POND SITING REPORT

Florida Department of Transportation

District Four

Interstate 95 (I-95) / State Road 9 (SR 9) Project Development and Environment Study

Limits of Project: From South of Hallandale Beach Boulevard (SR 858) to North of Hollywood Boulevard (SR 820)

Broward County, Florida

Financial Management Number: 436903-1-22-02

ETDM Number: 14254

Date: February 2025

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

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1.0 INTRODUCTION

The Florida Department of Transportation (FDOT), District Four is conducting a Project Development and Environment (PD&E) Study to increase capacity and evaluate the arterial and ramp terminal improvements at the interchanges of I-95 and Hallandale Beach Boulevard (SR 858), Pembroke Road (SR 824) and Hollywood Boulevard (SR 820). These improvements result in the need to upgrade and modify the corresponding stormwater collection, treatment and conveyance systems to meet applicable regulatory agency criteria within the project corridor.

The intent of this pond siting report is to evaluate and identify the recommended stormwater management facility locations to comply with the permit agency requirements and FDOT design criteria. This report identifies the existing drainage systems within the project limits and the stormwater management facilities to meet state design criteria.

2.0 PURPOSE

The primary purpose of this study is to increase capacity and to study the arterial and ramp terminal improvements at the interchanges of I-95 and Hallandale Boulevard, Pembroke Road, Hollywood Boulevard and respective I-95 ramps.

The objective of this report is to evaluate the need for stormwater management and to recommend potential locations for stormwater management. The recommended locations will then be analyzed and evaluated for cultural resources such as historic structures and archeological assessment, environmental impacts including wetlands, upland habitat and protected species involvement, hazardous and/or potential contamination, and economic factors including right of way acquisition costs.

3.0 PROJECT DESCRIPTION

FDOT District Four is conducting a PD&E Study for I-95 from south of Hallandale Beach Boulevard to north of Hollywood Boulevard, a distance of approximately three miles. The PD&E Study is proposing improvements to the Hallandale Beach Boulevard, Pembroke Road, and Hollywood Boulevard interchanges. The project is located in Broward County, Florida under Township 51S, Range 42E, and Sections 16, 17, 20, 21, 28 and 29 and is contained within the municipalities of Hallandale Beach, Pembroke Park, and Hollywood. ***Figure 3.1*** depict the project location.

This project will evaluate the potential modification of existing entrance and exit ramps serving the three interchanges within the project limits. Widening and turn lane modifications will be evaluated along Hallandale Beach Boulevard, Pembroke Road, and Hollywood Boulevard to facilitate the ramp modifications and improve the access and operation of the corridors upstream and downstream from the interchanges.

NAVD'88 vertical datum is used for the project.

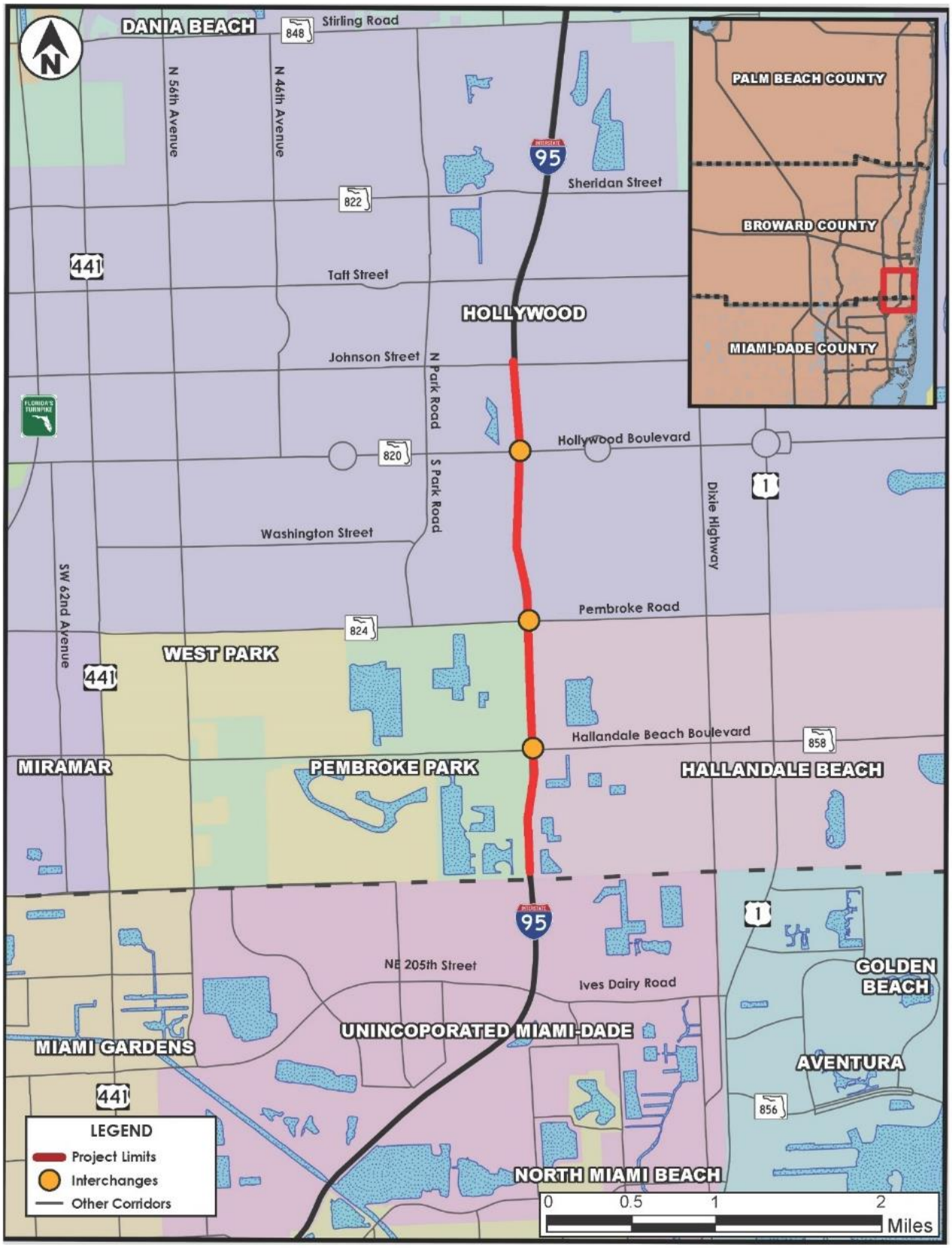

Figure 3.1 – Project Location Map

3.1 Existing Typical Sections

The existing I-95 mainline roadway section varies slightly. It consists primarily of four 11-foot wide express lanes (two in each direction) and eight 11-foot to 12-foot wide general use lanes (four in each direction) with 12-foot wide auxiliary lanes at select locations. A 3-foot wide buffer area with pavement markings and express lane markers separates the general use lanes from the express lanes with 5-foot to 12-foot wide inside shoulders, 12-foot wide outside shoulders, and a 2.5-foot wide center barrier wall. One express lane exists in each direction between Miami-Dade County and Hallandale Beach Boulevard in Broward County.

Three existing full interchanges within the project limits are located at Hallandale Beach Boulevard, Pembroke Road, and Hollywood Boulevard. Hallandale Beach Boulevard consists of four lanes west of I-95 and six lanes east of I-95. Pembroke Road and Hollywood Boulevard each have six lanes west of I-95 and four lanes east of I-95. All three interchanges are currently diamond interchanges.

3.2 Proposed Typical Sections

The preferred alternative roadway typical section varies slightly. It consists primarily of four 11-foot wide express lanes (two in each direction), eight 11 to 12-foot wide general use lanes (four in each direction), a two to four-foot wide buffer area with pavement markings and express lane markers separating the general use lanes from the express lanes, eight to 12-foot wide inside shoulders, 12-foot wide outside shoulders, 12-foot wide auxiliary lanes at select locations, and a 2.5-foot wide center barrier wall.

Modifications along the mainline result from the FDOT District Six I-95 PD&E Study and FDOT District Four 95 Express 3C Construction project. The PD&E Study proposes a combination of ramp modifications and collector distributor roads adjacent to the I-95 mainline lanes.

Between Ives Dairy Road and Hallandale Beach Boulevard, the PD&E Study proposes relocating the Pembroke Road southbound on-ramp to enter south of Hallandale Beach Boulevard. This roadway section includes a one-lane 15-foot wide ramp/bridge with 6-foot wide inside and outside shoulders parallel to I-95.

Between Hallandale Beach Boulevard and Pembroke Road, the PD&E Study proposes relocating the Pembroke Road southbound on-ramp to enter south of

Hallandale Beach Boulevard. This roadway section includes a one-lane 15-foot wide ramp/bridge with 6-foot wide inside and outside shoulders parallel to I-95 and grade separated over the Hallandale Beach Boulevard southbound off-ramp.

In the northbound direction, the PD&E Study proposes relocating the Pembroke Road northbound off-ramp to enter south of Hallandale Beach Boulevard. The off-ramp crosses over the on-ramp from Hallandale Beach Boulevard and stays elevated until reaching Pembroke Road. The preferred alternative is proposing a new local ramp connection between Hallandale Beach Boulevard and Pembroke Road. This connection will allow local traffic to travel northbound between the two crossing roadways without entering the I-95 mainline lanes. This roadway section includes a one-lane 15-foot wide ramp/bridge with 6-foot wide inside and outside shoulders parallel to I-95 and grade separated over the local connection. The local connection has a one-lane 15-foot wide roadway with inside and outside shoulders varying from 0 – 6 foot wide, parallel to I-95.

Between Pembroke Road and Hollywood Boulevard, the PD&E Study proposes a northbound collector distributor road. The existing off-ramp to Hollywood Boulevard is relocated from south of Hollywood Boulevard to just north of the I-95/Pembroke Road bridge overpass. The on-ramp from Pembroke Road merges with the off-ramp to Hollywood Boulevard, becoming a two-lane collector distributor road. This roadway section includes two 12-foot wide lanes with an eight-foot wide inside shoulder and 12-foot wide outside shoulder.

In the southbound direction, the preferred alternative also proposes a collector distributor road between north of Hollywood Boulevard and Pembroke Road. This roadway section includes a one-lane 15-foot wide ramp/bridge with 6-foot wide inside and outside shoulders parallel to I-95.

Figures 3.2 – 3.4 shows the existing and proposed roadway cross sections between interchanges.

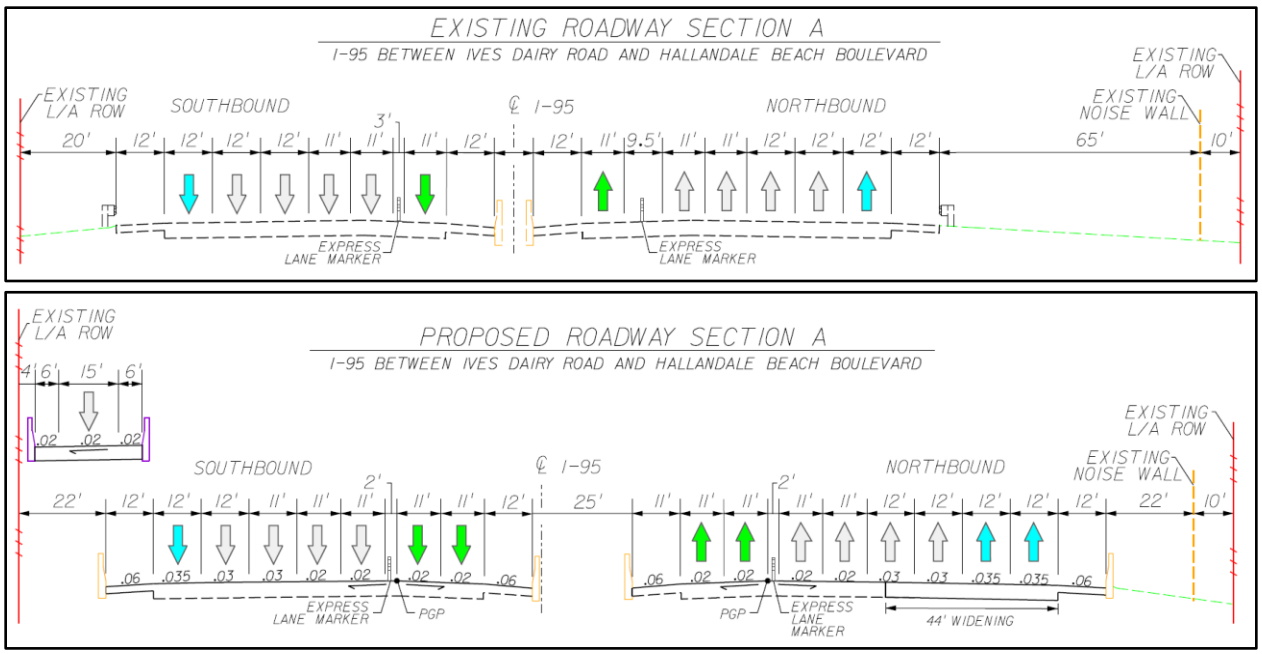

Figure 3.2 – Existing Conditions and Preferred Alternative Roadway Section between Ives Dairy Road and Hallandale Beach Boulevard

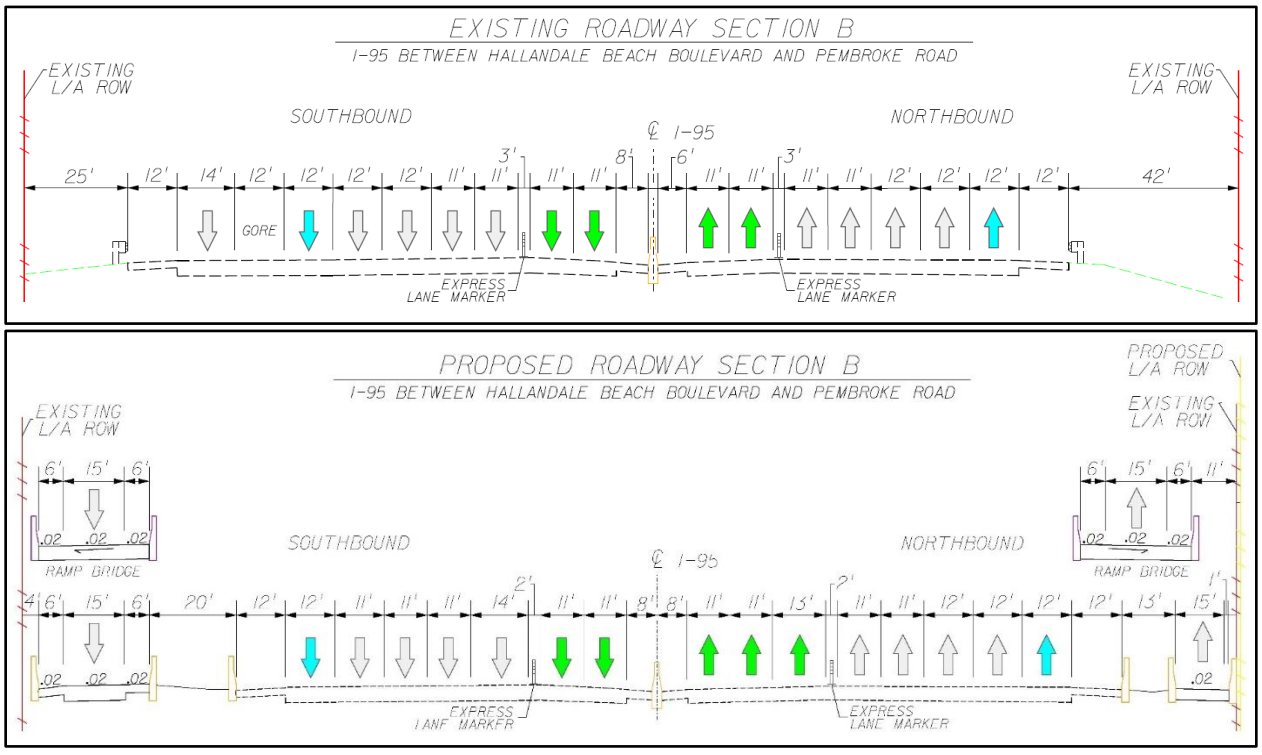

Figure 3.3 – Existing Conditions and Preferred Alternative Roadway Section between Hallandale Beach Boulevard and Pembroke Road

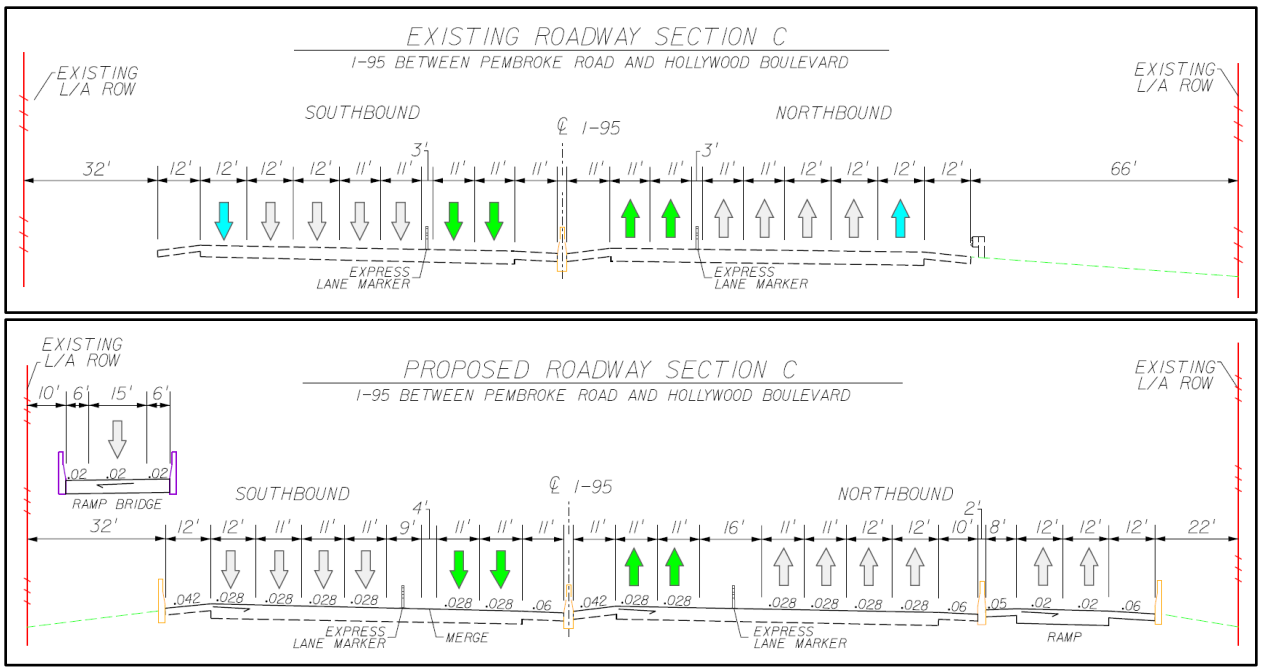

Figure 3.4 – Existing Conditions and Preferred Alternative Roadway Section between Pembroke Road and Hollywood Boulevard

4.0 Existing Drainage

4.1 Existing Drainage Basins

The existing drainage system is divided into three separate basins, typically divided by major east-west arterial crossings at Hallandale Beach Boulevard, Pembroke Road and Johnson Street. The basins have been identified in the latest I-95 improvement documents (FDOT project FPID 422796-1-52-01 and 422796-2-52-01) as System 4, 5 and 6 as described below:

- **System 4 (Basin 1):** This drainage basin encompasses I-95 from south of Miami Dade/Broward County Line to Hallandale Beach Boulevard (see ***Appendix A*** – Conceptual Drainage Maps). Runoff from I-95 sheet flows into roadside swales located along both sides of I-95. These dry detention roadside swales provide for water quality treatment and stormwater attenuation through the use of ditch block weirs. Basin 1 has a swale bottom elevation of 2.5 feet North American Vertical Datum of 1988 (NAVD 88) and a discharge elevation of 3.5 feet NAVD 88. The excess stormwater runoff overflows these weirs and discharges south into infield ponds at the I-95 and Ives Dairy Road interchange, which ultimately discharges to the C-9/Snake Creek Canal. This basin is located within the South Florida Water Management District (SFWMD) C-9 East Basin.

- **System 5 (Basin 2):** This drainage basin encompasses I-95 from Hallandale Beach Boulevard to Pembroke Road. Runoff from I-95 sheet flows into roadside dry detention swales located along both sides of I-95 and a dry pond located at the corner of Hallandale Beach Boulevard and I-95 northbound on-ramp. These dry detention roadside swales provide water quality treatment and stormwater attenuation through the use of ditch block weirs. This system consists of swales with a bottom elevation of 1.5 feet NAVD 88 and discharge elevation of 4.0 feet NAVD 88. According to existing permit information this basin discharges into an FDOT borrow pit called Chaves Lake, which is located at the northeast quadrant of I-95 and Hallandale Beach Boulevard. However, no drainage connection was observed during our field investigation. Excess stormwater runoff from Chaves Lake overflows to the C-10 Canal through a pump station located within the west side of the I-95 right of way between Hallandale Beach Boulevard and Pembroke Road. This basin is located within the SFWMD's C-10 Basin.

- **System 6 (Basin 3 & 4):** This drainage basin encompasses I-95 from Pembroke Road to Johnson Street. Runoff from I-95 sheet flows into the roadside dry detention swales located along both sides of the I-95 and Hollywood Boulevard interchange infield areas. This system has a swale bottom elevation of 1.5 feet NAVD 88 and discharge elevation of 2.5 feet NAVD 88. These roadside swales and interchange infield areas provide water quality treatment and stormwater attenuation through the use of ditch block weirs. Excess stormwater runoff overflows these weirs and discharges into the C-10 Canal just north of Johnson Street. This basin is located within the SFWMD's C-10 Basin.

Side Street/Arterial Street Drainage: There are three arterial streets within the project limits of the I-95 corridor; Hallandale Beach Boulevard, Pembroke Road and Hollywood Boulevard. Each of those side streets, beyond the interchanges, has its own drainage system. Since the improvements are mostly at the interchanges, the impact to the existing drainage systems of the side streets beyond interchanges are considered minor.

Offsite System: An offsite storm-sewer system exists along the I-95 corridor within the project limits. The system is designed to alleviate the adverse flooding conditions for the City of Hallandale Beach and the Town of Pembroke Park as described in the SFWMD permit No. 06-02942-P, application 010601-42, dated October 2001. The permitted system includes the Chaves Lake, located within the City of Hallandale Beach, connected to the adjacent Hallandale Beach High School Lake via an open channel. The school lake is connected through an 84" pipe to a main pump station on the west side of I-95 just south of the CSX Railroad. From the pump station a 64" stormwater force main is installed along the west side of I-95 to discharge into the modified CSX western channel. A 42" force main from another pump station located on Behan Lake, within the Town of Pembroke Park, is connected to a 64" force main outfall of the I-95 Pump Station. At the end of the conveyance channel, along the CSX Railroad, a ditch bottom inlet with a 72" diameter pipe is located to discharge the flow to the C-10 canal. This system is not expected to be impacted by the proposed I-95 improvements.

4.2 Existing Permits

Within the project corridor there are several permits involved. The following are the permits pertaining to the project:

- ERP No. 88-00053-S, Application Number 03168-B, I-95 HOV Lanes
- ERP No. 88-00053-S, Application Number 120327, I-95 Managed Lanes
- ERP No. 06-01465-S I-95 Phase 3C
- ERP No. 06-02942-P Pump Station
- ERP 06-01955-S Orange Brook Golf Course

4.3 Regulatory Agencies

The study area falls in the SFWMD C-9 and C-10 Canal Basins within the jurisdiction of SFWMD and outside the limits of any local water control districts jurisdiction. ***Figure 4.1*** and ***Figure 4.2*** show SFWMD drainage basins C-9 and C-10 and ***Figure 4.3*** shows the Broward County Drainage Districts Map.

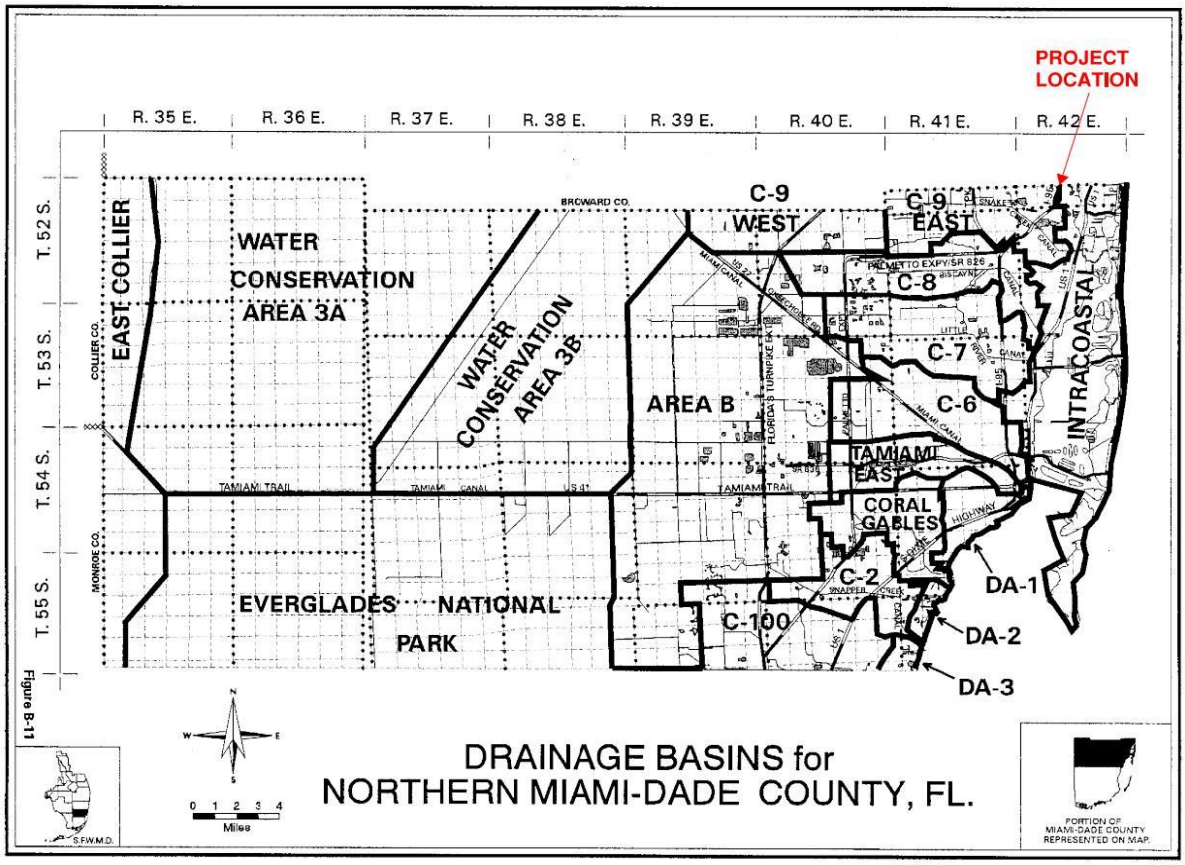

Figure 4.1 – SFWMD Basin C-9

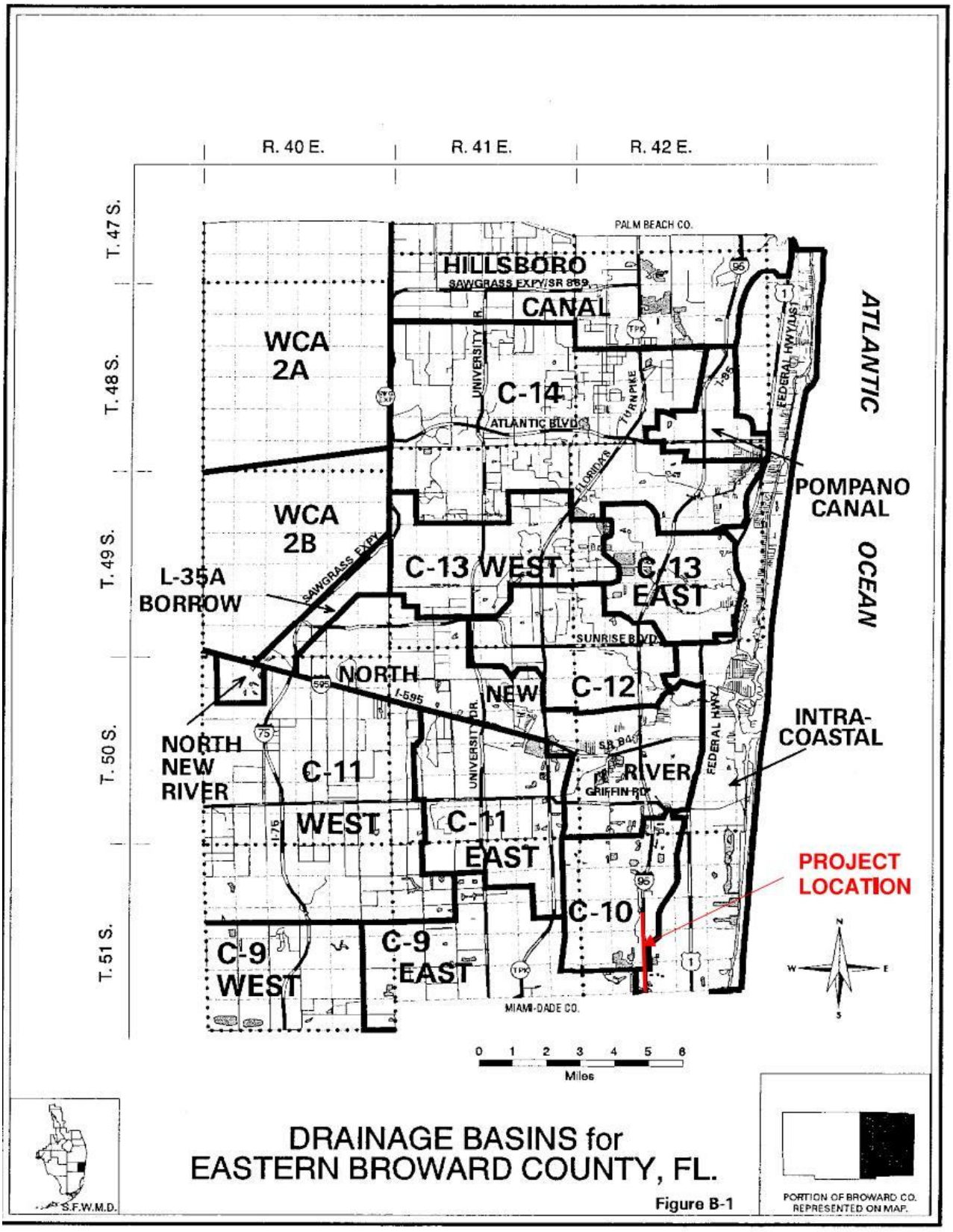

Figure 4.2 – SFWMD Basin C-10

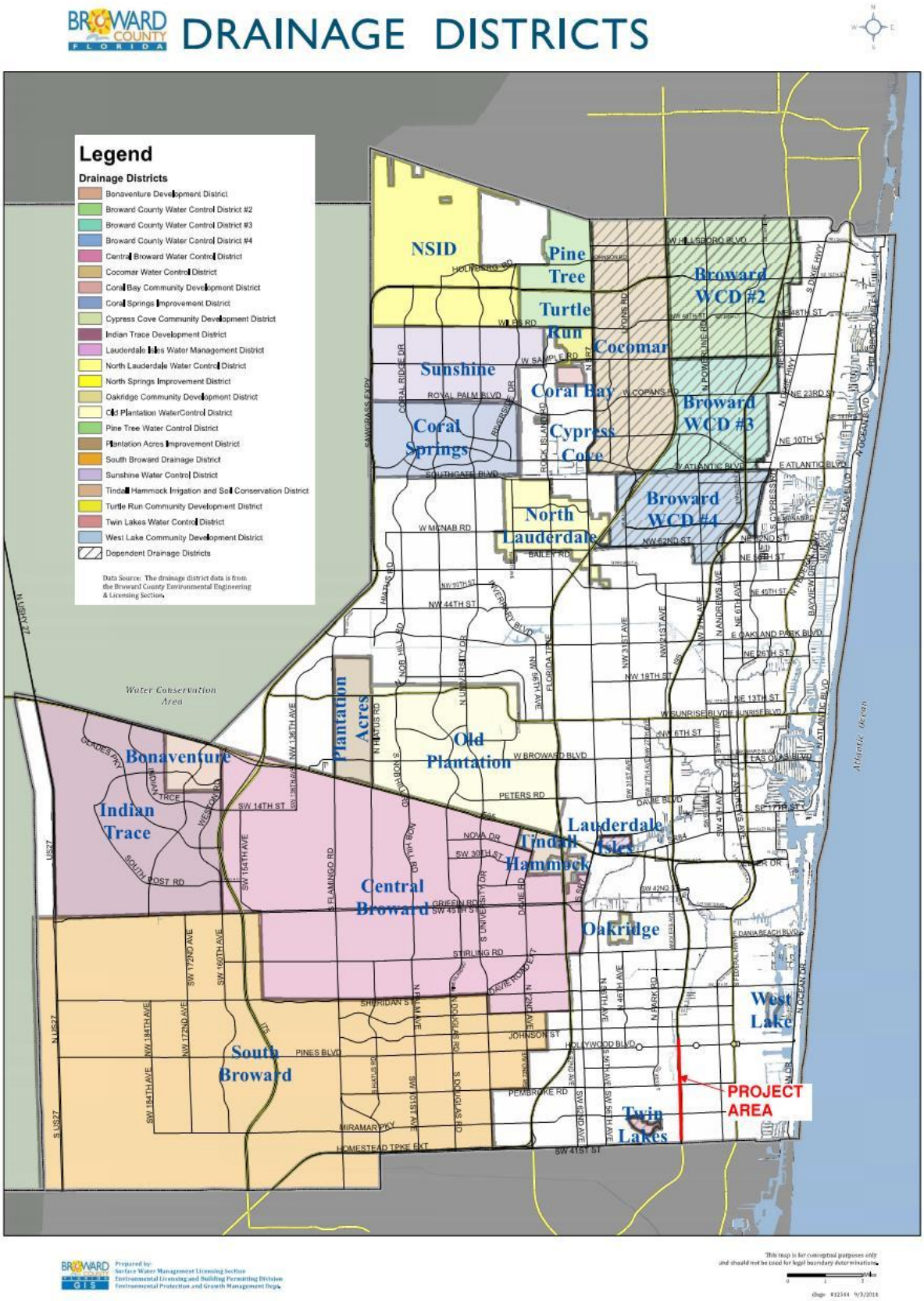

Figure 4.3 – Broward County Drainage Districts

4.4 LAND USE

The project land use is primarily commerce and low medium residential. No future land use change is anticipated within the project corridor. ***Figure 4.4*** shows a copy of the Broward County Land Use Plan.

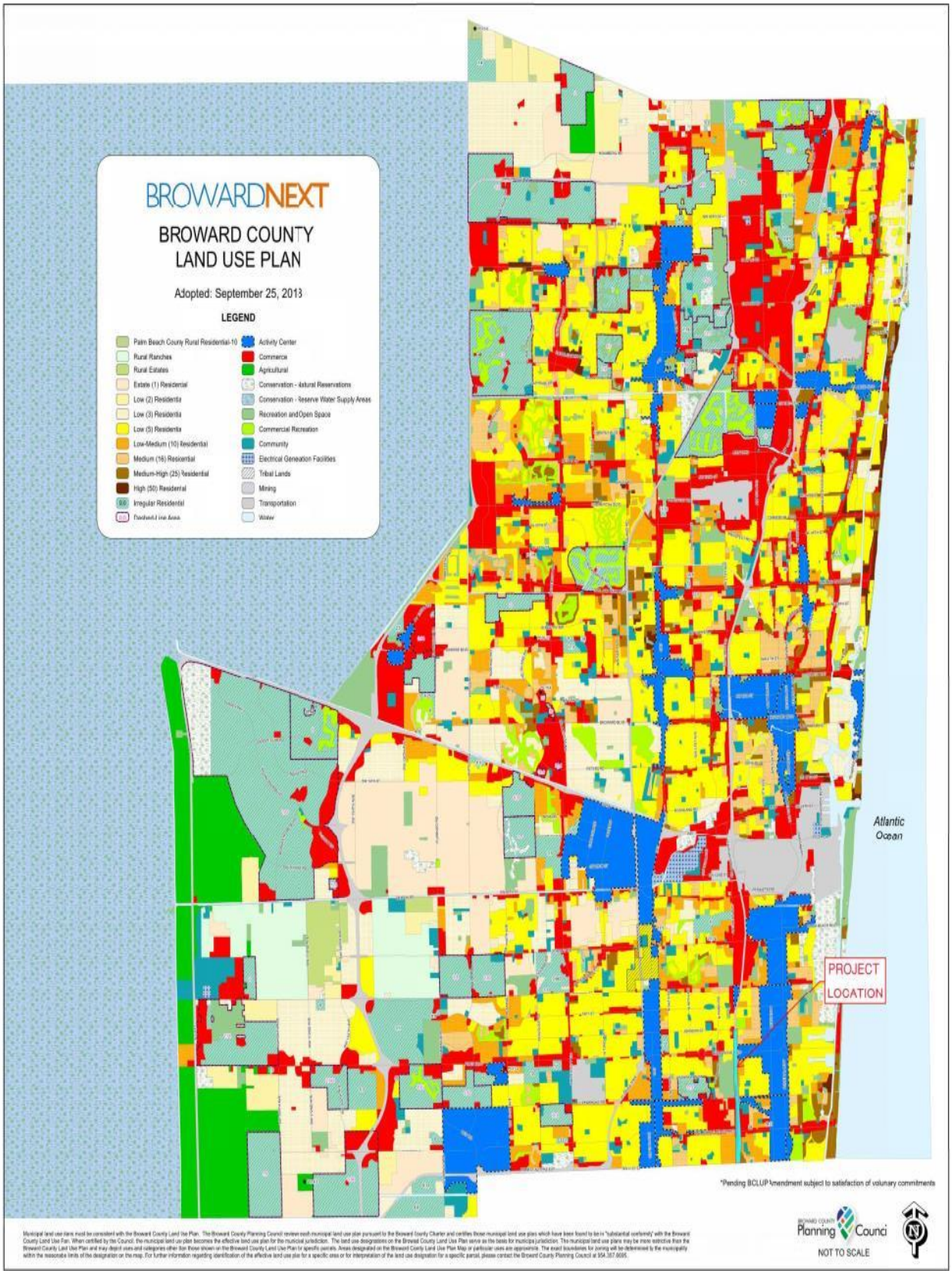

Figure 4.4 – Broward County Land Use Plan

4.5 GEOTECHNICAL CHARACTERISTICS

4.5.1 SOIL PROPERTIES

Based on the U.S. Department of Agriculture (USDA) web soil survey, it was determined that the soil property within the project falls in hydrologic soil group A. Udorthents (shaped), the predominant soil in the corridor, is a somewhat poorly drained soil with the depth to SHGWT ranging from 2.0 feet NAVD to 4.0 feet NAVD. The Soil Properties Map is included in the Custom Soil Resource Report in ***Appendix B***. **Appendix I** shows preliminary Geotechnical Report. **Appendix J** is submitted Seasonal High Water Table Technical Memo.

The Seasonal High-Water elevation has been determined to be 1.00 feet NAVD 88 for Basin 1 and 0.50 feet NAVD 88 for Basins 2 to 4 based on existing ERP permits and Broward County Water Table Map. ***Figure 4.5*** shows the Broward County Water Table Map.

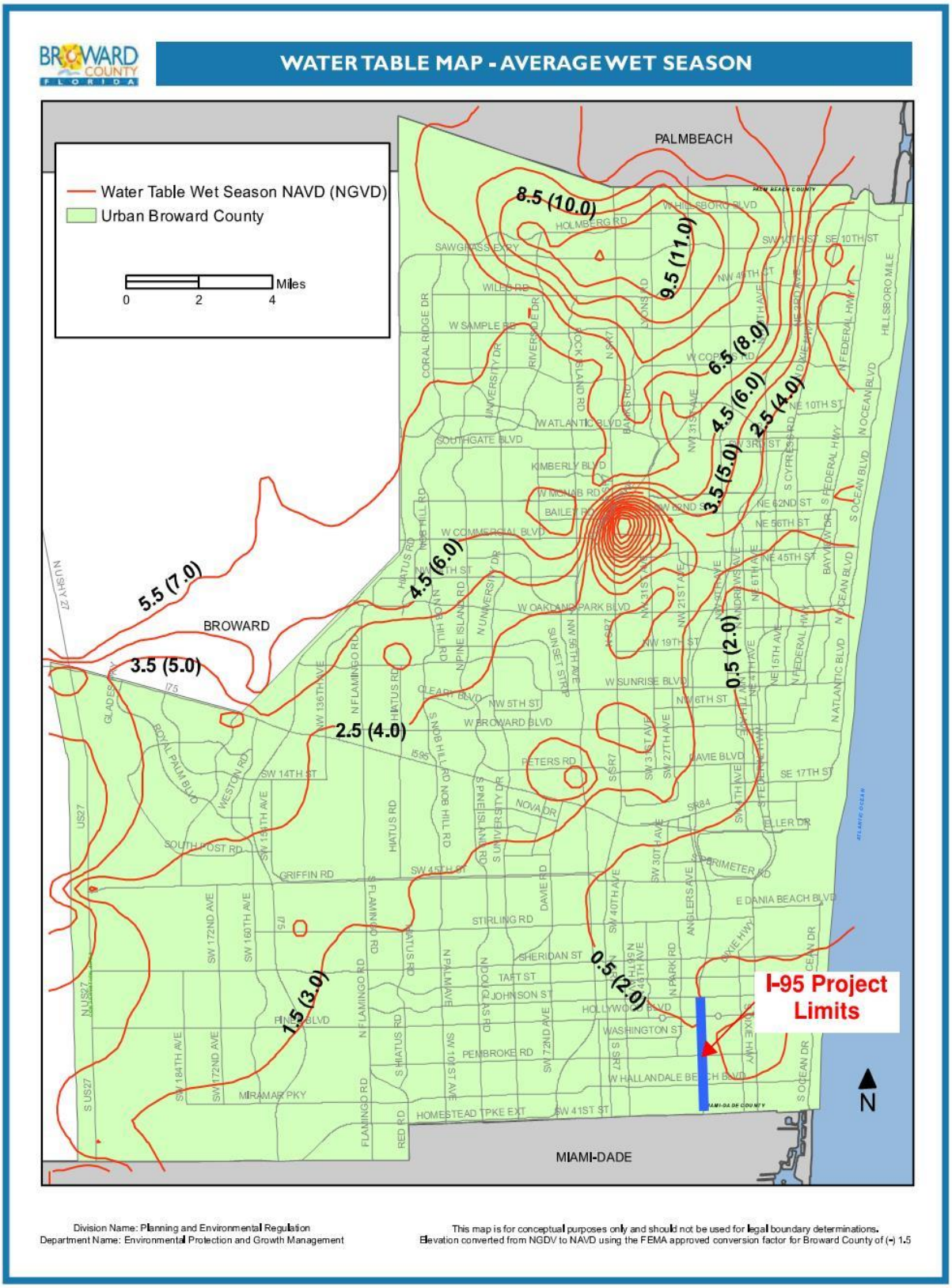

Figure 4.5 – Broward County Water Table Map

4.5.2 WELLFIELD PROTECTION AREAS

The project is outside the limits of any wellfield protection areas. Therefore, no wellfield protection measures are required. The near wellfield areas are located east of the project corridor between Hallandale Beach Boulevard and Pembroke Road. ***Figure 4.6*** shows the Broward County Wellfield Map.

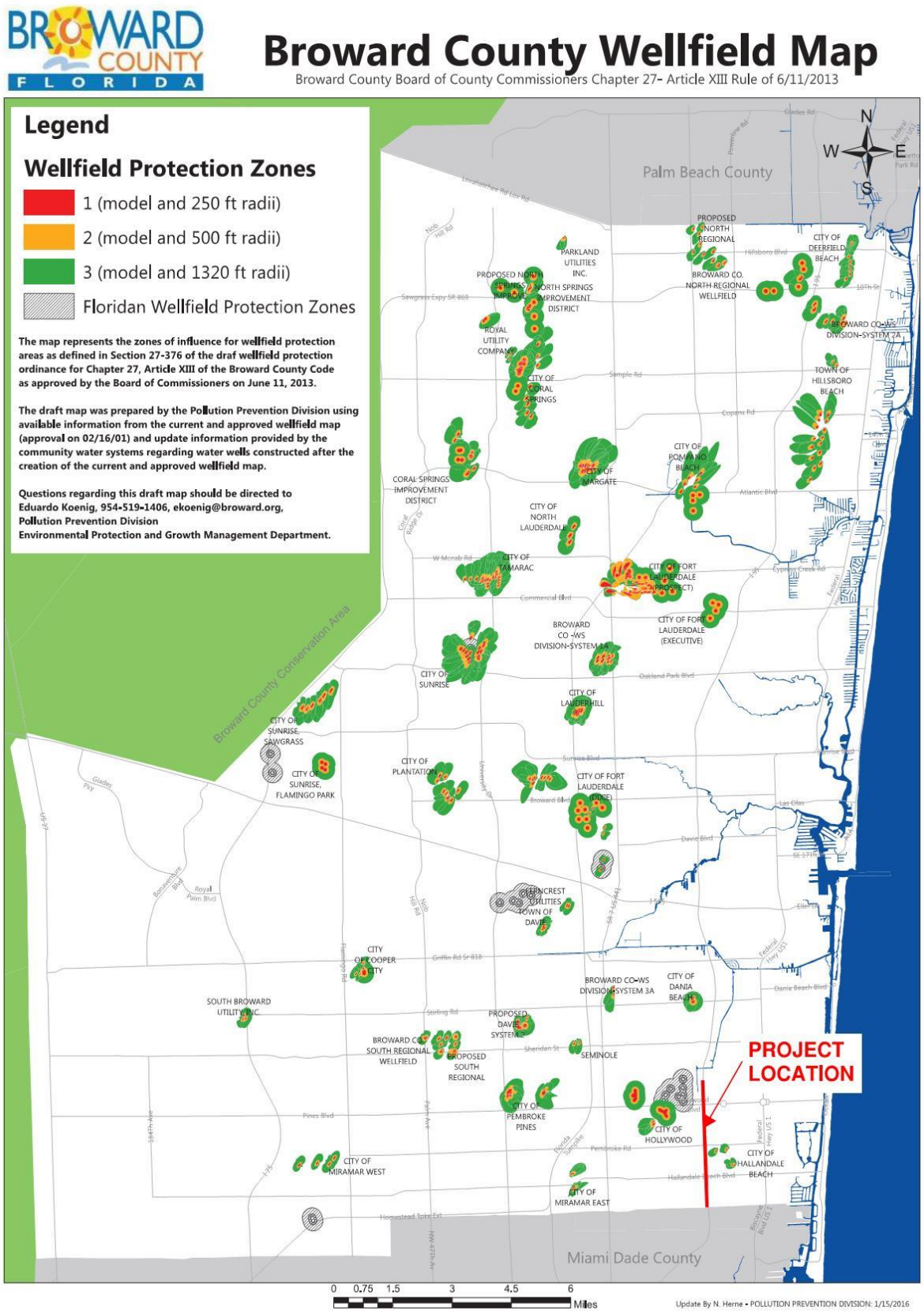

Figure 4.6 – Broward County Wellfield Map

4.6 ENVIRONMENTAL

4.6.1 CONTAMINATION

A Level 1 Contamination Screening Evaluation Report (CSER) was prepared using the FDOT PD&E Manual, Part 2, Chapter 20, and standard contamination screening evaluation practices such as: reviewing regulatory agency records, site reconnaissance, literature review and when necessary, personal interviews of knowledgeable parties within the limits of the project.

A total of 38 potentially contaminated sites were identified and reviewed for potential impacts to the project. Of these, three were ranked "High", 22 were ranked "Medium", 11 were ranked "Low", and two were ranked "No" for potential contamination concerns. See ***Figure 4.7***, ***Figure 4.8*** and ***Figure 4.9*** for the locations of these sites and see ***Table 4.1*** for site names, descriptions, and risk ratings. For sites assigned a risk rating of "Medium" or "High", a Level II Assessment is recommended if construction activities are proposed in the site vicinity. These sites have been determined to have known contaminants, which may impact the proposed project. A soil and groundwater sampling plan should be developed for each site, as applicable. Based on the findings of a future review and Level II Assessment, the design engineers may be required to avoid areas of concern or include special provisions with the plans to require that construction activities performed in areas of concern be conducted or supervised by a contamination assessment and remediation contractor specified by FDOT.

Additional information may become available or site-specific conditions may change from the time this report was prepared and should be considered prior to acquiring right of way and/or proceeding with roadway construction.

Figure 4.7 – Contaminated Sites Map (North)

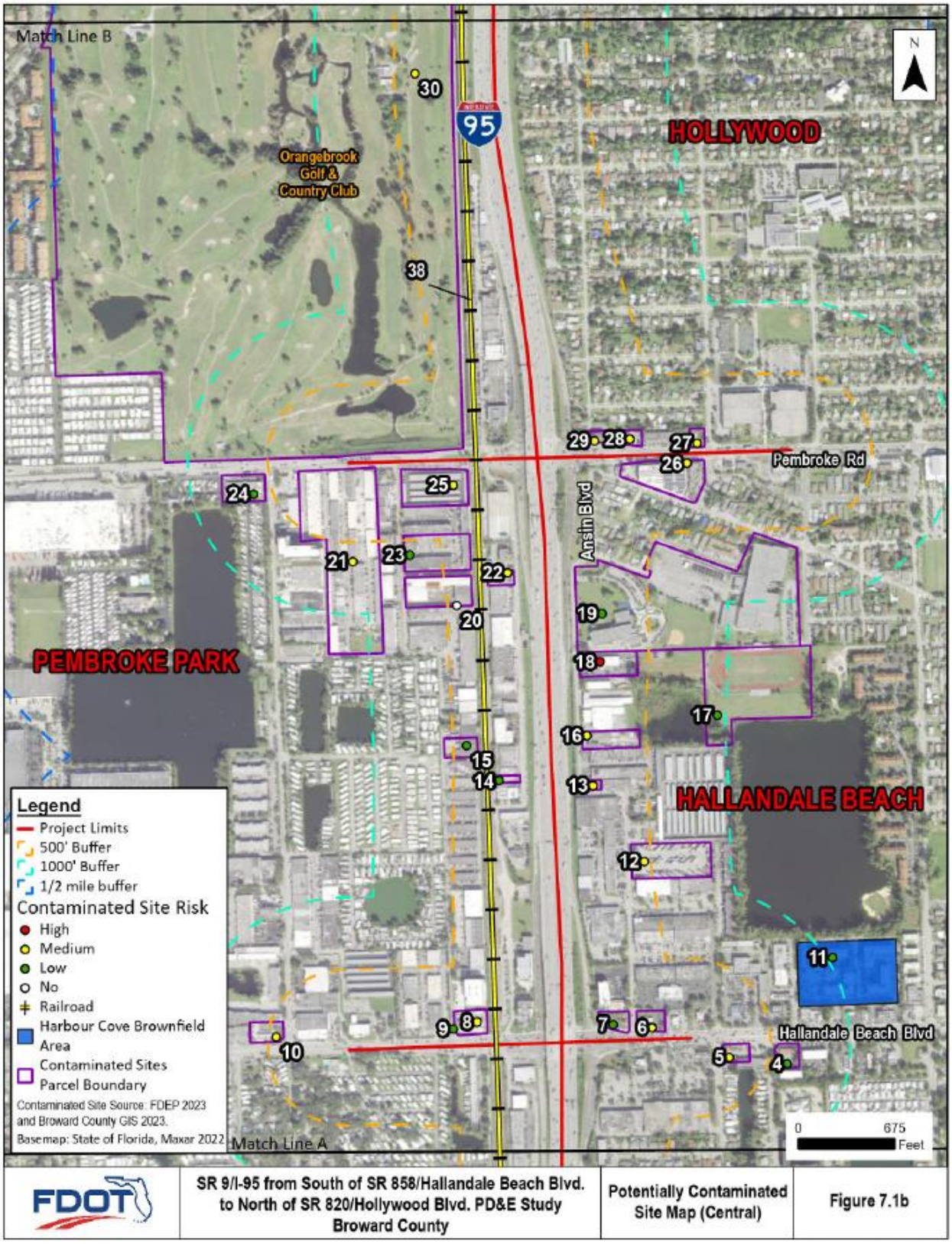

Figure 4.8 – Contaminated Sites Map (Central)

Figure 4.9 – Contamination Site Map (South)

Table 4.1 – Potential Contamination Sites

Site ID	Facility Name	Address	County Permit or ID Number	FDEP Facility ID	Contamination Concern	Distance from Project	Status	Risk Rating
1	City of North Miami Beach OJUS Landfill	20735 NE 16th Avenue Miami, FL 33139	SW-1179/File-12839	57134 ERIC_15135	Methane, ammonia	150' southwest of project beginning	Ongoing biennial groundwater monitoring for ammonia and annual groundwater monitoring for methane	M
2	Penn Tank Lines Inc. Roadside Spill	Southbound I-95 0.75 miles South of Exit 18 Hallandale Beach, FL 33020	None Recovered	9816414	Petroleum	Within project corridor	NFAP submitted	M
3	City of Hallandale Beach DDMS #1	Field Behind 1000 SW 3rd Street Hallandale Beach, FL 33009	None Identified	99011	None Recorded	700' East of I-95	NFA issued	N
4	Hallandale Beach U-Gas	999 W Hallandale Beach Boulevard Hallandale Beach, FL 33009	ST-04111-20 04111	8502072	Petroleum Hydrocarbons	525' East - along Hallandale Beach Boulevard	NAM ongoing	L
5	HB 1000-18 LLC	1021 W Hallandale Beach Boulevard Hallandale Beach, FL 33009	04094	8501728	Petroleum Hydrocarbons	200' East - along Hallandale Beach Boulevard	Quarterly monitoring ongoing	M
6	Exxon	1080 W Hallandale Beach Boulevard Hallandale Beach, FL 33009	ST-04662-20 04662	8502695	Petroleum Hydrocarbons	Adjacent	SRCO Issued- proposed for acquisition	M
7	Burger King	1090 W Hallandale Beach Boulevard Hallandale Beach, FL 33009	09827 09693	8501967 8502027	Petroleum	Adjacent	NFA issued- proposed for acquisition	L
8	Racetrac #491	3031 W Hallandale Beach Boulevard Pembroke Park, FL 33009	ST-02341-20 02341	9602003 9101088	Petroleum Hydrocarbons	Adjacent	SRCO Issued	M
9	Energy Dispatch LLC Tanker Truck Spill	East and West Sides of SW 31st Avenue & Hallandale Boulevard Pembroke Park, FL 33009	09884	9803721	Petroleum Hydrocarbons	Adjacent	SRCO Issued	L
10	MOIL Gas Station	3151 W Hallandale Beach Boulevard Pembroke Park, FL 33009	02181 ST-02181-20	9800048	Petroleum	400' West - along Hallandale Beach Boulevard	TCAR showed levels above SCTLs	M
11	Harbour Cove Associates (Brownfield)	100 NW 9th Terrace Hallandale Beach, FL 33020	BF060401001	ERIC_6725	Petroleum	700' East of I-95	SRCO Issued	L
12	Vintage Ansin Truck Parking	310 Ansin Boulevard Hallandale Beach, FL 33009	None	53352	None recorded	400' East of I-95	Offsite notice issued for contamination	M
13	Pharmco Rx	400 Ansin Boulevard Hallandale Beach, FL 33009	None	9802375	None Recorded	100' East of I-95	No contamination identified	M

Table 4.1 – Potential Contamination Sites (Continued)

Site ID	Facility Name	Address	County Permit or ID Number	FDEP Facility ID	Contamination Concern	Distance from Project	Status	Risk Rating
14	Messingschlager Properties	2514 SW 30th Avenue Hallandale Beach, FL 33009	None	9401806	Petroleum	75' West of I-95	SRCO Issued	L
15	95 Warehouse LTD	2401 SW 31st Avenue Pembroke Park, FL 33009	06862	8942651	Petroleum Hydrocarbons	350' West of I-95	SRCO Issued	L
16	Gallo Marble Enterprises	500 Ansin Boulevard Hallandale Beach, FL 33009	None	8627989	Ammonia	100' East of I-95	DRC issued; in compliance	M
17	James Lanier Education Center – grass field	700 NW 7 Street Hallandale Beach, FL 33009	None	99353	Ammonia	875' East of I-95	Offsite notice issued for contamination	L
18	Park Shore Pharmacy	600 Ansin Boulevard Hallandale Beach, FL 33009	NF-2701 09924	9700906	Ammonia	70' East of I-95	Offsite notice issued for contamination	H
19	James Lanier Education Center	1050 NW 7th Court Hallandale Beach, FL 33009	07879	9100221	Petroleum	50' East of I-95	SRCO issed	L
20	BW Recycling	2035 SW 31st Avenue Pembroke Park, FL 33009	None	None	None Recorded	350' West of I-95	No contamination identified	N
21	Petroleum Products Corporation (Superfund Site)	3130 SW 19th Street Pembroke Park, FL 33009	54384655 ERIC_3796 54391722 09535	8732818	Petroleum Hydrocarbons	Adjacent	Remediation to begin	M
22	Orkin Extermination Co	1820 SW 30th Avenue Hallandale Beach, FL 33009	HM-01149-19 01149	8502427	None Recorded	60' West of I-95	No contamination identified	M
23	Waste Connections - Pembroke Park Transfer Station	1899 SW 31st Avenue Pembroke Park, FL 33009	FL0000871996 00014	55464 105719	None Recorded	300' West of I-95, 500' South of Pembroke Road	No contamination identified	L
24	Flowers Baking Company (Out of Business)	3262 Pembroke Road Pembroke Park, FL 33009	None	8622371	Petroleum	530' West - along Pembroke Road	Remediation recommended	L
25	A&B Recycling	1708 SW 31st Avenue Pembroke Park, FL 33009	03206 HM-03206-20	None	None Recorded	Adjacent	No contamination identified	M
26	Sun Yi Cafe	1051 W Pembroke Road Pembroke Park, FL 33010	04369	8732177	None Recorded	Adjacent	No contamination identified	M
27	Shell FCE #3828	2801 Pembroke Road Pembroke Park, FL 33020	03950 ST-03950-20	8502153	Petroleum	Adjacent	SRCO issued	M
28	Family Tire Distributors	2817 Pembroke Road Hollywood, FL 33020	15361 HM-15361-20	None	None Recorded	Adjacent	No contamination identified	M
29	Kosher Motors	2829 Pembroke Road Hollywood, FL 33020	15905 01535	9500022	Petroleum	Adjacent	SRCO issued	M

Table 4.1 – Potential Contamination Sites (Continued)

Site ID	Facility Name	Address	County Permit or ID Number	FDEP Facility ID	Contamination Concern	Distance from Project	Status	Risk Rating
30	Orangebrook Golf Course and Country Club	4000 Entrada Street Hollywood, FL 33021	01360 HM-01360-20	8944879	Arsenic	Adjacent	No contamination identified, but arsenic presence likely	M
31	Shell-First Coast Energy #3829	2600 Hollywood Boulevard Hollywood, FL 33020	13297 HM-13297-20	8502526	Petroleum Hydrocarbons	750' East - along Hollywood Boulevard	SRCO issued	L
32	Dabern Auto Center	2828 Hollywood Boulevard Hollywood, FL 33020	54397828 0969	8502583	Petroleum Hydrocarbons	350' East - along Hollywood Boulevard	NAM ongoing	M
33	Goodyear Tires	2911 Hollywood Boulevard Hollywood, FL 33020	54401456 09656	8502126	Petroleum	Adjacent	CAR showed levels above SCTLs and GCTLs	H
34	Chevron	3000 Johnson Street Hallandale Beach, FL 33020	None	8502723	Petroleum	150' West - along Johnson Street	SRCO issued	M
35	Clean Paws Pet Salon and Resort	3030 Johnson Street Hallandale Beach, FL 33020	ERIC_4112 AIR_0112286 FLD059858167 FLR000031617 01888	9501066	Solvents PCE/TCE	375' West - along Johnson Street	Biennial groundwater sampling ongoing	M
36	Marathon	3034 Johnson Street Hallandale Beach, FL 33021	None	8502207	Petroleum	450' West - along Johnson Street	Additional testing recommended	M
37	Former Sunset Golf Club	2727 Johnson Street Hollywood, FL 33020	NF-2088 19544 FLR10TJ71	None	Arsenic	Adjacent	NFAC issued	H
38	CSX Railroad	Along west side of I-95	None	None	Arsenic, creosote	Varies 60'-215'	No contamination identified	M

Dewatering is anticipated to occur. Therefore, a dewatering permit will be required from FDEP/SFWMD. The contractor will be held responsible for ensuring compliance with any necessary dewatering permit(s). The dewatering plan will need to consider the radius of the influence of any dewatering activity on nearby contamination plumes to avoid potential contamination plume exacerbation. The status of the sites will be updated accordingly at each future design phase. All permits will be obtained in accordance with Federal, State, and local laws and regulations and coordination with the District Contamination Impact Coordinator (DCIC).

If dewatering activities are proposed within 500 feet of a contaminated site, an FDOT Contamination Assessment Remediation (CAR) Contractor will assist in the preparation of the dewatering permit application and assist in the permit process. Roadway plans will have a general note listing any area of dewatering concerns with applicable stationing. See *Part 2, Chapter 20 Contamination, paragraph 22.2.5.2 Dewatering During Construction* for further details. Additionally, *see Part 1, Chapter 12, Environmental Permits, and Part 2, Chapter 11, Water Quality Impact Evaluation,* for guidance on NPDES permitting.

For more information about contamination, please refer to the CSER, which is included in the SWEPT project file.

4.6.2 WETLAND

In accordance with the FDOT PD&E Manual, Chapter 9 (July 1, 2024), Executive Order 11990, Protection of Wetlands as well as applicable federal and state regulatory requirements (Section 404 of the Clean Water Act and Chapter 373, Florida Statute, respectively) a wetland and other surface waters (OSW) evaluation was conducted for this project. The objectives of this evaluation were to identify existing wetlands and OSW's, evaluate potential impacts to them, and assess the function and value of wetlands potentially impacted by the project.

Additional ROW is being acquired primarily for drainage purposes/ponds. Pedestrian transect surveys and windshield reviews were used to conduct the field reviews and confirm identified wetland and/or OSW areas. Existing conditions field reviews were conducted on February 24 and 27, 2017, and then verification surveys were conducted to confirm previously identified wetlands, swales, or OSW's conditions within a 500-foot buffer of the project on September 22, 2020, and November 20 and 21, 2023.

Figure 4.10 illustrates the location of wetlands and OSWs. One mangrove wetland (WL-1) adjacent to the C-10 Canal is present with hydric soils, and hydrology. This wetland is considered jurisdictional to SFWMD and the Florida Department of Environmental Protection (FDEP) and the hydrology of this area is hydrologically connected to the C-10 Canal. In addition, four man-made stormwater swales are present along I-95. These swales contain standing water and hydrophytic vegetation. Hydric soils are not present, and their hydrology appeared dependent on rainfall, stormwater runoff, and groundwater. These swales are part of an existing SFWMD permitted stormwater drainage system. Other man-made surface waters were observed within the project area, including stormwater ponds associated with developments. Most of these stormwater ponds do not contain littoral vegetation although some contained spike rush (Eleocharis spp.), water hyssop (Bacopa spp.), and bald cypress (Taxodium distichum) at the time of the field reviews.

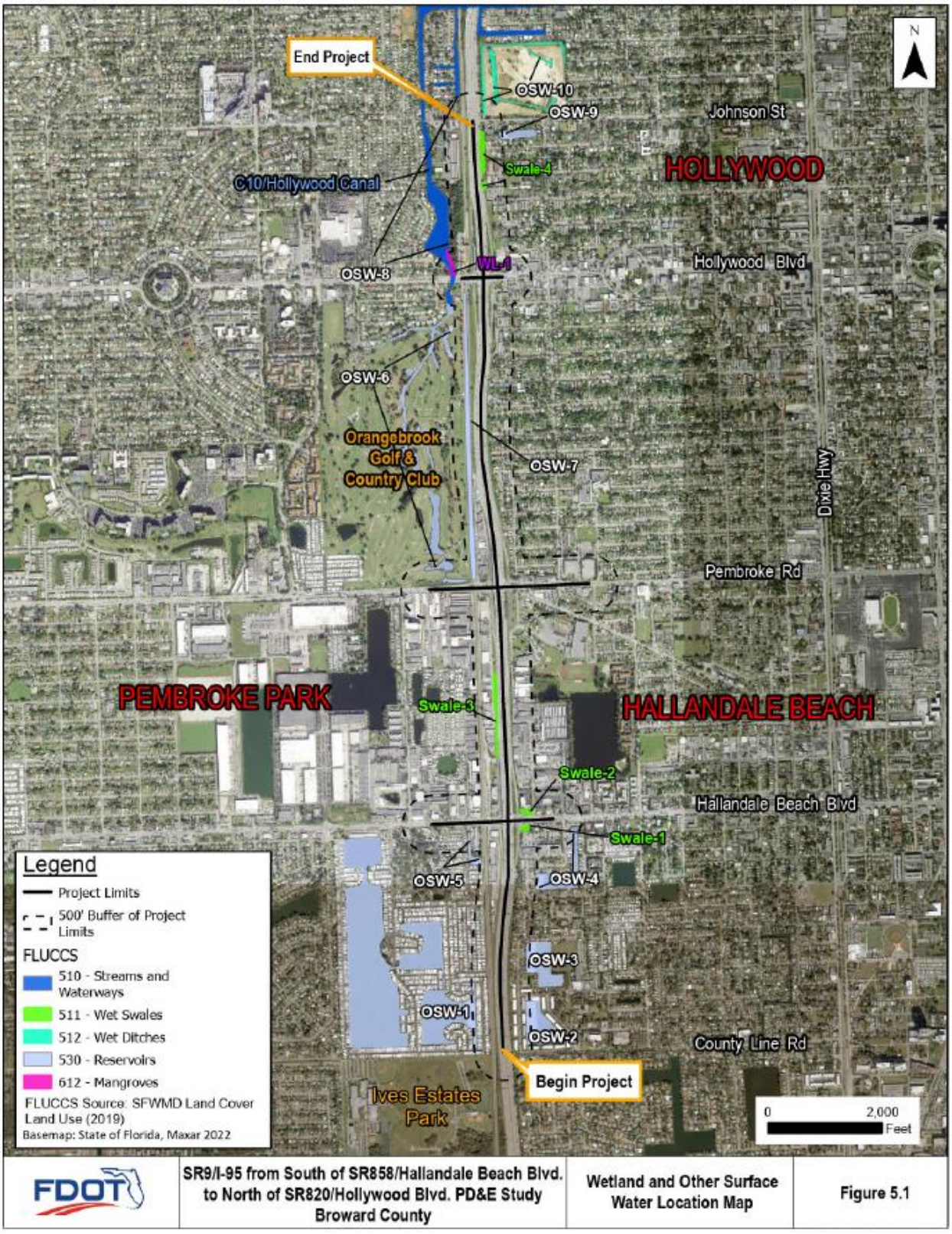

Figure 4.10 – Broward County Wetland and Other Surface Water Location Map

4.6.3 Historical, Archeological and Endangered Species

There are few historical, archaeological and environmental areas located within the project limits. A copy of the Broward County Historical, Archaeological and Environmental Area Maps are included in ***Appendix C***.

4.6.4 Cross Drains

Existing cross drains were located based on existing construction plans, FDOT Straight Line Diagrams (SLDs), and field investigations.

The existing cross drain locations are summarized in **Table 4.2** More information and analysis of existing cross drains is required during the design and permitting phase.

Table 4.2 – Summary of Cross Drains

CD No.	Approx. Location	Size and Material	Approx. Length	Description
CD-1	228+76	30" RCP	196.0 ft	Connected with median barrier wall inlet
CD-2	266+83	30" RCP	218.7 ft	Connected with median barrier wall inlet
CD-2A	274+91	84" UNKNOWN	UNKNOWN	Coming from Chaves Lakes Apartment crossing I-95
CD-3	302+65	30" RCP	202.7 ft	Connected with median barrier wall inlet
CD-4	319+87	24" RCP	219.0 ft	Connected with median barrier wall inlet
CD-5	325+35	24" RCP	219.8 ft	Connected with median barrier wall inlet
CD-6	341+10	36" RCP	220.1 ft	*Under bridge middle of Hollywood Boulevard*

5.0 Proposed Drainage

5.1 Design Criteria

5.1.1 Water Quality Criteria

SFWMD Criteria: The SFWMD requires that all projects meet state water quality standards as set forth in Chapter 17-302, Florida Administrative Code (FAC). According to the SFWMD Environmental Resource Permit Information Manual, 2014, all projects must meet the following volumetric retention/detention requirements:

- Wet detention volume shall be provided for the first inch of runoff from the developed project, or the total runoff of 2.5 inches times the percentage of imperviousness, whichever is greater. A wet detention system is a system which 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.

- Dry detention volume shall be provided equal to 75% of the above amounts computed for wet detention. Dry detention systems must maintain the control elevation at or above one foot above the seasonal high groundwater elevation.

- Retention volume shall be provided equal to 50% of the above amounts computed for wet detention.

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

- Projects having greater than 40% impervious area and discharging directly to an Outstanding Florida Waters (OFW) shall provide at least one half inch of dry detention or retention pretreatment as part of the required retention/detention.

- Projects discharging directly to Outstanding Florida Waters (OFW) must provide an additional 50% water quality pre-treatment as part of the required retention/detention (SFWMD Criteria).

5.1.2 Water Quantity Criteria

The SFWMD Basis of Review also addresses stormwater quantity (peak discharge), and requires that off-site discharge rates and volumes do not adversely impact off-site areas. Typically this means that post-development peak discharge rate must be equal or less than the pre-development discharge rate. The design storm for determination of allowable off-site discharge is a 3-day duration storm with a 25-year return frequency, unless a different frequency is specified on previous permits. The 25-year, 3-day rainfall amount at the project location is 13.4 inches, see ***Figure 5.1***.

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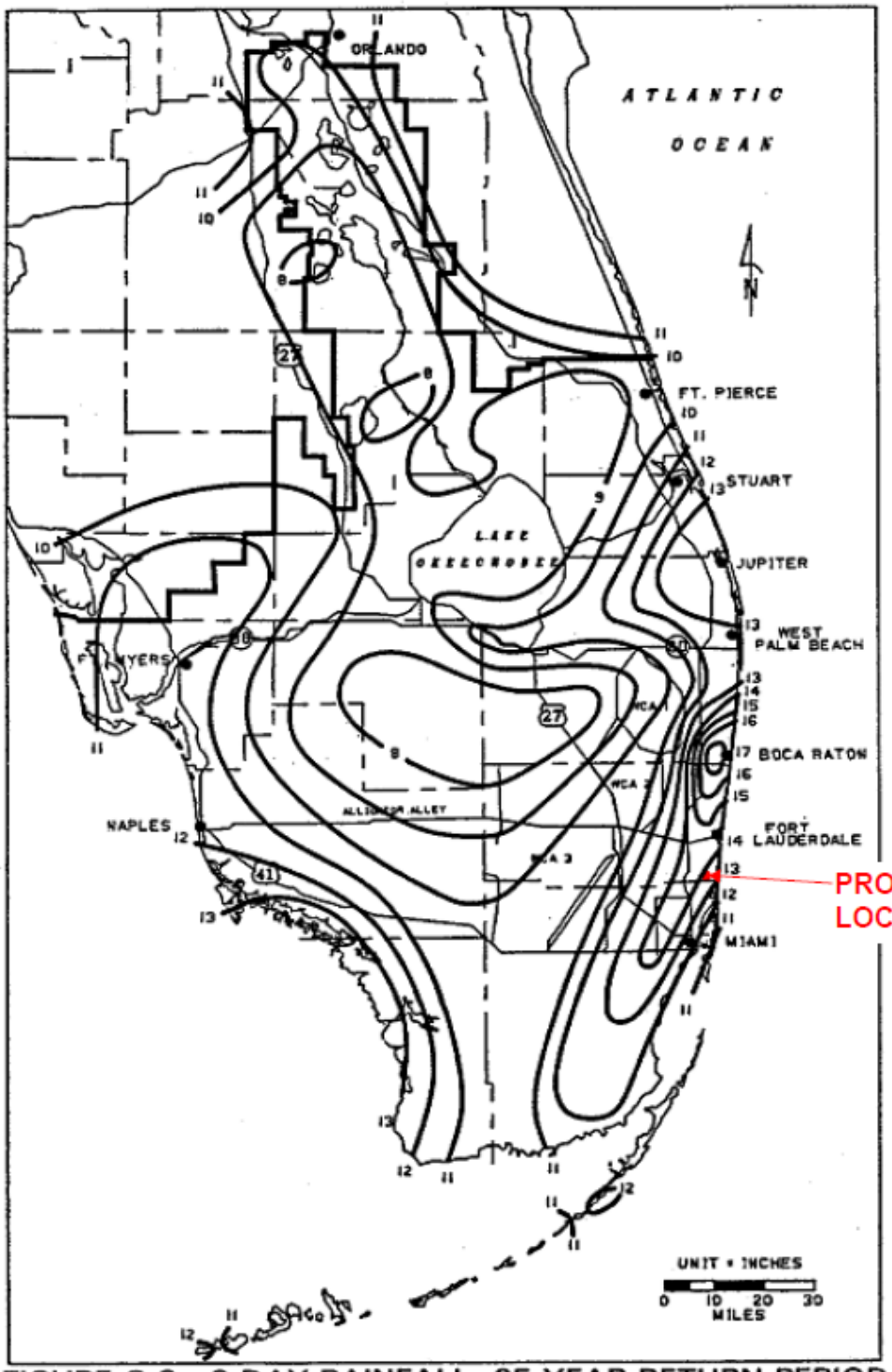


FIGURE C-8. 3-DAY RAINFALL: 25-YEAR RETURN PERIOD

Figure 5.1 – 3-Day Rainfall Map

5.1.3 Required Permits

The agencies with stormwater permitting jurisdiction over the proposed study area and the required permits include:

- SFWMD - General Environmental Resource Permit (ERP)
- United States Army Corps of Engineers – Dredge and fill permit is required for proposed work in, under or above surface waters or wetlands, as associated with the bridge widening work at the Hollywood Canal
- SFWMD - Consumptive Water Use Permit - For dewatering and irrigation
- Florida Department of Environmental protection – An NPDES (Erosion Control Plans, Stormwater Pollution Prevention Plan, Notice of Intent and Notice of Termination) Permit is required due to disturbance of more than one acre of soil

Since proposed improvement is next to CSX right of way and sharing some of its conveyance system, coordination with CSX is required.

5.2 Required Storage for Water Quality Treatment and Water Quantity Attenuation

The original permit for this segment of I-95 was issued by SFWMD in 1988. In subsequent I-95 improvement the permit was modified based on reshaping the I-95 swales to provide additional storage for additional impervious area resulting from the project. None of the previous permits established a pre-development discharge rate. This study will have significant impact to the existing permitted I-95 swales and there is a limited space available within I-95 right of way to create additional storage. Therefore, it is assumed that the project requires treatment for the entire I-95 pavement from the proposed condition of this study. For water quantity there is no defined discharge rate available from the previous permit to compare with the discharge rate from the proposed improvement. Therefore, a net runoff volume is determined from the runoff volume generated between the proposed I-95 section of this study and the original I-95 section before the improvement was made by the permit approved in 1988. Excerpts from the original permit is attached in **Appendix D**.

The analysis determined that additional parcels are needed to meet the stormwater management criteria for the project. The analysis has been summarized in Tables 1, 2 and 3 in **Appendix E**.

5.3 Stormwater Management for Alternatives and Pond Siting

The proposed drainage system is primarily divided into four separate basins following existing drainage basins as identified in the latest I-95 improvement documents (FDOT project FPID 422796-1-52-01 and 422796-2-52-01) as System 4, 5 and 6. However, with the improvement at the interchanges of I-95 and addition of new ramps, the proposed drainage systems will be altered significantly. Each of the proposed basins is subdivided into sub-basins and storage has been calculated accordingly. Proposed drainage systems are based on the preferred stormwater management sites after considering three alternatives and evaluating them with a matrix on the PD&E Study Pond Siting Report. ***Appendix A*** includes the preferred conceptual drainage design for each basin along the corridor within the study limits.

Due to limited availability of open space within right of way, providing required storage pond/swale is not enough capacity. Therefore, exfiltration trenches are used to provide the required deficit storage. Preliminary exfiltration trench length was estimated using average hydraulic conductivity "K" value; 8.67×10^{-5} cfs/ft^2-ft. from preliminary geotechnical report. For more accurate French drainage length calculations during final design, "K" value at French drain location is required. **Appendix E** includes Geotechnical information consisting of "K" value.

The proposed drainage systems are described below:

- **Basin 1**: This drainage basin encompasses I-95 between station limits 172+00 and 247+38 between south of the limits of the Miami Dade/Broward County Line and Hallandale Beach Boulevard. The basin is subdivided into several sub-basins 1AL, 1BL, 1CL, 1DL, 1EL, 1AR, 1BR, 1CR and 1DR. Runoff from I-95 sheet flows into roadside swales and French drains located along both sides of I-95. These roadside swales are identified as S-L1A, S-L1B, S-L1C, S-L1D, S-L2, S-L1E, S-R1A, S-RA1-1, S-R1, S-R2, and S-R4. Dry detention pond S-L3 is in a new parcel. This system consists of dry swales with a bottom elevation of 2.0 feet NAVD 88. Weir control elevation is raised to 4.2 feet NAVD 88 to accommodate the

required treatment and attenuation volume for this basin. The excess stormwater runoff overflows these weirs and discharges into infield ponds at the I-95 and Ives Dairy Road interchange, which ultimately discharges to the C-9/Snake Creek Canal. This basin is located within the SFWMD's C-9 East Basin.

Peak stages in swales and ponds are to be compared for existing and proposed conditions. The stages for proposed conditions need to be lower or similar to stages for existing conditions.

Since there is deficit in provided storage within proposed swale/pond, French drain is proposed to provide additional storage.

- **Basin 2**: This drainage basin encompasses I-95 between station limits 247+38 and 287+92 between Hallandale Beach Boulevard and Pembroke Road. The basin is subdivided into sub-basins 2AL, 2BL, 2CL, 2DL, 2EL, 2FL, 2AR, 2BR, 2CR and 2DR. Runoff from this segment of I-95 sheet flows into the remaining roadside swales and pond located along both sides of I-95 identified as SL-4, S-R5, S-R6, S-R7, S-R7A and SR-8. Pond S-L5 is and swale S-R7 are in two (2) new parcels. These roadside swales will provide water quality treatment and stormwater attenuation using ditch block weirs. This system consists of dry swales with a bottom elevation of 1.5 feet NAVD 88 to provide partial treatment and attenuation for this basin and a weir control elevation raised to 4.0 feet NAVD 88. This basin is located within the SFWMD's C-10 Basin.

  Additional required storage can be achieved using proposed French drain within existing right of way.

- **Basin 3:** This drainage basin encompasses I-95 between station limits 287+92 and 341+98, between Pembroke Road and Hollywood Boulevard. The basin is subdivided into 3AL, 3BL, 3CL, 3DL, 3EL, 3FL, 3AR, 3BR, 3CR, 3DR, and 3ER. Runoff from this segment of I-95 sheet flows into remaining roadside swales and French drains located along both sides of I-95 identified as SR-9, SR-10 & SR-11 at east side and SL-5A-1, SL-5A-2, SL-5B, SL-5C & SL-5D at I-95 west side. Modified roadside swales provide partial water quality treatment and stormwater attenuation using ditch block weirs. This system consists of dry detention swales with a bottom elevation of 1.5 feet NAVD 88 and a weir control elevation raised to 3.5 feet NAVD 88. The rest of the storage for treatment and attenuation will be discharged to Basin 4 and routed to the proposed

stormwater pond within the Sunset Golf Course on the east side of the I-95 corridor and ultimately will be discharged to the SFWMD' C-10 Canal. This basin is located within the SFWMD's C-10 Basin. A pump may be required to overcome hydraulic gradients and ensure proper conveyance to the proposed pond within the Sunset Golf Course.

Additional required storage can be achieved using proposed French drain within existing right of way.

- **Basin 4**: This drainage basin encompasses I-95 between station limits 341+98 and 369+46, between Hollywood Boulevard and Johnson Street. The basin is subdivided into 4A-L, 4B-L, 4C-L & 4D-L on the west side, and 4A-R & 4B-R at east of I-95. Runoff from this segment of I-95 sheet flows into the remaining roadside swales located along both sides of I-95 identified as S-L6, S-R12, S-R13, S-R14 and S-R15. Among those, swale S-R13 is in two (2) new parcels. This system consists of dry swales with a bottom elevation of 1.5 feet NAVD 88 and a weir control elevation raised to 3.5 feet NAVD 88. These modified roadside swales provide water quality treatment and stormwater attenuation using ditch block weirs. The excess stormwater runoff will be discharged to the stormwater pond within the Sunset Golf Course on the east side of the I-95 corridor and ultimately discharged into the C-10 Canal just north of Johnson Street. This basin is located within the SFWMD's C-10 Basin.

  Peak stages in swales are to be compared for existing and proposed conditions. The stages for proposed conditions need to be lower or similar to stages for existing conditions.

  Additional required storage can be achieved using proposed French drain within existing right of way.

  Basin 5: This drainage basin encompasses I-95 between Johnson Street and approximately 800 feet to the North, where the northbound widening is ending. Basically, the I-95 improvements north of Johnson Street are included in the Sheridan interchange project. The basin is subdivided into 5 AL basin on the west side and 5 AR on the east side. Since no improvements in the southbound direction are happening under this project, no analysis has been performed for the Basin 5 AL. The stormwater runoff from the 5 AR basin is being routed to a new proposed retention Pond located in the adjacent Sunset Golf

Course which will provide water quality and attenuation for this basin as well for basins 3 & 4. This basin is located within the SFWMD's C-10 Basin.

Please note that basins are reconfigured for proposed conditions and part of off-site area are part of onsite basins. Therefore, basin areas in proposed conditions are little more than areas in existing conditions.

5.4 Recommended Drainage System

The proposed drainage system is primarily divided into four separate basins following the existing drainage basins as identified in the latest I-95 improvement documents (FDOT project FPID 422796-1-52-01 and 422796-2-52-01) as System 4, 5 and 6. However, with the improvement at the interchanges of I-95 and addition of new ramps, the proposed drainage systems will be altered significantly. Each of the proposed basins are subdivided into sub-basins and storage has been calculated accordingly. ***Appendix A*** includes the conceptual drainage basins along the corridor within the study limits.

The proposed drainage systems are described below:

- **Basin 1**: This drainage basin encompasses I-95 between station limits 172+00 and 247+38 between the limits of the south of Miami Dade/Broward County Line and Hallandale Beach Boulevard. Required stormwater needs are provided in onsite swales, ponds and French drain withing existing right of way. These stormwater facilities are S-L1A, S-L1B, S-L1C, S-L1D, S-L2, S-L1E, S-R1A, S-RA1-1, S-R1, S-R2, and S-R4. Due to constraint of availability of open spaces, preferred alternative, Alternative 1, Swale S-L2 and Pond S-L3 are proposed to meet quality and quantity requirements. Parcels at S-L2 is open area whereas parcels at S-L3 is commercial building.

  There is an opportunity to explore if stormwater needs can be satisfied south of the project, which is in District 6 and within SFWMD C-9 basin.

- **Basin 2**: This drainage basin encompasses I-95 between station limits 247+38 and 287+92 between Hallandale Beach Boulevard and Pembroke Road. Required stormwater needs are provided in onsite SL-4, S-R5, S-R6, S-R7, S-R7A and SR-8. Due to constraint of availability of open spaces, preferred alternative, Alternative 1 consists of Swale S-L5 and Pond S-R7 are proposed

to meet stormwater permitting requirements. Parcels at S-L5 is vacant industrial land whereas parcels at S-R7 is commercial building.

- **Basin 3:** This drainage basin encompasses I-95 between station limits 287+92 and 341+98, between Pembroke Road and Hollywood Boulevard. Due to constraint of open space within existing right of way and surrounding commercial area Alternative 3, Suncoast Golf Course owned by City of Hollywood, is recommended for Alternative 3. Suncoast Golf Course is used for stormwater needs for Basin 3. This alternative requires pump station to overcome hydraulic gradient.

- **Basin 4**: This drainage basin encompasses I-95 between station limits 341+98 and 369+46, between Hollywood Boulevard and Johnson Street. Runoff from this segment of I-95 sheet flows into the remaining roadside swales located along both sides of I-95 identified as S-L6, S-R12, S-R13, S-R14 and S-R15. Alternative 2 consisting of SR-14 is preferred alternative. It consists of two parcels which are vacant residential land.

- **Basin 5:** This drainage basin encompasses I-95 between Johnson Street and approximately 800 feet to the North, where the northbound widening is ending. Required stormwater needs are provided in swale S-R16 and pond S-R17, Suncoast Golf Course which is owned by City of Hollywood.

Side Street/Arterial Street Drainage: There are three arterial streets within the project limits of I-95 corridor; Hallandale Beach Boulevard, Pembroke Road and Hollywood Boulevard. Each of those side streets, beyond the interchanges, has its own drainage system. The exfiltration trenches will be provided to accommodate the improvements.

Essentially, the drainage improvements alternatives proposed include the expansion of some of the existing linear dry detention ponds (swales), new dry detention ponds (swales) mainly adjacent to I-95 and additional privately own parcels and wet detention ponds at the Golf Courses. The Sunset Golf Course and Orangebrook Golf Course are viable alternatives for pond locations. However, the Orangebrook Golf Course is designated as a Section 4(f). Therefore, the project will need to go through the Section 4(f) process to acquire the needed parcel areas. It is recommended that the Sunset Golf Course Alternative be selected to address any stormwater needs outside the right of way.

6.0 FLOODPLAIN COMPENSATION

The project corridor lies within Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) panel numbers 12011C0568H and 12011C731H in Broward County (see ***Appendix H***). The project is predominantly located within the 100-year floodplain, within flood zones AE, AH, and X. Zone AE designates flood hazard areas inundated by 100-year flood; Zone AH designates shallow flooding areas where average depths are between 1 and 3 feet for the 100-year flood; and Zone X designates flood hazard areas outside the 100-year flood zone but within the 500-year flood zone.

In accordance with Executive Order 11988 "Floodplain Management", USDOT Order 5650.2, "Floodplain Management Protection", and Federal-Aid Policy Guide 23 CFR 650A, floodplains must be protected. The intent of these regulations is to avoid or minimize highway encroachments within the base floodplains, and to avoid supporting land use development incompatible with floodplain values.

Preliminary flood encroachment is estimated using existing roadway cross-sections of FPID 422796-1-52-01. **Table 6.1** shows estimated required floodplain compensation.

Table 6.1- Summary of Floodplain Encroachment/Compensation

SFWMD BASIN	BASIN	FLOODPLAIN ENCROACHMENT (AC-FT)	PROVIDEE FLOODPLAIN COMPENSATION (AC-FT)
C-9	BASIN 1	5.90	
C-10	BASIN 2	4.34	
	BASIN 3	9.47	
	BASIN 4	1.08	22.18
		20.80	22.18

Floodplain encroachment for Basin 1 has been addressed through proposed regraded swales and ponds. For Basins 2, 3, 4, and 5, mitigation measures have been incorporated at the Sunset Golf Course. Any remaining floodplain deficit in Basin 1 can be resolved through coordination with the District 6 project located south of the site.

Detailed analysis of floodplain encroachment and corresponding compensation measures will be conducted during the later design phase, incorporating finalized roadway cross-sections.

7.0 CONCLUSIONS

After the initial screening of all the roadway alternatives for stormwater management, it was determined that Alternative 2 is the most viable option for roadway improvement and stormwater management. The project was subdivided into five basins and the optimal stormwater management solution was determined for each basin.

Several new parcels have been identified as a potential site for stormwater management based on location, right of way costs, land use, drainage considerations, FEMA flood zone, contamination, utilities, wellfield location, aesthetics, construction, and maintenance. These parcels are necessary to meet both FDOT and SFWMD criteria for stormwater management.

In conclusion, the total project permit area of 176.76 ac requires a storage volume of 42.73 ac-ft to provide the required water quality and attenuation volume, which satisfies SFWMD regulatory criteria. 25.05 ac-ft of the required storage will be provided within swale/pond within FDOT right of way, 10.05 ac-ft storage will be provided within acquisition parcels, and 0.92 Acre-feet will be provided in proposed exfiltration trench. The rest 9.62 ac-ft will be directed to the Sunset Golf Course Pond, see ***Tables 7.1 and 7.2***. ***Appendix E*** documents the drainage calculations and ***Appendix F*** the Pond Siting Evaluation Matrix.

Based on the Pond Siting Matrix Analysis, the Orangebrook Golf Course and the Sunset Golf Course are viable alternatives for pond sites. However, the Orangebrook Golf Course is designated as a Section 4(f) property, which requires Section 4(f) approval. Therefore, it is recommended that the Sunset Golf Course Alternative is selected to address any stormwater needs outside the right of way. The Sunset Golf Course is identified as high-risk contamination site in CSER Report. The site requires to install pond lining to provide attenuation and flood compensation. The site can not be used for treatment purpose. The excess soil produced from potential pond excavation at Sunset Golf Course may be contaminated and should be handled and or disposed as such.

Table 7.1 - Summary of Required/Provided Storage Volume

SFWMD BASIN	BASIN	TOTAL AREA (AC)	IMP. AREA (AC)	WATER QUALITY (AC-FT)	WATER QUANTITY (AC-FT)	REQUIRED VOLUME (AC-FT)	PROVIDED STORAGE VOLUME (AC-FT)				SURPLUS /DEFICIT VOLUME (AC-FT)
							POND/SWALE WITHIN R/W	POND/SWALE OUTSIDE R/W	FRENCH DRAIN	TOTAL	
C-9	BASIN 1	58.68	49.46	14.19	8.60	14.19	8.16	5.91	0.92	14.99	0.80
C-10	BASIN 2	34.94	29.16	8.02	3.94	8.02	6.05	3.34	0.00	9.39	1.37
	BASIN 3	49.87	42.36	14.69	11.20	14.69	4.40	0.80	0.00	5.20	-9.49
	BASIN 4	26.91	20.11	4.86	2.56	4.86	6.10	0.00	0.00	6.10	1.25
	BASIN 5	6.36	4.66	0.97	0.07	0.97	0.34	9.62	0.00	9.97	9.00
	TOTAL	176.76	145.75			42.73				45.66	2.93

"+" for surplus
"-" for deficit

Table 7.2 - Summary of Control Structures Elevation

SFWMD BASIN	BASIN	CONTROL STRUCTURE EL (FT-NAVD88)	
		EXISTING	PROPOSED
C-9	Basin 1	3.5	4.2
C-10	Basin 2	4	4
	Basin 3, 4 & 5	2.5	3.5

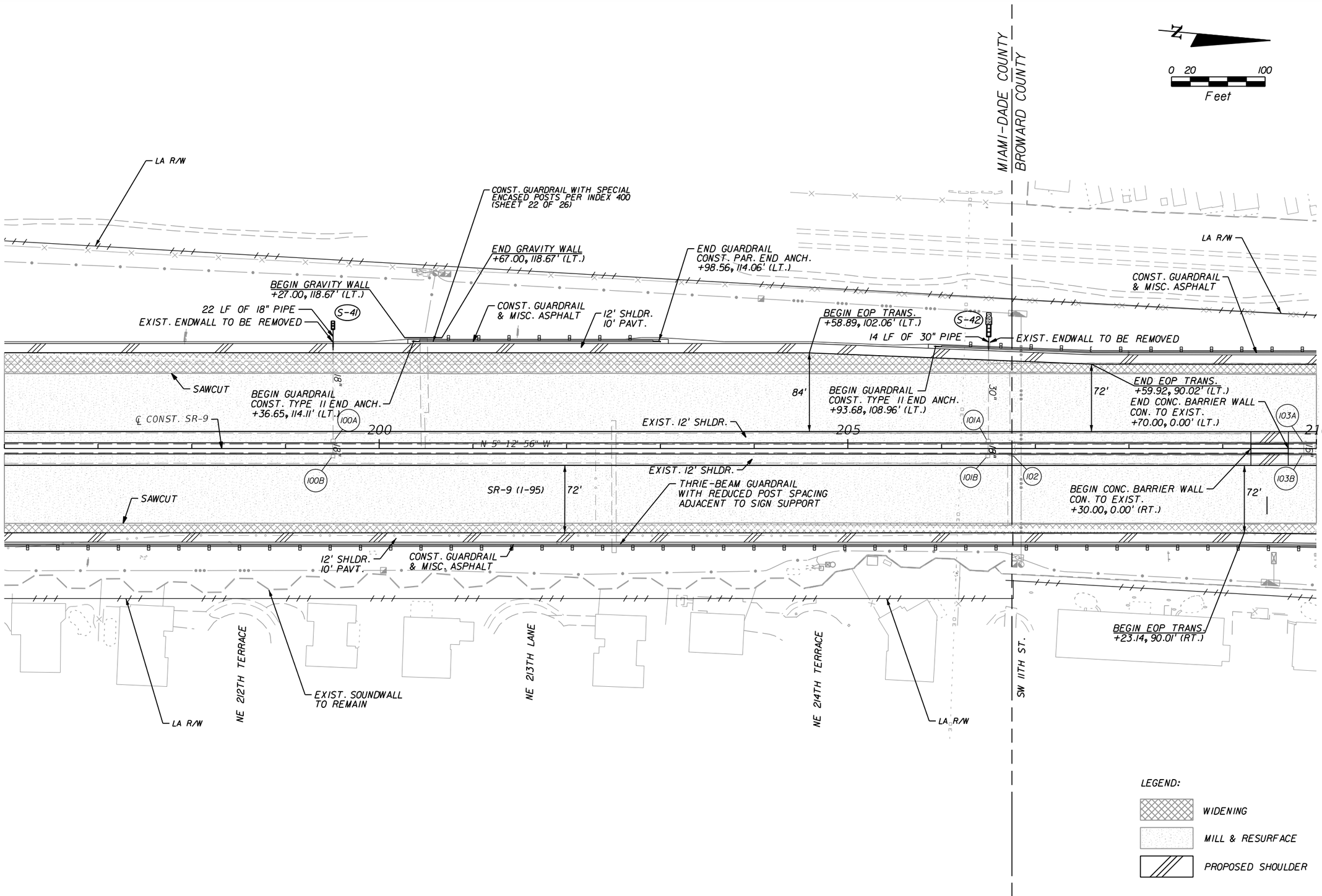
8.0 REFERENCES

- FDOT Drainage Manual, dated January 2020
- FDOT Project Development and Environmental Manual, July 2020
- FDOT Drainage Design Guide, January 2020
- FDOT Optional Pipe Materials-Chapter 8 of the Drainage Design Guide
- FDOT Standard Plans, 2020-21
- FDOT District IV Drainage Practices & Guidance
- SFWMD Environmental Resource Permit Information Manual, 2014
- ERP No. 88-00053-S, I-95 Managed Lanes
- ERP No. 06-01465-S I-95 Phase 3C
- ERP No. 06-02942-P Pump Station
- ERP 06-01955-S Orange Brook Golf Course

APPENDIX A

CONCEPTUAL DRAINAGE MAPS

AS-BUILT ROADWAY SHEETS



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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

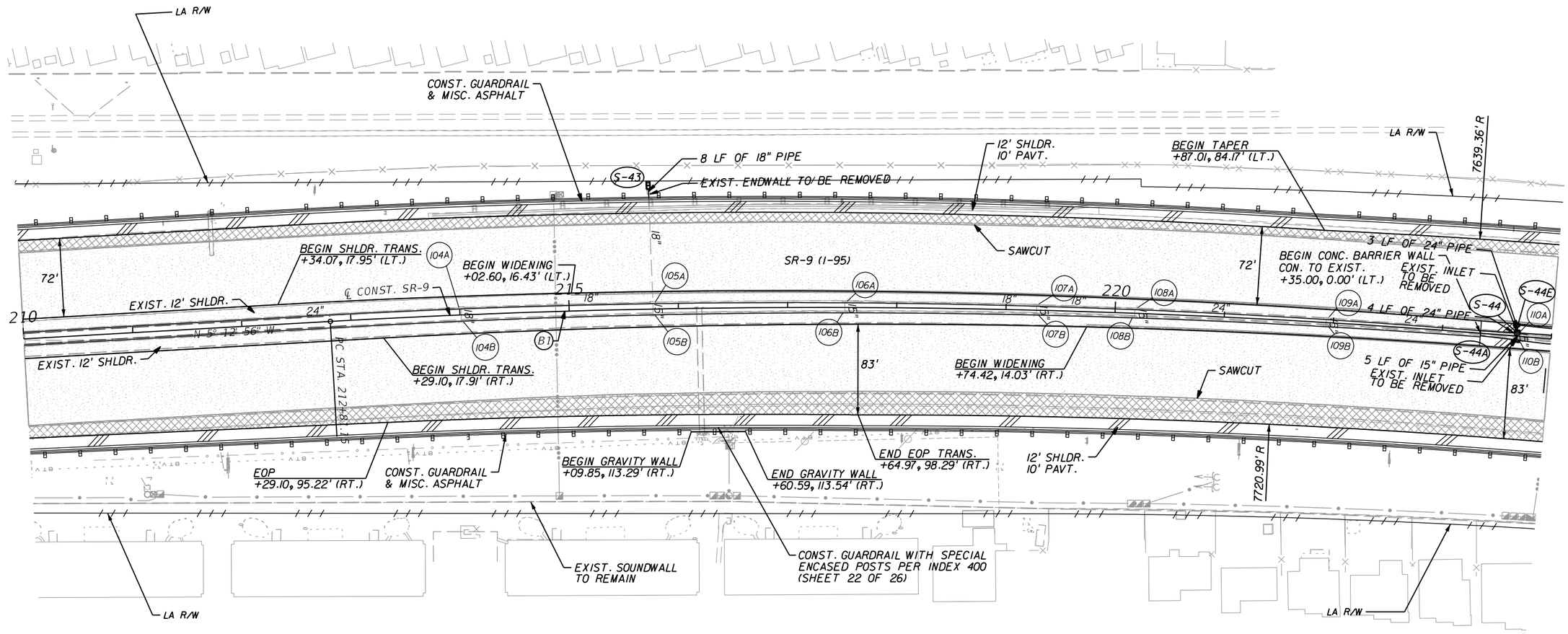
C. BRIAN FULLER, P.E. # 49524
METRIC ENGINEERING, INC.
615 CRESCENT EXECUTIVE CT
SUITE 524
LAKE MARY, FLORIDA 32746
TEL. (407) 644-1898
FAX. (407) 644-1921
● ENGINEERS
● PLANNERS
● SURVEYORS CERTIFICATE OF AUTHORIZATION 2294

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 41



LEGEND:

- WIDENING
- MILL & RESURFACE
- PROPOSED SHOULDER

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

C. BRIAN FULLER, P.E. # 49524
METRIC ENGINEERING, INC.
615 CRESCENT EXECUTIVE CT
SUITE 524
LAKE MARY, FLORIDA 32746
TEL. (407) 644-1898
FAX. (407) 644-1921
CERTIFICATE OF AUTHORIZATION 2294

● ENGINEERS
● PLANNERS
● SURVEYORS

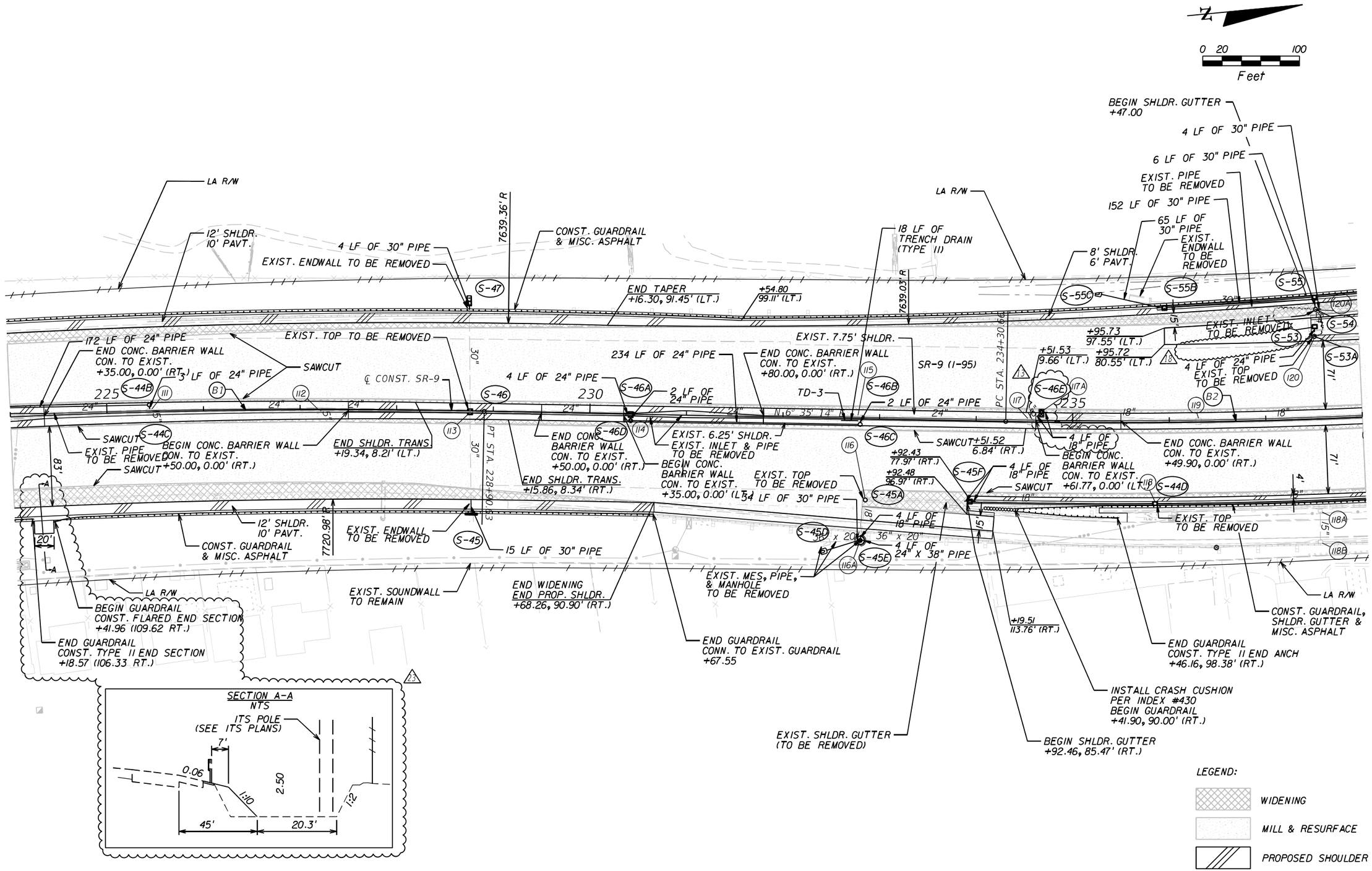
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 42

anthony.smith 5/3/2013 12:13:26 PM F:\PROJECT\42279615201_Broward_Express\electronic delivery\42279615201\roadway\PL



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
1/13/14	13 ADDED S-46E		
8/21/14	16 REVISED PIPE BETWEEN S-53 AND S-54 DUE TO AS-BUILT ELEVATIONS		
12/18/15	23 ITS ACCESS AS-BUILT		

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METRIC ENGINEERING, INC.
615 CRESCENT EXECUTIVE CT
SUITE 524
LAKE MARY, FLORIDA 32746
TEL. (407) 644-1898
FAX. (407) 644-1921
CERTIFICATE OF AUTHORIZATION 2294
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 43

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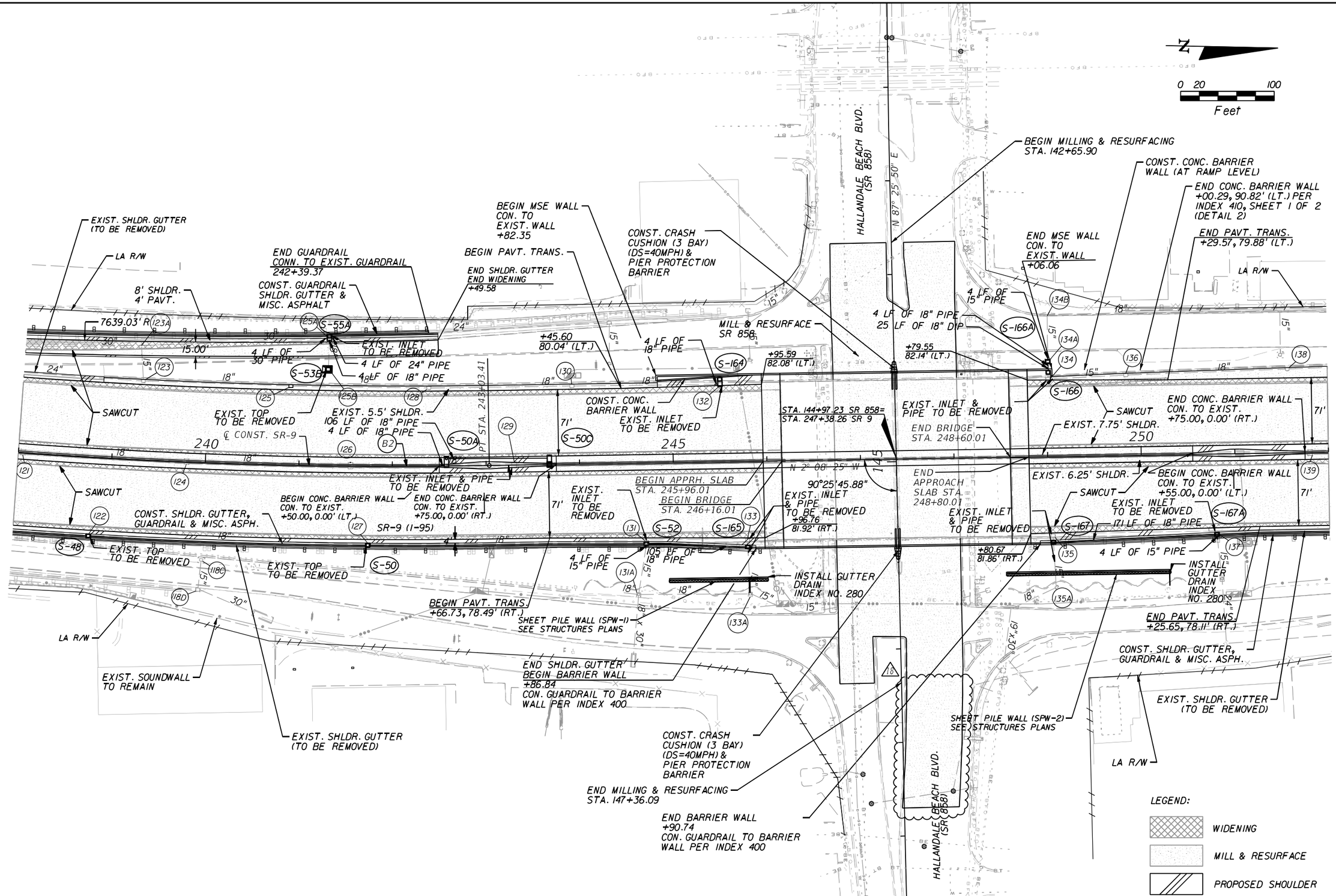

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
5/5/14	18 CHANGED MILLING AND RESURFACING LIMITS AT HALLANDALE BEACH BLVD.		

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● SURVEYORS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 44

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N

0 20 100
Feet

LA R/W
BEGIN CONC. BARRIER WALL
CON. TO EXIST.
+55.00, 0.00' (LT.)
EXIST. 18' SHLDR.
+22.29
128.36' (LT.)
6' SHLDR.
4' PAVT.
4584.00' R
BEGIN GUARDRAIL
CONST. TYPE II END ANCH.
+55.13, 123.54' (LT.)
CONST. GUARDRAIL
& MISC. ASPHALT
LA R/W
+08.24
122.84' (LT.)
BEGIN SHLDR. TRANS.
+33.55, 120.61' (LT.)
EXIST. C.C.
TO REMAIN
+82.48
99.15' (LT.)
+82.48
80.15' (LT.)
SAWCUT
BEGIN PAVT. CROWN SHIFT
+50.00, 22.89' (LT.)
BEGIN CROSS SLOPE
TRANS. (LANE L2 ONLY)
STA. 255+45.00
END CROSS SLOPE
TRANS. (LANE L2 ONLY)
STA. 256+95.00
SR-9 (I-95)
EXIST. INLET & PIPE
TO BE REMOVED
91 LF OF 18" PIPE
4 LF OF 18" PIPE
EXIST. 7.75' SHLDR.
EXIST. 7.75' SHLDR.
255
260
265
N 2° 08' 25" W
℄ CONST. SR-9
SAWCUT
EXIST. INLET TO BE REMOVED
SAWCUT
8' SHLDR.
4' PAVT.
EXIST. 6.25' SHLDR.
EXIST. TOP
TO BE REMOVED
EXIST. TOP
TO BE REMOVED
END CONC.
BARRIER WALL
CON. TO EXIST.
+50.00, 0.00' (RT.)
BEGIN CONC.
BARRIER WALL
CON. TO EXIST.
+50.00, 0.00' (LT.)
4 LF OF 18" PIPE
END CONC. BARRIER WALL
CON. TO EXIST.
+60.00, 0.00' (RT.)
EXIST. 6.25' SHLDR.
SAWCUT
71'
83'
S-167B
S-167C
S-167D
S-167F
S-167E
+53.16
78.11' (RT.)
2864.79' R
4 LF OF
15" PIPE
4 LF OF
15" PIPE
EXIST. INLET
TO BE REMOVED
EXIST. INLET
TO BE REMOVED
4 LF OF 18" PIPE
EXIST. 2' SHLDR.
15'
4 LF OF
18" PIPE
19" x 30"
SPILLWAYS
SPILLWAYS
+66.96
145.78' (RT.)
EXIST. 6' SHLDR.
END GUARDRAIL
CONST. TYPE II END ANCH.
+68.24, 86.11' (RT.)
+37.23
112.21' (RT.)
+53.16
95.11' (RT.)
BEGIN WIDENING
BEGIN PROP. SHLDR.
+47.76, 100.66' (RT.)
BEGIN GUARDRAIL
CON. TO EXIST. GUARDRAIL
BEGIN SHLDR. TRANSITION
+39.15, 100.6' (RT.)
END SHLDR. TRANS.
+90.33
90.36' (RT.)
12' SHLDR.
10' PAVT.
+93.00
114.85' (RT.)
+54.93
104.84' (RT.)
CONST. GUARDRAIL
& MISC. ASPHALT
LA R/W
LA R/W
CONST. SHLDR. GUTTER,
GUARDRAIL & MISC. ASPH.
EXIST. SHLDR. GUTTER
(TO BE REMOVED)
END PROP. SHLDR.
END SHLDR. GUTTER
+53.16
EXIST. SHLDR. GUTTER
(TO BE REMOVED)
END GUARDRAIL
CONST. TYPE II END ANCH.
+04.67, 102.35' (RT.)
BEGIN GUARDRAIL
CONST. TYPE II END ANCH.
+04.67, 112.35' (RT.)

LEGEND:
WIDENING
MILL & RESURFACE
PROPOSED SHOULDER

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
10/9/13	6 ADDED S-59A		
3/5/14	16 UPDATED CROSS SLOPE TRANSITION		

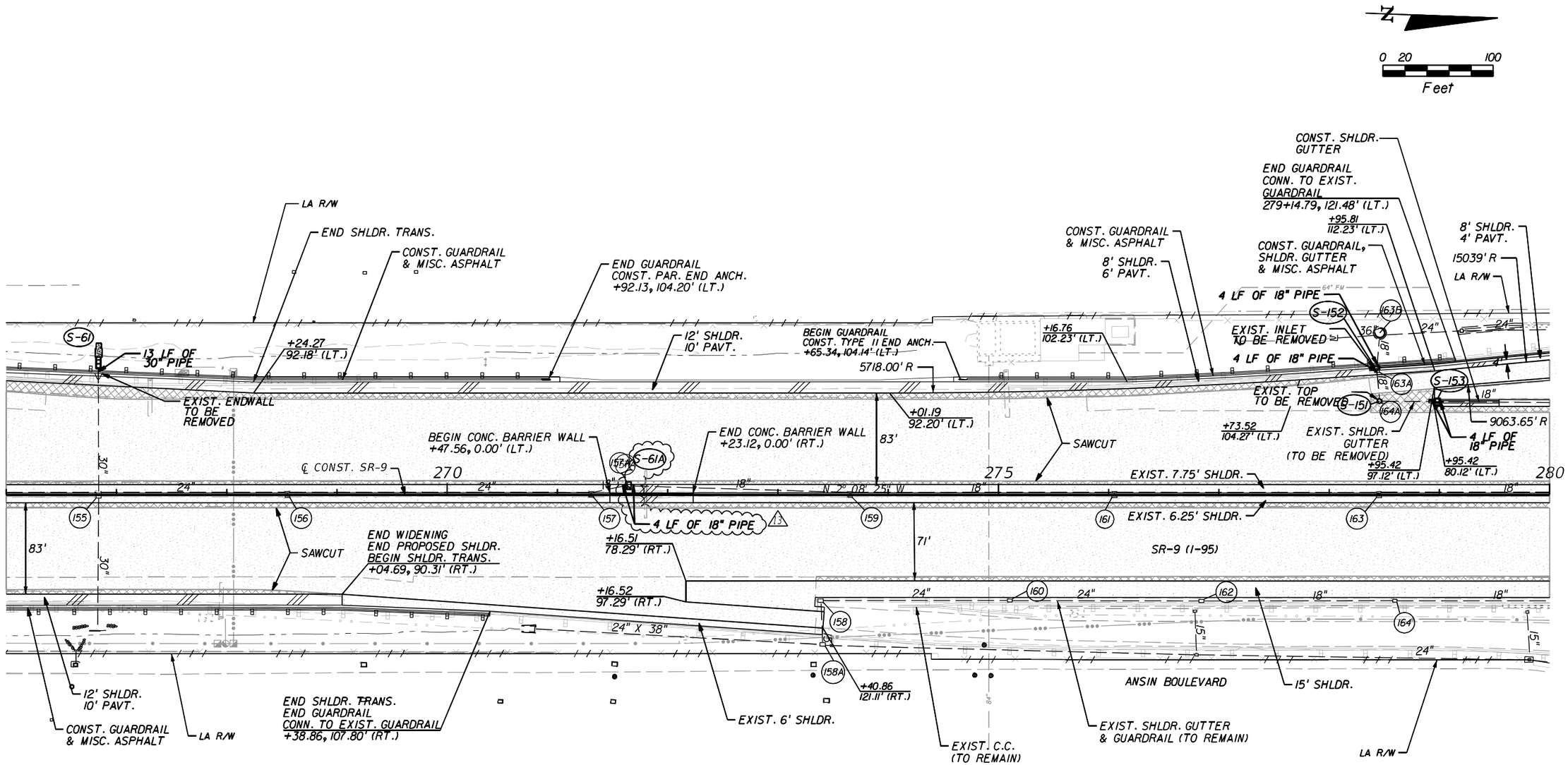
C. BRIAN FULLER, P.E. # 49524
METRIC ENGINEERING, INC.
615 CRESCENT EXECUTIVE CT
SUITE 524
LAKE MARY, FLORIDA 32746
TEL. (407) 644-1898
FAX. (407) 644-1921
CERTIFICATE OF AUTHORIZATION 2294
● ENGINEERS ● PLANNERS ● SURVEYORS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 45



LEGEND:

- WIDENING
- MILL & RESURFACE
- PROPOSED SHOULDER

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
1/13/14	13 ADDED S-61A		

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SUITE 524
LAKE MARY, FLORIDA 32746
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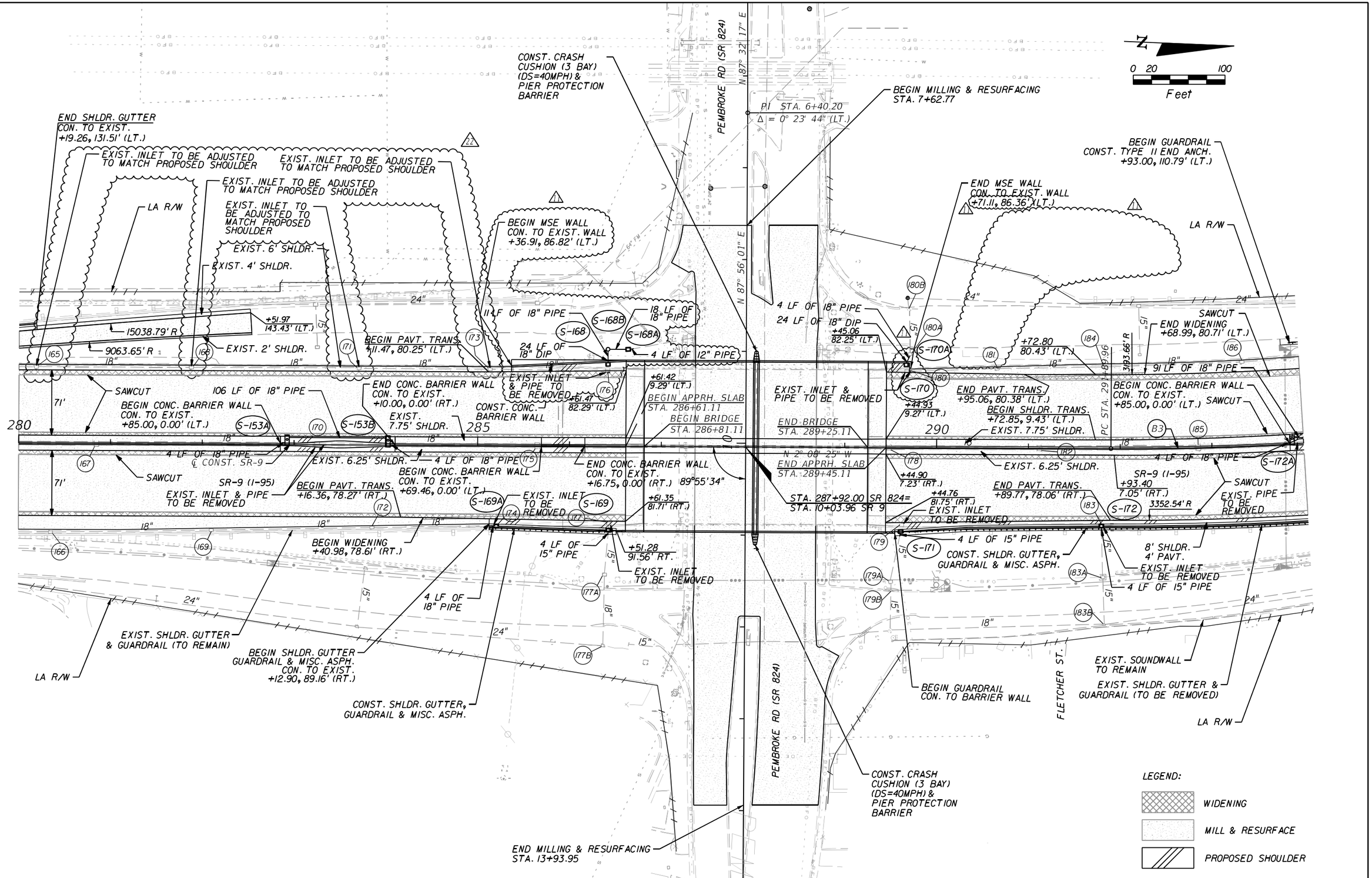
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 46



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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
12/13/13	1 ADDED S-168A & S-168B; S-170 ADJUSTED; ADJUST MSE WALLS 7; REVISE MSE WALL 8 CALL OUT; EXTRA CALL OUTS REMOVED		
8/31/15	22 ADDED CALL OUTS FOR EXIST. INLETS TO BE ADJUSTED.		

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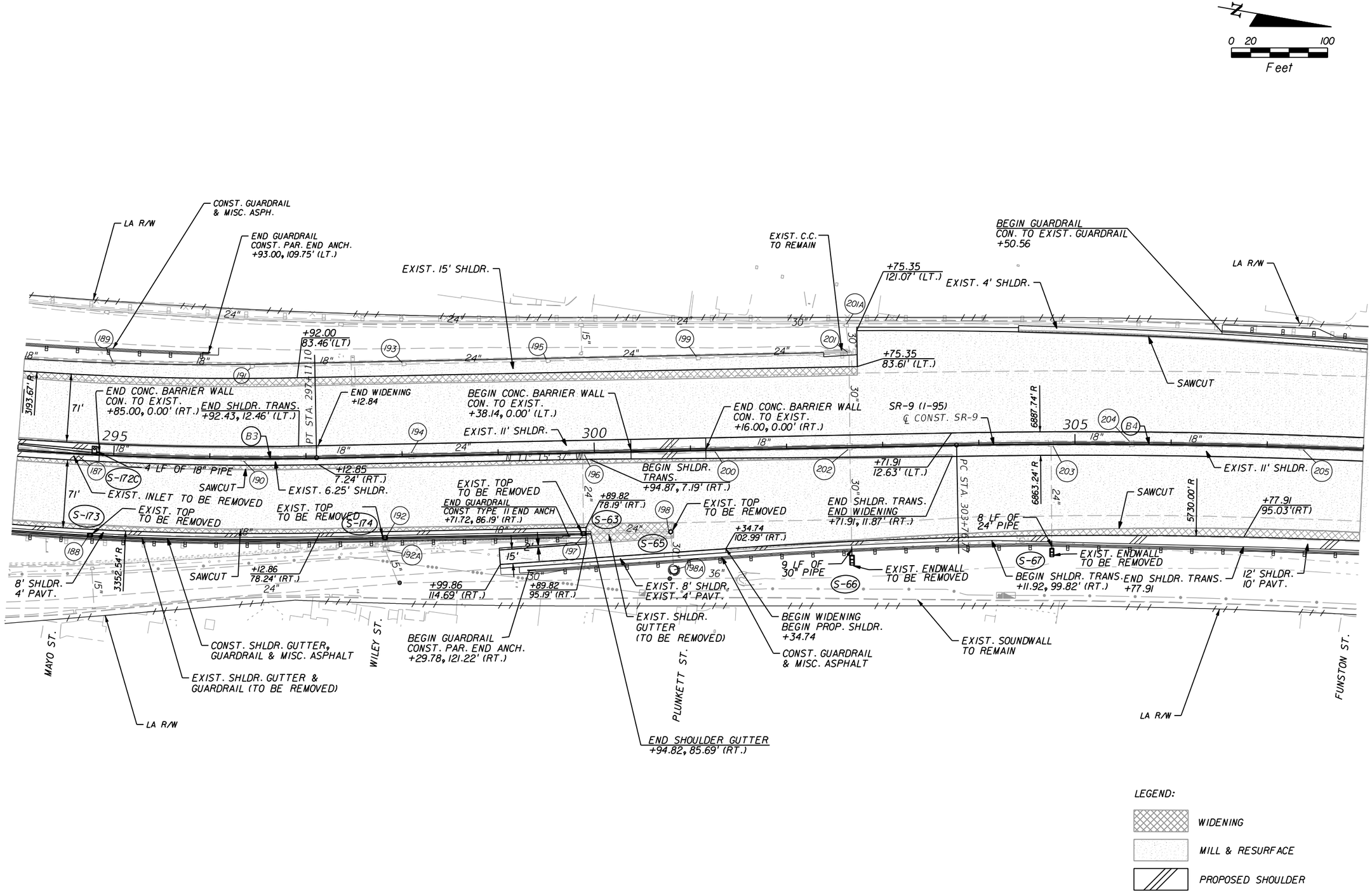
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 47

bgillette 11/12/2015 6:11:00 PM F:\PROJECT\42279615201\roadway\PLANRD21.dgn



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 48

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N

0 20 100
Feet

EXIST. 4' SHLDR.
BEGIN PROP. SHLDR.
+00.65, 101.35' (LT.)
+44.23
95.27' (LT.)
LA R/W
CONST. GUARDRAIL
& MISC. ASPHALT
END CONC. BARRIER WALL
CON. TO EXIST.
+23.32, 0.00' (RT.)
LA R/W
12' SHLDR.
10' PAVT.
S-69
4 LF OF 24" PIPE
EXIST. ENDWALL TO BE REMOVED
SAWCUT
BEGIN CONC. BARRIER WALL
CON. TO EXIST.
+35.06, 0.00' (LT.)
83'
END CONC. BARRIER WALL
CON. TO EXIST.
+50.00, 0.00' (RT.)
167 LF OF 18" PIPE
6887.74' R
S-67B
4 LF OF
18" PIPE
B4
208
℄ CONST. SR-9
315
EXIST. 11' SHLDR.
210
4 LF OF
18" PIPE
S-67A
310
18"
18"
18"
18"
18"
320
+04.41
11.70' (LT.)
24"
S-67C
206
207
S-67D
EXIST. PIPE TO BE REMOVED
209
EXIST. 11' SHLDR.
211
212
213
N 3° 14' 00" E
PT STA. 321+16.00
BEGIN CONC. BARRIER WALL
CON. TO EXIST.
+50.00. 0.00' (LT.)
6863.24' R
30"
REDUCED 3'-1 1/2" POST SPACING
ADJACENT TO SIGN SUPPORT
SR-9 (I-95)
83'
SAWCUT
+04.40
12.80' (RT.)
+28.43
95.82' (RT.)
S-68
8 LF OF 30" PIPE
EXIST. ENDWALL TO BE REMOVED
12' SHLDR.
10' PAVT.
EXIST. ENDWALL TO BE REMOVED
17 LF OF 24" PIPE
S-70
CONST GUARDRAIL
& MISC. ASPHALT
DEWEY ST.
EXIST. SOUNDWALL
TO REMAIN
WASHINGTON ST.
ADAMS ST.
BEGIN SHLDR. TRANS.
+28.43
LA R/W
LA R/W

LEGEND:

WIDENING

MILL & RESURFACE

PROPOSED SHOULDER

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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615 CRESCENT EXECUTIVE CT
SUITE 524
LAKE MARY, FLORIDA 32746
TEL. (407) 644-1898
FAX. (407) 644-1921
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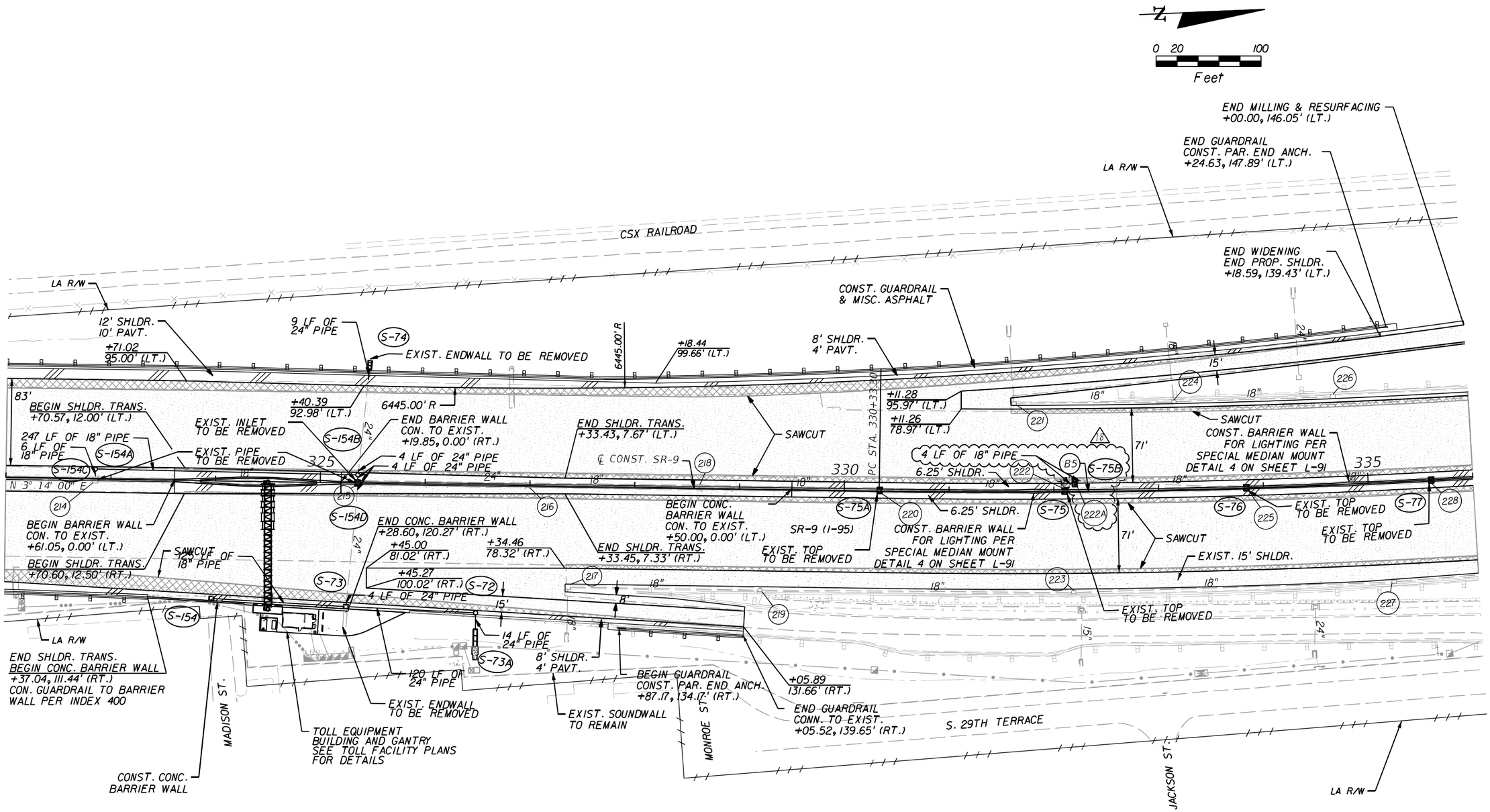
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 49



NOTE: NO RUMBLE STRIPS WITHIN TOLL PLAZA SHLDR. PAVT. LIMITS

LEGEND:

- WIDENING
- MILL & RESURFACE
- PROPOSED SHOULDER

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
5/5/14	18 ADDED S-75B		

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SUITE 524
LAKE MARY, FLORIDA 32746
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 50

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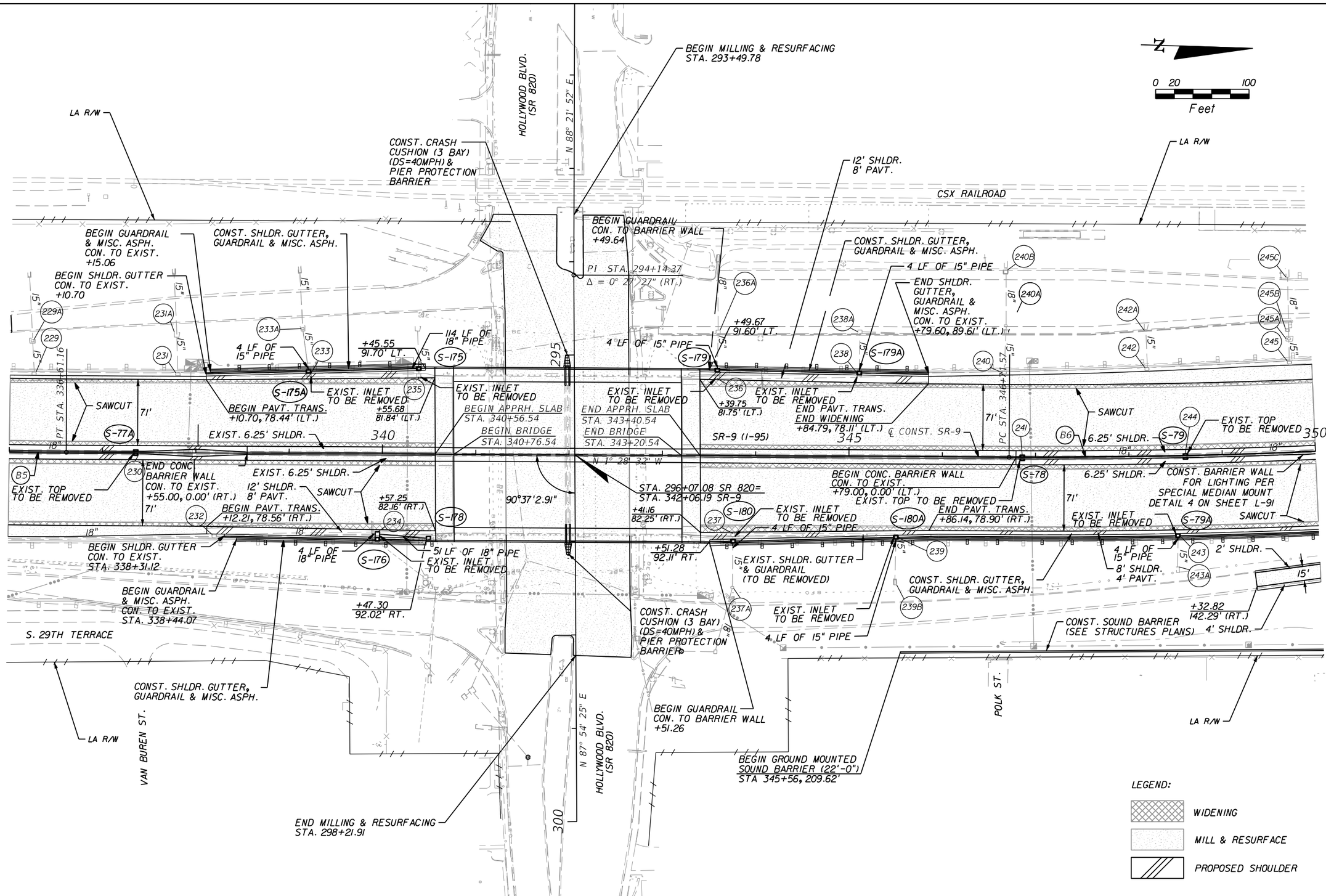

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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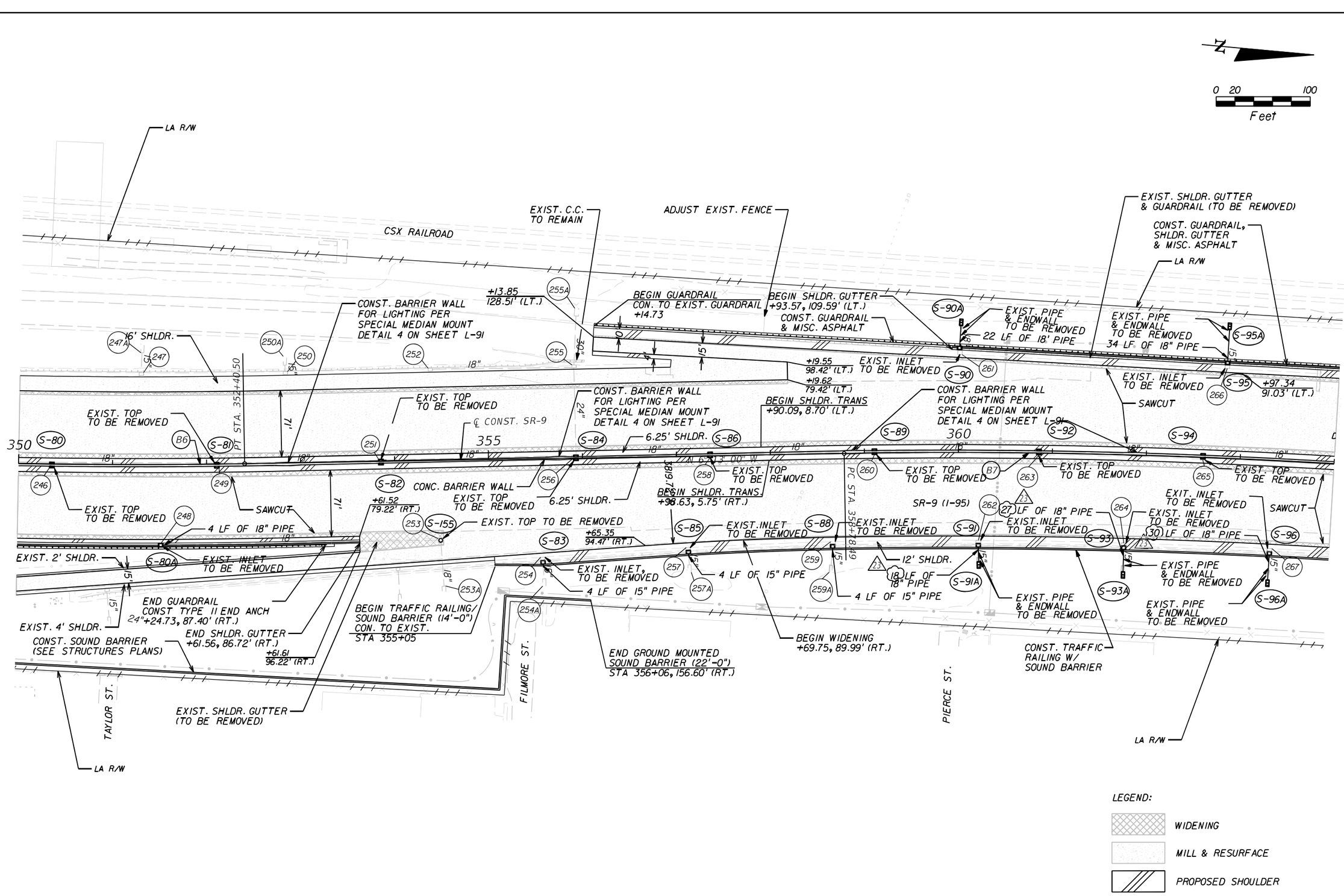
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 51



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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
9/8/16	23 AS-BUILT		

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STATE OF FLORIDA
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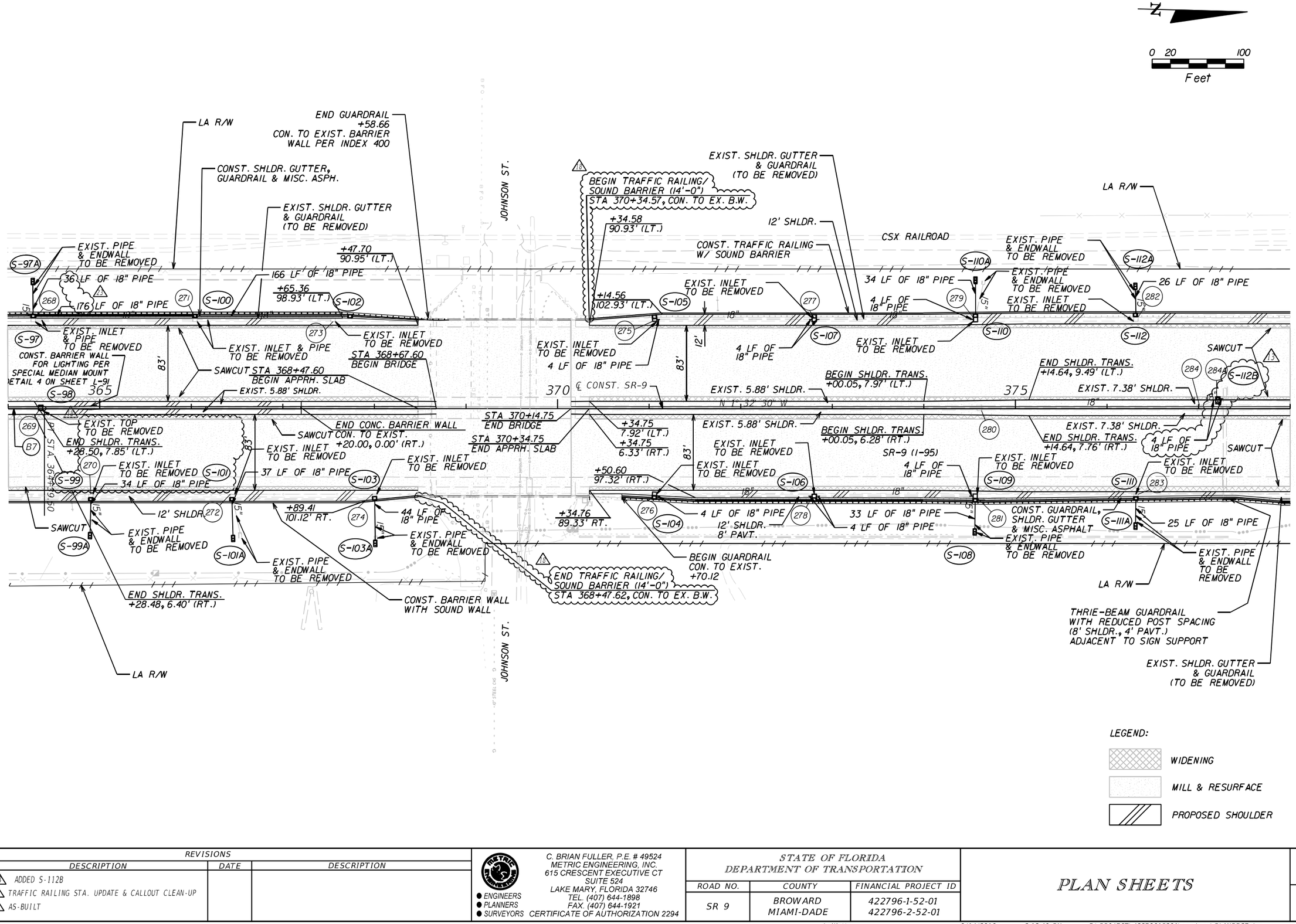
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 52



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
1/13/14	13 ADDED S-112B		
8/25/14	18 TRAFFIC RAILING STA. UPDATE & CALLOUT CLEAN-UP		
9/8/16	23 AS-BUILT		

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LAKE MARY, FLORIDA 32746
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 53

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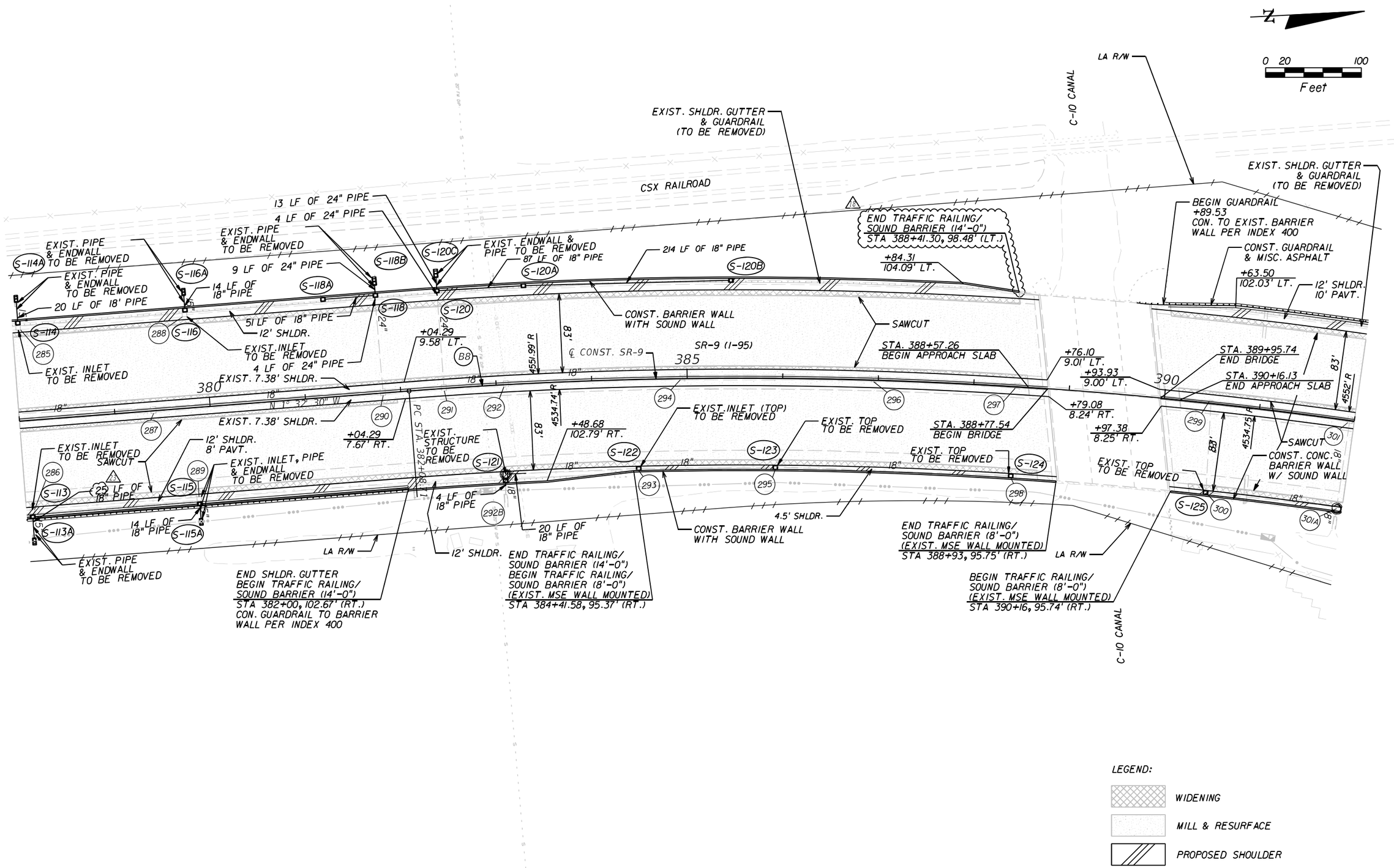

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
08/25/14	1 TRAFFIC RAILING STA. UPDATE		
09/08/16	2 AS-BUILT		

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SUITE 524
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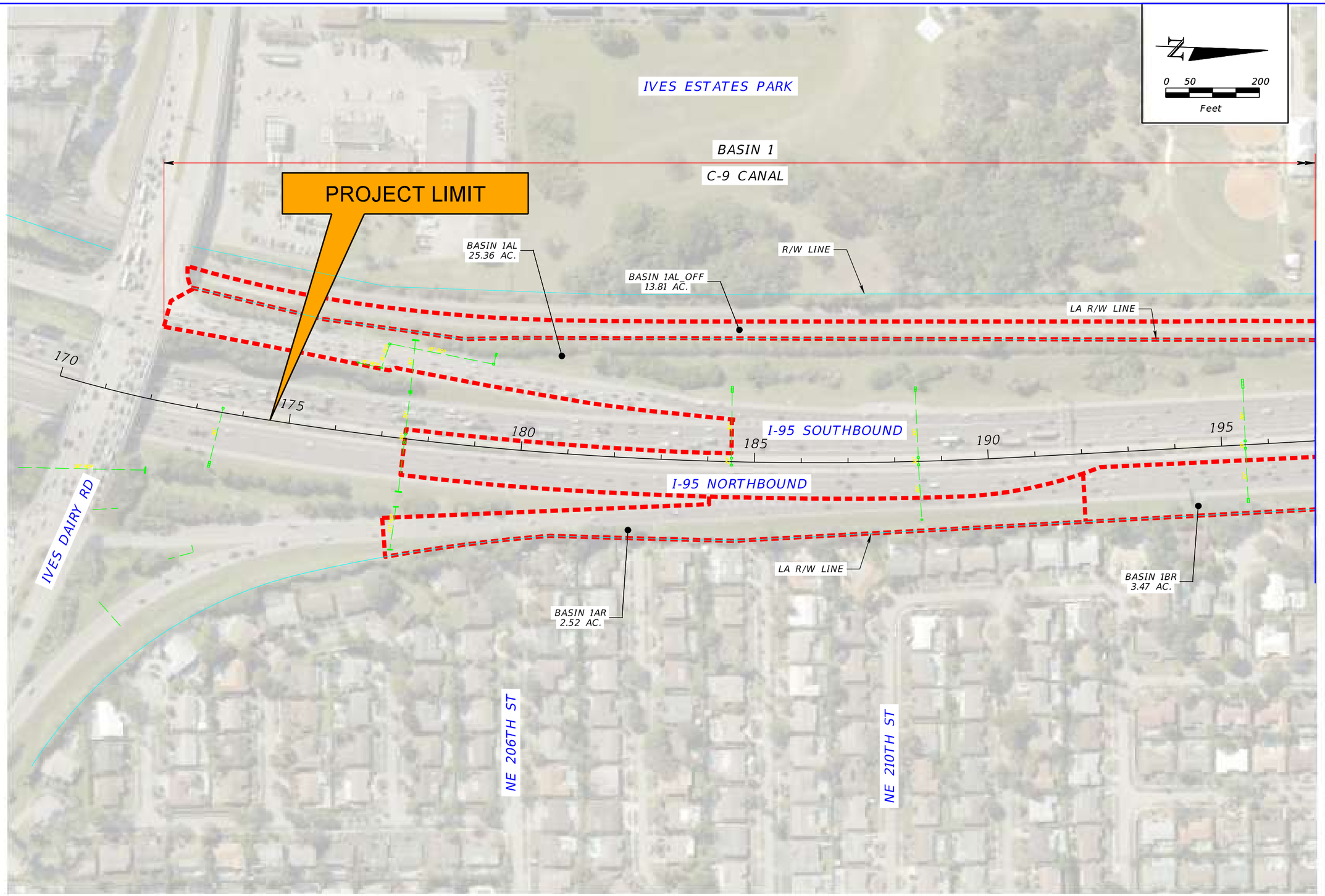
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

PLAN SHEETS

SHEET NO. 54

EXISTING DRAINAGE MAPS



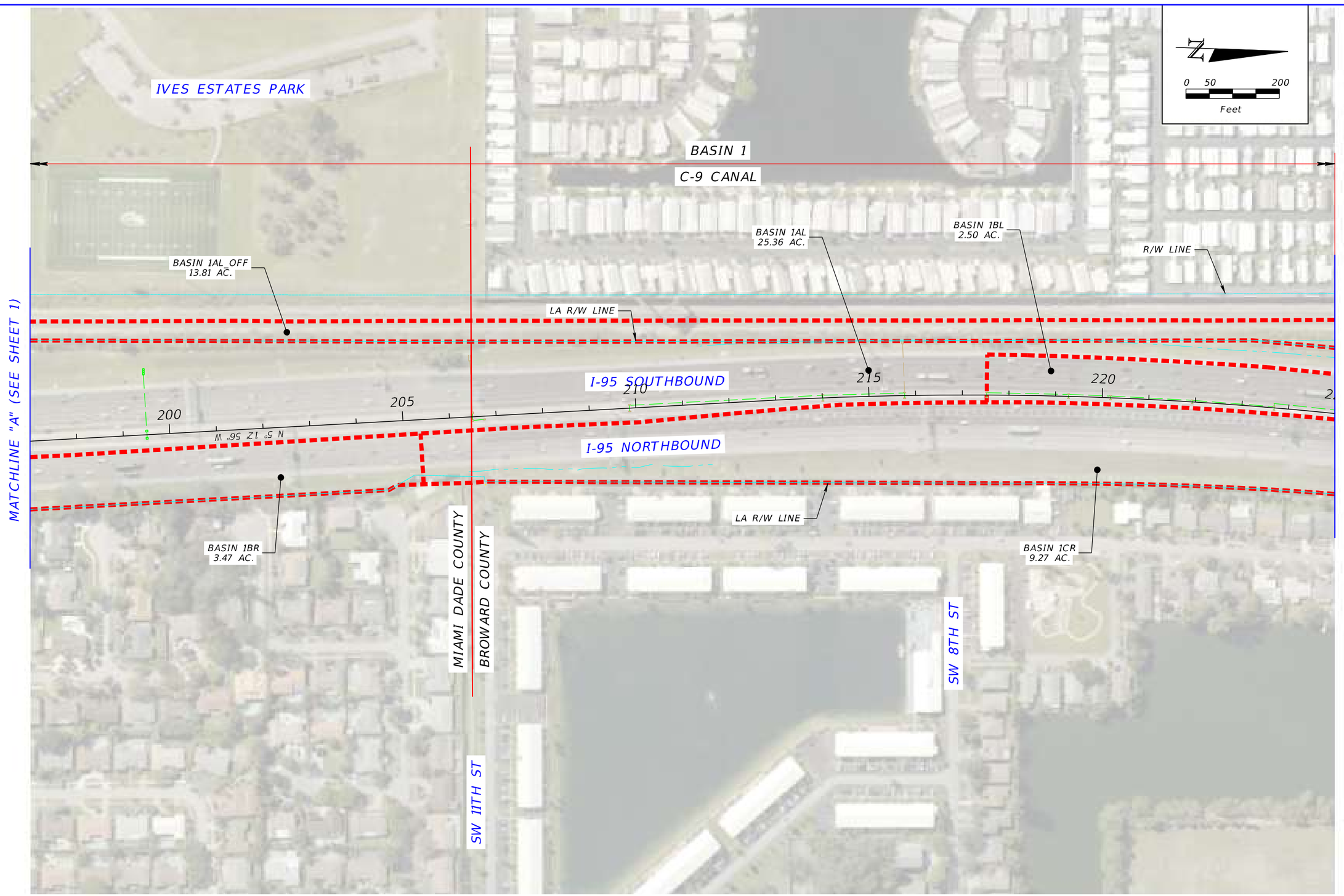
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

PRE-DEVELOPMENT DRAINAGE MAP

SHEET NO. 1



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

PRE-DEVELOPMENT DRAINAGE MAP

SHEET NO. 2

MATCHLINE "B" (SEE SHEET 2)

MATCHLINE "C" (SEE SHEET 4)

BASIN 1

C-9 CANAL

HALLANDALE BEACH BLVD

0 50 200

Feet

BASIN 1BL
2.50 AC.

BASIN 1AL
25.36 AC.

R/W LINE

BASIN 1AL-OFF
13.81 AC.

BASIN 1CL
2.12 AC.

BASIN 2AL
2.40 AC.

BASIN 2BL
2.46 AC.

POT1 STA. 141+41.39

Sta 141+42.85 BK =
Sta 141+41.39 AH
EQUATION:

LA R/W LINE

I-95 SOUTHBOUND

I-95 NORTHBOUND

PC STA. 234+30.66

PT STA. 245+03.41

PT STA. 228+90.63

N 6° 35 14 E

CD-1

BASIN 1CR
9.27 AC.

LA R/W LINE

BASIN 1DL
2.37 AC.

BASIN 1EL
2.92 AC.

BASIN 1DR
5.21 AC.

BASIN 2CL
2.47 AC.

BASIN 2BR
2.01 AC.

SW 3TH ST

WINN-DIXIE

HALLANDALE BEACH BLVD

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

PRE-DEVELOPMENT DRAINAGE MAP

SHEET NO. 3

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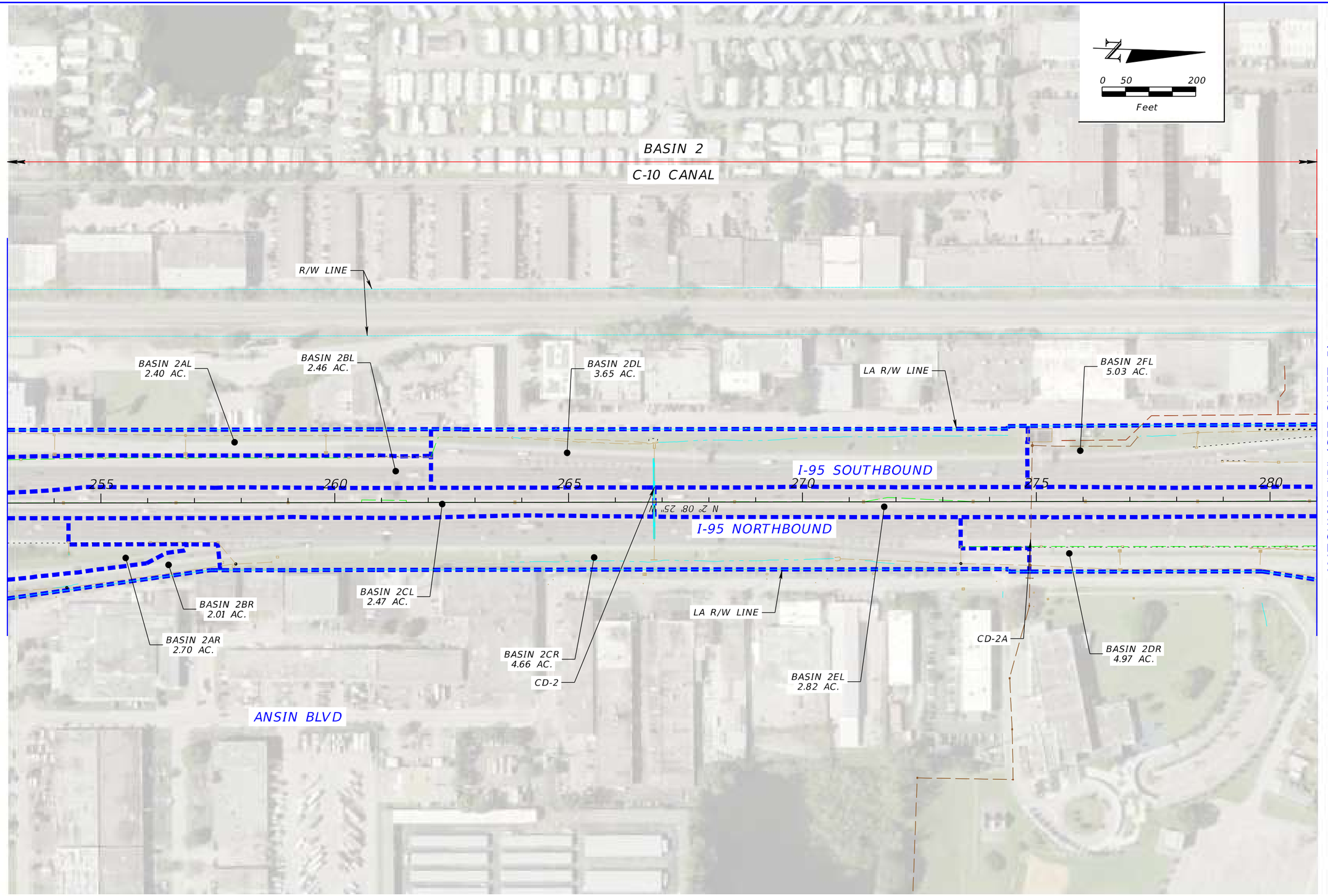


REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PRE-DEVELOPMENT DRAINAGE MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				SR 9	BROWARD	436903-1-22-02		4

ORANGEBROOK GOLF COURSE

N

0 50 200

Feet

BASIN 2

C-10 CANAL

BASIN 3

C-10 CANAL

W PEMBROKE RD

BASIN 2FL
5.03 AC.

BASIN 3BL
1.86 AC.

R/W LINE

P1 STA. 273+31.37

BASIN 2EL
2.82 AC.

BASIN 3AL
5.48 AC.

LA R/W LINE

BASIN 3AR
2.19 AC.

PC STA. 291+89.96

PT STA. 297+11.10

PC STA. 303+76.77

I-95 SOUTHBOUND

I-95 NORTHBOUND

N 11° 15' 37" W

CD-3

BASIN 3DR
8.35 AC.

BASIN 3CR
0.31 AC.

LA R/W LINE

BASIN 3BR
3.07 AC.

BASIN 2DR
4.97 AC.

SW 29TH AVE

PLUNKETT ST

PEMBROKE RD

270 275 280 285

285 290 295 300 305

MATCHLINE "D" (SEE SHEET 4)

MATCHLINE "E" (SEE SHEET 6)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

PRE-DEVELOPMENT DRAINAGE MAP

SHEET NO. 5

ORANGEBROOK GOLF COURSE

BASIN 3

C-10 CANAL

BASIN 3CL
1.79 AC.

BASIN 3DL
1.69 AC.

R/W LINE

BASIN 3FL
2.97 AC.

BASIN 3EL_OFF
2.38 AC.

BASIN 3EL
11.00 AC.

LA R/W LINE

310

315

320

325

330

335

I-95 NORTHBOUND

I-95 SOUTHBOUND

N 3° 14' 00" E

LA R/W LINE

BASIN 3DR
8.35 AC.

CD-4

CD-5

BASIN 3ER
6.69 AC.

R/W LINE

SW 29TH AVE

MONROE ST

MATCHLINE "E" (SEE SHEET 5)

MATCHLINE "F" (SEE SHEET 7)

0 50 200
Feet

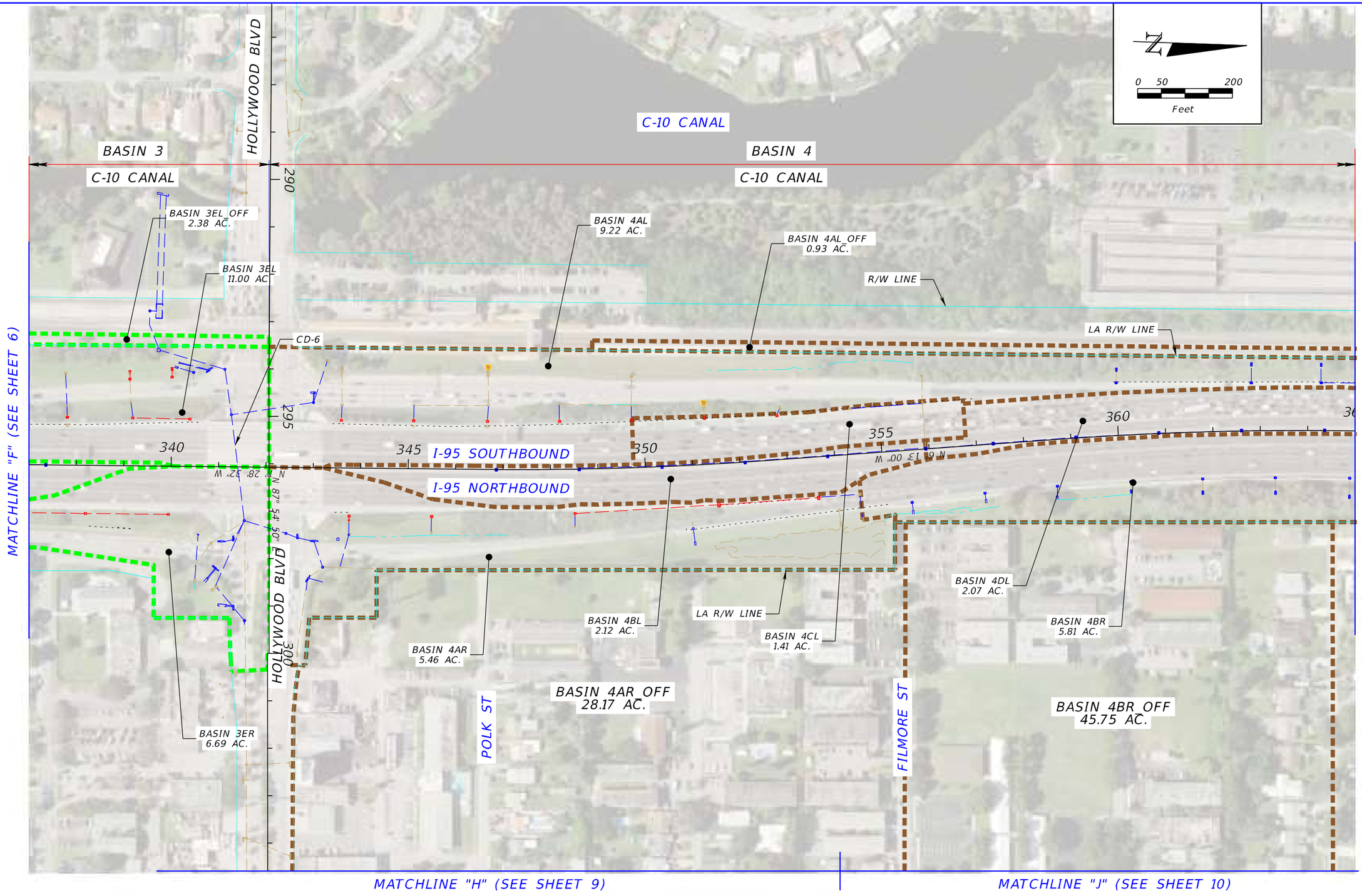
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

PRE-DEVELOPMENT DRAINAGE MAP

SHEET NO. 6



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

PRE-DEVELOPMENT DRAINAGE MAP

SHEET NO. 7

C-10 CANAL

C-10 CANAL

0 50 200
Feet

BASIN 4

BASIN 5

C-10 CANAL

C-10 CANAL

PROJECT LIMIT

BASIN 4AL
8.70 AC.

BASIN OFF 4L
0.93 AC.

BASIN 5AL OFF
1.06 AC.

R/W LINE

BASIN 5AL
7.91 AC.

LA R/W LINE

MATCHLINE "G" (SEE SHEET 7)

370

I-95 SOUTHBOUND

375

380

385

390

N 1° 32' 30" W

I-95 NORTHBOUND

LA R/W LINE

BASIN 4BR
5.81 AC.

BASIN 5AR
6.36 AC.

JOHNSON ST

SUNSET GOLF COURSE

CLEVELAND ST

BASIN 4CR OFF
32.16 AC.

MATCHLINE "K" (SEE SHEET 10)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

PRE-DEVELOPMENT DRAINAGE MAP

SHEET NO.
8

MATCHLINE "L" (SEE SHEET 10)

MATCHLINE "H" (SEE SHEET 7)

N 28TH AVE

TAYLOR ST

BASIN 4

C-10 CANAL

N 26TH AVE

BASIN 4AR OFF
28.17 AC.

305

310

315

N 87° 54' 50" E

HOLLYWOOD BLVD

N 87° 54' 50" E

HOLLYWOOD BLVD

N

0 50 200

Feet

REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PRE-DEVELOPMENT DRAINAGE MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				SR 9	BROWARD	436903-1-22-02		9

MATCHLINE "K" (SEE SHEET 8)

BASIN 4CR_OFF
32.16 AC.

BASIN 4CR_OFF
32.16 AC.

LINCOLN ST

N

0 50 200
Feet

PIERCE ST

N 28TH AVE

N 26TH AVE

BASIN 4

C-10 CANAL

BASIN 4BR_OFF
45.75 AC.

FILMORE ST

MATCHLINE "J" (SEE SHEET 7)

MATCHLINE "L" (SEE SHEET 9)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

PRE-DEVELOPMENT DRAINAGE MAP

SHEET NO. 10

PROPOSED DRAINAGE MAPS

IVES ESTATES PARK

BASIN 1

C-9 CANAL

PROJECT LIMIT

SWALE S-L1A

BASIN 1AL
24.56 AC.

BASIN 1AL_OFF
13.66 AC.

R/W LINE

SWALE S-L1B

LA R/W LINE

S1-01 S1-02 S1-03 S1-04 S1-05 S1-06 S1-07 S1-08 S1-09 S1-10 S1-11 S1-12 S1-13 S1-14 S1-15 S1-16 S1-17 S1-19 S1-20 S1-21 S1-22 S1-23 S1-24 S1-25 S1-26 S1-27 S1-28 S1-29 S1-30 S1-31 S1-32 S1-33 S1-34 S1-35 S1-36 S1-37 S1-38 S1-39 S1-40 S1-41 S1-42 S1-43 S1-44 S1-45 S1-46 S1-47 S1-49 S1-50 S1-51 S1-52 S1-53

170 175 180 185 190 195

INTERSTATE 95

I-95 SOUTHBOUND

I-95 NORTHBOUND

IVES DAIRY RD

NE 206TH ST

NE 210TH ST

BASIN 1AR
5.96 AC.

SWALE S-R1A

SWALE S-R1A-1

FD1_1R

FD1_2R

MATCHLINE "A" (SEE SHEET 2)

0 50 200
Feet

LEGEND

BASIN 1 BOUNDARY

SX-XX PROPOSED STRUCTURE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

POST-DEVELOPMENT DRAINAGE MAP

SHEET NO. 1

IVES ESTATES PARK

BASIN 1

C-9 CANAL

SWALE S-L1D

SWALE S-L1C

BASIN 1BL
2.96 AC.

BASIN 1AL_OFF
13.66 AC.

R/W LINE

BASIN 1AL
24.56 AC.

S1-56 S1-57 S1-60 S1-64 S1-63 S1-66 S1-70 S1-71 S1-73 S1-74 S1-76 S1-80 S1-79 S1-82

LA R/W LINE

I-95 SOUTHBOUND

I-95 NORTHBOUND

INTERSTATE 95

200 205 210 215 220

N 5° 12' 56" W

S1-54 S1-55 S1-59 S1-58 S1-62 S1-61 S1-65 S1-67 S1-68 S1-69 S1-72 S1-75 S1-77 S1-78 S1-81

LA R/W LINE

BASIN 1CR
6.97 AC.

SWALE S-R1

BASIN 1BR
3.99 AC.

MIAMI DADE COUNTY

BROWARD COUNTY

SW 8TH ST

SW 11TH ST

FD1_3R

MATCHLINE "A" (SEE SHEET 1)

MATCHLINE "B" (SEE SHEET 3)

0 50 200
Feet

LEGEND

BASIN 1 BOUNDARY

SX-XX PROPOSED STRUCTURE

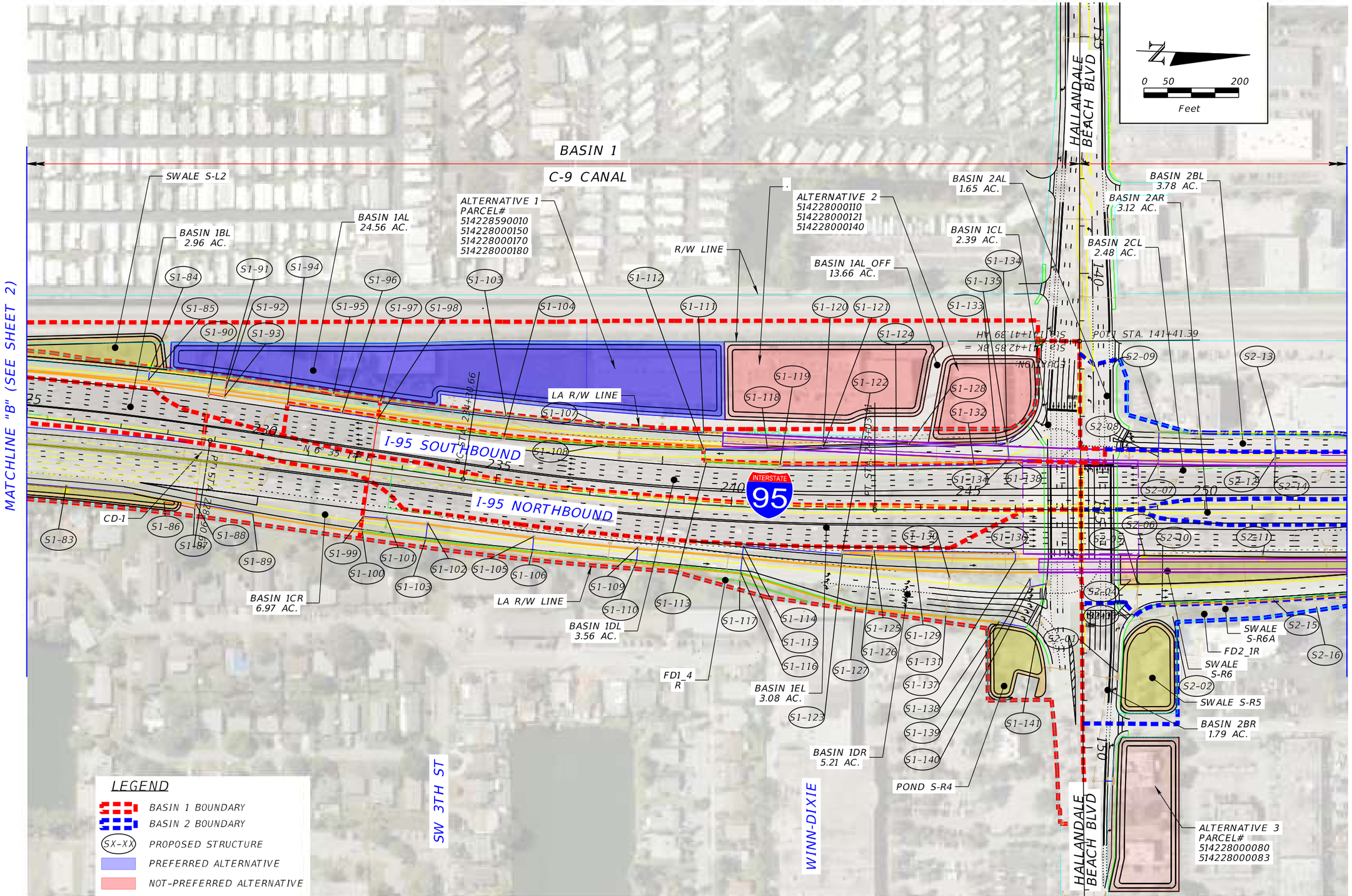
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

POST-DEVELOPMENT DRAINAGE MAP

SHEET NO. 2



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

POST-DEVELOPMENT DRAINAGE MAP

SHEET NO. 3

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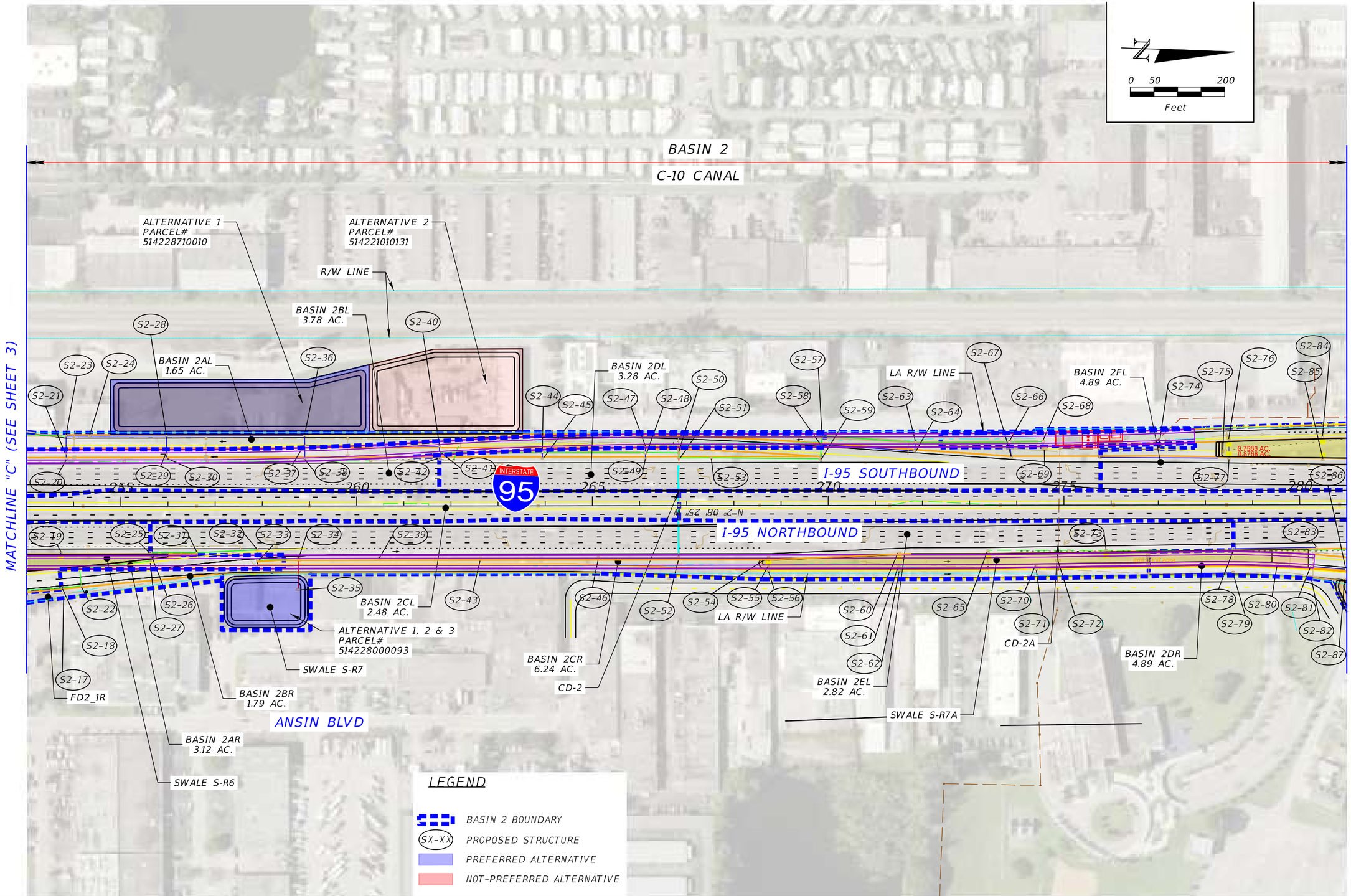
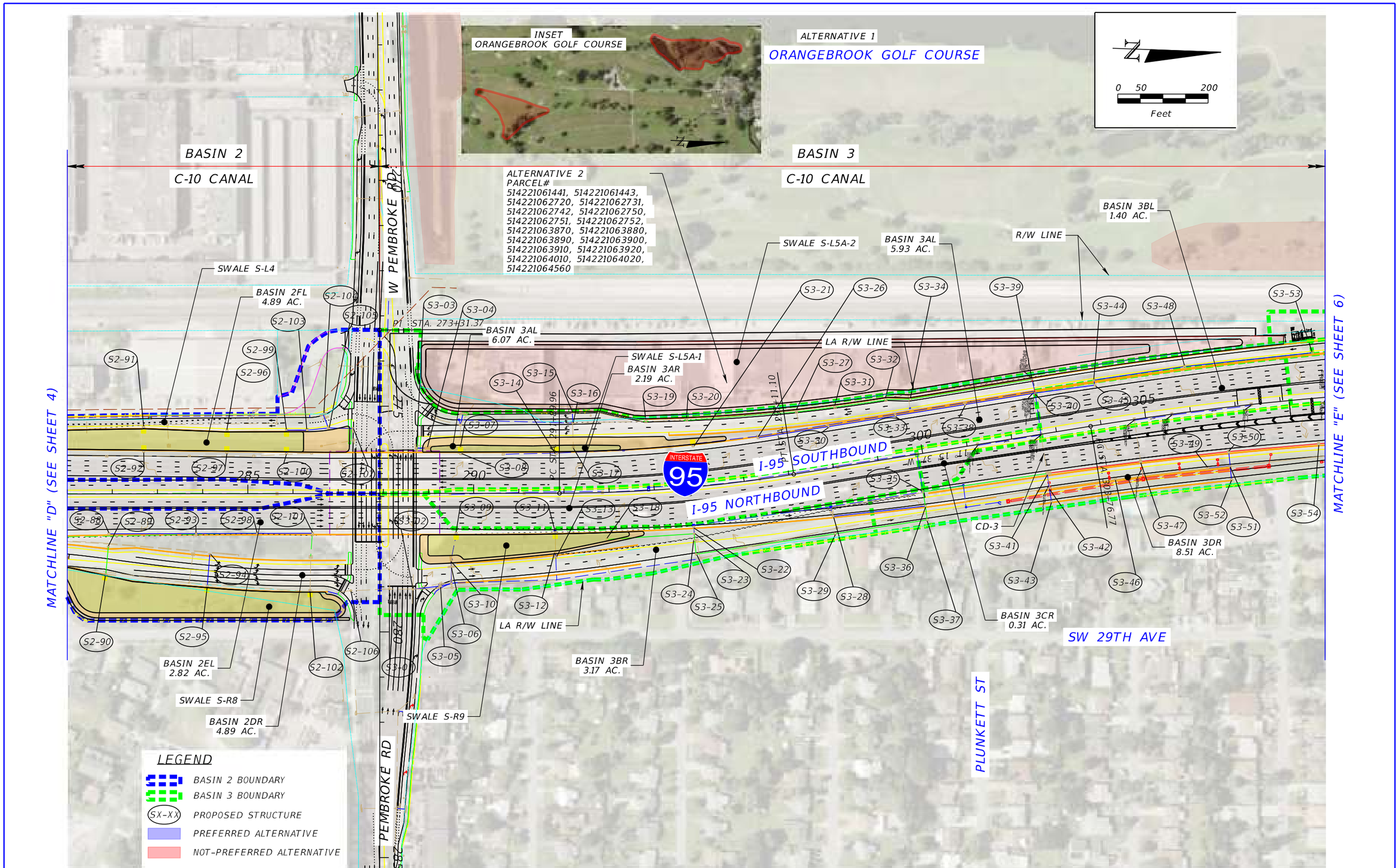


REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POST-DEVELOPMENT DRAINAGE MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				SR 9	BROWARD	436903-1-22-02		4



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

POST-DEVELOPMENT DRAINAGE MAP

SHEET NO. 5

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ORANGEBROOK GOLF COURSE

BASIN 3

C-10 CANAL

0 50 200
Feet

MATCHLINE "E" (SEE SHEET 5)

MATCHLINE "F" (SEE SHEET 7)

SWALE S-L5C

SWALE S-L5E

SWALE S-L5A-2

SWALE S-L5B

BASIN 3CL
1.66 AC.

BASIN 3DL
1.69 AC.

BASIN 3EL_OFF
2.38 AC.

BASIN 3EL
14.05 AC.

BASIN 3FL
2.97 AC.

R/W LINE

LA R/W LINE

S3-55 S3-56 S3-57 S3-58 S3-59 S3-60 S3-61 S3-62 S3-63 S3-64 S3-65 S3-66 S3-67 S3-68 S3-69 S3-70 S3-71 S3-72 S3-73 S3-74 S3-75 S3-76 S3-77 S3-78 S3-79 S3-80 S3-89 S3-90 S3-91 S3-92 S3-93 S3-94 S3-95 S3-96 S3-97 S3-98 S3-99 S3-100 S3-101 S3-102 S3-103 S3-104 S3-105 S3-106 S3-107 S3-108 S3-109 S3-110 S3-111 S3-112 S3-113 S3-114 S3-115 S3-116 S3-117 S3-118 S3-119 S3-120 S3-03

310 315 320 325 330 335

INTERSTATE 95

I-95 NORTHBOUND

I-95 SOUTHBOUND

N 73° 14' 00" E

CD-4

CD-5

BASIN 3DR
8.51 AC.

BASIN 3ER
7.99 AC.

SWALE S-R10

SW 29TH AVE

MONROE ST

LEGEND

- BASIN 3 BOUNDARY
- SX-XX PROPOSED STRUCTURE
- PREFERRED ALTERNATIVE
- NOT-PREFERRED ALTERNATIVE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

POST-DEVELOPMENT DRAINAGE MAP

SHEET NO. 6

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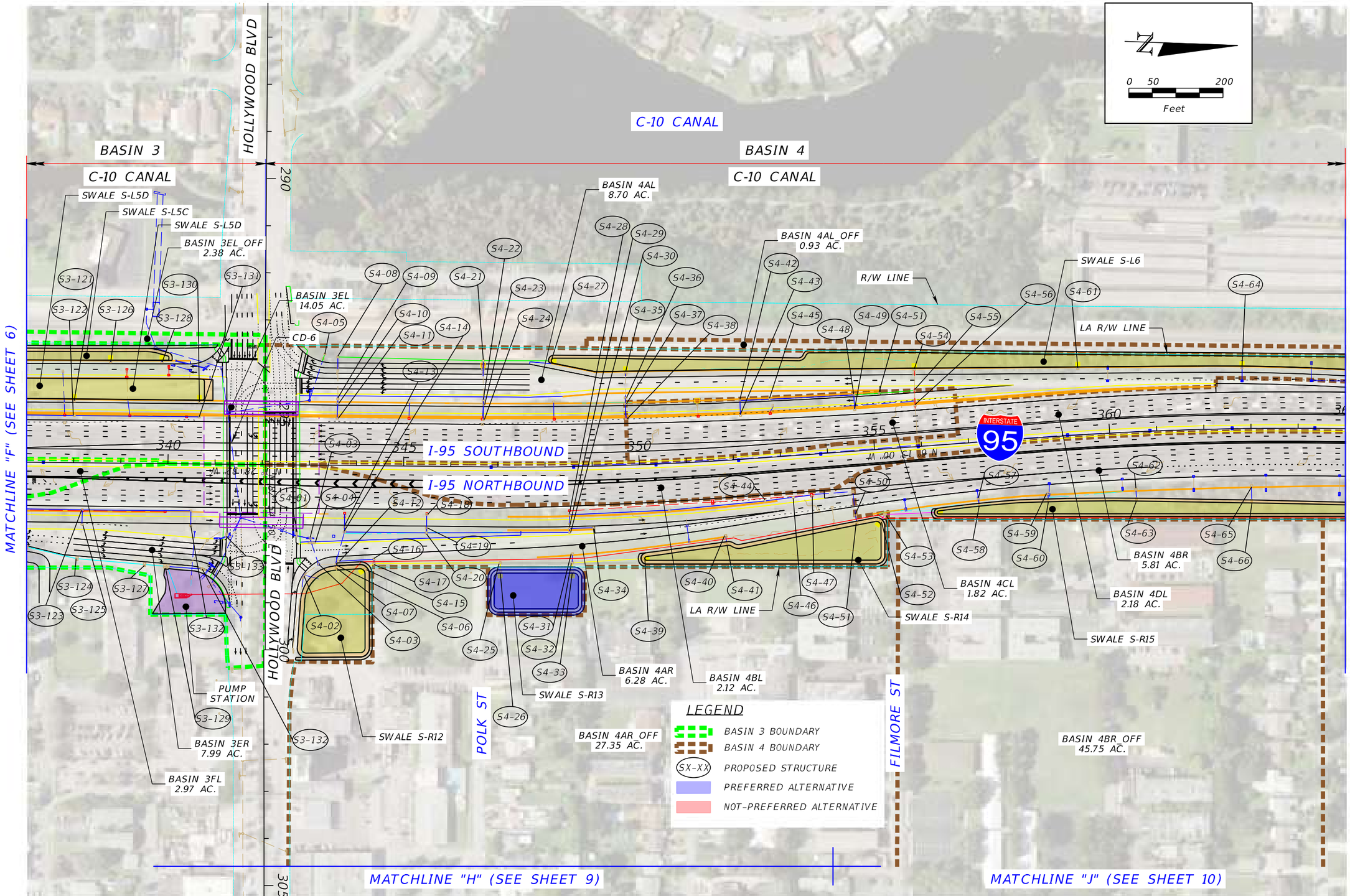

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

POST-DEVELOPMENT DRAINAGE MAP

SHEET NO. 7

C-10 CANAL

C-10 CANAL

0 50 200
Feet

BASIN 4

BASIN 5

C-10 CANAL

C-10 CANAL

SWALE S-L6

BASIN 4AL
8.70 AC.

S4-70

BASIN 4AL_OFF
0.93 AC.

S5-02

BASIN 5AL_OFF
1.06 AC.

S5-06

PROJECT LIMIT

R/W LINE

BASIN 5AL
7.91 AC.

S4-69

S4-72

S5-03

S5-07

S5-08

LA R/W LINE

I-95 SOUTHBOUND

370

375

380

385

390

N 1° 32' 30" W

INTERSTATE 95

I-95 NORTHBOUND

S5-05

STA. 382+08.71

S4-67

S4-68

S4-71

S4-73

BASIN 4BR
5.81 AC.

LA R/W LINE

S5-10

BASIN 5AR
6.36 AC.

SWALE
S-R15

S5-01

S5-04

S5-09

JOHNSON ST

SWALE
S-R16

POND
S-R17

ALTERNATIVE 2
PARCEL#
514209000200

CLEVELAND ST

BASIN 4CR_OFF
32.16 AC.

SUNSET GOLF COURSE

FLOOD COMPENSATION SITE
12.76 AC

LEGEND

- BASIN 4 BOUNDARY
- BASIN 5 BOUNDARY
- SX-XX PROPOSED STRUCTURE
- PREFERRED ALTERNATIVE
- NOT-PREFERRED ALTERNATIVE

MATCHLINE "G" (SEE SHEET 7)

MATCHLINE "K" (SEE SHEET 10)

REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POST-DEVELOPMENT DRAINAGE MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				SR 9	BROWARD	436903-1-22-02		8

MATCHLINE "L" (SEE SHEET 10)

N 28TH AVE

BASIN 4AR_OFF
27.35 AC.

TAYLOR ST

N 26TH AVE

BASIN 4

C-10 CANAL

N

0 50 200

Feet

MATCHLINE "H" (SEE SHEET 7)

305 310 315

N 87° 54' 50" E

HOLLYWOOD BLVD

N 87° 54' 50" E

HOLLYWOOD BLVD

LEGEND

BASIN 4 BOUNDARY

REVISIONS					
DATE	DESCRIPTION	DATE	DESCRIPTION	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	POST-DEVELOPMENT DRAINAGE MAP
				ROAD NO. / COUNTY / FINANCIAL PROJECT ID	SHEET NO.
				SR 9 / BROWARD / 436903-1-22-02	9

MATCHLINE "K" (SEE SHEET 8)

N

0 50 200

Feet

BASIN 4CR_OFF
32.16 AC.

LINCOLN ST

BASIN 4BR_OFF
45.75 AC.

PIERCE ST

N 28TH AVE

BASIN 4

C-10 CANAL

N 26TH AVE

LEGEND

BASIN 4 BOUNDARY

FILMORE ST

MATCHLINE "J" (SEE SHEET 7)

MATCHLINE "L" (SEE SHEET 9)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	436903-1-22-02

POST-DEVELOPMENT DRAINAGE MAP

SHEET NO. 10

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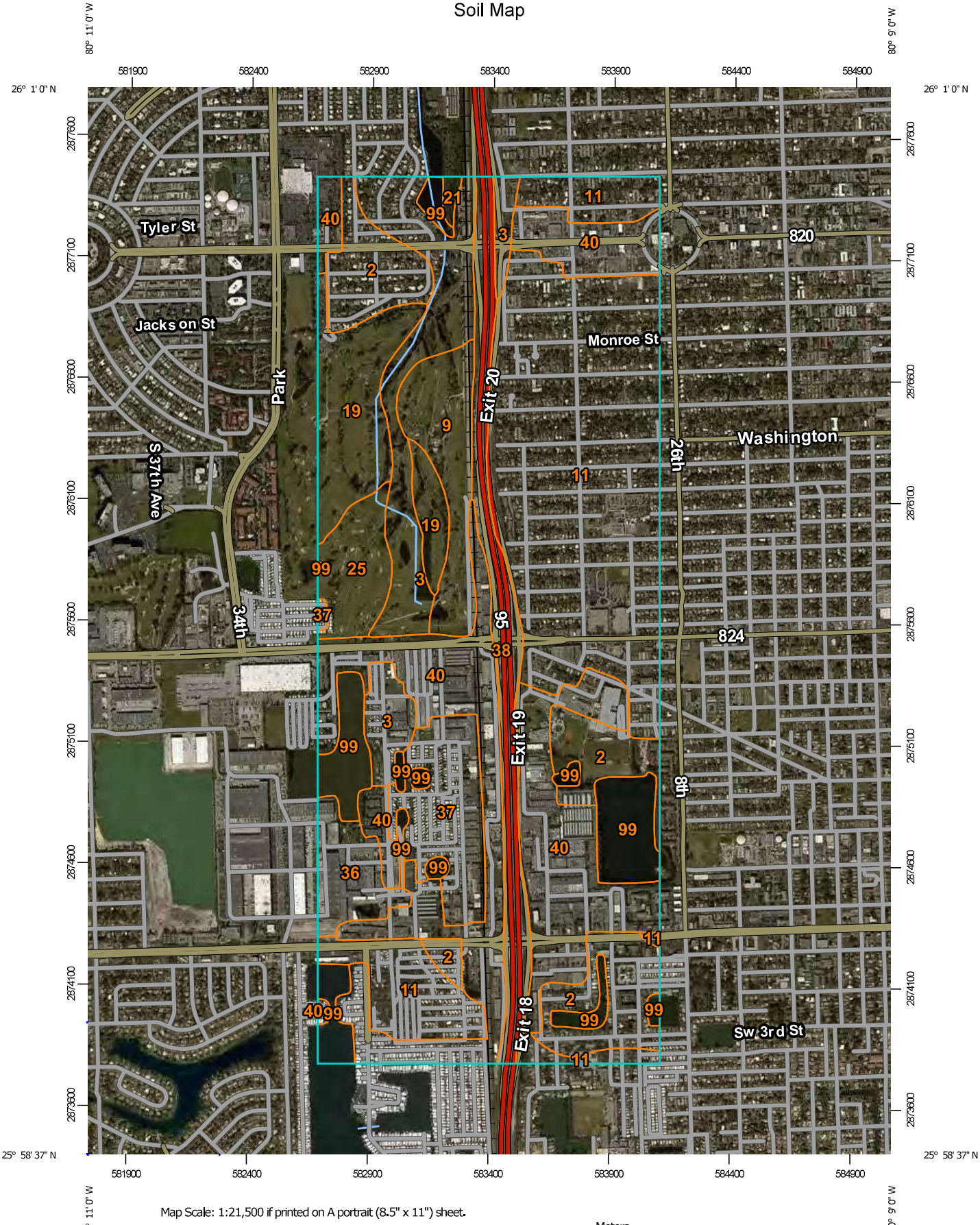
APPENDIX B

USDA - SOILS GROUP REPORT

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Broward County, Florida, East Part
Survey Area Data: Version 12, Sep 14, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 11, 2010—Feb 11, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Broward County, Florida, East Part (FL606)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
2	Arents-Urban land complex	113.3	8.8%
3	Arents, organic substratum-Urban land complex	109.5	8.5%
9	Dade fine sand	53.0	4.1%
11	Dade-Urban land complex	363.6	28.3%
19	Margate fine sand	77.5	6.0%
21	Okeelanta muck, drained, 0 to 1 percent slopes	2.7	0.2%
25	Pennsuco silty clay loam	35.2	2.7%
36	Udorthents	31.6	2.5%
37	Udorthents, marly substratum-Urban land complex	59.4	4.6%
38	Udorthents, shaped	74.2	5.8%
40	Urban land	283.7	22.1%
99	Water	80.1	6.2%
Totals for Area of Interest		**1,283.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the

scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Broward County, Florida, East Part

2—Arents-Urban land complex

Map Unit Setting

National map unit symbol: 1hn8f
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Arents and similar soils: 55 percent
Urban land: 40 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arents

Setting

Landform: Rises on marine terraces
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Altered marine deposits

Typical profile

A - 0 to 4 inches: cobbly sand
C1 - 4 to 9 inches: cobbly sand
C2 - 9 to 32 inches: sand
2C - 32 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A/D
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Unranked

Minor Components

Arents, organic substratum

Percent of map unit: 3 percent
Landform: Rises on marine terraces
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

Udorthents, marly substratum

Percent of map unit: 2 percent
Landform: Marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

3—Arents, organic substratum-Urban land complex

Map Unit Setting

National map unit symbol: 1hn8g
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Arents, organic substratum and similar soils: 55 percent
Urban land: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arents, Organic Substratum

Setting

Landform: Rises on marine terraces
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy dredge spoils over organic material over sandy marine deposits

Typical profile

A - 0 to 12 inches: gravelly sand
C - 12 to 38 inches: sand
Oa - 38 to 52 inches: muck
2C - 52 to 72 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Unranked

9—Dade fine sand

Map Unit Setting

National map unit symbol: 1hn8n
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Dade and similar soils: 94 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dade

Setting

Landform: Rises on marine terraces
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits over soft limestone

Typical profile

A - 0 to 6 inches: fine sand
E - 6 to 27 inches: fine sand
Bh - 27 to 35 inches: fine sand
Cr - 35 to 39 inches: weathered bedrock

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: About 60 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Other vegetative classification: Shallow or moderately deep, sandy or loamy soils on rises and ridges of mesic uplands (G156AC521FL)

Hydric soil rating: No

Minor Components

Basinger

Percent of map unit: 2 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G156AC141FL)
Hydric soil rating: Yes

Duette

Percent of map unit: 2 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G156AC121FL)
Hydric soil rating: No

Margate

Percent of map unit: 1 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G156AC145FL)
Hydric soil rating: Yes

Immokalee, limestone substratum

Percent of map unit: 1 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G156AC141FL)
Hydric soil rating: No

11—Dade-Urban land complex

Map Unit Setting

National map unit symbol: 1hn8q
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Dade and similar soils: 55 percent
Urban land: 40 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dade

Setting

Landform: Rises on marine terraces
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits over soft limestone

Typical profile

A - 0 to 8 inches: gravelly sand
E - 8 to 27 inches: fine sand
Bh - 27 to 35 inches: fine sand
Cr - 35 to 39 inches: weathered bedrock

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: About 60 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified

Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Unranked

Minor Components

Basinger
Percent of map unit: 2 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Yes

Immokalee, limestone substratum
Percent of map unit: 2 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

Margate
Percent of map unit: 1 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Yes

19—Margate fine sand

Map Unit Setting
National map unit symbol: 1hn8z
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition
Margate and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Margate

Setting

Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Sandy marine deposits over limestone

Typical profile

A - 0 to 8 inches: fine sand
E - 8 to 16 inches: fine sand
Bw - 16 to 28 inches: fine sand
C - 28 to 32 inches: gravelly fine sand
2R - 32 to 36 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G156AC145FL)
Hydric soil rating: Yes

Minor Components

Basinger

Percent of map unit: 5 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G156AC141FL)
Hydric soil rating: Yes

Plantation, undrained

Percent of map unit: 5 percent
Landform: Marshes on marine terraces
Landform position (three-dimensional): Talf

Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Organic soils in depressions and on flood plains (G156AC645FL)
Hydric soil rating: Yes

21—Okeelanta muck, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2tzwc
Elevation: 0 to 30 feet
Mean annual precipitation: 48 to 68 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Okeelanta, drained, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Okeelanta, Drained

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material over sandy marine deposits

Typical profile

Oa - 0 to 31 inches: muck
Cg - 31 to 65 inches: fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: High (about 11.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Other vegetative classification: Organic soils in depressions and on flood plains (G156AC645FL)
Hydric soil rating: Yes

Minor Components

Sanibel

Percent of map unit: 5 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Organic soils in depressions and on flood plains (G156AC645FL)
Hydric soil rating: Yes

Tequesta

Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Organic soils in depressions and on flood plains (G156AC645FL)
Hydric soil rating: Yes

Basinger

Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G156AC141FL)
Hydric soil rating: Yes

25—Pennsuco silty clay loam

Map Unit Setting

National map unit symbol: 1hn95
Elevation: 10 feet
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Pennsuco, drained, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pennsuco, Drained

Setting

Landform: Marshes on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy marine deposits over limestone

Typical profile

A - 0 to 5 inches: silty clay loam
Bg - 5 to 38 inches: silt loam
2C - 38 to 53 inches: fine sand
2Cr - 53 to 80 inches: weathered bedrock

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 40 to 72 inches to paralithic bedrock
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 60 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very high (about 14.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Other vegetative classification: Loamy and clayey soils on flats of hydric or mesic lowlands (G156AC341FL)
Hydric soil rating: Yes

Minor Components

Perrine

Percent of map unit: 2 percent
Landform: Marshes on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Loamy and clayey soils on flats of hydric or mesic lowlands (G156AC341FL)
Hydric soil rating: Yes

Pennsuco, tidal

Percent of map unit: 2 percent
Landform: Tidal marshes on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Yes

Perrine variant

Percent of map unit: 1 percent
Landform: Tidal marshes on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Yes

36—Udorthents

Map Unit Setting

National map unit symbol: 1hn9j
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Altered marine deposits

Typical profile

C - 0 to 57 inches: cobbly sand

Properties and qualities

Slope: 2 to 40 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 2.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

37—Udorthents, marly substratum-Urban land complex

Map Unit Setting
National map unit symbol: 1hn9k
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition
Udorthents, marly substratum, and similar soils: 55 percent
Urban land: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Marly Substratum

Setting
Landform: Marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Altered marine deposits

Typical profile
C - 0 to 32 inches: gravelly sand
2C - 32 to 60 inches: marly silt loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)

Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: A
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

Description of Urban Land

Setting
Landform: Marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups
Land capability classification (irrigated): None specified
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Unranked

38—Udorthents, shaped

Map Unit Setting
National map unit symbol: 1hn9l
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition
Udorthents, shaped and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Shaped

Setting
Landform: Marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear

Across-slope shape: Linear
Parent material: Altered marine deposits

Typical profile

C1 - 0 to 30 inches: gravelly sand
C2 - 30 to 50 inches: sand
2R - 50 to 54 inches: weathered bedrock

Properties and qualities

Slope: 0 to 45 percent
Depth to restrictive feature: 40 to 72 inches to paralithic bedrock
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

Minor Components

Udorthents

Percent of map unit: 10 percent
Landform: Marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

40—Urban land

Map Unit Setting

National map unit symbol: 1hn9n
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Unranked

Minor Components

Matlacha, limestone substratum

Percent of map unit: 5 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

99—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Unranked

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Hydrologic Soil Group and Surface Runoff

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

Report—Hydrologic Soil Group and Surface Runoff

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Hydrologic Soil Group and Surface Runoff–Broward County, Florida, East Part			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
2—Arents-Urban land complex			
Arents	55	High	A/D
Urban land	40	—	—

Hydrologic Soil Group and Surface Runoff–Broward County, Florida, East Part			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
3—Arents, organic substratum-Urban land complex			
Arents, organic substratum	55	High	A
Urban land	45	—	—
9—Dade fine sand			
Dade	94	Negligible	A
10—Duette-Urban land complex			
Duette	55	Negligible	A
Urban land	40	—	—
11—Dade-Urban land complex			
Dade	55	Negligible	A
Urban land	40	—	—
19—Margate fine sand, occasionally ponded, 0 to 1 percent slopes			
Margate	85	Negligible	A/D
20—Matlacha, limestone substratum-Urban land complex			
Matlacha, limestone substratum	50	Low	B
Urban land	45	—	—
21—Okeelanta muck, drained, frequently ponded, 0 to 1 percent slopes			
Okeelanta, drained	90	Negligible	A/D
25—Pennsuco silty clay loam			
Pennsuco, drained	95	Very high	B/D
36—Udorthents			
Udorthents	100	Negligible	A
37—Udorthents, marly substratum-Urban land complex			
Udorthents, marly substratum	55	Low	A
Urban land	45	—	—
38—Udorthents, shaped			
Udorthents, shaped	90	Low	A
40—Urban land			
Urban land	95	—	—
99—Water			
Water	100	—	—

Hydrologic Soil Group and Surface Runoff–Miami-Dade County Area, Florida			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**

Hydrologic Soil Group and Surface Runoff–Miami-Dade County Area, Florida			
Map symbol and soil name	Pct. of map unit	Surface Runoff	Hydrologic Soil Group
15—Urban land			
Urban land	98	—	—
41—Dade fine sand			
Dade	99	Negligible	A
99—Water			
Water	100	—	—

Data Source Information

Soil Survey Area: Broward County, Florida, East Part
Survey Area Data: Version 13, Oct 2, 2017

Soil Survey Area: Miami-Dade County Area, Florida
Survey Area Data: Version 9, Oct 5, 2017

Hydric Soils

This table lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:
Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
Federal Register. September 18, 2002. Hydric soils of the United States.
Federal Register. July 13, 1994. Changes in hydric soils of the United States.
Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
National Research Council. 1995. Wetlands: Characteristics and boundaries.
Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

Report—Hydric Soils

Hydric Soils–Broward County, Florida, East Part				
Map symbol and map unit name	**Component**	**Percent of map unit**	**Landform**	**Hydric criteria**
9—Dade fine sand				
	Basinger	2	Drainageways on marine terraces	2
	Margate	1	Drainageways on marine terraces	2
11—Dade-Urban land complex				
	Basinger	2	Drainageways on marine terraces	2
	Margate	1	Drainageways on marine terraces	2
19—Margate fine sand, occasionally ponded, 0 to 1 percent slopes				
	Margate	85	Flats on marine terraces	2
	Basinger	5	Flats on marine terraces	2
	Plantation	5	Marshes on marine terraces	2, 3
21—Okeelanta muck, drained, frequently ponded, 0 to 1 percent slopes				
	Okeelanta, drained	90	Depressions on marine terraces	1, 3
	Sanibel	5	Depressions on marine terraces	2, 3
	Tequesta	3	Depressions on marine terraces	2, 3
	Basinger	2	Depressions on marine terraces	2
40—Urban land, 0 to 2 percent slopes				
	Boca	1	Flats on marine terraces, drainageways on marine terraces	2
	Hallandale	1	Flatwoods on marine terraces	2

Hydric Soils–Miami-Dade County Area, Florida				
Map symbol and map unit name	**Component**	**Percent of map unit**	**Landform**	**Hydric criteria**
15—Urban land, 0 to 2 percent slopes				
	Boca	1	Drainageways on marine terraces, flats on marine terraces	2
	Hallandale	1	Flatwoods on marine terraces	2

Data Source Information

Soil Survey Area: Broward County, Florida, East Part
Survey Area Data: Version 16, Jun 8, 2020

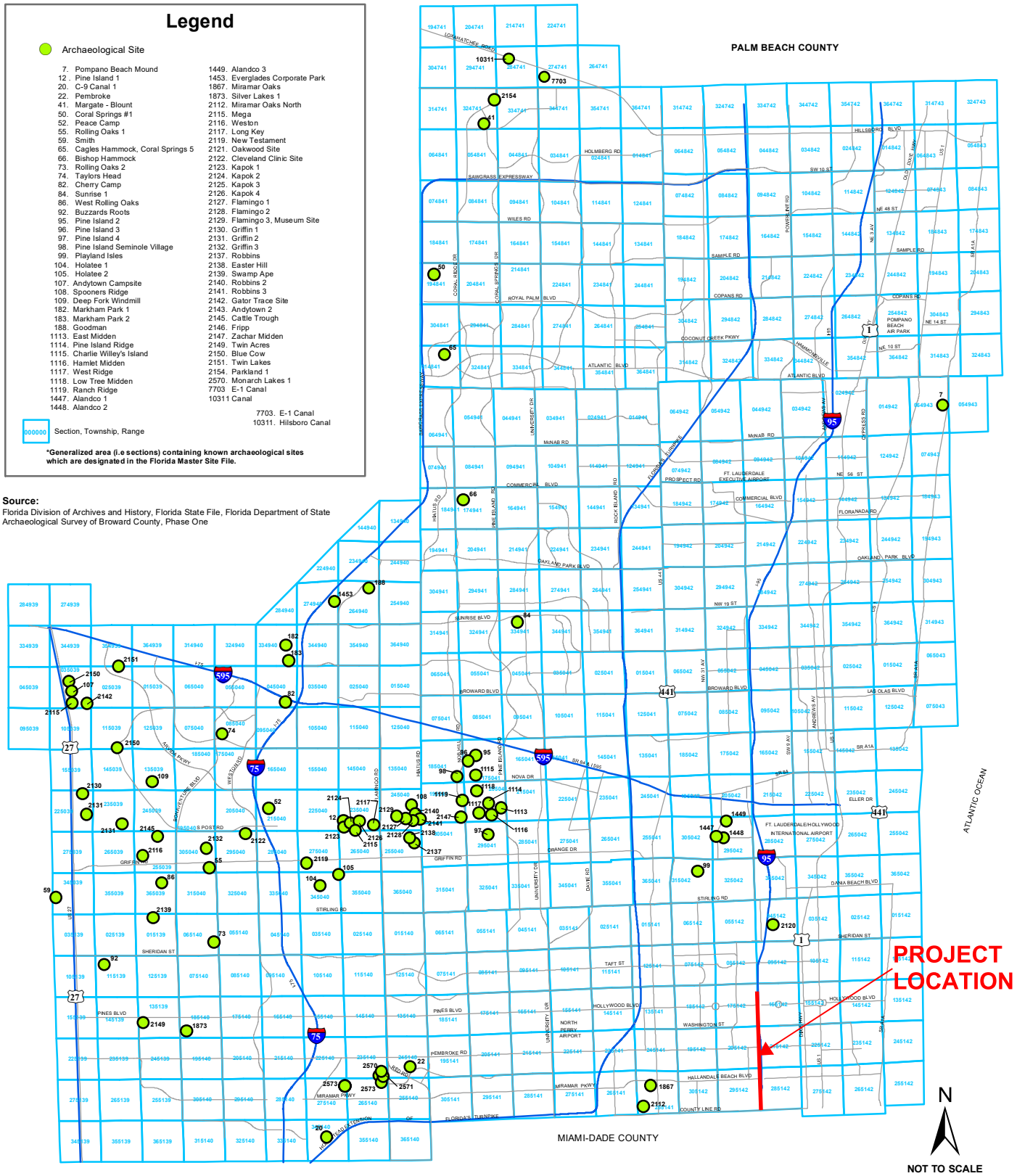
Soil Survey Area: Miami-Dade County Area, Florida
Survey Area Data: Version 12, Jun 9, 2020

APPENDIX C

BROWARD COUNTY HISTORICAL, ARCHAOLOGICAL AND ENVIRONMENTAL AREA MAPS

BROWARD COUNTY LAND USE PLAN

Cultural Resource Map Series/Local Areas of Particular Concern- Archaeological Sites



Source:
Florida Division of Archives and History, Florida State File, Florida Department of State
Archaeological Survey of Broward County, Phase One

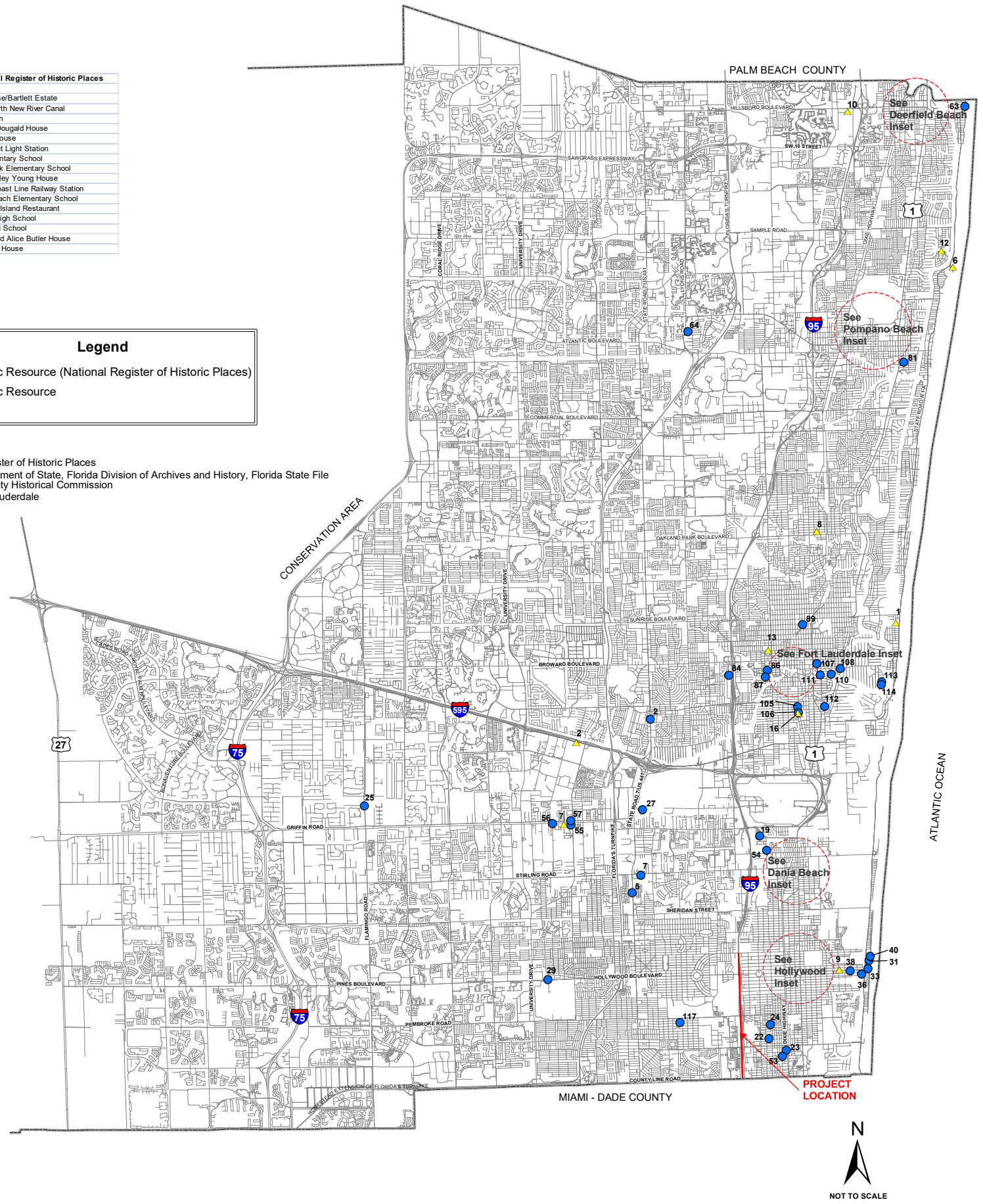
This is a generalized map. This map should not be used to determine parcel boundaries or limits of depicted items. Please contact the Broward County Planning Council office regarding questions pertaining to parcel boundaries or limits.

BROWARD COUNTY LAND USE PLAN

CULTURAL RESOURCES / LOCAL AREAS OF PARTICULAR CONCERN: HISTORIC SITES

	Historic Resource
Map #	Name
1	Deerfield Beach Pioneer House (Kester Cottage)
2	Dixie Water Plant
3	Sailboat Bend Historic District
4	Old Fort Lauderdale High School Site
5	Seminole Indian Reservation
6	Great Southern Hotel
7	John M. and Gilda Bryan House
8	Hollywood Art and Culture Center (Johnson-Foster Funeral Home)
9	Hollywood Publishing Company/Hemmingway Restaurant
10	Ingram Arcade
11	Young Circle
12	Hollywood Woman's Club
13	Original Dania Methodist Church
14	A. C. Frost House
15	Martin C. Frost House
16	Dania Bank Building
17	Woodlawn Cemetery
18	Westlawn Memorial Cemetery
19	Ocean Waterway Mobile Home Park Office Building
20	Dania Beach Hotel
22	Old Hallandale Schoolhouse
23	J. W. Moffitt House
24	Hallandale Cemetery
25	Floyd L. Wray House/Wray Everglades Museum
27	Old Electrical Plant
29	North Perry Airport
30	Dunham's Grocery
31	Coral House
32	Golf View Hotel/Hutchinson Apartments
33	Hollywood Beach Hotel
34	Flora Apartments
35	Hollywood Temple Methodist Church
36	707 Van Buren Street
37	1329 Polk Street
38	Little White House
39	Floyd Wray Residence
40	Circle Villa Apartments
41	Avon Apartments
42	Lornell Apartments
43	1555 Hollywood Boulevard
44	1345 Hollywood Boulevard
45	Ollie H. Gore Residence
46	Dania Historical Society and Museum
47	Hotel Poinciana
48	29 South Federal Highway
49	118 Southwest 1 Avenue
50	124 Southwest 1 Avenue
51	La Normandie Restaurant
52	A. E. Anderson Residence
53	Frank Curci Residence
54	John Bryan House Site
55	Davie Community Church
56	Viele House
57	1911 Hotel
58	Deerfield Furniture Store
59	Waldron House/Kraeer Funeral Home
60	Valdama Howard House
61	Memorial Cemetery
62	Deerfield Beach First Baptist Church and Parsonage
63	Vina S. Gould House
64	Coconut Creek Windmill
65	George Foster Chapel/First United Methodist Church
66	Captain Campbell House
67	Shiver House
68	J. D. Blount House
69	George Blount House
70	Wallace Robinson House
71	W. H. McNab House
72	Dr. McClellan House and Office
73	McClellan Drugs
74	Pompano Mercantile Company
75	Bank Of Pompano
76	Pompano City Pump House and Fire Department
77	Pompano Beach Historical Society Museum
78	Bevill House
79	B. F. Bailey House
80	Frank Austin House
81	Pompano Beach Cemetery
82	Horace Robinson House
83	Giddens-Kimball House
84	Seaboard Airline Railroad Station
85	Brown Home
86	Fire Station No. 8
87	Southwest 11 Avenue Bridge
88	Commodore Brook House
89	Progresso Plaza
90	Retail Stores/Apartments
91	Tom M. Bryan Building
92	Tibbets
93	Colonial Hotel
94	Woman's Club
95	Reed Bryan House
96	Weidling Building
97	Tom M. Bryan House
98	Philemon Bryan House
99	King-Cromartie House
100	Shepherd Hotel
101	Maxwell Arcade
102	Coca-Cola Bottling Plant
103	South Side School
104	Fire Station No. 2
105	Frank Croissant House
106	Croissant Park Administration Building
107	Himmarshee Court
108	Sheppard Estate
109	John W. Needham House
110	Tom Bryan Home
111	E. N. Sperry House
112	Evergreen Cemetery
113	Tom Stilwell House
114	W. G. Bosworth House
116	Robert McNab House
117	Bowles-Strachan House

	National Register of Historic Places
Map #	Name
1	Bonnet House/Bartlett Estate
2	Lock #1, North New River Canal
3	New River Inn
4	Sample-McDougald House
5	Stranahan House
6	Hillsboro Inlet Light Station
7	Davie Elementary School
8	Oakland Park Elementary School
9	Joseph Wesley Young House
10	Seaboard Coast Line Railway Station
11	Deerfield Beach Elementary School
12	Cap's Place Island Restaurant
13	Old Dillard High School
14	Old Deerfield School
15	James D. and Alice Butler House
16	Sam Gilliam House



Legend

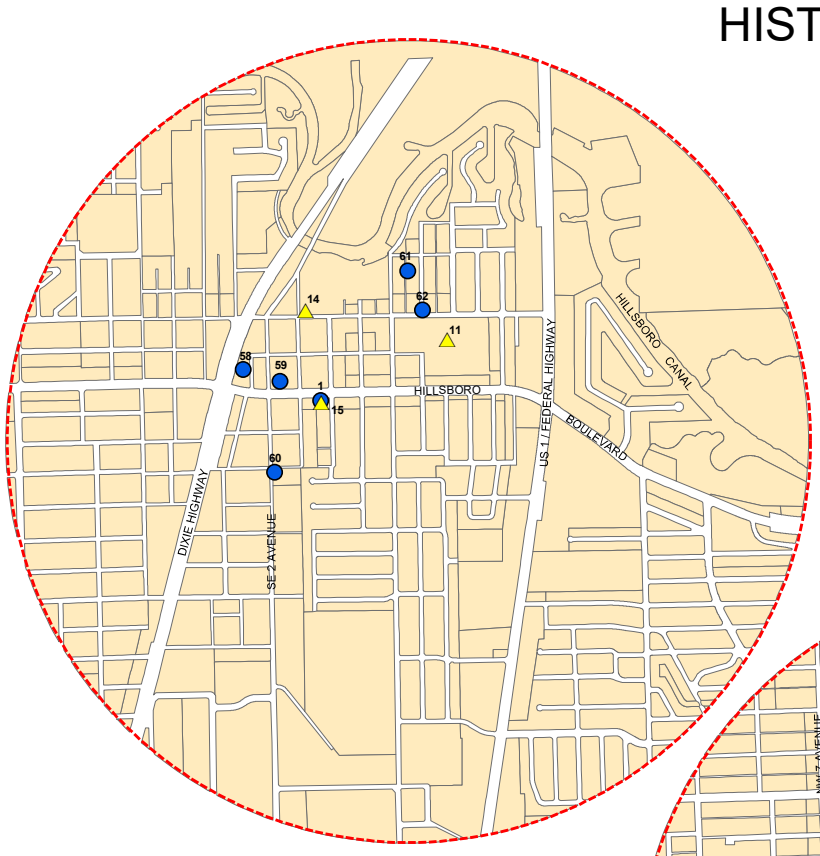
- Historic Resource (National Register of Historic Places)
- Historic Resource

Source:
National Register of Historic Places
Florida Department of State, Florida Division of Archives and History, Florida State File
Broward County Historical Commission
City of Fort Lauderdale

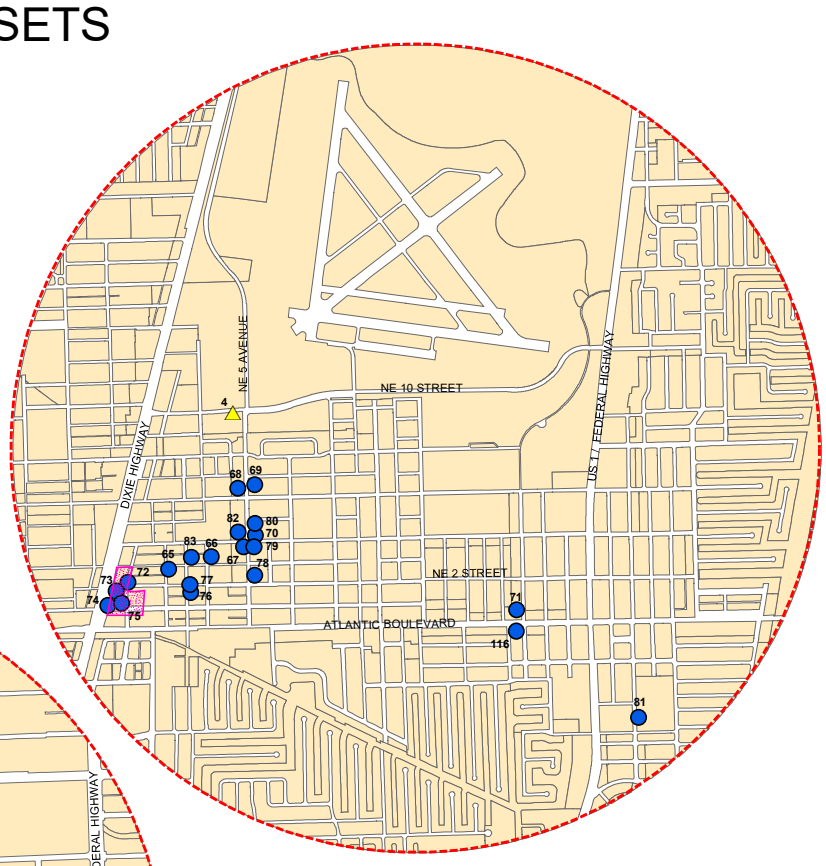
This is a generalized map. This map should not be used to determine parcel boundaries or limits of depicted items. Please contact the Broward County Planning Council office regarding questions pertaining to parcel boundaries or limits.

BROWARD COUNTY LAND USE PLAN

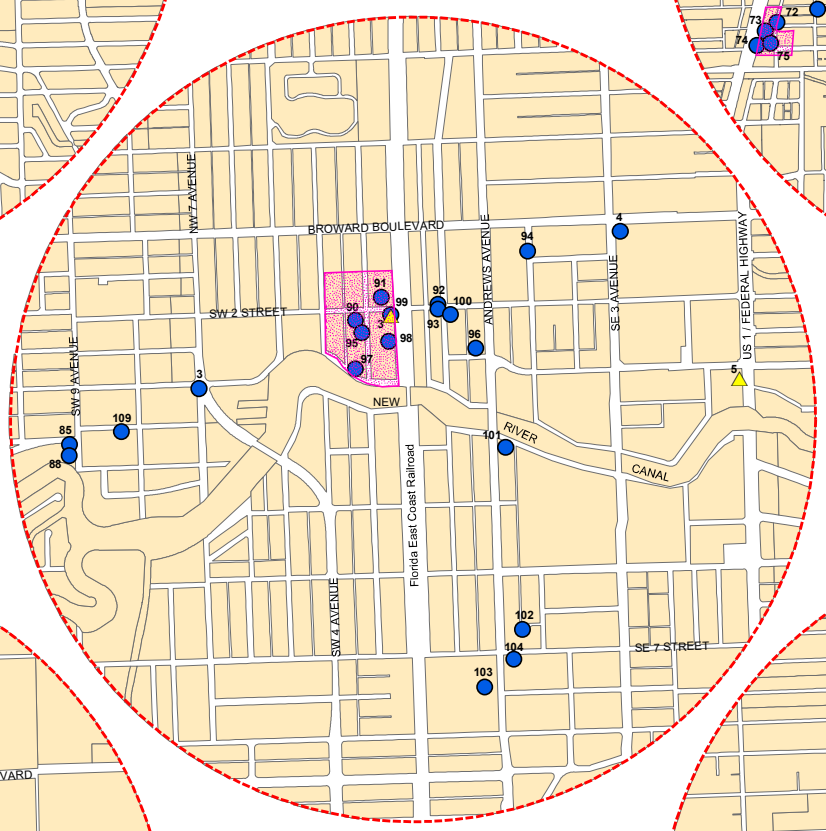
CULTURAL RESOURCE / LOCAL AREAS OF PARTICULAR CONCERN: HISTORIC SITES MAP INSETS



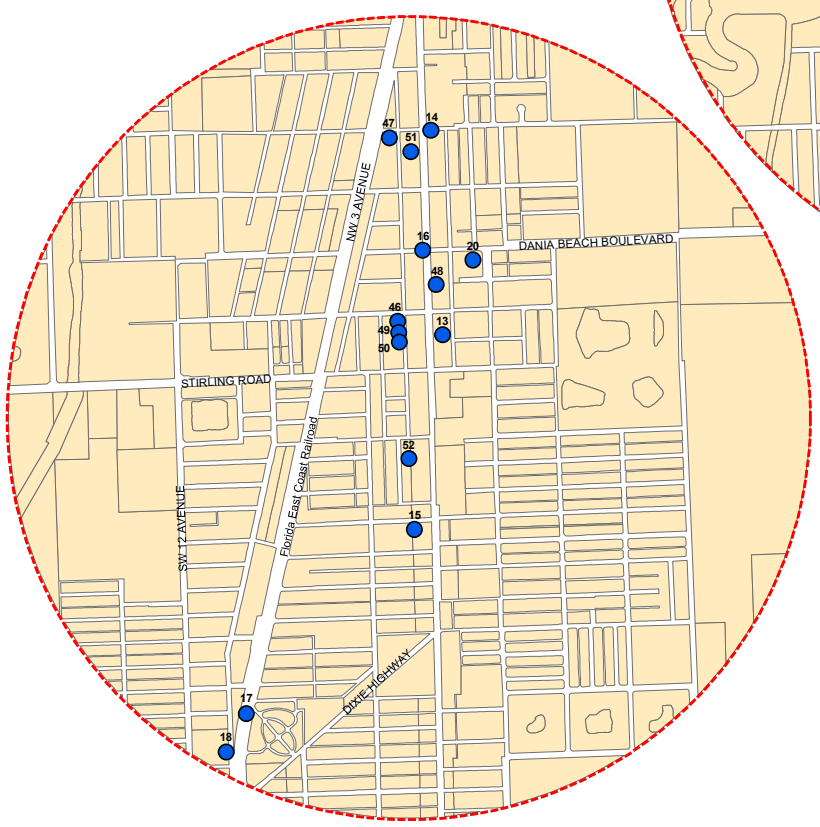
DEERFIELD BEACH



POMPANO BEACH



FORT LAUDERDALE



DANIA BEACH

HOLLYWOOD

Legend

- Historic Resource (National Register of Historic Places)
- Historic Resource
- Historic District

Source:

National Register of Historic Places
Florida Department of State, Florida Division of Archives and History, Florida State File
Broward County Historical Commission
City of Fort Lauderdale

N

NOT TO SCALE

This is a generalized map. This map should not be used to determine parcel boundaries or limits of depicted items.
Please contact the Broward County Planning Council office regarding questions pertaining to parcel boundaries or limits.

Proposed to be deleted

BROWARD COUNTY LAND USE PLAN

CULTURAL RESOURCES / LOCAL AREAS OF PARTICULAR CONCERN: CULTURAL FACILITIES

NO. NAME

ARTS PARK
1 ArtsPark & Amphitheater at Young Circle
2 Central Broward Regional Park & ArtsPark
3 Miramar Cultural Center & ArtsPark
4 River of Grass ArtsPark

CULTURAL CENTER
5 Coral Springs Center for the Arts
6 David Posnack Jewish Community Center
7 Donnith Fletcher Art & Cultural Center
8 Hallandale Beach Cultural Community Center
9 Historic West Side School
10 Hollywood Beach Culture & Community Center
11 Pembroke Pines Historical Library
12 Pompano Beach Amphitheater
13 Ruth E. Cohan Art Gallery/Soref Jewish Community Cent
14 Stonewall Library & Archives
15 Sunrise Civic Center
16 The Township Aquatic Center
17 Third Avenue Art District

MUSEUM
18 Acetylene Building
19 Art & Culture Center of Hollywood
20 Bienes Museum of the Modern Book
21 Bonnet House Museum & Gardens
22 Broward County Historical Commission
23 Coral Springs Museum of Art
24 Ely Educational Museum
25 Flamingo Gardens
26 Fort Lauderdale Antique Car Museum
27 Fort Lauderdale Fire & Safety Museum
28 Hoch Heritage Center
29 IGFA Fishing Hall of Fame & Museum
30 International Swimming Hall of Fame
31 King Cromartie House
32 Museum of Art/Fort Lauderdale/Nova Southeastern Univ
33 Museum of Coral Springs History
34 Museum of Discovery & Science & IMAX 3D Theater
35 My Jewish Discovery Place Museum
36 Old Fort Lauderdale Village & Museum
37 Philemon Nathaniel Bryan House
38 Plantation Historical Museum
39 Replica 1899 Schoolhouse
40 Schacknow Museum of Fine Arts
41 Seminole Okalee Indian Village & Museum
42 Tradewinds McLean Farmhouse
43 Viele House
44 Walsh/Osterhoudt House
45 Wray Family Estate
46 Young At Art Children's Museum

NATIONAL REGISTER OF HISTORIC PLACES
47 Alfred and Olive Thorpe Lustron House (2007)
48 Bonnet House Museum & Gardens (1984)
49 Bryan Building (1997)
50 Cap's Place (1990)
51 Croissant Park Administration Building (2001)
52 Davie School Historical Museum (1988)
53 Deerfield Beach Elementary School (1990)
54 Dr. Willard Van Orsdel King House (2006)
55 Hammerstein House (2005)
56 Hillsboro Inlet Light Station (1974)
57 Hollywood Boulevard Historic Business District (1999)
58 Hollywood Garden Club (2005)
59 Hollywood Woman's Club (1995)
60 James D. and Alice Butler House (1995)
61 Joseph Wesley Young House (1989)
62 Link Trainer Building (1998)
63 Lock No. 1, North New River Canal (1978)
64 New River Inn (1972)
65 Nyberg-Swanson House (1999)
66 Oakland Park Elementary School (1988)
67 Old Deerfield School (1999)
68 Old Dillard High School (1991)
69 Old Seaboard Air Line Railway Station (1990)
70 S.S. Copenhagen Shipwreck (2001)
71 Sam Gilliam House (2001)
72 Sample-McDougald House (1984)
73 South Side School (2006)
74 St. Anthony School (1997)
75 Stranahan House (1973)
76 Williams House aka Gilda's Club (2005)

OTHER
77 Broward Cultural Division & Cultural Information Center
78 Butterfly World
79 Deerfield Beach Arboretum aka Tree Zoo
80 Flamingo Gardens
81 Hallandale Beach Cannon Site, World War II Memorial
82 Seminole Okalee Indian Village & Museum

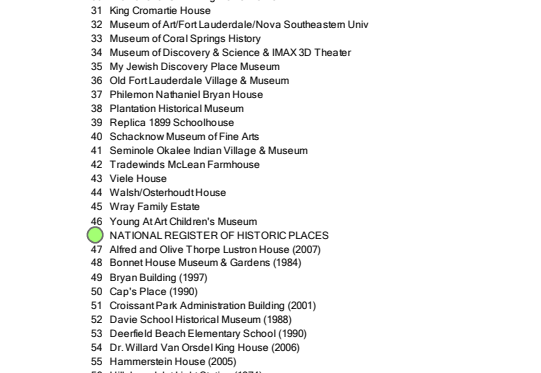
0 PERFORMING ARTS FACILITY
83 Actors Community Theatre
84 African American Research Library & Cultural Center

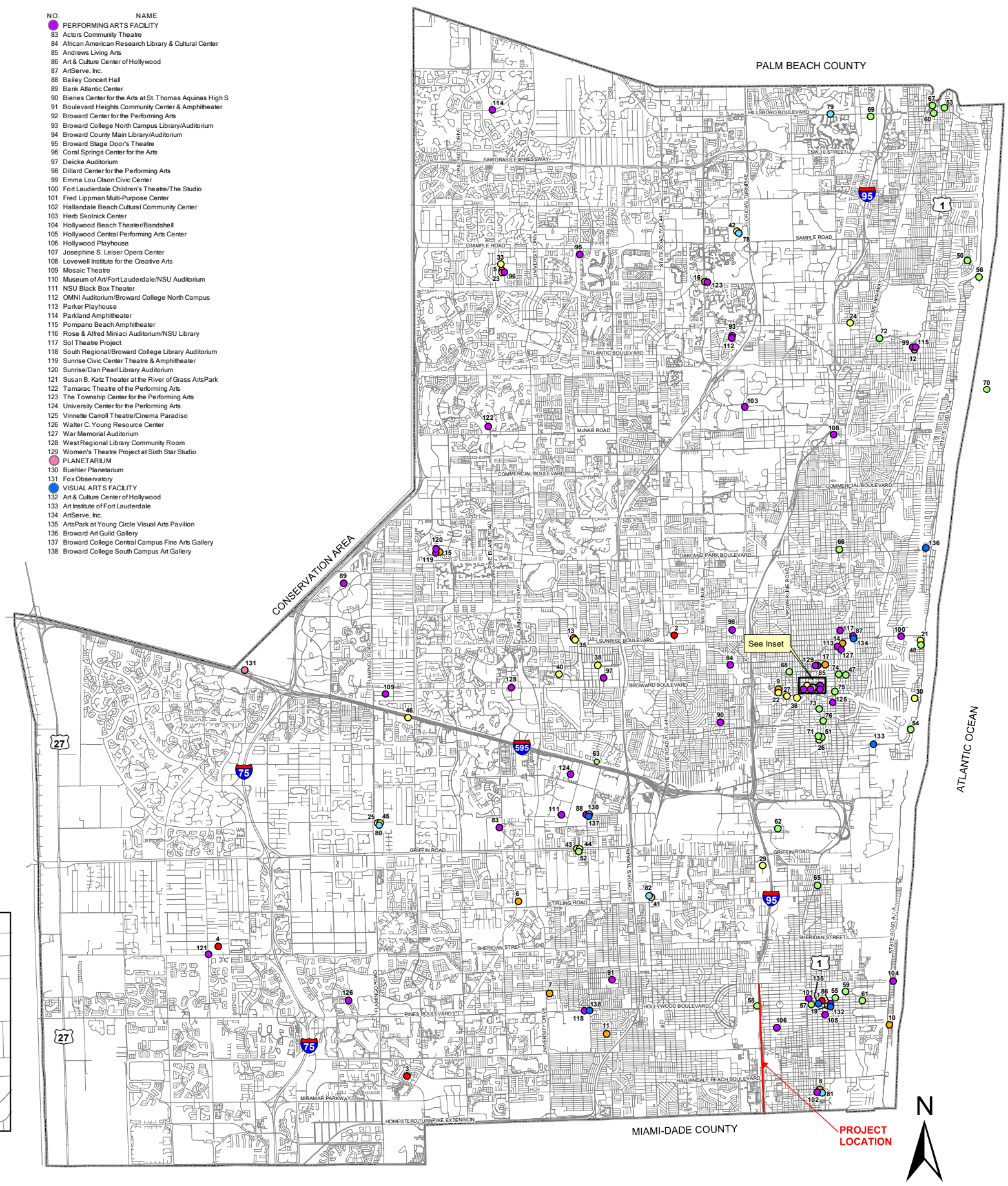
NO. NAME

PERFORMING ARTS FACILITY
83 Actors Community Theatre
84 African American Research Library & Cultural Center
85 Andrews Living Arts
86 Art & Culture Center of Hollywood
87 ArtServe, Inc.
88 Bailey Concert Hall
89 Bank Atlantic Center
90 Bienes Center for the Arts at St. Thomas Aquinas High S
91 Boulevard Heights Community Center & Amphitheater
92 Broward Center for the Performing Arts
93 Broward College North Campus Library/Auditorium
94 Broward County Main Library/Auditorium
95 Broward Stage Door's Theatre
96 Coral Springs Center for the Arts
97 Deicke Auditorium
98 Dillard Center for the Performing Arts
99 Emma Lou Olson Civic Center
100 Fort Lauderdale Children's Theatre/The Studio
101 Fred Lippman Multi-Purpose Center
102 Hallandale Beach Cultural Community Center
103 Herb Skolnick Center
104 Hollywood Beach Theater/Bandshell
105 Hollywood Central Performing Arts Center
106 Hollywood Playhouse
107 Josephine S. Leiser Opera Center
108 Lovewell Institute for the Creative Arts
109 Mosaic Theatre
110 Museum of Art/Fort Lauderdale/NSU Auditorium
111 NSU Black Box Theater
112 OMNI Auditorium/Broward College North Campus
113 Parker Playhouse
114 Parkland Amphitheater
115 Pompano Beach Amphitheater
116 Rose & Alfred Miniaci Auditorium/NSU Library
117 Sol Theatre Project
118 South Regional/Broward College Library Auditorium
119 Sunrise Civic Center Theatre & Amphitheater
120 Sunrise/Dan Pearl Library Auditorium
121 Susan B. Katz Theater at the River of Grass ArtsPark
122 Tamarac Theatre of the Performing Arts
123 The Township Center for the Performing Arts
124 University Center for the Performing Arts
125 Vinnette Carroll Theatre/Cinema Paradiso
126 Walter C. Young Resource Center
127 War Memorial Auditorium
128 West Regional Library Community Room
129 Women's Theatre Project at Sixth Star Studio

PLANETARIUM
130 Buehler Planetarium
131 Fox Observatory

VISUAL ARTS FACILITY
132 Art & Culture Center of Hollywood
133 Art Institute of Fort Lauderdale
134 ArtServe, Inc.
135 ArtsPark at Young Circle Visual Arts Pavilion
136 Broward Art Guild Gallery
137 Broward College Central Campus Fine Arts Gallery
138 Broward College South Campus Art Gallery





Source:
Broward County Cultural Division
II.C. Cultural Resources/Local Areas of Particular Concern - Cultural Facilities (October 25, 2011)

This is a generalized map. This map should not be used to determine parcel boundaries or limits of depicted items. Please contact the Broward County Planning Council office regarding questions pertaining to parcel boundaries or limits.

NOT TO SCALE

APPENDIX D

EXISTING PERMITS

FILE

South Florida Water Management District

John R. Wodraska, Executive Director
Tilford C. Creel, Deputy Executive Director

Post Office Box 24680 3301 Gun Club Road
West Palm Beach, Florida 33416-4680
Telephone (407) 686-8800
Florida WATS Line 1-800-432-2045

QUAD 9 & 7
ITEM 29 & 189
POSTED

I-95 ORIGINAL PERMIT

IN REPLY REFER TO:

CERTIFIED MAIL NO. P 938 448 997
Resource Control Department
Application No.: 03168-B

July 9, 1988

Permittee: Florida Department of Transportation
Address: 780 Southwest 24 Street
City: Ft. Lauderdale, FL 33315-2696

Dear Sir or Madam:

Subject: General Highway Permit No.: 88-53
Permittee: Florida Department of Transportation
Project : I-95 from Dade County Line to Johnson Street
Location : Broward County, S16,21,28/T51S/R42E

This letter is to acknowledge receipt of your Intent to Construct Works pursuant to Rule 40E-40, Florida Administrative Code.

Based on the information provided, District rules have been adhered to and a General Highway Permit is in effect for this project subject to the attached 13 Special Conditions and 26 Exhibits.

Should you object to these Conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Please contact this office if you have any questions concerning this matter. If we do not hear from you prior to the date specified in the "Notice of Rights," we will assume that you concur with the District's recommendation.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the addressee (and the persons listed in the attached distribution list) not later than 5:00 p.m. this 9thday of July , 1988, in accordance with Section 120.60(3), Florida Statutes.

Sincerely,

Edward W. Yaun, P.E., Supervising Professional
Surface Water Management Division

EWY:mc
Enclosures

Nancy H. Roen, Chairman - Plantation
J.D. York, Vice Chairman - Palm City
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Oscar M. Corbin, Jr., Ft. Myers
Arsenio Milian, Miami
Fritz Stein, Belle Glade
James F. Garner, Ft. Myers
Mike Stout, Windermere
Doran A. Jason, Key Biscayne

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PROJECT I-95 from Dade County Line to Johnson Street

APPLICATION NUMBER 03168-B

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EXTERNAL DISTRIBUTION CONTINUED

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F.D.O.T.
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F.D.O.T.
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X Engineer, County of:
Broward
Engineer, City of:

Local Drainage District:

BUILDING AND ZONING

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COUNTY

X Broward	-Director, Water Mgmt. Div.
	-BCEQCB
Collier	-Agricultural Agent
Dade	-DERM
Lee	-Long Range Planning
	-Mosquito Control
	-E.P.S.
Martin	-Attorney
	-Board of County Commissioners
	-Community Development Director
Palm Beach	-Building Dept.
	-School Brd., Plant Planning
Polk	-Water Resources Dept.

OTHER

Fred Vidzes, Big Cypress Basin
Kissimmee River Coordinating Council

EXHIBIT 26

GENERAL HIGHWAY PERMIT SUMMARY SHEET

PROJECT NAME: I-95 from Dade County Line to Johnson Street

APPLICATION NO.: 03168-B

REVIEWER'S NAME: Maria C. Clemente

DATE: May 6, 1988

LOCATION: Broward County, S16,21,28/T51S/R42E

ABSTRACT:

On March 16, 1988 plans were submitted to the District for construction of approximately 17,500 LF of roadway. This application consists of the addition of High Occupancy Vehicle (H.O.V.) lanes, auxiliary lanes, paved shoulders, a concrete median barrier wall, new bridges over Hallandale Beach Boulevard, Pembroke Road and Hollywood Boulevard, realignment and widening of the ramps to these intersecting streets, and bridge widening over Johnson Street. The construction plans were in agreement with this District's requirements for roadway projects, therefore a General Permit authorizing construction was issued.

APPLICABLE LAND USE:

TOTAL	141.6 acres
WATER MANAGEMENT	19.9 acres
IMPERVIOUS	92.8 acres

COMMENTS:

1. The limits of this project are from the Dade-Broward County Line to north of Johnson Street in Broward County. The total project consists of approximately 141.6 acres. Presently, runoff from the southernmost 26.2 acres of the project flows into Dade County and runoff from the remaining 115.4 acres outfalls in Broward County.

2. Runoff from this project will flow to the following four separate drainage basins:

   Basin 1 runs from the Dade-Broward County Line to Hallandale Beach Boulevard. Runoff will be collected and retained in side ditches north of the county line by ditch blocks set at elevation 4.0 feet NGVD. The existing outfall route to Snake Creek Canal via side ditches into Dade County will be utilized. Retention will be provided in excess of 2.5 inches times the percentage of imperviousness for water quality.

Basin 2 runs from Hallandale Beach Boulevard to Pembroke Road. Currently, this basin is land-locked with no outfall. The proposed water management system will connect into the existing Hallandale Beach Boulevard system which will provide outfall to a proposed F.D.O.T. lake approximately 1/4 mile east of I-95 on N.W. 8th Avenue in the City of Hallandale. Discharge will be routed through structure S-65 which consists of 1-0.42' wide weir with a crest elevation of 4.0 feet NGVD to the Hallandale Beach Boulevard system. Retention will be provided for 1.4" of rainfall for the total area (existing and proposed) and exceeds the volume required for the additional impervious area. The available volume for water quality treatment is 2.0" of rainfall for the total impervious area.

Basin 3 runs from Pembroke Road to Johnson Street. Systems north and south of Hollywood Boulevard and east and west of I-95 (quadrants) are treated separately. Runoff from these quadrants will be detained by ditch blocks set at elevation 3.0 feet NGVD. These systems will direct treated runoff through a modified structure S-253 which consists of 1-1.5' wide weir with a crest elevation of 4.0 feet NGVD discharging to the Hollywood Canal. Retention will be provided in excess of 2.5 inches times the percentage of imperviousness for water quality.

Basin 4 is that portion of the project which lies north of Johnson Street. Ditch blocks set at elevation 3.0 feet NGVD will detain runoff prior to outfall to the existing outfall route to the Hollywood Canal (beyond the projects limits) via F.D.O.T. right-of-way will be utilized. Detention will be provided in excess of 2.5 inches times the percentage of imperviousness for water quality.

bcc: M.Clemente/Administration

FORM 0537
10/87

South Florida Water Management District
GENERAL PERMIT
NOTICE OF RIGHTS

This Notice of Rights is intended to inform the recipient of the administrative and judicial review which may be available as mandated by section 120.60(3), Florida Statutes. Be advised that although this notice is intended to be comprehensive, the review procedures set forth herein have been the subject of judicial construction and interpretation which may affect the administrative of judicial review available. Recipients are therefore advised to become familiar with Chapters 120 and 373, Florida Statutes, and the judicial interpretation of the provisions of these chapters.

1. If a substantially affected person objects to the staff's recommendation, that person has the right to request an administrative hearing on the proposed agency action. The substantially affected person may request either a formal or an informal hearing, as set forth below. Failure to comply with the prescribed time periods shall constitute a waiver of the right to a hearing.

2. If a substantially affected person believes a genuine issue of material fact is in dispute, that person may request a formal hearing pursuant to section 120.57(1), Florida Statutes, by filing a petition not later than:
   a. IF NOTICE OF THE APPLICATION WAS PUBLISHED BY THE APPLICANT, within fourteen (14) days after mailing of the proposed agency action or
   b. IF NOTICE OF THE APPLICATION WAS NOT PUBLISHED, within fourteen days after receipt of actual notice.

   The request for a section 120.57(1), F.S., formal hearing must comply with the requirements of Rule 40E-1.521, Florida Administrative Code, a copy of which is attached. Petitions are deemed filed upon receipt by the District. Failure to substantially comply with the provisions of Rule 40E-1.521, Florida Administrative Code, shall constitute a waiver of the right to a 120.57(1) hearing. If a petition for administrative hearing is not timely filed, the staff's proposed agency will automatically mature into final agency action.

3. If a substantially affected person believes that no issues of material fact are in dispute, that person may request an informal hearing pursuant to section 120.57(2), F.S., by filing a petition for hearing not later than:
   a. IF NOTICE OF THE APPLICATION WAS PUBLISHED BY THE APPLICANT, within fourteen (14) days after mailing of the proposed agency action or
   b. IF NOTICE OF THE APPLICATION WAS NOT PUBLISHED, within fourteen days after receipt of actual notice.

   A request for informal hearing shall be considered as a waiver of the right to request a formal section 120.57(1), F.S., hearing. A request for a section 120.57(1), F.S., formal hearing not in substantial compliance with the provisions of rule 40E-1.521, F.A.C., may be considered by the District as a request for informal hearing. If a petition for administrative hearing is not timely filed, the staff's proposed agency action will automatically mature into final agency action.

4. Pursuant to section 373.114, Florida Statutes, a party to the proceeding below may seek review of a Final Order rendered on the permit application before the Land and Water Adjudicatory Commission, as provided therein. Review under this section is initiated by filing a request for review with the Land and Water Adjudicatory Commission and serving a copy on the Department of Environmental Regulation and any person named in the Order within 20 days after rendering of the District's Order. However, when the order to be reviewed has statewide or regional significance, as determined by the Land and Water Adjudicatory Commission within 60 days after receipt of a request for review, the commission may accept a request for review from any affected person within 30 days after the rendering of the order. Review under section 373.114, Florida Statutes, is limited solely to a determination of consistency with the provisions and purposes of Chapter 373, Florida Statutes. This review is appellate in nature and limited to the record below.

5. A party who is adversely affected by final agency action on the permit application is entitled to judicial review in the District Court of Appeal pursuant to section 120.68, Florida Statutes, as provided therein. Review under section 120.68, Florida Statutes in the District Court of Appeal is initiated by filing a petition in the appropriate District Court of Appeal in accordance with Florida rule of appellate Procedure 9.110. The Notice of Appeal must be filed within 30 days of the final agency action.

6. Section 373.617(2), Florida Statutes, provides:

   > Any person substantially affected by a final action of any agency with respect to a permit may seek review within 90 days of the rendering of such decision and request monetary damages and other relief in the circuit court in the judicial circuit in which the affected property is located; however, circuit court review shall be confined solely to determining whether final agency action is an unreasonable exercise of the state's police power constituting a taking without just compensation. Review of final agency action for the purpose of determining whether the action is in accordance with existing statutes or rules and based on component substantial evidence shall proceed in accordance with Chapter 120.

7. Please be advised that exhaustion of administrative remedies is generally a prerequisite to appeal to the District Court of Appeal or the seeking of Circuit Court review of final agency action by the District on the permit application. There are, however, exceptions to the exhaustion requirement. The applicant is advised to consult the case law as to the requirements of exhaustion exceptions.

SPECIAL CONDITIONS

1. DISCHARGE FACILITIES: BASIN 2

   DESCRIPTION: 1-0.42' WIDE WEIR WITH A CREST ELEVATION OF 4.0 FEET NGVD.

   RECEIVING WATER: HALLANDALE BEACH BOULEVARD DRAINAGE SYSTEM.

   CONTROL ELEVATION: 4.0 FEET NGVD.

2. OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL BE THE RESPONSIBILITY OF THE FLORIDA DEPARTMENT OF TRANSPORTATION.

3. WATER QUALITY DATA FOR THE WATER DISCHARGED FROM THE PERMITTEE'S PROPERTY OR INTO SURFACE WATERS OR GROUNDWATERS OF THE STATE SHALL BE SUBMITTED TO THE DISTRICT AS REQUIRED. PARAMETERS TO BE MONITORED MAY INCLUDE THOSE LISTED IN CHAPTER 17-3. IF WATER QUALITY DATA IS REQUIRED, THE PERMITTEE SHALL PROVIDE DATA AS REQUIRED ON VOLUMES OF WATER DISCHARGED, INCLUDING TOTAL VOLUME DISCHARGED DURING THE DAYS OF SAMPLING AND TOTAL MONTHLY DISCHARGES FROM THE PROPERTY OR INTO SURFACE WATERS OR GROUNDWATERS OF THE STATE.

4. SPECIAL CONDITIONS OF RULE 40E-4.381 (SURFACE WATER MANAGEMENT) ARE WAIVED UNLESS OTHERWISE PROVIDED HEREIN.

5. FACILITIES OTHER THAN THOSE STATED HEREIN SHALL NOT BE CONSTRUCTED WITHOUT AN APPROVED MODIFICATION OF THIS PERMIT.

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. THE PERMITTEE SHALL PROSECUTE THE WORK AUTHORIZED IN A MANNER SO AS TO MINIMIZE ANY ADVERSE IMPACT OF THE WORKS ON FISH, WILDLIFE, NATURAL ENVIRONMENTAL VALUES, AND WATER QUALITY. THE PERMITTEE SHALL INSTITUTE NECESSARY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING FULL COMPACTION OF ANY FILL MATERIAL PLACED AROUND NEWLY INSTALLED STRUCTURES, TO REDUCE EROSION, TURBIDITY, NUTRIENT LOADING AND SEDIMENTATION IN THE RECEIVING WATER.

8. 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, OPERATION, MAINTENANCE OR USE OF ANY FACILITY AUTHORIZED BY THE PERMIT.

9. THIS PERMIT IS ISSUED BASED ON THE APPLICANT'S SUBMITTED INFORMATION WHICH REASONABLY DEMONSTRATES THAT ADVERSE OFF-SITE WATER RESOURCE RELATED IMPACTS WILL NOT BE CAUSED BY THE COMPLETED PERMIT ACTIVITY. IT IS ALSO THE RESPONSIBILITY OF THE PERMITTEE TO INSURE THAT ADVERSE OFF-SITE WATER RESOURCE RELATED IMPACTS DO NOT OCCUR DURING CONSTRUCTION.

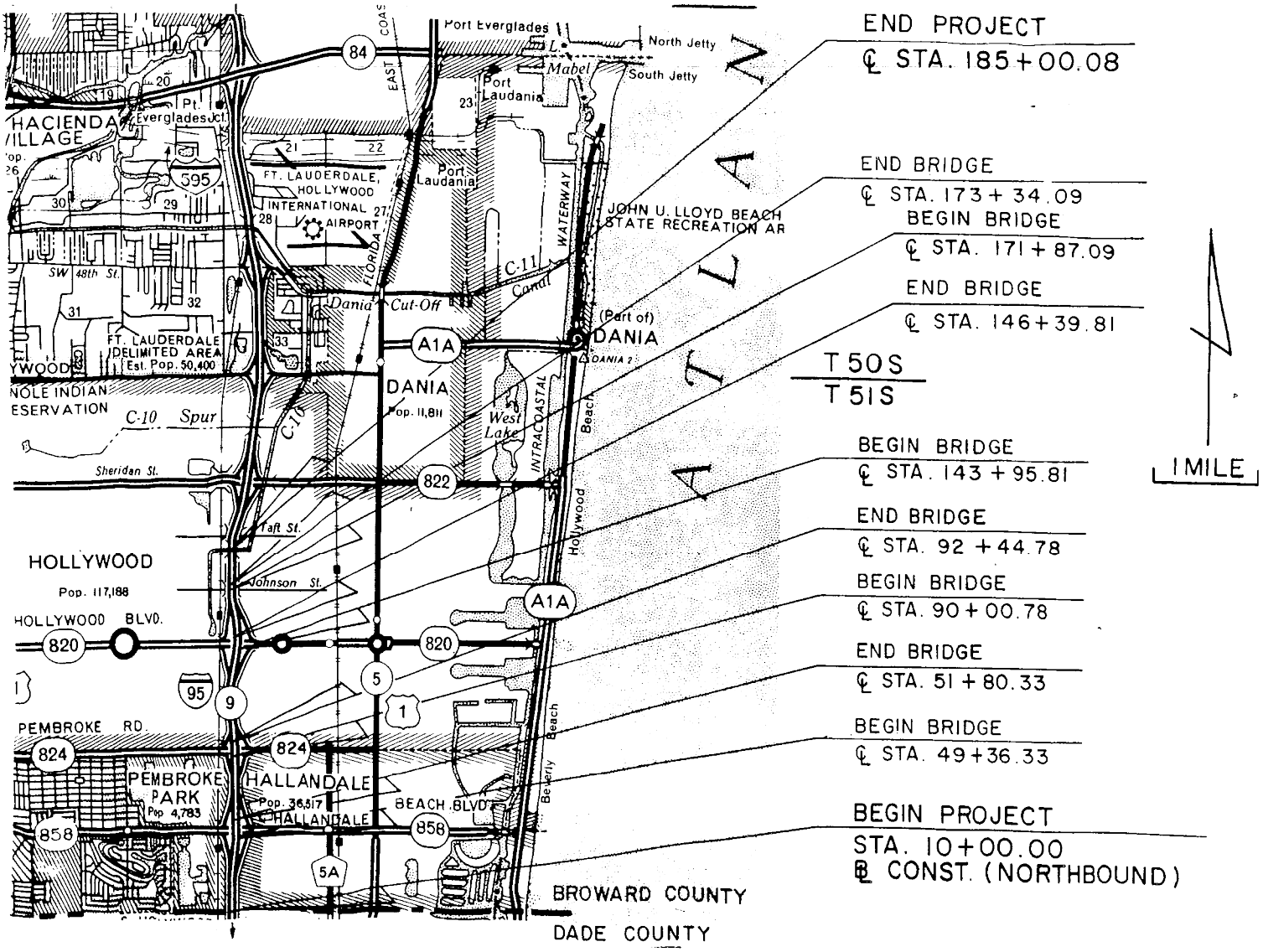
SPECIAL CONDITIONS CONTINUED

10. OFF-SITE DISCHARGES DURING CONSTRUCTION AND DEVELOPMENT SHALL BE MADE ONLY THROUGH THE FACILITIES AUTHORIZED BY THIS PERMIT. WATER DISCHARGED FROM THE PROJECT SHALL BE THROUGH STRUCTURES HAVING A MECHANISM SUITABLE FOR REGULATING UPSTREAM WATER STAGES. STAGES MAY BE SUBJECT TO OPERATING SCHEDULES SATISFACTORY TO THE DISTRICT.

11. PRIOR TO DEWATERING, PLANS SHALL BE SUBMITTED TO THE DISTRICT FOR APPROVAL. INFORMATION SHALL INCLUDE AS A MINIMUM: PUMP SIZES, LOCATIONS AND HOURS OF OPERATION FOR EACH PUMP. IF OFF-SITE DISCHARGE IS PROPOSED, OR OFF-SITE ADVERSE IMPACTS ARE EVIDENT, AN INDIVIDUAL WATER USE PERMIT MAY BE REQUIRED. THE PERMITTEE IS CAUTIONED THAT SEVERAL MONTHS MAY BE REQUIRED FOR CONSIDERATION OF THE WATER USE PERMIT APPLICATION.

12. THE PERMIT DOES NOT CONVEY TO THE PERMITTEE ANY PROPERTY RIGHT NOR ANY RIGHTS OR PRIVILEGES OTHER THAN THOSE SPECIFIED IN THE PERMIT AND CHAPTER 40E-4, FAC.

13. THE PERMITTEE SHALL COMPLY WITH ALL APPLICABLE LOCAL SUBDIVISION REGULATIONS AND OTHER LOCAL REQUIREMENTS. IN ADDITION THE PERMITTEE SHALL OBTAIN ALL NECESSARY FEDERAL, STATE, LOCAL AND SPECIAL DISTRICT AUTHORIZATIONS PRIOR TO THE START OF ANY CONSTRUCTION OR ALTERATION OF WORKS AUTHORIZED BY THIS PERMIT.



LOCATION MAP

EXHIBIT 1

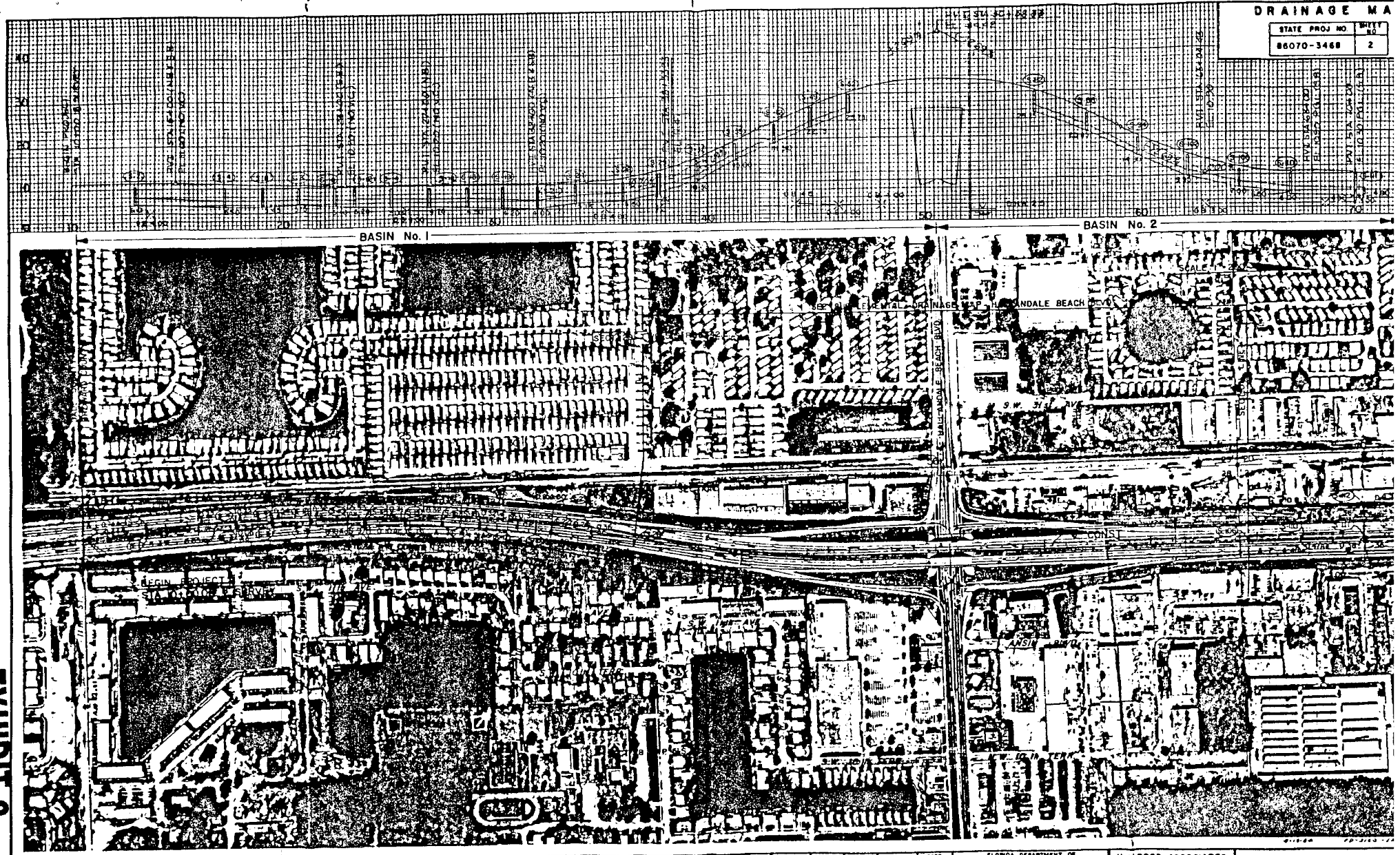


EXHIBIT 2

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

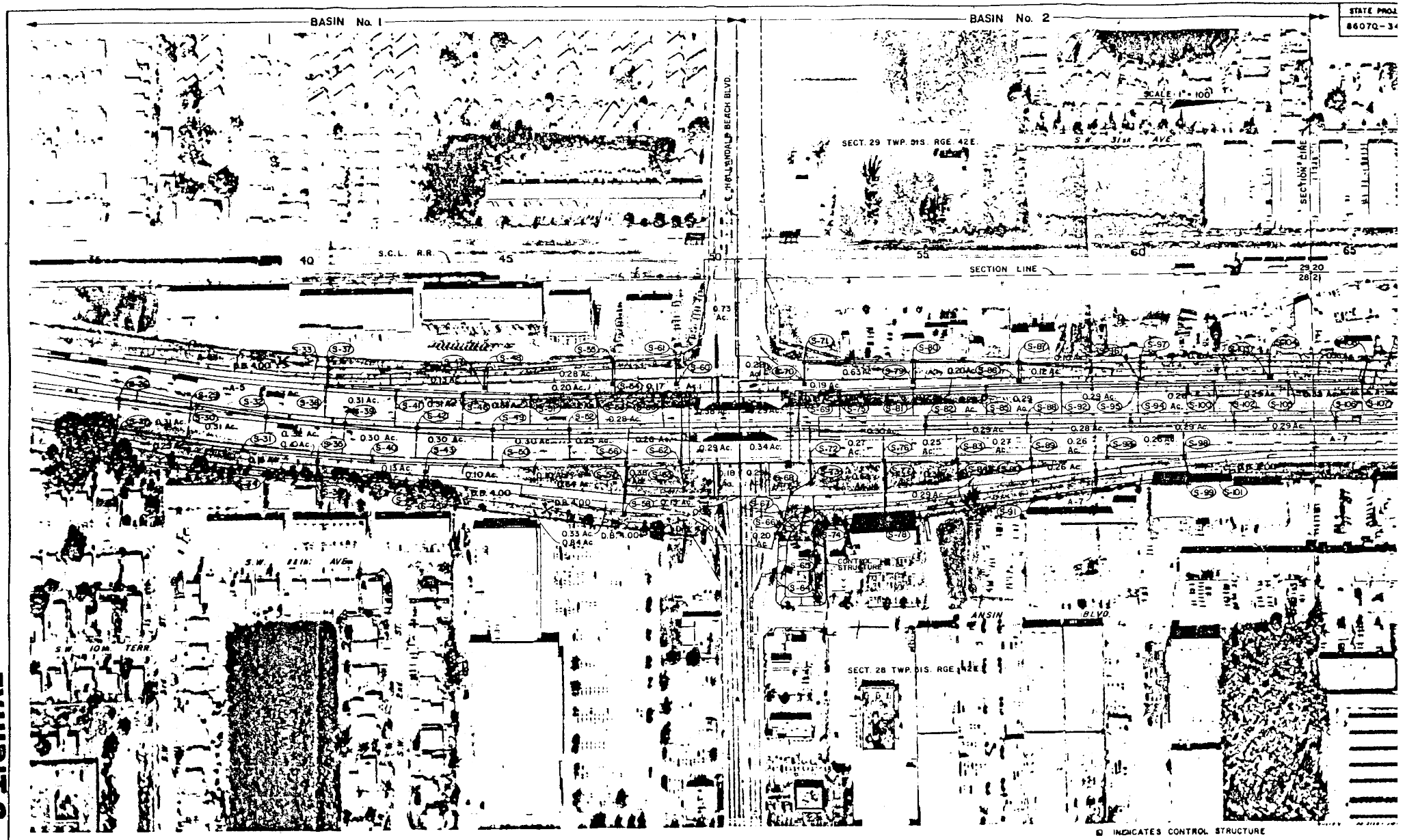
FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY Lamel W. Reynolds DATE 5-3-88

H. J. ROSS ASSOCIATES
CONSULTING ENGINEERS
8401 N.W. 53 Terrace
MIAMI, FLORIDA 33166

DRAINAGE MAP

EXHIBIT 2



| REVISIONS | | |

EXHIBIT A

BASIN No. 2
BASIN No. 3
PEMBROKE ROAD
FOSTER RD
PLUNKETT ST
RODMAN ST
FUNSTON ST
DEWEY ST
WASHINGTON ST
ADAMS ST
MADISON ST
SECTION LINE
DRAINAGE MAP
H.J. ROSS ASSOCIATES
CONSULTING ENGINEERS
MIAMI, FLORIDA
FLORIDA DEPARTMENT OF TRANSPORTATION
DRAINAGE MA
STATE PROJ. NO
86070-3448
SHEET NO
4

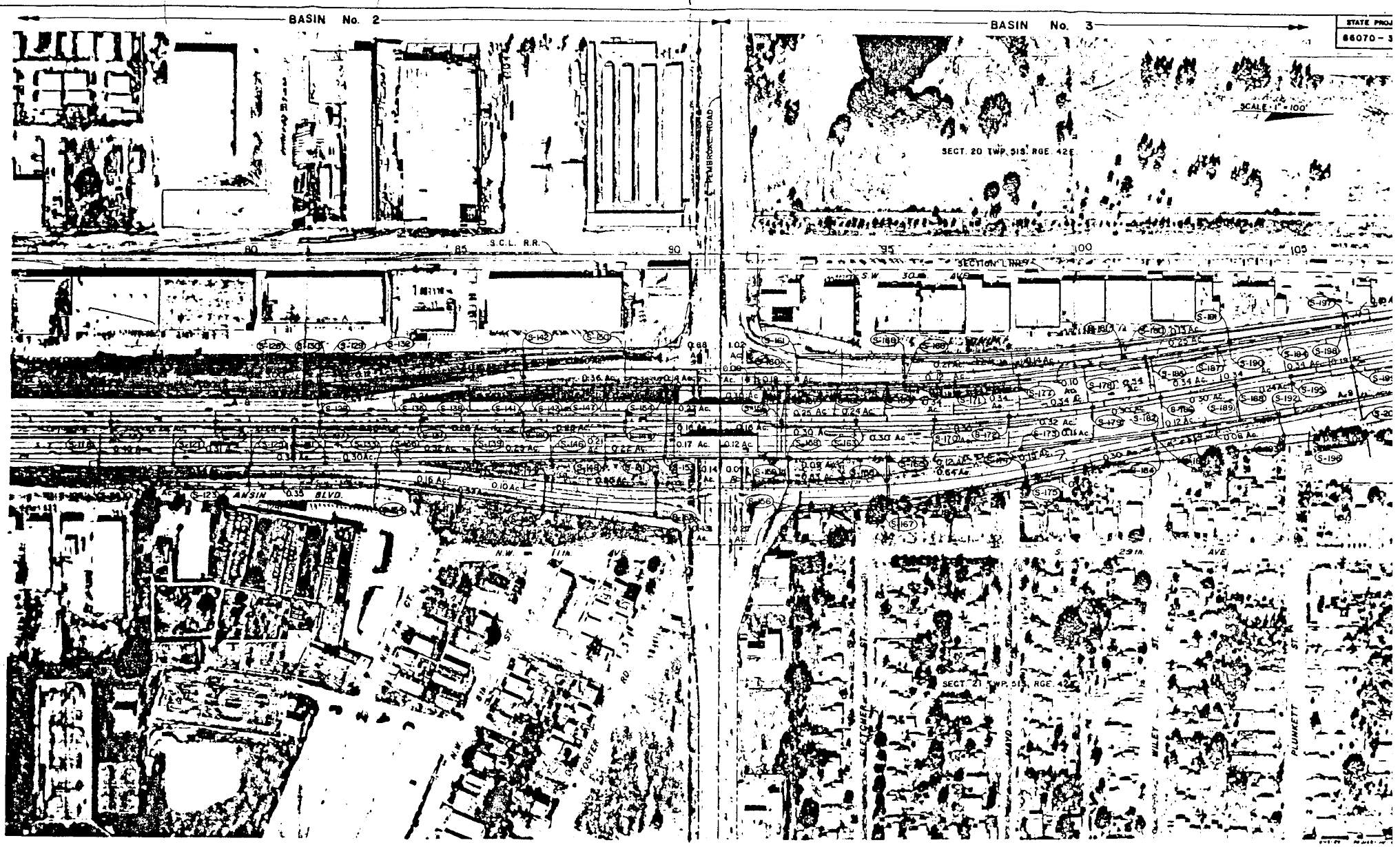
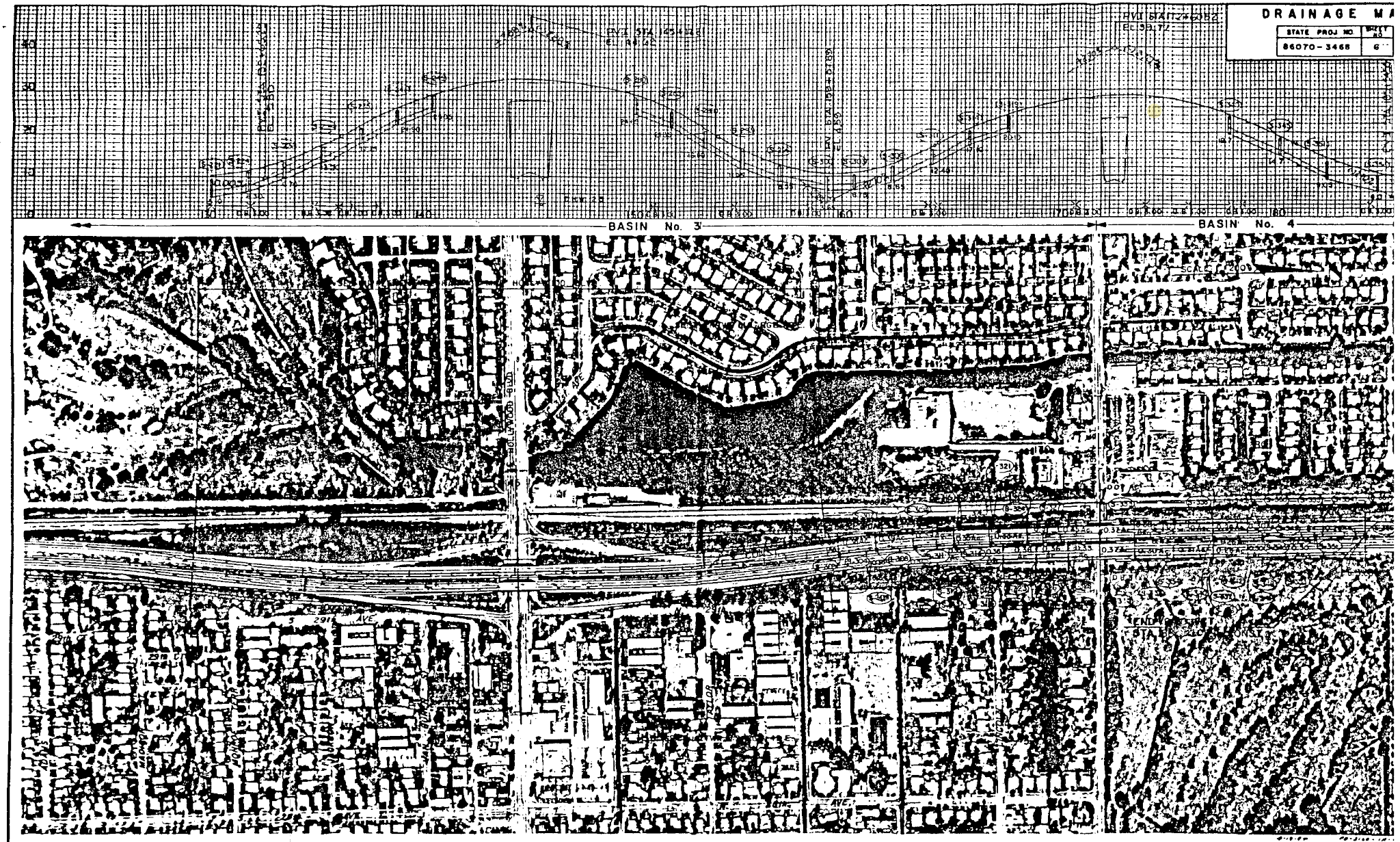


EXHIBIT E

| REVISIONS | | |

EXHIBIT C


DRAINAGE MA
STATE PROJ NO
86070-3468
BASIN No. 3
BASIN No. 4
291st AVE
TAYLOR ST
ELEV. 5.0
ELEV. 5.5
ELEV. 6.0
ELEV. 6.5
ELEV. 7.0
ELEV. 7.5
ELEV. 8.0
ELEV. 8.5
ELEV. 9.0
ELEV. 9.5
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ELEV. 10.5
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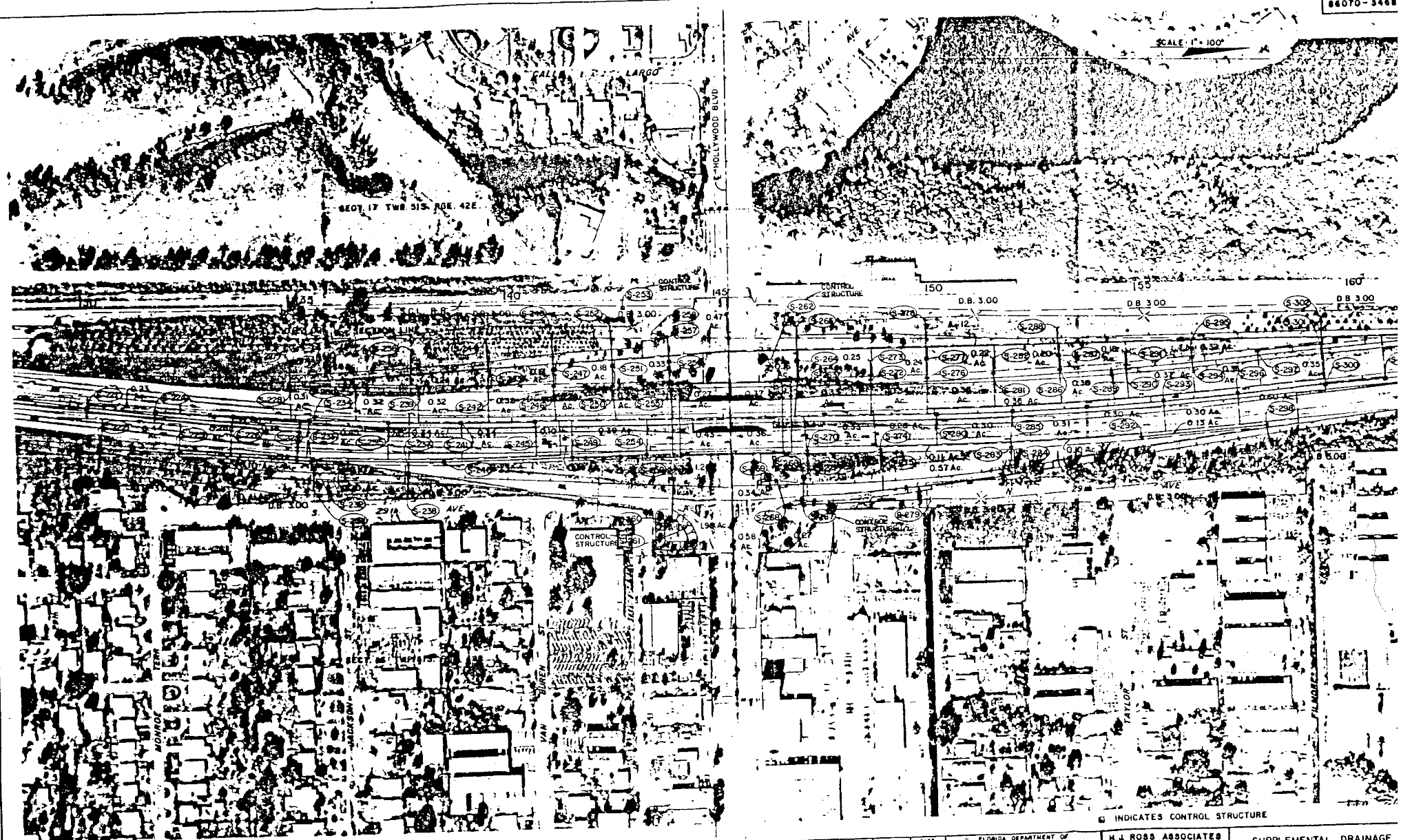
STATE PROJ. NO.
86070-3468



INDICATES CONTROL STRUCTURE

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

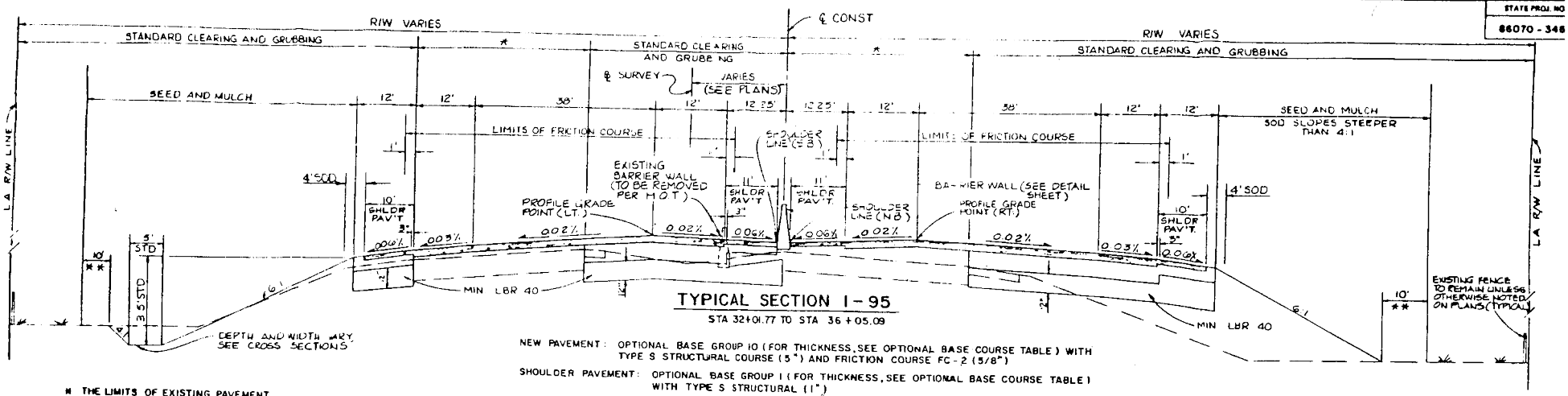
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY [signature] DATE 5-3-88

H. J. ROSS ASSOCIATES
CONSULTING ENGINEERS
8401 NW 53 Terrace
MIAMI, FLORIDA 33166

SUPPLEMENTAL DRAINAGE
HOLLYWOOD BLVD.

EXHIBIT 7

STATE PROJ. NO
86070 - 348



TYPICAL SECTION I-95

STA 32+01.77 TO STA 36+05.09

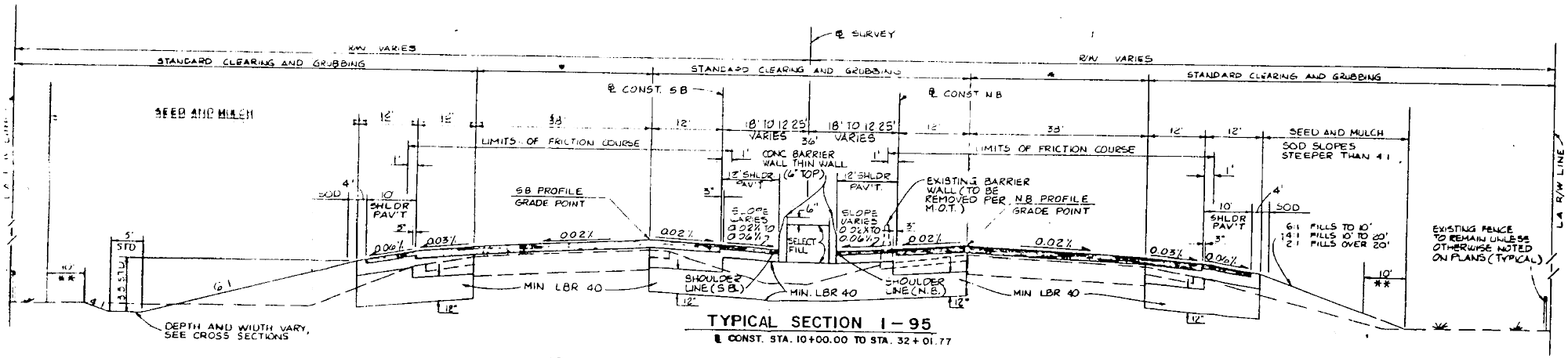
NEW PAVEMENT: OPTIONAL BASE GROUP 10 (FOR THICKNESS, SEE OPTIONAL BASE COURSE TABLE) WITH TYPE S STRUCTURAL COURSE (5") AND FRICTION COURSE FC-2 (5/8")

SHOULDER PAVEMENT: OPTIONAL BASE GROUP 1 (FOR THICKNESS, SEE OPTIONAL BASE COURSE TABLE) WITH TYPE S STRUCTURAL (1")

RESURFACING: OVERBUILD EXISTING PAVEMENT WITH TYPE III (1000 lb STABILITY), AT 600 lb. PER SQ. YD. AVERAGE PLUS TYPE III LEVELING AT 60lb PER SQ. YD. WITH TYPE S. STRUCTURAL COURSE (1") AND FRICTION COURSE FC-2 (5/8")

* THE LIMITS OF EXISTING PAVEMENT TO REMAIN AND TO BE RESURFACED VARY, SEE CROSS SECTIONS AND PLAN

** 10' OR AREA DISTURBED DURING CONSTRUCTION



TYPICAL SECTION I-95

℄ CONST. STA. 10+00.00 TO STA. 32+01.77

NEW PAVEMENT: OPTIONAL BASE GROUP 10 (FOR THICKNESS, SEE OPTIONAL BASE COURSE TABLE) WITH TYPE S STRUCTURAL COURSE (5") AND FRICTION COURSE FC-2 (5/8")

SHOULDER PAVEMENT: OPTIONAL BASE GROUP 1 (FOR THICKNESS, SEE OPTIONAL BASE COURSE TABLE) WITH TYPE S STRUCTURAL (1")

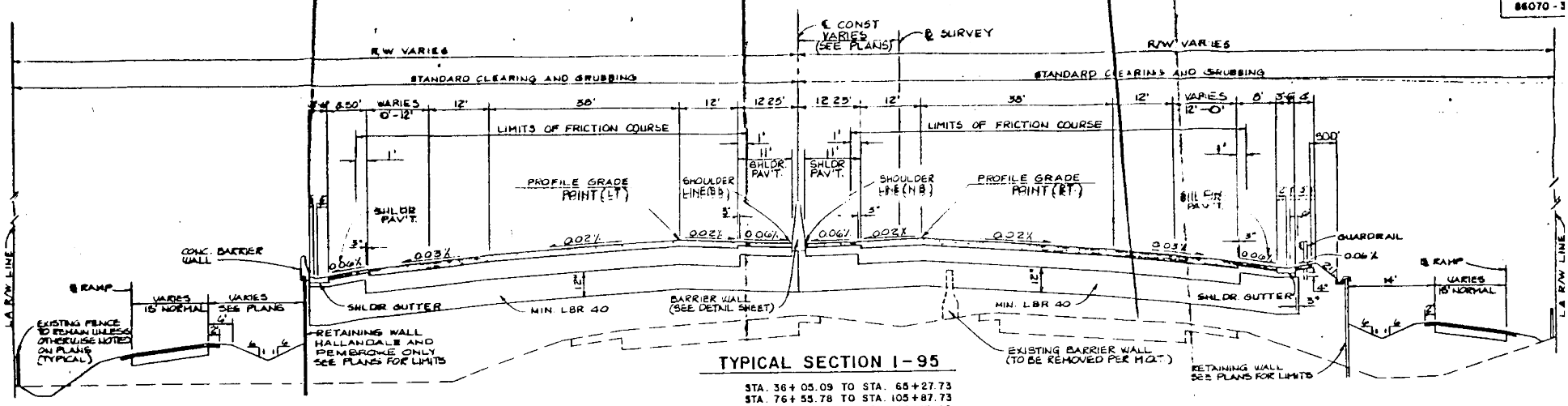
RESURFACING: OVERBUILD EXISTING PAVEMENT WITH TYPE III (1000 lb STABILITY), AT 600 lb PER SQ. YD AVERAGE PLUS TYPE III LEVELING AT 60 lb PER SQ. YD. WITH TYPE S STRUCTURAL COURSE (1") AND FRICTION COURSE FC-2 (5/8")

FOR ADDITIONAL DETAILS SEE INDEX NO'S 281, 400, 410, 450, 452, 500, 505, 510, 520, 525.

1983 ADT 113,605
2003 ADT 211,400
K 8%, D 50%, T 4%
24 HOUR T 2%
DESIGN SPEED 60 MPH.

1. FOR TYPICAL SECTION NOTES SEE SHT. 10
2. FOR OPTIONAL BASE COURSE TABLE SEE SHT. 10

| REVISIONS | | |

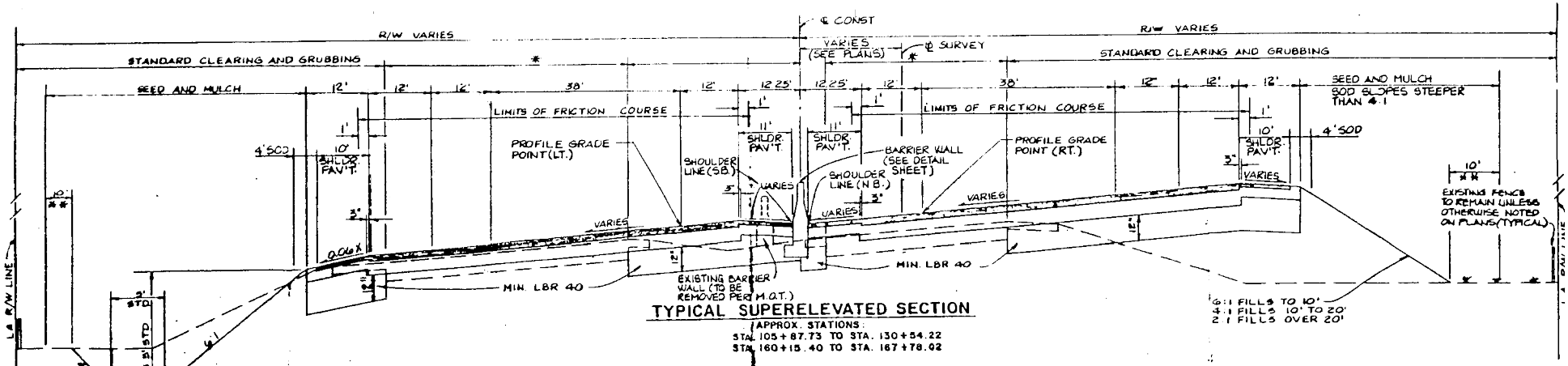


TYPICAL SECTION I-95

STA. 36+05.09 TO STA. 65+27.73
STA. 76+55.78 TO STA. 105+87.73
STA. 130+54.23 TO STA. 160+15.40

NEW PAVEMENT: OPTIONAL BASE GROUP 10 (FOR THICKNESS, SEE OPTIONAL BASE COURSE TABLE) WITH TYPE S STRUCTURAL COURSE (5") AND FRICTION COURSE FC-2 (5/8")

SHOULDER PAVEMENT: OPTIONAL BASE GROUP 1 (FOR THICKNESS, SEE OPTIONAL BASE COURSE TABLE) WITH TYPE S STRUCTURAL (1")



TYPICAL SUPERELEVATED SECTION

APPROX. STATIONS:
STA. 105+87.73 TO STA. 130+54.22
STA. 160+15.40 TO STA. 167+78.02

NEW PAVEMENT: OPTIONAL BASE GROUP 10 (FOR THICKNESS, SEE OPTIONAL BASE COURSE TABLE) WITH TYPE S STRUCTURAL COURSE (5") AND FRICTION COURSE FC-2 (5/8")

SHOULDER PAVEMENT: OPTIONAL BASE GROUP 1 (FOR THICKNESS, SEE OPTIONAL BASE COURSE TABLE) WITH TYPE S STRUCTURAL (1")

RESURFACING: OVERBUILD EXISTING PAVEMENT WITH TYPE III (1000 lb STABILITY), AT 600 lb PER SQ. YD. AVERAGE PLUS TYPE III LEVELING AT 60 lb PER SQ. YD. WITH TYPE S STRUCTURAL COURSE (1") AND FRICTION COURSE FC-2 (5/8")

FOR ADDITIONAL DETAILS SEE INDEX NO'S 28[illegible], 400, 410, 460, 462, 500, 505, 510, 520, 525

* THE LIMITS OF EXISTING PAVEMENT TO REMAIN AND TO BE RESURFACED VARY, SEE CROSS SECTIONS AND PLAN.

** 10' OR AREA DISTURBED DURING CRONSTRUCTION

H.J. ROSS ASSOCIATES
CONSULTING ENGINEERS
6401 N.W. 93 Terrace
MIAMI, FLORIDA 33166

TYPICAL SECTION
I-95 H.O.V. LAN

EXHIBIT 0

STATE PROJ. 86070-3

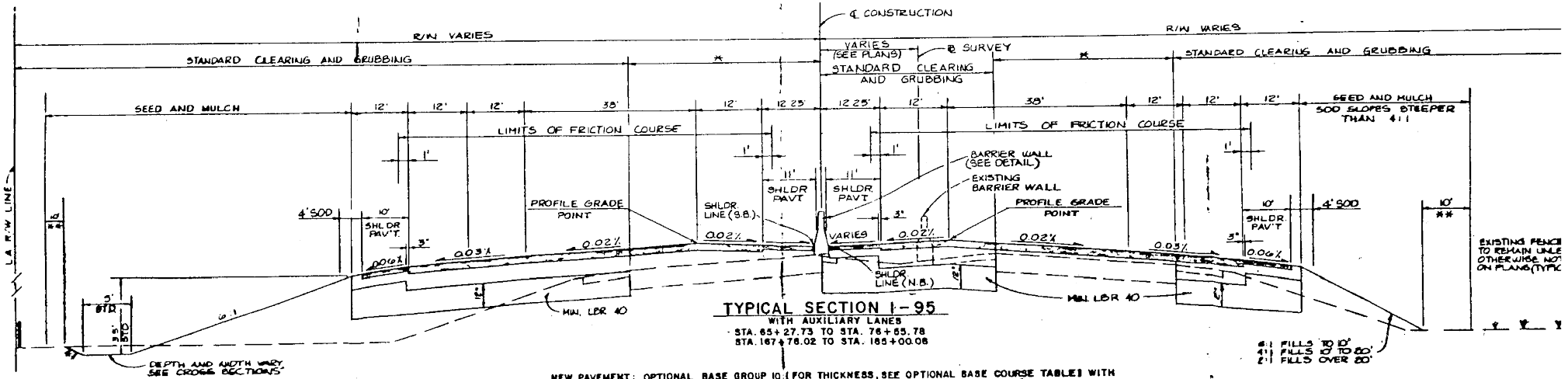
TYPICAL SECTION NOTES

1. ALL PERMANENT GRASS AREAS ARE TO RECEIVE A 4" TOPSOIL TREATMENT.
2. NONE OF THE EXISTING LIMEROCK BASE THAT IS REMOVED SHALL BE USED IN THE CONSTRUCTION OF LIMEROCK BASE.
3. ALL OF THE LIMEROCK BASE THAT IS REMOVED SHALL BE INCORPORATED IN THE STABILIZED PORTION OF THE SUBGRADE.
4. THE QUANTITY INDICATED FOR RESURFACING REPRESENTS AN AVERAGE FOR THE SPECIFIED ROADWAY SECTION. THE RATE OF APPLICATION OF RESURFACING MAY BE DECREASED OR INCREASED AS NECESSARY AT LOCATIONS DESIGNATED BY THE ENGINEER.
5. WHEN SHOULDER PAVEMENT ADJACENT TO SHOULDER GUTTER IS LESS THAN 6' WIDE IT SHALL BE IDENTICAL TO THE ADJACENT ROADWAY PAVEMENT.
6. ALL STATIONING REFERS TO THE ℄ OF CONSTRUCTION OR TO ℄ OF RAMP UNLESS OTHERWISE NOTED.
7. PAVEMENT CROSS SLOPES SHOWN ARE NORMAL SLOPES WITHIN STATION LIMITS INDICATED, BUT VARY ACCORDING TO SUPERELEVATION TRANSITIONS.

OPTIONAL BASE COURSE TABLE

BASE GROUP	THICKNESS INCHES	BASE	OPTION CODE
10	10 1/2"	LIMEROCK	003
	9 1/2"	ASPHALT BASE TYPE I	006
	8"	ASPHALT BASE TYPE II	366
	6 1/2"	ASPHALT BASE TYPE III	367
1	4"	LIMEROCK	001
	4"	ASPHALT BASE TYPE I	005
	4"	ASPHALT BASE TYPE II	008
	4"	ASPHALT BASE TYPE III	007

THE CONTRACTOR SHOULD IDENTIFY THE "PROPOSED" OPTION ON WHICH HIS INITIAL BID IS BASED BY ENTERING THE THREE DIGIT OPTION CODE TO THE RIGHT SIDE OF THE ITEM NUMBER OF OPTIONAL BASE ITEM ON THE SUBMITTED BID PROPOSAL.



TYPICAL SECTION I-95
WITH AUXILIARY LANES
STA. 65+27.73 TO STA. 76+65.78
STA. 167+76.02 TO STA. 185+00.08

* THIS LIMITS OF EXISTING PAVEMENT TO REMAIN AND TO BE RESURFACED VARY, SEE CROSS SECTIONS AND PLANS

** 10' OR AREA DISTURBED DURING CONSTRUCTION

NEW PAVEMENT: OPTIONAL BASE GROUP 10 (FOR THICKNESS, SEE OPTIONAL BASE COURSE TABLE) WITH TYPE S STRUCTURAL COURSE (6") AND FRICTION COURSE FC-2 (5/8")

SHOULDER PAVEMENT: OPTIONAL BASE GROUP 1 (FOR THICKNESS, SEE OPTIONAL BASE COURSE TABLE) WITH TYPE S STRUCTURAL (1")

RESURFACING: OVERBUILD EXISTING PAVEMENT WITH TYPE III (1000 lb STABILITY) AT 600 lb PER SQ. YD. AVERAGE PLUS TYPE III LEVELING AT 601b PER SQ. YD. WITH TYPE S STRUCTURAL COURSE (1") AND FRICTION COURSE FC-2 (5/8")

FOR ADDITIONAL DETAILS SEE INDEX NO'S 281, 400, 410, 450, 452, 500, 505, 510, 520, 525

EXHIBIT 10

REVISIONS

DATE	BY	DESCRIPTION

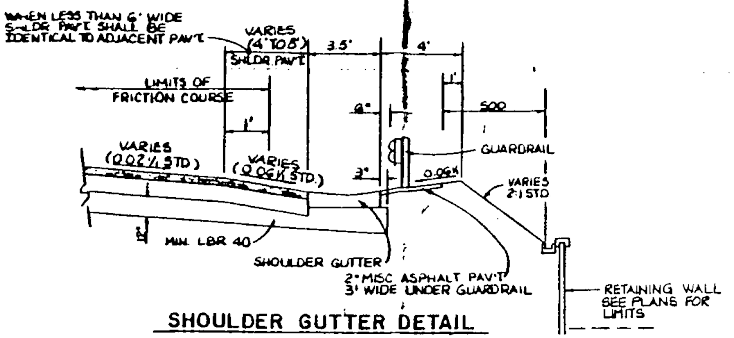
DESIGNED BY | CHECKED BY | DRAWN BY | CHECKED BY

FLORIDA DEPARTMENT OF TRANSPORTATION
DATE 5-3-88

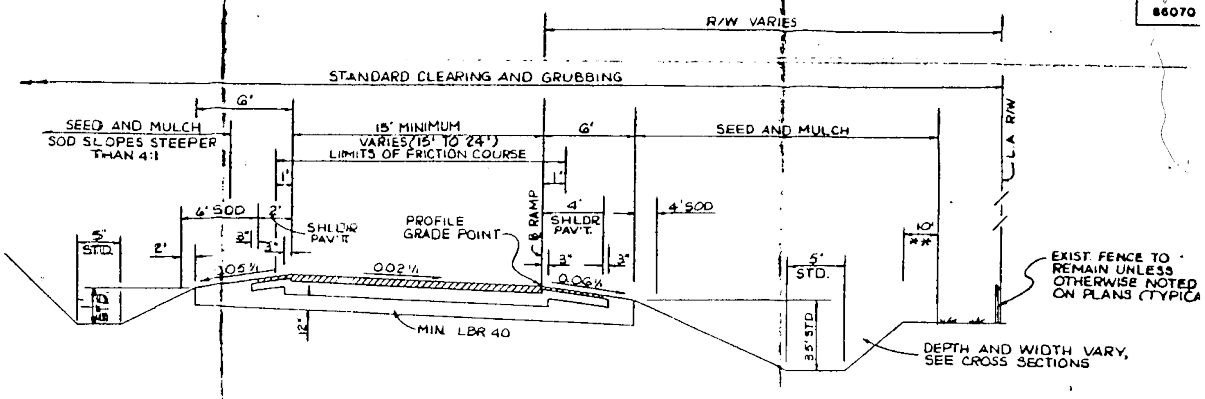
M.J. ROSS ASSOCIATES
CONSULTING ENGINEERS
8401 N.W. 53 TERRACE
MIAMI, FLORIDA 33166

TYPICAL SECTIONS
I-95 H.O.V. LAN

EXHIBIT 11



SHOULDER GUTTER DETAIL



TYPICAL RAMP SECTION

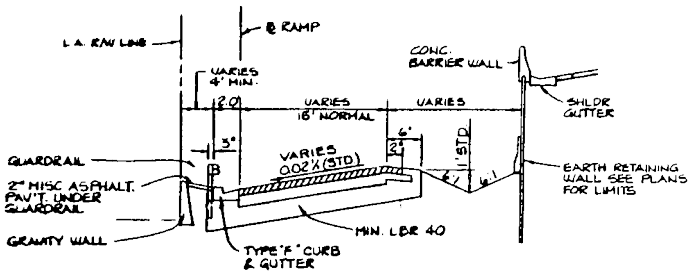
RAMPS "A", "B", "C", & "D" ON
HALLANDALE, PEMBROKE & HOLLYWOOD

NEW PAVEMENT: OPTIONAL BASE GROUP 10 (FOR THICKNESS, SEE OPTIONAL BASE COURSE TABLE) WITH TYPE S STRUCTURAL COURSE (5") AND FRICTION FC-2 (5/8")

SHOULDER PAVEMENT: OPTIONAL BASE GROUP 1 (FOR THICKNESS, SEE OPTIONAL BASE COURSE TABLE) WITH TYPE S STRUCTURAL (1")

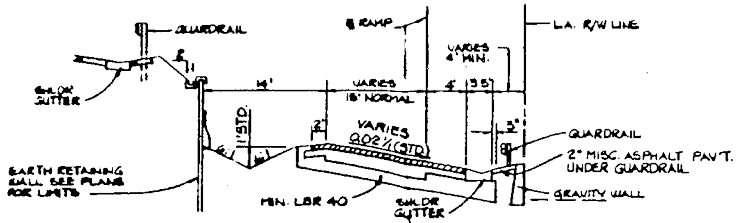
* THE LIMITS OF EXISTING PAVE TO REMAIN AND TO BE RESUR VARY, SEE CROSS SECTIONS PLAN

** 10' OR AREA DISTURBED DUR CONSTRUCTION



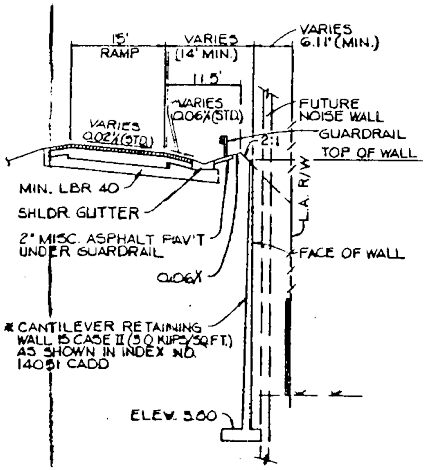
TYPICAL SECTION ON TIGHT RIGHT - OF - WAY

RAMP "C" HALLANDALE



TYPICAL SECTION ON TIGHT RIGHT - OF - WAY

RAMP "C" PEMBROKE
RAMP "A" HOLLYWOOD



TYPICAL WALL SECTION

RAMP "A" HALLANDALE

RAMP "A" WALL

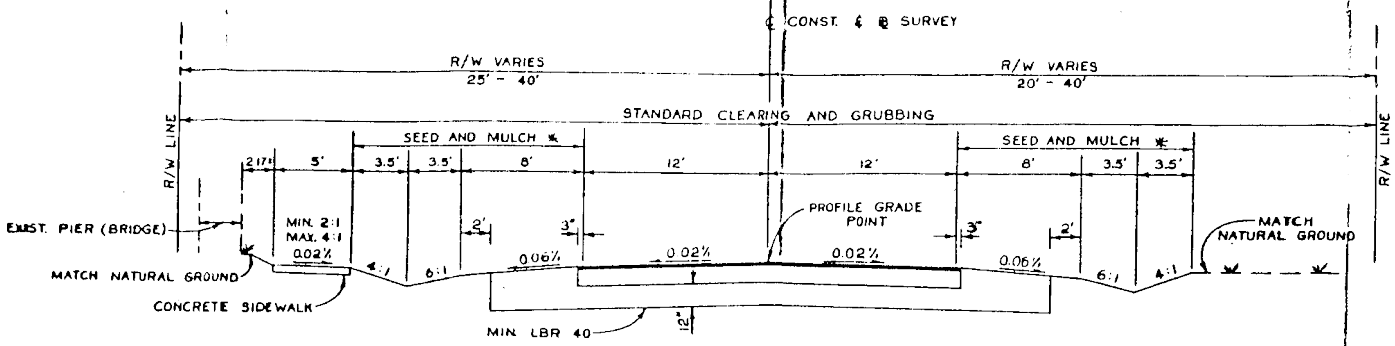
STATION	FACE OF WALL OFFSET	TOP ELEV.	WALL TYPE
237+00	28.09' RT.	5.20	GRAVITY WALL
237+50		6.85	
238+00		8.20	
238+50		9.20	
239+00		10.10	
239+50		10.60	
240+00	14.00' RT.	11.40	CANTILEVER RETAINING WALL
240+50		11.75	
241+00	14.00' RT.	11.90	
241+50	29.00' RT.	11.80	
242+00		11.60	
242+50	29.00' RT.	11.15	
243+00	55.00' RT.	7.60	GRAVITY WALL
243+28	45.00' RT.	6.10	

* NOTE: OFFSETS ARE TO FACE OF WALL.

1. FOR TYPICAL SECTION NOTES SEE SHT.
2. FOR OPTIONAL BASE COURSE TABLE SEE

| REVISIONS | | |

STATE PROJ. NO.
86070 - 341



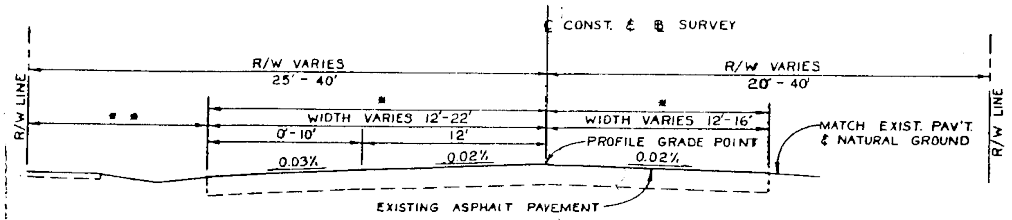
TYPICAL SECTION
STA. 13+60 TO STA. 18+00

NEW CONSTRUCTION: OPTIONAL BASE GROUP 9 (FOR THICKNESS, SEE BELOW) WITH TYPE S STRUCTURAL COURSE (3") AND FRICTION COURSE FC-1 OR FC-4 (1")

OPTIONAL BASE COURSES PERMITTED:	OPTION CODE:
10" LIMEROCK BASE COURSE	990
9" ASPHALT BASE COURSE TYPE I	325
7" ASPHALT BASE COURSE TYPE II	326
6" ASPHALT BASE COURSE TYPE III	327

NOTE:
THE CONTRACTOR SHOULD IDENTIFY THE "PROPOSED" OPTION ON WHICH HIS INITIAL BID IS BASED BY ENTERING THE THREE DIGIT OPTION CODE TO THE RIGHT SIDE OF THE ITEM NUMBER OF OPTIONAL BASE ITEM ON THE SUBMITTED BID PROPOSAL.

* UNDER I-95 BRIDGE (STA. 14+40 TO 1(USE 2" MISC ASPHALT PAVEMENT.



TYPICAL SECTION
STA. 11+00 TO STA. 13+44
STA. 18+00 TO STA. 19+00

* THE LIMITS OF EXISTING PAVEMENT TO REMAIN AND TO BE RESURFACED PER CROSS SECTIONS AND PLAN.

* * EXISTING SIDEWALK AND SWALE TREATMENT VARIES. SEE CROSS SECTIONS AND PLAN.

RESURFACING: RESURFACE EXISTING PAVEMENT WITH TYPE III LEVELING AT 50 lb PER SQ. YD. AVERAGE AND TYPE S STRUCTURAL COURSE (1 1/2") WITH FRICTION COURSE FC-1 OR FC-4 (1")

FOR ADDITIONAL DETAILS SEE INDEX NOS. 304, 500, 513, 515 & 560

| REVISIONS | | |

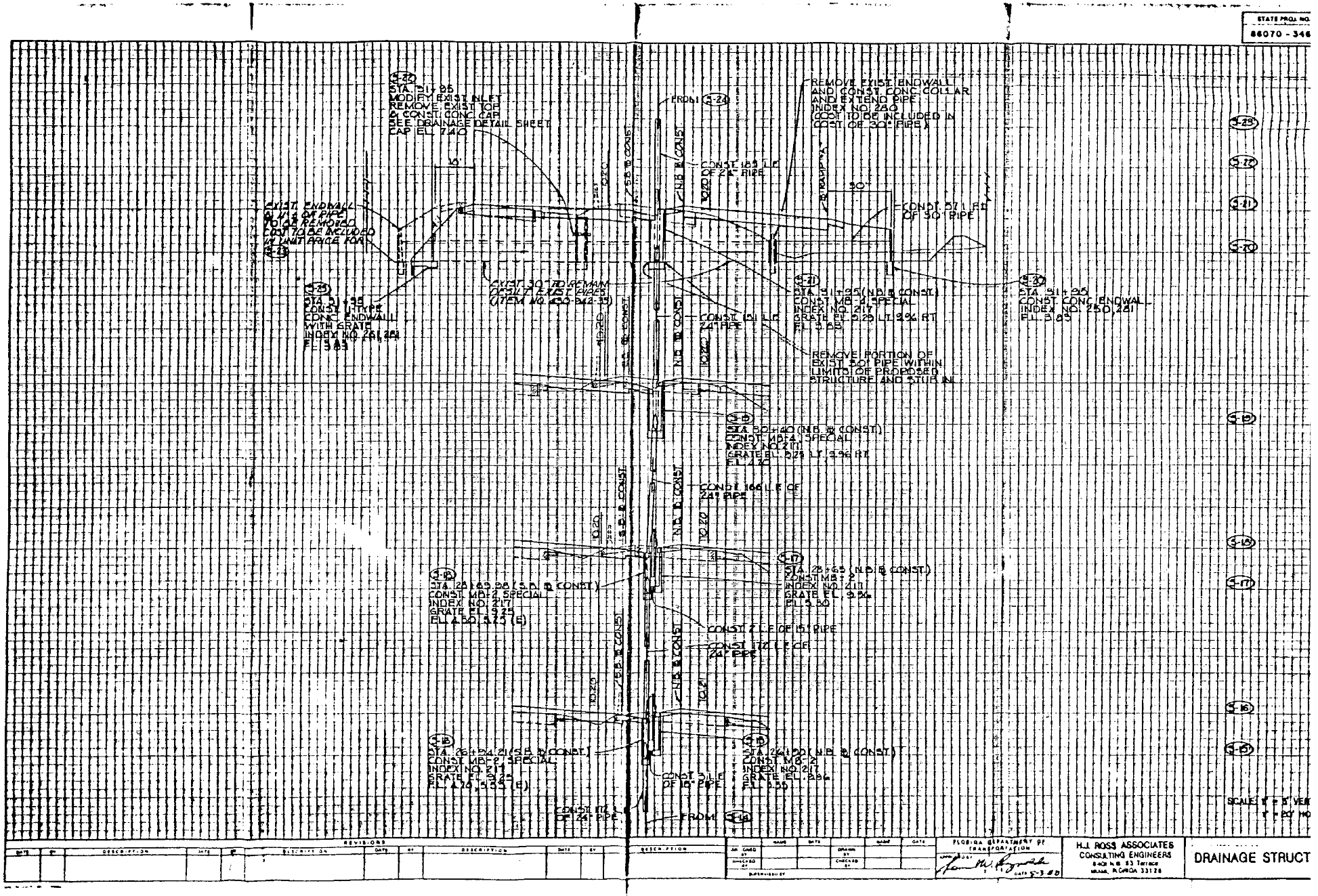

STATE PROJ. NO.
86070 - 346
S-22
STA. 31+95
MODIFY EXIST. INLET
REMOVE EXIST. TOP
& CONST. CONC. CAP
SEE DRAINAGE DETAIL SHEET
CAP EL. 7.40
FROM S-24
REMOVE EXIST. ENDWALL
AND CONST. CONC. COLLAR
AND EXTEND PIPE
INDEX NO. 280
(COST TO BE INCLUDED IN
COST OF 30" PIPE)
CONST. 185 L.F.
OF 24" PIPE
CONST. 57 L.F.
OF 30" PIPE
EXIST. ENDWALL
& 4'-4" OF PIPE
TO BE REMOVED
COST TO BE INCLUDED
IN UNIT PRICE FOR
S-23
S-25
STA. 31+95
CONST. U-TYPE
CONC. ENDWALL
WITH GRATE
INDEX NO. 261, 281
EXIST. 30" TO REMAIN
DESILT EXIST. PIPES
(ITEM NO. 430-942-35)
S-21
STA. 31+95 (N.B. & CONST.)
CONST. MB-4 SPECIAL
INDEX NO. 217
GRATE EL. 9.29 LT. 9.96 RT.
EL. 5.83
S-20
STA. 31+95
CONST. CONC. ENDWALL
INDEX NO. 250, 281
EL. 3.83
CONST. 151 L.F.
24" PIPE
REMOVE PORTION OF
EXIST. 30" PIPE WITHIN
LIMITS OF PROPOSED
STRUCTURE AND STUB IN
S-19
STA. 30+40 (N.B. & CONST.)
CONST. MB-4 SPECIAL
INDEX NO. 217
GRATE EL. 9.25 LT. 9.96 RT.
EL. 4.70
CONST. 166 L.F. OF
24" PIPE
S-18
STA. 28+69.98 (S.B. & CONST.)
CONST. MB-2 SPECIAL
INDEX NO. 217
GRATE EL. 9.25
EL. 4.50, 5.25 (E)
S-17
STA. 28+65 (N.B. & CONST.)
CONST. MB-2
INDEX NO. 217
GRATE EL. 9.96
EL. 5.50
CONST. 2 L.F. OF 15" PIPE
CONST. 172 L.F. OF
24" PIPE
S-16
S-15
STA. 26+94.21 (S.B. & CONST.)
CONST. MB-2 SPECIAL
INDEX NO. 217
GRATE EL. 9.25
EL. 4.70, 5.55 (E)
S-15
STA. 26+90 (N.B. & CONST.)
CONST. MB-2
INDEX NO. 217
GRATE EL. 9.96
EL. 5.55
CONST. 3 L.F.
OF 15" PIPE
CONST. 172 L.F.
OF 24" PIPE
FROM S-14
S-23
S-22
S-21
S-20
S-19
S-18
S-17
S-16
S-15
SCALE: 1" = 5' VER
1" = 20' HO
REVISIONS
DATE
BY
DESCRIPTION
DATE
BY
DESCRIPTION
DATE
BY
DESCRIPTION
DATE
BY
DESCRIPTION
JOB CHKD BY
NAME
DATE
DRAWN BY
NAME
DATE
CHECKED BY
SUPERVISED BY
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE 5-3-80
H.J. ROSS ASSOCIATES
CONSULTING ENGINEERS
8401 N.W. 53 Terrace
MIAMI, FLORIDA 33126
DRAINAGE STRUCT

EXHIBIT 1.3

EXHIBIT 14

DRAINAGE STRU
H. J. ROSS ASSOCIATES
CONSULTING ENGINEERS
MIAMI, FLORIDA
STATE PROJ. NO.
86070-3468

EXHIBIT 15

FLORIDA DEPARTMENT OF TRANSPORTATION
H.J. ROSS ASSOCIATES
CONSULTING ENGINEERS
MIAMI FLORIDA
DRAINAGE STRUC
STATE PROJ NO
86070-3468
STA 24+80
CONST MH TYPE 'P' DOT
INDEX NO 2001
RIM EL 10.00
F.L.'S 5.00
CONST 76 L.F. OF 24" PIPE
CONST 6 L.F. OF 30" PIPE
STA 24+80
CONCRETE HEADWALL
INDEX NO 2501 (2)(B)
F.L.'S 5.00
CONST 21 L.F. OF 18" CMP
CONST 30 L.F. OF 18" PIPE
STA 21+66.74
CONST INLET TYPE 'S'
INDEX NO 2120
GRATE EL 13.20
F.L. 13.20
CONST 226 L.F. OF 12" PIPE
STA 21+63
CONST MH 'S' SPECIAL
INDEX NO 2120
GRATE EL 19.28
F.L. 15.28
CONST 111 L.F. OF 18" PIPE
CONST 111 L.F. OF 15" PIPE
CONST 226 L.F. OF 15" PIPE
STA 20+05
CONST INLET TYPE 'S'
INDEX NO 2120
GRATE EL 14.15
F.L. 9.53
CONST 171 L.F. OF 18" PIPE
CONST 236 L.F. OF 18" PIPE
STA 19+83
CONST MH 'S' SPECIAL
INDEX NO 2120
GRATE EL 10.94
F.L. 10.10
CONST 124 L.F. OF 24" PIPE
STA 20+00
CONST INLET TYPE 'A'
INDEX NO 2130
GRATE EL 9.40
F.L. 3.90
CONST 347 L.F. OF 24"x38" PIPE
CONST 207 L.F. OF 24" PIPE
STA 20+00
CONST INLET TYPE 'S'
INDEX NO 2120
GRATE EL 9.00
F.L. 4.50
CONST 30 L.F. OF 24" PIPE
FROM S-132
FROM S-133
FROM S-134
FROM S-135
FROM S-136
FROM S-137
TO S-127
TO S-128
TO S-129
TO S-130
TO S-131
TO S-138
TO S-139
TO S-140
S-117
S-118
S-119
S-120
S-121
S-122
S-123
S-124
S-125
S-126
S-127
S-128
S-129
S-130
S-131
S-132
S-133
S-134
S-135
S-136
S-137
S-138
S-139
S-140

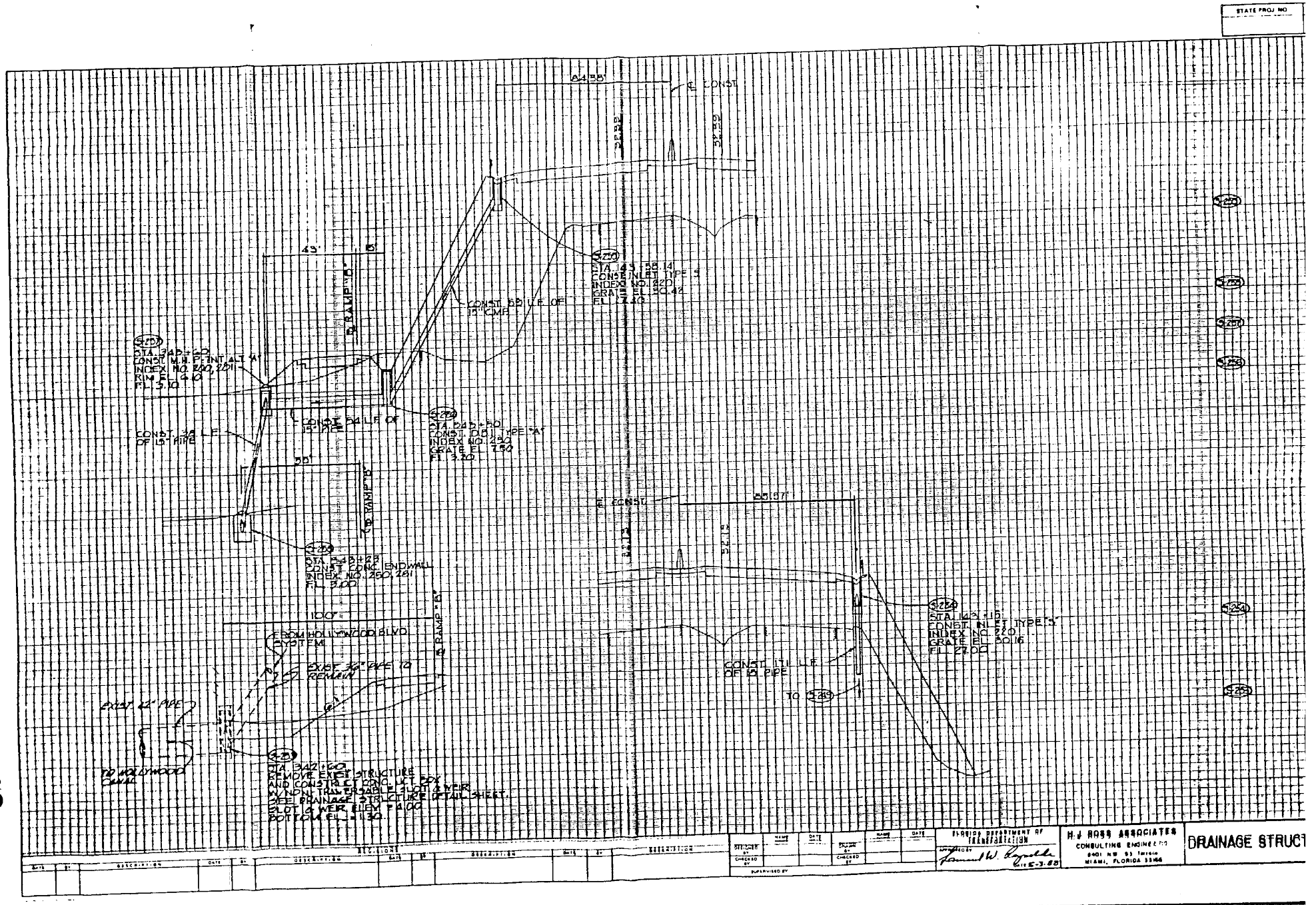
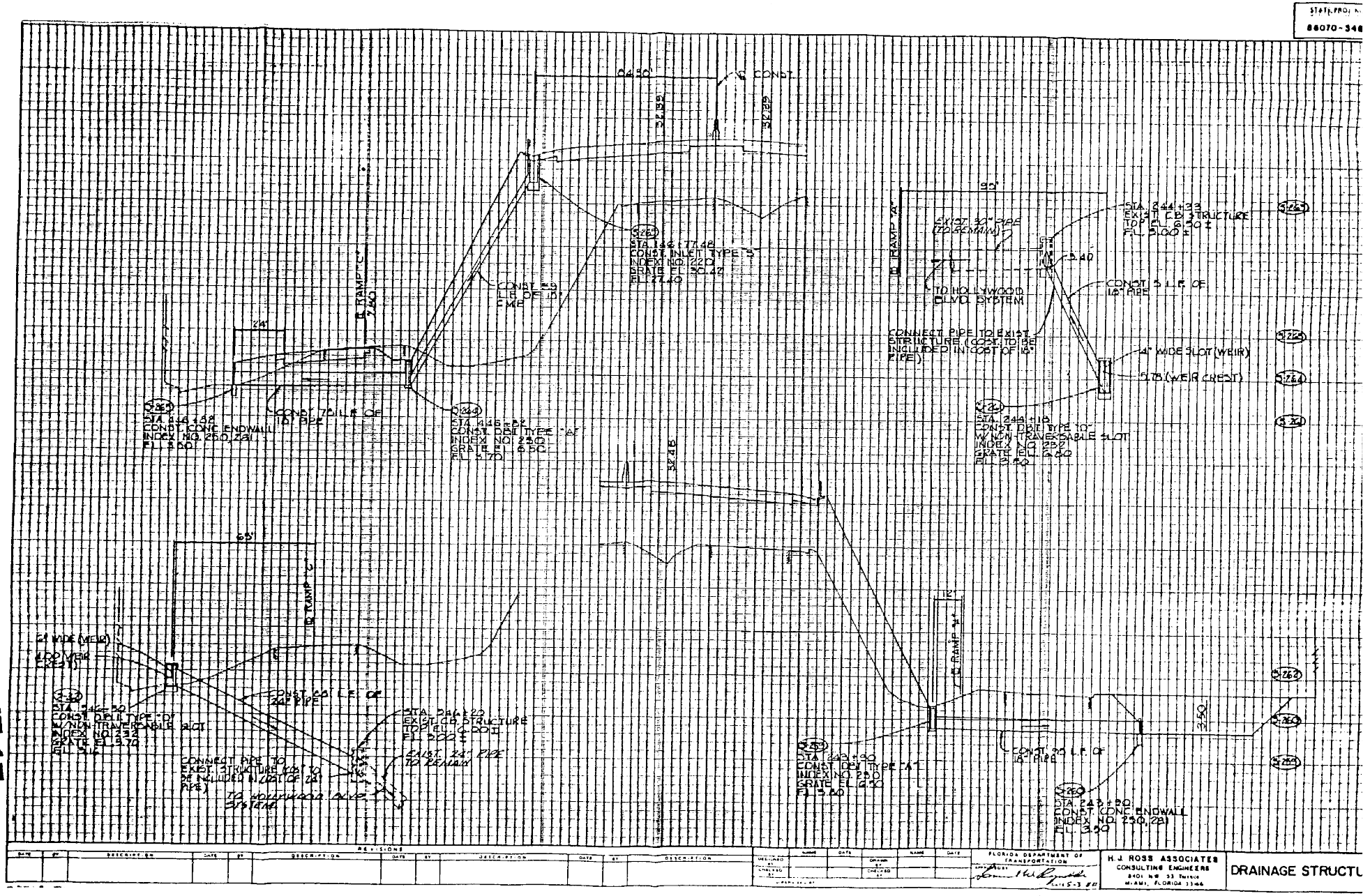

STATE PROJ NO
84.38'
℄ CONST
43'
15'
℄ RAMP "B"
S-250
STA. 143+58.14
CONST. INLET TYPE "S"
INDEX NO. 220
GRATE EL. 30.42
F.L. 27.40
CONST. 58 L.F. OF 15" CMP
S-257
STA. 343+60
CONST. M.H. P-INT. ALT. "A"
INDEX NO. 250, 281
RIM EL. 6.10
F.L. 3.10
CONST. 54 L.F. OF 15" PIPE
S-256
STA. 343+50
CONST. D.B.I. TYPE "A"
INDEX NO. 250
GRATE EL. 7.50
F.L. 3.20
CONST. 38 L.F. OF 15" PIPE
55'
℄ RAMP "B"
℄ CONST
85.57'
S-255
STA. 343+28
CONST. CONC. ENDWALL
INDEX NO. 250, 281
F.L. 3.00
100'
FROM HOLLYWOOD BLVD SYSTEM
EXIST. 36" PIPE TO REMAIN
℄ RAMP "B"
S-254
STA. 143+15
CONST. INLET TYPE "S"
INDEX NO. 220
GRATE EL. 30.16
F.L. 27.00
CONST. 171 L.F. OF 15" PIPE
TO S-249
EXIST. 42" PIPE
TO HOLLYWOOD CANAL
S-253
STA. 342+60
REMOVE EXIST. STRUCTURE
AND CONSTRUCT CONC. JCT. BOX
W/NON-TRAVERSABLE SLOT & WEIR
SEE DRAINAGE STRUCTURE DETAIL SHEET.
SLOT & WEIR ELEV. = 4.00
BOTTOM EL. = 1.30
REVISIONS
DESCRIPTION
DATE
BY
DESIGNED BY
CHECKED BY
SUPERVISED BY
NAME
DATE
DRAWN BY
CHECKED BY
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE 5-3-88
H.J. ROSS ASSOCIATES
CONSULTING ENGINEERS
8401 NW 53 Terrace
MIAMI, FLORIDA 33166
DRAINAGE STRUCT

EXHIBIT 16

EXHIBIT 17


STATE PROJ NO.
86070-3446
CONST.
94.00
52.82
SE 28
B RAMP "C"
2.40
95'
EXIST. 30" PIPE (TO REMAIN)
B RAMP "A"
STA. 244+13
EXIST. C.B. STRUCTURE
TOP EL. 5.34
FL. 1.00 IN
FL. 0.64 OUT
5.40
TO HOLLYWOOD BLVD. SYSTEM
CONST. 5 L.F. OF 18" PIPE
CONNECT PIPE TO EXIST. STRUCTURE (COST TO BE INCLUDED IN COST OF 5' PIPE)
4" WIDE SLOT (WEIR)
5.78 (WEIR CREST)
STA. 244+19
CONST. DOT TYPE 10 W/NON-TRAVERSABLE SLOT
INDEX NO. 2327
GRATE EL. 6.40
FL. 3.50
STA. 246+16.68
CONST. CONC. ENDWALL
INDEX NO. 250.221
FL. 3.50
CONST. 70 L.F. OF 18" PIPE
STA. 246+46
CONST. DOT TYPE "A"
INDEX NO. 2350
GRATE EL. 6.50
FL. 3.70
STA. 246+78
CONST. INLET TYPE "B"
INDEX NO. 2220
GRATE EL. 30.42
FL. 27.40
CONST. 45 L.F. OF 18" PIPE
65'
B RAMP "C"
4" WIDE (WEIR)
(TO BE FIELD VERIFIED)
STA. 246+50
CONST. DOT TYPE "D" W/NON-TRAVERSABLE SLOT
INDEX NO. 2347
GRATE EL. 5.70
FL. 3.14
CONST. 60 L.F. OF 24" PIPE
STA. 246+20
EXIST. C.B. STRUCTURE
TOP EL. 4.20
FL. 0.22 IN
EXIST. 24" PIPE TO REMAIN
CONNECT PIPE TO EXIST. STRUCTURE (COST TO BE INCLUDED IN COST OF 24" PIPE)
TO HOLLYWOOD BLVD. SYSTEM
B RAMP "A"
12"
STA. 242+50
CONST. DOT TYPE "A"
INDEX NO. 2350
GRATE EL. 6.50
FL. 3.50
CONST. 20 L.F. OF 18" PIPE
STA. 242+20
CONST. CONC. ENDWALL
INDEX NO. 250.221
FL. 3.50
REVISIONS
DESIGNED BY
CHECKED BY
FLORIDA DEPARTMENT OF TRANSPORTATION
H. J. ROSS ASSOCIATES
CONSULTING ENGINEERS
MIAMI, FLORIDA 33166
DRAINAGE STRUCTU

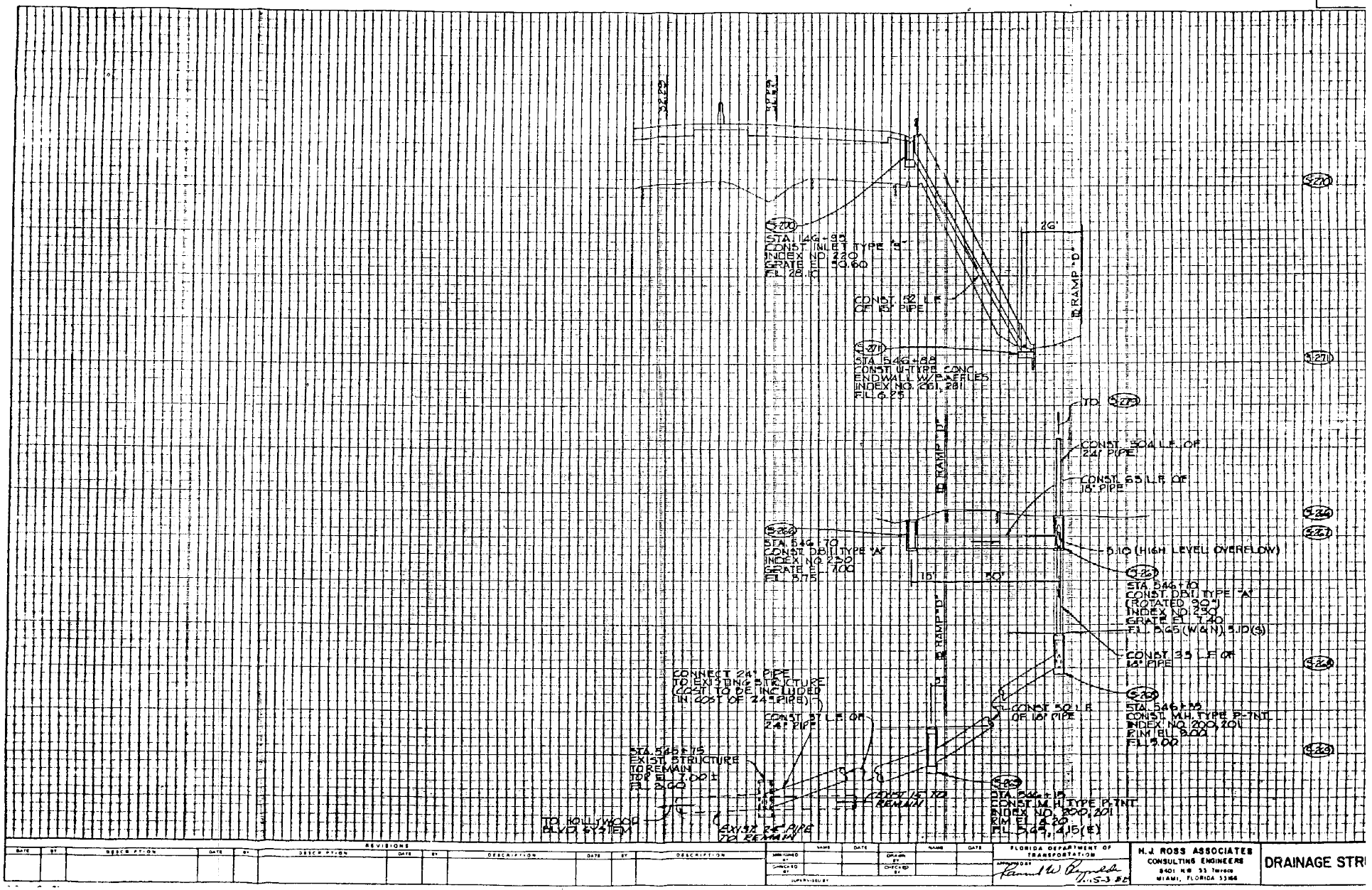

STATE PR
86070-
S-270
STA. 146+95
CONST. INLET TYPE "S"
INDEX NO. 220
GRATE EL. 50.60
F.L. 28.10
CONST. 52 L.F. OF 15" PIPE
26'
℄ RAMP "D"
S-271
STA. 546+88
CONST. U-TYPE CONC. ENDWALL W/BAFFLES
INDEX NO. 261, 281
F.L. 6.25
TO S-279
CONST. 504 L.F. OF 24" PIPE
CONST. 65 L.F. OF 18" PIPE
S-266
S-267
STA. 546+70
CONST. DBI TYPE "A"
INDEX NO. 230
GRATE EL. 7.00
F.L. 3.75
5.10 (HIGH LEVEL OVERFLOW)
15'
30'
STA. 546+70
CONST. DBI TYPE "A"
(ROTATED 90°)
INDEX NO. 230
GRATE EL. 7.40
F.L. 3.65 (W&N), 5.10 (S)
CONST. 35 L.F. OF 18" PIPE
CONNECT 24" PIPE TO EXISTING STRUCTURE (COST TO BE INCLUDED IN COST OF 24" PIPE)
CONST. 37 L.F. OF 24" PIPE
CONST. 50 L.F. OF 18" PIPE
STA. 546+35
CONST. M.H. TYPE P-7NT
INDEX NO. 200, 201
RIM EL. 8.00
F.L. 5.00
STA. 545+75
EXIST. STRUCTURE TO REMAIN
TOP EL. 7.00±
F.L. 3.60
EXIST. 15" TO REMAIN
STA. 546+15
CONST. M.H. TYPE P-7NT
INDEX NO. 200, 201
RIM EL. 8.20
F.L. 5.65, 4.15 (E)
TO HOLLYWOOD BLVD. SYSTEM
EXIST. 24" PIPE TO REMAIN
REVISIONS
DATE
BY
DESCRIPTION
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
H.J. ROSS ASSOCIATES
CONSULTING ENGINEERS
8401 NW 53 Terrace
MIAMI, FLORIDA 33166
DRAINAGE STR

EXHIBIT 18

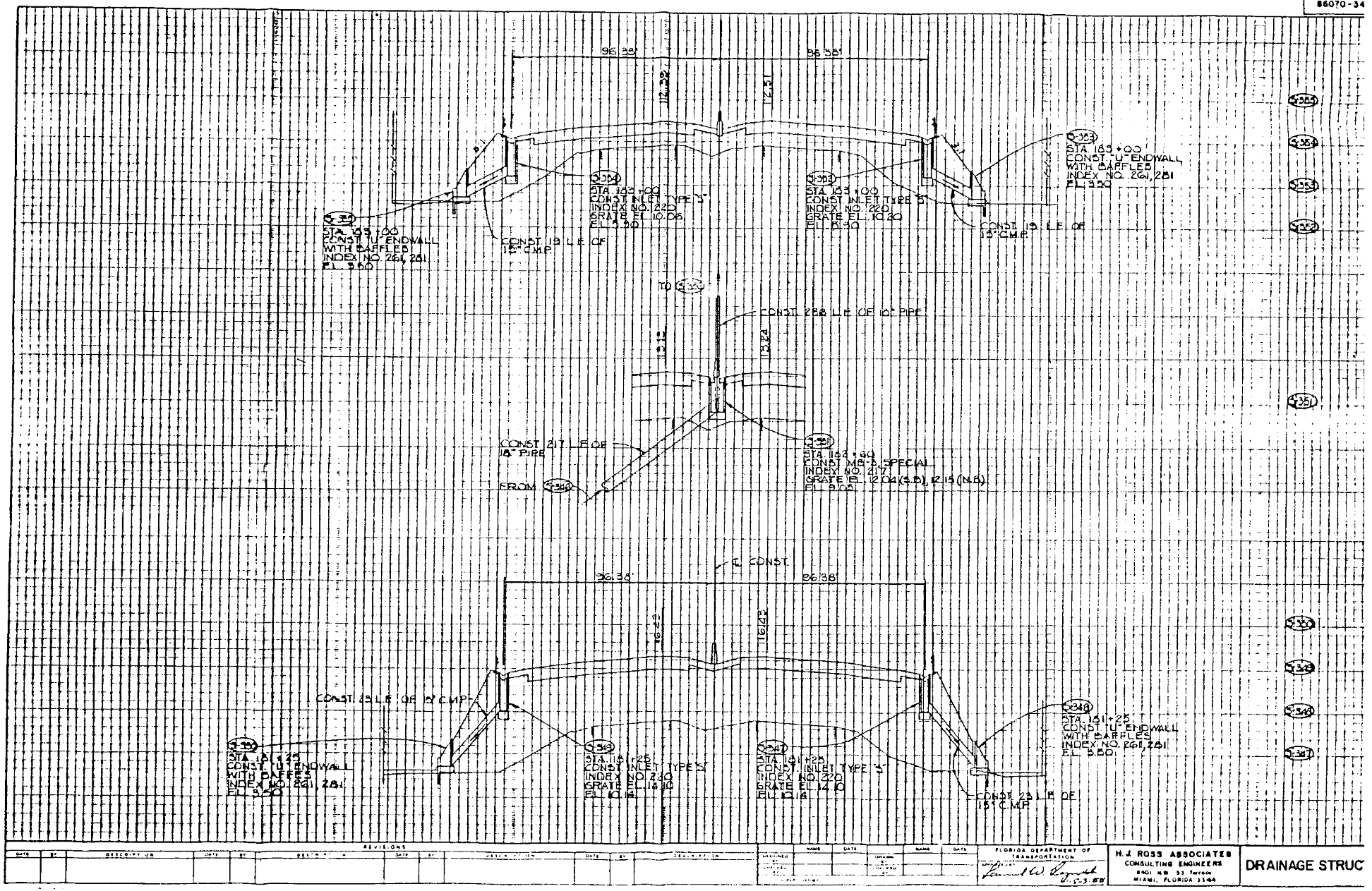
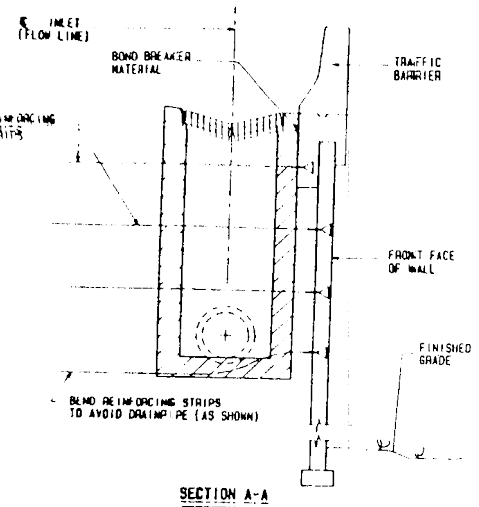

STATE PROJ
86070-34
96.38'
96.38'
112.39
112.51
S-353
STA. 183+00
CONST. "U" ENDWALL
WITH BAFFLES
INDEX NO. 261, 281
EL. 3.50
S-354
STA. 183+00
CONST. INLET TYPE "S"
INDEX NO. 220
GRATE EL. 10.06
EL. 5.90
S-352
STA. 183+00
CONST. INLET TYPE "S"
INDEX NO. 220
GRATE EL. 10.20
EL. 5.90
S-353
STA. 183+00
CONST. "U" ENDWALL
WITH BAFFLES
INDEX NO. 261, 281
EL. 3.50
CONST. 19 L.F. OF
15" C.M.P.
CONST. 19 L.F. OF
15" C.M.P.
TO S-350
CONST. 258 L.F. OF 18" PIPE
13.13
13.24
S-351
CONST. 217 L.F. OF
18" PIPE
FROM S-346
S-351
STA. 182+60
CONST. MB-3, SPECIAL
INDEX NO. 217
GRATE EL. 12.04 (S.B.), 12.15 (N.B.)
EL. 9.05
℄ CONST.
96.38'
96.38'
116.43
116.43
CONST. 23 L.F. OF 15" C.M.P.
S-350
STA. 181+25
CONST. "U" ENDWALL
WITH BAFFLES
INDEX NO. 261, 281
EL. 3.50
S-349
STA. 181+25
CONST. INLET TYPE "S"
INDEX NO. 220
GRATE EL. 14.10
EL. 10.14
S-347
STA. 181+25
CONST. INLET TYPE "S"
INDEX NO. 220
GRATE EL. 14.10
EL. 10.14
S-348
STA. 181+25
CONST. "U" ENDWALL
WITH BAFFLES
INDEX NO. 261, 281
EL. 3.50
CONST. 23 L.F. OF
15" C.M.P.
S-350
S-349
S-348
S-347
REVISIONS
DATE
BY
DESCRIPTION
FLORIDA DEPARTMENT OF TRANSPORTATION
H. J. ROSS ASSOCIATES
CONSULTING ENGINEERS
8401 NW 53 Terrace
MIAMI, FLORIDA 33166
DRAINAGE STRUC

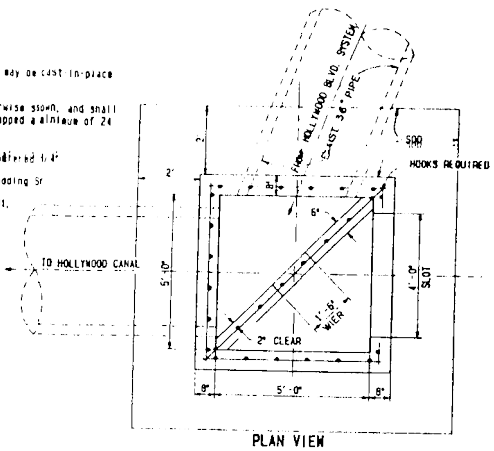
EXHIBIT 19



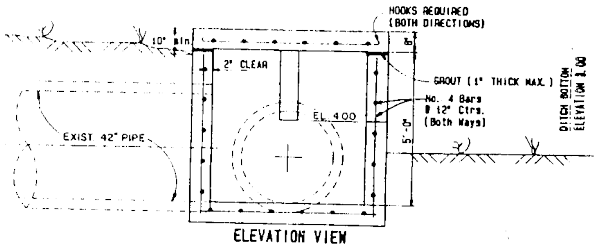
SECTION A-A

CONTROL STRUCTURE (S-253) NOTES:

1. Structure shall be constructed of Class I Concrete and may be cast in-place or precast.
2. All steel bars shall have 2" minimum cover unless otherwise shown, and shall be hooked where indicated. Horizontal steel shall be lapped a minimum of 24 bar diameters at corners.
3. All exposed corners and edges of [illegible] to be chamfered 1/4".
4. Sodding to be paid for under contract unit price for Sodding Sr
5. Control Structure shall be paid for under Item 425-3 081, Junction Box (Special)

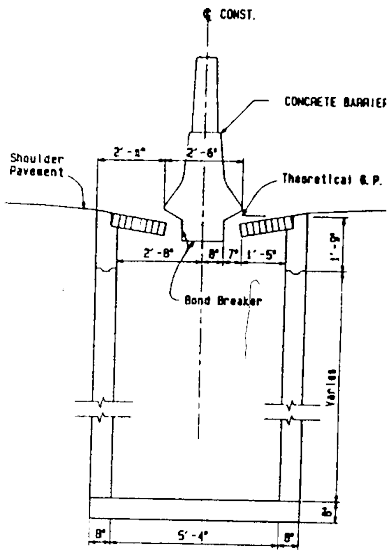


PLAN VIEW

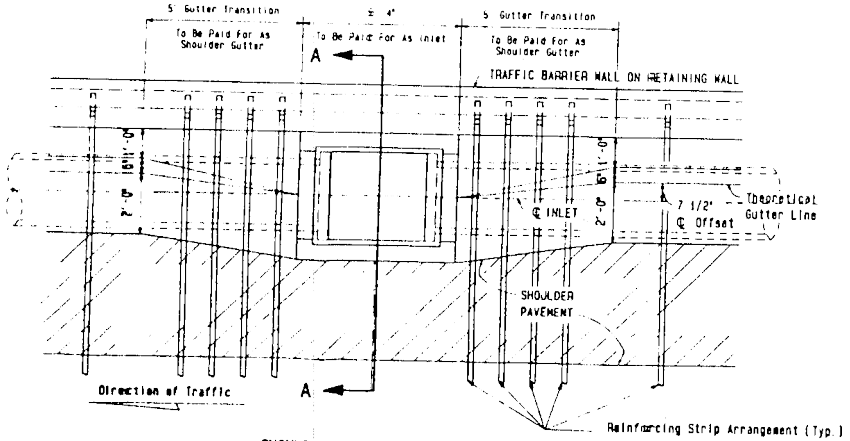


ELEVATION VIEW

CONTROL STRUCTURE DETAIL (S-253)



"SPECIAL" MEDIAN BARRIER INLET TYPE 3, 4 & 5

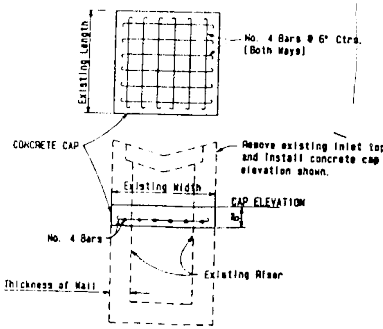


SHOULDER GUTTER TRANSITION

"SPECIAL" TYPE 'S' INLET AGAINST RETAINING WALL

SCALE: 1" = 2'

NOTE:
1. For grate and additional details see Index No. 230.
2. "SPECIAL" Type 'S' Inlets are to be paid for under the contract unit price for Inlets - Type S, each



MODIFY EXISTING INLET (CONCRETE CAP DETAIL)

NTS

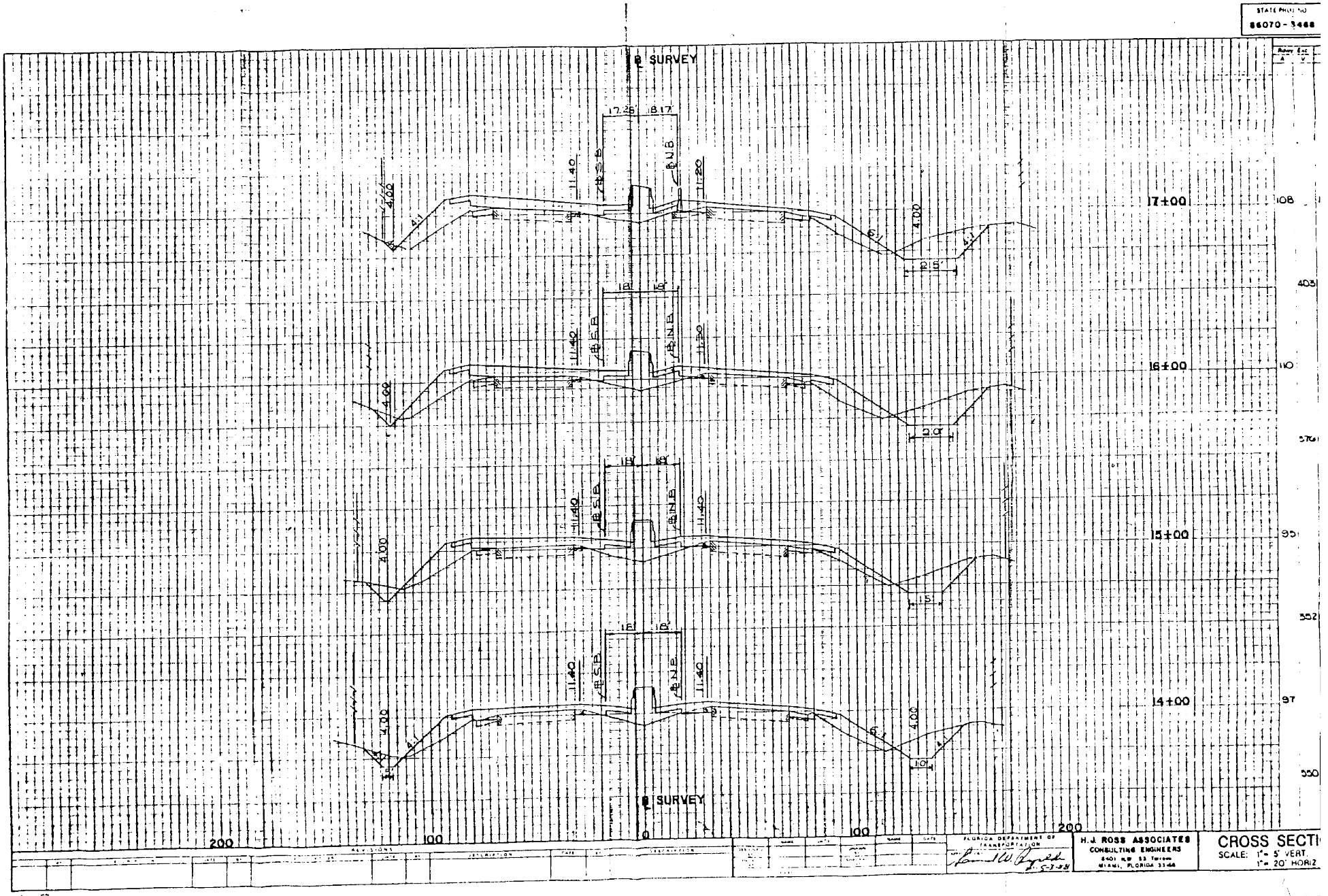
NOTES
1. "SPECIAL" Median Barrier Inlet Descriptions
   - Type 3 Two single throats, opposite sides of barrier wall.
   - Type 4 Double throats, opposite sides of barrier wall.
   - Type 5 Double throats, one side of barrier wall, one single throat other side of barrier wall.
2. For grate details see Index No. 220. The parallel bar grate shall be used unless the reticuline grate is called for in the plans.
3. For dimensions of concrete barrier wall and concrete barrier wall incorporating light standards within the wall, refer to Concrete Barrier Wall and Miscellaneous Concrete Barrier Wall Details sheets.
4. Reinforcing steel shall have 2" minimum cover.
5. All reinforcing steel #4 bars. Longitudinal steel bars extend over full length of concrete barrier wall transition. Tie bars @ 12" ctrs. Reinforcing to be paid for under the contract unit price for concrete barrier wall - special. Reinforcing for the Median Barrier Inlets shall be as shown in Index No. 217, unless otherwise noted.
6. For supplemental details see Index Nos. 201 & 217.
7. Inlets to be paid for under the contract unit price for Inlets (MBI (Type 1, 2, 3, 4 & 5), each. Barrier wall to be paid for under the contract unit price for Concrete Barrier Wall - L.F.

EXHIBIT 29

FLOR DA DEPARTMENT OF TRANSPORTATION
H. J. ROSS ASSOCIATES CONSULTING ENGINEERS

DRAINAGE DETAILS

EXHIBIT 21


STATE PROJ NO
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H.J. ROSS ASSOCIATES
CONSULTING ENGINEERS
CROSS SECTI
SCALE: 1"= 5' VERT.
1"= 20' HORIZ

STATE PROJ. NO.
86070-3468

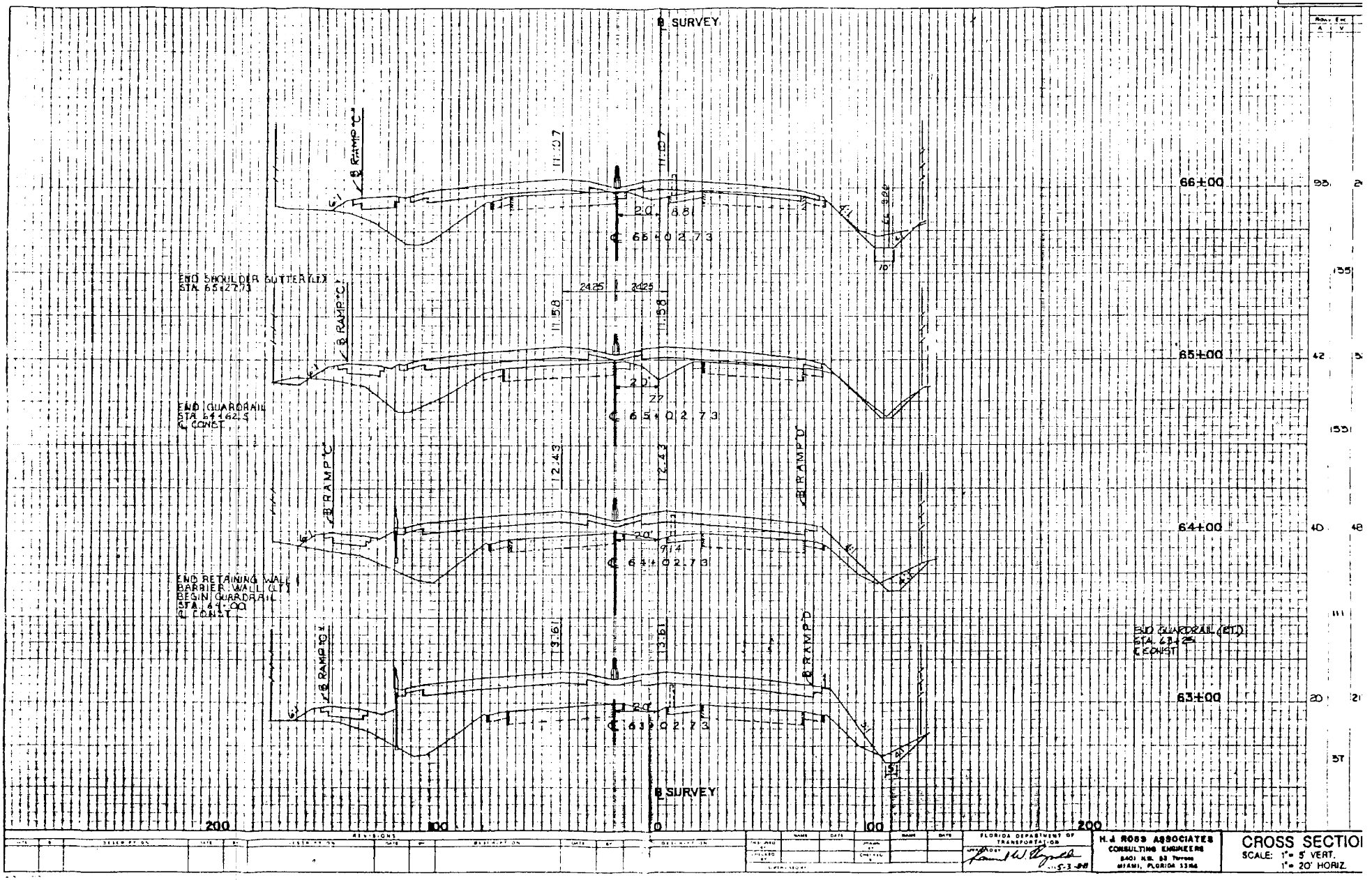
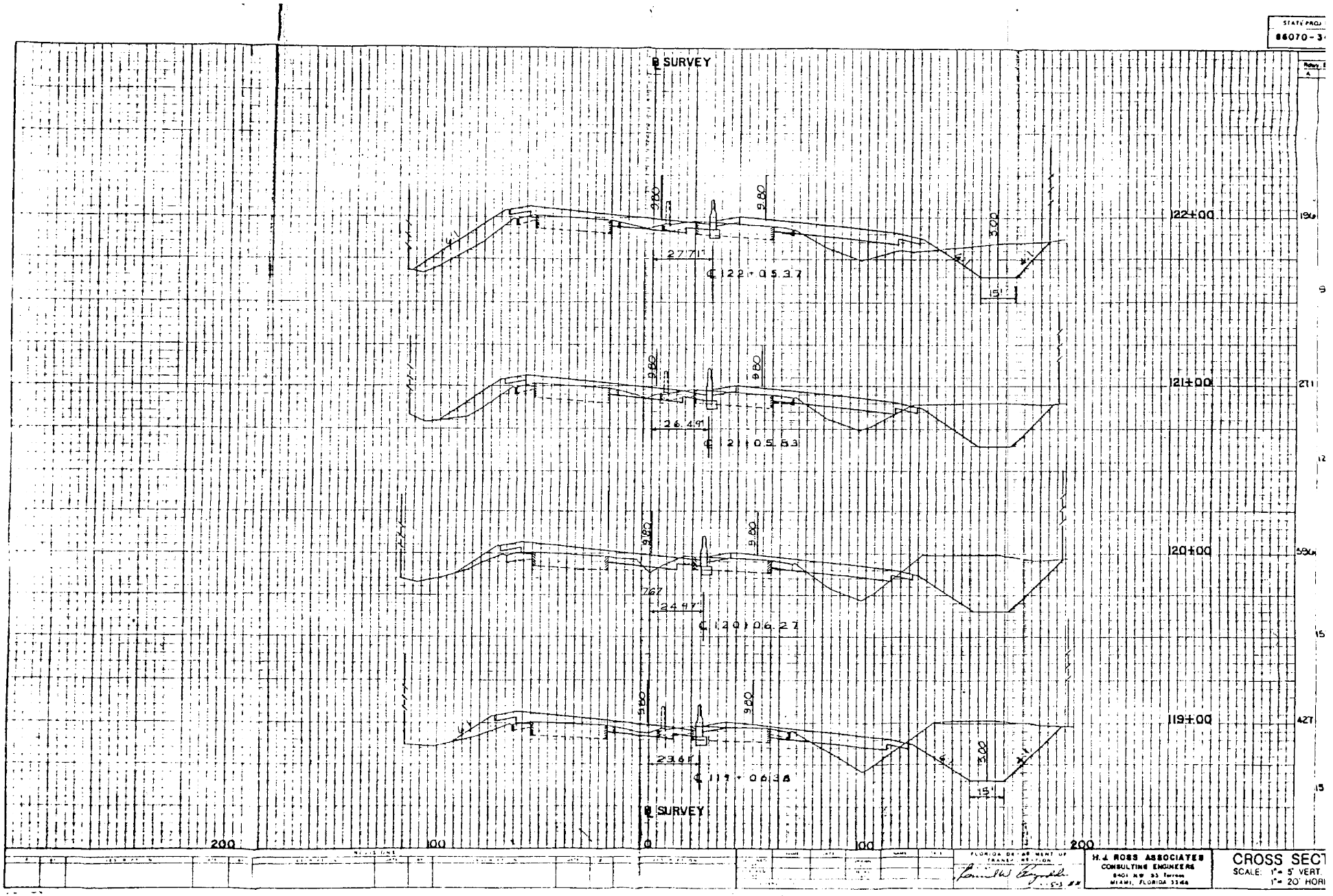


EXHIBIT 22

FLORIDA DEPARTMENT OF TRANSPORTATION
5-3-88

H.J. ROSS ASSOCIATES
CONSULTING ENGINEERS
8401 N.W. 53 Terrace
MIAMI, FLORIDA 33166

CROSS SECTIO
SCALE: 1"= 5' VERT.
1"= 20' HORIZ.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H. J. ROSS ASSOCIATES
CONSULTING ENGINEERS
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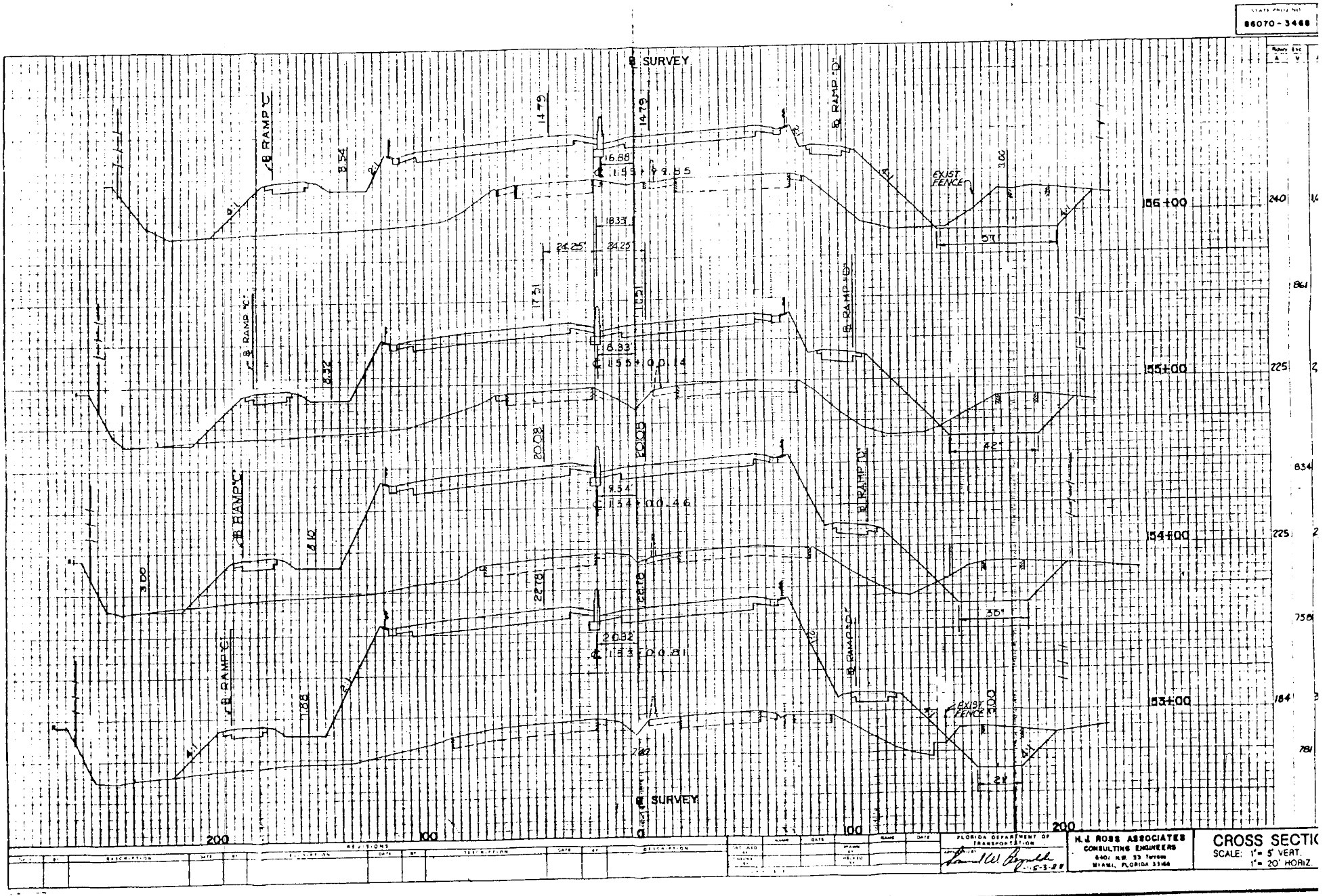
EXHIBIT 23

EXHIBIT 24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FLORIDA DEPARTMENT OF TRANSPORTATION
H.J. ROSS ASSOCIATES
CONSULTING ENGINEERS
CROSS SECTIO
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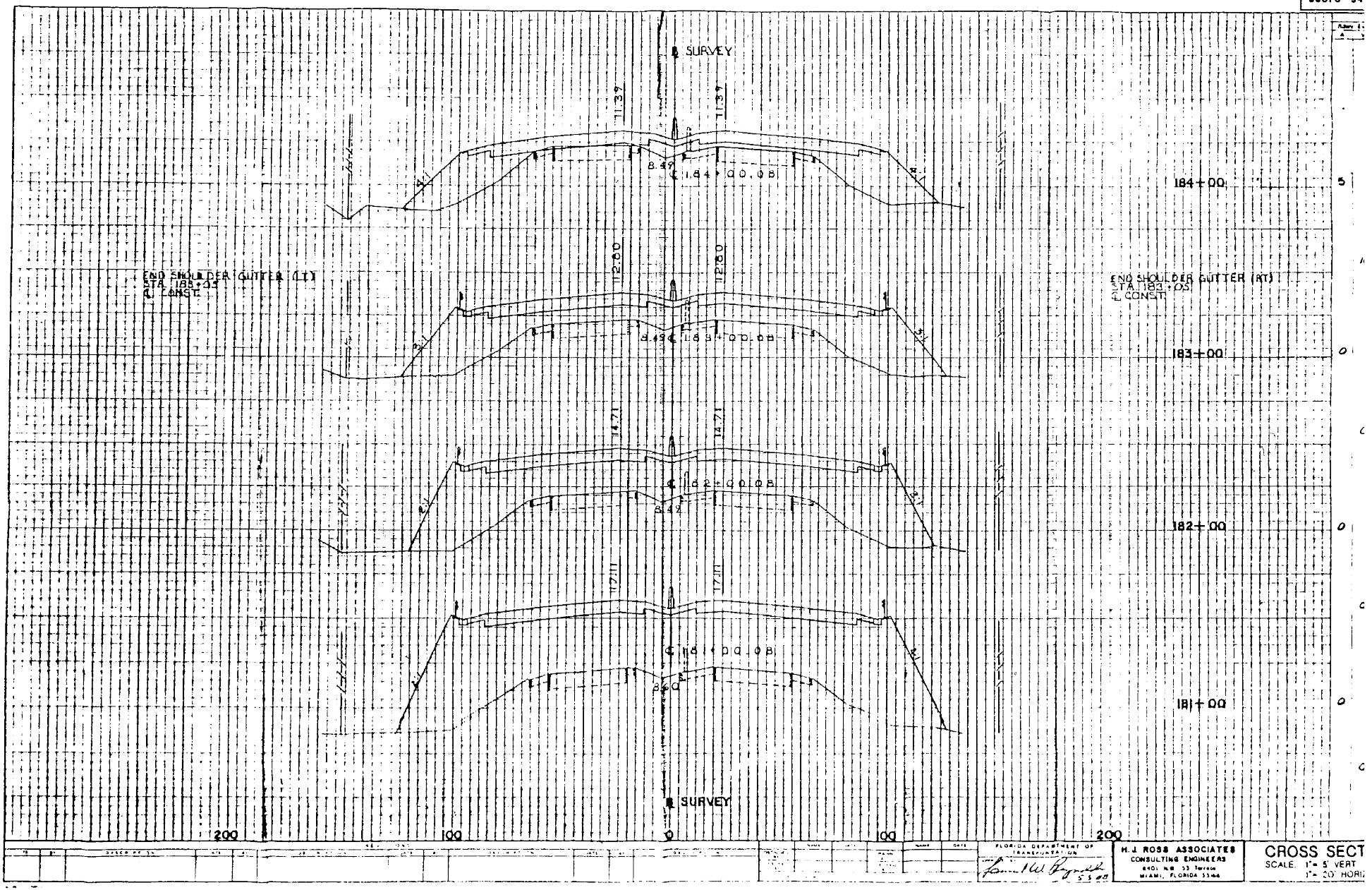
1"= 20' HORIZ.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8.49
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184+00
END SHOULDER GUTTER (LT)
STA. 185+05
℄ CONST.
12.80
12.80
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℄ 183+00.08
183+00
END SHOULDER GUTTER (RT)
STA. 183+05
℄ CONST.
14.71
14.71
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17.11
8.49
℄ 181+00.08
181+00
℄ SURVEY
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FLORIDA DEPARTMENT OF TRANSPORTATION
H.J. ROSS ASSOCIATES
CONSULTING ENGINEERS
MIAMI, FLORIDA
CROSS SECT
SCALE 1"= 5' VERT
1"= 20' HORI

EXHIBIT 25

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE
STANDARD GENERAL PERMIT NO. 88-00053-S
DATE ISSUED:May 2, 2012

Form #0941
08/95

PERMITTEE: FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
3400 WEST COMMERCIAL BLVD
FORT LAUDERDALE, FL 33309

PROJECT DESCRIPTION: Modification of a surface water management system to serve 4.16 acres of additional impervious area for a project known as SR-9/I-95 Express Lanes.

PROJECT LOCATION: BROWARD COUNTY, SEC 9, 16, 21, 28 TWP 51S RGE 42E

PERMIT DURATION: See Special Condition No:1. Pursuant to 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. 120327-4, dated March 27, 2012. 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 5),
3. the attached 11 Special Conditions (See Pages : 5 - 5 of 5) 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 2nd day of May, 2012, in accordance with Section 120.60(3), Florida Statutes.

BY: Anita R. Bain

Anita R. Bain
Bureau Chief - Environmental Resource Permitting
Regulation Division

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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

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GENERAL CONDITIONS

be in compliance with the permitted plans and specifications; and the entity approved by the District in accordance with Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, accepts responsibility for operation and maintenance of the system. The permit shall not be transferred to such approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall initiate transfer of the permit to the approved responsible operating entity if different from the permittee. Until the permit is transferred pursuant to Section 40E-1.6107, F.A.C., the permittee shall be liable for compliance with the terms of the permit.

8. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of the phase or portion of the system to a local government or other responsible entity.

9. For those systems that will be operated or maintained by an entity that will require an easement or deed restriction in order to enable that entity to operate or maintain the system in conformance with this permit, such easement or deed restriction must be recorded in the public records and submitted to the District along with any other final operation and maintenance documents required by Sections 9.0 and 10.0 of the Basis of Review for Environmental Resource Permit applications within the South Florida Water Management District, prior to lot or units sales or prior to the completion of the system, whichever comes first. Other documents concerning the establishment and authority of the operating entity must be filed with the Secretary of State, county or municipal entities. Final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final documents will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system and any other permit conditions.

10. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the District in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.

11. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40E-4 or Chapter 40E-40, F.A.C..

12. The permittee is hereby advised that Section 253.77, F.S. states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the State, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.

13. The permittee must obtain a Water Use permit prior to construction dewatering, unless the work qualifies for a general permit pursuant to Subsection 40E-20.302(3), F.A.C., also known as the "No Notice" Rule.

14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities

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GENERAL CONDITIONS

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.

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SPECIAL CONDITIONS

1. The construction phase of this permit shall expire on May 2, 2017.
2. Operation of the surface water management system shall be the responsibility of the permittee.
3. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.
4. Measures shall be taken during construction to insure that sedimentation and/or turbidity violations do not occur in the receiving water.
5. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.
6. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.
7. 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.
8. 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.
9. 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 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.
10. 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.
11. Reference is made to Exhibit No. 2 by the Florida Department of Transportation, Project ID 422796-2-52-01 & 422796-1-52-01, State Road No. 9 / I-95. The plan set consisting of drainage plans and detail sheets. The drawings have been signed and sealed by Charles B. Fuller P.E., of Metric Engineering, Inc. on 3-26-12 and have been included in this permit by reference (please see permit file).

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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.

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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.

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Last Date For Agency Action: May 26, 2012

GENERAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Sr-9/I-95 Express Lanes

Permit No.: 88-00053-S

Application No.: 120327-4 **Associated File:** 120330-2 WU Concurrent

Application Type: Environmental Resource (General Permit Modification)

Location: Broward County, S9, 16, 21, 28/T51S/R42E

Permittee : Florida Department Of Transportation District 4

Operating Entity : Permittee

Project Area: 4.16 acres

Project Land Use: Highway

Drainage Basin: C-10
Drainage Basin: C-9 EAST

Receiving Body: SFWMD C-9 Canal (Snake Creek Canal) & Hollywood Canal

Special Drainage District: NA

Conservation Easement To District : No
Sovereign Submerged Lands: No

PROJECT PURPOSE:

This application is a request for modification of a surface water management system to serve 4.16 acres of additional impervious area for a project known as SR-9/I-95 Express Lanes.

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PROJECT EVALUATION:

PROJECT SITE DESCRIPTION:

The project site is a section of I-95 from the Miami-Dade/Broward County line to Johnson Street. The site is currently a multilane divided Interstate highway with an existing surface water management system (SWMS) consisting of inlets, culverts and roadside detention swales directing runoff to the SFWMD C-9 Canal (Snake Creek Canal) and the Hollywood Canal. The site was originally issued Permit No. 88-00053-S in 1988, and was most recently modified in 2009 under Application No. 090225-1 for a project then known as I-95 Managed Lanes. This application is a request to modify the previously permitted design for what is now referred to as the I-95 Express Lanes project.

PROJECT BACKGROUND:

The FDOT is proposing to convert the existing I-95 HOV lane to two express lanes from the Golden Glades Interchange to the Broward Boulevard Park and Ride. Improvements to I-95 in this area have been previously authorized under three Surface Water Management permits (85-00070-S, 88-00053-S and 88-00050-S). Three applications have been submitted to modify each respective permit (120327-2, 120327-4 and 120327-6). This application is for the modification of Permit No. 88-00053-S which covers the stretch of I-95 from the Miami-Dade/Broward County line to Johnson Street.

PROPOSED PROJECT:

Proposed is the modification of Permit No. 88-00053-S for the construction and operation of a surface water management system to serve 4.16 acres of additional impervious area for a project known as SR-9/I-95 Express Lanes. The proposed surface water management system will consist of inlets, culverts and roadside detention swales which will provide water quality treatment prior to overflow into the SFWMD C-9 Canal (Snake Creek Canal) and the Hollywood Canal.

The project scope includes roadway widening, milling and resurfacing, shoulder reconstruction, drainage collection and conveyance, swale regrading and expansion and tolling infrastructure. The intention is to widen this section of I-95 in order to facilitate toll lanes where currently High Occupancy Vehicle (HOV) lanes exist.

WATER QUANTITY :

Discharge Rate :

The engineer-of-record has submitted an analysis which demonstrates that the post-development peak discharge rate for the 25-year 3-day design storm event will not exceed the existing condition.

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NAVD 88)	WSWT Ctrl Elev (ft, NAVD 88)	Method Of Determination
site	4.16	.42	.42	Previously Permitted

WATER QUALITY :

Water quality treatment of 2.5" times the new impervious area will be provided in roadside detention swales.

The authorization for construction of the surface water management system is issued pursuant to the

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water quality net improvement provisions referenced in Rule Section 40E-4.303(1), Florida Administrative Code; therefore, the state water quality certification is waived.

Basin		Treatment Method	Vol Req.d (ac-ft)	Vol Prov'd
site	Treatment	Dry Detention	.65	.65

WETLANDS:

Mangrove wetlands exist along the canal banks adjacent to the bridges over the C-10 Canal and the C-10 Spur Canal. No work is proposed that would alter the existing bridges over these resources or require construction within in these water bodies. Due to the scope of work and the limits of project construction, there will be no impacts to wetland resources.

Wildlife Issues:

The C-10 Canal and C-10 Spur Canal do contain preferred habitat for wetland-dependent endangered or threatened wildlife species or species of special concern. Manatees are known to utilize these water bodies. However, no work is proposed that would alter existing bridges over these waterways or require construction in these water bodies. 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.

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.

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RELATED CONCERNS:

Water Use Permit Status:

Water Use application number 120330-2 has been submitted and is being processed concurrently 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.

CERP:

The proposed project is not located within or adjacent to a Comprehensive Everglades Restoration Project component.

Potable Water Supplier:

Not Applicable

Waste Water System/Supplier:

Not Applicable

Right-Of-Way Permit Status:

A District Right-of-Way Permit is not required for this project.

DRI Status:

This project is not a DRI.

Historical/Archeological Resources:

The District has received correspondence from the Florida Department of State, Division of Historical Resources indicating that no significant archaeological or historical resources are recorded in the project area and therefore is unlikely to have an effect upon any such properties.

DEO/CZM Consistency Review:

The issuance of this permit constitutes a finding of consistency with the Florida Coastal Management Program.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF REVIEW:

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DIVISION APPROVAL:

NATURAL RESOURCE MANAGEMENT:

Barbara J. Conmy

DATE: 5/1/12

SURFACE WATER MANAGEMENT:

Carlos A. de Rojas, P.E.

DATE: 4/30/12

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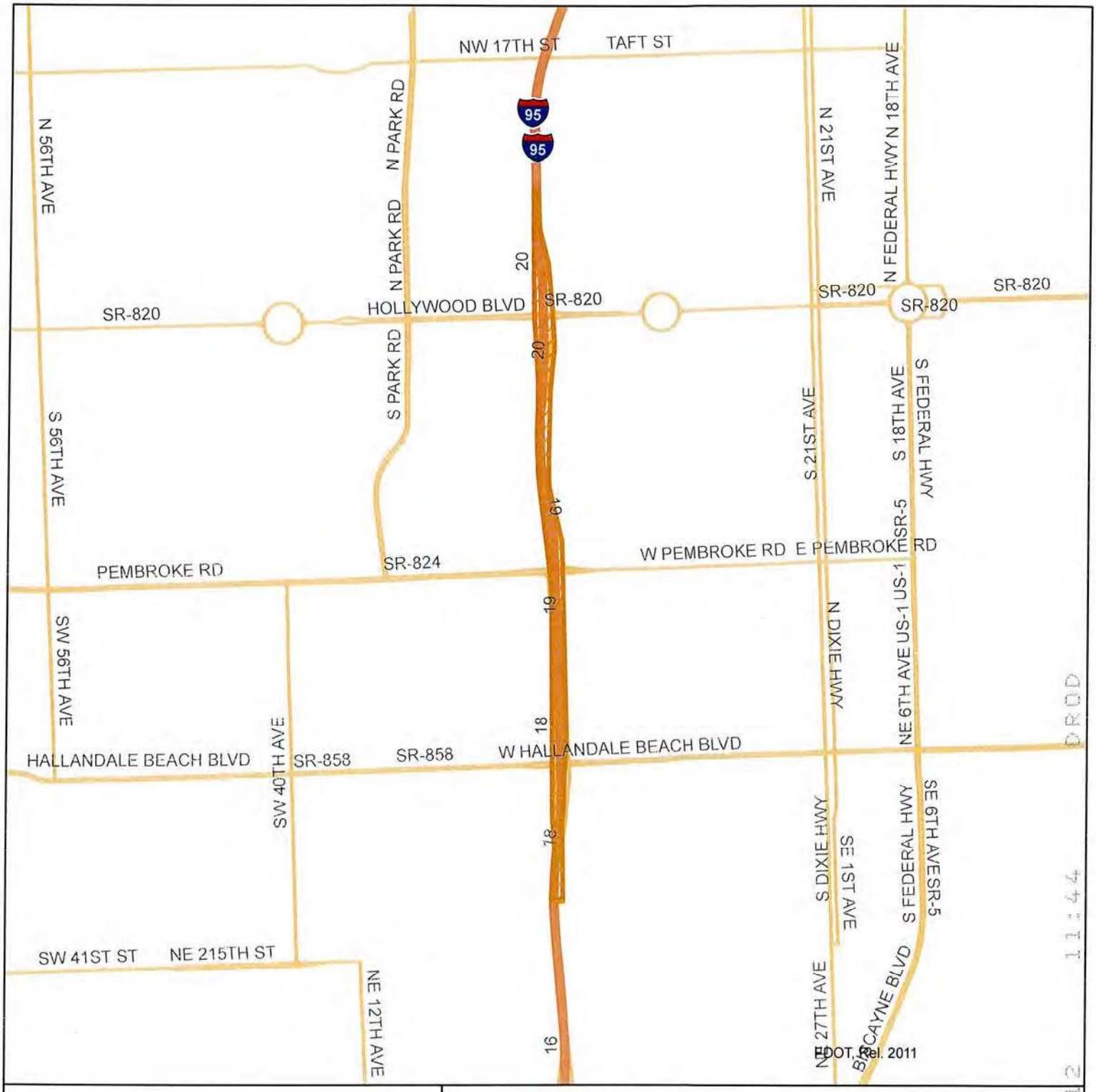

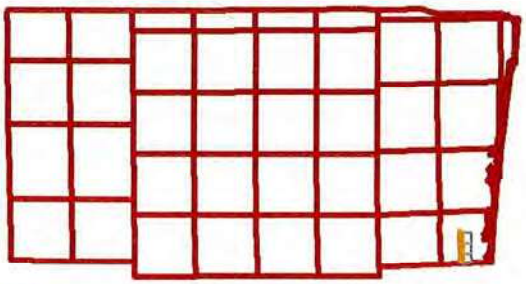

BROWARD COUNTY, FLORIDA

N

Legend

Application

Map Date: 2012-04-16

Application Number: 120327-4

Permit Number: 88-00053-S

Sec 9, 16, 21, 28 / Twp 51 / Rge 42

Project Name: SR 9/I-95 EXPRESS LANES

0 0.5 1 Miles

Exhibit 1

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APPLICATION No. 120327-4
PERMIT No. 88-00053-S
SR-9/I-95 Express Lanes

EXHIBIT NUMBER 2

PLAN SET TITLED:
State Road No. 9 / I-95
Project ID. 422796-2-52-01 &
422796-1-52-01

INCORPORATED BY REFERENCE

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STAFF REPORT DISTRIBUTION LIST

SR-9/I-95 EXPRESS LANES

Application No: 120327-4

Permit No: 88-00053-S

INTERNAL DISTRIBUTION

X Joseph D. Santangelo
X Robert F. Hopper
X Carlos A. de Rojas, P.E.
X Barbara J. Conmy
X ERC Engineering
X ERC Environmental
X H. Azizi
X Permit File

EXTERNAL DISTRIBUTION

X Permittee - Florida Department Of Transportation District 4
X Agent - Reynolds Smith And Hills, Inc

GOVERNMENT AGENCIES

X Broward County - Director, Water Mgmt Div
X Broward County Engineer
X Div of Recreation and Park - District 7 - FDEP

OTHER INTERESTED PARTIES

X Audubon of Florida - Charles Lee

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SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Regulation
Application No.: 170519-3

June 5, 2017

FLORIDA DEPARTMENT OF TRANSPORTATION
3400 WEST COMMERCIAL BOULEVARD
FORT LAUDERDALE, FL 33309

Dear Permittee:

SUBJECT: **Permit No.: 88-00053-S**
Project : OPERATIONAL IMPROVEMENTS AT SR9 / I-95 PEMBROKE ROAD (SR824)
Location: Broward County, S21/T51S/R42E

District staff has reviewed the information submitted May 19, 2017, for the widening of the northbound and southbound off-ramps at the I-95/Pembroke Road Interchange. The off-ramps will be widened to provide additional right turn lanes onto Pembroke Road. The engineer-of-record has demonstrated that the existing stormwater management system will be able to accomodate the runoff from the additional 0.20 acres of impervious area. No adverse water quality or quantity impacts are anticipated.

Construction authorization expires on June 5, 2017.

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
Regulation Division

CD/js

c: Broward County Engineer
Wantman Group Inc

NOTICE OF RIGHTS

As required by Sections 120.569 and 120.60(3), Fla. Stat., the following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all of the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a SFWMD decision which affects or may affect their substantial interests shall file a petition for hearing with the Office of the District Clerk of the SFWMD, in accordance with the filing instructions set forth herein, within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: (1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or (2) within 14 days of service of an Administrative Order pursuant to Section 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of written notice through mail, electronic mail, or posting that the SFWMD has or intends to take final agency action, or publication of notice that the SFWMD has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

If the District takes final agency action which materially differs from the noticed intended agency decision, persons who may be substantially affected shall, unless otherwise provided by law, have an additional Rule 28-106.111, Fla. Admin. Code, point of entry.

Any person to whom an emergency order is directed pursuant to Section 373.119(2), Fla. Stat., shall comply therewith immediately, but on petition to the board shall be afforded a hearing as soon as possible.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for an extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

FILING INSTRUCTIONS

A petition for administrative hearing must be filed with the Office of the District Clerk of the SFWMD. Filings with the Office of the District Clerk may be made by mail, hand-delivery, or e-mail. Filings by facsimile will not be accepted. A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the Office of the District Clerk at SFWMD headquarters in West Palm Beach, Florida. The District's normal business hours are 8:00 a.m. – 5:00 p.m., excluding weekends and District holidays. Any document received by the Office of the District Clerk after 5:00 p.m. shall be deemed filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, 3301 Gun Club Road, West Palm Beach, Florida 33406.

- Filings by hand-delivery must be delivered to the Office of the District Clerk. Delivery of a petition to the SFWMD's security desk does not constitute filing. It will be necessary to request that the SFWMD's security officer contact the Office of the District Clerk. An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by e-mail must be transmitted to the Office of the District Clerk at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the Office of the District Clerk receives the complete document. A party who files a document by e-mail shall (1) represent that the original physically signed document will be retained by that party for the duration of the proceeding and of any subsequent appeal or subsequent proceeding in that cause and that the party shall produce it upon the request of other parties; and (2) be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed.

INITIATION OF AN ADMINISTRATIVE HEARING

Pursuant to Sections 120.54(5)(b)4. and 120.569(2)(c), Fla. Stat., and Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, SFWMD file number or any other SFWMD identification number, if known.
2. The name, address, any email address, any facsimile number, and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

MEDIATION

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401–.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Section 120.68, Fla. Stat., and in accordance with Florida Rule of Appellate Procedure 9.110, a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal with the Office of the District Clerk of the SFWMD in accordance with the filing instructions set forth herein within 30 days of rendition of the order to be reviewed, and by filing a copy of the notice with the clerk of the appropriate district court of appeal.

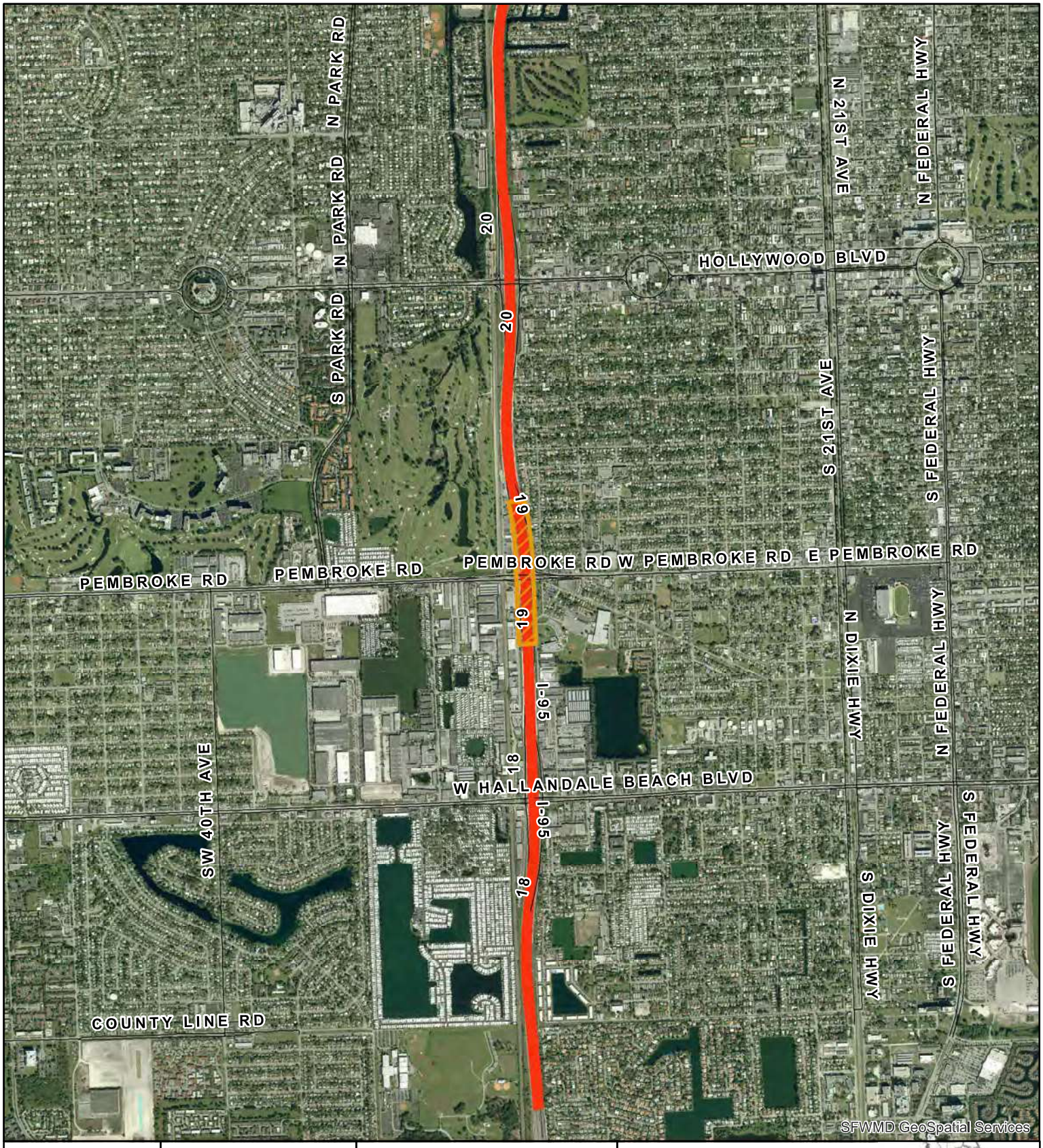


Exhibit No: 1	Exhibit Created On: 2017-06-02	BROWARD COUNTY, FL

REGULATION DIVISION

Project Name: OPERATIONAL IMPROVEMENTS AT SR9 / I-95 PEMBROKE ROAD (SR824)

0 0.4 0.8 Miles

N

Application

Permit No: 88-00053-S

Application Number: 170519-3

Created by

South Florida Water Management District

CONTRACT PLANS COMPONENTS

ROADWAY PLANS
SIGNING & PAVEMENT MARKING PLANS
SIGNALIZATION PLANS
LIGHTING PLANS

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

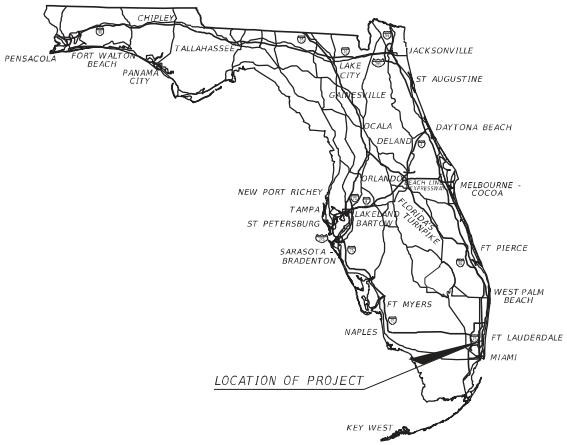
CONTRACT PLANS

FINANCIAL PROJECT ID 436303-1-52-01

SR-9/I-95 AND SR-824/PEMBROKE ROAD

BROWARD COUNTY (86070)

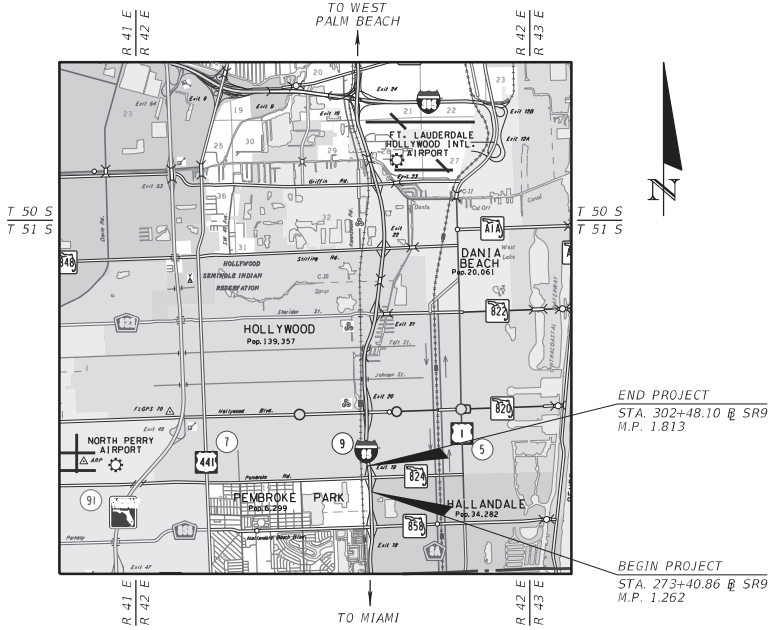
STATE ROAD NO. 9



INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
N/A	NOTES FOR REVIEWERS
2 - 3	TYPICAL SECTIONS
SQ-1 - SQ-8	SUMMARY OF QUANTITIES
4	PROJECT LAYOUT
5 - 10	ROADWAY PLANS
11	RAMP TERMINAL DETAIL
12 - 21	CROSS SECTIONS
22 - 26	TEMPORARY TRAFFIC CONTROL PLANS
CTL-1*	PROJECT NETWORK CONTROL SHEET
GR-1	ROADWAY SOIL SURVEY

** These sheets are included in the Index of Roadway Plans only to indicate that they are part of the Roadway Plans. These sheets are contained in a separate digitally signed and sealed document.*



END PROJECT
STA. 302+48.10 ℄ SR9
M.P. 1.813

BEGIN PROJECT
STA. 273+40.86 ℄ SR9
M.P. 1.262

GOVERNING DESIGN STANDARDS:

Florida Department of Transportation, FY 2016-17 Design Standards eBook (DSeB) and applicable Design Standards Revisions (DSRs) at the following website:
http://www.dot.state.fl.us/rddesign/DesignStandards/Standards.shtm

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, 2016 Standard Specifications for Road and Bridge Construction at the following website:
http://www.dot.state.fl.us/programmanagement/Implemented/SpecBooks

REVISIONS:

KEY SHEET REVISIONS	
DATE	DESCRIPTION

ROADWAY PLANS ENGINEER OF RECORD:

ANTHONY ALFRED, P.E.
P.E. NO.: 51857
WANTMAN GROUP, INC.
5219 NW 33RD AVE PROSPECT PARK 1
FORT LAUDERDALE, FLORIDA 33309
CONTRACT NO.: C-9G17
VENDOR NO. 65-0271367
CERTIFICATE OF AUTHORIZATION NO. 6091

FDOT PROJECT MANAGER:

DONOVAN PESSOA, P.E.

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
	19	1

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ANTHONY VAUGHN ALFRED
LICENSE
No 51857
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Anthony V Alfred

Date: 2017.05.16 09:06:25 -04'00'

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED. THE SIGNATURE MUST BE VERIFIED ON THE ELECTRONIC DOCUMENTS.

WANTMAN GROUP, INC.
5219 NW 33RD AVE PROSPECT PARK 19
FORT LAUDERDALE, FL 33309
CERTIFICATE OF AUTHORIZATION 6091
ANTHONY ALFRED, P.E.
P.E. LICENSE NUMBER 51857

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2A	SIGNATURE SHEET
2B - 3	TYPICAL SECTIONS
4	PROJECT LAYOUT
5 - 10	ROADWAY PLANS
11	RAMP TERMINAL DETAIL
12 - 13	DRAINAGE STRUCTURES

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ANTHONY ALFRED, P.E.
P.E. LICENSE NUMBER 51857
WANTMAN GROUP, INC
5219 NW 33RD AVE PROSPECT PARK 19
FORT LAUDERDALE, FL 33309
CERTIFICATE OF AUTHORIZATION 6091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

SIGNATURE SHEET

SHEET NO. 2 A

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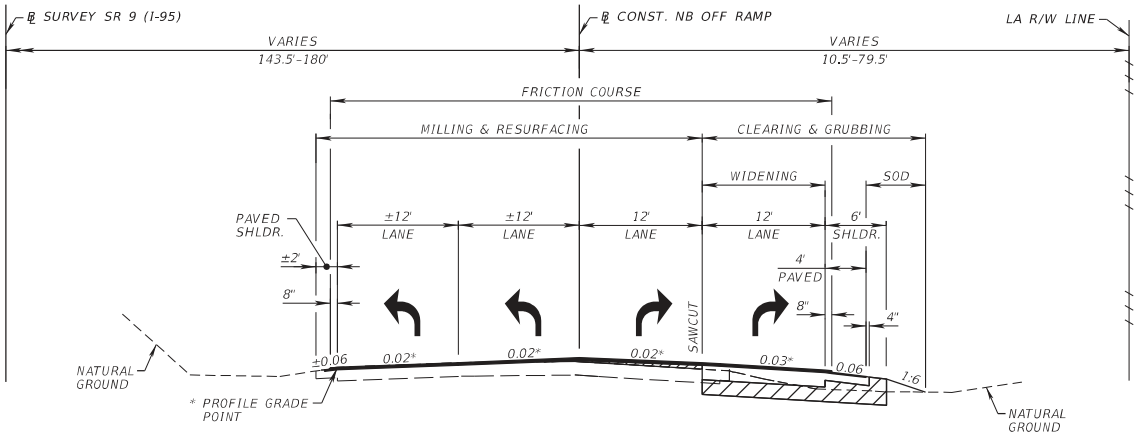

* CROSS SLOPE CORRECTION WITH OVERBUILD

TYPICAL SECTION NO. 1
NB SR 9 (I-95) OFF RAMP
STA. 514+86.35 TO STA. 520+04.05

MILLING
MILL EXISTING ASPHALT PAVEMENT FOR DEPTH (2 ¼")

RESURFACING
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (PG 76-22) (1 ½ "),
AND FRICTION COURSE FC-5 (PG 76-22) (¾")

WIDENING
OPTIONAL BASE GROUP 9 WITH
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (2 ½"),
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (PG 76-22) (1 ½"),
AND FRICTION COURSE FC-5 (¾")

MILLING (SHOULDER)
MILL EXISTING ASPHALT PAVEMENT FOR DEPTH (1 ½")

RESURFACING (SHOULDER)
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (PG 76-22) (1 ½ ")

NEW SHOULDER PAVEMENT
OPTIONAL BASE GROUP 1 WITH
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (PG 76-22) (1 ½")

NB SR 9 (I-95) OFF RAMP
STA. 506+07.45 TO STA. 514+86.35

MILLING
MILL EXISTING ASPHALT PAVEMENT FOR DEPTH (2 ¼")

RESURFACING
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (PG 76-22) (1 ½ "),
AND FRICTION COURSE FC-5 (PG 76-22) (¾")

MILLING (SHOULDER)
MILL EXISTING ASPHALT PAVEMENT FOR DEPTH (1 ½")

RESURFACING (SHOULDER)
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (PG 76-22) (1 ½ ")

NB SR 9 (I-95) OFF RAMP
STA. 513+41.14 TO STA. 514+86.35

NEW SHOULDER PAVEMENT
OPTIONAL BASE GROUP 1 WITH
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (PG 76-22) (1 ½")

TRAFFIC DATA
CURRENT YEAR = 2015 AADT = 21,700
ESTIMATED OPENING YEAR = 2022 AADT = 23,300
ESTIMATED DESIGN YEAR = 2042 AADT = 28,400
K = 9% D = 100% T = 4% (24 HOUR)
DESIGN HOUR T = 4%
DESIGN SPEED = 40 MPH

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ANTHONY ALFRED, P.E.
P.E. LICENSE NUMBER 51857
WANTMAN GROUP, INC.
5219 NW 33RD AVE
FORT LAUDERDALE, FL. 33309
CERTIFICATE OF AUTHORIZATION 6091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

TYPICAL SECTION

SHEET NO. 2 B

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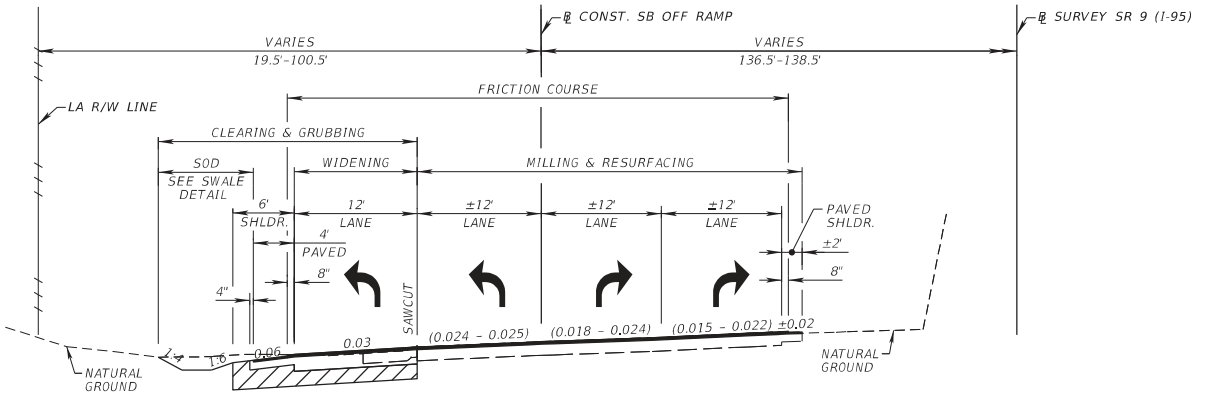
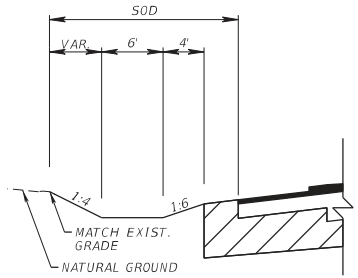
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.





SWALE DETAIL
(NTS)

TRAFFIC DATA

CURRENT YEAR = 2015 AADT = 21,700
ESTIMATED OPENING YEAR = 2022 AADT = 23,300
ESTIMATED DESIGN YEAR = 2042 AADT = 28,400
K = 9% D = 100% T = 4% (24 HOUR)
DESIGN HOUR T = 4%
DESIGN SPEED = 40 MPH

TYPICAL SECTION NO. 2
SB SR 9 (I-95) OFF RAMP
STA. 800+77.12 TO STA. 803+62.97

MILLING
MILL EXISTING ASPHALT PAVEMENT FOR DEPTH (2 ¼")

RESURFACING
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (PG 76-22) (1 ½ "), AND FRICTION COURSE FC-5 (PG 76-22) (¾")

WIDENING
OPTIONAL BASE GROUP 9 WITH
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (2 ½"),
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (PG 76-22) (1 ½"),
AND FRICTION COURSE FC-5 (¾")

NEW SHOULDER PAVEMENT
OPTIONAL BASE GROUP 1 WITH
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (PG 76-22) (1 ½")

SB SR 9 (I-95) OFF RAMP
STA. 803+62.97 TO STA. 814+34.14

MILLING
MILL EXISTING ASPHALT PAVEMENT FOR DEPTH (2 ¼")

RESURFACING
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (PG 76-22) (1 ½ "), AND FRICTION COURSE FC-5 (PG 76-22) (¾")

MILLING (SHOULDER)
MILL EXISTING ASPHALT PAVEMENT FOR DEPTH (1 ½")

RESURFACING (SHOULDER)
TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC LEVEL D) (PG 76-22) (1 ½ ")

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

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ANTHONY ALFRED, P.E.
P.E. LICENSE NUMBER 51857
WANTMAN GROUP, INC.
5219 NW 33RD AVE
FORT LAUDERDALE, FL. 33309
CERTIFICATE OF AUTHORIZATION 6091

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

TYPICAL SECTION

SHEET NO. 3

USER: sofia.quinones 5/15/2017 3:13:07 PM c:\pwworking\wgi\sofia.quinones\d0160520\TYPDRD01.DGN

CURVE DATA NB-1
PI STA. = 508+04.88
Δ = 3° 52' 01" (LT)
D = 0° 58' 00"
T = 200.09
L = 400.02
R = 5,927.00
PC STA. = 506+04.79
PT STA. = 510+04.81

CURVE DATA SB-1
PI STA. = 806+94.16
Δ = 7° 58' 54" (LT)
D = 1° 01' 23"
T = 390.69
L = 780.12
R = 5,600.00
PC STA. = 803+03.47
PT STA. = 810+83.59

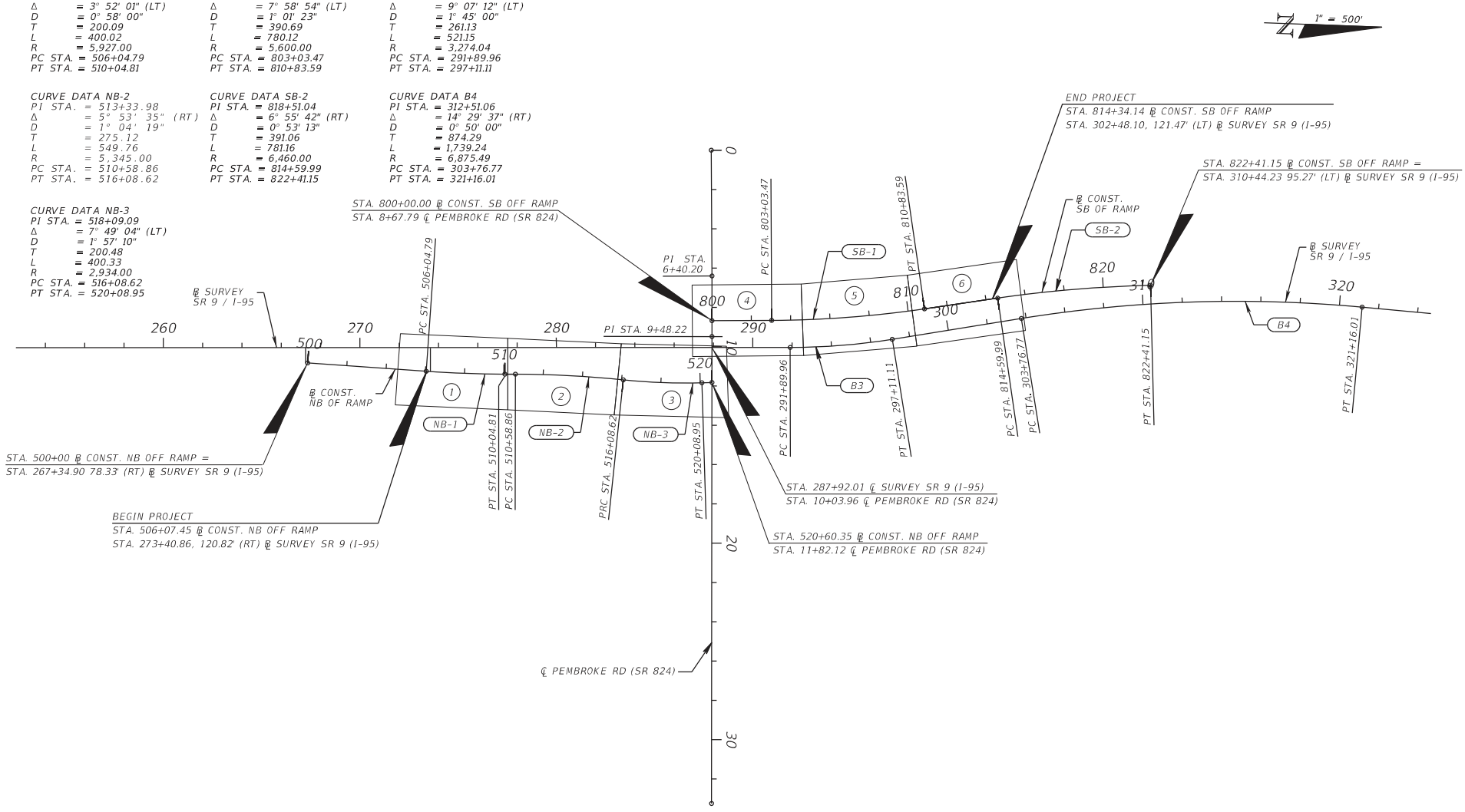
CURVE DATA B3
PI STA. = 294+51.08
Δ = 9° 07' 12" (LT)
D = 1° 45' 00"
T = 261.13
L = 521.15
R = 3,274.04
PC STA. = 291+89.96
PT STA. = 297+11.11

CURVE DATA NB-2
PI STA. = 513+33.98
Δ = 5° 53' 35" (RT)
D = 1° 04' 19"
T = 275.12
L = 549.76
R = 5,345.00
PC STA. = 510+58.86
PT STA. = 516+08.62

CURVE DATA SB-2
PI STA. = 818+51.04
Δ = 6° 55' 42" (RT)
D = 0° 53' 13"
T = 391.06
L = 781.16
R = 6,460.00
PC STA. = 814+59.99
PT STA. = 822+41.15

CURVE DATA B4
PI STA. = 312+51.06
Δ = 14° 29' 37" (RT)
D = 0° 50' 00"
T = 874.29
L = 1,739.24
R = 6,875.49
PC STA. = 303+76.77
PT STA. = 321+16.01

CURVE DATA NB-3
PI STA. = 518+09.09
Δ = 7° 49' 04" (LT)
D = 1° 57' 10"
T = 200.48
L = 400.33
R = 2,934.00
PC STA. = 516+08.62
PT STA. = 520+08.95



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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

PROJECT LAYOUT

SHEET NO. 4

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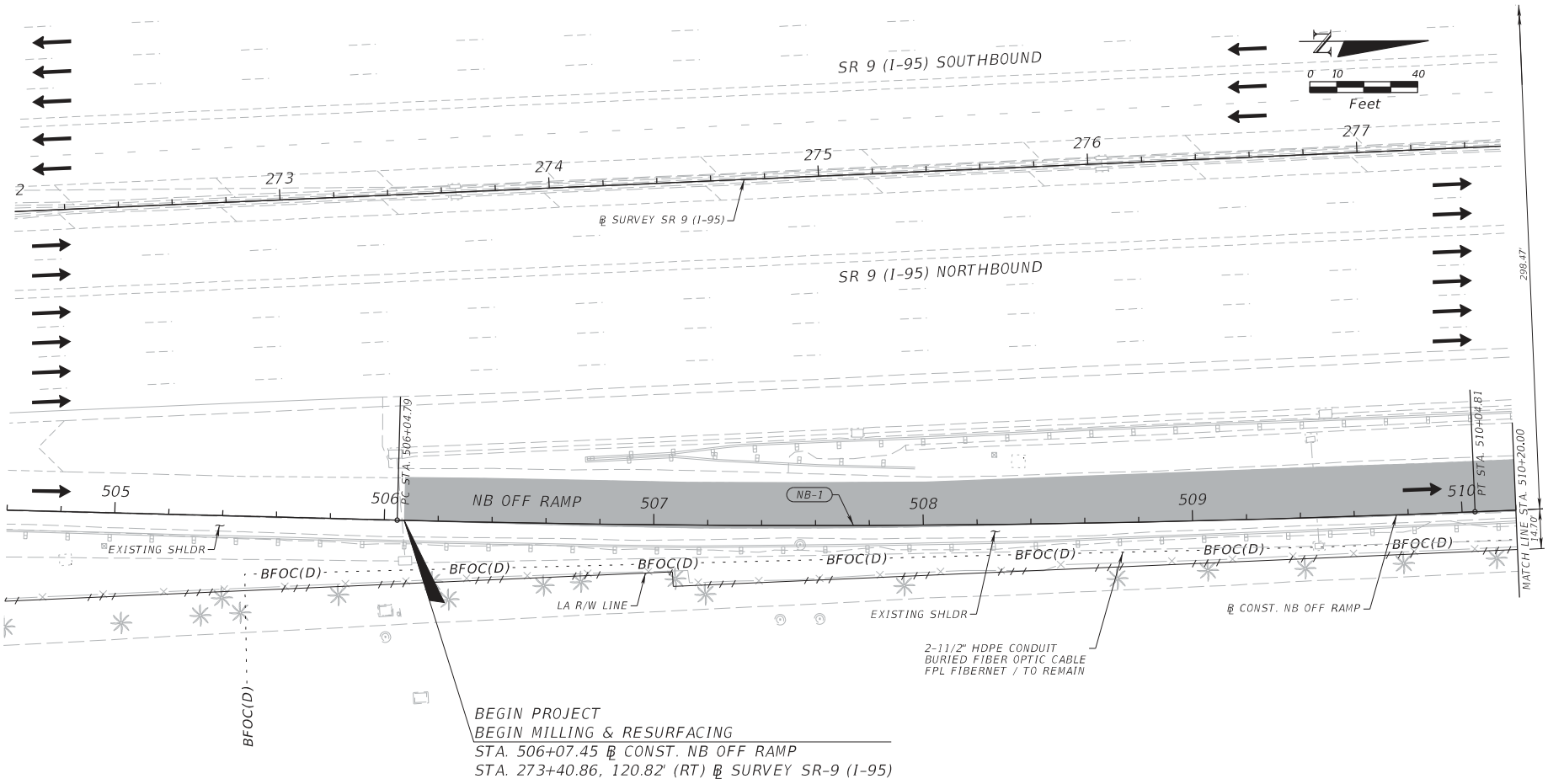

LEGEND

MILLING & RESURFACING

CURVE DATA NB-1
PI STA. = 508+04.88
Δ = 3° 52' 01" (LT)
D = 0° 58' 00"
T = 200.09
L = 400.02
R = 5,927.00
PC STA. = 506+04.79
PT STA. = 510+04.81
e = MATCH EXISTING
DESIGN SPEED = 40 MPH

NOTE:

1. NO STAGING OR OTHER ACTIVITIES FOR THIS PROJECT WILL BE ALLOWED WITHIN OR ADJACENT TO THE ORANGEBROOK GOLF AND COUNTRY CLUB, THE LANIER JAMES EDUCATION CENTER OR THE HALLANDALE HIGH SCHOOL PROPERTIES.

REVISIONS			
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

ROADWAY PLAN (1)

SHEET NO. 5

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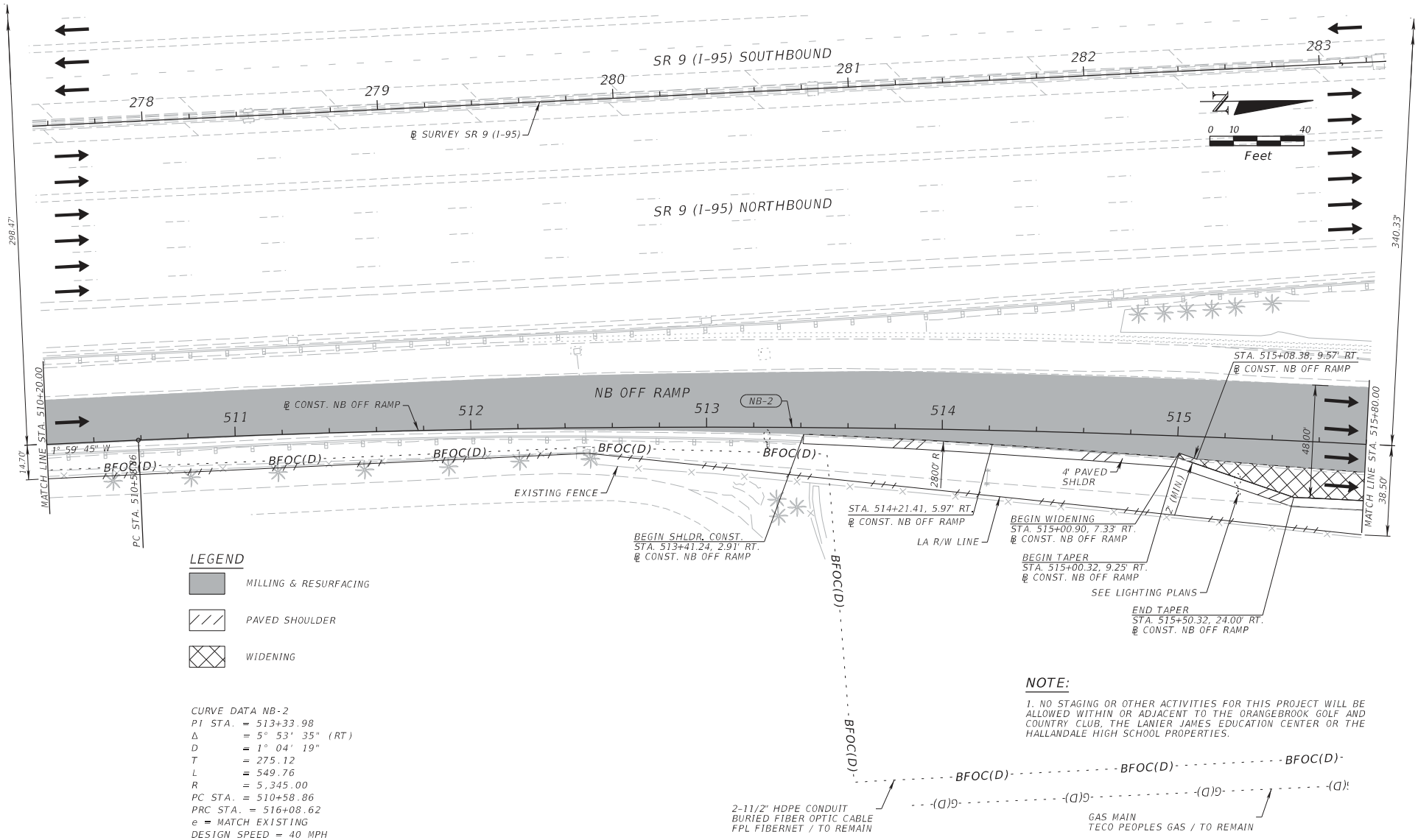

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STATE OF FLORIDA
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9	BROWARD	436303-1-52-01

ROADWAY PLAN (2)

SHEET NO. 6

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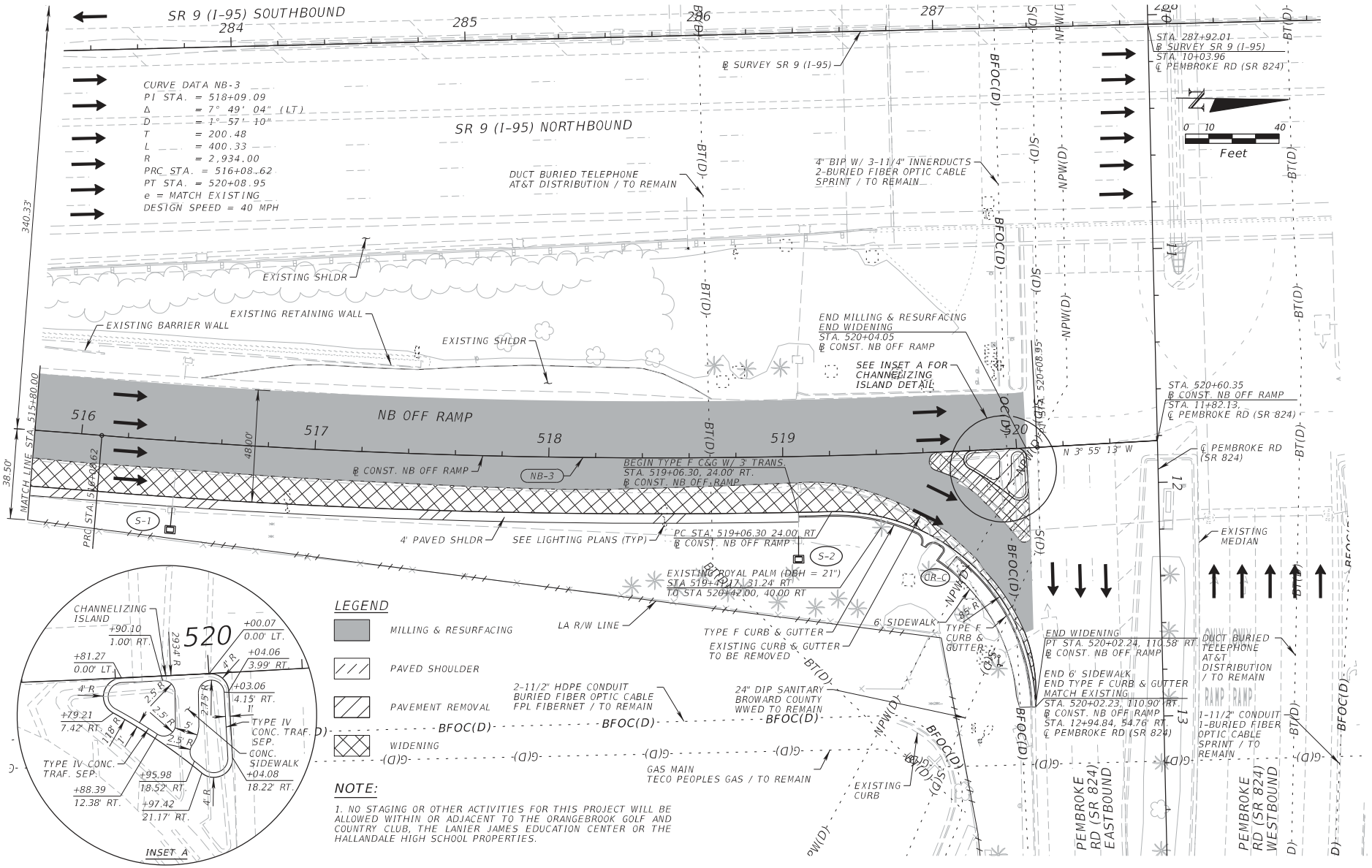

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

ROADWAY PLAN (3)

SHEET NO. 7

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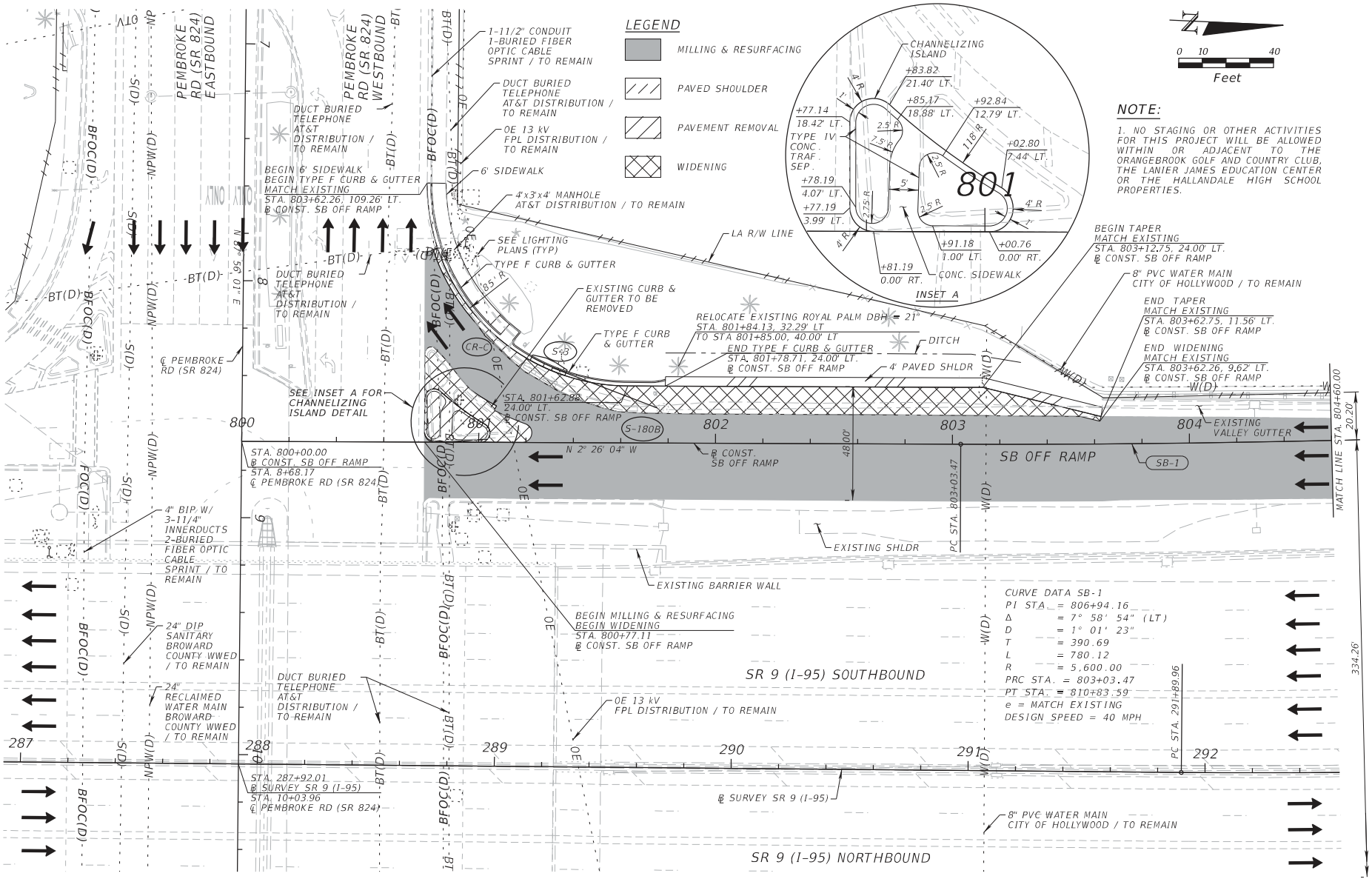

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

ROADWAY PLAN (4)

SHEET NO. 8

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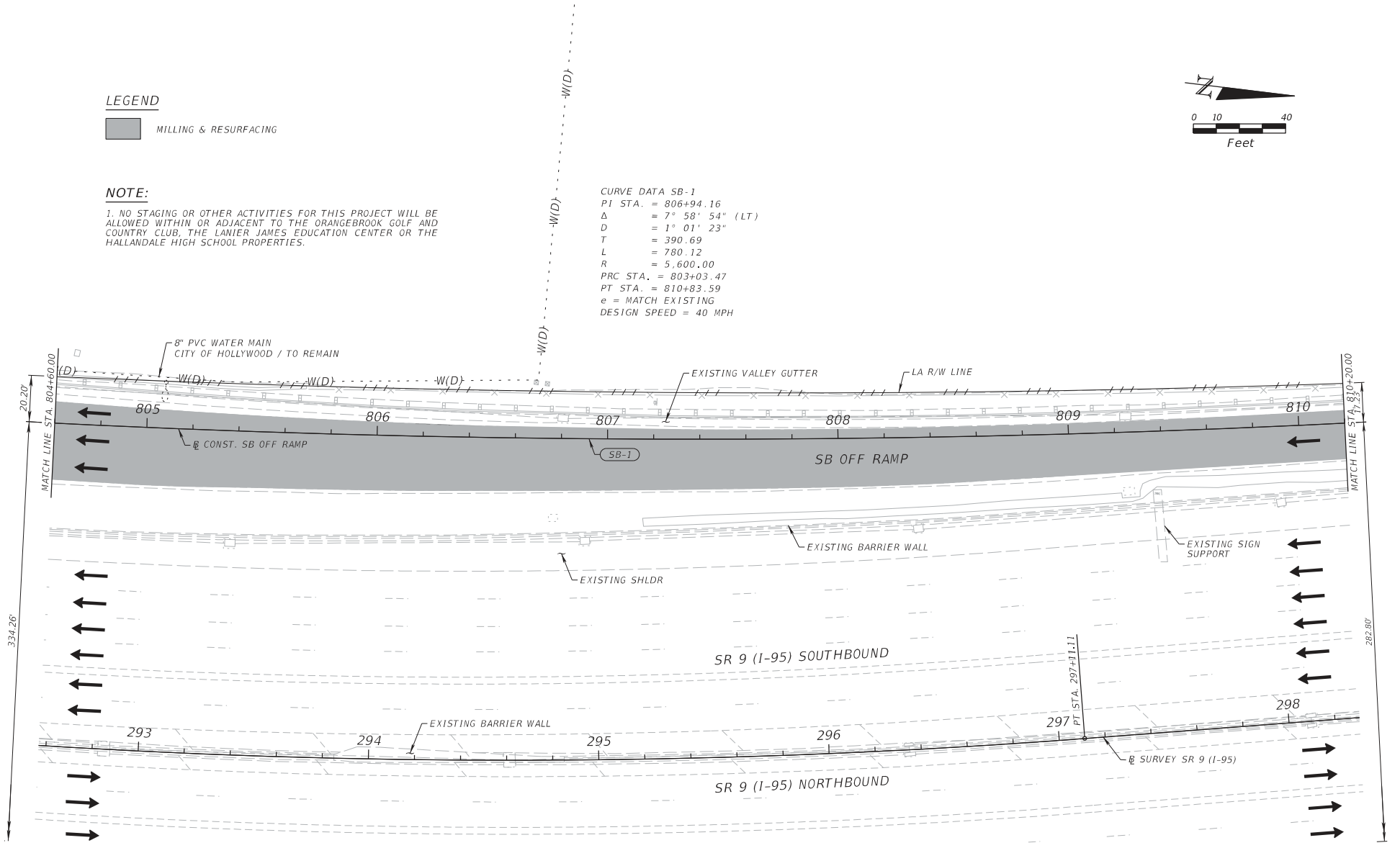

REVISIONS			
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WANTMAN GROUP, INC.
5219 NW 33RD AVE
FORT LAUDERDALE, FL. 33309
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

ROADWAY PLAN (5)

SHEET NO. 9

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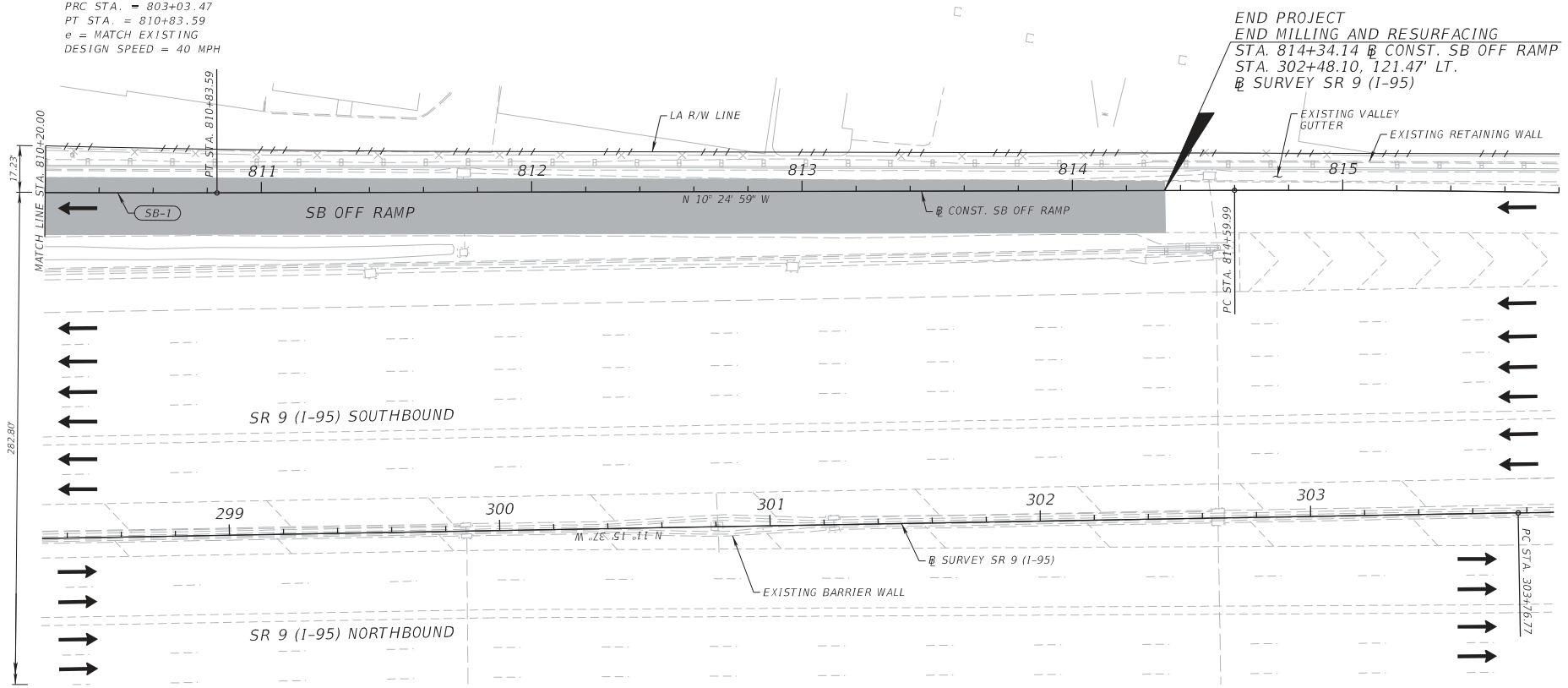
LEGEND

MILLING & RESURFACING

NOTE:

1. NO STAGING OR OTHER ACTIVITIES FOR THIS PROJECT WILL BE ALLOWED WITHIN OR ADJACENT TO THE ORANGEBROOK GOLF AND COUNTRY CLUB, THE LANIER JAMES EDUCATION CENTER OR THE HALLANDALE HIGH SCHOOL PROPERTIES.

CURVE DATA SB-1
PI STA. = 806+94.16
Δ = 7° 58' 54" (LT)
D = 1° 01' 23"
T = 390.69
L = 780.12
R = 5,600.00
PRC STA. = 803+03.47
PT STA. = 810+83.59
e = MATCH EXISTING
DESIGN SPEED = 40 MPH



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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

ROADWAY PLAN (6)

SHEET NO. 10

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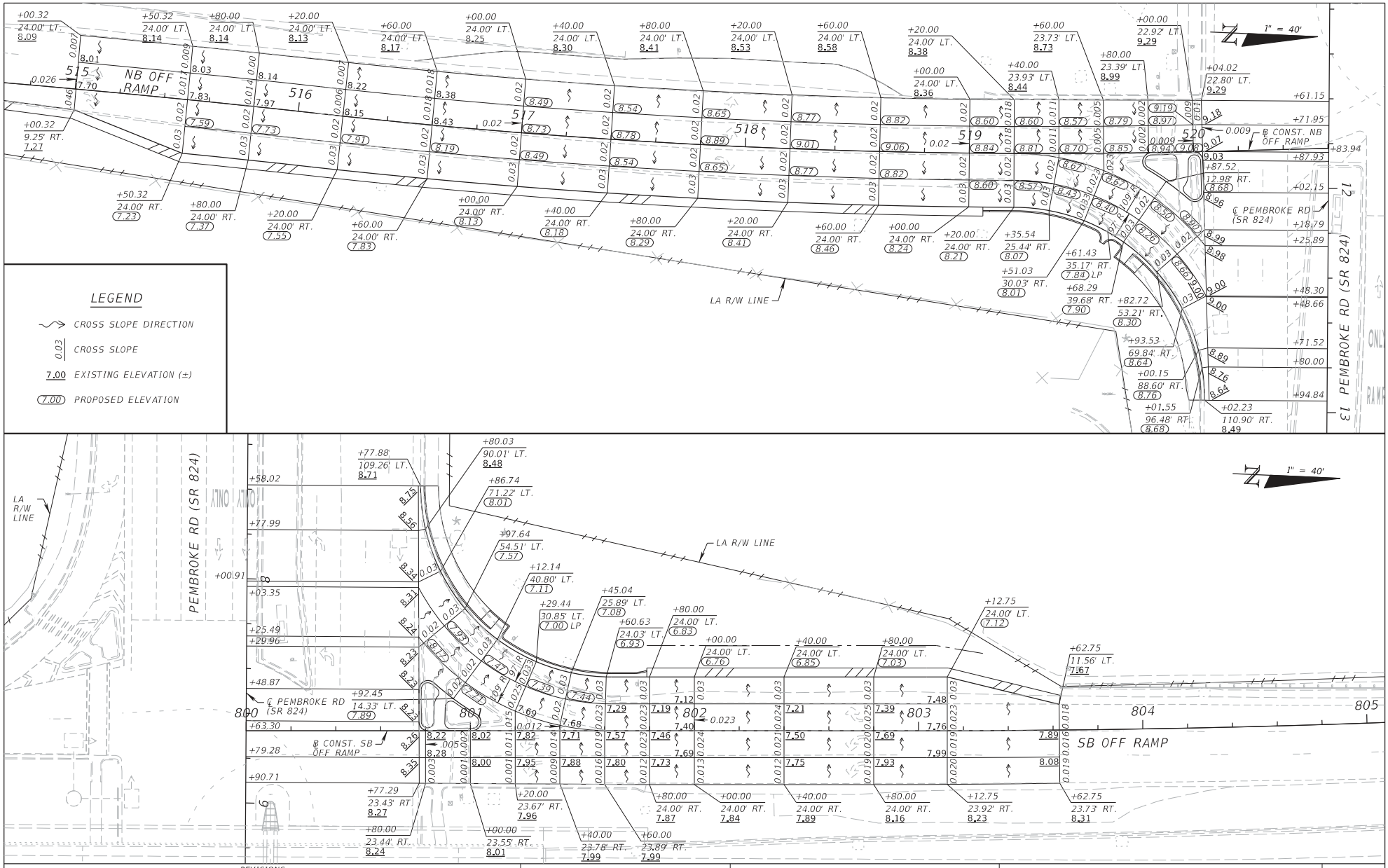

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STATE OF FLORIDA
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9	BROWARD	436303-1-52-01

RAMP TERMINAL DETAILS

SHEET NO. 11

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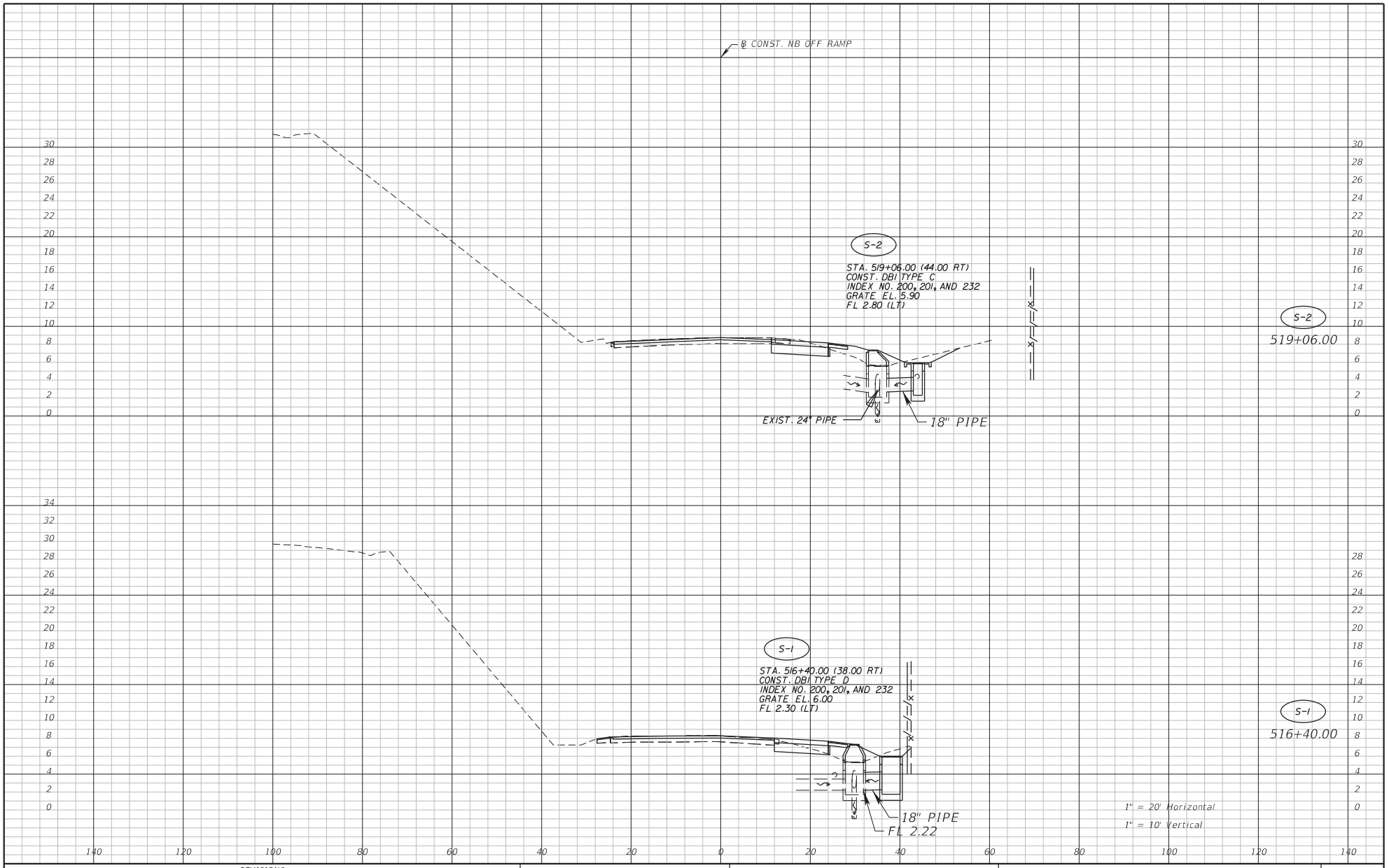

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

DRAINAGE STRUCTURES

SHEET NO. 12

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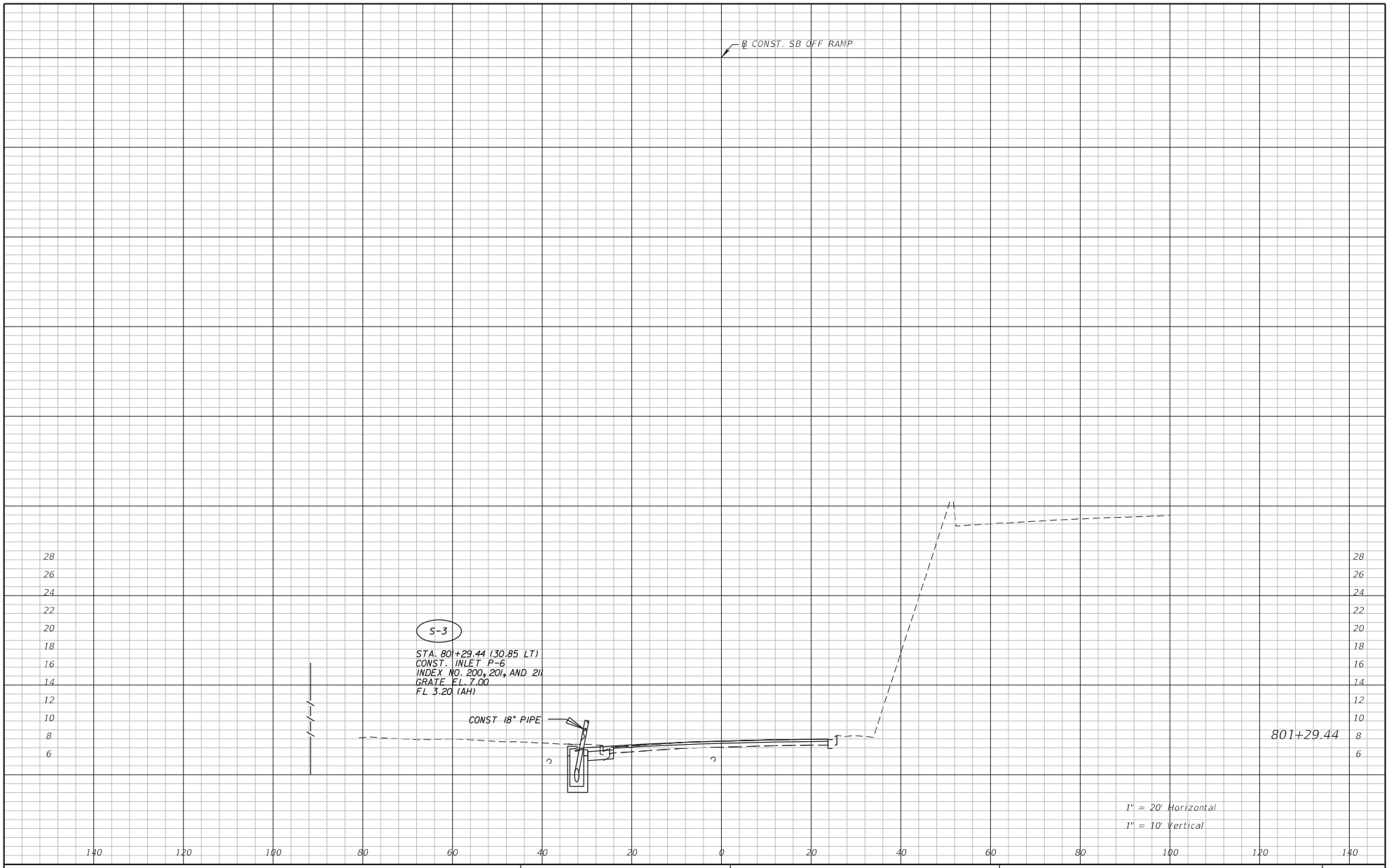

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DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

DRAINAGE STRUCTURES

SHEET NO. 13

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STAFF REPORT DISTRIBUTION LIST

OPERATIONAL IMPROVEMENTS AT SR9 / I-95 PEMBROKE ROAD (SR824)

Application No: 170519-3

Permit No: 88-00053-S

INTERNAL DISTRIBUTION

X Joseph D. Santangelo
X Morgan Reins
X Carlos A. de Rojas, P.E.
X Barbara J. Conmy
X A. Waterhouse, P.E.
X J. Markle, P.E.

EXTERNAL DISTRIBUTION

X Permittee - Florida Department Of Transportation
X Agent - Wantman Group Inc

GOVERNMENT AGENCIES

X Broward County - Director, Water Mgmt Div
X Div of Recreation and Park - District 5 - Miranda Cunningham, FDEP

OTHER INTERESTED PARTIES

X Audubon of Florida - Charles Lee

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE PERMIT NO. 06-01465-S
DATE ISSUED:August 2, 2017

PERMITTEE: FLORIDA DEPARTMENT OF TRANSPORTATION
3400 WEST COMMERCIAL BOULEVARD
FORT LAUDERDALE, FL 33309

PROJECT DESCRIPTION: Conceptual approval of a stormwater management system serving an 8.6 mile highway widening project known as I-95 Express Lanes Phase 3C.

PROJECT LOCATION: BROWARD COUNTY, SEC 8,9,16,17,19,20,21,28,29,33 TWP 50S RGE 42E
SEC 4,8,9,16,17 TWP 51S RGE 42E

PERMIT DURATION: See Special Condition No:1.

This is to notify you of the District's agency action for Permit Application No. 170525-8, dated May 25, 2017. This action is taken pursuant to the provisions of Chapter 373, Part IV, Florida Statues (F.S).

Based on the information provided, District rules have been adhered to and an Environmental Resource Permit is in effect for this project subject to:

1. Not receiving a filed request for a Chapter 120, Florida Statutes, administrative hearing.
2. the attached 18 General Conditions (See Pages : 2 - 4 of 8),
3. the attached 10 Special Conditions (See Pages : 5 - 7 of 8),
4. the attached General Conditions for Authorizations for Use of Sovereign Submerged Lands (See Pages : 8 - 8 of 8) and
5. the attached 6 Exhibit(s)

Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights," we will assume that you concur with the District's action.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY THAT this written notice has been mailed or electronically transmitted to the Permittee (and the persons listed in the attached distribution list) this 2nd day of August, 2017, in accordance with Section 120.60(3), F.S. Notice was also electronically posted on this date through a link on the home page of the District's website (my.sfwmd.gov/ePermitting).

BY:_____
Ricardo A. Valera, P.E.
Bureau Chief - Environmental Resource
Regulation Division

GENERAL CONDITIONS

1. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, Florida Administrative Code (F.A.C.). Any deviations that are not so authorized shall subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.

2. A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.

3. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the "State of Florida Erosion and Sediment Control Designer and Reviewer Manual" (Florida Department of Environmental Protection and Florida Department of Transportation June 2007), and the "Florida Stormwater Erosion and Sedimentation Control Inspector's Manual" (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.

4. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice" indicating the expected start and completion dates. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.

5. Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.

6. Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:
   a. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex- "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit"[Form 62-330.310(3)]; or
   b. For all other activities- "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)].
   c. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.

7. If the final operation and maintenance entity is a third party:
   a. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as- built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance documents (see sections 12.3 thru 12.3.3 of Applicant's Handbook Volume I) as filed with the Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.
   b. Within 30 days of submittal of the as- built certification, the permittee shall submit "Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity" [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.

8. The permittee shall notify the Agency in writing of changes required by any other regulatory agency that

GENERAL CONDITIONS

require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.

9. This permit does not:
a. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;
b. Convey to the permittee or create in the permittee any interest in real property;
c. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
d. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.

10. Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.

11. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.

12. The permittee shall notify the Agency in writing:
a. Immediately if any previously submitted information is discovered to be inaccurate; and
b. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.

13. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.

14. If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification shall be provided in accordance with Section 872.05, F.S.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.

16. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other

GENERAL CONDITIONS

uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.

17. This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.

18. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with Rule 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

SPECIAL CONDITIONS

1. The conceptual phase of this permit shall expire on July 28, 2037.

2. Operation and maintenance of the stormwater management system shall be the responsibility of FLORIDA DEPARTMENT OF TRANSPORTATION.

3. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.

4. The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

   a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injuries to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

   b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

   c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

   d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the animal(s) have moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the animal(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

   e. Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com.

   f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used. One sign measuring at least 3 ft. by 4 ft. which reads Caution: Manatee Area must be posted. A second sign measuring at least 81/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to FWC at ImperiledSpecies@myFWC.com.

5. Manatee exclusion devices (such as grating) shall be installed and maintained over any existing or proposed pipes or culverts greater than 8 inches, but smaller than 8 feet in diameter that are submerged or partially submerged and reasonably accessible to manatees. If horizontal or vertical bars are used, no more than 8 inch gaps on center shall be allowed. Grates or valves shall be in place at the accessible

SPECIAL CONDITIONS

end(s) during all phases of the construction process and as a final design element to restrict manatee access.

6. 1. For the I-595 bridge crossing over the FPL Cooling Pond Canal:

No pile driving work shall be performed between November 15 and March 31, to reduce the possibility of injuring or killing a manatee during construction.

2. During pile-driving activities for concrete piles 12 inches in diameter or larger, the following measures shall be followed:

a. At least one observer shall be onsite and dedicated to the task of watching for manatees during the pile driving. Observers must have prior on-the-job experience as a dedicated manatee observer, observing for manatees during similar in-water work and shall perform no other duties that may interfere with their ability to observe for protected marine species. All pile-driving activity shall be confined to daylight hours. If pile driving is to occur between November 15 and March 31, the observer(s) must be approved by the FWC at least two weeks prior to construction commencement. FWC approval of observers shall be specific to this project and must occur as per FWC guidelines outlined at the following website: http://www.myfwc.com/wildlifehabitats/managed/manatee/watch-program/.

b. The pile driving activities will use a ramp-up measure. At the start of pile driving, hammers would initially be operated at low levels, then gradually increase to minimum necessary power required for pile installation. Monitoring for protected marine species will occur for 30 minutes prior to pile driving, during pile driving, and for 30 minutes after pile driving ends.

c. If the activities appear to harass or injure a protected marine species, then work shall cease immediately and not resume until after consultation with the Florida Fish and Wildlife Conservation Commission (FWC) at ImperiledSpecies@myfwc.com or 850-922-4330. Any additional conservation measures deemed necessary by FWC must be implemented to minimize the risks to protected species.

3. For the use of barges during work on the C-10 Canal, Dania Cutoff Canal bridge crossings, and also for in-water activity associated with the South Fork of the New River Canal bridge crossing:

At least one dedicated observer shall be present during bridge construction related activity in the water and shall perform no other duties that may interfere with their ability to observe for protected marine species. Observer(s) must have prior on-the-job experience observing during previous work where the activities were similar in nature to this project. Movement of a work barge or other associated vessels shall be minimized to the greatest extent possible at night.

7. A monitoring program shall be implemented in accordance with Exhibit No. 5.2. The monitoring program shall extend for a period of 5 years with annual reports submitted to District staff. At the end of the first monitoring period the mitigation area shall contain an 80% survival of planted vegetation. The 80% survival rate shall be maintained throughout the remainder of the monitoring program, with replanting as necessary. If native wetland, transitional, and upland species do not achieve an 80% coverage within the initial two years of the monitoring program, native species shall be planted in accordance with the maintenance program. At the end of the 5 year monitoring program the entire mitigation area shall contain an 80% survival of planted vegetation and an 80% coverage of desirable obligate and facultative wetland species.

SPECIAL CONDITIONS

8. Upon submittal of an application for construction approval involving wetland impacts or proposed restoration, the permittee shall submit a work schedule, subject to District staff review and approval, specifying completion dates for each restoration, monitoring and maintenance task.

9. No work shall occur within the District's right-of-way until all necessary right-of-way occupancy permits are obtained authorizing the proposed work in the District's right-of-way.

10. The following are exhibits to this permit:

Exhibit No. 1 Location Map
Exhibit No. 2 Summary Tables
Exhibit No. 3 Pre & Post Drainage Basin Maps
Exhibit No. 4 Roadway Plans
Exhibit No. 5 Environmental Documents
Exhibit No. 6 Sovereign Submerged Lands Sketch

GENERAL CONDITIONS FOR AUTHORIZATIONS FOR USE OF SOVEREIGN SUBMERGED LANDS

Project No. 170525-8

Chapter 18-21.004(7), F.A.C., provides that all authorizations granted by rule or in writing under Rule 18-21.005, F.A.C., except those for aquaculture activities and geophysical testing, shall be subject to the general conditions as set forth in paragraphs (a) through (i) below. The general conditions shall be part of all authorizations under this chapter, shall be binding upon the grantee, and shall be enforceable under Chapter 253 or Chapter 258, Part II, F.S.

Chapter 18-21.004(7), F.A.C., General Conditions for Authorizations:
(a) Authorizations are valid only for the specified activity or use. Any unauthorized deviation from the specified activity or use and the conditions for undertaking that activity or use shall constitute a violation. Violation of the authorization shall result in suspension or revocation of the grantee's use of the sovereignty submerged land unless cured to the satisfaction of the Board.

(b) Authorizations convey no title to sovereignty submerged land or water column, nor do they constitute recognition or acknowledgment of any other person's title to such land or water.

(c) Authorizations may be modified, suspended or revoked in accordance with their terms or the remedies provided in Sections 253.04 and 258.46, F.S., or Chapter 18-14, F.A.C.

(d) Structures or activities shall be constructed and used to avoid or minimize adverse impacts to sovereignty submerged lands and resources.

(e) Construction, use, or operation of the structure or activity shall not adversely affect any species which is endangered, threatened or of special concern, as listed in Rules 68A-27.003, 68A-27.004, and 68A-27.005, F.A.C.

(f) Structures or activities shall not unreasonably interfere with riparian rights. When a court of competent jurisdiction determines that riparian rights have been unlawfully affected, the structure or activity shall be modified in accordance with the court's decision.

(g) Structures or activities shall not create a navigational hazard.

(h) Structures shall be maintained in a functional condition and shall be repaired or removed if they become dilapidated to such an extent that they are no longer functional. This shall not be construed to prohibit the repair or replacement subject to the provisions of Rule 18-21.005, F.A.C., within one year, of a structure damaged in a discrete event such as a storm, flood, accident, or fire.

(i) Structures or activities shall be constructed, operated, and maintained solely for water dependent purposes, or for non-water dependent activities authorized under paragraph 18-21.004(1)(g), F.A.C., or any other applicable law.

NOTICE OF RIGHTS

As required by Sections 120.569 and 120.60(3), Fla. Stat., the following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all of the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a SFWMD decision which affects or may affect their substantial interests shall file a petition for hearing with the Office of the District Clerk of the SFWMD, in accordance with the filing instructions set forth herein, within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: (1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or (2) within 14 days of service of an Administrative Order pursuant to Section 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of written notice through mail, electronic mail, or posting that the SFWMD has or intends to take final agency action, or publication of notice that the SFWMD has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

If the District takes final agency action which materially differs from the noticed intended agency decision, persons who may be substantially affected shall, unless otherwise provided by law, have an additional Rule 28-106.111, Fla. Admin. Code, point of entry.

Any person to whom an emergency order is directed pursuant to Section 373.119(2), Fla. Stat., shall comply therewith immediately, but on petition to the board shall be afforded a hearing as soon as possible.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for an extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

FILING INSTRUCTIONS

A petition for administrative hearing must be filed with the Office of the District Clerk of the SFWMD. Filings with the Office of the District Clerk may be made by mail, hand-delivery, or e-mail. Filings by facsimile will not be accepted. A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the Office of the District Clerk at SFWMD headquarters in West Palm Beach, Florida. The District's normal business hours are 8:00 a.m. – 5:00 p.m., excluding weekends and District holidays. Any document received by the Office of the District Clerk after 5:00 p.m. shall be deemed filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, 3301 Gun Club Road, West Palm Beach, Florida 33406.

- Filings by hand-delivery must be delivered to the Office of the District Clerk. Delivery of a petition to the SFWMD's security desk does not constitute filing. It will be necessary to request that the SFWMD's security officer contact the Office of the District Clerk. An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by e-mail must be transmitted to the Office of the District Clerk at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the Office of the District Clerk receives the complete document. A party who files a document by e-mail shall (1) represent that the original physically signed document will be retained by that party for the duration of the proceeding and of any subsequent appeal or subsequent proceeding in that cause and that the party shall produce it upon the request of other parties; and (2) be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed.

INITIATION OF AN ADMINISTRATIVE HEARING

Pursuant to Sections 120.54(5)(b)4. and 120.569(2)(c), Fla. Stat., and Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, SFWMD file number or any other SFWMD identification number, if known.
2. The name, address, any email address, any facsimile number, and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

MEDIATION

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401–.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Section 120.68, Fla. Stat., and in accordance with Florida Rule of Appellate Procedure 9.110, a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal with the Office of the District Clerk of the SFWMD in accordance with the filing instructions set forth herein within 30 days of rendition of the order to be reviewed, and by filing a copy of the notice with the clerk of the appropriate district court of appeal.

Last Date For Agency Action: September 23, 2017

INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: I-95 Express Lanes Phase 3c

Permit No.: 06-01465-S

Application No.: 170525-8

Application Type: Environmental Resource (Conceptual Approval Modification)

Location: Broward County, S8,9,16,17,19,20,21,28,29,33/T50S/R42E
S4,8,9,16,17/T51S/R42E

Permittee : Florida Department Of Transportation

Operating Entity : Florida Department Of Transportation

Project Area: 15.70 acres

Permit Area: 416.76 acres

Project Land Use: Roadway

Drainage Basin: NORTH NEW RIVER
Drainage Basin: C-10
Drainage Basin: C-12

Receiving Body: See Exhibit 2 - Table 5

Special Drainage District: NA

Total Acres Wetland Onsite: 6.66
Total Acres Impacted Onsite : 6.66
Conservation Easement To District : No
Sovereign Submerged Lands: Yes **Type:** Letter Of Consent

PROJECT SUMMARY:

This Environmental Resource Permit Modification authorizes the conceptual approval of a stormwater management system serving an 8.6 mile highway widening project known as I-95 Express Lanes Phase 3C.

This project is for the widening of I-95 from south of Stirling Road to Broward Boulevard in Broward County for the purpose of converting the existing High Occupancy Vehicle (HOV) lanes to Express Toll Lanes and to provide an additional Express Toll Lane in each direction. A total of 15.47 acres of new impervious area is proposed. Additionally, a stretch of I-595 will be widened to accomodate the required auxiliary lanes that connect the I-95 and I-595 Express Lane systems (see Exhibit Nos. 1, 3 & 4).

The project extends through the C-10, North New River and C-12 Basins and through the Cities of Hollywood, Dania Beach and Fort Lauderdale.

The stormwater management system will consist of catch basins, storm sewer pipes, existing infield wet & dry ponds, expansion of existing roadside dry ponds (swales) and the construction of new dry detention ponds discharging to various canals (see Exhibit No. 2 - Table 5).

Issuance of this permit constitutes certification of compliance with state water quality standards in accordance with Rule 62-330.062 Florida Administrative Code (F.A.C.).

PROJECT EVALUATION:

PROJECT SITE DESCRIPTION:

Refer to Exhibit 1 for a Location Map and Exhibit No. 3 for Drainage Basin Maps.

The site is an existing stretch of Interstate-95 from south of Stirling Road to Broward Boulevard in Broward County, Florida.

For information on the wetlands and surface waters within the project, please refer to the Wetlands and Surface Waters section of this staff report.

LAND USE:

See Exhibit No. 2 - Table 3

WATER QUANTITY :

Discharge Rate :

The engineer-of-record has submitted an analysis which demonstrates that the post-development peak discharge rate for the 25-year 3-day design storm event will not exceed the existing condition (see Exhibit No. 2 - Table 5).

WATER QUALITY :

The project provides the required water quality treatment volume based on one inch over the basin area (see Exhibit No. 2 - Table 4).

In addition to the required water quality treatment volume, the applicant provided site specific pollutant loading calculations to demonstrate that the storm water management system reduces the post development loading of pollutants (specifically nutrients) to levels less than the loadings generated under the pre-development condition. The pollutant loading calculations are based upon the removal characteristics associated with the system.

The project also includes implementation of an Erosion Control Plan (Exhibit No. 4) as additional reasonable assurance of compliance with water quality criteria during construction and operation.

WETLANDS:

Wetlands And Other Surface Waters:

The project area contains wetlands and surface waters totaling 19.20 acres. Please see Exhibit No. 5.0 for wetland locations. The wetlands along the I-95 corridor consist of degraded mangrove fringes, dominated by exotic species, and are located within the Dania Cut-Off Canal, the C-10 and C-10 Spur Canals, and the South Fork of the New River Canal. There are three different types of wetlands along the I-595 corridor and these include white mangrove dominated wetlands, mudflats and forested wetlands with a mix of freshwater species and white and red mangroves. Additional wetland descriptions are located in the July 2017 environmental considerations report in the epermitting file.

The project will result in permanent impacts to 6.66 acres of wetlands and 1.05 acres of other surface

waters as described in the table below, and temporary impacts to 2.42 acres of wetlands. Exhibit No. 5.1 identifies the locations of wetlands and surface waters that will be impacted. Due to the limited space within the right-of-way, staff determined that additional reduction and elimination of direct impacts was not practicable.

Secondary impacts to mangrove wetlands within the C-10 Spur Canal and Dania Cut-Off Canal were assessed within 25 feet from the edge of the proposed bridge widening for a total of 0.04 acre. No secondary impacts in the C-10 Canal and South Fork of the New River canal are anticipated.

A series of stormwater ponds will be constructed below the I-595 bridge which will separate the north portion of the forested wetland area from the south portion. However, no secondary impacts are anticipated. The hydrology will be maintained, via the continuation of freshwater discharge from an adjacent ditch, the tidal influence from the South Fork of the New River Canal and equalizer pipes located in each pond. In addition, the water quality of the discharge into the wetland area will be significantly improved as it is currently discharged with no treatment. Finally, the ponds will still provide access to wildlife and will continue to provide a source of foraging for wading birds.

Mitigation Plan:

Wetland Impacts:

To mitigate for the wetland impacts within the canals along the I-95 corridor, the applicant will use mitigation functional units generated from the West Lake Park Mitigation Project and the wetland impacts along the I-595 bridge will be offset with the use of functional units from the Pond Apple Slough Mitigaton Area. Applications No. 170725-13 and 170725-15 are being issued concurrently to authorize the modification of Permits No. 06-05891-P and 06-07122-P to deduct 0.025 and 1.84 functional units, respectively, proposed as wetland mitigation. The amount of mitigation was determined by using the Uniform Mitigation Assessment Method in Chapter 62-345, F.A.C. The final scores can be found in the permit file.

The proposed mitigation is located within the same basin as the impacts; therefore, pursuant to Section 10.2.8 of Volume I, the project will not result in unacceptable cumulative impacts to the New River Basin.

Other Surface Waters Impacts:

The benthic surveys conducted by the applicant indicate that some discontinuous, patchy oyster beds were observed in the South Fork of the New River Canal, under the east bound lane of the I-595 bridge as well as south of the bridge and in the C-10 and C-10 Spur Canals. A majority of the observed oyster patches consisted of remnant shells and the total acreage of fill in the South Fork of the New River Canal is 0.06 acre and less than 0.01 acre in the C-10 and C-10 Spur Canals. No other benthic resources were observed within the overall project's proposed area of work in other surface waters. Therefore, mitigation is not required for work in other surface waters associated with this project. The benthic surveys can be found in the permit file.

Temporary Wetland Impacts:

The project includes temporary impacts to 2.10 acres of forested wetlands and 0.32 acre of mudflats along the I-595 bridge. Temporary access roads will be constructed for the duration of the project and will be removed upon completion. The wetland areas will be restored to their original condition as described in the restoration plan shown in Exhibit No. 5.2. An additional 0.79 acre of forested wetland areas will be impacted by the temporary road construction and then restored. However, these areas will be shaded after the bridge widening and mitigation units from the Pond Apple Slough Mitigation Area will be used to offset the shading impacts.

Monitoring/Maintenance:

Since 2.10 acres of forested wetland areas will be restored upon completion of the project, monitoring will be conducted by the permittee for five years or until District staff determines that restoration success has been achieved. The 0.32 acre of restored mudflats will not require monitoring as no vegetation will be planted. Exhibit No. 5.2 describes the monitoring methodology, locations, and maintenance activities. Monitoring will include vegetative cover, hydrologic conditions and success of the restoration, as well as wildlife usage and recommendations for maintenance work. Success criteria are found in the special conditions and Exhibit No. 5.2. A work schedule for monitoring shall be submitted at the time of the application for construction and annual reports shall be submitted to the District in accordance with that work schedule. After success is achieved, maintenance will be conducted in perpetuity by the permittee.

Wetland Inventory:

The temporary impacts to 2.10 acres of forested wetland areas and 0.32 acre of non-vegetated wetland areas are not shown in the table below since they will be restored directly following the completion of the bridge construction activities.

Wetland Inventory :

CONSTRUCTION NEW -I-95 Express Lanes Phase 3C

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 Fluccs	Adj Delta	Functional Gain / Loss
A	ON	612	Direct	3.11							.000	.000
B	ON	650	Direct	2.76							.000	.000
C	ON	630	Direct	.79							.000	.000
D	ON	510	Direct	1.05							.000	.000
			Total:	7.71								.00

Fluccs Code	Description
510	Streams And Waterways
612	Mangrove Swamps
630	Wetland Forested Mixed
650	Non-Vegetated

Fish And Wildlife Issues:

The wetlands or surface waters to be impacted provide habitat for wetland-dependent species including the West Indian manatee (Trichechus manatus). Correspondence from the Florida Fish and Wildlife Conservation Commission recommends that the permittee follow the Standard Manatee Construction Conditions for In-Water Work, as well as provide manatee exclusion devices on any existing or proposed pipes or culverts greater than 8 inches but less than 8 feet in diameter that are submerged or partially submerged and reasonably accessible to manatees. Additionally, no pile driving work shall be performed between November 15 and March 31 in the FPL Cooling Pond Canal and an observer will be required during pile-driving activities for concrete piles 12 inches in diameter or larger. An observer will also be

required while using barges on the C-10 Canal and Dania Cut-Off Canal bridge crossings, and during in-water activities associated with the South Fork of the New River Canal Bridge crossing. Special conditions are included to address these recommendations.

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.

SOVEREIGNTY SUBMERGED LANDS:

The existing bridge is located on sovereignty submerged lands- lands owned by the State of Florida and Easement No. 26451(3335-06) was granted to the applicant by the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida on January 26, 2014.

The project also requires the temporary use of sovereignty submerged lands adjacent to the existing easement to provide additional space for waterborne access and staging of equipment and materials during the bridge construction. Therefore, it also requires authorization from the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), pursuant to Article X, Section 11 of the Florida Constitution, and Section 253.77, F.S. For this project, the District is delegated the authority to review and take final action on behalf of the Board of Trustees, pursuant to Rule 18-21.0051(2), F.A.C.

The District has determined that the activity qualifies for a Letter of Consent, as long as the work performed is located within the boundaries as described and is consistent with the conditions herein. The sketch depicting the location of the temporary area is included as Exhibit No. 6.0.

RELATED CONCERNS:

Water Use Permit Status:

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:

District Right-of-Way Permit Application No. 17-0526-2M is under review for the Dania Cut-Off Canal I-95 crossing. Right-of-Way Permits will also be required for the I-95 crossing over the C-10 and C-10 Spur Canals and the applicant is in the process of submitting the applications. The Right-of-Way permits will be required before the modification for the construction phase of this project is issued.

Historical/Archeological Resources:

The District has received correspondence from the Florida Department of State, Division of Historical Resources indicating that no significant archaeological or historical resources are recorded in the project area and the project is therefore unlikely to have an effect upon any such properties.

This permit does not release the permittee from compliance with any other agencies' requirements in the event that historical and/or archaeological resources are found on the site.

DEO/CZM Consistency Review:

The issuance of this permit constitutes a finding of consistency with the Florida Coastal Management Program.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF REVIEW:

DIVISION APPROVAL:

NATURAL RESOURCE MANAGEMENT:

Barbara J. Conmy

DATE: 02 Aug 2017

SURFACE WATER MANAGEMENT:

Carlos A. de Rojas, P.E.

DATE: 02-Aug-2017

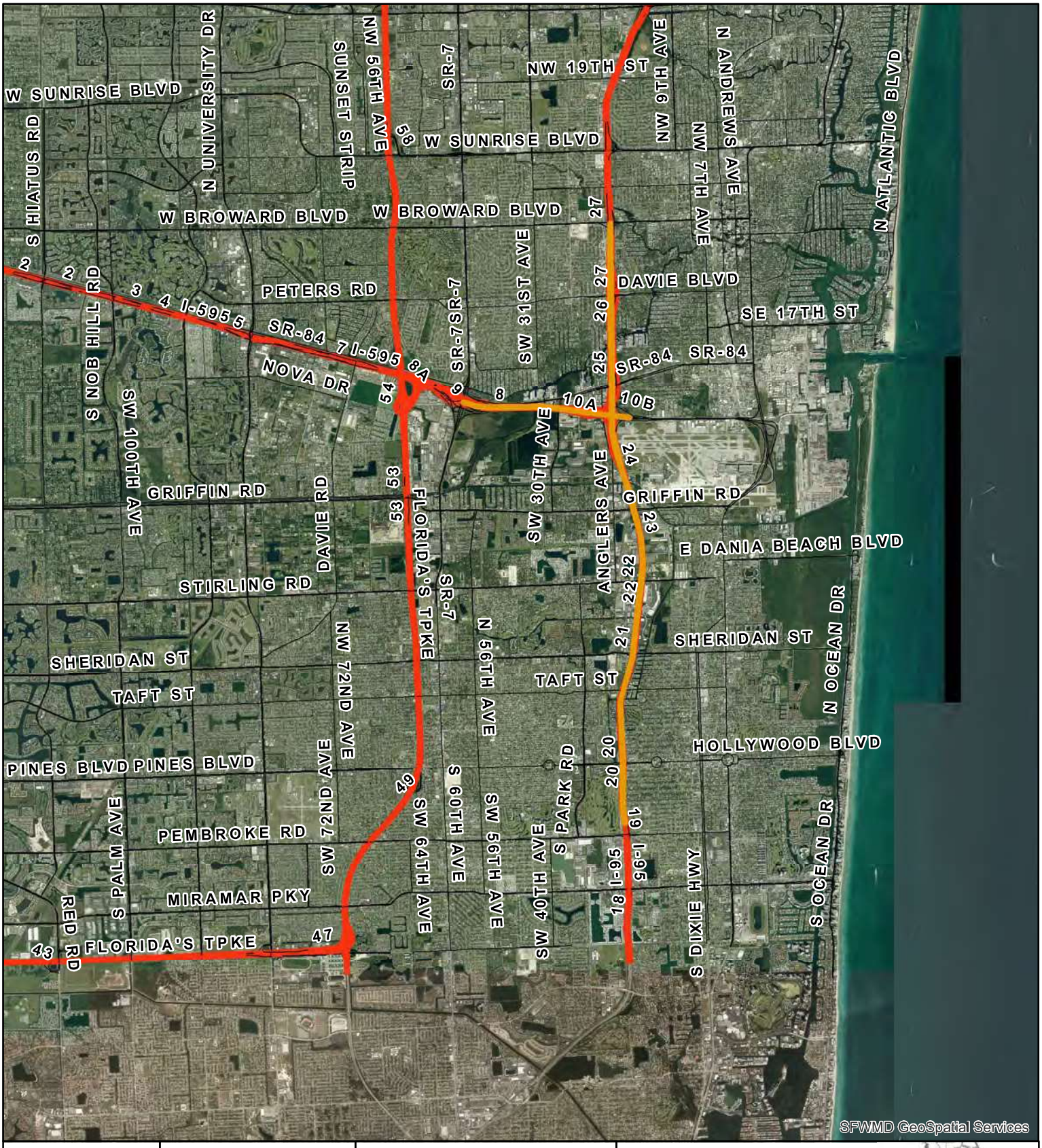

Exhibit No: 1	Exhibit Created On: 2017-06-06	BROWARD COUNTY, FL

Application

Permit No: 06-01465-S

Application Number: 170525-8

REGULATION DIVISION

Project Name: I-95 EXPRESS LANES PHASE 3C

0 1.5 3 Miles

N

Created by

South Florida Water Management District

ORANGE BROOK
GOLF COURSE

South Florida Water Management District

Certification For Stormwater Discharge

Form #0113
Rev 1/91

SURFACE WATER MANAGEMENT PERMIT NO. 06-01955-S
(NON-ASSIGNABLE)

Date Issued: MAY 12, 1994

Authorizing: CONSTRUCTION AND OPERATION OF THE PROPOSED IMPROVEMENTS TO THE SURFACE WATER MANAGEMENT SYSTEM SERVING 208.4 ACRES OF THE ORANGEBROOK GOLF COURSE DISCHARGING TO THE C-10 CANAL.

Located In: BROWARD COUNTY, SEC. 17,20 TWP. 51S RGE. 42E

Issued To: HOLLYWOOD CITY OF
(ORANGE BROOK GOLF COURSE)
2600 HOLLYWOOD BOULEVARD
P O BOX 229045
HOLLYWOOD, FL 33022-9045

This Permit is issued pursuant to Application for Permit No. 931202-10 dated November 29, 1993. Permittee agrees to hold and save the South Florida Water Management District and its successors harmless from any and all damages, claims or liabilities which may arise by reason of the construction, operation, maintenance or use of any work or structure involved in the Permit. Said Application, including all plans and specifications attached thereto, as addressed by the Staff Report, is by reference made a part hereof.

This Permit may be revoked or modified at anytime pursuant to the appropriate provisions of Chapter 373, Florida Statutes.

This Permit does not convey to Permittee any property rights or privileges other than those specified herein, nor relieve the Permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by Permittee hereunder shall remain the property of the Permittee.

Within thirty (30) days after the completion of the construction of any work or structure relative to this Permit, the Permittee shall file with the District a written statement of completion on the appropriate form provided by the Board.

Special Conditions are as follows:

SEE SHEETS 2-3 OF 5 - 14 SPECIAL CONDITIONS.
SEE SHEETS 4-5 OF 5 - 12 LIMITING CONDITIONS.

Filed with the Clerk of the South Florida Water Management District

On Original signed by:
By Vern Kaiser
Deputy Clerk

South Florida Water Management District, by its Governing Board

By Original signed by TONY BURNS
Assistant Secretary

MICROFILMED

SPECIAL CONDITIONS

1 . DISCHARGE FACILITIES:

1-43' WIDE SHARP CRESTED WEIR WITH CREST AT ELEV. 4' NGVD.
1-3' W X ' H RECTANGULAR NOTCH WITH INVERT AT ELEV. 2' NGVD.

RECEIVING BODY : C-10

CONTROL ELEV : 2 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 . PRIOR TO THE INITIATION OF ANY WITHDRAWAL OF WATER (IRRIGATION, DEWATERING, PUBLIC WATER SUPPLY, ETC.), IT WILL BE NECESSARY TO APPLY FOR A WATER USE PERMIT. THE PERMITTEE IS CAUTIONED THAT A MINIMUM OF 90 DAYS IS REQUIRED FOR CONSIDERATION OF THE WATER USE PERMIT APPLICATION. THE PERMITTEE IS CAUTIONED THAT THE ISSUANCE OF A SURFACE WATER MANAGEMENT PERMIT SHALL NOT BE CONSTRUED TO BE A GUARANTEE THAT WATER WILL BE AVAILABLE.

6 . FACILITIES OTHER THAN THOSE STATED HEREIN SHALL NOT BE CONSTRUCTED WITHOUT AN APPROVED MODIFICATION OF THIS PERMIT.

7 . A BENCHMARK SHALL BE PROVIDED IN THE VICINITY OF THE CONTROL STRUCTURE AND A DESCRIPTION PROVIDED TO THE DISTRICT WHEN CERTIFYING CONSTRUCTION COMPLETION OF THE DRAINAGE FACILITIES.

8 . PRIOR TO JULY 9, 1994, THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT SHALL BE NOTIFIED BY THE PERMITTEE OR AUTHORIZED AGENT (VIA THE SUPPLIED CONSTRUCTION COMMENCEMENT NOTICE OR EQUIVALENT) OF THE ACTUAL OR ANTICIPATED CONSTRUCTION START DATE AND THE EXPECTED COMPLETION DATE/DURATION.

9 . WHEN THE DURATION OF CONSTRUCTION EXCEEDS ONE YEAR, CONSTRUCTION STATUS REPORTS SHALL BE SUBMITTED TO THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT ON AN ANNUAL BASIS (VIA THE SUPPLIED ANNUAL STATUS REPORT OR EQUIVALENT) BEGINNING ONE YEAR AFTER THE INITIAL COMMENCEMENT OF CONSTRUCTION DATE.

10. WITHIN 30 DAYS AFTER COMPLETION OF CONSTRUCTION OF THE SURFACE WATER MANAGEMENT SYSTEM, THE PERMITTEE OR AUTHORIZED AGENT SHALL NOTIFY THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT OF THAT COMPLETION DATE AND SUBMIT CERTIFICATION BY A FLORIDA REGISTERED PROFESSIONAL ENGINEER THAT ALL FACILITIES HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DESIGN APPROVED BY

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THE DISTRICT (VIA THE SUPPLIED CONSTRUCTION COMPLETION/CONSTRUCTION CERTIFICATION OR EQUIVALENT). SUCH CERTIFICATION MAY CONSIST OF WORDING IN PARAGRAPH 3.1.7 "CONSTRUCTION COMPLETION CERTIFICATION" OF THE CURRENT BASIS OF REVIEW FOR SURFACE WATER MANAGEMENT PERMIT APPLICATIONS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT. IF THE CERTIFICATION LANGUAGE USED IS DIFFERENT FROM THE SUGGESTED LANGUAGE, A SET OF RECORD DRAWINGS CONSISTING OF ELEVATIONS, LOCATIONS AND DIMENSIONS OF COMPONENTS OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL ALSO BE SUBMITTED.

11. OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL BE THE RESPONSIBILITY OF THE CITY OF HOLLYWOOD.

12. IF THE PROJECT DESIGN IS CHANGED AS A RESULT OF OTHER AGENCY REQUIREMENTS, A SURFACE WATER MANAGEMENT PERMIT MODIFICATION MAY BE REQUIRED. THE PERMITEE SHALL NOTIFY SFWMD STAFF OF DESIGN CHANGES REQUIRED BY OTHER AGENCIES FOR A DETERMINATION OF ANY NECESSARY PERMIT MODIFICATIONS.

13. FOR THE PROPOSED LAKE EXCAVATION AREAS WITHIN THE GOLF COURSE, LAKE SIDE SLOPES SHALL BE 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.

14. THE CITY OF HOLLYWOOD SHALL OPERATE THE SURFACE WATER MANAGEMENT SYSTEM IN SUCH A MANNER SO AS TO PREVENT CHLORIDE CONCENTRATIONS FROM EXCEEDING HISTORIC LEVELS. THE DISTRICT RESERVES THE RIGHT TO REQUIRE THAT WATER QUALITY DATA BE SUBMITTED TO INSURE CONTINUED COMPLIANCE WITH THIS CONDITION.

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LIMITING CONDITIONS

1 . THE PERMITTEE SHALL PROSECUTE THE WORK AUTHORIZED IN A MANNER SO AS TO MINIMIZE ANY ADVERSE IMPACT OF THE WORKS ON FISH, WILDLIFE, NATURAL ENVIRONMENTAL VALUES, AND WATER QUALITY. THE PERMITTEE SHALL INSTITUTE NECESSARY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING FULL COMPACTION OF ANY FILL MATERIAL PLACED AROUND NEWLY INSTALLED STRUCTURES, TO REDUCE EROSION, TURBIDITY, NUTRIENT LOADING AND SEDIMENTATION IN THE RECEIVING WATERS.

2 . WATER QUALITY DATA FOR THE WATER DISCHARGED FROM THE PERMITTEE'S PROPERTY OR INTO SURFACE WATERS OF THE STATE SHALL BE SUBMITTED TO THE DISTRICT AS REQUIRED. PARAMETERS TO BE MONITORED MAY INCLUDE THOSE LISTED IN CHAPTER 17-302. IF WATER QUALITY DATA IS REQUIRED, THE PERMITTEE SHALL PROVIDE DATA AS REQUIRED, ON VOLUMES OF WATER DISCHARGED INCLUDING TOTAL VOLUME DISCHARGED, DURING THE DAYS OF SAMPLING AND TOTAL MONTHLY DISCHARGES FROM THE PROPERTY OR INTO SURFACE WATERS OF THE STATE.

3 . THE PERMITTEE SHALL COMPLY WITH ALL APPLICABLE LOCAL SUBDIVISION REGULATIONS AND OTHER LOCAL REQUIREMENTS. IN ADDITION, THE PERMITTEE SHALL OBTAIN ALL NECESSARY FEDERAL, STATE, LOCAL AND SPECIAL DISTRICT AUTHORIZATIONS PRIOR TO THE START OF ANY CONSTRUCTION OR ALTERATION OF WORKS AUTHORIZED BY THIS PERMIT.

4 . THE OPERATION PHASE OF THIS PERMIT SHALL NOT BECOME EFFECTIVE UNTIL A FLORIDA REGISTERED PROFESSIONAL ENGINEER CERTIFIES THAT ALL FACILITIES HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DESIGN APPROVED BY THE DISTRICT. WITHIN 30 DAYS AFTER COMPLETION OF CONSTRUCTION OF THE SURFACE WATER MANAGEMENT SYSTEM, THE PERMITTEE SHALL SUBMIT THE CERTIFICATION AND NOTIFY THE DISTRICT THAT THE FACILITIES ARE READY FOR INSPECTION AND APPROVAL. UPON APPROVAL OF THE COMPLETED SURFACE WATER MANAGEMENT SYSTEM, THE PERMITTEE SHALL REQUEST TRANSFER OF THE PERMIT TO THE RESPONSIBLE ENTITY APPROVED BY THE DISTRICT.

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6 . ALL BUILDING FLOORS SHALL BE SET AT OR ABOVE ELEVATIONS ACCEPTABLE TO THE APPLICABLE LOCAL GOVERNMENT.

7 . OFF-SITE DISCHARGES DURING CONSTRUCTION AND DEVELOPMENT SHALL BE MADE ONLY THROUGH THE FACILITIES AUTHORIZED BY THIS PERMIT. NO ROADWAY OR BUILDING CONSTRUCTION SHALL COMMENCE ON-SITE UNTIL COMPLETION OF THE PERMITTED DISCHARGE STRUCTURE AND DETENTION AREAS. WATER DISCHARGED FROM THE PROJECT SHALL BE THROUGH STRUCTURES HAVING A MECHANISM SUITABLE FOR REGULATING UPSTREAM WATER STAGES. STAGES MAY BE SUBJECT TO OPERATING SCHEDULES SATISFACTORY TO THE DISTRICT.

8 . NO CONSTRUCTION AUTHORIZED HEREIN SHALL COMMENCE UNTIL A RESPONSIBLE ENTITY ACCEPTABLE TO THE DISTRICT HAS BEEN ESTABLISHED AND HAS AGREED TO OPERATE AND MAINTAIN THE SYSTEM. THE ENTITY MUST BE PROVIDED WITH SUFFICIENT

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OWNERSHIP SO THAT IT HAS CONTROL OVER ALL WATER MANAGEMENT FACILITIES AUTHORIZED HEREIN. UPON RECEIPT OF WRITTEN EVIDENCE OF THE SATISFACTION OF THIS CONDITION, THE DISTRICT WILL ISSUE AN AUTHORIZATION TO COMMENCE CONSTRUCTION.

9 . THE PERMIT DOES NOT CONVEY TO THE PERMITTEE ANY PROPERTY RIGHT NOR ANY RIGHTS OR PRIVILEGES OTHER THAN THOSE SPECIFIED IN THE PERMIT AND CHAPTER 40E-4, FAC.

10. 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, OPERATION, MAINTENANCE OR USE OF ANY FACILITY AUTHORIZED BY THE PERMIT.

11. THIS PERMIT IS ISSUED BASED ON THE APPLICANT'S SUBMITTED INFORMATION WHICH REASONABLY DEMONSTRATES THAT ADVERSE OFF-SITE WATER RESOURCE RELATED IMPACTS WILL NOT BE CAUSED BY THE COMPLETED PERMIT ACTIVITY. IT IS ALSO THE RESPONSIBILITY OF THE PERMITTEE TO INSURE THAT ADVERSE OFF-SITE WATER RESOURCE IMPACTS DO NOT OCCUR DURING CONSTRUCTION.

12. PRIOR TO DEWATERING, PLANS SHALL BE SUBMITTED TO THE DISTRICT FOR APPROVAL. INFORMATION SHALL INCLUDE AS A MINIMUM: PUMP SIZES, LOCATIONS AND HOURS OF OPERATION FOR EACH PUMP. IF OFF-SITE DISCHARGE IS PROPOSED, OR OFF-SITE ADVERSE IMPACTS ARE EVIDENT, AN INDIVIDUAL WATER USE PERMIT MAY BE REQUIRED. THE PERMITTEE IS CAUTIONED THAT SEVERAL MONTHS MAY BE REQUIRED FOR CONSIDERATION OF THE WATER USE PERMIT APPLICATION.

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SCANNED 10/28/2008 14:44:44 JSB

FLORIDA DEPARTMENT OF TRANSPORTATION
LAWTON CHILES
GOVERNOR
BEN G. WATTS
SECRETARY
3400 West Commercial Blvd.
Fort Lauderdale, Florida 33309-3421
Telephone: (305) 777-4343

June 28, 1994

Ms. Beth Colavecchio
Regulation Department
So. Florida Water Management District
3301 Gun Club Road
P.O. Box 24680
West Palm Beach, FL 33416-4680

Dear Ms. Colavecchio:

RE: Permit Processing Fee
Orangebrook Golf Course
SFWMD Application / Permit No. 931202-10 / 06-01955-S
Work Program Item No. 4110318
State Project No. 86018-3501
Broward County

Enclosed is the $3050.00 permit processing fee for the individual permit issued for the Orangebrook Golf Course referenced by SFWMD Permit No. 06-01955-S.

If you have any questions or need additional information, please do not hesitate to contact me at (305) 777-4343.

confirmed

Sincerely,

Amie K. Goddeau, P.E.
District Permit Coordinator
D.E.M.O.

Per ow
AL 6-28-

AKG

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RECYCLED PAPER

File

South Florida Water Management District

3301 Gun Club Road • P.O. Box 24680 • West Palm Beach, FL 33416-4680 • (407) 686-8800 • FL WATS 1-800-432-2045

May 6, 1994

City of Hollywood
2600 Hollywood Blvd.
Hollywood, FL 33022-9045

Dear Sir or Madam:

Subject: Application No. 931202-10, Orange Brook Golf Course
Broward County, S17,20/T51S/R42E

Enclosed is a copy of this District's staff report covering the request for 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 May 12, 1994.

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:

Vern Kaiser, Deputy Clerk
South Florida Water Management District
Post Office Box 24680
West Palm Beach, Florida 33416-4680

The "Notice of Rights" addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. You are advised, however, to be prepared to defend your position regarding the permit application when it is considered by the Governing Board for final agency action, even if you agree with the staff 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. If we do not hear from you prior to the date on the "Notice of Rights", we will assume you concur with our recommendations.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the addressee and the persons listed in the attached distribution list not later than 5:00 p.m. this 6th day of May 1994 in accordance with Section 120.60 (3), Florida Statutes.

Sincerely,

Steve Lamb
Director
Regulation Department

CERTIFIED MAIL #P 252 275 419
RETURN RECEIPT REQUESTED

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Governing Board:
Allan Milledge, Chairman - Miami
Valerie Boyd, Vice Chairman - Naples
Ken Adams - West Palm Beach
James E. Nail - Fort Lauderdale
Annie Betancourt - Miami
Franklin B. Mann - Fort Myers
Leah G. Schad - West Palm Beach
Frank Williamson, Jr. - Okeechobee
Eugene K. Pettis - Fort Lauderdale
Tilford C. Creel, Executive Director
Thomas K. MacVicar, Deputy Executive Director

South Florida Water Management District

Notice of Rights

Form #0300
Rev. 7/93

NOTICE OF RIGHTS

Enclosed is a copy of the Staff Review Summary regarding the subject permit application, which is this agency's Notice of Proposed Agency Action.

PETITION FOR FORMAL ADMINISTRATIVE PROCEEDINGS

Any person whose substantial interests are or may be affected by the action which is proposed in the enclosed Notice of Proposed Agency Action/Staff Review Summary, may petition for an administrative hearing in accordance with the requirements of Rule 40E-1.521, Florida Administrative Code, and be filed with (received by) the District Clerk, 3301 Gun Club Road, West Palm Beach, Florida 33406. Petitions for administrative hearing on the above application must be filed within **fourteen (14) days of actual receipt** of this Notice of Proposed Agency Action. Failure to file a petition within this time period shall constitute a waiver of any rights such person may have to request an administrative determination (hearing) under section 120.57, Florida Statutes, concerning the subject permit application. Petitions which are not filed in accordance with the above provisions are subject to dismissal.

FLORIDA LAND AND WATER ADJUDICATORY COMMISSION

A party to the proceeding below may seek review of a Final Order rendered on the permit application before the Land and Water Adjudicatory Commission. Review under section 373.114, Florida Statutes, is initiated by filing a request for review with the Land and Adjudicatory Commission and serving a copy on the Department of Environmental Protection and any person named in the Order within applicable statutory timeframes. This review is appellate in nature and limited to the record below.

DISTRICT COURT OF APPEAL

A party who is adversely affected by final agency action on the permit application is entitled to judicial review in the District Court of Appeal pursuant to section 120.68, Florida Statutes, as provided therein. Review under section 120.68, Florida Statutes, is initiated by filing a Notice of Appeal in the appropriate District Court of Appeal in accordance with Florida Rule of Appellate Procedure 9.110.

CIRCUIT COURT

Section 373.617(2), Florida Statutes, provides:

> Any person substantially affected by a final action of any agency with respect to a permit may seek review within 90 days of the rendering of such decision and request monetary damages and other relief in the circuit court in the judicial circuit in which the affected property is located; however, circuit court review shall be confined solely to determining whether final agency action is an unreasonable exercise of the state's police power constituting a taking with just compensation. Review of final agency action for the purpose of determining whether the action is in accordance with existing statutes or rules and based on competent substantial evidence shall proceed in accordance with Chapter 120.

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LAST DATE FOR GOVERNING BOARD ACTION:
JUNE 9, 1994

DRAFT
Subject to Governing Board Approval

SURFACE WATER MANAGEMENT STAFF REVIEW SUMMARY

I. ADMINISTRATIVE

APPLICATION NUMBER: 931202-10

PROJECT NAME: ORANGE BROOK GOLF COURSE

LOCATION: BROWARD COUNTY
S17,20/T51S/R42E

APPLICANT'S NAME: HOLLYWOOD CITY OF

OWNERS NAME AND ADDRESS: HOLLYWOOD CITY OF
2600 HOLLYWOOD BOULEVARD
P O BOX 229045
HOLLYWOOD, FL 33022-9045

DEVELOPER:

ENGINEER: FLORIDA DEPARTMENT OF TRANSPORATION

II. PROJECT DESCRIPTION

PROJECT AREA: 208.40 acres **DRAINAGE AREA:** 309.40 acres

DISTRICT DRAINAGE BASIN: C-10

RECEIVING BODY: C-10

CLASSIFICATION: CLASS III

PURPOSE:

This application is a request for Construction and Operation of proposed improvements to the surface water management system serving the existing 208.4 acre City of Hollywood's Orange Brook Golf Course (OBGC). Staff recommends approval with conditions.

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BACKGROUND:

On July 28, 1993, the City of Hollywood and the Florida Department of Transportation (FDOT) entered into a Joint Participation Agreement for the proposed improvements to the OBGC surface water management system. This agreement provides for FDOT funding of the proposed improvements with construction and operation to be undertaken by the City. Funding and construction of the proposed improvements would allow the FDOT Pembroke Road widening project to discharge into the OBGC water management system.

EXISTING FACILITIES:

The existing OBGC discharge facilities consist of a dam structure, 1-18000 GPM pump and several gated culverts. Currently runoff from the golf course and several adjacent parcels flows into the existing lake area within the golf course. Discharge is into the C-10 Canal which abuts the northeast corner of the OBGC.

PROPOSED FACILITIES:

This application covers the proposed improvements to the City of Hollywood's Orange Brook Golf Course (OBGC). These improvements include the reconfiguration of the lake system, replacement of pedestrian bridges, and replacement of the existing control structure which discharges into the C-10 Canal.

The new control structure will consist of 1-3' wide rectangular slide gate with the crest to be set at elevation 2.0' NGVD, 1-43' wide broad crested weir (dam) with a crest at elevation 4.0' NGVD and 1-18000 GPM pump with an on/off elevation at 4.0' NGVD. A second 18000 GPM pump will be installed and will only be used as backup. Discharge is into the C-10 Canal as presently occurs.

The proposed improvements to the surface water management system will include a pre-treatment swale between Pembroke Road (SR 824) and the first golf course lake. Runoff from the Pembroke Road system will be pre-treated prior to entering the golf course lake system. For the proposed lake excavation areas within the golf course, lake side slopes shall be constructed to meet the 4:1 side slope criteria.

The City of Hollywood will be required to monitor chloride concentrations within the golf course lake system. Chloride concentrations shall not exceed current levels (approximately 60 mg/l) as shown on Exhibit 14. Operation of the surface water management system shall be conducted in a manner so as not to increase chloride concentrations beyond current conditions.

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SCANNED 10/15/96

BASIN INFORMATION:

Basin	Area Acres	WSWT Elev (ft, NGVD)	Normal/Dry Ctrl Elev (ft, NGVD)	Method of Determination
GOLF COURSE	208.40	2.00	2	EXISTING CONTROL ELEVATION

DISCHARGE STRUCTURE INFORMATION:

Water Quality Structures:

Basin	Str. #	Bleeder Type	Dimensions	Invert Elev. (ft, NGVD)
GOLF COURSE	1	RECTANGULAR NOTCH	3' wide X 2' high	2.00

Major Discharge Structures:

Basin	Str. #	Description	Crest Elev. (ft, NGVD)
GOLF COURSE	1	43' wide SHARP CRESTED weir	4.00

Pump Discharge Structures:

Basin	Str. #	Capacity (GPM)	on/off elev. (ft, NGVD)
GOLF COURSE	1	18000	4/4

Receiving Body:

Basin	Str. #	Receiving Body
GOLF COURSE	1	C-10

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III. PROJECT EVALUATION

Discharge Rate:

In the table below, the allowable discharge is based on the pre-development condition which consists of the existing structure and facilities.

Design Storm Frequency: 25YR-3DAY **Design Rainfall:** 13.50 inches

Basin	Allow Disch (cfs)	Method of Determination	Design Disch (cfs)	Design Stage (ft, NGVD)
GOLF COURSE	150	PRE VS. POST	134	4.6

WATER QUALITY:

Detention of the first inch of runoff from the 309.4 acre drainage area will be provided within the lake system.

Basin	Treatment Method		Vol Req'd. (ac-ft)	Vol Prov'd (ac-ft)
GOLF COURSE	16.4 acres	WET DETENTION	25.80	25.80

IV. ENVIRONMENTAL ASSESSMENT

EXISTING ON SITE UPLAND COMMUNITIES:

ID NO	TOTAL ACREAGE	BIOLOGICAL CONDITION	COMMUNITY TYPE	COMMUNITY ACREAGE
1	208.40	N/A	GOLF COURSES	208.40

TOTAL ON SITE UPLAND ACREAGE: 208.40

ENVIRONMENTAL SUMMARY:

The project site consists of an existing golf course development. There are no isolated wetlands on site and the permit does not include any wetland protection or mitigation requirements.

The golf course lakes are waters of the state. Therefore the proposed recontouring of the lake slopes and alterations to the control structure require a Wetland Resource Permit. Application number 940224-1-D is currently

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being processed by this agency for the proposed work and is on the agenda for the May 12, 1994 Governing Board meeting.

Adverse impacts to wetlands are not anticipated as a result of the proposed construction.

SYSTEM OPERATION:

City Of Hollywood

PROPOSED LAND USE(S):

Recreational

WATER USE PERMIT STATUS:

A Water Use permit application for golf course irrigation is currently under review. The main issues are saline water intrusion and the potential competing use with the City of Hollywood Public Water Supply.

POTABLE WATER SUPPLIER:

City Of Hollywood

WASTE WATER SYSTEM/SUPPLIER:

City Of Hollywood

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.

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RIGHT-OF-WAY PERMIT STATUS:

A Right-of-Way Permit is not required for this project.

ENFORCEMENT ACTIVITY:

There has been no enforcement activity associated with this application.

THIRD PARTY INTEREST:

No third party has contacted the District with concerns about this application.

WELL FIELD ZONE OF INFLUENCE:

The project is located within Zone 3 of the City of Hollywood wellfield.

PRIMARY ISSUES RESOLVED:

No primary issues.

V. APPLICABLE LAND AREA

TOTAL PROJECT area and THIS PHASE area is for the existing golf course.

PROJECT

	TOTAL PROJECT	PREVIOUSLY PERMITTED	THIS PHASE	
TOTAL ACRES	208.40		208.40	acres
WTRM ACREAGE	16.40		16.40	acres
PAVEMENT	4.90		4.90	acres
BUILD COVERAGE	.40		.40	acres
PERVIOUS	186.70		186.70	acres

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VI. STAFF RECOMMENDATION

The Staff recommends that the following be issued:

Authorization for Construction and Operation of the proposed improvements to the surface water management system serving the Orangebrook Golf Course discharging to the C-10 Canal.

Based on the information provided, District rules have been adhered to.

Staff recommendation is for approval subject to the attached Standard Limiting and Special Conditions.

VII. STAFF REVIEW

AREA MANAGER

5/6/94

Anthony M. Waterhouse, P.E.

NATURAL RESOURCE MANAGEMENT DIVISION APPROVAL

APPLICATION REVIEWER

Anita R. Bain

Anita R. Bain

SUPERVISING PROFESSIONAL

Robert G. Robbins

Robert G. Robbins

DIVISION DIRECTOR:

Terrie A. Bates

DATE: 5-6-94

SURFACE WATER MANAGEMENT DIVISION APPROVAL

APPLICATION REVIEWER

Eduardo J. Lopez

SUPERVISING PROFESSIONAL

Carlos A. deRojas, P.E

DIVISION DIRECTOR

Richard A. Rogers, P.E.

DATE: 5/6/94

DRAFT
Subject to Governing Board Approval

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6 . FACILITIES OTHER THAN THOSE STATED HEREIN SHALL NOT BE CONSTRUCTED WITHOUT AN APPROVED MODIFICATION OF THIS PERMIT.

7 . A BENCHMARK SHALL BE PROVIDED IN THE VICINITY OF THE CONTROL STRUCTURE AND A DESCRIPTION PROVIDED TO THE DISTRICT WHEN CERTIFYING CONSTRUCTION COMPLETION OF THE DRAINAGE FACILITIES.

8 . PRIOR TO JULY 9, 1994, THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT SHALL BE NOTIFIED BY THE PERMITTEE OR AUTHORIZED AGENT (VIA THE SUPPLIED CONSTRUCTION COMMENCEMENT NOTICE OR EQUIVALENT) OF THE ACTUAL OR ANTICIPATED CONSTRUCTION START DATE AND THE EXPECTED COMPLETION DATE/ DURATION.

9 . WHEN THE DURATION OF CONSTRUCTION EXCEEDS ONE YEAR, CONSTRUCTION STATUS REPORTS SHALL BE SUBMITTED TO THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT ON AN ANNUAL BASIS (VIA THE SUPPLIED ANNUAL STATUS REPORT OR EQUIVALENT) BEGINNING ONE YEAR AFTER THE INITIAL COMMENCEMENT OF CONSTRUCTION DATE.

10. WITHIN 30 DAYS AFTER COMPLETION OF CONSTRUCTION OF THE SURFACE WATER

MICROFILMED

MANAGEMENT SYSTEM, THE PERMITTEE OR AUTHORIZED AGENT SHALL NOTIFY THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT OF THAT COMPLETION DATE AND SUBMIT CERTIFICATION BY A FLORIDA REGISTERED PROFESSIONAL ENGINEER THAT ALL FACILITIES HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DESIGN APPROVED BY THE DISTRICT (VIA THE SUPPLIED CONSTRUCTION COMPLETION/CONSTRUCTION CERTIFICATION OR EQUIVALENT). SUCH CERTIFICATION MAY CONSIST OF WORDING IN PARAGRAPH 3.1.7 "CONSTRUCTION COMPLETION CERTIFICATION" OF THE CURRENT BASIS OF REVIEW FOR SURFACE WATER MANAGEMENT PERMIT APPLICATIONS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT. IF THE CERTIFICATION LANGUAGE USED IS DIFFERENT FROM THE SUGGESTED LANGUAGE, A SET OF RECORD DRAWINGS CONSISTING OF ELEVATIONS, LOCATIONS AND DIMENSIONS OF COMPONENTS OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL ALSO BE SUBMITTED.

11. OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL BE THE RESPONSIBILITY OF THE CITY OF HOLLYWOOD.

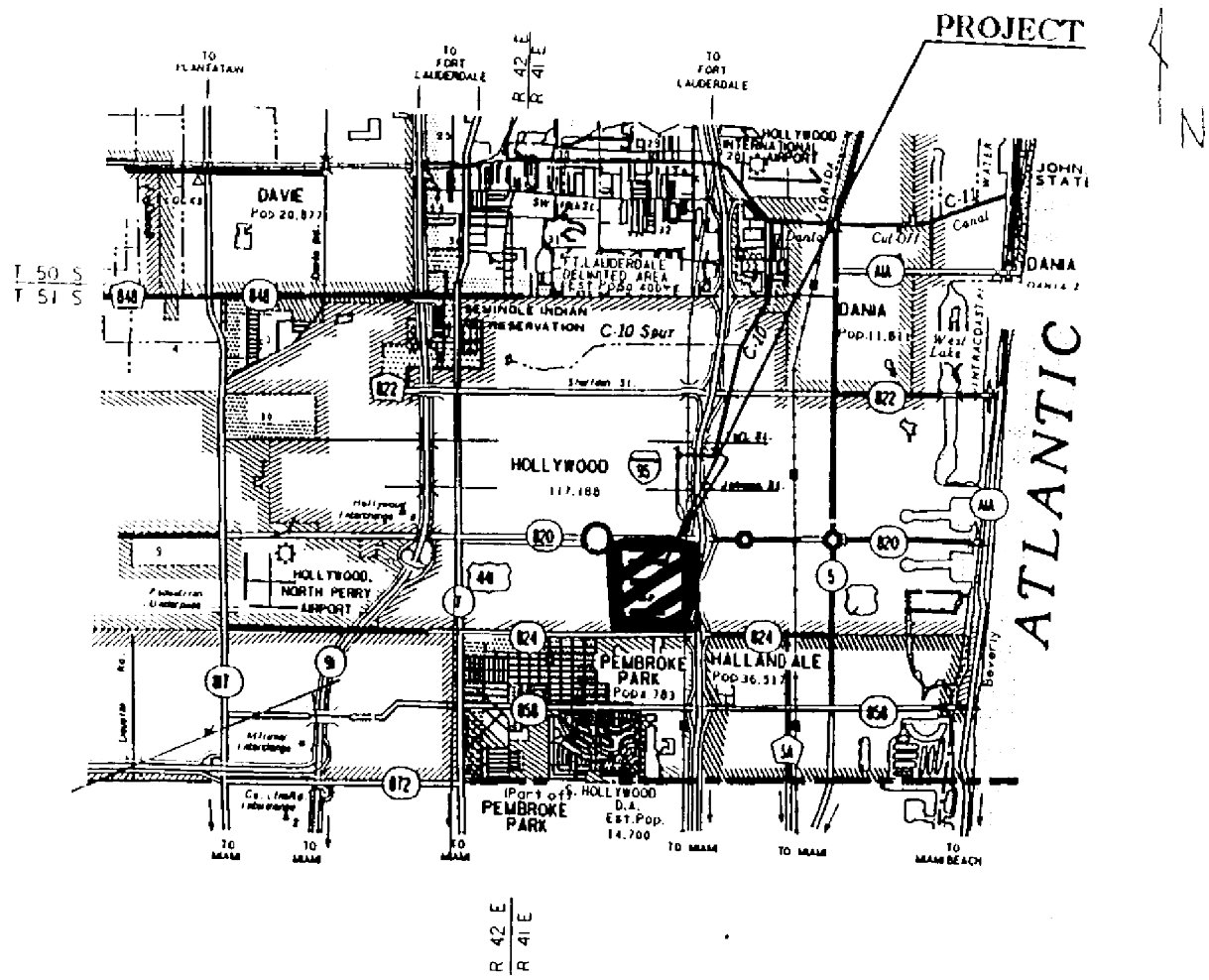
12. IF THE PROJECT DESIGN IS CHANGED AS A RESULT OF OTHER AGENCY REQUIREMENTS, A SURFACE WATER MANAGEMENT PERMIT MODIFICATION MAY BE REQUIRED. THE PERMITEE SHALL NOTIFY SFWMD STAFF OF DESIGN CHANGES REQUIRED BY OTHER AGENCIES FOR A DETERMINATION OF ANY NECESSARY PERMIT MODIFICATIONS.

13. FOR THE PROPOSED LAKE EXCAVATION AREAS WITHIN THE GOLF COURSE, LAKE SIDE SLOPES SHALL BE 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.

14. THE CITY OF HOLLYWOOD SHALL OPERATE THE SURFACE WATER MANAGEMENT SYSTEM IN SUCH A MANNER SO AS TO PREVENT CHLORIDE CONCENTRATIONS FROM EXCEEDING HISTORIC LEVELS. THE DISTRICT RESERVES THE RIGHT TO REQUIRE THAT WATER QUALITY DATA BE SUBMITTED TO INSURE CONTINUED COMPLIANCE WITH THIS CONDITION.

MICROFILMED

CITY OF HOLLYWOOD
ORANGE BROOK GOLF COURSE
(PEMBROKE ROAD)



LENGTH OF PROJECT		
	LINEAR FT.	MILES
ROADWAY	N/A	N/A
BRIDGES		
NET LENGTH OF PROJ		
EXCEPTIONS		
GROSS LENGTH OF PROJ		

DATE | BY

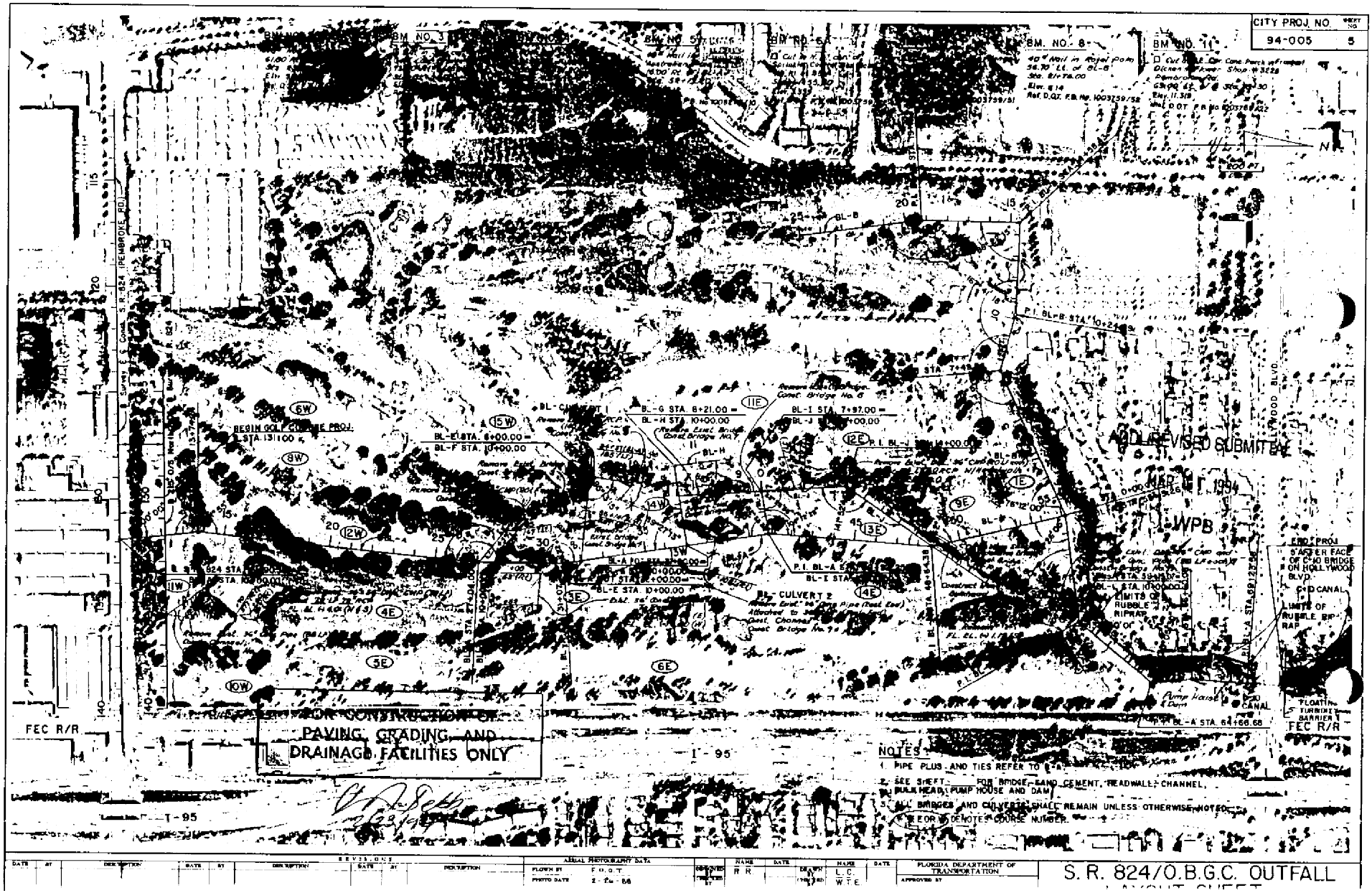
GNED BY RICK RENNA FDOT PROJECT MANAGER HOWARD WEBB

EXHIBIT 1

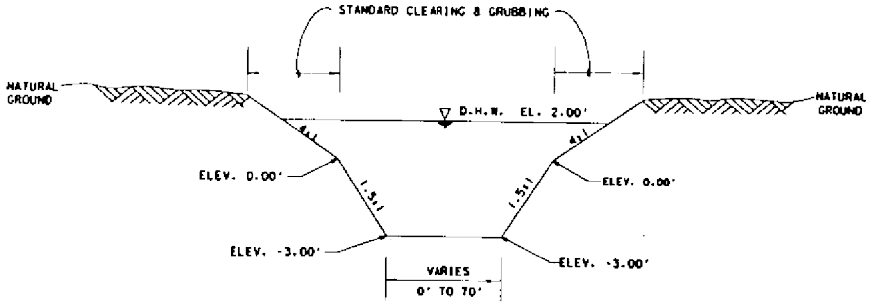
MICROFILMED

SCANNED 10/15/2012 11:14 JGE

EXHIBIT 2

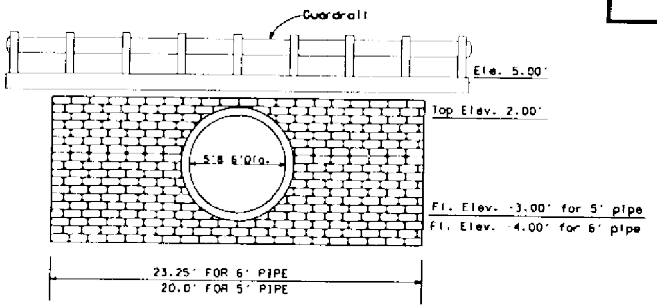

CITY PROJ. NO. 94-005
SHEET NO. 5
BM NO. 1
BM NO. 5
BM NO. 6
BM NO. 8
BM NO. 11
ADD/REVISED SUBMITTAL
MAR 11 1994
WPB
FOR CONSTRUCTION OF
PAVING, GRADING, AND
DRAINAGE FACILITIES ONLY
FEC R/R
I-95
NOTES
1. PIPE PLUS AND TIES REFER TO B.L.
2. SEE SHEET FOR BRIDGE, SAND CEMENT, HEADWALL, CHANNEL, PUBLIC HEAD, PUMP HOUSE AND DAM
3. ALL BRIDGES AND CULVERTS SHALL REMAIN UNLESS OTHERWISE NOTED.
4. REFER TO DETAIL COURSE NUMBER
REVISIONS
AERIAL PHOTOGRAPHY DATA
FLOWN BY F.D.O.T.
PHOTO DATE 2-24-86
FLORIDA DEPARTMENT OF TRANSPORTATION
S. R. 824/O.B.G.C. OUTFALL

CITY PROJ. NO.	SHEET NO.
94-005	3



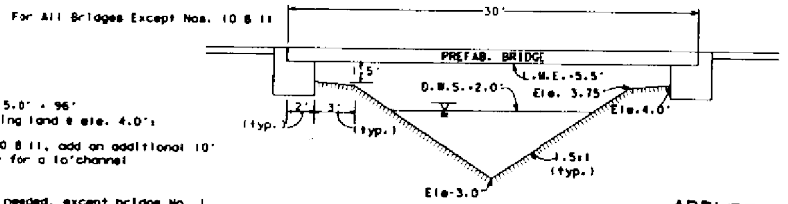
CANAL TYPICAL SECTION

N.T.S.



CULVERT TYPICAL SECTION

N.T.S.



NOTES:

Flow Area at ele. 5.0' = 96'
Tie in to surrounding land @ ele. 4.0':

For bridges Nos. 10 & 11, add an additional 10' of length to allow for a to'channel bottom width.

No rubble will be needed, except bridge No. 1, since design velocities will be near 1 fps.

PROPOSED CHANNEL SECTION

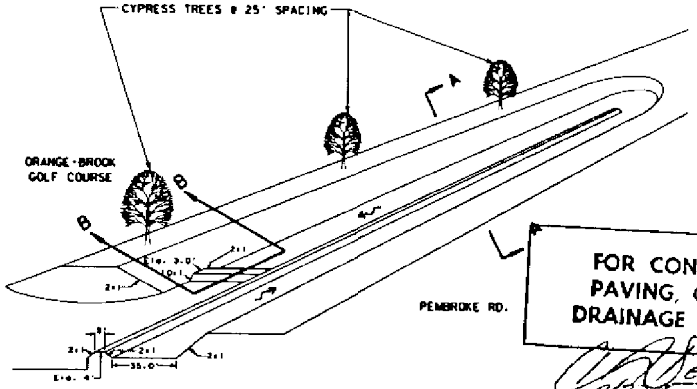
ORANGE-BROOK GOLF COURSE BRIDGES

N.T.S.

ADDL/REVISED SUBMITTAL

MAR 0 1 1994

WPB

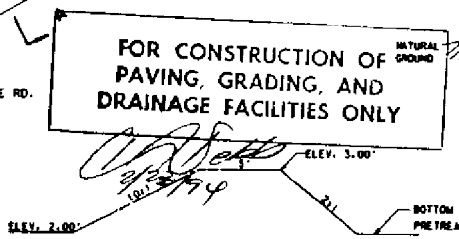


PROPOSED PRE-TREATMENT SWALE

ALONG PEMBROKE ROAD

PLAN VIEW

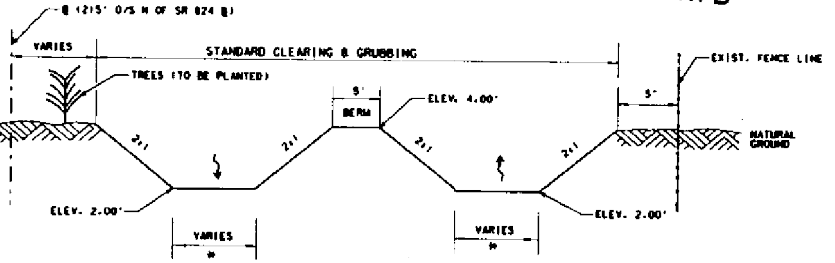
N.T.S.



SECTION B-B

PRE-TREATMENT SWALE

N.T.S.



SECTION A-A

PRE-TREATMENT SWALE

STA. 131+00 TO 139+60

N.T.S.

* SEE CROSS-SECTIONS

REVISIONS															
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	
			1												

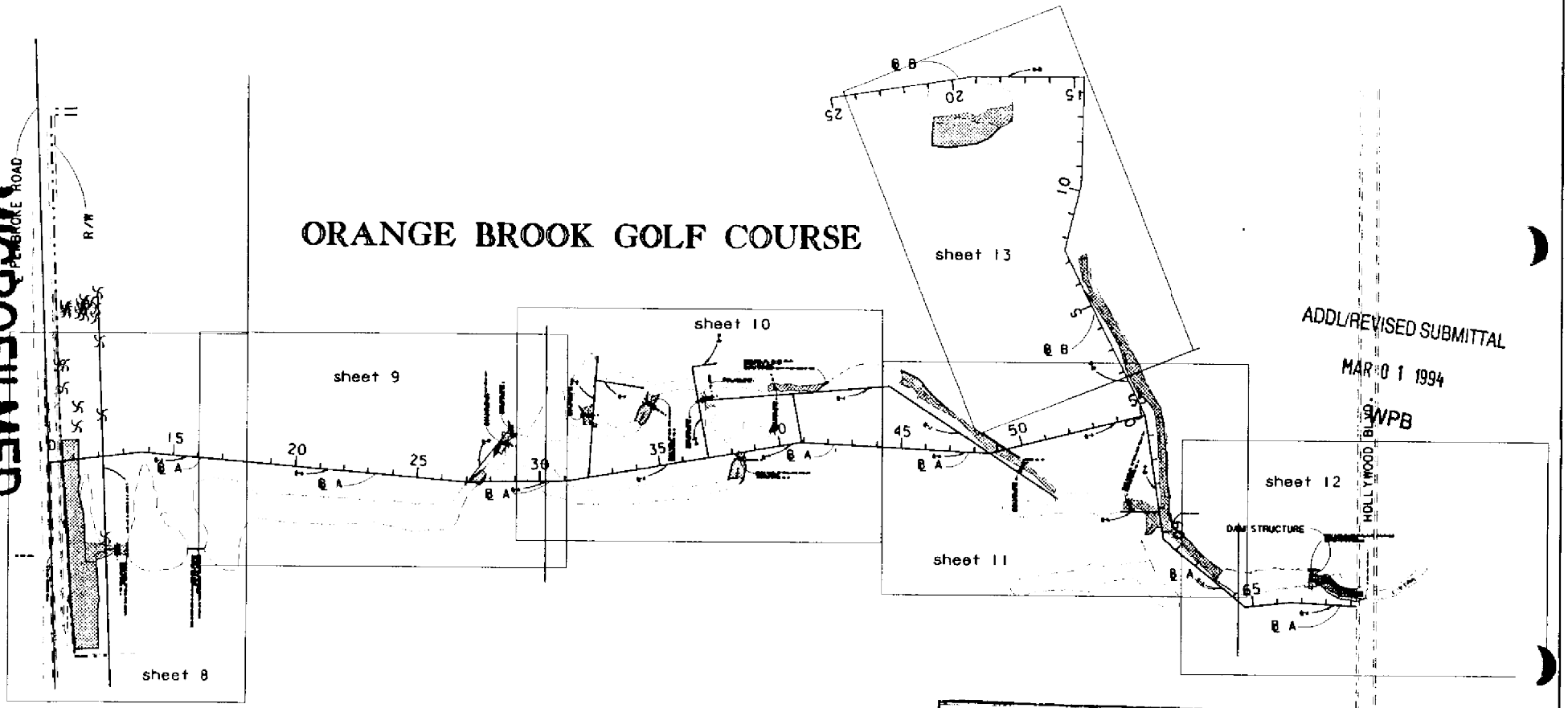
FLORIDA DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

MICROFILMED EXHIBIT 3

CITY PROJ. NO.	SHEET NO.
94-005	6

ORANGE BROOK GOLF COURSE



ADDL/REVISED SUBMITTAL

MAR 0 1 1994

WPB

FOR CONSTRUCTION OF PAVING, GRADING, AND DRAINAGE FACILITIES ONLY

2/25/94

REVISIONS															
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	
		1													

CITY OF HOLLYWOOD

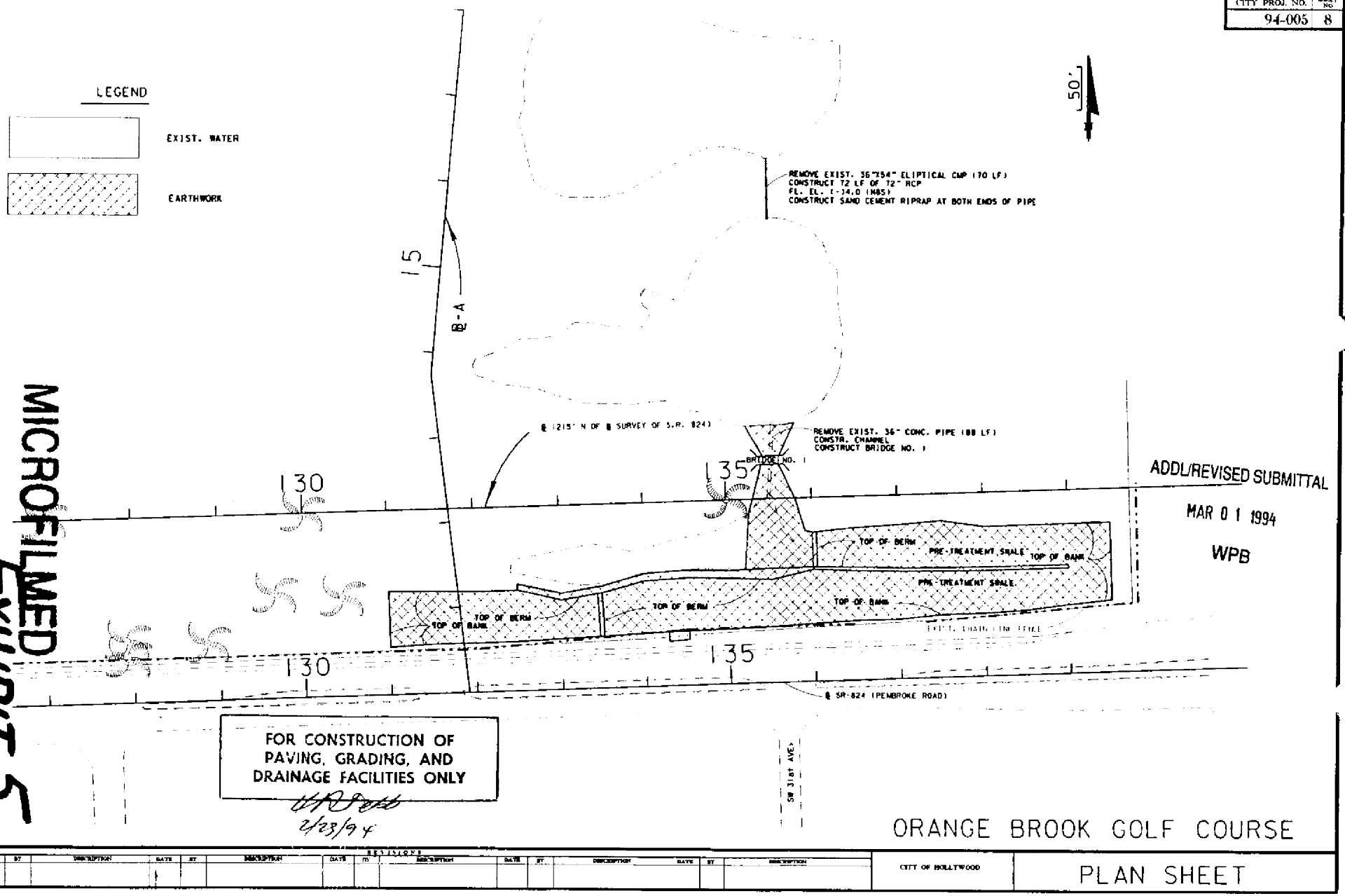
LAYOUT SHEET

MICROFILMED

EXHIBIT 4

SCANNED 10/15/2012 BY JRE

CITY PROJ. NO.	SHEET NO.
94-005	8



ADDL/REVISED SUBMITTAL

MAR 0 1 1994

WPB

FOR CONSTRUCTION OF PAVING, GRADING, AND DRAINAGE FACILITIES ONLY

2/23/94

MICROFILMED

EXHIBIT 5

ORANGE BROOK GOLF COURSE

REVISIONS																	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CITY OF HOLLYWOOD

PLAN SHEET

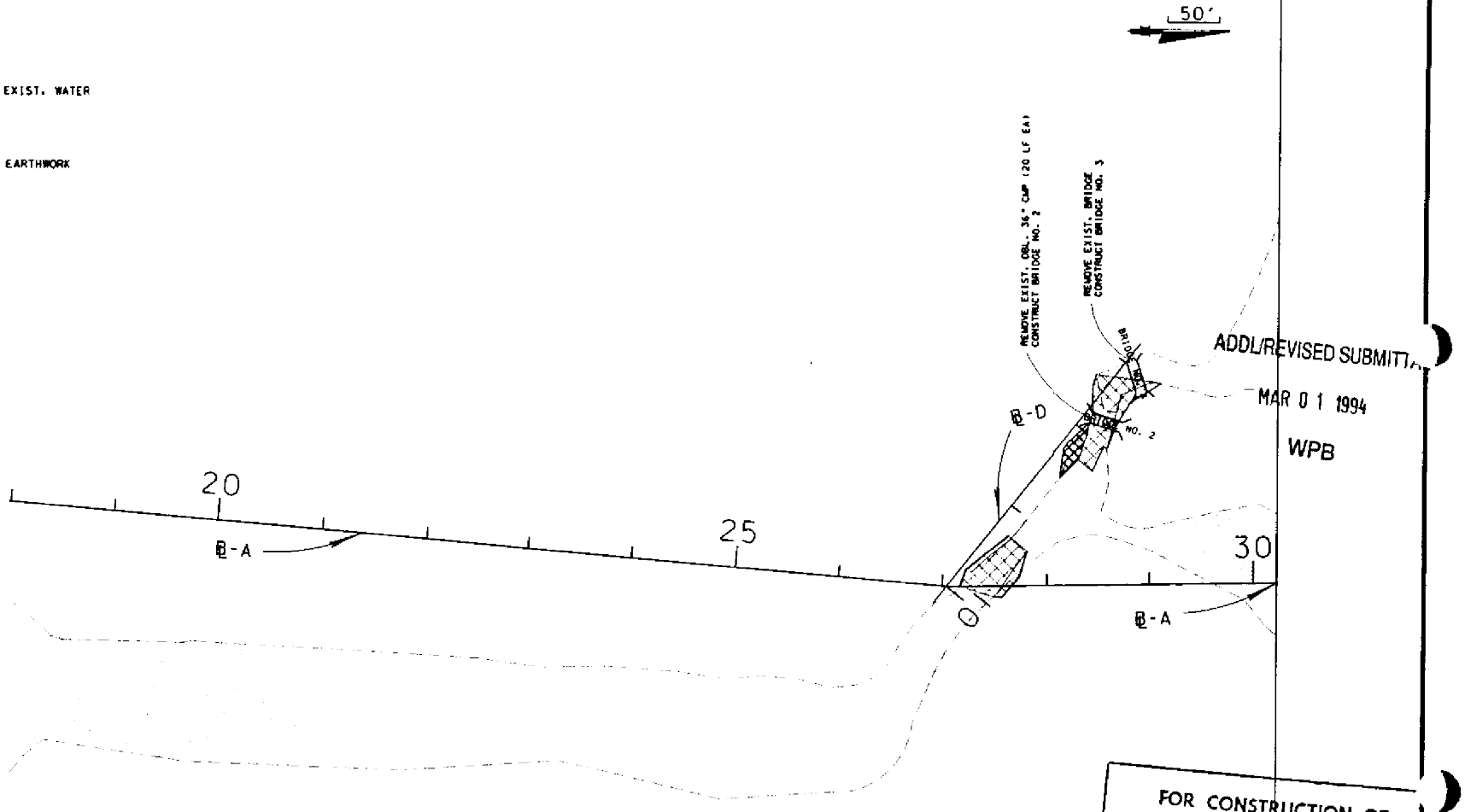
SCANNED 10/15/2012 11:14 JCE

CITY PROJ. NO.	SHEET NO.
94-005	9

LEGEND

EXIST. WATER

EARTHWORK



ADDL/REVISED SUBMITTAL

MAR 0 1 1994

WPB

FOR CONSTRUCTION OF PAVING, GRADING, AND DRAINAGE FACILITIES ONLY

2/23/94

ORANGE BROOK GOLF COURSE

REVISIONS															
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	

CITY OF HOLLYWOOD

PLAN SHEET

MICROFILMED

EXHIBIT 6

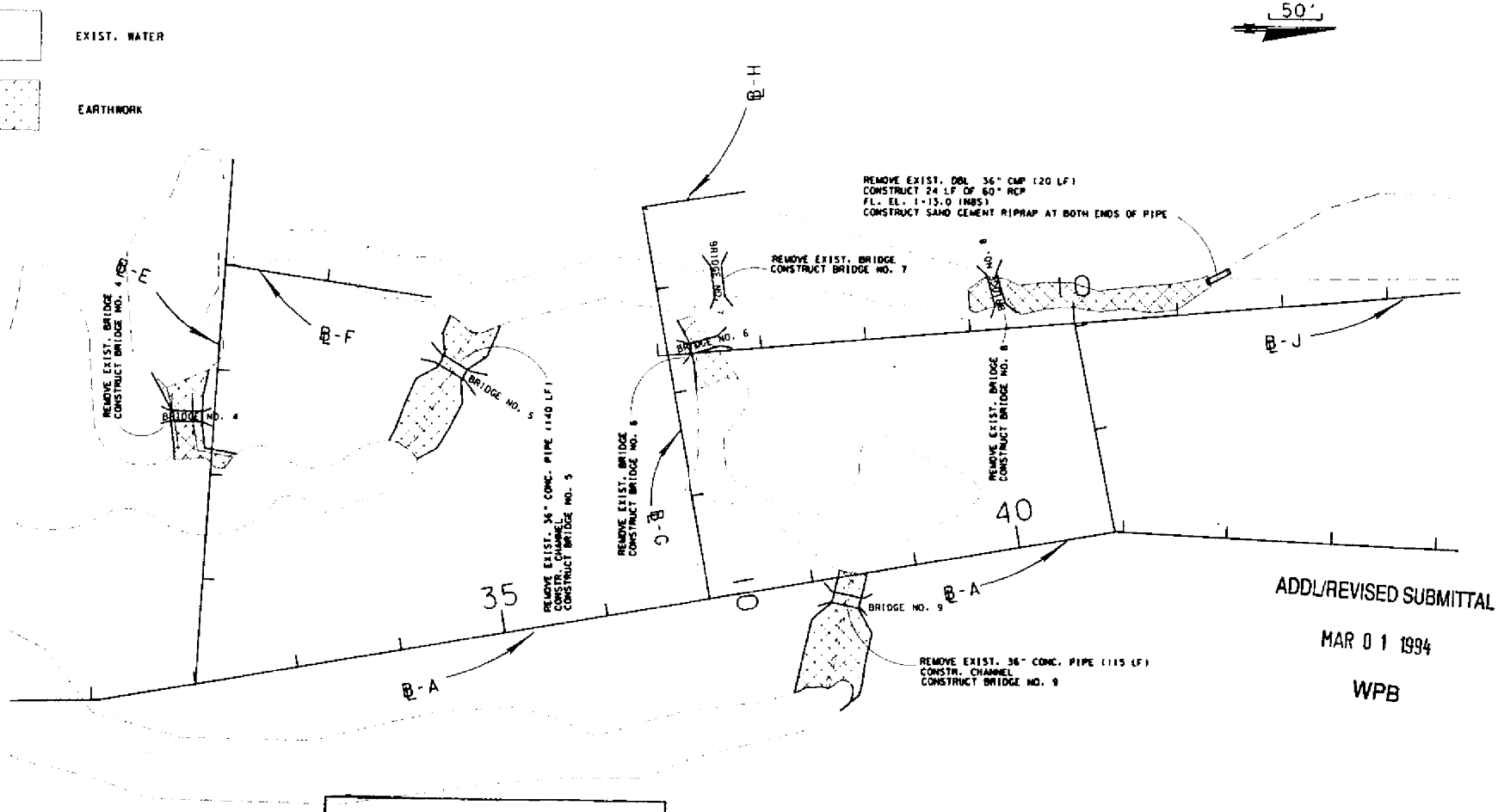
SCANNED 10/15/2012 JEB

CITY PROJ. NO.	SHEET NO.
94-005	10

LEGEND

EXIST. WATER

EARTHWORK



ADDL/REVISED SUBMITTAL

MAR 0 1 1994

WPB

FOR CONSTRUCTION OF PAVING, GRADING, AND DRAINAGE FACILITIES ONLY

2/23/94

ORANGE BROOK GOLF COURSE

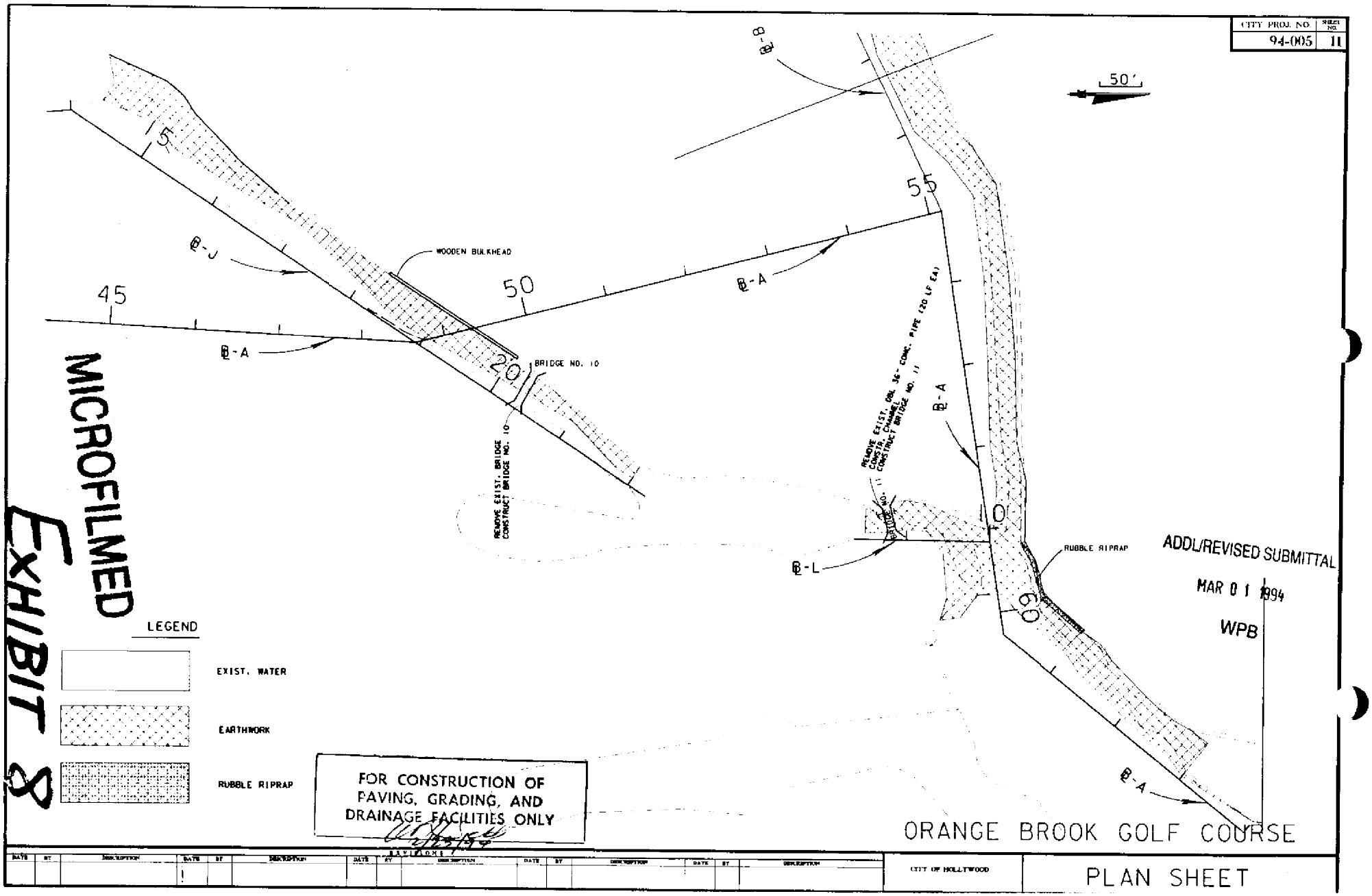
REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CITY OF HOLLYWOOD

PLAN SHEET

MICROFILMED

EXHIBIT 7



MICROFILMED

EXHIBIT 8

SCANNED

CITY PROJ. NO.	SHEET No.
94-005	12

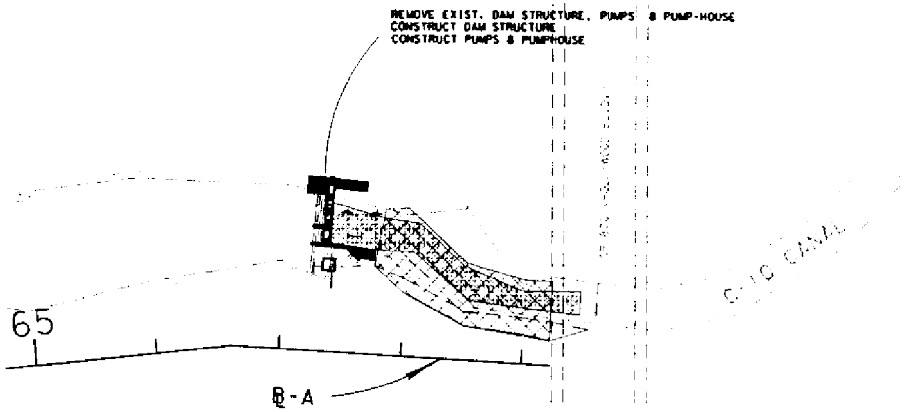
50'

LEGEND

EXIST. WATER

EARTHWORK

RUBBLE RIPRAP



MICROFILMED

EXHIBIT 9

ADDL/REVISED SUBMITTAL

MAR 0 1 1994

WPB

FOR CONSTRUCTION OF
PAVING, GRADING, AND
DRAINAGE FACILITIES ONLY

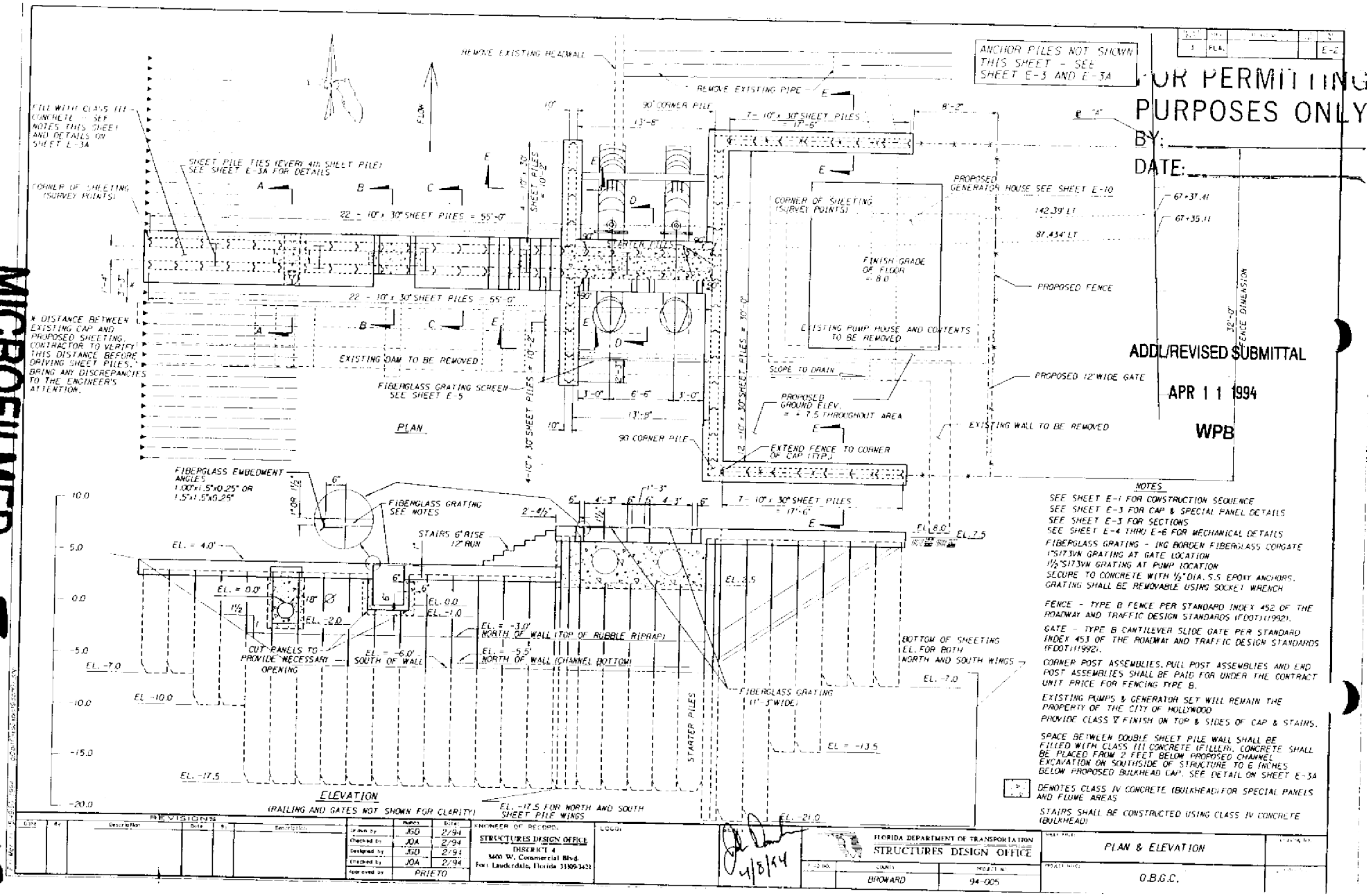
2/23/94

ORANGE BROOK GOLF COURSE

REVISIONS															
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	
			1												

CITY OF HOLLYWOOD

PLAN SHEET



NOTES

SEE SHEET E-1 FOR CONSTRUCTION SEQUENCE
SEE SHEET E-3 FOR CAP & SPECIAL PANEL DETAILS
SEE SHEET E-3 FOR SECTIONS
SEE SHEET E-4 THRU E-6 FOR MECHANICAL DETAILS

FIBERGLASS GRATING - IKG BORDEN FIBERGLASS CORGATE
1"S173VN GRATING AT GATE LOCATION
1½"S173VN GRATING AT PUMP LOCATION
SECURE TO CONCRETE WITH ½" DIA. S.S EPOXY ANCHORS. GRATING SHALL BE REMOVABLE USING SOCKET WRENCH

FENCE - TYPE B FENCE PER STANDARD INDEX 452 OF THE ROADWAY AND TRAFFIC DESIGN STANDARDS (FDOT)(1992).

GATE - TYPE B CANTILEVER SLIDE GATE PER STANDARD INDEX 453 OF THE ROADWAY AND TRAFFIC DESIGN STANDARDS (FDOT)(1992).

CORNER POST ASSEMBLIES, PULL POST ASSEMBLIES AND END POST ASSEMBLIES SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR FENCING TYPE B.

EXISTING PUMPS & GENERATOR SET WILL REMAIN THE PROPERTY OF THE CITY OF HOLLYWOOD

PROVIDE CLASS V FINISH ON TOP & SIDES OF CAP & STAIRS.

SPACE BETWEEN DOUBLE SHEET PILE WALL SHALL BE FILLED WITH CLASS III CONCRETE (FILLER). CONCRETE SHALL BE PLACED FROM 2 FEET BELOW PROPOSED CHANNEL EXCAVATION ON SOUTHSIDE OF STRUCTURE TO 6 INCHES BELOW PROPOSED BULKHEAD CAP. SEE DETAIL ON SHEET E-3A

DENOTES CLASS IV CONCRETE (BULKHEAD) FOR SPECIAL PANELS AND FLUME AREAS

STAIRS SHALL BE CONSTRUCTED USING CLASS IV CONCRETE (BULKHEAD)

REVISIONS

Date	By	Description	Date	By	Description

	Names	Date
Drawn by	JGD	2/94
Checked by	JOA	2/94
Designed by	JGD	2/94
Checked by	JOA	2/94
Approved by	PRIETO	

ENGINEER OF RECORD: STRUCTURES DESIGN OFFICE, DISTRICT 4, 5400 W. Commercial Blvd., Fort Lauderdale, Florida 33309-3421

LOCUS

4/8/94

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

COUNTY: BROWARD
PROJECT NO.: 94-005

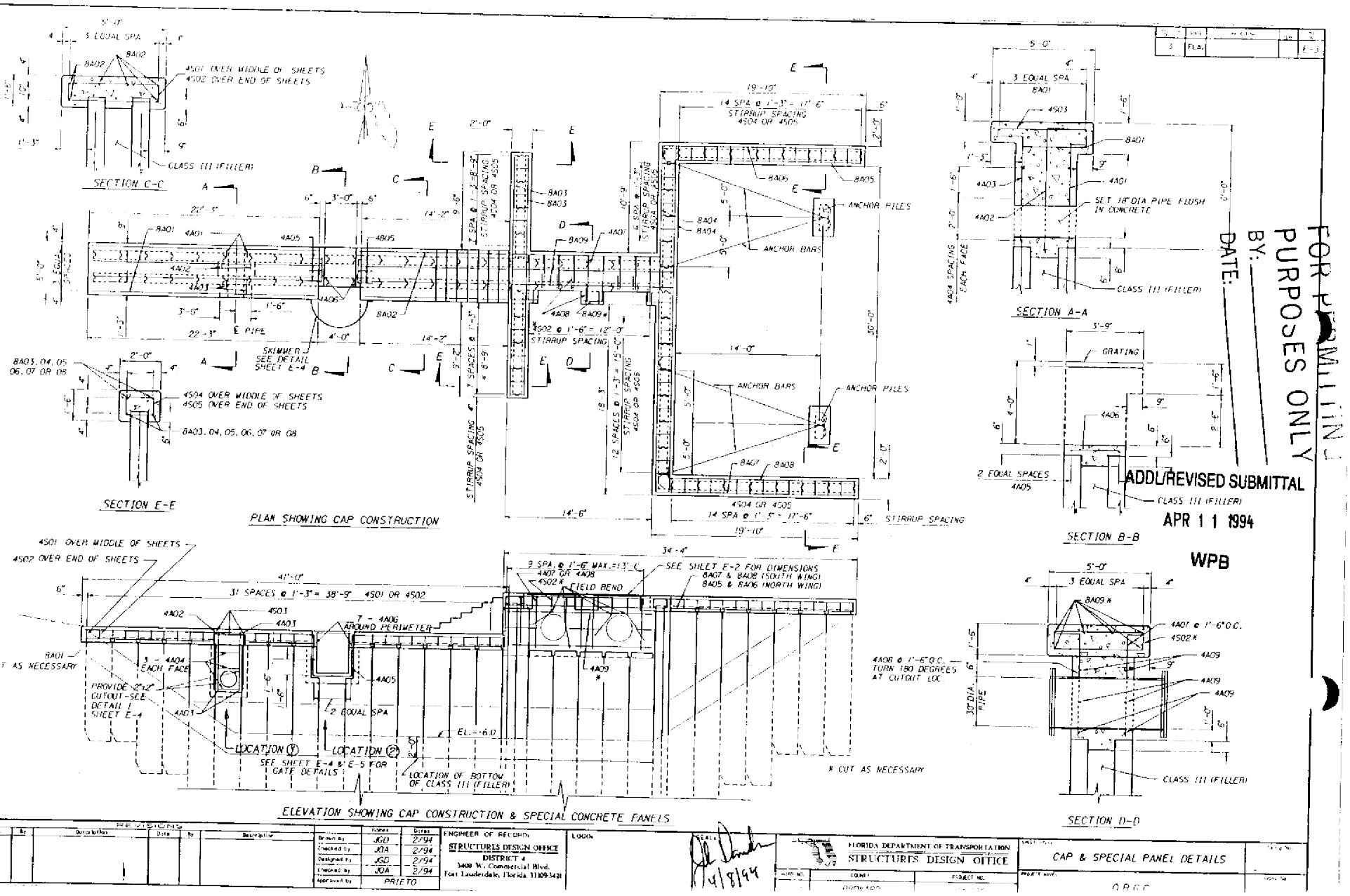
SHEET TITLE: PLAN & ELEVATION

PROJECT NAME: O.B.G.C.

MICROFILMED

EXHIBIT 10

SCANNED 10/15/2012 11:14 JEE



FOR PERMITTING PURPOSES ONLY
BY:
DATE:

ADD'L/REVISED SUBMITTAL
APR 11 1994
WPB

MICROFILMED EXHIBIT 11

Drawn by	JGD	2/94
Checked by	JOA	2/94
Designed by	JGD	2/94
Checked by	JOA	2/94
Approved by	PRIETO	

ENGINEER OF RECORD
STRUCTURES DESIGN OFFICE
DISTRICT 4
3400 W. Commercial Blvd.
Fort Lauderdale, Florida 33309-3421

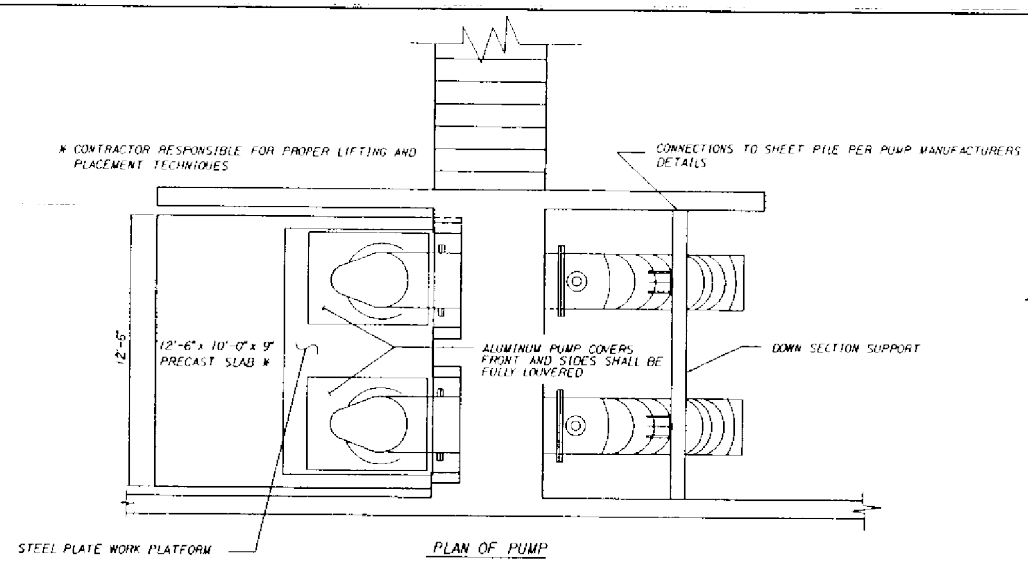
LOGO

4/8/94

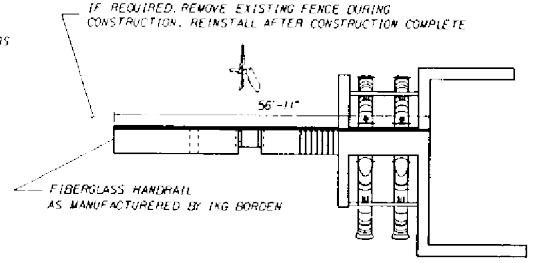
FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

CAP & SPECIAL PANEL DETAILS

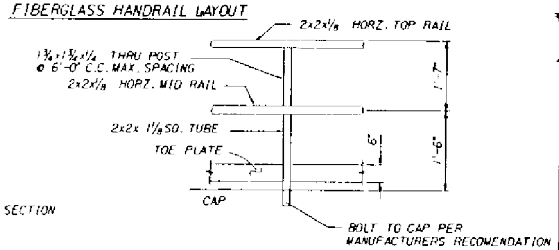
O.R.C.C.



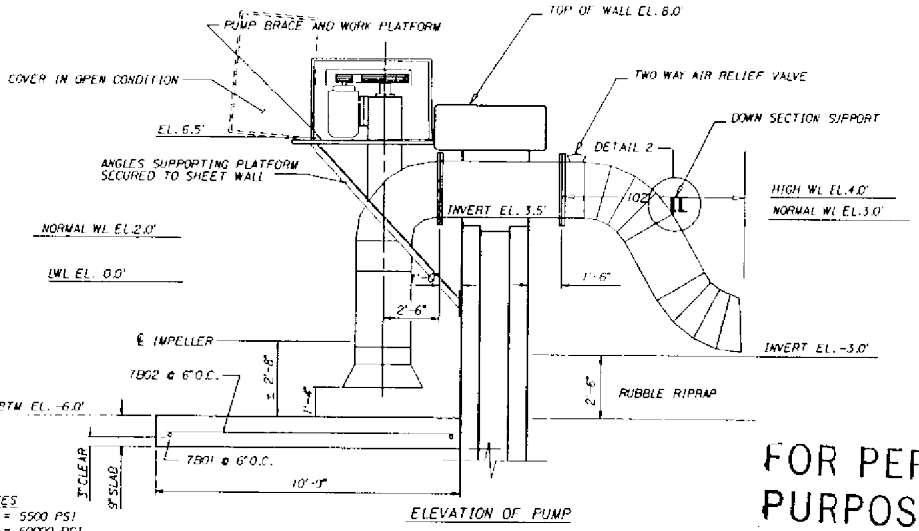
PLAN OF PUMP



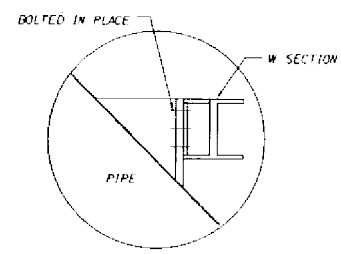
FIBERGLASS HANDRAIL LAYOUT



FIBERGLASS HANDRAIL DETAIL



ELEVATION OF PUMP



DETAIL 2

ADDL/REVISED SUBMITTAL

APR 1 1 1994

WPB

NOTES

CONTRACTOR RESPONSIBLE FOR THE FOLLOWING:

DESIGN OF DOWN SECTION SUPPORT AND ALL CONNECTIONS TO PUMP TUBES AND ATTACHMENTS TO SHEET PILES. DESIGN SHALL MEET ALL REQUIREMENTS OF THE LATEST EDITION OF THE AISC AND AWS CODES. CONTRACTOR SHALL SUBMIT SHOP TO THE ENGINEER OF RECORD FOR APPROVAL.

DESIGN OF PUMP COVER. COVER SHALL BE MADE OF ALUMINUM. COVER SHALL BE FULLY LOUVERED. COVER SHALL BE HINGED AT BOTTOM NEAR PLATFORM TO PROVIDE OPENING AS SHOWN. COVER SHALL HAVE MEANS OF CONTROLING MOVEMENT PAST THIS FULL OPENING. ALSO PROVIDE STOP RESTRAINT IN THE DOWN POSITION. PROVIDE SHOP DRAWING FOR APPROVAL.

DESIGN AND DETAILS OF STEEL PLATFORM. PLATFORM SHALL ACT AS A SUPPORT FOR THE PUMP MOTORS AND BE CABABLE OF RESISTING A UNIFORM LOAD OF 85 LBS PER SQ. FOOT. PLATE SHALL BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL HARDWARE SHALL BE STAINLESS STEEL.

SEE SPECIAL PROVISIONS FOR PUMP INFORMATION AND REQUIREMENTS.

SLAB NOTES
F'C = 5500 PSI
FY = 60000 PSI
SEE BAR LIST FOR BAR LENGTHS
PAID FOR UNDER P.I. NO. 400-4-15 AND 415-1-6

FOR PERMIT PURPOSES ONLY
BY:
DATE:

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	BH	2/94
Checked by	JGA	2/94
Designed by	JGA	2/94
Checked by	JGA	2/94
Approved by	PRIETO	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
DISTRICT 4
3400 W. Commercial Blvd.
Fort Lauderdale, Florida 33309-3421

LOGO:

4/8/94

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
—	BROWARD	94-005

SHEET TITLE: PUMP AND HANDRAIL DETAILS

PROJECT NAME: O.B.G.C.

MICROFILMED EXHIBIT 13

SCANNED 10/15/2012 11:14 [illegible]

CITY OF HOLLYWOOD, FLORIDA
INTER-OFFICE MEMORANDUM

DATE: December 17, 1993 **FILE:** WP-93-113

TO: Marty Pilote, Civil Engineer I

FROM: Operations Superintendent

SUBJECT: Chloride Results - Orangebrook

RECEIVED
DEC 20 1993
CITY OF HOLLYWOOD
City Engineering Dept.

ISSUE:
Samples from the Lakes of Orangebrook Golf Course..

EXPLANATION:
Listed below are the chloride results of the samples taken at Orangebrook.

DATE	SAMPLES	CHLORIDE RESULTS
12/14/93	#1	60
12/14/93	#2	58
12/14/93	#3	30
12/14/93	#4	20

RECOMMENDATION:

For informational purposes only. If I can be of further assistance, please don't hesitate to call me.

Robert O. Boyce

ROB:df

ADDL/REVISED SUBMITTAL
JAN 21 1994
WPB

MICROFILMED

EXHIBIT 14

South Florida Water Management District

BEG. PERMIT NUMBER 06-02942-P

APPLICATION NO. 010601-42

PUMP STATION

06-02942-P

APPLICATION/PERMIT FILE RECORD & ACTION SHEET

District IV

Name: Florida Dept. of Transportation (I-95 Pump Station)

Permit No. 06-029-

Application No. 010601-

This file contains:

☐ ORIGINAL APPLICATION ☐ PERMIT ☐ SPECIAL CONDITION SH

☐ STAFF CALCULATION SHEET(S) ☐ DRAWING(S) ☐ STAFF REPORT

Chronological Correspondence/Action Record

Date	Subject	By	Comments
9-28-01	Staff Report Mailed	JB	K. Dickson, P.E., N. Je
10-11-01	Permit Issued		

FORM 10157
rev 03/95

ENVIRONMENTAL RESOURCE
PERMIT MODIFICATION NO. 06-02942-P
DATE ISSUED: OCTOBER 11, 2001

PERMITTEE: FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT IV
(I-95 PUMP STATION)
3400 WEST COMMERCIAL BLVD.
FORT LAUDERDALE, FL 33309

ORIGINAL PERMIT ISSUED: JANUARY 13, 2000

ORIGINAL PROJECT DESCRIPTION: AUTHORIZATION FOR CONSTRUCTION/OPERATION OF A SWM SYSTEM TO SERVE THE ADDITION OF A MA
TRACK ADJACENT TO THE EXISTING SINGLE MAIN WITHIN THE FORMER CSX RIGHT-OF-WAY, FROM OPA
JUST NORTH OF HOLLYWOOD BOULEVARD.

APPROVED MODIFICATION : AUTHORIZATION FOR CONSTRUCTION AND OPERATION OF A STORMWATER IMPROVEMENT PROJECT TO
SERVE FLOOD PRONE AREAS WITHIN THE CITY OF HALLANDALE BEACH AND THE TOWN OF PEMBROKE P
IN BROWARD COUNTY.

PROJECT LOCATION: BROWARD COUNTY,
SECTION 19,20 TWP 51S RGE 42E
SECTION 28,29 TWP 51S RGE 42E

PERMIT DURATION: Five years from the date issued to complete construction of the surface water management system as authorized herein. See attached Rule 40E-4.321, Florida Administrative Code.

This Permit Modification is approved pursuant to Application No. 010601-42, dated May 30, 2001. Permittee agrees to hold and save the South Florida Water Management District and its successors harmless from any and all damages, claims or liabilities which m arise by reason of the construction, operation, maintenance or use of any activities authorized by this Permit. This Permit is issued unc the provisions of Chapter 373, Part IV Florida Statutes(F.S.), and the Operating Agreement Concerning Regulation Under Part IV, Chapter 373 F.S. between South Florida Water Management District and the Department of Environmental Protection. Issuance of thi Permit constitutes certification of compliance with state water quality standards where necessary pursuant to Section 401, Public La 92-500, 33 USC Section 1341, unless this Permit is issued pursuant to the net improvement provisions of Subsections 373.414(1)(b), F or as otherwise stated herein.

This Permit Modification may be revoked, suspended, or modified at any time pursuant to the appropriate provisions of Chapter 373, F.S and Sections 40E-4.351(1), (2), and (4), Florida Administrative Code (F.A.C.). This Permit Modification may be transferred pursuant to th appropriate provisions of Chapter 373, F.S., and Sections 40E-1.6107(1) and (2), and 40E-4.351(1), (2), and (4), F.A.C.

All specifications and special and limiting/general conditions attendant to the original Permit,unless specifically rescinded by this or previous modifications, remain in effect.

This Permit Modification shall be subject to the General Conditions set forth in Rule 40E-4.381, F.A.C., unless waived or modified by the Governing Board. The Application, and Environmental Resource Permit Staff Review Summary of the Application, including all condition and all plans and specifications incorporated by reference, are a part of this Permit Modification. All activities authorized by this Permit Modification shall be implemented as set forth in the plans, specifications, and performance criteria as set forth and incorporated in the Environmental Resource Permit Staff Review Summary. Within 30 days after completion of construction of the permitting activity, the Permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual, pursuant to the appropriate provisions of Chapter 373, F.S. and Sections 40E-4.361 and 40E-4.381, F.A.C.

In the event the property is sold or otherwise conveyed, the Permittee will remain liable for compliance with this Permit until transfer is approved by the District pursuant to Rule 40E-1.6107, F.A.C.

SPECIAL AND GENERAL CONDITIONS ARE AS FOLLOWS:

SEE PAGES 2 - 3 OF 6 (13 SPECIAL CONDITIONS).
SEE PAGES 4 - 6 OF 6 (19 GENERAL CONDITIONS).

PERMIT MODIFICATION APPROVED BY THE GOVERNING BOARD OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT

FILED WITH THE CLERK OF THE
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ON ORIGINAL SIGNED BY: JENNIFER KRUMLAUF
BY _____
DEPUTY CLERK

Original signed by T... BURNS
BY _____
ASSISTANT SECRETARY

12/13/01

SPECIAL CONDITIONS

1. DISCHARGE FACILITIES:

STRUCTURE NO. 1:

1-53760 GPM WITH PUMP ON AT ELEV. 3' NGVD AND WITH PUMP OFF AT ELEV. 2' NGVD.

RECEIVING BODY : C-10 CANAL

CONTROL ELEV : 2 FEET NGVD. /2 FEET NGVD DRY SEASON.

STRUCTURE NO. 2:

1-17920 GPM ' NGVD.

RECEIVING BODY : C-10 CANAL

CONTROL ELEV : 2 FEET NGVD. /2 FEET NGVD DRY SEASON.

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. FACILITIES OTHER THAN THOSE STATED HEREIN SHALL NOT BE CONSTRUCTED WITHOUT AN APPROVED MODIFICATION OF THIS PERMIT.

6. OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL BE THE RESPONSIBILITY OF FDOT, HALLANDALE BEACH AND PEMBROKE PARK.

7. ALL SPECIAL CONDITIONS, EXHIBITS AND TEXT OF STAFF REPORTS PREVIOUSLY STIPULATED BY PERMIT NUMBER 06-02942-P REMAIN IN EFFECT UNLESS OTHERWISE REVISED AND SHALL APPLY TO THIS MODIFICATION.

8. SILT SCREENS, HAY BALES AND/OR OTHER SUCH SEDIMENT CONTROL MEASURES AND TURBIDITY BARRIERS AND/OR OTHER TURBIDITY CONTROL MEASURES SHALL BE UTILIZED DURING CONSTRUCTION AS INDICATED IN THE CONSTRUCTION PLANS.

9. PRIOR TO CONSTRUCTION, THE PERMITTEE(S) SHALL PROVIDE THE DISTRICT WITH A COPY OF THE EXECUTED JOINT PARTICIPATION AGREEMENT.

10. PRIOR TO CONSTRUCTION, THE PERMITTEE(S) SHALL PROVIDE THE DISTRICT WITH A COPY OF THE EASEMENT DEED AUTHORIZING THE FACILITIES TO BE CONSTRUCTED ON THE PROPERTY OF HALLANDALE BEACH HIGH SCHOOL.

11. EXHIBIT NUMBER 3 AND EXHIBITS 8 THROUGH 55 DEPICT PLAN AND PROFILE VIEWS OF THE PROPOSED BACKBONE CONVEYANCE FACILITIES. THESE EXHIBITS ARE LOCATED IN THE PERMIT FILE AND ARE INCORPORATED HEREIN BY REFERENCE.

12. EXHIBIT 67 DEPICTS THE AREAS WHERE THE MAINTENANCE DREDGING OF THE C-10 CANAL WILL BE DONE. THIS EXHIBIT IS LOCATED IN THE PERMIT FILE AND IS INCORPORATED BY

REFERENCE.

13. THE AUTHORIZATION OF THE STORMWATER MANAGEMENT SYSTEM IS ISSUED PURSUANT TO THE WATER QUALITY NET IMPROVEMENT PROVISIONS REFERENCED IN RULE SECT. 40E-4.303(1); THEREFORE, WATER QUALITY CERTIFICATION IS WAIVED.

GENERAL CONDITIONS

1. ALL ACTIVITIES AUTHORIZED BY THIS PERMIT SHALL BE IMPLEMENTED AS SET FORTH IN THE PLANS, SPECIFICATIONS AND PERFORMANCE CRITERIA AS APPROVED BY THIS PERMIT. ANY DEVIATION FROM THE PERMITTED ACTIVITY AND THE CONDITIONS FOR UNDERTAKING THAT ACTIVITY SHALL CONSTITUTE A VIOLATION OF THIS PERMIT AND PART IV, CHAPTER 373, F.S.

2. THIS PERMIT OR A COPY THEREOF, COMPLETE WITH ALL CONDITIONS, ATTACHMENTS, EXHIBITS, AND MODIFICATIONS SHALL BE KEPT AT THE WORK SITE OF THE PERMITTED ACTIVITY. THE COMPLETE PERMIT SHALL BE AVAILABLE FOR REVIEW AT THE WORK SITE UPON REQUEST BY THE DISTRICT STAFF. THE PERMITTEE SHALL REQUIRE THE CONTRACTOR TO REVIEW THE COMPLETE PERMIT PRIOR TO COMMENCEMENT OF THE ACTIVITY AUTHORIZED BY THIS PERMIT.

3. ACTIVITIES APPROVED BY THIS PERMIT SHALL BE CONDUCTED IN A MANNER WHICH DOES NOT CAUSE VIOLATIONS OF STATE WATER QUALITY STANDARDS. THE PERMITTEE SHALL IMPLEMENT BEST MANAGEMENT PRACTICES FOR EROSION AND POLLUTION CONTROL TO PREVENT VIOLATION OF STATE WATER QUALITY STANDARDS. TEMPORARY EROSION CONTROL SHALL BE IMPLEMENTED PRIOR TO AND DURING CONSTRUCTION, AND PERMANENT CONTROL MEASURES SHALL BE COMPLETED WITHIN 7 DAYS OF ANY CONSTRUCTION ACTIVITY. TURBIDITY BARRIERS SHALL BE INSTALLED AND MAINTAINED AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATERBODY EXISTS DUE TO THE PERMITTED WORK. TURBIDITY BARRIERS SHALL REMAIN IN PLACE AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND SOILS ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE GUIDELINES AND SPECIFICATIONS DESCRIBED IN CHAPTER 6 OF THE FLORIDA LAND DEVELOPMENT MANUAL; A GUIDE TO SOUND LAND AND WATER MANAGEMENT (DEPARTMENT OF ENVIRONMENTAL REGULATION, 1988), INCORPORATED BY REFERENCE IN RULE 40E-4.091, 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 TH PERMITTED SYSTEM MUST BE COMPLETED IN ACCORDANCE WITH THE PERMITTED PLANS AND PERMIT CONDITIONS PRIOR TO THE INITIATION OF THE PERMITTED USE OF SITE INFRASTRUCTURE LOCATED WITHIN THE AREA SERVED BY THAT PORTION OR PHASE OF THE SYSTEM. EACH PHASE OR INDEPENDENT PORTION OF THE SYSTEM MUST BE COMPLETED IN ACCORDANCE WITH THE PERMITTED PLANS AND PERMIT CONDITIONS PRIOR TO TRANSFER OF RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF THE PHASE OR PORTION OF THE SYSTEM TO A LOCAL GOVERNMENT OR OTHER RESPONSIBLE ENTITY.

9. FOR THOSE SYSTEMS THAT WILL BE OPERATED OR MAINTAINED BY AN ENTITY THAT WILL REQUIRE AN EASEMENT OR DEED RESTRICTION IN ORDER TO ENABLE THAT ENTITY TO OPERATE OR MAINTAIN THE SYSTEM IN CONFORMANCE WITH THIS PERMIT, SUCH EASEMENT OR DEED RESTRICTION MUST BE RECORDED IN THE PUBLIC RECORDS AND SUBMITTED TO THE DISTRICT ALONG WITH ANY OTHER FINAL OPERATION AND MAINTENANCE DOCUMENTS REQUIRED BY SECTIONS 9.0 AND 10.0 OF THE BASIS OF REVIEW FOR ENVIRONMENTAL RESOURCE PERMIT APPLICATIONS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT - AUGUST 1995, PRIOR TO LOT OR UNIT SALES OR PRIOR TO THE COMPLETION OF THE SYSTEM, WHICHEVER OCCURS FIRST. OTHER DOCUMENTS CONCERNING THE ESTABLISHMENT AND AUTHORITY OF THE OPERATING ENTITY MUST BE FILED WITH THE SECRETARY OF STATE WHERE APPROPRIATE. FOR THOSE SYSTEMS WHICH ARE PROPOSED TO BE MAINTAINED BY THE COUNTY OR MUNICIPAL ENTITIES, FINAL OPERATION AND MAINTENANCE DOCUMENTS MUST BE RECEIVED BY THE DISTRICT WHEN MAINTENANCE AND OPERATION OF THE SYSTEM IS ACCEPTED BY THE LOCAL GOVERNMENT ENTITY. FAILURE TO SUBMIT THE APPROPRIATE FINAL DOCUMENTS WILL RESULT IN THE PERMITTEE REMAINING LIABLE FOR CARRYING OUT MAINTENANCE AND OPERATION OF THE PERMITTED SYSTEM AND ANY OTHER PERMIT CONDITIONS.

10. SHOULD ANY OTHER REGULATORY AGENCY REQUIRE CHANGES TO THE PERMITTED SYSTEM, THE PERMITTEE SHALL NOTIFY THE DISTRICT IN WRITING OF THE CHANGES PRIOR TO IMPLEMENTATION SO THAT A DETERMINATION CAN BE MADE WHETHER A PERMIT MODIFICATION IS REQUIRED.

11. THIS PERMIT DOES NOT ELIMINATE THE NECESSITY TO OBTAIN ANY REQUIRED FEDERAL, STATE, LOCAL AND SPECIAL DISTRICT AUTHORIZATIONS PRIOR TO THE START OF ANY ACTIVITY APPROVED BY THIS PERMIT. THIS PERMIT DOES NOT CONVEY TO THE PERMITTEE OR CREATE IN THE PERMITTEE ANY PROPERTY RIGHT, OR ANY INTEREST IN REAL PROPERTY, NOR DOES IT AUTHORIZE ANY ENTRANCE UPON OR ACTIVITIES ON PROPERTY WHICH IS NOT OWNED OR CONTROLLED BY THE PERMITTEE, OR CONVEY ANY RIGHTS OR PRIVILEGES OTHER THAN THOSE SPECIFIED IN THE PERMIT AND CHAPTER 40E-4 OR CHAPTER 40E-40, F.A.C.

12. THE PERMITTEE IS HEREBY ADVISED THAT SECTION 253.77, F.S. STATES THAT A PERSON MAY NOT COMMENCE ANY EXCAVATION, CONSTRUCTION, OR OTHER ACTIVITY INVOLVING THE USE OF SOVEREIGN OR OTHER LANDS OF THE STATE, THE TITLE TO WHICH IS VESTED IN THE BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND WITHOUT OBTAINING THE REQUIRED LEASE, LICENSE, EASEMENT, OR OTHER FORM OF CONSENT AUTHORIZING THE PROPOSED USE. THEREFORE, THE PERMITTEE IS RESPONSIBLE FOR OBTAINING ANY NECESSARY AUTHORIZATIONS FROM THE BOARD OF TRUSTEES PRIOR TO COMMENCING ACTIVITY ON SOVEREIGNTY LANDS OR

OTHER STATE-OWNED LANDS.

13. THE PERMITTEE MUST OBTAIN A WATER USE PERMIT PRIOR TO CONSTRUCTION DEWATERING, UNLESS THE WORK QUALIFIES FOR A GENERAL PERMIT PURSUANT TO SUBSECTION 40E-20.302(4), F.A.C., ALSO KNOWN AS THE "NO NOTICE" RULE.

14. THE PERMITTEE SHALL HOLD AND SAVE THE DISTRICT HARMLESS FROM ANY AND ALL DAMAGES, CLAIMS, OR LIABILITIES WHICH MAY ARISE BY REASON OF THE CONSTRUCTION, ALTERATION, OPERATION, MAINTENANCE, REMOVAL, ABANDONMENT OR USE OF ANY SYSTEM AUTHORIZED BY THE PERMIT.

15. ANY DELINEATION OF THE EXTENT OF A WETLAND OR OTHER SURFACE WATER SUBMITTED AS PART OF THE PERMIT APPLICATION, INCLUDING PLANS OR OTHER SUPPORTING DOCUMENTATION SHALL NOT BE CONSIDERED BINDING UNLESS A SPECIFIC CONDITION OF THIS PERMIT OR A FORMAL DETERMINATION UNDER SECTION 373.421(2), F.S., PROVIDES OTHERWISE.

16. THE PERMITTEE SHALL NOTIFY THE DISTRICT IN WRITING WITHIN 30 DAYS OF ANY SALE, CONVEYANCE, OR OTHER TRANSFER OF OWNERSHIP OR CONTROL OF A PERMITTED SYSTEM OR THE REAL PROPERTY ON WHICH THE PERMITTED SYSTEM IS LOCATED. ALL TRANSFERS OF OWNERSHIP OR TRANSFERS OF A PERMIT ARE SUBJECT TO THE REQUIREMENTS OF RULES 40E-1.6105 AND 40E-1.6107, F.A.C. THE PERMITTEE TRANSFERRING THE PERMIT SHALL REMAIN LIABLE FOR CORRECTIVE ACTIONS THAT MAY BE REQUIRED AS A RESULT OF ANY VIOLATIONS PRIOR TO THE SALE, CONVEYANCE OR OTHER TRANSFER OF THE SYSTEM.

17. UPON REASONABLE NOTICE TO THE PERMITTEE, DISTRICT AUTHORIZED STAFF WITH PROPER IDENTIFICATION SHALL HAVE PERMISSION TO ENTER, INSPECT, SAMPLE AND TEST THE SYSTEM TO INSURE CONFORMITY WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE PERMIT.

18. IF HISTORICAL OR ARCHAEOLOGICAL ARTIFACTS ARE DISCOVERED AT ANY TIME ON THE PROJECT SITE, THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE APPROPRIATE DISTRICT SERVICE CENTER.

19. THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DISTRICT IN WRITING OF ANY PREVIOUSLY SUBMITTED INFORMATION THAT IS LATER DISCOVERED TO BE INACCURATE.

40E-4.321 Duration of Permits

(1) Unless revoked or otherwise modified the duration of an environmental resource permit issued under this chapter or Chapter 40E-40, F.A.C. is as follows:

(a) For a conceptual approval, two years from the date of issuance or the date specified as a condition of the permit, unless within that period an application for an individual or standard general permit is filed for any portion of the project. If an application for an environmental resource permit is filed, then the conceptual approval remains valid until final action is taken on the environmental resource permit application. If the application is granted, then the conceptual approval is valid for an additional two years from the date of issuance of the permit. Conceptual approvals which have no individual or standard general environmental resource permit applications filed for a period of two years shall expire automatically at the end of the two year period.

(b) For a conceptual approval filed concurrently with a development of regional impact (DRI) application for development approval (ADA) and a local government comprehensive plan amendment, the duration of the conceptual approval shall be two years from whichever one of the following occurs at the latest date:

1. the effective date of the local government's comprehensive plan amendment.
2. the effective date of the local government development order.
3. the date on which the District issues the conceptual approval, or
4. the latest date of the resolution of any Chapter 120.57, F.A.C., administrative proceeding or other legal appeals.

(c) For an individual or standard general environmental resource permit, five years from the date of issuance or such amount of time as made a condition of the permit.

(d) For a noticed general permit issued pursuant to chapter 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, Amended 7-1-86, 4/20/94, 10-3-95

Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045 • TDD (561) 697
Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680 • www.sfwmd.gov

DISTRICT File

September 28, 2001

Florida Department of Transportation District IV
3400 West Commercial Blvd.
Fort Lauderdale, FL 33309

Subject: Application No. 010601-42, **I-95 Pump Station**
Broward County, S19,20,28,29/T51S/R42E

Enclosed is a copy of this District's staff report covering the permit application referenced therein. It is requested that you read this staff report thoroughly and understand its contents. The recommendations as stated in the staff report will be presented to our Governing Board for consideration on **October 11, 2001.**

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:

Jennifer Krumlauf, 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 28th day of September, 2001 in accordance with Section 120.60 (3), Florida Statutes.

Sincerely,

W.R. Howard, Jr. P.E., Deputy Director
Environmental Resource Regulation Division

WRH/jb

CERTIFIED # 7099 3400 0003 8293 7765
RETURN RECEIPT REQUESTED

GOVERNING BOARD
Trudi K. Williams, Chair
Lennart E. Lindahl, Vice Chair
Pamela Brooks-Thomas
Michael Collins
Hugh M. English
Gerardo B. Fernandez
Patrick J. Gleason, Ph.D., P.G.
Nicolás J. Gutierrez, Jr., Esq.
Harkley R. Thornton
EXECUTIVE OFFICE
Henry Dean, Executive Director

NOTICE OF RIGHTS

Section 120.569(1), Fla. Stat. (1997), requires that "each notice shall inform the recipient of any administrative hearing or judicial review that is available under this section, s. 120.57, or s. 120.68; shall indicate the procedure which must be followed to obtain the hearing or judicial review, and shall state the time limits which apply." Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

Petition for Administrative Proceedings

1. A person whose substantial interests are affected by the South Florida Water Management District's (SFWMD) action has the right to request an administrative hearing on that action. The affected person may request either a formal or an informal hearing, as set forth below. A point of entry into administrative proceedings is governed by Rules 28-106.111 and 40E-1.511, Fla. Admin. Code, (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109), as set forth below. Petitions are deemed filed upon receipt of the original documents by the SFWMD Clerk.

a. Formal Administrative Hearing: If a genuine issue(s) of material fact is in dispute, the affected person seeking a formal hearing on a SFWMD decision which does or may determine their substantial interests shall file a petition for hearing pursuant to Sections 120.569 and 120.57(1), Fla. Stat. or for mediation pursuant to Section 120.573, Fla. Stat. within 21 days, except as provided in subsections c. and d. below, of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-106.201(2), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

b. Informal Administrative Hearing: If there are no issues of material fact in dispute, the affected person seeking an informal hearing on a SFWMD decision which does or may determine their substantial interests shall file a petition for hearing pursuant to Sections 120.569 and 120.57(2), Fla. Stat. or for mediation pursuant to Section 120.573, Fla. Stat. within 21 days, except as provided in subsections c. and d. below, of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-106.301(2), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

c. Administrative Complaint and Order: If a Respondent objects to a SFWMD Administrative Complaint and Order, pursuant to Section 373.119, Fla. Stat. (1997), the person named in the Administrative Complaint and Order may file a petition for a hearing no later than 14 days after the date such order is served. Petitions must substantially comply with the requirements of either subsection a. or b. above.

d. State Lands Environmental Resource Permit: Pursuant to Section 373.427, Fla. Stat., and Rule 40E-1.511(3), Fla. Admin. Code (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109(2)(c)), a petition objecting to the SFWMD's agency action regarding consolidated applications for Environmental Resource Permits and Use of Sovereign Submerged Lands (SLERPs), must be filed within 14 days of the notice of consolidated intent to grant or deny the SLERP. Petitions must substantially comply with the requirements of either subsection a. or b. above.

e. Emergency Authorization and Order: A person whose substantial interests are affected by a SFWMD Emergency Authorization and Order, has a right to file a petition under Sections 120.569, 120.57(1), and 120.57(2), Fla. Stat., as provided in subsections a. and b. above. However, the person, or the agent of the person responsible for causing or contributing to the emergency conditions shall take whatever action necessary to cause immediate compliance with the terms of the Emergency Authorization and Order.

f. Order for Emergency Action: A person whose substantial interests are affected by a SFWMD Order for Emergency Action has a right to file a petition pursuant to Rules 28-107.005 and 40E-1.611, Fla. Admin. Code, copies of which are attached to this Notice of Rights, and Section 373.119(3), Fla. Stat., for a hearing on the Order. Any subsequent agency action or proposed agency action to initiate a formal revocation proceeding shall be separately noticed pursuant to section g. below.

g. Permit Suspension, Revocation, Annulment, and Withdrawal: If the SFWMD issues an administrative complaint to suspend, revoke, annul, or withdraw a permit, the permittee may request a hearing to be conducted in accordance with Sections 120.569 and 120.57, Fla. Stat., within 21 days of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-107.004(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 (LAWAC) of SFWMD's final agency action to determine if such action is consistent with the provisions and purposes of Chapter 373, Fla. Stat. Pursuant to Section 373.114, Fla. Stat., and Rules 42-2.013 and 42-2.0132, Fla. Admin. Code, a request for review of (a) an order or rule of the SFWMD must be filed with LAWAC within 20 days after rendition of the order or adoption of the rule sought to be reviewed; (b) an order of the Department of Environmental Protection (DEP) requiring amendment or repeal of a SFWMD rule must be filed with LAWAC within 30 days of rendition of the DEP's order, and (c) a SFWMD order entered pursuant to a formal administrative hearing under Section 120.57(1), Fla. Stat., must be filed no later than 20 days after rendition of the SFWMD's final order. Simultaneous with filing, a copy of the request for review must be served on the DEP Secretary, any person named in the SFWMD or DEP final order, and all parties to the proceeding below. A copy of Rule 42-2.013, Fla. Admin. Code is attached to this Notice of Rights.

PRIVATE PROPERTY RIGHTS PROTECTION ACT

10. A property owner who alleges a specific action of the SFWMD has inordinately burdened an existing use of the real property, or a vested right to a specific use of the real property, may file a claim in the circuit court where the real property is located within 1 year of the SFWMD action pursuant to the procedures set forth in Subsection 70.001(4)(a), Fla. Stat.

LAND USE AND ENVIRONMENTAL DISPUTE RESOLUTION

11. A property owner who alleges that a SFWMD development order (as that term is defined in Section 70.51(2)(a), Fla. Stat. to include permits) or SFWMD enforcement action is unreasonable, or unfairly burdens the use of the real property, may file a request for relief with the SFWMD within 30 days of receipt of the SFWMD's order or notice of agency action pursuant to the procedures set forth in Subsections 70.51(4) and (6), Fla. Stat.

MEDIATION

12. A person whose substantial interests are, or may be, affected by the SFWMD's action may choose mediation as an alternative remedy under Section 120.573, Fla. Stat. Pursuant to Rule 28-106.111(2), Fla. Admin. Code, the petition for mediation shall be filed within 21 days of either written notice through mail or posting or

publication of notice that the SFWMD has or intends to take final agency action. Choosing mediation will not adversely affect the right to an administrative hearing if mediation does not result in settlement.

Pursuant to Rule 28-106.402, Fla. Admin. Code, the contents of the petition for mediation shall contain the following information:

(1) the name, address, and telephone number of the person requesting mediation and that person's representative, if any;

(2) a statement of the preliminary agency action;

(3) an explanation of how the person's substantial interests will be affected by the agency determination; and

(4) a statement of relief sought.

As provided in Section 120.573, Fla. Stat. (1997), the timely agreement of all the parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57, Fla. Stat., for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within 60 days of the execution of the agreement. If mediation results in settlement of the dispute, the SFWMD must enter a final order incorporating the agreement of the parties. Persons whose substantial interest will be affected by such a modified agency decision have a right to petition for hearing within 21 days of receipt of the final order in accordance with the requirements of Sections 120.569 and 120.57, Fla. Stat., and SFWMD Rule 28-106.201(2), Fla. Admin. Code. If mediation terminates without settlement of the dispute, the SFWMD shall notify all parties in writing that the administrative hearing process under Sections 120.569 and 120.57, Fla. Stat., remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action.

VARIANCES AND WAIVERS

13. A person who is subject to regulation pursuant to a SFWMD rule and believes the application of that rule will create a substantial hardship or will violate principles of fairness (as those terms are defined in Subsection 120.542(2), Fla. Stat.) and can demonstrate that the purpose of the underlying statute will be or has been achieved by other means, may file a petition with the SFWMD Clerk requesting a variance from or waiver of the SFWMD rule. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have concerning the SFWMD's action. Pursuant to Rule 28-104.002(2), Fla. Admin. Code, the petition must include the following information:

(a) the caption shall read:
Petition for (Variance from) or (Waiver of) Rule (Citation)

(b) The name, address, telephone number and any facsimile number of the petitioner;

(c) The name, address telephone number and any facsimile number of the attorney or qualified representative of the petitioner, (if any);

(d) the applicable rule or portion of the rule;

(e) the citation to the 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.

DRAFT
Subject to Governing Board Approval

LAST DATE FOR GOVERNING BOARD ACTION:
OCTOBER 11, 2001

ENVIRONMENTAL RESOURCE PERMIT STAFF REVIEW SUMMARY

I.ADMINISTRATIVE

APPLICATION NUMBER: 010601-42

PERMIT NUMBER: 06-02942-P

PROJECT NAME: I-95 PUMP STATION

LOCATION: BROWARD COUNTY, S19,20/T51S/R42E
S28,29/T51S/R42E

APPLICANT'S NAME: FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT IV

OWNER'S NAME AND ADDRESS: FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT IV
3400 WEST COMMERCIAL BLVD
FORT LAUDERDALE, FL 33309

ENGINEER: CRAIG A SMITH AND ASSOCIATES

II. PROJECT DESCRIPTION

PROJECT AREA: 740.00 acres DRAINAGE AREA: 740.00 acres

DISTRICT DRAINAGE BASIN: C-10

RECEIVING BODY: C-10 CANAL

CLASSIFICATION: CLASS III

PURPOSE:

This application is a request for construction and operation of a stormwater improvement project to alleviate flooding conditions within areas of the City of Hallandale Beach and the Town of Pembroke Park. Staff recommends approval with conditions.

BACKGROUND:

Historically, portions of the City of Hallandale Beach and the Town of Pembroke Park have experienced significant flooding conditions. Most recently, Hurricane Irene in 1999 and the No Name Storm in 2000 resulted in significant flooding for extended periods of time within these two communities. These two

communities are on either side of I-95 in southern Broward County and drainage and flooding between the communities and the I-95 right-of-way is intermingled. The Florida Department of Transportation (FDOT) and the City of Hollywood have been working with these communities in developing a plan to alleviate flooding conditons in this area.

EXISTING FACILITIES:

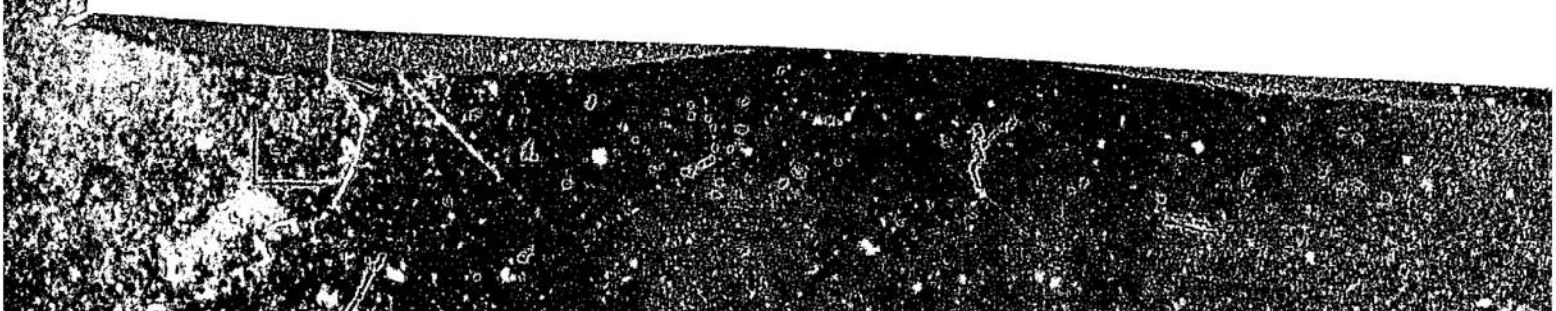
The project drainage area includes portions of the City of Hallandale Beach and the Town of Pembroke Park, along the FDOT I-95 right-of-way.

There are very few existing drainage facilities within the affected areas of the City of Hallandale Beach and the Town of Pembroke Park. These areas have less than adequate drainage facilities with no positive drainage. Flooding of finished floors occurs during certain rainfall events. Chaves Lake located within the City of Hallandale Beach does provide a certain level of storage during storm conditions. However, this lake has no outfall and recovery of available storage takes days or weeks after major storm events.

PROPOSED FACILITIES:

In order to improve the flooding conditions within the City and Town, the following improvements are proposed as part of a tri-party Joint Participation Agreement between the Town of Pembroke Park, the City of Hallandale Beach and the FDOT. These improvements will provide a conveyance for runoff from the affected areas to the District's C-10 canal, effectively providing positive outfall where none previously existed.

Chaves Lake is to be connected to the adjacent Hallandale High School Lake via an open channel connection. The schools lake is to be connected to a proposed pumping station, on the west side of I-95, via an 84 inch diameter culvert which will be jack and bored under I-95. The pump station will consist of three 17,920 GPM (40 cfs each) pumps plus a standby pump. This pump station will serve the Chaves Lake Basin, within Hallandale Beach, and a portion of the Town of Pembroke Park. These pumps will turn off at elevation 2.0 feet NGVD which is the control elevation for Chaves Lake. They will turn on, one after another, when the stage reaches 3.0 feet, 3.5 feet and 4.0 feet NGVD in Chaves Lake. A stormwater force main will be constructed along the west side of I-95 and connected to the modified CSX Railroad ditch. A secondary pump station will be constructed on Beehan Lake within the Town of Pembroke Park. A force main will connect this pump station to the I-95 pump station's force main. The station will consist of two 8,960 GPM (20 cfs each) pumps plus a standby pump. This pump station will provide additional flood relief for the Town of Pembroke Park when one or more of the pumps within the I-95 pump station are not operating. By operating the pump station in this manner the total discharge into the CSX ditch will not exceed 120 cfs. Monitoring of the



pump station will be accomplished via a telemetry system. The CSX ditch will be deepened and widened in order to pass the additional 120 cfs and to provide water quality treatment for the contributing portion of the South Florida Rail Corridor Track expansion project. The Track expansion generates another 15 cfs that has been accounted for in the design of this project. The downstream end of the CSX ditch will be fitted with a ditch bottom inlet and a concrete box culvert. This structure will convey the runoff to the canal system, upstream of C-10, within the City of Hollywood. Maintenance dredging will be performed at three locations within the C-10 canal in order to pass the additional 135 cfs through the canal without raising the water surface elevations beyond existing conditions. The three locations are, upstream of the railroad bridge over the C-10 canal, the reach of C-10 between Stirling Road and Oakwood Boulevard and the first 400 linear feet of C-10, immediately south of it's junction with the Dania Cutoff Canal. The applicant has demonstrated that the proposed water surface profile will be lower than the existing water surface profile after the dredging has been accomplished.

The operation and maintenance responsibilities for each of the three parties is detailed in the Joint Participation Agreement which is attached as an exhibit to this staff report.

BASIN INFORMATION:

Basin	Area Acres	WSWT Elev (ft, NGVD)	Normal/Dry Ctrl Elev (ft, NGVD)	Method of Determination
I-95 PUMP STATION	740.00	2.00	2/2	MONITORING DATA

Pump Discharge Structures:

Basin	Str. #	Capacity (GPM)	on/off elev. (ft, NGVD)
I-95 PUMP STATION	1	53760	3/2
I-95 PUMP STATION	2	17920	

Receiving Body:

Basin	Str. #	Receiving Body
I-95 PUMP STATION	1	C-10 CANAL
I-95 PUMP STATION	2	C-10 CANAL

III. PROJECT EVALUATION

Discharge Rate:

This project proposes to discharge 135 cfs to the C-10 canal. The C-10 canal will be dredged in three locations so that the additional flow will not result in an increase in the water surface elevation above the existing condition.

Basin	Allow Disch (cfs)	Method of Determination	Design Disch (cfs)	Design Stage (ft, NGVD)
I-95 PUMP STATION	135	CONVEYANCE LIMITATION	135	n/a

WATER QUALITY:

Water quality treatment is being provided to the maximum extent possible within Chaves Lake in the City of Hallandale Beach and Beehans Lake within the Town of Pembroke Park. No new development is proposed as part of this application and the project consists of a stormwater improvement project to alleviate flooding conditions within those two communities. This permit is being issued pursuant to the water quality net improvement provisions referenced in Rule Sect. 40E-4.303(1), see Special Condition.

An erosion and sediment control plan (Exhibit 68) has been provided for the work area outside of the C-10 canal R/W. Broward County is requiring the applicant to provide a Turbidity Monitoring Plan for the work to be performed outside of and within the C-10 canal R/W. A copy of this plan will be submitted to the District once the plan is completed.

IV. ENVIRONMENTAL ASSESSMENT

WETLAND INVENTORY:

MOD PHASE-I-95 PUMP STATION

ONSITE

Pre-Development		Post-Development				
	TOTAL EXISTING	PRESERVED	UNDISTURBED	IMPACTED	ENHANCED	RESTORED/ CREATED
OSW	.38	0	0	.38	0	0

TOTALS	.38	0	0	.38	0	0

UPLAND COMP: PRESERVED: N/A ENHANCED: N/A

ENVIRONMENTAL SUMMARY:

This project is a modification of Permit Number 06-02942-P to include construction and operation of a surface water management system to serve 740 acres of developed lands located within portions of the City of Hallandale Beach, the Town of Pembroke Park and FDOT Right-of-Way discharging into C-10 Canal via the proposed pumping stations and associated drainage facilities in Broward County. The proposed project also involves 4.6 acres of maintenance dredging and 0.38 acres of new dredging within the connector area between Chaves Lake and Hallandale High School Lake and under the Hollywood Boulevard bridge. The applicant proposes these storm water improvements to address the adverse flooding conditions within these southern Broward communities. No wetlands have been identified in this project area. The applicant has provided erosion and turbidity control mechanisms as assurance that no adverse impacts to the adjacent water body will occur due to project related 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, 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:

Fdot, Hallandale Beach And Pembroke Park

PROPOSED LAND USE(S):

Government

WATER USE PERMIT STATUS:

A Water Use permit is not required for this project, at this time.

DRI STATUS:

This project is not a DRI.

SAVE OUR RIVERS:

The project is not within or adjacent to lands under consideration by the Save Our Rivers program.

SWIM BASIN:

The project is not within nor does it discharge directly to a designated SWIM basin.

RIGHT-OF-WAY PERMIT STATUS:

Application number 010814-1 was filed for a Right-of-Way Permit to authorize the applicant to dredge within the C-10 Canal R/W. This application is to be considered by the Governing Board on the same day as this Environmental Resource Permit application.

ENFORCEMENT ACTIVITY:

There has been no enforcement activity associated with this application.

THIRD PARTY INTEREST:

The City of Hollywood has expressed concerns related to potential adverse impacts to the adjacent Orangebrook Golf Course and the residential area adjacent to the C-10 canal. The FDOT has addressed this issue by designing the maintenance dredging and the conveyance facilities downstream of the pump station to result in no increase in the water surface profile of the C-10 canal.

WELL FIELD ZONE OF INFLUENCE:

The project is not located within the zone of influence of a wellfield.

V. APPLICABLE LAND AREA

The acreage in the Land Use Table is for existing development based on an estimation of percent impervious area (77%). No new development is proposed as part of this application.

PROJECT

	TOTAL PROJECT	PREVIOUSLY PERMITTED	THIS PHASE	
TOTAL ACRES	740.00		740.00	acres
PERVIOUS	167.98		167.98	acres
IMPERVIOUS	572.00		572.00	acres

DRAFT
Subject to Governing Board Approval

VI. STAFF RECOMMENDATION

The Staff recommends that the following be issued:

Authorization for construction and operation of a stormwater improvement project to serve flood prone areas within the City of Hallandale Beach and the Town of Pembroke Park in Broward County.

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 DEPARTMENT APPROVAL

ENVIRONMENTAL EVALUATION

for Anita R. Bain
Nirmala Jeyakumar

SUPERVISOR

Anita R. Bain
Anita R. Bain

DEPARTMENT DIRECTOR:

Robert G. Robbins

DATE: 9/27/01

SURFACE WATER MANAGEMENT DEPARTMENT APPROVAL

ENGINEERING EVALUATION

Kevin G. Dickson, P.E.

SUPERVISOR

Carlos A. DeRojas, P.E.

DEPARTMENT DIRECTOR:

Anthony M. Waterhouse, P.E.

DATE: 9/27/01

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:

   STRUCTURE NO. 1:

   1-53760 GPM WITH PUMP ON AT ELEV. 3' NGVD AND WITH PUMP OFF AT ELEV. 2' NGVD.

   RECEIVING BODY : C-10 CANAL

   CONTROL ELEV : 2 FEET NGVD. /2 FEET NGVD DRY SEASON.

   STRUCTURE NO. 2:

   1-17920 GPM ' NGVD.

   RECEIVING BODY : C-10 CANAL

   CONTROL ELEV : 2 FEET NGVD. /2 FEET NGVD DRY SEASON.

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. FACILITIES OTHER THAN THOSE STATED HEREIN SHALL NOT BE CONSTRUCTED WITHOUT AN APPROVED MODIFICATION OF THIS PERMIT.

6. OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL BE THE RESPONSIBILITY OF FDOT. HALLANDALE BEACH AND PEMBROKE PARK.

7. ALL SPECIAL CONDITIONS, EXHIBITS AND TEXT OF STAFF REPORTS PREVIOUSLY STIPULATED BY PERMIT NUMBER 06-02942-P REMAIN IN EFFECT UNLESS OTHERWISE REVISED AND SHALL APPLY TO THIS MODIFICATION.

8. SILT SCREENS, HAY BALES AND/OR OTHER SUCH SEDIMENT CONTROL MEASURES AND TURBIDITY BARRIERS AND/OR OTHER TURBIDITY CONTROL MEASURES SHALL BE UTILIZED DURING CONSTRUCTION AS INDICATED IN THE CONSTRUCTION PLANS.

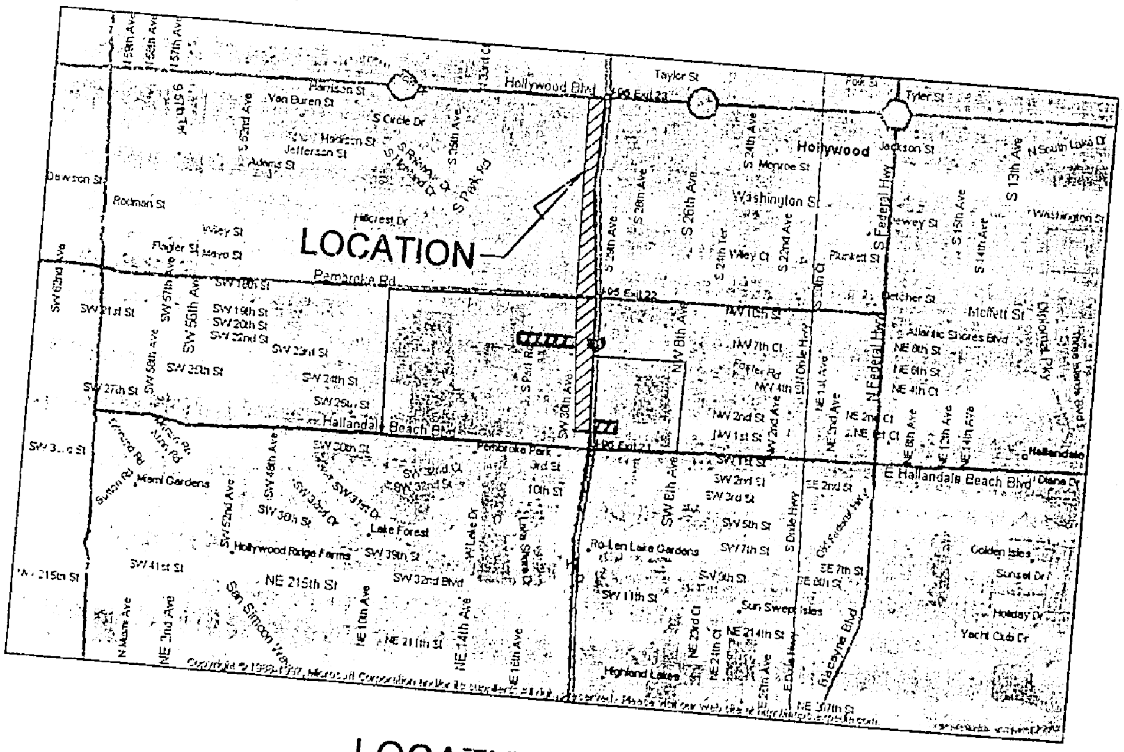
9. PRIOR TO CONSTRUCTION, THE PERMITTEE(S) SHALL PROVIDE THE DISTRICT WITH A COPY OF THE EXECUTED JOINT PARTICIPATION AGREEMENT.

10. PRIOR TO CONSTRUCTION, THE PERMITTEE(S) SHALL PROVIDE THE DISTRICT WITH A COPY OF THE EASEMENT DEED AUTHORIZING THE FACILITIES TO BE CONSTRUCTED ON THE PROPERTY OF HALLANDALE BEACH HIGH SCHOOL.

11. EXHIBIT NUMBER 3 AND EXHIBITS 8 THROUGH 55 DEPICT PLAN AND PROFILE VIEWS OF THE PROPOSED BACKBONE CONVEYANCE FACILITIES. THESE EXHIBITS ARE LOCATED IN THE PERMIT FILE AND ARE INCORPORATED HEREIN BY REFERENCE.

12. EXHIBIT 67 DEPICTS THE AREAS WHERE THE MAINTENANCE DREDGING OF THE C-10 CANAL WILL BE DONE. THIS EXHIBIT IS LOCATED IN THE PERMIT FILE AND IS INCORPORATED BY REFERENCE.

13. THE AUTHORIZATION OF THE STORMWATER MANAGEMENT SYSTEM IS ISSUED PURSUANT TO THE WATER QUALITY NET IMPROVEMENT PROVISIONS REFERENCED IN RULE SECT. 40E-4.303(1); THEREFORE, WATER QUALITY CERTIFICATION IS WAIVED.



LOCATION MAP

I-95 and Pembroke Road Pump Station
Carolina St. and Park Rd. Pump Station

Exhibit 1

APPENDIX E

DRAINAGE CALCULATIONS

TABLE 1. WATER QUALITY/QUANTITY SUMMARY

Basin Area Calculation							Water Quality Calculation Summary	Water Quantity Calculation Summary	Required Storage For Stormwater Management	Storage Calculation Summary					Remarks
Project Basin		Station		Side	Total Area	Impervious Area	Water Quality Treatment Req'd	Net Runoff Increase (Post-Pre)		Available Storage within Exist. R/W (Ac.ft.)	Available Storage in FD (Ac.Ft.)	Additional Storage Needed outside Exist. R/W (Ac.ft.)	Additional Storage Provided outside Exist. R/W (Ac.ft.)	Surplus Storage (Ac.ft.)	Remarks
No.	Name	From	To	LT/RT	(Ac.)	(Ac.)	(Ac.ft.)	(Ac.ft.)	(Ac.ft.)						
1	Basin 1AL	172+00	236+00	LT	24.56	20.49	4.27	2.05	4.27	2.35	0.00	-1.92	5.91		Swale S-L2 & Swale S-L3 (Parcel 514228000170 & 514118000180)
2	Basin 1BL	217+50	228+80	LT	2.96	2.96	0.62	0.50	0.62	0.13	0.00	-0.48	0.00		Swale S-L1B
3	Basin 1CL	237+50	247+38	LT	2.39	1.92	0.40	0.52	0.52	0.08	0.00	-0.44	0.00		Swale S-L1C
4	Basin 1DL	236+00	247+38	LT	3.56	3.56	0.74	1.35	1.35	0.19	0.00	-1.16	0.00		Swale S-L1D
5	Basin 1EL	228+80	245+20	LT	3.08	3.08	0.64	0.18	0.64	0.16	0.00	-0.48	0.00		Swale S-L1E
6	Basin 1AR	177+50	192+00	RT	5.96	4.68	0.98	3.88	3.88	3.42	0.62	0.16	0.00		Swale S-R1A, Swale S-R1A-1, FD1_1R & FD1_2R
7	Basin 1BR	192+00	205+20	RT	3.99	3.34	0.70	0.95	0.95	1.36	0.23	0.63	0.00		Swale S-R1, FD1_3R
8	Basin 1CR	177+50	192+00	RT	6.97	5.39	1.12	-1.30	1.12	0.00	0.00	-1.12	0.00		
9	Basin 1DR	177+50	192+00	RT	5.21	4.04	0.84	0.47	0.84	0.48	0.08	-0.28	0.00		Pond S-R4, FD1_4R
From beginning of the project to Hallandale Beach Blvd. (Basin 1)									**14.19**	**8.16**	**0.92**	**-5.11**	**5.91**	**0.80**	

TABLE 1. WATER QUALITY/QUANTITY SUMMARY (CONTINUED)

Basin Area Calculation							Water Quality Calculation Summary	Water Quantity Calculation Summary	Required Storage For Stormwater Management	Storage Calculation Summary					Remarks
Project Basin		Station		Side	Total Area	Impervious Area	Water Quality Treatment Req'd	Net Runoff Increase (Post-Pre)		Available Storage within Exist. R/W (Ac.ft.)	Available Storage in FD (Ac.Ft.)	Additional Storage Needed outside Exist. R/W (Ac.ft.)	Additional Storage Provided outside Exist. R/W (Ac.ft.)	Surplus Storage (Ac.ft.)	Remarks
No.	Name	From	To	LT/RT	(Ac.)	(Ac.)	(Ac.ft.)	(Ac.ft.)	(Ac.ft.)						
1	Basin 2AL	247+38	262+00	LT	1.65	1.36	0.28	-0.55	0.28	0.00	0.00	0.28	2.75		Pond S-L5, (Parcels 514228710010, 514221010131, 514228640010, 514228740010 & 514228000102)
2	Basin 2BL	247+38	262+00	LT	3.78	3.78	0.79	1.45	1.45	0.00	0.00	1.45	0.00		
3	Basin 2CL	248+60	266+80	LT	2.48	2.48	0.52	0.01	0.52	0.00	0.00	0.52	0.00		
4	Basin 2DL	262+00	274+80	LT	3.28	2.74	0.57	0.55	0.57	0.00	0.00	0.57	0.00		
5	Basin 2EL	266+80	286+80	LT	2.82	2.82	0.59	0.00	0.59	1.51	0.00	-0.92	0.00		Swale S-R7A
6	Basin 2FL	274+80	288+00	LT	4.89	3.51	0.73	-0.04	0.73	0.84	0.00	-0.11	0.00		Swale S-L4
7	Basin 2AR	247+38	257+00	RT	3.12	2.87	0.60	0.89	0.89	1.35	0.00	-0.47	0.00		Swale S-R6
8	Basin 2BR	247+38	257+60	RT	1.79	0.73	0.15	-0.14	0.15	0.63	0.00	-0.48	0.00		Swale S-R5, FD2_1R
9	Basin 2CR	254+20	275+00	RT	6.24	5.73	1.19	2.20	2.20	0.00	0.00	2.20	0.59		Swale S-R7 (Parcel #514228000092 & 514228000093)
10	Basin 2DR	273+30	288+00	RT	4.89	3.14	0.65	-0.42	0.65	1.72	0.00	-1.07	0.00		Swale S-R8
From Hallandale Beach Blvd. to Pembroke Road. (Basin 2)									**8.02**	**6.05**	**0.00**	**1.97**	**3.34**	**1.37**	

TABLE 1. WATER QUALITY/QUANTITY SUMMARY (CONTINUED)

Basin Area Calculation							Water Quality Calculation Summary	Water Quantity Calculation Summary	Required Storage For Stormwater Management	Storage Calculation Summary					Remarks
Project Basin		Station		Side	Total Area	Impervious Area	Water Quality Treatment Req'd	Net Runoff Increase (Post-Pre)		Available Storage within Exist. R/W (Ac.ft.)	Available Storage in FD (Ac.Ft.)	Additional Storage Needed outside Exist. R/W (Ac.ft.)	Additional Storage Provided outside Exist. R/W (Ac.ft.)	Surplus Storage (Ac.ft.)	Remarks
No.	Name	From	To	LT/RT	(Ac.)	(Ac.)	(Ac.ft.)	(Ac.ft.)	(Ac.ft.)						
1	Basin 3AL	288+00	302+60	LT	5.93	5.08	1.06	0.47	1.06	0.41	0.00	0.65	0.80		Parcels 514221064500, 514221064590 & 514221064591
2	Basin 3BL	302+60	308+10	LT	1.40	1.40	0.29	-0.45	0.29	0.00	0.00	0.29	0.00		
3	Basin 3CL	308+10	315+00	LT	1.66	1.66	0.35	-0.11	0.35	0.74	0.00	-0.39	0.00		
4	Basin 3DL	315+00	322+00	LT	1.69	1.69	0.35	0.00	0.35	0.00	0.00	0.35	0.00		
5	Basin 3EL	310+00	342+00	LT	14.05	11.84	2.47	7.90	7.90	2.37	0.00	5.53	0.00		
6	Basin 3FL	322+00	340+00	LT	2.97	2.97	0.62	0.00	0.62	0.00	0.00	0.62	0.00		
7	Basin 3AR	289+00	300+00	RT	2.19	2.19	0.46	0.00	0.46	0.00	0.00	0.46	0.00		
8	Basin 3BR	288+00	298+80	RT	3.17	1.92	0.40	0.35	0.40	0.54	0.00	-0.14	0.00		
9	Basin 3CR	300+00	302+60	RT	0.31	0.31	0.06	0.00	0.06	0.00	0.00	0.06	0.00		
10	Basin 3DR	299+60	324+00	RT	8.51	7.76	1.62	1.46	1.62	0.00	0.00	1.62	0.00		
11	Basin 3ER	324+00	342+00	RT	7.99	5.54	1.15	1.58	1.58	0.34	0.00	1.24	0.00		
From Pembroke Road to Hollywood Blvd. (Basin 3)									**14.69**	**4.40**	**0.00**	**10.29**	**0.80**	**-9.49**	Provide in Sunset Golf Course

TABLE 1. WATER QUALITY/QUANTITY SUMMARY (CONTINUED)

Basin Area Calculation							Water Quality Calculation Summary	Water Quantity Calculation Summary	Required Storage For Stormwater Management	Storage Calculation Summary					Remarks
Project Basin		Station		Side	Total Area	Impervious Area	Water Quality Treatment Req'd	Net Runoff Increase (Post-Pre)		Available Storage within Exist. R/W (Ac.ft.)	Available Storage in FD (Ac.Ft.)	Additional Storage Needed outside Exist. R/W (Ac.ft.)	Additional Storage Provided outside Exist. R/W (Ac.ft.)	Surplus Storage (Ac.ft.)	Remarks
No.	Name	From	To	LT/RT	(Ac.)	(Ac.)	(Ac.ft.)	(Ac.ft.)	(Ac.ft.)						
1	Basin 4AL	342+00	369+50	LT	8.70	6.43	1.34	0.28	1.34	2.76	0.00	-1.42	0.00		Swale S-L6
2	Basin 4BL	343+00	355+90	LT	2.12	2.12	0.44	0.00	0.44	0.00	0.00	0.44	0.00		
3	Basin 4CL	349+80	356+80	LT	1.82	1.82	0.38	0.45	0.45	0.00	0.00	0.45	0.00		
4	Basin 4DL	355+90	369+50	LT	2.18	2.18	0.45	0.12	0.45	0.00	0.00	0.45	0.00		
5	Basin 4AR	342+00	355+00	LT	6.28	3.68	0.77	1.36	1.36	1.73	0.00	-0.36	0.56		Swale S-R12, Swale S-R14 & Swale S-R13 (Parcel No. 514216026520 & 51426026530),
6	Basin 4BR	354+60	369+50	LT	5.81	3.88	0.81	0.35	0.81	1.62	0.00	-0.81	0.00		Swale S-R15
From Hollywood Blvd. to Johnson Street (Basin 4)									**4.86**	**6.10**	**0.00**	**-1.25**	**0.56**	**1.81**	

TABLE 1. WATER QUALITY/QUANTITY SUMMARY (CONTINUED)

Basin Area Calculation							Water Quality Calculation Summary	Water Quantity Calculation Summary	Required Storage For Stormwater Management	Storage Calculation Summary					Remarks
Project Basin		Station		Side	Total Area	Impervious Area	Water Quality Treatment Req'd	Net Runoff Increase (Post-Pre)		Available Storage within Exist. R/W (Ac.ft.)	Available Storage in FD (Ac.Ft.)	Additional Storage Needed outside Exist. R/W (Ac.ft.)	Additional Storage Provided outside Exist. R/W (Ac.ft.)	Surplus Storage (Ac.ft.)	Remarks
No.	Name	From	To	LT/RT	(Ac.)	(Ac.)	(Ac.ft.)	(Ac.ft.)	(Ac.ft.)						
1	Basin 5AR	369+50	390+50	LT	6.36	4.66	0.97	0.07	0.97	0.34	0.00	0.63	9.62		
From Johnson Street to end of the project (Basin 5)									**0.97**	**0.34**	**0.00**	**0.63**	**9.62**	**9.00**	

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 1AL
POND No.
OUTFALL C-9/ Snake Creek Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	172+00	172+00
TO STA.	ft	236+00	236+00
LENGHT	ft	6400.0	6400.0
BASIN WIDTH	ft	172.6	172.6
PAVED WIDTH	ft	108.6	139.5
TOTAL AREA			
INSIDE ROW	Ac	25.36	24.56
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	25.36	24.56
IMP. AREA			
PAVED AREAS	Ac	15.96	20.49
WET OUT AREA	Ac	0.00	0.00
OTHER IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	15.96	20.49
PER. AREA			
Ap	Ac	9.40	4.07

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		2.05
2.5" on Pav. Area	Ac-ft		4.27
Greater of Above	Ac-ft		**4.27**

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A		PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA					
Paved Areas		98	15.96	98	20.49
Lakes and wet areas		100	0.00	100	0.00
Other		98	0.00	98	0.00
SUB-TOTAL (Ai)		**98**	**15.96**	**98**	**20.49**
PER. AREA					
Gravel Roads		91	0.00	91	0.00
Dirt Roads		89	0.00	89	0.00
Cultivated Land		91	0.00	91	0.00
Pasture or range		80	0.00	80	0.00
Meadow, good cond.		78	0.00	78	0.00
Wood or forest land		83	0.00	83	0.00
Lawns/sod, fair cond.		49	9.40	49	4.07
Other		0	0.00	0	0.00
SUB-TOTAL (Ap)		**49**	**9.40**	**49**	**4.07**
TOTAL AREA (At= Ai+Ap)					
CNw=Sum(A*CN)/At		**80**	**25.36**	**90**	**24.56**
DESIGN RAINFALL (25yr-72hr) (P)	in		13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in		2.53		1.13
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in		10.78		12.14
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft		22.79		24.84

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **2.05**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 1BL
POND No.
OUTFALL C-9/ Snake Creek Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	217+50	217+50
TO STA. ft	228+80	228+80
LENGHT ft	1130.0	1130.0
BASIN WIDTH ft	96.4	96.4
PAVED WIDTH ft	96.4	114.1
TOTAL AREA		
INSIDE ROW Ac	2.50	2.96
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	2.50	2.96
IMP. AREA		
PAVED AREAS Ac	2.50	2.96
WET OUT AREA Ac	0.00	0.00
OTHER IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	2.50	2.96
PER. AREA		
Ap Ac	0.00	0.00

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.25
2.5" on Pav. Area Ac-ft		0.62
Greater of Above Ac-ft		**0.62**

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98	2.50	98	2.96
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98.00**	**2.50**	**98.00**	**2.96**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.00	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**0.00**	**49**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**98**	**2.50**	**98**	**2.96**

		PRE-DEV.	POST-DEV.
DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.20	0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	13.16	13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	2.74	3.25

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.50**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 1CL
POND No.
OUTFALL C-9/ Snake Creek Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	237+50	237+50
TO STA.	ft	247+38	247+38
LENGHT	ft	988.0	988.0
BASIN WIDTH	ft	93.5	93.5
PAVED WIDTH	ft	55.1	84.7
TOTAL AREA			
INSIDE ROW	Ac	2.12	2.39
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	2.12	2.39
IMP. AREA			
PAVED AREAS	Ac	1.25	1.92
WET OUT AREA	Ac	0.00	0.00
OTHER IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	1.25	1.92
PER. AREA			
Ap	Ac	0.87	0.47

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98	1.25	98	1.92
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98.00**	**1.25**	**98.00**	**1.92**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.87	49	0.47
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**0.87**	**49**	**0.47**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**78**	**2.12**	**88**	**2.39**

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.20
2.5" on Pav. Area	Ac-ft		0.40
Greater of Above	Ac-ft		**0.40**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	2.84	1.32
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	10.51	11.94
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	1.86	2.38

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.52**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 1DL
POND No.
OUTFALL C-9/ Snake Creek Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	236+00	236+00
TO STA. ft	247+38	247+38
LENGHT ft	1138.0	1138.0
BASIN WIDTH ft	90.7	90.7
PAVED WIDTH ft	87.3	136.3
TOTAL AREA		
INSIDE ROW Ac	2.37	3.56
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	2.37	3.56
IMP. AREA		
PAVED AREAS Ac	2.28	3.56
WET OUT AREA Ac	0.00	0.00
OTHER IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	2.28	3.56
PER. AREA		
Ap Ac	0.09	0.00

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.30
2.5" on Pav. Area Ac-ft		0.74
Greater of Above Ac-ft		**0.74**

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98	2.28	98	3.56
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98.00**	**2.28**	**98.00**	**3.56**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.09	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**0.09**	**49**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**96**	**2.37**	**98**	**3.56**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.40	0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	12.93	13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	2.55	3.90

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **1.35**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 1EL
POND No.
OUTFALL C-9/ Snake Creek Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	228+80	228+80
TO STA.	ft	245+20	245+20
LENGHT	ft	1640.0	1640.0
BASIN WIDTH	ft	77.6	77.6
PAVED WIDTH	ft	77.6	81.8
TOTAL AREA			
INSIDE ROW	Ac	2.92	3.08
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	2.92	3.08
IMP. AREA			
PAVED AREAS	Ac	2.92	3.08
WET OUT AREA	Ac	0.00	0.00
OTHER IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	2.92	3.08
PER. AREA			
Ap	Ac	0.00	0.00

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.26
2.5" on Pav. Area	Ac-ft		0.64
Greater of Above	Ac-ft		**0.64**

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A		PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA					
Paved Areas		98	2.92	98	3.08
Lakes and wet areas		100	0.00	100	0.00
Other		98	0.00	98	0.00
SUB-TOTAL (Ai)		**98.00**	**2.92**	**98.00**	**3.08**
PER. AREA					
Gravel Roads		91	0.00	91	0.00
Dirt Roads		89	0.00	89	0.00
Cultivated Land		91	0.00	91	0.00
Pasture or range		80	0.00	80	0.00
Meadow, good cond.		78	0.00	78	0.00
Wood or forest land		83	0.00	83	0.00
Lawns/sod, fair cond.		49	0.00	49	0.00
Other		0	0.00	0	0.00
SUB-TOTAL (Ap)		**49**	**0.00**	**49**	**0.00**
TOTAL AREA (At= Ai+Ap)					
CNw=Sum(A*CN)/At		**98**	**2.92**	**98**	**3.08**
DESIGN RAINFALL (25yr-72hr) (P)	in		13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in		0.20		0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in		13.16		13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft		3.20		3.38

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.18**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 1AR
POND No.
OUTFALL C-9/ Snake Creek Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	177+50	177+50
TO STA.	ft	192+00	192+00
LENGHT	ft	1450.0	1450.0
BASIN WIDTH	ft	75.7	75.7
PAVED WIDTH	ft	33.9	140.6
TOTAL AREA			
INSIDE ROW	Ac	2.52	5.96
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	2.52	5.96
IMP. AREA			
PAVED AREAS	Ac	1.13	4.68
WET OUT AREA	Ac	0.00	0.00
OTHER IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	1.13	4.68
PER. AREA			
Ap	Ac	1.39	1.28

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.50
2.5" on Pav. Area	Ac-ft		0.98
Greater of Above	Ac-ft		**0.98**

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98	1.13	98	4.68
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98.00**	**1.13**	**98.00**	**4.68**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	1.39	49	1.28
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**1.39**	**49**	**1.28**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**71**	**2.52**	**87**	**5.96**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	4.09	1.43
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	9.50	11.82
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	1.99	5.87

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **3.88**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 1BR
POND No.
OUTFALL C-9/ Snake Creek Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	192+00	192+00
TO STA.	ft	205+20	205+20
LENGHT	ft	1320.0	1320.0
BASIN WIDTH	ft	114.5	114.5
PAVED WIDTH	ft	70.6	110.2
TOTAL AREA			
INSIDE ROW	Ac	3.47	3.99
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	3.47	3.99
IMP. AREA			
PAVED AREAS	Ac	2.14	3.34
WET OUT AREA	Ac	0.00	0.00
OTHER IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	2.14	3.34
PER. AREA			
Ap	Ac	1.33	0.65

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.33
2.5" on Pav. Area	Ac-ft		0.70
Greater of Above	Ac-ft		**0.70**

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A		PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA					
Paved Areas		98	2.14	98	3.34
Lakes and wet areas		100	0.00	100	0.00
Other		98	0.00	98	0.00
SUB-TOTAL (Ai)		**98.00**	**2.14**	**98.00**	**3.34**
PER. AREA					
Gravel Roads		91	0.00	91	0.00
Dirt Roads		89	0.00	89	0.00
Cultivated Land		91	0.00	91	0.00
Pasture or range		80	0.00	80	0.00
Meadow, good cond.		78	0.00	78	0.00
Wood or forest land		83	0.00	83	0.00
Lawns/sod, fair cond.		49	1.33	49	0.65
Other		0	0.00	0	0.00
SUB-TOTAL (Ap)		**49**	**1.33**	**49**	**0.65**
TOTAL AREA (At= Ai+Ap)					
CNw=Sum(A*CN)/At		**79**	**3.47**	**90**	**3.99**
DESIGN RAINFALL (25yr-72hr) (P)	in		13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in		2.62		1.11
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in		10.70		12.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft		3.09		4.04

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.95**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 1CR
POND No.
OUTFALL C-9/ Snake Creek Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	205+20	205+20
TO STA.	ft	232+20	232+20
LENGHT	ft	2700.0	2700.0
BASIN WIDTH	ft	149.6	149.6
PAVED WIDTH	ft	88.4	87.0
TOTAL AREA			
INSIDE ROW	Ac	9.27	6.97
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	9.27	6.97
IMP. AREA			
PAVED AREAS	Ac	5.48	5.39
WET OUT AREA	Ac	0.00	0.00
OTHER IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	5.48	5.39
PER. AREA			
Ap	Ac	3.79	1.58

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.58
2.5" on Pav. Area	Ac-ft		1.12
Greater of Above	Ac-ft		**1.12**

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A		PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA					
Paved Areas		98	5.48	98	5.39
Lakes and wet areas		100	0.00	100	0.00
Other		98	0.00	98	0.00
SUB-TOTAL (Ai)		**98.00**	**5.48**	**98.00**	**5.39**
PER. AREA					
Gravel Roads		91	0.00	91	0.00
Dirt Roads		89	0.00	89	0.00
Cultivated Land		91	0.00	91	0.00
Pasture or range		80	0.00	80	0.00
Meadow, good cond.		78	0.00	78	0.00
Wood or forest land		83	0.00	83	0.00
Lawns/sod, fair cond.		49	3.79	49	1.58
Other		0	0.00	0	0.00
SUB-TOTAL (Ap)		**49**	**3.79**	**49**	**1.58**
TOTAL AREA (At= Ai+Ap)					
CNw=Sum(A*CN)/At		**78**	**9.27**	**87**	**6.97**
DESIGN RAINFALL (25yr-72hr) (P)	in		13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in		2.83		1.51
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in		10.52		11.75
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft		8.13		6.82

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **-1.30**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 1DR
POND No.
OUTFALL C-9/ Snake Creek Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	232+20	232+20
TO STA. ft	247+38	247+38
LENGHT ft	1518.0	1518.0
BASIN WIDTH ft	149.5	149.5
PAVED WIDTH ft	91.5	115.9
TOTAL AREA		
INSIDE ROW Ac	5.21	5.21
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	5.21	5.21
IMP. AREA		
PAVED AREAS Ac	3.19	4.04
WET OUT AREA Ac	0.00	0.00
OTHER IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	3.19	4.04
PER. AREA		
Ap Ac	2.02	1.17

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98	3.19	98	4.04
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98.00**	**3.19**	**98.00**	**4.04**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	2.02	49	1.17
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**2.02**	**49**	**1.17**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**79**	**5.21**	**87**	**5.21**

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.43
2.5" on Pav. Area Ac-ft		0.84
Greater of Above Ac-ft		**0.84**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	2.66		1.49
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	10.67		11.76
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	4.63		5.11

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.47**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 2AL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	247+38	247+38
TO STA.	ft	262+00	262+00
LENGHT	ft	1462	1462
BASIN WIDTH	ft	71.51	71.51
PAVED WIDTH	ft	48.0	157.5
TOTAL AREA			
INSIDE ROW	Ac	2.40	1.65
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	2.40	1.65
IMP. AREA			
PAVED AREAS	Ac	1.61	1.36
WET OUT AREA	Ac	0.00	0.00
IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	1.61	1.36
PER. AREA			
Ap	Ac	0.79	0.29

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A		PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA					
Paved Areas		98.00	1.61	98	1.36
Lakes and wet areas		100	0.00	100	0.00
Other		98	0.00	98	0.00
SUB-TOTAL (Ai)		**98.00**	**1.61**	**98.00**	**1.36**
PER. AREA					
Gravel Roads		91	0.00	91	0.00
Dirt Roads		89	0.00	89	0.00
Cultivated Land		91	0.00	91	0.00
Pasture or range		80	0.00	80	0.00
Meadow, good cond.		78	0.00	78	0.00
Wood or forest land		83	0.00	83	0.00
Lawns/sod, fair cond.		49	0.79	49	0.29
Other		0	0.00	0	0.00
SUB-TOTAL (Ap)		**49**	**0.79**	**49**	**0.29**
TOTAL AREA (At= Ai+Ap)					
CNw=Sum(A*CN)/At		**81.9**	**2.40**	**89.4**	**1.65**
DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4	
WATERSHED STORAGE: S=(1000/CNw)-10	in	2.21		1.19	
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	11.07		12.07	
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	2.21		1.66	

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **-0.55**

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.14
2.5" on Pav. Area	Ac-ft		0.28
Greater of Above	Ac-ft		**0.28**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 2BL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	247+38	247+38
TO STA. ft	262+00	262+00
LENGHT ft	1462	1462
BASIN WIDTH ft	73.30	112.62
PAVED WIDTH ft	73.30	112.62
TOTAL AREA		
INSIDE ROW Ac	2.46	3.78
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	2.46	3.78
IMP. AREA		
PAVED AREAS Ac	2.46	3.78
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	2.46	3.78
PER. AREA		
Ap Ac	0.00	0.00

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	2.46	98	3.78
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98.00**	**2.46**	**98.00**	**3.78**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.00	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**0**	**0.00**	**0**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**98.0**	**2.46**	**98.0**	**3.78**

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.32
2.5" on Pav. Area Ac-ft		0.79
Greater of Above Ac-ft		**0.79**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.20		0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	13.16		13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	2.70		4.14

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **1.45**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 2CL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By: MSP
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	248+60	248+60
TO STA. ft	266+80	266+80
LENGHT ft	1820	1820
BASIN WIDTH ft	59.12	59.12
PAVED WIDTH ft	59.12	59.36
TOTAL AREA		
INSIDE ROW Ac	2.47	2.48
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	2.47	2.48
IMP. AREA		
PAVED AREAS Ac	2.47	2.48
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	2.47	2.48
PER. AREA		
Ap Ac	0.00	0.00

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.21
2.5" on Pav. Area Ac-ft		0.52
Greater of Above Ac-ft		**0.52**

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	2.47	98	2.48
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98.00**	**2.47**	**98.00**	**2.48**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.00	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**0**	**0.00**	**0**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**98.0**	**2.47**	**98.0**	**2.48**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.20	0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	13.16	13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	2.71	2.72

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.01**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 2DL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	262+00	262+00
TO STA.	ft	274+80	274+80
LENGHT	ft	1280	1280
BASIN WIDTH	ft	124.21	124.21
PAVED WIDTH	ft	78.95	93.25
TOTAL AREA			
INSIDE ROW	Ac	3.65	3.28
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	3.65	3.28
IMP. AREA			
PAVED AREAS	Ac	2.32	2.74
WET OUT AREA	Ac	0.00	0.00
IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	2.32	2.74
PER. AREA			
Ap	Ac	1.33	0.54

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	2.32	98	2.74
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98.00**	**2.32**	**98.00**	**2.74**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	1.33	49	0.54
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**0**	**1.33**	**0**	**0.54**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**62.3**	**3.65**	**81.9**	**3.28**

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.27
2.5" on Pav. Area	Ac-ft		0.57
Greater of Above	Ac-ft		**0.57**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	6.05		2.22
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	8.14		11.07
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	2.48		3.02

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.55**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 2EL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	266+80	266+80
TO STA. ft	286+80	286+80
LENGHT ft	2000	2000
BASIN WIDTH ft	61.42	61.42
PAVED WIDTH ft	61.42	61.42
TOTAL AREA		
INSIDE ROW Ac	2.82	2.82
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	2.82	2.82
IMP. AREA		
PAVED AREAS Ac	2.82	2.82
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	2.82	2.82
PER. AREA		
Ap Ac	0.00	0.00

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.24
2.5" on Pav. Area Ac-ft		0.59
Greater of Above Ac-ft		**0.59**

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98	2.82	98	2.82
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98.00**	**2.82**	**98.00**	**2.82**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.00	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**0**	**0.00**	**0**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**98.0**	**2.82**	**98.0**	**2.82**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.20	0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	13.16	13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	3.09	3.09

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.00**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 2FL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	274+80	274+80
TO STA.	ft	288+00	288+00
LENGHT	ft	1320	1320
BASIN WIDTH	ft	165.99	165.99
PAVED WIDTH	ft	113.52	115.83
TOTAL AREA			
INSIDE ROW	Ac	5.03	4.89
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	5.03	4.89
IMP. AREA			
PAVED AREAS	Ac	3.44	3.51
WET OUT AREA	Ac	0.00	0.00
IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	3.44	3.51
PER. AREA			
Ap	Ac	1.59	1.38

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.41
2.5" on Pav. Area	Ac-ft		0.73
Greater of Above	Ac-ft		**0.73**

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A		PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA					
Paved Areas		98.00	3.44	98	3.51
Lakes and wet areas		100	0.00	100	0.00
Other		98	0.00	98	0.00
SUB-TOTAL (Ai)		**98.00**	**3.44**	**98.00**	**3.51**
PER. AREA					
Gravel Roads		91	0.00	91	0.00
Dirt Roads		89	0.00	89	0.00
Cultivated Land		91	0.00	91	0.00
Pasture or range		80	0.00	80	0.00
Meadow, good cond.		78	0.00	78	0.00
Wood or forest land		83	0.00	83	0.00
Lawns/sod, fair cond.		49	1.59	49	1.38
Other		0	0.00	0	0.00
SUB-TOTAL (Ap)		**49**	**1.59**	**49**	**1.38**
TOTAL AREA (At= Ai+Ap)					
CNw=Sum(A*CN)/At		**82.5**	**5.03**	**84.2**	**4.89**
DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4	
WATERSHED STORAGE: S=(1000/CNw)-10	in	2.12		1.88	
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	11.15		11.38	
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	4.68		4.64	

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **-0.04**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 2AR
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	247+38	247+38
TO STA. ft	257+00	257+00
LENGHT ft	962	962
BASIN WIDTH ft	122.26	122.26
PAVED WIDTH ft	75.62	129.96
TOTAL AREA		
INSIDE ROW Ac	2.70	3.12
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	2.70	3.12
IMP. AREA		
PAVED AREAS Ac	1.67	2.87
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	1.67	2.87
PER. AREA		
Ap Ac	1.03	0.25

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.26
2.5" on Pav. Area Ac-ft		0.60
Greater of Above Ac-ft		**0.60**

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	1.67	98	2.87
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**1.67**	**98.0**	**2.87**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	1.03	49	0.25
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**1.03**	**49**	**0.25**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**79.3**	**2.70**	**94.1**	**3.12**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	2.61	0.63
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	10.71	12.67
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	2.41	3.29

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.89**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 2BR
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	247+38	247+38
TO STA. ft	257+60	257+60
LENGHT ft	1022	1022
BASIN WIDTH ft	85.67	85.67
PAVED WIDTH ft	32.82	31.11
TOTAL AREA		
INSIDE ROW Ac	2.01	1.79
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	2.01	1.79
IMP. AREA		
PAVED AREAS Ac	0.77	0.73
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	0.77	0.73
PER. AREA		
Ap Ac	1.24	1.06

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	0.77	98	0.73
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**0.77**	**98.0**	**0.73**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	1.24	49	1.06
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**1.24**	**49**	**1.06**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**67.8**	**2.01**	**69.0**	**1.79**

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.15
2.5" on Pav. Area Ac-ft		0.15
Greater of Above Ac-ft		**0.15**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	4.76	4.50
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	9.01	9.19
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	1.51	1.37

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **-0.14**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 2CR
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	254+20	254+20
TO STA. ft	275+00	275+00
LENGHT ft	2080	2080
BASIN WIDTH ft	97.38	97.38
PAVED WIDTH ft	69.11	120.00
TOTAL AREA		
INSIDE ROW Ac	4.65	6.24
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	4.65	6.24
IMP. AREA		
PAVED AREAS Ac	3.30	5.73
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	3.30	5.73
PER. AREA		
Ap Ac	1.35	0.51

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	3.30	98	5.73
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**3.30**	**98.0**	**5.73**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	1.35	49	0.51
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**1.35**	**49**	**0.51**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**83.8**	**4.65**	**94.0**	**6.24**

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.52
2.5" on Pav. Area Ac-ft		1.19
Greater of Above Ac-ft		**1.19**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	1.94	0.64
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	11.33	12.66
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	4.39	6.58

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **2.20**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 2DR
POND No. <
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	273+30	273+30
TO STA.	ft	288+00	288+00
LENGHT	ft	1470	1470
BASIN WIDTH	ft	147.27	147.27
PAVED WIDTH	ft	113.20	93.05
TOTAL AREA			
INSIDE ROW	Ac	4.97	4.89
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	4.97	4.89
IMP. AREA			
PAVED AREAS	Ac	3.82	3.14
WET OUT AREA	Ac	0.00	0.00
IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	3.82	3.14
PER. AREA			
Ap	Ac	1.15	1.75

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A		PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA					
Paved Areas		98.00	3.82	98	3.14
Lakes and wet areas		100	0.00	100	0.00
Other		98	0.00	98	0.00
SUB-TOTAL (Ai)		**98**	**3.82**	**98.0**	**3.14**
PER. AREA					
Gravel Roads		91	0.00	91	0.00
Dirt Roads		89	0.00	89	0.00
Cultivated Land		91	0.00	91	0.00
Pasture or range		80	0.00	80	0.00
Meadow, good cond.		78	0.00	78	0.00
Wood or forest land		83	0.00	83	0.00
Lawns/sod, fair cond.		49	1.15	49	1.75
Other		0	0.00	0	0.00
SUB-TOTAL (Ap)		**49**	**1.15**	**49**	**1.75**
TOTAL AREA (At= Ai+Ap)					
CNw=Sum(A*CN)/At		**86.7**	**4.97**	**80.5**	**4.89**
DESIGN RAINFALL (25yr-72hr) (P)	in		13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in		1.54		2.43
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in		11.71		10.87
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft		4.85		4.43

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.41
2.5" on Pav. Area	Ac-ft		0.65
Greater of Above	Ac-ft		**0.65**

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **-0.42**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 3AL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	288+00	288+00
TO STA.	ft	302+60	302+60
LENGHT	ft	1460	1460
BASIN WIDTH	ft	163.50	321.00
PAVED WIDTH	ft	139.63	151.56
TOTAL AREA			
INSIDE ROW	Ac	5.48	5.93
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	5.48	5.93
IMP. AREA			
PAVED AREAS	Ac	4.68	5.08
WET OUT AREA	Ac	0.00	0.00
IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	4.68	5.08
PER. AREA			
Ap	Ac	0.80	0.85

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.49
2.5" on Pav. Area	Ac-ft		1.06
Greater of Above	Ac-ft		**1.06**

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A		PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA					
Paved Areas		98.00	4.68	98	5.08
Lakes and wet areas		100	0.00	100	0.00
Other		98	0.00	98	0.00
SUB-TOTAL (Ai)		**98**	**4.68**	**98**	**5.08**
PER. AREA					
Gravel Roads		91	0.00	91	0.00
Dirt Roads		89	0.00	89	0.00
Cultivated Land		91	0.00	91	0.00
Pasture or range		80	0.00	80	0.00
Meadow, good cond.		78	0.00	78	0.00
Wood or forest land		83	0.00	83	0.00
Lawns/sod, fair cond.		49	0.80	49	0.85
Other		0	0.00	0	0.00
SUB-TOTAL (Ap)		**49**	**0.80**	**49**	**0.85**
TOTAL AREA (At= Ai+Ap)					
CNw=Sum(A*CN)/At		**91**	**5.48**	**91**	**5.93**
DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4	
WATERSHED STORAGE: S=(1000/CNw)-10	in	1.01		0.99	
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	12.26		12.28	
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	5.60		6.07	

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.47**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 3BL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	302+60	302+60
TO STA. ft	308+10	308+10
LENGHT ft	550	550
BASIN WIDTH ft	147.31	321.00
PAVED WIDTH ft	138.60	110.88
TOTAL AREA		
INSIDE ROW Ac	1.86	1.40
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	1.86	1.40
IMP. AREA		
PAVED AREAS Ac	1.75	1.40
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	1.75	1.40
PER. AREA		
Ap Ac	0.11	0.00

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	1.75	98	1.40
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**1.75**	**98**	**1.40**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.11	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**0.11**	**0**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**95**	**1.86**	**98**	**1.40**

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.12
2.5" on Pav. Area Ac-ft		0.29
Greater of Above Ac-ft		**0.29**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.52		0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	12.80		13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	1.98		1.54

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **-0.45**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 3CL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	308+10	308+10
TO STA.	ft	315+00	315+00
LENGHT	ft	690	690
BASIN WIDTH	ft	113.00	321.00
PAVED WIDTH	ft	108.58	104.80
TOTAL AREA			
INSIDE ROW	Ac	1.79	1.66
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	1.79	1.66
IMP. AREA			
PAVED AREAS	Ac	1.72	1.66
WET OUT AREA	Ac	0.00	0.00
IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	1.72	1.66
PER. AREA			
Ap	Ac	0.07	0.00

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.14
2.5" on Pav. Area	Ac-ft		0.35
Greater of Above	Ac-ft		**0.35**

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	1.72	98	1.66
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**1.72**	**98**	**1.66**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.07	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**0.07**	**0**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**96**	**1.79**	**98**	**1.66**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.41	0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	12.92	13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	1.93	1.82

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **-0.11**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 3DL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	315+00	315+00
TO STA. ft	322+00	322+00
LENGHT ft	700	700
BASIN WIDTH ft	105.17	321.00
PAVED WIDTH ft	105.17	105.17
TOTAL AREA		
INSIDE ROW Ac	1.69	1.69
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	1.69	1.69
IMP. AREA		
PAVED AREAS Ac	1.69	1.69
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	1.69	1.69
PER. AREA		
Ap Ac	0.00	0.00

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	1.69	98	1.69
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**1.69**	**98**	**1.69**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.00	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**0**	**0.00**	**0**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**98**	**1.69**	**98**	**1.69**

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.14
2.5" on Pav. Area Ac-ft		0.35
Greater of Above Ac-ft		**0.35**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.20		0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	13.16		13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	1.85		1.85

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.00**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 3EL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	310+00	310+00
TO STA. ft	342+00	342+00
LENGHT ft	3200	3200
BASIN WIDTH ft	149.74	321.00
PAVED WIDTH ft	72.69	161.17
TOTAL AREA		
INSIDE ROW Ac	11.00	14.05
OUTSIDE ROW Ac		
TOTAL AREA Ac	11.00	14.05
IMP. AREA		
PAVED AREAS Ac	5.34	11.84
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	5.34	11.84
PER. AREA		
Ap Ac	5.66	2.21

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		1.17
2.5" on Pav. Area Ac-ft		2.47
Greater of Above Ac-ft		**2.47**

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	5.34	98	11.84
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**5.34**	**98**	**11.84**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	5.66	49	2.21
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**0**	**5.66**	**0**	**2.21**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**48**	**11.00**	**83**	**14.05**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	11.02	2.11
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	5.64	11.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	5.17	13.07

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **7.90**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 3FL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	322+00	322+00
TO STA.	ft	340+00	340+00
LENGHT	ft	1800	1800
BASIN WIDTH	ft	71.87	71.87
PAVED WIDTH	ft	71.874	71.874
TOTAL AREA			
INSIDE ROW	Ac	2.97	2.97
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	2.97	2.97
IMP. AREA			
PAVED AREAS	Ac	2.97	2.97
WET OUT AREA	Ac	0.00	0.00
IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	2.97	2.97
PER. AREA			
Ap	Ac	0.00	0.00

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	2.97	98	2.97
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**2.97**	**98**	**2.97**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.00	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**0.00**	**49**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**98**	**2.97**	**98**	**2.97**

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.25
2.5" on Pav. Area	Ac-ft		0.62
Greater of Above	Ac-ft		**0.62**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.20		0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	13.16		13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	3.26		3.26

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.00**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 3AR
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	289+00	289+00
TO STA.	ft	300+00	300+00
LENGHT	ft	1100	1100
BASIN WIDTH	ft	86.72	86.72
PAVED WIDTH	ft	86.724	86.724
TOTAL AREA			
INSIDE ROW	Ac	2.19	2.19
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	2.19	2.19
IMP. AREA			
PAVED AREAS	Ac	2.19	2.19
WET OUT AREA	Ac	0.00	0.00
IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	2.19	2.19
PER. AREA			
Ap	Ac	0.00	0.00

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.18
2.5" on Pav. Area	Ac-ft		0.46
Greater of Above	Ac-ft		**0.46**

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	2.19	98	2.19
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**2.19**	**98**	**2.19**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.00	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**0.00**	**49**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**98**	**2.19**	**98**	**2.19**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.20		0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	13.16		13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	2.40		2.40

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.00**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 3BR
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	288+00	288+00
TO STA. ft	298+80	298+80
LENGHT ft	1080	1080
BASIN WIDTH ft	123.42	127.86
PAVED WIDTH ft	57.68	77.44
TOTAL AREA		
INSIDE ROW Ac	3.06	3.17
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	3.06	3.17
IMP. AREA		
PAVED AREAS Ac	1.43	1.92
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	1.43	1.92
PER. AREA		
Ap Ac	1.63	1.25

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.26
2.5" on Pav. Area Ac-ft		0.40
Greater of Above Ac-ft		**0.40**

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	1.43	98	1.92
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**1.43**	**98**	**1.92**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	1.63	49	1.25
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**1.63**	**49**	**1.25**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**72**	**3.06**	**79**	**3.17**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	3.91	2.71
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	9.63	10.62
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	2.46	2.81

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.35**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 3CR
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	300+00	300+00
TO STA. ft	302+60	302+60
LENGHT ft	260	260
BASIN WIDTH ft	51.94	51.94
PAVED WIDTH ft	51.94	51.94
TOTAL AREA		
INSIDE ROW Ac	0.31	0.31
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	0.31	0.31
IMP. AREA		
PAVED AREAS Ac	0.31	0.31
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	0.31	0.31
PER. AREA		
Ap Ac	0.00	0.00

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	0.31	98	0.31
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**0.31**	**98**	**0.31**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.00	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**0.00**	**49**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**98**	**0.31**	**98**	**0.31**

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.03
2.5" on Pav. Area Ac-ft		0.06
Greater of Above Ac-ft		**0.06**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.20		0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	13.16		13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	0.34		0.34

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.00**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 3DR
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	299+60	299+60
TO STA. ft	324+00	324+00
LENGHT ft	2440	2440
BASIN WIDTH ft	149.07	151.92
PAVED WIDTH ft	93.55	138.54
TOTAL AREA		
INSIDE ROW Ac	8.35	8.51
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	8.35	8.51
IMP. AREA		
PAVED AREAS Ac	5.24	7.76
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	5.24	7.76
PER. AREA		
Ap Ac	3.11	0.75

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	5.24	98	7.76
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**5.24**	**98**	**7.76**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	3.11	49	0.75
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**3.11**	**49**	**0.75**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**80**	**8.35**	**94**	**8.51**

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.71
2.5" on Pav. Area Ac-ft		1.62
Greater of Above Ac-ft		**1.62**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	2.54		0.67
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	10.77		12.62
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	7.49		8.95

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **1.46**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 3ER
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	324+00	324+00
TO STA.	ft	342+00	342+00
LENGHT	ft	1800	1800
BASIN WIDTH	ft	161.66	193.36
PAVED WIDTH	ft	96.80	134.07
TOTAL AREA			
INSIDE ROW	Ac	6.68	7.99
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	6.68	7.99
IMP. AREA			
PAVED AREAS	Ac	4.00	5.54
WET OUT AREA	Ac	0.00	0.00
IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	4.00	5.54
PER. AREA			
Ap	Ac	2.68	2.45

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.67
2.5" on Pav. Area	Ac-ft		1.15
Greater of Above	Ac-ft		**1.15**

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	4.00	98	5.54
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**4.00**	**98**	**5.54**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	2.68	49	2.45
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**2.68**	**49**	**2.45**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**78**	**6.68**	**83**	**7.99**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	2.76	2.05
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	10.57	11.22
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	5.89	7.47

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **1.58**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 4AL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	342+00	342+00
TO STA. ft	369+50	369+50
LENGHT ft	2750	2750
BASIN WIDTH ft	146.04	137.81
PAVED WIDTH ft	86.17	101.85
TOTAL AREA		
INSIDE ROW Ac	9.22	8.70
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	9.22	8.70
IMP. AREA		
PAVED AREAS Ac	5.44	6.43
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	5.44	6.43
PER. AREA		
Ap Ac	3.78	2.27

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	5.44	98	6.43
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**5.44**	**98**	**6.43**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	3.78	49	2.27
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**3.78**	**49**	**2.27**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**78**	**9.22**	**85**	**8.70**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	2.84	1.74
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	10.51	11.52
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	8.08	8.35

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.28**

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.73
2.5" on Pav. Area Ac-ft		1.34
Greater of Above Ac-ft		**1.34**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 4BL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	343+00	343+00
TO STA. ft	355+90	355+90
LENGHT ft	1290	1290
BASIN WIDTH ft	71.59	71.59
PAVED WIDTH ft	71.59	71.59
TOTAL AREA		
INSIDE ROW Ac	2.12	2.12
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	2.12	2.12
IMP. AREA		
PAVED AREAS Ac	2.12	2.12
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	2.12	2.12
PER. AREA		
Ap Ac	0.00	0.00

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	2.12	98	2.12
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**2.12**	**98**	**2.12**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.00	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**98**	**0.00**	**49**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**98**	**2.12**	**98**	**2.12**

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.18
2.5" on Pav. Area Ac-ft		0.44
Greater of Above Ac-ft		**0.44**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.20		0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	13.16		13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	2.32		2.32

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.00**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 4CL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	349+80	349+80
TO STA. ft	356+80	356+80
LENGHT ft	700	700
BASIN WIDTH ft	87.74	113.26
PAVED WIDTH ft	87.74	113.26
TOTAL AREA		
INSIDE ROW Ac	1.41	1.82
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	1.41	1.82
IMP. AREA		
PAVED AREAS Ac	1.41	1.82
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	1.41	1.82
PER. AREA		
Ap Ac	0.00	0.00

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	1.41	98	1.82
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**1.41**	**98**	**1.82**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.00	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**98**	**0.00**	**49**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**98**	**1.41**	**98**	**1.82**

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.15
2.5" on Pav. Area Ac-ft		0.38
Greater of Above Ac-ft		**0.38**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.20		0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	13.16		13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	1.55		2.00

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.45**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 4DL
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	355+90	355+90
TO STA.	ft	369+50	369+50
LENGHT	ft	1360	1360
BASIN WIDTH	ft	66.30	69.82
PAVED WIDTH	ft	66.30	69.82
TOTAL AREA			
INSIDE ROW	Ac	2.07	2.18
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	2.07	2.18
IMP. AREA			
PAVED AREAS	Ac	2.07	2.18
WET OUT AREA	Ac	0.00	0.00
IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	2.07	2.18
PER. AREA			
Ap	Ac	0.00	0.00

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.18
2.5" on Pav. Area	Ac-ft		0.45
Greater of Above	Ac-ft		**0.45**

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	2.07	98	2.18
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**2.07**	**98**	**2.18**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	0.00	49	0.00
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**0.00**	**49**	**0.00**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**98**	**2.07**	**98**	**2.18**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	0.20	0.20
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	13.16	13.16
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	2.27	2.39

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.12**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 4AR
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:		AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA.	ft	342+00	342+00
TO STA.	ft	355+00	355+00
LENGHT	ft	1300	1300
BASIN WIDTH	ft	182.95	210.43
PAVED WIDTH	ft	71.37	123.31
TOTAL AREA			
INSIDE ROW	Ac	5.46	6.28
OUTSIDE ROW	Ac	0	0
TOTAL AREA	Ac	5.46	6.28
IMP. AREA			
PAVED AREAS	Ac	2.13	3.68
WET OUT AREA	Ac	0.00	0.00
IMP. AREA (Ramp)	Ac	0.00	0.00
TOTAL (Ai)	Ac	2.13	3.68
PER. AREA			
Ap	Ac	3.33	2.60

WET DETENTION		SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin	Ac-ft		0.52
2.5" on Pav. Area	Ac-ft		0.77
Greater of Above	Ac-ft		**0.77**

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A		PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA					
Paved Areas		98.00	2.13	98	3.68
Lakes and wet areas		100	0.00	100	0.00
Other		98	0.00	98	0.00
SUB-TOTAL (Ai)		**98**	**2.13**	**98**	**3.68**
PER. AREA					
Gravel Roads		91	0.00	91	0.00
Dirt Roads		89	0.00	89	0.00
Cultivated Land		91	0.00	91	0.00
Pasture or range		80	0.00	80	0.00
Meadow, good cond.		78	0.00	78	0.00
Wood or forest land		83	0.00	83	0.00
Lawns/sod, fair cond.		49	3.33	49	2.60
Other		0	0.00	0	0.00
SUB-TOTAL (Ap)		**49**	**3.33**	**49**	**2.60**
TOTAL AREA (At= Ai+Ap)					
CNw=Sum(A*CN)/At		**68**	**5.46**	**78**	**6.28**
DESIGN RAINFALL (25yr-72hr) (P)	in		13.4		13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in		4.68		2.87
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in		9.06		10.48
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft		4.12		5.49

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **1.36**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 4BR
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	354+60	354+60
TO STA. ft	369+50	369+50
LENGHT ft	1490	1490
BASIN WIDTH ft	169.85	321.00
PAVED WIDTH ft	95.60	113.43
TOTAL AREA		
INSIDE ROW Ac	5.81	5.81
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	5.81	5.81
IMP. AREA		
PAVED AREAS Ac	3.27	3.88
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	3.27	3.88
PER. AREA		
Ap Ac	2.54	1.93

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.48
2.5" on Pav. Area Ac-ft		0.81
Greater of Above Ac-ft		**0.81**

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	3.27	98	3.88
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**3.27**	**98**	**3.88**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	2.54	49	1.93
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**2.54**	**49**	**1.93**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**77**	**5.81**	**82**	**5.81**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	3.06	2.24
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	10.32	11.05
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	5.00	5.35

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.35**

Project Name: I-95 (SR 9) Widening PD Study

Table 2. Basin Water Quality and Peak Attenuation per Basin

Project No. 436903-1-22-02

Drainage Area: Basin 5AR
POND No.
OUTFALL C-10/ Hollywood Canal

Designed By: IS
Checked By:
Date: 12/31/2024

WATER QUALITY CRITERIA FROM SFWMD

DATA:	AREAS PRE-DEV.	AREAS POST-DEV.
FROM STA. ft	369+50	369+50
TO STA. ft	390+50	390+50
LENGHT ft	2100	2100
BASIN WIDTH ft	131.92	321.00
PAVED WIDTH ft	94.17	96.66
TOTAL AREA		
INSIDE ROW Ac	6.36	6.36
OUTSIDE ROW Ac	0	0
TOTAL AREA Ac	6.36	6.36
IMP. AREA		
PAVED AREAS Ac	4.54	4.66
WET OUT AREA Ac	0.00	0.00
IMP. AREA (Ramp) Ac	0.00	0.00
TOTAL (Ai) Ac	4.54	4.66
PER. AREA		
Ap Ac	1.82	1.70

AREAS OUT OF CORRIDOR (Ac)		
DESCR.	PRE-DEV.	POST-DEV.
Pond		
Ao=		

PROP. PAV. WIDTH (FT)	

ADDITIONAL PAVED AREAS		
ITEM	AMOUNT (EA)	UNIT A. (Ac)
MED. OP.		
TURN LANE		
TURN OUT		
TOTAL AREAS (Ac)		0.00

WET DETENTION	SFWMD PRE-DEV.	SFWMD POST-DEV
1" on the Basin Ac-ft		0.53
2.5" on Pav. Area Ac-ft		0.97
Greater of Above Ac-ft		**0.97**

PEAK ATTENUATION: SCS METHOD

SOIL TYPE A	PRE-DEV. CN	PRE-DEV. AREA (Ac)	POST-DEV. CN	POST-DEV. AREA (Ac)
IMP. AREA				
Paved Areas	98.00	4.54	98	4.66
Lakes and wet areas	100	0.00	100	0.00
Other	98	0.00	98	0.00
SUB-TOTAL (Ai)	**98**	**4.54**	**98**	**4.66**
PER. AREA				
Gravel Roads	91	0.00	91	0.00
Dirt Roads	89	0.00	89	0.00
Cultivated Land	91	0.00	91	0.00
Pasture or range	80	0.00	80	0.00
Meadow, good cond.	78	0.00	78	0.00
Wood or forest land	83	0.00	83	0.00
Lawns/sod, fair cond.	49	1.82	49	1.70
Other	0	0.00	0	0.00
SUB-TOTAL (Ap)	**49**	**1.82**	**49**	**1.70**
TOTAL AREA (At= Ai+Ap)				
CNw=Sum(A*CN)/At	**84**	**6.36**	**85**	**6.36**

DESIGN RAINFALL (25yr-72hr) (P)	in	13.4	13.4
WATERSHED STORAGE: S=(1000/CNw)-10	in	1.91	1.78
DIRECT RUNOFF: R=(P-0.2S)^2/(P+0.8S)	in	11.35	11.48
TOTAL RUNOFF: (Rt=At*R/12)	Ac-ft	6.02	6.08

NET RUNOFF = POST DEV. RUNOFF - PRE DEV. RUNOFF Ac-ft **0.07**

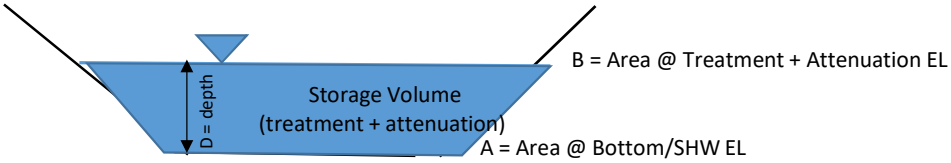
BASIN No.	WATER MANAGEMENT FACILITIES					CONTROL /BOTTOM EL		TREATMENT AND ATTENUATION EL		STORAGE	REMARKS
	DESCRIPTION	From Sta.	To Sta.	Side	TREATMENT METHOD	Elev. (ft.)	Area (Ac.)	Elev (ft.)	Area (Ac.)	Volume (Ac-ft)	Minimum Berm EL
1	Swale S-L1A	176+20	191+00	LT	Dry Detention	2	0.98	4.2	1.15	2.35	6.00
	Swale S-L1B	193+90	197+20	LT	Dry Detention	2	0.04	4.2	0.08	0.13	6.00
	Swale S-L1C	209+80	212+50	LT	Dry Detention	2	0.02	4.2	0.05	0.08	6.50
	Swale S-L1D	219+50	222+30	LT	Dry Detention	2	0.06	4.2	0.11	0.19	5.00
	Swale S-L2	222+00	227+80	LT	Dry Detention	2	0.28	4.2	0.38	0.72	6.50
	Swale S-L1E	239+70	242+00	LT	Dry Detention	2	0.05	4.2	0.09	0.16	6.00
	Pond S-L3	224+90	239+80	LT	Dry Detention	2	2.23	4.2	2.49	5.19	5.50
	Swale S-R1A	171+00	175+80	RT	Dry Detention	2	1.08	4.2	1.26	2.58	8.00
	Swale S-R1A-1	171+00	175+80	RT	Dry Detention	2	0.33	4.2	0.43	0.84	8.00
	Swale S-R1	212+10	228+50	RT	Dry Detention	2	0.55	4.2	0.68	1.36	6.00
	Pond S-R4	245+20	246+80	RT	Dry Detention	2	0.18	4.2	0.26	0.48	5.50
									Σ Dry Detention =	*14.07*	
	TOTAL AVAILABLE STORAGE BASIN 1 = 14.07 AC-FT										
2	Swale S-L4	278+10	286+20	LT	Dry Detention	1.5	0.28	4	0.39	0.84	9.00
	Pond S-L5	254+90	260+20	LT	Dry Detention	1.5	1.00	4	1.20	2.75	9.00
	Swale S-R5	248+20	249+60	RT	Dry Detention	1.5	0.18	4	0.32	0.63	5.50
	Swale S-R6	248+20	255+80	RT	Dry Detention	1.5	0.47	4	0.61	1.35	5.50
	Swale S-R7	257+20	259+00	RT	Dry Detention	1.5	0.19	4	0.28	0.59	6.00
	Swale S-R7A	268+50	280+20	RT	Dry Detention	1.5	0.53	4	0.68	1.51	5.00
	Swale S-R8	280+10	285+10	RT	Dry Detention	1.5	0.61	4	0.77	1.72	7.00
									Σ Dry Detention =	*9.39*	
	TOTAL AVAILABLE STORAGE BASIN 1 = 9.39 AC-FT										
3	Swale S-L5A-1	289+90	295+80	LT	Dry Detention	1.5	0.17	3.5	0.24	0.41	7.50
	Swale S-L5A-2	314+30	321+70	LT	Dry Detention	1.5	0.30	3.5	0.44	0.74	4.50
	Swale S-L5B	326+20	334+20	LT	Dry Detention	1.5	0.35	3.5	0.45	0.80	5.00
	Swale S-L5C	333+80	340+10	LT	Dry Detention	1.5	0.18	3.5	0.25	0.43	5.00
	Swale S-L5D	332+30	340+90	LT	Dry Detention	1.5	0.47	3.5	0.58	1.05	5.00
	Swale S-L5E	330+40	332+40	LT	Dry Detention	1.5	0.03	3.5	0.06	0.09	5.00
	Swale S-R9	288+90	293+80	RT	Dry Detention	1.5	0.23	3.5	0.31	0.54	7.50
	Swale S-R10	329+00	331+80	RT	Dry Detention	1.5	0.14	3.5	0.20	0.34	4.50
									Σ Dry Detention =	*4.40*	
	TOTAL AVAILABLE STORAGE BASIN 1 = 4.40 AC-FT										
4	Swale S-L6	348+00	369+00	LT	Dry Detention	1.5	1.29	3.5	1.47	2.76	4.50
	Swale S-R12	342+90	346+30	RT	Dry Detention	1.5	0.29	3.5	0.43	0.72	6.00
	Swale S-R13	346+70	348+90	RT	Dry Detention	1.5	0.24	3.5	0.32	0.56	5.00
	Swale S-R14	350+00	355+10	RT	Dry Detention	1.5	0.45	3.5	0.56	1.01	5.50
	Swale S-R15	346+10	369+00	LT	Dry Detention	1.5	0.74	3.5	0.88	1.62	4.50
									Σ Dry Detention =	*6.66*	
	TOTAL AVAILABLE STORAGE BASIN 1 = 6.66 AC-FT										
5	Swale S-R16	370+10	375+05	RT	Dry Detention	1.5	0.14	3.5	0.20	0.34	5.00
	Pond S-R17	370+00	382+05	RT	Dry Detention	1.5	4.56	3.5	5.06	9.62	6.00
									Σ Dry Detention =	*9.97*	
	TOTAL AVAILABLE STORAGE BASIN 1 = 9.97 AC-FT										

indicates outside r/w

Notes:

1. Swale and Pond locations are shown in the associated Drainage Map.
2. Swale and pond sections are estimated from existing plans and conceptual roadway design. See associated exhibit
3. Treatment volume provided by new roadside swales or enlarging interchange ponds.
4. All Elevations are in feet NAVD-88 datum. Datum Conversion factor, NAVD EL = NGVD EL - 1.529'

Storage Volume Calculations in Dry/Wet Pond



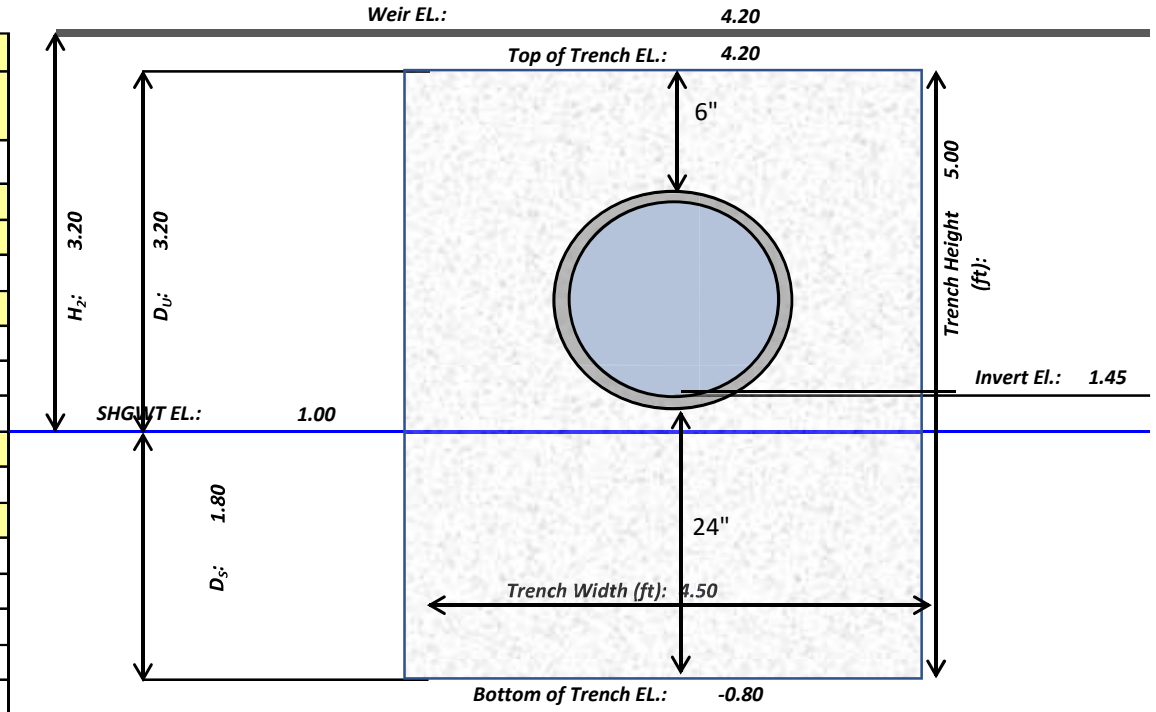
$$\boldsymbol{Storage\ Volume} = \boldsymbol{Average\ of\ (A\ \&\ B)X\ D}$$

I-95 PD&E

I-95

FRENCH DRAIN DESIGN & PROVIDED VOLUMES

BASIN	BASIN 1
Location	FD1_1R
SHGWT EL. (ft-NAVD):	1.00
Pipe Size (in):	24
Length of French Drain, L (LF):	990
Pipe Thickness (in):	3.00
Pipe Invert EL. (ft-NAVD):	1.45
Top of Trench EL. (ft-NAVD):	4.20
Bottom of Trench EL. (ft-NAVD):	-0.80
Trench Height, H_T (ft):	5.00
Weir EL. (ft-NAVD):	4.20
Trench Width, W (ft):	4.50
Average Hydraulic Conductivity, K_{10} (cfs/ft^2/ft-head):	8.670E-05
Depth to Water Table, H_2 (ft):	3.20
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.80
H_2W:	14.40
$2H_2D_U$:	20.48
D_U^2:	10.24
$2H_2D_S$:	11.52
$(1.39x10^{-4})WD_U$:	0.002002
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	5.09
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	3.85
$D_U > D_S$ and $W < 2H_T$(Yes/No):	Yes
Treatment Volume Provided, V (Ac-ft):	**0.42**



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39x10^{-4})WD_U]$$

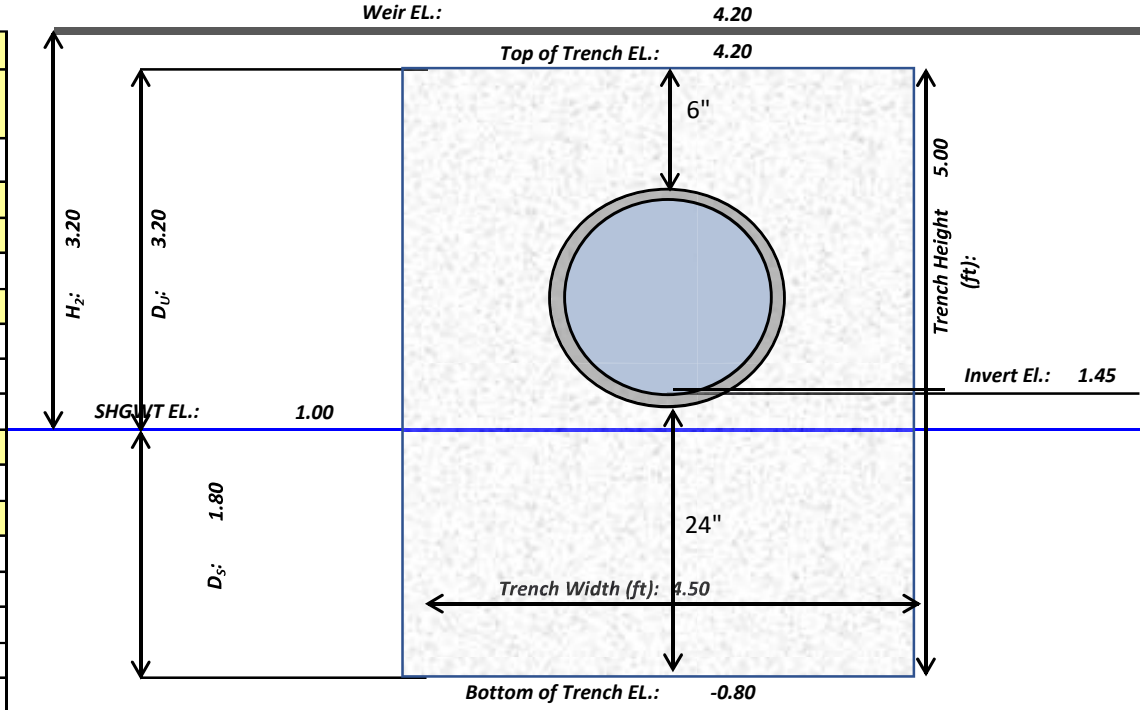
$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39x10^{-4})WD_U]$$

I-95 PD&E

I-95

FRENCH DRAIN DESIGN & PROVIDED VOLUMES

BASIN	BASIN 1
Location	FD1_2R
SHGWT EL. (ft-NAVD):	1.00
Pipe Size (in):	24
Length of French Drain, L (LF):	452
Pipe Thickness (in):	3.00
Pipe Invert EL. (ft-NAVD):	1.45
Top of Trench EL. (ft-NAVD):	4.20
Bottom of Trench EL. (ft-NAVD):	-0.80
Trench Height, H_T (ft):	5.00
Weir EL. (ft-NAVD):	4.20
Trench Width, W (ft):	4.50
Average Hydraulic Conductivity, K_{10} (cfs/ft^2/ft-head):	8.670E-05
Depth to Water Table, H_2 (ft):	3.20
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.80
H_2W:	14.40
$2H_2D_U$:	20.48
D_U^2:	10.24
$2H_2D_S$:	11.52
$(1.39x10^{-4})WD_U$:	0.002002
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	2.32
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	1.76
$D_U > D_S$ and $W < 2H_T$(Yes/No):	Yes
Treatment Volume Provided, V (Ac-ft):	**0.19**



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^{\,2} + 2H_2D_S) + (1.39x10^{-4})WD_U]$$

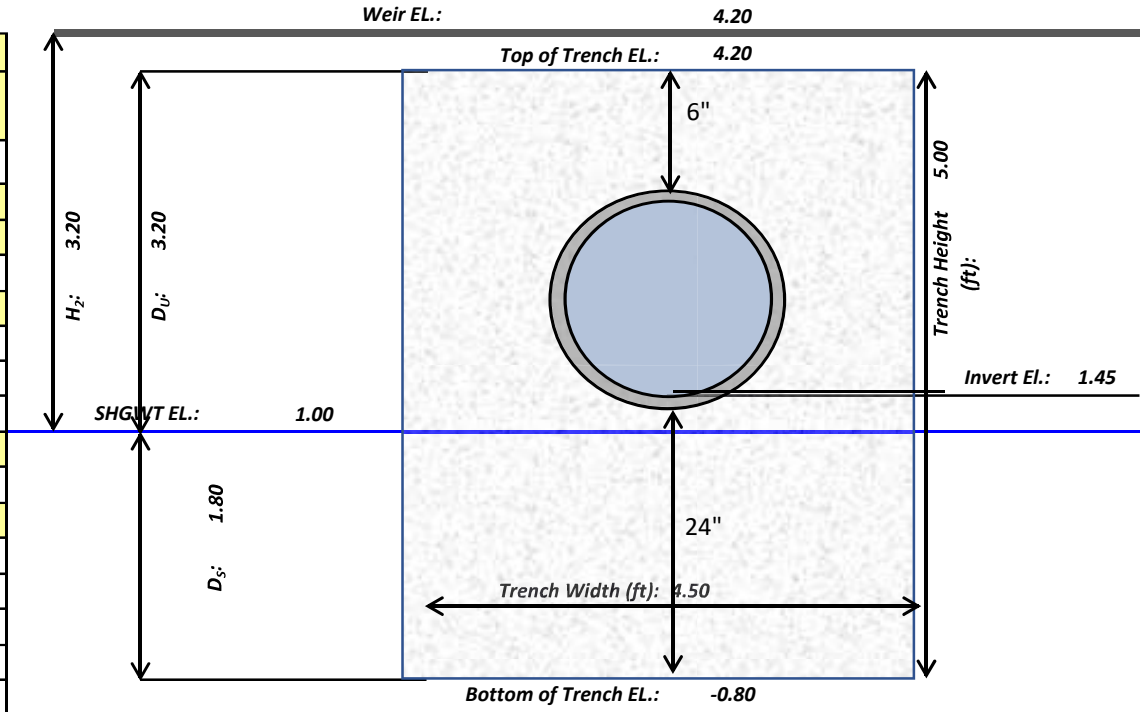
$$V = L[K_{10}(2H_2D_U - D_U^{\,2} + 2H_2D_S) + (1.39x10^{-4})WD_U]$$

I-95 PD&E

I-95

FRENCH DRAIN DESIGN & PROVIDED VOLUMES

BASIN	BASIN 1
Location	FD1_3R
SHGWT EL. (ft-NAVD):	1.00
Pipe Size (in):	24
Length of French Drain, L (LF):	527
Pipe Thickness (in):	3.00
Pipe Invert EL. (ft-NAVD):	1.45
Top of Trench EL. (ft-NAVD):	4.20
Bottom of Trench EL. (ft-NAVD):	-0.80
Trench Height, H_T (ft):	5.00
Weir EL. (ft-NAVD):	4.20
Trench Width, W (ft):	4.50
Average Hydraulic Conductivity, K_{10} (cfs/ft^2/ft-head):	8.670E-05
Depth to Water Table, H_2 (ft):	3.20
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.80
H_2W:	14.40
$2H_2D_U$:	20.48
D_U^2:	10.24
$2H_2D_S$:	11.52
$(1.39x10^{-4})WD_U$:	0.002002
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	2.71
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	2.05
$D_U > D_S$ and $W < 2H_T$(Yes/No):	Yes
Treatment Volume Provided, V (Ac-ft):	**0.23**



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39x10^{-4})WD_U]$$

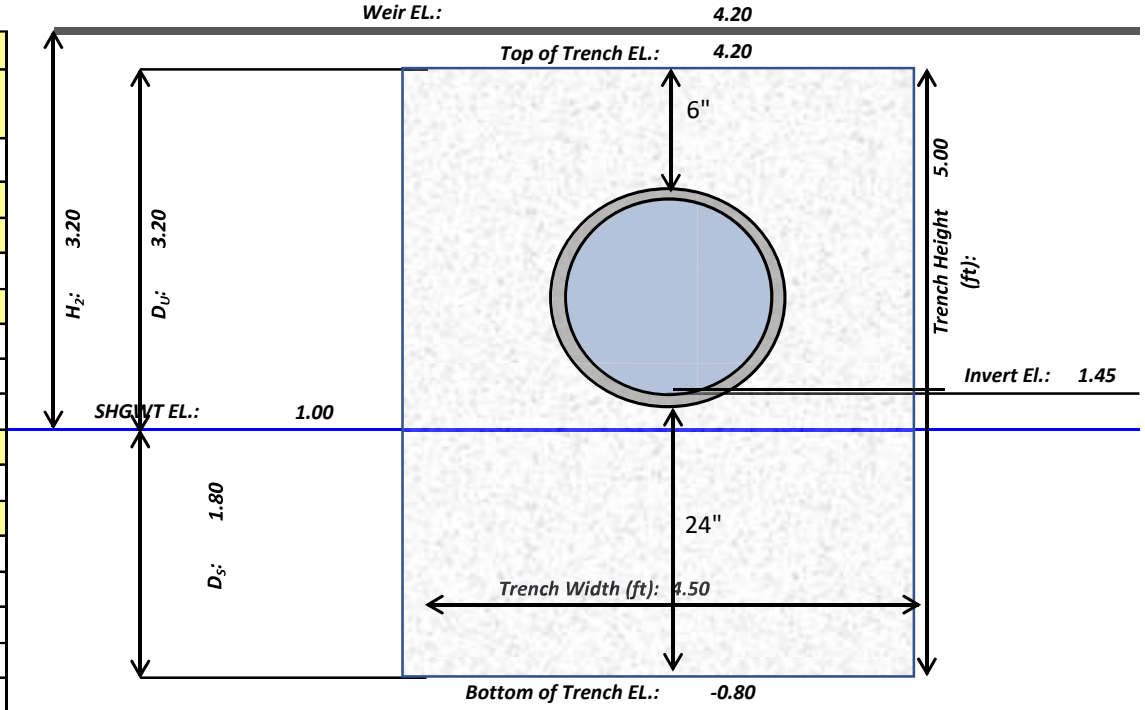
$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39x10^{-4})WD_U]$$

I-95 PD&E

I-95

FRENCH DRAIN DESIGN & PROVIDED VOLUMES

BASIN	BASIN 1
Location	FD1_4R
SHGWT EL. (ft-NAVD):	1.00
Pipe Size (in):	24
Length of French Drain, L (LF):	180
Pipe Thickness (in):	3.00
Pipe Invert EL. (ft-NAVD):	1.45
Top of Trench EL. (ft-NAVD):	4.20
Bottom of Trench EL. (ft-NAVD):	-0.80
Trench Height, H_T (ft):	5.00
Weir EL. (ft-NAVD):	4.20
Trench Width, W (ft):	4.50
Average Hydraulic Conductivity, K_{10} (cfs/ft^2/ft-head):	8.670E-05
Depth to Water Table, H_2 (ft):	3.20
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.80
H_2W:	14.40
$2H_2D_U$:	20.48
D_U^2:	10.24
$2H_2D_S$:	11.52
$(1.39x10^{-4})WD_U$:	0.002002
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	0.92
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	0.70
$D_U > D_S$ and $W < 2H_T$(Yes/No):	Yes
Treatment Volume Provided, V (Ac-ft):	**0.08**



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^{\,2} + 2H_2D_S) + (1.39x10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^{\,2} + 2H_2D_S) + (1.39x10^{-4})WD_U]$$

TABLE 2
SUMMARY OF PERCOLATION TEST RESULTS
S.R. 9 AND PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FPID: 436303-1-52-01 | T.W.O. NO. 12
PSI PROJECT NO. 0397-1021

BORING No.	DATE PERFORMED	CASING DIAMETER (inches)	PERFORATED PVC DIAMETER (inches)	DEPTH OF HOLE (feet)	DEPTH TO GROUNDWATER LEVEL BELOW GROUND PRIOR TO TEST	DEPTH TO GROUNDWATER LEVEL BELOW GROUND DURING TEST	HYDRAULIC HEAD H_2 (feet)	SATURATED HOLE DEPTH, D_S (feet)	AVERAGE FLOW RATE, Q (gpm)	HYDRAULIC CONDUCTIVITY, K (cfs/ft^2-ft)
B-3	1/4/2016	6	4	10.0	7.1	0.0	7.1	2.9	2.0	6.08E-05
B-3	1/4/2016	6	4	15.0	7.1	0.0	7.1	7.9	4.0	6.90E-05
B-3	1/4/2016	6	4	20.0	7.1	0.0	7.1	12.9	9.0	1.08E-04
B-5	1/5/2016	6	4	10.0	7.0	0.0	7.0	3.0	2.0	6.12E-05
B-5	1/5/2016	6	4	15.0	7.0	0.0	7.0	8.0	5.0	8.72E-05
B-5	1/5/2016	6	4	20.0	7.0	0.0	7.0	13.0	11.0	1.34E-04

NOTES:

(1) The above hydraulic conductivity values are for a french drain installed to the same depth as the borehole tests. The values represent an ultimate value. The designer should apply the appropriate factor

(2) The hydraulic conductivity values were calculated based on the South Florida Water Management District's USUAL OPEN HOLE CONSTANT HEAD percolation test procedure as shown on the following page.

(3) A hole diameter of six inches was used for the computation of the Hydraulic Conductivity values presented in the above table. Cave in depths at the time of drilling was noted at 10 feet and 8 feet in borings B-3 and B-5, respectively.

Average Hydraulic Conductivity (K) used for FD calculations = (6.08E-05+6.90E-05+1.08E-04 +6.12E-05+8.72E-05+1.34E-04)/6
= 8.67E-05 cfs/ft^2-ft

APPENDIX F

EVALUATION OF POND SITING ALTERNATIVE

I-95 PD&E FPID 436903-1-22-02 (From South of Hallandale Beach Blvd to Johnson St)

POND SITING EVALUATION MATRIX: **BASIN 1**

Sr. No.	Weight of Factor	Factor	Score[1]	Weighted Score	Score[1]	Weighted Score	Remarks
			1-10		1-10		
		Alternative Number	Pond Alternative 1		Pond Alternative 2		
		Brief Description of Alternative	Triangular shaped lot with Commercial building and parking		Commercial building with parking lot		
		Parcel Number		(S-L2) 514228590010 (SL-3) 514228000150, 514228000170 514228000180		(S-L2) 514228590010, (S-L4) 514228000121 & 514228000140	
		Parcel Size (Acres)		3.77		3.08	Includes requirements for drainage design, maintenance berms and tie-ins.
		Easement (Acres)		Included with pond footprint		Included with pond footprint	
1	5	Zoning (Right of Way)	8	40	8	40	All parcels are Commerce Use. Refer to Broward County Land Use Plan.
2	5	Land Use	8	40	8	40	All parcels landuse are Commerce Use
3	10	Total Right of Way Costs (Pond + Easement)	7	70	9	90	
4	10	Drainage Considerations	6	60	7	70	
5	5	Flood Zone FEMA	5	25	5	25	
6	5	Contamination and Hazardous Materials	5	25	6	30	As per CSER 514228000170 is low risk
7	5	Utilities	5	25	5	25	Utilities are all along the project corridor. For all three alternative, the impact is equal.
8	5	Threatened and Endangered Species and Associates Concerns	5	25	5	25	
9	3	Existing Desirable Vegetation	5	15	5	15	
10	3	Wetlands and Protected Uplands and Associated Concerns	5	15	5	15	No identified wetland area along the project corridor. No wetland impacts for any of the proposed alternatives.
11	3	Cultural Resources Involvement and Associated Concerns & Section 4(f)	5	15	5	15	No Cultural Resources that could be impacted for any of the proposed alternatives.
12	2	Public Wellfield	5	10	5	10	No Public Welfields that could be impacted for any of the proposed alternatives.
13	4	Construction	5	20	5	20	Considerations given to accessibilitry for construction and associated impacts that may affect construction costs.
14	6	Maintenance	5	30	5	30	
15	5	Aesthetics	5	25	5	25	All sites are close to I-95

1. Score Range is 1-10 (Less points means a better or more desired alternative)

I-95 PD&E FPID 436903-1-22-02 (From South of Hallandale Beach Blvd to Johnson St)

POND SITING EVALUATION MATRIX: **BASIN 1**

Sr. No.	Weight of Factor	Factor	Score[1]	Weighted Score	Score[1]	Weighted Score	Remarks
			1-10		1-10		
		Alternative Number	Pond Alternative 1		Pond Alternative 2		
		Brief Description of Alternative	Triangular shaped lot with Commercial building and parking		Commercial building with parking lot		
		Parcel Number		(S-L2) 514228590010 (SL-3) 514228000150, 514228000170 514228000180		(S-L2) 514228590010, (S-L4) 514228000121 & 514228000140	
		Parcel Size (Acres)		3.77		3.08	Includes requirements for drainage design, maintenance berms and tie-ins.
		Easement (Acres)		Included with pond footprint		Included with pond footprint	
16	8	Public Opinion and Adjustment Residency Concerns	5	40	5	40	Proposed ponds are located between railroad track and I-95 (away from any residential areas).
17	2	Other:					
		Comments					
		Score		480		515	
		Ranking		**1**		**2**	

1. Score Range is 1-10 (Less points means a better or more desired alternative)

I-95 PD&E FPID 436903-1-22-02 (From Hallandale Beach Blvd to Johnson St)

POND SITING EVALUATION MATRIX: **BASIN 2**

Sr. No.	Weight of Factor	Factor	Score[1]	Weighted Score	Score[1]	Weighted Score	Score[1]	Weighted Score	Remarks
			1-10		1-10		1-10		
		Alternative Number	Pond Alternative 1		Pond Alternative 2		Pond Alternative 3		
		Brief Description of Alternative	Vacant Industrial, Commercial Building		Commercial Building		Commercial Building		
		Parcel Number		(SL-5) 514228640010 (SR-7) 514228000093		(SL-6) 514221010131 (SR-7) 514228000093		(SL-6) 514228000080, 514228000083 (SR-7) 514228000093	
		Parcel Size (Acres)		2.02		1.77		1.59	Includes requirements for drainage design, maintenance berms and tie-ins.
		Easement (Acres)		Included with pond footprint		Included with pond footprint		Included with pond footprint	
1	5	Zoning (Right of Way)	8	40	8	40	8	40	All parcels are Commerce Use. Refer to Broward County Land Use Plan.
2	5	Land Use	8	40	8	40	8	40	All parcels landuse are Commerce Use
3	10	Total Right of Way Costs (Pond + Easement)	5	50	8	80	9	90	
4	10	Drainage Calculations	6	60	9	90	7	70	Consideration for the location within the basins for hydraulic conditions, site elevations, Seasonal High Groud Water Table (SHGWT), Outfalls Pipe locations, piping needs etc.
5	5	Flood Zone FEMA	5	25	5	25	5	25	
6	5	Contamination and Hazardous Materials	5	25	6	30	7	35	As per CSER 514228000083 is medium risk and 514221280026 is low
7	5	Utilities	5	25	5	25	5	25	Utilities are all along the project corridor. For all three alternative, the impact is equal.
8	5	Threatened and Endangered Species and Associates Costs	5	25	5	25	5	25	
9	3	Existing Desirable Vegetation	5	15	5	15	5	15	
10	3	Wetlands and Protected Uplands and Associated Concerns	5	15	5	15	5	15	No identified wetland area along the project corridor. No wetland impacts for any of the proposed alternatives.
11	3	Cultural Resources Involvement and Associated Concerns & Section 4(f)	5	15	5	15	5	15	No Cultural Resources that could be impacted for any of the proposed alternatives.
12	2	Public Wellfield	5	10	5	10	5	10	No Public Welfields that could be impacted for any of the proposed alternatives.
13	4	Construction	5	20	5	20	5	20	Considerations given to accessibilitry for construction and associated impacts that may affect construction costs.
14	6	Maintenance	5	30	5	30	5	30	
15	5	Aesthetics	5	25	6	30	5	25	All sites are close to I-95
16	8	Public Opinion and Adjustment Residency Concerns	5	40	7	56	5	40	Alternative 2 & 3 Proposed ponds are located between railroad track and I-95 (away from any residential areas).
17	2	Other:							
		Comments							
		Score		460		546		520	
		Ranking		**1**		**3**		**2**	

1. Score Range is 1-10 (Less points means a better or more desired alternative)

I-95 PD&E FPID 436903-1-22-02 (From Hallandale Beach Blvd to Johnson St)

POND SITING EVALUATION MATRIX: **BASIN 3**

Sr. No.	Weight of Factor	Factor	Score[1]	Weighted Score	Score[1]	Weighted Score	Score[1]	Weighted Score	Remarks
				1-10		1-10		1-10	
		Alternative Number	Pond Alternative 1		Pond Alternative 2		Pond Alternative 3		
		Brief Description of Alternative	Orangebrook Golf Course and parcels at North-east corner of I-95 and Pembroke Road		Commerical Building		Sunset Golf Course and parcels at North-east corner of I-95 and Pembroke Road		Alternatives 1, 2 & 3 Located NE I-95 and Pembroke Road also includes: 514221064500, 514221064590 & 514221064591 Parcel Size: 0.60 Acres Parcel Size Sunset Golf Course 10.60 Acres
		Parcel Number		Orangebrook Golfcourse 514217050010		(S-L5A-2) 514221061441, 514221061443, 514221062720, 514221062731, 514221062742, 514221062750, 514221062751,514221062752, 514221062870, 514221062880, 514221062890, 514221062900, 514221062910, 514221062920, 514221064560		(Sunset Golfcourse) 514209000200	
		Parcel Size (Acres)		10.34		5.11		7.66	Includes requirements for drainage design, maintenance berms and tie-ins.
		Easement (Acres)		Reshape Existing Ponds		Included with pond footprint		Reshape Existing Ponds	
1	5	Zoning (Right of Way)	5	25	8	40	5	25	Alternative 2 parcels are Commerce Use. Refer to Broward County Land Use Plan.
2	5	Land Use	5	25	8	40	5	25	Alternative 2 parcels landuse are Commerce Use
3	10	Total Right of Way Costs (Pond + Easement)	6	60	8	80	6	60	
4	10	Drainage Calculations	5	50	7	70	5	50	Consideration for the location within the basins for hydraulic conditions, site elevations, Seasonal High Groud Water Table (SHGWT), Outfalls Pipe locations, piping needs etc.
5	5	Flood Zone FEMA	5	25	5	25	5	25	
6	5	Contamination and Hazardous Materials	5	25	6	30	5	25	As per CSER 514221064560 is low risk
7	5	Utilities	5	25	7	35	5	25	Utilities are all along the project corridor. For all three alternative, the impact is equal.
8	5	Threatened and Endangered Species and Associates Costs	5	25	5	25	5	25	
9	3	Existing Desirable Vegetation	5	15	5	15	5	15	
10	3	Wetlands and Protected Uplands and Associated Concerns	5	15	5	15	5	15	No identified wetland area along the project corridor. No wetland impacts for any of the proposed alternatives.
11	3	Cultural Resources Involvement and Associated Concerns & Section 4(f)	5	15	5	15	5	15	No Cultural Resources that could be impacted for any of the proposed alternatives.
12	2	Public Wellfield	5	10	5	10	5	10	No Public Welfields that could be impacted for any of the proposed alternatives.
13	4	Construction	5	20	6	24	5	20	Considerations given to accessibilitry for construction and associated impacts that may affect construction costs.
14	6	Maintenance	5	30	5	30	5	30	
15	5	Aesthetics	5	25	6	30	5	25	All sites are close to I-95
16	8	Public Opinion and Adjustment Residency Concerns	5	40	7	56	5	40	Reshaping of the existing pond at the Orangebrook Golf Course will be more appealing to the community.
17	2	Other:							

1. Score Range is 1-10 (Less points means a better or more desired alternative)

I-95 PD&E FPID 436903-1-22-02 (From Hallandale Beach Blvd to Johnson St)

POND SITING EVALUATION MATRIX: **BASIN 3**

Sr. No.	Weight of Factor	Factor	Score[1]	Weighted Score	Score[1]	Weighted Score	Score[1]	Weighted Score	Remarks
				1-10		1-10		1-10	
		Alternative Number		Pond Alternative 1		Pond Alternative 2		Pond Alternative 3	
		Brief Description of Alternative		Orangebrook Golf Course and parcels at North-east corner of I-95 and Pembroke Road		Commerical Building		Sunset Golf Course and parcels at North-east corner of I-95 and Pembroke Road	Alternatives 1, 2 & 3 Located NE I-95 and Pembroke Road also includes: 514221064500, 514221064590 & 514221064591 Parcel Size: 0.60 Acres Parcel Size Sunset Golf Course 10.60 Acres
		Parcel Number		Orangebrook Golfcourse 514217050010		(S-L5A-2) 514221061441, 514221061443, 514221062720, 514221062731, 514221062742, 514221062750, 514221062751,514221062752, 514221062870, 514221062880, 514221062890, 514221062900, 514221062910, 514221062920, 5142210624010, 5142210624020, 514221064560		(Sunset Golfcourse) 514209000200	
		Parcel Size (Acres)		10.34		5.11		7.66	Includes requirements for drainage design, maintenance berms and tie-ins.
		Easement (Acres)		Reshape Existing Ponds		Included with pond footprint		Reshape Existing Ponds	
		Comments							
		Score		430		540		430	
		Ranking		**2**		**3**		**1**	

1. Score Range is 1-10 (Less points means a better or more desired alternative)

I-95 PD&E FPID 436903-1-22-02 (From Hallandale Beach Blvd to Johnson St)

POND SITING EVALUATION MATRIX: **BASIN 4**

Sr. No.	Weight of Factor	Factor	Score[1]	Weighted Score	Score[1]	Weighted Score	Score[1]	Weighted Score	Remarks
				1-10		1-10		1-10	
		Alternative Number	Pond Alternative 1		Pond Alternative 2		Pond Alternative 2		
		Brief Description of Alternative	Developed north of north-east corner of I-95 and Hollywood Blvd		Developed two parcels north of north-east corner of I-95 and Hollywood Blvd		Developed north of north-east corner of I-95 and Hollywood Blvd		
		Parcel Number		SR-13 514216026800		SR-14 514216026520 & 514216026530		SR-13 514216026810	
		Parcel Size (Acres)		0.53		0.48		0.43	Includes requirements for drainage design, maintenance berms and tie-ins.
		Easement (Acres)		Included with pond footprint		Included with pond footprint		Included with pond footprint	
1	5	Zoning (Right of Way)	9	45	7	35	7	63	Located close to Residential Zone
2	5	Land Use	8	40	8	40	8	64	All parcels landuse are Residential Use
3	10	Total Right of Way Costs (Pond + Easement)	10	100	8	80	10	100	
4	10	Drainage Considerations	6	60	7	70	6	36	Consideration for the location within the basins for hydraulic conditions, site elevations, Seasonal High Groud Water Table (SHGWT), Outfalls Pipe locations, piping needs etc.
5	5	Flood Zone FEMA	5	25	5	25	5	25	
6	5	Contamination and Hazardous Materials	5	25	5	25	5	25	
7	5	Utilities	5	25	5	25	5	25	Utilities are all along the project corridor. For all three alternative, the impact is equal.
8	5	Threatened and Endangered Species and Associates Concerns	5	25	5	25	5	25	
9	3	Existing Desirable Vegetation	5	15	5	15	5	25	
10	3	Wetlands and Protected Uplands and Associated Costs	5	15	5	15	5	25	No identified wetland area along the project corridor. No wetland impacts for any of the proposed alternatives.
11	3	Cultural Resources Involvement and Associated Concerns & Section 4(f)	5	15	5	15	5	25	No Cultural Resources that could be impacted for any of the proposed alternatives.
12	2	Public Wellfield	5	10	5	10	5	25	No Public Welfields that could be impacted for any of the proposed alternatives.
13	4	Construction	5	20	5	20	5	25	Considerations given to accessibilitry for construction and associated impacts that may affect construction costs.
14	6	Maintenance	5	30	5	30	5	25	
15	5	Aesthetics	5	25	5	25	5	25	All sites are close to I-95

1. Score Range is 1-10 (Less points means a better or more desired alternative)

I-95 PD&E FPID 436903-1-22-02 (From Hallandale Beach Blvd to Johnson St)

POND SITING EVALUATION MATRIX: **BASIN 4**

Sr. No.	Weight of Factor	Factor	Score[1]	Weighted Score	Score[1]	Weighted Score	Score[1]	Weighted Score	Remarks
				1-10		1-10		1-10	
		Alternative Number	Pond Alternative 1		Pond Alternative 2		Pond Alternative 2		
		Brief Description of Alternative	Developed north of north-east corner of I-95 and Hollywood Blvd		Developed two parcels north of north-east corner of I-95 and Hollywood Blvd		Developed north of north-east corner of I-95 and Hollywood Blvd		
		Parcel Number		SR-13 514216026800		SR-14 514216026520 & 514216026530		SR-13 514216026810	
		Parcel Size (Acres)		0.53		0.48		0.43	Includes requirements for drainage design, maintenance berms and tie-ins.
		Easement (Acres)		Included with pond footprint		Included with pond footprint		Included with pond footprint	
16	8	Public Opinion and Adjustment Residency Concerns	5	40	5	40	5	25	
17	2	Other:							
		Comments							
		Score		515		495		563	
		Ranking		**2**		**1**		**3**	

1. Score Range is 1-10 (Less points means a better or more desired alternative)

APPENDIX G

CORRESPONDENCE

Meeting Minutes

Project:	FPID#436903-1-22-02, I-95 PD&E Study
Subject:	I-95 PD&E Study from South of Hallandale Beach Blvd. to North of Hollywood Blvd.
Date:	Wednesday, August 01, 2018
Location:	City of Hollywood City Hall, Rm. 215
Attendees:	See attached sign-in sheet

The meeting took place in the City of Hollywood City Hall at 2 PM to discuss the PD&E Study and drainage improvements for the I-95 corridor from South of Hallandale Beach Blvd. to North of Hollywood Blvd.

Introduction to the project

After introductions, Ryan Solis-Rios began describing the scope of the project and discussed the project's schedule. He mentioned that there is a public hearing scheduled to take place sometime in 2019 to present recommended alternative to the public. The study is expected to end in 2020. Mr. Solis-Rios continued describing the purpose of the project, stating that access on the highway and congestion at the interchange needs to be improved. Currently, there are no construction funds set aside for the project yet. Mr. Solis-Rios clarified that the I-95 express lanes will not be touched for this project.

Existing Drainage

After the description of the project's scope of work, Mohammad Pervez began to talk about the existing drainage system along I-95. Project limits and affected areas were pointed out on a printed aerial map of the area, as well as current outfalls at C-9 and C-10. Everything south of Hallandale drains to C-9 and everything north goes to C-10. Mr. Pervez stated that the I-95 currently drains off to the active swales on both sides. There is an 84'' pipe crossing under I-95 connecting Chavez Lake to the pump station within I-95 R/W. The Pump station discharges to a conveyance channel along CSX railroad which ultimately discharges to Hollywood/C-10 Canal. Mr. Pervez also stated that part of the runoff from SR 824 is currently being treated in the Orangebrook Golf Course before discharging to the Hollywood/C-10 Canal. Based on the permit history SR 824 is allowed to discharge 100 cfs to the Orangebrook Golf Course.

Proposed Drainage

Mr. Pervez mentioned that the improvements will include widening of the roadway which will fill-up the existing roadside swales. The improvement will consider new swales and stormwater facilities (some outside of the existing right of way, near service interchanges) where possible but it will likely not be enough to meet stormwater needs for the project. He also mentioned that one viable option to manage stormwater is to treat and attenuate the I-95 runoff in the Orangebrook Golf Course. Mr. Lopez asked how the additional runoff from Hollywood Blvd. and Pembroke Rd. will be managed and how much storage is needed. Mr. Pervez suggested that one alternative under consideration by the PD&E Study Team is to expand the ponds within the golf course to retain more water and to reduce the increased

discharge. He mentioned that the project will need approximately 17 acre-ft of storage based on the preliminary calculation.

While discussing about the drainage, Mr. Lopez reported that there is a drainage problem with private properties in the area along Johnson Street. The swales are overflowing to the private properties and losing discharge. A recommendation was made by Mr. Pervez to lower the swale bottom but keep at least 1 foot above seasonal high water to improve drainage and water retention. As a follow-up response after the meeting FDOT indicated that they are aware of it and FDOT Maintenance is investigating the issue. The PD&E team inquired about the Sunset Golf Course, a private golf course, for a potential stormwater management area. Mr. Lopez responded saying that the City will not be purchasing it, claiming it is too expensive right now for the City of Hollywood. PD&E Study Team stated that since Sunset golf course is to the very north end of the project, it will not be used for analysis but can be marked as a potential pond site for future projects to the north of this project limit.

Additional discussions related to the project

Mr. Vazquez inquired about the status of the Hillcrest Golf Course. Mr. Lopez mentioned that the Hillcrest Golf Course is no longer available, but the ponds still exist. Mr. Lopez stated that the drainage right-of-way for FDOT still exist and a diversion of flow to the Hillcrest Golf Course ponds is present in order to ease the burden of additional runoff at the Orangebrook Golf Course. Since the Hillcrest Golf Course (not owned by the City) will no longer be a Golf Course and further away from the project location, it will not be a viable stormwater management option for the project. The original Hillcrest Golf Course permit does not show any outfalls.

Mr. Pervez mentioned that the team will meet with South Florida Water Management District (SFWMD) and present the stormwater management options for the project.

Mr. Solis-Rios talked more about the project, stating that the timing of construction for the potential improvements is not yet known. The study is scheduled to end in 2020. Mr. Solis-Rios also mentioned that the final design phase of this project may overlap with the PD&E Study. The design usually does not change much after the public hearing. Mr. Vazquez mentioned that the City will have a Bond Referendum in March of 2019 and improvements to Orangebrook Golf Course is in the bond program. The City noted that improvements to Orangebrook Golf Course from the Bond program could include a full renovation or partial improvements, based on the funding availability. Mr. Vazquez asked what is needed from the City for the meeting. Mr. Solis-Rios stated that meeting minutes needed to be created to show that the project team met with the City of Hollywood to discuss the options and that there is an agreement that the Orangebrook Golf Course is a viable alternative for the stormwater management for the project. It was also discussed that FDOT would revisit the stormwater management alternatives with the City and all stakeholders in the final phase of the PD&E Study and further discuss the agreement with the City for the Orangebrook Golf Course.

The meeting concluded at 3:30 P.M.

Should anyone have additional questions or additions to this record of meeting, please respond to this email sender no later than 5 business days from receipt.

DRAINAGE COORDINATION MEETING WITH CITY OF HOLLYWOOD

I-95 PD&E Study
From South of Hallandale Beach Boulevard (SR 858)
to North of Hollywood Boulevard (SR 820)
Broward County, Florida
FPID # 436903-1-22-02
ETDM# 14254

Wednesday, August 1, 2018
2:00 PM - 3:30 PM

SIGN IN SHEET

NAME	Initial	FDOT / COMPANY	TELEPHONE	EMAIL
1) Kenzot Jasmin		FDOT- D4	(954) 777-4462	Kenzot.Jasmin@dot.state.fl.us
2) Hui Shi		FDOT	(954) 777-4657	Hui.Shi@dot.state.fl.us
3) Claudia Calvo	C.C.	FDOT	(954) 777-4476	Claudia.Calvo@dot.state.fl.us
4) Georgi Celusnek		FDOT	(954) 777-4462	Georgi.Celusnek@dot.state.fl.us
5) Luis Lopez		City of Hollywood	(954) 921-3251	llopez@hollywoodfl.org
6) David Vazquez		City of Hollywood	(954) 921-3404	DVazquez@hollywoodfl.org
7) Gus Zambrano		City of Hollywood	(954) 921-3201	GZambrano@hollywoodfl.org
8) Rick Mitinger		City of Hollywood	(954) 921-3990	RMitinger@hollywoodfl.org
9) Steve Joseph		City of Hollywood	(954) 967-4455	SJoseph@hollywoodfl.org
10) Mike Ciscar		The Corradino Group	(305) 586-7107	Mciscar@corradino.com
11) Ryan Solis-Rios	RSR	The Corradino Group	(954) 777-0044	Rsolis-rios@corradino.com
12) Will Suero	W.S.	HDR	(954) 535-1876	Will.Suero@hdrinc.com
13) Mohammad Pervez	M.P.	HDR	(954) 535-1876	Mohammad.Pervez@hdrinc.com
14) Rohan Hameed		HDR	(954) 535-1876	Rohan.Hameed@hdrinc.com
15) Derly Cano		HDR	(954) 535-1876	Derly.Cano@hdrinc.com
16) Christopher Alli	CA	HDR	(954) 535-1876	Christopher.Alli@hdrinc.com
17) Katheline Tabuteau	KT	HDR	(954) 535-1876	Katheline.Tabuteau@hdrinc.com
18) Imtyaz Shaikh		HDR	(954) 535-1876	Imtyazahmad.Shaikh@hdrinc.com
19) [illegible]		City of Hollywood		[illegible]
20) Wilford Zephyr	W.Z.	City of Hollywood	(954) 921-3994	wzephyr@hollywoodfl.org

DRAINAGE COORDINATION MEETING
WITH CITY OF HOLLYWOOD

I-95 PD&E Study
From South of Hallandale Beach Boulevard (SR 858)
to North of Hollywood Boulevard (SR 820)
Broward County, Florida
FPID # 436903-1-22-02
ETDM# 14254

Tuesday, November 10, 2020
10:00 AM

MEETING MINUTES

The summary of the meeting minutes is noted below in bold italics.

1. Introduction to the Project

a) Scope of the Project
b) Purpose and Need
c) Preferred Alternative
d) Schedule

- ***The Florida Department of Transportation (FDOT) staff and project team introduced themselves (see meeting invite for list of attendees).***
- ***The PD&E Study team presented a brief PowerPoint presentation of the PD&E Study covering the following information:***
    - ***Project Limits and Study Area***
    - ***Scope of the Project***
    - ***Needs of the Project***
    - ***Preferred Alternative Recommendations***
    - ***Schedule***
- ***The project team also presented a large roll plot depicting the PD&E Study recommended alternative on a plan view showing the number of lanes, proposed improvement areas, roadway cross sections, pond locations and adjacent projects.***

2. Drainage Overview

a) Existing Drainage
    - Existing I-95 Drainage
    - Existing Pembroke Road Drainage
    - I-95 Pump Station - Offsite System

- ***A drainage roll plot was presented depicting the existing and proposed drainage features (culverts, swales, ponds, basins, and pump stations) within the study limits.***
- ***The drainage engineers described all the basins within the study limits.***
  - ***Basin 1 covers from SW 11th Street to Hallandale Beach Boulevard. This basin discharges into the C-9 Snake Creek Canal. Water quality and quantity will be met within FDOT right of way.***
  - ***Basin 2 covers from Hallandale Beach Boulevard to Pembroke Road.***
  - ***Basin 3 covers from Pembroke Road to Hollywood Boulevard.***
  - ***Basin 4 covers from Hollywood Boulevard to Johnson Street.***
  - ***Basins 2, 3 and 4 discharge into the C-10 Canal. Water quality and quantity will be met by utilizing existing FDOT right of way, new right of way takes and using the Orangebrook Golf Course or the abandoned Sunset Golf Course.***

b) Proposed Drainage

- Drainage Criteria - Water Quality and Quantity
  - ***The project team discussed the design criteria being used in this project. The criteria includes FDOT, South Florida Water Management District and local requirements.***

- Proposed Drainage Approach
  - ***Based on the proposed roadway improvements, the existing dry detention swales and ponds will be impacted and volume capacity reduced by the interchange new ramps along I-95. The remaining stormwater facilities will be re-graded to accommodate partially the runoff for the impervious areas. The project will require additional right of way takes to comply with the regulatory agencies' stormwater treatment and attenuation criteria. In addition, runoff from Basin 2 and 3 will be conveyed to either the Orangebrook Golf Course or the abandoned Sunset Golf Course to provide the required stormwater management needs (see the two options below).***
    - ***Option 1 – Add new ponds in non-playable areas within the Orangebrook Golf Course and expand existing ponds draining Pembroke Road. This option will trigger a Section 4(f) process.***
    - ***Option 2 – Utilize the abandoned Sunset Golf Course. This is a recent purchase from the City that will be redesigned to become a passive park. No Section 4(f) process in needed to use this site.***
- Preliminary Water Quality and Quantity Analyses
  - ***Preliminary analyses were conducted to identify the number and locations of ponds. The results will be documented in a Conceptual Drainage Analysis Report.***
- Shared-Use Pond at Orangebrook Golf Course - Opportunities/Challenges/Summary
  - ***The project team identified two potential scenarios to use this golf course.***
    - ***Scenario 1: Use this golf course to meet the required stormwater needs based on current conditions and constructing new ponds outside***

playable areas. The Section 4(f) documentation approach will be to present this conversion of land to be considered a de minimis impact because the playable areas are being avoided. At a minimum, a temporary use of the City's property will be needed for construction.

- ***Scenario 2: Use this golf course to meet the required stormwater needs based on the City's future plan to redevelop the golf course and that this renovation will occur prior to the FDOT's roadway construction project. In this scenario, the City would renovate the golf course and then construct the ponds to FDOT specifications. The FDOT could provide funding for pond construction, but the City would construct them concurrently with their golf course renovations. Therefore, the current Section 4(f) determination will be "No Use" due to the above timing.***

- Shared-Use Pond at Sunset Golf Course - Opportunities/Challenges/Summary
  - ***The project team identified one potential scenario to use this golf course, which was presented as Option 2 above. The opportunity here is that it will not require a Section 4(f) process. The challenge with this site is that it will require a new pump station to pump the runoff from Basins 2 and 3.***

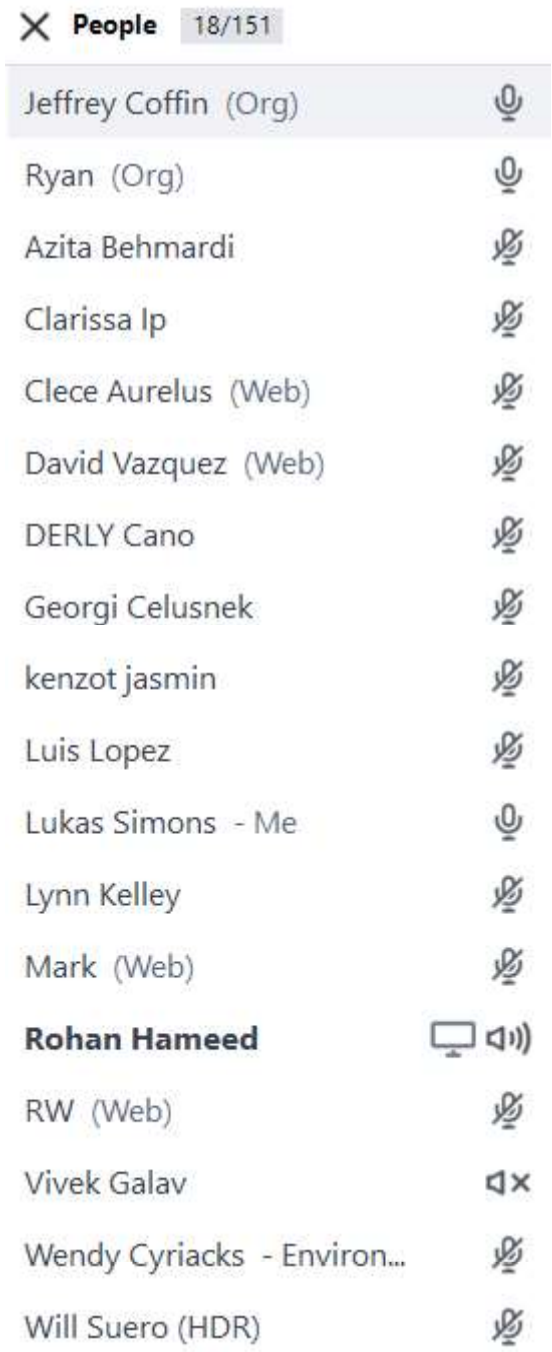
- Recommendation from the Project Team
  - ***The project team recommends proceeding with the abandoned Sunset Golf Course during the PD&E Study phase as it is currently considered an open space property. During the design phase, further evaluation will be done to evaluate both sites and reconsider both locations.***
  - ***FDOT and the City agreed on using the abandoned Sunset Golf Course to meet the stormwater needs in the PD&E Study and obtain LDCA. However, they also both agreed on keeping both golf course options open by documenting them in the official PD&E Study documents and drainage reports. FDOT will reevaluate during the Design phase the use of the Orangebrook Golf Course. By then, City of Hollywood site plans may be available about the renovation/reconstruction of the golf course.***

c) Next Steps

- Feedback from the City
  - ***Raul was concerned about the drainage issues within the abandoned Sunset Golf Course. Residents surrounding the golf course have been complaining about the high elevation of the C-10 Canal. The area of concern is east of I-95 and just south of Johnson Street. The swale is not contained and is discharging into the community.***
  - ***David recommended to continue with evaluating both golf course options. Currently the City has maintenance issues with FDOT that will need to be addressed, which affects future interests between both agencies.***
  - ***Azita asked if there were any other options not using the golf courses. The project team responded that significant ROW impacts will be required to meet the stormwater needs. One example is acquiring the entire NW quadrant of the I-95/Pembroke Road Interchange, which is not viable.***

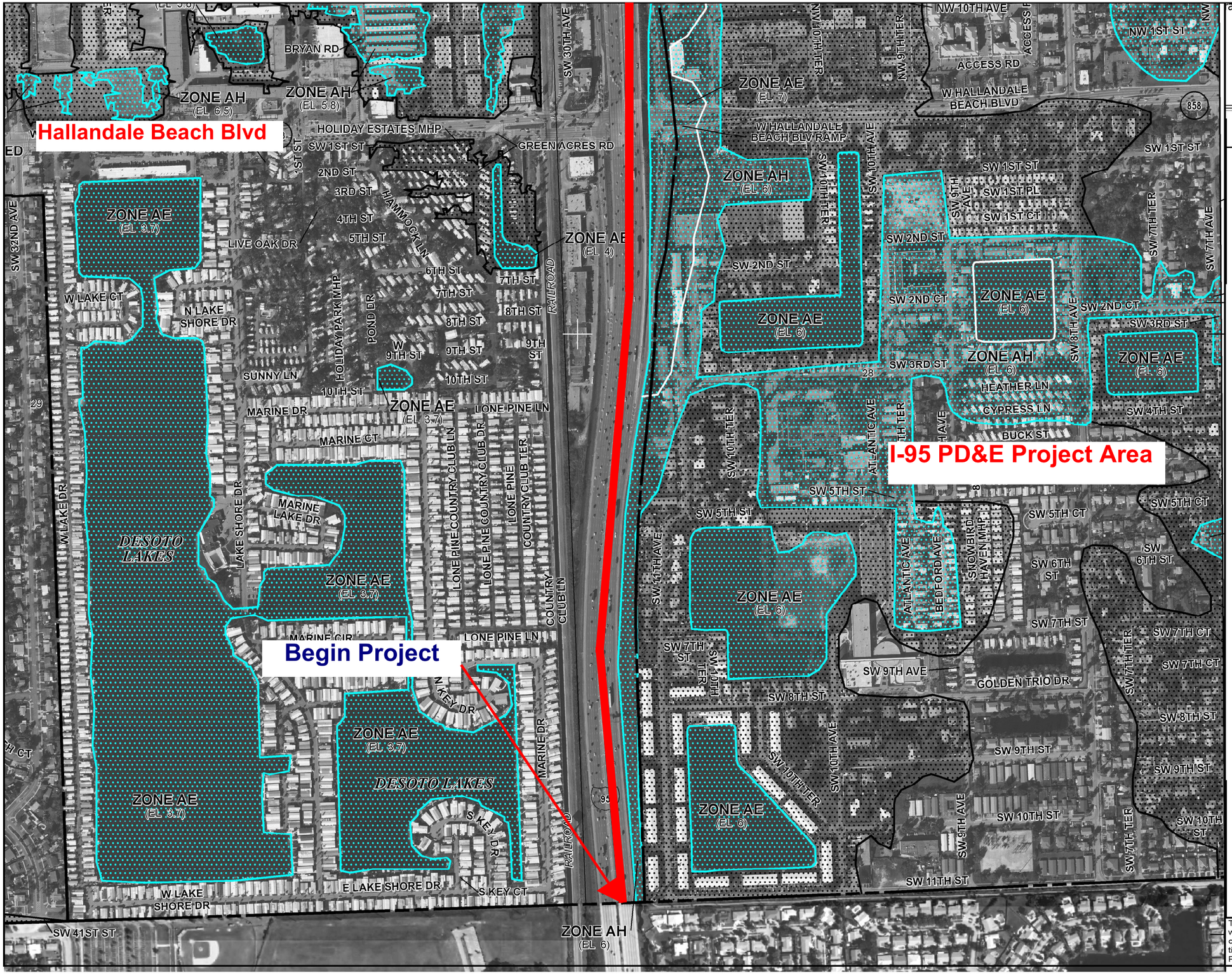
- ***Luis mentioned that the impacted parcels along Hollywood Boulevard are prime locations for the City. He asked the project team if those parcels could remain available for businesses and/or future developments instead of drainage ponds.***
- ***David mentioned that the next step for the abandoned Sunset Golf Course is a master plan of the park. No rezoning has been issued. He expects a short term and long-term plan. This parcel was purchased as an open space with the intention of being a passive park.***
- ***Azita asked if vacant lots were looked and considered to reduce the 9.14 ac-ft needed from the golf courses. The project team responded that vacant lots were considered. The biggest issue with vacant lots is that these locations need to have connectivity with each other for the ponds to work and eventually discharge to larger bodies. Properties that are being looked at right now are parcels that are being impacted by the proposed roadway improvements.***
- ***Georgi asked regarding the I-595 Project and how they handled their golf courses. In this project, Arrowhead was a private golf course. Therefore, there was no Section 4(f).***

- Discuss an Agreement between FDOT and the City
  - ***Both agencies agreed on the next steps and that we need to continue to coordinate with each other as new information becomes available from both agencies.***
  - ***Kenzot will follow up with FDOT maintenance and operations to make sure all flooding issues at both golf courses can we worked out between both agencies.***


People 18/151
Jeffrey Coffin (Org)
Ryan (Org)
Azita Behmardi
Clarissa Ip
Clece Aurelus (Web)
David Vazquez (Web)
DERLY Cano
Georgi Celusnek
kenzot jasmin
Luis Lopez
Lukas Simons - Me
Lynn Kelley
Mark (Web)
Rohan Hameed
RW (Web)
Vivek Galav
Wendy Cyriacks - Environ...
Will Suero (HDR)

APPENDIX H

FLORIDA EMERGENCY MANAGEMENT AGENCY FIRMETTE AND FLOODPLAIN CALCULATIONS



ance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

0 250 500 750 1,000 FEET

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0731H

FIRM

FLOOD INSURANCE RATE MAP

BROWARD COUNTY, FLORIDA

AND INCORPORATED AREAS

PANEL 731 OF 751

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HALLANDALE BEACH, CITY OF	125110	0731	H
HOLLYWOOD, CITY OF	125113	0731	H
PEMBROKE PARK, TOWN OF	120052	0731	H
WEST PARK, CITY OF	120222	0731	H

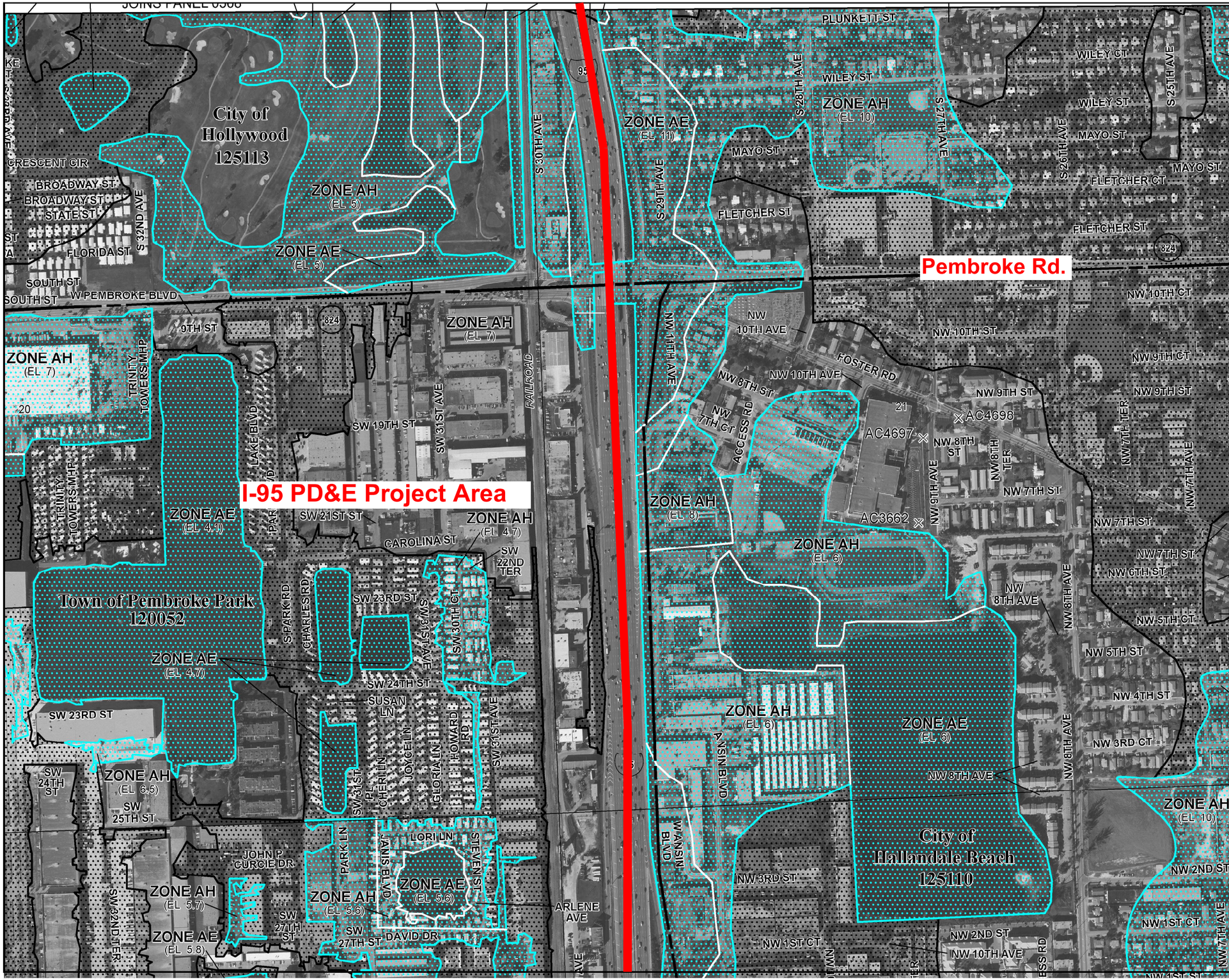
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12011C0731H

EFFECTIVE DATE
AUGUST 18, 2014

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



rance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

0 250 500 750 1,000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0731H

FIRM

FLOOD INSURANCE RATE MAP

BROWARD COUNTY, FLORIDA

AND INCORPORATED AREAS

PANEL 731 OF 751

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HALLANDALE BEACH, CITY OF	125110	0731	H
HOLLYWOOD, CITY OF	125113	0731	H
PEMBROKE PARK, TOWN OF	120052	0731	H
WEST PARK, CITY OF	120222	0731	H

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12011C0731H

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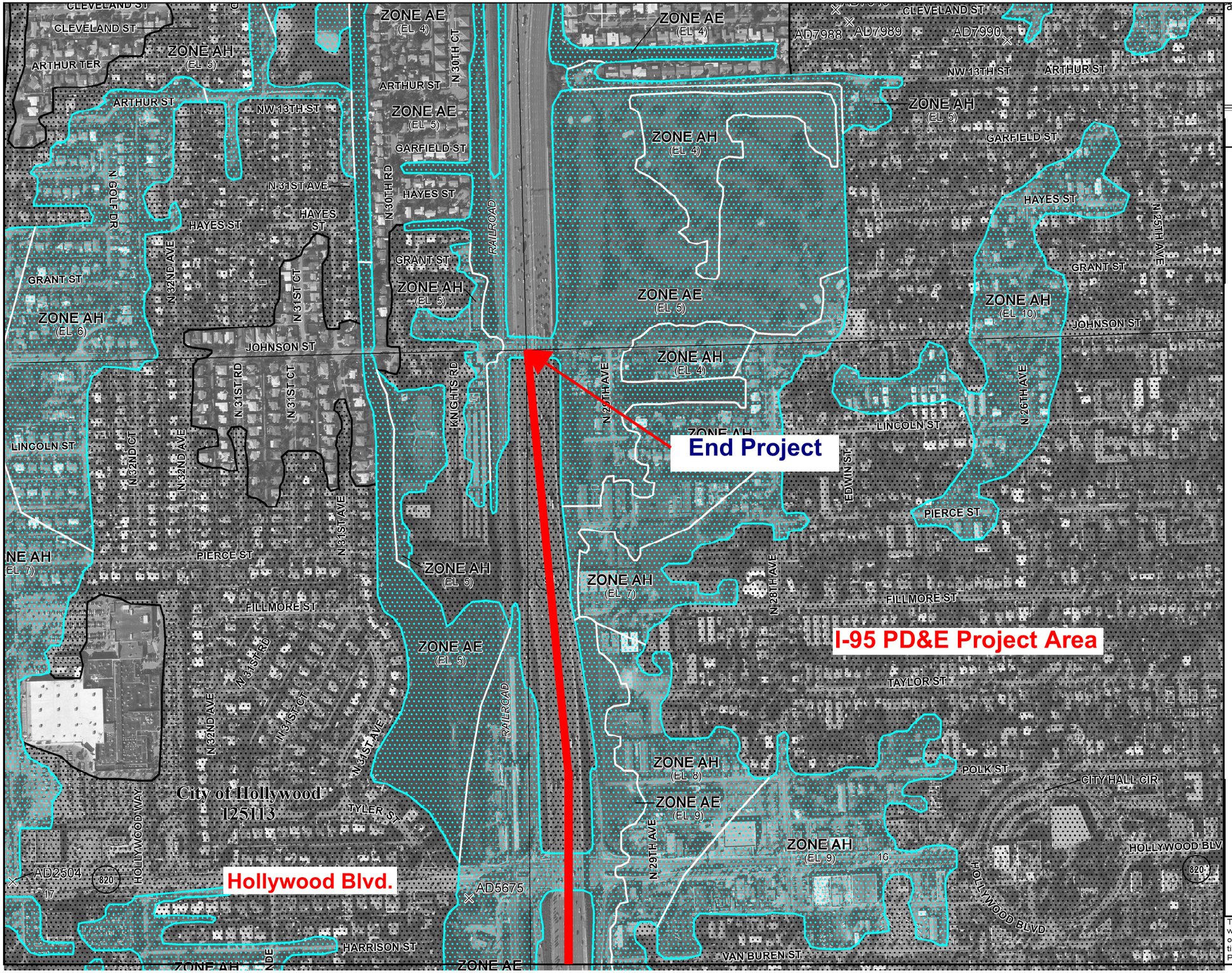


ance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

0 250 500 750 1,000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0568H

FIRM

FLOOD INSURANCE RATE MAP

BROWARD COUNTY, FLORIDA

AND INCORPORATED AREAS

PANEL 568 OF 751

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HOLLYWOOD, CITY OF	125113	0568	H

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

MAP NUMBER
12011C0568H

EFFECTIVE DATE
AUGUST 18, 2014

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Summary of Floodplain Encroachment/Compensation Calculations

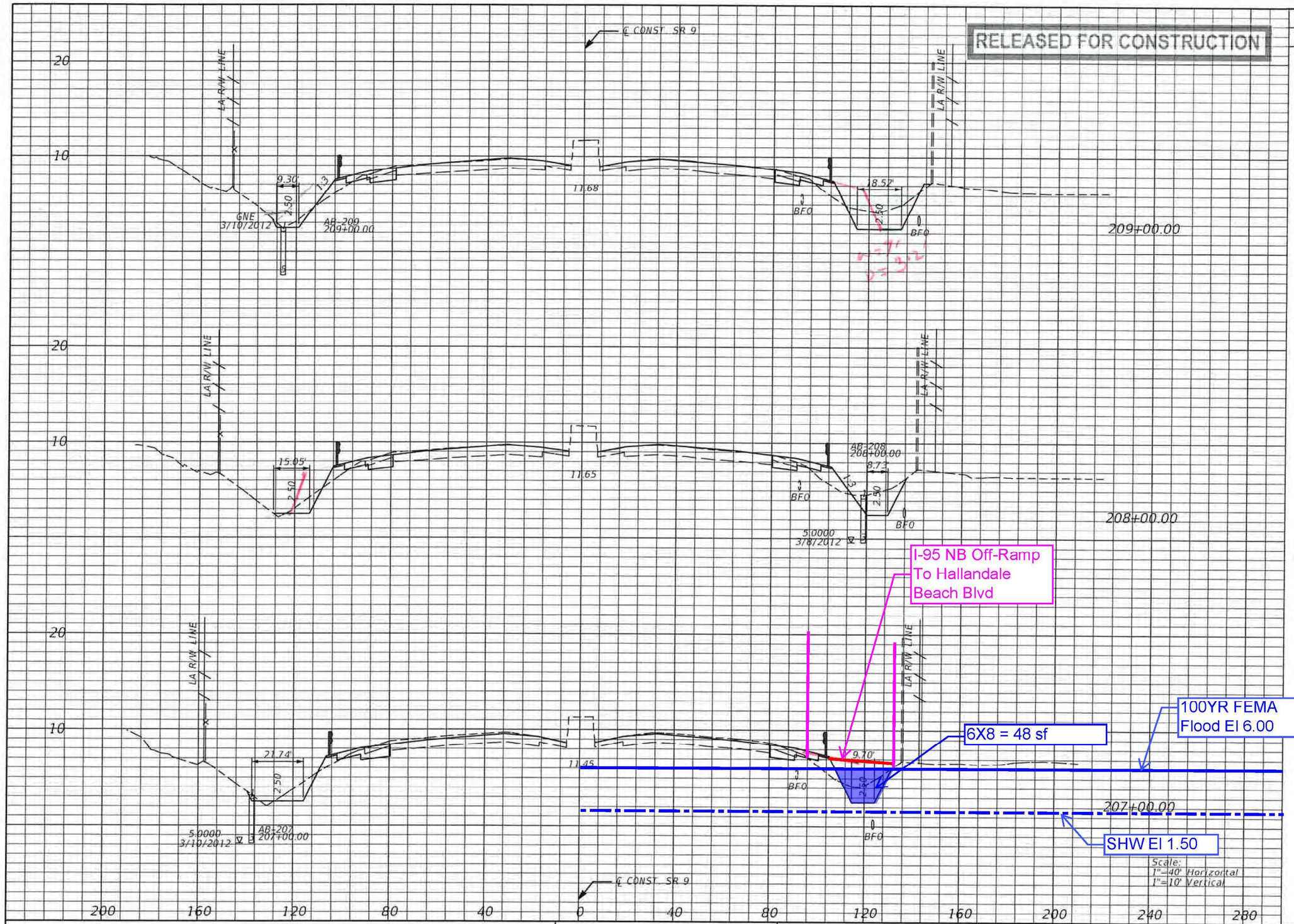
SFWMD BASIN	BASIN	FLOODPLAIN ENCROACHMENT (AC-FT)	PROVIDEE FLOODPLAIN COMPENSATION (AC-FT)
C-9	BASIN 1	5.90	
C-10	BASIN 2	4.34	
	BASIN 3	9.47	
	BASIN 4	1.08	22.18
		20.80	22.18

Summary of Floodplain Encroachment Calculations

Basin	Roadway XS Station	XS Area (sf)	Average XS Area (sf)	Length between Stations (ft)	Encroached Volume (cf)	XS Area (sf)	Average XS Area (sf)	Length between Stations (ft)	Encroached Volume (cf)	Total (cf)	Total (ac-ft)
	LT					RT					
Basin 1	207+00	0	-	-	-	48		0			
	219+00	0	0	1200	0	104	76	1200	91200		
	229+00	0	0	1000	0	104	104	1000	104000		
	235+00	0	0	600	0	0	52	600	31200		
	236+00	0	0	100	0	0	0	100	0		
	243+00	0	0	700	0	40	20	700	14000		
	246+50	0	0	350	0	56	48	350	16800		
					0				257200	**257200**	**5.90**
Basin 2	248+20	0	0	-	-	0		0			
	252+00	0	0	380	0	0	0	380	0		
	254+00	0	0	200	0	8	4	200	800		
	258+00	0	0	400	0	40	24	400	9600		
	259+00	0	0	100	0	104	72	100	7200		
	270+00	0	0	1100	0	88	96	1100	105600		
	274+00	0	0	400	0	24	56	400	22400		
	278+00	0	0	400	0	24	24	400	9600		
	279+00	0	0	100	0	104	64	100	6400		
	280+00	0	0	100	0	48	76	100	7600		
	281+00	0	0	100	0	24	36	100	3600		
	283+00	0	0	200	0	32	28	200	5600		
	286+00	0	0	300	0	40	36	300	10800		
					0				189200	**189200**	**4.34**

Basin	Roadway XS Station	XS Area (sf)	Average XS Area (sf)	Length between Stations (ft)	Encroached Volume (cf)	XS Area (sf)	Average XS Area (sf)	Length between Stations (ft)	Encroached Volume (cf)	Total (cf)	Total (ac-ft)
	LT					RT					
Basin 3	290+00	8				24		0			
	295+00	8	8	500	4000	8	16	500	8000		
	300+00	0	4	500	2000	0	4	500	2000		
	305+00	0	0	500	0	176	88	500	44000		
	310+00	0	0	500	0	208	192	500	96000		
	317+00	0	0	700	0	264	236	700	165200		
	321+00	0	0	400	0	40	152	400	60800		
	336+00	0				0		0			
	340+00	152	76	400	30400	0	400	0			
					36400				376000	**412400**	**9.47**
Basin 4	344+00	16				0					
	347+00	0	8	300	2400	16	8	300	2400		
	350+00	16	8	300	2400	24	20	300	6000		
	352+00	32	24	200	4800	16	20	200	4000		
	353+00	0	16	100	1600	48	32	100	3200		
	355+00	0		200	0	24	36	200	7200		
	356+00	0		100	0	8	16	100	1600		
	357+00	0		100	0	16	12	100	1200		
	360+00	0		300	0	32	24	300	7200		
	362+00	0		200	0	0	16	200	3200		
					11200				36000	**47200**	**1.08**

RELEASED FOR CONSTRUCTION



Regular Exc.		Embankment	
A	V	A	V
73.4	259	24.0	96
66.8	253	28.0	93
70.0	163	22.3	108

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

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING
• ENGINEERS
• PLANNERS
• SURVEYORS

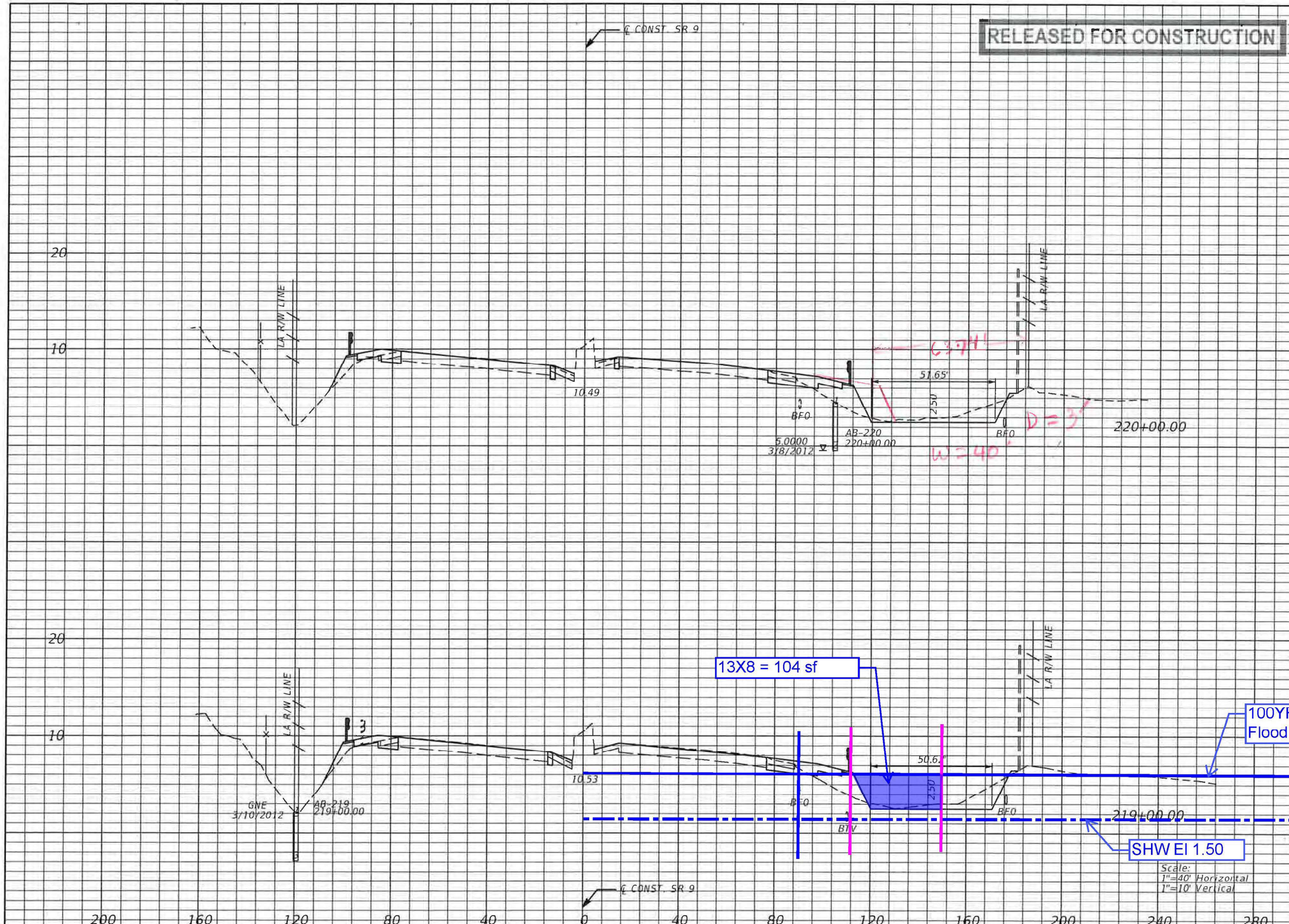
C. BRIAN FULLER, P.E. # 49524
METRIC ENGINEERING, INC
615 CRESCENT EXECUTIVE CT
SUITE 524
LAKE MARY, FLORIDA 32746
TEL. (407) 644-1898
FAX. (407) 644-1921
CERTIFICATE OF AUTHORIZATION 2294

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 286



Regular Exc.		Embankment	
A	V	A	V
49.5		48.0	
	196		167
56.1		42.3	
	181		188

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

C. BRIAN FULLER, P.E. # 49524
METRIC ENGINEERING, INC.
615 CRESCENT EXECUTIVE CT
SUITE 524
LAKE MARY, FLORIDA 32746
TEL (407) 644-1898
FAX. (407) 644-1921
CERTIFICATE OF AUTHORIZATION 2294
● ENGINEERS
● PLANNERS
● SURVEYORS

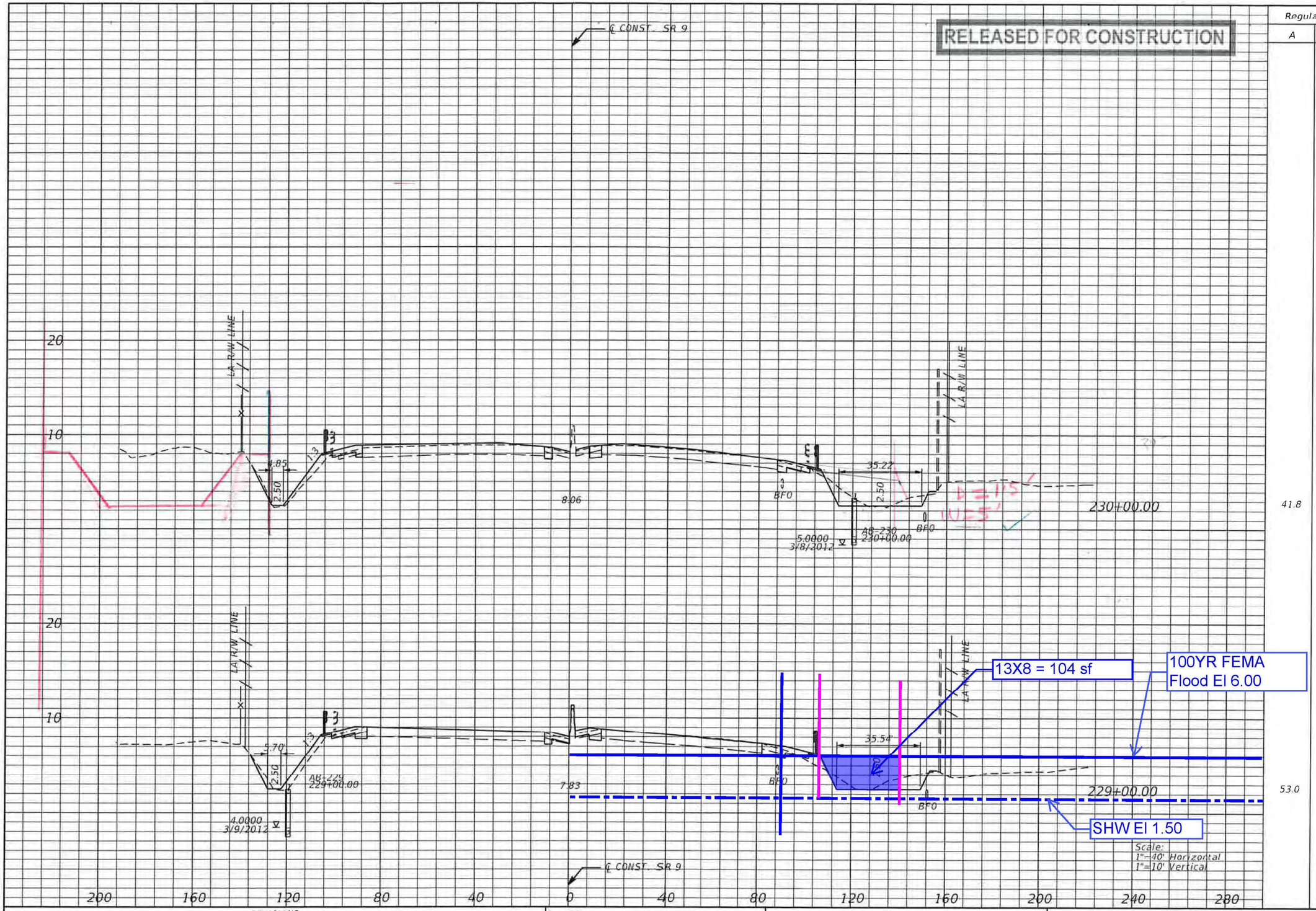
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO.
290

RELEASED FOR CONSTRUCTION



Scale:
1"=40' Horizontal
1"=10' Vertical

Regular Exc.		Embankment	
A	V	A	V
41.8		20.0	
	176		87
53.0		27.2	
	214		159

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

C. BRIAN FULLER, P.E. # 49524
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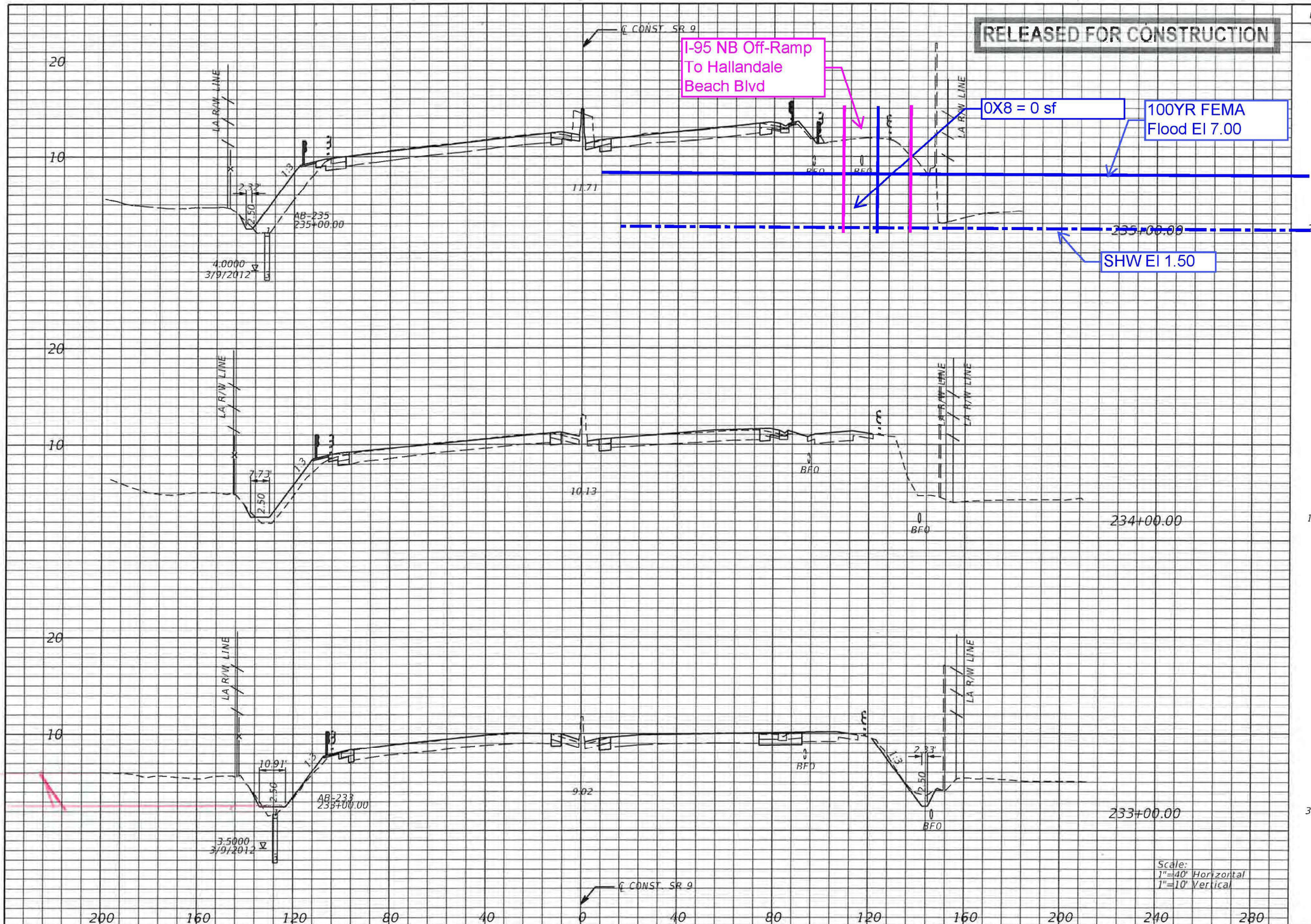
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 294

RELEASED FOR CONSTRUCTION



	Regular Exc.		Embankment	
	A	V	A	V
235+00.00	20.5		63.7	
		62		175
234+00.00	12.9		31.0	
		84		77
233+00.00	32.4		10.5	
		176		28

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DEPARTMENT OF TRANSPORTATION

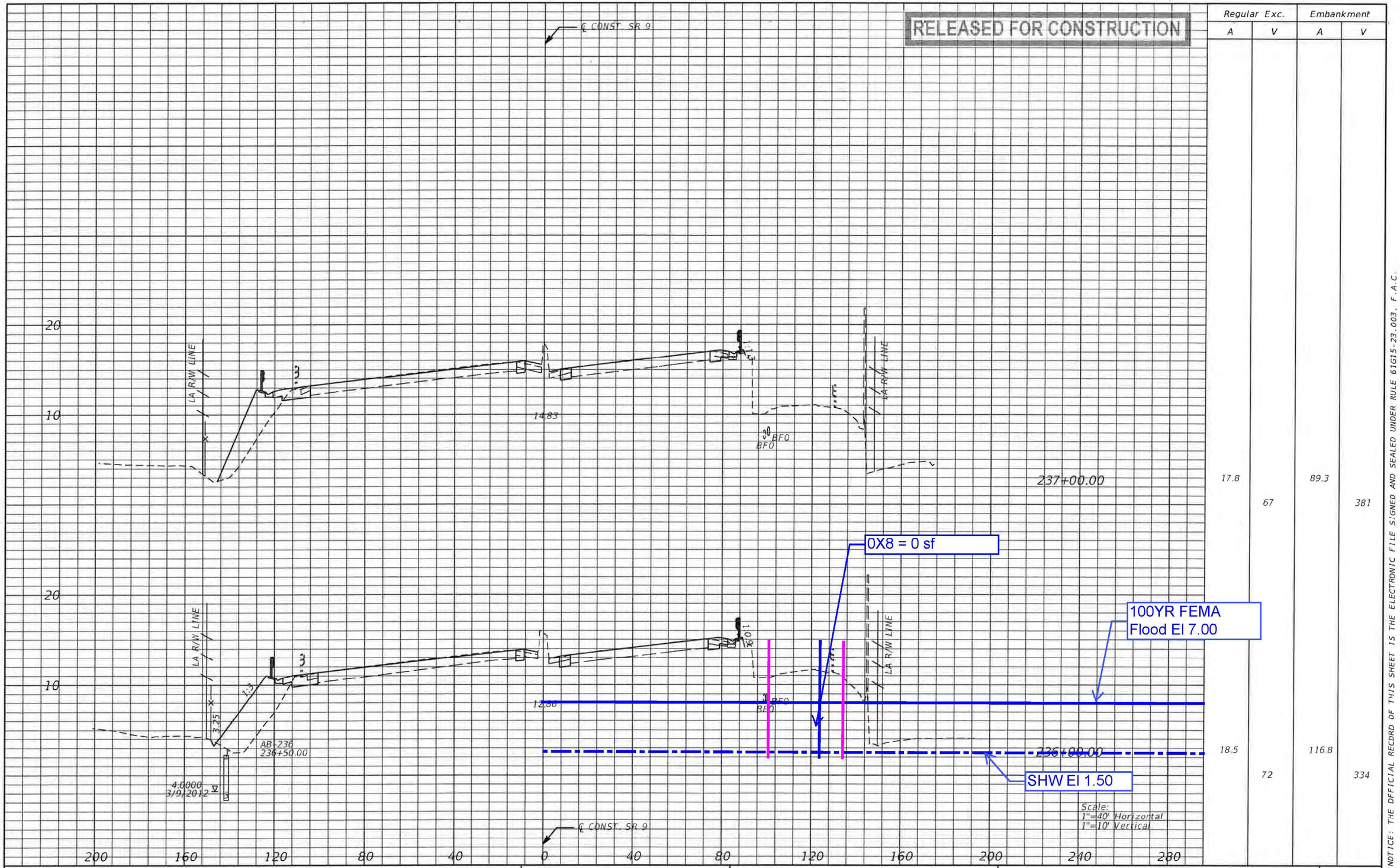
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 296

RELEASED FOR CONSTRUCTION

Regular Exc.		Embankment	
A	V	A	V
17.8		89.3	
	67		381
18.5		116.8	
	72		334



Scale:
1"=40' Horizontal
1"=10' Vertical

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REVISIONS			
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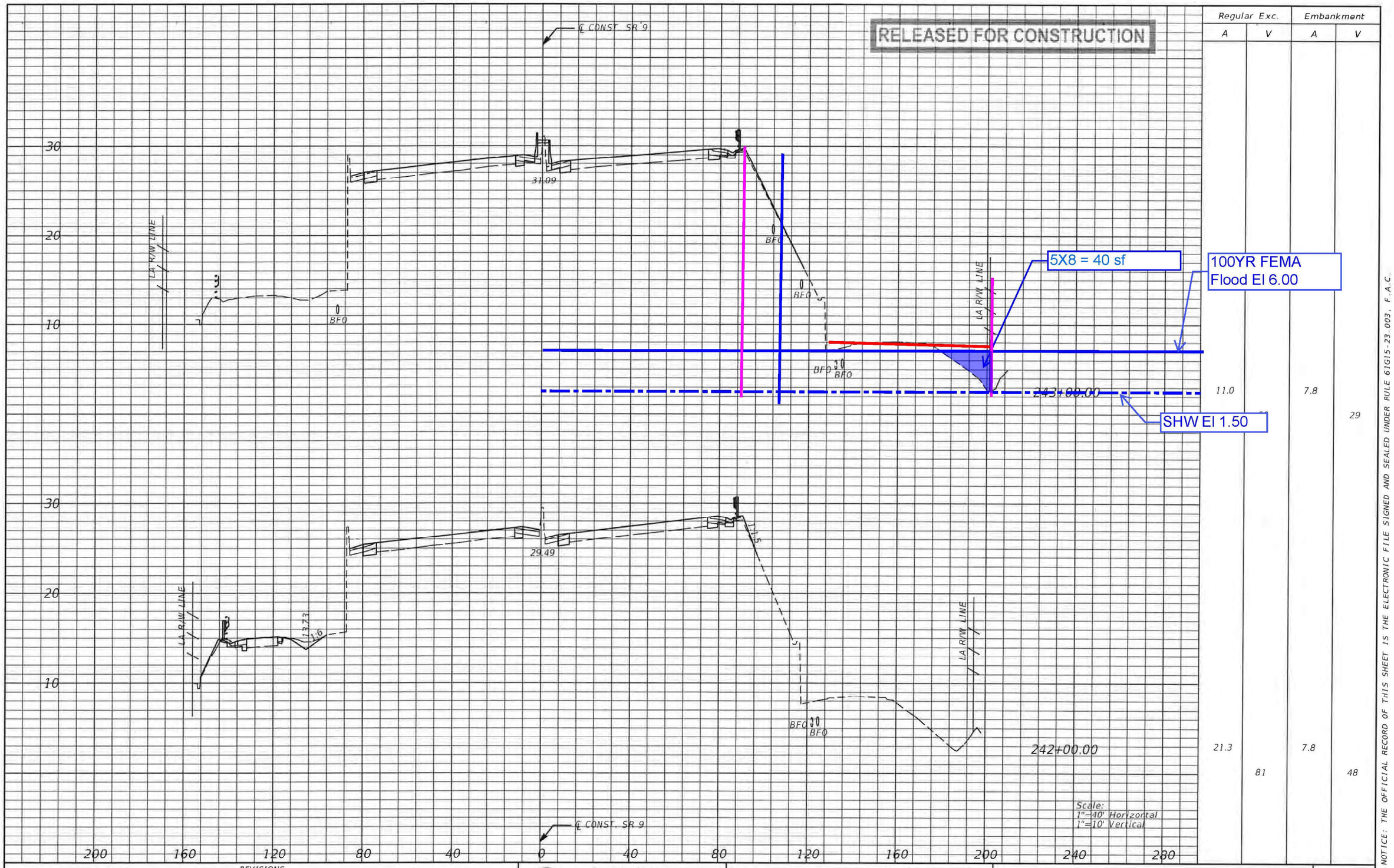
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 297

RELEASED FOR CONSTRUCTION



Regular Exc.		Embankment	
A	V	A	V
11.0		7.8	29
21.3	81	7.8	48

Scale:
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1"=10' Vertical

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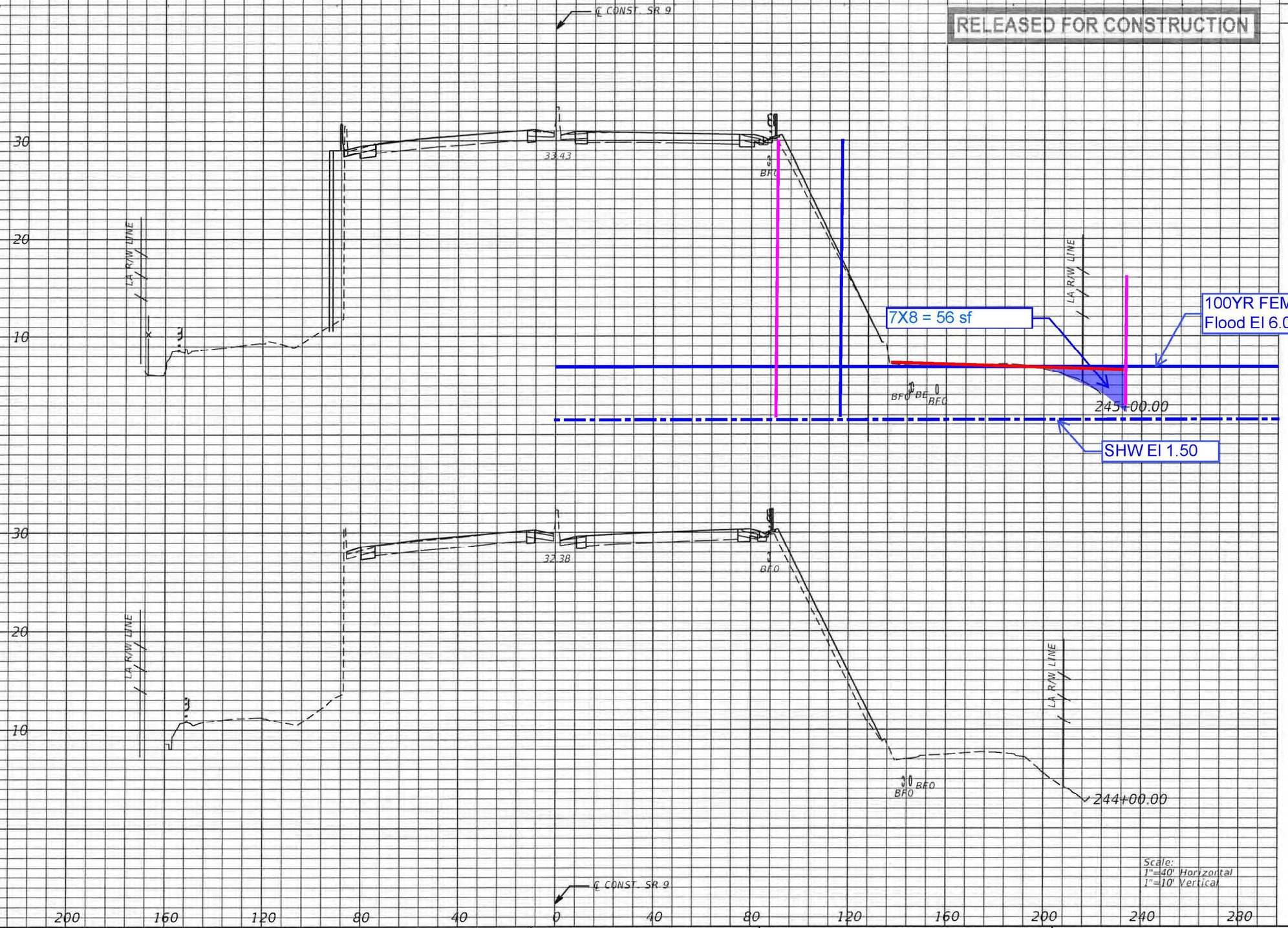
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO.
300

RELEASED FOR CONSTRUCTION



Regular Exc.		Embankment	
A	V	A	V
14.8	46	22.0	63
10.0	39	11.8	36

Scale:
1"=40' Horizontal
1"=10' Vertical

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C. BRIAN FULLER, P.E. # 49524
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO.
301

RELEASED FOR CONSTRUCTION

	Regular Exc.		Embankment	
	A	V	A	V
249+00.00	18.0	27	65.5	97
END BRIDGE STA. 248+60.11		0	65.5	0
BEGIN BRIDGE STA. 246+16.18	26.5	15	8.3	5
246+00.00	25.1	74	8.3	56

Scale:
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1"=10' Vertical

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REVISIONS			
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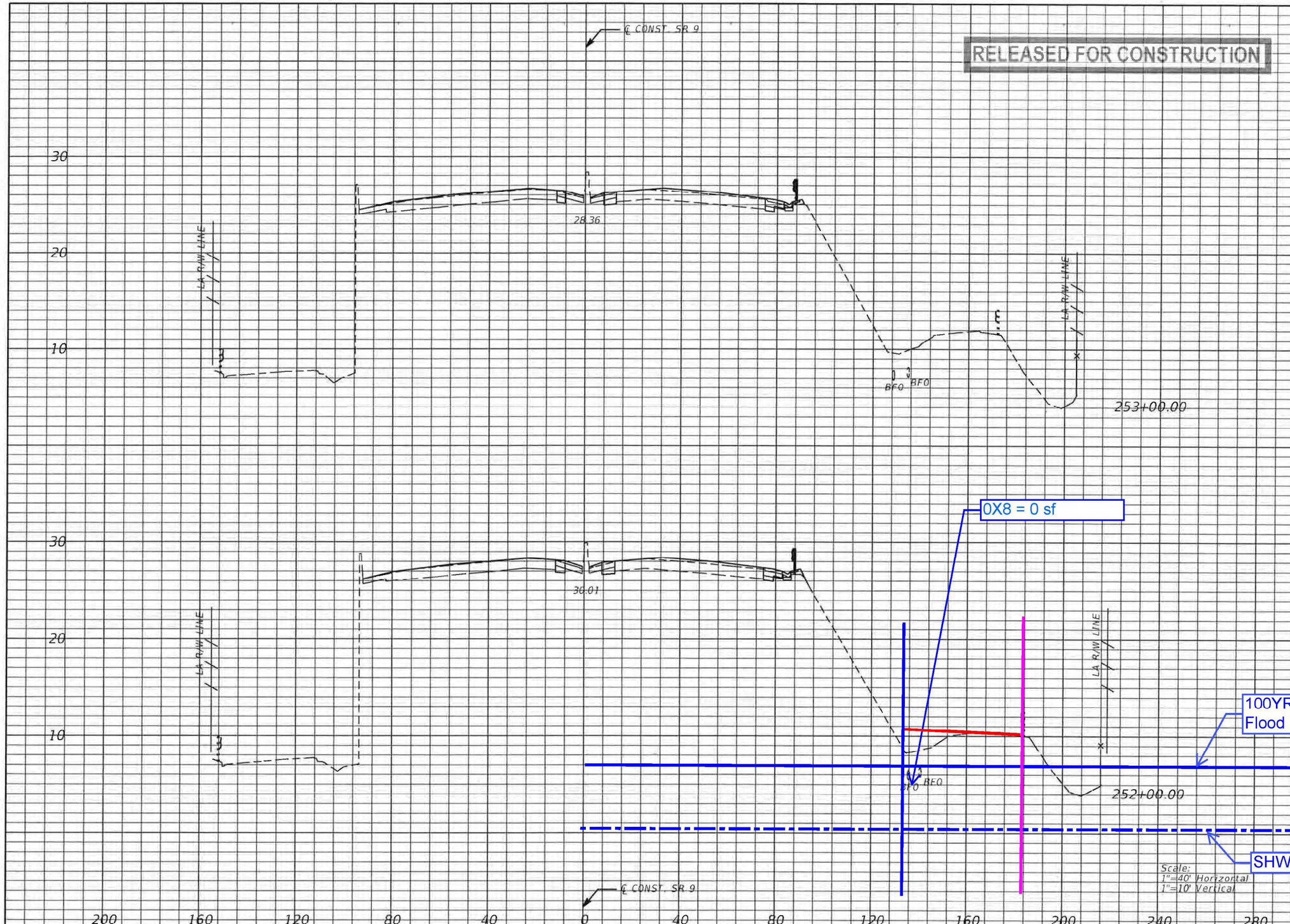
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 302



Regular Exc.		Embankment	
A	V	A	V
8.0		3.0	
	30		12
8.3		3.4	
	31		28

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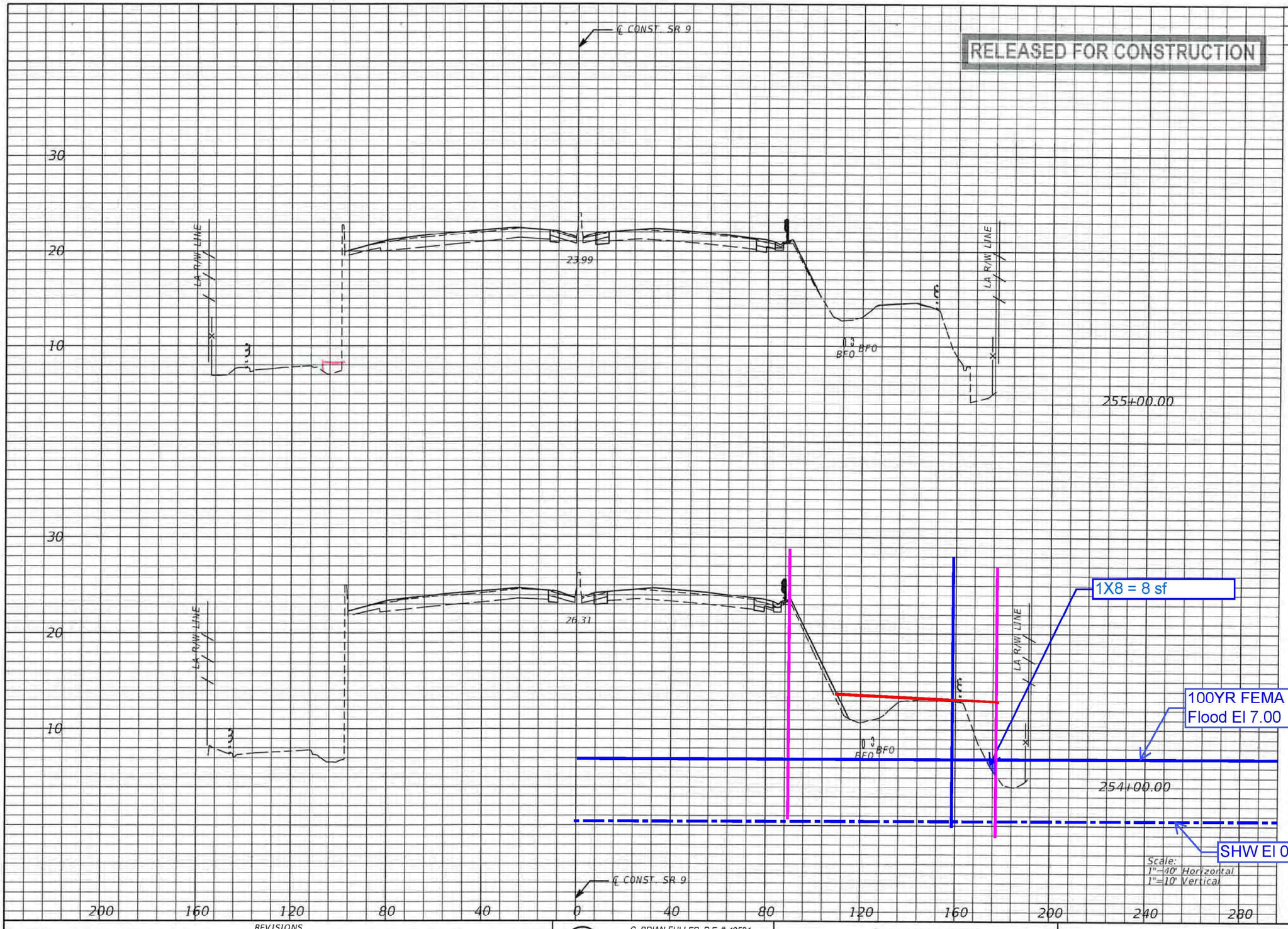
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO.
304



Regular Exc.		Embankment	
A	V	A	V
7.8		4.6	
	30		42
8.3		18.3	
	30		39

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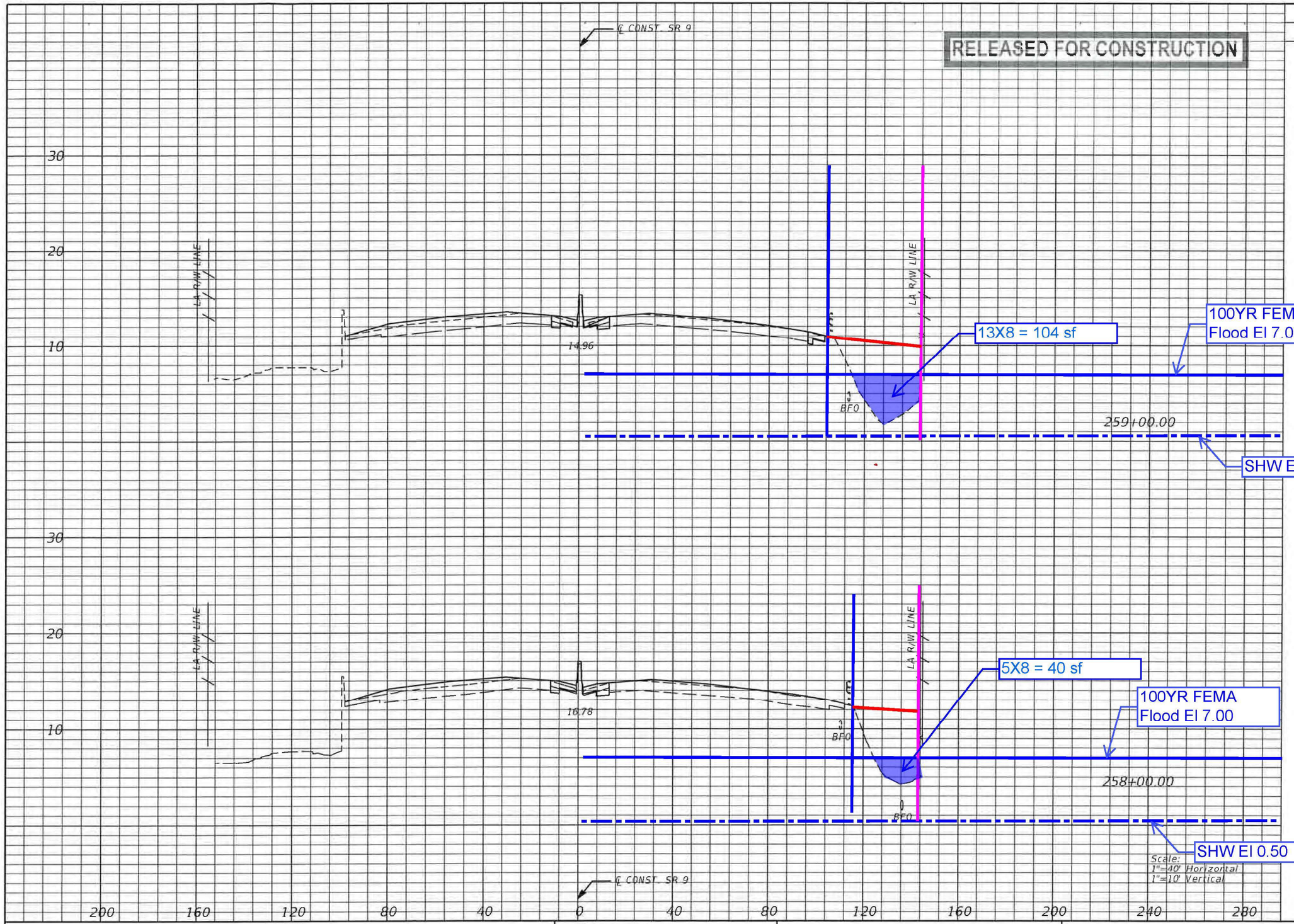
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO.
305

RELEASED FOR CONSTRUCTION



Regular Exc.		Embankment	
A	V	A	V
6.5	22	0.8	4
5.3	23	1.3	8

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METRIC ENGINEERING
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SUITE 524
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

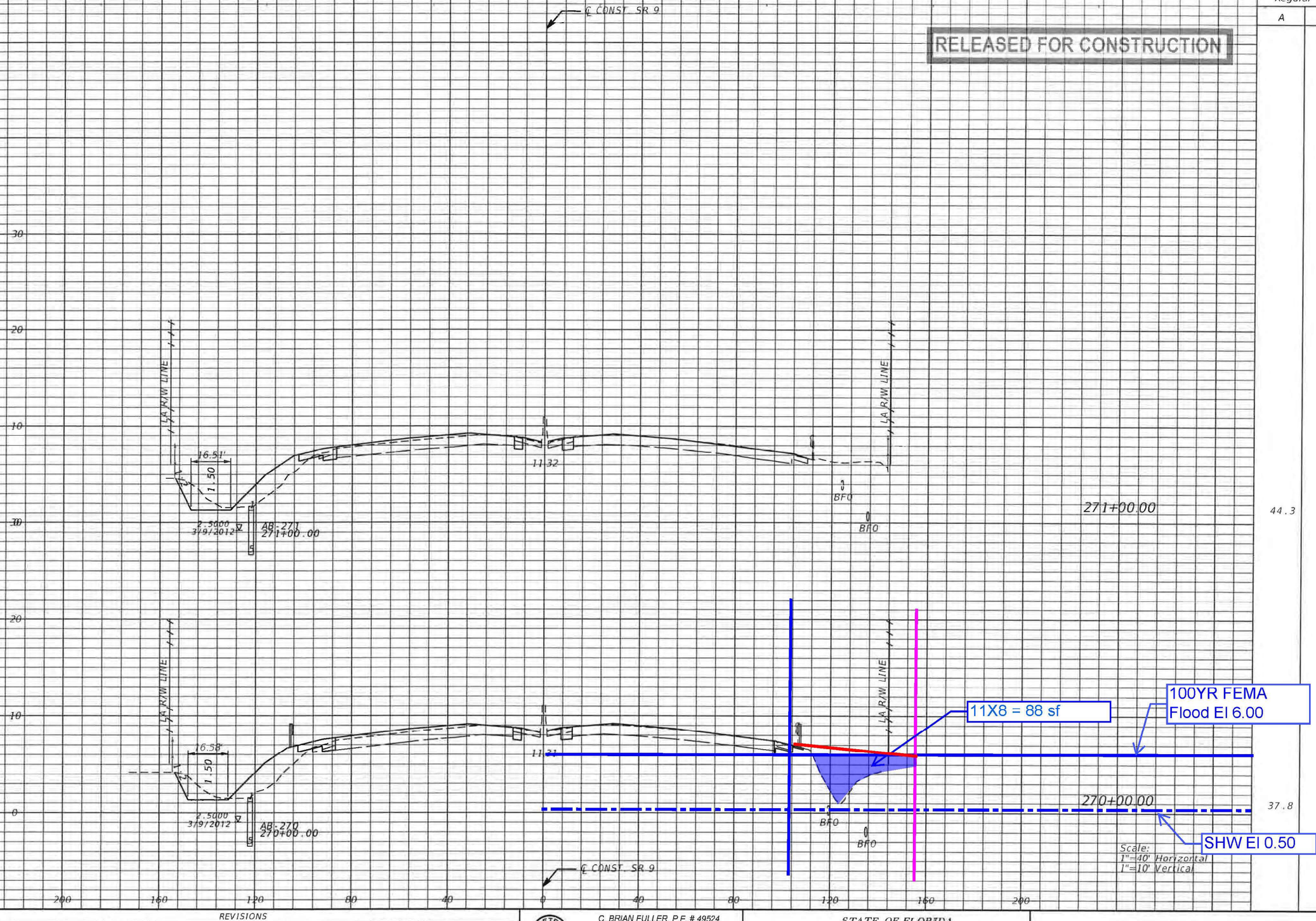
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 307

RELEASED FOR CONSTRUCTION

Regular Exc.		Embankment	
A	V	A	V
44.3	152	47.5	194
37.8	157	57.3	129



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REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

RETRIC ENGINEERING
• ENGINEERS
• PLANNERS
• SURVEYORS

C. BRIAN FULLER, P.E. # 49524
METRIC ENGINEERING, INC.
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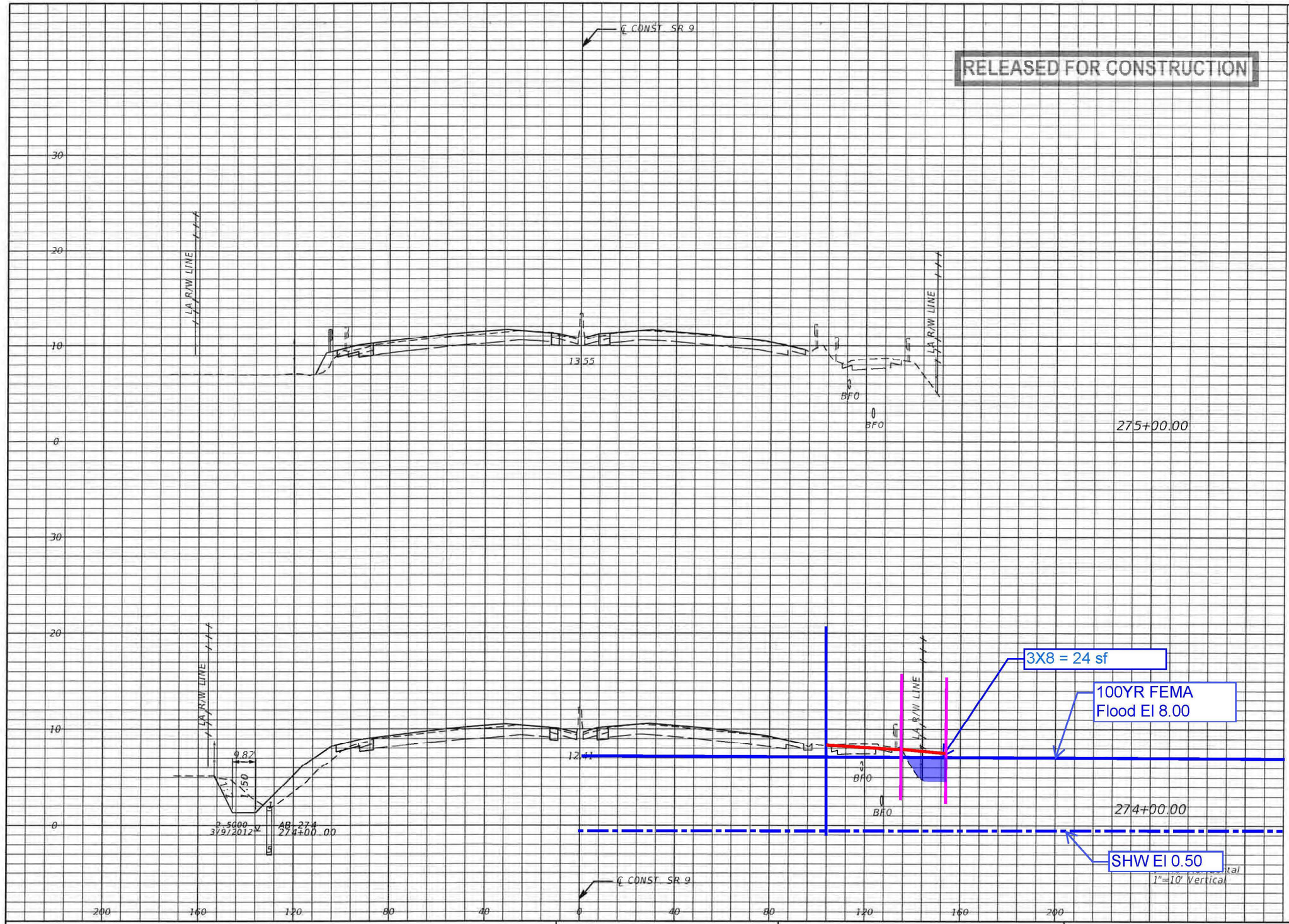
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 312

RELEASED FOR CONSTRUCTION



Regular Exc.		Embankment	
A	V	A	V
15.7	126	4.4	90
52.6	206	44.2	154

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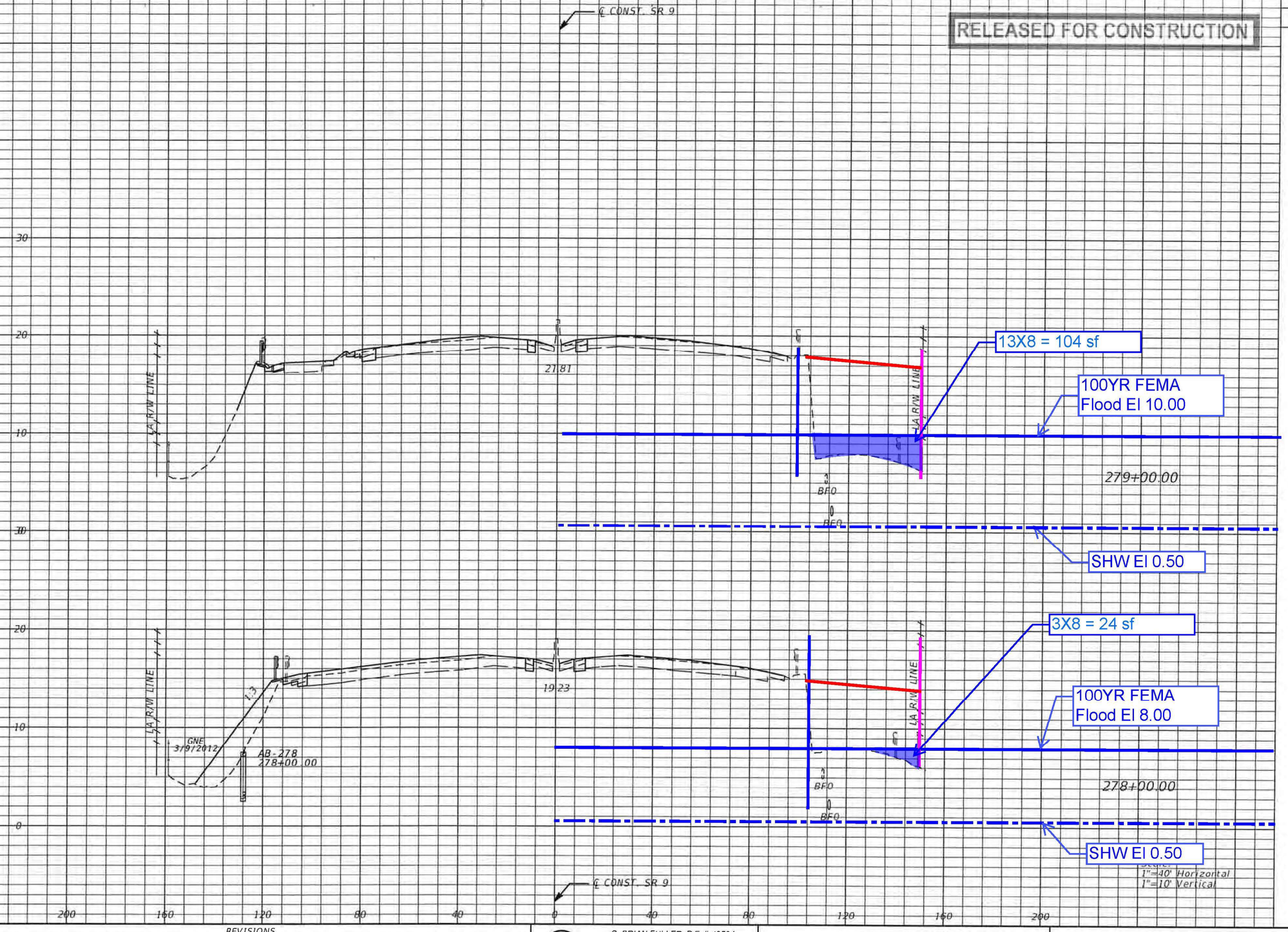
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 314

RELEASED FOR CONSTRUCTION



Regular Exc.		Embankment	
A	V	A	V
21.9	54	1.2	169
7.4	30	90.0	215

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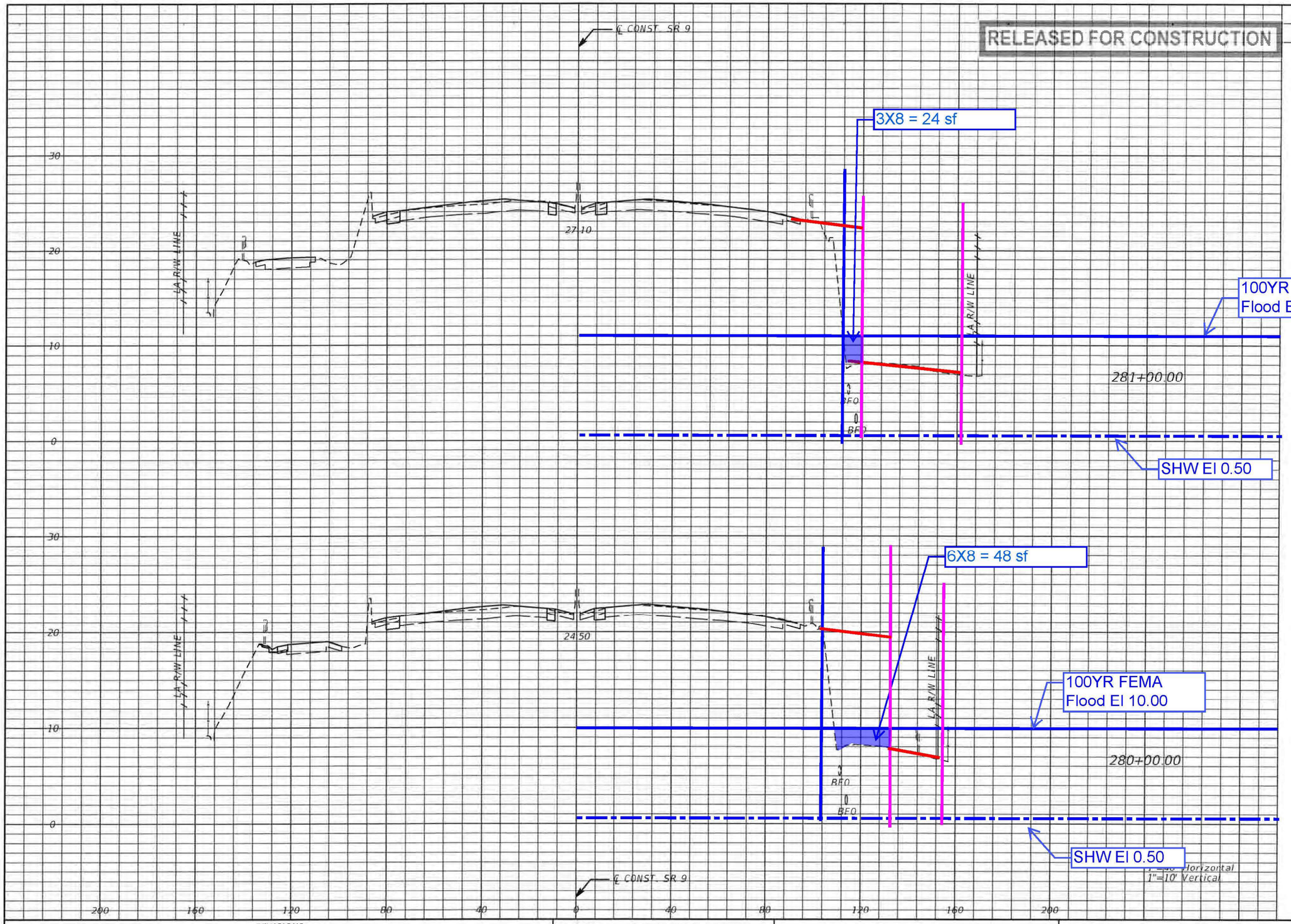
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 316

RELEASED FOR CONSTRUCTION



Regular Exc.		Embankment	
A	V	A	V
17.8	65	0.1	0
17.4	73	0.0	2

1"=40' Horizontal
1"=10' Vertical

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STATE OF FLORIDA
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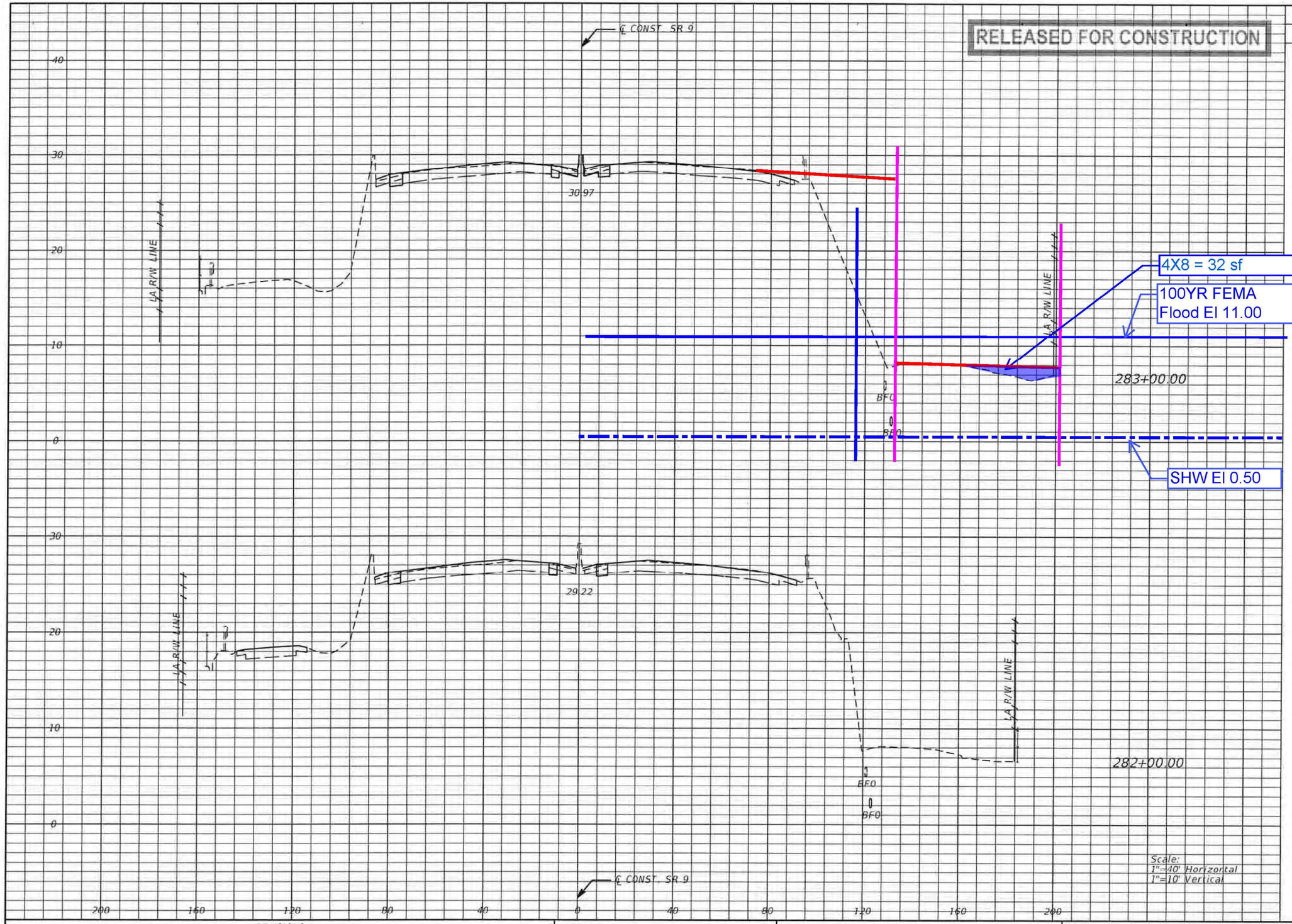
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 317

RELEASED FOR CONSTRUCTION



Scale:
1"=40' Horizontal
1"=10' Vertical

	Regular Exc.		Embankment	
	A	V	A	V
283+00.00	14.6	58	0.0	0
282+00.00	16.5	64	0.1	0

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REVISIONS			
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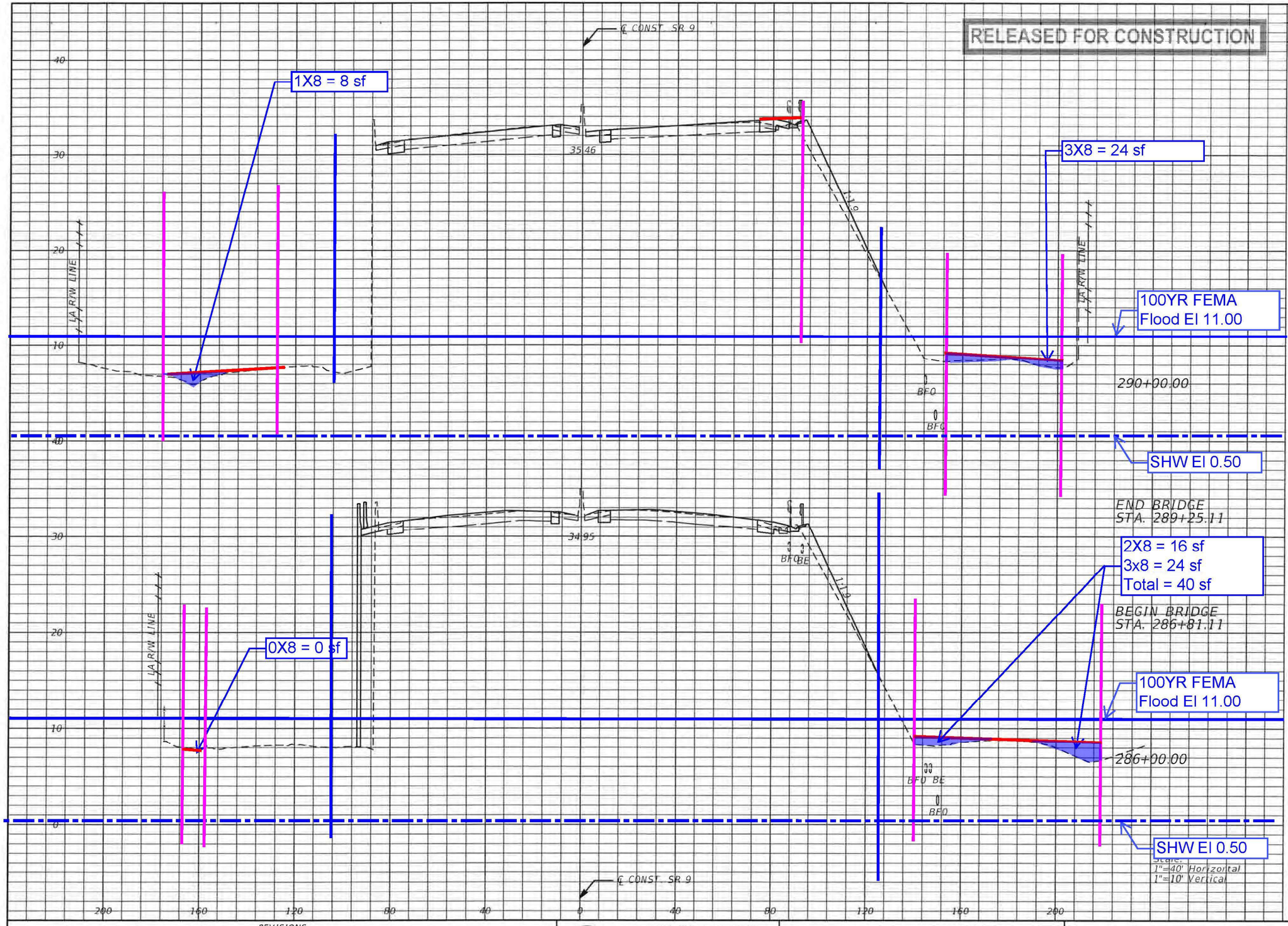
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 318

RELEASED FOR CONSTRUCTION



	Regular Exc.		Embankment	
	A	V	A	V
290+00.00	26.7	74	50.0	139
END BRIDGE STA. 289+25.11	26.7	0	50.0	0
BEGIN BRIDGE STA. 286+81.11	17.3	52	157.5	473
286+00.00	17.3	66	157.5	292

Scale:
1"=40' Horizontal
1"=10' Vertical

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 320

RELEASED FOR CONSTRUCTION

℄ CONST. SR 9

LA R/W LINE

26.21

1:5

BFG

296+00.00

1X8 = 8 sf

28.50

1:19

295+00.00

100YR FEMA
Flood El 11.00

SHW El 0.50

Scale:
1"=40' Horizontal
1"=10' Vertical

	Regular Exc.		Embankment	
	A	V	A	V
296+00.00	12.6	48	11.9	31
295+00.00	13.5	51	4.8	31

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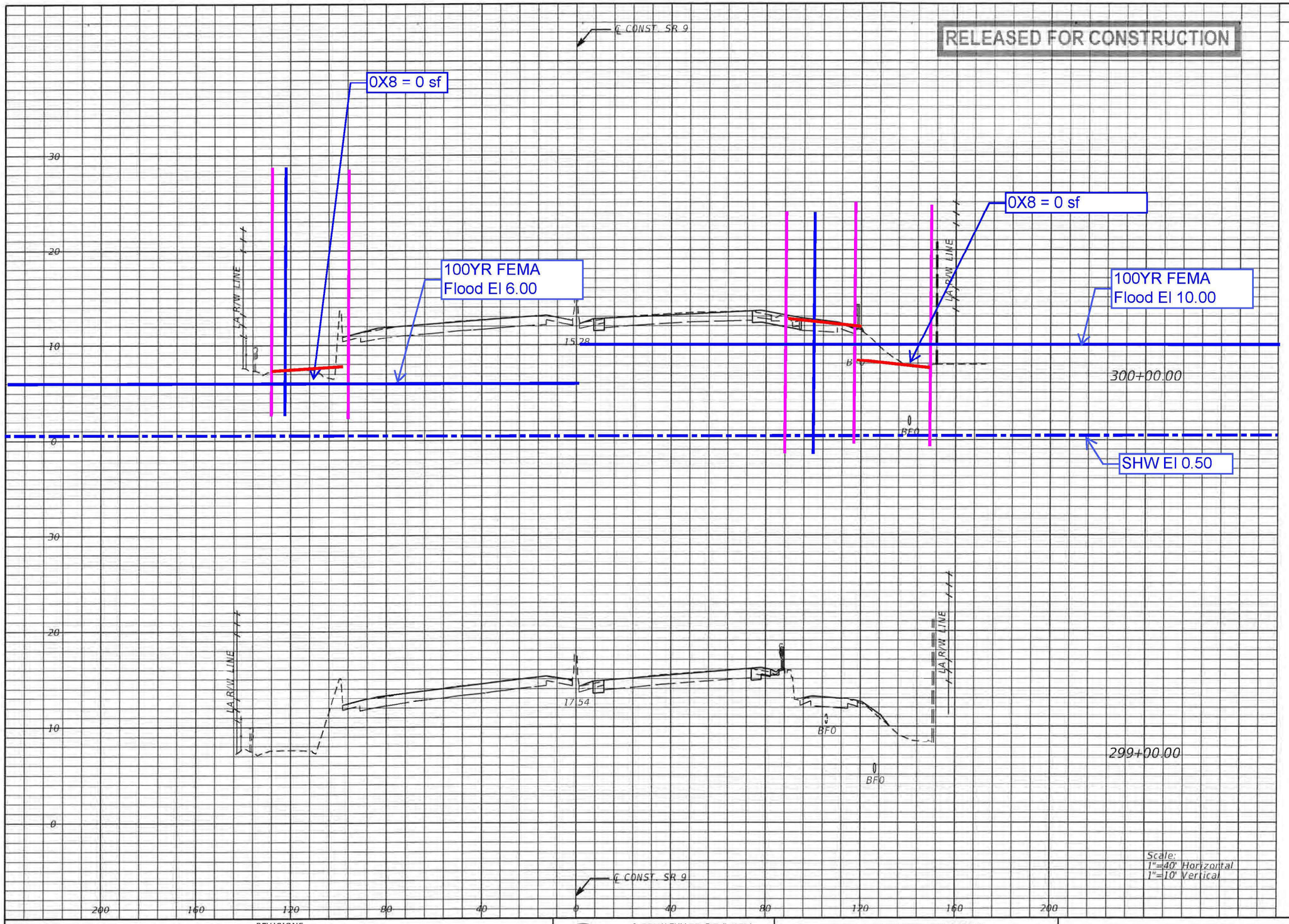
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 323

RELEASED FOR CONSTRUCTION



Regular Exc.		Embankment	
A	V	A	V
22.1	58	2.2	15
9.4	36	6.1	16

Scale:
1"=40' Horizontal
1"=10' Vertical

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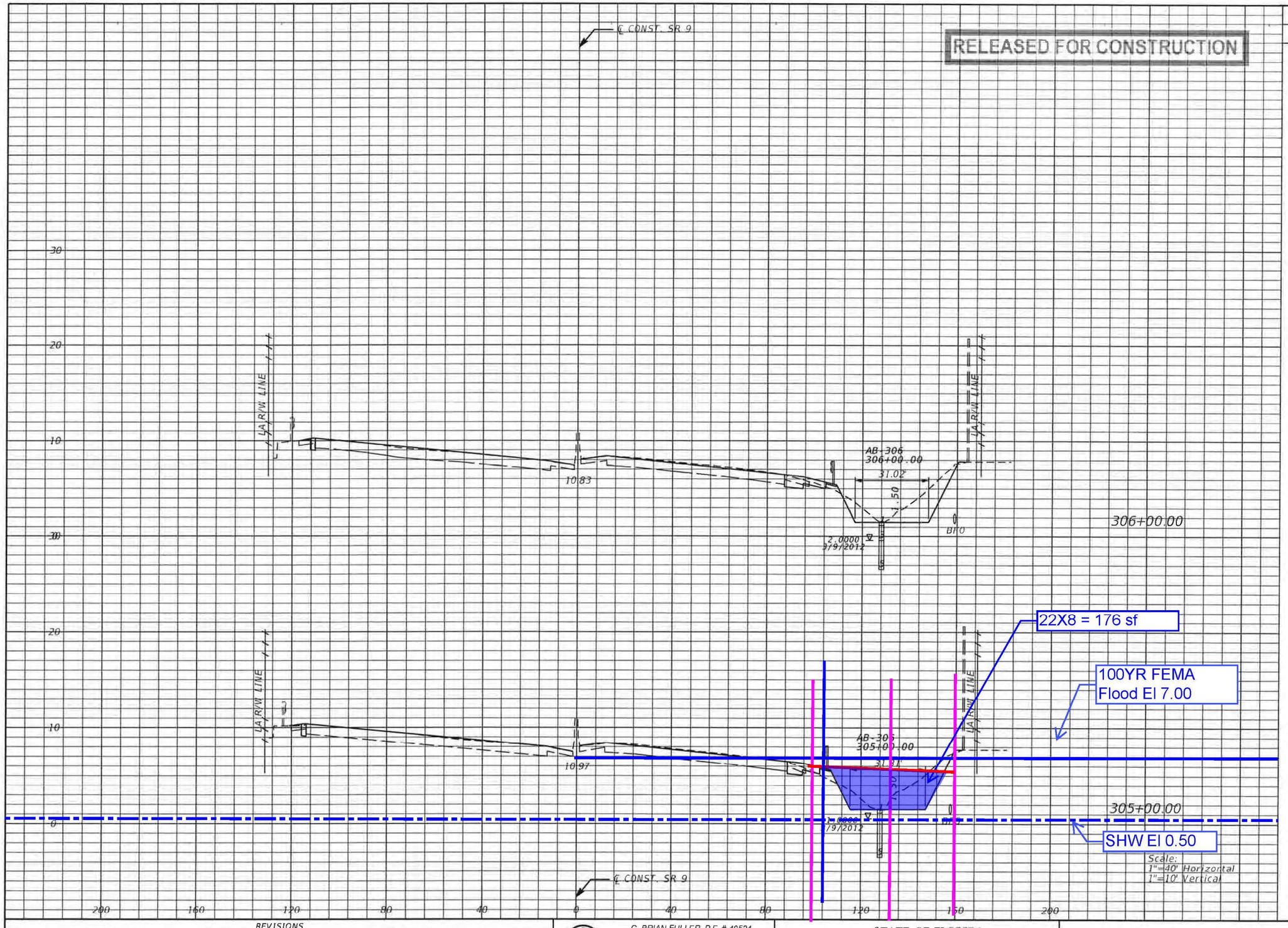
LAKE MARY, FLORIDA 32746
TEL. (407) 644-1898
FAX. (407) 644-1921
CERTIFICATE OF AUTHORIZATION 2294

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO.
325



Regular Exc.		Embankment	
A	V	A	V
84.6	309	8.2	28
82.0	344	6.8	18

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DATE	DESCRIPTION	DATE	DESCRIPTION

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METRIC ENGINEERING, INC.
615 CRESCENT EXECUTIVE CT
SUITE 524
LAKE MARY, FLORIDA 32746
TEL. (407) 644-1898
FAX. (407) 644-1921
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328

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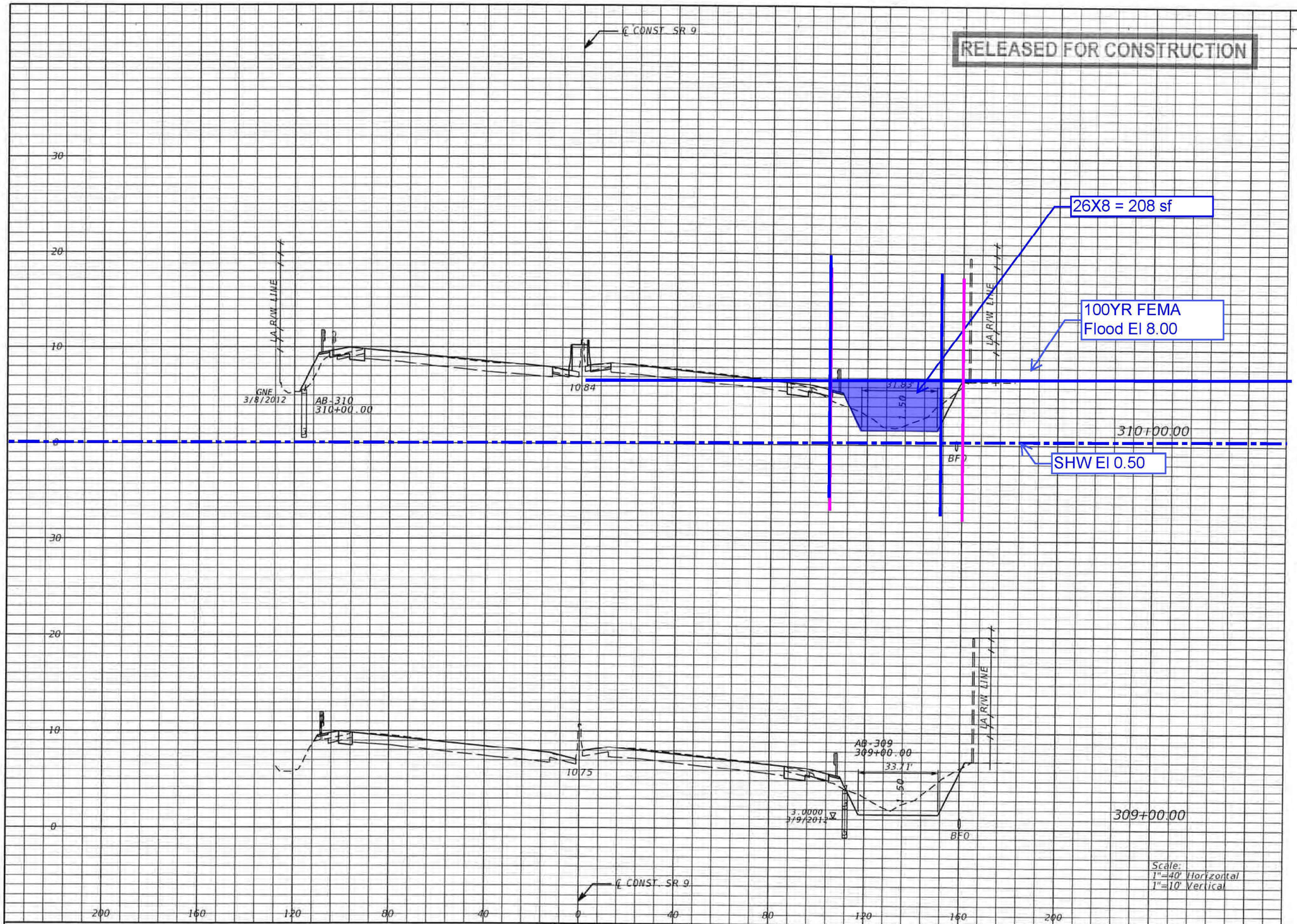

Regular Exc.		Embankment	
A	V	A	V
65.0	290	28.3	73
91.7	336	11.0	47

Scale:
1"=40' Horizontal
1"=10' Vertical

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615 CRESCENT EXECUTIVE CT
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LAKE MARY, FLORIDA 32746
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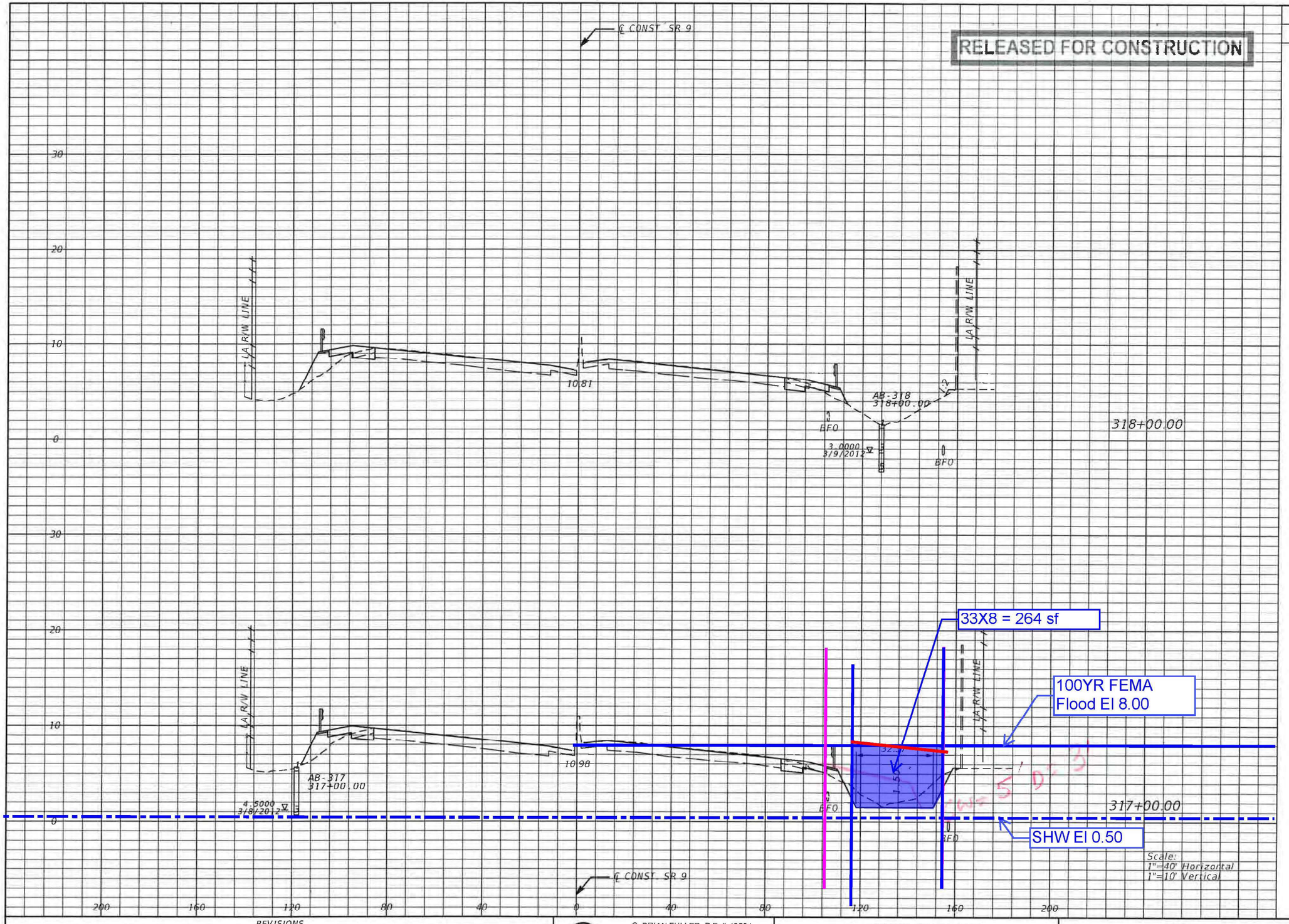

Scale:
1"=40' Horizontal
1"=10' Vertical

Regular Exc.		Embankment	
A	V	A	V
18.0	154	80.9	212
65.0	236	33.5	131

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 334

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5X8 = 40 sf

100YR FEMA
Flood El 8.00

SHW El 0.50

℄ CONST. SR 9

9.72

10.05

10.15

321+00.00

320+00.00

319+00.00

AB-321
321+00.00
3.0000
3/8/2012

AB-320
320+00.00
3.0000
3/9/2012

AB-319
319+00.00 R T
4.5000
3/8/2012

LA R/W LINE

RT R/W LINE

1:3

BFO

	Regular Exc.		Embankment	
	A	V	A	V
321+00.00	8.9	34	73.4	305
320+00.00	9.6	51	91.2	339
319+00.00	18.2	67	91.7	320

Scale:
1"=40' Horizontal
1"=10' Vertical

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING
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SUITE 524
LAKE MARY, FLORIDA 32746
TEL (407) 644-1898
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DEPARTMENT OF TRANSPORTATION

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SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 335

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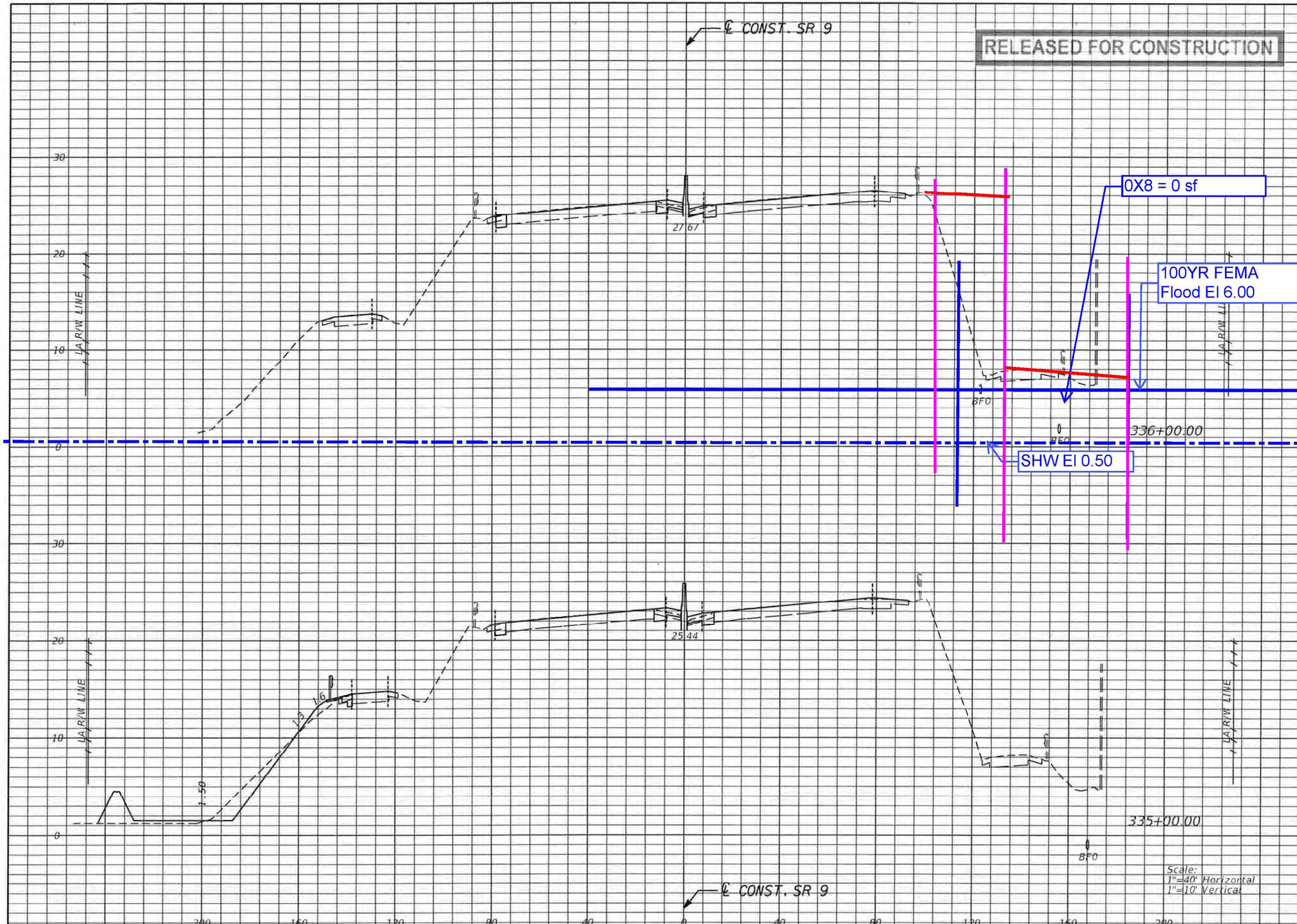

Regular Exc. A	Regular Exc. V	Embankment A	Embankment V
14.4	120	0.0	91
50.3	227	49.0	119

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METRIC ENGINEERING, INC
615 CRESCENT EXECUTIVE CT
SUITE 524
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 341

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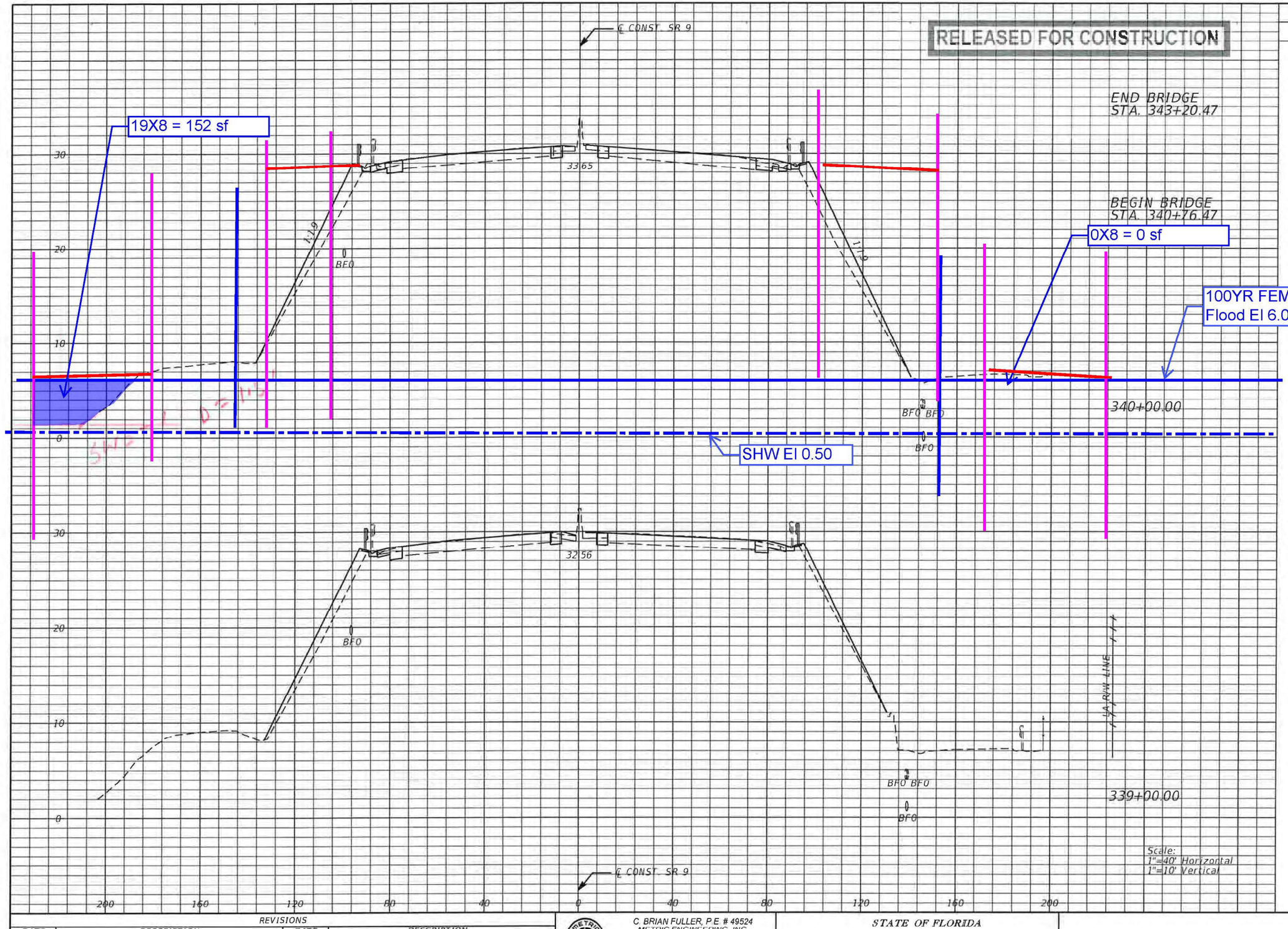

Regular Exc.		Embankment	
A	V	A	V
22.0	0	119.8	0
20.5	58	146.5	415
20.5	74	146.5	438
19.4	62	90.1	167

Scale:
1"=40' Horizontal
1"=10' Vertical

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SUITE 524
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FAX. (407) 644-1921
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 343

RELEASED FOR CONSTRUCTION

℄ CONST. SR 9

3176

BFO

L.A. R/W LINE

345+00.00

2X8 = 16 sf

3315

1:1.6

1:1.6

0X8 = 0 sf

100YR FEMA
Flood El 6.00

344+00.00

SHW El 0.50

Scale:
1"=40' Horizontal
1"=10' Vertical

Regular Exc.		Embankment	
A	V	A	V
19.8	77	54.8	323
22.0	65	119.8	353

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SUITE 524
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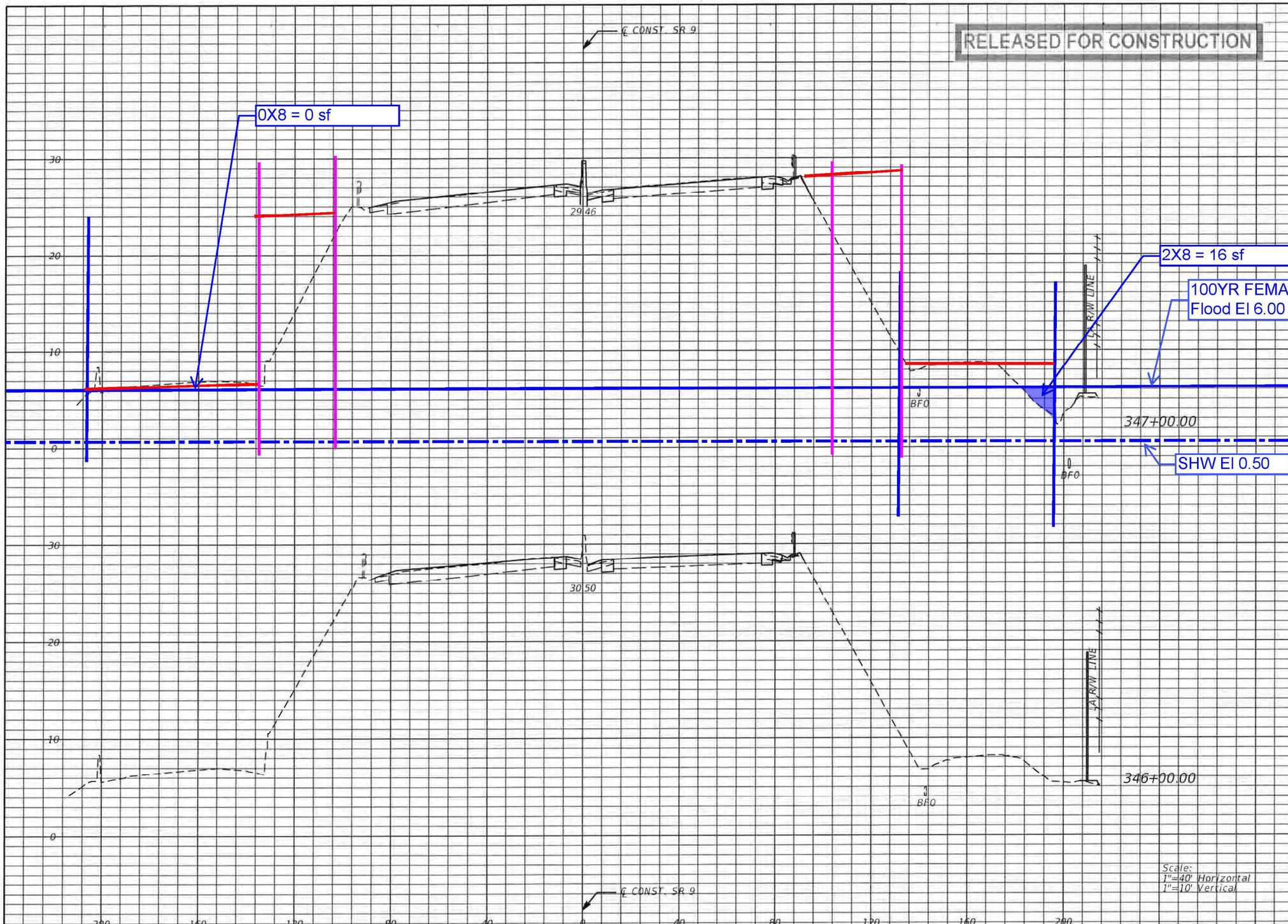
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 344



Regular Exc.		Embankment	
A	V	A	V
17.7	66	0.8	5
17.7	69	2.1	105

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SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO.
345

RELEASED FOR CONSTRUCTION

℄ CONST. SR 9

30
20
10
0

19.17

BFG

L/A R/W LINE

351+00.00

2X8 =16 sf

3X8 = 24 sf

23.04

100YR FEMA
Flood El 6.00

350+00.00

SHW El 0.50

Scale:
1"=40' Horizontal
1"=10' Vertical

℄ CONST. SR 9

200 160 120 80 40 0 40 80 120 160 200

Regular Exc.		Embankment	
A	V	A	V
17.2	68	3.4	9
19.4	72	1.4	7

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615 CRESCENT EXECUTIVE CT
SUITE 524
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TEL. (407) 644-1898
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO. 347

RELEASED FOR CONSTRUCTION

℄ CONST. SR 9

11.35

BFO

354+00.00

0X8 =8 sf

6X8 =48 sf

100YR FEMA
Flood El 6.00

12.33

BFO

353+00.00

SHW El 0.50

4X8 =32 sf

2X8 =16 sf

100YR FEMA
Flood El 6.00

15.17

BFO

352+00.00

SHW El 0.50

LA R/W LINE

20
10
0

200 160 120 80 40 0 40 80 120 160 200

Scale:
1"=40' Horizontal
1"=10' Vertical

Regular Exc.		Embankment	
A	V	A	V
29.8	84	0.0	2
15.6	64	1.1	6
19.2	67	2.1	10

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615 CRESCENT EXECUTIVE CT
SUITE 524
LAKE MARY, FLORIDA 32746
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SR 9	BROWARD MIAMI-DADE	422796-1-52-01 422796-2-52-01

CROSS SECTIONS

SHEET NO.
348

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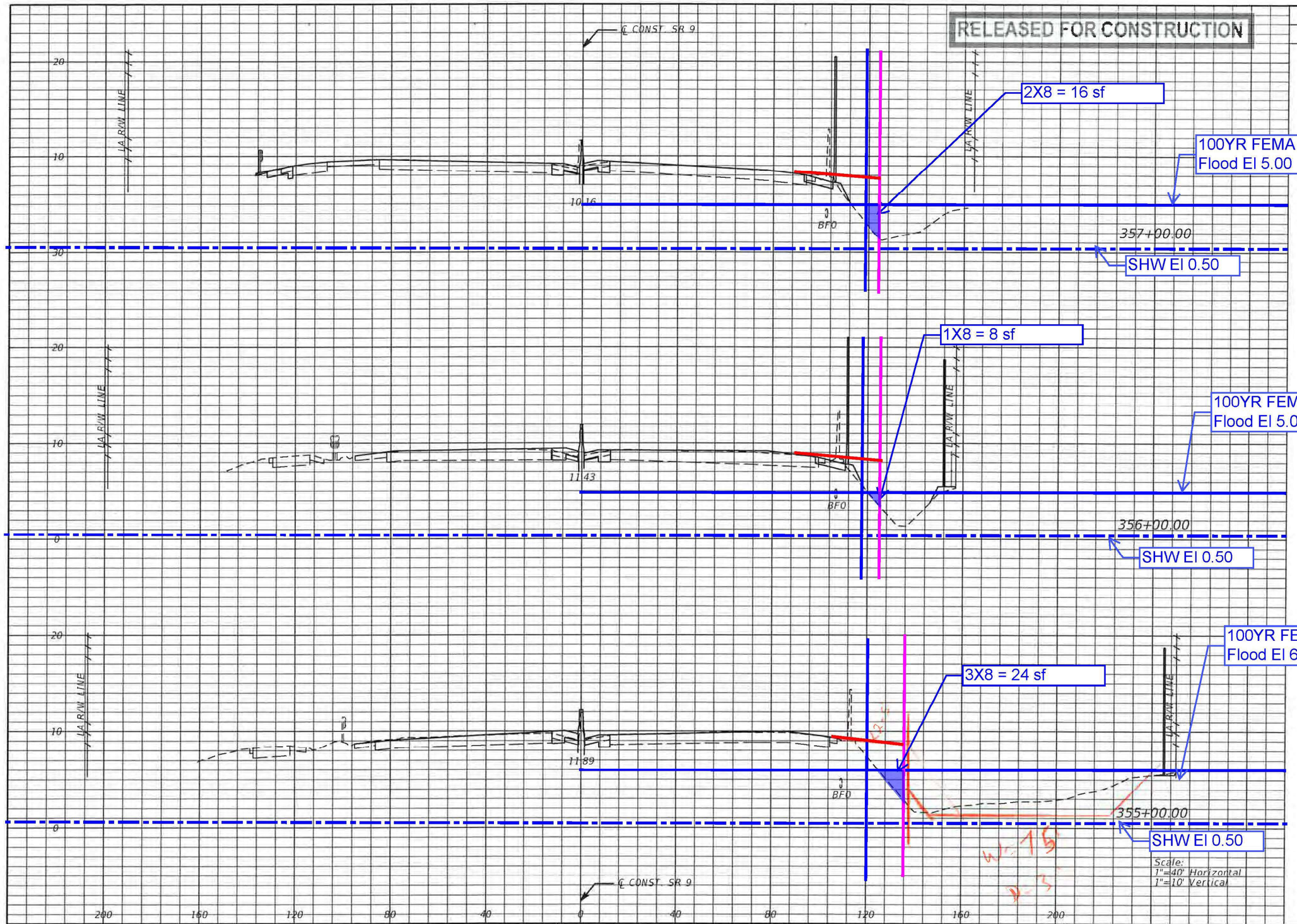

	Regular Exc.		Embankment	
	A	V	A	V
357+00.00	13.2	44	2.5	20
356+00.00	10.8	46	8.4	16
355+00.00	14.0	81	0.0	0

Scale:
1"=40' Horizontal
1"=10' Vertical

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SUITE 524
LAKE MARY, FLORIDA 32746
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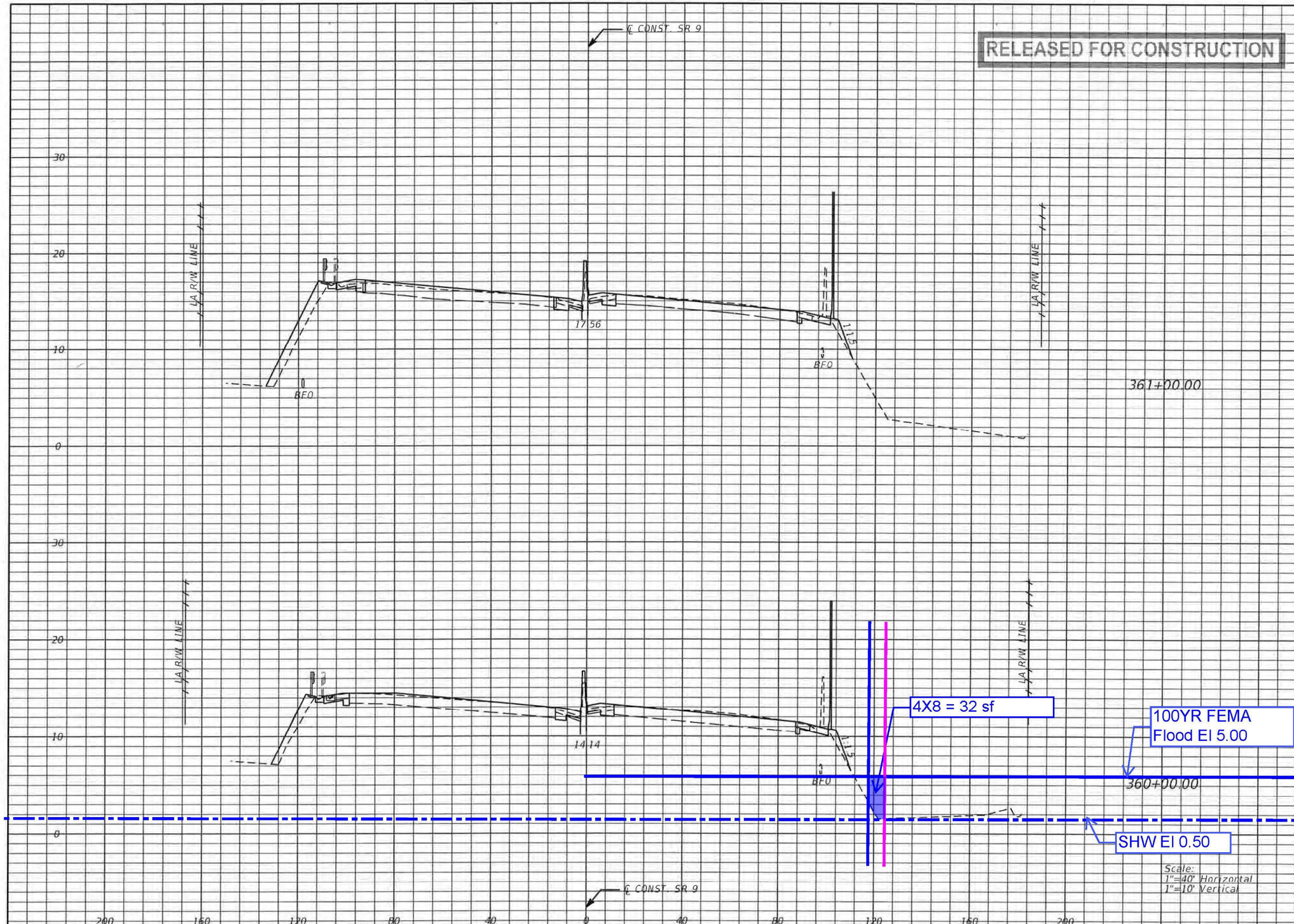
CROSS SECTIONS

SHEET NO. 349



Regular Exc.		Embankment	
A	V	A	V
29.9	100	69.3	245
24.3	85	63.0	159

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SHEET NO.
351

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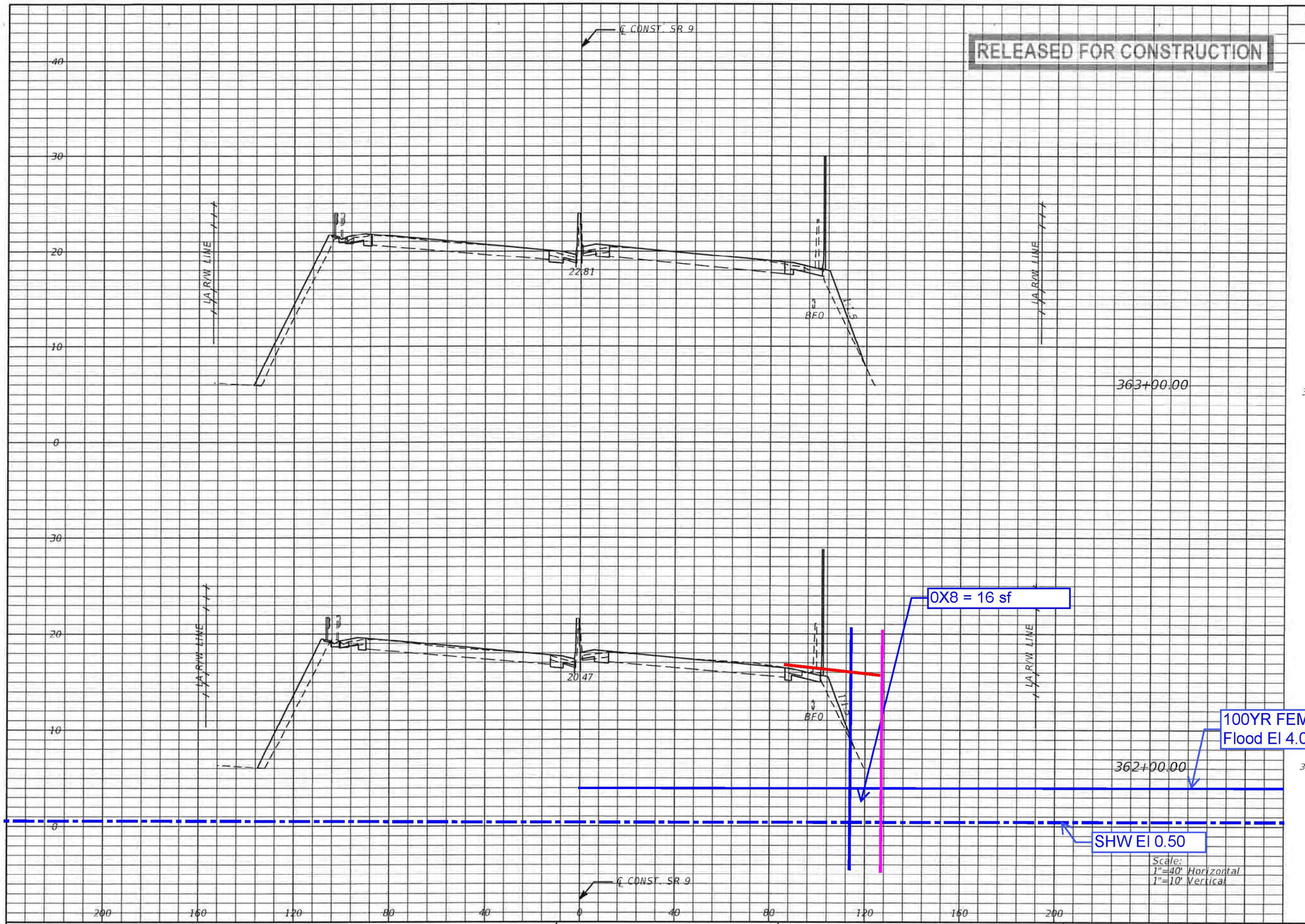

Regular Exc.		Embankment	
A	V	A	V
30.3	118	137.6	467
33.4	117	114.4	340

Scale:
1"=40' Horizontal
1"=10' Vertical

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CROSS SECTIONS

SHEET NO. 352

APPENDIX I

PRELIMINARY GEOTECHNICAL REPORT

REPORT OF GEOTECHNICAL ENGINEERING SERVICES
S.R. 9 MISCELLANEOUS STRUCTURES, ROADWAY WIDENING AND PAVEMENT CORES
INTERSECTION OF S.R. 9 AND PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FP ID NO. 436303-1-52-01 | T.W.O. #12
PSI PROJECT NO. 0397-1021

February 4, 2016
Updated February 23, 2016

February 4, 2016
Updated February 23, 2016

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT 4 & 6 MATERIALS AND RESEARCH OFFICE
14200 West S.R. 84
Davie, Florida 33323-5300

Attention: Mr. Matthew Gisondi, P.E.
Geotechnical Engineer

Re: Report of Geotechnical Engineering Services
S.R. 9 Miscellaneous Structures, Roadway Widening and Pavement Cores
Intersection of S.R. 9 and Pembroke Road
Broward County, Florida
FP ID No.: 427937-1-52-01 | T.W.O. #12
PSI Project No.: 0397-1021

Dear Mr. Gisondi:

Professional Service Industries, Inc. (PSI) has completed a geotechnical engineering study in connection with the noted project. Our services were provided in general accordance with our proposal No. 0397-165708. Authorization to perform our services was provided by means of Task Work Order (T.W.O.) No. 12, dated, December 12, 2015 to our existing contract with FDOT (Contract No. C9L13), executed on July 30, 2015.

We trust this report is adequate for your current needs; however, should you have any questions or should additional information be required, please do not hesitate to contact our office at (305) 471-7725.

Respectfully Submitted,

Professional Service Industries, Inc.
Certificate of Authorization No: 3684
THIS DOCUMENT HAS BEEN DIGITALLY
SIGNED AND SEALED BY:

PRINTED COPIES OF THIS DOCUMENT ARE
NOT CONSIDERED SIGNED AND SEALED. THE
SIGNATURE MUST BE VERIFIED ON THE
ELECTRONIC DOCUMENTS

Paul D. Passe, P.E.
Chief Engineer
FL. License No. 34750

Riley O'Brien, M.E., E.I.
Department Manager

cc: Addressee (PDF)
File (1 and PDF)

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Figure 2: USDA Soils Survey Map
Figure 3: USGS Topographic Map
Figures 4 through 7: Pavement Core Photographs/Coring Location Plans
APPENDIX B
Sheet 1: Report of Core Borings (Boring Location Plan included as an inset)
Sheet 2: Roadway Soil Profiles (Boring Location Plan included as an inset)
Sheet 3: Roadway Soils Survey
APPENDIX C
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Embankment Resilient Modulus Pavement Design
APPENDIX D
FHWA Checklist

1.0 PROJECT INFORMATION

The subject project is located at the intersection of S.R. 9 and Pembroke Road in Broward County, Florida. More specifically, the project includes the S.R. 9 north and southbound off-ramps and associated intersection improvements. A site vicinity map identifying the project location with respect to existing streets and features is presented in **Figure 1** of **Appendix A.**

Currently, plans are underway to improve the referenced off-ramps and intersection. As part of the improvements, the following new developments are planned:

- S.R. 9 north and southbound off-ramps will be widened to include an additional outside turn lane.
- The existing mast arm at the northeast corner of the intersection will be replaced
- Milling and resurfacing, as well as the addition of sidewalks are also planned along the off-ramps.

If any of the noted information is incorrect or has changed, please notify PSI so that we may amend the recommendations presented in this report, if appropriate.

2.0 FIELD EXPLORATIONS AND SUBSURFACE CONDITIONS

2.1 GENERAL

The field scope of services for the project included site reconnaissance, marking the field exploration locations, clearing underground utilities, maintenance of traffic (MOT), and conducting Standard Penetration Test (SPT) borings/sampling. The approximate locations at which the various field explorations were performed are presented as a Boring Location Plan within **Sheets 1** and **2** of **Appendix B.**

Plane coordinates data was collected at the field exploration locations using a hand held GPS instrument (Garmin 64 map) with the reported data being accurate to within 15 feet. The plane coordinates data is included within the Soil Profile sheets, as well as within **Table 1** of **Appendix C**. In addition **Table 1** within **Appendix C** includes, the following information:

- Northing/easting coordinates.
- Station/offset – interpreted from the provided Plan Sheet No. 47 dated December 31, 2013.
- Boring depths and groundwater depth.

Attenuator trucks, police officers, barricades, cones and sign devices were used as necessary and in general compliance with FDOT Design Standards (Index 600 series).

2.2 SPT BORINGS

To evaluate the subsurface conditions at the site, we drilled/sampled seven SPT borings that were advanced to depths ranging from 6 to 25 feet below existing grade. The SPT borings were performed using a CME-55 truck mounted drilling rig equipped with an automatic hammer.

After seating the sample spoon six inches, the number of successive blows required to drive the sampler twelve inches into the soil constitutes the test result commonly referred to as the "N" value. The “N” value has been empirically correlated with various soil properties and is considered

to be indicative of the relative density of cohesionless soils and the consistency of cohesive materials. The recovered split spoon samples were visually classified in the field and transported to our office for further review. Following completion of our field services, all boreholes were grout sealed, the asphalt surface patched where necessary and the areas around the test location generally cleaned as required.

2.3 PERCOLATION TESTS

PSI performed a percolation test at locations B-3 and B-5, with testing performed at depths of 10, 15 and 20 feet below grade. The percolation tests were performed in general accordance with the South Florida Water Management District (SFWMD) procedures for the "Usual Condition Constant Head" Percolation Test. SPT sampling was performed simultaneously as the boreholes were advanced using a 6-inch diameter casing. A 4-inch diameter perforated PVC pipe was placed in the borehole prior to retrieving the casing. Water was then pumped into the borehole in order to raise the water level as close to the ground surface as possible. Once the inflow equalized with the outflow rate, the average pumping rate and level of the water for this stabilized flow rate was recorded.

The hydraulic conductivity values determined from the tests are presented in **Table 2** of **Appendix C**. The values are in units of cubic feet of flow per second, per square foot of seepage area, per foot of head (cfs/ft^2-ft). The tabulated values are ultimate values. The designer should apply an appropriate factor of safety to the reported values.

2.4 PAVEMENT CORES

PSI collected four, six-inch diameter pavement cores for this project. Additionally, PSI performed SPT sampling below the extracted pavement core level. The sampling was intended to determine the base and subgrade thicknesses at the test locations.

The photographs of the sampled pavement cores are included within the Pavement Core Photographs and Coring Location Plans on **Figures 4** through **7** of **Appendix A**. A Summary of Pavement Evaluation Coring and Condition Data sheet (FDOT Form No. 675-030-09) is presented on **Table 3** in **Appendix C**.

Upon completion of field testing, the pavement core locations were patched and the site was generally cleaned, as required.

The District Pavement Materials Engineer, Mr. Jesus Caballero, P.E., has provided the following milling and resurfacing recommendations.

“The base course is limerock. The subgrade was determined to a silty to fine sand with some limerock fragments. The milling recommendation is for 1.50 inches with FC 12.5. In the majority of cases limerock is used for both the base and subgrade. It is recommended that 8.5 inches be used for the base and 12 inches for the subgrade. Core number 4 had asphalt base course type 3 instead of limerock base. Milepost data was obtained from the SR9/I-95 straight line diagrams.”

These recommendations are based solely on the condition of the existing pavement evaluation and cracking. These recommendations should not be considered final and are subject to change based on the anticipated design traffic loadings, as this information has not been taken into consideration during the preparation of this report.

2.5 Resilient Modulus (M_R) Bulk Soil Samples

PSI collected four bulk soil samples of the roadway embankment along the S.R. 9 (I-95) north and southbound off-ramp alignments for Resilient Modulus (M_R) testing. The samples were delivered to the State Materials Office (SMO) for M_R testing and soil classification. Based on the soil testing performed by SMO, the soils can be classified as A-3 (select material). The 90th percentile M_R value determined by SMO is 9,900 psi. The resilient modulus test results are presented in **Appendix C**.

2.6 Soil Survey of Broward County

The Soil Survey of Broward County, Florida, published by the United States Department of Agriculture (USDA) was reviewed for general near-surface soil information within the general project vicinity. The map is shown on **Figure 2** of **Appendix A** and lists the various soil units.

2.7 USGS Topographic Map

The USGS Topographic Map is presented in **Figure 3** of **Appendix A**.

2.8 Subsurface Conditions

The soil types encountered at the boring locations are presented in the Soil Profiles and Report of Core Borings included as **Sheets 1** and **2** of **Appendix B**. Soil stratification is based on an examination of the recovered soil samples, laboratory testing on select samples and interpretation of field boring logs by a geotechnical engineer. The depths represent the approximate boundaries between soil types of significantly different engineering properties. The actual transition may be gradual. In some cases, small variations in properties not considered pertinent to our engineering evaluation may have been abbreviated or omitted for clarity. The profiles represent the conditions at the boring locations only and variations may occur between the borings. **Table A** below summarizes the different strata encountered.

Table A: Soil Strata

Stratum	Soil Description	USCS Classification	AASHTO Soil Classification
1	(Topsoil) Dark Brown Organic Fine **SAND** with Trace of Roots and Occasional Limerock	OL	A-8
2	Asphalt	-	-
3	Light Brown/Gray **LIMEROCK** with Some Fine Sand and Few to Little Silt	GM	A-1-b
4	Light Brown/Gray Fine **SAND** with Little Limerock and Few Silt	SP-SM	A-3
5	Light Brown/Gray Fine **SAND**	SP	A-3
6	Light Brown/Gray **LIMESTONE** with Fine Sand	-	-

Based upon the exploratory borings and results of the laboratory testing, the near surface soils in the project area have been grouped into five different strata (plus asphalt). Each stratum group exhibits a range of engineering properties related to suitability for roadway construction as outlined by FDOT Standard Index 505. The Roadway Soil Survey sheet presented in **Sheet 3** of **Appendix B** shows the general range of engineering properties measured in the laboratory for the various soil strata encountered during our exploration.

2.9 GROUNDWATER CONDITIONS

When encountered, the groundwater levels were measured in the completed boreholes after termination of the drilling operations. The ground water level was encountered at depths ranging from 7.0 to 8.1 feet below the existing ground surface.

The variation in groundwater levels is due to the ground surface elevation difference that exists between the boring locations. Variations in groundwater elevations may be due to boreholes not given enough time to stabilize before readings were obtained. Seasonal variations, temperature, land use, and rainfall conditions may influence the depths of the groundwater. At a time of the year different from the time of drilling, there is a possibility of a change in the recorded levels. The water table measurement has been identified on **Sheets 1** and **2** of **Appendix B**.

2.10 ESTIMATED SEASONAL HIGH GROUNDWATER TABLE (ESHGWT)

Based on the information gathered from borings indicated the groundwater table fluctuated from approximately elevation -0.6 to +1.2 feet (NAVD 88), with an average of +0.4 feet (NAVD 88). To determine the ESHGWT well number 255936080091702-G-2478 (G-2478) was analyzed. Well G-2478 is located approximately 0.70 miles east of the project and has readings dating back to 1981. In our opinion, the 90th percentile value of groundwater elevation data during the wet season is the most reliable indicator to determine the ESHGWT. This value was reported to be +3.72 NGVD 29 (+2.13 NAVD 88).

Based on the results of our field explorations, elevations obtained by the Wantman Group Inc. from the DTM files and review of the well information in this area, we recommend that an ESHGWT elevation of +2.5 feet (NAVD 88) be utilized.

Based on the boring elevations provided from the DTM files we believe that the three feet clearance required for the roadway base course above the seasonal high groundwater table will be satisfied. It should be noted that to accurately determine the seasonal high groundwater levels a groundwater monitoring program should be conducted throughout the wet season.

3.0 LABORATORY TESTING

3.1 GENERAL

Soil samples collected from the borings were visually reviewed in the laboratory by a geotechnical engineer to confirm the field classification. Classification was based on visual observations with the aid of the laboratory test results performed on select samples. The results of the laboratory testing are tabulated in **Table 4** of **Appendix C**.

3.2 GRAIN SIZE ANALYSIS

Grain-size analysis tests were conducted in general accordance with the following methods:

- ASTM C-117-03 – Standard Test Method for Materials Finer than 75-µm (No.200) Sieve in Mineral Aggregates by Washing (AASHTO Designation T 11-05)
- ASTM C-136-05 – Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates (AASHTO Designation T 27-06)

The Particle Size Distribution Reports are also included in **Appendix C**.

3.3 MOISTURE CONTENT DETERMINATIONS

The laboratory moisture content test consists of determining the percentage of moisture in selected samples in general accordance with FDOT test designation FM 1-T265 (ASTM test designation D-2216).

3.4 ORGANIC CONTENT DETERMINATIONS

The organic content test consists of the determination of the percentage of organic material present in a soil sample in general accordance with FDOT Test Designation FM1-T267 (ASTM Test Designation D-2974, titled “Moisture, Ash, and Organic Matter of Peat and Other Organic Soils”).

4.0 ENGINEERING AND CONSTRUCTION RECOMMENDATIONS - ROADWAY

4.1 SITE MATERIALS

The site should be prepared in accordance with FDOT Standard Specifications for Road and Bridge Construction, Section 110 and 120. Any imported fill soils should consist of materials conforming to Design Standard Index 505 and compacted in general accordance with Section 120-9 of the Standard Specifications for Road and Bridge Construction. The Roadway Soil Survey sheet presented as **Sheet 3** of **Appendix B**, shows the general range of engineering properties measured in the laboratory for the various soil strata encountered during our exploration, as well as the construction recommendations. The following summarizes the generalized use of the subsurface materials that will most likely be encountered during construction.

1. The material from stratum number 1 (A-8) should be removed as part of the clearing and grubbing operations in accordance with Standard Specification for Road and Bridge Construction Section 110.

2. The material from stratum number 2 is Asphalt and should be removed or milled as required by the roadway design.

3. The material from strata numbers 3 (A-1-b), 4 (A-3), and 5 (A-3) are Select (S). These materials appear to be satisfactory for use in the embankment when utilized in accordance with Design Standard Index 505.

4. The material from stratum number 6 corresponds to the natural limestone formation. This material typically offers a high resistance to excavation. Special equipment and breaking tools may be required to excavate it. This material is also difficult to dewater due to its high porosity and permeability.

4.2 TEMPORARY SIDE SLOPES

The Contractor is responsible for the design of the temporary ground support system. Based on the results of the soil borings, an unsupported vertical cut is not considered stable or safe during construction. An unsupported vertical cut will cause cracks on the surface of the asphalt-paved roadway due to a reduction in the soil shear strength. Materials removed from the excavation should not be stockpiled immediately adjacent to the cut. Open excavations shall be backfilled as soon as possible to prevent instability, which may cause collapse of the excavations and injury to people. The Contractor is responsible for backfilling the excavation in a timely fashion such that cut instability (excavation failure) will not occur. The temporary ground support system should be in conformance with the Occupational Safety and Health Administration (OSHA) Standards.

4.3 GROUNDWATER CONTROL

Depending upon groundwater levels at the time of construction or as a result of perched/standing water after a rain event, some form of dewatering may or may not be required to achieve the required compaction. If required, groundwater can normally be controlled in shallow excavations with pumps and sumps. During subgrade soil preparation the soils below design grade could become disturbed by construction activities. If this becomes the case, the contractor may be directed by the engineer to remove the disturbed or pumping soils to a depth of one to two feet below design grade and backfill the area with structural fill. In such situations, FDOT Indices 500 and 505 should be followed closely.

4.4 General Roadway Construction Recommendations

The overall site preparation and mechanical densification work for the construction of the roadway should be in accordance with the FDOT Standard Specifications for Road and Bridge Construction and Standard Index requirements.

5.0 RECOMMENDATIONS FOR SOIL PARAMETERS – MISCELLANEOUS STRUCTURES

Based on the results of our field exploration program, a Standard Foundation Design can be used along with the soil parameters listed in **Table 5** of **Appendix C** with the FDOT MathCAD program (i.e. "Drilled Shaft Foundation for Sign & Signal Structures" version 2.05). The parameters were derived using correlations noted in the 2016 FDOT Soils and Foundation Handbook (SFH). A summary of the results is shown in **Table B** below.

Table B: Foundation Design Parameters for Mast Arm

Design Type	Minimum Shaft Embedment Length[1] (feet)	Offset (feet)	γ (Effective) (pcf)	ϕ (degrees)	Corrected N-Safety Value (bpf)
Standard	12	-[2]	57	37	17
Standard	14	-[2]	57	37	17
Standard	16	-[2]	57	37	17
Standard	18	-[2]	57	37	17
Standard	20	-[2]	57	37	17

Notes:
1. Shaft embedment length is measured from the existing ground.
2. Refers to foundation length below which the foundation will have equal to or greater than "2.5 times Shaft Diameter horizontal soil cover (face-to-pile to face-of-slope)". Refer to Page 162 of the SFH.

The drilled shaft should be constructed in accordance with Standard Specifications for Road and Bridge Construction, Section 455 "Structures Foundations".

6.0 FHWA CHECKLIST

As referenced in the Structures Design Guidelines, conformance to the FHWA Report "Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Plans and Specifications" prepared by the Geotechnical and Materials Branch, FHWA, Washington, D.C., dated October 1985 is required when preparing geotechnical reports. The FHWA checklist for this report is enclosed in **Appendix D**.

7.0 REPORT LIMITATIONS

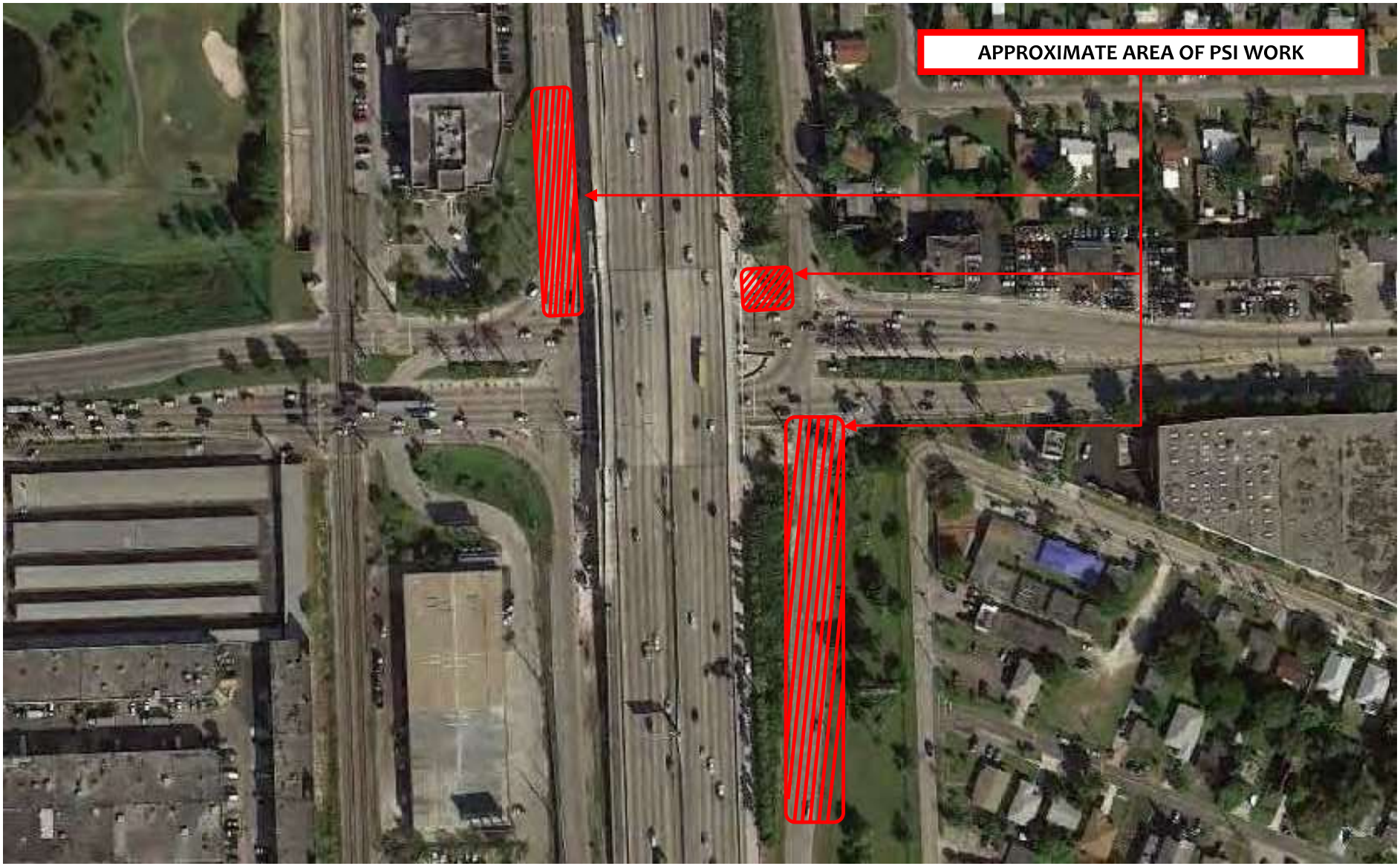
Our professional services have been performed, findings obtained, and recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices at the time of this report. This company is not responsible for the conclusions, opinions or recommendations made by others based on this data. No other warranties are implied or expressed. After the plans and specifications are complete, it is recommended that PSI be provided the opportunity to review the final design and specifications, in order to verify that the earthwork and recommendations are properly interpreted and implemented. At that time, it may be necessary to submit supplemental recommendations.

The scope of investigation was intended to evaluate soil conditions within the influence of the proposed roadway widening and miscellaneous structures. The analyses and recommendations submitted in this report are based upon the data obtained from the soil borings performed at the locations indicated. If any subsoil variations become evident during the course of this project, a re-evaluation of the recommendations contained in this report will be necessary after we have had an opportunity to observe the characteristics of the conditions encountered. The applicability of the report should also be reviewed in the event significant changes occur in the design, nature or location of the project.

The scope of our services did not include a formal environmental assessment for the presence or absence of hazardous or toxic materials in the soil and groundwater. Any statements in this report regarding odors, staining of soils, or other unusual conditions observed are strictly for the information of our client.

APPENDIX A

SITE VICINITY MAP



GEOTECHNICAL ENGINEERING SERVICES
S.R. 9 AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA

DATE: 02/03/2015

DRAWN: RO

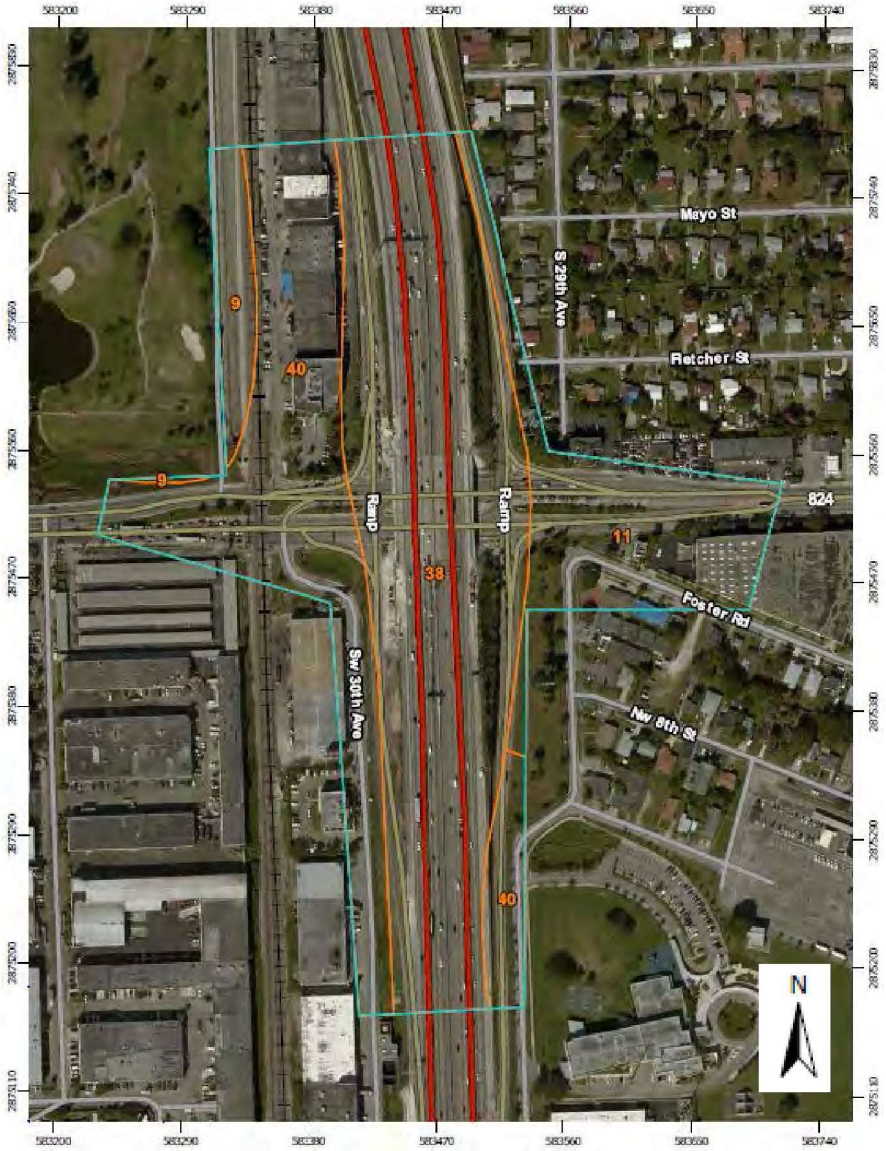
CHKD:: PP

PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI)
7950 N.W. 64TH STREET, MIAMI, FL 33166
PHONE: (305) 471-7725 - FAX: (305) 593-1915
CERTIFICATE OF AUTHORIZATION No. 3684
ENGINEER OF RECORD: PAUL PASSE, P.E. No. 34750

FIGURE No.: 1

FP ID No.: 436303-1-52-01 | T.W.O. #12
PSI PROJECT No.: 0397-1021

USDA SOIL SURVEY MAP



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Map Unit Legend

Broward County, Florida, East Part (FL606)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
9	Dade fine sand	1.3	4.2%
11	Dade-Urban land complex	5.1	16.4%
38	Udorthents, shaped	14.8	47.5%
40	Urban land	9.9	32.0%
Totals for Area of Interest		**31.1**	**100.0%**

USDA Natural Resources Conservation Service

GEOTECHNICAL ENGINEERING SERVICES
S.R. 9 AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA

DATE: 02/03/2015

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FIGURE No.: 2

FP ID No.: 436303-1-52-01 | T.W.O. #12
PSI PROJECT No.: 0397-1021

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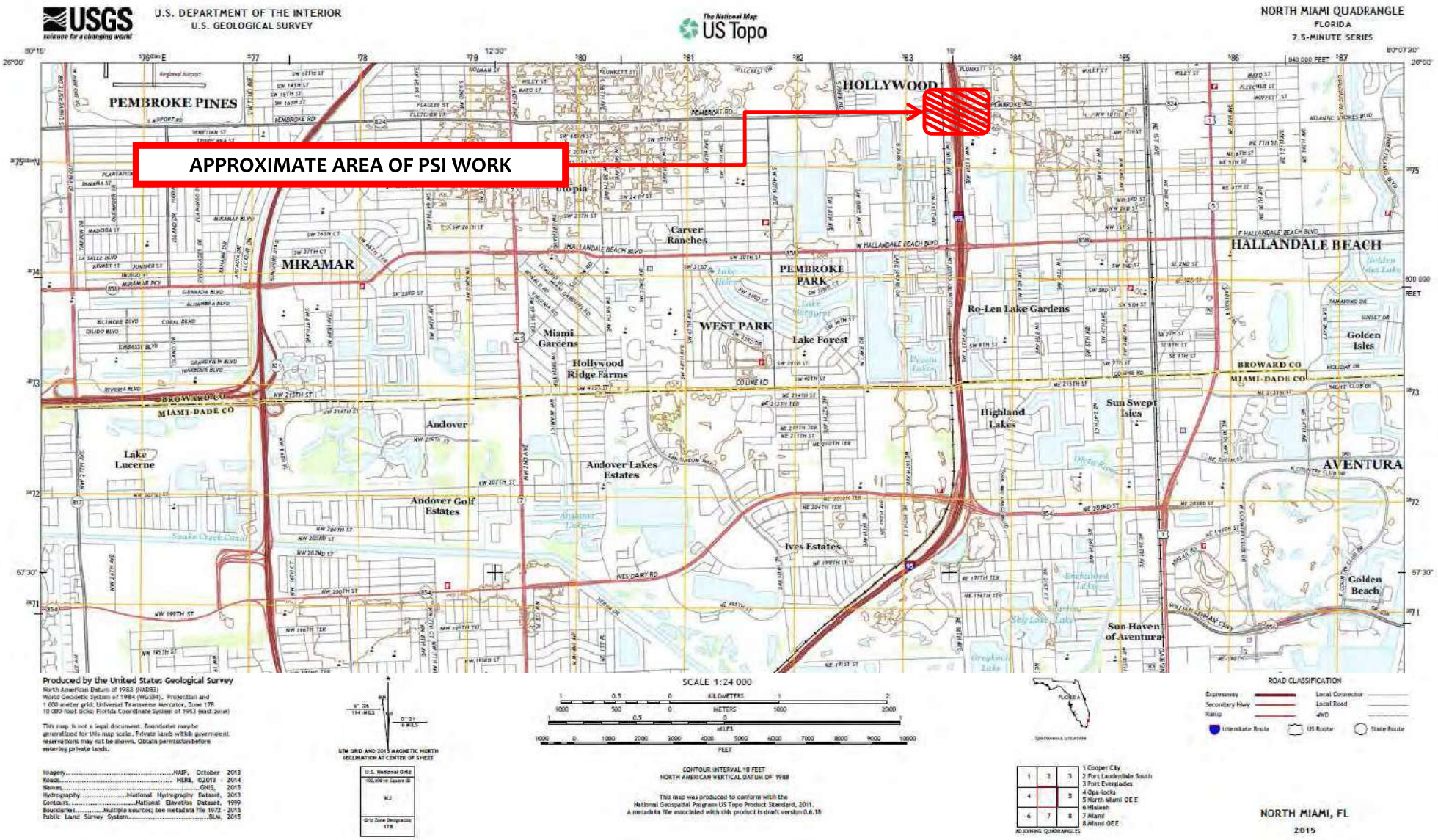
CERTIFICATE OF AUTHORIZATION No. 3684
ENGINEER OF RECORD: PAUL PASSE, P.E. No. 34750

USGS TOPOGRAPHIC MAP



GEOTECHNICAL ENGINEERING SERVICES
S.R. 9 AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA

DATE: 02/03/2015

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FIGURE No.: 3

FP ID No.: 436303-1-52-01 | T.W.O. #12
PSI PROJECT No.: 0397-1021

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CERTIFICATE OF AUTHORIZATION No. 3684
ENGINEER OF RECORD: PAUL PASSE, P.E. No. 34750

PAVEMENT CORE PHOTOGRAPH/CORE LOCATION PHOTOGRAPH

PC-1
LENGTH = 5.00”

GEOTECHNICAL ENGINEERING SERVICES
S.R. 9 AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA

DATE: 01/26/2016

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CHKD:: RO

FIGURE No.: 4

FP ID No.: 436303-1-52-01 | T.W.O. #12
PSI PROJECT No.: 0397-1021

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PHONE: (305) 471-7725 - FAX: (305) 593-1915
CERTIFICATE OF AUTHORIZATION No. 3684
ENGINEER OF RECORD: PAUL PASSE, P.E. No. 34750

PAVEMENT CORE PHOTOGRAPH/CORE LOCATION PHOTOGRAPH

PC-2
LENGTH = 4.50”

GEOTECHNICAL ENGINEERING SERVICES
S.R. 9 AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA

DATE: 01/26/2016

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CHKD:: RO

FIGURE No.: 5

FP ID No.: 436303-1-52-01 | T.W.O. #12
PSI PROJECT No.: 0397-1021

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PHONE: (305) 471-7725 - FAX: (305) 593-1915
CERTIFICATE OF AUTHORIZATION No. 3684
ENGINEER OF RECORD: PAUL PASSE, P.E. No. 34750

PAVEMENT CORE PHOTOGRAPH/CORE LOCATION PHOTOGRAPH

PC-3
LENGTH = 6.25”

GEOTECHNICAL ENGINEERING SERVICES
S.R. 9 AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA

DATE: 01/26/2016

DRAWN: CD

CHKD:: RO

FIGURE No.: 6

FP ID No.: 436303-1-52-01 | T.W.O. #12
PSI PROJECT No.: 0397-1021

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7950 N.W. 64TH STREET, MIAMI, FL 33166
PHONE: (305) 471-7725 - FAX: (305) 593-1915
CERTIFICATE OF AUTHORIZATION No. 3684
ENGINEER OF RECORD: PAUL PASSE, P.E. No. 34750

PAVEMENT CORE PHOTOGRAPH/CORE LOCATION PHOTOGRAPH

PC-4
LENGTH = 11.50”

GEOTECHNICAL ENGINEERING SERVICES
S.R. 9 AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA

DATE: 01/26/2016

DRAWN: CD

CHKD:: RO

FIGURE No.: 7

FP ID No.: 436303-1-52-01 | T.W.O. #12
PSI PROJECT No.: 0397-1021

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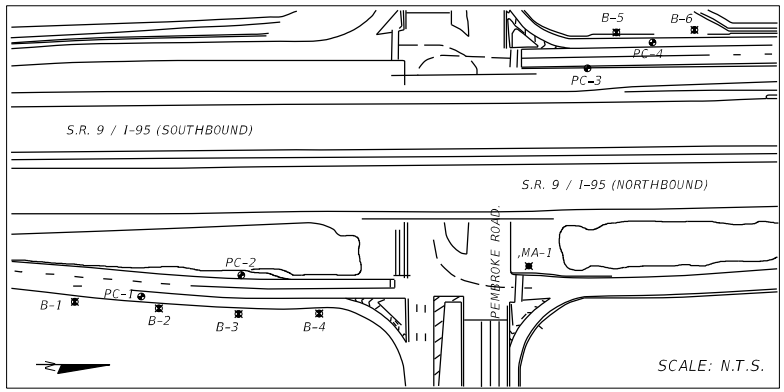
7950 N.W. 64TH STREET, MIAMI, FL 33166
PHONE: (305) 471-7725 - FAX: (305) 593-1915
CERTIFICATE OF AUTHORIZATION No. 3684
ENGINEER OF RECORD: PAUL PASSE, P.E. No. 34750

APPENDIX B

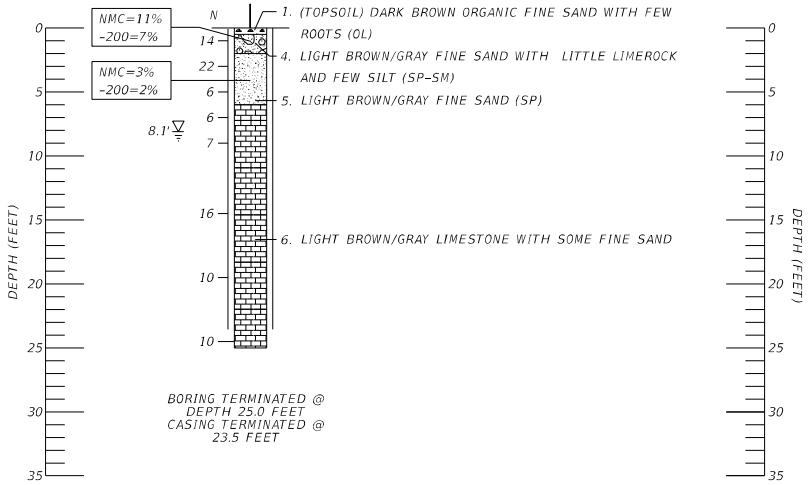


S.R. 9 (I-95) AT PEMBROKE ROAD
PSI PROJECT No. 0397-1021, T.W.O. #12

- APPROXIMATE SPT BORING LOCATION
- APPROXIMATE ASPHALT CORE LOCATION
- APPROXIMATE SPT/MAST ARM BORING LOCATION

BORING No.	MA-1
NORTHING	605254
EASTING	930236
STATION	288+91
OFFSET	140' RT.
DATE	01/05/16

0 5' 10'
VERTICAL SCALE
HORIZONTAL N.T.S.



NOTES

- PLANE COORDINATES DATA AT THE BORING LOCATIONS WERE OBTAINED BY PSI USING A HAND HELD GPS INSTRUMENT (GARMIN 64MAM). THE DATA IS ACCURATE TO WITHIN 15 FEET.
- N — NUMBERS TO THE LEFT OF THE BORINGS INDICATE SPT "N" VALUE FOR 12" PENETRATION
- GROUNDWATER LEVEL, ON THE DATE OF DRILLING.
- 3-INCH DIAMETER CASING USED (NW)
- -200 — PERCENTAGE PASSING NO.200 SIEVE
- NMC — NATURAL MOISTURE CONTENT (%)
- OC — ORGANIC CONTENT (%)

DRILLED BY: LUIS RODRIGUEZ (PSI).

LEGEND

1. (TOPSOIL) DARK BROWN ORGANIC SILTY FINE SAND WITH TRACES OF ROOTS (OL)
2. ASPHALT
3. LIGHT BROWN/GRAY LIMEROCK WITH SOME FINE SAND AND FEW TO LITTLE SILT (GM)
4. LIGHT BROWN/GRAY FINE SAND WITH LITTLE LIMEROCK AND FEW SILT (SP-SM)
5. LIGHT BROWN/GRAY FINE SAND (SP)
6. LIGHT BROWN/GRAY LIMESTONE WITH SOME FINE SAND

STRATA 2 AND 3 WERE NOT ENCOUNTERED IN BORING MA-1 BUT WAS ENCOUNTERED IN OTHER AREAS OF THE PROJECT.

SPT NOTES

HAMMER WEIGHT	140 LBS.
HAMMER DROP HEIGHT	30 INCHES
TYPE OF HAMMER	AUTOMATIC
SPOON INSIDE DIAMETER	1.500 INCH
SPOON INSIDE DIAMETER (AT OPENING)	1.375 INCH
SPOON OUTSIDE DIAMETER	2.000 INCH
TYPE OF RIG	CME 55

GRANULAR MATERIALS- RELATIVE DENSITY	AUTOMATIC HAMMER SPT-N (BLOWS/12-INCH)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40
SILTS AND CLAYS CONSISTENCY	**AUTOMATIC HAMMER SPT-N (BLOWS/12-INCH)**
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI)
7950 N.W. 64TH STREET, MIAMI, FL 33166
PHONE: (305) 471-7725 - FAX: (305) 593-1915
CERTIFICATE OF AUTHORIZATION No. 3684
ENGINEER OF RECORD: PAUL PASSE, P.E. No. 34750

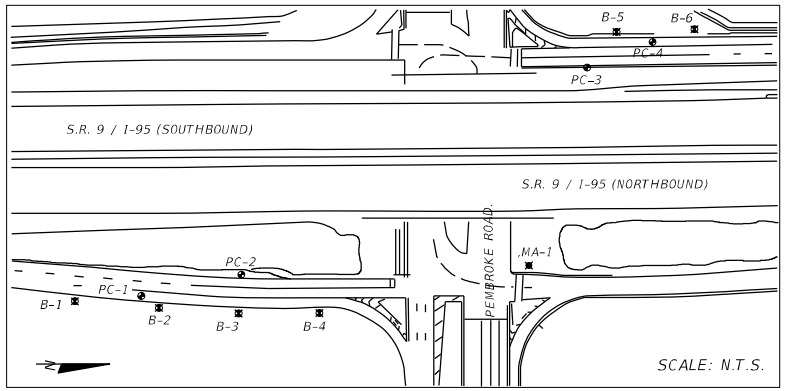
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

REPORT OF CORE BORINGS

SHEET NO. 1

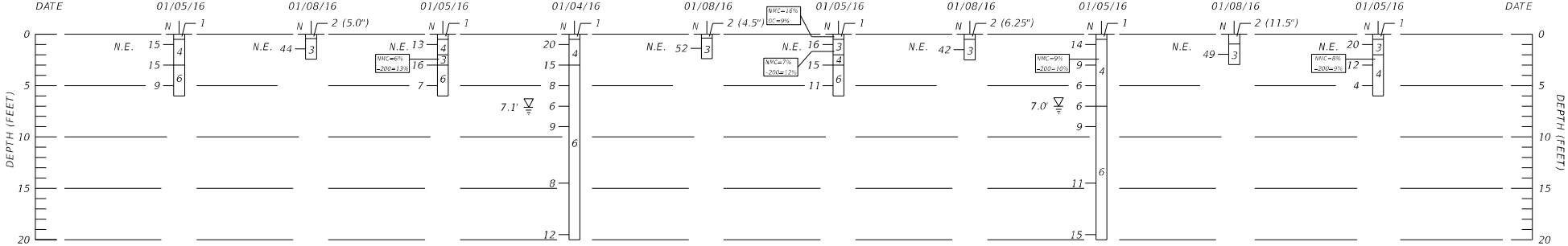
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



APPROXIMATE SPT BORING LOCATION
APPROXIMATE ASPHALT CORE LOCATION
APPROXIMATE SPT/MAST ARM BORING LOCATION

0 5' 10'
VERTICAL SCALE
HORIZONTAL N.T.S.

BORING No.	B-1	PC-1	B-2	B-3	PC-2	B-4	PC-3	B-5	PC-4	B-6	BORING No.
NORTHING	604681	604765	604788	604889	604891	604991	605323	605359	605406	605459	NORTHING
EASTING	930298	930289	930304	930308	930258	930304	929981	929933	929944	929927	EASTING
STATION	283+15	284+00	284+24	285+25	285+28	286+27	289+68	290+07	290+51	291+05	STATION
OFFSET	183' RT.	178' RT.	193' RT	200' RT.	151' RT.	200' RT.	110' LT.	158' LT.	146' LT.	162' LT.	OFFSET
DATE	01/05/16	01/08/16	01/05/16	01/04/16	01/08/16	01/05/16	01/08/16	01/05/16	01/08/16	01/05/16	DATE



LEGEND

1. (TOPSOIL) DARK BROWN ORGANIC SILTY FINE SAND WITH TRACES OF ROOTS (A-8)
2. ASPHALT
3. LIGHT BROWN/GRAY LIMEROCK WITH SOMEFINE SAND AND FEW TO LITTLE SILT (A-1-b)
4. LIGHT BROWN/GRAY FINE SAND WITH LITLE LIMEROCK AND FEW SILT (A-3)
5. LIGHT BROWN/GRAY FINE SAND (A-3)
6. LIGHT BROWN/GRAY LIMESTONE WITH FINE SAND

NOTES

- PLANE COORDINATES DATA AT THE BORING LOCATIONS WERE OBTAINED BY PSI USING A HAND HELD GPS INSTRUMENT (GARMIN 64MAP). THE DATA IS ACCURATE TO WITHIN 15 FEET.
- N NUMBERS TO THE LEFT OF THE BORINGS INDICATE SPT "N" VALUE FOR 12" PENETRATION
- ▽ GROUNDWATER LEVEL, ON THE DATE OF DRILLING.
- N.E. GROWNDWATER LEVEL NOT ENCOUNTERED
- -200, PERCENTAGE PASSING NO.200 SIEVE
- NMC NATURAL MOISTURE CONTENT (%)
- OC ORGANIC CONTENT (%)
- PERCOLATION TESTS PERFORMED AT DEPTHS OF 10 FEET, 15 FEET AND 20 FEET WITHIN BORINGS B-3 AND B-5.
- SOIL IDENTIFIED IN LEGEND "5" WAS ONLY ENCOUNTERED IN BORING MA-1.
- DRILLED BY: LUIS RODRIGUEZ (PSI).

GRANULAR MATERIALS– RELATIVE DENSITY	AUTOMATIC HAMMER SPT-N (BLOWS/12–INCH)
VERY LOOSE	LESS THAN 3
LOOSE	3–8
MEDIUM DENSE	8–24
DENSE	24–40
VERY DENSE	GREATER THAN 40
SILTS AND CLAYS CONSISTENCY	**AUTOMATIC HAMMER SPT-N (BLOWS/12–INCH)**
VERY SOFT	LESS THAN 1
SOFT	1–3
FIRM	3–6
STIFF	6–12
VERY STIFF	12–24
HARD	GREATER THAN 24

SPT NOTES

HAMMER WEIGHT	140 LBS.
HAMMER DROP HEIGHT	30 INCHES
TYPE OF HAMMER	AUTOMATIC
SPOON INSIDE DIAMETER	1.500 INCH
SPOON INSIDE DIAMETER (AT OPENING)	1.375 INCH
SPOON OUTSIDE DIAMETER	2.000 INCH
TYPE OF RIG	CME-55

S.R. 9 (I-95) AT PEMBROKE ROAD
PSI PROJECT No. 0397-1021, T.W.O. #12

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI)
7950 N.W. 64TH STREET, MIAMI, FL 33166
PHONE: (305) 471-7725 - FAX: (305) 593-1915
CERTIFICATE OF AUTHORIZATION No. 3684
ENGINEER OF RECORD: PAUL PASSE, P.E. No. 34750

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

SOIL PROFILES

SHEET NO. 2

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

DATE OF SURVEY: 01/04/16 - 01/08/16
SURVEY MADE BY: PSI
SUBMITTED BY: PAUL PASSE, P.E.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
MATERIALS AND RESEARCH

DISTRICT: IV
ROAD NO.: 9
COUNTY: BROWARD

FINANCIAL PROJECT ID : 436303-1-52-01

PROJECT NAME: S.R. 9 (I-95) AT PEMBROKE ROAD

ROADWAY WIDENING AND MAST ARM STRUCTURES

S.R. 9 SURVEY BEGINS STA. : 288+91 SURVEY ENDS STA. : 291+05

	ORGANIC CONTENT		MOISTURE CONTENT		SIEVE ANALYSIS RESULTS PERCENT PASS						ATTERBERG LIMITS (%)					CORROSION TEST RESULTS				
STRATUM NO.	NO. OF TESTS	% ORGANIC	NO. OF TESTS	MOISTURE CONTENT	NO. OF TESTS	10 MESH	40 MESH	60 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTIC INDEX	AASHTO GROUP	DESCRIPTION	NO. OF TESTS	RESISTIVITY ohm-cm	CHLORIDE ppm	SULFATES ppm	pH
1	1	9	1	16	-	-	-	-	-	-	-	-	-	(A-8)	(TOPSOIL) DARK BROWN ORGANIC SILTY FINE SAND WITH TRACES OF ROOTS	-	-	-	-	-
2.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ASPHALT	-	-	-	-	-
3.	-	-	2	6-7	2	53-55	47-48	34-36	18	12-13	-	-	-	(A-1-b)	LIGHT BROWN/GRAY LIMEROCK WITH SOME FINE SAND AND FEW TO LITTLE SILT	-	-	-	-	-
4.	-	-	3	8-11	3	76-83	67-71	47-50	16-19	7-10	-	-	-	(A-3)	LIGHT BROWN/GRAY FINE SAND WITH LITLE LIMEROCK AND FEW SILT	-	-	-	-	-
5.	-	-	1	3	1	100	93	67	13	2	-	-	-	(A-3)	LIGHT BROWN/GRAY FINE SAND	-	-	-	-	-
6.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LIGHT BROWN/GRAY LIMESTONE WITH FINE SAND	-	-	-	-	-

EMBANKMENT AND SUBGRADE MATERIAL

STRATA BOUNDARIES ARE APPROXIMATE. MAKE FINAL CHECK AFTER GRADING.

▽ - WATER TABLE ENCOUNTERED

▼ - ESTIMATED SEASONAL HIGH GROUNDWATER

NOTES:

1. THE MATERIAL FROM STRATUM NUMBER 1 (A-8) SHOULD BE REMOVED AS PART OF THE CLEARING AND GRUBBING OPERATIONS IN ACCORDANCE WITH STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION SECTION 110.
2. THE MATERIAL FROM STRATUM NUMBER 2 IS ASPHALT AND SHOULD BE REMOVED OR MILLED AS REQUIRED BY THE ROADWAY DESIGN.
3. THE MATERIAL FROM STRATA NUMBERS 3 (A-1-b), 4 (A-3), AND 5 (A-3) ARE SELECT (S). THESE MATERIALS APPEAR TO BE SATISFACTORY FOR USE IN THE EMBANKMENT WHEN UTILIZED IN ACCORDANCE WITH DESIGN STANDARD INDEX 505.
4. THE MATERIAL FROM STRATUM NUMBER 6 CORRESPONDS TO THE NATURAL LIMESTONE FORMATION. THIS MATERIAL TYPICALLY OFFERS A HIGH RESISTANCE TO EXCAVATION. SPECIAL EQUIPMENT AND BREAKING TOOLS MAY BE REQUIRED TO EXCAVATE IT. THIS MATERIAL IS ALSO DIFFICULT TO DEWATER DUE TO ITS HIGH POROSITY AND PERMEABILITY.

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

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI)
7950 N.W. 64TH STREET, MIAMI, FL 33166
PHONE: (305) 471-7725 - FAX: (305) 593-1915
CERTIFICATE OF AUTHORIZATION No. 3684
ENGINEER OF RECORD: PAUL PASSE, P.E. No. 34750

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	436303-1-52-01

ROADWAY SOIL SURVEY

SHEET NO. 3

APPENDIX C

TABLE 1
SUMMARY OF TEST LOCATIONS
S.R. 9 AND PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FPID: 436303-1-52-01 | T.W.O. NO. 12
PSI PROJECT NO. 0397-1021

BORING No.	LATITUDE	LONGITUDE	NORTHING[1]	EASTING[1]	STATION[2]	OFFSET[2] (FEET)	BORING DEPTH (FEET)	GROUNDWATER DEPTH (FEET)	BORING ELEVATION (NAVD 88)	GROUNDWATER ELEVATION (NAVD 88)
MA-1	25.9964	80.1656	605254	930236	288+91	140 RT.	25	8.1	9.30	1.2
B-1	25.9948	80.1654	604681	930298	283+15	183 RT.	6	N.E.[3]	N/A	N/A
B-2	25.9951	80.1654	604788	930304	284+24	193 RT.	6	N.E.[3]	N/A	N/A
B-3	25.9954	80.1654	604889	930308	285+25	200 RT.	20	7.1	7.71	0.6
B-4	25.9957	80.1654	604991	930304	286+27	200 RT.	6	N.E.[3]	N/A	N/A
B-5	25.9967	80.1665	605359	929933	290+07	158 LT.	20	7.0	6.36	-0.6
B-6	25.9970	80.1665	605459	929927	291+05	162 LT.	6	N.E.[3]	N/A	N/A
PC-1	25.9950	80.1655	604765	930289	284+00	178 RT.	2	N.E.[3]	N/A	N/A
PC-2	25.9954	80.1656	604891	930258	285+28	151 RT.	2	N.E.[3]	N/A	N/A
PC-3	25.9966	80.1664	605323	929981	289+68	110 LT.	3	N.E.[3]	N/A	N/A
PC-4	25.9968	80.1665	605406	929944	290+51	146 LT.	3	N.E.[3]	N/A	N/A

NOTES:

(1) Northings and Eastings were obtained using a hand held GPS instrument (Garmin Map 64) that has a 15 foot accuracy.

(2) Station and Offset values were approximated from the provided Plan Sheet No. 47 dated December 31, 2013.

(3) N.E. = Not Encountered

(4) Boring elevations were only obtained for the borings were groundwater was encountered. Elevations were provided by Wantman Group Inc. from the DTM file.

TABLE 2
SUMMARY OF PERCOLATION TEST RESULTS
S.R. 9 AND PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FPID: 436303-1-52-01 | T.W.O. NO. 12
PSI PROJECT NO. 0397-1021

BORING No.	DATE PERFORMED	CASING DIAMETER (inches)	PERFORATED PVC DIAMETER (inches)	DEPTH OF HOLE (feet)	DEPTH TO GROUNDWATER LEVEL BELOW GROUND		HYDRAULIC HEAD	SATURATED HOLE DEPTH,	AVERAGE FLOW RATE,	HYDRAULIC CONDUCTIVITY,
					PRIOR TO TEST	DURING TEST	H_2 (feet)	D_S (feet)	Q (gpm)	K (cfs/ft^2-ft)
B-3	1/4/2016	6	4	10.0	7.1	0.0	7.1	2.9	2.0	6.08E-05
B-3	1/4/2016	6	4	15.0	7.1	0.0	7.1	7.9	4.0	6.90E-05
B-3	1/4/2016	6	4	20.0	7.1	0.0	7.1	12.9	9.0	1.08E-04
B-5	1/5/2016	6	4	10.0	7.0	0.0	7.0	3.0	2.0	6.12E-05
B-5	1/5/2016	6	4	15.0	7.0	0.0	7.0	8.0	5.0	8.72E-05
B-5	1/5/2016	6	4	20.0	7.0	0.0	7.0	13.0	11.0	1.34E-04

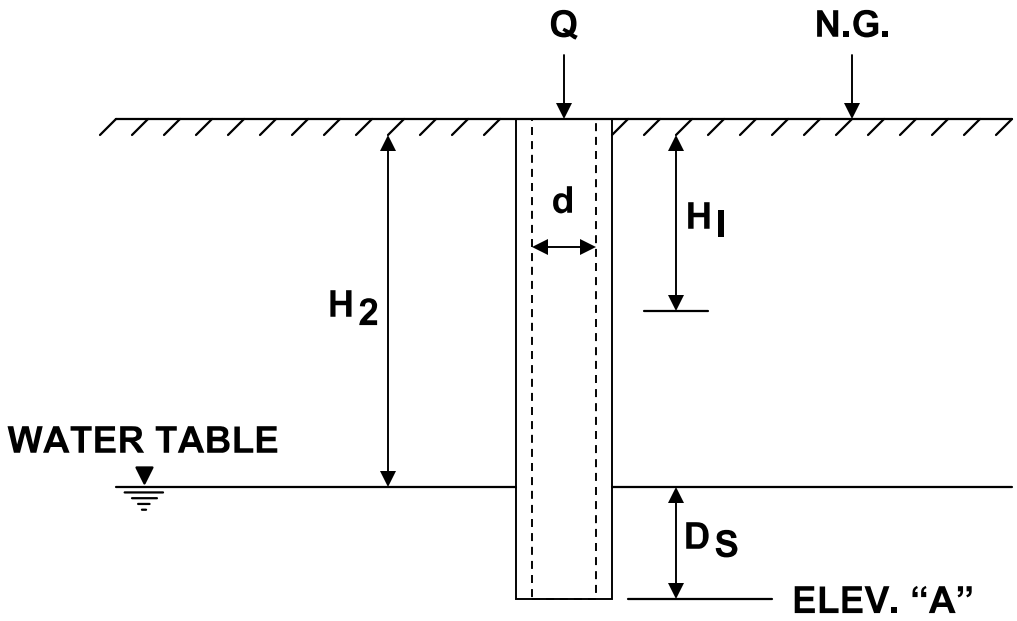
NOTES:

(1) The above hydraulic conductivity values are for a french drain installed to the same depth as the borehole tests. The values represent an ultimate value. The designer should apply the appropriate factor

(2) The hydraulic conductivity values were calculated based on the South Florida Water Management District's USUAL OPEN HOLE CONSTANT HEAD percolation test procedure as shown on the following page.

(3) A hole diameter of six inches was used for the computation of the Hydraulic Conductivity values presented in the above table. Cave in depths at the time of drilling was noted at 10 feet and 8 feet in borings B-3 and B-5, respectively.

USUAL OPEN – HOLE TEST



$$K = \frac{4Q}{\pi d (2H_2^2 + 4H_2D_S + H_2d)}$$

K= HYDRAULIC CONDUCTIVITY (CFS/FT.^{2} - FT.HEAD)

Q= "STABILIZED" FLOW RATE (CFS)

d= DIAMETER OF TEST HOLE (FEET)

H_2 = DEPTH TO WATER TABLE (FEET)

D_S = SATURATED HOLE DEPTH (FEET)

ELEV. "A"= PROPOSED TRENCH BOTTOM ELEV.

H_I = AVERAGE HEAD ON UNSATURATED HOLE SURFACE (FT.HEAD)

TABLE 3
SUMMARY OF PAVEMENT CORING AND EVALUATION AND CONDITION DATA SHEET (FDOT Form No. 675-030-09)
S.R. 9 AND PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FPID: 436303-1-52-01 | T.W.O. NO. 12
PSI PROJECT NO. 0397-1021

Cored By:	LUIS RODRIGUEZ (PSI)		Date: 1/8/2016	Page: Table 3	Typical Section No.		
PSI Project No.	0397-1021	Name:	S.R. 9 and Pembroke Road	Lanes: North and Soundbound Off-Ramp Inside Shoulders and Outside Lanes			
County:	BROWARD	S.R. No.	9	Shoulder Type & Condition:			
Median Curbed?	NO.	From	Southbound Off-Ramp	Inside:			
		To.	Northbound Off-Ramp				
		Beg. Sta.	288+00	End Sta: 291+05	Length:	680' Approx.	Outside:
			Lawn?	Other?	Curb & Gutter?		

Core No.	Northing [1]	Easting [1]	Mile Post [3]	Lane	Wheel Path	Pavement Layer (inches) Top -	-	-	-	-	-	Core Length (in.)	Base Thickness (inches) [2]	Sub-grade Thickness (inches) [2]	Crack Depth (ft)	Type	Class	Extent	Pavement Condition	Rut Depth (in.)	Rut Location (ft)	Cross Slope (ft/6ft)
TRAVEL LANES																						
PC-1	604765	930289	1.47	NB-OR-R3	YES	---	---	---	---	---	---	5.00	24	-	---	---	---	---	FAIR	0.125	---	0.104
PC-2	604891	930258	1.49	NB-OR-IS	NO	---	---	---	---	---	---	4.50	24	-	---	---	---	---	FAIR	0.625	---	0.000
PC-3	605323	929981	1.57	SB-OR-IS	NO	---	---	---	---	---	---	6.25	24	-	---	---	---	---	FAIR	0.625	---	0.083
PC-4	605406	929944	1.58	SB-OR-L3	YES	---	---	---	---	---	---	11.50	24	-	---	---	---	---	FAIR	0.125	---	0.135

Notes:
(1) Northings and Eastings were obtained using a hand held GPS instrument (Garmin Map 64) that has a 15 foot accuracy.
(2) The SPT Split Spoon Sampler was only penetrated 24 inches into the base/sub-grade, therefore, base and sub-grade thicknesses could not be accurately measured. In order to estimate the base/subgrade thicknesses we suggest that the as-built plans be reviewed.
(3) Mile Posts were obtained from the S.R. 9 (I-95) striaght line diagrams.

TABLE 4
SUMMARY OF LABORATORY TEST RESULTS
S.R. 9 AND PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FPID: 436303-1-52-01 | T.W.O. NO. 12
PSI PROJECT NO. 0397-1021

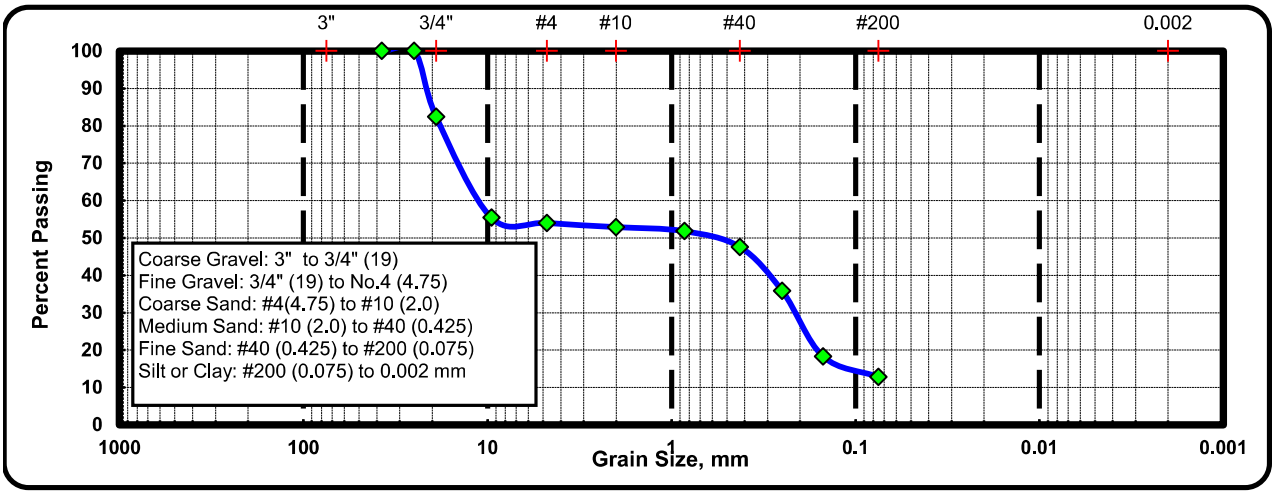
					SIEVE ANALYSES, PERCENT PASSING (%)												
BORING NUMBER	SAMPLE DEPTH INTERVAL (FEET)	STRATUM NUMBER	ORGANIC CONTENT (%)	MOISTURE CONTENT (%)	1.5"	1"	3/4"	3/8"	#4	#10	#20	#40	#60	#100	#200	USCS CLASS.	AASHTO CLASS.
B-4	0.0-0.5	1	9	16	-	-	-	-	-	-	-	-	-	-	-	OL	A-8
B-2	2.0-3.0	3	-	6	100	100	82	55	54	53	52	48	36	18	13	GM	A-1-b
B-4	0.5-2.0	3	-	7	100	100	86	71	56	55	53	47	34	18	12	GM	A-1-b
MA-1	0.5-2.0	4	-	11	100	100	90	83	79	76	74	67	47	16	7	SP-SM	A-3
B-5	2.0-4.0	4	-	9	100	100	100	92	87	83	81	71	50	19	10	SP-SM	A-3
B-6	2.0-4.0	4	-	8	100	100	100	88	84	81	79	69	49	18	9	SP-SM	A-3
MA-1	2.0-4.0	5	-	3	100	100	100	100	100	100	100	93	67	13	2	SP	A-3

PARTICAL SIZE DISTRIBUTION REPORT
S.R. 9 (I-95) AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FPID: 436303-1-52-01 | T.W.O. No. 12
PSI PROJECT No. 0397-1021

SIEVE ANALYSIS

Boring ID:	B-2	Depth Interval:	2.0'-3.0'

Percent Gravel (%):	46.0	Percent Sand (%):	41.2	Percent Fines (%):	12.8
D10 (mm):	N/A	D30 (mm):	0.22	D60 (mm):	11.12
Coefficient of Uniformity, Cu (D60/D10):	N/A	Coeff. of Curvature, Cc ($D30^2$/D10*D60):			N/A
CLASSIFICATION					
AASHTO:	A-1-b	USCS:	GM		



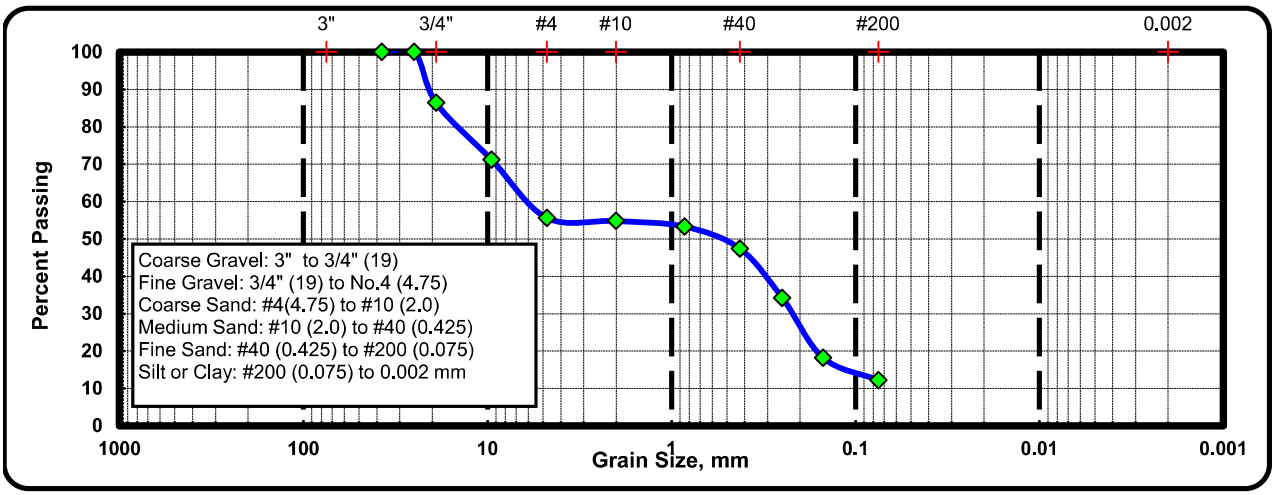
US Standard Sieve No.	Sieve Size (mm)	Percent Retained (%)	Percent Passing Sieve (%)
1-1/2"	37.500	0	100
1"	25.000	0	100
3/4"	19.000	18	82
3/8"	9.500	45	55
#4	4.750	46	54
#10	2.000	47	53
#20	0.850	48	52
#40	0.425	52	48
#60	0.250	64	36
#100	0.15	82	18
#200	0.08	87	13
PAN	NA	100	0

PARTICAL SIZE DISTRIBUTION REPORT
S.R. 9 (I-95) AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FPID: 436303-1-52-01 | T.W.O. No. 12
PSI PROJECT No. 0397-1021

SIEVE ANALYSIS

Boring ID:	B-4	Depth Interval:	0.5'-2.0'

Percent Gravel (%):	44.4	Percent Sand (%):	43.4	Percent Fines (%):	12.2
D10 (mm):	N/A	D30 (mm):	0.22	D60 (mm):	6.09
Coefficient of Uniformity, Cu (D60/D10):	N/A	Coeff. of Curvature, Cc ($D30^2$/D10*D60):			N/A
CLASSIFICATION					
AASHTO:	A-1-b	USCS:	GM		

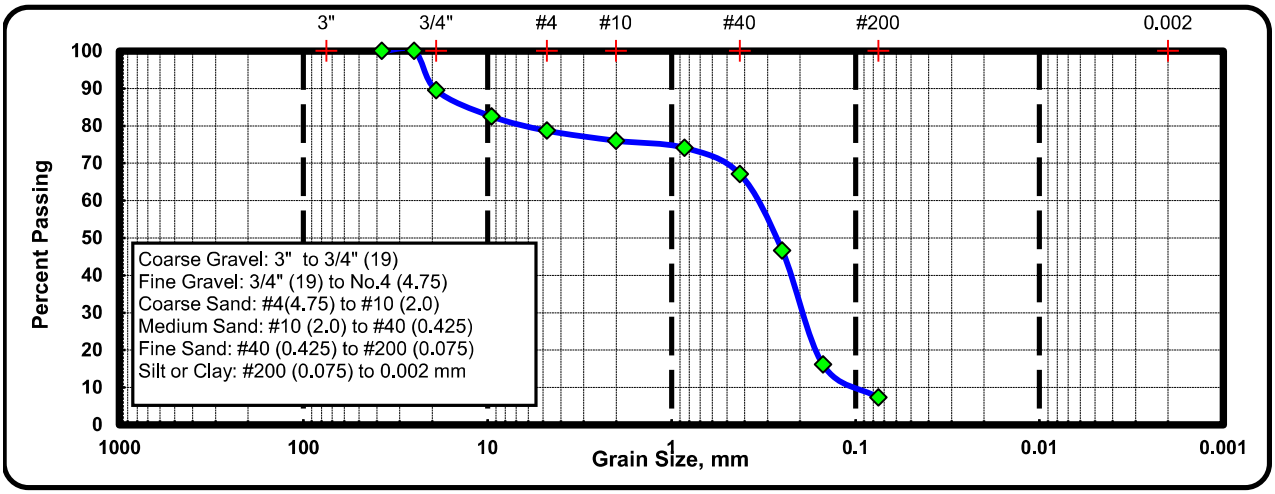


US Standard Sieve No.	Sieve Size (mm)	Percent Retained (%)	Percent Passing Sieve (%)
1-1/2"	37.500	0	100
1"	25.000	0	100
3/4"	19.000	14	86
3/8"	9.500	29	71
#4	4.750	44	56
#10	2.000	45	55
#20	0.850	47	53
#40	0.425	53	47
#60	0.250	66	34
#100	0.15	82	18
#200	0.08	88	12
PAN	NA	100	0

PARTICAL SIZE DISTRIBUTION REPORT
S.R. 9 (I-95) AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FPID: 436303-1-52-01 | T.W.O. No. 12
PSI PROJECT No. 0397-1021

SIEVE ANALYSIS			
Boring ID:	**MA-1**	**Depth Interval:**	**0.5'-2.0'**

Percent Gravel (%):	**21.3**	**Percent Sand (%):**	**71.4**	**Percent Fines (%):**	**7.3**
D10 (mm):	**0.10**	**D30 (mm):**	**0.20**	**D60 (mm):**	**0.36**
Coefficient of Uniformity, Cu (D60/D10):		**3.72**	**Coeff. of Curvature, Cc ($D30^2$/D10*D60):**		**1.07**
CLASSIFICATION					
AASHTO:	**A-3**		**USCS:**	**SP-SM**	

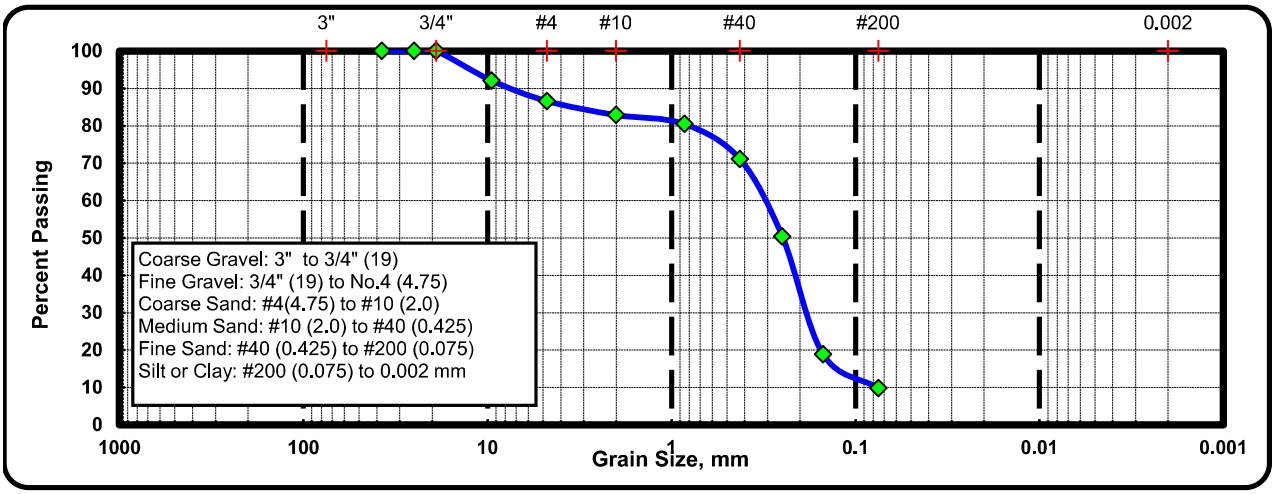


US Standard Sieve No.	Sieve Size (mm)	Percent Retained (%)	Percent Passing Sieve (%)
1-1/2"	37.500	0	100
1"	25.000	0	100
3/4"	19.000	11	90
3/8"	9.500	18	83
#4	4.750	21	79
#10	2.000	24	76
#20	0.850	26	74
#40	0.425	33	67
#60	0.250	53	47
#100	0.15	84	16
#200	0.08	93	7
PAN	NA	100	0

PARTICAL SIZE DISTRIBUTION REPORT
S.R. 9 (I-95) AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FPID: 436303-1-52-01 | T.W.O. No. 12
PSI PROJECT No. 0397-1021

SIEVE ANALYSIS			
Boring ID:	**B-5**	**Depth Interval:**	**2.0'-4.0'**

Percent Gravel (%):	13.4	**Percent Sand (%):**	76.8	**Percent Fines (%):**	9.8
D10 (mm):	0.08	**D30 (mm):**	0.19	**D60 (mm):**	0.33
Coefficient of Uniformity, Cu (D60/D10):	4.14	**Coeff. of Curvature, Cc ($D30^2$/D10*D60):**			1.30
CLASSIFICATION					
AASHTO:	A-3	**USCS:**	SP-SM		



US Standard Sieve No.	Sieve Size (mm)	Percent Retained (%)	Percent Passing Sieve (%)
1-1/2"	37.500	0	100
1"	25.000	0	100
3/4"	19.000	0	100
3/8"	9.500	8	92
#4	4.750	13	87
#10	2.000	17	83
#20	0.850	20	81
#40	0.425	29	71
#60	0.250	50	50
#100	0.15	81	19
#200	0.08	90	10
PAN	NA	100	0

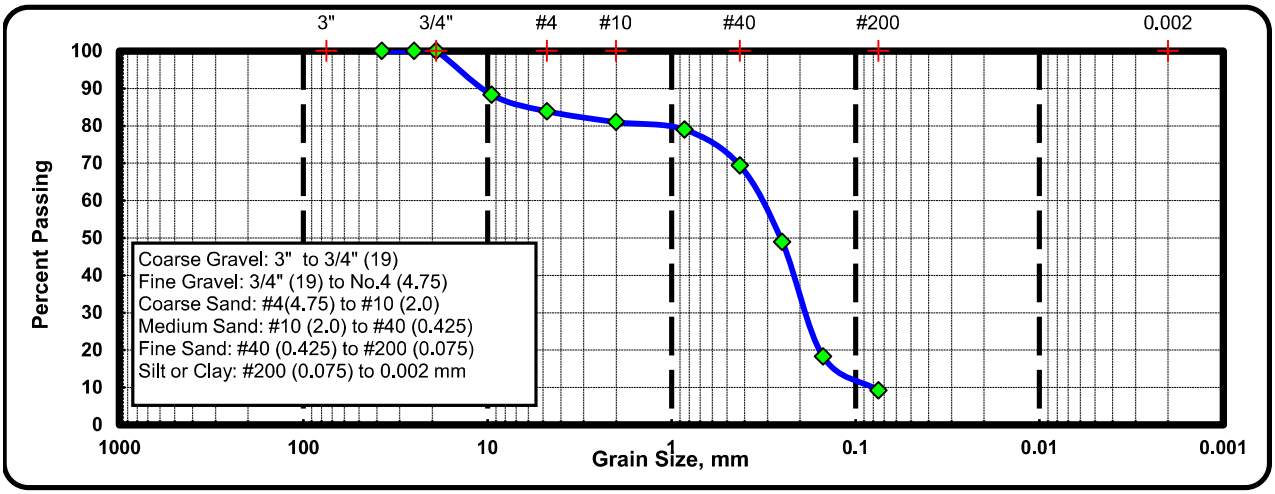
PARTICAL SIZE DISTRIBUTION REPORT
S.R. 9 (I-95) AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FPID: 436303-1-52-01 | T.W.O. No. 12
PSI PROJECT No. 0397-1021

SIEVE ANALYSIS

Boring ID:	B-6	Depth Interval:	2.0'-4.0'

Percent Gravel (%):	16.1	Percent Sand (%):	74.7	Percent Fines (%):	9.2
D10 (mm):	0.08	D30 (mm):	0.19	D60 (mm):	0.34
Coefficient of Uniformity, Cu (D60/D10):	4.23	Coeff. of Curvature, Cc ($D30^2$/D10*D60):			1.26

CLASSIFICATION	
AASHTO: A-3	USCS: SP-SM



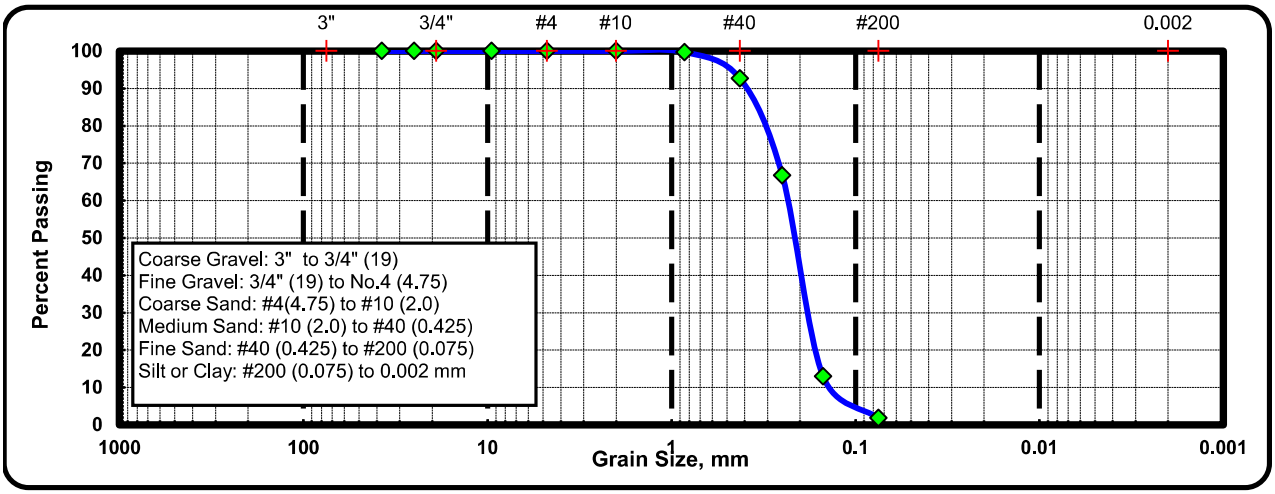
US Standard Sieve No.	Sieve Size (mm)	Percent Retained (%)	Percent Passing Sieve (%)
1-1/2"	37.500	0	100
1"	25.000	0	100
3/4"	19.000	0	100
3/8"	9.500	12	88
#4	4.750	16	84
#10	2.000	19	81
#20	0.850	21	79
#40	0.425	31	69
#60	0.250	51	49
#100	0.15	82	18
#200	0.08	91	9
PAN	NA	100	0

PARTICAL SIZE DISTRIBUTION REPORT
S.R. 9 (I-95) AT PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FPID: 436303-1-52-01 | T.W.O. No. 12
PSI PROJECT No. 0397-1021

SIEVE ANALYSIS

Boring ID:	MA-1	Depth Interval:	2.0'-4.0'

Percent Gravel (%):	0.0	Percent Sand (%):	98.2	Percent Fines (%):	1.8
D10 (mm):	0.13	D30 (mm):	0.18	D60 (mm):	0.24
Coefficient of Uniformity, Cu (D60/D10):	1.83	Coeff. of Curvature, Cc ($D30^2$/D10*D60):			1.07
CLASSIFICATION					
AASHTO:	A-3	USCS:	SP		



US Standard Sieve No.	Sieve Size (mm)	Percent Retained (%)	Percent Passing Sieve (%)
1-1/2"	37.500	0	100
1"	25.000	0	100
3/4"	19.000	0	100
3/8"	9.500	0	100
#4	4.750	0	100
#10	2.000	0	100
#20	0.850	0	100
#40	0.425	7	93
#60	0.250	33	67
#100	0.15	87	13
#200	0.08	98	2
PAN	NA	100	0

TABLE 5
SUMMARY OF GEOTECHNICAL DESIGN PARAMETERS
S.R. 9 AND PEMBROKE ROAD
BROWARD COUNTY, FLORIDA
FPID: 436303-1-52-01 | T.W.O. NO. 12
PSI PROJECT NO. 0397-1021

	DEPTH (FEET)	MAST ARM AT THE NORTHEAST CORNER OF S.R. 9 AND PEMBROKE ROAD BORING NUMBER: MA-1
SAMPLING DEPTH INTERVAL	1.00	14
	3.00	22
	5.00	6
	7.00	6
	9.00	7
	14.50	16
	19.50	10
	24.50	10

PREDOMINANT SOIL TYPES: FINE SAND AND LIMESTONE		SHAFT LENGTHS (FEET)				
		12	14	16	18	20
VALUES FOR USE WITH FDOT DRILLED SHAFT SIGN AND SIGNAL STRUCTURES PROGRAM (BROM'S METHOD)	N-Automatic[1]	14	14	14	14	14
	Corrected N Value (N-Safety)[2]	17	17	17	17	17
	Effective Unit Weight (γ') (pcf)	57	57	57	57	57
	Friction Angle (ϕ) [3]	37	37	37	37	37
	Friction Coefficient (μ)	0.76	0.76	0.76	0.76	0.76
	Offset (feet)[4]	---	---	---	---	---
	Load Transfer Ratio (ω_{fdot}) [5]	1.5	1.5	1.5	1.5	1.5

NOTES:

(1) The SPT N values were averaged over the depth interval of the corresponding shaft length. The averaged SPT N values were corrected for overbrden.

(2) The SPT N values were converted from an Automatic Hammer to those of a Safety Hammer, using a correction factor of 1.24 (Page 164 of the Soils and Foundation Handbook, 2016 [SFH]).

(3) The angle of friction is computed using the following equation: For Rock material with N-Values between 10 and 25 blows/foot, ϕ=N/4+33. (Page 162 of SFH).

(4) Refers to a depth below which the foundation will have equal to or greater than "2.5 times Shaft Diameter horizontal soil cover (face-of-pile to face-of-slope)". Refer to Page 162 of the SFH. Value should be determined by the designer.

(5) The Load Transfer Ratio is computed using Section 13.6.1.1 of the FDOT Structures Manual, Modifications to LTS-6.

Florida Department of Transportation

RICK SCOTT
GOVERNOR

State Materials Office
5007 NE 39th Avenue, Gainesville, FL 32609
(352) 955-6600

JIM BOXOLD
SECRETARY

MEMORANDUM

DATE: February 3, 2016

TO: Michael Kim

FROM: David Horhota

SUBJECT: Embankment Resilient Modulus Pavement Design
District 4, Broward County
FPN 436303-1: SR-9/I-95 and SR-824/Pembroke Road

Four (4), 2-bag samples were received by the State Materials Office (SMO) for determination of an embankment (roadbed) resilient modulus for pavement design. After visual observation of the four samples, it was determined that the material from each 2-bag sample looked visually similar and the material from each of the bags were combined to form one sample from each location. After combining materials from the bags, samples from each location were obtained for classification tests (Atterberg limits, particle size analysis, and organic content), Proctor density, and resilient modulus. The classification test results are reported in Tables 1 and 2. Information provide for this project by PSI, Inc. did not include sample depth.

Table 1. Summary of Initial Soil Gradation Results

Sample ID	Passing 3/4" (%)	Passing 1/2" (%)	Passing 3/8" (%)	Passing No. 4 (%)	Passing No. 10 (%)	Passing No. 40 (%)	Passing No. 60 (%)	Passing No. 100 (%)	Passing No. 200 (%)
MR-1	98.8	97.9	97.5	97.1	96.8	89.3	67.7	16.2	2.0
MR-2	96.6	95.0	94.0	93.4	93.0	85.4	62.9	14.0	2.0
MR-3	88.7	88.5	88.4	87.3	86.6	80.0	61.2	17.2	3.2
MR-4	100.0	100.0	100.0	99.8	99.6	91.9	66.1	13.7	1.5

Table 2. Summary of Soil Classification and Organic Content Results

Sample ID	Station Location	Offset	LL/PI	Soil Class.	Org. Content (%)
MR-1	283+70	188'RT	N.P.	A-3	0.2
MR-2	285+52	202' RT	N.P.	A-3	0.3
MR-3	289+85	159' LT	N.P.	A-3	0.3
MR-4	290+96	158' LT	N.P.	A-3	0.1

In addition to the classification testing, the following test program was conducted:

(1) Standard Proctor, AASHTO T 99
(2) Resilient Modulus (M_R), AASHTO T 307.

A summary of laboratory test results is included in Table 3. The resilient modulus values listed in this table were obtained using the relationship developed from each individual test (resilient modulus versus bulk stress - with bulk stress, Θ, defined as $\Theta = \sigma_1 + \sigma_2 + \sigma_3$), and using a bulk stress of 11 psi, which is the recommendation from Dr. Ping's research work in modeling the embankment in-situ stresses for Florida pavement conditions. Two results are listed for each location because two samples were prepared for each location and they represent the individual test result from each sample tested. The resilient modulus samples were compacted to within 1 pound per cubic foot (pcf) of the maximum density and 0.5 percent of the optimum moisture content as determined by AASHTO T99.

Table 3. Summary of T-99 and M_R Test Results

Sample ID	Passing No. 200 (%)	Standard Proctor Density (pcf)	Optimum Moisture Content (%)	Resilient Modulus @ Θ=11psi (psi)	Average Resilient Modulus (psi)
MR-1	2	102.9	13.5	10,192 10,684	10,438
MR-2	2	103.8	13.7	9,651 10,098	9,875
MR-3	3	102.7	13.6	10,498 9,603	10,051
MR-4	2	101.3	13.1	11,001 10,023	10,512

For this set of samples the minimum number of samples called for in the Soils and Foundations Handbook were not satisfied. This resulted in an inability to perform a true 90% method of analysis due to a lack of the required number of test values.

For those reasons it is recommended that the lowest average resilient modulus be used for the design. Based on the results for sample MR-2, a design **M_R of 9,900 psi** would be recommended for this project.

APPENDIX D

GEOTECHNICAL REPORT REVIEW CHECKLISTS

The following checklists cover the major information and recommendations which should be addressed in project geotechnical reports.

Section A covers site investigation information which will be common to all geotechnical reports for any type of geotechnical feature.

Sections B through I cover the basic information and recommendations which should be presented in geotechnical reports for specific geotechnical features: centerline cuts and embankments, embankments over soft ground, landslides, retaining walls, structure foundations and material sites.

Subject Page

SECTION A, Site Investigation Information 2
SECTION B, Centerline Cuts and Embankments 4
SECTION C, Embankments Over Soft Ground 6
SECTION D, Landslide Corrections 8
SECTION E, Retaining Walls 10
SECTION F, Structure Foundations - Spread Footings 11
SECTION G, Structure Foundations - Piles 12
SECTION H, Structure Foundations - Drilled Shafts 15
SECTION I, Materials Sites 16

In most sections and subsections, the user has been provided supplemental page references to the Soils and Foundations Workshop Manual. These page numbers appear in parentheses ( ) immediately adjacent to the section or subsection topic. Generalist engineers are particularly encouraged to read these references. Additional reference information on these topics is available in the Geotechnical Notebook, a copy of which is kept in all Division Offices by either the Bridge Engineer or the engineer with the soils responsibility.

Certain checklist items are of vital importance to have been included in the geotechnical report. These checklist items have been marked with an asterisk (*). A negative response to any of these asterisked items is cause to contact the geotechnical engineer for clarification of this omission.

"GTR REVIEW CHECKLIST" (SITE INVESTIGATION)

A. Site Investigation Information

Since the most important step in the geotechnical design process is the conduct of an adequate site investigation, presentation of the subsurface information in the geotechnical report and on the plans deserves careful attention.

Geotechnical Report Text (Introduction) (Pages 322-325)	Yes	No	Unknown or N/A
1. Is the general location of the investigation described and/or vicinity map included?		X	
2. Is scope and purpose of the investigation summarized?		X	
3. Is concise description given of geologic setting and topography of area?		X	
4. Are the field explorations and laboratory tests on which the report is based listed?	X		
5. Is general description of subsurface soil, rock, and groundwater conditions given?		X	
*6. Is the following information included with the geotechnical report (typically included in report appendices):			
a. Test hole logs? (Pages 25-33)		X	
b. Field test data?		X	
c. Laboratory test data? (Pages 74-75)		X	
d. Photographs (if pertinent)?			X
Plan and Subsurface Profile (Pages 24, 47-49, 335)			
*7. Is a plan and subsurface profile of the investigation site provided?		x	

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

A. Site Investigation Information (Cont.)	Yes	No	Unknown or N/A
8. Are the field explorations located on the plan view?	X		
*9. Does the conducted site investigation meet minimum criteria outlined in Table 2?	X		
10. Are the explorations plotted and correctly numbered on the profile at their true elevation and location?	X		
11. Does the subsurface profile contain a word description and/or graphic depiction of soil and rock types?	X		
12. Are groundwater levels and data measured shown on the subsurface profile?	X		
Subsurface Profile or Field Boring Log (Pages 16-17, 25-29)			
13. Are sample types and depths noted?	X		
*14. Are SPT blow counts, percent core recovery, and RQD values shown?	x		
15. If cone penetration tests were made, are plots of cone resistance and friction ratio shown with depth?	___	___	X
Laboratory Test Data (Pages 60, 74-75)			
*16. Were lab soil classification tests such as natural moisture content, gradation, Atterberg limits, performed on selected representative samples to verify field visual soil identifications?	X		
17. Are laboratory test results such as shear strength (Page 62), consolidation (Page 68), etc., included and/or summarized?	___	___	X

* A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

APPENDIX J

SEASONAL HIGH WATER TABLE TECHNICAL MEMO

HDR | ONE COMPANY *Many Solutions*℠

Memo

To:	Ryan Solis-Rios, P.E.		
From:	Derly Y. Cano, EI	Project:	PD&E I-95 from S of SR-858/Hallandale Beach Blvd. to N of SR-820/Hollywood Blvd., Broward County
CC:	Javier Manso, P.E., Mohammad Pervez, P.E., Rohan Hameed, P.E.		
Date:	July 11, 2017	FPID:	436903-1-22-02

RE: Seasonal High Water (SHW) for the project area

Seasonal High Water (SHW) Elevation

In order to determine the Seasonal High Water (SHW) elevation for the PD&E study of I-95 from south of SR-858/Hallandale Beach Blvd. to north of SR-820/Hollywood Blvd. the following material have been a analyzed:

1. Broward County Water Table Map – Average Wet Season: The Seasonal High Water Elevation for the project area has been identified as 0.5 ft. NAVD (2.0 ft. NGVD).
2. Existing environmental permit for SFWMD ERP 88-00053-S, for the Interstate 95 managed lanes – Fm No. 422796-1-52-01, according to the drainage design documents for this permit the Seasonal High Water showed is 0.50 ft. NAVD (2.00 ft. NGVD).
3. FDOT projects:
   - FPID 422796-1-52-01 and FPID 422796-2-52-01

     The scope of this project include the design to convert the existing High occupancy Vehicle (HOV) Lane to two Express Lanes along I-95 from the Golden Glades Interchange to south of Broward Blvd. and Ives Dairy Road Interchange at I-95 from NE 16th Ave. to East of Highlands Lake Blvd.

This project includes design information relevant to the PD&E study area as follows: System 5 includes the area from Hallandale Beach Blvd. to Pembroke Rd. this system consists of ditches with bottom elevation of 1.5 ft. NAVD and discharge elevation of 4.0 ft. NAVD. System 5 discharges into a self contained FDOT Borrow pit.

- FPID 409354-2-52-01

  The scope of this project includes the roadway widening to accommodate modifications to the existing I-95 Express ingress and egress points, and widening of bridges over Hollywood Blvd, Johnson Street, C-10 Canal, Taft Street, Sheridan Street, C-10 Spur Canal, Stirling Road and Griffin Road.

  This project includes design information relevant to the PD&E study area as follows: System 6 covers the area from Pembroke Rd. to Johnson St. The System 6 ditches have a ditch bottom elevation of 1.5 ft. NAVD and discharge elevation of 2.5 ft. NAVD. The ultimate discharge for System 6 outfalls is the Hollywood Canal (C-10 canal) as indicated in SFWMD ERP Permit No. 88-00053-S.

For the reference projects the pond bottom has been set based on SFWMD Environmental Resource Permit Handbook design criteria for dry retention as follow; bottom elevation shall be at least one foot above the average wet season water table elevation.

Conclusion and Recommendation:

Based on the information obtain from the various relevant sources the seasonal high water elevation for the project area has been recommended as 0.50 ft. NAVD (2.00 ft. NGVD).

Attached find the back-up information for the evaluation of the Seasonal High Water Elevation as described in this Memo.

WATER TABLE MAP - AVERAGE WET SEASON

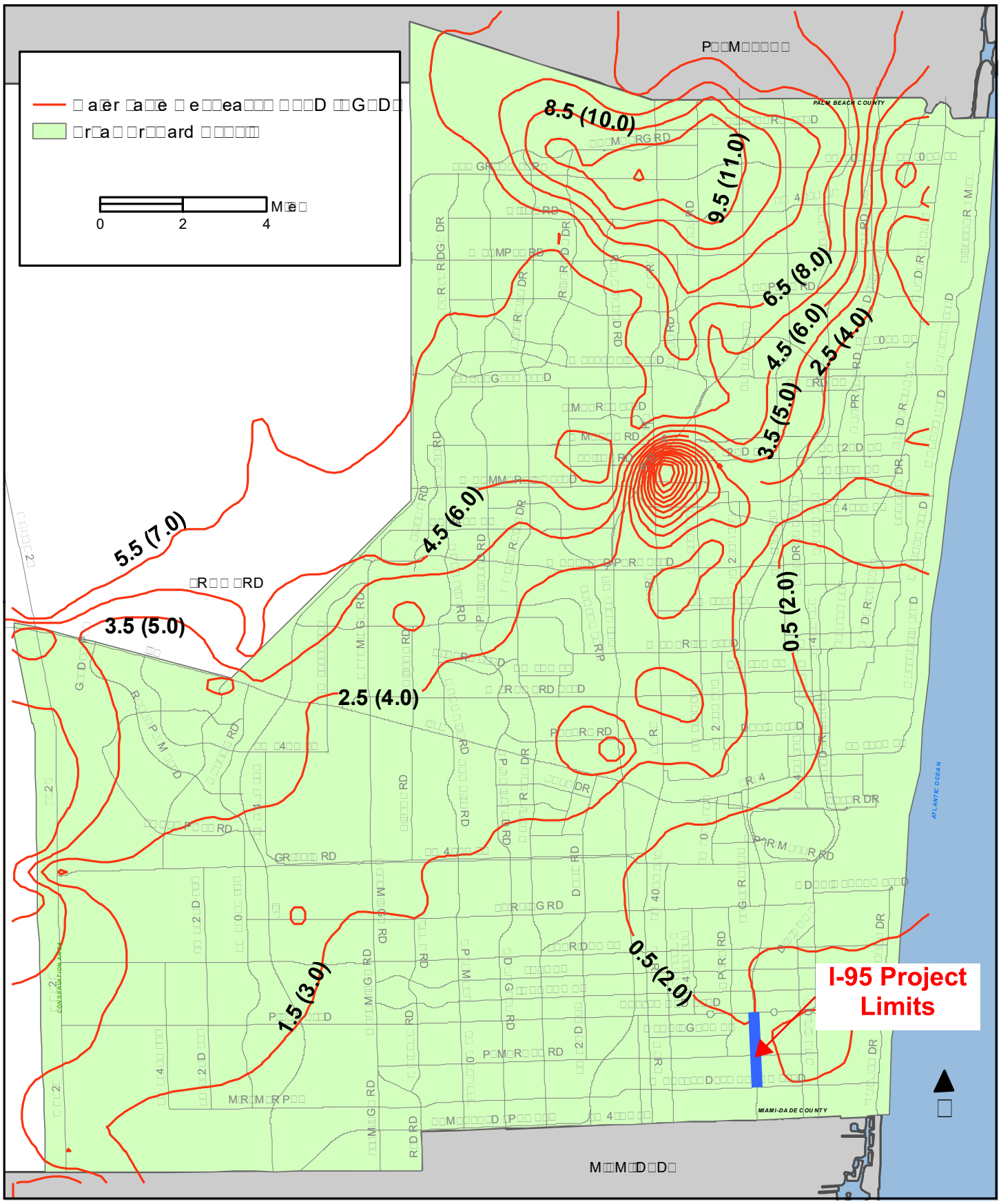


Table E-1: Drainage System Area Calculations -Final Compilation

			A	B	C	D=B-C	E	F=D+E	G	H
Existing Permit	System	Basin Limits	Additional Impervious Area (Ac.)	Runoff Volume of 25yr-3day Storm Event for Additional Impervious Area, V_{post} (Ac-ft) (post-condition) (CN=98)	Runoff Volume of 25yr-3day Storm Event for Additional Impervious Area, V_{pre} (grass) (Ac-ft) (pre-condition) (CN=39)	Increased Runoff Volume of 25yr-3day Storm Event for Additional Impervious Area (Ac-ft)	Ditch Volume Being Filled (Ac-ft) (See Cross Section)	Volume Required (Ac-ft)	Volume Provided (Ac-ft) (See Cross Sections)	Volume of 2.5" Over Additional Impervious Area w/ 75% Dry Detention Credit (Ac-ft)
Permit 85-00070-S	System 1 *	Begin Project to South of Miami Gardens Dr. (Sta. 34+00.00)	0.313	0.385	0.134	0.251	0.001	0.252	0.240	0.049
	System 2 *	South of Miami Gardens Dr. (Sta. 34+00.00) to Snake Creek Canal	0.918	1.129	0.392	0.737	0.047	0.784	0.433	0.143
	System 3	Snake Creek Canal to Miami-Dade Broward County Line	9.389	11.547	4.008	7.539	3.609	11.148	11.617	1.467
Permit 88-00053-S			**10.620**					**12.184**	**12.290**	
	System 4	Miami-Dade Broward County Line to Hallandale Beach Blvd.	1.847	2.271	0.788	1.483	0.204	1.687	1.504	0.289
	System 5 **	Hallandale Beach Blvd. to Pembroke Road	0.470	0.578	0.201	0.377	0.266	0.643	0.643	0.073
	System 6	Pembroke Road to Johnson Street	1.634	2.010	0.698	1.312	0.059	1.371	1.738	0.255
	System 7 **	Johnson Street to North of Johnson Street (Sta. 381+80.50)	0.211	0.259	0.090	0.169	0.037	0.207	0.033	0.033
Permit 88-00050-S			**4.162**					**3.907**	**3.917**	
	System 8 ***	North of Johnson Street (Sta. 381+80.50) to C-10 Canal	0.089	0.109	0.038	0.071	0.027	0.098	0.074	0.014
	System 9 ***	C-10 Canal to Sheridan Street	0.189	0.232	0.081	0.152	0.054	0.206	0.108	0.030
	System 10 ***	Sheridan Street to C-10 Canal Spur	0.734	0.903	0.313	0.589	0.036	0.625	0.478	0.115
	System 11	C-10 Canal Spur to Stirling Road	0.376	0.462	0.161	0.302	0.024	0.326	0.468	0.059
	System 12	Stirling Road to Griffin Road	0.637	0.783	0.272	0.511	0.000	0.511	0.673	0.100
			2.025					**1.766**	**1.803**	
							Total	**17.857**	**18.009**	

Legend

Column	Description
A	Additional impervious area
B, C	V = Q x A/12
	where:
	V = runoff volume (pre or post)
	Q = peak discharge for 25yr-3day storm
	$= (P-0.2S)^2 / (P+0.8S)$,
	where:
	S = (1000 / CN) - 10
	P = rainfall depth (inches) = 15 in
D	Increased runoff (Column B - Column C)
E	Ditch volume being filled (See Cross Sections)
F	Volume required (Column D + Column E)
G	Volume provided (See Cross Sections)
H	Volume of 2.5" over additional impervious area with a 50% detention credit
	V = (2.5/12) x (Column A) x 50%

Notes:

For System 1 use ditch bottom elevation of 4.0-ft NAVD and control elevation of 6.0-ft NAVD.
For System 2 use ditch bottom elevation of 1.5-ft NAVD and control elevation of 2.7-ft NAVD.
For System 3 use ditch bottom elevation of 1.5-ft NAVD and control elevation of 4.5-ft NAVD.
For System 4 use ditch bottom elevation of 2.5-ft NAVD and control elevation of 3.5-ft NAVD.
For System 5 use ditch bottom elevation of 1.5-ft NAVD and control elevation of 4.0-ft NAVD.
For System 6 use ditch bottom elevation of 1.5-ft NAVD and control elevation of 2.5-ft NAVD.
For System 7 use ditch bottom elevation of 1.5-ft NAVD and control elevation of 2.5-ft NAVD.
For System 8 use ditch bottom elevation of 1.5-ft NAVD and control elevation of 2.5-ft NAVD.
For System 9 use ditch bottom elevation of 1.0-ft NAVD and control elevation of 2.0-ft NAVD.
For System 10 use ditch bottom elevation of 1.5-ft NAVD and control elevation of 2.6-ft NAVD.
For System 11 use ditch bottom elevation of 1.5-ft NAVD and control elevation of 2.6-ft NAVD.
For System 12 use ditch bottom elevation of 1.5-ft NAVD and control elevation of 1.95-ft NAVD.

* The deficiency in required volume in Systems 1 and 2 are offset by compensatory volume provided in the adjoining System 3 SFWMD Permit No. 85-00070-S.
** The deficiency in required volume in Systems 4, 5, and 7 are offset by compensatory volume provided in the adjoining System 6 of SFWMD Permit No. 88-00053-S.
*** The deficiency in required volume in Systems 8, 9, and 10 are offset by compensatory volume provided in the adjoining Systems 11 and 12 of SFWMD Permit No. 88-00050-S.

APPENDIX K

EXCERPT OF CONTAMINATION SCREENING EVALUATION REPORT (CSER)

Contamination Screening Evaluation Report Update

Florida Department of Transportation

District 4

I-95 PD&E

Limits of Project: from south of Hallandale Beach Boulevard to north of Hollywood Boulevard

Broward County, Florida

Financial Management Number: 436903-1-22-02

ETDM Number: 14254

Date: April 2024

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

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1.0 EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) District 4 is conducting an Interstate 95 (I-95) Project Development and Environment (PD&E) Study to evaluate interchange improvements at Hallandale Beach Boulevard, Pembroke Road, and Hollywood Boulevard. The project is in Broward County, Florida and is contained within the municipalities of Hallandale Beach, Pembroke Park, and Hollywood. The project is approximately three miles long and extends from south of Hallandale Beach Boulevard to north of Hollywood Boulevard (Mileposts 0.0-3.1).

This Level I Contamination Screening Evaluation Report (CSER) was prepared using the FDOT PD&E Manual, Part 2, Chapter 20, and standard contamination screening evaluation practices such as: reviewing regulatory agency records, site reconnaissance, and literature review.

A total of 38 potentially contaminated sites were identified and reviewed for potential impacts to the project. Of these, three were ranked "High", 22 were ranked "Medium", 11 were ranked "Low", and two were ranked "No" for potential contamination concerns. For sites assigned a risk rating of "Medium" or "High", a Level II Assessment is recommended if construction activities are proposed in the site vicinity. These sites have been determined to have known contaminants, which may impact the proposed project. A soil and groundwater sampling plan should be developed for each site, as applicable. Based on the findings of a future review and Level II Assessment, the design engineers may be required to avoid areas of concern or include special provisions with the plans to require that construction activities performed in areas of concern be conducted or supervised by a contamination assessment and remediation contractor specified by FDOT.

Additional information may become available or site-specific conditions may change from the time this report was prepared and should be considered prior to acquiring right of way (ROW) and/or proceeding with roadway construction.

2.0 Project Overview

2.1 Project Description and Location

The FDOT District Four is conducting a PD&E Study for I-95 from south of Hallandale Beach Boulevard (SR 858) to north of Hollywood Boulevard (SR 820), a distance of approximately three miles (see **Figure 2.1**). The PD&E Study is proposing improvements to the Hallandale Beach Boulevard, Pembroke Road, and Hollywood Boulevard interchanges. The project is located in Broward County, Florida and is contained within the municipalities of Hallandale Beach, Pembroke Park, and Hollywood. The project is approximately three miles long and extends from the Broward/Miami-Dade County Line to Johnson Street (Mileposts 0.0 – 3.1).

I-95 is the primary north-south interstate facility that links all major cities along the Atlantic Seaboard and is one of the most important transportation systems in southeast Florida. I-95 is one of the two major expressways, Florida's Turnpike being the other that connects major employment centers and residential areas within the South Florida tri-county area. I-95 is part of the state's Strategic Intermodal System (SIS) and the National Highway System. In addition, I-95 is designated as an evacuation route along the east coast of Florida.

I-95, within the project limits, currently consists of eight general use lanes (four in each direction) and four dynamically tolled express lanes (two in each direction). This segment of I-95 is functionally classified as a Divided Urban Principal Arterial Interstate and has a posted speed limit of 65 miles per hour.

The access management classification for this corridor is Class 1.2, Freeway in an existing urbanized area with limited access.

There are three existing full interchanges within the project limits located at Hallandale Beach Boulevard, Pembroke Road, and Hollywood Boulevard. All three roadways are classified as Divided Urban Principal Arterials. Hallandale Beach Boulevard consists of four lanes west of I-95 and six lanes east of I-95. Pembroke Road and Hollywood Boulevard each have six lanes west of I-95 and four lanes east of I-95.

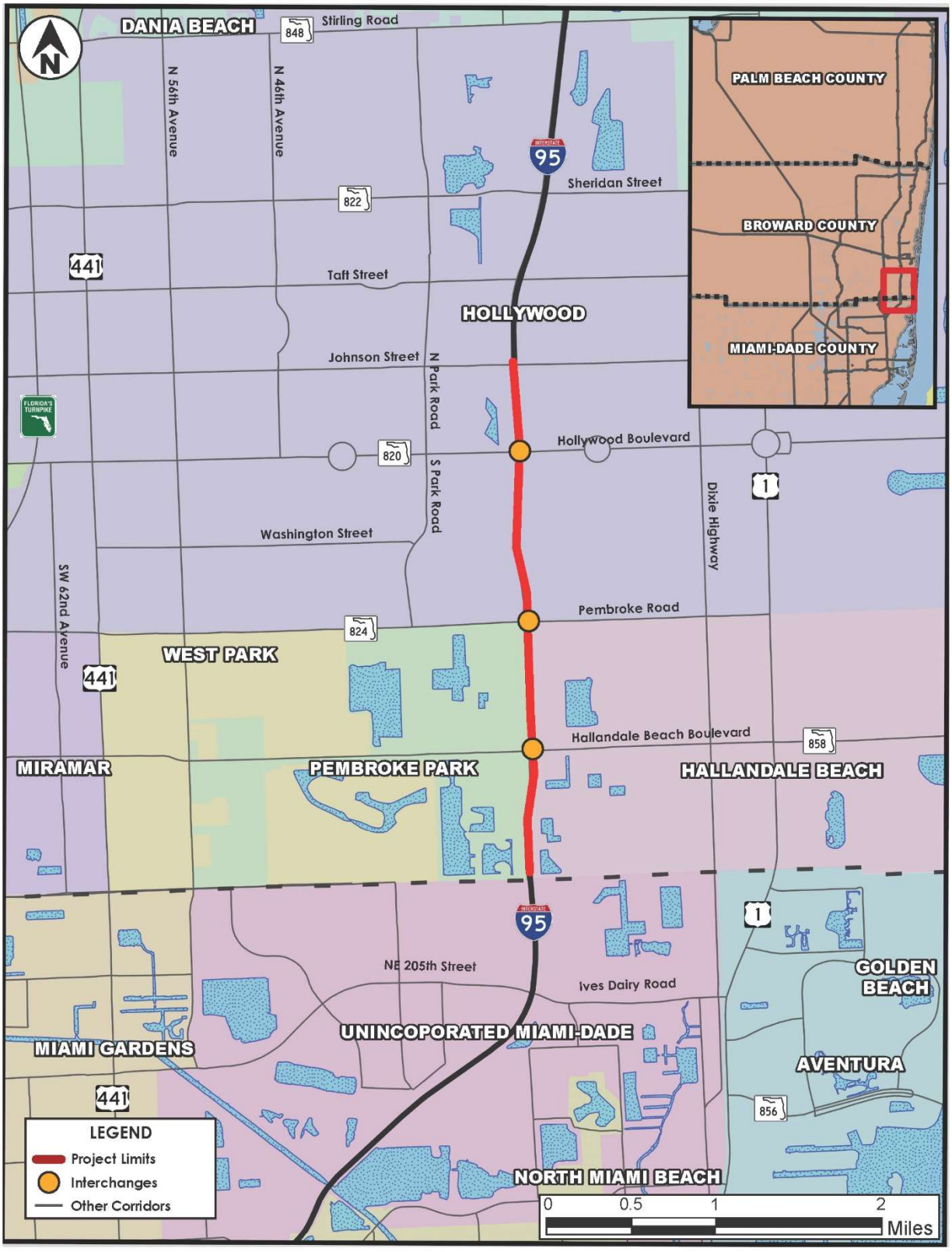


Figure 2.1 – Project Location Map

This PD&E Study is evaluating the potential modification of existing entrance and exit ramps serving the three interchanges within the project limits. Widening and turn lane modifications at the ramp terminals were evaluated to facilitate the ramp modifications and improve the access and operation of the interchanges.

2.2 Purpose and Need of the Project

The overall goals and objectives of this PD&E Study are described below:

- Evaluate the implementation of potential interchange and intersection improvements that will improve capacity, operations, safety, mobility, and emergency evacuation.
- Identify the appropriate interstate/interchange access improvements that, combined with Transportation Systems Management and Operations (TSM&O) improvements, will service the users of the area, and achieve the Purpose and Need.
- Provide relief from existing and projected traffic congestion.
- Improve the safety of the I-95 mainline corridor by addressing speed differentials and lane weaving deficiencies between interchanges.
- Support the optimal operations of the existing roadway network.
- Maintain consistency with the current I-95 Express Lanes and local projects.
- Prioritize the proposed improvements based on the area needs (short-term vs. long-term), logical segmentation and funding.

The need for this project is to increase interchange and ramp terminals intersection capacity at Hallandale Beach Boulevard, Pembroke Road and Hollywood Boulevard. Other considerations for the purpose and need of this project include safety, system linkage, modal interrelationships, transportation demand, social demands, economic development, and emergency evacuation. The primary and secondary needs for the project are discussed in further detail below:

Capacity – The I-95 ramps at Hallandale Beach Boulevard, Pembroke Road, and Hollywood Boulevard are currently congested and affecting traffic operations along I-95 between the interchange ramps and at the arterial intersections near I-95.

Without future improvements, the driving conditions will continue to deteriorate well below acceptable Level of Service (LOS) standards. The following I-95 freeway segments will operate below LOS D within at least one peak-hour period before the year 2045:

- Ives Dairy Road northbound on-ramp to Hallandale Beach Boulevard northbound off-ramp
- Hallandale Beach Boulevard northbound on-ramp to Pembroke Road northbound off-ramp
- Pembroke Road northbound on-ramp to Hollywood Boulevard northbound off-ramp
- Hollywood Boulevard northbound on-ramp to Sheridan Street northbound off-ramp
- Sheridan Street southbound on-ramp to Hollywood Boulevard southbound off-ramp
- Pembroke Road southbound on-ramp to Hallandale Beach Boulevard southbound off-ramp
- Hallandale Beach Boulevard southbound on-ramp to Ives Dairy Road southbound off-ramp

Additionally, the following intersections will fall below LOS D during at least one peak-hour period before the year 2045:

- Hallandale Beach Boulevard northbound ramp terminal
- Hallandale Beach Boulevard southbound ramp terminal
- Hollywood Boulevard southbound ramp terminal
- Hollywood Boulevard/28th Avenue

The improvements proposed as part of this project will increase the capacity of the interchanges and the ramp terminal intersections.

Safety – The crash safety analysis indicates that the I-95 study area segments have experienced greater overall number of crashes for the years 2012 through 2014 than what would typically be anticipated on similar facilities. A review of the crash data indicates that traffic operational improvements could address some of the safety issues.

Additional I-95 entry and exit ramp capacity at these interchanges will improve the safety and overall flow of traffic within the project corridor and adjacent intersections.

System Linkage – I-95 is part of the State's SIS and the National Highway System. I-95 provides limited access connectivity to other major arterials such as I-595 and Florida's Turnpike. The project is not proposing to change system linkage. However, potential interchange modifications would improve movements within the existing network systems.

Modal Interrelationships – There are sidewalks in both directions and public transit routes along Hallandale Beach Boulevard, Pembroke Road, and Hollywood Boulevard. Additionally, there is a Tri-Rail Station in the northwest quadrant of the I-95/Hollywood Boulevard Interchange.

Capacity improvements within the study area will enhance the mobility of people and goods by alleviating current and future congestion at the interchanges and on the surrounding freight and transit networks. Reduced congestion will serve to maintain and improve viable access to the major transportation facilities and businesses in the area.

Transportation Demand – The I-95 PD&E Study phase from south of Hallandale Beach Boulevard to north of Hollywood Boulevard is included in the Broward Metropolitan Planning Organization (MPO) 2045 Long Range Transportation Plan (LRTP), Transportation Improvement Program (TIP), FDOT Work Program, FDOT State TIP, and FDOT SIS Five Year Plan.

Social Demands and Economic Development – Social and economic demands on the I-95 corridor will continue to increase as population and employment increase. The Broward County MPO LRTP predicted that the population would grow from 1.9 million in 2018 to 2.2 million by 2045, an increase of 16 percent. Jobs were predicted to increase from 0.9 to 1.2 million during the same period, an increase of 25 percent.

The project intersects the cities of Hallandale Beach, Pembroke Park, and Hollywood, the third largest city in Broward County.

Emergency Evacuation – The project is anticipated to improve emergency evacuation capabilities by enhancing connectivity and accessibility to major arterials designated on the state evacuation route. I-95, Hallandale Beach Boulevard, Pembroke Road, and Hollywood Boulevard serve as part of the emergency evacuation route network designated by the Florida Division of Emergency Management and by Broward County. Hallandale Beach Boulevard, Pembroke Road, and Hollywood Boulevard move traffic from the east to I-95. I-95 is critical in facilitating traffic during emergency evacuation periods as it connects to other major arterials and highways in the state evacuation route network (i.e., I-595 and the Florida's Turnpike).

2.3 Existing Conditions

I-95, within the study limits, consists of eight 11- to 12-foot-wide general use lanes (four lanes in each direction), four 11-foot wide dynamically tolled express lanes (two in each direction), 12-foot-wide auxiliary lanes at selected locations, 12-foot-wide paved outside shoulders, 6 to 11-foot wide paved inside shoulders, a 2-foot wide median barrier wall, and outside roadway guardrails. The express lanes are buffer separated from the general use lanes with express lane markers and a 3-foot-wide buffer. **Figure 2.2** shows the roadway section north of Hallandale Beach Boulevard and **Figure 2.3** shows the roadway section north of Pembroke Road. **Figure 2.4** depicts the existing conditions schematic line diagram.

The existing limited access right of way varies slightly within the study limits. The right of way is generally consistent throughout the corridor except at the interchanges, where it varies to accommodate entrance and exit ramps. **Table 2.1** summarizes the available right of way along the corridor.

Table 2.1 – Summary of Existing Limited Access Right of Way

I-95 Roadway Section	Right of Way Width (feet)
Miami-Dade/Broward County Line – Hallandale Beach Boulevard	303
Hallandale Beach Boulevard – Pembroke Road	300
Pembroke Road – Hollywood Boulevard	315
Hollywood Boulevard – Johnson Street	343

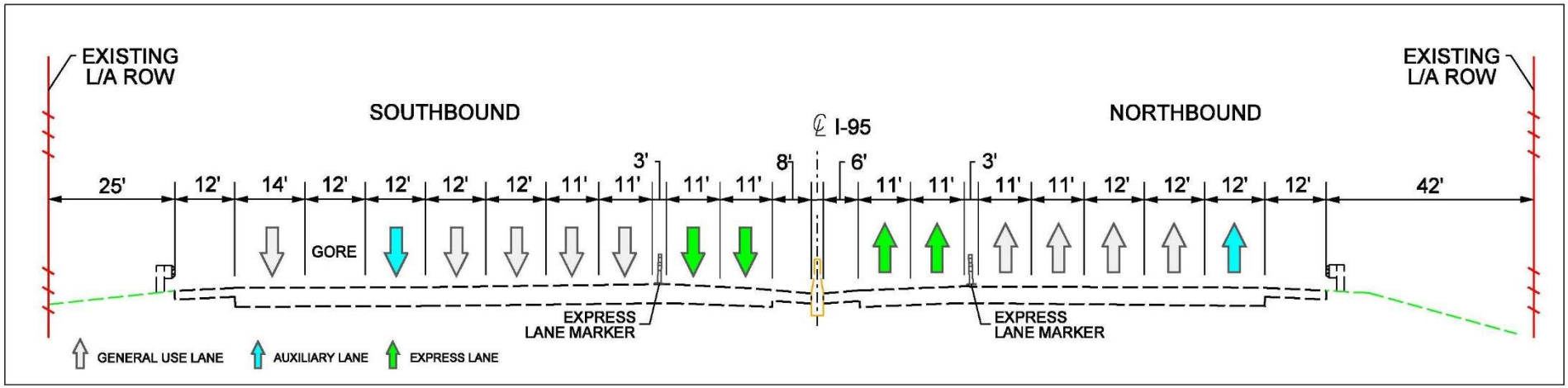


Figure 2.2 – Existing Roadway North of Hallandale Beach Boulevard

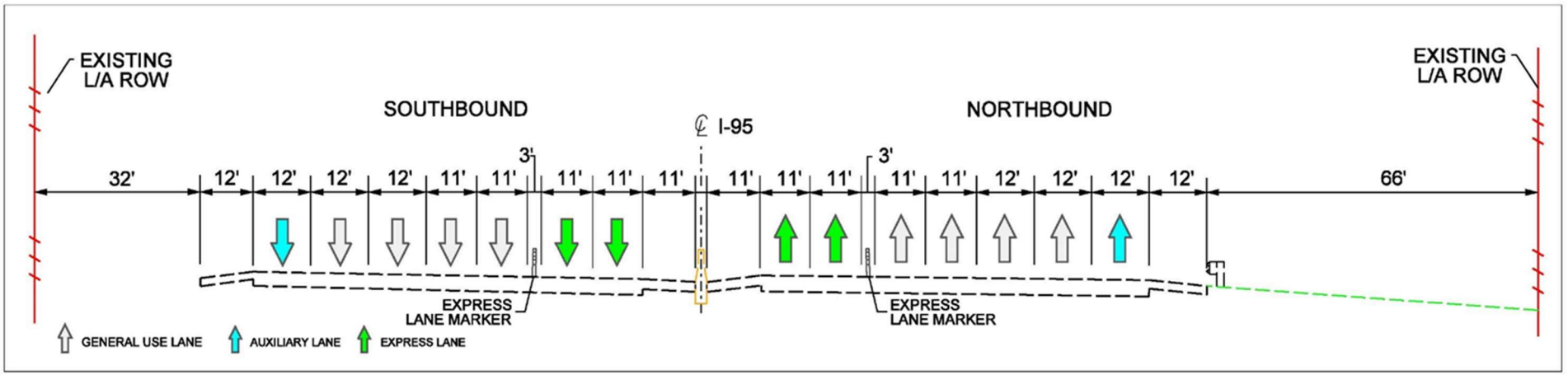
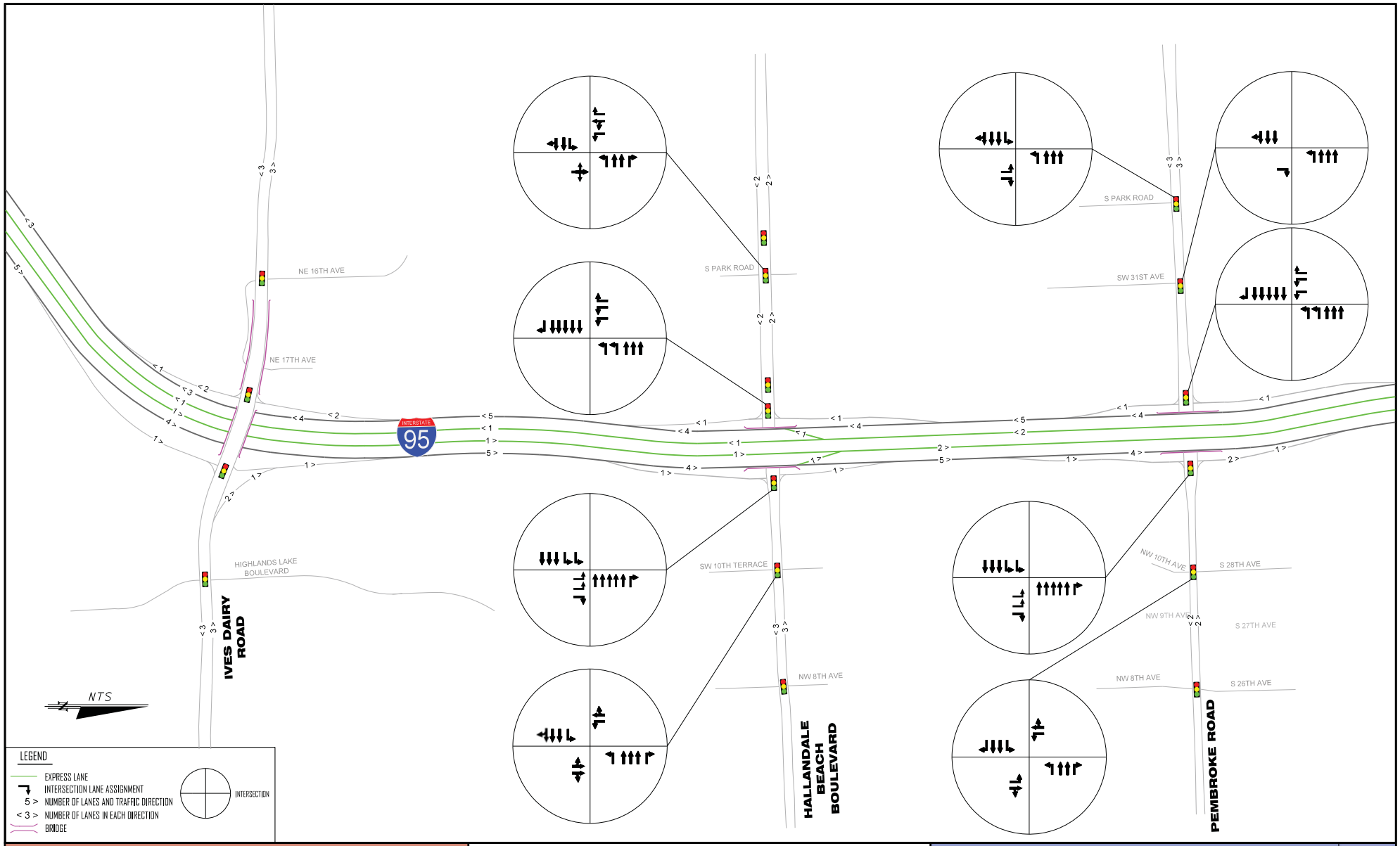


Figure 2.3 – Existing Roadway North of Pembroke Road



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from South of Hallandale Beach Boulevard (SR 858) to North of Hollywood Boulevard (SR 820)
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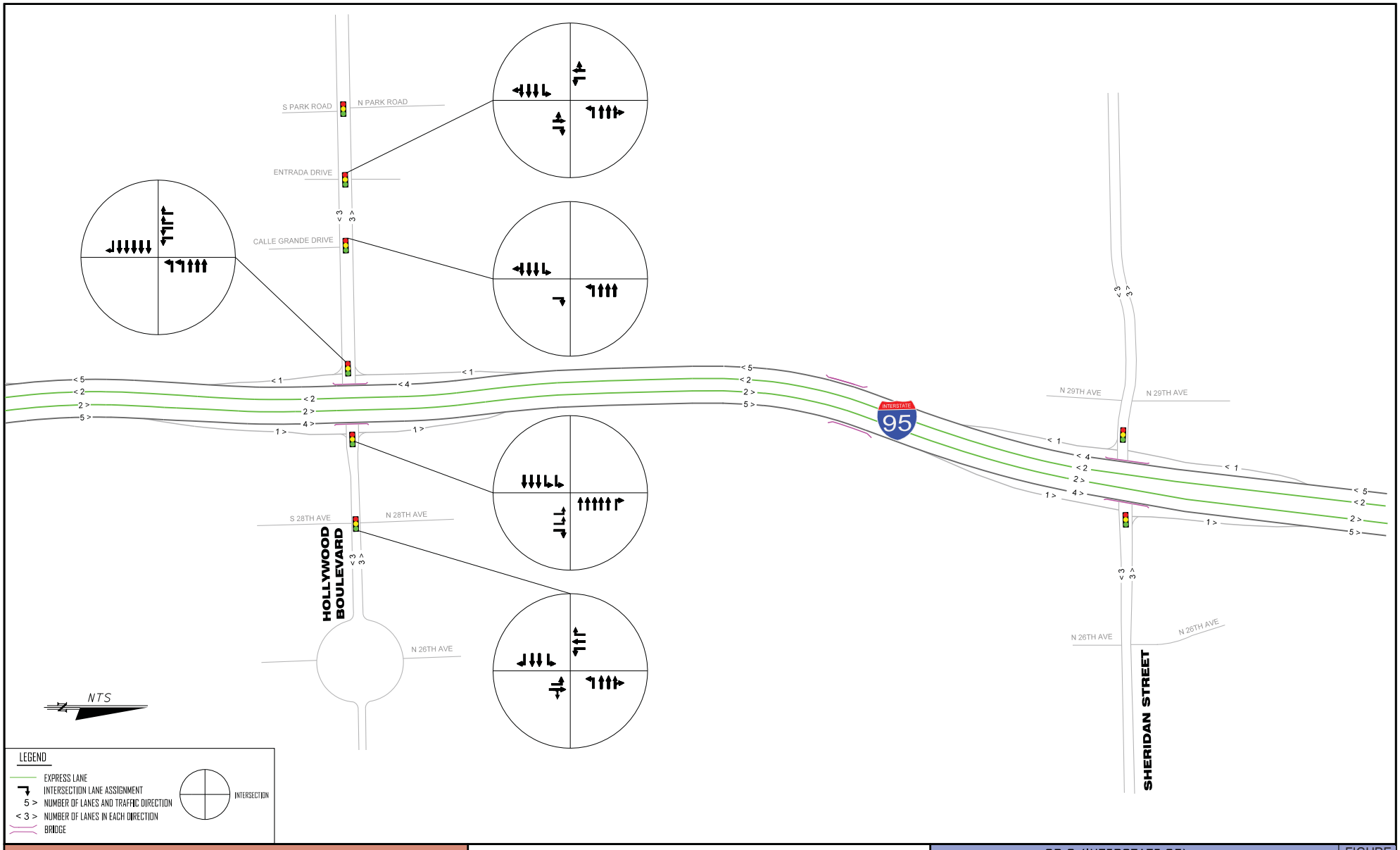
ETDM No.: 14254

SR 9 (INTERSTATE 95)
LANE GEOMETRY AND CONFIGURATIONS
EXISTING LINE DIAGRAM

FIGURE 2.4



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SR 9 (INTERSTATE 95) LANE GEOMETRY AND CONFIGURATIONS EXISTING LINE DIAGRAM

FIGURE 2.4

3.0 PROJECT ALTERNATIVES

Alternatives evaluated during the PD&E Study include the No-Build Alternative and two Build Alternatives. Alternatives were developed and evaluated based on the ability to meet the project's purpose and need.

3.1 NO-BUILD ALTERNATIVE

The No-Build Alternative includes the existing transportation network and any funded, planned, or programmed improvements open to traffic by the design year. The No-Build Alternative includes only those improvements that are elements of the MPO's Transportation Improvement Program, the 2045 Cost Feasible LRTP, the FDOT's Adopted Five Year Work Program, any local government comprehensive plans and/or any development mitigation improvement projects that are elements of approved development orders.

The No-Build Alternative includes currently planned and programmed improvements. One of the programmed improvements is the safety short-term interim improvements at the Hallandale Beach Boulevard, Pembroke Road and Hollywood Boulevard interchanges. The No-Build Alternative includes the ongoing District Four I-95 Express Phase 3C Construction Project between south of Hollywood Boulevard and north of I-595. This construction project will add additional express lane access points (northbound egress and southbound ingress) within the Hollywood Boulevard Interchange. The No-Build Alternative also includes the District Six I-95 Planning Study between US 1 (Downtown Miami) and the Miami-Dade/Broward County Line. This planning study is proposing to add mainline capacity and interchange improvements by the design year of this project.

This alternative is considered to be a viable alternative to serve as a comparison to the study's proposed build alternatives.

The No-Build Alternative roadway sections are the same as the existing sections plus any future planned improvements. I-95, within the study limits, consists of eight 11- to 12-foot-wide general use lanes (four lanes in each direction), four 11-foot wide dynamically tolled express lanes (two in each direction), 12-foot-wide auxiliary lanes at selected locations, 12-foot-wide paved outside shoulders, 6 to

11-foot wide paved inside shoulders, a 2-foot wide median barrier wall, and outside roadway guardrails. The express lanes are buffer separated from the general use lanes with express lane markers and a 3-foot-wide buffer. **Figure 3.1** shows the roadway section north of Hallandale Beach Boulevard and **Figure 3.2** shows the roadway section north of Pembroke Road. **Figure 3.3** depicts the No-Build Alternative schematic line diagram.

3.2 Build Alternatives

Two build alternatives were evaluated to improve traffic operations within the study area for the I-95 mainline and interchanges. Build alternatives were developed with the goal of reducing congestion and delay while also maximizing the efficiency of the transportation system.

Alternative 1 – This alternative proposes braided ramps between interchanges to improve substandard weaving movements along I-95. In this alternative, the on-ramps from each interchange will remain unchanged. However, the off-ramps to Pembroke Road and Hollywood Boulevard in the northbound direction and to Pembroke Road and Hallandale Beach Boulevard in the southbound direction will be located one interchange prior to the destination interchange. For example, travelers destined northbound to Pembroke Road would use an exit ramp located just south of the Hallandale Beach Boulevard corridor right after the Hallandale Beach Boulevard off-ramp. The new exit ramp will continue separated from the I-95 mainline braiding over the Hallandale Beach Boulevard on-ramp and continuing along the right of way line until reaching the cross-street ramp terminal. This new exit ramp bypasses and avoids conflicts with the Hallandale Beach Boulevard on-ramp. The same design continues northbound to Hollywood Boulevard and southbound to Pembroke Road and Hallandale Beach Boulevard. **Figure 3.4** shows the roadway section north of Hallandale Beach Boulevard and **Figure 3.5** shows the roadway section north of Pembroke Road. **Figure 3.6** shows the schematic geometric layout of Alternative 1.

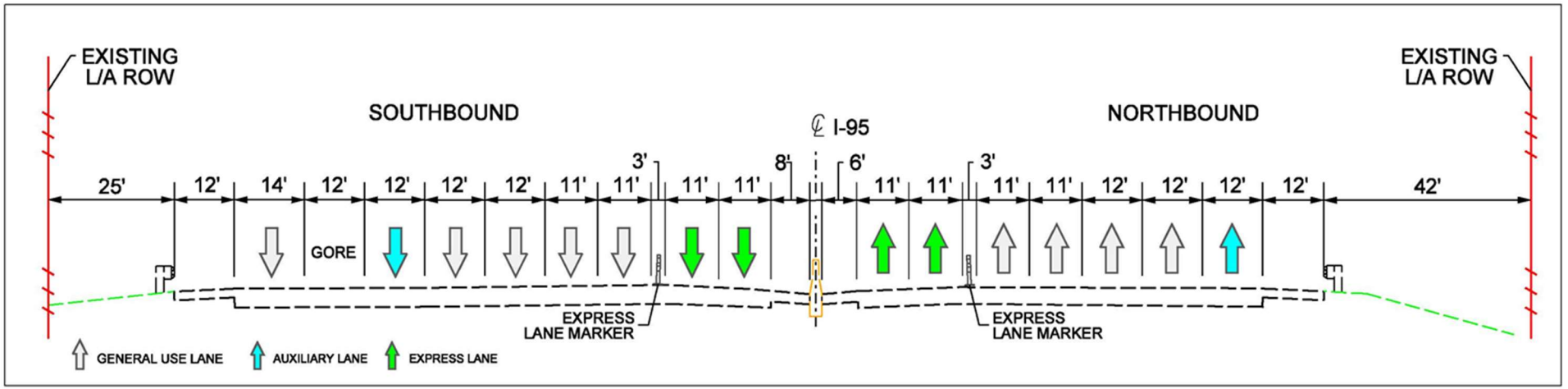


Figure 3.1 – No-Build Alternative North of Hallandale Beach Boulevard

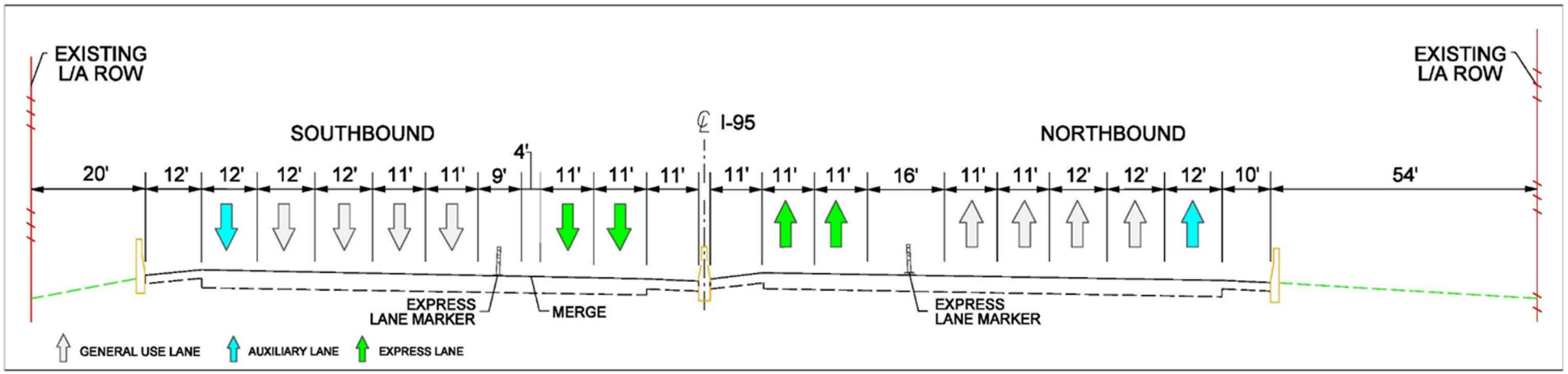
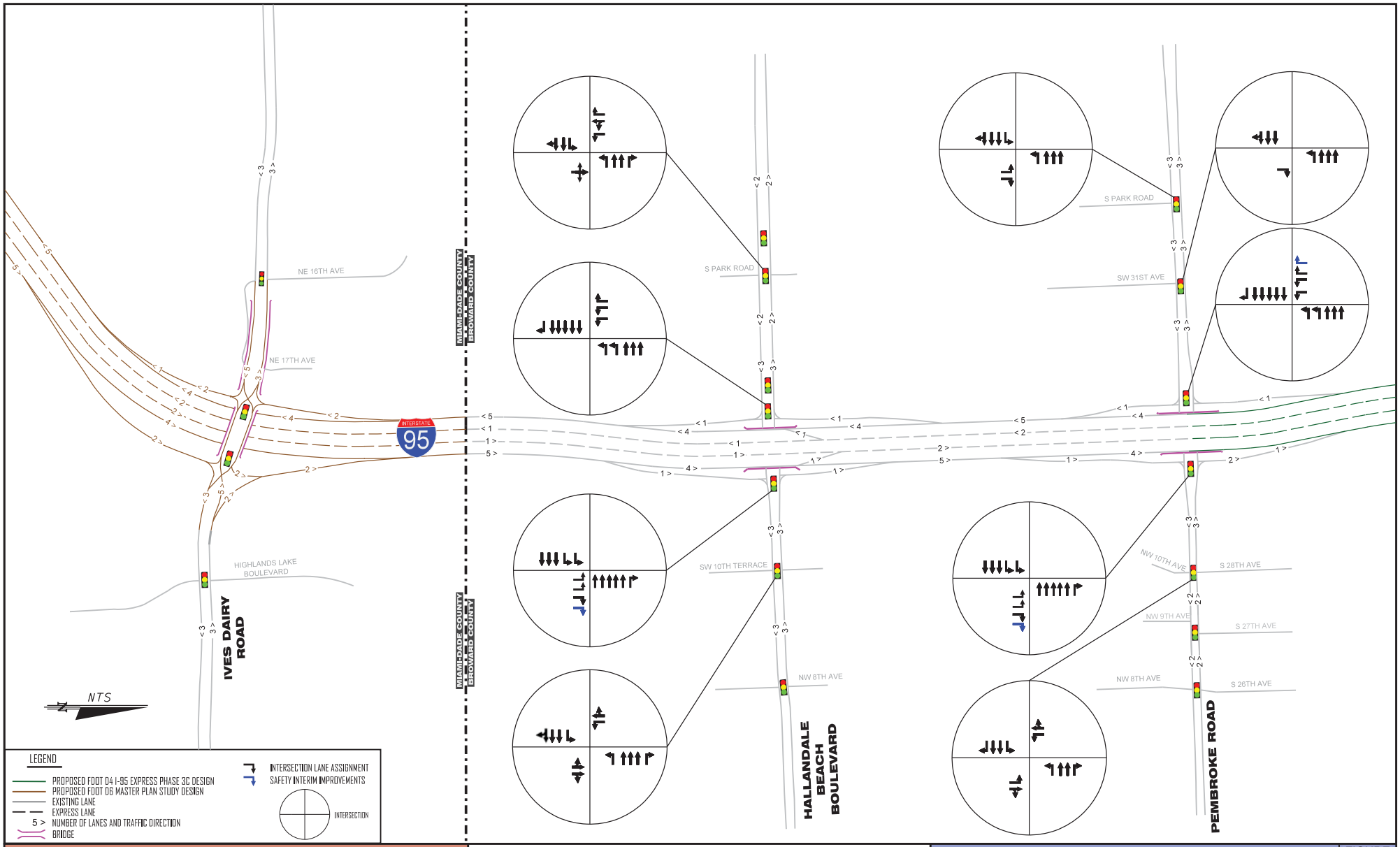


Figure 3.2 – No-Build Alternative North of Pembroke Road



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SEPTEMBER 2020

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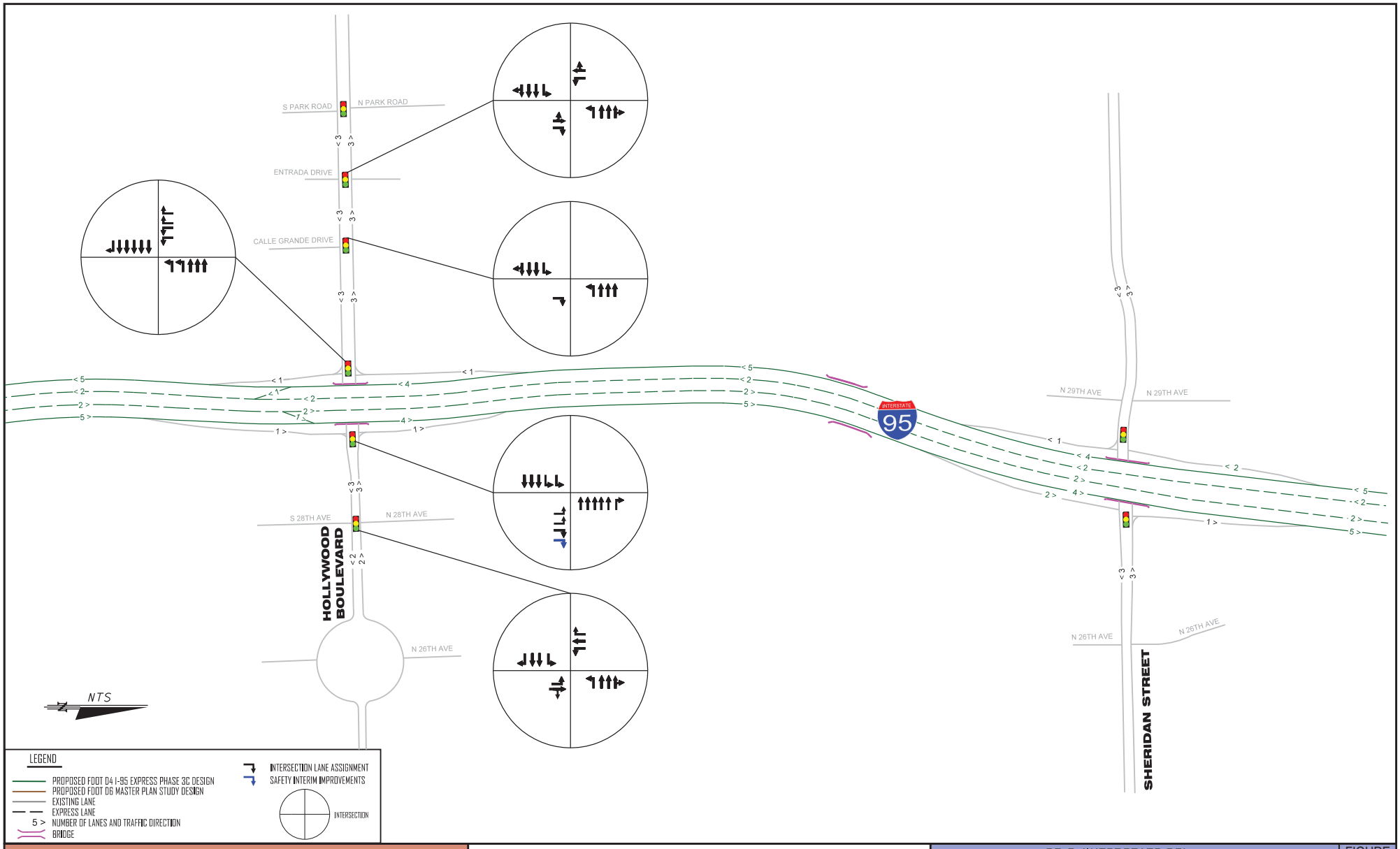
SR 9 (INTERSTATE 95)
LANE GEOMETRY AND CONFIGURATIONS
2045 NO-BUILD LINE DIAGRAM

FIGURE 3.3



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SR 9 (INTERSTATE 95) LANE GEOMETRY AND CONFIGURATIONS 2045 NO-BUILD LINE DIAGRAM

FIGURE 3.3

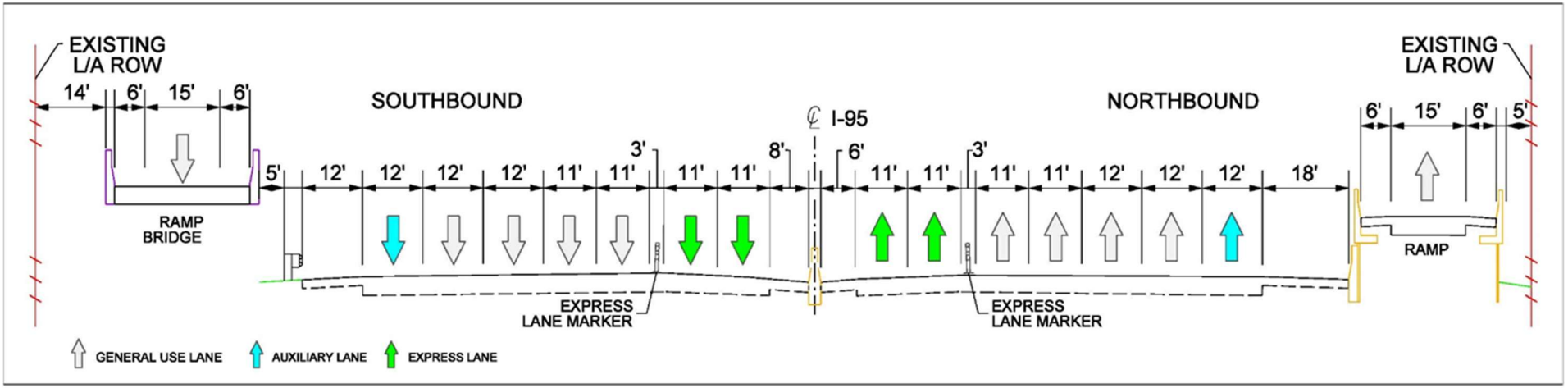


Figure 3.4 – Alternative 1 North of Hallandale Beach Boulevard

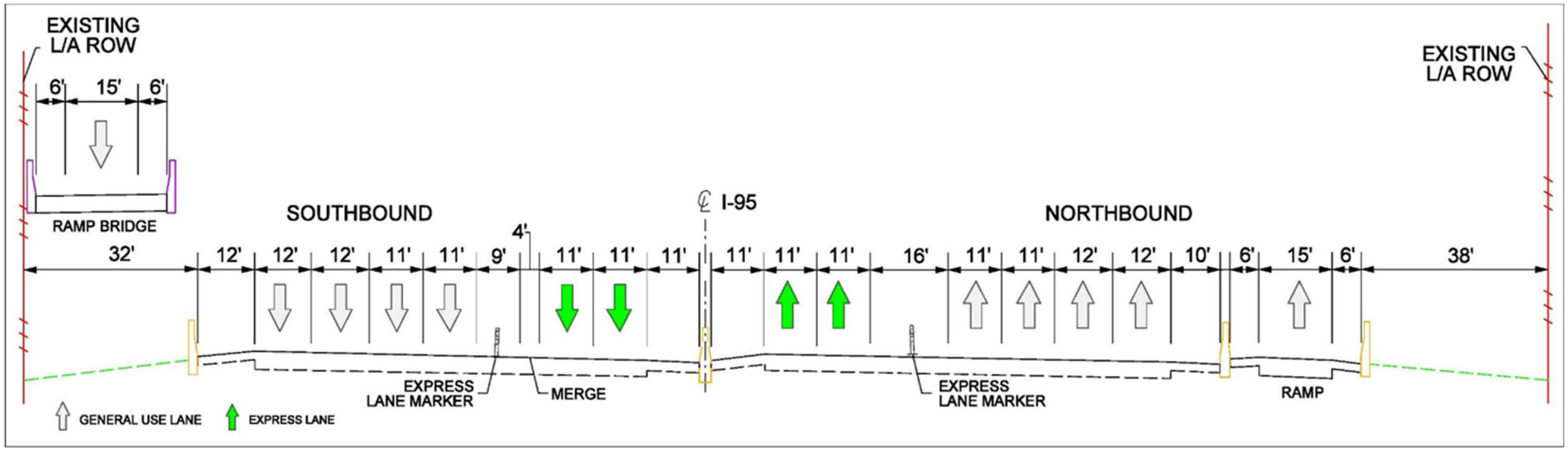
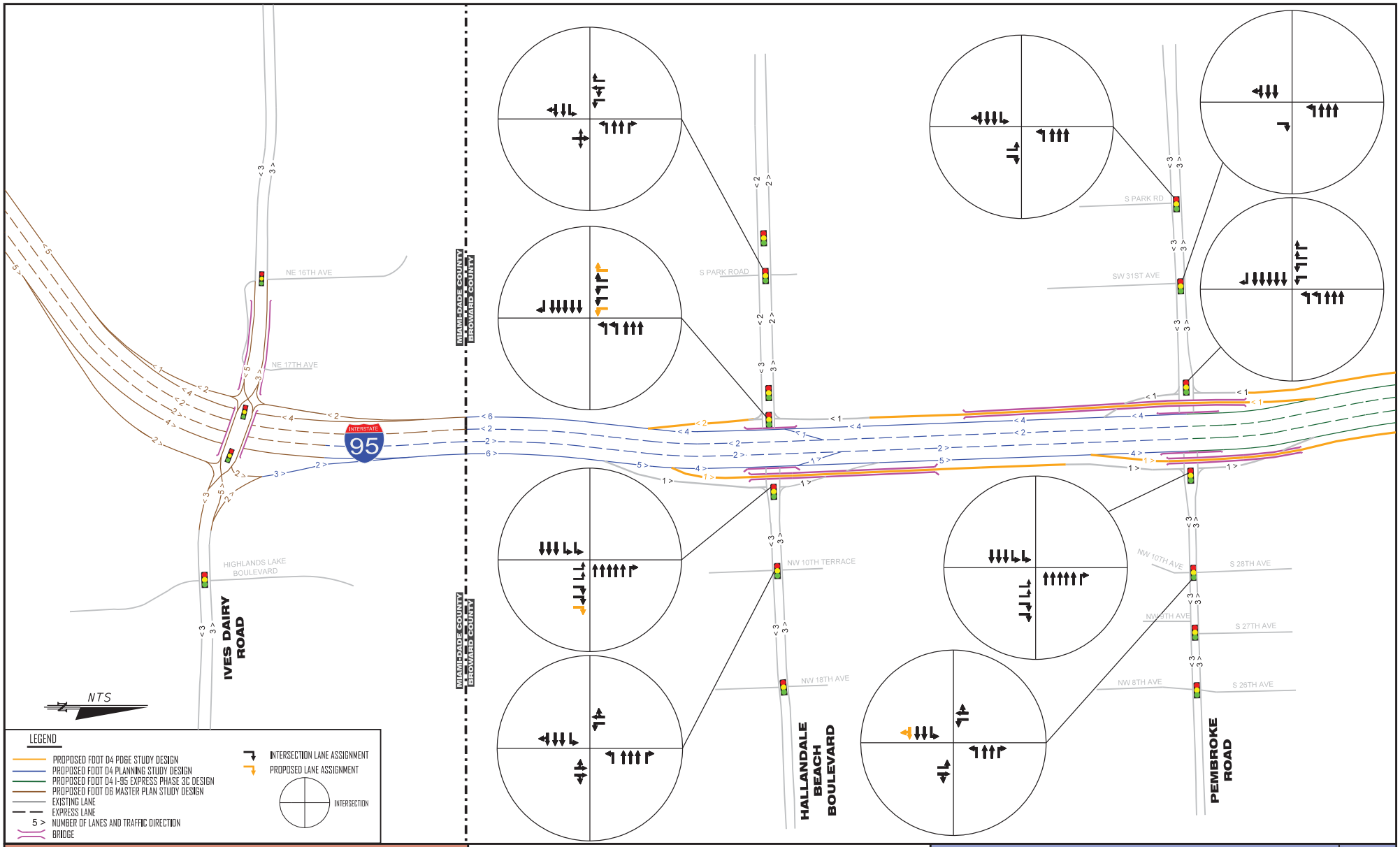


Figure 3.5 – Alternative 1 North of Pembroke Road



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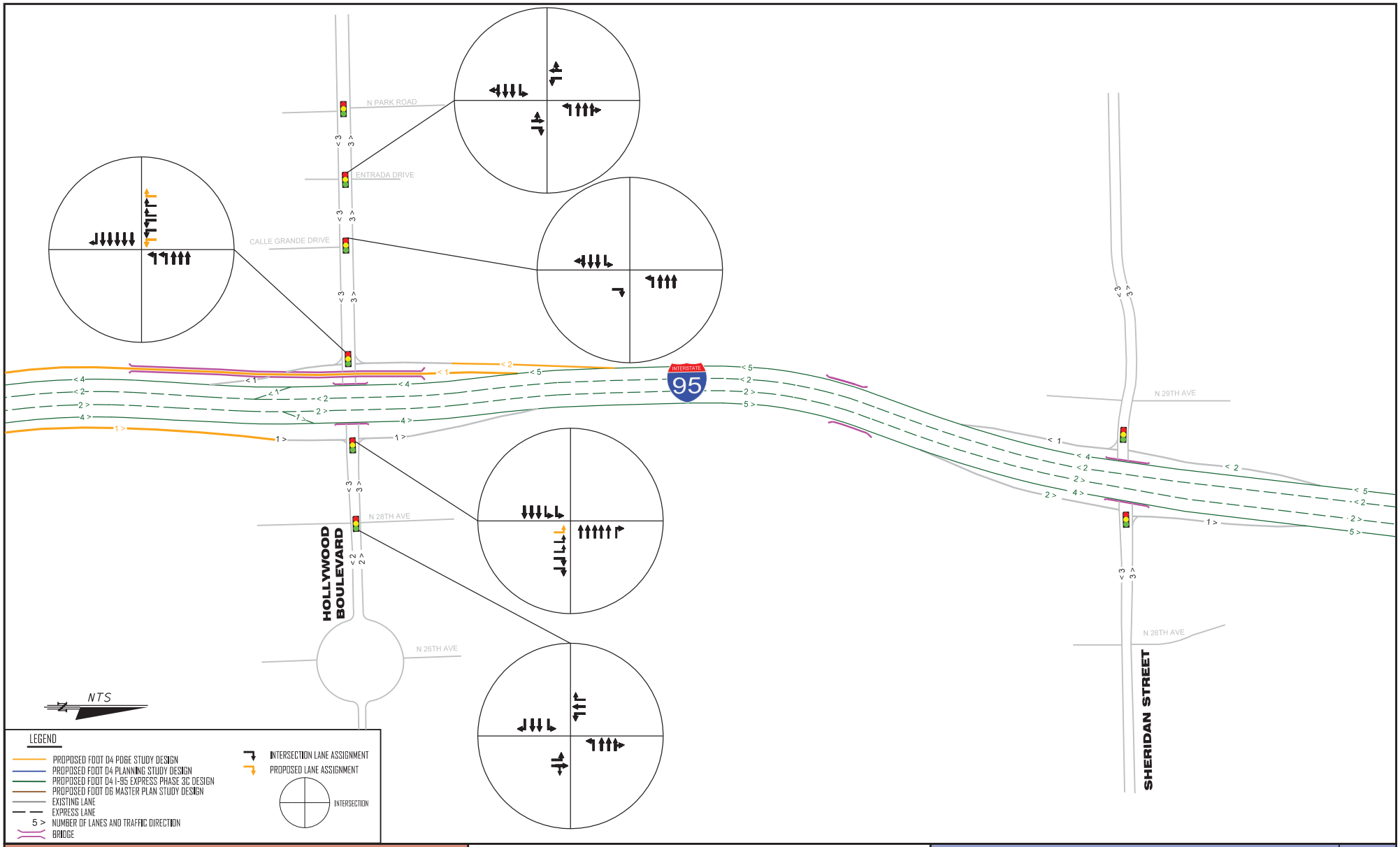
SR 9 (INTERSTATE 95)
LANE GEOMETRY AND CONFIGURATIONS
ALTERNATIVE 1 LINE DIAGRAM

FIGURE 3.6



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LANE GEOMETRY AND CONFIGURATIONS
ALTERNATIVE 1 LINE DIAGRAM

FIGURE 3.6

Alternative 2 – This alternative proposes a collector distributor roadway system within the I-95 mainline project area. The collector distributor roadway system will remove the Pembroke Road Interchange from directly interacting with the I-95 mainline. In the northbound direction, all exiting traffic to Pembroke Road and Hollywood Boulevard will utilize a new collector distributor off-ramp just south of Hallandale Beach Boulevard. The collector distributor roadway system will extend to just north of Hollywood Boulevard serving the exit traffic to Pembroke Road, entry traffic from Pembroke Road and entry traffic from Hollywood Boulevard. In the southbound direction, the new collector distributor roadway system will not be continuous, it will end and begin at Pembroke Road. The first section combines the off-ramps to Hollywood Boulevard and Pembroke Road and the second section moves the Pembroke Road on-ramp to enter I-95 south of the Hallandale Beach Boulevard on-ramp. **Figure 3.7** shows the roadway section north of Hallandale Beach Boulevard and **Figure 3.8** shows the roadway section north of Pembroke Road. **Figure 3.9** shows the schematic geometric layout of Alternative 2.

Widening and turn lane modifications at the ramp terminals were evaluated to facilitate the ramp modifications and improve the access and operation of the interchanges. These improvements are the same in both alternatives.

3.3 Preferred Alternative

A preferred alternative was selected in September 2021. Subsequent coordination with the local municipalities generated several requests to modify the preferred alternative in specific areas to meet their local needs. Therefore, FDOT addressed these requests and evaluated several modifications to the preferred alternative.

In 2023, FDOT completed the evaluation and finalized the refinements to the preferred alternative. The refined preferred alternative is proposing a combination of ramp modifications and collector distributor roads adjacent to the I-95 mainline lanes. Collector distributor roads are extra lanes between the interstate freeway lanes and local frontage/crossing roads. Their primary purpose is to move vehicle lane changing away from the high-speed traffic on the interstate lanes. Lane changes occur on the collector distributor roads as vehicles move from the interstate to the frontage roads or other connecting roadways and vice versa.

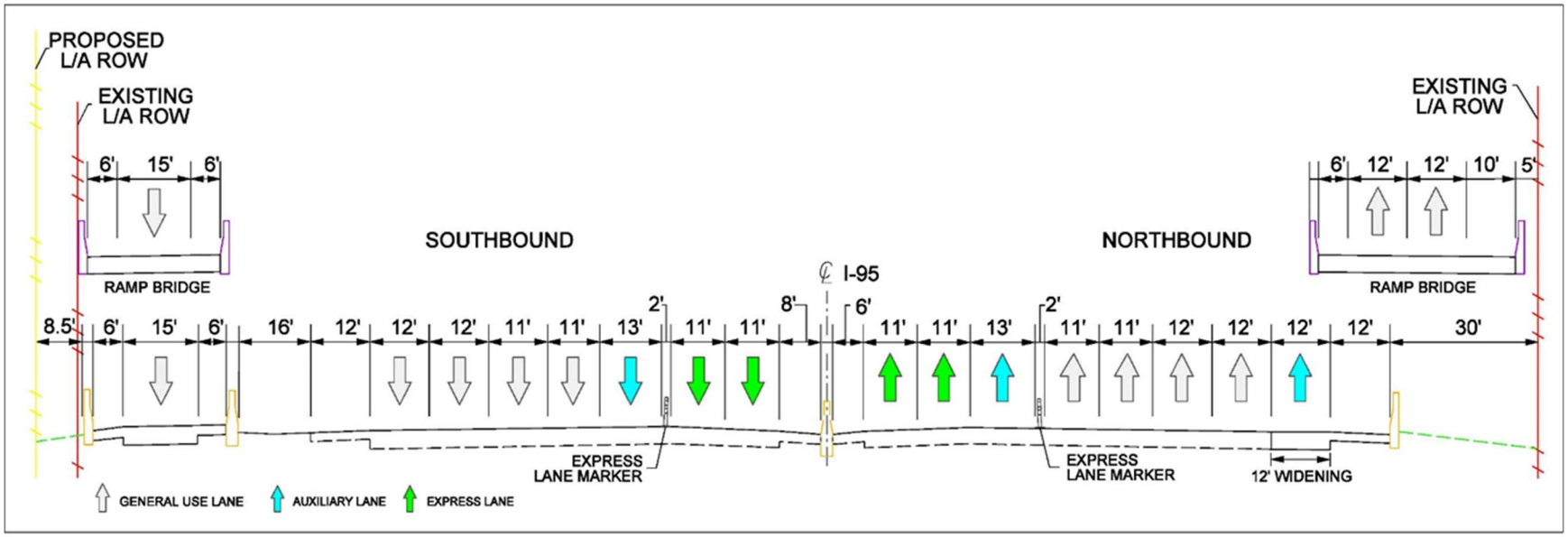


Figure 3.7 – Alternative 2 North of Hallandale Beach Boulevard

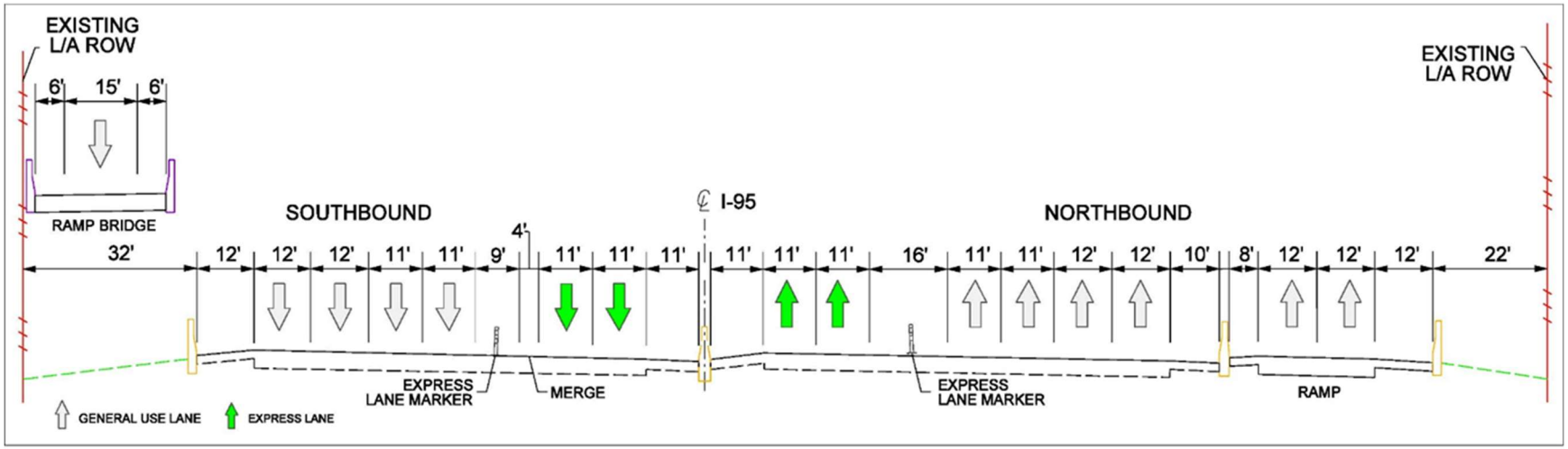
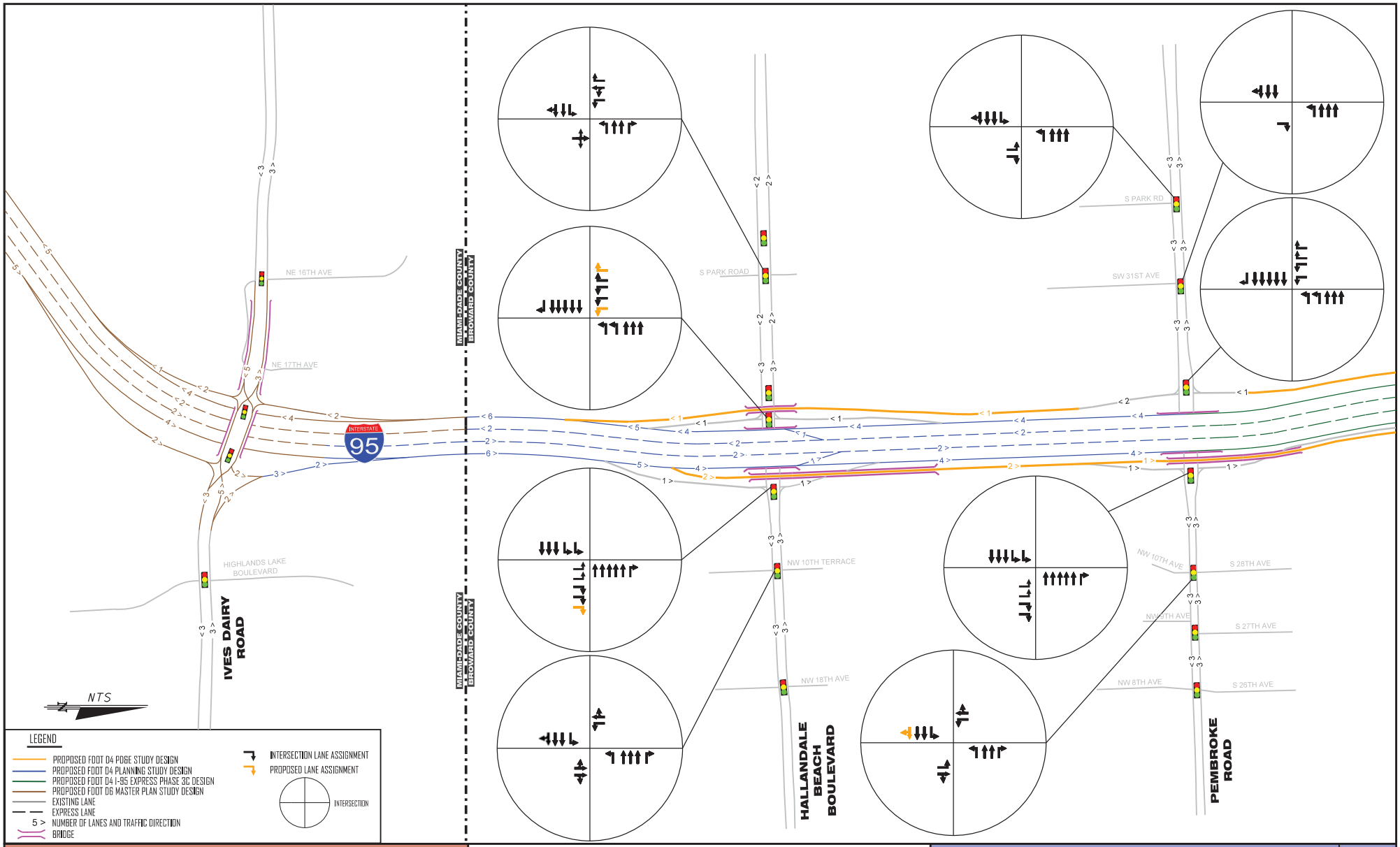


Figure 3.8 – Alternative 2 North of Pembroke Road



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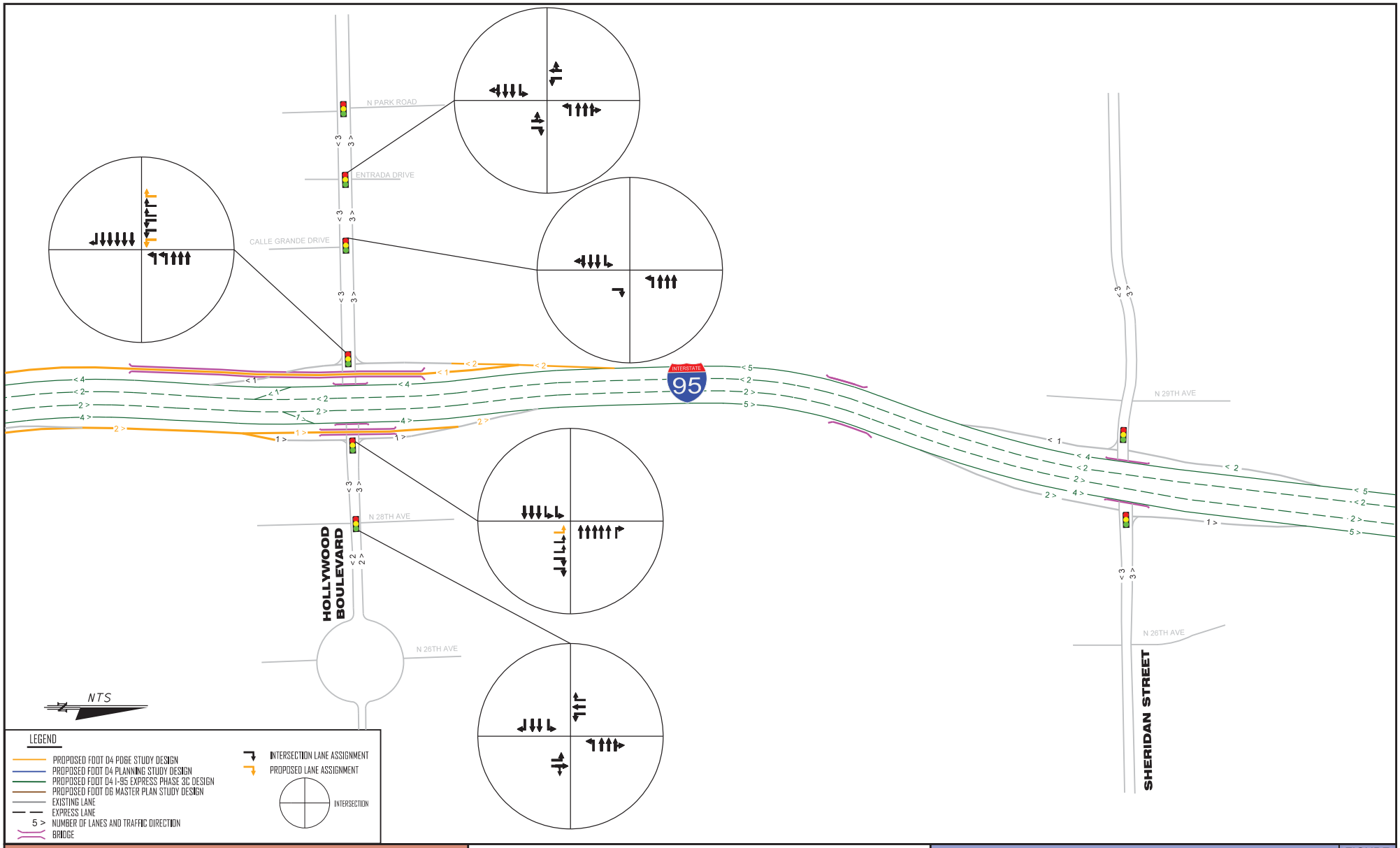
SR 9 (INTERSTATE 95)
LANE GEOMETRY AND CONFIGURATIONS
ALTERNATIVE 2 LINE DIAGRAM

FIGURE 3.9



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SR 9 (INTERSTATE 95)
LANE GEOMETRY AND CONFIGURATIONS
ALTERNATIVE 2 LINE DIAGRAM

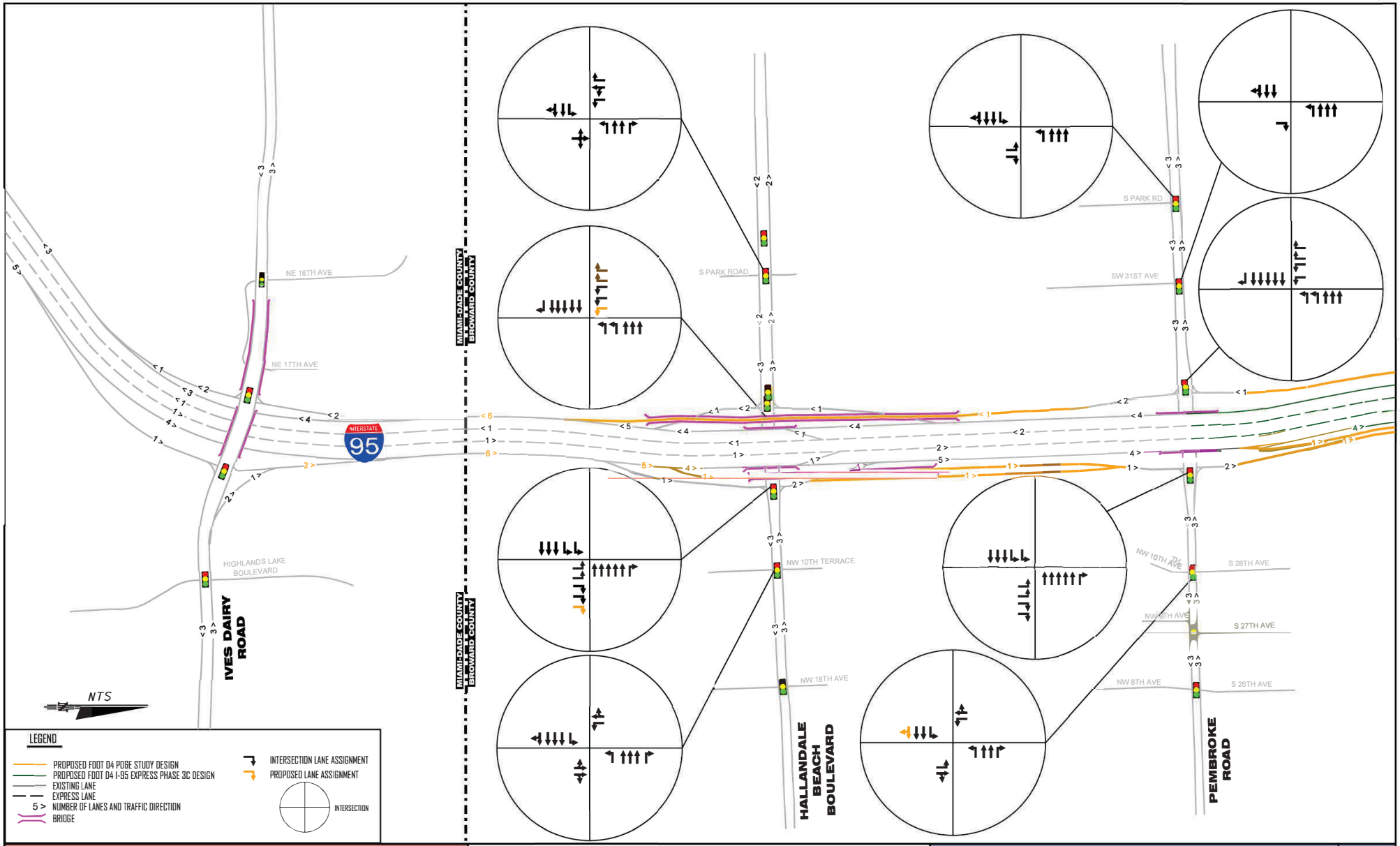
FIGURE 3.9

Figure 3.10 shows a schematic line diagram of the refined preferred alternative.

Northbound Direction – In the northbound direction, the preferred alternative is proposing two auxiliary lanes between Ives Dairy Road and Hallandale Beach Boulevard. The outside auxiliary lane becomes the exit ramp to Hallandale Beach Boulevard. The inside auxiliary lane becomes the exit ramp to Pembroke Road, which happens just south of the I-95/Hallandale Beach Boulevard bridge overpass. With this design, the existing exit ramp to Pembroke Road was relocated from south of Pembroke Road to south of Hallandale Beach Boulevard. The exit ramp to Pembroke Road crosses over the entry ramp from Hallandale Beach Boulevard and stays elevated until reaching Pembroke Road. The preferred alternative is proposing a new local ramp connection between Hallandale Beach Boulevard and Pembroke Road. This connection will allow local traffic to travel between the two crossing roadways in the northbound direction without entering the I-95 mainline lanes.

The preferred alternative is also proposing a collector distributor road between Pembroke Road and north of Hollywood Boulevard. The existing exit ramp to Hollywood Boulevard was relocated from south of Hollywood Boulevard to just north of the I-95/Pembroke Road bridge overpass. The entry ramp from Pembroke Road merges with the exit ramp to Hollywood Boulevard becoming a two-lane collector distributor road. The outside lane of the collector distributor road becomes the exit to Hollywood Boulevard and the inside lane becomes the Pembroke Road entry ramp to I-95. The Hollywood Boulevard entry ramp merges with the Pembroke Road entry ramp becoming a two-lane on-ramp to I-95.

Southbound Direction – In the southbound direction, the preferred alternative is also proposing a collector distributor road between north of Hollywood Boulevard and Pembroke Road. The collector distributor road begins with a two-lane exit ramp just south of Johnson Street serving Hollywood Boulevard and Pembroke Road. The two lanes continue south until reaching Hollywood Boulevard. Before reaching Hollywood Boulevard, a one-lane left-hand exit ramp opens to continue traveling south to Pembroke Road. The exit ramp to Pembroke Road continues south over Hollywood Boulevard and crosses over the entry ramp from Hollywood Boulevard until reaching Pembroke Road. The preferred alternative is proposing a new local ramp connection between Hollywood Boulevard and Pembroke Road. This connection will allow local traffic to travel between the two crossing roadways in the southbound direction without entering the I-95 mainline lanes.



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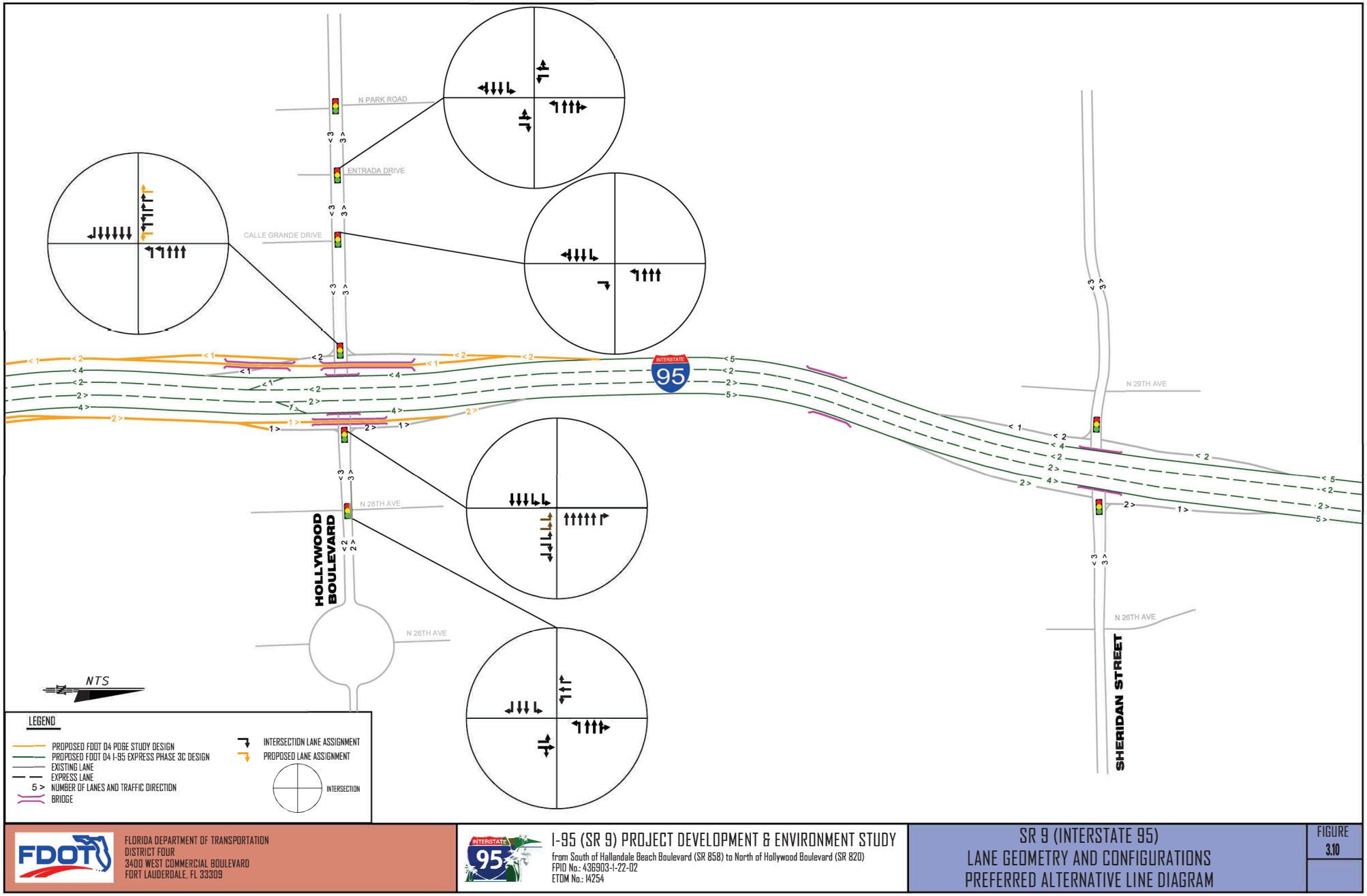
LANE GEOMETRY AND CONFIGURATIONS
PREFERRED ALTERNATIVE LINE DIAGRAM

FIGURE 3.10



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SR 9 (INTERSTATE 95) LANE GEOMETRY AND CONFIGURATIONS PREFERRED ALTERNATIVE LINE DIAGRAM

FIGURE 3.10

The preferred alternative is proposing to relocate the existing southbound entry ramp from Pembroke Road to south of Hallandale Beach Boulevard. This entry ramp from Pembroke Road crosses over the southbound exit ramp to Hallandale Beach Boulevard and stays elevated over Hallandale Beach Boulevard and over the entry ramp from Hallandale Beach Boulevard. The ramp comes down and enters I-95 southbound. This entry ramp from Pembroke Road together with the entry ramp from Hallandale Beach Boulevard become two southbound auxiliary lanes between Hallandale Beach Boulevard and Ives Dairy Road.

Intersection Improvements – Ramp terminal intersection modifications were identified at Hallandale Beach Boulevard, Pembroke Road, and Hollywood Boulevard to improve the access and operations to and from I-95. **Figure 3.10** depicts these improvements.

4.0 METHODOLOGY

4.1 SITE RECONNAISSANCE

Initial pedestrian/windshield surveys of the project study area were conducted on March 13, 2017, to identify potential sites or areas with indications of past or present contaminant storage, use, generation, or disposal. Follow up field reviews were conducted on November 29, 2018, August 14, 2020, November 18, 2020, November 20 and 21, 2023 to update and/or verify previous data collected. The potentially contaminated sites were visually examined to the extent of available access for evidence of contamination. Known and potentially contaminated sites within the project study area were visually inspected for stressed vegetation, vent and fill pipes, accumulated areas of debris, evidence of buried materials, areas of soil staining, etc. (see **Section 7.2**). Current occupancy and operations at each site were verified during the field reviews. Photographs of typical existing sites are included in **Appendix A**.

Interviews were conducted via telephone. No additional information was provided for any of the sites.

4.2 HISTORICAL AERIAL PHOTOGRAPH REVIEW

Historical aerial photographs were reviewed to identify historical land use/activities along the project corridor that may pose potential contamination

concerns. Aerial photographs were obtained from the University of Florida Digital Collection (UFDC), FDOT and Google Earth (1952 – 2023). A summary of historical aerial review is provided in **Section 7.1**. Sites identified as a concern are included in the discussion in **Section 7.2.**

4.3 Regulatory File Review

In accordance with Part 2, Chapter 20 of the FDOT PD&E Manual, the following buffer distances from the exiting roadway were used:

1. 500 feet from the right of way line for petroleum, drycleaners, and nonpetroleum sites. Corridor projects in heavily industrialized or urbanized areas with dewatering planned near the contaminated sites need to be addressed with the Florida Department of Environmental Protection (FDEP), Water Management District (WMD), or the local delegated program lead.
2. 1,000 feet from the right of way line for non-landfill solid waste sites (such as recycling facilities, transfer stations and debris placement areas).
3. Half a (1/2) mile from the ROW line for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), National Priorities List (NPL) Superfund sites, or Landfill sites.

This report provides locations of sites with known or potential contamination based on a number of federal, state, and local databases, including:

- Federal NPL Site List
- Federal Delisted NPL Site List
- Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) List
- Federal CERCLIS No further Remedial Action Planned (NFRAP) Site List
- Federal Resource Conservation and Recovery Act (RCRA) Corrective Action (CORRACTS) Facilities List
- Federal RCRA non-CORRACTS TSD Facilities List
- Federal RCRA Generators List
- Federal Emergency Response Notification System (ERNS) List
- State- and Tribal-equivalent CERCLIS
- State and Tribal Landfill and/or Solid Waste Disposal Site Lists
- State and Tribal Leaking Storage Tanks Lists

- State and Tribal Registered Storage Tank Lists
- State and tribal Voluntary Cleanup Sites
- Local lists of Hazardous Waste / Contaminated Sties
- Environmental Restoration Integrated Cleanup (ERIC) Waste Cleanup Database
- Other Ascertainable Records

Individual contaminated sites were reviewed, and desktop information updated in November 2023, as applicable. The desktop review was conducted online using the Broward County Environmental Inquiry and Resource System (ENVIROS) database, Broward County GeoHub, Miami Division of Environmental Resource Management (DERM) Department of Regulatory and Economic Resources (RER) database, FDEP OCULUS and Information Portal, FDEP Contamination Locator Map, FDOT Efficient Transportation Decision Making (ETDM) Environmental Screening Tool (EST), Florida Department of Health (FDOH) Well Surveillance Mapping Site, and United States (US) Environmental Protection Agency (EPA) Facility Index System (FINDS). File reviews were supplemented with telephone conversations with Agency representatives.

A detailed discussion of the potential contamination sites identified during this contamination screening evaluation is provided in **Section 7.2**.

4.4 Agency Coordination

As part of the ETDM process, comments were solicited from the South Florida Water Management District (SFWMD), Federal Highway Administration (FHWA), EPA, and other federal, state and local agencies requesting a review of each agency's database for information relating to the identification of properties or businesses that use, store, or distribute petroleum products, hazardous wastes, or other regulated materials, or potentially contain environmental contamination, that may be located within or adjacent to the existing or proposed FDOT ROW associated with the project corridor. To date, responses have been received from the SFWMD, FHA, and EPA. A summary of the agency comments are discussed in **Section 7.5** and in the ETDM Progress Summary Report.

The EPA held A community meeting on January 19, 2021, to discuss their proposed preferred cleanup alternative for Petroleum Products Corporation (Superfund) site cleanup located at 3130 SW 19th Street, Pembroke Park, Florida. Agencies

present during the meeting included the EPA Region 4, FDEP and FDOT District IV. A detailed discussion of this community meeting is included in **Section 7.2**.

4.5 Potential Contamination Risk Rating

Based on the compilation of data collection activities described above, and the distance and direction of a site from the project corridor, each site was assigned a risk rating based on the rating system specified in the FDOT PD&E Manual, Part 2, Chapter 20. This rating system expresses the degree of concern for potential contamination impacts to the project's cost and schedule. Each site was assigned a contamination rating of No, Low, Medium, or High based on the following criteria:

- **No:** A review of available information on the property and a review of the conceptual or design plans indicates there is no potential contamination impact to the project. It is possible that contaminants had been handled on the property. However, findings from the contamination screening evaluation or sampling and testing results indicate that contamination impacts are not expected.

- **Low:** A review of available information indicates that former or current activities on the property have an ongoing contamination issue, has a hazardous waste generator identification (ID) number, or handles hazardous materials in some capacity. However, based on the review of conceptual or design plans and/or findings from the contamination screening evaluation or sampling and testing results, it is not likely that there would be any contamination impacts to the project.

- **Medium:** After a review of conceptual or design plans and findings from a contamination screening evaluation or sampling and testing results, a potential contamination impact to the project has been identified. If there is insufficient information (such as regulatory records or site historical documents) to make a determination as to the potential for contamination impact, and there is reasonable suspicion that contamination may exist, the property should be rated at least as a "Medium". Properties used historically as gasoline stations and which have not been evaluated or assessed by regulatory agencies, sites with abandoned in place

underground petroleum storage tanks or currently operating gasoline stations should receive this rating.

- **High:** After a review of all available information and conceptual or design plans, there is appropriate analytical data that shows contamination will substantially impact construction activities, have implications to ROW acquisition or have other potential transfer of contamination related liability to the FDOT.

5.0 Land Use

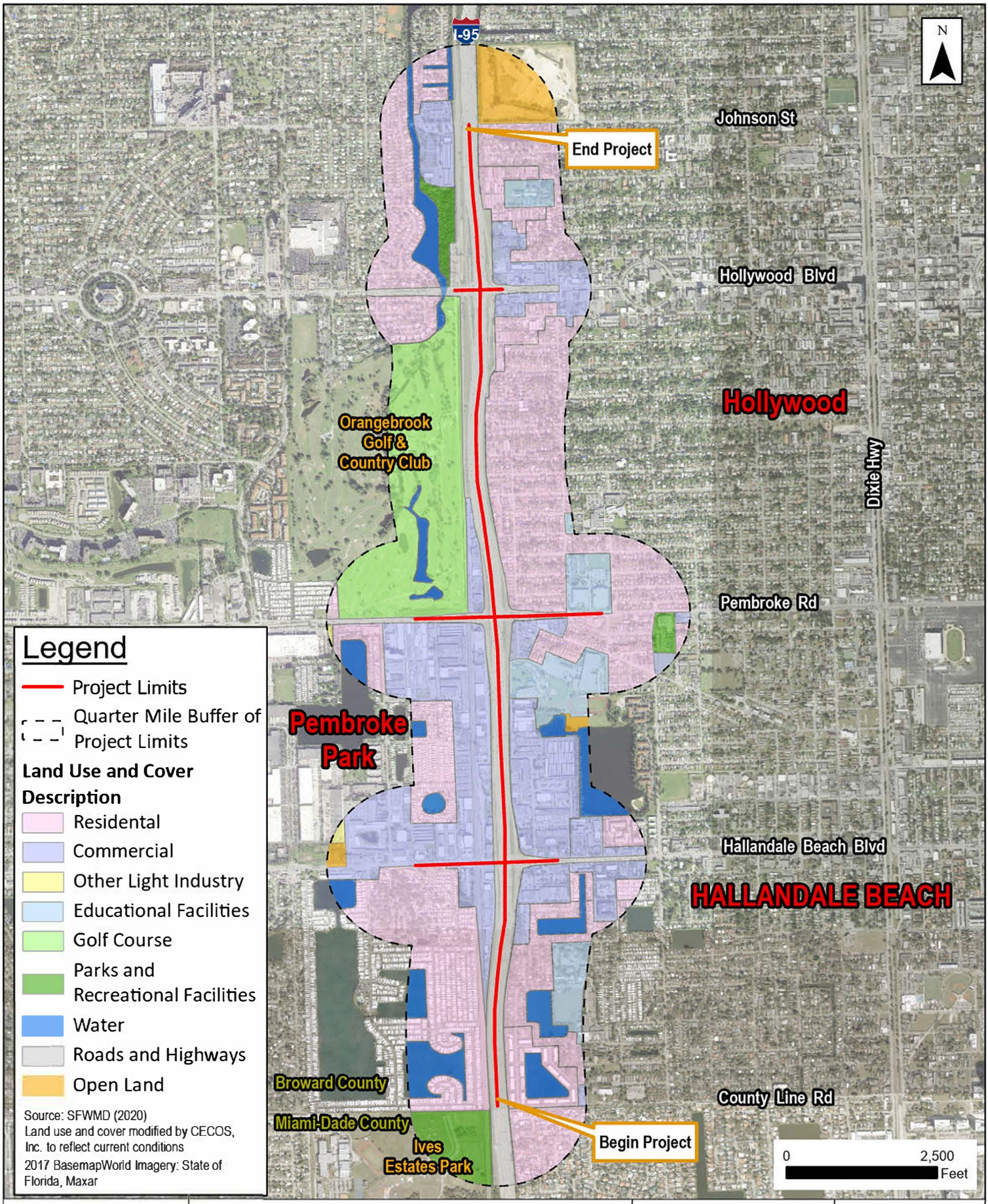
Existing land use within and adjacent to the project corridor was mapped using the Land Use layer from the SFWMD Geographic Information System (GIS) Data Catalog. Land use within the ROW is transportation (road and highway) with supporting features such as drainage swales and ponds. The primary land uses adjacent to the project corridor comprise developed properties, such as commercial, light industrial, residential, institutional facilities, and recreation/open space (e.g., golf courses). Vacant lands within the project corridor were reviewed for potential contamination concerns. **Figure 5.1** illustrates the existing land use and cover within a quarter mile of the project corridor.

6.0 Hydrologic Features

6.1 Soils

Based on the Soil Survey of Broward County, Florida (Natural Resources Conservation Service (NRCS) 1984), mapped soil types within a quarter mile of proposed improvements are classified in **Table 6.1** and shown in **Figure 6.1**.

According to the *Hydric Soils of Florida Handbook* (Hurt, 2007), five (5) of the eleven (11) soil types identified listed above in **Table 6.1** are classified as hydric; the remaining six (6) types are classified as non-hydric. Hydric soils are typically characterized as poorly to very poorly drained muck or sandy soils. The majority of areas within and adjacent to the project corridor have been disturbed by residential and infrastructure development, and these areas may not currently exhibit historic soil conditions.



FDOT	SR 9/I-95 from South of SR 858/Hallandale Beach Blvd. to North of SR 820/Hollywood Blvd. PD&E Study Broward County	Land Use and Cover Map	Figure 5.1

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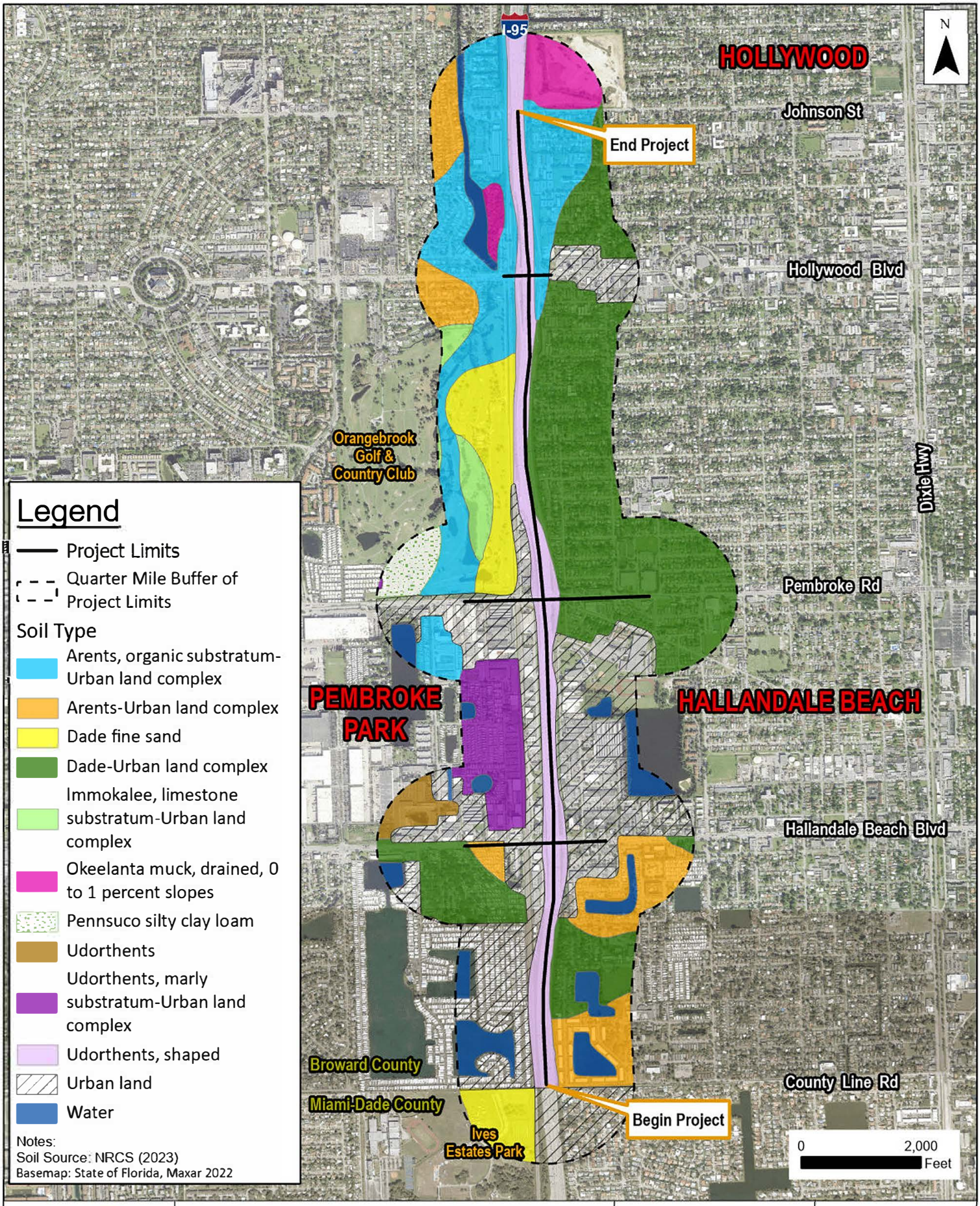

FDOT	SR 9/I-95 from South of SR 858/Hallandale Beach Blvd. to North of SR 820/Hollywood Blvd. PD&E Study Broward County	Soils Map	Figure 6.1

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Table 6.1 - Mapped Soils within a Quarter Mile of the Project Corridor

Soil Name	Hydric Rating	Percent Cover (%)
Arents, organic substratum-Urban land complex	No	13.15
Arents-Urban land complex	No	8.41
Dade fine sand	Yes	5.46
Dade-Urban land complex	Yes	24.91
Immokalee, Limestone Substratum-Urban Land Complex	Yes	1.60
Okeelanta muck, drained, frequently ponded, 0 to 1 percent slopes	Yes	2.15
Pennsuco Silty Clay Loam	Yes	1.42
Udorthents	No	1.37
Udorthents, marly substratum-Urban land complex	No	3.84
Udorthents, shaped	No	7.77
Urban land complex	No	24.72
Water	N/A	5.20

6.2 HYDROLOGY

The Biscayne Aquifer underlies the project area as well as the entire Broward County. The Biscayne Aquifer is a Sole Source Aquifer for drinking water in Broward County. The Biscayne aquifer is a surficial, unconfined aquifer, which extends from the ground surface to a depth of 240 feet along the eastern coastline (U.S. Geological Survey (USGS) Atlas 2000). The water table fluctuates from two (2) to four (4) feet above mean sea level. This aquifer is recharged through infiltration of precipitation and surface water. A sequence of low permeability, largely clay deposits about 1,000 feet thick separates the Biscayne aquifer from the underlying Floridian aquifer system. The groundwater and surface water form an integrated hydrologic system. The SFWMD utilizes a system of canals, levees, control structures, pumping stations, and water conservation areas to manage freshwater resources. Regional groundwater generally flows in the southeast direction, however, influences from local geology and topography can change the direction of groundwater flow. The specific groundwater flow beneath the subject property can only be determined by field methods such as the installation of monitoring wells and the measuring of hydrostatic pressure.

USGS (2013) Topographic Maps are shown in **Figure 6.2**. Based on the topographic map, the surface elevation is approximately 5 – 10 feet above sea level. Regional and roadway drainage basin maps are shown in **Figures 6.3a and 6.3b**.

6.2.1 Broward County Wellfield Protection Zones

The Broward County Wellfield Protection Program protects the aquifer by restricting land uses within the vicinity of the public wellfield. A section of the project corridor east of I-95's intersection with Pembroke Road, is located within the Broward County Wellfield Protection Zones in the City of Hallandale Beach. No other part of the study area is located within the wellfield protection zone (see **Figure 6.4**). All phases of work will comply with the requirements of Chapter 27 Article XIII, Broward County Wellfield Ordinance. Best Management Practices pertaining to construction will be followed to prevent adverse impacts to water quality.

6.2.2 USGS Wells

USGS groundwater wells are located throughout Broward County. The four (4) wells in closest proximity to the project are illustrated in the USGS Groundwater Wells map in **Appendix B**. USGS wells G -2956 and G-4002 are located adjacent to the project corridor.

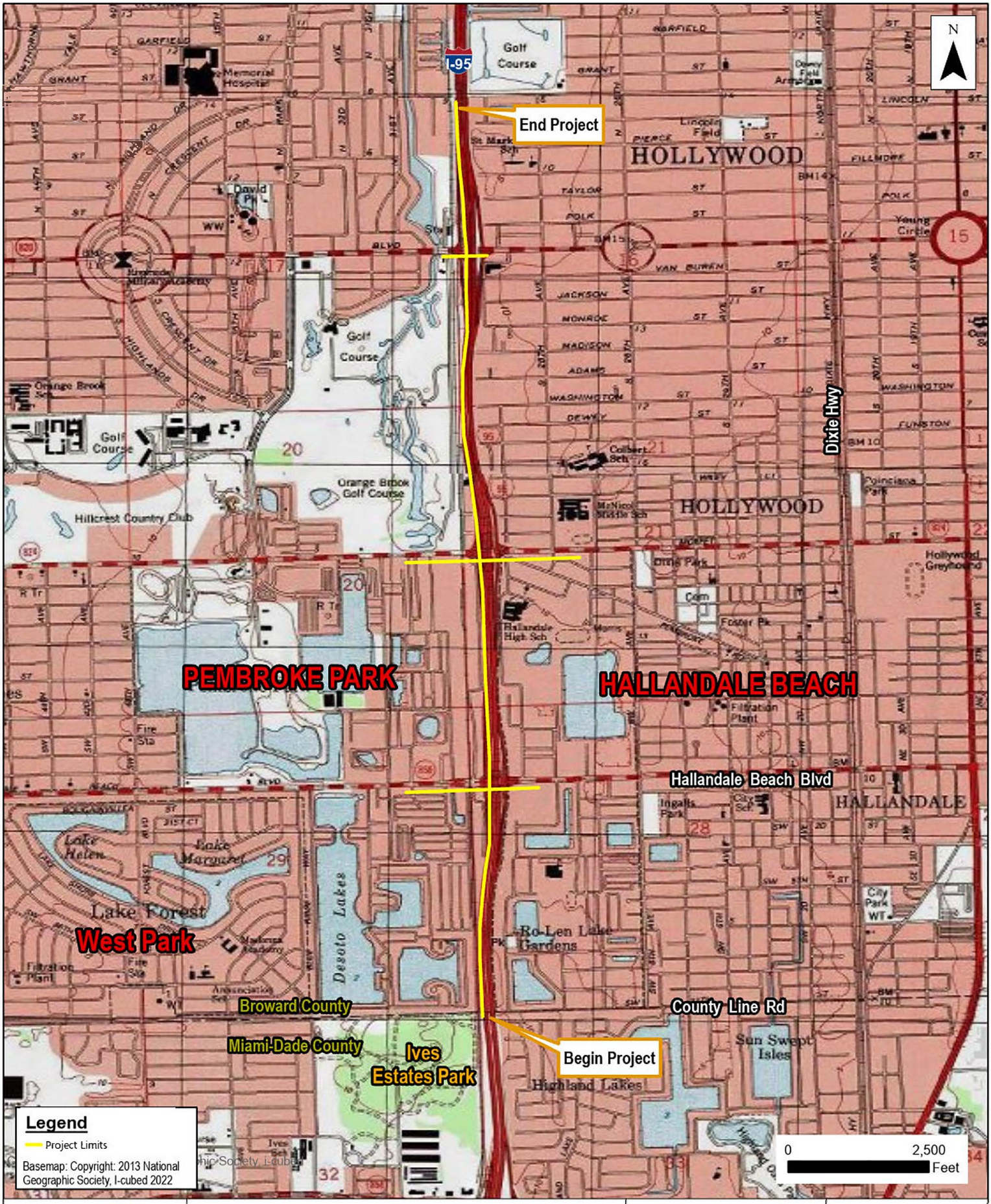
7.0 Project Impacts

7.1 Aerial Photograph Review

A detailed review of the historical aerials obtained from 1952 to 2023 is provided below. Historical aerials were reviewed for significant changes and a summary provided at a frequency of once per five years, when available. Aerials are shown in **Appendix C**.

1951

A four (4) lane roadway appears in the approximate location of present day I-95. An existing railway, located within the project corridor and oriented north to south is also visible. Orangebrook Golf and Country Club is visible adjacent to and west of the four-lane roadway and north of Pembroke Road. Sunset Golf Course is observed North of Johnson Street and east of the four-lane roadway.



FDOT	SR 9/I-95 from South of SR 858/Hallandale Beach Blvd. to North of SR 820/Hollywood Blvd. PD&E Study Broward County	Topographic Map	Figure 6.2

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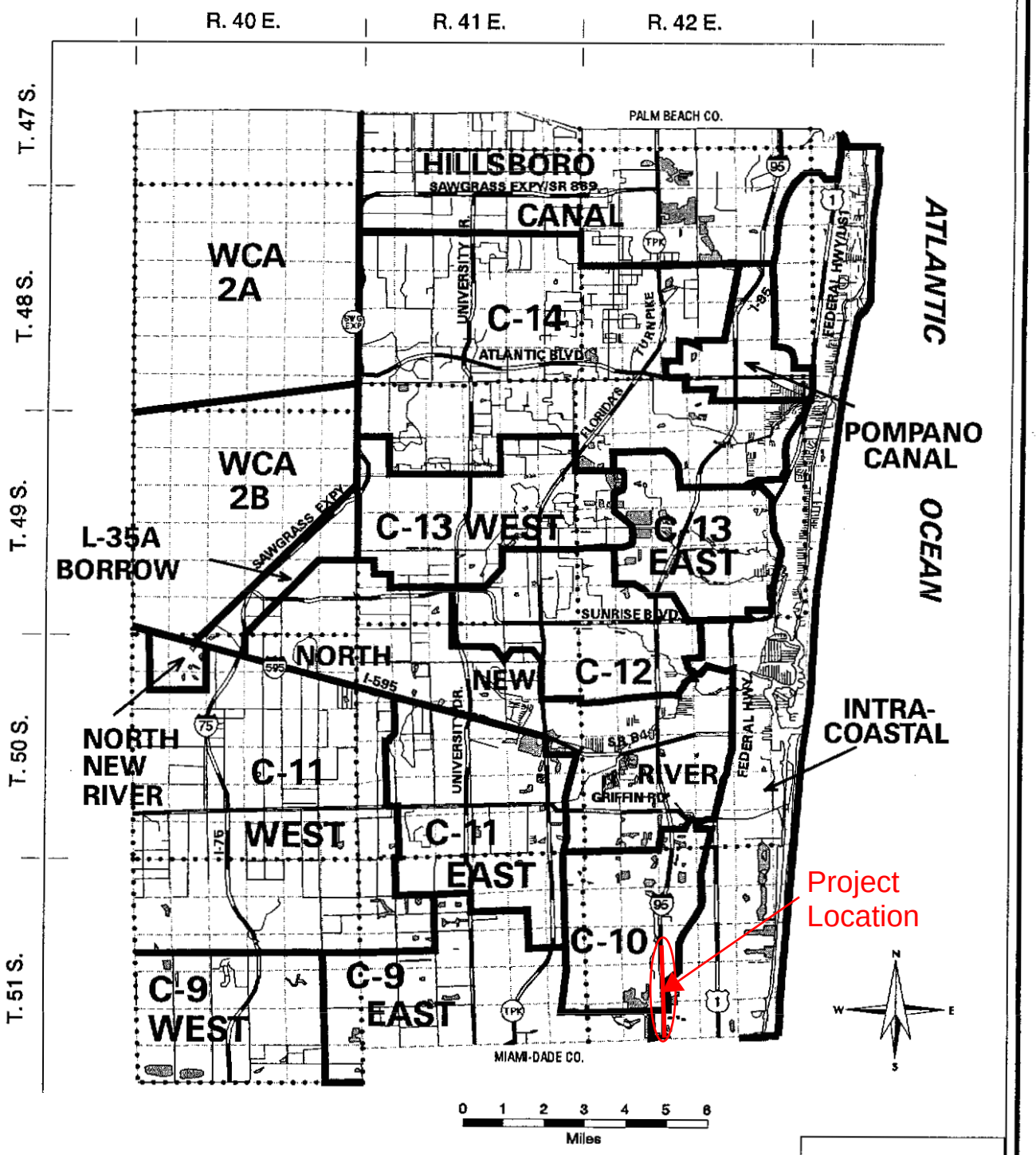
REGIONAL DRAINAGE BASINS



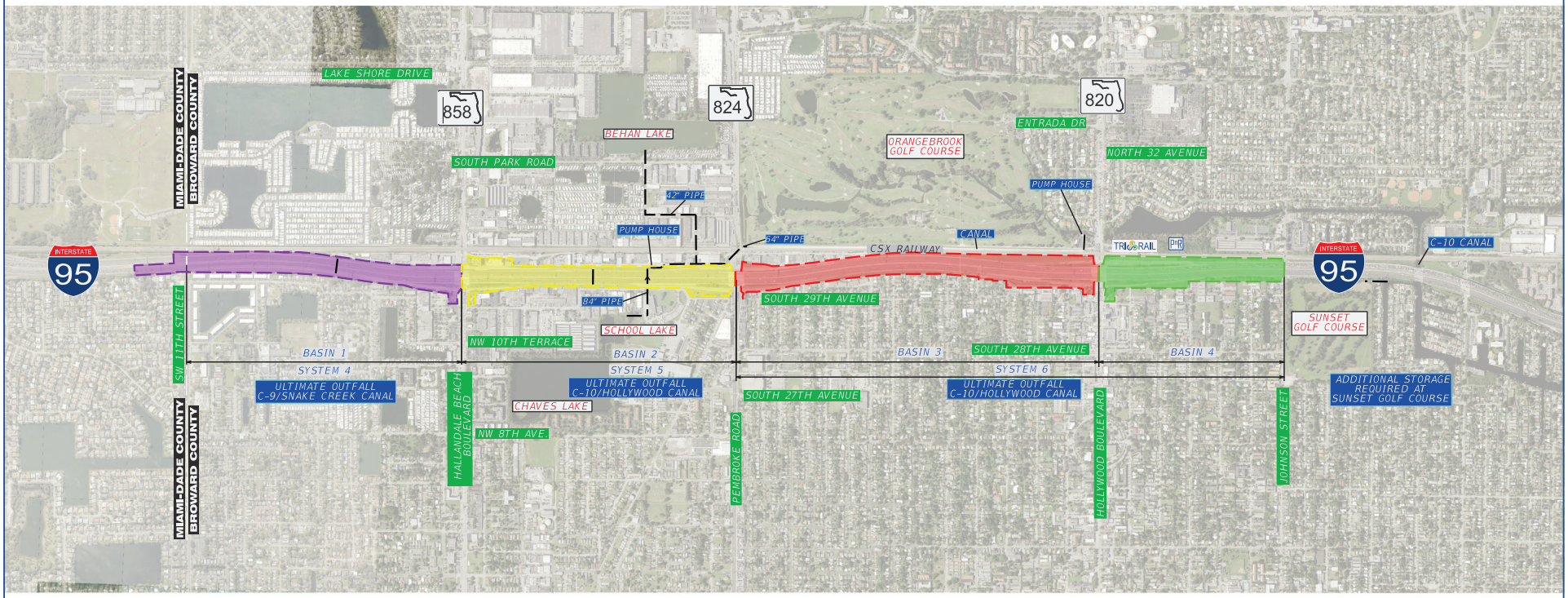
S.F.W.M.D.

DRAINAGE BASINS for EASTERN BROWARD COUNTY, FL.

Figure B-1

PORTION OF BROWARD CO. REPRESENTED ON MAP.

Figure 6.3a



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ROHAN A HAMEED, P.E.
P.E. LICENSE NUMBER 56734
HDR Engineering, Inc.
15450 New Barn Road Suite 304
Miami Lakes, FL 33014-2169
CERTIFICATE OF AUTHORIZATION 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

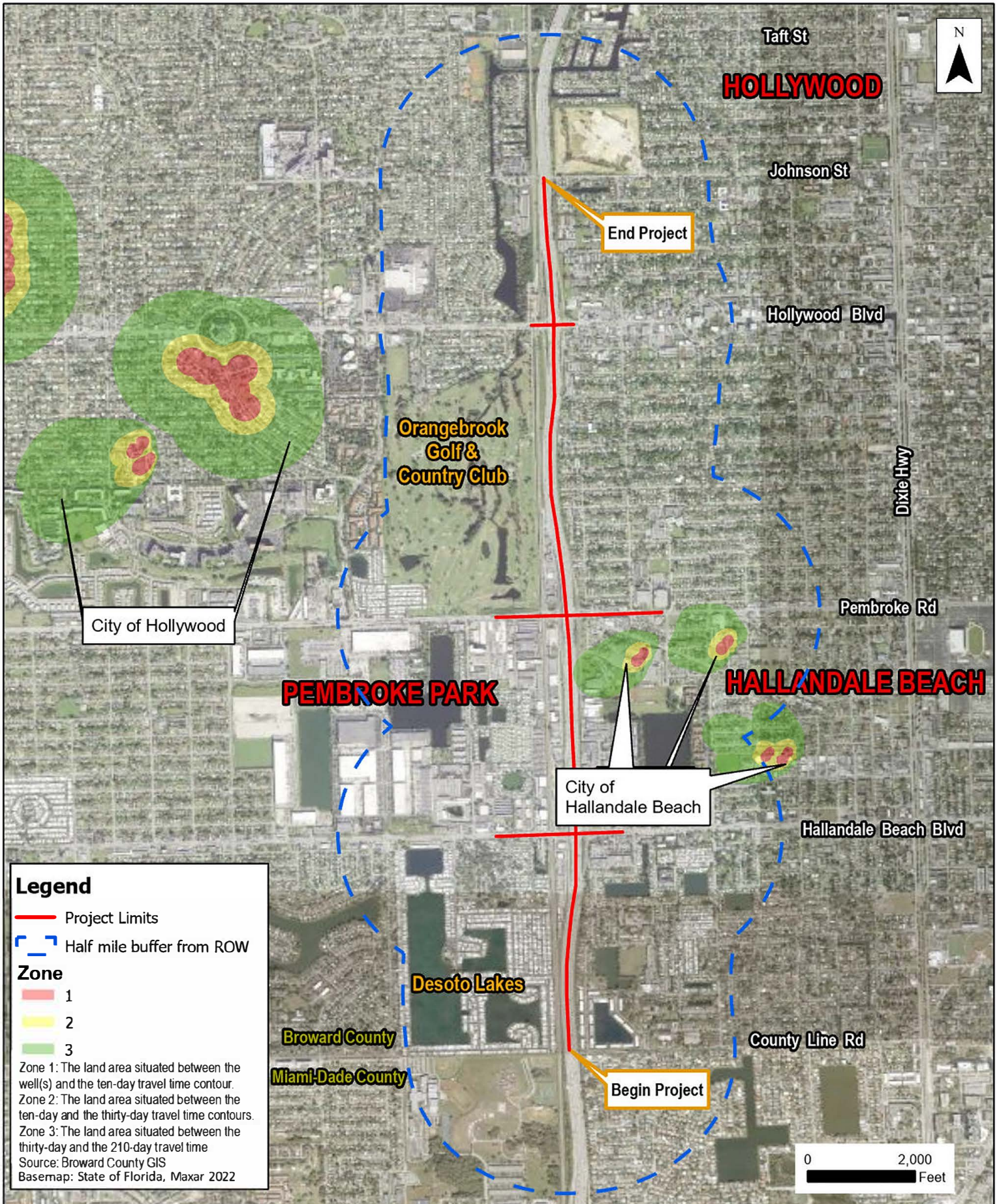
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-9	BROWARD	436903-1-22-02

DRAINAGE SYSTEMS

SHEET NO. 01

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

Figure 6.3b



FDOT	SR 9/I-95 from South of SR 858/Hallandale Beach Blvd. to North of SR 820/Hollywood Blvd. PD&E Study Broward County	Broward County Wellfield Map	Figure 6.4

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1958

A four-lane road appears in the approximate location of present day I-95. Ojus Landfill, located 200 feet west of the four-lane road, is visible. Dredging activities are shown at the present-day Desoto Lakes, approximately 350 feet west of the four-lane road. Land use is primarily undeveloped at the southern portion of the project corridor. Residential/commercial development is visible along the northern half of the project corridor.

1961

Commercial development is visible along the corridor, on the west and east sides of the aforementioned four lane (in the approximate location of present day I-95). There is significant residential development along Hollywood Boulevard and Hallandale Beach Boulevard. The Desoto Lakes are developed and surrounded by a mobile home park. Borrow pits are visible west of the project corridor and south of Pembroke Road. Commercial/industrial warehouses are developed, and Sunset Golf Course appears fully developed.

1969

I-95 is fully developed with multiple lanes and overpasses (first shown on USGS topographic maps as early as 1962). Excavation of a borrow pit lake is visible east of I-95, between Hallandale Beach Boulevard and Pembroke Road. Dredging activities are observed at the present day, Harbour Cove Brownfield Site. Bulk storage tanks and several pits are visible west of I-95 and south of Pembroke Road at the current Petroleum Products Corporation Superfund site.

1971

Significant commercial development is visible adjacent west and east of I-95. Ojus landfill is observed with vegetative overgrowth.

1978

A school is observed on the southeast corner of I-95 and Pembroke Road. The current Superfund site (Petroleum Products Corporation) appears developed with warehouses.

1981

Two gasoline stations appear along Hallandale Beach Boulevard.

1985
Land use appears generally unchanged. The present-day Harbour Cove Brownfield site, located 100 feet north of Hallandale Beach Boulevard, appears backfilled.

1991
Additional earthwork around the borrow pits/lakes west of I-95 and south of Pembroke Road.

1992
Commercial development is observed at the northwest intersection of I-95 and Hallandale Beach Boulevard.

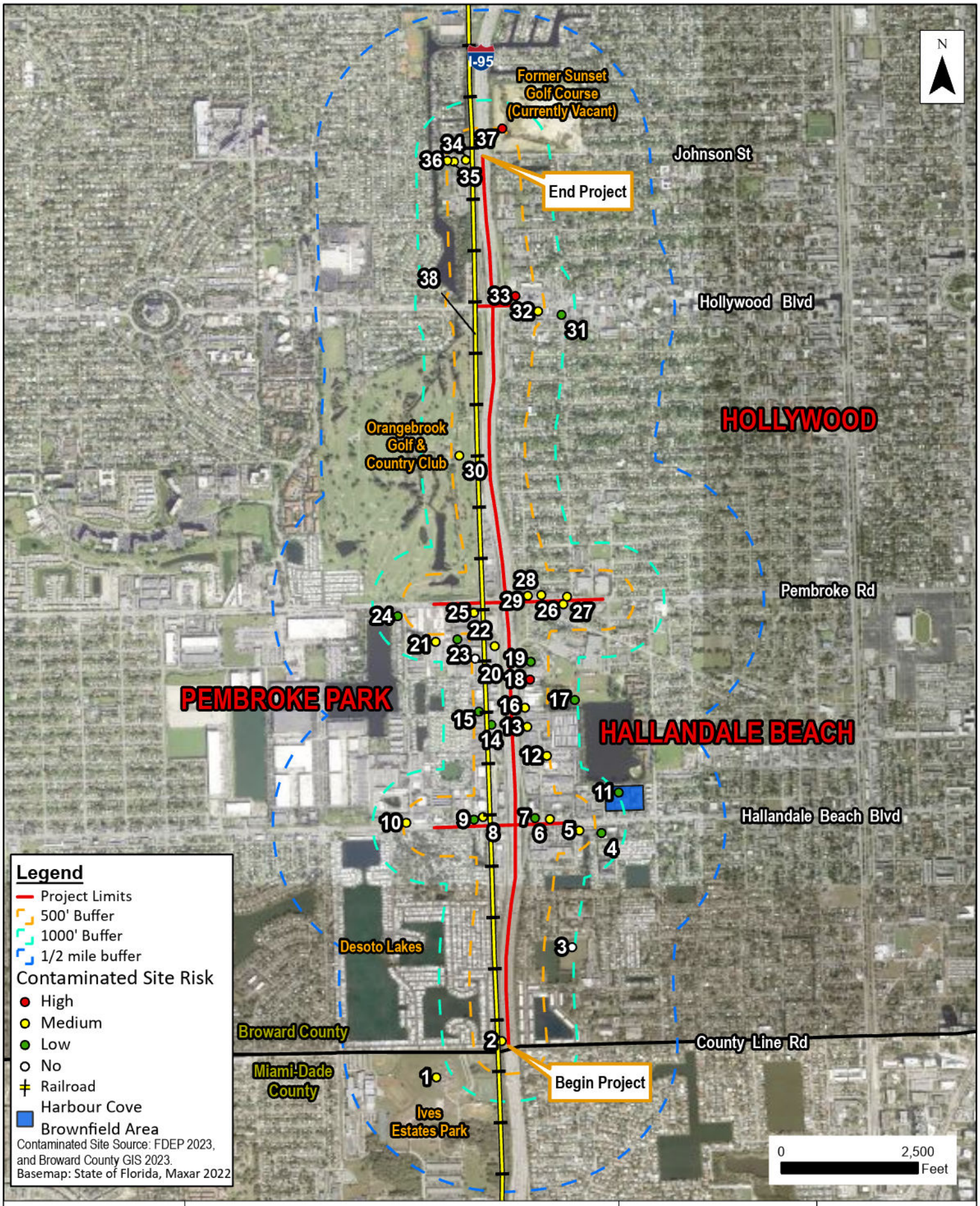
1998
Land use along the project corridor is generally unchanged. There appears to be backfilling activities at a borrow lake, north of Hallandale Beach Boulevard.

2003
The backfilled area north of Hallandale Beach Boulevard. Ives Estates Park is developed at the former Ojus Landfill.

2006-2024
The project corridor and surrounding area appear similar to current conditions. The project corridor is fully developed with residential properties, golf courses, commercial properties, gasoline stations and auto repair shops. Construction of Harbour Cove Apartments located at the Harbour Cove Brownfield site is visible.

7.2 Regulatory Database Review

This section describes the potential contamination associated with each of the identified sites in the vicinity of the proposed project. Thirty-eight (38) potentially contaminated sites were identified along the corridor and evaluated for potential impacts to the project. Known contaminated sites were confirmed by record search. Potentially contaminated sites were identified by field review and then researched to determine if file information was available. **Figure 7.1 (Overall Map), and Figures 7.1a, 7.1b and 7.1c** illustrate the general locations and parcel boundaries of the known and potentially contaminated sites. **Table 7.1** presents a brief summary of the details recovered from the record search and field review.



FDOT	SR 9/I-95 from South of SR 858/Hallandale Beach Blvd. to North of SR 820/Hollywood Blvd. PD&E Study Broward County	Potentially Contaminated Sites Map (Overall)	Figure 7.1

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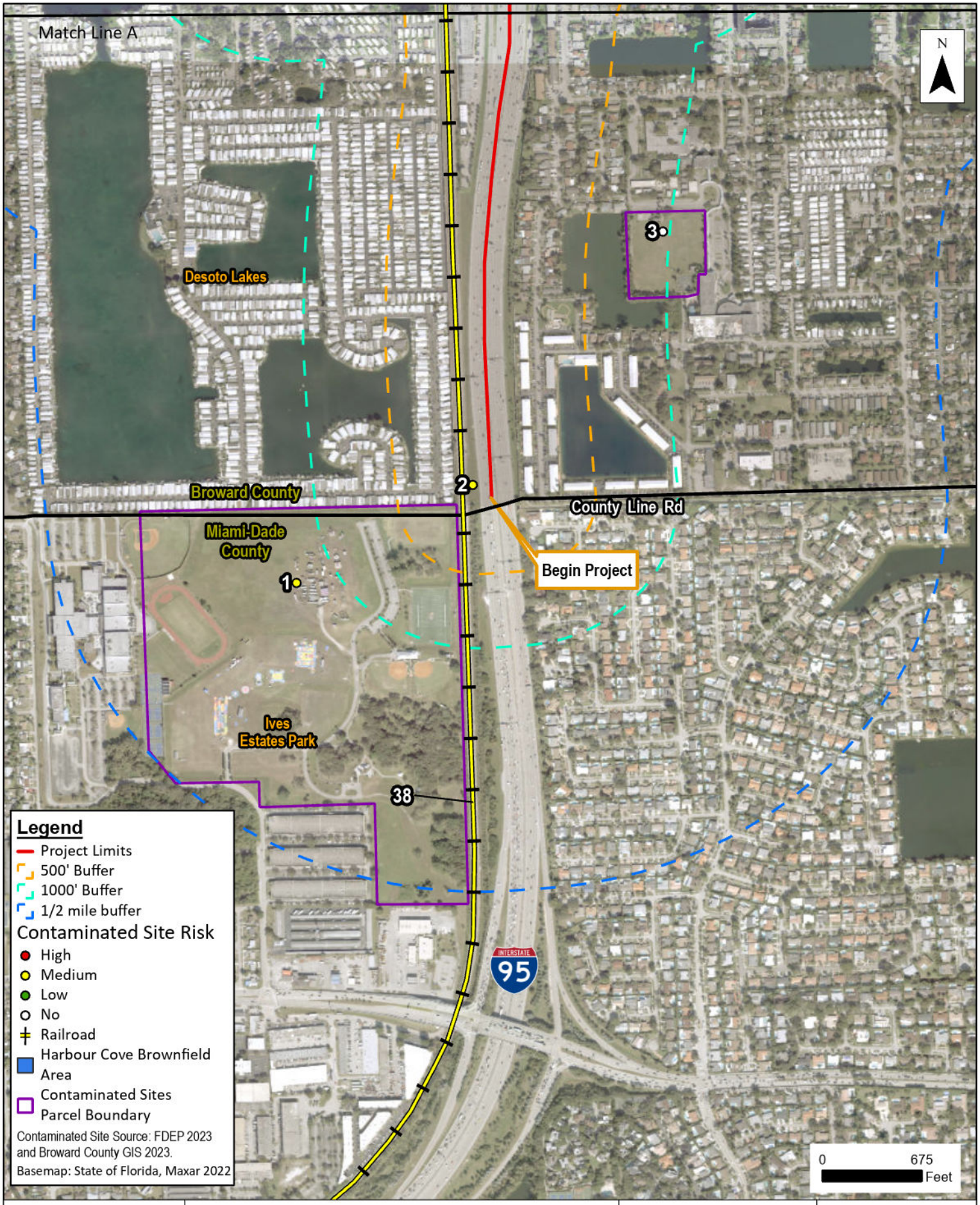

FDOT	SR 9/I-95 from South of SR 858/Hallandale Beach Blvd. to North of SR 820/Hollywood Blvd. PD&E Study Broward County	Potentially Contaminated Site Map (South)	Figure 7.1a

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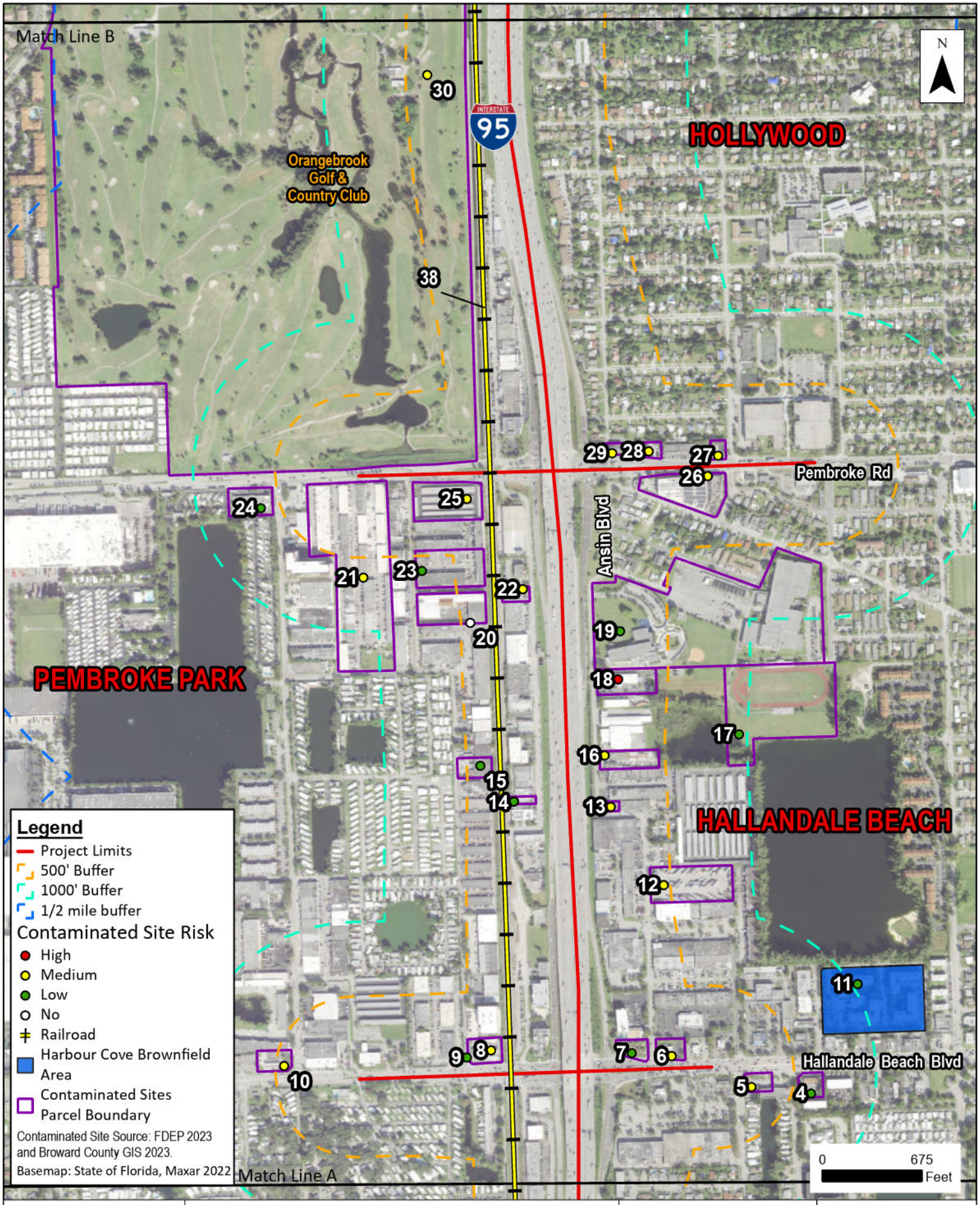

FDOT	SR 9/I-95 from South of SR 858/Hallandale Beach Blvd. to North of SR 820/Hollywood Blvd. PD&E Study Broward County	Potentially Contaminated Site Map (Central)	Figure 7.1b

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FDOT	SR 9/I-95 from South of SR 858/Hallandale Beach Blvd. to North of SR 820/Hollywood Blvd. PD&E Study Broward County	Potentially Contaminated Site Map (North)	Figure 7.1c

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Table 7.1 - Potentially Contaminated Sites

Site ID	Facility Name	Address	County Permit or ID Number	FDEP Facility ID	Contamination Concern	Distance from Project	Status	Risk Rating
1	City of North Miami Beach OJUS Landfill	20735 NE 16th Avenue Miami, FL 33139	SW-1179/File-12839	57134 ERIC_15135	Methane, ammonia	150' southwest of project beginning	Ongoing biennial groundwater monitoring for ammonia and annual groundwater monitoring for methane	M
2	Penn Tank Lines Inc. Roadside Spill	Southbound I-95 0.75 miles South of Exit 18 Hallandale Beach, FL 33020	None Recovered	9816414	Petroleum	Within project corridor	NFAP submitted	M
3	City of Hallandale Beach DDMS #1	Field Behind 1000 SW 3rd Street Hallandale Beach, FL 33009	None Identified	99011	None Recorded	700' East of I-95	NFA issued	N
4	Hallandale Beach U-Gas	999 W Hallandale Beach Boulevard Hallandale Beach, FL 33009	ST-04111-20 04111	8502072	Petroleum Hydrocarbons	525' East - along Hallandale Beach Boulevard	NAM ongoing	L
5	HB 1000-18 LLC	1021 W Hallandale Beach Boulevard Hallandale Beach, FL 33009	04094	8501728	Petroleum Hydrocarbons	200' East - along Hallandale Beach Boulevard	Quarterly monitoring ongoing	M
6	Exxon	1080 W Hallandale Beach Boulevard Hallandale Beach, FL 33009	ST-04662-20 04662	8502695	Petroleum Hydrocarbons	Adjacent	SRCO Issued- proposed for acquisition	M
7	Burger King	1090 W Hallandale Beach Boulevard Hallandale Beach, FL 33009	09827 09693	8501967 8502027	Petroleum	Adjacent	NFA issued- proposed for acquisition	L
8	Racetrac #491	3031 W Hallandale Beach Boulevard Pembroke Park, FL 33009	ST-02341-20 02341	9602003 9101088	Petroleum Hydrocarbons	Adjacent	SRCO Issued	M
9	Energy Dispatch LLC Tanker Truck Spill	East and West Sides of SW 31st Avenue & Hallandale Boulevard Pembroke Park, FL 33009	09884	9803721	Petroleum Hydrocarbons	Adjacent	SRCO Issued	L
10	MOIL Gas Station	3151 W Hallandale Beach Boulevard Pembroke Park, FL 33009	02181 ST-02181-20	9800048	Petroleum	400' West - along Hallandale Beach Boulevard	TCAR showed levels above SCTLs	M
11	Harbour Cove Associates (Brownfield)	100 NW 9th Terrace Hallandale Beach, FL 33020	BF060401001	ERIC_6725	Petroleum	700' East of I-95	SRCO Issued	L
12	Vintage Ansin Truck Parking	310 Ansin Boulevard Hallandale Beach, FL 33009	None	53352	None recorded	400' East of I-95	Offsite notice issued for contamination	M
13	Pharmco Rx	400 Ansin Boulevard Hallandale Beach, FL 33009	None	9802375	None Recorded	100' East of I-95	No contamination identified	M

Table 7.1 - Potentially Contaminated Sites

Site ID	Facility Name	Address	County Permit or ID Number	FDEP Facility ID	Contamination Concern	Distance from Project	Status	Risk Rating
14	Messingschlager Properties	2514 SW 30th Avenue Hallandale Beach, FL 33009	None	9401806	Petroleum	75' West of I-95	SRCO Issued	L
15	95 Warehouse LTD	2401 SW 31st Avenue Pembroke Park, FL 33009	06862	8942651	Petroleum Hydrocarbons	350' West of I-95	SRCO Issued	L
16	Gallo Marble Enterprises	500 Ansin Boulevard Hallandale Beach, FL 33009	None	8627989	Ammonia	100' East of I-95	DRC issued; in compliance	M
17	James Lanier Education Center – grass field	700 NW 7 Street Hallandale Beach, FL 33009	None	99353	Ammonia	875' East of I-95	Offsite notice issued for contamination	L
18	Park Shore Pharmacy	600 Ansin Boulevard Hallandale Beach, FL 33009	NF-2701 09924	9700906	Ammonia	70' East of I-95	Offsite notice issued for contamination	H
19	James Lanier Education Center	1050 NW 7th Court Hallandale Beach, FL 33009	07879	9100221	Petroleum	50' East of I-95	SRCO issed	L
20	BW Recycling	2035 SW 31st Avenue Pembroke Park, FL 33009	None	None	None Recorded	350' West of I-95	No contamination identified	N
21	Petroleum Products Corporation (Superfund Site)	3130 SW 19th Street Pembroke Park, FL 33009	54384655 ERIC_3796 54391722 09535	8732818	Petroleum Hydrocarbons	Adjacent	Remediation to begin	M
22	Orkin Extermination Co	1820 SW 30th Avenue Hallandale Beach, FL 33009	HM-01149-19 01149	8502427	None Recorded	60' West of I-95	No contamination identified	M
23	Waste Connections - Pembroke Park Transfer Station	1899 SW 31st Avenue Pembroke Park, FL 33009	FL0000871996 00014	55464 105719	None Recorded	300' West of I-95, 500' South of Pembroke Road	No contamination identified	L
24	Flowers Baking Company (Out of Business)	3262 Pembroke Road Pembroke Park, FL 33009	None	8622371	Petroleum	530' West - along Pembroke Road	Remediation recommended	L
25	A&B Recycling	1708 SW 31st Avenue Pembroke Park, FL 33009	03206 HM-03206-20	None	None Recorded	Adjacent	No contamination identified	M
26	Sun Yi Cafe	1051 W Pembroke Road Pembroke Park, FL 33010	04369	8732177	None Recorded	Adjacent	No contamination identified	M
27	Shell FCE #3828	2801 Pembroke Road Pembroke Park, FL 33020	03950 ST-03950-20	8502153	Petroleum	Adjacent	SRCO issued	M
28	Family Tire Distributors	2817 Pembroke Road Hollywood, FL 33020	15361 HM-15361-20	None	None Recorded	Adjacent	No contamination identified	M
29	Kosher Motors	2829 Pembroke Road Hollywood, FL 33020	15905 01535	9500022	Petroleum	Adjacent	SRCO issued	M

Table 7.1 - Potentially Contaminated Sites

Site ID	Facility Name	Address	County Permit or ID Number	FDEP Facility ID	Contamination Concern	Distance from Project	Status	Risk Rating
30	Orangebrook Golf Course and Country Club	4000 Entrada Street Hollywood, FL 33021	01360 HM-01360-20	8944879	Arsenic	Adjacent	No contamination identified, but arsenic presence likely	M
31	Shell-First Coast Energy #3829	2800 Hollywood Boulevard Hollywood, FL 33020	13297 HM-13297-20	8502526	Petroleum Hydrocarbons	750' East - along Hollywood Boulevard	SRCO issued	L
32	Dabern Auto Center	2828 Hollywood Boulevard Hollywood, FL 33020	54397828 0969	8502583	Petroleum Hydrocarbons	350' East - along Hollywood Boulevard	NAM ongoing	M
33	Goodyear Tires	2911 Hollywood Boulevard Hollywood, FL 33020	54401456 09656	8502126	Petroleum	Adjacent	CAR showed levels above SCTLs and GCTLs	H
34	Chevron	3000 Johnson Street Hallandale Beach, FL 33020	None	8502723	Petroleum	150' West - along Johnson Street	SRCO issued	M
35	Clean Paws Pet Salon and Resort	3030 Johnson Street Hallandale Beach, FL 33020	ERIC_4112 AIR_0112286 FLD059858167 FLR000031617 01888	9501066	Solvents PCE/TCE	375' West - along Johnson Street	Biennial groundwater sampling ongoing	M
36	Marathon	3034 Johnson Street Hallandale Beach, FL 33021	None	8502207	Petroleum	450' West - along Johnson Street	Additional testing recommended	M
37	Former Sunset Golf Club	2727 Johnson Street Hollywood, FL 33020	NF-2088 19544 FLR10TJ71	None	Arsenic	Adjacent	NFAC issued	H
38	CSX Railroad	Along west side of I-95	None	None	Arsenic, creosote	Varies 60'-215'	No contamination identified	M

Relevant documentation of contaminated sites assigned a risk rating of Medium or High are included in **Appendix D**.

At this time, dewatering is anticipated for bridge/structure construction and possibly for drainage and utility installation. The preferred alternative will require a construction dewatering permit from the SFWMD, and Broward County as most of the project corridor has contaminated sites within 500 feet of potential dewatering areas. Distances from the project were measured from ROW and/or the project limits on the cross streets.

A brief description of the identified sites is provided below.

Site 1
Ives Estates Park (formerly City of North Miami Beach OJUS Landfill))
20735 NE 16th Avenue
Miami, Florida
DERM Facility ID: 57134 / SW-1179 / File-12839; FDEP Facility ID: ERIC_15135

This site is a documented contaminated site under DERM and FDEP. It is located southwest of I-95 and County Line Road intersection, within 150 feet west of the project corridor. Based on the regulatory file review, the City of Miami Beach operated the Ojus Landfill from the late 1930s until 1978, receiving solid waste such as vegetative debris, bulk goods and household garbage. Several citations were issued for this facility for operating without a permit on July 30, 1975, for trash disposal, trench excavation below the water table, trash dumping into water-filled trenches and failure to address violations until officially closed in accordance with State and County regulations in February 1978. A follow up inspection conducted by DERM on June 17, 1986, reported uncovered trash and miscellaneous trash disposed in an open ditch. Onsite groundwater contamination with ammonia was documented in 1984 by DERM and USGS. An ammonia groundwater plume is present beneath the northern portion of the site and methane gas is monitored along the perimeter.

The April 2016 5th Semi-Annual Groundwater Monitoring Report confirmed ammonia at several locations throughout the site above FDEP Groundwater Cleanup Target Level (GCTL) of 2.8 micrograms per liter (mg/L) for the following samples: OW-1 at 6.6 mg/L, OW-2 at 5.9 mg/L, OW-3 at 5.7 mg/L, OJ (60') at 8.3 mg/L, OJ-20(40') at 7.2 mg/L, OJ-21(35') at 3.4 mg/L, OJ-21(55') at 3.8 mg/L, OJ-

22 (35') at 4.7 mg/L and OJ-22(55') at 9.1mg/L. No additional information was available for review (for example, groundwater flow direction). The site is currently occupied by Ives Estates Park. Nothing of concern was identified during field reviews.

Based on the documented presence of ammonia in groundwater, distance to project corridor, and potential for dewatering activities, this site has been assigned a **Medium** risk rating for the preferred alternative.

Site 2
Penn Tanks Lines Inc. - Roadside Spill
Southbound I-95, 0.75 Miles south of Exit 18
Hallandale Beach, Florida
FDEP Facility ID: 06/9816414

This site is a documented contaminated site under FDEP. This discharge site is located along southbound I-95, 0.75 miles south of Exit 18 (Hallandale Beach Boulevard), within the project corridor. A Discharge Reporting Form (DRF) was submitted March 2018 in response to a petroleum product release due to a multi-vehicle accident. A Penn Tank Lines, Inc. fuel tanker rolled over, damaging one compartment, and releasing approximately 2,000-gallons of gasoline along the paved shoulder and soil in the retention area between I-95 and the South Florida Regional Transit Authority (SFRTA) railroad tracks. Approximately, 400 gallons of free product, fire-fighting foam containing Per- and Polyfluorinated Substances (PFAS), and water were collected for disposal during emergency response cleanup. An August 2018 Interim Source Removal (ISR) Report documented subsequent source removal activities, to include the excavation of 465.87 tons of soil and 12,190 gallons of free product and surface water collected for recovery. The March 2019 Site Assessment Report (SAR) and subsequent October 2019 and April 2020 SAR addendums reported soil concentrations below FDEP Soil Cleanup Target Levels (SCTLs) at the former discharge site. However, groundwater samples collected during the April 2020 sampling event reported Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) concentrations above FDEP GCTLs. Benzene was reported in MW-E at 1.20 mg/L above the GCTL of 1.0 mg/L. Ethylbenzene was reported in MW-E2 at 106 mg/L above the GCTL of 30 mg/L. Toluene was reported in MW-E1 at 85.9 mg/L and MW-E2 at 40.2 mg/L, above the GCTLS of 40 mg/L. Total xylenes was reported in MW-E at 30 mg/L and MW-E2 at 739 mg/L, above the GCTL of 20 mg/L. The groundwater plume has been delineated during

the "dry season", but further sampling was recommended during the "wet season" to verify prior to remediation. The October 2020 "wet season" sampling event confirmed BTEX exceedances and lack of plume delineation on the east of monitoring well MW-E2 (towards I-95). The October 2020 SAR addendum (SARA) reported groundwater flow towards the south-southeast direction. Agency review included recommendations for semi-annual groundwater sampling to determine contaminant plume stability. An April 2021 SARA was submitted to address recommendations made on the October 2020 sampling. The report concluded there is a reduction in plume size during the dry season 2021, however, total xylenes are not completely delineated to the east. Agency review concurred with the findings of this report. In September and November 2021, additional testing was completed and still showed total xylenes above GCTLs present in the east. In September 2022 and May 2023, all parameters tested below GCTLs. Due to this, Broward County recommended a No Further Action (NFA) in May 2023 after additional testing. In June 2023, Broward County stated that due to PAHs being detected, a NFA cannot be approved without conditions. A NFAP was submitted in September 2023. Nothing of concern was identified during field reviews.

Due to the current presence of contamination in groundwater adjacent to the project corridor and potential for dewatering, this site has been assigned a **Medium** risk rating for the preferred alternative.

Site 3
Gulfstream Academy at Hallandale Beach (formerly City of Hallandale Beach Disaster Debris Management Site (DDMS) #1))
Field behind 1000 SW 3rd Street
Hallandale Beach, Florida
FDEP Facility ID: 99011

This site is a documented contaminated site under FDEP. This site is located approximately 700 feet east of the I-95 project corridor. No evidence of disposal of debris material or dumping was observed during review of historical aerials. The FDEP Waste Assurance and Compliance System (WACS) assigned the facility a NFA status. The site was identified during site reconnaissance as a field for Gulfstream Academy of Hallandale Beach. No additional information was readily available for review. Nothing of concern was identified during field reviews.

Due to lack of documented contamination and distance from project, this facility is assigned a **No** risk rating.

Site 4
Hallandale Beach U-Gas (formerly BP Amoco)
999 Hallandale Beach Boulevard
Hallandale Beach, FL
FDEP Facility ID: 8502072; County Facility ID: 04111

This site is a documented contaminated site under FDEP. This site is located on the south side of Hallandale Beach Boulevard and east of I-95, with the tank area approximately 525 feet south of the existing Hallandale Beach Boulevard ROW. The site currently has three (3) active 10,000-gallon unleaded gasoline Underground Storage Tanks (USTs) that were installed in 1984. One 10,000-gallon UST has been closed in place. A DRF was submitted in October 1987 and November 1990. A June 2018 SAR identified soil contamination above FDEP SCTLs and groundwater contamination above FDEP GCTLs, recommending remedial action followed by Natural Attenuation Monitoring (NAM). The March 2020 NAM Report identified groundwater flow direction to the southeast along the northern portion of the site, away from the project corridor. The groundwater impacts appear to be delineated within the property limits according to the March 2020 NAM report. A June 2021 NAM Report identified exceedances in monitoring wells MW-8, MW-15, MW-16, MW-C, and MW-E. Quarterly groundwater monitoring has been ongoing as of October 2023 and the last quarterly report in May 2023 still showed exceedances over GCTLs. Nothing of concern was identified during field reviews.

Based on the current presence of contamination in soil and groundwater and distance from the project, this site has been assigned a **Low** risk rating for the preferred alternative.

Site 5
HB 1000-18 LLC (formerly Shell, Fina, Citgo, 7-11)
1021 Hallandale Beach Boulevard
Hallandale Beach, Florida
FDEP Facility ID: 8501728; County Facility ID: 04094

This site is a documented contaminated site under FDEP. This site is located 200 feet east of Hallandale Beach Boulevard and is presently a strip mall. The site was a former gasoline station from 1979 through circa 2011. Two DRFs were submitted in February 1987 and February 2000. The February 1987 Discharge Notification Form (DNF) was filed in response to evidence of petroleum impacts detected during groundwater analysis. An Early Detection Incentive (EDI) application was submitted and approved in July 1987. A Remedial Action Plan (RAP) proposing a pump and treat system was approved in April 1990. Remediation was discontinued due to the site's low score.

During the February 2000 removal and replacement of three USTs, the contents of one UST was released into the excavated area. A Supplemental Site Assessment and Limited Tank Closure Assessment Report (TCAR) was submitted in December 2010, identifying contamination in soil and groundwater. A February 2011 Limited Groundwater Assessment Report noted temporary petroleum impacts to groundwater above the FDEP GCTLs, and recommended NAM. The March 2018 NAM Report identified groundwater flow direction to the northeast and identified cumene (isopropyl benzene) in groundwater above FDEP GCTLs. The March 2018 NAM Report recommended further NAM monitoring, however, upon further review, the FDEP issued a purchase order to transition the site to remedial action. A Level I RAP was submitted in October 2018 recommending biosparging with bioaugmentation system technology to address the groundwater impacts at the site. The RAP was approved in June 2019 and a purchase order for the construction and operation of the RAP was issued. A Field Inspection Summary Form dated December 2020 documents the beginning stages of the remedial system installation. A Task 2-Remedial Action Startup Report dated July 30, 2021, documented baseline groundwater sampling results from September 2020. Cumene was reported above the GCTLs in monitoring wells MW-20, MW-24, and MW-27. Quarterly monitoring has been ongoing as of September 2023. Nothing of concern was identified during field reviews.

Based on the lack of closure for the February 1987 and 2000 discharges and potential for dewatering, this site has been assigned a **Medium** risk rating for the preferred alternative.

Site 6
Exxon (formerly Shell, Hallandale Beach Club, Five Brothers)
1080 Hallandale Beach Boulevard
Hallandale Beach, Florida
FDEP Facility ID: 8502695; County Facility ID: 04662

This site is a documented contaminated site under FDEP. This site is located adjacent to both I-95 and Hallandale Beach Boulevard, with the tank area less than 50 feet north of the existing Hallandale Beach Boulevard ROW. Two historical DRFs have been filed for this facility in May 1986 and December 2004. The 1986 DRF was filed in response to a fuel dispenser leak. The facility was approved for state-funded cleanup under the EDI Program in April 1988. A RAP proposing installation of a pump and treat system and soil vapor extraction system with an air stripper was approved by FDEP in 1991. A Site Rehabilitation Completion Report (SRCR) was proposed in June 1997 and approved by FDEP in November 1997. The second DRF was filed December 2004 in response to a release of 610-gallons of diesel fuel during a product delivery. A Preliminary Contamination Assessment Report (PCAR) and NFA were submitted in December 2005. A Site Rehabilitation Completion Order (SRCO) was issued by the FDEP in August 2006. Routine inspections have been occurring since 2006. A FDEP Storage Tank Facility Annual Compliance Site Inspection dated October 2023 lists this facility in compliance. Nothing of concern was identified during field reviews.

The property is proposed for ROW acquisition. Based on this as well as documentation of historical contamination and the potential for dewatering activities, this site has been assigned a **Medium** risk rating for the preferred alternative.

Site 7
Burger King (formerly Texaco #021-313-FISK's)
1090 Hallandale Beach Blvd
Hallandale Beach, Florida
FDEP Facility ID: 8502027; County Facility ID: 09693

This site is a documented contaminated site under FDEP. This facility is located adjacent to the east of I-95 and adjacent to the north side of Hallandale Beach Boulevard. The site was acquired by FDOT circa 1994 for a prior I-95 expansion project, with plans to demolish the gasoline station and construct a stormwater

detention pond. The site formerly operated one 8,000-gallon, three (3) 4,000-gallon and one 3,000-gallon gasoline USTs removed circa 1987. A DRF was filed November 1988 in response to evidence of petroleum contamination discovered during manual testing of the monitoring wells. Subsequently, an EDI application was submitted and the site was approved for state-funded cleanup. Remediation efforts included the submission of a Contamination Assessment Report (CAR), soil excavation, limited groundwater pumping and implementation of a Monitoring Only Plan (MOP). The CAR was completed in efforts to identify the horizontal and vertical extent of petroleum hydrocarbons in soil and groundwater. The CAR concluded the petroleum plume had migrated offsite to the east and south but, had not impacted those properties based on groundwater monitoring results. Additionally, the vertical extent of the petroleum plume was determined to be less than 28 feet with groundwater flow to the northeast. Approximately 2,370 tons of soil was subsequently removed from the site and a groundwater treatment pump was installed with additional monitoring wells to monitor the effluent. An NFA status was granted to the facility in June 1996. No additional information was available for review. A swale was constructed at this site circa 1997. The site has remained a swale. Nothing of concern was identified during field reviews.

The property is proposed for ROW acquisition to be a swale. Based on the NFA status issued for the November 1988 discharge, current regulatory status, and current use of the property as a swale, this site has been assigned a **Low** risk rating for the preferred alternative.

Site 8
Racetrac #491 (formerly Chevron)
3031 Hallandale Beach Boulevard
Pembroke Park, Florida
FDEP Facility ID: 9602003; County Facility ID: 02341

This site is a documented contaminated site under FDEP. This facility is located west of I-95, north of Hallandale Beach Boulevard adjacent to the project corridor, with the tank area approximately 100 feet north of Hallandale Beach Boulevard. This facility has a history of discharges. It operated as a Chevron service station from 1969 to circa 1971. Historic soil and groundwater impacts were discovered during an environmental audit conducted in 1989. Source removal activities included excavation of soil on the south side of the site. A SRCO was issued for the 1989 discharge discovery in June of 1994. The site is currently

occupied by a Racetrac service station. A DRF was submitted in May 2008 after petroleum was observed in a spill bucket. The spill buckets were removed and replaced in December 2008 and contaminated soil was excavated. The 2009 SAR indicated that GCTLs were exceeded, and a RAP was recommended. Following submission of the RAP in 2010, additional data was collected, and the Broward County Environmental Protection and Growth Management Division (BCEPGMD) agreed to implement NAM in place of the RAP. After four quarters of NAM, a NAM Report/No Further Action Proposal (NFAP) was submitted for review. The NFAP was approved, and an SRCO was issued for the May 2008 discharge by FDEP in January 2014. Two (2) 12,000-gallon unleaded gasoline USTs and one 12,000-gallon vehicular diesel UST are maintained onsite. A FDEP Storage Tank Facility Annual Compliance Site Inspection Report dated July 2021 reported the facility as in-compliance. No additional information was available on file to the date of this report. Nothing of concern was identified during field reviews.

Based on the facility being an active gas station, historical documentation of contamination, and potential for dewatering activities, this facility has been assigned a **Medium** risk rating for the preferred alternative.

Site 9
Energy Dispatch LLC Tanker Truck Spill
East & West Sides of SW 31st Avenue & Hallandale Boulevard
Pembroke Park, Florida
FDEP Facility ID: 9803721; County Facility ID: 09884

This site is a documented contaminated site under FDEP. This discharge site is located on SW 31st Avenue, adjacent to the north side of Hallandale Beach Boulevard. An Energy Dispatch LLC fuel tanker was involved in a vehicular accident, releasing approximately 675 gallons of unleaded gasoline. Subsequent source removal activities were performed through excavation of 549.39 tons of impacted soil. A July 2003 SAR/ NFAP reported the petroleum derived compounds sampled during source removal activities below the FDEP SCTL/GCTLs. A SRCO was issued by FDEP in November 2003. Nothing of concern was identified during field reviews.

Based on the current regulatory status and closure of the historical discharge, this facility has been assigned a **Low** risk rating for the preferred alternative.

Site 10
MOIL Gas Station (formerly Amoco-Subco and Superstop Hallandale)
3151 W Hallandale Beach Boulevard
Pembroke Park, Florida
FDEP Facility ID: 9800048; County Facility ID: 02181

This site is a documented contaminated site under FDEP. The site is approximately 400 feet west of the terminus along Hallandale Beach Boulevard, north side, and approximately 1500 feet west of I-95. This facility has historically operated and currently operates as a retail gasoline station and maintains two (2) unleaded gasoline UST and one vehicular diesel UST. In January 2019, a Discharge Report Form reported a gas release near dispenser #1 and in a nearby storm drain. Based on this form, the Broward County EPGMD Environmental Engineering Permitting Division (EEPD) issued a notice requiring a site assessment be performed onsite. The spill was cleaned up in January 2019 and the storm drain was pumped out. In May 2023, a Tank Closure Report (TCR) was completed, and soil testing results showed all samples below SCTLs. No additional information is available at this time. Nothing of concern was identified during field reviews.

Based on the reported discharge and the potential for dewatering, this site has been assigned a **Medium** risk rating for the preferred alternative.

Site 11
Harbour Cove Associates (Brownfield Site)
100 Northwest 9th Terrace
Hallandale Beach, FL
FDEP Facility IDs: BF060401001 / ERIC_6725

This site is a documented contaminated site under FDEP. This site is approximately 700 feet east of the terminus along Hallandale Beach Boulevard, on the north side, and approximately 1,300 feet east of I-95 ROW. The location is an EPA Brownfield site with completed rehabilitation and redevelopment as a multi-family residential apartment complex. Historically, the property was once used as a 4-acre, 400-foot deep borrow pit at a lake fill site. From 1967 through 1985, the site was occupied by an auto parts manufacturer. In February 2004, free petroleum product was identified in excavation test pits. Site assessment and monitoring activities were completed, soil and groundwater contamination were delineated, and Alternative Cleanup Target Levels (CTLs) were established for the

site. Fifty-one (51) tons of soil was excavated from the site. The property implemented institutional and engineering controls to restrict groundwater use at the property and address the remaining soil contamination. A SRCO with the above-mentioned conditions was issued in May 2009. The property was in compliance as of February 2021. No additional information is available at this time. Nothing of concern was identified during field reviews.

Based on the distance from the corridor's terminus on Hallandale Beach Boulevard (beyond 500 feet), the site has been assigned a **Low** risk rating for the preferred alternative.

Site 12
Vintage Ansin Truck Parking (formerly Recycling Center of Florida)
310 Ansin Boulevard
Hallandale Beach, Florida
FDEP Facility ID: 53352

This site is a documented contaminated site under FDEP. This site is located north of Hallandale Beach Boulevard, approximately 400 feet east of I-95. A 1988 groundwater sample result did not detect contaminants above FDEP GCTLs. However, in 2006, the FDEP issued an offsite notice for soil or groundwater contamination found on the property, due to migration from the former Hallandale Switch Facility (Site 18). No additional information was readily available for review. The site is currently closed and appears as a truck yard. Nothing of concern was identified during field reviews.

Based on the lack of information on potential contamination and potential dewatering within 500 feet of this site has been assigned a **Medium** risk rating for the preferred alternative.

Site 13
Pharmco Rx (formerly Wedgewood Holdings, Inc.)
400 Ansin Boulevard,
Hallandale Beach, FL
FDEP Facility ID: 9802375

This site is a documented contaminated site under FDEP. This site is located approximately 100 feet east of I-95, on the east side of Ansin Boulevard. A TCAR

dated January 2000 documents the removal of a 4,000-gallon gasoline UST. Based on soil and groundwater samples collected during tank removal, no soil or groundwater contamination was present. No additional information was available during the desktop review. This facility is currently closed. Nothing of concern was identified during field reviews.

Based on the lack of information about contamination in the files and potential for dewatering, this site has been assigned a **Medium** risk rating for the preferred alternative.

Site 14
Messingschlager Properties (formerly Richard Danvers Auto Shop)
2514 SW 30th Avenue
Hallandale Beach, Florida
FDEP Facility ID: 9401806

This site is a documented contaminated site under FDEP. This site is located approximately 75 feet west of I-95. The site was formerly occupied by Richard Danvers Auto Shop and maintained a 500-gallon UST. A DRF was submitted September 1994 in response to gasoline impacted groundwater during monitoring well installation, sampling and analysis following the removal of 500-gallon gasoline UST. In February 1996, the site became eligible for state-funded cleanup under the Abandoned Tank Restoration Program (ATRP). Subsequently, a SAR and NAM Plan was submitted and approved in 2002. After three quarters of NAM, a SRCO was granted for the 1994 discharge. Nothing of concern was identified during field reviews.

Based on the June 2005 SRCO and current regulatory status, this site has been assigned a **Low** risk rating for the preferred alternative.

Site 15
95 Warehouse LTD
2401 SW 31st Avenue
Hallandale Beach, Florida
FDEP Facility ID: 894265; County Facility ID: 06862

This site is a documented contaminated site under FDEP. This site is located approximately 350 feet west of I-95. A DRF was submitted in December 1988 with

eligibility for state-funded cleanup under the EDI Program. A CAR dated March 2001 was submitted with recommendations for development of a RAP. The RAP proposed implementation of an air sparging and soil vapor extraction system. The system was operated for three years followed by post Remedial Action Quarterly Monitoring. The facility was granted an SRCO November 2010. Nothing of concern was identified during field reviews.

Based on the closure of the historical discharge, current regulatory status and distance to project, this site has been assigned a **Low** risk rating for the preferred alternative.

Site 16
Gallo Marble Enterprises
500 Ansin Boulevard
Hallandale Beach, Florida
FDEP Facility ID: 8627989

This site is a documented contaminated site under FDEP. This site is located approximately 100 feet east of I-95. A DRF was submitted December 1991 due to soil contamination discovered during the removal of a 2,000-gallon gasoline UST. A SRCO was issued for the 1991 petroleum discharge. In 2004, Phase I and Phase II Environmental Site Assessments (ESAs) conducted for this facility detected ammonia in groundwater, above the FDEP GCTLs. The ESA Reports were submitted to the Broward County Environmental Protection Department (BCEPD). The BCEPD requested additional assessment in June 2005. A September 2005 Groundwater Sampling Report was submitted to the BCEPD, documenting ammonia concentrations in groundwater above FDEP GCTLs. Previous assessments did not detect a point source for ammonia. The site is suspected of being impacted by ammonia plume migrating from the former Hallandale Switch Facility (Site 18). A Declaration of Restrictive Covenant (DRC) restricting groundwater use at the site was recorded in February 2012. A DRC Inspection conducted in September 2020 lists the facility as in compliance with the DRC, and documented no groundwater use at this site. This site is currently occupied by Countertops of Broward. Nothing of concern was identified during field reviews.

Based on the current presence of contamination and potential dewatering activities, this site has been assigned a **Medium** risk rating for the preferred alternative.

Site 17
James Lanier Education Center – grass field (formerly Hallandale Beach Dump)
700 NW 7th Street
Hallandale Beach, Florida
FDEP Facility ID: 99353

This site is a documented contaminated site under FDEP. Although this site is adjacent to I-95, the documented contamination is located on the southeast corner of the James Lanier Education Center, approximately 875-feet east of I-95 and is presently an apparently un-used grass field. The facility is listed in the Broward County Abandoned Dump Inventory. No readily available records were available for review. A Freedom of Information Act (FOIA) request was submitted to the BCEGPMD Environmental Engineering and Permitting Division to obtain additional information in December 2020. Available reports were given for CECOS' review.

According to a report dated June 1992 by the Broward County Office of Natural Resource Protection (DNRP), this facility was approximately five (5) acres in size with trash burning activities. Complaints were reported by neighboring properties due to fumes caused by burning and occasional fires that would start at the dump. Recommendations were made in the report to cover the trash with six inches of material and to continue using it as a trash dump. The FDEP Solid Waste Inventory lists the facility's status as NFA. In 2006, the FDEP issued an offsite notice for soil or groundwater ammonia contamination found on the property, due to migration from the former Hallandale Switch Facility (Site 18). Nothing of concern was identified during field reviews.

Based on the distance from the project corridor, this site has been assigned a **Low** risk rating for the preferred alternative.

Site 18
Park Shore Pharmacy (formerly known as Hallandale Switch Facility)
600 Ansin Boulevard
Hallandale Beach, Florida
FDEP Facility ID: 9700906; County Facility ID: 09924

This site is a documented contaminated site under FDEP. The site is located approximately 70 feet east of I-95. A TCAR dated June 1997 was submitted to

document the removal of a 1,000-gallon UST of unknown prior usage, discovered during a Phase I ESA. No contamination was documented during the removal of the UST and the site was issued a NFA for the UST closure. The site historically operated as Hallandale Switch Facility- a transfer station. A desktop review conducted on Broward County Contaminated Locations Database revealed ammonia contamination onsite. A DRC was recorded with the BCEPGMD in July 2010 restricting groundwater use onsite. A DRC Inspection conducted in July 2019 lists the facility as in compliance with the DRC and documented no groundwater use at this site. Additionally, the FDOH was contacted on December 16th and December 29th, 2020, and again on January 5, 2021, to obtain additional information regarding results of potable well surveys performed at the former Hallandale Switch Facility and nearby properties with ammonia contamination. No response has been received.

Based on regulatory review, the FDEP issued offsite notices to surrounding properties in 2006 (Sites 17, 21, and 22) after potable well surveys were conducted in the vicinity, informing of ammonia contamination in groundwater migrating from the site. However, no additional files were readily available for review online as of this report. Nothing of concern was identified during field reviews.

Based on the lack of additional information on the reported contamination, close proximity to I-95, potential for dewatering, and the migration of the contaminating plume offsite and distance to the project corridor, the site has been assigned a **High** risk rating for the preferred alternative.

Site 19
James Lanier Education Center (formerly South Area Alternative Education Center)
1050 NW 7th Court
Hallandale Beach, Florida
FDEP Facility ID: 9100221; County Facility ID: 07879

This site is a documented contaminated site under FDEP and is currently an education center with no tanks on site. This site is located approximately 50 feet east of I-95. A DRF was submitted in May 2007 due to the discovery of petroleum impacts to soil and groundwater during the removal of a 2,500-gallon heating oil tank. Remediation efforts were completed through the excavation of 14.77 tons of contaminated soil. Subsequently, a SAR/NFAP was submitted and approved in

2008. A SRCO was issued for the discharge July 2008. Nothing of concern was identified during field reviews.

Based on the SRCO issued for the 2007 discharge and current regulatory status, the site has been assigned a **Low** risk rating for the preferred alternative.

Site 20
BW Recycling
2035 SW 31st Avenue,
Pembroke Park, Florida
Facility ID: N/A

This site is not documented as a contaminated site under FDEP. This site is located approximately 800 feet south of Pembroke Road, approximately 350 feet west of I-95 and just west of the CSX railroad tracks. The site is a recycling center and is not in the FDEP Cleanup Program. No permits or registered storage tank information were recorded for this facility. A pedestrian/windshield survey was conducted and did not observe any visual environmental concerns or recycling activities outside the facility during November 2023 field reviews. Nothing of concern was identified during field reviews.

Based on the absence of reported contamination and field survey noting no visual concern, the site has been assigned a **No** risk rating for the preferred alternative.

Site 21
Petroleum Products Corporation (PPC) (Superfund Site)
3130 SW 19th Street,
Pembroke Park, FL
FDEP Facility ID: 8732818

This site is a documented contaminated site under FDEP. This Superfund site is located adjacent to the south side of Pembroke Road and approximately 900 feet west of I-95. This facility operated from approximately 1958 to 1971 as a processor and broker of waste oil and other petroleum derived products. Twenty-two (22) bulk storage Above-Ground Storage Tanks (ASTs) were maintained at the site. A sulfuric acid-clay refining process was used to reprocess waste oil. This process generated sludge waste and spent clay, contaminated with petroleum

products and metals, which were disposed in unlined pits. Additionally, waste containing PCBs and chlorinated solvents were received by the facility. Between 1970 and 1971, the pits were backfilled and most of the site was sold, and contamination was reportedly spread to adjacent areas.

PPC operations were restricted to the southeast corner of the site in 1971, and reportedly functioned as a storage/distribution facility until complete deactivation in 1985. In 1985, approximately 262 drums of sludge and 7,000-gallons of oil were removed from the site. The site was investigated in 1989 and subsequently, a bioslurping unit was installed and operated from 1990 until 2012. The bioslurping unit recovered approximately 43,000 gallons of petroleum product. Recovery efforts continued through sludge removal. A 2019 Feasibility Study (FS) identified soil and groundwater analytical data comprised of Volatile Organic Compounds (VOCs), Semi-VOCs, PCBs, and metals above FDEP SCTLs and GCTLs. On July 15, 2019, the site was added to the EPA Emphasis List of Superfund Sites Targeted for Immediate, Intense Action. In December 2020, a proposed plan was developed by the EPA for the site remediation. A Record of Decision (ROD) was completed in April 2021 recommending soil excavation and groundwater recovery and treatment. Design plans for the remediation have been underway and are still underway as of September 2023.

On May 8, 2018, a teleconference was conducted with EPA, FDEP, FDOT representatives and contractors to provide an overview of the PD&E process, proposed roadway improvements and the potential effects on the PPC site. EPA identified approximate soil contamination boundaries and discussed proposed cleanup methods.

On January 19, 2021, a community meeting was held by the EPA to address the proposed plan for the site. The plan proposes relocation of tenants prior to building demolition, excavation of offsite contaminated soil at the Bamboo Trailer Park (located adjacent and south of PPC), shallow excavation under buildings, installation of a groundwater recovery and treatment system and the implementation of institutional controls to restrict groundwater usage until restoration of the Biscayne aquifer is achieved. The proposed plan was available for public comment until February 12, 2021. A Record of Decision (ROD) was issued in July 2021 stating that remediation is to begin. No other documentation was available.

The community meeting noted the facility location within 100 feet from the cone of influence for the City of Hallandale Wellfield. Sludge has been detected as deep as 24 feet below ground surface. The petroleum, PCB and chlorinated solvents impacts have extended offsite in groundwater as north as Pembroke Road and south/southeast towards the Bamboo Trailer Park. Sludge and free product binds to soils and as a result, leaches to the groundwater, causing the quality of the Biscayne aquifer to be affected. Currently, no nearby wellfields have been affected by the site. Nothing of concern was identified during field reviews.

Based on the presence of contamination in soil and groundwater and potential for dewatering activities, the site has been assigned a **Medium** risk rating for the preferred alternative.

Site 22
Orkin Extermination Company
1820 SW 30th Avenue
Hallandale Beach, Florida
FDEP Facility ID: 8502427; County Facility ID: 01149

This site is a documented contaminated site under FDEP. This site is located 60 feet west of I-95 and is occupied by pest control services. Two 4,000-gallon gasoline USTs were removed from the site in May 1987. The facility maintains a Broward County Hazardous Material License for pesticides and fluorescent light bulbs. According to the Broward County ENVIROS database, the facility is on septic. No notices of noncompliance of violations have been issued for this site. No additional information was readily available for review. Nothing of concern was identified during field reviews.

This site is proposed for acquisition. Based on the absence of documented contamination or a tank removal report, this site has been assigned a **Medium** risk rating for the preferred alternative.

Site 23
Waste Connections – Pembroke Park Transfer Station (formerly Choice Recycling Services of Broward, Pembroke Park Recycling and Transfer)
1899 SW 31st Avenue
Pembroke Park, Florida

FDEP Facility ID: 55464 / 105719; County Facility ID: 00014

This site is a documented contaminated site under FDEP. This site is located approximately 500 feet south of Pembroke Road and approximately 300 feet west of I-95. The site is an operational waste transfer station. A 2009 FDEP Annual Report for a Construction and Demolition Debris Facility identified materials processed to include concrete, wood, land clearing debris, paper, metals and textiles. The 2019 Annual Report submitted for the facility indicates that no waste materials were recycled or processed at the facility in 2019. Inspections have been in compliance as of August 2023. Nothing of concern was identified during field reviews.

Based on the absence of documented contamination, this site has been assigned a **Low** risk rating for the preferred alternative.

Site 24
Flowers Baking Company (out of business)
3262 Pembroke Road
Pembroke Park, Florida
FDEP Facility ID: 8622371

This site is a documented contaminated site under FDEP. The site is located on the south side of Pembroke Road, approximately 530 feet west of the project terminus along Pembroke Road and approximately 1500 feet west of I-95. It is a known contaminated site. A July 2015 Template SAR reported a DRF was filed for this site in February 1988, due to a release from a 2,000-gallon UST; which has since been removed. The TSAR also reported 2014 groundwater samples detected benzene above FDEP GCTLs and soil sample results above FDEP SCTLs. The groundwater flow was reported to be to the north, east and south (toward the Pembroke Road project corridor). An air sparging and soil vapor extraction remediation system was installed at the site in 2018 and operated from July 2018 until May 2019. Post Active Remediation Monitoring (PARM) was conducted with quarterly groundwater sampling following the remediation. After four quarterly events, groundwater concentrations were still reported above GCTLs at the site. March 2020 PARM Year 1, Quarter 4 results detected naphthalene in MW-03 at 229 micrograms per Liter (µg/L, above the GTCL of 14 µg/L and above the Natural Attenuation Default Source Concentrations (NADC) of 140 µg/L, as specified in Table V of Chapter 62-777, FAC. The March 2020 PARM Year 1, Quarter 4 review

letter indicates that additional evaluation of the site is necessary to determine the source of post-remediation rebound of concentrations. A RAP modification was approved on November 18, 2020, and monitoring wells were abandoned in February 2022. A Limited Scope Remedial Action Plan Modification (LSRAPM) was completed in June 2023 which recommends additional soil and groundwater remediation. Nothing of concern was identified during field reviews.

Due to the recommendation of further groundwater and soil remediation, potential for dewatering, and distance from the project, this site has been assigned a **Low** risk rating for the preferred alternative.

Site 25
A&B Recycling
1708 SW 31st Avenue
Pembroke Park, Florida
County Facility ID: 03206

This site is not documented as a contaminated site under FDEP. This site is located adjacent to the south side of Pembroke Road and approximately 300 feet west of I-95. This facility maintains a Hazardous Materials License for operations as a scrap metal yard with battery recycling. Mismanaged and cluttered materials were observed during the field review in November 2023 including metal, car parts, etc. in piles on and off site.

Based on the absence of documented contamination, the visual concerns identified, and potential for dewatering, the site has been assigned a **Medium** risk rating for the preferred alternative.

Site 26
Sun Yi Cafe (formerly Texaco station, Italian Hoagie)
1051 W Pembroke Road*
Pembroke Park, Florida
FDEP Facility ID: 8732177; County Facility ID: 04369

This site is a documented contaminated site under FDEP. The site is located adjacent to the south side of Pembroke Road, approximately 250 feet east of I-95. This facility was formerly leased by Texaco as a gasoline station. The site had two (2) 7,500-leaded gasoline USTs. A letter from Texaco dated May 1986 noted

that it is unknown whether the tanks were removed after operations ceased in January 1974. Nothing of concern was identified during field reviews.
*Note that discrepancies in address were identified in the file. Other address mentioned is 1090 W Pembroke Road which is located in the center of Pembroke Road at the terminus of the project limits, approximately 1,000 feet from I-95

Based on the unknown status of the tanks and potential dewatering, this site has been assigned a **Medium** risk for the preferred alternative.

Site 27
Shell FEC #3828 (formerly First Coast Energy #3828)
2801 Pembroke Road
Pembroke Park, Florida
FDEP Facility ID: 8502153

This site is a documented contaminated site under FDEP. This site is located adjacent to the north side of Pembroke Road, with the tank area approximately 35 feet north of Pembroke Road and approximately 750 feet east of I-95. A DRF was submitted in July 1998 after petroleum was observed in an excavation during UST replacements. The 1999 SAR indicated that GCTLs were exceeded, and a NAM was recommended. The fourth quarter of NAM (November 2016) recommended NFA and requested a SRCO be issued. A SRCO was issued by FDEP in March 2017. An FDEP Storage Tank Facility Annual Compliance Site Inspection Report letter dated February 2024 stated the system was in compliance. Nothing of concern was identified during field reviews.

Based on the issued SRCO, current operations as a gas station, and potential dewatering, this site has been assigned a **Medium** risk rating for the preferred alternative.

Site 28
Family Tire Distributors
2817 Pembroke Road
Hollywood, Florida
County Facility ID: 15361

This site is not documented as a contaminated site under FDEP. The site is located adjacent to the north side of Pembroke Road and is approximately 250 feet east

of I-95. The facility currently maintains a Hazardous Material License for auto repair services and has three bays to conduct auto repairs, handling petroleum products, batteries, and fluorescent light bulbs. No additional documentation was available regarding the history of the site. During the pedestrian/windshield survey, the site appeared to be cluttered with visual evidence of staining on the pavement in front of three auto bays. Nothing of concern was identified during field reviews.

The property is proposed for partial ROW acquisition. Based on this, the absence of documented contamination, current operations as a gas station, and potential for dewatering, the site has been assigned a **Medium** risk rating for the preferred alternative.

Site 29
Kosher Motors (formerly Stevens Auto Service Center)
2829 Pembroke Road
Hollywood, Florida
FDEP Facility ID: 9500022; County Facility ID: 01535

This site is a documented contaminated site under FDEP. This site is located adjacent to the north side of Pembroke Road and approximately 100 feet east of I-95. The location was formerly called Stevens Auto Service Center with documented discharges reported. Historically, the site operated as a gasoline service station with underground gasoline and waste oil tanks, which were removed in 1984. Contamination was documented at the site in 1984 during UST removal activities and a discharge was also reported at the site for the waste oil tank in 1994. The site was assessed in 2008 and contaminated soil was removed under state-funded programs in 2011. Following the source removal, the site was transitioned to NAM for three years and two quarters and received a SRCO in January 2015. The facility currently maintains a Hazardous Material License for auto repair services, handling petroleum products, batteries, and fluorescent light bulbs. Nothing of concern was identified during field reviews.

The property is proposed for ROW acquisition. Based on this, the issuance of an SRCO, and potential dewatering, the site has been assigned a **Medium** risk rating for preferred alternative.

Site 30
Orangebrook Golf Course and Country Club
4000 Entrada Street
Hollywood, Florida
FDEP Facility ID: 8944879; County Facility ID: 01360

This site is a documented contaminated site under FDEP. This site is located adjacent to the west side of I-95 between Pembroke Road and Hollywood Boulevard and is presently a public golf course. Based on the historical aerial review, the site has operated as a golf course as early as the 1950s. The facility had two (2) registered 1,000-gallon USTs, removed in September 1989, and currently uses one 500-gallon vehicular diesel UST. No tank closure report was available for review. The facility maintains a Hazardous Material License for the handling of petroleum products, solvents, batteries, rags, antifreeze, and fluorescent bulbs. Arsenical herbicides and pesticides were commonly used in the 1950s for agricultural use. These same pesticides were often applied for turf maintenance on golf courses throughout Florida. This potential application to turf grass may present a potential risk to soils and groundwater. Nothing of concern was identified during field reviews.

Based on the lack of documented contamination but the potential for arsenic contamination present, and potential for dewatering, this site has been assigned a **Medium** risk rating for the preferred alternative.

Site 31
Shell-First Coast Energy #3829 (formerly Equiva)
2800 Hollywood Boulevard
Hollywood, Florida
FDEP Facility ID: 8502526

This site is a documented contaminated site under FDEP. The site is approximately 750 feet east of the eastern terminus along Hollywood Boulevard.. The facility currently operates as a gasoline station. A DRF was submitted in April 1986 in response to a tank leak release of approximately 8,000 gallons and was accepted into the EDI program. A groundwater remedial system was installed and operated in 1986 and a soil remedial system was installed in 1992. A DRF was submitted in September 1993 in response to unleaded gas in a monitoring well (MW-6) and accepted into the PLRIP, a remedial system was operated from 1999 to 2000. A

DRF was filed in July 2008 in response to groundwater contamination in wells which was not eligible for FDEP funding. An October 2008 Limited Contamination Assessment Report (LCAR) detailed groundwater sample results above FDEP GCTLs and soil sample results above FDEP SCTLs. Confirmatory soil sampling was completed in 2016 and soil samples were reported below SCTLs. A NAM was initiated in 2016 and was completed in February 2020, following two consecutive quarters of groundwater samples reported below GCTLs. The 2019 NAM results confirmed groundwater contamination below FDEP GCTLs and the NFA proposal was approved in February 2020. All monitoring wells and remediation system components were properly abandoned in May 2020 and the report was approved in July 2020. A SRCO was issued for the since in August 2020. A FDEP Compliance Inspection Form dated January 2020 indicates that the facility is in compliance. Nothing of concern was identified during field reviews.

Based on the issued SRCO, the site has been assigned a **Low** risk rating for the preferred alternative.

Site 32
Dabern Auto Center (formerly Davo Auto Center)
2828 Hollywood Blvd
Hollywood, Florida
FDEP Facility ID: 8502583

This site is a documented contaminated site under FDEP. The site is approximately 350 feet east of the terminus along Hollywood Boulevard. The facility was constructed circa 1956 and one 4,000-gallon, one 6,000-gallon and one 10,000 gasoline UST were in place from 1975 to 1990. Additionally, one 10,000-gallon leaded gasoline, one 10,000-gallon unleaded gasoline, and one 10,000-gallon diesel USTs were in place from 1981 to 1990. All tanks have since been removed. Petroleum hydrocarbons were detected during monitoring in close proximity to the USTs. The facility was admitted for state-funded cleanup under the ATRP. Assessment activities have been ongoing, with delays due to available funding. A Template SAR dated January 2018 documented the groundwater contaminant plume extending to the northern boundary of the site, with recommendations for remediation. A RAP was submitted for the site in May 2019 and approved in August 2019. A subsequent Pilot Study was performed to test the efficiency of an air sparging and soil vapor extractions system. An FDEP Field Inspection Report dated April 2020 indicated the site has U-Haul and vehicle storage with no fuel

dispensing operation. The reports noted vehicles in the back of the lot that would need to be removed prior to installation of the remedial system. In September 2020, an Agency Term Contractor (ATC) was selected to conduct remediation activities. In July 2019, a RAP was approved by Broward County. Interim remedial action testing was completed in January 2022 which identified petroleum constituents over GCTLs. A NAM was approved by Broward County in February 2022 and NAM has been occurring since, as of September 2023. The NAM results still show petroleum constituents over GCTLs. During the field review in November 2023, containers without secondary containment were observed next to the building. Nothing else of concern was observed.

Based on the presence of contamination in groundwater and potential for dewatering, the site has been assigned a **Medium** risk rating for the preferred alternative.

Site 33
Goodyear Tires (formerly Chevron)
2911 Hollywood Boulevard
Hollywood, Florida
FDEP Facility ID: 8502126; County Facility ID: 09656

This site is a documented contaminated site under FDEP. This site is located approximately 150 feet east of I-95 adjacent to the north side of Hollywood Boulevard and is presently a vacant lot owned by FDOT. A DRF was submitted in July 1988 and an SRCO issued in September 1992. During tank removal, a DRF was submitted February 1995. The 1995 CAR indicated that groundwater sample results exceeded GCTLs for benzene and soil samples exceeded FDEP SCTLs for lead. The site was assigned a score of 30 during a scoring review in November 2012 under the EDI program. Based on a review of historic aerials, the gasoline station was demolished between 1995 and 1999. During the pedestrian/windshield survey in November 2023, the site is vacant with fencing around the site boundary. No further information was available for review beyond 2012. Nothing of concern was identified during field reviews.

A swale is proposed for construction at this site. Swale construction may include excavation and dewatering activities. Based on the open 1995 discharge, the absence of recent documentation, and proposed construction, this site has been assigned a **High** risk rating for the preferred alternative.

Site 34
Chevron (formerly Sunshine #30)
3000 Johnson Street
Hallandale Beach, Florida
FDEP Facility ID: 8502723

This site is a documented contaminated site under FDEP. The site is adjacent to the south side of Johnson Street and approximately 150 feet west of I-95. The location is an active retail gasoline station and currently operates two (2) 10,000-gallon unleaded gasoline USTs. The site has three (3) documented unleaded gasoline discharges, dated 1990, 1993, and 2000. Records show an SRCO dated 2010 for the 2000 discharge. No record of closures for the other two discharges was observed in the file. As of 2010, routine inspections are ongoing. The latest inspection was completed in February 2024 stating that the site had a minor non-compliance violation due to spill containment, dispenser liners, and piping sumps not being accessible. Nothing of concern was identified during field reviews.

Based on the current regulatory status, current operations as a gas station, and potential for dewatering, the site has been assigned a **Medium** risk rating for the preferred alternative.

Site 35
Clean Paws Pet Salon and Resort (formerly Marvin's Cleaners)
3030 Johnson Street,
Hallandale Beach, FL
FDEP Facility ID: 9501066; ERIC_4112

This site is a documented contaminated site under FDEP. This site is adjacent to the south side of Johnson Street and approximately 375 feet west of I-95. The location operated as a drycleaning facility from 1967 until 2003. Site assessment activities were completed in 1998 which reported soil and groundwater contamination of solvents/PCE at the site. Remedial activities were performed at the site to reduce contaminant concentrations from 2001 through 2009 when groundwater samples were reported below GCTLs. Remediation efforts were made through actions including septic tank cleaning, drain field excavation and the installation of an air sparging and soil vapor extraction (SVE) system. The SVE system consists of six horizontal vapor extraction wells, a moisture separator with automatic pump-out, liquid carbon treatment, a 500-gallon holding tank, a

regenerative vacuum blower, and a vapor-phase carbon vessel. The SVE system has been in operation for eight years and is ongoing. Concentrations increased at the site following remediation. A 2021 Biennial Groundwater Sampling Report confirmed groundwater concentrations above FDEP GCTLs. According to the report, the results indicate a small source area remaining on site. Groundwater flow was reported to the east toward the I-95 project corridor. Nothing of concern was identified during field reviews.

Based on the presence of contamination and potential for dewatering, the site has been assigned a **Medium** risk rating for the preferred alternative.

Site 36
Marathon (formerly Amoco)
3034 Johnson Street
Hallandale Beach, Florida
FDEP Facility ID: 8502207

This site is a documented contaminated site under FDEP. The site is adjacent to the south side of Johnson Street and approximately 450 feet west of I-95. The location is an active retail gasoline station with two (2) 10,000-gallon ethanol USTs, and one out of service 10,000-gallon gasoline UST. In 1989, contaminated soils were encountered during tank replacement activities. Subsequently, 1,191 tons of excessively contaminated soils were removed and disposed offsite. In 1990, the site received eligibility for state-funded cleanup under the EDI program, with an assigned score of 75. In 1991, a RAP proposing groundwater pump and treat was prepared and approved by Broward County. However, due to the changes in the petroleum cleanup program, the RAP was not implemented. In 2001, the site was proposed for NAM for one year. In subsequent years, a SAR was completed to delineate the horizontal and vertical extent of petroleum contamination at the site. A RAP addendum was proposed in 2009 and 2010, to perform in-situ air sparging with soil vapor extraction. Remediation activities were completed in 2015. Post remediation monitoring activities were performed through 2019. A May 2020 NAM Report confirmed groundwater petroleum concentrations above GCTLs at the site. A June 2021 NAM Report stated BTEX / MTBE constituents were below GCTLs in monitoring wells MW-3 and MW-4. An October 2021 NAM Report showed benzene above GCTLs in MW-4. In May and June 2021, a TCAR was performed to remove a used oil tank. Stained soil was observed during the excavation, but results showed all detected compounds were either below the

detected limits and/or within the SCTLs; however, the pesticide Dieldrin was detected above GCTLs. As of 2023, the groundwater analytical results indicated that all analyzed parameters were either below the detected limits or within the Groundwater Cleanup Target Levels (GCTLs) with the exception of Benzene, Ethyl-Benzene, Total Xylenes, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Isopropyl-benzene, Aldrin, and Dieldrin of which the levels of Benzene, Total Xylenes, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Isopropyl-benzene, and Dieldrin were above the NADSCs. Nothing of concern was identified during field reviews.

Based on the recommendation for additional testing and the potential for dewatering, this site has been assigned a **Medium** risk rating for the preferred alternative.

Site 37
Former Sunset Golf Club (currently vacant land)
2727 Johnson Street
Hollywood, Florida
FDEP Facility ID: FLR10TJ71; County Facility ID19554

This site is a documented contaminated site under FDEP. This site is located adjacent to the ROW on the north side of Johnson Street and adjacent on the east side of I-95. A review of historical aerials determined this site was developed circa 1952. Golf course operations were terminated in 2014. Arsenic impacts to soil and groundwater, above the FDEP CTLs, were discovered in a Phase II ESA, conducted in 2006. SARs completed in July 2018 and revised in July of 2019, documented groundwater flow at the site in the northwest direction (toward the I-95 project corridor) and summarized the excavation and disposal of approximately 149.48 tons of soil. A RAP submitted in June 2019, proposed the dredging and disposal of an additional 489 tons of soil and soil blending to lower concentrations of arsenic in the soil. A revised RAP dated May 2020 stated that the City of Hollywood proposed the construction of a stormwater detention area at the center of the site, excavation of contaminated soils from the proposed detention area, and placement of two feet of clean fill throughout the property. Additionally, three quarters of NAM was conducted onsite to evaluate plume stability. In October 2020, the site was issued a No Further Action with Controls (NFAC) status after the BCEPGMD received a copy of the DRC restricting groundwater use at the site. In October 2020, the City of Hollywood purchased the land. Currently, the land is being cleared. During the pedestrian survey, the

site was vacant and fenced, with vegetative overgrowth and land clearing occurring. Nothing of concern was identified during field reviews.

FDOT is proposing a wet stormwater pond on this site. Based on this, potential for dewatering, and the presence of contamination, this site has been assigned a **High** risk rating for the preferred alternative.

Site 38
CSX Railroad
Facility ID: N/A

I CSX railroad is located along the west side of I-95. While the railroad is not documented as contaminated, railroads were previously treated with arsenic and railroad ties were usually treated with chemicals such as creosote. Additionally, a railroad siding is present between Pembroke Road and Hallandale Beach Boulevard where cars offload supplies. This is important to note as the types of supplies are unknown and could contain chemicals. Nothing of concern was identified during field reviews.

Based on the likely potential of contamination present and the potential for dewatering, this site has been assigned a **Medium** risk rating for the preferred alternative.

7.3 ETDM ETAT Review

The project was reviewed through the FDOT's ETDM process where members of the ETDM ETAT provide input and comments; the ETDM Screening Summary Report (No. 14254) is included herein by reference.

7.4 Permits and Specifications

Dewatering is anticipated to occur, as such a construction dewatering permit will be required from SFWMD. The contractor will be held responsible for ensuring compliance with any necessary dewatering permit(s). The dewatering plan will need to consider the radius of influence of any dewatering activity on nearby contamination plumes to avoid potential contamination plume exacerbation. The status of the sites will be updated accordingly at each future design phase. All permits will be obtained in accordance with Federal, State, and local laws and

regulations and in coordination with the District Contamination Impact Coordinator (DCIC).

If dewatering activities are proposed within 500 feet of a contaminated site, a FDOT CAR Contractor will provide assistance during the preparation of the dewatering permit application and assist in the permit process. Roadway plans will have a general note listing any area of dewatering concerns with applicable stationing. See *Part 2, Chapter 20 Contamination, paragraph 22.2.5.2 Dewatering During Construction* for further details. Additionally, *see Part 1, Chapter 12, Environmental Permits and Part 2, Chapter 11, Water Quality Impact Evaluation* for guidance on NPDES permitting.

8.0 Conclusions and Recommendations

This CSER identified 38 sites for evaluation associated with the preferred alternative. These sites consisted mainly of former/current gas stations, dry cleaners, landfills, and one CERCLA site within one-half mile. Risk rankings were assigned to each potentially contaminated site after reviewing data obtained from regulatory databases, historical land uses, on-site field visits, proposed construction activity, and proposed ROW acquisition. **Table 8.1** provides a summary of risk ratings for the preferred alternative. The sites are rated the same for all the build alternatives.

Table 8.1 – Summary of Risk Ratings for the Preferred Alternative

Alternative	Contamination Risk			
	No	Low	Medium	High
Preferred Alternative	2	11	22	3

Medium and High risk sites may require a Contamination Level II Assessment consisting of soil and groundwater testing should excavation/earthwork, drainage installation, structure installation, dewatering, and/or ROW acquisition be proposed adjacent to them.

See **Table 7.1** for a list of all 38 sites with their name, contamination disposition/status, and risk ranking. To evaluate potential impacts to planned construction activities, Medium and High risk sites are recommended for soil and

groundwater sampling should ROW acquisition or construction activities be proposed that impacts those sites.

Interstate 95 (I-95/ SR 9) PD&E Study

From South of Hallandale Beach Boulevard (SR 858) to
North of Hollywood Boulevard (SR 820), Broward County