

Concurrence on the effect determination was received from the USFWS on January 10, 2017. Therefore, this document is adopted as the Final WEBAR by FDOT.

# **WETLAND EVALUATION AND BIOLOGICAL ASSESSMENT REPORT**

**Florida Department of Transportation  
District Seven**

## **SR 600 (US 92) Project Development & Environment Study Re-evaluation**

From East of I-4 to East of County Line Road  
Hillsborough County, Florida

Work Program Item Segment No.: 435749-1

Federal Aid Project No.: MAF-212-1(34)

The Florida Department of Transportation, District Seven, is conducting a Project Development and Environment Study Re-evaluation for the proposed widening of State Road 600 (US 92) from east of Interstate 4 to east of County Line Road in Hillsborough County, Florida. The total project length is approximately 18.1 miles. The environmental document that is being reevaluated is a Type 2 Categorical Exclusion (Approved by the FHWA on March 24, 1994).

Date: October 2016

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

Any reference contained herein to the Project Development & Environment Manual is referring to the 2016 revision.

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## EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study Re-evaluation for the proposed widening of SR 600 (US 92) from east of Interstate 4 (I-4) to east of County Line Road in Hillsborough County, Florida. The total project length is approximately 18.1 miles. The project location is shown in **Appendix A, Figure 1**.

The original PD&E Study was approved by the Federal Highway Administration on March 24, 1994. The study generally recommended four and six-lane build alternatives from east of I-4 to Mobley Street and from Park Road to County Line Road. However, the no-build alternative was selected for the segment between Mobley Street and west of Park Road with the exception of improving one section of Baker Street between Mobley and Whitehall Street where it was recommended for conversion to an urban section. It is noted that sidewalk and drainage improvements have since been made to the section of Baker Street between Mobley Street and Whitehall Street that meet the intent of the original PD&E Study recommendation for this project segment. Therefore, the no-build alternative between Mobley Street and Park Road remains as the recommended alternative for this portion of the Re-evaluation study limits.

Due to a change in design standards and existing conditions, the proposed project's PD&E Study is being re-evaluated. The no-build alternative between Mobley Street and Park Road remains as the recommended alternative. The PD&E Study Re-evaluation addresses the area from east of I-4 to Mobley Street and from west of Park Road to County Line Road. Proposed intersection improvements at Park Road necessitate the extension of the build segment between Park Road and County Line Road to include a tie in to the existing roadway along US 92 to the west of Park Road.

US 92 is an east-west roadway and is classified as an urban principal arterial other facility. Within the project limits, US 92 runs parallel to I-4. Part of the project is located within Plant City while the remainder of the project is in unincorporated Hillsborough County.

From Garden Lane to Thonotosassa Road, US 92 is a two-lane rural roadway with 12-foot lanes, grass shoulders, and drainage ditches located typically within 80 to 100 feet of right-of-way. From Thonotosassa Road to Mobley Street, US 92 consists of two eastbound travel lanes and two westbound travel lanes. The outside westbound travel lane becomes a dedicated right turn at Thonotosassa Road. There are no pedestrian facilities between Thonotosassa Road and Mobley Street.

East of Park Road, US 92 is a two-lane roadway with grass shoulders, drainage ditches, and a right-of-way width of 80 feet.

The purpose of this Draft Wetlands Evaluation and Biological Assessment Report (WEBAR) is to document and describe the existing wetland communities as well as wildlife or their habitats in the study area, pursuant to FDOT's *PD&E Manual*, Section 2, Chapters 18 and

27, respectively. This Draft WEBAR identifies the proposed project's impact to wetlands and possible impacts to wildlife or their habitats and provides potential mitigation alternatives to compensate for unavoidable wetland impacts in addition to a determination of effect on listed species that could occur in the study area. This Draft WEBAR includes analysis of the proposed Stormwater Management Facility (SMF) and Floodplain Compensation (FPC) sites and the potential impacts associated with those using the sites.

### ***Wetlands***

Pursuant to Executive Order 11990 (Protection of Wetlands) and USDOT Order 5660.1A (Preservation of the Nation's Wetlands), an analysis of the potential impacts on wetlands and associated wildlife was conducted for the alignment alternatives. The analysis also included measures to minimize adverse impacts and avoid to the fullest extent possible disturbance or impacts to wetlands. The analysis shows that some wetland impacts would be unavoidable; however, these wetland impacts would occur to previously disturbed wetlands adjacent to the existing roadway.

Based on the results from the alternatives analysis, there are no practicable alternatives to the proposed construction in wetlands that can address the needs of the project. Based on the recommended alignments, the anticipated wetland and surface water impacts will be approximately 11.33 acres, consisting of 9.84 acres of forested wetlands, 1.43 acres of herbaceous wetlands and 0.06 acres of surface water. Mitigation will be provided to compensate for all unavoidable loss of wetland function as required by the appropriate regulatory agencies.

### ***Wildlife***

A total of 25 listed wildlife species, including 7 federally-listed and 18 state-listed species that occur in Hillsborough County may also occur in the study area. The study area is located partially or entirely within three U.S. Fish and Wildlife Service (USFWS) Consultation Areas: Audubon's crested caracara, Florida scrub-jay, and sand skink. Proposed activities within consultation areas are more likely to affect the species than actions outside the consultation areas. The study area is also located within 12 wood stork core foraging areas, which refers to habitats around known wood stork nest colonies that are important for reproductive success and provide suitable foraging habitat for the wood stork. The study area is not located within designated critical habitat for any federally-listed species.

Biologists familiar with Florida's native habitats and wildlife conducted surveys in May 2015 and in June 2016 to document the presence of and likelihood of occurrence of listed species along the main line portions of the project's study area. The biologists observed one state-listed species, which was a white ibis foraging along a roadside ditch. The majority of habitats in and adjacent to the study area have been developed or altered so that they are not of sufficient quantity or quality to support many listed species. The publicly-available data affirms the position that listed species may not occur in the study area. An effect determination is provided for each species according to the results of the desktop analysis and field surveys.

Based on the FDOT commitments and results of previous wildlife surveys in the study area, it has been determined that the proposed project may affect, but is not likely to adversely affect or jeopardize the existence of any threatened or endangered species. Any wetland mitigation proposed during the design phase of the project is expected to fully offset any potential impacts to aquatic or wetland-dependent species.

### **Stormwater Management Facility (SMF) and Floodplain Compensation (FPC) Alternatives**

A total of 21 SMF sites and 14 FPC sites were evaluated to determine the potential impacts to jurisdictional wetlands and state and federal listed species. Biologists conducted field reviews on June 21 and 23, 2016 to document the occurrence of wetlands and the likelihood of occurrence of listed species within the proposed SMF and FPC sites.

Based on the results of field reviews, it has been determined that eight (8) SMFs and eight (8) FPC site alternatives have the potential to impact jurisdictional wetlands and/or surface waters. Where feasible, measures to avoid and minimize wetland and surface water impacts will be implemented during the final pond site design. Mitigation will be provided to compensate for all unavoidable loss of wetland function as required by the appropriate regulatory agencies.

Suitable foraging habitat (SFH) for wood storks was observed in SMF 15, FCP-3, and SCP-12. Suitable habitat for the gopher tortoise was observed in three (3) SMF sites and two (2) FCP sites. The FDOT will address potential wildlife impacts on the project by adhering to the commitments outlined in the previous *Wildlife* section. Based on these commitments and the results of the field reviews conducted within the SMF and FCP sites, it has been determined that the proposed project may affect, but is not likely to adversely affect any threatened or endangered species. Any wetland mitigation proposed during the design phase of the project is expected to fully offset any potential impacts to aquatic or wetland-dependent species.



## SECTION 1.0 – INTRODUCTION

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study Re-evaluation for the proposed widening of SR 600 (US 92) from east of Interstate 4 (I-4) to east of County Line Road in Hillsborough County, Florida. The total project length is approximately 18.1 miles. The project location is shown in **Appendix A, Figure 1**.

The original PD&E Study was approved by the Federal Highway Administration on March 24, 1994. The study generally recommended four and six-lane build alternatives from east of I-4 to Mobley Street and from Park Road to County Line Road. However, the no-build alternative was selected for the segment between Mobley Street and west of Park Road with the exception of improving one section of Baker Street between Mobley Street and Whitehall Street where it was recommended for conversion to an urban section. It is noted that sidewalk and drainage improvements have since been made to the section of Baker Street between Mobley Street and Whitehall Street that meet the intent of the original PD&E Study recommendation for this project segment. Therefore, the no-build alternative between Mobley Street and Park Road remains as the recommended alternative.

Due to a change in design standards and existing conditions, the proposed project's PD&E Study is being re-evaluated. The no-build alternative between Mobley Street and Park Road remains as the recommended alternative. The PD&E Study Re-evaluation addresses the area from east of I-4 to Mobley Street and from west of Park Road to east of County Line Road. Proposed intersection improvements at Park Road and at County Line Road necessitate the extension of the build segment between Park Road and County Line Road to include a tie in to the existing roadway along US 92 to the west of Park Road and to the east of County Line Road.

### 1.1 Existing Facility

US 92 is an east-west roadway and is classified as an urban principal arterial other facility. Within the project limits, US 92 runs parallel to I-4. Part of the project is located within Plant City while the remainder of the project is in unincorporated Hillsborough County.

From Garden Lane to Thonotosassa Road, US 92 is a two-lane rural roadway with 12-foot lanes, grass shoulders, and drainage ditches located typically within 80 to 100 feet of right-of-way. From Thonotosassa Road to Mobley Street, US 92 consists of two eastbound travel lanes and two westbound travel lanes. The outside westbound travel lane becomes a dedicated right turn at Thonotosassa Road. There are no pedestrian facilities between Thonotosassa Road and Mobley Street.

East of Park Road, US 92 is a two-lane roadway with grass shoulders, drainage ditches, and a right-of-way width of 80 feet.

## 1.2 Summary of Proposed Improvements from Original 1994 PD&E Study

The proposed improvements identified in the original PD&E Study are described below.

From Garden Lane to Falkenburg Road, the recommended improvement consisted of a six-lane urban facility with a 22-foot median within 122 feet of right-of-way and with a 45 miles per hour (mph) speed limit.

From Falkenburg Road to Kingsway Road, from Forbes Road to Mobley Street, and from Park Road to County Line Road, the recommended improvement consisted of a four-lane urban facility with a 46-foot median allowing for future expansion to six lanes within 122 feet of right-of-way and a 45 mph design speed.

From Kingsway Road to Forbes Road, the recommended improvement consisted of a four-lane rural facility with a 46-foot median within 198 feet of right-of-way and a 60 mph design speed.

Between Mobley Street and Park Road, the existing alignment and typical section of the one-way pair system was recommended with the exception that the section of Baker Street between Mobley Street and Whitehall Street be converted to an urban section.

## 1.3 Need for Project

As identified in the original PD&E Study, the need for the project is based on capacity deficiencies, consistency with transportation plans, safety, and socioeconomic demand.

### *Capacity*

The existing annual average daily traffic within the study limits varied between 10,000 and 21,350 vehicles per day (VPD) in year 2015. Based on the growth projected to occur within the corridor, US 92 is projected to have future traffic volumes ranging from approximately 18,100 VPD to 39,300 VPD within the project limits by year 2040, which would yield a level of service (LOS) F for the corridor with the current roadway configuration. These volumes would exceed roadway capacity at the adopted standards of LOS for US 92 within the project limits. The proposed widening to four lanes will allow US 92 to meet future travel demand at an acceptable LOS D or better and continue to serve as an important regional arterial. Transportation Systems Management & Operations-type improvements will not adequately address future travel demand needs.

### *Transportation Planning*

The segments of US 92 from US 301 to CR 579 and from Park Road to County Line Road have been identified as cost feasible projects in the Imagine 2040: Hillsborough County MPO's Long Range Transportation Plan (LRTP). These segments have also been included in the State Transportation Improvement Plan and the Hillsborough County Metropolitan Planning Organization's (MPO's) Transportation Improvement Program for design.

### *Safety*

Crash data along US 92 within the project limits was obtained from the FDOT for the most recent five-year (2009 through 2013) period. There were 1,209 crashes reported within the project limits during the five-year period which involved 1,017 injuries and 14 fatalities. As a part of the analysis, the number of crashes that occurred at night was also summarized. The crash rate was calculated and compared to the statewide crash rates for similar roadway segments.

The average crash rate over the entire length of the US 92 study corridor is 3.59, which is higher than the statewide five-year average crash rate of 2.629 for two to three lane, two-way undivided suburban segments. Approximately 34% of the total crashes along US 92 are night-time crashes. A review of the distribution of crashes by mile post indicates that the majority of the crashes occurred at Falkenburg Road, Williams Road, CR 579/Mango Road, Kingsway Road, McIntosh Road, Branch Forbes Road/Forbes Road, Turkey Creek Road, Alexander Street, Maryland Avenue, and County Line Road. Many of the crashes on US 92 are types that are associated with congestion. The proposed widening of US 92 and the addition of turn lanes at intersections is expected to improve safety along the corridor.

### *Socioeconomic Demand*

The Hillsborough County MPO's 2040 LRTP socioeconomic projections estimate an employment increase of 56% and a population increase of 48% for Hillsborough County between year 2010 and year 2040. The population estimate for Hillsborough County is 1,229,226 for the year 2010 and 1,815,964 for future year 2040, and the countywide employment estimate is 711,400 for the year 2010 and 1,112,059 for future year 2040. As a result, traffic on US 92 is expected to increase due to projected population and employment growth both along the corridor and in the region.

## SECTION 2.0 – RECOMMENDED BUILD ALTERNATIVES

The project was divided into evaluation segments based on changes in land use and the proposed typical sections in comparison with the land use and typical sections from the original PD&E Study. The evaluation segment limits are shown in **Appendix A, Figure 2**. The proposed typical sections, the alignment alternatives considered (where applicable), and the recommended alignments for each segment are described below.

### 2.1 Segment 1 from east of I-4 (Garden Lane) to west of CR 579 (Mango Road)

From Garden Lane to west of I-75 and from east of I-75 to west of Mango Road, the proposed typical section is an urban roadway with two 11-foot travel lanes and a 7-foot buffered bike lane in each direction. The travel lanes are separated by a 44-foot median with 8-foot inside shoulders. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater management facilities. A 17-foot border is provided along both sides of the roadway and accommodates 5-foot sidewalks on both sides of the road. This typical section requires a minimum of 136 feet of right-of-way and complies with the FDOT minimum design speed of 45 mph. The proposed typical section for Segment 1 is shown in **Appendix A, Figure 2A**.

From west of I-75 to east of I-75, the proposed typical section for this segment is constrained by the piers for I-75. The typical section is an urban roadway with two 11-foot travel lanes and a 7-foot buffered bike lane in each direction. The travel lanes are separated by a 40.5-foot median with 8-foot inside shoulders. Pier protection barrier is located between the bike lanes and the piers and six-foot sidewalks are located behind the piers on both sides of the roadway. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater management facilities. This typical section complies with the FDOT minimum design speed of 45 mph but would require a design variation if the roadway is expanded to six lanes in the future. This proposed typical section is shown in **Appendix A, Figure 2B**.

The recommended alignment for Segment 1 from Garden Lane to west of Mango Road follows the recommended alignment from the original PD&E Study. From Garden Lane to Falkenburg Road, the recommended alignment is a north alignment with right-of-way to be acquired from the north side of the roadway. From Falkenburg Road to west of Mango Road, the alignment shifts to a south alignment with right-of-way to be acquired from the south side of the roadway.

### 2.2 Segment 2 from west of CR 579 (Mango Road) to east of CR 579 (Mango Road)

The proposed typical section for this segment is the same as for the major portion of Segment 1 and is shown in **Appendix A, Figure 2A**.

Due to additional development (First Freewill Baptist Church additions) which has occurred in the vicinity of the Mango Road intersection, a north, centered, and south alignment were evaluated. The recommended alignment for Segment 2 from west of CR 579 (Mango Road) to east CR 579 (Mango Road) is the north alignment. The north alignment begins as a south

alignment adjacent to Segment 1, then transitions to the north side of US 92 through the intersection, and then transitions to a south alignment at the beginning of Segment 3.

### 2.3 Segment 3 from east of CR 579 (Mango Road) to North Parsons Avenue

The proposed typical section for this segment is the same as for the major portion of Segment 1 and is shown in **Appendix A, Figure 2A**.

The recommended alignment for Segment 3 from east of Mango Road to North Parsons Avenue follows the preferred alignment from the original PD&E Study and is a south alignment.

### 2.4 Segment 4 from North Parsons Avenue to east of Crow Wing Drive

The proposed typical section for this segment is the same as for the major portion of Segment 1 and is shown in **Appendix A, Figure 2A**.

Due to additional development which has occurred on the north side of the roadway (Burnett Middle School and The Hammocks at Kingsway subdivision), north and south alignments were evaluated from North Parsons Avenue to Crow Wing Drive. The recommended alignment for Segment 4 follows the preferred alignment from the original PD&E Study and is a north alignment.

### 2.5 Segment 5 from Crow Wing Drive to Castlewood Road

The proposed typical section for this segment is an urban roadway with two 12-foot travel lanes and a 7-foot buffered bike lane in each direction. The travel lanes are separated by a 54-foot median with 8-foot inside shoulders. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater management facilities. A 29-foot border is provided along both sides of the roadway and accommodates 5-foot sidewalks on both sides of the road. This typical section requires a minimum of 160 feet of right-of-way and complies with the FDOT minimum design speed of 50 mph. The proposed typical section for Segment 5 is shown in **Appendix A, Figure 2C**.

The recommended alignment for Segment 5 from Crow Wing Drive to Castlewood Road follows the preferred alignment from the original PD&E Study and is a north alignment.

### 2.6 Segment 6 from Castlewood Road to west of Gallagher Road

The proposed typical section for this segment is the same as for Segment 5 and is shown in **Appendix A, Figure 2C**.

Due to additional development which has occurred in the vicinity of the McIntosh Road intersection (McIntosh Charter School), north and south alignments were evaluated from Castlewood Road to west of Gallagher Road. The recommended alignment for Segment 6 from Castlewood Road to west of Gallagher Road is the south alignment.

## 2.7 Segment 7 from west of Gallagher Road to Lynn Oaks Circle

The proposed typical section for Segment 7 is the same as for Segment 5 and is shown in **Appendix A, Figure 2C**.

The recommended alignment for Segment 7 from west of Gallagher Road to Lynn Oaks Circle follows the preferred alignment from the original PD&E Study and is a south alignment.

## 2.8 Segment 8 from Lynn Oaks Circle to east of Bethlehem Road

The proposed typical section for Segment 8 is the same as for Segment 5 and is shown in **Appendix A, Figure 2C**.

Due to a reduction in the proposed typical section width in comparison with the typical section width in the original PD&E Study, north, centered, and south alignments were evaluated from Lynn Oaks Circle to east of Bethlehem Road. The recommended alignment for Segment 8 from Lynn Oaks Circle to east of Bethlehem Road follows the preferred alignment from the original PD&E Study and is a centered alignment.

## 2.9 Segment 9 from east of Bethlehem Road to Mobley Street

The proposed typical section for Segment 9 from east of Bethlehem Road to Edwards Street is the same as for Segment 5 and is shown in **Appendix A, Figure 2C**.

The proposed typical section for Segment 9 from Edwards Street to Mobley Street is an urban roadway with two 11-foot travel lanes and a 7-foot buffered bike lane in each direction. The travel lanes are separated by a 22-foot median. Type E curb and gutter is used along the inside and Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater management facilities. A 12-foot border is provided along both sides of the roadway and accommodates 5-foot sidewalks on both sides of the road. This typical section requires a minimum of 114 feet of right-of-way and complies with the FDOT minimum design speed of 45 mph. The proposed typical section for Segment 9 from Edwards Street to Mobley Street is shown in **Appendix A, Figure 2D**.

The recommended alignment for Segment 9 from east of Bethlehem Road to Mobley Street follows the preferred alignment from the original PD&E Study and is a south alignment from east of Bethlehem Road to Turkey Creek Road and then transitions to a north alignment from Turkey Creek Road to Woodrow Wilson Street. From Woodrow Wilson Street to Mobley Street, the recommended alignment is a centered alignment due to geometric constraints at the Thonotosassa Road intersection and the Baker Street intersection.

## 2.10 Segment 10 from Mobley Street to west of Park Road

This segment is through Plant City and the recommended alternative for this segment is the no-build alternative. As stated above, sidewalk and drainage improvements were made to the section of Baker Street between Mobley Street and Whitehall Street which meet the intent of the original PD&E Study recommendation for this segment of the project.

## 2.11 Segment 11 from Park Road to east of County Line Road

The proposed typical section for this segment is an urban roadway with two 12-foot travel lanes and a 7-foot buffered bike lane in each direction. The travel lanes are separated by a 40-foot median with 8-foot inside shoulders. Type F curb and gutter is used along the outside lanes and curb inlets collect stormwater runoff which is then conveyed to stormwater management facilities. A 24-foot border is provided along both sides of the roadway and accommodates 5-foot sidewalks on both sides of the road. A border width design variation will be required. This typical section requires a minimum of 136 feet of right-of-way and complies with the FDOT minimum design speed of 50 mph. The proposed typical section for Segment 11 is shown in **Appendix A, Figure 2E**.

The recommended alignment for Segment 11 follows the preferred alignment from the original PD&E Study and is a north alignment.

## SECTION 3.0 – Existing Environmental Conditions

### 3.1 Methodology

The US 92 PD&E Study Re-evaluation considers the potential environmental impacts to wildlife and habitat resources, including designated critical habitat(s) for federally-listed species and adverse effects on either federally-listed or state-listed species. The potential environmental impacts due to the project alternatives were analyzed through a combination of publicly available documents and Geographic Information System (GIS) data, as well as field reviews.

#### *Preliminary Data Collection*

Staff reviewed publicly available documents and GIS data to determine whether federally-listed species or their critical habitat(s), or state-listed species, occur or have the potential to occur in the study corridor. The following resources were used as part of the preliminary data collection:

- *Soil Survey of Hillsborough County, Florida* (Natural Resources Conservation Service 1989).
- Topographic Quadrangle Maps: Thonotosassa, Plant City West, Plant City East (U.S. Geological Survey 1995).
- *National Wetlands Inventory* (USFWS 2014).
- *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979).
- 2008 Land Use and Land Cover of Hillsborough County (Southwest Florida Water Management District [SWFWMD] 2008), based on *Florida Land Use, Cover and Forms Classification System* (FDOT 1999).
- High Resolution Ortho-imagery of Hillsborough County (FDOT 2014).
- Federally Endangered and Threatened Wildlife and Plants List, 50 CFR Part 17.
- USFWS Consultation Areas for Federally-listed Species.
- Wood Stork Rookeries and Core Foraging Areas (USFWS 1999).
- State Threatened and Species of Special Concern List, Chapter 68A-27, F.A.C.
- Bald Eagle Nest Locator (Florida Fish and Wildlife Conservation Commission [FWC] 2014).
- Florida Natural Areas Inventory Database for Hillsborough County (FNAI 2015).

#### *Field Reviews*

Biologists familiar with Florida's wildlife and habitats conducted surveys for listed species and their potential habitats along the study corridor in May 2015. Additional surveys of the proposed stormwater management facilities (SMF) and floodplain compensation (FPC) locations were conducted in June 2016. The biologists performed meandering pedestrian surveys in natural habitats and spot-surveys along the study corridor and within the proposed SMF and FPC locations. The survey season was chosen to correspond with the spring breeding season for endemic Florida species, such as the Florida sandhill crane and Southeastern American kestrel, which can be confused with their non-listed, migratory



counterparts during the winter. The biologists captured photographs of representative habitat types along the study corridor and within the SMF and FPC locations (Appendix A).

### *Wetlands*

Wetlands and surface waters were first identified in the study corridor by examining the USGS's Quadrangle Map (**Appendix A, Figure 3-1**), the USFWS's *National Wetlands Inventory* (2014) data and SWFWMD's 2011 Land Use and Land Cover data, and other relevant materials. Field reviews were conducted by two biologists familiar with Florida's wetland habitats. These biologists determined the limits of each wetland using the methods described in Chapter 62340, Florida Administrative Code; the U.S. Army Corps of Engineers' (USACE) *Wetland Delineation Manual* (1987); and the *Regional Supplement to the Corps of Engineers' Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region* (2010). Wetland descriptions follow FDOT (1999) and the USFWS's *Classification of Wetlands and Deepwater Habitats of the United States*.

### 3.2 Soil Conditions

The classification and distribution of soils within 250 feet of the alignment alternatives was determined by using the soil information prepared by the Natural Resources Conservation Service data. Twenty soil types occur in the study corridor (**Appendix A, Figure 3-2A – 3-2D**). A majority of the soils are sandy and generally support flatwood habitats, and they are used for pastures or citrus crops. Hydric soils generally occur within or adjacent to potential wetland areas. These soils are typically located near creeks and streams or floodplains of these waterways. A brief description of the various soil types is provided in the text and in **Table 1**.

**Table 1 - NRCS Soils within 250 feet of the Study Corridor**

Soil Name	Map Unit Number	Hydric	Hydrologic Group	Area (ac.)	% of Study Corridor
Adamsville Fine Sand, 0 to 2 percent slopes	2	No	A/D	<1	<1
Archbold Fine Sand	3	No	A	3	<1
Basinger, Holopaw, and Samsula soils, Depressional	5	Yes	A/D	54	4
Candler fine sand, 0 to 2 percent slopes	7	No	A	59	5
Eaton Mucky Sand, Depressional	14	Yes	C/D	17	1
Felda Fine Sand	15	Yes	A/D	<1	<1
Fort Meade Loamy Fine Sand, 0 to 5 percent slopes	18	No	A	33	3
Gainesville Loamy Fine Sand, 0 to 5 percent slopes	19	No	A	37	3
Haplaquents, Clayey	51	Yes	D	2	<1
Holopaw Fine Sand, Depressional	33	Yes	A/D	<1	<1
Immokalee Fine Sand	21	No	B/D	11	1
Lake Fine Sand, 0 to 5 percent slopes	25	No	A	151	12
Lochloosa-Micanopy Fine Sand, 0 to 5 percent slopes	26	No	C	10	1
Malabar Fine Sand	27	Yes	A/D	11	1
Myakka Fine Sand, 0 to 2 percent slopes	29	No	A/D	142	12
Ona Fine Sand	33	No	B/D	60	5
Orlando Fine Sand, 0 to 5 percent slopes	35	No	A	2	<1
Pomello Fine Sand, 0 to 5 percent slopes	41	No	A	14	1
Pomona Fine Sand	7	No	A/D	2	<1
Seffner Fine Sand	47	No	A/D	303	25
Smyrna Fine Sand, 0 to 2 percent slopes	52	No	A/D	28	2
St. Johns Fine Sand	46	Yes	B/D	76	6
Tavares-Millhopper Fine Sand, 0 to 5 percent slopes	53	No	A	104	8
Water	99			2	<1
Zolfo Fine Sand	61	No	A	71	6
			<b>TOTAL</b>	<b>1,191</b>	<b>100</b>

*Adamsville Fine Sand*

The soil is nearly level, somewhat poorly drained, and rapidly permeable. It is located on broad ridges of flatwoods; however, the soil is typically used for improved pasture, citrus crops, or homesites and urban development. In most years, the seasonal high water table is at a depth of 20 to 40 inches for 2 to 6 months and recedes to a depth of 60 inches during prolonged dry periods. The soil is not hydric.

*Archbold Fine Sand*

The soil is nearly level, moderately well drained, and rapidly permeable. It is located on low ridges of flatwoods; a few areas are used for pasture or for residential or urban development,

but it is common to scrub habitats and those areas which support deep-rooted plants. In most years, the seasonal high water table is at a depth of 42 to 60 inches for about 6 months, and it recedes to a depth of 60 to 80 inches during prolonged dry periods. The soil is not hydric.

*Basinger, Holopaw, and Samsula Soils, Depressional*

The soil is nearly level and very poorly drained. The permeability is rapid in Basinger and Samsula soils. The permeability is rapid in the surface and subsurface and moderately slow or moderate in the subsoil of Holopaw soil. It is located in swamps and depressions of flatwoods. In most years, the undrained portions of the soil are ponded for about 6 months. The soil is hydric.

*Candler Fine Sand, 0 to 5 Percent Slopes*

The soil is nearly level to gently sloping, excessively drained and rapidly permeable. It is located on uplands, used for citrus crops and sometimes used for residential or urban development. The seasonal high water table is at a depth of more than 80 inches in most years. The soil is not hydric.

*Eaton Mucky Sand, Depressional*

The soil is nearly level, very poorly drained, and rapidly permeable in the surface and subsurface layers and slow in the subsurface. The soil is located in depressions in flatwoods and swamps. In most years, the undrained areas are ponded for one to four months. A seasonal high water table fluctuates from the soil surface to a depth of about 10 inches for 9 months. The soil is hydric.

*Felda Fine Sand*

The soil is nearly level, poorly drained, and rapidly permeable in the surface and subsurface layers and moderate in the subsoil. The soil is located in broad sloughs and flatwoods, and can be used for pastures, citrus crops and developments. A seasonal high water table fluctuates from the soil surface to a depth of about 10 inches for 2 to 6 months in most years. The soil is hydric.

*Fort Meade Loamy Fine Sand, 0 to 5 Percent Slopes*

The soil is nearly level to gently sloping, well drained and rapidly permeable. The soil is located on uplands, and often used for citrus crops, slash pine plantations and pastures. A seasonal high water table is at a depth of more than 72 inches. The soil is not hydric.

*Gainesville Loamy Fine Sand, 0 to 5 Percent Slopes*

The soil is nearly level to gently sloping, well drained and rapidly permeable. The soil is located on uplands, well suited to citrus crops, pastures and development, and naturally supports deep-rooted plants. A seasonal high water table is at a depth of more than 72 inches. The soil is not hydric.

### *Haplaquents, Clayey*

The soil is nearly level, very poorly drained, and generally very slow permeability. The soil formed in accumulations of fine-textured material from phosphate mining operations. In most years, undrained areas of this map unit are ponded except during dry periods. The seasonal high water table fluctuates from the soil surface to a depth of about 10 inches. The soil is hydric.

### *Holopaw Fine Sand, Depressional*

The soil is nearly level, very poorly drained, rapidly permeable in the surface and subsurface layers and moderately slow to moderate in the subsoil. The soil is located in depressions and marshes, and not suited to cultivated crops. The soil is ponded for 6 to 9 months or more each year. The water table is within 10 inches of the surface for 2 to 4 months and between a depth of 10 and 40 inches for most of the remainder of the year. The soil is hydric.

### *Immokalee Fine Sand*

The soil is nearly level, poorly drained, rapidly permeable in the surface and subsurface layers and moderate in the subsoil. The soil is located on broad plains in flatwoods, and well-suited to most crops, pasture and development. In most years, a seasonal high water table fluctuates from the soil surface to a depth of 10 inches for more than 2 months and recedes to a depth of 10 to 40 inches for 8 months or more. The soil is not hydric.

### *Lake Fine Sand, 0 to 5 Percent Slopes*

The soil is nearly level to gently sloping, excessively drained and rapidly permeable. The soil is located on uplands, well-suited to citrus crops, and naturally supports deep-rooted plants. A seasonal high water table is at a depth of more than 80 inches. The soil is not hydric.

### *Lochloosa-Micanopy Fine Sand, 0 to 5 Percent Slopes*

The soils are nearly level to gently sloping and somewhat poorly drained. Permeability of Lochloosa soil is moderately rapid or rapid in the surface and subsurface layers and slow to moderately rapid in the subsoil. Permeability of Micanopy soil is rapid in the surface and subsurface layers, moderate in the upper part of the subsoil, and slow in the lower part. The soil is located on uplands, most often used for citrus crops or for urban development, and naturally supports flatwoods. Lochloosa soil has a seasonal high water table at a depth of 30 to 60 inches for 1 to 4 months, but it recedes to a depth of more than 60 inches during prolonged dry periods. Micanopy soil has a perched, seasonal high water table at a depth of 18 to 30 inches for 1 to 3 months, but it recedes to a depth of more than 60 inches during prolonged dry periods. The soil is not hydric.

### *Malabar Fine Sand*

The soil is nearly level, poorly drained, and rapidly permeable in the surface and subsurface layers, slow in the subsoil, and moderately rapid or rapid in the substratum. The soil is located in low-lying sloughs and shallow depressions in flatwoods. In most years, a seasonal

high water table fluctuates from the soil surface to a depth of about 10 inches for 2 to 6 months. The soil is hydric.

*Myakka Fine Sand*

The soil is nearly level, poorly drained, rapidly permeable in the surface and subsurface layers, moderate or moderately rapid in the subsoil, and rapid in the substratum. The soil is located on broad plains in flatwoods. In most years, the seasonal high water table fluctuates from the soil surface to a depth of 10 inches for 1 to 4 months and recedes to a depth of 40 inches during prolonged dry periods. The soil is not hydric.

*Ona Fine Sand*

The soil is nearly level, poorly drained, rapidly permeable in the surface layer, moderate or moderately rapid in the subsoil, and rapid in the substratum. The soil is located on broad plains in flatwoods, and used for native pasture. In most years, the seasonal high water table fluctuates from the soil surface to a depth of 10 inches for more than 2 months and recedes to a depth of 10 to 40 inches for 6 months or more. The soil is not hydric.

*Orlando Fine Sand, 0 to 5 Percent Slopes*

The soil is nearly level to gently sloping, well drained and rapidly permeable. The soil is located on uplands, and mostly used for cultivated crops or citrus crops. The seasonal high water table is below a depth of more than 72 inches. The soil is not hydric.

*Pomello Fine Sand*

The soil is nearly level to gently sloping, moderately well drained, very rapidly permeable in the surface and subsurface layers, moderately rapid in the subsoil, and rapid in the substratum. The soil is located on low ridges in flatwoods, and not well suited for crops or pastures. In most years, the seasonal high water table is at a depth of 24 to 40 inches for 1 to 4 months and recedes to a depth of 40 to 60 inches during dry periods. The soil is not hydric.

*Pomona Fine Sand*

The soil is near level, poorly drained, and moderate or slow permeability in the subsoil. The soil is located in low, broad areas within flatwoods, and poorly suited to crops because of the water levels. In most years, the water table is within a depth of 10 inches for 1 to 3 months and within 40 inches for about 6 months. The soil is not hydric.

*Seffner Fine Sand*

The soil is nearly level, somewhat poorly drained, and rapidly permeable. The soil is located at the rim of depressions and on broad, low ridges in flatwoods. In most years, the seasonal high water table is at a depth of 20 to 40 inches for 2 to 6 months and recedes to a depth of less than 60 inches during prolonged dry periods. The soil is not hydric.

### *Smyrna Fine Sand*

The soil is nearly level, poorly drained, rapidly permeable in the surface and subsurface layers, moderate or moderately rapid in the subsoils, and rapid in the substratum. The soil is located in broad, low lying, convex swells in flatwoods, and often used for pastures. In most years, the seasonal high water table fluctuates from the soil surface to a depth of 10 inches for more than 2 months and recedes to a depth of 10 to 40 inches for 6 months or more. The soil is not hydric.

### *St. Johns Fine Sand*

The soil is nearly level, poorly drained, rapidly permeable in the surface and subsurface layers and moderate in the subsoil. The soil is located in broad flatwoods and landscapes adjacent to drainageways, and often used for crops and pastures. In most years, the seasonal high water table is at a depth of 0 to 15 inches for 2 to 6 months and at 15 to 30 inches during periods of low rainfall.

### *Tavares-Millhopper Fine Sand, 0 to 5 Percent Slopes*

The soil is moderately sloping, moderately well drained, rapidly permeable in the surface and subsurface layers and moderately rapid or moderate in the subsoil. The soil is located on side slopes of uplands adjacent to ponds, lakes and streams. Tavares soil has a seasonal high water table at a depth of 40 to 80 inches for more than 6 months, and it recedes to a depth of more than 80 inches during prolonged dry periods. Millhopper soil has a seasonal high water table at a depth of 40 to 60 inches for 1 to 4 months, and it recedes to a depth of 60 to 72 inches for 2 to 4 months. The soil is not hydric.

### *Zolfo Fine Sand*

The soil is nearly level, somewhat poorly drained, rapidly permeable in the surface and subsurface layers and moderate in the subsoil. The soil is located on broad, low ridges in flatwoods, and often used for citrus crops, pastures or development. In most years, the seasonal high water table is at a depth of 24 to 40 inches for more than 2 to 6 months and recedes to a depth of 60 inches during prolonged dry periods. The soil is not hydric.

## 3.3 Existing Land Use

The existing land uses were first determined by using the SWFWMD's Land Use and Land Cover and then modified after field surveys to better reflect observations made at the time the study was conducted. The existing land uses range from industrial and commercial to croplands and wetlands. Industrial and commercial lands generally occur near US 92 and I-4 (**Appendix A, Figure 3-3A – 3-3D**). The wetlands tend to occur near streams and waterways like Spartman Branch and Baker Creek. The types and extent of land uses in the study corridor are provided in **Table 2**. A summary of land use categories is provided below; a more detailed description of the wetland types is provided in the following section.

### *Urban and Built-up*

Urban and built-up land consists of areas of moderate to intense land use with properties occupied by man-made structures. The land use category is found throughout the study corridor. Shopping centers, commercial complexes and government institutions are found in the City of Plant City and along the major roads. Medium and high density residential development tends to occur in the City of Plant City whereas low density residential development generally occurs in unincorporated Hillsborough County.

### *Agriculture*

In a broad sense, agricultural lands may be defined as those lands which are cultivated to produce food crops and livestock. The land use category is found throughout the study corridor, particularly outside the City of Plant City. Field size and shape are highly variable depending upon topographic conditions as well as soil types, the kinds of crops and pastures, and other conditions. The most common land use type is cropland and pastureland, which includes land that has been cleared for row crops or grazing. Another typical land use type is row crop, particularly strawberries and melons.

### *Upland Forests*

Upland forests include those areas which support a tree canopy closure of ten percent or more. The land use category is found throughout the study corridor with neither upland conifers nor hardwoods achieving 66 percent crown canopy dominance. While most upland forest areas in the study corridor are relatively small, two larger upland forests were identified near Baker Creek and English Creek, respectively.

### *Water*

In general, the water category is defined as the areas predominantly or persistently covered by water. Those portions of a water body having emergent vegetation or observable submerged vegetation are considered to be wetlands (see below). Water bodies are located throughout the study corridor. The three most common types of water bodies are streams and waterways, lakes, and reservoirs. Several named streams and unnamed tributaries are located in the study corridor. The majority of the streams and tributaries are channelized and support stream and lake swamps (bottomland wetlands). Some of the named streams include Baker and English Creeks, East Canal, and Spartman Branch, as well as the Tampa Bypass Canal. There are numerous reservoirs in the study corridor. The reservoirs are typically associated with agriculture lands and residential areas.

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Canal. There are numerous reservoirs in the study corridor. The reservoirs are typically associated with agriculture lands and residential areas.

### *Wetlands*

Wetlands are considered to be areas inundated or saturated by water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soils or soils that possess reducing soil conditions. Wetlands are located throughout the study corridor (**Appendix A, Figure 3-4A – 3-4D**). The most common wetland types are freshwater marshes, stream and lake swamps, and wetland forested mixed. These areas are frequently associated with streams and waterways or topographic low lying areas.

### *Transportation*

Transportation facilities are used for the movement of people and goods. Transportation land uses influence the landscape and boundaries. Due to the urban nature of the City of Plant City, transportation facilities are common to the study corridor. The major transportation facilities are US 92 and Interstate 4. The study area also includes rail-oriented facilities like the one east of the City of Plant City.



**Table 2 - Land Use and Land Cover within 250 feet of the Study Corridor**

<b>FLUCFCS Code</b>	<b>Description</b>	<b>Area (ac.)</b>	<b>% of Survey Corridor</b>
<b>100s: Urban and Built-up</b>			
110	Residential, low density	136.08	11.40
120	Residential, medium density	110.23	9.24
130	Residential, high density	51.45	4.31
140	Commercial and Services	399.40	33.45
150	Industrial	42.86	3.59
170	Institutional	27.61	2.31
180	Recreational	2.88	0.24
190	Open Land	28.51	2.39
<b>TOTAL</b>		<b>799.02</b>	<b>66.93</b>
<b>200s: Agriculture</b>			
210	Cropland and Pastureland	29.53	2.47
214	Row Crops	15.97	1.34
220	Tree Crops	4.52	0.38
240	Nurseries and Vineyards	9.94	0.83
254	Aquiculture	1.88	0.16
260	Other Open Lands	9.27	0.78
<b>TOTAL</b>		<b>71.11</b>	<b>5.96</b>
<b>400s: Upland Forests</b>			
434	Hardwood Conifer Mixed	78.53	6.58
<b>TOTAL</b>		<b>78.53</b>	<b>6.58</b>
<b>500s: Water</b>			
530	Reservoirs	1.94	0.16
<b>TOTAL</b>		<b>1.94</b>	<b>0.16</b>
<b>600s: Wetlands</b>			
615	Stream and Lake Swamps	19.03	1.59
618	Willow and Elderberry	1.10	0.09
620	Wetland Coniferous Forests	0.17	0.01
630	Wetland Forested Mixed	22.31	1.87
640	Vegetated Non-Forested Wetlands	1.35	0.11
641	Freshwater Marshes	8.25	0.69
644	Emergent Aquatic Vegetation	1.20	0.10
653	Intermittent Ponds	2.02	0.16
<b>TOTAL</b>		<b>55.44</b>	<b>4.64</b>
<b>800s: Transportation</b>			
810	Transportation (Roads)	165.58	13.87
820	Railroads	20.81	1.75
830	Utilities	1.34	0.11
<b>TOTAL</b>		<b>187.73</b>	<b>15.73</b>

### 3.4 Wetlands

#### *Stream and Lake Swamps (Bottomland)*

FLUCFCS: 615

USFWS: PFO1C/J (Palustrine, Forested, Broad-Leaved Deciduous, Seasonally/Intermittently Flooded)

The wetland is typically found on but not restricted to flood plains adjacent to rivers and lakes. The tree canopy includes a wide variety of hardwood species such as cypress (*Taxodium* sp.), red maple (*Acer rubrum*), water oak (*Quercus nigra*), sweet gum (*Liquidambar styraciflua*), willows (*Salix* sp.), water tupelos (*Nyssa aquatica*), and water hickory (*Carya aquatica*). Associated species include loblolly bay (*Gordonia lasianthus*), sweetgum magnolia (*Magnolia virginiana*) and red bay (*Persea borbonia*), as well as loblolly pine (*Pinus taeda*) and slash pine (*P. elliotii*). The understory and ground cover are usually sparse or absent due to frequent flooding but sometimes include such species as buttonbush (*Cephalanthus occidentalis*), lizard's tail (*Saururus cernuus*) and various ferns.

#### *Willow and Elderberry*

FLUCFCS: 618

USFWS: PSS6B (Palustrine, Scrub-Shrub, Deciduous, Saturated)

The wetland type is typically found on depressions or low-lying areas with waters at or above the ground surface. The vegetation is generally comprised of a monoculture of Carolina willow (*Salix caroliniana*) and elderberry (*Sambucus canadensis*). Other vegetation species may include arrowhead (*Sagittaria latifolia*), cattails (*Typha latifolia*), Peruvian primrose willow (*Ludwigia peruviana*), and pickerelweed (*Pontederia cordata*). The wetland type is not uncommon to roadsides.

#### *Wetland Forested Mixed*

FLUCFCS: 630

USFWS: PFO (Palustrine, Forested)

The wetland occurs on organic soils of low-lying flatlands or depressions that only flood during extreme circumstances. The wetland type is highly variable in terms of size, shape and species composition. However, it is considered a forested mixed community because neither hardwoods nor conifers achieve a 66 percent dominance of the crown canopy composition. The canopy composition of more-hydric sites generally consists of cypress, sweetgum and red maple whereas mesic sites tend to support loblolly and slash pine, cabbage palm (*Sabal palmetto*) and sweetbay magnolia.

#### *Freshwater Marshes*

FLUCFCS: 641

USFWS: PEM1

The wetland is usually confined to shallow depressions. The tree canopy is absent. The ground layer is diverse and varies according to the water's depth and hydroperiod. Most freshwater marshes are inundated at least two months per year, undergoing prolonged periods of soil saturation. The ground layer vegetation consists of one or more of the following: fireflag (*Thalia geniculata*), bulrush (*Schoenoplectus* sp.), buttonbush, common reed (*Phragmites australis*), maidencane, needlerush (*Juncus* sp.), sawgrass, and switchgrass (*Panicum* sp.).

*Emergent Aquatic Vegetation*

FLUCFCS: 644

USFWS: PEM1

The wetland is general part of a deep water system or lake shore. In fact, the wetland type would be classified as a water body in the absence of vegetation. The wetland type includes both floating vegetation and vegetation which is found either partially or completely above the surface of water. The most common vegetation for this wetland type includes water lettuce (*Pistia stratiotes*), spatterdock (*Nuphar luteum*), water hyacinth (*Eichhornia crassipes*), duck weed (*Lemna* sp.) and water lily (*Nymphaea* sp.). Other common vegetation includes floating mats of rhizomatous species such as alligator weed (*Alternanthera philoxeroides*) or various grasses and sedges.

*Intermittent Ponds*

FLUCFCS: 653

USFWS: PEM2x (Palustrine, Emergent, Nonpersistent, Excavated)

This wetland type only exists for a portion of the year. It may also be referred to as a seasonal or ephemeral waterbody. Its existence relies upon water received directly from precipitation. The vegetation is highly variable and dependent on seasonal rainfall. At the time of the field reviews, the most common vegetation included bahiagrass (*Paspalum notatum*), bluestem (*Andropogon* sp.), chalky bluestem (*A. capillipes*), dog fennel (*Eupatorium* sp.), hairy indigo (*Indigofera hirsuta*) and blackberry (*Rubus* sp.).

## SECTION 4.0 – WETLAND IMPACTS

The potential direct wetland and surface water impacts are based on the concept plans for the Preferred Build Alternative from the 1994 PD&E Study, as well several additional locations that needed to be re-evaluated with this study. For the purpose of this PD&E Re-evaluation study, the assumption was that wetland and surface water impacts will occur within each alternative; however, the final wetland impacts will be determined during the design phase of the project.

### 4.1 No-Build Alternative

The no-build alternative would not require new construction. Instead, it would involve the regular maintenance of US 92. The no-build alternative would maintain the roadway in safe operation conditions and existing typical sections. This alternative would not result in direct wetland or surface water impacts. Wetland mitigation would not be required.

### 4.2 Recommended Build Alternatives

The Recommended Build Alternatives are described in Section 2.0. Each build alternative requires the acquisition of additional right-of-way, which may result in additional unavoidable wetland impacts. The potential wetland impacts for the alternatives are provided in **Table 3**. Based on the recommended alignments, the anticipated wetland and surface water impacts will be approximately 11.33 acres, consisting of 9.84 acres of forested wetlands, 1.43 acres of herbaceous wetlands and 0.06 acres of surface water. The potential impacts for the recommended alignments are provided in **Table 4**.

Impacts to other surface waters generally do not require a functional analysis or wetland mitigation, so long as the primary function of the system is water conveyance, the system does not support threatened or endangered species, and the system is constructed entirely in uplands. In the study area, the majority of surface waters are channelized streams that, at times, occur within wetlands. It is unlikely the project alternatives would divert or redesign these channelized streams.

**Table 3 - Estimated Wetland Impacts and Functional Losses**

SEGMENT	ALIGNMENT ALTERNATIVE	WETLAND (FLUCFCS)	ESTIMATED WETLAND IMPACTS (Ac.)	ESTIMATED UMAM FUNCTIONAL LOSS*
No Build Alternative	No Build Alternative		0	0
Segment 1 from east of I-4 (Garden Lane to west of CR 579 (Mango Road)	Original PD&E Alignment – North/South	615	0.50	0.35
		630	0.18	0.13
Segment 2 from west of CR 579 (Mango Road) to east CR 579 (Mango Road)	North		0	0
	Centered		0	0
	South		0	0
Segment 3 from east of CR 579 (Mango Road) to North Parsons Avenue	Original PD&E Alignment – South		0	0
Segment 4 from North Parsons Avenue to east of Crow Wing Drive	North	641	0.72	0.50
		644	0.27	0.19
		653	0.29	0.20
	South	641	0.72	0.50
		644	0.26	0.19
		653	0.40	0.28
Segment 5 from east of Crow Wing Drive to Castlewood Road	Original PD&E Alignment – North	641	0.14	0.10
Segment 6 from Castlewood Road to west of Gallagher Road	North	530	0.74	0.52
		615	0.54	0.38
	South	530	0.06	0.04
		615	0.22	0.15
Segment 7 from west of Gallagher Road to Lynn Oaks Circle	Original PD&E Alignment – South	--	0	0
Segment 8 from Lynn Oaks Circle to east of Bethlehem Road	North	615	2.19	1.53
	Centered	615	2.09	1.46
	South	615	1.50	1.05
Segment 9 from east of Bethlehem Road to Mobley Street	Original PD&E Alignment – South/North	615	0.89	0.62
		618	0.04	0.03
		630	5.76	4.03
		641	0.01	0.01
Segment 10 from Mobley Street to west of Park Road	No Build Alternative	--	0	0
Segment 11 west of Park Road to County Line Road	Original PD&E Alignment – North	618	0.16	0.11

\*Functional loss score based on an assumed ecological value of 0.7 using the UMAM

**Table 4 – Estimated Wetland Impacts for the Recommended Alignments**

SEGMENT	RECOMMENDED ALIGNMENT	FORESTED WETLAND IMPACTS (Ac.)	HERBACEOUS WETLAND IMPACTS (Ac.)	SURFACE WATER IMPACTS (Ac.)	TOTAL ESTIMATED WETLAND IMPACTS (Ac.)
Segment 1 from east of I-4 (Garden Lane to west of CR 579 (Mango Road))	Original PD&E Alignment – North/South	0.68			0.68
Segment 2 from west of CR 579 (Mango Road) to east CR 579 (Mango Road)	North				0
Segment 3 from east of CR 579 (Mango Road) to North Parsons Avenue	Original PD&E Alignment – South				0
Segment 4 from North Parsons Avenue to east of Crow Wing Drive	North		1.28		1.28
Segment 5 from east of Crow Wing Drive to Castlewood Road	Original PD&E Alignment – North		0.14		0.14
Segment 6 from Castlewood Road to west of Gallagher Road	South	0.22		0.06	0.28
Segment 7 from west of Gallagher Road to Lynn Oaks Circle	Original PD&E Alignment – South				0
Segment 8 from Lynn Oaks Circle to east of Bethlehem Road	Centered	2.09			2.09
Segment 9 from east of Bethlehem Road to Mobley Street	Original PD&E Alignment – South/North	6.69	0.01		6.70
Segment 10 from Mobley Street to west of Park Road	No Build Alternative				0
Segment 11 west of Park Road to County Line Road	Original PD&E Alignment – North	0.16			0.16
<b>TOTAL ESTIMATED WETLAND IMPACTS</b>		<b>9.84</b>	<b>1.43</b>	<b>0.06</b>	<b>11.33</b>

## 4.3 Wetland Mitigation

### *UMAM*

The ecological functions provided by wetlands and other surface waters were analyzed through the Uniform Mitigation Assessment Method (UMAM), Chapter 62-345, Florida Administrative Code. The UMAM is accepted by the state and federal regulatory agencies as the means of determining ecological functions of a wetland, the amount those functions are reduced by a proposed impact, and the amount of mitigation necessary to offset any losses to ecological functions in a wetland.

The UMAM analysis includes a qualitative characterization (Part 1) to identify the functions beneficial to fish and wildlife and their habitat that are characteristic of the assessment area's native community type. This is determined by currently available information, literature reviews, site visits, and reasonable scientific judgement. The information provided should address (1) special water classifications, (2) significant nearby features, (3) assessment area size, (4) geographic relationship between the assessment area and any contiguous habitats, (5) identification of the native habitat type, (6) uniqueness of the habitat type, (7) functions provided by the assessment area, and (8) anticipated wildlife utilization. The UMAM analysis also includes a quantitative assessment (Part 2) that is based in part on the qualitative characterization of the assessment area and its surroundings. The information provided in the quantitative assessment is used to determine the degree to which the assessment area provides the functions identified in Part 1 and the amount of functions lost or gained by the project. The quantitative assessment considers the (1) "current" and "with project" condition of the assessment area, (2) its location and landscape support relative to its surroundings, (3) the overall water environment, and (4) the characteristic community structure of the assessment area.

### *UMAM Results*

The ecological function was calculated for wetland impacts associated with the mainline, but not the SFM and FPC sites. This analysis will be conducted during the final design phase once the SFM and FPC locations have been chosen. Since each wetland type has similar species and characteristics, the ecological function and estimated functional losses were evaluated by wetland type and provided in **Table 3**. The current condition scores are based on the fact that most wetlands are located near development, generally do not support listed species, and the hydrology and/or community structure have declined from optimal conditions. Each wetland was assigned a functional score of 0.70 to use for mitigation planning purposes. These scores have not been submitted to, or approved by the regulatory agencies. It is assumed the "with project" condition for direct impacts will completely eliminate the ecological function of the wetland; however, these impacts could change during the design phase, based on the final roadway footprint and coordination with the permitting agencies. It is assumed the impacts to surface waters will not completely eliminate the ecological function of those systems, in part because eliminating the function of a stream is unlikely to be supported by the regulatory agencies.

#### 4.4 Wetland Mitigation Alternatives

One of the goals of this PD&E Re-evaluation Study is to document the extent and condition of wetlands in the project's study area. Some of these wetlands provide important functions and values such as stormwater attenuation or wildlife habitat. Presidential Executive Order 11990, Protection of Wetlands, and U.S. Department of Transportation Order 5660.1A, Preservation of the Nation's Wetlands, prohibit federally-funded roadway projects from wetland impacts unless there is not an alternative to minimize or avoid the destruction, loss or degradation of those wetlands to the greatest extent practicable. Since some of the wetlands are located next to the existing roadway, it will be impossible to avoid wetland impacts and meet the project's needs to widen and improve the level of service on US 92.

In 1996, the state legislature determined that regional mitigation administered by the water management districts would more effectively accomplish long-term mitigation planning rather than project by project mitigation. The FDOT Mitigation Program (see Section 373.4137, Florida Statutes) is based on the FDOT inventory of construction projects and mitigation plans developed by the water management districts with input from various federal and state regulatory and resource agencies. Mitigation projects established through the FDOT Mitigation Program focus on activities such as land acquisition, Surface Water Improvement and Management (SWIM) projects, and the control of invasive and exotic plants to the extent these projects meet mitigation requirements for the FDOT road improvement projects. The FDOT Mitigation Program is available to offset unavoidable wetland impacts that result from the proposed plan alternatives for US 92.

The project's study area is at least partially located within the service areas of three wetland mitigation banks: Hillsborough River, North Tampa, and Tampa Bay. The service areas of Hillsborough River and North Tampa Mitigation Banks cover the eastern two-thirds of the project's study area, less an outparcel associated with English Creek. According to the USACE's Regulatory In-lieu Fee and Bank Information Tracking System, the Hillsborough River Mitigation Bank has palustrine emergent and forested credits available whereas the North Tampa Mitigation Bank has only palustrine forested credits. Neither mitigation bank has a substantial number of credits available to offset the potential wetland impacts of the project. The service area for Tampa Bay Mitigation Bank covers the western one-third of the project's study area. This mitigation bank has palustrine emergent credits available; however, it does not have palustrine forested credits, and too few of either credits to offset all wetland impacts of the project.

The USACE and SWFWMD are currently reviewing an application for the Alafia River Mitigation Bank. The proposed service area intersects with a portion of US 92. According to the application documents, the mitigation bank would provide palustrine forested credits. This mitigation bank may be an option in the future, but would not likely provide the palustrine emergent credits necessary to offset all emergent wetland impacts of the project.

Alternatively, the FDOT may consider onsite or offsite mitigation options near the project's study area to offset unavoidable wetland impacts.



## **SECTION 5.0 – WILDLIFE**

According to the aforementioned documents and GIS data, a total of 25 listed species may possibly occur within or near the study area (**Table 5**). The list of species includes 7 federally-listed and 18 state-listed species. However, the study area and adjacent properties are developed such that most of the remnant natural habitats are not of sufficient quality or quantity to support many species, particularly listed species. This information and subsequent field reviews was used to determine the likelihood of occurrence for each species.

The likelihood of occurrence ranges from “no habitat available” to “low” to “moderate” to “high.” A low likelihood of occurrence suggests that less-than-suitable habitat(s) may occur and the species was not observed in the study corridor. A moderate likelihood of occurrence suggests that suitable habitats may occur but the species was not observed in the study corridor during field reviews. A high likelihood of occurrence indicates that suitable habitat may occur and the species was observed in the study corridor during field reviews.

**Table 5 - Threatened and Endangered Species with Potential to Occur in Hillsborough and Polk Counties**

<b>GROUP</b>	<b>SCIENTIFIC NAME</b>	<b>COMMON NAME</b>	<b>USFWS</b>	<b>FWC</b>
<b>AMPHIBIANS</b>				
	<i>Rana capito</i>	Gopher frog	N	SSC
<b>BIRDS</b>				
	<i>Ajaia ajaja</i>	Roseate Spoonbill	N	SSC
	<i>Ammodramus maritimus peninsulae</i>	Scott's Seaside Sparrow	N	SSC
	<i>Ammodramus savannarum floridanus</i>	Florida grasshopper sparrow	E	E
	<i>Aphelocoma coerulescens</i>	Florida Scrub-jay	T	T
	<i>Aramus quarauna</i>	Limpkin	N	SSC
	<i>Athene cunicularia floridana</i>	Florida Burrowing Owl	N	SSC
	<i>Charadrius melodus</i>	Piping Plover	T	T
	<i>Cistothorus palustris marianae</i>	Marian's Marsh Wren	N	SSC
	<i>Egretta caerulea</i>	Little Blue Heron	N	SSC
	<i>Egretta thula</i>	Snowy Egret	N	SSC
	<i>Egretta tricolor</i>	Tricolored Heron	N	SSC
	<i>Eudocimus albus</i>	White Ibis	N	SSC
	<i>Falco peregrinus</i>	Peregrine Falcon	N	E
	<i>Falco sparverius paulus</i>	Southeastern American Kestrel	N	T
	<i>Grus Canadensis pratensis</i>	Florida Sandhill Crane	N	T
	<i>Haematopus palliatus</i>	American Oystercatcher	N	SSC
	<i>Haliaeetus leucocephalus</i>	Bald Eagle	T	T
	<i>Mycteria americana</i>	Wood Stork	E	E
	<i>Pandion haliaetus</i>	Osprey	N	SSC*
	<i>Pelecanus occidentalis</i>	Brown Pelican	N	SSC
	<i>Picoides borealis</i>	Red-cockaded Woodpecker	E	E
	<i>Polyborus plancus audubonii</i>	Audubon's crested caracara	T	T
	<i>Rostrhamus sociabilis plumbeus</i>	Everglade snail kite	E	E
	<i>Rynchops niger</i>	Black Skimmer	N	SSC
	<i>Sterna antillarum</i>	Least Tern	N	T

**Table 5 - Threatened and Endangered Species with the potential to occur in Hillsborough and Polk Counties, continued**

<b>GROUP</b>	<b>SCIENTIFIC NAME</b>	<b>COMMON NAME</b>	<b>USFWS</b>	<b>FWC</b>
<b>FISH</b>				
	<i>Acipenser oxyrinchus desotoi</i>	Gulf sturgeon	T	T
<b>MAMMALS</b>				
	<i>Podomys floridanus</i>	Florida mouse	N	SSC
	<i>Sciurus niger shermani</i>	Sherman's fox squirrel	N	SSC
	<i>Trichechus manatus</i>	Manatee	E	E
<b>REPTILES</b>				
	<i>Alligator mississippiensis</i>	American alligator	T (S/A)	N
	<i>Drymarchon corais couperi</i>	Eastern indigo snake	T	T
	<i>Eumeces egregious lividus</i>	Blue-tailed mole skink	T	T
	<i>Gopherus polyphemus</i>	Gopher tortoise	C	T
	<i>Neoseps reynoldsi</i>	Sand skink	T	T
	<i>Pituophis melanoleucus mugitis</i>	Florida pine snake	N	SSC
	<i>Pseudemys concinna suwanniensis</i>	Suwannee cooter	N	SSC
	<i>Stilosoma extenuatum</i>	Short-tailed snake	N	T
<b>USFWS</b>	<b>= United States Fish and Wildlife Service</b>			
<b>FWC</b>	<b>= Florida Fish and Wildlife Conservation Commission</b>			
<b>E</b>	<b>= Endangered</b>			
<b>C</b>	<b>= Candidate for Listing</b>			
<b>N</b>	<b>= Not-listed by Agency</b>			
<b>T</b>	<b>= Threatened</b>			
<b>SSC</b>	<b>= Species of Special Concern</b>			
<b>(S/A)</b>	<b>= Similarity of Appearance to Listed Species</b>			

## *U.S. Fish and Wildlife Service Consultation Areas*

The study corridor is located within USFWS Consultation Areas for the Audubon's crested caracara, Florida scrub-jay and sand skink. Consultation Areas are meant to guide Federal and non-Federal actions. In general, proposed actions inside the consultation area are more likely to affect the species than actions that are located outside the consultation area. However, the consultation area is based on the best available information to the USFWS and not necessarily the most current environmental or habitat conditions of the study area. Coordination is typically recommended to determine whether and to what extent a project may affect federally-listed species.

### 5.1 Federally-listed Species

#### *American Alligator*

The American alligator (*Alligator mississippiensis*) is listed by the USFWS and FWC as Threatened due to similarity of appearance to a threatened species (i.e., American crocodile). This listing provides federal protection for alligators but allows state-approved management and control programs. Alligators can be legally taken only by individuals with proper licenses and permits. Alligators occur throughout the southeastern United States. They prefer freshwater lakes and slow-moving rivers and their associated wetlands. Some of the larger wetlands and surface waters in the project's study area could support alligators; however, it is unlikely the project will have much of an appreciable effect on alligators or their habitats. Therefore, it is anticipated the project "**may affect, but is not likely to adversely affect**" the American alligator.

#### *Audubon's Crested Caracara*

The Audubon's crested caracara (*Caracara plancus audubonii*) is listed by the USFWS and FWC as Threatened. The eastern half of the study corridor is located within the USFWS's crested caracara consultation area. The crested caracara was commonly observed in peninsular Florida; however, the bird is rarely seen as far north as Orlando or on the east side of the St. Johns River. The crested caracara occurs in dry or wet prairie areas with scattered cabbage palms and has been found in lightly wooded areas. Due to widespread changes in land use, the species now uses improved or semi-improved pastures that include ephemeral wetlands. Nesting occurs almost exclusively in cabbage palms and to a lesser extent live oaks or cypress.

The habitats in the study corridor provide minimal foraging area for crested caracara. Most of the pastures are subdivided and located adjacent to transportation corridors or development. The pastures also lack the presence of cabbage palms, the primary nesting substrate for caracara. The biologists did not observe crested caracara during their general wildlife surveys conducted May 2015 of the study corridor, and June 2016 of the SMF and FPC locations. Due to the lack of habitat and preferred nest trees, the project is expected to have "**no effect**" on the Audubon's crested caracara.

### *Eastern Indigo Snake*

The eastern indigo snake (*Drymarchon couperi*) is listed by the USFWS and FWC as Threatened. The eastern indigo snake is widely distributed throughout central and south Florida; however, it is generally associated with upland land cover types, and typically found in hammocks and pine forests. Whenever the eastern indigo snake occurs in xeric upland habitats, it is closely associated with gopher tortoise burrows. The biologists did not observe indigo snakes during their field reviews, but suitable upland habitats such as agricultural fields and hardwood conifer forests occur next to the study corridor. The study corridor does not include xeric habitat, but may support gopher tortoises.

It is anticipated the project “**may affect, but is not likely to adversely affect**” the eastern indigo snake. The biological rationale for the determination is based on the *Eastern Indigo Snake Programmatic Effect Determination Key* (USACE 2013), including the commitment to follow the *Standard Protection Measures for the Eastern Indigo Snake* (USFWS 2013) (**Appendix C**).

### *Florida Scrub-jay*

The Florida scrub-jay (*Aphelocoma coerulescens*) is listed by the USFWS and FWC as Threatened. The study corridor is entirely within the USFWS’s Florida scrub-jay consultation area. The species has extremely specific habitat requirements. It is endemic to peninsular Florida’s ancient dune ecosystem of oak-dominated scrub or xeric oak scrub, which occurs on well-drained to excessively well-drained sandy soils. This community type is adapted to nutrient-poor soils, periodic drought and frequent fires. In optimal habitat for scrub-jays, low-growing oaks are 3 to 9 feet high, interspersed with 10 to 50 percent sandy openings, and a sand pine canopy of less than 20 percent. Less optimal scrub-jay habitat may include pine flatwoods with an oak mid-story or even citrus groves.

There is no xeric oak scrub or sub-optimal scrub-jay habitat in the study corridor. A statewide scrub-jay survey was conducted in 1992-1993. The results of the survey show the nearest scrub-jay was observed more than 9.5 miles from the study corridor, well beyond the reasonable dispersal distance given the land use types between those scrub-jays and US 92. A scrub-jay call-back survey was not conducted in the study corridor because suitable scrub-jay habitat was not observed. As a result, the project is expected to have “**no effect**” on the Florida scrub-jay.

### *Sand Skink*

The sand skink and blue-tailed mole skink are listed by the USFWS and FWC as Threatened. The portion of the study corridor within Hillsborough County is not within the USFWS’s sand skink consultation area; however, the project’s buffer extends to Polk County, which is inside the consultation area. The species has extremely specific habitat requirements. It is endemic to central Florida’s ancient ridge ecosystem of xeric oak scrub on well-drained sandy soils. According to the USFWS, sand skink distribution is based on three factors: location (county), elevation (> 82 feet above sea level), and soil types. While the study corridor meets the elevation criteria for sand skink, it is not located within the appropriate county nor does it

support the necessary soils, since most soils have been altered for development or agriculture. As a result, the project is expected to have “**no effect**” on the sand skink or blue-tailed mole skink.

### *Wood Stork*

The USFWS and FWC recently revised the status of the wood stork from endangered to Threatened under the Endangered Species Act and Chapter 68A-27, F.A.C., respectively. Wood storks are birds of freshwater and estuarine wetlands, primarily nesting in cypress or mangrove swamps and feeding in marshes or tidal creeks and pools. Particularly attractive feeding sites are depressions in marshes or swamps where fish become concentrated during periods of receding water levels.

The study corridor is located within twelve USFWS wood stork nest colony Core Foraging Areas (CFA): 611110, 611310, 612316, 615105, 615333, 616114, 616117, Cross Creek, Cypress Creek, East Lake/Bellows Lake, Lone, and NE Mulberry. The CFA refers to the habitats around all known wood stork nesting colonies that are important for reproductive success of the wood stork. In central Florida, CFA’s include suitable foraging habitat within a 15-mile radius of the wood stork nest colony. The USFWS believes the loss of suitable foraging wetlands within these CFA’s may reduce foraging opportunities for the wood stork.

Some of the wetlands in the study corridor may support wood stork foraging; however, it was not observed during field reviews. Moreover, the adjacency of natural wetlands to development may dissuade wood stork foraging in the study corridor. The USFWS typically requires type-for-type wetland mitigation for wetland impacts greater than 0.5-acres and an analysis of foraging prey base losses from wetland impacts greater than 5 acres in core foraging areas. In some instances, the requirements to compensate for the loss of wood stork foraging habitat can exceed the wetland mitigation under Chapter 373, Florida Statutes, and 33 U.S.C. §1344.

It is anticipated the project “**may affect, but is not likely to adversely affect**” the wood stork. The biological rationale for this determination is based on the *Effect Determination Key for the Wood Stork* (USACE 2010), including the commitment to provide compensatory mitigation within a CFA or USFWS-approved mitigation bank. The FDOT will re-initiate consultation with the USFWS and evaluate the potential wetland impacts and compensatory mitigation during the design phase of the project.

## 5.2 State-listed Species

### *Bald Eagle*

The bald eagle was removed from the federal list of endangered species and the state’s list of threatened species in 2007 and 2008, respectively. However, the bald eagle is still afforded protection by the federal Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act, as well as the state eagle rule and Bald Eagle Management Plan. Bald eagles are piscivorous, but are also know to feed on carrion. They use forests for nesting and roosting, and expanses of shallow fresh or salt water for foraging. Nesting habitat generally consists of

densely forested areas of mature trees located within 1.8 miles of water (FWC 2008). Biologists did not observe bald eagles nor bald eagle nests during the field reviews. According to the FWC bald eagle nest locator, the nearest bald eagle nests are approximately 3,200 feet and 4,200 feet from US 92. Due to lack of suitable bald eagle nest habitat and distance from the study corridor, it is anticipated the project “**may affect, but is not likely to adversely affect**” the bald eagle.

#### *Florida Black Bear*

The Florida black bear is no longer listed on the state’s list of endangered or threatened species. However, it is still managed by the FWC. Black bears occur in a variety of forested habitats, often a function of nutritional needs and spatially fluctuation food sources. According to the FWC (2012), optimal bear habitat is a mixture of flatwoods, swamps, scrub oak ridges, bayheads and hammocks. These habitats do not occur or occur infrequently along the study area. Moreover, there is no data from the FWC indicating that bear-related wildlife vehicle collisions or nuisance reports have occurred in the study area. Therefore, it is anticipated the project will have “**no effect**” on the Florida black bear.

#### *Florida Burrowing Owl*

The Florida burrowing owl is currently listed by the FWC as a Species of Special Concern; however, it is recommended to be up-listed by the FWC to Threatened. Burrowing owl habitat includes open areas such as dry prairies, pastures, agricultural fields, airports, schools and golf courses. Burrowing owls typically dig their own burrows but will use gopher tortoise burrows or other structures if necessary. Burrowing owls in urban areas are known to use burrows year-round, for roosting during the winter, and for raising young during the breeding season; however, year-round use of burrows by owls has not been well documented in rural areas (FWC 2013a). The potential burrowing owl habitat in the study area is relatively small and discontinuous. Therefore, it is anticipated the project “**may affect, but is not likely to adversely affect**” the Florida burrowing owl.

#### *Florida Mouse*

The Florida mouse is currently listed by the FWC as a Species of Special Concern; however, it was recommended for removal from the state’s list of threatened species by the FWC. Florida mouse habitat is largely restricted to oak scrub and sandhill, but the mice can also be found on flatwoods and hammocks. The habitats are typically located on well-drained sandy soils. The Florida mouse excavates burrows used for daytime refuges and nesting sites, and also utilizes gopher tortoise burrows. The populations are generally isolated and scattered throughout its range because the habitats are discontinuous and not managed with chronic fire, which is necessary to maintain optimal Florida mouse habitat (FWC 2013b). The types of natural upland habitats needed to support the Florida mouse do not occur in the study area; nor did the biologists observe gopher tortoise burrows. Therefore, it is anticipated the project “**may affect, but is not likely to adversely affect**” the Florida mouse.

### *Florida Pine Snake*

The Florida pine is currently listed by the FWC as a Species of Special Concern; however, it is recommended to be up-listed by the FWC to Threatened. Florida pine snakes occur in a variety of upland habitats, but tend to prefer longleaf pine sandhills and other habitats with well-drained sandy soils like xeric oak scrub, pine flatwoods and dry prairie. Pine snakes can spend up to 80 percent of their time in underground refuges, including gopher tortoise or pocket gopher burrows. Verified specimens are most commonly found along the Florida panhandle and north central Florida (FWC 2013c); only one specimen has been catalogued in Hillsborough County since 1980. Due to the lack of habitat in the study area and rarity of the species in Hillsborough County, it is anticipated the project will have “**no effect**” on the Florida pine snake.

### *Florida Sandhill Crane*

The Florida sandhill crane is listed by the FWC as Threatened. The Florida sandhill crane is a non-migratory sub-species of the greater sandhill crane, which arrives in Florida in October and leaves for breeding grounds in late February (FWC 2013d). Sandhill cranes rely on shallow marshes for nesting and roosting, and open upland and wetland habitats for foraging. According to the FWC, sandhill cranes spend most of their time in either pastures, freshwater marshes, ecotones between pastures and marshes, or ecotones between pastures and forests. Biologists did not observe Florida sandhill cranes nor their nests during the field reviews. While marginal sandhill crane foraging habitat occurs along the roadsides and pastures and some wetland areas, most of these habitats are not of sufficient size or quality to support sandhill crane nesting or roosting. Therefore, it is anticipated the project “**may affect, but is not likely to adversely affect**” the Florida sandhill crane.

### *Gopher Frog*

The gopher frog is currently listed by the FWC as a Species of Special Concern; however, it was recommended for removal from the state’s list of imperiled species by the FWC. Gopher frogs typically inhabit xeric upland habitats occupied by gopher tortoises that are also near (< 3.1 miles) shallow wetlands with emergent vegetation (FWC 2013e). Breeding wetlands include depression marshes, basin marshes, wet prairies, dome swamps, upland sandhill lakes, sinkhole ponds, ditches and even borrow pits. Gopher frogs spend a majority of their lives in burrows or other underground refugia. The biologists did not observe gopher tortoise burrows during their field reviews nor did they hear auditory calls from gopher frogs. While the study corridor includes habitats that may support gopher tortoise burrows, most of the wetlands are unlikely to support gopher frog breeding because these wetlands contain small fish they prey on frog eggs and larvae. Since the habitat is not particularly suitable for the gopher frog and it has been recommended for removal from the state’s list of threatened species, it is anticipated the project “**may affect, but is not likely to adversely affect**” the gopher frog.

### *Gopher Tortoise*

The gopher tortoise is listed by the FWC as Threatened. The gopher tortoise lives in well-drained sandy areas with a sparse tree canopy and abundant low growing vegetation. Tortoises



can be found in sandhills, scrub, xeric oak hammocks and dry pine flatwoods. They will also inhabit pastures, abandoned fields and citrus groves, as well as road shoulders. Gopher tortoises excavate burrows for refuge from predators and thermoregulation. More than 350 other species have been recorded using gopher tortoise burrows, including listed species such as eastern Indigo snakes, Florida burrowing owls, Florida mice, Florida pine snakes, and gopher frogs (FWC 2012). Most of the study corridor does not support gopher tortoise habitat; however, a gopher tortoise survey will confirm the presence or absence of gopher tortoise burrows. Based on the lack of gopher tortoise habitat and existing gopher tortoise permit program sponsored by the FWC, it is anticipated the project “**may affect, but is not likely to adversely affect**” the gopher tortoise.

### *Limpkin*

The limpkin is listed by the FWC as a Species of Special Concern; however, it was recommended for removal from the state’s list of imperiled species by the FWC. The limpkin occurs in wetlands habitats like freshwater sloughs and marshes, wooded swamps, springs and spring runs, edges of rivers and ponds, some estuarine wetlands, and man-made ponds or canals (FWC 2013f). The primary food source is apple snails, although they will also prey on insects and mussels. The biologists did not observe limpkins nesting or foraging during the field reviews. While suitable foraging habitat exists in the study corridor, the project will avoid or minimize wetland impacts to potential limpkin habitat. Additionally, the FWC has determined that the limpkin population is large enough to warrant its removal from the list of threatened species. Therefore, it is anticipated the project “**may affect, but is not likely to adversely affect**” the limpkin.

### *Sherman’s Fox Squirrel*

The Sherman’s fox squirrel is listed by the FWC as a Species of Special Concern. The Sherman’s fox squirrel is the largest of four subspecies in Florida (FWC 2013g). The optimal fox squirrel habitat is defined as open, fire-maintained longleaf pine and turkey oak sandhills, as well as pine flatwoods. Sub-optimal habitat includes mixed hardwood pine forests, cypress swamps, pastures, and other open habitats with pines and oaks. Sub-optimal habitat occurs in the study area; however, the biologists did not observe fox squirrels. Therefore, it is anticipated the project “**may affect, but is not likely to adversely affect**” the Sherman’s fox squirrel.

### *Short-tailed Snake*

The short-tailed snake is listed by the FWC as Threatened. The short-tailed snake generally inhabits longleaf pine and xeric oak sandhills with well-drained sandy soils. This snake can also occur on scrub and xeric hammock habitats. It is primarily a fossorial species that spends most of its time burrowed in sand. The species is endemic to peninsular Florida, mostly along the central ridges and historic beach dunes. The preferred habitat of the short-tailed snake is not found in the project’s study area. In addition, its geographic distribution rarely occurs in Hillsborough County (FWC 2013h). Therefore, it is anticipated the project will have “**no effect**” on the short-tailed snake.

### *Southeastern American Kestrel*

The southeastern American kestrel is listed by the FWC as Threatened. The southeastern American kestrel is a non-migratory sub-species of the American kestrel, which is found in Florida from September through March (FWC 2013i). It is closely associated with longleaf and slash pine sandhills, but may also utilize other open habitats such as flatwoods, dry prairies, agricultural lands, golf courses, and citrus groves. American kestrels depend on tree cavities excavated by woodpeckers or other natural tree cavities for nesting sites. The most common natural nest cavities occur in dead longleaf pine trees. Kestrels hunt for food by searching the ground from elevated perches and hovering or soaring over open areas. Biologists did not observe southeastern American kestrels or potential nest cavities during field reviews. Based on the lack of suitable habitat or nest cavities, it is anticipated the project “**may affect, but is not likely to adversely affect**” the southeastern American kestrel.

### *Suwannee Cooter*

The Suwannee Cooter is currently listed by the FWC as a Species of Special Concern; however, it is recommended by the FWC to be de-listed. Suwannee cooters are restricted to rivers, large streams, and associated permanent freshwater habitats. In Hillsborough County, the Suwannee cooter is found in the Alafia River (FWC 2013i), which is outside the project's study area. Therefore, it is anticipated the project will have “**no effect**” on the Suwannee cooter.

### *Wading Birds*

Wading birds refers to a group of six birds whose habitat preferences, distribution, and geographic range are similar (FWC 2013k). Only the little blue heron, roseate spoonbill, snowy egret, tricolored heron and white ibis have the potential to occur in the study corridor; the reddish egret and roseate spoonbill are typically found in coastal wetlands. The little blue heron and tricolored heron are listed by the FWC as Threatened. The snowy egret and white ibis are currently listed by the FWC as Species of Special Concern; however, they were recommended for removal from the state's list of threatened species by the FWC. Wading birds feed primarily on small fish and other aquatic animals in shallow waters, and sometimes prey on insects in upland habitats. Wading birds tend to nest in multi-species colonies in woody or forested wetland habitats. According to the most recent wading bird rookery survey (FWC-FWRI 2005), the nearest active rookery is approximately 4.2-miles south of US 92. The nearest inactive rookery is approximately 1.4-miles south of US 92. The biologists did not observe a wading bird rookery during the field reviews. Some wetland habitats may and do support wading bird foraging in the study corridor, although most wading birds were observed utilizing the swales and ditches adjacent to the roadway. Since the project will minimize wetland impacts to wading bird foraging habitat, it is anticipated the project “**may affect, but is not likely to adversely affect**” wading birds.

## SECTION 6.0 – STORMWATER MANAGEMENT FACILITY (SMF) AND FLOODPLAIN COMPENSATION (FPC) SITES

### 6.1 Proposed SMF and FPC Sites

Study staff conducted an ecological assessment to identify the potential presence and utilization of habitat by state and/or federally protected wildlife, and jurisdictional wetlands and/or surface waters within the proposed SMF and FPC sites. A total of 21 SMF sites and 14 FPC sites were evaluated using pedestrian surveys to determine the potential impacts to jurisdictional wetlands and state and federal listed species. Field reviews were conducted on June 21 and 23, 2016. The potential wetland impact acreages are identified in Tables 6 and 7. Photographs of the SMF and FPC sites are included in **Appendix B**. **Appendix D** includes Basin Maps with the proposed SMF and FPC locations.

The following is a description of the conditions observed within each proposed SMF and FPC alternative.

#### SMF 1

SMF 1 is located at the northeastern intersection of U.S. 92 and Eureka Springs Rd, and approximately between Station 111+74.53 and 132+65.74. A portion of this location includes commercial and residential developments. Remaining native habitat is comprised of an oak hammock upland. Observed canopy species include live oak (*Quercus virginiana*) and laurel oak (*Quercus laurifolia*). Shrub species include immature oaks, Carolina laurelcherry (*Prunus caroliniana*), wax myrtle (*Myrica cerifera*), and saw palmetto (*Serenoa repens*). Ground cover species include sword fern (*Nephrolepis* sp.) and was limited by the prevalence of vines including air potato (*Discorea bulbifer*), and muscadine grape (*Vitis rotundifolia*). A roadside ditch along the northern edge of the parcel contains a fringe of vegetation that includes similar canopy species with occasional red maple (*Acer rubrum*). Understory species include wax myrtle, saltbush (*Baccharis halimifolia*), elderberry (*Sambucus Canadensis*), and saw palmetto. Ground cover is dominated by sword fern.

No listed species or critical habitat was observed. No wetlands were observed within this SMF location. No impacts to listed species or wetlands are anticipated to be associated with this SMF site.

#### SMF 2

SMF 2 is located on the south side of U.S. 92, approximately 0.25 miles east of I-75, and approximately between Station 132+65.74 and 192+99.56. This site is a commercial development that is currently being utilized as a junk yard with no natural habitat within the SMF site. There is a man-made canal that runs along Tanner Road at the southern boundary of the parcel; however, the current design will not impact this canal. No impacts to listed species or wetlands are anticipated to be associated with this SMF site.

### SMF 3

SMF 3 is located just east of Mobile Villa Drive on the south side of U.S. 92, and approximately between Station 192+99.56 and 215+52.65. The majority of the pond site consists of a residential development. The southeastern quadrant consists of an oak hammock upland forest. Observed canopy species include live oak, laurel oak, and camphor tree (*Cinnamomum camphora*). Understory species observed include immature oaks, chinaberry (*Melia azedarach*), and American beautyberry (*Callicarpa americana*). Groundcover species include beggarticks (*Bidens alba*), woodoats (*Chasmanthium* sp.), and wire grass (*Aristida stricta*). Vine species include air potato and muscadine grape. A canal runs along the eastern side of the parcel within the SMF site and connects to wetlands located on the north side of U.S. 92. Wetland vegetation was observed within the canal, but did not extend beyond the top of bank.

No listed species or critical habitat was observed, and no impacts to listed species are anticipated to be associated with this site. This SMF site will incur impacts to the canal and has the potential to incur impacts to wetlands associated with the canal near the southeast corner of the site.

### SMF 4

SMF 4 is located just north of U.S. 92 west of Black Dairy Road, and approximately between Station 215+52.65 and 258+99.50. This SMF location includes a mixture of commercial and residential developments. Natural habitat was limited to an oak hammock east of the canal. Observed canopy species consist of live oak, laurel oak, and camphor tree. Understory species include chinaberry, immature oaks, and paper mulberry (*Broussonetia papyrifera*). Groundcover species include ragweed (*Ambrosia artemisiifolia*), Caesar weed (*Urena lobate*), and beggarticks. Vine species are prevalent throughout and dominated by air potato. There are multiple canals and culverts within the SMF site. The canals are associated with nearby ponds which are outside of the SMF site limits. Water oak (*Quercus nigra*), red maple, and sweetgum (*Liquidambar styraciflua*) were observed along the top of bank near the canals. Understory vegetation includes immature canopy species, and saw palmetto. Groundcover species are limited by the prevalence of air potato and include netted chain fern (*Woodwardia areolata*), soft rushes (*Juncus* sp.), and beggarticks.

No listed species or critical habitat was observed. No impacts to listed species are anticipated to be associated with this site. Wetland impacts less than 0.10 acres are anticipated in the northwestern portion of the SMF site.

### SMF 5

SMF 5 is located south of U.S. 92, just west of Pine Street, and approximately between Station 258+99.50 and 295+48.35. A portion of this pond site is associated with a commercial property along U.S. 92. The southern half of the SMF site contains a mixed hardwood forest. The canopy includes laurel oak, paper mulberry, and Carolina laurelcherry. Understory species include immature canopy species, citrus (*Citrus* sp.), and saw palmetto. Groundcover is limited due to thick leaf litter. A large amount of trash and debris was observed throughout the site.

No listed species or critical habitat was observed. No wetlands are located within this site. No impacts to listed species or wetlands are anticipated to be associated with SMF 5.

#### SMF 6

SMF 6 is located in a residential area south of U.S. 92, just east of Parsons Pointe Street, and approximately between Station 295+48.35 and 337+31.20. The entire site has been developed with no natural habitat remaining. No listed species, suitable habitat, or wetlands were observed. No impacts to listed species or wetlands are anticipated to be associated with this SMF site.

#### SMF 7A

SMF 7A is located in a residential area south of U.S. 92, just west of Shangri La Drive, and approximately between Station 337+31.20 and 375+40.00. The entire site has been developed with no natural habitat remaining. No listed species, critical habitat, or wetlands were observed within the SMF site. No impacts to listed species or wetlands are anticipated to be associated with SMF 7A.

#### SMF 7B

SMF 7B is located just east of Brady Lee Trail, south of U.S. 92, and approximately between Station 375+40.00 and 402+84.19. The site consists of a single family home and open land/lawn. There is a freshwater marsh located south of the SMF site. The SMF is well outside the limits of this wetland. No impacts to wetlands are associated with this site. No listed species or critical habitat was observed. No impacts to listed species are anticipated to be associated with this SMF site.

#### SMF 8

The SMF site is located on the north side of U.S. 92, north of Brockwood Road, and approximately between Station 402+84.19 and 443+55.27. Historically, this site was a hardwood-conifer mixed forest. It was recently cleared leaving scattered canopy species and a sparse understory consisting of few remaining live oaks and laurel oaks. Understory species include saw palmetto, winged sumac (*Rhus copallinum*), hairy indigo (*Indigofera hirsuta*), and Caesar weed. Groundcover includes bracken fern (*Pteridium aquilinum*) and immature canopy and shrub species. Muscadine grape and greenbrier (*Smilax* sp.) are prevalent throughout.

No listed species were observed. Suitable habitat for the gopher tortoise (*Gopherus polyphemus*) was observed within the SMF location and adjacent habitat. However, no gopher tortoises or burrows were observed during the field visit. This SMF may incur impacts to the gopher tortoise and a survey would likely be required to confirm absence of tortoises and/or the need for relocation if potentially-occupied burrows were located within the SMF. No wetlands occur within this SMF; therefore, no impacts to wetlands are anticipated to be associated with SMF 8.

### SMF 9

SMF 9 is located just east of McIntosh Road on the south side of U.S. 92, and approximately between Station 443+55.27 and 500+90.74. There is a canal that runs east through the property as well as drainage culverts that drain adjacent SMFs. The site contains forested uplands and wetlands. Observed canopy species include sweetgum, American elm (*Ulmus americana*), laurel oak, water oak, and red maple. Understory species include immature canopy species, Carolina willow, Chinese privet (*Ligustrum sinense*), and saltbush. Groundcover species are limited by dense leaf litter and vines including air potato, poison ivy (*Toxicodendron radicans*), and muscadine grape.

No listed species or critical habitat was observed. Impacts to listed species are not anticipated to be associated with this SMF site. The majority of the SMF site consists of forested wetlands. SMF 9 will incur approximately 3.0 acres of impacts to wetlands.

### SMF 10

SMF 10 is located north of U.S. 92 just west of Moores Lake Road, and approximately between Station 500+09.74 and 530+97.14. It is adjacent to site FPC-8. This open land was previously used as row crops, but has been cleared and appears unmaintained. Vegetation consists almost entirely of ragweed and dog fennel (*Eupatorium capillifolium*).

No listed species were observed. Suitable habitat for the gopher tortoise was observed within the pond site location and adjacent habitat. However, no gopher tortoises or burrows were observed during the field visit. This SMF may incur impacts to the gopher tortoise and a survey would likely be required to confirm absence of tortoises and/or the need for relocation if potentially-occupied burrows were located within the SMF. A reservoir with a fringe of freshwater marsh is located north of this site. Due to the distance between the proposed SMF and wetland, no impacts to wetlands are anticipated.

### SMF 11

The site is located south of U.S. 92, just east of Lindsey Loop, and approximately between 530+97.14 and 558+41.06. The majority of this site is within a forested wetland comprised of stream and lake swamp. Observed canopy species include red maple, sweet bay (*Magnolia virginiana*), and water oak. Understory species include cabbage palm (*Sabal palmetto*), elderberry, buttonbush (*Cephalanthus occidentalis*), and Carolina laurelcherry. Groundcover includes cinnamon fern (*Osmunda cinnamomea*), water pennywort (*Hydrocotyle bonariensis*) and *Yucca* (*Yucca* sp.), with dense leaf litter and prevalent vine species. Vines include air potato and muscadine grape. A canal is located along the northeastern boundary of the site, adjacent to U.S. 92. However, impacts are not anticipated to this canal as it is located outside of the proposed SMF limits.

No listed species or critical habitat was observed; therefore, no impacts to listed species are anticipated with this SMF location. This SMF will incur approximately 0.8 acres of direct wetland impacts.

### SMF 12

SMF 12 is located on the north side of U.S. 92, west of Meadow Oaks Drive, and approximately between Station 558+41.06 and 571+27.34. The site consists entirely of low density residential property. No listed species, suitable habitat, or wetlands were observed within this SMF location and no impacts to listed species or wetlands are anticipated to be associated with this site.

### SMF 13

SMF 13 is located south of U.S. 92 approximately 0.3 miles west of Tanner Road, and approximately between Station 571+27.34 and 619+19.15. The majority of the site is actively utilized as strawberry fields. There are multiple reservoirs located within the forested bottomland wetlands which are present along the southern boundary of this SMF site. Observed canopy species include water oak, red maple, sweet bay, and sweetgum. Understory species include immature canopy species, Carolina willow, wax myrtle, and saltbush.

No listed species or critical habitat was observed, and no impacts to listed species are anticipated. Forested wetlands occur along the southern boundary of the SMF location. It is anticipated that SMF 13 will incur approximately 0.4 acres of wetland impacts.

### SMF 14

SMF 14 is located on ruderal land behind the commercial development at the northeast intersection of U.S. 92 and N Branch Forbes Road, approximately between Station 619+19.15 and 643+70.00. Historically, the site appears to have been utilized as crops/pasture lands, but it currently fallow. Observed vegetation includes dog fennel, tropical soda apple (*Solanum viarum*), ragweed, and Bermuda grass (*Cynodon dactylon*). Spartman Branch and the associated forested floodplain wetlands are located north of this SMF site. This wetland is not within the limits of the SMF.

No listed species were observed within this SMF location. Suitable gopher tortoise habitat was observed; however, no gopher tortoises or burrows were observed during the site review. This SMF may incur impacts to the gopher tortoise and a survey would likely be required to confirm absence of tortoises and/or the need for relocation if potentially-occupied burrows were located within the SMF. No wetlands occur within the SMF location. Wetland impacts are not anticipated to be associated with this SMF.

### SMF 15

SMF 15 is located north of U.S. 92 approximately 0.3 miles east of N. Forbes Road, and approximately between Station 643+70.00 and 724+11.45. SMF 15 is adjacent to FPC-12. This site has been cleared and construction of what appeared to be commercial facilities is in progress at the time of the field review. A large SMF is also being constructed. Spartman Branch runs along the eastern and northern boundaries of this site. A freshwater marsh associated with the Spartan Branch floodplain is also present along the northern edge of the

site. Wetland vegetation observed along the banks of the Spartman Branch include red maple, elderberry, Caesar weed and blackberry (*Rubus* sp.).

No listed species or critical habitat was observed. Impacts to suitable wood stork (*Mycteria americana*) foraging areas are anticipated with this SMF site. This site contains Spartman Branch and associated freshwater marsh wetlands. The current design of SMF 15 is anticipated to incur approximately 0.23 acres of surface water and wetland impacts.

#### SMF 16

SMF 16 is located south of U.S. 92, west of N. Edwards Street, and approximately between 724+11.45 and 768+37.95. The site contains pasture, strawberry fields, and a mixed forested wetland. Observed canopy species includes red maple, water oak, laurel oak and American elm. The understory includes elderberry and Carolina willow. Groundcover species include cinnamon fern, soft rush (*Juncus* sp.), beaked sedge (*Carex* sp.), and dog fennel. Standing water was observed.

No listed species or critical habitat was observed. Impacts to listed species are not anticipated. SMF 16 is anticipated to incur approximately 0.70 acres of wetland impacts.

#### SMF 18

This SMF is located within an active cattle pasture just west of the Family Bowl bowling alley, on the north side of U.S. 92, and approximately between Station 1024+91.42 and 1066+00.00. Observed vegetation is comprised of pasture grasses with encroachment of cogon grass (*Imperata cylindrica*) in some areas. Shrub layer species include wax myrtle, buttonbush, meadow beauty (*Rhexia* sp.), beakrushes (*Rhynchospora* spp.), and water pennywort. There is one freshwater marsh within the site and a ditch near the western edge of the property. The vegetation is similar in this area to that of the freshwater marsh except there is a canopy of red maple along the ditch banks.

No listed species or critical habit was observed during the site assessment, and no impacts to listed species are anticipated to be associated with this SMF site. SMF 18 will incur approximately 1.0 acres of wetland impacts.

#### SMF 19

SMF 19 is located within a commercial and residential development near Vicky Ann and Happy Homes lane on the north side of U.S. 19, and approximately between Station 1066+00.00 and 1097+00.00. No natural habitat remains within this SMF site. One area of barren land occurs within the site that contained remnants of a concrete slab that are visible throughout this area. Bahiagrass comprises the vegetation within the maintained lawn. No wetland impacts or impacts to listed species are anticipated to be associated with SMF 19.

#### SMF 20

The SMF site is located on a wooded residential parcel east of Thrasher Road, on the north side of U.S. 92 and approximately between Station 1097+00.00 and 1142+50.00. It is



adjacent to a single family home and contains entrance roads to additional homes located north of the SMF site. Observed canopy species include live oak, water oak and laurel oak. Red maple occurs along the canal that is adjacent to and outside the limits of the SMF site. Shrub species include Chinaberry, immature oaks, Caesar weed, and American beautyberry. Groundcover species include woodgrass (*Oplismenus hirtellus*), and shield fern (*Thelypteris* sp), and bahiagrass. Vine species include Virginia creeper (*Parhenocissus quinquefolia*) and air potato and are prevalent throughout.

No listed species or critical habitat was observed. No wetlands occur within the SMF site. No impacts to listed species or wetlands are anticipated with SMF 20.

#### SMF 21

SMF 21 is located just east of Ella Mae St., on the north side of U.S. 92, and approximately between Station 1142+50.00 and 1186+74.28. This site is comprised of open land and a small portion of forested uplands. The open land consists of a maintained lawn adjacent to a single family home. The portion of uplands within the SMF site also appear to be maintained as part of the residence. Observed canopy species include live oak and laurel oak. Understory species are limited and include immature oaks and American beautyberry. Ground cover species include sword fern and woodgrass. Vines are prevalent throughout and consist of air potato and Virginia creeper.

No wetlands, listed species or critical habitat was observed within or adjacent to SMF 21. Impacts to wetlands and listed species are not anticipated to be associated with this SMF location.

#### FPC-1A

FPC-1A is located south of U.S. 92, just west of I-75, and approximately between Station 168+4.88 and 185+71.88. This site is located on pasture land that contains a small ephemeral wetland. Observed vegetation within the site includes bahiagrass, cogon grass, chalky bluestem (*Andropogon capillipes*), vaseygrass (*Paspalum urvillei*), Johnsongrass (*Sorghum halepense*), ragweed, meadow beauty, beaked sedge, frog-fruit (*Phyla nodiflora*), and thistle (*Cirsium* sp.).

No listed species or critical habitat was observed within this FPC site and impacts to listed species are not anticipated to be associated with this site. Wetland impacts associated with FPC-1A will be minimal. Impacts to isolated wetlands under 0.5 acres will not require mitigation.

#### FPC-1B

FPC-1B is located north of U.S. 92 just east of I-75, and approximately between Station 174+77.12 and 184+00.00. The entire FPC site is located within a freshwater marsh. Observed vegetation consists of Carolina willow, Peruvian primrose-willow (*Ludwigia peruviana*), saltbush and duck potato (*Sagittaria latifolia*).

No listed species or critical habitat was observed, and no impacts to listed species are anticipated to be associated with FPC1-B. The entire site consists of freshwater marsh and the anticipated wetland impacts associated with FPC1-B are approximately 0.06 acres.

### FPC-2

FPC-2 is located in an oak hammock forest north of U.S. 92, just west of Darby Lake Street, and approximately between Station 362+31.19 and 367+95.97. The majority of the site is located within the upland forest. There is a freshwater marsh surrounding an emergent aquatic wetland. The marsh is located along the western boundary of the FPC site. Observed vegetation includes Carolina willow, Peruvian primrose-willow, saltbush, and soft rush. Observed canopy species within the oak hammock include live oak, laurel oak, and cabbage palm. Understory species include Carolina laurelcherry, saw palmetto, and pokeweed (*Phytolacca americana*). Groundcover includes ragweed, Johnson grass, beggarticks, tropical soda apple, and barnyard grass.

No listed species or critical habitat was observed. No impacts to listed species are anticipated to be associated with this FPC site. Due to the adjacent freshwater marsh, wetland impacts are anticipated to be approximately 0.30 acres.

### FPC-3

FPC-3 is located north of U.S. 92, west of Pasadena Drive, and approximately between Station 381+00.00 and 393+00.00. This site contains an oak hammock and freshwater marsh/shrub wetlands. The middle of the site contains an oak hammock consisting of canopy species that include live oak, laurel oak and cabbage palm. Understory species include saw palmetto, American beautyberry, and Caesar weed with a prevalence of air potato. The wetland located on the northwest side of the site is a freshwater marsh with shrub wetland fringe. Vegetation consists of Carolina willow, Peruvian primrose-willow, saltbush, buttonbush, maidencane (*Panicum hemitomon*), and duck potato. There is a small pond with a shrub wetland in the southeastern portion of the site. This wetland consists almost entirely of Carolina willow. A narrow channel connects to the swale adjacent to U.S. 92.

No listed species or critical habitat was observed. Non-forested wetlands occur within this FPC site. Impacts to suitable wood stork foraging areas are anticipated with SMF site. Approximately 0.7 acres of wetlands will be impacted with the proposed FPC-3 design.

### FPC-4

This site is located north of U.S. 92, west of Pasadena Drive, and approximately between Station 393+47.34 and 414+25.22. Historically, the site was a hardwood-conifer mixed forest, but it has recently been cleared. Only scattered live oak and laurel oak remain along with minimal shrub and groundcover species, primarily saw palmetto, due to the recent disturbance.

No listed species or critical habitat was observed. No wetlands are present within this FPC site. No impacts to listed species or wetlands are anticipated to be associated with FPC-4.

### FPC-5

FPC-5 is located on the north side of U.S. 92, north of Brockwood Road, and approximately between 418+00.00 and 443+66.59. This oak hammock contains a canopy of live oak, laurel oak and slash pine (*Pinus elliotti*). Shrub species include saw palmetto, winged sumac, and hairy indigo. Groundcover species are limited likely due to dense leaf litter. Vines including air potato, Virginia creeper and muscadine grape are prevalent.

No listed species were observed. Suitable habitat for the gopher tortoise was observed within the FPC location and adjacent habitat. No gopher tortoises or burrows were observed during the field visit. This FPC site may incur impacts to the gopher tortoise and a survey would likely be required to confirm absence of tortoises and/or the need for relocation if potentially-occupied burrows were located within the SMF. No wetlands occur within this FPC site; therefore, no impacts to wetlands are anticipated to be associated with this FCP-5.

### FPC-6

This site is located south of U.S. 92 in a residential area just west of Gallaher Road and consists of a single family lot with no remaining natural habitat. It is located approximately between Station 443+86.96 and 460+86.08. No wetlands were observed and no impacts to listed species or wetlands are anticipated to be associated with FCP-6.

### FPC-8

FPC-8 is adjacent to SMF 10 and is located on the north side of U.S. 92, approximately between Station 507+64.54 and 509+82.28. This open land was previously used as row crops, but has been cleared and unmaintained. Observed vegetation consists of ragweed and dog fennel.

No listed species were observed. Suitable habitat for the gopher tortoise was observed within the pond site location and adjacent habitat. No gopher tortoises or burrows were observed during the field visit. This FPC site may incur impacts to the gopher tortoise and a survey would likely be required to confirm absence of tortoises and/or the need for relocation if potentially-occupied burrows were located within the SMF. A reservoir with a fringe of freshwater marsh is located north of this site. Due to the distance between the proposed FPC site and wetland, no impacts to wetlands are anticipated to be associated with FPC-8.

### FPC-9

FPC-9 is located on the north side of U.S. 92, west of Meadow Oaks Drive, and approximately between Station 550+58.09 and 560+00.00. It is located in a low density residential area and contains a mixed upland forest. Observed canopy species include live oak, laurel oak, and camphor. Understory species include immature oaks, Carolina laurelcherry, and saw palmetto. Groundcover includes ragweed, beggarticks, and woodgrass. There is a canal that runs along the western boundary of the site as well as stream and swamp wetlands. Wetland vegetation near the northern edge is contained within the canal and does not extend beyond the top of bank. Portions of the wetland boundary may extend into the FPC site near the west central portion.

No listed species or critical habitat was observed; therefore, no impacts to listed species are anticipated to be associated with FPC-9. Due to the proximity of wetlands near this FPC site, wetland impacts are anticipated. The wetland impacts will be minimal and are anticipated to be less than 0.10 acres.

#### FPC-10

FPC-10 is located on the north side of U.S. 92 and west of Rogers Road, and approximately between Station 601+50.25 and 613+00.00. A portion of FPC-10 is located in an agricultural area utilized for row crops, while the majority of the site is located within a forested wetland. Observed canopy species include red maple, Chinese tallow (*Triadica sebifera*), and mimosa (*Albizia julibrissin*). Understory species include buttonbush, Carolina willow, Chinese privet, and elderberry. Groundcover includes duck potato, cinnamon fern, and soft rush.

No listed species or critical habitat was observed, and no impacts to listed species are anticipated to be associated with FPC-10. Wetlands were observed on the eastern portion of the FPC site. FPC-10 will incur approximately 0.95 acres of wetland impacts.

#### FPC-11

This site is located south of U.S. 92 and west of N. Forbes Road, and approximately between Station 624+22.39 and 629+86.70. This site consists of existing SMFs and single family homes. One of the SMFs is fenced and maintained. The other SMF is adjacent to U.S. 92. Observed vegetation includes Carolina willow and Peruvian primrose-willow; however, this SMF is man-made and not considered a jurisdictional wetland. A large amount of trash and debris was observed.

No listed species or critical habitat was observed. No impacts to wetlands or listed species are anticipated to be associated with this FPC site.

#### FPC-12

FPC-12 is located north of U.S. 92 approximately 0.3 miles east of N. Forbes Road, and approximately between Station 639+41.41 and 652+08.61. The western boundary of this site is directly adjacent to SMF 15. The majority of the proposed site is comprised of pasture lands. The southwestern portion of the site has been cleared and is currently under construction. Spartman Branch runs through a portion of this FPC site. A freshwater marsh associated with the Spartman Branch floodplain is also present. Silt fence was observed along the wetland boundary during the site visit. The banks of the branch contain red maple, elderberry, Caesar weed and blackberry.

No listed species or critical habitat was observed within FPC-12. This site contains Spartan Branch and freshwater marsh wetlands. Impacts to suitable wood stork foraging areas are anticipated with SMF site. The current design of FPC-12 is anticipated to incur approximately 1.1 acres of surface water and wetland impacts.

#### FPC-14A

FPC-14A is located north of U.S. 92, and just east of Walter Drive, and approximately between Station 727+27.00 and 737+54.70. This site consists of commercial and residential properties. No natural habitat remains within the proposed site. No listed species or suitable habitat was observed. There are no wetlands within this site. No impacts to listed species or wetlands are associated with FPC-14A.

#### FPC-14B

FPC-14B is located west of N. Woodrow Wilson Street and north of U.S. 92, and approximately between Station 756+02.00 and 763+63.00. This site consists of commercial properties including a newly constructed Dollar General at the corner of U.S. 92 and N. Woodrow Wilson Street. There is a large forested wetland along the northern and western boundaries. Observed canopy species include sweet bay and red maple. The understory is dense and comprised of Carolina willow, buttonbush, wax myrtle, castor bean (*Ricinus communis*), and elderberry. Groundcover species include duck potato, soft rush, beggarticks, water pennywort, and ragweed. Vine species are dense throughout the understory and include muscadine grape and air potato.

No listed species or critical habitat was observed. No impacts to listed species are anticipated to be associated with FPC-14B. Most of this site is commercially developed and the remaining natural habitat consists of a forested wetland. FPC-14B will incur approximately 0.20 acres of wetland impacts.

**Table 6 – SMF Sites Estimated Wetland Impacts**

LOCATION	FLUCFCS CODE	FLUCFCS TYPE	ESTIMATED WETLAND IMPACTS (acres)
SMF 1	110	RESIDENTIAL - LOW DENSITY	N/A
	140	COMMERCIAL	
SMF 2	140	COMMERCIAL	N/A
SMF 3	130	RESIDENTIAL - HIGH DENSITY	> 0.50
	434	HARDWOOD CONIFER MIXED	
SMF 4	130	RESIDENTIAL - HIGH DENSITY	0.10
	140	COMMERCIAL	
	617	MIXED HARDWOOD WETLANDS	
SMF 5	140	COMMERCIAL	N/A
SMF 6	130	RESIDENTIAL - HIGH DENSITY	N/A
SMF 7A	120	RESIDENTIAL - MEDIUM DENSITY	N/A
SMF 7B	140	COMMERCIAL	N/A
	190	OPEN LAND	
SMF 8	434	HARDWOOD CONIFER MIXED	N/A
SMF 9	434	HARDWOOD CONIFER MIXED	3.00
	617	MIXED HARDWOOD WETLANDS	
SMF 10	214	ROW CROPS	N/A
SMF 11	110	RESIDENTIAL - LOW DENSITY	0.80
	615	STREAM AND LAKE SWAMPS	
SMF 12	110	RESIDENTIAL - LOW DENSITY	N/A
SMF 13	110	RESIDENTIAL - LOW DENSITY	0.40
	214	ROW CROPS	
	615	STREAM AND LAKE SWAMPS	
SMF 14	210	CROPLAND AND PASTURELAND	N/A
SMF 15	115	INDUSTRIAL	0.23
	510	STREAMS AND WATERWAYS	
	641	FRESHWATER MARSH	
SMF 16	214	ROW CROPS	0.7
	190	OPEN LAND	
	630	WETLAND FORESTED MIXED	
SMF 18	210	CROPLAND AND PASTURELAND	1.0
	510	STREAMS AND WATERWAYS	
	641	FRESHWATER MARSH	
SMF 19	120	RESIDENTIAL - MEDIUM DENSITY	N/A
SMF 20	110	RESIDENTIAL - LOW DENSITY	N/A
SMF 21	110	RESIDENTIAL - LOW DENSITY	N/A

**Table 7 – FPC Sites Estimated Wetland Impacts**

LOCATION	FLUCFCS CODE	FLUCFCS TYPE	ESTIMATED WETLAND IMPACTS (acres)
FPC-1A	210	CROPLAND AND PASTURELAND	0.2
FPC-1B	641	FRESHWATER MARSH	0.06
FPC-2	190	OPEN LAND	0.3
	434	HARDWOOD CONIFER MIXED	
	641	FRESHWATER MARSH	
FPC-3	130	RESIDENTIAL - HIGH DENSITY	0.7
	434	HARDWOOD CONIFER MIXED	
	641	FRESHWATER MARSH	
FPC-4	434	HARDWOOD CONIFER MIXED	N/A
FPC-5	434	HARDWOOD CONIFER MIXED	N/A
FPC-6	110	RESIDENTIAL - LOW DENSITY	N/A
FPC-8	214	ROW CROPS	N/A
FPC-9	110	RESIDENTIAL - LOW DENSITY	> 0.10
	615	STREAM AND LAKE SWAMPS	
FPC-10	214	ROW CROPS	0.95
	630	WETLAND FORESTED MIXED	
FPC-11	110	RESIDENTIAL - LOW DENSITY	N/A
FPC-12	150	INDUSTRIAL	1.1
	210	CROPLAND AND PASTURELAND	
	510	STREAMS AND WATERWAYS	
	641	FRESHWATER MARSH	
FPC-14A	120	RESIDENTIAL - MEDIUM DENSITY	N/A
	140	COMMERCIAL	
FPC-14B	140	COMMERCIAL	0.2
	630	WETLAND FORESTED MIXED	
	641	FRESHWATER MARSH	

Based on the data review and the results of the field reconnaissance, it has been determined that eight (8) SMFs and eight (8) FPC site alternatives have the potential to impact jurisdictional wetlands and/or surface waters. Where feasible, measures to avoid and minimize wetland and surface water impacts will be implemented during the final pond site design. Mitigation will be required for unavoidable wetland and surface water impacts.

Suitable foraging habitat (SFH) for wood storks was observed in SMF 15, FCP-3, and FCP-12. These sites have the potential to impact wood stork core foraging areas (CFAs).

According to the Effect Determination Key for the Wood Stork (USACE 2010), impacts to SFH greater than or equal to 0.5 acre will require SFH compensation within the same CFA. Impacts to SFH will be calculated and offset through the purchase of wetland mitigation within the same wood stork CFA. Assuming impacts to SFH are mitigated within the same CFA, this project “may affect, but is not likely to adversely affect” the wood stork.

Suitable habitat for the gopher tortoise was observed in three (3) SMF sites and two (2) FCP sites. Current regulations require that the 100% survey and relocation activities be conducted by an FWC Authorized Gopher Tortoise Agent. A formal 100% gopher tortoise survey will be conducted according to the current guidelines published by the FWC and completed within 72 hours to 90 days before construction of the proposed project begins. A relocation permit from the FWC is required before disturbances of any burrows (including those activities within 25 feet of a gopher tortoise burrow). Assuming completion of the 100% survey, coupled with the excavation/trapping and relocation of all occupying tortoises prior to the start of construction activities, this project “may affect, but is not likely to adversely affect” the gopher tortoise.



## **SECTION 7.0 – REGULATORY AGENCIES: COORDINATION AND PERMITTING**

Preliminary agency coordination was initially conducted through the initial Project Development & Environment Study. Further agency coordination will continue through this PD&E Re-evaluation Study, and the design phase of this project. The relevant federal agencies include the USACE, USFWS, and U.S. Environmental Protection Agency. The relevant state agencies include the Florida Department of Environmental Protection (FDEP), SWFWMD, and FWC. This Draft WEBAR will be provided to various environmental agencies for their review and provision of any relevant comments regarding the information contained in this document.

### **7.1 Wetlands**

Since wetlands are located within the project's study area and adjacent to the US 92 corridor, including the SMF and FPC locations, it is anticipated the roadway widening could result in wetland impacts. The following environmental permits are likely necessary to conduct activities in those affected wetlands:

- USACE Section 404 Dredge and Fill Permit
- SWFWMD Individual Environmental Resource Permit
- FDEP National Pollutant Discharge Elimination System Permit

### **7.2 Wildlife**

The proposed project is not expected to adversely affect state or federally-listed species. The majority of the habitats in the project's study area are unlikely to support listed species. Only one listed species, a wading bird, was observed in the project's study area. This bird was observed foraging along a roadside ditch. It is presumed that wildlife habitat impacts can be offset through wetland mitigation. Suitable habitat for the wood stork and gopher tortoise was observed in a number of SMF and FPC locations. Current regulations require that the 100% survey and relocation activities be conducted by an FWC Authorized Gopher Tortoise Agent. A formal 100% gopher tortoise survey will be conducted according to the current guidelines published by the FWC and completed within 72 hours to 90 days before construction of the proposed project begins. A relocation permit from the FWC is required before disturbances of any burrows (including those activities within 25 feet of a gopher tortoise burrow).

## SECTION 8.0 – COMMITMENTS

The FDOT will address potential wildlife and wetland impacts on the project by adhering to the following commitments:

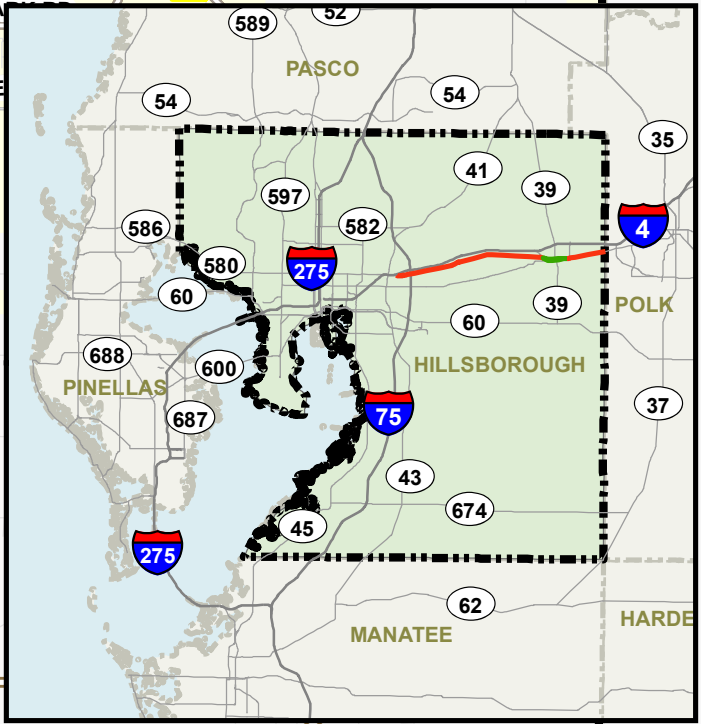
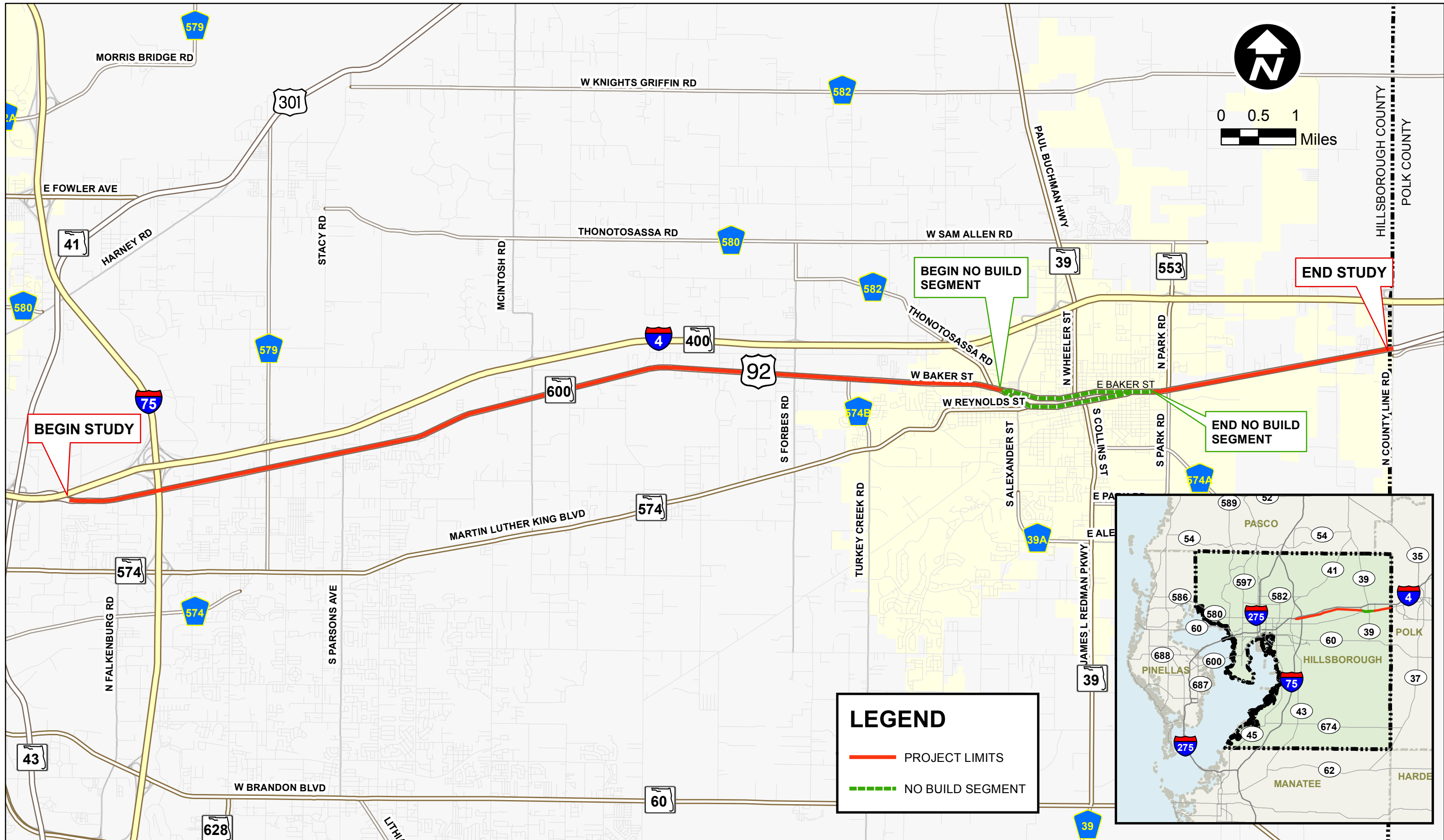
- The FDOT will perform a survey of potential gopher tortoise habitat that may be impacted by the project. The survey will follow the latest survey criteria from the FWC's *Gopher Tortoise Permitting Guidelines*. If burrows are identified, a gopher tortoise relocation permit will be sought from the FWC for any tortoise burrows that cannot be avoided.
- The FDOT will implement the *Standard Protection Measures for the Eastern Indigo Snake* (USFWS 2013) during site preparation and construction. To ensure these protection measures are followed on site, the General Plan Notes will include the following statement: Eastern indigo snake habitat has been identified within the project limits. Utilize the U.S. Fish and Wildlife Service Standard Protection Measures for the Eastern Indigo Snake, at the U.S. Fish and Wildlife Service Link: [http://www.fws.gov/northflorida/indigosnakes/20130812\\_eastern\\_indigo\\_snake\\_standard\\_protection\\_measures.htm](http://www.fws.gov/northflorida/indigosnakes/20130812_eastern_indigo_snake_standard_protection_measures.htm).
- Impacts to suitable wood stork foraging areas will be calculated during permitting and compensated for in the final mitigation plan.
- Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 U.S.C. §1344.

Based on the above commitments and results of previous wildlife surveys in the study area, it has been determined the proposed project may affect, but is not likely to adversely affect or jeopardize the existence of any threatened or endangered species. Any wetland mitigation proposed during the design phase of the project is expected to fully offset any potential impacts to aquatic or wetland-dependent species.

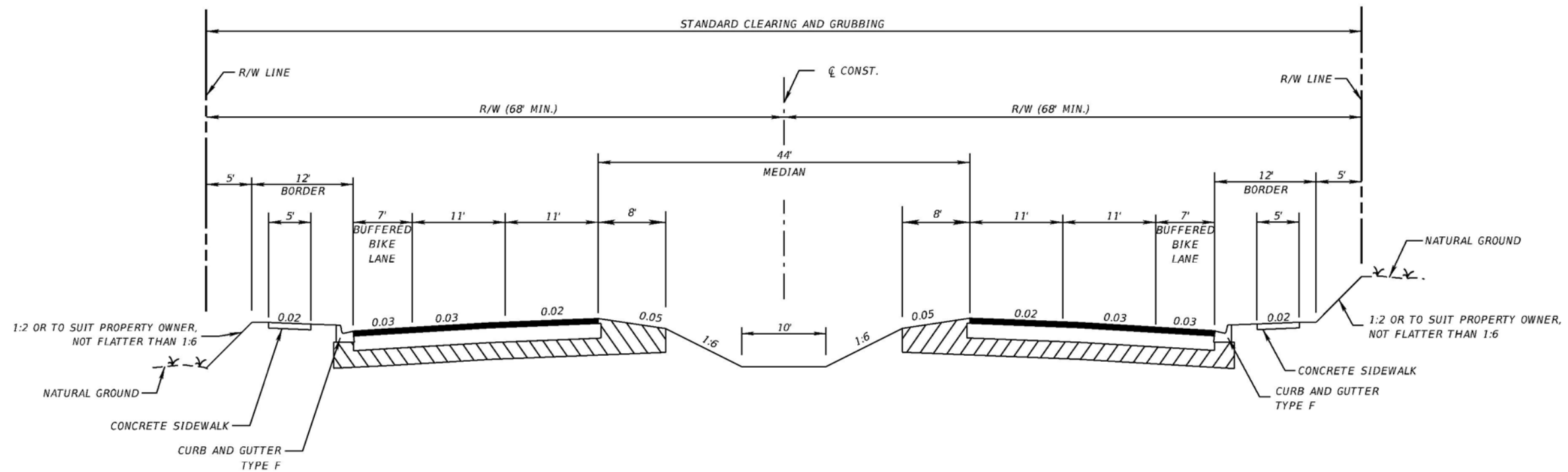
## SECTION 9.0 – REFERENCES

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. Laroe. 1979. Classification of wetlands and deep water habitats in the United States. U.S. Fish and Wildlife Service Publication, Office of Biological Services, Washington, D.C. FWS/OBS-79-31.
- Florida Department of Transportation. 1999. Florida land use, cover and forms classification system. Third edition. FDOT Surveying and Mapping Office, Geographic Mapping Section. Tallahassee, FL.
- Florida Fish and Wildlife Conservation Commission – Fish and Wildlife Research Institute. 2005. Wading Bird Colonies of Florida 1999. FWC Wildlife Technology Services Section, Tallahassee, FL  
<http://research.myfwc.com/>
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- . 2012. Florida black bear management plan. Tallahassee, FL.
- . 2012. Gopher tortoise management Plan. Tallahassee, FL.
- . 2013a. A species action plan for the Florida burrowing owl. Tallahassee, FL.
- . 2013b. A species action plan for the Florida mouse. Tallahassee, FL.
- . 2013c. A species action plan for the Florida pine snake. Tallahassee, FL.
- . 2013d. A species action plan for the Florida sandhill crane. Tallahassee, FL.
- . 2013e. A species action plan for the gopher frog. Tallahassee, FL.
- . 2013f. A species action plan for the limpkin. Tallahassee, FL.
- . 2013g. A species action plan for the Sherman’s fox squirrel. Tallahassee, FL.
- . 2013h. A species action plan for the short-tailed snake. Tallahassee, FL.
- . 2013i. A species action plan for the southeastern American kestrel. Tallahassee, FL.
- . 2013j. A species action plan for four imperiled species of beach-nesting birds. Tallahassee, FL.
- . 2013k. A species action plan for six imperiled wading birds: little blue heron, reddish egret, roseate spoonbill, snowy egret, tricolored heron, and white ibis. Tallahassee, FL.
- . 2013l. A species action plan for the Suwannee cooter. Tallahassee, FL.
- Natural Resources Conservation Service. 1989. Soil Survey of Hillsborough County, Florida. Published in cooperation with the University of Florida, Institute of Food and Agricultural Sciences, and the Florida Department of Agriculture and Consumer Services

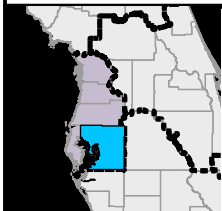
APPENDIX A –  
FIGURES







FROM EAST OF I-4 TO WEST OF I-75  
 AND FROM EAST OF I-75 TO WEST OF CR 579 - SEGMENT 1  
 FROM WEST OF CR 579 TO EAST OF CR 579 - SEGMENT 2  
 FROM EAST OF CR 579 TO NORTH PARSONS AVENUE - SEGMENT 3  
 FROM NORTH PARSONS AVENUE TO EAST OF CROW WING DRIVE - SEGMENT 4  
 DESIGN SPEED = 45 MPH

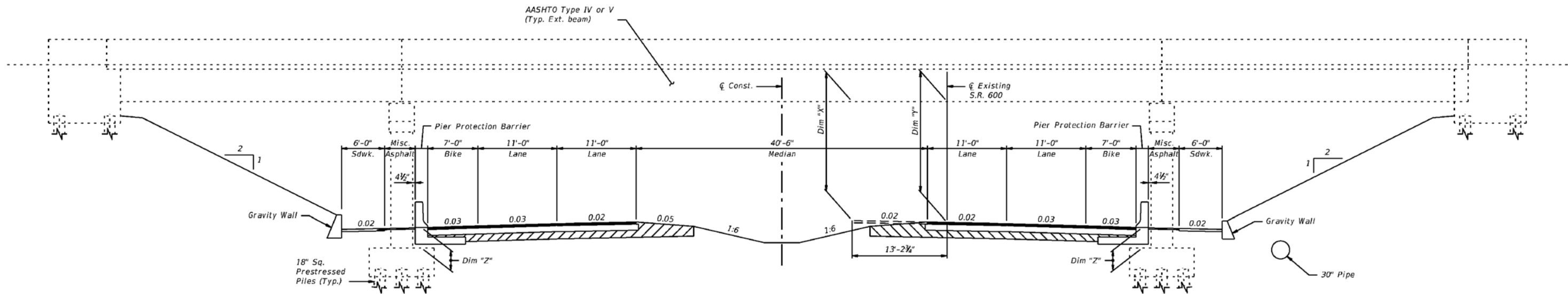


Florida Department  
 of Transportation  
 District 7

**US 92 PD&E Study Re-evaluation**  
 from east of I-4 to east  
 of County Line Road  
 Hillsborough County, Florida  
 Work Program Item Segment No.: 435749-1

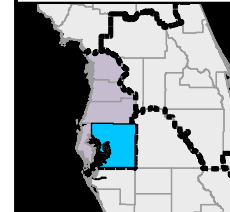
**TYPICAL SECTION 1**  
**PROPOSED FOUR LANE 45 MPH DESIGN SPEED**  
**TYPICAL SECTION**

Figure  
**2A**



UNDER I-75 BRIDGE  
 FROM WEST OF I-75 TO EAST OF I-75 - SEGMENT 1  
 DESIGN SPEED = 45 MPH

BRIDGE NO.	DIM "X" (ft.)	DIM "Y" (ft.)	DIM "Z" (ft.)	
			PIER 2	PIER 3
100414	18.235	18.500	4.135	3.135
100415	19.069	19.333	2.552	2.552
100422	17.673	17.938	2.745	2.245
100424	16.038	16.302	3.438	3.438



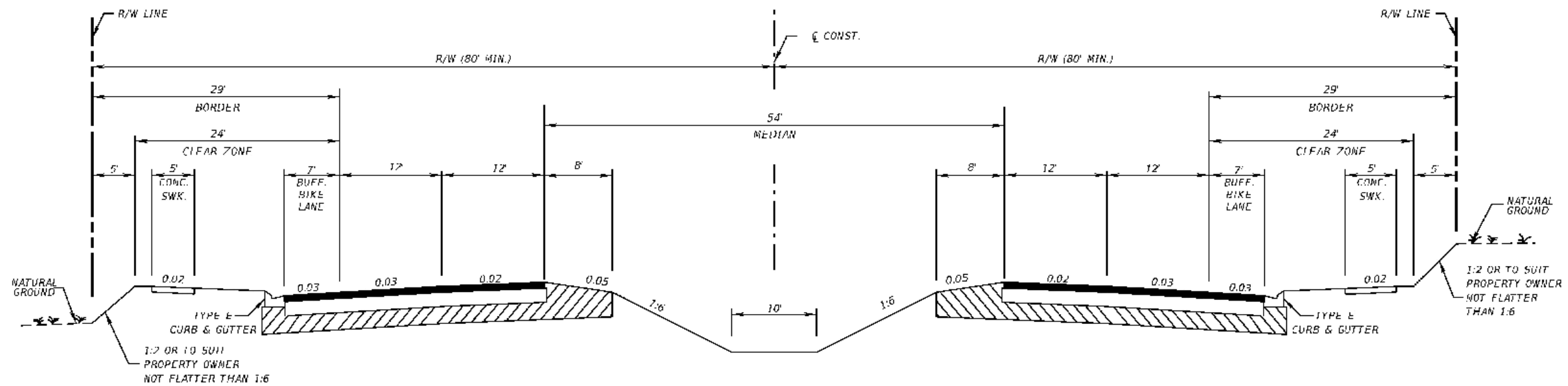
Florida Department of Transportation  
 District 7

**US 92 PD&E Study Re-evaluation**  
 from east of I-4 to east of County Line Road  
 Hillsborough County, Florida  
 Work Program Item Segment.: 435749-1

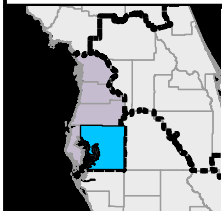
**TYPICAL SECTION 2**  
**PROPOSED FOUR LANE 45 MPH DESIGN SPEED**  
**TYPICAL SECTION UNDER I-95**

Figure  
**2B**





FROM EAST OF CROW WING DRIVE TO CASTLEWOOD ROAD - SEGMENT 5  
 FROM CASTLEWOOD ROAD TO WEST OF GALLAGHER ROAD - SEGMENT 6  
 FROM WEST OF GALLAGHER ROAD TO LYNN OAKS CIRCLE - SEGMENT 7  
 FROM LYNN OAKS CIRCLE TO EAST OF BETHLEHEM ROAD - SEGMENT 8  
 FROM EAST OF BETHLEHEM ROAD TO EDWARDS STREET - SEGMENT 9  
 DESIGN SPEED = 50 MPH



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 District 7

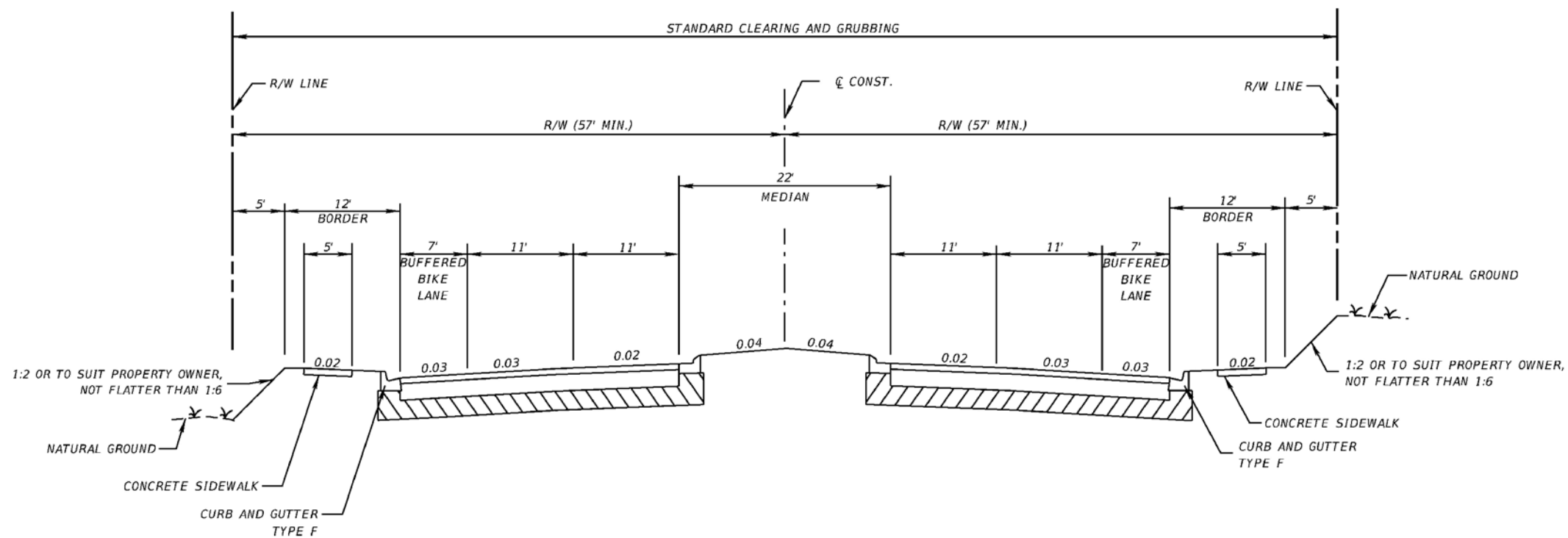
**US 92 PD&E Study Re-evaluation**

*from East of I-4 to East of County Line Road  
 Hillsborough County, Florida*

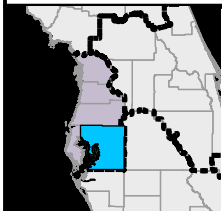
Work Program Segment No: 435749-1

**TYPICAL SECTION 3  
 PROPOSED FOUR LANE 50 MPH DESIGN SPEED  
 TYPICAL SECTION**

Figure  
 2C



FROM EDWARDS STREET TO MOBLEY STREET - SEGMENT 9  
 DESIGN SPEED = 45 MPH

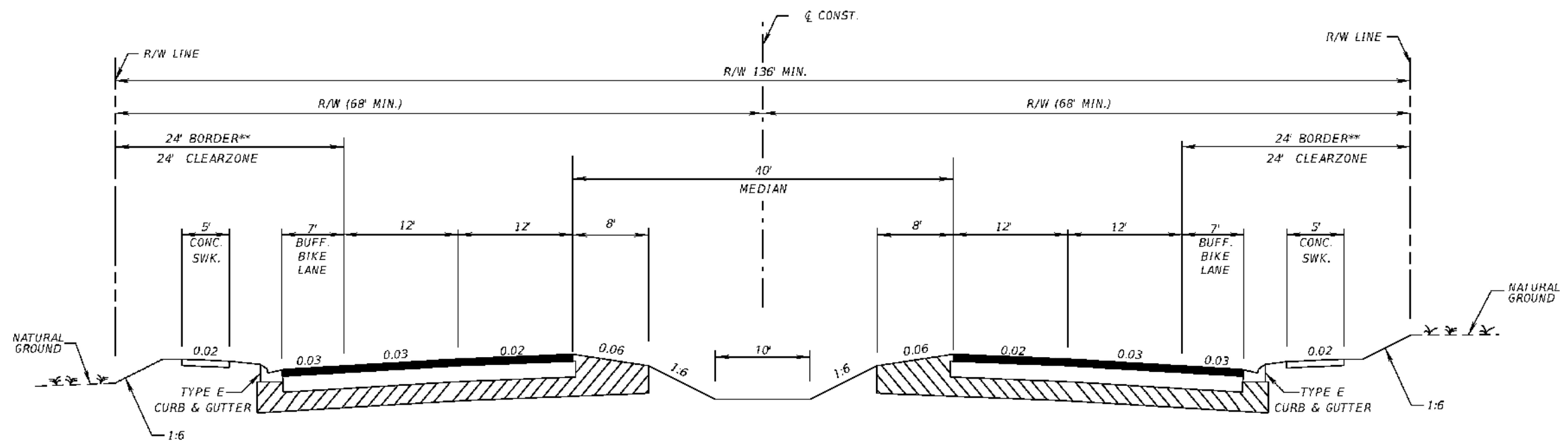


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 District 7

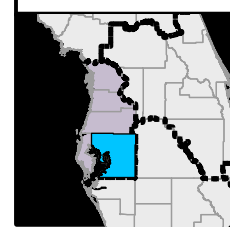
**US 92 PD&E Study Re-evaluation**  
 from east of I-4 to east of County Line Road  
 Hillsborough County, Florida  
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**TYPICAL SECTION 4**  
**PROPOSED FOUR LANE 45 MPH DESIGN SPEED**  
**TYPICAL SECTION WITH 22 FOOT WIDE MEDIAN**

Figure  
 2D



FROM PARK ROAD TO COUNTY LINE ROAD - SEGMENT 11  
 DESIGN SPEED = 50 MPH



Florida Department of Transportation  
 District 7

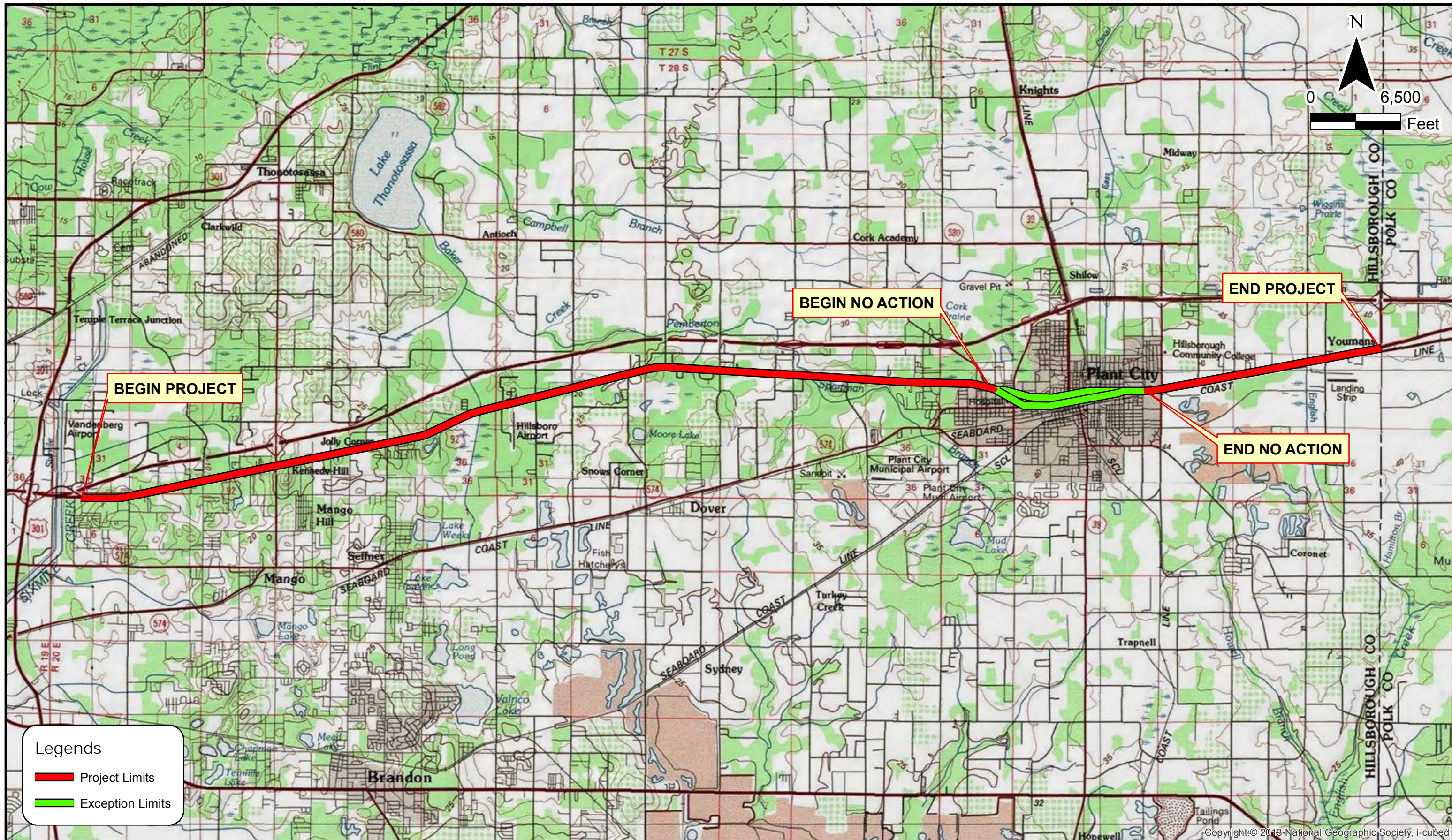
**US 92 PD&E Study Re-evaluation**

from east of I-4 to east of County Line Road  
 Hillsborough County, Florida

Work Program Item Segment.: 435749-1

**TYPICAL SECTION 5  
 PROPOSED FOUR LANE 50 MPH DESIGN SPEED  
 PARK ROAD TO COUNTY LINE ROAD**

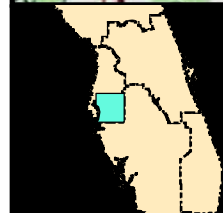
Figure  
**2E**



**Legends**

- Project Limits
- Exception Limits

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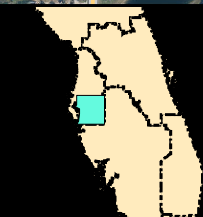


Florida Department of Transportation  
District 7

**SR 600 (US 92) PD&E Study Re-Evaluation**  
from East of I-4 to County Line Road  
Hillsborough County, Florida  
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USGS QUADRANGLE MAP

EXHIBIT  
3



Florida Department of Transportation  
District 7



**SR 600 (US 92)**

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NCRS SOILS MAP

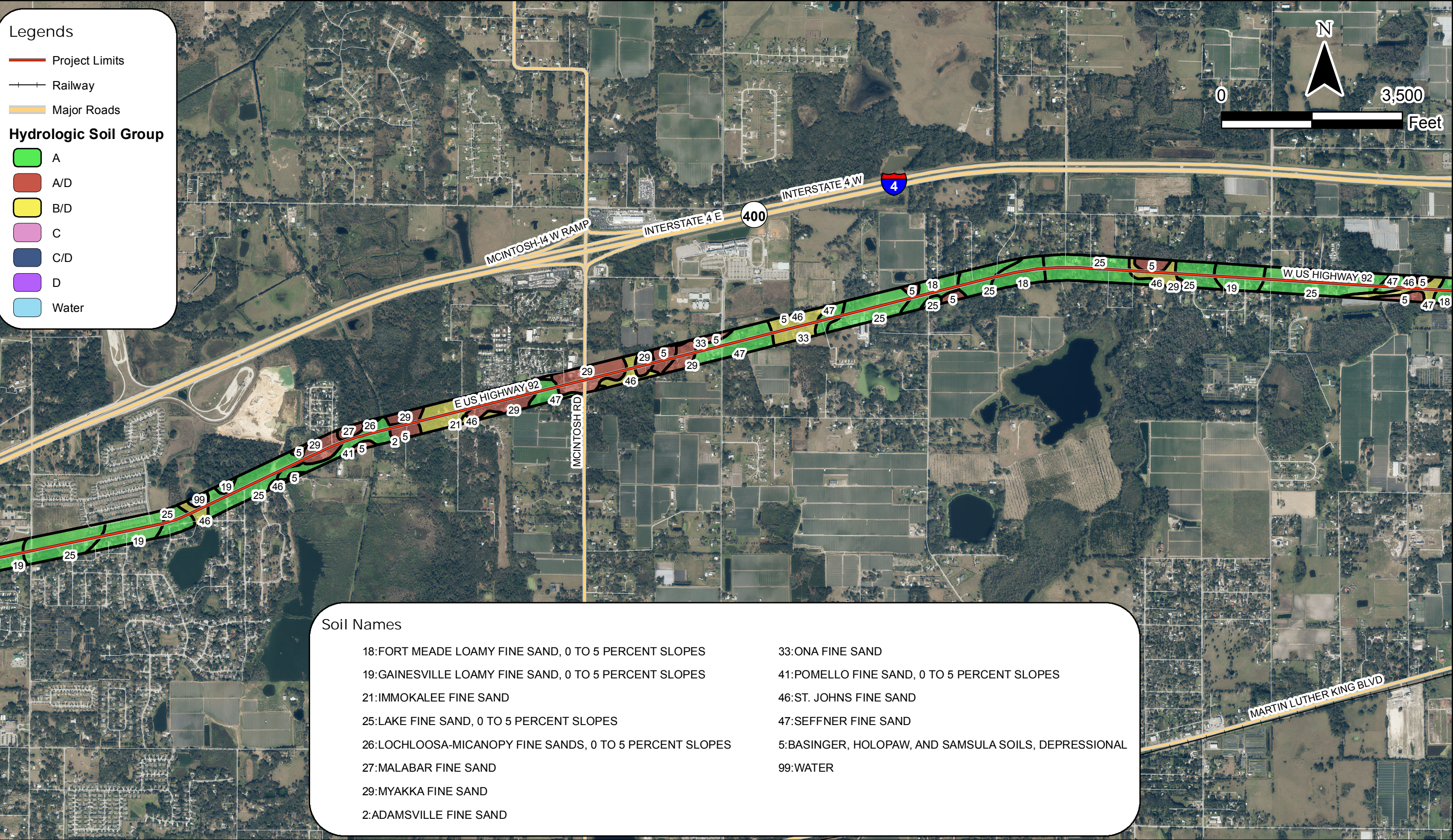
**FIGURE**  
3-2A

**Legends**

-  Project Limits
-  Railway
-  Major Roads

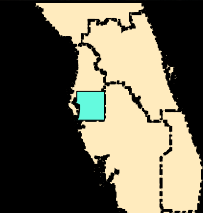
**Hydrologic Soil Group**

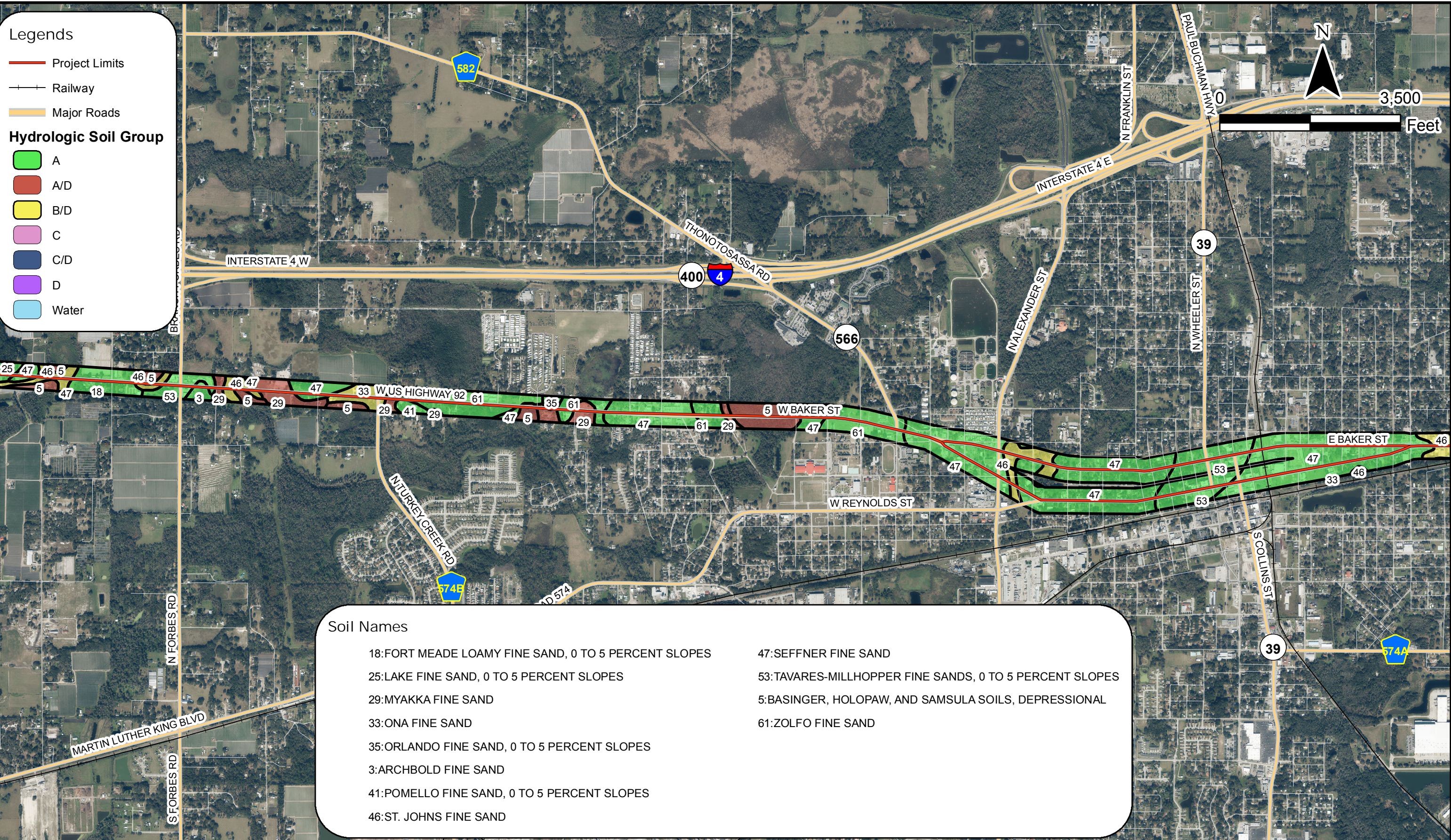
-  A
-  A/D
-  B/D
-  C
-  C/D
-  D
-  Water



**Soil Names**

18:FORT MEADE LOAMY FINE SAND, 0 TO 5 PERCENT SLOPES	33:ONA FINE SAND
19:GAINESVILLE LOAMY FINE SAND, 0 TO 5 PERCENT SLOPES	41:POMELLO FINE SAND, 0 TO 5 PERCENT SLOPES
21:IMMOKALEE FINE SAND	46:ST. JOHNS FINE SAND
25:LAKE FINE SAND, 0 TO 5 PERCENT SLOPES	47:SEFFNER FINE SAND
26:LOCHLOOSA-MICANOPY FINE SANDS, 0 TO 5 PERCENT SLOPES	5:BASINGER, HOLOPAW, AND SAMSULA SOILS, DEPRESSIONAL
27:MALABAR FINE SAND	99:WATER
29:MYAKKA FINE SAND	
2:ADAMSVILLE FINE SAND	





**Legends**

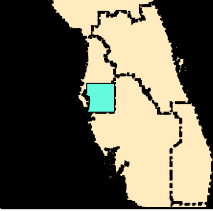
- Project Limits
- Railway
- Major Roads

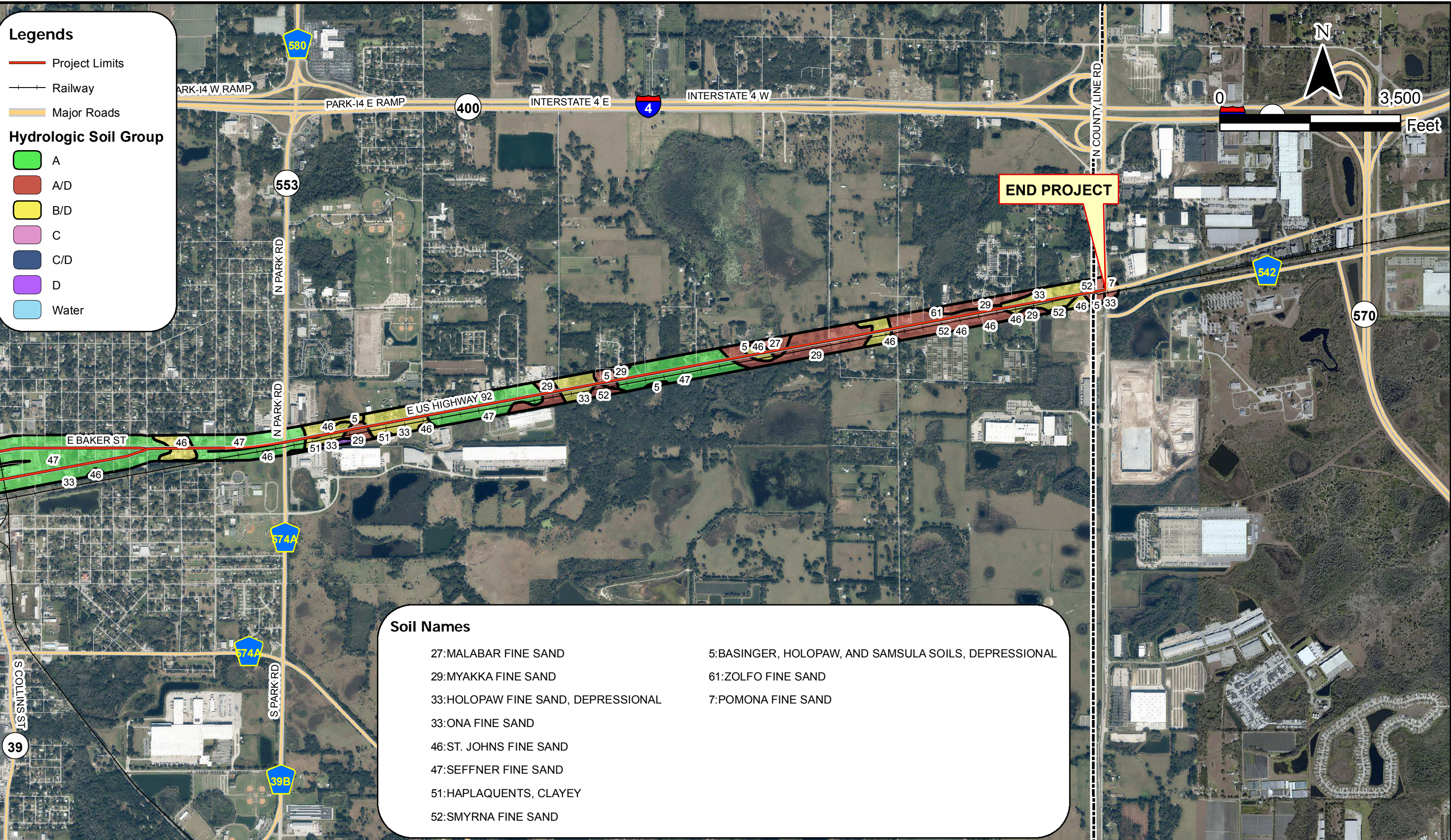
**Hydrologic Soil Group**

- A
- A/D
- B/D
- C
- C/D
- D
- Water

**Soil Names**

18: FORT MEADE LOAMY FINE SAND, 0 TO 5 PERCENT SLOPES	47: SEFFNER FINE SAND
25: LAKE FINE SAND, 0 TO 5 PERCENT SLOPES	53: TAVARES-MILLHOPPER FINE SANDS, 0 TO 5 PERCENT SLOPES
29: MYAKKA FINE SAND	5: BASINGER, HOLOPAW, AND SAMSULA SOILS, DEPRESSIONAL
33: ONA FINE SAND	61: ZOLFO FINE SAND
35: ORLANDO FINE SAND, 0 TO 5 PERCENT SLOPES	
3: ARCHBOLD FINE SAND	
41: POMELLO FINE SAND, 0 TO 5 PERCENT SLOPES	
46: ST. JOHNS FINE SAND	





**Florida Department of Transportation**  
District 7

**SR 600 (US 92)**

from East of I-4 to County Line Road  
Hillsborough County, Florida


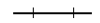

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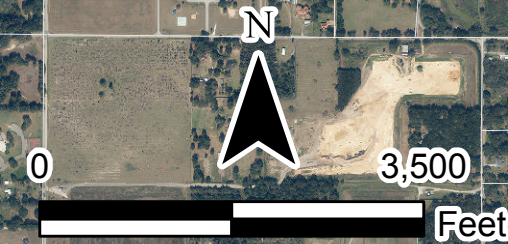
**NRCS SOILS MAP**

**FIGURE 3-2D**



Legends

-  Project Limits
-  Railway
-  Major Roads



**BEGIN PROJECT**

FLUCFCS Names		
110:RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS	220:TREE CROPS	641:FRESHWATER MARSHES
120:RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT	240:NURSERIES AND VINEYARDS	653:INTERMITTENT PONDS
130:RESIDENTIAL HIGH DENSITY	260:OTHER OPEN LANDS <RURAL>	810:TRANSPORTATION
140:COMMERCIAL AND SERVICES	434:HARDWOOD CONIFER MIXED	830:UTILITIES
150:INDUSTRIAL	615:STREAM AND LAKE SWAMPS (BOTTOMLAND)	
170:INSTITUTIONAL	620:WETLAND CONIFEROUS FORESTS	
190:OPEN LAND	630:WETLAND FORESTED MIXED	
210:CROPLAND AND PASTURELAND	640:VEGETATED NON-FORESTED WETLANDS	



Florida Department of Transportation  
District 7

**SR 600 (US 92)**

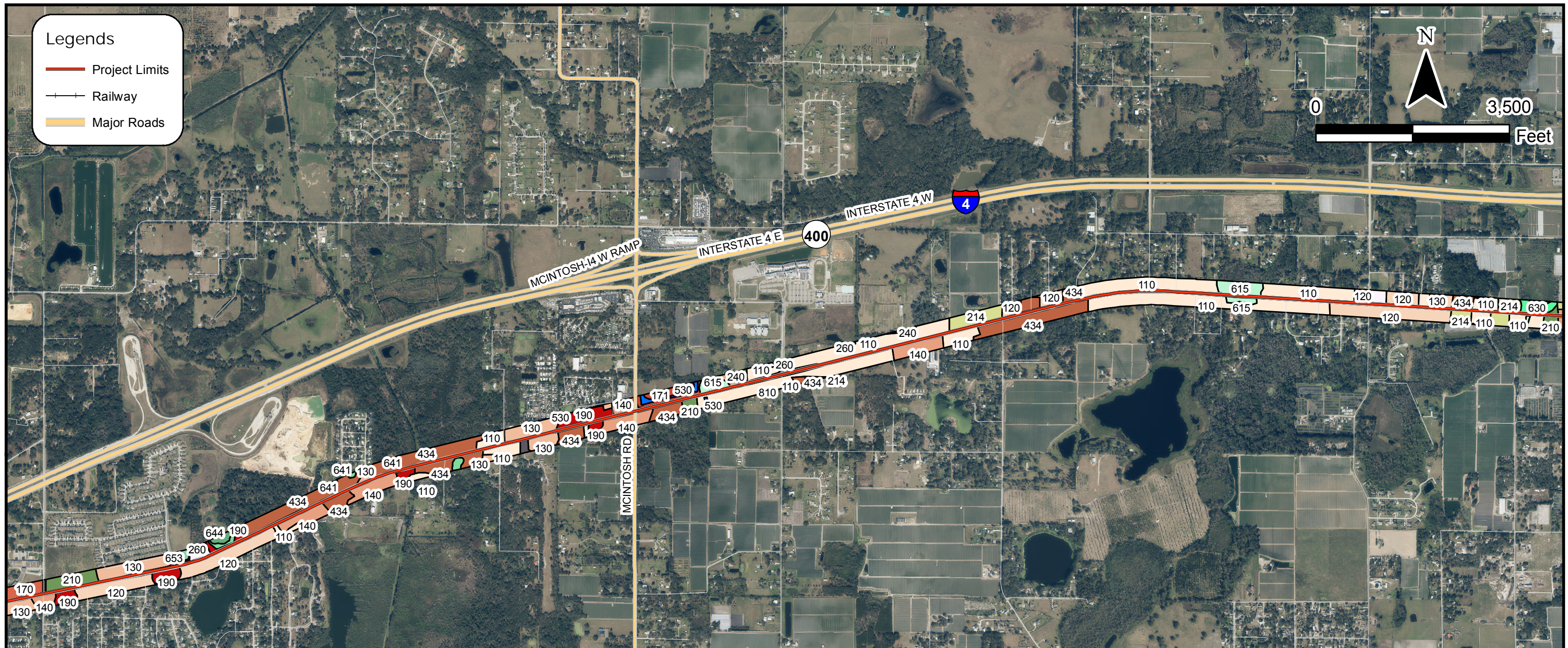
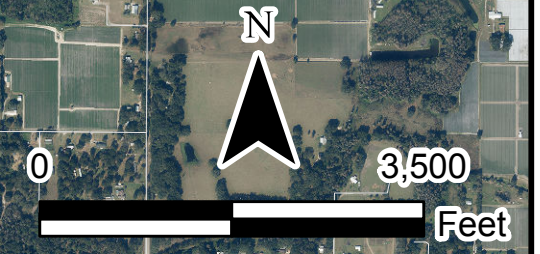
from East of I-4 to County Line Road  
Hillsborough County, Florida  
Work Program Item Segment No.: 435749-1

FLUCFCS MAP

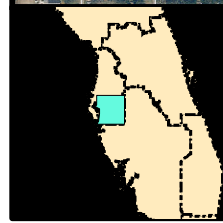
**FIGURE**  
3-3A

Legends

- Project Limits
- Railway
- Major Roads



FLUCFCS Names		
110:RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS	214:ROW CROPS	641:FRESHWATER MARSHES
120:RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT	240:NURSERIES AND VINEYARDS	644:EMERGENT AQUATIC VEGETATION
130:RESIDENTIAL HIGH DENSITY	260:OTHER OPEN LANDS <RURAL>	653:INTERMITTENT PONDS
140:COMMERCIAL AND SERVICES	434:HARDWOOD CONIFER MIXED	810:TRANSPORTATION
170:INSTITUTIONAL	530:RESERVOIRS	
171:EDUCATIONAL FACILITIES	615:STREAM AND LAKE SWAMPS (BOTTOMLAND)	
190:OPEN LAND	630:WETLAND FORESTED MIXED	
210:CROPLAND AND PASTURELAND	641:FRESHWATER MARSH WITH SHRUBS	



Legends

- Project Limits
- |— Railway
- Major Roads



FLUCFCS Names

- 110: RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS
- 120: RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT
- 130: RESIDENTIAL HIGH DENSITY
- 140: COMMERCIAL AND SERVICES
- 150: INDUSTRIAL
- 170: INSTITUTIONAL
- 180: RECREATIONAL
- 190: OPEN LAND

- 210: CROPLAND AND PASTURELAND
- 214: ROW CROPS
- 220: TREE CROPS
- 240: NURSERIES AND VINEYARDS
- 260: OTHER OPEN LANDS <RURAL>
- 434: HARDWOOD CONIFER MIXED
- 615: STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 618: WILLOW AND ELDERBERRY

- 630: WETLAND FORESTED MIXED
- 641: FRESHWATER MARSH WITH SHRUBS
- 641: FRESHWATER MARSHES
- 810: TRANSPORTATION



Florida Department of Transportation  
District 7

SR 600 (US 92)

from East of I-4 to County Line Road  
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FLUCFCS MAP

FIGURE  
3-3C



Florida Department  
of Transportation  
District 7

### SR 600 (US 92)

from East of I-4 to County Line Road  
Hillsborough County, Florida

Work Program Item Segment No.: 435749-1

FLUCFCS MAP

FIGURE  
3-3D



**Legends**

- Project Limits
- |— Railway
- Major Roads

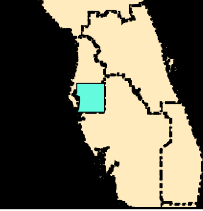
N

0 3,500 Feet

**BEGIN PROJECT**

**Wetland Description**

- 615: STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 620: WETLAND CONIFEROUS FORESTS
- 630: WETLAND FORESTED MIXED
- 640: VEGETATED NON-FORESTED WETLANDS
- 641: FRESHWATER MARSHES
- 653: INTERMITTENT PONDS

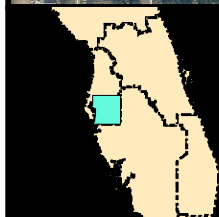
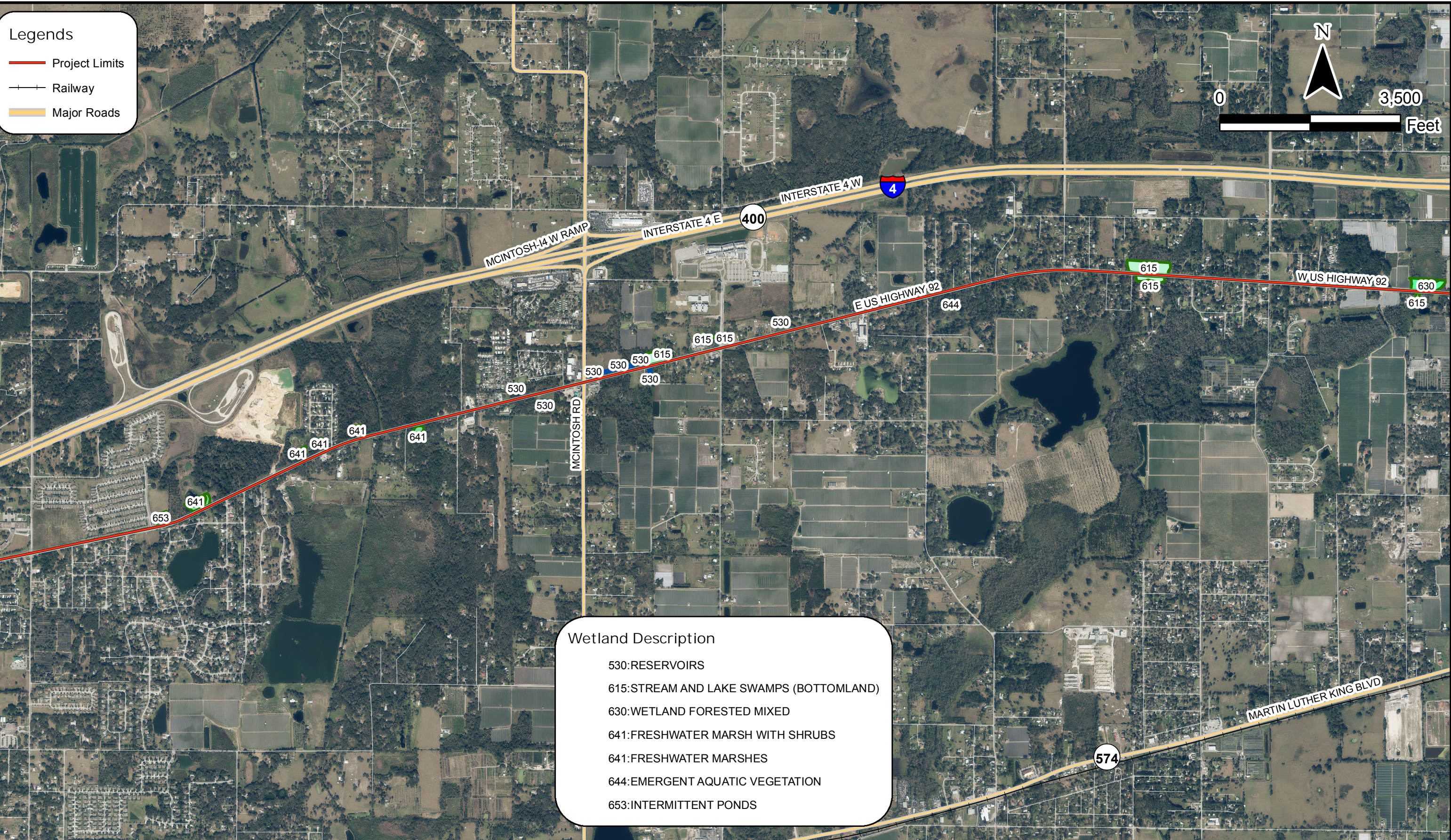


**FDOT** Florida Department of Transportation  
District 7

**SR 600 (US 92)**  
from East of I-4 to County Line Road  
Hillsborough County, Florida  
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**WETLANDS MAP**

**FIGURE 3-4A**



Florida Department of Transportation  
District 7

**SR 600 (US 92)**

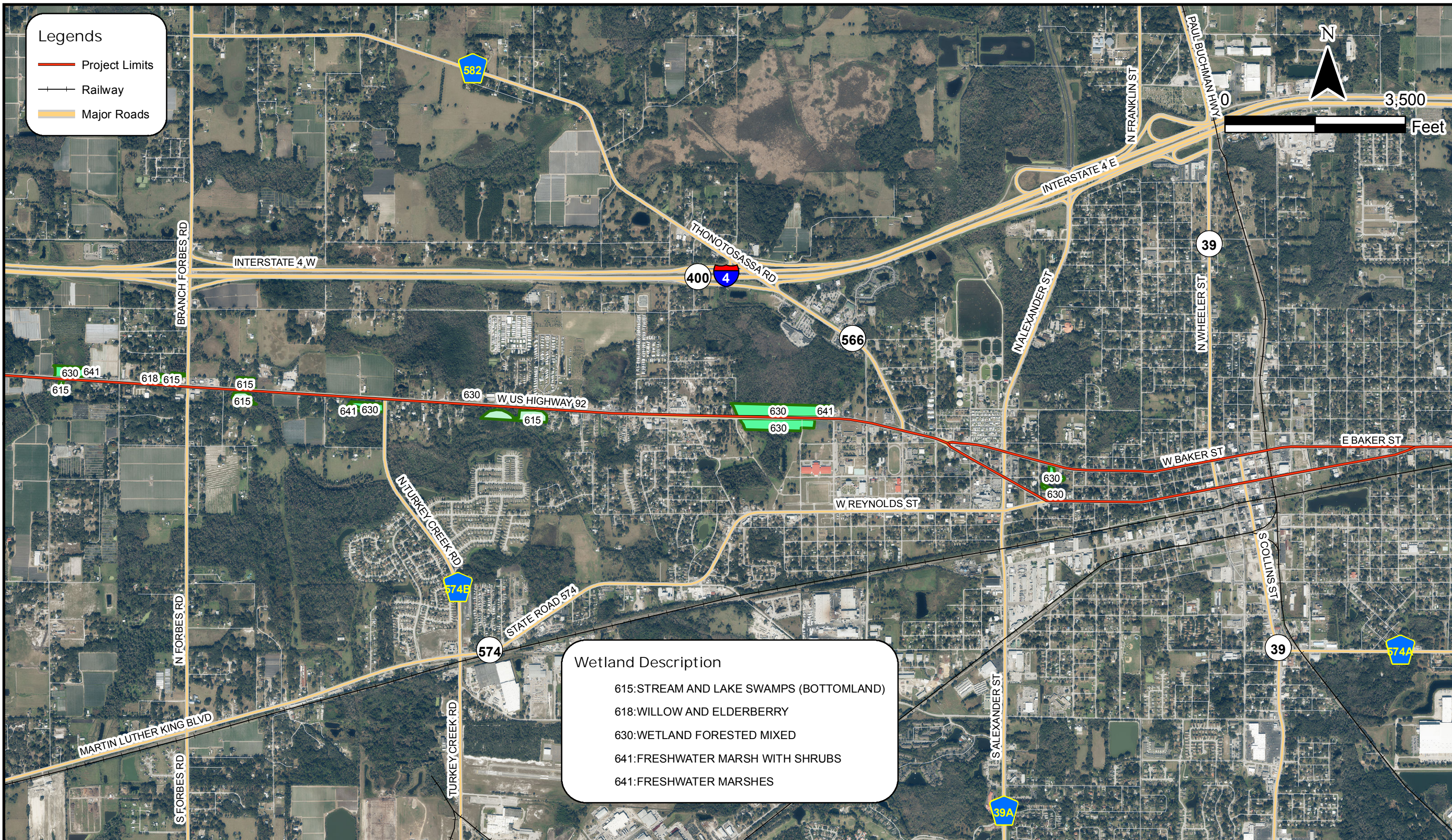
from East of I-4 to County Line Road  
Hillsborough County, Florida  
Work Program Item Segment No.: 435749-1

WETLANDS MAP

**FIGURE**  
3-4B

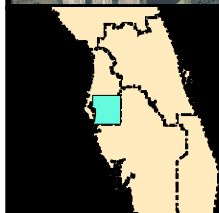
Legends

- Project Limits
- +— Railway
- Major Roads



**Wetland Description**

- 615: STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 618: WILLOW AND ELDERBERRY
- 630: WETLAND FORESTED MIXED
- 641: FRESHWATER MARSH WITH SHRUBS
- 641: FRESHWATER MARSHES



Florida Department of Transportation  
District 7

**SR 600 (US 92)**

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Hillsborough County, Florida  
Work Program Item Segment No.: 435749-1

**WETLANDS MAP**

**FIGURE**  
3-4C





APPENDIX B –  
REPRESENTATIVE HABITAT PHOTOGRAPHS  
AND  
PROPOSED STORMWATER MANAGEMENT FACILITY PHOTOGRAPHS

## REPRESENTATIVE HABITAT PHOTOGRAPHS

*Photo 1: Hardened canal near N. Vermont St. and US 92*



*Photo 2: Earthen-berm canal near N. Alexander St. and US 92*



*Photo 3: Forested wetland north of US 92 west of N. Woodrow Wilson St.*



*Photo 4: Forested wetland south of US 92 east of N. Turkey Creek Rd*



*Photo 5: Stream and forested wetland located along US 92 west of N. Turkey Creed Rd., facing south.*



*Photo 6: Forested wetland north of US 92 west of Tanner Rd.*



*Photo 7: Typical elevated walkway located along stretches of US 92 west of Plant City*



*Photo 8: Stream crossing US 92 west of Brackwood Rd.*



PROPOSED STORMWATER MANAGEMENT FACILITY PHOTOGRAPHS

*Photo 9: SMF 1, commercial property adjacent to U.S. 92*



*Photo 10: SMF 1, representative vegetation along the northern boundary*



*Photo 11: SFM 2, southern boundary of site*



*Photo 12: SMF 3, vegetation along the western boundary*



*Photo 13: SMF 3, residential properties*



*Photo 14: SMF 4, representative vegetation in uplands adjacent to U.S. 92*





*Photo 15: SMF 4, canal within SMF location*



*Photo 16: SMF 5, representative vegetation within SMF site*



Photo 17: SMF 6, residential properties



Photo 18: SMF 7A, residential property



*Photo 19: SMF 7B, lawn area of residential property*



*Photo 20: SMF 8, remaining vegetation after recent clearing*



*Photo 21: SMF 9, vegetation adjacent to U.S. 92 ROW*



*Photo 22: SMF 9, vegetation within interior of SMF site*



*Photo 23: SMF 10, vegetation within SMF 10 and adjacent FPC -8*



*Photo 24: SMF 11, wetland vegetation within interior of site*



*Photo 25: SMF 11, southern boundary of SMF site, facing north*



*Photo 26: SMF 12, residential properties*



*Photo 27: SMF 13, strawberry fields*



*Photo 28: SMF 13, canal near southern boundary of SMF site*



*Photo 29: SMF 14, representative vegetation*



*Photo 30: SMF 15, site has been cleared with construction in progress*





*Photo 31: SMF 15, SMF site and construction of adjacent pond*



*Photo 32: SMF 16, pasture and strawberry fields on the southern portion of SMF site*



*Photo 33: SMF 16, vegetation and standing water within wetland along portion adjacent to U.S. 92*



*Photo 34: SMF 18, pasture and edge wetlands along the northern boundary of SMF site*



*Photo 35: SMF 18, vegetation along canal and adjacent wetland*



*Photo 36: SMF 19, facing west, open land, mobile homes, and commercial property*



*Photo 37: SMF 19, area of open land within the SMF site*



*Photo 38: SMF 20, facing north*



*Photo 39: SMF 20, driveway to homes north of the SMF site*



*Photo 40: SMF 21, residential property, lawn*



*Photo 41: FPC-1A, open land*



*Photo 42: FPC-1B, wetland adjacent to U.S. 92*



*Photo 43: FPC-2, vegetation within forested uplands*



*Photo 44: FPC-2, adjacent marsh near the western boundary of the FPC site*



*Photo 45: FPC-3, marsh along western boundary*



*Photo 46: FPC-3, upland area within the site*





*Photo 47: FPC-5, representative vegetation within FPC site*



*Photo 48: FPC-6, residential properties*



*Photo 49: FPC-8, open land previously utilized as row crops*



*Photo 50: FPC-9, residential property and adjacent uplands, facing SW*



*Photo 51: FPC-9, canal along western boundary of site*



*Photo 52: FPC-10, row crop area on western portion of the site*



*Photo 53: FPC-10, wetland vegetation within eastern portion of site*



*Photo 54: FPC-11, existing fenced SMF and residential properties*



*Photo 55: FPC-11, existing SMF adjacent to the U.S. 92 ROW*



*Photo 56: FPC-12, pasture in eastern portion of site*



*Photo 57: FPC-12 wetland and bank of surface water north of feed store*



*Photo 58: FPC-12, construction in progress, facing west toward SMF 15*



*Photo 59: FPC-14A, commercial property adjacent to U.S. 92*



*Photo 60: FPC-14A, residential area in northern portion of site*



*Photo 61: FPC-14B, wetland along northern boundary of site*



*Photo 62: FPC-14B, commercial properties in center of site*





*Photo 63: FPC-14B, open land along eastern boundary of site, adjacent to U.S. 92*



*Photo 64: FPC-14B, newly constructed Dollar General*



APPENDIX C –  
STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

**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](mailto:jaxregs@fws.gov); South Florida Field Office: [verobeach@fws.gov](mailto:verobeach@fws.gov); Panama City Field Office: [panamacity@fws.gov](mailto: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 LIVE 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 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.

**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.

**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:**

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

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

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**LEGAL STATUS:** 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.



August 12, 2013

**ATTENTION:**  
THREATENED EASTERN INDIGO  
SNAKES MAY BE PRESENT ON  
THIS SITE!!!



Please read the following information provided by the U.S. Fish and Wildlife Service to become familiar with standard protection measures for the eastern indigo snake.



# **ATTENTION:**

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

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**South Florida Field Office – (772) 562-3909**

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APPENDIX D –  
BASIN MAPS (WITH PRELIMINARY SMF SITES SHOWN)



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

Inwood Consulting Engineers, Inc.  
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765  
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
1



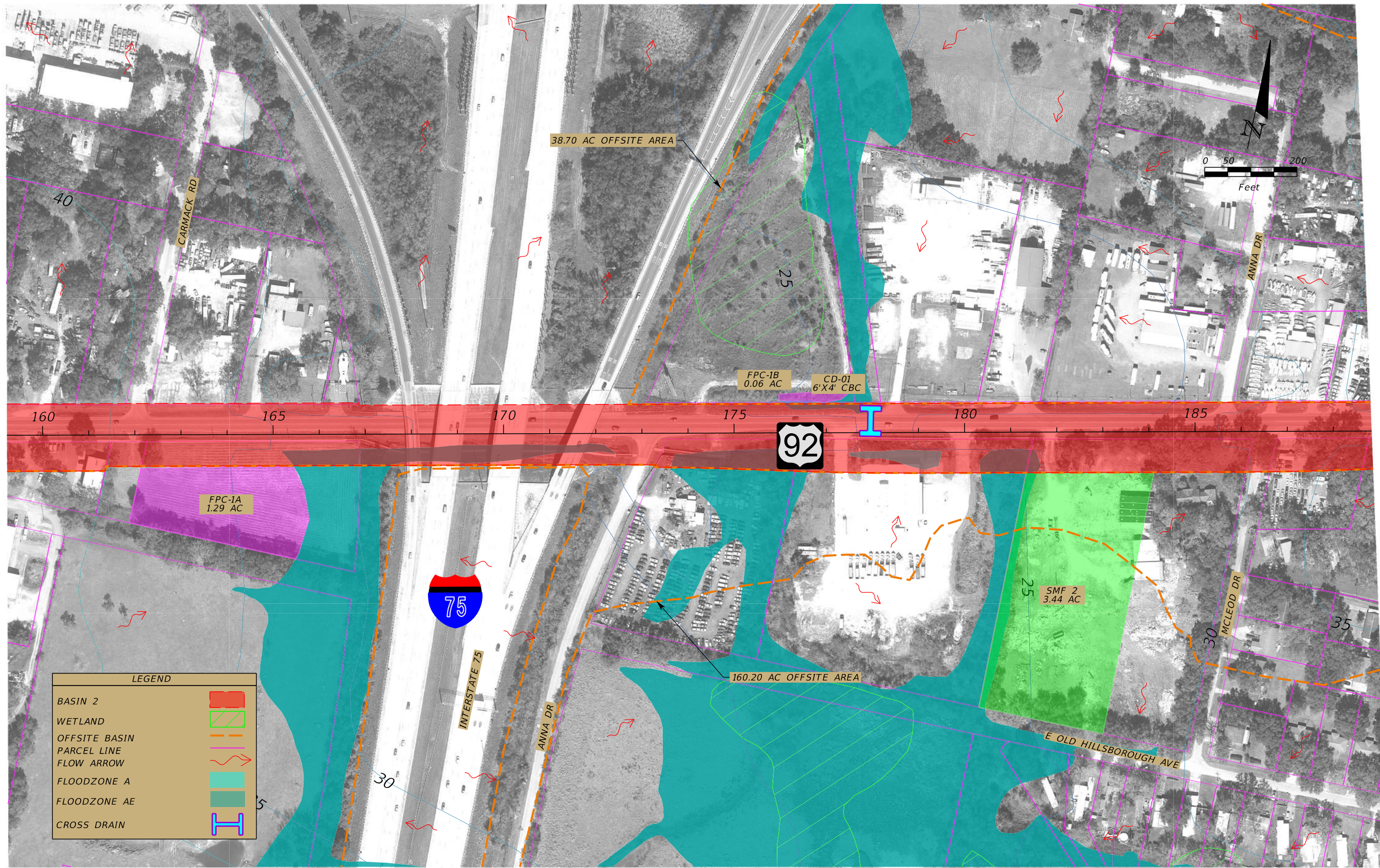
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DATE	DESCRIPTION	DATE	DESCRIPTION

Inwood Consulting Engineers, Inc.  
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765  
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
2



LEGEND	
BASIN 2	
WETLAND	
OFFSITE BASIN	
PARCEL LINE	
FLOW ARROW	
FLOODZONE A	
FLOODZONE AE	
CROSS DRAIN	

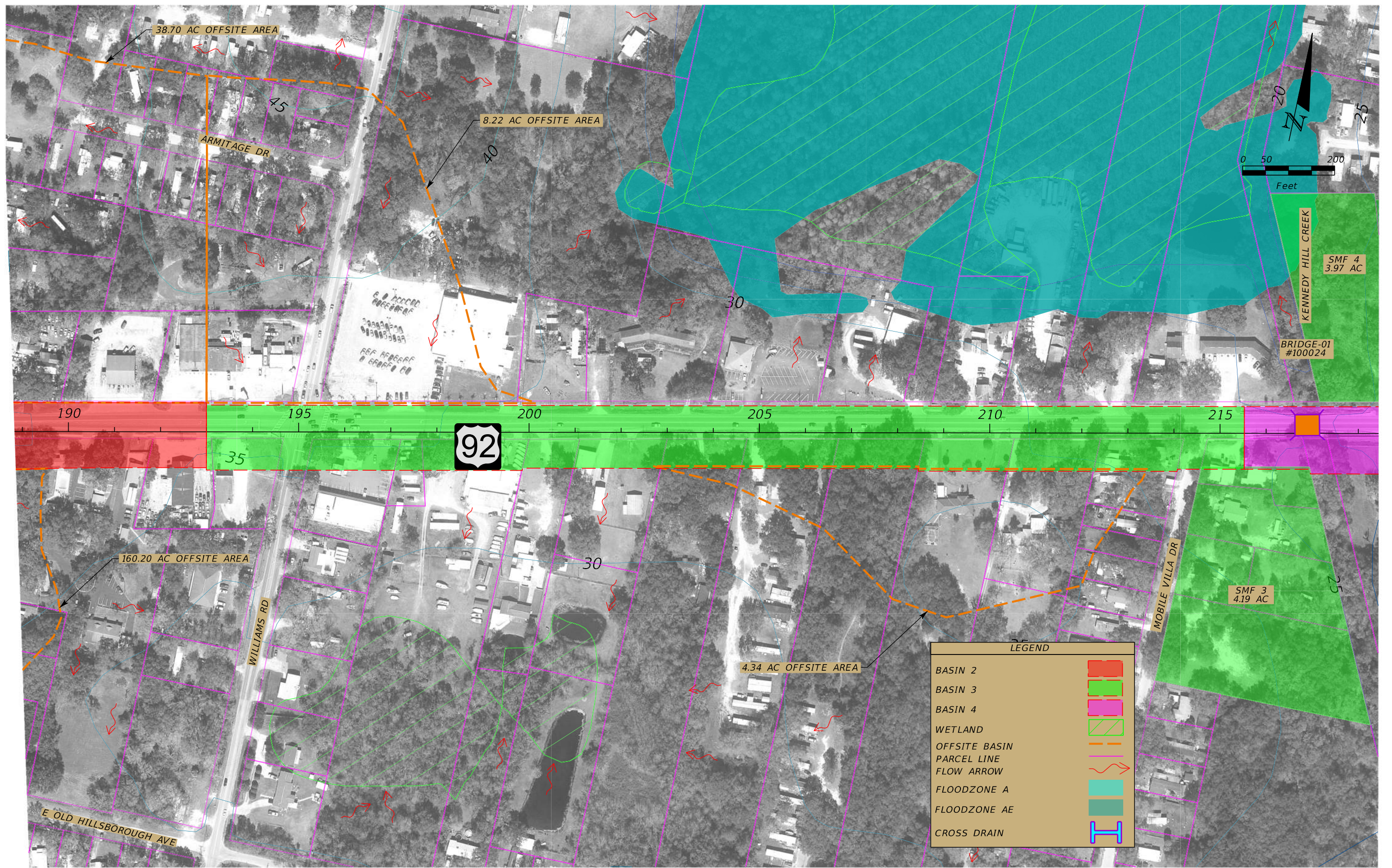
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DATE	DESCRIPTION	DATE	DESCRIPTION

Inwood Consulting Engineers, Inc.  
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765  
 P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
3



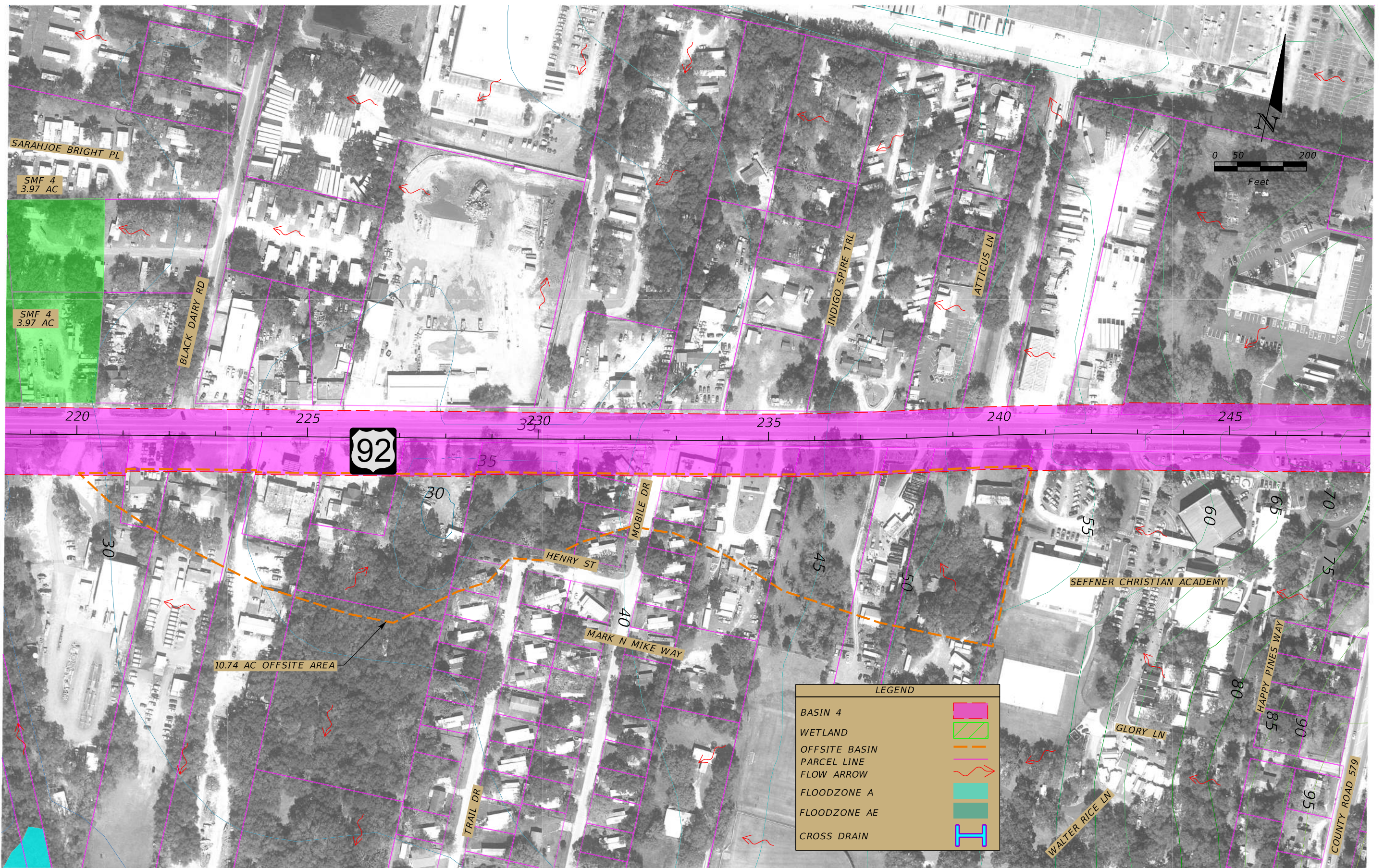
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Inwood Consulting Engineers, Inc.  
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765  
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
4



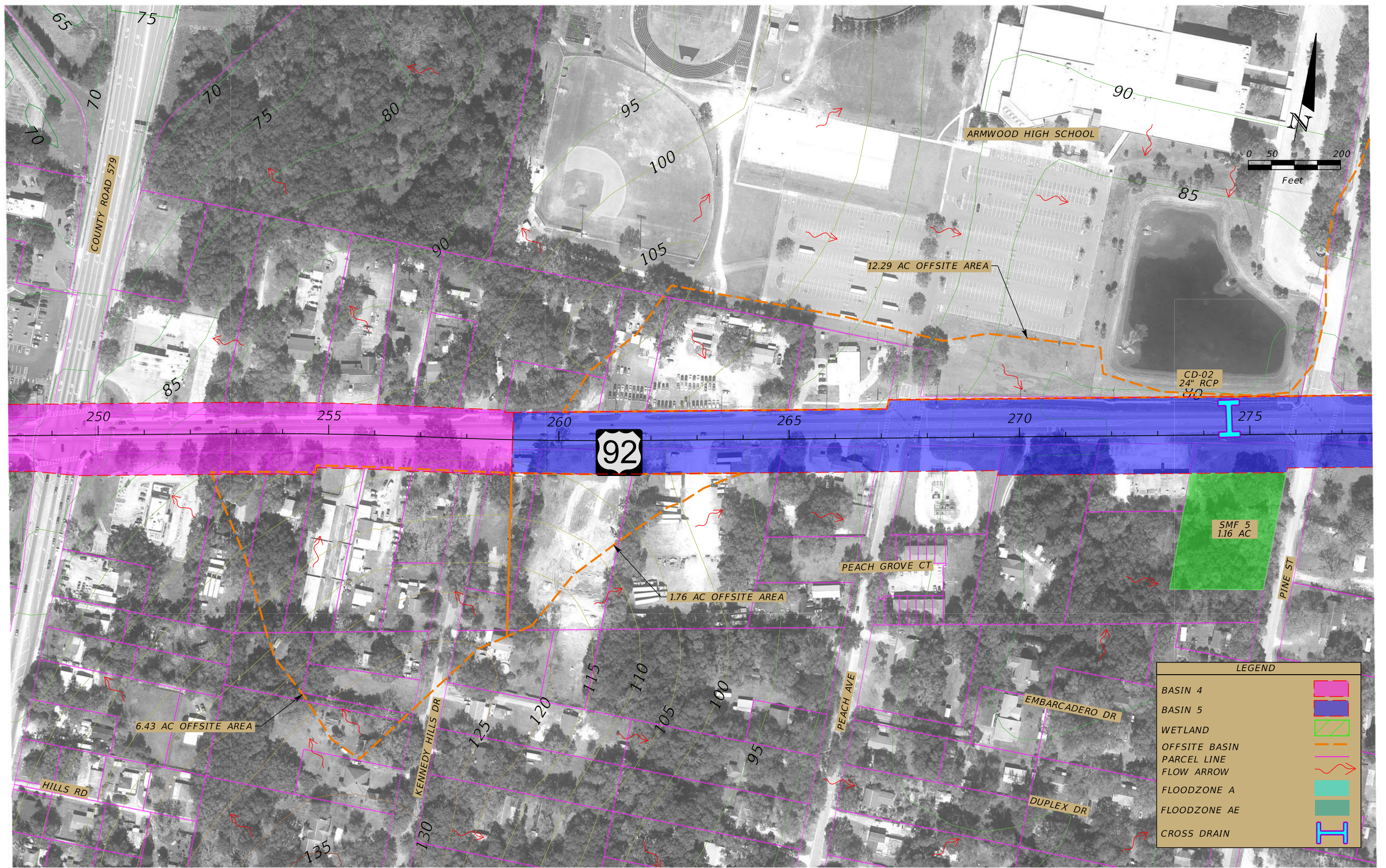
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DATE	DESCRIPTION	DATE	DESCRIPTION

Inwood Consulting Engineers, Inc.  
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765  
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
5



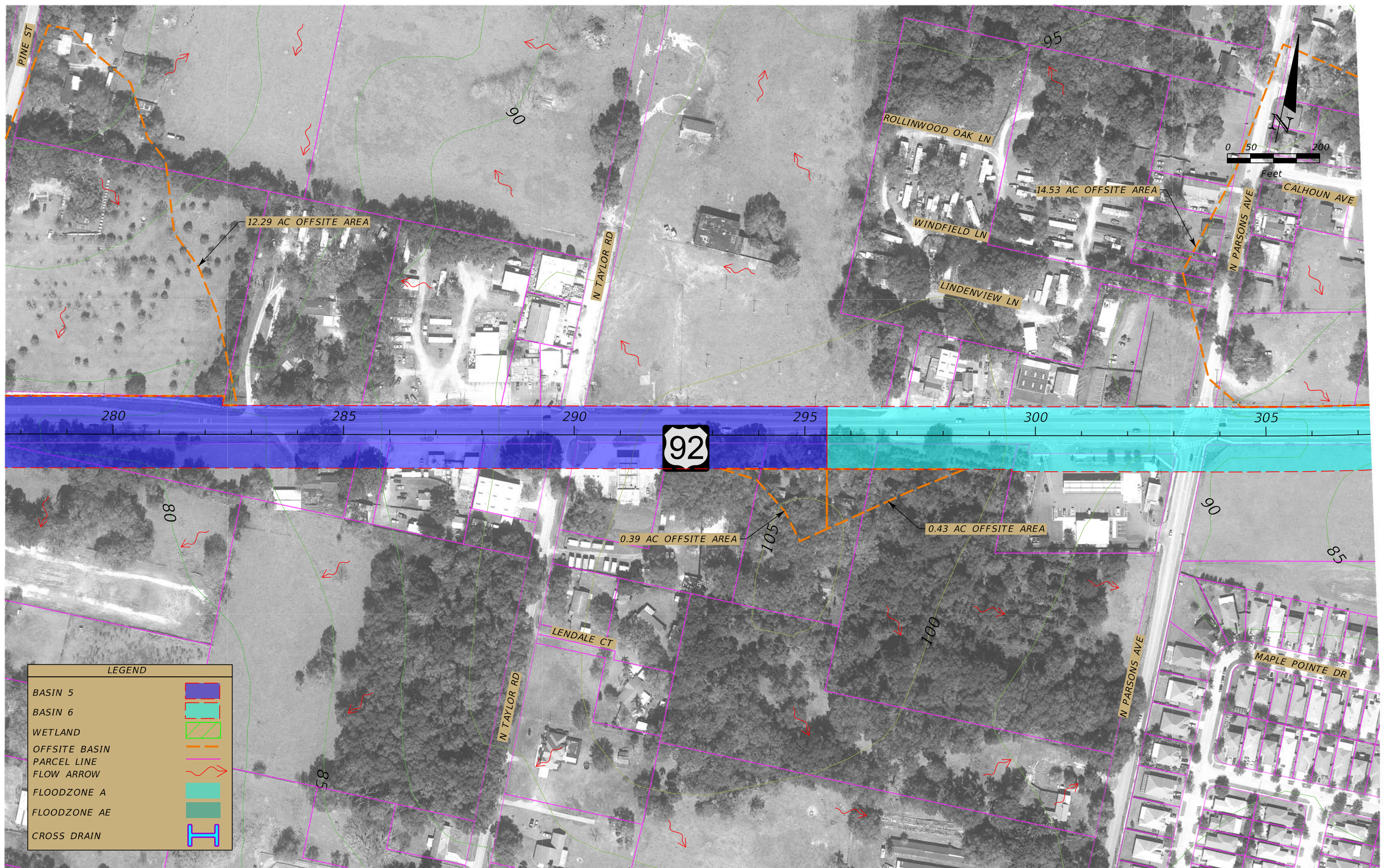
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
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92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
6



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DATE	DESCRIPTION

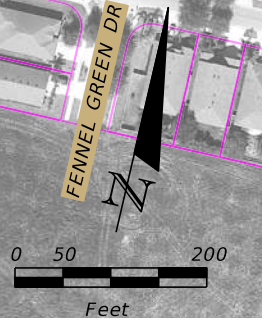
Inwood Consulting Engineers, Inc.  
 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765  
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
7





LEGEND	
BASIN 6	
WETLAND	
OFFSITE BASIN	
PARCEL LINE	
FLOW ARROW	
FLOODZONE A	
FLOODZONE AE	
CROSS DRAIN	

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
8



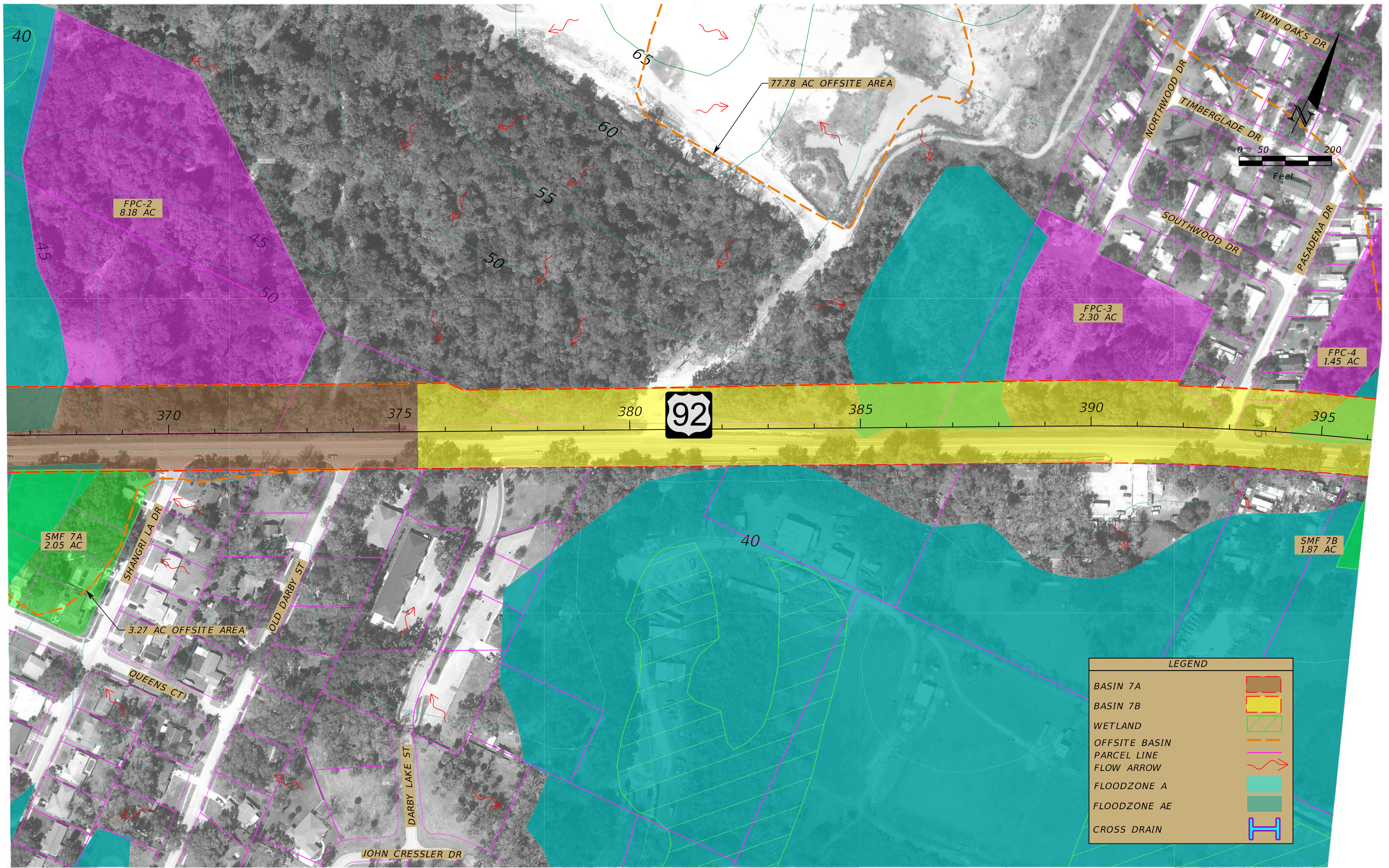
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DATE	DESCRIPTION	DATE	DESCRIPTION

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92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
9



REVISIONS			
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
10



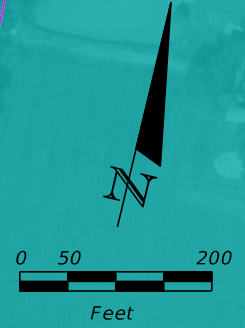
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
11



LEGEND	
BASIN 8	
BASIN 9	
WETLAND	
OFFSITE BASIN	
PARCEL LINE	
FLOW ARROW	
FLOODZONE A	
FLOODZONE AE	
CROSS DRAIN	

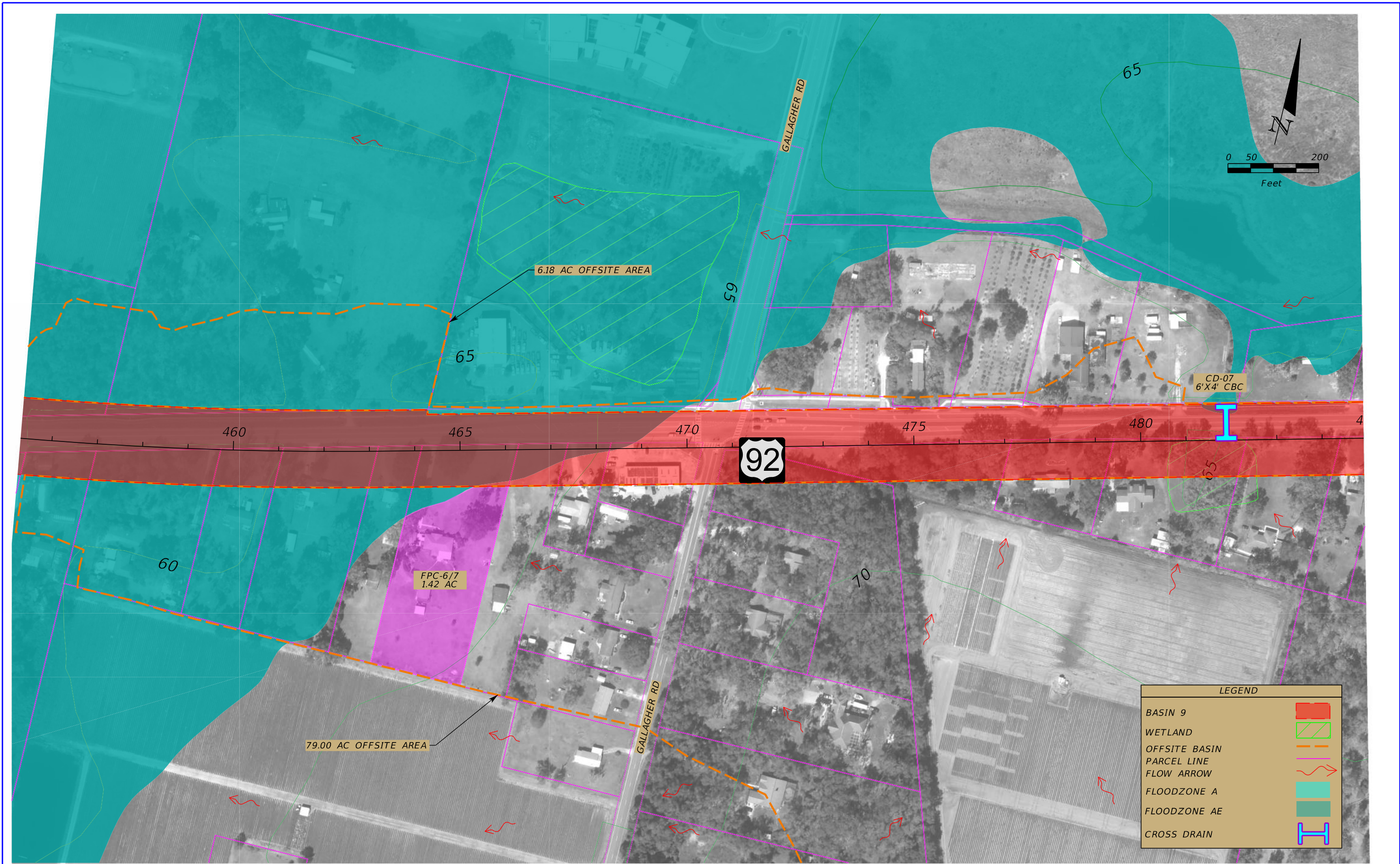
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92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
12



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
13



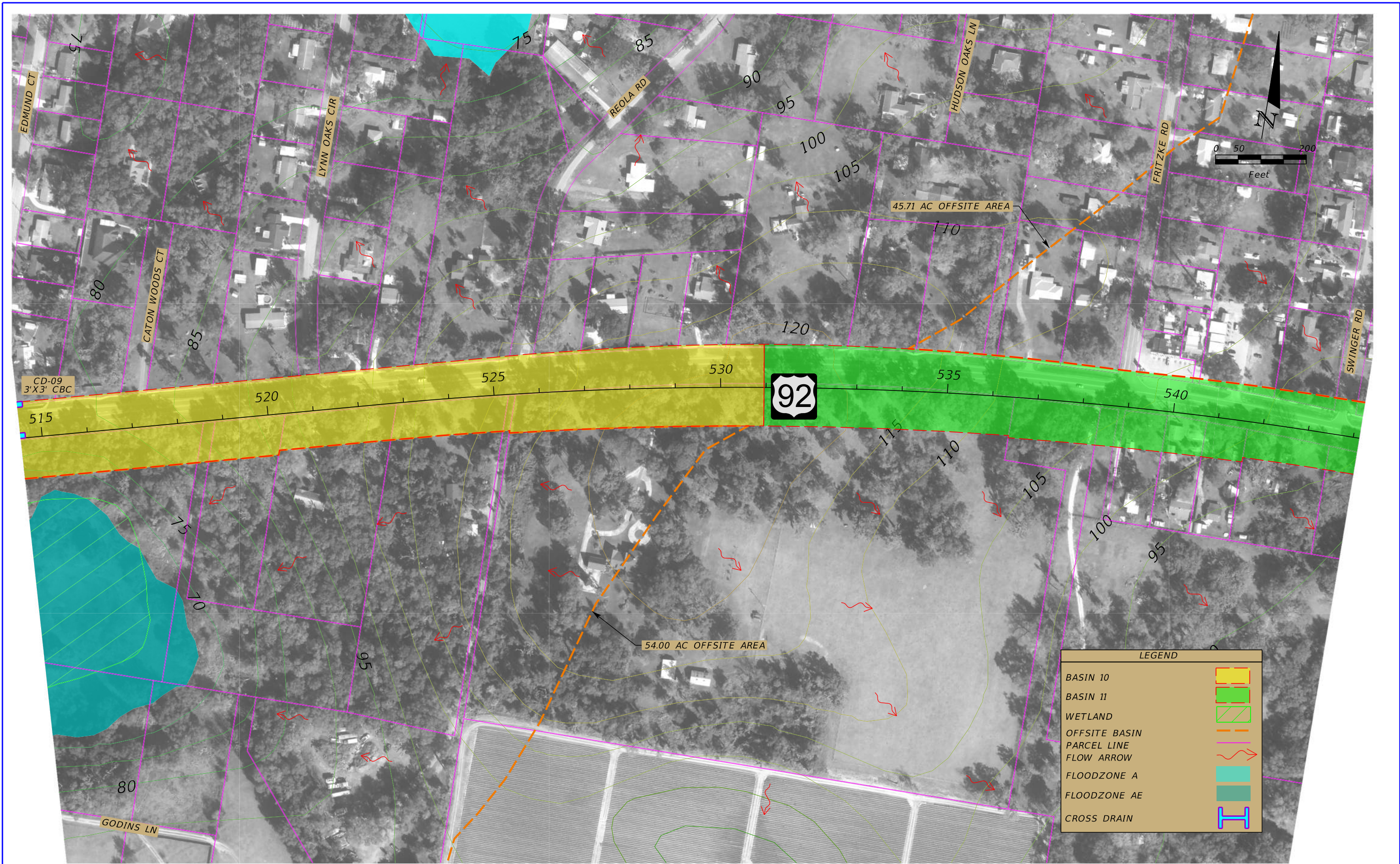
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92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
14



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

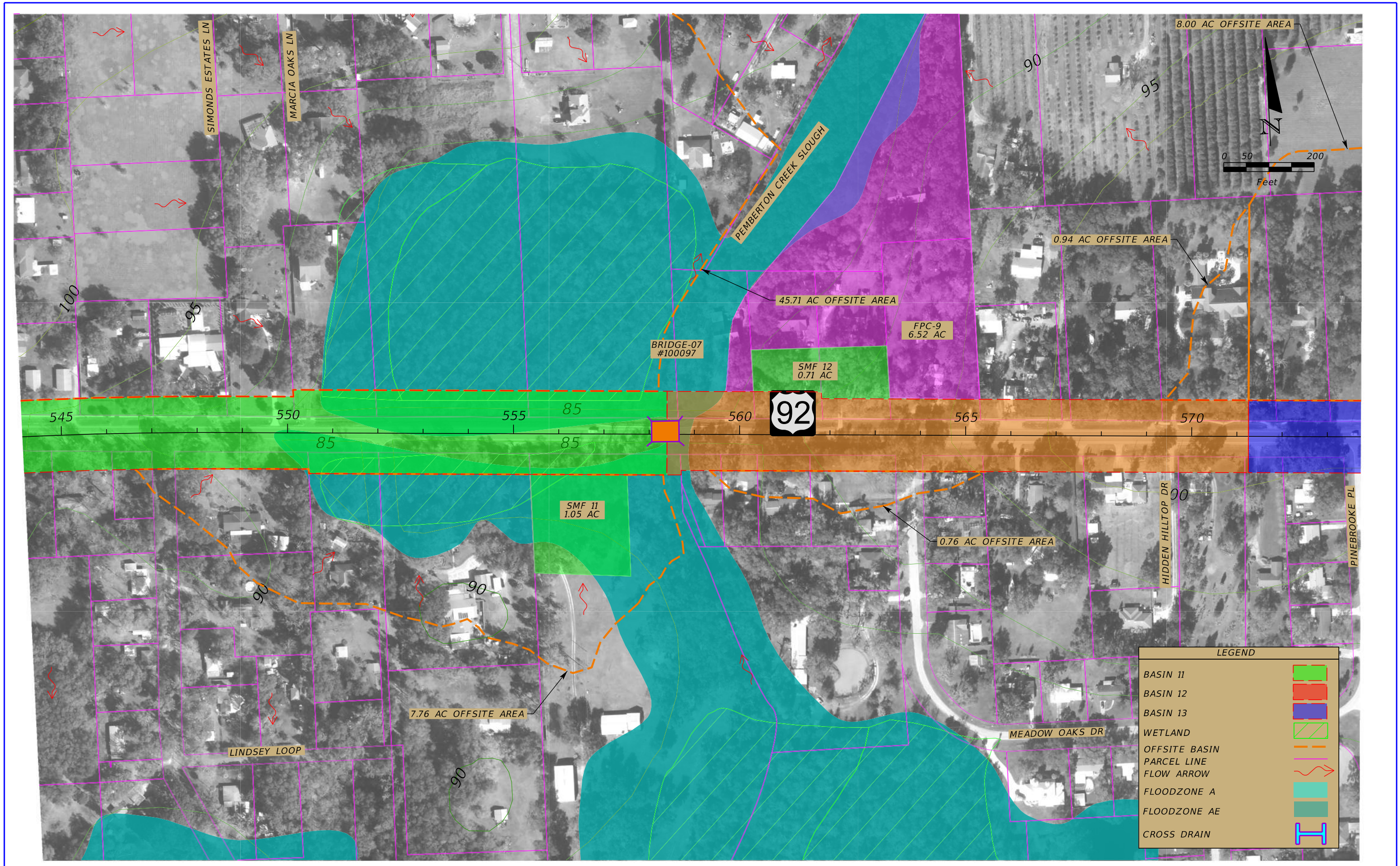
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
92	HILLSBOROUGH	435749-1-22-01

**BASIN MAPS**

SHEET NO.  
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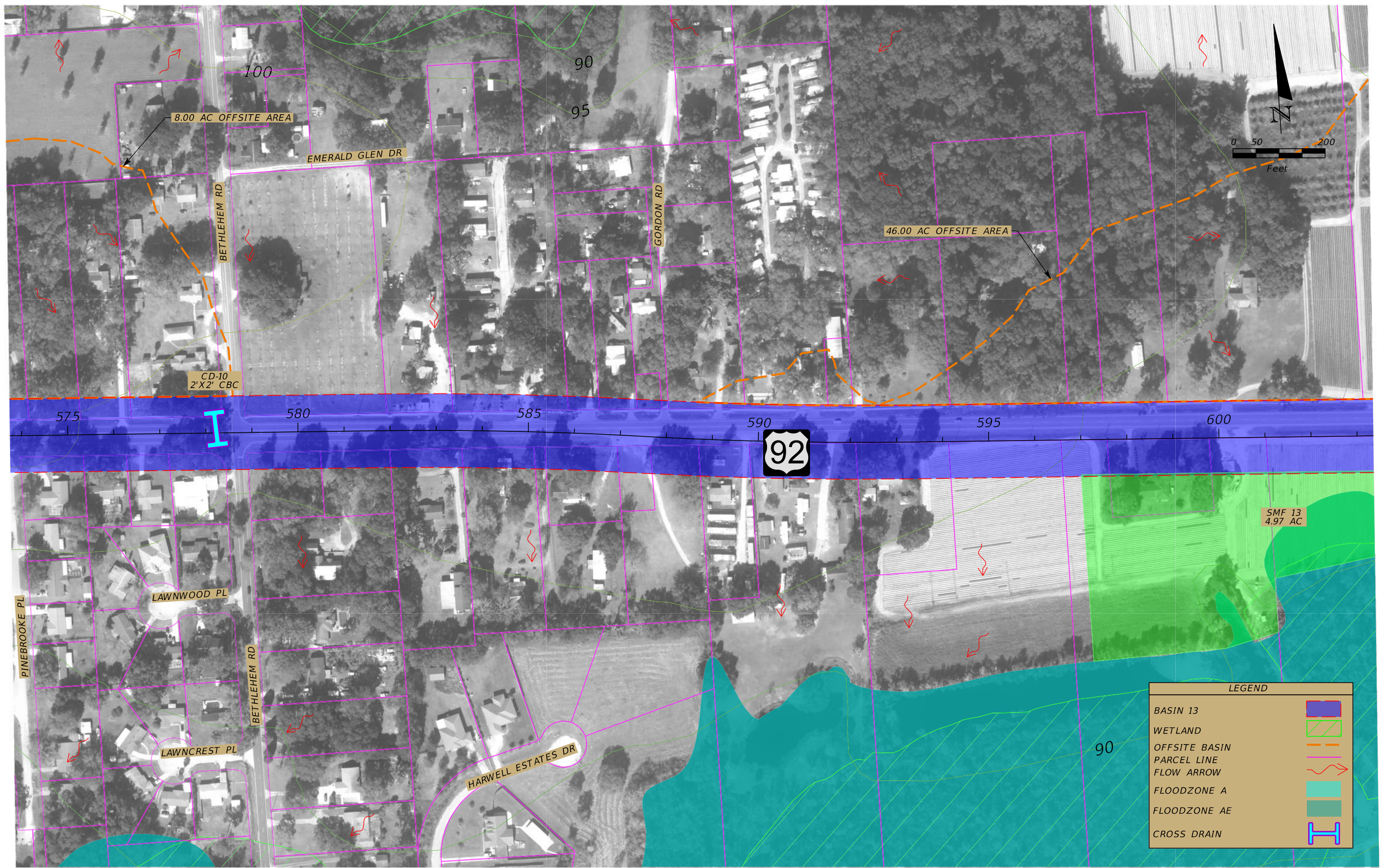
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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**BASIN MAPS**

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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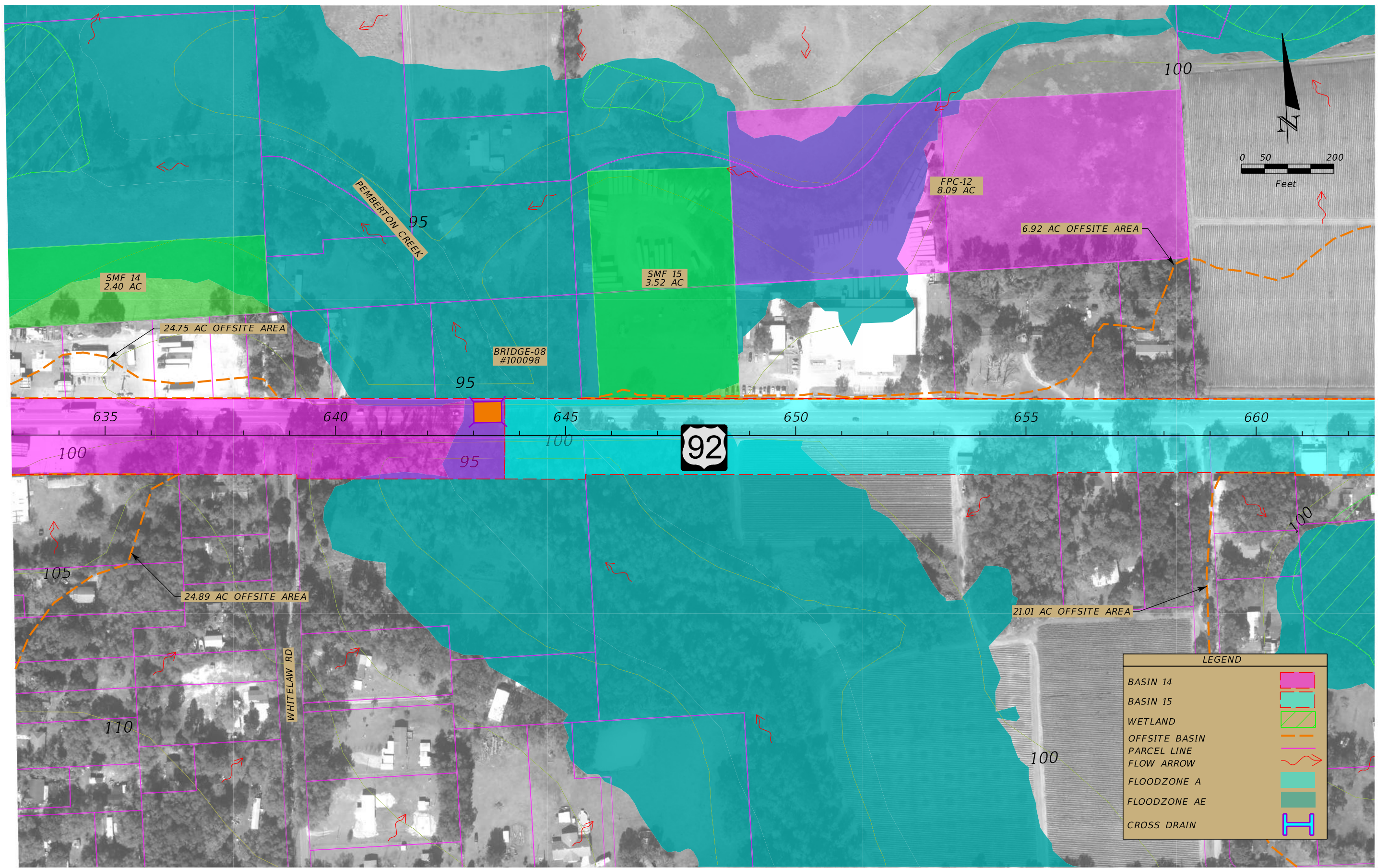
**BASIN MAPS**

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17



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					92	HILLSBOROUGH	435749-1-22-01	18

**BASIN MAPS**



LEGEND	
BASIN 14	
BASIN 15	
WETLAND	
OFFSITE BASIN	
PARCEL LINE	
FLOW ARROW	
FLOODZONE A	
FLOODZONE AE	
CROSS DRAIN	

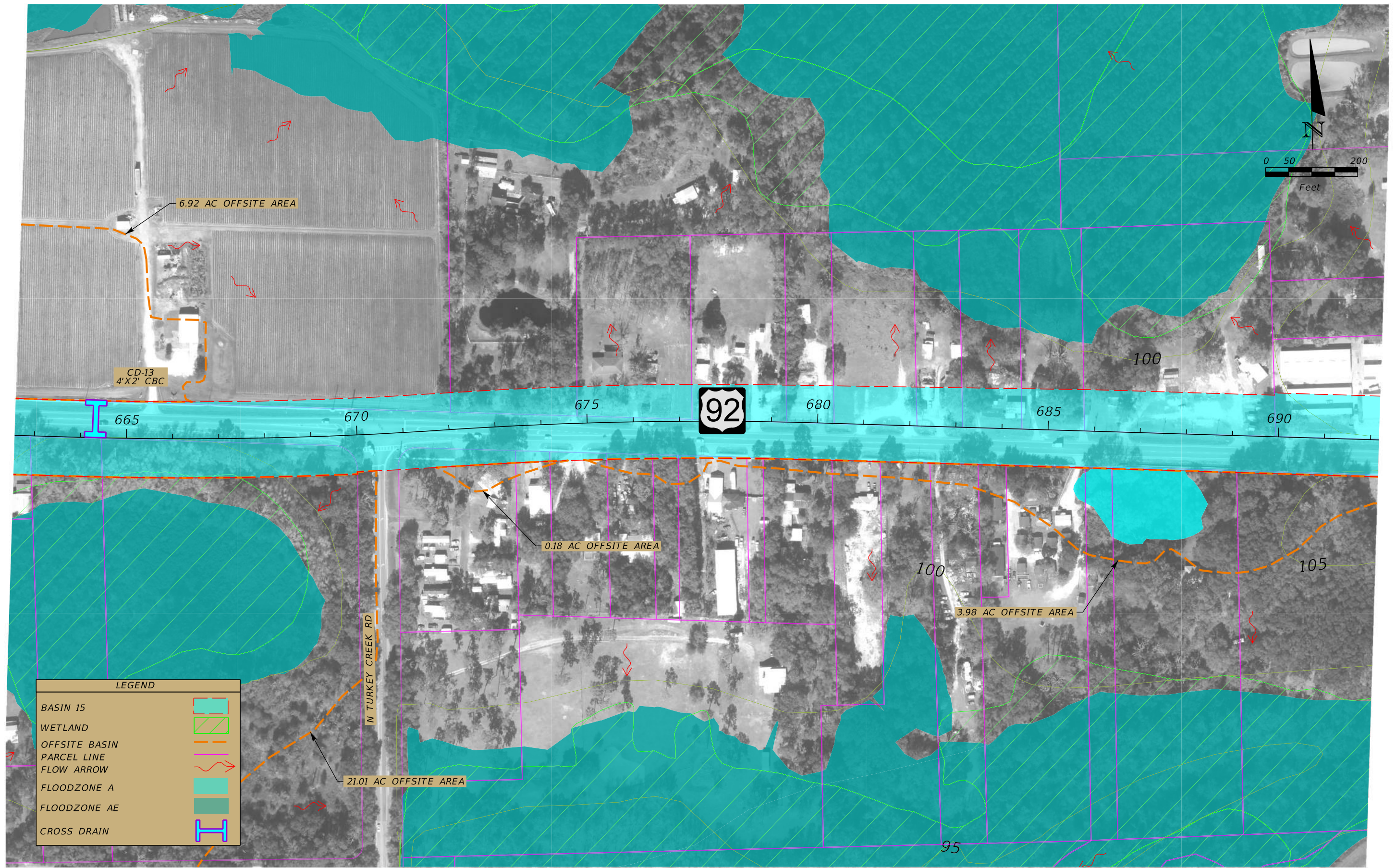
REVISIONS			
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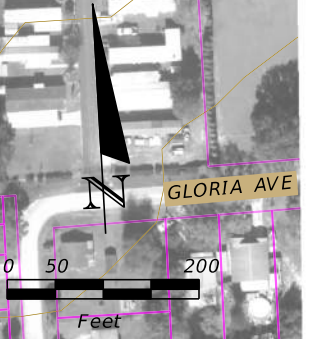
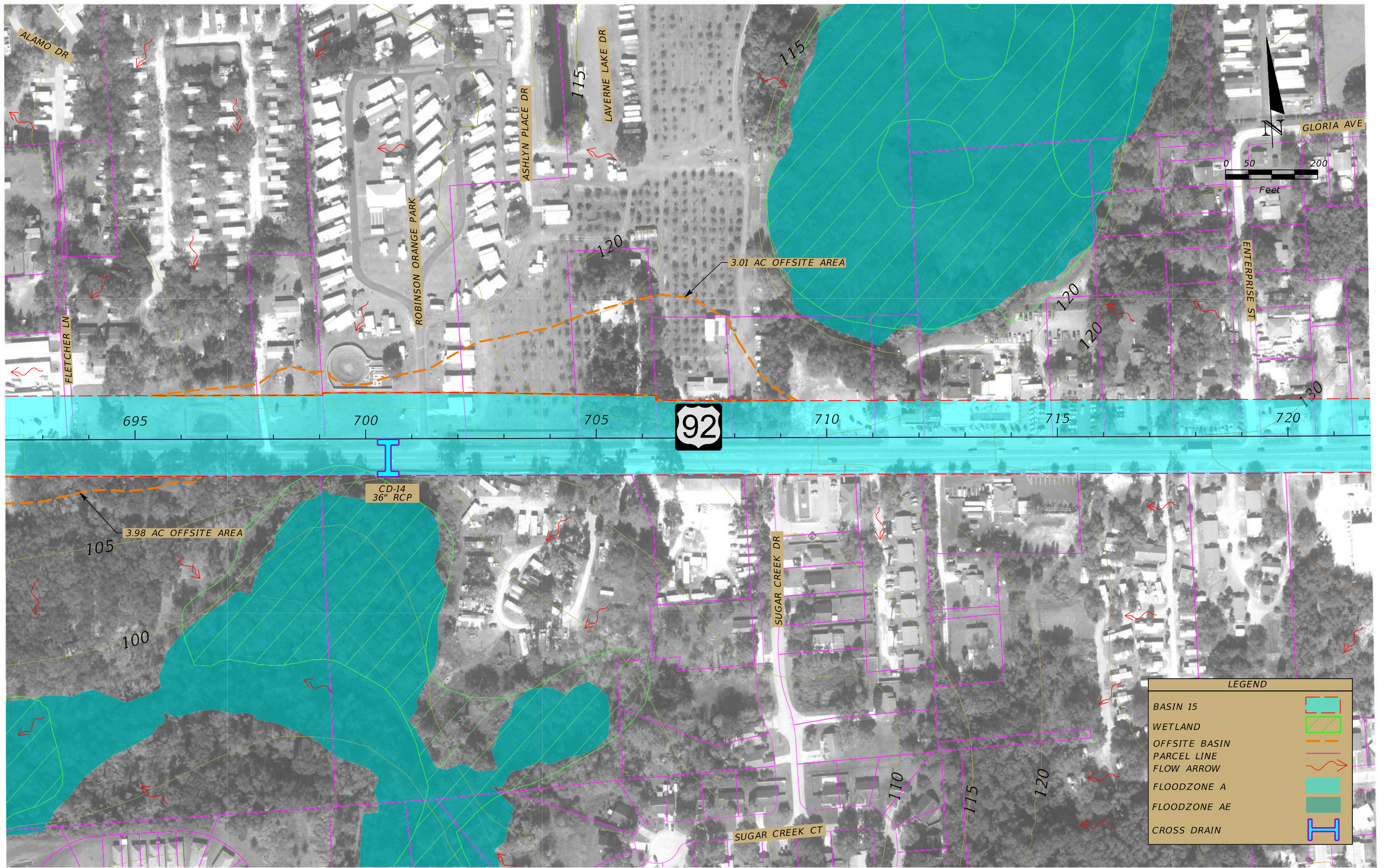
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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**BASIN MAPS**

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**19**



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DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					92	HILLSBOROUGH	435749-1-22-01		



LEGEND	
BASIN 15	
WETLAND	
OFFSITE BASIN	
PARCEL LINE	
FLOW ARROW	
FLOODZONE A	
FLOODZONE AE	
CROSS DRAIN	

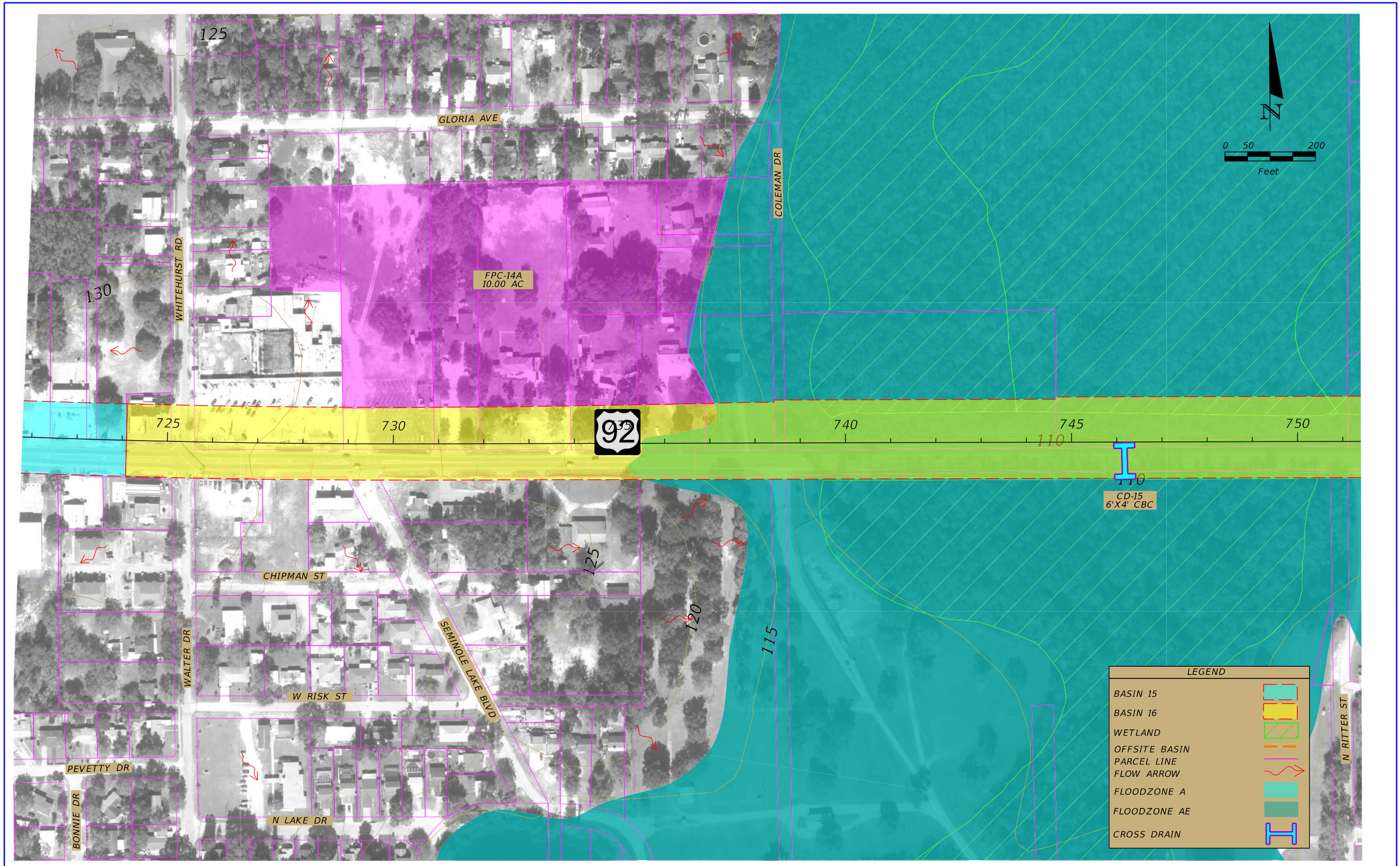
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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REVISIONS			
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**BASIN MAPS**

SHEET NO.  
22



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

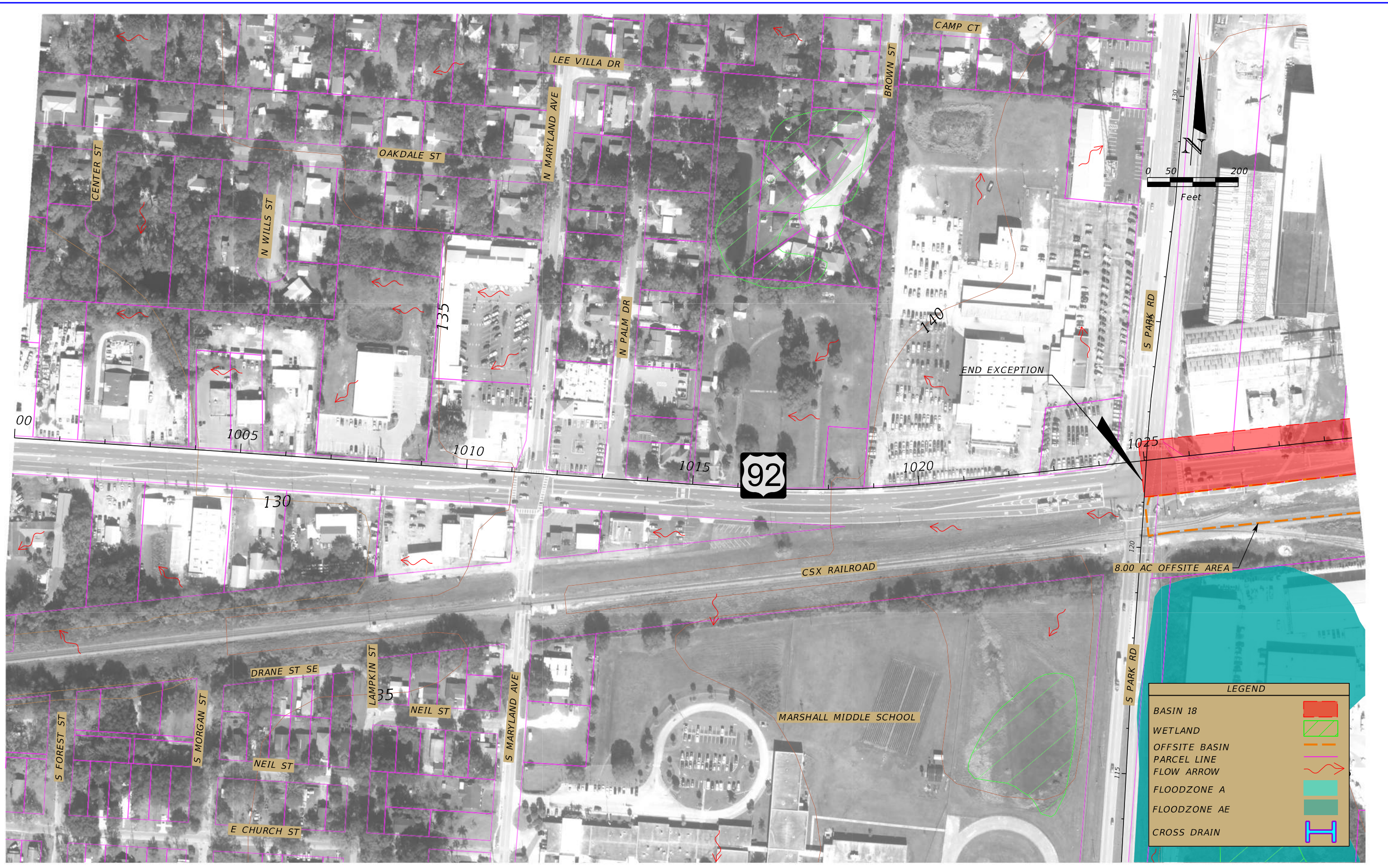
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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**BASIN MAPS**

SHEET NO.  
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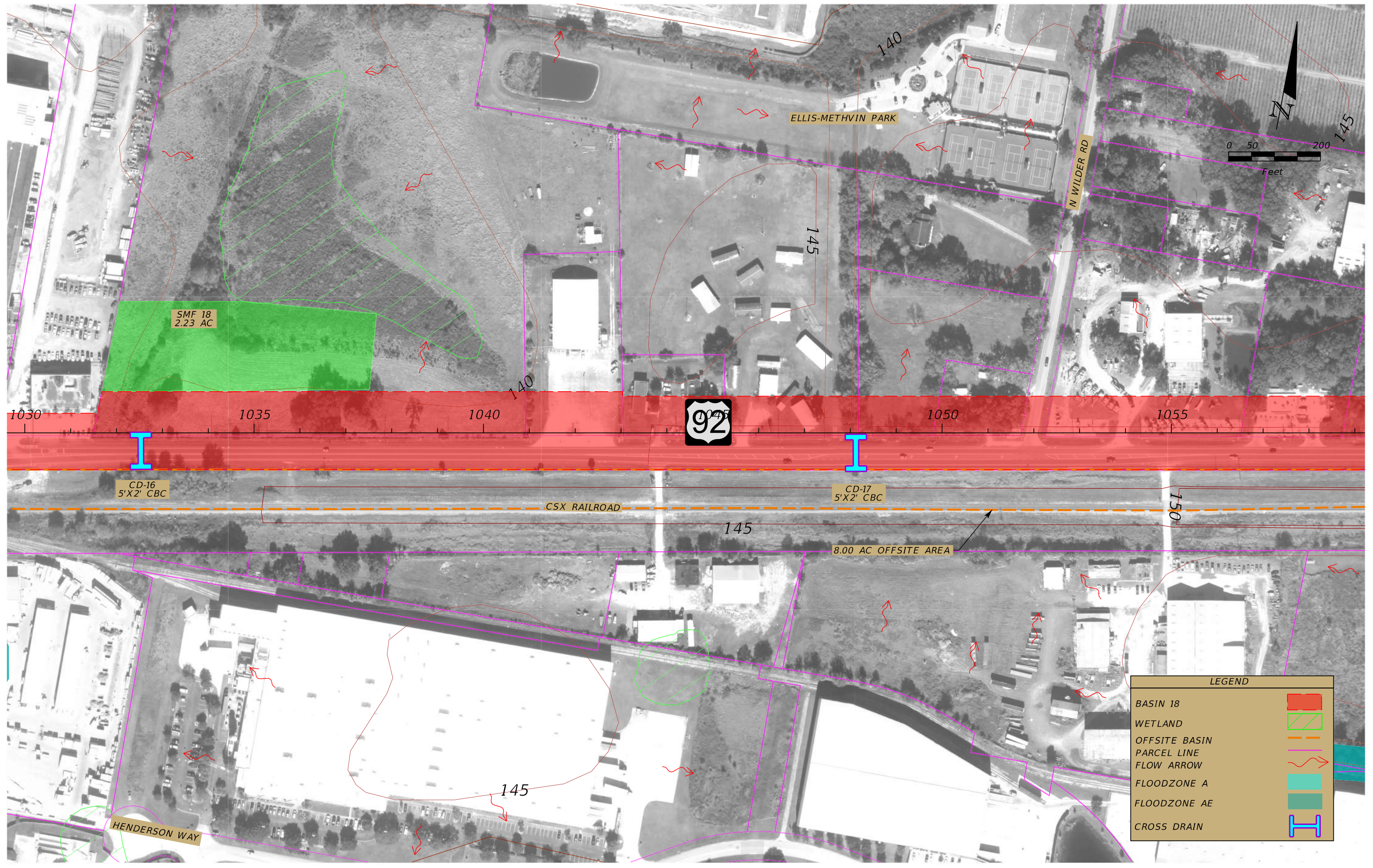
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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**BASIN MAPS**

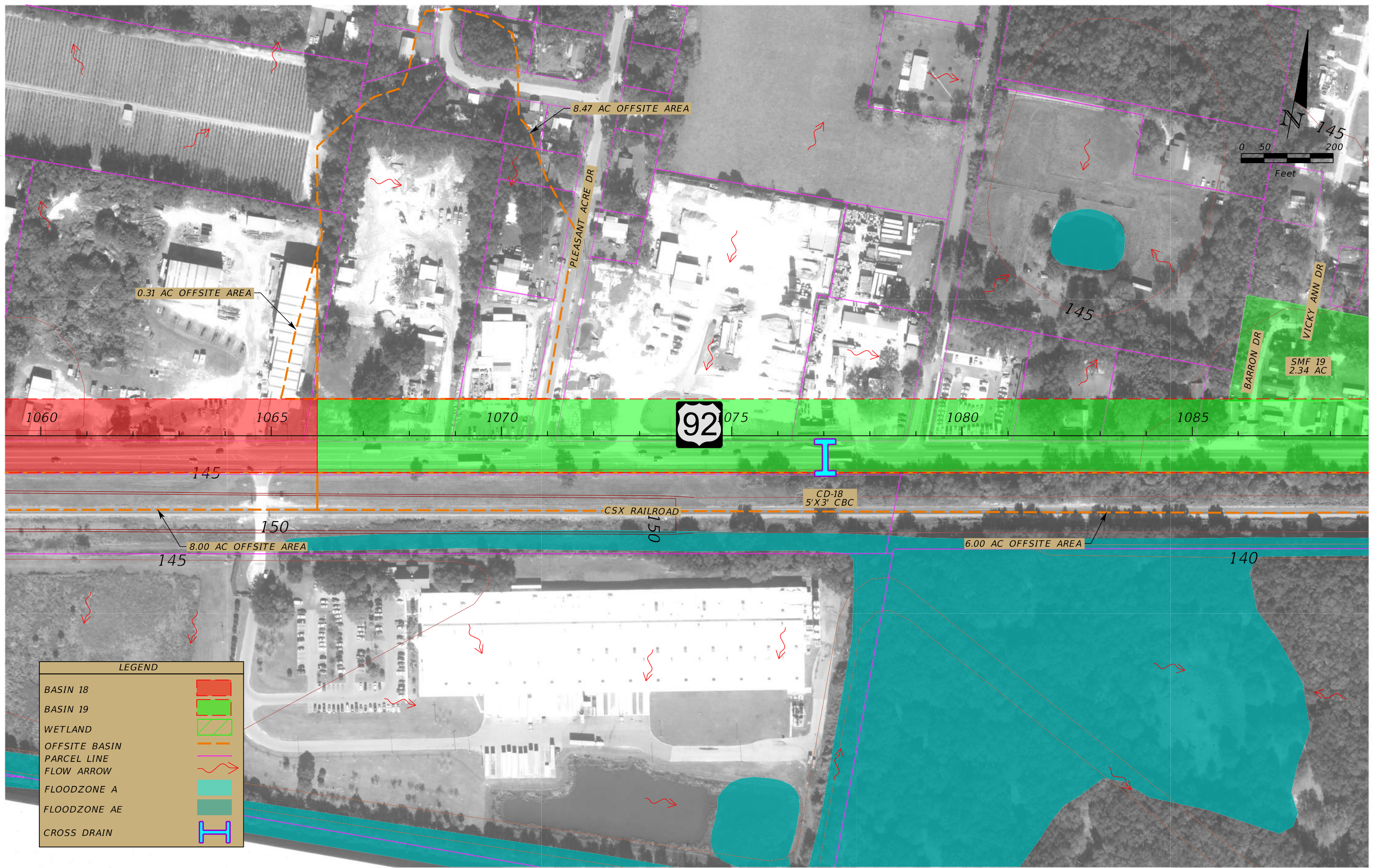
SHEET NO.  
24



LEGEND	
BASIN 18	
WETLAND	
OFFSITE BASIN	
PARCEL LINE	
FLOW ARROW	
FLOODZONE A	
FLOODZONE AE	
CROSS DRAIN	

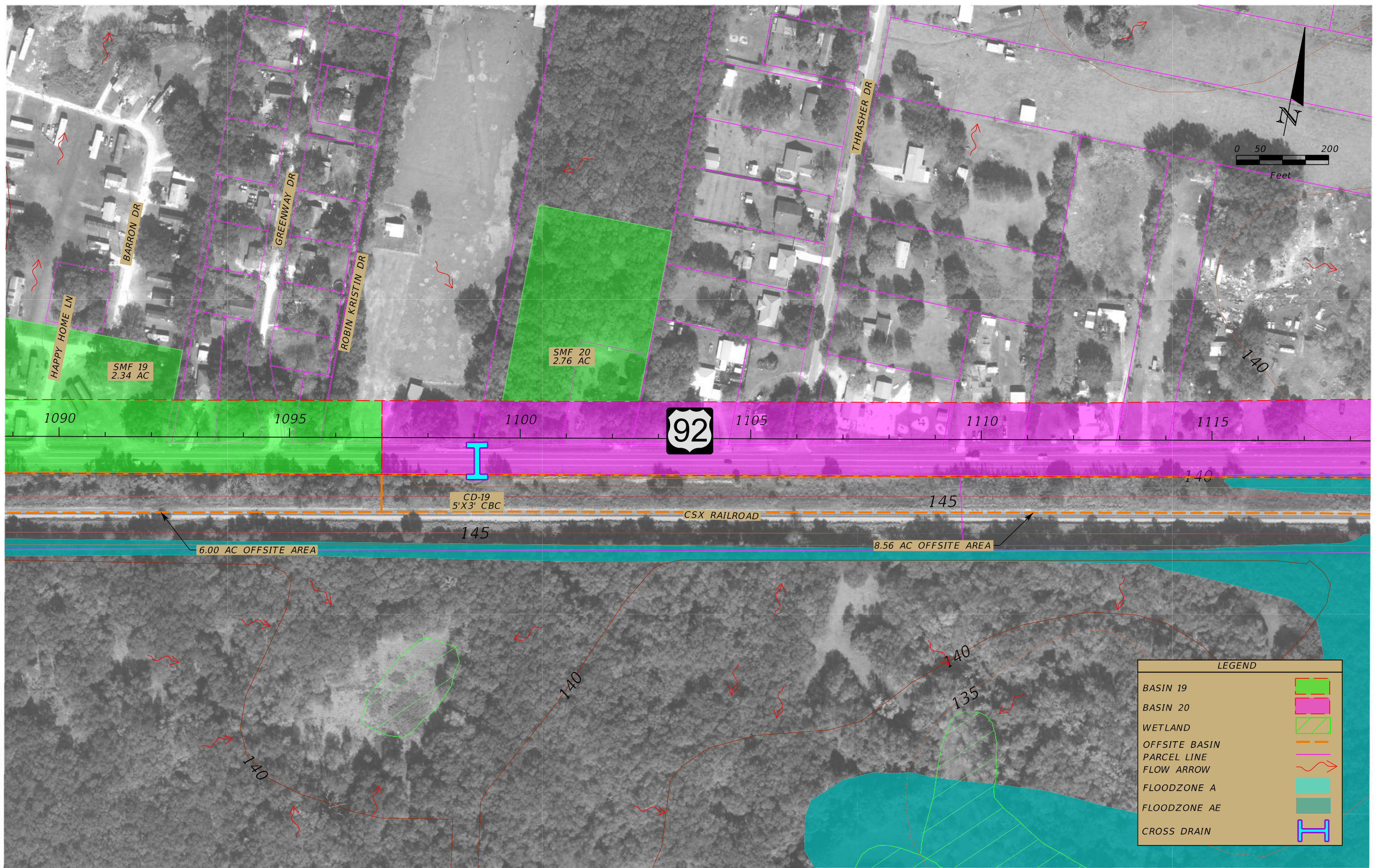
REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
				92	HILLSBOROUGH	435749-1-22-01	25

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LEGEND	
BASIN 18	
BASIN 19	
WETLAND	
OFFSITE BASIN	
PARCEL LINE	
FLOW ARROW	
FLOODZONE A	
FLOODZONE AE	
CROSS DRAIN	

REVISIONS				Inwood Consulting Engineers, Inc. 3000 Dovera Drive, Suite 200, Oviedo, Florida 32765 P 407.971.8850	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			<b>BASIN MAPS</b>  SHEET NO. 26
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					92	HILLSBOROUGH	435749-1-22-01	



LEGEND	
BASIN 19	
BASIN 20	
WETLAND	
OFFSITE BASIN	
PARCEL LINE	
FLOW ARROW	
FLOODZONE A	
FLOODZONE AE	
CROSS DRAIN	

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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**BASIN MAPS**

SHEET NO.  
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LEGEND	
BASIN 20	
BASIN 21	
WETLAND	
OFFSITE BASIN	
PARCEL LINE	
FLOW ARROW	
FLOODZONE A	
FLOODZONE AE	
CROSS DRAIN	

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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**BASIN MAPS**

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REVISIONS			
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
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**BASIN MAPS**

SHEET NO.  
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LEGEND	
BASIN 21	
WETLAND	
OFFSITE BASIN	
PARCEL LINE	
FLOW ARROW	
FLOODZONE A	
FLOODZONE AE	
CROSS DRAIN	

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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**BASIN MAPS**

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