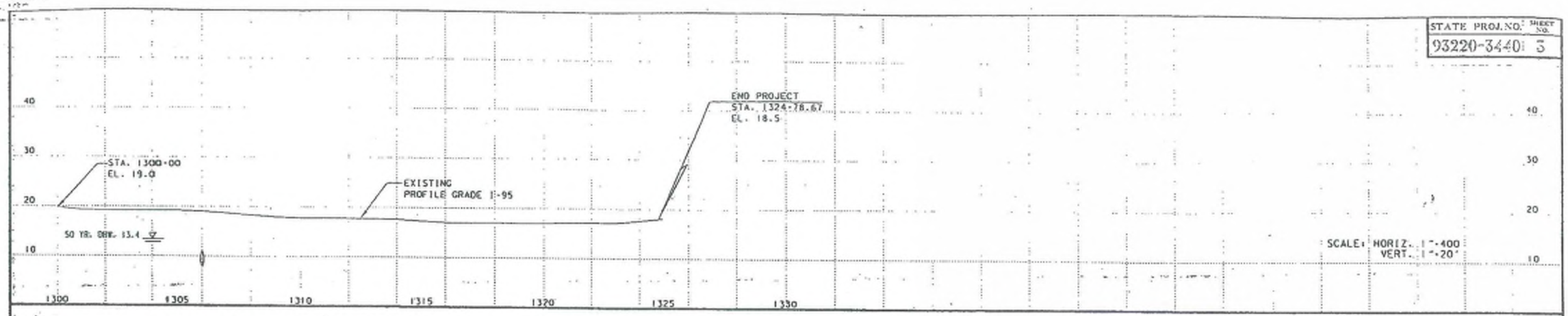
STATE PROJ. NO.	SHEET NO.
93220-3440	2

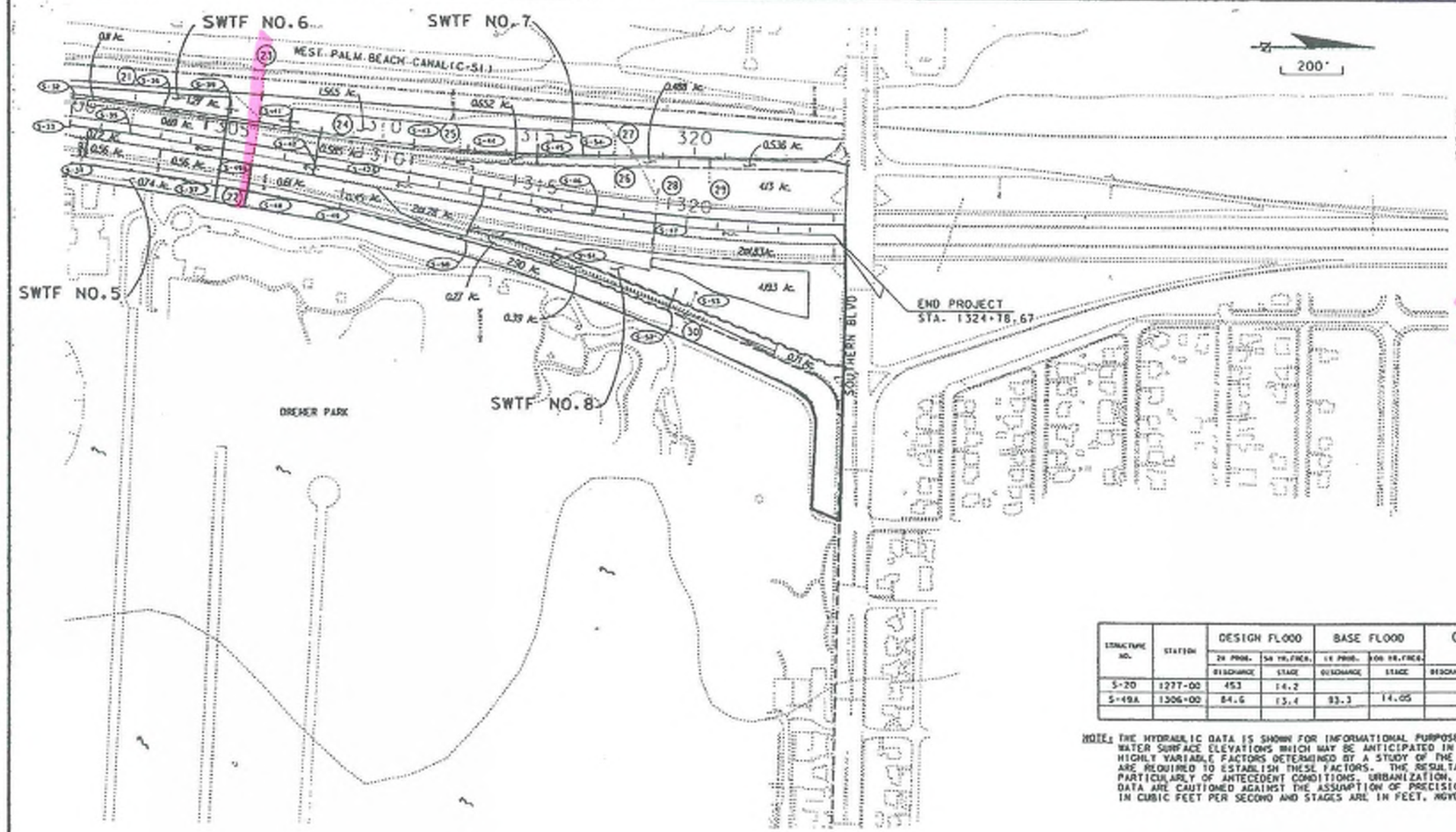



SWTF NO. 4
SWTF NO. 1 & 2
SWTF NO. 3
SWTF NO. 5
BEGIN PROJECT
STA. 1250+55.00
SUMMIT BLVD.
FOREST HILL BLVD.
DREHER PARK
0.72 Ac.
0.20 Ac.
0.28 Ac.
6.93 Ac.
2.05 Ac.
0.87 Ac.
0.75 Ac.
0.78 Ac.
0.60 Ac.
0.70 Ac.
0.68 Ac.
0.56 Ac.
0.58 Ac.
0.71 Ac.
0.51 Ac.
0.53 Ac.
0.55 Ac.
0.95 Ac.
0.44 Ac.
0.77 Ac.
0.84 Ac.
0.80 Ac.
0.69 Ac.
0.68 Ac.
0.62 Ac.
0.83 Ac.
0.54 Ac.
1.00 Ac.
2.24 Ac.
4.82 Ac.
0.84 Ac.
0.25 Ac.
0.60 Ac.
0.60 Ac.
1.60 Ac.
0.70 Ac.
0.68 Ac.
0.56 Ac.
0.56 Ac.
0.58 Ac.
0.71 Ac.
0.77 Ac.
0.28 Ac.
0.71

STATE PROJECT

STATE PROJ. NO. 93220-3440 | SHEET NO. 5





INLET (21)
TOP GRATE 16.19
W. INV. 18" CMP 13.41
W. INV. OUTFALL 12.22

(22)
48" RCP
E. INV 8.00
W. INV. 7.80

(23)
48" RCP
E. INV. 7.60
W. INV. 7.40

INLET (24)
TOP GRATE 16.31
E. INV. 18" CMP 12.86
W. INV. OUTFALL 8.29

INLET (25)
TOP GRATE 16.86
W. INV. 18" CMP 14.66
W. INV. OUTFALL 8.32

CB. (26)
THROAT EL. 25.24
W. INV. 18" CMP 22.22
W. INV. W. END WALL 8.95

INLET (27)
TOP GRATE 13.11
W. INV. 30" RCP 10.02
W. INV. HEAD WALL 9.59

INLET (28)
TOP GRATE 16.45
W. INV 18" RCP 14.06
W. INV. OUTFALL 13.34

INLET (29)
TOP GRATE 34.59
E. INV 18" RCP 31.14
E. INV. WING WALL 13.57

(30)
24" RCP
W. INV 12.11
E. INV. 11.66

DEFINITIONS:

DESIGN FLOOD: THE FLOOD SELECTED BY F.D.O.T. TO BE UTILIZED TO ASSURE A STANDARD LEVEL OF HYDRAULIC PERFORMANCE.

BASE FLOOD: THE FLOOD HAVING A 1% CHANCE OF BEING EXCEEDED IN ANY YEAR. (100 YR. FREQUENCY)

OVERTOPPING FLOOD: THE FLOOD WHERE FLOW OCCURS (A) OVER THE HIGHWAY (B) OVER A WATERSHED DIVIDE OR (C) THRU EMERGENCY RELIEF STRUCTURES.

GREATEST FLOOD: THE MOST SEVERE FLOOD WHICH CAN BE PREDICTED WHERE OVERTOPPING IS NOT PRACTICABLE, NORMALLY ONE WITH A 0.2% CHANCE OF BEING EXCEEDED IN ANY YEAR. (500 YR. FREQUENCY)

STRUCTURE NO.	STATION	DESIGN FLOOD		BASE FLOOD		OVERTOPPING FLOOD				GREATEST FLOOD			
		25 YRS.	50 YR. FREQ.	100 YRS.	500 YR. FREQ.								
		DISCHARGE	STAGE	DISCHARGE	STAGE	DISCHARGE	STAGE	FREQ. YRS.	FREQ. %	DISCHARGE	STAGE	FREQ. YRS.	FREQ. %
S-20	1277+00	453	14.2										
S-49A	1306+00	84.6	13.4	93.3	14.05								

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 OF ANTECEDENT CONDITIONS, URBANIZATION, CHANNELIZATION, AND LAND USE. USERS OF THIS DATA ARE CAUTIONED AGAINST THE ASSUMPTION OF PRECISION WHICH CAN NOT BE ATTAINED. DISCHARGES ARE IN CUBIC FEET PER SECOND AND STAGES ARE IN FEET, NGVD, 1929.

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY	JEM	4/95	DRAWN BY	MKW	4/95
CHECKED BY	DBL	5/95	CHECKED BY	JEM	4/95
SUPERVISED BY:	MARK A. OWEN, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY:

DATE:

DRAINAGE MAP

Plotted: dmgrd02.dgn Jun. 24, 1996 08:38:07

STATE PROJ. NO. 95220-3440 SHEET NO. 13

CURVE 195CL1
PI Sta 1285+58.34
Δ = 21° 04' 09" (RT)
D = 0° 30' 00"
L = 4,213.84'
T = 2,130.99'
R = 11,459.16'
PC Sta 1264+27.35
PT Sta 1306+41.20
e = 0.0208 ft/ft (EX-6%)

CONSTRUCT STD GRAVITY WALL, INDEX 520 SEE CONTROL DWG. ON SHT. NO. 22

STA. 1288+47.38 ℄ I-95
STA. 86+69.27 ℄ SUMMIT BLVD.

L/A R/W

SHOULDER GUTTER

8' PAVED SHOULDER

GUARDRAIL

END GUARDRAIL TIE TO BRIDGE PARAPET

TRI-RAIL

EXIST. SIDEWALK

STA 1288+92.01 BEGIN RETAINING WALL

10' PAVED SHLDR.

300' TAPER

VARIABLE WIDTH PAVED SHLDR. (FULL DEPTH)

RETAINING WALL

12' PAVED SHOULDER (FULL DEPTH)

WIDENING RESURFACING

BEGIN BRIDGE STA 1287+71.38

89°14'51" T.C.

END BRIDGE STA 1289+23.38

1280

1285

℄ SURVEY & ℄ CONST. I-95

1290

CURVE 195CL1

1295

S-22A

REMOVE EXIST. DRAINAGE STRUCTURES CAP EXIST PIPE-SEE DRAINAGE STRUCTURE SHEET

ABONDON 107 LF 24" RCP

12" PAVED SHOULDER (FULL DEPTH)

8' PAVED SHOULDER

96 LF 24" RCP

STRUCTURE TO BE REMOVED

RESURFACING WIDENING

1289+67.5 CONST. DITCH BLOCK

12' PAVED SHLDR. (FULL DEPTH)

10' PAVED SHLDR.

RESET 200 LF DBL FACE GUARDRAIL (WITH RUB RAIL)

109 LF 24" RCP

12 LF 30" RCP

35 LF 24" RCP W/FES

SHOULDER GUTTER

DROP CTR. STRUCTURE

S-21A

S-26

S-27

S-28

S-29

TO BE REMOVED

NO POINT SET

℄ SURVEY I-95

SWTF NO. 3

CONST. SOUND BARRIER WALL NO 17 SHLDR STA. 1286+00 TO STA 1292+00

A52 PK NAIL & ALUM PLATE

M NAIL & TAB

LA R/W

TO A51

TO A52

91°11'17"

104°18'51"

127°58'43"

250°46'53"

91°43'24"

218°03'31"

278°19'50"

STA. 1286+00 END GUARDRAIL TIE TO SOUND BARRIER WALL, END SHLDR. GUTTER

EXIST. SIDEWALK

ASPH.

SUMMIT BLVD.

STA 1288+89.00 BEGIN RETAINING WALL

CONST. SOUND BARRIER WALL NO 17 ROW (REFER TO STRUCTURES PLANS FOR DETAILS) STA. 1289+95.89 TO STA 1299+89.67

NOTE: FOR STORM SEWER LOCATION AT SOUND BARRIER WALL NO. 17 ROW SEE SHEET NO. 23

A51 PK NAIL & ALUM PLATE

DRILL HOLE IN CONC WALL

CONST. STD. GRAVITY WALL INDEX 520. SEE CONTROL DRAWING ON SHT. NO. 23

ABONDON

PK NAIL & ALUM PLATE

5/8" COPPER COATED IRON ROD & CAP

5/8" COPPER COATED IRON ROD & PLASTIC CAP (TYP.)

BM. NO. A52
P.K. NAIL & PLATE IN PAV'T.
76.032' RT. STA. 1281+72.97
ELEV. 25.784

STA. 1281+72.97

BM. NO. A51
P.K. NAIL & PLATE IN PAV'T.
73.021' RT. STA. 1287+55.23
ELEV. 34.855

BM. NO. A50
P.K. NAIL & PLATE IN PAV'T.
73.021' RT. STA. 1294+01.26
ELEV. ELEV. 29.03

STA. 1287+55.23

STA. 1294+01.25

SE = -0.0208% ON SOUTHBOUND LANES OUTSIDE 8' SHOULDER AT -0.0492%

160' OUTSIDE SHLDR. CROSS SLOPE TRANSITION -0.0492% TO -0.0208%

160' PAV'T. CROSS SLOPE TRANSITION NORMAL CROWN TO -0.0208%

TRANSITION INSIDE & OUTSIDE SHOULDERS TO 0.0208%

MATCH BRIDGE CROSS SLOPE -0.0208%

160' OUTSIDE SHLDR. CROSS SLOPE TRANSITION -0.0208% TO -0.0492%

160' PAV'T. CROSS SLOPE TRANSITION NORMAL CROWN TO -0.0208%

TRANSITION INSIDE & OUTSIDE SHOULDERS FROM 0.0208% TO NORMAL CROWN

SE = -0.0208% ON SOUTHBOUND LANES OUTSIDE 10' SHOULDER AT -0.0492%

NORMAL CROWN FOR NORTHBOUND LANES

NORMAL CROWN FOR NORTHBOUND LANES

SUMMIT BLVD.

BEGIN BRIDGE STA 1287+71.38

END BRIDGE STA 1289+23.38

EXISTING GRADE SOUTH BOUND INSIDE E.O.P.

15'-9 7/8" MIN. VERT. CLEARANCE

-00 P.I. RT. EL. 12.2

-00 P.I. RT. EL. 9.75

-00 P.I. RT. EL. 10.0

-1.35%

0.00%

RT. DITCH

22.78

27.83

40 35 30 25 20 15 10

1280 1 2 3 4 1285 6 7 8 9 1290 1 2 3 4 1295

DATE	BY	DESCRIPTION
1/30/98	JCH	ADDED STORM SEWER NOTE

REVISIONS

	NAME	DATE
DESIGNED BY	GAL	4/95
DRAWN BY	RPS	4/95
CHECKED BY	MAO	5/95
CHECKED BY	MAO	4/95
SUPERVISED BY:	MARK A. OWEN, P.E.	

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY:
DATE:

RS&H
Reynolds, Smith and Hills, Inc.
ARCHITECTURE, ENGINEERING AND PLANNING
JACKSONVILLE, FLORIDA

I-95 PLAN AND PROFILE
STA 1280+00 TO STA 1295+00

h:\auxi\roadway\0]orrd01.dgn : Apr 04, 1998 16:44:17

STATE PROJ. NO.	SHEET NO.
95220-3440	14

CURVE 195CL1
PI Sta 1285-58.34
Δ - 21° 04' 09" (RT)
D - 0° 30' 00"
L - 4,213.84'
T - 2,130.99'
R - 11,459.16'
PC Sta 1264-27.35
PT Sta 1306-41.20
e - 0.0208 % (EXIST)

TRI-RAIL

STA. 1296-00 - END RETAINING WALL
BEGIN GUARDRAIL
BEGIN SHLDR. GUTTER

PROPOSED COUNT STATION (SEE SHEET NO. 24)

LA R/W

GUARDRAIL

SHOULDER GUTTER

8' PAVED SHOULDER

SWTF NO.6

12 LF 30" PIPE

295 LF 18" PIPE

WIDENING
RESURFACING

TO BE PLUGGED

CURVE 195CL1

℄ SURVEY & ℄ CONST. I-95

111 LF 30" PIPE

195 LF 24" RCP

RESET 400 LF DBL FACE GUARDRAIL (WITH RUB RAIL)

RESURFACING
WIDENING

12' PAVED SHLDR. (FULL DEPTH)

REMOVE EXIST. DRAINAGE STRUCTURES CAP EXIST PIPE SEE DRAINAGE STRUCTURE SHEET

STA. 1299-25
END RETAINING WALL
BEGIN GUARDRAIL
WITH SHLDR. GUTTER

CONST. 109 LF 24" PIPE

200 LF 53"x34" ELLIP.

295 LF 24" RCP

3'-53"x34" ELLIP.

LF 30" PIPE W/DROP CTL. STRUCTURE

TO BE REMOVED SWTF NO.5

195 LF 38"x24" ELLIP.

295 LF 24" PIPE

EXIST. COUNT STATION

PROPOSED COUNT STATION (SEE SHEET NO. 24)

ERECT GUARDRAIL

SHOULDER GUTTER

8' PAVED SHLDR.

CONST. DITCH BLOCK

CONST. SOUND BARRIER WALL NO. 17-ROW
STA 1289-95.85 TO STA 1299-89.67
(REFER TO STRUCTURES PLANS FOR DETAILS)

CONST. STD. GRAVITY WALL (INDEX 520, SEE CONTROL DRAWING ON SHT. NO. 23

CURVE RG-1
PI Sta 311-47.13
Δ- 8° 38' 56" (LT)
D - 1° 00' 00"
L - 864.90'
T - 433.27'
R - 5,729.58'
PC Sta 307-13.86
PT Sta 315-78.76

BEGIN ℄ RAMP "G"
STA. 305-00 ℄ RAMP "G"
STA. 1305-00 ℄ SURVEY
I-95 (92° LT.)

CONST. DITCH BLOCK W/CTRL. STR.

74 LF 18" PIPE

42 LF 30" PIPE

CONST. DITCH BLOCK W/CROSS CTRL STR.

PC -13.86

REMOVE EXIST. DRAINAGE STRUCTURES CAP EXIST PIPE SEE DRAINAGE STRUCTURE SHEET

SWTF NO.7

℄ RAMP "G"

12 LF 24" PIPE

RESET 275 LF DBL FACE GUARDRAIL (WITH RUB RAIL)

200 LF 24" PIPE

REMOVE 200 LF GUARDRAIL

PT -41.20

N 09°56'35" E

95 LF 18" PIPE

TO BE REMOVED

75. CONST. 400 LF GUARDRAIL (W/RUB RAIL) CONNECT TO EXIST GUARDRAIL

REMOVE EXIST. ENDWALL

9 LF 48" RCP

195 LF 18" PIPE

℄ RAMP "H"

N 13° 56' 35" E

195 LF 24" PIPE

BEGIN ℄ RAMP "H"
STA. 307-00 ℄ RAMP "H"
STA. 1307-00
℄ SURVEY (95(92° RT.)

NOTE: FOR STORM SEWER LOCATION AT SOUND BARRIER WALL NO. 17 ROW SEE SHEET NO. 23

SE - -0.0208% ON SOUTHBOUND LANES
OUTSIDE SHOULDER AT -0.0492%

366.35' SUPERELEVATION TRANSITION TO MATCH EXISTING TRANSITION ON SOUTHBOUND LANES, -0.0208 % (EXISTING) TO NORMAL CROWN

NORMAL CROWN FOR NORTHBOUND LANES

-81.23

-47.64

27.83

18.44

0.00%

RT. DITCH

-25 D.P.I. RT. EL. 10.0

CONST. DITCH BLK. RT. TOP EL. 16.0

-00 D.P.I. RT. EL. 8.0

-00 D.P.I. LT. EL. 12.0

-00 SP. GUTTER LT. 19.10

-00 SP. GUTTER LT. 19.43

-00 SP. GUTTER LT. 19.13

-0.33%

-0.30%

-0.32%

-0.49%

-00 SP. GUTTER RT 16.30

-50 SP. GUTTER RT 16.91

-00 SP. GUTTER RT. 16.46

CONST. DITCH BLK. LT. INV. EL. 15.0

48" RCP INV. 7.90

EXISTING GRADE SOUTH BOUND INSIDE E.O.P.

-00 SP. GUTTER RT. 17.10

-00 SP GUTTER RT 16.80

CONST. MEDIAN DITCH BLK. 1' HEIGHT WITH 20:1 SLOPES

-00 SP GUTTER RT 17.25

-00 SP GUTTER RT. 17.10

-00 SPECIAL DITCH ℄ 16.25

-00 SPECIAL DITCH ℄ 16.31

INV 50-13.4

CONST. DITCH BLK. LT TOP EL. 15.0

-00 D.P.I. RT. EL. 9.5

-00 D.P.I. LT. EL. 7.7

LT. DITCH

-00 D.P.I. RT. EL. 8.0

1295 6 7 8 9 1300 1 2 3 4 1305 6 7 8 9 1310

DATE	BY	DESCRIPTION
8/31/98	GL	⚠2 REVISED GUARDRAIL
1/30/98	JEW	⚠1 ADDED STORM SEWER NOTE
		⚠ REVISED RT. DITCH PROFILE

REVISIONS

	NAME	DATE		NAME	DATE
DESIGNED BY	GAL	4/95	DRAWN BY	RPS	4/95
CHECKED BY	MAO	5/95	CHECKED BY	GAL	4/95
SUPERVISED BY:	MARK A. OWEN, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY:
DATE:

RS&H
Reynolds, Smith and Hills Inc.
ARCHITECTURE, ENGINEERING AND PLANNING
JACKSONVILLE, FLORIDA

I-95 PLAN AND PROFILE
STA 1295-00 TO STA 1310-00

h:\aux\roadway\plprd01.dgn - Apr 04, 1998 16:43:28

STATE PROJ. NO.	SHEET NO.
93220-3440	15

UE (7.6KV)
REMOVE 25 LF EXIST. PIPE & END TREATMENT
TO BE REMOVED
S-54
END SHOULDER GUTTER
END GUARDRAIL
TIE TO EXIST.
℄ RAMP 'G'
50'
SWTF NO.7
TO BE REMOVED
S-44
S-45
8' PAVED SHLDR.
SHLDR. GUTTER
PI 78.76
120
N 0° 35' 18" E
ERECT GUARDRAIL
3 LF 18" PIPE
14 LF 18" PIPE
NEW CONSTRUCTION
50
24'
27'
SP No.93120-3516
(FUTURE CONSTRUCTION)
CURVE RG-1
PI Sta 311+47.13
Δ = 8° 38' 56" (LT)
D = 1° 00' 00"
L = 864.90'
T = 433.27'
R = 5,729.58'
PC Sta 307+13.86
PT Sta 315+78.76
PT STA 1324+78.67
END PROJECT
END WIDENING &
RESURFACING
VARIES
WIDENING
RESURFACING
STA 1313+00
END OUTSIDE WIDENING
SOUTHBOUND LANES
EDGE OF EARTH SHLDR
4' PAVED SHLDR.
END CONSTR. STA. 319+50 ℄ RAMP 'G'.
STA. 1319+57.43 ℄ SUR. I-95 (211.74')
E-27
REMOVE
PC 92.91
MILL AND RESURFACE
EXISTING PAV'T AND SHLDR.
N 09°36'35" E
RESET 825 LF DBL FACE GUARDRAIL
75 END GUARDRAIL
CONNECT TO EXISTING
1315
S-46
TO BE PLUGGED
1320
CURVE 195 CL2
℄ SURVEY & ℄ CONST. I-95
N 0° 05' 08" E
SOUTHERN BLVD.
MILL AND RESURFACE
EXISTING PAV'T
RESURFACING
WIDENING
S-51A
75.77
END PAVED SHLDR.
N 13° 56' 35" E
END GUARDRAIL
WITH END ANCHORAGE
TYPE II STA. 310+75
155 LF 24" PIPE
PC 19.12
S-50
232 LF 24" PIPE
SHLDR. GUTTER
8' PAVED SHLDR.
315
CURVE RH-1
10" PAVED SHOULDER
52 LF 30" PIPE
302 LF 24" PIPE
140 LF 30" PIPE
12' FULL DEPTH SHLDR.
12' EARTH SHLDR
LA R/W
S-51
℄ RAMP 'H'
EDGE OF EARTH SHLDR
N 21° 42' 04" E
SWTF NO.8
S-53
CONSTR. CONTROL STRUCTURE
195 CL 2
PI Sta 1319+87.01
Δ = 9° 51' 27" (LT)
D = 1° 00' 00"
L = 985.76'
T = 494.10'
R = 5,729.58'
PC Sta 1314+92.91
PT Sta 1324+78.67
e = 0.039 %
℄ SURVEY I-95
NO POINT SET
69°17'24"
90°
A37
5/8" REBAR
TO A38
TO A36
322.415'
100.00'
134°00'00"
5/8" IR SR PLASTIC CAP
STA. 1321+34.75
PK NAIL IN WASHER
℄ SURVEY I-95
NO POINT SET
5/8"I.R. IN PLASTIC CAP
124.34'
90°
100.00'
100.00'
100.00'
17°00'00"
TO A37
STA. 1313+34.12
A38
259°08'51"
1/2"I.R. IN CONC
CURVE RH-1
PI Sta 315+78.12
Δ = 7° 45' 29" (RT)
D = 1° 30' 00"
L = 517.20'
T = 259.00'
R = 3,819.72'
PC Sta 313+19.12
PT Sta 318+36.32
e = 0.03 %
4' PAVED SHOULDER
MILLING, RESURFACING AND WIDENING
180' TAPER
4
MILLING & RESURFACING
325
85.00
(36.62' Lt.)
℄ RAMP H
END CONSTR.
Sta 325+96.84
℄ Ramp H
(7.58' Lt.)
64.11 (27.21' Rt.)
℄ Ramp H
76.90 (8.03' Rt.)
℄ Ramp H
BM. NO. A38
1/2" IR IN CONC.
124.34' RT. STA. 1313+34.12
ELEV. 16.974
127.30' SUPERELEVATION
TRANSTION ON SOUTHBOUND LANES-
NORMAL CROWN TO EXISTING (-0.039%)
NORMAL CROWN
ON SOUTHBOUND LANES
MATCH EXISTING SUPERELEVATION (-0.039%)
91.07
18.37
82.22
79.02
NORMAL CROWN
496.80' SUPERELEVATION
TRANSITION TO MATCH EXISTING TRANSITION
ON NORTHBOUND LANES-NORMAL CROWN
TO -0.039% (EXISTING)
MATCH EXISTING SUPERELEVATION (-0.039%)
BM. NO. A37
1/2" IR SET IN CONC.
322.415' RT. STA. 1321+34.75
ELEV. 21.341
25
20
15
10
5
-00
O.P.I. RT.
EL. 19.5
-00
O.P.I. RT.
EL. 12.1
-00
O.P.I. LT.
EL. 9.5
-0.36%
-0.20%
7.40%
0.00%
SP. DITCH ℄ 50, 17.90
SP. DITCH ℄ 00, 17.20
EXISTING GRADE
SOUTH BOUND
INSIDE E.O.P.
8.99
1310
1
2
3
4
1315
6
7
8
9
1320
1
2
3
4
1325

Revision No.4
5/15/98

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
8/1/97	GL	⚠1 REVISED GUARDRAIL									
5/15/98	GL	⚠4 EXTENDED LIMITS OF MILLING AND RESURFACING ON RAMP H.									

	NAME	DATE		NAME	DATE
DESIGNED BY:	GAL	4/95	DRAWN BY:	RPS	4/95
CHECKED BY:	MAO	5/95	CHECKED BY:	GAL	4/95
SUPERVISED BY:	MARK A. OWEN, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY:
DATE:

RS+H
Reynolds, Smith and Hills Inc.
ARCHITECTURE, ENGINEERING AND PLANNING
JACKSONVILLE, FLORIDA

I-95 PLAN AND PROFILE
STA 1310+00 TO STA 1325+00

h:\auxi\roadway\plprrd02.dgn May. 15, 1998 11:31:45

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	48

1:1000

TRI-RAIL

LA R/W

SR-9 (I-95 SB)

397 398 399 400

℄ SURVEY & ℄ CONST. I-95

N 9° 56' 36" E

MATCH LINE STA 396+25.000

9.754 0.973 13.411 ±34.080

SR-9 (I-95 NB)

MILLING & RESURFACING

±89.659

VARIES

LA R/W

MATCH LINE STA 400+00.000

NOTE:

MILLING AND RESURFACING BETWEEN STA 390+50.000 AND STA 400+20.240 SHALL NOT BE COMPLETED UNTIL I-95 AND ASSOCIATED RAMPS ARE READY FOR FRICTION COURSE.

1-28-99

0 5 20
METERS

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RS+H
Reynolds, Smith and Hills, Inc.
Architecture, Engineering and Planning
Jacksonville, Florida

FLORIDA DEPARTMENT OF TRANSPORTATION

STATE ROAD 9
PLAN SHEET
STA 396+25 TO STA 400+00

.../t/auxi/plnaux05.dgn Jan. 28, 1999 19:34:16

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	49

1:1000

BEGIN PROJECT
BEGIN WIDENING
BEGIN MILLING & RESURFACING (SB LANES)
STA. 400+20.240

MATCHLINE STA 400+00.000

MATCHLINE STA 403+75.000

TRI-RAIL

LA R/W

BEGIN SHLDR. GUTTER
+20.240

+24.240
24.154 (LT)

+15.211
27.754 (LT)

2.4 PAVED SHOULDER

END SHLDR. GUTTER
+70.000

+20.240
10.973

+20.240
8.535 (LT)

+70.000
(6.754 LT.)

+15.211
14.4

N 9° 56' 36" E

SAWCUT LINE

SR-9 (I-95 SB)

3.6 FULL DEPTH PAVED SHOULDER

WIDENING

MILL & RESURFACE

+20.240
8.535 (RT)

+70.000
6.754 (RT)

9.754

10.973

VARIES

+60.479
20.485

PC +79.034

℄ SURVEY & ℄ CONST. I-95

+34.775
19.288

RESET OBJ. FACE GUARDRAIL

CURVE 1

WIDENING

MILL & RESURFACE

3.0 FULL DEPTH PAVED SHOULDER

SAWCUT LINE

SR-9 (I-95 NB)

END ANCHORAGE ASSEMBLY TYPE SRT-350

45.72m GUARDRAIL

LIMITS OF MILLING & RESURFACING
+58.885 (46.450 RT)

NOTE:

MILLING AND RESURFACING BETWEEN STA 390+50.000 AND STA 400+20.240 SHALL NOT BE COMPLETED UNTIL I-95 AND ASSOCIATED RAMPS ARE READY FOR FRICTION COURSE.

LA R/W

LEGEND
- FULL DEPTH PAVED SHOULDER
- PAVED SHOULDER

0 5 20
METERS

Jan N. Biava, PE
License No. 50700
Date: 10/04/01
Reynolds, Smith & Hills, Inc.
300 South Pine Island Road, Suite 300
Plantation, Florida 33324
Office: (954) 474-3000 Fax: (954) 474-1304

REVISIONS

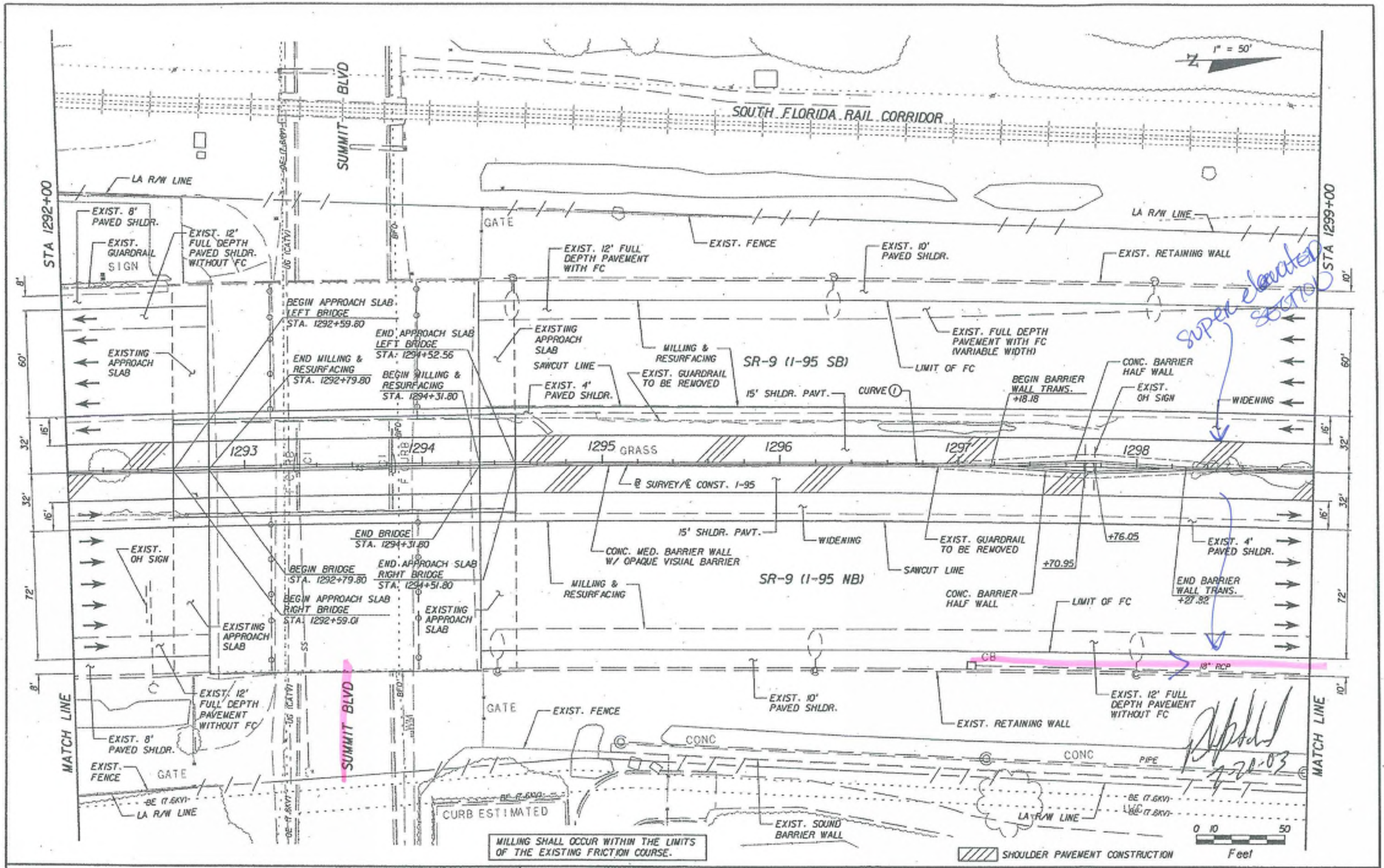
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
10/04/01	BW	⚠ REVISED SHOULDER TRANSITION									

RS+H
Reynolds, Smith and Hills, Inc.
Architecture, Engineering and Planning
Plantation, Florida

FLORIDA DEPARTMENT OF TRANSPORTATION

STATE ROAD 9
PLAN SHEET
STA 400+00 TO STA 403+75

.../t/roadway/planrd01.dgn Oct. 04, 2001 13:33:02



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
300 S. Pine Island Road, Suite 300
Plantation, Florida 33324-2519
954-474-3005
Phil Schwab, P.E.
P.E. No. 47555

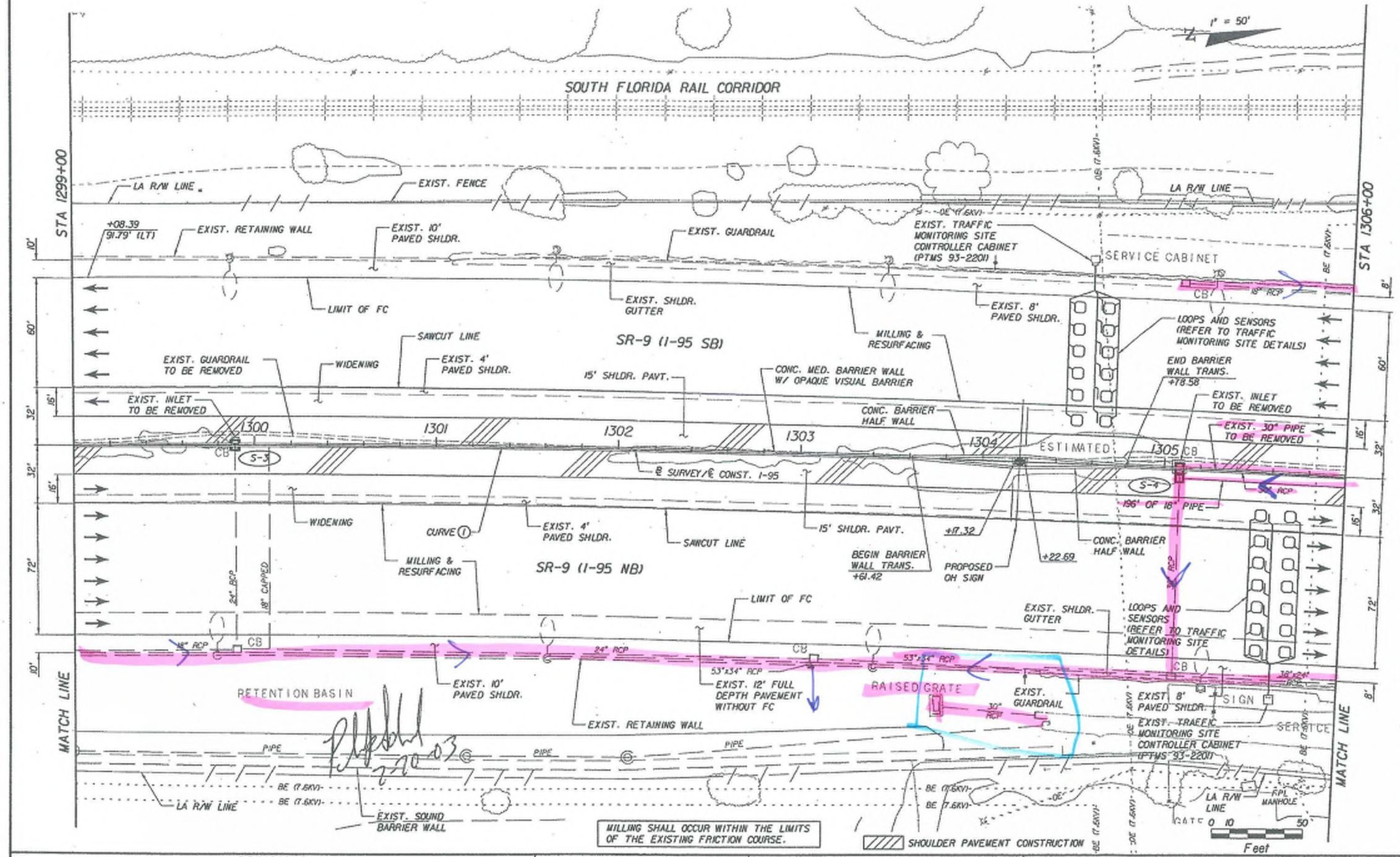
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	PALM BEACH	23919-2-52-01

STATE ROAD 9
PLAN SHEET
STA 1292+00 TO STA 1299+00

SHEET NO. 19

(DESIGN) 03:47:03 PM x:\projects\6969000\roadway\plan\rd9.dgn



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RS&H
Reynolds, Smith and Hills, Inc.
300 S. Pine Island Road, Suite 300
Plantation, Florida 33324-2619
954-474-3500
Phil Schweb, P.E.
P.E. No. 47955

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	PALM BEACH	23919-2-52-01

STATE ROAD 9
PLAN SHEET
STA 1299+00 TO STA 1306+00

SHEET NO. 20

PORTIONS OF THE EXISTING TOPOGRAPHIC FEATURES DEPICTED WERE REPRODUCED FROM ELECTRONIC FILES OF THE FPID 231919-1-52-01 PROJECT. THE EXISTING INFORMATION SHOWN MAY NOT REPRESENT ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL VERIFY EXISTING INFORMATION PRIOR TO CONSTRUCTION.

2

1" = 50'

SOUTH FLORIDA RAIL CORRIDOR

HOW ESTIMATED

LA R/W LINE

OE (1.6KV)

EXIST. FENCE

FENCE & DITCH ESTIMATED

LA R/W LINE

OE (1.6KV)

STA 1306+00

STA 1313+00

CONTROL

15" PIPE

CB

24" PIPE

CONTROL

NOTES:

FINANCIAL PROJECT ID 231835-1-52-01, 231919-1-52-01 AND 231919-2-52-01 WILL BE UNDER CONSTRUCTION CONCURRENT WITH THIS PROJECT. THE CONTRACTOR SHALL COORDINATE WITH THE ADJACENT PROJECT CONTRACTORS ON ALL ROADWAY CONSTRUCTION AND TRAFFIC CONTROL ACTIVITIES.

EXIST. GUARDRAIL

EXIST. SHLDR. GUTTER

PIPE END WITH SPILLWAY

18" RCP

EXIST. 8' SHLDR. PAVT.

EXIST. 8' PAVED SHLDR.

8'

60'

32'

16'

72'

LIMIT OF FC

MILLING & RESURFACING

SR-9 (I-95 SB)

EXIST. 16' FULL DEPTH PAVEMENT WITHOUT FC

MILLING & RESURFACING

EXIST. GUARDRAIL TO BE REMOVED

EXIST. INLET TO BE REMOVED

SAWCUT LINE

WIDENING

15' SHLDR. PAVT.

EXIST. 4' PAVED SHLDR.

EXIST. 15' PAVED SHLDR.

EXIST. MEDIAN BARRIER WALL W/ OPAQUE VISUAL BARRIER

EXIST. 30" PIPE TO BE REMOVED

5' OF 18" PIPE

S-6

1307

1308

1309

1310

1311

1312

S-5

S-7

18" PIPE

276' OF 18" PIPE

℄ SURVEY/ ℄ CONST. I-95

15"x23" PIPE

N 09°56'36" E

EXIST. 15' PAVED SHLDR.

CONC. MED. BARRIER WALL W/ OPAQUE VISUAL BARRIER

CURVE (1)

EXIST. 4' PAVED SHLDR.

EXIST. 16' FULL DEPTH PAVEMENT WITHOUT FC

MILLING & RESURFACING*

13

SAWCUT LINE

SR-9 (I-95 NB)

END PROJECT
END WIDENING
END MILLING & RESURFACING (NB)
STA. 1309+87.42
℄ SURVEY/℄ CONST. I-95

PT STA. 1311+47.77

2

LIMIT OF FC

CB

CB

CB

24" PIPE

30"x24" RCP

CABINET

EXIST. 12' FULL DEPTH PAVEMENT WITHOUT FC

EXIST. 8' PAVED SHLDR.

EXIST. GUARDRAIL

EXIST. SHLDR. GUTTER

EXIST. 8' PAVED SHLDR.

24" PIPE

FOR 2/18/08 REVISION

EXIST. FENCE

SIGN

OE (60KV)

OE (60KV)

LA R/W LINE

LA R/W LINE

MATCH LINE

MATCH LINE

VAR.

49'

16'

0.67'

16'

16'

60'

VAR.

8'

8'

0 10 50

Feet

*MILLING AND RESURFACING BETWEEN NORTHBOUND STA. 1306+00 AND STA. 1309+87.42 ONLY APPLIES TO PLACING FRICTION COURSE ATOP EXISTING STRUCTURAL COURSE.

MILLING SHALL OCCUR WITHIN THE LIMITS OF THE EXISTING FRICTION COURSE.

SHOULDER PAVEMENT CONSTRUCTION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/05/04	DAG	2 ADDED EXISTING PAVEMENT LINES, ADDED/MODIFIED LABELS AND DIMENSIONS	02/18/08	DAG	13 ELIMINATED NORTHBOUND MILLING AND RESURFACING LIMITS.

RS&H
Reynolds, Smith and Hills, Inc.
300 S. Pine Island Road, Suite 300
Plantation, Florida 33324-2619
954-474-3005
FL Cert. No. EB0005620
Phil Schwab, P.E. No. 47556

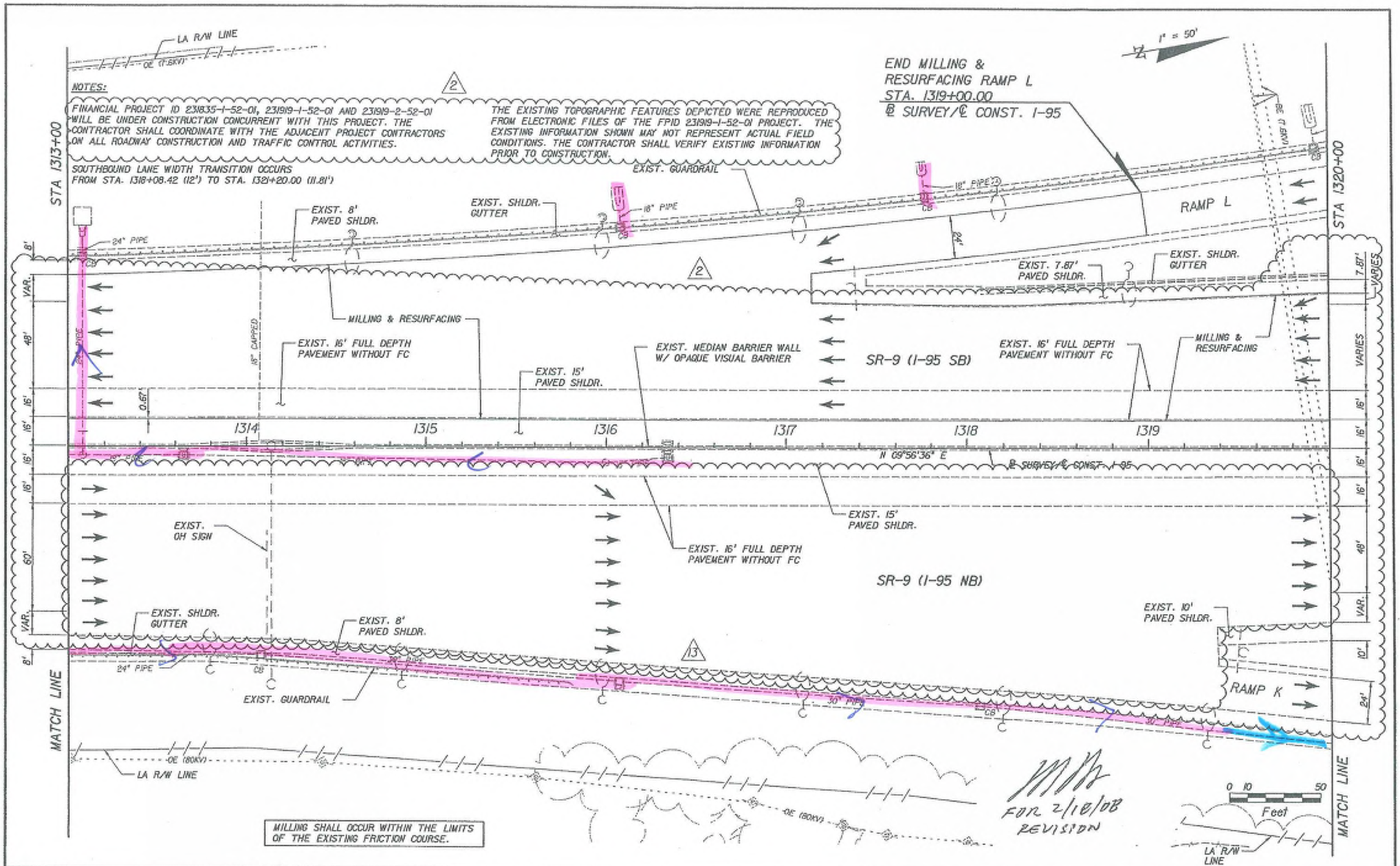
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	PALM BEACH	231919-2-52-01

STATE ROAD 9
PLAN SHEET
STA 1306+00 TO STA 1313+00

SHEET NO. 21

2/18/2008 3:06:15 PM \\Wf1fs01\transportation\P\2005\2005019\roadway\PLANS\C21.dgn



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/06/04	DRG	2 ADDED EXISTING PAVEMENT LINES, ADDED/MODIFIED LABELS AND DIMENSIONS, MODIFIED LIMITS OF MILLING & RESURFACING.	02/18/08	DRG	13 ELIMINATED NORTHBOUND MILLING AND RESURFACING LIMITS.

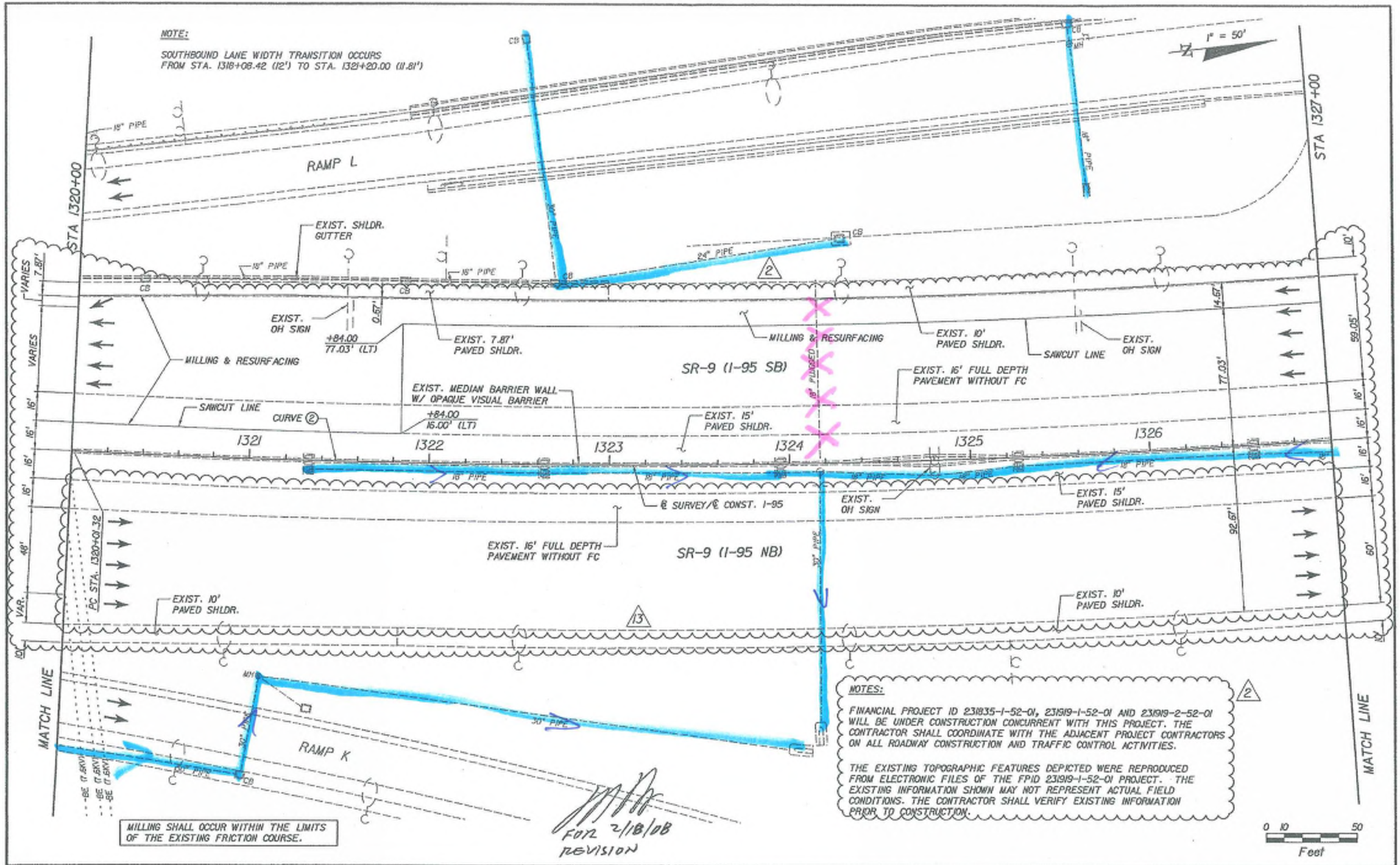
RS&H
Reynolds, Smith and Hills, Inc.
300 S. Pine Island Road, Suite 300
Plantation, Florida 33324-2619
954-474-3005
FL Cert. No. EB0005920
Phil Schwab, P.E. No. 47585

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	PALM BEACH	231919-2-52-01

STATE ROAD 9 PLAN SHEET STA 1313+00 TO STA 1320+00

SHEET NO. 22

2/18/2008 3:51:37 PM \\WWGI\transportation\P\05652009\roadway\PLANR09.dgn



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/06/04	DRG	2 ADDED EXISTING PAVEMENT LINES, ADDED/MODIFIED LABELS AND DIMENSIONS, MODIFIED LIMITS OF MILLING & RESURFACING.	02/18/08	DRG	13 ELIMINATED NORTHBOUND MILLING AND RESURFACING LIMITS.

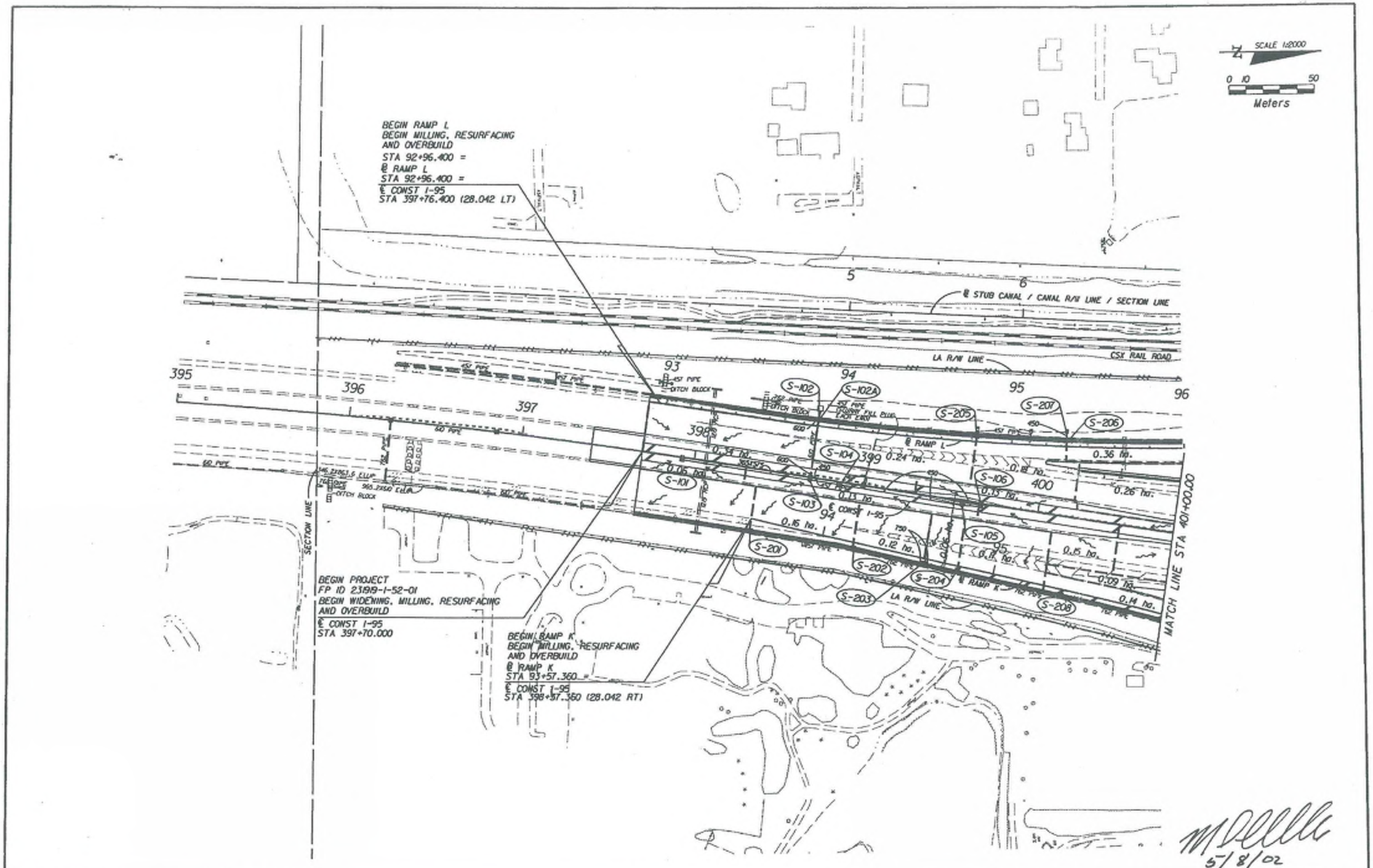
RS&H
Reynolds, Smith and Hills, Inc.
300 S. Pine Island Road, Suite 300
Plantation, Florida 33324-2619
954-474-3005
FL Cert. No. EB0025820
Phil Schwab, P.E. No. 47555

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	PALM BEACH	23919-2-52-01

STATE ROAD 9
PLAN SHEET
STA 1320+00 TO STA 1327+00 (2)

SHEET NO. 23

2/18/2008 3:32:40 PM \\RSHDOM1\projects\Fellsmere\P\06592009\roadway\PLAN\R009.dgn



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

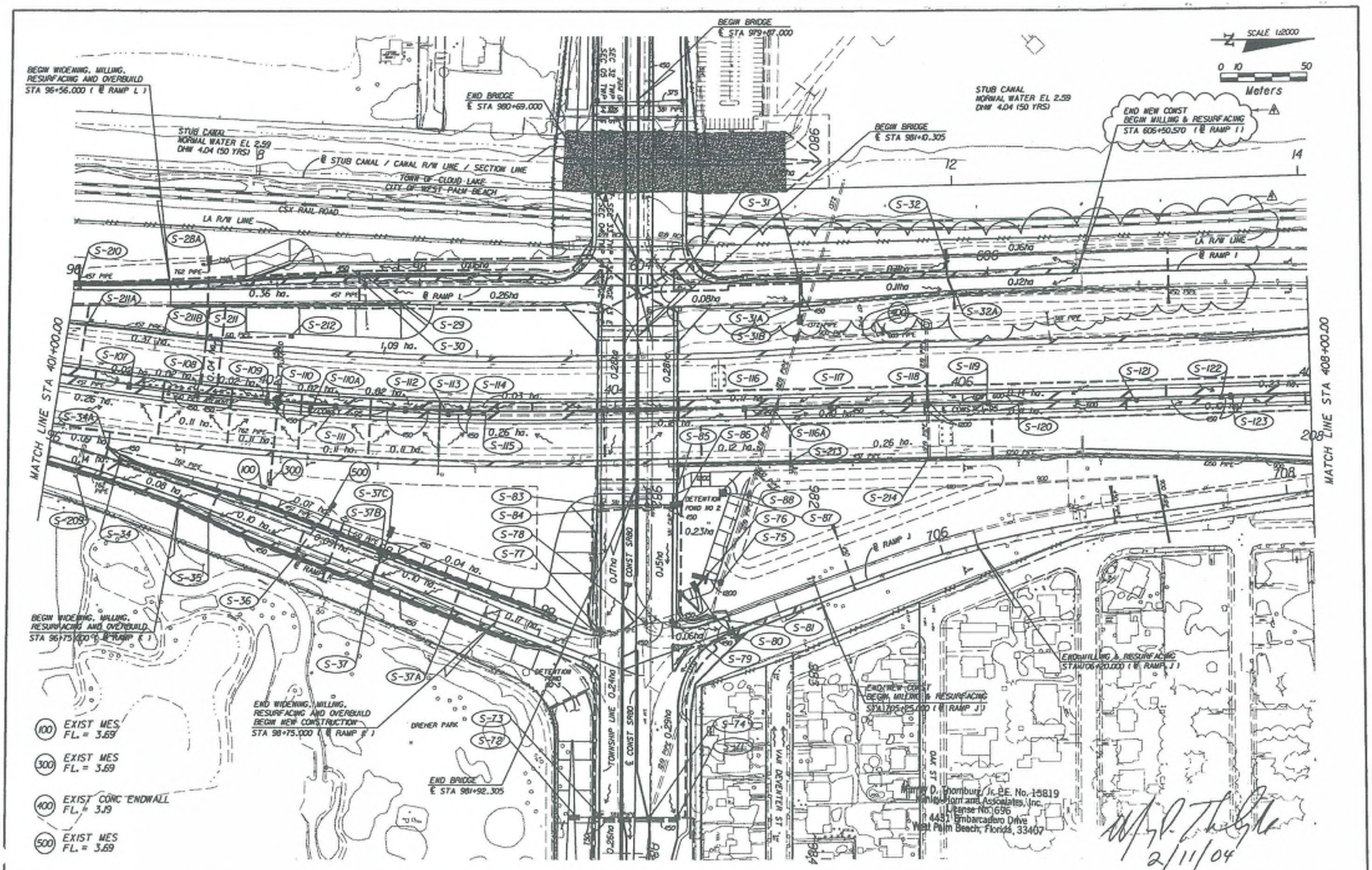
Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			
ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
SR 80	PALM BEACH	23835-1-52-01 23919-1-52-01	

DRAINAGE MAP

SHEET NO. 6

04/16/2002 03:21:06 PM G:\40005452\MKT\DRNMP01A4.dgn



Kimley D. Thornburg, Jr. P.E. No. 15819
Kimley-Horn and Associates, Inc.
License No. 696
4431 Embarcadero Drive
West Palm Beach, Florida, 33407

2/11/04

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-11-04	GLB	⚠ REVISED RAMP I. ADDED STRUCTURES S-32, S-32A			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

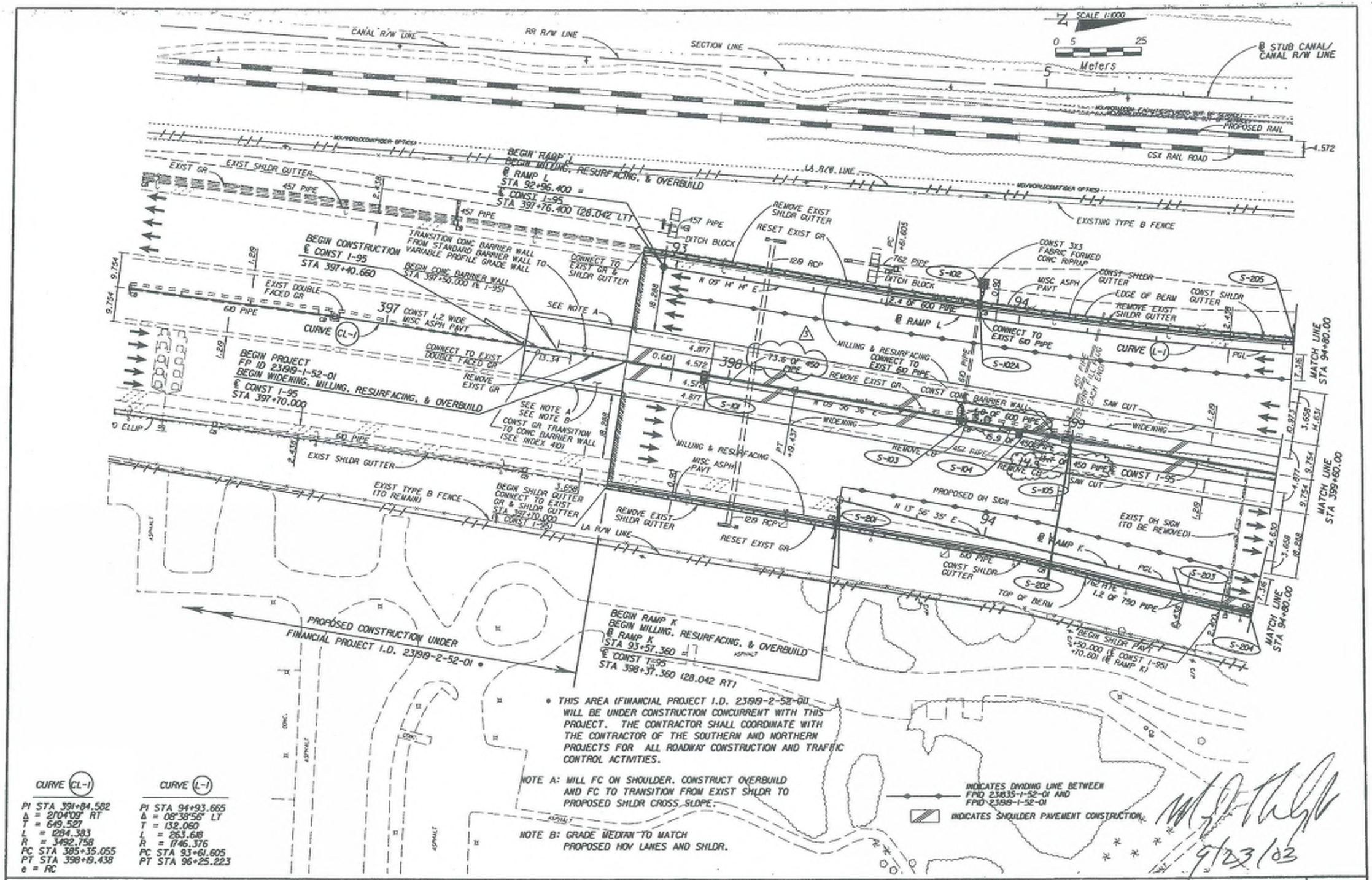
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

DRAINAGE MAP

SHEET NO. 7

02/04/2004 8:25:15 AM e:\40005456_SR80 East\231835\Revisions\drainage\DRMP0004_r4.dgn



9/23/03

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
09-23-03	DMB	3 CHANGED PIPE SIZE			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

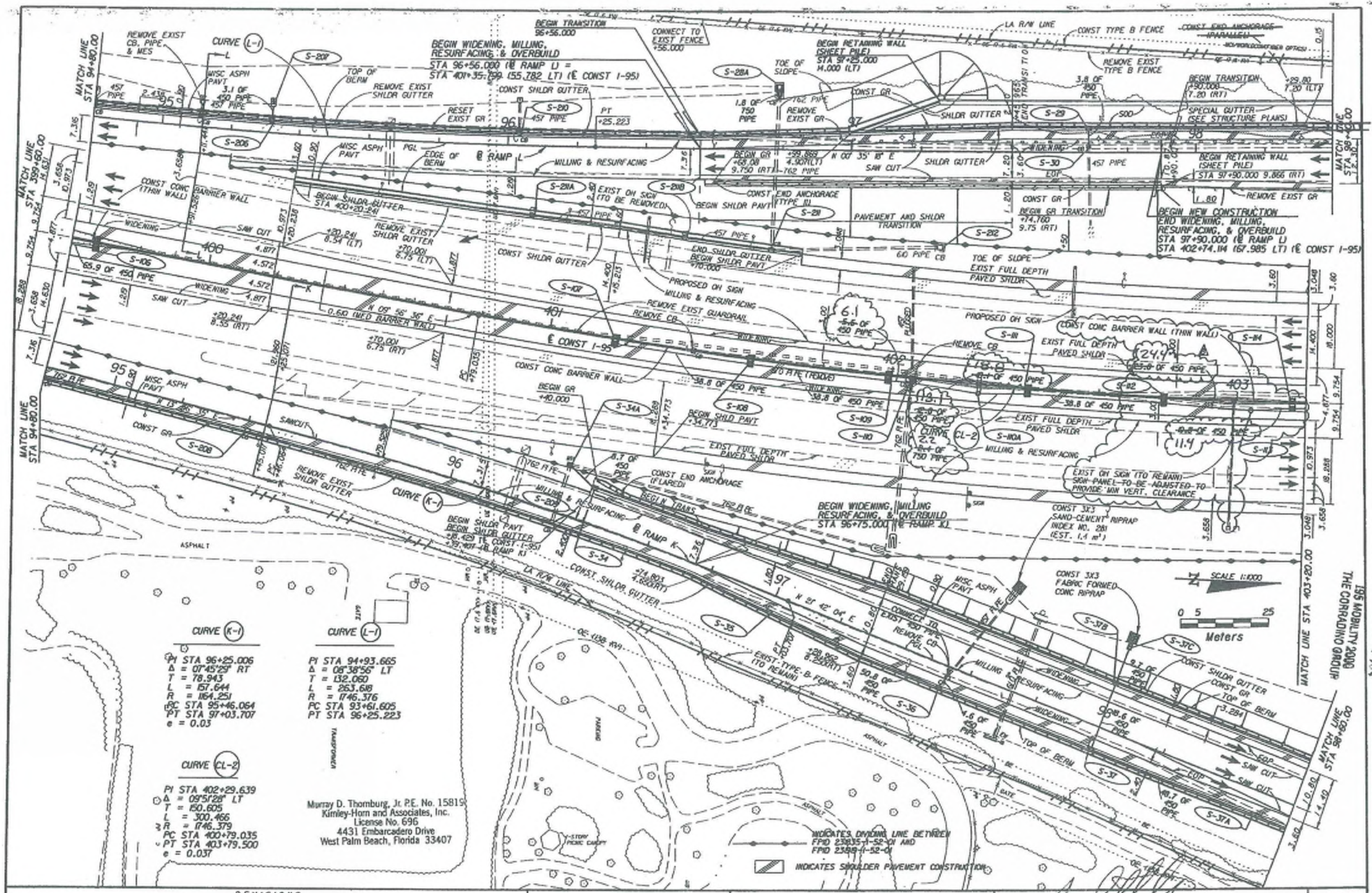
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23835-1-52-01 23919-1-52-01

I-95 - PLAN

SHEET NO. 81

09/16/2003 08:43:09 AM e:\40000645e_SR80 East\23835_Rowland\roadway\Plans\R_rv5.dgn



REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
09-30-04	BB	⚠ REVISED PROPOSED SIGN STRUCTURE; SHIFTED PROPOSED BARRIER WALL			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	238835-1-52-01 238919-1-52-01

I-95 - PLAN

SHEET NO. 82

09/30/2004 09:32:34 AM c:\10005458 SR80 Fast\238835 Revisions\roadway\plans02 rev1.dgn

RECEIVED
DEC 17 2004

Form #0941
08/95

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE
STANDARD GENERAL PERMIT NO. 50-05327-P
DATE ISSUED: March 19, 2002

PERMITTEE: FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT FOUR
3400 W COMMERCIAL BLVD
FORT LAUDERDALE, FL 33309-3421

PROJECT DESCRIPTION: Construction and operation (C&O) of modifications to an existing surface water management (SWM) system to serve approximately 15.43 acres (including pond sites) of proposed roadway improvements, and 3.46 acres of adjacent off-site lands, collectively known as SR-80 from west of SR-9 (I-95) to Parker Avenue.

PROJECT LOCATION: PALM BEACH COUNTY, SEC 32,33 TWP 43S RGE 43E
SEC 4,5 TWP 44S RGE 43E

PERMIT DURATION: See Special Condition No:1. See attached Rule 40E-4.321, Florida Administrative Code.

This is to notify you of the District's agency action concerning Notice of Intent for Permit Application No. 010727-4, dated July 27, 2001. This action is taken pursuant to Rule 40E-1.603 and Chapter 40E-40 , Florida Administrative Code (F.A.C.).

Based on the information provided, District rules have been adhered to and an Environmental Resource General Permit is in effect for this project subject to:

1. Not receiving a filed request for a Chapter 120, Florida Statutes, administrative hearing.
2. the attached 19 General Conditions (See Pages : 2 - 4 of 6),
3. the attached 14 Special Conditions (See Pages : 5 - 6 of 6) and
4. the attached 3 Exhibit(s).

Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights," we will assume that you concur with the District's action.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the Permittee (and the persons listed in the attached distribution list) no later than 5:00 p.m. on this 19th day of March, 2002, in accordance with Section 120.60(3), Florida Statutes.

BY: _____
Anthony M. Waterhouse, P.E.
Director - Surface Water Management
Palm Beach Service Center

Certified mail number 7000 1530 0000 2743 2565

Enclosures

GENERAL CONDITIONS

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit and Part IV, Chapter 373. F.S.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. Activities approved by this permit shall be conducted in a manner which does not cause violations of State water quality standards. The permittee shall implement best management practices for erosion and pollution control to prevent violation of State water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. All practices shall be in accordance with the guidelines and specifications described in Chapter 6 of the Florida Land Development Manual; A Guide to Sound Land and Water Management (Department of Environmental Regulation, 1988), incorporated by reference in Rule 40E-4.091, F.A.C. unless a project-specific erosion and sediment control plan is approved as part of the permit. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

4. The permittee shall notify the District of the anticipated construction start date within 30 days of the date that this permit is issued. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District an Environmental Resource Permit Construction Commencement Notice Form Number 0960 indicating the actual start date and the expected construction completion date.

5. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual status report form. Status report forms shall be submitted the following June of each year.

6. Within 30 days after completion of construction of the permitted activity, the permitee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the supplied Environmental Resource Permit Construction Completion/Certification Form Number 0881. The statement of completion and certification shall be based on onsite observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and sepcifications. This submittal shall serve to notify the District that the system is ready for inspection. Additionally, if deviation from the approved drawings is discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "As-built" or "Record" drawing. All surveyed dimensions and elevations shall be certified by a registered surveyor.

7. The operation phase of this permit shall not become effective: until the permittee has complied with the requirements of condition (6) above, and submitted a request for conversion of Environmental Resource Permit from Construction Phase to Operation Phase, Form No. 0920; the District determines the system to be in compliance with the permitted plans and specifications; and the entity approved by the District in accordance with Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, accepts responsibility for operation and maintenance of the system. The permit shall not be transferred to such approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall initiate transfer of the permit to the

GENERAL CONDITIONS

approved responsible operating entity if different from the permittee. Until the permit is transferred pursuant to Section 40E-1.6107, F.A.C., the permittee shall be liable for compliance with the terms of the permit.

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of the phase or portion of the system to a local government or other responsible entity.

9. For those systems that will be operated or maintained by an entity that will require an easement or deed restriction in order to enable that entity to operate or maintain the system in conformance with this permit, such easement or deed restriction must be recorded in the public records and submitted to the District along with any other final operation and maintenance documents required by Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit applications within the South Florida Water Management District, prior to lot or units sales or prior to the completion of the system, whichever comes first. Other documents concerning the establishment and authority of the operating entity must be filed with the Secretary of State, county or municipal entities. Final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system and any other permit conditions.

10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the District in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.

11. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40E-4 or Chapter 40E-40, F.A.C..

12. The permittee is hereby advised that Section 253.77, F.S. states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the State, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.

13. The permittee must obtain a Water Use permit prior to construction dewatering, unless the work qualifies for a general permit pursuant to Subsection 40E-20.302(4), F.A.C., also known as the "No Notice" Rule.

14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the permit.

15. Any delination of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding, unless a specific condition of this permit or a formal determination under Section 373.421(2), F.S., provides otherwise.

16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of a permitted system or the real property on which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rules 40E-1.6105 and

GENERAL CONDITIONS

40E-1.6107, F.A.C.. The permittee transferring the permit shall remain liable for corrective actions that may be required as a result of any violations prior to the sale, conveyance or other transfer of the system.

17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the appropriate District service center.

19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

SPECIAL CONDITIONS

1. The construction phase of this permit shall expire on March 19, 2007.

2. Grass seed, sod or mulch shall be installed and maintained on exposed areas within 48 hours of completing final grade, and at other times as necessary, to prevent erosion, sedimentation or turbid discharge into adjacent waters and /or wetlands.

3. Operation of the surface water management system shall be the responsibility of FLORIDA DEPARTMENT OF TRANSPORTATION.

4. A water quality monitoring program shall be implemented as described below:

   Turbidity expressed in nephelometric turbidity units (ntu).

   Background samples shall be taken 200 feet upstream of any construction activity within adjacent surface waters as shown on Exhibit 3A.

   Compliance samples shall also be taken 200 feet downstream as shown on Exhibit 3A.

   Samples taken twice daily, with at least a four-hour interval, during all work authorized by this permit.

   Monitoring shall begin on the first day of construction for all activities within or adjacent to surface waters. Monitoring shall cease when all construction activities are completed. The monitoring data must demonstrate that turbidity 200 feet downstream of all proposed activities is less than or equal to 29 NTU's above natural background turbidity and 200 feet upstream of each proposed activity for a period of 7 consecutive days after completion of construction.

   All monitoring data shall be maintained on site and be available to District staff during regular business hours. The content of such data shall include:

   1) permit and application number; (2) dates of sampling and analysis; (3) a statement describing the methods used in collection, handling, storage and analysis of the samples; (4) a map indicating the sampling locations and (5) a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data.

   Monitoring reports shall also include the following information for each sample that is taken:
   (a) time of day samples taken;
   (b) depth of water body;
   (c) depth of samples;
   (d) antecedent weather conditions;
   (e) wind direction and velocity;
   (f) direction of flow.

5. Discharge Facilities:

   Basin: 1

   1-3.28' WIDE SHARP CRESTED weir with crest at elev. 11.32' NGVD.
   1-3" dia. CIRCULAR ORIFICE with invert at elev. 9.19' NGVD.

   Receiving body : Spur Canal
   Control elev : 9.19 feet NGVD.

   Basin: 2

SPECIAL CONDITIONS

1-3.77' WIDE SHARP CRESTED weir with crest at elev. 15.42' NGVD.
1-3" dia. CIRCULAR ORIFICE with invert at elev. 9.51' NGVD.

Receiving body : Spur Canal
Control elev : 9.51 feet NGVD. = 7.93' NAVD

6. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.

7. Measures shall be taken during construction to insure that sedimentation and/or turbidity problems are not created in the receiving water.

8. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.

9. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.

10. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.

11. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments/debris. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.

12. Minimum road crown elevation: Basin: 1 - 16.50 feet NGVD.
Basin: 2 - 16.15 feet NGVD.

13. Reference is made to Exhibit 2, entitled "Contract Plans - State Road 80 (Southern blvd) from West of SR 9 (I-95) to Parker Avenue". Exhibit 2 consists of roadway plans, drainage plans, roadway profiles, cross-sections, and detail sheets. The drawings have been signed and sealed by Murray D. Thornburg, P.E., of Kimley-Horn & Associates on 11/5/01 and 2/14/02, have been included in the permit file, and are hereby incorporated into this permit by reference.

14. Prior to the commencement of any site activity authorized by this permit, a pre-construction meeting shall be held with District Environmental Resource Compliance staff from the West Palm Beach service center.

Included with this letter/permit is a brochure from the Florida Department of Environmental Protection (DEP) on Florida's National Pollutant Discharge Elimination System (NPDES) program for construction activities. As the brochure indicates, the U.S. Environmental Protection Agency authorized the DEP in October 2000 to implement the NPDES stormwater permitting program in Florida. The District is assisting DEP by distributing this information to entities which may be subject to regulation under the NPDES program. No response to the District is required.

A "Generic Permit for Stormwater Discharge from Construction Activities that Disturb Five or More Acres of Land" **is required for a construction activity which contributes stormwater discharges to surface waters of the State or into a municipal separate storm sewer system and disturbs five or more acres of land. A permit is required for less than five acres if the activity is part of a larger common plan of development or sale that will meet or exceed the five acre threshold.**

The permit required under DEP's NPDES stormwater permitting program is separate from the Environmental Resource Permit required by the District. Receiving a permit from the District does not exempt you from meeting the NPDES program requirements.

If you have any questions on the NPDES program, there are DEP phone numbers, mailing addresses and internet web page addresses in the brochure. The DEP web site, at www.dep.state.fl.us/water/stormwater/npdes/, provides information associated with the NPDES program including all regulations and forms cited in the brochure.

40E-4.321 Duration of Permits

(1) Unless revoked or otherwise modified the duration of an environmental resource permit issued under this chapter or Chapter 40E-40, F.A.C. is as follows:

(a) For a conceptual approval, two years from the date of issuance or the date specified as a condition of the permit, unless within that period an application for an individual or standard general permit is filed for any portion of the project. If an application for an environmental resource permit is filed, then the conceptual approval remains valid until final action is taken on the environmental resource permit application. If the application is granted, then the conceptual approval is valid for an additional two years from the date of issuance of the permit. Conceptual approvals which have no individual or standard general environmental resource permit applications filed for a period of two years shall expire automatically at the end of the two year period.

(b) For a conceptual approval filed concurrently with a development of regional impact (DRI) application for development approval (ADA) and a local government comprehensive plan amendment, the duration of the conceptual approval shall be two years from whichever one of the following occurs at the latest date:

1. the effective date of the local government's comprehensive plan amendment.
2. the effective date of the local government development order.
3. the date on which the District issues the conceptual approval, or
4. the latest date of the resolution of any Chapter 120.57, F.A.C., administrative proceeding or other legal appeals.

(c) For an individual or standard general environmental resource permit, five years from the date of issuance or such amount of time as made a condition of the permit.

(d) For a noticed general permit issued pursuant to Chapter 40-E-400, F.A.C., five years from the date the notice of intent to use the permit is provided to the District.

(2)(a) Unless prescribed by special permit condition, permits expire automatically according to the timeframes indicated in this rule. If application for extension is made in writing pursuant to subsection (3), the permit shall remain in full force and effect until:

1. the Governing Board takes action on an application for extension of an individual permit, or
2. staff takes action on an application for extension of a standard general permit.

(b) Installation of the project outfall structure shall not constitute a vesting of the permit.

(3) The permit extension shall be issued provided that a permittee files a written request with the District showing good cause prior to the expiration of the permit. For the purpose of this rule, good cause shall mean a set of extenuating circumstances outside of the control of the permittee. Requests for extensions, which shall include documentation of the extenuating circumstances and how they have delayed this project, will not be accepted more than 180 days prior to the expiration date.

(4) Substantial modifications to Conceptual Approvals will extend the duration of the Conceptual Approval for two years from the date of issuance of the modification. For the purposes of this section, the term "substantial modification" shall mean a modification which is reasonably expected to lead to substantially different water resource or environmental impacts which require a detailed review.

(5) Substantial modifications to individual or standard general environmental resource permits issued pursuant to a permit application extend the duration of the permit for three years from the date of issuance of the modification. Individual or standard general environmental resource permit modifications do not extend the duration of a conceptual approval.

(6) Permit modifications issued pursuant to subsection 40E-4.331(2)(b), F.A.C. (letter modifications) do not extend the duration of a permit.

(7) Failure to complete construction or alteration of the surface water management system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization in order to continue construction unless a permit extension is granted.

Specific authority 373.044, 373.113 F.S. Law Implemented 373.413, 373.416, 373.419, 373.426 F.S. History—New 9-3-81, Amended 1-31-82, 12-1-82, Formerly 16K-4.07(4), Amended 7-1-86, 4/20/94, 10-3-95

NOTICE OF RIGHTS

Section 120.569(1), Fla. Stat. (1999), requires that "each notice shall inform the recipient of any administrative hearing or judicial review that is available under this section, s. 120.57, or s. 120.68; shall indicate the procedure which must be followed to obtain the hearing or judicial review, and shall state the time limits which apply." Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

Petition for Administrative Proceedings

1. A person whose substantial interests are affected by the South Florida Water Management District's (SFWMD) action has the right to request an administrative hearing on that action. The affected person may request either a formal or an informal hearing, as set forth below. A point of entry into administrative proceedings is governed by Rules 28-106.111 and 40E-1.511, Fla. Admin. Code, (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109), as set forth below. Petitions are deemed filed upon receipt of the original documents by the SFWMD Clerk.

a. Formal Administrative Hearing: If a genuine issue(s) of material fact is in dispute, the affected person seeking a formal hearing on a SFWMD decision which does or may determine their substantial interests shall file a petition for hearing pursuant to Sections 120.569 and 120.57(1), Fla. Stat. or for mediation pursuant to Section 120.573, Fla. Stat. within 21 days, except as provided in subsections c. and d. below, of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-106.201(2), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

b. Informal Administrative Hearing: If there are no issues of material fact in dispute, the affected person seeking an informal hearing on a SFWMD decision which does or may determine their substantial interests shall file a petition for hearing pursuant to Sections 120.569 and 120.57(2), Fla. Stat. or for mediation pursuant to Section 120.573, Fla. Stat. within 21 days, except as provided in subsections c. and d. below, of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-106.301(2), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

c. Administrative Complaint and Order: If a Respondent objects to a SFWMD Administrative Complaint and Order, pursuant to Section 373.119, Fla. Stat. (1997), the person named in the Administrative Complaint and Order may file a petition for a hearing no later than 14 days after the date such order is served. Petitions must substantially comply with the requirements of either subsection a. or b. above.

d. State Lands Environmental Resource Permit: Pursuant to Section 373.427, Fla. Stat., and Rule 40E-1.511(3), Fla. Admin. Code (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109(2)(c)), a petition objecting to the SFWMD's agency action regarding consolidated applications for Environmental Resource Permits and Use of Sovereign Submerged Lands (SLERPs), must be filed within 14 days of the notice of consolidated intent to grant or deny the SLERP. Petitions must substantially comply with the requirements of either subsection a. or b. above.

e. Emergency Authorization and Order: A person whose substantial interests are affected by a SFWMD Emergency Authorization and Order, has a right to file a petition under Sections 120.569, 120.57(1), and 120.57(2), Fla. Stat., as provided in subsections a. and b. above. However, the person, or the agent of the person responsible for causing or contributing to the emergency conditions shall take whatever action necessary to cause immediate compliance with the terms of the Emergency Authorization and Order.

f. Order for Emergency Action: A person whose substantial interests are affected by a SFWMD Order for Emergency Action has a right to file a petition pursuant to Rules 28-107.005 and 40E-1.611, Fla. Admin. Code, copies of which are attached to this Notice of Rights, and Section 373.119(3), Fla. Stat., for a hearing on the Order. Any subsequent agency action or proposed agency action to initiate a formal revocation proceeding shall be separately noticed pursuant to section g. below.

g. Permit Suspension, Revocation, Annulment, and Withdrawal: If the SFWMD issues an administrative complaint to suspend, revoke, annul, or withdraw a permit, the permittee may request a hearing to be conducted in accordance with Sections 120.569 and 120.57, Fla. Stat., within 21 days of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-107.004(3), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

2. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the SFWMD's final action may be different from the position taken by it previously. Persons whose substantial interests may be affected by

any such final decision of the SFWMD shall have, pursuant to Rule 40E-1.511(2), Fla. Admin. Code (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109(2)(c)), an additional 21 days from the date of receipt of notice of said decision to request an administrative hearing. However, the scope of the administrative hearing shall be limited to the substantial deviation.

3. Pursuant to Rule 40E-1.511(4), Fla. Admin. Code, substantially affected persons entitled to a hearing pursuant to Section 120.57(1), Fla. Stat., may waive their right to such a hearing and request an informal hearing before the Governing Board pursuant to Section 120.57(2), Fla. Stat., which may be granted at the option of the Governing Board.

4. Pursuant to Rule 28-106.111(3), Fla. Admin. Code, persons may file with the SFWMD a request for extension of time for filing a petition. The SFWMD, for good cause shown, may grant the extension. The request for extension must contain a certificate that the petitioner has consulted with all other parties, if any, concerning the extension and that the SFWMD and all other parties agree to the extension.

CIRCUIT COURT

5. Pursuant to Section 373.617, Fla. Stat., any substantially affected person who claims that final agency action of the SFWMD relating to permit decisions constitutes an unconstitutional taking of property without just compensation may seek judicial review of the action in circuit court by filing a civil action in the circuit court in the judicial circuit in which the affected property is located within 90 days of the rendering of the SFWMD's final agency action.

6. Pursuant to Section 403.412, Fla. Stat., any citizen of Florida may bring an action for injunctive relief against the SFWMD to compel the SFWMD to enforce the laws of Chapter 373, Fla. Stat., and Title 40E, Fla. Admin. Code. The complaining party must file with the SFWMD Clerk a verified complaint setting forth the facts upon which the complaint is based and the manner in which the complaining party is affected. If the SFWMD does not take appropriate action on the complaint within 30 days of receipt, the complaining party may then file a civil suit for injunctive relief in the 15th Judicial Circuit in and for Palm Beach County or circuit court in the county where the cause of action allegedly occurred.

7. Pursuant to Section 373.433, Fla. Stat., a private citizen of Florida may file suit in circuit court to require the abatement of any stormwater management system, dam, impoundment, reservoir, appurtenant work or works that violate the provisions of Chapter 373, Fla. Stat.

DISTRICT COURT OF APPEAL

8. Pursuant to Section 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the SFWMD Clerk within 30 days of rendering of the final SFWMD action.

LAND AND WATER ADJUDICATORY COMMISSION

9. A party to a "proceeding below" may seek review by the Land and Water Adjudicatory Commission (FLAWAC) of SFWMD's final agency action to determine if such action is consistent with the provisions and purposes of Chapter 373, Fla. Stat. Pursuant to Section 373.114, Fla. Stat., and Rules 42-2.013 and 42-2.0132, Fla. Admin. Code, a request for review of (a) an order or rule of the SFWMD must be filed with FLAWAC within 20 days after rendition of the order or adoption of the rule sought to be reviewed; (b) an order of the Department of Environmental Protection (DEP) requiring amendment or repeal of a SFWMD rule must be filed with FLAWAC within 30 days of rendition of the DEP's order, and (c) a SFWMD order entered pursuant to a formal administrative hearing under Section 120.57(1), Fla. Stat., must be filed no later than 20 days after rendition of the SFWMD's final order. Simultaneous with filing, a copy of the request for review must be served on the DEP Secretary, any person named in the SFWMD or DEP final order, and all parties to the proceeding below. A copy of Rule 42-2.013, Fla. Admin. Code is attached to this Notice of Rights.

PRIVATE PROPERTY RIGHTS PROTECTION ACT

10. A property owner who alleges a specific action of the SFWMD has inordinately burdened an existing use of the real property, or a vested right to a specific use of the real property, may file a claim in the circuit court where the real property is located within 1 year of the SFWMD action pursuant to the procedures set forth in Subsection 70.001(4)(a), Fla. Stat.

LAND USE AND ENVIRONMENTAL DISPUTE RESOLUTION

11. A property owner who alleges that a SFWMD development order (as that term is defined in Section 70.51(2)(a), Fla. Stat. to include permits) or SFWMD enforcement action is unreasonable, or unfairly burdens the use of the real property, may file a request for relief with the SFWMD within 30 days of receipt of the SFWMD's order or notice of agency action pursuant to the procedures set forth in Subsections 70.51(4) and (6), Fla. Stat.

MEDIATION

12. A person whose substantial interests are, or may be, affected by the SFWMD's action may choose mediation as an alternative remedy under Section 120.573, Fla. Stat. Pursuant to Rule 28-106.111(2), Fla. Admin. Code, the petition for mediation shall be filed within 21 days of either written notice through mail or posting or

publication of notice that the SFWMD has or intends to take final agency action. Choosing mediation will not affect the right to an administrative hearing if mediation does not result in settlement.

Pursuant to Rule 28-106.402, Fla. Admin. Code, the contents of the petition for mediation shall contain the following information:

(1) the name, address, and telephone number of the person requesting mediation and that person's representative, if any;

(2) a statement of the preliminary agency action;

(3) an explanation of how the person's substantial interests will be affected by the agency determination; and

(4) a statement of relief sought.

As provided in Section 120.573, Fla. Stat. (1997), the timely agreement of all the parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57, Fla. Stat., for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within 60 days of the execution of the agreement. If mediation results in settlement of the dispute, the SFWMD must enter a final order incorporating the agreement of the parties. Persons whose substantial interest will be affected by such a modified agency decision have a right to petition for hearing within 21 days of receipt of the final order in accordance with the requirements of Sections 120.569 and 120.57, Fla. Stat., and SFWMD Rule 28-106.201(2), Fla. Admin. Code. If mediation terminates without settlement of the dispute, the SFWMD shall notify all parties in writing that the administrative hearing process under Sections 120.569 and 120.57, Fla. Stat., remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action.

VARIANCES AND WAIVERS

13. A person who is subject to regulation pursuant to a SFWMD rule and believes the application of that rule will create a substantial hardship or will violate principles of fairness (as those terms are defined in Subsection 120.542(2), Fla. Stat.) and can demonstrate that the purpose of the underlying statute will be or has been achieved by other means, may file a petition with the SFWMD Clerk requesting a variance from or waiver of the SFWMD rule. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have concerning the SFWMD's action. Pursuant to Rule 28-104.002(2), Fla. Admin. Code, the petition must include the following information:

(a) the caption shall read:

Petition for (Variance from) or (Waiver of) Rule (Citation)

(b) The name, address, telephone number and any facsimile number of the petitioner;

(c) The name, address telephone number and any facsimile number of the attorney or qualified representative of the petitioner, (if any);

(d) the applicable rule or portion of the rule;

(e) the citation to the statue the rule is implementing;

(f) the type of action requested;

(g) the specific facts that demonstrate a substantial hardship or violation of principals of fairness that would justify a waiver or variance for the petitioner;

(h) the reason why the variance or the waiver requested would serve the purposes of the underlying statute; and

(i) a statement of whether the variance or waiver is permanent or temporary. If the variance or waiver is temporary, the petition shall include the dates indicating the duration of the requested variance or waiver.

A person requesting an emergency variance from or waiver of a SFWMD rule must clearly so state in the caption of the petition. In addition to the requirements of Section 120.542(5), Fla. Stat. pursuant to Rule 28-104.004(2), Fla. Admin. Code, the petition must also include:

a) the specific facts that make the situation an emergency; and

b) the specific facts to show that the petitioner will suffer immediate adverse effect unless the variance or waiver is issued by the SFWMD more expeditiously than the applicable timeframes set forth in Section 120.542, Fla. Stat.

WAIVER OF RIGHTS

14. Failure to observe the relevant time frames prescribed above will constitute a waiver of such right.

28-106.201 INITIATION OF PROCEEDINGS
(INVOLVING DISPUTED ISSUES OF MATERIAL FACT)

(2) All petitions filed under these rules shall contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding, and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and

(f) A demand for relief.

28-106.301 INITIATION OF PROCEEDINGS
(NOT INVOLVING DISPUTED ISSUES OF MATERIAL FACT)

(2) All petitions filed under these rules shall contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding, and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and

(e) A demand for relief.

28-107.004 SUSPENSION, REVOCATION, ANNULMENT, OR WITHDRAWAL

(3) Requests for hearing filed in accordance with this rule shall include:

(a) The name and address of the party making the request, for purposes of service;

(b) A statement that the party is requesting a hearing involving disputed issues of material fact, or a hearing not involving disputed issues of material fact; and

(c) A reference to the notice, order to show cause, administrative complaint, or other communication that the party has received from the agency.

42-2.013 REQUEST FOR REVIEW PURSUANT TO SECTION 373.114 OR 373.217

(1) In any proceeding arising under Chapter 373, F.S., review by the Florida Land and Water Adjudicatory Commission may be initiated by the Department or a party by filing a request for such review with the Secretary of the Commission and serving a copy on any person named in the rule or order, and on all parties to the proceeding which resulted in the order sought to be reviewed. A certificate of service showing completion of service as required by this subsection shall be a requirement for a determination of sufficiency under Rule 42-2.0132. Failure to file the request with the Commission within the time period provided in Rule 42-2.0132 shall result in dismissal of the request for review.

(2) The request for review shall identify the rule or order requested to be reviewed, the proceeding in which the rule or order was entered and the nature of the rule or order. A copy of the rule or order sought to be reviewed shall be attached. The request for review shall state with particularity:

(a) How the order or rule conflicts with the requirements, provisions and purposes of Chapter 373, F.S., or rules duly adopted thereunder;

(b) How the rule or order sought to be reviewed affects the interests of the party seeking review;

(c) The oral or written statement, sworn or unsworn, which was submitted to the agency concerning the matter to be reviewed and the date and location of the statement, if the individual or entity requesting the review has not participated in a proceeding previously instituted pursuant to Chapter 120, F.S., on the order for which review is sought;

(d) If review of an order is being sought, whether and how the activity authorized by the order would substantially affect natural resources of statewide or regional significance, or whether the order raises issues of policy, statutory interpretation, or rule interpretation that have regional or statewide significance from a standpoint of agency precedent, and all the factual bases in the record which the petitioner claims support such determination(s); and

(e) The action requested to be taken by the Commission as a result of the review, whether to rescind or modify the order, or remand the proceeding to the water management district for further action, or to require the water management district to initiate rulemaking to adopt, amend or repeal a rule.

28-107.005 EMERGENCY ACTION

(1) If the agency finds that immediate serious danger to the public health, safety, or welfare requires emergency action, the agency shall summarily suspend, limit, or restrict a license.

(2) the 14-day notice requirement of Section 120.569(2)(b), F. S., does not apply and shall not be construed to prevent a hearing at the earliest time practicable upon request of an aggrieved party.

(3) Unless otherwise provided by law, within 20 days after emergency action taken pursuant to paragraph (1) of this rule, the agency shall initiate a formal suspension or revocation proceeding in compliance with Sections 120.569, 120.57, and 120.60, F.S.

40E-1.611 EMERGENCY ACTION

(1) An emergency exists when immediate action is necessary to protect public health, safety or welfare; the health of animals, fish or aquatic life; the works of the District; a public water supply, or recreational, commercial, industrial, agricultural or other reasonable uses of land and water resources.

(2) The Executive Director may employ the resources of the District to take whatever remedial action necessary to alleviate the emergency condition without the issuance of an emergency order, or in the event an emergency order has been issued, after the expiration of the requisite time for compliance with that order.

Last Date For Agency Action: March 19, 2002

GENERAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Sr 80 (West Of I-95 To Parker Avenue)

Permit No.: 50-05327-P

Application No.: 010727-4

Application Type: Environmental Resource (New General Permit)

Location: Palm Beach County, S32,33/T43S/R43E
S4,5/T44S/R43E

Permittee : Florida Department Of Transportation

Operating Entity : Florida Department Of Transportation

Project Area: 15.43 acres

Project Land Use: Highway

Drainage Basin: C-51

Receiving Body: STUB CANAL **Class:** CLASS III

Special Drainage District: NA

Conservation Easement To District : No

Sovereign Submerged Lands: No

PROJECT PURPOSE:

The applicant is seeking approval to construct and operate a modified surface water management system to serve approximately 15.43 acres (including pond sites) of proposed roadway improvements and 3.46 acres of adjacent off-site lands, collectively known as SR-80 from west of SR-9 (I-95) to Parker Avenue.

PROJECT EVALUATION:

PROJECT SITE DESCRIPTION:

The proposed project site consists of portions of the existing SR 80 corridor within Sections 4 and 5 (Township 44 South, Range 43 East), and Sections 32 and 33 (Township 43 South, Range 43 East), in Palm Beach County (see location map, Exhibit 1). The corridor generally runs from Lang Road (approximate metric STA 977+17), east to Parker Avenue (approximate metric STA 988+29). The corridor includes the I-95 bridge (approximate metric centerline STA 980+75).

There are no wetlands located within or affected by the proposed project. The road widening project will involve construction activities over approximately 0.34 acres of other surface waters. Impacts to these areas will result from the regrading of the existing Stub Canal. Therefore, impacts to this area will be temporary in nature and are not anticipated to result in adverse impacts to environmental resources.

PROPOSED PROJECT:

Excess stormwater within Basin 1 will be discharged to a proposed dry detention pond (Pond 1) which is to be constructed at the southeast quadrant of the intersection of SR 80 with Lang Road. A proposed control structure, to be constructed within Pond 1, will ensure adequate water quality treatment and flood flow attenuation is provided for Basin 1, prior to discharge to the Stub Canal (which is located just west of I-95).

Excess stormwater within Basin 2 will be discharged to either of 2 proposed (interconnected) dry detention ponds (Pond 2 and Pond 3, both of which are to be constructed as part of this project). Pond 2 is to be constructed north of (and contiguous to) SR-80, south of (and contiguous to) an existing I-95 detention pond, east of (and contiguous to) the I-95 mainline, and west of (and contiguous to) Ramp J (SR 80 eastbound and westbound to I-95 northbound). Pond 3 is to be constructed adjacent to the south side of SR 80, just east of Ramp K (I-95 northbound to SR 80 east and west). A proposed control structure, to be constructed within Pond 2, will ensure adequate water quality treatment and flood flow attenuation is provided for Basin 2, prior to discharge to the Stub Canal via an existing 48" RCP.

Reference is made to Exhibit 2, entitled "Contract Plans - State Road 80 (Southern Blvd) from West of SR 9 (I-95) to Parker Avenue". Exhibit 2 consists of roadway plans, drainage plans, roadway profiles, cross-sections, and detail sheets. The drawings have been signed and sealed by Murray D. Thornburg, P.E., of Kimley-Horn & Associates on 11/5/01 and 2/14/02, have been included in the permit file, and are hereby incorporated into this permit by reference.

LAND USE:

The land use breakdown below is based on the 15.43 acres within the roadway right-of-way (including ponds).

Construction:
Project:

	This Phase	Total Project	
Impervious	10.68	10.68	acres
Pervious	3.06	3.06	acres
Water Mgnt Acreage	1.69	1.69	acres
Total:	**15.43**	**15.43**	

WATER QUANTITY :

Discharge Rate :

Discharge Storm Frequency : 10 YEAR-3 DAY Design Rainfall : 8.75 inches

Basin	Allow Disch (cfs)	Method Of Determination	Peak Disch (cfs)	Peak Stage (ft, NGVD)
1	24.2	Pre Vs Post	24.2	12.31
2	42.3	Pre Vs Post	42.3	14.79

Road Design :

Road Storm Frequency : 10 YEAR-3 DAY Design Rainfall: 8.75 inches

Basin	Peak Stage (ft, NGVD)	Proposed Min. Road Crown (ft, NGVD)
1	12.31	16.5
2	14.79	16.15

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NGVD)	WSWT Ctrl Elev (ft, NGVD)	Method Of Determination
1	6.32	9.19	8.86	Wet Season Soil Borings
2	9.11	9.51	9.00	Wet Season Soil Borings

Receiving Body :

Basin	Str.#	Receiving Body
1	1	Spur Canal
2	2	Spur Canal

Discharge Structures

Discharge Bleeders:

Basin	Str.#	Dimensions	Invert Elev. (ft, NGVD)
1	1	1 - 3" Dia. Circular Orifice	9.19
2	2	1 - 3" Dia. Circular Orifice	9.51

Discharge Weirs:

Basin	Str.#	Dimensions	Crest Elev. (ft, NGVD)
1	1	1 - 3.28' wide Sharp Crested	11.32
2	2	1 - 3.77' wide Sharp Crested	15.42

WATER QUALITY :

Water quality treatment equivalent to 2.5" from all impervious areas within Basin 1, with a 25% reduction for dry detention, will be provided within Pond 1. Water quality treatment equivalent to 2.5" from all impervious areas within Basin 2, with a 25% reduction for dry detention, will be provided within interconnected Ponds 2 and 3.

No adverse water quality impacts are anticipated as a result of the proposed project. A water quality monitoring plan has been proposed by the Applicant (Exhibit 3). Anchored floating turbidity curtains are to be installed immediately outside the limits of construction within the Stub Canal. Turbidity curtains are to remain in place until all construction activities have ceased and all potential sources of turbid emissions have been stabilized within the construction area.

A downstream mixing zone is proposed to extend approximately 200' downstream from the floating turbidity curtains within the Stub Canal. The upstream mixing zone will be 200' upstream from the limits of construction. The compliance monitoring station is to be located at the downstream limit of the mixing zone. Background samples are to be collected approximately 200' upstream (north) of the floating turbidity curtains.

Samples are to be collected and recorded twice daily during the canal dredging portion of construction. Updated records of turbidity monitoring are to be maintained onsite and readily available to SFWMD Field Representatives (see Special Condition No. 4).

Basin	Treatment Method		Vol Req.d (ac-ft)	Vol Prov'd (ac-ft)
1	Treatment	Dry Detention	.72	.72
2	Treatment	Dry Detention	1.19	1.19

WETLANDS:

Wetland Inventory :

CONSTRUCTION NEW -SR 80 - Other Surface Waters ONSITE

Pre-Development	Post-Development				
	Total Existing	Impacted	Undisturbed	Enhanced	Preserved	Restored/ Created
Other Surface Waters		.34				
Total:		.34				

CERTIFICATION AND MAINTENANCE OF THE WATER MANAGEMENT SYSTEM:

It is suggested that the permittee retain the services of a Professional Engineer registered in the State of Florida for periodic observation of construction of the surface water management (SWM) system. This will facilitate the completion of construction completion certification Form #0881 which is required pursuant to Section 10 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, and Rule 40E-4361(2), Florida Administrative Code (F.A.C.).

Pursuant to Chapter 40E-4 F.A.C., this permit may not be converted from the construction phase to the operation phase until certification of the SWM system is submitted to and accepted by this District. Rule 40E-4.321(7) F.A.C. states that failure to complete construction of the SWM system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization unless a permit extension is granted.

For SWM systems permitted with an operating entity who is different from the permittee, it should be noted that until the permit is transferred to the operating entity pursuant to Rule 40E-1.6107, F.A.C., the permittee is liable for compliance with the terms of this permit.

The permittee is advised that the efficiency of a SWM system will normally decrease over time unless the system is periodically maintained. A significant reduction in flow capacity can usually be attributed to partial blockages of the conveyance system. Once flow capacity is compromised, flooding of the project may result. Maintenance of the SWM system is required to protect the public health, safety and the natural resources of the state. Therefore, the permittee must have periodic inspections of the SWM system performed to ensure performance for flood protection and water quality purposes. If deficiencies are found, it is the responsibility of the permittee to correct these deficiencies in a timely manner.

RELATED CONCERNS:

Water Use Permit Status:

A Water Use permit is not required for this project at this time. This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation, unless the work qualifies for a general permit issued pursuant to Section 40E-20 FAC.

Historical/Archeological Resources:

No information has been received that indicates the presence of archaeological or historical resources or that the proposed activities could cause adverse impacts to archaeological or historical resources.

DCA/CZM Consistency Review:

The District has not received a finding of inconsistency from the Florida Department of Community Affairs or other commenting agencies regarding the provisions of the federal Coastal Zone Management Plan.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF RECOMMENDATION:

The Staff recommends that the following be issued :

Construction and operation (C&O) of modifications to an existing surface water management (SWM) system to serve approximately 15.43 acres (including pond sites) of proposed roadway improvements, and 3.46 acres of adjacent off-site lands, collectively known as SR-80 from west of SR-9 (I-95) to Parker Avenue.

Based on the information provided, District rules have been adhered to.

Staff recommendation is for approval subject to the attached General and Special Conditions.

STAFF REVIEW:

DIVISION APPROVAL:

NATURAL RESOURCE MANAGEMENT:

Donald L. Medellin

DATE: 7-Mar-02

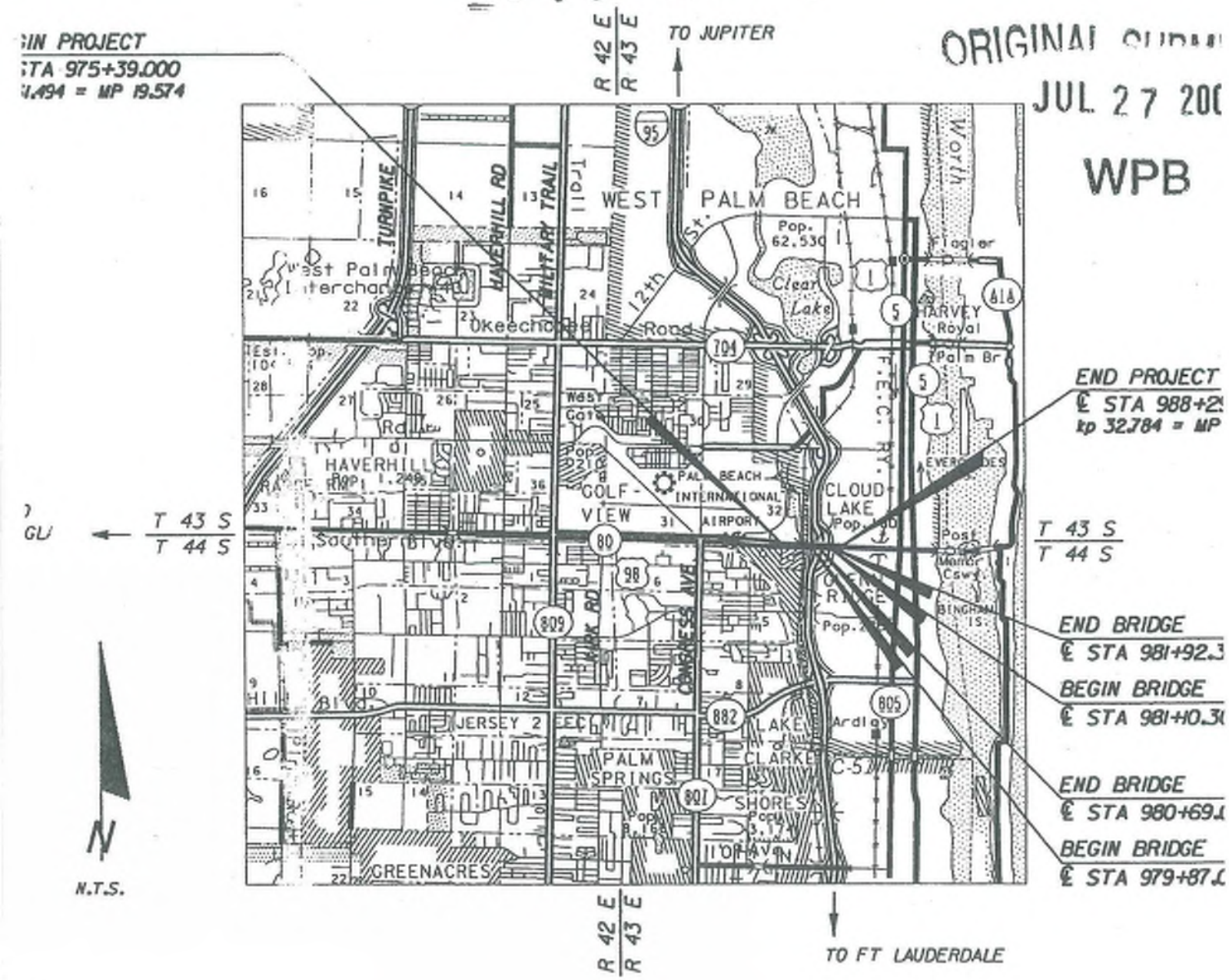
Donald L. Medellin

SURFACE WATER MANAGEMENT:

DATE: 10 Mar 02

Hugo A. Carter, P.E.

010727-4



STATE ROAD 80 (WEST OF I-95 TO EAST OF PARKER A

VICINITY MAP

EXHIBIT 1

NOTE: DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (N.G.V.D.-'29

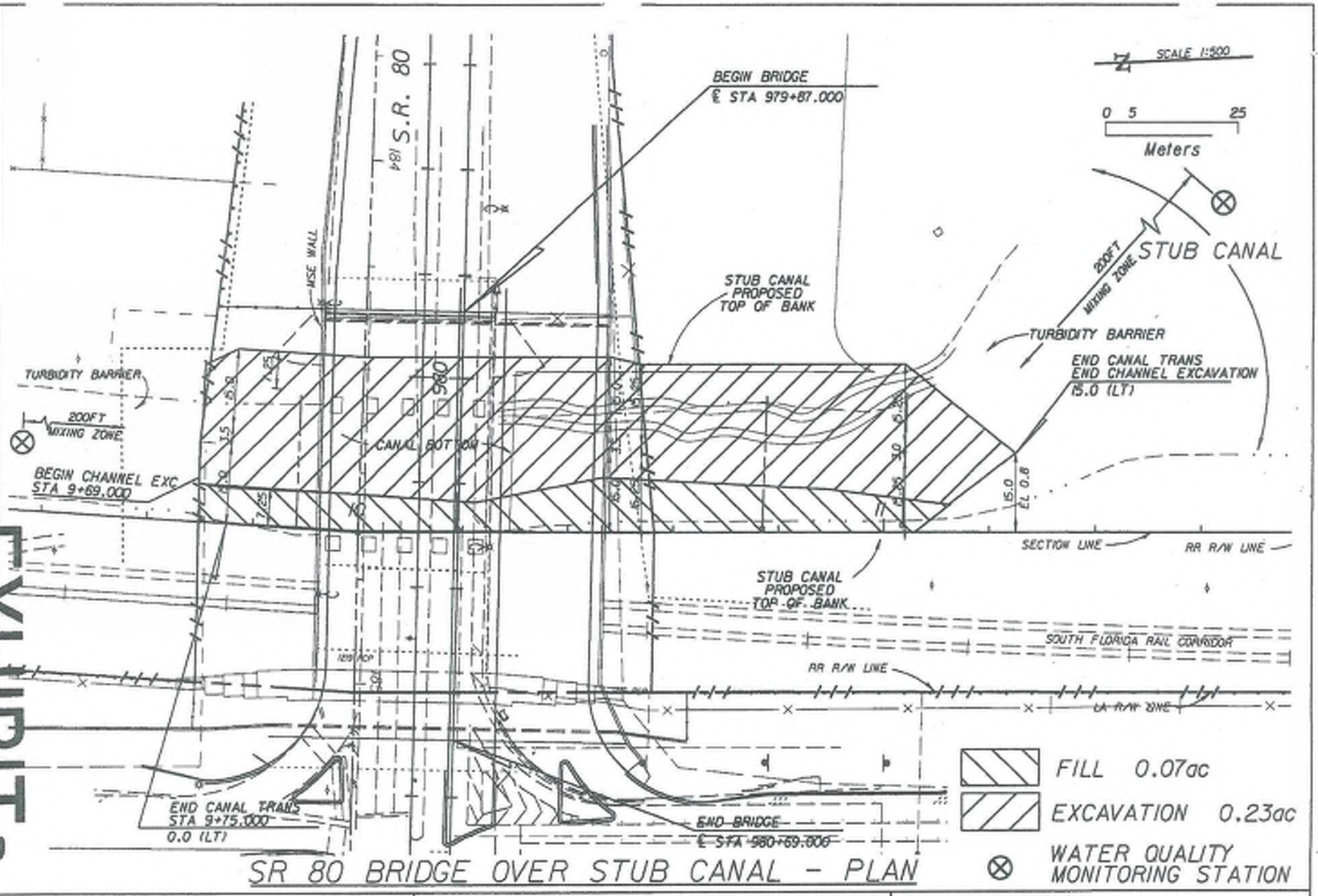


EXHIBIT 3a

SR 80 BRIDGE OVER STUB CANAL - PLAN

PROJECT DESCRIPTION STATE ROAD 80 TWP: 43,44 S RNG: 43 E SEC 4,5,32,33	FLORIDA DEPARTMENT OF TRANSPORTATION NAME: MURRAY THORNBURG, P.E. SIGNATURE CERTIFICATE NO. 15819 DATE:	FPID: 231835-1-52-01 COUNTY PALM BEACH DEP / CG / SHEET 5 OF 10 COE / WMD / DATE 1/4/01

A WATER QUALITY MONITORING PROGRAM SHALL BE IMPLEMENTED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITIES. MEASUREMENTS WILL BE TAKEN AT LEAST TWICE DAILY WITH AT LEAST A 4-HOUR INTERVAL DURING CONSTRUCTION. SAMPLES WILL BE TAKEN 60M (200FT) DOWNSTREAM OF THE SILT-CONTAINMENT STRUCTURES (TURBIDITY CURTAINS) AT MID-DEPTH FROM THE CENTER OF THE STUB CANAL. IF TURBIDITY EXCEEDS STANDARDS (29 NTU'S ABOVE BACKGROUND), WORK SHALL BE TEMPORARILY HALTED UNTIL THE PLUME CLEARS. COST TO BE INCLUDED UNDER 2101-I, MOBILIZATION.

EXHIBIT 3b

STAFF REPORT DISTRIBUTION LIST

SR 80 (WEST OF I-95 TO PARKER AVENUE)

Application No: 010727-4

Permit No: 50-05327-P

INTERNAL DISTRIBUTION

X John K. Shaffer - 4220
X LeRoy Rodgers - 4250
X Donald L. Medellin - 4250
X Hugo A. Carter, P.E. - 4220
X ERC Engineering - 4230
X ERC Environmental - 4230
X H. Azizi - 4230
X H. Bittaker, PBCSC - 6150
X Permit File

EXTERNAL DISTRIBUTION

X Permittee - Florida Department Of Transportation
X Agent - Florida Department Of Transportation
X Engr Consultant - Kimley-Horn And Associates Inc

GOVERNMENT AGENCIES

X City of Boynton Beach - Timothy K. Large, Bldg Code Permit Adm.
X Div of Recreation and Park - District 7 - FDEP
X Florida Fish & Wildlife Conservation Commission - Bureau of Protected Species Mgmt
X Palm Beach County - Building Div
X Palm Beach County - Environmental Res Mgmt
X Palm Beach County - Health Dept
X Palm Beach County - Land Development Div
X Palm Beach County - School Board Growth Mgmt
X Palm Beach County Engineer

OTHER INTERESTED PARTIES

X Rosa Durando
X Water Catchment Area Advisory Committee - Ed Dailey
X Water Management Institute - Michael N. Vanatta

STAFF REPORT DISTRIBUTION LIST

ADDRESSES

Florida Department Of Transportation
3400 W Commercial Blvd
Fort Lauderdale FL 33309-3421

Florida Department Of Transportation
District Four
3400 W Commercial Blvd
Fort Lauderdale FL 33309-3421

Kimley-Horn And Associates Inc
4431 Embarcadero Dr
West Palm Beach FL 33407

Florida Department Of Transportation

City of Boynton Beach - Timothy K. Large, Bldg Code Permit Adm.
Po Box 310
Boynton Beach FL 33425-0310

Div of Recreation and Park - District 7 - FDEP
13798 Se Federal Highway
Hobe Sound FL 33455

Florida Fish & Wildlife Conservation Commission - Bureau of Protected Species Mgmt
620 South Meridian Street
Tallahassee FL 32399-6000

Palm Beach County - Building Div
100 Australian Ave
West Palm Beach FL 33406

Palm Beach County - Environmental Res Mgmt
3323 Belvedere Road
#502
West Palm Beach FL 33406-1522

Palm Beach County - Health Dept
826 Evernia St
West Palm Beach FL 33407

Palm Beach County - Land Development Div
160 Australian Ave
West Palm Beach FL 33406

Palm Beach County - School Board Growth Mgmt
3300 Summit Blvd
West Palm Beach FL 33406-1492

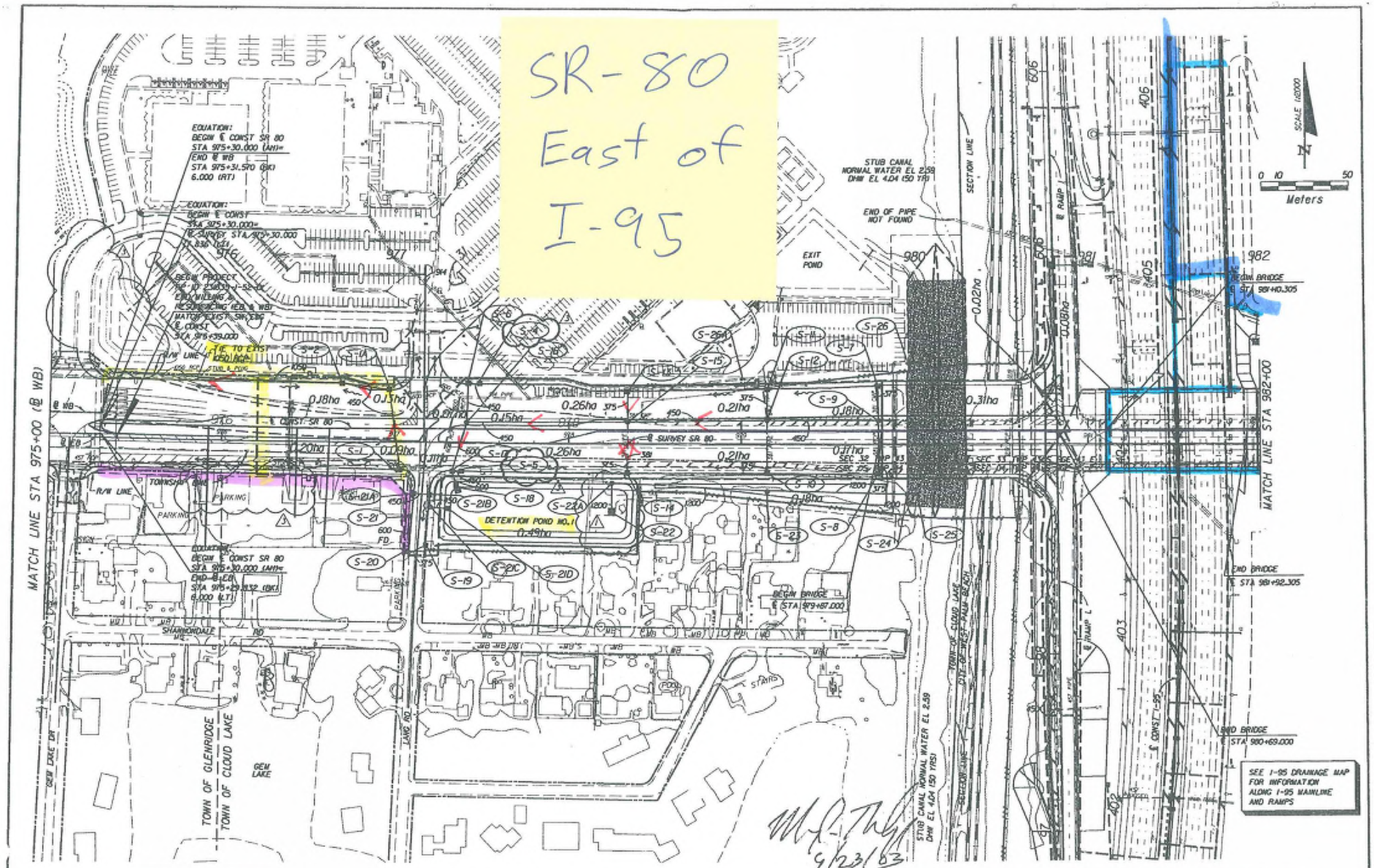
Palm Beach County Engineer
P.O.Box 21229
West Palm Beach FL 33416-1522

Rosa Durando
10300 Heritage Farms Road
Lake Worth FL 33467

Water Catchment Area Advisory Committee - Ed Dailey
2895 Farragut Lane
West Palm Beach FL 33409

Water Management Institute - Michael N. Vanatta
Po Box 6446
Vero Beach FL 32961

SR-80
East of
I-95



9/23/03

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
8-28-02	BB	1 UPDATED TOPO			
09-23-03	BB	2 REMOVED DRIVEWAY, REVISED TE. ADDED DRIVEWAYS			
09-23-03	DMB	3 REVISED STRUCTURE NUMBER			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

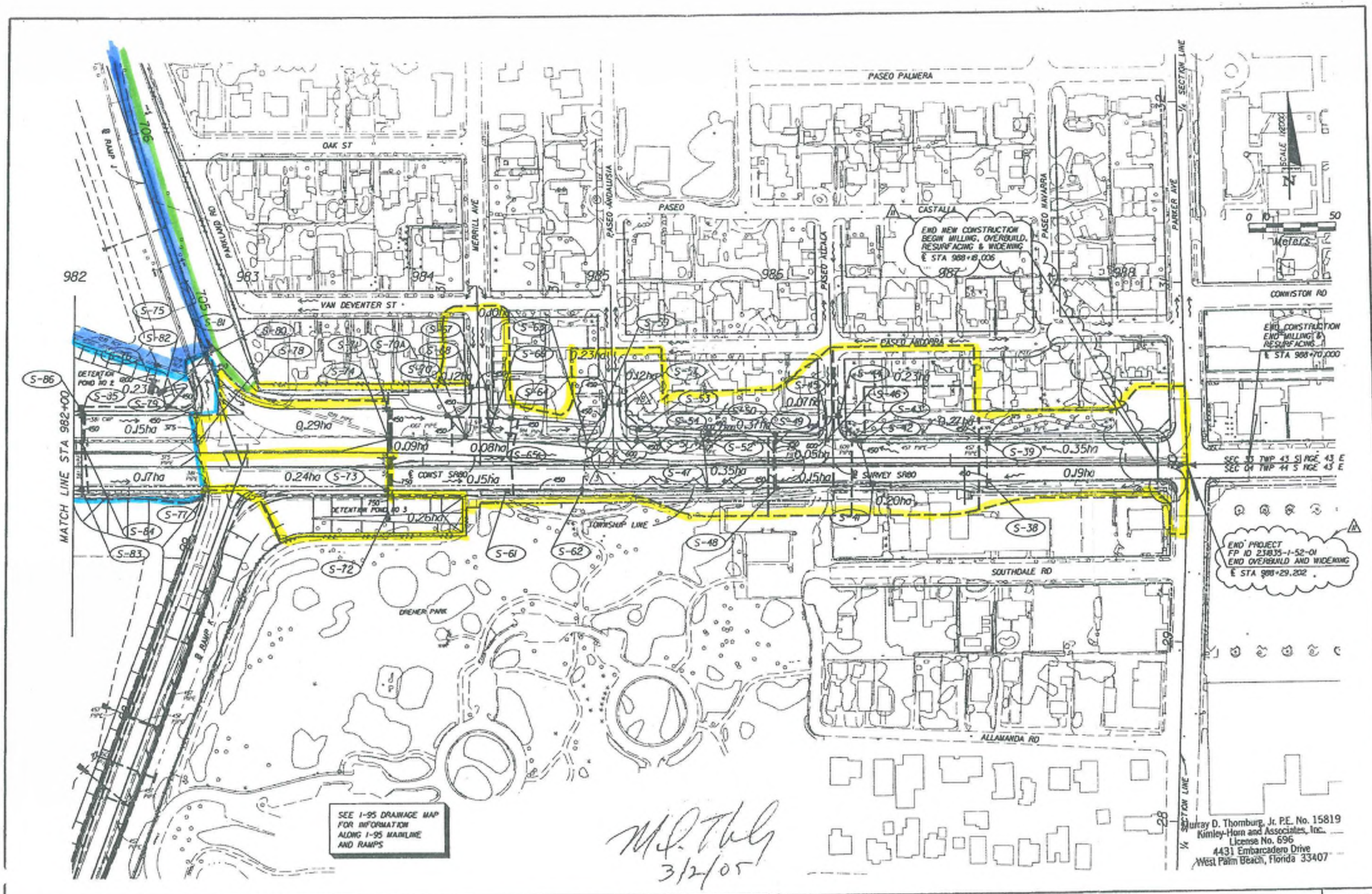
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

DRAINAGE MAP

SHEET NO. 4

09/24/2003 11:31:45 AM o:\400545a_SR80 East\231835\Roadway\Drainage\Drmap02_r3.dgn



REVISIONS						
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
09-23-03	BB	3 CHANGED TAPERS (MEDIAN)			
09-30-04	BB	8 FIELD REVISION			
03-02-05	BB	10 REVISED CONSTRUCTION LIMITS AND ADDED WIDENING LIMITS.			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 23919-1-52-01

DRAINAGE MAP

SHEET NO. 5

3/3/2005 8:23:05 PM G:\40005456_SR80 East\231835\Revisions\Drainage\Drnage03_rev1.dgn

Murray D. Thornburg, Jr. P.E. No. 15819
Kimley-Horn and Associates, Inc.
License No. 696
4431 Embarcadero Drive
West Palm Beach, Florida 33407

12/11/04

I-95 RAMP I

SCALE: 1:400 HORIZ
1:100 VERT

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-11-04	BLB	⚠ ADDED STRUCTURES S-32, S-32A ALONG RAMP I. NEW SHEET.			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

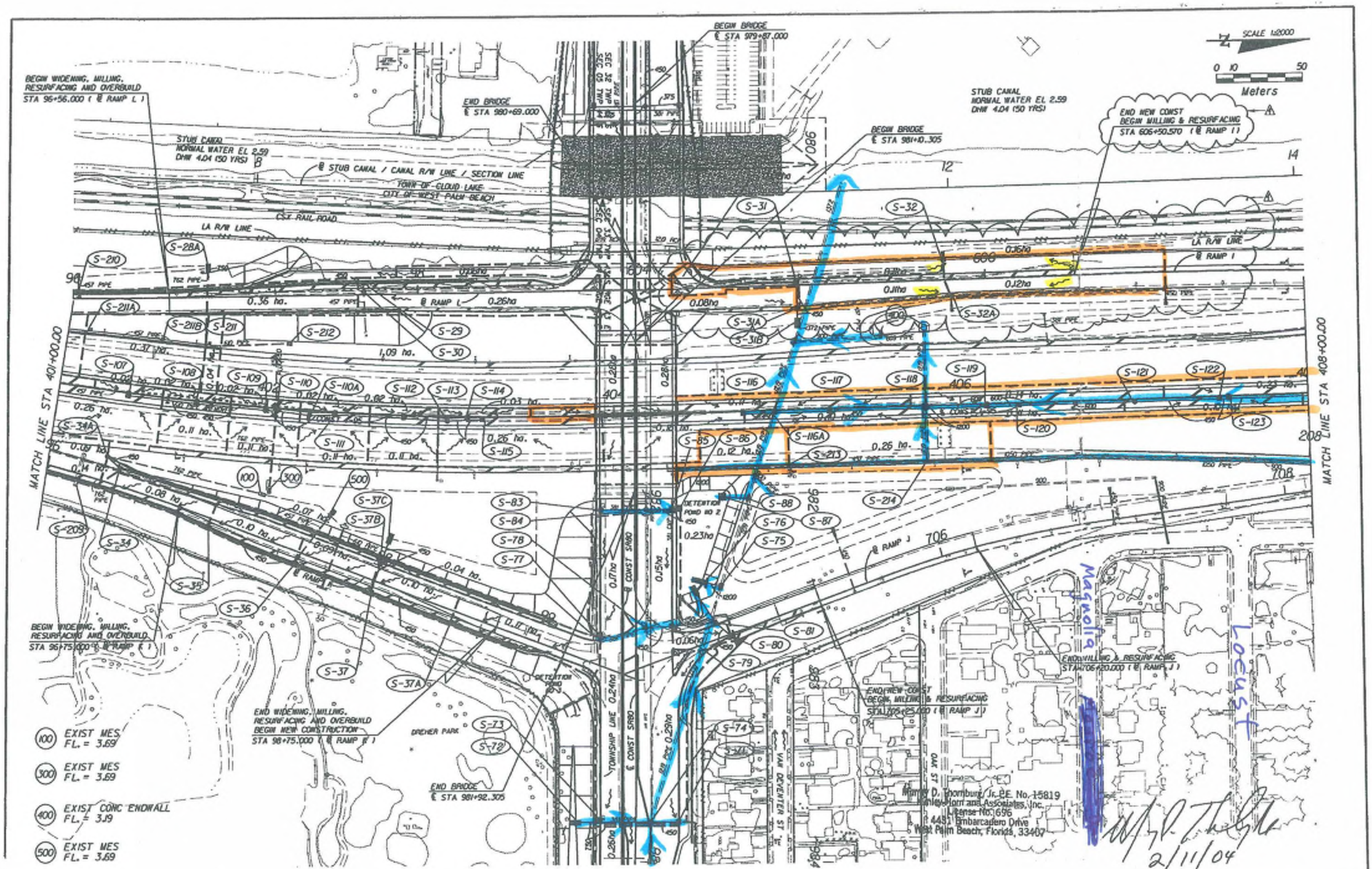
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

DRAINAGE STRUCTURES
RAMPS

SHEET NO. 131A

02/05/2004 10:32:31 AM G:\40005456_SR80 EAST\231835_REVISIONS\Highway\DRSTR005_R14.SHG



Murray D. Thornburg, Jr. P.E. No. 15819
Kimley-Horn and Associates, Inc.
License No. 696
4431 Embarcadero Drive
West Palm Beach, Florida, 33407

2/11/04

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-11-04	BLB	⚠ REVISED RAMP I, ADDED STRUCTURES S-32, S-32A			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

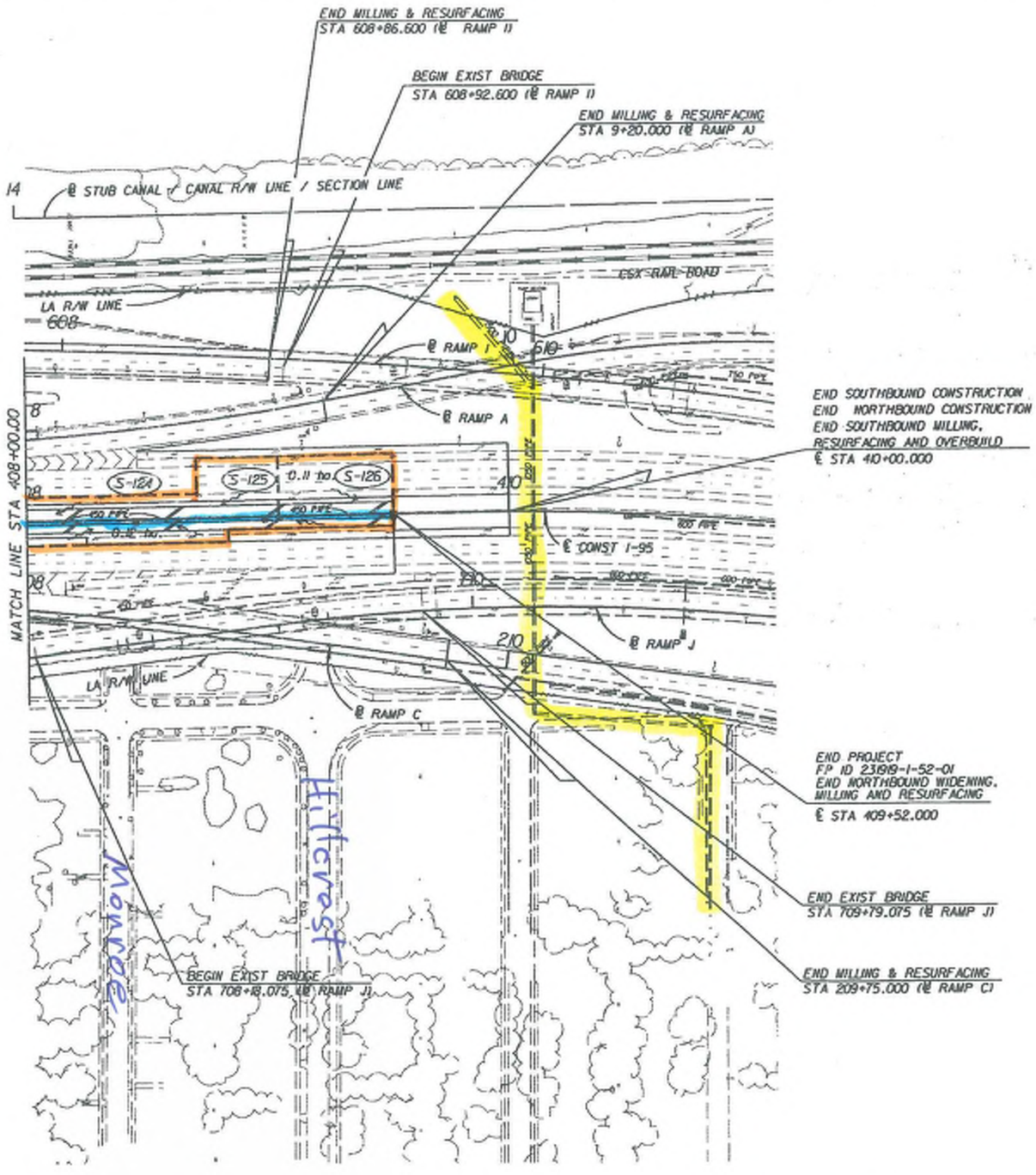
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23835-1-52-01 23919-1-52-01

DRAINAGE MAP

SHEET NO. 7

02/04/2004 11:25:15 AM o:\4000545a_SR80 East\23835\Roadway\drainage\DRAIN04_rv4.dgn



SCALE 1:2000

0 10 50

Meters

5/8/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

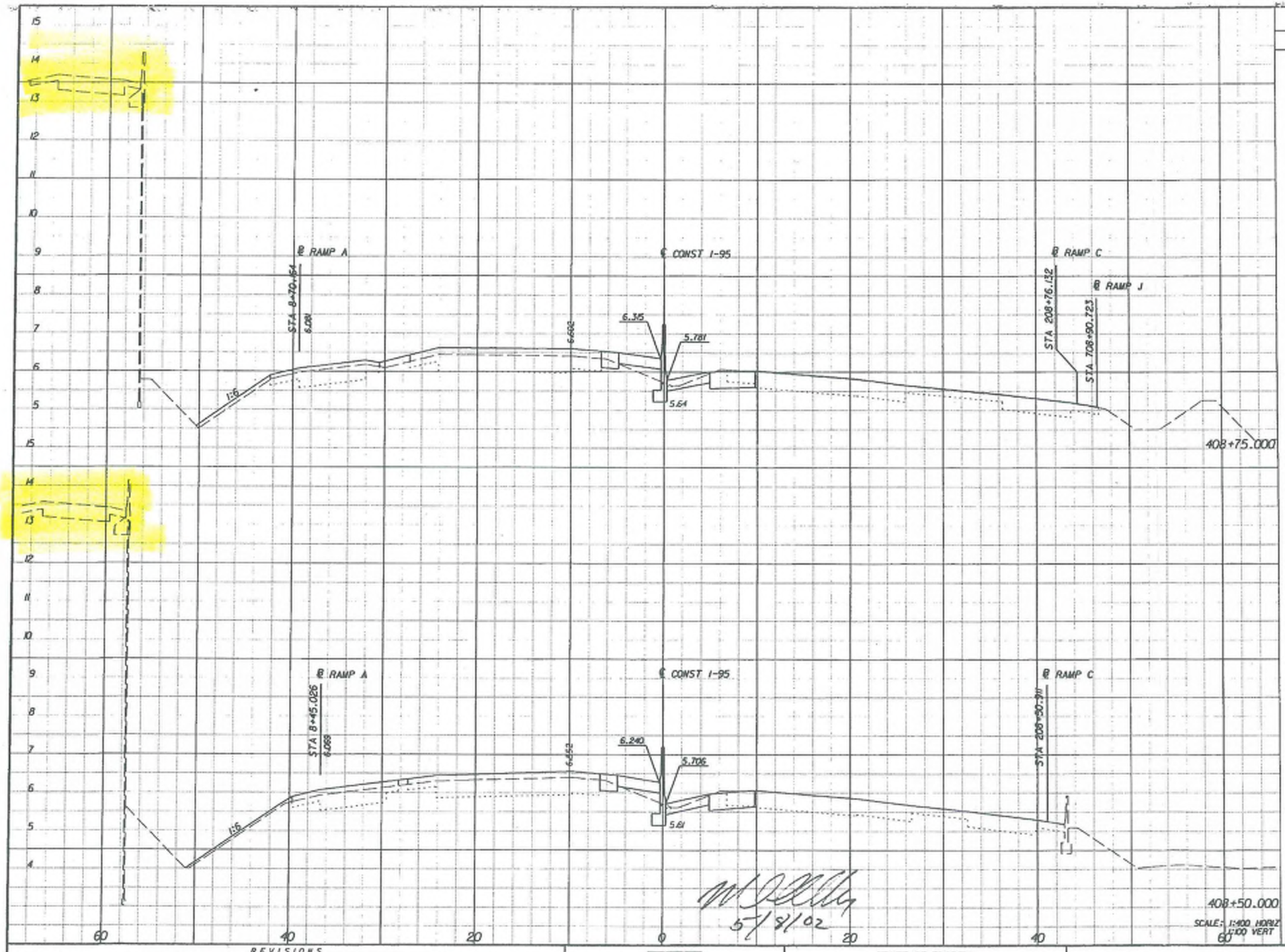
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

DRAINAGE MAP

SHEET NO. 8

04/16/2002 03:23:25 PM E:\400545a\VINY\DRMP02d4c.dgn



	Regular Exc		Embk	
	A	V	A	V
408+75.000	3.8	98	2.2	46
408+50.000	4.0	95	1.4	24

SCALE: 1:400 HORIZ
1:100 VERT

5/31/02

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

CROSS SECTIONS - I-95

SHEET NO. 203

XS 22

04/30/2002 08:13:06 AM o:\400545e\MRT\dgn\e40.dgn

Regular Exc		Embk	
A	V	A	V
3.0	81	1.3	35
3.4	90	1.5	47

RAMP A
END MILLING & RESURFACING
STA 9+20.000 (℄ RAMP A)
STA 409+24.372 (℄ CONST I-95 RT)

RAMP I
END MILLING & RESURFACING
STA 608+86.000 (℄ RAMP I)
STA 409+02.388 (63.566 LT)
(℄ CONST I-95)

SCALE: 1:400 HORIZ
1:100 VERT

4/23/03

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
9-23-03	BB	3 CHANGED ELEVATION			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

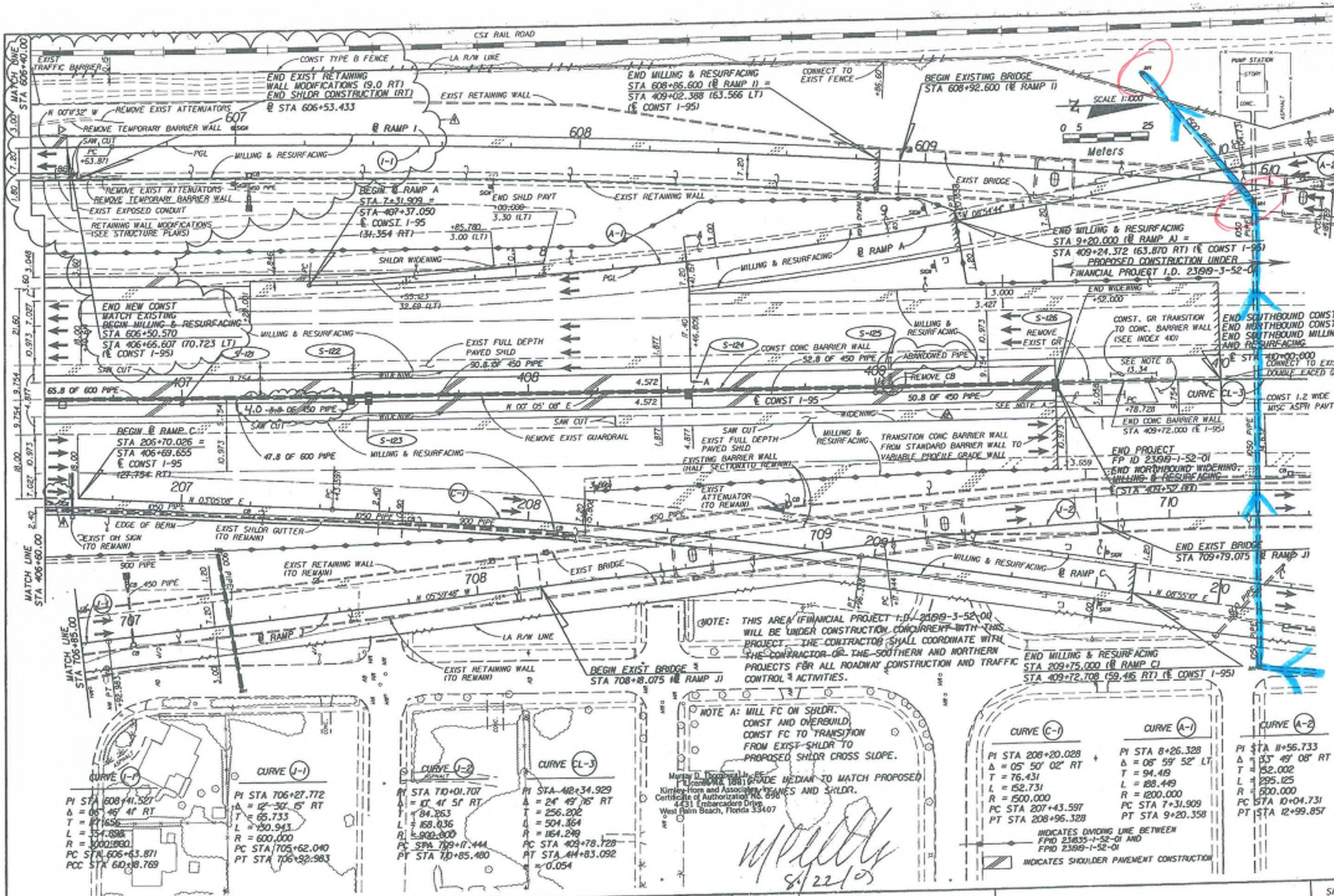
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

CROSS SECTIONS - I-95

SHEET NO. 204

05/15/2003 05:15:51 PM a:\400545e.SR80 East\231835_Revisions\roadway\xsrd4l_rv3.dgn

XS 23



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-11-04	BLB	⚠1 REVISED RAMP I, ADDED ARROW			
08-22-05	GK	⚠2 ADDED ABANDONED PIPE			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

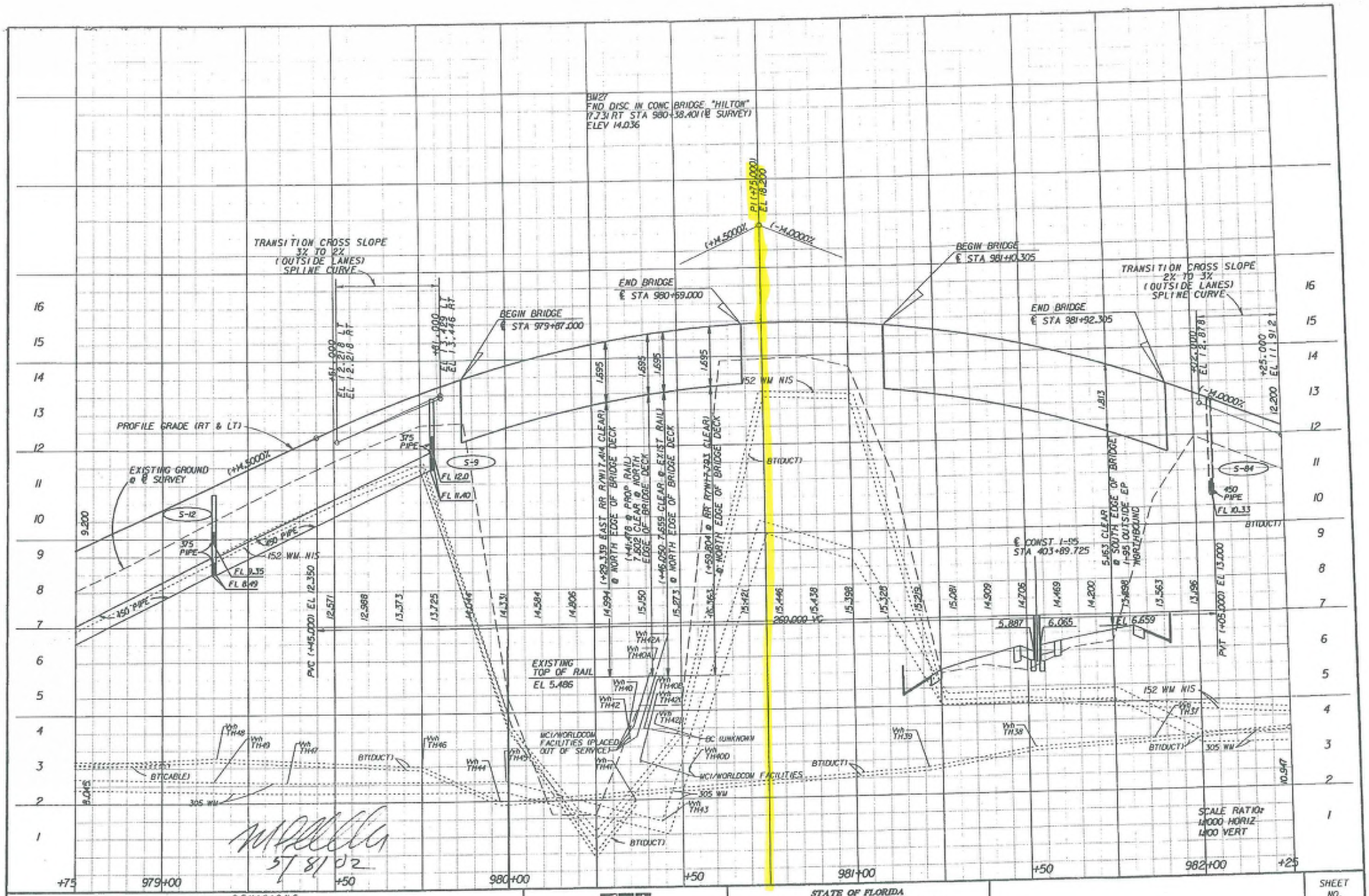
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23835-1-52-01 23919-1-52-01

I-95 - PLAN

SHEET NO. 84

8/22/2005 3:27:57 PM e:\4000545a 5480 Fair\23835 Revisions\roadway\plan84 (v2).dgn



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

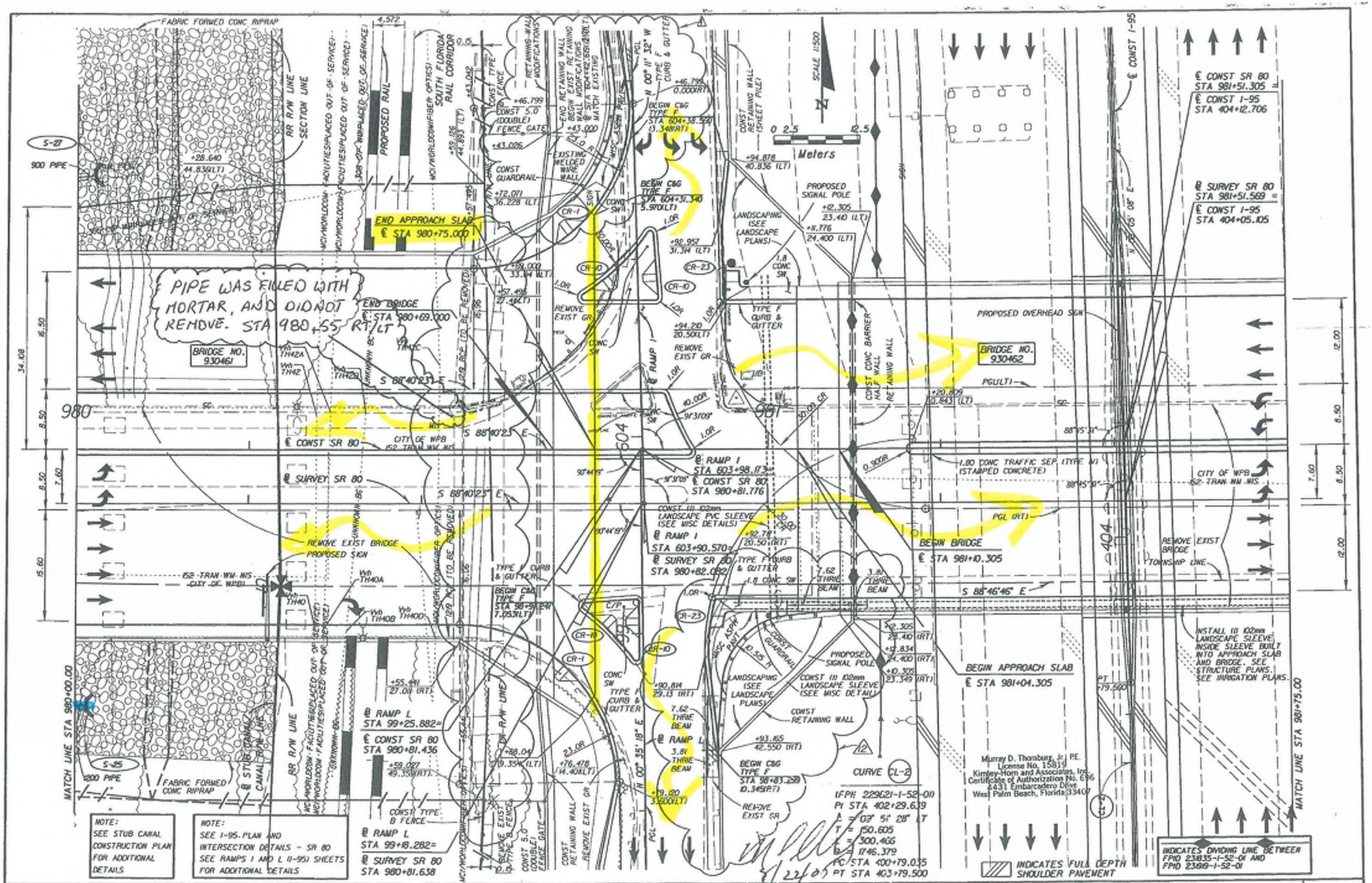
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 23919-1-52-01

PROFILES - SR 80

SHEET NO. 87

04/17/2002 10:13:07 AM G:\40005456\PMT\PROFILES.DGN



NOTE:
SEE STUB CANAL CONSTRUCTION PLAN FOR ADDITIONAL DETAILS

NOTE:
SEE I-95 PLAN AND INTERSECTION DETAILS - SR 80
SEE RAMPS I AND L (I-95) SHEETS FOR ADDITIONAL DETAILS

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-8-01	BLB	⚠1 REVISED RAMP I			
08-22-05	GN	⚠2 ADDED GUARDRAIL			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23835-1-52-01 23919-1-52-01

SR 80 - PLAN

SHEET NO. 75

6/8/2005 2:56:58 PM a:\0000545e_SR80 East\23835\Revisions\roadway\plan806_RW2.dgn

CONTROL STRUCTURE NUMBER	DITCH BOTTOM INLET TYPE	LOCATION	GRATE ELEV A	WEIR ELEV B	POND ELEV C	STRUCT BOTTOM ELEV D	PIPE SIZE	PIPE FL ELEV E	ORIFICE SIDE	WEIR LENGTH G	ORIFICE ELEV F	WEIR SIDE(S)
S-22	B (W/J-BOT)	978+25	~~3.91~~ ~~3.98~~	~~3.13~~ ~~3.45~~	3.1	~~0.16~~ ~~0.30~~	1200	0.30	SOUTH	1.00	~~2.07~~ ~~2.80~~	E & W
S-87	B (W/J-BOT)	981+97.8	~~4.79~~ 4.80	~~3.91~~ 3.99	3.2	~~2.18~~ 2.02	1200	2.10	SOUTH	1.15	~~2.90~~ 2.90	EAST

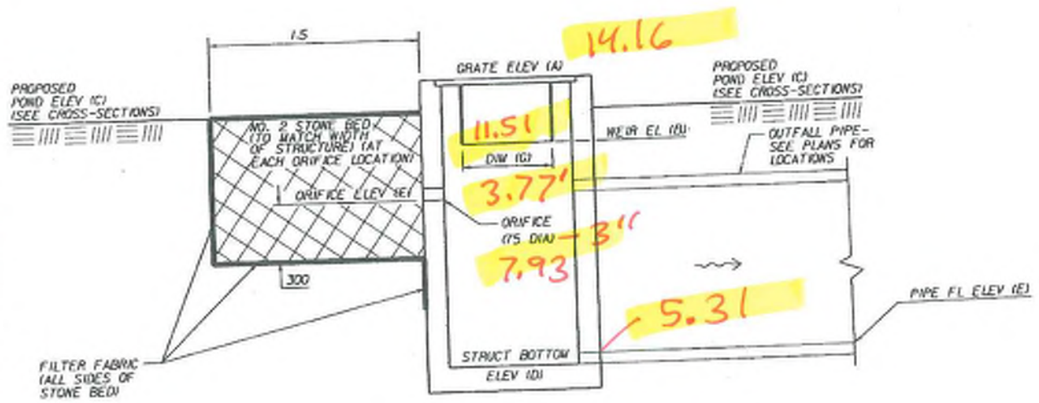
14.16

11.91

5.31

3.77'

7.93



TYPICAL CONTROL STRUCTURE DETAIL

NTS

S-22, S-87

NOTES:

1. SEE INDEX NO. 231 FOR ALL OTHER DETAILS AND DIMENSIONS.
2. COST OF FILTER FABRIC, STONE BED, WEIR, WEEP HOLE AND ALL OTHER NECESSARY HARDWARE IS TO BE INCLUDED IN THE COST OF THE CONTROL STRUCTURES, WHICH ARE TO BE PAID FOR AS INLET (DT BOTXTYPE B) (W/ J-BOT), EA.

5/8/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

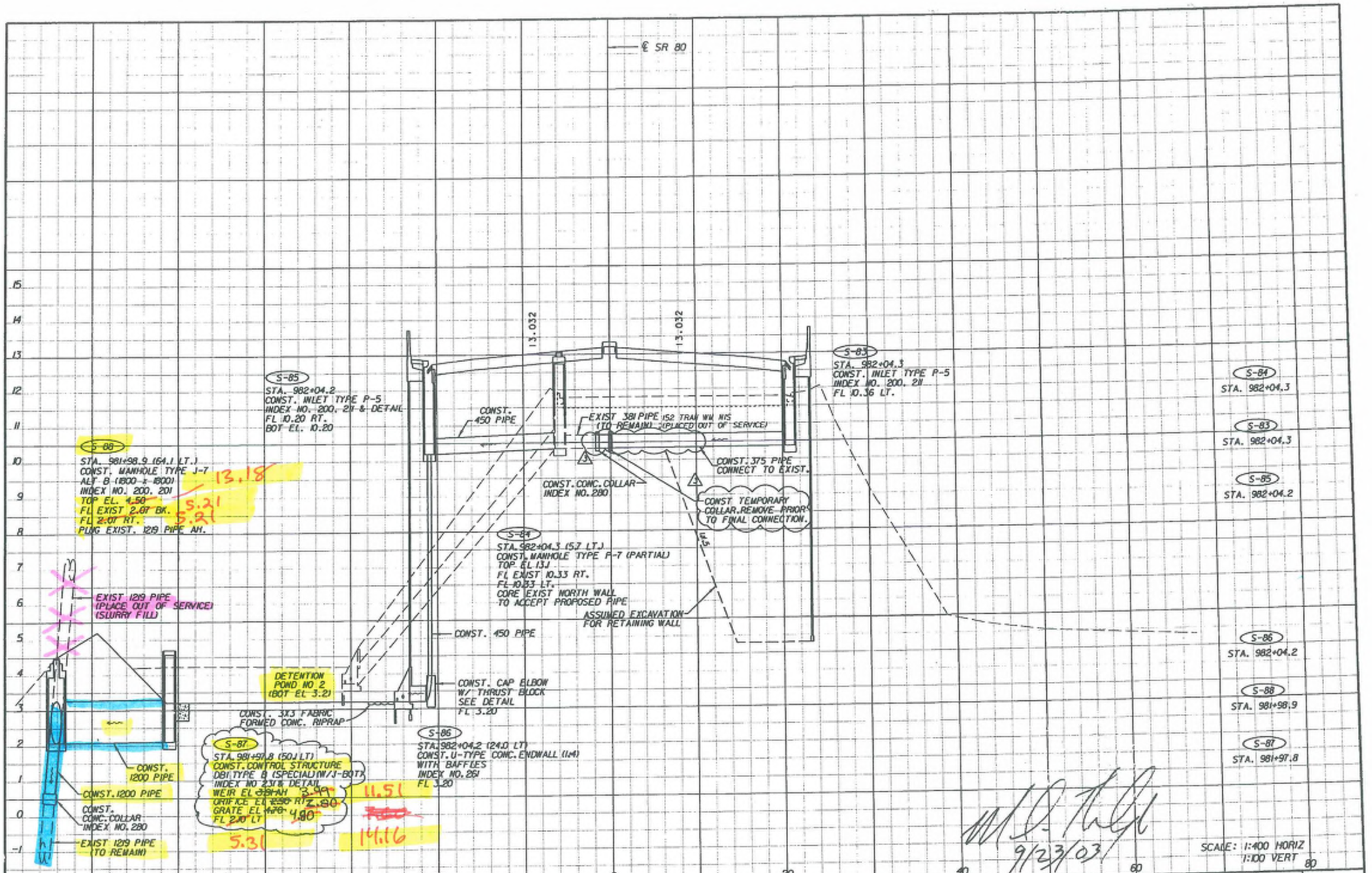
Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

SPECIAL DETAILS

SHEET NO. 109



SCALE: 1:400 HORIZ
1:100 VERT

9/23/03

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
9-23-03	DB	3 REVISED PIPE CONNECTION. ADDED TEMPORARY COLLAR.			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

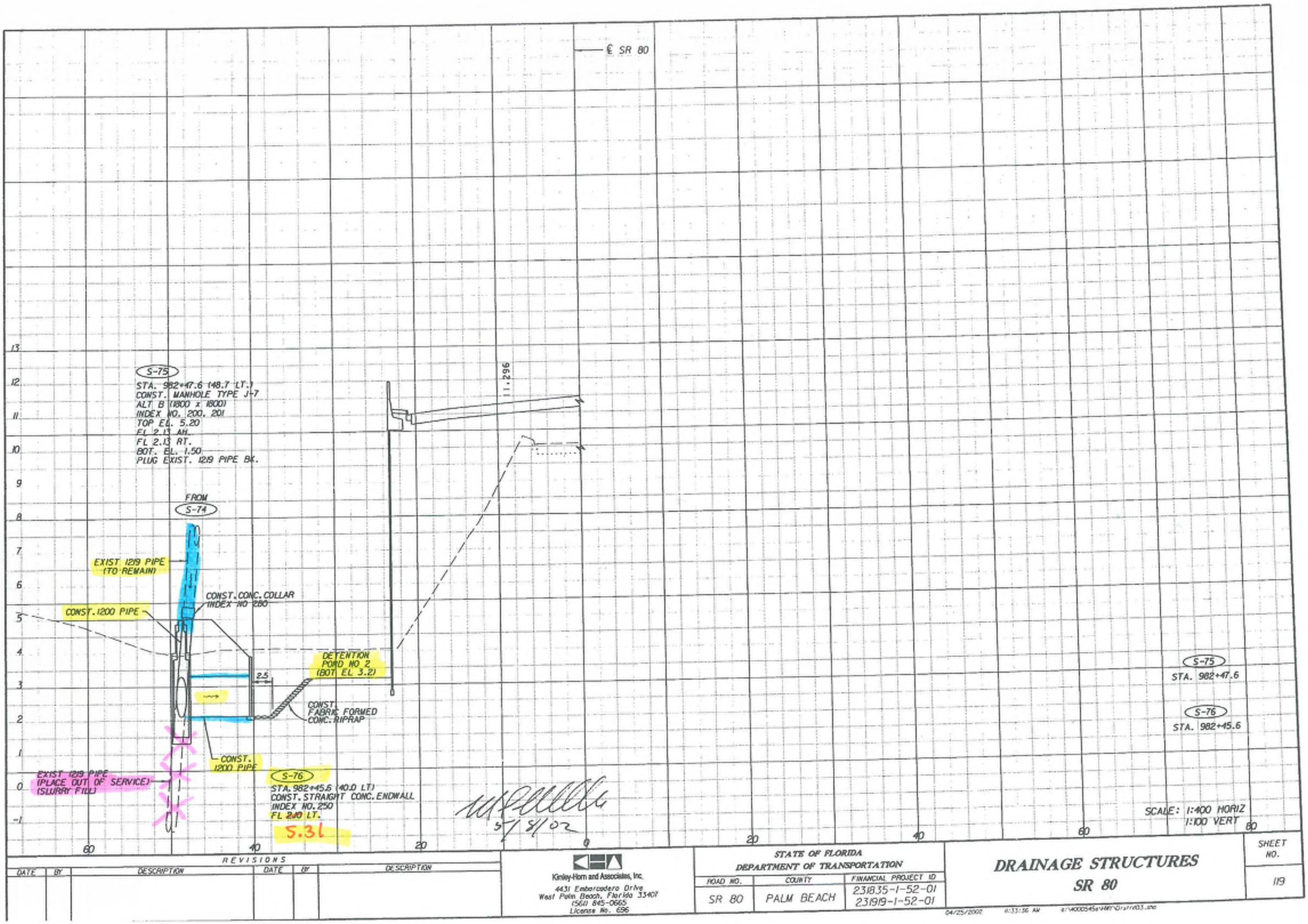
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

DRAINAGE STRUCTURES
SR 80

SHEET NO. 118

09/23/2003 08:33:00 PM o:\40005454e_SR80 East\231835\Revisions\Release\Drstr03_rv3.SAG



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

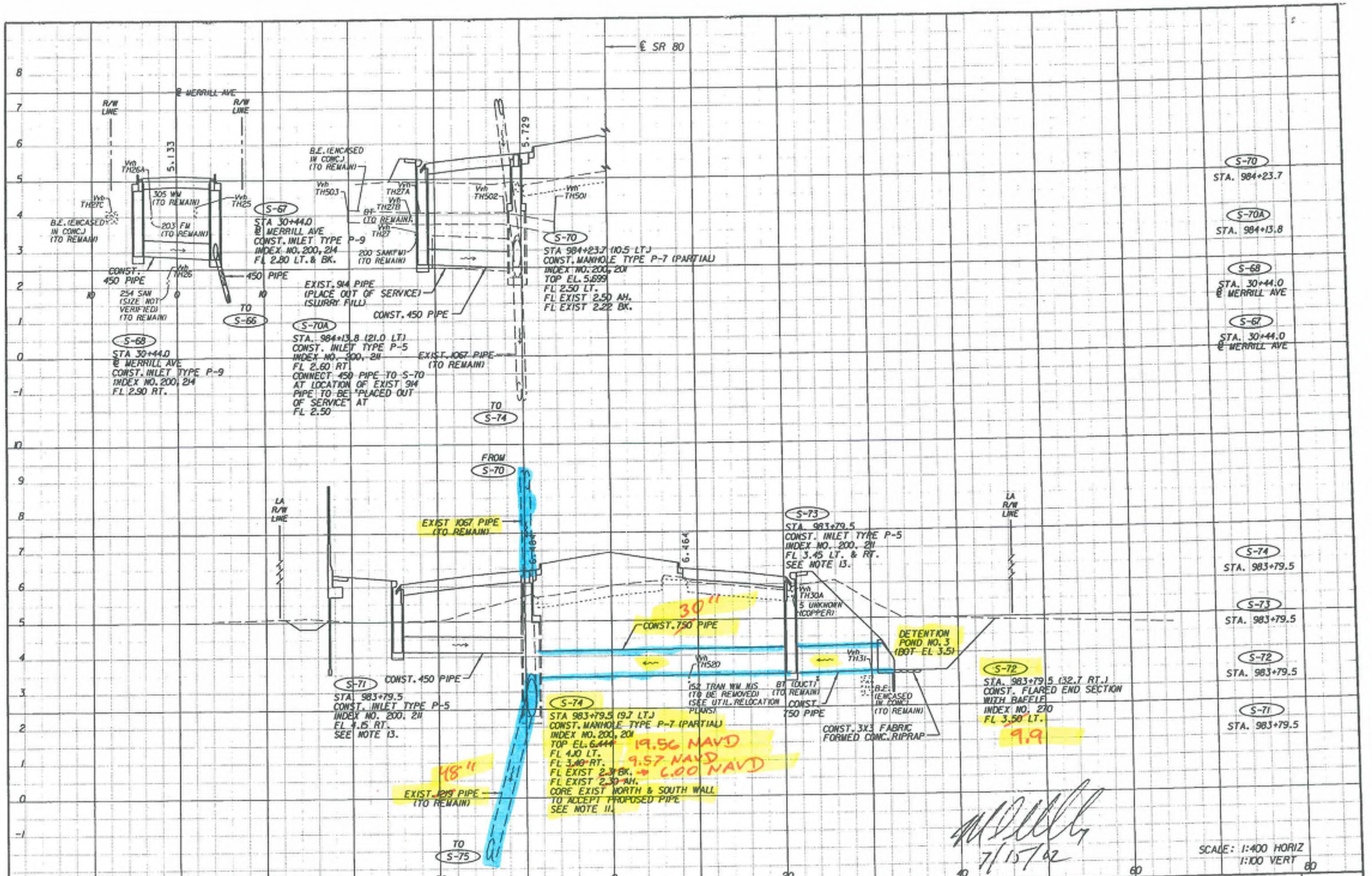
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

DRAINAGE STRUCTURES
SR 80

SHEET NO. 119

04/25/2002 11:33:56 AM e:\4000545e\MP\Drain03.dgn



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

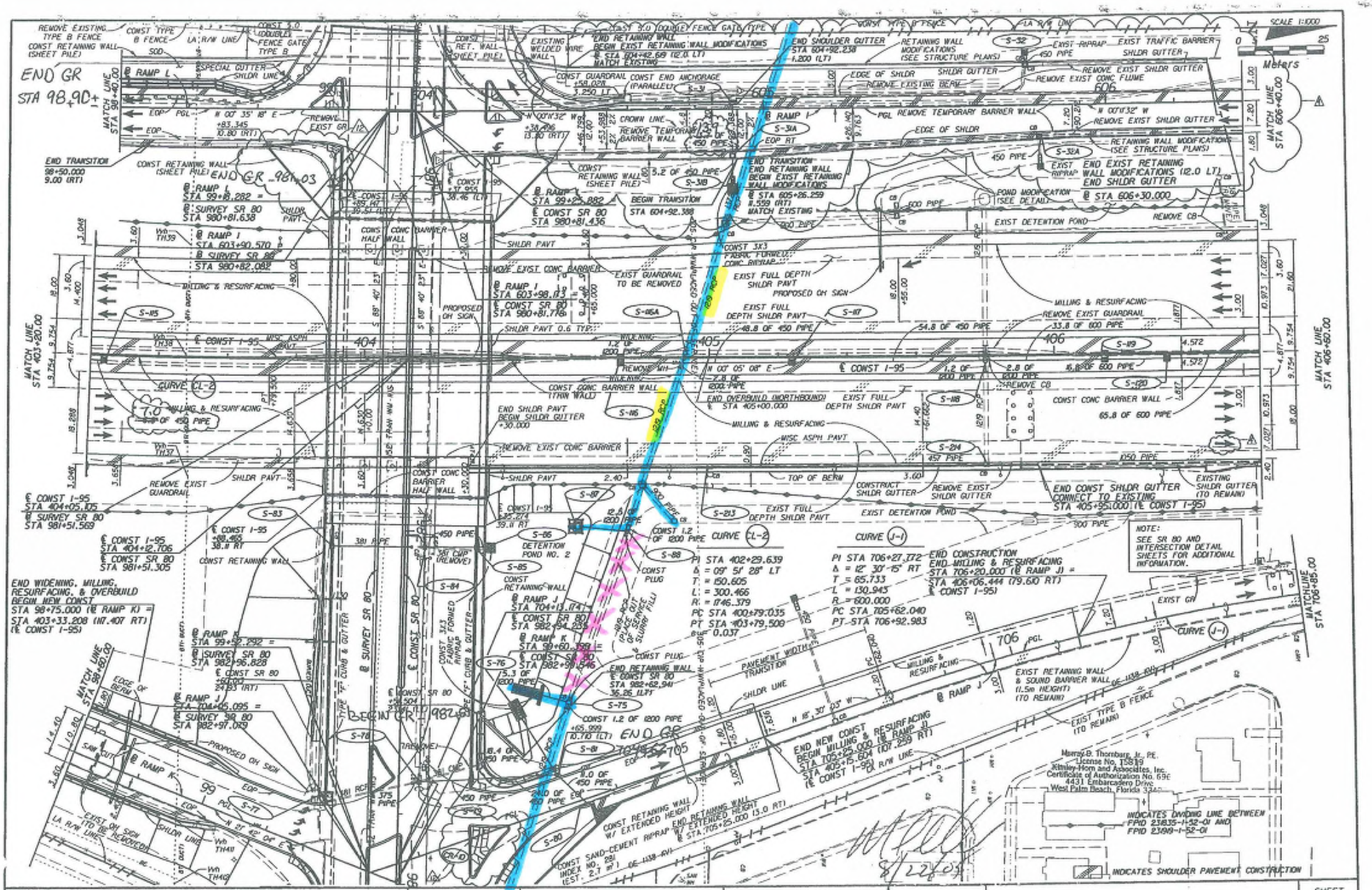
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

DRAINAGE STRUCTURES
SR 80

SHEET NO. 121

07/15/2002 10:51:27 AM G:\4000545e.SR80 East\231835\drainage\DRSTR001.PLG



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-8-04	BLB	1 REVISED RAMP I, ADDED STRUCTURES S-32, S-32A ADDED ARROWS			
08-22-05	GII	2 ADDED GUARDRAIL, REMOVE EXIST GR, REVISED RAMP J ISLAND PEDESTRIAN RAMP			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

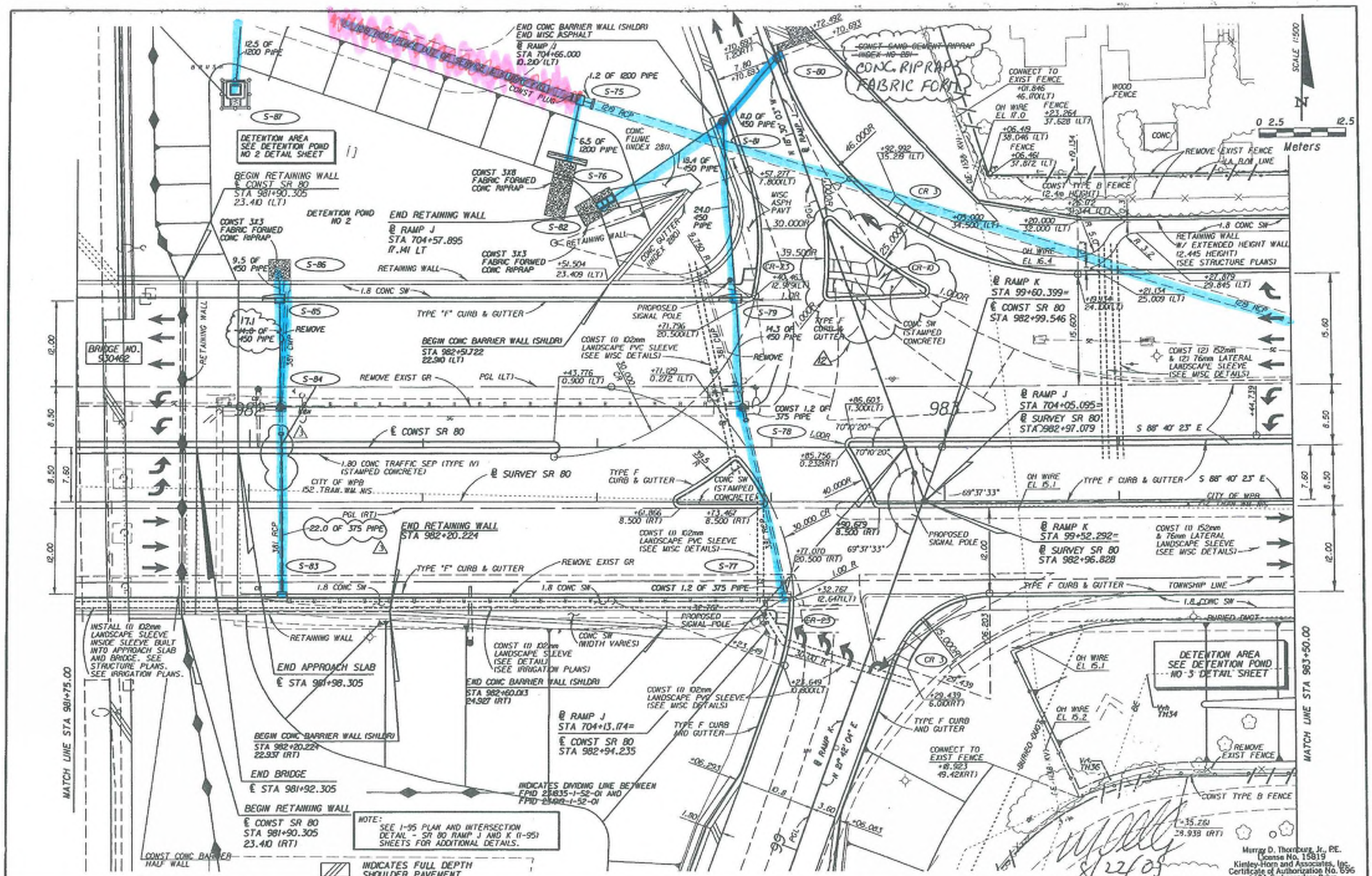
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 23919-1-52-01

I-95 - PLAN

SHEET NO. 83

8/22/2005 2:01:37 PM o:\4000545e_SR80 East\23835\Revisions\roadway\Plan\83_rv1.dgn



Murray D. Thornburg, Jr., P.E.
License No. 15819
Kimley-Horn and Associates, Inc.
Certificate of Authorization No. 696
4431 Embarcadero Drive
West Palm Beach, Florida 33407

8/22/05

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
09-23-03	BB	3 REVISED PIPE CONNECTIONS			
08-22-05	GN	4 REVISED PEDESTRIAN RAMP			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

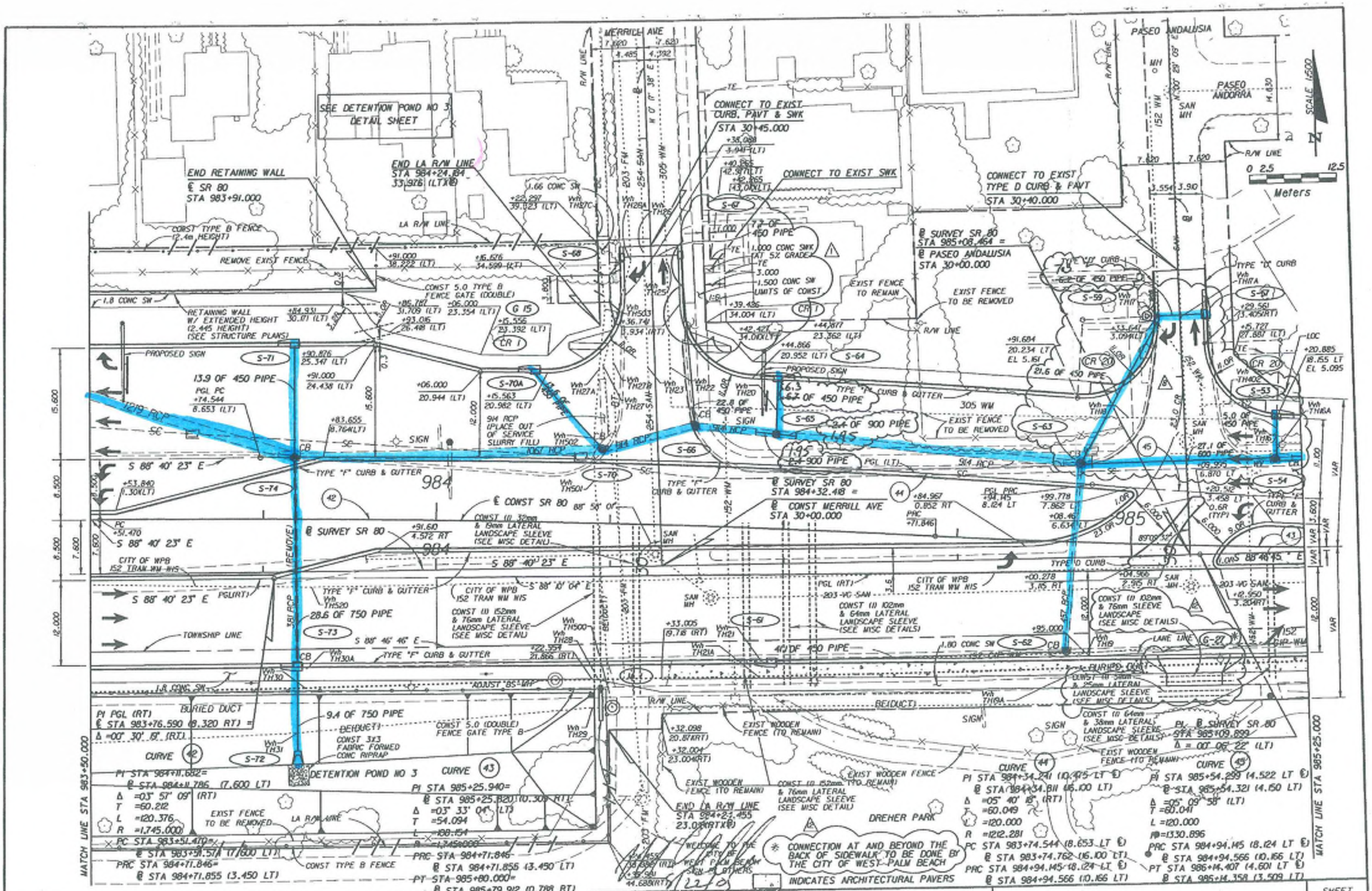
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

SR 80 - PLAN

SHEET NO. 76

8/22/2005 8:42:37 AM o:\40005454.3480 East\231835\Awlplot\roadway\plan80f_rv2.dgn



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
10-03-02	BB	1 CHANGED SWK, LOC AND TE			
9-30-04	BB	6 FIELD REVISIONS			
8-22-05	GN	7 ADDED DROP CURB TURNOUT AND IRRIGATION SLEEVES			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

Murray D. Thomson, Jr., P.E.
License No. 15819
Kimley-Horn and Associates, Inc.
Certificate of Authorization No. 696
4431 Embarcadero Drive
West Palm Beach, Florida 33407

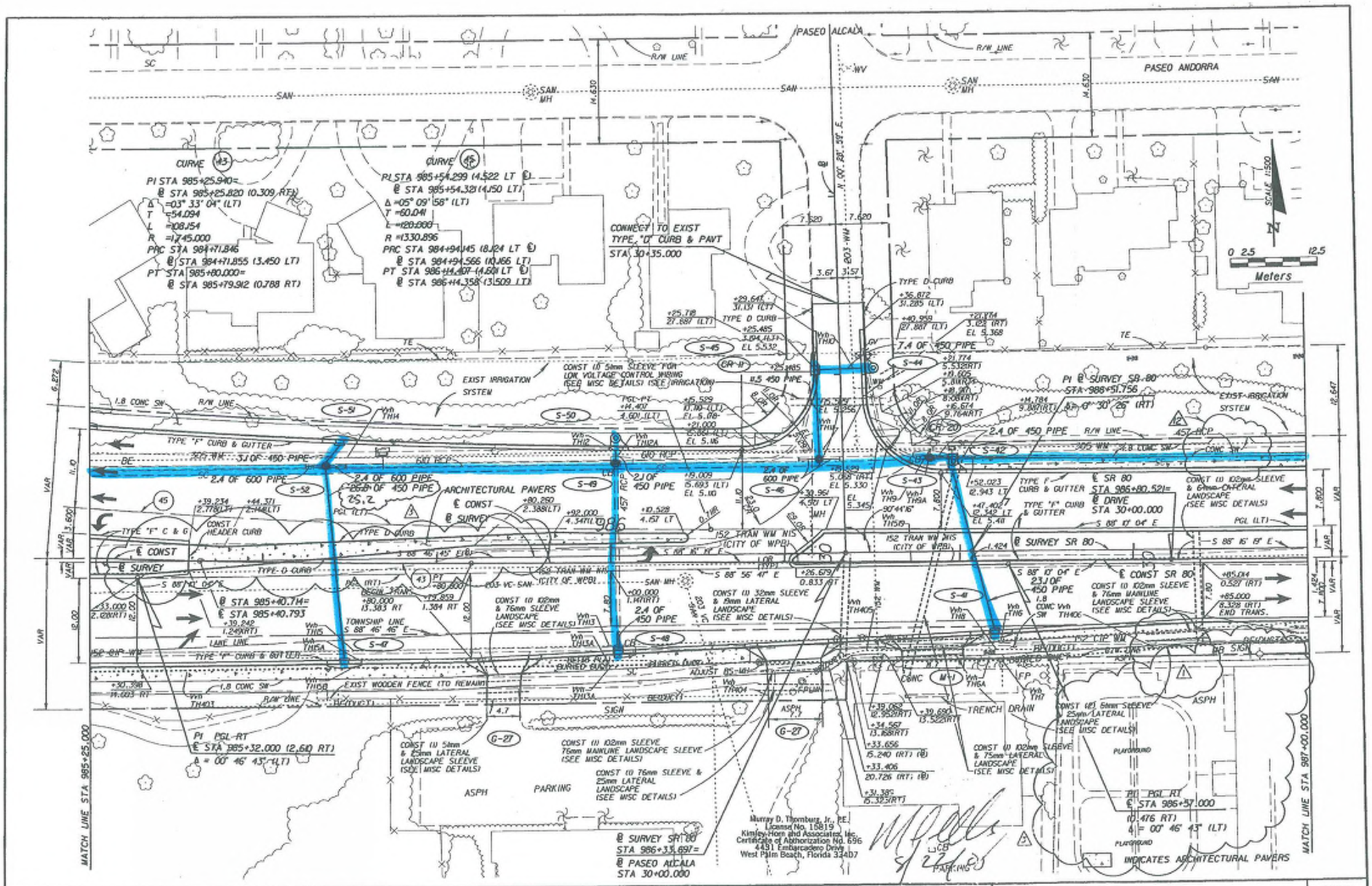
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23835-1-52-01
		23919-1-52-01

SR 80 - PLAN

SHEET NO. 77

8/5/2005 1:09:53 PM o:\4000646e_SR80 East\258151_Revisions\roadway\Plan\r08_rv2.dgn



Murray D. Thornburg, Jr., P.E.
License No. 16819
Kimley-Horn and Associates, Inc.
Certificate of Authorization No. 696
4431 Embarcadero Drive
West Palm Beach, Florida 33407

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
10-03-02	BB	1 DELETED DRIVEWAY AND LA	08-22-05	GW	12 REVISED SIDEWALK
09-23-03	BB	3 CHANGED TAPERS (MEDIAN), CHANGED TOPO, CHANGED DRIVEWAY WIDTH (BY 987+00, RT) NOT SHOWN, REVISED TE (NOT SHOWN)			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01
		231919-1-52-01

SR 80 - PLAN

SHEET NO. 78

8/8/2005 8:15:18 AM a:\40005456_SR80 East\231835_Revisions\roadway\Plans\09_rv12.dgn

PASEO ANDORRA

PARKER AVE

END NEW CONSTRUCTION BEGIN MILLING, OVERBUILD, RESURFACING & WIDENING
℄ STA 987+85.000 (EB)

END NEW CONSTRUCTION BEGIN MILLING, OVERBUILD, RESURFACING
℄ STA 988+19.006 (WB)

END MILLING & RESURFACING
STA 30+35.000

END PROJECT
FP ID 231835-1-52-01
END-OVERBUILD & WIDENING
℄ STA 988+29.202

OH WIRE NOTE 1	OH WIRE NOTE 2	OH WIRE NOTE 3	OH WIRE NOTE 4
A-EL 12.6	A-EL 12.9	A-EL 13.3	A-EL 14.3
C-EL 15.5	C-EL 15.6	C-EL 16.0	C-EL 14.3
D-EL 17.4	D-EL 17.5	D-EL 17.9	D-EL 17.0
E-EL 17.5	E-EL 17.8	E-EL 18.3	E-EL 18.6
F-EL 18.6	F-EL 18.8	F-EL 19.3	F-EL 20.1
"B" EL 14.2	"B" EL 14.1	"B" EL 14.2	"B" EL 14.3

℄ STA 30+02.777
PARKER AVE =
PI PGL (LT)
℄ STA 988+35.443
4.68 (LT)
℄ SURVEY SR 80
STA 988+35.094=
℄ SURVEY PARKER AVENUE
STA 30+00.000
℄ CONST SR 80
STA 988+35.203 =
℄ SURVEY PARKER AVENUE
STA 29+98.576
℄ STA 29+97.776
PARKER AVE =
PI PGL (RT)
℄ STA 988+35.230
0.800(RT)
PI @ PARKER AVENUE
STA 29+90.955
Δ= 03° 20' 16" (LT)

℄ SURVEY SR 80
℄ DRIVE
STA 30+00.000
CONNECT TO EXIST
℄ STA 29+81.783
℄ SR 80
STA 987+07.892 =

BEGIN MILLING & RESURFACING
℄ STA 29+70.000

END CONSTRUCTION
END MILLING & RESURFACING
℄ STA 988+70.000
PI ℄ CONST SR 80
STA 988+35.203
Δ= 00° 29' 41" (LT)
℄ SURVEY PARKER AVE
STA 29+98.576
℄ STA 29+97.776
PARKER AVE =
PI PGL (RT)
℄ STA 988+35.230
0.800(RT)
PI @ PARKER AVENUE
STA 29+90.955
Δ= 03° 20' 16" (LT)

INDICATES ARCHITECTURAL PAVERS

INDICATES WIDENING

SCALE 1:500
0 2.5 12.5
Meters

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
09-23-03	BB	Δ CHANGED TOPO, CHANGED DRIVEWAY WIDTH (BY 987+07, RT), REVISED TE, MOVED DRIVEWAY (BY 987+70, RT)	02-17-06	GK	Δ REVISED CONSTRUCTION LIMITS
05-02-05	BB	Δ REVISED CONSTRUCTION LIMITS, AND ADDED WIDENING LIMITS.			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

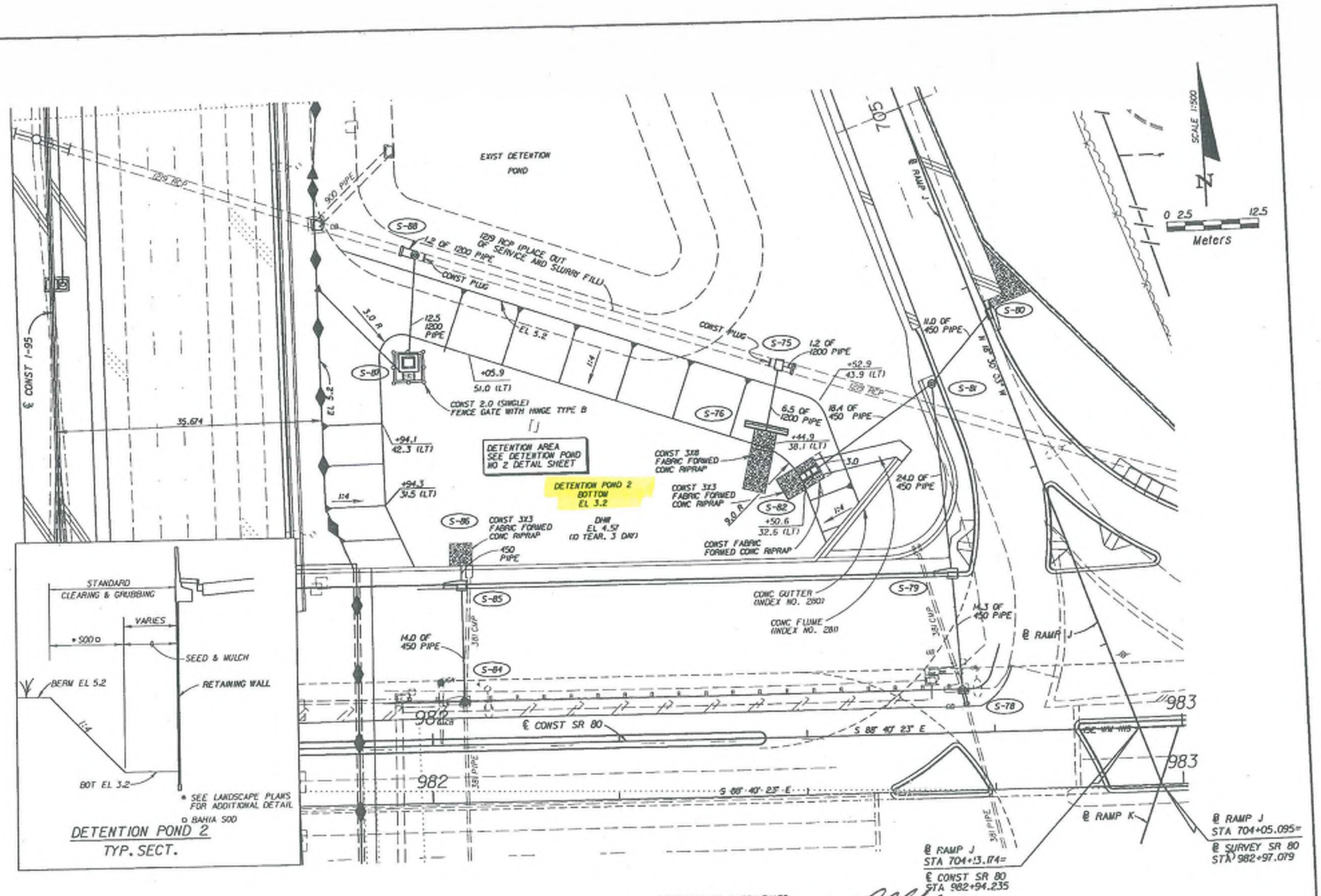
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01
		231919-1-52-01

SR 80 - PLAN

SHEET NO. 79

2/23/2006 2:23:53 PM



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

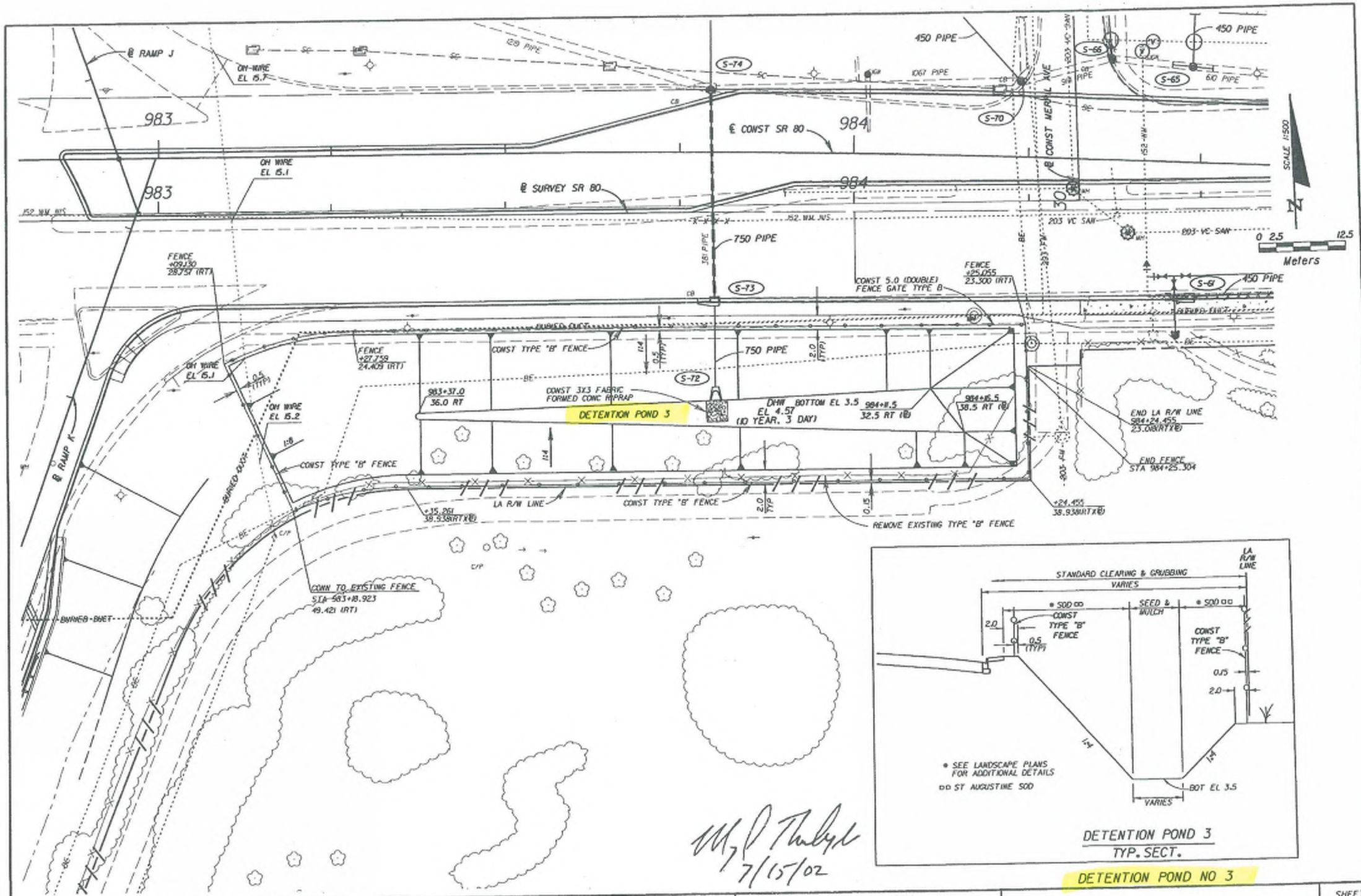
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

DETENTION POND DETAILS

SHEET NO. 30

04/25/2002 04:43:45 PM G:\A000545e\MBT\dwg\d38.dgn



7/15/02

DETENTION POND NO 3

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

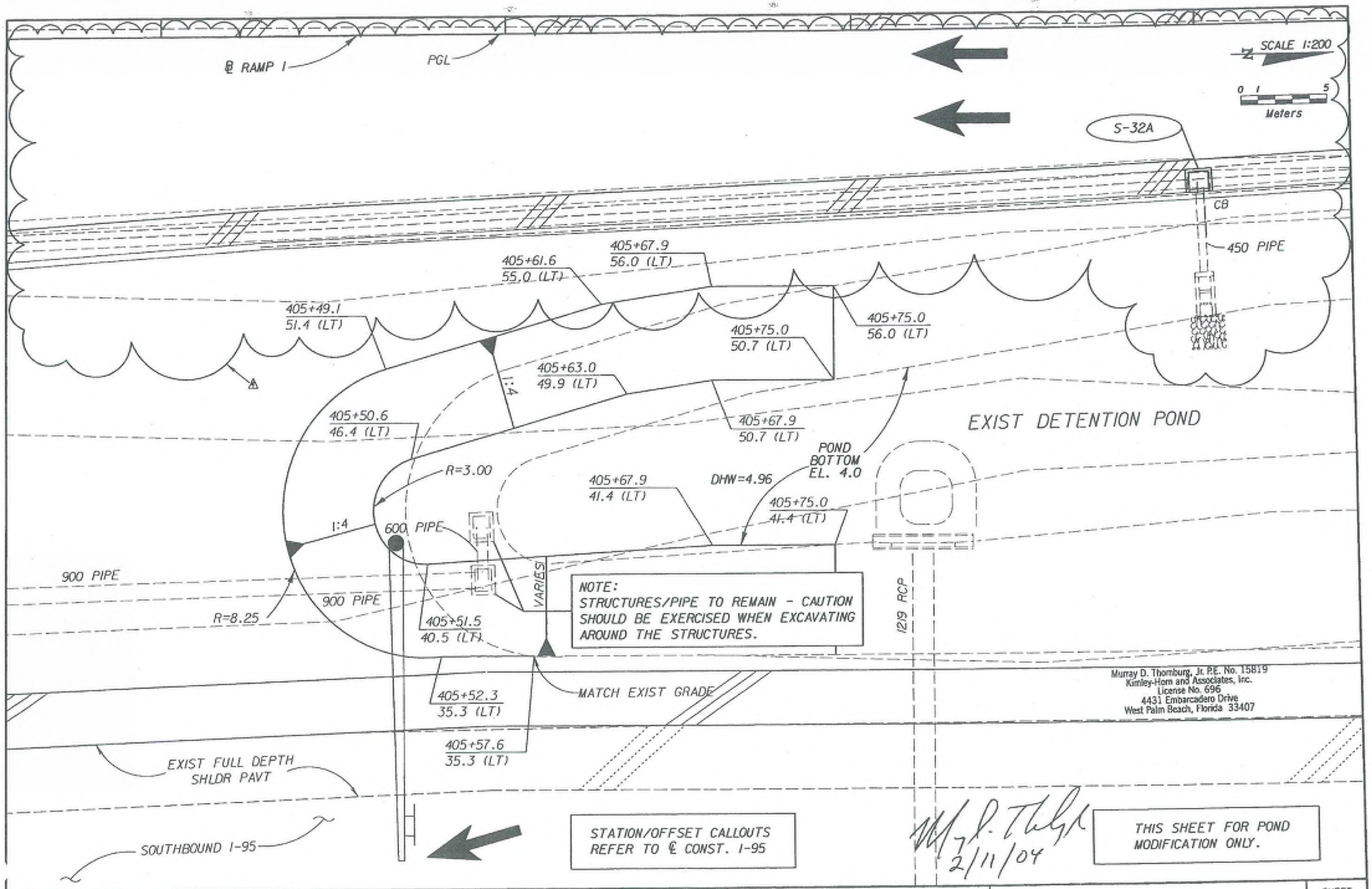
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 23191-1-52-01

DETENTION POND DETAILS

SHEET NO. 31

07/15/2002 8:25:0 AM C:\MERRILL ROAD EXTENSION\...



Murray D. Thornburg, Jr. P.E. No. 15819
Kimley-Horn and Associates, Inc.
License No. 696
4431 Embarcadero Drive
West Palm Beach, Florida 33407

2/11/04

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-11-04	ELB	⚠ REVISED RAMP I, ADDED STRUCTURE S-32A			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

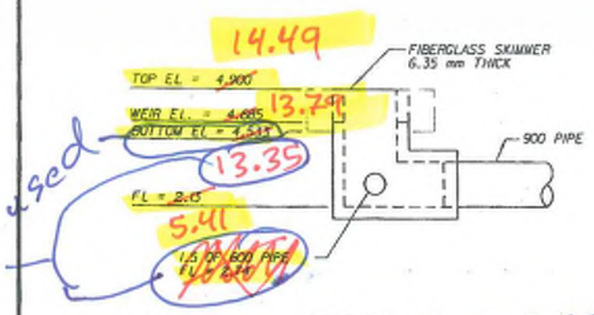
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

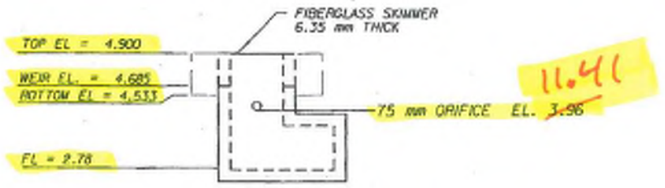
POND MODIFICATION DETAIL

SHEET NO. 32

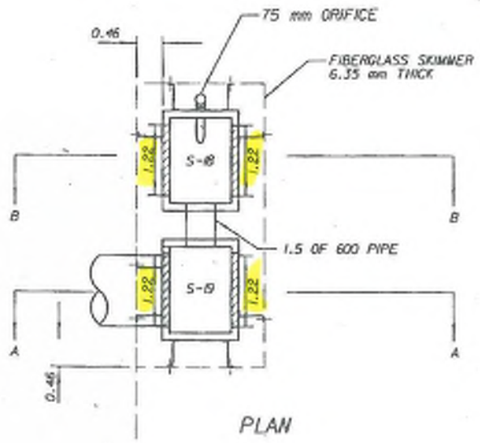
FINANCIAL PROJ. ID	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	125



SECTION A-A → S-19



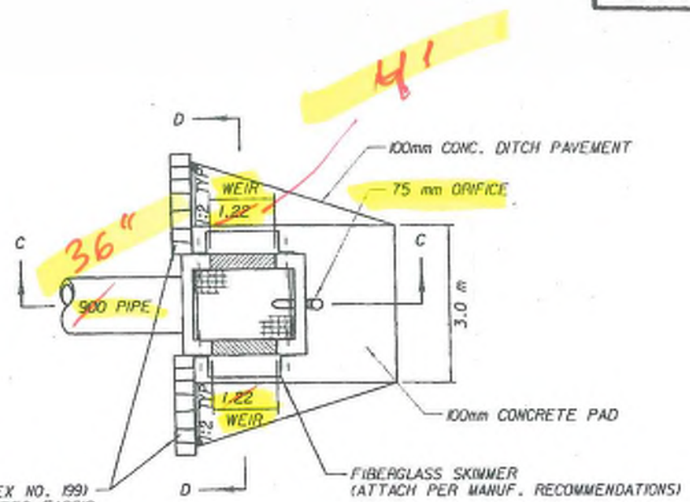
SECTION B-B → S-18



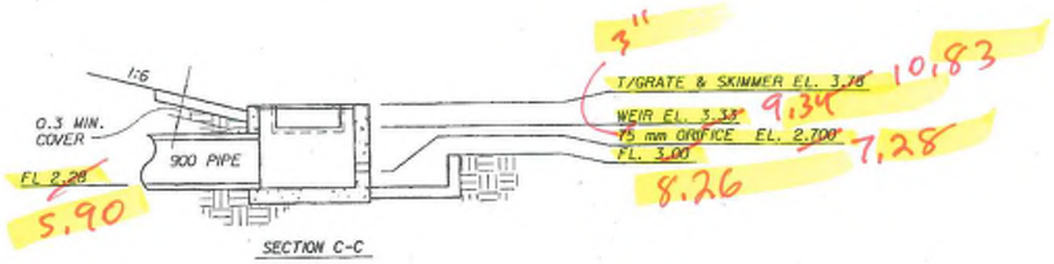
PLAN

S-18 AND S-19 TYPE D DBI (MODIFIED) W/ J-BOTTOM ALT. B (1250 x 1500) OUTFALL STRUCTURE DETAILS ⚠1

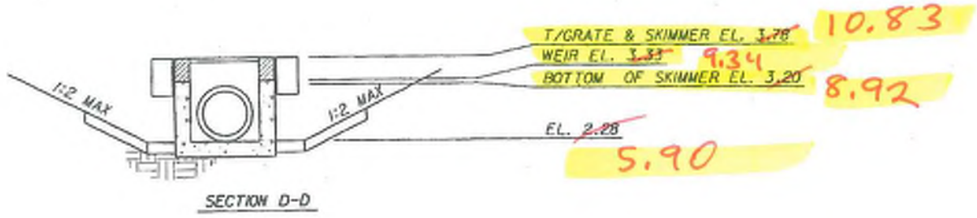
NOTE: COST OF SKIMMER AND FASTENERS TO BE INCLUDED IN COST FOR INLET.



PLACE PLASTIC FILTER FABRIC TYPE D-4 (SEE STD. INDEX NO. 199) AROUND AND BELOW SAND CEMENT RIPRAP. COST OF FILTER FABRIC AND SAND CEMENT RIPRAP TO BE INCLUDED IN COST FOR INLET.



SECTION C-C



SECTION D-D

S-6A D.B.I. TYPE D MODIFIED OUTFALL STRUCTURE DETAIL ⚠1

Francis Flatley
11/5/99
FOR REV. 11/8/99

REVISIONS															
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	
11/08/99	FF	⚠1 REVISED CONTROL ELEVATIONS													

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

RS+H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning Tampa, Florida

STORMWATER POND DETAIL POND 1B, 1C

.../t/drainage/drdtrd01.dgn Nov. 02, 1999 15:59:47

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	160

NOT IMPLEMENTED

S-8
STA. 605+23.962 @ RAMP I (12.31 RT)
CONST. INLET TYPE S
GRATE EL. 11.617
FL 9.68

STA. 605+21.962 @ RAMP I (25.714 RT)
CONST. U-TYPE CONC. ENDWALL W/6 BAFFLES
FL 4.31

12.061
LA R/W
450 PIPE
4.90
2.0x2.0 RUBBLE RIP RAP
℄ CONSTRUCTION

S-19
STA. 405+54.69 (39.58 LT) ℄ I-95

S-18
STA. 405+54.600 (42.54 LT) ℄ I-95

S-8
STA. 605+23.962 @ RAMP I

4
S-7A
STA. 404+97.500

4
℄ CONSTRUCTION
TO S-177
450 PIPE
S-7A
STA. 404+97.500 (30.800 RT)
CONST. INLET TYPE S
GRATE EL. 5.38
FL 3.53

S-18
STA. 405+54.600 (42.54 LT)
CONST. INLET TYPE "D"
GRATE EL. 4.90
FL EL. 2.74

S-19
STA. 405+54.690 (39.58 LT)
CONST. INLET TYPE "D"
GRATE EL. 4.90
FL EL. 2.13

POND 18
600 PIPE

2 S-149
STA. 407+10.156 (44.213 RT)
CONST. M.H. TYPE 7
TOP EL. 4.00
FL 2.06

2 S-150
STA. 407+16.685 (81.020 RT)
CONST. M.H. TYPE 7
TOP EL. 4.00
FL 2.06

900 PIPE
750 PIPE EXIST.

2 S-148
STA. 405+90.189 (47.000 RT)
CONST. MES
FL 2.06

900 PIPE

S-150
STA. 407+16.685

S-149
STA. 407+10.156

S-148
STA. 405+90.189

S-6
STA. 405+04.671 (38.100 LT)
REMOVE EXIST. INLET
CONST. CONC. PIPE COLLAR
CONST. INLET TYPE B
(ALT. B 1800 x 1500)
GRATE EL. 4.95 ~~14.66~~
MATCH EXIST. FL

S-7
STA. 404+72.21 (38.73 RT)
CONST. CONC. SLAB (1500 x 1500)
CONST. INLET TYPE B
FL EL. 2.28 ~~5.90~~
PER ENGINEER

POND 2
S-6A
STA. 404+90.91 (44.47 RT)
CONST. INLET TYPE D
GRATE EL. 3.78 ~~10.83~~
FL EL. 2.28 ~~5.90~~

℄ CONSTRUCTION
900 PIPE
2.09
EXIST. 1050 PIPE TO REMAIN
~~4'6"~~
~~98"~~ 5.09 per survey
1050 PIPE
EXIST. 1050 PIPE TO REMAIN
~~42"~~
EXIST. 1050 PIPE TO REMAIN
~~42"~~
Modify Existing Structure
12/13/00

S-7
STA. 404+78.532

S-6A
STA. 404+90.91 (44.47 RT)

S-6
STA. 405+04.671

5.00m (assumed) ~~14.82~~
2.00m (assumed) ~~4.98'~~ ~~5.21'~~ assumed (match US)
EXIST. 1050 PIPE TO REMAIN

Revisions noted by Cloud Designation - Document Field Changes Authorized During Construction and do not imply either Review of, or Responsibility for Original Design

Ian N. Blava, PE
License No. 50700
Date: 9/19/01
Reynolds, Smith & Hills, Inc.
300 South Pine Island Road, Suite 300
Plantation, Florida 33324
Office: (954) 474-3005 Fax: (954) 474-1304

SCALE RATIO: 1:500 HORZ. 1:200 VERT.

DATE	BY	DESCRIPTION
05/05/99	FM	1 CHANGED S-7. ADDED S-148 THRU S-150
11/08/99	FM	2 CHANGED S-8 & S-19 ADJUSTED S-149 & S-150 CHANGED S-148 TO MES
11/08/99	FM	3 ELIMINATED S-6B. CHANGED S-7
09/19/01	MC	4 REVISED S-7A

REVISIONS

RS+H Reynolds, Smith and Hills, Inc. Architecture, Engineering and Planning, Plantation, Florida

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE STRUCTURES

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	68

MATCHLINE STA 406+00.000

ons noted by Cloud Design:
ıment Field Changes Author
ıng Construction and do not in
ıer Review of, or Responsibility
Original Design

TO REMAIN

8.6 OF 450 PIPE

11.5 OF 450 PIPE

℄ RAMP I

POND IB

41.7 OF 1215 PIPE

29.6 OF 1215 PIPE

32.2 OF 1050 PIPE

1.5 OF 600 PIPE

14.8 OF 450 PIPE

47.5 OF 900 PIPE

3.9 OF 1050 PIPE

℄ SURVEY & ℄ CONST. I-95

SR-9 (I-95 NB)

52 OF 450 PIPE

27.4 OF 1050 PIPE

POND IC

32.4 OF 450 PIPE

℄ RAMP J

RAMP J

OAK STREET

PARKLAND ROAD

VAN DEVENTER

11.4 OF 900 PIPE

TO REMAIN

TO REMAIN

REGRADE AREA TOWARD EXISTING INLET

TO REMAIN

TO REMAIN

404+12.516 ℄ SURVEY & ℄ CONST. I-95 = 981+50.973 ℄ SOUTHERN BLVD.

SR-9 (I-95 SB)

RAMP I

BEGIN ℄ RAMP I
STA 603+97.982=
STA 980+81.451
℄ SOUTHERN BLVD.

SOUTHERN BLVD. (S.R. 80)

T 43 S
T 44 S

MATCHLINE STA. 403+75.000

Ian N. Biava, PE
License No. 50700
Date: 7/19/07
Reynolds, Smith & Hills, Inc.
300 South Pine Island Road, Suite 300
Plantation, Florida 33324
Office: (954) 474-3005 Fax: (954) 474-1304

0 5 20
Meters

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
03/05/08	GAL	⚠ ADDED S-14B	5/05/08	FW	⚠ ADDED S-6A, S-6B, S-9 ADDED POND IC, ADJUSTED S-9 PIPE LENGTH	07/05/07	KEB	⚠ ADDED S-14B,S-14C, S-15			
						08/15/07	MS	⚠ ADDED S-9T, RELOCATED S-7A			

REVISIONS

RS+H
Reynolds, Smith and Hills, Inc.
Architecture, Engineering and Planning
Transportation Group

FLORIDA DEPARTMENT OF TRANSPORTATION

STATE ROAD 9
DRAINAGE PLAN SHEET
STA 403+75 TO STA 406+00

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	117

0 5 25
Meters

+86.009
36.000 (RT)

+14.838
36.000 (RT)

S-7A

S-7

S-11

S-14

EL 5.25

NOTE: SEE SHEET 125 FOR STRUCTURE DETAILS FOR S-6A

EL 4.25

S-6A

S-14B

EL 3.00

14.5 R

115.8 OF 900 PIPE

+72.339
45.663 (RT)

+17.052
49.641 (RT)

POND NO. IC
BOTTOM EL. 3.09
D.H.W 3.97

+61.291
76.884 (RT)

6.0 MAINTENANCE BERM

EL 3.00

EL 4.25

EL 5.25

32.4 OF 450 PIPE

S-15

14.5 R

+79.545
95.477 (RT)

S-9

DENSE BRUSH

I-95 NB

RAMP J

12.50
VARIES

1:6

D.H.W 3.97

EL 4.25

EL 3.00

TYPICAL SECTION A-A
POND NO. IC

Francis Whitehead
11/5/99
For RFV 11/8/99

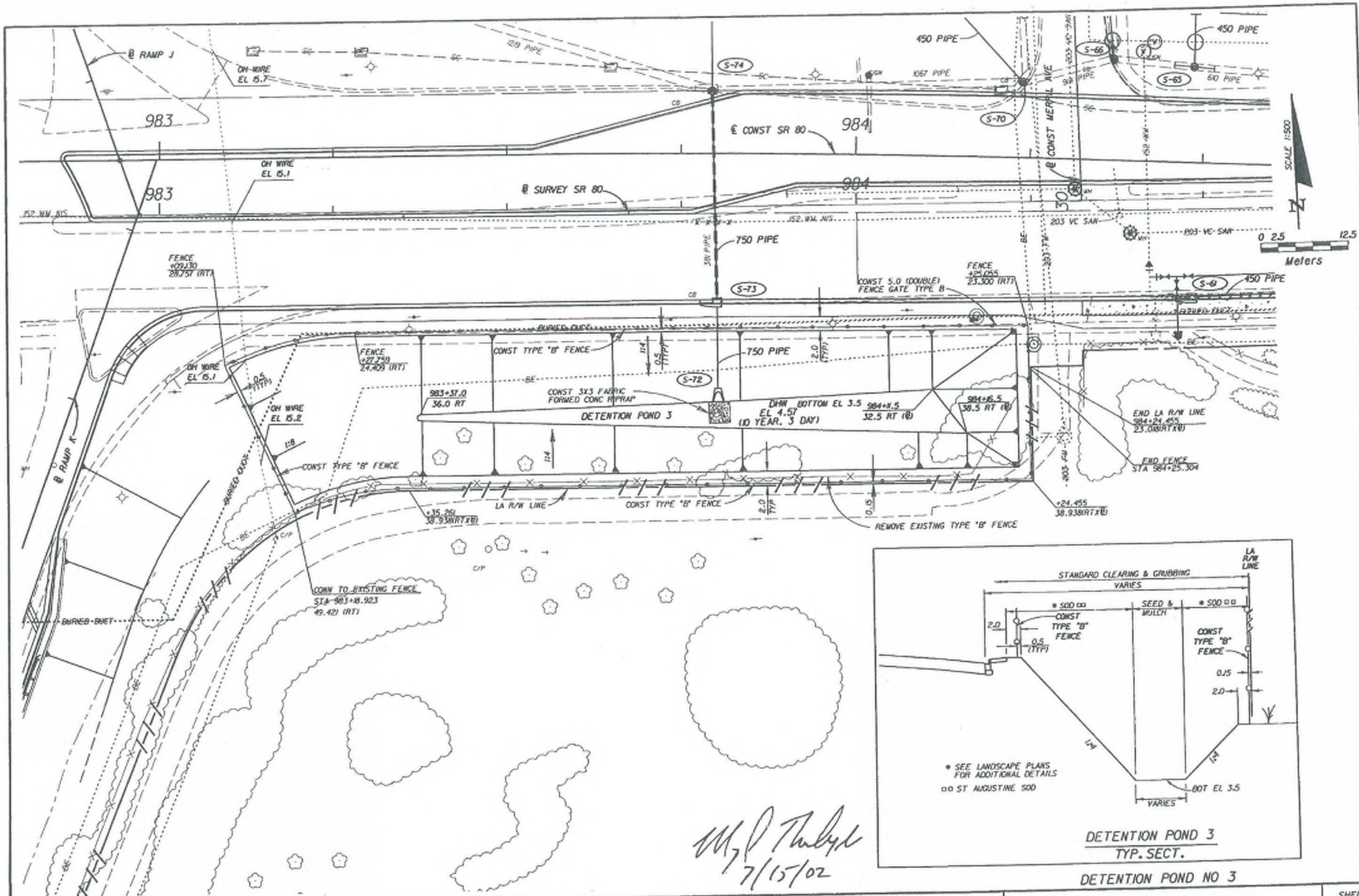
REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
11/05/99	FW	⚠ ADDED S-14B	6/08/99	FW	⚠ ADDED S-6A & S-14B ADDED POND IC. REVISED S-9 PIPE LENGTH						

RS&H
Reynolds, Smith and Hills, Inc.
Architecture, Engineering and Planning
Jacksonville, Florida

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE DETAILS
POND NO. IC

.../t/drainage/retardlc.dgn Nov. 05, 1999 08:45:13



DETENTION POND 3
TYP. SECT.

7/15/02

DETENTION POND NO 3

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

DETENTION POND DETAILS

SHEET NO. 31

07/13/2002 8:25:10 AM

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	68

ons noted by Cloud Design
ıment Field Changes Author
ıng Construction and do not in
ıer Review of, or Responsibility
Original Design

MATCHLINE STA 406+00.000

MATCHLINE STA. 403+75.000

OAK STREET

PARKLAND ROAD

VAN DEVENTER

SOUTHERN BLVD. (S.R. 80)

SR-9 (I-95 NB)

SR-9 (I-95 SB)

POND 18

POND 1C

RAMP I

RAMP J

@ SURVEY & @ CONST. I-95

TO REMAIN

REGRADE AREA TOWARD EXISTING INLET

41.7 OF 1215 PIPE

29.6 OF 1215 PIPE

32.2 OF 1050 PIPE

27.4 OF 1050 PIPE

52 OF 450 PIPE

8.6 OF 450 PIPE

11.5 OF 450 PIPE

1.5 OF 600 PIPE

14.8 OF 450 PIPE

47.5 OF 900 PIPE

3.9 OF 1050 PIPE

32.4 OF 450 PIPE

11.4 OF 900 PIPE

S-12, S-13, S-10, S-11, S-11A, S-11B, S-11T, S-18, S-19, S-6, S-6A, S-7, S-7A, S-9

BEGIN @ RAMP I
STA 603+97.982=
STA 980+81.451
@ SOUTHERN BLVD.

404+12.516 @ SURVEY & @ CONST. I-95=
981+50.973 @ SOUTHERN BLVD.

T 43 S
T 44 S

Ian N. Biava, PE
License No. 50700
Date: 7/19/01
Reynolds, Smith & Hills, Inc.
300 South Pine Island Road, Suite 300
Plantation, Florida 33324
Office: (954) 474-3005 Fax: (954) 474-1304

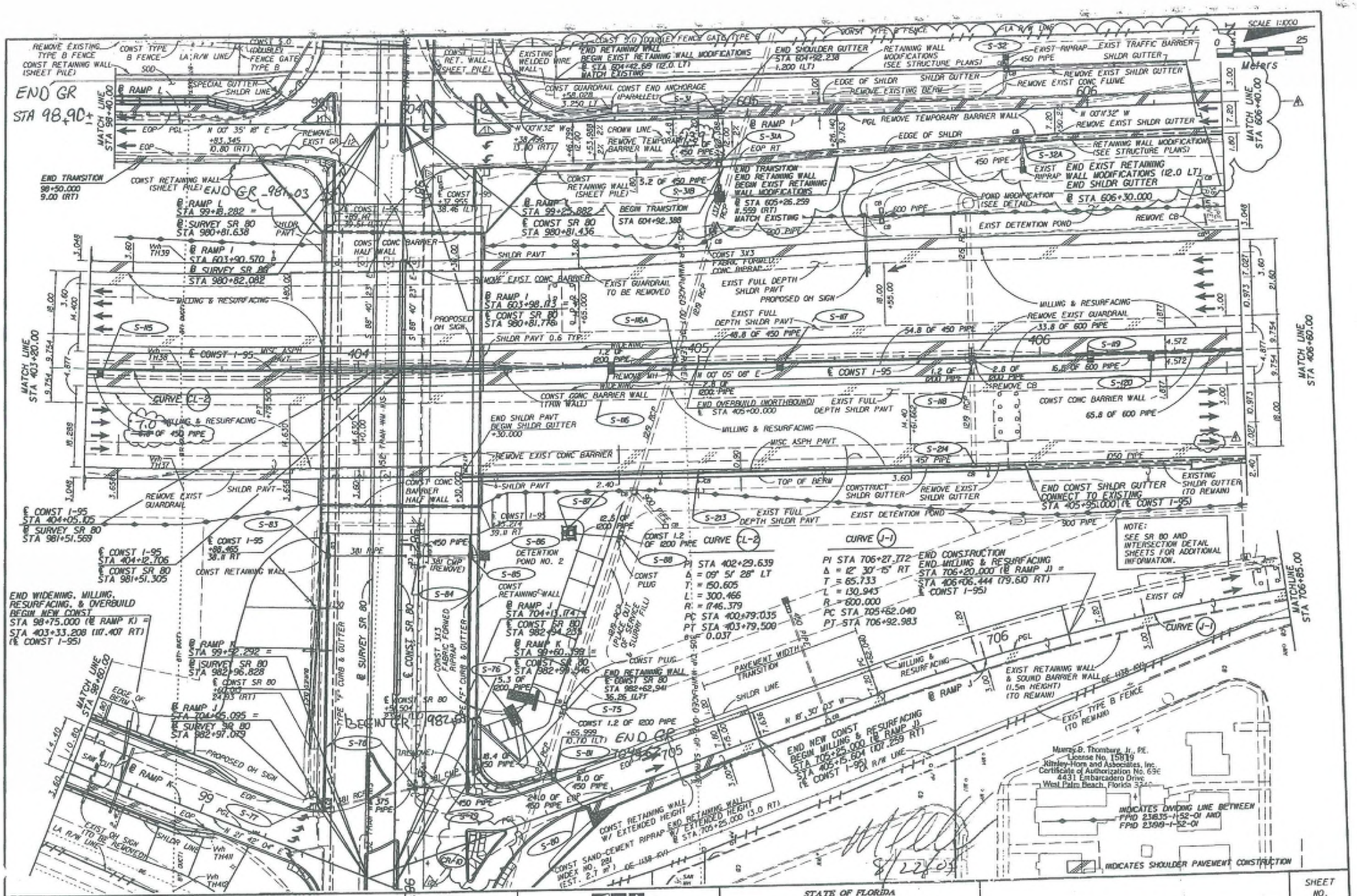
REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
03/05/99	CAL	⚠ ADDED S-11B	6/08/99	FB	⚠ ADDED S-6A, S-6, S-9 ADDED POND IC, ADJUSTED S-9 PIPE LENGTH	07/05/01 09/6/01	KCB	⚠ ADDED SHOULDER GUTTER
							MS	⚠ ADDED S-9T, RELOCATED S-7A

RS+H
Reynolds, Smith and Hills, Inc.

FLORIDA DEPARTMENT OF TRANSPORTATION

STATE ROAD 9
DRAINAGE PLAN SHEET
STA 403+75 TO STA 406+00



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-11-04	BLB	⚠1 REVISED RAMP I. ADDED STRUCTURES S-32, S-32A ADDED ARROWS			
08-22-05	GH	⚠2 ADDED GUARDRAIL, REMOVE EXIST GR. REVISED RAMP J ISLAND PEDESTRIAN RAMP			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

I-95 - PLAN

SHEET NO. 83

8/22/2005 2:50:37 PM o:\40005454_SR80 East\231835_Revisions\roadway\Plans\03_rw01.dgn

℄ RAMP I

PGL

SCALE 1:200

0 1 5
Meters

S-32A

CB

450 PIPE

405+67.9
56.0 (LT)

405+61.6
55.0 (LT)

405+49.1
51.4 (LT)

405+75.0
56.0 (LT)

405+75.0
50.7 (LT)

405+63.0
49.9 (LT)

1:4

405+50.6
46.4 (LT)

405+67.9
50.7 (LT)

EXIST DETENTION POND

POND
BOTTOM
EL. 4.0

DHW=4.96

R=3.00

405+67.9
41.4 (LT)

405+75.0
41.4 (LT)

1:4

600 PIPE

900 PIPE

900 PIPE

R=8.25

VARIES

405+51.5
40.5 (LT)

NOTE:
STRUCTURES/PIPE TO REMAIN - CAUTION SHOULD BE EXERCISED WHEN EXCAVATING AROUND THE STRUCTURES.

1219 RCP

405+52.3
35.3 (LT)

MATCH EXIST GRADE

405+57.6
35.3 (LT)

EXIST FULL DEPTH
SHLDR PAVT

SOUTHBOUND I-95

STATION/OFFSET CALLOUTS
REFER TO ℄ CONST. I-95

Murray D. Thornburg, Jr. P.E. No. 15819
Kimley-Horn and Associates, Inc.
License No. 696
4431 Embarcadero Drive
West Palm Beach, Florida 33407

2/11/04

THIS SHEET FOR POND MODIFICATION ONLY.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-11-04	BLB	⚠ REVISED RAMP I, ADDED STRUCTURE S-32A			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

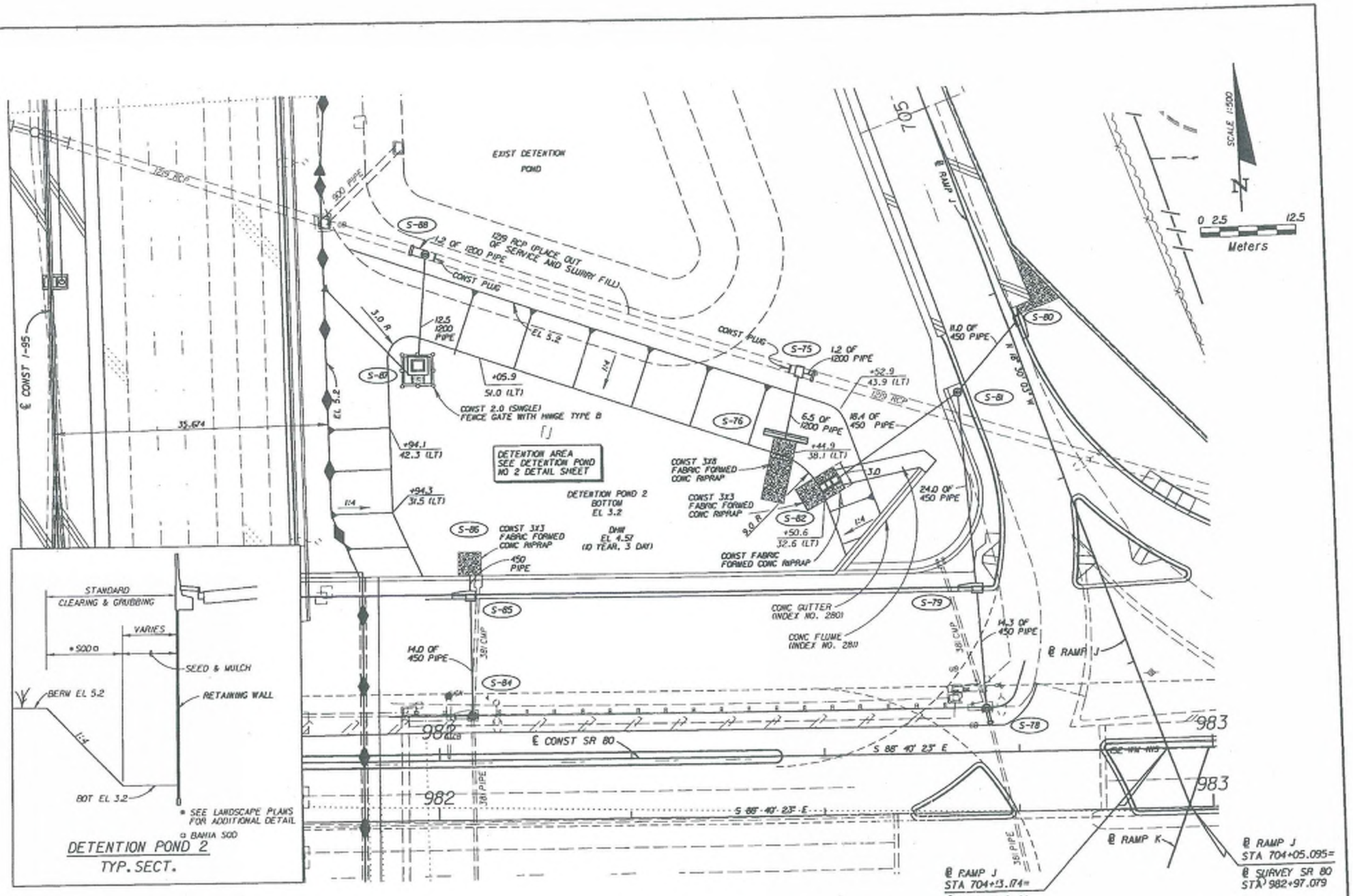
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

POND MODIFICATION DETAIL

SHEET NO. 32

02/04/2004 8:27:39 AM



5/31/02

DETENTION POND NO 2

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

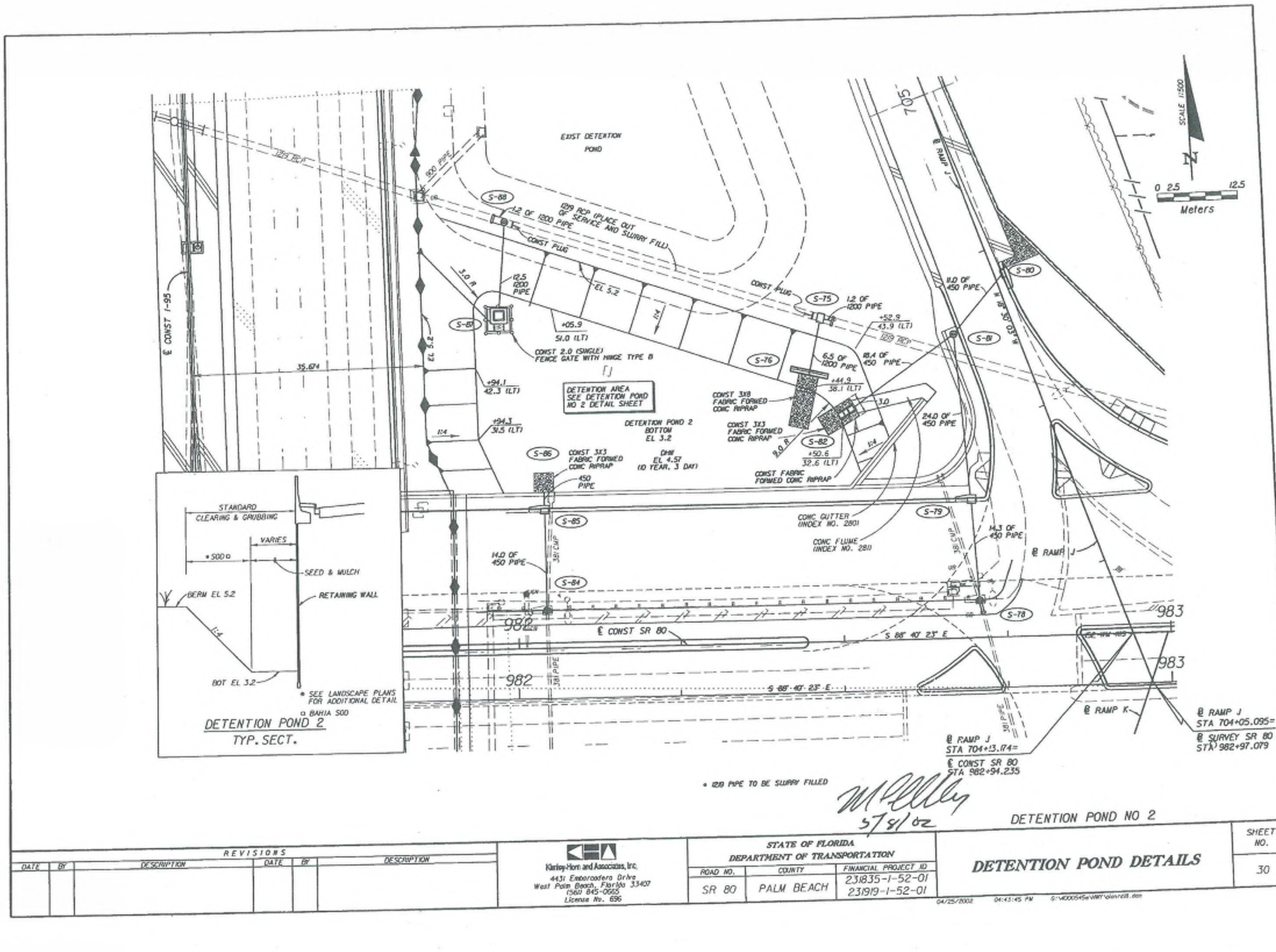
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 23191-1-52-01

DETENTION POND DETAILS

SHEET NO. 30

04/25/2002 04:43:45 PM G:\4000545a\WP\plan\d18.dgn



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23183S-1-52-01 23191-1-52-01

DETENTION POND DETAILS

SHEET NO. 30

04/25/2002 04:45:45 PM G:\40005456\WP\plan018.dgn

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	117

0 5 25
Meters
HOOD

+86.009
36.000 (RT)

+14.838
36.000 (RT)

S-7A

S-7

S-6A

S-11

S-M

S-M8

S-5

S-9

EL 5.25
EL 4.25
EL 3.00

NOTE: SEE SHEET 125 FOR STRUCTURE DETAILS FOR S-6A

14.5 R

115.8 OF 900 PIPE

+72.339
45.663 (RT)

+17.052
49.641 (RT)

POND NO. IC
BOTTOM EL. 3.00
D.H.W 3.97

6.0 MAINTENANCE BERM

+61.291
76.884 (RT)

321.4 OF 450 PIPE

+79.545
95.477 (RT)

DENSE BRUSH

I-95 NB

RAMP J

12.50
VARIES

1:6

D.H.W 3.97

EL 4.25

EL 3.00

TYPICAL SECTION A-A
POND NO. IC

11/5/99
FOR RCV 11/8/99

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
03/05/99	FW	⚠ ADDED S-M8	04/05/99	FW	⚠ ADDED S-6A & S-M8 ADDED POND IC. REVISED S-9 PIPE LENGTH						

RS+H
Reynolds, Smith and Hills, Inc.
Architecture, Engineering and Planning
Plantation, Florida

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE DETAILS
POND NO. IC

.../t/drainage/retardic.dgn Nov. 05, 1999 08:45:13

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	51

OFFSETS TO MSE WALLS INDICATE GUTTER LINE

AIRPORT FUTURE PRECISION INSTRUMENT APPROACH SURFACE (SEE SHEET 155 AND 156 FOR AIRPORT APPROACH SLOPES).

SEE SHEET 140 FOR DETAILS OF RAMP A AT SR-9 (I-95) AND DETAILS OF RAMP C AT SR-9 (I-95)

1:1000

BEGIN FENCE TYPE B AT EXISTING FENCE 608+27.875 24.187 (LT)

609+24.335 30.601 (LT)

END SHOULDER GUTTER +30.0m

TRI-RAIL

LA R/W

EXIST FENCE (TO REMAIN)

EXISTING FENCE (TO BE REMOVED)

BEGIN BRIDGE 608+92.600

BEGIN APPROACH SLAB 608+86.600

END SHOULDER GUTTER 608+74.536

LA R/W

END BARRIER WALL (RIGID-SHOULDER) PROVIDE GUARDRAIL CONNECTION STA 9+62.000

BEGIN BARRIER WALL (RIGID-SHOULDER) STA 9+50.000

605 606 607 608 609

3.0 PAVED SHOULDER

℄ RAMP I

MSE WALL I-1C

SHOULDER GUTTER

12.000

N 00° 11' 32" W

PC +63.671

RAMP I

CURVE I-1

MISC. ASPHALT

PT +20.358

MSE WALL I-1A

BEGIN RAMP ℄ A STA PC 7+31.909= STA 407+37.050 ℄ CONST. I-95 (31.354 LT.)

1.8 PAVED SHOULDER

3.0 PAVED SHOULDER

℄ RAMP A

CURVE A-1

RAMP A

N 08° 54' 44" W

3.6 FULL DEPTH PAVED SHOULDER

1.2 PAVED SHLDR.

1.2 PAVED SHOULDER

REMOVE EXISTING GUARDRAIL

3.0 PAVED SHOULDER

WIDENING

EDGE OF RAMP TRAVEL LANE PAINT STRIPE, R=800

SAWCUT LINE

SR-9 (I-95 SB)

MILL & RESURFACE

WIDENING

3.427 FULL DEPTH PAVED SHOULDER

406 407 ℄ SURVEY & ℄ CONST. I-95 408 409

3.0 FULL DEPTH SHOULDER

N 00° 05' 08" E

RESET DBL FACE GUARDRAIL

WIDENING

MATCHLINE STA 406+00.000

MATCHLINE STA 409+75.000

SAWCUT LINE

BEGIN ℄ RAMP C STA 206+70.026= STA 406+69.655 (27.754 RT) CONST. I-95

SR-9 (I-95 NB)

MILL & RESURFACE

VEHICULAR IMPACT ATTENUATOR QUADGUARD (12-BAY)

3.6 FULL DEPTH PAVED SHOULDER

100mm CONCRETE CAP

MILLING & RESURFACING

SAWCUT LINE

BEGIN 2.768 PAVED SHLDR. +60.000

N 03° 05' 08" E

207

2.4 PAVED SHOULDER

℄ RAMP C

WIDENING

CURVE C-1

+12.000 END SHLDR. GUTTER

208

SHOULDER PAVT.

VARIABLE WIDTH FULL DEPTH PAVED SHOULDER

END ANCHORAGE ASSEMBLY TYPE SRT-350

SHLDR. GUTTER

PC +43.597

BARRIER WALL (HALF SECTION)

209

CURVE J-2

MSE WALL J-2C

MSE WALL J-2A

END GUARDRAIL BEGIN MSE WALL J-1C PROVIDE GUARDRAIL CONNECTION +80.000

MSE WALL J-1C

1.2 PAVED SHOULDER

℄ RAMP J

RAMP J

N 08° 55' 10" E

22.86m GUARDRAIL

END ANCHORAGE ASSEMBLY TYPE SRT-350

SOUND BARRIER WALL (SB-1) 1.5m HEIGHT

N 05° 59' 48" W

CURVE J-1

BEGIN BRIDGE 708+18.075

408+40.000 58.714 (RT)

LA LINE

PT +96.328

PC +17.444

BARRIER WALL #18.458 9.000 (LT)

℄ RAMP C

END BRIDGE BEGIN MSE WALL 709+79.075

3.0 PAVED SHOULDER

MSE WALL J-1A

190.50m GUARDRAIL

407+14.101 72.126 (RT)

BEGIN APPROACH SLAB 708+12.075

PARKLAND ROAD

406+70.000 59.340 (RT)

FENCE TYPE B

+50.000 END SOUND BARRIER WALL (SB-1)

408+06.503 75.265 (RT)

END BARRIER WALL (RIGID-SHOULDER) STA 208+49.000

BEGIN BARRIER WALL (RIGID-SHOULDER) PROVIDE GUARDRAIL CONNECTION STA 208+37.000

BEGIN FENCE TYPE B AT EXISTING FENCE 406+58.024 78.101 (RT)

MAGNOLIA AVENUE

LOCUST AVENUE

HOLLYWOOD PLACE

HILLCREST BOULEVARD

409+60.000 72.692 (RT)

END CONC. BARRIER WALL 209+62.972 15.051 (LT)

LEGEND

FULL DEPTH PAVED SHOULDER

PAVED SHOULDER

0 5 20 METERS

Ian N. Biava, PE
License No. 50700
STATE OF FLORIDA
Date: 12/6/01
Reynolds, Smith & Hills, Inc.
300 South Pine Island Road, Suite 300
Plantation, Florida 33324
Office: (954) 474-3[illegible] Fax: (954) 474-1864

REVISIONS

DATE	BY	DESCRIPTION
03/05/99	GAL	1 ADDED STORM SEWER 406+00 TO 406+15 (45+RT) AND TO PARKLAND RD.
10/08/99	FW	UPDATED PLAN FOR DRAINAGE CHANGES
07/05/01	KCB	2 ADDED SHOULDER GUTTER
09/26/01	MG	
09/5/01	MG	3 RELOCATED S-H, ADDED S-8B
11/29/01	KCB	4 RELOCATED S-8
		5 REVISED I-95 SB SHOULDER

RS+H
Reynolds, Smith and Hills, Inc.
Architecture, Engineering and Planning
Florida Certificate of Authorization #00000670

FLORIDA DEPARTMENT OF TRANSPORTATION

STATE ROAD 9
PLAN SHEET
STA 406+00 TO STA 409+75

.../t/roadway/planrd03.dgn Nov. 28, 2001 13:37:30

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	50

SEE SHEET 142 FOR DETAILS OF RAMP I AT SOUTHERN BLVD.

OFFSETS TO MSE WALLS INDICATE GUTTER LINE

END BEGIN SHOULDER GUTTER 605+80.64 10.930 (LT)

MATCHLINE STA 406+00.000

BEGIN MSE WALL I-IA PROVIDE GUARDRAIL CONNECTION STA 605+86.000

MSE WALL I-IC

@ RAMP I

RAMP I

POND IB

1.8 PAVED SHLDR.

3.6 FULL DEPTH PAVED SHOULDER

WIDENING

RESET DBL FACE GUARDRAIL

℄ SURVEY & ℄ CONST. I-95

3.0 FULL DEPTH PAVED SHOULDER

SR-9 (I-95 NB)

SHOULDER GUTTER

3.0 PAVED SHOULDER

90.0 TAPER

MILL & RESURFACE

SAWCUT LINE

EXISTING PANEL (TO REMAIN)

TRI-RAIL

LA R/W

605

406

405

404

403

18.0 9.754 9.754 VARIES

10.973

+55.000 18.0

+61.662 14.4

+65.000 14.4

+79.500 14.630

+00.0 14.4

+23.00

+43.000 12.000 (LT)

+80.000

+00.000 10.8

11.796

45.72m GUARDRAIL

+06.620 0.940 (RT)

+06.620 11.458 (RT)

+10.651 7.709 (LT)

+07.024 3.764 (LT)

91° 31' 09"

88° 45' 31"

N 0° 05' 08" E

N 00° 11' 32" W

7.2 CURVE J-1 1.8 PAVED SHOULDER

MSE WALL J-IA & SOUND BARRIER WALL (SB-1) 1.5m HEIGHT

PC 705+62.040

N 18° 30' 03" W

@ RAMP J

EXISTING FENCE (TO REMAIN)

OAK STREET

PARKLAND ROAD

1:1000

N

POND IC

BEGIN MSE WALL J-IA
BEGIN SOUND BARRIER WALL (SB-1)
PROVIDE GUARDRAIL CONNECTION
+25.000, 3.000 (RT)

22.86m GUARDRAIL AND END ANCHORAGE ASSEMBLY SRT-350

END MILLING & RESURFACING
BEGIN RECONSTRUCTION
MATCH EXIST. PAVT
STA 705+00.000
705+12.000

7.932

MILL & RESURFACE

2.4 SHLDR PAVT

END REINFORCED CONC. BARRIER WALL (RETAINING)
BEGIN 3.0 PAVED SHOULDER
BEGIN SHOULDER GUTTER
+30.000, 27.754 (RT)

3.427 WIDENING

SAWCUT LINE

404+12.516 ℄ CONST. I-95 = 981+50.973 @ SOUTHERN BLVD.

+28.183 13.046 (LT)

+23.127 7.417 (LT)

70° 10' 20"

SOUTHERN BLVD. (SR 80)

BEGIN REINFORCED CONC. BARRIER WALL (RETAINING)
PROVIDE GUARDRAIL CONNECTION
+60.000, 28.042 (RT)

S 88° 40' 23" E

BEGIN @ RAMP J
STA 704+12.972 =
STA 982+93.973
@ SOUTHERN BLVD.

+20.697 19.457 (RT)

+15.768 12.923 (RT)

LIMITS OF MILLING & RESURFACING
STA 704+12.923

T 43 S
T 44 S

BEGIN SHOULDER GUTTER
BEGIN WIDENING, MATCH EXIST. PAVT
STA 604+30.677

BEGIN MSE WALL I-IC
604+26.818, 18.763 (LT)

SLOPE STABILIZATION

980

@ SOUTHERN BLVD.

981

982

983

BEGIN @ RAMP I
STA 603+97.982=
STA 980+81.451
@ SOUTHERN BLVD.

BEGIN MILLING & RESURFACING
STA 604+06.620
@ RAMP I

32 33 5 4

END REINFORCED CONC. BARRIER WALL (RETAINING)
PROVIDE GUARDRAIL CONNECTION
+30.000, 27.754 (LT)

PT 403+79.500

BEGIN REINFORCED CONC BARRIER WALL (RETAINING)
+60.000, 27.254 (LT)

MATCHLINE STA. 403+75.000

BEGIN PAVT. WIDENING MATCH EXIST. PAVT.
+79.500

45.72m GUARDRAIL

3.600 FULL DEPTH PAVED SHLDR.

EXIST PIPE OUT OF SERVICE?

LEGEND
FULL DEPTH PAVED SHOULDER
PAVED SHOULDER

Revisions noted by Cloud Designation - Document Field Changes Authorized During Construction and do not imply either Review of, or Responsibility for Original Design

Ian N. Biava, PE
License No. 50700
Date: 9/19/01
Reynolds, Smith & Hills, Inc.
300 South Pine Island Road, Suite 300
Plantation, Florida 33324
Office: (954) 474-3005 Fax: (954) 474-1304

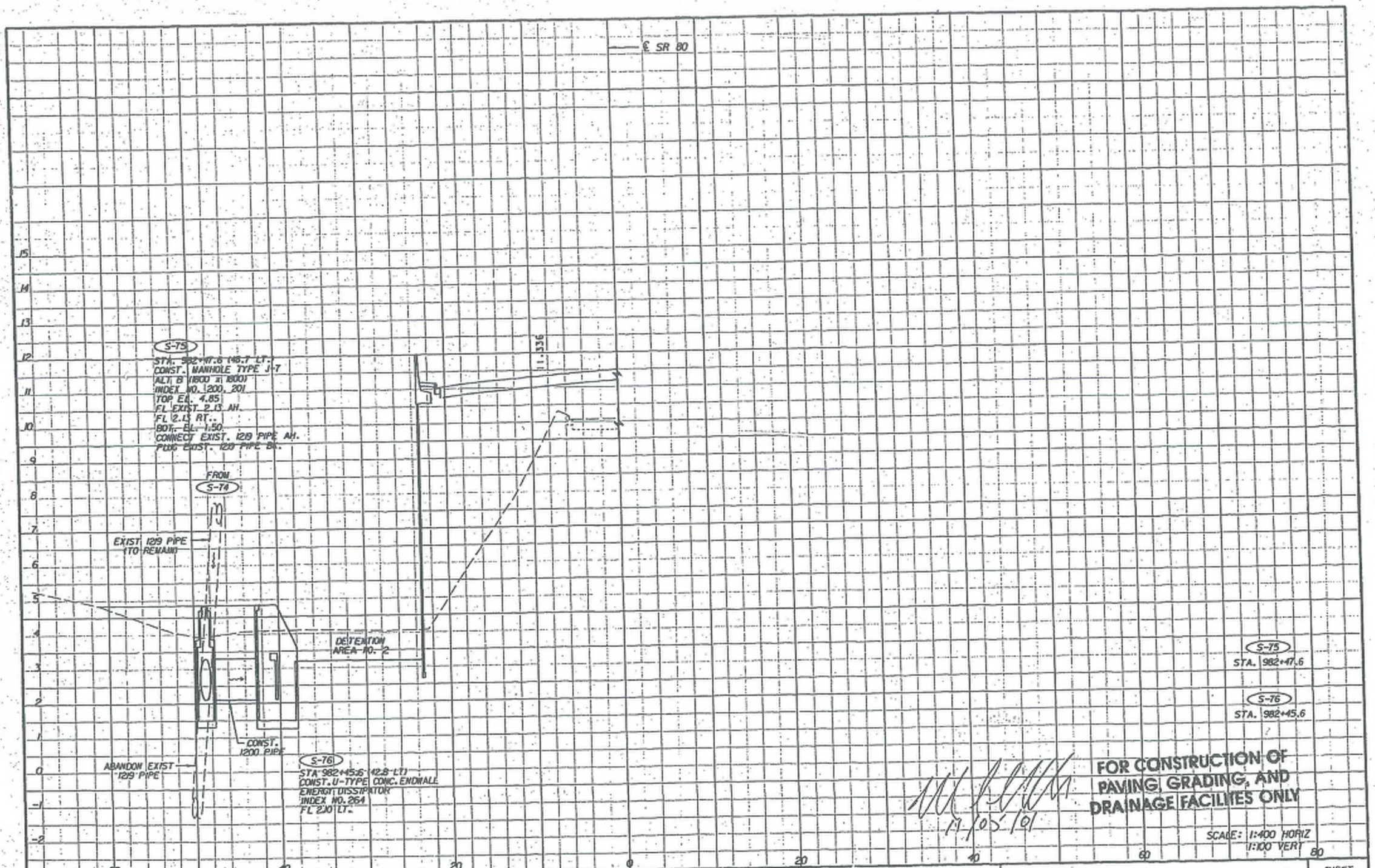
0 5 20
METERS

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
03/05/99	GAL	⚠ ADDED STORM SEWER 604+80 TO 606+00 (402+ RT)	05/03/01	KCS	⚠ ADDED SHOULDER GUTTER						
9/08/99	GAL	⚠ ADDED POND IC, UPDATED PLAN FOR DRAINAGE CHANGES	05/15/01	MC	⚠ RELOCATED S-TA, ADDED S-17						

RS+H
Reynolds, Smith and Hills, Inc.
Architecture, Engineering and Planning
Jacksonville, Florida

FLORIDA DEPARTMENT OF TRANSPORTATION

STATE ROAD 9
PLAN SHEET
STA 403+75 TO STA 406+00



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

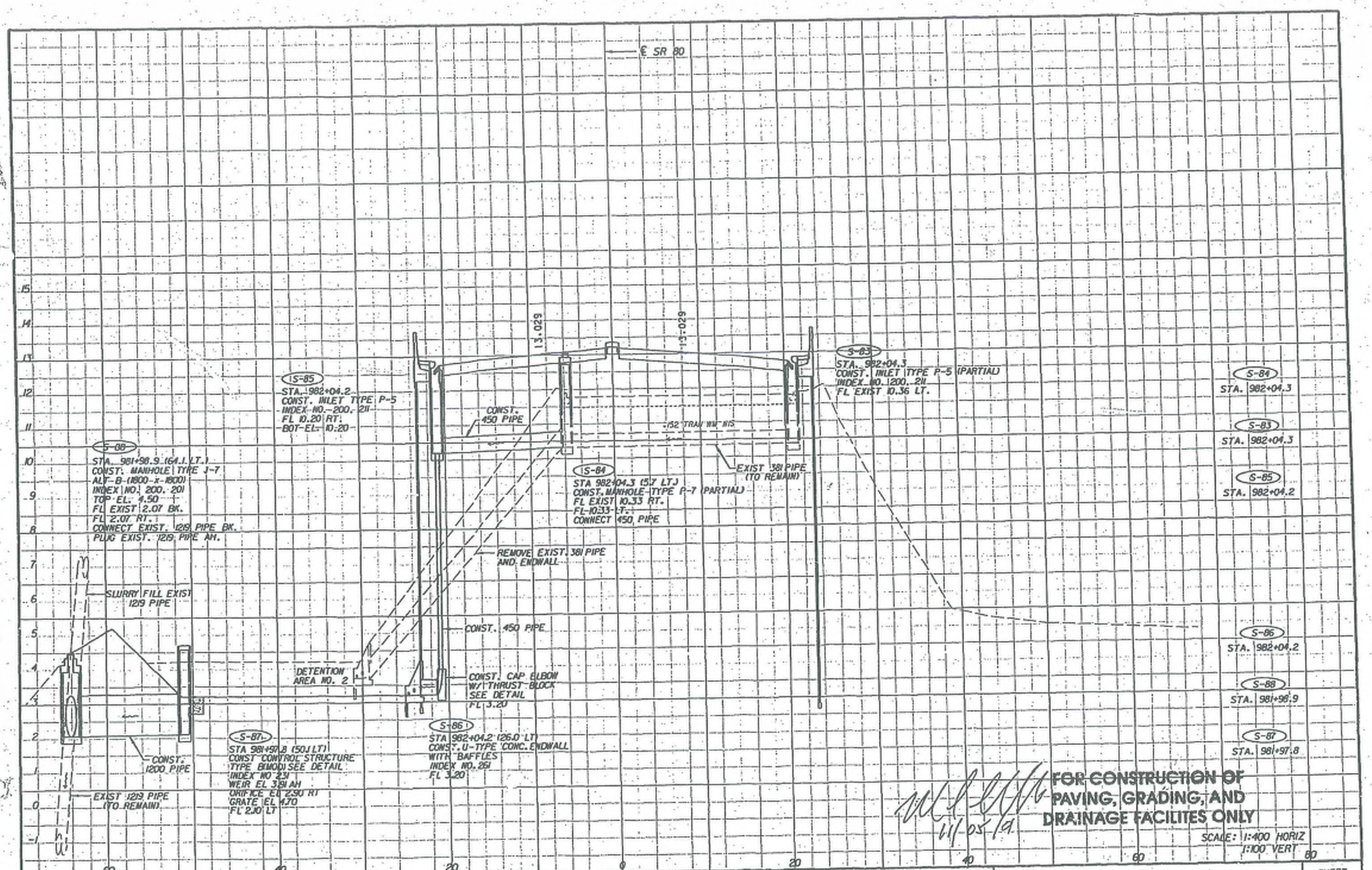
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

DRAINAGE STRUCTURES
SR 80

SHEET NO. 119

10/27/2001 11:14:45 AM G:\4000545a\PMT\drstr01.dgn



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

DRAINAGE STRUCTURES
SR 80

SHEET NO. 118

11/05/2001 04:15:13 PM G:\4000545\HWY\DRSTR003.DNG

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	119

0 5 25
Meters
N

606 607 608 609

A A

B B

POND NO. IB
BOTTOM EL. 4.00

S-18 S-19 S-13

1.5 OF 600 PIPE

47.5 OF 900 PIPE

1:4 1:6

406 407 408 409

℄ I-95

207 208

POND NO. IC

S-148 S-149

115.8 OF 900 PIPE

37.4 OF 900 PIPE

70℄

℄ RAMP T

℄ RAMP A

12.95 VARIES

1:4 D.H.W 4.96 1:6

EL 4.00

TYPICAL SECTION A-A
POND NO. IB

258.0

1:4 D.H.W 4.96 1:60

EL 4.00

TYPICAL SECTION B-B
POND NO. IB

NOTE:
1. FOR POND LIMITS SEE ROADWAY CROSS SECTIONS.
2. SEE SHEET 125 FOR DETAILS STRS S-18 AND S-19.

11/5/99
FOR REV. 11/8/99

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
03/05/99	FW	⚠ ADDED STRUCTURES S-148, AND S-149	11/08/99	FW	⚠ ADDED STRUCTURES S-18, S-19 ADDED POND 'C'						

RS+H
Reynolds, Smith and Hills, Inc.
Architecture, Engineering and Planning
Jacksonville, Florida

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE DETAILS
POND NO. IB

I:\drainage\rotard09.dgn Nov. 04, 1999 15:47:08

1" = 50'

RAMP L

SOUTHERN BLVD.

RAMP I

STA 1327+00

STA 1334+00

NOTES:

FINANCIAL PROJECT ID 23/835-1-52-01, 23/919-1-52-01 AND 23/919-2-52-01 WILL BE UNDER CONSTRUCTION CONCURRENT WITH THIS PROJECT. THE CONTRACTOR SHALL COORDINATE WITH THE ADJACENT PROJECT CONTRACTORS ON ALL ROADWAY CONSTRUCTION AND TRAFFIC CONTROL ACTIVITIES.

THE EXISTING TOPOGRAPHIC FEATURES DEPICTED WERE REPRODUCED FROM ELECTRONIC FILES OF THE FPID 23/919-1-52-01 PROJECT. THE EXISTING INFORMATION SHOWN MAY NOT REPRESENT ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL VERIFY EXISTING INFORMATION PRIOR TO CONSTRUCTION.

EXIST. RETAINING WALL W/ CONC. BARRIER HALF WALL

EXIST. MISC. ASPHALT PAVT.

+67.03
91.74' (LT)

EXIST. 10' PAVED SHLDR.

MILLING & RESURFACING

SAWCUT LINE

EXIST. 16' FULL DEPTH PAVEMENT WITHOUT FC

SR-9 (I-95 SB)

CURVE ②

1328 1329 1330 1331 1332 1333

N 0°05'08" E

R SURVEY & CONST. I-95

EXIST. 15' PAVED SHLDR.

EXIST. MEDIAN BARRIER WALL W/ OPAQUE VISUAL BARRIER

EXIST. OH SIGN

PT STA. 1329+87.09

SR-9 (I-95 NB)

EXIST. 7.87' PAVED SHLDR.

EXIST. SHLDR. GUTTER

EXIST. MISC. ASPHALT PAVT.

SOUTHERN BLVD.

EXIST. RETAINING WALL W/ CONC. BARRIER HALF WALL

MATCH LINE

MATCH LINE

MILLING SHALL OCCUR WITHIN THE LIMITS OF THE EXISTING FRICTION COURSE.

FUR 2/18/08
REVISION

0 10 50
Feet

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/06/04	DRG	② ADDED SHEET NO. 23A			
02/18/08	DRG	⑬ ELIMINATED NORTHBOUND MILLING AND RESURFACING LIMITS.			

RS&H
Reynolds, Smith and Hills, Inc.
300 S. Pine Island Road, Suite 300
Plantation, Florida 33324-3619
954-474-3005
FL Cert. No. EB0006820
Phil Schwab, P.E. No. 47555

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	PALM BEACH	23/919-2-52-01

STATE ROAD 9
PLAN SHEET
STA 1327+00 TO STA 1334+00

SHEET NO. 23A

2/18/2008 3:41:56 PM \\WPBFN1\transportation\P\60592009\roadway\PLANS\D10.dgn

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	160

NOT IMPLEMENTED

S-8
STA. 605+23.962 @ RAMP I (12.31 RT)
CONST. INLET TYPE S
GRATE EL. 11.67
FL 9.66

STA. 605+21.962 @ RAMP I (25.714 RT)
CONST. U-TYPE CONC. ENDWALL HP W/BAFFLES
FL 4.31

12.06'
LA R/W
450 PIPE
4.90'
2.0x2.0 RUBBLE RIP RAP
℄ CONSTRUCTION

S-18
STA. 405+54.600 (42.54 LT)
CONST. INLET TYPE "D"
GRATE EL. 4.90
FL EL. 2.74

S-18
STA. 405+54.690 (39.58 LT)
CONST. INLET TYPE "D"
GRATE EL. 4.90
FL EL. 2.13

POND 18
600 PIPE

S-6
STA. 405+04.671 (38.00 LT)
REMOVE EXIST. INLET
CONST. CONC. PIPE COLLAR
CONST. INLET TYPE B
(ALT. @ 1800 x 1500)
GRATE EL. 4.95
MATCH EXIST. FL

900 PIPE
2.09
EXIST. 1050 PIPE TO REMAIN
1050 PIPE
EXIST. 1050 PIPE TO REMAIN
℄ CONSTRUCTION
EXIST. 1050 PIPE TO REMAIN
Modify Existing Structure
11/3/00

TO S-177
450 PIPE
S-7A
STA. 404+97.500 (30.800 RT)
CONST. INLET TYPE S
GRATE EL. 5.38
FL 3.53
℄ CONSTRUCTION

S-149
STA. 407+10.156 (44.213 RT)
CONST. M.H. TYPE 7
TOP EL. 4.00
FL 2.06

S-150
STA. 407+16.685 (81.020 RT)
CONST. M.H. TYPE 7
TOP EL. 4.00
FL 2.06

900 PIPE
750 PIPE EXIST.

S-148
STA. 405+90.189 (47.000 RT)
CONST. MES
FL 2.06

900 PIPE

S-7
STA. 404+78.21 (38.73 RT)
~~PRVC - CONC. SLAB 1500 x 1500~~
CONST INLET TYPE B
FL EL. 2.28
PER ENGINEER

POND 17
℄ CONSTRUCTION
900 PIPE

S-6A
STA. 404+90.91 (44.47 RT)
CONST. INLET TYPE D
GRATE EL. 3.78
FL EL. 2.28

EXIST. 1050 PIPE TO REMAIN

S-15
STA. 405+54.69 (39.58 LT) ℄ I-95

S-18
STA. 405+54.600 (42.54 LT) ℄ I-95

S-8
STA. 605+23.962 @ RAMP I

4 S-7A
STA. 404+97.500

S-150
STA. 407+16.685

S-149
STA. 407+10.156

S-148
STA. 405+90.189

S-7
STA. 404+78.532

S-6A
STA. 404+90.91 (44.47 RT)

S-6
STA. 405+04.671

80 70 60 50 40 30 20 10 0 10 20 30 70 80

Revisions noted by Cloud Designation - Document Field Changes Authorized During Construction and do not imply either Review of, or Responsibility for Original Design

DATE	BY	DESCRIPTION
01/05/99	FM	1 CHANGED S-7, ADDED S-148 THRU S-150
6/08/99	FM	2 CHANGED S-15 & S-18 ADJUSTED S-149 & S-150 CHANGED S-148 TO MES
12/08/99	FM	3 ELIMINATED S-18, CHANGED S-7
09/19/01	MS	4 REVISED S-7A

RS+H
Reynolds, Smith and Hills, Inc.
Architects/Engineers/Planners
Florida

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE STRUCTURES

Ian N. Brava, PE
License No. 50700
Date: 9/19/01
Reynolds, Smith & Hills, Inc.
300 South Pine Island Road, Suite 300
Plantation, Florida 33324
Office: (954) 474-3005 Fax: (954) 474-3047

SCALE RATIO: 1:500 HORZ. 1:200 VERT.

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	161

S-12
STA. 605+80.000 (12.0' LT) @ RAMP I
CONST. BARRIER WALL TYPE S INLET
THROAT EL. 11.29
FL 10.22 (BOX BOTTOM)

S-13
STA. 605+79.051 (9.25' RT) @ RAMP I
CONST. BARRIER WALL INLET
THROAT EL. 11.35
FL 10.42 (BOX BOTTOM)

STA. 605+79.329 @ RAMP I (13.936 RT)
CONST. U-TYPE CONC. ENDWALL 1:4 W/BAFFLES
FL 4.00

450 PIPE
2.0x2.0 RUBBLE RIP RAP
SEE "DRAINAGE DETAILS" FOR CONNECTION TO INLET, FITTINGS, JOINTS, THRUST BLOCKS AND MSE WALL PENETRATIONS.
STA. 605+80.000 (12.550 LT) @ RAMP I
CONST. U-TYPE CONC. ENDWALL 1:2 W/BAFFLES
FL 3.00

S-13
STA. 605+83.963 @ RAMP I

S-12
STA. 605+80.000 @ RAMP I

FROM S-178

S-10
STA. 405+80.00 ℄
CONST. INLET TYPE B
(ALT. B 1115 x 1800)
GRATE EL. 5.359
FL 3.22

S-11
STA. 405+80.00 (30.800 RT)
CONST. INLET TYPE S
(ALT. B, 1800 x 1500)
GRATE EL. 5.43
FL 3.25

℄ CONSTRUCTION

1050 PIPE

S-11
S-10
STA. 405+80.000

3.0x3.0 RUBBLE RIP RAP

STA. 405+80.00 (42.000 LT)
CONST. STRAIGHT CONC. ENDWALL
FL 3.19

JACK & BORE 1215 (13mm MIN. THK.) STEEL CASING PIPE

JACK & BORE 1215 (13mm MIN. THK.) STEEL CASING PIPE

450 PIPE

FROM S-177

@ RAMP J

S-9
STA. 705+45.730 (3.000 RT) @ RAMP J
CONST. BARRIER WALL INLET
THROAT EL. 7.28
FL 6.00

STA. 705+45.730 (30.732 LT) @ RAMP J
CONST. U-TYPE CONC. ENDWALL 1:4 W/BAFFLES
FL 3.00

2.0x2.0 RUBBLE RIP RAP

450 PIPE

S-9
STA. 705+45.730 @ RAMP J

TO S-11

S-177
STA. 405+51.000 (30.800 RT)
CONST. INLET TYPE S
GRATE EL. 5.35
MATCH EXISTING FL.

450 PIPE

FROM S-7A

S-177
STA. 405+51.000

SCALE RATIO: 1:500 HORZ.
1:200 VERT.

Ian N. Biava, PE
License No. 50700
Date: 4/16/01
Reynolds, Smith & Hills, Inc.
300 South Pine Island Road, Suite 300
Plantation, Florida 33324
Office: (954) 474-3005 Fax: (954) 474-1304

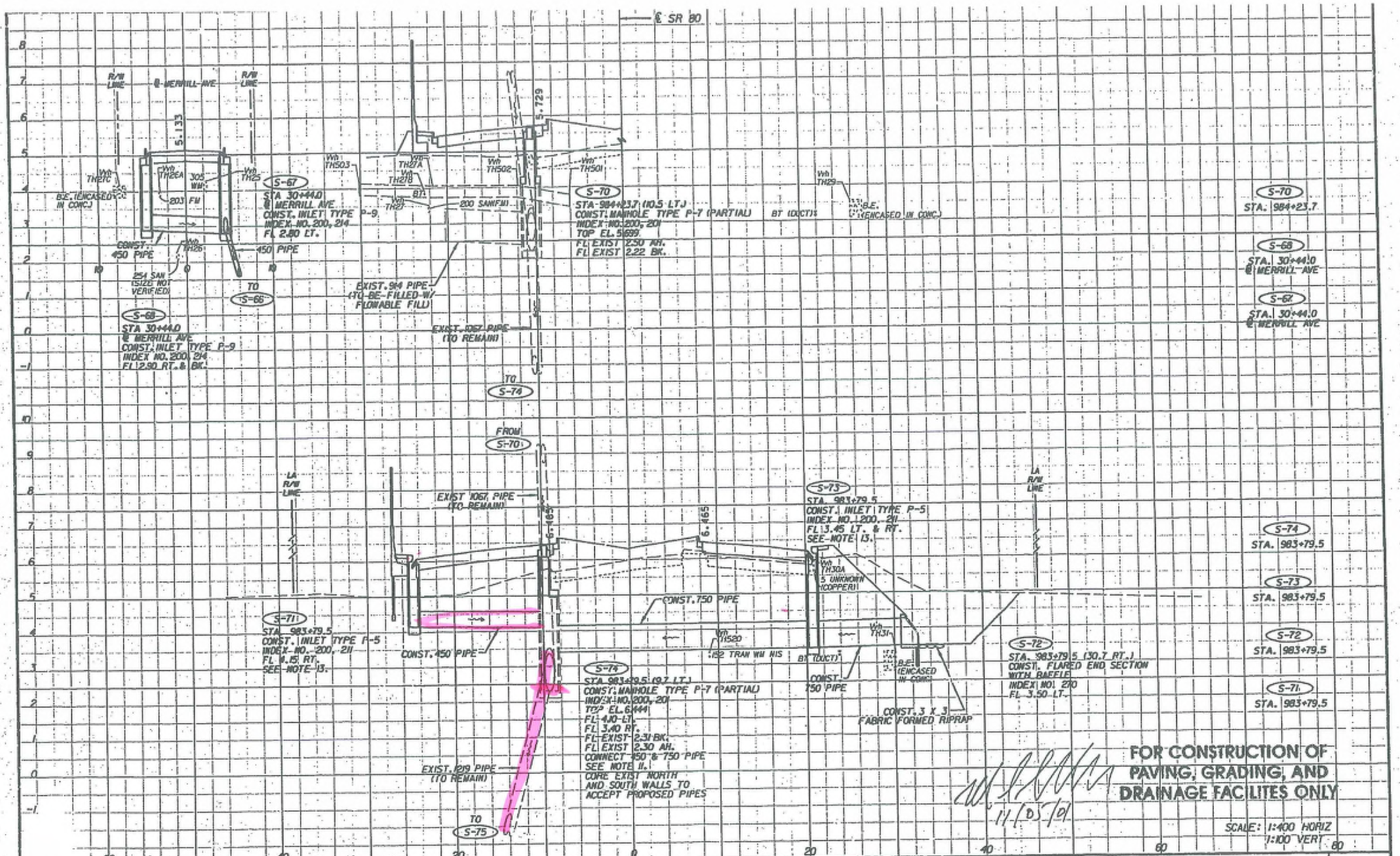
REVISIONS

DATE	BY	DESCRIPTION
8/08/99	FW	⚠1 ADJUSTED S-9 OUTFALL LOCATION
07/05/01	KCB	⚠2 CHANGED S-12 FROM BARRIER WALL INLET TO TYPE "S" INLET.
09/01/01	MG	⚠3 REVISED S-9, ADDED S-177

RS+H
Reynolds, Smith and Hills, Inc.
Architecture, Engineering and Planning
Plantation, Florida

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE STRUCTURES



REVISIONS				
BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

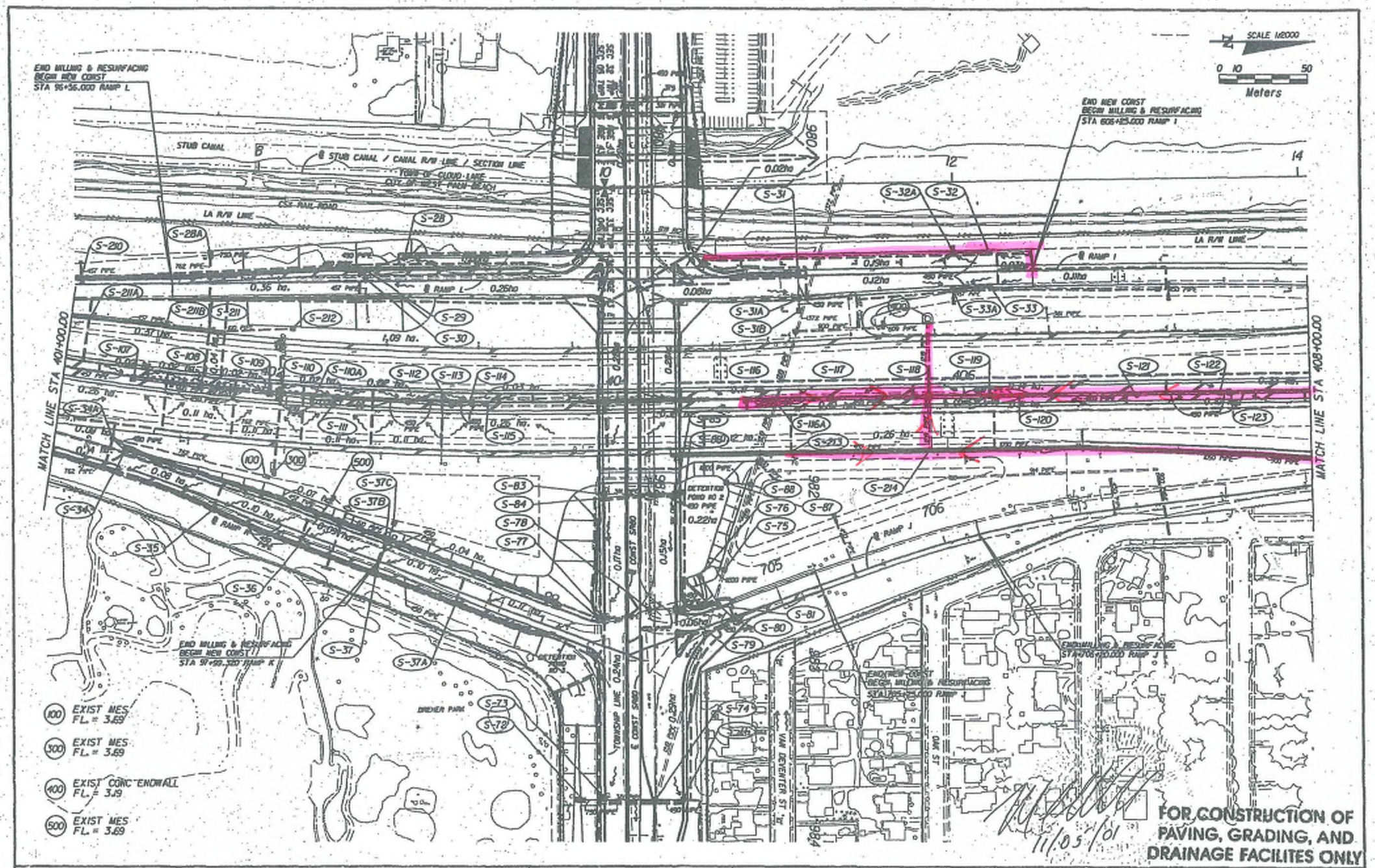
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23183S-1-52-01 23191-1-52-01

DRAINAGE STRUCTURES
SR 80

SHEET NO. 121

11/02/2001 03:00:54 PM G:\4000545\WP\DRSTR003.SNG



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

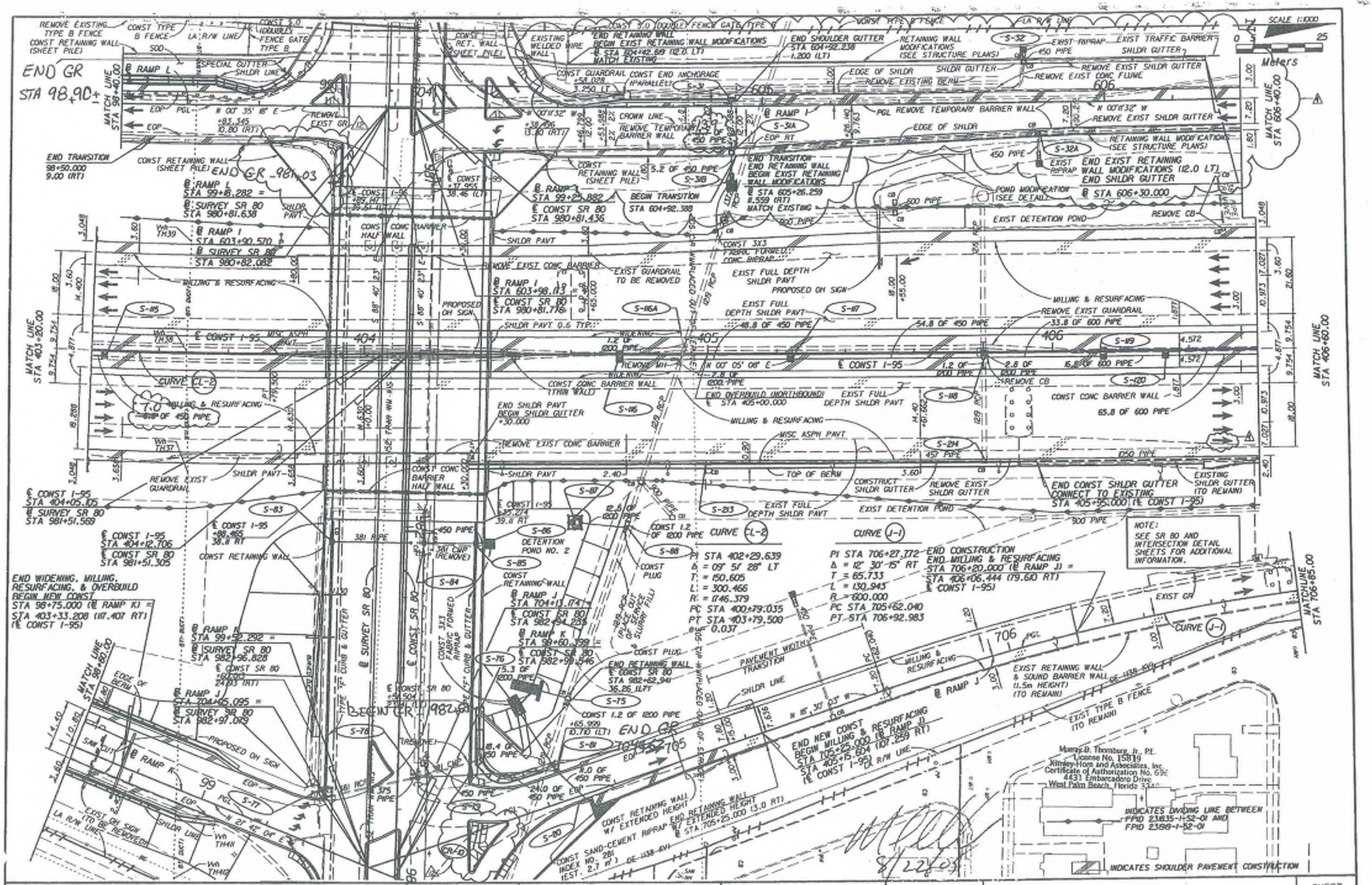
Turkey-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

DRAINAGE MAP

SHEET NO. 10



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-11-04	BLB	⚠1 REVISED RAMP I, ADDED STRUCTURES S-32, S-32A ADDED ARROWS			
08-22-05	GH	⚠2 ADDED GUARDRAIL, REMOVE EXIST GR, REVISED RAMP J ISLAND PEDESTRIAN RAMP			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

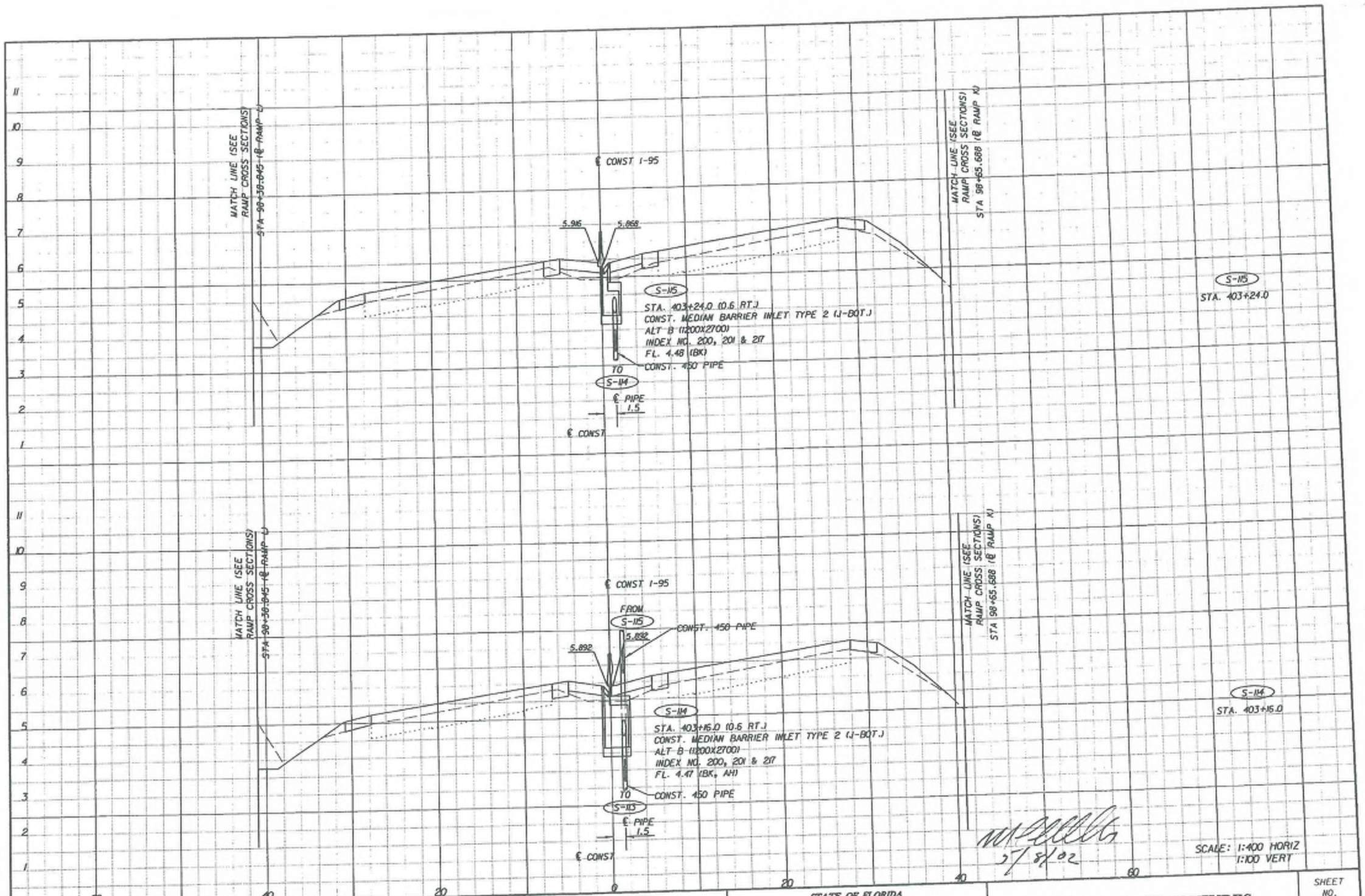
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23835-1-52-01 23919-1-52-01

I-95 - PLAN

SHEET NO. 83

8/22/2005 8:01:37 PM s:\4000545e.SR80 East\23835\Revised roadway Plans\83_rw2.dgn



27/8/02

SCALE: 1:400 HORIZ
1:100 VERT

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

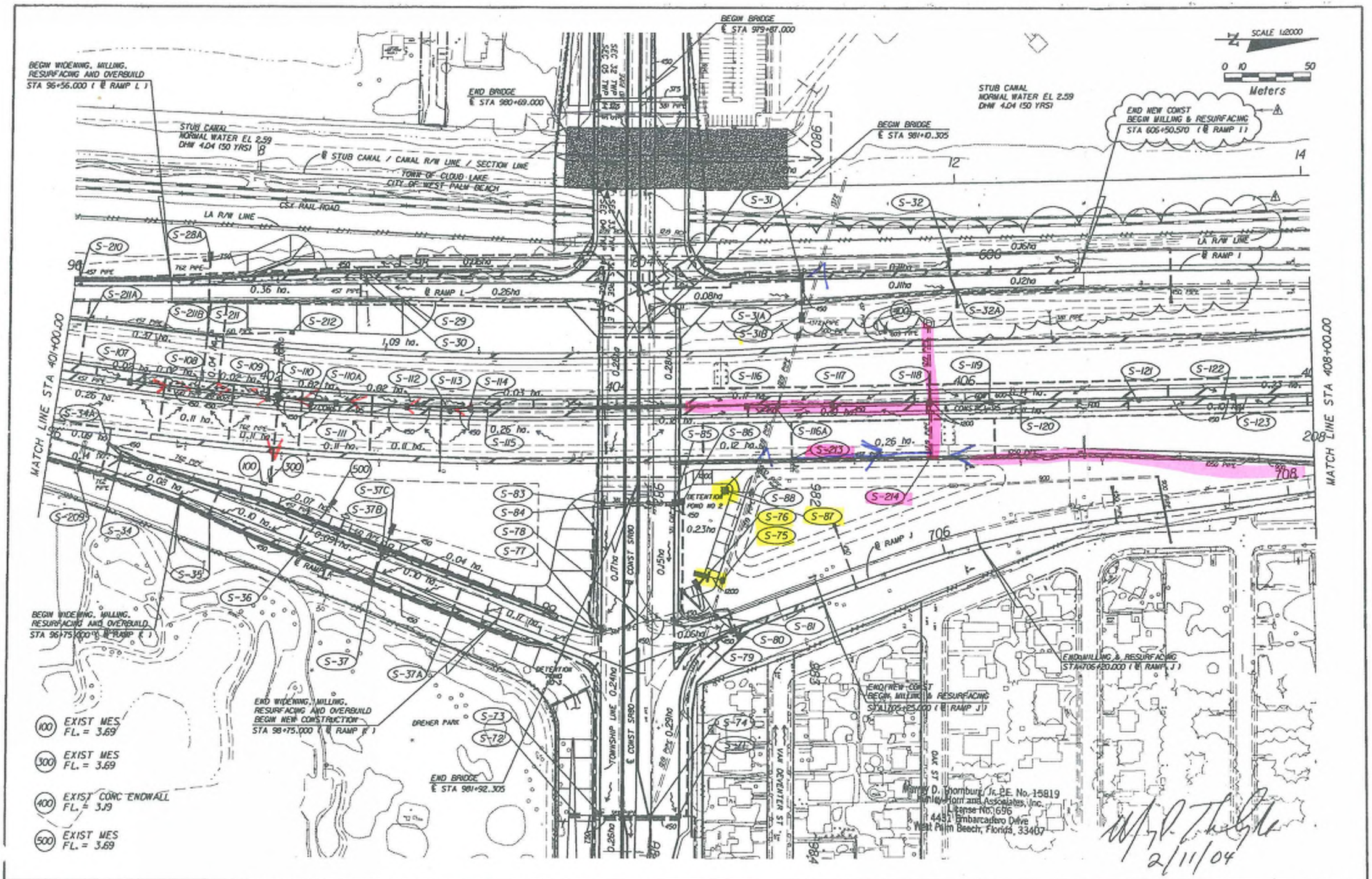
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23835-1-52-01 23919-1-52-01

DRAINAGE STRUCTURES
I-95

SHEET NO. 146

05/02/2002 10:29:03 AM e:\400054\e\MP\Drst109.sht



Murray D. Thornburg, Jr. P.E. No. 15819
Kimley-Horn and Associates, Inc.
License No. 696
4431 Embarcadero Drive
West Palm Beach, Florida, 33407

2/11/04

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-11-04	BLB	⚠ REVISED RAMP I, ADDED STRUCTURES S-32, S-32A			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

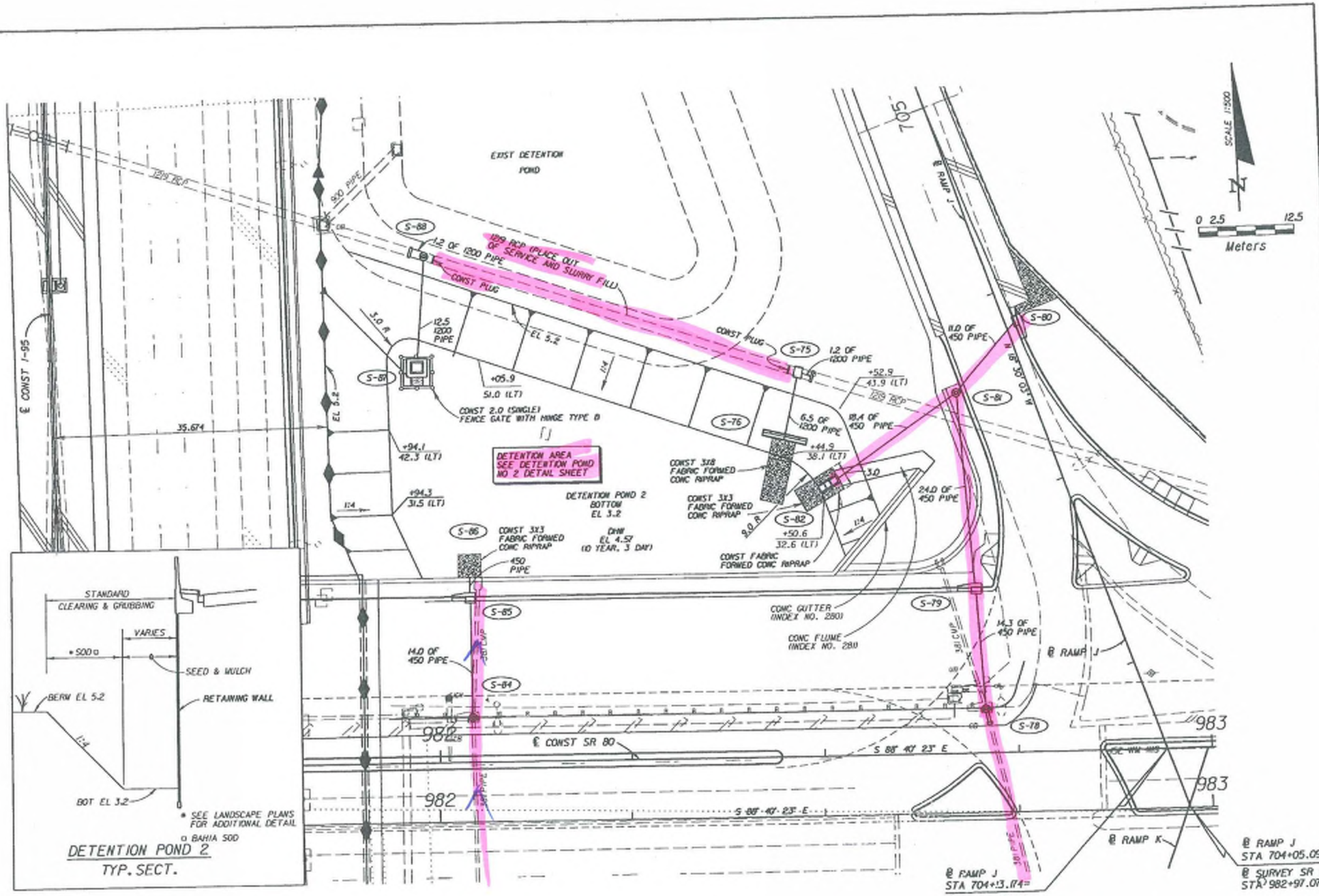
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23835-1-52-01 23919-1-52-01

DRAINAGE MAP

SHEET NO. 7

02/04/2004 8:25:15 AM e:\4000545a_SR80 Est\23835\Revisions\drainage\DRAP1004_rv4.dgn



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

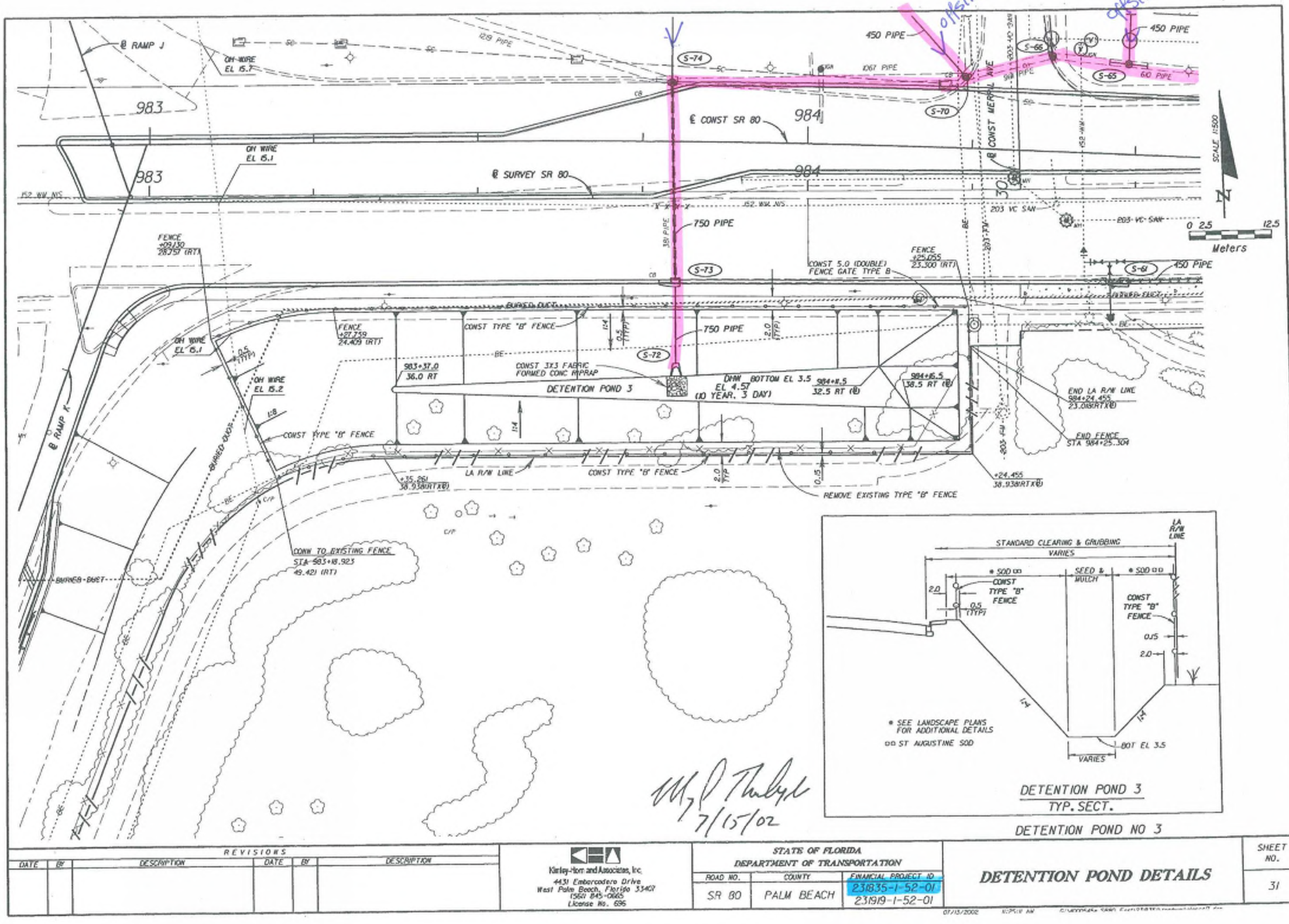
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23835-1-52-01 23919-1-52-01

DETENTION POND DETAILS

SHEET NO. 30

04/25/2002 04:43:45 PM G:\A000545\eVMT\sheet08.dgn



DETENTION POND 3
TYP. SECT.

M. P. Thulyk
7/15/02

DETENTION POND NO 3

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

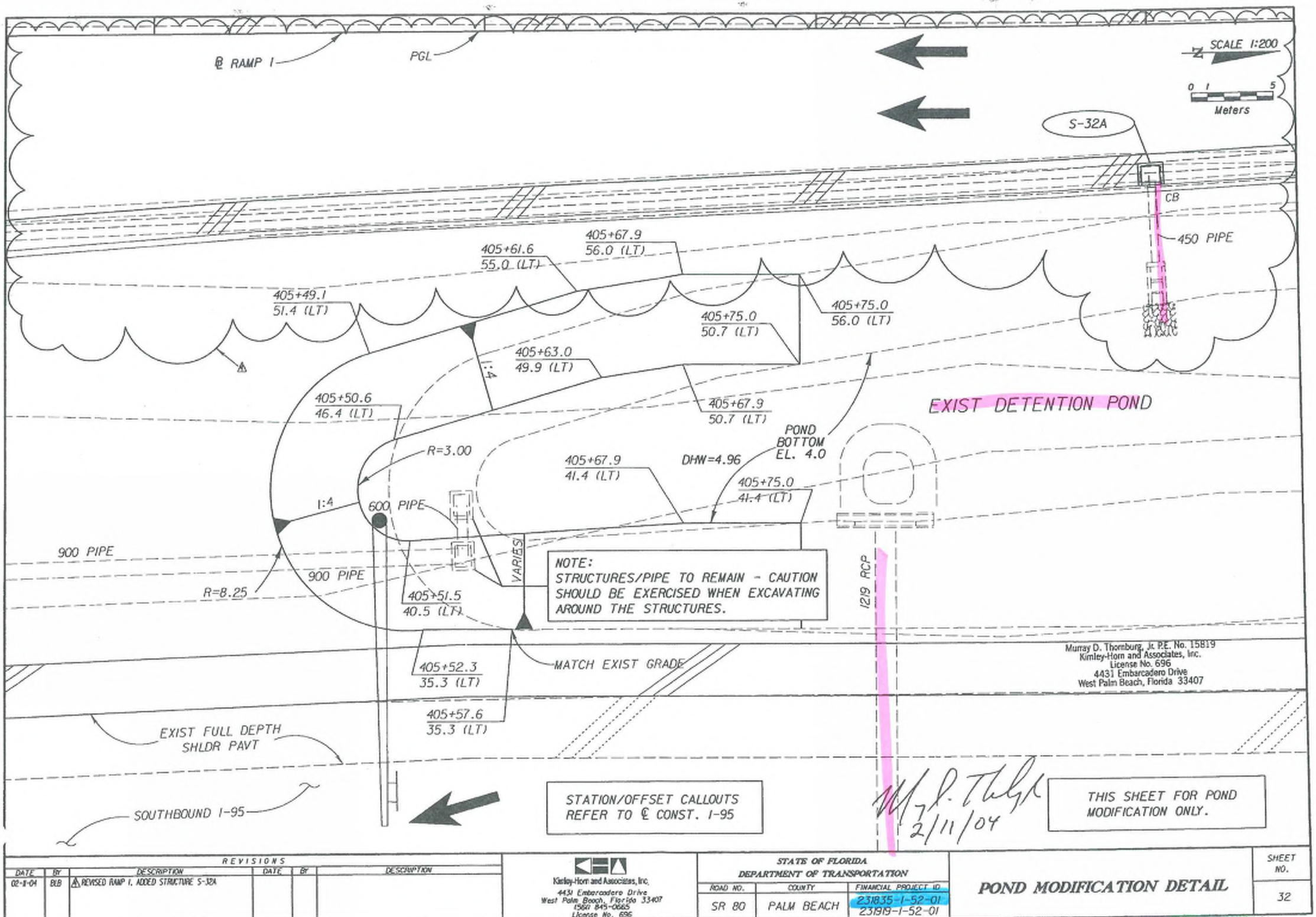
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01
		231919-1-52-01

DETENTION POND DETAILS

SHEET NO. 31

07/15/2002



Murray D. Thornburg, Jr. P.E. No. 15819
Kimley-Horn and Associates, Inc.
License No. 696
4431 Embarcadero Drive
West Palm Beach, Florida 33407

2/11/04

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-11-04	BLB	⚠ REVISED RAMP I, ADDED STRUCTURE S-32A			

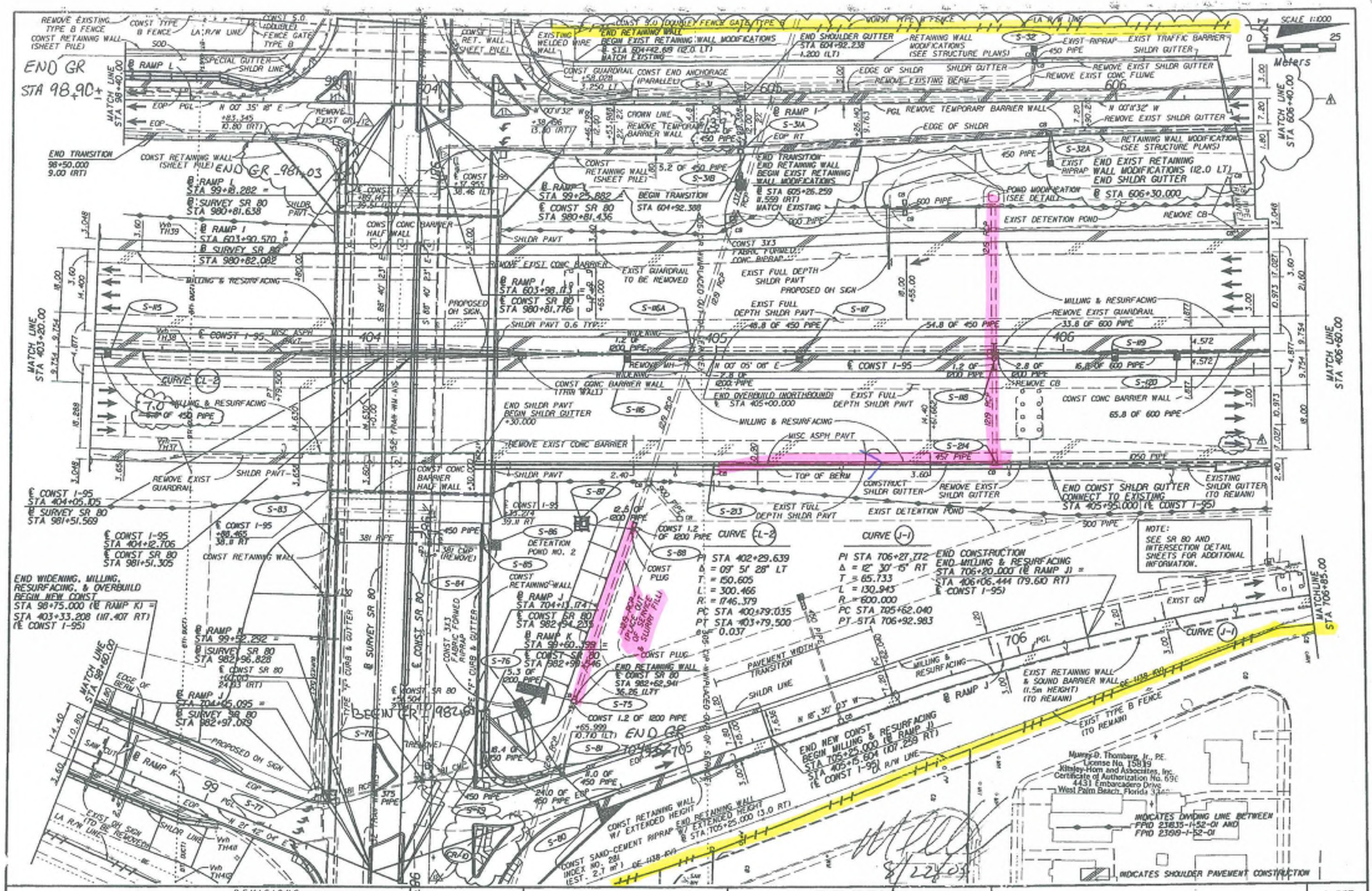
Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23183S-1-52-01 23191-1-52-01

POND MODIFICATION DETAIL

SHEET NO. 32



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-11-04	BLB	⚠ REVISED RAMP I, ADDED STRUCTURES S-32, S-32A ADDED ARROWS			
06-22-05	DH	⚠ ADDED GUARDRAIL, REMOVE EXIST GR, REVISED RAMP J ISLAND PEDESTRIAN RAMP			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

I-95 - PLAN

SHEET NO. 83

8/22/2005 12:01:37 PM a:\4000545a_SR80 East\231835\Revised\roadway\Plans03_rv2.dgn

Form #0941
08/95

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE
STANDARD GENERAL PERMIT NO. 50-05327-P
DATE ISSUED: March 19, 2002

App No. 010727-4

PERMITTEE: FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT FOUR
3400 W COMMERCIAL BLVD
FORT LAUDERDALE, FL 33309-3421

PROJECT DESCRIPTION: Construction and operation (C&O) of modifications to an existing surface water management (SWM) system to serve approximately 15.43 acres (including pond sites) of proposed roadway improvements, and 3.46 acres of adjacent off-site lands, collectively known as SR-80 from west of SR-9 (I-95) to Parker Avenue.

PROJECT LOCATION: PALM BEACH COUNTY, SEC 32,33 TWP 43S RGE 43E
SEC 4,5 TWP 44S RGE 43E

PERMIT DURATION: See Special Condition No:1. See attached Rule 40E-4.321, Florida Administrative Code.

This is to notify you of the District's agency action concerning Notice of Intent for Permit Application No. 010727-4, dated July 27, 2001. This action is taken pursuant to Rule 40E-1.603 and Chapter 40E-40 , Florida Administrative Code (F.A.C.).

Based on the information provided, District rules have been adhered to and an Environmental Resource General Permit is in effect for this project subject to:

1. Not receiving a filed request for a Chapter 120, Florida Statutes, administrative hearing.
2. the attached 19 General Conditions (See Pages : 2 - 4 of 6).
3. the attached 14 Special Conditions (See Pages : 5 - 6 of 6) and
4. the attached 3 Exhibit(s).

Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights," we will assume that you concur with the District's action.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the Permittee (and the persons listed in the attached distribution list) no later than 5:00 p.m. on this 19th day of March, 2002, in accordance with Section 120.60(3), Florida Statutes.

BY:
Anthony M. Waterhouse, P.E.
Director - Surface Water Management
Palm Beach Service Center

Certified mail number 7000 1530 0000 2743 2565

Enclosures

231835-1

GENERAL CONDITIONS

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit and Part IV, Chapter 373. F.S.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. Activities approved by this permit shall be conducted in a manner which does not cause violations of State water quality standards. The permittee shall implement best management practices for erosion and pollution control to prevent violation of State water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. All practices shall be in accordance with the guidelines and specifications described in Chapter 6 of the Florida Land Development Manual; A Guide to Sound Land and Water Management (Department of Environmental Regulation, 1988), incorporated by reference in Rule 40E-4.091, F.A.C. unless a project-specific erosion and sediment control plan is approved as part of the permit. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

4. The permittee shall notify the District of the anticipated construction start date within 30 days of the date that this permit is issued. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District an Environmental Resource Permit Construction Commencement Notice Form Number 0960 indicating the actual start date and the expected construction completion date.

5. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual status report form. Status report forms shall be submitted the following June of each year.

6. Within 30 days after completion of construction of the permitted activity, the permitee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the supplied Environmental Resource Permit Construction Completion/Certification Form Number 0881. The statement of completion and certification shall be based on onsite observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and sepcifications. This submittal shall serve to notify the District that the system is ready for inspection. Additionally, if deviation from the approved drawings is discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "As-built" or "Record" drawing. All surveyed dimensions and elevations shall be certified by a registered surveyor.

7. The operation phase of this permit shall not become effective: until the permittee has complied with the requirements of condition (6) above, and submitted a request for conversion of Environmental Resource Permit from Construction Phase to Operation Phase, Form No. 0920; the District determines the system to be in compliance with the permitted plans and specifications; and the entity approved by the District in accordance with Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, accepts responsibility for operation and maintenance of the system. The permit shall not be transferred to such approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall initiate transfer of the permit to the

GENERAL CONDITIONS

approved responsible operating entity if different from the permittee. Until the permit is transferred pursuant to Section 40E-1.6107, F.A.C., the permittee shall be liable for compliance with the terms of the permit.

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of the phase or portion of the system to a local government or other responsible entity.

9. For those systems that will be operated or maintained by an entity that will require an easement or deed restriction in order to enable that entity to operate or maintain the system in conformance with this permit, such easement or deed restriction must be recorded in the public records and submitted to the District along with any other final operation and maintenance documents required by Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit applications within the South Florida Water Management District, prior to lot or units sales or prior to the completion of the system, whichever comes first. Other documents concerning the establishment and authority of the operating entity must be filed with the Secretary of State, county or municipal entities. Final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system and any other permit conditions.

10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the District in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.

11. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40E-4 or Chapter 40E-40, F.A.C..

12. The permittee is hereby advised that Section 253.77, F.S. states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the State, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.

13. The permittee must obtain a Water Use permit prior to construction dewatering, unless the work qualifies for a general permit pursuant to Subsection 40E-20.302(4), F.A.C., also known as the "No Notice" Rule.

14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the permit.

15. Any delination of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding, unless a specific condition of this permit or a formal determination under Section 373.421(2), F.S., provides otherwise.

16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of a permitted system or the real property on which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rules 40E-1.6105 and

GENERAL CONDITIONS

40E-1.6107, F.A.C.. The permittee transferring the permit shall remain liable for corrective actions that may be required as a result of any violations prior to the sale, conveyance or other transfer of the system.

17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the appropriate District service center.

19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

SPECIAL CONDITIONS

1. The construction phase of this permit shall expire on March 19, 2007.

2. Grass seed, sod or mulch shall be installed and maintained on exposed areas within 48 hours of completing final grade, and at other times as necessary, to prevent erosion, sedimentation or turbid discharge into adjacent waters and /or wetlands.

3. Operation of the surface water management system shall be the responsibility of FLORIDA DEPARTMENT OF TRANSPORTATION.

4. A water quality monitoring program shall be implemented as described below:

   Turbidity expressed in nephelometric turbidity units (ntu).

   Background samples shall be taken 200 feet upstream of any construction activity within adjacent surface waters as shown on Exhibit 3A.

   Compliance samples shall also be taken 200 feet downstream as shown on Exhibit 3A.

   Samples taken twice daily, with at least a four-hour interval, during all work authorized by this permit.

   Monitoring shall begin on the first day of construction for all activities within or adjacent to surface waters. Monitoring shall cease when all construction activities are completed. The monitoring data must demonstrate that turbidity 200 feet downstream of all proposed activities is less than or equal to 29 NTU's above natural background turbidity and 200 feet upstream of each proposed activity for a period of 7 consecutive days after completion of construction.

   All monitoring data shall be maintained on site and be available to District staff during regular business hours. The content of such data shall include:

   1) permit and application number; (2) dates of sampling and analysis; (3) a statement describing the methods used in collection, handling, storage and analysis of the samples; (4) a map indicating the sampling locations and (5) a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data.

   Monitoring reports shall also include the following information for each sample that is taken:
   (a) time of day samples taken;
   (b) depth of water body;
   (c) depth of samples;
   (d) antecedent weather conditions;
   (e) wind direction and velocity;
   (f) direction of flow.

5. Discharge Facilities:

   Basin: 1

   1-3.28' WIDE SHARP CRESTED weir with crest at elev. 11.32' NGVD.
   1-3" dia. CIRCULAR ORIFICE with invert at elev. 9.19' NGVD.

   Receiving body : Spur Canal
   Control elev : 9.19 feet NGVD. → 7.61 NAVD → Lang Rd. Pond

   Basin: 2

Basin 2

SPECIAL CONDITIONS 13.84 NAVD

1-3.77" WIDE SHARP CRESTED weir with crest at elev. 15.42' NGVD.
1-3" dia. CIRCULAR ORIFICE with invert at elev. 9.51' NGVD.

Receiving body : Spur Canal
Control elev : 9.51 feet NGVD. → 7.93 NAVD

→ Ponds east of I-95

6. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.

7. Measures shall be taken during construction to insure that sedimentation and/or turbidity problems are not created in the receiving water.

8. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.

9. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.

10. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.

11. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments/debris. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.

12. Minimum road crown elevation: Basin: 1 - 16.50 feet NGVD.
Basin: 2 - 16.15 feet NGVD.

13. Reference is made to Exhibit 2, entitled "Contract Plans - State Road 80 (Southern blvd) from West of SR 9 (I-95) to Parker Avenue". Exhibit 2 consists of roadway plans, drainage plans, roadway profiles, cross-sections, and detail sheets. The drawings have been signed and sealed by Murray D. Thornburg, P.E., of Kimley-Horn & Associates on 11/5/01 and 2/14/02, have been included in the permit file, and are hereby incorporated into this permit by reference.

14. Prior to the commencement of any site activity authorized by this permit, a pre-construction meeting shall be held with District Environmental Resource Compliance staff from the West Palm Beach service center.

Included with this letter/permit is a brochure from the Florida Department of Environmental Protection (DEP) on Florida's National Pollutant Discharge Elimination System (NPDES) program for construction activities. As the brochure indicates, the U.S. Environmental Protection Agency authorized the DEP in October 2000 to implement the NPDES stormwater permitting program in Florida. The District is assisting DEP by distributing this information to entities which may be subject to regulation under the NPDES program. No response to the District is required.

A "Generic Permit for Stormwater Discharge from Construction Activities that Disturb Five or More Acres of Land" **is required for a construction activity which contributes stormwater discharges to surface waters of the State or into a municipal separate storm sewer system and disturbs five or more acres of land. A permit is required for less than five acres if the activity is part of a larger common plan of development or sale that will meet or exceed the five acre threshold.**

The permit required under DEP's NPDES stormwater permitting program is separate from the Environmental Resource Permit required by the District. Receiving a permit from the District does not exempt you from meeting the NPDES program requirements.

If you have any questions on the NPDES program, there are DEP phone numbers, mailing addresses and internet web page addresses in the brochure. The DEP web site, at www.dep.state.fl.us/water/stormwater/npdes/, provides information associated with the NPDES program including all regulations and forms cited in the brochure.

40E-4.321 Duration of Permits

(1) Unless revoked or otherwise modified the duration of an environmental resource permit issued under this chapter or Chapter 40E-40, F.A.C. is as follows:

(a) For a conceptual approval, two years from the date of issuance or the date specified as a condition of the permit, unless within that period an application for an individual or standard general permit is filed for any portion of the project. If an application for an environmental resource permit is filed, then the conceptual approval remains valid until final action is taken on the environmental resource permit application. If the application is granted, then the conceptual approval is valid for an additional two years from the date of issuance of the permit. Conceptual approvals which have no individual or standard general environmental resource permit applications filed for a period of two years shall expire automatically at the end of the two year period.

(b) For a conceptual approval filed concurrently with a development of regional impact (DRI) application for development approval (ADA) and a local government comprehensive plan amendment, the duration of the conceptual approval shall be two years from whichever one of the following occurs at the latest date:

1. the effective date of the local government's comprehensive plan amendment.
2. the effective date of the local government development order.
3. the date on which the District issues the conceptual approval, or
4. the latest date of the resolution of any Chapter 120.57, F.A.C., administrative proceeding or other legal appeals.

(c) For an individual or standard general environmental resource permit, five years from the date of issuance or such amount of time as made a condition of the permit.

(d) For a noticed general permit issued pursuant to Chapter 40-E-400, F.A.C., five years from the date the notice of intent to use the permit is provided to the District.

(2)(a) Unless prescribed by special permit condition, permits expire automatically according to the timeframes indicated in this rule. If application for extension is made in writing pursuant to subsection (3), the permit shall remain in full force and effect until:

1. the Governing Board takes action on an application for extension of an individual permit, or
2. staff takes action on an application for extension of a standard general permit.

(b) Installation of the project outfall structure shall not constitute a vesting of the permit.

(3) The permit extension shall be issued provided that a permittee files a written request with the District showing good cause prior to the expiration of the permit. For the purpose of this rule, good cause shall mean a set of extenuating circumstances outside of the control of the permittee. Requests for extensions, which shall include documentation of the extenuating circumstances and how they have delayed this project, will not be accepted more than 180 days prior to the expiration date.

(4) Substantial modifications to Conceptual Approvals will extend the duration of the Conceptual Approval for two years from the date of issuance of the modification. For the purposes of this section, the term "substantial modification" shall mean a modification which is reasonably expected to lead to substantially different water resource or environmental impacts which require a detailed review.

(5) Substantial modifications to individual or standard general environmental resource permits issued pursuant to a permit application extend the duration of the permit for three years from the date of issuance of the modification. Individual or standard general environmental resource permit modifications do not extend the duration of a conceptual approval.

(6) Permit modifications issued pursuant to subsection 40E-4.331(2)(b), F.A.C. (letter modifications) do not extend the duration of a permit.

(7) Failure to complete construction or alteration of the surface water management system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization in order to continue construction unless a permit extension is granted.

Specific authority 373.044, 373.113 F.S. Law Implemented 373.413, 373.416, 373.419, 373.426 F.S. History—New 9-3-81, Amended 1-31-82, 12-1-82, Formerly 16K-4.07(4), Amended 7-1-86, 4/20/94, 10-3-95

NOTICE OF RIGHTS

Section 120.569(1), Fla. Stat. (1999), requires that "each notice shall inform the recipient of any administrative hearing or judicial review that is available under this section, s. 120.57, or s. 120.68; shall indicate the procedure which must be followed to obtain the hearing or judicial review, and shall state the time limits which apply." Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

Petition for Administrative Proceedings

1. A person whose substantial interests are affected by the South Florida Water Management District's (SFWMD) action has the right to request an administrative hearing on that action. The affected person may request either a formal or an informal hearing, as set forth below. A point of entry into administrative proceedings is governed by Rules 28-106.111 and 40E-1.511, Fla. Admin. Code, (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109), as set forth below. Petitions are deemed filed upon receipt of the original documents by the SFWMD Clerk.

a. Formal Administrative Hearing: If a genuine issue(s) of material fact is in dispute, the affected person seeking a formal hearing on a SFWMD decision which does or may determine their substantial interests shall file a petition for hearing pursuant to Sections 120.569 and 120.57(1), Fla. Stat. or for mediation pursuant to Section 120.573, Fla. Stat. within 21 days, except as provided in subsections c. and d. below, of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-106.201(2), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

b. Informal Administrative Hearing: If there are no issues of material fact in dispute, the affected person seeking an informal hearing on a SFWMD decision which does or may determine their substantial interests shall file a petition for hearing pursuant to Sections 120.569 and 120.57(2), Fla. Stat. or for mediation pursuant to Section 120.573, Fla. Stat. within 21 days, except as provided in subsections c. and d. below, of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-106.301(2), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

c. Administrative Complaint and Order: If a Respondent objects to a SFWMD Administrative Complaint and Order, pursuant to Section 373.119, Fla. Stat. (1997), the person named in the Administrative Complaint and Order may file a petition for a hearing no later than 14 days after the date such order is served. Petitions must substantially comply with the requirements of either subsection a. or b. above.

d. State Lands Environmental Resource Permit: Pursuant to Section 373.427, Fla. Stat., and Rule 40E-1.511(3), Fla. Admin. Code (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109(2)(c)), a petition objecting to the SFWMD's agency action regarding consolidated applications for Environmental Resource Permits and Use of Sovereign Submerged Lands (SLERPs), must be filed within 14 days of the notice of consolidated intent to grant or deny the SLERP. Petitions must substantially comply with the requirements of either subsection a. or b. above.

e. Emergency Authorization and Order: A person whose substantial interests are affected by a SFWMD Emergency Authorization and Order, has a right to file a petition under Sections 120.569, 120.57(1), and 120.57(2), Fla. Stat., as provided in subsections a. and b. above. However, the person, or the agent of the person responsible for causing or contributing to the emergency conditions shall take whatever action necessary to cause immediate compliance with the terms of the Emergency Authorization and Order.

f. Order for Emergency Action: A person whose substantial interests are affected by a SFWMD Order for Emergency Action has a right to file a petition pursuant to Rules 28-107.005 and 40E-1.611, Fla. Admin. Code, copies of which are attached to this Notice of Rights, and Section 373.119(3), Fla. Stat., for a hearing on the Order. Any subsequent agency action or proposed agency action to initiate a formal revocation proceeding shall be separately noticed pursuant to section g. below.

g. Permit Suspension, Revocation, Annulment, and Withdrawal: If the SFWMD issues an administrative complaint to suspend, revoke, annul, or withdraw a permit, the permittee may request a hearing to be conducted in accordance with Sections 120.569 and 120.57, Fla. Stat., within 21 days of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-107.004(3), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

2. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the SFWMD's final action may be different from the position taken by it previously. Persons whose substantial interests may be affected by

any such final decision of the SFWMD shall have, pursuant to Rule 40E-1.511(2), Fla. Admin. Code (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109(2)(c)), an additional 21 days from the date of receipt of notice of said decision to request an administrative hearing. However, the scope of the administrative hearing shall be limited to the substantial deviation.

3. Pursuant to Rule 40E-1.511(4), Fla. Admin. Code, substantially affected persons entitled to a hearing pursuant to Section 120.57(1), Fla. Stat., may waive their right to such a hearing and request an informal hearing before the Governing Board pursuant to Section 120.57(2), Fla. Stat., which may be granted at the option of the Governing Board.

4. Pursuant to Rule 28-106.111(3), Fla. Admin. Code, persons may file with the SFWMD a request for extension of time for filing a petition. The SFWMD, for good cause shown, may grant the extension. The request for extension must contain a certificate that the petitioner has consulted with all other parties, if any, concerning the extension and that the SFWMD and all other parties agree to the extension.

CIRCUIT COURT

5. Pursuant to Section 373.617, Fla. Stat., any substantially affected person who claims that final agency action of the SFWMD relating to permit decisions constitutes an unconstitutional taking of property without just compensation may seek judicial review of the action in circuit court by filing a civil action in the circuit court in the judicial circuit in which the affected property is located within 90 days of the rendering of the SFWMD's final agency action.

6. Pursuant to Section 403.412, Fla. Stat., any citizen of Florida may bring an action for injunctive relief against the SFWMD to compel the SFWMD to enforce the laws of Chapter 373, Fla. Stat., and Title 40E, Fla. Admin. Code. The complaining party must file with the SFWMD Clerk a verified complaint setting forth the facts upon which the complaint is based and the manner in which the complaining party is affected. If the SFWMD does not take appropriate action on the complaint within 30 days of receipt, the complaining party may then file a civil suit for injunctive relief in the 15th Judicial Circuit in and for Palm Beach County or circuit court in the county where the cause of action allegedly occurred.

7. Pursuant to Section 373.433, Fla. Stat., a private citizen of Florida may file suit in circuit court to require the abatement of any stormwater management system, dam, impoundment, reservoir, appurtenant work or works that violate the provisions of Chapter 373, Fla. Stat.

DISTRICT COURT OF APPEAL

8. Pursuant to Section 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the SFWMD Clerk within 30 days of rendering of the final SFWMD action.

LAND AND WATER ADJUDICATORY COMMISSION

9. A party to a "proceeding below" may seek review by the Land and Water Adjudicatory Commission (FLAWAC) of SFWMD's final agency action to determine if such action is consistent with the provisions and purposes of Chapter 373, Fla. Stat. Pursuant to Section 373.114, Fla. Stat., and Rules 42-2.013 and 42-2.0132, Fla. Admin. Code, a request for review of (a) an order or rule of the SFWMD must be filed with FLAWAC within 20 days after rendition of the order or adoption of the rule sought to be reviewed; (b) an order of the Department of Environmental Protection (DEP) requiring amendment or repeal of a SFWMD rule must be filed with FLAWAC within 30 days of rendition of the DEP's order, and (c) a SFWMD order entered pursuant to a formal administrative hearing under Section 120.57(1), Fla. Stat., must be filed no later than 20 days after rendition of the SFWMD's final order. Simultaneous with filing, a copy of the request for review must be served on the DEP Secretary, any person named in the SFWMD or DEP final order, and all parties to the proceeding below. A copy of Rule 42-2.013, Fla. Admin. Code is attached to this Notice of Rights.

PRIVATE PROPERTY RIGHTS PROTECTION ACT

10. A property owner who alleges a specific action of the SFWMD has inordinately burdened an existing use of the real property, or a vested right to a specific use of the real property, may file a claim in the circuit court where the real property is located within 1 year of the SFWMD action pursuant to the procedures set forth in Subsection 70.001(4)(a), Fla. Stat.

LAND USE AND ENVIRONMENTAL DISPUTE RESOLUTION

11. A property owner who alleges that a SFWMD development order (as that term is defined in Section 70.51(2)(a), Fla. Stat. to include permits) or SFWMD enforcement action is unreasonable, or unfairly burdens the use of the real property, may file a request for relief with the SFWMD within 30 days of receipt of the SFWMD's order or notice of agency action pursuant to the procedures set forth in Subsections 70.51(4) and (6), Fla. Stat.

MEDIATION

12. A person whose substantial interests are, or may be, affected by the SFWMD's action may choose mediation as an alternative remedy under Section 120.573, Fla. Stat. Pursuant to Rule 28-106.111(2), Fla. Admin. Code, the petition for mediation shall be filed within 21 days of either written notice through mail or posting or

publication of notice that the SFWMD has or intends to take final agency action. Choosing mediation will not affect the right to an administrative hearing if mediation does not result in settlement.

Pursuant to Rule 28-106.402, Fla. Admin. Code, the contents of the petition for mediation shall contain the following information:

(1) the name, address, and telephone number of the person requesting mediation and that person's representative, if any;

(2) a statement of the preliminary agency action;

(3) an explanation of how the person's substantial interests will be affected by the agency determination; and

(4) a statement of relief sought.

As provided in Section 120.573, Fla. Stat. (1997), the timely agreement of all the parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57, Fla. Stat., for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within 60 days of the execution of the agreement. If mediation results in settlement of the dispute, the SFWMD must enter a final order incorporating the agreement of the parties. Persons whose substantial interest will be affected by such a modified agency decision have a right to petition for hearing within 21 days of receipt of the final order in accordance with the requirements of Sections 120.569 and 120.57, Fla. Stat., and SFWMD Rule 28-106.201(2), Fla. Admin. Code. If mediation terminates without settlement of the dispute, the SFWMD shall notify all parties in writing that the administrative hearing process under Sections 120.569 and 120.57, Fla. Stat., remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action.

VARIANCES AND WAIVERS

13. A person who is subject to regulation pursuant to a SFWMD rule and believes the application of that rule will create a substantial hardship or will violate principles of fairness (as those terms are defined in Subsection 120.542(2), Fla. Stat.) and can demonstrate that the purpose of the underlying statute will be or has been achieved by other means, may file a petition with the SFWMD Clerk requesting a variance from or waiver of the SFWMD rule. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have concerning the SFWMD's action. Pursuant to Rule 28-104.002(2), Fla. Admin. Code, the petition must include the following information:

(a) the caption shall read:

Petition for (Variance from) or (Waiver of) Rule (Citation)

(b) The name, address, telephone number and any facsimile number of the petitioner;

(c) The name, address telephone number and any facsimile number of the attorney or qualified representative of the petitioner, (if any);

(d) the applicable rule or portion of the rule;

(e) the citation to the statue the rule is implementing;

(f) the type of action requested;

(g) the specific facts that demonstrate a substantial hardship or violation of principals of fairness that would justify a waiver or variance for the petitioner;

(h) the reason why the variance or the waiver requested would serve the purposes of the underlying statute; and

(i) a statement of whether the variance or waiver is permanent or temporary. If the variance or waiver is temporary, the petition shall include the dates indicating the duration of the requested variance or waiver.

A person requesting an emergency variance from or waiver of a SFWMD rule must clearly so state in the caption of the petition. In addition to the requirements of Section 120.542(5), Fla. Stat. pursuant to Rule 28-104.004(2), Fla. Admin. Code, the petition must also include:

a) the specific facts that make the situation an emergency; and

b) the specific facts to show that the petitioner will suffer immediate adverse effect unless the variance or waiver is issued by the SFWMD more expeditiously than the applicable timeframes set forth in Section 120.542, Fla. Stat.

WAIVER OF RIGHTS

14. Failure to observe the relevant time frames prescribed above will constitute a waiver of such right.

28-106.201 INITIATION OF PROCEEDINGS
(INVOLVING DISPUTED ISSUES OF MATERIAL FACT)

(2) All petitions filed under these rules shall contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding, and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and

(f) A demand for relief.

28-106.301 INITIATION OF PROCEEDINGS
(NOT INVOLVING DISPUTED ISSUES OF MATERIAL FACT)

(2) All petitions filed under these rules shall contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding, and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and

(e) A demand for relief.

28-107.004 SUSPENSION, REVOCATION, ANNULMENT, OR WITHDRAWAL

(3) Requests for hearing filed in accordance with this rule shall include:

(a) The name and address of the party making the request, for purposes of service;

(b) A statement that the party is requesting a hearing involving disputed issues of material fact, or a hearing not involving disputed issues of material fact; and

(c) A reference to the notice, order to show cause, administrative complaint, or other communication that the party has received from the agency.

42-2.013 REQUEST FOR REVIEW PURSUANT TO SECTION 373.114 OR 373.217

(1) In any proceeding arising under Chapter 373, F.S., review by the Florida Land and Water Adjudicatory Commission may be initiated by the Department or a party by filing a request for such review with the Secretary of the Commission and serving a copy on any person named in the rule or order, and on all parties to the proceeding which resulted in the order sought to be reviewed. A certificate of service showing completion of service as required by this subsection shall be a requirement for a determination of sufficiency under Rule 42-2.0132. Failure to file the request with the Commission within the time period provided in Rule 42-2.0132 shall result in dismissal of the request for review.

(2) The request for review shall identify the rule or order requested to be reviewed, the proceeding in which the rule or order was entered and the nature of the rule or order. A copy of the rule or order sought to be reviewed shall be attached. The request for review shall state with particularity:

(a) How the order or rule conflicts with the requirements, provisions and purposes of Chapter 373, F.S., or rules duly adopted thereunder;

(b) How the rule or order sought to be reviewed affects the interests of the party seeking review;

(c) The oral or written statement, sworn or unsworn, which was submitted to the agency concerning the matter to be reviewed and the date and location of the statement, if the individual or entity requesting the review has not participated in a proceeding previously instituted pursuant to Chapter 120, F.S., on the order for which review is sought;

(d) If review of an order is being sought, whether and how the activity authorized by the order would substantially affect natural resources of statewide or regional significance, or whether the order raises issues of policy, statutory interpretation, or rule interpretation that have regional or statewide significance from a standpoint of agency precedent, and all the factual bases in the record which the petitioner claims support such determination(s); and

(e) The action requested to be taken by the Commission as a result of the review, whether to rescind or modify the order, or remand the proceeding to the water management district for further action, or to require the water management district to initiate rulemaking to adopt, amend or repeal a rule.

28-107.005 EMERGENCY ACTION

(1) If the agency finds that immediate serious danger to the public health, safety, or welfare requires emergency action, the agency shall summarily suspend, limit, or restrict a license.

(2) the 14-day notice requirement of Section 120.569(2)(b), F. S., does not apply and shall not be construed to prevent a hearing at the earliest time practicable upon request of an aggrieved party.

(3) Unless otherwise provided by law, within 20 days after emergency action taken pursuant to paragraph (1) of this rule, the agency shall initiate a formal suspension or revocation proceeding in compliance with Sections 120.569, 120.57. and 120.60, F.S.

40E-1.611 EMERGENCY ACTION

(1) An emergency exists when immediate action is necessary to protect public health, safety or welfare; the health of animals, fish or aquatic life; the works of the District; a public water supply, or recreational, commercial, industrial, agricultural or other reasonable uses of land and water resources.

(2) The Executive Director may employ the resources of the District to take whatever remedial action necessary to alleviate the emergency condition without the issuance of an emergency order, or in the event an emergency order has been issued, after the expiration of the requisite time for compliance with that order.

Last Date For Agency Action: March 19, 2002

GENERAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Sr 80 (West Of I-95 To Parker Avenue)

Permit No.: 50-05327-P

Application No.: 010727-4

Application Type: Environmental Resource (New General Permit)

Location: Palm Beach County, S32,33/T43S/R43E
S4,5/T44S/R43E

Permittee : Florida Department Of Transportation

Operating Entity : Florida Department Of Transportation

Project Area: 15.43 acres

Project Land Use: Highway

Drainage Basin: C-51

Receiving Body: STUB CANAL **Class:** CLASS III

Special Drainage District: NA

Conservation Easement To District : No

Sovereign Submerged Lands: No

PROJECT PURPOSE:

The applicant is seeking approval to construct and operate a modified surface water management system to serve approximately 15.43 acres (including pond sites) of proposed roadway improvements and 3.46 acres of adjacent off-site lands, collectively known as SR-80 from west of SR-9 (I-95) to Parker Avenue.

PROJECT EVALUATION:

PROJECT SITE DESCRIPTION:

The proposed project site consists of portions of the existing SR 80 corridor within Sections 4 and 5 (Township 44 South, Range 43 East), and Sections 32 and 33 (Township 43 South, Range 43 East), in Palm Beach County (see location map, Exhibit 1). The corridor generally runs from Lang Road (approximate metric STA 977+17), east to Parker Avenue (approximate metric STA 988+29). The corridor includes the I-95 bridge (approximate metric centerline STA 980+75).

There are no wetlands located within or affected by the proposed project. The road widening project will involve construction activities over approximately 0.34 acres of other surface waters. Impacts to these areas will result from the regrading of the existing Stub Canal. Therefore, impacts to this area will be temporary in nature and are not anticipated to result in adverse impacts to environmental resources.

PROPOSED PROJECT:

Excess stormwater within Basin 1 will be discharged to a proposed dry detention pond (Pond 1) which is to be constructed at the southeast quadrant of the intersection of SR 80 with Lang Road. A proposed control structure, to be constructed within Pond 1, will ensure adequate water quality treatment and flood flow attenuation is provided for Basin 1, prior to discharge to the Stub Canal (which is located just west of I-95).

Excess stormwater within Basin 2 will be discharged to either of 2 proposed (interconnected) dry detention ponds (Pond 2 and Pond 3, both of which are to be constructed as part of this project). Pond 2 is to be constructed north of (and contiguous to) SR-80, south of (and contiguous to) an existing I-95 detention pond, east of (and contiguous to) the I-95 mainline, and west of (and contiguous to) Ramp J (SR 80 eastbound and westbound to I-95 northbound). Pond 3 is to be constructed adjacent to the south side of SR 80, just east of Ramp K (I-95 northbound to SR 80 east and west). A proposed control structure, to be constructed within Pond 2, will ensure adequate water quality treatment and flood flow attenuation is provided for Basin 2, prior to discharge to the Stub Canal via an existing 48" RCP.

Reference is made to Exhibit 2, entitled "Contract Plans - State Road 80 (Southern Blvd) from West of SR 9 (I-95) to Parker Avenue". Exhibit 2 consists of roadway plans, drainage plans, roadway profiles, cross-sections, and detail sheets. The drawings have been signed and sealed by Murray D. Thornburg, P.E., of Kimley-Horn & Associates on 11/5/01 and 2/14/02, have been included in the permit file, and are hereby incorporated into this permit by reference.

LAND USE:

The land use breakdown below is based on the 15.43 acres within the roadway right-of-way (including ponds).

Construction:
Project:

	This Phase	Total Project	
Impervious	10.68	10.68	acres
Pervious	3.06	3.06	acres
Water Mgnt Acreage	1.69	1.69	acres
Total:	**15.43**	**15.43**	

WATER QUANTITY :

Discharge Rate :

Discharge Storm Frequency : 10 YEAR-3 DAY Design Rainfall : 8.75 inches

Basin	Allow Disch (cfs)	Method Of Determination	Peak Disch (cfs)	Peak Stage (ft, NGVD)
1	24.2	Pre Vs Post	24.2	12.31
2	42.3	Pre Vs Post	42.3	14.79

Road Design :

Road Storm Frequency : 10 YEAR-3 DAY Design Rainfall: 8.75 inches

Basin	Peak Stage (ft, NGVD)	Proposed Min. Road Crown (ft, NGVD)
1	12.31	16.5
2	14.79	16.15

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NGVD)	WSWT Ctrl Elev (ft, NGVD)	Method Of Determination
1	6.32	9.19	8.86	Wet Season Soil Borings
2	9.11	9.51	9.00	Wet Season Soil Borings

Receiving Body :

Basin	Str.#	Receiving Body
1	1	Spur Canal
2	2	Spur Canal

Discharge Structures

Discharge Bleeders:

Basin	Str.#	Dimensions	Invert Elev. (ft, NGVD)
1	1	1 - 3" Dia. Circular Orifice	9.19
2	2	1 - 3" Dia. Circular Orifice	9.51

Discharge Weirs:

Basin	Str.#	Dimensions	Crest Elev. (ft, NGVD)
1	1	1 - 3.28' wide Sharp Crested	11.32
2	2	1 - 3.77" wide Sharp Crested	15.42

WATER QUALITY :

Water quality treatment equivalent to 2.5" from all impervious areas within Basin 1, with a 25% reduction for dry detention, will be provided within Pond 1. Water quality treatment equivalent to 2.5" from all impervious areas within Basin 2, with a 25% reduction for dry detention, will be provided within interconnected Ponds 2 and 3.

No adverse water quality impacts are anticipated as a result of the proposed project. A water quality monitoring plan has been proposed by the Applicant (Exhibit 3). Anchored floating turbidity curtains are to be installed immediately outside the limits of construction within the Stub Canal. Turbidity curtains are to remain in place until all construction activities have ceased and all potential sources of turbid emissions have been stabilized within the construction area.

A downstream mixing zone is proposed to extend approximately 200' downstream from the floating turbidity curtains within the Stub Canal. The upstream mixing zone will be 200' upstream from the limits of construction. The compliance monitoring station is to be located at the downstream limit of the mixing zone. Background samples are to be collected approximately 200' upstream (north) of the floating turbidity curtains.

Samples are to be collected and recorded twice daily during the canal dredging portion of construction. Updated records of turbidity monitoring are to be maintained onsite and readily available to SFWMD Field Representatives (see Special Condition No. 4).

Basin	Treatment Method		Vol Req.d (ac-ft)	Vol Prov'd (ac-ft)
1	Treatment	Dry Detention	.72	.72
2	Treatment	Dry Detention	1.19	1.19

WETLANDS:

Wetland Inventory :

CONSTRUCTION NEW -SR 80 - Other Surface Waters ONSITE

Pre-Development	Post-Development				
	Total Existing	Impacted	Undisturbed	Enhanced	Preserved	Restored/ Created
Other Surface Waters		.34				
Total:		**.34**				

CERTIFICATION AND MAINTENANCE OF THE WATER MANAGEMENT SYSTEM:

It is suggested that the permittee retain the services of a Professional Engineer registered in the State of Florida for periodic observation of construction of the surface water management (SWM) system. This will facilitate the completion of construction completion certification Form #0881 which is required pursuant to Section 10 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, and Rule 40E-4361(2), Florida Administrative Code (F.A.C.).

Pursuant to Chapter 40E-4 F.A.C., this permit may not be converted from the construction phase to the operation phase until certification of the SWM system is submitted to and accepted by this District. Rule 40E-4.321(7) F.A.C. states that failure to complete construction of the SWM system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization unless a permit extension is granted.

For SWM systems permitted with an operating entity who is different from the permittee, it should be noted that until the permit is transferred to the operating entity pursuant to Rule 40E-1.6107, F.A.C., the permittee is liable for compliance with the terms of this permit.

The permittee is advised that the efficiency of a SWM system will normally decrease over time unless the system is periodically maintained. A significant reduction in flow capacity can usually be attributed to partial blockages of the conveyance system. Once flow capacity is compromised, flooding of the project may result. Maintenance of the SWM system is required to protect the public health, safety and the natural resources of the state. Therefore, the permittee must have periodic inspections of the SWM system performed to ensure performance for flood protection and water quality purposes. If deficiencies are found, it is the responsibility of the permittee to correct these deficiencies in a timely manner.

RELATED CONCERNS:

Water Use Permit Status:

A Water Use permit is not required for this project at this time. This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation, unless the work qualifies for a general permit issued pursuant to Section 40E-20 FAC.

Historical/Archeological Resources:

No information has been received that indicates the presence of archaeological or historical resources or that the proposed activities could cause adverse impacts to archaeological or historical resources.

DCA/CZM Consistency Review:

The District has not received a finding of inconsistency from the Florida Department of Community Affairs or other commenting agencies regarding the provisions of the federal Coastal Zone Management Plan.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF RECOMMENDATION:

The Staff recommends that the following be issued :

Construction and operation (C&O) of modifications to an existing surface water management (SWM) system to serve approximately 15.43 acres (including pond sites) of proposed roadway improvements, and 3.46 acres of adjacent off-site lands, collectively known as SR-80 from west of SR-9 (I-95) to Parker Avenue.

Based on the information provided, District rules have been adhered to.

Staff recommendation is for approval subject to the attached
General and Special Conditions.

STAFF REVIEW:

DIVISION APPROVAL:

NATURAL RESOURCE MANAGEMENT:

Donald L. Medellin

DATE: 7-Mar-02

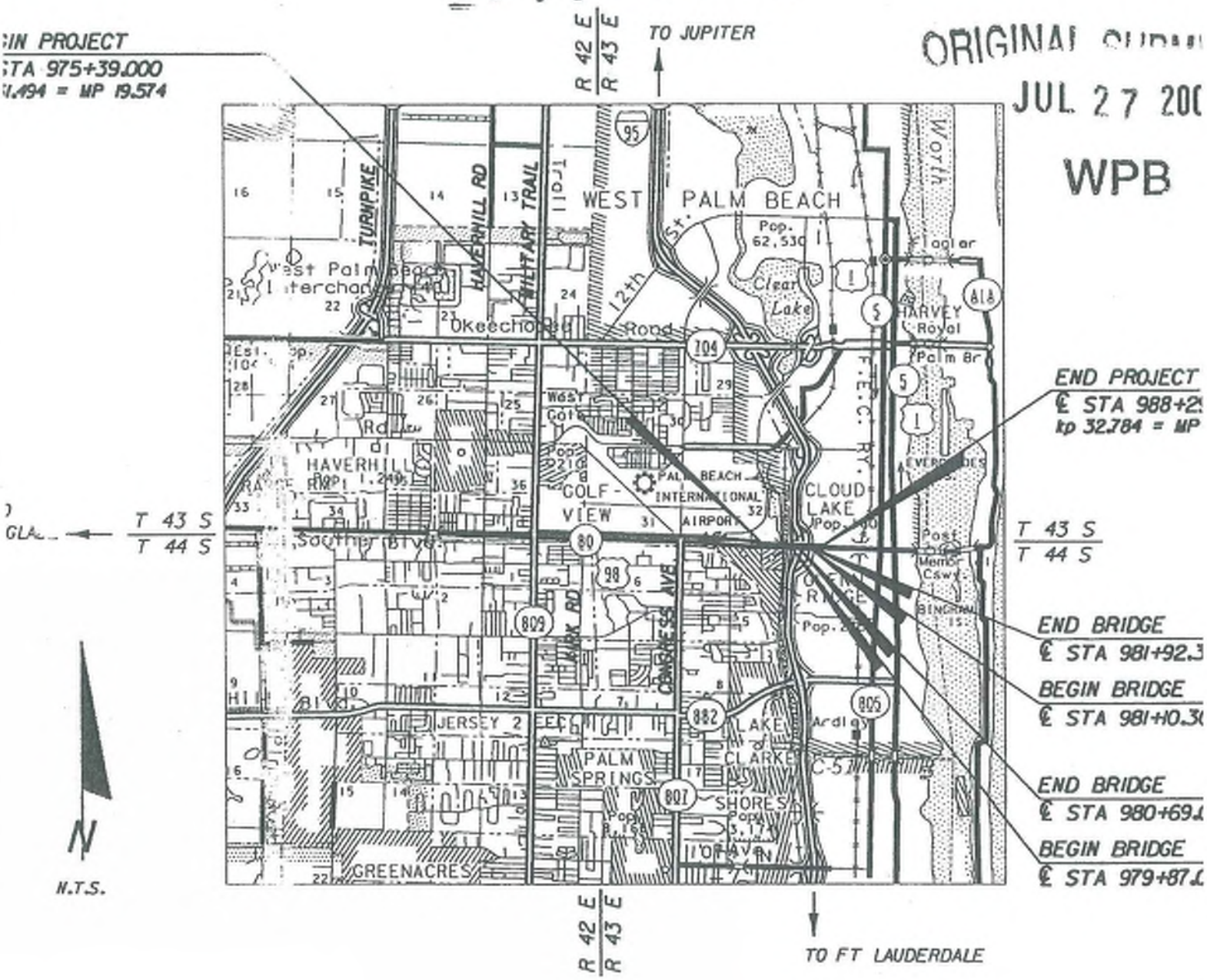
Donald L. Medellin

SURFACE WATER MANAGEMENT:

DATE: 10 Mar 02

Hugo A. Carter, P.E.

010727-4



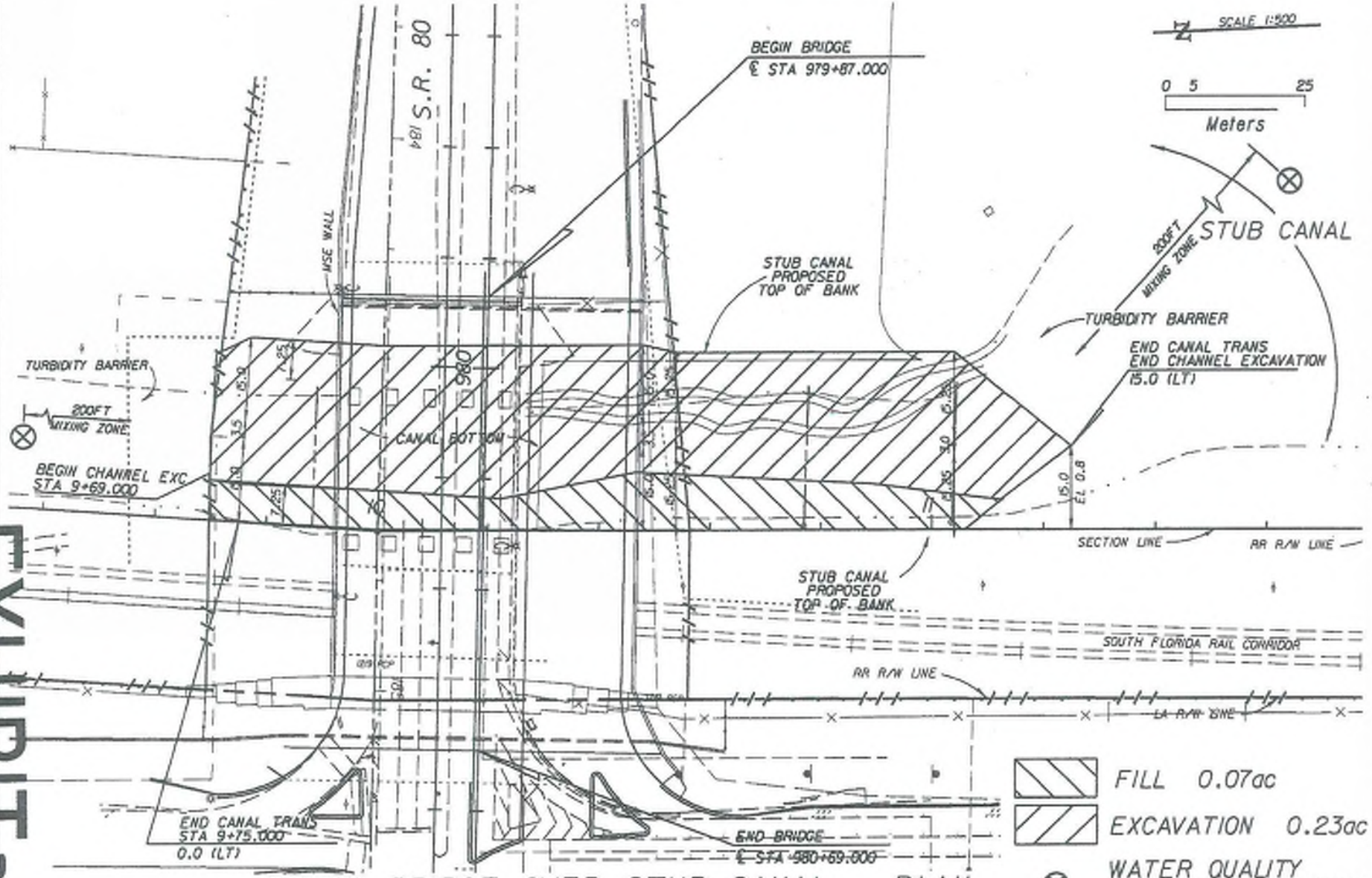
STATE ROAD 80 (WEST OF I-95 TO EAST OF PARKER A

VICINITY MAP

EXHIBIT 1

NOTE: DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (N.G.V.D.-'29

EXHIBIT 2a



SR 80 BRIDGE OVER STUB CANAL - PLAN

PROJECT DESCRIPTION	FLORIDA DEPARTMENT OF TRANSPORTATION	FPID: 231835-1-52-01
STATE ROAD 80	NAME: MURRAY THORNBURG, P.E.	COUNTY PALM BEACH
TWP: 43,44 S RNG: 43 E	SIGNATURE	DEP / CG / SHEET 5 OF 10
SEC 4,5,32,33	CERTIFICATE NO. 15819 DATE:	COE / MD / DATE 1/4/01

A WATER QUALITY MONITORING PROGRAM SHALL BE IMPLEMENTED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITIES. MEASUREMENTS WILL BE TAKEN AT LEAST TWICE DAILY WITH AT LEAST A 4-HOUR INTERVAL DURING CONSTRUCTION. SAMPLES WILL BE TAKEN 60M (200FT) DOWNSTREAM OF THE SILT-CONTAINMENT STRUCTURES (TURBIDITY CURTAINS) AT MID-DEPTH FROM THE CENTER OF THE STUB CANAL. IF TURBIDITY EXCEEDS STANDARDS (29 NTU'S ABOVE BACKGROUND), WORK SHALL BE TEMPORARILY HALTED UNTIL THE PLUME CLEARS. COST TO BE INCLUDED UNDER 2101-I, MOBILIZATION.

EXHIBIT 36

STAFF REPORT DISTRIBUTION LIST

SR 80 (WEST OF I-95 TO PARKER AVENUE)

Application No: 010727-4

Permit No: 50-05327-P

INTERNAL DISTRIBUTION

X John K. Shaffer - 4220
X LeRoy Rodgers - 4250
X Donald L. Medellin - 4250
X Hugo A. Carter, P.E. - 4220
X ERC Engineering - 4230
X ERC Environmental - 4230
X H. Azizi - 4230
X H. Bittaker, PBCSC - 6150
X Permit File

EXTERNAL DISTRIBUTION

X Permittee - Florida Department Of Transportation
X Agent - Florida Department Of Transportation
X Engr Consultant - Kimley-Horn And Associates Inc

GOVERNMENT AGENCIES

X City of Boynton Beach - Timothy K. Large, Bldg Code Permit Adm.
X Div of Recreation and Park - District 7 - FDEP
X Florida Fish & Wildlife Conservation Commission - Bureau of Protected Species Mgmt
X Palm Beach County - Building Div
X Palm Beach County - Environmental Res Mgmt
X Palm Beach County - Health Dept
X Palm Beach County - Land Development Div
X Palm Beach County - School Board Growth Mgmt
X Palm Beach County Engineer

OTHER INTERESTED PARTIES

X Rosa Durando
X Water Catchment Area Advisory Committee - Ed Dailey
X Water Management Institute - Michael N. Vanatta

STAFF REPORT DISTRIBUTION LIST

ADDRESSES

Florida Department Of Transportation
3400 W Commercial Blvd
Fort Lauderdale FL 33309-3421

Florida Department Of Transportation
District Four
3400 W Commercial Blvd
Fort Lauderdale FL 33309-3421

Kimley-Horn And Associates Inc
4431 Embarcadero Dr
West Palm Beach FL 33407

Florida Department Of Transportation

City of Boynton Beach - Timothy K. Large, Bldg Code Permit Adm.
Po Box 310
Boynton Beach FL 33425-0310

Div of Recreation and Park - District 7 - FDEP
13798 Se Federal Highway
Hobe Sound FL 33455

Florida Fish & Wildlife Conservation Commission - Bureau of Protected Species Mgmt
620 South Meridian Street
Tallahassee FL 32399-6000

Palm Beach County - Building Div
100 Australian Ave
West Palm Beach FL 33406

Palm Beach County - Environmental Res Mgmt
3323 Belvedere Road
#502
West Palm Beach FL 33406-1522

Palm Beach County - Health Dept
826 Evernia St
West Palm Beach FL 33407

Palm Beach County - Land Development Div
160 Australian Ave
West Palm Beach FL 33406

Palm Beach County - School Board Growth Mgmt
3300 Summit Blvd
West Palm Beach FL 33406-1492

Palm Beach County Engineer
P.O.Box 21229
West Palm Beach FL 33416-1522

Rosa Durando
10300 Heritage Farms Road
Lake Worth FL 33467

Water Catchment Area Advisory Committee - Ed Dailey
2895 Farragut Lane
West Palm Beach FL 33409

Water Management Institute - Michael N. Vanatta
Po Box 6446
Vero Beach FL 32961

SCANNED 02/24/2009 10:46 DR

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE
STANDARD GENERAL PERMIT NO. 50-08974-P
DATE ISSUED:February 24, 2009

Form #0941
08/95

PERMITTEE: PALM BEACH ATLANTIC UNIVERSITY
C/O WILLIAM SNED, SNED, PRUITT & TUCKER
3030 S DIXIE HWY #5
WEST PALM BEACH, FL 33405-1539

PROJECT DESCRIPTION: Construction and operation of a surface water management system to serve an 89.71 acre institutional and recreational development known as Palm Beach Atlantic Athletic Complex and City Park.

PROJECT LOCATION: PALM BEACH COUNTY, SEC 33 TWP 43S RGE 43E

PERMIT DURATION: See Special Condition No:1. See attached Rule 40E-4.321, Florida Administrative Code.

This is to notify you of the District's agency action concerning Notice of Intent for Permit Application No. 080424-11, dated April 24, 2008. This action is taken pursuant to Rule 40E-1.603 and Chapter 40E-40 , Florida Administrative Code (F.A.C.).

Based on the information provided, District rules have been adhered to and an Environmental Resource General Permit is in effect for this project subject to:

1. Not receiving a filed request for a Chapter 120, Florida Statutes, administrative hearing.
2. the attached 19 General Conditions (See Pages : 2 - 4 of 6),
3. the attached 13 Special Conditions (See Pages : 5 - 6 of 6) and
4. the attached 2 Exhibit(s)

Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights," we will assume that you concur with the District's action.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the Permittee (and the persons listed in the attached distribution list) no later than 5:00 p.m. on this 24th day of February, 2009, in accordance with Section 120.60(3), Florida Statutes.

BY: _____
Anthony M. Waterhouse, P.E.
Deputy Director
Environmental Resource Regulation Department

Certified mail number 7007 3020 0000 2072 7038

SCANNED 02/24/2009 10:46 DR

GENERAL CONDITIONS

1. All activities authorized by this permit shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit and Part IV, Chapter 373. F.S.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. Activities approved by this permit shall be conducted in a manner which does not cause violations of State water quality standards. The permittee shall implement best management practices for erosion and pollution control to prevent violation of State water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. All practices shall be in accordance with the guidelines and specifications described in Chapter 6 of the Florida Land Development Manual; A Guide to Sound Land and Water Management (Department of Environmental Regulation, 1988), incorporated by reference in Rule 40E-4.091, F.A.C. unless a project-specific erosion and sediment control plan is approved as part of the permit. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

4. The permittee shall notify the District of the anticipated construction start date within 30 days of the date that this permit is issued. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District an Environmental Resource Permit Construction Commencement Notice Form Number 0960 indicating the actual start date and the expected construction completion date.

5. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual status report form. Status report forms shall be submitted the following June of each year.

6. Within 30 days after completion of construction of the permitted activity, the permitee shall submit a written statement of completion and certification by a professional engineer or other individual authorized by law, utilizing the supplied Environmental Resource/Surface Water Management Permit Construction Completion/Certification Form Number 0881A, or Environmental Resource/Surface Water Management Permit Construction Completion Certification - For Projects Permitted prior to October 3, 1995 Form No. 0881B, incorporated by reference in Rule 40E-1.659, F.A.C. The statement of completion and certification shall be based on onsite observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and specifications. This submittal shall serve to notify the District that the system is ready for inspection. Additionally, if deviation from the approved drawings are discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawings. All surveyed dimensions and elevations shall be certified by a registered surveyor.

7. The operation phase of this permit shall not become effective: until the permittee has complied with the requirements of condition (6) above, and submitted a request for conversion of Environmental Resource Permit from Construction Phase to Operation Phase, Form No. 0920; the District determines the system to be in compliance with the permitted plans and specifications; and the entity approved by the District in accordance with Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit

SCANNED 02/24/2009 10:46 DR

GENERAL CONDITIONS

Applications within the South Florida Water Management District, accepts responsibility for operation and maintenance of the system. The permit shall not be transferred to such approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall initiate transfer of the permit to the approved responsible operating entity if different from the permittee. Until the permit is transferred pursuant to Section 40E-1.6107, F.A.C., the permittee shall be liable for compliance with the terms of the permit.

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of the phase or portion of the system to a local government or other responsible entity.

9. For those systems that will be operated or maintained by an entity that will require an easement or deed restriction in order to enable that entity to operate or maintain the system in conformance with this permit, such easement or deed restriction must be recorded in the public records and submitted to the District along with any other final operation and maintenance documents required by Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit applications within the South Florida Water Management District, prior to lot or units sales or prior to the completion of the system, whichever comes first. Other documents concerning the establishment and authority of the operating entity must be filed with the Secretary of State, county or municipal entities. Final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system and any other permit conditions.

10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the District in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.

11. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40E-4 or Chapter 40E-40, F.A.C..

12. The permittee is hereby advised that Section 253.77, F.S. states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the State, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.

13. The permittee must obtain a Water Use permit prior to construction dewatering, unless the work qualifies for a general permit pursuant to Subsection 40E-20.302(3), F.A.C., also known as the "No Notice" Rule.

14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the permit.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit

SCANNED 02/24/2009 10:46 DR

GENERAL CONDITIONS

application, including plans or other supporting documentation, shall not be considered binding, unless a specific condition of this permit or a formal determination under Section 373.421(2), F.S., provides otherwise.

16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of a permitted system or the real property on which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rules 40E-1.6105 and 40E-1.6107, F.A.C.. The permittee transferring the permit shall remain liable for corrective actions that may be required as a result of any violations prior to the sale, conveyance or other transfer of the system.

17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the appropriate District service center.

19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

SCANNED 02/24/2009 10:46 DR

SPECIAL CONDITIONS

1. The construction phase of this permit shall expire on February 24, 2014.

2. Operation of the surface water management system shall be the responsibility of BASIN 1: CITY OF WEST PALM BEACH BASIN 2: PERMITTEE. Within one year of permit issuance or concurrent with the engineering certification of construction completion, whichever comes first, the permittee shall submit a copy of the recorded deed restrictions (or declaration of condominium, if applicable), a copy of the filed articles of incorporation, and a copy of the certificate of incorporation for the association.

3. Discharge Facilities:

   Basin: Basin 1, Structure: CS-1

   1-1' W X 2' H RECTANGULAR NOTCH with invert at elev. 14' NGVD 29.

   Receiving body : Parker Avenue SWM System
   Control elev : 8.5 feet NGVD 29.

   Basin: Basin 1, Structure: CS-2

   1-1' W X 2' H RECTANGULAR NOTCH with invert at elev. 14' NGVD 29.

   Receiving body : Parker Avenue SWM System
   Control elev : 8.5 feet NGVD 29.

   Basin: Basin 1, Structure: CS-3

   1-1' W X 2' H RECTANGULAR NOTCH with invert at elev. 14' NGVD 29.

   Receiving body : Parker Avenue SWM System
   Control elev : 8.5 feet NGVD 29.

   Basin: Basin 2

   1-X 45 deg. TRIANGULAR ORIFICE with invert at elev. 11' NGVD 29.

   Receiving body : Stub Canal west of I-95
   Control elev : 11 feet NGVD 29.

4. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.

5. Measures shall be taken during construction to insure that sedimentation and/or turbidity violations do not occur in the receiving water.

6. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.

7. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.

8. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.

SCANNED 02/24/2009 10:46 DR

SPECIAL CONDITIONS

9. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments/debris. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.

10. This permit is issued based on the applicant's submitted information which reasonably demonstrates that adverse water resource related impacts will not be caused by the completed permit activity. Should any adverse impacts caused by the completed surface water management system occur, the District will require the permittee to provide appropriate mitigation to the District or other impacted party. The District will require the permittee to modify the surface water management system, if necessary, to eliminate the cause of the adverse impacts.

11. The permittee acknowledges, that pursuant to Rule 40E-4.101(2), F.A.C., a notice of Environmental Resource or Surface Water Management Permit may be recorded in the county public records. Pursuant to the specific language of the rule, this notice shall not be considered an encumbrance upon the property.

12. Minimum building floor elevation: BASIN: Basin 1 - 18.00 feet NGVD 29. BASIN: Basin 2 - 19.00 feet NGVD 29.

13. Minimum road crown elevation: Basin: Basin 1 - 16.25 feet NGVD 29. Basin: Basin 2 - 15.00 feet NGVD 29.

SCANNED 02/24/2009 10:45 DR

40E-4.321 Duration of Permits.

(1) Unless revoked or otherwise modified the duration of an environmental resource permit issued under this chapter or Chapter 40E-40, F.A.C., is as follows:

(a) For a conceptual approval, two years from the date of issuance or the date specified as a condition of the permit, unless within that period an application for an individual or standard general permit is filed for any portion of the project. If an application for an environmental resource permit is filed, then the conceptual approval remains valid until final action is taken on the environmental resource permit application. If the application is granted, then the conceptual approval is valid for an additional two years from the date of issuance of the permit. Conceptual approvals which have no individual or standard general environmental resource permit applications filed for a period of two years shall expire automatically at the end of the two year period.

(b) For a conceptual approval filed concurrently with a development of regional impact (DRI) application for development approval (ADA) and a local government comprehensive plan amendment, the duration of the conceptual approval shall be two years from whichever one of the following occurs at the latest date:

1. The effective date of the local government's comprehensive plan amendment,
2. The effective date of the local government development order,
3. The date on which the District issues the conceptual approval, or
4. The date on which the District issues a final order pertaining to the resolution of any Section 120.57, F.S., administrative proceeding or other legal appeals.

(c) For an individual or standard general environmental resource permit, the construction phase authorizing construction, removal, alteration or abandonment of a system shall expire five years from the date of issuance or such amount of time as made a condition of the permit.

(d) For an individual or standard general environmental resource permit, the operational phase of the permit is perpetual for operation and maintenance.

(e) For a noticed general permit issued pursuant to Chapter 40E-400, F.A.C., five years from the date the notice of intent to use the permit is provided to the District.

(2)(a) Unless prescribed by special permit condition, permits expire automatically according to the timeframes indicated in this rule. If application for extension is made by electronic mail at the District's e-Permitting website or in writing pursuant to subsection (3), the permit shall remain in full force and effect until:

1. The Governing Board takes action on an application for extension of an individual permit, or
2. Staff takes action on an application for extension of a standard general permit.

(b) Installation of the project outfall structure shall not constitute a vesting of the permit.

(3) The permit extension shall be issued provided that a permittee files a written request with the District showing good cause prior to the expiration of the permit. For the purpose of this rule, good cause shall mean a set of extenuating circumstances outside of the control of the permittee. Requests for extensions, which shall include documentation of the extenuating circumstances and how they have delayed this project, will not be accepted more than 180 days prior to the expiration date.

(4) Substantial modifications to Conceptual Approvals will extend the duration of the Conceptual Approval for two years from the date of issuance of the modification. For the purposes of this section, the term "substantial modification" shall mean a modification which is reasonably expected to lead to substantially different water resource or environmental impacts which require a detailed review.

(5) Substantial modifications to individual or standard general environmental resource permits issued pursuant to a permit application extend the duration of the permit for three years from the date of issuance of the modification. Individual or standard general environmental resource permit modifications do not extend the duration of a conceptual approval.

(6) Permit modifications issued pursuant to paragraph 40E-4.331(2)(b), F.A.C. (letter modifications) do not extend the duration of the permit.

(7) Failure to complete construction or alteration of the surface water management system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization in order to continue construction unless a permit extension is granted.

Specific Authority 373.044, 373.113, 668.003, 668.004, 668.50 FS. Law Implemented 373.413, 373.416, 373.419, 373.426, 668.003, 668.004, 668.50 FS. History–New 9-3-81, Amended 1-31-82, 12-1-82, Formerly 16K-4.07(4), Amended 7-1-86, 4-20-94, 10-3-95, 5-28-00, 10-1-06.

SCANNED 02/24/2009 10:46 DR

NOTICE OF RIGHTS

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a District decision which does or may determine their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: 1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or 2) within 14 days of service of an Administrative Order pursuant to Subsection 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of either written notice through mail, or electronic mail, or posting that the District has or intends to take final agency action, or publication of notice that the District has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

Filing Instructions

The Petition must be filed with the Office of the District Clerk of the SFWMD. Filings with the District Clerk may be made by mail, hand-delivery or facsimile. **Filings by e-mail will not be accepted.** Any person wishing to receive a clerked copy with the date and time stamped must provide an additional copy. A petition for administrative hearing is deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Any document received by the office of the SFWMD Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the SFWMD Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must be delivered to the Office of the SFWMD Clerk. **Delivery of a petition to the SFWMD's security desk does not constitute filing. To ensure proper filing, it will be necessary to request the SFWMD's security officer to contact the Clerk's office.** An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by facsimile must be transmitted to the SFWMD Clerk's Office at (561) 682-6010. Pursuant to Subsections 28-106.104(7), (8) and (9), Fla. Admin. Code, a party who files a document by facsimile represents that the original physically signed document will be retained by that party for the duration of that proceeding and of any subsequent appeal or subsequent proceeding in that cause. Any party who elects to file any document by facsimile shall be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed with the clerk as a result. The filing date for a document filed by facsimile shall be the date the SFWMD Clerk receives the complete document.

SCANNED 02/24/2009 10:46 DR

Initiation of an Administrative Hearing

Pursuant to Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 and 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, District file number or any other SFWMD identification number, if known.
2. The name, address and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose to the extension. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

If the District's Governing Board takes action with substantially different impacts on water resources from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law.

Mediation

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the SFWMD Clerk within 30 days of rendering of the final SFWMD action.

SCANNED 02/24/2009 10:46 DR

Last Date For Agency Action: 23-MAR-2009

GENERAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Palm Beach Atlantic Athletic Complex And City Park

Permit No.: 50-08974-P

Application No.: 080424-11 **Associated File:** 080516-5 WU Concurrent

Application Type: Environmental Resource (New General Permit)

Location: Palm Beach County, S33/T43S/R43E

Permittee : Palm Beach Atlantic University

Operating Entity : Basin 1: City Of West Palm Beach Basin 2: Permittee

Project Area: 89.71 acres

Project Land Use: Recreational
Institutional

Drainage Basin: INTRACOASTAL WATERWAY

Drainage Basin: C-51 EAST

Receiving Body: Basin 1: Parker Avenue SWM System Basin 2: Stub Canal west of I-95

Special Drainage District: NA

Conservation Easement To District : No

Sovereign Submerged Lands: No

PROJECT PURPOSE:

This application is a request for an Environmental Resource Permit to authorize construction and operation of a surface water management system to serve an 89.71-acre athletic complex and city park.

SCANNED 02/24/2009 10:46 DR

PROJECT EVALUATION:

PROJECT SITE DESCRIPTION:

The project is located north of Southern Blvd between I-95 on the west and Parker Avenue on the east in the city of West Palm Beach, Palm Beach County. The site is a former residential subdivision that was known as Hillcrest. All lots have been cleared of residential structures and are vacant. Remaining features include roads, upland trees and ground cover. There are no permitted surface water management facilities within the project area. There are no wetlands or other surface waters located within or affected by the proposed project.

PROPOSED PROJECT:

This application is a request for the construction and operation of 2 separate surface water management systems serving a 77.63 acre institutional development and a 12.08 acre recreational development collectively known as Palm Beach Atlantic Athletic Complex and City Park. The proposed 12.08 acre West Palm Beach City Park surface water management system will consist of inlets, culverts and exfiltration trench which will provide water quality treatment prior to discharge to the Parker Avenue storm sewer system. The proposed 77.63 acre Palm Beach Atlantic University Athletic Complex surface water management system will consist of inlets, culverts and a dry detention area which will provide water quality treatment and attenuation prior to discharge to an existing culvert running under I-95 which leads to the Stub Canal. The two surface water management system's will be physically seperated by grading the perimeters to the determined 25 year 3 day peak stage.

The site will be divided into 2 parts. The western 77.63 acres will be an athletic complex for Palm Beach Atlantic University. The eastern 8.62 acres and northern and southern strips of the site totaling 3.46 acres (12.08 acres total) will be a park for the city of West Palm Beach. The 12.08 acre park will be deeded over to the city of West Palm Beach when construction is complete. A draft deed has been submitted which demonstrates that the city of West Palm Beach will be the future owner of the park and responsible entity for the surface water management system.

The area encompassing the proposed dry detention area located on the western portion of the site was previously used by FDOT as compensating storage area (C-51 Basin) in Application No. 980805-4, Permit No. 50-04154-P. The engineer-of-record has submitted analysis which demonstrates the proposed dry detention area has been designed to accomodate the required FDOT compensating storage volume, this project's compensating storage volume and the required water quality treatment volume.

LAND USE:

Construction:

Basin : Basin 1

	Total Basin	
Building Coverage	.14	acres
Pavement	.93	acres
Pervious	11.01	acres
Total:	**12.08**	

Basin : Basin 2

SCANNED 02/24/2009 10:46 DR

Basin : Basin 2

	Total Basin	
Building Coverage	.84	acres
Dry Detention Bottom	5.65	acres
Dry Detention Sides	1.35	acres
Pavement	9.62	acres
Pervious	60.17	acres
Total:	**77.63**	

WATER QUANTITY :

Discharge Rate :

For Basin 1, calculations were submitted to demonstrate that post-development discharge for the design event will be less than existing conditions. For Basin 2, as shown in the table below, the proposed project discharge is within the allowable limit for the area.

Discharge Storm Frequency : 25 YEAR-3 DAY Design Rainfall : 13 inches

Basin	Allow Disch (cfs)	Method Of Determination	Peak Disch (cfs)	Peak Stage (ft, NGVD 29)
Basin 2	4.25	Discharge Formula	3.96	15.33

Finished Floors :

As shown in the following table and the attached exhibits, minimum finished floor elevations have been set at or above the calculated design storm flood elevation.

Building Storm Frequency : 100 YEAR-3 DAY Design Rainfall : 16 inches

Basin	Peak Stage (ft, NGVD 29)	Proposed Min. Finished Floors (ft, NGVD 29)	FEMA Elevation (ft, NGVD 29)
Basin 1	17.66	18	N/A
Basin 2	17.12	19	N/A

Road Design :

As shown in the following table and the attached exhibits, minimum road center lines have been set at or above the calculated design storm flood elevation.

Road Storm Frequency : 10 YEAR-1 DAY Design Rainfall: 8.5 inches

Basin	Peak Stage (ft, NGVD 29)	Proposed Min. Road Crown (ft, NGVD 29)
Basin 1	15.76	16.25
Basin 2	14.4	15

SCANNED 02/24/2009 10:46 DR

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NGVD 29)	WSWT Ctrl Elev (ft, NGVD 29)	Method Of Determination
Basin 1	12.08	8.5	8.50	Wet Season Water Table
Basin 2	77.63	11	11.00	Wet Season Water Table

Receiving Body :

Basin	Str.#	Receiving Body
Basin 1	CS-1	Parker Avenue SWM System
Basin 1	CS-2	Parker Avenue SWM System
Basin 1	CS-3	Parker Avenue SWM System
Basin 2	CS-1	Stub Canal west of I-95

Discharge Structures: Note: The units for all the elevation values of structures are (ft, NGVD 29)

Bleeders:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Invert Angle	Invert Elev.
Basin 1	CS-1	1	Rectangular Notch	1'	2'				14
Basin 1	CS-2	1	Rectangular Notch	1'	2'				14
Basin 1	CS-3	1	Rectangular Notch	1'	2'				14
Basin 2	CS-1	1	Triangular Orifice		1'			45 deg.	11

WATER QUALITY :

The required water quality treatment for the Palm Beach Atlantic University Athletic Complex (1" over the entire site) will be provided within a dry detention area prior to discharge to the Stub Canal.

The required water quality treatment for the West Palm Beach city park (1" over the entire site) wil be provided within exfiltration trench prior to discharge to the Parker Avenue storm sewer system.

Basin	Treatment Method		Vol Req.d (ac-ft)	Vol Prov'd
Basin 1	Treatment	Exfiltration Trench	.54	.54
Basin 2	Treatment	Dry Detention	6.47	6.47

CERTIFICATION AND MAINTENANCE OF THE WATER MANAGEMENT SYSTEM:

It is suggested that the permittee retain the services of a Professional Engineer registered in the State of Florida for periodic observation of construction of the surface water management (SWM) system. This will facilitate the completion of construction completion certification Form #0881 which is required pursuant to Section 10 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, and Rule 40E-4.361(2), Florida Administrative Code (F.A.C.).

Pursuant to Chapter 40E-4 F.A.C., this permit may not be converted from the construction phase to the operation phase until certification of the SWM system is submitted to and accepted by this District. Rule 40E-4.321(7) F.A.C. states that failure to complete construction of the SWM system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization unless a permit extension is granted.

For SWM systems permitted with an operating entity who is different from the permittee, it should be noted

SCANNED 02/24/2009 10:46 DR

that until the permit is transferred to the operating entity pursuant to Rule 40E-1.6107, F.A.C., the permittee is liable for compliance with the terms of this permit.

The permittee is advised that the efficiency of a SWM system will normally decrease over time unless the system is periodically maintained. A significant reduction in flow capacity can usually be attributed to partial blockages of the conveyance system. Once flow capacity is compromised, flooding of the project may result. Maintenance of the SWM system is required to protect the public health, safety and the natural resources of the state. Therefore, the permittee must have periodic inspections of the SWM system performed to ensure performance for flood protection and water quality purposes. If deficiencies are found, it is the responsibility of the permittee to correct these deficiencies in a timely manner.

SCANNED 02/24/2009 10:46 DR

RELATED CONCERNS:

Water Use Permit Status:

Water Use application number 080516-5 has been submitted and is being processed for this project. This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation, unless the work qualifies for a No-Notice Short-Term Dewatering permit pursuant to Chapter 40E-20.302(3) or is exempt pursuant to Section 40E-2.051, FAC.

CERP:

The proposed project is not located within or adjacent to a Comprehensive Everglades Restoration Project component.

Potable Water Supplier:

City of West Palm Beach Utilities

Waste Water System/Supplier:

City of West Palm Beach Utilities

Right-Of-Way Permit Status:

A Right-of-Way Permit is not required for this project.

DRI Status:

This project is not a DRI.

Historical/Archeological Resources:

No information has been received that indicates the presence of archaeological or historical resources or that the proposed activities could cause adverse impacts to archaeological or historical resources.

DCA/CZM Consistency Review:

The District has not received a finding of inconsistency from the Florida Department of Environmental Protection or other commenting agencies regarding the provisions of the federal Coastal Zone Management Plan.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF REVIEW:

DIVISION APPROVAL:

SCANNED 02/24/2009 10:46 DR

NATURAL RESOURCE MANAGEMENT:

Barbara J. Conmy

DATE: 2/23/09

SURFACE WATER MANAGEMENT:

Carlos A. DeRojas, P.E.

DATE: 2/23/09

SCANNED 02/24/2009 10:46 DR

STAFF REPORT DISTRIBUTION LIST

PALM BEACH ATLANTIC ATHLETIC COMPLEX AND CITY PARK

Application No: 080424-11

Permit No: 50-08974-P

INTERNAL DISTRIBUTION

X Caroline Hanes - 4220
X Joseph D. Santangelo - 4220
X Carlos A. DeRojas, P.E. - 4220
X Barbara J. Conmy - 4220
X ERC Engineering - 4230
X ERC Environmental - 4230
X H. Azizi - 6890
X H. Bittaker, PBCSC - 6890
X Permit File
X Permit No. 50-04154-P

EXTERNAL DISTRIBUTION

X Permittee - Palm Beach Atlantic University
X Engr Consultant - Schaefer Fagan & Associates

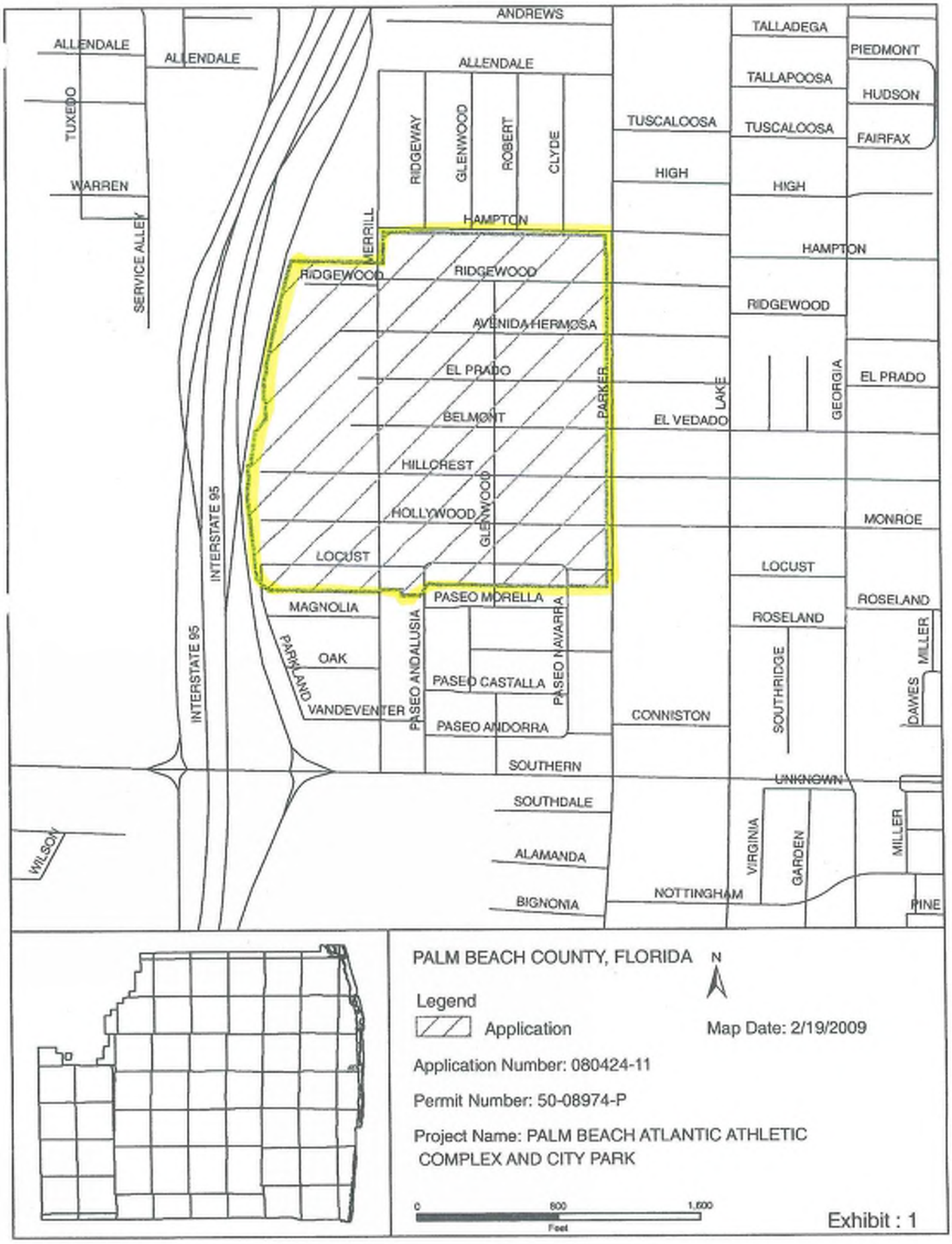
GOVERNMENT AGENCIES

X City Engineer, City of West Palm Beach
X Div of Recreation and Park - District 7 - FDEP
X Florida Department of Transportation - District IV
X Palm Beach County - Building Div
X Palm Beach County - Environmental Res Management
X Palm Beach County - Health Dept Environmental Health & Engineering
X Palm Beach County - Land Development Div
X Palm Beach County - School Board Growth Mgmt
X Palm Beach County Engineer

OTHER INTERESTED PARTIES

X Water Catchment Area Advisory Committee - Ed Dailey

SCANNED 02/24/2009 10:46 DR



April 11, 2008

080424-11

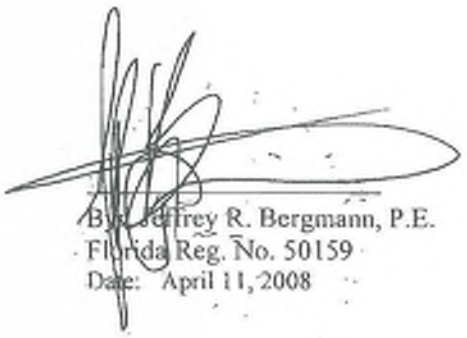
Palm Beach Atlantic University
Athletic Complex
Palm Beach County, Florida

Drainage Calculations

RECEIVED
APR 24 2008
ENV RES REGULATION

Prepared for:
Palm Beach Atlantic University
West Palm Beach, Florida, 33405

Prepared by:
Schaefer-Fagan & Cooper Engineers inc.
631 US Highway 1, Suite 305
North Palm Beach, Florida 33408



By: Jeffrey R. Bergmann, P.E.
Florida Reg. No. 50159
Date: April 11, 2008

Palm Beach Atlantic University Athletic Complex

Palm Beach County, Florida

Project Description

Project Description

Palm Beach Atlantic Athletic Complex is sited on a previous residential neighborhood within West Palm Beach known as Hillcrest. The Hillcrest neighborhood was condemned as part of the PBIA runway expansion.

The property is located east of the Palm Beach International Airport and these particular parcels of land were part of the Palm Beach County Airport buy-out area. These properties were previously single family dwellings in a low density neighborhood within the City's municipal boundary.

This parcel of land has been vacated and the previous residential homes have been demolished. Only the remnants of the existing streets and utilities are present at the site. In 1999 permitting of the I-95 expansion (Permit No. 50-04154-P/ APPL No. 980805) and airport exit work a portion of the site along the western boundary (adjacent to I-95) was lowered to provide C-51 compensating storage for I-95. An existing 42" RCP pipe was left in place with the I-95 construction. A new ditch bottom inlet structure was placed on the western end of the existing 42" pipe to allow for connectivity between the Stub Canal and the hillcrest site.

The existing on-site drainage is split along a natural occurring ridge that runs north-south midway through the property. The existing Hillcrest drainage system routed the eastern half of the property into the Parker Avenue drainage system and the western half of the property was routed to the west and then south via Parkland Road , across I-95 in an existing 42" RCP and into the Stub canal.

The PBAU Athletic Complex comprises 77.63 Acres of the total 89.71 acre parcel. An agreement between PBAU and the city of West palm Beach donates 12.08 acres to the city along the north, east and southern boundaries of the athletic complex as a buffer from the adjacent residential communities.

The proposed drainage for the athletic complex will split the site similarly to the previous drainage patterns.

The City owned perimeter parcels along the north, south and east to continue to drain into the roadway systems of Hampton, Parkland (via a swale) and Parker respectively. The City properties are 100% pervious with the exaction of the parcel along Parker Avenue. Therefore, only the parcel adjacent to Parker will contain pretreatment for water quality prior to discharging into the Parker Avenue drainage system.

The Athletic Complex will route the storm water discharge into a series of catch basins and inlets and discharge these pipe network systems into a created dry detention area on the eastern portion of the site. This is in the approximate location as the compensating storage area for the FDOT I-95 expansion. The dry detention area will provide storm water attenuation and water quality by raising the existing FDOT inlet and providing a v-notch bleeder in the inlet structure. The dry detention area was sized to accommodate both the compensating storage requirements for the FDOT I-95 project as well as the Athletic Complex and the required storage volume for the storm discharge attenuation.

Palm Beach Atlantic University
Athletic Complex

Palm Beach County, Florida

Post-Development
Drainage Calculations

4/16/2008

Flood Routing Summary

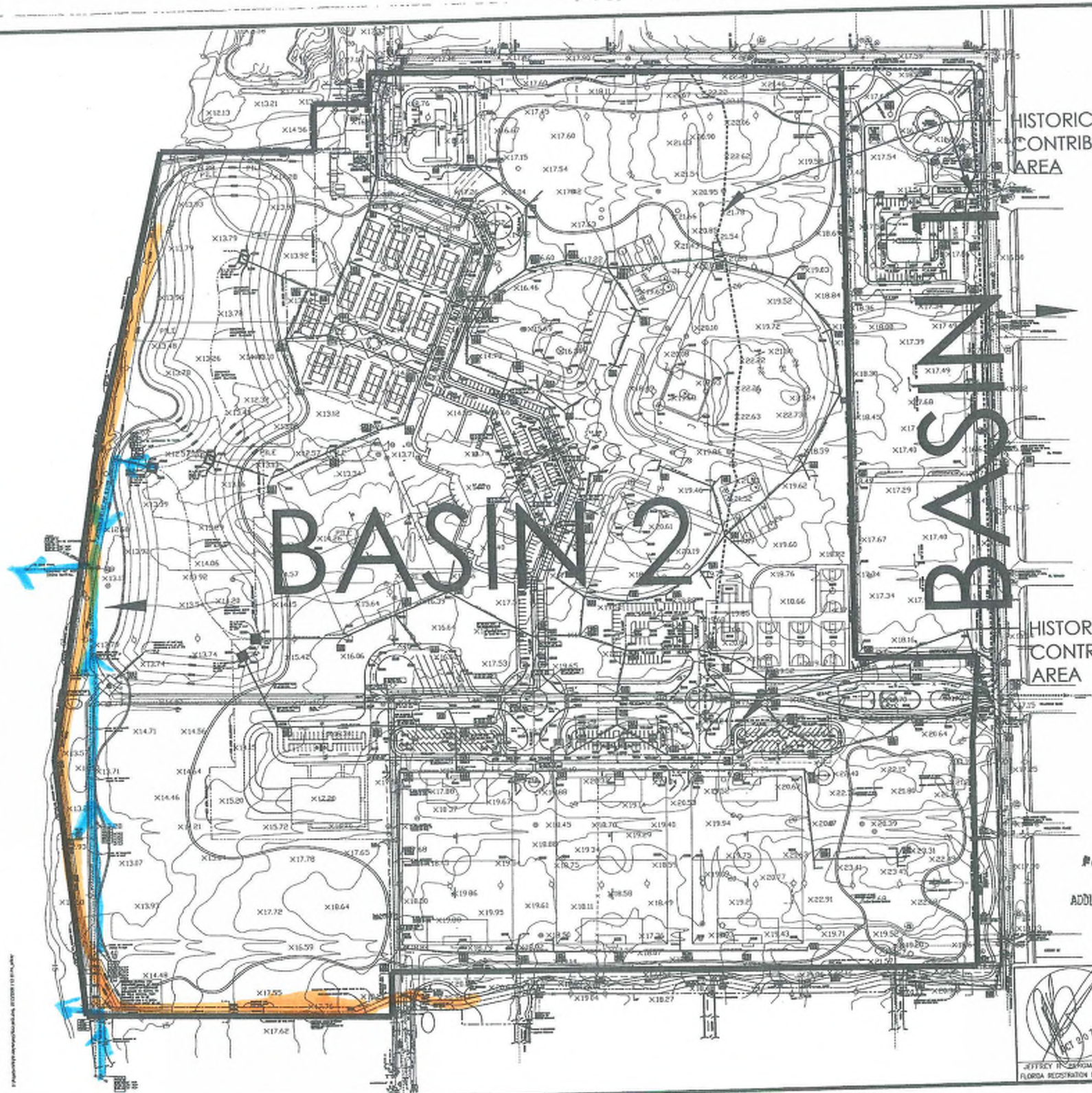
		Basin No. Basin 1	Basin 2
Rainfall	10 year -1day	8.5	8.5
inches	10 year - 3 day	10.5	10.5
	25 year - 3 day	13	13
	100 year - 3 day	16	16
Peak Stage	10 year -1day	17.40	14.4
NGVD	**10 year - 3 day**	**17.58**	**15.33**
	25 year - 3 day	17.77	15.84
	100 year - 3 day	17.99	16.24
Peak Discharge	10 year -1day	2.72	3.29
CFS	**10 year - 3 day**	**4.55**	**3.96**
	25 year - 3 day	6.85	16.45
	100 year - 3 day	9.79	32.94

C-51 Allowable Discharge = 4.16 CFS

4/16/2008

Control Structure Summary

Basin No.	Wier Dimensions			Bleeder Dimensions	
	Elevation	Width	Type	Invert Elevation	Width x Height
Basin 1	15.25	10'	Triangular	11	0.83' x 1.00'
Basin 2	17	3'	Triangular	16.5	0.414' x 0.50'



HISTORIC PARKER AVENUE
CONTRIBUTING DRAINAGE
AREA

GRAPHIC SCALE
(IN FEET)
0 50 100 200

LEGEND

- LENGTH, SIZE, TYPE, AND SLOPE OF PIPE; STORM DRAINAGE INLET
- STORM DRAINAGE MANHOLE
- FLOW DIRECTION OF RUNOFF
- STORM DRAINAGE STRUCTURE NUMBER; RIM ELEVATION; INVERT ELEVATION OF PIPE
- CONFLICT CROSSING
- PROPOSED ELEVATION
- EXISTING ELEVATION
- EL. ELEVATION
- FF ELEV FINISHED FLOOR ELEVATION
- RCP REINFORCED CONCRETE PIPE
- STREET/STOP SIGN
- S.S.W.S.S.B. STOP SIGN WITH STREET SIGN BASE
- ADS ADVANCED DRAINAGE SYSTEMS HDPE CORRUGATED PIPE OR EQUAL
- BRICK PAVERS, RUNNING BOND PATTERN
- BRICK PAVERS HERRING BONE PATTERN
- EXFILTRATION TRENCH
- HCR HANDICAP RAMP PER FDOT INDEX NO. 304
- CR-1 HANDICAP RAMP TYPE

NOTES

1. ALL HANDICAP RAMPS SHALL BE PER FDOT INDEX 304 TYPE CR-1 UNLESS OTHERWISE NOTED.
2. ALL SIDEWALKS ADJACENT TO PAVEMENT SHALL BE CONSTRUCTED WITH A TURNED DOWN EDGE.
3. A 12" HEADER CURB SHALL BE USED AT ALL CROSSWALK LOCATIONS.
4. WHERE DRAINAGE PIPE IS INDICATED TO BE BY OTHERS -OR- FUTURE, A KNOCK OUT OF 15" DIA. SHALL BE PROVIDED IN THE STRUCTURE.

SFWMD CRITERIA	BASIN 1	BASIN 2
MIN ROAD CROWN	16.25	15.00
MIN PERIMETER BERM	16.50	16.00
MIN FINISH FLOOR	18.00	19.00

R080424 11

ADDUREVISED SUBMITTAL

JAN 22 2009

UNAUTHORIZED USE OF ELECTRONIC FILES WITHOUT CONSENT OF SFBA IS PROHIBITED. THESE FILES ARE FOR REFERENCE PURPOSES ONLY, NOT FOR CONSTRUCTION. THESE DRAWINGS ARE NOT VALID WITHOUT SIGNATURE, SEAL, AND DATE AFFIXED BY THE ENGINEER OF RECORD.

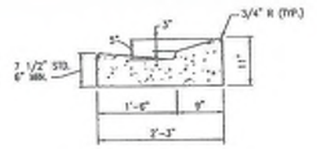
JEFFREY R. BERGMANN, P.E.
FLORIDA REGISTRATION NO 50159

DATE	REVISIONS
03/13/09	INCORPORATE CWPB 10-3-08 COMMENTS

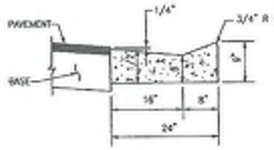
SCHAEFER FAGAN & ASSOCIATES, INC.
ENGINEERING
631 U.S. Highway 1 • Suite 300 • North Palm Beach, FL 33408
Fax (561) 366-2125 Phone (561) 848-7223
EB NO. 3405

PBAU ATHLETIC CAMPUS
MASTER PAVING AND DRAINAGE
MASTER PLAN

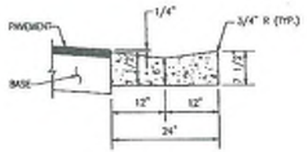
JRB	DRN. JRB/KJC	CHECKED DJF	DATE 03/09/09
BY	SCALE 1" = 100'	FILE PBAU-p401.dwg	SHEET 2 of 20



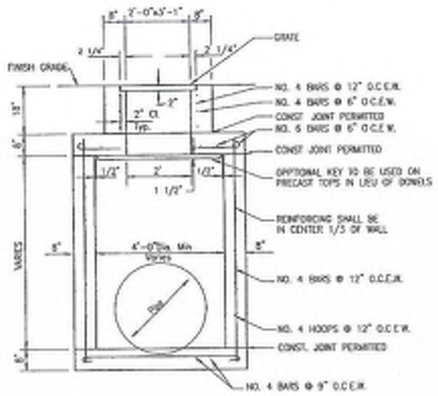
TYPE E CURB
NOT TO SCALE



VALLEY GUTTER
NOT TO SCALE

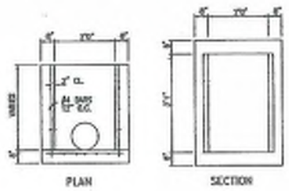


VALLEY GUTTER
NOT TO SCALE



SECTION

INLETS – TYPE "P"
NOT TO SCALE



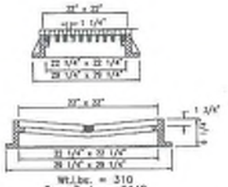
GENERAL NOTES

BEVELED EDGES: ALL EXPOSED EDGES TO BE CHAMFERED 3/4"

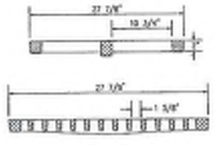
GRATES: CAST IRON GRATES IN ACCORDANCE WITH FLORIDA D.O.T. SPECIFICATIONS.

MATERIAL: INLET WALLS AND FOOTING MAY EITHER BE POURED IN PLACE 3000 Lb. CONCRETE, OR PRECAST CLASS "A" 3000 Lb. CONCRETE.

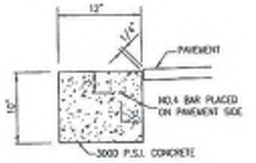
INLETS – TYPE "C"
NOT TO SCALE



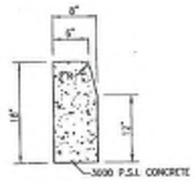
U.S.F. 5105 CURB INLET WITH CHAIN
NOTE: ALL GRATES TO HAVE LOCKING CHAINS IN ACCORDANCE WITH FDOT INDEX 201



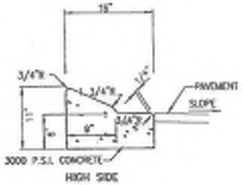
U.S.F. 6210 DITCH BOTTOM INLET GRATE WITH CHAIN
NOTE: ALL GRATES TO HAVE LOCKING CHAINS IN ACCORDANCE WITH FDOT INDEX 201



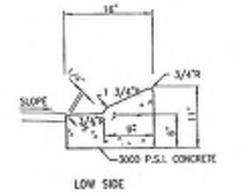
FLUSH HEADER CURB
NOTE: SUBGRADE TO EXTEND 6" BEYOND HEADER CURB



TYPE "D" CURB
NOT TO SCALE

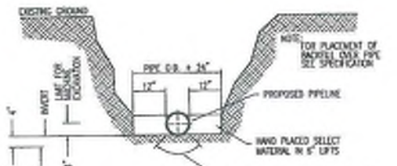


HIGH SIDE



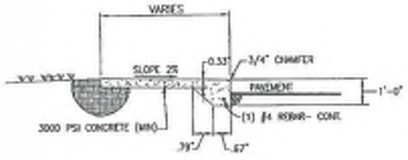
LOW SIDE

TYPE "A" CURB AND GUTTER
NOT TO SCALE



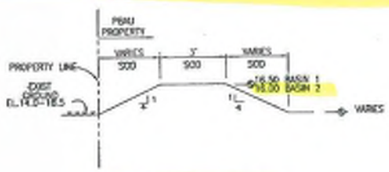
EXCAVATION SIDE SLOPE SHORING, ETC. SHALL CONFORM TO O.S.H.A. STANDARDS. COMPACT TRENCH BACKFILL TO 98% OF MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T-180. DENSITY TESTS SHALL BE TAKEN AT 12" LIFTS EVERY 500' IN PUBLIC RIGHT-OF-WAY AND 200' IN EASEMENTS

STANDARD TRENCHING PROCEDURE
NOT TO SCALE

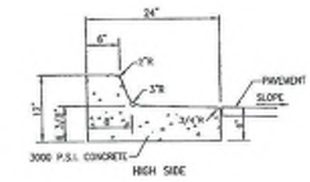


NOTE:
SAWCUT 1" DEEP TRANSVERSE JOINTS @ 10' O.C. EXPANSION JOINTS TO BE PLACED AT 50' O.C. AND ADJACENT TO VERTICAL CONSTRUCTION.

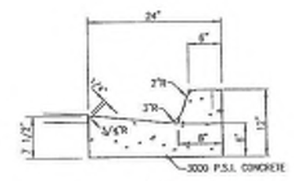
TYPICAL SECTION TURNED DOWN SIDEWALK
NOT TO SCALE



PERIMETER BERM DETAIL
EAST, WEST & SOUTH PROPERTY LINES
NOT TO SCALE

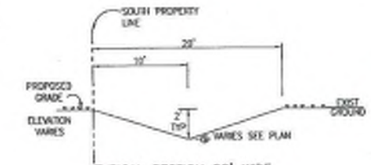


HIGH SIDE

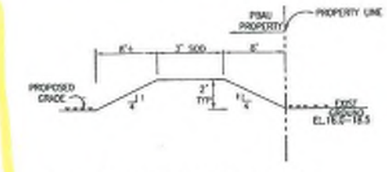


LOW SIDE

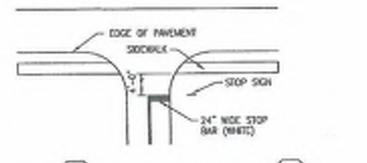
TYPE "F" CURB AND GUTTER

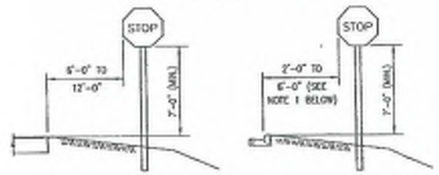


TYPICAL SECTION 20' WIDE SWALE @ SOUTH PROPERY LINE
NOT TO SCALE



TYPICAL SECTION PERIMETER BERM DETAIL
NORTH PROPERTY LINE
NOT TO SCALE

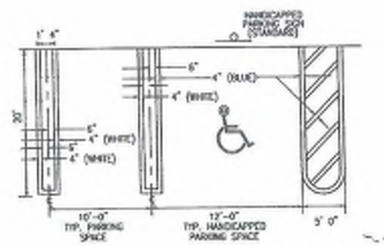




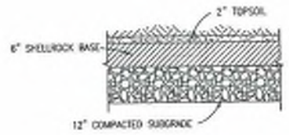
STOP SIGN LOCATION

NOTES:

1. STOP SIGN CLEARANCE MAY BE REDUCED TO 2 FEET WHEN ADJACENT TO A RAISED CURB.
2. FOR BUSINESS OR RESIDENCE DISTRICT ONLY.
3. IN RURAL DISTRICTS, SIGN TO BE NOT LESS THAN 5 FEET IN HEIGHT AND 12 FEET FROM EDGE OF PAVEMENT.
4. DETERMINE IF 50 FEET OF 4 INCH DOUBLE YELLOW STRIPING AT THE STOP BAR IS NECESSARY FOR YOUR PROJECT.



TYPICAL PARKING SPACE DETAIL
NOT TO SCALE



STABILIZED ACCESS ROAD MATERIAL
NOT TO SCALE

CHANNEL POST

GENERAL SPECIFICATIONS

FLAT BLADE: ALCOA #6005A.6063 T6 ALLOY ETCHED, DEGREASED WITH #1200 ALODINE FINISH WITH #3877 GREEN HIGH INTENSITY BACKGROUND AND EQUAL DIMENSIONS 9"& 12" H, 24",30" 36" L

LETTERS: NAME – 6" & 5" SERIES "B" = 3870 HIGH INTENSITY (SILVER) OR EQUAL – SUFFIX – 4.5" SERIES AS ABOVE.

BRACKETS: SEE DETAILS THIS SHEET

POST: STEEL FLANGED CHANNEL POST WITH BAKED GREEN ALKYD OR GALVANIZED FINISH PER ASTM A-123 WITHOUT ANCHOR PLATES

STOP SIGN: R1-1 MUTCD – 30" 30" (HIGH INTENSITY)

LOCATION ONE PER INTERSECTION AS INDICATED ON THE PLANS

POLICY: 9" BLADES WITH 5" LETTERS FOR TWO LANE ROADS WITH SPEED LIMIT UNDER 45 MPH.

12" BLADES WITH 8" LETTERS:
-THOROUGHFARE ROADS FOUR LANES OR WIDER.
-TWO LANE ROADS WITH POSTED SPEED LIMIT OF 45 MPH OR GREATER.

ISOMETRIC VIEW

9"-12" SNS ID-31 BRACKET DETAIL

A- ALL DIMENSIONS AND SPECIFICATIONS CONTAINED IN DRAWINGS.

B- MATERIAL: ALUMINUM HIGH STRENGTH ALLOY 380 ASTM B95-807. HARDWARE SHALL BE SMOOTHLY FINISHED AND PRECISION MACHINED TO FIT MACHINED TO FIT STANDARD FLAT BLADE SECTION, ALLOWING CLEARANCE FOR REFLECTIVE FACING ACCORDING TO REQUIREMENTS.

C- POST TO SIGN BRACKET: THEY SHALL BE ATTACHED FIRMLY ON STANDARD ROUND TUBING OR U-CHANNEL POSTS BY MEANS OF (2) ⅜" DIAMETER HEX HEAD SCREWS.

D- SIGN TO SIGN BRACKET: THEY SHALL BE 90 OR 45 DEGREE TYPE WITH MINIMUM REQUIREMENTS EQUAL TO THE POST TO SIGN BRACKET.

STREET NAME MUST BE ON BOTH SIDES OF THE SIGN PLATE

STREET NAME SIGN (SNS) OR (D-3)

NOTE: PAVEMENT MARKINGS AND GEOMETRICS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND PALM BEACH COUNTY TYPICAL # T-P-06-001

ADD/REVISED SUBMITTAL:
JAN 22 2020
B0804241

UNAUTHORIZED USE OF ELECTRONIC FILES WITHOUT CONSENT OF SF&A IS PROHIBITED. THESE FILES ARE FOR REFERENCE PURPOSES ONLY, NOT FOR CONSTRUCTION. THESE DRAWINGS ARE NOT VALID WITHOUT SIGNATURE, SEAL, AND DATE AFFIXED BY THE ENGINEER OF RECORD.

OCT 20 2020

JEFFREY R. BERGMANN, P.E.
FLORIDA REGISTRATION NO 50159

DATE	REVISIONS	BY

SCHAEFER FAGAN & ASSOCIATES, INC.
ENGINEERING
631 U.S. Highway 1 • Suite 305 • North Palm Beach, FL 33408
Fax: (561) 296-3125 EB NO. 3456 Phone: (561) 848-7222

PBAU ATHLETIC CAMPUS
PAVING AND DRAINAGE
P&D DETAILS

DWN. JRB/RJC	CHECKED: GJF	DATE: 03/25/08	SHEET 17 of 20
SCALE: AS NOTED	FILE: PBAU-plot.dwg		

MATCH LINE (SEE SHEET 13)

CONSTRUCT MEANDERING DITCH BOTT. EL=10.00

CONSTRUCT DRY DETENTION BOTT. EL=11.00

CONSTRUCT MIN. PERIMETER BERM ELEV. 15.00

PROPERTY BOUNDARY

EXIST FDOT STM CB 10.90 / 6.09 S / 5.92 E — TO BE EXTENDED TO 15.85 — 30" RCP

OUTFALL SEE DETAIL SHEET 19

INV. EL. 10.77

BASIN 2 CONTROL STRUCTURE

20 x 20 SUMP W/ RIP RAP BOTTOM OF SUMP EL. 10.00

20 x 20 SUMP W/ RIP RAP BOTTOM OF SUMP EL. 10.50

EXISTING 242' 42" RCP @ 0.17%

FDOT STM MH 13.06 / 5.67 N / 4.93 S 36" RCP / 6.05 W 42" RCP — TO BE EXTENDED TO 15.85

I-95 STRUCTURE 1-24

TO STUB CANAL

EXISTING 42" RCP STORM OUTFALL

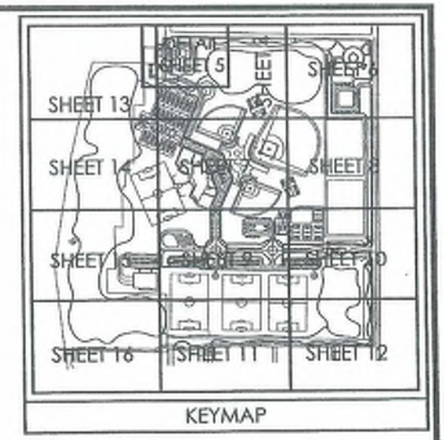
FUTURE

800 AREA BOUNDARY

CONSTRUCT MEANDERING DITCH BOTT. EL=10.00

MATCH LINE (SEE SHEET 15)

MATCH LINE (SEE SHEET 7)



KEYMAP

GRAPHIC SCALE (IN FEET)
0 15 30 60

LEGEND

- 120'-18" RCP @ 1.00% — LENGTH, SIZE, TYPE, AND SLOPE OF PIPE
- STORM DRAINAGE INLET
- STORM DRAINAGE MANHOLE
- FLOW DIRECTION OF RUNOFF
- C-1 / 13.00 / 12.00 — STORM DRAINAGE STRUCTURE NUMBER, RIM ELEVATION, INVERT ELEVATION OF PIPE
- 8" SAN. INV. 12.05 / 18" STORM INV. 8.28 — CONFLICT CROSSING
- 17.00 — PROPOSED ELEVATION
- 14.00 — EXISTING ELEVATION
- EL. — ELEVATION
- FF ELEV — FINISHED FLOOR ELEVATION
- RCP — REINFORCED CONCRETE PIPE
- STREET/STOP SIGN
- S.S.W.S.S.B. — STOP SIGN WITH STREET SIGN BASE
- ADS — ADVANCED DRAINAGE SYSTEMS HDPE CORRUGATED PIPE OR EQUAL
- BRICK PAVERS RUNNING BOND PATTERN
- BRICK PAVERS HERRING BONE PATTERN
- EXFILTRATION TRENCH
- HCR / CR-1 — HANDICAP RAMP PER FDOT INDEX NO. 304 / HANDICAP RAMP TYPE

NOTES:

1. ALL HANDICAP RAMPS SHALL BE PER FDOT INDEX 304 TYPE CR-1 UNLESS OTHERWISE NOTED.
2. ALL SIDEWALKS ADJACENT TO PAVEMENT SHALL BE CONSTRUCTED WITH A TURNED DOWN EDGE.
3. A 12" HEADER CURB SHALL BE USED AT ALL CROSSWALK LOCATIONS.
4. WHERE DRAINAGE PIPE IS INDICATED TO BE BY OTHERS -OR- FUTURE, A KNOCK OUT OF 15" DIA. SHALL BE PROVIDED IN THE STRUCTURE.

ADDL/REVISED SUBMITTAL
JAN 2 2 2009
#080424.11

JEFFREY R BERGMANN, P.E.
FLORIDA REGISTRATION NO. 50159
JAN 20 2009

UNAUTHORIZED USE OF ELECTRONIC FILES WITHOUT CONSENT OF SFBA IS PROHIBITED. THESE FILES ARE FOR REFERENCE PURPOSES ONLY, NOT FOR CONSTRUCTION. THESE DRAWINGS ARE NOT VALID WITHOUT SIGNATURE, SEAL, AND DATE AFFIXED BY THE ENGINEER OF RECORD.

DATE	REVISIONS	BY
1/20/09	INCORPORATE CMPR 12-3-08 COMMENTS	

SCHAEFER FAGAN & ASSOCIATES, INC.
ENGINEERING
431 U.S. Highway 1 • Suite 305 • North Palm Beach, FL 33408
Fax (561) 286-3123 CA NO. 3605 Phone (561) 848-7221

PBAU ATHLETIC CAMPUS
PAVING AND DRAINAGE PLAN

JOB	2007 JEB/RJC	CHECKED CJF	DATE 05/08/08	SHEET
BY	SCALE 1" = 30'	FILE PBAU-p001.dwg		14 of 30

MATCH LINE (SEE SHEET 14)

CONSTRUCT MEANDERING DITCH BOTT. EL=10.00

800 AREA BOUNDARY

20 x 20 SUMP W/ RIP RAP BOTTOM OF SUMP EL. 9.00

INV EL 9.00

188'-30" ADS FLAT @ INV 9.00

127'-30" ADS FLAT @ 9.00

CONSTRUCT 15" FLAP VALVE (WATERMAN AF-41 W/ HDPE CONNECTION) AT END OF PIPE

INV EL 12.00

INV EL 9.82

20 x 20 SUMP W/ RIP RAP BOTTOM OF SUMP EL. 9.50

CONST. BERM ALONG EASEMENT LINE-TOP OF BERM AT EL 17.0 (100YR-3DAY STORM)

CONSTRUCT MIN. PERIMETER BERM ELEV. 16.00

EXISTING LIFT STATION

PROPERTY BOUNDARY

30" STORM INV 11.04
8" SAN TOP 3.20

30" STORM INV 4.97
8" SAN TOP 2.84

207'-30" ADS @ 0.10%

CONST. 20' STABILIZED ACCESS TO LS#6

S-M1
13.24
5.94N 36" RCP
7.94NE 12" RCP
8.09SE 24" RCP
6.22S 30" RCP
30" RCP

FF=19.50

MATCH LINE (SEE SHEET 9)

MATCH LINE (SEE SHEET 16)

KEYMAP

SHEET 13 | SHEET 5 | SHEET 4 | SHEET 3
SHEET 14 | SHEET 8 | SHEET 7
SHEET 15 | SHEET 9 | SHEET 10
SHEET 16 | SHEET 11 | SHEET 12

GRAPHIC SCALE (IN FEET)

LEGEND

- LENGTH, SIZE, TYPE, AND SLOPE OF PIPE STORM DRAINAGE INLET
- STORM DRAINAGE MANHOLE
- FLOW DIRECTION OF RUNOFF
- STORM DRAINAGE STRUCTURE NUMBER / RIM ELEVATION / INVERT ELEVATION OF PIPE
- CONFLICT CROSSING
- PROPOSED ELEVATION
- EXISTING ELEVATION
- EL ELEVATION
- FF ELEV FINISHED FLOOR ELEVATION
- RCP REINFORCED CONCRETE PIPE
- STREET/STOP SIGN
- STOP SIGN WITH STREET SIGN BASE
- ADS ADVANCED DRAINAGE SYSTEMS HDPE CORRUGATED PIPE OR EQUAL
- BRICK PAVERS RUNNING BOND PATTERN
- BRICK PAVERS HERRING BONE PATTERN
- EXFILTRATION TRENCH
- HCR CR-1 HANDICAP RAMP PER FDOT INDEX NO. 304 HANDICAP RAMP TYPE

NOTES:

1. ALL HANDICAP RAMPS SHALL BE PER FDOT INDEX 304 TYPE CR-1 UNLESS OTHERWISE NOTED.
2. ALL SIDEWALKS ADJACENT TO PAVEMENT SHALL BE CONSTRUCTED WITH A TURNED DOWN EDGE.
3. A 12" HEADER CURB SHALL BE USED AT ALL CROSSWALK LOCATIONS.
4. WHERE DRAINAGE PIPE IS INDICATED TO BE BY OTHERS -OR- FUTURE, A KNOCK OUT OF 12" DIA. SHALL BE PROVIDED IN THE STRUCTURE.

ADD./REVISED SUBMITTAL
JAN 22 2009
#080424 11

OCT 20 2008
JEFFREY R. BERGMANN, P.E.
FLORIDA REGISTRATION NO 50159

UNAUTHORIZED USE OF ELECTRONIC FILES WITHOUT CONSENT OF SFBA IS PROHIBITED. THESE FILES ARE FOR REFERENCE PURPOSES ONLY, NOT FOR CONSTRUCTION. THESE DRAWINGS ARE NOT VALID WITHOUT SIGNATURE, SEAL, AND DATE AFFIXED BY THE ENGINEER OF RECORD.

DATE	REVISIONS	BY
10/13/08	INCORPORATE CWPB 10-3-08 COMMENTS	JRB

SCHAEFER FAGAN & ASSOCIATES, INC.
ENGINEERING
631 U.S. Highway 1 • Suite 305 • North Palm Beach, FL 33408
Phone: (561) 848-7221
Fax (561) 296-2129 EB NO. 3420

PBAU ATHLETIC CAMPUS
PAVING AND DRAINAGE PLAN

DES. JRB/RJC | CHECKED DJF | DATE: 05/08/08 | SHEET
SCALE 1" = 30' | FILE: PBAU-pd01.dwg | 15 of 20

MATCH LINE (SEE SHEET 15)

MATCH LINE (SEE SHEET 11)

CONSTRUCT MIN. 42"H BERM ELEV. 16.00

CONST. 20' STABILIZED ACCESS TO LS#6

S—MH	
13.16	
8.43N	30" RCP
8.82NE	18" RCP
7.44S	24" RCP
10.31SE	18" RCP
5.61S	30" RCP
8.78W	12" RCP

DOT	
12.99	
7.05S	
7.62W	

EXISTING OUTFALL FOR PROPERTY SOUTH OF PBAU AND NORTH OF SOUTHERN BOULEVARD TO REMAIN, TO BE FIELD VERIFIED. FDOT MANHOLE LID TO BE REMOVED AND A C DITCH BOTTOM INLET GRATE TO BE INSTALLED.

EXISTING PAVEMENT OF PARKLAND ROAD

14.04	
7.09 N	
8.03 NE	18" RCP
7.44 S	30" RCP
8.09 SW	18" RCP

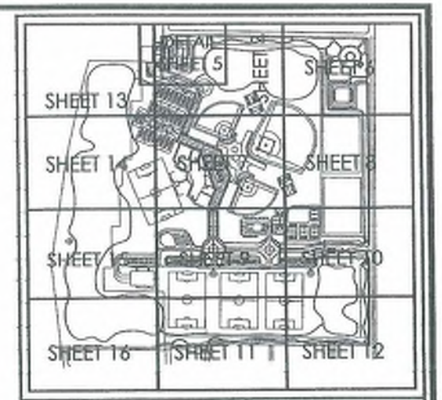
TRANSITION PERIMETER BERM FROM 16.50 TO 16.0

PBAU SOUTH PROPERTY LINE

CONSTRUCT MIN. PERIMETER BERM ELEV. 16.00

CONSTRUCT 20' WIDE SWALE

PROPOSED SWALE TO CONVEY EXISTING RUNOFF FROM STREETS AND SUBDIVISIONS TO THE SOUTH



KEYMAP

GRAPHIC SCALE
(IN FEET)
0 15 30 60

LEGEND

12"W - 18" RCP @ 1.00%	LENGTH, SIZE, TYPE, AND SLOPE OF PIPE STORM DRAINAGE INLET
	STORM DRAINAGE MANHOLE
	FLOW DIRECTION OF RUNOFF
C-1 / 16.00 / 12.00	STORM DRAINAGE STRUCTURE NUMBER RIM ELEVATION INVERT ELEVATION OF PIPE
8" SAN. INV. 12.65 / 18" STORM INV. 8.28	CONFLICT CROSSING
17.80	PROPOSED ELEVATION
14.80	EXISTING ELEVATION
EL.	ELEVATION
FF ELEV	FINISHED FLOOR ELEVATION
RCP	REINFORCED CONCRETE PIPE
	STREET/STOP SIGN
S.S.W.S.S.B.	STOP SIGN WITH STREET SIGN BASE
ADS	ADVANCED DRAINAGE SYSTEMS HDPE CORRUGATED PIPE OR EQUAL
	BRICK PAVERS RUNNING BOND PATTERN
	BRICK PAVERS HERRING BONE PATTERN
	EXFILTRATION TRENCH
HCR CR-1	HANDICAP RAMP PER FDOT INDEX NO. 304 HANDICAP RAMP TYPE

NOTES:

1. ALL HANDICAP RAMPS SHALL BE PER FDOT INDEX 304 TYPE CR-1 UNLESS OTHERWISE NOTED.
2. ALL SIDEWALKS ADJACENT TO PAVEMENT SHALL BE CONSTRUCTED WITH A TURNED DOWN EDGE.
3. A 12" HEADER CURB SHALL BE USED AT ALL CROSSWALK LOCATIONS.
4. WHERE DRAINAGE PIPE IS INDICATED TO BE BY OTHERS -OR- FUTURE, A KNOCK OUT OF 15" DIA. SHALL BE PROVIDED IN THE STRUCTURE.

20080424-11

ADD/REVISED SUBMITTAL

JAN 22 2009

JEFFREY R. BERGMANN, P.E.
FLORIDA REGISTRATION NO. 50159

UNAUTHORIZED USE OF ELECTRONIC FILES WITHOUT CONSENT OF SFA IS PROHIBITED. THESE FILES ARE FOR REFERENCE PURPOSES ONLY, NOT FOR CONSTRUCTION. THESE DRAWINGS ARE NOT VALID WITHOUT SIGNATURE, SEAL, AND DATE AFFIXED BY THE ENGINEER OF RECORD.

DATE	REVISIONS	BY
03/13/09	ACCOMMODATE CWDD 10-1-08 COMMENTS	JRB

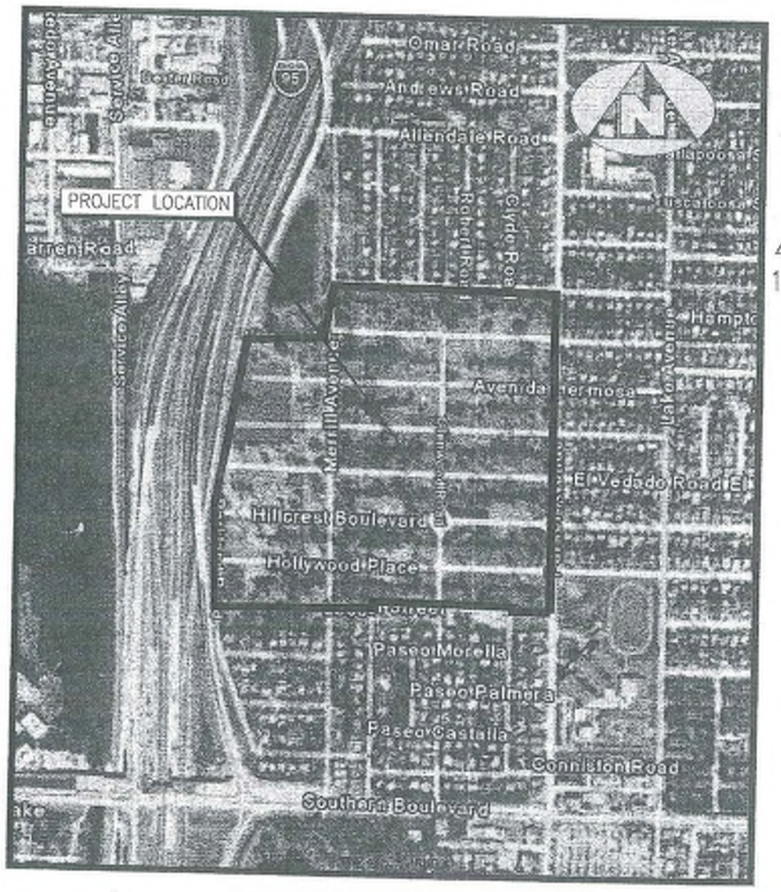
SCHAEFER FAGAN & ASSOCIATES, INC.
ENGINEERING
621 U.S. Highway 1 • Suite 305 • North Palm Beach, FL 33408
Fax: (561) 296-2325 EB NO. 3405 Phone: (561) 848-7225

PBAU ATHLETIC CAMPUS
PAVING AND DRAINAGE
PLAN

DRN: JRB/KLC	CHECKED: CJF	DATE: 05/08/08
SCALE: 1" = 30'	FILE: PBAU-p808.dwg	SHEET 16 of 20

PBAU ATHLETIC CAMPUS

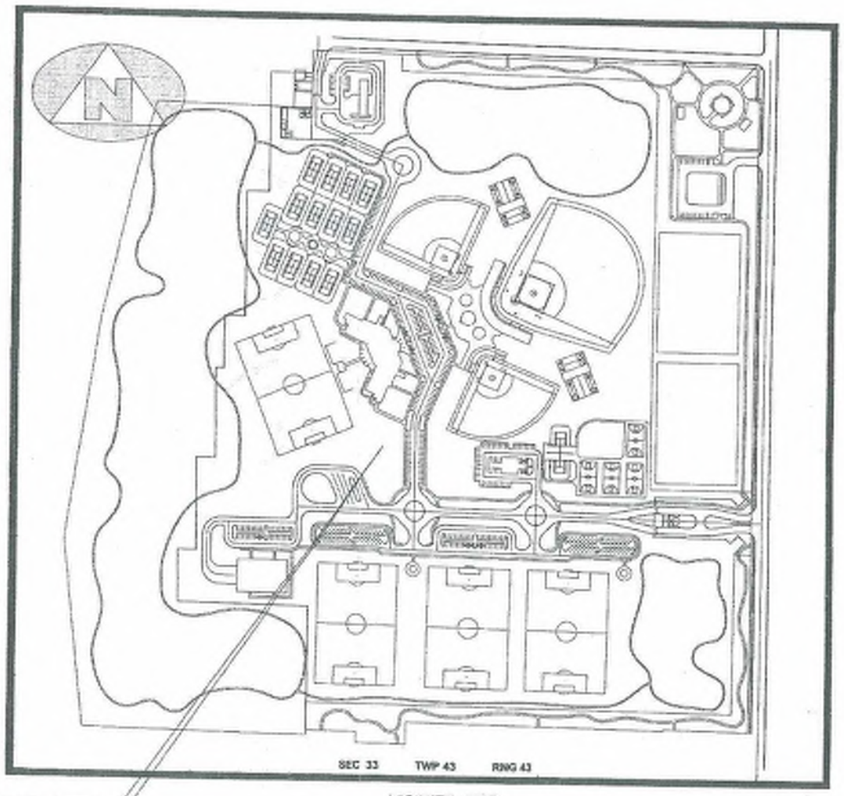
PAVING AND DRAINAGE PLANS



LOCATION MAP
NOT TO SCALE

INDEX OF SHEETS

1	COVER SHEET
2	MASTER PAVING, GRADING AND DRAINAGE PLAN
3	CLEARING AND EROSION CONTROL PLAN
4–16	PAVING AND DRAINAGE PLANS
17–20	PAVING AND DRAINAGE DETAILS



VICINITY MAP
NOT TO SCALE

ADDENDUM #1 SUBMITTAL
JAN 2 2 2013

20080424 11

JEFFREY P. SCHROMAN, P.E.
FLORIDA REGISTRATION NO. 50159

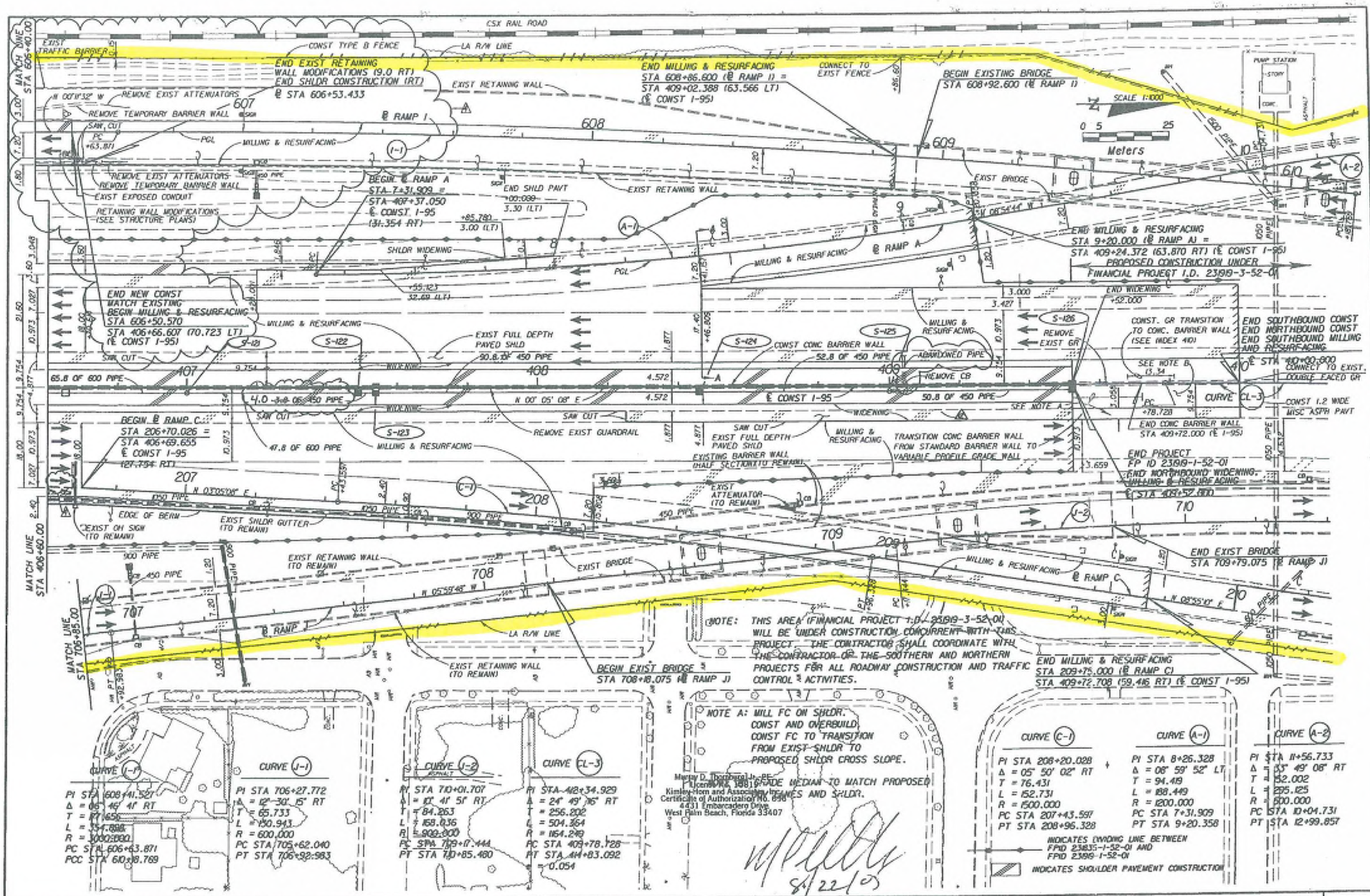
UNAUTHORIZED USE OF ELECTRONIC FILES WITHOUT CONSENT OF SFBA IS PROHIBITED. THESE FILES ARE FOR REFERENCE PURPOSES ONLY, NOT FOR CONSTRUCTION. THESE DRAWINGS ARE NOT VALID WITHOUT SIGNATURE, SEAL, AND DATE AFFIXED BY THE ENGINEER OF RECORD.

DATE	REVISIONS	BY

SCHAEFER FAGAN & ASSOCIATES, INC.
ENGINEERING
631 U.S. Highway 1 • Suite 305 • North Palm Beach, FL 33408
Fax: (561) 296-2226 CB NO. 3406 Phone: (561) 848-7723

PBAU ATHLETIC CAMPUS
PAVING AND DRAINAGE
COVER SHEET

ENG: JRS	CHECKED: JRS	DATE: 05/08/08
SCALE: NONE	FILE: PBAU-1.dwg	SHEET 1 of 20



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-8-01	BJB	⚠ REVISED RAMP I, ADDED ARROW			
08-22-05	GI	⚠ ADDED ABANDONED PIPE			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

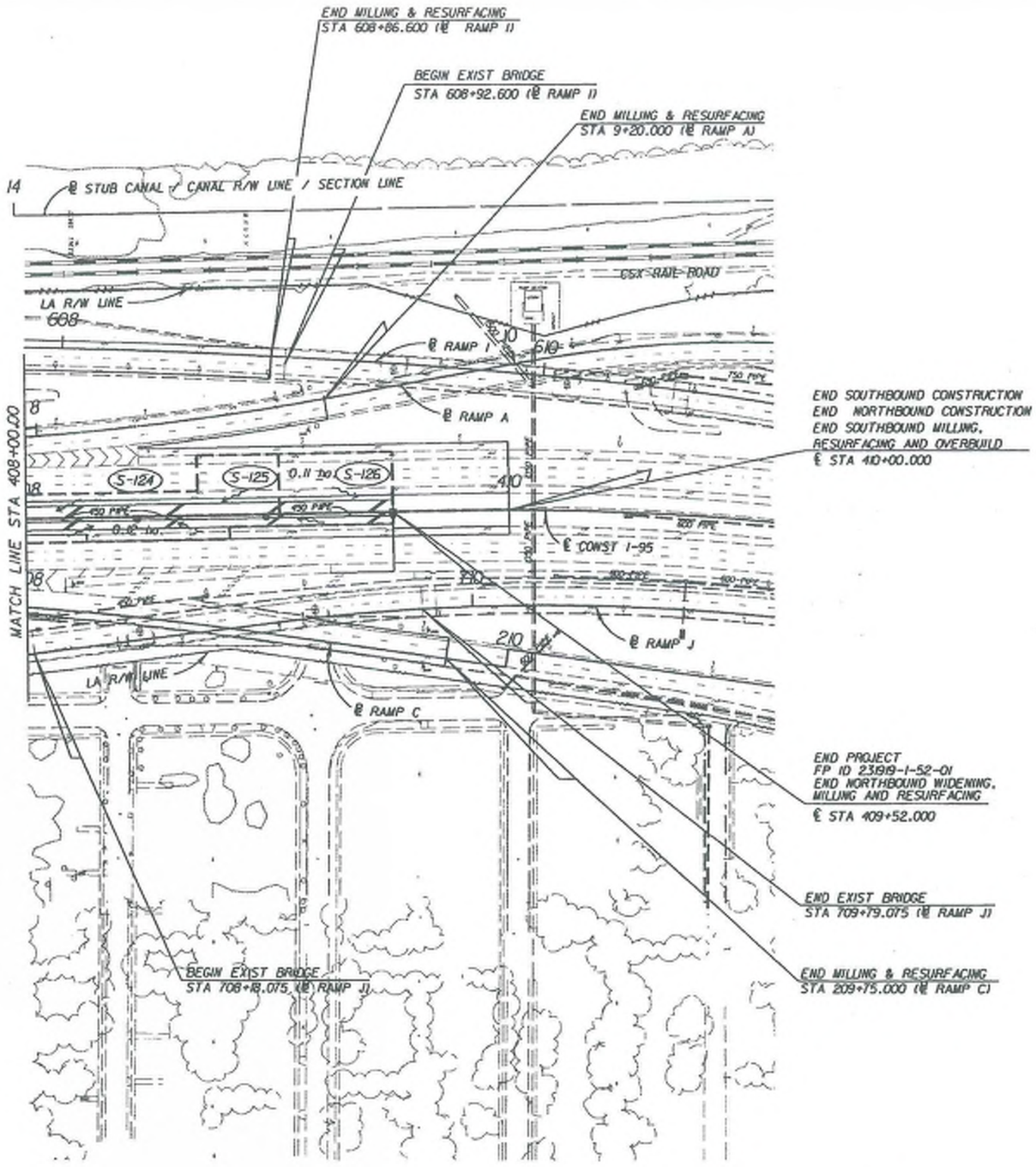
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	23835-1-52-01 23919-1-52-01

I-95 - PLAN

SHEET NO. 84

8/22/2005 3:27:52 PM c:\4000545s 5880 Final\2381D Builders\roadway\plan84 rvd.dgn



SCALE 1:2000

0 10 50

Meters

5/8/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 23919-1-52-01

DRAINAGE MAP

SHEET NO. 8

04/16/2002 03:23:25 PM G:\A000545\e\MP\DRAINDDA1.dgn

℄ RAMP I

PGL

SCALE 1:200

0 1 5

Meters

S-32A

CB

450 PIPE

405+67.9
56.0 (LT)

405+61.6
55.0 (LT)

405+49.1
51.4 (LT)

405+75.0
56.0 (LT)

405+75.0
50.7 (LT)

405+63.0
49.9 (LT)

1:4

405+50.6
46.4 (LT)

405+67.9
50.7 (LT)

EXIST DETENTION POND

POND
BOTTOM
EL. 4.0

DHW=4.96

R=3.00

405+67.9
41.4 (LT)

405+75.0
41.4 (LT)

1:4

600 PIPE

900 PIPE

900 PIPE

R=8.25

VARIES

405+51.5
40.5 (LT)

NOTE:
STRUCTURES/PIPE TO REMAIN - CAUTION SHOULD BE EXERCISED WHEN EXCAVATING AROUND THE STRUCTURES.

1219 RCP

405+52.3
35.3 (LT)

MATCH EXIST GRADE

405+57.6
35.3 (LT)

EXIST FULL DEPTH
SHLDR PAVT

SOUTHBOUND I-95

STATION/OFFSET CALLOUTS
REFER TO ℄ CONST. I-95

Murray D. Thornburg, Jr. P.E. No. 15819
Kimley-Horn and Associates, Inc.
License No. 696
4431 Embarcadero Drive
West Palm Beach, Florida 33407

2/11/04

THIS SHEET FOR POND MODIFICATION ONLY.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02-11-04	BLB	⚠ REVISED RAMP I, ADDED STRUCTURE S-32A			

Kimley-Horn and Associates, Inc.
4431 Embarcadero Drive
West Palm Beach, Florida 33407
(561) 845-0665
License No. 696

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 80	PALM BEACH	231835-1-52-01 231919-1-52-01

POND MODIFICATION DETAIL

SHEET NO. 32

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	50

SEE SHEET 42 FOR DETAILS OF RAMP I AT SOUTHERN BLVD.

OFFSETS TO MSE WALLS INDICATE GUTTER LINE

END

BEGIN SHOULDER GUTTER
605+80.84, 10.930 (LT)

MATCHLINE STA 406+00.000

BEGIN MSE WALL I-1A
PROVIDE GUARDRAIL CONNECTION
STA 605+25.000

58.00

MSE WALL I-1C

℄ RAMP I

RAMP I

POND IB

1.8 PAVED SHLDR.

3.6 FULL DEPTH PAVED SHOULDER

18.0
10.973

9.754

9.754

VARIES
10.973

+55.000
14.0

+61.662
14.4

℄ SURVEY & ℄ CONST. I-95

RESET DBL FACE GUARDRAIL

SHOULDER GUTTER

3.0 FULL DEPTH PAVED SHOULDER

SR-9 (I-95 NB)

3.6 FULL DEPTH PAVED SHOULDER

7.932

CURVE J-1
392

I:2 PAVED SHOULDER

MSE WALL J-1A & SOUND BARRIER WALL (SB-1) 1.5m HEIGHT

PC 705+62.040

7.2

N 18° 30' 03" W

℄ RAMP J

PARKLAND ROAD

EXISTING FENCE (TYP.)

1:1000

N

POND IC

BEGIN MSE WALL J-1A
BEGIN SOUND BARRIER WALL (SB-1)
PROVIDE GUARDRAIL CONNECTION
+25.000, 3.000 (RT)

22.86m GUARDRAIL AND END ANCHORAGE ASSEMBLY SRT-350

END MILLING & RESURFACING
BEGIN RECONSTRUCTION
MATCH EXIST. PAVT
STA 705+00.000
705+12.000

MILL & RESURFACE

BEGIN SHOULDER GUTTER
BEGIN WIDENING, MATCH EXIST. PAVT
STA 604+30.677

BEGIN MSE WALL I-1C
604+26.818, 18.763 (LT)

SLOPE STABILIZATION

TRI-RAIL

LA R/W

EXISTING PANEL (TO REMAIN)

605

3.0 PAVED SHOULDER

90.0 TAPER

400.000
19.8

1:2 PAVED SHLDR.

N 00° 11' 32" W

MILL & RESURFACE

REMOVE EXISTING GUARDRAIL

EXISTING SHOULDER GUTTER

+80.000
END MILL, RESURFACE & WIDENING

BEGIN RECONSTRUCTION

+43.000
12.000 (LT)

CONNECT TO EXISTING GUARDRAIL
CONNECT TO EXISTING SHOULDER GUTTER

+23.00

11.796

45.72m GUARDRAIL
+06.620
0.940 (RT)

+06.620
11.458 (RT)

+10.651
7.709 (LT)

+07.024
3.764 (LT)

980

981

982

983

604

℄ SOUTHERN BLVD.

91° 31' 09"

BEGIN MILLING & RESURFACING
STA 604+06.620
℄ RAMP I

BEGIN ℄ RAMP I
STA 603+97.982=
STA 980+81.451
℄ SOUTHERN BLVD.

END REINFORCED CONC. BARRIER WALL (RETAINING)
PROVIDE GUARDRAIL CONNECTION
+30.000, 27.754 (LT)

PT
403+79.500

BEGIN REINFORCED CONC BARRIER WALL (RETAINING)
+80.000, 27.254 (LT)

MATCHLINE STA. 403+75.000

SR-9 (I-95 SB)

WIDENING

RESET GUARDRAIL

N 0° 05' 08" E

88° 45' 31"

WIDENING

SAWCUT LINE

MILL & RESURFACE

3.427 WIDENING

2.4 SHLDR PAVT

END REINFORCED CONC. BARRIER WALL (RETAINING)
BEGIN 3.0 PAVED SHOULDER
BEGIN SHOULDER GUTTER
+30.000, 27.754 (RT)

404+12.516 ℄ CONST. I-95 =
981+50.973 ℄ SOUTHERN BLVD.

+28.183
13.046 (LT)

+23.127
7.147 (LT)

70° 10' 20"

S 88° 40' 23" E

SOUTHERN BLVD. (SR 80)

BEGIN REINFORCED CONC. BARRIER WALL (RETAINING)
PROVIDE GUARDRAIL CONNECTION
+80.000, 28.042 (RT)

BEGIN ℄ RAMP J
STA 704+82.972 =
STA 982+93.973
℄ SOUTHERN BLVD.

+20.697
19.457 (RT)

+15.768
12.923 (RT)

LIMITS OF MILLING & RESURFACING
STA 704+82.923

LEGEND
FULL DEPTH PAVED SHOULDER
PAVED SHOULDER

10.973
14.4

+00.0

3.600 FULL DEPTH PAVED SHLDR.

10.973
14.4

9.754

9.754

+79.500
14.630

BEGIN PAVT. WIDENING MATCH EXIST. PAVT.
+79.500

45.72m GUARDRAIL

32 33 5 4

T 43 S
T 44 S

0 5 20
METERS

Revisions noted by Cloud Designation - Document Field Changes Authorized During Construction and do not imply either Review of, or Responsibility for Original Design

Ian N. Biava, PE
License No. 50700
Date: 9/19/01

Reynolds, Smith & Hills, Inc.
300 South Pine Island Road, Suite 300
Plantation, Florida 33324
Office: (954) 474-3005 Fax: (954) 474-1304

AV 9/19/01 cmy

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
03/05/99	GAL	ADDED STORM SEWER 604+86.19 106.00 (RT)	07/03/02	RDB	ADDED SHOULDER GUTTER			
11/08/99	GAL	ADDED POND IC, UPDATED PLAN FOR DRAINAGE CHANGES	05/15/01	WS	RELOCATED S-1A, ADDED S-9T			

REVISIONS

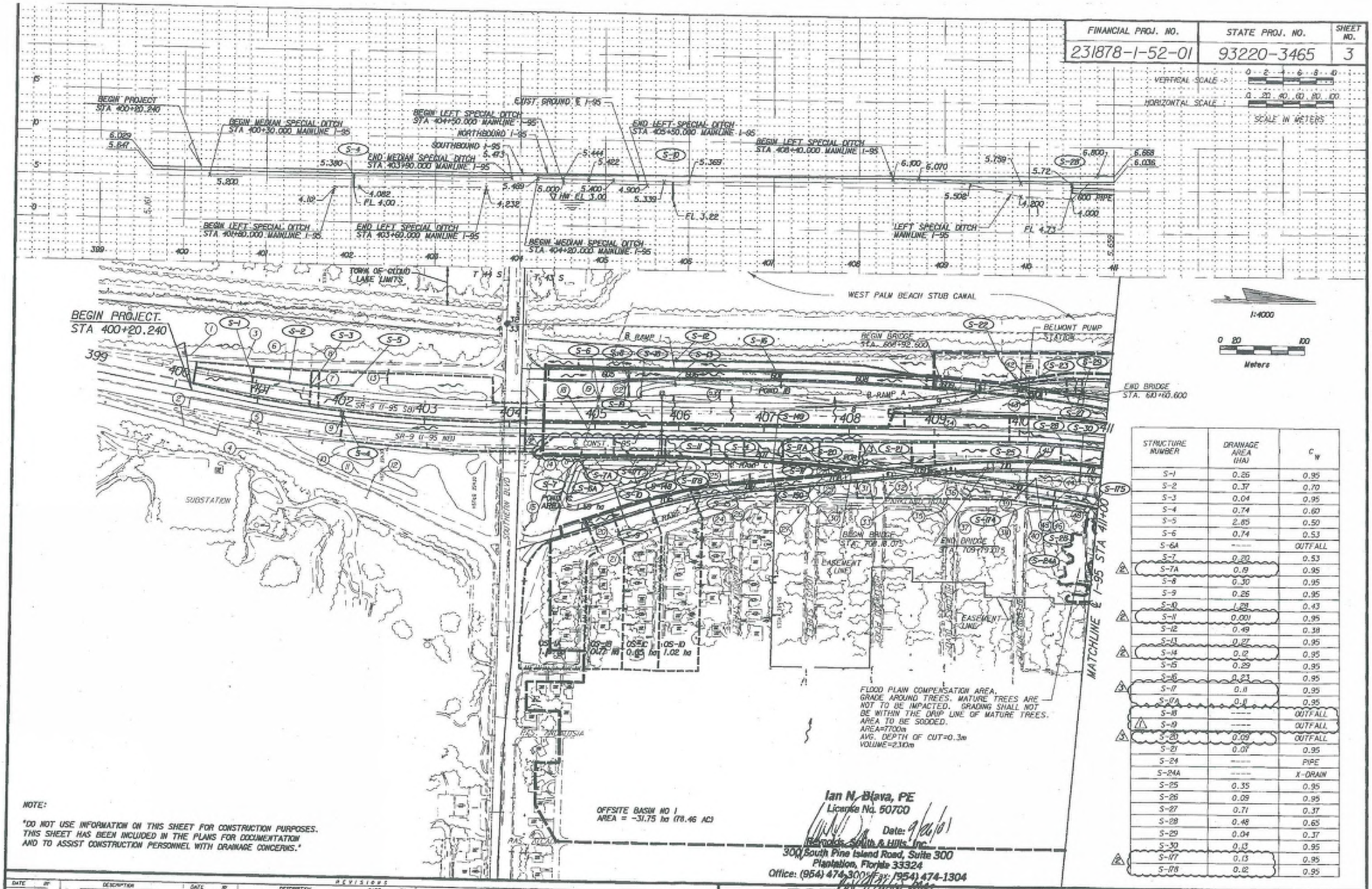
RS+H
Reynolds, Smith and Hills, Inc.
Architecture, Engineering and Planning
Plantation, Florida

FLORIDA DEPARTMENT OF TRANSPORTATION

STATE ROAD 9
PLAN SHEET
STA 403+75 TO STA 406+00

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
231878-1-52-01	93220-3465	3

VERTICAL SCALE 0 2 4 6 8 10
HORIZONTAL SCALE 0 20 40 60 80 100
SCALE IN METERS



1:4000

0 80 100
Meters

STRUCTURE NUMBER	DRAINAGE AREA (HA)	C_w
S-1	0.26	0.95
S-2	0.37	0.70
S-3	0.04	0.95
S-4	0.74	0.60
S-5	2.65	0.50
S-6	0.74	0.53
S-6A	-----	OUTFALL
S-7	0.20	0.53
A S-7A	0.19	0.95
S-8	0.30	0.95
S-9	0.26	0.95
S-10	1.28	0.43
A S-11	0.001	0.95
S-12	0.49	0.38
S-13	0.27	0.95
A S-14	0.12	0.95
S-15	0.29	0.95
S-16	0.23	0.95
A S-17	0.11	0.95
S-17A	0.11	0.95
S-18	-----	OUTFALL
⚠ S-19	-----	OUTFALL
A S-20	0.09	OUTFALL
S-21	0.01	0.95
S-24	-----	PIPE
S-24A	-----	X-DRAIN
S-25	0.35	0.95
S-26	0.09	0.95
S-27	0.71	0.37
S-28	0.48	0.65
S-29	0.04	0.37
S-30	0.13	0.95
A S-177	0.13	0.95
S-178	0.12	0.95

NOTE:

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

Ian N. Blava, PE
License No. 50700
Date: 9/26/01
Reynolds, Smith & Hills, Inc.
300 South Pine Island Road, Suite 300
Plantation, Florida 33324
Office: (954) 474-3000 Fax: (954) 474-1304

DATE	BY	DESCRIPTION
6/08/99	FM	⚠ ADDED S-1B, S-1C, POND C. POND 1 REMOVED.
09/19/01	MC	⚠ ADDED S-17, S-17A DRAINAGE AREAS REVISED FOR S-7A, S-8, S-17, S-18, S-19
09/25/01	MC	⚠ REVISED DRAINAGE AREAS S-9, S-9A AND S-20

Reynolds, Smith and Hills, Inc.
Architecture, Engineering and Planning
Orlando, Florida

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE MAP

.../t/drainage/drmprd01.dgn Sep. 26, 2001 09:59:20

STATE PROJ. NO.	SHEET NO.
93220-3465	7

(1) INLET - 450 mm PIPE - MES
TOP EL = unknown
FL = unknown
MES FL = unknown

(2) INLET - 600 mm PIPE
TOP EL = unknown
S. FL = unknown
N. FL = unknown

(3) INLET - 450 mm PIPE - MES
TOP EL = unknown
FL = unknown
MES FL = unknown

(4) INLET - 750 mm PIPE
TOP EL = unknown
FL = unknown

(5) INLET - 600 mm PIPE
TOP EL = unknown
E. FL = unknown
N. FL = unknown

(6) INLET - PIPE - EW
TOP EL = unknown
FL = unknown
EW FL = unknown

(7) INLET - 750 mm CP
TOP EL = 4.093
FL = 3.081

(8) INLET - 750 mm CP - EW
TOP EL = unknown
E. FL = 2.924
W. FL = unknown
EW FL = unknown

(9) INLET - 450 mm CP - EW
TOP EL = 5.150
W. FL = 4.301
E. FL = unknown
EW FL = 4.082

(10) 750 mm PIPE - MES
FL = unknown

(11) INLET - 450 mm PIPE - MES
TOP EL = unknown
FL = unknown
MES FL = unknown

(12) EW - 600 mm CP - EW
E. FL = 3.679
W. FL = 3.554

(13) INLET - 450 mm CMP - EW
TOP EL = unknown
FL = unknown
EW FL = 4.140

(14) INLET - 375 mm CMP - EW
TOP EL = unknown
FL = unknown
EW FL = 3.647

(15) INLET - 375 mm CMP - EW
TOP EL = unknown
FL = unknown
EW FL = 4.161

(16) INLET - 1050 mm CP
TOP EL = 3.765
W. FL = 1.600
E. FL = 2.070

(17) INLET - 1050 mm CP
TOP EL = 4.041
W. FL = 2.135
E. FL = 2.170

(18) INLET - 1050 mm CP
TOP EL = 5.144
W. FL = 1.896
E. FL = 2.020

(19) INLET - 1050 mm CP
TOP EL = 3.872
W. FL = 2.068
E. FL = 2.120

(20) INLET - 375 mm RCP
THROAT EL = unknown
FL = 3.266

(21) INLET - 375 mm RCP
THROAT EL = unknown
W. FL = 3.171
N. FL = 3.102

(22) INLET - 450 mm CMP - EW
TOP EL = 11.543
FL = 11.468
EW FL = 3.830

(23) INLET - 375 mm CMP - EW
TOP EL = 8.205
FL = 7.146
EW FL = 4.318

(24) INLET - 600 mm RCP
THROAT EL = unknown
S. FL = 2.466
N. FL = 2.463

(25) INLET - 375 mm RCP
THROAT EL = unknown
FL = 3.059

(26) MH - 750 mm RCP
TOP EL = unknown
W. FL = 2.918
S. FL = 2.236
N. FL = 2.423

(27) INLET - 450 mm RCP
THROAT EL = unknown
FL = 2.687

(28) INLET - 300 mm RCP
THROAT EL = unknown
FL = 2.818

(29) MH - 750 mm RCP
TOP EL = unknown
N. FL = 2.225
S. FL = 2.016
W. FL = 2.545
S.E. FL = 2.579
N.E. FL = 2.421

(30) INLET - 450 mm RCP
THROAT EL = unknown
FL = 2.693

(31) INLET - 450 mm RCP
THROAT EL = 7.490
FL = 2.583

(32) MH - 750 mm RCP
TOP EL = unknown
N. FL = 1.809
S. FL = 1.899
S.E. FL = 2.368
N.E. FL = 2.454

(33) INLET - 450 mm RCP
THROAT EL = unknown
FL = 2.509

(34) INLET - 450 mm CP - EW
TOP EL = 5.560
FL = 4.426
EW FL = 3.793

(35) INLET - 375 mm RCP
THROAT EL = unknown
FL = 2.528

(36) MH - 750 mm RCP
TOP EL = unknown
S. FL = 2.005
N.E. FL = 2.474
S.E. FL = 2.352

(37) INLET - 375 mm RCP
THROAT EL = unknown
FL = 2.693

(38) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(39) MH - 750 mm RCP
TOP EL = unknown
N. FL = 1.854
W. FL = 1.568

(40) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(41) INLET - 1050 mm CP
TOP EL = 3.138
E. FL = unknown
W. FL = 2.230

(42) INLET - 1050 mm CP
TOP EL = 3.825
E. FL = 1.450
W. FL = 1.450

(43) INLET - 600 mm CP
TOP EL = unknown
FL = unknown

(44) INLET - 375 mm RCP
THROAT EL = unknown
FL = 2.134

(45) MH - 750 mm RCP
TOP EL = unknown
S. FL = 1.814
N. FL = unknown
E. FL = 1.878
W. FL = 2.077

(46) INLET - 375 mm RCP
THROAT EL = unknown
FL = 2.229

(47) INLET - 300 mm RCP
THROAT EL = unknown
FL = 2.413

(48) INLET - 450 mm RCP
THROAT EL = unknown
FL = 2.330

(49) MH - 350 mm RCP
TOP EL = unknown
N. FL = 2.086
S. FL = unknown
E. FL = 2.246
W. FL = 2.250

(50) INLET - 750 mm RCP
THROAT EL = unknown
N. FL = 2.072
S. FL = 1.975

(51) INLET - 450 mm CP - EW
TOP EL = 5.659
FL = 4.503
EW FL = 3.575

(52) MH - 750 mm RCP
TOP EL = unknown
N. FL = 2.205
S. FL = 2.151
E. FL = 2.425
W. FL = 2.783

(53) INLET - 450 mm RCP
THROAT EL = unknown
FL = 2.497

(54) INLET - 300 mm RCP
THROAT EL = unknown
FL = 2.804

(55) EW - 600 mm CP
FL = unknown

(56) INLET - 750 mm RCP
THROAT EL = unknown
N. FL = 2.430
S. FL = 2.272

(57) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(58) INLET - 600 mm CP
THROAT EL = unknown
S. FL = 2.356
E. FL = 2.574

(59) INLET - 600 mm RCP
THROAT EL = unknown
FL = 2.865

(60) INLET - 450 mm CP - EW
TOP EL = 5.862
FL = 4.824
EW FL = 4.007

(61) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(62) INLET - 450 mm CP - EW
TOP EL = 6.393
FL = 5.481
EW FL = 4.481

(63) EW - 600 mm CP - EW
E. FL = 4.409
W. FL = 4.491

(64) INLET - 1200 mm CP
TOP EL = 4.892
E. FL = 2.831
W. FL = 2.841

(65) INLET - 1200 mm CP
TOP EL = 5.010
E. FL = 2.791
W. FL = 2.747

(66) INLET - 450 mm CP
TOP EL = 9.571
FL = 8.355

(67) INLET - 375 mm RCP - EW
TOP EL = 7.962
E. FL = 6.947
W. FL = 6.828
EW FL = 2.07 (375 mm)
EW FL = 3.098 (1200 mm)

(68) INLET - 375 mm CMP
TOP EL = 13.073
FL = 11.672

(69) INLET - 375 mm CMP - EW
TOP EL = 10.800
E. FL = 9.527
W. FL = 9.547
EW FL = 3.812

(70) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(71) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(72) BOX CULVERT - 2.134 x 1.524
N. FL = 2.664
S. FL = 2.725

(73) MH - pipe size unknown
TOP EL = unknown
FL = 3.229

(74) INLET - 375 mm CP - MES
THROAT EL = unknown
FL = unknown
MES FL = 2.696

(75) MH - pipe size unknown
TOP EL = unknown
E. FL = 2.839
W. FL = 2.886

(76) MH - pipe size unknown
TOP EL = unknown
FL = unknown

(77) INLET - pipe size unknown
TOP EL = 4.541
FL = 3.826

(78) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(79) INLET - pipe size unknown
THROAT EL = unknown
S. FL = 3.376
E. FL = 3.513

(80) MH - pipe size unknown
TOP EL = unknown
N. FL = 3.136
W. FL = 3.183
E. FL = 3.143

(81) INLET - 375 mm CP
THROAT EL = unknown
FL = unknown

(82) MH - pipe size unknown
TOP EL = 4.218
E. FL = 3.221
W. FL = 3.269

(83) MH - pipe size unknown
TOP EL = unknown
FL = 3.439

(84) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(85) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(86) MH - pipe size unknown
TOP EL = unknown
FL = unknown

(87) INLET - pipe size unknown
THROAT EL = unknown
FL = 3.050

(88) INLET - pipe size unknown
THROAT EL = unknown
S. FL = 2.281
W. FL = 1.989

(89) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(90) MH - pipe size unknown
TOP EL = unknown
N. FL = 3.328
S. FL = 3.402

(91) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(92) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(93) INLET - pipe size unknown
TOP EL = unknown
FL = 0.653
EW FL = 0.599

(94) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(95) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(96) INLET - pipe size unknown
THROAT EL = unknown
E. FL = 2.404
W. FL = 2.407

(97) EW - pipe size unknown - EW
E. FL = 2.874 & 1.647
W. FL = 2.779 & 2.023

(98) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(99) EW - pipe size unknown - EW
N. FL = unknown
S. FL = unknown

(100) INLET - pipe size unknown
THROAT EL = unknown
FL = unknown

(101) INLET - pipe size unknown
TOP EL = unknown
E. FL = 2.095
W. FL = 1.903

(102) INLET - pipe size unknown
THROAT EL = unknown
FL = 3.073

(103) INLET - pipe size unknown
THROAT EL = unknown
FL = 2.201

(104) INLET - pipe size unknown
TOP EL = unknown
N. FL = 2.237
E. FL = 2.374

(105) INLET - 600 mm CP
FL = 4.596
N. FL = 2.438
S. FL = 2.619
W. FL = 2.560
E. FL = 1.862

(106) INLET - pipe size unknown
TOP EL = 5.480
E. FL = 3.747
S. FL = 3.578

(107) INLET - pipe size unknown
THROAT EL = unknown
N. FL = 6.574
S. FL = 6.444
W. FL = 6.444

(108) INLET - pipe size unknown
TOP EL = 4.522
FL = 3.731

ltr - 2ASLT 1/28/99

EXISTING DRAINAGE STRUCTURE INFORMATION

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	REVISION # 5 DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

RS&H
Reynolds, Smith and Hills, Inc.
Tampa, Florida 33607

SUPPLEMENTAL DRAINAGE MAP

Thu Jan 28, 99 TAYLOR_BOB
S:\697_DOT\TAYLOR\Cad\sht1.dgn