Draft Natural Resource Evaluation

Florida Department of Transportation

District Four

SR 9/I-95

Limits of Project: FROM SOUTH OF SR 870/COMMERCIAL BOULEVARD TO NORTH OF CYPRESS CREEK ROAD

Broward County, Florida

Financial Management Number: 435808-1-22-02

ETDM Number: 14222

July 31, 2018

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

Executive Summary

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study to evaluate improvements to the Cypress Creek Road and SR 870/Commercial Boulevard interchanges of Interstate 95 (I-95) and along I-95 from South of SR 870/Commercial Boulevard to North of Cypress Creek Road. The project occurs along a major interstate highway within a developed and urban area of Broward County. The study includes the development, evaluation, and documentation of detailed engineering and environmental studies, which involves data collection, corridor analyses, conceptual design analyses, environmental analyses, public involvement, and project documentation.

The study was evaluated through the FDOT's Efficient Transportation Decision Making (ETDM) process and is designated as ETDM #14222. An ETDM Programming Screen Summary Report was published on February 22, 2016, which contains agency comments from the Environmental Technical Advisory Team (ETAT) on the potential effects to natural, cultural, and community resources.

This Natural Resources Evaluation (NRE) Report contains detailed information pertaining to any threatened, endangered or otherwise protected species as well as the existing jurisdictional wetland features throughout the project limits from south of SR 870/Commercial Boulevard to north of Cypress Creek Road. Avoidance and minimization measures for any potential impacts are also included in this report. A Protected Species and Habitat evaluation was conducted to document potential project involvement with threatened, endangered and/or protected species that may result from the proposed roadway and interchange enhancements along the I-95 corridor. This assessment was conducted in accordance with Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.) and Part 2 Chapter 16 of the PD&E Manual. In addition, this NRE includes a Wetland and Surface Waters Evaluation which was conducted pursuant to the criteria specified in Part 2, Chapter 9 of the PD&E Manual. The evaluation identifies and describes existing jurisdictional wetlands and other surface waters within the project limits, assesses potential impacts to these resources, and evaluates avoidance, minimization, and potential mitigation options.

Through the ETDM screening tool, this project has been coordinated with National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) and per their comments, there is no involvement with, or adverse effect on Essential Fish Habitat (EFH) as the project area does not contain areas that support EFH or NOAA trust fishery resources; therefore, no EFH assessment or further consultation with NMFS will be required. In addition, an interagency meeting was held with representatives from the Florida Department of Environmental Protection (FDEP), US Army Corps of Engineers (USACE), South Florida Water Management District (SFWMD), US Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC) and local counties in October 2017 to discuss the project as currently proposed. The general comments from this meeting indicated that the few potentially present, listed species and jurisdictional wetlands would not be anticipated to cause any issues with the permitting and regulatory review of the proposed road improvements to I-95.

Protected Species and Habitat Evaluation

This NRE documents the likelihood of occurrence and the potential for impact to any federally and state listed species and their suitable habitats. The report was prepared in accordance with Section 7 of the ESA of 1973 (ESA, PL 93-205), as amended, and FDOT's PD&E Manual, Part 2, Chapter 16 (Protected Species and Habitat). Database searches, Geographic Information System (GIS) analysis and field investigations were conducted to determine occurring and potentially occurring protected species and their habitats within the corridor.

The Florida Land Use, Cover, and Forms Classification System (FLUCCS) identified the following existing land uses within the project area: Fixed Single Family, Medium Density (1210), Fixed Single Family, High Density (1310), Mobile Home (1320), Multiple Dwellings, Low (1330), Multiple Dwellings, High (1340), Commercial and Services (1400), Shopping Centers (1411), Other Light Industries (1550), Institutional (1700), Educational Facilities (1710), Australian Pine (4370), Airports (8110), Railroads and Railways (8120), and Sewage Treatment (8340).

A total of 15 animal species (1 mammal, 11 birds, 2 reptiles and 1 fish) that are federally and/or state listed were determined to occur or potentially occur within the project area. No designated critical habitat for any of these animal species is present within the project corridor; hence, the project will not adversely affect any designated critical habitat. No direct impacts to any of these listed species are anticipated as a result of this project. The project is within the core foraging area (CFA) of three known wood stork colonies. However, there is very limited suitable wood stork foraging habitat within the project limits and the proposed potential impacts to jurisdictional wetland features is limited to 0.07 acres of stormwater swales (**SW 1** and **SW 2**). Therefore, the effect determination for the wood stork is "May Affect, Not Likely to Adversely Affect". There were no active or inactive gopher tortoise burrows observed within the project limits; therefore, the gopher tortoise effect determination is "No Effect." Per the programmatic effect determination key (Key) for the Eastern indigo snake, the effect determination is "May Affect, Not Likely to Adversely Affect". All other federal and state protected species effect determinations are listed as "no effect". All protected species and their determination of effect can be found in **Table 3-2**.

Wetlands and Surface Water Evaluation

Pursuant to Executive Order 11990 entitled "Protection of Wetlands," (May 1977) the U.S. Department of Transportation (USDOT) developed a policy, Preservation of the Nation's Wetlands (USDOT Order 5660.1A), dated August 24, 1978, which requires all federally-funded highway studies to protect wetlands to the fullest extent possible. The Wetland and Surface Water evaluation performed for this project identified one natural wetland area (**W-1**) within the study area which consisted of a single community type as classified by FLUCCS codes: 630 – Wetland forested mix. A total of 18 engineered (i.e. man-made) stormwater swales containing hydrophytic vegetation consisting of five FLUCCS types; and, five other surface waters consisting of two FLUCCS types were identified along the project study corridor. The FLUCCS Map (**Figure 2-1**) identifies these wetlands and surface waters as Streams and Waterways (510), Drainage Swales (514), Reservoirs less than 10 acres (534), Wetland Forested Mixed (630), Wetland Scrub (631), Vegetated Non-Forested Wetlands (640), Freshwater Marshes (641) and Wet Prairies (643). The majority of these areas (including the only natural wetland area, **W-1**) are not anticipated to be impacted by the project. The only potential impacts to any jurisdictional features are to two small stormwater swales, **SW 1** and **SW 2,** totaling a maximum impact of 0.07 acres**.** The potential jurisdictional impacts are shown in **Table 4-3**. The identified jurisdictional features are shown in **Table 4-1** which includes the features' identification number, size (acres), FLUCCS code/description, and USFWS code/description. The locations of these features are depicted on aerial maps in **Appendix B** and representative photographs are included in **Appendix C**. Mitigation is not anticipated to be required for the potential impacts to **SW 1** and **SW 2** as these impacts would be offset through a permit modification to USACE Permit No. SAJ-2014-01584 (**Appendix E**). This permit authorized the creation of an excess of over 20 acres of swales within the limits of this PD&E study which would adequately cover the proposed potential impacts.

Table of Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1 Introduction

The Florida Department of Transportation (FDOT) District Four is conducting a Project Development and Environment (PD&E) Study for improvements to the Commercial Boulevard and Cypress Creek Road interchanges and along I-95 from South of Commercial Boulevard to north of Cypress Creek Road (Mile Posts 14.5 to 17.0), a distance of approximately two and a half miles in Broward County, Florida.

The Natural Resource Evaluation (NRE) includes a Protected Species and Habitat Evaluation which was conducted to document potential project involvement with any threatened, endangered and/or protected species that may result from the proposed roadway and interchange enhancement along the I-95 corridor. This assessment was conducted in accordance with Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.) and Part 2 Chapter 16 of the PD&E Manual.

This NRE also includes a Wetland and Surface Water Evaluation which was conducted pursuant to the criteria specified in Part 2, Chapter 9 of the PD&E Manual. The objective of this evaluation is to present the findings of the wetland assessment that was completed for the proposed corridor. It identifies and describes existing jurisdictional wetlands and other surface waters within the project limits; assesses potential impacts to these resources; and evaluates avoidance, minimization, as well as any potential mitigation options.

Lastly, as indicated in the comments received from the National Marine Fisheries Service's (NMFS) Environmental Technical Advisory Team (ETAT) representative (Brandon Howard), no Essential Fish Habitat (EFH) assessment is required for this project as NMFS stated that this project would not directly impact any areas that support EFH or National Oceanic and Atmospheric Administration (NOAA) trust fishery resources.

1.1 Project Background

I-95 is one of the most important surface transportation facilities along the east coast of Florida. As part of the state's Strategic Intermodal System (SIS), it is a critical asset for moving people and goods within the 12 coastal counties, including Miami-Dade, Broward, and Palm Beach Counties.

FDOT is conducting a comprehensive systematic analysis of the I-95 interchanges in Broward and Palm Beach Counties for the first time since the initial construction of the interstate in the 1970s. Per the I-95 Interchange Master Plan, FDOT has developed preliminary design concepts to address traffic spillback onto I-95, improve traffic operations at the interchanges, reduce congestion which has reached unacceptable levels during peak hours, and to enhance overall safety at each interchange, including those at Cypress Creek Road and Commercial Boulevard. These preliminary design concepts were developed in separate Interchange Concept Development Reports (ICDR) for each interchange completed in February 2016 (Commercial Boulevard) and June 2015 (Cypress Creek Road).

The intent of the I-95 PD&E Study from south of Commercial Boulevard to north of Cypress Creek Road is to study in further detail the preliminary design concepts from the I-95 Interchange Master Plan ICDRs in addition to other alternatives. This PD&E Study will also include a No-Action alternative which assumes no proposed improvement and serves as a baseline for comparison against other alternatives.

1.2 Project Description

This project is proposing improvements to the Commercial Boulevard and Cypress Creek Road interchanges and along I-95 from south of Commercial Boulevard to north of Cypress Creek Road, a distance of approximately two and a half miles in Broward County, Florida. A project location map is depicted in **Figure 1-1**.

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 connect the major employment centers and residential areas within the South Florida tri-county area. I-95 is part of the state's SIS and the National Highway System (NHS). In addition, I-95 is designated as an evacuation route along the east coast of Florida.

I-95, within the project limits, currently has six general purpose lanes (three in each direction) and two High Occupancy Vehicle (HOV) lanes (one 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 two full interchanges within the project limits located at Commercial Boulevard and Cypress Creek Road, as well as entry ramps from N. Andrews Avenue and from Cypress Creek Park and Ride Lot to I-95 southbound.

The proposed improvements will be compatible with the proposed I-95 Express Lanes Phase 3 Project, which will introduce two tolled, express lanes in place of the existing HOV lanes from Broward Boulevard in Broward County to Linton Boulevard in Palm Beach County. Phase 3A, which extends from Broward Boulevard to south of SW 10 Street and includes the limits of the proposed interchange improvements, began construction in early 2016.

Figure 1-1 Project Location Map

1.3 Purpose and Need

The primary need for this project is to increase capacity and improve traffic operations on I-95 and at the Cypress Creek Road/I-95 and Commercial Boulevard (SR 870)/I-95 interchanges. The project is also intended to improve safety within the vicinity, including access to I-95 and the arterial intersections. Secondary considerations for the purpose and need of this project include system linkage, modal interrelationships, transportation demand, social demands and economic development, and evacuation.

I-95 within the project limits currently operates at Level of Service (LOS) F. Additionally, Commercial Boulevard operates at LOS E east of I-95 and LOS F west of I-95, while Cypress Creek Road operates at LOS E on both sides of I-95. Without improvements, the driving conditions will continue to deteriorate well below acceptable LOS standards. The I-95 Express Phase 3 improvements will help maintain or slightly improve the I-95 corridor LOS by adding one travel lane in each direction in the form of an Express Lane. The improvements proposed as part of this project will complement the I-95 Express Lanes improvements.

The existing Cypress Creek Park and Ride southbound on-ramp and Commercial Boulevard southbound on-ramp provide less than 500 feet of weave distance before the acceleration lane drops and merges with the general-purpose traffic. This forces commuters to merge with the general-purpose traffic while accelerating which is an unsafe maneuver.

The proposed modifications will improve the safety of the project corridor. The buses travelling onto I-95 from the Cypress Creek Park and Ride will be provided greater distance prior to merging with I-95 southbound traffic. Additionally, the existing substandard vertical clearance of the North Andrews Avenue bridge over I-95 will be resolved with the bridge replacement.

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, Commercial Boulevard, and Cypress Creek Road serve as part of the emergency evacuation route network designated by the Florida Division of Emergency Management and by Broward County. Commercial Boulevard and Cypress Creek Road 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 of the state evacuation route network (i.e., I-595 and the Florida's Turnpike).

The Cypress Creek Road Interchange Project is included in the Broward County Metropolitan Planning Organization (MPO) Transportation Improvement Program (TIP) for Fiscal Years (FY) 2016-2020, the FDOT Work Program FY 2017- 2021, the FDOT State TIP FY 2016-2020, and the FDOT SIS Five Year Plan FY 2016-2020 for PD&E Phase in FY 2016.

The Broward County MPO 2035 Long Range Transportation Plan (LRTP) included improvements to all I-95 interchanges in Broward County under Illustrative Roadway Projects. Illustrative projects are those that cannot be included in the cost feasible plan due to financial constraints but would be included in a future approved TIP.

1.4 Proposed Improvements

A recommended alternative was selected following the June 29, 2017 Alternative Public Workshop based on results from the alternative analysis process, public, local and state officials input, and coordination with FDOT. Alternative 1A-6 was selected as the recommended Build Alternative. This alternative meets the purpose and need of the project. The proposed improvements under this alternative achieve the objectives of the department to improve traffic operations and enhance overall safety within the project study area while minimizing cost and environmental and socio-

economic impacts. A full description of all build alternatives evaluated is included in the Preliminary Engineering Report prepared for this project.

The following are the proposed improvements associated with Alternative 1A-6:

I-95 Mainline Improvements

- Maintain the proposed I-95 Express Lanes Phase 3 project improvements, which will introduce two tolled, express lanes in place of the existing HOV lanes from Broward Boulevard in Broward County to Linton Boulevard in Palm Beach County.
- Provide a Collector-Distributor (CD) road system to carry a large volume of the Cypress Creek Road traffic desiring to go southbound onto I-95. The CD road system starts at the Cypress Creek Park & Ride on-ramp and merges with the existing I-95 southbound on-ramp from North Andrews Avenue. The CD road system continues southbound over Commercial Boulevard and merges with the I-95 mainline just north of Powerline Road.
- Reconstruct the North Andrews Bridge over the I-95 mainline.

Commercial Boulevard Interchange Improvements

I-95 Northbound Off-Ramp:

- Provide two additional eastbound right turn lanes to have a triple right turn movement to Commercial Boulevard east.

I-95 Southbound Off-Ramp:

- Provide one additional westbound right turn lane to have a dual right turn movement to Commercial Boulevard west.

Commercial Boulevard and Powerline Road Intersection:

- Provide one additional Powerline Road southbound left turn lane by removing one of the three thru lanes to have a triple left turn movement to Commercial Boulevard east.
- Provide one additional Commercial Boulevard westbound thru lane by removing one of the two westbound to southbound left turn lanes to have four thru westbound lanes.
- Provide one additional Commercial Boulevard eastbound thru lane east of Powerline Road.

Commercial Boulevard and N. Andrews Avenue Intersection:

- Provide one additional North Andrews Avenue southbound left turn lane to have dual left turn lanes to Commercial Boulevard east.
- Provide one additional Commercial Boulevard eastbound thru lane to have four eastbound thru lanes.
- Reduce existing westbound though lanes from three to two lanes.
- Provide a one lane bridge across North Andrews Avenue to accommodate Commercial Boulevard westbound traffic to the existing I-95 westbound to southbound flyover on-ramp. The proposed one lane bridge merges with the existing I-95 westbound to southbound at-grade ramp which accommodates the North Andrews Avenue southbound and northbound traffic heading to southbound I-95. This reconfigured I-95 westbound to southbound flyover on-ramp will have two lanes at the entrance and will

drop to one lane after the third span of the flyover bridge. The first three spans of the flyover bridge will be reconstructed.

- Convert existing two-lane frontage road located at the northeast quadrant of the intersection to a one lane frontage road in the westbound direction. The west end of the proposed one lane frontage road turns northward before approaching North Andrews Avenue and terminates at the intersection of NE 1 Avenue and NE 51 Street.

Cypress Creek Road Interchange Improvements

I-95 Northbound Off-Ramps:

- Replace the existing I-95 northbound to westbound off-ramp loop at the northwest quadrant of the interchange with a bridge parallel to the existing I-95 mainline northbound bridge over Cypress Creek Road. The bridge accommodates the I-95 northbound to Cypress Creek westbound traffic to a stop condition at Cypress Creek Road. This movement will require signalization.
- Widen the northbound to eastbound off-ramp with an additional eastbound right turn lane to have a dual right turn movement to Cypress Creek Road eastbound. This movement will require signalization.

I-95 Northbound On-Ramp:

- Remove the Cypress Creek Road westbound free flow right on-ramp onto I-95 northbound. Provide one additional Cypress Creek Road westbound right turn lane to have a dual right turn lane I-95 on-ramp which will drop to one lane before merging with the I-95 mainline.

I-95 Southbound On-Ramp from N. Andrews Avenue:

- Reconstruct and widen to provide an additional lane; tie in to the proposed CD road system which starts from the Cypress Creek Park and Ride.

Cypress Creek Road and N. Andrews Avenue Intersection:

- Maintain existing number of lanes at the north and south legs of the intersection.
- Remove one Cypress Creek Road eastbound thru lane between NW 6 Way and North Andrews Avenue and provide one additional right turn lane to have dual right turn lanes from Cypress Creek Road eastbound to North Andrews Avenue southbound.

N. Andrews Avenue and N. Andrews Way Intersection:

- Maintain existing number of lanes at all legs of the intersection.

Cypress Creek Road and NE 7 Avenue Intersection:

- Provide one additional left turn lane to have dual left turn lanes from Cypress Creek Road eastbound to NE 7 Avenue northbound.

2 Existing Conditions

2.1 Land Use Classifications

The existing land uses within the project area were identified through the review and interpretation of the most recent version (updated 9-14-2011) of the South Florida Water Management District's (SFWMD) *Land Cover Land Use 2008* GIS layer. Land uses were categorized using the Florida Land Use, Cover, and Forms Classification (FLUCCS) codes.

The I-95 corridor and intersecting arterials are designated as transportation land use. The area to the east of I-95 is primarily residential land use with some commercial uses along the major arterials. The area west of I-95 is dominated by industrial and commercial land uses. Existing land use along the project corridor is depicted in **Figure 2-1**, upland habitats and land uses are described in **Section 2.1.1** below and jurisdictional wetland habitats are described further in **Section 4.2**.

2.1.1 UPLAND HABITATS AND LAND USES

Due to the developed and urbanized nature of the project area, there were very few natural habitat types identified within the proposed corridor. The existing upland land uses are identified and briefly described below.

FLUCCS Code / Description

1210 – Fixed Single Family, Medium Density. This category includes fixed single-family homes with two – five dwelling units per acre.

1310 – Fixed Single Family, High Density. This category includes fixed single-family homes with six or more dwelling units per acre.

1320 – Mobile Home Units. This category includes mobile homes with six or more dwelling units per acre.

1330 – Multiple Dwellings, Low Rise. This category includes multi-family housing units of two stories or less.

1340 - Multiple Dwellings, High Rise. This category includes multi-family housing units of two stories or more.

1400 – Commercial and Services. This category includes buildings that support a mixture of commercial and retail services.

1411 – Shopping Centers. This category includes many small strip malls and other retail services.

1550 – Other Light Industries. This category includes small fabrication and manufacturing facilities.

1700 – Institutional. This category includes all schools, churches, and hospitals.

1710 – Educational Facilities. This category includes all schools and other educational facilities.

4370 – Australian Pine. This category includes forested habitats dominated by the exotic Australian Pine (*Casuarina equisetifolia*).

8110 – Airports. This category includes open land associated with the approach of a small private airport.

8120 – Railroads and Railways. This category includes all existing railroads and right of ways (ROW) for those features.

8140 – Roads and Highways. This category includes all existing roads, highways and the associated ROW for these features.

8340 – Sewage treatment. This category includes all existing sewage treatment facilities.

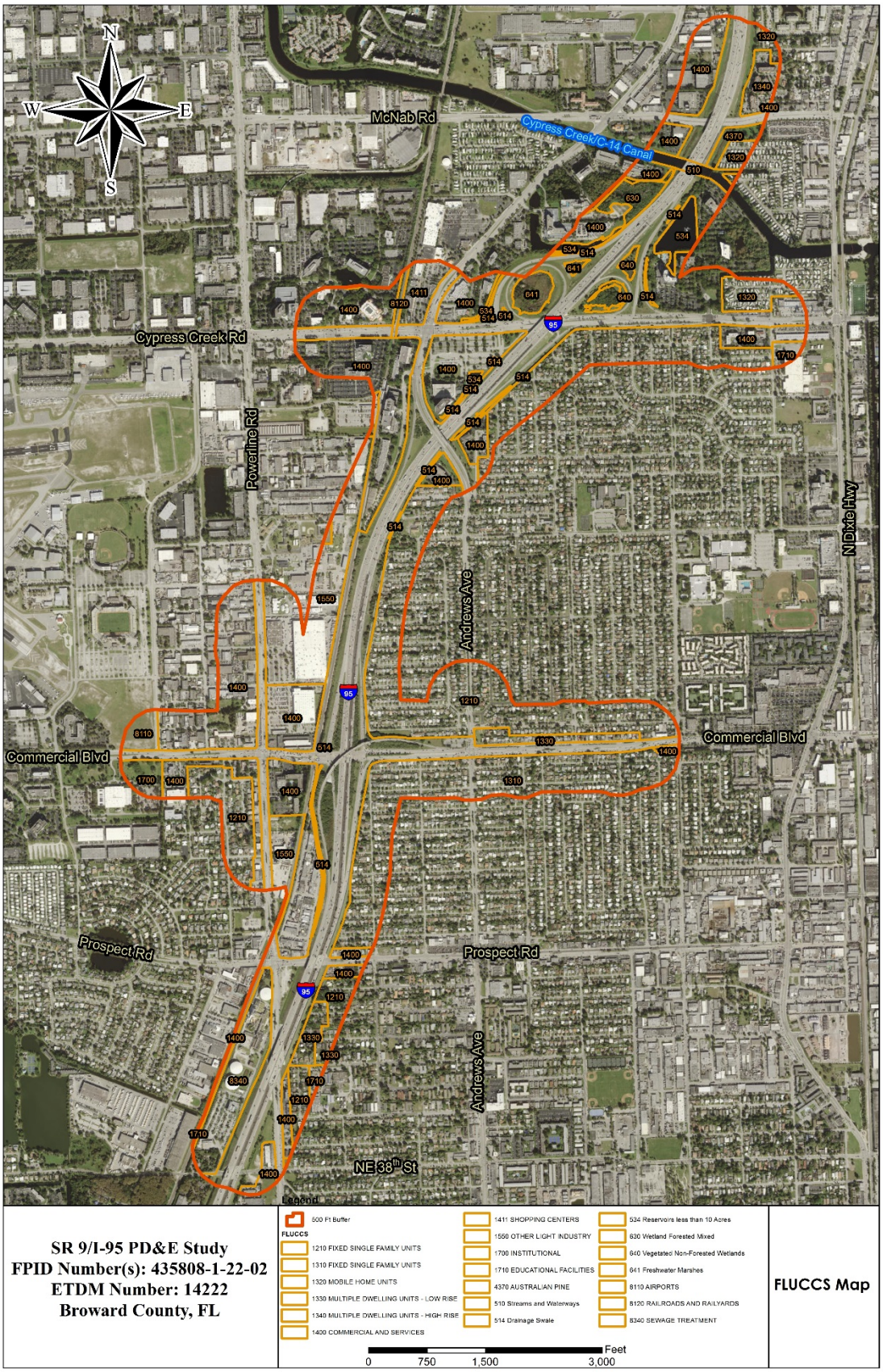

Figure 2-1 FLUCCS Map

2.2 Soil Classifications

The soils within the project study area were identified using maps and definitions determined by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) and utilizing the most recent version (updated 10-26-2016) of the *Soil Survey Geographic (SSURGO) Database for Florida - November 2015* GIS layer.

The I-95 corridor and intersecting arterials contain primarily urban land complex and Udorthents, Shaped soil types, which account for over 80% of the study area within the 500-foot buffer. These soil types indicate highly disturbed (mechanically altered and shaped) soils which would be expected as the majority of this study area has been altered and transformed into roadways and other urban developments. Three hydric soil types were identified within the study area (Basinger Fine Sand, Margate Fine Sand, and Sanibel Muck). However, per the aerial interpretations and the field reviews, these areas with documented hydric soils also appear to have been disturbed and developed and do not exist in their natural, unadulterated condition. The NRCS Soils are further described in **Table 2-1** and are depicted over a project aerial in **Figure 2-2**.

Table 2-1
NRCS Soils within 500 feet of the Project Corridor

Mapping Unit	Mapping Unit Name	Hydric Rating	Drainage	Percentage of Project Area
2	ARENTS-URBAN LAND COMPLEX	NO	SOMEWHAT POORLY DRAINED	1.7%
3	ARENTS, ORGANIC SUBSTRATUM-URBAN LAND COMPLEX	NO	SOMEWHAT POORLY DRAINED	2.6%
4	BASINGER FINE SAND, 0 TO 2 PERCENT SLOPES	YES	POORLY DRAINED	0.1%
10	DUETTE-URBAN LAND COMPLEX	NO	MODERATELY WELL DRAINED	22.7%
15	IMMOKALEE FINE SAND, 0 TO 2 PERCENT SLOPES	NO	POORLY DRAINED	4.9%
16	IMMOKALEE, LIMESTONE SUBSTRATUM-URBAN LAND COMPLEX	NO	POORLY DRAINED	0.1%
17	IMMOKALEE-URBAN LAND COMPLEX	NO	POORLY DRAINED	10.2%
19	MARGATE FINE SAND	YES	POORLY DRAINED	3.4%
21	OKEELANTA MUCK, DRAINED, 0 TO 1 PERCENT SLOPES	NO	VERY POORLY DRAINED	0.2%
23	PAOLA-URBAN LAND COMPLEX	NO	EXCESSIVELY DRAINED	5.9%
33	SANIBEL MUCK	YES	VERY POORLY DRAINED	3.1%
34	ST. LUCIE FINE SAND, 0 TO 2 PERCENT SLOPES	NO	EXCESSIVELY DRAINED	1.7%
38	UDORTHENTS, SHAPED	NO	SOMEWHAT POORLY DRAINED	25.4%
40	URBAN LAND	UNRANKED		17.0%
99	WATER	UNRANKED		0.9%

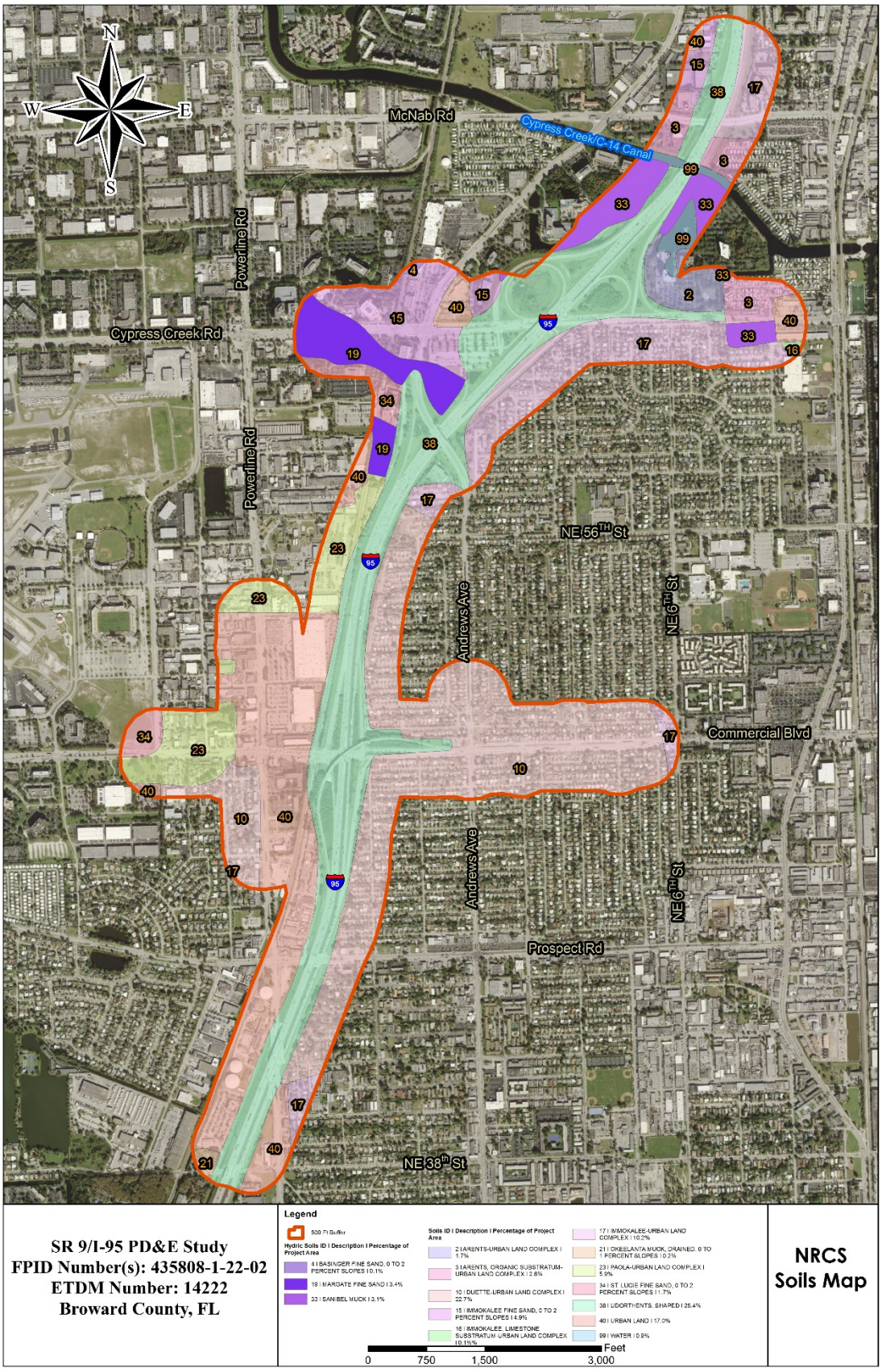

Figure 2-2 NRCS Soils Map

3 Protected Species and Habitat Evaluation

Agency coordination to obtain protected species information for this project occurred through the Efficient Transportation Decision Making (ETDM) Programming Screening (ETDM #14222), where members of the ETAT provided input/comments pertaining to threatened, endangered and otherwise protected species within the project area. The ETDM review occurred between April 10, 2015 to May 25, 2015, and the Programming Screen Summary Report was published on February 22, 2016. The ETAT representatives from the Federal Highway Administration (FHWA), the Florida Fish and Wildlife Conservation Commission (FWC), and the US Fish and Wildlife Service (USFWS) assigned the project a degree of effect of "Minimal" for wildlife and habitat as there is limited wildlife habitat present and no significant wildlife resources were identified in the study area. In addition, an interagency meeting was held with representatives from the Florida Department of Environmental Protection (FDEP), United States Army Corps of Engineers (USACE), SFWMD, USFWS, FWC and local counties in October 2017 to discuss the project as currently proposed. The general comments from this meeting indicated that the few potentially present, listed species would not be anticipated to cause any issues with the permitting and regulatory review of the proposed road improvements to I-95.

3.1 Methodology

In accordance with Section 7 of the ESA of 1973, as amended, the FDOT PD&E Manual Part 2 Chapter 16 (Protected Species and Habitat) and Chapter 68 of the Florida Administrative Code (FAC), the project study area was evaluated for the potential occurrence of federal and state listed protected plant and animal species and their habitats. In addition, literature reviews, agency database searches and a habitat field review were conducted to identify protected species and critical habitat that could be potentially present within the study area. Literature reviews and database searches included the following:

- ETDM Summary Report for Project # 14222
- FDOT PD&E Manual Part 2 Chapter 16 Protected Species and Habitat (2017)
- Florida Natural Areas Inventory (FNAI) Tracking List, Broward County (2010)
- FNAI Field Guide to the Rare Plants and Animals of Florida Online (2012)
- FWC Florida's Endangered and Threatened Species (October 2016)
- FWC Fish and Wildlife Research Institute Terrestrial Resources GIS Data (2012)
- FWC Eagle Nest Locator Database (2015)
- FWC Wading Bird Colony Locator Database (2012)
- Google Earth, Aerial Photographs (2017)
- USFWS Listed Species in Broward County, Florida (2012)
- USFWS Multi-Species Recovery Plan for South Florida (1999)

Aerial photography was interpreted to determine habitat types occurring within the project study area and the potential presence of any listed plant or animal species. The USFWS listed species list (2012) is specific to Broward County, but it is not site specific to the project study area. This list includes categorizations of species as endangered (E) and threatened (T). The FWC species list (2016) covers the entire state of Florida and includes classifications of species as federally-endangered (FE), federally-threatened (FT), endangered (E), threatened (T), and species of special concern (SSC). The FWC list also includes the state list of plants maintained by the Florida Department of Agriculture and Consumer Services (FDACCS) and categorized as endangered (E), threatened (T), and commercially exploited. The FNAI tracking list includes both plants and

animals with special state or federal status that are known to occur, are reported to occur, or may occur within Broward County.

As part of the field survey conducted on November 8, 2016 and September 5, 2017, the I-95 project corridor was surveyed for listed plant and wildlife species by project scientists familiar with protected flora and fauna in the area. The survey methodology included meandering pedestrian transects throughout the project area to search for listed plants and wildlife species. Project scientists sought to identify notable macro vertebrates/invertebrates including, but not limited to birds, mammals, reptiles, amphibians, and fish. Any observations of listed plant and wildlife species or indicators of their presence (i.e., vocalizations, tracks, scat, burrows, or other indicators) within and immediately adjacent to the project limits were documented and included in this report.

3.2 Protected Species Inventory

Based on potential availability of suitable habitat and known species ranges, **Table 3-1** lists the federal and state-listed wildlife species with the potential to occur within the project study area. Each species is given a rating of low, moderate, or high likelihood of occurring within the project corridor as defined below:

- **High** – Preferred habitat exists within project limits and species have been observed or reported within the project area
- **Moderate** – Some preferred habitat exists within the project limits, but species have not been observed in the project area
- **Low** – Preferred habitat is limited or lacking within the project limits and species have not been observed in the project area

Table 3-1
Federal and State-Listed Species with the Potential to Occur within the Project Corridor

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential	Observed
Mammals					
West Indian Manatee	*Trichechus manatus latirostris*	T	T	Low	No
Birds					
Wood Stork	*Mycteria americana*	T	T	Low	No
Least Tern	*Sterna antillarum*	NL	T	Low	No
Little Blue Heron	*Egretta caerulea*	NL	SSC	Low	No
Tricolored Heron	*Egretta tricolor*	NL	SSC	Low	No
Snowy Egret	*Egretta thula*	NL	SSC	Moderate	No
Reddish Egret	*Egretta rufescens*	NL	SSC	Low	No
White Ibis	*Eudocimus albus*	NL	SSC	Low	No
Black Skimmer	*Rynchops niger*	NL	SSC	Low	No
Burrowing Owl	*Athene cunicularia*	NL	SSC	Low	No
Roseate Spoonbill	*Platalea ajaja*	NL	SSC	Low	No

Table 3-1
Federal and State-Listed Species with the Potential to Occur within the Project Corridor

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential	Observed
Birds (continued)					
Everglade Snail Kite	*Rostrhamus sociabilis plumbeus*	E	E	Low	No
Reptiles					
Eastern Indigo Snake	*Drymarchon corais couperi*	T	T	Low	No
Gopher Tortoise	*Gopherus polyphemus*	CS	T	Low	No
Fish					
Mangrove Rivulus	*Rivulus marmoratus*	NL	SSC	Low	No

E = Endangered
T = Threatened
SSC = Species of Special Concern
NL = Not Listed
CS = Candidate Species

3.2.1 MAMMALS

West Indian Manatee (*Trichechus manatus latirostris*)

The West Indian manatee is federally and state-listed as Threatened throughout its range. The manatee is a large, aquatic, herbivorous mammal. These animals are generally slow swimmers and have no known natural predators. They are known to reach lengths of 10 feet and can weigh in excess of 1,000 pounds. During warm water periods the manatee is typically found in coastal or estuarine waters, bays, rivers, and lakes from Texas to North Carolina. Manatees migrate south to the warm brackish waters of Biscayne and Florida Bay as well as the Intracoastal Waterway. The primary cause for the decline of manatees is anthropogenic in nature, including collisions with watercraft, poaching, vandalism, and loss of safe and undisturbed habitat due to expanding development. Although no manatees were observed during wildlife surveys for this study, a section of the Cypress Creek (C-14) Canal crosses under I-95 within the study area. However, no work is proposed within or above this canal or any other surface waters for this project. Therefore, the probability of their occurrence within the project area is considered to be "**Low**".

3.2.2 BIRDS

Little Blue Heron (*Egretta caerulea*)

The little blue heron is a medium sized bird with a purple to maroon-brown head and neck, small white patch on the throat and upper neck and a slate blue body. It forages in shallow freshwater, brackish and saltwater habitats and nests in woody vegetation such as cypress, willow, maple, black mangrove and cabbage palm. Potential foraging and nesting habitat are present within the project corridor in the form of stormwater swales with hydrophytic vegetation and the wetland trees associated with jurisdictional areas in the infields of the I-95 interchanges. The jurisdictional areas observed could be used for roosting and potential foraging habitat. There were no individuals, nests or signs of this species observed during the field inspections. The potential for this species to occur is '**Low**'.

Tricolored Heron (*Egretta tricolor*)

The tricolored heron is a medium sized heron with a long slender neck, two toned body coloration on the head, neck and body along with a white underside. Nesting occurs mostly on mangrove islands or in freshwater willow thickets on islands or over standing water. This heron prefers coastal environments. Foraging areas consist of permanently and seasonally flooded wetlands, mangrove swamps, tidal creeks, ditches and the edges of lakes and ponds. Potential foraging habitat is present within the stormwater swales supporting hydrophytic vegetation. The jurisdictional areas within and adjacent to the I-95 ROW could be used for roosting. No individuals, nests or signs of this species were observed during the field inspections. The potential for this species to occur is "**Low**".

Snowy Egret (*Egretta thula*)

This egret is a medium sized, solid white wading bird with a black bill, black legs and yellow feet. Snowy egrets nest both inland and in coastal wetlands within woody shrubs, particularly mangroves and willows. They also nest over shallow water or on islands separated from shoreline by extensive open water. Foraging occurs in permanently and seasonally flooded wetlands, streams, lakes, swamps and man-made impoundments and ditches. Potential foraging habitat is present within the swales that support hydrophytic vegetation and the jurisdictional areas within and adjacent to the I-95 ROW. There is also potential roosting habitat in these same habitats. There were no individuals, nests or signs of this species observed during the field inspections. The potential for this species to occur is '**Moderate**'.

Reddish Egret (*Egretta rufescens*)

The reddish egret has a gray body and chestnut colored plumes on its head, neck and upper body. Their preferred habitat is almost exclusively in coastal areas with nesting occurring on coastal mangrove islands or in Brazilian pepper located on dredge spoil islands. Foraging habitats include shallow water areas (typically less than six inches deep) of variable salinity. They also utilize broad, open marine tidal flats and shorelines with little vegetation. Potential foraging habitat is present within the hydrophytic swales in the project corridor. There were no individuals, nests or signs of this species observed during the field inspections. The potential for this species to occur is '**Low**'.

Roseate Spoonbill (*Platalea ajaja*)

Spoonbills exhibit bright pink bodies, white necks and unmistakable flat, spoon shaped bills. These birds nest on coastal mangrove islands or in Brazilian pepper on man-made dredge spoil islands near suitable forage habitat. They will also nest in willow heads located in freshwater wetlands and forage in shallow water of varying salinity. Forage habitats include marine tidal flats, shallow ponds, coastal marshes, mangrove dominated inlets and pools as well as freshwater marshes and sloughs. There is minimal potential foraging habitat present in the shallow hydrophytic swales and shallow edges of the jurisdictional areas in the infields within the I-95 interchanges. There were no individuals, nests or signs of this species observed during the field inspections. The potential for this species to occur is '**Low**'.

White Ibis (*Eudocimus albus*)

The white ibis is a medium sized wading bird with a long, downward curving bill. This species is found in freshwater and brackish marshes, salt flats, salt marsh meadows, forested wetlands, wet prairies, swales, seasonally inundated fields and in man-made ditches. Nesting occurs in trees, shrubs and vines. Potential foraging habitats are present within the hydrophytic swales and the jurisdictional habitats in the I-95 interchange infields. The forested areas of these habitats could be used for roosting. There were no individuals, nests or signs of this species observed during the field inspections. The potential for this species to occur is '**Low**'.

Black Skimmer (*Rynchops niger*)

The black skimmer, listed by the FWC as a SSC, is a coastal water bird. This species is typically relegated to coastal waters, including beaches, bays, estuaries, sandbars, tidal creeks (foraging), and also inland waters such as large lakes, phosphate pits, and flooded agricultural fields. They nest primarily on sandy beaches, small coastal islands, and dredge spoil islands, but also on gravel rooftops. This species is most recognizable by its large bill with extended lower mandible which it uses to skim for food (mostly small fish) from the surface of water bodies while. Black skimmers have been observed in canals similar to those found within the project corridor, but none were observed on site. As such, the potential for this species to occur is '**Low**'.

Florida Burrowing Owl (*Athene cunicularia floridana*)

The burrowing owl is listed as a SSC by FWC. It is a small, diurnal ground-dwelling owl. The adults are spotted and barred with brown and white stripes. They have long legs, a round head and stubby tail. Human activities such as clearing of land for pasture and residential developments have increased its range in Florida but have exposed the owl to additional threats. Intensive cultivation and development of grasslands pose a major threat to this species. The largest concentration of owls now resides in grasslands and lawns of residential and industrial areas. Nesting typically occurs in burrows dug in the ground in areas sparsely vegetated, sandy soils, including dry prairies and sandhills along with ruderal sites such as airports, ball fields, parks, road ROW and vacant lands. The highly-disturbed conditions, compacted fill and routine maintenance within the ROW would preclude these owls from nesting in the limited potential habitat that is present within the project area. No burrowing owls were observed within the vicinity of the proposed project. Therefore, the potential for this species to occur within the project area is '**Low**'.

Least Tern (*Sterna antillarum*)

The least tern is a migratory bird, found throughout almost all coastal Florida, including the Keys from March through October and is listed as Threatened by the FWC. It should be noted that the internal United States breeding population (Texas to North Dakota/Montana and Mississippi River Valley) is federally-listed as Endangered by the USFWS, but the Florida population is not federally protected. The least tern is the smallest member of the tern and gull family (*Laridae*), which can be identified by its superior agility in the air and its ability to plunge headlong into the water while hunting small fish. Breeding adults can be identified by the light gray above, black cap and nape, white forehead, and black line running from crown through eye to base of bill. This species has become accustomed to adoption of artificial nesting sites, particularly gravel rooftops, which has led to increased use of inland locations and increase in populations (FNAI, 2011). This species has been observed foraging in canals and stormwater ponds similar to those within this project corridor. However, preferred nesting habitat is limited within the project corridor. As such, the potential for this species to occur is '**Low**'.

Everglade Snail Kite (*Rostrhamus sociabilis*)

The project area is within the USFWS consultation area for the Everglade snail kite due to its proximity to the Everglades. This bird of prey inhabits freshwater marshes and the shallow vegetated edges of lakes (natural or man-made) where their prey, the apple snail, can be found. There are wetland habitats adjacent to the proposed project area as well as the permitted stormwater management swales that periodically hold water. The maintained ROW has very little natural habitat remaining and there is very little open water available for foraging habitat. The regular maintenance of these stormwater management facilities prevents the growth of cattails and shrubby species that could potentially be used as nest sites. No Florida applesnails (*Pomacea paludosa*) or Florida applesnail egg masses were observed during the field review, though exotic applesnails (*Pomacea* spp.) and exotic applesnail egg masses were observed. The absence of suitable foraging habitat, coupled with the lack of available nesting habitat, are the limiting factors in the potential presence of this species within the limits of the project as proposed. No Everglade snail kites were observed within the ROW during the field review. The occurrence potential for this species is '**Low**'.

Wood Stork (*Mycteria americana*)

The wood stork is listed as Threatened by the USFWS and FWC. Wood storks inhabit freshwater and brackish wetlands, primarily nesting in cypress and mangrove swamps. The wood stork is a highly colonial species usually nesting in large rookeries and feeding in flocks. They can be found foraging in shallow water in freshwater marshes, narrow tidal creeks and flooded tidal pools as well as roadside ditches and pasturelands. The decline of the wood stork in south Florida is believed to be due primarily to the loss of suitable feeding habitat. Repeated nesting failures have occurred despite protection of wood stork rookeries. Feeding areas in south Florida have decreased by about 35 percent since 1900 due to man's alteration of wetlands. Wetland water levels are critical to wood stork feeding habits. Man-made levees, canals, and floodgates have greatly changed natural water regimes in south Florida, and, as a result, wood storks are increasingly nesting in artificial habitats. The USACE and the USFWS recognize a 29.9-kilometer (km) (18.6-mile) core foraging area (CFA) around all known wood stork colonies in south Florida. According to the FWC Water Bird Locator, the USFWS Wood Stork 5-year Review: Summary and Evaluation (2007) and the most up-to-date USFWS Wood Stork CFA Map (2010), the project lies within the CFA of three wood stork colonies (see **Figure 3-1**).

No wood storks were observed at any time during the field survey; however, the project lies within the core foraging area of three documented wood stork nesting colonies, two within western Broward County and one within Palm Beach County. These colonies were recently changed to active status based upon USFWS observations of nesting activity. Based upon the distances to the nearby active colonies and limited, poor quality, exotic infested foraging habitat that exists only in the hydric swales and densely vegetated wetland features present within the project corridor, the potential for this species to occur within the project limits is '**Low**'.

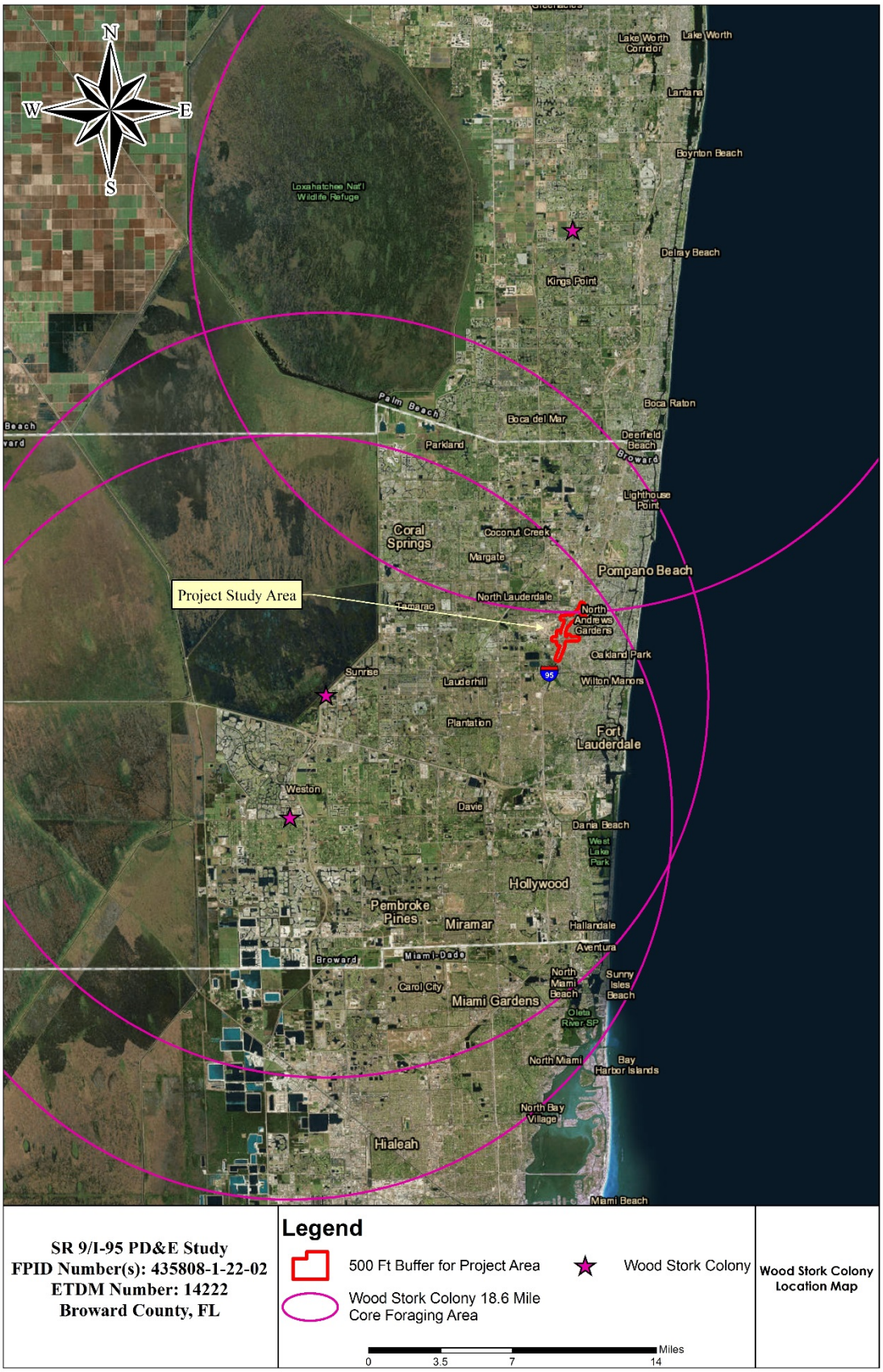

Figure 3-1 Wood Stork Colonies within proximity of the Project Corridor

3.2.3 REPTILES

Eastern Indigo Snake (*Drymarchon corais couperi*)
The Eastern indigo snake is listed as threatened by both the USFWS and the FWC due to a decline in the population. This decline is attributed to the loss of habitat and collection by the pet trade. These snakes need relatively large areas of undeveloped land; as habitats become fragmented by roads, indigo snakes will be increasingly vulnerable to highway mortality as they traverse these large territories in search of food or mates. This snake is very widespread throughout the state, but relatively uncommon partially due to its secluded nature. Evidence indicates that this species, prized by snake collectors, is perhaps more abundant than first believed. Federal protection has considerably eased collection pressure on this species. Formerly classified as a racer, this snake can attain a length of well over eight feet. It is one of the largest North American snakes and has an average length of about five feet. The entire body is lustrous black or blue-black except for the chin, throat, and upper lip plates which are reddish-brown. The preferred Florida habitat includes dry glade areas, tropical hammocks, muckland fields, and some flatwoods areas. It will readily utilize disturbed areas and mangrove swamps as well as upland and even urban habitats. Roadside berms and swales may be potential habitat. This species also commonly inhabits gopher tortoise burrows. Per the USFWS's 2017 update of the Eastern indigo snake programmatic effect determination key (Key), the project is not located in open water or salt marsh, any and all required permits for this project will be conditioned for use of the USFWS's most current guidance for Standard Protection Measures for the Eastern Indigo Snake during site preparation and project construction (included in USACE permit No. SAJ-2014-01584), the project will impact less than 25 acres of the snake's habitat, and finally, no gopher tortoises or their burrows (neither active or inactive) were observed within the project area. Therefore, the potential for this species to occur is '**Low'**.

Gopher Tortoise (*Gopherus polyphemus*)
The gopher tortoise is a candidate species for federal listing and is a state-listed threatened species, protected under Chapter 68A - 27.003, FAC. The species has been classified as threatened due to the increased pressures of development and expansion into its remaining dry habitat. This species occurs throughout Florida but prefers sandy, well-drained upland areas. Gopher tortoises inhabit extensive subterranean burrows in dry upland habitats. Vegetation communities where gopher tortoises are found include longleaf pine sandhills, xeric oak hammocks, scrub, pine flatwoods, dry prairies, and coastal dunes. Gopher tortoises can also live in man-made environments, such as pastures, old fields, railroad beds, and grassy roadsides. To be suitable for gopher tortoises, the habitat must have well drained sandy soils to allow digging burrows, herbaceous forage plants, and open sunny areas for nesting and basking. Tortoises are considered a keystone species with their burrows affording refuge to more than 360 commensal species, including other state-listed species such as the Eastern indigo snake, Florida pine snake, burrowing owl and the Florida mouse. Habitat alteration and land development pose the most serious threat to the continued survival of the gopher tortoise (Alderson, D. 2002).

There were no gopher tortoise burrows observed within or adjacent to the project limits during this site inspection. There is very little potential tortoise habitat within the project corridor due to low elevations and consequently high-water levels. In addition, the few areas that are high enough to potentially allow burrow excavation are associated with filled areas for the road base of I-95 and have compacted soils. Their potential presence within the project corridor is considered low due to lack of available habitat and limited access due to existing interstate and local roadways. The occurrence potential for this species is considered to be '**Low'**

3.2.4 FISH

Mangrove Rivulus (*Rivulus marmoratus*)
This unusual fish species is usually found in coastal waters along the east coast of North, Central and South America from Florida to Brazil. The species consists of a primarily hermaphroditic

population, but males do exist. Though not very common, they are present in many estuaries and tidal waterways along the coastal areas where they are found. Another unusual trait of this species is their ability to survive inside fallen logs for up to 66 consecutive days out of water; during which time, they alter their gills to retain water and respire through their skin. This project lies more than three miles inland from the Atlantic Ocean and Intercoastal Waterway. As such, the waters present within the study area would not be considered coastal or marine resources and corresponding salinities would be very low or non-existent. The probability of this species occurring within the project area is low due to lack of suitable habitat and the presence of several control structures in the waterways within the project area. The occurrence potential for this species is considered to be '**Low**'

3.2.5 PLANTS

Based on the habitat types observed within and adjacent to the project corridor, there were no listed plant species that were identified as potentially present within the project area.

3.3 Designated Habitat

3.3.1 CRITICAL HABITAT

Critical Habitat is a federally-designated, geographic area that is essential for the conservation of a threatened or endangered species that may require special management and protection, but they are not considered a refuge or sanctuary for the species. Critical Habitat may include an area that is not currently occupied by the species, but that will be needed for its recovery. An area is designated as Critical Habitat after the USFWS or NMFS publishes a proposed federal regulation in the Federal Register and then receives public comments on the proposal. The final boundaries of the critical habitat areas are also published in the Federal Register. There are no areas designated as Critical Habitat for any listed species located within the project corridor.

3.3.2 STRATEGIC HABITAT CONSERVATION AREAS

Strategic Habitat Conservation Areas (SHCA) are defined as regions not in public ownership, which are recommended for protection in order to maintain biological diversity. These SHCA designations are intended to indicate that the existing land use should be maintained in order to conserve state-wide biodiversity. The SHCAs were originally mapped state-wide in association with the FWC's *Closing the Gaps in Florida's Wildlife Habitat Conservation System* (Cox, *et al.*, 1994) report. Since 1994, landscape-level habitat changes, transfer of land from private to public ownership, and changes in land use have all altered the applicability of the originally mapped SHCAs. Advances in technological capabilities, revised habitat data, and more extensive species occurrence data facilitated a reassessment of Florida's biodiversity protection status. Additionally, advances in population viability modeling techniques allow for more in-depth examination of wildlife habitat needs that were not available in the previous report. The results of the reanalysis have identified SHCAs for a new selection of focal species, including many species that were in the original report. According to the updated report, *Wildlife Habitat Conservation Needs in Florida: Updated Recommendations for Strategic Habitat Conservation Areas* (Endries, *et al.*, 2009), and associated GIS data layers, there are no SHCAs within the project corridor.

3.3.3 CONSULTATION AREAS

The entire project area lies within the consultation area for the Everglade snail kite due to the proximity of the Florida Everglades to the west. Field reviews determined that a majority of the habitats remaining within the project corridor are not likely to be used by this species as described in **Section 3.2.2**. Some of the jurisdictional wetland features adjacent to the project corridor could provide marginal potential foraging due to the presence of exotic apple snails in the swales and shallow ditches. Additionally, a few of the forested wetland areas could possibly be used for

nesting habitat for the Everglade snail kite. However, due to the distances from known snail kite habitat, it is unlikely snail kites would fly to these areas to forage given the urban nature of all adjacent habitats. Furthermore, none of these habitats are anticipated to be affected by the recommended alternative for this project. See **Figure 3-2** showing the consultation areas for the Everglade snail kite.

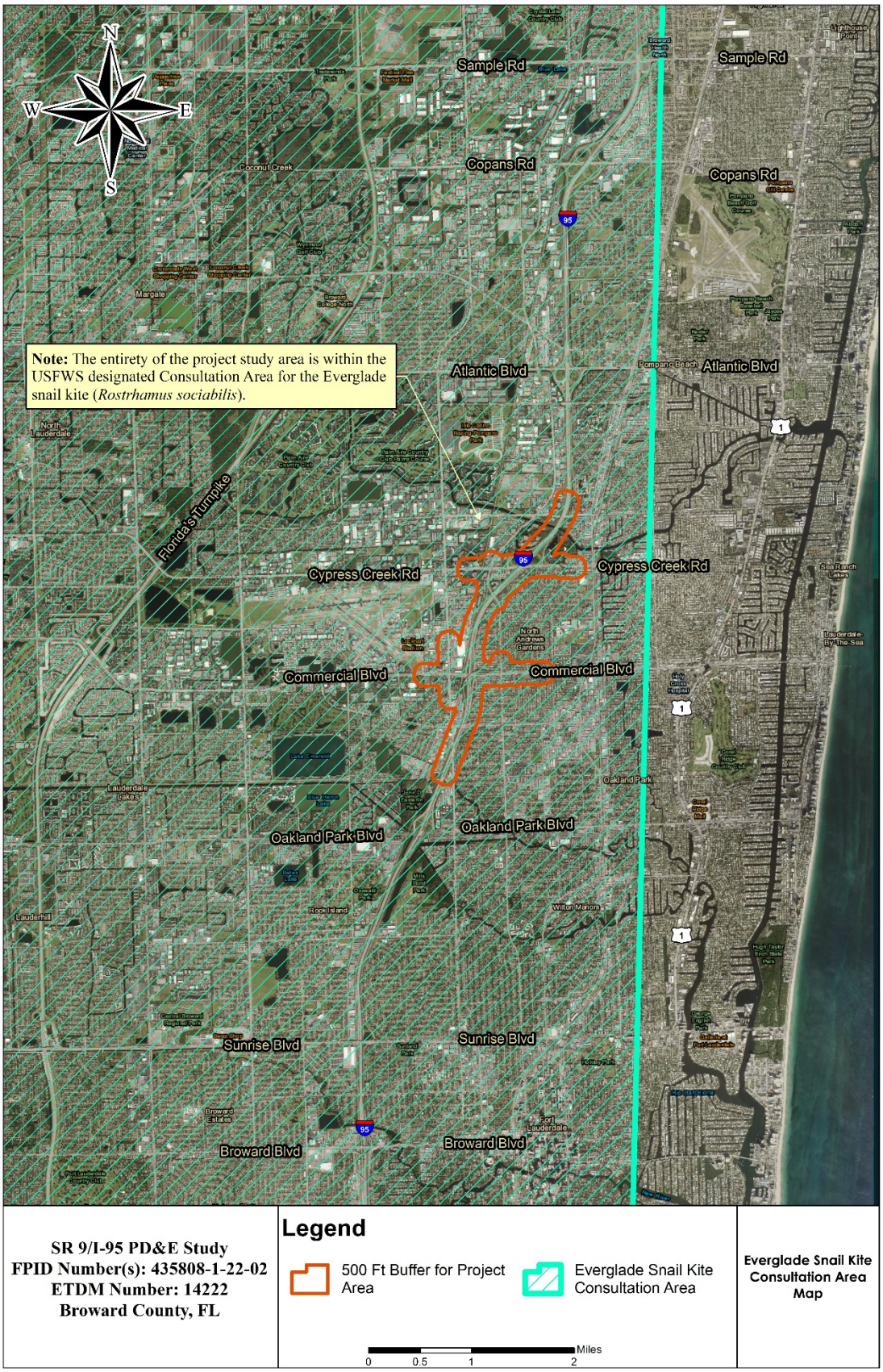

Figure 3-2 Everglade Snail Kite Consultation Area

3.4 Protected Species Impact Evaluation

3.4.1 DIRECT EFFECTS

No direct impacts to listed species are anticipated as a result of this project. The project is within the CFA of three known wood stork colonies; however, there is very limited suitable wood stork foraging habitat within the project limits. Furthermore, there are no proposed impacts to the one natural wetland feature (**W-1**) within the study area and the only proposed jurisdictional impacts are extremely minor alterations (limited to 0.07-acres) to two previously impacted roadside swales (**SW 1** and **SW 2**). Therefore, the effect determination for the wood stork is "May Affect, Not Likely to Adversely Affect". There were no active or inactive gopher tortoise burrows observed within the project limits; therefore, the gopher tortoise effect determination is "No Effect." Per the Key for the Eastern indigo snake the effect determination is "May Affect, Not Likely to Adversely Affect". All other federal and state protected species effect determinations are listed as "no effect" and this information can be found in **Table 3-2**.

Table 3-2
Federal and State-Listed Species Effect Determination

Common Name	Scientific Name	Federal Status	State Status	Effect Determination
Mammals				
West Indian Manatee	*Trichechus manatus*	T	T	No Effect
Birds				
Wood Stork	*Mycteria americana*	T	T	May Affect, Not Likely to Adversely Affect
Least Tern	*Sterna antillarum*	NL	T	No Effect
Little Blue Heron	*Egretta caerulea*	NL	SSC	No Effect
Tricolored Heron	*Egretta tricolor*	NL	SSC	No Effect
Snowy Egret	*Egretta thula*	NL	SSC	No Effect
Reddish Egret	*Egretta rufescens*	NL	SSC	No Effect
White Ibis	*Eudocimus albus*	NL	SSC	No Effect
Black Skimmer	*Rynchops niger*	NL	SSC	No Effect
Burrowing Owl	*Athene cunicularia*	NL	SSC	No Effect
Roseate Spoonbill	*Platalea ajaja*	NL	SSC	No Effect
Everglade Snail Kite	*Rostrhamus sociabilis plumbeus*	E	E	No Effect
Reptiles				
Eastern Indigo Snake	*Drymarchon corais couperi*	T	T	May Affect, Not Likely to Adversely Affect
Gopher Tortoise	*Gopherus polyphemus*	CS	T	No Effect
Fish				
Mangrove Rivulus	*Rivulus marmoratus*	NL	SSC	No Effect

*E – Federal Endangered, T – Federal Threatened, CS – Candidate Species
* ST – State Threatened, SSC – Species of Special Concern

3.4.2 INDIRECT EFFECTS

Indirect effects are those that are caused by the proposed action and occur later in time or are further removed in distance from the action, but are reasonably certain to occur. Indirect effects include those that are related to changes in land use patterns, population density, or growth rate (USFWS, 1998). The need for the project is based on future travel demands that will occur with or without the project; growth will not be induced by the project. As stated in the PD&E Manual Part 2 Chapter 9, indirect effects also include effects caused by other actions that have an association or connection to the project (these actions would not or could not happen without the proposed project). Indirect effects generally occur from habitat fragmentation, mortality and population declines, and pollution. No indirect impacts to listed species are anticipated as a result of this project. The use of Best Management Practices (BMPs) will reduce any indirect effects to adjacent habitat from construction, such as erosion and sedimentation of nearby waterways. Construction of a stormwater management system in accordance with current regulations will eliminate any indirect impacts, such as flooding, impacts to water quality, or alteration to vegetative communities in wetlands and surface waters outside the project limits. Hence, by not affecting wood stork foraging capabilities, the proposed project activities will result in no indirect effects to the wood stork or other state-listed wading birds, accordingly a wood stork foraging habitat assessment for impacts greater than 5 acres is not required.

3.4.3 CUMULATIVE EFFECTS

No cumulative impacts to listed species are anticipated as a result of this project. The potentially impacted swales within the study area both occur within maintained, man-made stormwater management features. The proposed activities will not impact any natural wetlands or any previously undisturbed lands. The potentially impacted swales provide some water filtration function for roadway stormwater and these functions are not anticipated to be impacted. Therefore, any of the potential impacts to the two existing swales (**SW 1** and **SW 2**) will not adversely impact groundwater or surface waters within the SFWMD defined drainage basins. The swales also provide suitable foraging habitat for wood storks and foraging habitat for other state-listed wading birds. The swales are not ideal for wading bird foraging because of their proximity to the roadway. Wading birds, particularly wood storks, have a large foraging range. Any wading bird that may be using the roadside and interchange swales is likely also utilize swale areas located to the east, as well as the Florida Everglades habitat to the west, within the same or adjacent drainage basins. Therefore, impacting the relatively small, narrow swales within the study area will have minimal impact on foraging habitat because other foraging habitat areas are abundant in the western portions of the drainage basins.

3.4.4 AVOIDANCE AND MINIMIZATION

The project is located within urban Broward County. There are very few natural areas remaining in this project corridor that could be used by protected species within the ROW. The existing wetlands and uplands located outside the ROW will not be impacted. The stormwater swales within the ROW provide marginal habitat for wading birds, including the wood stork; however, only minor impacts to these areas are proposed (a maximum of 0.07 acres), these potentially impacted swales are anticipated to maintain their same drainage functions, and any impacts will be minimized to the greatest extent possible. Protected species were not observed in upland, stormwater swales, or other surface waters during this study's field reviews. Therefore, based on a lack of suitable habitat along with the minor potential impacts to jurisdictional wetland features, no impacts to threatened, endangered or otherwise protected species are anticipated as a result of the project as proposed.

The USFWS Standard Protection Measures for the Eastern indigo snake which specify education of the contractor concerning avoidance of indigo snakes and post-construction reporting, will be implemented during the construction phase as applicable.

4 Wetland and Surface Water Evaluation

Agency coordination to obtain wetland information for this project occurred through the ETDM Programming Screening (ETDM #14222), where members of the ETAT provided input/comments. In summation, the US Environmental Protection Agency (EPA), USACE, SFWMD, FHWA and FDEP stated that the project will have "Minimal" effect on wetlands. In addition, the NMFS provided a degree of effect of "None" for wetlands.

An interagency meeting was held in October 2017 to discuss the project as currently proposed. Representatives from the FDEP, USACE, SFWMD, USFWS, FWC and local counties were present. The general comments from this meeting indicated the jurisdictional wetlands within the project corridor would not present problems with permitting the proposed road improvements to I-95.

Pursuant to Presidential Executive Order 11990 entitled "Protection of Wetlands," the US Department of Transportation (USDOT) has developed a policy (USDOT Order 5660.1A), Preservation of the Nation's Wetlands (dated August 24, 1978), which requires all federally funded highway projects to protect wetlands to the greatest extent possible. In accordance with National Environmental Policy Act (NEPA) and this policy, the project has been evaluated to determine how the preferred alternative would impact wetlands, stormwater management (i.e. drainage) features with hydrophytic vegetation (from here on referred to as "stormwater swales containing hydrophytic vegetation"), or other surface waters, the extent to which those potential impacts would affect wetland functions and values, and mitigative measures that could be taken to offset unavoidable impacts, if necessary. The project area was reviewed to identify, delineate, and evaluate wetlands and surface water communities that are located within or adjacent to the I-95 PD&E study corridor. The existing I-95 corridor consists of land that has previously been altered and filled to create the current highway system consisting of travel lanes, shoulders, recovery zones, and a stormwater management system.

4.1 Methodology

A desktop review of existing information, including aerial photographs, GIS databases and previous permit documentation, was performed prior to the field assessments. The locations and boundaries of most of the wetlands, stormwater swales containing hydrophytic vegetation, and other surface water communities within and adjacent to the project area had previously been mapped during the permitting effort for the I-95 Corridor Design Concept (CDC) Phase 3A (from Davie Blvd (SR 736) to SW 10th St (SR 869)) which covered the limits of this PD&E study. This information was used as a basis for this wetland assessment.

A jurisdictional wetland field assessment was conducted on November 8, 2016 and September 5, 2017 by field biologists experienced in South Florida flora and fauna. During the field assessment, existing wetlands, stormwater swales containing hydrophytic vegetation, and other surface water communities were identified and assessed. Delineations were conducted in accordance with the *Corps of Engineers Wetland Delineation Manual (Technical Report Y-87-1), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plan Region (ERDC/ED TR-10-20)* and *Chapter 62-340 of the Florida Administrative Code, Delineation of the Landward Extent of Wetlands and Surface Waters*. Stormwater swales that contained obligate and facultative wet vegetation (i.e. hydrophytic) were considered jurisdictional pursuant to Chapter 62-340 of the FAC. During the field investigation, plant species were identified, and the vegetative composition was characterized for each wetland, stormwater swale containing hydrophytic vegetation, and surface water community. Exotic/nuisance plant species coverages and other notable occurrences were recorded for each jurisdictional feature. Wildlife observations or signs of wildlife utilization were also recorded with special attention paid to listed species (as described in the Protected Species and Habitat Evaluation Section).

Each feature was classified using the FLUCCS Manual (FDOT, 1999) and the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al, 1979). Finally, the

identified wetland (**W-1**) was evaluated using the Uniform Mitigation Assessment Methodology (UMAM). As discussed in the following section, the UMAM is a state and federally approved method used to assess wetland functions in the state of Florida.

4.1.1 UMAM

The UMAM evaluation, as defined in Chapter 62-345, FAC, is a state and federally approved method used to assess the functionality of wetland features in the state of Florida. The UMAM was developed by the FDEP and the water management districts (including the SFWMD) to determine the amount of mitigation needed to offset adverse impacts to wetlands. In July 2005, the USACE also accepted this methodology for use in assessing wetlands. The UMAM was designed to assess the existing functions provided by wetlands and determine the amount the wetland functions would be reduced by a proposed impact, in order to determine the amount of mitigation necessary to offset the proposed functional losses. This methodology is also used to determine the degree of improvement in ecological value that will be created by mitigation activities. The UMAM assessment includes a Qualitative Characterization (Part 1) as well as a Quantitative Assessment and Scoring (Part 2). Part 1 serves as a basic descriptor of the site being evaluated. The variables described include the following:

- Significant nearby features
- Water classifications
- Assessment area size
- Hydrology and relationship to contiguous offsite wetlands
- Uniqueness of the assessment area
- Functions of the assessment area
- Wildlife utilization

Part 2 provides a score of the assessment area in both the current condition and "with impact" condition. The scoring evaluates the following parameters:

- Location and landscape support
- Water environment
- Community Structure

4.2 Wetland Identification, Delineation and Classification

Based on the field investigations conducted for this project, the existing conditions of the wetlands, stormwater management/drainage features, and surface waters vary in terms of habitat value, water quality, level of intrusion by exotic/invasive (undesirable) species, and degree of geographical isolation. One natural wetland area (**W-1**) was identified and consisted of a single community type (630 – Wetland forested mix; as classified by FLUCCS codes); 18 engineered (i.e. man-made) stormwater swales containing hydrophytic vegetation consisting of five habitat types; and, five other surface waters (OSW) consisting of two community types were identified along the project study corridor. **Table 4-1** shows the features' identification number, size (acres), FLUCCS code/description (**Figure 2-1**), and USFWS code/description. The locations of these features are depicted on aerial maps in **Appendix B** and representative photographs are included in **Appendix C**. These jurisdictional wetland features are described further in the following subsections.

Table 4-1 Wetlands, Stormwater Management/Drainage Features and Surface Waters					
ID No.	**Size (Acres)**	**FLUCCS Code**	**FLUCCS Description**	**USFWS Code**	**USFWS Description**
Wetlands					
W-1	12.95	630	Wetland Forested Mixed	PFO3C	Palustrine, Forested, Broadleaved Evergreen, Seasonally Flooded
Total	**12.95**				
Stormwater Swales Containing Hydrophytic Vegetation					
SW 1	0.95	514	Drainage Swale	PEM1A	Palustrine, Emergent Persistent, Temporarily Flooded
SW 2	0.01	514	Drainage Swale	PEM1A	Palustrine, Emergent Persistent, Temporarily Flooded
SW 3	0.12	514	Drainage Swale	PEM1A	Palustrine, Emergent Persistent, Temporarily Flooded
SW 4	0.33	514	Drainage Swale	PEM1A	Palustrine, Emergent Persistent, Temporarily Flooded
SW 5	0.13	514	Drainage Swale	PEM1A	Palustrine, Emergent Persistent, Temporarily Flooded
SW 6	0.65	514	Drainage Swale	PEM1A	Palustrine, Emergent Persistent, Temporarily Flooded
SW 7	0.03	514	Drainage Swale	PEM1A	Palustrine, Emergent Persistent, Temporarily Flooded
SW 8	0.19	514	Drainage Swale	PEM1A	Palustrine, Emergent Persistent, Temporarily Flooded
SW 9	0.11	514	Drainage Swale	PEM1A	Palustrine, Emergent Persistent, Temporarily Flooded

Table 4-1
Wetlands, Stormwater Management/Drainage Features and Surface Waters

ID No.	Size (Acres)	FLUCCS Code	FLUCCS Description	USFWS Code	USFWS Description
SW 10	4.93	631/641/643	Wetland Scrub/Freshwater Marshes/Wet Prairies	PEM1A / PAB3F/ PFO1C	Palustrine, Emergent Persistent, Temporarily Flooded/Palustrine, Rooted Vascular, Semi-permanently Flooded/Palustrine, Forested, Broadleaved Deciduous, Seasonally Flooded
SW 11	0.71	631/641/643	Wetland Scrub/Freshwater Marshes/Wet Prairies	PEM1A / PAB3F/ PSS1C	Palustrine, Emergent Persistent, Temporarily Flooded/ Palustrine, Rooted Vascular, Semi-permanently Flooded/ Palustrine, Scrub-Shrub, broad-leaved Deciduous, seasonally Flooded
SW 12	0.36	514	Drainage Swale	PEM1A	Palustrine, Emergent, Persistent, Temporarily Flooded
SW 13	1.39	640	Vegetated Non-Forested Wetlands	PEM1F	Palustrine, Emergent, Persistent, Semi-permanently Flooded
SW 14	1.25	640	Vegetated Non-Forested Wetlands	PEM1A / PFOC	Palustrine, Emergent, Persistent, Temporarily Flooded/ Palustrine, Forested, Seasonally Flooded
SW 15	0.37	514	Drainage Swale	PEM1A	Palustrine, Emergent, Persistent, Temporarily Flooded
SW 16	0.09	514	Drainage Swale	PEM1A	Palustrine, Emergent, Persistent, Temporarily Flooded
SW 17	<0.01	514	Drainage Swale	PEM1A	Palustrine, Emergent Persistent, Temporarily Flooded
SW 18	0.06	514	Drainage Swale	PEM1A	Palustrine, Emergent Persistent, Temporarily Flooded
Total	**11.68**				

Table 4-1
Wetlands, Stormwater Management/Drainage Features and Surface Waters

ID No.	Size (Acres)	FLUCCS Code	FLUCCS Description	USFWS Code	USFWS Description
Other Surface Waters					
OSW 1	0.50	534	Reservoirs less than 10 Acres	PABHx	Palustrine, Aquatic Bed, Permanently Flooded, Excavated
OSW 2	1.05	534	Reservoirs less than 10 Acres	PABHx	Palustrine, Aquatic Bed, Permanently Flooded, Excavated
OSW 3	3.80	534	Reservoirs less than 10 Acres	PABHx	Palustrine, Aquatic Bed, Permanently Flooded, Excavated
OSW 4	1.55	510	Streams and Waterways	R2UBHx	Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated
OSW 5	5.88	534	Reservoirs less than 10 Acres	PABHx	Palustrine, Aquatic Bed, Permanently Flooded, Excavated
Total	**12.78**				

4.2.1 WETLANDS

ID W-1

FLUCCS – 630 (Wetland Forested Mixed)

USFWS – PFO3C (Palustrine, Forested, Broad-leaved Evergreen, Seasonally Flooded)

This wetland feature, measuring approximately 12.95 acres is a forested system located along the west side of I-95 just north of the Cypress Creek Road interchange and immediately south of the Cypress Creek (C-14) Canal. This wetland extends westward and is situated between several developments. The wetland contains two separate ponds connected via a culvert underneath the roadway that separates the two lobes of this feature. The field review revealed this wetland area is designated a state aquatic preserve and was preserved as the Reflections Plat (aka May Tract) Wetlands Restoration Area. The Broward County Commission (BCC) designated this area as a Local Area of Particular Concern (LAPC) as well as a Natural Resource Area (NRA). This site originally consisted of approximately 35 acres of hardwood swamp which included cypress and maple trees. The area was disturbed in 1981 when the previous property owner illegally cleared the area and was subsequently required to restore 0.50 acres of preservation area and 3.77 acres of wetland restoration areas. Per the Broward County Comprehensive Plan (Volume 4, 2014), "These designations do not preclude development, they do limit activities that may occur on the site until a certain level of development approval is received." In other words, while this area has been designated as a LAPC and NRA, it does not preclude development of these areas given the proper approvals/permits have been obtained and wetland mitigation offered.

Vegetation around the perimeter of the assessment area included a mixture of native and non-native herbaceous and woody vegetation including pond apple (*Annona glabra*), Brazilian-pepper (*Schinus terebinthifolius*), bishopwood (*Bischofia javanica*), Australian umbrella tree (*Schefflera actinophylla*), pond-cypress (*Taxodium ascendens*), red maple (*Acer rubrum*), giant leather fern (*Acrostichum danaeifolium*), southern shield fern (*Thelypteris kunthii*), cattail (*Typha sp.*), Mexican primrose willow (*Ludwigia octovalvis*), bulltongue arrowhead *(Sagittaria lancifolia*), barnyard grass (*Echinochloa crus-galli*), and common reed (*Phragmites australis*). The coverage of exotic species varied throughout the site and was estimated to be approximately 30-50% of the canopy, and significantly higher along the outer fence line. Inundated/saturated soils were present throughout the entire central, deeper pond. Hydrology in this wetland is influenced by both groundwater fluctuations and stormwater runoff input from the road. The site provides marginal to moderate quality habitat for wetland-dependent species due to the heavy exotic infestation as well as the close proximity to the highway and urban developments.

4.2.2 STORMWATER SWALES

ID Nos. SW 1 thru SW 9, SW 12 & SW 15 thru SW 18

FLUCCS –514 (Drainage Swale)

USFWS – PEM1A (Palustrine, Emergent, Persistent, Temporarily Flooded)

Numerous stormwater swales are present within the project area that are small, shallow, linear roadside drainage features. Most of these contain a similar herbaceous vegetative composition and serve the purpose of stormwater drainage and retention. These features make up a combined 3.40 acres along the project corridor, are all linear stormwater swales containing hydrophytic vegetation. These shallow ditches are part of a network of interconnected ditches and canals located within the I-95 ROW. Due to the similarity of function and vegetation, these 14 swales have been characterized together. These swales are all regularly maintained (i.e., vegetation is mowed, trimmed, and/or treated with herbicide) by the FDOT. They have become dominated primarily by nuisance or exotic herbaceous hydrophytic vegetation that is adapted to frequent disturbance. Most of these swales are narrow (approximately six feet wide or less), shallow (less than 18 inches deep), and contain a variety of native, nuisance and exotic woody and/or herbaceous species including: cattail, torpedograss (*Panicum repens*), primrose willow (*Ludwigia peruviana*), pickerelweed (*Pontederia cordata*), and bulltongue arrowhead. Other species present include, smartweed (*Polygonum punctatum*), red ludwigia (*Ludwigia repens*), water hyssop (*Bacopa monnieri*), creeping primrose willow (*Salix repens*), and several species of flatsedges (*Cyperus spp.*) The exotic grass species paragrass (*Urochloa mutica*) was also found in many of these features. Other species present include, Mexican primrose willow, stiff marsh bedstraw (*Galium tinctorium*), rosy camphorweed (*Pluchea baccharis*), St. Augustine grass (*Stenotaphrum secundatum*), creeping oxeye (*Sphagneticola trilobata*), anglestem primrose willow (*Ludwigia leptocarpa*), Virginia buttonweed (*Diodia virginiana*), starrush whitetop (*Rynchospora colorata*), winged loosestrife (*Lythrum alatum*), toothcups (*Ammannia latifolia*), frogfruit (*Phyla nodifora*). The areas surrounding these features have typically consisted of upland ruderal species including Spanish needles (*Bidens alba*), large Mexican clover (*Rhicardia grandiflora*), thin paspalum (*Paspalum setaceum*), Bahia grass (*Paspalum notatum*), southern sandbur (*Cenchrus echinatus*), cabbage palm (*Sabal palmetto*), and crowfoot grass (*Dactyloctenium aegyptum*).

Although these 14 swales were nearly identical in their design, purpose and species composition, there were some unique features in **SW 8, SW 9, SW 15** and **SW 18**. **SW 8** is a small swale with generally the same, maintained hydrophytic herbaceous understory as these other features. However, there exists a forested component in this swale which consists of planted pond-cypress trees. This swale is hydrologically connected via culverts to **SW 9** which receives flows as this area becomes inundated. **SW 9** consisted primarily of same regularly maintained opportunistic and ruderal hydrophytic herbaceous native and non-native species as the other swales. However, it

also features several species indicative of extended hydroperiods within a narrow depressed linear feature in the center of this swale. These species included bulltongue arrowhead, pickerelweed and maidencane (*Panicum hemitomon*). **SW 15** and **SW 18** also contained unique features including the maple trees that are planted along the western boundary of **SW 15** and the pond-cypress that were planted on the edges of **SW 18**.

The substrate within these man-made roadside features is typically graded limerock fill covered with organic topsoil (Udorthents, Shaped). The hydrology of these features is primarily driven by stormwater runoff from the adjacent roadway. These stormwater swales offer poor habitat for local and migratory wildlife species due to their small size, shallow depth, and high degree of disturbance. In addition, habitat values are reduced because these swales are relatively isolated from any adjacent natural features and are bordered by the adjacent interstate highway (I-95) and nearby urban developments.

ID Nos. SW 10 & SW 11

FLUCCS – 631/641/643 (Wetland scrub/ Freshwater Marshes/ Wet Prairies)

USFWS – PEM1A/PAB3F/PFO1C (Palustrine, Emergent, Persistent, Temporarily Flooded/ Palustrine, Rooted Vascular, Semi-permanently Flooded/ Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded)

In-field features **SW 10** and **SW 11** are 4.93 and 0.71-acres in size, respectively. Both are man-made stormwater retention/detention basins containing hydrophytic vegetation located within the I-95/Cypress Creek interchange and are part of the I-95 stormwater management system. These in-field features include three wetland communities: long hydroperiod emergent aquatic vegetation (marsh), a short hydroperiod freshwater vegetated non-forested wetland (prairie) and a forested wetland dominated by coniferous and hardwood wetland species. The long hydroperiod emergent wetland habitat is dominated by herbaceous hydrophytic vegetation including spikerush (*Eleocharis sp*), bulltongue arrowhead, cattail, pickerelweed, giant bulrush (*Schoenoplectus californicus*) and Mexican primrose willow. The shorter hydroperiod prairie areas are dominated by herbaceous wetland vegetation such as spreading beaksedge (*Rhynchospora divergens*), bighead rush (*Juncus megacephalus*), starrush whitetop, torpedograss, many spike flatsedge (*Cyperus polystachyos*), frogfruit, tropical flatsedge (*Cyperus surinamensis*), water hyssop, saltmarsh umbrellasedge (*Fuirena breviseta*), Baldwin's spikerush (*Eleocharis baldwinii*), swamp flatsedge (*Cyperus ligularis*), largeleaf marsh pennywort (*Hydrocotyle spp.*), Mexican primrose willow, anglestem primrose willow, Carolina willow (*Salix caroliniana*), dogfennel (*Eupatorium capillifolium*), punk tree (*Melaleuca quinquenervia*), false nettle (*Boehmeria cylindrica*), ragweed (*Ambrosia artemisiifolia*), frogfruit, smartweed, toothcups, swamp horn pod (*Mitreola sessilifolia*), and showy milkwort (*Polygala violacea*). The forested wetland portion of these features contain evergreen and broadleaf components. Prevalent canopy species include native hydrophytic species such as red maple, bald-cypress (*Taxodium distichum*) and pond cypress, pond apple, and Carolina willow, as well as some exotic trees like punk tree, earleaf acacia (*Acacia auriculiformis*) and Brazilian-pepper. Standing water was observed within the long hydroperiod areas within these features and saturated soil conditions were observed throughout the remainder of these features. The hydrology for this feature appears to be driven by stormwater runoff as well as groundwater and surface water fluctuations. The site provides minimal foraging habitat for wading birds and waterfowl due to the dense vegetation. Overall wildlife habitat quality of this feature is poor due to its location within a major roadway interchange and the adjacent urban developments.

ID No. SW 13

FLUCCS – 640 (Vegetated Non-Forested Wetlands)

USFWS – PEM1F (Palustrine, Emergent, Persistent, Semi-Permanently Flooded)

This 1.39-acre in-field feature is a stormwater retention/detention basin containing hydrophytic vegetation located within the northeast quadrant (ramp loop) of the I-95/Cypress Creek Road

interchange and is a part of the engineered I-95 stormwater management system. The understory is comprised of hydrophytic herbaceous species including giant leather fern, royal fern (*Osmunda regalis*), and southern shield fern (*Dryopteris ludoviciana*). The outer edge of the non-herbaceous portion of this in-field feature consists of torpedograss, largeleaf marsh pennywort, Baldwin's spikerush, creeping primrose willow, Mexican primrose willow, toothcups, and several species of flatsedges and beaksedges (*Rhynchospora spp*). A few bald-cypress trees are present as well. Standing water was observed within the depressed linear feature near the center of the basin. Saturated soils were observed throughout the remainder of the detention/retention in-field feature. The hydrology appears to be driven by stormwater runoff from the adjacent impervious surfaces. The site provides marginal foraging habitat for wading birds as well as wetland-dependent species such as frogs and aquatic macroinvertebrates. Overall wildlife habitat quality of this feature is poor due to its location within a major roadway interchange and the adjacent urban developments.

ID No. SW 14

FLUCCS –640 (Vegetated Non-Forested Wetlands)

USFWS – PEM1A/PFOC (Palustrine, Emergent, Persistent, Temporarily Flooded/ Palustrine, Forested, Seasonally Flooded)

This 1.25-acre roadside feature is a stormwater retention/detention basin containing hydrophytic vegetation located within an infield area between the northbound exit and on ramps from Cypress Creek Rd and is a part of the engineered I-95 stormwater management system. This feature includes forested/shrub and herbaceous components. The forested shrub component consists of planted bald-cypress, pond apple, red maple, Carolina willow, and Brazilian-pepper. Some of the herbaceous areas appear to be periodically maintained (i.e., vegetation is mowed, trimmed, and/or treated with herbicide) by the FDOT and are dominated by herbaceous hydrophytic vegetation including torpedograss (dominant species), bulltongue arrowhead, smartweed, pickerelweed, cattail and creeping primrose willow. The hydrology appears to be driven by stormwater runoff from the adjacent impervious surface areas. Standing water was present at the time the assessment. This feature provides moderate foraging habitat for wading birds and wetland-dependent species such as frogs and aquatic macroinvertebrates. Overall wildlife habitat quality of this feature is poor due to its isolated location within a major roadway interchange in an urban environment.

4.2.3 OTHER SURFACE WATERS

ID No. OSW 1

FLUCCS – 534 (Reservoirs less than 10 Acres)

USFWS – PABHx (Palustrine, Aquatic Bed, Permanently Flooded, Excavated)

This surface water is a small reservoir, 0.50-acres, that serves as a stormwater detention pond for the adjacent roadway. This reservoir appears to be connected to nearby stormwater **SW 5** and **SW 18** through culverts. **SW 7** borders this surface water to the south. Floating and submerged vegetation observed in this area include: spatterdock (*Nuphar lutea*), water hyacinth (*Eichhornia crassipes*), coontail (*Ceratophyllum demersum*), Illinois pondweed (*Potamogeton illinoensis*), and the exotic hydrilla (*Hydrilla verticillata*). This surface water offers minimal value habitat to local and migratory wildlife species due to the dense vegetation and its location between a major interstate highway to the east and urban developments to the west.

ID No. OSW 2

FLUCCS – 534 (Reservoirs less than 10 Acres)

USFWS – PABHx (Palustrine, Aquatic Bed, Permanently Flooded, Excavated)

This surface water is a small, approximately 1.05-acre, open water canal, located parallel to the southbound egress ramp to Cypress Creek Rd. The canal banks are generally steep except at the northern terminus where the slopes become gentler and there is a well-defined transitional zone between the surface water feature and the adjacent stormwater **SW 12**. Some sporadic shrub and herbaceous macrophytes are present including torpedograss, Peruvian primrose willow, and largeleaf marsh pennywort. The canal banks are regularly maintained and consist of upland ruderal species including Spanish needles, large Mexican clover, thin paspalum, bahia grass, southern sandbur, cabbage palm, and crowfoot grass. Submerged and floating vegetation within the canal includes coontail, hydrilla, and Illinois pondweed. Cattails are also present in a dense monoculture in the southern half of this waterway. These surface waters offer minimal quality habitat value to local and migratory wildlife bird species due to the steep slopes and dense shoreline vegetation. In addition, the location between a major interstate highway to the east and urban developments to the west further reduces wildlife habitat values. In addition, this OSW is an isolated reservoir feature that has no connections to any other OSW; therefore, the West Indian manatee is not able to access this waterway.

ID No. OSW 3

FLUCCS – 534 (Reservoirs less than 10 Acres)

USFWS - PABHx (Palustrine, Aquatic Bed, Permanently Flooded, Excavated)

This surface water feature is an approximately 3.81-acre, excavated retention/detention pond that abuts Andrews Avenue to the east and continues between several commercial properties to the western edge of I-95. This surface water feature, is a large "L" shaped, excavated waterway that captures stormwater runoff from several commercial properties and pre-treats it before discharging to the northeast toward the Cypress Creek (C14) Canal. There are two separate sections of this OSW including the much larger "L" shaped lobe that forms the eastern and southern side of this OSW and a much smaller circular pond located at the western end of this OSW near Andrews Avenue. There is a culvert under the roadway between these two sections that connects them. The submerged aquatic vegetation observed in this OSW included a dense mat of the submerged exotic hydrilla along the shoreline out 10-12 feet, along with sparsely scattered tape grass (*Vallisneria americana*), and bladderwort *(Utricularia floridana*). The only other wetland vegetation observed were a few cattails, Carolina willow and Brazilian pepper all present on the edge abutting the stormwater **SW 12** adjacent to I-95. However, this system is not connected to the I-95 swale. Numerous egg masses of the exotic apple snail (*Pomacea insularum*) were observed on the culvert between the two sections of this waterbody and on several rocky outcroppings along the shoreline. Mosquitofish (*Gambusia affinis*) were present, but sparse and walking catfish (*Clarias batrachus*) were observed gulping air at the surface. The water quality in this system appeared to be very poor. The sediments were dark and mucky due to the dense layers of decomposing vegetation from repeated chemical treatments of the hydrilla. Overall this surface water feature offers limited potential habitat for aquatic species that may be present in the general area due to poor water quality and its location between a major interstate highway to the east and urban developments to the west.

ID No. OSW 4

FLUCCS – 510 (Streams and Waterways)

USFWS – R2UBHx (Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated)

This surface water feature is a major canal, the Cypress Creek (C14) canal that is owned and maintained by the SFWMD. The surface water consists of typically muddy unconsolidated or

exposed bedrock substrate. The canal bank slopes are steep resulting in sparse transitional emergent wetland vegetation along the margins. A few sporadic hydrophytic species are present along the shoreline including torpedo grass, primrose willow, and southern shield fern. The area where I-95 crosses over the Cypress Creek Canal is located upstream of an existing control structure that prevents migration of West Indian manatee into the project area. Due to the prevalence of freshwater flow in this waterway within the project limits, some of the shallow areas on the north and south banks contain tape grass. However, the total acreage of areas containing tape grass is estimated to be less than a hundredth of an acre. The north-south orientation of the bridges allows sufficient sunlight to reach the bottom of the canal allowing tape grass to grow up to the outer edges of the bridges on either side of the bridges. There is limited potential for marginal wading bird foraging habitat, but this is minimal due to the steepness of the slopes and/or slope protection. Overall the Cypress Creek (C14) canal offers moderate value habitat quality to local and migratory wildlife species in the limits of this study area.

ID No. OSW 5

FLUCCS – 534 (Reservoirs less than 10 Acres)

USFWS – PABHx (Palustrine, Aquatic Bed, Permanently Flooded, Excavated)

This surface water feature is a small pond, 5.88-acres in size, located northeast of the Cypress Creek interchange. The surface water is an excavated waterway that captures stormwater runoff from several commercial properties and pre-treats it before discharging to the north toward the Cypress Creek (C14) Canal. The pond banks are sparsely vegetated by nuisance and exotic herbaceous species along the shorelines. In addition, the upland sections of the shorelines are landscaped and regularly mowed and maintained eliminating any natural vegetation. A few sporadic hydrophytic species are present along the shoreline including torpedograss, primrose willow, and southern shield fern. Submerged species observed included hydrilla and scattered clumps of tape grass. There is the potential for marginal wading bird foraging habitat, but this is limited due to the density of the undesirable weedy vegetation along the shoreline and the quick drop-off to deeper water. Overall this surface water feature offers moderate value habitat quality to local and migratory wildlife species in the limits of this study.

4.3 Wetland Impact Assessment

4.3.1 UMAM ASSESSMENT

As mentioned in **Section 4.1.1**, the UMAM provides a standardized methodology for evaluating the functional value provided by wetlands; the amount that those functions are reduced by a proposed impact; and the amount of mitigation necessary to compensate for that functional loss in terms of current condition, hydrologic connection, uniqueness, location, fish and wildlife utilization, time lag, and mitigation risk. A UMAM assessment was conducted for wetland community **W-1** as this was the only natural wetland feature located within the study area (although not currently proposed to be impacted). Please note that a UMAM assessment was not conducted for areas characterized as stormwater swales containing hydrophytic vegetation or surface waters. The majority of these swales have been previously impacted and any impacts from this project are anticipated to be offset via a modification to the USACE permit No. SAJ-2014-01584. The presence of native wetland vegetation is limited in these OSWs and, although no impacts are proposed to any of these features, it is important to note that mitigation for impacts to surface waters is typically not required.

A summary of the results of the UMAM assessment for wetland **W-1** is provided in **Table 4-2**. Copies of the UMAM data forms are provided in **Appendix D**. Please note that these calculations are only estimates which were based on existing conditions.

Table 4-2 UMAM Assessment Results					
Assessment Area	FLUCCS	UMAM SCORE (CURRENT)			
		Location and Landscape Support	Water Environment	Community Structure	Total Score
W-1	630	2	4	3	0.30

4.3.2 DIRECT AND INDIRECT IMPACTS

A total of approximately 12.95 acres of natural jurisdictional wetlands (i.e. **W-1**), 11.68 acres of swales and 6.90 acres of OSWs exist within the project study area (please refer to the Jurisdictional Features Location Maps shown in **Appendix B**). Approximately 0.07 acres of swales (**SW 1** and **SW 2**) we be impacted by a collector-distributor (CD) ramp proposed along the west side of I-95 adjacent to the existing eastbound off ramp to Commercial Blvd. The CD ramp is proposed over **SW 1** and **SW 2** which will result in shading and/or dredge/fill impacts associated with the piling installations. However, this work would not be expected to affect the drainage capacity and hydrology of these swales. No other jurisdictional features, including **W-1**, are anticipated to be directly or indirectly impacted. Any impacts to **SW 1** and **SW 2** are anticipated to be offset by utilizing some of the excess swale acreage that was created and permitted by the USACE during the previous I-95 CDC project (Phase 3A from Davie Blvd (SR 736) to SW 10th St (SR 869)) which covered the limits of this PD&E study project. This I-95 CDC project created additional travel lanes along I-95 and improved the drainage system to accommodate for the associated impervious areas. USACE Permit SAJ-2014-01584 authorized the creation 48.24 acres of hydric swales within the project limits which generated a surplus of 22.1 acres of swales for mitigation in excess of what had been impacted by the project (24.43 acres). This additional acreage of created hydric swales will adequately offset the proposed potential impacts to swales **SW 1** and **SW 2** (a total of 0.07 acres) which had previously been impacted by the CDC project. This authorization from USACE is anticipated to be accomplished through a permit modification to USACE Permit SAJ-2014-01584, which will be initiated during the permitting phase.

Potential indirect impacts to jurisdictional features from this project are limited to temporary construction impacts and shading from the proposed CD.

Table 4-3 Impact Analysis			
ID No.	FLUCCS Code	USFWS Code	Potential Impacted Area (Acres)
SW 1	514	PEM1A	0.06
SW 2	514	PEM1A	0.01

4.3.3 CUMULATIVE IMPACTS

Cumulative wetland impacts include the combined direct and indirect wetland impacts of the proposed action and other reasonably foreseeable actions in the general area that are not dependent on the proposed action. As indirect impacts are limited to temporary construction impacts and shading from the proposed CD, the cumulative impacts from this project will simply be the potential direct impacts to **SW 1** and **SW 2**. Therefore, the anticipated cumulative impacts will amount to a maximum of 0.07 acres. As previously stated, it is anticipated that any impacts to the swales will be authorized through a permit modification to the USACE Permit No. SAJ-2014-01584 which created an excess swale acreage. No further mitigation, such as on-site/off-site

wetland restoration or the purchase of mitigation credits from a mitigation bank, is anticipated to be required for this project.

4.3.4 AVOIDANCE AND MINIMIZATION

Initially, this project proposed a ramp through the jurisdictional feature **W-1** just north of N. Andrews Ave. The new ramp would have directly impacted **W-1** which is an existing mitigation area (Reflections Plat). This ramp was eliminated, thereby avoiding the associated wetland impacts. Additional wetland impact avoidance and minimization measures will include, at a minimum, a restriction on staging or operation of construction equipment within any jurisdictional wetland areas that are not proposed to be directly impacted along with the use of the FDOT Standard Specifications. In addition, the proposed CD ramp over **SW 1** and **SW 2** could be designed so that the pilings for this ramp would be installed outside these swales. This design could avoid any direct dredge/fill impacts and result in only minor shading impacts which would not impact the swales drainage/retention functionality. Proper erosion control measures and Best Management Practices (BMPs) will be utilized to protect the jurisdictional wetland features in the study area to the maximum extent possible. Further measures to avoid and minimize jurisdictional wetland impacts will be evaluated during the design phase of the project.

5 Essential Fish Habitat Assessment

The Magnuson-Stevens Fishery Conservation and Management Act ((MSFCMA), 16 USC 1801 et seq. Public Law 104-208) reflects the Secretary of Commerce and Fishery Management Council's authority and responsibilities for the protection of EFH. The MSFCMA specifies that each federal agency shall consult with the Secretary with respect to any action authorized (or proposed to be), funded, or undertaken, by such agency that may adversely affect any EFH. EFH is defined in the MSFCMA as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." The regional Fishery Management Council (FMC) that has jurisdiction over the study area's region of south Florida is the South Atlantic Fishery Management Council (SAFMC). The SAFMC is responsible for identifying EFH for federally managed species in the southeast United States and designates thirteen habitats as EFH for federally managed species which are divided into estuarine areas and marine areas. The estuarine areas include: estuarine emergent wetlands, estuarine scrub / shrub mangroves, submerged aquatic vegetation, oyster reefs and shell banks, intertidal flats, palustrine emergent and forested wetlands, aquatic beds, and estuarine water column. Marine areas include live / hard bottoms, coral and coral reefs, artificial / manmade reefs, sargassum, and water column. Highly migratory species, such as tunas, billfish, and sharks, are also managed by NMFS and have EFH designations in these areas of the Southeast as well. Federal agencies are required to consult with NMFS when their activities, including permits and licenses they issue, may adversely affect EFH and respond to NMFS recommendations for protecting and conserving EFH.

During the ETDM Screening, the ETAT representative from NMFS stated that the project would not directly impact any areas that support EFH or support NOAA trust fishery resources. Therefore, no EFH assessment was required and no additional consultation with NMFS is necessary unless the project is modified, or the project area is changed in a manner that could adversely affect EFH.

The ETAT representative from FHWA identified that habitat for the USFWS designated Rare and Imperiled Fish, the mangrove rivulus, occurred within the project corridor. However, the project is located more than three miles inland of the Intercoastal Waterway and the Atlantic Ocean and the wetlands and waterbodies identified within the project study area are not considered to be coastal or marine resources. Furthermore, the canals and water bodies in the vicinity of the project location are not tidal and are located upstream of SFWMD water control structures; hence, as the habitat that this species is known to utilize is not present within the study area, it is not likely that this species would be present. Finally, the ETAT representative from the SFWMD has indicated no coastal resources are expected to be affected.

6 Conceptual Mitigation

Compensatory mitigation for unavoidable wetland impacts is not anticipated to be required for this project. No wetland impacts are proposed and the only impacts to jurisdictional features are the potential minor impacts within **SW 1** and **SW 2**. The impacts to these features, totaling 0.07 acres, would be anticipated to be offset through a permit modification to the USACE Permit No. SAJ-2014-01584 which resulted in an excess of 22.1 acres of swale creation as part of the I-95 CDC project (Phase 3A). It is not anticipated that SFWMD would require mitigation for impacts (dredge or fill) to these swales as these areas are part of a permitted drainage system and were not claimed as jurisdictional wetlands during the previous I-95 CDC project in this area. No impacts are anticipated to any listed species from this proposed project; therefore, no mitigation is expected to be required.

7 Agency Coordination and Permitting

Agency coordination through the ETDM Programming Screening #14222 occurred between April 10, 2015 to May 25, 2015, and the Programming Screen Summary Report was published on February 22, 2016. This ETDM process allowed members of the ETAT to provide input and comments pertaining to natural resources in the study area including: protected species, wetlands and surface waters, and EFH.

To summarize, the US EPA, USACE, SFWMD, FHWA and FDEP stated that the project will have "Minimal" effect on wetlands. In addition, the NMFS provided a degree of effect of "None" for wetlands. The ETAT members also provided degree of effects for wildlife and habitat. FHWA, FWC, and the USFWS assigned the project a degree of effect of "Minimal" for wildlife and habitat as there is limited wildlife habitat present and no significant wildlife resources were identified in the study area. The NMFS and FHWA provided a degree of effect of "None" for Coastal and Marine, whereas SFWMD assigned a "Minimal" degree of effect.

An interagency meeting was held in October 2017 to discuss the project as currently proposed. Representatives from the FDEP, USACE, SFWMD, USFWS, FWC and local counties were present. The general comments from this meeting indicated the jurisdictional wetlands and few minor potentially present listed species would not present problems with permitting the proposed road improvements to I-95.

8 Anticipated Permits

List of Potentially Required Permits:

1. Modification to USACE Standard Permit No. SAJ-2014-01584 – Required if impacts to **SW 1** and **SW 2** are determined to be unavoidable during the design phase of the project.
2. General Permit from SFWMD

9 Summary

The proposed project consists of improvements along I-95 from South of SR 870/Commercial Blvd to North of Cypress Creek Rd (approximately two miles) including enhancements at the Cypress Creek Rd and SR 870/Commercial Blvd interchanges within a developed and urbanized region of Broward County, Florida. Jurisdictional wetland features were identified within the study area; however, there are very few natural areas remaining in this project corridor that could be utilized by protected species within the ROW. As currently proposed, this project will not impact the one natural wetland feature (**W-1**) within the study area. The existing wetlands and uplands located outside the ROW will not be impacted by this project either. The stormwater swales within the ROW provide marginal habitat for wading birds, including the wood stork, and only minor potential impacts to these areas are proposed and will be minimized to the greatest extent possible. Although the project is within the CFA of three (3) active wood stork colonies, there is very limited suitable wood stork foraging habitat within the project limits. Therefore, the effect determination for the wood stork is "May Affect, Not Likely to Adversely Affect". There were no active or inactive gopher tortoise burrows observed within the project limits; therefore, the gopher tortoise effect determination is "No Effect". Per the Key for the Eastern indigo snake, the effect determination this species is "May Affect, Not Likely to Adversely Affect". The effect determination for all other federal and state protected species is "no effect", and this information can be found in **Table 3-2**. In addition, no protected species were observed within the study area during this study's field reviews. Therefore, based on the lack of suitable habitat and the minor potential impacts to previously disturbed swales, no impacts to any threatened, endangered or otherwise protected species are anticipated as a result of the project as proposed. The USFWS Standard Protection Measures for the Eastern indigo snake will be implemented during the construction phase as applicable. Other implementation measures include:

- BMPs for erosion control
- FDOT Standard Specifications

The project study area contained an approximate total of 37.41 acres of jurisdictional wetland features consisting of 12.95 acres of natural wetlands (i.e. **W-1**), 11.68 acres of swales containing hydrophytic vegetation and 12.78 acres of OSWs (please refer to the **Table 4-1** and the Jurisdictional Features Location Map shown in **Appendix B**). Of that total acreage, only an estimated 0.07 acres of swales (**SW 1** and **SW 2**) are potentially going to be impacted by the recommended alternative (See **Table 4-3**). The potential impacts to **SW 1** and **SW 2** would be anticipated to be offset through the modification of the existing USACE Permit No. SAJ-2014-01584. This modification would authorize this project to utilize some of the excess swale acreage that was created and during the previous I-95 CDC project within the limits of this project (Phase 3A: I-95 from Davie Blvd (SR 736) to SW 10th St (SR 869)). This permit authorized the creation of an additional 22.1 acres of swales in excess of what had been impacted by the project. This excess acreage would adequately offset any proposed jurisdictional impacts. Therefore, utilizing BMPs including proper staging areas/construction methodologies and appropriate avoidance and minimization measures during construction, no indirect impacts are anticipated to jurisdictional wetlands from this project.

10 References

Aerial photographs of the project area at one inch = 100 feet, one inch = 300 Feet, and one inch = 1000 feet scales Broward County GIS

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Board of County Commissioners. 2014. Broward County Comprehensive Plan. Broward County, Volume 4

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Gilbert, K.M., J.D. Tobe, R.W. Cantrell, M.E. Sweeley, and J.R. Cooper. 1995. The Florida Wetlands Delineation Manual. Florida Department of Environmental Protection, Florida Department of Environmental Regulation (in cooperation with the Florida Water Management Districts), Tallahassee, Florida.

Natural Resource Conservation Service. May 1984. Soil Survey of Broward County, Eastern Part, Natural Resource Conservation Service Web Soil Survey.

Tobe, J.D. et. al. 1998. Florida Wetland Plants: An Identification Manual. Florida Department of Environmental Protection, Tallahassee, Florida.

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U.S. Army Corps of Engineers. November 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2.0

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U.S. Fish and Wildlife Service. 2016. National Wetland Inventory GIS database

APPENDIX A

Conceptual Plans

CONSTRUCTION CONTRACT NO.

COMPONENTS OF CONTRACT PLANS SET

CONCEPT PLANS

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT

INDEX OF ROADWAY PLANS

STATE OF FLORIDA

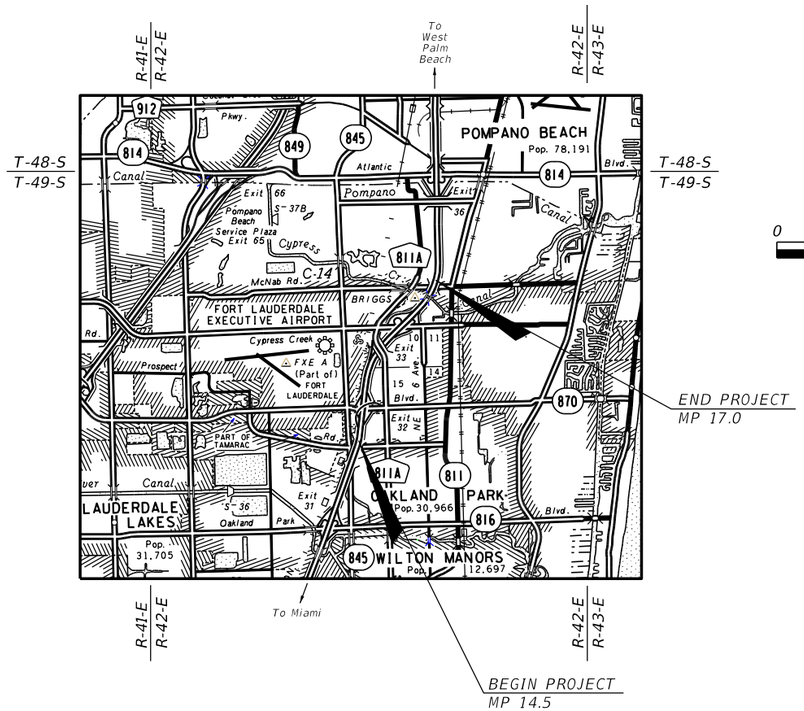
DEPARTMENT OF TRANSPORTATION

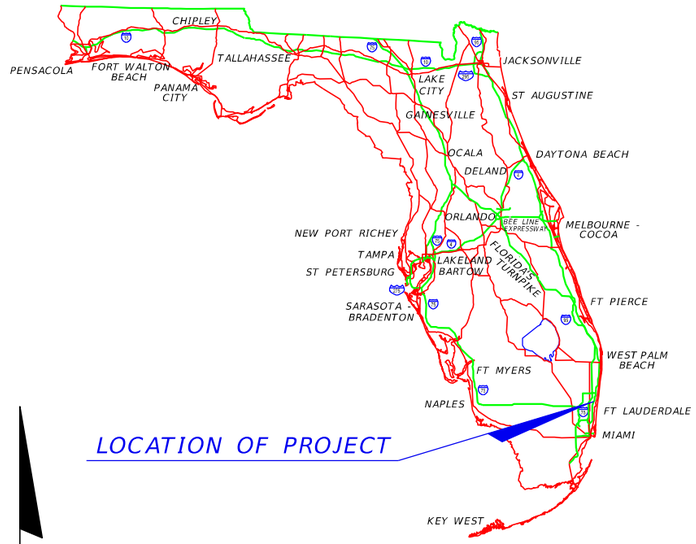
PRELIMINARY CONCEPT PLANS

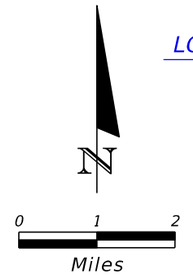
FINANCIAL PROJECT ID 435808-1

BROWARD COUNTY (86070)
STATE ROAD No. 9

FROM SOUTH OF SR 870/COMMERCIAL BOULEVARD
TO NORTH OF CYPRESS CREEK ROAD







ROADWAY SHOP DRAWINGS
TO BE SUBMITTED TO:

PLANS PREPARED BY:
STANTEC CONSULTING SERVICES, INC.
901 PONCE DE LEON BLVD., SUITE 900
CORAL GABLES, FLORIDA 33134
MIAMI (305)-445-2900 FLORIDA (800)-448-0227
CERTIFICATION OF AUTHORIZATION NO. 00027013
VENDOR ID NO. 650039493001
CONSULTANT CONTRACT NO. C-8F17

GOVERNING STANDARDS AND SPECIFICATIONS:

Florida Department of Transportation, Design Standards and revised Index Drawings as appended herein, and Standard Specifications for Road and Bridge Construction, as amended by Contract Documents.

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

For the Standard Specifications for Road and Bridge Construction click on the "Specifications" link at the following web site:
http://www.dot.state.fl.us/specificationsoffice/

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

PROJECT LENGTH IS BASED ON ℄ OF CONSTRUCTION

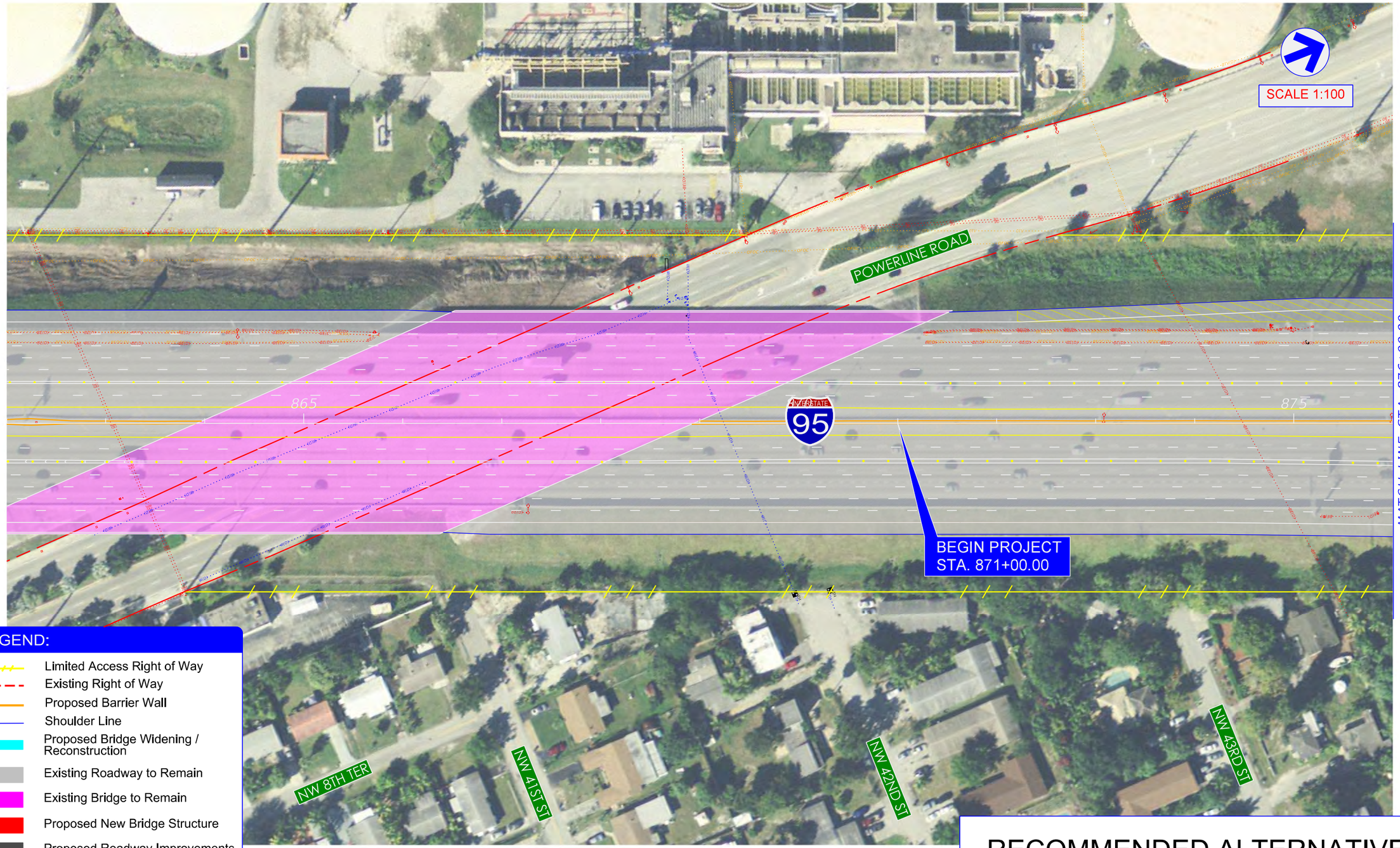
LENGTH OF PROJECT		
	LINEAR FEET	MILES
ROADWAY		
BRIDGES		
NET LENGTH OF PROJECT		
EXCEPTIONS		
GROSS LENGTH OF PROJECT		

FDOT PROJECT MANAGER: NADIR RODRIGUES, P.E.

ROADWAY PLANS
ENGINEER OF RECORD: SILVIA BELTRE, P.E.

P.E. NO.: 51295

FISCAL YEAR	SHEET NO.
	1



LEGEND:

- Limited Access Right of Way
- Existing Right of Way
- Proposed Barrier Wall
- Shoulder Line
- Proposed Bridge Widening / Reconstruction
- Existing Roadway to Remain
- Existing Bridge to Remain
- Proposed New Bridge Structure
- Proposed Roadway Improvements

RECOMMENDED ALTERNATIVE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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CORAL GABLES, FLORIDA 33134
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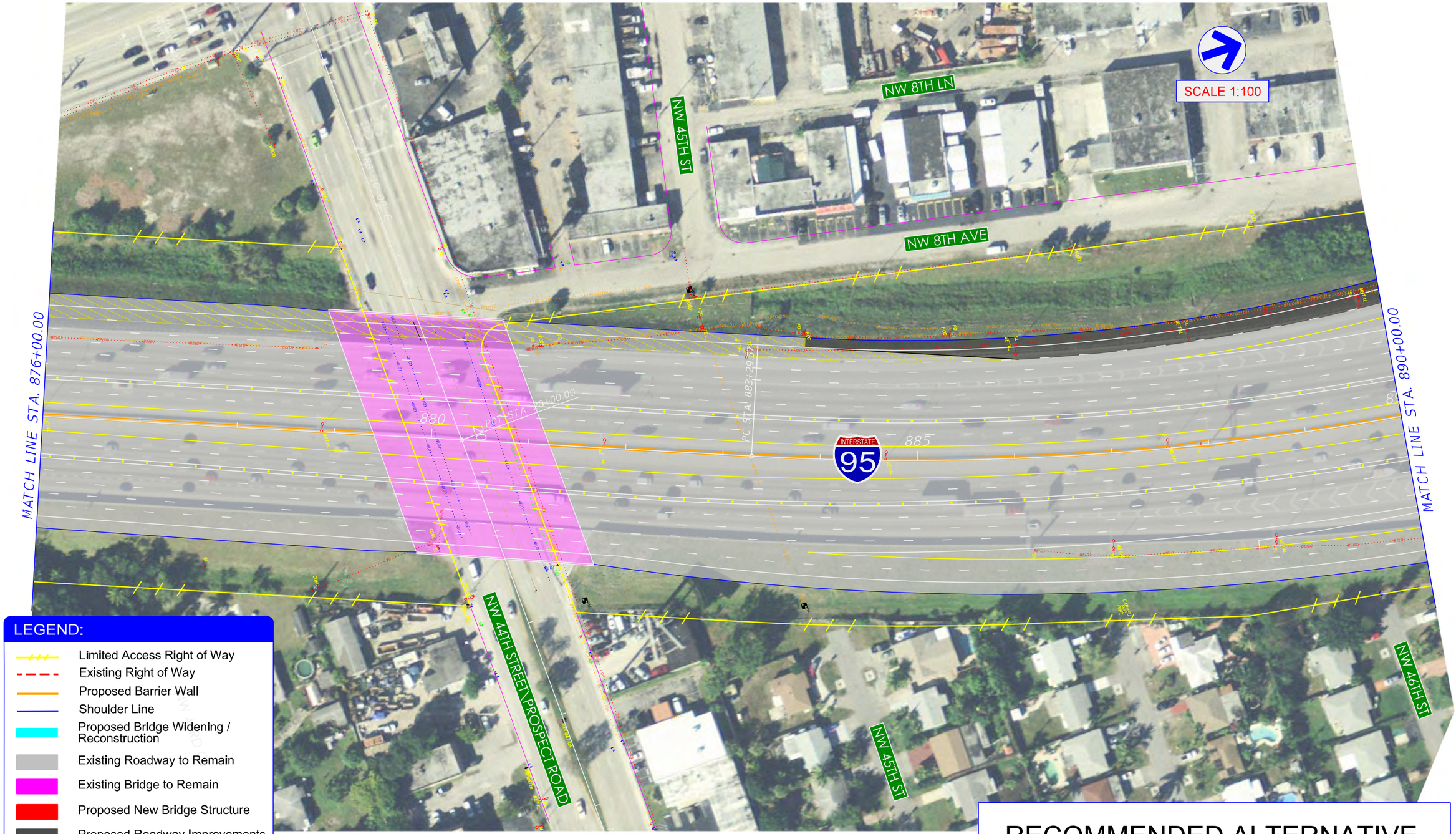
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	435808-1

PRELIMINARY
CONCEPT PLANS

SHEET NO. 2



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STATE OF FLORIDA
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SR 9	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 3

LEGEND:

- Limited Access Right of Way
- Existing Right of Way
- Proposed Barrier Wall
- Shoulder Line
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- Existing Bridge to Remain
- Proposed New Bridge Structure
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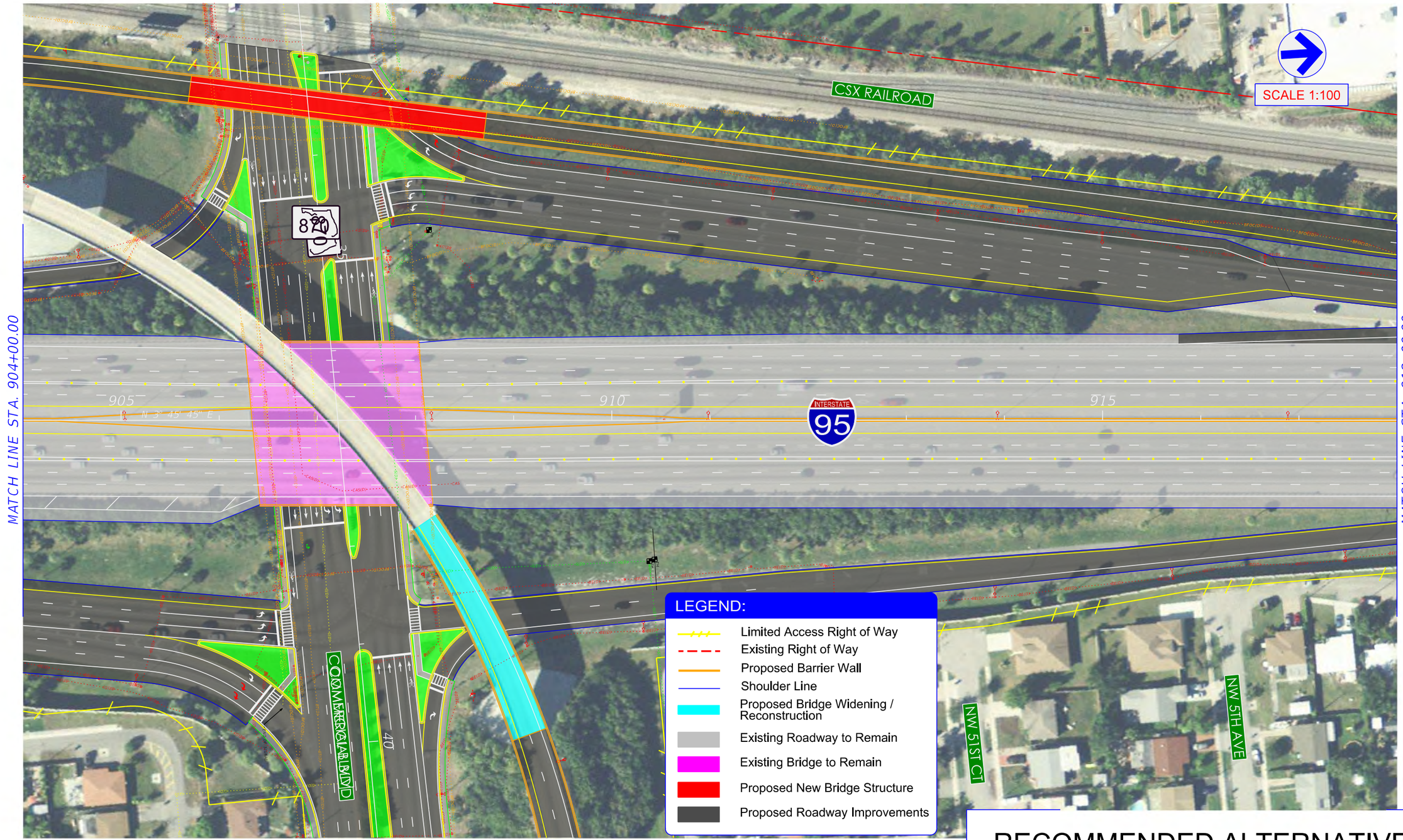
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 4



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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	435808-1

PRELIMINARY
CONCEPT PLANS

SHEET NO. 5

LEGEND:

- Limited Access Right of Way
- Existing Right of Way
- Proposed Barrier Wall
- Shoulder Line
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- Existing Bridge to Remain
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 6

LEGEND:

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	435808-1

PRELIMINARY
CONCEPT PLANS

SHEET NO. 7

MATCH LINE STA. 25+64.50

MATCH LINE STA. 946+00.00

MATCH LINE STA. 960+00.00

SCALE 1:100

RESERVED FDOT PROPERTY FOR POTENTIAL 95 EXPRESS BUS SERVICE

PC STA. 23+90.44

PT STA. 24+59.66

PT STA. 25+89.46

PT STA. 18+00.13

INTERSTATE 95

N. ANDREWS AVE

N. ANDREWS AVE

NW 59TH CT

950

955

LEGEND:

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SR 9	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 8

dachang 4/2/2018 4:25:27 PM V:\2158\active\215810476\Engineering\Alternatives Analysis\Concept Plans\Recommended

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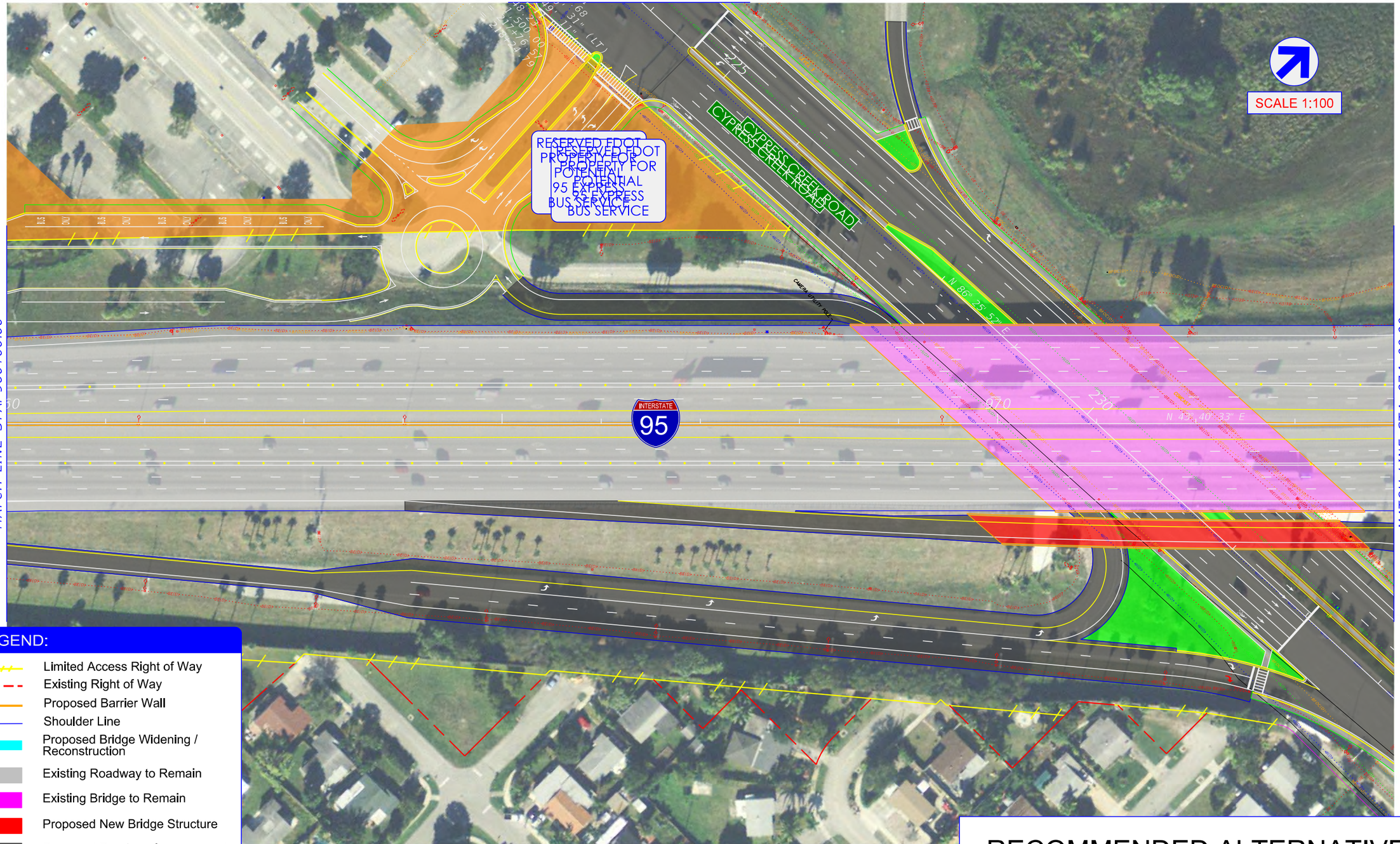

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PRELIMINARY CONCEPT PLANS

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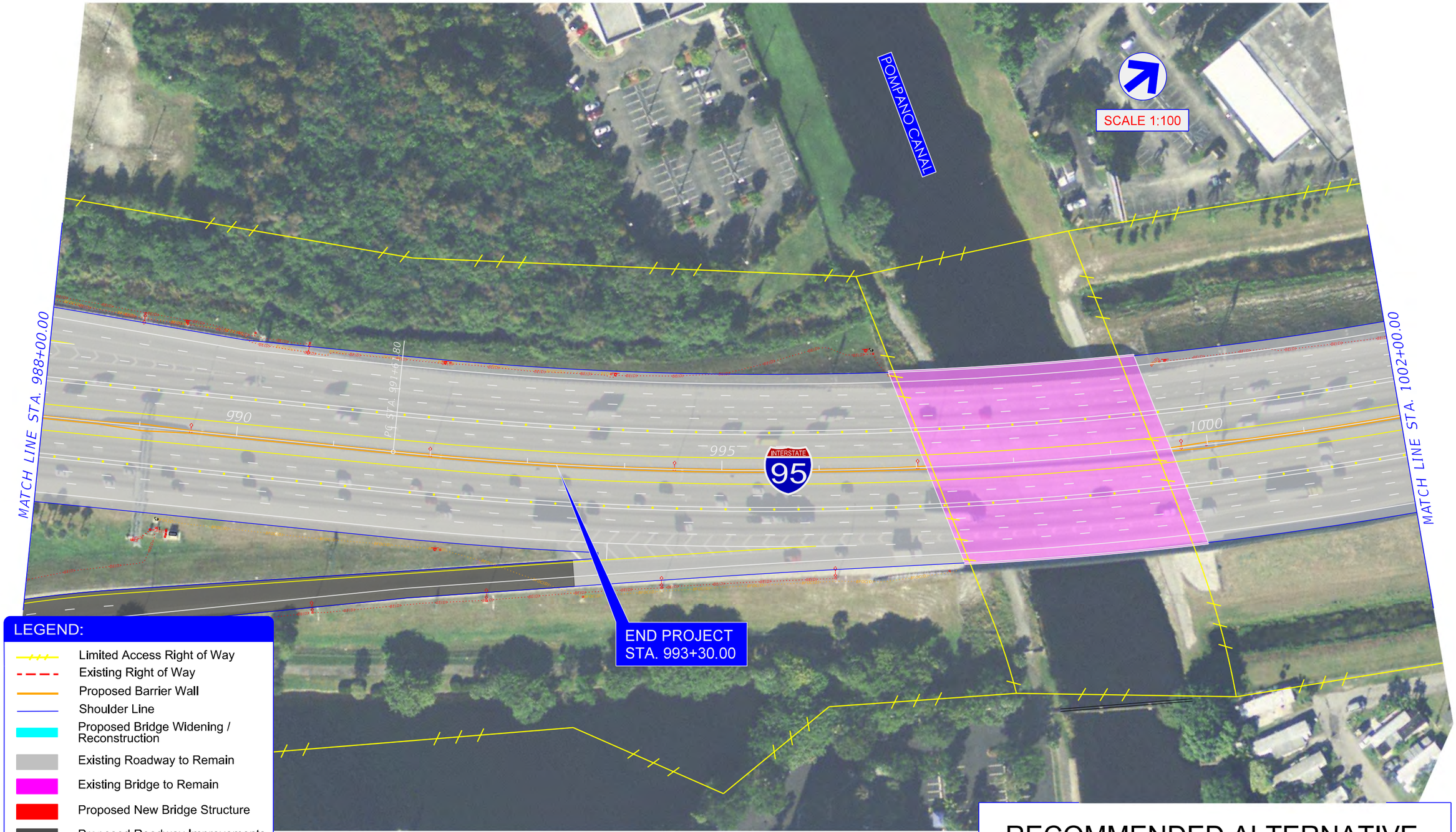
PRELIMINARY CONCEPT PLANS

SHEET NO. 10



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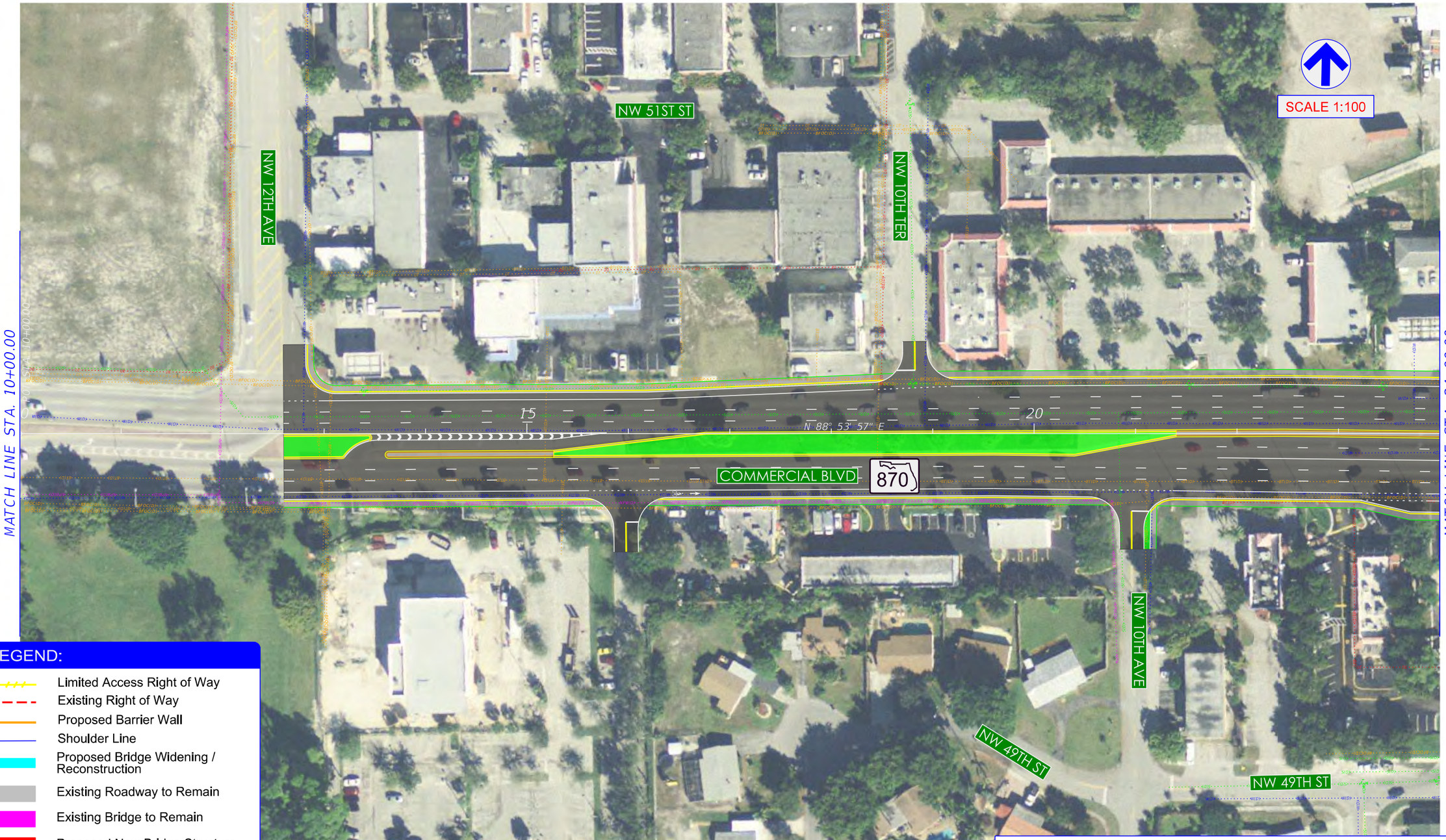
SR 9	BROWARD	435808-1

PRELIMINARY
CONCEPT PLANS

SHEET NO.
11



LEGEND:

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 870	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 12

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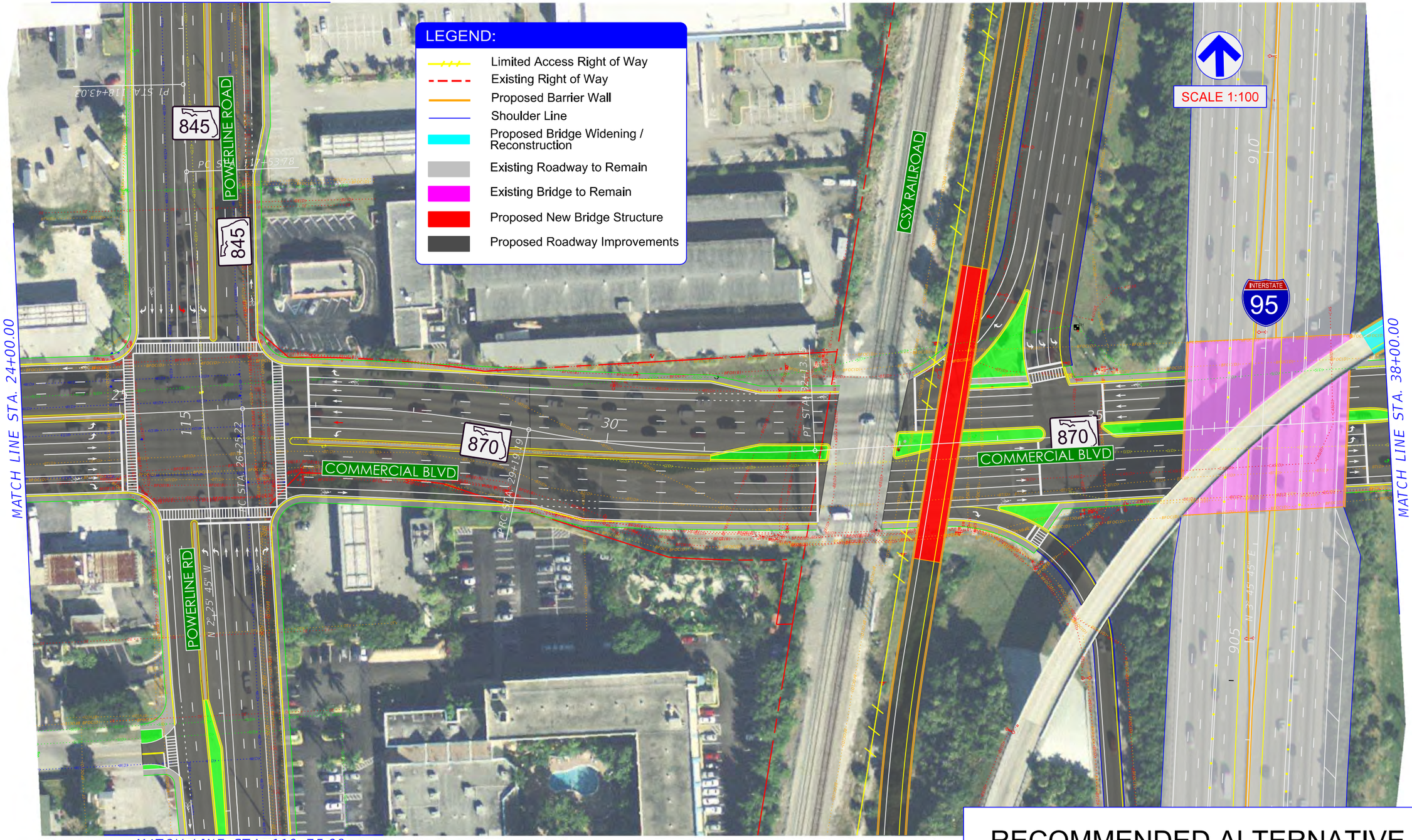

MATCH LINE STA. 24+00.00

MATCH LINE STA. 38+00.00

MATCH LINE STA. 110+75.00

RECOMMENDED ALTERNATIVE

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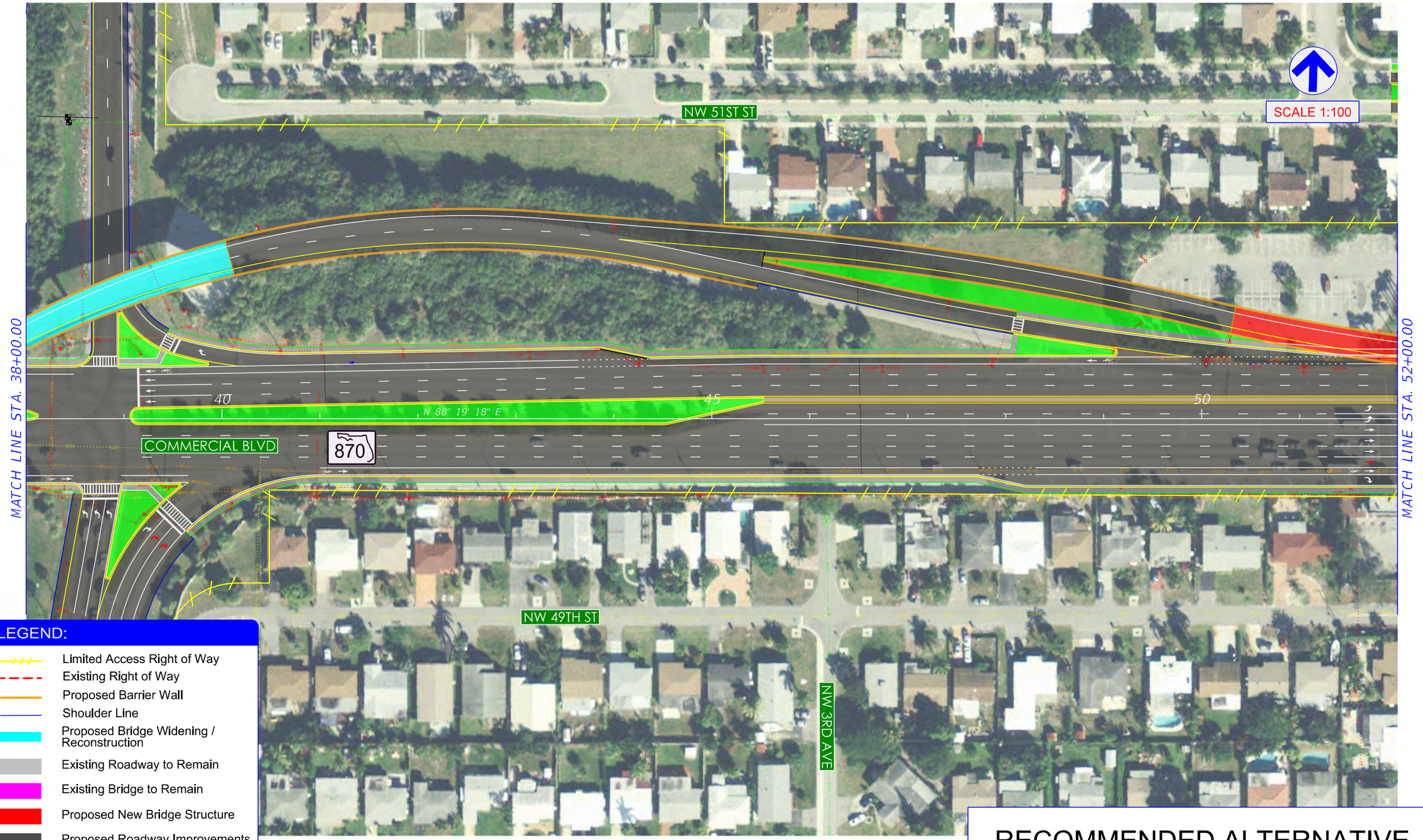
SR 870	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 13



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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 870	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 14

RECOMMENDED ALTERNATIVE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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P.E. LICENSE NUMBER 51295
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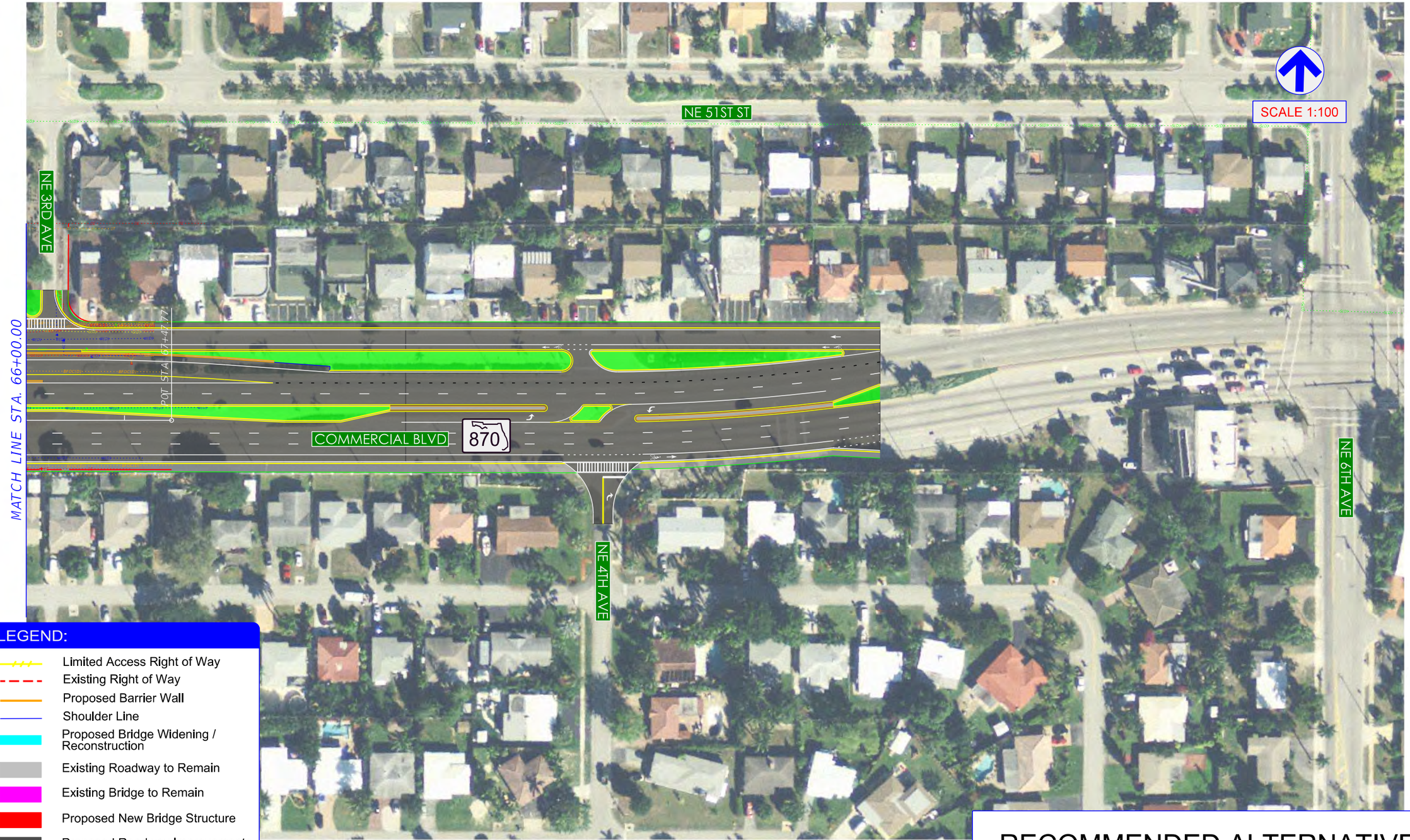
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 870	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 15



LEGEND:

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- Shoulder Line
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- Existing Roadway to Remain
- Existing Bridge to Remain
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RECOMMENDED ALTERNATIVE

REVISIONS			
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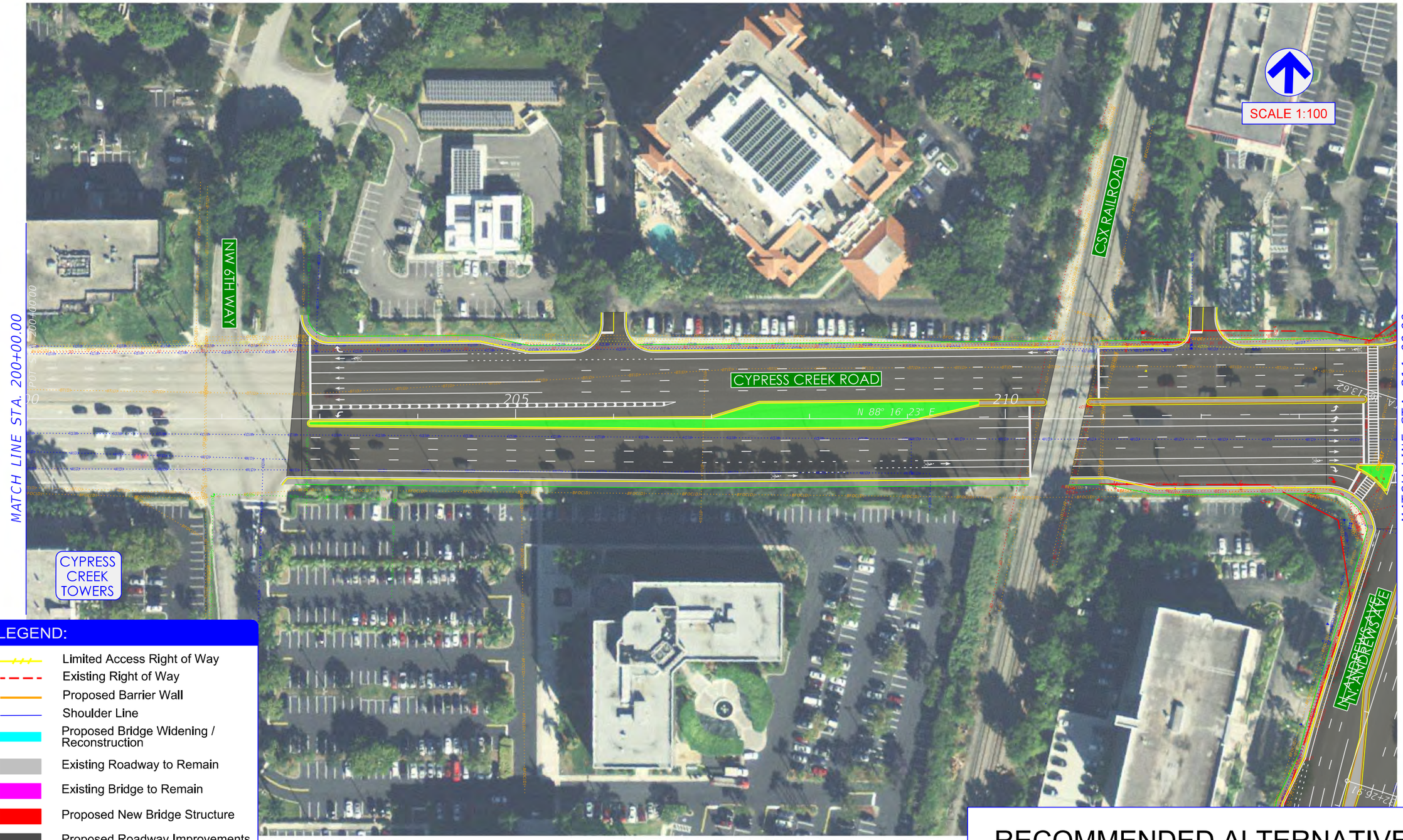
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 870	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 16



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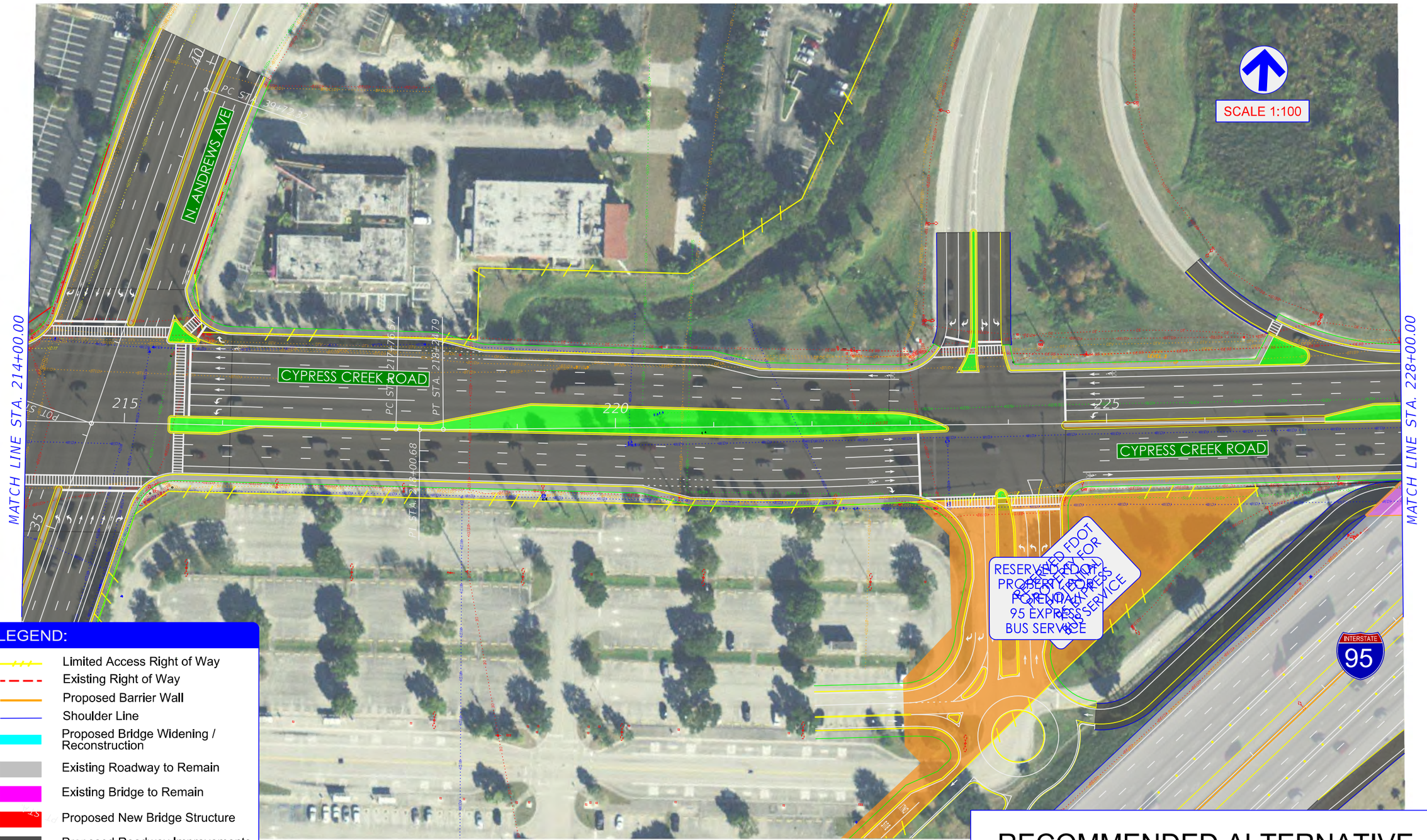
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 17



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- Proposed Barrier Wall
- Shoulder Line
- Proposed Bridge Widening / Reconstruction
- Existing Roadway to Remain
- Existing Bridge to Remain
- Proposed New Bridge Structure
- Proposed Roadway Improvements

RECOMMENDED ALTERNATIVE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SILVIA M. BELTRE, P.E.
P.E. LICENSE NUMBER 51295
STANTEC CONSULTING SERVICES, INC.
901 PONCE DE LEON BLVD. SUITE 900
CORAL GABLES, FLORIDA 33134
CERTIFICATE OF AUTHORIZATION 00027013

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BROWARD	435808-1

PRELIMINARY
CONCEPT PLANS

SHEET NO.
18

MATCH LINE STA. 977+18.88

MATCH LINE STA. 228+00.00

MATCH LINE STA. 242+00.00

SCALE 1:100

INTERSTATE 95

CYPRESS CREEK ROAD

NE 61ST CT

NE 61ST ST

NE 3RD TERR

NE 4RD AVE

N 86° 25' 52" E

975

230

235

240

LEGEND:

- Limited Access Right of Way
- Existing Right of Way
- Proposed Barrier Wall
- Shoulder Line
- Proposed Bridge Widening / Reconstruction
- Existing Roadway to Remain
- Existing Bridge to Remain
- Proposed New Bridge Structure
- Proposed Roadway Improvements

RECOMMENDED ALTERNATIVE

REVISIONS			
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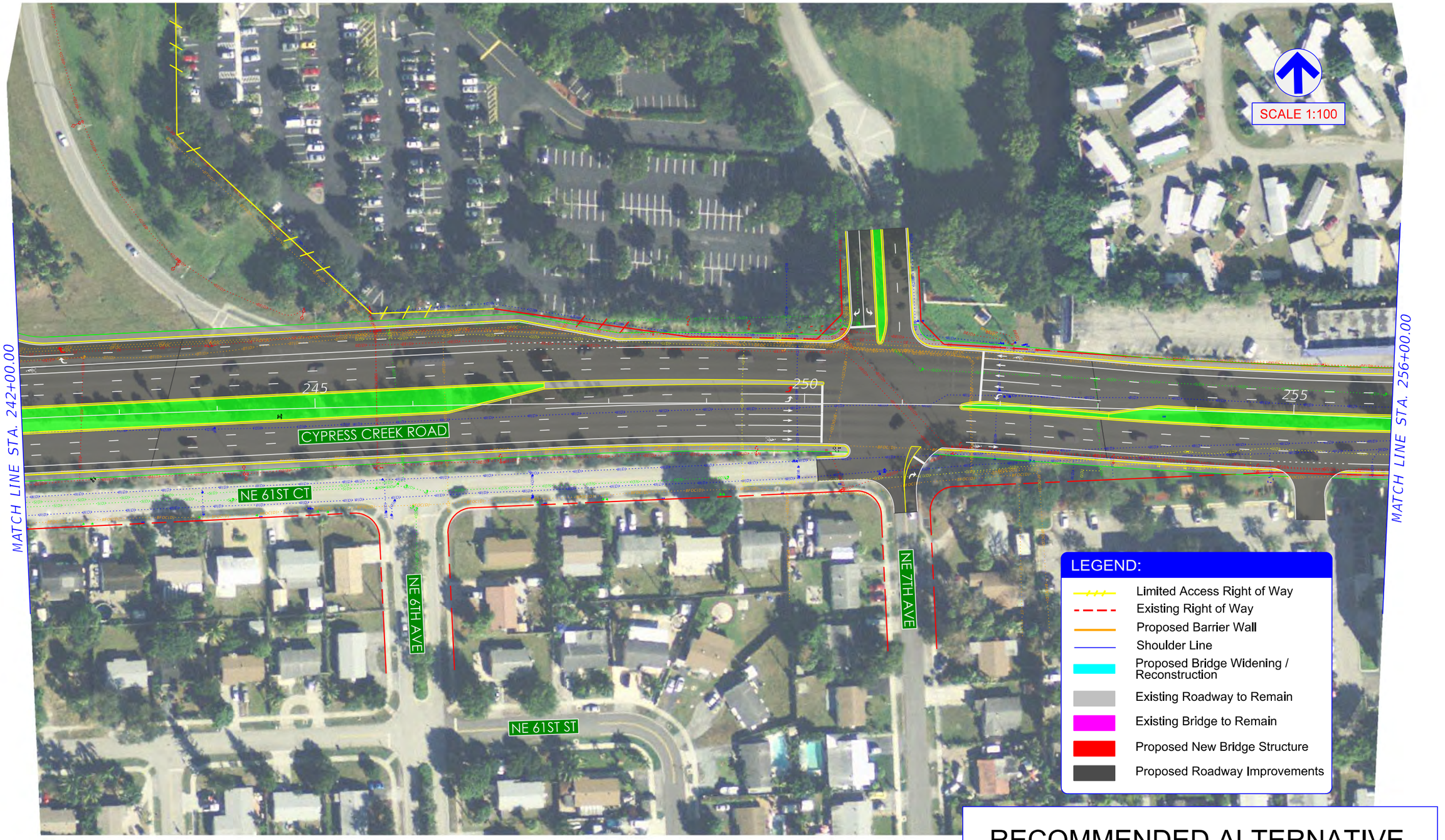
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BROWARD	435808-1

PRELIMINARY
CONCEPT PLANS

SHEET NO.
19



RECOMMENDED ALTERNATIVE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SILVIA M. BELTRE, P.E.
P.E. LICENSE NUMBER 51295
STANTEC CONSULTING SERVICES, INC.
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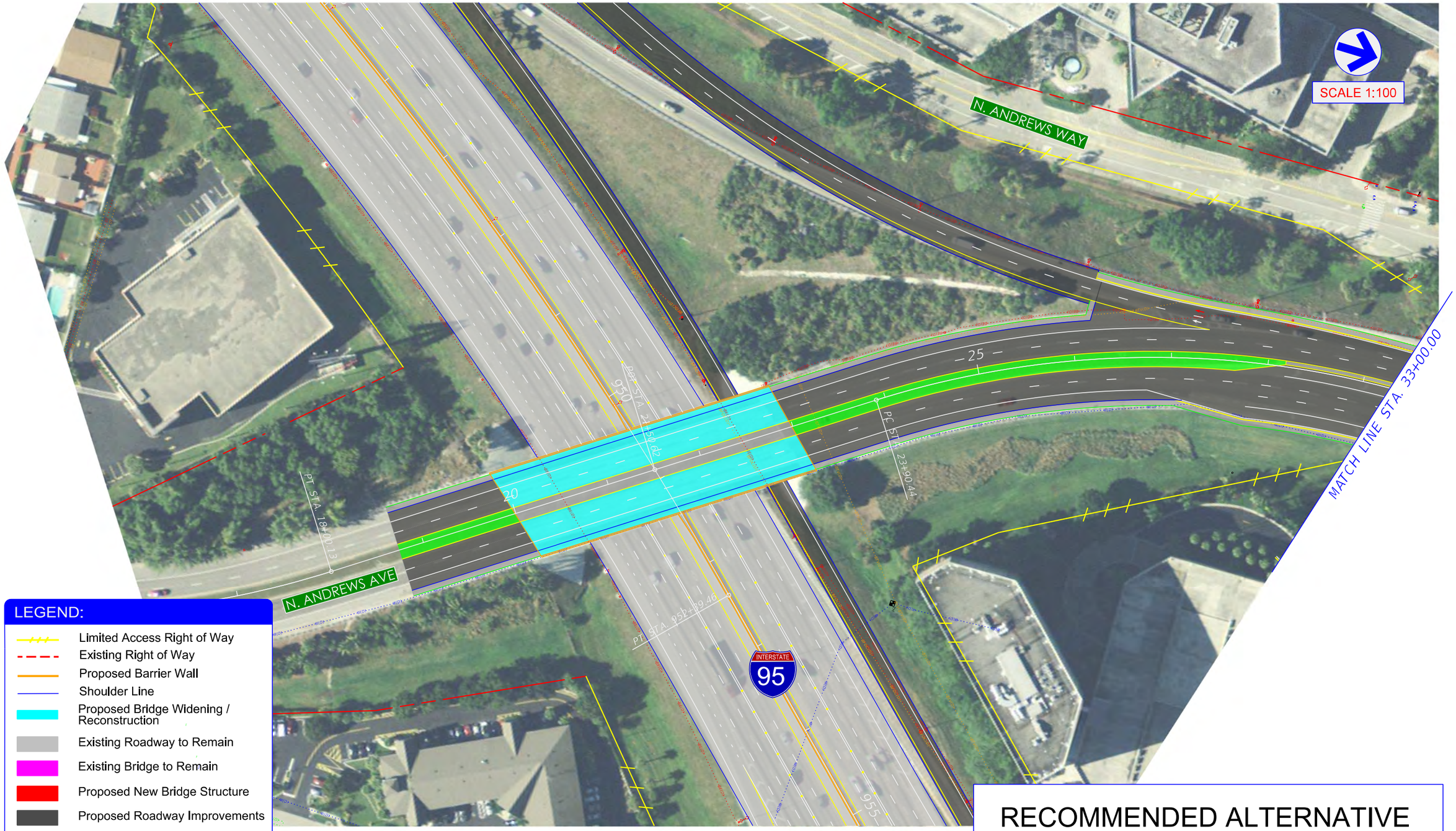
CERTIFICATE OF AUTHORIZATION 00027013

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BROWARD	435808-1

PRELIMINARY
CONCEPT PLANS

SHEET NO.
20



LEGEND:

- Limited Access Right of Way
- Existing Right of Way
- Proposed Barrier Wall
- Shoulder Line
- Proposed Bridge Widening / Reconstruction
- Existing Roadway to Remain
- Existing Bridge to Remain
- Proposed New Bridge Structure
- Proposed Roadway Improvements

RECOMMENDED ALTERNATIVE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SILVIA M. BELTRE, P.E.
P.E. LICENSE NUMBER 51295
STANTEC CONSULTING SERVICES, INC.
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CORAL GABLES, FLORIDA 33134
CERTIFICATE OF AUTHORIZATION 00027013

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BROWARD	435808-1

PRELIMINARY
CONCEPT PLANS

SHEET NO.
21

MATCH LINE STA. 212+10.50

MATCH LINE STA. 33+00.00

N. ANDREWS WAY

N. ANDREWS AVE

N. ANDREWS AVE

CYPRESS CREEK ROAD

CYPRESS CREEK ROAD

SCALE 1:100

LEGEND:

- Limited Access Right of Way
- Existing Right of Way
- Proposed Barrier Wall
- Shoulder Line
- Proposed Bridge Widening / Reconstruction
- Existing Roadway to Remain
- Existing Bridge to Remain
- Proposed New Bridge Structure
- Proposed Roadway Improvements

RECOMMENDED ALTERNATIVE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SILVIA M. BELTRE, P.E.
P.E. LICENSE NUMBER 51295
STANTEC CONSULTING SERVICES, INC.
901 PONCE DE LEON BLVD. SUITE 900
CORAL GABLES, FLORIDA 33134
CERTIFICATE OF AUTHORIZATION 00027013

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 22

LEGEND:

- Limited Access Right of Way
- Existing Right of Way
- Proposed Barrier Wall
- Shoulder Line
- Proposed Bridge Widening / Reconstruction
- Existing Roadway to Remain
- Existing Bridge to Remain
- Proposed New Bridge Structure
- Proposed Roadway Improvements

RECOMMENDED ALTERNATIVE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SILVIA M. BELTRE, P.E.
P.E. LICENSE NUMBER 51295
STANTEC CONSULTING SERVICES, INC.
901 PONCE DE LEON BLVD. SUITE 900
CORAL GABLES, FLORIDA 33134
CERTIFICATE OF AUTHORIZATION 00027013

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

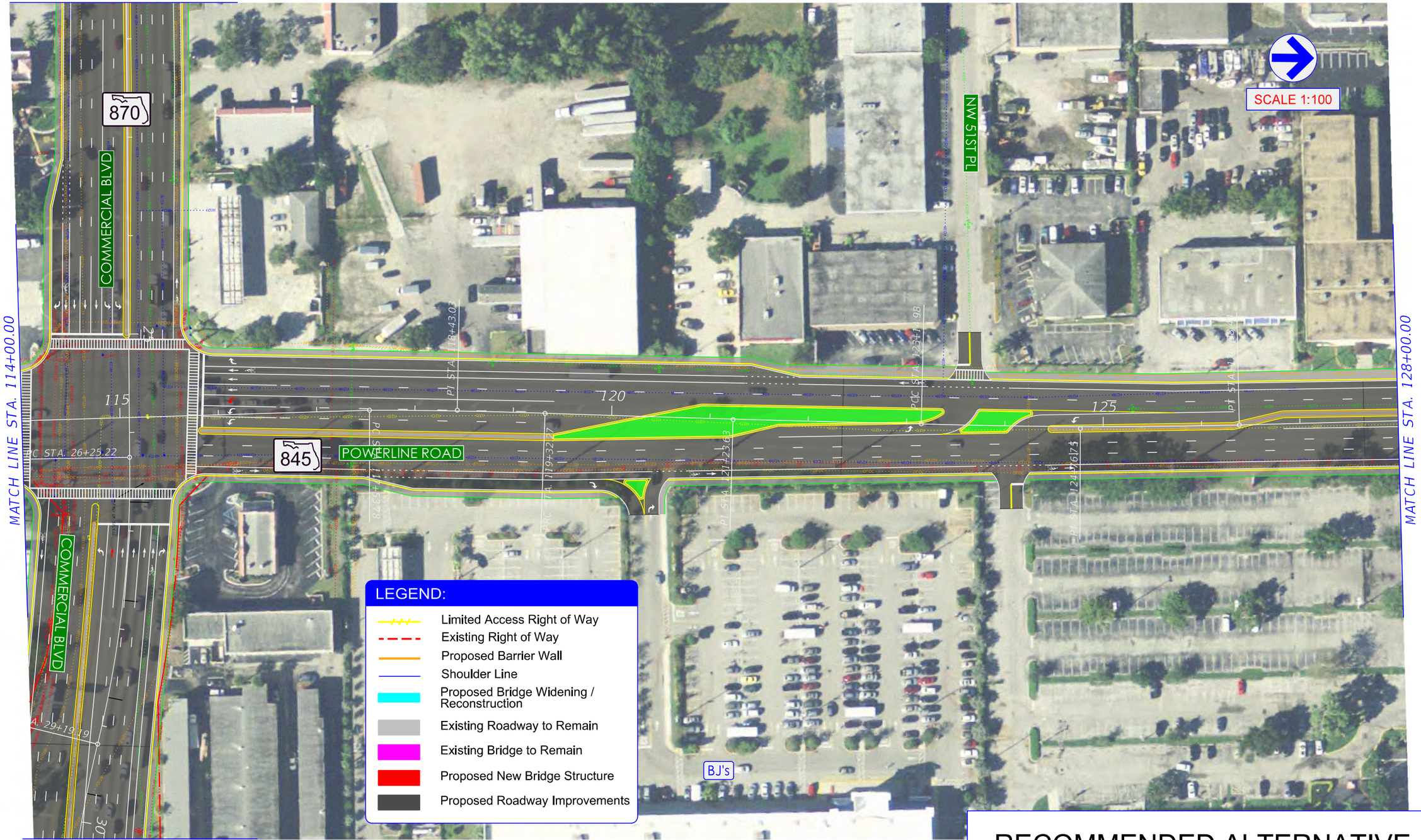
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 845	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 23

dachang 4/2/2018 4:26:39 PM V:\2158\active\215810476\Engineering\Alternatives Analysis\Concept Plans\Recommended

MATCH LINE STA. 21+63.12



MATCH LINE STA. 30+17.48

RECOMMENDED ALTERNATIVE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SILVIA M. BELTRE, P.E.
P.E. LICENSE NUMBER 51295
STANTEC CONSULTING SERVICES, INC.
901 PONCE DE LEON BLVD. SUITE 900
CORAL GABLES, FLORIDA 33134
CERTIFICATE OF AUTHORIZATION 00027013

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 845	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 24

RECOMMENDED ALTERNATIVE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SILVIA M. BELTRE, P.E.
P.E. LICENSE NUMBER 51295
STANTEC CONSULTING SERVICES, INC.
901 PONCE DE LEON BLVD. SUITE 900
CORAL GABLES, FLORIDA 33134
CERTIFICATE OF AUTHORIZATION 00027013

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

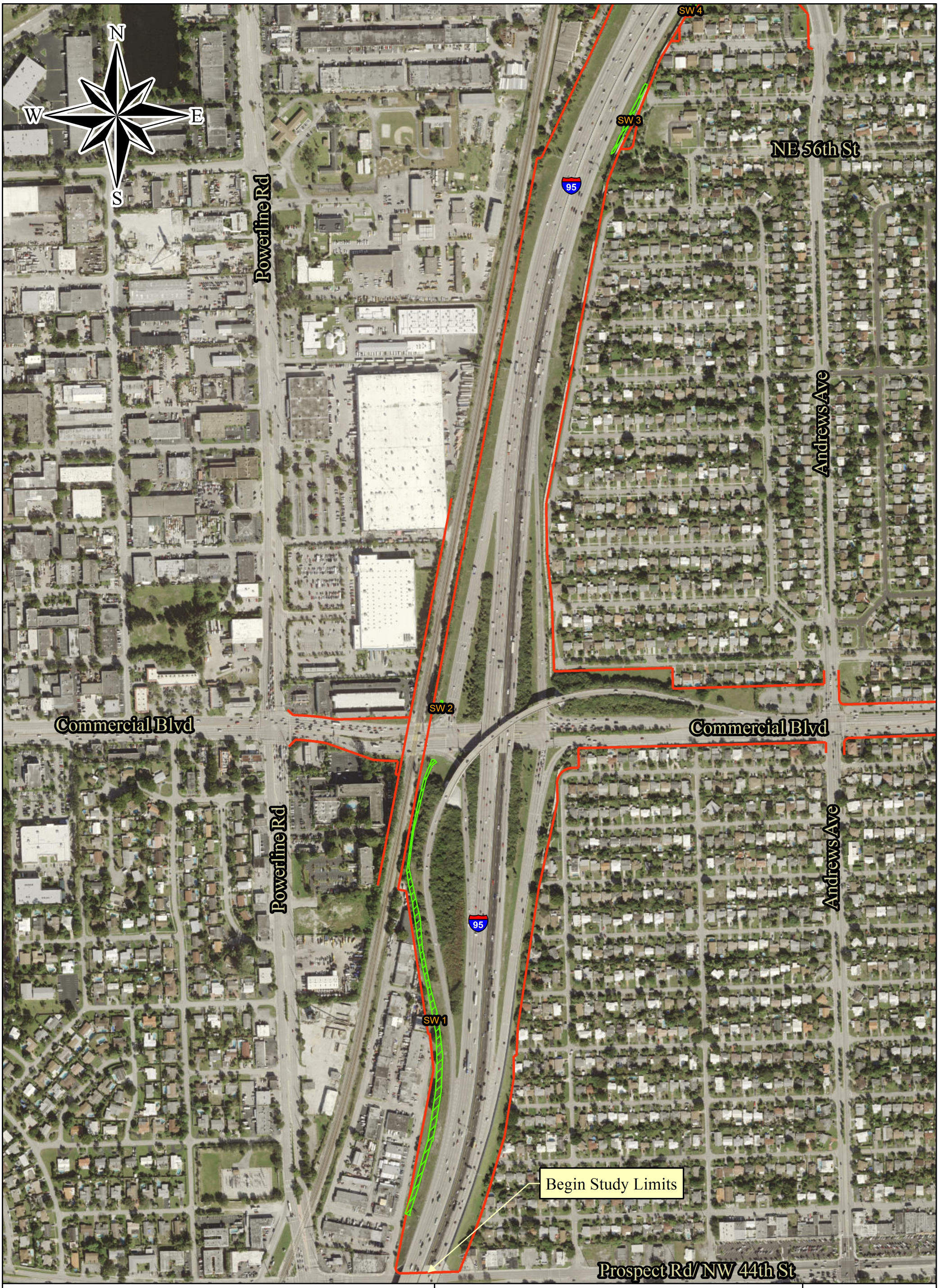
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 845	BROWARD	435808-1

PRELIMINARY CONCEPT PLANS

SHEET NO. 25

APPENDIX B

Jurisdictional Features Location Maps



Legend

Right-of-Way

Jurisdictional Features

Other Surface Waters

Stormwater Swale Containing Hydrophytic Vegetation

Wetland

Feet

0 335 670 1,340

Jurisdictional Features Location Map

SR 9/I-95 PD&E Study
FPID Number(s): 435808-1-22-02
ETDM Number: 14222
Broward County, FL

Legend

- Right-of-Way
- **Jurisdictional Features**
- Other Surface Waters
- Stormwater Swale Containing Hydrophytic Vegetation
- Wetland

0 335 670 1,340 Feet

Jurisdictional Features Location Map

SR 9/I-95 PD&E Study
FPID Number(s): 435808-1-22-02
ETDM Number: 14222
Broward County, FL

APPENDIX C

Photograph Log

September 2017 Photographic Log

Picture 1. Representative photograph of a stormwater swale with hydrophytic vegetation within the study area.

Picture 2. The photograph shows another representative stormwater swale with hydrophytic vegetation within the project area.

Picture 3. Stormwater Swale No. 10 with forested wetland features along with hydrophytic vegetation.

Picture 4. The photograph documents the other surface water feature **OSW 2**, looking west.

Picture 5. The photograph shows forested wetland 1 **(W-1**) looking west from I-95.

Pictures 6-7. The photographs show the signs outside Wetland No. 1 that document that this area is a State governed aquatic preserve: The Reflections Plat Wetland Restoration Area.

Picture 8. The photograph shows the Cypress Creek(C-14) Canal looking west from I-95.

APPENDIX D

UMAM Data Form – W-1

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
I-95 (SR 9) PD&E		W-1

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
630 (Wetland Forested Mixed)	PFO3C	Impact	1.76 Acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
		N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Wetland W-1 is located in the northern end of the I-95 assessment area which traverses a densely populated, highly developed portion of Broward County. This wetland is an isolated system just south of the Pompano / Cypres Creek Canal (C-14). The wetland receives all water from culverts or other manmade ditch / swales systems and there is very little treatment prior to the flows being discharged into this wetland. There are no other natural areas contiguous with this wetland and very little buffer habitat was left when the adoing sites were developed.

Assessment area description

This 1.76 acre assessment area is a forested wetland located along the west side of the I-95 highway just north of Cypress Creek Road interchange and immediately south of the Pompano/Cypress Creek Canal (C-14). The road shoulder slopes abruptly towards the natural wetland grade leaving a very narrow, managed grassy swale adjacent to the wetland. Vegetation along the edge of the assessment area consisted of a mixture of native and non-native herbaceous and woody vegetation including pond apple (Annona glabra), Brazilian-pepper (Schinus terebinthifolius), bishopwood (Bischofia javanica), Australian umbrella tree (Schefflera actinophylla), pond-cypress (Taxodium ascendens), red maple (Acer rubrum), giant leather fern (Acrostichum danaeifolium), southern shield fern (Thelypteris kunthii) , cattail (Typha sp.), Mexican primrosewillow (Ludwigiaoctovalvis), bulltongue arrowhead (Sagittaria lancifolia), barnyardgrass (Echinochloa crus-galli), and common reed (Phragmites australis). Exotic coverage varies across the site, but is estimated to be approximately 35-45% of the canopy, and significantly higher along the perimeter due to the edge effect. Inundated soils were present throughout the entire area, reaching up to two feet in depth. Hydrology is influenced by both groundwater fluctuations and stormwater runoff input from the road. The site provides marginal quality habitat for wetland-dependent species due to the heavy exotic infestation as well as its close proximity to the highway.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
surrounded by residential and commercial development on three sides, major interstate highway on 4th side, no adjoining natural habitats	Not unique.

Functions	Mitigation for previous permit/other historic use
Marginal wildlife habitat functions, stormwater retention, sediment stabilization, nutrient removal, and ground-water/aquifer recharge	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Anticipated wildlife utilization includes typical macroinvertebrates, fish, amphibians and reptiles as well as several species of wading birds and small mammals and rodents that could breed or forage in the wetland. Minimal open water would limit wading bird forage opportunities.	Many species of geographically abundant wading birds could potentially roost or nest in the canopy in this wetland. However, the lack of open water severely limits the potential for forage by these wading bird species. Due to the poor quality of the habitat and surrounding developments, minimal if any use by listed species is expected.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

No signs of use by wildlife or wading birds observed during this inspection. Density of tree cover and lack of open water would preclude wading birds from foraging effectively. Could potentially be used as roost / nest habitat by wading birds, but exotic vegetation limits that use as well.

Additional relevant factors:

The wetland is adjacent to I-95, a heavily used highway and one of the most important transportation thoroughfares in South Florida. All runoff entering the wetland gets minimal treatment prior to being discharged into the wetland. In addition, traffic noise and light pollution due to the close proximity of the interstate and surrounding developments further degrade the habitat.

Assessment conducted by:	Assessment date(s):
George Burke & Craig Schmittler	8-Nov-16

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
I-95 (SR 9) PD&E		W-1
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact	George Burke & Craig Schmittler	8-Nov-16

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	o pres or curre nt	with	The W-1 Assessment Area area consists of an isolated wetland surrounded by development to the north, west and south and the I-95 highway to the east. The surrounding land uses create a significant landscape barriers impeding wildlife movement to and from these wetlands as well as providing limited habitat/landscape support for wetland dependent species. The wetland does not provide any significant downstream benefits to fish and wildlife as most flows enter the wetland from man-made facilities and enter through drainage features to the west.
	4	0	
.500(6)(b)Water Environment (n/a for uplands)	o pres or curre nt	with	The hydrology for this wetland is nearly 100% reliant upon outflows from surface water management facilities and existing ditches or swales. The nearby Pompano Canal helps keep surface water levels high due to control structues in the canal that maintain water levels to sustain nearby wetland systems such as this one. There is very little buffer habitat so all flows entering the wetland are untreated or have limited treatment. The system is heavily infested with nuisance and exotic vegetation in addition to the poor water wuality of all inflows.
	4	0	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	o pres or curre nt	with	Vegetation within the assessment area consisted of a mixture of native trees such as pond apple, cypress and red maple, as well as non-native, invasive exotics such as Brazilian pepper, bishopwood , Australian umbrella tree. Groundcover species present included giant leather fern (Acrostichum danaefolium), southern shield fern (Thelyoteris kunthii), cattails, Mexican primrose willow (Salix caroliniana), bulltongue arrowhead (Sagittaria lancifolia), barnyardgrass (Echinochloa crusgalli), and common reed (Phragmites australis). Exotic coverage varies across the site, but is estimated to be approximately 45-65% of the canopy, and significantly higher along the perimeter. As the exotic and undesirable species mature they are out-competing the antive species and lowering the overall habitat value and function as a wetland.
	4	0	

Score = sum of above scores/30 (if uplands, divide by 20)	curre nt	with
	w/o pres	
	0.4	0

Delta = [with-current]

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

APPENDIX E

USACE Permit No. SAJ-2014-01584

DEPARTMENT OF THE ARMY PERMIT

Permittee: Florida Department of Transportation District 4
Attention: James Poole
3400 West Commercial Blvd
Ft. Lauderdale, Florida 33309

Permit No: SAJ-2014-01584(SP-GGL)

Issuing Office: U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below:

Project Description: The authorization includes filling 26.13 acres of waters of the United States, including 24.98 acres of swales, 0.14 acres of mangroves, 0.08 acres of tape grass, and 0.93 acres of open water in order to improve I-95 by creating additional travel lanes and improving the existing drainage system. Impacts requiring compensatory mitigation include the following: 0.14 acres of mangroves, 0.08 acres of tape grass, and 0.71 acres of forested wetland swales. Compensatory mitigation requirements include mangrove restoration at West Lake Park, and purchasing 0.31 federal herbaceous mitigation bank credits from Loxahatchee Mitigation Bank. The FDOT project number 433108-4.

The work described above is to be completed in accordance with the 32 pages of drawings [and 4 attachments] affixed at the end of this permit instrument.

Project Location: The name of the project is State Road 9/Interstate-95 (I-95) Express Lanes Phase 3A, and it is located in jurisdictional waters including estuarine and palustrine wetlands along Interstate 95 from south of Davie Boulevard to north of SW 10th Street. The project is approximately 14.7 miles in length and within Broward County, Florida. (Sections 4,9,16,17 Township 50S Range 42E; Sections 2,10,11,15,21,22,28,33 Township 49S Range 42E; and Sections 34,35 Township 48S Range 42E). The C-14 canal is part of the Central and Southern Florida Flood control facility.

Directions to site: Directions to the site are as follows: From I-95 in Broward County. Find the SW 10th Street Interchange and proceed south until reaching Davie Boulevard.

Latitude & Longitude: Latitude 26.173829°
Longitude -80.156438°

Permit Conditions

General Conditions:

1. The time limit for completing the work authorized ends on **April 2, 2020**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature and the mailing address of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. Fill Material: The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete block with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act. The placement of loose sediments, fill or dredged material occurring other than as designed for the project within any aquatic resource is specifically prohibited by this authorization.

2. Permittee Responsible Compensatory Mitigation:

a. In order to fully offset the adverse effects associated with the authorized impacts to 0.14 acres of mangroves, and 0.08 acres of tape grass with an anticipated functional loss of 0.096 UMAM units, the permittee shall restore approximately 0.177 acres of estuarine mangrove at West Lake Park. The restoration shall occur at areas #19 and #42, and has been previously constructed. The restored wetland mitigation areas shall be preserved as wetlands and protected in perpetuity. All information regarding the mitigation shall be sent to: U.S. Army Corps of Engineers, Palm Beach Gardens Enforcement Section, at: CESAJ-complyDocs@usace.army.mil. All correspondences shall reference the following file number: SAJ-2014-01584(SP-GGL).

b. The compensatory mitigation at West Lake Park shall be monitored in accordance with the attached West Lake Park Segment 2 Mitigation Plan. The site shall be maintained in perpetuity as a preserve area.

3. Compensatory Mitigation: In order to fully offset the adverse effects associated with filling 0.71 acres of palustrine non-herbaceous wetland swales, the permittee shall purchase 0.31 federal herbaceous mitigation bank credits from Loxahatchee Mitigation Bank (SAJ-1997-07816). The credits shall be purchased prior to construction commencement. All information regarding the mitigation shall be sent to: U.S. Army Corps of Engineers, Palm Beach Gardens Enforcement Section, at: CESAJ-complyDocs@usace.army.mil. All correspondences shall reference the following file number: SAJ-2014-01584(SP-GGL).

4. Erosion Control: Prior to the initiation of any work authorized by this permit, the Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material outside the work area. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas shall be stabilized using sod, degradable mats, barriers, or a combination of similar stabilizing materials to prevent erosion. The erosion control measures shall remain in place and be maintained until all authorized work has been completed and the site has been stabilized.

5. Turbidity Barriers: Prior to the initiation of any of the work authorized by this permit the Permittee shall install floating turbidity barriers with weighted skirts that extend to within one foot of the bottom around all work areas that are in, or adjacent to, surface waters. The turbidity barriers shall remain in place and be maintained until the authorized work has been completed and all erodible materials have been stabilized.

6. As-Built Certification: Within 60 days of completion of the work authorized by this permit, the Permittee shall submit as-built drawings of the authorized work and a completed "As-Built Certification By Professional Engineer" form to the Corps. Mail the completed form to the Regulatory Division, Enforcement Section, at: CESAJ-complyDocs@usace.army.mil. The as-built drawings shall be signed and sealed by a registered professional engineer and include the following:

a. A plan view drawing of the location of the authorized work footprint, as shown on the permit drawings, with transparent overlay of the work as constructed in the same scale as the permit drawings on 8½-inch by 11-inch sheets. The plan view drawing should show all "earth disturbance," including aquatic resource impacts and water management structures.

b. A list of any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the attached "As-Built Certification By Professional Engineer" form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. Please note that the depiction and/or description of any deviations on the drawings and/or "As-Built Certification By Professional Engineer" form does not constitute approval of any deviations by the Corps.

c. Include the Department of the Army permit number on all sheets submitted.

7. Endangered Species: The Permittee shall comply with the *Standard Protection Measures for the Eastern Indigo Snake* provided in this permit. All gopher tortoise burrows, active or inactive, will be evacuated prior to site manipulation in the vicinity of the burrows. If an indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity.

8. Endangered Species: The permittee must inspect all holes, cavities, and snake refugia other than gopher tortoise burrows each morning before planned site manipulation of a particular area, and, if occupied by an indigo snake, no work will commence until the snake has vacated the vicinity of proposed work. If excavating potentially occupied burrows, active or inactive, individuals must first obtain state authorization via a FWC Authorized Gopher Tortoise Agent permit. The excavation method selected should also minimize the potential for injury of an indigo snake.

Applicants should follow the excavation guidance provided within the most current Gopher Tortoise Permitting Guidelines found at: http://myfwc.com/gophertortoise

9. Endangered Species-Manatee: The Permittee shall comply with the "Standard Manatee Conditions for In-Water Work – 2011"

10. **Endangered Species-Sawfish and Swimming Sea Turtles:** The Permittee shall comply with National Marine Fisheries Service's "Sea Turtle and Smalltooth Sawfish Construction Conditions" dated March 23, 2006.

11. Wetland Avoidance: The Permittee shall conduct a pre-construction meeting with all in-house staff, field crews, contractors, subcontractors, and all persons involved in the construction prior to commencement in order to notify responsible parties of the conditions of this permit. The Permittee shall inform staff members and contractors of the construction area boundaries as shown on the attached permit drawings. Copies of the permit and specific conditions shall be available at the construction site.

12. Cultural Resources/Historic Properties: The historic North Woodlawn Cemetery (8BD4879) is located immediately adjacent to the Right-of-Way, to avoid impacts to the Cemetery and any unmarked burials, no utility relocation shall occur within the area of the Cemetery until prior written authorization is provided by the State Historic Preservation Officer (SHPO). Additionally, no staging in the shoulder area adjacent to the Cemetery, and archaeological monitoring will occur during all subsurface activities conducted within 250 feet of the Cemetery.

13. Cultural Resources/Historic Properties: No structure or work shall adversely affect impact or disturb properties listed in the National Register of Historic Places (NRHP) or those eligible for inclusion in the NRHP.

b. If during the ground disturbing activities and construction work within the permit area, there are archaeological/cultural materials encountered which were not the subject of a previous cultural resources assessment survey (and which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other physical remains that could be associated with Native American cultures or early colonial or American settlement), the Permittee shall immediately stop all work in the vicinity and notify the Corps. The Corps shall then notify the Florida SHPO and the appropriate Tribal Historic Preservation Officer(s) (THPO(s)) to assess the significance of the discovery and devise appropriate actions.

c. A cultural resources assessment may be required of the permit area, if deemed necessary by the SHPO, THPO(s), or Corps, in accordance with 36 CFR 800 or 33 CFR 325, Appendix C (5). Based, on the circumstances of the discovery, equity to all parties,

and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume on non-federal lands without written authorization from the SHPO and the Corps.

d. In the unlikely event that unmarked human remains are identified on non-federal lands, they will be treated in accordance with Section 872.05 Florida Statutes. All work in the vicinity shall immediately cease and the Permittee shall immediately notify the medical examiner, Corps, and State Archeologist. The Corps shall then notify the appropriate SHPO and THPO(s). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume without written authorization from the State Archeologist, SHPO and the Corps.

e. In the unlikely event that human remains are encountered on federal or tribal lands, or in situations where Archaeological Resources Protection Act of 1979, or Native American Graves Protection Repatriation Act of 1990 applies, all work in the vicinity shall immediately cease and the Permittee immediately notify the Corps. The Corps shall then notify the appropriate THPO(s) and SHPO. Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. After such notification, project activities on federal lands shall not resume without written authorization from the Corps, and/or appropriate THPO(s), SHPO, and federal manager. After such notification, project activities on tribal lands shall not resume without written authorization from the appropriate THPO(s) and the Corps.

14. Permit On-Site: The Permittee shall ensure that all contractors, sub-contractors, and entities associated with the implementation of the project review, understand, and comply with the approved plans and special conditions made part of this permit. The Permittee shall inform all parties associated with the activity of the construction area boundaries and any adjacent wetland areas to be avoided. Complete copies of the permit and approved plans shall be available at the construction site at all times. Failure to comply with the approved plans and permit special conditions may subject the Permittee to enforcement action. Prior to construction commencement, the permittee shall have a pre-construction meeting with all project construction personnel to review this permit and the special conditions, and the requirements to avoid offsite wetlands.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(**X**) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(**X**) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

_____ 03/02/2015
(PERMITTEE) (DATE)

Binod Basnet, Drainage Engineer, FDOT District 4
(PERMITTEE NAME-PRINTED)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

_____ _____
(DISTRICT ENGINEER) (DATE)
for: Alan M. Dodd
Colonel, U.S. Army
District Commander

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ _____
(TRANSFEREE-SIGNATURE) (DATE)

_____
(NAME-PRINTED)

_____
(ADDRESS)

_____
(CITY, STATE, AND ZIP CODE)

Attachments to Department of the Army Permit Number SAJ-2014-01584(SP-GGL)

1. PERMIT DRAWINGS: 21 PAGES

2. WATER QUALITY CERTIFICATION: Specific Conditions of the water quality permit/certification in accordance with General Condition number 5 on page 2 of this DA permit. 8 pages.

3 As-Built Certification form, 2 page

4. STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE- 3 pages

5. STANDARD PROTECTION MEASURES FOR THE WEST INDIAN MANATEE

6. STANDARD PROTECTION MEASURES FOR THE SWIMMING SEA TURTLES AND SMALLTOOTH SAWFISH

7. WEST LAKE PARK SEGMENT 2 MITIGATION PLAN

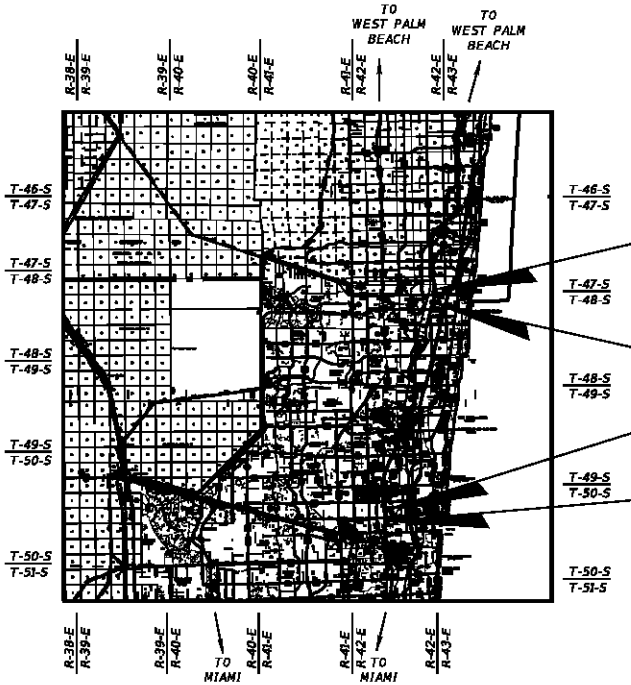
STATE OF FLORIDA

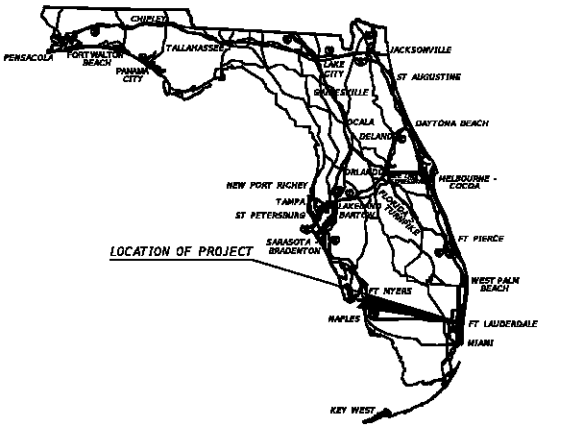
DEPARTMENT OF TRANSPORTATION

USACE DREDGE AND FILL PERMIT SKETCHES

FINANCIAL PROJECT ID 433108-4-52-01
BROWARD COUNTY (86070)
STATE ROAD NO. 9 (I-95)
I-95 EXPRESS PHASE 3A

INDEX OF PERMIT SKETCHES





SKETCHES PREPARED BY:

STANTEC CONSULTING SERVICES, INC.
901 PONCE DE LEON BOULEVARD - SUITE 900
CORAL GABLES, FL 33134-3070
TEL: (305) 445-2900
FAX: (305) 445-3367
VENDOR NO. 650039493001
FL CERTIFICATE NO. C-9723

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

NOTE:
THESE PERMIT SKETCHES HAVE BEEN PREPARED FOR THE SPECIFIC USE BY THE USACE FOR ILLUSTRATION OF THE PROPOSED IMPACTS TO WETLANDS AND OTHER SURFACE WATERS.

PERMIT SKETCH
ENGINEER OF RECORD: ALEYMA DE LA CRUZ, P.E.

P.E. NO.: 65500

FISCAL YEAR	SHEET NO.
15	1

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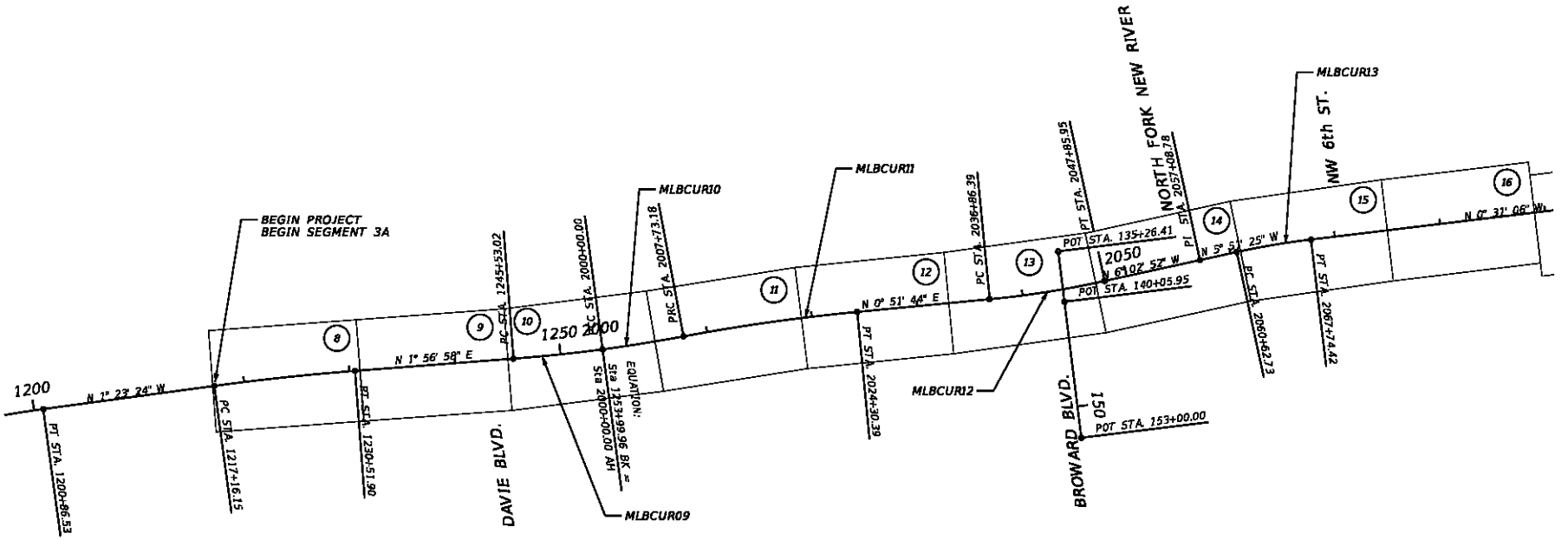

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

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

PROJECT LAYOUT

SHEET NO. 2

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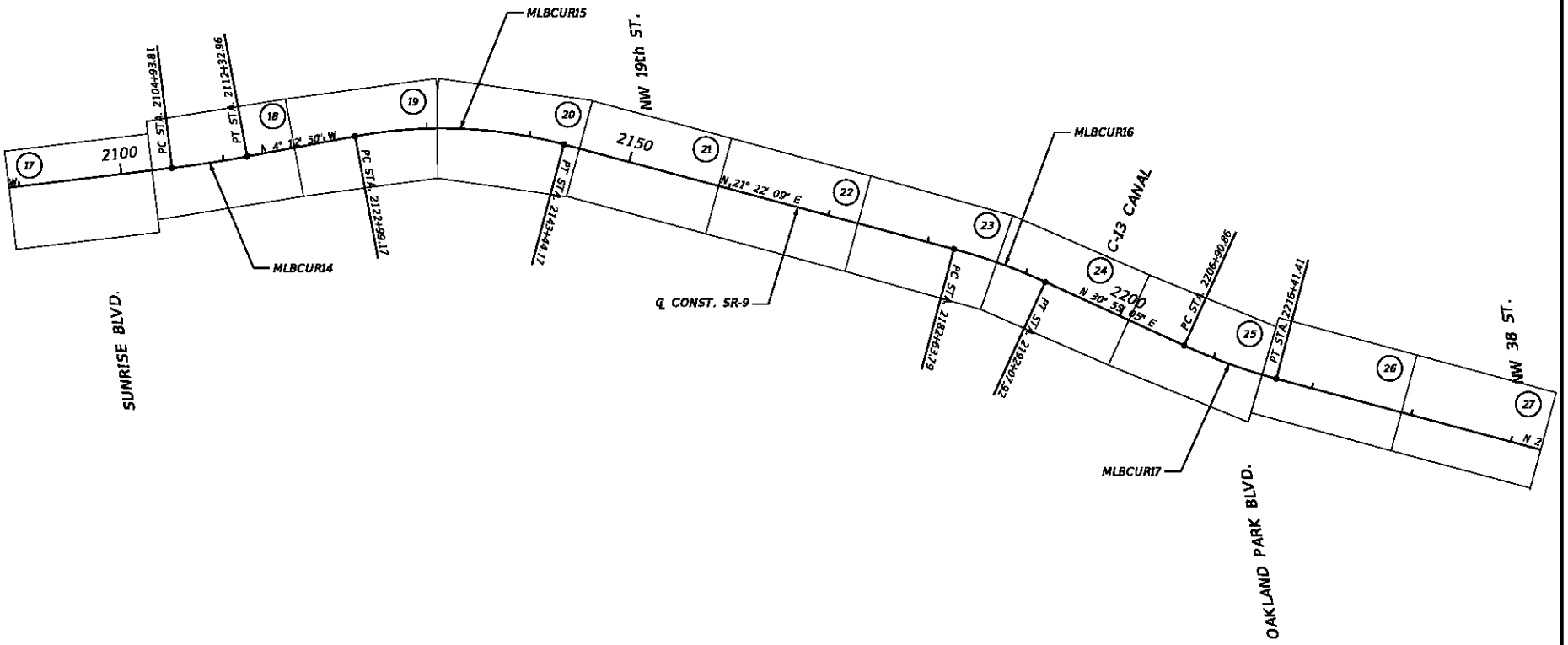

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901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

PROJECT LAYOUT

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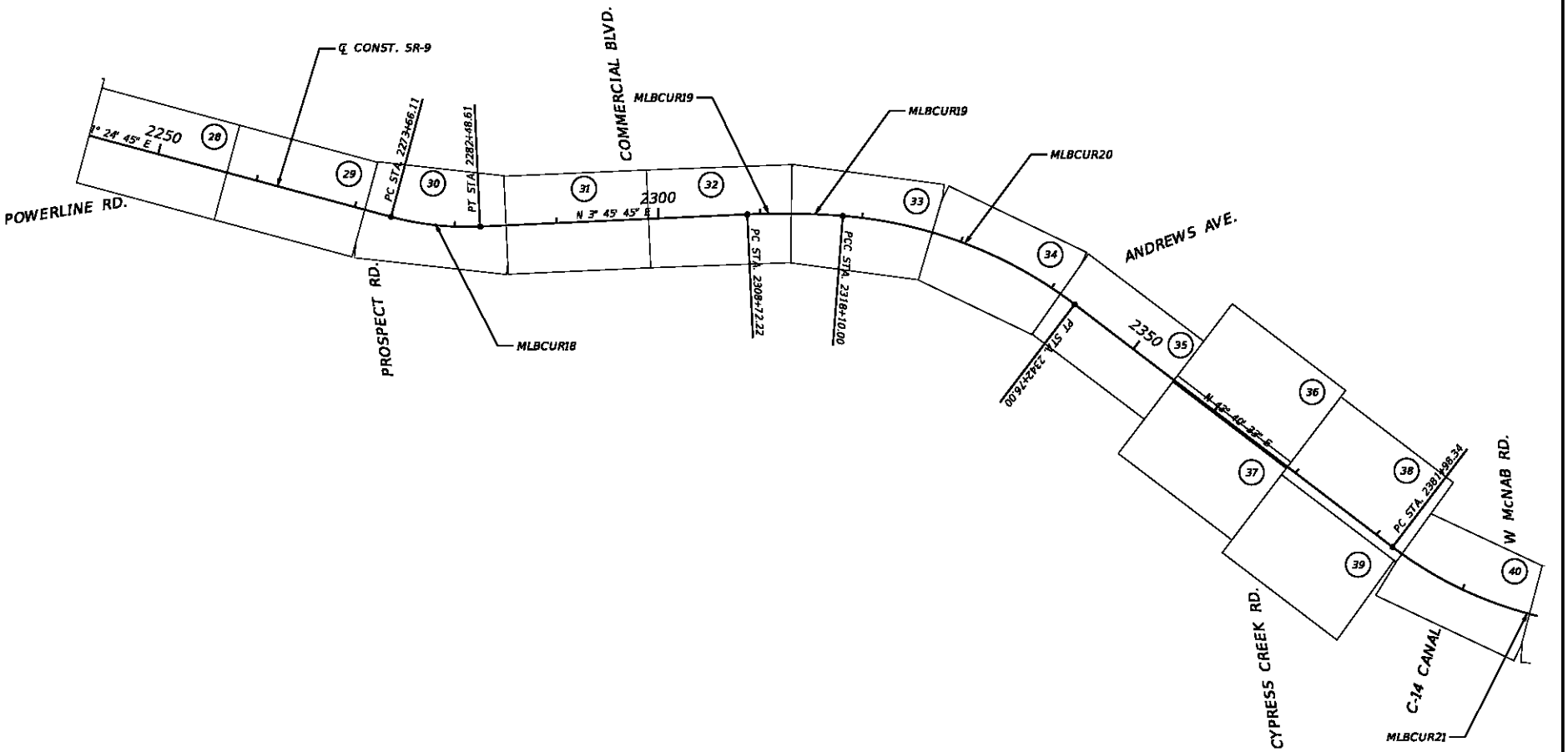

REVISIONS			
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

PROJECT LAYOUT

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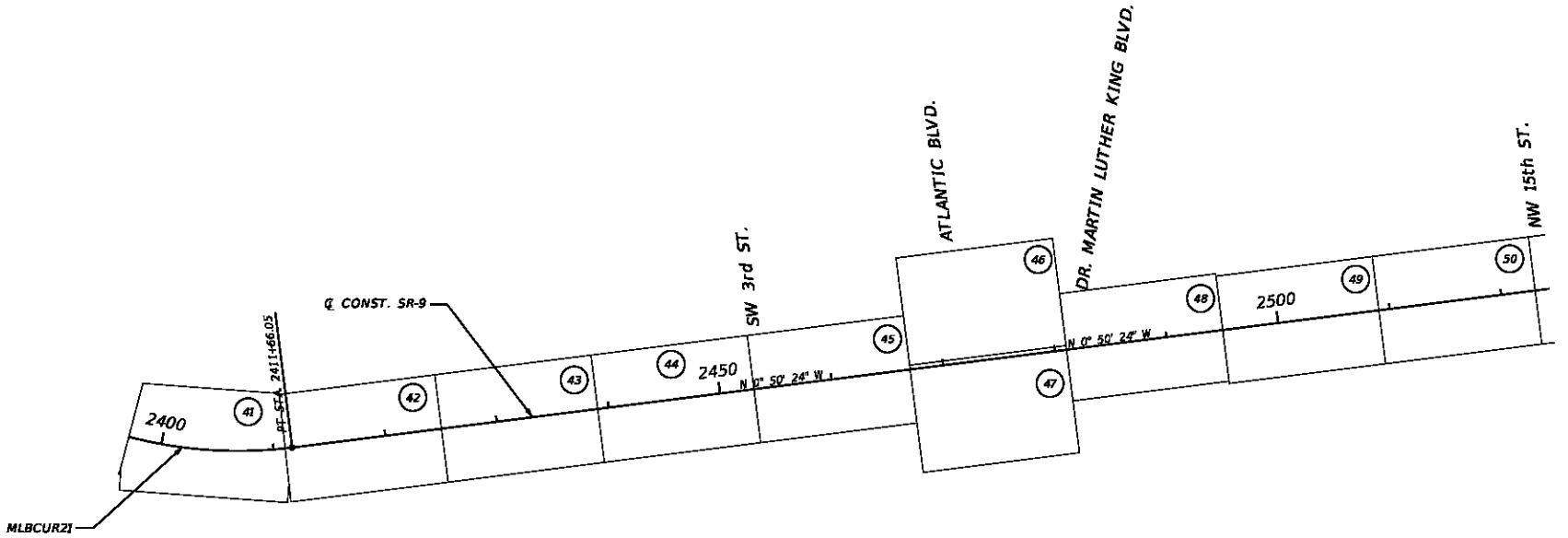

REVISIONS			
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CORAL GABLES, FL 33134
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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

PROJECT LAYOUT

SHEET NO. 5

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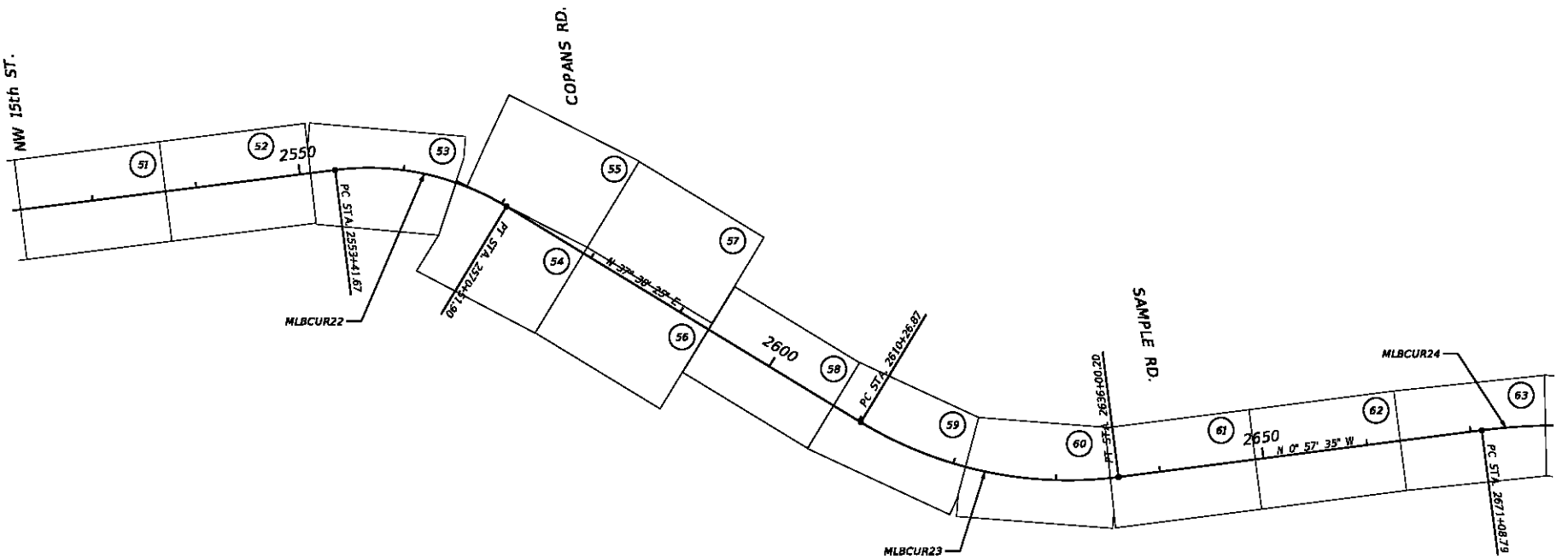

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

PROJECT LAYOUT

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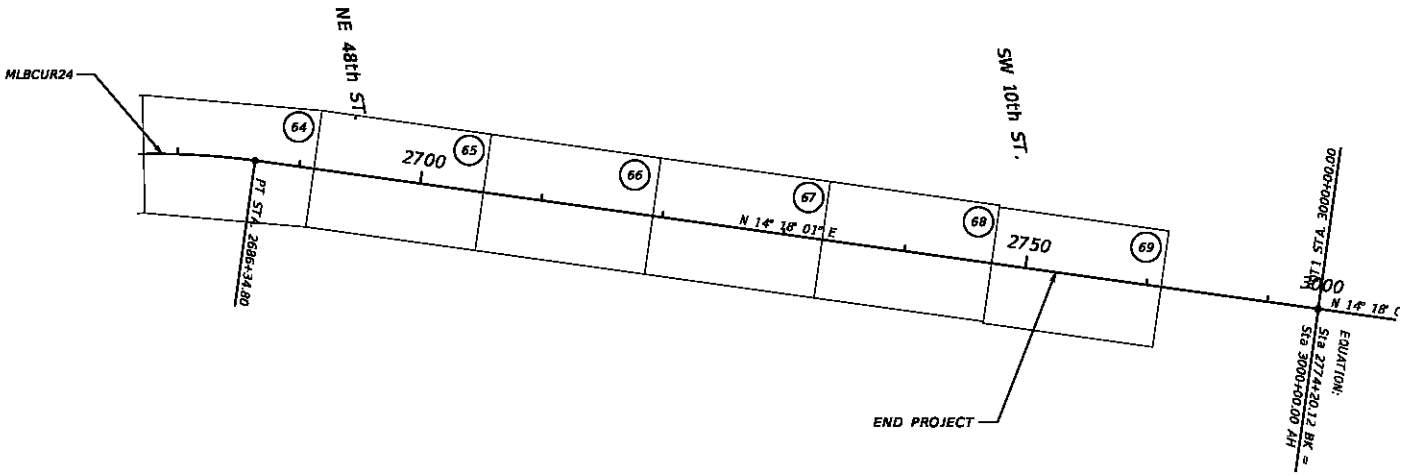

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STANTEC
901 PONCE DE LEON BLVD
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ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

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PROJECT LAYOUT

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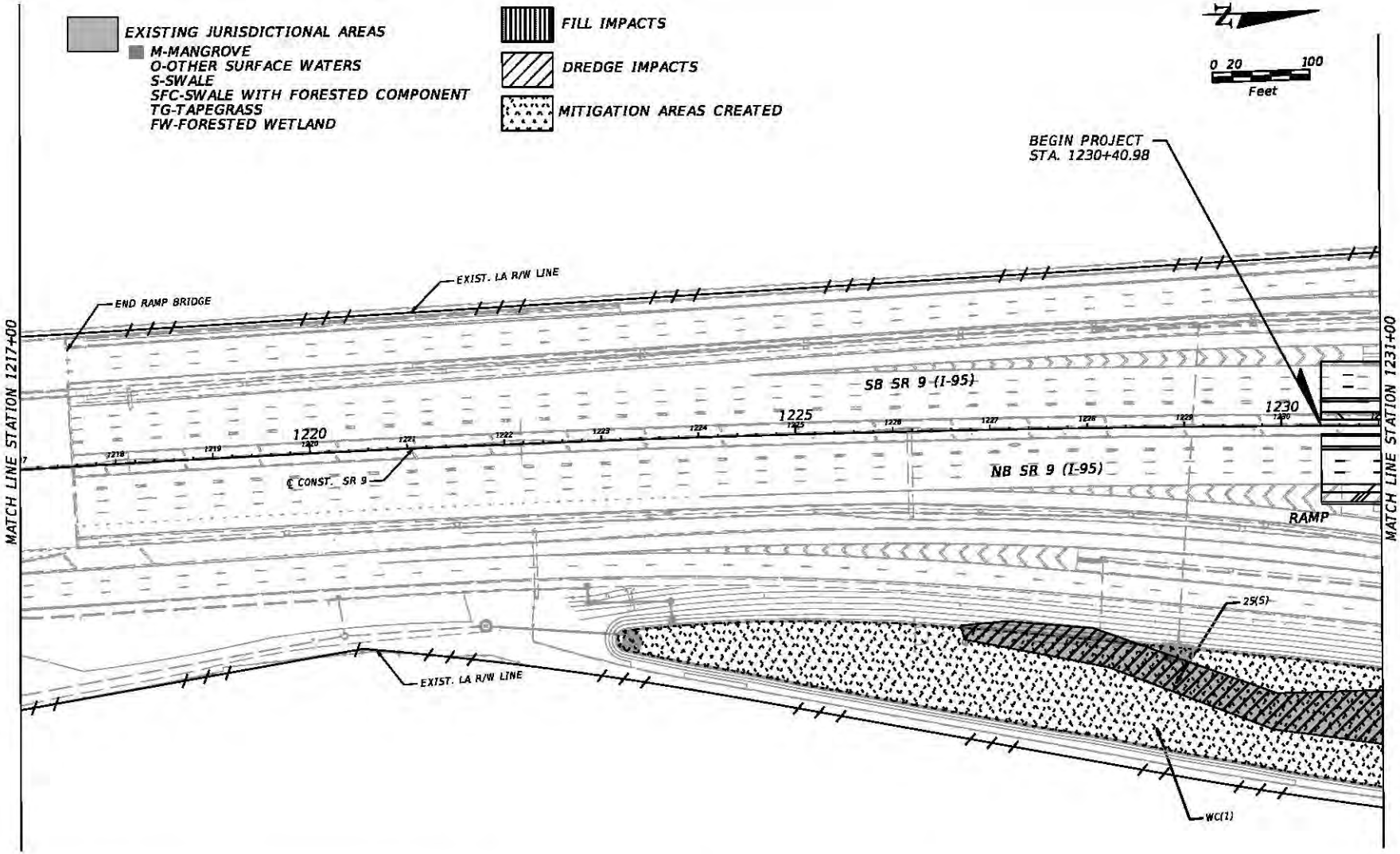

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
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CORAL GABLES, FL 33134
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VENDOR NO. 650039493001
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ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 8

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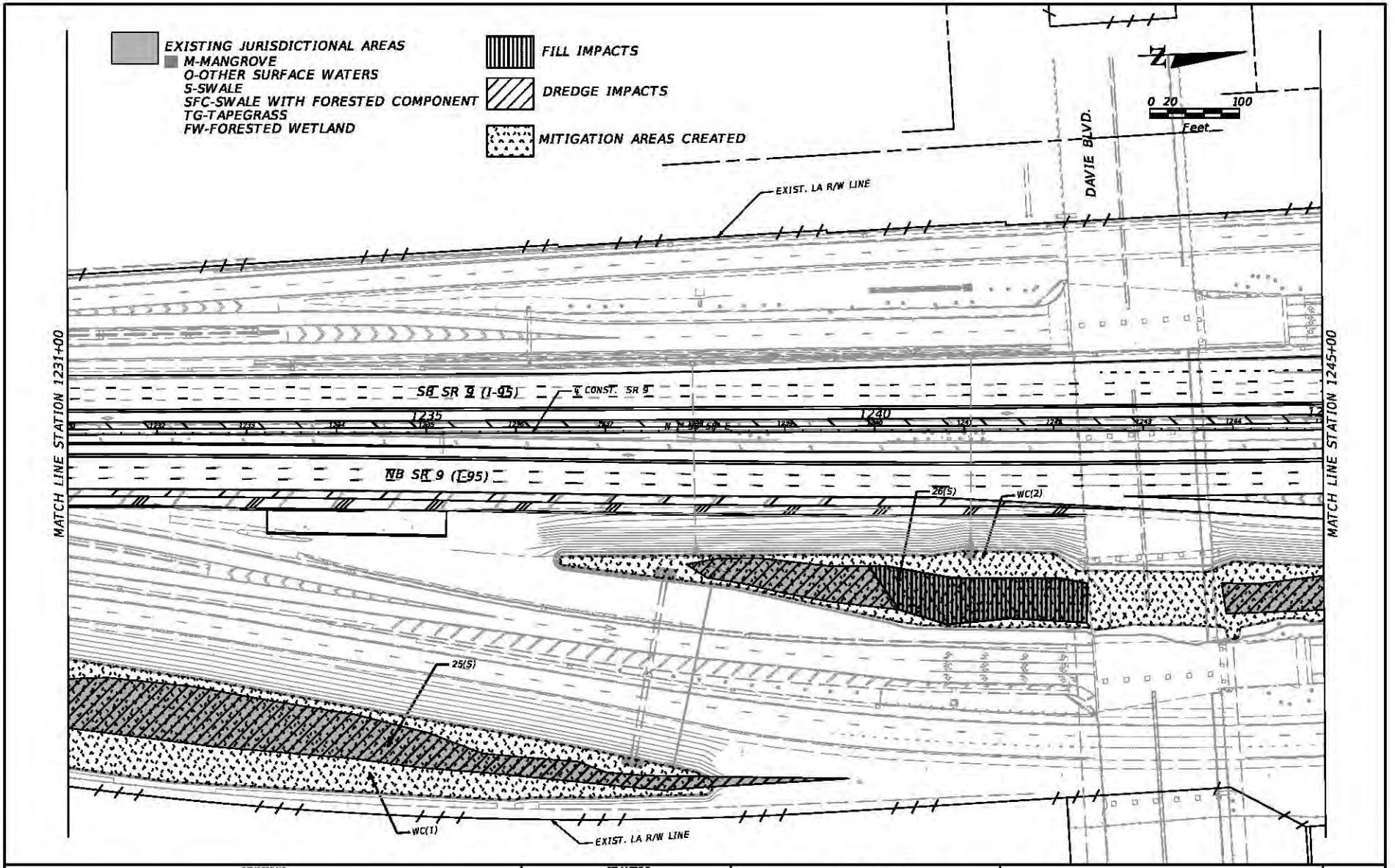

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STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 9

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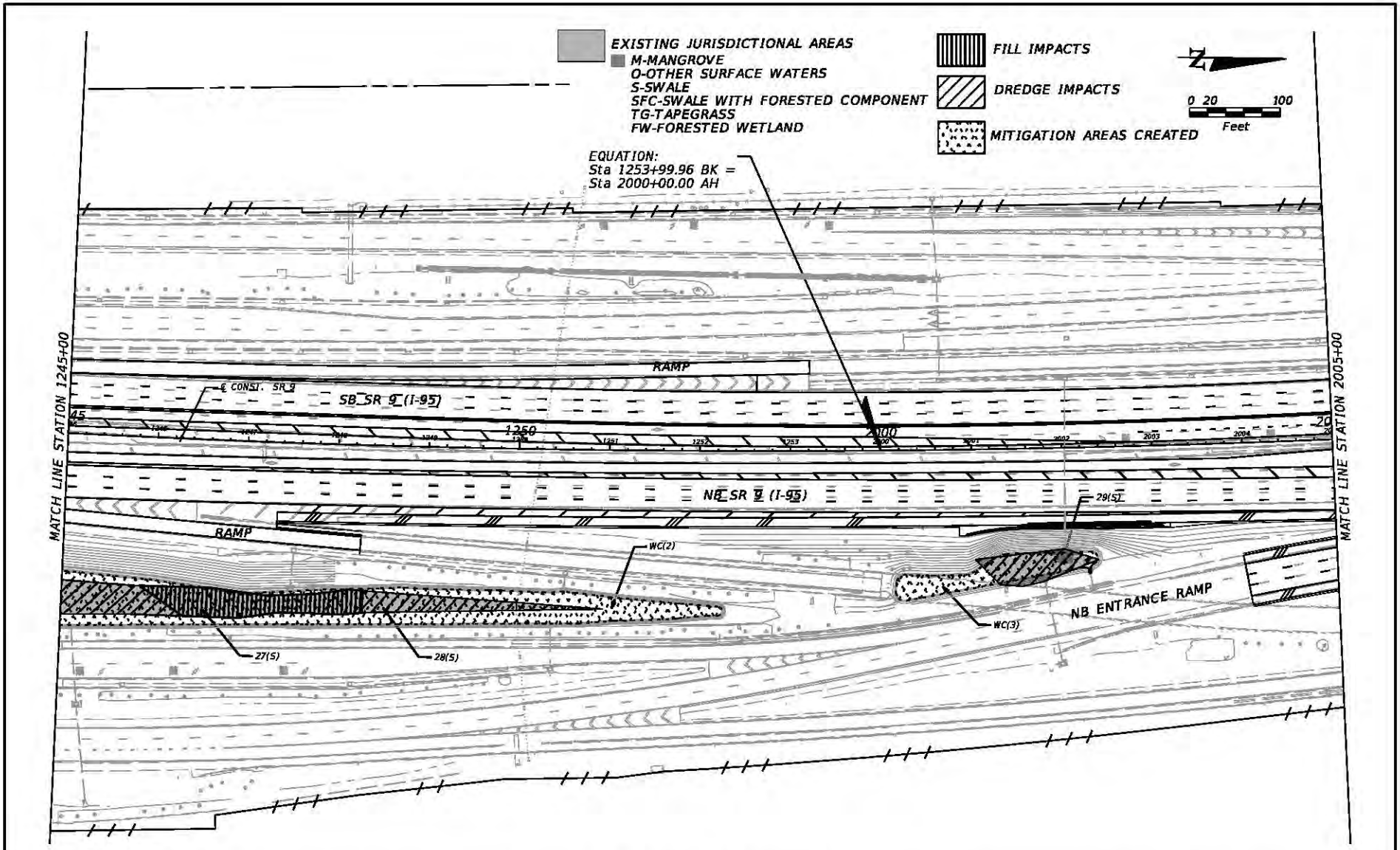

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CORAL GABLES, FL 33134
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VENDOR NO. 650039493001
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ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 10

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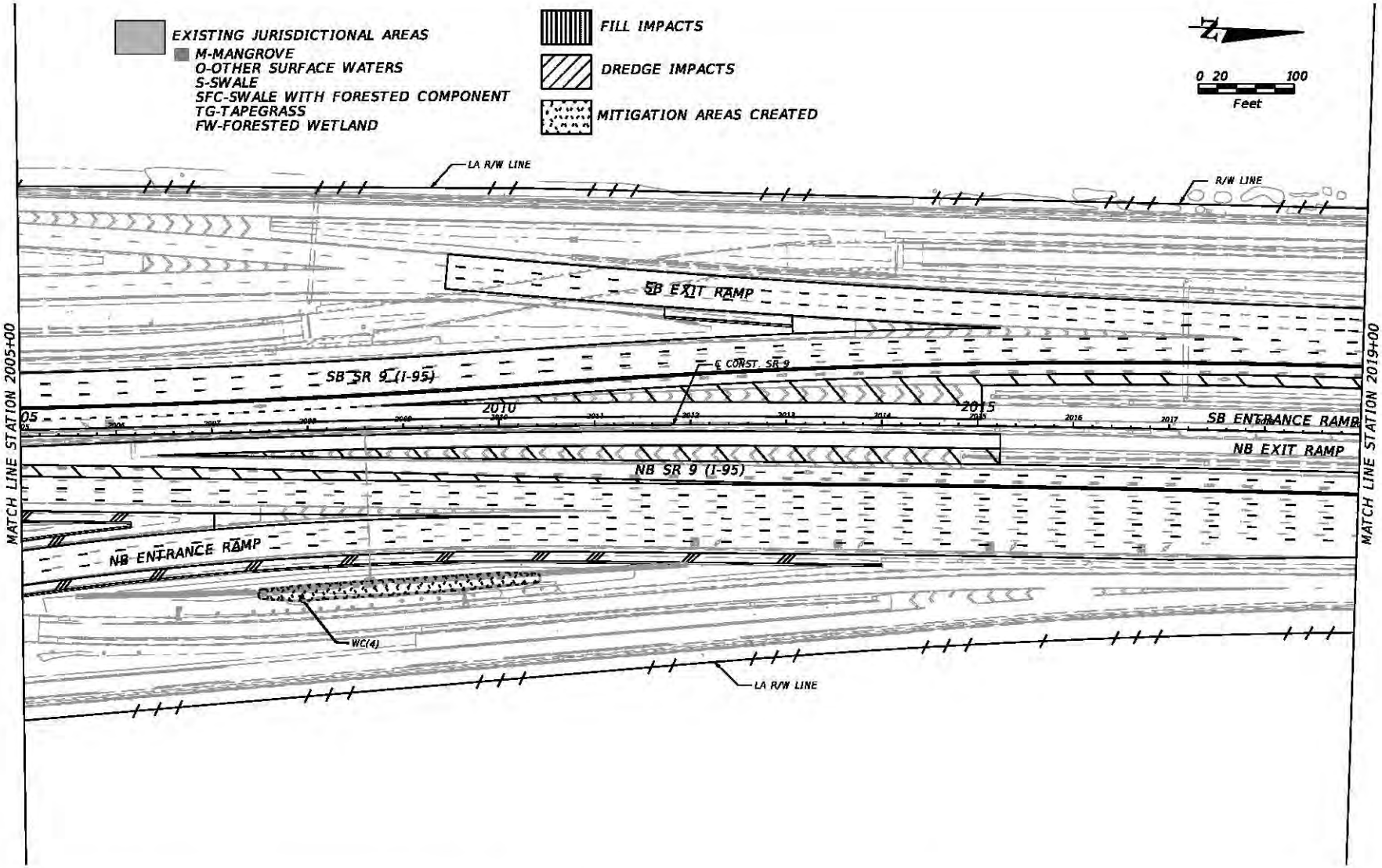

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

PROJECT LAYOUT

SHEET NO. 11

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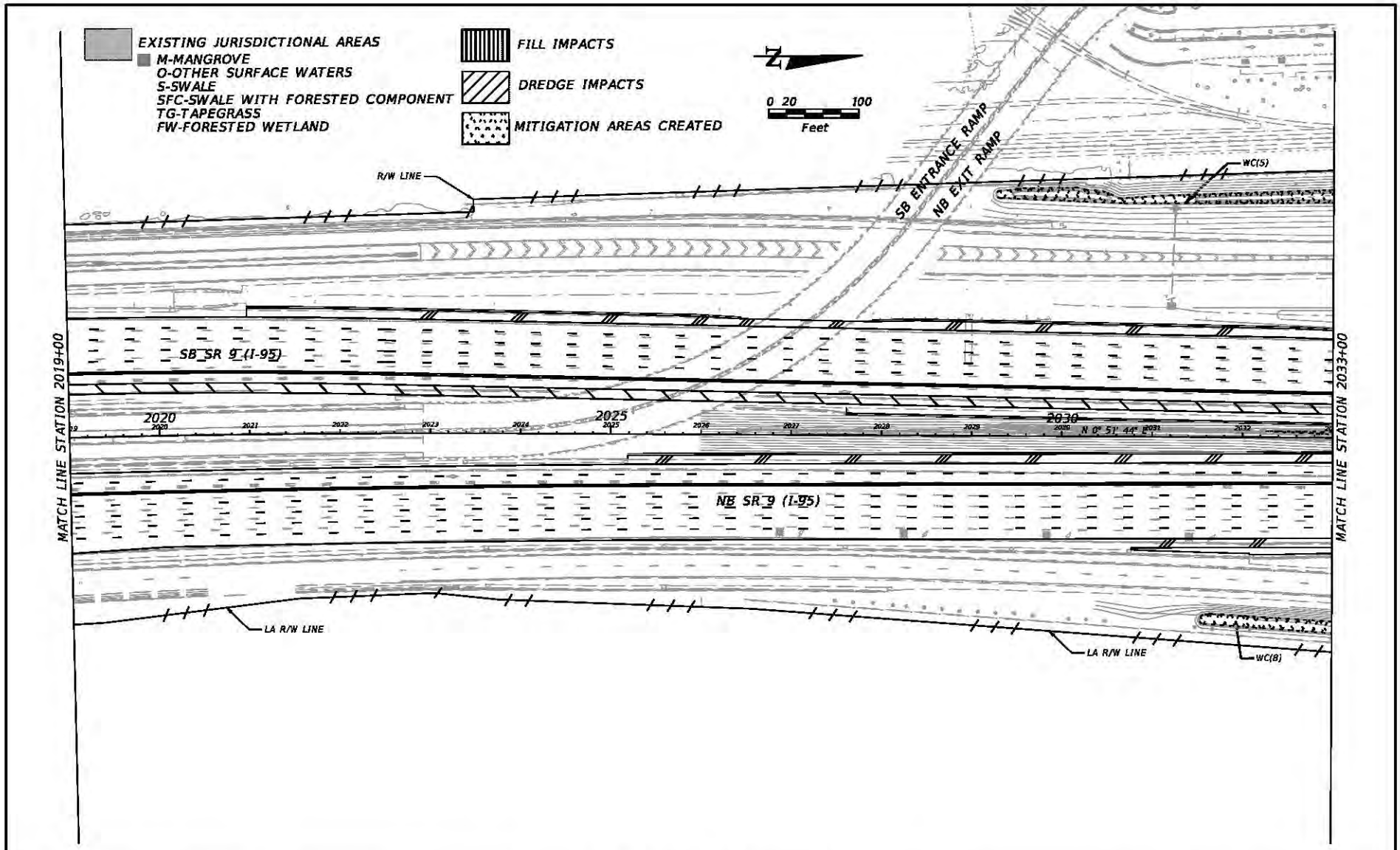

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
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VENDOR NO. 650039493001
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ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

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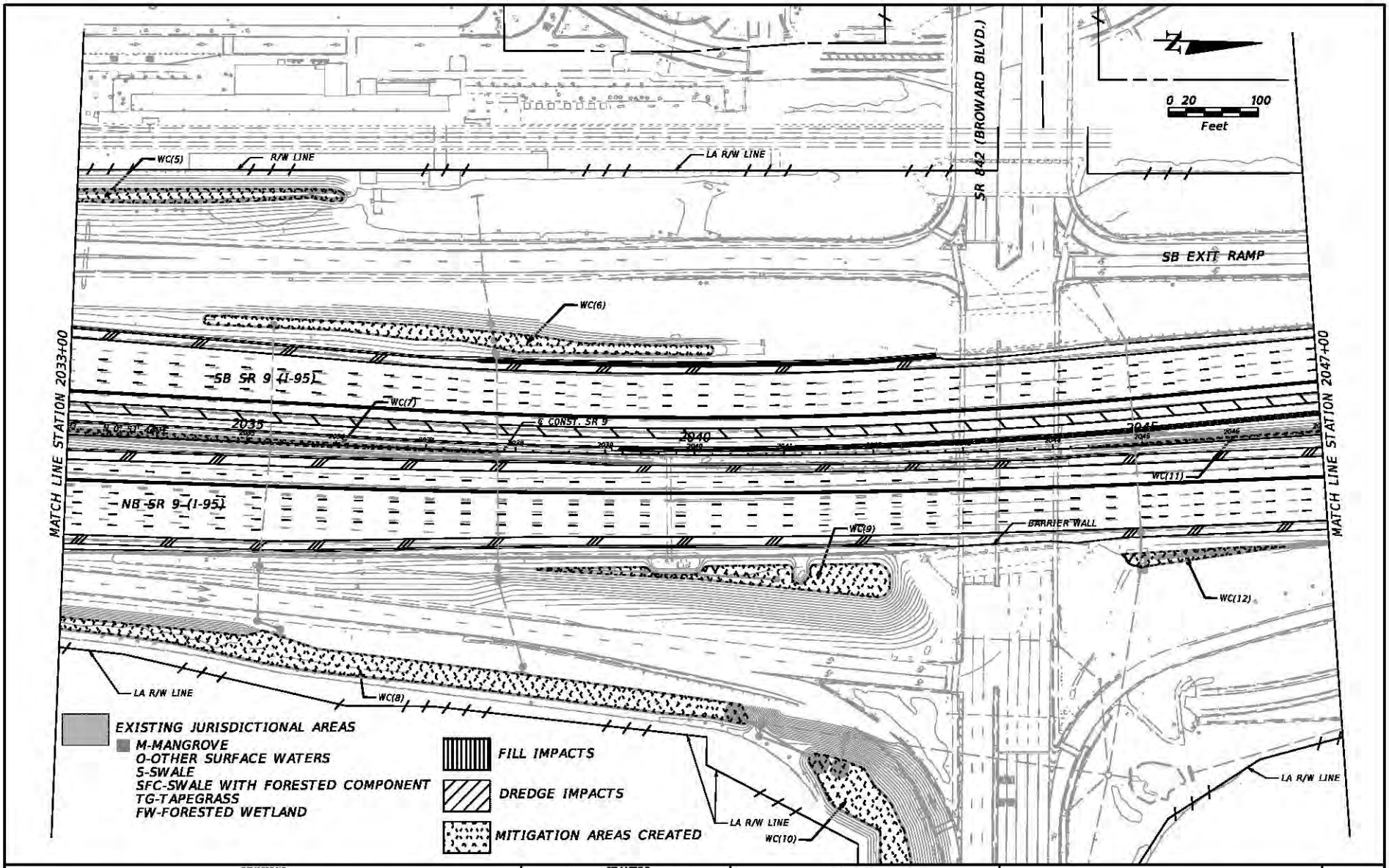

REVISIONS			
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STANTEC
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 13

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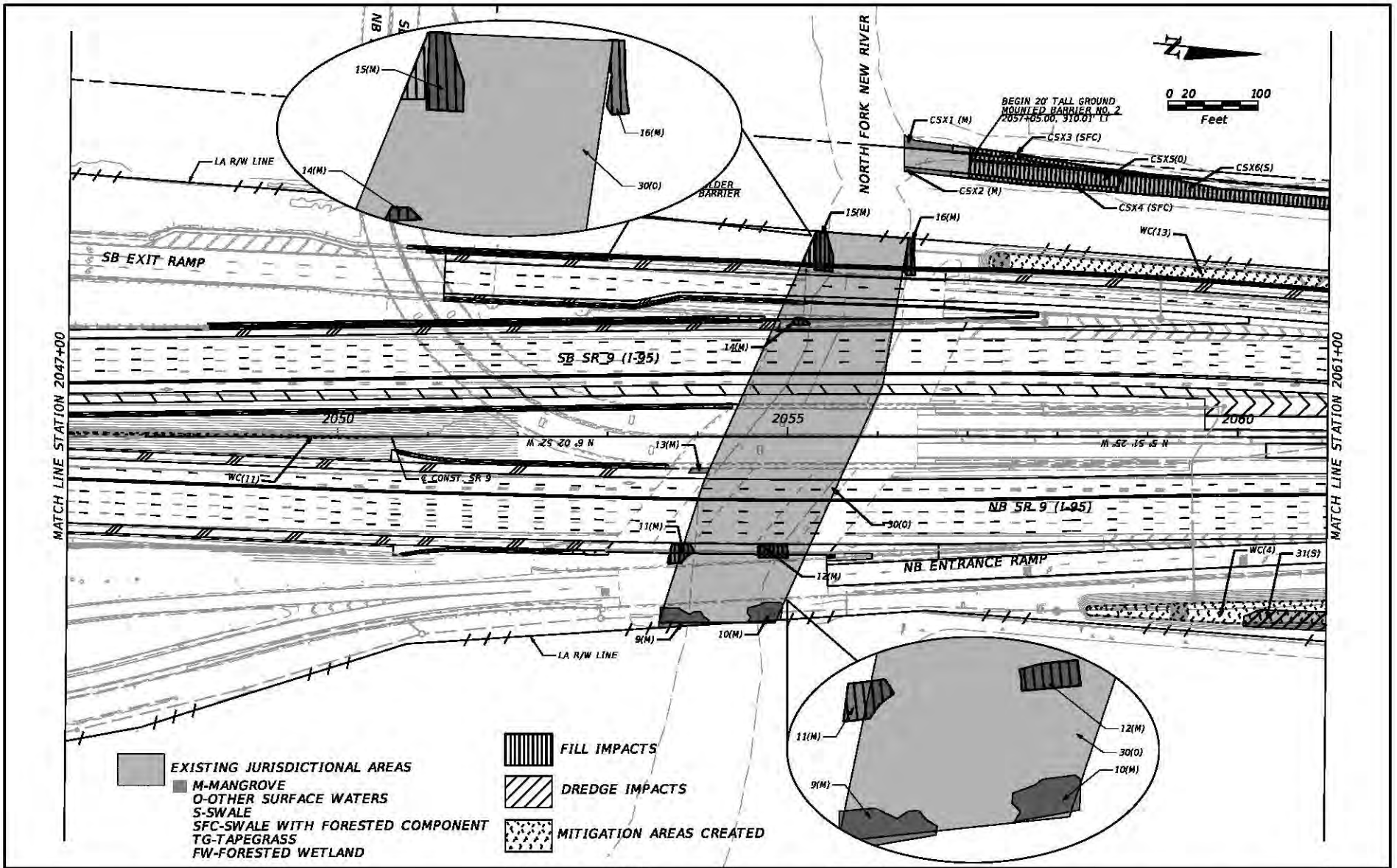

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

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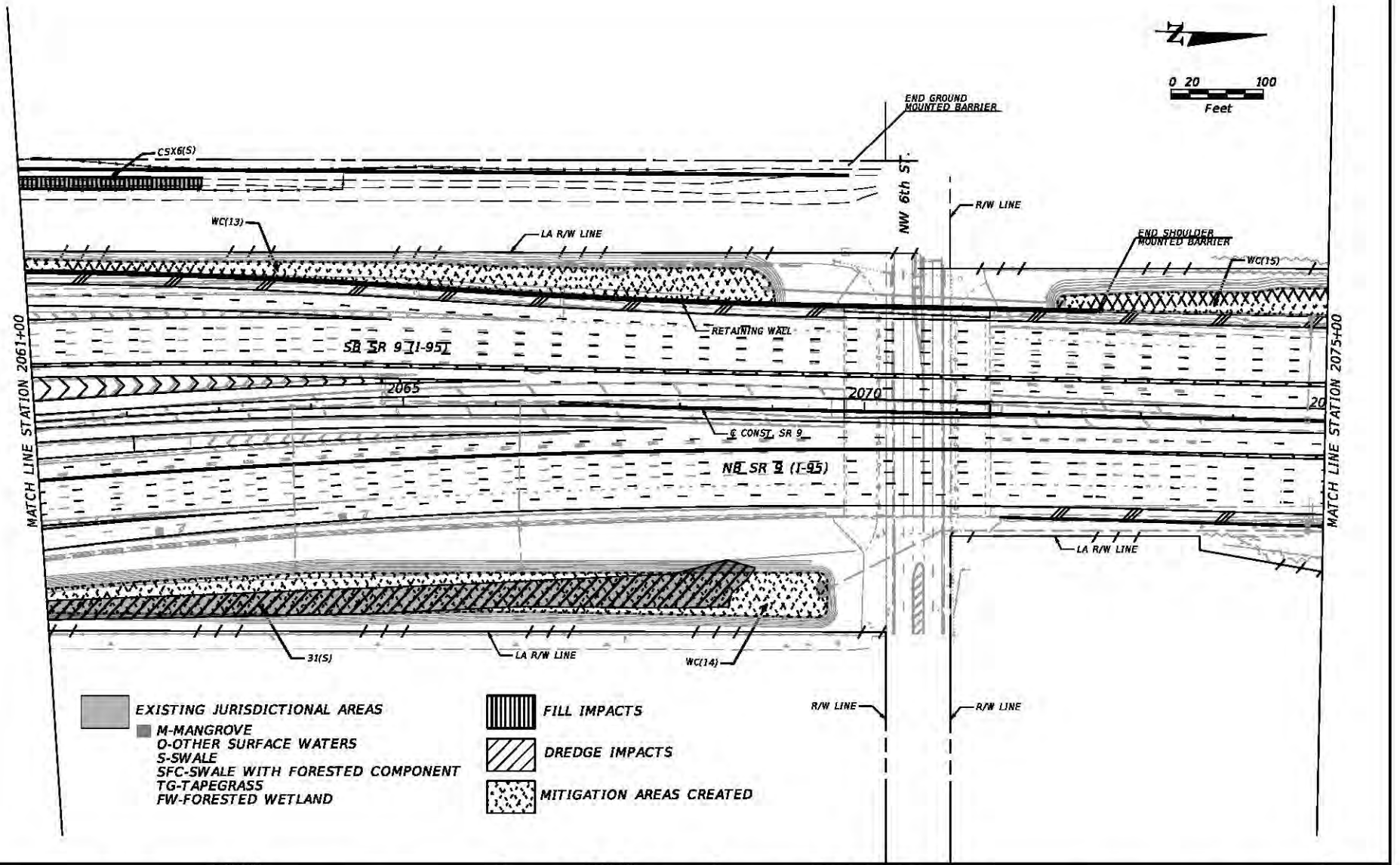
ROADWAY PLAN

SHEET NO. 14



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 15

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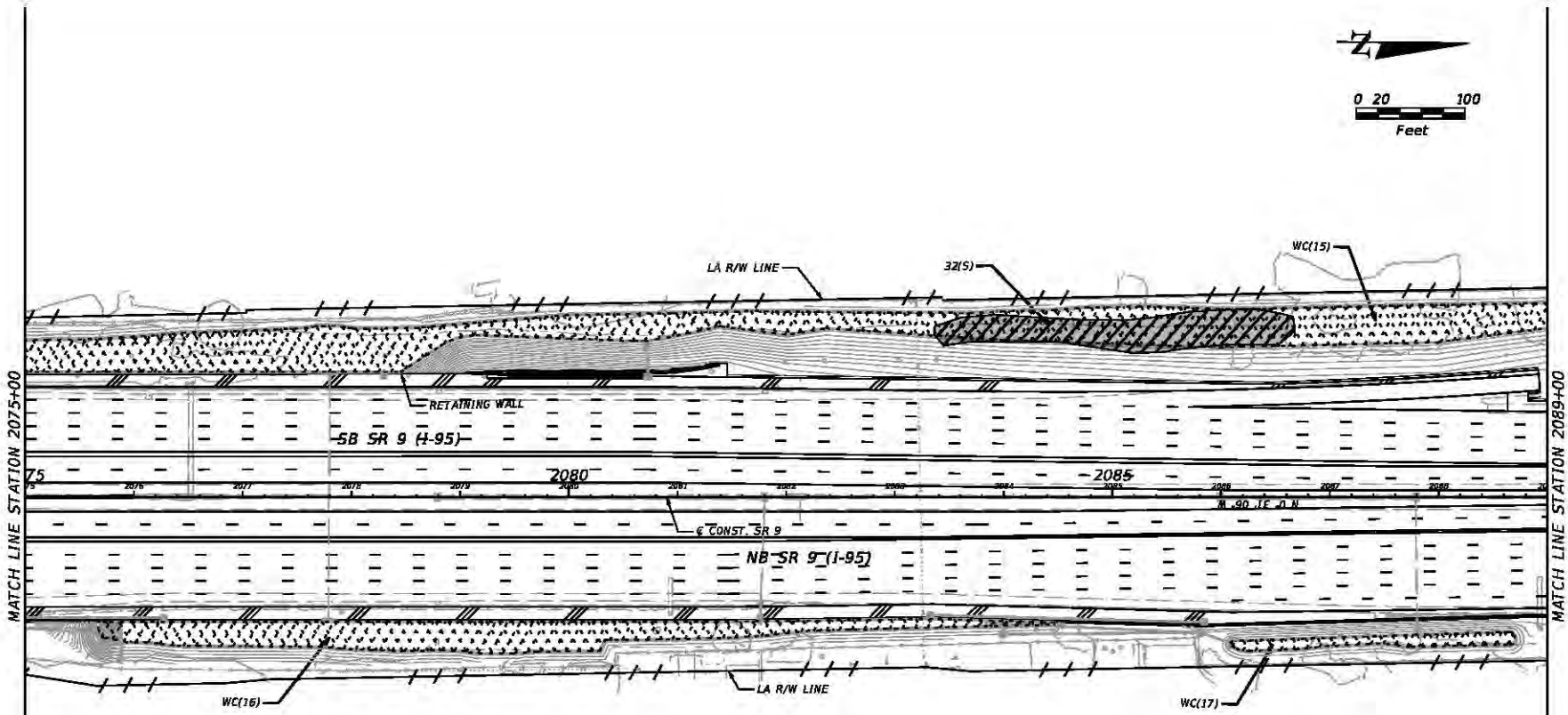

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 16

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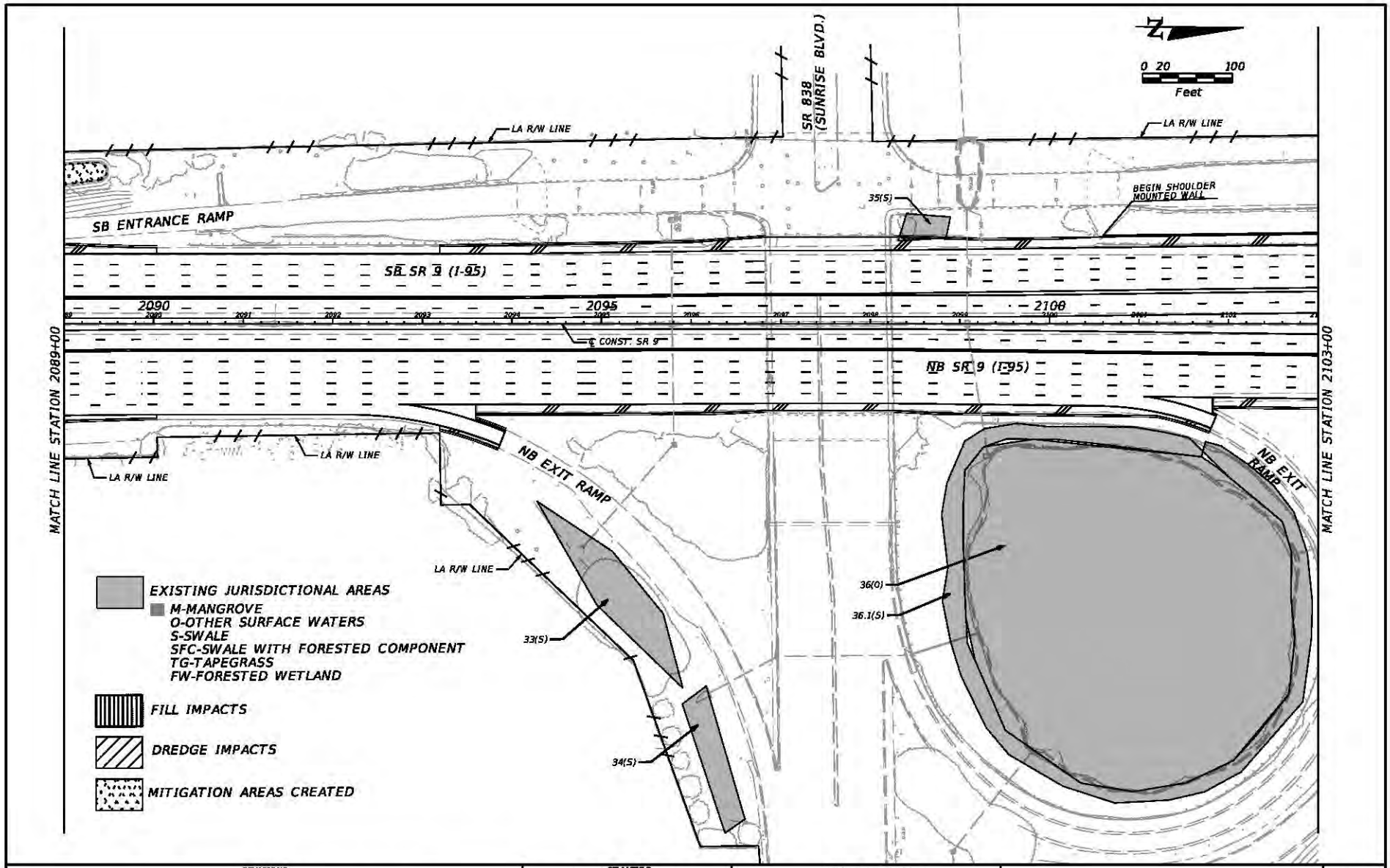

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 17

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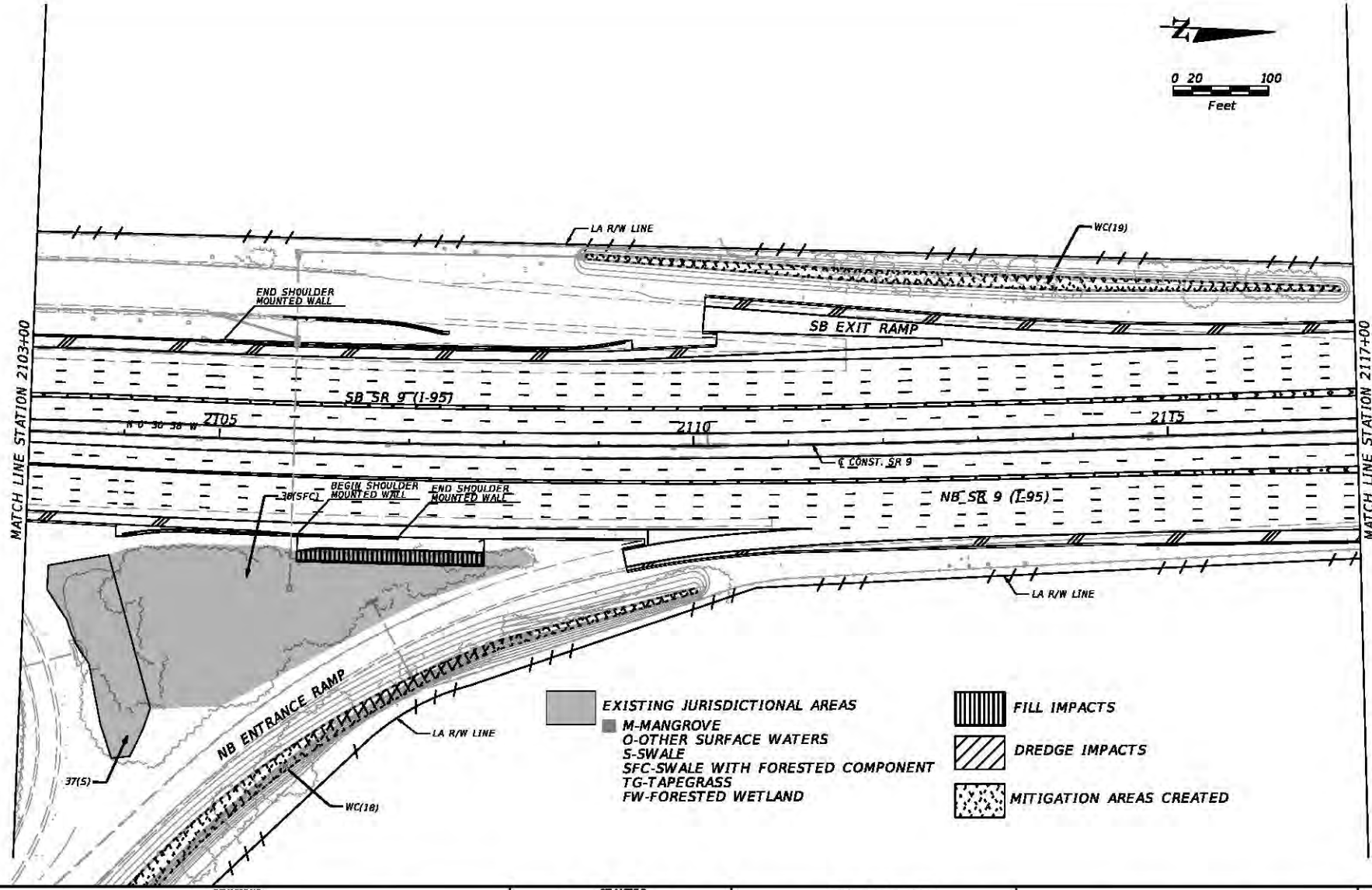

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 18

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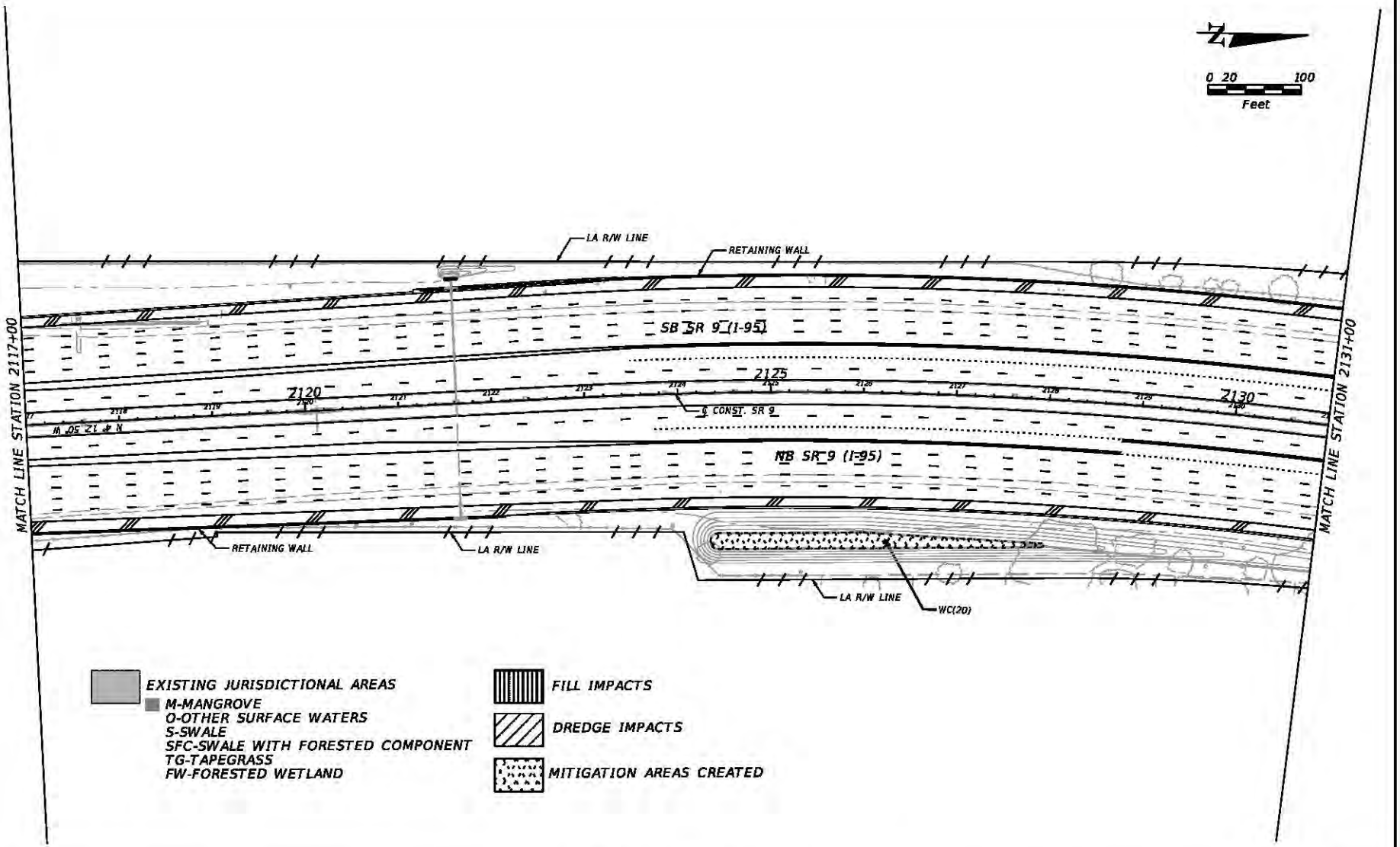

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 19

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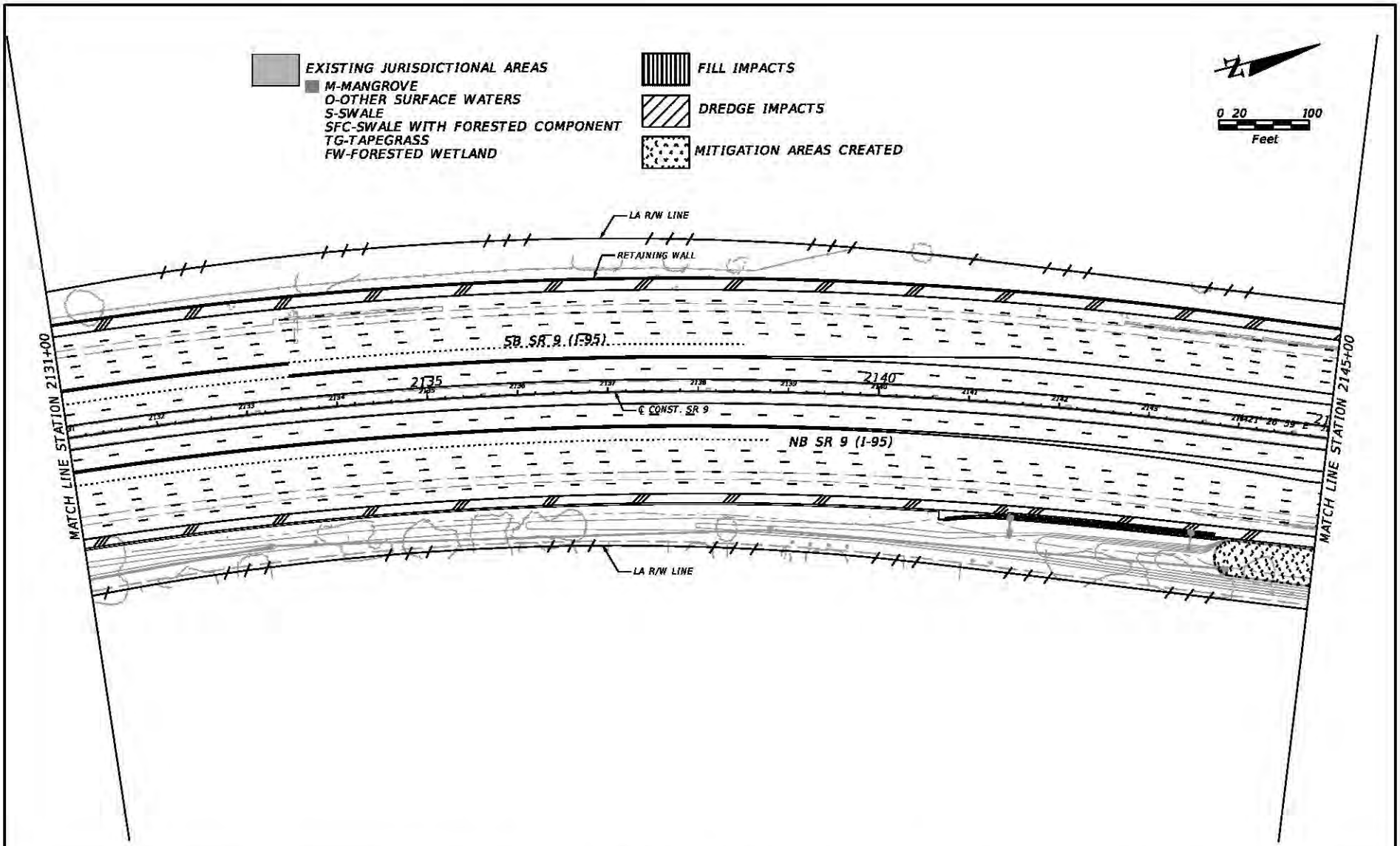

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 20

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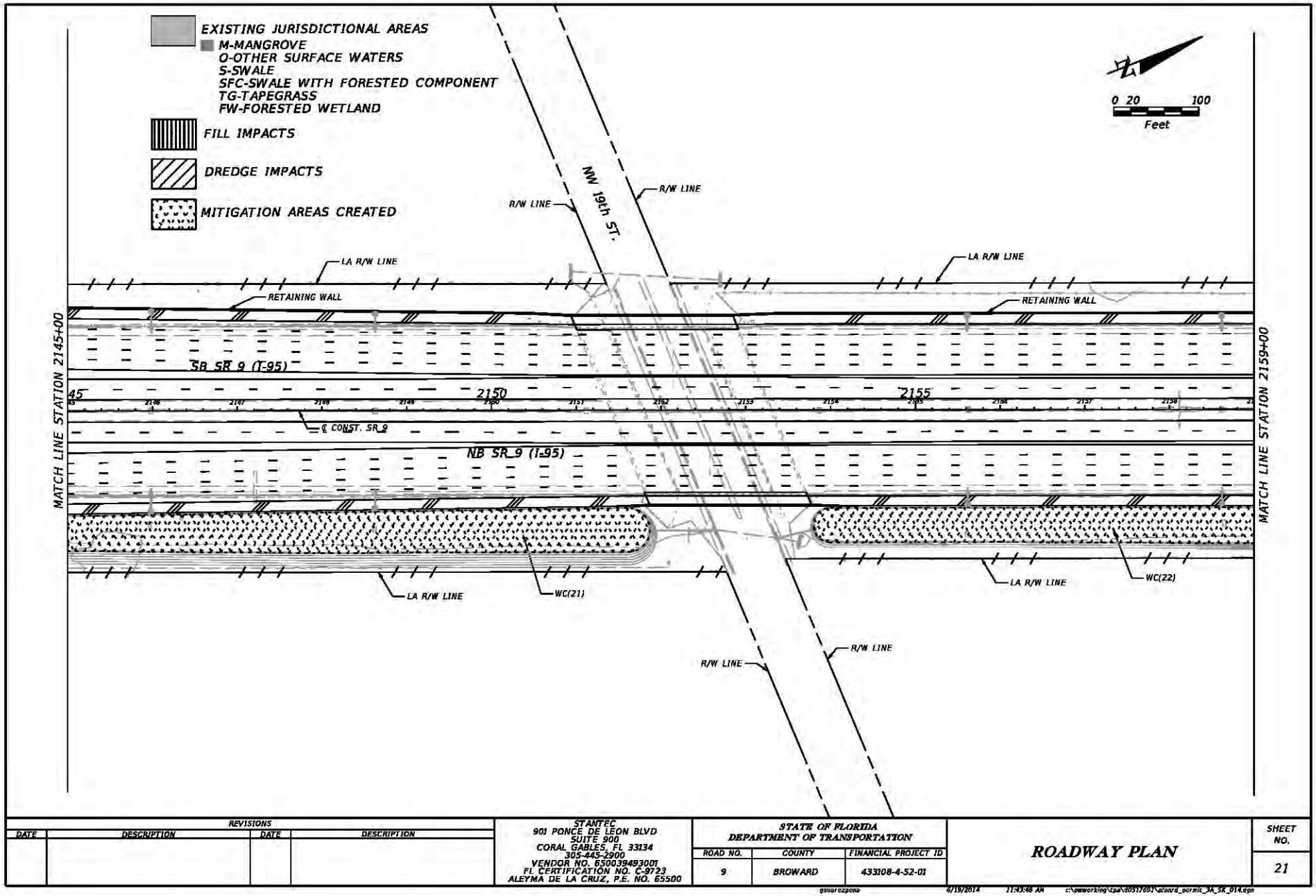

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 21

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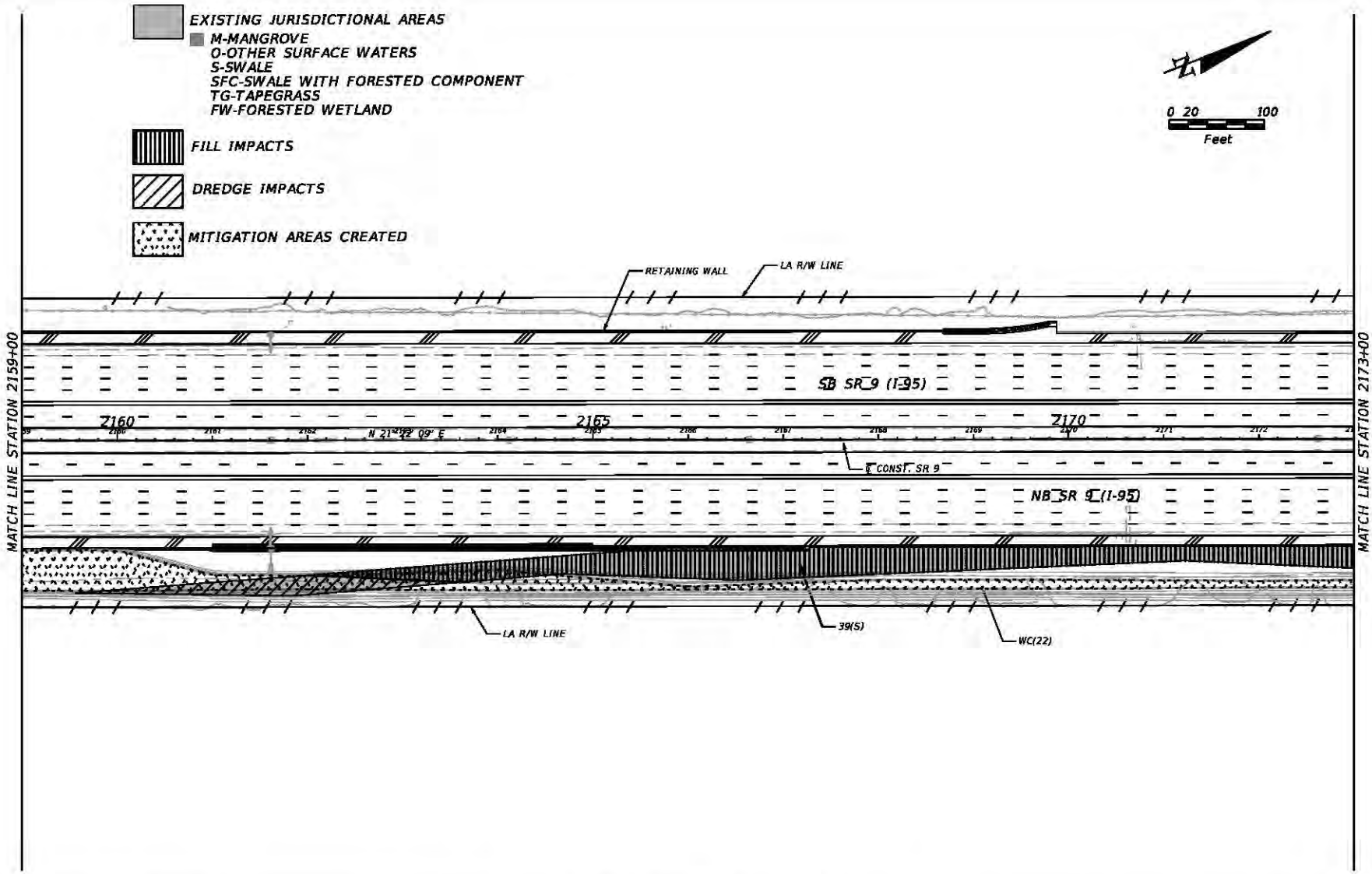

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 22

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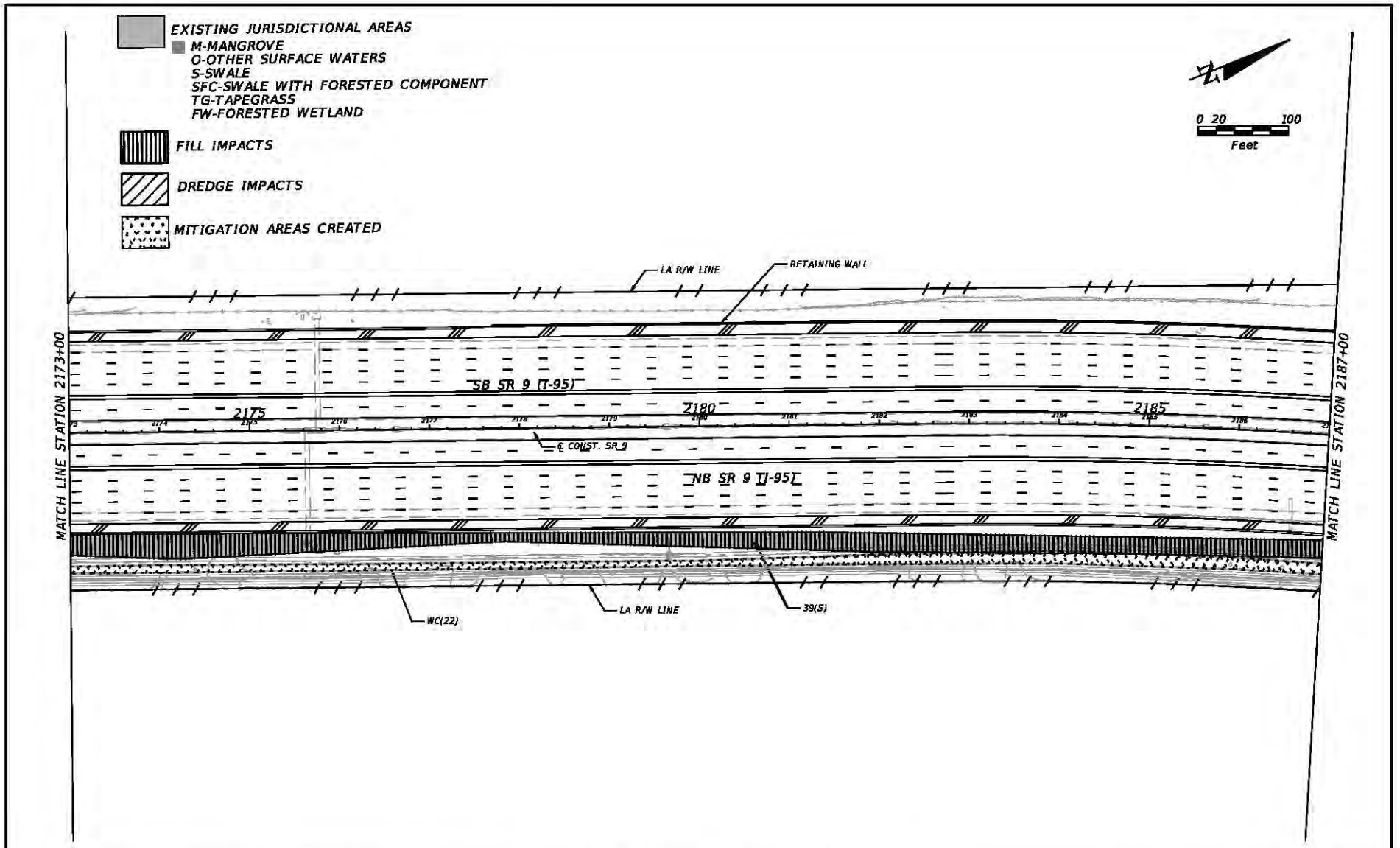

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 23

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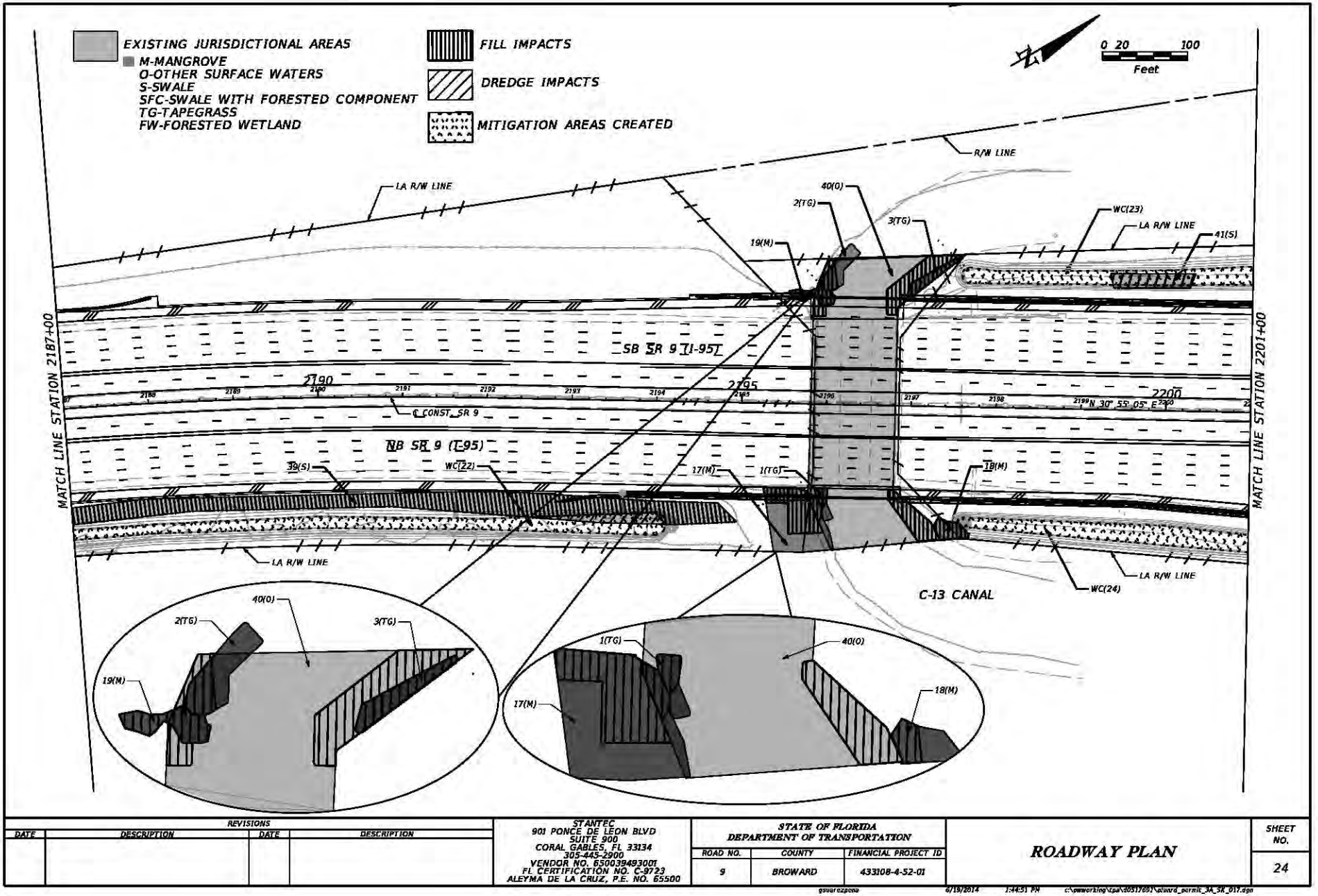

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 24

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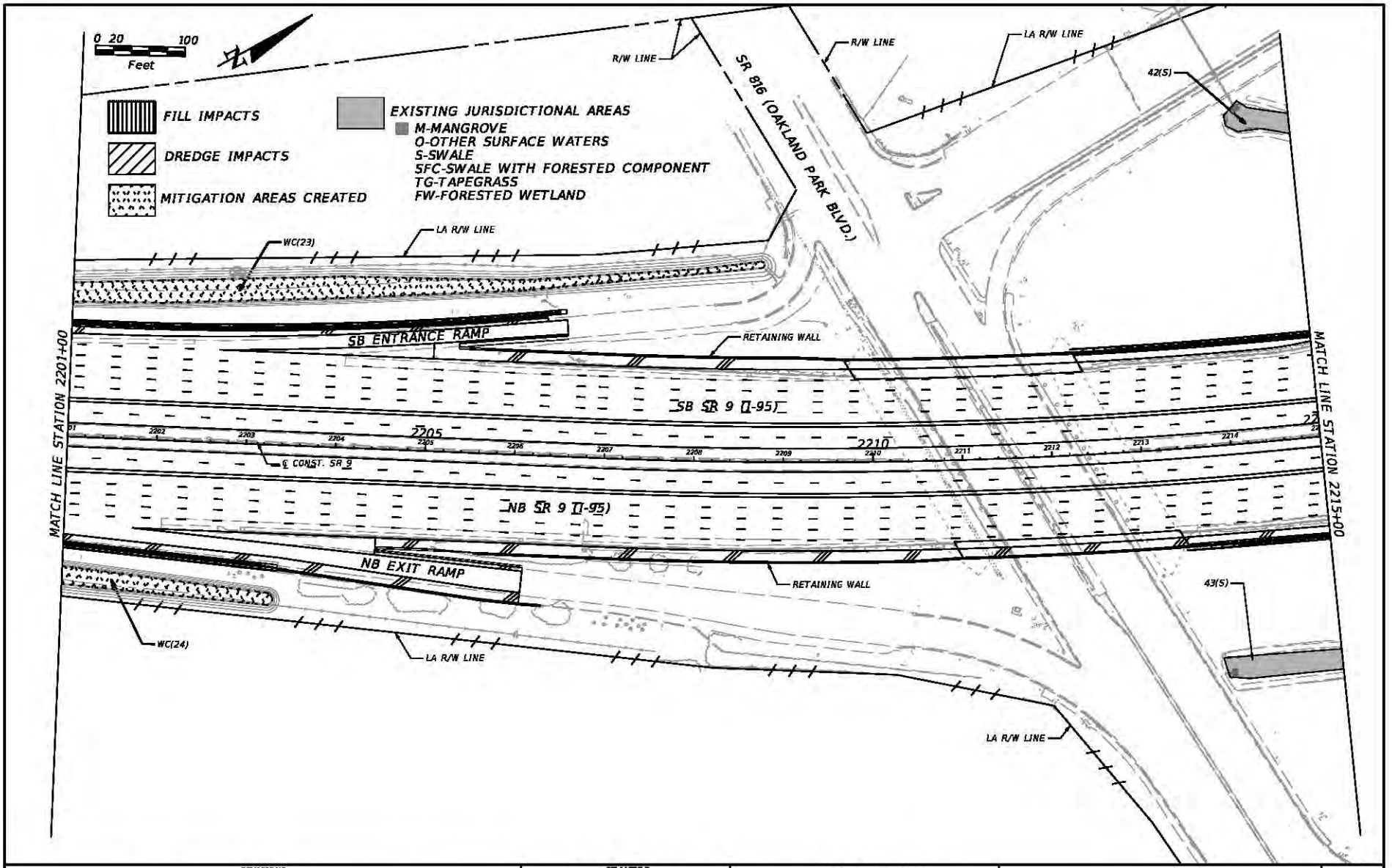

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 25

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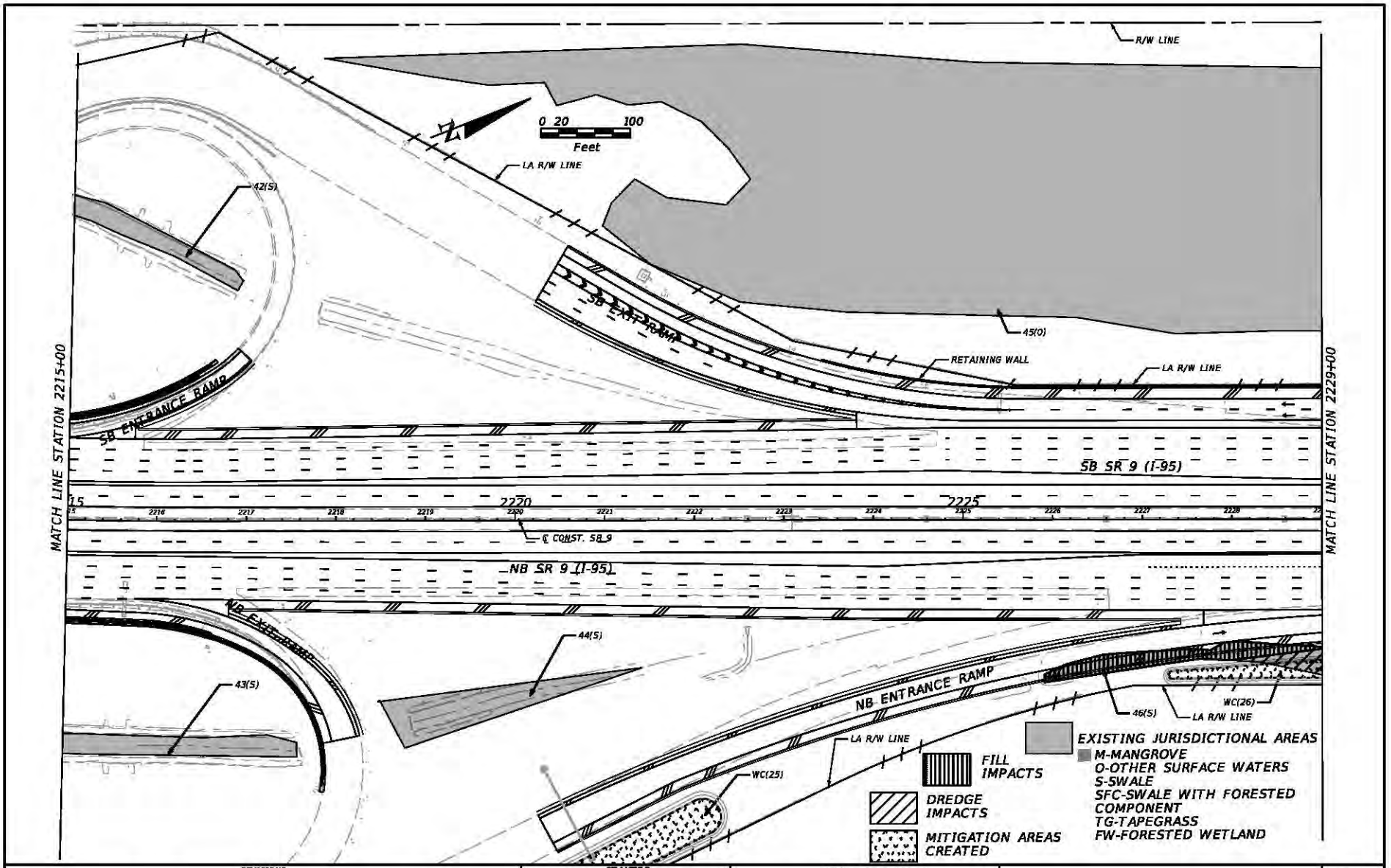

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 26

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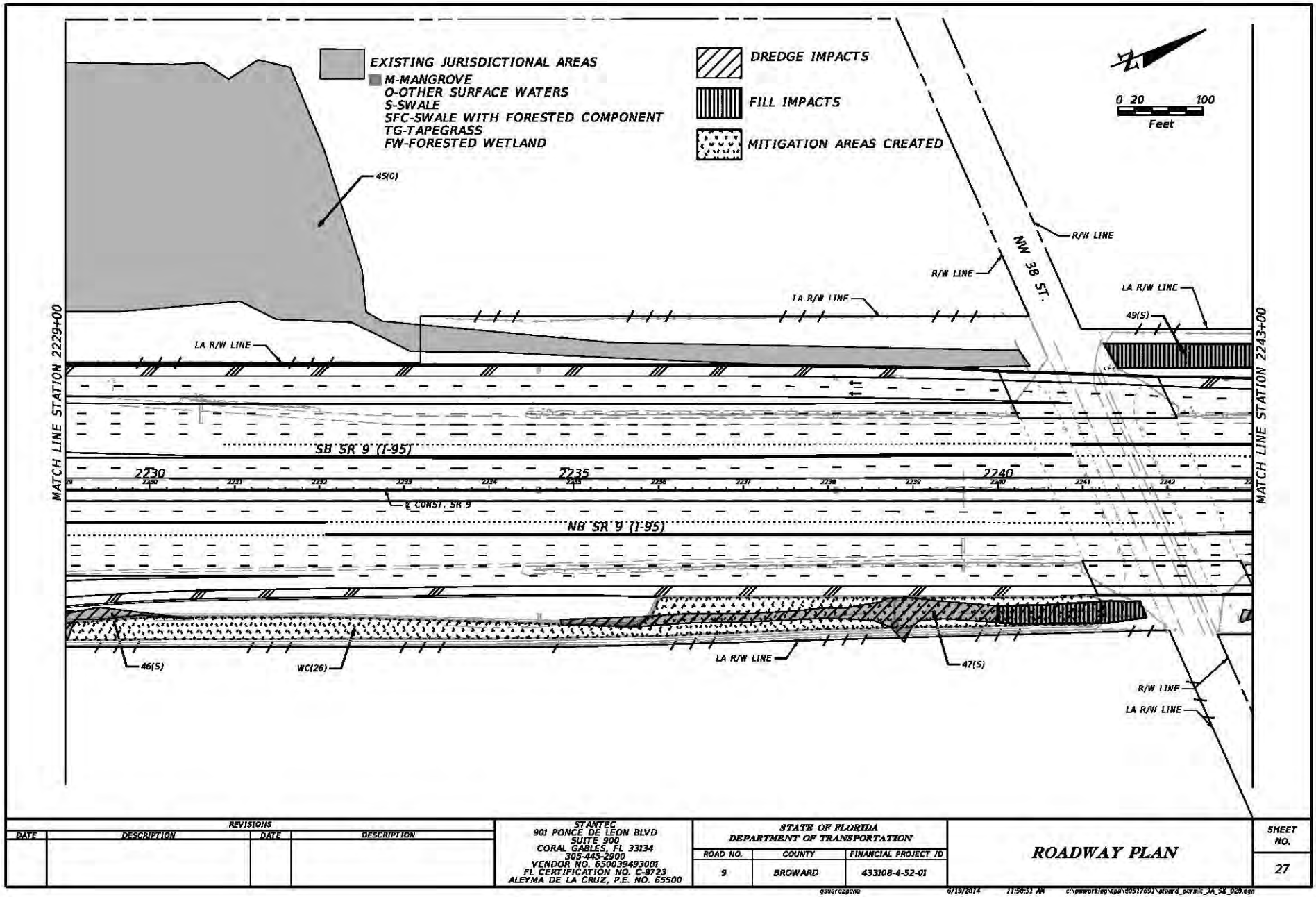

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

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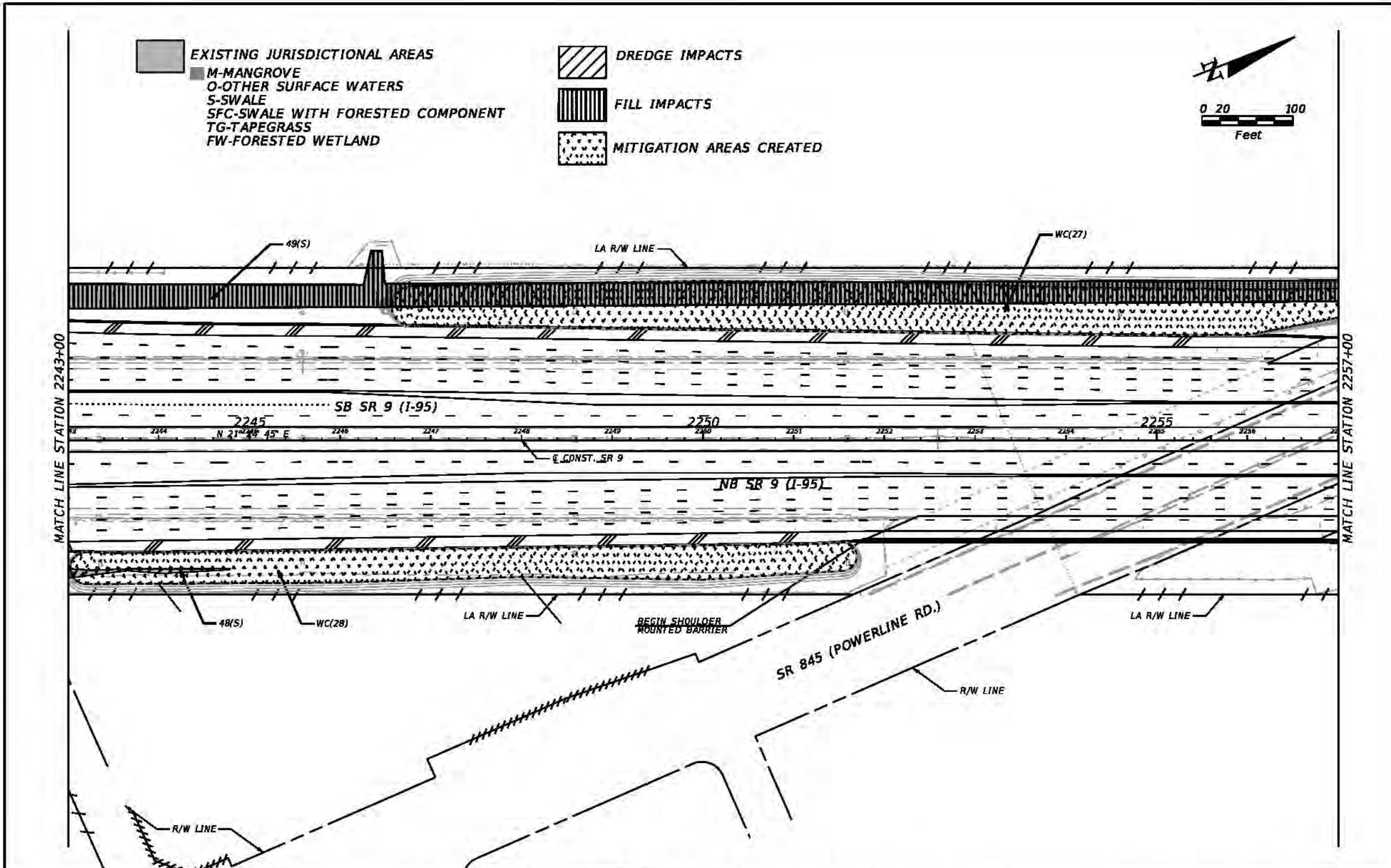

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 28

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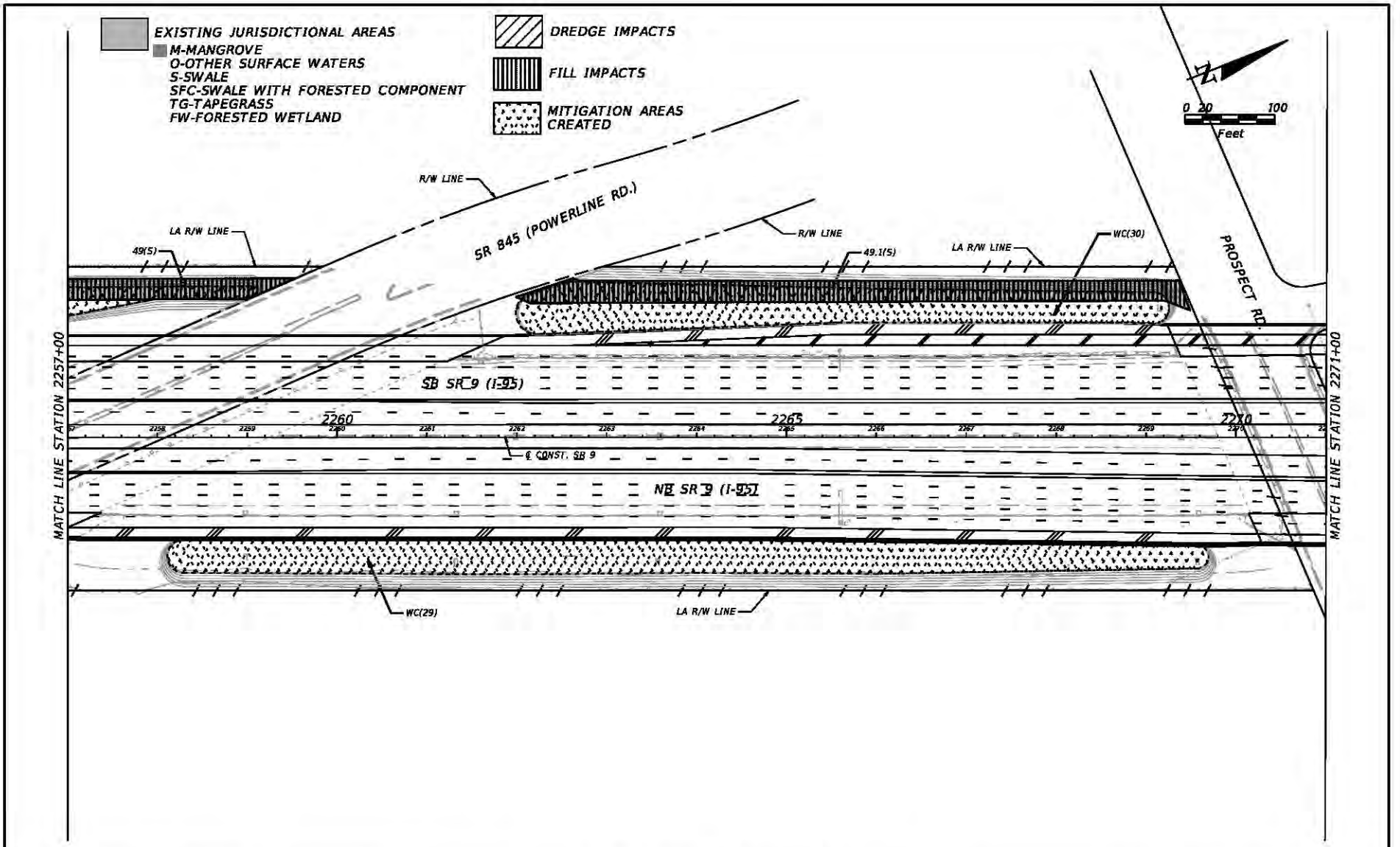

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 29

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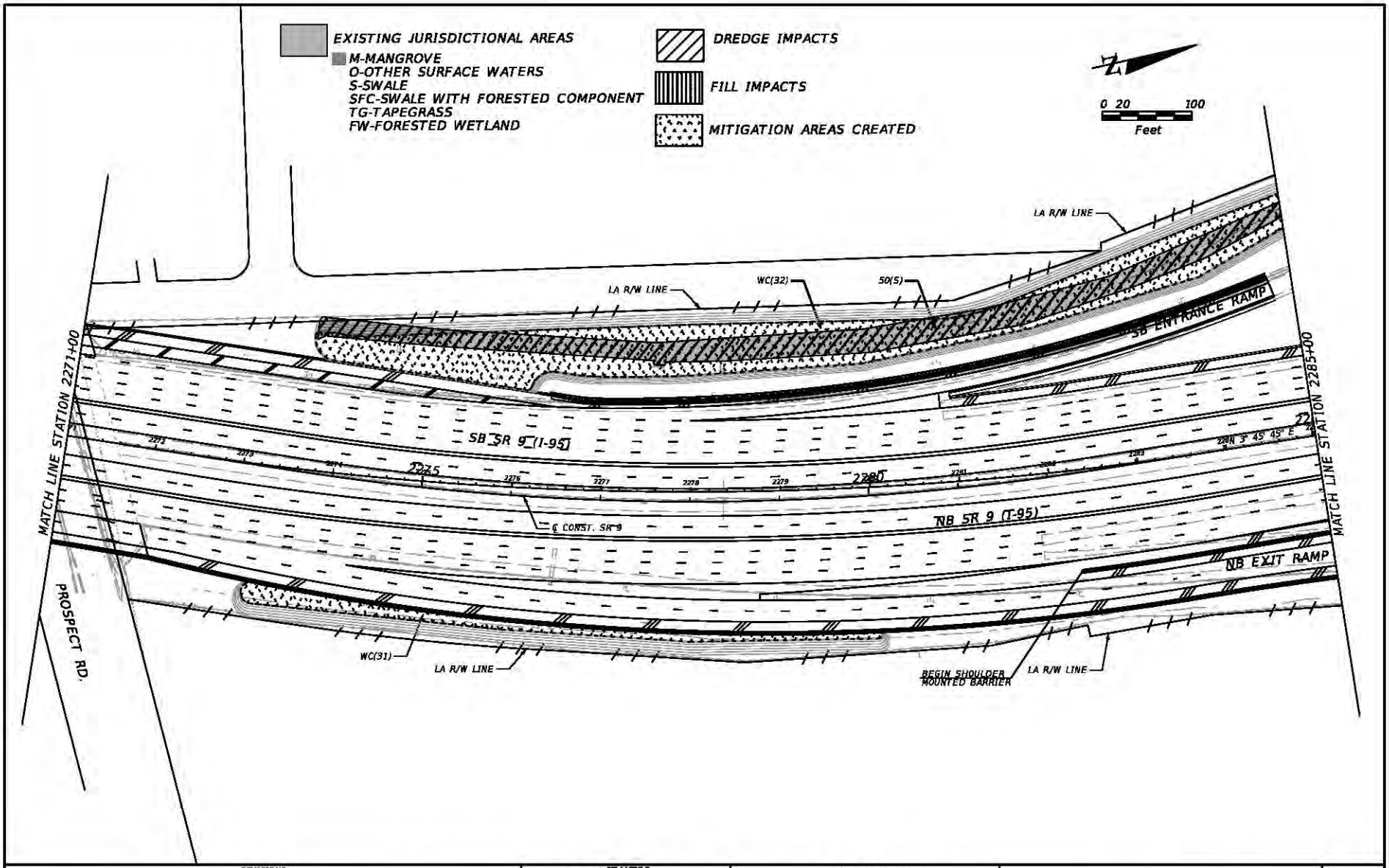

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 30

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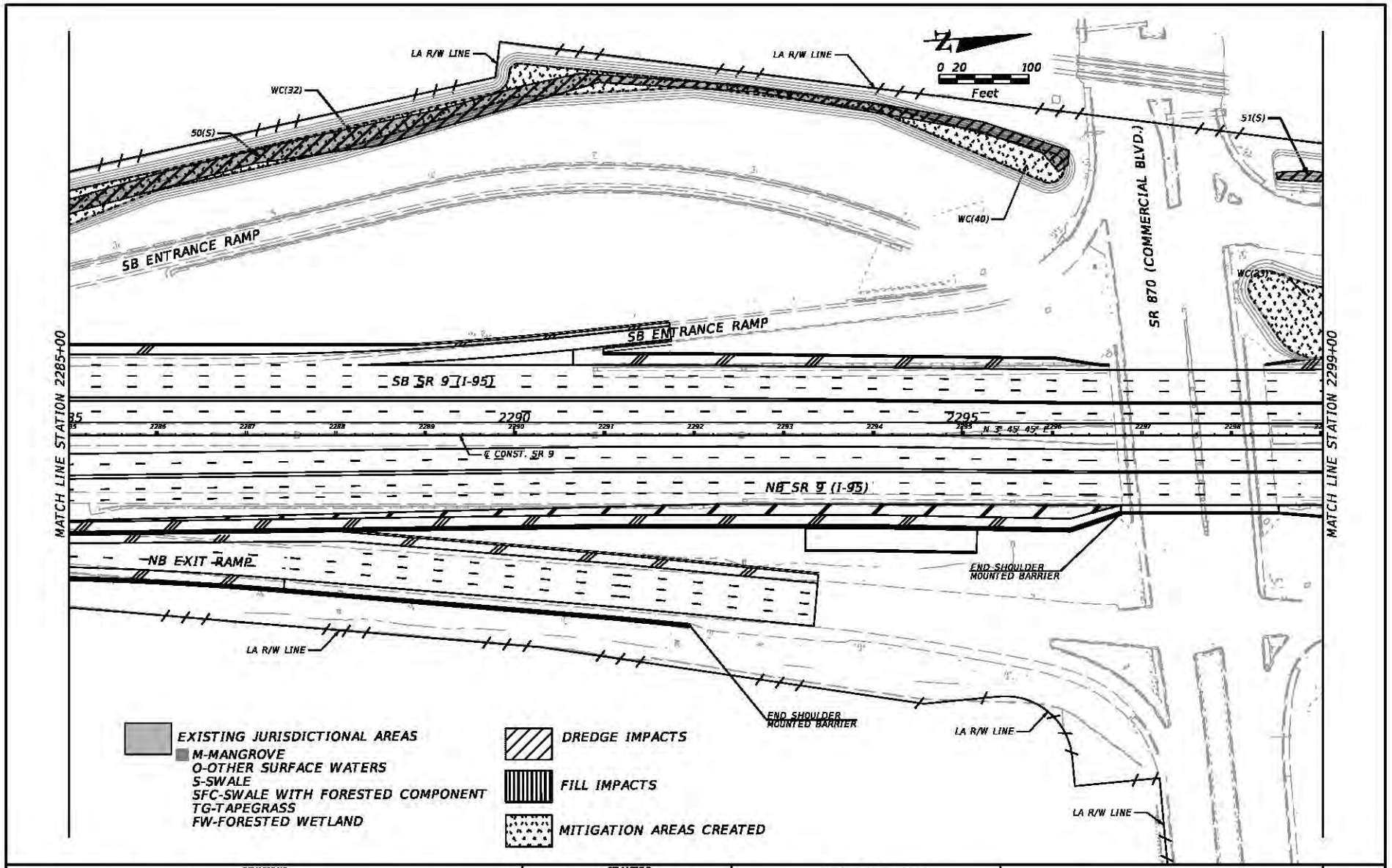

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 31

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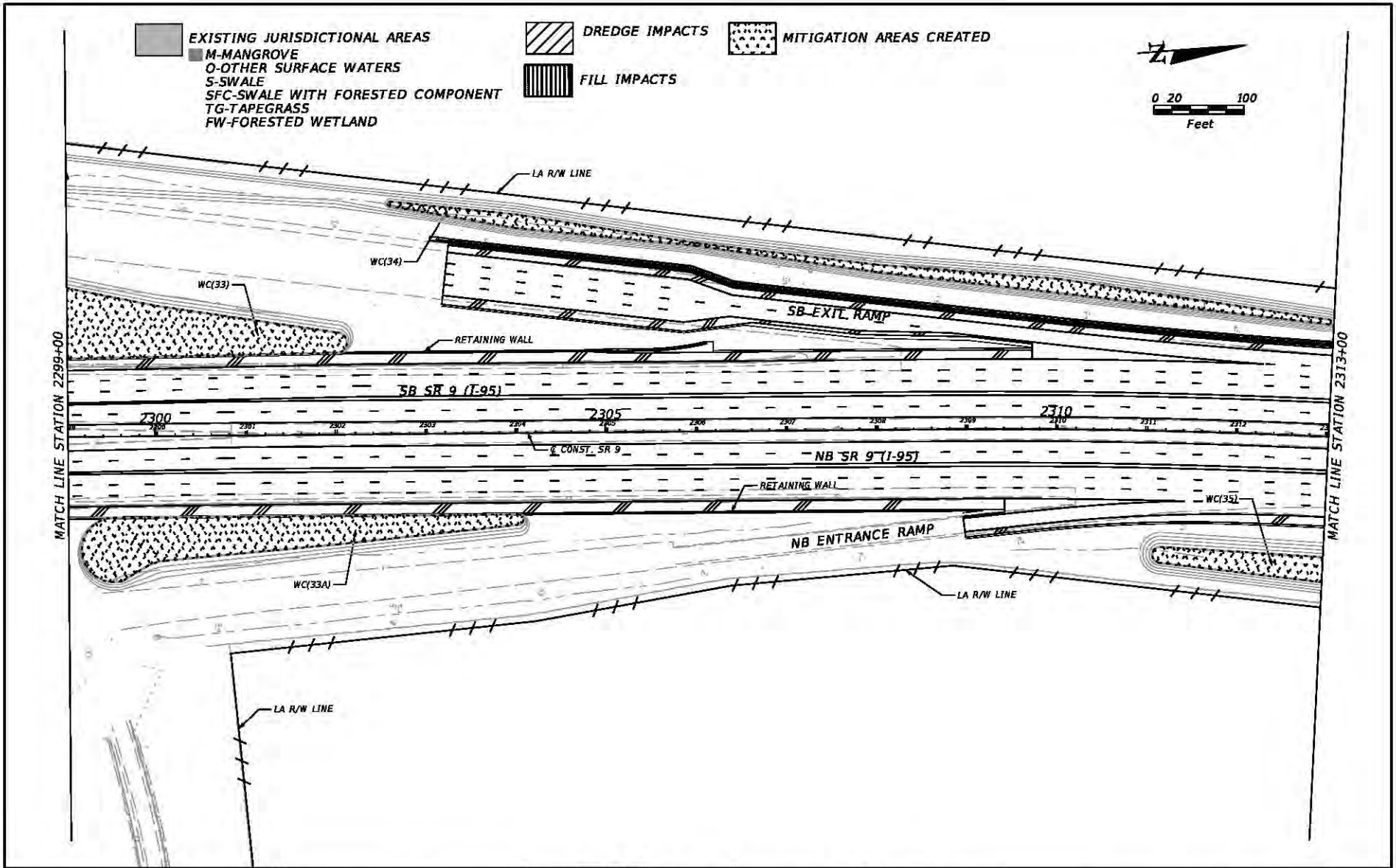

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 32

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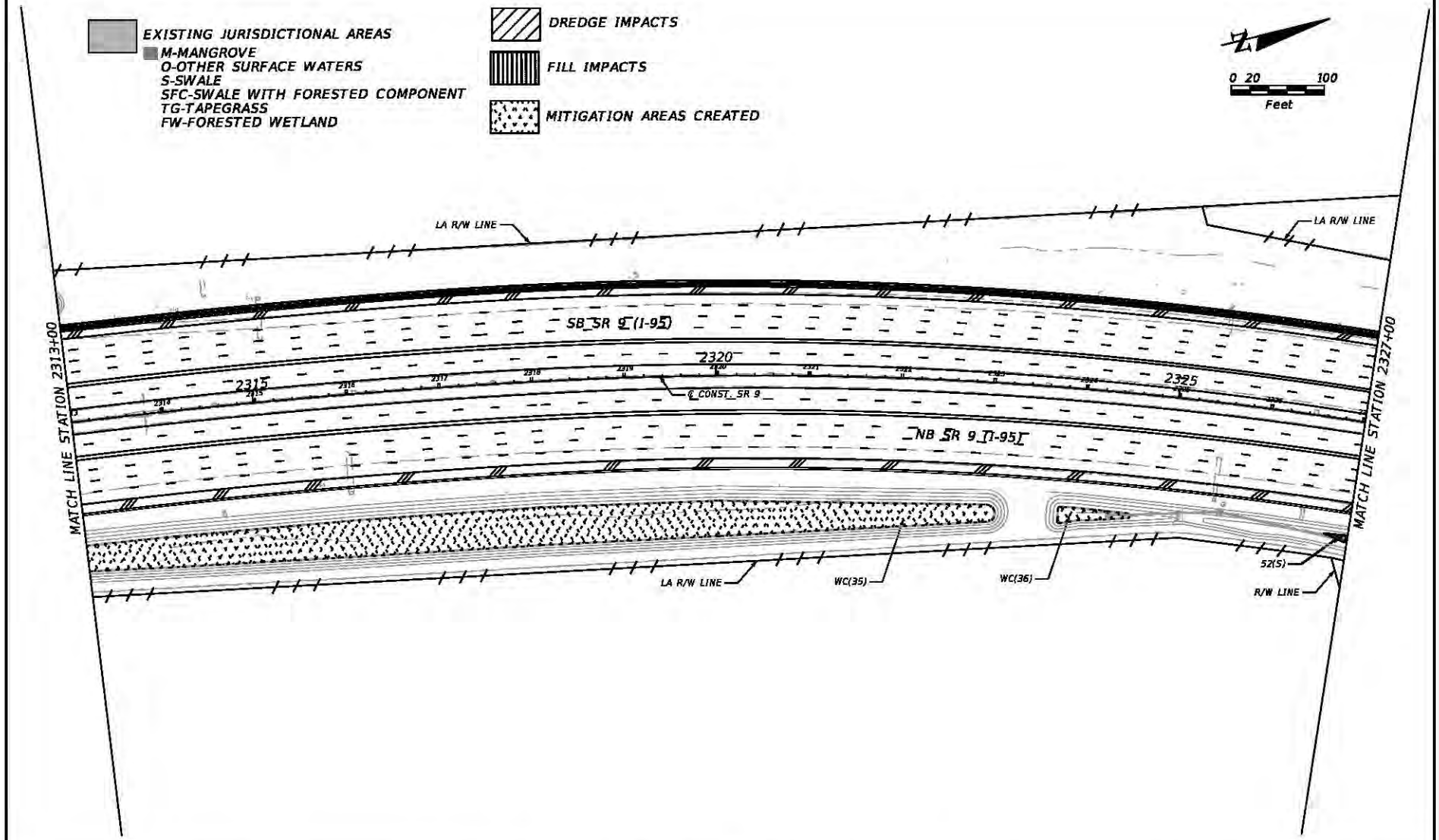

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 33

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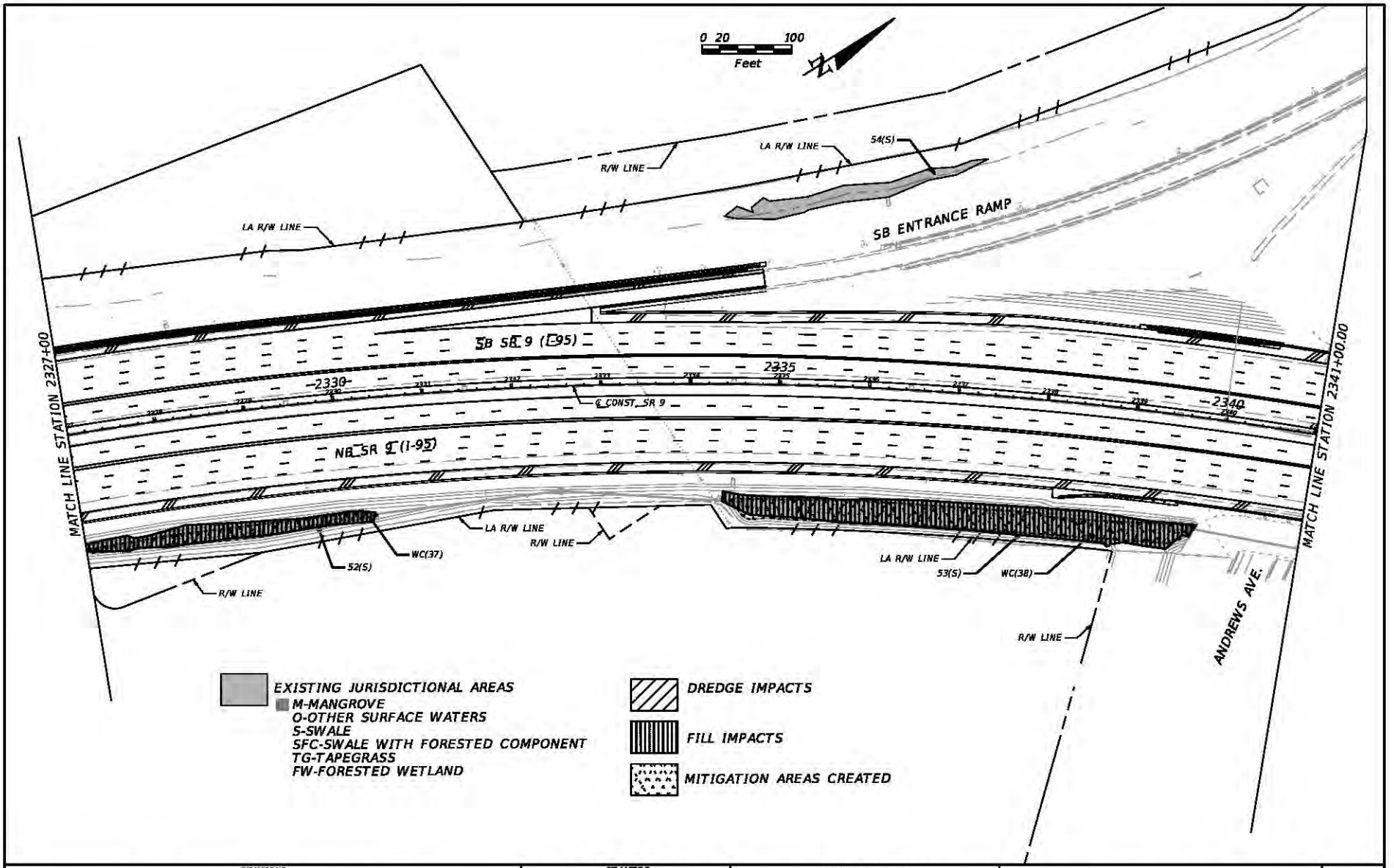

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 34

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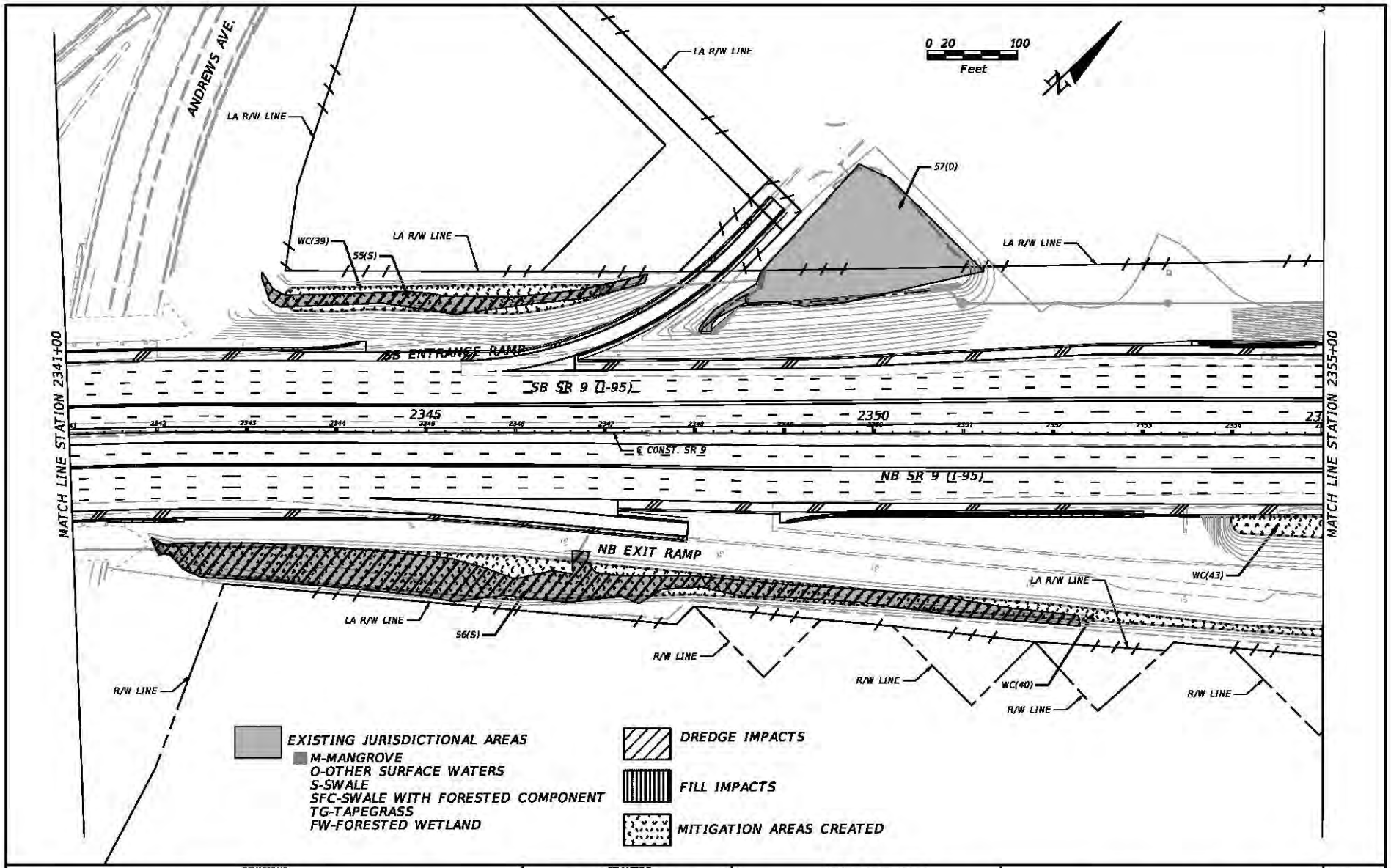

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 35

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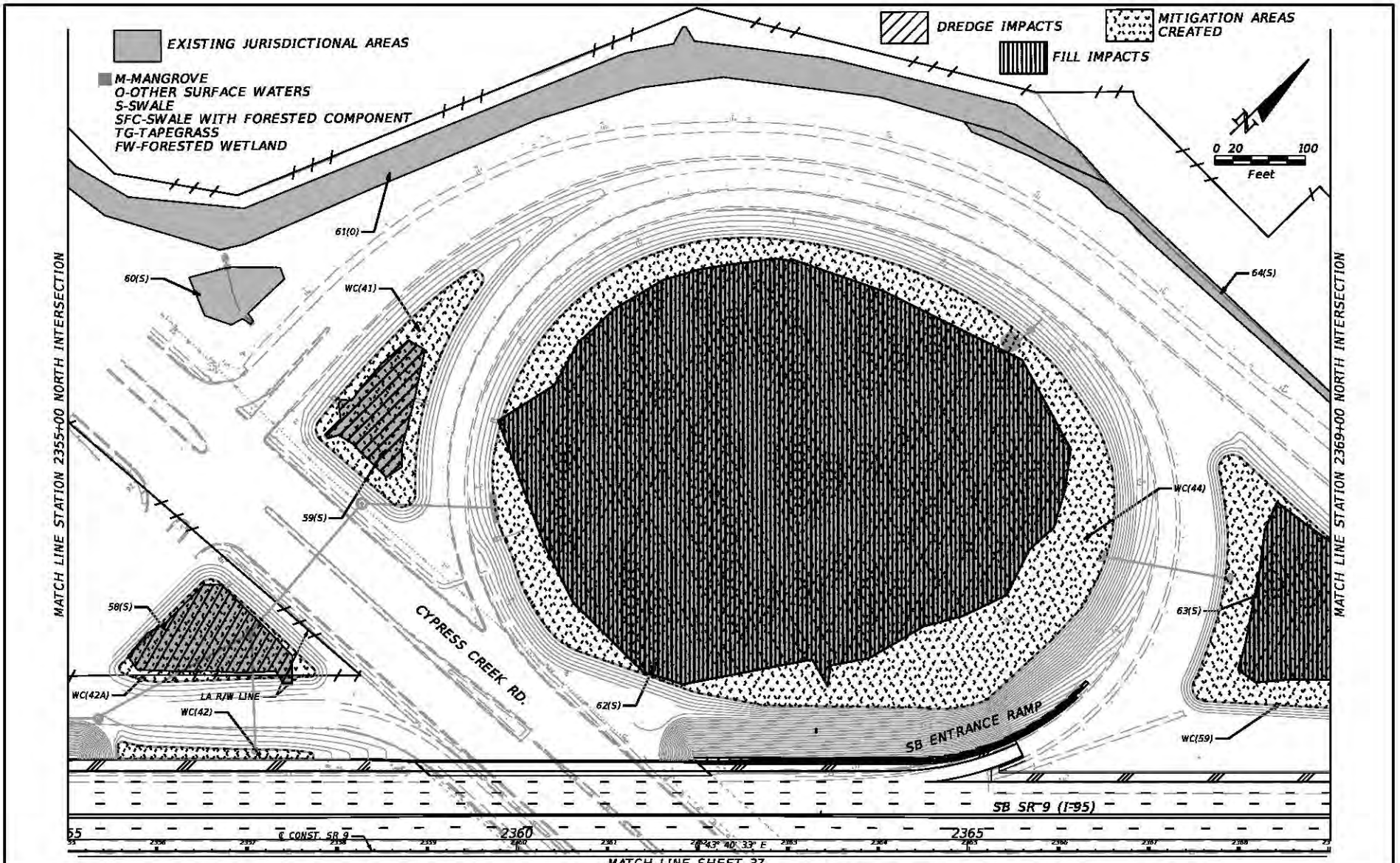

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 36

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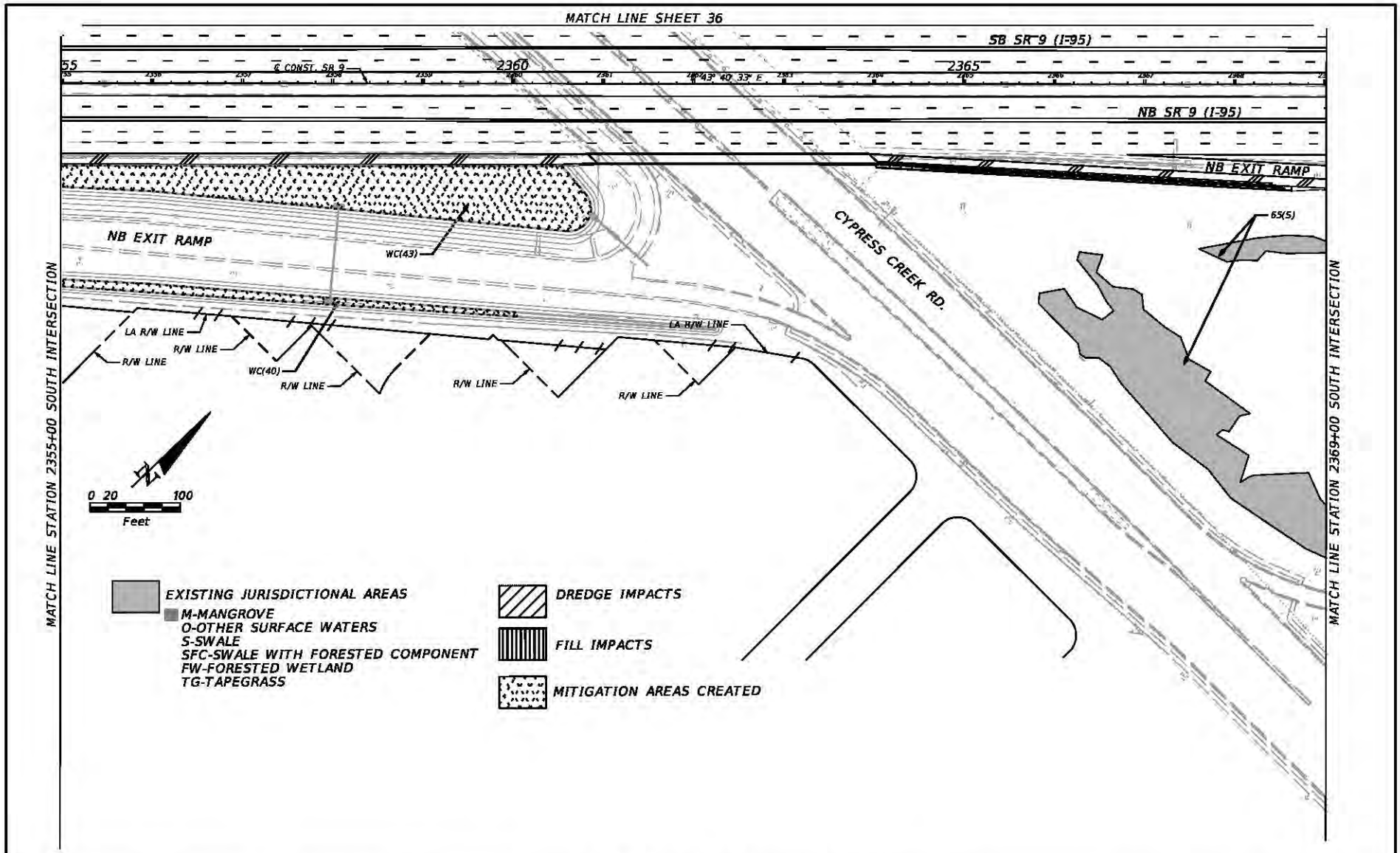

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 37

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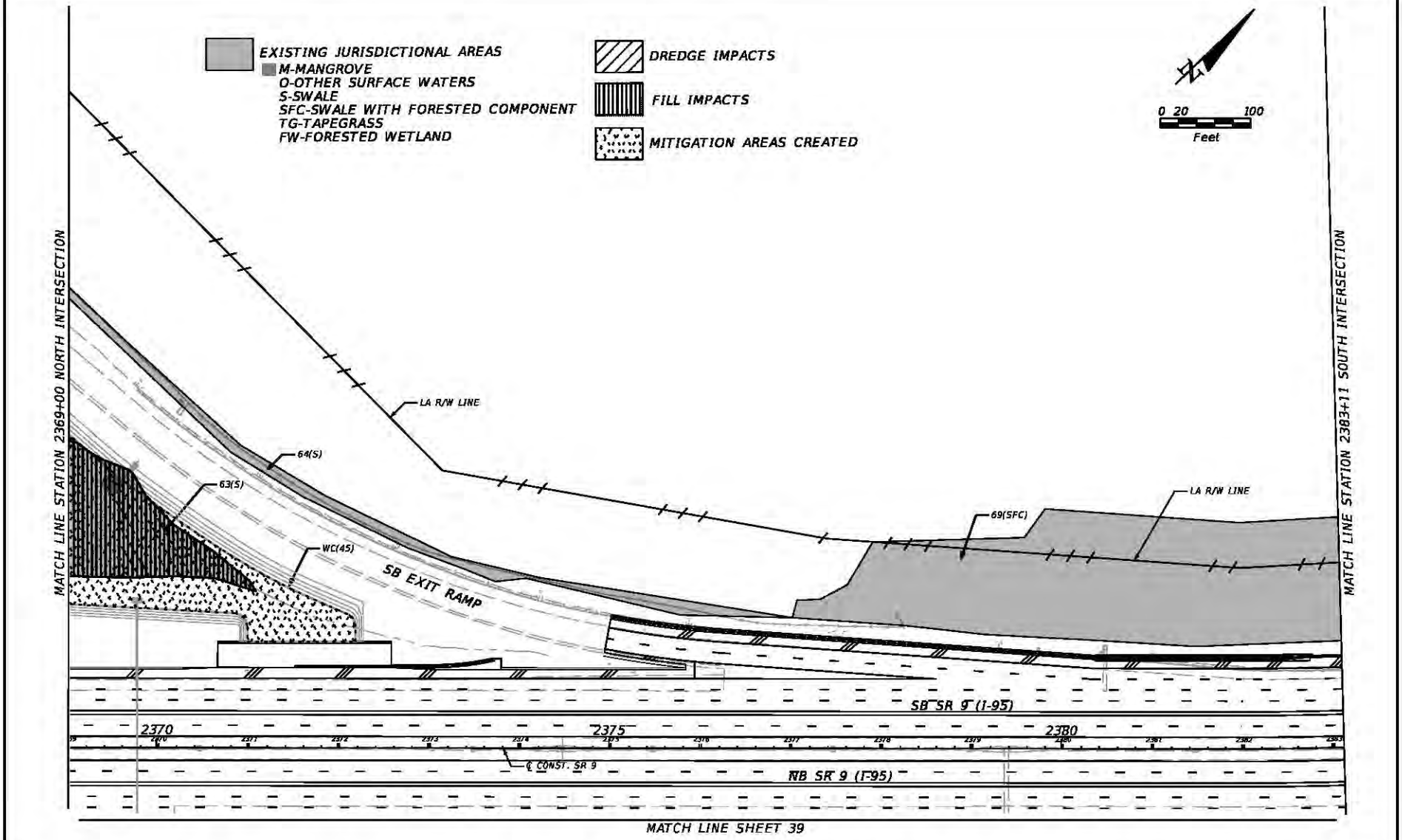

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 38

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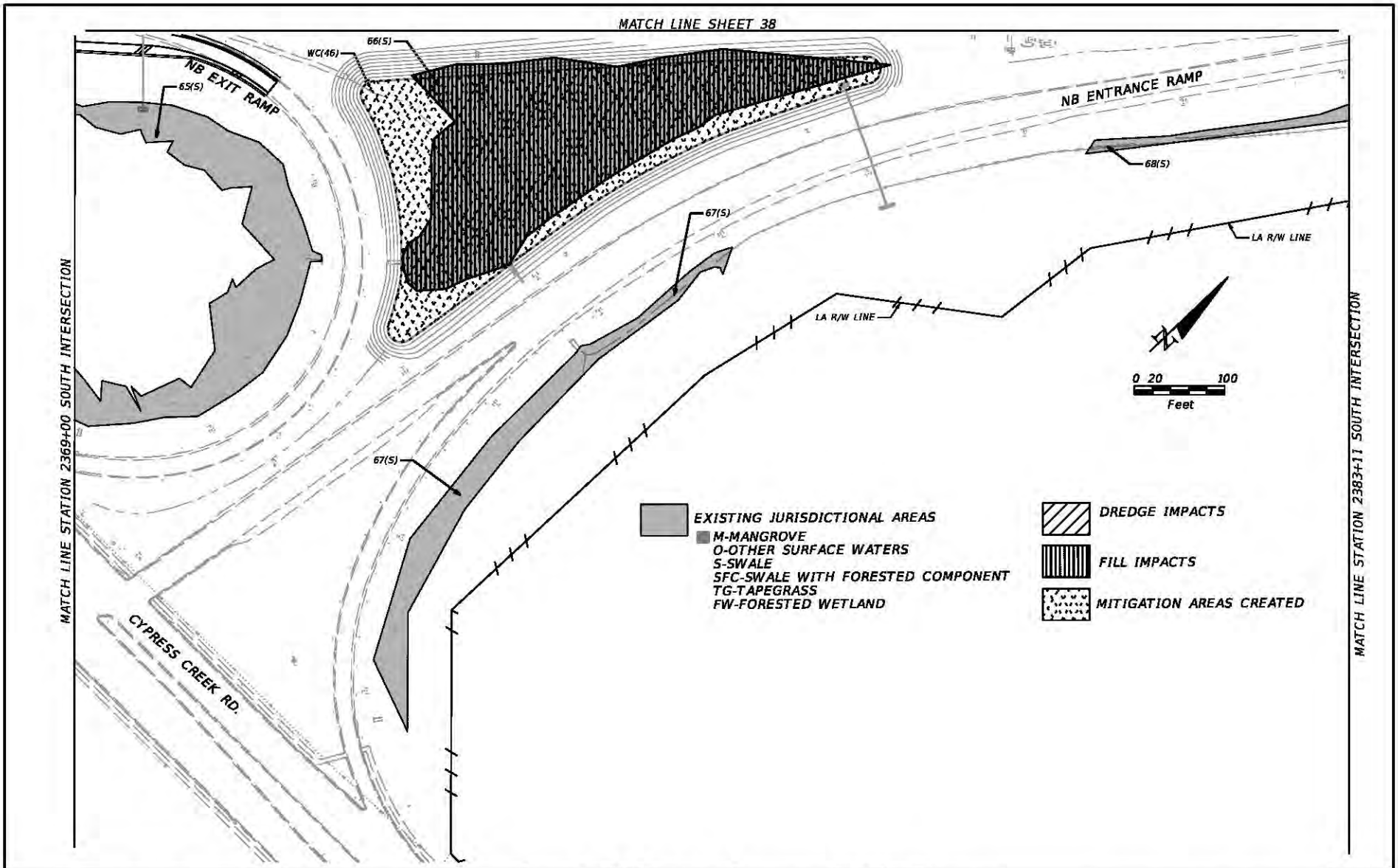

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 39

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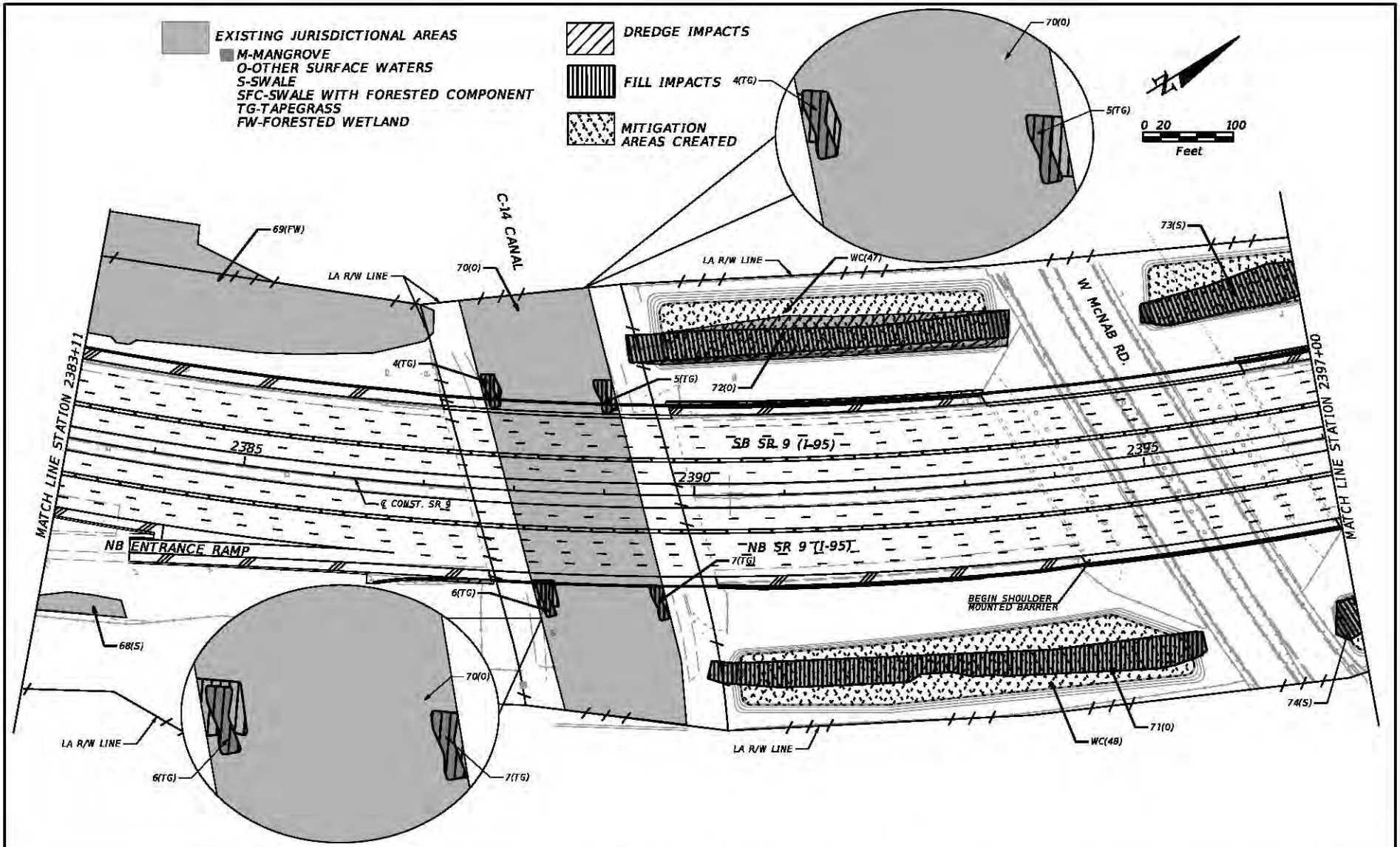

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

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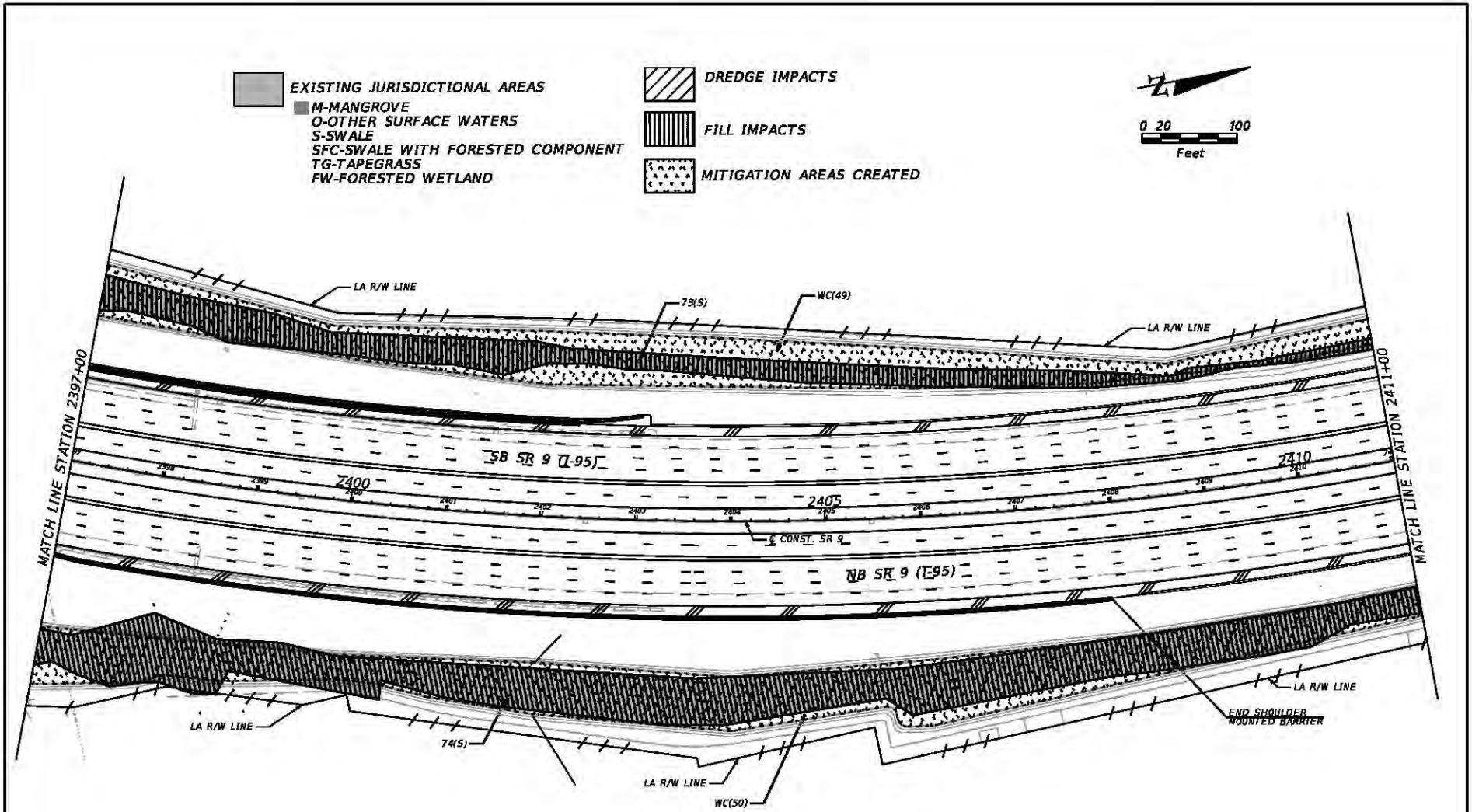
ROADWAY PLAN

SHEET NO. 40



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 41

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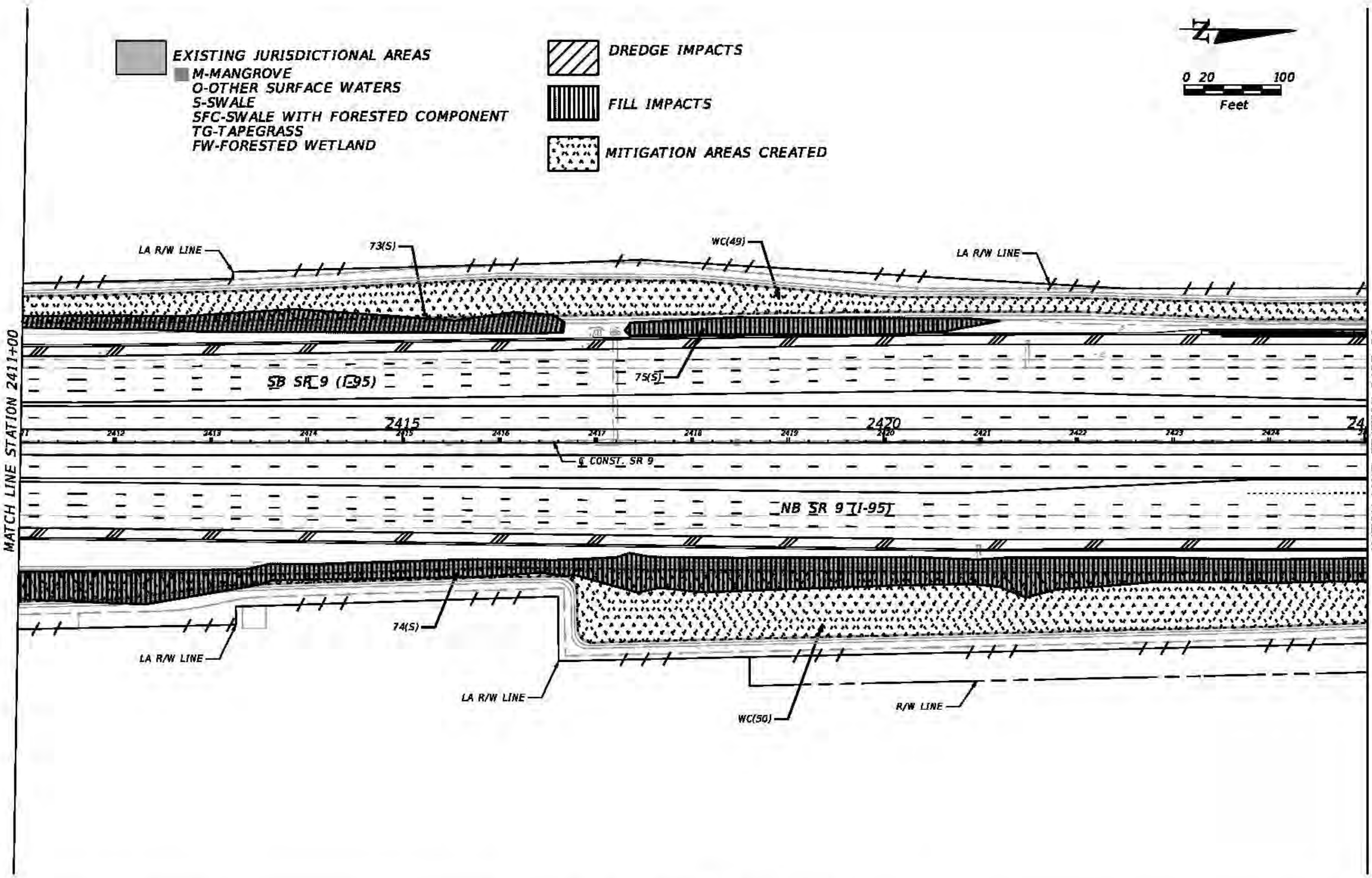

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO.
42

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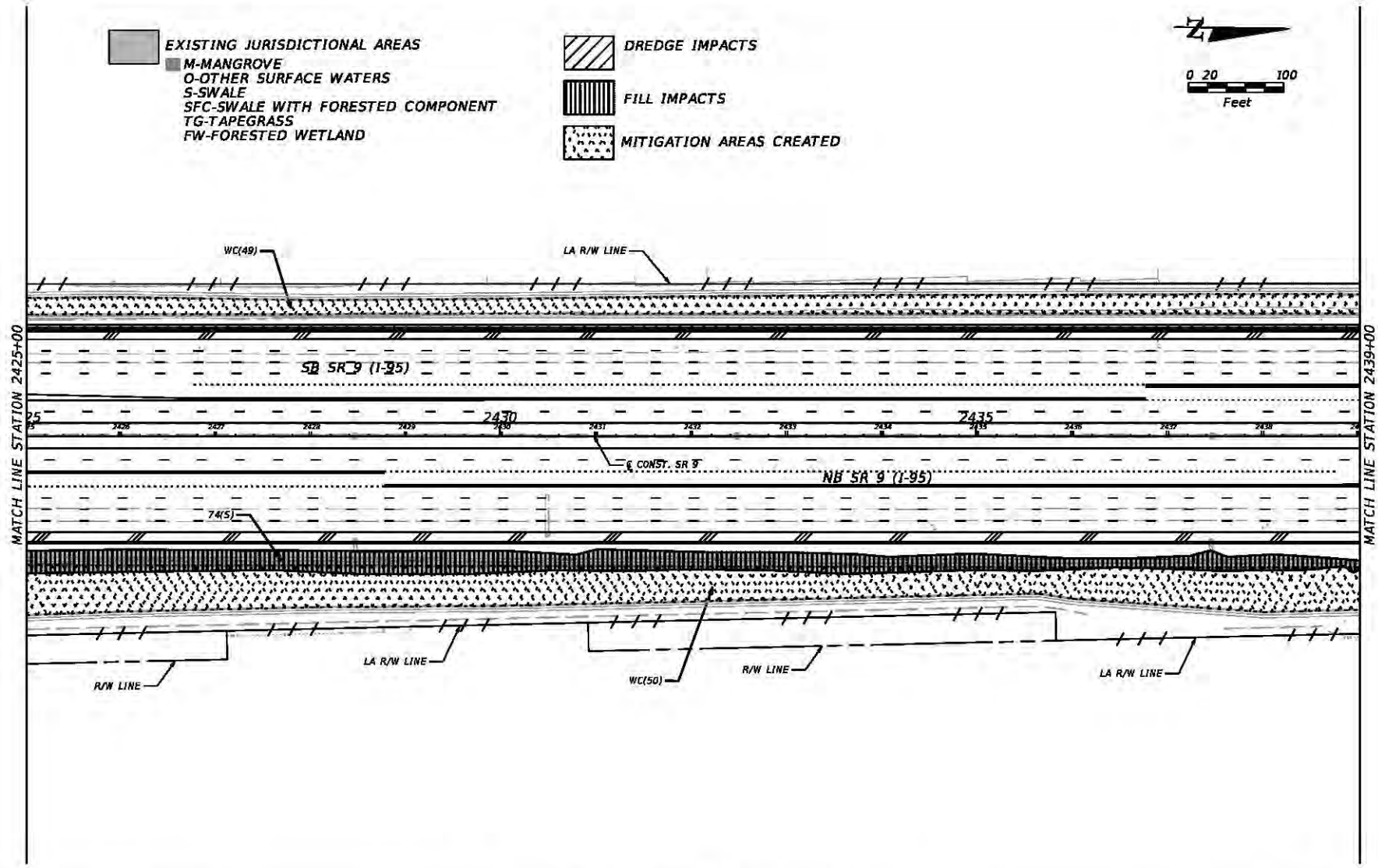

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 43

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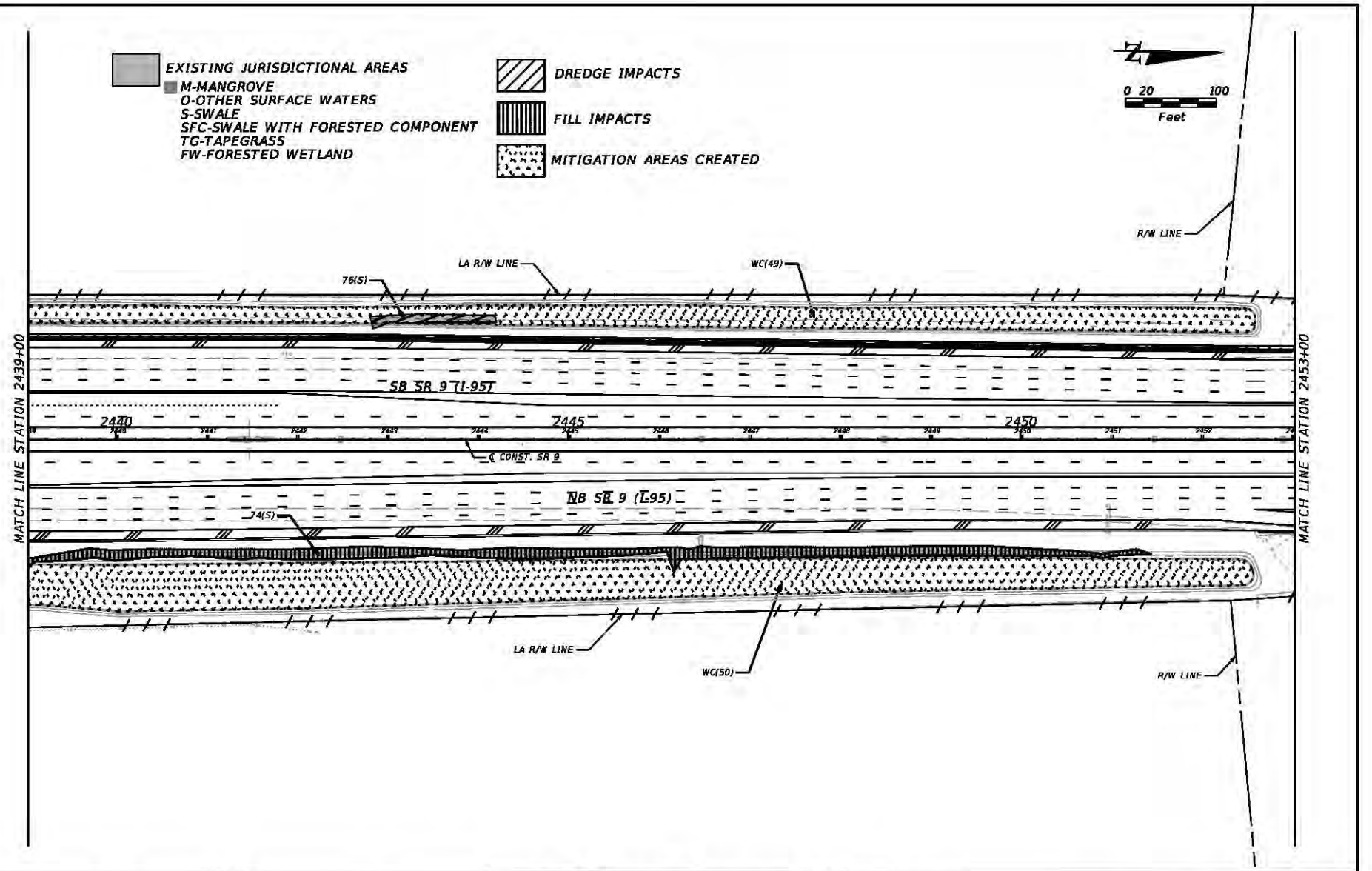

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 44

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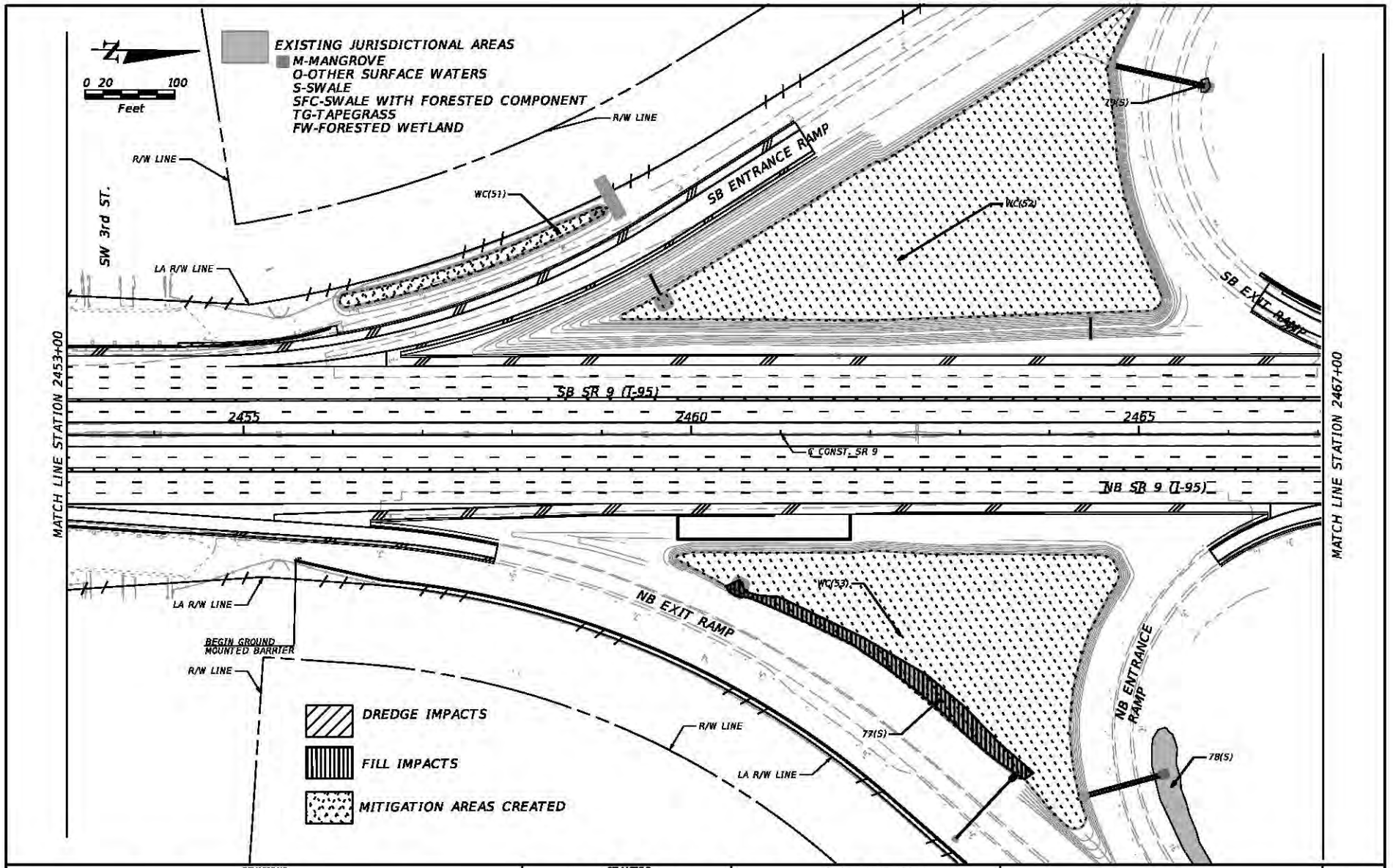


REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

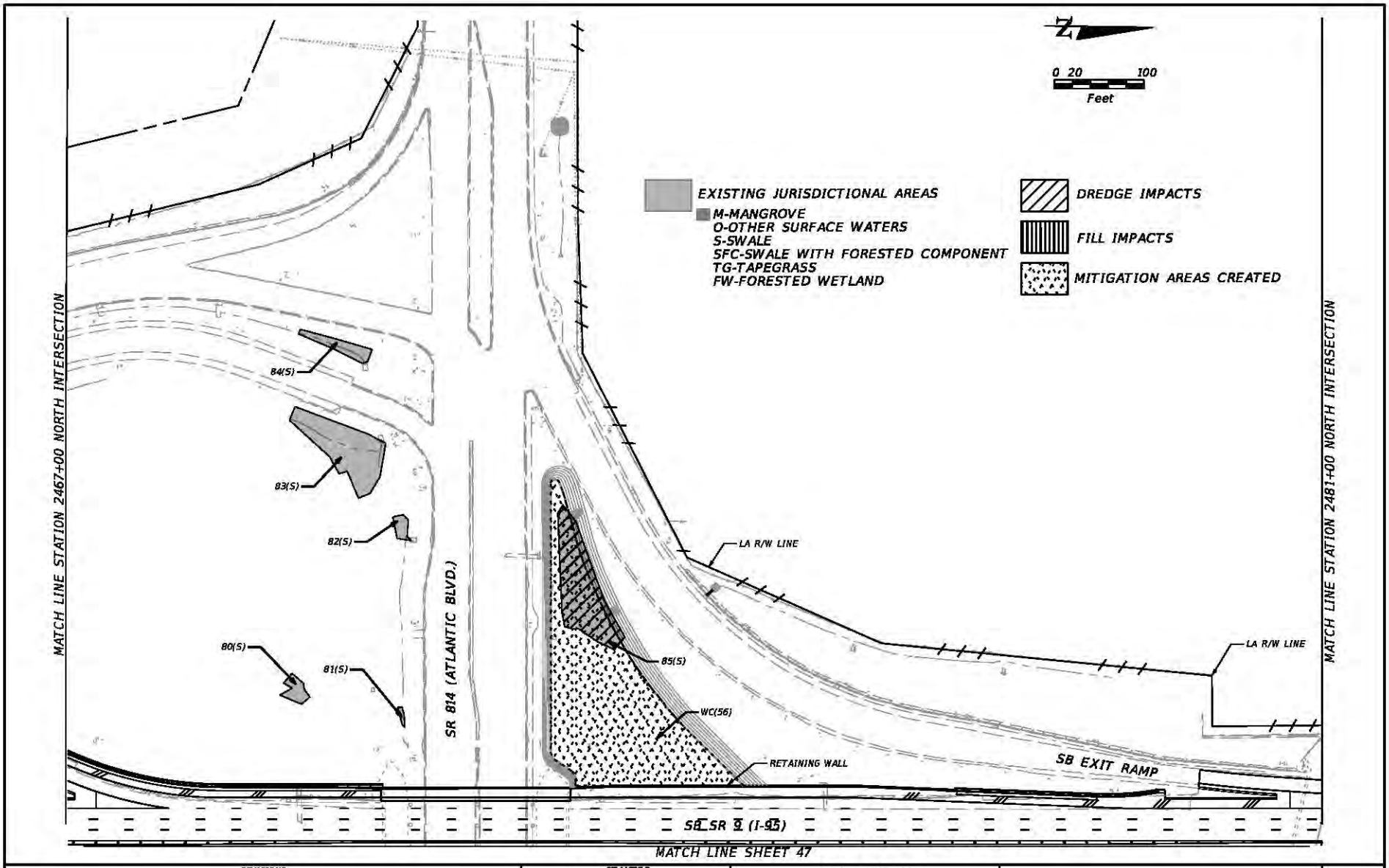
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

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

ROADWAY PLAN

SHEET NO. 45



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

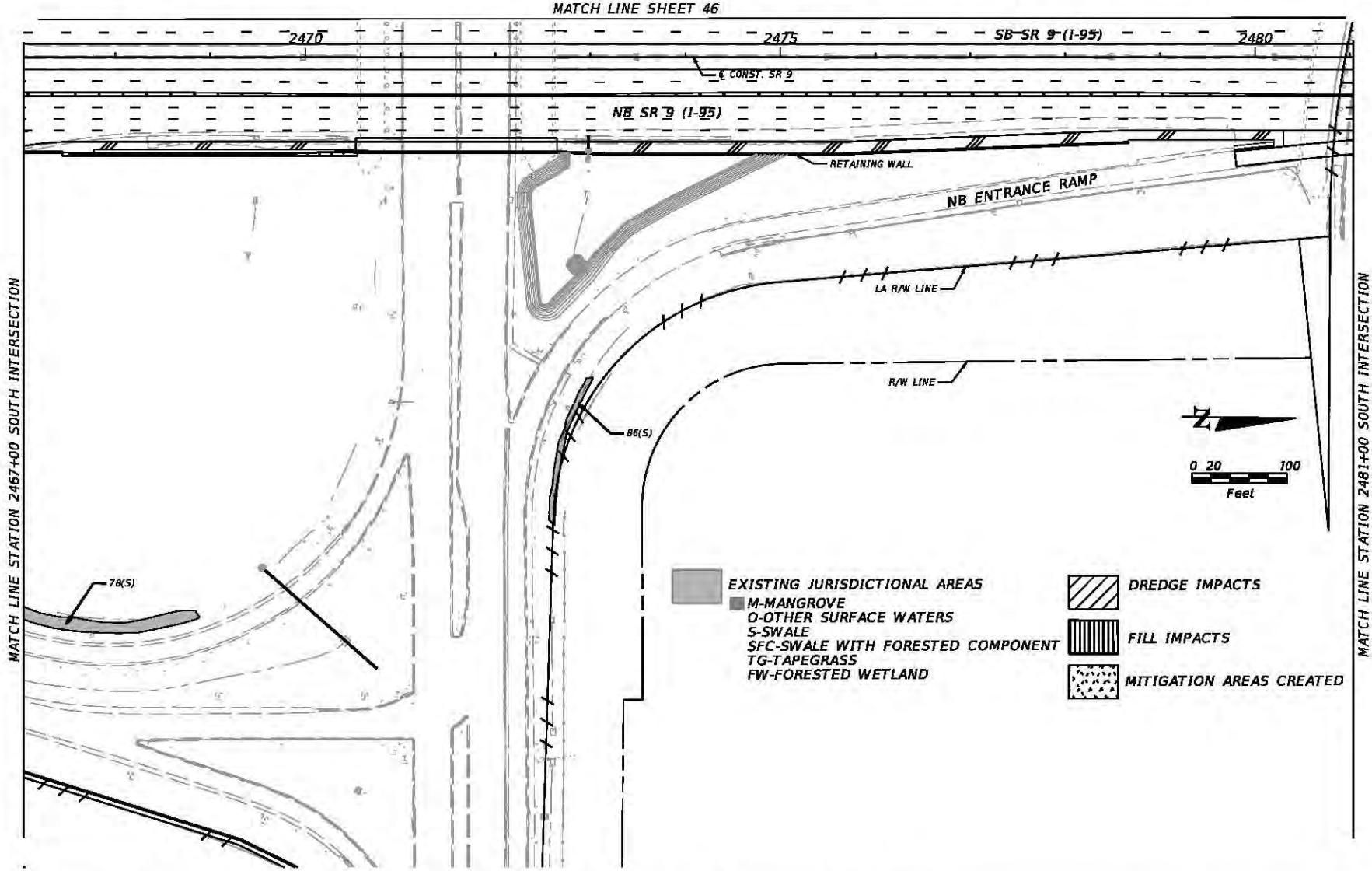
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

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

ROADWAY PLAN

SHEET NO. 46



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

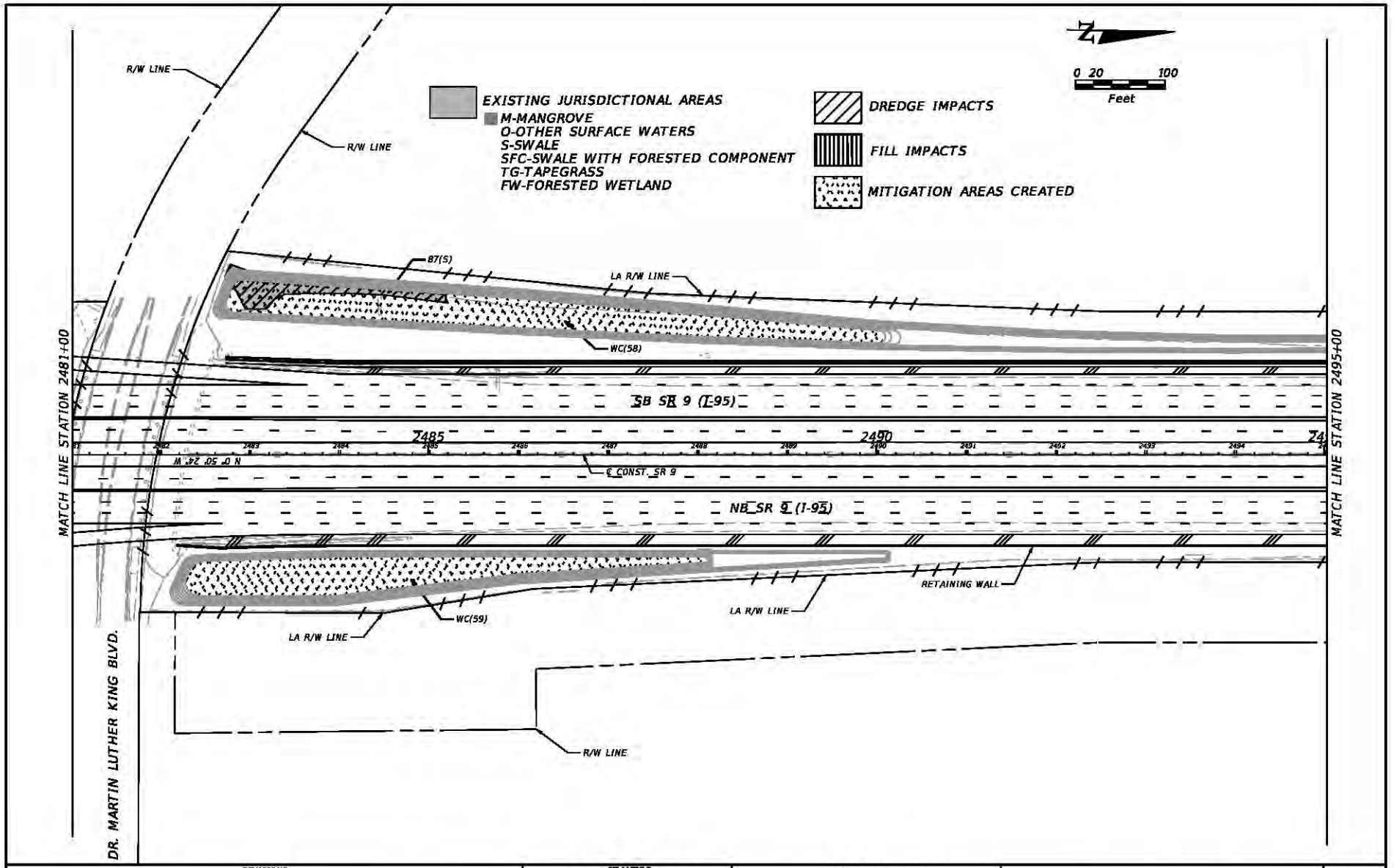
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

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

ROADWAY PLAN

SHEET NO. 47



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 48

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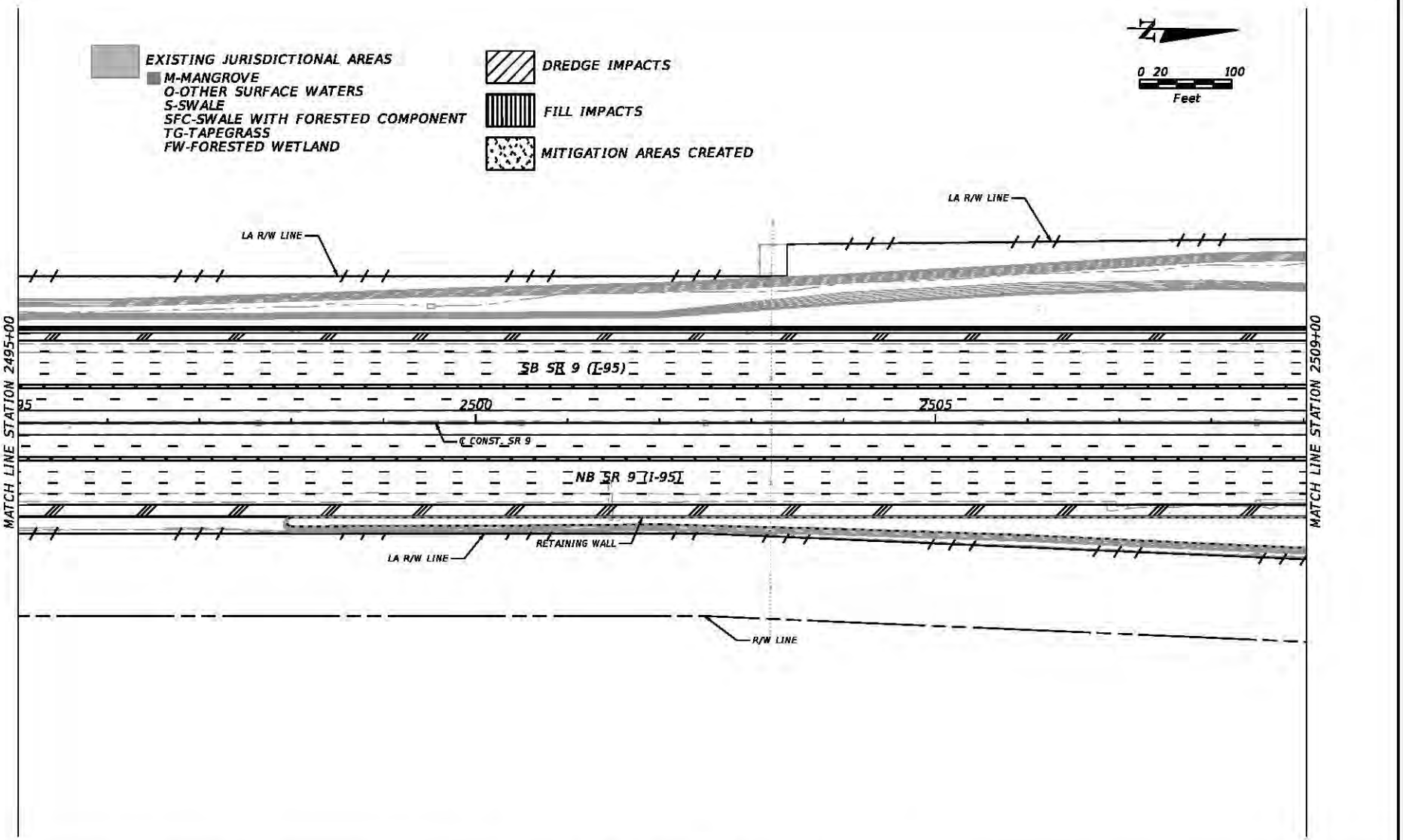

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 49

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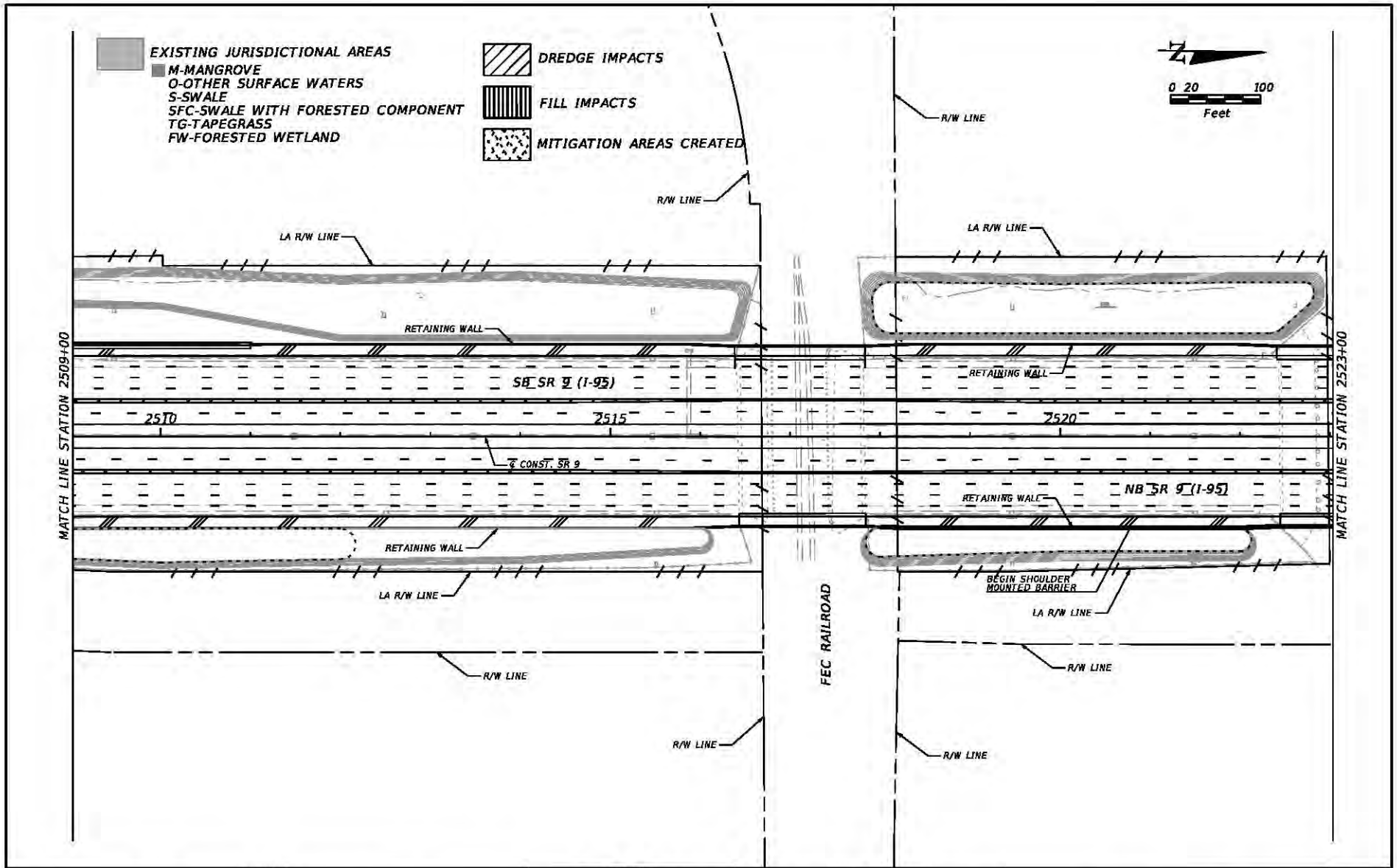

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 50

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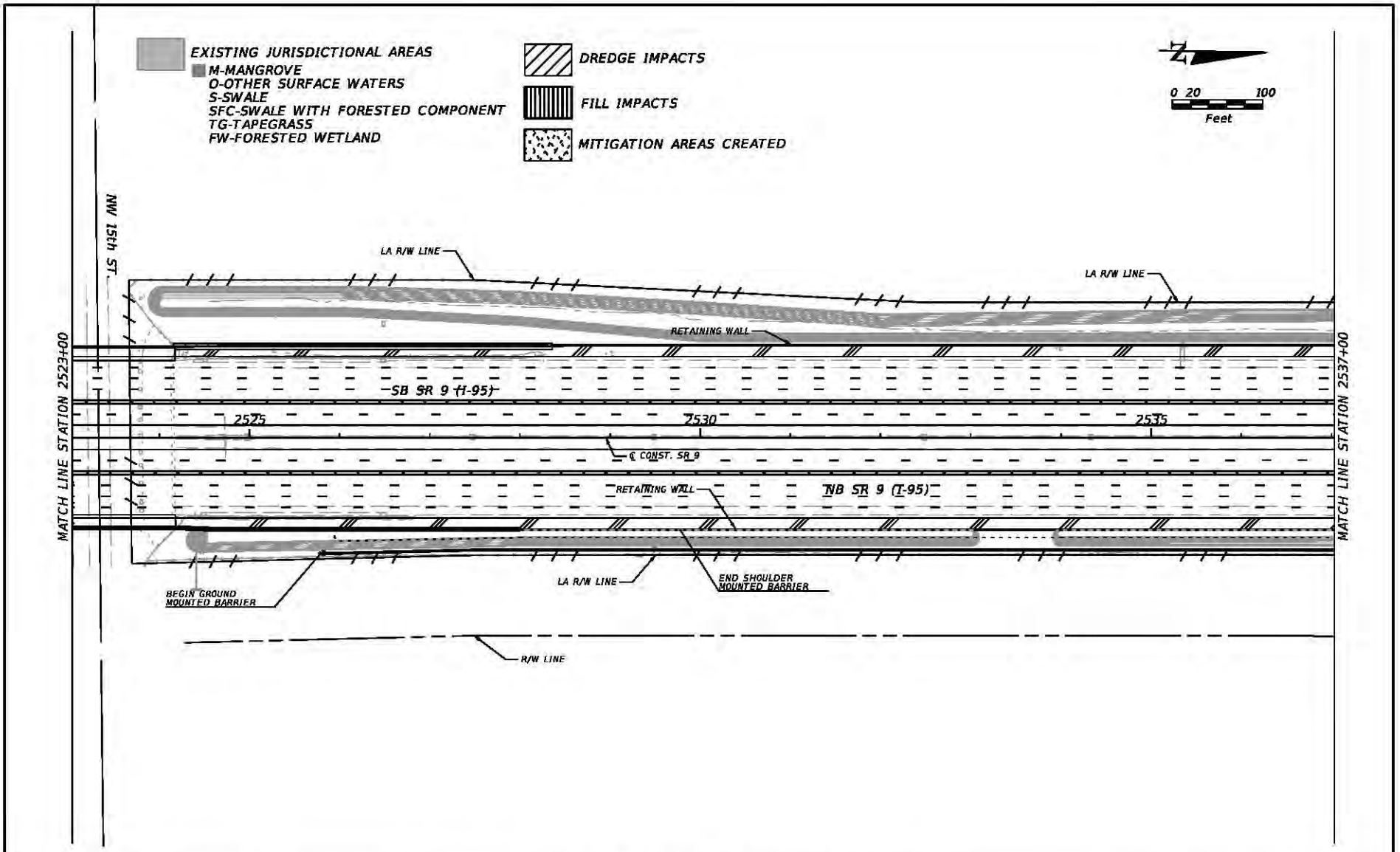

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 51

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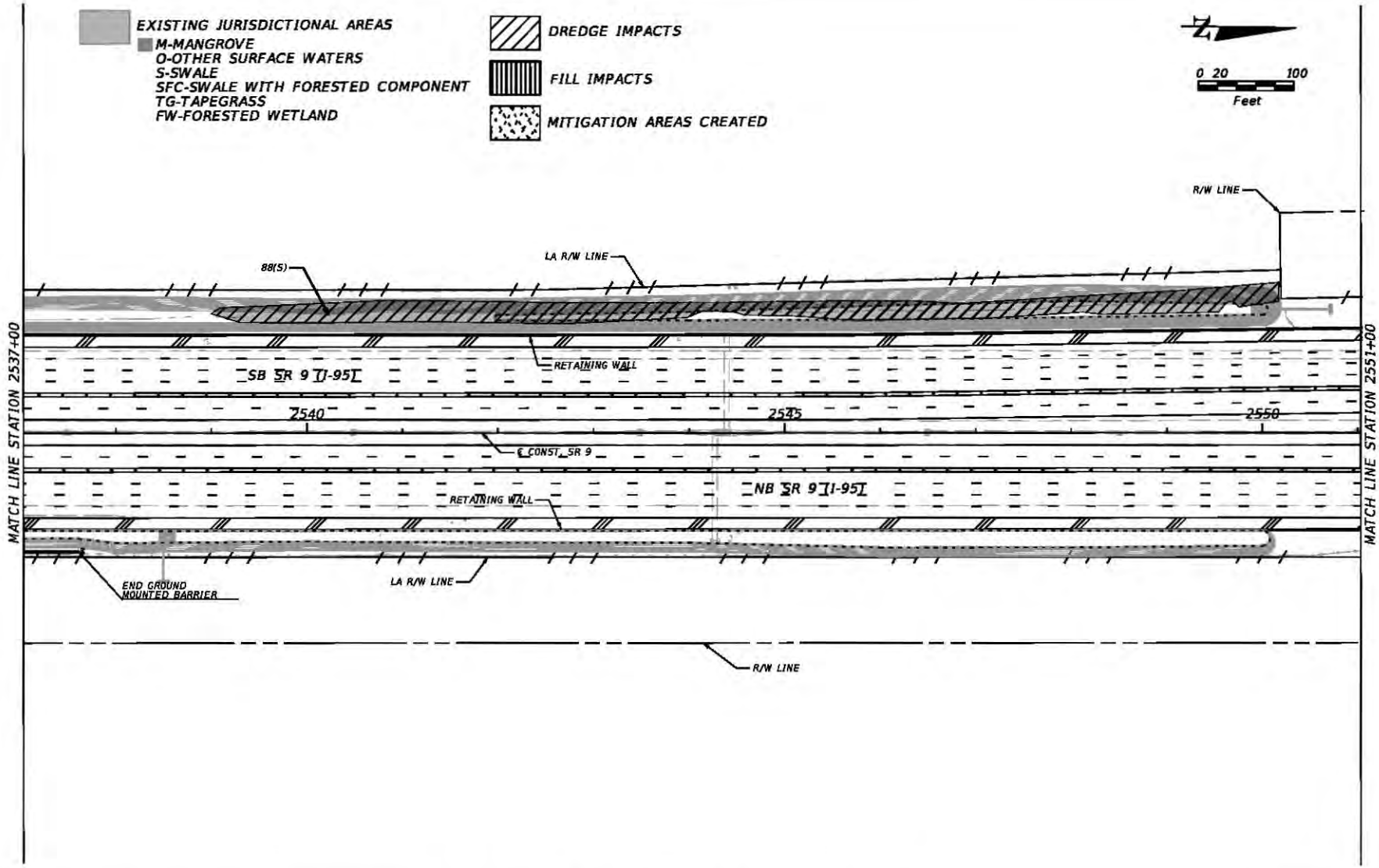

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 52

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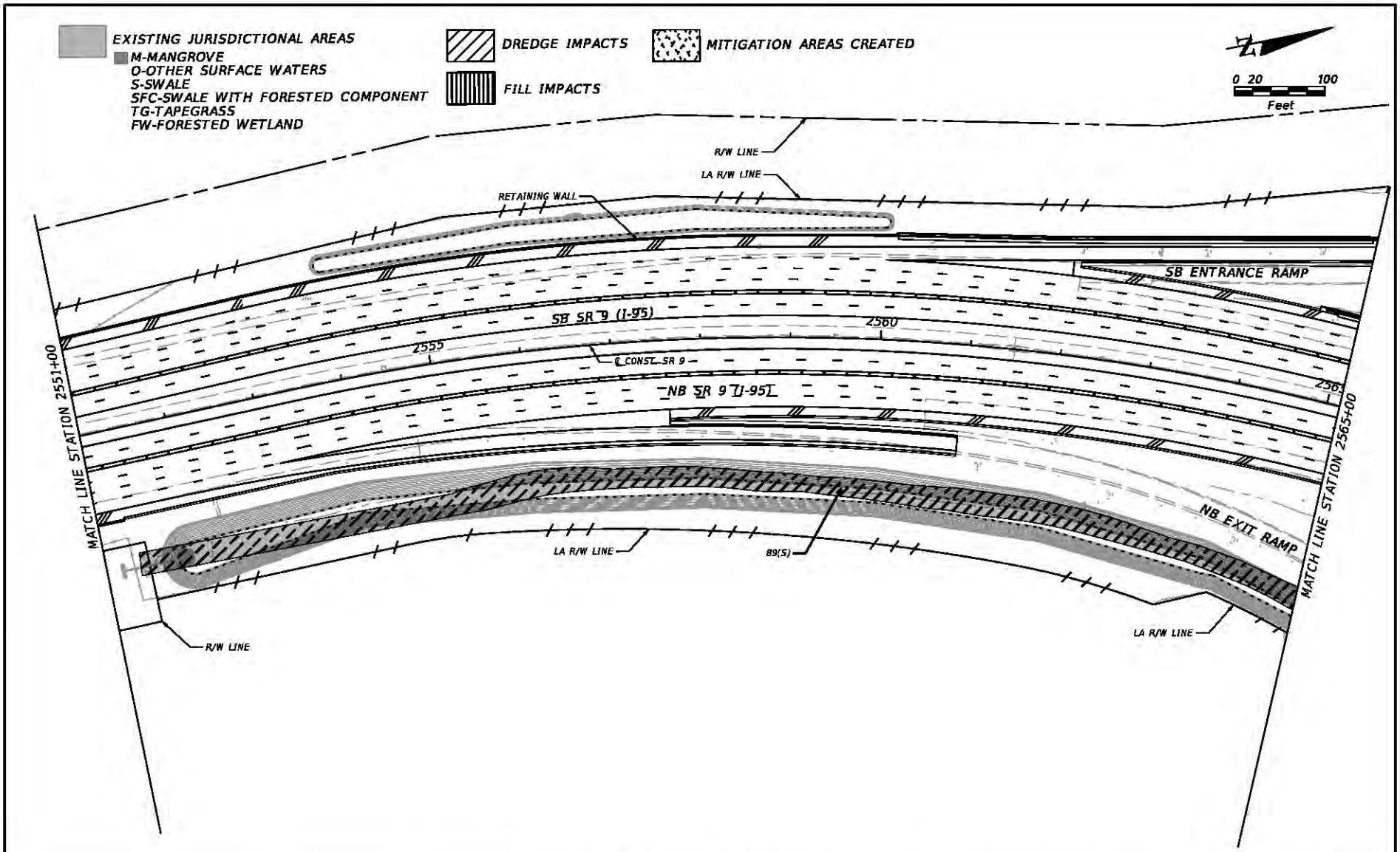

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 53

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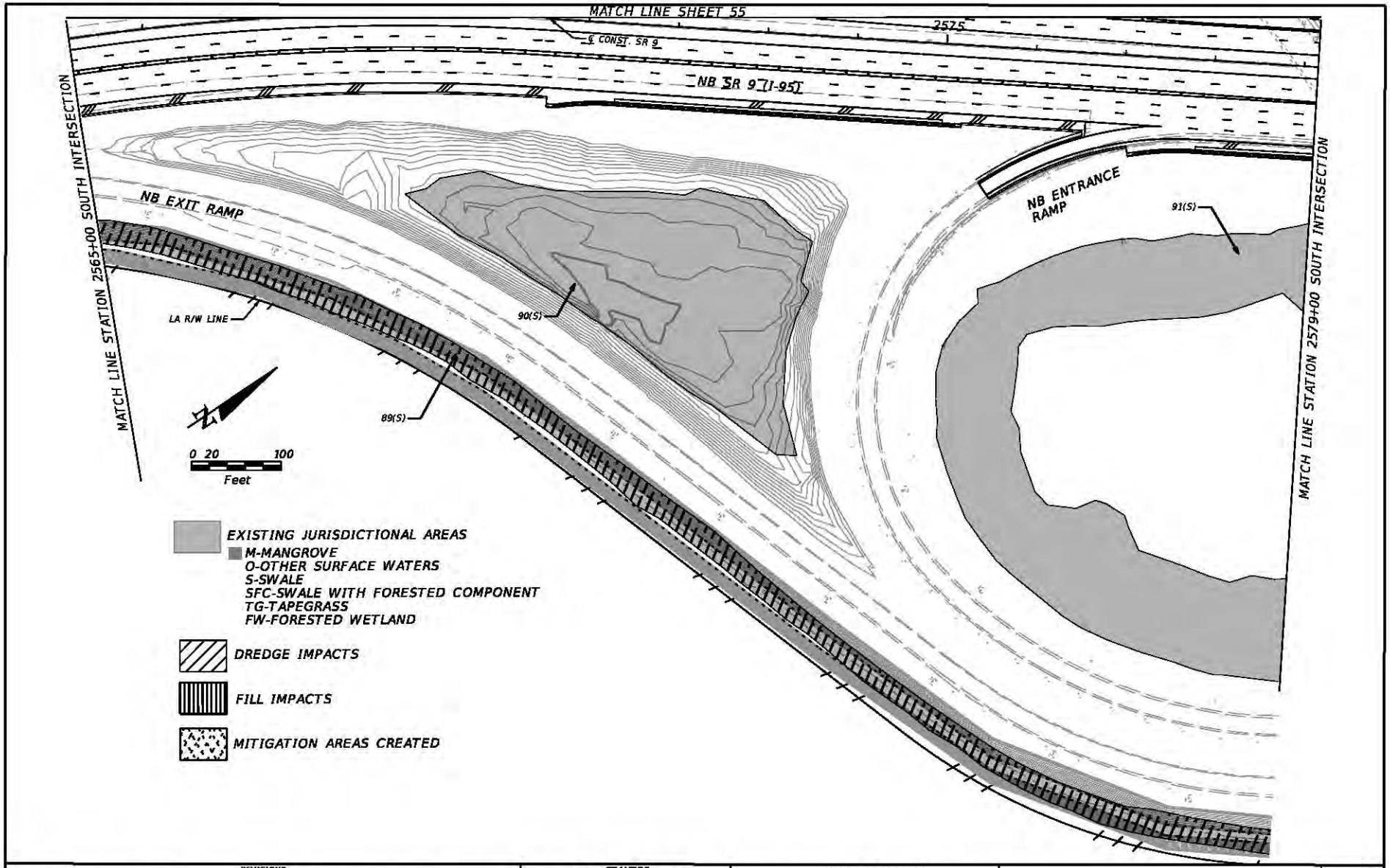

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 54

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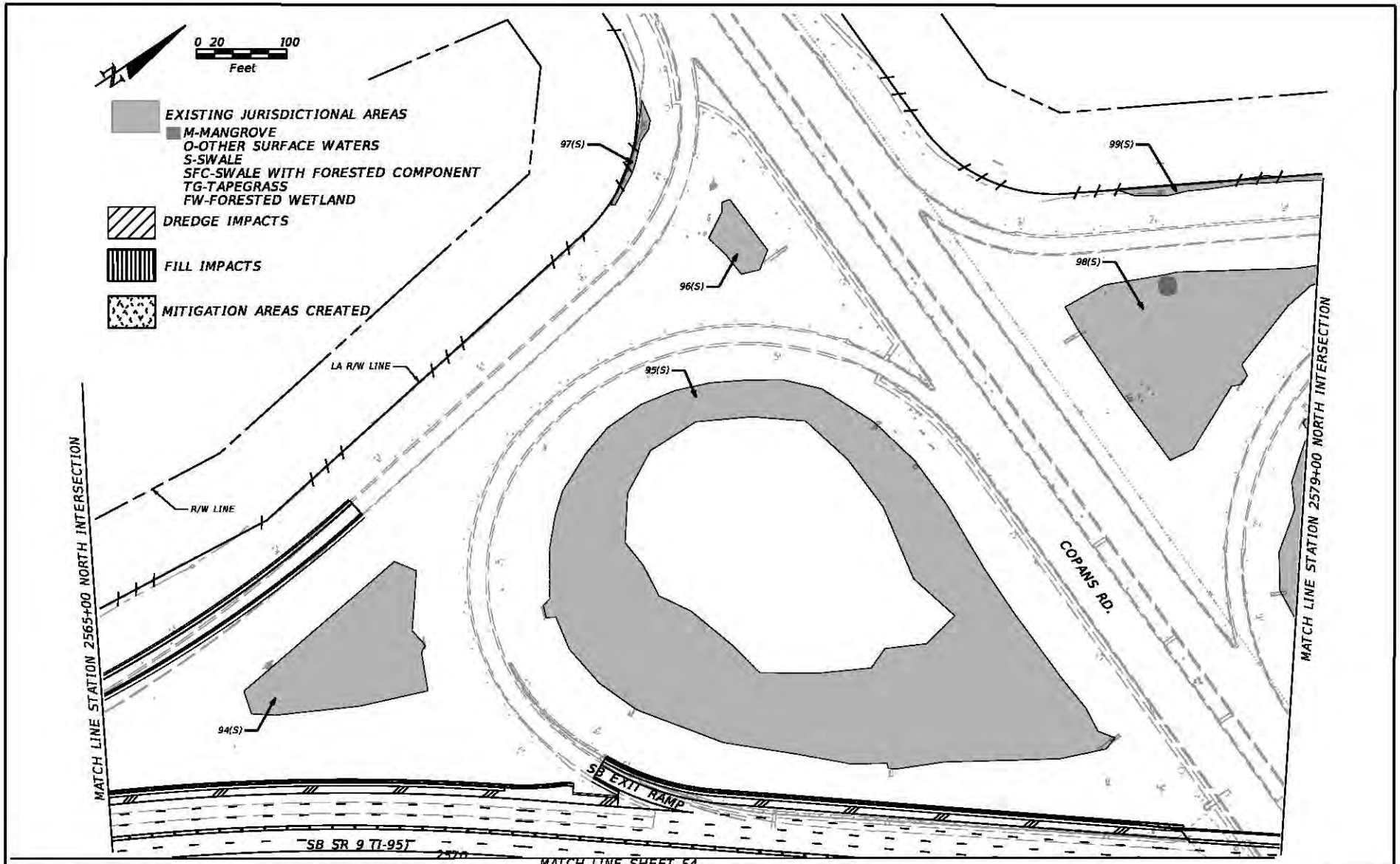

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 55

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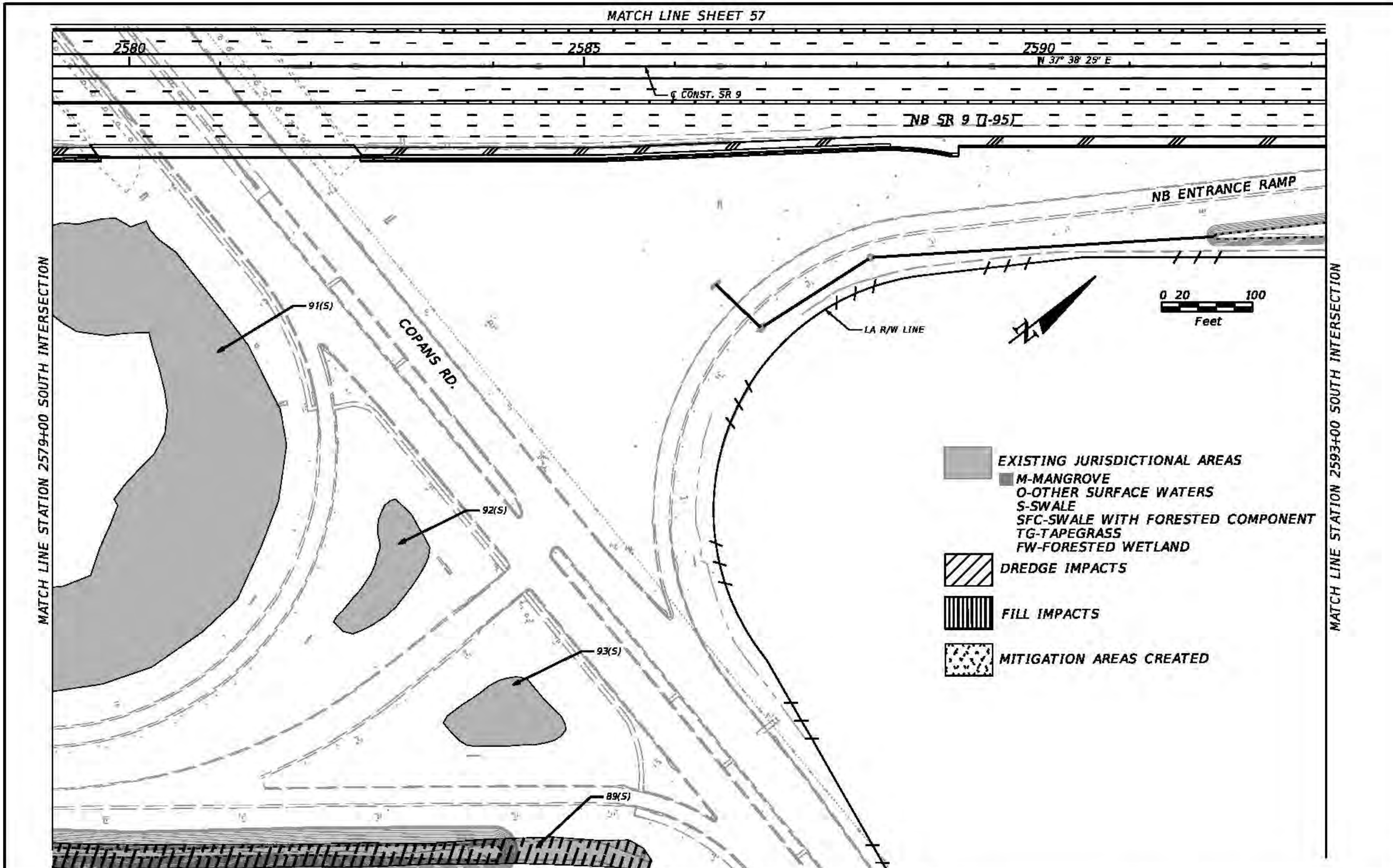

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO.
56

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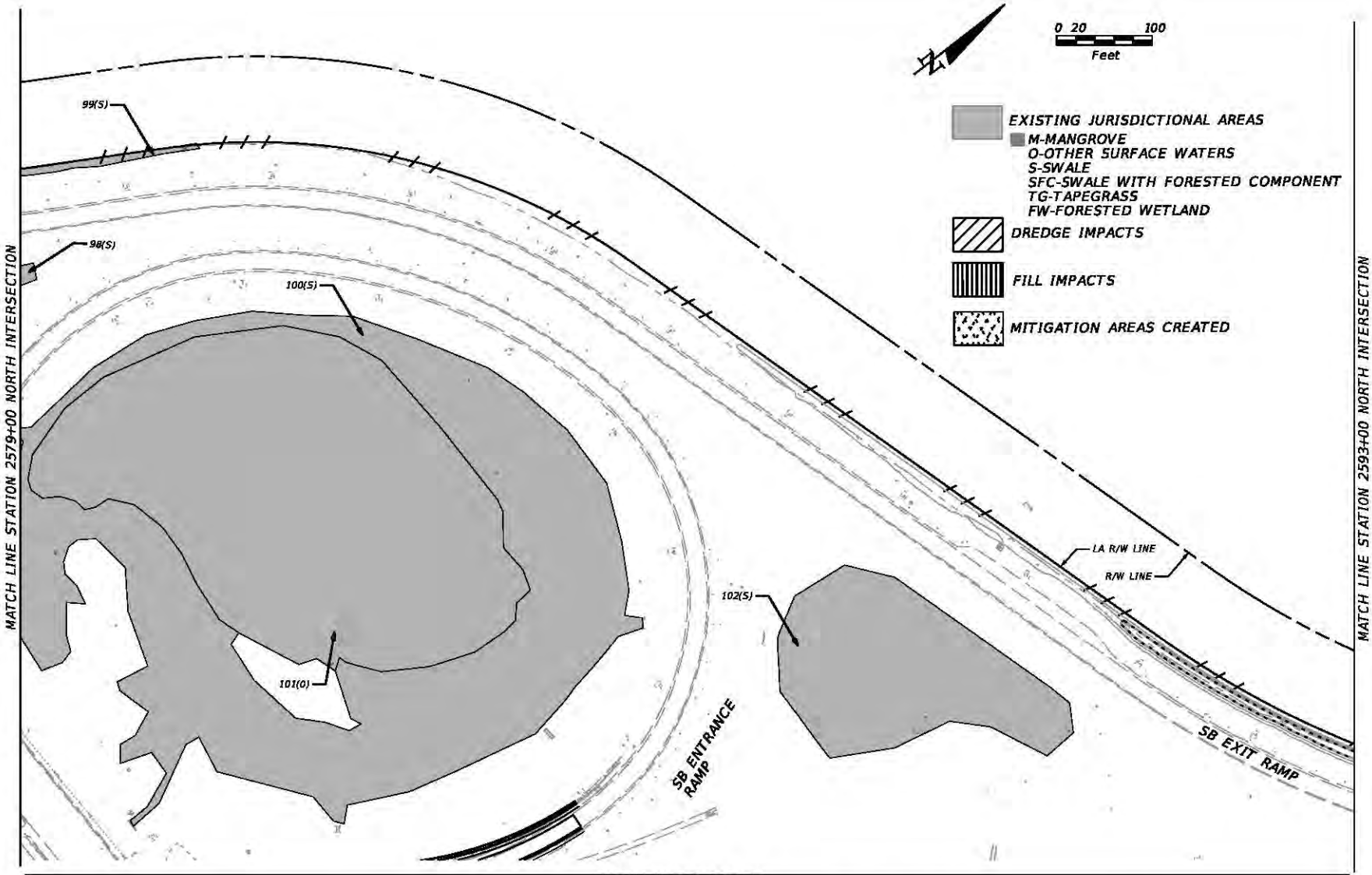

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 57

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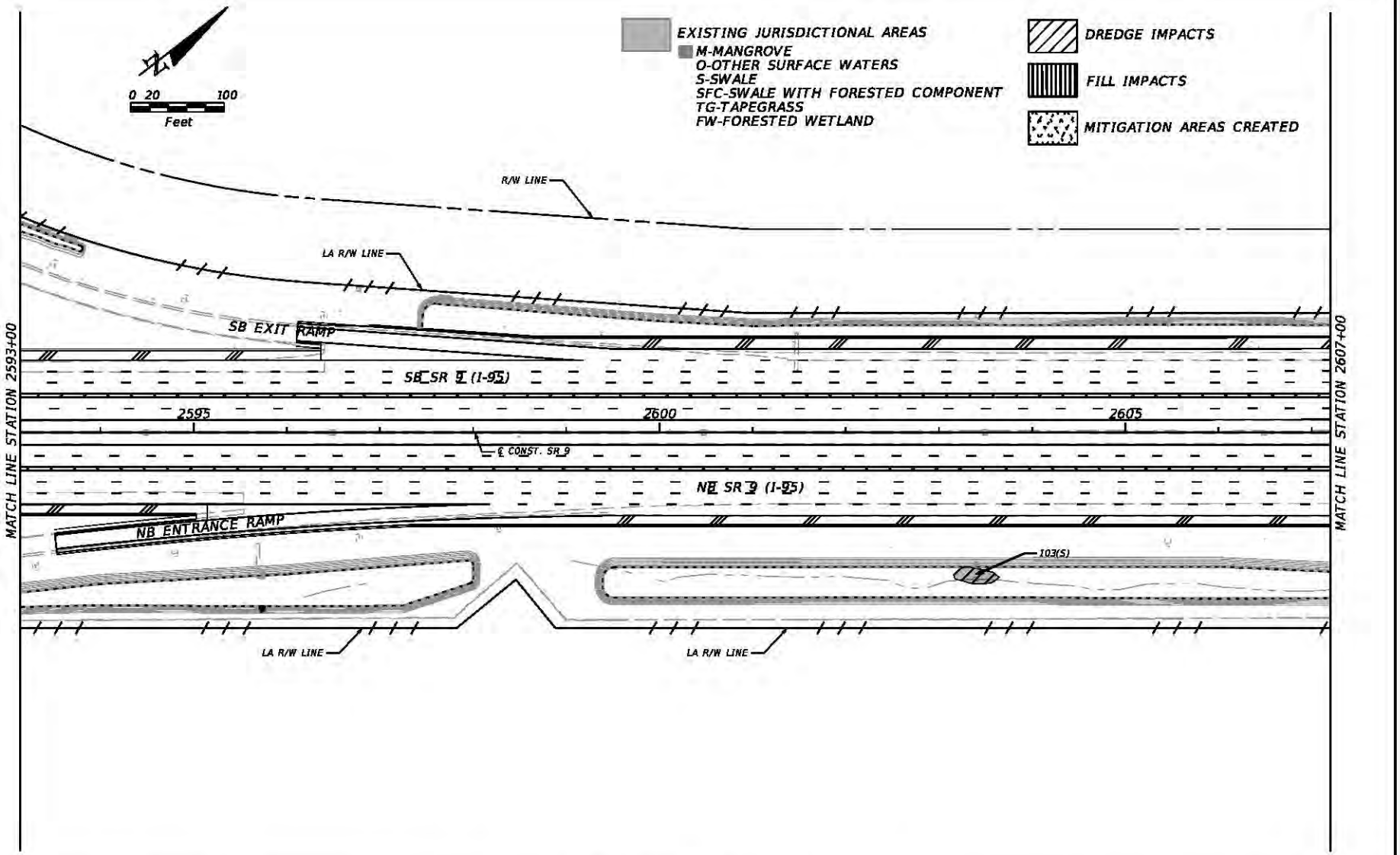

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 58

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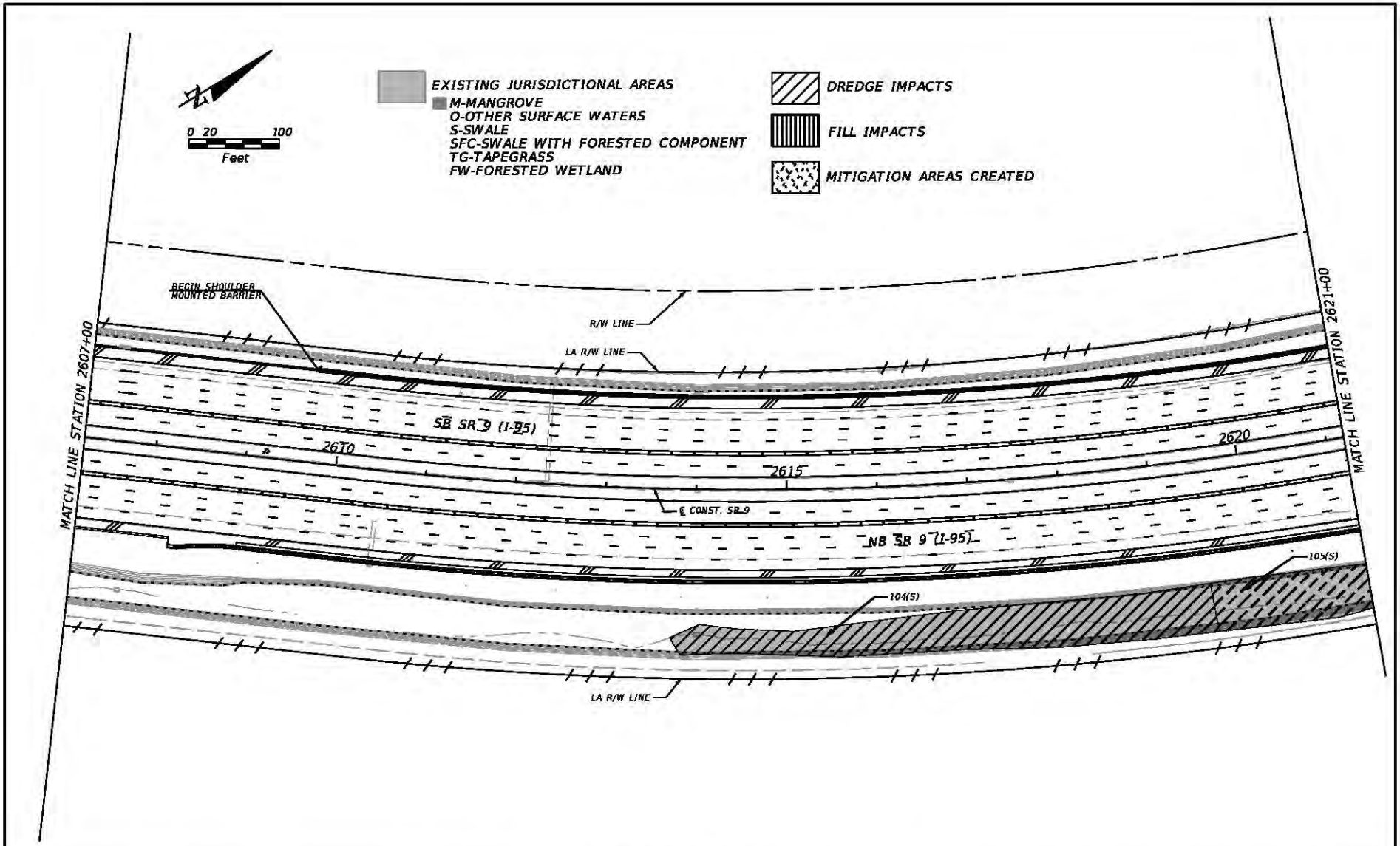

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 59

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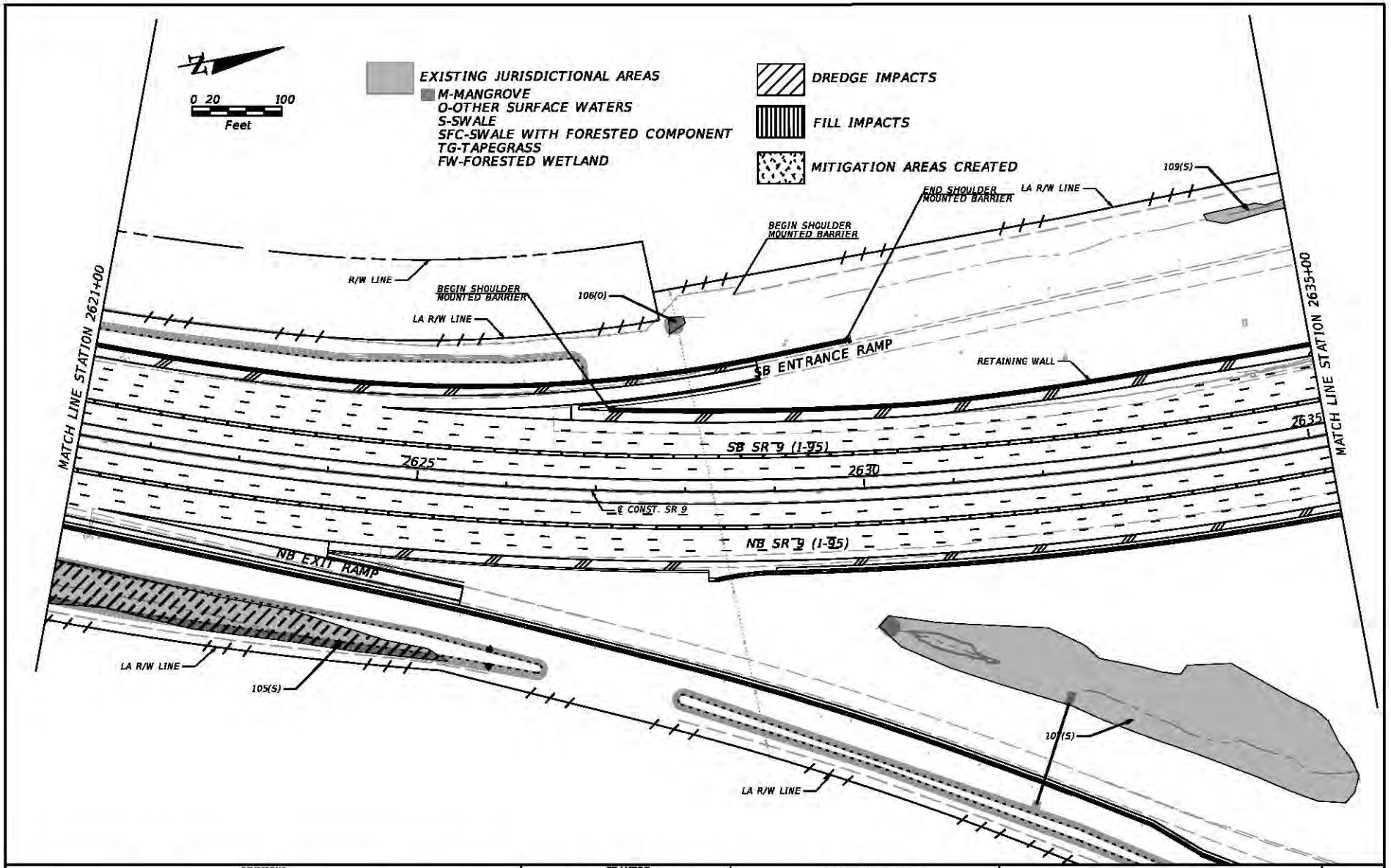

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 60

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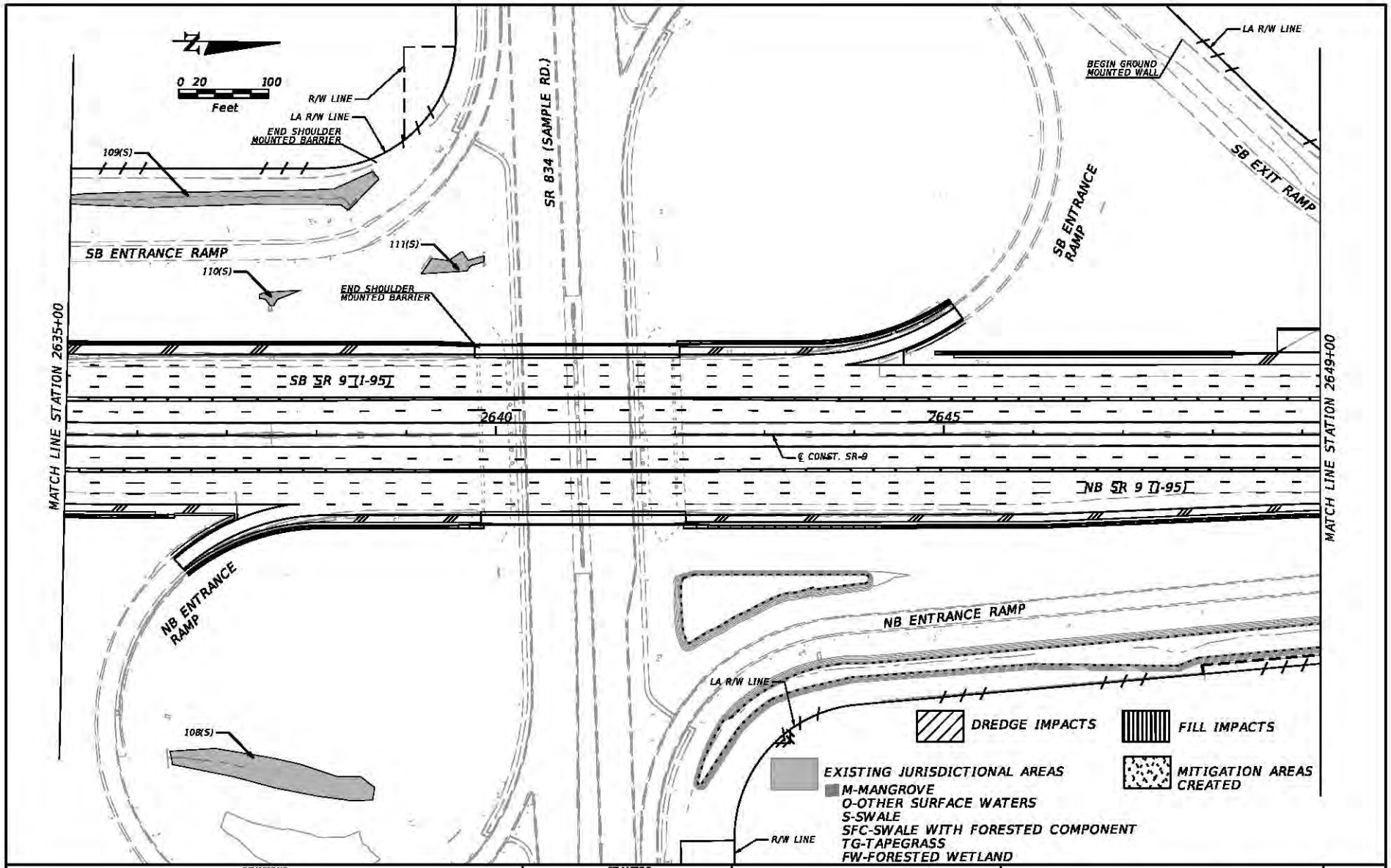

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 61

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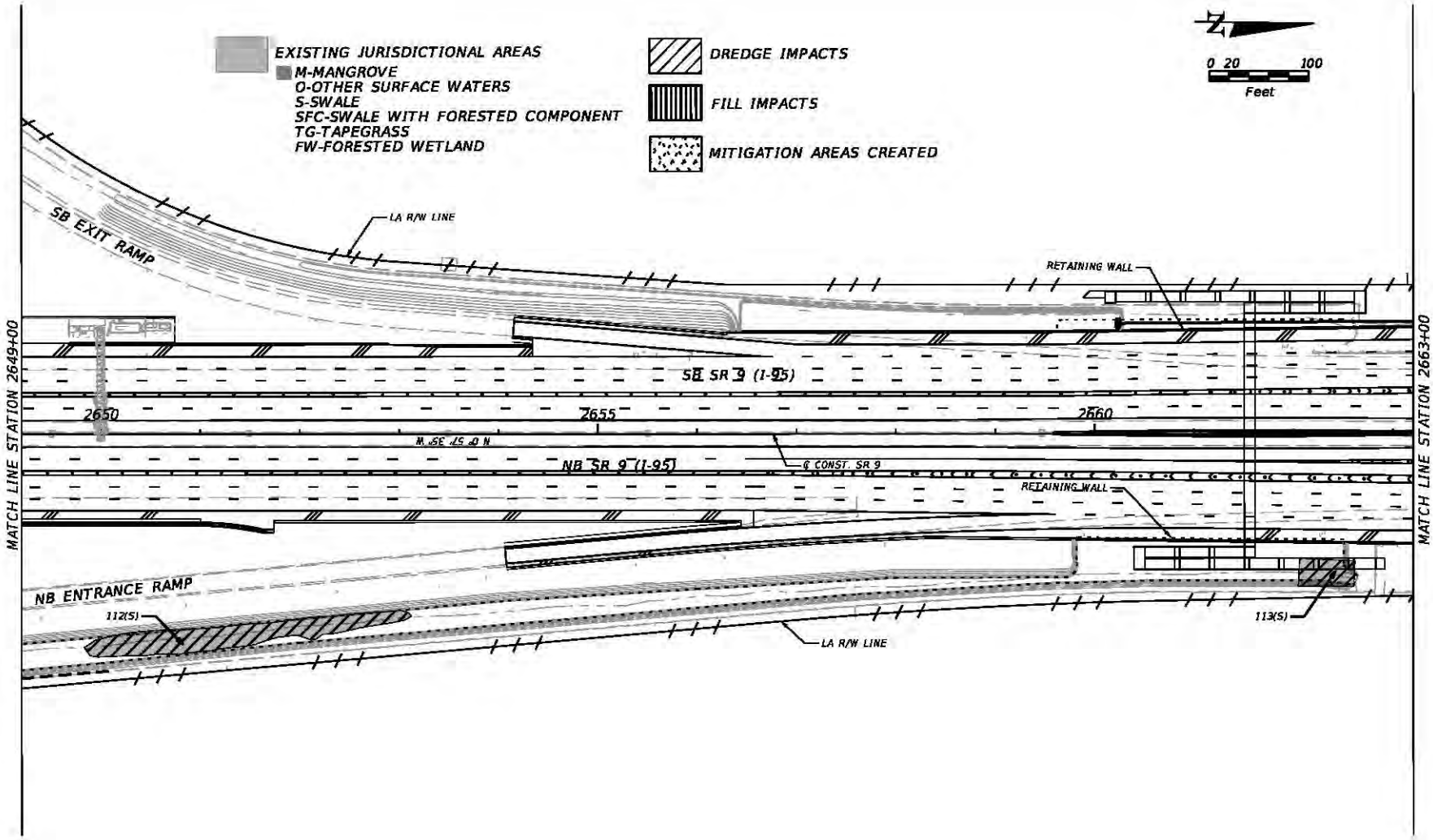


REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

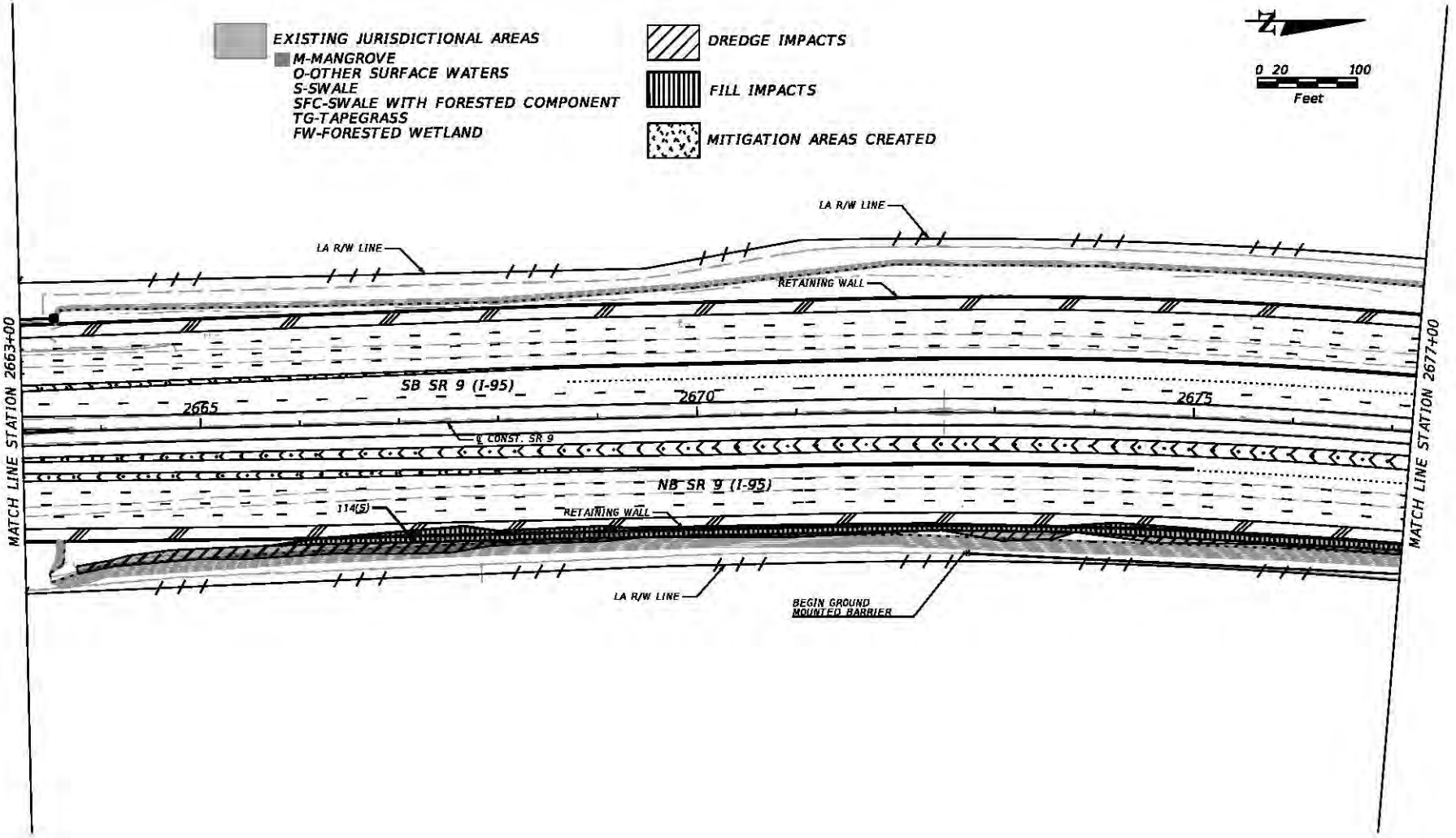
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

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

ROADWAY PLAN

SHEET NO. 62



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
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CORAL GABLES, FL 33134
305-445-2900
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 63

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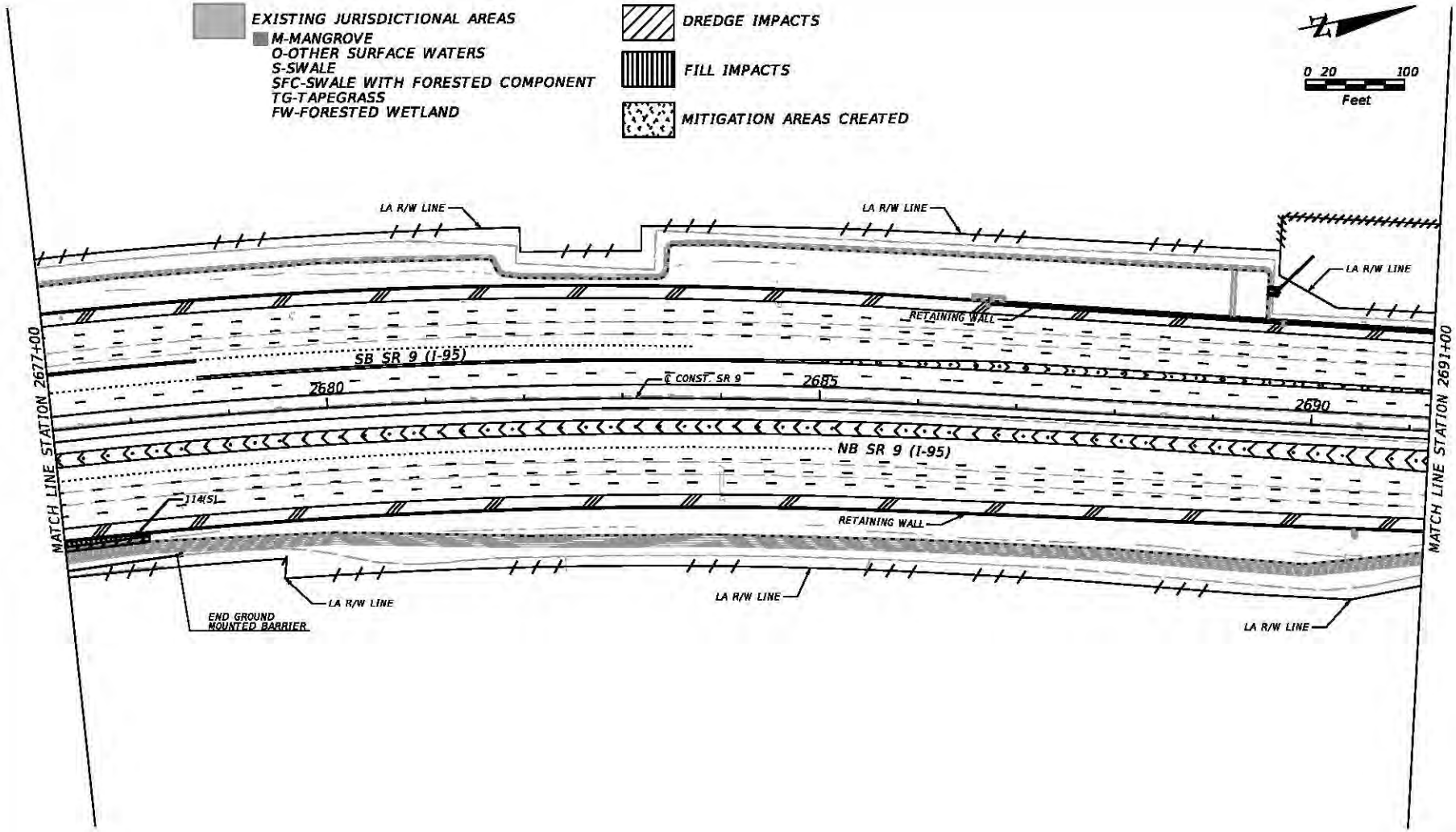

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 64

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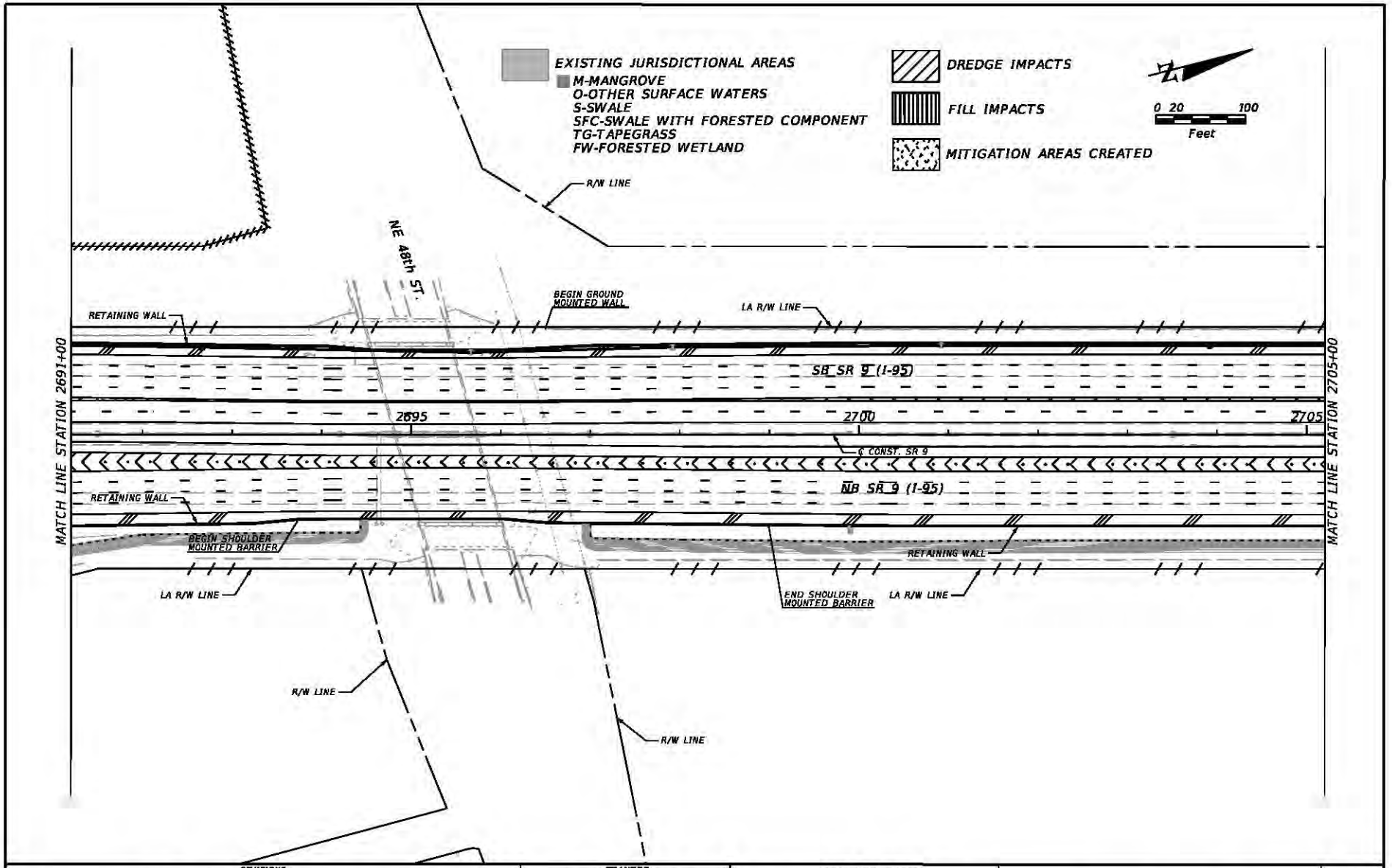

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
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ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 65

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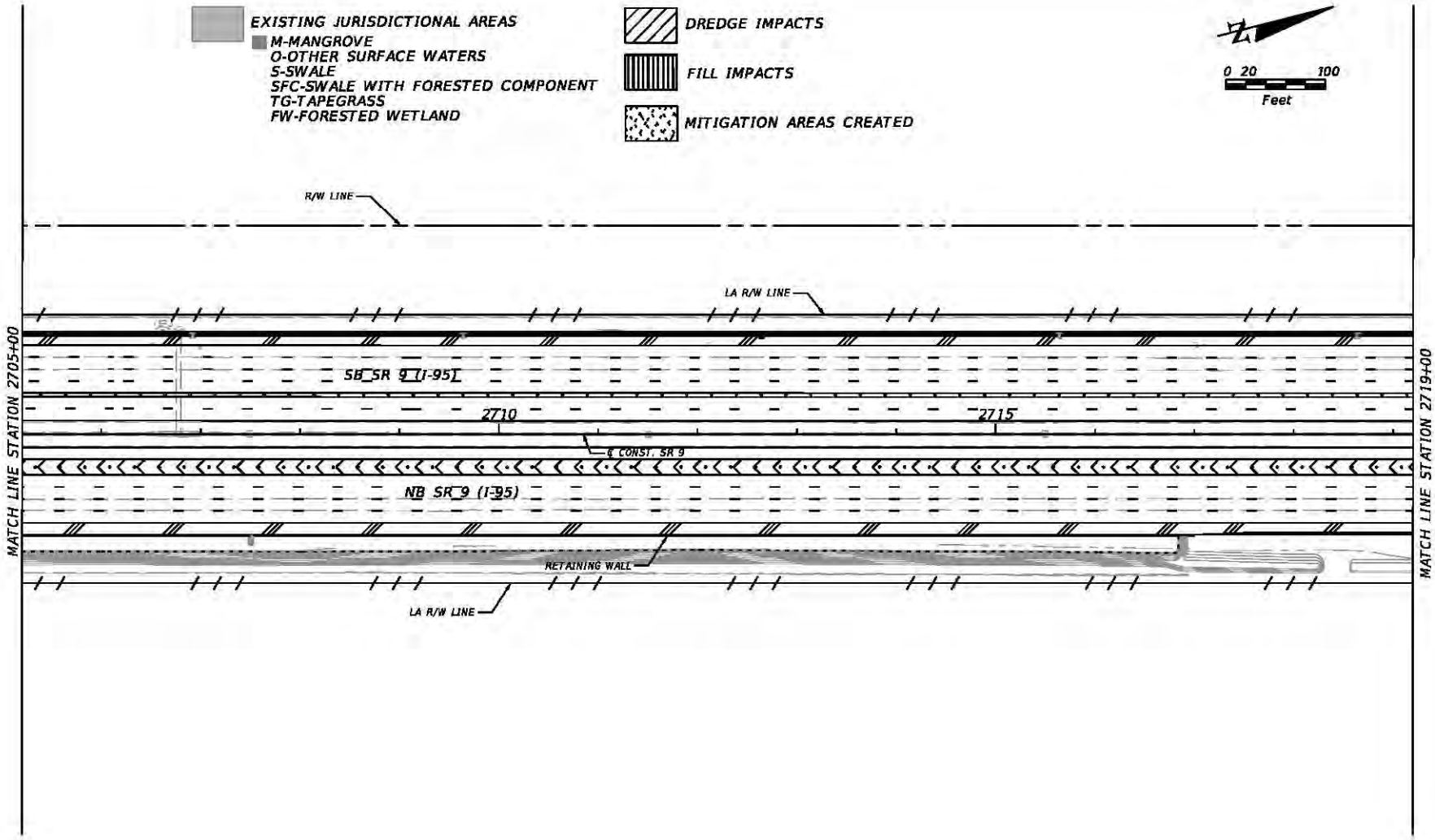

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STANTEC
901 PONCE DE LEON BLVD
SUITE 900
CORAL GABLES, FL 33134
305-445-2900
VENDOR NO. 650039493001
FL CERTIFICATION NO. C-9723
ALEYMA DE LA CRUZ, P.E. NO. 65500

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 66

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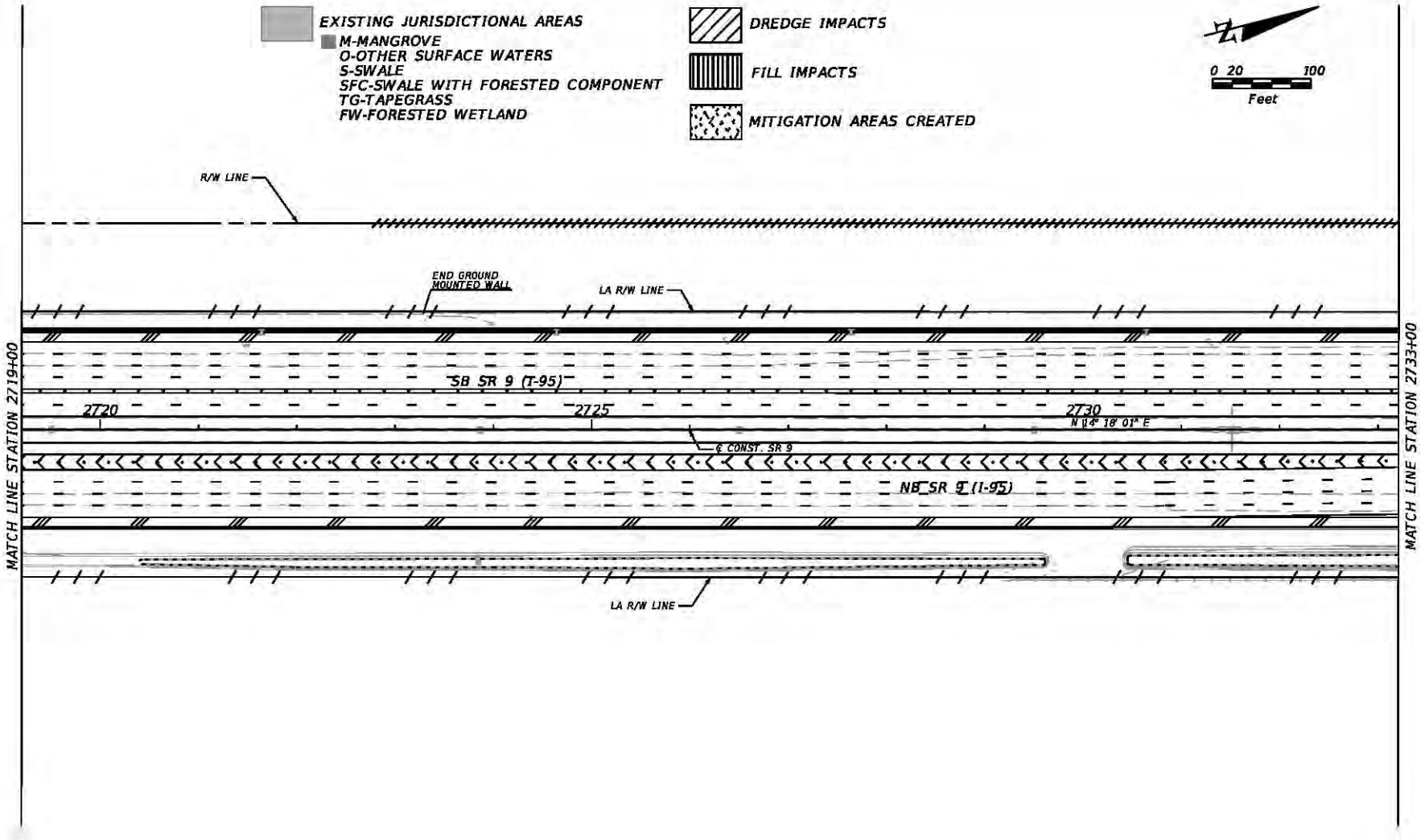

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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305-445-2900
VENDOR NO. 650039493001
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 67

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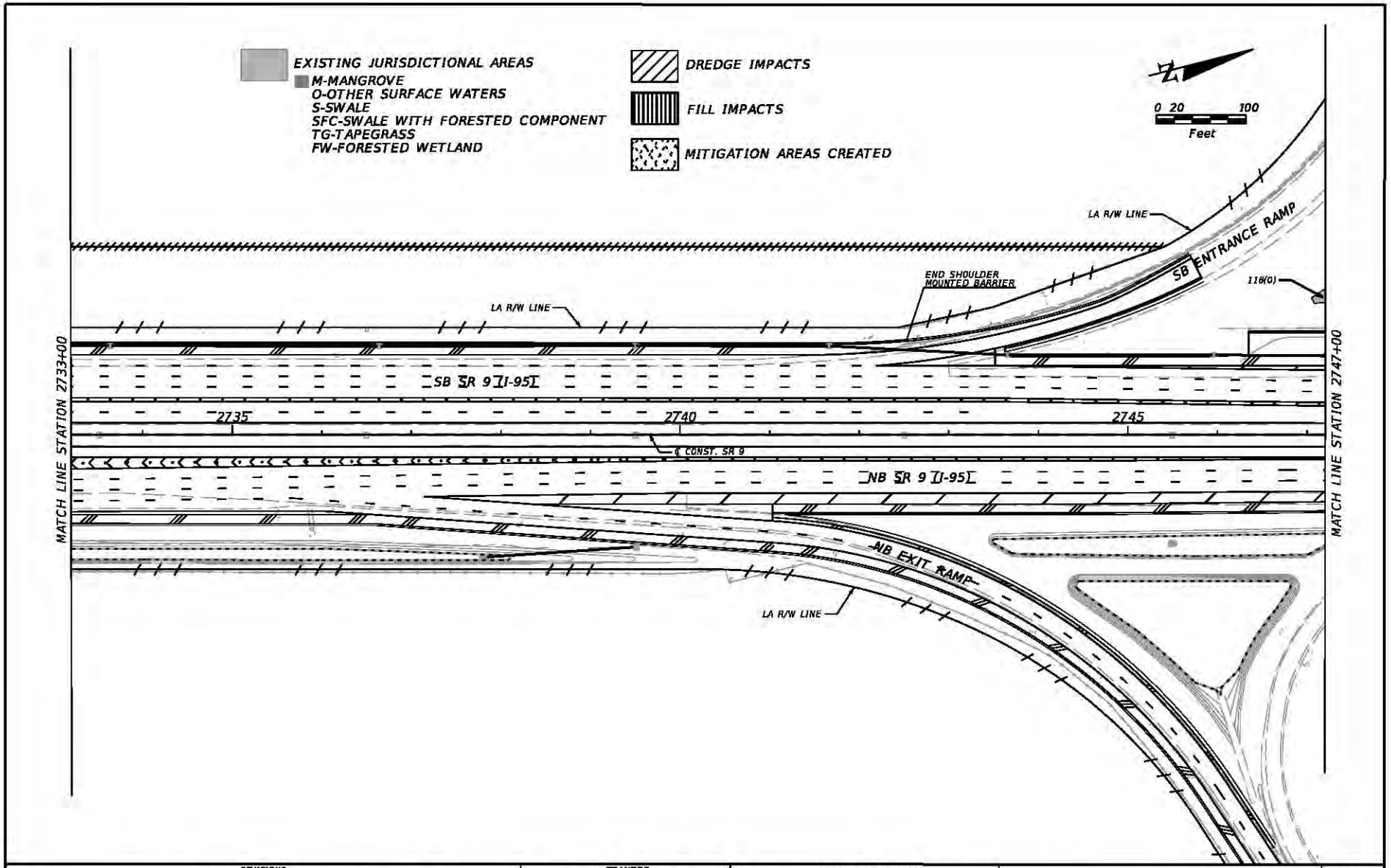

REVISIONS			
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 68

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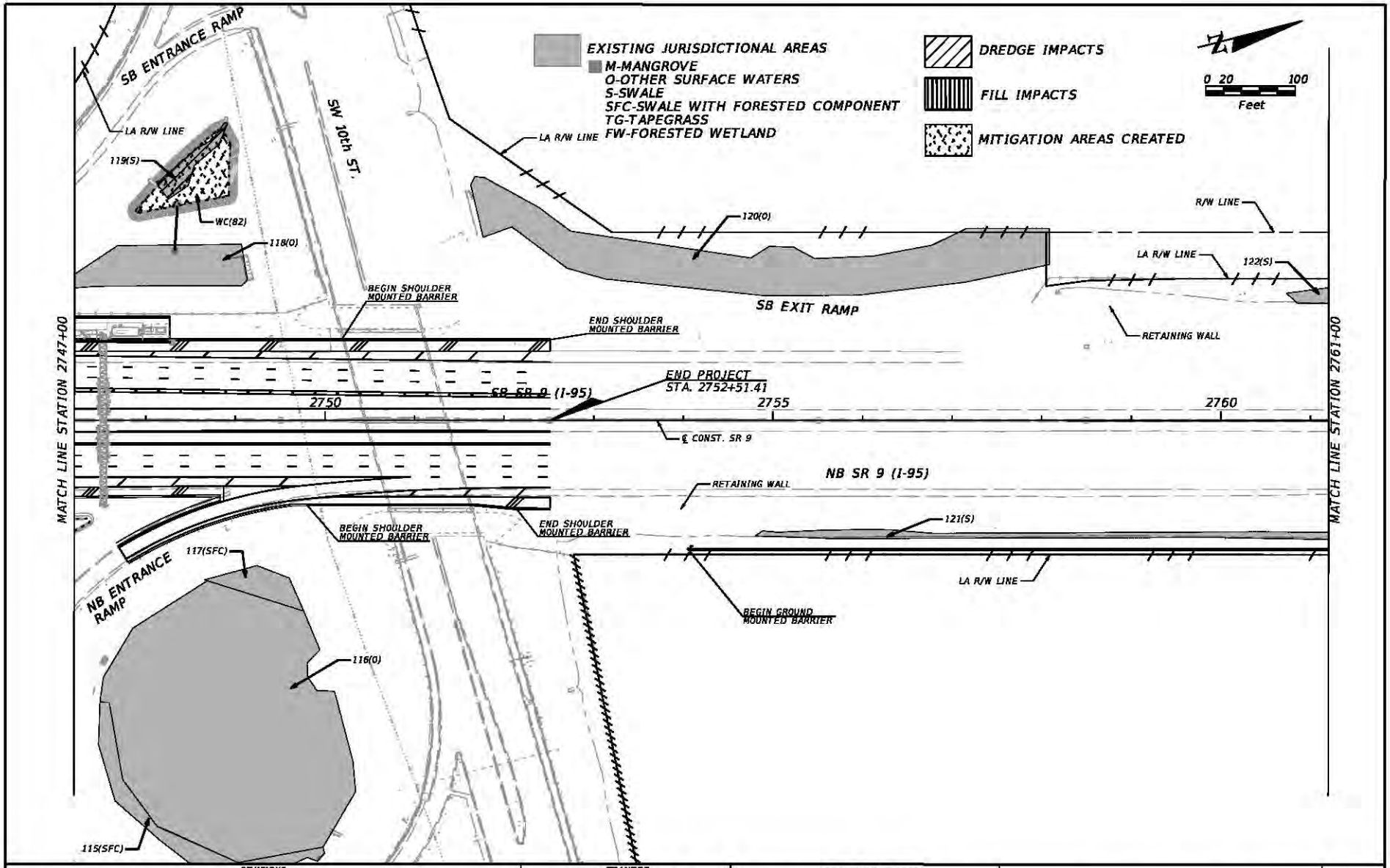

REVISIONS			
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STANTEC
901 PONCE DE LEON BLVD
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305-445-2900
VENDOR NO. 650039493001
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

ROADWAY PLAN

SHEET NO. 69

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SUMMARY OF USACE AREA IMPACTS

JURISDICTIONAL ID	EXISTING AREA (AC)	PERMANENT IMPACTS (AC)	IMPACT CODE
1(TG)	0.01	<0.01	F
2(TG)	0.02	0.01	F
3(TG)	0.02	0.02	F
4(TG)	0.01	0.01	F
5(TG)	0.01	0.01	F
6(TG)	0.01	0.01	F
7(TG)	0.01	0.01	F
9(M)	0.02	-	-
10(M)	0.02	-	-
11(M)	0.01	0.01	F
12(M)	0.01	0.01	F
13(M)	0.003	0.003	-
14(M)	0.003	0.000	F
15(M)	0.02	0.02	F
16(M)	0.01	0.01	F
17(M)	0.11	0.05	F
18(M)	0.02	0.02	F
19(M)	0.02	0.02	F
25(S)	1.04	1.04	D
26(S)	0.41	0.41	D/F
27(S)	0.31	0.31	D/F
28(S)	0.07	0.07	D
29(S)	0.08	0.08	D
30(0)	1.23	0.01	D
31(S)	0.54	0.54	D
32(S)	0.21	0.21	D
33(S)	0.19	-	-
34(S)	0.10	-	-
35(S)	0.03	-	-
36(0)	2.76	-	-
36(S)	0.56	-	-
37(S)	0.27	-	-
38(SFC)	1.00	0.06	F
39(S)	1.65	1.65	D/F
40(0)	0.78	0.08	F
41(S)	0.04	0.04	D
42(S)	0.14	-	-
43(S)	0.20	-	-
44(S)	0.19	-	-
45(0)	7.60	-	-
46(S)	0.16	0.16	D/F
47(S)	0.27	0.27	D/F
48(S)	0.02	0.02	D

SUMMARY OF USACE AREA IMPACTS

JURISDICTIONAL ID	EXISTING AREA (AC)	PERMANENT IMPACTS (AC)	IMPACT CODE
49(S)	1.04	1.04	F
49.1(S)	0.39	0.39	F
50(S)	0.95	0.95	D
51(S)	0.01	0.01	D
52(S)	0.11	0.11	F
53(S)	0.33	0.33	F
54(S)	0.10	-	-
55(S)	0.13	0.13	D
56(S)	0.64	0.64	D
57(0)	0.53	-	-
58(SFC)	0.26	0.26	D
59(SFC)	0.19	0.19	D
60(S)	0.10	-	-
61(0)	1.05	-	-
62(S)	4.91	4.91	F
63(S)	0.71	0.71	F
64(S)	0.36	-	-
65(S)	1.37	-	-
66(S)	1.36	1.36	F
67(S)	0.36	-	-
68(S)	0.11	-	-
69(FW)	2.32	-	-
70(0)	1.55	0.02	F
71(0)	0.35	0.35	F
72(0)	0.40	0.40	D/F
73(S)	1.00	1.00	F
74(S)	3.18	3.18	F
75(S)	0.14	0.14	F
76(S)	0.03	0.03	D
77(S)	0.14	0.14	F
78(S)	0.19	-	-
79(S)	< 0.01	-	-
80(S)	0.01	-	-
81(S)	< 0.01	-	-
82(S)	0.01	-	-
83(S)	0.11	-	-
84(S)	0.02	-	-
85(S)	0.13	0.13	D
86(S)	0.02	-	-
87(S)	0.09	0.09	D
88(S)	0.49	0.49	D
89(S)	1.96	1.96	D
90(S)	1.53	-	-

SUMMARY OF USACE AREA IMPACTS

JURISDICTIONAL ID	EXISTING AREA (AC)	PERMANENT IMPACTS (AC)	IMPACT CODE
91(S)	3.72	-	-
92(S)	0.16	-	-
93(S)	0.16	-	-
94(S)	0.44	-	-
96(S)	0.07	-	-
97(S)	0.02	-	-
98(S)	0.73	-	-
99(S)	0.07	-	-
100(S)	2.81	-	-
101(0)	2.76	-	-
102(S)	0.90	-	-
103(S)	0.01	0.01	D
104(S)	0.57	0.57	D
105(S)	0.55	0.55	D
106(0)	0.01	-	-
107(S)	0.92	-	-
108(S)	0.14	-	-
109(S)	0.15	-	-
110(S)	0.01	-	-
111(S)	0.02	-	-
112(S)	0.14	0.14	D
113(S)	0.03	0.03	D
114(S)	0.41	0.41	D/F
115(SFC)	0.13	-	-
116(0)	1.48	-	-
117(SFC)	0.06	-	-
118(0)	0.19	-	-
119(S)	0.04	0.04	D
120(0)	0.68	-	-
121(S)	0.12	-	-
122(S)	0.03	-	-
CSX1(M)	0.01	-	F
CSX2(M)	0.01	-	F
CSX3(SFC)	0.02	0.02	F
CSX4(SFC)	0.02	0.02	F
CSX5(0)	0.11	0.07	F
CSX6(S)	0.14	0.14	F

F- FILL
D- DREDGE
TG-TAPEGRASS
M-MANGROVE
S-SWALE
FW-FORESTED WETLAND
O-OTHER SURFACE WATERS
SFC-SWALE WITH FORESTED COMPONENT
W-WETLAND

REVISIONS

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

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

SUMMARY OF TOTALS

SHEET NO. 70

USACE WETLAND OFFSET/CREATION		
WETLAND ID	OFFSET/ CREATION (AC)	TYPE
WC(1)	2.92	S
WC(2)	1.72	S
WC(3)	0.12	S
WC(4)	0.10	S
WC(5)	0.19	S
WC(6)	0.16	S
WC(7)	0.05	S
WC(8)	0.43	S
WC(9)	0.14	S
WC(10)	0.27	S
WC(11)	0.03	S
WC(12)	0.04	S
WC(13)	0.56	S
WC(14)	0.93	S
WC(15)	1.08	S
WC(16)	0.36	S
WC(17)	0.06	S
WC(18)	0.39	S
WC(19)	0.19	S
WC(20)	0.11	S
WC(21)	0.84	S
WC(22)	1.50	S
WC(23)	0.44	S
WC(24)	0.24	S
WC(25)	0.58	S
WC(26)	0.85	S
WC(27)	1.30	S
WC(28)	0.68	S
WC(29)	0.94	S

USACE WETLAND OFFSET/CREATION		
WETLAND ID	OFFSET/ CREATION (AC)	TYPE
WC(30)	0.70	S
WC(31)	0.19	S
WC(32)	1.68	S
WC(33)	0.43	S
WC(33A)	0.40	S
WC(34)	0.23	S
WC(35)	0.88	S
WC(36)	0.02	S
WC(37)	0.07	S
WC(38)	0.26	S
WC(39)	0.22	S
WC(40)	0.85	S
WC(41)	0.42	S
WC(42)	0.06	S
WC(42A)	0.33	S
WC(43)	0.66	S
WC(44)	6.57	S
WC(45)	1.36	S
WC(46)	1.76	S
WC(47)	0.51	S
WC(48)	0.74	S
WC(49)	3.55	S
WC(50)	5.61	S
WC(51)	0.10	S
WC(52)	0.87	S
WC(53)	1.05	S
WC(56)	0.66	S
WC(58)	0.48	S
WC(59)	0.36	S

SUMMARY OF TOTALS (AC)		
TYPE	JURISDICTIONALS	IMPACTED AREAS
TG	0.09	0.08
M	0.27	0.14
S	40.87	24.43
O	21.48	0.93
SFC	1.68	0.55
FW	2.32	0.00
W	0.00	0.00
TOTAL CREATION (S)	48.24	
NET IMPACTS (S)	0.00 (-22.1)	

REVISIONS

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	433108-4-52-01

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

SUMMARY OF TOTALS

SHEET NO. 71

FORM #0157
Rev. 07/09

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE
PERMIT MODIFICATION NO. 06-01465-S
DATE ISSUED: DECEMBER 15, 2014

PERMITTEE: FLORIDA DEPARTMENT OF TRANSPORTATION
(I-95 EXPRESS LANES PHASE 3A)
3400 W COMMERCIAL BLVD.
FORT LAUDERDALE, FL 33309

ORIGINAL PERMIT ISSUED: NOVEMBER 15, 1990

ORIGINAL PROJECT DESCRIPTION: CONSTRUCTION AND OPERATION OF A SURFACE WATER MANAGEMENT SYSTEM SERVING 40 ACRES OF A ROADWAY PROJECT KNOWN AS I-95 FROM SOUTH OF BROWARD BLVD TO 6TH STREET.

APPROVED MODIFICATION: MODIFICATION FOR THE CONCEPTUAL APPROVAL OF A 993.78 ACRE ROADWAY PROJECT KNOWN AS I-95 EXPRESS LANES PHASE 3A.(NO CONSTRUCTION IS AUTHORIZED BY THIS PERMIT.)

PROJECT LOCATION: BROWARD COUNTY , SECTION 2,10,11,15,21,22,28,33 TWP 49S RGE 42E
SECTION 4,9,16,17 TWP 50S RGE 42E
SECTION 34,35 TWP 48S RGE 42E

PERMIT DURATION: See Special Condition No:1.

This is to notify you of the District's agency action concerning Permit Application No. 140516-1, dated May 15, 2014. This action is taken pursuant to the provisions of Chapter 373, Part IV, Florida Statutes (F.S.).

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

1. Not receiving a filed request for an administrative hearing pursuant to Section 120.57 and Section 120.569, or request a judicial review pursuant Section 120.68, Florida Statutes.
2. The attached 18 General Conditions.
3. The attached 9 Special Conditions.
4. The attached 5 Exhibits.

Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Should you wish to object to the proposed agency action or file a petition, please provide written objections, petitions and/or waivers to:

Office of the District Clerk
South Florida Water Management District
Post Office Box 24680
West Palm Beach, FL 33416-4680
e-mail: clerk@sfwmd.gov

Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights", we will assume that you concur with the District's action.

CERTIFICATION OF SERVICE

I HEREBY CERTIFY THAT this written notice has been mailed or electronically submitted to the Permittee (and the persons listed on the attached distribution list) this 16th day of December, 2014, in accordance with Section 120.60(3), F.S. Notice was also electronically posted on this date through a link on the home page of the District's website (my.sfwmd.gov/ePermitting).

By _____
DEPUTY CLERK
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Attachments

SPECIAL CONDITIONS

1. The conceptual phase of this permit shall expire on December 15, 2034.

2. Operation of the stormwater management system shall be the responsibility of PERMITTEE.

3. Discharge Facilities: See Exhbit 2 (Plans) and Exhibit 3 (Summary Table)

4. 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.

5. Reference is made to Exhibit Numbers 2A, 2B, 2C, and 2D consisting of typical sections and roadway plan sheets, pond details and drainage details, cross sections and project survey control sheets, and erosion control plan sheets. The drawings have been signed and sealed by a registered professional and have been incorporated in this permit by reference (please see permit file).

6. In accordance with the work schedule, the permittee shall submit verification from the Florida Department of Environmental Protection (FDEP) that 0.04 freshwater forested mitigation credit has been debited from the Loxahatchee Mitigation Bank ledger as mitigation for this impact.

7. The permittee shall comply with the following conditions intended to protect manatees and marine turtles from direct project effects:

   a. All personnel associated with the project shall be instructed about the presence of marine turtles, 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 and marine turtles cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee and marine turtle 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 marine turtles and manatee(s). All in-water operations, including vessels, must be shutdown if a marine turtle or 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 marine turtle or 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.

8. Manatee exclusion devices (such as grating or valves) 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, in accordance with Exhibit No. 2. 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 end(s) during all phases of the construction process and as a final design element to restrict manatee access.

9. The permittee shall comply with the following protected species construction conditions for sea turtles and smalltooth sawfish:

   a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.

   b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.

   c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.

   d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.

   e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

   f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/ rescue organization.

GENERAL CONDITIONS

1. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized shall subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S. (2012).

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

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

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

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

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

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

8. The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.

9. This permit does not:
   a. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified

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

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

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

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

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

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

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

16. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.

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

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

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

2011

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 injury 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 manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(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 Florida Fish and Wildlife Conservation Commission (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. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" 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 the email address listed above.

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work
all in-water activities must

SHUT DOWN

Report any collision with or injury to a manatee:

Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.

b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.

c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.

d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.

e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.

g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006
O:\forms\Sea Turtle and Smalltooth Sawfish Construction Conditions.doc

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE
U.S. Fish and Wildlife Service
August 12, 2013

The eastern indigo snake protection/education plan (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida for use by applicants and their construction personnel. At least **30 days prior** to any clearing/land alteration activities, the applicant shall notify the appropriate USFWS Field Office via e-mail that the Plan will be implemented as described below (North Florida Field Office: jaxregs@fws.gov; South Florida Field Office: verobeach@fws.gov; Panama City Field Office: panamacity@fws.gov). As long as the signatory of the e-mail certifies compliance with the below Plan (including use of the attached poster and brochure), no further written confirmation or "approval" from the USFWS is needed and the applicant may move forward with the project.

If the applicant decides to use an eastern indigo snake protection/education plan other than the approved Plan below, written confirmation or "approval" from the USFWS that the plan is adequate must be obtained. At least 30 days prior to any clearing/land alteration activities, the applicant shall submit their unique plan for review and approval. The USFWS will respond via e-mail, typically within 30 days of receiving the plan, either concurring that the plan is adequate or requesting additional information. A concurrence e-mail from the appropriate USFWS Field Office will fulfill approval requirements.

The Plan materials should consist of: 1) a combination of posters and pamphlets (see **Poster Information** section below); and 2) verbal educational instructions to construction personnel by supervisory or management personnel before any clearing/land alteration activities are initiated (see **Pre-Construction Activities** and **During Construction Activities** sections below).

POSTER INFORMATION

Posters with the following information shall be placed at strategic locations on the construction site and along any proposed access roads (a final poster for Plan compliance, to be printed on 11" x 17" or larger paper and laminated, is attached):

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.

SIMILAR SNAKES: The black racer is the only other solid black snake resembling the eastern indigo snake. However, black racers have a white or cream chin, thinner bodies, and WILL BITE if handled.

LIFE HISTORY: The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida. Although they have a preference for uplands, they also utilize some wetlands

and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

PROTECTION UNDER FEDERAL AND STATE LAW: The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. "Taking" of eastern indigo snakes is prohibited by the Endangered Species Act without a permit. "Take" is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of $25,000 for civil violations and up to $50,000 and/or imprisonment for criminal offenses, if convicted.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a Section 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

IF YOU SEE A <u>LIVE</u> EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and allow the live eastern indigo snake sufficient time to move away from the site without interference;
- Personnel must NOT attempt to touch or handle snake due to protected status.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant's designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

IF YOU SEE A <u>DEAD</u> EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and immediately notify supervisor or the applicant's designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

Telephone numbers of USFWS Florida Field Offices to be contacted if a live or dead eastern indigo snake is encountered:

North Florida Field Office – (904) 731-3336
Panama City Field Office – (850) 769-0552
South Florida Field Office – (772) 562-3909

PRE-CONSTRUCTION ACTIVITIES

1. The applicant or designated agent will post educational posters in the construction office and throughout the construction site, including any access roads. The posters must be clearly visible to all construction staff. A sample poster is attached.

2. Prior to the onset of construction activities, the applicant/designated agent will conduct a meeting with all construction staff (annually for multi-year projects) to discuss identification of the snake, its protected status, what to do if a snake is observed within the project area, and applicable penalties that may be imposed if state and/or federal regulations are violated. An educational brochure including color photographs of the snake will be given to each staff member in attendance and additional copies will be provided to the construction superintendent to make available in the onsite construction office (a final brochure for Plan compliance, to be printed double-sided on 8.5" x 11" paper and then properly folded, is attached). Photos of eastern indigo snakes may be accessed on USFWS and/or FWC websites.

3. Construction staff will be informed that in the event that an eastern indigo snake (live or dead) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the Plan, which includes notification of the appropriate USFWS Field Office. The contact information for the USFWS is provided on the referenced posters and brochures.

DURING CONSTRUCTION ACTIVITIES

1. During initial site clearing activities, an onsite observer may be utilized to determine whether habitat conditions suggest a reasonable probability of an eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).

2. If an eastern indigo snake is discovered during gopher tortoise relocation activities (i.e. burrow excavation), the USFWS shall be contacted within one business day to obtain further guidance which may result in further project consultation.

3. Periodically during construction activities, the applicant's designated agent should visit the project area to observe the condition of the posters and Plan materials, and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are seen.

POST CONSTRUCTION ACTIVITIES

Whether or not eastern indigo snakes are observed during construction activities, a monitoring report should be submitted to the appropriate USFWS Field Office within 60 days of project completion. The report can be sent electronically to the appropriate USFWS e-mail address listed on page one of this Plan.

ATTENTION:

THREATENED EASTERN INDIGO SNAKES MAY BE PRESENT ON THIS SITE!!!

IF YOU SEE A LIVE EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and allow the eastern indigo snake sufficient time to move away from the site without interference.
- Personnel must NOT attempt to touch or handle snake due to protected status.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant's designated agent, **and** the appropriate U.S. Fish and Wildlife Service (USFWS) office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

IF YOU SEE A DEAD EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and immediately notify supervisor or the applicant's designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

USFWS Florida Field Offices to be contacted if a live or dead eastern indigo snake is encountered:

North Florida Field Office – (904) 731-3336
Panama City Field Office – (850) 769-0552
South Florida Field Office – (772) 562-3909

Killing, harming, or harassing indigo snakes is strictly prohibited and punishable under State and Federal Law.

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.

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PROTECTION: The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. "Taking" of eastern indigo snakes is prohibited by the Endangered Species Act without a permit. "Take" is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of $25,000 for civil violations and up to $50,000 and/or imprisonment for criminal offenses, if convicted.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a Section 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER

Submit this form and one set of as-built engineering drawings to the U.S. Army Corps of Engineers, Enforcement Section, CESAJ-complyDocs@usace.army.mil. If you have questions regarding this requirement, please contact the Enforcement Branch at 904-232-3131.

1. Department of the Army Permit Number: SAJ-2014-1584 (SP-GGL)

2. Permittee Information:

Name: _____

Address: _____

_____

3. Project Site Identification (physical location/address):

_____

_____

_____

4. As-Built Certification: I hereby certify that the authorized work, including any mitigation required by Special Conditions to the permit, has been accomplished in accordance with the Department of the Army permit with any deviations noted below. This determination is based upon on-site observation, scheduled, and conducted by me or by a project representative under my direct supervision. I have enclosed one set of as-built engineering drawings.

_____ _____

Signature of Engineer Name (*Please type*)

_____ _____

(FL, PR, or VI) Reg. Number Company Name

_____ _____ _____

City State ZIP

(Affix Seal)

_____ _____

Date Telephone Number

Identify any deviations from the approved permit drawings and/or special conditions (attach additional pages if necessary):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

West Lake Park

Segment 2 Mitigation Plan

Prepared for:
Broward County Parks and Recreation Division
950 N.W. 38th Street
Oakland Park, FL 33309

Prepared by:

Miller Legg
1800 N. Douglas Road, Suite 200
Pembroke Pines, FL 33024-3200
www.millerlegg.com

September 18, 2009

TABLE OF CONTENTS

1.0 PREAMBLE

West Lake Park is a ±1,522 acre park in Sections 25, 35, and 36 in Township 50S, Range 42E and Sections 1, 2, 11, and 12 in Township 51S, Range 42E in Broward County Florida. The Park, which is currently managed by Broward County Parks and Recreation Division (BCPRD), includes mangrove, seagrass, mud flat, upland, and open water communities, as well as community recreation facilities. The Park also currently contains ±63.5 acres of exotic plant-dominated spoil islands and uplands of which ±55.3 is proposed to be created into a natural habitat under the Master Mitigation Plan.

Permits for the improvements described herein have been received by the U.S. Army Corps of Engineers (USACOE), South Florida Water Management District (SFWMD), and Broward County Environmental Protection and Growth Management Department (BCEPGMD). USACOE permit SAJ-2002-72 (IP-LAO) was issued on March 2, 2006. SFWMD permit 06-04016-P was issued on April 22, 2004 and BCEPD license DF03-1117 was issued on August 12, 2004. Extensions have been issued by the SFWMD for two (2) years and for five (5) years by BCEPGMD.

The improvements are being constructed in segments in accordance with the Master Mitigation plan as funding and mitigation needs become available. Permit modifications will be submitted as necessary to the requesting agencies as segments are defined and construction is eminent. A credit tally ledger will be included in all permit modifications to compare each segments credit allocation with the overall issued permit.

Segment 2 is the first segment to be constructed and is providing mangrove mitigation for the Eller Drive and Dixie Highway projects being completed by the Florida Department of Transportation and Broward County. This segment shall aid in the restoration and enhancement of tidal wetland functions and focus on exotic upland spoil/vegetation removal and hydrologic/flushing improvements by scraping down exotic-infested spoil islands 19 and 42, and created mangrove recruitment areas along with primary and secondary channels.

1.1 Segment 2 Project Description and Goals

West Lake Park contains estuarine wetlands and upland hammocks that are significantly imperiled in the South Florida region. The implementation of the Master Mitigation Plan for West Lake Park should result in identifiable ecological benefits to the Park and the surrounding watershed. Completion of Segment 2 as a portion of the overall West Lake Park Master Mitigation Plan shall provide the following:

- Removal of ±2.1 acres of exotic vegetation and associated seed source that currently degrades the natural communities in the park and adjacent areas,
- Encourage propagation of desirable invertebrates and additional use by birds, fish, amphibians, reptiles and mammals.
- Remove exotic and invasive plant species and recruit desirable mangroves to provide valuable habitat for wildlife.

- Attainment of a minimum of 80% coverage of desirable plant species in the mitigation areas.

1.2 Existing Conditions

Segment 2, consisting of spoil islands 19 and 42 of the West Lake Park project currently consists of approximately ±0.1 acres of mangrove swamps and ±2.1 acres of exotic plant-dominated spoil areas, of which all are proposed to be improved per this plan. This area of the Park is tidally influenced by indirect connection to the ICW on the east and the interior lake to the west. The Segment is located just north of Sheridan Street, on the west side of the Anne Kolb Nature Center entrance road and adjacent and south of portions of the mudflat nature path/boardwalk beginning at Anne Kolb Nature Center.

1.2.1 Soils

The soils map included in the Master Mitigation Plan was prepared using the Soil Survey of Broward County Florida (Eastern Part), United States Soil Conservation Service (1984). Two (2) of the 10 mapped soil types are present within Segment 2. The standard soil survey description for each soil type in italics is listed below.

Pennsuco silty clay, tidal (Pf)

The majority of West Lake Park is Pennsuco silty clay, tidal and is dominated by mangroves.

> *This is a nearly level, very poorly drained, loamy soil that is underlain by limestone at a depth of more than 40 inches. It is found in tidal swamps in southeastern Broward County from Port Everglades southward.*
>
> *Included within this mapped soil complex are small areas of similar soils with a thin covering of organic material or gravelly sand fill material. Also included are small spots of Pennsuco, Perrine, and Perrine Variant soils.*
>
> *The natural vegetation consists mainly of red mangrove, white mangrove, and scattered areas of giant leatherfern, sawgrass, bushy sea-oxeye daisy, and glasswort. Australian pine is scattered through areas that have thin coverings of fill materials.*
>
> *This soil is adversely affected by daily or frequent tidal flooding and low to moderate salinity. This soil is unsuited to either agricultural or urban uses.* It is best used in its natural condition as habitat for marine life and waterfowl.

Udorthents, marly substratum ULC (Um)

This soil is located along the ICW north of Sheridan Street, along Sheridan Street, and within the recreational area of the Park. Dominant vegetation in this soil type is Australian pine, however, the majority of this soil type has been developed for Anne Kolb Nature Center and the recreational area of the park.

> *About 50 to 75 percent of this complex consists of Udorthents, marly substratum, which are in open land areas; and 25 to 45 percent consists of Urban land, or areas covered by concrete and buildings. The areas of these components are so intermixed or so small that to map them separately at the scale of mapping used is impractical. Slopes are 0 to 2 percent.*
>
> *The open areas of Udorthents, marly substratum, are lawns, vacant lots, parks, playgrounds, and idle areas. Urban land consists of streets, sidewalks, parking lots, and buildings or other constructions where the soil is covered and cannot be readily observed.*
>
> *This map unit occurs only in the eastern part of the survey area. It is made up of a layer of mixed limestone fragments, sand and shell about 20 to 50 inches thick over the natural soil, which is predominantly calcareous silt loam (marl). The overburden material is occasional pockets or lenses of black. The natural marl soil below is similar to that described as representative for the Perrine or Pennsuco series.*
>
> *The water table depends on the established drainage in the area, but in most areas it is at a depth of about 30 to 40 inches. Commonly, depth to the water table is the same as the depth to the natural soil in any particular area. In general, the rocky sand mixture of overburden material is rapidly permeable and the available water capacity is low. Natural fertility is also low.*
>
> *Included within this mapped soil complex are small areas in which the overburden material is dominantly sand and other small areas in which the fill material overlies 12 to 48 inches of muck.*
>
> *To properly establish and maintain lawns and ornamentals on the soil in this complex, a layer of good topsoil about 6 inches thick is needed. In addition, proper watering and regular applications of fertilizer are needed.*
>
> *The soil is well suited to many urban uses, but has moderate to severe limitations as a foundation for roads or buildings. The marl substratum, when wet, is compressible under mobile or static loads. The severity of the limitation depends upon the degree of drainage provided and the thickness of the overburden. Areas of this unit that are inadequately drained and have less than 3 feet of fill material are poorly suited to use as foundations for major roads, buildings, or large homes.*

1.2.2 Hydrologic and Water Quality Conditions

West Lake Park is tidally influenced through direct connection and through numerous secondary, tidal channels that connect the interior of the Park to the ICW. The tidal cycle in Florida is semi-diurnal, consisting of two high and low tides each day. Freshwater inputs are mainly limited to stormwater runoff and direct rainfall. To the west of spoil island 19, a remnant berm limits east-west flow and is proposed to be removed and replaced with a secondary channel.

Hydrologic data was previously recorded at 10 stations located throughout West Lake Park. Water level data was recorded at Stations 1-8 using Remote Data Systems (RDS) WL80 Automated Monitoring Wells to aid in determination of the Mean High Water (MHW) elevations (in feet NGVD), and to determine proper elevations for construction of proposed habitats.

1.2.3 Vegetative Community Types

Segment 2 is comprised of approximately 2.1 acres of Australian pine (***Casuarina equisetifolia***) in spoil islands 19 and 42 and approximately 0.1 acres of mangrove swamp consisting of Red mangroves (***Rhizophora mangle***), black mangroves (***Avicennia germinans***), and white mangroves (***Laguncularia racemosa***) at the western most portion of spoil island 42. These species have been observed adjacent to the spoil islands of Segment 2. Buttonwood (***Conocarpus erectus***) and sea oxeye daisy (***Borrichia*** spp.) are also present within this community, but to a lesser extent.

Various other native species are present at Anne Kolb Nature Center and may be present near Segment 2. These species include gumbo limbo (***Bursera simaruba***), cabbage palm (***Sabal palmetto***), pigeon plum (***Coccoloba diversifolia***), sea grape (***Coccoloba uvifera***), and blolly (***Guapira discolor***).

2.0 SEGMENT 2 PROPOSED HABITAT & MITIGATION IMPROVEMENTS

The permitted improvements at West Lake Park were permitted based upon the ecological lift they provided through the Uniform Mitigation Assessment Methodology (UMAM) and generate a Functional Gain Unit (FGU) to be used for Mangrove and Seagrass habitat.

Segment 2 utilizes 1.12 FGU as permitted by SFWMD, of the total permitted 37.99 FGU's for the overall project. The permitted functional units are as follows:

MANGROVE SUMMARY

Assessment Area	Size (Acres)	RFG	Functional Gain Units
Mangrove Creation	1.1	0.41	.45
Mudflat-Channel Creation	1.1	0.61	.67
TOTAL	**2.2**		**1.12**

2.1 Creation of Mangrove and Channel Areas from Spoil Islands #19 and #42

Exotic plant-dominated upland spoil areas in this segment will be replaced by extensive wetland creation areas following practices used successfully on previous projects within West Lake Park. Exotic plant-dominated uplands (spoil islands) will be converted into desirable, native communities to encourage usage by a diversity of plant and animal species.

Mangrove Creation Areas

Upland areas that are infested with exotic vegetation will be cleared and scraped down to the proper elevation to support natural recruitment of mangroves which provide physical habitat for many species of plants and animals that could not survive alone in the intertidal zone. If necessary, these areas may also receive supplemental mangrove planting to promote their spread and establishment.

Primary Channel Creation Areas

Upland areas that are infested with exotic vegetation will be cleared and scraped down to the proper elevation for primary channels to enhance and restore water flow within the Park. These channels will provide improved flushing and circulation throughout the mangrove communities aiding in mangrove recruitment.

3.0 POTENTIAL CONSTRUCTION ALTERNATIVES FOR SEGMENT 2

This section describes environmentally sensitive construction alternatives and precautions that could be used during construction activities of this segment. The contractor, however, will determine the appropriate means or methods of construction based on the environmental constraints. The contractor shall provide protection, operate temporary facilities, and conduct construction in a manner that complies with environmental regulations, minimizes the possibility that air, waterways, and subsoil may become contaminated or polluted, or result in other undesirable effects. While exact means and methods of the contractor cannot be dictated, the conceptual framework of guidelines discussed below would provide the appropriate restrictions.

Due to the environmental sensitivity of this project, the contractor and the appropriate subcontractors shall attend an environmental pre-construction meeting with appropriate owner and agency representatives.

3.1 Segment 2 – Spoil Islands #19 and 42

This segment includes the creation of mangrove and channel areas from exotic plant-dominated Spoil Islands #19 and #42. The majority of the proposed improvement areas can be accessed from Anne Kolb Nature Center and the existing entrance road. Minor mangrove trimming or temporary impacts may be necessary in order to access the improvement areas of spoil island #42.

Existing vegetation consists primarily of the nuisance/exotic species Australian pine *(Casuarina equisetifolia).* Vegetation on the islands is proposed to be cleared, grubbed and piled using a combination of mechanical and non-mechanical means. Non-mechanical means refers to clearing by chainsaws, trimmers, etc. that do not move the soil. Mechanical equipment used to clear vegetation can access the spoil areas using the existing roads.

To avoid and minimize impacts, the spoil area/existing mangrove interface is proposed to be demarcated with erosion control, where appropriate to protect existing mangroves from damage prior to clearing and during construction. Tree barricades shall be used for existing mangroves that are designated to remain within the limits of construction. In addition, exotic vegetation could be removed by non-mechanical means to minimize disturbance where mangroves and other desirable natural vegetation are in close proximity. The resulting pile of removed vegetation could be removed by truck using existing roads and disposed of in an appropriate upland location in accordance with state and local regulations.

The interface of the eastern edge of spoil island 19 with the western edge of spoil island 18 will be demarcated with erosion control. An 8-foot construction transitional zone will enable the created habitat of spoil island 19 with the future proposed habitat of spoil island 18. This construction transitional zone will gradually slope from the created

channel of the former spoil island 19 to the existing elevation of spoil island 18 and will not be eligible for mitigation credit.

Excavation of spoil material is proposed to proceed from the center of the spoil area outward to provide turbidity control and containment. Material could be excavated using appropriate mechanical means, such as a small backhoe and/or bulldozer that could access the area using the existing entrance road. Silt fencing/turbidity curtains would be placed at the edge of mangroves prior to clearing of vegetation and would remain until the end of construction in this area. The spoil areas are proposed to be excavated to an elevation of ±0.9' to 1.4' NGVD for natural mangrove recruitment, ± (-) 3.5' NGVD for channels, and ±(-) 2.0' – (-)0.5' NGVD for secondary channels.

Excess spoil material should be removed from the site by dump trucks using the existing roads. The contractor shall be responsible for placement of spoils on a suitable upland site and the material shall remain the property of the owner (public domain) unless otherwise transferred.

A small flushing channel is proposed west of Spoil Area #19 to connect existing channels to the interior lake. Approximately 0.1 acres of mangroves may be impacted and could be removed by non-mechanical means. The channels could be created by using a small suction dredge such as a Piranha Pump to a containment/settling area. This area can be cleared of exotic vegetation and serve as the settling area prior to its conversion to its habitat. The dredge spoils would be allowed to settle for an appropriate amount of time (per State criteria) and the return water would then be discharged via filtration and/or settlement in the ground and/or existing channels. The sediment could then be loaded onto dump trucks for transport to a suitable upland site. The material shall remain the property of the owner unless otherwise transferred. The exact location of the channels will be field located to minimize mangrove impacts.

3.2 Archaeological and Historic Resources

Based upon previous research by Florida Department of State Division of Historical Resources, it is not anticipated that historic or archaeological remains are present. However if historic or archaeological remains are discovered, the contractor shall notify the appropriate Federal and State agencies. In addition, ground disturbing work in the immediate vicinity of artifacts will be halted until the area can be further investigated by qualified, owner approved personnel.

3.3 Cleanup and Restoration

During and upon completion of the project, the contractor shall keep the project site clean. The contractor should be allowed to temporarily store equipment, surplus materials, etc., within the limits of construction only if previously approved by the project's environmental permits and BCPRD. No discarded equipment or materials, rubbish, or other refuse shall be placed outside the limits of construction.

Upon completion, the contractor shall remove from the project site and adjacent property all equipment, surplus and discarded materials, rubbish and temporary structures; the contractor shall restore, to an acceptable degree, public and private property which may have been damaged during execution of the work. Waterways shall be left clean and unobstructed upon project completion.

4.0 TURBIDITY MONITORING PLAN

4.1 Construction Turbidity Monitoring

Construction activities will be conducted in accordance with the FDOT 2010 Edition of the Standard Specifications for Road and Bridge Construction. Prior to and during construction, erosion controls will be installed as necessary to prevent exceeding turbidity standards as outlined in Chapter 62-302, F.A.C. Turbidity control devices used shall remain in place until turbidity, as measured in Nephelometric Turbidity Units (NTUs), within the work areas returns to within 29 NTUs of background levels.

The contractor will be responsible for monitoring turbidity in areas where construction activity occurs. Turbidity levels shall be monitored and recorded every four hours during dredging and filling. Samples shall be taken one foot below the surface and mid-depth at monitoring stations, which shall be located as follows:

- ±200' up current of the work sites and/or outside the influence of construction activities (control).
- At 200' down current of the work site, within ±50' down current of the work site, and within the densest portion of any visible turbidity plume.

If turbidity exceeds standards (29 NTUs above background), work may be temporarily halted until the above standard is achieved.

The following data will be recorded and presented in each daily water quality monitoring report:

- permit and permit number
- dates of sampling and analysis
- turbidity sampling results
- description of data collection methods
- a map indicating the sampling locations
- time of sampling
- depth of water
- weather conditions at time of sampling
- tidal stage and direction of flow
- wind direction and velocity
- water temperature
- a statement by the individual responsible for the implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data

Reports are to be submitted to Broward County Environmental Protection Department on a weekly basis.

5.0 PLANTING SCHEDULE

MANGROVE CREATION AREAS - ±1.1 ACRES

Canopy/Shrub layer vegetation will consist of naturally recruited mangrove species *(Rhizophora mangle, Avicennia germinans, and Laguncularia racemosa).*

6.0 MONITORING PLAN

A time-zero monitoring event will be performed shortly after construction completion of creation areas. The areas shall then be monitored quarterly for the required five-year period.

6.1 Mangrove Areas

Vegetative sampling:

Establish one (1) belt transect within each individual mangrove recruitment area. These transects will be two (2) meters wide and will stretch across the approximate maximum length of each recruitment area. A one-square meter quadrat will be randomly placed along the transects at a minimum density of one (1) quadrat per 10 meters of transect (i.e., 100 meter transect will contain 10 quadrats). Though the quadrats will be randomly placed, they will not be placed within "breaks" (i.e., mud flats, pre-existing mangrove areas) in the mangrove recruitment areas. Percent aerial coverage by naturally recruited vegetative species falling within the quadrats will be visually estimated and recorded. Data from these sampling quadrats will then be extrapolated to determine overall percent coverage within each mangrove recruitment area.

Once naturally recruited mangrove trees have obtained sufficient height (±1.5 meters) to be recorded individually, trees located within the belt transects (base of trunk within the transect) would be flagged and measured for height, spread, and diameter breast height (DBH). These measurements will be at random points along the transect at a frequency of one set of measurements per 10 meters. Measurements of these flagged trees will be repeated during subsequent monitoring events to determine growth rates and survivorship. Overall health would also be assessed.

Survivorship Success criteria:

Success criteria for mangroves and herbaceous plantings within mangrove recruitment areas will be based on percent coverage.

Percent coverage success criteria will be based on the following interim goals:

1. 10% aerial coverage by mangroves by the first year.
2. 40% aerial coverage by mangroves by the third year.
3. 80% aerial coverage by mangroves by the fifth year.

If the interim coverage's mentioned above are not achieved, supplemental mangrove planting will be performed; red mangrove seedlings will be installed 3' on center in areas where coverage discrepancies and shortfalls are noted.

6.2 Success Criteria for Recruitment Areas

The success criterion will be 2% or less coverage by nuisance/exotic vegetative species within the recruitment areas.

The following information will be included in the Time-Zero and quarterly monitoring reports:

1) A summary of visual field observations, including survivorship and percent coverage data obtained from the above-noted sampling activities.
2) Physical conditions during the monitoring event including: weather, wind direction and speed; tide cycle status and direction of flow, water temperature, salinity, and turbidity levels.
3) A photographic record taken from fixed photo stations.
4) Water level readings from automatic monitoring wells during the time period of monitoring activities.
5) Aquatic macrofauna sampling data and incidental fish/wildlife observations.
6) Evaluation of the success of the mitigation and maintenance effort.
7) Comments and/or recommendations for permit compliance.

7.0 MAINTENANCE PLAN

Maintenance shall be performed quarterly for a period of five (5) years by the contractor and in perpetuity by the permittee as needed. A survival rate of 80% for installed tree/shrub species in the upland hammock planting areas, 80% coverage by desirable herbaceous species in the upland hammock areas, 80% coverage for the planted species in the upland areas, and 80% coverage of desirable obligate and facultative wetland species in the aquatic and marsh areas are anticipated through implementation of this mitigation program.

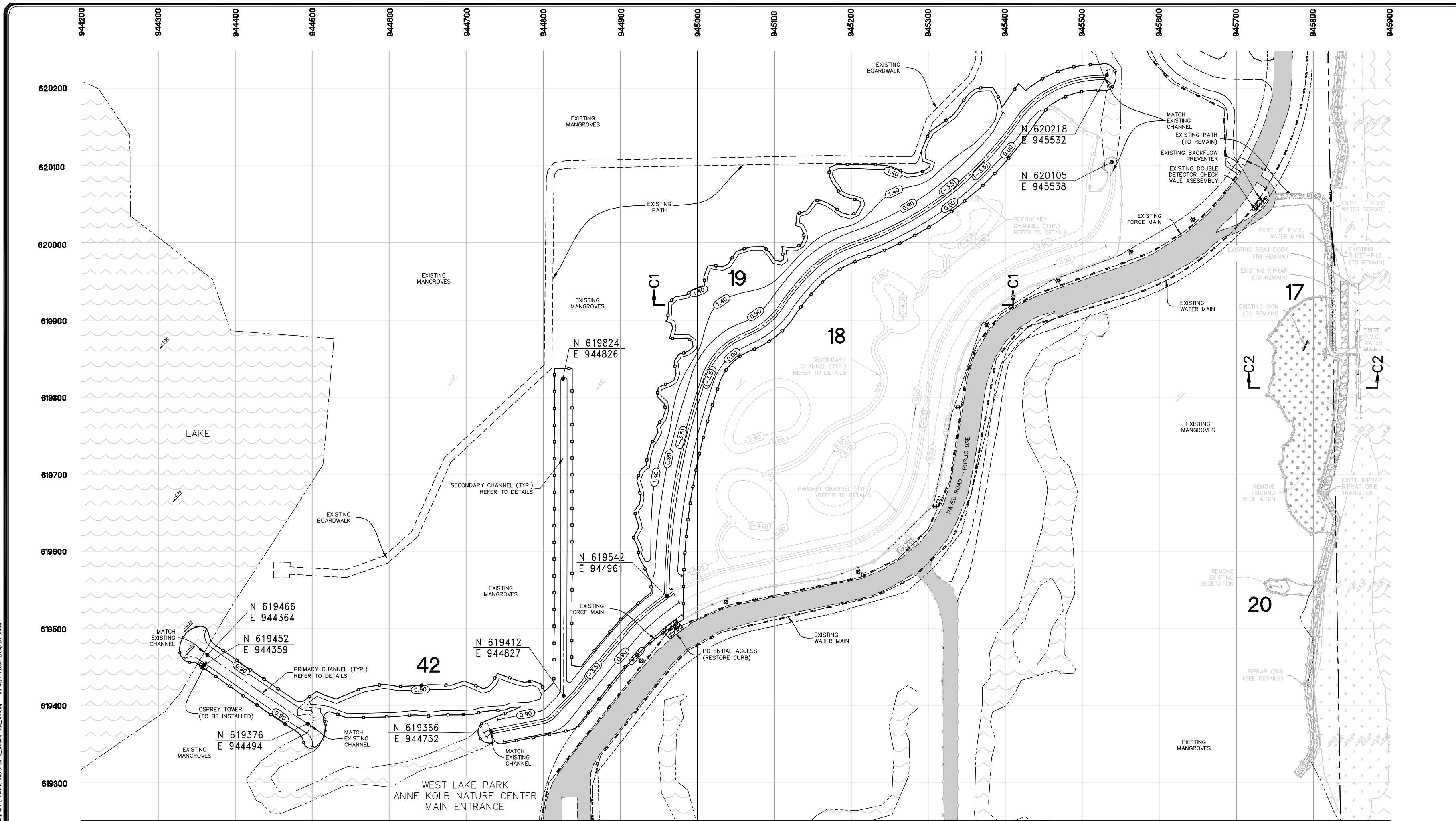
The permittee is responsible for the regular removal of nuisance and exotic vegetation and debris from the mitigation area for the length of the monitoring period, and in perpetuity as needed. Exotic vegetation shall include such species as are currently listed by the Florida Exotic Pest Plant Council. Mitigation areas shall be free from exotic/nuisance vegetation immediately following maintenance periods. Total coverage of exotic and nuisance species shall not exceed 2% between maintenance activities.

Maintenance is anticipated to be conducted regularly throughout the duration of the 5-year monitoring period, and in perpetuity on an as-needed basis. Appropriate methods of control shall be used which will include, but will not necessarily be limited to, cutting, mowing, chemical treatment, hand removal, or any combination thereof.

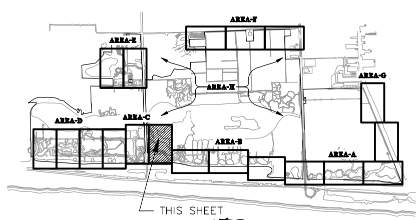
Upon completion of the required 5-year monitoring period, BCPRD shall continue to be responsible for the perpetual maintenance and management of the mitigation areas.

8.0 SCHEDULE

Activities	Anticipated Date
Begin earthwork	FEB 2010
Complete earthwork	AUG 2010
Begin planting	N/A
Complete planting	N/A
Submit Time-zero Monitoring Report	OCT 2010
Submit first Annual Monitoring Report	OCT 2011
Submit Second Annual Monitoring Report	OCT 2012
Submit Third Annual Monitoring Report	OCT 2013
Submit Fourth Annual Monitoring Report	OCT 2014
Submit Fifth Annual Monitoring Report	OCT 2015



REFER TO DRAWING NO. C-GP2 FOR CONTINUATION



KEY MAP

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BROWARD COUNTY FLORIDA
BROWARD COUNTY PARKS AND RECREATION DIVISION

GRAPHIC SCALE
0 30 60 120
(IN FEET)
1 INCH = 60 FEET

PERMIT SET – NOT FOR CONSTRUCTION

APPROVED :
FLA. REGISTRATION NO. DATE :

SEGMENT 2 GRADING PLAN

WEST LAKE PARK

BROWARD COUNTY, FLORIDA

FOR: BROWARD COUNTY PARKS AND RECREATION DIVISION

REVISIONS	
9/17/09	SEGMENT 2 REVISIONS

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954-436-7000 · Fax: 954-436-8664
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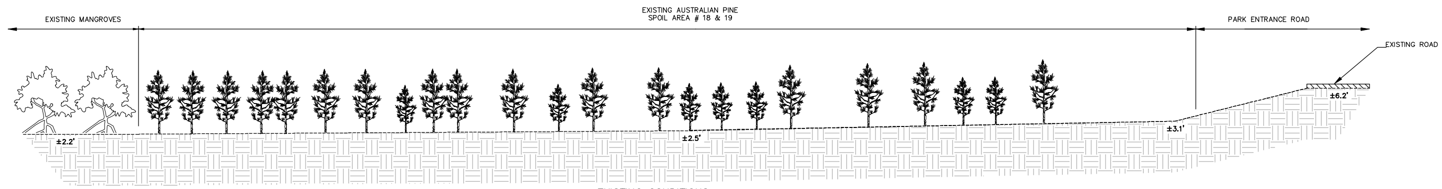
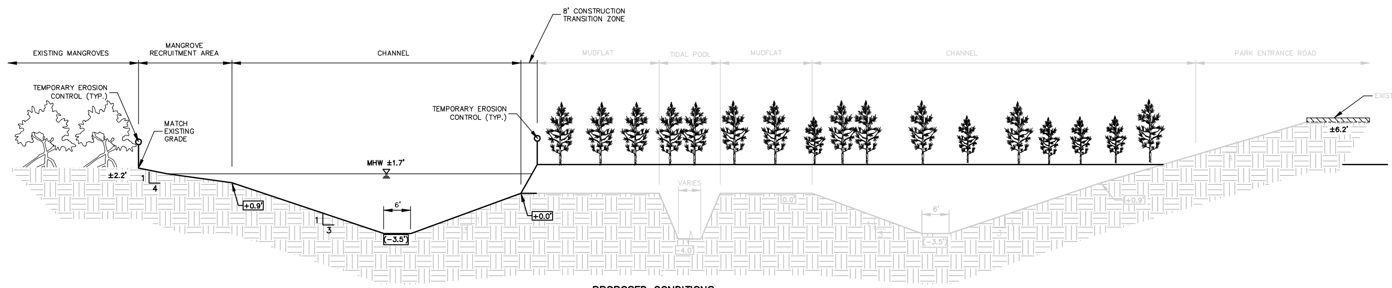
CERTIFICATES OF AUTHORIZATION
EB7318 LB6680 LC0337

DES.	DWN.	CHK.
EHM	EHM	MEB

PROJECT / FILE NO. 99-37503
DRAWING NO. C-GP1
DATE DRAWN: 2/2/07



EXISTING CONDITIONS
SECTION 'C1–C1'
N.T.S.



PROPOSED CONDITIONS
SECTION 'C1–C1'
N.T.S.

NOTE; GREYED AREA IS FUTURE PROPOSED CONDITIONS (AFTER SEGMENT 2 CONSTRUCTION)

PERMIT SET – NOT FOR CONSTRUCTION

BROWARD COUNTY FLORIDA
BROWARD COUNTY PARKS AND RECREATION DIVISION

WEST LAKE PARK

BROWARD COUNTY, FLORIDA
FOR: BROWARD COUNTY PARKS AND RECREATION DIVISION

SEGMENT 2 CROSS SECTIONS

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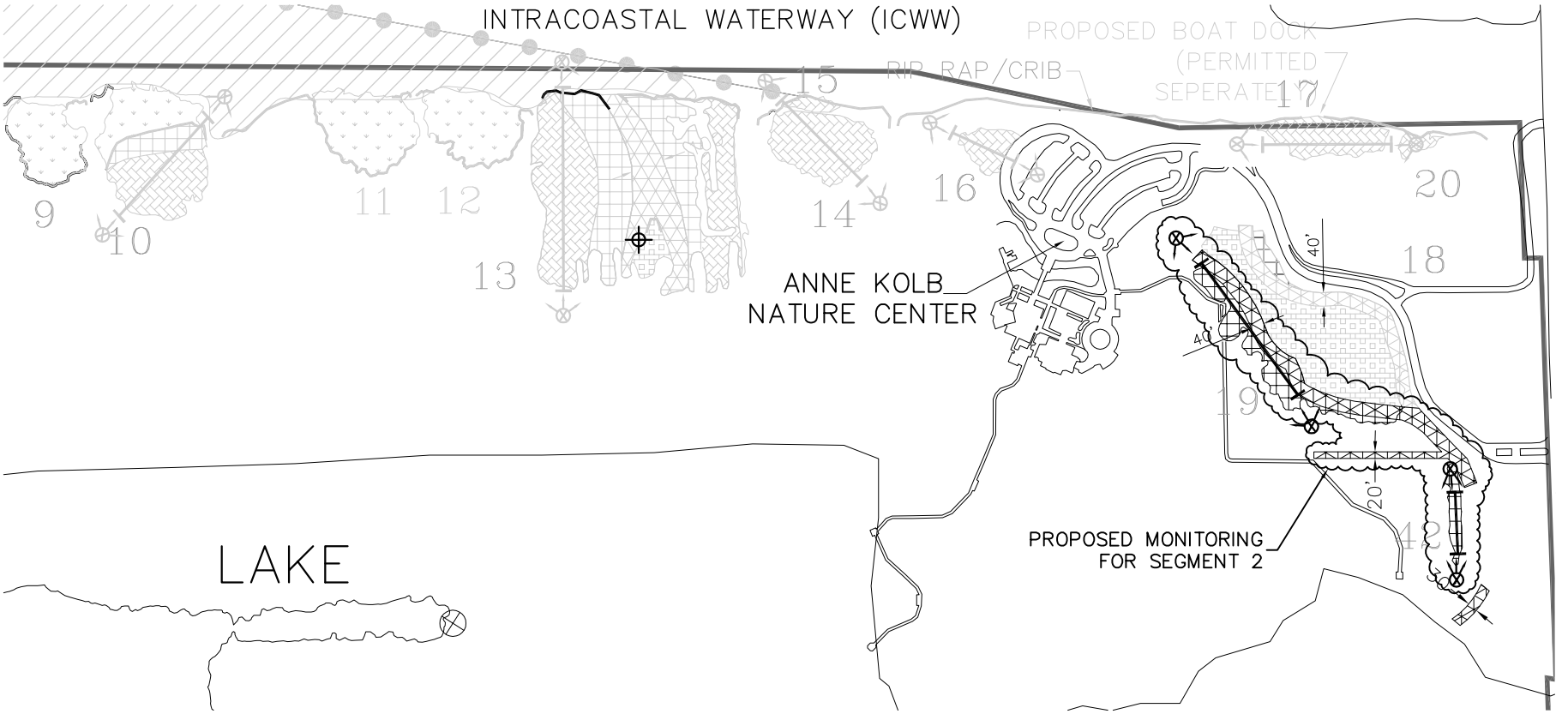
Pembroke Pines, Florida · 33024-3200
954-436-7000 · Fax: 954-436-8664
www.millerlegg.com

REVISIONS: 9/17/09 SEGMENT 2 REVISIONS

CERTIFICATES OF AUTHORIZATION: EB7318 LB6680 LC0337
DES. EHM | DWN. EHM | CHK. MEB
PROJECT / FILE NO. 99–37503
DRAWING NO. C–CS1
DATE DRAWN: 2/28/07
32 of 42

APPROVED :
FLA. REGISTRATION NO. DATE :

DETAIL 2 - MONITORING



NOT TO SCALE

LEGEND

- PARK BOUNDARY
- FLOATING BARRIER
- CULVERT IMPROVEMENT OR DESILT EXISTING CONNECTIONS
- NEW CULVERT INSTALLATION
- OSPREY NESTING PLATFORM
- PHOTO STATION
- PROPOSED STAGING AREA
- SUPPLEMENT EXISTING RIP RAP
- DESILT CHANNEL/REMOVE BLOCKS
- RIP RAP/CRIB
- VEGETATIVE TRANSECT
- PIEZOMETER/STAFF GAUGE
- MANATEE PROTECTION AREA
- MANGROVE CREATION – ±24.2 acres
- CHANNEL CREATION – ±11.6 acres
- UPLAND HAMMOCK CREATION– ±13.4 acres
- MUD FLAT/TIDE POOL CREATION – ±8.5 acres
- SEAGRASS CREATION– ±8.0 acres

PERMIT SET NOT FOR CONSTRUCTION

APPROVED : _____
FLA. REGISTRATION NO. _____ DATE : _____

MONITORING LOCATION MAP

NO.	DATE	REVISIONS	BY	APP.
3	09-18-09	SEGMENT 2 REVISIONS	JS	PDM
2	07-07-03	PLAN REVISIONS		GDP
1	02-26-03	PLAN REVISIONS		GDP

WEST LAKE PARK

BROWARD COUNTY, FLORIDA

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DES. | DWN. | CHK.

PROJECT / FILE NO.
99-37503

DRAWING NO.
SHEET-11

DATE DRAWN:
8/29/08

\\MLA\DFS\DATA\PROJECTS\1999\99-37503 WEST LAKE PARK MITIGATION PLAN\DWGS\ENV\PERMIT MOD SKETCHES\SEGMENT 2 PERMIT MOD\37503VPPLOC8.5X11_GREY(PERMIT-MOD-8-29-08).DWG

FDOT West Lake Park Mitigation UMAM Calculations
Revised per As-Builts

WEST LAKE PARK MITIGATION FUNCTIONAL UNIT LEDGER (USACOE)		Permitted	
CORPS PERMIT NUMBER		Acreage	UMAM FXNL UNITS
SAJ 2000-00072	Create 2.43 ACRE MANGROVE SWAMP Mitigation Area	2.43	1.32
	reduction in credits due to deviation in construction	-0.07	-0.04
Impact file number	Impact Project Name		
SAJ 2008-01438	ELLER DRIVE IMPACT (IMPACT 1.41 ACRES)	1.41	-0.71
SAJ 2009-01208	DIXIE FLYOVER (IMPACT 0.045 ACRES)	0.045	-0.03
SAJ 2011-01383	Sunrise Blvd Bridge replacement	0.007	-0.01
SAJ-2104-01584	I-95 Davie to SW 10th Street	0.177	-0.10
	REMAINING USACOE CREDITS/FG UNITS		0.43

0.5432UMAM units/acre

Parcel 19	Mangrove Habitat	0.7	0.34	0.98	0.46
	Primary Channel	1	0.65	0.99	0.64
	Total		0.99		1.10
Parcel 42	Mangrove Habitat, Secondary Channel	0.4	0.18	0.46	0.22
	Primary Channel	0.1	0.07	0	0
	Total		0.25		0.22