

# STORMWATER MANAGEMENT FACILITY (SMF) SITING REPORT

**Florida Department of Transportation**

**District 7**

**I-275 (SR 93) Design Change Re-evaluation**

**Project Development and Environment Study  
from south of 54th Avenue South to north of 4th Street North**

**Pinellas County, Florida**

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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 Title 23, Section 327 of the United States Code (23 U.S.C. § 327) and a Memorandum of Understanding dated December 14, 2016, and executed by FHWA and FDOT.

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# 1 Introduction

## 1.1 Project Description

The Florida Department of Transportation (FDOT), District Seven is conducting a Design Change Re-evaluation to evaluate and document proposed changes to the originally approved Type II Categorical Exclusion (CE) and subsequent Re-evaluation for I-275 (SR 93) from south of 54th Avenue South to north of 4th Street North in Pinellas County, Florida. A Project Development and Environment (PD&E) study was conducted for the 16.3-mile corridor to analyze the need for operational improvements and evaluate the location, conceptual design, and social, economic, and environmental effects of any proposed improvements. Following a Public Hearing held on September 29, 2015, FHWA approved the Type II CE for this project on July 15, 2016.

Following approval of the Type II CE, FDOT performed a Design Change Re-evaluation in 2017 to evaluate a change to the approved Typical Section of Segment C (from Dr. MLK, Jr. Boulevard to north of 4th Street North). The 2017 Re-evaluation assessed the repurposing of one of the two approved express lanes to accommodate the provision of three general use through lanes, one auxiliary lane, and one express lane in each direction for this segment of the study corridor. The 2017 Design Change Re-evaluation was approved by FDOT on April 26, 2017.

FDOT is currently conducting another Design Change Re-evaluation to assess impacts of accommodating improvements for a second express lane in Segment C and the addition of two express lanes in Segment B from north of I-375 to south of Gandy Boulevard. These proposed improvements would tie-in with planned improvements to the Howard Frankland Bridge (FPID 422904-2 and 422904-4). This re-evaluation also analyzes replacing the I-275 ramp bridges on 4th Street North over Big Island Gap.

The current re-evaluation also analyzes replacing the I-275 ramp bridges on 4th Street North over Big Island Gap, providing trail connections from the Howard Frankland Bridge to 4th Street North and Ulmerton Road, and ramp connection modifications at the Gandy Boulevard and Gateway Expressway interchange areas. To meet drainage and stormwater requirements, pond sites will be needed to accommodate new impervious surface due to widening to accommodate express lanes. Several of these new pond site locations will be outside of the existing right of way.

## 1.2 Purpose and Need

The purpose of this project is to provide for operational improvements that maximize capacity within the I-275 corridor, improve lane continuity, and connect I-275 within Pinellas County to the future network of express lanes planned for the Tampa Bay Region. Improvements are needed within the I-275 corridor to help improve existing traffic congestion, enhance safety, and better accommodate future travel demands associated with projected growth in employment and population. The addition of express lanes is included in the Pinellas County Metropolitan Planning Organization (MPO) 2040 Long Range Transportation Plan (LRTP).

I-275 is a vital link in the local and regional transportation network and serves as a critical evacuation route. As a major north-south corridor through Pinellas County, I-275 links the Tampa Bay Region with the remainder of the state and the nation supporting commerce, trade, and tourism. Preserving the

operational integrity and regional functionality of I-275 is critical to the mobility and economy of the Tampa Bay Region.

### 1.3 Description of the Design Change

The current Design Change Re-evaluation includes a typical section change to extend two buffer separated express lanes in both directions from I-375 to north of 4th Street North, as well as a 12-ft wide outside shoulder to accommodate bus-on-shoulder operations from I-375 to Gandy Boulevard. This concept supersedes the 2017 Design Change Re-evaluation concept. The current Design Change Re-evaluation also includes trail connections from the Howard Frankland Bridge to 4th Street North and Ulmerton Road. To accommodate the new trail connection, the 4th Street North bridge over Big Island Gap will undergo either widening or reconstruction.

The Gateway Expressway interchange area will also be modified under this re-evaluation. Ramps located to the south of the Gateway area will carry drivers from northbound I-275 Express Lanes to Gateway Expressway, as well as carry drivers from the Gateway Expressway to southbound I-275 Express Lanes. In addition, access to southbound I-275 from the Gandy Boulevard interchange will be modified by connecting the westbound-to-southbound loop on ramp and the eastbound-to-southbound on ramp into a frontage road system that provides one entry point onto southbound I-275. Finally, additional drainage and stormwater requirements, such as pond sites, will be needed to accommodate the new impervious surface due to the express lane widening. Several of these new pond site locations will be outside of the existing right of way.

### 1.4 Purpose of this Report

This Stormwater Management Facility (SMF) Siting Report has been prepared as part of the Design Change Re-evaluation to analyze stormwater treatment and attenuation requirements for the basins affected by the addition of two express lanes in Segment B from north of I-375 to south of Gandy Boulevard (Basins 11 through 20). In addition, this report includes the analysis of alternative SMF sites for basins within Segment A which required right-of-way for stormwater management (Basins 2 and 7) as determined in the Alternative Stormwater Management Facility Technical Memorandum (April 2015).

This SMF Siting Report presents potential SMF site locations for meeting applicable stormwater management criteria that are hydraulically feasible and environmentally permissible based on the best available information. Alternatives were analyzed and evaluated for the following:

- Environmental impacts including wetlands, upland habitat and protected species involvement
- Cultural resources
- Petroleum and hazardous materials contamination
- Economic factors including construction costs and estimated land costs
- Hydrologic factors such as soil types and seasonal high groundwater table (SHWT) elevations
- Floodplains
- Stormwater conveyance and hydraulic parameters

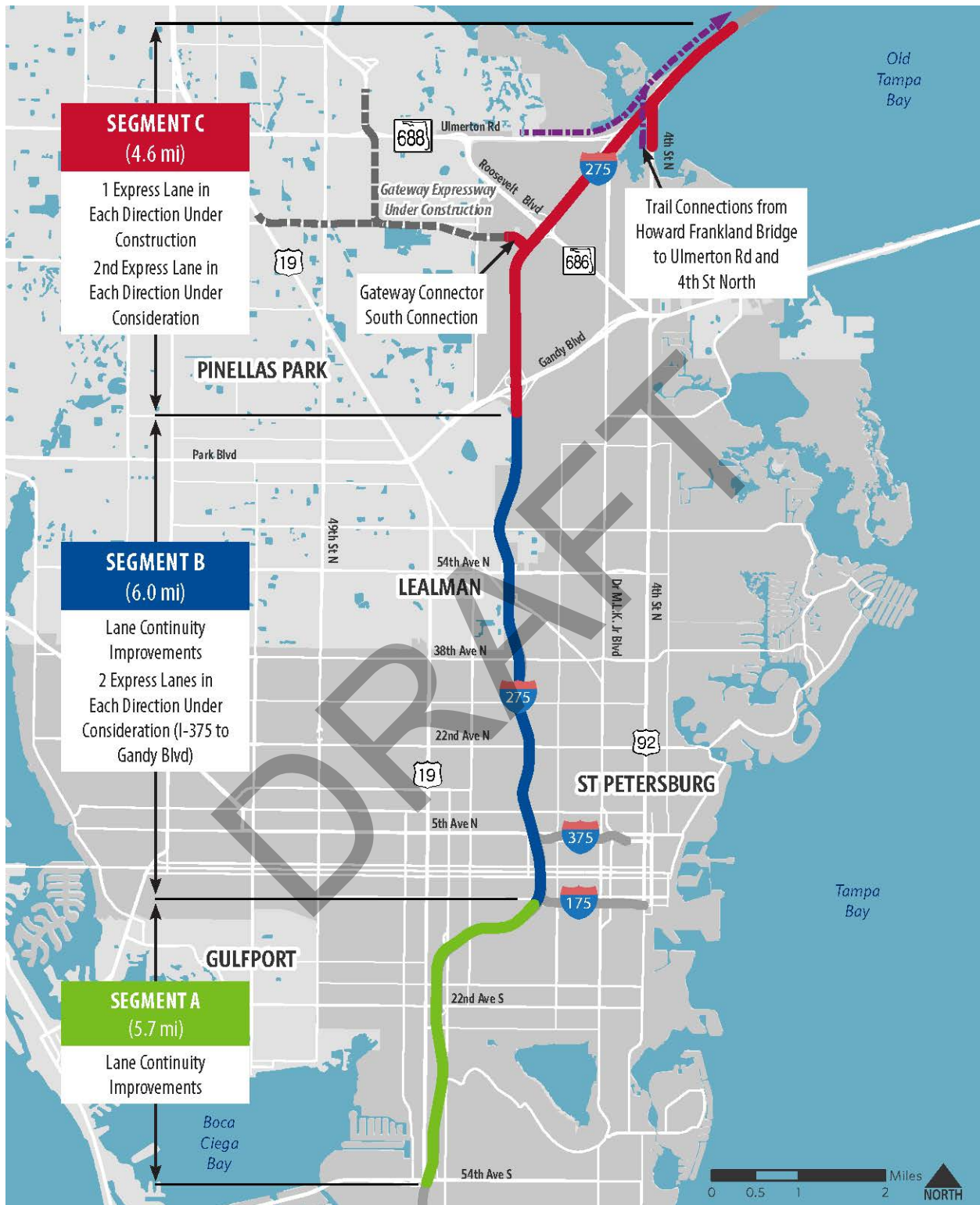


Figure 1.1. Project Location Map

## 2 Stormwater Management Design Criteria

The design of the stormwater management facilities (ponds) for this project is regulated by the rules and criteria set forth by the Florida Department of Transportation (FDOT), the Southwest Florida Water Management District (SWFWMD) and the Florida Department of Environmental Protection (FDEP). The requirements of each agency are discussed in the following sections.

### 2.1 FDOT Criteria

The design of stormwater management systems for Department projects shall comply with the water quality, rate, and quantity requirements of Section 334.044(15), F.S., Chapter 14-86, F.A.C., Rules of the Department of Transportation only in closed basins or areas subject to historical flooding.

#### 2.1.1 Water Quality

FDOT's requirement is to meet or exceed the applicable regulatory agency criteria.

#### 2.1.2 Water Quantity

FDOT's requirement is to meet or exceed the applicable regulatory agency criteria. There are no closed basins within the limits of this PD&E Study.

#### 2.1.3 Stormwater Management Facilities

Based on the 2019 FDOT Drainage Manual and the 2017 FDOT Drainage Design Guide, the following criteria were used in the design of the SMF alternatives for this project.

- Stormwater management facilities shall be designed with a minimum 20' wide maintenance berm and sloped no steeper than 1:8 (vertical: horizontal) toward the SMF bottom.
- Side slopes will be no steeper than 1:4 (vertical: horizontal) out to a depth of two feet below the control elevation.
- One (1) foot of freeboard is required above the maximum design stage. The freeboard shall be measured from the inside edge of the maintenance berm.

Please refer to **Appendix E** for *Figure 5.1 Minimum Clearance Retention-Detention Ponds*, excerpted from the 2019 FDOT Drainage Manual.

### 2.2 SWFWMD Criteria

The design of the project stormwater management facilities will comply with the requirements of Chapter 40D-4, F.A.C., rules of the Southwest Florida Water Management District.

#### 2.2.1 Water Quality

Dry retention systems require treatment of the first one-half inch ( $\frac{1}{2}$ " ) of stormwater runoff from the contributing drainage area.

Wet detention systems require treatment of the first one inch (1") of stormwater runoff from the contributing drainage area.

The contributing drainage area is defined as follows:

- For off-line treatment systems and on-line treatment systems, including wet detention, which provide storage of the treatment volume off-line from the primary conveyance path of flood discharges, use the area of new pavement.
- For all other on-line treatment systems, including wet-detention, use the entire on-site directly connected impervious areas contributing to the system; directly connected impervious areas are those new and existing pavement areas connected to the treatment systems by pavement or pipe that contribute untreated runoff.

Projects discharging directly into Outstanding Florida Waters (OFW) shall be required to provide treatment for a volume 50 percent more than required for the selected treatment system.

When alterations involve extreme hardship, in order to provide direct treatment of new project area, the District will consider proposals to satisfy the overall public interest that shall include equivalent treatment of alternate existing pavement areas to achieve the required pollution abatement. For example, existing untreated contributing areas not otherwise required to be included for treatment may be included for treatment by the system in lieu of direct treatment of new project area when the pollution abatement is equivalent and benefits the same receiving waters.

Existing treatment capacity being displaced by any roadway project will require additional compensating treatment volume.

For dry retention systems, the total treatment volume shall again be available within 72 hours, however, only that volume which can again be available within 36 hours may be counted as part of the volume required for water quantity storage.

For wet detention systems, include a minimum of 35 percent littoral zone, concentrated at the outfall, for biological assimilation of pollutants. The percentage of littoral zone is based on the ratio of vegetated littoral zone to the surface area of the pond at the control elevation. The littoral zone shall be no deeper than 3.5 feet below the design overflow elevation. The treatment volume should not cause the pond level to rise more than 18 inches above the control elevation. The wet detention system's treatment volume shall be discharged in no less than 120 hours (5 days) with no more than one-half the total volume being discharged within the first 60 hours (2.5 days). Due to the detention time required for wet detention systems, only that volume which drains below the overflow elevation within 36 hours may be counted as part of the volume required for water quantity storage.

Treatment of off-site areas is not required.

## 2.2.2 Water Quantity

For a project or portion of a project located within an open drainage basin, the allowable discharge is:

- Historic discharge, which is the peak rate at which water leaves a parcel of land by gravity under existing site conditions, or the legally allowable discharge at the time of permit application; or
- Amounts determined in previous District permit actions.

Unless otherwise specified, off-site discharges and peak stages for the existing and developed conditions shall be computed using the Southwest Florida Water Management District's 24-hour, 25-year rainfall maps and the Natural Resources Conservation Service type II Florida Modified 24-hour rainfall distribution with an antecedent moisture condition II.

Please refer to **Appendix E** for Table D-1: Rainfall Ratios (Accumulated 24-Hour Total), excerpted from the SWFWMD Environmental Resource Permit Applicant's Handbook Volume II (June 2018), Appendix A, Part D - Project Design Aids.

## 2.3 FDEP Criteria

The design of the project stormwater management facilities will comply with the requirements of Chapter 62-302, F.A.C., rules of the Florida Department of Environmental Protection.

### 2.3.1 Impaired Waters

The freshwater segment of Joe's Creek (Waterbody Identification (WBID) 1668A) in Pinellas County is listed as an impaired water body for dissolved oxygen, nutrients, and Biochemical Oxygen Demand (BOD). A Total Maximum Daily Load (TMDL) for the freshwater segment was prepared by the U.S. Environmental Protection Agency (EPA) and released in September 2007. The TMDL indicates a target pollutant load reduction of 49% for total phosphorus and 49% for total nitrogen.

Basins 14, 15 and 16 discharge to Joe's Creek; therefore, a pre-development versus post-development pollutant loading analysis will be required for these basins. The University of Central Florida's BMPTRAINS model spreadsheet will be used to calculate pollutant loadings for this SMF Siting Report.

## 2.4 Permits

Permits are expected to be required from the following agencies:

- Southwest Florida Water Management District
  - Environmental Resource Permit
- United States Army Corps of Engineers
  - Section 404, Dredge and Fill Permit
- Florida Department of Environmental Protection
  - National Pollutant Discharge Elimination System Permit



## 3 Drainage Description

### 3.1 Pinellas County Drainage Basins

The project crosses the following Pinellas County Watersheds, from south to north:

#### Frenchman's Creek Watershed (#48 on Figure in Appendix E)

Frenchman's Creek watershed is located in southern Pinellas County and lies entirely within the City of St. Petersburg. The basin contains approximately 2,400 acres of land, most of which is designated on the Future Land Use Map as residential urban, residential low and medium, commercial general, residential/office general, residential/office/retail, recreation/open space, preservation, and public/semi-public. Minor outfalls can be found throughout the basin, none draining more than one square mile. The terrain is gently sloping toward Boca Ciega Bay on the west basin shore.

#### Booker Creek Watershed (#40 on Figure in Appendix E)

Booker Creek watershed is located in southeast Pinellas County and lies entirely within the City of St. Petersburg. Of the 3,100 acres in the basin, most of the land is designated on the Future Land Use Map as residential urban but also includes a complete urban mix of residential low medium, medium and high, commercial general, residential/office general, residential /office/retail, industrial limited and general, recreation/open space, and public/semi-public. The major outfall is approximately 4.5 miles in length and outlets into Bayboro Harbor. Because of the development, an accurate estimate of the basin permeability cannot be determined. Several storage areas are either existing or under construction along the outfall channel. The basin terrain is gently sloping at its upper end and steep sloping at its lower end.

#### Joe's Creek Watershed (#35 on Figure in Appendix E)

Joe's Creek watershed is located in south central Pinellas County and includes parts of the Cities of Pinellas Park and St. Petersburg, and all of Kenneth City. The basin contains approximately 9,500 acres of land, much of which is designated on the Future Land Use Map as residential low and residential urban, including a complete urban mix of residential low medium, medium and high, commercial general, mixed use, industrial, recreation/open space, preservation and public/semipublic.

Most of the undeveloped area is located in the low lying northwest corner of the basin where the major outfall empties into Cross Bayou Canal. The major outfall and its tributaries generally flow east to west, and total 11.2 miles in length. Most of the soil has a medium permeability rating, and many small (1 to 3 acres) natural water storage areas are located throughout subdivisions in the basin. Terrain is gently sloping in the east, steep sloping in the middle, and practically flat in the west basin area.

The freshwater segment of Joe's Creek (Waterbody Identification (WBID) 1668A) in Pinellas County is listed as an impaired water for dissolved oxygen, nutrients, and Biochemical Oxygen Demand (BOD). A Total Maximum Daily Load (TMDL) for the freshwater segment was prepared by the U.S. Environmental Protection Agency (EPA) and released in September 2007. The TMDL indicates a target pollutant load reduction of 49% for total phosphorus and 49% for total nitrogen.

Basins 14, 15 and 16 discharge to Joe's Creek and will be required to meet pre/post pollutant loading. The wet detention ponds in these basins will provide water quality treatment benefits but will not be



sufficient to meet TMDL requirements alone. A 1.0-acre dry retention pretreatment area will be required to supplement the wet detention ponds to meet the required nutrient removal efficiencies. The dry retention area will be located in the median of Basin 15, in series with the downstream wet pond. This dry pretreatment area should meet the required nutrient removal efficiencies for all three basins.

### Sawgrass Lake Watershed (#30 on Figure in Appendix E)

Sawgrass Lake watershed is located in east central Pinellas County, and parts of the Cities of Pinellas Park and St. Petersburg. The central northern portion of the basin consists of Sawgrass Lake Park (390 acres) and mostly undeveloped vacant land. Sawgrass Lake has a total surface area of 20 acres and has very little developed area along its shoreline. The herbaceous wetland around the lake provides valuable habitat for many bird and reptile species. Much of the 5,800 acre drainage area is designated on the Future Land Use Map as residential urban, including a complete urban mix of residential low, low medium, medium and high, commercial general, residential/ office/retail, industrial limited, recreation/open space, preservation and public/semi-public. The major outfall and its three tributaries total 7.6 miles in length, and outlet into Old Tampa Bay. Soil in the west half of the basin has a medium permeability rating. Terrain is fairly steep in the southern basin area, and gently sloping to flat in the remainder. Most of the eastern half of the basin is flood prone. Drainage from Sawgrass Lake flows into Riviera Bay through the Turner Creek ditch. A water control structure located on Sawgrass Park's eastern boundary controls the flow of drainage that is released into Turner Creek.

### Roosevelt Watershed (#23 on Figure in Appendix E)

Roosevelt watershed is located in east central Pinellas County and contains parts of the Cities of Pinellas Park and St. Petersburg. Most of the basin's 8,000 acres is designated on the Future Land Use Map as industrial limited and transportation /utility, with lesser amounts of residential urban, low medium and medium, residential/office general, commercial recreation, recreation/open space and preservation. Three separate major outfalls, totaling 9.5 miles in length, drain 5,000 acres of the watershed and outlet into Old Tampa Bay. Soil in the basin generally has a medium permeability rating. The terrain is flat with many natural water storage areas located throughout the basin. Due to its low elevation, most of the northeast area is flood prone. Also, extensive highway construction, gravel quarrying and landfill operations have occupied a good portion of the land. Adequate culvert capacity has been provided at most of the major highways which cross the basin.

## 3.2 Project Drainage Basins

### Basin 2

Basin 2 begins just north of 54th Avenue South (Sta. 100+00) and extends to 38th Avenue South (Sta. 146+40). The drainage area consists of the roadway right-of-way between these stations. The total basin area is 48.56 acres, with the existing impervious area equal to 15.30 acres. The estimated low edge of pavement (LEOP) elevation is 20.76 ft NGVD. The proposed improvements will generate approximately 2.72 acres of new impervious area. A wet detention pond within the existing right-of-way will be utilized to provide the required treatment and attenuation volumes. The basin drains to a cross drain at Sta. 114+15 and ultimately flows west into a canal which outfalls into Boca Ciega Bay.

## Basin 7

Basin 7 begins at Sta. 245+00 and extends to the I-175 interchange (Sta. 280+00). The drainage area consists of the I-275 roadway right-of-way between Sta. 245+00 to Sta. 260+00 (NB) and between Sta. 245+00 to Sta. 280+00 (SB), as well as a portion of I-175 WB. The total basin area is 26.70 acres, with the existing impervious area equal to 9.42 acres. The estimated LEOP elevation is 63.06 ft NGVD. The proposed improvements will generate approximately 1.60 acres of new impervious area. A wet detention pond will be utilized to provide the required treatment and attenuation volumes. The basin drains to a storm drain system at Sta. 271+96 that flows north along 20th Street South and eventually into Booker Creek.

## Basin 11

Basin 11 begins at 5th Avenue North (Sta. 316+50) and extends to north of 13th Avenue North (Sta. 346+85). The drainage area consists of the roadway right-of-way between these stations, as well the northernmost portion of the I-375 Interchange. The total basin area is 27.32 acres, with the existing impervious area equal to 12.08 acres. The estimated LEOP elevation is 60.66 ft NGVD. The proposed improvements will generate approximately 3.77 acres of new impervious area. A wet detention pond will be utilized to provide the required treatment and attenuation volumes. The basin drains to an existing 10'x9' concrete box culvert on the east side of I-275 and ultimately discharges into Booker Creek. Booker Creek flows south into Bayboro Harbor.

## Basin 12

Basin 12 begins north of 13th Avenue North (Sta. 346+85) and extends to Sta. 391+88. The drainage area consists of the roadway right-of-way between these stations, including the 22nd Avenue North Interchange. The total basin area is 41.31 acres, with the existing impervious area equal to 16.94 acres. The estimated LEOP elevation is 57.66 ft NGVD. The proposed improvements will generate approximately 6.08 acres of new impervious area. A wet detention pond will be utilized to provide the required treatment and attenuation volumes. The basin drains to an existing concrete box culvert on the west side of I-275 at Sta. 351+00 and ultimately discharges into Booker Creek. Booker Creek flows south into Bayboro Harbor.

## Basin 13

Basin 13 begins at Sta. 391+88 and extends to 30th Avenue North (Sta. 400+00). The drainage area consists of the roadway right-of-way between these stations. The total basin area is 5.70 acres, with the existing impervious area equal to 2.14 acres. The estimated LEOP elevation is 67.16 ft NGVD. The proposed improvements will generate approximately 1.65 acres of new impervious area. A wet detention pond will be utilized to provide the required treatment and attenuation volumes. The basin drains to an existing storm drain system on the west side of I-275 at Sta. 395+15. The existing storm drain flows west along 28th Avenue North and ultimately discharges into Booker Creek. Booker Creek flows south into Bayboro Harbor.

## Basin 14

Basin 14 begins at 30th Avenue North (Sta. 400+00) and extends to just south of 38th Avenue North (Sta. 425+25). The drainage area consists of the roadway right-of-way between these stations and includes the southern ramps for the 38th Avenue North Interchange. The total basin area is 23.90 acres, with the existing impervious area equal to 7.84 acres. The estimated LEOP elevation is 58.86

ft NGVD. The proposed improvements will generate approximately 5.00 acres of new impervious area. A wet detention pond within the existing right-of-way will be utilized to provide the required treatment and attenuation volumes. The basin drains to an existing storm drain system on the west side of I-275 at Sta. 423+88, discharges to the 25th Street N Outfall and ultimately into Joe's Creek. Joe's Creek flows west into Cross Bayou. This basin discharges to an impaired water body, Joe's Creek. Please refer to **Section 3.1** and **Section 4.3.2** for a detailed discussion and **Appendix D** for calculations.

#### Basin 15

Basin 15 begins just south of 38th Avenue North (Sta. 425+25) and ends at Sta. 446+00. The drainage area consists of the roadway right-of-way between these stations and includes the 38th Avenue North Interchange. The total basin area is 23.74 acres, with the existing impervious area equal to 9.90 acres. The estimated LEOP elevation is 49.56 ft NGVD. The proposed improvements will generate approximately 1.97 acres of new impervious area. A wet detention pond will be utilized to provide the required treatment and attenuation volumes. The basin drains to an existing storm drain system at Sta. 440+00 that flows west, ultimately into Joe's Creek. Joe's Creek flows west into Cross Bayou. This basin discharges to an impaired water body, Joe's Creek. Please refer to **Section 3.1** and **Section 4.3.2** for a detailed discussion and **Appendix D** for calculations.

#### Basin 16

Basin 16 begins at Sta. 446+00 and ends south of 54th Avenue North at Sta. 473+50. The drainage area consists of the roadway right-of-way between these stations. The total basin area is 19.98 acres, with the existing impervious area equal to 9.73 acres. The estimated LEOP elevation is 50.56 ft NGVD. The proposed improvements will generate approximately 3.57 acres of new impervious area. A wet detention pond will be utilized to provide the required treatment and attenuation volumes. The basin drains to an existing storm drain system at Sta. 453+25 that flows west, ultimately into Joe's Creek. Joe's Creek flows west into Cross Bayou. This basin discharges to an impaired water body, Joe's Creek. Please refer to **Section 3.1** and **Section 4.3.2** for a details and **Appendix D** for calculations.

#### Basin 17

Basin 17 begins at south of 54th Avenue North at Sta. 473+50 and extends to Sta. 328+00 (Station Equation:  $499+99.72 = 324+97.73$ ). The drainage area consists of the roadway right-of-way between these stations and includes the 54th Avenue North Interchange. The total basin area is 36.66 acres, with the existing impervious area equal to 13.93 acres. The estimated LEOP elevation is 25.25 ft NGVD. The proposed improvements will generate approximately 4.14 acres of new impervious area. A wet detention pond within the existing right-of-way will be utilized to provide the required treatment and attenuation volumes. The basin outfalls to an existing ditch on the east side of I-275 at Sta. 325+16. This existing ditch flows north within the I-275 right-of-way, ultimately discharging into the Turner Creek ditch which flows east into Riviera Bay.

#### Basin 18

Basin 18 begins at Sta. 328+00 and extends to the Gandy Boulevard Interchange at Sta. 421+17 (Sta. 440+00 for I-275 NB). The drainage area consists of the roadway right-of-way between these stations and includes the southwest, southeast and northeast quadrants of the Gandy Boulevard Interchange. The total basin area is 130.02 acres, with the existing impervious area equal to 38.45 acres. The estimated LEOP elevation is 11.59 ft NGVD. The proposed improvements will generate approximately 21.95 acres of new impervious area. A wet detention pond will be utilized to provide the required

treatment and attenuation volumes. The basin outfalls to a double box culvert at Sta. 386+65 that discharges into the Turner Creek ditch which flows east into Riviera Bay.

### Basin 19

Basin 19 begins at Sta. 421+17 and extends to just north of the Gandy Boulevard Interchange at Sta. 440+00. The drainage area consists of the roadway right-of-way between these stations and includes the northwest quadrant of the Gandy Boulevard Interchange. The total basin area is 73.20 acres, with the existing impervious area equal to 16.96 acres. The estimated LEOP elevation is 12.84 ft NGVD. The proposed improvements will generate approximately 2.21 acres of new impervious area. A wet detention pond within the existing right-of-way will be utilized to provide the required treatment and attenuation volumes. The basin outfalls to ditch west of the interchange via a double 24" pipe under Ramp C. This ditch flows southwest to a concrete box culvert under Gandy Boulevard and into Sawgrass Lake. Sawgrass Lake flows into Riviera Bay through the Turner Creek ditch. A water control structure located on Sawgrass Park's eastern boundary controls the flow of drainage that is released into Turner Creek.

### Basin 20

Basin 20 begins just north of the Gandy Boulevard Interchange at Sta. 440+00 and ends at Sta. 491+50 (SB) and Sta. 477+00 (NB), south of the Roosevelt Boulevard Interchange. The drainage area consists of the roadway right-of-way between these stations. The total basin area is 31.20 acres, with the existing impervious area equal to 14.62 acres. The estimated LEOP elevation is 11.79 ft NGVD. The proposed improvements will generate approximately 7.46 acres of new impervious area. A wet detention pond will be utilized to provide the required treatment and attenuation volumes. The basin outfalls to a double box culvert at Sta. 466+70 that discharges into the 102nd Avenue ditch which flows east to 16th Street North and then flows north into Roosevelt Creek Tributary 2 and ultimately into Tampa Bay.

## 4 Stormwater Management

### 4.1 Methodology

In addition to the environmental considerations discussed in Section 5.0, stormwater management methodology and criteria were used to determine the SMF site alternatives.

As described in Section 1.4, this report provides alternative stormwater management facility sites for the basins affected by the addition of two express lanes in Segment B from north of I-375 to south of Gandy Boulevard (Basins 11 through 20) and for basins within Segment A which required right-of-way for stormwater management (Basins 2 and 7) as determined in the Alternative Stormwater Management Facility Technical Memorandum (April 2015). Three (3) alternative SMF sites were analyzed for the majority of the basins; however, some of the basins have fewer alternatives as detailed below:

Basin 2 – stormwater management is accomplished within the existing right-of-way (1 alternative)

Basin 13 – limited sites available within the vicinity (2 alternatives)

Basin 14 – stormwater management is accomplished within the existing right-of-way (1 alternative)

Basin 17 – stormwater management is accomplished within the existing right-of-way (1 alternative)

Basin 18 – limited sites available within the vicinity (2 alternatives)

Basin 19 – stormwater management is accomplished within the existing right-of-way (1 alternative)

Basin 20 – limited sites available within the vicinity (2 alternatives)

The provided treatment and attenuation volumes were calculated and areas for the proposed SMF site alternatives were established using these volumes and the estimated seasonal high groundwater elevation. For detailed calculations associated with the SMF siting and sizing, see **Appendix D – Stormwater Management Calculations**. The SMF site alternatives are shown in **Appendix C – Pond Site Alternatives**.

The following parameters for each site were analyzed in the selection process:

- Soil Type
- Estimated average ground elevation – based on 1-foot digital contours from SWFWMD LiDAR data for Pinellas County
- Estimated Seasonal High Groundwater Table (SHWT) elevations – estimated based on the NRCS soil information at the SMF site

### 4.2 SMF Design Alternatives

Several stormwater management facility types were considered including wet detention systems, dry detention systems, retention systems, swale systems and underground exfiltration trench systems. SWFWMD's water quantity requirements specify the peak post-development runoff rate shall not

exceed the peak pre-development runoff rate for the 25-year/24-hour design storm event. The required water quality volume is based on the type of treatment system proposed. The following is a list of design methodologies and their associated rules.

#### 4.2.1 Wet Detention Systems

This method involves storing stormwater runoff in a wet bottom pond, above the normal water surface. The discharge rate from the wet bottom pond is controlled by an outlet structure to prevent downstream flooding and erosion. SWFWMD requires a wet detention treatment system for public roads to treat 1.0 inch of runoff from the contributing area. An additional 50% above the proposed basin treatment volume must be provided for discharge to Outstanding Florida Waters (OFW). Due to the normally high groundwater elevations along the project, long conveyance distances and depth of the storm drain system inverts, wet detention systems were selected as the most feasible method for stormwater treatment and attenuation.

#### 4.2.2 Dry Detention Systems

This method involves storing stormwater runoff in a dry bottom pond, above the seasonal high groundwater table elevation. Filtering the stormwater runoff through the pond bottom to the groundwater table provides water quality treatment. The use of dry detention systems would be prohibitive due to the anticipated depth of the storm drain system inverts and the normally high groundwater elevations along the project. Therefore, dry detention systems were only considered as an alternative stormwater management facility for basins that do not meet nutrient removal requirements through wet detention alone.

#### 4.2.3 Retention Systems

This concept provides storage and water quality treatment through retention. Retention systems are designed to prevent discharge of a given volume of runoff by complete on-site storage. The high water table and low permeability rates in 'D' type soils present on this project discourage the use of this method. The retention system design must assure that long-term recovery and flood protection is provided. For this project, the discharge limitation would require a pond size too large to be accommodated within the land available. Therefore, the option would be too cost-prohibitive and is not used.

#### 4.2.4 Swale Systems

This method involves storing stormwater runoff in a dry bottom swale, above the seasonal high groundwater table elevation. Filtering of the stormwater runoff through the swale bottom to the groundwater table provides water quality treatment. The use of swales would not provide sufficient volume to attenuate and treat the proposed runoff volumes for this project.

#### 4.2.5 Underground Exfiltration Trench Systems

This concept provides storage and water quality treatment through exfiltration into the surrounding soils. Exfiltration is accomplished using a perforated pipe laid in a rock-filled trench that allows the runoff to percolate into the surrounding ground. Exfiltration systems are costly and have high maintenance requirements due to very large pipe sizes and sediment buildup. Moreover, exfiltration systems would not provide sufficient available volume to capture and treat stormwater runoff



effectively. Exfiltration is generally used as a last resort. High ground water table normally discourages the use of this method. Therefore, exfiltration systems are not a viable solution for this project.

## 4.3 Proposed Stormwater Management Design

Wet detention is the selected method of stormwater management for the project. Wet detention was chosen due to the predominantly poorly drained soils, seasonal depths to groundwater ranging from 2.0 feet above to 3.5 feet below ground and storm drain system requirements. Additionally, the storm drain systems require the pond inflow structures to be below the control water level (CWL) or normal water level (NWL) of the proposed ponds.

### 4.3.1 SWFWMD SMF Sizing Criteria

The SWFWMD rules dictate the use of the 25-year/24-hour design storm event. The required treatment volume was calculated for each basin (1-inch over the area of new roadway impervious area). The NRCS method was used to calculate pre-development and post-development runoff volumes. The runoff volume difference between pre-development and post-development conditions was used to determine the SMF volume required for attenuation of the design storm event. The attenuation volume calculated was added to the required treatment volume to size each SMF alternative. The design analysis is strictly a Volumetric Analysis for the purposes of this report (see **Appendix D** – Stormwater Management Calculations).

### 4.3.2 Impaired Waters

The freshwater segment of Joe's Creek (Waterbody Identification (WBID) 1668A) in Pinellas County is listed as an impaired water body for dissolved oxygen, nutrients, and Biochemical Oxygen Demand (BOD). A Total Maximum Daily Load (TMDL) for the freshwater segment was prepared by the U.S. Environmental Protection Agency (EPA) and released in September 2007. The TMDL indicates a target pollutant load reduction of 49% for total phosphorus and 49% for total nitrogen.

Basins 14, 15 and 16 discharge to Joe's Creek. Therefore, a pre-development versus post-development pollutant loading analysis (net improvement) has been performed for these basins using the University of Central Florida's BMPTRAINS model spreadsheet. Wet detention is not sufficient to provide the required nutrient removal. Additional dry retention (in series with wet detention) was provided in these basins in order to meet nutrient removal criteria. Please refer to **Appendix D** – Stormwater Management Calculations.

### 4.3.3 Curve Numbers

Runoff curve numbers were obtained from the FDOT Drainage Design Guide (January 2017) – Appendix B, Table B-7 (see **Appendix E**). When soils in a dual hydrologic group, such as B/D, were encountered, curve numbers for group D soils were utilized to be consistent with adjacent existing permits. Since ground cover is good throughout the study area, Open Spaces, Good Condition was chosen for the Land Use Description. Please refer to **Appendix D** – Stormwater Management Calculations.

## 4.3.4 Seasonal High Groundwater Table Elevation

### 4.3.4.1 Soil Survey

The NRCS Soil Survey for Pinellas County was used to obtain estimated SHWT elevations. The SHWT is defined by the Natural Resource Conservation Service (NRCS) as the highest level of saturated zone in the soil in a year with normal rainfall, which persists in the soil for more than a few weeks. Along most of the project alignment, the SHWT levels are estimated to be 0 to 1.0 feet below the natural ground surface. SHWT elevations were estimated based on the NRCS soil information for the SMF site alternative.

### 4.3.4.2 Vertical Limitations

The maximum design stage is limited to the low edge of pavement (LEOP) elevation in the basin. For SMFs adjacent to the road, the top of the treatment volume is constrained to the low point in the road minus the base clearance. These criteria were used to establish the available depth for treatment and attenuation as illustrated below:

**Available depth for treatment = LEOP – base clearance – SHWT elevation**

**Available depth for treatment and attenuation = LEOP – SHWT elevation**

## 4.3.5 Conclusion

In conclusion, SMF alternatives were sized based on the combination of treatment and attenuation volumes calculated based on SWFWMD requirements. The maximum volume required was determined by using the treatment requirements to establish a pollution abatement volume and the volume difference between pre-development and post-development conditions for the 25-year/24-hour storm event. The two volumes were then added together to approximate a required SMF size for the basin. The proposed SMF area was considered in the basin calculations to establish the design volumes. Alternate SMF sites have been analyzed for minimum area, outfall characteristics, land use, and environmental conditions.

Each SMF design includes:

- 20-foot maintenance berm sloped 10:1 toward the SMF bottom;
- 4:1 side slopes from the top of the bank to the SMF bottom; and
- 1-foot of freeboard measured from the inside edge of the maintenance berm
- The wet detention treatment method will be used for all SMF site alternatives.

A 10% contingency was added to each SMF alternative size to account for limited site-specific data. Please refer to **Appendix D** – Stormwater Management Calculations.



## 4.4 Alternative SMF Sites

The following stormwater management facility site alternatives were evaluated for this report:

### Basin 2

**2A** is a 1.1-acre area located in the median of I-275 the centerline near Sta. 115+00 (SB). After providing the required stormwater management, SMF 2A will discharge west to the basin outfall, an offsite ditch located between the XTC Supercenter and Crystal Inn near Sta. 115+00 (SB).

### Basin 7

**7A** is located north of and adjacent to the I-275 right-of-way near Sta. 249+00. This 1.1-acre site is located on a number of undeveloped residential lots north and south of 8<sup>th</sup> Avenue South. In addition, 4360 SF will be required for a cul-de-sac on 8<sup>th</sup> Avenue South. After providing the required stormwater management, SMF 7A will discharge into the I-275 roadside ditch and flow north to the basin outfall at Sta. 272+00 (SB).

**7B** is located north of and adjacent to the I-275 right-of-way near Sta. 256+00. This 1.0-acre site is located on a number of undeveloped residential lots south of 7<sup>th</sup> Avenue South. In addition, 2600 SF will be required for a cul-de-sac on 8<sup>th</sup> Avenue South. After providing the required stormwater management, SMF 7B will discharge into the I-275 roadside ditch and flow north to the basin outfall at Sta. 272+00 (SB).

**7C** is located south of and adjacent to the I-275 right-of-way near Sta. 257+50. This 1.0-acre site is located on a number of undeveloped residential lots east of 22<sup>nd</sup> Street South. After providing the required stormwater management, SMF 7C will discharge into the I-275 roadside ditch and flow north to the basin outfall at Sta. 272+00 (SB).

### Basin 11

**11A** is located west of the I-275 right-of-way near Sta. 327+00. This 1.5-acre site is located on a number of developed residential lots south of 8<sup>th</sup> Avenue North. In addition, a 3600 SF easement will be required in order to provide access for the inflow and outflow pipes. After providing the required stormwater management, SMF 11A will discharge into an existing storm drain system and flow to basin outfall at Sta. 318+50 RT (NB).

**11B** is located west of and adjacent to the I-275 right-of-way near Sta. 331+00. This 1.4-acre site is located on a number of developed residential lots south of 9<sup>th</sup> Avenue North. After providing the required stormwater management, SMF 11B will discharge into an existing storm drain system and flow to basin outfall at Sta. 318+50 RT (NB).

**11C** is located east of and adjacent to the I-275 right-of-way, north of 9<sup>th</sup> Avenue North. This 7.5-acre site is owned by the City of St. Petersburg and is an existing pond. In order to provide the required stormwater management for this project, the existing pond will require expansion. Use of this pond will require coordination with the City of St. Petersburg.

## Basin 12

**12A** is located west of the I-275 right-of-way near Sta. 355+00, between the two railroad tracks spanned by the interstate in this area. This 2.0-acre site is located on a vacant industrial parcel immediately south of Home Depot. A 10,320 SF easement will be required in order to provide access for the inflow and outflow pipes. After providing the required stormwater management, SMF 12A will discharge into an existing storm drain system and flow to the basin outfall at Sta. 351+50 LT.

**12B** is located east of and adjacent to the I-275 right-of-way near Sta. 355+00. This 2.0-acre site is located on several occupied industrial parcels between I-275 and 19<sup>th</sup> Street North, along to 15<sup>th</sup> Avenue North. After providing the required stormwater management, SMF 12B will discharge into an existing storm drain system and flow to the basin outfall at Sta. 351+50 LT.

**12C** is located east of and adjacent to the I-275 right-of-way near Sta. 357+50. This 2.2-acre site is located on a number of occupied residential lots between I-275 and 19<sup>th</sup> Street North and includes the roadway right-of-way for 16<sup>th</sup> Avenue North. After providing the required stormwater management, SMF 12B will discharge into an existing storm drain system and flow to the outfall at Sta. 351+50 LT.

## Basin 13

**13A** is located east of and adjacent to the I-275 right-of-way near Sta. 395+00. This 1.3-acre site is located on a number of occupied residential lots north and south of 29<sup>th</sup> Avenue North and includes the roadway right-of-way for 29<sup>th</sup> Avenue North from the I-275 right-of-way east to 21<sup>st</sup> Street North. After providing the required stormwater management, SMF 13A will discharge into an existing storm drain system and flow to the basin outfall located at Sta. 395+30 LT.

**13B** is located west of and adjacent to the I-275 right-of-way near Sta. 395+00. This 1.3-acre site is located on a number of occupied residential lots north and south of 29<sup>th</sup> Avenue North and includes the roadway right-of-way for 28<sup>th</sup> Avenue North from the I-275 right-of-way west to 22<sup>nd</sup> Street North. After providing the required stormwater management, SMF 13B will discharge into an existing storm drain system and flow to the basin outfall located at Sta. 395+30 LT.

## Basin 14

**14A** is a 1.9-acre area located in the median of I-275 near Sta. 418+50 (NB). After providing the required stormwater management, SMF 14A will discharge into an existing storm drain system and flow to the basin outfall located at Sta. 445+60 LT.

## Basin 15

**15A** is located west of and adjacent to the I-275 right-of-way near Sta. 438+00 (SB). This 1.0-acre site is located on a portion of a larger commercial parcel. SMF 15A will discharge into an existing storm drain system and flow to the basin outfall located at Sta. 440+35 LT (SB).

**15B** is located east of and adjacent to the I-275 right-of-way near Sta. 439+00 (NB). This 1.1-acre site is located on a number of occupied residential lots between 42<sup>nd</sup> Avenue North and 41<sup>st</sup> Avenue North. In addition, 5920 SF will be required for restoring connections for existing adjacent parcels. After providing the required stormwater management, SMF 15B will discharge into an existing storm drain system and flow to the basin outfall located at Sta. 440+35 LT (SB).

**15C** is located west of and adjacent to the I-275 right-of-way near Sta. 442+25 (SB). This 1.2-acre site is located on a number of occupied residential lots between 42<sup>nd</sup> Avenue North and 43<sup>rd</sup> Avenue North. After providing the required stormwater management, SMF 15C will discharge into an existing storm drain system and flow to the basin outfall located at Sta. 440+35 LT (SB).

#### Basin 16

**16A** is located west of the I-275 right-of-way near Sta. 456+00. This 1.2-acre site is located on a number of occupied residential lots between Xenia Street North and 24<sup>th</sup> Street North, on the north side of 46<sup>th</sup> Avenue North. An 18,425 SF easement will be required in order to provide access for the inflow and outflow pipes. After providing the required stormwater management, SMF 16A will discharge into an existing storm drain system and flow to the basin outfall located at Sta. 453+00 RT.

**16B** is located west of the I-275 right-of-way near Sta. 456+00. This 1.2-acre site is located on a number of occupied residential lots, adjacent to Hewitt's Lake, west of Xenia Street North and north of 46<sup>th</sup> Avenue North. A 6,325 SF easement will be required in order to provide access for the inflow and outflow pipes. After providing the required stormwater management, SMF 16B will discharge into an existing storm drain system and flow to the basin outfall located at Sta. 453+00 RT.

**16C** is located east of and adjacent to the I-275 right-of-way near Sta. 450+00. This 1.3-acre site is located on a number of occupied residential lots between 45<sup>th</sup> Avenue North and Salem Avenue North. After providing the required stormwater management, SMF 16C will discharge into an existing storm drain system and flow to the basin outfall located at 453+00 RT.

#### Basin 17

**17A** is a 1.6-acre area located in the northwest quadrant of the 54<sup>th</sup> Avenue North interchange. After providing the required stormwater management, SMF 17A will discharge into an existing storm drain system and flow to the basin outfall located at Sta. 325+20 LT.

#### Basin 18

**18A** is located east of and adjacent to the I-275 right-of-way near Sta. 385+00. This 4.1-acre site is located immediately south of and adjacent to the Turner Creek Ditch on four occupied residential lots easts. After providing the required stormwater management, SMF 18A will discharge into the Turner Creek Ditch and flow east into Riviera Bay.

**18B** is located east of and adjacent to the I-275 right-of-way near Sta. 390+00. This 5.0-acre site is located immediately north of and adjacent to the Turner Creek Ditch on a parcel owned by Pinellas County Public Schools. After providing the required stormwater management, SMF 18B will discharge into the Turner Creek Ditch and flow east into Riviera Bay.

#### Basin 19

**19A** is a 2.1-acre area located in the northwest quadrant of the Gandy Boulevard interchange. After providing the required stormwater management, SMF 19A will discharge to the west, under the SB I-275 exit ramp and flow to the basin outfall.

## Basin 20

**20A** is located west of and adjacent to the I-275 right-of-way near Sta. 457+50. This 2.1-acre site is located on a large industrial parcel and is adjacent to an existing pond. After providing the required stormwater management, SMF 20A will discharge into the I-275 roadside ditch and flow north to the outfall ditch along 102<sup>nd</sup> Avenue North at Sta. 467+00.

**20B** is located west of and adjacent to the I-275 right-of-way near Sta. 442+00. This 2.1-acre site is located on a vacant industrial parcel and is immediately south of Valpak. After providing the required stormwater management, SMF 20B will discharge into the I-275 roadside ditch and flow north to the outfall ditch along 102<sup>nd</sup> Avenue North at Sta. 467+00.

## 4.5 Environmental Look Around

An Environmental Look Around (ELA) is currently being conducted for this section of I-275. The purpose of the ELA to coordinate with regional stakeholders to explore watershed wide stormwater needs and alternative permitting approaches. A progress meeting was held on May 22, 2019 to present the results of the preliminary analysis and provide a progress update on the ELA investigations. Below is a summary of the information presented at the meeting:

- The preliminary analysis indicates that all PD&E preferred offsite ponds could potentially be replaced with ELAs within Pinellas County and City of St. Petersburg proposed Regional Pond Sites.
- The intent is to pursue agreements with other governmental agencies that achieve win-win solutions for both while minimizing impacts to the community and reducing right-of-way takes.
- Meetings will be scheduled with Pinellas County, City of St. Petersburg and SWFWMD as soon as possible to obtain stakeholder buy-in on the ELA approach.
- The preliminary analyses, as well as the follow-up stakeholder correspondence, will be compiled into an ELA Memorandum and submitted to FDOT.
- The PD&E SMFSR and community meetings will continue to show the PD&E SMFSR Preferred Pond Sites along with general discussions regarding ELAs being investigated. The intent is to present the current right-of-way needs during PD&E with the goal of reducing the proposed right-of-way footprint during design.

In addition, a meeting was held with SWFWMD on April 9, 2019 to confirm the applicability, if any, of the Old Tampa Bay (OTB) water quality credits to Tampa Bay Next (TBN) program. The limits of this PD&E Study are known as TBN Section 2. Meeting notes and exhibits from this meeting are included in Appendix F.

## 5 Environmental Clearances

The environmental clearances described in the sections below are also summarized in **Table 6-1: Stormwater Management Facility Site Evaluation Matrix**.

### 5.1 Wetlands and Surface Waters

Based on the results of the preliminary data collection and field reviews, it has been determined that 5 of the 25 evaluated alternative pond sites involve wetlands or surface water impacts. Alternative pond sites with a 'moderate' ranking for wetland involvement include: 2A, 11C, 18A, and 18B. Alternative pond site 20B was determined to have a ranking of 'Low'.

Final impact acreages to jurisdictional wetlands can only be determined following the establishment of agency approved wetlands limits and upon completion of final pond design. This includes maintenance of hydrology and provisions for adequate wetland buffering (15-foot minimum and 25-foot average set back from wetlands) to minimize secondary impacts. Where feasible, measures to avoid or minimize wetland and water quality impacts will be implemented during final pond site design.

### 5.2 Protected Species

Based on results of preliminary data collection and field reviews, it has been determined that 21 of the 25 evaluated alternative pond sites have a 'low' potential for impacting protected species.

The potential involvement with protected species and their habitat is 'moderate' for 16A and 18A. Suitable habitat is present within these sites.

11C, an existing City pond, has a 'high' potential for impacting protected species. A wood stork was observed during the field review. 18B, an existing permitted wetland mitigation area, also has a 'high' ranking.

### 5.3 Cultural Resources

As a result of the preliminary study, one previously recorded archaeological site is recorded within two of the proposed pond sites (18A and 18B). The lithic scatter type site (8PI01212) has not been evaluated by the State Historic Preservation Officer (SHPO) but the recorders did not consider it significant. Background research indicated that 49 historic resources were previously recorded within or immediately adjacent to twelve of the proposed pond sites. Of these, the Kenwood Historic District (8PI11176) and 21 contributing resources to the historic district are located within or adjacent to proposed pond sites 11A and 11B. The Kenwood Historic District (8PI11176) was listed in the NRHP in 2003 and the building at 2105 7th Avenue North (8PI07410) is considered NRHP-eligible as a contributing resource to the Kenwood Historic District, both are located with pond 11A. Pond 11B is adjacent to the Kenwood Historic District except for 2118 9th Avenue (8PI7588), located within a portion of Pond 11B and is considered a contributing resource but has not been evaluated by the SHPO. Background research also included a review of the Pinellas County Property Appraisers website, which indicated the potential for 45 historic buildings (50 years of age or older) within or immediately adjacent to eleven of the proposed pond sites (Twitty 2019).

As a result of the preliminary probability pond analysis, proposed pond sites 11A and 11B should be avoided for this project. Following the selection of preferred pond sites, systematic archaeological field survey is recommended in accordance with the guidelines and standards promulgated by the Florida Department of Transportation (FDOT) and Florida Division of Historical Resources (FDHR). The selected pond sites considered to have a low potential also should be surveyed and judgmentally tested. Historical/architectural field survey is also recommended.

In 2016 ACI also prepared an associated Pond Technical Memorandum (FDHR Survey #22781). Based on the results of these reports, ten historic resources (8PI11652, 8PI12273, 8PI12341, 8PI12343, 8PI12345, 8PI12418, 8PI12723, 8PI12724, 8PI12354, and 8PI12433) were previously recorded within or immediately adjacent to twelve of the proposed pond sites (Table 3; Figures 2-5). These include one linear resource, the Orange Belt Railway (8PI12273), two building complexes (8PI12724 & 8PI12354), five Frame Vernacular style buildings (8PI11652, 8PI12341, 8PI12343, 8PI12723, and 8PI12433), one Mission style building (8PI12345), and one Masonry Vernacular style building (8PI12418). Of these, eight (8PI12341, 8PI12343, 8PI12345, 8PI12418, 8PI12723, 8PI12724, and 8PI12433) were evaluated as ineligible for listing in the NRHP by the SHPO. The Orange Belt Railway is located adjacent to pond 12A and was determined to have insufficient information by the SHPO in 2015.

A review of relevant quadrangle maps, historic aerial photographs, and Pinellas County property appraiser's website data revealed the potential for 13 new historic resources 50 years of age or older (constructed 1969 or earlier) within the APE (Twitty 2019). In addition, several 1973 buildings, part of the Meadow Lawn Pinellas Addition Subdivision developed in 1971, were noted south of proposed pond site 18A.

Please refer to **Appendix G** for the Preliminary Cultural Resource Assessment Probability Analysis Technical Memorandum and to the Cultural Resource Assessment Survey Proposed Pond Site Alternatives and Re-evaluation Technical Memorandum (under separate cover).

## 5.4 Contamination and Hazardous Materials

A total of twelve (12) preferred pond sites were evaluated and resulted in the following risk rankings: two (2) "Medium" risk rankings, five (5) "Low" risk rankings and five (5) "No" risk rankings for potential contamination and hazardous material impacts.

The pond alternatives with a "medium" risk ranking are:

- 11C - This pond site was observed as an existing stormwater drainage pond located adjacent east of I-275 ROW.
  - Concerns: Railroad tracks are located adjacent east of this pond site. Historically, railroads used arsenic based pesticides and/or herbicides for vegetation and weed control along its corridors. In addition, petroleum-based and creosote compounds were often used to preserve railroad ties. Therefore, the railroad tracks located adjacent east are considered a contamination concern to Pond 11C.
  - Risk Rating: Due to the railroad tracks located adjacent east, this pond site is assigned a risk rating of Medium.

- 12A - Please note that a locked gate prevented access to this pond site during the site reconnaissance. According to Google Earth aerial photography, this pond site is composed of a vacant concrete lot located 120 feet northwest of existing I-275 ROW.
  - Concerns: Railroad tracks are located adjacent east and west of this pond site. Historically, railroads used arsenic based pesticides and/or herbicides for vegetation and weed control along its corridors. In addition, petroleum-based and creosote compounds were often used to preserve railroad ties. Therefore, the railroad tracks located adjacent east and west are considered a contamination concern to Pond 12A.
  - Risk Rating: Due to the railroad tracks located adjacent east and west, this pond site is assigned a risk rating of Medium.

For sites ranked “No” or “Low”, no additional work is recommended at this time. Should a facility’s permitting or regulatory status change between now and the time acquisitions are initiated, additional screening should be conducted.

For the two sites with risk rankings of “Medium”, a Level 2 field screening is recommended to determine if environmental impacts exist at the proposed pond sites. All pond sites selected for final design, regardless of risk ranking, will require limited field screening in accordance with the Department Contamination Impact Coordinator requirements outlined in the scope of work. This will include, at a minimum, soil screening for arsenic concentrations and potential buried debris.

## 6 Results

### 6.1 SMF Site Evaluation Matrix

An evaluation matrix was developed to present the alternatives in each basin with respect to the environmental clearances discussed in Section 5.0 and the right-of-way cost estimate discussed in Section 6.2. **Table 6-1** shows all of the evaluated pond sites and the recommended ranking.

**SMF sizes and configurations in this report are based on preliminary assumptions and calculations. Final SMF sizes and configurations will be determined in the design phase and could be different from those used in this report and presented in the following tables as more detailed information on seasonal high groundwater table, wetland normal pool elevations, final roadway design, geotechnical data, etc. becomes available.**

### 6.2 Right-of-Way Cost Estimate

A right-of-way cost estimate, dated January 22, 2019, was prepared for each SMF alternative.

Please see **Appendix H** for the right-of-way cost estimate.



TABLE 6-1  
STORMWATER MANAGEMENT FACILITY SITE EVALUATION MATRIX

SMF Site Alternative	Size (acres)	Easement Size (feet <sup>2</sup> )	Wetland and Surface Waters Ranking	Wetland or Surface Water Type	Impact Estimate (acres)	Mitigation Assumption	<sup>1</sup> Protected Species Ranking	Potential Species	Contamination and Hazardous Material Rating	Cultural Resource Potential	<sup>2</sup> Wetland Mitigation Cost Estimate	Right-of-Way Cost Estimate	SMF Site Ranking
2A	0.7	-	Moderate	SW (Forested)	0.22	Section 373.4137, F.S.	Low	Least Tern (GIS), EIS (historic)	No	Low	\$0	\$0	1
7A	1.1	4,360	None	N/A	0	N/A	Low	Gopher tortoise	Low	Low	\$0	\$565,300	2
7B	1.0	2,600	None	N/A	0	N/A	Low	Gopher tortoise	Low	Low	\$0	\$537,600	1
7C	1.0	-	None	N/A	0	N/A	Low	Gopher tortoise	Low	Moderate	\$0	\$2,090,900	3
11A	1.5	3,600	None	N/A	0	N/A	Low	--	Low	High	\$0	\$5,156,500	3
11B	1.4	-	None	N/A	0	N/A	Low	--	Low	High	\$0	\$4,044,000	2
11C	7.5	-	Moderate	SW (herbaceous)	4.6 (lake) 0.96 (SFH)	Section 373.4137, F.S.	<sup>6</sup> High	Wood stork observed (SFH); other wading bird foraging expected	Medium	Low	\$115,623.36	\$469,700	1
12A	2.0	-	None	N/A	0	N/A	Low	--	Medium	Low	\$0	\$2,653,600	1
12B	2.0	-	None	N/A	0	N/A	Low	--	Low	High	\$0	\$4,380,100	2
12C	2.2	-	None	N/A	0	N/A	Low	--	Low	High	\$0	\$4,916,400	3
13A	1.3	-	None	N/A	0	N/A	Low	--	No	High	\$0	\$2,490,400	2
13B	1.0	-	None	N/A	0	N/A	Low	--	Low	Low	\$0	\$1,329,700	1
14A	1.9	-	None	N/A	0	N/A	Low	--	No	Low	\$0	\$0	1
15A	1.0	-	None	N/A	0	N/A	Low	--	Low	Low	\$0	\$1,187,200	1
15B	1.1	5,920	None	N/A	0	N/A	Low	--	No	High	\$0	\$2,658,600	3
15C	1.2	-	None	N/A	0	N/A	Low	--	No	High	\$0	\$2,352,000	2
16A	1.2	18,425	None	N/A	0	N/A	Moderate	Wood stork; other wading bird (roosting)	No	Low	\$0	\$2,644,800	1
16B	1.2	6,325	None	N/A	0	N/A	Low	--	No	High	\$0	\$3,449,500	3

TABLE 6-1  
STORMWATER MANAGEMENT FACILITY SITE EVALUATION MATRIX

SMF Site Alternative	Size (acres)	Easement Size (feet <sup>2</sup> )	Wetland and Surface Waters Ranking	Wetland or Surface Water Type	Impact Estimate (acres)	Mitigation Assumption	<sup>1</sup> Protected Species Ranking	Potential Species	Contamination and Hazardous Material Rating	Cultural Resource Potential	<sup>2</sup> Wetland Mitigation Cost Estimate	Right-of-Way Cost Estimate	SMF Site Ranking
16C	1.3	-	None	N/A	0	N/A	Low	--	No	High	\$0	\$3,407,900	2
17A	1.6	-	None	N/A	0	N/A	Low	Wood stork; other wading birds	Low	Low	\$0	\$0	1
18A	4.1	-	Moderate	WL – Forested	1.21	Section 373.4137, F.S.	Low	Wood stork, other wading birds; EIS	No	Moderate	\$145,733.61	\$2,826,200	1
18B	5.0	-	<sup>3</sup> Moderate	WL – Forested	<sup>4</sup> 4.54	Section 373.4137, F.S.	High	Wood stork, other wading birds; least tern; EIS	No	Moderate	\$0	\$613,200	2
19A	2.1	-	None	N/A	0	N/A	Low	Wood stork; other wading birds	Low	Low	\$0	\$0	1
20A	2.1	-	None	N/A	0	N/A	Low	Gopher tortoise; EIS	No	Low	\$0	\$802,100	1
20B	2.1	-	Low	<sup>5</sup> SW	<i>Deminimis</i>	N/A	Low	Gopher tortoise; EIS; wood stork; wading birds; least tern	Medium	Low	\$0	\$1,371,500	2

<sup>1</sup> Low (L) - Little or no suitable habitat; Moderate (M) – Suitable habitat present within the project limits or species record of occurrence (based on FNAI, GIS, literature review) within or adjacent the project ROW; High (H) – Suitable habitat present within the project limits and species observed within or adjacent the project ROW.

<sup>2</sup> Estimated wetland mitigation: FDOT Mitigation Program 2019/2020 cost/acre = \$120,441.

<sup>3</sup> Pinellas School Board Mitigation Area

<sup>4</sup> Permitted wetland mitigation

<sup>5</sup> Pond may be adjusted to avoid ditch (SW) impact

<sup>6</sup> Within the wood stork 15-mile Core Foraging Area.

## 7 Conclusions and Recommendations

A preferred alternative for each basin was recommended based on their ranking of critical site selection parameters. The ranking was based on: environmental impacts, including wetlands and surface waters, protected species, cultural resources and contamination; hydrologic factors such as estimated seasonal high groundwater table elevations and soil types; and economic factors based on estimated land costs. The preferred SMF site for each basin is shown in **Table 7-1** below.

**TABLE 7-1: PREFERRED SMF SITES**

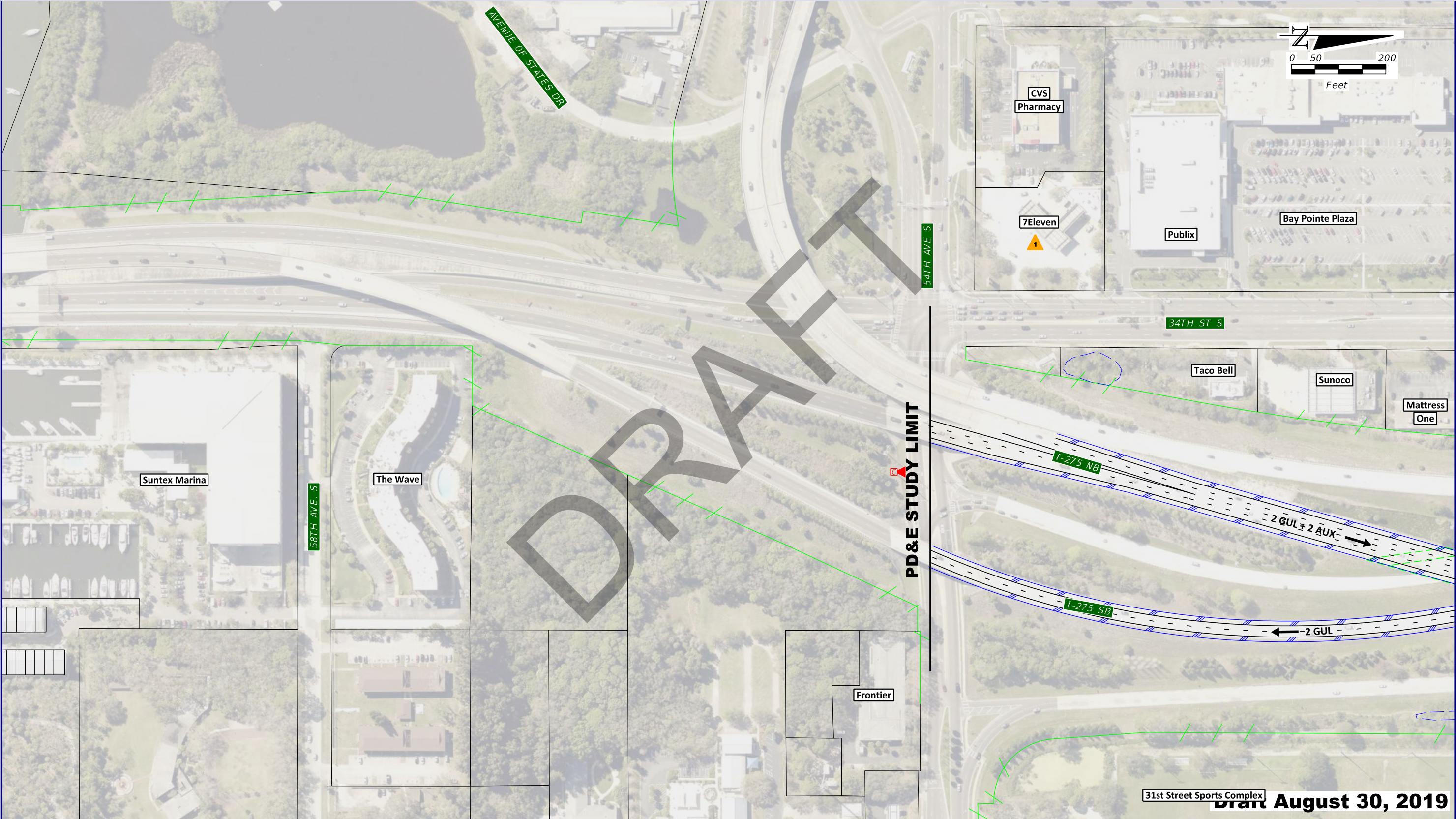
Basin	Preferred SMF Site	SMF Size (acres)
2	2A *	0.7
7	7B	1.0
11	11C	7.5 **
12	12A	2.0
13	13B	1.0
14	14A *	1.9
15	15A	1.0
16	16A	1.2
17	17A *	1.6
18	18A	4.1
19	19A *	2.1
20	20A	2.1

























\* Within the existing right-of-way.

\*\* Easement over existing City stormwater facility.

## Appendix A. Concept Plans





LEGEND:											
	PAVEMENT WIDENING/ RECONSTRUCTION		PEDESTRIAN TRAIL		SEAGRASS		FLOOD PLAINS		PROPOSED LA R/W		ITS CAMERA
			EXPRESS LANE BRIDGE		WETLANDS		CONTAMINATION		EXISTING LA R/W		EL = EXPRESS LANES
	PAVEMENT REMOVAL		EXPRESS LANES		SURFACE WATER		POTENTIAL RESIDENTIAL RELOCATION		PROPOSED EASEMENT		GUL = GENERAL USE LANES
	BARRIER WALL		BRIDGES						PREFERRED SMF SITE & PROPOSED SMF R/W		AUX = AUXILIARY LANES
	BRIDGE WIDENING		KENWOOD HISTORIC DISTRICT		MANGROVES		POTENTIAL NOISE BARRIER				Aerial Photos Jan. '18 - Apr. '18

Concept Plans  
Design Change Re-evaluation

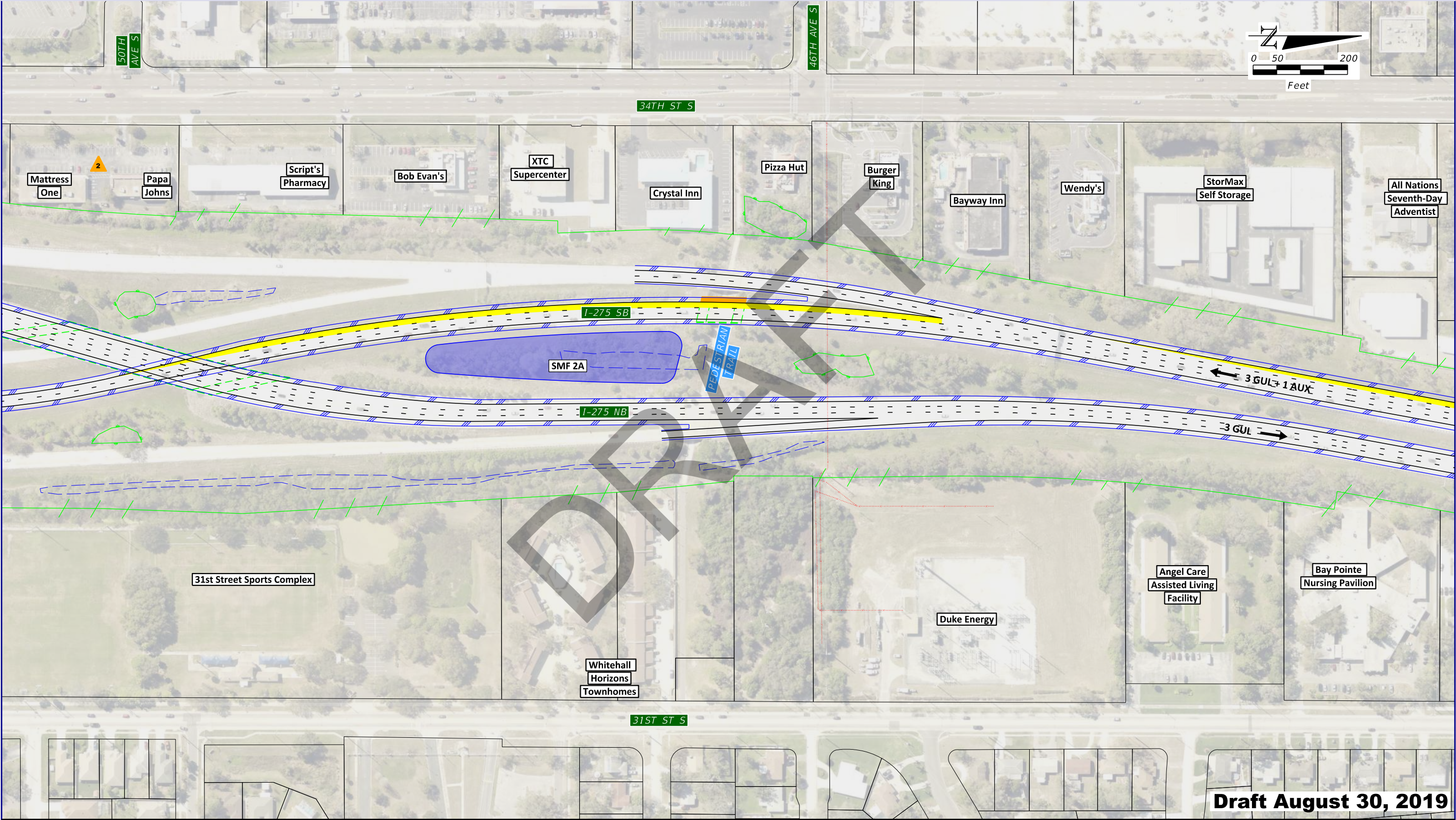
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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



LEGEND:											
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	PAVEMENT REMOVAL		EXPRESS LANE BRIDGE		WETLANDS		POTENTIAL RESIDENTIAL RELOCATION		EXISTING LA R/W		EL = EXPRESS LANES
	BARRIER WALL		EXPRESS LANES		SURFACE WATER		POTENTIAL NOISE BARRIER		PROPOSED EASEMENT		GUL = GENERAL USE LANES
	BRIDGE WIDENING		BRIDGES		MANGROVES				PREFERRED SMF SITE & PROPOSED SMF R/W		AUX = AUXILIARY LANES
			KENWOOD HISTORIC DISTRICT								Aerial Photos Jan. '18 - Apr. '18

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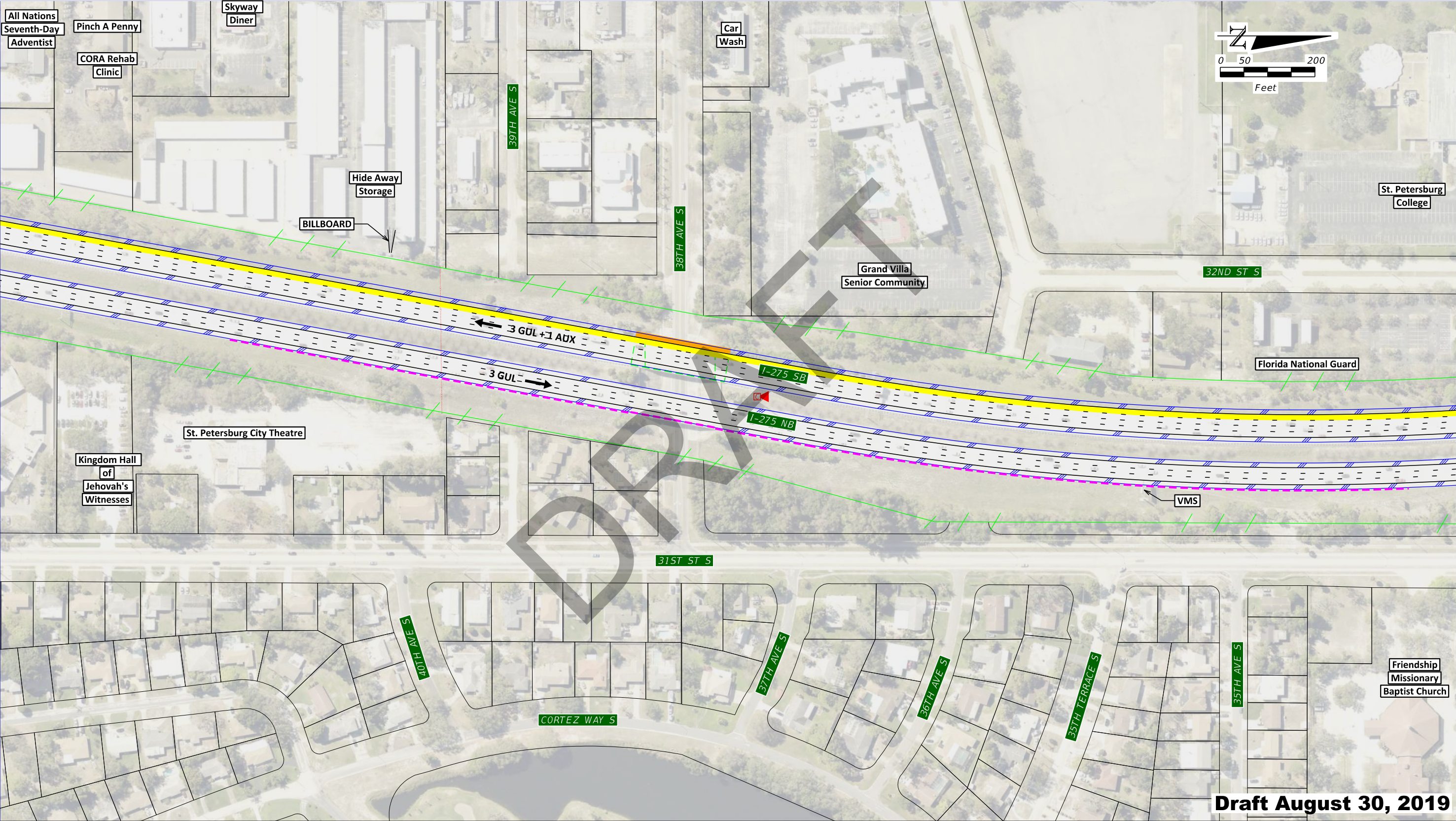
Concept Plans  
Design Change Re-evaluation

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




















I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



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<b>LEGEND:</b>			<b>PEDESTRIAN TRAIL</b>		<b>SEAGRASS</b>		<b>FLOOD PLAINS</b>		<b>PROPOSED LA R/W</b>		<b>ITS CAMERA</b>
	<b>PAVEMENT WIDENING/ RECONSTRUCTION</b>		<b>EXPRESS LANE BRIDGE</b>		<b>WETLANDS</b>		<b>CONTAMINATION</b>		<b>EXISTING LA R/W</b>	<b>EL = EXPRESS LANES</b>	
	<b>PAVEMENT REMOVAL</b>		<b>EXPRESS LANES</b>		<b>SURFACE WATER</b>		<b>POTENTIAL RESIDENTIAL RELOCATION</b>		<b>PROPOSED EASEMENT</b>	<b>GUL = GENERAL USE LANES</b>	
	<b>BARRIER WALL</b>		<b>BRIDGES</b>		<b>MANGROVES</b>		<b>POTENTIAL NOISE BARRIER</b>		<b>PREFERRED SMF SITE &amp; PROPOSED SMF R/W</b>	<b>AUX = AUXILIARY LANES</b>	
	<b>BRIDGE WIDENING</b>		<b>KENWOOD HISTORIC DISTRICT</b>							<b>Aerial Photos Jan. '18 - Apr. '18</b>	

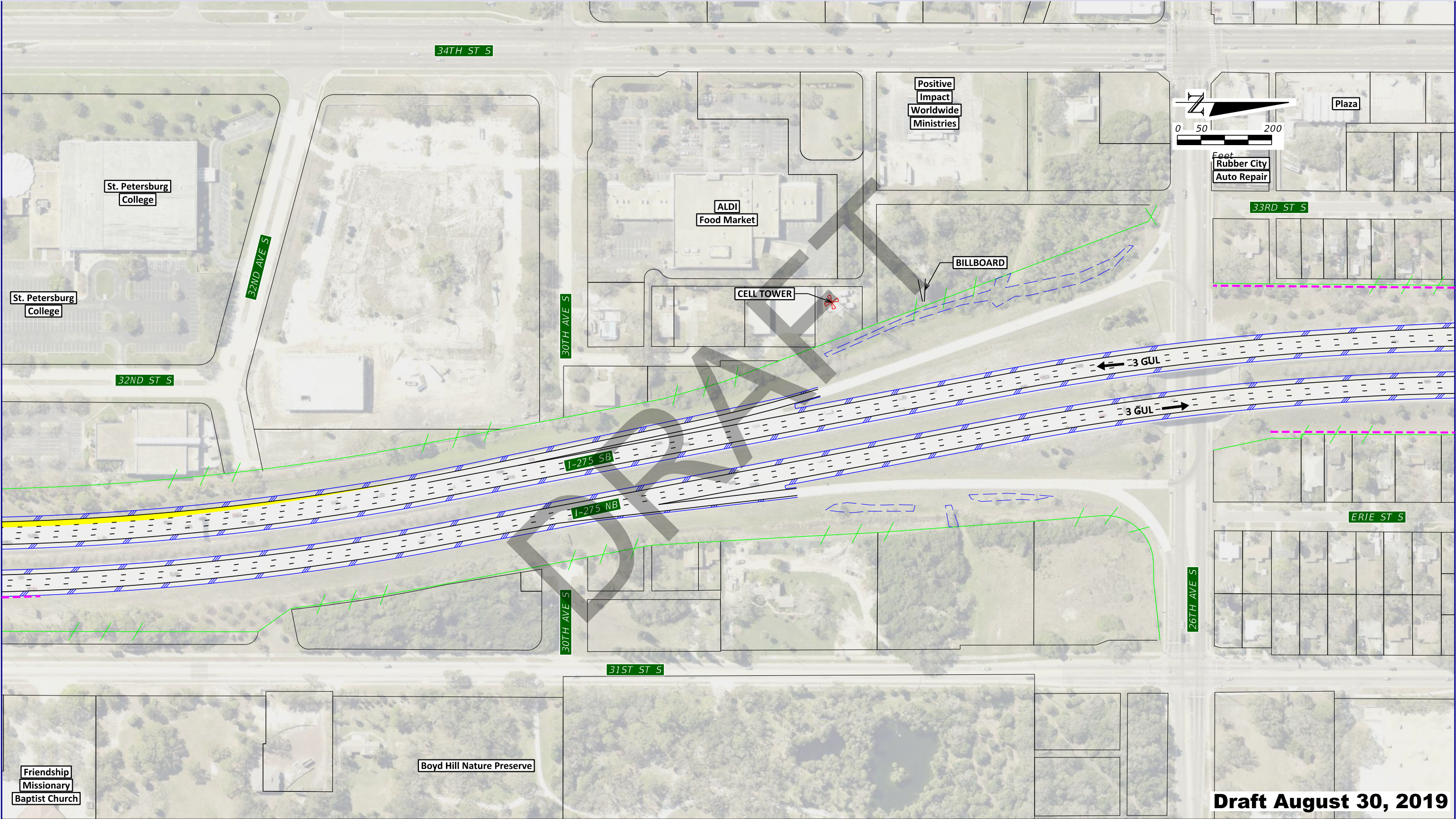
Concept Plans  
Design Change Re-evaluation

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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



<b>LEGEND:</b>		<b>PEDESTRIAN TRAIL</b>		<b>SEAGRASS</b>		<b>FLOOD PLAINS</b>		<b>PROPOSED LA R/W</b>		<b>ITS CAMERA</b>	
	PAVEMENT WIDENING/RECONSTRUCTION		EXPRESS LANE BRIDGE		WETLANDS		CONTAMINATION		PROPOSED LA R/W		EL = EXPRESS LANES
	PAVEMENT REMOVAL		EXPRESS LANES		SURFACE WATER		POTENTIAL RESIDENTIAL RELOCATION		EXISTING LA R/W		GUL = GENERAL USE LANES
	BARRIER WALL		BRIDGES		MANGROVES		POTENTIAL NOISE BARRIER		PROPOSED EASEMENT		AUX = AUXILIARY LANES
	BRIDGE WIDENING		KENWOOD HISTORIC DISTRICT						PREFERRED SMF SITE & PROPOSED SMF R/W		

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Concept Plans  
Design Change Re-evaluation

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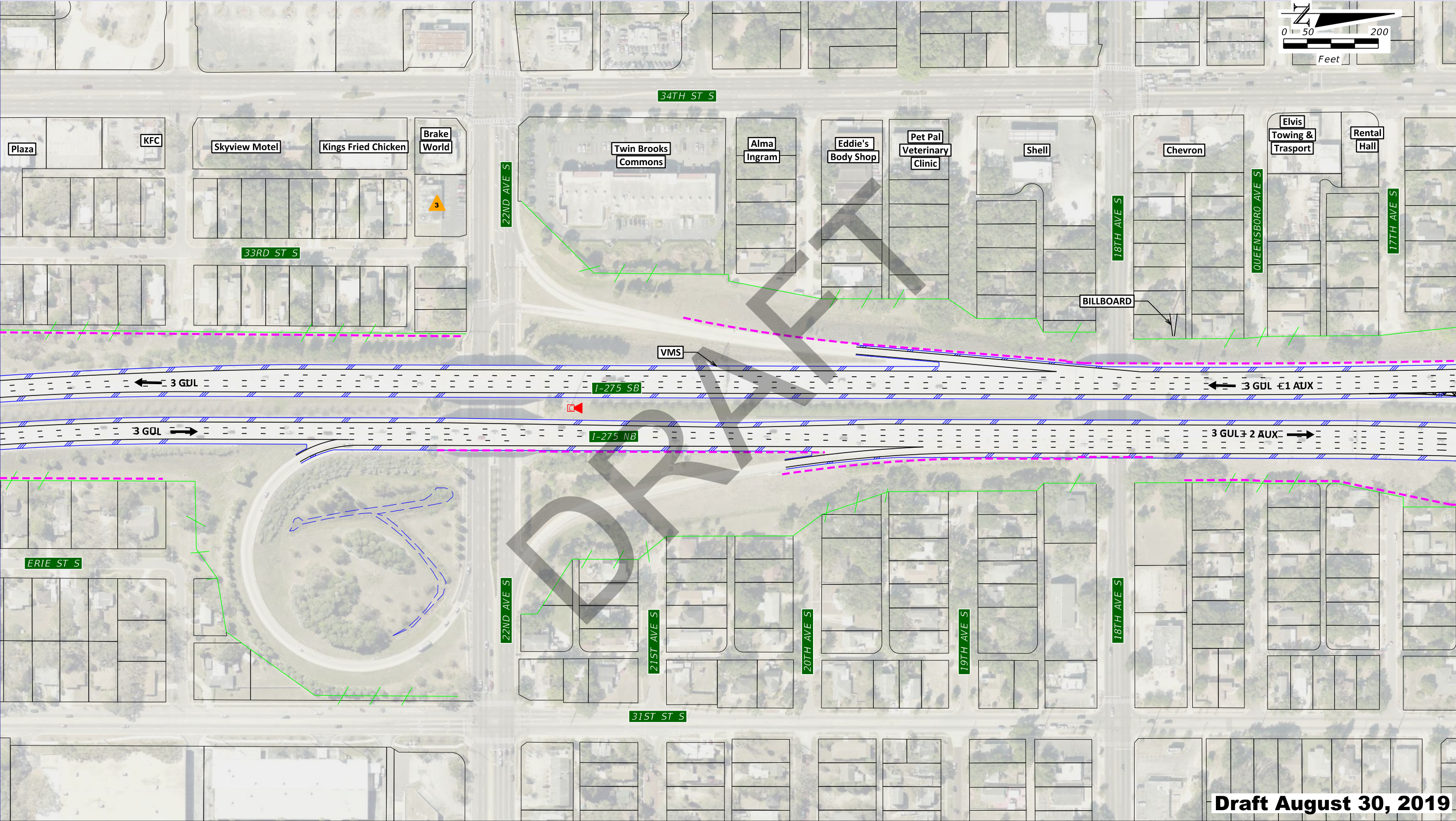
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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



<b>LEGEND:</b>			<b>FLOOD PLAINS</b>			<b>ITS CAMERA</b>		
PAVEMENT WIDENING/RECONSTRUCTION	PEDESTRIAN TRAIL	SEAGRASS	CONTAMINATION	PROPOSED LA R/W	EL = EXPRESS LANES			
PAVEMENT REMOVAL	EXPRESS LANE BRIDGE	WETLANDS	POTENTIAL RESIDENTIAL RELOCATION	EXISTING LA R/W	GUL = GENERAL USE LANES			
BARRIER WALL	EXPRESS LANES	SURFACE WATER	POTENTIAL NOISE BARRIER	PROPOSED EASEMENT	AUX = AUXILIARY LANES			
BRIDGE WIDENING	BRIDGES	MANGROVES		PREFERRED SMF SITE & PROPOSED SMF R/W		Aerial Photos Jan. '18 - Apr. '18		
	KENWOOD HISTORIC DISTRICT							

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Concept Plans  
Design Change Re-evaluation

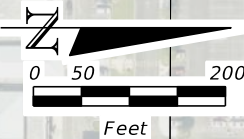
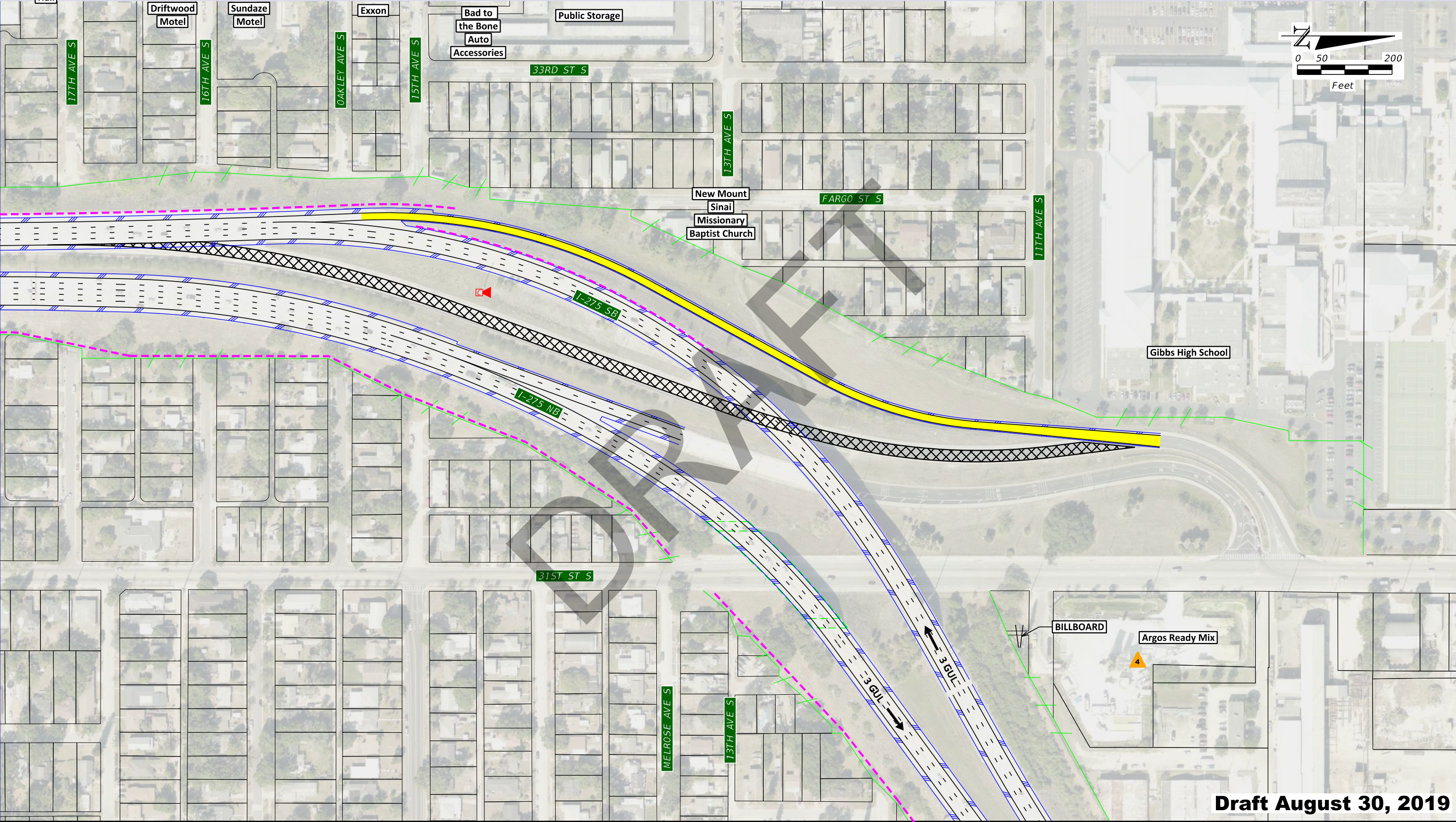
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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



<b>LEGEND:</b>		PAVEMENT WIDENING/RECONSTRUCTION	PEDESTRIAN TRAIL	SEAGRASS	FLOOD PLAINS	PROPOSED LA R/W	ITS CAMERA
PAVEMENT REMOVAL	EXPRESS LANE BRIDGE	WETLANDS	EXPRESS LANES	SURFACE WATER	POTENTIAL RESIDENTIAL RELOCATION	EXISTING LA R/W	EL = EXPRESS LANES
BARRIER WALL	BRIDGES	MANGROVES	KENWOOD HISTORIC DISTRICT	POTENTIAL NOISE BARRIER	PROPOSED EASEMENT	PREFERRED SMF SITE & PROPOSED SMF R/W	GUL = GENERAL USE LANES
BRIDGE WIDENING							AUX = AUXILIARY LANES

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Concept Plans  
Design Change Re-evaluation

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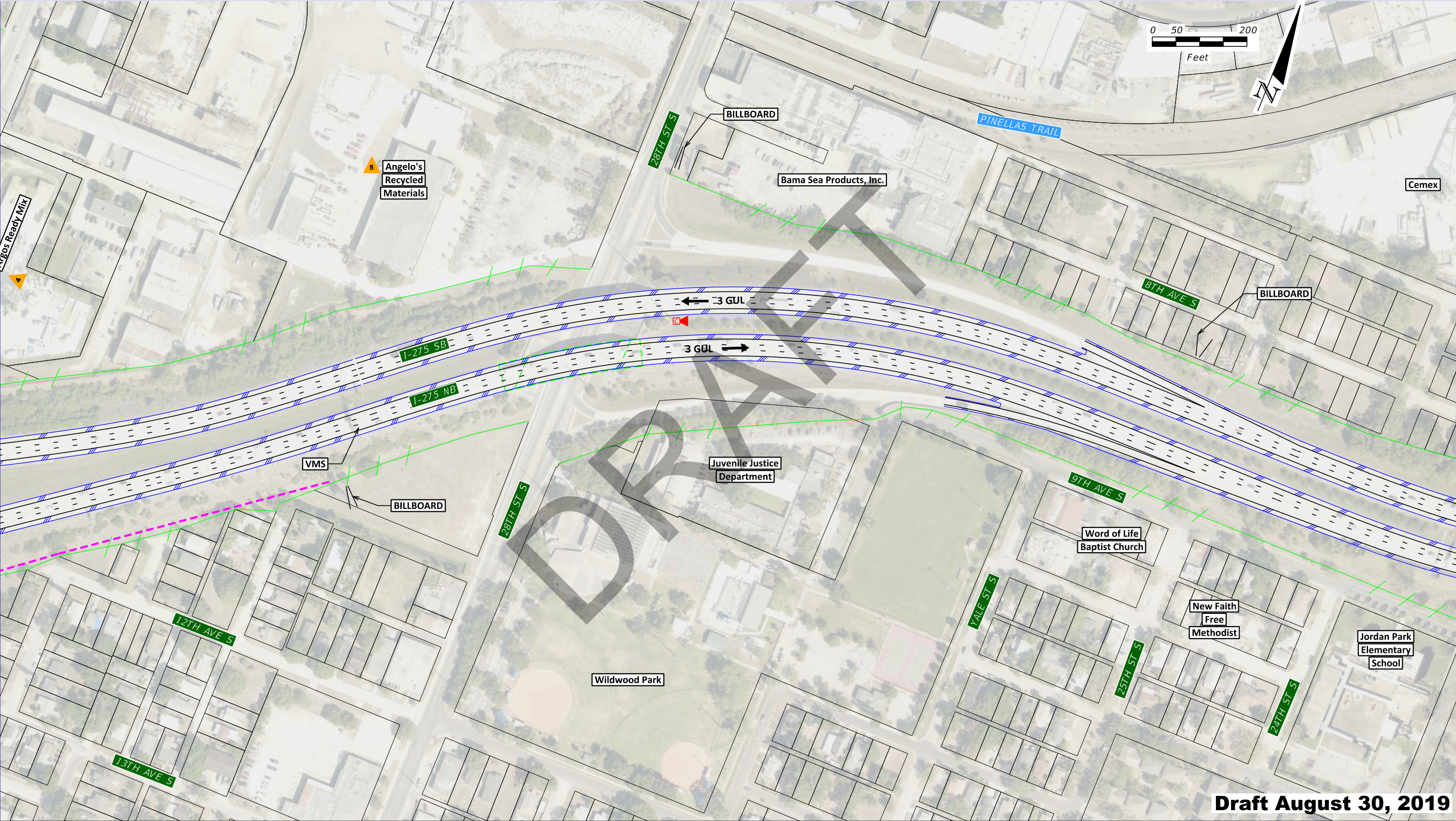
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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



Draft August 30, 2019

<b>LEGEND:</b>	<b>PEDESTRIAN TRAIL</b>	<b>SEAGRASS</b>	<b>FLOOD PLAINS</b>	<b>PROPOSED LA R/W</b>	<b>ITS CAMERA</b>
PAVEMENT WIDENING/RECONSTRUCTION	EXPRESS LANE BRIDGE	WETLANDS	CONTAMINATION	EXISTING LA R/W	EL = EXPRESS LANES
PAVEMENT REMOVAL	EXPRESS LANES	SURFACE WATER	POTENTIAL RESIDENTIAL RELOCATION	PROPOSED EASEMENT	GUL = GENERAL USE LANES
BARRIER WALL	BRIDGES	MANGROVES	POTENTIAL NOISE BARRIER	PREFERRED SMF SITE & PROPOSED SMF R/W	AUX = AUXILIARY LANES
BRIDGE WIDENING	KENWOOD HISTORIC DISTRICT				Aerial Photos Jan. '18 - Apr. '18

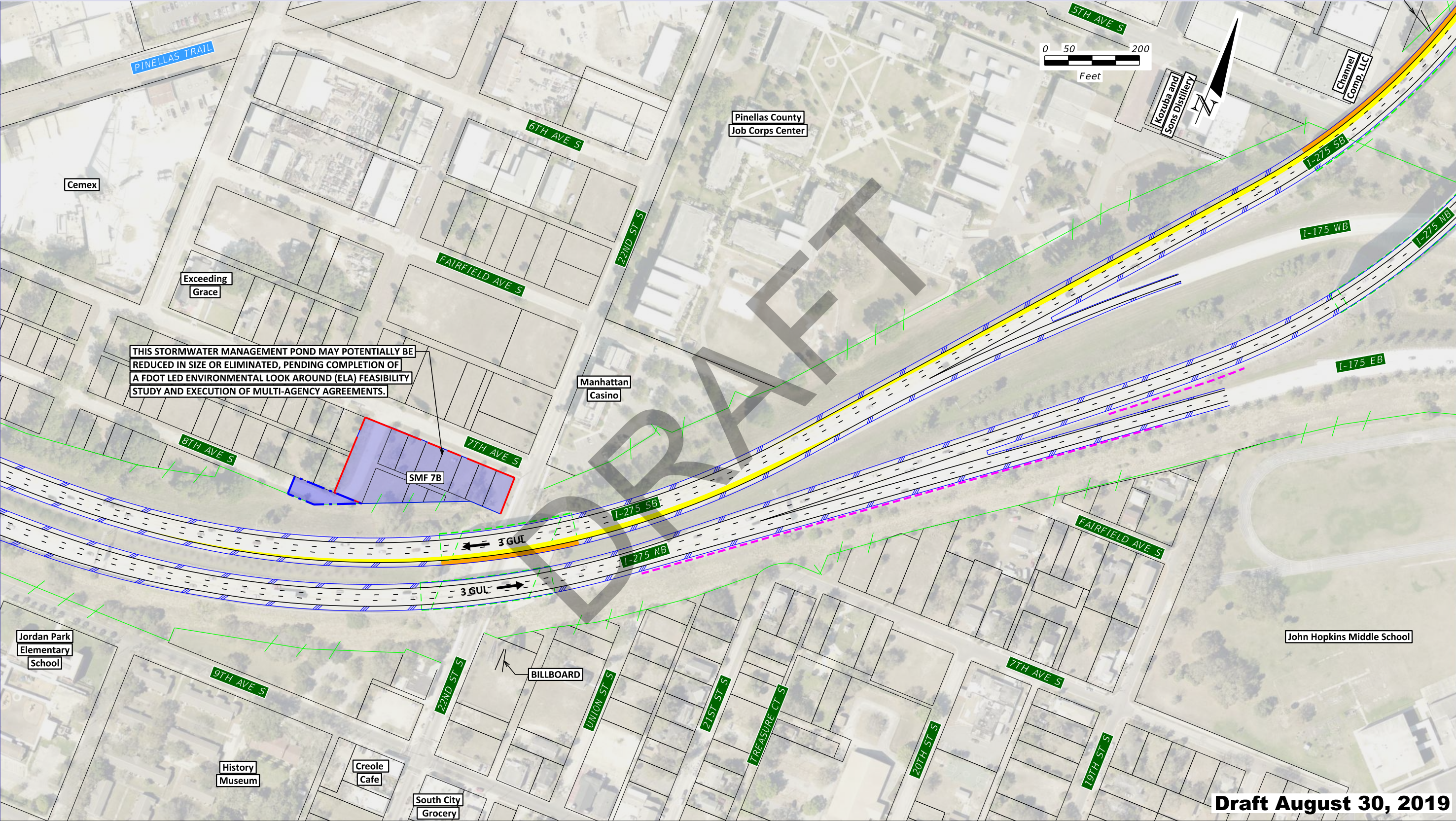
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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



THIS STORMWATER MANAGEMENT POND MAY POTENTIALLY BE REDUCED IN SIZE OR ELIMINATED, PENDING COMPLETION OF A FDOT LED ENVIRONMENTAL LOOK AROUND (ELA) FEASIBILITY STUDY AND EXECUTION OF MULTI-AGENCY AGREEMENTS.

Draft August 30, 2019

<b>LEGEND:</b>		PEDESTRIAN TRAIL	SEAGRASS	FLOOD PLAINS	PROPOSED LA R/W	ITS CAMERA
PAVEMENT WIDENING/RECONSTRUCTION	EXPRESS LANE BRIDGE	WETLANDS	SURFACE WATER	POTENTIAL RESIDENTIAL RELOCATION	EXISTING LA R/W	EL = EXPRESS LANES
PAVEMENT REMOVAL	EXPRESS LANES	MANGROVES	POTENTIAL NOISE BARRIER	PROPOSED EASEMENT		GUL = GENERAL USE LANES
BARRIER WALL	BRIDGES			PREFERRED SMF SITE & PROPOSED SMF R/W		AUX = AUXILIARY LANES
BRIDGE WIDENING	KENWOOD HISTORIC DISTRICT					

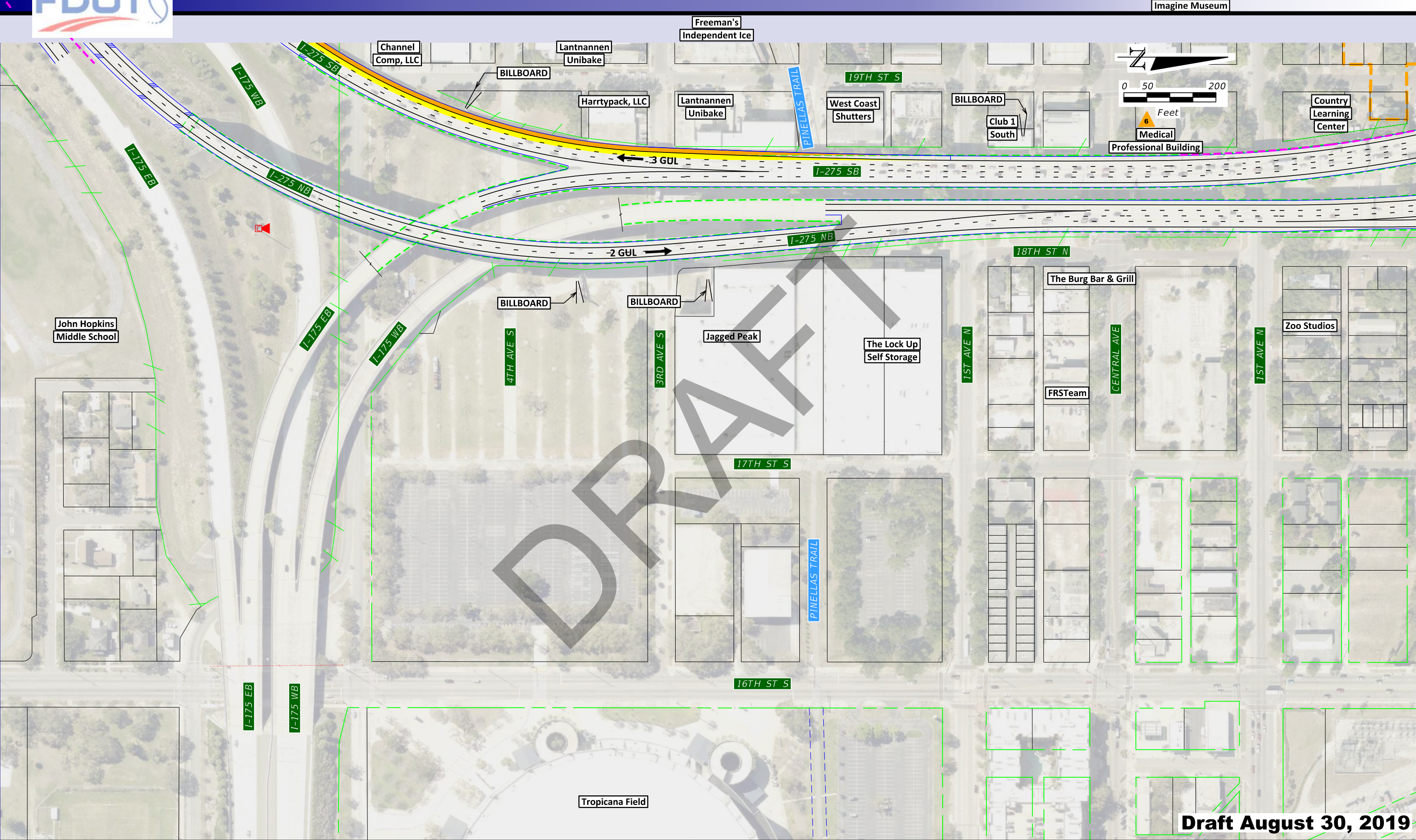
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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



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PAVEMENT WIDENING/RECONSTRUCTION	PEDESTRIAN TRAIL	SEAGRASS	EXPRESS LANE BRIDGE	WETLANDS	FLOOD PLAINS	PROPOSED LA R/W	CONTAMINATION	PROPOSED LA R/W	CONTAMINATION	ITS CAMERA	ITS CAMERA
PAVEMENT REMOVAL	EXPRESS LANES	SURFACE WATER	BRIDGES	MANGROVES	POTENTIAL RESIDENTIAL RELOCATION	EXISTING LA R/W	POTENTIAL NOISE BARRIER	EXISTING LA R/W	EXISTING LA R/W	EXISTING LA R/W	EXISTING LA R/W
BARRIER WALL	KENWOOD HISTORIC DISTRICT					PROPOSED EASEMENT		PROPOSED EASEMENT		PROPOSED EASEMENT	PROPOSED EASEMENT
BRIDGE WIDENING						PREFERRED SMF SITE & PROPOSED SMF R/W		PREFERRED SMF SITE & PROPOSED SMF R/W		PREFERRED SMF SITE & PROPOSED SMF R/W	PREFERRED SMF SITE & PROPOSED SMF R/W

Concept Plans

Design Change Re-evaluation

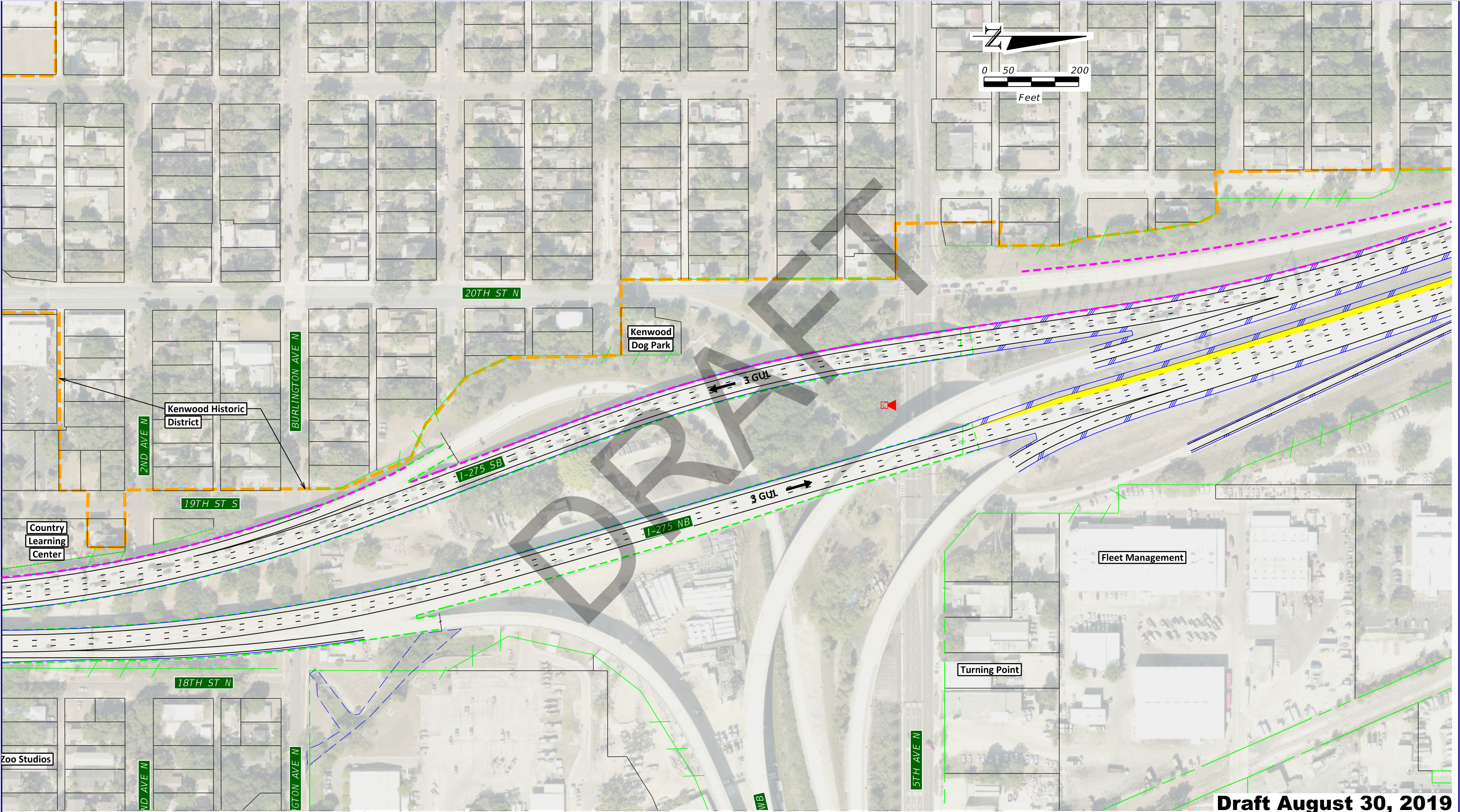
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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



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	PAVEMENT REMOVAL		EXPRESS LANE BRIDGE		WETLANDS		POTENTIAL RESIDENTIAL RELOCATION		EXISTING LA R/W
	BARRIER WALL		EXPRESS LANES		SURFACE WATER		POTENTIAL NOISE BARRIER		PROPOSED EASEMENT
	BRIDGE WIDENING		BRIDGES		MANGROVES				PREFERRED SMF SITE & PROPOSED SMF R/W
			KENWOOD HISTORIC DISTRICT						

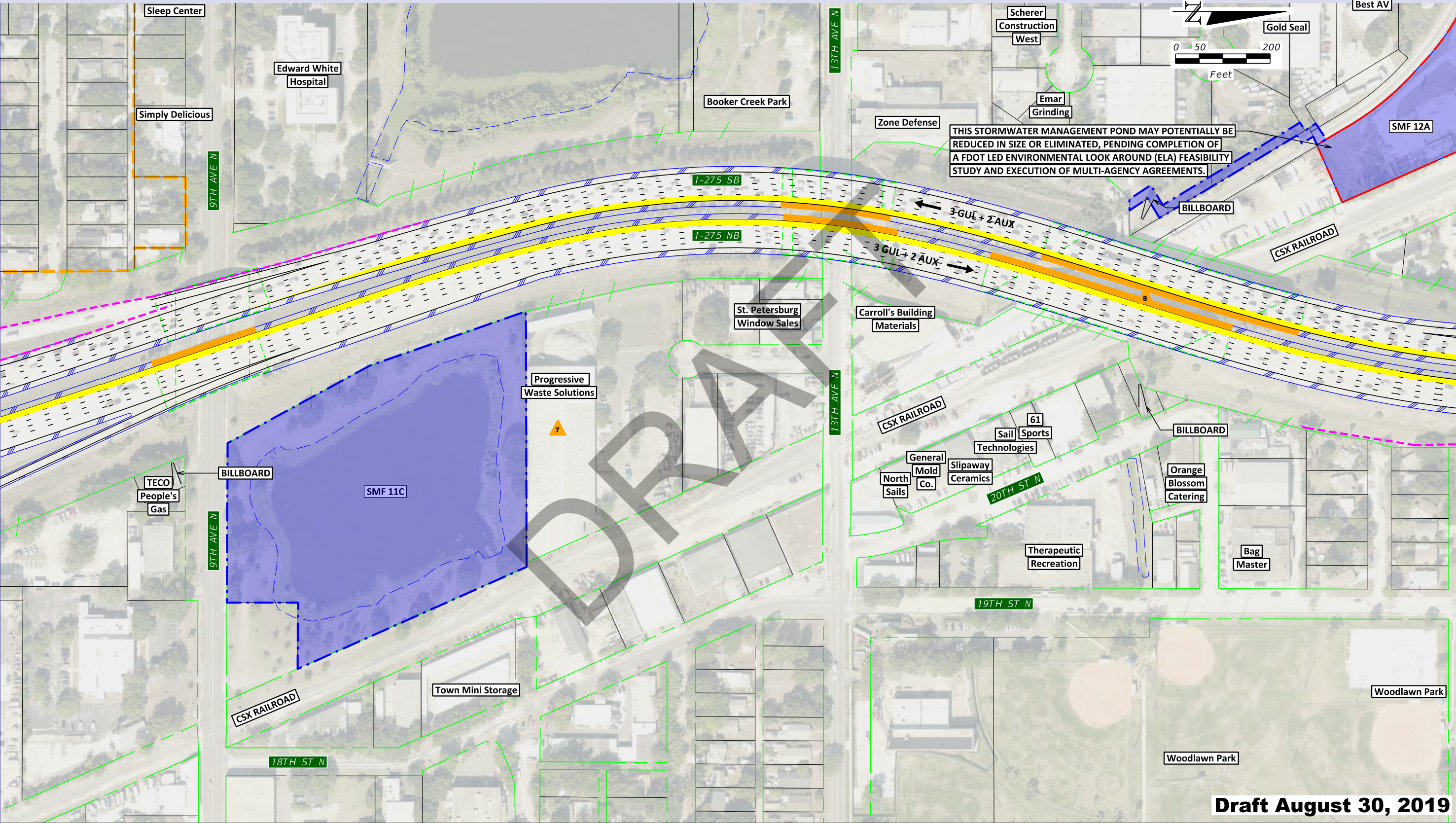
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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



Draft August 30, 2019

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	PAVEMENT WIDENING/RECONSTRUCTION		EXPRESS LANE BRIDGE		WETLANDS		CONTAMINATION		PROPOSED LA R/W		EL = EXPRESS LANES
	PAVEMENT REMOVAL		EXPRESS LANES		SURFACE WATER		POTENTIAL RESIDENTIAL RELOCATION		EXISTING LA R/W		GUL = GENERAL USE LANES
	BARRIER WALL		BRIDGES		MANGROVES		POTENTIAL NOISE BARRIER		PROPOSED EASEMENT		AUX = AUXILIARY LANES
	BRIDGE WIDENING		KENWOOD HISTORIC DISTRICT						PREFERRED SMF SITE & PROPOSED SMF R/W		Aerial Photos Jan. '18 - Apr. '18

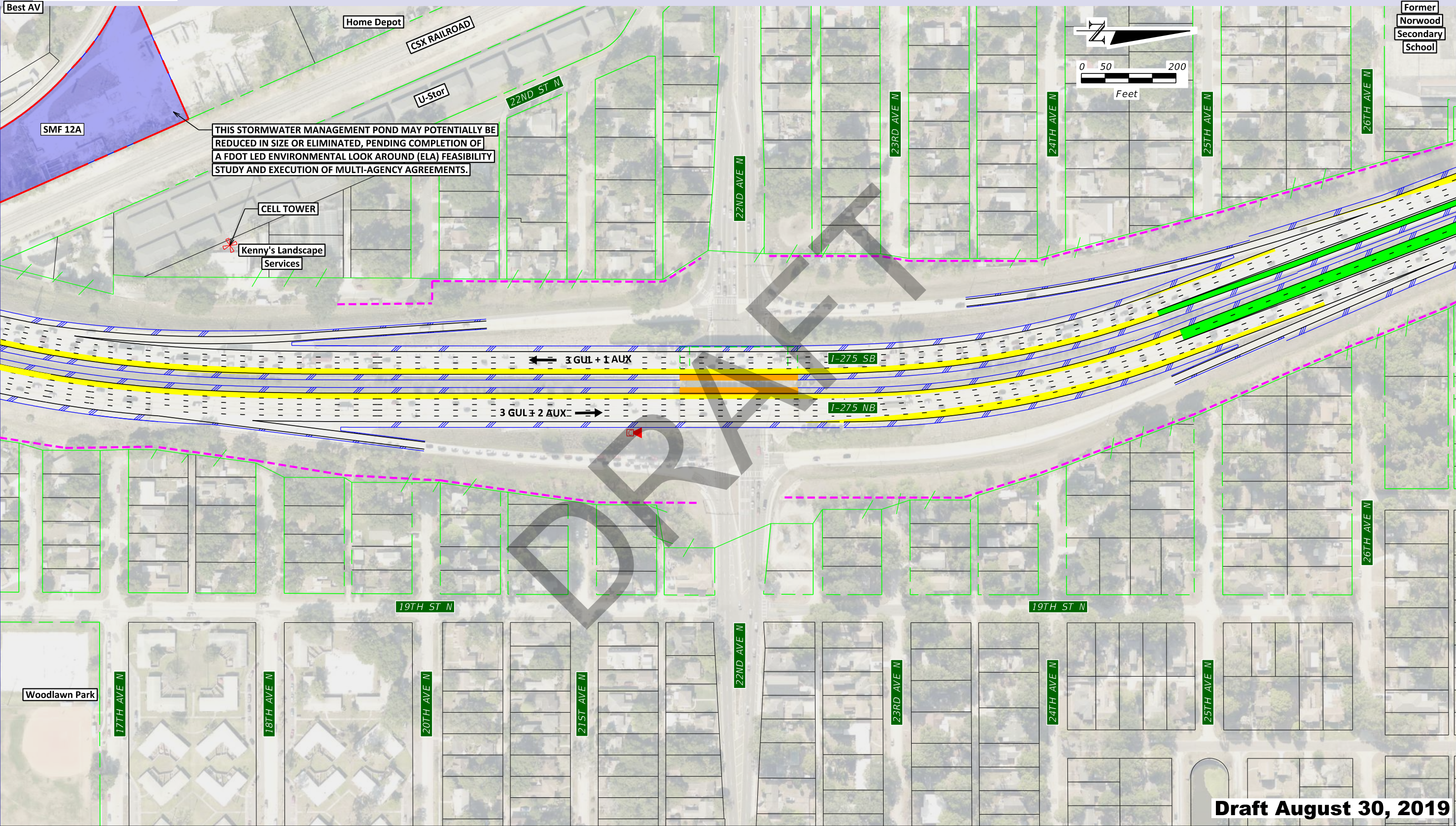
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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



<b>LEGEND:</b>			<b>PEDESTRIAN TRAIL</b>			<b>SEAGRASS</b>			<b>FLOOD PLAINS</b>			<b>PROPOSED LA R/W</b>			<b>ITS CAMERA</b>		
	PAVEMENT WIDENING/RECONSTRUCTION			EXPRESS LANE BRIDGE			WETLANDS			POTENTIAL RESIDENTIAL RELOCATION			EXISTING LA R/W			EL = EXPRESS LANES	
	PAVEMENT REMOVAL			EXPRESS LANES			SURFACE WATER			POTENTIAL NOISE BARRIER			PROPOSED EASEMENT			GUL = GENERAL USE LANES	
	BARRIER WALL			BRIDGES			MANGROVES						PREFERRED SMF SITE & PROPOSED SMF R/W			AUX = AUXILIARY LANES	
	BRIDGE WIDENING			KENWOOD HISTORIC DISTRICT												Aerial Photos Jan. '18 - Apr. '18	

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Concept Plans  
Design Change Re-evaluation

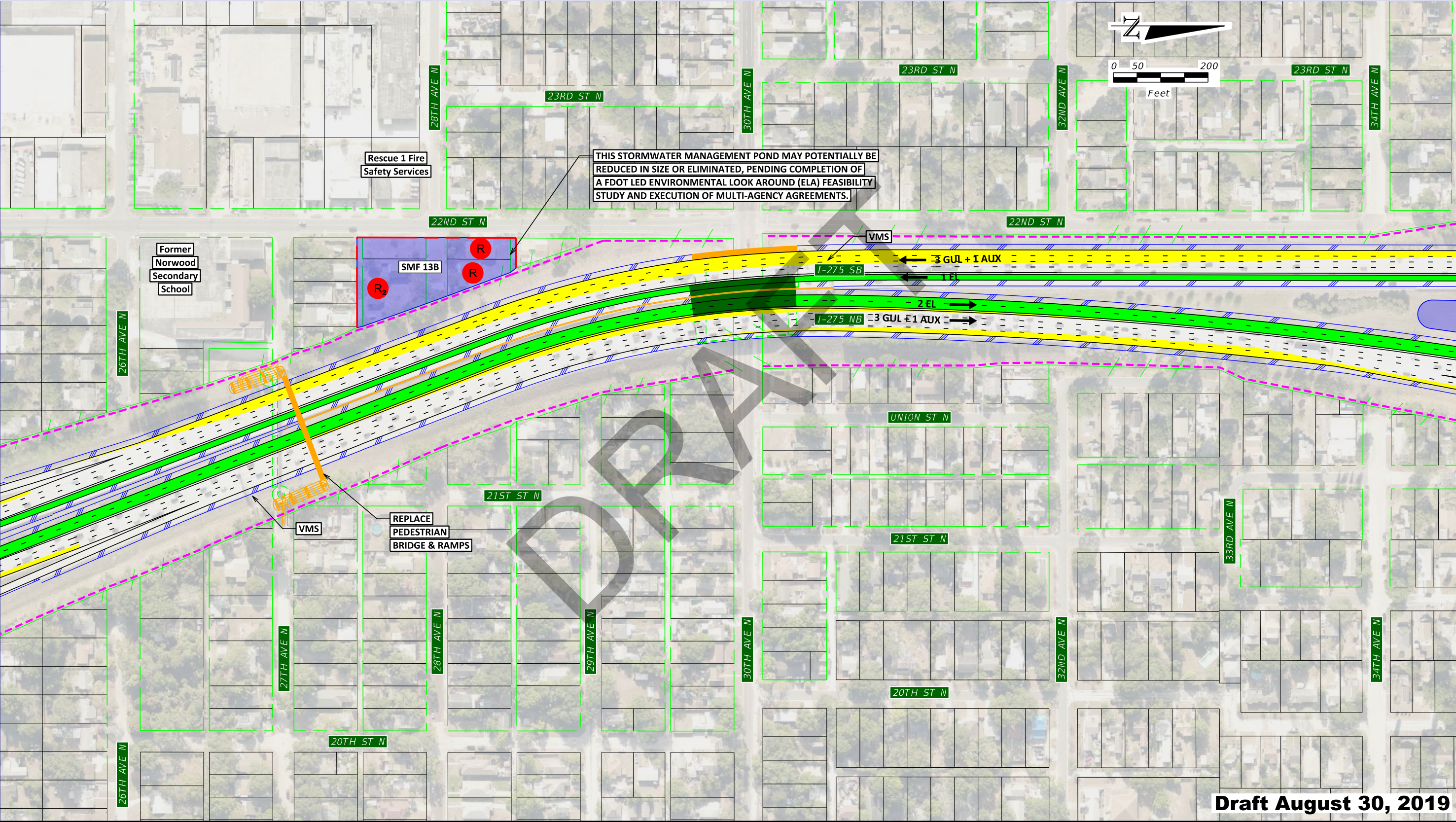
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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



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<b>LEGEND:</b>		PEDESTRIAN TRAIL	SEAGRASS	FLOOD PLAINS	PROPOSED LA R/W	ITS CAMERA
PAVEMENT WIDENING/RECONSTRUCTION	EXPRESS LANE BRIDGE	WETLANDS	SURFACE WATER	POTENTIAL RESIDENTIAL RELOCATION	EXISTING LA R/W	EL = EXPRESS LANES
PAVEMENT REMOVAL	EXPRESS LANES	MANGROVES	POTENTIAL NOISE BARRIER	PROPOSED EASEMENT		GUL = GENERAL USE LANES
BARRIER WALL	BRIDGES			PREFERRED SMF SITE & PROPOSED SMF R/W		AUX = AUXILIARY LANES
BRIDGE WIDENING	KENWOOD HISTORIC DISTRICT					

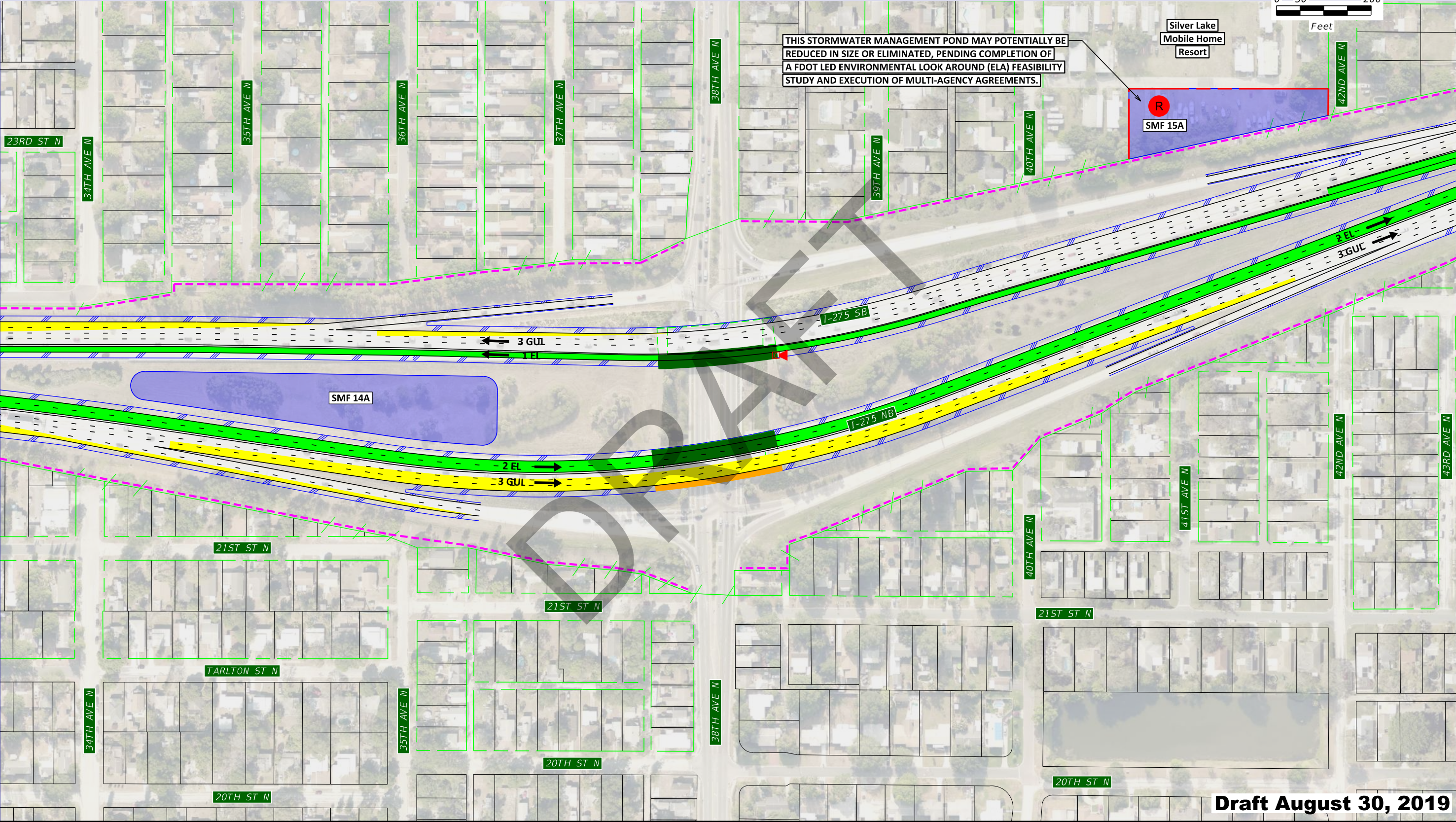
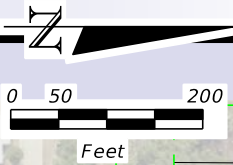
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Design Change Re-evaluation

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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



<b>LEGEND:</b>		<b>PEDESTRIAN TRAIL</b>	<b>SEAGRASS</b>	<b>FLOOD PLAINS</b>	<b>PROPOSED LA R/W</b>	<b>ITS CAMERA</b> <b>EL = EXPRESS LANES</b> <b>GUL = GENERAL USE LANES</b> <b>AUX = AUXILIARY LANES</b> <b>Aerial Photos Jan. '18 - Apr. '18</b>
<b>PAVEMENT WIDENING/RECONSTRUCTION</b>	<b>EXPRESS LANE BRIDGE</b>	<b>WETLANDS</b>	<b>CONTAMINATION</b>	<b>EXISTING LA R/W</b>		
<b>PAVEMENT REMOVAL</b>	<b>EXPRESS LANES</b>	<b>SURFACE WATER</b>	<b>POTENTIAL RESIDENTIAL RELOCATION</b>	<b>PROPOSED EASEMENT</b>		
<b>BARRIER WALL</b>	<b>BRIDGES</b>	<b>MANGROVES</b>	<b>POTENTIAL NOISE BARRIER</b>	<b>PREFERRED SMF SITE &amp; PROPOSED SMF R/W</b>		
<b>BRIDGE WIDENING</b>	<b>KENWOOD HISTORIC DISTRICT</b>					

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Concept Plans  
Design Change Re-evaluation

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Aerial Photos Jan. '18 - Apr. '18

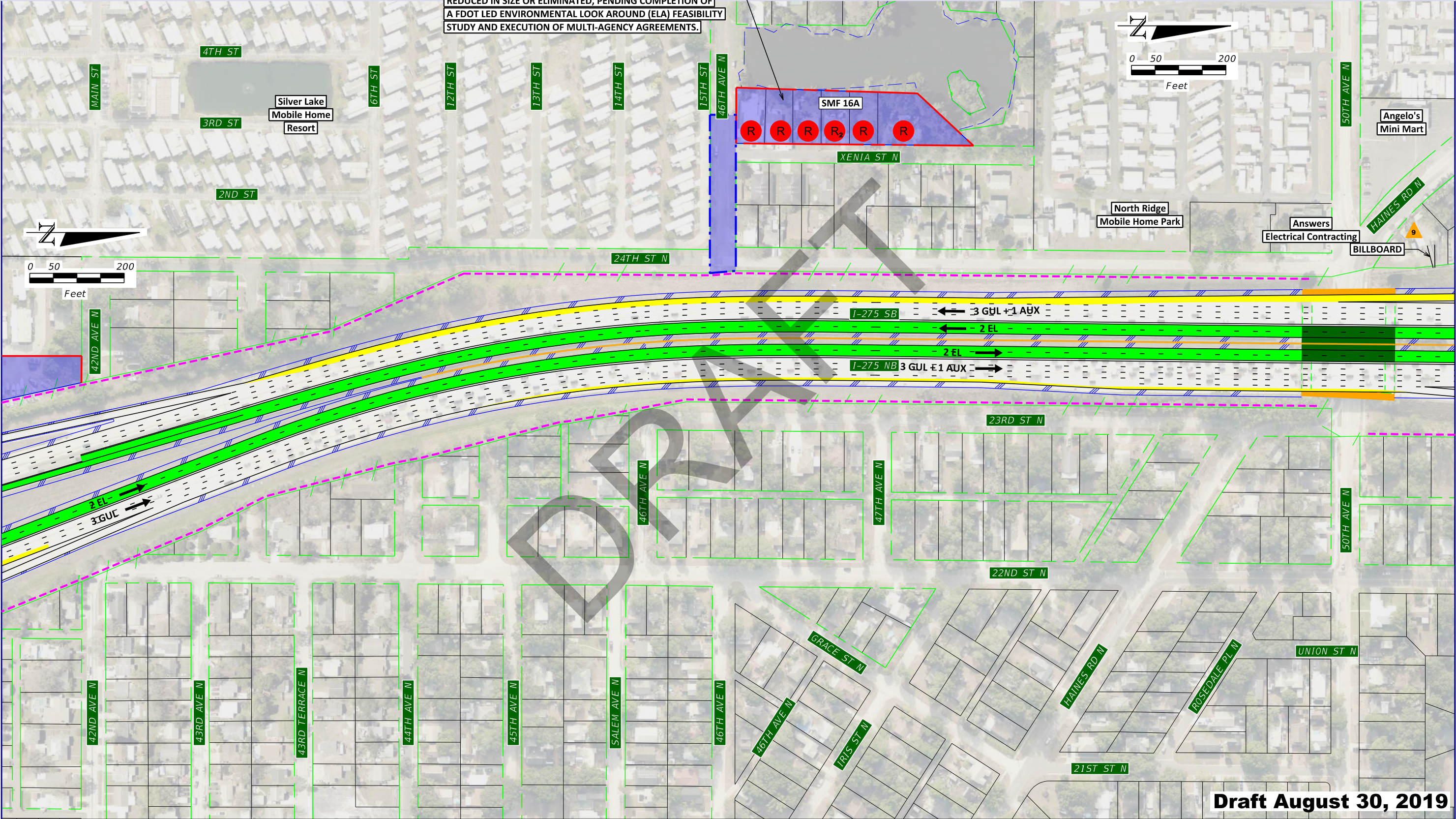
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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION

THIS STORMWATER MANAGEMENT POND MAY POTENTIALLY BE REDUCED IN SIZE OR ELIMINATED, PENDING COMPLETION OF A FDOT LED ENVIRONMENTAL LOOK AROUND (ELA) FEASIBILITY STUDY AND EXECUTION OF MULTI-AGENCY AGREEMENTS.

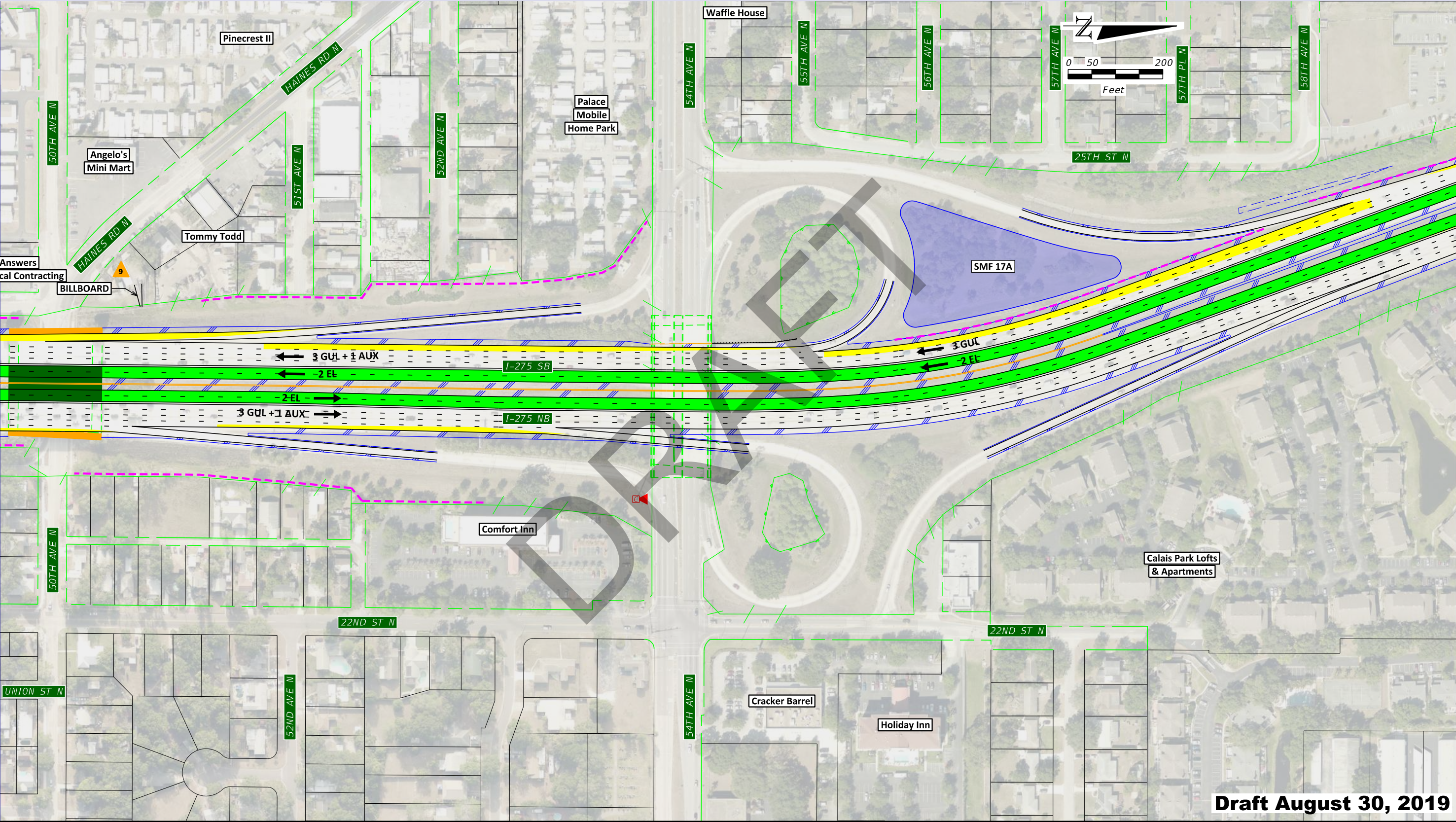


<b>LEGEND:</b>		<b>PEDESTRIAN TRAIL</b>		<b>SEAGRASS</b>		<b>FLOOD PLAINS</b>		<b>PROPOSED LA R/W</b>		<b>ITS CAMERA</b>	
	PAVEMENT WIDENING/RECONSTRUCTION		EXPRESS LANE BRIDGE		WETLANDS		CONTAMINATION		PROPOSED LA R/W		EL = EXPRESS LANES
	PAVEMENT REMOVAL		EXPRESS LANES		SURFACE WATER		POTENTIAL RESIDENTIAL RELOCATION		EXISTING LA R/W		GUL = GENERAL USE LANES
	BARRIER WALL		BRIDGES		MANGROVES		POTENTIAL NOISE BARRIER		PROPOSED EASEMENT		AUX = AUXILIARY LANES
	BRIDGE WIDENING		KENWOOD HISTORIC DISTRICT						PREFERRED SMF SITE & PROPOSED SMF R/W		





I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



LEGEND:		PEDESTRIAN TRAIL		SEAGRASS		FLOOD PLAINS		PROPOSED LA R/W		ITS CAMERA	
	PAVEMENT WIDENING/RECONSTRUCTION		EXPRESS LANE BRIDGE		WETLANDS		CONTAMINATION		PROPOSED LA R/W		EL = EXPRESS LANES
	PAVEMENT REMOVAL		EXPRESS LANES		SURFACE WATER		POTENTIAL RESIDENTIAL RELOCATION		EXISTING LA R/W		GUL = GENERAL USE LANES
	BARRIER WALL		BRIDGES		MANGROVES		POTENTIAL NOISE BARRIER		PROPOSED EASEMENT		AUX = AUXILIARY LANES
	BRIDGE WIDENING		KENWOOD HISTORIC DISTRICT						PREFERRED SMF SITE & PROPOSED SMF R/W		Aerial Photos Jan. '18 - Apr. '18

**Draft August 30, 2019**

Concept Plans  
Design Change Re-evaluation

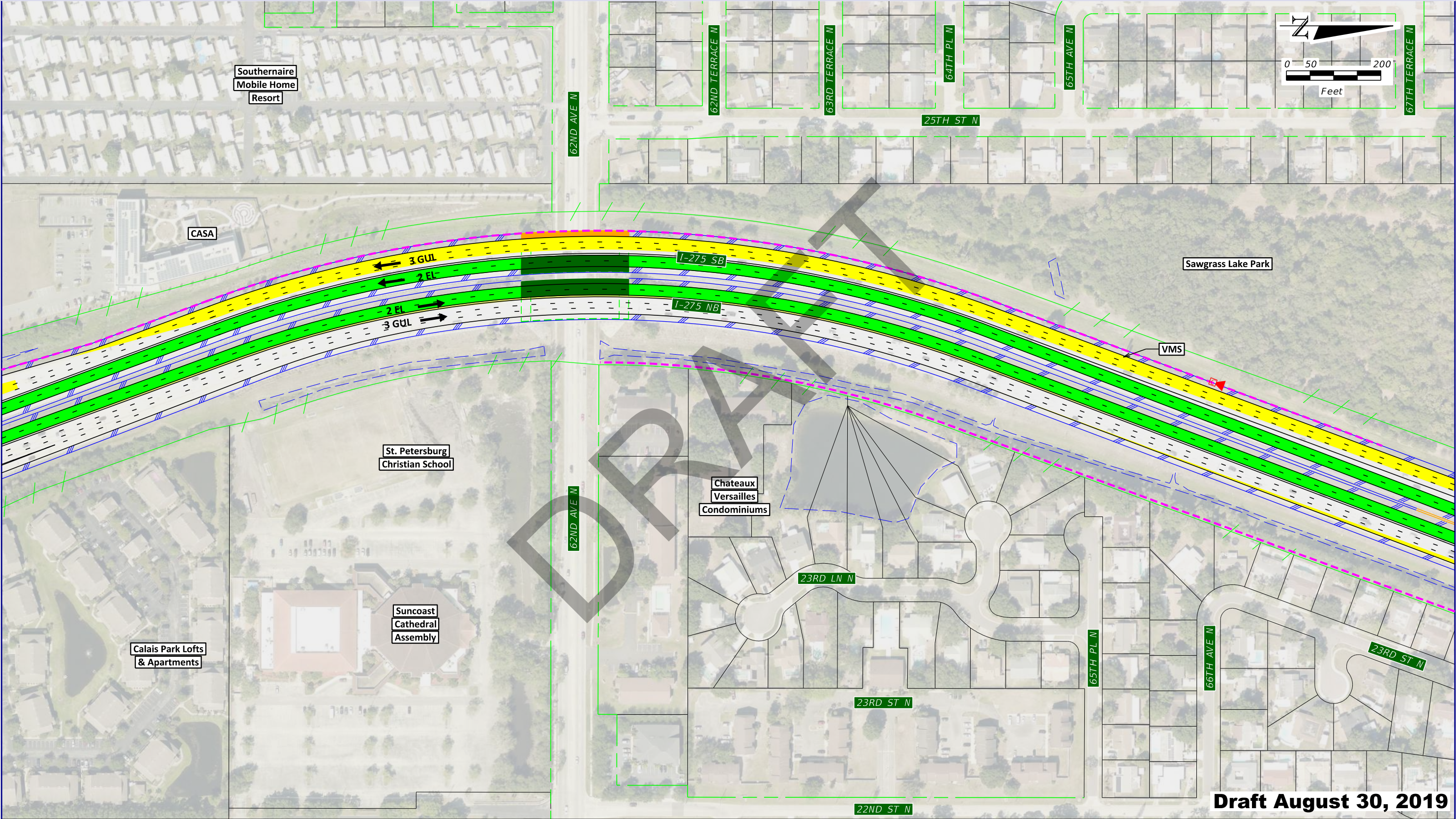
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
























I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



Draft August 30, 2019

<b>LEGEND:</b>	 PEDESTRIAN TRAIL	 SEAGRASS	 FLOOD PLAINS	 PROPOSED LA R/W	 ITS CAMERA
 PAVEMENT WIDENING/ RECONSTRUCTION	 EXPRESS LANE BRIDGE	 WETLANDS	 CONTAMINATION	 EXISTING LA R/W	EL = EXPRESS LANES
 PAVEMENT REMOVAL	 EXPRESS LANES	 SURFACE WATER	 POTENTIAL RESIDENTIAL RELOCATION	 PROPOSED EASEMENT	GUL = GENERAL USE LANES
 BARRIER WALL	 BRIDGES	 MANGROVES	 POTENTIAL NOISE BARRIER	 PREFERRED SMF SITE & PROPOSED SMF R/W	AUX = AUXILIARY LANES
 BRIDGE WIDENING	 KENWOOD HISTORIC DISTRICT				Aerial Photos Jan. '18 - Apr. '18

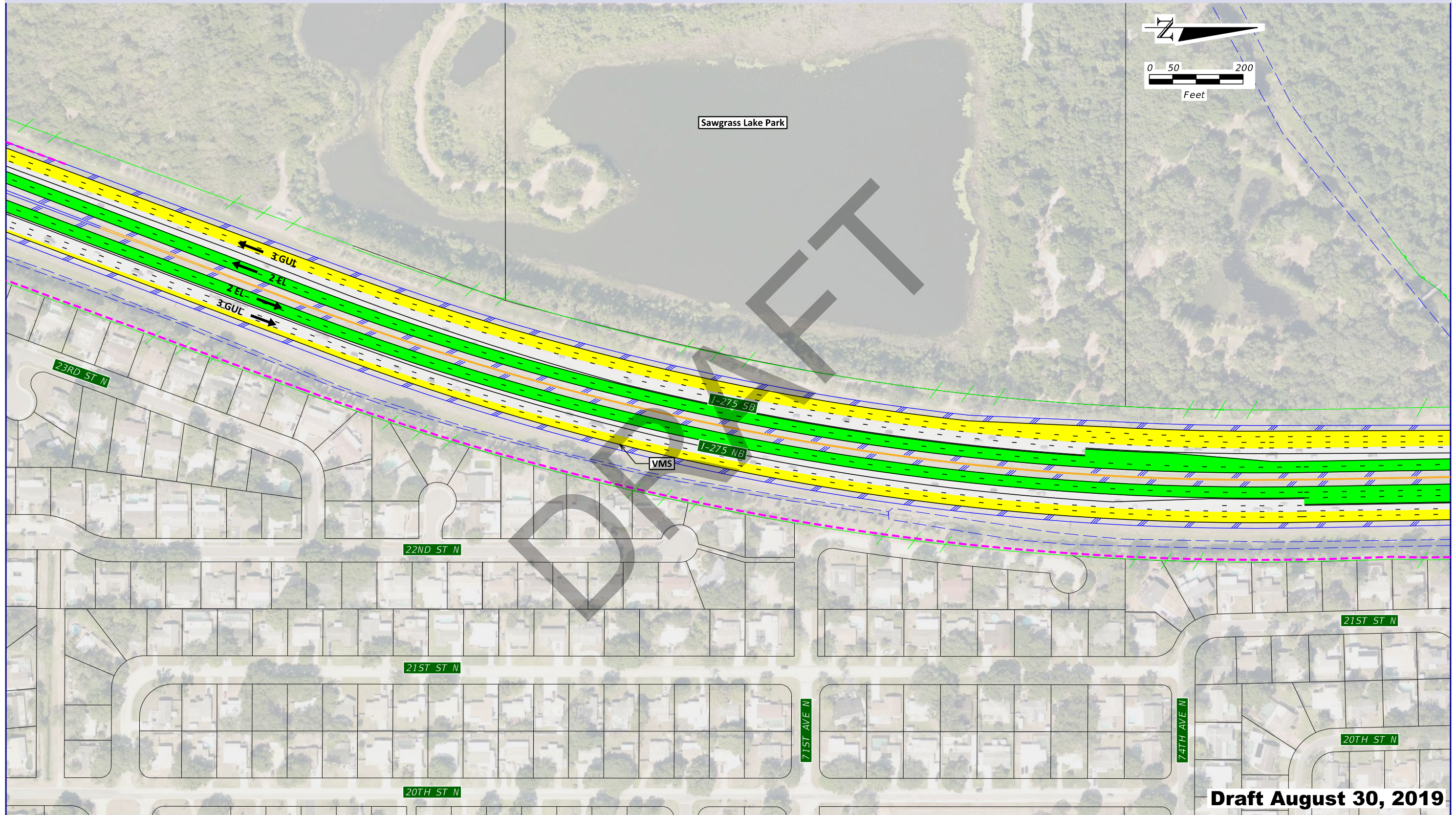
Concept Plans  
Design Change Re-evaluation

SHEET  
NO.  
17





# I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



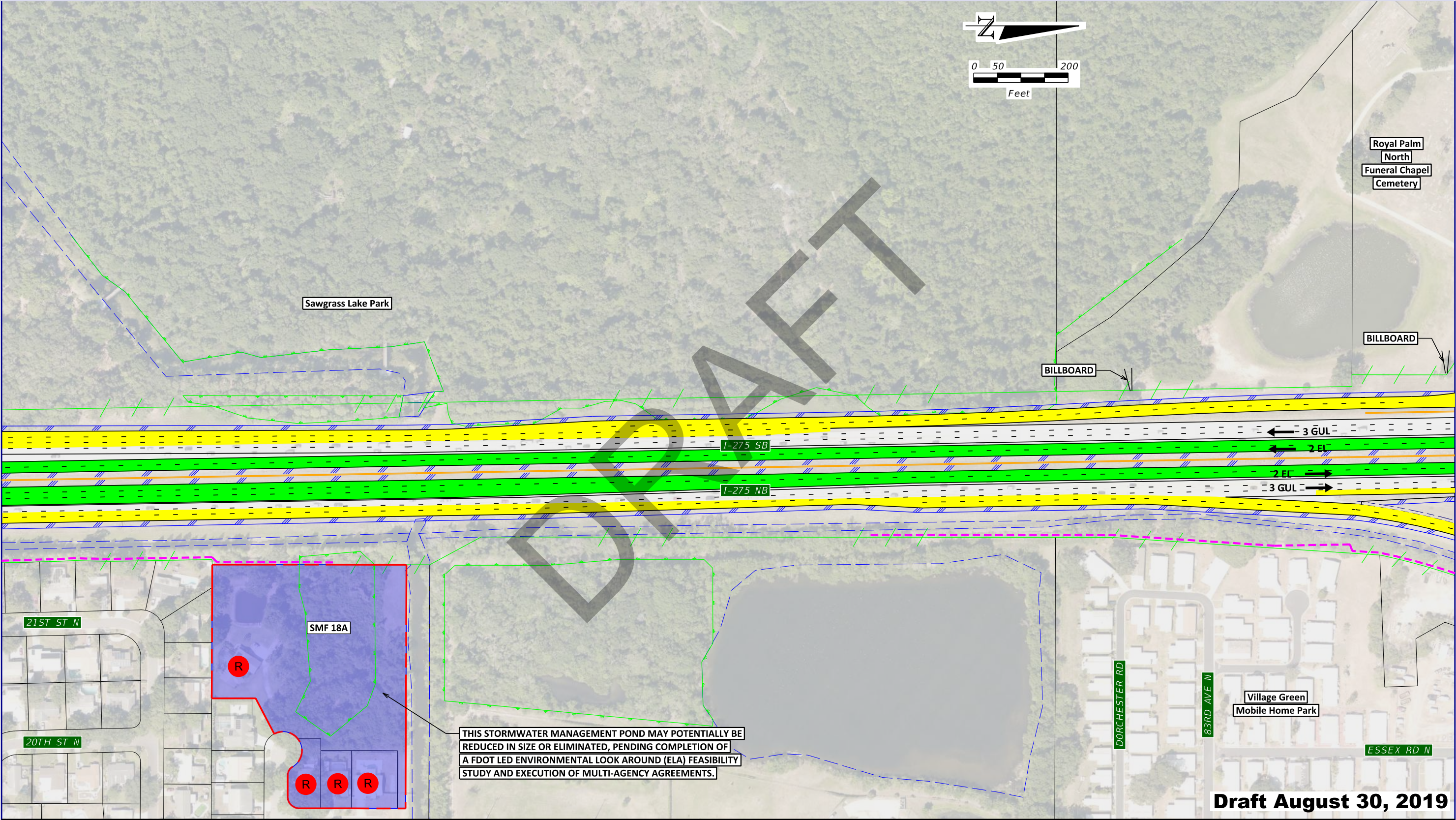
**Draft August 30, 2019**

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	EXPRESS LANE BRIDGE		EXPRESS LANES		WETLANDS		POTENTIAL RESIDENTIAL RELOCATION		EXISTING LA R/W
	PAVEMENT REMOVAL		BRIDGES		SURFACE WATER		POTENTIAL NOISE BARRIER		PROPOSED EASEMENT
	BARRIER WALL		KENWOOD HISTORIC DISTRICT		MANGROVES				PREFERRED SMF SITE & PROPOSED SMF R/W
	BRIDGE WIDENING								

Concept Plans  
Design Change Re-evaluation

SHEET  
NO.  
18



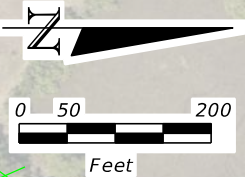
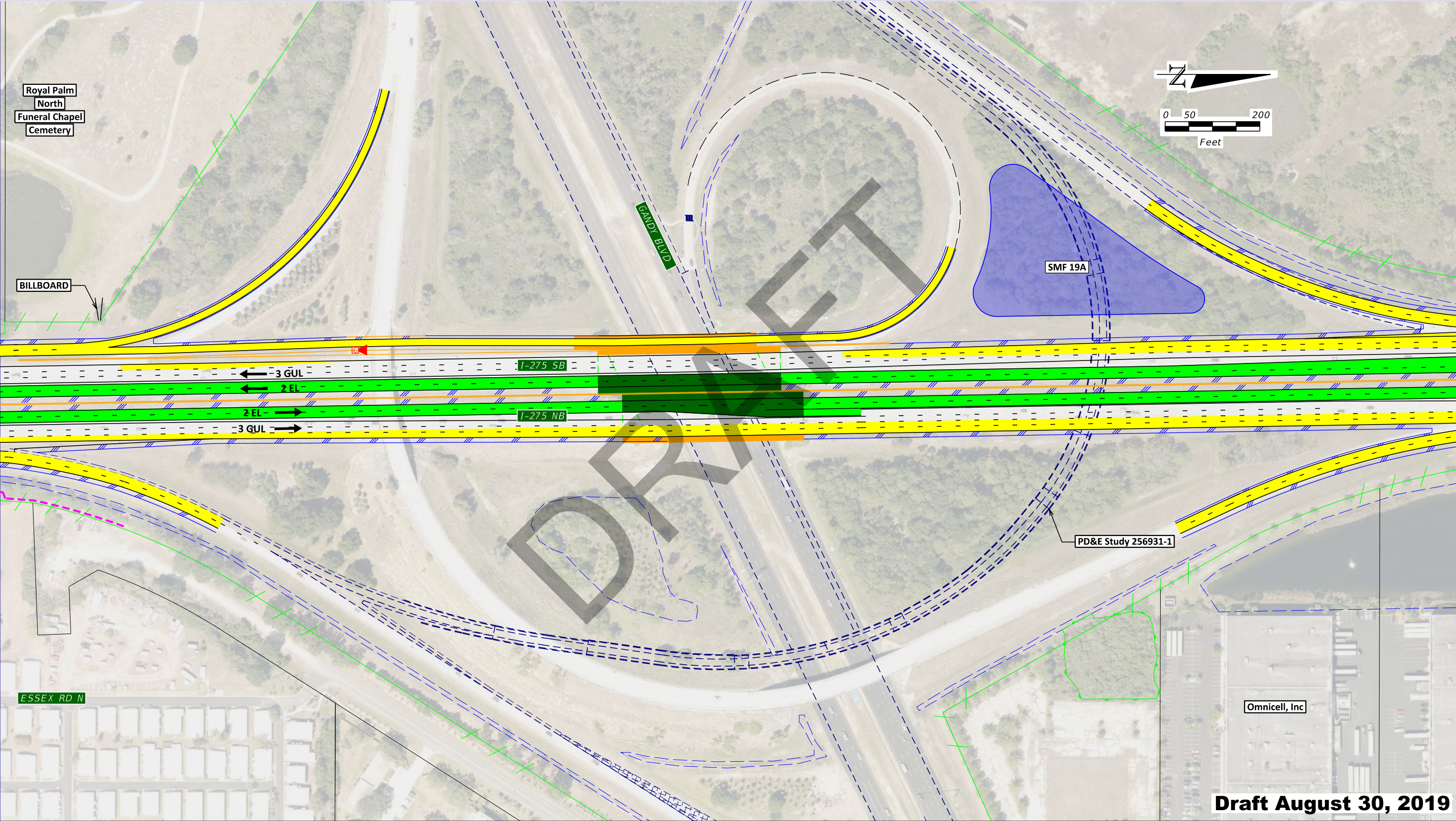


<b>LEGEND:</b>		<b>PEDESTRIAN TRAIL</b>		<b>SEAGRASS</b>		<b>FLOOD PLAINS</b>		<b>PROPOSED LA R/W</b>		<b>ITS CAMERA</b>	
	PAVEMENT WIDENING/RECONSTRUCTION		EXPRESS LANE BRIDGE		WETLANDS		CONTAMINATION		PROPOSED LA R/W		EL = EXPRESS LANES
	PAVEMENT REMOVAL		EXPRESS LANES		SURFACE WATER		POTENTIAL RESIDENTIAL RELOCATION		EXISTING LA R/W		GUL = GENERAL USE LANES
	BARRIER WALL		BRIDGES		MANGROVES		POTENTIAL NOISE BARRIER		PROPOSED EASEMENT		AUX = AUXILIARY LANES
	BRIDGE WIDENING		KENWOOD HISTORIC DISTRICT						PREFERRED SMF SITE & PROPOSED SMF R/W		





I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



<b>LEGEND:</b>		PEDESTRIAN TRAIL	SEAGRASS	FLOOD PLAINS	PROPOSED LA R/W	ITS CAMERA
PAVEMENT WIDENING/RECONSTRUCTION	EXPRESS LANE BRIDGE	WETLANDS	SURFACE WATER	CONTAMINATION	EXISTING LA R/W	EL = EXPRESS LANES
PAVEMENT REMOVAL	EXPRESS LANES	MANGROVES	POTENTIAL RESIDENTIAL RELOCATION	POTENTIAL NOISE BARRIER	PROPOSED EASEMENT	GUL = GENERAL USE LANES
BARRIER WALL	BRIDGES				PREFERRED SMF SITE & PROPOSED SMF R/W	AUX = AUXILIARY LANES
BRIDGE WIDENING	KENWOOD HISTORIC DISTRICT					

Concept Plans

Design Change Re-evaluation

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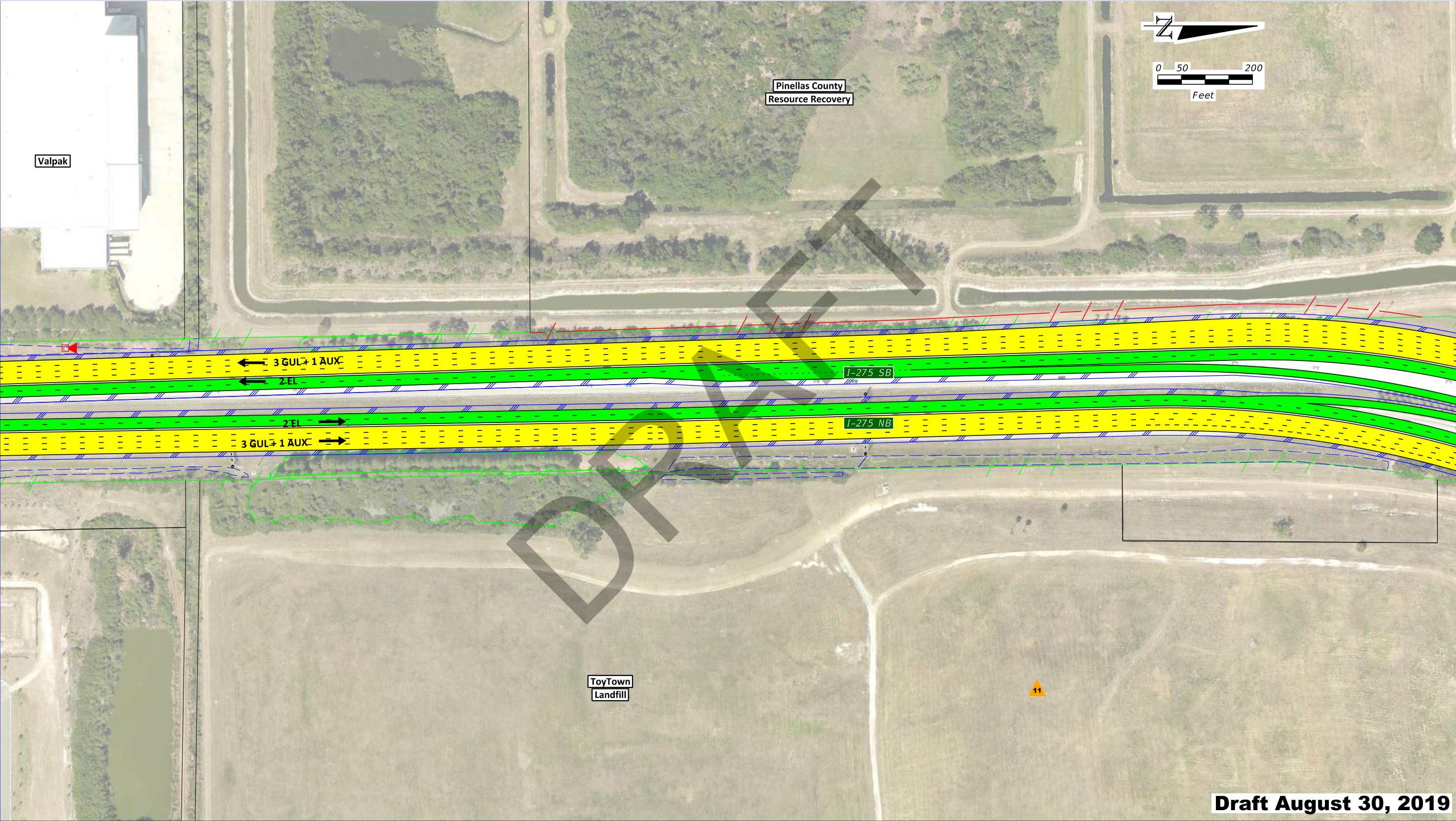


Concept Plans  
Design Change Re-evaluation





12



Draft August 30, 2019

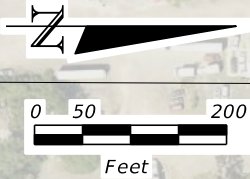
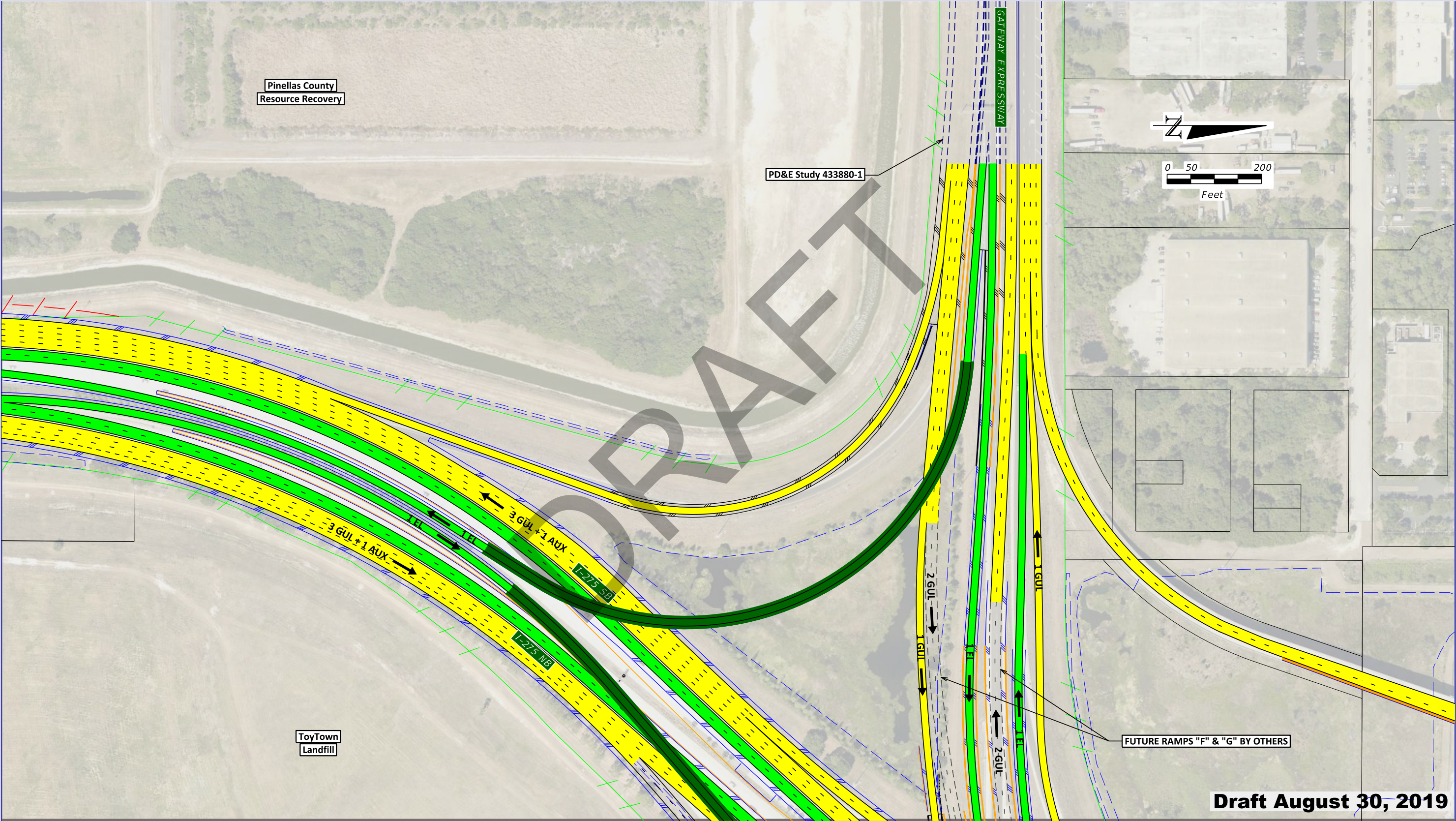
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Concept Plans  
Design Change Re-evaluation

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Draft August 30, 2019

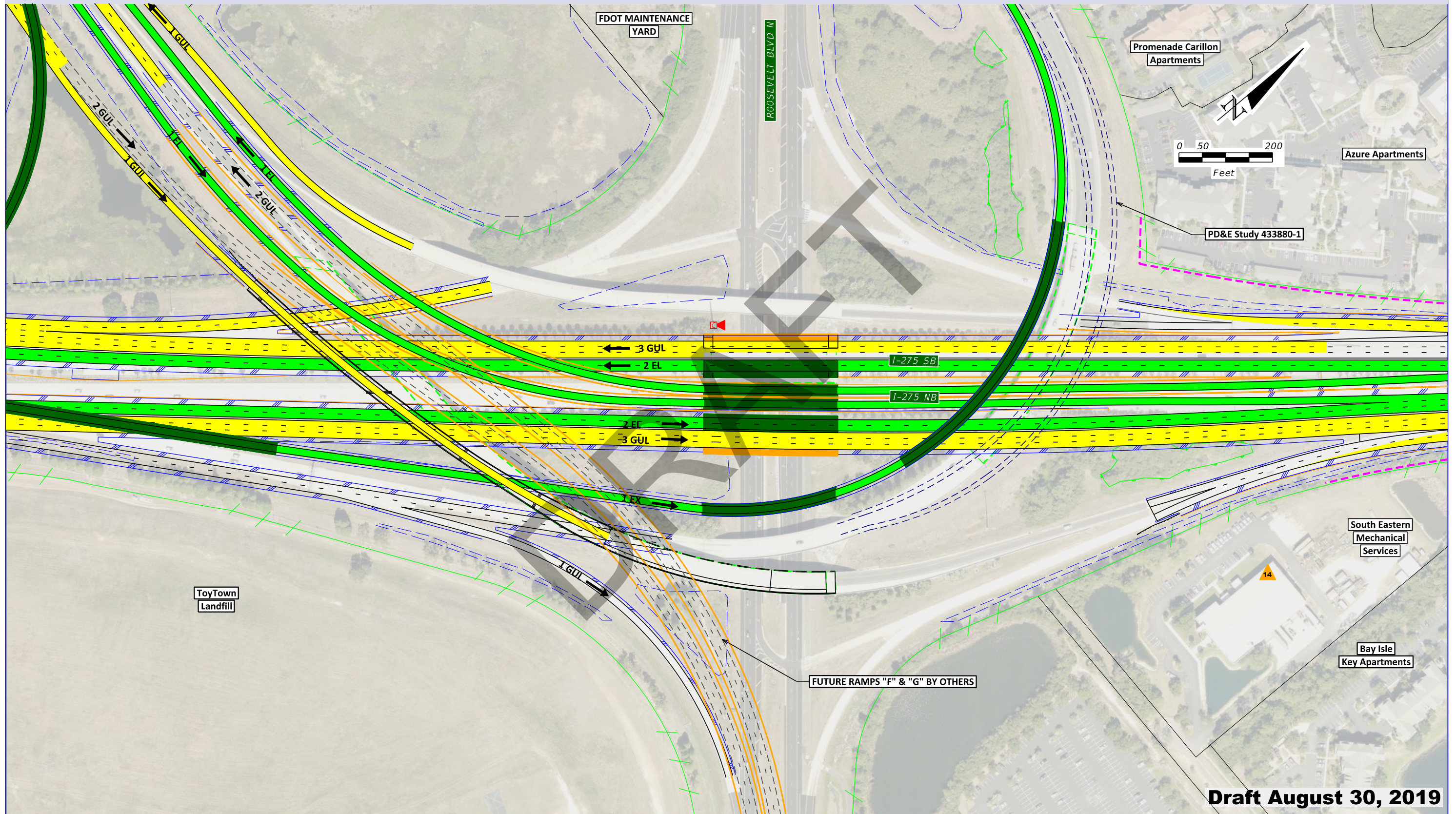
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PAVEMENT WIDENING/RECONSTRUCTION	EXPRESS LANE BRIDGE	WETLANDS	SURFACE WATER	CONTAMINATION	EXISTING LA R/W	EL = EXPRESS LANES
PAVEMENT REMOVAL	EXPRESS LANES	MANGROVES	POTENTIAL RESIDENTIAL RELOCATION	PROPOSED EASEMENT	GUL = GENERAL USE LANES	AUX = AUXILIARY LANES
BARRIER WALL	BRIDGES		POTENTIAL NOISE BARRIER	PREFERRED SMF SITE & PROPOSED SMF R/W	Aerial Photos Jan. '18 - Apr. '18	
BRIDGE WIDENING	KENWOOD HISTORIC DISTRICT					

Concept Plans  
Design Change Re-evaluation





# I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



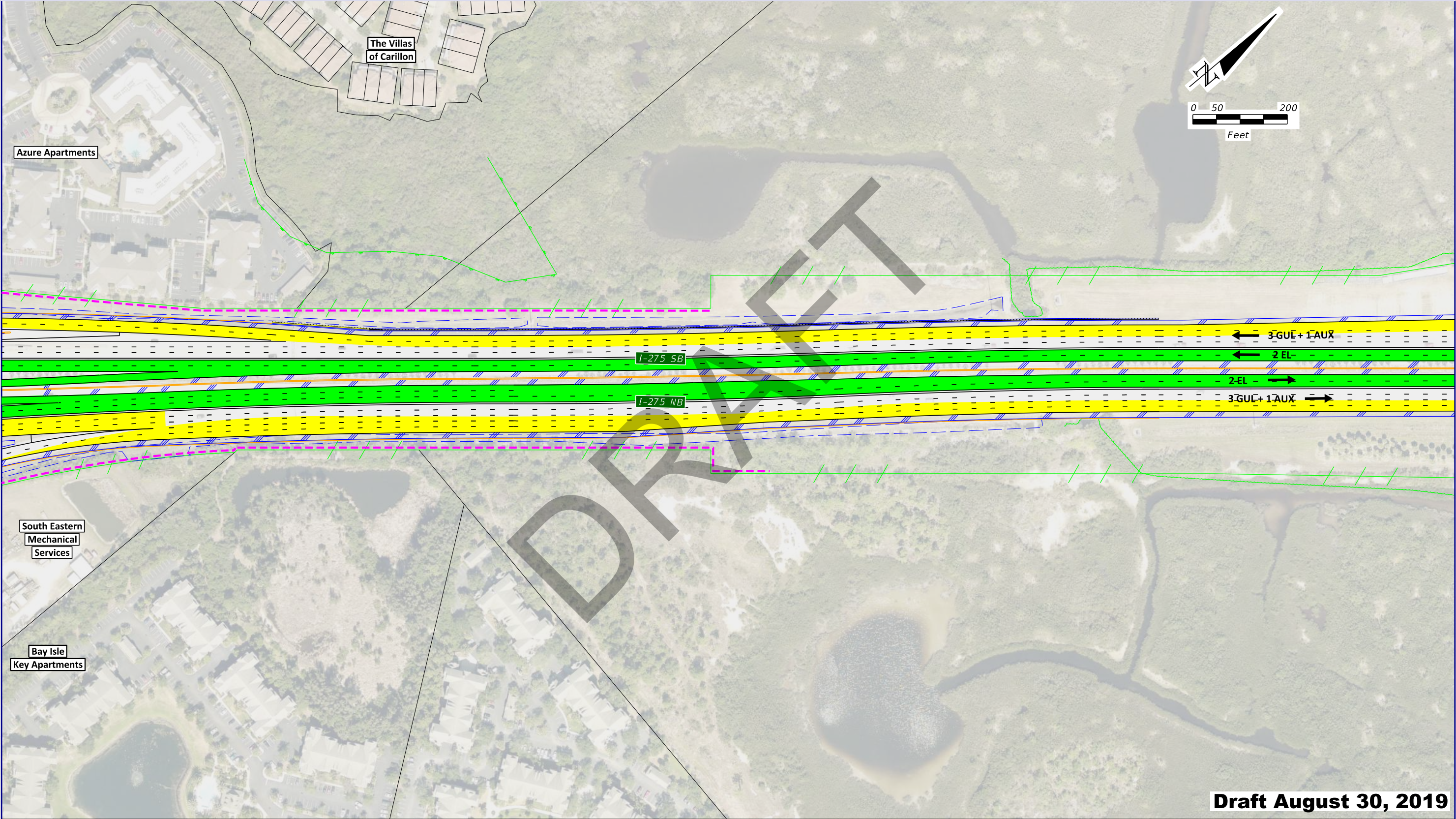
Draft August 30, 2019

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	PAVEMENT REMOVAL		EXPRESS LANE BRIDGE		WETLANDS		EXISTING LA R/W
	BARRIER WALL		EXPRESS LANES		SURFACE WATER		PROPOSED EASEMENT
	BRIDGE WIDENING		BRIDGES		MANGROVES		PREFERRED SMF SITE & PROPOSED SMF R/W
			KENWOOD HISTORIC DISTRICT				POTENTIAL RESIDENTIAL RELOCATION
							POTENTIAL NOISE BARRIER

Concept Plans  
Design Change Re-evaluation

SHEET  
NO.  
24





Draft August 30, 2019

**LEGEND:**

- PAVEMENT WIDENING/RECONSTRUCTION
- PAVEMENT REMOVAL
- BARRIER WALL
- BRIDGE WIDENING

- PEDESTRIAN TRAIL
- EXPRESS LANE BRIDGE
- EXPRESS LANES
- BRIDGES
- KENWOOD HISTORIC DISTRICT

- SEAGRASS
- WETLANDS
- SURFACE WATER
- MANGROVES

- FLOOD PLAINS
- POTENTIAL RESIDENTIAL RELOCATION
- POTENTIAL NOISE BARRIER

- PROPOSED LA R/W
- EXISTING LA R/W
- PROPOSED EASEMENT
- PREFERRED SMF SITE & PROPOSED SMF R/W

- ITS CAMERA
- EL = EXPRESS LANES
- GUL = GENERAL USE LANES
- AUX = AUXILIARY LANES

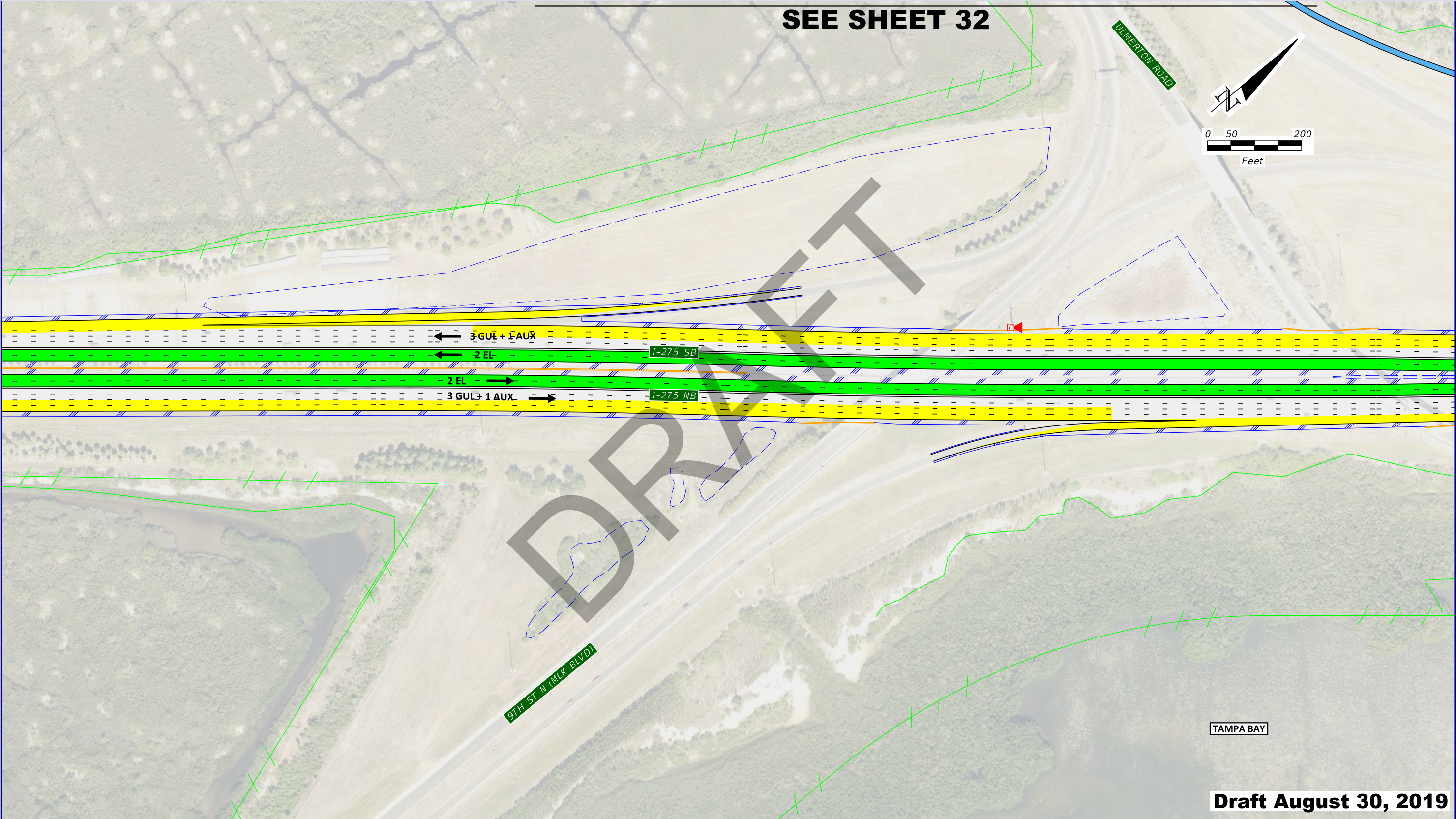
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Concept Plans  
Design Change Re-evaluation

SHEET NO. 25





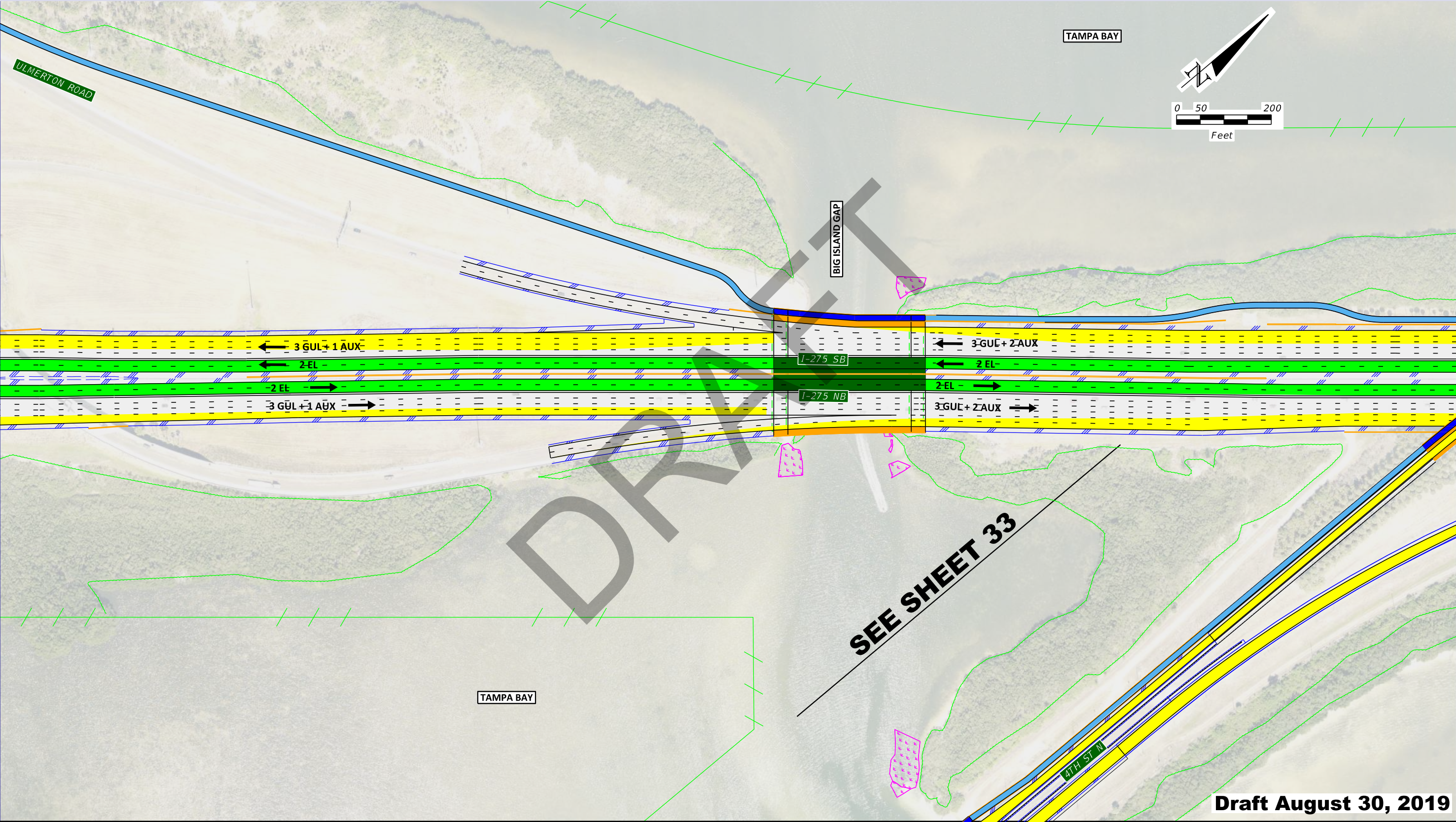
Draft August 30, 2019



<b>LEGEND:</b> <div> PAVEMENT WIDENING/RECONSTRUCTION</div> <div> PAVEMENT REMOVAL</div> <div> BARRIER WALL</div> <div> BRIDGE WIDENING</div>	<div> PEDESTRIAN TRAIL</div> <div> EXPRESS LANE BRIDGE</div> <div> EXPRESS LANES</div> <div> BRIDGES</div> <div> KENWOOD HISTORIC DISTRICT</div>	<div> SEAGRASS</div> <div> WETLANDS</div> <div> SURFACE WATER</div> <div> MANGROVES</div>	<div> FLOOD PLAINS</div> <div> CONTAMINATION</div> <div> POTENTIAL RESIDENTIAL RELOCATION</div> <div> POTENTIAL NOISE BARRIER</div>	<div> PROPOSED LA R/W</div> <div> EXISTING LA R/W</div> <div> PROPOSED EASEMENT</div> <div> PREFERRED SMF SITE &amp; PROPOSED SMF R/W</div>	<div> ITS CAMERA</div> <div><b>EL = EXPRESS LANES</b></div> <div><b>GUL = GENERAL USE LANES</b></div> <div><b>AUX = AUXILIARY LANES</b></div> <div><b>Aerial Photos Jan. '18 - Apr. '18</b></div>	<div>Concept Plans</div> <div>Design Change Re-evaluation</div> <div>SHEET NO. 26</div>
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I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



<b>LEGEND:</b>			<b>PEDESTRIAN TRAIL</b>		<b>SEAGRASS</b>		<b>FLOOD PLAINS</b>		<b>PROPOSED LA R/W</b>		<b>ITS CAMERA</b>
	<b>PAVEMENT WIDENING/ RECONSTRUCTION</b>		<b>EXPRESS LANE BRIDGE</b>		<b>WETLANDS</b>		<b>CONTAMINATION</b>		<b>EXISTING LA R/W</b>	<b>EL = EXPRESS LANES</b>	
	<b>PAVEMENT REMOVAL</b>		<b>EXPRESS LANES</b>		<b>SURFACE WATER</b>		<b>POTENTIAL RESIDENTIAL RELOCATION</b>		<b>PROPOSED EASEMENT</b>	<b>GUL = GENERAL USE LANES</b>	
	<b>BARRIER WALL</b>		<b>BRIDGES</b>		<b>MANGROVES</b>		<b>POTENTIAL NOISE BARRIER</b>		<b>PREFERRED SMF SITE &amp; PROPOSED SMF R/W</b>	<b>AUX = AUXILIARY LANES</b>	
	<b>BRIDGE WIDENING</b>		<b>KENWOOD HISTORIC DISTRICT</b>							<b>Aerial Photos Jan. '18 - Apr. '18</b>	





I-275 (SR 93) DESIGN CHANGE RE-EVALUATION



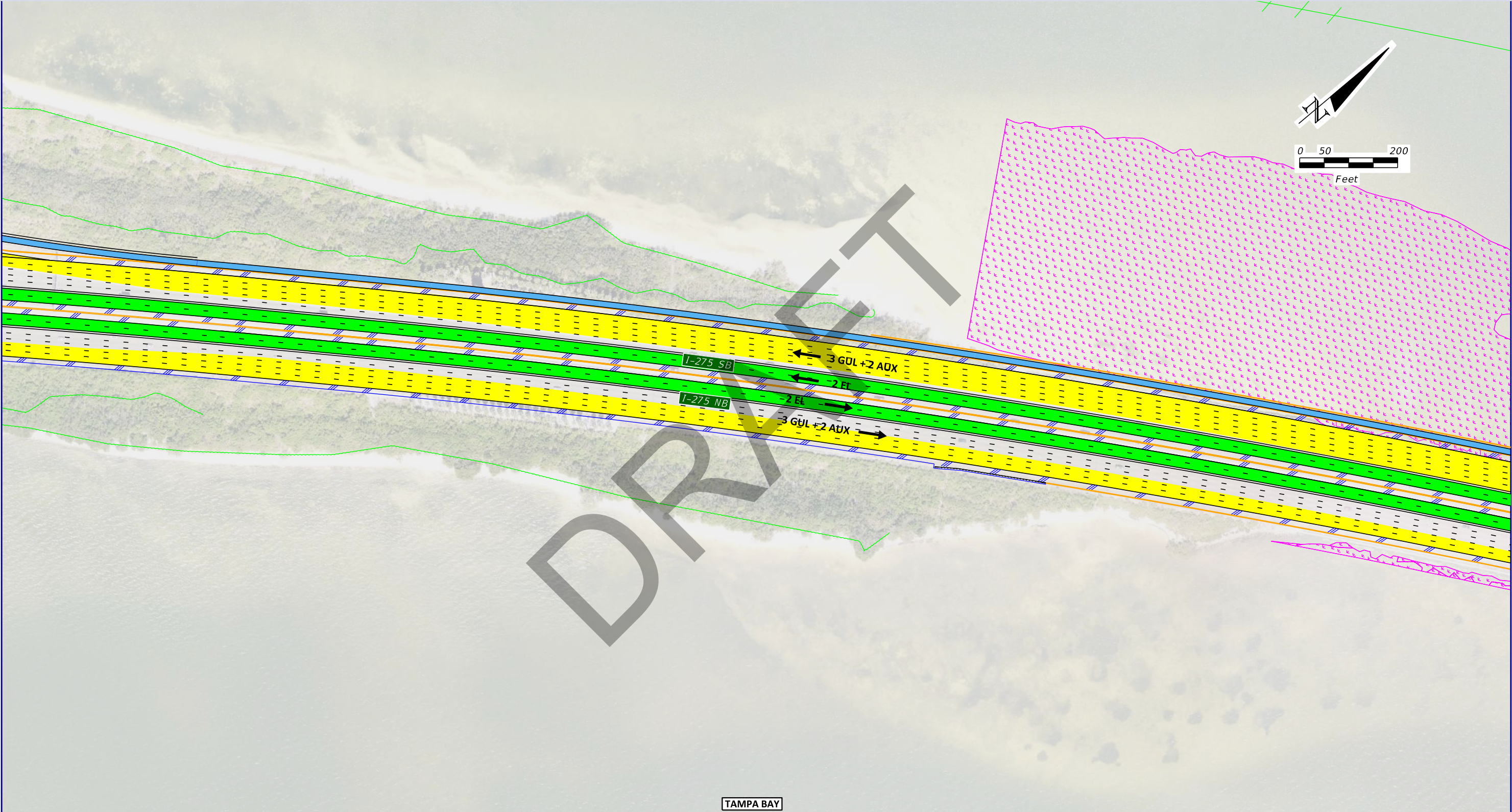
Draft August 30, 2019

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	PAVEMENT REMOVAL		EXPRESS LANE BRIDGE		WETLANDS		CONTAMINATION		EXISTING LA R/W		EL = EXPRESS LANES
	BARRIER WALL		EXPRESS LANES		SURFACE WATER		POTENTIAL RESIDENTIAL RELOCATION		PROPOSED EASEMENT		GUL = GENERAL USE LANES
	BRIDGE WIDENING		BRIDGES		MANGROVES		POTENTIAL NOISE BARRIER		PREFERRED SMF SITE & PROPOSED SMF R/W		AUX = AUXILIARY LANES
			KENWOOD HISTORIC DISTRICT								Aerial Photos Jan. '18 - Apr. '18

Concept Plans  
Design Change Re-evaluation

SHEET  
NO.  
28





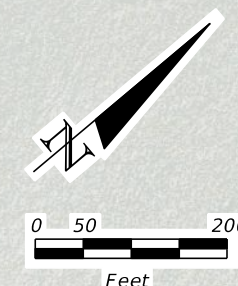
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























<b>LEGEND:</b>		PEDESTRIAN TRAIL	SEAGRASS	FLOOD PLAINS	PROPOSED LA R/W	ITS CAMERA
PAVEMENT WIDENING/RECONSTRUCTION	EXPRESS LANE BRIDGE	WETLANDS	POTENTIAL RESIDENTIAL RELOCATION	EXISTING LA R/W	EL = EXPRESS LANES	GUL = GENERAL USE LANES
PAVEMENT REMOVAL	EXPRESS LANES	SURFACE WATER	POTENTIAL NOISE BARRIER	PROPOSED EASEMENT	AUX = AUXILIARY LANES	
BARRIER WALL	BRIDGES	MANGROVES		PREFERRED SMF SITE & PROPOSED SMF R/W		
BRIDGE WIDENING	KENWOOD HISTORIC DISTRICT					

Concept Plans  
Design Change Re-evaluation

SHEET  
NO.  
29



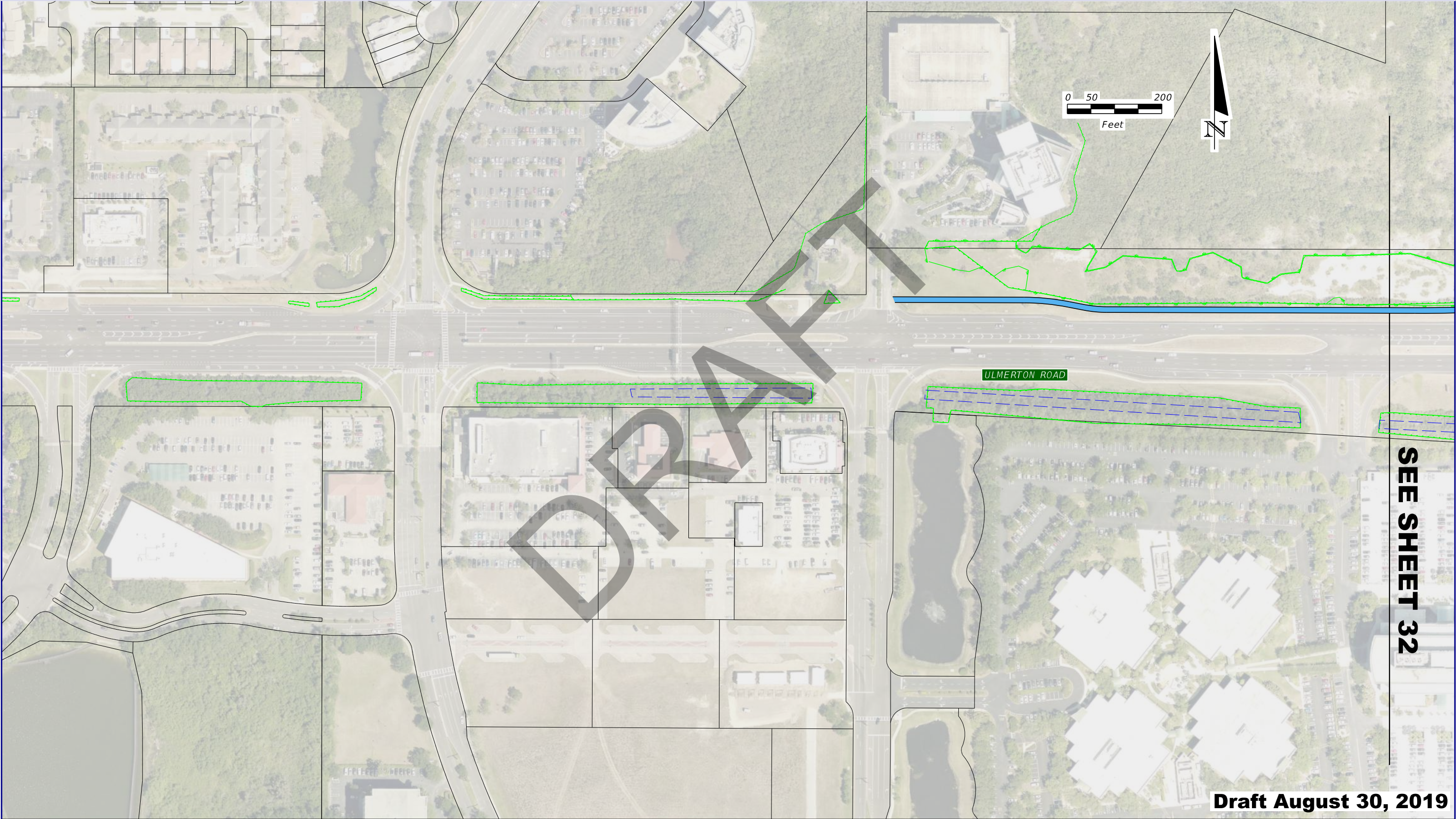


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	EXPRESS LANE BRIDGE		EXPRESS LANE BRIDGE		WETLANDS		POTENTIAL RESIDENTIAL RELOCATION		EXISTING LA R/W		PROPOSED EASEMENT
	PAVEMENT REMOVAL		EXPRESS LANES		SURFACE WATER		POTENTIAL NOISE BARRIER		PREFERRED SMF SITE & PROPOSED SMF R/W		EL = EXPRESS LANES
	BARRIER WALL		BRIDGES		MANGROVES						GUL = GENERAL USE LANES
	BRIDGE WIDENING		KENWOOD HISTORIC DISTRICT								AUX = AUXILIARY LANES

Aerial Photos Jan. '18 - Apr. '18

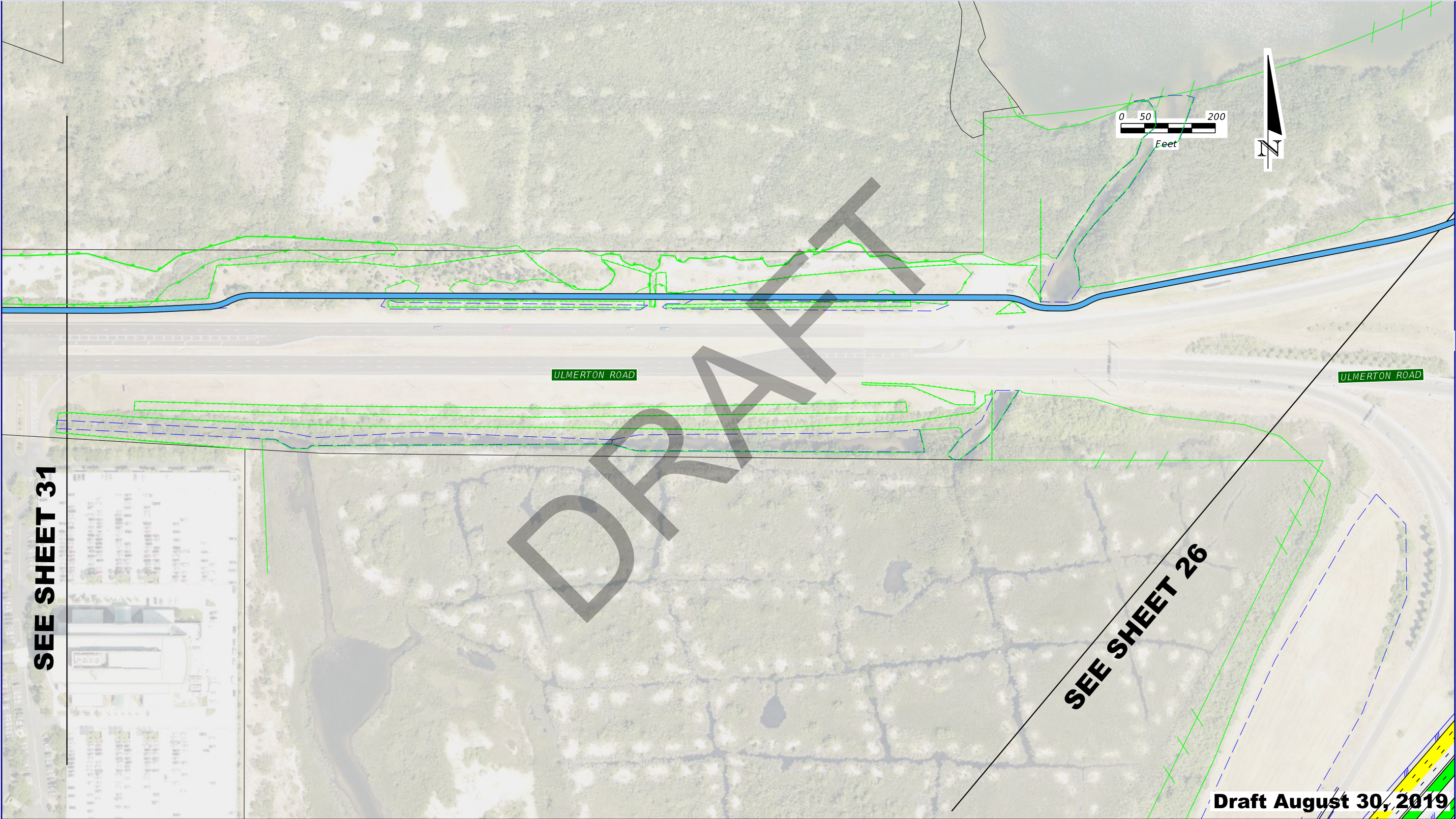
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**30**





<b>LEGEND:</b>		PEDESTRIAN TRAIL	SEAGRASS	FLOOD PLAINS	PROPOSED LA R/W	ITS CAMERA
PAVEMENT WIDENING/RECONSTRUCTION	EXPRESS LANE BRIDGE	WETLANDS	SURFACE WATER	CONTAMINATION	EXISTING LA R/W	EL = EXPRESS LANES
PAVEMENT REMOVAL	EXPRESS LANES	MANGROVES	POTENTIAL RESIDENTIAL RELOCATION	PROPOSED EASEMENT		GUL = GENERAL USE LANES
BARRIER WALL	BRIDGES		POTENTIAL NOISE BARRIER	PREFERRED SMF SITE & PROPOSED SMF R/W		AUX = AUXILIARY LANES
BRIDGE WIDENING	KENWOOD HISTORIC DISTRICT					





Draft August 30, 2019

<b>LEGEND:</b>											
	PAVEMENT WIDENING/ RECONSTRUCTION		PEDESTRIAN TRAIL		SEAGRASS		FLOOD PLAINS		PROPOSED LA R/W		ITS CAMERA
	PAVEMENT REMOVAL		EXPRESS LANE BRIDGE		WETLANDS		CONTAMINATION		EXISTING LA R/W		EL = EXPRESS LANES
	BARRIER WALL		EXPRESS LANES		SURFACE WATER		POTENTIAL RESIDENTIAL RELOCATION		PROPOSED EASEMENT		GUL = GENERAL USE LANES
	BRIDGE WIDENING		BRIDGES		MANGROVES		POTENTIAL NOISE BARRIER		PREFERRED SMF SITE & PROPOSED SMF R/W		AUX = AUXILIARY LANES
			KENWOOD HISTORIC DISTRICT								Aerial Photos Jan. '18 - Apr. '18



## I-275 (SR 93) DESIGN CHANGE RE-EVALUATION

**SEE SHEET 27**






4TH ST N

CELL TOWER

**Draft August 30, 2019**

**LEGEND:**

**LEGEND:**

-  **PAVEMENT WIDENING/  
RECONSTRUCTION**
-  **PAVEMENT REMOVAL**
-  **BARRIER WALL**
-  **BRIDGE WIDENING**

## PEDESTRIAN TRAIL

### EXPRESS LANE BRIDGE

## EXPRESS LANES

BRIDGES

## KENWOOD HISTORIC DISTRICT

 **SEAGRASS** **WETLANDS**

**WETLANDS**

**SURFACE WATER**

— — — SURFACE WATER

~~~~~ MANGROVES

## FLOOD PLAINS CONTAMINATION

## POTENTIAL RESIDENTIAL

## RELOCATION

### POTENTIAL NOISE

## POTENTIAL NOISE BARRIER

---

**---/---/---/--- PROPOSED LA R/W**

—/—/—/— **EXISTING LA R/W**

**PROPOSED EASEMENT**

**PREFERRED SMF SITE  
& PROPOSED SMF R/W**

---


**ITS CAMERA**

**EL = EXPRESS LANES**

**GUL = GENERAL USE LANES**

**AUX = AUXILIARY LANES**

### Aerial Photos Jan. '18 - Apr. '18

*\$USER\$*

\$DATES\$

\$TIMES\$

\$FILES\$

Concept Plans  
Design Change Re-evaluation

*SHEET*  
*NO.*

33



## Appendix B. Drainage Maps



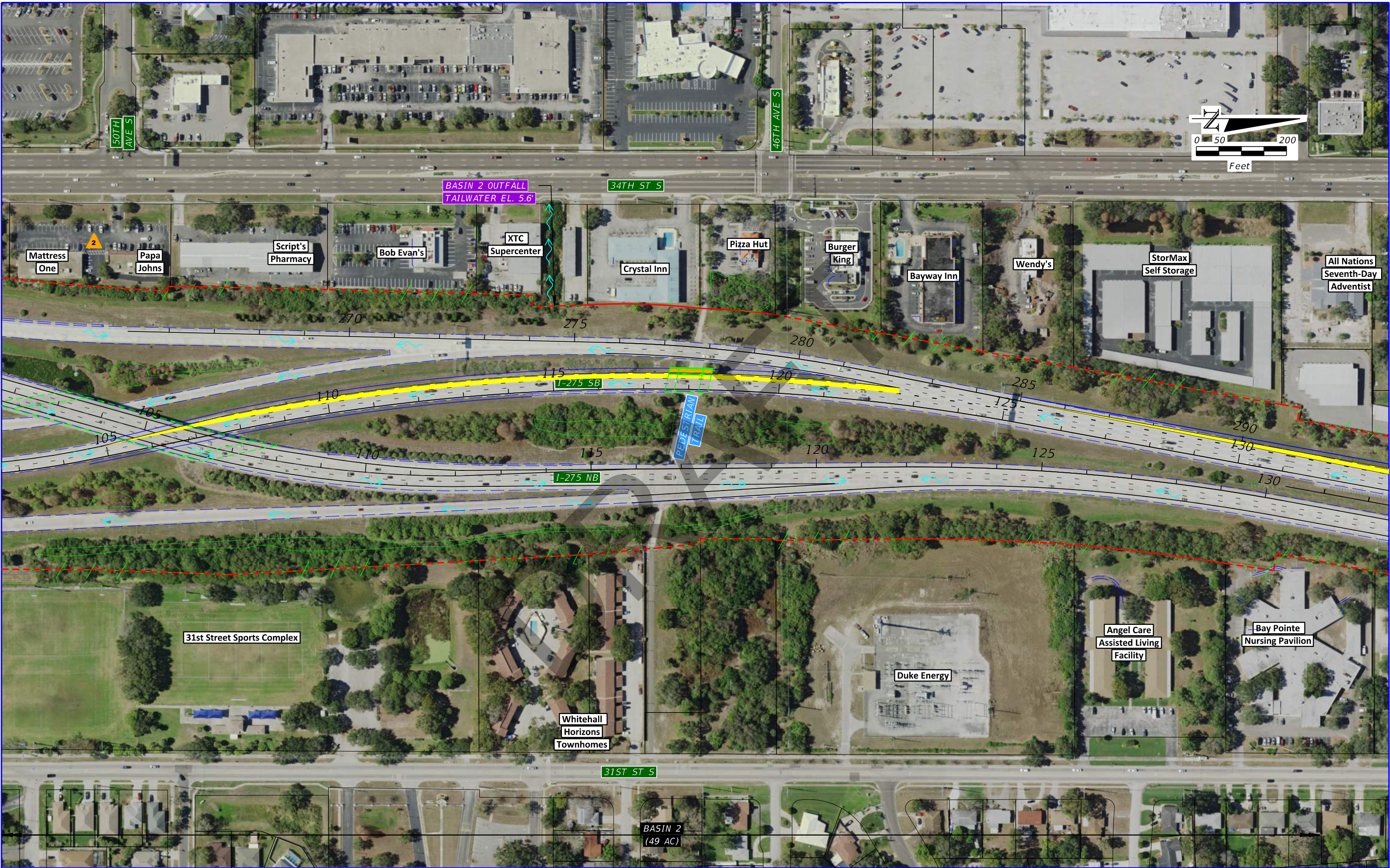


| LEGEND:     |                   |             | STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |             |                      | DRAINAGE MAP (01) | SHEET<br>NO.<br><br>B-1 |
|-------------|-------------------|-------------|--------------------------------------------------|-------------|----------------------|-------------------|-------------------------|
| <div></div> | PAVEMENT WIDENING | <div></div> | BRIDGE WIDENING                                  | <div></div> | DIRECTION OF FLOW    |                   |                         |
| <div></div> | EXPRESS LANES     | <div></div> | BRIDGES                                          | <div></div> | WETLANDS             |                   |                         |
| <div></div> | PAVEMENT REMOVAL  | <div></div> | BARRIER WALL                                     | <div></div> | BASIN BOUNDARY       |                   |                         |
|             |                   |             |                                                  |             |                      |                   |                         |
|             |                   |             | ROAD NO.                                         | COUNTY      | FINANCIAL PROJECT ID |                   |                         |
|             |                   |             | I-275                                            | PINELLAS    | 424501-1-22-01       |                   |                         |









**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (03)

SHEET NO.

B-3

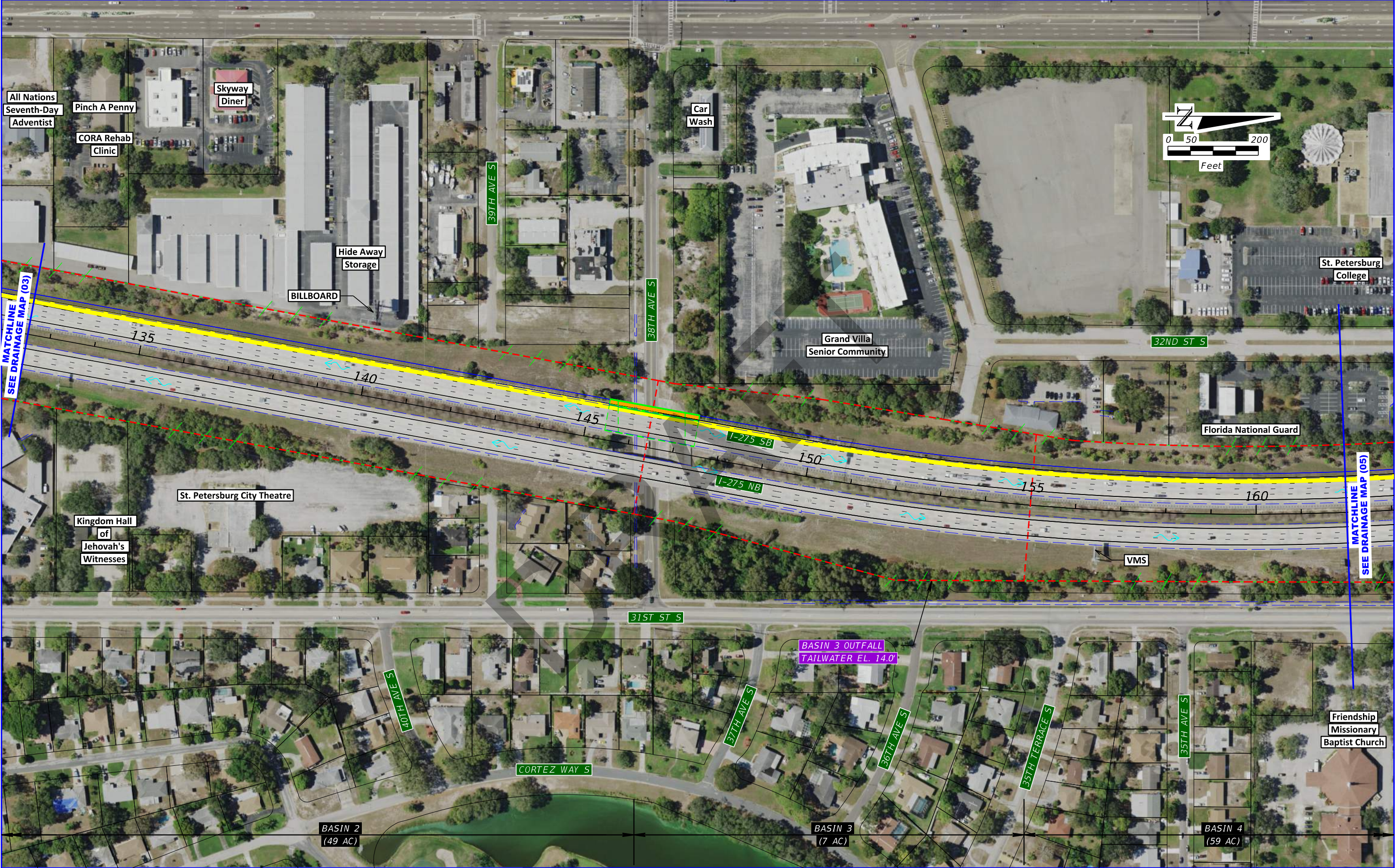
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**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (04)

SHEET NO.

B-4

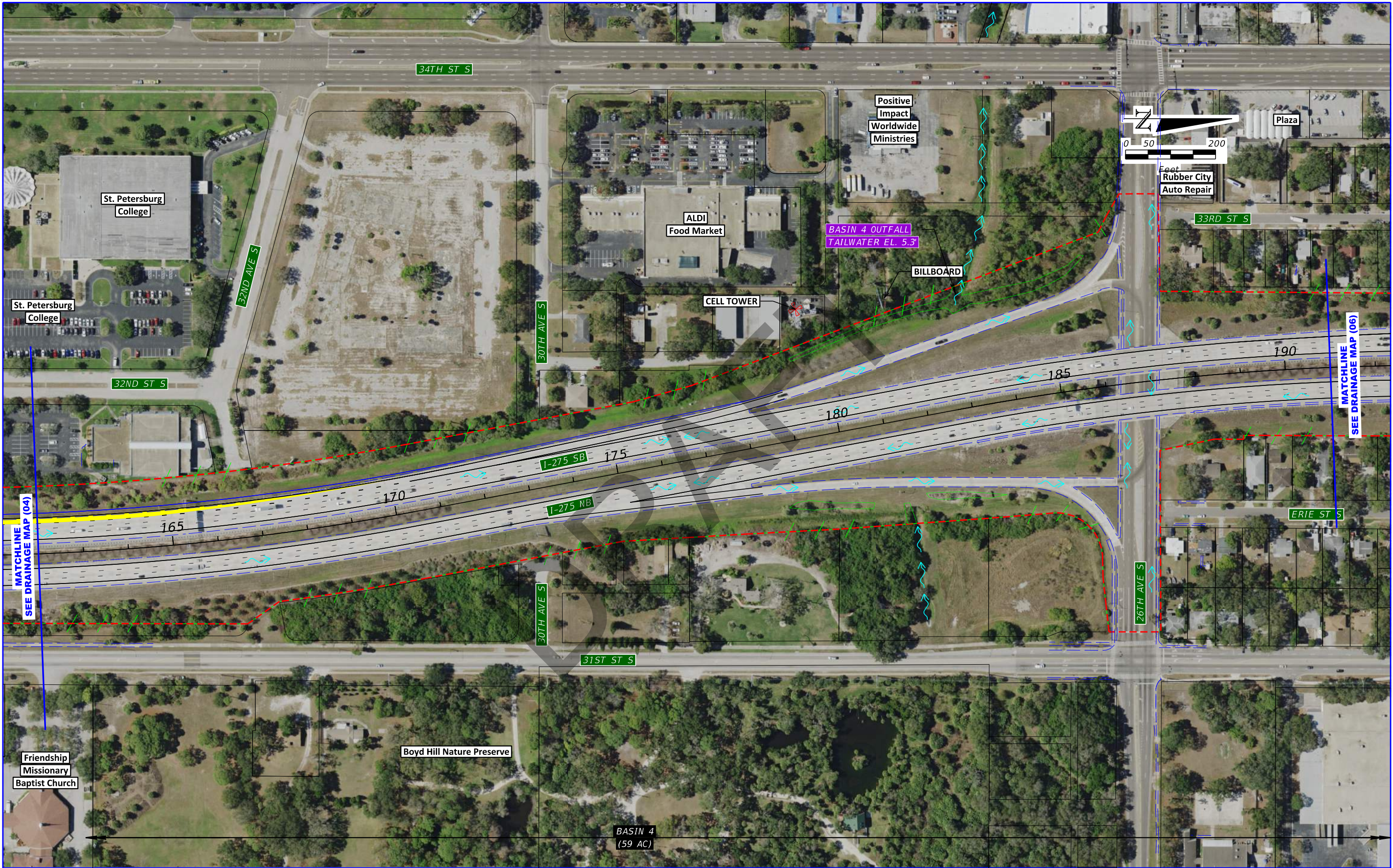
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**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (05)

SHEET NO.

B-5

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**LEGEND:**

**PAVEMENT WIDENING**

**EXPRESS LANES**

**PAVEMENT REMOVAL**

**BRIDGE WIDENING**

**BRIDGES**

**BARRIER WALL**

**DIRECTION OF FLOW**

**WETLANDS**

**BASIN BOUNDARY**

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-22-01         |

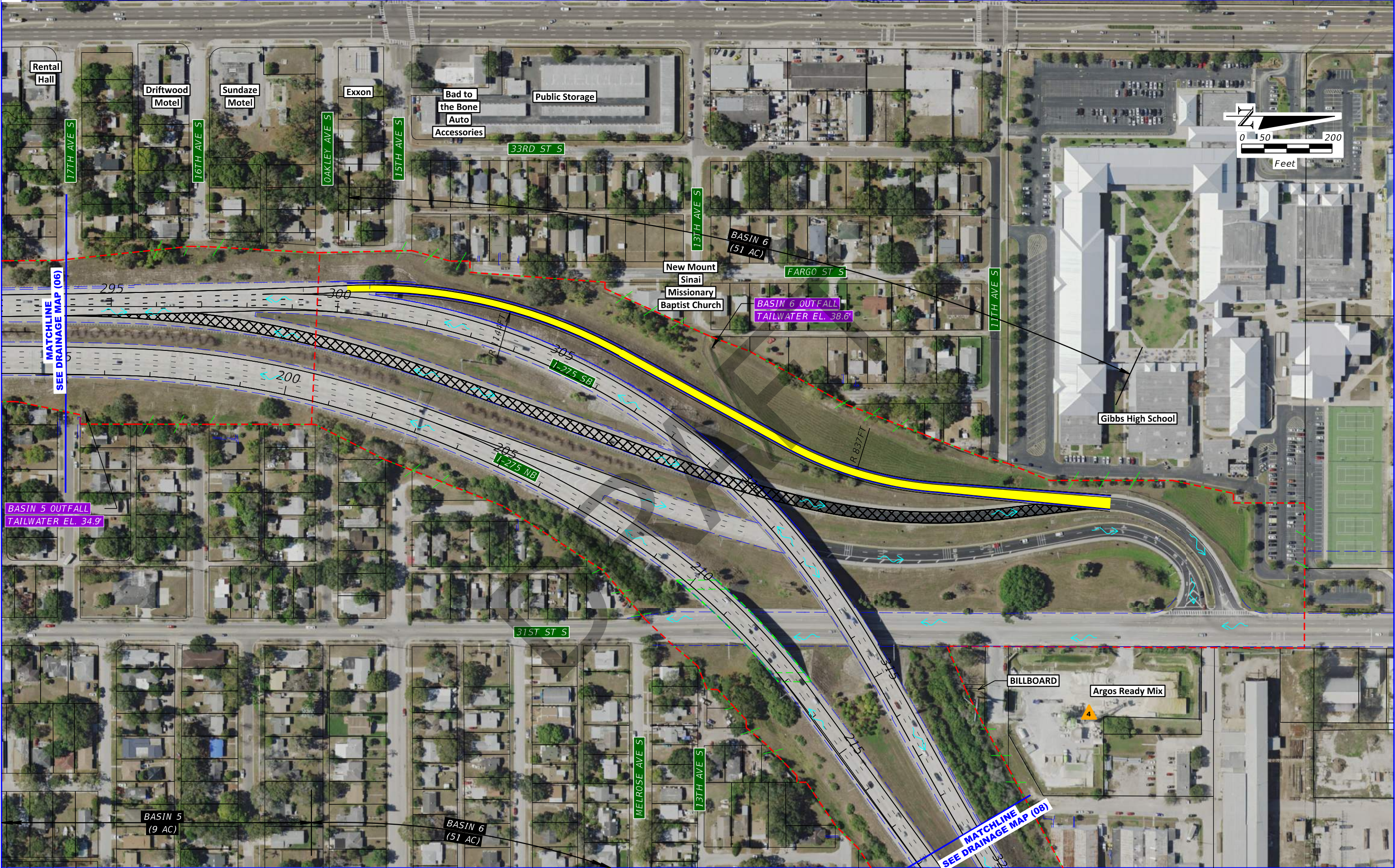
**DRAINAGE MAP (06)**

SHEET NO.

**B-6**

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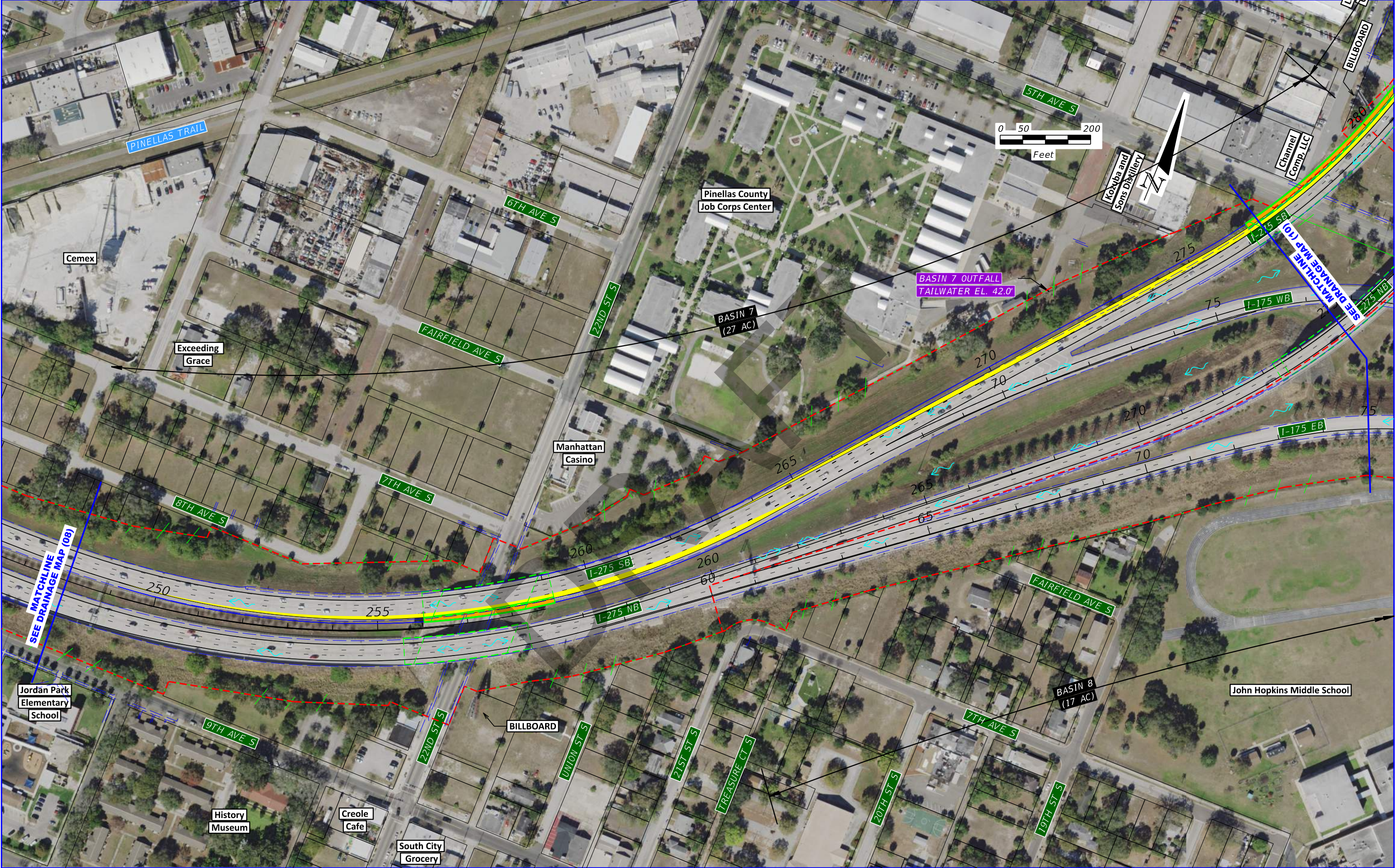












**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

|          |          |                      |
|----------|----------|----------------------|
| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (09)

SHEET NO.

B-9

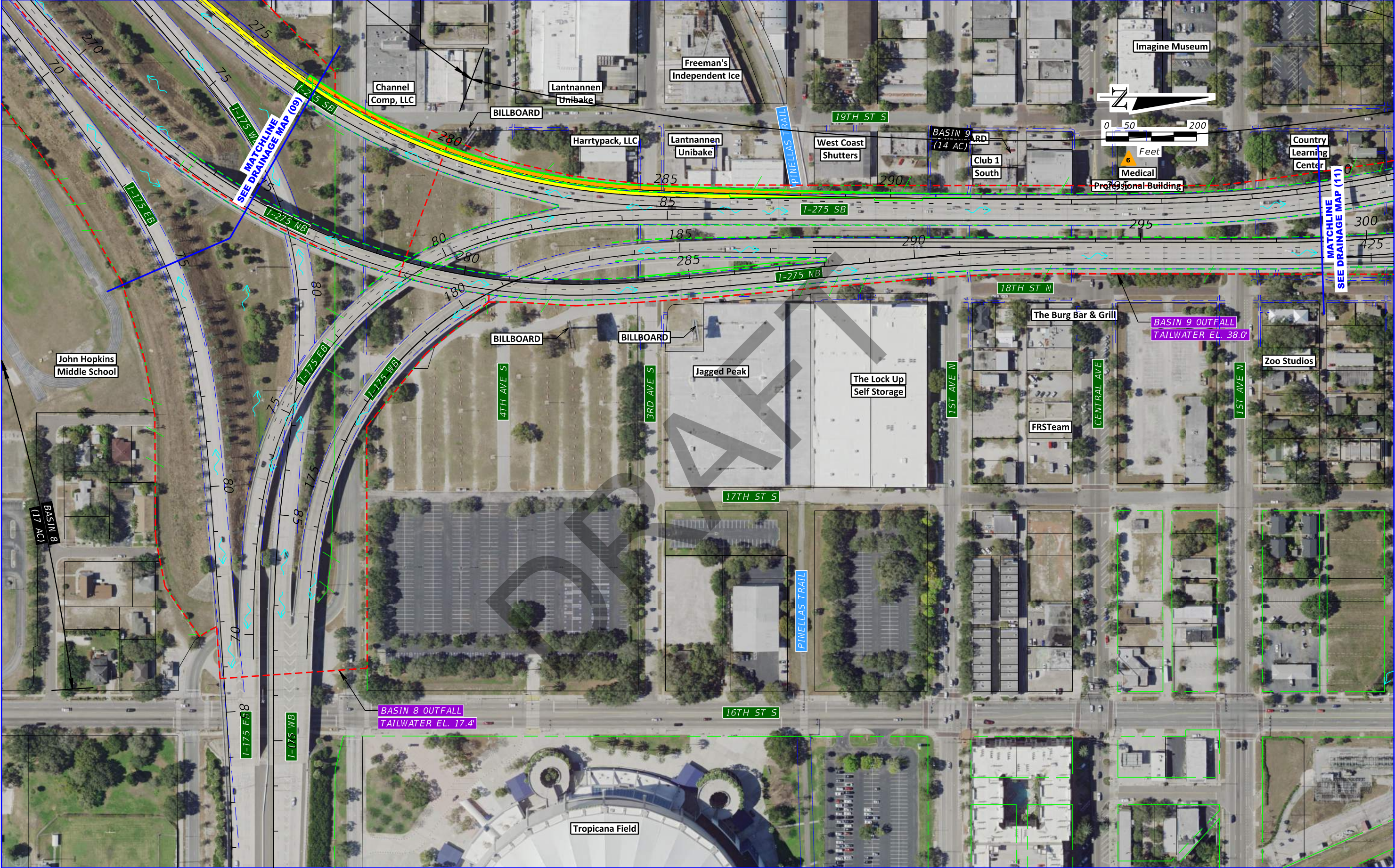
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6/20/2019

9:35:03 AM

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**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

|                                                  |          |                      |
|--------------------------------------------------|----------|----------------------|
| STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |          |                      |
| ROAD NO.                                         | COUNTY   | FINANCIAL PROJECT ID |
| I-275                                            | PINELLAS | 424501-1-22-01       |

*DRAINAGE MAP (10)*

SHEET NO.

**B-10**

RDORZBACK 6/20/2019 9:35:34 AM I:\TPA\PRJ\000014672\CADD\42450112201\drainage\DRMPRD10.DGN





**LEGEND:**  

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (11)

SHEET NO.  
B-11

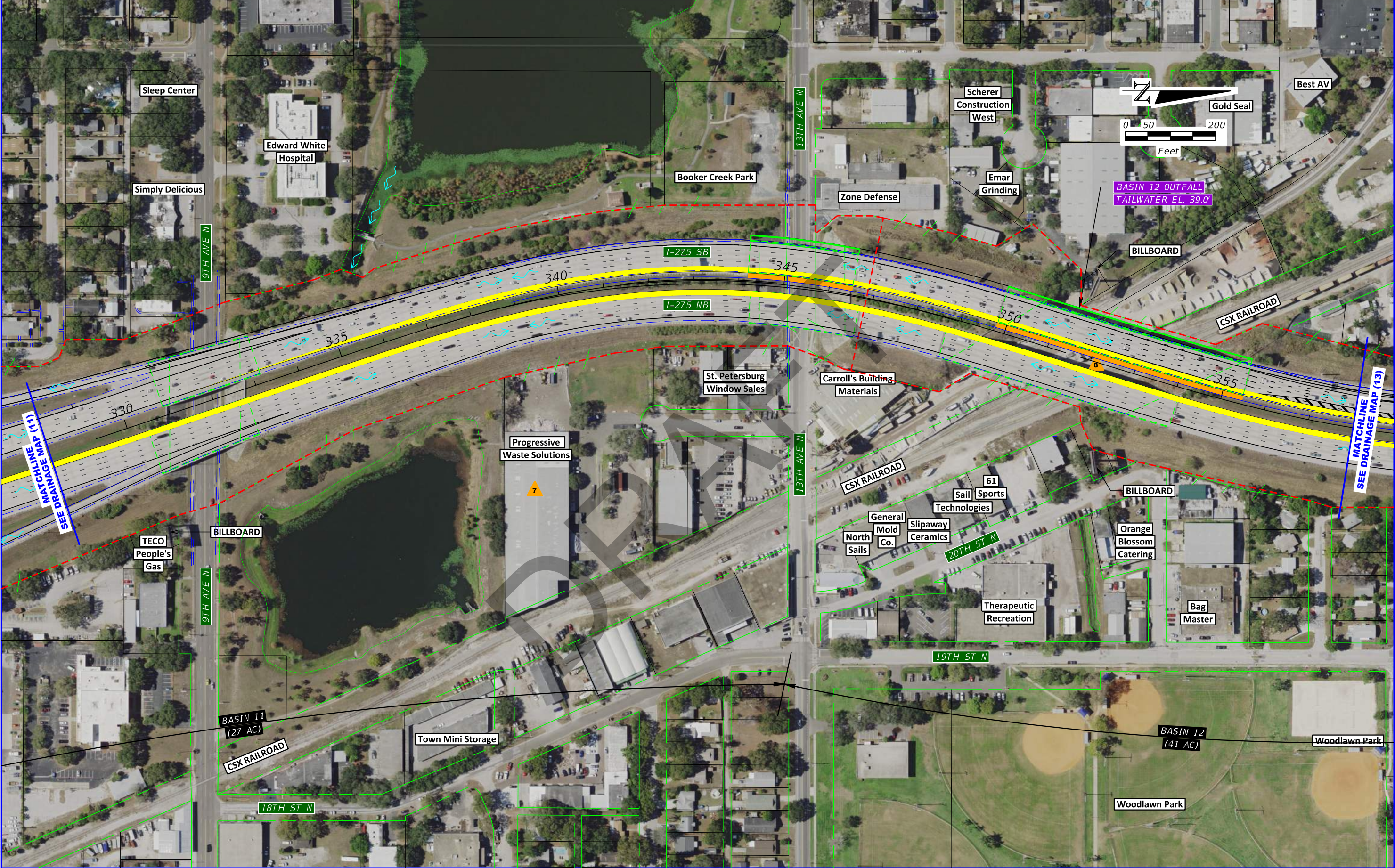
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6/20/2019

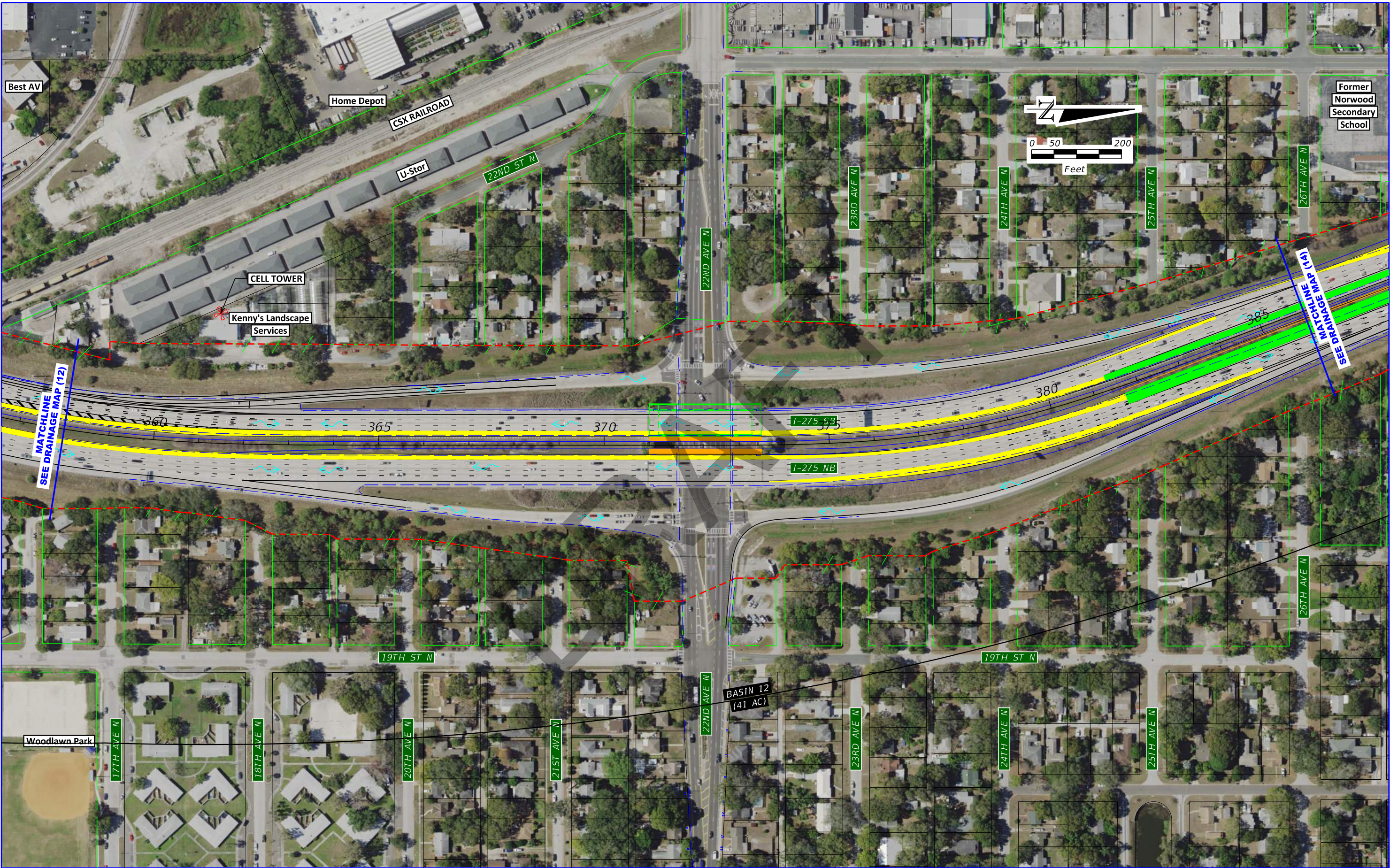
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PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (13)

SHEET NO.

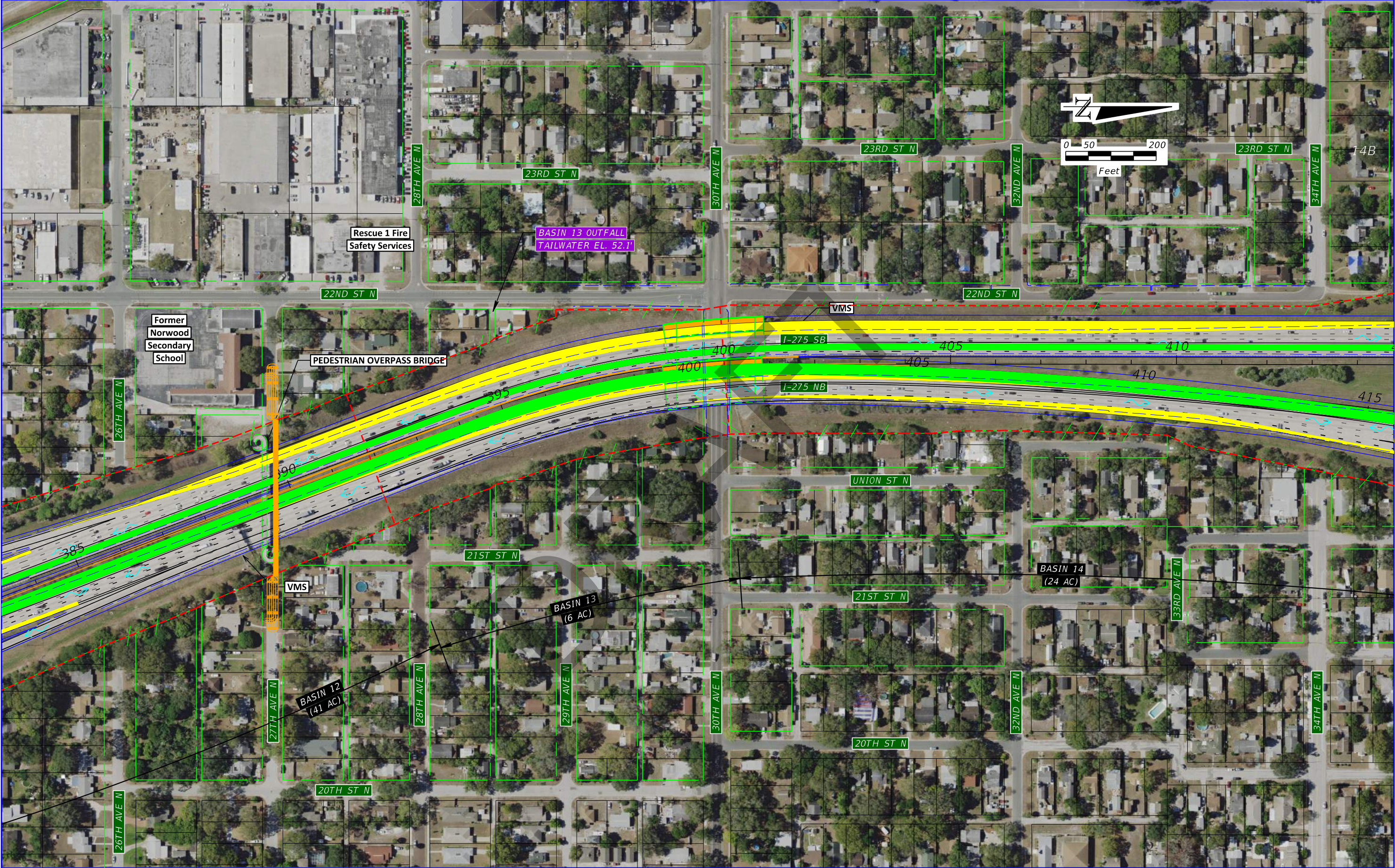
B-13

6/20/2019

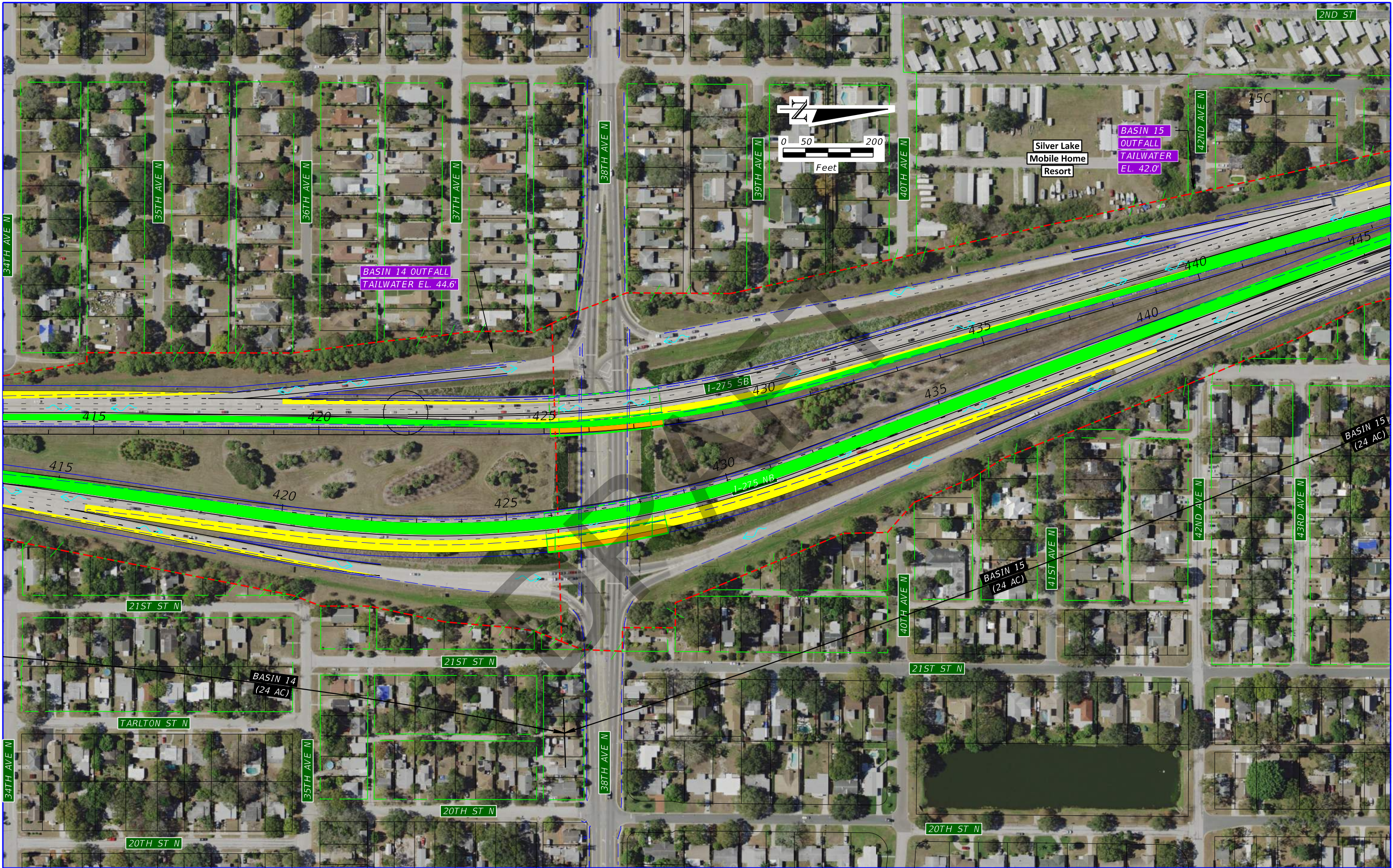
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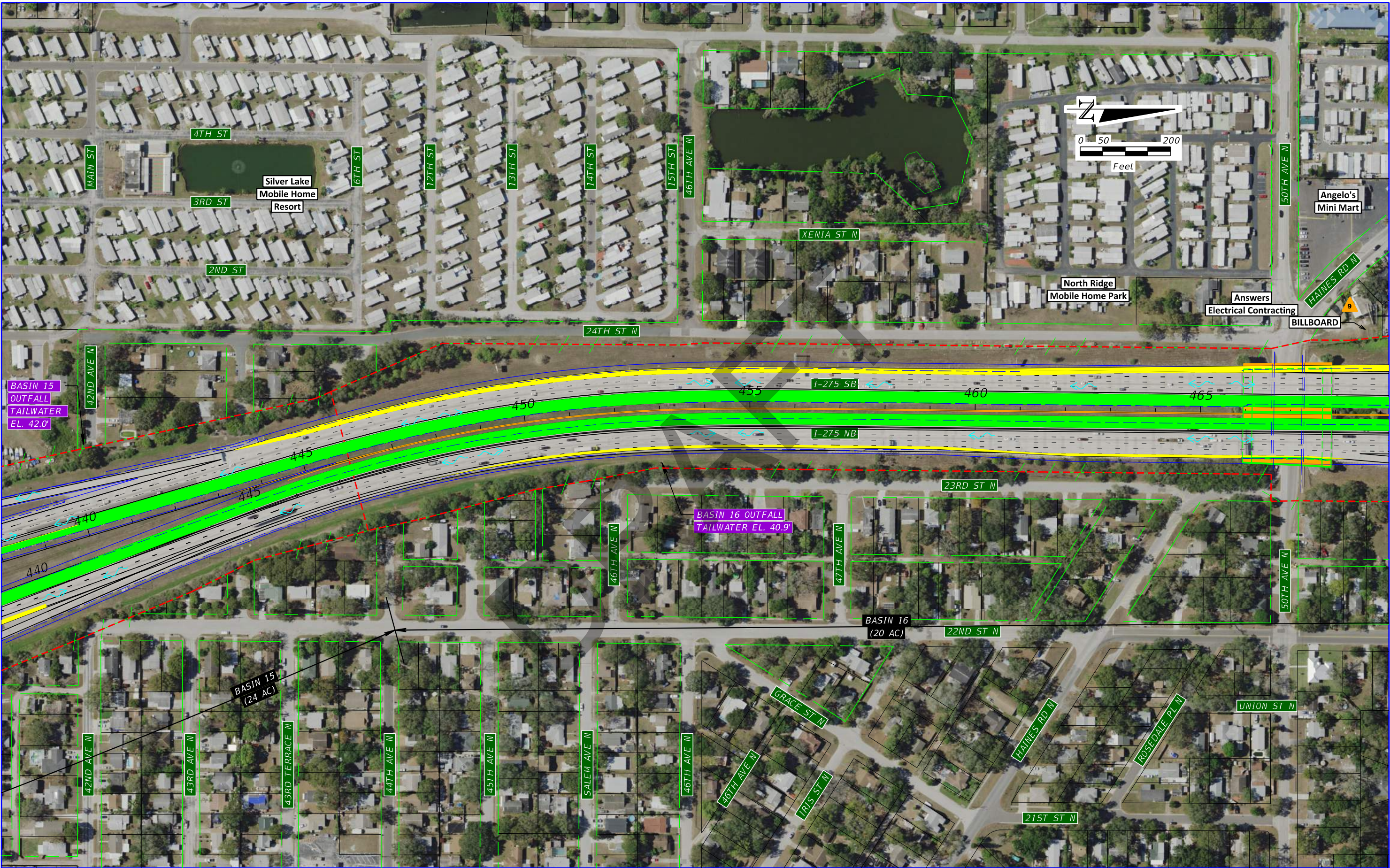












**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

|          |          |                      |
|----------|----------|----------------------|
| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (16

SHEET NO.

B-16

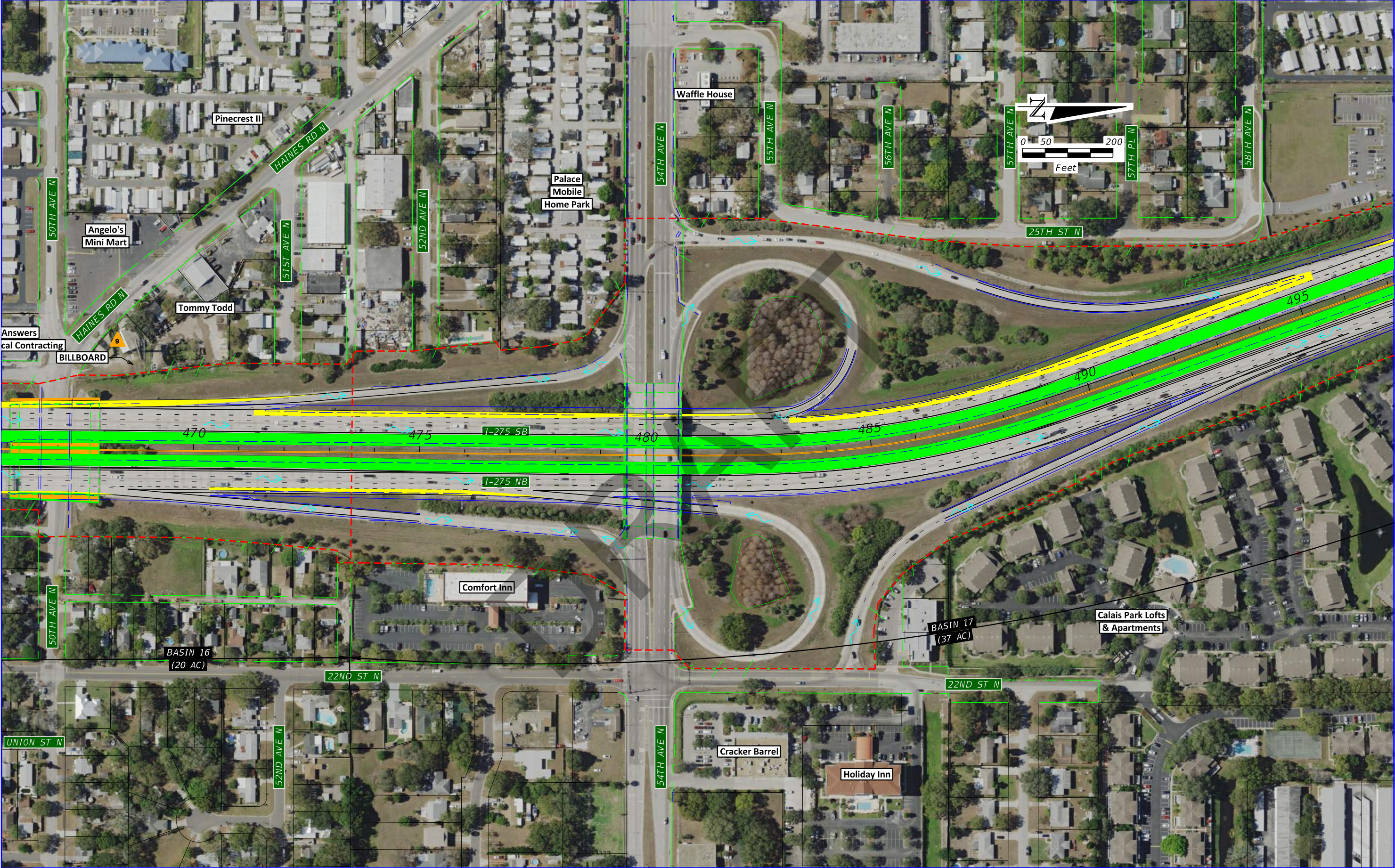
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6/20/2019

9:39:52 AM

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PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (17)

SHEET NO.

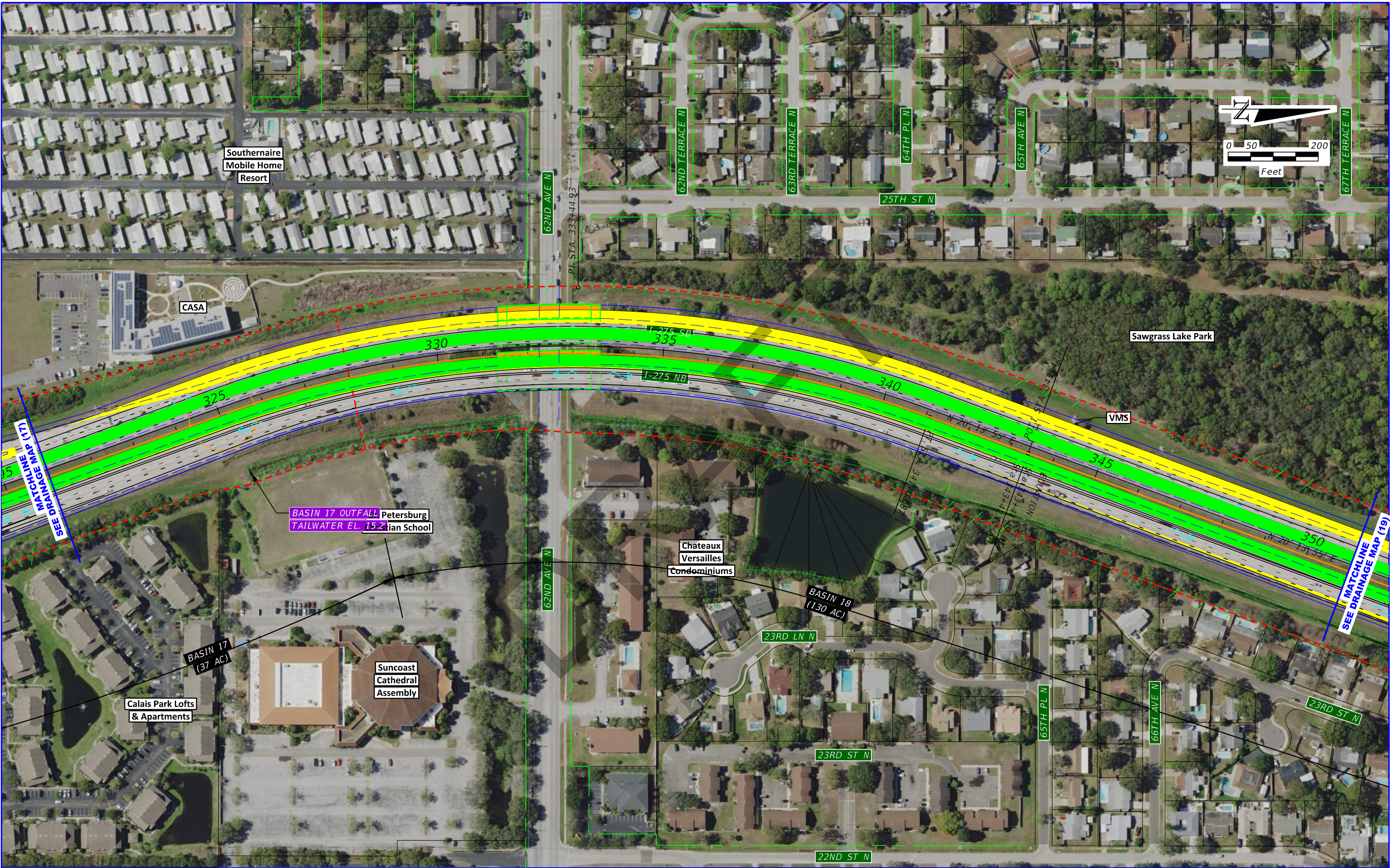
B-17

6/20/2019

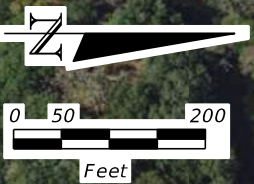
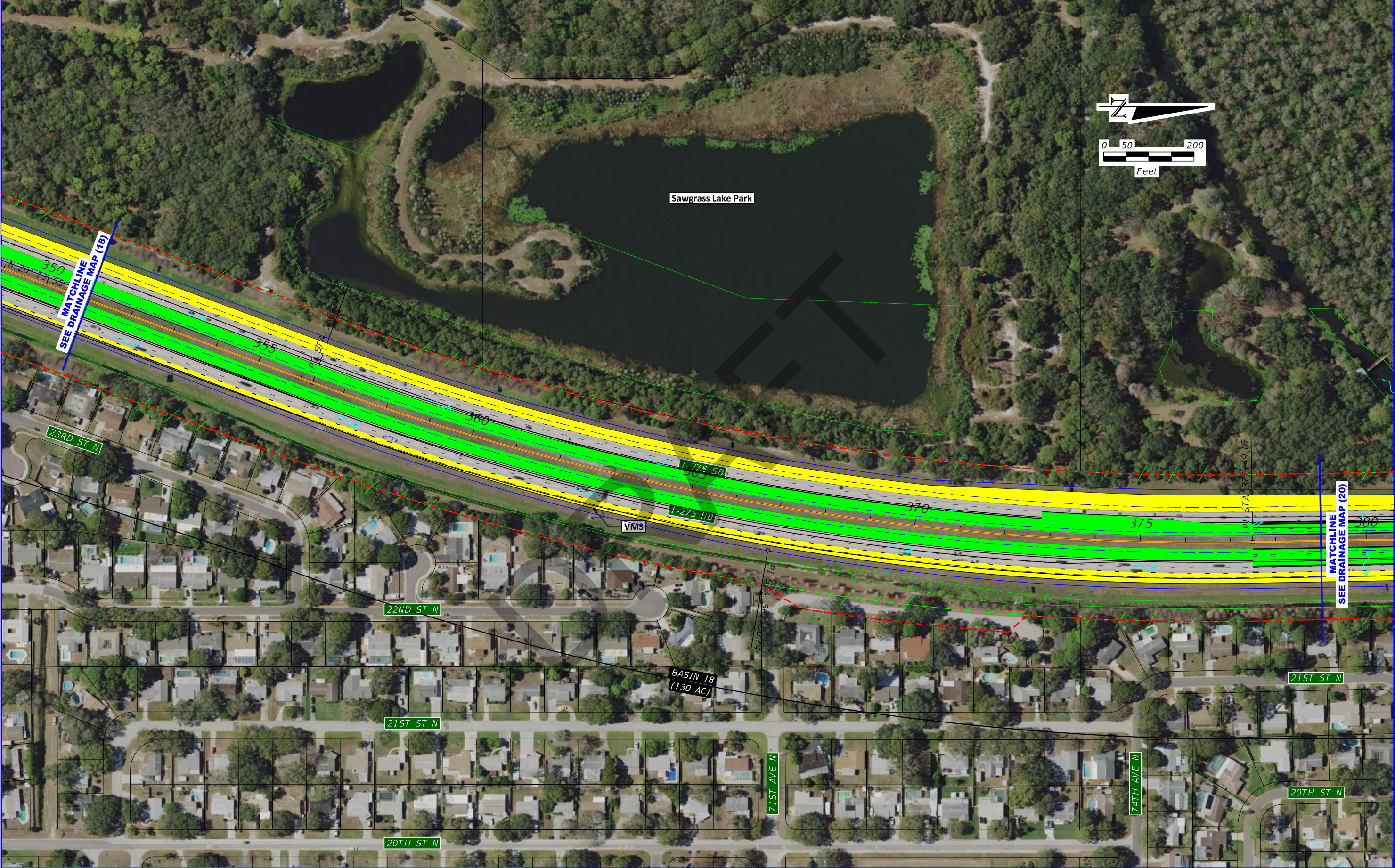
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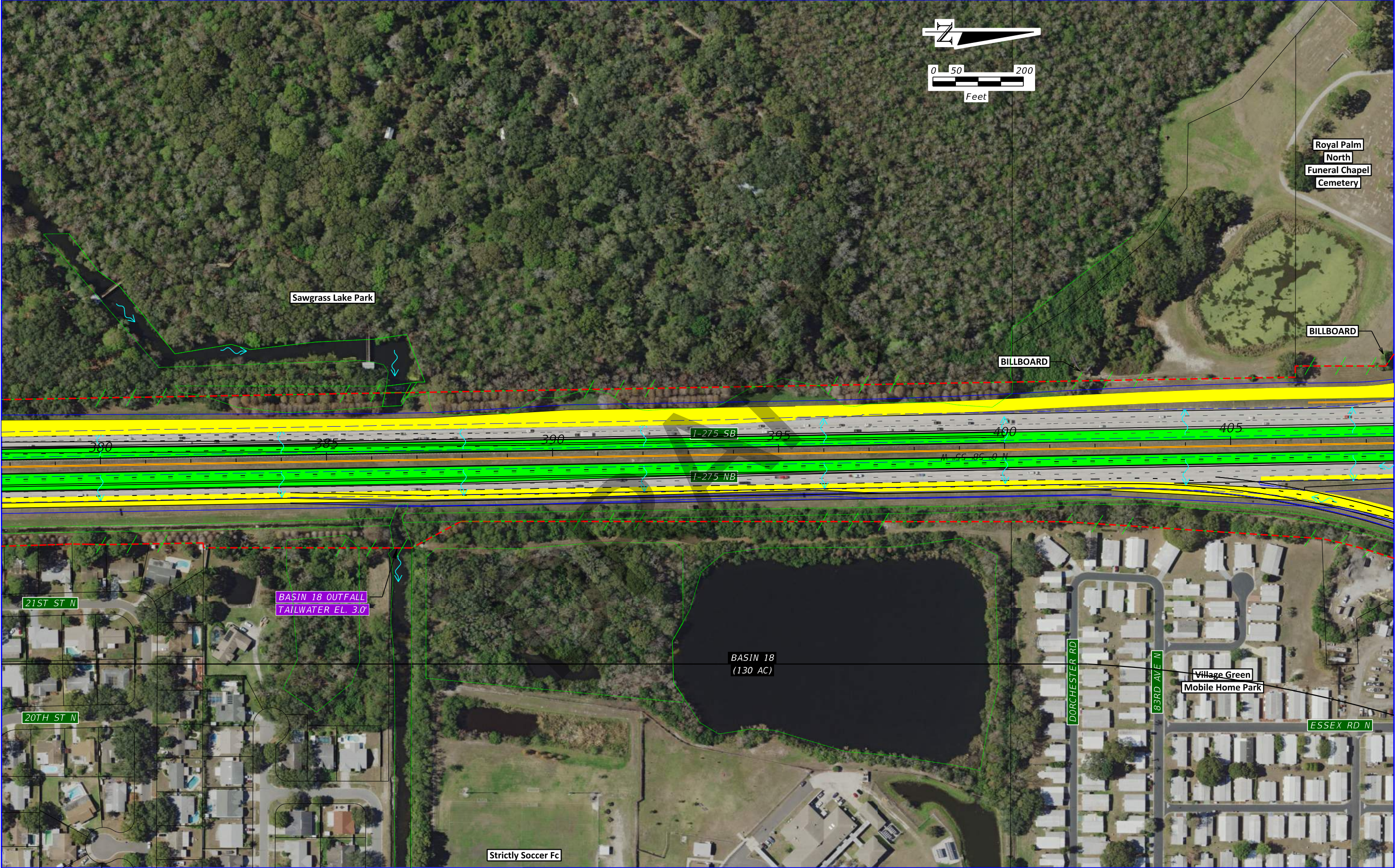




|                   |                 |                   |                                                  |          |                |                   |                   |
|-------------------|-----------------|-------------------|--------------------------------------------------|----------|----------------|-------------------|-------------------|
| <b>LEGEND:</b>    |                 |                   | STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |          |                | DRAINAGE MAP (19) | SHEET NO.<br>B-19 |
| PAVEMENT WIDENING | BRIDGE WIDENING | DIRECTION OF FLOW |                                                  |          |                |                   |                   |
| EXPRESS LANES     | BRIDGES         | WETLANDS          | I-275                                            | PINELLAS | 424501-1-22-01 |                   |                   |
| PAVEMENT REMOVAL  | BARRIER WALL    | BASIN BOUNDARY    |                                                  |          |                |                   |                   |

RDORZBACK 6/20/2019 9:41:24 AM I:\TPA\PRJ\000014672\CADD\42450112201\drainage\DRMPRD19.DGN





**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (20)

SHEET NO.

B-20

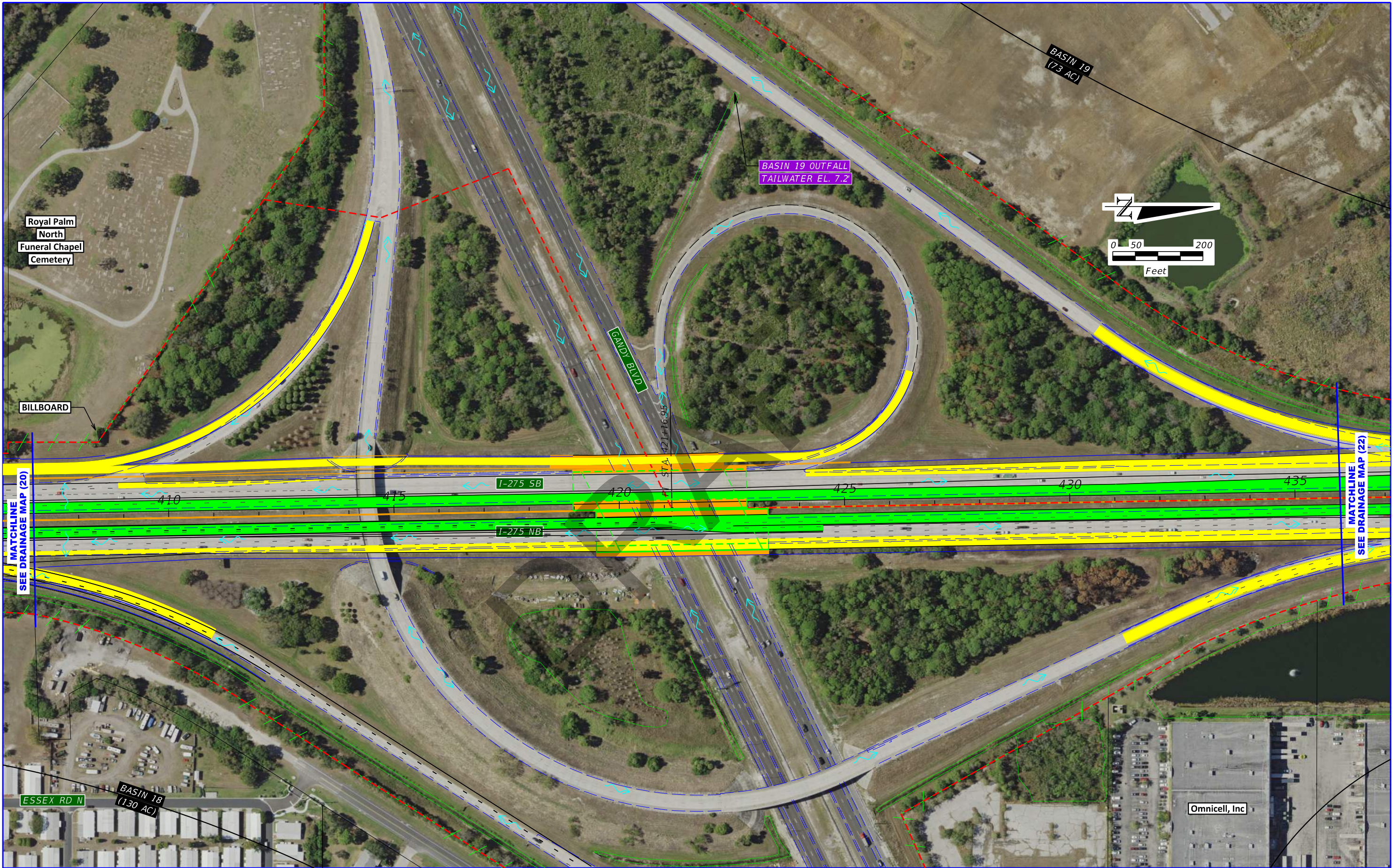
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6/20/2019

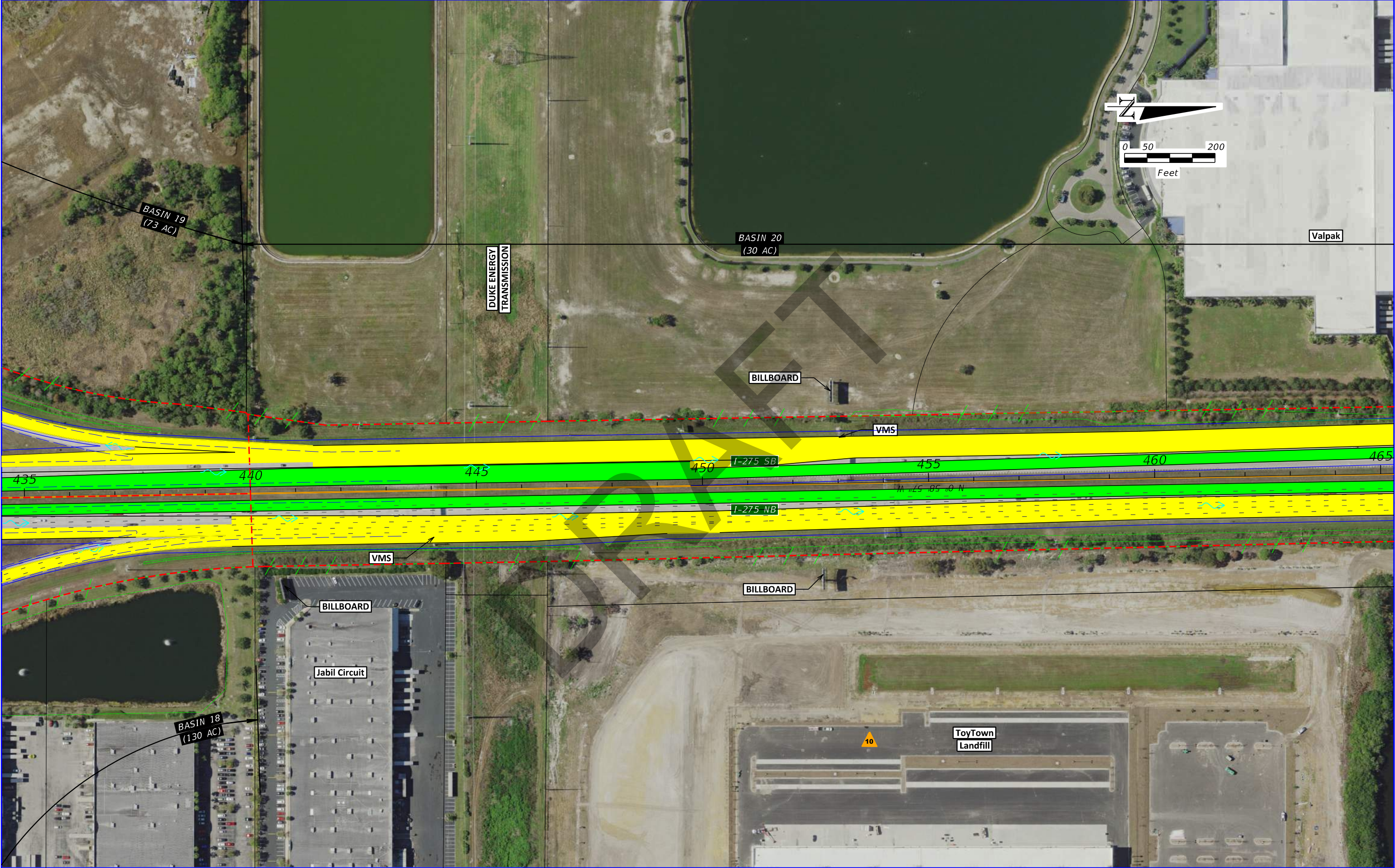
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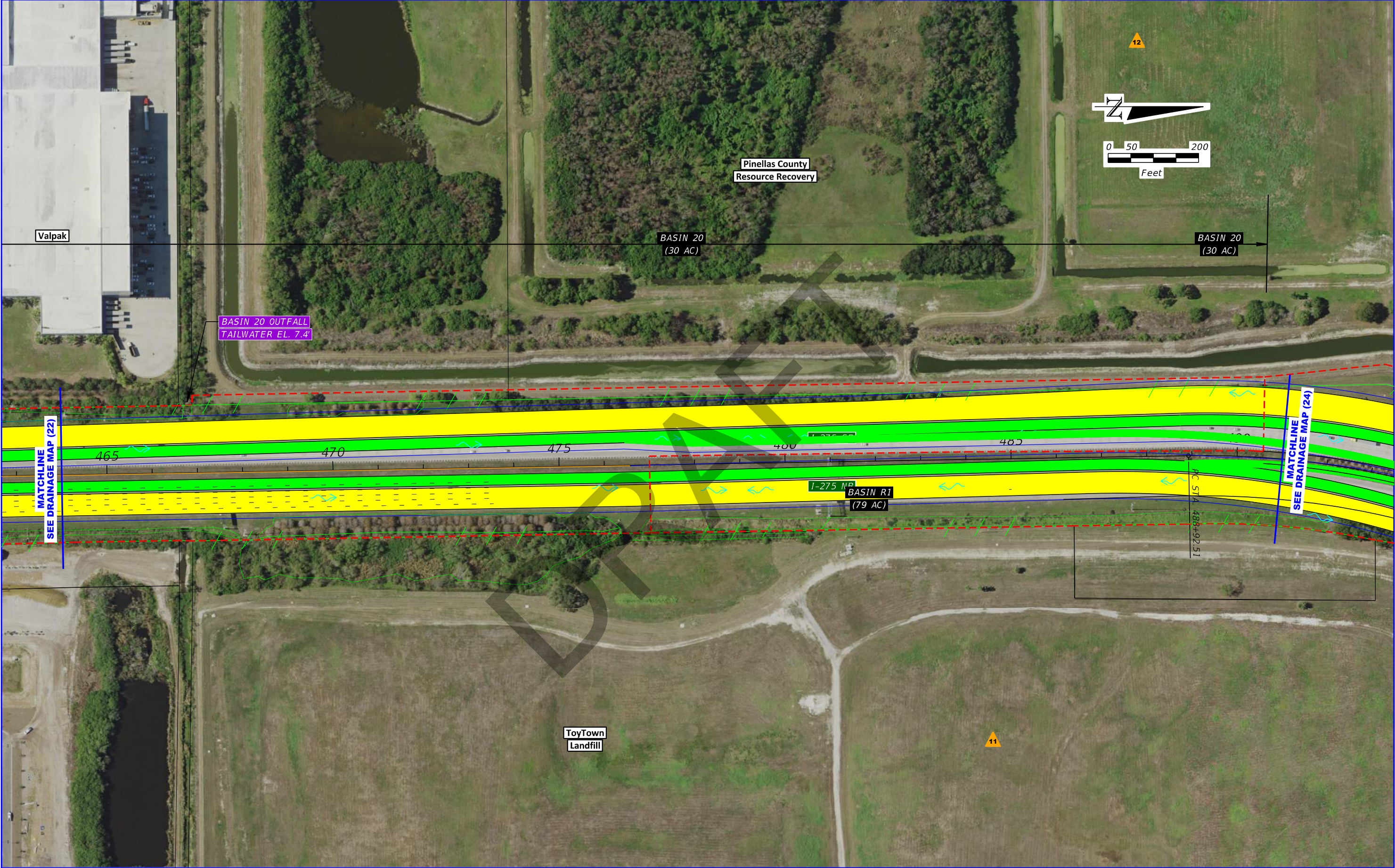












**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

|                                                  |          |                      |
|--------------------------------------------------|----------|----------------------|
| STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |          |                      |
| ROAD NO.                                         | COUNTY   | FINANCIAL PROJECT ID |
| I-275                                            | PINELLAS | 424501-1-22-01       |

*DRAINAGE MAP (23)*

SHEET NO.

B-23

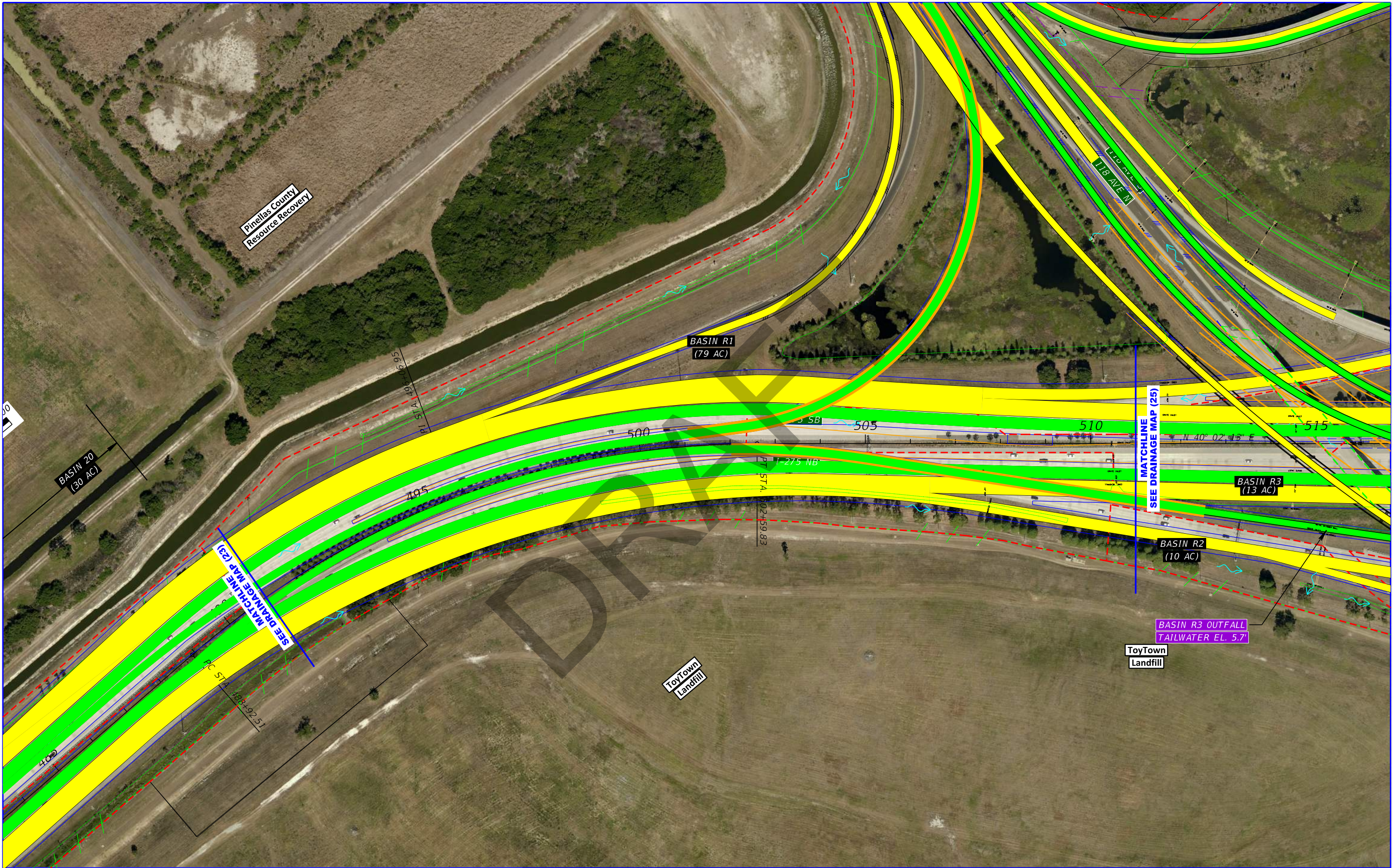
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6/20/2019

9:43:49 AM

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**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION

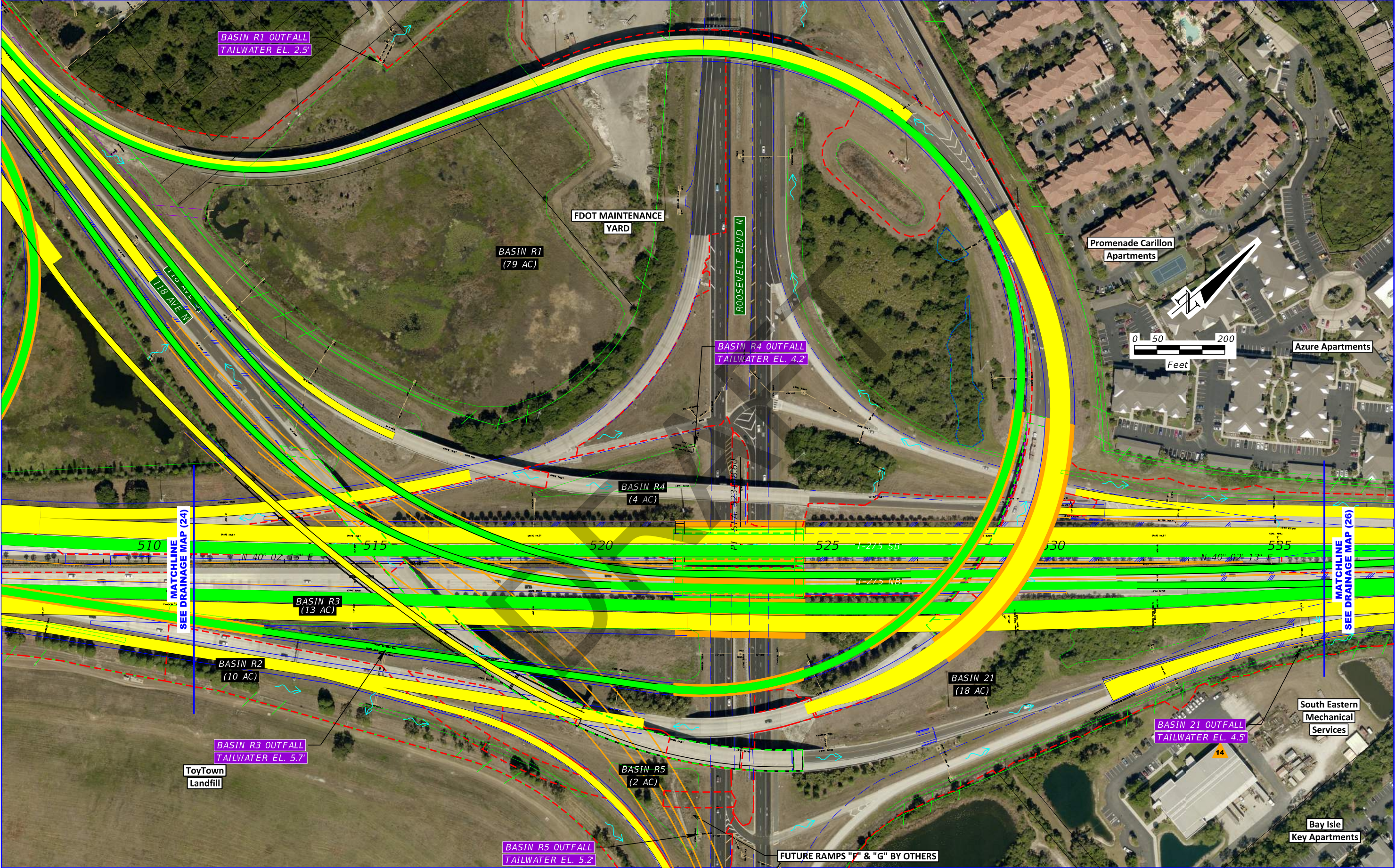
| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

**DRAINAGE MAP (24)**

SUSERS      SDATES      STIMES      SFILES

SHEET NO.  
B-24

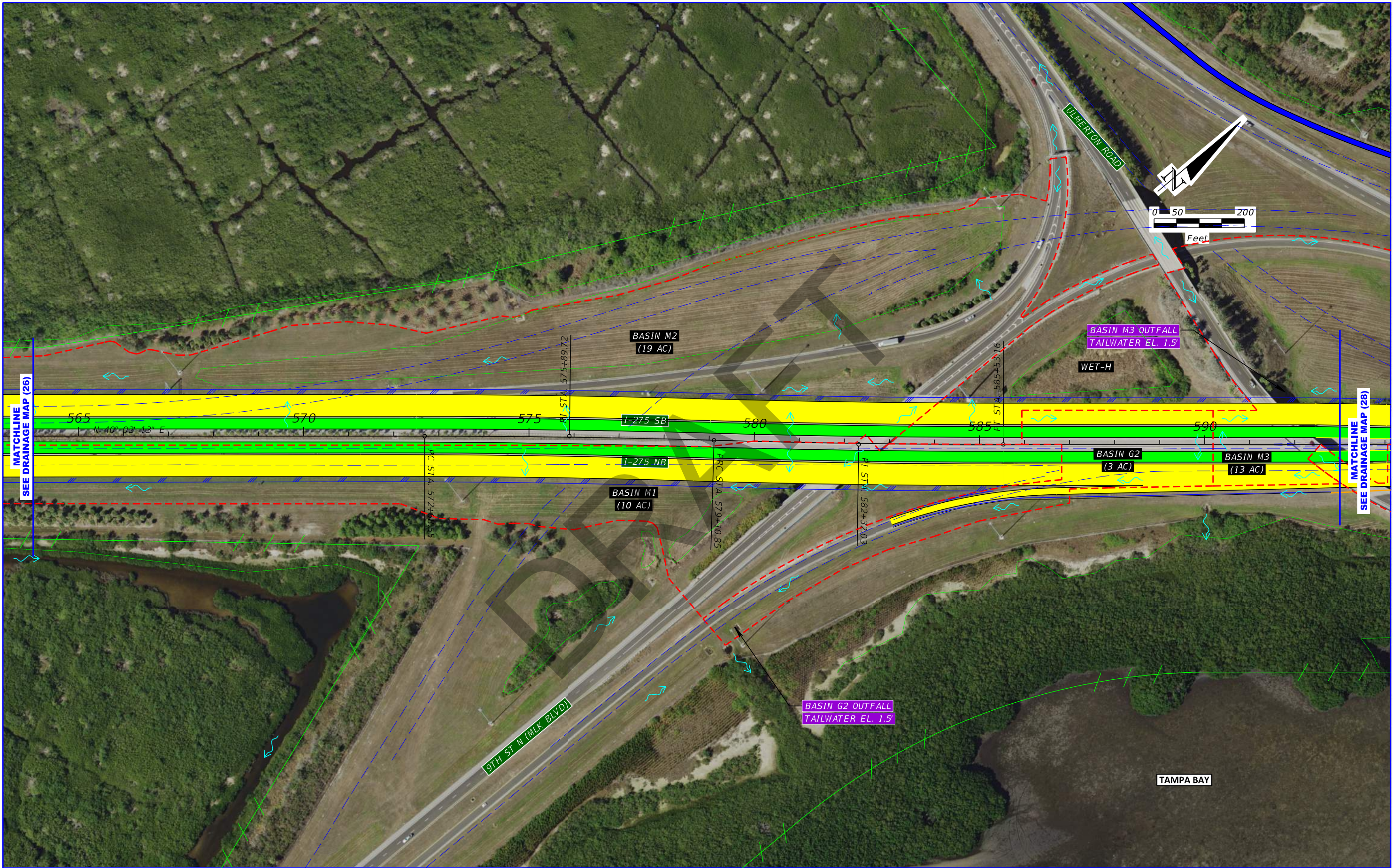




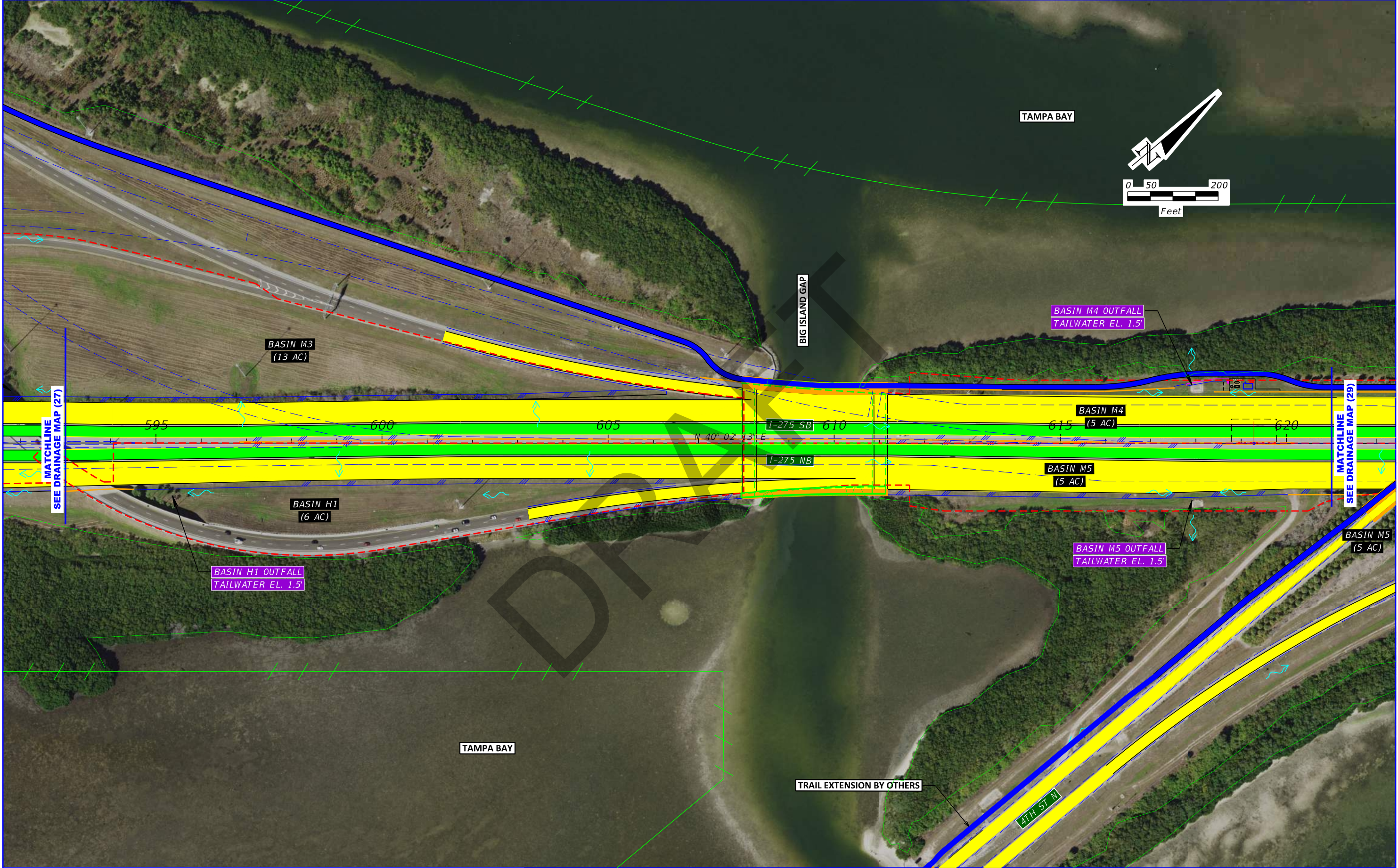












**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (28)

SHEET NO.  
B-28

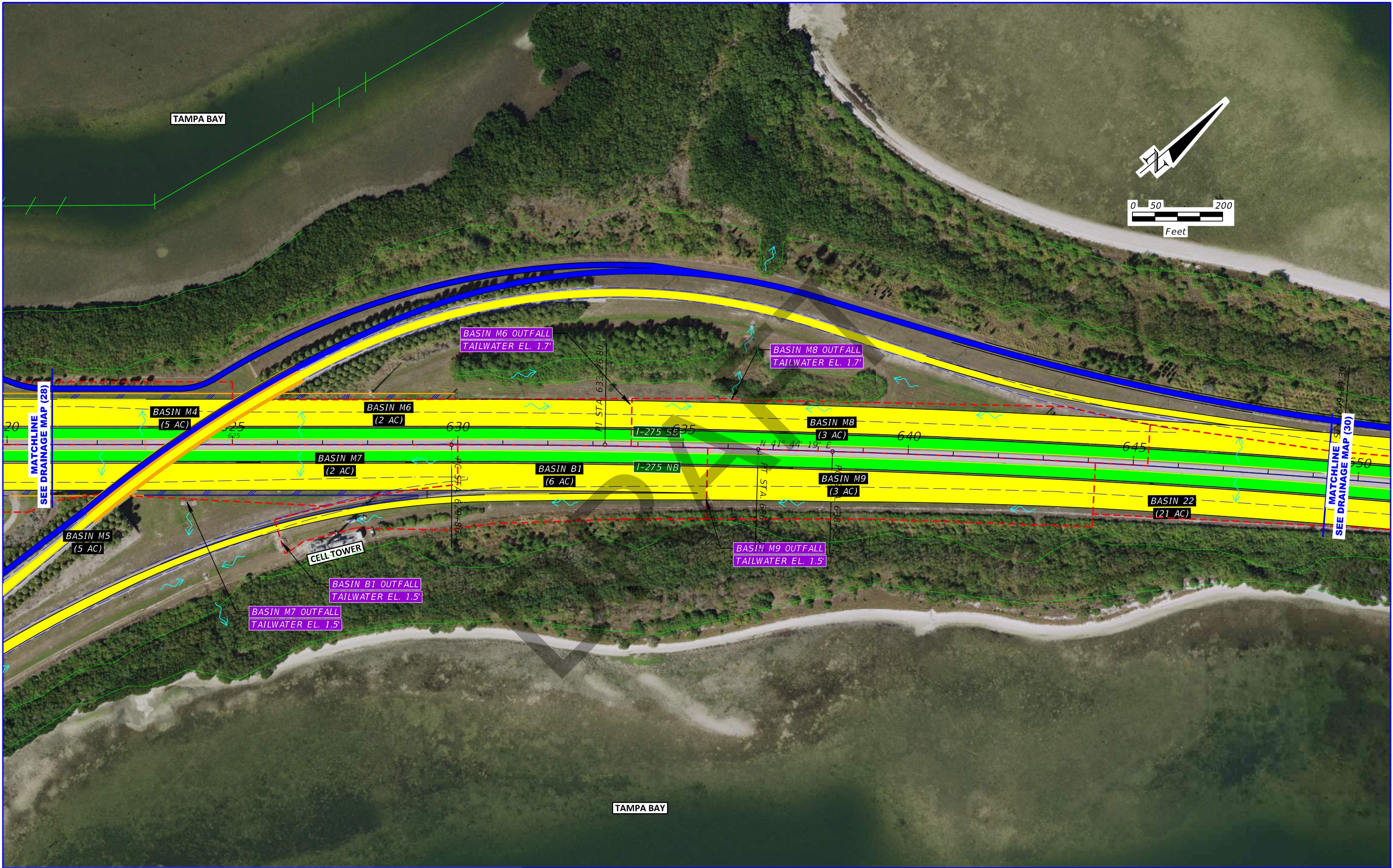
RDORZBACK

6/20/2019

9:46:58 AM

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**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (29)

SHEET NO.  
B-29

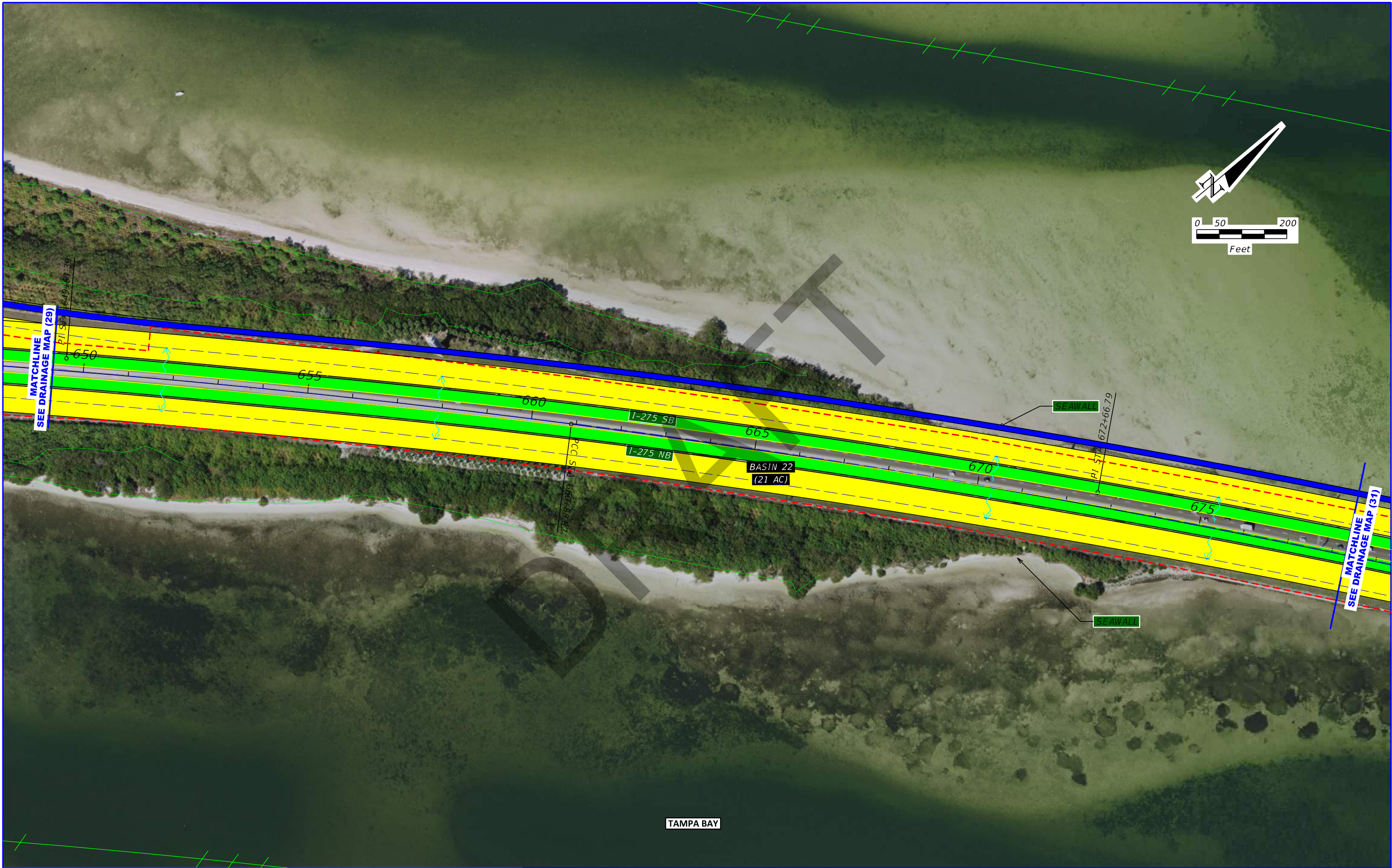
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6/20/2019

9:47:28 AM

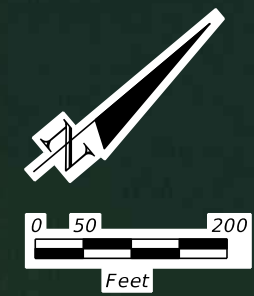
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|                                                                                                       |                                                                                                     |                                                                                                       |  |  |                                                  |          |                      |                   |           |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--|--|--------------------------------------------------|----------|----------------------|-------------------|-----------|
| <b>LEGEND:</b>                                                                                        |                                                                                                     |                                                                                                       |  |  | STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |          |                      | DRAINAGE MAP (30) | SHEET NO. |
|  PAVEMENT WIDENING |  BRIDGE WIDENING |  DIRECTION OF FLOW |  |  |                                                  |          |                      |                   |           |
|  EXPRESS LANES     |  BRIDGES         |  WETLANDS          |  |  |                                                  |          |                      |                   |           |
|  PAVEMENT REMOVAL  |  BARRIER WALL    |  BASIN BOUNDARY    |  |  |                                                  |          |                      |                   |           |
|                                                                                                       |                                                                                                     |                                                                                                       |  |  | ROAD NO.                                         | COUNTY   | FINANCIAL PROJECT ID |                   | B-30      |
|                                                                                                       |                                                                                                     |                                                                                                       |  |  | I-275                                            | PINELLAS | 424501-1-22-01       |                   |           |





**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

| STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |          |                      |
|--------------------------------------------------|----------|----------------------|
| ROAD NO.                                         | COUNTY   | FINANCIAL PROJECT ID |
| I-275                                            | PINELLAS | 424501-1-22-01       |

**DRAINAGE MAP (31)**

SHEET NO.

B-31

RDORZBACK

6/20/2019

9:48:34 AM

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**LEGEND:**

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

*DRAINAGE MAP (32)*

SHEET NO.

B-32

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PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (33)

SHEET NO.

B-33

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PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

| STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |          |                      |
|--------------------------------------------------|----------|----------------------|
| ROAD NO.                                         | COUNTY   | FINANCIAL PROJECT ID |
| I-275                                            | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (34)

SHEET NO.

B-34

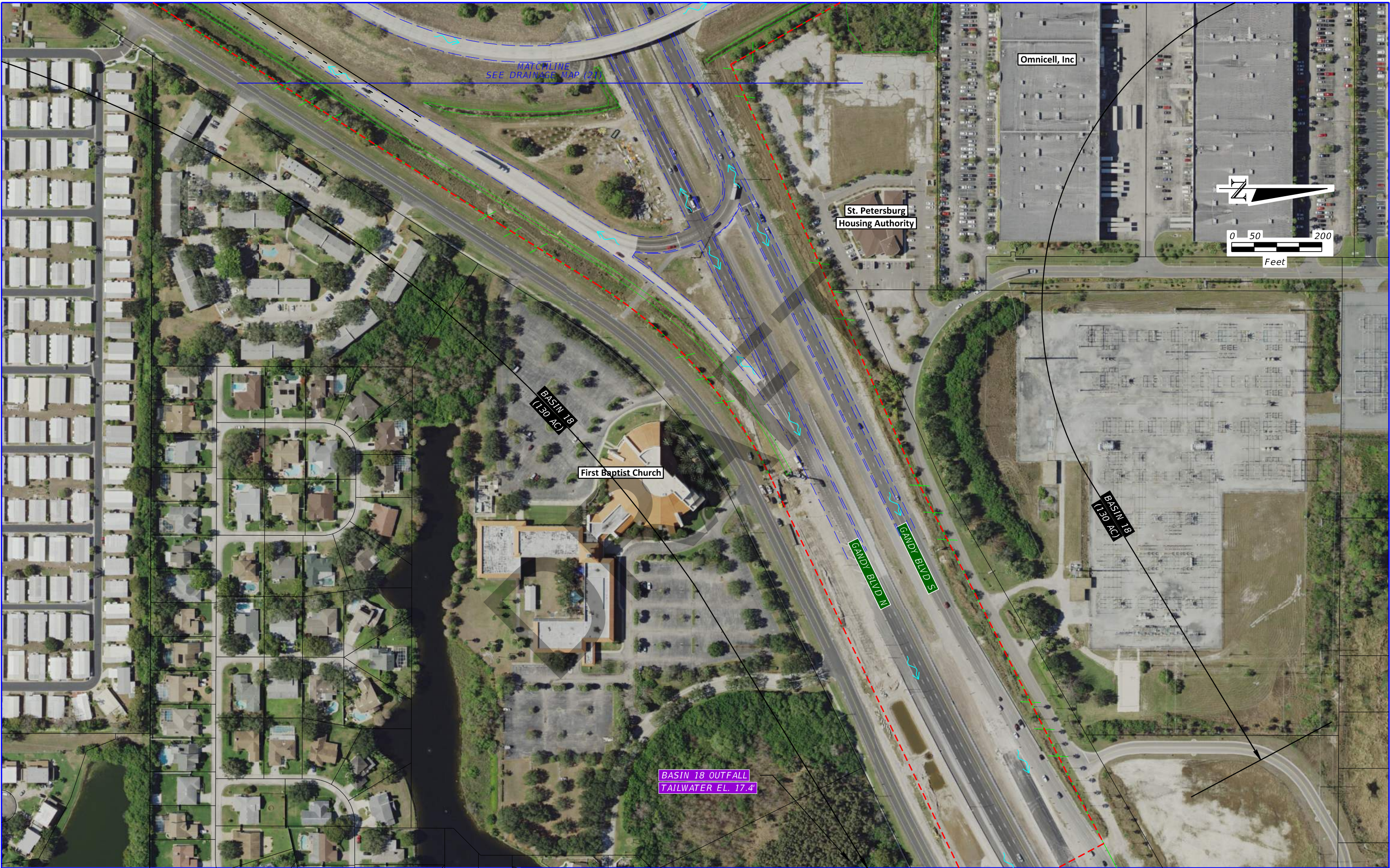
RDORZBACK

6/20/2019

9:50:16 AM

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LEGEND:

PAVEMENT WIDENING

EXPRESS LANES

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

DRAINAGE MAP (35)

SHEET NO.

B-35

RDORZBACK

6/20/2019

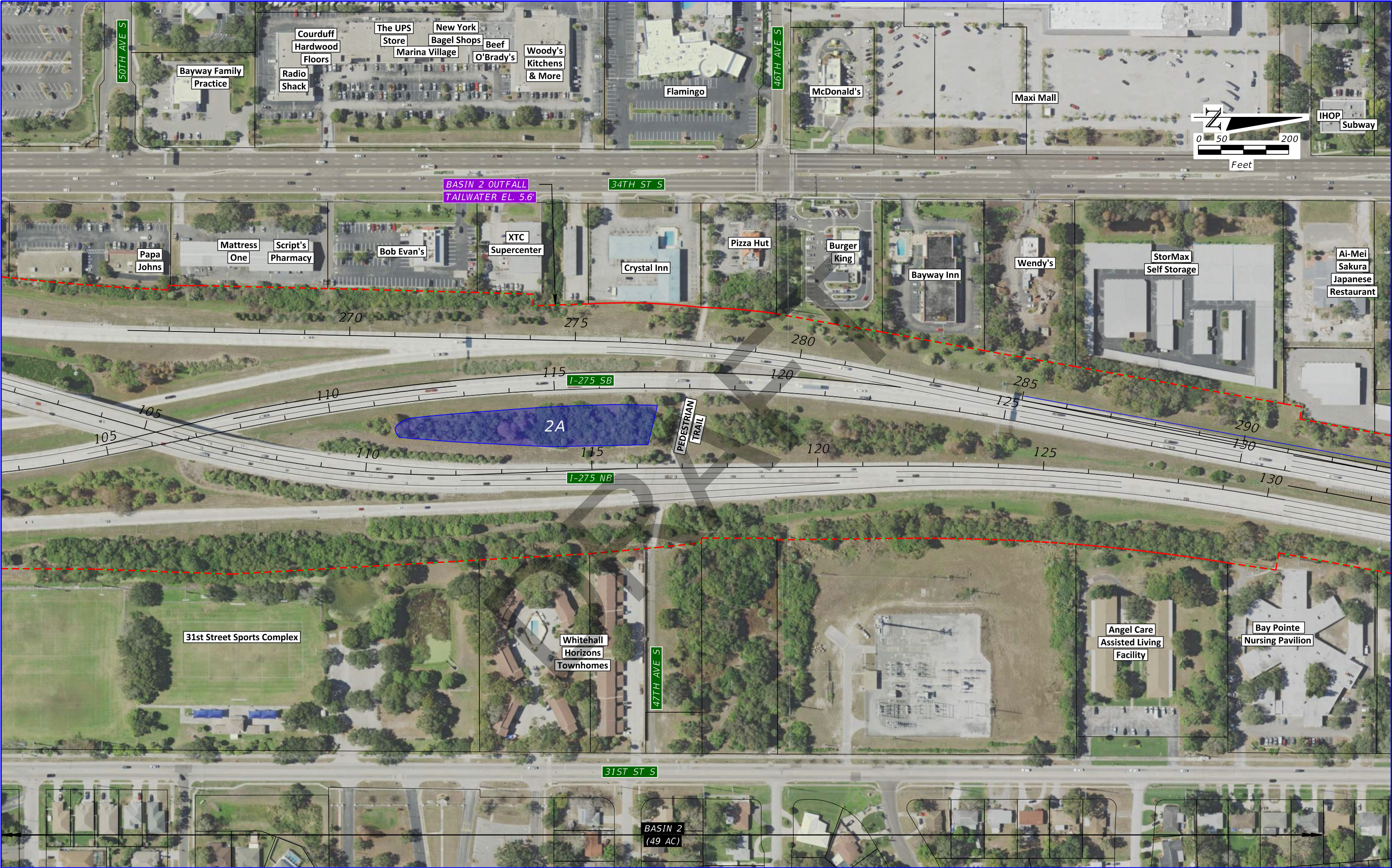
9:50:49 AM

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## Appendix C. Pond Site Alternatives





LEGEND:

PAVEMENT WIDENING

MASTER WIDENING

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

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\$DATES\$

\$TIMES\$

\$FILES\$

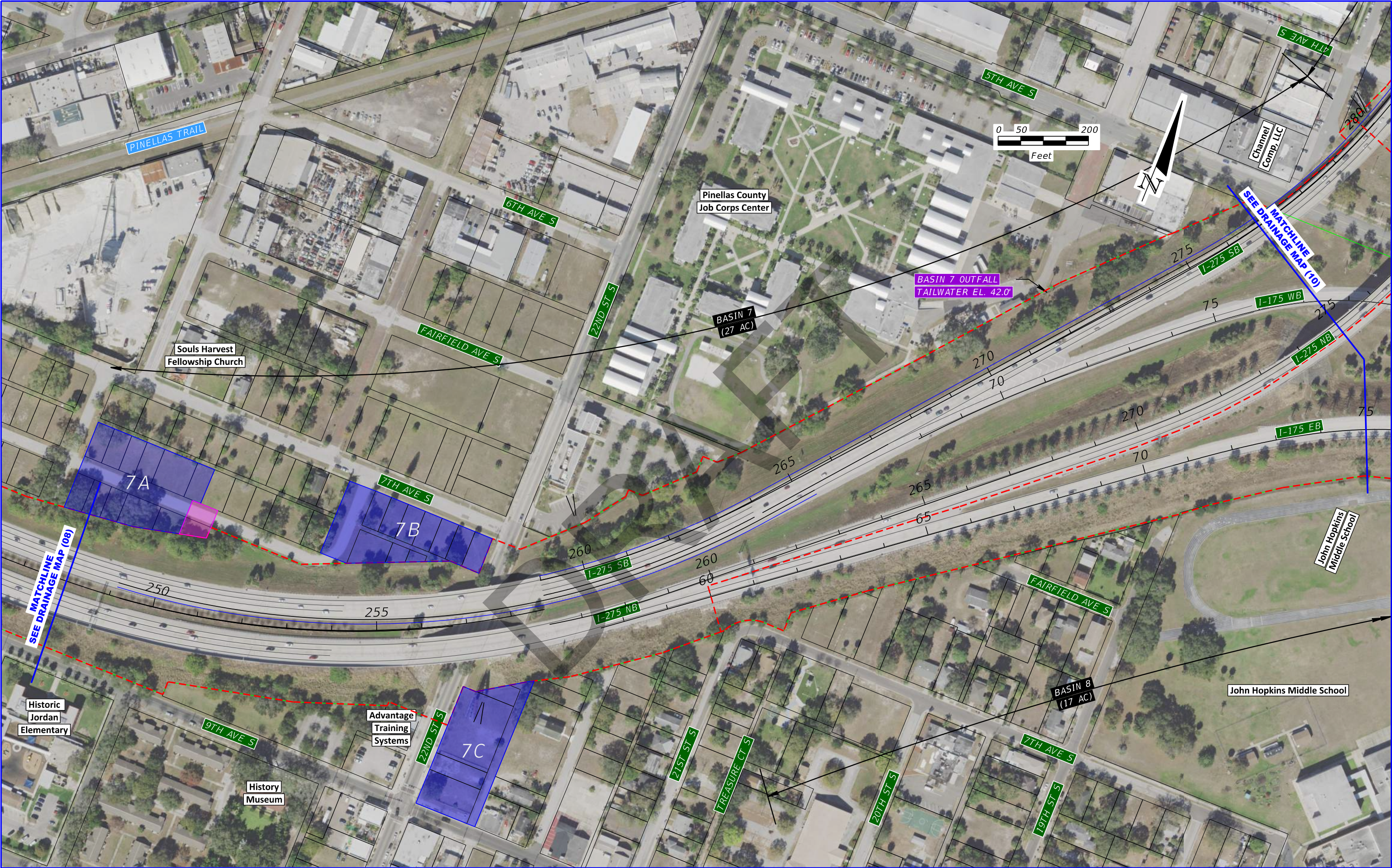
BASIN 2

SMF SITE ALTERNATIVES

SHEET NO.

C-1





**LEGEND:**

PAVEMENT WIDENING

MASTER WIDENING

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

\$USERS\$

\$DATES\$

\$TIMES\$

\$FILES\$

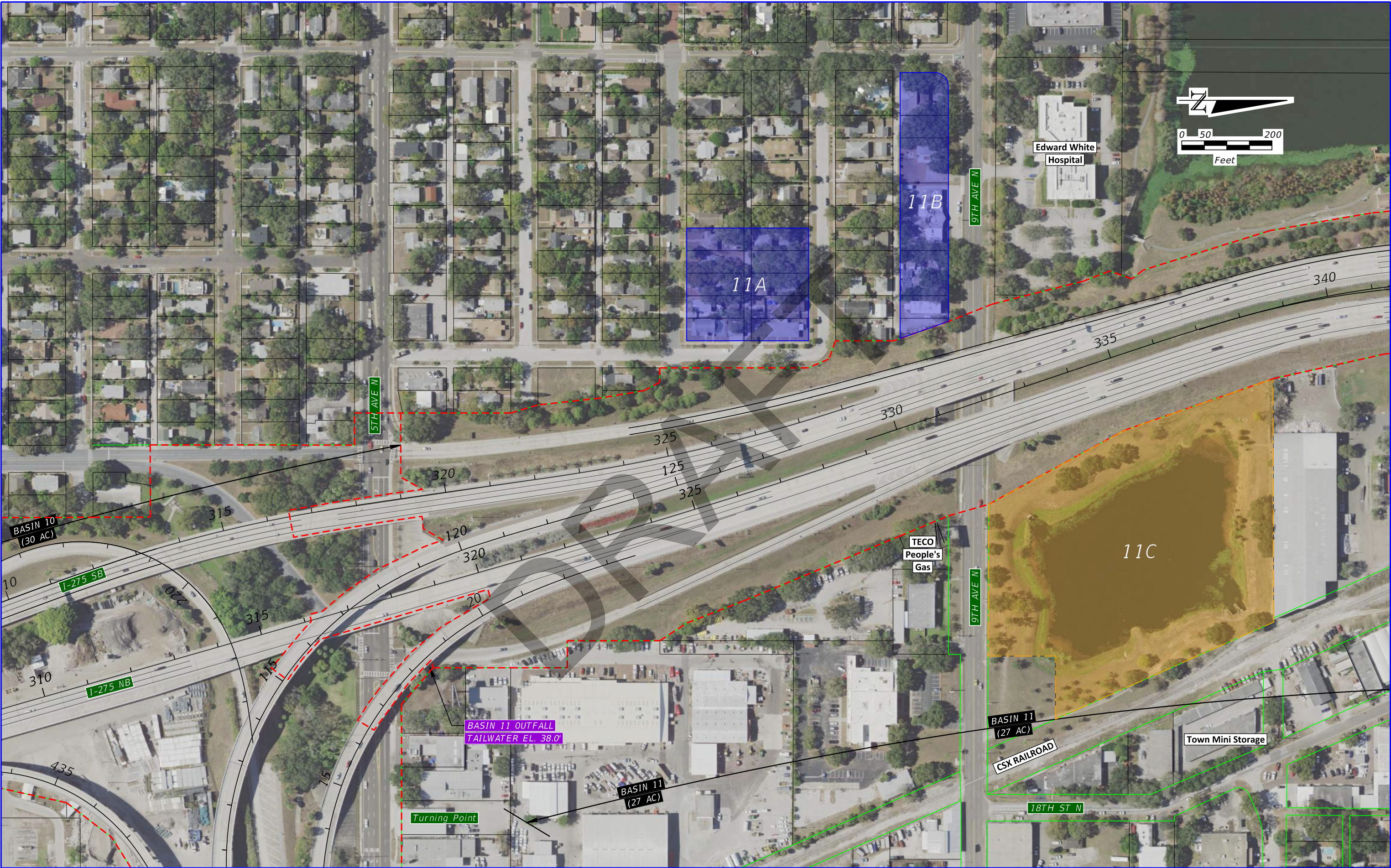
BASIN 7

SMF SITE ALTERNATIVES

SHEET NO.

C-2





**LEGEND:**

PAVEMENT WIDENING

MASTER WIDENING

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

| STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |          |                      |
|--------------------------------------------------|----------|----------------------|
| ROAD NO.                                         | COUNTY   | FINANCIAL PROJECT ID |
| I-275                                            | PINELLAS | 424501-1-22-01       |

\$USERS\$

\$DATES\$

\$TIMES\$

\$FILES\$

**BASIN 11**

**SMF SITE ALTERNATIVES**

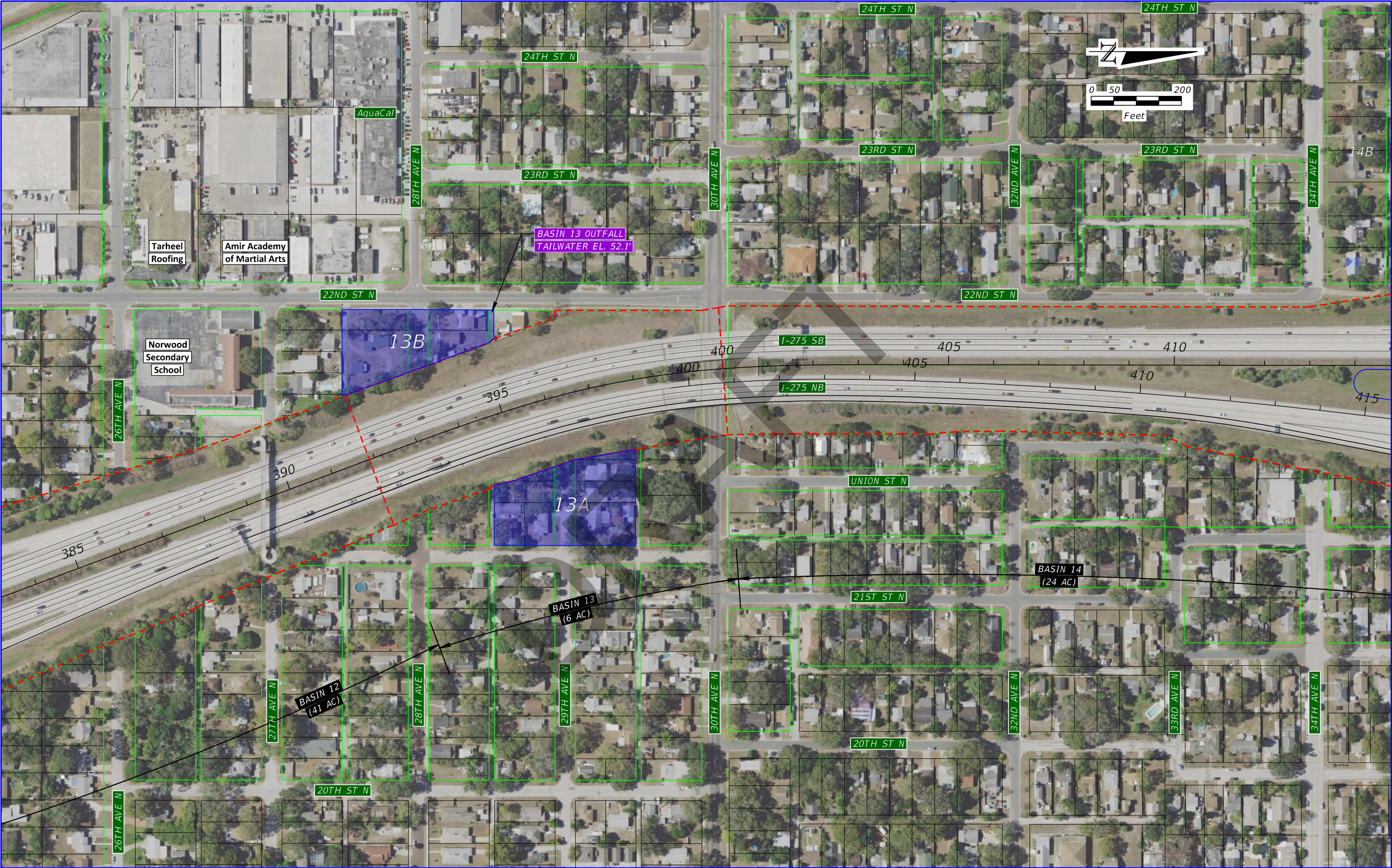
SHEET NO.

C-3









**LEGEND:**

PAVEMENT WIDENING

MASTER WIDENING

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

| STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |          |                      |
|--------------------------------------------------|----------|----------------------|
| ROAD NO.                                         | COUNTY   | FINANCIAL PROJECT ID |
| I-275                                            | PINELLAS | 424501-I-22-01       |

\$USERS\$

\$DATES\$

\$TIMES\$

\$FILES\$

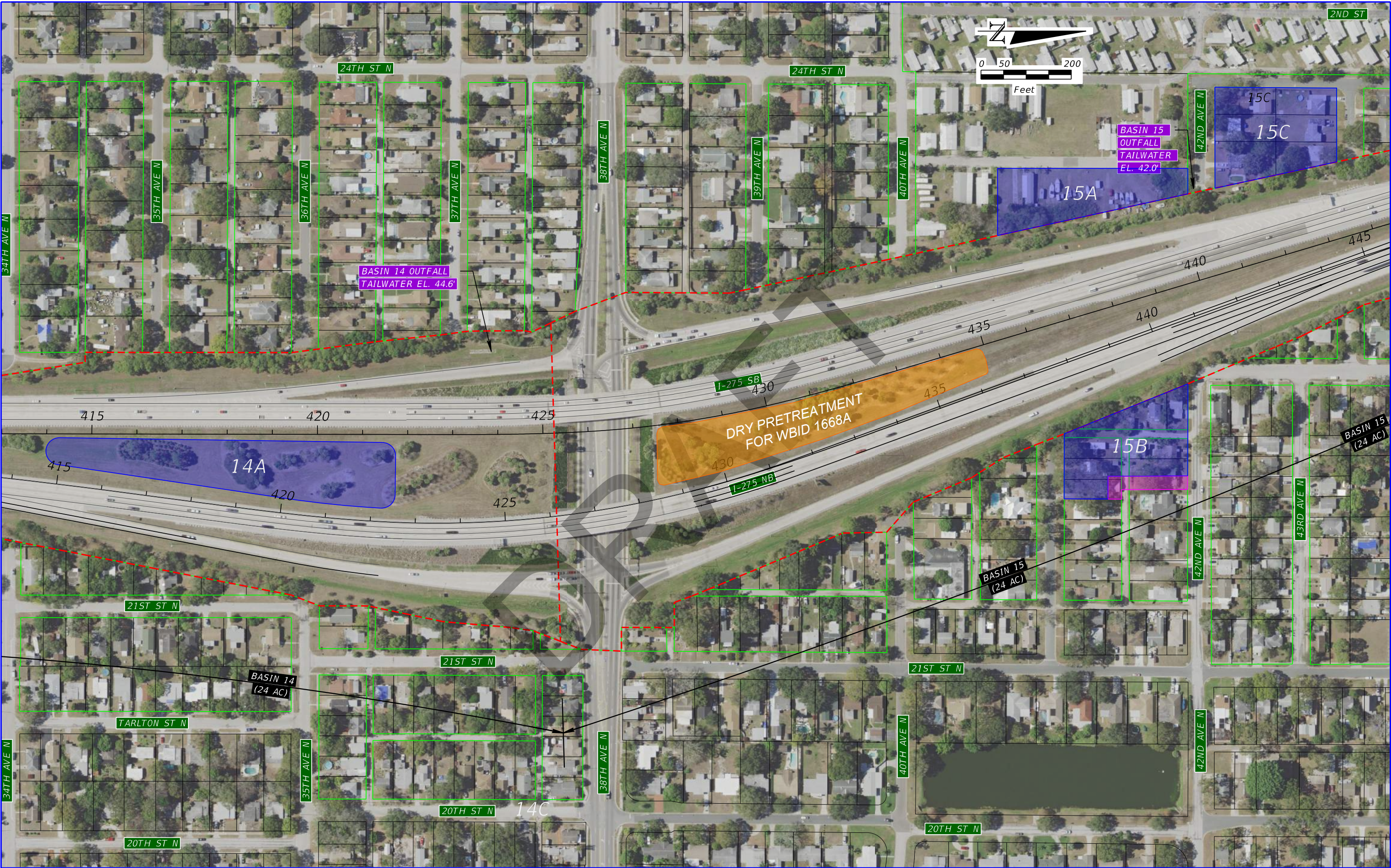
**BASIN 13**

**SMF SITE ALTERNATIVES**

SHEET NO.

C-5





**LEGEND:**

PAVEMENT WIDENING

MASTER WIDENING

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY   | FINANCIAL PROJECT ID |
|----------|----------|----------------------|
| I-275    | PINELLAS | 424501-1-22-01       |

\$USERS\$

\$DATES\$

\$TIMES\$

\$FILES\$

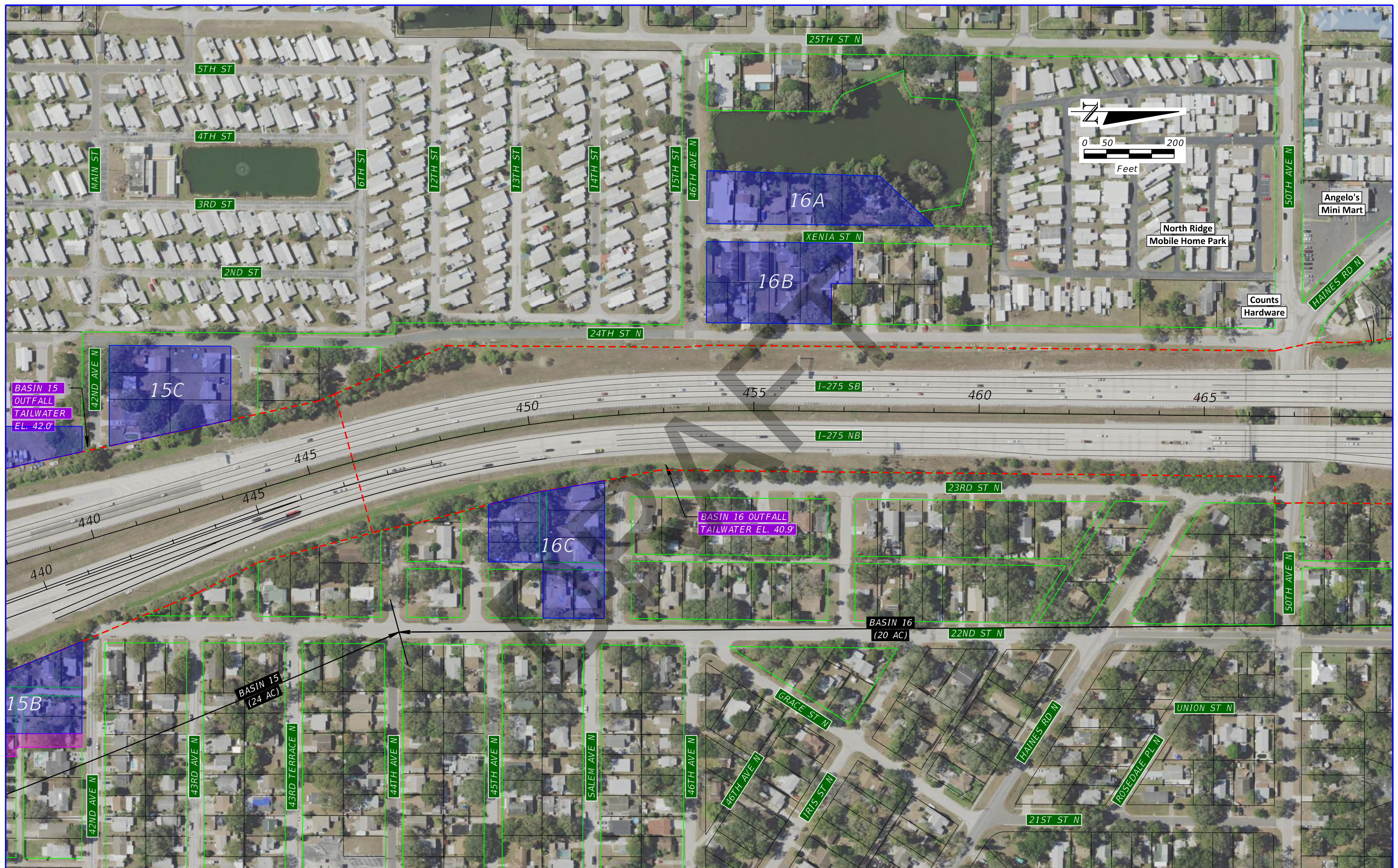
BASIN 14 & 15

SMF SITE ALTERNATIVES

SHEET NO.

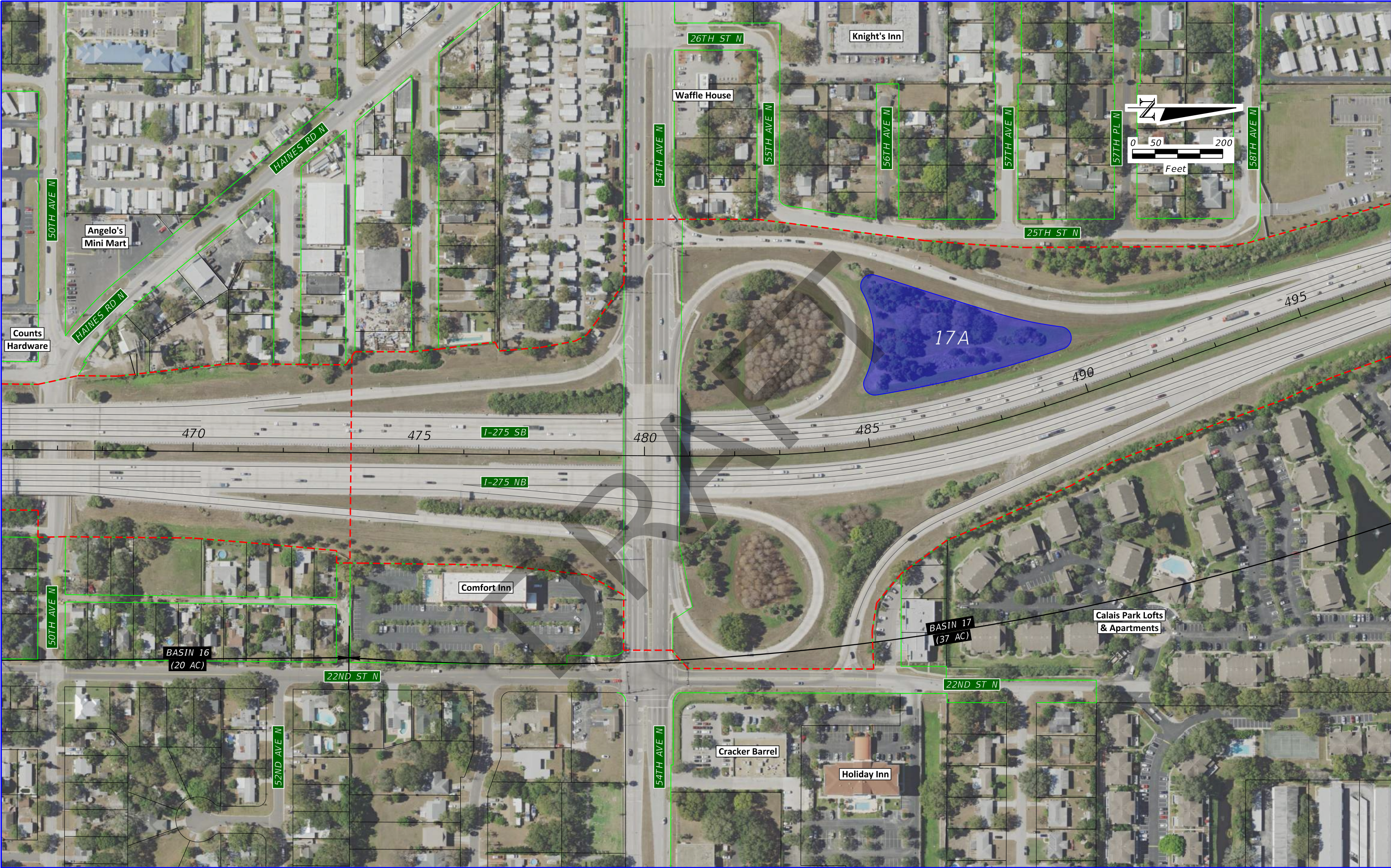
C-6





|                                                                                                       |                                                                                                     |                                                                                                       |  |                                                  |          |                      |                                   |           |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--|--------------------------------------------------|----------|----------------------|-----------------------------------|-----------|
| <b>LEGEND:</b>                                                                                        |                                                                                                     |                                                                                                       |  | STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |          |                      | BASIN 16<br>SMF SITE ALTERNATIVES | SHEET NO. |
|  PAVEMENT WIDENING |  BRIDGE WIDENING |  DIRECTION OF FLOW |  | ROAD NO.                                         | COUNTY   | FINANCIAL PROJECT ID |                                   | C-7       |
|  MASTER WIDENING   |  BRIDGES         |  WETLANDS          |  | I-275                                            | PINELLAS | 424501-1-22-01       |                                   |           |
|  PAVEMENT REMOVAL  |  BARRIER WALL    |  BASIN BOUNDARY    |  |                                                  |          |                      |                                   |           |





PAVEMENT WIDENING

MASTER WIDENING

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

|                                                  |          |                      |
|--------------------------------------------------|----------|----------------------|
| STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |          |                      |
| ROAD NO.                                         | COUNTY   | FINANCIAL PROJECT ID |
| I-275                                            | PINELLAS | 424501-1-22-01       |

BASIN 17

SMF SITE ALTERNATIVES

SHEET NO.

C-8

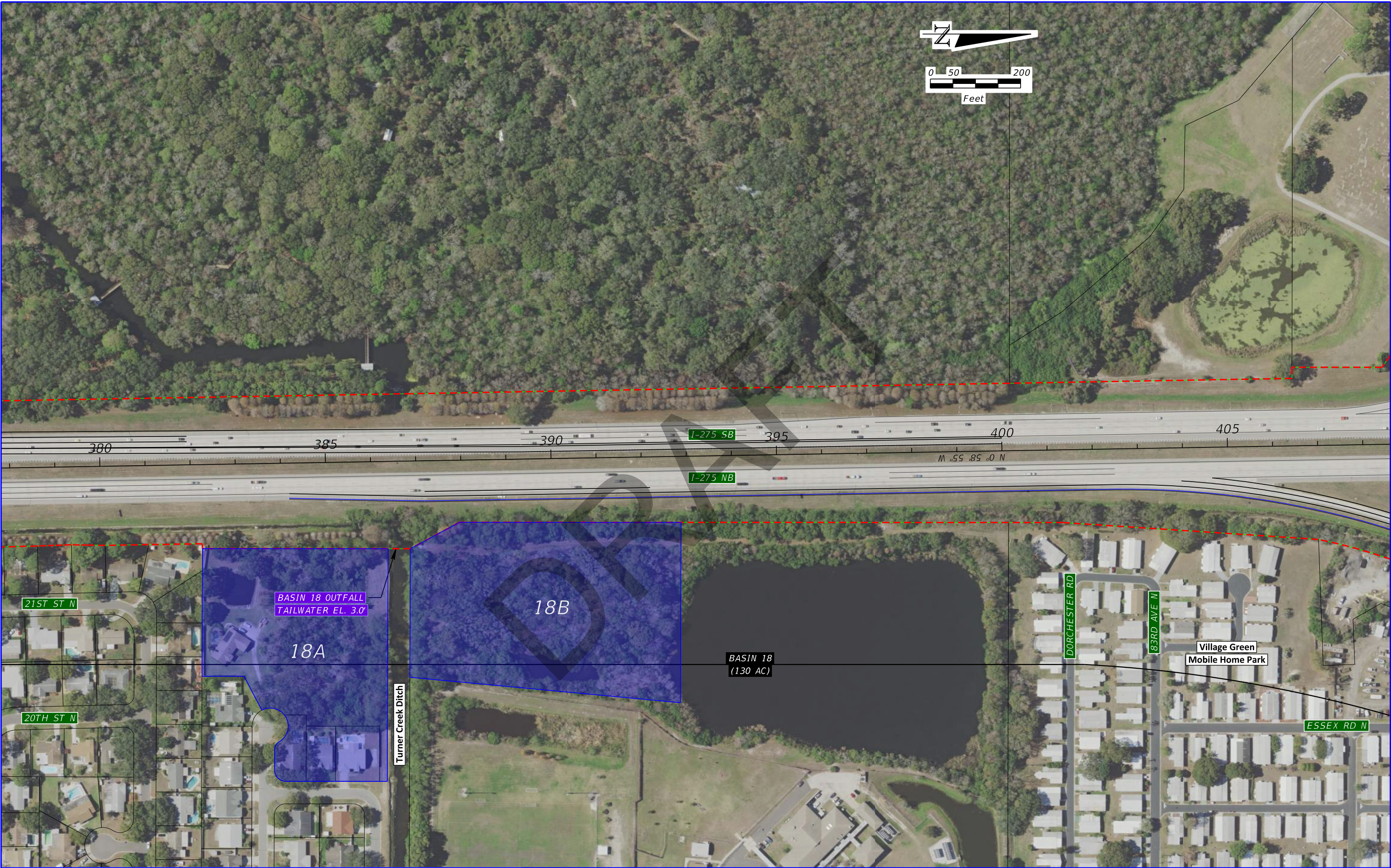
\$USERS\$

\$DATES\$

\$TIMES\$

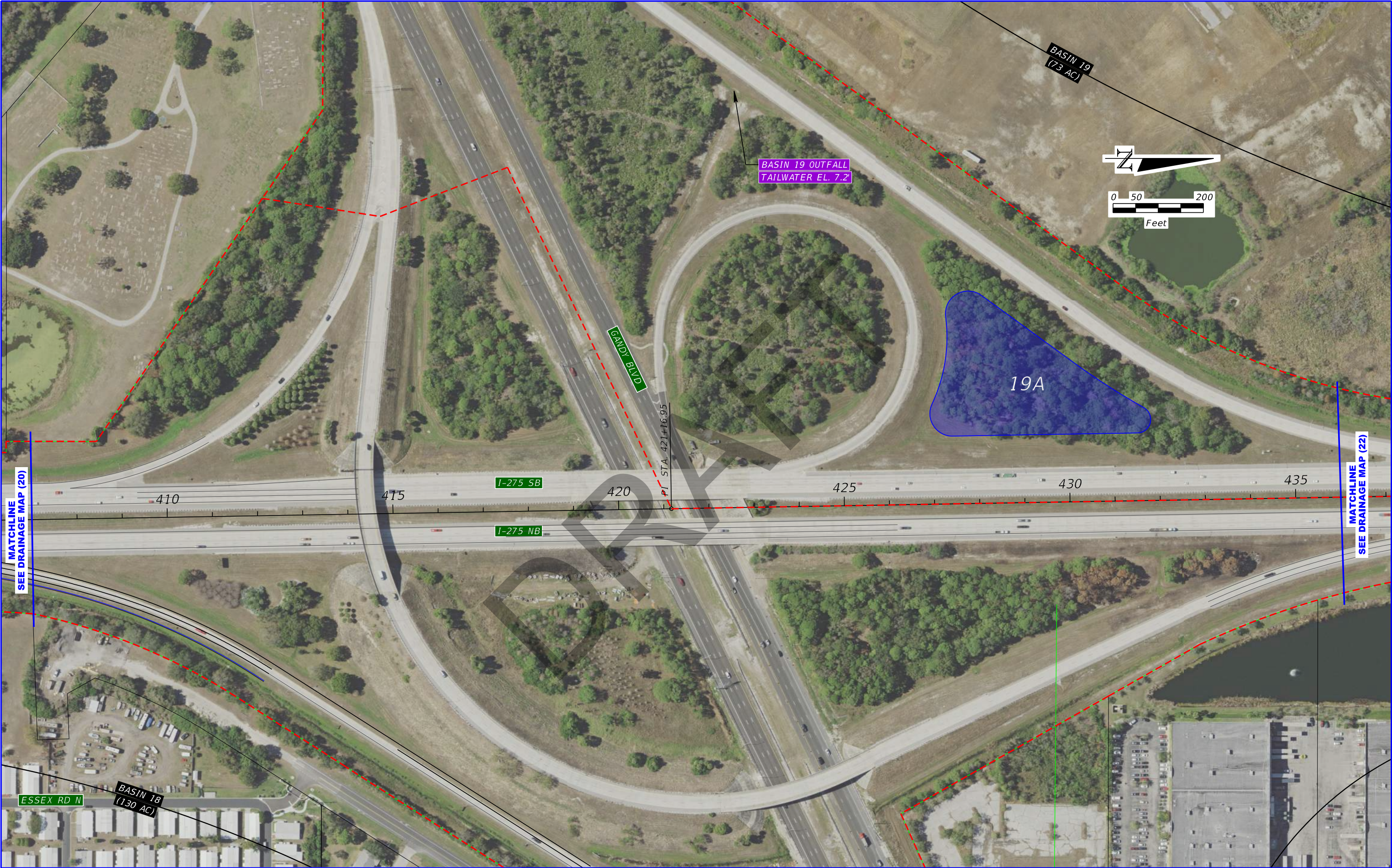
\$FILES\$





| LEGEND:     |                   |             | STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |             |                   | BASIN 18<br>SMF SITE ALTERNATIVES |           |                      | SHEET NO. |
|-------------|-------------------|-------------|--------------------------------------------------|-------------|-------------------|-----------------------------------|-----------|----------------------|-----------|
| <div></div> | PAVEMENT WIDENING | <div></div> | BRIDGE WIDENING                                  | <div></div> | DIRECTION OF FLOW |                                   |           |                      | NO.       |
| <div></div> | MASTER WIDENING   | <div></div> | BRIDGES                                          | <div></div> | WETLANDS          | ROAD NO.                          | COUNTY    | FINANCIAL PROJECT ID |           |
| <div></div> | PAVEMENT REMOVAL  | <div></div> | BARRIER WALL                                     | <div></div> | BASIN BOUNDARY    | I-275                             | PINELLAS  | 424501-1-22-01       | C-9       |
|             |                   |             |                                                  |             |                   | \$USERS\$                         | \$DATES\$ | \$TIMES\$            | \$FILES\$ |





PAVEMENT WIDENING

MASTER WIDENING

PAVEMENT REMOVAL

BRIDGE WIDENING

BRIDGES

BARRIER WALL

DIRECTION OF FLOW

WETLANDS

BASIN BOUNDARY

| STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |          |                      |
|--------------------------------------------------|----------|----------------------|
| ROAD NO.                                         | COUNTY   | FINANCIAL PROJECT ID |
| I-275                                            | PINELLAS | 424501-1-22-01       |

\$USERS\$

\$DATES\$

\$TIMES\$

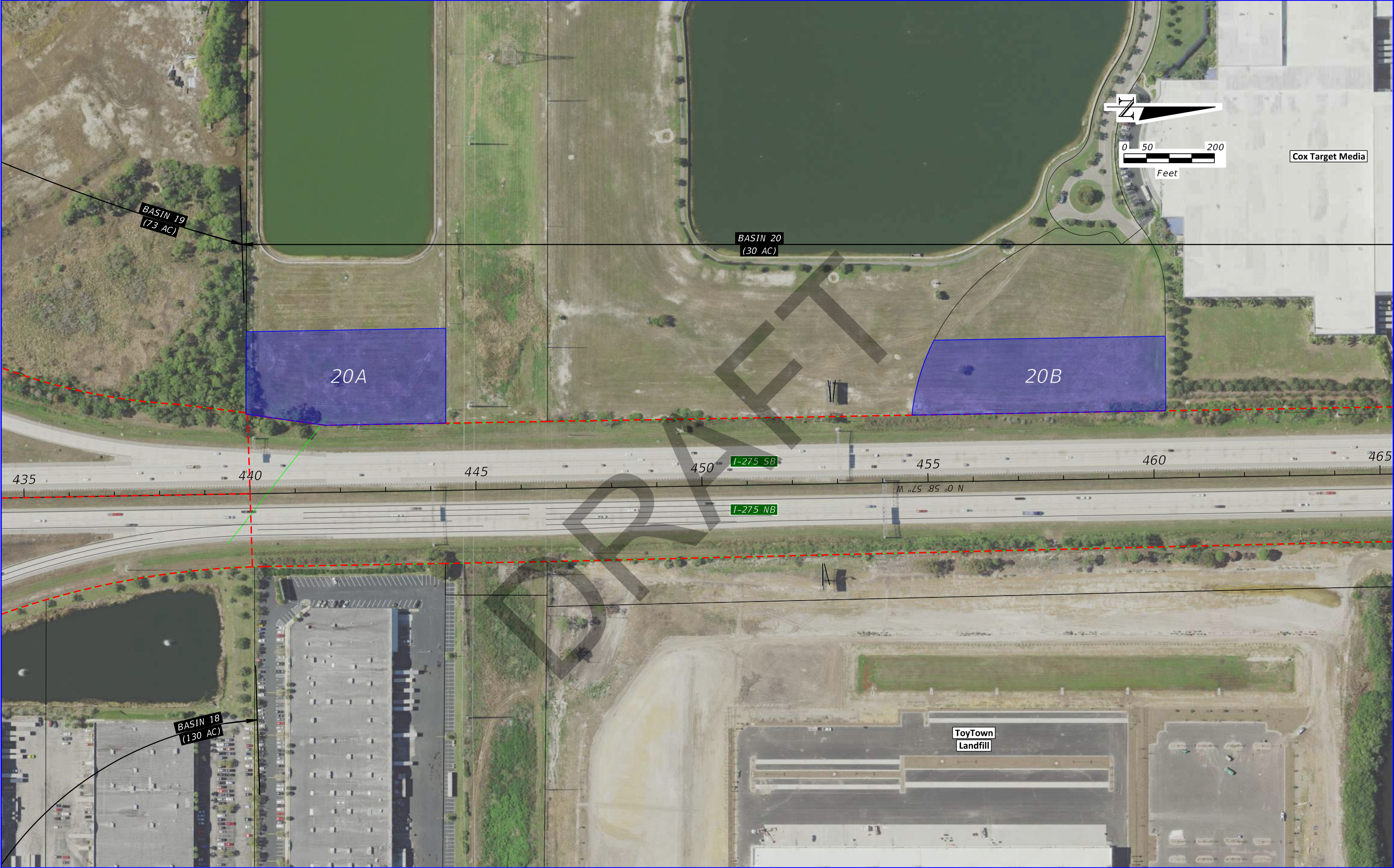
\$FILES\$

BASIN 19  
SMF SITE ALTERNATIVES

SHEET NO.

C-10





| LEGEND:     |                   |             | STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION |             |                   | BASIN 20<br>SMF SITE ALTERNATIVES |          |                      | SHEET NO. |
|-------------|-------------------|-------------|--------------------------------------------------|-------------|-------------------|-----------------------------------|----------|----------------------|-----------|
| <div></div> | PAVEMENT WIDENING | <div></div> | BRIDGE WIDENING                                  | <div></div> | DIRECTION OF FLOW |                                   |          |                      | NO.       |
| <div></div> | MASTER WIDENING   | <div></div> | BRIDGES                                          | <div></div> | WETLANDS          | ROAD NO.                          | COUNTY   | FINANCIAL PROJECT ID |           |
| <div></div> | PAVEMENT REMOVAL  | <div></div> | BARRIER WALL                                     | <div></div> | BASIN BOUNDARY    | I-275                             | PINELLAS | 424501-1-22-01       | C-11      |
| \$USERS\$   |                   |             | \$DATES\$                                        |             |                   | \$TIMES\$                         |          |                      | \$FILES\$ |



# Appendix D. Stormwater Management Calculations



**BASIN 2**

**Curve Number and Runoff Volume Calculation (SWFWMD 25YR/24HR)**

**Pre-Condition Curve Number Calculation**

| Land Use Description                  | Soil Map Unit | Hydrologic Group | Area               | CN | Product |
|---------------------------------------|---------------|------------------|--------------------|----|---------|
| Impervious Roadway                    | --            | --               | 15.30 acres        | 98 | 1499    |
| Sod/Grass                             | 17            | B                | 33.26 acres        | 80 | 2661    |
| <b>Subtotal:</b>                      |               |                  | <b>48.56 acres</b> |    |         |
| Pond Site                             | 17            | B                | 0.90 acres         | 80 | 72      |
| Totals:                               |               |                  | 49.46 acres        |    | 4232    |
| Pre-Condition Composite Curve Number: |               |                  | 85.6               |    |         |

**Pre-Condition Runoff Volume Calculation**

$$\begin{aligned}
 &25\text{-yr/24-hr Rainfall Depth (P)} = 9.00 \text{ IN} \\
 &CN = 85.6 \\
 &\text{Drainage Area (A)} = 49.46 \text{ AC} \\
 &\text{Potential maximum retention after runoff begins (S) and S is:} \\
 &\quad (S) = 1000/CN - 10 = 1.69 \text{ IN} \\
 &\quad \text{Runoff Depth (Q)} = (P - 0.2S)^2 / (P + 0.8S) = 7.25 \text{ IN} \\
 &\quad \text{Pre-Condition Runoff Volume (V}_{PRE}\text{)} = A \times Q = 29.89 \text{ AC-FT}
 \end{aligned}$$

**Post-Condition Curve Number Calculation**

| Land Use Description                   | Soil Map Unit | Hydrologic Group | Area               | CN  | Product |
|----------------------------------------|---------------|------------------|--------------------|-----|---------|
| Impervious Roadway                     | --            | --               | 15.30 acres        | 98  | 1499    |
| <b>New</b> Impervious Roadway          | --            | --               | 2.72 acres         | 98  | 267     |
| Sod/Grass                              | 17            | B                | 30.54 acres        | 80  | 2443    |
| <b>Subtotal:</b>                       |               |                  | <b>48.56 acres</b> |     |         |
| Pond Impervious                        | --            | --               | 0.23 acres         | 100 | 23      |
| Pond Pervious                          | 17            | B                | 0.67 acres         | 80  | 54      |
| Totals:                                |               |                  | 49.46 acres        |     | 4286    |
| Post-Condition Composite Curve Number: |               |                  | 86.7               |     |         |

**Post-Condition Runoff Volume Calculation**

$$\begin{aligned}
 &25\text{-yr/24-hr Rainfall Depth (P)} = 9.00 \text{ IN} \\
 &CN = 86.7 \\
 &\text{Drainage Area (A)} = 49.46 \text{ AC} \\
 &\text{Potential maximum retention after runoff begins (S) and S is:} \\
 &\quad (S) = 1000/CN - 10 = 1.54 \text{ IN} \\
 &\quad \text{Runoff Depth (Q)} = (P - 0.2S)^2 / (P + 0.8S) = 7.38 \text{ IN} \\
 &\quad \text{Post-Condition Runoff Volume (V}_{POST}\text{)} = A \times Q = 30.43 \text{ AC-FT}
 \end{aligned}$$

|                                                                           |             |              |
|---------------------------------------------------------------------------|-------------|--------------|
| <b>Required Attenuation Volume = V<sub>POST</sub> - V<sub>PRE</sub> =</b> | <b>0.55</b> | <b>AC-FT</b> |
|---------------------------------------------------------------------------|-------------|--------------|



## BASIN 2 (POND A)

### TREATMENT VOLUME CALCULATION

BASIN 2 R/W AREA= 48.56 ACRES  
BASIN 2 EXIST. IMPERVIOUS AREA= 15.30 ACRES  
BASIN 2 NEW IMPERVIOUS AREA = 2.72 ACRES

TREATMENT VOLUME REQUIRED:

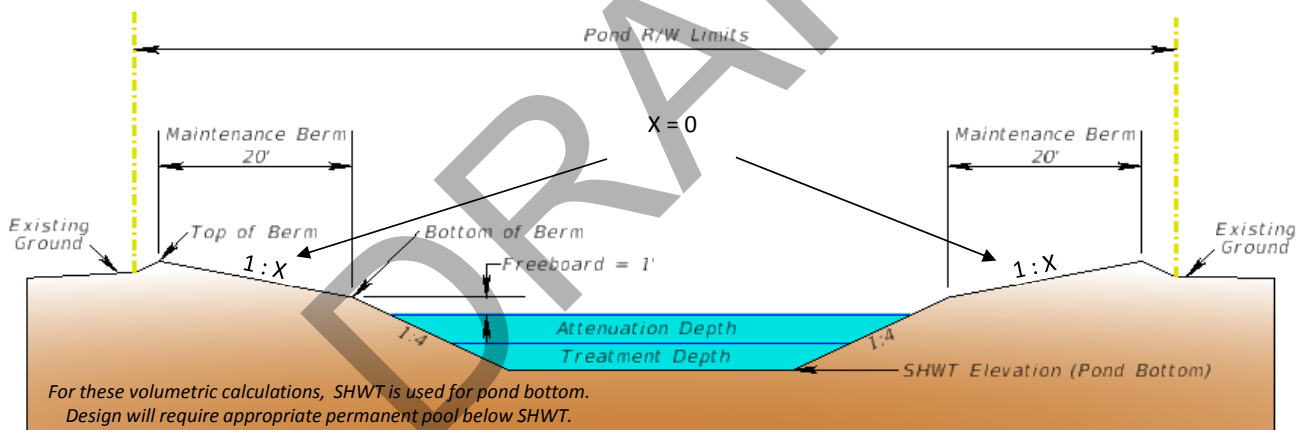
1 inch x 2.72 acres = 0.23 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 16 - Matlacha and St. Augustine  
NRCS HIGH WATER DEPTH: 2.0-3.0 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 6.0 FT  
SHWT EL = 4.0 FT  
AT ROADWAY:  
LOW EOP EL = 20.8 FT



|                                                 |      |    |             |
|-------------------------------------------------|------|----|-------------|
| Conveyance loss to pond =                       | 0.9  | FT |             |
| Conveyance loss to outfall =                    | 0.2  | FT |             |
| Available depth for treatment and attenuation = | 14.8 | FT | = 177.12 in |
| Treatment Depth =                               | 14   | in |             |
| Attenuation Depth =                             | 25   | in |             |
| Approx. low edge of pavement elevation (LEOP) = | 20.8 | FT |             |
| Approx. Proposed Top of Berm elevation =        | 8.4  | FT |             |
| Average Ground at Pond Site =                   | 6.0  | FT |             |
| Actual Depth of Treatment and Attenuation =     | 3.3  | FT |             |
| Pond Bottom Elevation =                         | 4.0  | FT |             |



## BASIN 2 (POND A)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.24  | AC-FT |
| Square dimension at bottom of treatment depth    | 90.0  | FT    |
| Square dimension at top of treatment depth       | 99.3  | FT    |
| Square dimension at top of attenuation depth     | 116.0 | FT    |
| Attenuation Volume provided by attenuation depth | 0.56  | AC-FT |
| Square dimension at top of freeboard             | 124.0 | FT    |
| Square dimension at top berm                     | 164.0 | FT    |
| Outside pond dimensions (including tie-down)     | 183.2 | FT    |

Minimum Total Area Required:

**0.93 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 2A STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 4.00 ft  
Estimated Low Edge of Pavement = 20.76 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 4.00      | 8100.0  | 0.19 | 0.0               | 0.0          | 0.00         |             |
| 5.17      | 9867.1  | 0.23 | 10480.8           | 10480.8      | 0.24         | TV          |
| 7.25      | 13456.0 | 0.31 | 24294.9           | 34775.7      | 0.80         | AV          |
| 8.25      | 15376.0 | 0.35 | 14416.0           | 49191.7      | 1.13         |             |
| 8.25      | 26896.0 | 0.62 | 0.0               | 49191.7      | 1.13         | Top of Berm |
| 6.00      | 40610.3 | 0.93 | --                | --           | --           |             |

Required Treatment Volume = 0.23 ac-ft  
**Provided Treatment Volume = 0.24 ac-ft** ✓  
 Required Attenuation Volume = 0.55 ac-ft  
**Provided Attenuation Volume = 0.56 ac-ft** ✓



**BASIN 7**

**Curve Number and Runoff Volume Calculation (SWFWMD 25YR/24HR)**

**Pre-Condition Curve Number Calculation**

| Land Use Description                  | Soil Map Unit | Hydrologic Group | Area               | CN | Product |
|---------------------------------------|---------------|------------------|--------------------|----|---------|
| Impervious Roadway                    | --            | --               | 9.42 acres         | 98 | 923     |
| Sod/Grass                             | 17            | C                | 17.28 acres        | 80 | 1382    |
| <b>Subtotal:</b>                      |               |                  | <b>26.70 acres</b> |    |         |
| Pond Site                             | 17            | C                | 1.04 acres         | 80 | 83      |
| Totals:                               |               |                  | 27.74 acres        |    | 2389    |
| Pre-Condition Composite Curve Number: |               |                  | 86.1               |    |         |

**Pre-Condition Runoff Volume Calculation**

$$\begin{aligned}
 &25\text{-yr/24-hr Rainfall Depth (P)} = 9.00 \text{ IN} \\
 &CN = 86.1 \\
 &\text{Drainage Area (A)} = 27.74 \text{ AC} \\
 &\text{Potential maximum retention after runoff begins (S) and S is:} \\
 &(S) = 1000/CN - 10 = 1.61 \text{ IN} \\
 &\text{Runoff Depth (Q)} = (P - 0.2S)^2 / (P + 0.8S) = 7.32 \text{ IN} \\
 &\text{Pre-Condition Runoff Volume (V}_{PRE}) = A \times Q = 16.92 \text{ AC-FT}
 \end{aligned}$$

**Post-Condition Curve Number Calculation**

| Land Use Description                   | Soil Map Unit | Hydrologic Group | Area               | CN  | Product |
|----------------------------------------|---------------|------------------|--------------------|-----|---------|
| Impervious Roadway                     | --            | --               | 9.42 acres         | 98  | 923     |
| <b>New</b> Impervious Roadway          | --            | --               | 1.60 acres         | 98  | 157     |
| Sod/Grass                              | 17            | C                | 15.68 acres        | 80  | 1254    |
| <b>Subtotal:</b>                       |               |                  | <b>26.70 acres</b> |     |         |
| Pond Impervious                        | --            | --               | 0.28 acres         | 100 | 28      |
| Pond Pervious                          | 17            | C                | 0.76 acres         | 80  | 61      |
| Totals:                                |               |                  | 27.74 acres        |     | 2423    |
| Post-Condition Composite Curve Number: |               |                  | 87.4               |     |         |

**Post-Condition Runoff Volume Calculation**

$$\begin{aligned}
 &25\text{-yr/24-hr Rainfall Depth (P)} = 9.00 \text{ IN} \\
 &CN = 87.4 \\
 &\text{Drainage Area (A)} = 27.74 \text{ AC} \\
 &\text{Potential maximum retention after runoff begins (S) and S is:} \\
 &(S) = 1000/CN - 10 = 1.45 \text{ IN} \\
 &\text{Runoff Depth (Q)} = (P - 0.2S)^2 / (P + 0.8S) = 7.47 \text{ IN} \\
 &\text{Post-Condition Runoff Volume (V}_{POST}) = A \times Q = 17.27 \text{ AC-FT}
 \end{aligned}$$

|                                                                           |             |              |
|---------------------------------------------------------------------------|-------------|--------------|
| <b>Required Attenuation Volume = V<sub>POST</sub> - V<sub>PRE</sub> =</b> | <b>0.35</b> | <b>AC-FT</b> |
|---------------------------------------------------------------------------|-------------|--------------|



## BASIN 7 (POND A)

### TREATMENT VOLUME CALCULATION

BASIN 2 R/W AREA= 26.70 ACRES  
BASIN 2 EXIST. IMPERVIOUS AREA= 9.42 ACRES  
BASIN 2 NEW IMPERVIOUS AREA = 1.60 ACRES

TREATMENT VOLUME REQUIRED:

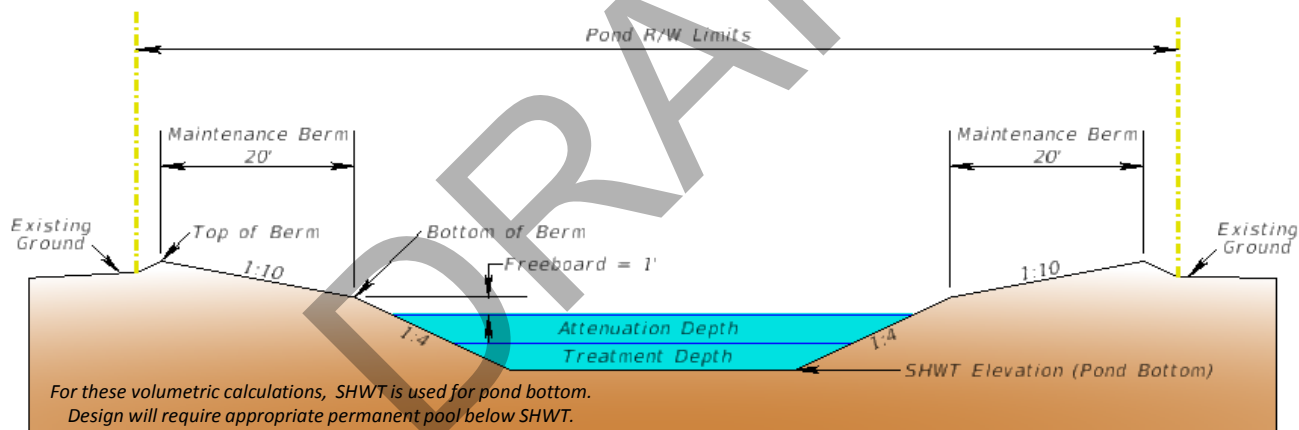
1 inch x 1.60 acres = 0.13 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 50.0 FT  
SHWT EL = 49.0 FT  
AT ROADWAY:  
LOW EOP EL = 63.1 FT



|                                                 |      |    |             |
|-------------------------------------------------|------|----|-------------|
| Conveyance loss to pond =                       | 0.7  | FT |             |
| Conveyance loss to outfall =                    | 0.4  | FT |             |
| Available depth for treatment and attenuation = | 12.0 | FT | = 144.12 in |
| Treatment Depth =                               | 7    | in |             |
| Attenuation Depth =                             | 18   | in |             |
| Approx. low edge of pavement elevation (LEOP) = | 63.1 | FT |             |
| Approx. Proposed Top of Berm elevation =        | 52.4 | FT |             |
| Average Ground at Pond Site =                   | 50.0 | FT |             |
| Actual Depth of Treatment and Attenuation =     | 2.1  | FT |             |
| Pond Bottom Elevation =                         | 49.0 | FT |             |



## BASIN 7 (POND A)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.15  | AC-FT |
| Square dimension at bottom of treatment depth    | 105.0 | FT    |
| Square dimension at top of treatment depth       | 109.7 | FT    |
| Square dimension at top of attenuation depth     | 121.7 | FT    |
| Attenuation Volume provided by attenuation depth | 0.47  | AC-FT |
| Square dimension at top of freeboard             | 129.7 | FT    |
| Square dimension at top berm                     | 169.7 | FT    |
| Outside pond dimensions (including tie-down)     | 189.1 | FT    |

Minimum Total Area Required:

**0.99 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 7A STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 49.00 ft  
Estimated Low Edge of Pavement = 63.06 ft

| Elevation | Area    | Area | Acumulated<br>Volume | Total<br>Volume | Total<br>Volume | REMARKS     |
|-----------|---------|------|----------------------|-----------------|-----------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)                 | (cf)            | (ac-ft)         |             |
| 49.00     | 11025.0 | 0.25 | 0.0                  | 0.0             | 0.00            |             |
| 49.58     | 12026.8 | 0.28 | 6723.4               | 6723.4          | 0.15            | TV          |
| 51.08     | 14802.8 | 0.34 | 20122.2              | 26845.6         | 0.62            | AV          |
| 52.08     | 16813.4 | 0.39 | 15808.1              | 42653.7         | 0.98            |             |
| 52.08     | 28786.8 | 0.66 | 0.0                  | 42653.7         | 0.98            | Top of Berm |
| 50.00     | 43283.4 | 0.99 | --                   | --              | --              |             |

Required Treatment Volume = 0.13 ac-ft

Provided Treatment Volume = 0.15 ac-ft



Required Attenuation Volume = 0.35 ac-ft

Provided Attenuation Volume = 0.47 ac-ft





## BASIN 7 (POND B)

### TREATMENT VOLUME CALCULATION

BASIN 2 R/W AREA= 26.70 ACRES  
BASIN 2 EXIST. IMPERVIOUS AREA= 9.42 ACRES  
BASIN 2 NEW IMPERVIOUS AREA = 1.60 ACRES

TREATMENT VOLUME REQUIRED:

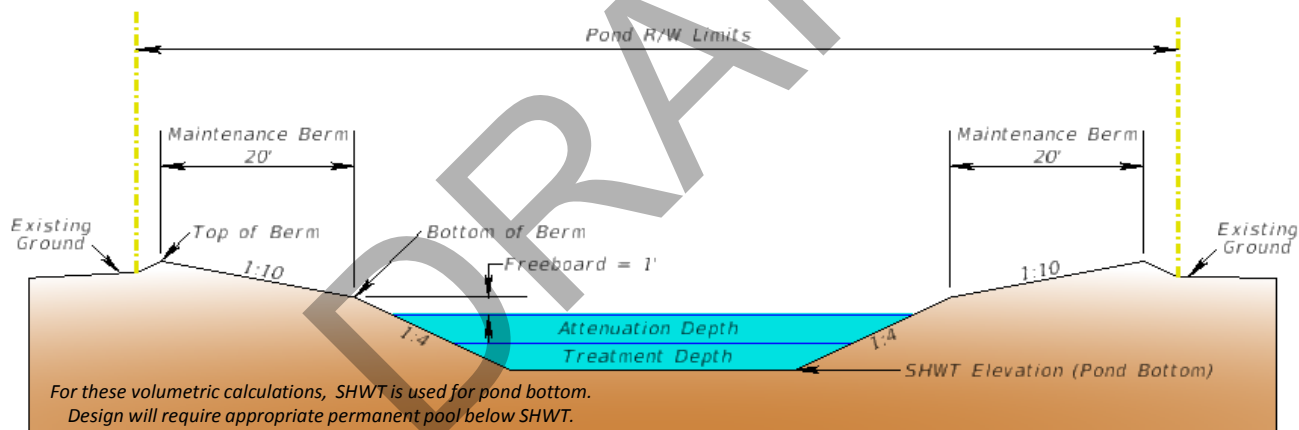
1 inch x 1.60 acres = 0.13 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 50.0 FT  
SHWT EL = 49.0 FT  
AT ROADWAY:  
LOW EOP EL = 63.1 FT



|                                                 |      |    |             |
|-------------------------------------------------|------|----|-------------|
| Conveyance loss to pond =                       | 0.5  | FT |             |
| Conveyance loss to outfall =                    | 0.9  | FT |             |
| Available depth for treatment and attenuation = | 11.7 | FT | = 140.52 in |
| Treatment Depth =                               | 7    | in |             |
| Attenuation Depth =                             | 18   | in |             |
| Approx. low edge of pavement elevation (LEOP) = | 63.1 | FT |             |
| Approx. Proposed Top of Berm elevation =        | 52.9 | FT |             |
| Average Ground at Pond Site =                   | 50.0 | FT |             |
| Actual Depth of Treatment and Attenuation =     | 2.1  | FT |             |
| Pond Bottom Elevation =                         | 49.0 | FT |             |



## BASIN 7 (POND B)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.14  | AC-FT |
| Square dimension at bottom of treatment depth    | 100.0 | FT    |
| Square dimension at top of treatment depth       | 104.7 | FT    |
| Square dimension at top of attenuation depth     | 116.7 | FT    |
| Attenuation Volume provided by attenuation depth | 0.42  | AC-FT |
| Square dimension at top of freeboard             | 124.7 | FT    |
| Square dimension at top berm                     | 164.7 | FT    |
| Outside pond dimensions (including tie-down)     | 188.1 | FT    |

Minimum Total Area Required:

**0.98 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 7B STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 49.00 ft  
Estimated Low Edge of Pavement = 63.06 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 49.00     | 10000.0 | 0.23 | 0.0               | 0.0          | 0.00         |             |
| 49.58     | 10955.1 | 0.25 | 6111.9            | 6111.9       | 0.14         | TV          |
| 51.08     | 13611.1 | 0.31 | 18424.7           | 24536.6      | 0.56         | AV          |
| 52.08     | 15541.8 | 0.36 | 14576.4           | 39113.0      | 0.90         |             |
| 52.08     | 27115.1 | 0.62 | 0.0               | 39113.0      | 0.90         | Top of Berm |
| 50.00     | 42826.9 | 0.98 | --                | --           | --           |             |

Required Treatment Volume = 0.13 ac-ft  
**Provided Treatment Volume = 0.14 ac-ft** ✓

Required Attenuation Volume = 0.35 ac-ft  
**Provided Attenuation Volume = 0.42 ac-ft** ✓



## BASIN 7 (POND C)

### TREATMENT VOLUME CALCULATION

BASIN 2 R/W AREA= 26.70 ACRES  
BASIN 2 EXIST. IMPERVIOUS AREA= 9.42 ACRES  
BASIN 2 NEW IMPERVIOUS AREA = 1.60 ACRES

TREATMENT VOLUME REQUIRED:

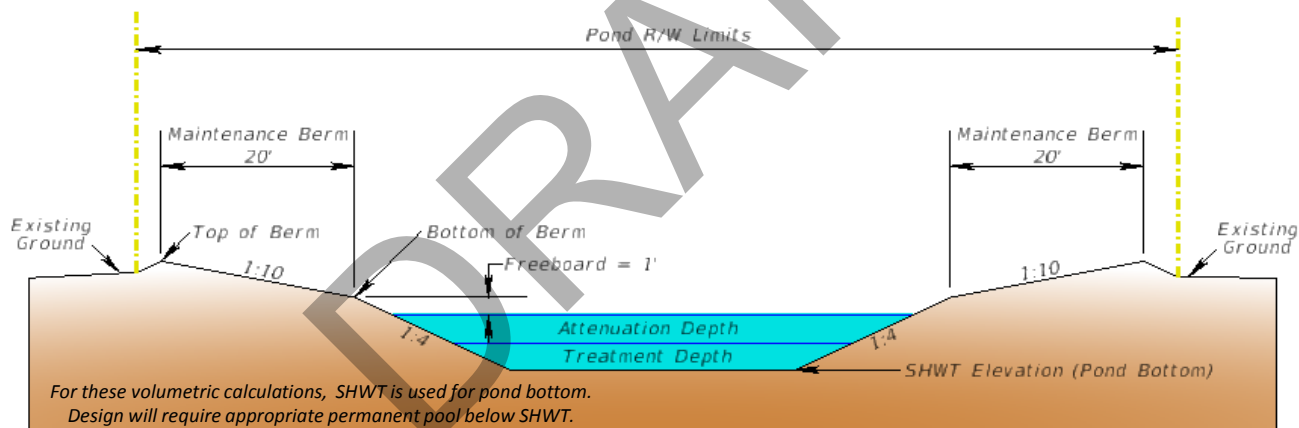
1 inch x 1.60 acres = 0.13 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 50.0 FT  
SHWT EL = 49.0 FT  
AT ROADWAY:  
LOW EOP EL = 63.1 FT



|                                                 |      |    |             |
|-------------------------------------------------|------|----|-------------|
| Conveyance loss to pond =                       | 0.6  | FT |             |
| Conveyance loss to outfall =                    | 0.9  | FT |             |
| Available depth for treatment and attenuation = | 11.6 | FT | = 138.72 in |
| Treatment Depth =                               | 7    | in |             |
| Attenuation Depth =                             | 18   | in |             |
| Approx. low edge of pavement elevation (LEOP) = | 63.1 | FT |             |
| Approx. Proposed Top of Berm elevation =        | 53.0 | FT |             |
| Average Ground at Pond Site =                   | 50.0 | FT |             |
| Actual Depth of Treatment and Attenuation =     | 2.1  | FT |             |
| Pond Bottom Elevation =                         | 49.0 | FT |             |



## BASIN 7 (POND C)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.15  | AC-FT |
| Square dimension at bottom of treatment depth    | 105.0 | FT    |
| Square dimension at top of treatment depth       | 109.7 | FT    |
| Square dimension at top of attenuation depth     | 121.7 | FT    |
| Attenuation Volume provided by attenuation depth | 0.47  | AC-FT |
| Square dimension at top of freeboard             | 129.7 | FT    |
| Square dimension at top berm                     | 169.7 | FT    |
| Outside pond dimensions (including tie-down)     | 193.3 | FT    |

Minimum Total Area Required:

1.04 ACRES

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 7C STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 49.00 ft  
Estimated Low Edge of Pavement = 63.06 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 49.00     | 11025.0 | 0.25 | 0.0               | 0.0          | 0.00         |             |
| 49.58     | 12026.8 | 0.28 | 6723.4            | 6723.4       | 0.15         | TV          |
| 51.08     | 14802.8 | 0.34 | 20122.2           | 26845.6      | 0.62         | AV          |
| 52.08     | 16813.4 | 0.39 | 15808.1           | 42653.7      | 0.98         |             |
| 52.08     | 28786.8 | 0.66 | 0.0               | 42653.7      | 0.98         | Top of Berm |
| 50.00     | 45227.1 | 1.04 | --                | --           | --           |             |

Required Treatment Volume = 0.13 ac-ft

Provided Treatment Volume = 0.15 ac-ft



Required Attenuation Volume = 0.35 ac-ft

Provided Attenuation Volume = 0.47 ac-ft





**BASIN 11**

**Curve Number and Runoff Volume Calculation (SWFWMD 25YR/24HR)**

**Pre-Condition Curve Number Calculation**

| Land Use Description                  | Soil Map Unit | Hydrologic Group | Area               | CN | Product |
|---------------------------------------|---------------|------------------|--------------------|----|---------|
| Impervious Roadway                    | --            | --               | 12.08 acres        | 98 | 1184    |
| Sod/Grass                             | 17            | C                | 15.24 acres        | 80 | 1219    |
| <b>Subtotal:</b>                      |               |                  | <b>27.32 acres</b> |    |         |
| Pond Site                             | 17            | C                | 1.52 acres         | 80 | 122     |
| Totals:                               |               |                  | 28.84 acres        |    | 2525    |
| Pre-Condition Composite Curve Number: |               |                  | 87.5               |    |         |

**Pre-Condition Runoff Volume Calculation**

25-yr/24-hr Rainfall Depth (P) = 9.00 IN  
 CN = 87.5  
 Drainage Area (A) = 28.84 AC  
 Potential maximum retention after runoff begins (S) and S is:  
 $(S) = 1000/CN - 10 = 1.42$  IN  
 $\text{Runoff Depth (Q)} = (P - 0.2S)^2 / (P + 0.8S) = 7.49$  IN  
 Pre-Condition Runoff Volume ( $V_{PRE}$ ) = A x Q = 18.01 AC-FT

**Post-Condition Curve Number Calculation**

| Land Use Description                   | Soil Map Unit | Hydrologic Group | Area               | CN  | Product |
|----------------------------------------|---------------|------------------|--------------------|-----|---------|
| Impervious Roadway                     | --            | --               | 12.08 acres        | 98  | 1184    |
| <b>New</b> Impervious Roadway          | --            | --               | 3.77 acres         | 98  | 369     |
| Sod/Grass                              | 17            | C                | 11.47 acres        | 80  | 918     |
| <b>Subtotal:</b>                       |               |                  | <b>27.32 acres</b> |     |         |
| Pond Impervious                        | --            | --               | 0.66 acres         | 100 | 66      |
| Pond Pervious                          | 17            | C                | 0.86 acres         | 80  | 69      |
| Totals:                                |               |                  | 28.84 acres        |     | 2606    |
| Post-Condition Composite Curve Number: |               |                  | 90.4               |     |         |

**Post-Condition Runoff Volume Calculation**

25-yr/24-hr Rainfall Depth (P) = 9.00 IN  
 CN = 90.4  
 Drainage Area (A) = 28.84 AC  
 Potential maximum retention after runoff begins (S) and S is:  
 $(S) = 1000/CN - 10 = 1.07$  IN  
 $\text{Runoff Depth (Q)} = (P - 0.2S)^2 / (P + 0.8S) = 7.83$  IN  
 Post-Condition Runoff Volume ( $V_{POST}$ ) = A x Q = 18.83 AC-FT

|                                                                                   |
|-----------------------------------------------------------------------------------|
| <b>Required Attenuation Volume = <math>V_{POST} - V_{PRE}</math> = 0.82 AC-FT</b> |
|-----------------------------------------------------------------------------------|



## BASIN 11 (POND A)

### TREATMENT VOLUME CALCULATION

BASIN 11 R/W AREA= 27.32 ACRES  
BASIN 11 EXIST. IMPERVIOUS AREA= 12.08 ACRES  
BASIN 11 NEW IMPERVIOUS AREA = 3.77 ACRES

TREATMENT VOLUME REQUIRED:

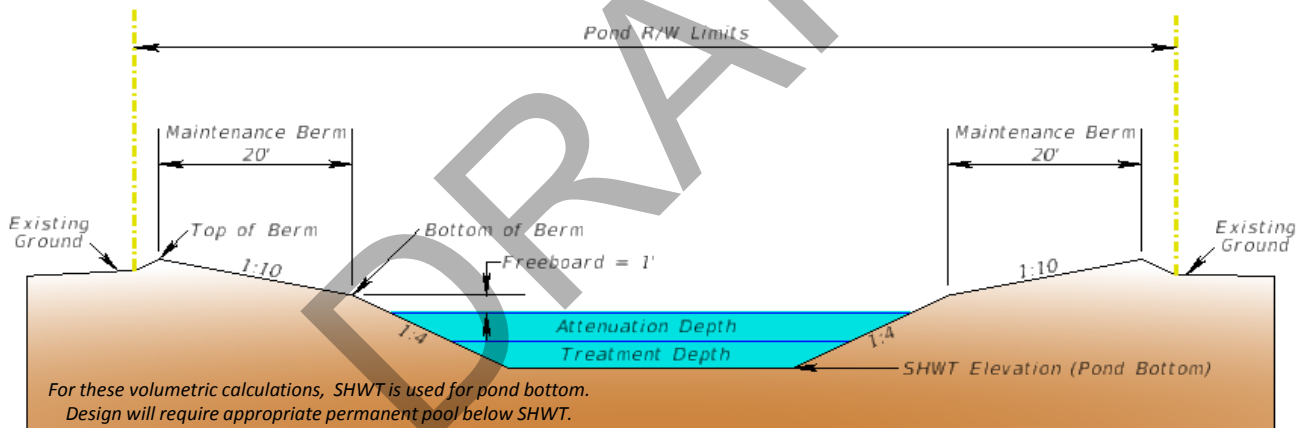
1 inch x 3.77 acres = 0.31 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 4 - Astatula Soils  
NRCS HIGH WATER DEPTH: 6.0 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 46.0 FT  
SHWT EL = 40.0 FT  
AT ROADWAY:  
LOW EOP EL = 60.7 FT



|                                                 |      |    |             |
|-------------------------------------------------|------|----|-------------|
| Conveyance loss to pond =                       | 0.4  | FT |             |
| Conveyance loss to outfall =                    | 0.8  | FT |             |
| Available depth for treatment and attenuation = | 18.5 | FT | = 222.42 in |
| Treatment Depth =                               | 8    | in |             |
| Attenuation Depth =                             | 18   | in |             |
| Approx. low edge of pavement elevation (LEOP) = | 60.7 | FT |             |
| Approx. Proposed Top of Berm elevation =        | 43.9 | FT |             |
| Average Ground at Pond Site =                   | 46.0 | FT |             |
| Actual Depth of Treatment and Attenuation =     | 2.2  | FT |             |
| Pond Bottom Elevation =                         | 40.0 | FT |             |



## BASIN 11 (POND A)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.33  | AC-FT |
| Square dimension at bottom of treatment depth    | 145.0 | FT    |
| Square dimension at top of treatment depth       | 150.3 | FT    |
| Square dimension at top of attenuation depth     | 162.3 | FT    |
| Attenuation Volume provided by attenuation depth | 0.85  | AC-FT |
| Square dimension at top of freeboard             | 170.3 | FT    |
| Square dimension at top berm                     | 210.3 | FT    |
| Outside pond dimensions (including tie-down)     | 193.7 | FT    |

Minimum Total Area Required:

1.04 ACRES

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 11A STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 40.00 ft  
Estimated Low Edge of Pavement = 60.66 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 40.00     | 21025.0 | 0.48 | 0.0               | 0.0          | 0.00         |             |
| 40.67     | 22600.1 | 0.52 | 14541.7           | 14541.7      | 0.33         | TV          |
| 42.17     | 26352.1 | 0.60 | 36714.2           | 51255.9      | 1.18         | AV          |
| 43.17     | 29013.4 | 0.67 | 27682.8           | 78938.6      | 1.81         |             |
| 43.17     | 44240.1 | 1.02 | 0.0               | 78938.6      | 1.81         | Top of Berm |
| 46.00     | 45383.2 | 1.04 | --                | --           | --           |             |

Required Treatment Volume = 0.31 ac-ft  
**Provided Treatment Volume = 0.33 ac-ft** ✓  
 Required Attenuation Volume = 0.82 ac-ft  
**Provided Attenuation Volume = 0.85 ac-ft** ✓



## BASIN 11 (POND B)

### TREATMENT VOLUME CALCULATION

BASIN 11 R/W AREA= 27.32 ACRES  
BASIN 11 EXIST. IMPERVIOUS AREA= 12.08 ACRES  
BASIN 11 NEW IMPERVIOUS AREA = 3.77 ACRES

TREATMENT VOLUME REQUIRED:

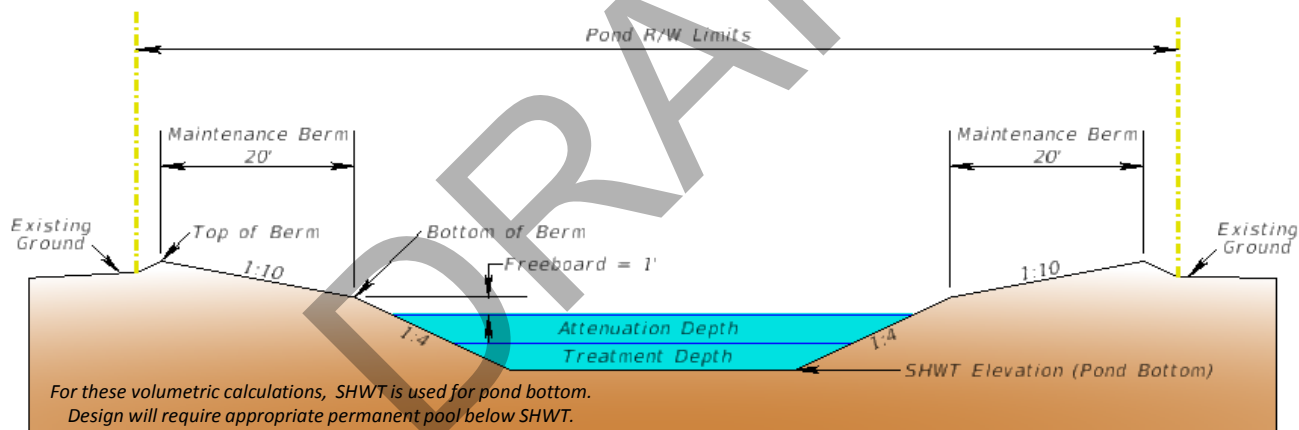
1 inch x 3.77 acres = 0.31 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 40.0 FT  
SHWT EL = 39.0 FT  
AT ROADWAY:  
LOW EOP EL = 60.7 FT



|                                                 |      |    |             |
|-------------------------------------------------|------|----|-------------|
| Conveyance loss to pond =                       | 0.1  | FT |             |
| Conveyance loss to outfall =                    | 0.8  | FT |             |
| Available depth for treatment and attenuation = | 19.7 | FT | = 236.94 in |
| Treatment Depth =                               | 8    | in |             |
| Attenuation Depth =                             | 18   | in |             |
| Approx. low edge of pavement elevation (LEOP) = | 60.7 | FT |             |
| Approx. Proposed Top of Berm elevation =        | 42.9 | FT |             |
| Average Ground at Pond Site =                   | 40.0 | FT |             |
| Actual Depth of Treatment and Attenuation =     | 2.2  | FT |             |
| Pond Bottom Elevation =                         | 39.0 | FT |             |



## BASIN 11 (POND B)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.33  | AC-FT |
| Square dimension at bottom of treatment depth    | 145.0 | FT    |
| Square dimension at top of treatment depth       | 150.3 | FT    |
| Square dimension at top of attenuation depth     | 162.3 | FT    |
| Attenuation Volume provided by attenuation depth | 0.85  | AC-FT |
| Square dimension at top of freeboard             | 170.3 | FT    |
| Square dimension at top berm                     | 210.3 | FT    |
| Outside pond dimensions (including tie-down)     | 233.9 | FT    |

Minimum Total Area Required:

1.52 ACRES

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 11B STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 39.00 ft  
Estimated Low Edge of Pavement = 60.66 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 39.00     | 21025.0 | 0.48 | 0.0               | 0.0          | 0.00         |             |
| 39.67     | 22600.1 | 0.52 | 14541.7           | 14541.7      | 0.33         | TV          |
| 41.17     | 26352.1 | 0.60 | 36714.2           | 51255.9      | 1.18         | AV          |
| 42.17     | 29013.4 | 0.67 | 27682.8           | 78938.6      | 1.81         |             |
| 42.17     | 44240.1 | 1.02 | 0.0               | 78938.6      | 1.81         | Top of Berm |
| 40.00     | 66179.3 | 1.52 | --                | --           | --           |             |

Required Treatment Volume = 0.31 ac-ft  
**Provided Treatment Volume = 0.33 ac-ft** ✓  
 Required Attenuation Volume = 0.82 ac-ft  
**Provided Attenuation Volume = 0.85 ac-ft** ✓



## BASIN 11 (POND C)

### TREATMENT VOLUME CALCULATION

BASIN 11 R/W AREA= 27.32 ACRES  
BASIN 11 EXIST. IMPERVIOUS AREA= 12.08 ACRES  
BASIN 11 NEW IMPERVIOUS AREA = 3.77 ACRES

TREATMENT VOLUME REQUIRED:

1 inch x 3.77 acres = 0.31 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 16 - Matlacha and St. Augustine soils  
NRCS HIGH WATER DEPTH: 2.0-3.0 FT (FROM PINELLAS COUNTY SOIL SURVEY)

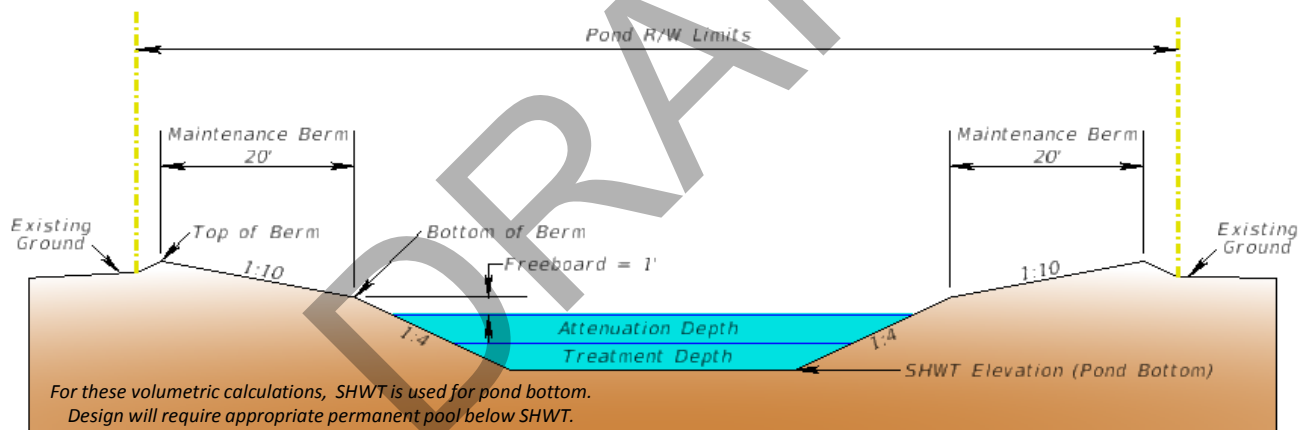
VERTICAL LIMITATIONS:

AT POND SITE:

AVERAGE NATURAL GROUND EL = 44.0 FT  
SHWT EL = 41.5 FT

AT ROADWAY:

LOW EOP EL = 60.7 FT



|                                                 |      |    |             |
|-------------------------------------------------|------|----|-------------|
| Conveyance loss to pond =                       | 0.5  | FT |             |
| Conveyance loss to outfall =                    | 0.4  | FT |             |
| Available depth for treatment and attenuation = | 17.2 | FT | = 206.67 in |
| Treatment Depth =                               | 9    | in |             |
| Attenuation Depth =                             | 20   | in |             |
| Approx. low edge of pavement elevation (LEOP) = | 60.7 | FT |             |
| Approx. Proposed Top of Berm elevation =        | 45.3 | FT |             |
| Average Ground at Pond Site =                   | 44.0 | FT |             |
| Actual Depth of Treatment and Attenuation =     | 2.4  | FT |             |
| Pond Bottom Elevation =                         | 41.5 | FT |             |



## BASIN 11 (POND C)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.32  | AC-FT |
| Square dimension at bottom of treatment depth    | 134.0 | FT    |
| Square dimension at top of treatment depth       | 140.0 | FT    |
| Square dimension at top of attenuation depth     | 153.3 | FT    |
| Attenuation Volume provided by attenuation depth | 0.83  | AC-FT |
| Square dimension at top of freeboard             | 161.3 | FT    |
| Square dimension at top berm                     | 201.3 | FT    |
| Outside pond dimensions (including tie-down)     | 212.1 | FT    |

Minimum Total Area Required:

**1.25 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 11C STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 41.50 ft  
Estimated Low Edge of Pavement = 60.66 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 41.50     | 17956.0 | 0.41 | 0.0               | 0.0          | 0.00         |             |
| 42.25     | 19600.0 | 0.45 | 14083.5           | 14083.5      | 0.32         | TV          |
| 43.92     | 23511.1 | 0.54 | 35925.9           | 50009.4      | 1.15         | AV          |
| 44.92     | 26028.4 | 0.60 | 24769.8           | 74779.2      | 1.72         |             |
| 44.92     | 40535.1 | 0.93 | 0.0               | 74779.2      | 1.72         | Top of Berm |
| 44.00     | 54416.4 | 1.25 | --                | --           | --           |             |

Required Treatment Volume = 0.31 ac-ft  
Provided Treatment Volume = 0.32 ac-ft



Required Attenuation Volume = 0.82 ac-ft  
Provided Attenuation Volume = 0.83 ac-ft





**BASIN 12**

**Curve Number and Runoff Volume Calculation (SWFWMD 25YR/24HR)**

**Pre-Condition Curve Number Calculation**

| Land Use Description                  | Soil Map Unit | Hydrologic Group | Area               | CN | Product |
|---------------------------------------|---------------|------------------|--------------------|----|---------|
| Impervious Roadway                    | --            | --               | 16.94 acres        | 98 | 1660    |
| Sod/Grass                             | 16, 17, 30    | B/D              | 24.37 acres        | 80 | 1950    |
| <b>Subtotal:</b>                      |               |                  | <b>41.31 acres</b> |    |         |
| Pond Site                             | 17            | B/D              | 2.03 acres         | 80 | 162     |
| Totals:                               |               |                  | 43.34 acres        |    | 3772    |
| Pre-Condition Composite Curve Number: |               |                  | 87.0               |    |         |

**Pre-Condition Runoff Volume Calculation**

$$\begin{aligned}
 &25\text{-yr/24-hr Rainfall Depth (P)} = 9.00 \text{ IN} \\
 &\text{CN} = 87.0 \\
 &\text{Drainage Area (A)} = 43.34 \text{ AC} \\
 &\text{Potential maximum retention after runoff begins (S) and S is:} \\
 &\quad (S) = 1000/\text{CN}-10 = 1.49 \text{ IN} \\
 &\quad \text{Runoff Depth (Q)} = (P-0.2S)^2/(P+0.8S) = 7.43 \text{ IN} \\
 &\quad \text{Pre-Condition Runoff Volume (V}_{\text{PRE}}\text{)} = A \times Q = 26.84 \text{ AC-FT}
 \end{aligned}$$

**Post-Condition Curve Number Calculation**

| Land Use Description                   | Soil Map Unit | Hydrologic Group | Area               | CN  | Product |
|----------------------------------------|---------------|------------------|--------------------|-----|---------|
| Impervious Roadway                     | --            | --               | 16.94 acres        | 98  | 1660    |
| <b>New</b> Impervious Roadway          | --            | --               | 6.08 acres         | 98  | 596     |
| Sod/Grass                              | 16, 17, 30    | B/D              | 18.29 acres        | 80  | 1463    |
| <b>Subtotal:</b>                       |               |                  | <b>41.31 acres</b> |     |         |
| Pond Impervious                        | --            | --               | 0.75 acres         | 100 | 75      |
| Pond Pervious                          | 17            | B/D              | 1.28 acres         | 80  | 102     |
| Totals:                                |               |                  | 43.34 acres        |     | 3897    |
| Post-Condition Composite Curve Number: |               |                  | 89.9               |     |         |

**Post-Condition Runoff Volume Calculation**

$$\begin{aligned}
 &25\text{-yr/24-hr Rainfall Depth (P)} = 9.00 \text{ IN} \\
 &\text{CN} = 89.9 \\
 &\text{Drainage Area (A)} = 43.34 \text{ AC} \\
 &\text{Potential maximum retention after runoff begins (S) and S is:} \\
 &\quad (S) = 1000/\text{CN}-10 = 1.12 \text{ IN} \\
 &\quad \text{Runoff Depth (Q)} = (P-0.2S)^2/(P+0.8S) = 7.78 \text{ IN} \\
 &\quad \text{Post-Condition Runoff Volume (V}_{\text{POST}}\text{)} = A \times Q = 28.10 \text{ AC-FT}
 \end{aligned}$$

|                                                                           |             |              |
|---------------------------------------------------------------------------|-------------|--------------|
| <b>Required Attenuation Volume = V<sub>POST</sub> - V<sub>PRE</sub> =</b> | <b>1.26</b> | <b>AC-FT</b> |
|---------------------------------------------------------------------------|-------------|--------------|



## BASIN 12 (POND A)

### TREATMENT VOLUME CALCULATION

BASIN 12 R/W AREA= 41.31 ACRES  
BASIN 12 EXIST. IMPERVIOUS AREA= 16.94 ACRES  
BASIN 12 NEW IMPERVIOUS AREA = 6.08 ACRES

TREATMENT VOLUME REQUIRED:

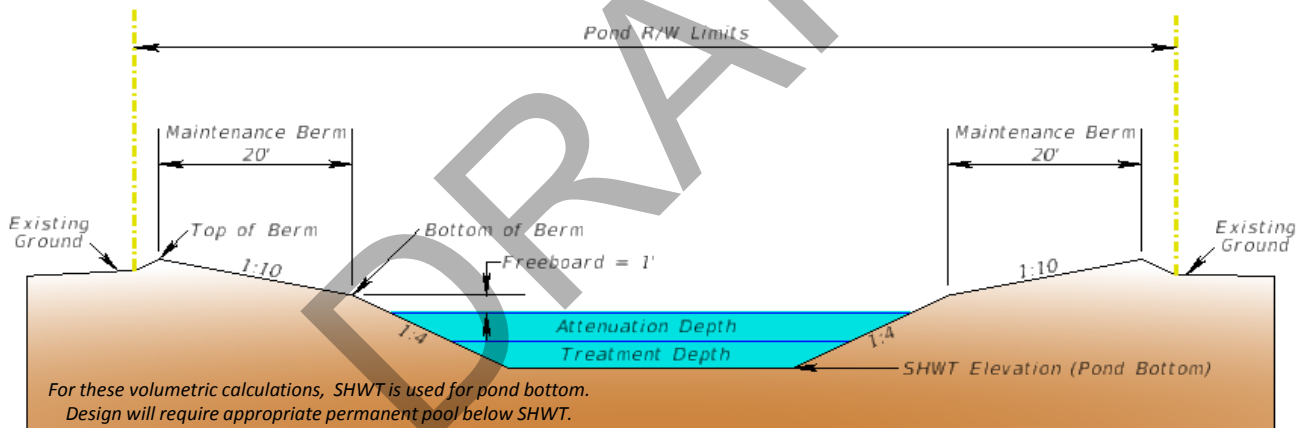
1 inch x 6.08 acres = 0.51 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka (Urban Land)  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 48.0 FT  
SHWT EL = 47.0 FT  
AT ROADWAY:  
LOW EOP EL = 57.7 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 1.0  | FT |            |
| Conveyance loss to outfall =                    | 0.6  | FT |            |
| Available depth for treatment and attenuation = | 8.0  | FT | = 96.42 in |
| Treatment Depth =                               | 9    | in |            |
| Attenuation Depth =                             | 19   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 57.7 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 51.0 | FT |            |
| Average Ground at Pond Site =                   | 48.0 | FT |            |
| Actual Depth of Treatment and Attenuation =     | 2.3  | FT |            |
| Pond Bottom Elevation =                         | 47.0 | FT |            |



## BASIN 12 (POND A)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.55  | AC-FT |
| Square dimension at bottom of treatment depth    | 175.0 | FT    |
| Square dimension at top of treatment depth       | 181.0 | FT    |
| Square dimension at top of attenuation depth     | 193.7 | FT    |
| Attenuation Volume provided by attenuation depth | 1.27  | AC-FT |
| Square dimension at top of freeboard             | 201.7 | FT    |
| Square dimension at top berm                     | 241.7 | FT    |
| Outside pond dimensions (including tie-down)     | 265.4 | FT    |

Minimum Total Area Required:

**1.96 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 12A STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 47.00 ft  
Estimated Low Edge of Pavement = 57.67 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 47.00     | 30625.0 | 0.70 | 0.0               | 0.0          | 0.00         |             |
| 47.75     | 32761.0 | 0.75 | 23769.8           | 23769.8      | 0.55         | TV          |
| 49.33     | 37506.8 | 0.86 | 55628.7           | 79398.4      | 1.82         | AV          |
| 50.33     | 40669.4 | 0.93 | 39088.1           | 118486.5     | 2.72         |             |
| 50.33     | 58402.8 | 1.34 | 0.0               | 118486.5     | 2.72         | Top of Berm |
| 48.00     | 85237.5 | 1.96 | --                | --           | --           |             |

Required Treatment Volume = 0.51 ac-ft  
**Provided Treatment Volume = 0.55 ac-ft** ✓  
  
 Required Attenuation Volume = 1.26 ac-ft  
**Provided Attenuation Volume = 1.27 ac-ft** ✓



## BASIN 12 (POND B)

### TREATMENT VOLUME CALCULATION

BASIN 12 R/W AREA= 41.31 ACRES  
BASIN 12 EXIST. IMPERVIOUS AREA= 16.94 ACRES  
BASIN 12 NEW IMPERVIOUS AREA = 6.08 ACRES

TREATMENT VOLUME REQUIRED:

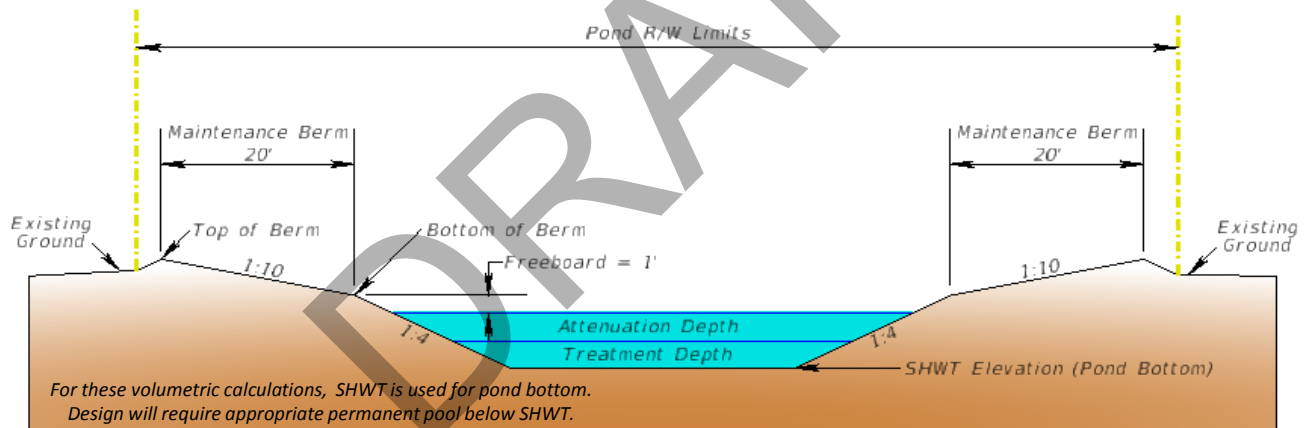
1 inch x 6.08 acres = 0.51 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka (Urban Land)  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 42.0 FT  
SHWT EL = 41.0 FT  
AT ROADWAY:  
LOW EOP EL = 57.7 FT



|                                                 |      |    |             |
|-------------------------------------------------|------|----|-------------|
| Conveyance loss to pond =                       | 1.3  | FT |             |
| Conveyance loss to outfall =                    | 1.2  | FT |             |
| Available depth for treatment and attenuation = | 13.2 | FT | = 158.46 in |
| Treatment Depth =                               | 9    | in |             |
| Attenuation Depth =                             | 20   | in |             |
| Approx. low edge of pavement elevation (LEOP) = | 57.7 | FT |             |
| Approx. Proposed Top of Berm elevation =        | 45.6 | FT |             |
| Average Ground at Pond Site =                   | 42.0 | FT |             |
| Actual Depth of Treatment and Attenuation =     | 2.4  | FT |             |
| Pond Bottom Elevation =                         | 41.0 | FT |             |



## BASIN 12 (POND B)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.52  | AC-FT |
| Square dimension at bottom of treatment depth    | 170.0 | FT    |
| Square dimension at top of treatment depth       | 176.0 | FT    |
| Square dimension at top of attenuation depth     | 189.3 | FT    |
| Attenuation Volume provided by attenuation depth | 1.27  | AC-FT |
| Square dimension at top of freeboard             | 197.3 | FT    |
| Square dimension at top berm                     | 237.3 | FT    |
| Outside pond dimensions (including tie-down)     | 266.4 | FT    |

Minimum Total Area Required:

1.97 ACRES

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 12B STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 41.00 ft  
Estimated Low Edge of Pavement = 57.67 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 41.00     | 28900.0 | 0.66 | 0.0               | 0.0          | 0.00         |             |
| 41.75     | 30976.0 | 0.71 | 22453.5           | 22453.5      | 0.52         | TV          |
| 43.42     | 35847.1 | 0.82 | 55685.9           | 78139.4      | 1.79         | AV          |
| 44.42     | 38940.4 | 0.89 | 37393.8           | 115533.2     | 2.65         |             |
| 44.42     | 56327.1 | 1.29 | 0.0               | 115533.2     | 2.65         | Top of Berm |
| 42.00     | 85863.8 | 1.97 | --                | --           | --           |             |

Required Treatment Volume = 0.51 ac-ft  
**Provided Treatment Volume = 0.52 ac-ft** ✓  
 Required Attenuation Volume = 1.26 ac-ft  
**Provided Attenuation Volume = 1.27 ac-ft** ✓



## BASIN 12 (POND C)

### TREATMENT VOLUME CALCULATION

BASIN 12 R/W AREA= 41.31 ACRES  
BASIN 12 EXIST. IMPERVIOUS AREA= 16.94 ACRES  
BASIN 12 NEW IMPERVIOUS AREA = 6.08 ACRES

TREATMENT VOLUME REQUIRED:

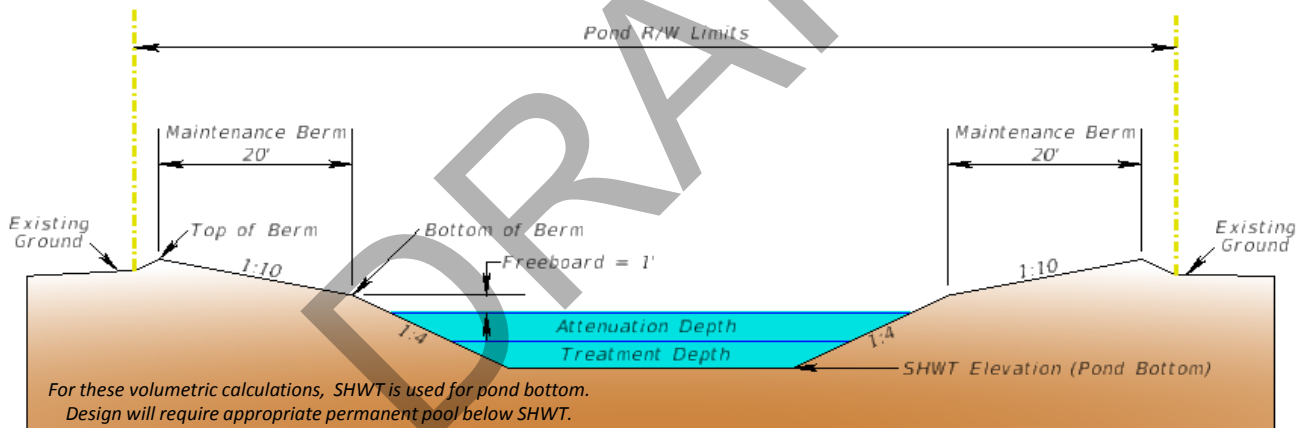
1 inch x 6.08 acres = 0.51 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 44.0 FT  
SHWT EL = 43.0 FT  
AT ROADWAY:  
LOW EOP EL = 57.7 FT



|                                                 |      |    |             |
|-------------------------------------------------|------|----|-------------|
| Conveyance loss to pond =                       | 1.7  | FT |             |
| Conveyance loss to outfall =                    | 0.2  | FT |             |
| Available depth for treatment and attenuation = | 11.8 | FT | = 141.24 in |
| Treatment Depth =                               | 8    | in |             |
| Attenuation Depth =                             | 18   | in |             |
| Approx. low edge of pavement elevation (LEOP) = | 57.7 | FT |             |
| Approx. Proposed Top of Berm elevation =        | 46.4 | FT |             |
| Average Ground at Pond Site =                   | 44.0 | FT |             |
| Actual Depth of Treatment and Attenuation =     | 2.2  | FT |             |
| Pond Bottom Elevation =                         | 43.0 | FT |             |



## BASIN 12 (POND C)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.57  | AC-FT |
| Square dimension at bottom of treatment depth    | 190.0 | FT    |
| Square dimension at top of treatment depth       | 195.3 | FT    |
| Square dimension at top of attenuation depth     | 207.3 | FT    |
| Attenuation Volume provided by attenuation depth | 1.40  | AC-FT |
| Square dimension at top of freeboard             | 215.3 | FT    |
| Square dimension at top berm                     | 255.3 | FT    |
| Outside pond dimensions (including tie-down)     | 274.4 | FT    |

Minimum Total Area Required:

**2.09 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 12C STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 43.00 ft  
Estimated Low Edge of Pavement = 57.67 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 43.00     | 36100.0 | 0.83 | 0.0               | 0.0          | 0.00         |             |
| 43.67     | 38155.1 | 0.88 | 24751.7           | 24751.7      | 0.57         | TV          |
| 45.17     | 42987.1 | 0.99 | 60856.7           | 85608.4      | 1.97         | AV          |
| 46.17     | 46368.4 | 1.06 | 44677.8           | 130286.1     | 2.99         |             |
| 46.17     | 65195.1 | 1.50 | 0.0               | 130286.1     | 2.99         | Top of Berm |
| 44.00     | 91125.1 | 2.09 | --                | --           | --           |             |

Required Treatment Volume = 0.51 ac-ft  
**Provided Treatment Volume = 0.57 ac-ft** ✓  
  
 Required Attenuation Volume = 1.26 ac-ft  
**Provided Attenuation Volume = 1.40 ac-ft** ✓



**BASIN 13**

**Curve Number and Runoff Volume Calculation (SWFWMD 25YR/24HR)**

**Pre-Condition Curve Number Calculation**

| Land Use Description                  | Soil Map Unit | Hydrologic Group | Area              | CN | Product |
|---------------------------------------|---------------|------------------|-------------------|----|---------|
| Impervious Roadway                    | --            | --               | 2.14 acres        | 98 | 210     |
| Sod/Grass                             | 17            | B/D              | 3.56 acres        | 80 | 285     |
| <b>Subtotal:</b>                      |               |                  | <b>5.70 acres</b> |    |         |
| Pond Site                             | 17            | B/D              | 0.92 acres        | 80 | 74      |
| Totals:                               |               |                  | 6.62 acres        |    | 568     |
| Pre-Condition Composite Curve Number: |               |                  | 85.8              |    |         |

**Pre-Condition Runoff Volume Calculation**

25-yr/24-hr Rainfall Depth (P) = 9.00 IN  
CN = 85.8  
Drainage Area (A) = 6.62 AC  
Potential maximum retention after runoff begins (S) and S is:  
(S) =  $1000/CN - 10$  = 1.65 IN  
Runoff Depth (Q) =  $(P - 0.2S)^2 / (P + 0.8S)$  = 7.28 IN  
Pre-Condition Runoff Volume ( $V_{PRE}$ ) = A x Q = 4.02 AC-FT

**Post-Condition Curve Number Calculation**

| Land Use Description                   | Soil Map Unit | Hydrologic Group | Area              | CN  | Product |
|----------------------------------------|---------------|------------------|-------------------|-----|---------|
| Impervious Roadway                     | --            | --               | 2.14 acres        | 98  | 210     |
| <b>New</b> Impervious Roadway          | --            | --               | 1.65 acres        | 98  | 162     |
| Sod/Grass                              | 17            | B/D              | 1.76 acres        | 80  | 141     |
| <b>Subtotal:</b>                       |               |                  | <b>5.55 acres</b> |     |         |
| Pond Impervious                        | --            | --               | 0.30 acres        | 100 | 30      |
| Pond Pervious                          | 17            | B/D              | 0.62 acres        | 80  | 50      |
| Totals:                                |               |                  | 6.47 acres        |     | 592     |
| Post-Condition Composite Curve Number: |               |                  | 91.5              |     |         |

**Post-Condition Runoff Volume Calculation**

25-yr/24-hr Rainfall Depth (P) = 9.00 IN  
CN = 91.5  
Drainage Area (A) = 6.47 AC  
Potential maximum retention after runoff begins (S) and S is:  
(S) =  $1000/CN - 10$  = 0.93 IN  
Runoff Depth (Q) =  $(P - 0.2S)^2 / (P + 0.8S)$  = 7.97 IN  
Post-Condition Runoff Volume ( $V_{POST}$ ) = A x Q = 4.30 AC-FT

|                                                                        |             |              |
|------------------------------------------------------------------------|-------------|--------------|
| <b>Required Attenuation Volume = <math>V_{POST} - V_{PRE}</math> =</b> | <b>0.28</b> | <b>AC-FT</b> |
|------------------------------------------------------------------------|-------------|--------------|



## BASIN 13 (POND A)

### TREATMENT VOLUME CALCULATION

BASIN 13 R/W AREA= 5.70 ACRES  
BASIN 13 EXIST. IMPERVIOUS AREA= 2.14 ACRES  
BASIN 13 NEW IMPERVIOUS AREA = 1.65 ACRES

TREATMENT VOLUME REQUIRED:

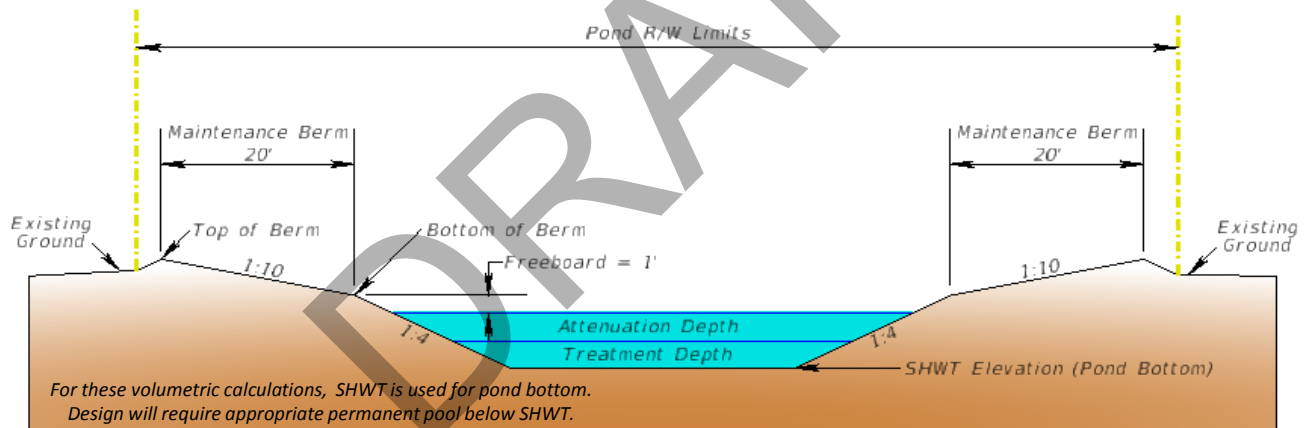
1 inch x 1.65 acres = 0.14 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 58.0 FT  
SHWT EL = 57.0 FT  
AT ROADWAY:  
LOW EOP EL = 67.2 FT



|                                                 |      |    |             |
|-------------------------------------------------|------|----|-------------|
| Conveyance loss to pond =                       | 0.2  | FT |             |
| Conveyance loss to outfall =                    | 0.2  | FT |             |
| Available depth for treatment and attenuation = | 8.8  | FT | = 105.00 in |
| Treatment Depth =                               | 8    | in |             |
| Attenuation Depth =                             | 16   | in |             |
| Approx. low edge of pavement elevation (LEOP) = | 67.2 | FT |             |
| Approx. Proposed Top of Berm elevation =        | 60.2 | FT |             |
| Average Ground at Pond Site =                   | 58.0 | FT |             |
| Actual Depth of Treatment and Attenuation =     | 2.0  | FT |             |
| Pond Bottom Elevation =                         | 57.0 | FT |             |



## BASIN 13 (POND A)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.16  | AC-FT |
| Square dimension at bottom of treatment depth    | 100.0 | FT    |
| Square dimension at top of treatment depth       | 105.3 | FT    |
| Square dimension at top of attenuation depth     | 116.0 | FT    |
| Attenuation Volume provided by attenuation depth | 0.38  | AC-FT |
| Square dimension at top of freeboard             | 124.0 | FT    |
| Square dimension at top berm                     | 164.0 | FT    |
| Outside pond dimensions (including tie-down)     | 181.8 | FT    |

Minimum Total Area Required:

0.92 ACRES

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 13A STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 57.00 ft  
Estimated Low Edge of Pavement = 67.16 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 57.00     | 10000.0 | 0.23 | 0.0               | 0.0          | 0.00         |             |
| 57.67     | 11095.1 | 0.25 | 7031.7            | 7031.7       | 0.16         | TV          |
| 59.00     | 13456.0 | 0.31 | 16367.4           | 23399.1      | 0.54         | AV          |
| 60.00     | 15376.0 | 0.35 | 14416.0           | 37815.1      | 0.87         |             |
| 60.00     | 26896.0 | 0.62 | 0.0               | 37815.1      | 0.87         | Top of Berm |
| 58.00     | 40009.6 | 0.92 | --                | --           | --           |             |

Required Treatment Volume = 0.14 ac-ft  
**Provided Treatment Volume = 0.16 ac-ft** ✓

Required Attenuation Volume = 0.28 ac-ft  
**Provided Attenuation Volume = 0.38 ac-ft** ✓



## BASIN 13 (POND B)

### TREATMENT VOLUME CALCULATION

BASIN 13 R/W AREA= 5.70 ACRES  
BASIN 13 EXIST. IMPERVIOUS AREA= 2.14 ACRES  
BASIN 13 NEW IMPERVIOUS AREA = 1.65 ACRES

TREATMENT VOLUME REQUIRED:

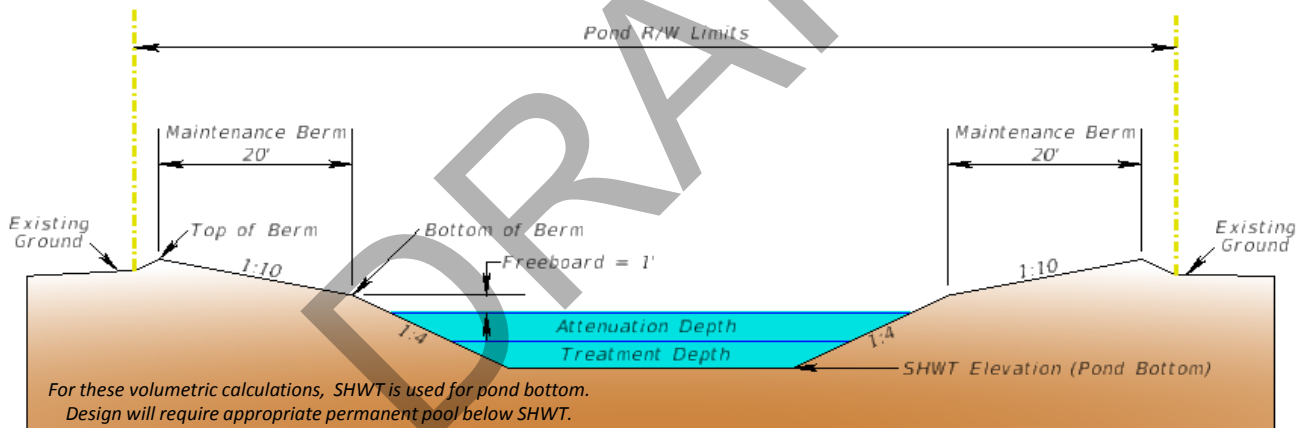
1 inch x 1.65 acres = 0.14 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 58.0 FT  
SHWT EL = 57.0 FT  
AT ROADWAY:  
LOW EOP EL = 67.2 FT



|                                                 |      |    |             |
|-------------------------------------------------|------|----|-------------|
| Conveyance loss to pond =                       | 0.2  | FT |             |
| Conveyance loss to outfall =                    | 0.0  | FT |             |
| Available depth for treatment and attenuation = | 9.0  | FT | = 107.46 in |
| Treatment Depth =                               | 6    | in |             |
| Attenuation Depth =                             | 12   | in |             |
| Approx. low edge of pavement elevation (LEOP) = | 67.2 | FT |             |
| Approx. Proposed Top of Berm elevation =        | 59.5 | FT |             |
| Average Ground at Pond Site =                   | 58.0 | FT |             |
| Actual Depth of Treatment and Attenuation =     | 1.5  | FT |             |
| Pond Bottom Elevation =                         | 57.0 | FT |             |



## BASIN 13 (POND B)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.14  | AC-FT |
| Square dimension at bottom of treatment depth    | 110.0 | FT    |
| Square dimension at top of treatment depth       | 114.0 | FT    |
| Square dimension at top of attenuation depth     | 122.0 | FT    |
| Attenuation Volume provided by attenuation depth | 0.32  | AC-FT |
| Square dimension at top of freeboard             | 130.0 | FT    |
| Square dimension at top berm                     | 170.0 | FT    |
| Outside pond dimensions (including tie-down)     | 182.2 | FT    |

Minimum Total Area Required:

**0.92 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 13B STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 57.00 ft  
Estimated Low Edge of Pavement = 67.16 ft

| Elevation | Area    | Area | Acumulated<br>Volume | Total<br>Volume | Total<br>Volume | REMARKS     |
|-----------|---------|------|----------------------|-----------------|-----------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)                 | (cf)            | (ac-ft)         |             |
| 57.00     | 12100.0 | 0.28 | 0.0                  | 0.0             | 0.00            |             |
| 57.50     | 12996.0 | 0.30 | 6274.0               | 6274.0          | 0.14            | TV          |
| 58.50     | 14884.0 | 0.34 | 13940.0              | 20214.0         | 0.46            | AV          |
| 59.50     | 16900.0 | 0.39 | 15892.0              | 36106.0         | 0.83            |             |
| 59.50     | 28900.0 | 0.66 | 0.0                  | 36106.0         | 0.83            | Top of Berm |
| 58.00     | 40168.2 | 0.92 | --                   | --              | --              |             |

Required Treatment Volume = 0.14 ac-ft  
**Provided Treatment Volume = 0.14 ac-ft** ✓

Required Attenuation Volume = 0.28 ac-ft  
**Provided Attenuation Volume = 0.32 ac-ft** ✓



**BASIN 14**

**Curve Number and Runoff Volume Calculation (SWFWMD 25YR/24HR)**

**Pre-Condition Curve Number Calculation**

| Land Use Description                  | Soil Map Unit | Hydrologic Group | Area               | CN | Product |
|---------------------------------------|---------------|------------------|--------------------|----|---------|
| Impervious Roadway                    | --            | --               | 7.84 acres         | 98 | 768     |
| Sod/Grass                             | 17            | B/D              | 16.06 acres        | 80 | 1285    |
| <b>Subtotal:</b>                      |               |                  | <b>23.90 acres</b> |    |         |
| Pond Site                             | 17            | B/D              | 0.00 acres         | 80 | 0       |
| Totals:                               |               |                  | 23.90 acres        |    | 2053    |
| Pre-Condition Composite Curve Number: |               |                  | 85.9               |    |         |

**Pre-Condition Runoff Volume Calculation**

25-yr/24-hr Rainfall Depth (P) = 9.00 IN  
 CN = 85.9  
 Drainage Area (A) = 23.90 AC  
 Potential maximum retention after runoff begins (S) and S is:  
 $(S) = 1000/CN - 10 = 1.64$  IN  
 $\text{Runoff Depth (Q)} = (P - 0.2S)^2 / (P + 0.8S) = 7.29$  IN  
 Pre-Condition Runoff Volume ( $V_{PRE}$ ) = A x Q = 14.52 AC-FT

**Post-Condition Curve Number Calculation**

| Land Use Description                   | Soil Map Unit | Hydrologic Group | Area               | CN  | Product |
|----------------------------------------|---------------|------------------|--------------------|-----|---------|
| Impervious Roadway                     | --            | --               | 7.84 acres         | 98  | 768     |
| <b>New</b> Impervious Roadway          | --            | --               | 5.00 acres         | 98  | 490     |
| Sod/Grass                              | 17            | B/D              | 9.31 acres         | 80  | 745     |
| <b>Subtotal:</b>                       |               |                  | <b>22.15 acres</b> |     |         |
| Pond Impervious                        | --            | --               | 0.67 acres         | 100 | 67      |
| Pond Pervious                          | 17            | B/D              | 1.08 acres         | 80  | 86      |
| Totals:                                |               |                  | 23.90 acres        |     | 2157    |
| Post-Condition Composite Curve Number: |               |                  | 90.2               |     |         |

**Post-Condition Runoff Volume Calculation**

25-yr/24-hr Rainfall Depth (P) = 9.00 IN  
 CN = 90.2  
 Drainage Area (A) = 23.90 AC  
 Potential maximum retention after runoff begins (S) and S is:  
 $(S) = 1000/CN - 10 = 1.08$  IN  
 $\text{Runoff Depth (Q)} = (P - 0.2S)^2 / (P + 0.8S) = 7.82$  IN  
 Post-Condition Runoff Volume ( $V_{POST}$ ) = A x Q = 15.57 AC-FT

|                                                                                   |
|-----------------------------------------------------------------------------------|
| <b>Required Attenuation Volume = <math>V_{POST} - V_{PRE}</math> = 1.05 AC-FT</b> |
|-----------------------------------------------------------------------------------|



## BASIN 14 (POND A)

### TREATMENT VOLUME CALCULATION

BASIN 14 R/W AREA= 23.90 ACRES  
BASIN 14 EXIST. IMPERVIOUS AREA= 7.84 ACRES  
BASIN 14 NEW IMPERVIOUS AREA = 5.00 ACRES

TREATMENT VOLUME REQUIRED:

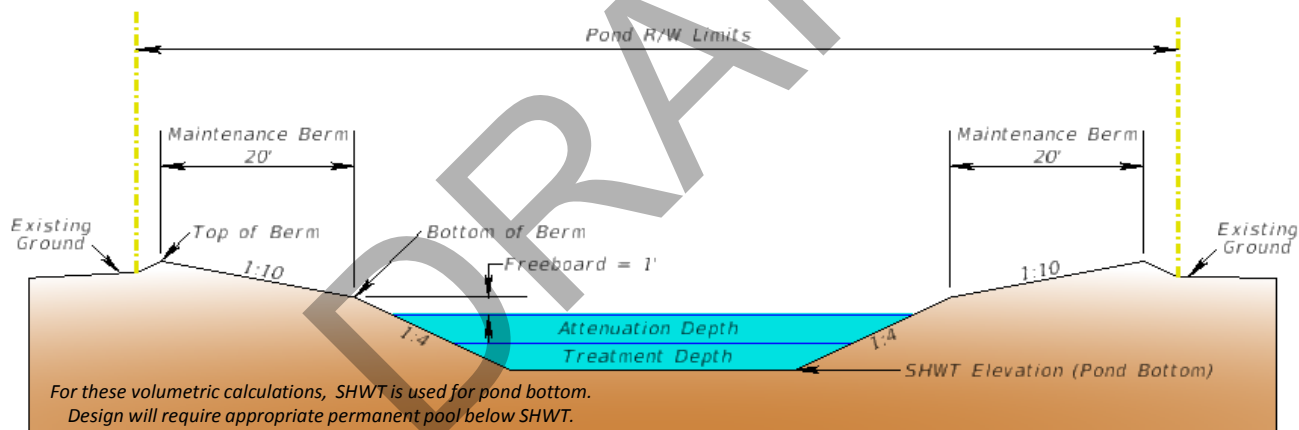
1 inch x 5.00 acres = 0.42 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 56.0 FT  
SHWT EL = 55.0 FT  
AT ROADWAY:  
LOW EOP EL = 58.9 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 0.1  | FT |            |
| Conveyance loss to outfall =                    | 0.4  | FT |            |
| Available depth for treatment and attenuation = | 2.4  | FT | = 29.22 in |
| Treatment Depth =                               | 8    | in |            |
| Attenuation Depth =                             | 18   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 58.9 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 58.5 | FT |            |
| Average Ground at Pond Site =                   | 56.0 | FT |            |
| Actual Depth of Treatment and Attenuation =     | 2.2  | FT |            |
| Pond Bottom Elevation =                         | 55.0 | FT |            |



## BASIN 14 (POND A)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.43  | AC-FT |
| Square dimension at bottom of treatment depth    | 165.0 | FT    |
| Square dimension at top of treatment depth       | 170.3 | FT    |
| Square dimension at top of attenuation depth     | 182.3 | FT    |
| Attenuation Volume provided by attenuation depth | 1.07  | AC-FT |
| Square dimension at top of freeboard             | 190.3 | FT    |
| Square dimension at top berm                     | 230.3 | FT    |
| Outside pond dimensions (including tie-down)     | 250.7 | FT    |

Minimum Total Area Required:

**1.75 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 14A STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 55.00 ft  
Estimated Low Edge of Pavement = 58.86 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 55.00     | 27225.0 | 0.63 | 0.0               | 0.0          | 0.00         |             |
| 55.67     | 29013.4 | 0.67 | 18746.1           | 18746.1      | 0.43         | TV          |
| 57.17     | 33245.4 | 0.76 | 46694.2           | 65440.3      | 1.50         | AV          |
| 58.17     | 36226.8 | 0.83 | 34736.1           | 100176.4     | 2.30         |             |
| 58.17     | 53053.4 | 1.22 | 0.0               | 100176.4     | 2.30         | Top of Berm |
| 56.00     | 76028.9 | 1.75 | --                | --           | --           |             |

Required Treatment Volume = 0.42 ac-ft  
Provided Treatment Volume = **0.43 ac-ft** ✓

Required Attenuation Volume = 1.05 ac-ft  
Provided Attenuation Volume = **1.07 ac-ft** ✓



**BASIN 15**

**Curve Number and Runoff Volume Calculation (SWFWMD 25YR/24HR)**

**Pre-Condition Curve Number Calculation**

| Land Use Description                  | Soil Map Unit | Hydrologic Group | Area               | CN | Product |
|---------------------------------------|---------------|------------------|--------------------|----|---------|
| Impervious Roadway                    | --            | --               | 9.90 acres         | 98 | 970     |
| Sod/Grass                             | 17            | B/D              | 13.84 acres        | 80 | 1107    |
| <b>Subtotal:</b>                      |               |                  | <b>23.74 acres</b> |    |         |
| Pond Site                             | 17            | B/D              | 0.99 acres         | 80 | 79      |
| Totals:                               |               |                  | 24.73 acres        |    | 2157    |
| Pre-Condition Composite Curve Number: |               |                  | 87.2               |    |         |

**Pre-Condition Runoff Volume Calculation**

25-yr/24-hr Rainfall Depth (P) = 9.00 IN  
 CN = 87.2  
 Drainage Area (A) = 24.73 AC  
 Potential maximum retention after runoff begins (S) and S is:  
 $(S) = 1000/CN - 10 = 1.47$  IN  
 $\text{Runoff Depth (Q)} = (P - 0.2S)^2 / (P + 0.8S) = 7.45$  IN  
 $\text{Pre-Condition Runoff Volume (V}_{PRE}) = A \times Q = 15.36$  AC-FT

**Post-Condition Curve Number Calculation**

| Land Use Description                   | Soil Map Unit | Hydrologic Group | Area               | CN  | Product |
|----------------------------------------|---------------|------------------|--------------------|-----|---------|
| Impervious Roadway                     | --            | --               | 9.90 acres         | 98  | 970     |
| <b>New</b> Impervious Roadway          | --            | --               | 1.97 acres         | 98  | 193     |
| Sod/Grass                              | 17            | B/D              | 11.87 acres        | 80  | 950     |
| <b>Subtotal:</b>                       |               |                  | <b>23.74 acres</b> |     |         |
| Pond Impervious                        | --            | --               | 0.26 acres         | 100 | 26      |
| Pond Pervious                          | 17            | B/D              | 0.73 acres         | 80  | 58      |
| Totals:                                |               |                  | 24.73 acres        |     | 2197    |
| Post-Condition Composite Curve Number: |               |                  | 88.8               |     |         |

**Post-Condition Runoff Volume Calculation**

25-yr/24-hr Rainfall Depth (P) = 9.00 IN  
 CN = 88.8  
 Drainage Area (A) = 24.73 AC  
 Potential maximum retention after runoff begins (S) and S is:  
 $(S) = 1000/CN - 10 = 1.25$  IN  
 $\text{Runoff Depth (Q)} = (P - 0.2S)^2 / (P + 0.8S) = 7.65$  IN  
 $\text{Post-Condition Runoff Volume (V}_{POST}) = A \times Q = 15.77$  AC-FT

|                                                                        |             |              |
|------------------------------------------------------------------------|-------------|--------------|
| <b>Required Attenuation Volume = <math>V_{POST} - V_{PRE}</math> =</b> | <b>0.41</b> | <b>AC-FT</b> |
|------------------------------------------------------------------------|-------------|--------------|



## BASIN 15 (POND A)

### TREATMENT VOLUME CALCULATION

BASIN 15 R/W AREA= 23.74 ACRES  
BASIN 15 EXIST. IMPERVIOUS AREA= 9.90 ACRES  
BASIN 15 NEW IMPERVIOUS AREA = 1.97 ACRES

TREATMENT VOLUME REQUIRED:

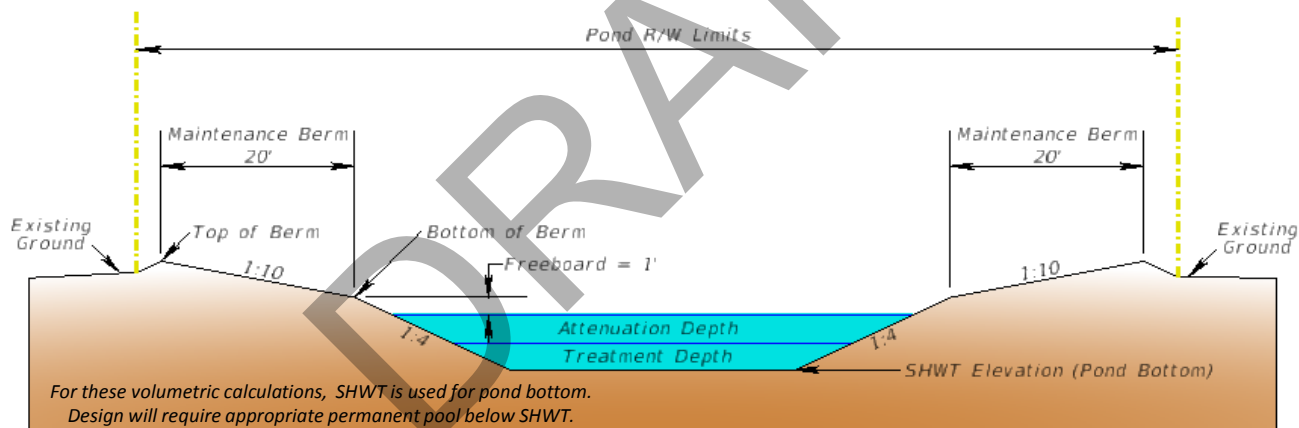
1 inch x 1.97 acres = 0.16 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 43.0 FT  
SHWT EL = 42.0 FT  
AT ROADWAY:  
LOW EOP EL = 49.6 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 0.1  | FT |            |
| Conveyance loss to outfall =                    | 0.0  | FT |            |
| Available depth for treatment and attenuation = | 6.5  | FT | = 77.52 in |
| Treatment Depth =                               | 10   | in |            |
| Attenuation Depth =                             | 20   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 49.6 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 45.5 | FT |            |
| Average Ground at Pond Site =                   | 43.0 | FT |            |
| Actual Depth of Treatment and Attenuation =     | 2.5  | FT |            |
| Pond Bottom Elevation =                         | 42.0 | FT |            |



## BASIN 15 (POND A)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.20  | AC-FT |
| Square dimension at bottom of treatment depth    | 100.0 | FT    |
| Square dimension at top of treatment depth       | 106.7 | FT    |
| Square dimension at top of attenuation depth     | 120.0 | FT    |
| Attenuation Volume provided by attenuation depth | 0.50  | AC-FT |
| Square dimension at top of freeboard             | 128.0 | FT    |
| Square dimension at top berm                     | 168.0 | FT    |
| Outside pond dimensions (including tie-down)     | 188.2 | FT    |

Minimum Total Area Required:

0.98 ACRES

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 15A STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 42.00 ft  
Estimated Low Edge of Pavement = 49.56 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 42.00     | 10000.0 | 0.23 | 0.0               | 0.0          | 0.00         |             |
| 42.83     | 11377.8 | 0.26 | 8907.4            | 8907.4       | 0.20         | TV          |
| 44.50     | 14400.0 | 0.33 | 21481.5           | 30388.9      | 0.70         | AV          |
| 45.50     | 16384.0 | 0.38 | 15392.0           | 45780.9      | 1.05         |             |
| 45.50     | 28224.0 | 0.65 | 0.0               | 45780.9      | 1.05         | Top of Berm |
| 43.00     | 42857.3 | 0.98 | --                | --           | --           |             |

Required Treatment Volume = 0.16 ac-ft  
Provided Treatment Volume = 0.20 ac-ft



Required Attenuation Volume = 0.41 ac-ft  
Provided Attenuation Volume = 0.50 ac-ft





## BASIN 15 (POND B)

### TREATMENT VOLUME CALCULATION

BASIN 15 R/W AREA= 23.74 ACRES  
BASIN 15 EXIST. IMPERVIOUS AREA= 9.90 ACRES  
BASIN 15 NEW IMPERVIOUS AREA = 1.97 ACRES

TREATMENT VOLUME REQUIRED:

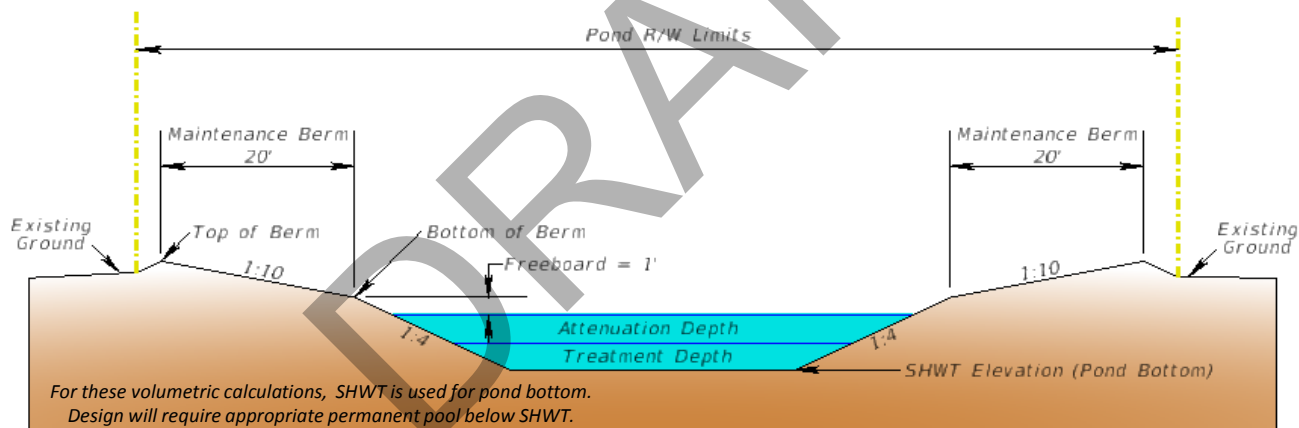
1 inch x 1.97 acres = 0.16 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 44.0 FT  
SHWT EL = 43.0 FT  
AT ROADWAY:  
LOW EOP EL = 49.6 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 0.2  | FT |            |
| Conveyance loss to outfall =                    | 0.2  | FT |            |
| Available depth for treatment and attenuation = | 5.2  | FT | = 62.34 in |
| Treatment Depth =                               | 9    | in |            |
| Attenuation Depth =                             | 21   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 49.6 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 46.7 | FT |            |
| Average Ground at Pond Site =                   | 44.0 | FT |            |
| Actual Depth of Treatment and Attenuation =     | 2.5  | FT |            |
| Pond Bottom Elevation =                         | 43.0 | FT |            |



## BASIN 15 (POND B)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.18  | AC-FT |
| Square dimension at bottom of treatment depth    | 100.0 | FT    |
| Square dimension at top of treatment depth       | 106.0 | FT    |
| Square dimension at top of attenuation depth     | 120.0 | FT    |
| Attenuation Volume provided by attenuation depth | 0.52  | AC-FT |
| Square dimension at top of freeboard             | 128.0 | FT    |
| Square dimension at top berm                     | 168.0 | FT    |
| Outside pond dimensions (including tie-down)     | 189.2 | FT    |

Minimum Total Area Required:

**0.99 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 15B STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 43.00 ft  
Estimated Low Edge of Pavement = 49.56 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 43.00     | 10000.0 | 0.23 | 0.0               | 0.0          | 0.00         |             |
| 43.75     | 11236.0 | 0.26 | 7963.5            | 7963.5       | 0.18         | TV          |
| 45.50     | 14400.0 | 0.33 | 22431.5           | 30395.0      | 0.70         | AV          |
| 46.50     | 16384.0 | 0.38 | 15392.0           | 45787.0      | 1.05         |             |
| 46.50     | 28224.0 | 0.65 | 0.0               | 45787.0      | 1.05         | Top of Berm |
| 44.00     | 43332.3 | 0.99 | --                | --           | --           |             |

Required Treatment Volume = 0.16 ac-ft  
**Provided Treatment Volume = 0.18 ac-ft** ✓  
  
 Required Attenuation Volume = 0.41 ac-ft  
**Provided Attenuation Volume = 0.52 ac-ft** ✓



## BASIN 15 (POND C)

### TREATMENT VOLUME CALCULATION

BASIN 15 R/W AREA= 23.74 ACRES  
BASIN 15 EXIST. IMPERVIOUS AREA= 9.90 ACRES  
BASIN 15 NEW IMPERVIOUS AREA = 1.97 ACRES

TREATMENT VOLUME REQUIRED:

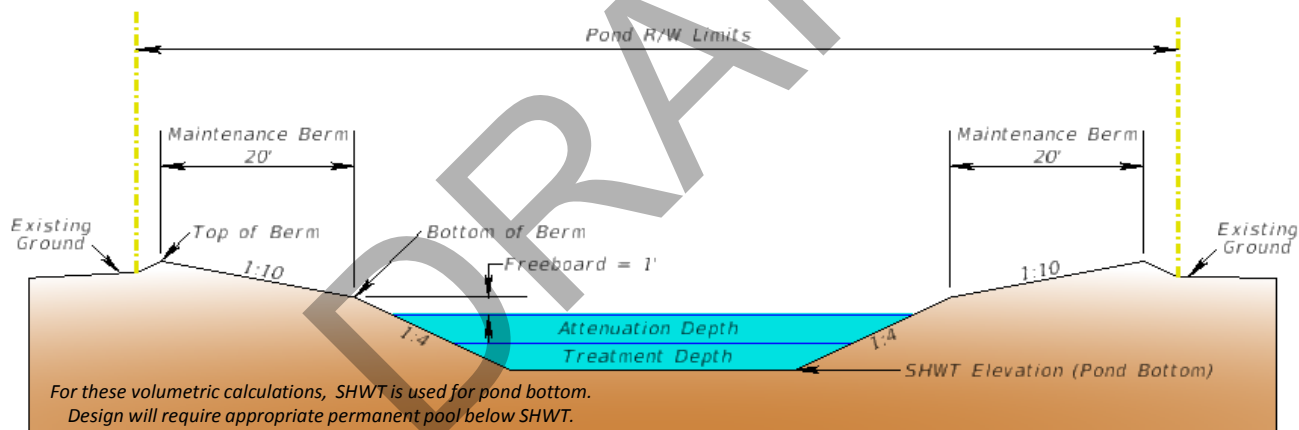
1 inch x 1.97 acres = 0.16 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 46.0 FT  
SHWT EL = 45.0 FT  
AT ROADWAY:  
LOW EOP EL = 49.6 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 0.1  | FT |            |
| Conveyance loss to outfall =                    | 0.0  | FT |            |
| Available depth for treatment and attenuation = | 3.4  | FT | = 40.74 in |
| Treatment Depth =                               | 9    | in |            |
| Attenuation Depth =                             | 19   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 49.6 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 48.4 | FT |            |
| Average Ground at Pond Site =                   | 46.0 | FT |            |
| Actual Depth of Treatment and Attenuation =     | 2.3  | FT |            |
| Pond Bottom Elevation =                         | 45.0 | FT |            |



## BASIN 15 (POND C)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.18  | AC-FT |
| Square dimension at bottom of treatment depth    | 100.0 | FT    |
| Square dimension at top of treatment depth       | 106.0 | FT    |
| Square dimension at top of attenuation depth     | 118.7 | FT    |
| Attenuation Volume provided by attenuation depth | 0.46  | AC-FT |
| Square dimension at top of freeboard             | 126.7 | FT    |
| Square dimension at top berm                     | 166.7 | FT    |
| Outside pond dimensions (including tie-down)     | 185.7 | FT    |

Minimum Total Area Required:

**0.96 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 15C STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 45.00 ft  
Estimated Low Edge of Pavement = 49.56 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 45.00     | 10000.0 | 0.23 | 0.0               | 0.0          | 0.00         |             |
| 45.75     | 11236.0 | 0.26 | 7963.5            | 7963.5       | 0.18         | TV          |
| 47.33     | 14081.8 | 0.32 | 20043.2           | 28006.7      | 0.64         | AV          |
| 48.33     | 16044.4 | 0.37 | 15063.1           | 43069.9      | 0.99         |             |
| 48.33     | 27777.8 | 0.64 | 0.0               | 43069.9      | 0.99         | Top of Berm |
| 46.00     | 41705.3 | 0.96 | --                | --           | --           |             |

Required Treatment Volume = 0.16 ac-ft  
**Provided Treatment Volume = 0.18 ac-ft** ✓  
 Required Attenuation Volume = 0.41 ac-ft  
**Provided Attenuation Volume = 0.46 ac-ft** ✓



**BASIN 16**

**Curve Number and Runoff Volume Calculation (SWFWMD 25YR/24HR)**

**Pre-Condition Curve Number Calculation**

| Land Use Description                  | Soil Map Unit | Hydrologic Group | Area               | CN | Product |
|---------------------------------------|---------------|------------------|--------------------|----|---------|
| Impervious Roadway                    | --            | --               | 9.73 acres         | 98 | 954     |
| Sod/Grass                             | 17            | B/D              | 10.25 acres        | 80 | 820     |
| <b>Subtotal:</b>                      |               |                  | <b>19.98 acres</b> |    |         |
| Pond Site                             | 17            | B/D              | 1.20 acres         | 80 | 96      |
| Totals:                               |               |                  | 21.18 acres        |    | 1870    |
| Pre-Condition Composite Curve Number: |               |                  | 88.3               |    |         |

**Pre-Condition Runoff Volume Calculation**

25-yr/24-hr Rainfall Depth (P) = 9.00 IN  
CN = 88.3  
Drainage Area (A) = 21.18 AC  
Potential maximum retention after runoff begins (S) and S is:  
(S) =  $1000/CN - 10$  = 1.33 IN  
Runoff Depth (Q) =  $(P - 0.2S)^2 / (P + 0.8S)$  = 7.58 IN  
Pre-Condition Runoff Volume ( $V_{PRE}$ ) = A x Q = 13.38 AC-FT

**Post-Condition Curve Number Calculation**

| Land Use Description                   | Soil Map Unit | Hydrologic Group | Area               | CN  | Product |
|----------------------------------------|---------------|------------------|--------------------|-----|---------|
| Impervious Roadway                     | --            | --               | 9.73 acres         | 98  | 954     |
| <b>New</b> Impervious Roadway          | --            | --               | 3.57 acres         | 98  | 350     |
| Sod/Grass                              | 17            | B/D              | 6.68 acres         | 80  | 534     |
| <b>Subtotal:</b>                       |               |                  | <b>19.98 acres</b> |     |         |
| Pond Impervious                        | --            | --               | 0.43 acres         | 100 | 43      |
| Pond Pervious                          | 17            | B/D              | 0.77 acres         | 80  | 62      |
| Totals:                                |               |                  | 21.18 acres        |     | 1942    |
| Post-Condition Composite Curve Number: |               |                  | 91.7               |     |         |

**Post-Condition Runoff Volume Calculation**

25-yr/24-hr Rainfall Depth (P) = 9.00 IN  
CN = 91.7  
Drainage Area (A) = 21.18 AC  
Potential maximum retention after runoff begins (S) and S is:  
(S) =  $1000/CN - 10$  = 0.90 IN  
Runoff Depth (Q) =  $(P - 0.2S)^2 / (P + 0.8S)$  = 8.00 IN  
Post-Condition Runoff Volume ( $V_{POST}$ ) = A x Q = 14.12 AC-FT

|                                                                                   |
|-----------------------------------------------------------------------------------|
| <b>Required Attenuation Volume = <math>V_{POST} - V_{PRE}</math> = 0.74 AC-FT</b> |
|-----------------------------------------------------------------------------------|



## BASIN 16 (POND A)

### TREATMENT VOLUME CALCULATION

BASIN 16 R/W AREA= 19.98 ACRES  
BASIN 16 EXIST. IMPERVIOUS AREA= 9.73 ACRES  
BASIN 16 NEW IMPERVIOUS AREA = 3.57 ACRES

TREATMENT VOLUME REQUIRED:

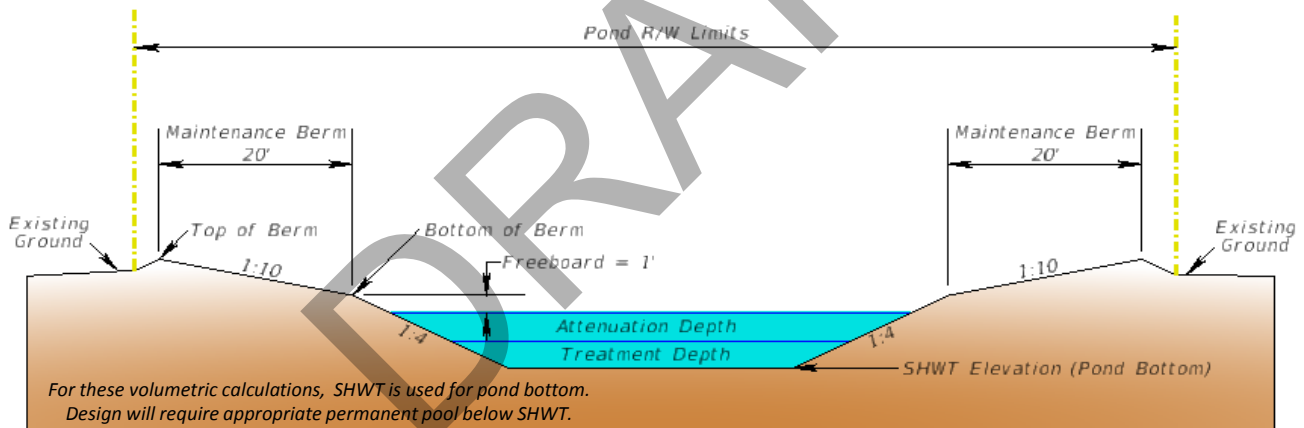
1 inch x 3.57 acres = 0.30 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 16- Matlacha and St Augustine  
NRCS HIGH WATER DEPTH: 2.0-3.0 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 44.0 FT  
SHWT EL = 42.0 FT  
AT ROADWAY:  
LOW EOP EL = 50.6 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 0.1  | FT |            |
| Conveyance loss to outfall =                    | 0.3  | FT |            |
| Available depth for treatment and attenuation = | 7.2  | FT | = 86.82 in |
| Treatment Depth =                               | 13   | in |            |
| Attenuation Depth =                             | 25   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 50.6 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 46.4 | FT |            |
| Average Ground at Pond Site =                   | 44.0 | FT |            |
| Actual Depth of Treatment and Attenuation =     | 3.2  | FT |            |
| Pond Bottom Elevation =                         | 42.0 | FT |            |



## BASIN 16 (POND A)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.33  | AC-FT |
| Square dimension at bottom of treatment depth    | 110.0 | FT    |
| Square dimension at top of treatment depth       | 118.7 | FT    |
| Square dimension at top of attenuation depth     | 135.3 | FT    |
| Attenuation Volume provided by attenuation depth | 0.77  | AC-FT |
| Square dimension at top of freeboard             | 143.3 | FT    |
| Square dimension at top berm                     | 183.3 | FT    |
| Outside pond dimensions (including tie-down)     | 202.9 | FT    |

Minimum Total Area Required:

**1.14 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 16A STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 42.00 ft  
Estimated Low Edge of Pavement = 50.56 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 42.00     | 12100.0 | 0.28 | 0.0               | 0.0          | 0.00         |             |
| 43.08     | 14081.8 | 0.32 | 14181.8           | 14181.8      | 0.33         | TV          |
| 45.17     | 18315.1 | 0.42 | 33746.8           | 47928.6      | 1.10         | AV          |
| 46.17     | 20544.4 | 0.47 | 19429.8           | 67358.3      | 1.55         |             |
| 46.17     | 33611.1 | 0.77 | 0.0               | 67358.3      | 1.55         | Top of Berm |
| 44.00     | 49797.4 | 1.14 | --                | --           | --           |             |

Required Treatment Volume = 0.30 ac-ft  
**Provided Treatment Volume = 0.33 ac-ft** ✓  
  
 Required Attenuation Volume = 0.74 ac-ft  
**Provided Attenuation Volume = 0.77 ac-ft** ✓



## BASIN 16 (POND B)

### TREATMENT VOLUME CALCULATION

BASIN 16 R/W AREA= 19.98 ACRES  
BASIN 16 EXIST. IMPERVIOUS AREA= 9.73 ACRES  
BASIN 16 NEW IMPERVIOUS AREA = 3.57 ACRES

TREATMENT VOLUME REQUIRED:

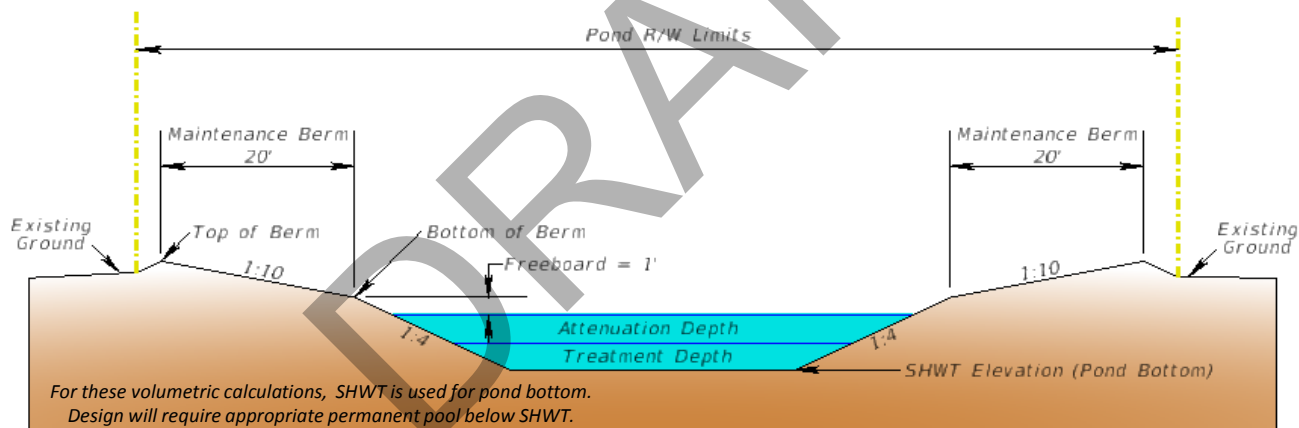
1 inch x 3.57 acres = 0.30 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 16- Matlacha and St Augustine  
NRCS HIGH WATER DEPTH: 2.0-3.0 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 45.0 FT  
SHWT EL = 43.0 FT  
AT ROADWAY:  
LOW EOP EL = 50.6 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 0.1  | FT |            |
| Conveyance loss to outfall =                    | 0.2  | FT |            |
| Available depth for treatment and attenuation = | 6.3  | FT | = 75.66 in |
| Treatment Depth =                               | 13   | in |            |
| Attenuation Depth =                             | 25   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 50.6 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 47.3 | FT |            |
| Average Ground at Pond Site =                   | 45.0 | FT |            |
| Actual Depth of Treatment and Attenuation =     | 3.2  | FT |            |
| Pond Bottom Elevation =                         | 43.0 | FT |            |



## BASIN 16 (POND B)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.33  | AC-FT |
| Square dimension at bottom of treatment depth    | 110.0 | FT    |
| Square dimension at top of treatment depth       | 118.7 | FT    |
| Square dimension at top of attenuation depth     | 135.3 | FT    |
| Attenuation Volume provided by attenuation depth | 0.77  | AC-FT |
| Square dimension at top of freeboard             | 143.3 | FT    |
| Square dimension at top berm                     | 183.3 | FT    |
| Outside pond dimensions (including tie-down)     | 202.1 | FT    |

Minimum Total Area Required:

1.13 ACRES

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 16B STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 43.00 ft  
Estimated Low Edge of Pavement = 50.56 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 43.00     | 12100.0 | 0.28 | 0.0               | 0.0          | 0.00         |             |
| 44.08     | 14081.8 | 0.32 | 14181.8           | 14181.8      | 0.33         | TV          |
| 46.17     | 18315.1 | 0.42 | 33746.8           | 47928.6      | 1.10         | AV          |
| 47.17     | 20544.4 | 0.47 | 19429.8           | 67358.3      | 1.55         |             |
| 47.17     | 33611.1 | 0.77 | 0.0               | 67358.3      | 1.55         | Top of Berm |
| 45.00     | 49425.0 | 1.13 | --                | --           | --           |             |

Required Treatment Volume = 0.30 ac-ft  
Provided Treatment Volume = 0.33 ac-ft



Required Attenuation Volume = 0.74 ac-ft  
Provided Attenuation Volume = 0.77 ac-ft





## BASIN 16 (POND C)

### TREATMENT VOLUME CALCULATION

BASIN 16 R/W AREA= 19.98 ACRES  
BASIN 16 EXIST. IMPERVIOUS AREA= 9.73 ACRES  
BASIN 16 NEW IMPERVIOUS AREA = 3.57 ACRES

TREATMENT VOLUME REQUIRED:

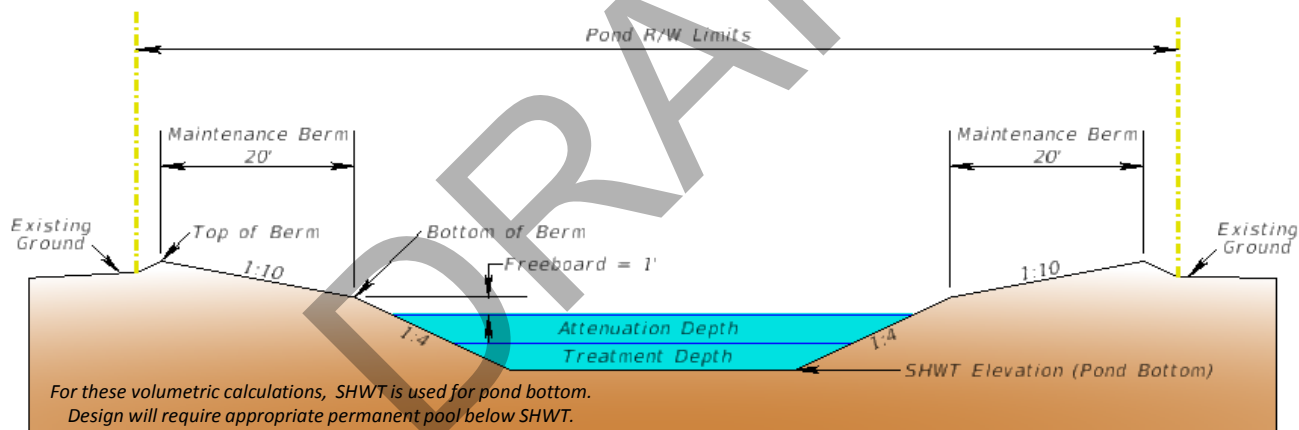
1 inch x 3.57 acres = 0.30 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 17 - Myakka  
NRCS HIGH WATER DEPTH: 0.5-1.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 48.0 FT  
SHWT EL = 47.0 FT  
AT ROADWAY:  
LOW EOP EL = 50.6 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 0.2  | FT |            |
| Conveyance loss to outfall =                    | 0.3  | FT |            |
| Available depth for treatment and attenuation = | 2.1  | FT | = 25.56 in |
| Treatment Depth =                               | 10   | in |            |
| Attenuation Depth =                             | 20   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 50.6 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 50.8 | FT |            |
| Average Ground at Pond Site =                   | 48.0 | FT |            |
| Actual Depth of Treatment and Attenuation =     | 2.5  | FT |            |
| Pond Bottom Elevation =                         | 47.0 | FT |            |



## BASIN 16 (POND C)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.34  | AC-FT |
| Square dimension at bottom of treatment depth    | 130.0 | FT    |
| Square dimension at top of treatment depth       | 136.7 | FT    |
| Square dimension at top of attenuation depth     | 150.0 | FT    |
| Attenuation Volume provided by attenuation depth | 0.79  | AC-FT |
| Square dimension at top of freeboard             | 158.0 | FT    |
| Square dimension at top berm                     | 198.0 | FT    |
| Outside pond dimensions (including tie-down)     | 220.2 | FT    |

Minimum Total Area Required:

**1.35 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 16C STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 47.00 ft  
Estimated Low Edge of Pavement = 50.56 ft

| Elevation | Area    | Area | Acumulated<br>Volume | Total<br>Volume | Total<br>Volume | REMARKS     |
|-----------|---------|------|----------------------|-----------------|-----------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)                 | (cf)            | (ac-ft)         |             |
| 47.00     | 16900.0 | 0.39 | 0.0                  | 0.0             | 0.00            |             |
| 47.83     | 18677.8 | 0.43 | 14824.1              | 14824.1         | 0.34            | TV          |
| 49.50     | 22500.0 | 0.52 | 34314.8              | 49138.9         | 1.13            | AV          |
| 50.50     | 24964.0 | 0.57 | 23732.0              | 72870.9         | 1.67            |             |
| 50.50     | 39204.0 | 0.90 | 0.0                  | 72870.9         | 1.67            | Top of Berm |
| 48.00     | 58670.5 | 1.35 | --                   | --              | --              |             |

Required Treatment Volume = 0.30 ac-ft

**Provided Treatment Volume = 0.34 ac-ft**



Required Attenuation Volume = 0.74 ac-ft

**Provided Attenuation Volume = 0.79 ac-ft**





**BASIN 17**

**Curve Number and Runoff Volume Calculation (SWFWMD 25YR/24HR)**

**Pre-Condition Curve Number Calculation**

| Land Use Description                  | Soil Map Unit | Hydrologic Group | Area               | CN | Product |
|---------------------------------------|---------------|------------------|--------------------|----|---------|
| Impervious Roadway                    | --            | --               | 13.93 acres        | 98 | 1365    |
| Sod/Grass                             | 4, 11, 17     | B/D              | 22.73 acres        | 74 | 1682    |
| <b>Subtotal:</b>                      |               |                  | <b>36.66 acres</b> |    |         |
| Pond Site                             | 4, 17         | B/D              | 2.35 acres         | 74 | 174     |
| Totals:                               |               |                  | 39.01 acres        |    | 3221    |
| Pre-Condition Composite Curve Number: |               |                  | 82.6               |    |         |

**Pre-Condition Runoff Volume Calculation**

$$\begin{aligned}
 &25\text{-yr/24-hr Rainfall Depth (P)} = 9.00 \text{ IN} \\
 &\text{CN} = 82.6 \\
 &\text{Drainage Area (A)} = 39.01 \text{ AC} \\
 &\text{Potential maximum retention after runoff begins (S) and S is:} \\
 &\quad (S) = 1000/\text{CN}-10 = 2.11 \text{ IN} \\
 &\quad \text{Runoff Depth (Q)} = (P-0.2S)^2/(P+0.8S) = 6.88 \text{ IN} \\
 &\quad \text{Pre-Condition Runoff Volume (V}_{\text{PRE}}\text{)} = A \times Q = 22.38 \text{ AC-FT}
 \end{aligned}$$

**Post-Condition Curve Number Calculation**

| Land Use Description                   | Soil Map Unit | Hydrologic Group | Area               | CN  | Product |
|----------------------------------------|---------------|------------------|--------------------|-----|---------|
| Impervious Roadway                     | --            | --               | 13.93 acres        | 98  | 1365    |
| <b>New</b> Impervious Roadway          | --            | --               | 4.14 acres         | 98  | 406     |
| Sod/Grass                              | 4, 11, 17     | B/D              | 18.59 acres        | 74  | 1376    |
| <b>Subtotal:</b>                       |               |                  | <b>36.66 acres</b> |     |         |
| Pond Impervious                        | --            | --               | 1.00 acres         | 100 | 100     |
| Pond Pervious                          | 4, 17         | B/D              | 1.35 acres         | 74  | 100     |
| Totals:                                |               |                  | 39.01 acres        |     | 3346    |
| Post-Condition Composite Curve Number: |               |                  | 85.8               |     |         |

**Post-Condition Runoff Volume Calculation**

$$\begin{aligned}
 &25\text{-yr/24-hr Rainfall Depth (P)} = 9.00 \text{ IN} \\
 &\text{CN} = 85.8 \\
 &\text{Drainage Area (A)} = 39.01 \text{ AC} \\
 &\text{Potential maximum retention after runoff begins (S) and S is:} \\
 &\quad (S) = 1000/\text{CN}-10 = 1.66 \text{ IN} \\
 &\quad \text{Runoff Depth (Q)} = (P-0.2S)^2/(P+0.8S) = 7.28 \text{ IN} \\
 &\quad \text{Post-Condition Runoff Volume (V}_{\text{POST}}\text{)} = A \times Q = 23.66 \text{ AC-FT}
 \end{aligned}$$

|                                                                           |             |              |
|---------------------------------------------------------------------------|-------------|--------------|
| <b>Required Attenuation Volume = V<sub>POST</sub> - V<sub>PRE</sub> =</b> | <b>1.28</b> | <b>AC-FT</b> |
|---------------------------------------------------------------------------|-------------|--------------|



## BASIN 17 (POND A)

### TREATMENT VOLUME CALCULATION

BASIN 17 R/W AREA= 36.66 ACRES  
BASIN 17 EXIST. IMPERVIOUS AREA= 13.93 ACRES  
BASIN 17 NEW IMPERVIOUS AREA = 4.14 ACRES

TREATMENT VOLUME REQUIRED:

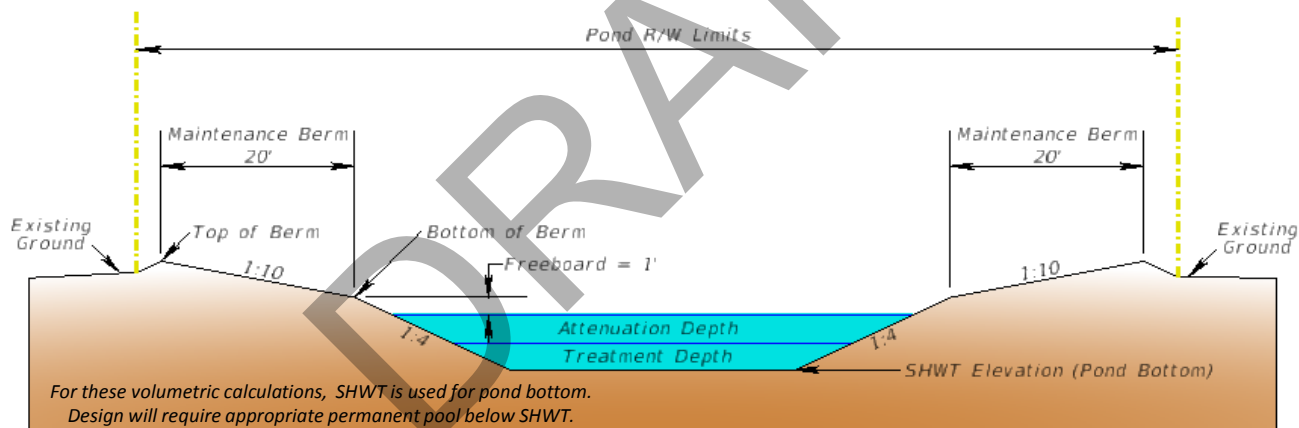
1 inch x 4.14 acres = 0.35 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 4 - Astatula  
NRCS HIGH WATER DEPTH: > 6.0 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 24.0 FT  
SHWT EL = 18.0 FT  
AT ROADWAY:  
LOW EOP EL = 25.3 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 0.3  | FT |            |
| Conveyance loss to outfall =                    | 0.8  | FT |            |
| Available depth for treatment and attenuation = | 5.3  | FT | = 63.00 in |
| Treatment Depth =                               | 12   | in |            |
| Attenuation Depth =                             | 24   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 25.3 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 24.8 | FT |            |
| Average Ground at Pond Site =                   | 24.0 | FT |            |
| Actual Depth of Treatment and Attenuation =     | 3.0  | FT |            |
| Pond Bottom Elevation =                         | 20.0 | FT |            |



## BASIN 17 (POND A)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.62  | AC-FT |
| Square dimension at bottom of treatment depth    | 160.0 | FT    |
| Square dimension at top of treatment depth       | 168.0 | FT    |
| Square dimension at top of attenuation depth     | 184.0 | FT    |
| Attenuation Volume provided by attenuation depth | 1.42  | AC-FT |
| Square dimension at top of freeboard             | 192.0 | FT    |
| Square dimension at top berm                     | 232.0 | FT    |
| Outside pond dimensions (including tie-down)     | 238.0 | FT    |

Minimum Total Area Required:

**1.57 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 17A STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 18.00 ft  
Estimated Low Edge of Pavement = 25.25 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 20.00     | 25600.0 | 0.59 | 0.0               | 0.0          | 0.00         |             |
| 21.00     | 28224.0 | 0.65 | 26912.0           | 26912.0      | 0.62         | TV          |
| 23.00     | 33856.0 | 0.78 | 62080.0           | 88992.0      | 2.04         | AV          |
| 24.00     | 36864.0 | 0.85 | 35360.0           | 124352.0     | 2.85         |             |
| 24.00     | 53824.0 | 1.24 | 0.0               | 124352.0     | 2.85         | Top of Berm |
| 24.00     | 68539.2 | 1.57 | --                | --           | --           |             |

Required Treatment Volume = 0.35 ac-ft  
**Provided Treatment Volume = 0.62 ac-ft** ✓  
  
 Required Attenuation Volume = 1.28 ac-ft  
**Provided Attenuation Volume = 1.42 ac-ft** ✓



**BASIN 18**

**Curve Number and Runoff Volume Calculation (SWFWMD 25YR/24HR)**

**Pre-Condition Curve Number Calculation**

| Land Use Description | Soil Map Unit          | Hydrologic Group | Area                | CN | Product |
|----------------------|------------------------|------------------|---------------------|----|---------|
| Impervious Roadway   | --                     | --               | 38.45 acres         | 98 | 3768    |
| Sod/Grass            | 11, 17, 18, 22, 26, 29 | B/D              | 91.57 acres         | 80 | 7326    |
| <b>Subtotal:</b>     |                        |                  | <b>130.02 acres</b> |    |         |
| Pond Site            | 20                     | B/D              | 8.66 acres          | 80 | 693     |

Totals: 138.68 acres 11787  
Pre-Condition Composite Curve Number: 85.0

**Pre-Condition Runoff Volume Calculation**

25-yr/24-hr Rainfall Depth (P) = 9.00 IN  
CN = 85.0  
Drainage Area (A) = 138.68 AC  
Potential maximum retention after runoff begins (S) and S is:  
(S) =  $1000 / (CN - 10)$  = 1.77 IN  
Runoff Depth (Q) =  $(P - 0.2S)^2 / (P + 0.8S)$  = 7.18 IN  
Pre-Condition Runoff Volume ( $V_{PRE}$ ) =  $A \times Q$  = 82.98 AC-FT

**Post-Condition Curve Number Calculation**

| Land Use Description          | Soil Map Unit          | Hydrologic Group | Area                | CN  | Product |
|-------------------------------|------------------------|------------------|---------------------|-----|---------|
| Impervious Roadway            | --                     | --               | 38.45 acres         | 98  | 3768    |
| <b>New</b> Impervious Roadway | --                     | --               | 21.95 acres         | 98  | 2151    |
| Sod/Grass                     | 11, 17, 18, 22, 26, 29 | B/D              | 69.62 acres         | 80  | 5570    |
| <b>Subtotal:</b>              |                        |                  | <b>130.02 acres</b> |     |         |
| Pond Impervious               | --                     | --               | 5.46 acres          | 100 | 546     |
| Pond Pervious                 | 20                     | B/D              | 3.20 acres          | 80  | 256     |

Totals: 138.68 acres 12291  
Post-Condition Composite Curve Number: 88.6

**Post-Condition Runoff Volume Calculation**

25-yr/24-hr Rainfall Depth (P) = 9.00 IN  
CN = 88.6  
Drainage Area (A) = 138.68 AC  
Potential maximum retention after runoff begins (S) and S is:  
(S) =  $1000 / (CN - 10)$  = 1.28 IN  
Runoff Depth (Q) =  $(P - 0.2S)^2 / (P + 0.8S)$  = 7.62 IN  
Post-Condition Runoff Volume ( $V_{POST}$ ) =  $A \times Q$  = 88.11 AC-FT

**Required Attenuation Volume =  $V_{POST} - V_{PRE}$  = 5.13 AC-FT**



BASIN 18 (POND A)

TREATMENT VOLUME CALCULATION

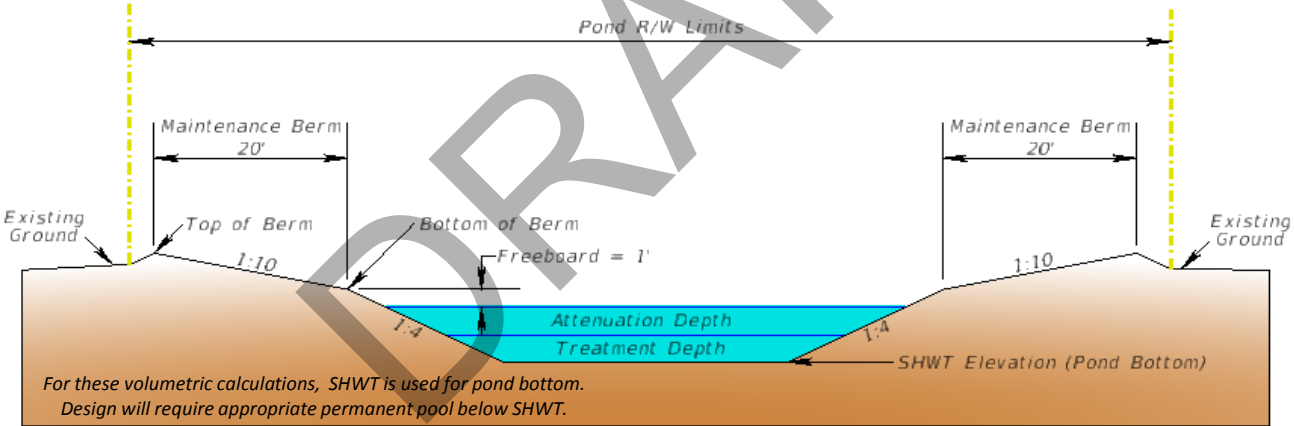
BASIN 18 R/W AREA (I-275)= 130.02 ACRES  
BASIN 18 EXIST. IMPERVIOUS AREA= 38.45 ACRES  
  
BASIN 18 NEW IMPERVIOUS AREA = 21.95 ACRES

TREATMENT VOLUME REQUIRED:  
1 inch x 21.95 acres = 1.83 AC-FT

POND SIZE ESTIMATION

NRCS SOILS AT POND: 7 - Basinger Fine Sands  
NRCS HIGH WATER DEPTH: 0.0-0.5 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:  
AT POND SITE:  
AVERAGE NATURAL GROUND EL = 5.0 FT  
SHWT EL = 4.5 FT (FROM SWFWMD ERP NO. 15130.000)  
AT ROADWAY:  
LOW EOP EL = 11.6 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 3.0  | FT |            |
| Conveyance loss to outfall =                    | 0.0  | FT |            |
| Available depth for treatment and attenuation = | 3.1  | FT | = 37.08 in |
| Treatment Depth =                               | 12   | in |            |
| Attenuation Depth =                             | 30   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 11.6 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 9.0  | FT |            |
| Average Ground at Pond Site =                   | 5.0  | FT |            |
| Actual Depth of Treatment and Attenuation =     | 3.5  | FT |            |
| Pond Bottom Elevation =                         | 4.5  | FT |            |



## BASIN 18 (POND A)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 1.92  | AC-FT |
| Square dimension at bottom of treatment depth    | 285.0 | FT    |
| Square dimension at top of treatment depth       | 293.0 | FT    |
| Square dimension at top of attenuation depth     | 313.0 | FT    |
| Attenuation Volume provided by attenuation depth | 5.27  | AC-FT |
| Square dimension at top of freeboard             | 321.0 | FT    |
| Square dimension at top berm                     | 361.0 | FT    |
| Outside pond dimensions (including tie-down)     | 393.0 | FT    |

Minimum Total Area Required:

**4.29 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 18A STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 4.50 ft  
Estimated Low Edge of Pavement = 11.59 ft

| Elevation | Area     | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|----------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)     | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 4.50      | 81225.0  | 1.86 | 0.0               | 0.0          | 0.00         |             |
| 5.50      | 85849.0  | 1.97 | 83537.0           | 83537.0      | 1.92         | TV          |
| 8.00      | 97969.0  | 2.25 | 229772.5          | 313309.5     | 7.19         | AV          |
| 9.00      | 103041.0 | 2.37 | 100505.0          | 413814.5     | 9.50         |             |
| 9.00      | 130321.0 | 2.99 | 0.0               | 413814.5     | 9.50         | Top of Berm |
| 5.00      | 186883.3 | 4.29 | --                | --           | --           |             |

Required Treatment Volume = 1.83 ac-ft  
**Provided Treatment Volume = 1.92 ac-ft** ✓  
 Required Attenuation Volume = 5.13 ac-ft  
**Provided Attenuation Volume = 5.27 ac-ft** ✓



BASIN 18 (POND B)

TREATMENT VOLUME CALCULATION

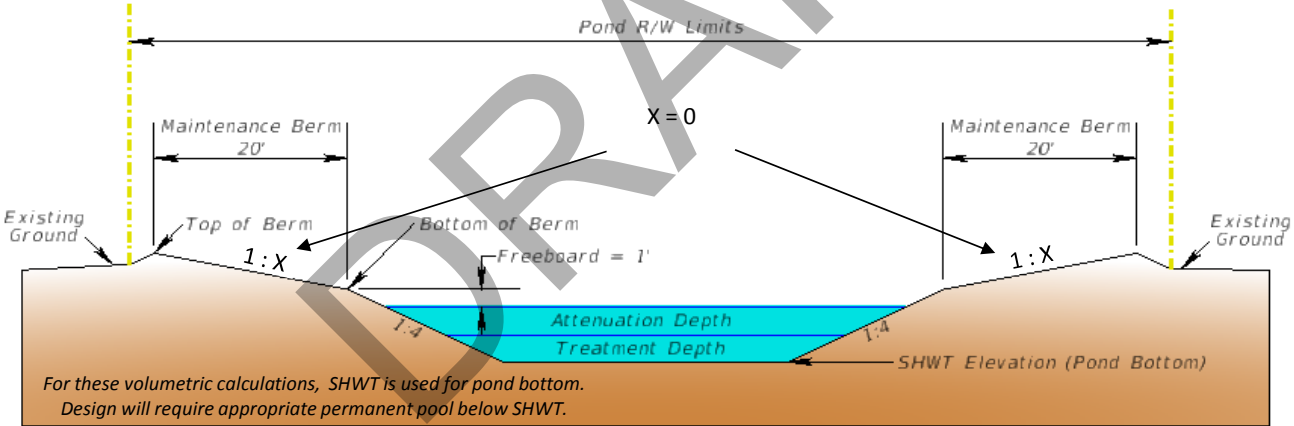
BASIN 18 R/W AREA (I-275)= 130.02 ACRES  
BASIN 18 EXIST. IMPERVIOUS AREA= 38.45 ACRES  
  
BASIN 18 NEW IMPERVIOUS AREA = 21.95 ACRES

TREATMENT VOLUME REQUIRED:  
1 inch x 21.95 acres = 1.83 AC-FT

POND SIZE ESTIMATION

NRCS SOILS AT POND: 18 - Okeechobee  
NRCS HIGH WATER DEPTH: 0.0 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:  
AT POND SITE:  
AVERAGE NATURAL GROUND EL = 2.0 FT  
SHWT EL = 2.0 FT (MEAN HIGH WATER ELEVATION 1.98 FT)  
AT ROADWAY:  
LOW EOP EL = 11.6 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 3.7  | FT |            |
| Conveyance loss to outfall =                    | 0.1  | FT |            |
| Available depth for treatment and attenuation = | 4.8  | FT | = 57.72 in |
| Treatment Depth =                               | 9    | in |            |
| Attenuation Depth =                             | 23   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 11.6 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 5.7  | FT |            |
| Average Ground at Pond Site =                   | 2.0  | FT |            |
| Actual Depth of Treatment and Attenuation =     | 2.7  | FT |            |
| Pond Bottom Elevation =                         | 2.0  | FT |            |



## BASIN 18 (POND B)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 1.91  | AC-FT |
| Square dimension at bottom of treatment depth    | 330.0 | FT    |
| Square dimension at top of treatment depth       | 336.0 | FT    |
| Square dimension at top of attenuation depth     | 351.3 | FT    |
| Attenuation Volume provided by attenuation depth | 5.20  | AC-FT |
| Square dimension at top of freeboard             | 359.3 | FT    |
| Square dimension at top berm                     | 399.3 | FT    |
| Outside pond dimensions (including tie-down)     | 429.3 | FT    |

Minimum Total Area Required:

5.12 ACRES

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 18B STAGE-STORAGE CALCULATIONS

$$\begin{aligned}\text{Estimated Seasonal High Water Table (SHWT)} &= 1.98 \text{ ft} \\ \text{Estimated Low Edge of Pavement} &= 11.59 \text{ ft}\end{aligned}$$

| Elevation | Area     | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|----------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)     | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 1.98      | 108900.0 | 2.50 | 0.0               | 0.0          | 0.00         |             |
| 2.73      | 112896.0 | 2.59 | 83173.5           | 83173.5      | 1.91         | TV          |
| 4.65      | 123435.1 | 2.83 | 226484.0          | 309657.5     | 7.11         | AV          |
| 5.65      | 129120.4 | 2.96 | 126277.8          | 435935.3     | 10.01        |             |
| 5.65      | 159467.1 | 3.66 | 0.0               | 435935.3     | 10.01        | Top of Berm |
| 2.00      | 223008.1 | 5.12 | --                | --           | --           |             |

|                               |      |       |   |
|-------------------------------|------|-------|---|
| Required Treatment Volume =   | 1.83 | ac-ft |   |
| Provided Treatment Volume =   | 1.91 | ac-ft | ✓ |
| Required Attenuation Volume = | 5.13 | ac-ft |   |
| Provided Attenuation Volume = | 5.20 | ac-ft | ✓ |



**BASIN 19**

**Curve Number and Runoff Volume Calculation (SWFWMD 25YR/24HR)**

**Pre-Condition Curve Number Calculation**

| Land Use Description                  | Soil Map Unit | Hydrologic Group | Area               | CN | Product |
|---------------------------------------|---------------|------------------|--------------------|----|---------|
| Impervious Roadway                    | --            | --               | 16.96 acres        | 98 | 1662    |
| Sod/Grass                             | 12, 22        | B/D              | 56.24 acres        | 80 | 4499    |
| <b>Subtotal:</b>                      |               |                  | <b>73.20 acres</b> |    |         |
| Pond Site                             | 12, 22        | B/D              | 0.00 acres         | 80 | 0       |
| Totals:                               |               |                  | 73.20 acres        |    | 6161    |
| Pre-Condition Composite Curve Number: |               |                  | 84.2               |    |         |

**Pre-Condition Runoff Volume Calculation**

$$\begin{aligned}
 &25\text{-yr/24-hr Rainfall Depth (P)} = 9.00 \text{ IN} \\
 &\text{CN} = 84.2 \\
 &\text{Drainage Area (A)} = 73.20 \text{ AC} \\
 &\text{Potential maximum retention after runoff begins (S) and S is:} \\
 &\quad (S) = 1000/\text{CN} - 10 = 1.88 \text{ IN} \\
 &\quad \text{Runoff Depth (Q)} = (P - 0.2S)^2 / (P + 0.8S) = 7.08 \text{ IN} \\
 &\quad \text{Pre-Condition Runoff Volume (V}_{\text{PRE}}) = A \times Q = 43.19 \text{ AC-FT}
 \end{aligned}$$

**Post-Condition Curve Number Calculation**

| Land Use Description                   | Soil Map Unit | Hydrologic Group | Area               | CN  | Product |
|----------------------------------------|---------------|------------------|--------------------|-----|---------|
| Impervious Roadway                     | --            | --               | 16.96 acres        | 98  | 1662    |
| <b>New</b> Impervious Roadway          | --            | --               | 2.21 acres         | 98  | 217     |
| Sod/Grass                              | 12, 22        | B/D              | 52.27 acres        | 80  | 4182    |
| <b>Subtotal:</b>                       |               |                  | <b>71.44 acres</b> |     |         |
| Pond Impervious                        | --            | --               | 0.74 acres         | 100 | 74      |
| Pond Pervious                          | 12, 22        | B/D              | 1.02 acres         | 80  | 82      |
| Totals:                                |               |                  | 73.20 acres        |     | 6216    |
| Post-Condition Composite Curve Number: |               |                  | 84.9               |     |         |

**Post-Condition Runoff Volume Calculation**

$$\begin{aligned}
 &25\text{-yr/24-hr Rainfall Depth (P)} = 9.00 \text{ IN} \\
 &\text{CN} = 84.9 \\
 &\text{Drainage Area (A)} = 73.20 \text{ AC} \\
 &\text{Potential maximum retention after runoff begins (S) and S is:} \\
 &\quad (S) = 1000/\text{CN} - 10 = 1.78 \text{ IN} \\
 &\quad \text{Runoff Depth (Q)} = (P - 0.2S)^2 / (P + 0.8S) = 7.17 \text{ IN} \\
 &\quad \text{Post-Condition Runoff Volume (V}_{\text{POST}}) = A \times Q = 43.74 \text{ AC-FT}
 \end{aligned}$$

|                                                                           |             |              |
|---------------------------------------------------------------------------|-------------|--------------|
| <b>Required Attenuation Volume = V<sub>POST</sub> - V<sub>PRE</sub> =</b> | <b>0.56</b> | <b>AC-FT</b> |
|---------------------------------------------------------------------------|-------------|--------------|



BASIN 19 (POND A)

TREATMENT VOLUME CALCULATION

BASIN 19 R/W AREA= 73.20 ACRES  
BASIN 19 EXIST. IMPERVIOUS AREA= 16.96 ACRES  
BASIN 19 NEW IMPERVIOUS AREA = 2.21 ACRES

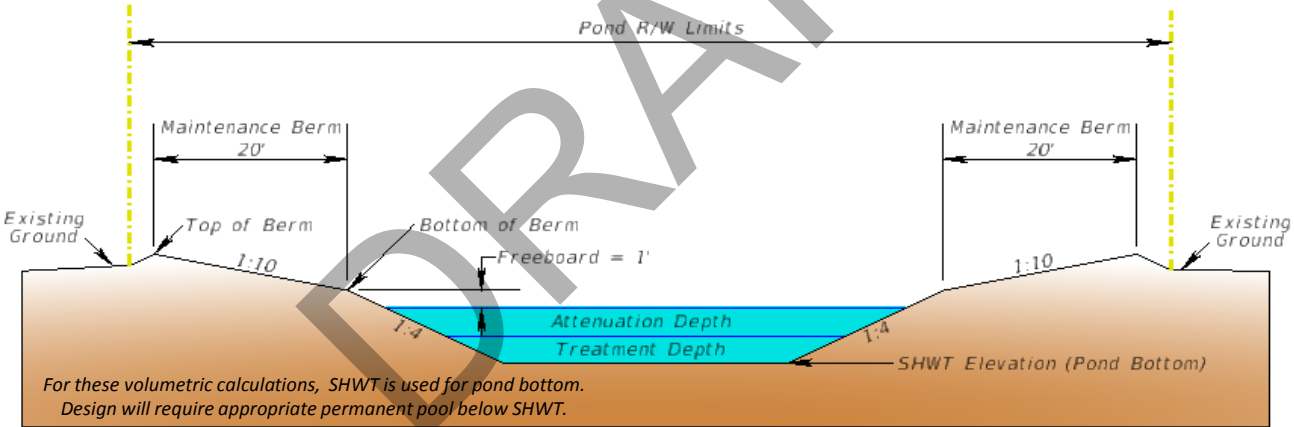
TREATMENT VOLUME REQUIRED:  
1 inch x 2.21 acres = 0.18 AC-FT

POND SIZE ESTIMATION

NRCS SOILS AT POND: 12 - Felda, 22 - Pineda  
NRCS HIGH WATER DEPTH: 0.0-1.0 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 10.0 FT  
SHWT EL = 9.5 FT  
AT ROADWAY:  
LOW EOP EL = 12.8 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 0.4  | FT |            |
| Conveyance loss to outfall =                    | 0.5  | FT |            |
| Available depth for treatment and attenuation = | 1.5  | FT | = 18.34 in |
| Treatment Depth =                               | 6    | in |            |
| Attenuation Depth =                             | 10   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 12.8 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 12.3 | FT |            |
| Average Ground at Pond Site =                   | 10.0 | FT |            |
| Actual Depth of Treatment and Attenuation =     | 1.3  | FT |            |
| Pond Bottom Elevation =                         | 9.5  | FT |            |



## BASIN 19 (POND A)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.36  | AC-FT |
| Square dimension at bottom of treatment depth    | 175.0 | FT    |
| Square dimension at top of treatment depth       | 179.0 | FT    |
| Square dimension at top of attenuation depth     | 185.7 | FT    |
| Attenuation Volume provided by attenuation depth | 0.64  | AC-FT |
| Square dimension at top of freeboard             | 193.7 | FT    |
| Square dimension at top berm                     | 233.7 | FT    |
| Outside pond dimensions (including tie-down)     | 252.0 | FT    |

Minimum Total Area Required:

**1.76 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 19A STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 9.50 ft  
Estimated Low Edge of Pavement = 12.84 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 9.50      | 30625.0 | 0.70 | 0.0               | 0.0          | 0.00         |             |
| 10.00     | 32041.0 | 0.74 | 15666.5           | 15666.5      | 0.36         | TV          |
| 10.83     | 34472.1 | 0.79 | 27713.8           | 43380.3      | 1.00         | AV          |
| 11.83     | 37506.8 | 0.86 | 35989.4           | 79369.7      | 1.82         |             |
| 11.83     | 54600.1 | 1.25 | 0.0               | 79369.7      | 1.82         | Top of Berm |
| 10.00     | 76811.4 | 1.76 | --                | --           | --           |             |

Required Treatment Volume = 0.18 ac-ft

Provided Treatment Volume = 0.36 ac-ft



Required Attenuation Volume = 0.56 ac-ft

Provided Attenuation Volume = 0.64 ac-ft





**BASIN 20**

**Curve Number and Runoff Volume Calculation (SWFWMD 25YR/24HR)**

**Pre-Condition Curve Number Calculation**

| Land Use Description                  | Soil Map Unit | Hydrologic Group | Area               | CN | Product |
|---------------------------------------|---------------|------------------|--------------------|----|---------|
| Impervious Roadway                    | --            | --               | 14.62 acres        | 98 | 1433    |
| Sod/Grass                             | 12, 22        | B/D              | 16.58 acres        | 80 | 1326    |
| <b>Subtotal:</b>                      |               |                  | <b>31.20 acres</b> |    |         |
| Pond Site                             | 12, 22        | B/D              | 2.67 acres         | 80 | 214     |
| Totals:                               |               |                  | 33.87 acres        |    | 2973    |
| Pre-Condition Composite Curve Number: |               |                  | 87.8               |    |         |

**Pre-Condition Runoff Volume Calculation**

$$\begin{aligned}
 &25\text{-yr/24-hr Rainfall Depth (P)} = 9.00 \text{ IN} \\
 &\text{CN} = 87.8 \\
 &\text{Drainage Area (A)} = 33.87 \text{ AC} \\
 &\text{Potential maximum retention after runoff begins (S) and S is:} \\
 &\quad (S) = 1000/\text{CN}-10 = 1.39 \text{ IN} \\
 &\quad \text{Runoff Depth (Q)} = (P-0.2S)^2/(P+0.8S) = 7.52 \text{ IN} \\
 &\quad \text{Pre-Condition Runoff Volume (V}_{\text{PRE}}\text{)} = A \times Q = 21.22 \text{ AC-FT}
 \end{aligned}$$

**Post-Condition Curve Number Calculation**

| Land Use Description                   | Soil Map Unit | Hydrologic Group | Area               | CN  | Product |
|----------------------------------------|---------------|------------------|--------------------|-----|---------|
| Impervious Roadway                     | --            | --               | 14.62 acres        | 98  | 1433    |
| <b>New</b> Impervious Roadway          | --            | --               | 7.46 acres         | 98  | 731     |
| Sod/Grass                              | 12, 22        | B/D              | 9.12 acres         | 80  | 730     |
| <b>Subtotal:</b>                       |               |                  | <b>31.20 acres</b> |     |         |
| Pond Impervious                        | --            | --               | 1.21 acres         | 100 | 121     |
| Pond Pervious                          | 12, 22        | B/D              | 1.46 acres         | 80  | 117     |
| Totals:                                |               |                  | 33.87 acres        |     | 3131    |
| Post-Condition Composite Curve Number: |               |                  | 92.4               |     |         |

**Post-Condition Runoff Volume Calculation**

$$\begin{aligned}
 &25\text{-yr/24-hr Rainfall Depth (P)} = 9.00 \text{ IN} \\
 &\text{CN} = 92.4 \\
 &\text{Drainage Area (A)} = 33.87 \text{ AC} \\
 &\text{Potential maximum retention after runoff begins (S) and S is:} \\
 &\quad (S) = 1000/\text{CN}-10 = 0.82 \text{ IN} \\
 &\quad \text{Runoff Depth (Q)} = (P-0.2S)^2/(P+0.8S) = 8.09 \text{ IN} \\
 &\quad \text{Post-Condition Runoff Volume (V}_{\text{POST}}\text{)} = A \times Q = 22.83 \text{ AC-FT}
 \end{aligned}$$

|                                                                           |             |              |
|---------------------------------------------------------------------------|-------------|--------------|
| <b>Required Attenuation Volume = V<sub>POST</sub> - V<sub>PRE</sub> =</b> | <b>1.61</b> | <b>AC-FT</b> |
|---------------------------------------------------------------------------|-------------|--------------|



## BASIN 20 (POND A)

### TREATMENT VOLUME CALCULATION

BASIN 20 R/W AREA= 31.20 ACRES  
BASIN 20 EXIST. IMPERVIOUS AREA= 14.62 ACRES  
BASIN 20 NEW IMPERVIOUS AREA = 7.46 ACRES

TREATMENT VOLUME REQUIRED:

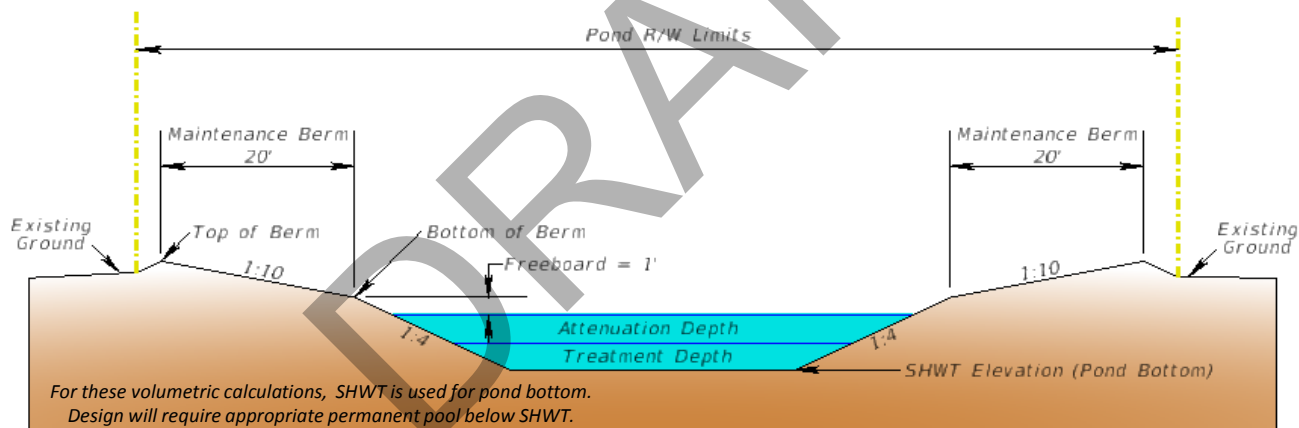
1 inch x 7.46 acres = 0.62 AC-FT

### POND SIZE ESTIMATION

NRCS SOILS AT POND: 12 - Felda, 22 - Pineda  
NRCS HIGH WATER DEPTH: 0.0-1.0 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

AT POND SITE:  
AVERAGE NATURAL GROUND EL = 8.5 FT  
SHWT EL = 5.3 FT (FROM SWFWMD ERP NO. 26538.000)  
AT ROADWAY:  
LOW EOP EL = 11.8 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 0.8  | FT |            |
| Conveyance loss to outfall =                    | 0.3  | FT |            |
| Available depth for treatment and attenuation = | 4.4  | FT | = 52.98 in |
| Treatment Depth =                               | 8    | in |            |
| Attenuation Depth =                             | 19   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 11.8 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 8.9  | FT |            |
| Average Ground at Pond Site =                   | 8.5  | FT |            |
| Actual Depth of Treatment and Attenuation =     | 2.3  | FT |            |
| Pond Bottom Elevation =                         | 5.3  | FT |            |



## BASIN 20 (POND A)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.63  | AC-FT |
| Square dimension at bottom of treatment depth    | 200.0 | FT    |
| Square dimension at top of treatment depth       | 205.3 | FT    |
| Square dimension at top of attenuation depth     | 218.0 | FT    |
| Attenuation Volume provided by attenuation depth | 1.63  | AC-FT |
| Square dimension at top of freeboard             | 226.0 | FT    |
| Square dimension at top berm                     | 266.0 | FT    |
| Outside pond dimensions (including tie-down)     | 269.0 | FT    |

Minimum Total Area Required:

**2.01 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 20A STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 5.30 ft  
Estimated Low Edge of Pavement = 11.79 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 5.30      | 40000.0 | 0.92 | 0.0               | 0.0          | 0.00         |             |
| 5.97      | 42161.8 | 0.97 | 27387.3           | 27387.3      | 0.63         | TV          |
| 7.55      | 47524.0 | 1.09 | 71001.2           | 98388.5      | 2.26         | AV          |
| 8.55      | 51076.0 | 1.17 | 49300.0           | 147688.5     | 3.39         |             |
| 8.55      | 70756.0 | 1.62 | 0.0               | 147688.5     | 3.39         | Top of Berm |
| 8.50      | 87556.8 | 2.01 | --                | --           | --           |             |

Required Treatment Volume = 0.62 ac-ft  
**Provided Treatment Volume = 0.63 ac-ft** ✓  
 Required Attenuation Volume = 1.61 ac-ft  
**Provided Attenuation Volume = 1.63 ac-ft** ✓



BASIN 20 (POND B)

TREATMENT VOLUME CALCULATION

BASIN 20 R/W AREA= 31.20 ACRES

BASIN 20 EXIST. IMPERVIOUS AREA= 14.62 ACRES

BASIN 20 NEW IMPERVIOUS AREA = 7.46 ACRES

TREATMENT VOLUME REQUIRED:

1 inch x 7.46 acres = 0.62 AC-FT

POND SIZE ESTIMATION

NRCS SOILS AT POND: 12 - Felda, 22 - Pineda

NRCS HIGH WATER DEPTH: 0.0-1.0 FT (FROM PINELLAS COUNTY SOIL SURVEY)

VERTICAL LIMITATIONS:

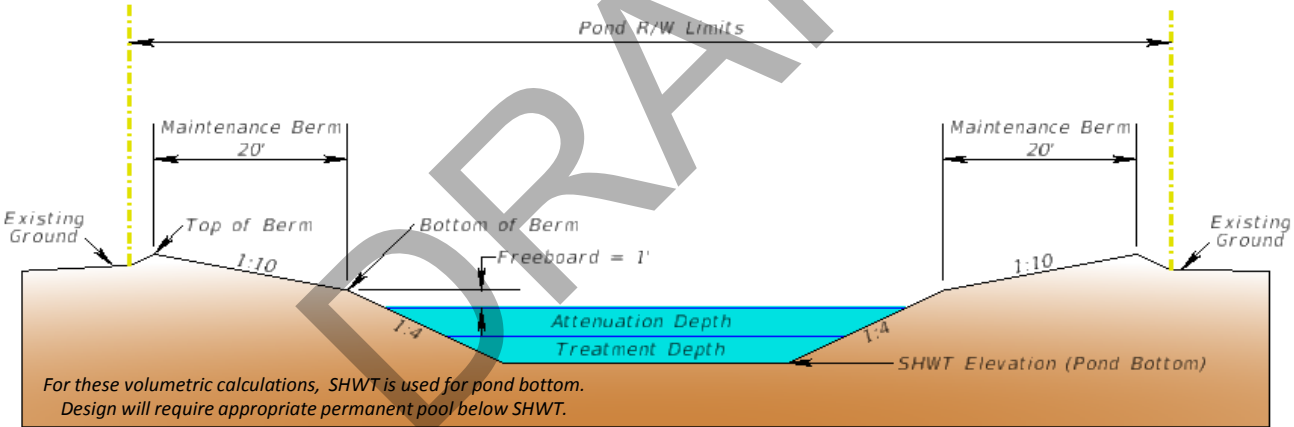
AT POND SITE:

AVERAGE NATURAL GROUND EL = 9.0 FT

SHWT EL = 5.3 FT (FROM SWFWMD ERP NO. 26538.000)

AT ROADWAY:

LOW EOP EL = 11.8 FT



|                                                 |      |    |            |
|-------------------------------------------------|------|----|------------|
| Conveyance loss to pond =                       | 1.0  | FT |            |
| Conveyance loss to outfall =                    | 0.3  | FT |            |
| Available depth for treatment and attenuation = | 4.2  | FT | = 50.34 in |
| Treatment Depth =                               | 8    | in |            |
| Attenuation Depth =                             | 19   | in |            |
| Approx. low edge of pavement elevation (LEOP) = | 11.8 | FT |            |
| Approx. Proposed Top of Berm elevation =        | 8.9  | FT |            |
| Average Ground at Pond Site =                   | 9.0  | FT |            |
| Actual Depth of Treatment and Attenuation =     | 2.3  | FT |            |
| Pond Bottom Elevation =                         | 5.3  | FT |            |



## BASIN 20 (POND B)

### POND SIZE ESTIMATION (CONTIN.)

|                                                  |       |       |
|--------------------------------------------------|-------|-------|
| Treatment Volume provided by treatment depth     | 0.63  | AC-FT |
| Square dimension at bottom of treatment depth    | 200.0 | FT    |
| Square dimension at top of treatment depth       | 205.3 | FT    |
| Square dimension at top of attenuation depth     | 218.0 | FT    |
| Attenuation Volume provided by attenuation depth | 1.63  | AC-FT |
| Square dimension at top of freeboard             | 226.0 | FT    |
| Square dimension at top berm                     | 266.0 | FT    |
| Outside pond dimensions (including tie-down)     | 265.0 | FT    |

Minimum Total Area Required:

**1.95 ACRES**

THE POND SIZE INCLUDES A 10% SAFETY FACTOR FOR BOTH LENGTH & WIDTH

### POND 20B STAGE-STORAGE CALCULATIONS

Estimated Seasonal High Water Table (SHWT) = 5.30 ft  
Estimated Low Edge of Pavement = 11.79 ft

| Elevation | Area    | Area | Acumulated Volume | Total Volume | Total Volume | REMARKS     |
|-----------|---------|------|-------------------|--------------|--------------|-------------|
| (ft)      | (sf)    | (ac) | (cf)              | (cf)         | (ac-ft)      |             |
| 5.30      | 40000.0 | 0.92 | 0.0               | 0.0          | 0.00         |             |
| 5.97      | 42161.8 | 0.97 | 27387.3           | 27387.3      | 0.63         | TV          |
| 7.55      | 47524.0 | 1.09 | 71001.2           | 98388.5      | 2.26         | AV          |
| 8.55      | 51076.0 | 1.17 | 49300.0           | 147688.5     | 3.39         |             |
| 8.55      | 70756.0 | 1.62 | 0.0               | 147688.5     | 3.39         | Top of Berm |
| 9.00      | 84972.3 | 1.95 | --                | --           | --           |             |

Required Treatment Volume = 0.62 ac-ft

**Provided Treatment Volume = 0.63 ac-ft**



Required Attenuation Volume = 1.61 ac-ft

**Provided Attenuation Volume = 1.63 ac-ft**





# Net Improvement Calculations for WBID 1668A - Joe's Creek

(Basins 14, 15 and 16)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GENERAL SITE INFORMATION:</b> <b>V7.3</b> <a href="#">GO TO INTRODUCTION PAGE</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | <div style="display: flex; justify-content: space-between; font-size: 0.8em;"> <span>Blue Numbers =</span> <span>Input data</span> </div> <div style="display: flex; justify-content: space-between; font-size: 0.8em;"> <span>Red Numbers =</span> <span>Calculated or Carryover</span> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Select the appropriate Meteorological Zone, input the appropriate Mean Annual Rainfall amount and select the type of analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>NAME OF PROJECT</b><br/> <b>I-275 JOE'S CREEK</b> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p>Meteorological Zone (Please use zone map):</p> <div style="border: 1px solid black; padding: 2px; text-align: center; margin-bottom: 5px;">             CLICK ON CELL BELOW TO SELECT<br/> <b>Zone 4</b> </div> <p>Mean Annual Rainfall (Please use rainfall map):</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px; margin-right: 5px;">51.00</div> <span>Inches</span> </div> <p>Type of analysis:</p> <div style="border: 1px solid black; padding: 2px; text-align: center; margin-bottom: 5px;">             CLICK ON CELL BELOW TO SELECT<br/> <b>Specified removal efficiency</b> </div> <p>Treatment efficiency (N, P) (leave empty if net improvement or BMP analysis is used):</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px; margin-right: 5px;">49.00</div> <div style="border: 1px solid black; padding: 2px 10px; margin-right: 5px;">49.00</div> <span>%</span> </div> </div> <div style="width: 35%; text-align: center;"> <div style="border: 1px solid black; padding: 10px; margin-bottom: 10px; background-color: yellow;"> <b>HELP</b> </div> <div style="border: 1px solid black; padding: 10px; margin-bottom: 10px; background-color: white;"> <b>VIEW ZONE MAP</b> </div> <div style="border: 1px solid black; padding: 10px; margin-bottom: 10px; background-color: white;"> <b>VIEW MEAN ANNUAL RAINFALL MAP</b> </div> <div style="border: 1px solid black; padding: 10px; background-color: white;"> <b>GO TO WATERSHED CHARACTERISTICS</b> </div> </div> </div> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Select the <b>STORMWATER TREATMENT ANALYSIS</b> Button below to begin analyzing the effectiveness of Best Management Practices.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Model documentation and example problems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <div style="border: 2px solid black; padding: 10px; margin-bottom: 10px; text-align: center; background-color: white;"> <b>STORMWATER TREATMENT ANALYSIS</b> </div> <p><b>Systems available for analysis:</b></p> <ul style="list-style-type: none"> <li>Retention Basin with option for calculating effluent concentration</li> <li>Wet Detention</li> <li>Exfiltration Trench</li> <li>Pervious Pavement</li> <li>Stormwater Harvesting</li> <li>Underdrain Biofiltration</li> <li>Greenroof</li> <li>Rainwater Harvesting</li> <li>Floating Island with Wet Detention</li> <li>Vegetated Natural Buffer</li> <li>Vegetated Filter Strip</li> <li>Swale</li> <li>Rain Garden</li> <li>Lined reuse pond</li> <li>User Defined BMP</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | <div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <p>There is a user's manual for the BMPTRAINS model. It can be downloaded from <a href="http://www.stormwater.ucf.edu">www.stormwater.ucf.edu</a>. The results from the example problems shown in the manual however may not reflect current model results due to ongoing updates of the model.</p> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%; text-align: center;"> <div style="border: 2px solid black; padding: 10px; margin-bottom: 10px; background-color: white;"> <b>RESET INPUT FOR STORMWATER TREATMENT ANALYSIS</b> </div> </div> <div style="width: 50%;"> <div style="border: 1px solid black; padding: 5px; text-align: center; margin-bottom: 5px; background-color: white;"> <b>METHODOLOGY FOR CALCULATING REQUIRED TREATMENT EFFICIENCY</b> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; background-color: white;"> <b>METHODOLOGY FOR RETENTION SYSTEMS</b> </div> <div style="border: 1px solid black; padding: 5px; background-color: white;"> <b>METHODOLOGY FOR GREENROOF SYSTEMS</b> </div> </div> <div style="width: 45%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; background-color: white;"> <b>METHODOLOGY FOR WET DETENTION SYSTEMS</b> </div> <div style="border: 1px solid black; padding: 5px; background-color: white;"> <b>METHODOLOGY FOR WATER HARVESTING SYSTEMS</b> </div> </div> </div> </div> </div> |



# Net Improvement Calculations for WBID 1668A - Joe's Creek

(Basins 14, 15 and 16)

|                                                                                |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                      |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------|
| <b>WATERSHED CHARACTERISTICS V7.3</b>                                          | <b>GO TO STORMWATER TREATMENT ANALYSIS</b>                                        | Blue Numbers =<br>Red Numbers =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Input data<br>Calculated | HELP - LAND USES/EMC |
| <b>SELECT CATCHMENT CONFIGURATION</b>                                          | <b>CLICK ON CELL BELOW TO SELECT CONFIGURATION</b><br><b>A - Single Catchment</b> | <b>VIEW CATCHMENT CONFIGURATION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                      |
| <b>CATCHMENT NO.1 CHARACTERISTICS:</b> \ If mixed land uses (side calculation) |                                                                                   | <b>OVERWRITE DEFAULT CONCENTRATIONS USING:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                      |
| Pre-development land use:                                                      | <b>CLICK ON CELL BELOW TO SELECT</b><br>Highway: TN=1.640 TP=0.220                | Land use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Area Acres               | non DCIA CN          |
| with default EMCs                                                              | <b>CLICK ON CELL BELOW TO SELECT</b>                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                      |
| Post-development land use:                                                     | Highway: TN=1.640 TP=0.220                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                      |
| with default EMCs                                                              |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                      |
| Total pre-development catchment area:                                          | 67.62 AC                                                                          | Total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                      |
| Total post-development catchment or BMP analysis area:                         | 69.82 AC                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                      |
| Pre-development Non DCIA CN:                                                   | 80.00                                                                             | Average annual runoff volume: <span style="float: right;">149.288 ac-ft/year</span><br>Pre-development Annual Mass Loading - <b>Nitrogen</b> : <span style="float: right;">239.092 kg/year</span><br>Pre-development Annual Mass Loading - <b>Phosphorus</b> : <span style="float: right;">32.073 kg/year</span><br>Post-development Annual Mass Loading - <b>Nitrogen</b> : <span style="float: right;">301.942 kg/year</span><br>Post-development Annual Mass Loading - <b>Phosphorus</b> : <span style="float: right;">40.504 kg/year</span> |                          |                      |
| Pre-development DCIA percentage:                                               | 40.62 %                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                      |
| Post-development Non DCIA CN:                                                  | 80.00                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                      |
| Post-development DCIA percentage:                                              | 56.21 %                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                      |
| Estimated Area of BMP (used for rainfall excess not loadings)                  | 2.20 AC                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                      |

Pre-development  
catchment area:

Basin 14 = 23.90 ac  
 Basin 15 = 23.74 ac  
 Basin 16 = 19.98 ac  
**Total = 67.62 ac**

Post-development  
catchment area:

Basin 14 = 23.90 ac  
 Basin 15 = 23.74 ac  
 Basin 16 = 19.98 ac  
 BMPs = 2.20 ac  
**Total = 69.82 ac**

Pre-development  
DCIA percentage:

Basin 14 = 7.84 ac  
 Basin 15 = 9.90 ac  
 Basin 16 = 9.73 ac  
 Total = 27.47 ac / 67.62ac  
**DCIA = 40.62%**

Post-development  
DCIA percentage:

Basin 14 = 12.84 ac  
 Basin 15 = 11.87 ac  
 Basin 16 = 13.30 ac  
 Total = 38.01 ac / 67.62ac  
**DCIA = 56.21%**



# Net Improvement Calculations for WBID 1668A - Joe's Creek (Basins 14, 15 and 16)

| WET DETENTION:                                                                        |             | V7.3              |             |
|---------------------------------------------------------------------------------------|-------------|-------------------|-------------|
| WET DETENTION POND SERVING:                                                           |             | I-275 JOE'S CREEK |             |
| Total pre-development catchment area:                                                 | Catchment 1 | Catchment 2       | Catchment 3 |
|                                                                                       | 67.620      | 0.000             | 0.000       |
| Total post-development catchment area:                                                | 67.620      | 0.000             | 0.000       |
| Average annual residence time (between 1 and 500 days):                               | 14.00       |                   |             |
| Littoral Zone or other improvements used?                                             | NO          |                   |             |
| Littoral Zone or other improvement efficiency credit:                                 |             |                   |             |
| Total Nitrogen removal required:                                                      | 49.000      |                   |             |
| Total Phosphorus removal required:                                                    | 49.000      |                   |             |
| Total Nitrogen removal efficiency provided:                                           | 33.324      |                   |             |
| Total Phosphorous removal efficiency provided:                                        | 58.430      |                   |             |
| Is the wet detention sufficient:                                                      | NO          |                   |             |
| Average annual runoff volume:                                                         | 149.288     |                   |             |
| To Achieve the Treatment Efficiency Shown in the Graph Below, the Following Must Hold |             |                   |             |
| Minimum Pond Permanent Pool Volume:                                                   | 5.726       |                   |             |

**NOTE FOR TREATMENT EFFICIENCY GRAPH:**

The purpose of the treatment efficiency graphs is to help illustrate the treatment efficiency of the wet detention system as the function of average annual residence time (and permanent pool volume). The graph illustrates that there is a point of diminished return as the permanent pool volume is substantially increased. The lines are produced from the conditions of catchment one, thus other catchments are shown with the data points.

**GO TO STORMWATER TREATMENT ANALYSIS**

**HELP - EXAMPLE PROBLEM 4**

**REQUIRED REMAINING TREATMENT EFFICIENCIES OF TREATMENT SYSTEM IN SERIES WITH WET DETENTION. USE FOR SIZING OF TREATMENT SYSTEM IN SERIES WITH WET DETENTION.**

|                                                     | Catchment 1 | Catchment 2 | Catchment 3 | Catchment 4 |
|-----------------------------------------------------|-------------|-------------|-------------|-------------|
| Remaining treatment efficiency needed (Nitrogen):   | 23.510      |             |             |             |
| Remaining treatment efficiency needed (Phosphorus): | 0.000       |             |             |             |

**TYPICAL X-SECTION OF A WET DETENTION SYSTEM**

Source of Graphic: draft **STORMWATER QUALITY APPLICANT'S HANDBOOK** dated March 2010, by the Department of Environmental Protection, available at: <http://www.dep.state.fl.us/water/wetlands/erp/rules/stormwater>, March 2010

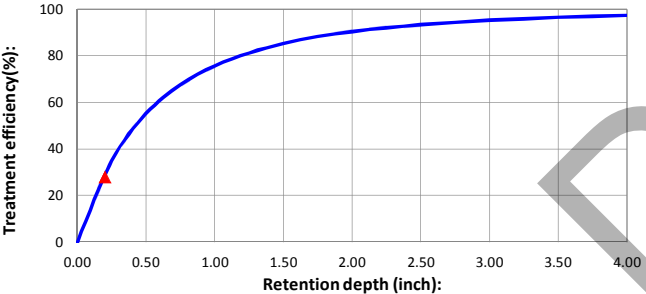
Wet detention does not provide sufficient removal.

Need additional treatment system in series to achieve nitrogen removal.



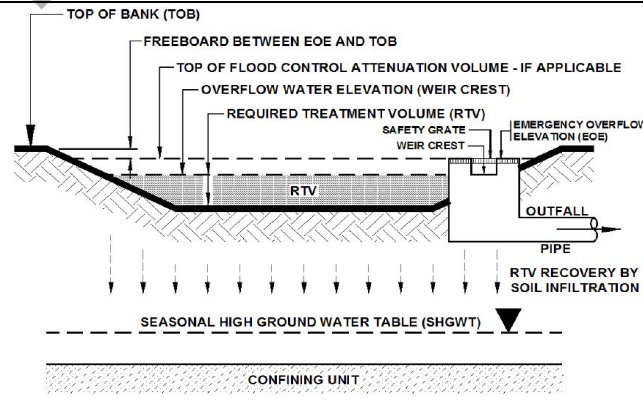
# Net Improvement Calculations for WBID 1668A - Joe's Creek

(Basins 14, 15 and 16)

| RETENTION BASIN:                                                                                                                                                                                                                                                                                                                                                                                                                          |             | V7.3              |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------|-------------|
| RETENTION BASIN SERVING:                                                                                                                                                                                                                                                                                                                                                                                                                  |             | I-275 JOE'S CREEK |             |
| Watershed area:                                                                                                                                                                                                                                                                                                                                                                                                                           | Catchment 1 | Catchment 2       | Catchment 3 |
| Required Treatment Eff (Nitrogen):                                                                                                                                                                                                                                                                                                                                                                                                        | 67.620      | 0.000             | 0.000       |
| Required Treatment Eff (Phosphorus):                                                                                                                                                                                                                                                                                                                                                                                                      | 49.000      | 49.000            | 49.000      |
| Required retention depth over the watershed to meet required efficiency                                                                                                                                                                                                                                                                                                                                                                   | 0.425       | 0.425             | 0.425       |
| Required water quality retention volume:                                                                                                                                                                                                                                                                                                                                                                                                  | 2.393       | 0.000             | 0.000       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                           | ac          | ac                | ac          |
| <b>RETENTION BASIN FOR MULTIPLE TREATMENT SYSTEMS (if there is a need for additional removal efficiencies in a series of BMPs):</b>                                                                                                                                                                                                                                                                                                       |             |                   |             |
| Retention volume based on retention depth                                                                                                                                                                                                                                                                                                                                                                                                 | 1.127       | 0.000             | 0.000       |
| Provided retention depth (inches over the watershed area):                                                                                                                                                                                                                                                                                                                                                                                | 0.200       |                   |             |
| Provided treatment efficiency (Nitrogen):                                                                                                                                                                                                                                                                                                                                                                                                 | 27.870      | 0.000             | 0.000       |
| Provided treatment efficiency (Phosphorus):                                                                                                                                                                                                                                                                                                                                                                                               | 27.870      | 0.000             | 0.000       |
| Remaining treatment efficiency (Nitrogen):                                                                                                                                                                                                                                                                                                                                                                                                | 29.295      | 49.000            | 49.000      |
| Remaining treatment efficiency (Phosphorus):                                                                                                                                                                                                                                                                                                                                                                                              | 29.295      | 49.000            | 49.000      |
| Remaining retention depth needed:                                                                                                                                                                                                                                                                                                                                                                                                         | 0.225       | 0.425             | 0.425       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                           | in          | in                | in          |
| <div style="display: flex; justify-content: space-between;"> <div> <p>Efficiency Curve:</p> <p>System Efficiency (N \$ P) CAT 2:</p> </div> <div> <p>System Efficiency (N \$ P) CAT 1:</p> <p>System Efficiency (N \$ P) CAT 3:</p> </div> </div>                                                                                                       |             |                   |             |
| <b>NOTE FOR TREATMENT EFFICIENCY GRAPH:</b><br>The purpose of this graph is to help illustrate the treatment efficiency of the retention system as the function of retention depth for a single BMP and in a single catchment. The graph illustrates that there is a diminished return as the retention depth is increased. Thus evaluations of other alternatives in "treatment trains" and compensatory treatment should be considered. |             |                   |             |
| <b>HELP - EXAMPLE PROBLEM 3</b>                                                                                                                                                                                                                                                                                                                                                                                                           |             |                   |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                           |             | View Media Mixes  |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                           | Catchment 1 | Catchment 2       | Catchment 3 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |                   |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |                   |             |
| If using media mix as a filter before water enters the ground, specify type<br>Nitrogen mass reduction in groundwater discharge (%)<br>Phosphorus mass reduction in groundwater discharge (%)                                                                                                                                                                                                                                             |             |                   |             |

**GO TO STORMWATER TREATMENT ANALYSIS**

**ERROR MESSAGE WINDOW FOR SINGLE RETENTION BASIN:**



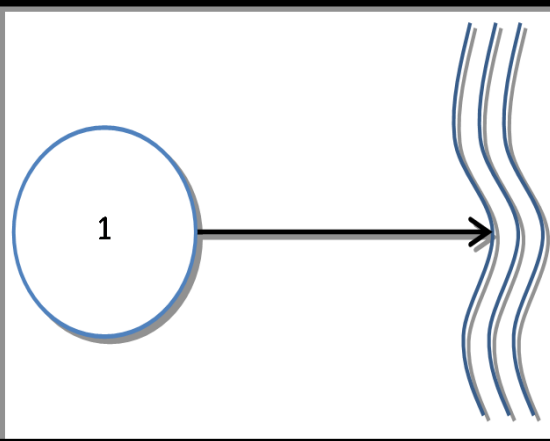
**TYPICAL CROSS SECTION OF A "DRY" RETENTION SYSTEM**

Source of Graphic: draft **STORMWATER QUALITY APPLICANT'S HANDBOOK** dated March 2010, by the Department of Environmental Protection, available at:  
<http://www.dep.state.fl.us/water/wetlands/erp/rules/stormwater>, March 2010.



# Net Improvement Calculations for WBID 1668A - Joe's Creek

(Basins 14, 15 and 16)

| CATCHMENTS AND TREATMENT SUMMARY RESULTS                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                         |                                                                                      | V7.3         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------|--------------------------------------------------------------------------------------|--------------|
| <b>CALCULATION METHODS:</b><br>1. The effectiveness of each BMP in a single catchment is converted to an equivalent capture volume.<br>2. Certain BMP treatment train combinations have not been evaluated and in practice they are at this time not used, an example is a greenroof following a tree well.<br>3. If multiple BMPs are used in a single catchment and one of them is detention, then it is assumed to be last in series. |                      |                         |                                                                                      |              |
| PROJECT TITLE                                                                                                                                                                                                                                                                                                                                                                                                                            | I-275 JOE'S CREEK    | Optional Identification |                                                                                      |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                          | Catchment 1:         | Catchment 2:            | Catchment 3:                                                                         | Catchment 4: |
| BMP Name                                                                                                                                                                                                                                                                                                                                                                                                                                 | Retention Basin      |                         |                                                                                      |              |
| BMP Name                                                                                                                                                                                                                                                                                                                                                                                                                                 | Wet Detention        |                         |                                                                                      |              |
| BMP Name                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                         |                                                                                      |              |
| Summary Performance of Entire Watershed                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                         |                                                                                      |              |
| Catchment Configuration                                                                                                                                                                                                                                                                                                                                                                                                                  | A - Single Catchment | 6/20/2019               |                                                                                      |              |
| Nitrogen Pre Load (kg/yr)                                                                                                                                                                                                                                                                                                                                                                                                                | 239.09               | BMPTRAINS MODEL         |                                                                                      |              |
| Phosphorus Pre Load (kg/yr)                                                                                                                                                                                                                                                                                                                                                                                                              | 32.07                |                         |                                                                                      |              |
| Nitrogen Post Load (kg/yr)                                                                                                                                                                                                                                                                                                                                                                                                               | 301.94               |                         |                                                                                      |              |
| Phosphorus Post Load (kg/yr)                                                                                                                                                                                                                                                                                                                                                                                                             | 40.50                |                         |                                                                                      |              |
| Target Load Reduction (N) %                                                                                                                                                                                                                                                                                                                                                                                                              | 49                   |                         |                                                                                      |              |
| Target Load Reduction (P) %                                                                                                                                                                                                                                                                                                                                                                                                              | 49                   |                         |                                                                                      |              |
| Target Discharge Load, N (kg/yr)                                                                                                                                                                                                                                                                                                                                                                                                         | 153.99               |                         |                                                                                      |              |
| Target Discharge Load, P (kg/yr)                                                                                                                                                                                                                                                                                                                                                                                                         | 20.66                |                         |                                                                                      |              |
| Provided Overall Efficiency, N (%):                                                                                                                                                                                                                                                                                                                                                                                                      | 49                   |                         |                                                                                      |              |
| Provided Overall Efficiency, P (%):                                                                                                                                                                                                                                                                                                                                                                                                      | 67                   |                         |                                                                                      |              |
| Discharged Load, N (kg/yr & lb/yr):                                                                                                                                                                                                                                                                                                                                                                                                      | 153.89               | 338.95                  |  |              |
| Discharged Load, P (kg/yr & lb/yr):                                                                                                                                                                                                                                                                                                                                                                                                      | 13.31                | 29.31                   |                                                                                      |              |
| Load Removed, N (kg/yr & lb/yr):                                                                                                                                                                                                                                                                                                                                                                                                         | 148.06               | 326.11                  |                                                                                      |              |
| Load Removed, P (kg/yr & lb/yr):                                                                                                                                                                                                                                                                                                                                                                                                         | 27.20                | 59.90                   |                                                                                      |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                         |                                                                                      |              |



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**Available Pond Volume for Dry Pretreatment in Joe's Creek**

---

| Available Stage Storage |              |              |                     |                      |                         | REMARKS |
|-------------------------|--------------|--------------|---------------------|----------------------|-------------------------|---------|
| Elevation<br>(ft)       | Area<br>(sf) | Area<br>(ac) | Acu. Volume<br>(cf) | Total Volume<br>(cf) | Total Volume<br>(ac-ft) |         |
| 57.0                    | 17100.0      | 0.393        | 0.0                 | 0.0                  | 0.00                    |         |
| 60.0                    | 29232.0      | 0.671        | 69498.0             | 69498.0              | 1.60                    |         |
| 61.0                    | 33852.0      | 0.777        | 31542.0             | 101040.0             | 2.32                    | Weir EL |
| 63.0                    | 43956.0      | 1.009        | 77808.0             | 178848.0             | 4.11                    |         |

DRAFT



## Appendix E. Figures



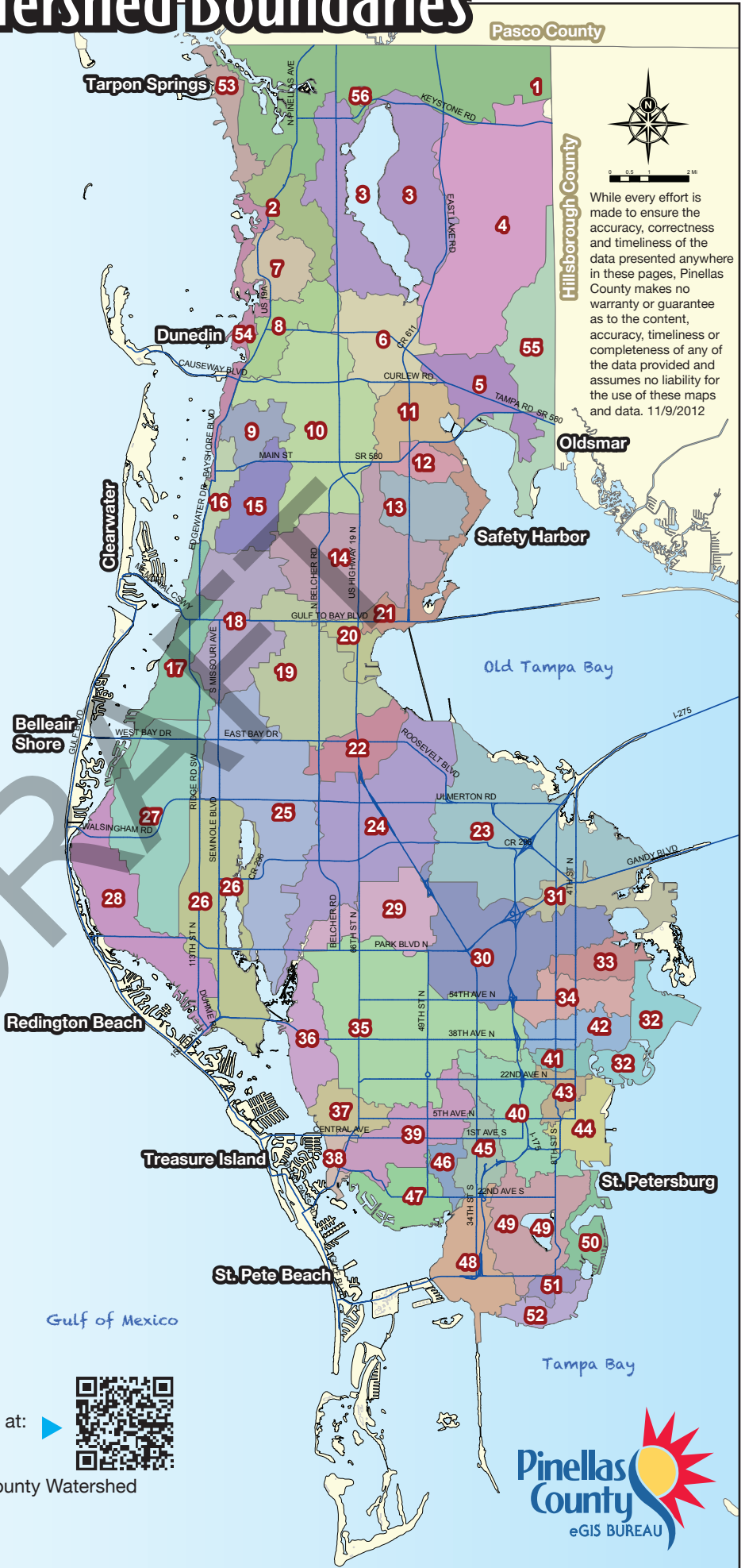
# Pinellas County Watershed Boundaries

- 1) Anclote River
- 2) Klosterman Bayou
- 3) Lake Tarpon
- 3) Lake Tarpon Basin
- 4) Brooker Creek
- 5) Oldsmar
- 6) South Creek
- 7) Sutherland Bayou
- 8) Smith Bayou
- 9) Cedar Creek
- 10) Curlew Creek
- 11) Possum Branch
- 12) Bishop Creek
- 13) Mullet Creek
- 14) Alligator Creek
- 15) Spring Branch
- 16) Coastal Zone 4
- 17) Coastal Zone 1
- 18) Stevensons Creek
- 19) Allen's Creek
- 20) Coastal Zone 2
- 21) Coastal Zone 3
- 22) Long Branch
- 23) Roosevelt
- 24) Cross Bayou
- 25) Starkey Road
- 26) Lake Seminole Basin
- 26) Lake Seminole
- 27) McKay Creek
- 28) Coastal Zone 5
- 29) Pinellas Park Ditch #1
- 30) Sawgrass Lake
- 31) Tinney Creek
- 32) NE St. Petersburg
- 33) 70th Ave North Canal
- 34) 54th Ave East Canal
- 35) Joe's Creek
- 36) Long Bayou
- 37) Pasadena Lake
- 38) SW St. Petersburg
- 39) Bear Creek
- 40) Booker Creek
- 41) North Coffee Pot Bayou
- 42) 45th Ave North East Canal
- 43) Coffee Pot Bayou
- 44) Albert Whitted
- 45) 34th Street
- 46) Clam Bayou
- 47) Gulfport
- 48) Frenchman's Creek
- 49) Lake Maggiore
- 49) Lake Maggiore / Salt Creek
- 50) Big Bayou
- 51) Little Bayou Creek
- 52) Pinellas Point
- 53) St. Joseph Sound
- 54) Clearwater Harbor North
- 55) Hillsborough County
- 56) Salt Lake

For more information about watersheds view this video at:  
<http://youtu.be/dUIAANVBYHM>

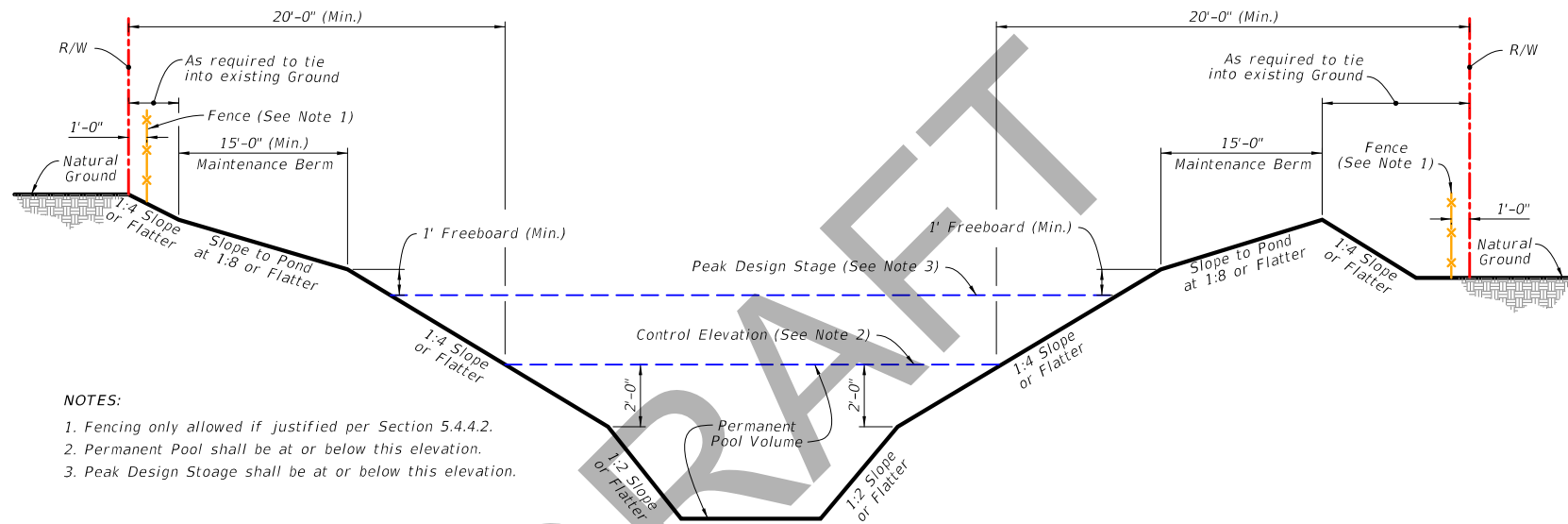


For more information about Pinellas County Watershed  
 Management visit our website at:  
[www.pinellascounty.org/watershed](http://www.pinellascounty.org/watershed)



While every effort is made to ensure the accuracy, correctness and timeliness of the data presented anywhere in these pages, Pinellas County makes no warranty or guarantee as to the content, accuracy, timeliness or completeness of any of the data provided and assumes no liability for the use of these maps and data. 11/9/2012





**Figure 5-1: Minimum Clearance Retention-Detention Ponds**



**TABLE D-1**  
**RAINFALL RATIOS (ACCUMULATED 24-HOUR TOTAL)**

| <u>TIME (HR)</u> | <u>SCS TYPE II FL. MODIFIED</u> |
|------------------|---------------------------------|
| 0.0              | .000                            |
| 0.5              | .006                            |
| 1.0              | .012                            |
| 1.5              | .019                            |
| 2.0              | .025                            |
| 2.5              | .032                            |
| 3.0              | .039                            |
| 3.5              | .047                            |
| 4.0              | .054                            |
| 4.5              | .062                            |
| 5.0              | .071                            |
| 5.5              | .080                            |
| 6.0              | .089                            |
| 6.5              | .099                            |
| 7.0              | .110                            |
| 7.5              | .122                            |
| 8.0              | .134                            |
| 8.5              | .148                            |
| 9.0              | .164                            |
| 9.5              | .181                            |
| 10.0             | .201                            |
| 10.5             | .226                            |
| 11.0             | .258                            |
| 11.5             | .308                            |
| 12.0             | .607                            |
| 12.5             | .719                            |
| 13.0             | .757                            |
| 13.5             | .785                            |
| 14.0             | .807                            |
| 14.5             | .826                            |
| 15.0             | .842                            |
| 15.5             | .857                            |
| 16.0             | .870                            |
| 16.5             | .882                            |
| 17.0             | .893                            |
| 17.5             | .904                            |
| 18.0             | .913                            |
| 18.5             | .923                            |
| 19.0             | .931                            |
| 19.5             | .940                            |
| 20.0             | .948                            |
| 20.5             | .955                            |
| 21.0             | .962                            |
| 21.5             | .969                            |
| 22.0             | .976                            |
| 22.5             | .983                            |
| 23.0             | .989                            |
| 23.5             | .995                            |
| 24.0             | 1.000                           |



**Table B-7: SCS Runoff Curve Numbers – Agricultural, Suburban, and Urban Land**

| Land Use Description                                                    | Hydrologic Soil Group |    |    |    |
|-------------------------------------------------------------------------|-----------------------|----|----|----|
|                                                                         | A                     | B  | C  | D  |
| Cultivated Land <sup>a</sup> :                                          |                       |    |    |    |
| Without conservation treatment                                          | 72                    | 81 | 88 | 91 |
| With conservation treatment                                             | 62                    | 71 | 78 | 81 |
| Pasture or range land:                                                  |                       |    |    |    |
| Poor condition                                                          | 68                    | 79 | 86 | 89 |
| Good condition                                                          | 39                    | 61 | 74 | 80 |
| Meadow: good condition                                                  | 30                    | 58 | 71 | 78 |
| Wood or Forest Land:                                                    |                       |    |    |    |
| Thin stand, poor cover, no mulch                                        | 45                    | 66 | 77 | 83 |
| Good cover <sup>b</sup>                                                 | 25                    | 55 | 70 | 77 |
| Open Spaces, Lawns, Parks, Golf Courses, Cemeteries:                    |                       |    |    |    |
| Good condition: grass cover on 75% or more of the area                  | 39                    | 61 | 74 | 80 |
| Fair condition: grass cover on 50% to 75% of the area                   | 49                    | 69 | 79 | 84 |
| Poor condition: grass cover on 50% or less of the area                  | 68                    | 79 | 86 | 89 |
| Commercial and Business Areas (85% impervious)                          | 89                    | 92 | 94 | 95 |
| Industrial Districts (72% impervious)                                   | 81                    | 88 | 91 | 93 |
| Residential <sup>c</sup>                                                |                       |    |    |    |
| Average lot size                      Average % Impervious <sup>d</sup> |                       |    |    |    |
| 1/8 acre or less                      65                                | 77                    | 85 | 90 | 92 |
| 1/4 acre                                  38                            | 61                    | 75 | 83 | 87 |
| 1/3 acre                                  30                            | 57                    | 72 | 81 | 86 |
| 1/2 acre                                  25                            | 54                    | 70 | 80 | 85 |
| 1 acre                                      20                          | 51                    | 68 | 79 | 84 |
| Paved Parking Lots, Roofs, Driveways <sup>e</sup> :                     | 98                    | 98 | 98 | 98 |
| Streets and Roads:                                                      |                       |    |    |    |
| Paved with curbs and storm sewers <sup>e</sup>                          | 98                    | 98 | 98 | 98 |
| Gravel                                                                  | 76                    | 85 | 89 | 91 |
| Dirt                                                                    | 72                    | 82 | 87 | 89 |
| Paved with open ditches                                                 | 83                    | 89 | 92 | 93 |
| Newly graded area (no vegetation established) <sup>f</sup>              | 77                    | 86 | 91 | 94 |

<sup>a</sup> For a more detailed description of agricultural land use curve numbers, refer to Table B-8.

<sup>b</sup> Good cover is protected from grazing and litter and brush cover soil.

<sup>c</sup> Curve numbers are computed assuming the runoff from the house and driveway is directed toward the street with a minimum of roof water directed to lawns where additional infiltration could occur, which depends on the depth and degree of the permeability of the underlying strata.

<sup>d</sup> The remaining pervious areas (lawn) are considered to be in good pasture condition for these curve numbers.

<sup>e</sup> In some warmer climates of the country, a curve number of 96 may be used.

<sup>f</sup> Use for temporary conditions during grading and construction.

**Note:** These values are for Antecedent Moisture Condition II, and  $I_a = 0.2S$ .

Reference: USDA, SCS, TR-55 (1984).



## Appendix F. Correspondence



## RESPONSES TO COMMENTS FROM TBN PD&E POND SITING MEETING

Date: November 2018  
Project: I-275 (TBN Section 2)  
Reviewer: Christina Jackson

Page 1 of 4  
Financial Project ID: 424501-1  
Responses By: Tracy Ellison

| Basin No. | Comment                                                                                                                                                                                                    | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11        | 11C appears as the preferred site (suggested by the City, does not impact residential or commercial, might not be considered a park (4f))                                                                  | Concur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 12        | All 3 alternatives appear to impact multiple residential/commercial properties.<br>Could we find an alternative that doesn't?<br>Can we consider vaults underneath the road as a "within ROW" alternative? | <p>The Basin 12 sites are based on suggestions from the City of St. Pete. Basin 12 is heavily developed and avoiding residential or commercial impacts may not be possible.</p> <p>Per the Pinellas County Soil Survey, the depth to the seasonal high water table in this area is 0.5-1.5 feet, which makes utilization of underground vaults or other alternative treatment options impractical. Additionally, FHWA may have an issue with placing vaults under interstate pavement.</p>     |
| 13        | All 3 alternatives appear to impact multiple residential/commercial properties.<br>Could we find an alternative that doesn't?<br>Can we consider vaults underneath the road as a "within ROW" alternative? | <p>The Basin 13 locations are based on suggestions from the City of St. Pete. Basin 13 is heavily developed and avoiding residential or commercial impacts may not be possible.</p> <p>Per the Pinellas County Soil Survey, the depth to the seasonal high water table in this area is 0.5-1.5 feet, which makes utilization of underground vaults or other alternative treatment options impractical. Additionally, FHWA may have an issue with placing vaults under interstate pavement.</p> |



## RESPONSES TO COMMENTS FROM TBN PD&E POND SITING MEETING

Date: November 2018  
Project: I-275 (TBN Section 2)  
Reviewer: Christina Jackson

Page 2 of 4  
Financial Project ID: 424501-1  
Responses By: Tracy Ellison

| Basin No. | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14        | <p>All 3 alternatives appear to impact multiple residential properties.<br/>Could we find an alternative that doesn't?<br/>Was the median area evaluated for pond alternatives (using the new impervious area only)?<br/>Can we consider vaults underneath the road as a "within ROW" alternative?<br/>Also, this basin appears to drain to Joe's Creek which has 3 water quality projects that FDOT could potentially partner with and obtain water quality credits for.<br/>Attenuation could potentially be provided within the median area.</p> | <p>The Basin 14 locations are based on suggestions from the City of St. Pete. Basin 14 is heavily developed and avoiding residential or commercial impacts may not be possible.</p> <p>We will evaluate the median as a pond alternative using the new impervious area only.</p> <p>Per the Pinellas County Soil Survey, the depth to the seasonal high water table in this area is 0.5-1.5 feet, which makes utilization of underground vaults or other alternative treatment options impractical. Additionally, FHWA may have an issue with placing vaults under interstate pavement or allowing attenuation in the median.</p> |
| 15        | <p>All 3 alternatives appear to impact multiple residential properties.<br/>Could we find an alternative that doesn't?<br/>Was the median area evaluated for pond alternatives (using the new impervious area only)?<br/>Can we consider vaults underneath the road as a "within ROW" alternative?<br/>Also, this basin appears to drain to Joe's Creek which has 3 water quality projects that FDOT could potentially partner with and obtain water quality credits for.<br/>Attenuation could potentially be provided within the median area.</p> | <p>The Basin 15 locations are based on suggestions from the City of St. Pete. Basin 15 is heavily developed and avoiding residential or commercial impacts may not be possible.</p> <p>Per the Pinellas County Soil Survey, the depth to the seasonal high water table in this area is 0.5-1.5 feet, which makes utilization of underground vaults or other alternative treatment options impractical. Additionally, FHWA may have an issue with placing vaults under interstate pavement or allowing attenuation in the median.</p>                                                                                              |



## RESPONSES TO COMMENTS FROM TBN PD&E POND SITING MEETING

Date: November 2018  
Project: I-275 (TBN Section 2)  
Reviewer: Christina Jackson

Page 3 of 4  
Financial Project ID: 424501-1  
Responses By: Tracy Ellison

| Basin No. | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16        | <p>All 3 alternatives appear to impact multiple residential properties.<br/>Could we find an alternative that doesn't?<br/>Was the median area evaluated for pond alternatives (using the new impervious area only)?<br/>Can we consider vaults underneath the road as a "within ROW" alternative?<br/>Also, this basin appears to drain to Joe's Creek which has 3 water quality projects that FDOT could potentially partner with and obtain water quality credits for.<br/>Attenuation could potentially be provided within the median area.</p> | <p>The Basin 16 locations are based on suggestions from the City of St. Pete. Basin 16 is heavily developed and avoiding residential or commercial impacts may not be possible.</p> <p>Per the Pinellas County Soil Survey, the depth to the seasonal high water table in this area is 2.0-3.0 feet, which makes utilization of underground vaults or other alternative treatment options impractical. Additionally, FHWA may have an issue with placing vaults under interstate pavement or allowing attenuation in the median.</p> |
| 17        | <p>17A appears as the preferred site since it is all within the ROW.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>Concur. This pond alternative will be sized for the new impervious area only.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 18        | <p>18A appears to be within Sawgrass Lake (owned by SWFWMD) and will require further coordination with SWFWMD regarding options for expanding.<br/>18B appears to be within school property and will require further coordination with the County regarding options for expanding.<br/>18C appears as the least desirable as it would impact residential property.</p>                                                                                                                                                                              | <p>Concur.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 19        | <p>Please verify if an alternative within the infield areas can be provided and if so please site/label just like Alt. 17A.</p>                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>The pond alternative for Basin 19 will be shown within the infield area of the interchange.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                   |



## RESPONSES TO COMMENTS FROM TBN PD&E POND SITING MEETING

Date: November 2018  
Project: I-275 (TBN Section 2)  
Reviewer: Christina Jackson

Page 4 of 4  
Financial Project ID: 424501-1  
Responses By: Tracy Ellison

| Basin No. | Comment                                                                                                                                                                                                                         | Response                                                                                                                                                                                                                                                                     |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20        | All alternatives appear to impact commercial properties. Please consider verifying if the small vacant FDOT parcel adjacent to the City Regional pond could provide treatment and attenuation for the new impervious area only. | A pond site providing treatment and attenuation for only the new impervious in Basin 20 would require at least 1.5 acres depending on site conditions. We could not locate the small vacant FDOT parcel adjacent to the City Regional pond to evaluate its size/suitability. |



## RESPONSES TO PRELIMINARY TBN SECTION 2 POND SITE CALCULATIONS COMMENTS

Date: December 2018

Project: TB Next Section 2

Reviewer: Cristina Jackson, PE - GEC

Page 1 of 3

Financial Project ID: 424501-1-22-01

Responses By: Tracy Ellison, PE – Lochner

| Comment No. | Comment                                                                                                                                                                                                                                                                               | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1           | Please verify whether any of the existing basins discharge to Impaired Water Bodies (i.e. Joe's Creek) which will require nutrient loading analysis. If so, please provide calculations to verify that the proposed wet detention ponds will not require an additional pre-treatment. | <p>Basins 14, 15 and 16 discharge to Joe's Creek and will be required to meet pre/post pollutant loading. The wet detention ponds in these basins will provide water quality treatment benefits but will not be sufficient to meet TMDL requirements alone. A 1.0-acre dry retention pretreatment area will be required to supplement the wet detention ponds to meet the required nutrient removal efficiencies. The dry retention area will be located in the median of Basin 15, in series with the downstream wet pond. This dry pretreatment area will meet the required nutrient removal efficiencies for all three basins.</p> <p>This dry retention area will be added to the Basin 14 &amp; 15 Pond Site Alternatives Map for clarity.</p> <p>Calculations are included as Attachment #1 to these responses.</p> |



## RESPONSES TO PRELIMINARY TBN SECTION 2 POND SITE CALCULATIONS COMMENTS

Date: December 2018

Project: TB Next Section 2

Reviewer: Cristina Jackson, PE - GEC

Page 2 of 3

Financial Project ID: 424501-1-22-01

Responses By: Tracy Ellison, PE – Lochner

| Comment No. | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Response                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2           | <p>Please verify the approach to the pond sizing calculations. The stage-storage calculations for the evaluated pond site alternatives indicate the same elevation for the top and bottom of the maintenance berm (indicating flat maintenance berms) however, the typical pond section graphics indicate top of the maintenance is two feet higher than the bottom of the maintenance berm (20-foot maintenance berm at 1:10 slope).</p> <p>a. If the intent is to maintain a 1:10 slope, please revise the top of the maintenance berm elevation, tie down distances and overall footprints of the pond site alternatives as these would likely be increased.</p> <p>b. If the intent is to maintain a flat berm, please revise the typical pond section graphic to show the flat berm.</p> | <p>The intent is to maintain a flat berm. The typical pond section graphic included in the calculations will be revised to show a flat berm.</p>                                                                                                                                                                                                                                                              |
| 3           | <p>Please verify that the pond sizing assumptions (square pond sites) is appropriate for all situations. For example, pond site alternative 2B has a long and narrow rectangular shape. It appears that in a situation like this, most of the pond site footprint may need to be devoted to typical maintenance berm rather than the stormwater volume.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>A contingency factor (10%) has been included for all of the pond sizes. This is to account for the preliminary nature of the information available at this phase, such as geotechnical information, survey and final pond configuration. We will evaluate long, narrow ponds to ensure that this contingency is appropriate and adjust if necessary. This approach will apply to 2B, 11B, 12A and 16A.</p> |



## RESPONSES TO PRELIMINARY TBN SECTION 2 POND SITE CALCULATIONS COMMENTS

Date: December 2018

Project: TB Next Section 2

Reviewer: Cristina Jackson, PE - GEC

Page 3 of 3

Financial Project ID: 424501-1-22-01

Responses By: Tracy Ellison, PE – Lochner

| Comment No. | Comment                                                                                                                                                                                                           | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4           | Please verify that a Curve Number of 80 is an appropriate assumption for all existing pervious areas.                                                                                                             | <p>The intent was to base the curve number on the majority soil type within each basin.</p> <ul style="list-style-type: none"><li>• The majority soil type in Basins 2, 7, 11-16, and 18 are Myakka which is within HSG D and assigned a CN of 80.</li><li>• The majority soil type in Basin 17 is Astatula which is within HSG C and assigned a curve number of 74. <i>The curve number for all pervious areas within Basin 17 will be revised to 74.</i> Revised calculations are included in Attachment #2 to these responses.</li><li>• The majority soil type in Basins 19 and 20 is Pineda which is within HSG D and assigned a CN of 80.</li></ul> |
| 5           | It appears the pond sizing calculations are missing calculations for alternative 15C.                                                                                                                             | We apologize for the omission. Pond sizing calculations for alternative 15C are included in Attachment #2 to these responses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6           | The pond sizing calculations for alternative 18C start the initial stage at elevation 0.0. Please verify this assumption. Please consider starting the initial stage at the tidal tailwater elevation (i.e. MHW). | Assume comment is in reference to alternative 18B (there is no pond alternative 18C). The calculations have been revised to show the pond bottom (initial stage) at MHW and are included in Attachment #2 to these responses.                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7           | Please verify if any of the proposed pond sites require inflow/outfall easements (i.e. 11A, 16A)? If so, please consider showing in the graphics.                                                                 | Easements will be added/shown on the Pond Site Alternative Maps for alternatives 11A, 16A and 16B.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



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## Applicability of the Old Tampa Bay Water Quality Credits to Tampa Bay Next

Date: April 9, 2019  
Location: D7 Headquarters, Executive Room  
11201 N. McKinley Drive  
Tampa, FL 33612  
Attendees: See Sign-In Sheet

### Meeting Notes:

- The purpose of the meeting was to confirm applicability of the Old Tampa Bay (OTB) water quality credits to Tampa Bay Next (TBN) program.
- Dave Kramer (Dave) gave a brief overview of the OTB water quality improvement permit
  - The project original intent was to provide net benefit.
  - OTB is a performance-based project. 20% of the credit recently released is based on tidal flux improvement. The remaining credit will be released once the project results meet specified goals. Monitoring to be performed over the next 2 years.
  - The initial discussions with FDOT regarding utilizing the project's water quality credits were for projects such as the Howard Frankland bridge replacement (Section 3), I-275/SR 60 interchange (Section 4) and Gateway that are within the immediate vicinity of Tampa Bay.
  - Due to the innovative permitting approach, the permit requires SWFWMD to review the use of the credits on a "case by case" basis and ultimately requires a proof of no adverse water quality impact.
  - The biggest obstacle in utilizing credits is demonstrating no local water quality impacts. Previous discussions assumed that to be conservative, projects would provide local presumptive treatment and use OTB to supplement net improvement requirements.
  - The use of the OTB water quality credits is tracked at the District in a ledger maintained under the OTB ERP permit. The permit must be modified (short form modification) every time the credit is utilized for a project. FDOT has internal tracking system as well.
- Q&A
  - The OTB permit contained a water quality credit applicability boundary exhibit. Is the purpose of this exhibit to define the limits of where the water quality credits from the OTB can be applied to an FDOT project?

The exhibit was provided during the application process by the Consultant and appears to reflect Tampa Bay and Coastal Areas watershed boundary. In general, the water quality credit would be applicable to FDOT projects located within these boundaries. However, concerns arise when the project which is to utilize credits discharges to other water bodies/WBIDs prior to discharging to the Bay. In that situation, reasonable assurance needs to be provided to the District that local water quality impacts will not occur.

- Could the OTB credits be utilized to eliminate the need for presumptive stormwater treatment for any section of TBN within the OTB water quality credit applicability boundary if the project provides an onsite form of BMP (i.e. roadway ditches, attenuations ponds, etc.)?

The District can apply criteria flexibility and may accept BMPs that do not meet presumptive criteria. However, reasonable assurance needs to be provided to the District that local water quality impacts will not occur. Wet pond permanent pool or linear dry ponds designed for attenuation could be accepted as BMPs in combination with the credits. FDOT may consider utilizing BMPTRAINS or other means to prove that BMPs sized for less than presumptive treatment will provide enough local benefit to provide reasonable assurance to the District that local water quality impacts will not occur.



- TBN Section 3 was recently permitted using water quality credits from OTB without an onsite form of BMP. TBN Section 3 directly discharges to Old Tampa Bay and therefore is not required to provide attenuation. Under what conditions can this approach be utilized (i.e. rely on the OTB credits without providing any other form of formal or informal stormwater treatment)? Looking at an aerial exhibit of Tampa Bay it seems that TBN Section 4 could follow the same approach due to the proximity to the Bay. Would the District agree to this approach to minimize hardships such as right of way acquisition, construction considerations, maintenance access, etc.?

Yes for Section 4. Also, some portions of Section 2 appear to be located close enough to the Bay to completely rely on the credit as well. In these situations, at least sediment and trash control BMPs should be considered. The District recommends scheduling pre-application meetings prior to design to discuss and agree on appropriate levels of water quality treatment.

- Could the OTB credits be utilized to eliminate the need for presumptive stormwater treatment for any section of TBN outside of the OTB water quality credit applicability boundary if the project provides an onsite form of BMP (i.e. roadway ditches, attenuations ponds, etc.)?

The EOR would need to address the local WBIDs assessment/impairment and prove no local water quality impact.

- If needed, could the OTB credits supplement the net improvement needs (when exceeding the minimum presumptive requirements) for any Section of TBN that is outside of the permitted credit applicability boundary?

Yes, if the net improvement requirement is specific to Tampa Bay.

- Could the OTB credits be used to retrofit existing FDOT ponds with permitted presumptive stormwater treatment capacity to maximize pond's attenuation volume and to minimize additional right of way needs?

Yes. It is up to the EOR to demonstrate no adverse impacts. It was also mentioned during the meeting that there is a possibility that some privately owned ponds within Section 4 could be impacted. The credits could be utilized to offset these impacts as well. Also, existing FDOT ponds that have been designed for the proposed conditions prior to net improvement (nutrient loading control) requirements do not need to address net improvement as long as the proposed activity remains within the previously permitted parameters.

- Can the OTB credits be used to offset stormwater treatment needs for potential Bus on Shoulder (BOS) operations within all TBN Sections?

Yes, the OTB credits can be used to completely satisfy stormwater treatment for BOS operations on all Sections of TBN. The District is OK with that approach since there is already existing pavement with minimal improvement. FDOT inquired if it could provide BOS without credits/treatment. The District indicated it is up to EOR to show no adverse water quality impact if not using the credits. BOS is not considered an exempt activity and water quality must be addressed.



- Section 2
- Section 3
- Section 4
- Section 5
- Section 6
- Section 7
- Section 8
- Section 9
- Section 10



1 in = 1 miles

TAMPA BAY AND COASTAL AREAS

HILLSBOROUGH RIVER BASIN

★  
OLD TAMPA BAY  
W.Q. IMPROV. PRJ.

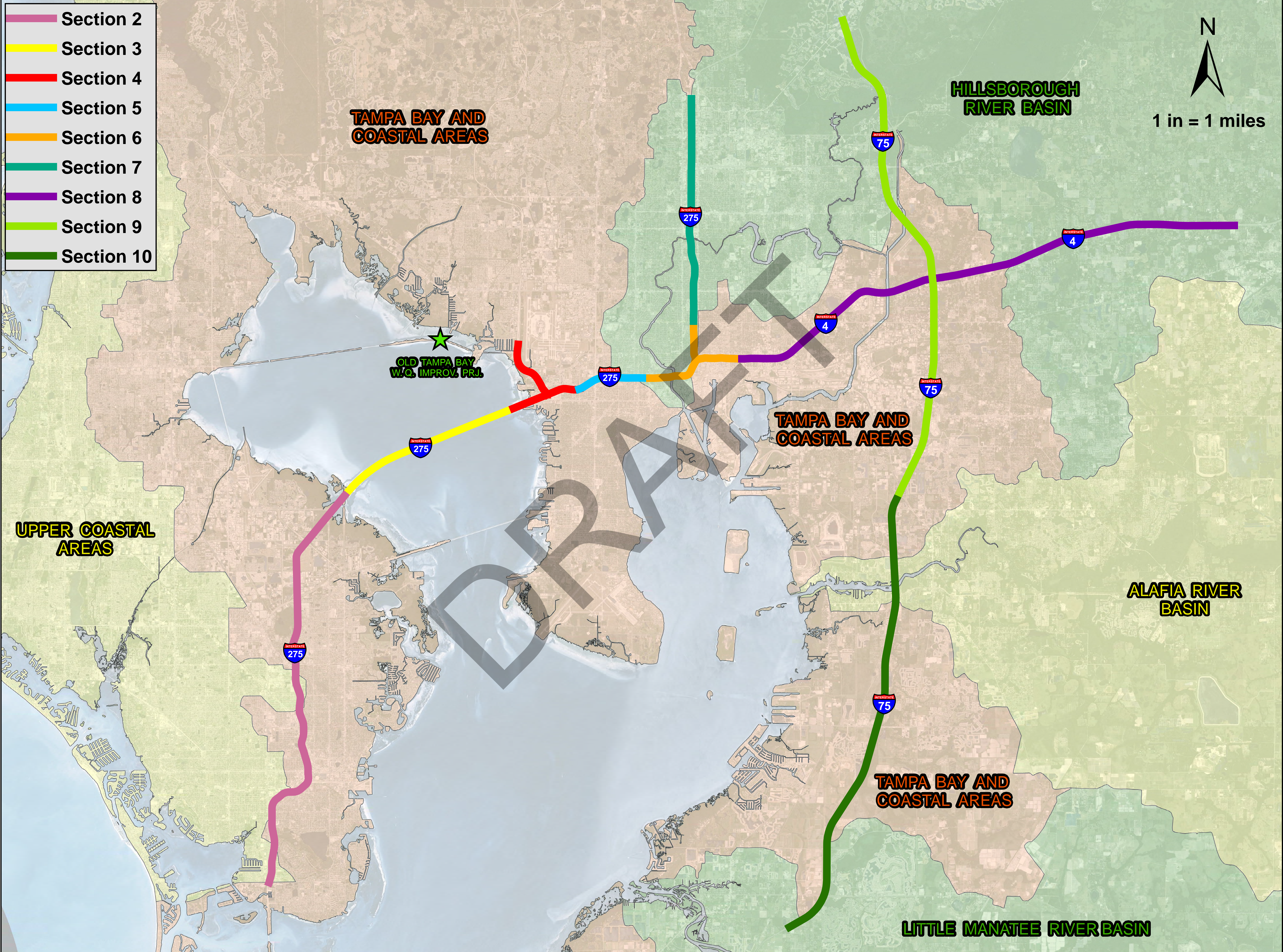
TAMPA BAY AND COASTAL AREAS

UPPER COASTAL AREAS

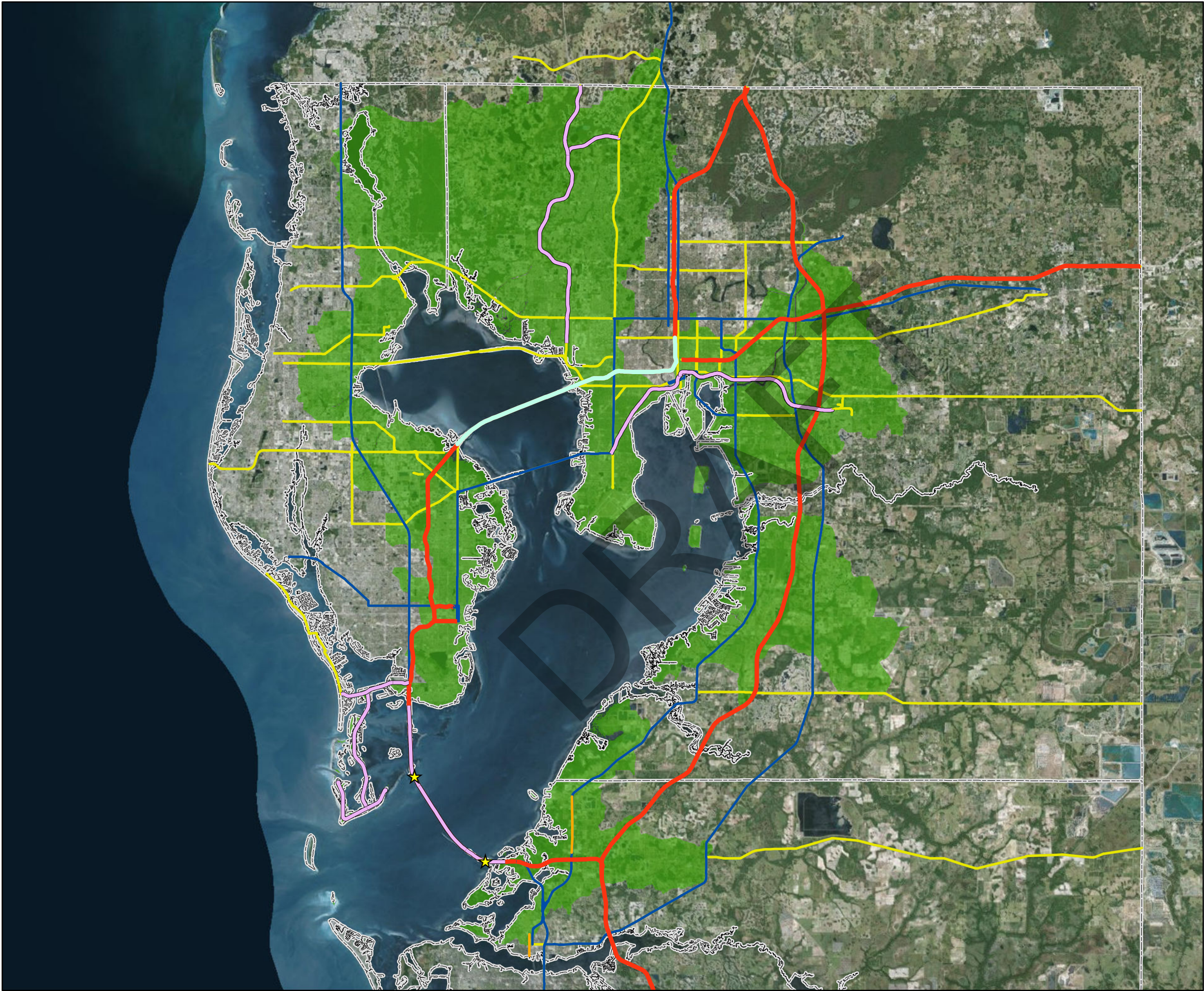
ALAFIA RIVER BASIN

TAMPA BAY AND COASTAL AREAS

LITTLE MANATEE RIVER BASIN







# ROADS WITHIN TAMPA BAY & COASTAL AREAS ERP

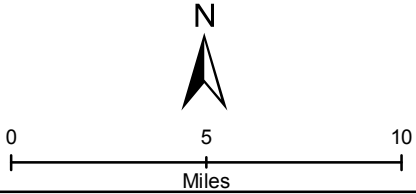
| Interstates |       |       |
|-------------|-------|-------|
| I-4         | I-175 | I-375 |
| I-75        | I-275 |       |

| US Roads |        |        |
|----------|--------|--------|
| US-19    | US-41  | US-301 |
| US-19A   | US-41B | US-92  |

| Toll Roads          |                   |
|---------------------|-------------------|
| Veterans Expressway | Selmon Expressway |
| Suncoast Parkway    | Pinellas Bayway   |
| Skyway Bridge       | CR-679            |

| State Roads |        |         |
|-------------|--------|---------|
| SR-41       | SR-574 | SR-618A |
| SR-43       | SR-580 | SR-628  |
| SR-45       | SR-595 | SR-651  |
| SR-54       | SR-597 | SR-678  |
| SR-55       | SR-599 | SR-679  |
| SR-60       | SR-600 | SR-682  |
| SR-62       | SR-616 | SR-685  |
| SR-93       | SR-582 | SR-686  |
| SR-93A      | SR-583 | SR-687  |
| SR-400      | SR-584 | SR-688  |
| SR-568      | SR-585 | SR-693  |
| SR-569      | SR-586 | SR-694  |
| SR-592      | SR-589 | SR-699  |
| SR-594      | SR-590 |         |
| SR-573      | SR-618 |         |

- ★ Skyway Bridge Rest Areas
- Interstates
- US Roads
- Toll Roads
- State Roads
- Additional Projects of Interest
- TBX
- Tampa Bay & Coastal Areas ERP
- County Boundaries







## Applicability of the Old Tampa Bay Water Quality Credits to Tampa Bay Next

Date: April 9, 2019  
Location: D7 Headquarters, Executive Room  
11201 N. McKinley Drive  
Tampa, FL 33612

| Attendee          | Representing       | Telephone    | E-mail                             |
|-------------------|--------------------|--------------|------------------------------------|
| JOHN LITTLEFIELD  | WSP                | 813 514-5528 | john.littlefield@wsp.com           |
| Bart Rehner       | HDR                | 813 282 5380 | Bart.Rehner@hdrinc.com             |
| Gary Cox          | HDR                | 813 282 2380 | Gary.Cox@hdrinc.com                |
| Anita Wang        | FDOT               | 813-975-6783 | anita.wang@dot.state.fl.us         |
| Richard Uptegraft | Atkins             | 941-926-6598 | richard-uptegraft@atkinsglobal.com |
| Tracy Ellison     | Lochner            | 813 351 3728 | tellison@hwllochner.com            |
| Christina Jackson | HNTB/OR            | 813 498 5169 | MCSAJACKSON@hntb.com               |
| ABDUL WARIS       | FDOT D7            | 813 975 6227 | abdul.waris@dot.state.fl.us        |
| CHRIS KULLO       | <del>HNTB/OR</del> | 813 498 5116 | pkullo@hntb.com                    |
| Marshall Hampton  | FDOT-PM            | 813.975.6078 | marshall.hampton@dot.state.fl.us   |
| David Kramer      | SWFWMD             | 985-7481     | dave.kramer@water matters.org      |
| Craig Fox         | FDOT               | 813-475-6082 | Craig.Fox@dot.state.fl.us          |
| Brad Flom         | HNTB/OR            | 407 915-4785 | brad.flom@dot.state.fl.us          |
| Kirk Bogen        | FDOT               | 813-975-6448 | Kirk.bogen@dot.state.fl.us         |





| Attendee         | Representing        | Telephone      | E-mail                          |
|------------------|---------------------|----------------|---------------------------------|
| JEFF DRAPP       | TBN Owner's Rep     | 813-906-4991   | jeffrey.drapp@dot.state.fl.us   |
| Frank Heck       | " "                 | 813 906 4990   | frank.heck@dot.state.fl.us      |
| DAVID LONG       | TBN OWNERS REP      | 813.334.7056   | david.long@dot.state.fl.us      |
| Bill Adams       | American Consulting | 561 853 9567   | wadams@acp-fl.com               |
| Mary Lou Godfrey | FDOT                | 813-975-6621   | marylou.godfrey@dot.state.fl.us |
| Ashley Henzel    | FDOT/Atkins GEC     | (813) 975-6433 | ashley.henzel@dot.state.fl.us   |

DRAFT



Appendix G.  
Preliminary Cultural Resource  
Assessment Probability Analysis  
Technical Memorandum



**PRELIMINARY CULTURAL RESOURCE ASSESSMENT  
PROBABILITY ANALYSIS  
TECHNICAL MEMORANDUM**

**PROPOSED POND SITE ALTERNATIVES  
I-275/SR 93  
FROM SOUTH OF 54<sup>TH</sup> AVENUE SOUTH TO  
NORTH OF 4<sup>TH</sup> STREET NORTH  
PINELLAS COUNTY, FLORIDA**

**Financial Project ID No.: 424501-1**



**Florida Department of Transportation  
District Seven  
11201 North McKinley Drive  
Tampa, Florida 33612-6456**

**January 2019**



**PRELIMINARY CULTURAL RESOURCE ASSESSMENT  
PROBABILITY ANALYSIS  
TECHNICAL MEMORANDUM**

**PROPOSED POND SITE ALTERNATIVES  
I-275/SR 93  
FROM SOUTH OF 54<sup>TH</sup> AVENUE SOUTH TO  
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PINELLAS COUNTY, FLORIDA**

**Financial Project ID No.: 424501-1**

Prepared for:

**Florida Department of Transportation  
District Seven  
11201 North McKinley Drive  
Tampa, Florida 33612-6456**

Prepared by:

**Archaeological Consultants, Inc.  
8110 Blaikie Court, Suite A  
Sarasota, Florida 34240**

In association with:

**HDR  
4830 W. Kennedy Boulevard, Suite 400  
Tampa, Florida 33609**

**January 2019**



**PRELIMINARY CULTURAL RESOURCE ASSESSMENT  
PROBABILITY ANALYSIS  
TECHNICAL MEMORANDUM  
PROPOSED POND SITE ALTERNATIVES  
I-275/SR 93 FROM SOUTH OF 54<sup>TH</sup> AVENUE SOUTH TO  
NORTH OF 4<sup>TH</sup> STREET NORTH  
PINELLAS COUNTY, FLORIDA  
Financial Project ID No.: 424501-1**

## **1.0 INTRODUCTION**

The purpose of this study was to determine, preliminarily, if any significant or potentially significant cultural resources, including archaeological sites and historic resources, will be impacted by the construction of a total 25 proposed pond site alternatives (hereinafter referred to as ponds) associated with improvements to I-275/SR 93 from south of 54<sup>th</sup> Avenue South to north of 4<sup>th</sup> Street North, Pinellas County (**Figure 1**). Known or potentially significant cultural resources are defined as those sites that are listed, determined eligible, or considered potentially eligible for listing in the National Register of Historic Places (NRHP). All work was conducted in compliance with the provisions of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended, and the implementing regulations 36 CFR 800, as well as with the provisions contained in the revised Chapter 267, *Florida Statutes (FS)*.

The study methodology included a review of Florida Master Site File (FMSF) records, NRHP listings, relevant cultural resource assessment survey (CRAS) reports, the U.S. Department of Agriculture's (USDA) *Soil Survey of Pinellas County, Florida* (USDA 1972), as well as the United States Geological Survey (USGS) Pass-A-Grille, Safety Harbor, and St. Petersburg quadrangle maps (USGS 1956a, 1956b, 1956c). Relevant CRAS reports included the Project Development and Environment (PD&E) Study for I-275/SR 93 from south of 54<sup>th</sup> Avenue South to north of 4<sup>th</sup> Street North (Archaeological Consultants, Inc. [ACI] 2015), including additional FDOT projects, those conducted for private developers, cell towers, and several historic resources surveys.

As a result of the preliminary study, one previously recorded archaeological site is recorded within two of the proposed pond sites (18A and 18B). The lithic scatter type site (8PI01212) has not been evaluated by the State Historic Preservation Officer (SHPO) but the recorders did not consider it significant. Background research indicated that 49 historic resources were previously recorded within or immediately adjacent to twelve of the proposed pond sites (**Table 2; Figures 2-5**). Of these, the Kenwood Historic District (8PI11176) and 21 contributing resources to the historic district are located within or adjacent to proposed pond sites 11A and 11B. The Kenwood Historic District (8PI11176) was listed in the NRHP in 2003 and the building at 2105 7th Avenue North (8PI07410) is considered NRHP-eligible as a contributing resource to the Kenwood Historic District, both are located with pond 11A. Pond 11B is adjacent to the Kenwood Historic District except for 2118 9<sup>th</sup> Avenue (8PI7588), located within a portion of Pond 11b and is considered a contributing resource but has not been evaluated by the SHPO. Background research also included a review of the Pinellas County Property Appraisers website, which indicated the potential for 45 historic buildings (50 years of age or older) within or immediately adjacent to 11 of the proposed pond sites (Twitty 2019). This information is summarized in **Table 2**.





**Figure 1.** Location of the proposed pond sites, Pinellas County.



As a result of the preliminary probability pond analysis, proposed pond sites 11A and 11B should be avoided or taken into consideration for this project. Following the selection of preferred pond sites, systematic archaeological field survey is recommended; historical/architectural field survey is also recommended.

## **2.0 BACKGROUND RESEARCH, DESCRIPTION OF KNOWN ARCHAEOLOGICAL AND HISTORIC RESOURCES AND SITE POTENTIAL**

Between 1978 and 2012, several archaeological and historical/architectural surveys were conducted within 500 feet of the I-275 project corridor. These include a number of historic structures surveys focused on neighborhoods or defined geographical areas such as the City of St. Petersburg (City of St. Petersburg Community Development 1981); Pinellas Park (Pinellas Park Planning Division 1993); Kenwood (Kitchen 1995); Crescent Heights and Crescent Lake (Stevenson Architects, Inc. 1996); the 22nd Street Corridor (Stevenson Architects, Inc. 2000); and the Dome Industrial Park Redevelopment Area (The Urban Group, Inc. 2008). Other surveys were carried out as part of FDOT projects along SR 686 (Browning 1988), SR 688 (Jackson 1991), SR 694 (Janus Research 1995; ACI 2002, 2012a), and the northbound Howard Frankland Bridge (I-275/SR 93) (ACI 2012b), as well as for private development (Janus Research 2001), for proposed cellular tower sites (Spriggs 2002; Ambrosino 2003), and during countywide surveys (New South Associates 2008; Pinellas County Planning Department 1995, 2008; Williams 1974), City of St. Petersburg-sponsored archaeological studies (Piper Archaeological Research and ACI 1978; Piper Archaeological Research 1987, 1991), among others.

**Archaeological Sites:** The FMSF search (January 2019) indicated that 15 previously recorded archaeological sites are located within one mile of the proposed pond sites (**Table 1**). Most of the sites consists of lithic scatter type sites and none has been evaluated by the SHPO. One of the sites, 8PI01212, is located within two of the proposed pond sites, 18A and 18B. It has not been evaluated by the SHPO but the recorders did not consider it eligible.

Based upon the results of previous archaeological surveys in the vicinity, an understanding of known patterns of aboriginal settlement in the general region, as well as an examination of the USGS quadrangle maps (USGS 1956a, 1956b, 1956c) and the USDA soil survey for Pinellas County (USDA 1972), each of the proposed pond sites were evaluated for archaeological site potential. Each was reviewed and assigned to either a low or moderate potential; there were no high potential areas (**Table 2**).

Many environmental factors had a direct influence upon site location selection. Among these variables are soil drainage, distance to freshwater, relative topography, and proximity to food and other resources including stone and clay. On the basis of the aforementioned projects, it has been repeatedly demonstrated that archaeological sites are most often located near permanent or semi-permanent sources of water. In addition, prehistoric sites are found, more often than not, on better drained soils, and at the better drained margins of wetland features such as swamps, sinkholes, wet prairies, lakes and ponds. In areas characterized by poorly drained soils, sites tend to be located in areas of slightly higher elevation.



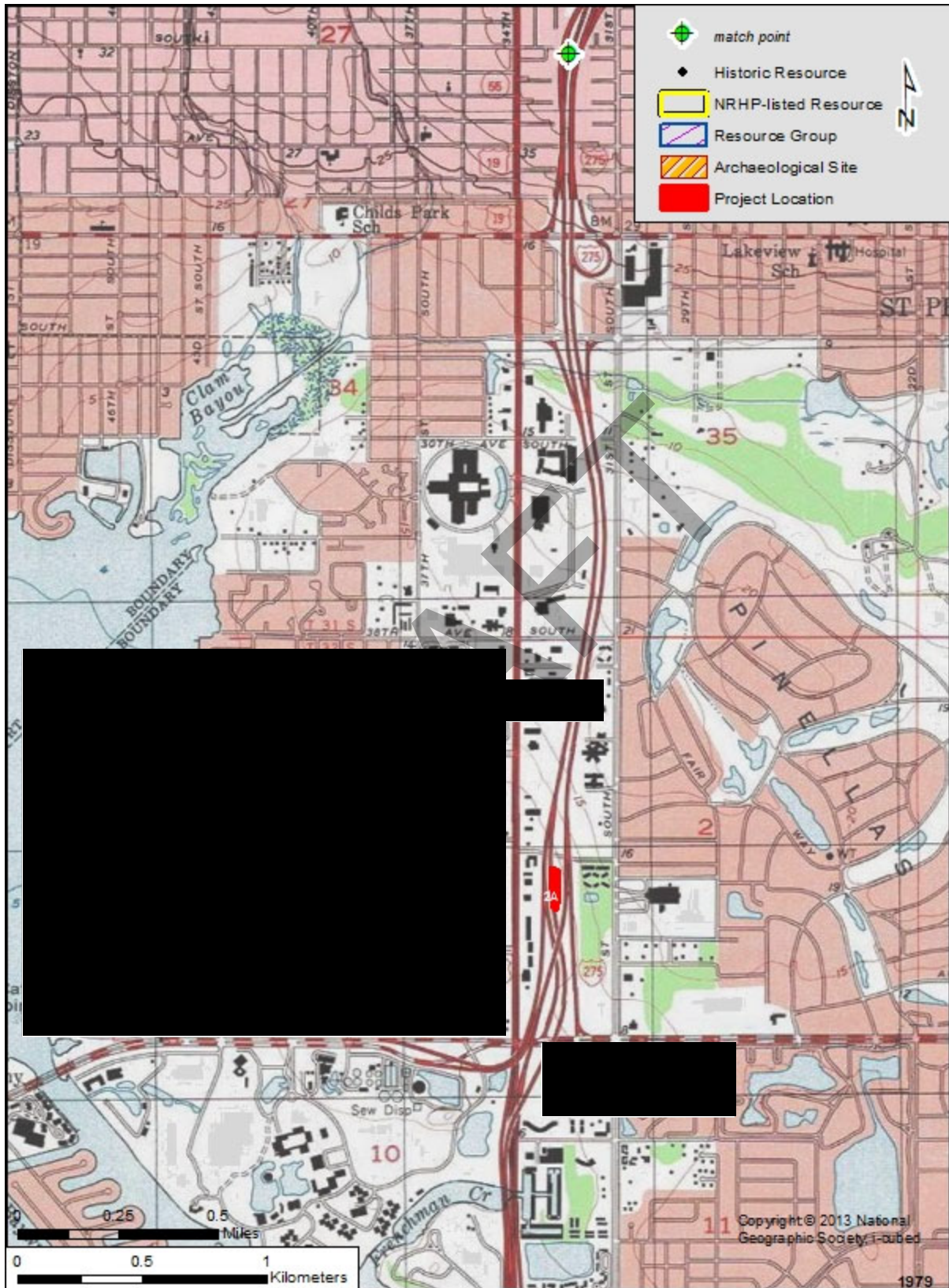
**Table 1.** Previously recorded archaeological sites located within one half mile of the proposed pond sites.

| SITE #   | SITE NAME             | SITE TYPE                    | CULTURE                  | SHPO EVAL.    |
|----------|-----------------------|------------------------------|--------------------------|---------------|
| 8PI00229 | Hart Creek            | Lithic Scatter               | Archaic, unspecified     | Not Evaluated |
| 8PI00742 | No Name (NN)          | Historic Refuse              | Historic, unspecified    | Not Evaluated |
| 8PI00901 | Sawgrass Lake #1      | Lithic scatter               | Archaic, unspecified     | Not Evaluated |
| 8PI00902 | Sawgrass Lake #2      | Artifact Scatter             | Archaic, unspecified     | Not Evaluated |
| 8PI01192 | New Publix            | Lithic Scatter, Shell Midden | Prehistoric, unspecified | Not Evaluated |
| 8PI01194 | Village Green         | Lithic Scatter               | Archaic, unspecified     | Not Evaluated |
| 8PI01197 | Broadwaters           | Lithic Scatter               | Early-Middle Archaic     | Not Evaluated |
| 8PI01198 | Whitehall Gardens     | Shell Midden                 | Prehistoric, unspecified | Not Evaluated |
| 8PI01201 | Maximo Moorings       | Lithic scatter               | Archaic, unspecified     | Not Evaluated |
| 8PI01212 | Turner's Creek        | Lithic scatter               | Archaic, unspecified     | Not Evaluated |
| 8PI01214 | Glen Lake             | Lithic scatter               | Transitional             | Not Evaluated |
| 8PI01215 | Evensen               | Lithic Scatter               | Paleo-Early Archaic      | Not Evaluated |
| 8PI01237 | Edward White Hospital | Lithic Scatter               | Middle Archaic           | Not Evaluated |
| 8PI01253 | Emerson Ave. Mound    | Mound                        | Prehistoric, unspecified | Not Evaluated |
| 8PI01258 | Gandy Exit            | Lithic scatter               | Archaic, unspecified     | Not Evaluated |

**Historic Resources:** In 2015, ACI conducted a CRAS of this segment of I-275 which resulted in recording and updating 325 historic resources. This total includes 309 buildings, 13 building complex resource groups, one historic district, one railroad, and one cemetery. In addition to this report, the Kenwood Historic District (8PI11176) nomination form was reviewed. Based on the results of these reports, 49 historic resources were previously recorded within or immediately adjacent to twelve of the proposed pond sites (**Table 2; Figures 2-5**). The Kenwood Historic District (8PI11176) was listed in the NRHP in 2003 and contains 21 contributing resources that are located within or adjacent to proposed pond sites 11A and 11B. Of these, 20 have not been evaluated by the SHPO. Contributing resource, 2105 7<sup>th</sup> Avenue North (8PI07410) was considered NRHP-eligible in 2015 and is located in pond 11A. Pond 11B is adjacent to the Kenwood Historic District except for 2118 9<sup>th</sup> Avenue (8PI7588), located within a portion of Pond 11B and considered a contributing resource but has not been evaluated by SHPO. In addition, the Orange Belt Railway is located adjacent to pond 12A and was determined to have insufficient information by the SHPO in 2015.

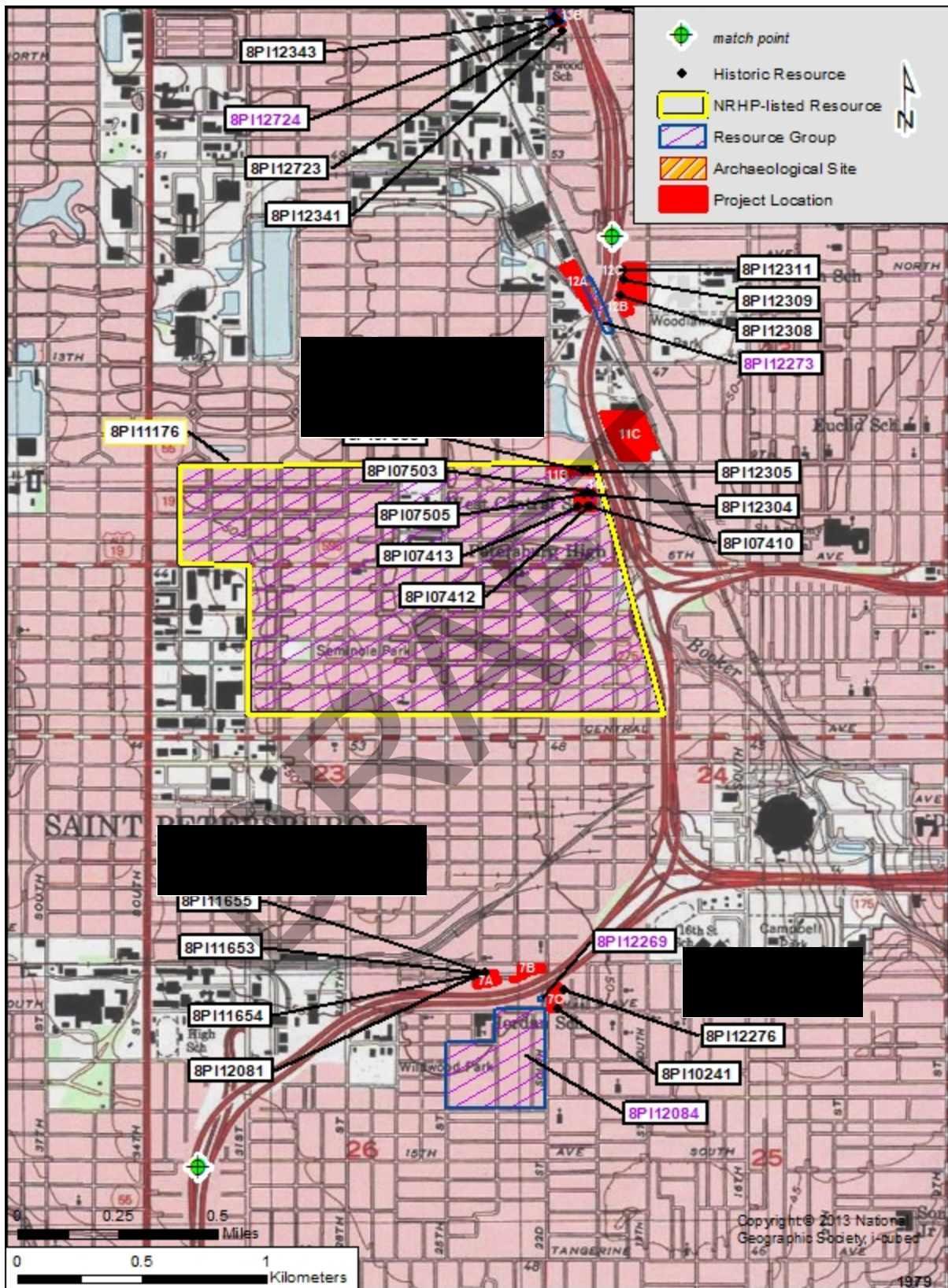
Background research also included a review of the Pinellas County Property Appraisers website, which indicated the potential for 45 historic buildings (50 years of age or older) within or immediately adjacent to 11 of the proposed pond sites (Twitty 2019). This information is summarized in **Table 2**.





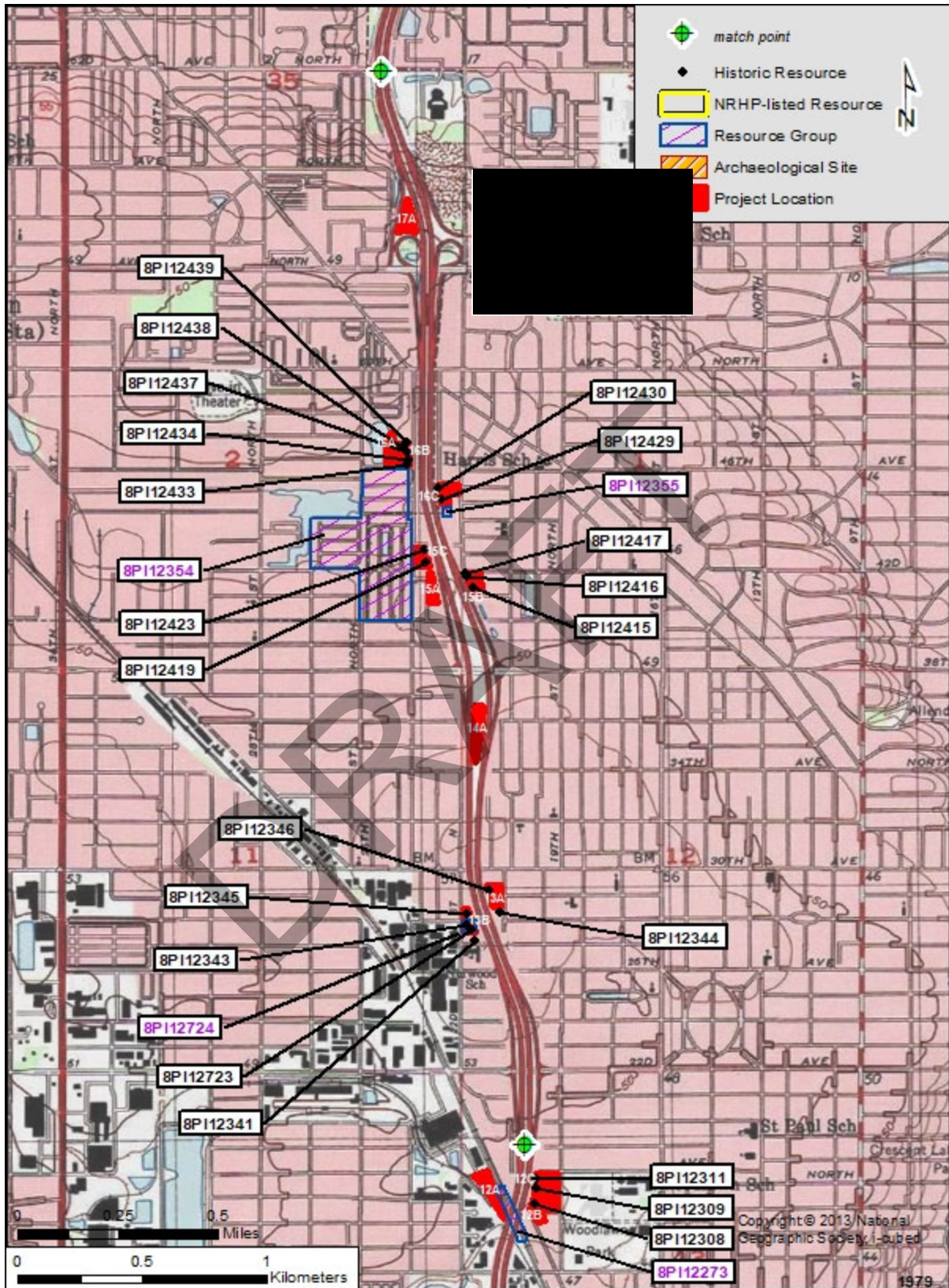
**Figure 2.** Previously recorded cultural resources within or in close proximity to the proposed pond sites.





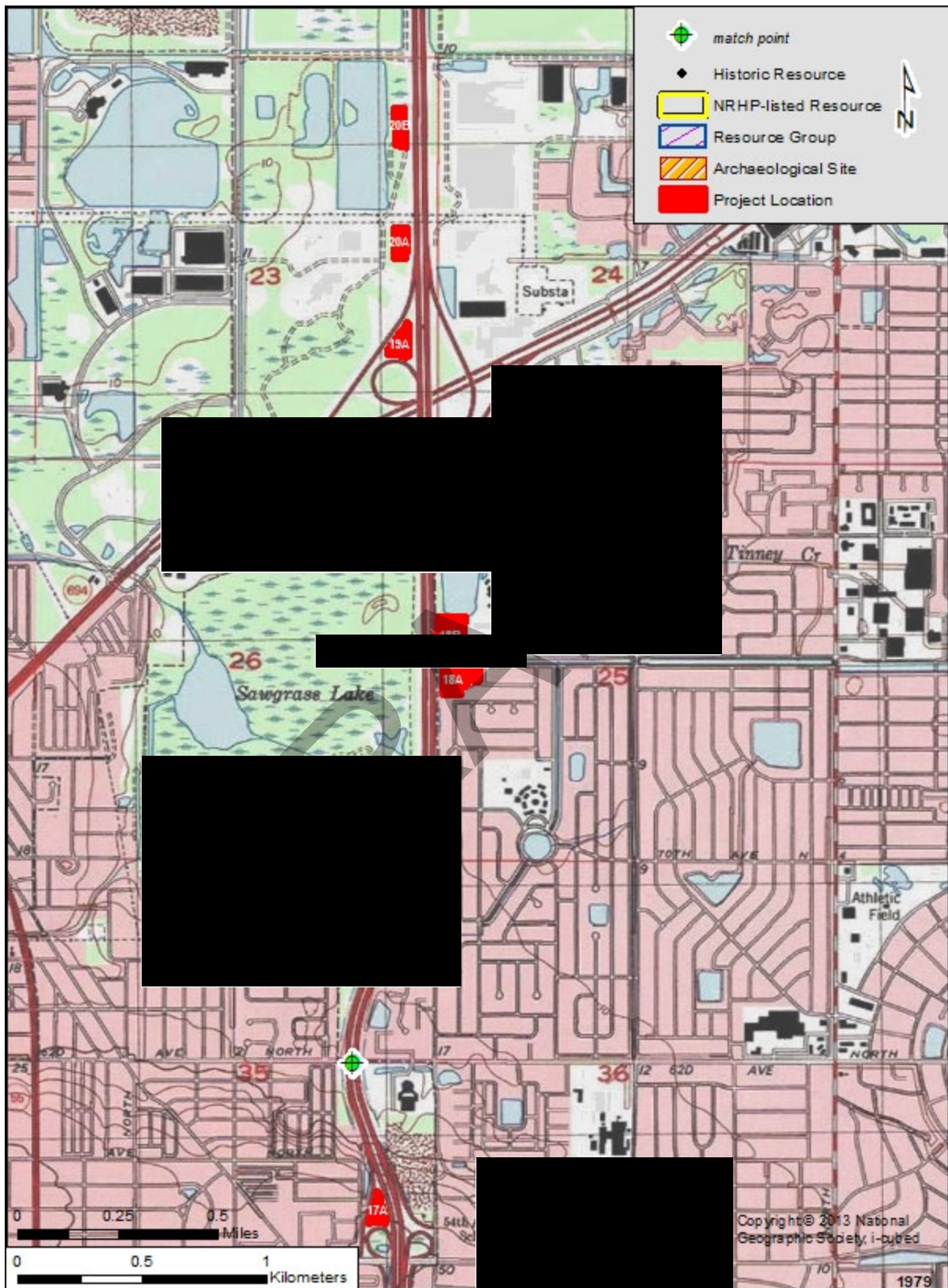
**Figure 3.** Previously recorded cultural resources within or in close proximity to the proposed pond sites.





**Figure 4.** Previously recorded cultural resources within or in close proximity to the proposed pond sites.





**Figure 5.** Previously recorded cultural resources within or in close proximity to the proposed pond sites.



**Table 2.** Archaeological and historic data.

| POND | ZAP*         | Comments (i.e. soils, vegetation, drainage, previously recorded sites, etc.)                                                                                                                                                                                                                             |
|------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2A   | Low          | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                       |
|      | Low          | Historic Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                          |
|      | Low          | Historical: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                                       |
| 7A   | Low          | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                       |
|      | Low          | Historic Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                          |
|      | Low          | Historical: 4 previously recorded resources within or adjacent to APE; however, these appear to have been destroyed.                                                                                                                                                                                     |
| 7B   | Low          | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                       |
|      | Low          | Historic Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                          |
|      | Low          | Historical: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                                       |
| 7C   | Low          | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                       |
|      | Low          | Historic Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                          |
|      | Moderate     | Historical: no previously recorded sites within; 2 previously recorded buildings and 1 newly identified adjacent                                                                                                                                                                                         |
| 11A  | Low          | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                       |
|      | Low          | Historic Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                          |
|      | High         | Historical: The NRHP-listed Kenwood Historic District (8PI11176), 9 previously recorded buildings (8 buildings are contributing resources to HD), and 1 newly identified building are within the pond; 2 previously recorded & contributing resources to the historic district are adjacent to the pond. |
| 11B  | Low          | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                       |
|      | Low          | Historic Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                          |
|      | High         | Historical: Portion of the NRHP-listed Kenwood Historic District (8PI11176) and 2 previously recorded buildings and 2 newly identified within the pond; 10 contributing resources to the historic district and 1 newly identified resource are adjacent.                                                 |
| 11C  | Low-Moderate | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE; pond is on elevated land upland from freshwater                                                                                                                                                                      |
|      | Low          | Historic Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                          |
|      | Low          | Historical: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                                       |
| 12A  | Low          | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                       |
|      | Low          | Historic Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                          |
|      | Moderate     | Historical: no previously recorded resources within; 1 previously recorded Resource Group (8PI12273) adjacent to pond                                                                                                                                                                                    |
| 12B  | Low          | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                       |
|      | Low          | Historic Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                          |
|      | High         | Historical: 1 previously recorded and 3 newly identified buildings within APE                                                                                                                                                                                                                            |
| 12C  | Low          | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                       |
|      | Low          | Historic Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                          |
|      | High         | Historical: 2 previously recorded and 12 newly identified buildings within APE                                                                                                                                                                                                                           |
| 13A  | Low          | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                       |
|      | Low          | Historic Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                          |
|      | High         | Historical: 1 previously recorded building within APE                                                                                                                                                                                                                                                    |
| 13B  | Low          | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                       |
|      | Low          | Historic Archaeological: no previously recorded sites within or adjacent to APE                                                                                                                                                                                                                          |
|      | High         | Historical: 4 previously recorded resources within; 1 previously recorded and 2 newly identified buildings adjacent.                                                                                                                                                                                     |



| POND | ZAP*     | Comments (i.e. soils, vegetation, drainage, previously recorded sites, etc.)                                      |
|------|----------|-------------------------------------------------------------------------------------------------------------------|
| 14A  | Low      | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | Low      | Historical: no previously recorded sites within or adjacent to APE                                                |
| 15A  | Low      | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | Low      | Historical: no previously recorded sites within or adjacent to APE                                                |
| 15B  | Low      | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | High     | Historical: 3 previously recorded and 4 newly identified buildings within APE                                     |
| 15C  | Low      | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | High     | Historical: 2 previously recorded and 4 newly identified buildings within APE                                     |
| 16A  | Low      | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | High     | Historical: no previously recorded sites within; 6 newly identified buildings adjacent to pond                    |
| 16B  | Low      | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | High     | Historical: 4 previously recorded and 1 newly identified building within; 1 previously recorded building adjacent |
| 16C  | Low      | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | High     | Historical: 2 previously recorded and 6 newly identified buildings within; 2 newly identified buildings adjacent  |
| 17A  | Low      | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | Low      | Historical: no previously recorded sites within or adjacent to APE                                                |
| 18A  | Moderate | Prehistoric Archaeological: portion of 8PI01212 within APE                                                        |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | Low      | Historical: no previously recorded sites within or adjacent to APE                                                |
| 18B  | Moderate | Prehistoric Archaeological: portion of 8PI01212 within APE                                                        |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | Low      | Historical: no previously recorded sites within or adjacent to APE                                                |
| 19A  | Low      | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | Low      | Historical: no previously recorded sites within or adjacent to APE                                                |
| 20A  | Low      | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | Low      | Historical: no previously recorded sites within or adjacent to APE                                                |
| 20B  | Low      | Prehistoric Archaeological: no previously recorded sites within or adjacent to APE                                |
|      | Low      | Historic Archaeological: no previously recorded sites within or adjacent to APE                                   |
|      | Low      | Historical: no previously recorded sites within or adjacent to APE                                                |

\* Zone of Archaeological Potential



### 3.0 CONCLUSIONS AND RECOMMENDATIONS

As a result of the preliminary probability pond analysis, proposed pond sites 11A and 11B should be avoided or taken into consideration for this project. Following the selection of preferred pond sites, systematic archaeological field survey is recommended in accordance with the guidelines and standards promulgated by the Florida Department of Transportation (FDOT) and Florida Division of Historical Resources (FDHR). The selected pond sites considered to have a low potential also should be surveyed and judgmentally tested. Historical/architectural field survey is also recommended.

### 4.0 BIBLIOGRAPHY

Ambrosino, Meghan L.

- 2003 Archaeological and Historical Survey of the Proposed Sawgrass Lake Tower Location. Panamerican Consultants, Inc., Tampa.

Archaeological Consultants, Inc. (ACI)

- 2002 Cultural Resource Assessment Survey Update, Gandy Boulevard (SR 694) PD&E Study from west of US 19 to east of 4<sup>th</sup> Street. ACI, Sarasota.
- 2012a Historic Resources Survey Update, SR 694 (Gandy Blvd) from west of Dr. Martin Luther King Street North (9<sup>th</sup> Street North) to east of SR 687 (4<sup>th</sup> Street North). ACI, Sarasota.
- 2012b Project Development & Environment (PD&E) Study for Replacement of the Northbound Howard Frankland Bridge (I-275/SR 93) Final Cultural Resource Assessment Survey, Work Program Item Segment No.: 4227991, ETDM Project No. 12539, Hillsborough and Pinellas Counties. ACI, Sarasota.
- 2015 Cultural Resource Research Survey, Project Development and Environment (PD&E) Study, Interstate 275 (I-275) from south of 54<sup>th</sup> Avenue to south of 4<sup>th</sup> Street North, Pinellas County, Florida. ACI, Sarasota and FDOT, District Seven, Tampa.

Browning, William

- 1988 Proposed widening of SR 686 from US 19 to SR 688. FDHR, Tallahassee.

City of St. Petersburg, Community Development Department

- 1981 St. Petersburg Architectural and Historic Resources. FDHR, Tallahassee.

Jackson, Roy

- 1991 Cultural Resource Assessment Survey of Ulmerton Road (SR-688) from Gulf Boulevard East to I-275. FDHR, Tallahassee.

Janus Research

- 1995 Cultural Resource Assessment Survey of SR 694 (Gandy Blvd) PD&E Study from west of US 19 to east of 4<sup>th</sup> St. Janus Research, Tampa.
- 2001 Cultural Resource Assessment Survey of the Gateway Centre and Highwoods Parcels Project Site, Pinellas County, Florida. FDHR, Tallahassee.

Kitchen, Judith L.

- 1995 St. Petersburg Neighborhood Survey, Phase III, Kenwood. FDHR, Tallahassee.

New South Associates

- 2008 Countywide Cultural Resource Study, Pinellas County, Florida. New South Associates Technical Report #1561. Pinellas County Board of County Commissioners, Clearwater.



Pinellas County Planning Department (PCPD)

- 1995 Pinellas County Historical Background. Pinellas County Planning Department, Clearwater.
- 2008 Countywide Cultural Resources Survey, Pinellas County. FDHR, Tallahassee.

Pinellas Park Planning Division

- 1993 Pinellas Park Historic Sites Survey. FDHR, Tallahassee.

Piper Archaeological Research

- 1987 Archaeological Survey of the City of St. Petersburg. Janus Research, Tampa.
- 1991 Archeological and Historical Survey of the Unincorporated Areas of Pinellas County. FDHR, Tallahassee.

Piper Archaeological Research and ACI

- 1978 Archaeological Survey of the Urban Redevelopment Program Areas of the City of St. Petersburg. FDHR, Tallahassee and ACI, Sarasota.

Spriggs, Patricia

- 2002 Historic Survey of the Proposed St. Pete Sanitation Complex Tower Location. FDHR, Tallahassee.

Stevenson Architects, Inc.

- 1996 Architectural/Historic Survey of Crescent Heights, Crescent Lake, a Portion of Uptown. FDHR, Tallahassee.
- 2000 Architectural/Historical Survey of the 22<sup>nd</sup> Street Corridor. FDHR, Tallahassee.

The Urban Group, Inc.

- 2008 Dome Industrial Park Project II Redevelopment Area Historic Structure Study. FDHR, Tallahassee.

Twitty, Mike

- 2019 Pinellas County Property Appraisers, Pinellas County.

United States Department of Agriculture (USDA)

- 1972 *Soil Survey of Pinellas County, Florida*. U.S. Department of Agriculture, Washington, D.C.

United States Geological Survey (USGS)

- 1956a Pass-A-Grille, Fla., photorevised 1981, photoinspected 1983.
- 1956b Safety Harbor, Fla., photorevised 1987.
- 1956c St. Petersburg, Fla., photorevised 1969.

Williams, J. Raymond

- 1974 Archaeological Survey of the Pass-a-Grille Beach and Oldsmar USGS Quadrangle Map Areas. FDHR, Tallahassee.



## Appendix H. Right-of-Way Cost Estimate



# Right of Way Cost Estimate

HDR #100626981-12.19

**FM#:** 424501-1  
**County:** Pinellas  
**Description:** I-275 54<sup>th</sup> Avenue to North of 4<sup>th</sup> Avenue Pond Sites  
**Date:** January 22, 2019  
**Purpose:** Special Purpose  
**Prepared by:** Roger D. Patton, Real Estate Services Agent III  
HDR, Inc.

In accordance with your request, a cost estimate has been prepared for the above-referenced project and is submitted for distribution. The estimate considers 21 pond sites. The previous estimate dated July 30, 2018 was for nine pond sites. The costs for each pond site is as follows:

|         |                       |
|---------|-----------------------|
| SMF-2A  | \$0 Existing FDOT R/W |
| SMF-7A  | \$565,300             |
| SMF-7B  | \$537,600             |
| SMF-7C  | \$2,090,900           |
| SMF-11A | \$5,156,100           |
| SMF-11B | \$4,044,000           |
| SMF-11C | \$469,700             |
| SMF-12A | \$2,653,600           |
| SMF-12B | \$4,380,100           |
| SMF-12C | \$4,916,400           |
| SMF-13A | \$2,490,900           |
| SMF-13B | \$1,329,700           |
| SMF-14A | \$0 Existing FDOT R/W |
| SMF-15A | \$1,187,200           |
| SMF-15B | \$2,658,600           |
| SMF-15C | \$2,352,000           |
| SMF-16A | \$2,644,800           |
| SMF-16B | \$3,449,500           |
| SMF-16C | \$3,407,900           |
| SMF-17A | \$0 Existing FDOT R/W |
| SMF-18A | \$2,826,200           |
| SMF-18B | \$613,200             |
| SMF-19A | \$0 Existing FDOT R/W |
| SMF-20A | \$802,100             |
| SMF-20B | \$1,371,500           |

Your attention is directed toward the following for comments relating to any considerations or differences noted since our last estimate of the selected pond sites:

SMF-12A: The pond site as proposed encroaches on two properties and is the lowest cost of the alternates for Basin 12. One site is improved and utilized as a commercial building materials operation with common ownership to the south. The pond is situated at the rear of the site and no access easement was included in the current cost estimate. Access to this site, as configured, should be included on future maps.

The other half of the pond site is a landlocked vacant parcel, with an existing access easement. Shifting the pond onto this single parcel instead of split between the two indicates a potential savings of \$2,095,100.



**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                                                                    |                   |                    |
|--------------------------------------------------------------------|-------------------|--------------------|
| FM#: 424501-1                                                      | Alternate: SMF 7A | District: Seven    |
| County: Pinellas                                                   | Segment: N/A      | Date: 4-Jan-19     |
| State Rd.: N/A                                                     | FAP#: N/A         | C.E. Sequence: N/A |
| Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                   |                    |

| Parcels       | Gross | Net | Estimated Relocates: |
|---------------|-------|-----|----------------------|
| Commercial    | 0     | 0   | Business             |
| Residential   | 0     | 0   | Residential          |
| Unimproved    | 1     | 1   | Signs                |
|               |       |     | Special              |
| Total Parcels | 1     | 1   | Total Relocates      |

| R/W SUPPORT COSTS (PHASE 41) |           |   |                  | Amount          |
|------------------------------|-----------|---|------------------|-----------------|
| 1. Direct Labor Cost         | (Parcels) | 1 | x 20,000 = Rate) | 20,000          |
| 2. Indirect Overhead         | (Parcels) | 1 | x 0 = Rate)      | 0               |
| 3.                           |           |   |                  |                 |
| <b>TOTAL PHASE 41</b>        |           |   |                  | <b>\$20,000</b> |

| R/W OPS (PHASE 4B)                        |     |             |                    | Amount          |
|-------------------------------------------|-----|-------------|--------------------|-----------------|
| 4. Appraisal Fees Through Trial           | 1   | Parcels     | x 30,000 =         | 30,000          |
| 5. Business Damage CPA Fees Through Trial | 0   | Claims      | x 19,000 =         | 0               |
| 6. Court Reporter & Process Servers       | 50% | 1           | Parcels x 500 =    | 500             |
| 7. Expert Witness                         | 75% | 1           | Parcels x 30,000 = | 30,000          |
| 8. Mediators                              | 75% | 1           | Parcels x 2,400 =  | 2,400           |
| 9. Demolition, Asb. Abate., Survey, etc.  | 0   | Imprvmet    | x 15,000 =         | 0               |
| 10. Miscellaneous Contracts               | 0   | Per Project | x 15,000 =         | 0               |
| 11. Appraisal Fee Review                  | 0   | Parcels     | x 5,000 =          | 0               |
| 12.                                       |     |             |                    |                 |
| <b>TOTAL PHASE 4B</b>                     |     |             |                    | <b>\$62,900</b> |

| R/W LAND COSTS (PHASE 43)                                          |         |                                |  | Amount  | Subtotal         |
|--------------------------------------------------------------------|---------|--------------------------------|--|---------|------------------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0       | x 120% * Design plan stage =   |  | 0       |                  |
| 14. Water Retention & Mit. (0 Ponds)                               | 295,168 | x 120% (0 Parcels w/o R/W Acq) |  | 354,200 |                  |
| 15. SUBTOTAL (52,276 SF)                                           |         | (Lines 13 & 14)                |  |         | 354,200          |
| 16. Admin. Settlements (Factor                                     | 20%     | x 100% of Line 15)             |  | 70,800  |                  |
| 17. Litigation Awards (Factor                                      | 45%     | x 0% of Line 15)               |  | 0       |                  |
| 18. Business Damages (Claims                                       | 0       | x 0)                           |  | 0       |                  |
| 19. Bus. Damages Incr (Factor                                      | 25%     | x \$ - )                       |  | 0       |                  |
| 20. Owner Appr. Fees (Parcels                                      | 1       | x \$15,000 )                   |  | 15,000  |                  |
| 21. Owner CPA Fees (Claims                                         | 0       | x \$16,000 )                   |  | 0       |                  |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 70,800  | x 33%)                         |  | 23,400  |                  |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0       | + 1) x 18,000                  |  | 18,000  |                  |
| 24. Other Condemn. Costs                                           | 1       | x \$1,000                      |  | 1,000   |                  |
| 25. SUBTOTAL                                                       |         | (Lines 16 thru 24)             |  |         | 128,200          |
| 26.                                                                |         |                                |  |         |                  |
| <b>TOTAL PHASE 43</b>                                              |         |                                |  |         | <b>\$482,400</b> |

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

| R/W ACQUISITION CONSULTANT (PHASE 42)     |          |     |  | Amount     |
|-------------------------------------------|----------|-----|--|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x 0 |  | 0          |
| <b>TOTAL PHASE 42</b>                     |          |     |  | <b>\$0</b> |

| RELOCATION COSTS (PHASE 45)  |          |                      |   | Amount     |
|------------------------------|----------|----------------------|---|------------|
| Replacement Housing          |          |                      |   |            |
| 28. Owner                    | \$35,000 | x 0                  | = | 0          |
| 29. Tenant                   | \$25,000 | x 0                  | = | 0          |
| Move Costs                   |          |                      |   |            |
| 30. Residential              | \$5,000  | x 0                  | = | 0          |
| 31. Business/Farm            | \$40,000 | x 0                  | = | 0          |
| 32. Personal Property        | \$3,000  | x 0                  | = | 0          |
| 33. (Lines 28 thru 32)       |          |                      |   |            |
| <b>TOTAL PHASE 45</b>        |          |                      |   | <b>\$0</b> |
| 34. Relocation Services Cost | \$0      | (Not in Phase Total) |   |            |

| (All Phases) TOTAL ESTIMATE |  |  |  | Amount           |
|-----------------------------|--|--|--|------------------|
|                             |  |  |  | <b>\$565,300</b> |

|                                    |                            |                |
|------------------------------------|----------------------------|----------------|
| Real Estate: Roger D. Patton       | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Bus. Dam.: Alfred J. Thompson      | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: <i>[Signature]</i> | Date: 01/15/19 |

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

REMARKS: This estimate is for SMF-7A. This is the first estimate for this pond alternate.

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

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

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

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

Comments: \_\_\_\_\_



**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                                                                    |                   |                    |
|--------------------------------------------------------------------|-------------------|--------------------|
| FM#: 424501-1                                                      | Alternate: SMF 7B | District: Seven    |
| County: Pinellas                                                   | Segment: N/A      | Date: 4-Jan-19     |
| State Rd.: N/A                                                     | FAP#: N/A         | C.E. Sequence: N/A |
| Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                   |                    |

| Parcels       | Gross | Net | Estimated Relocates: |
|---------------|-------|-----|----------------------|
| Commercial    | 0     | 0   | Business 0           |
| Residential   | 0     | 0   | Residential 0        |
| Unimproved    | 1     | 1   | Signs 0              |
|               |       |     | Special 0            |
| Total Parcels | 1     | 1   | Total Relocates 0    |

| R/W SUPPORT COSTS (PHASE 41) |           |   |   |                | Amount          |
|------------------------------|-----------|---|---|----------------|-----------------|
| 1. Direct Labor Cost         | (Parcels) | 1 | x | 20,000 = Rate) | 20,000          |
| 2. Indirect Overhead         | (Parcels) | 1 | x | 0 = Rate)      | 0               |
| 3.                           |           |   |   |                |                 |
| <b>TOTAL PHASE 41</b>        |           |   |   |                | <b>\$20,000</b> |

| R/W OPS (PHASE 4B)                        |     |   |             |         | Amount            |
|-------------------------------------------|-----|---|-------------|---------|-------------------|
| 4. Appraisal Fees Through Trial           |     | 1 | Parcels     | x       | 30,000 = 30,000   |
| 5. Business Damage CPA Fees Through Trial |     | 0 | Claims      | x       | 19,000 = 0        |
| 6. Court Reporter & Process Servers       | 50% | x | 1           | Parcels | x 500 = 500       |
| 7. Expert Witness                         | 75% | x | 1           | Parcels | x 30,000 = 30,000 |
| 8. Mediators                              | 75% | x | 1           | Parcels | x 2,400 = 2,400   |
| 9. Demolition, Asb. Abate., Survey, etc.  |     | 0 | Imprvmet    | x       | 15,000 = 0        |
| 10. Miscellaneous Contracts               |     | 0 | Per Project | x       | 15,000 = 0        |
| 11. Appraisal Fee Review                  |     | 0 | Parcels     | x       | 5,000 = 0         |
| 12.                                       |     |   |             |         |                   |
| <b>TOTAL PHASE 4B</b>                     |     |   |             |         | <b>\$62,900</b>   |

| R/W LAND COSTS (PHASE 43)                                          |         |   |                              |   | Amount  | Subtotal         |
|--------------------------------------------------------------------|---------|---|------------------------------|---|---------|------------------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0       | x | 120% * Design plan stage     | = | 0       |                  |
| 14. Water Retention & Mit. (0 Ponds)                               | 276,928 | x | 120% (0 Parcels w/o R/W Acq) | = | 332,300 |                  |
| 15. SUBTOTAL (47,916 SF)                                           |         |   | (Lines 13 & 14)              |   |         | 332,300          |
| 16. Admin. Settlements (Factor                                     | 20%     | x | 100% of Line 15)             | = | 66,500  |                  |
| 17. Litigation Awards (Factor                                      | 45%     | x | 0% of Line 15)               | = | 0       |                  |
| 18. Business Damages (Claims                                       | 0       | x | 0 )                          | = | 0       |                  |
| 19. Bus. Damages Incr (Factor                                      | 25%     | x | \$ - )                       | = | 0       |                  |
| 20. Owner Appr. Fees (Parcels                                      | 1       | x | \$15,000 )                   | = | 15,000  |                  |
| 21. Owner CPA Fees (Claims                                         | 0       | x | \$16,000 )                   | = | 0       |                  |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 66,500  | x | 33% )                        | = | 21,900  |                  |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0       | + | 1 ) x 18,000                 | = | 18,000  |                  |
| 24. Other Condemn. Costs                                           | 1       | x | \$1,000                      | = | 1,000   |                  |
| 25. SUBTOTAL                                                       |         |   | (Lines 16 thru 24)           | = |         | 122,400          |
| 26.                                                                |         |   |                              |   |         |                  |
| <b>TOTAL PHASE 43</b>                                              |         |   |                              |   |         | <b>\$454,700</b> |

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

| R/W ACQUISITION CONSULTANT (PHASE 42)     |          |   |   |  | Amount     |
|-------------------------------------------|----------|---|---|--|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x | 0 |  | 0          |
| <b>TOTAL PHASE 42</b>                     |          |   |   |  | <b>\$0</b> |

| RELOCATION COSTS (PHASE 45)  |          |   |                      |   | Amount     |
|------------------------------|----------|---|----------------------|---|------------|
| Replacement Housing          |          |   |                      |   |            |
| 28. Owner                    | \$35,000 | x | 0                    | = | 0          |
| 29. Tenant                   | \$25,000 | x | 0                    | = | 0          |
| Move Costs                   |          |   |                      |   |            |
| 30. Residential              | \$5,000  | x | 0                    | = | 0          |
| 31. Business/Farm            | \$40,000 | x | 0                    | = | 0          |
| 32. Personal Property        | \$3,000  | x | 0                    | = | 0          |
| 33. (Lines 28 thru 32)       |          |   |                      |   |            |
| <b>TOTAL PHASE 45</b>        |          |   |                      |   | <b>\$0</b> |
| 34. Relocation Services Cost | \$0      |   | (Not in Phase Total) |   |            |

| (All Phases) |  |  |  |  | TOTAL ESTIMATE   |
|--------------|--|--|--|--|------------------|
|              |  |  |  |  | <b>\$537,600</b> |

|                                    |                            |                |
|------------------------------------|----------------------------|----------------|
| Real Estate: Roger D. Patton       | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Bus. Dam. : Alfred J. Thompson     | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: <i>[Signature]</i> | Date: 01/15/19 |

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

**REMARKS:**

This estimate is for SMF-7B. This was part of a previous estimate dated July 30, 2018 in the amount of \$200,240 "unfactored"

The unit costs are the same while the overall take area has increased.

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

Type A - indicates the most confidence

Type B - indicates above average confidence

x Type C - indicates below average confidence

Type D - indicates the least or no confidence

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

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

Comments: \_\_\_\_\_



# FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

HDR#: 10062698-1-12.19

FM#: 424501-1  
County: Pinellas  
State Rd.: N/A  
Project Des.: I-275 From S. of 54th Ave to 4th Ave North Pond Sites

Alternate: SMF 7C  
Segment: N/A  
FAP#: N/A

District: Seven  
Date: 4-Jan-19  
C.E. Sequence: N/A

| Parcels       | Gross | Net |
|---------------|-------|-----|
| Commercial    | 0     | 0   |
| Residential   | 0     | 0   |
| Unimproved    | 3     | 3   |
| Total Parcels | 3     | 3   |

|                      |   |
|----------------------|---|
| Estimated Relocates: |   |
| Business             | 0 |
| Residential          | 0 |
| Signs                | 0 |
| Special              | 0 |
| Total Relocates      | 0 |

## R/W SUPPORT COSTS (PHASE 41)

|                      |           |   |   |        |   |       |        |
|----------------------|-----------|---|---|--------|---|-------|--------|
| 1. Direct Labor Cost | (Parcels) | 3 | x | 20,000 | = | Rate) | Amount |
| 2. Indirect Overhead | (Parcels) | 3 | x | 0      | = | Rate) | 60,000 |
| 3.                   |           |   |   |        |   |       | 0      |

TOTAL PHASE 41 \$60,000

## R/W OPS (PHASE 4B)

|                                           |     |   |   |   |   |             |   |          |        |        |
|-------------------------------------------|-----|---|---|---|---|-------------|---|----------|--------|--------|
| 4. Appraisal Fees Through Trial           |     |   |   |   | 3 | Parcels     | x | 30,000 = | Amount | 90,000 |
| 5. Business Damage CPA Fees Through Trial |     |   |   |   | 0 | Claims      | x | 19,000 = |        | 0      |
| 6. Court Reporter & Process Servers       | 50% | x | 3 | = | 2 | Parcels     | x | 500 =    |        | 1,000  |
| 7. Expert Witness                         | 75% | x | 3 | = | 2 | Parcels     | x | 30,000 = |        | 60,000 |
| 8. Mediators                              | 75% | x | 3 | = | 2 | Parcels     | x | 2,400 =  |        | 4,800  |
| 9. Demolition, Asb. Abate., Survey, etc.  |     |   |   |   | 1 | Imprymet    | x | 15,000 = |        | 15,000 |
| 10. Miscellaneous Contracts               |     |   |   |   | 0 | Per Project | x | 15,000 = |        | 0      |
| 11. Appraisal Fee Review                  |     |   |   |   | 0 | Parcels     | x | 5,000 =  |        | 0      |
| 12.                                       |     |   |   |   |   |             |   |          |        |        |

TOTAL PHASE 4B \$170,800

## R/W LAND COSTS (PHASE 43)

|                                                                    |           |   |          |                         |   |           |        |           |
|--------------------------------------------------------------------|-----------|---|----------|-------------------------|---|-----------|--------|-----------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0         | x | 120%     | * Design plan stage     | = | 0         | Amount | Subtotal  |
| 14. Water Retention & Mit. (0 Ponds)                               | 1,047,280 | x | 120%     | (0 Parcels w/o R/W Acq) | = | 1,256,700 |        |           |
| 15. SUBTOTAL (43,560 SF)                                           |           |   |          | (Lines 13 & 14)         |   |           |        | 1,256,700 |
| 16. Admin. Settlements (Factor                                     | 20%       | x | 60%      | of Line 15)             | = | 150,800   |        |           |
| 17. Litigation Awards (Factor                                      | 45%       | x | 40%      | of Line 15)             | = | 226,200   |        |           |
| 18. Business Damages (Claims                                       | 0         | x | 0        | )                       | = | 0         |        |           |
| 19. Bus. Damages Incr (Factor                                      | 25%       | x | \$       | - )                     | = | 0         |        |           |
| 20. Owner Appr. Fees (Parcels                                      | 3         | x | \$15,000 | )                       | = | 45,000    |        |           |
| 21. Owner CPA Fees (Claims                                         | 0         | x | \$16,000 | )                       | = | 0         |        |           |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 377,000   | x | 33%      | )                       | = | 124,400   |        |           |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0         | + | 3        | ) x 18,000              | = | 54,000    |        |           |
| 24. Other Condemn. Costs                                           | 3         | x | \$1,000  |                         | = | 3,000     |        |           |
| 25. SUBTOTAL                                                       |           |   |          | (Lines 16 thru 24)      | = | 603,400   |        |           |
| 26.                                                                |           |   |          |                         |   |           |        |           |

TOTAL PHASE 43 \$1,860,100

\* Design contingency for design plan stage:

(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans -105% (5) 268 Date -100%

## R/W ACQUISITION CONSULTANT (PHASE 42)

|                                           |          |   |   |  |
|-------------------------------------------|----------|---|---|--|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x | 0 |  |
|-------------------------------------------|----------|---|---|--|

TOTAL PHASE 42 \$0

## RELOCATION COSTS (PHASE 45)

|                        |          |        |        |
|------------------------|----------|--------|--------|
| Replacement Housing    |          | Number | Amount |
| 28. Owner              | \$35,000 | x      | 0 = 0  |
| 29. Tenant             | \$25,000 | x      | 0 = 0  |
| Move Costs             |          |        |        |
| 30. Residential        | \$5,000  | x      | 0 = 0  |
| 31. Business/Farm      | \$40,000 | x      | 0 = 0  |
| 32. Personal Property  | \$3,000  | x      | 0 = 0  |
| 33. (Lines 28 thru 32) |          |        |        |

TOTAL PHASE 45 \$0

34. Relocation Services Cost \$0 (Not in Phase Total)

35.  
36.  
37. (All Phases) TOTAL ESTIMATE \$2,090,900

Real Estate: Roger D. Patton Signed: *[Signature]* Date: 01/15/19  
Bus. Dam.: Alfred J. Thompson Signed: *[Signature]* Date: 01/15/19  
Relocation: Roger D. Patton Signed: *[Signature]* Date: 01/15/19  
Overall Review: Alfred J. Thompson Signed: *[Signature]* Date: 01/15/19

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

## REMARKS:

This estimate is for SMF-7C. This is the first estimate for this pond alternate.

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

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

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

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

Comments:



# **FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                  |                    |                    |
|------------------|--------------------|--------------------|
| FM#: 424501-1    | Alternate: SMF-11A | District: Seven    |
| County: Pinellas | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A   | FAP#: N/A          | C.E. Sequence: N/A |

Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites

| Parcels              | Gross     | Net       |
|----------------------|-----------|-----------|
| Commercial           | 0         | 0         |
| Residential          | 10        | 10        |
| Unimproved           | 0         | 0         |
| <b>Total Parcels</b> | <b>10</b> | <b>10</b> |

| Estimated Relocates:   |           |
|------------------------|-----------|
| Business               | 6         |
| Residential            | 15        |
| Signs                  | 0         |
| Special                | 0         |
| <b>Total Relocates</b> | <b>21</b> |

## **R/W SUPPORT COSTS (PHASE 41)**

|                       |           |    |   |        |   |       |                  |
|-----------------------|-----------|----|---|--------|---|-------|------------------|
| 1. Direct Labor Cost  | (Parcels) | 10 | x | 20,000 | = | Rate) | Amount           |
| 2. Indirect Overhead  | (Parcels) | 10 | x | 0      | = | Rate) | 200,000          |
| 3.                    |           |    |   |        |   |       | 0                |
| <b>TOTAL PHASE 41</b> |           |    |   |        |   |       | <b>\$200,000</b> |

## **R/W OPS (PHASE 4B)**

|                                           |     |             |   |        |   |  | Amount           |
|-------------------------------------------|-----|-------------|---|--------|---|--|------------------|
| 4. Appraisal Fees Through Trial           | 10  | Parcels     | x | 30,000 | = |  | 300,000          |
| 5. Business Damage CPA Fees Through Trial | 0   | Claims      | x | 19,000 | = |  | 0                |
| 6. Court Reporter & Process Servers       | 50% | Parcels     | x | 500    | = |  | 2,500            |
| 7. Expert Witness                         | 75% | Parcels     | x | 30,000 | = |  | 240,000          |
| 8. Mediators                              | 75% | Parcels     | x | 2,400  | = |  | 19,200           |
| 9. Demolition, Asb. Abate., Survey, etc.  | 15  | Imprvmet    | x | 15,000 | = |  | 225,000          |
| 10. Miscellaneous Contracts               | 0   | Per Project | x | 15,000 | = |  | 0                |
| 11. Appraisal Fee Review                  | 0   | Parcels     | x | 5,000  | = |  | 0                |
| 12.                                       |     |             |   |        |   |  |                  |
| <b>TOTAL PHASE 4B</b>                     |     |             |   |        |   |  | <b>\$786,700</b> |

## **R/W LAND COSTS (PHASE 43)**

|                                                                    |           |   |                              |   |  | Amount    | Subtotal           |
|--------------------------------------------------------------------|-----------|---|------------------------------|---|--|-----------|--------------------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0         | x | 120% * Design plan stage     | = |  | 0         |                    |
| 14. Water Retention & Mit. (0 Ponds)                               | 1,953,390 | x | 120% (0 Parcels w/o R/W Acq) | = |  | 2,344,100 |                    |
| 15. SUBTOTAL (69,696SF)                                            |           |   | (Lines 13 & 14)              |   |  |           | 2,344,100          |
| 16. Admin. Settlements (Factor                                     | 20%       | x | 60% of Line 15)              | = |  | 281,300   |                    |
| 17. Litigation Awards (Factor                                      | 45%       | x | 40% of Line 15)              | = |  | 421,900   |                    |
| 18. Business Damages (Claims                                       | 0         | x | 0 )                          | = |  | 0         |                    |
| 19. Bus. Damages Incr (Factor                                      | 25%       | x | \$ - )                       | = |  | 0         |                    |
| 20. Owner Appr. Fees (Parcels                                      | 10        | x | \$15,000 )                   | = |  | 150,000   |                    |
| 21. Owner CPA Fees (Claims                                         | 0         | x | \$16,000 )                   | = |  | 0         |                    |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 703,200   | x | 33% )                        | = |  | 232,100   |                    |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0         | + | 0 ) x 18,000                 | = |  | 0         |                    |
| 24. Other Condemn. Costs                                           | 10        | x | \$1,000                      | = |  | 10,000    |                    |
| 25. SUBTOTAL                                                       |           |   | (Lines 16 thru 24)           | = |  | 1,095,300 |                    |
| 26.                                                                |           |   |                              |   |  |           |                    |
| <b>TOTAL PHASE 43</b>                                              |           |   |                              |   |  |           | <b>\$3,439,400</b> |

\* Design contingency for design plan stage:

(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans -105% (5) 268 Date -100%

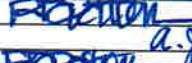
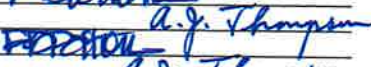

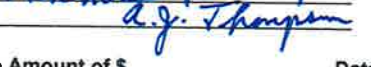
## **R/W ACQUISITION CONSULTANT (PHASE 42)**

|                                           |          |   |   |  |  |                       |            |
|-------------------------------------------|----------|---|---|--|--|-----------------------|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x | 0 |  |  | <b>TOTAL PHASE 42</b> | <b>\$0</b> |
|-------------------------------------------|----------|---|---|--|--|-----------------------|------------|

## **RELOCATION COSTS (PHASE 45)**

|                               |          |   | Number |   | Amount               |
|-------------------------------|----------|---|--------|---|----------------------|
| 28. Owner Replacement Housing | \$35,000 | x | 4      | = | 140,000              |
| 29. Tenant                    | \$25,000 | x | 11     | = | 275,000              |
| 30. Residential Move Costs    | \$5,000  | x | 15     | = | 75,000               |
| 31. Business/Farm             | \$40,000 | x | 6      | = | 240,000              |
| 32. Personal Property         | \$3,000  | x | 0      | = | 0                    |
| 33. (Lines 28 thru 32)        |          |   |        |   |                      |
| 34. Relocation Services Cost  | \$73,000 |   |        |   | (Not in Phase Total) |
| <b>TOTAL PHASE 45</b>         |          |   |        |   | <b>\$730,000</b>     |

|                                    |  |  |  |  |                    |
|------------------------------------|--|--|--|--|--------------------|
| 35.                                |  |  |  |  |                    |
| 36.                                |  |  |  |  |                    |
| 37.                                |  |  |  |  |                    |
| <b>(All Phases) TOTAL ESTIMATE</b> |  |  |  |  | <b>\$5,156,100</b> |

|                 |                    |         |                                                                                      |       |          |
|-----------------|--------------------|---------|--------------------------------------------------------------------------------------|-------|----------|
| Real Estate:    | Roger D. Patton    | Signed: |   | Date: | 01/15/19 |
| Bus. Dam. :     | Alfred J. Thompson | Signed: |  | Date: | 01/15/19 |
| Relocation:     | Roger D. Patton    | Signed: |   | Date: | 01/15/19 |
| Overall Review: | Alfred J. Thompson | Signed: |  | Date: | 01/15/19 |

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

## **REMARKS:**

This estimate is for SMF-11A. This is the first estimate for this pond alternate.

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

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

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

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

Comments:



**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

**HDR#:** 10062698-1-12.19

|                                                                            |                           |                           |
|----------------------------------------------------------------------------|---------------------------|---------------------------|
| <b>FM#:</b> 424501-1                                                       | <b>Alternate:</b> SMF-11B | <b>District:</b> Seven    |
| <b>County:</b> Pinellas                                                    | <b>Segment:</b> N/A       | <b>Date:</b> 4-Jan-19     |
| <b>State Rd.:</b> N/A                                                      | <b>FAP#:</b> N/A          | <b>C.E. Sequence:</b> N/A |
| <b>Project Des.:</b> I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                           |                           |

| Parcels              | Gross    | Net      | Estimated Relocates:   |
|----------------------|----------|----------|------------------------|
| Commercial           | 3        | 3        | Business               |
| Residential          | 2        | 2        | Residential            |
| Unimproved           | 0        | 0        | Signs                  |
|                      |          |          | Special                |
| <b>Total Parcels</b> | <b>5</b> | <b>5</b> | <b>Total Relocates</b> |

| R/W SUPPORT COSTS (PHASE 41) |          |   |   | Amount           |
|------------------------------|----------|---|---|------------------|
| 1. Direct Labor Cost         | (Parcels | 5 | x | 20,000 =         |
| 2. Indirect Overhead         | (Parcels | 5 | x | 0 =              |
| 3.                           |          |   |   |                  |
| <b>TOTAL PHASE 41</b>        |          |   |   | <b>\$100,000</b> |

| R/W OPS (PHASE 4B)                        |     |   |           | Amount                      |
|-------------------------------------------|-----|---|-----------|-----------------------------|
| 4. Appraisal Fees Through Trial           |     | 5 | Parcels x | 30,000 = 150,000            |
| 5. Business Damage CPA Fees Through Trial |     | 0 | Claims x  | 19,000 = 0                  |
| 6. Court Reporter & Process Servers       | 50% | x | 3         | Parcels x 500 = 1,500       |
| 7. Expert Witness                         | 75% | x | 4         | Parcels x 30,000 = 120,000  |
| 8. Mediators                              | 75% | x | 4         | Parcels x 2,400 = 9,600     |
| 9. Demolition, Asb. Abate., Survey, etc.  |     |   | 7         | Imprvmet x 15,000 = 105,000 |
| 10. Miscellaneous Contracts               |     |   | 0         | Per Project x 15,000 = 0    |
| 11. Appraisal Fee Review                  |     |   | 0         | Parcels x 5,000 = 0         |
| 12.                                       |     |   |           |                             |
| <b>TOTAL PHASE 4B</b>                     |     |   |           | <b>\$386,100</b>            |

| R/W LAND COSTS (PHASE 43)                                          |           |   |                              | Amount    | Subtotal           |
|--------------------------------------------------------------------|-----------|---|------------------------------|-----------|--------------------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0         | x | 120% * Design plan stage =   | 0         |                    |
| 14. Water Retention & Mit. (0 Ponds)                               | 1,729,738 | x | 120% (0 Parcels w/o R/W Acq) | 2,075,700 |                    |
| 15. SUBTOTAL (61,432 SF)                                           |           |   | (Lines 13 & 14)              |           | 2,075,700          |
| 16. Admin. Settlements (Factor                                     | 20%       | x | 60% of Line 15)              | = 249,100 |                    |
| 17. Litigation Awards (Factor                                      | 45%       | x | 40% of Line 15)              | = 373,600 |                    |
| 18. Business Damages (Claims                                       | 0         | x | 0 )                          | = 0       |                    |
| 19. Bus. Damages Incr (Factor                                      | 25%       | x | \$ - )                       | = 0       |                    |
| 20. Owner Appr. Fees (Parcels                                      | 5         | x | \$15,000 )                   | = 75,000  |                    |
| 21. Owner CPA Fees (Claims                                         | 0         | x | \$16,000 )                   | = 0       |                    |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 622,700   | x | 33% )                        | = 205,500 |                    |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 3         | + | 0 ) x 18,000                 | = 54,000  |                    |
| 24. Other Condemn. Costs                                           | 5         | x | \$1,000                      | = 5,000   |                    |
| 25. SUBTOTAL                                                       |           |   | (Lines 16 thru 24)           | = 962,200 |                    |
| 26.                                                                |           |   |                              |           |                    |
| <b>TOTAL PHASE 43</b>                                              |           |   |                              |           | <b>\$3,037,900</b> |

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

| R/W ACQUISITION CONSULTANT (PHASE 42)     |          |   |   | Amount     |
|-------------------------------------------|----------|---|---|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x | 0 |            |
| <b>TOTAL PHASE 42</b>                     |          |   |   | <b>\$0</b> |

| RELOCATION COSTS (PHASE 45)  |          |   |                      | Amount           |
|------------------------------|----------|---|----------------------|------------------|
| <b>Replacement Housing</b>   |          |   |                      |                  |
| 28. Owner                    | \$35,000 | x | 1                    | = 35,000         |
| 29. Tenant                   | \$25,000 | x | 4                    | = 100,000        |
| <b>Move Costs</b>            |          |   |                      |                  |
| 30. Residential              | \$5,000  | x | 5                    | = 25,000         |
| 31. Business/Farm            | \$40,000 | x | 9                    | = 360,000        |
| 32. Personal Property        | \$3,000  | x | 0                    | = 0              |
| 33. (Lines 28 thru 32)       |          |   |                      |                  |
| 34. Relocation Services Cost | \$52,000 |   | (Not in Phase Total) |                  |
| <b>TOTAL PHASE 45</b>        |          |   |                      | <b>\$520,000</b> |

| (All Phases) TOTAL ESTIMATE |  |  |  |
|-----------------------------|--|--|--|
| <b>\$4,044,000</b>          |  |  |  |

|                                           |                                   |                       |
|-------------------------------------------|-----------------------------------|-----------------------|
| <b>Real Estate:</b> Roger D. Patton       | <b>Signed:</b> <i>[Signature]</i> | <b>Date:</b> 01/15/19 |
| <b>Bus. Dam. :</b> Alfred J. Thompson     | <b>Signed:</b> <i>[Signature]</i> | <b>Date:</b> 01/15/19 |
| <b>Relocation:</b> Roger D. Patton        | <b>Signed:</b> <i>[Signature]</i> | <b>Date:</b> 01/15/19 |
| <b>Overall Review:</b> Alfred J. Thompson | <b>Signed:</b> <i>[Signature]</i> | <b>Date:</b> 01/15/19 |

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

**REMARKS:**

This estimate is for SMF-11B. A portion of this pond alternate was included in the prior estimate. The comparison between alternates is not applicable as the size and properties impacted are different.

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

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

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

**Work Program Update:** \_\_\_\_\_ **Gaming 1:** \_\_\_\_\_ **Special Purpose:** ☒ **Docs to RW:** \_\_\_\_\_

**Comments:** \_\_\_\_\_



# **FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                                                                    |                  |                    |
|--------------------------------------------------------------------|------------------|--------------------|
| FM#: 424501-1                                                      | Alternate: N/A   | District: Seven    |
| County: Pinellas                                                   | Segment: SMF-11C | Date: 4-Jan-19     |
| State Rd.: N/A                                                     | FAP#: N/A        | C.E. Sequence: N/A |
| Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                  |                    |

| Parcels       | Gross | Net | Estimated Relocates: |
|---------------|-------|-----|----------------------|
| Commercial    | 0     | 0   | Business 0           |
| Residential   | 0     | 0   | Residential 0        |
| Unimproved    | 1     | 1   | Signs 0              |
|               |       |     | Special 0            |
| Total Parcels | 1     | 1   | Total Relocates 0    |

| R/W SUPPORT COSTS (PHASE 41) |           |   |                  | Amount          |
|------------------------------|-----------|---|------------------|-----------------|
| 1. Direct Labor Cost         | (Parcels) | 1 | x 20,000 = Rate) | 20,000          |
| 2. Indirect Overhead         | (Parcels) | 1 | x 0 = Rate)      | 0               |
| 3.                           |           |   |                  |                 |
| <b>TOTAL PHASE 41</b>        |           |   |                  | <b>\$20,000</b> |

| R/W OPS (PHASE 4B)                        |     |       |                        | Amount          |
|-------------------------------------------|-----|-------|------------------------|-----------------|
| 4. Appraisal Fees Through Trial           |     | 1     | Parcels x 30,000 =     | 30,000          |
| 5. Business Damage CPA Fees Through Trial |     | 0     | Claims x 19,000 =      | 0               |
| 6. Court Reporter & Process Servers       | 50% | x 1 = | 1 Parcels x 500 =      | 500             |
| 7. Expert Witness                         | 75% | x 1 = | 1 Parcels x 30,000 =   | 30,000          |
| 8. Mediators                              | 75% | x 1 = | 1 Parcels x 2,400 =    | 2,400           |
| 9. Demolition, Asb. Abate., Survey, etc.  |     | 0     | Imprymet x 15,000 =    | 0               |
| 10. Miscellaneous Contracts               |     | 0     | Per Project x 15,000 = | 0               |
| 11. Appraisal Fee Review                  |     | 0     | Parcels x 5,000 =      | 0               |
| 12.                                       |     |       |                        |                 |
| <b>TOTAL PHASE 4B</b>                     |     |       |                        | <b>\$62,900</b> |

| R/W LAND COSTS (PHASE 43)                                          |         |                                |         | Amount | Subtotal         |
|--------------------------------------------------------------------|---------|--------------------------------|---------|--------|------------------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0       | x 120% * Design plan stage =   | 0       |        |                  |
| 14. Water Retention & Mit. (0 Ponds)                               | 294,030 | x 120% (0 Parcels w/o R/W Acq) | 352,800 |        |                  |
| 15. SUBTOTAL (57,648 SF)                                           |         | (Lines 13 & 14)                |         |        | 352,800          |
| 16. Admin. Settlements (Factor                                     | 0%      | x 60% of Line 15)              | =       | 0      |                  |
| 17. Litigation Awards (Factor                                      | 0%      | x 40% of Line 15)              | =       | 0      |                  |
| 18. Business Damages (Claims                                       | 0       | x 0)                           | =       | 0      |                  |
| 19. Bus. Damages Incr (Factor                                      | 25%     | x \$ - )                       | =       | 0      |                  |
| 20. Owner Appr. Fees (Parcels                                      | 1       | x \$15,000)                    | =       | 15,000 |                  |
| 21. Owner CPA Fees (Claims                                         | 0       | x \$16,000)                    | =       | 0      |                  |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 0       | x 33%)                         | =       | 0      |                  |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0       | + 1) x 18,000                  | =       | 18,000 |                  |
| 24. Other Condemn. Costs                                           | 1       | x \$1,000                      | =       | 1,000  |                  |
| 25. SUBTOTAL                                                       |         | (Lines 16 thru 24)             | =       |        | 34,000           |
| 26.                                                                |         |                                |         |        |                  |
| <b>TOTAL PHASE 43</b>                                              |         |                                |         |        | <b>\$386,800</b> |

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

| R/W ACQUISITION CONSULTANT (PHASE 42)     |          |     |  | Amount     |
|-------------------------------------------|----------|-----|--|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x 0 |  | 0          |
| <b>TOTAL PHASE 42</b>                     |          |     |  | <b>\$0</b> |

| RELOCATION COSTS (PHASE 45)  |          |                      |   | Amount     |
|------------------------------|----------|----------------------|---|------------|
| Replacement Housing          |          |                      |   |            |
| 28. Owner                    | \$35,000 | x 0                  | = | 0          |
| 29. Tenant                   | \$25,000 | x 0                  | = | 0          |
| Move Costs                   |          |                      |   |            |
| 30. Residential              | \$5,000  | x 0                  | = | 0          |
| 31. Business/Farm            | \$40,000 | x 0                  | = | 0          |
| 32. Personal Property        | \$3,000  | x 0                  | = | 0          |
| 33. (Lines 28 thru 32)       |          |                      |   |            |
| 34. Relocation Services Cost | \$0      | (Not in Phase Total) |   |            |
| <b>TOTAL PHASE 45</b>        |          |                      |   | <b>\$0</b> |

|                                    |  |  |  |                  |
|------------------------------------|--|--|--|------------------|
| 35.                                |  |  |  |                  |
| 36.                                |  |  |  |                  |
| 37.                                |  |  |  |                  |
| (All Phases) <b>TOTAL ESTIMATE</b> |  |  |  | <b>\$469,700</b> |

|                                    |                            |                |
|------------------------------------|----------------------------|----------------|
| Real Estate: Roger D. Patton       | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Bus. Dam. : Alfred J. Thompson     | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: <i>[Signature]</i> | Date: 01/15/19 |

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

REMARKS:

This estimate is for SMF-11C. This is proposed as a permanent easement on an existing pond site.

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

Type A - indicates the most confidence

Type B - indicates above average confidence

x Type C - indicates below average confidence

Type D - indicates the least or no confidence

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

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

Comments: \_\_\_\_\_



**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                  |                    |                    |
|------------------|--------------------|--------------------|
| FM#: 424501-1    | Alternate: SMF-12A | District: Seven    |
| County: Pinellas | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A   | FAP#: N/A          | C.E. Sequence: N/A |

Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites

| Parcels              | Gross    | Net      |
|----------------------|----------|----------|
| Commercial           | 1        | 1        |
| Residential          | 0        | 0        |
| Unimproved           | 1        | 1        |
| <b>Total Parcels</b> | <b>2</b> | <b>2</b> |

**Estimated Relocates:**

|                        |          |
|------------------------|----------|
| Business               | 0        |
| Residential            | 0        |
| Signs                  | 0        |
| Special                | 1        |
| <b>Total Relocates</b> | <b>1</b> |

**R/W SUPPORT COSTS (PHASE 41)**

|                      |           |   |   |        |   |       |                       |                 |
|----------------------|-----------|---|---|--------|---|-------|-----------------------|-----------------|
| 1. Direct Labor Cost | (Parcels) | 2 | x | 20,000 | = | Rate) | Amount                | 40,000          |
| 2. Indirect Overhead | (Parcels) | 2 | x | 0      | = | Rate) | 0                     |                 |
| 3.                   |           |   |   |        |   |       | <b>TOTAL PHASE 41</b> | <b>\$40,000</b> |

**R/W OPS (PHASE 4B)**

|                                           |     |         |             |        |        |        |                       |                  |
|-------------------------------------------|-----|---------|-------------|--------|--------|--------|-----------------------|------------------|
| 4. Appraisal Fees Through Trial           | 2   | Parcels | x           | 30,000 | =      | 60,000 | Amount                |                  |
| 5. Business Damage CPA Fees Through Trial | 1   | Claims  | x           | 19,000 | =      | 19,000 |                       |                  |
| 6. Court Reporter & Process Servers       | 50% | 1       | Parcels     | x      | 500    | =      | 500                   |                  |
| 7. Expert Witness                         | 75% | 2       | Parcels     | x      | 30,000 | =      | 60,000                |                  |
| 8. Mediators                              | 75% | 2       | Parcels     | x      | 2,400  | =      | 4,800                 |                  |
| 9. Demolition, Asb. Abate., Survey, etc.  |     | 1       | Imprvmet    | x      | 15,000 | =      | 15,000                |                  |
| 10. Miscellaneous Contracts               |     | 0       | Per Project | x      | 15,000 | =      | 0                     |                  |
| 11. Appraisal Fee Review                  |     | 0       | Parcels     | x      | 5,000  | =      | 0                     |                  |
| 12.                                       |     |         |             |        |        |        | <b>TOTAL PHASE 4B</b> | <b>\$159,300</b> |

**R/W LAND COSTS (PHASE 43)**

|                                                                    |         |   |             |                         |   |           |                       |                    |
|--------------------------------------------------------------------|---------|---|-------------|-------------------------|---|-----------|-----------------------|--------------------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0       | x | 120%        | * Design plan stage     | = | 0         | Amount                | Subtotal           |
| 14. Water Retention & Mit. (0 Ponds)                               | 439,844 | x | 120%        | (0 Parcels w/o R/W Acq) | = | 527,800   |                       |                    |
| 15. SUBTOTAL (87,120 SF)                                           |         |   |             | (Lines 13 & 14)         |   |           |                       | 527,800            |
| 16. Admin. Settlements (Factor                                     | 20%     | x | 60%         | of Line 15)             | = | 63,300    |                       |                    |
| 17. Litigation Awards (Factor                                      | 45%     | x | 40%         | of Line 15)             | = | 95,000    |                       |                    |
| 18. Business Damages (Claims                                       | 1       | x | 0           | )                       | = | 1,200,000 |                       |                    |
| 19. Bus. Damages Incr (Factor                                      | 25%     | x | \$1,200,000 | )                       | = | 300,000   |                       |                    |
| 20. Owner Appr. Fees (Parcels                                      | 2       | x | \$15,000    | )                       | = | 30,000    |                       |                    |
| 21. Owner CPA Fees (Claims                                         | 1       | x | \$16,000    | )                       | = | 16,000    |                       |                    |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 458,300 | x | 33%         | )                       | = | 151,200   |                       |                    |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 1       | + | 1           | x 18,000                | = | 36,000    |                       |                    |
| 24. Other Condemn. Costs                                           | 2       | x | \$1,000     |                         | = | 2,000     |                       |                    |
| 25. SUBTOTAL                                                       |         |   |             | (Lines 16 thru 24)      | = | 1,893,500 |                       |                    |
| 26.                                                                |         |   |             |                         |   |           | <b>TOTAL PHASE 43</b> | <b>\$2,421,300</b> |

\* Design contingency for design plan stage:

(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans -105% (5) 268 Date -100%

**R/W ACQUISITION CONSULTANT (PHASE 42)**

|                                           |          |   |   |  |  |                       |            |
|-------------------------------------------|----------|---|---|--|--|-----------------------|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x | 0 |  |  | <b>TOTAL PHASE 42</b> | <b>\$0</b> |
|-------------------------------------------|----------|---|---|--|--|-----------------------|------------|

**RELOCATION COSTS (PHASE 45)**

|                                             |          |         |                      |                       |
|---------------------------------------------|----------|---------|----------------------|-----------------------|
| Replacement Housing                         |          | Number  | Amount               |                       |
| 28. Owner                                   | \$35,000 | x       | 0                    | = 0                   |
| 29. Tenant                                  | \$25,000 | x       | 0                    | = 0                   |
| Move Costs                                  |          |         |                      |                       |
| 30. Residential                             | \$5,000  | x       | 0                    | = 0                   |
| 31. Business/Farm                           | \$40,000 | x       | 0                    | = 0                   |
| 32. Personal Property (Parcel 1 + \$30,000) | \$3,000  | x       | 1                    | = 33,000              |
| 33. (Lines 28 thru 32)                      |          |         |                      |                       |
| 34. Relocation Services Cost                |          | \$3,300 | (Not in Phase Total) |                       |
| 35.                                         |          |         |                      |                       |
| 36.                                         |          |         |                      |                       |
| 37.                                         |          |         |                      |                       |
|                                             |          |         | (All Phases)         | <b>TOTAL PHASE 45</b> |
|                                             |          |         |                      | <b>\$33,000</b>       |

|                                    |                            |                |
|------------------------------------|----------------------------|----------------|
| Real Estate: Roger D. Patton       | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Bus. Dam. : Alfred J. Thompson     | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: <i>[Signature]</i> | Date: 01/15/19 |

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

**REMARKS:**

This estimate is for SMF- 12A. This is the first cost estimate we have performed for this alternate.  
An access easement from 13th Avenue N will be required to access this site and is not included in the total cost.

It is recommended that the engineer consider shifting this pond onto Parcel 2, a vacant tract with an existing access easement. A potential cost savings of \$2,095,100 is estimated when shifting the entire pond site onto Parcel 2.

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

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

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

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

Comments:



**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                  |                    |                    |
|------------------|--------------------|--------------------|
| FM#: 424501-1    | Alternate: SMF-12B | District: Seven    |
| County: Pinellas | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A   | FAP#: N/A          | C.E. Sequence: N/A |

Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites

| Parcels       | Gross | Net |
|---------------|-------|-----|
| Commercial    | 5     | 5   |
| Residential   | 0     | 0   |
| Unimproved    | 0     | 0   |
| Total Parcels | 5     | 5   |

| Estimated Relocates: |   |
|----------------------|---|
| Business             | 4 |
| Residential          | 0 |
| Signs                | 0 |
| Special              | 1 |
| Total Relocates      | 5 |

**R/W SUPPORT COSTS (PHASE 41)**

|                      |           |   |   |        |   |       |                       |                  |
|----------------------|-----------|---|---|--------|---|-------|-----------------------|------------------|
| 1. Direct Labor Cost | (Parcels) | 5 | x | 20,000 | = | Rate) | Amount                | 100,000          |
| 2. Indirect Overhead | (Parcels) | 5 | x | 0      | = | Rate) | 0                     |                  |
| 3.                   |           |   |   |        |   |       | <b>TOTAL PHASE 41</b> | <b>\$100,000</b> |

**R/W OPS (PHASE 4B)**

|                                           |     |   |   |   | Amount  |                             |
|-------------------------------------------|-----|---|---|---|---------|-----------------------------|
| 4. Appraisal Fees Through Trial           |     |   |   | 5 | Parcels | x 30,000 = 150,000          |
| 5. Business Damage CPA Fees Through Trial |     |   |   | 0 | Claims  | x 19,000 = 0                |
| 6. Court Reporter & Process Servers       | 50% | x | 5 | = | 3       | Parcels x 500 = 1,500       |
| 7. Expert Witness                         | 75% | x | 5 | = | 4       | Parcels x 30,000 = 120,000  |
| 8. Mediators                              | 75% | x | 5 | = | 4       | Parcels x 2,400 = 9,600     |
| 9. Demolition, Asb. Abate., Survey, etc.  |     |   |   |   | 8       | Imprvmet x 15,000 = 120,000 |
| 10. Miscellaneous Contracts               |     |   |   |   | 0       | Per Project x 15,000 = 0    |
| 11. Appraisal Fee Review                  |     |   |   |   | 0       | Parcels x 5,000 = 0         |
| 12.                                       |     |   |   |   |         |                             |
| TOTAL PHASE 4B                            |     |   |   |   |         | \$401,100                   |

**R/W LAND COSTS (PHASE 43)**

|                                                                    |           |   |                              |   |           | Amount         | Subtotal    |
|--------------------------------------------------------------------|-----------|---|------------------------------|---|-----------|----------------|-------------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0         | x | 120% * Design plan stage     | = | 0         |                |             |
| 14. Water Retention & Mit. (0 Ponds)                               | 2,112,276 | x | 120% (0 Parcels w/o R/W Acq) | = | 2,534,700 |                |             |
| 15. SUBTOTAL (83,648 SF)                                           |           |   | (Lines 13 & 14)              |   |           |                | 2,534,700   |
| 16. Admin. Settlements (Factor                                     | 20%       | x | 60% of Line 15)              | = | 304,200   |                |             |
| 17. Litigation Awards (Factor                                      | 45%       | x | 40% of Line 15)              | = | 456,200   |                |             |
| 18. Business Damages (Claims                                       | 0         | x | 0 )                          | = | 0         |                |             |
| 19. Bus. Damages Incr (Factor                                      | 25%       | x | \$ - )                       | = | 0         |                |             |
| 20. Owner Appr. Fees (Parcels                                      | 5         | x | \$15,000 )                   | = | 75,000    |                |             |
| 21. Owner CPA Fees (Claims                                         | 0         | x | \$16,000 )                   | = | 0         |                |             |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 760,400   | x | 33% )                        | = | 250,900   |                |             |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 5         | + | 0 ) x 18,000                 | = | 90,000    |                |             |
| 24. Other Condemn. Costs                                           | 5         | x | \$1,000                      | = | 5,000     |                |             |
| 25. SUBTOTAL                                                       |           |   | (Lines 16 thru 24)           | = |           |                | 1,181,300   |
| 26.                                                                |           |   |                              |   |           |                |             |
|                                                                    |           |   |                              |   |           | TOTAL PHASE 43 | \$3,716,000 |

\* Design contingency for design plan stage:

(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans -105% (5) 268 Date -100%

**R/W ACQUISITION CONSULTANT (PHASE 42)**

|                                           |          |   |   |  |  |                       |            |
|-------------------------------------------|----------|---|---|--|--|-----------------------|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x | 0 |  |  | <b>TOTAL PHASE 42</b> | <b>\$0</b> |
|-------------------------------------------|----------|---|---|--|--|-----------------------|------------|

**RELOCATION COSTS (PHASE 45)**

| Replacement Housing          |          | Number   | Amount               |
|------------------------------|----------|----------|----------------------|
| 28. Owner                    | \$35,000 | x 0      | = 0                  |
| 29. Tenant                   | \$25,000 | x 0      | = 0                  |
| Move Costs                   |          |          |                      |
| 30. Residential              | \$5,000  | x 0      | = 0                  |
| 31. Business/Farm            | \$40,000 | x 4      | = 160,000            |
| 32. Personal Property        | \$3,000  | x 1      | = 3,000              |
| 33. (Lines 28 thru 32)       |          |          |                      |
| 34. Relocation Services Cost |          | \$16,300 | (Not in Phase Total) |
| TOTAL PHASE 45               |          |          | \$163,000            |

|     |  |  |  |              |                       |  |                    |
|-----|--|--|--|--------------|-----------------------|--|--------------------|
| 35. |  |  |  |              |                       |  |                    |
| 36. |  |  |  |              |                       |  |                    |
| 37. |  |  |  | (All Phases) | <b>TOTAL ESTIMATE</b> |  | <b>\$4,380,100</b> |

|                                    |                            |                |
|------------------------------------|----------------------------|----------------|
| Real Estate: Roger D. Patton       | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Bus. Dam.: Alfred J. Thompson      | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: <i>[Signature]</i> | Date: 01/15/19 |

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

**REMARKS:**

This estimate is for SMF-12B and is the first cost estimate we have performed for this alternate.

The parcels are all improved commercial lots.

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

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

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

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

Comments:



# **FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10082698-1-12.19

|                  |                    |                    |
|------------------|--------------------|--------------------|
| FM#: 424501-1    | Alternate: SMF-12C | District: Seven    |
| County: Pinellas | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A   | FAP#: N/A          | C.E. Sequence: N/A |

Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites

| Parcels              | Gross     | Net       |
|----------------------|-----------|-----------|
| Commercial           | 0         | 0         |
| Residential          | 12        | 12        |
| Unimproved           | 0         | 0         |
| <b>Total Parcels</b> | <b>12</b> | <b>12</b> |

|                             |           |
|-----------------------------|-----------|
| <b>Estimated Relocates:</b> |           |
| Business                    | 5         |
| Residential                 | 12        |
| Signs                       | 0         |
| Special                     | 0         |
| <b>Total Relocates</b>      | <b>17</b> |

## **R/W SUPPORT COSTS (PHASE 41)**

|                      |           |    |   |        |   |       |                       |                  |
|----------------------|-----------|----|---|--------|---|-------|-----------------------|------------------|
| 1. Direct Labor Cost | (Parcels) | 12 | x | 20,000 | = | Rate) | Amount                | 240,000          |
| 2. Indirect Overhead | (Parcels) | 12 | x | 0      | = | Rate) | 0                     |                  |
| 3.                   |           |    |   |        |   |       | <b>TOTAL PHASE 41</b> | <b>\$240,000</b> |

## **R/W OPS (PHASE 4B)**

| NEW CP'S (PHASE 4B)                       |     |   |    |   | Amount |             |   |          |           |
|-------------------------------------------|-----|---|----|---|--------|-------------|---|----------|-----------|
| 4. Appraisal Fees Through Trial           |     |   |    |   | 12     | Parcels     | x | 30,000 = | 360,000   |
| 5. Business Damage CPA Fees Through Trial |     |   |    |   | 0      | Claims      | x | 19,000 = | 0         |
| 6. Court Reporter & Process Servers       | 50% | x | 12 | = | 6      | Parcels     | x | 500 =    | 3,000     |
| 7. Expert Witness                         | 75% | x | 12 | = | 9      | Parcels     | x | 30,000 = | 270,000   |
| 8. Mediators                              | 75% | x | 12 | = | 9      | Parcels     | x | 2,400 =  | 21,600    |
| 9. Demolition, Asb. Abate., Survey, etc.  |     |   |    |   | 12     | Imprvmet    | x | 15,000 = | 180,000   |
| 10. Miscellaneous Contracts               |     |   |    |   | 0      | Per Project | x | 15,000 = | 0         |
| 11. Appraisal Fee Review                  |     |   |    |   | 0      | Parcels     | x | 5,000 =  | 0         |
| 12.                                       |     |   |    |   |        |             |   |          |           |
| TOTAL PHASE 4B                            |     |   |    |   |        |             |   |          | \$834,600 |

## **R/W LAND COSTS (PHASE 43)**

|                                                                    |           |   |                              |   |           |                       |                    |
|--------------------------------------------------------------------|-----------|---|------------------------------|---|-----------|-----------------------|--------------------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0         | x | 120% * Design plan stage     | = | 0         | Amount                | Subtotal           |
| 14. Water Retention & Mit. (0 Ponds)                               | 1,798,813 | x | 120% (0 Parcels w/o R/W Acq) | = | 2,158,600 |                       |                    |
| 15. SUBTOTAL (95,832 SF)                                           |           |   | (Lines 13 & 14)              |   |           |                       | 2,158,600          |
| 16. Admin. Settlement (Factor                                      | 20%       | x | 60% of Line 15)              | = | 259,000   |                       |                    |
| 17. Litigation Awards (Factor                                      | 45%       | x | 40% of Line 15)              | = | 388,500   |                       |                    |
| 18. Business Damages (Claims                                       | 0         | x | 0 )                          | = | 0         |                       |                    |
| 19. Bus. Damages Incr (Factor                                      | 25%       | x | \$ - )                       | = | 0         |                       |                    |
| 20. Owner Appr. Fees (Parcels                                      | 12        | x | \$15,000 )                   | = | 180,000   |                       |                    |
| 21. Owner CPA Fees (Claims                                         | 0         | x | \$16,000 )                   | = | 0         |                       |                    |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 647,500   | x | 33% )                        | = | 213,700   |                       |                    |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0         | + | 0 ) x 18,000                 | = | 0         |                       |                    |
| 24. Other Condemn. Costs                                           | 12        | x | \$1,000                      | = | 12,000    |                       |                    |
| 25. SUBTOTAL                                                       |           |   | (Lines 16 thru 24)           | = | 1,053,200 |                       |                    |
| 26.                                                                |           |   |                              |   |           | <b>TOTAL PHASE 43</b> | <b>\$3,211,800</b> |

\* Design contingency for design plan stage:

(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans -105% (5) 268 Date -100%





## **R/W ACQUISITION CONSULTANT (PHASE 42)**

|                                           |          |   |   |  |                       |            |
|-------------------------------------------|----------|---|---|--|-----------------------|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x | 0 |  | <b>TOTAL PHASE 42</b> | <b>\$0</b> |
|-------------------------------------------|----------|---|---|--|-----------------------|------------|

## **RELOCATION COSTS (PHASE 45)**

|                              |          |                       |                  |
|------------------------------|----------|-----------------------|------------------|
| Replacement Housing          |          | Number                | Amount           |
| 28. Owner                    | \$35,000 | x 7                   | = 245,000        |
| 29. Tenant                   | \$25,000 | x 5                   | = 125,000        |
| Move Costs                   |          |                       |                  |
| 30. Residential              | \$5,000  | x 12                  | = 60,000         |
| 31. Business/Farm            | \$40,000 | x 5                   | = 200,000        |
| 32. Personal Property        | \$3,000  | x 0                   | = 0              |
| 33. (Lines 28 thru 32)       |          |                       |                  |
| 34. Relocation Services Cost | \$63,000 | (Not in Phase Total)  |                  |
|                              |          | <b>TOTAL PHASE 45</b> | <b>\$630,000</b> |

|     |  |              |                       |  |  |                    |
|-----|--|--------------|-----------------------|--|--|--------------------|
| 35. |  |              |                       |  |  |                    |
| 36. |  |              |                       |  |  |                    |
| 37. |  |              |                       |  |  |                    |
|     |  | (All Phases) | <b>TOTAL ESTIMATE</b> |  |  | <b>\$4,916,400</b> |

|                                    |         |                                                                                     |                |
|------------------------------------|---------|-------------------------------------------------------------------------------------|----------------|
| Real Estate: Roger D. Patton       | Signed: |  | Date: 01/15/19 |
| Bus. Dam. : Alfred J. Thompson     | Signed: |  | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: |  | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: |  | Date: 01/15/19 |

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

## **REMARKS:**

This estimate is for SMF- 12C. This is the first cost estimate we have performed for this alternate.

The parcels are all improved residential lots.

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

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

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

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

Comments:



# **FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                  |                    |                    |
|------------------|--------------------|--------------------|
| FM#: 424501-1    | Alternate: SMF-13A | District: Seven    |
| County: Pinellas | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A   | FAP#: N/A          | C.E. Sequence: N/A |

Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites

| Parcels              | Gross    | Net      |
|----------------------|----------|----------|
| Commercial           | 0        | 0        |
| Residential          | 6        | 6        |
| Unimproved           | 0        | 0        |
| <b>Total Parcels</b> | <b>6</b> | <b>6</b> |

## **Estimated Relocates:**

|                        |          |
|------------------------|----------|
| Business               | 0        |
| Residential            | 6        |
| Signs                  | 0        |
| Special                | 0        |
| <b>Total Relocates</b> | <b>6</b> |

## **R/W SUPPORT COSTS (PHASE 41)**

|                      |          |   |   |        |   |       |                       |                  |
|----------------------|----------|---|---|--------|---|-------|-----------------------|------------------|
| 1. Direct Labor Cost | (Parcels | 6 | x | 20,000 | = | Rate) | Amount                | 120,000          |
| 2. Indirect Overhead | (Parcels | 6 | x | 0      | = | Rate) | 0                     |                  |
| 3.                   |          |   |   |        |   |       | <b>TOTAL PHASE 41</b> | <b>\$120,000</b> |

## **R/W OPS (PHASE 4B)**

|                                           |     |         |   |        |   |             |                       |                  |
|-------------------------------------------|-----|---------|---|--------|---|-------------|-----------------------|------------------|
| 4. Appraisal Fees Through Trial           | 6   | Parcels | x | 30,000 | = | 180,000     | Amount                | 180,000          |
| 5. Business Damage CPA Fees Through Trial | 0   | Claims  | x | 19,000 | = | 0           |                       | 0                |
| 6. Court Reporter & Process Servers       | 50% | x       | 6 | =      | 3 | Parcels     | x                     | 500 = 1,500      |
| 7. Expert Witness                         | 75% | x       | 6 | =      | 5 | Parcels     | x                     | 30,000 = 150,000 |
| 8. Mediators                              | 75% | x       | 6 | =      | 5 | Parcels     | x                     | 2,400 = 12,000   |
| 9. Demolition, Asb. Abate., Survey, etc.  |     |         |   |        | 8 | Imprvmet    | x                     | 15,000 = 120,000 |
| 10. Miscellaneous Contracts               |     |         |   |        | 0 | Per Project | x                     | 15,000 = 0       |
| 11. Appraisal Fee Review                  |     |         |   |        | 0 | Parcels     | x                     | 5,000 = 0        |
| 12.                                       |     |         |   |        |   |             | <b>TOTAL PHASE 4B</b> | <b>\$463,500</b> |

## **R/W LAND COSTS (PHASE 43)**

|                                                                    |         |   |          |                         |   |           |                       |                    |          |
|--------------------------------------------------------------------|---------|---|----------|-------------------------|---|-----------|-----------------------|--------------------|----------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0       | x | 120%     | * Design plan stage     | = | 0         | Amount                |                    | Subtotal |
| 14. Water Retention & Mit. (0 Ponds)                               | 935,965 | x | 120%     | (0 Parcels w/o R/W Acq) | = | 1,123,200 |                       |                    |          |
| 15. SUBTOTAL (56,628 SF)                                           |         |   |          | (Lines 13 & 14)         |   |           |                       | 1,123,200          |          |
| 16. Admin. Settlements (Factor                                     | 20%     | x | 60%      | of Line 15)             | = | 134,800   |                       |                    |          |
| 17. Litigation Awards (Factor                                      | 45%     | x | 40%      | of Line 15)             | = | 202,200   |                       |                    |          |
| 18. Business Damages (Claims                                       | 0       | x | 0        | )                       | = | 0         |                       |                    |          |
| 19. Bus. Damages Incr (Factor                                      | 25%     | x | \$       | - )                     | = | 0         |                       |                    |          |
| 20. Owner Appr. Fees (Parcels                                      | 6       | x | \$15,000 | )                       | = | 90,000    |                       |                    |          |
| 21. Owner CPA Fees (Claims                                         | 0       | x | \$16,000 | )                       | = | 0         |                       |                    |          |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 337,000 | x | 33%      | )                       | = | 111,200   |                       |                    |          |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0       | + | 0        | x 18,000                | = | 0         |                       |                    |          |
| 24. Other Condemn. Costs                                           | 6       | x | \$1,000  | )                       | = | 6,000     |                       |                    |          |
| 25. SUBTOTAL                                                       |         |   |          | (Lines 16 thru 24)      | = | 544,200   |                       |                    |          |
| 26.                                                                |         |   |          |                         |   |           | <b>TOTAL PHASE 43</b> | <b>\$1,667,400</b> |          |

\* Design contingency for design plan stage:

(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans - 105% (5) 268 Date - 100%

## **R/W ACQUISITION CONSULTANT (PHASE 42)**

|                                           |          |   |   |  |                       |            |
|-------------------------------------------|----------|---|---|--|-----------------------|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x | 0 |  | <b>TOTAL PHASE 42</b> | <b>\$0</b> |
|-------------------------------------------|----------|---|---|--|-----------------------|------------|

## **RELOCATION COSTS (PHASE 45)**

|                               |          |   |   |   |                      |                       |                  |
|-------------------------------|----------|---|---|---|----------------------|-----------------------|------------------|
| 28. Owner Replacement Housing | \$35,000 | x | 6 | = | 210,000              | Number                | Amount           |
| 29. Tenant                    | \$25,000 | x | 0 | = | 0                    |                       |                  |
| 30. Residential Move Costs    | \$5,000  | x | 6 | = | 30,000               |                       |                  |
| 31. Business/Farm             | \$40,000 | x | 0 | = | 0                    |                       |                  |
| 32. Personal Property         | \$3,000  | x | 0 | = | 0                    |                       |                  |
| 33. (Lines 28 thru 32)        |          |   |   |   |                      |                       |                  |
| 34. Relocation Services Cost  | \$24,000 |   |   |   | (Not in Phase Total) | <b>TOTAL PHASE 45</b> | <b>\$240,000</b> |

|     |  |  |  |  |  |  |  |
|-----|--|--|--|--|--|--|--|
| 35. |  |  |  |  |  |  |  |
| 36. |  |  |  |  |  |  |  |
| 37. |  |  |  |  |  |  |  |

|                                    |         |                       |       |          |
|------------------------------------|---------|-----------------------|-------|----------|
| Real Estate: Roger D. Patton       | Signed: | <i>R. D. Patton</i>   | Date: | 01/15/19 |
| Bus. Dam.: Alfred J. Thompson      | Signed: | <i>A. J. Thompson</i> | Date: | 01/15/19 |
| Relocation: Roger D. Patton        | Signed: | <i>R. D. Patton</i>   | Date: | 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: | <i>A. J. Thompson</i> | Date: | 01/15/19 |

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

## **REMARKS:**

This estimate is for SMF-13A. This is the first cost estimate we have performed for this alternate.

The parcels are all improved residential lots.

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

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

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

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

Comments:



**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                                                                    |                    |                    |
|--------------------------------------------------------------------|--------------------|--------------------|
| FM#: 424501-1                                                      | Alternate: SMF-13B | District: Seven    |
| County: Pinellas                                                   | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A                                                     | FAP#: N/A          | C.E. Sequence: N/A |
| Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                    |                    |

| Parcels       | Gross | Net | Estimated Relocates: |
|---------------|-------|-----|----------------------|
| Commercial    | 0     | 0   | Business 2           |
| Residential   | 3     | 3   | Residential 4        |
| Unimproved    | 0     | 0   | Signs 0              |
|               |       |     | Special 0            |
| Total Parcels | 3     | 3   | Total Relocates 6    |

| R/W SUPPORT COSTS (PHASE 41) |           |   |            | Amount          |
|------------------------------|-----------|---|------------|-----------------|
| 1. Direct Labor Cost         | (Parcels) | 3 | x 20,000 = | 60,000          |
| 2. Indirect Overhead         | (Parcels) | 3 | x 0 =      | 0               |
| 3.                           |           |   |            |                 |
| <b>TOTAL PHASE 41</b>        |           |   |            | <b>\$60,000</b> |

| R/W OPS (PHASE 4B)                        |     |         |            | Amount                      |
|-------------------------------------------|-----|---------|------------|-----------------------------|
| 4. Appraisal Fees Through Trial           | 3   | Parcels | x 30,000 = | 90,000                      |
| 5. Business Damage CPA Fees Through Trial | 0   | Claims  | x 19,000 = | 0                           |
| 6. Court Reporter & Process Servers       | 50% | x 3 =   | 2          | Parcels x 500 = 1,000       |
| 7. Expert Witness                         | 75% | x 3 =   | 2          | Parcels x 30,000 = 60,000   |
| 8. Mediators                              | 75% | x 3 =   | 2          | Parcels x 2,400 = 4,800     |
| 9. Demolition, Asb. Abate., Survey, etc.  |     |         | 7          | Imprvmet x 15,000 = 105,000 |
| 10. Miscellaneous Contracts               |     |         | 0          | Per Project x 15,000 = 0    |
| 11. Appraisal Fee Review                  |     |         | 0          | Parcels x 5,000 = 0         |
| 12.                                       |     |         |            |                             |
| <b>TOTAL PHASE 4B</b>                     |     |         |            | <b>\$260,800</b>            |

| R/W LAND COSTS (PHASE 43)                                          |         |                                |  | Amount           | Subtotal |
|--------------------------------------------------------------------|---------|--------------------------------|--|------------------|----------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0       | x 120% * Design plan stage =   |  | 0                |          |
| 14. Water Retention & Mit. (0 Ponds)                               | 447,316 | x 120% (0 Parcels w/o R/W Acq) |  | 536,800          |          |
| 15. SUBTOTAL (43,560 SF)                                           |         | (Lines 13 & 14)                |  |                  | 536,800  |
| 16. Admin. Settlements (Factor 20%)                                |         | x 60% of Line 15)              |  | 64,400           |          |
| 17. Litigation Awards (Factor 45%)                                 |         | x 40% of Line 15)              |  | 96,600           |          |
| 18. Business Damages (Claims 0)                                    |         | x 0)                           |  | 0                |          |
| 19. Bus. Damages Incr (Factor 25%)                                 |         | x \$ - )                       |  | 0                |          |
| 20. Owner Appr. Fees (Parcels 3)                                   |         | x \$15,000)                    |  | 45,000           |          |
| 21. Owner CPA Fees (Claims 0)                                      |         | x \$16,000)                    |  | 0                |          |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 161,000 | x 33%)                         |  | 53,100           |          |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0       | + 0) x 18,000                  |  | 0                |          |
| 24. Other Condemn. Costs                                           | 3       | x \$1,000                      |  | 3,000            |          |
| 25. SUBTOTAL                                                       |         | (Lines 16 thru 24)             |  |                  | 262,100  |
| 26.                                                                |         |                                |  |                  |          |
| <b>TOTAL PHASE 43</b>                                              |         |                                |  | <b>\$798,900</b> |          |

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

| R/W ACQUISITION CONSULTANT (PHASE 42)     |          |     |  | Amount     |
|-------------------------------------------|----------|-----|--|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x 0 |  | 0          |
| <b>TOTAL PHASE 42</b>                     |          |     |  | <b>\$0</b> |

| RELOCATION COSTS (PHASE 45)  |          |                      |   | Amount           |
|------------------------------|----------|----------------------|---|------------------|
| Replacement Housing          |          |                      |   |                  |
| 28. Owner                    | \$35,000 | x 1                  | = | 35,000           |
| 29. Tenant                   | \$25,000 | x 3                  | = | 75,000           |
| Move Costs                   |          |                      |   |                  |
| 30. Residential              | \$5,000  | x 4                  | = | 20,000           |
| 31. Business/Farm            | \$40,000 | x 2                  | = | 80,000           |
| 32. Personal Property        | \$3,000  | x 0                  | = | 0                |
| 33. (Lines 28 thru 32)       |          |                      |   |                  |
| 34. Relocation Services Cost | \$21,000 | (Not in Phase Total) |   |                  |
| <b>TOTAL PHASE 45</b>        |          |                      |   | <b>\$210,000</b> |

| (All Phases) TOTAL ESTIMATE |  |  |  |
|-----------------------------|--|--|--|
| \$1,329,700                 |  |  |  |

|                                    |                            |                |
|------------------------------------|----------------------------|----------------|
| Real Estate: Roger D. Patton       | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Bus. Dam. : Alfred J. Thompson     | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: <i>[Signature]</i> | Date: 01/15/19 |

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

REMARKS: This estimate is for SMF- 13B.

With the exception of some additional platted right of way, this estimate is essentially unchanged from the prior estimate dated July 30, 2018.

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

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

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

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

Comments:



**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                  |                    |                    |
|------------------|--------------------|--------------------|
| FM#: 424501-1    | Alternate: SMF-15A | District: Seven    |
| County: Pinellas | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A   | FAP#: N/A          | C.E. Sequence: N/A |

Project Des: I-275 From S. of 54th Ave to 4th Ave North Pond Sites

| Parcels              | Gross    | Net      |
|----------------------|----------|----------|
| Commercial           | 1        | 1        |
| Residential          | 0        | 0        |
| Unimproved           | 0        | 0        |
| <b>Total Parcels</b> | <b>1</b> | <b>1</b> |

**Estimated Relocates:**

|                        |          |
|------------------------|----------|
| Business               | 1        |
| Residential            | 1        |
| Signs                  | 0        |
| Special                | 1        |
| <b>Total Relocates</b> | <b>3</b> |

**R/W SUPPORT COSTS (PHASE 41)**

|                      |           |   |   |        |   |       |                       |                 |
|----------------------|-----------|---|---|--------|---|-------|-----------------------|-----------------|
| 1. Direct Labor Cost | (Parcels) | 1 | x | 20,000 | = | Rate) | Amount                | 20,000          |
| 2. Indirect Overhead | (Parcels) | 1 | x | 0      | = | Rate) | 0                     | 0               |
| 3.                   |           |   |   |        |   |       | <b>TOTAL PHASE 41</b> | <b>\$20,000</b> |

**R/W OPS (PHASE 4B)**

|                                           |     |         |             |        |        |        |                       |                 |
|-------------------------------------------|-----|---------|-------------|--------|--------|--------|-----------------------|-----------------|
| 4. Appraisal Fees Through Trial           | 1   | Parcels | x           | 30,000 | =      | 30,000 | Amount                | 30,000          |
| 5. Business Damage CPA Fees Through Trial | 0   | Claims  | x           | 19,000 | =      | 0      |                       | 0               |
| 6. Court Reporter & Process Servers       | 50% | 1       | x           | 1      | =      | 500    |                       | 500             |
| 7. Expert Witness                         | 75% | 1       | x           | 1      | =      | 30,000 |                       | 30,000          |
| 8. Mediators                              | 75% | 1       | x           | 1      | =      | 2,400  |                       | 2,400           |
| 9. Demolition, Asb. Abate., Survey, etc.  |     | 1       | Imprvmet    | x      | 15,000 | =      | 15,000                |                 |
| 10. Miscellaneous Contracts               |     | 0       | Per Project | x      | 15,000 | =      | 0                     |                 |
| 11. Appraisal Fee Review                  |     | 0       | Parcels     | x      | 5,000  | =      | 0                     |                 |
| 12.                                       |     |         |             |        |        |        | <b>TOTAL PHASE 4B</b> | <b>\$77,900</b> |

**R/W LAND COSTS (PHASE 43)**

|                                                                    |         |   |                              |   |         |        |                       |                    |
|--------------------------------------------------------------------|---------|---|------------------------------|---|---------|--------|-----------------------|--------------------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0       | x | 120% * Design plan stage     | = | 0       | Amount | Subtotal              |                    |
| 14. Water Retention & Mit. (0 Ponds)                               | 509,480 | x | 120% (0 Parcels w/o R/W Acq) | = | 611,400 |        |                       |                    |
| 15. SUBTOTAL (43,560 SF)                                           |         |   | (Lines 13 & 14)              |   |         |        | 611,400               |                    |
| 16. Admin. Settlements (Factor                                     | 20%     | x | 0% of Line 15)               | = | 0       |        |                       |                    |
| 17. Litigation Awards (Factor                                      | 45%     | x | 100% of Line 15)             | = | 275,100 |        |                       |                    |
| 18. Business Damages (Claims                                       | 0       | x | 0)                           | = | 0       |        |                       |                    |
| 19. Bus. Damages Incr (Factor                                      | 25%     | x | \$ - )                       | = | 0       |        |                       |                    |
| 20. Owner Appr. Fees (Parcels                                      | 1       | x | \$15,000)                    | = | 15,000  |        |                       |                    |
| 21. Owner CPA Fees (Claims                                         | 0       | x | \$16,000)                    | = | 0       |        |                       |                    |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 275,100 | x | 33%)                         | = | 90,800  |        |                       |                    |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 1       | + | 0) x 18,000                  | = | 18,000  |        |                       |                    |
| 24. Other Condemn. Costs                                           | 1       | x | \$1,000                      | = | 1,000   |        |                       |                    |
| 25. SUBTOTAL                                                       |         |   | (Lines 16 thru 24)           | = | 399,900 |        |                       |                    |
| 26.                                                                |         |   |                              |   |         |        | <b>TOTAL PHASE 43</b> | <b>\$1,011,300</b> |

\* Design contingency for design plan stage:

(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans -105% (5) 268 Date -100%

**R/W ACQUISITION CONSULTANT (PHASE 42)**

|                                           |          |   |   |  |                       |            |
|-------------------------------------------|----------|---|---|--|-----------------------|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x | 0 |  | <b>TOTAL PHASE 42</b> | <b>\$0</b> |
|-------------------------------------------|----------|---|---|--|-----------------------|------------|

**RELOCATION COSTS (PHASE 45)**

|                              |          |        |                      |                       |
|------------------------------|----------|--------|----------------------|-----------------------|
| Replacement Housing          |          | Number | Amount               |                       |
| 28. Owner                    | \$30,000 | x 1    | =                    | 30,000                |
| 29. Tenant                   | \$25,000 | x 0    | =                    | 0                     |
| Move Costs                   |          |        |                      |                       |
| 30. Residential              | \$5,000  | x 1    | =                    | 5,000                 |
| 31. Business/Farm            | \$40,000 | x 1    | =                    | 40,000                |
| 32. Personal Property        | \$3,000  | x 1    | =                    | 3,000                 |
| 33. (Lines 28 thru 32)       |          |        |                      |                       |
| 34. Relocation Services Cost | \$7,800  |        | (Not in Phase Total) | <b>TOTAL PHASE 45</b> |
|                              |          |        |                      | <b>\$78,000</b>       |

|     |  |  |  |              |                       |                    |
|-----|--|--|--|--------------|-----------------------|--------------------|
| 35. |  |  |  |              |                       |                    |
| 36. |  |  |  |              |                       |                    |
| 37. |  |  |  | (All Phases) | <b>TOTAL ESTIMATE</b> | <b>\$1,187,200</b> |

|                 |                    |         |  |       |          |
|-----------------|--------------------|---------|--|-------|----------|
| Real Estate:    | Roger D. Patton    | Signed: |  | Date: | 01/15/19 |
| Bus. Dam. :     | Alfred J. Thompson | Signed: |  | Date: | 01/15/19 |
| Relocation:     | Roger D. Patton    | Signed: |  | Date: | 01/15/19 |
| Overall Review: | Alfred J. Thompson | Signed: |  | Date: | 01/15/19 |

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

**REMARKS:** Administrative Settlement and Litigation Awards have been adjusted to reflect one ownership. Administrative settlement is considered to be zero, while litigation is factored at 45%.

This estimate is for SMF- 15A. This is the first cost estimate we have performed for this alternate.

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

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

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

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

Comments:



**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                                                                    |                    |                    |
|--------------------------------------------------------------------|--------------------|--------------------|
| FM#: 424501-1                                                      | Alternate: SMF-15B | District: Seven    |
| County: Pinellas                                                   | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A                                                     | FAP#: N/A          | C.E. Sequence: N/A |
| Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                    |                    |

| Parcels       | Gross | Net | Estimated Relocates: |
|---------------|-------|-----|----------------------|
| Commercial    | 0     | 0   | Business 1           |
| Residential   | 7     | 7   | Residential 7        |
| Unimproved    | 0     | 0   | Signs 0              |
|               |       |     | Special 0            |
| Total Parcels | 7     | 7   | Total Relocates 8    |

| R/W SUPPORT COSTS (PHASE 41) |           |   |            | Amount           |
|------------------------------|-----------|---|------------|------------------|
| 1. Direct Labor Cost         | (Parcels) | 7 | x 20,000 = | Rate) 140,000    |
| 2. Indirect Overhead         | (Parcels) | 7 | x 0 =      | Rate) 0          |
| 3.                           |           |   |            |                  |
| <b>TOTAL PHASE 41</b>        |           |   |            | <b>\$140,000</b> |

| R/W OPS (PHASE 4B)                        |     |       |                          | Amount           |
|-------------------------------------------|-----|-------|--------------------------|------------------|
| 4. Appraisal Fees Through Trial           |     | 7     | Parcels x 30,000 =       | 210,000          |
| 5. Business Damage CPA Fees Through Trial |     | 0     | Claims x 19,000 =        | 0                |
| 6. Court Reporter & Process Servers       | 50% | x 7 = | 4 Parcels x 500 =        | 2,000            |
| 7. Expert Witness                         | 75% | x 7 = | 5 Parcels x 30,000 =     | 150,000          |
| 8. Mediators                              | 75% | x 7 = | 5 Parcels x 2,400 =      | 12,000           |
| 9. Demolition, Asb. Abate., Survey, etc.  |     |       | 10 Imprvmet x 15,000 =   | 150,000          |
| 10. Miscellaneous Contracts               |     |       | 0 Per Project x 15,000 = | 0                |
| 11. Appraisal Fee Review                  |     |       | 0 Parcels x 5,000 =      | 0                |
| 12.                                       |     |       |                          |                  |
| <b>TOTAL PHASE 4B</b>                     |     |       |                          | <b>\$524,000</b> |

| R/W LAND COSTS (PHASE 43)                                          |                   |                                |           | Amount | Subtotal           |
|--------------------------------------------------------------------|-------------------|--------------------------------|-----------|--------|--------------------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0                 | x 120% * Design plan stage =   | 0         |        |                    |
| 14. Water Retention & Mit. (0 Ponds)                               | 936,788           | x 120% (0 Parcels w/o R/W Acq) | 1,124,100 |        |                    |
| 15. SUBTOTAL (52,272 SF)                                           |                   | (Lines 13 & 14)                |           |        | 1,124,100          |
| 16. Admin. Settlements (Factor 20%)                                | x 60% of Line 15) | =                              | 134,900   |        |                    |
| 17. Litigation Awards (Factor 45%)                                 | x 40% of Line 15) | =                              | 202,300   |        |                    |
| 18. Business Damages (Claims 0)                                    | x 0)              | =                              | 0         |        |                    |
| 19. Bus. Damages Incr (Factor 25%)                                 | x \$ - )          | =                              | 0         |        |                    |
| 20. Owner Appr. Fees (Parcels 7)                                   | x \$15,000)       | =                              | 105,000   |        |                    |
| 21. Owner CPA Fees (Claims 0)                                      | x \$16,000)       | =                              | 0         |        |                    |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 337,200 x 33%)    | =                              | 111,300   |        |                    |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0 + 0) x 18,000   | =                              | 0         |        |                    |
| 24. Other Condemn. Costs                                           | 7 x \$1,000       | =                              | 7,000     |        |                    |
| 25. SUBTOTAL                                                       |                   | (Lines 16 thru 24) =           | 560,500   |        |                    |
| 26.                                                                |                   |                                |           |        |                    |
| <b>TOTAL PHASE 43</b>                                              |                   |                                |           |        | <b>\$1,684,600</b> |

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

| R/W ACQUISITION CONSULTANT (PHASE 42)     |          |     |  | Amount     |
|-------------------------------------------|----------|-----|--|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x 0 |  | 0          |
| <b>TOTAL PHASE 42</b>                     |          |     |  | <b>\$0</b> |

| RELOCATION COSTS (PHASE 45)  |          |          |                      | Amount           |
|------------------------------|----------|----------|----------------------|------------------|
| Replacement Housing          |          |          |                      |                  |
| 28. Owner                    | \$35,000 | x 6      | =                    | 210,000          |
| 29. Tenant                   | \$25,000 | x 1      | =                    | 25,000           |
| Move Costs                   |          |          |                      |                  |
| 30. Residential              | \$5,000  | x 7      | =                    | 35,000           |
| 31. Business/Farm            | \$40,000 | x 1      | =                    | 40,000           |
| 32. Personal Property        | \$3,000  | x 0      | =                    | 0                |
| 33. (Lines 28 thru 32)       |          |          |                      |                  |
| 34. Relocation Services Cost |          | \$31,000 | (Not in Phase Total) |                  |
| <b>TOTAL PHASE 45</b>        |          |          |                      | <b>\$310,000</b> |

|                                    |  |  |  |                    |
|------------------------------------|--|--|--|--------------------|
| 35.                                |  |  |  |                    |
| 36.                                |  |  |  |                    |
| 37.                                |  |  |  |                    |
| (All Phases) <b>TOTAL ESTIMATE</b> |  |  |  | <b>\$2,658,600</b> |

|                                    |         |                |
|------------------------------------|---------|----------------|
| Real Estate: Roger D. Patton       | Signed: | Date: 01/15/19 |
| Bus. Dam. : Alfred J. Thompson     | Signed: | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: | Date: 01/15/19 |

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

**REMARKS:**

This estimate is for SMF-15B and is the first estimate we have performed for this alternate.

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

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

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

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

Comments: \_\_\_\_\_



# **FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                                                                     |                    |                    |
|---------------------------------------------------------------------|--------------------|--------------------|
| FM#: 424501-1                                                       | Alternate: SMF-15C | District: Seven    |
| County: Pinellas                                                    | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A                                                      | FAP#: N/A          | C.E. Sequence: N/A |
| Project Des.: I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                    |                    |

| Parcels              | Gross    | Net      |
|----------------------|----------|----------|
| Commercial           | 0        | 0        |
| Residential          | 6        | 6        |
| Unimproved           | 0        | 0        |
| <b>Total Parcels</b> | <b>6</b> | <b>6</b> |

| Estimated Relocates:   |          |
|------------------------|----------|
| Business               | 2        |
| Residential            | 6        |
| Signs                  | 0        |
| Special                | 0        |
| <b>Total Relocates</b> | <b>8</b> |

## **R/W SUPPORT COSTS (PHASE 41)**

|                      |          |   |   |        |   |       |         |
|----------------------|----------|---|---|--------|---|-------|---------|
| 1. Direct Labor Cost | (Parcels | 6 | x | 20,000 | = | Rate) | Amount  |
| 2. Indirect Overhead | (Parcels | 6 | x | 0      | = | Rate) | 120,000 |
| 3.                   |          |   |   |        |   |       | 0       |

**TOTAL PHASE 41 \$120,000**

## **R/W OPS (PHASE 4B)**

|                                           |     |   |         |   |        |             | Amount  |
|-------------------------------------------|-----|---|---------|---|--------|-------------|---------|
| 4. Appraisal Fees Through Trial           |     | 6 | Parcels | x | 30,000 | =           | 180,000 |
| 5. Business Damage CPA Fees Through Trial |     | 0 | Claims  | x | 19,000 | =           | 0       |
| 6. Court Reporter & Process Servers       | 50% | x | 6       | = | 3      | Parcels     | x       |
| 7. Expert Witness                         | 75% | x | 6       | = | 5      | Parcels     | x       |
| 8. Mediators                              | 75% | x | 6       | = | 5      | Parcels     | x       |
| 9. Demolition, Asb. Abate., Survey, etc.  |     |   |         |   | 8      | Imprvmet    | x       |
| 10. Miscellaneous Contracts               |     |   |         |   | 0      | Per Project | x       |
| 11. Appraisal Fee Review                  |     |   |         |   | 0      | Parcels     | x       |
| 12.                                       |     |   |         |   |        |             |         |

**TOTAL PHASE 4B \$463,500**

## **R/W LAND COSTS (PHASE 43)**

|                                                                    |         |   |          |                         |   |         | Amount | Subtotal |
|--------------------------------------------------------------------|---------|---|----------|-------------------------|---|---------|--------|----------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0       | x | 120%     | * Design plan stage     | = |         | 0      |          |
| 14. Water Retention & Mit. (0 Ponds)                               | 817,620 | x | 120%     | (0 Parcels w/o R/W Acq) | = | 981,100 |        |          |
| 15. SUBTOTAL (53,062 SF)                                           |         |   |          | (Lines 13 & 14)         |   |         |        | 981,100  |
| 16. Admin. Settlements (Factor                                     | 20%     | x | 60%      | of Line 15)             | = | 117,700 |        |          |
| 17. Litigation Awards (Factor                                      | 45%     | x | 40%      | of Line 15)             | = | 176,600 |        |          |
| 18. Business Damages (Claims                                       | 0       | x | 0        | )                       | = | 0       |        |          |
| 19. Bus. Damages Incr (Factor                                      | 25%     | x | \$       | - )                     | = | 0       |        |          |
| 20. Owner Appr. Fees (Parcels                                      | 6       | x | \$15,000 | )                       | = | 90,000  |        |          |
| 21. Owner CPA Fees (Claims                                         | 0       | x | \$16,000 | )                       | = | 0       |        |          |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 294,300 | x | 33%      | )                       | = | 97,100  |        |          |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0       | + | 0        | x 18,000                | = | 0       |        |          |
| 24. Other Condemn. Costs                                           | 6       | x | \$1,000  |                         | = | 6,000   |        |          |
| 25. SUBTOTAL                                                       |         |   |          | (Lines 16 thru 24)      | = |         |        | 487,400  |
| 26.                                                                |         |   |          |                         |   |         |        |          |

**TOTAL PHASE 43 \$1,468,500**

\* Design contingency for design plan stage:

(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans -105% (5) 268 Date -100%

## **R/W ACQUISITION CONSULTANT (PHASE 42)**

|                                           |          |   |   |
|-------------------------------------------|----------|---|---|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x | 0 |
|-------------------------------------------|----------|---|---|

**TOTAL PHASE 42 \$0**

## **RELOCATION COSTS (PHASE 45)**

|                               |          |   | Number |   | Amount  |
|-------------------------------|----------|---|--------|---|---------|
| 28. Owner Replacement Housing | \$35,000 | x | 4      | = | 140,000 |
| 29. Tenant                    | \$25,000 | x | 2      | = | 50,000  |
| 30. Residential Move Costs    | \$5,000  | x | 6      | = | 30,000  |
| 31. Business/Farm             | \$40,000 | x | 2      | = | 80,000  |
| 32. Personal Property         | \$3,000  | x | 0      | = | 0       |
| 33. (Lines 28 thru 32)        |          |   |        |   |         |

**TOTAL PHASE 45 \$300,000**

34. Relocation Services Cost \$30,000 (Not in Phase Total)

35.  
36.  
37.

(All Phases) **TOTAL ESTIMATE \$2,352,000**

|                                    |                            |                |
|------------------------------------|----------------------------|----------------|
| Real Estate: Roger D. Patton       | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Bus. Dam. : Alfred J. Thompson     | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: <i>[Signature]</i> | Date: 01/15/19 |

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

## **REMARKS:**

This estimate is for SMF-15C and is the first estimate we have performed for this alternate.

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

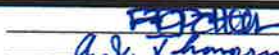
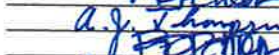

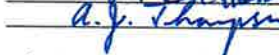
☐ Type A - indicates the most confidence  
☐ Type B - indicates above average confidence  
☒ Type C - indicates below average confidence  
☐ Type D - indicates the least or no confidence

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

Work Program Update: \_\_\_\_\_ Gaming 1: \_\_\_\_\_ Special Purpose: ☒ Docs to RW: \_\_\_\_\_

Comments: \_\_\_\_\_



| FLORIDA DEPARTMENT OF TRANSPORTATION                                                                                                                  |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------|-------------------------|-----------------------------|-------------|----------------|--------|-------------|
| DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE                                                                                                             |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| HDR#:                                                                                                                                                 |                                                       | 10062698-1-12.19    |                                                                                     |                         |                             |             |                |        |             |
| FM#:                                                                                                                                                  | 424501-1                                              | Alternate:          | SMF-16A                                                                             |                         | District:                   | Seven       |                |        |             |
| County:                                                                                                                                               | Pinellas                                              | Segment:            | N/A                                                                                 |                         | Date:                       | 4-Jan-19    |                |        |             |
| State Rd.:                                                                                                                                            | N/A                                                   | FAP#:               | N/A                                                                                 |                         | C.E. Sequence               | N/A         |                |        |             |
| Project Des.:                                                                                                                                         | I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                     |                                                                                     |                         |                             |             |                |        |             |
| Parcels                                                                                                                                               | Gross                                                 | Net                 |                                                                                     |                         |                             |             |                |        |             |
| Commercial                                                                                                                                            | 0                                                     | 0                   |                                                                                     |                         |                             |             |                |        |             |
| Residential                                                                                                                                           | 6                                                     | 6                   |                                                                                     |                         |                             |             |                |        |             |
| Unimproved                                                                                                                                            | 0                                                     | 0                   |                                                                                     |                         |                             |             |                |        |             |
| Total Parcels                                                                                                                                         | 6                                                     | 6                   |                                                                                     |                         |                             |             |                |        |             |
|                                                                                                                                                       |                                                       |                     | Estimated Relocates:                                                                |                         |                             |             |                |        |             |
|                                                                                                                                                       |                                                       |                     | Business 5                                                                          |                         |                             |             |                |        |             |
|                                                                                                                                                       |                                                       |                     | Residential 7                                                                       |                         |                             |             |                |        |             |
|                                                                                                                                                       |                                                       |                     | Signs 0                                                                             |                         |                             |             |                |        |             |
|                                                                                                                                                       |                                                       |                     | Special 0                                                                           |                         |                             |             |                |        |             |
|                                                                                                                                                       |                                                       |                     | Total Relocates 12                                                                  |                         |                             |             |                |        |             |
| R/W SUPPORT COSTS (PHASE 41)                                                                                                                          |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| 1. Direct Labor Cost                                                                                                                                  | (Parcels                                              | 6                   | x                                                                                   | 20,000                  | =                           | Rate)       | Amount         |        |             |
| 2. Indirect Overhead                                                                                                                                  | (Parcels                                              | 6                   | x                                                                                   | 0                       | =                           | Rate)       | 120,000        |        |             |
| 3.                                                                                                                                                    |                                                       |                     |                                                                                     |                         |                             |             | 0              |        |             |
|                                                                                                                                                       |                                                       |                     |                                                                                     |                         |                             |             | TOTAL PHASE 41 |        | \$120,000   |
| R/W OPS (PHASE 4B)                                                                                                                                    |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| 4. Appraisal Fees Through Trial                                                                                                                       | 6                                                     | Parcels             | x                                                                                   | 30,000                  | =                           | 180,000     | Amount         |        |             |
| 5. Business Damage CPA Fees Through Trial                                                                                                             | 0                                                     | Claims              | x                                                                                   | 19,000                  | =                           | 0           |                |        |             |
| 6. Court Reporter & Process Servers                                                                                                                   | 50%                                                   | x                   | 6                                                                                   | =                       | 3                           | Parcels     | x              | 500    | = 1,500     |
| 7. Expert Witness                                                                                                                                     | 75%                                                   | x                   | 6                                                                                   | =                       | 5                           | Parcels     | x              | 30,000 | = 150,000   |
| 8. Mediators                                                                                                                                          | 75%                                                   | x                   | 6                                                                                   | =                       | 5                           | Parcels     | x              | 2,400  | = 12,000    |
| 9. Demolition, Asb. Abate., Survey, etc.                                                                                                              |                                                       |                     |                                                                                     |                         | 7                           | Imprvmet    | x              | 15,000 | = 105,000   |
| 10. Miscellaneous Contracts                                                                                                                           |                                                       |                     |                                                                                     |                         | 0                           | Per Project | x              | 15,000 | = 0         |
| 11. Appraisal Fee Review                                                                                                                              |                                                       |                     |                                                                                     |                         | 0                           | Parcels     | x              | 5,000  | = 0         |
| 12.                                                                                                                                                   |                                                       |                     |                                                                                     |                         |                             |             | TOTAL PHASE 4B |        | \$448,500   |
| R/W LAND COSTS (PHASE 43)                                                                                                                             |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount                                                                                    | 0                                                     | x                   | 120%                                                                                | * Design plan stage     | =                           | 0           | Amount         |        | Subtotal    |
| 14. Water Retention & Mit. (0 Ponds)                                                                                                                  | 929,426                                               | x                   | 120%                                                                                | (0 Parcels w/o R/W Acq) | =                           | 1,115,300   |                |        |             |
| 15. SUBTOTAL (68,915 SF)                                                                                                                              | (Lines 13 & 14)                                       |                     |                                                                                     |                         |                             |             | 1,115,300      |        |             |
| 16. Admin. Settlements (Factor                                                                                                                        | 20%                                                   | x                   | 60%                                                                                 | of Line 15)             | =                           | 133,800     |                |        |             |
| 17. Litigation Awards (Factor                                                                                                                         | 45%                                                   | x                   | 40%                                                                                 | of Line 15)             | =                           | 200,800     |                |        |             |
| 18. Business Damages (Claims                                                                                                                          | 0                                                     | x                   | 0                                                                                   | )                       | =                           | 0           |                |        |             |
| 19. Bus. Damages Incr (Factor                                                                                                                         | 25%                                                   | x                   | \$                                                                                  | - )                     | =                           | 0           |                |        |             |
| 20. Owner Appr. Fees (Parcels                                                                                                                         | 6                                                     | x                   | \$15,000                                                                            | )                       | =                           | 90,000      |                |        |             |
| 21. Owner CPA Fees (Claims                                                                                                                            | 0                                                     | x                   | \$16,000                                                                            | )                       | =                           | 0           |                |        |             |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                                                                                                      | 334,600                                               | x                   | 33%                                                                                 | )                       | =                           | 110,400     |                |        |             |
| 23. Owner Expert Witn (Comm.+Unimp.)                                                                                                                  | 0                                                     | +                   | 0                                                                                   | ) x 18,000              | =                           | 0           |                |        |             |
| 24. Other Condemn. Costs                                                                                                                              | 6                                                     | x                   | \$1,000                                                                             | )                       | =                           | 6,000       |                |        |             |
| 25. SUBTOTAL                                                                                                                                          | (Lines 16 thru 24)                                    |                     |                                                                                     |                         |                             |             | 541,000        |        |             |
| 26.                                                                                                                                                   |                                                       |                     |                                                                                     |                         |                             |             | TOTAL PHASE 43 |        | \$1,656,300 |
| * Design contingency for design plan stage:<br>(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans -105% (5) 268 Date -100% |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| R/W ACQUISITION CONSULTANT (PHASE 42)                                                                                                                 |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| 27. Acquisition Consultant-50% of parcels                                                                                                             | \$20,000                                              | x                   | 0                                                                                   |                         |                             |             |                |        |             |
|                                                                                                                                                       |                                                       |                     |                                                                                     |                         |                             |             | TOTAL PHASE 42 |        | \$0         |
| RELOCATION COSTS (PHASE 45)                                                                                                                           |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| Replacement Housing                                                                                                                                   |                                                       | Number              |                                                                                     | Amount                  |                             |             |                |        |             |
| 28. Owner                                                                                                                                             | \$35,000                                              | x                   | 1                                                                                   | =                       | 35,000                      |             |                |        |             |
| 29. Tenant                                                                                                                                            | \$25,000                                              | x                   | 6                                                                                   | =                       | 150,000                     |             |                |        |             |
| Move Costs                                                                                                                                            |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| 30. Residential                                                                                                                                       | \$5,000                                               | x                   | 7                                                                                   | =                       | 35,000                      |             |                |        |             |
| 31. Business/Farm                                                                                                                                     | \$40,000                                              | x                   | 5                                                                                   | =                       | 200,000                     |             |                |        |             |
| 32. Personal Property                                                                                                                                 | \$3,000                                               | x                   | 0                                                                                   | =                       | 0                           |             |                |        |             |
| 33. (Lines 28 thru 32)                                                                                                                                |                                                       |                     |                                                                                     |                         |                             |             | TOTAL PHASE 45 |        | \$420,000   |
| 34. Relocation Services Cost                                                                                                                          |                                                       |                     | \$42,000                                                                            | (Not in Phase Total)    |                             |             |                |        |             |
| 35.                                                                                                                                                   |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| 36.                                                                                                                                                   |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| 37.                                                                                                                                                   | (All Phases)                                          |                     |                                                                                     |                         |                             |             | TOTAL ESTIMATE |        | \$2,644,800 |
| Real Estate:                                                                                                                                          | Roger D. Patton                                       | Signed:             |  |                         |                             | Date:       | 01/15/19       |        |             |
| Bus. Dam. :                                                                                                                                           | Alfred J. Thompson                                    | Signed:             |  |                         |                             | Date:       | 01/15/19       |        |             |
| Relocation:                                                                                                                                           | Roger D. Patton                                       | Signed:             |  |                         |                             | Date:       | 01/15/19       |        |             |
| Overall Review:                                                                                                                                       | Alfred J. Thompson                                    | Signed:             |  |                         |                             | Date:       | 01/15/19       |        |             |
| Cost Estimate Sequence #:                                                                                                                             | Dated:                                                | In the Amount of \$ |                                                                                     |                         | Data Input Completion Date: |             |                |        |             |
| REMARKS:                                                                                                                                              |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| This estimate is for SMF-16A and is the first estimate we have performed for this alternate.                                                          |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| The following indicates the estimator's confidence in the above estimate:                                                                             |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| Type A - indicates the most confidence                                                                                                                |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| Type B - indicates above average confidence                                                                                                           |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| x Type C - indicates below average confidence                                                                                                         |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| Type D - indicates the least or no confidence                                                                                                         |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| The following indicates the Department's purpose for this estimate:                                                                                   |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| Work Program Update: Gaming 1: Special Purpose: x Docs to RW:                                                                                         |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |
| Comments:                                                                                                                                             |                                                       |                     |                                                                                     |                         |                             |             |                |        |             |



FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

HDR#: 10062698-1-12.19

FM#: 424501-1 Alternate: SMF-16B District: Seven  
County: Pinellas Segment: N/A Date: 4-Jan-19  
State Rd.: N/A FAP#: N/A C.E. Sequence N/A  
Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites

| Parcels       | Gross | Net |
|---------------|-------|-----|
| Commercial    | 0     | 0   |
| Residential   | 7     | 7   |
| Unimproved    | 1     | 1   |
| Total Parcels | 8     | 8   |

Estimated Relocates:

|                 |    |
|-----------------|----|
| Business        | 5  |
| Residential     | 9  |
| Signs           | 0  |
| Special         | 0  |
| Total Relocates | 14 |

R/W SUPPORT COSTS (PHASE 41)

|                      |           |   |   |        |   |       |        |           |
|----------------------|-----------|---|---|--------|---|-------|--------|-----------|
| 1. Direct Labor Cost | (Parcels) | 8 | x | 20,000 | = | Rate) | Amount | 160,000   |
| 2. Indirect Overhead | (Parcels) | 8 | x | 0      | = | Rate) | 0      |           |
| 3.                   |           |   |   |        |   |       |        |           |
| TOTAL PHASE 41       |           |   |   |        |   |       |        | \$160,000 |

R/W OPS (PHASE 4B)

|                                           |     |   |   |   |         |             |                    |
|-------------------------------------------|-----|---|---|---|---------|-------------|--------------------|
|                                           |     |   |   |   | Amount  |             |                    |
| 4. Appraisal Fees Through Trial           |     |   |   | 8 | Parcels | x 30,000 =  | 240,000            |
| 5. Business Damage CPA Fees Through Trial |     |   |   | 0 | Claims  | x 19,000 =  | 0                  |
| 6. Court Reporter & Process Servers       | 50% | x | 8 | = | 4       | Parcels     | x 500 = 2,000      |
| 7. Expert Witness                         | 75% | x | 8 | = | 6       | Parcels     | x 30,000 = 180,000 |
| 8. Mediators                              | 75% | x | 8 | = | 6       | Parcels     | x 2,400 = 14,400   |
| 9. Demolition, Asb. Abate., Survey, etc.  |     |   |   |   | 9       | Imprvmet    | x 15,000 = 135,000 |
| 10. Miscellaneous Contracts               |     |   |   |   | 0       | Per Project | x 15,000 = 0       |
| 11. Appraisal Fee Review                  |     |   |   |   | 0       | Parcels     | x 5,000 = 0        |
| 12.                                       |     |   |   |   |         |             |                    |
| TOTAL PHASE 4B                            |     |   |   |   |         |             | \$571,400          |

R/W LAND COSTS (PHASE 43)

|                                                                    |           |   |          |                         |   |           |        |             |
|--------------------------------------------------------------------|-----------|---|----------|-------------------------|---|-----------|--------|-------------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0         | x | 120%     | * Design plan stage     | = | 0         | Amount | Subtotal    |
| 14. Water Retention & Mit. (0 Ponds)                               | 1,240,240 | x | 120%     | (0 Parcels w/o R/W Acq) | = | 1,488,300 |        |             |
| 15. SUBTOTAL (60,325 SF)                                           |           |   |          | (Lines 13 & 14)         |   |           |        | 1,488,300   |
| 16. Admin. Settlements (Factor                                     | 20%       | x | 60%      | of Line 15)             | = | 178,600   |        |             |
| 17. Litigation Awards (Factor                                      | 45%       | x | 40%      | of Line 15)             | = | 267,900   |        |             |
| 18. Business Damages (Claims                                       | 0         | x | 0        | )                       | = | 0         |        |             |
| 19. Bus. Damages Incr (Factor                                      | 25%       | x | \$       | - )                     | = | 0         |        |             |
| 20. Owner Appr. Fees (Parcels                                      | 8         | x | \$15,000 | )                       | = | 120,000   |        |             |
| 21. Owner CPA Fees (Claims                                         | 0         | x | \$16,000 | )                       | = | 0         |        |             |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 446,500   | x | 33%      | )                       | = | 147,300   |        |             |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0         | + | 1        | x 18,000                | = | 18,000    |        |             |
| 24. Other Condemn. Costs                                           | 8         | x | \$1,000  |                         | = | 8,000     |        |             |
| 25. SUBTOTAL                                                       |           |   |          | (Lines 16 thru 24)      | = | 739,800   |        |             |
| 26.                                                                |           |   |          |                         |   |           |        |             |
| TOTAL PHASE 43                                                     |           |   |          |                         |   |           |        | \$2,228,100 |

\* Design contingency for design plan stage:

(1) PD&E plans - 120% (2) 30% plans - 115% (3) 60% plans - 110% (4) 90% plans -105% (5) 268 Date -100%

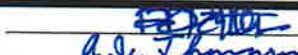



R/W ACQUISITION CONSULTANT (PHASE 42)

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

RELOCATION COSTS (PHASE 45)

|                              |          |   |          |                      |         |           |
|------------------------------|----------|---|----------|----------------------|---------|-----------|
| Replacement Housing          |          |   | Number   |                      | Amount  |           |
| 28. Owner                    | \$35,000 | x | 2        | =                    | 70,000  |           |
| 29. Tenant                   | \$25,000 | x | 7        | =                    | 175,000 |           |
| Move Costs                   |          |   |          |                      |         |           |
| 30. Residential              | \$5,000  | x | 9        | =                    | 45,000  |           |
| 31. Business/Farm            | \$40,000 | x | 5        | =                    | 200,000 |           |
| 32. Personal Property        | \$3,000  | x | 0        | =                    | 0       |           |
| 33. (Lines 28 thru 32)       |          |   |          |                      |         |           |
| 34. Relocation Services Cost |          |   | \$49,000 | (Not in Phase Total) |         |           |
| TOTAL PHASE 45               |          |   |          |                      |         | \$490,000 |

|                             |  |  |  |  |  |             |
|-----------------------------|--|--|--|--|--|-------------|
| 35.                         |  |  |  |  |  |             |
| 36.                         |  |  |  |  |  |             |
| 37.                         |  |  |  |  |  |             |
| (All Phases) TOTAL ESTIMATE |  |  |  |  |  | \$3,449,500 |

Real Estate: Roger D. Patton Signed:  Date: 01/15/19  
Bus. Dam.: Alfred J. Thompson Signed:  Date: 01/15/19  
Relocation: Roger D. Patton Signed:  Date: 01/15/19  
Overall Review: Alfred J. Thompson Signed:  Date: 01/15/19

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

REMARKS:

This estimate is for SMF-16B and is the first estimate we have performed for this alternate.

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

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

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

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



**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                                                                    |                    |                    |
|--------------------------------------------------------------------|--------------------|--------------------|
| FM#: 424501-1                                                      | Alternate: SMF-16C | District: Seven    |
| County: Pinellas                                                   | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A                                                     | FAP#: N/A          | C.E. Sequence: N/A |
| Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                    |                    |

| Parcels       | Gross | Net | Estimated Relocates: |
|---------------|-------|-----|----------------------|
| Commercial    | 0     | 0   | Business 2           |
| Residential   | 8     | 8   | Residential 8        |
| Unimproved    | 1     | 2   | Signs 0              |
|               |       |     | Special 0            |
| Total Parcels | 9     | 10  | Total Relocates 10   |

| R/W SUPPORT COSTS (PHASE 41) |          |    |            | Amount           |
|------------------------------|----------|----|------------|------------------|
| 1. Direct Labor Cost         | (Parcels | 10 | x 20,000 = | Rate) 200,000    |
| 2. Indirect Overhead         | (Parcels | 10 | x 0 =      | Rate) 0          |
| 3.                           |          |    |            |                  |
| <b>TOTAL PHASE 41</b>        |          |    |            | <b>\$200,000</b> |

| R/W OPS (PHASE 4B)                        |     |        |                    | Amount                      |
|-------------------------------------------|-----|--------|--------------------|-----------------------------|
| 4. Appraisal Fees Through Trial           |     | 10     | Parcels x 30,000 = | 300,000                     |
| 5. Business Damage CPA Fees Through Trial |     | 0      | Claims x 19,000 =  | 0                           |
| 6. Court Reporter & Process Servers       |     | 5      | Parcels x 500 =    | 2,500                       |
| 7. Expert Witness                         | 50% | x 10 = | 8                  | Parcels x 30,000 = 240,000  |
| 8. Mediators                              | 75% | x 10 = | 8                  | Parcels x 2,400 = 19,200    |
| 9. Demolition, Asb. Abate., Survey, etc.  | 75% | x 10 = | 8                  | Imprvmet x 15,000 = 120,000 |
| 10. Miscellaneous Contracts               |     |        | 0                  | Per Project x 15,000 = 0    |
| 11. Appraisal Fee Review                  |     |        | 0                  | Parcels x 5,000 = 0         |
| 12.                                       |     |        |                    |                             |
| <b>TOTAL PHASE 4B</b>                     |     |        |                    | <b>\$681,700</b>            |

| R/W LAND COSTS (PHASE 43)                                          |           |                                |           | Amount | Subtotal           |
|--------------------------------------------------------------------|-----------|--------------------------------|-----------|--------|--------------------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0         | x 120% * Design plan stage =   | 0         |        |                    |
| 14. Water Retention & Mit. (0 Ponds)                               | 1,161,663 | x 120% (0 Parcels w/o R/W Acq) | 1,394,000 |        |                    |
| 15. SUBTOTAL (56,628 SF)                                           |           | (Lines 13 & 14)                |           |        | 1,394,000          |
| 16. Admin. Settlements (Factor                                     | 20%       | x 60% of Line 15)              | = 167,300 |        |                    |
| 17. Litigation Awards (Factor                                      | 45%       | x 40% of Line 15)              | = 250,900 |        |                    |
| 18. Business Damages (Claims                                       | 0         | x 0 )                          | = 0       |        |                    |
| 19. Bus. Damages Incr (Factor                                      | 25%       | x \$ - )                       | = 0       |        |                    |
| 20. Owner Appr. Fees (Parcels                                      | 10        | x \$15,000 )                   | = 150,000 |        |                    |
| 21. Owner CPA Fees (Claims                                         | 0         | x \$16,000 )                   | = 0       |        |                    |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 418,200   | x 33% )                        | = 138,000 |        |                    |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0         | + 2 ) x 18,000                 | = 36,000  |        |                    |
| 24. Other Condemn. Costs                                           | 10        | x \$1,000                      | = 10,000  |        |                    |
| 25. SUBTOTAL                                                       |           | (Lines 16 thru 24)             | = 752,200 |        |                    |
| 26.                                                                |           |                                |           |        |                    |
| <b>TOTAL PHASE 43</b>                                              |           |                                |           |        | <b>\$2,146,200</b> |

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

| R/W ACQUISITION CONSULTANT (PHASE 42)     |          |     |  | Amount     |
|-------------------------------------------|----------|-----|--|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x 0 |  | 0          |
| <b>TOTAL PHASE 42</b>                     |          |     |  | <b>\$0</b> |

| RELOCATION COSTS (PHASE 45)  |          |                      |           | Amount           |
|------------------------------|----------|----------------------|-----------|------------------|
| Replacement Housing          |          |                      |           |                  |
| 28. Owner                    | \$35,000 | x 6                  | = 210,000 |                  |
| 29. Tenant                   | \$25,000 | x 2                  | = 50,000  |                  |
| Move Costs                   |          |                      |           |                  |
| 30. Residential              | \$5,000  | x 8                  | = 40,000  |                  |
| 31. Business/Farm            | \$40,000 | x 2                  | = 80,000  |                  |
| 32. Personal Property        | \$3,000  | x 0                  | = 0       |                  |
| 33. (Lines 28 thru 32)       |          |                      |           |                  |
| 34. Relocation Services Cost | \$38,000 | (Not in Phase Total) |           |                  |
| <b>TOTAL PHASE 45</b>        |          |                      |           | <b>\$380,000</b> |

| (All Phases) TOTAL ESTIMATE |  |  |  | \$3,407,900 |
|-----------------------------|--|--|--|-------------|
| 35.                         |  |  |  |             |
| 36.                         |  |  |  |             |
| 37.                         |  |  |  |             |

|                                    |         |                |
|------------------------------------|---------|----------------|
| Real Estate: Roger D. Patton       | Signed: | Date: 01/15/19 |
| Bus. Dam. : Alfred J. Thompson     | Signed: | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: | Date: 01/15/19 |

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

**REMARKS:**

This estimate is for SMF-16C and is the first estimate we have performed for this alternate.

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

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

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

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

Comments:



**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                                                                    |                    |                    |
|--------------------------------------------------------------------|--------------------|--------------------|
| FM#: 424501-1                                                      | Alternate: SMF-18A | District: Seven    |
| County: Pinellas                                                   | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A                                                     | FAP#: N/A          | C.E. Sequence: N/A |
| Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                    |                    |

| Parcels       | Gross | Net | Estimated Relocates: |
|---------------|-------|-----|----------------------|
| Commercial    | 0     | 0   | Business 1           |
| Residential   | 4     | 4   | Residential 4        |
| Unimproved    | 0     | 0   | Signs 0              |
|               |       |     | Special 0            |
| Total Parcels | 4     | 4   | Total Relocates 5    |

| R/W SUPPORT COSTS (PHASE 41) |           |   |            | Amount          |
|------------------------------|-----------|---|------------|-----------------|
| 1. Direct Labor Cost         | (Parcels) | 4 | x 20,000 = | Rate) 80,000    |
| 2. Indirect Overhead         | (Parcels) | 4 | x 0 =      | Rate) 0         |
| 3.                           |           |   |            |                 |
| <b>TOTAL PHASE 41</b>        |           |   |            | <b>\$80,000</b> |

| R/W OPS (PHASE 4B)                        |     |       |               | Amount           |
|-------------------------------------------|-----|-------|---------------|------------------|
| 4. Appraisal Fees Through Trial           |     | 4     | Parcels x     | 30,000 = 120,000 |
| 5. Business Damage CPA Fees Through Trial |     | 0     | Claims x      | 19,000 = 0       |
| 6. Court Reporter & Process Servers       | 50% | x 4 = | 2 Parcels x   | 500 = 1,000      |
| 7. Expert Witness                         | 75% | x 4 = | 3 Parcels x   | 30,000 = 90,000  |
| 8. Mediators                              | 75% | x 4 = | 3 Parcels x   | 2,400 = 7,200    |
| 9. Demolition, Asb. Abate., Survey, etc.  |     | 4     | Imprvmet x    | 15,000 = 60,000  |
| 10. Miscellaneous Contracts               |     | 0     | Per Project x | 15,000 = 0       |
| 11. Appraisal Fee Review                  |     | 0     | Parcels x     | 5,000 = 0        |
| 12.                                       |     |       |               |                  |
| <b>TOTAL PHASE 4B</b>                     |     |       |               | <b>\$278,200</b> |

| R/W LAND COSTS (PHASE 43)                                          |           |                                |           | Amount             | Subtotal |
|--------------------------------------------------------------------|-----------|--------------------------------|-----------|--------------------|----------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0         | x 120% * Design plan stage =   | 0         |                    |          |
| 14. Water Retention & Mit. (0 Ponds)                               | 1,318,713 | x 120% (0 Parcels w/o R/W Acq) | 1,582,500 |                    |          |
| 15. SUBTOTAL (174,474 SF)                                          |           | (Lines 13 & 14)                |           | 1,582,500          |          |
| 16. Admin. Settlements (Factor                                     | 20%       | x 60% of Line 15)              | = 189,900 |                    |          |
| 17. Litigation Awards (Factor                                      | 45%       | x 40% of Line 15)              | = 284,900 |                    |          |
| 18. Business Damages (Claims                                       | 0         | x 0 )                          | = 0       |                    |          |
| 19. Bus. Damages Incr (Factor                                      | 25%       | x \$ - )                       | = 0       |                    |          |
| 20. Owner Appr. Fees (Parcels                                      | 4         | x \$15,000 )                   | = 60,000  |                    |          |
| 21. Owner CPA Fees (Claims                                         | 0         | x \$16,000 )                   | = 0       |                    |          |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 474,800   | x 33% )                        | = 156,700 |                    |          |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0         | + 0 ) x 18,000                 | = 0       |                    |          |
| 24. Other Condemn. Costs                                           | 4         | x \$1,000                      | = 4,000   |                    |          |
| 25. SUBTOTAL                                                       |           | (Lines 16 thru 24)             | = 695,500 |                    |          |
| 26.                                                                |           |                                |           |                    |          |
| <b>TOTAL PHASE 43</b>                                              |           |                                |           | <b>\$2,278,000</b> |          |

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

| R/W ACQUISITION CONSULTANT (PHASE 42)     |          |     |  | Amount     |
|-------------------------------------------|----------|-----|--|------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x 0 |  | 0          |
| <b>TOTAL PHASE 42</b>                     |          |     |  | <b>\$0</b> |

| RELOCATION COSTS (PHASE 45)  |          |                      |   | Amount           |
|------------------------------|----------|----------------------|---|------------------|
| Replacement Housing          |          |                      |   |                  |
| 28. Owner                    | \$35,000 | x 3                  | = | 105,000          |
| 29. Tenant                   | \$25,000 | x 1                  | = | 25,000           |
| Move Costs                   |          |                      |   |                  |
| 30. Residential              | \$5,000  | x 4                  | = | 20,000           |
| 31. Business/Farm            | \$40,000 | x 1                  | = | 40,000           |
| 32. Personal Property        | \$3,000  | x 0                  | = | 0                |
| 33. (Lines 28 thru 32)       |          |                      |   |                  |
| 34. Relocation Services Cost | \$19,000 | (Not in Phase Total) |   |                  |
| <b>TOTAL PHASE 45</b>        |          |                      |   | <b>\$190,000</b> |

| (All Phases) TOTAL ESTIMATE |  |  |  | Amount      |
|-----------------------------|--|--|--|-------------|
|                             |  |  |  | \$2,826,200 |

|                                    |                            |                |
|------------------------------------|----------------------------|----------------|
| Real Estate: Roger D. Patton       | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Bus. Dam. : Alfred J. Thompson     | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: <i>[Signature]</i> | Date: 01/15/19 |

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

**REMARKS:**

This estimate is for SMF-18A. The prior estimate dated July 30, 2018 included only a portion of this current alternate.

This alternate now includes 4 parcels with above average residential improvements.

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

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

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

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

Comments:



**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                                                                    |                    |                    |
|--------------------------------------------------------------------|--------------------|--------------------|
| FM#: 424501-1                                                      | Alternate: SMF-18B | District: Seven    |
| County: Pinellas                                                   | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A                                                     | FAP#: N/A          | C.E. Sequence: N/A |
| Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                    |                    |

| Parcels       | Gross | Net | Estimated Relocates: |
|---------------|-------|-----|----------------------|
| Commercial    | 1     | 1   | Business 0           |
| Residential   | 0     | 0   | Residential 0        |
| Unimproved    | 0     | 0   | Signs 0              |
|               |       |     | Special 0            |
| Total Parcels | 1     | 1   | Total Relocates 0    |

| R/W SUPPORT COSTS (PHASE 41) |           |   |            | Amount                         |
|------------------------------|-----------|---|------------|--------------------------------|
| 1. Direct Labor Cost         | (Parcels) | 1 | x 20,000 = | Rate) 20,000                   |
| 2. Indirect Overhead         | (Parcels) | 1 | x 0 =      | Rate) 0                        |
|                              |           |   |            | <b>TOTAL PHASE 41 \$20,000</b> |

| R/W OPS (PHASE 4B)                        |     |       |               | Amount                         |
|-------------------------------------------|-----|-------|---------------|--------------------------------|
| 4. Appraisal Fees Through Trial           |     | 1     | Parcels x     | 30,000 = 30,000                |
| 5. Business Damage CPA Fees Through Trial |     | 0     | Claims x      | 19,000 = 0                     |
| 6. Court Reporter & Process Servers       | 50% | x 1 = | 1 Parcels x   | 500 = 500                      |
| 7. Expert Witness                         | 75% | x 1 = | 1 Parcels x   | 30,000 = 30,000                |
| 8. Mediators                              | 75% | x 1 = | 1 Parcels x   | 2,400 = 2,400                  |
| 9. Demolition, Asb. Abate., Survey, etc.  |     | 0     | Imprvmet x    | 15,000 = 0                     |
| 10. Miscellaneous Contracts               |     | 0     | Per Project x | 15,000 = 0                     |
| 11. Appraisal Fee Review                  |     | 0     | Parcels x     | 5,000 = 0                      |
|                                           |     |       |               | <b>TOTAL PHASE 4B \$62,900</b> |

| R/W LAND COSTS (PHASE 43)                                          |         |                                |  | Amount                          | Subtotal |
|--------------------------------------------------------------------|---------|--------------------------------|--|---------------------------------|----------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0       | x 120% * Design plan stage =   |  | 0                               |          |
| 14. Water Retention & Mit. (0 Ponds)                               | 326,700 | x 120% (0 Parcels w/o R/W Acq) |  | 392,000                         |          |
| 15. SUBTOTAL (217,800)                                             |         | (Lines 13 & 14)                |  |                                 | 392,000  |
| 16. Admin. Settlements (Factor                                     | 20%     | x 100% of Line 15)             |  | 78,400                          |          |
| 17. Litigation Awards (Factor                                      | 45%     | x 0% of Line 15)               |  | 0                               |          |
| 18. Business Damages (Claims                                       | 0       | x 0)                           |  | 0                               |          |
| 19. Bus. Damages Incr (Factor                                      | 25%     | x \$ - )                       |  | 0                               |          |
| 20. Owner Appr. Fees (Parcels                                      | 1       | x \$15,000)                    |  | 15,000                          |          |
| 21. Owner CPA Fees (Claims                                         | 0       | x \$16,000)                    |  | 0                               |          |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 78,400  | x 33%)                         |  | 25,900                          |          |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 1       | + 0) x 18,000                  |  | 18,000                          |          |
| 24. Other Condemn. Costs                                           | 1       | x \$1,000                      |  | 1,000                           |          |
| 25. SUBTOTAL                                                       |         | (Lines 16 thru 24)             |  |                                 | 138,300  |
|                                                                    |         |                                |  | <b>TOTAL PHASE 43 \$530,300</b> |          |

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

| R/W ACQUISITION CONSULTANT (PHASE 42)     |          |     |  | Amount                    |
|-------------------------------------------|----------|-----|--|---------------------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x 0 |  | 0                         |
|                                           |          |     |  | <b>TOTAL PHASE 42 \$0</b> |

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

| (All Phases) TOTAL ESTIMATE |  |  |  |
|-----------------------------|--|--|--|
| \$613,200                   |  |  |  |

|                                    |                            |                |
|------------------------------------|----------------------------|----------------|
| Real Estate: Roger D. Patton       | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Bus. Dam. : Alfred J. Thompson     | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: <i>[Signature]</i> | Date: 01/15/19 |

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

REMARKS: Administrative Settlement and Litigation Awards have been adjusted to reflect one ownership. Administrative settlement is considered to be 100%, while litigation is factored at zero.

This estimate is for SMF-18B. The prior estimate dated July 30, 2018 was for a smaller site, but the unit price is unchanged.

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

|                                                                                 |
|---------------------------------------------------------------------------------|
| Type A - indicates the most confidence                                          |
| Type B - indicates above average confidence                                     |
| <input checked="" type="checkbox"/> Type C - indicates below average confidence |
| Type D - indicates the least or no confidence                                   |

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

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

Comments:



# FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

HDR#: 10062698-1-12.19

|                                                                    |                    |                    |
|--------------------------------------------------------------------|--------------------|--------------------|
| FM#: 424501-1                                                      | Alternate: SMF-20A | District: Seven    |
| County: Pinellas                                                   | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A                                                     | FAP#: N/A          | C.E. Sequence: N/A |
| Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                    |                    |

| Parcels       | Gross | Net | Estimated Relocates: |
|---------------|-------|-----|----------------------|
| Commercial    | 1     | 1   | Business 0           |
| Residential   | 0     | 0   | Residential 0        |
| Unimproved    | 0     | 0   | Signs 0              |
|               |       |     | Special 0            |
| Total Parcels | 1     | 1   | Total Relocates 0    |

| R/W SUPPORT COSTS (PHASE 41) |           |   |            | Amount                         |
|------------------------------|-----------|---|------------|--------------------------------|
| 1. Direct Labor Cost         | (Parcels) | 1 | x 20,000 = | Rate) 20,000                   |
| 2. Indirect Overhead         | (Parcels) | 1 | x 0 =      | Rate) 0                        |
| 3.                           |           |   |            |                                |
|                              |           |   |            | <b>TOTAL PHASE 41 \$20,000</b> |

| R/W OPS (PHASE 4B)                        |     |       |               | Amount                         |
|-------------------------------------------|-----|-------|---------------|--------------------------------|
| 4. Appraisal Fees Through Trial           |     | 1     | Parcels x     | 30,000 = 30,000                |
| 5. Business Damage CPA Fees Through Trial |     | 0     | Claims x      | 19,000 = 0                     |
| 6. Court Reporter & Process Servers       | 50% | x 1 = | 1             | Parcels x 500 = 500            |
| 7. Expert Witness                         | 75% | x 1 = | 1             | Parcels x 30,000 = 30,000      |
| 8. Mediators                              | 75% | x 1 = | 1             | Parcels x 2,400 = 2,400        |
| 9. Demolition, Asb. Abate., Survey, etc.  |     | 0     | Imprvmet x    | 15,000 = 0                     |
| 10. Miscellaneous Contracts               |     | 0     | Per Project x | 15,000 = 0                     |
| 11. Appraisal Fee Review                  |     | 0     | Parcels x     | 5,000 = 0                      |
| 12.                                       |     |       |               |                                |
|                                           |     |       |               | <b>TOTAL PHASE 4B \$62,900</b> |

| R/W LAND COSTS (PHASE 43)                                          |         |                                |           | Amount                          | Subtotal |
|--------------------------------------------------------------------|---------|--------------------------------|-----------|---------------------------------|----------|
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0       | x 120% * Design plan stage =   | 0         |                                 |          |
| 14. Water Retention & Mit. (0 Ponds)                               | 357,192 | x 120% (0 Parcels w/o R/W Acq) | 428,600   |                                 |          |
| 15. SUBTOTAL (91,746)                                              |         | (Lines 13 & 14)                |           |                                 | 428,600  |
| 16. Admin. Settlements (Factor                                     | 20%     | x 0% of Line 15)               | = 0       |                                 |          |
| 17. Litigation Awards (Factor                                      | 45%     | x 100% of Line 15)             | = 192,900 |                                 |          |
| 18. Business Damages (Claims                                       | 0       | x 0)                           | = 0       |                                 |          |
| 19. Bus. Damages Incr (Factor                                      | 25%     | x \$ -)                        | = 0       |                                 |          |
| 20. Owner Appr. Fees (Parcels                                      | 1       | x \$15,000)                    | = 15,000  |                                 |          |
| 21. Owner CPA Fees (Claims                                         | 0       | x \$16,000)                    | = 0       |                                 |          |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 192,900 | x 33%)                         | = 63,700  |                                 |          |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 1       | + 0) x 18,000                  | = 18,000  |                                 |          |
| 24. Other Condemn. Costs                                           | 1       | x \$1,000                      | = 1,000   |                                 |          |
| 25. SUBTOTAL                                                       |         | (Lines 16 thru 24)             | = 290,600 |                                 |          |
| 26.                                                                |         |                                |           |                                 |          |
|                                                                    |         |                                |           | <b>TOTAL PHASE 43 \$719,200</b> |          |

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

| R/W ACQUISITION CONSULTANT (PHASE 42)     |          |     |  | Amount                    |
|-------------------------------------------|----------|-----|--|---------------------------|
| 27. Acquisition Consultant-50% of parcels | \$20,000 | x 0 |  | 0                         |
|                                           |          |     |  | <b>TOTAL PHASE 42 \$0</b> |

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

|                                              |  |
|----------------------------------------------|--|
| 35.                                          |  |
| 36.                                          |  |
| 37.                                          |  |
| (All Phases) <b>TOTAL ESTIMATE \$802,100</b> |  |

|                                    |                            |                |
|------------------------------------|----------------------------|----------------|
| Real Estate: Roger D. Patton       | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Bus. Dam. : Alfred J. Thompson     | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: <i>[Signature]</i> | Date: 01/15/19 |

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

REMARKS: Administrative Settlement and Litigation Awards have been adjusted to reflect one ownership. Administrative settlement is considered to be zero, while litigation is factored at 45%.

This estimate is for SMF-20A. This is the first estimate we have performed for this particular alternate.

Damages for creating a remnant added to the cost of this pond site.

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

|                                     |                                               |
|-------------------------------------|-----------------------------------------------|
| <input type="checkbox"/>            | Type A - indicates the most confidence        |
| <input type="checkbox"/>            | Type B - indicates above average confidence   |
| <input checked="" type="checkbox"/> | Type C - indicates below average confidence   |
| <input type="checkbox"/>            | Type D - indicates the least or no confidence |

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

Work Program Update: \_\_\_\_\_ Gaming 1: \_\_\_\_\_ Special Purpose: ☒ Docs to RW: \_\_\_\_\_

Comments: \_\_\_\_\_



**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

HDR#: 10062698-1-12.19

|                                                                    |                    |                    |
|--------------------------------------------------------------------|--------------------|--------------------|
| FM#: 424501-1                                                      | Alternate: SMF-20B | District: Seven    |
| County: Pinellas                                                   | Segment: N/A       | Date: 4-Jan-19     |
| State Rd.: N/A                                                     | FAP#: N/A          | C.E. Sequence: N/A |
| Project Des. I-275 From S. of 54th Ave to 4th Ave North Pond Sites |                    |                    |

|               |       |     |                      |
|---------------|-------|-----|----------------------|
| Parcels       | Gross | Net | Estimated Relocates: |
| Commercial    | 0     | 0   | Business             |
| Residential   | 0     | 0   | Residential          |
| Unimproved    | 1     | 1   | Signs                |
|               |       |     | Special              |
| Total Parcels | 1     | 1   | Total Relocates      |

|                                     |           |   |   |          |       |                 |
|-------------------------------------|-----------|---|---|----------|-------|-----------------|
| <b>R/W SUPPORT COSTS (PHASE 41)</b> |           |   |   | Amount   |       |                 |
| 1. Direct Labor Cost                | (Parcels) | 1 | x | 20,000 = | Rate) | 20,000          |
| 2. Indirect Overhead                | (Parcels) | 1 | x | 0 =      | Rate) | 0               |
| 3.                                  |           |   |   |          |       |                 |
| <b>TOTAL PHASE 41</b>               |           |   |   |          |       | <b>\$20,000</b> |

|                                           |     |   |         |             |          |                 |
|-------------------------------------------|-----|---|---------|-------------|----------|-----------------|
| <b>R/W OPS (PHASE 4B)</b>                 |     |   |         | Amount      |          |                 |
| 4. Appraisal Fees Through Trial           |     | 1 | Parcels | x           | 30,000 = | 30,000          |
| 5. Business Damage CPA Fees Through Trial |     | 0 | Claims  | x           | 19,000 = | 0               |
| 6. Court Reporter & Process Servers       | 50% | x | 1       | =           | 1        | Parcels         |
| 7. Expert Witness                         | 75% | x | 1       | =           | 1        | Parcels         |
| 8. Mediators                              | 75% | x | 1       | =           | 1        | Parcels         |
| 9. Demolition, Asb. Abate., Survey, etc.  |     |   | 0       | Imprvmet    | x        | 15,000 =        |
| 10. Miscellaneous Contracts               |     |   | 0       | Per Project | x        | 15,000 =        |
| 11. Appraisal Fee Review                  |     |   | 0       | Parcels     | x        | 5,000 =         |
| 12.                                       |     |   |         |             |          | 0               |
| <b>TOTAL PHASE 4B</b>                     |     |   |         |             |          | <b>\$62,900</b> |

|                                                                    |         |   |                              |        |                    |
|--------------------------------------------------------------------|---------|---|------------------------------|--------|--------------------|
| <b>R/W LAND COSTS (PHASE 43)</b>                                   |         |   |                              | Amount | Subtotal           |
| 13. Land, Improvements & Severance Damages and Cost to Cure Amount | 0       | x | 120% * Design plan stage     | =      | 0                  |
| 14. Water Retention & Mit. (0 Ponds)                               | 654,024 | x | 120% (0 Parcels w/o R/W Acq) | =      | 784,800            |
| 15. SUBTOTAL (91,746)                                              |         |   | (Lines 13 & 14)              |        | 784,800            |
| 16. Admin. Settlements (Factor                                     | 20%     | x | 0% of Line 15)               | =      | 0                  |
| 17. Litigation Awards (Factor                                      | 45%     | x | 100% of Line 15)             | =      | 353,200            |
| 18. Business Damages (Claims                                       | 0       | x | 0 )                          | =      | 0                  |
| 19. Bus. Damages Incr (Factor                                      | 25%     | x | \$ - )                       | =      | 0                  |
| 20. Owner Appr. Fees (Parcels                                      | 1       | x | \$15,000 )                   | =      | 15,000             |
| 21. Owner CPA Fees (Claims                                         | 0       | x | \$16,000 )                   | =      | 0                  |
| 22. Defend. Atty Fees (Sum of Lines 16, 17 & 19)                   | 353,200 | x | 33% )                        | =      | 116,600            |
| 23. Owner Expert Witn (Comm.+Unimp.)                               | 0       | + | 1 ) x 18,000                 | =      | 18,000             |
| 24. Other Condemn. Costs                                           | 1       | x | \$1,000                      | =      | 1,000              |
| 25. SUBTOTAL                                                       |         |   | (Lines 16 thru 24)           | =      | 503,800            |
| 26.                                                                |         |   |                              |        |                    |
| <b>TOTAL PHASE 43</b>                                              |         |   |                              |        | <b>\$1,288,600</b> |

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

|                                              |          |   |   |        |            |
|----------------------------------------------|----------|---|---|--------|------------|
| <b>R/W ACQUISITION CONSULTANT (PHASE 42)</b> |          |   |   | Amount |            |
| 27. Acquisition Consultant-50% of parcels    | \$20,000 | x | 0 | =      | 0          |
| <b>TOTAL PHASE 42</b>                        |          |   |   |        | <b>\$0</b> |

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

|                                    |  |  |  |                    |
|------------------------------------|--|--|--|--------------------|
| <b>(All Phases) TOTAL ESTIMATE</b> |  |  |  | <b>\$1,371,500</b> |
|------------------------------------|--|--|--|--------------------|

|                                    |                            |                |
|------------------------------------|----------------------------|----------------|
| Real Estate: Roger D. Patton       | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Bus. Dam. : Alfred J. Thompson     | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Relocation: Roger D. Patton        | Signed: <i>[Signature]</i> | Date: 01/15/19 |
| Overall Review: Alfred J. Thompson | Signed: <i>[Signature]</i> | Date: 01/15/19 |

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

**REMARKS:** Administrative Settlement and Litigation Awards have been adjusted to reflect one ownership. Administrative settlement is considered to be zero, while litigation is factored at 45%.

This estimate is for SMF-20B. The prior estimate dated July 30, 2018 on this parcel was for a smaller site.

Damages for diminishing the potential future development of the site added to the cost of this pond site.

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

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

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

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

Comments: \_\_\_\_\_



# Appendix I. Environmental Look Around Documentation

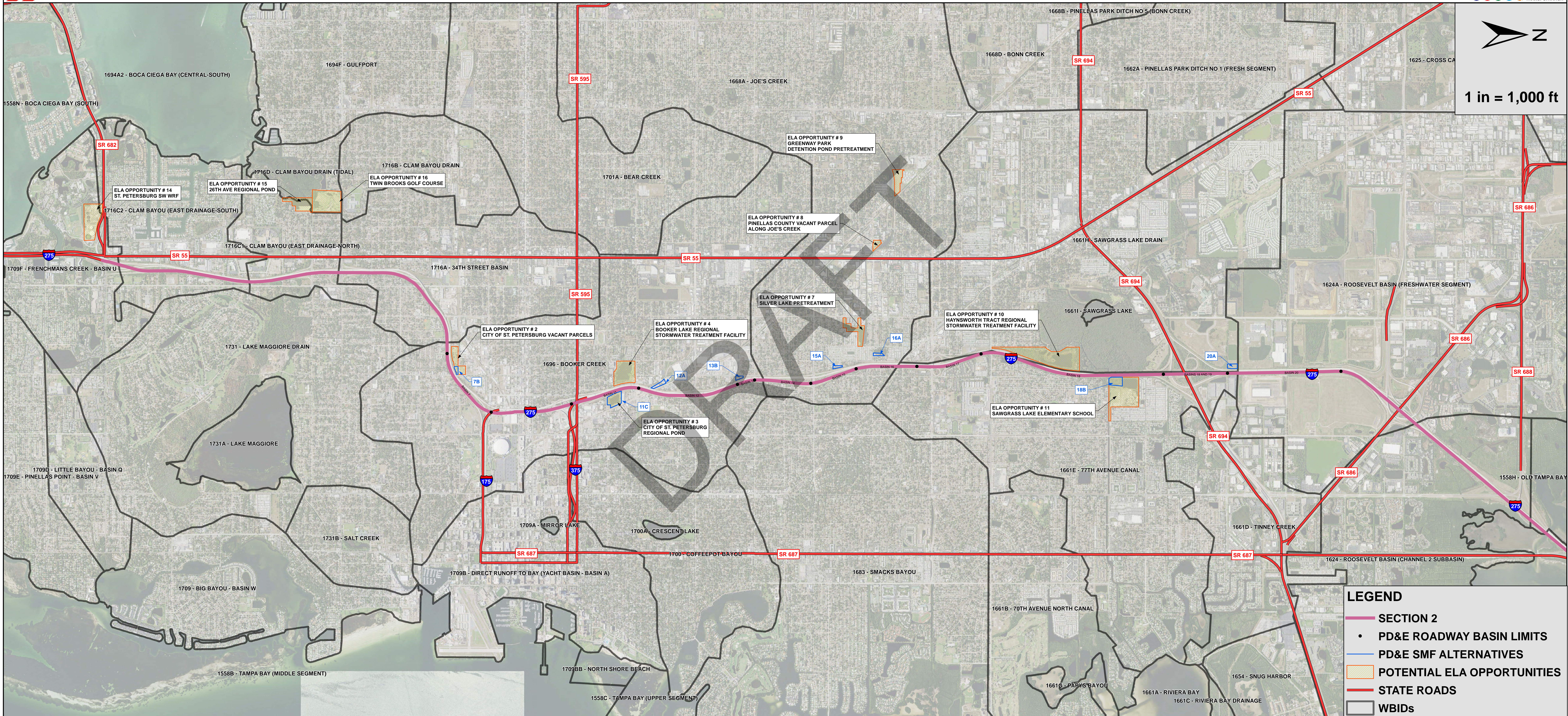


**TBN S2 ELA Approach**

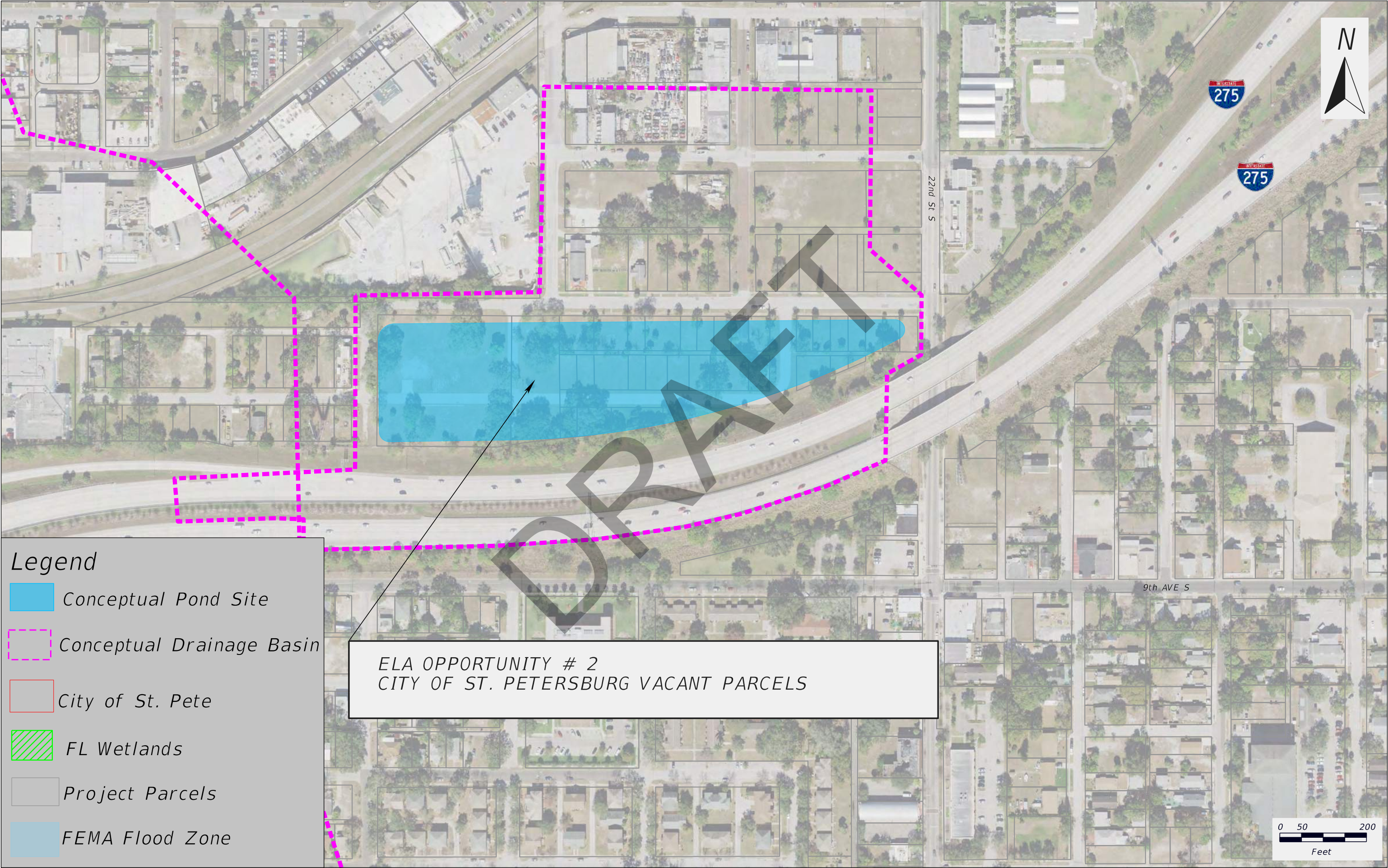
| PD&E Basin | Watershed                   | WBID                                    | PD&E Preferred Pond | Needs ROW for Ponds | ELA for Offsite Pond Replacement/Reduction                                                                                                           | Stakeholder Approach                                                              |
|------------|-----------------------------|-----------------------------------------|---------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 2          | Upper Coastal Areas         | Boca Ciega Bay                          | 2A                  | No                  | N/A - Ponds are within the ROW                                                                                                                       | N/A                                                                               |
| 7          | Tampa Bay And Coastal Areas | Booker Creek                            | 7B                  | Yes                 | Utilizes ELA # 2 (expanded SMF 7B), ELA # 3 (expanded SMF 11C) or ELA # 4 for Water Quality Treatment and Water Quantity Attenuation                 | Agreement with City of St. Pete for ELAs # 2, 3 or 4                              |
| 11         | Tampa Bay And Coastal Areas | Booker Creek                            | 11C                 | Yes                 |                                                                                                                                                      |                                                                                   |
| 12         | Tampa Bay And Coastal Areas | Booker Creek                            | 12A                 | Yes                 |                                                                                                                                                      |                                                                                   |
| 13         | Tampa Bay And Coastal Areas | Booker Creek                            | 13B                 | Yes                 |                                                                                                                                                      |                                                                                   |
| 14         | Upper Coastal Areas         | Joe's Creek                             | 14A                 | No                  | N/A - Ponds are within the ROW                                                                                                                       | N/A                                                                               |
| 15         | Upper Coastal Areas         | Joe's Creek                             | 15A                 | Yes                 | Utilizes ELA #7, 8 or 9 for Water Quality Treatment & ELA #10/SMF 17A for Water Quantity Attenuation                                                 | Agreement with Pinellas County for ELAs #7, 8 or 9 and 10                         |
| 16         | Upper Coastal Areas         | Joe's Creek                             | 16A                 | Yes                 |                                                                                                                                                      |                                                                                   |
| 17         | Tampa Bay And Coastal Areas | Sawgrass Lake Drain / 77th Avenue Canal | 17A                 | No                  | Utilizes ELA #10 for Water Quality Treatment & Water Quantity Attenuation. Allows SMF 17A to provide Water Quantity Attenuation for Basins 15 and 16 | N/A                                                                               |
| 18         | Tampa Bay And Coastal Areas | Sawgrass Lake Drain / 77th Avenue Canal | 18B                 | Yes                 | ELA #10 for Water Quality Treatment & Water Quantity Attenuation                                                                                     | Agreement with Pinellas County for ELA #10                                        |
| 19         | Tampa Bay And Coastal Areas | Sawgrass Lake Drain / 77th Avenue Canal | 19A                 | No                  | N/A - Ponds are within the ROW                                                                                                                       | N/A                                                                               |
| 20         | Tampa Bay And Coastal Areas | Roosevelt Basin                         | 20A                 | Yes                 | Utilize Water Quality Treatment Credits from the Old Tampa Bay Water Quality Improvement Project                                                     | Deduct Water Quality Treatment Credits from OTBWQ Project upon SWFWMD concurrence |



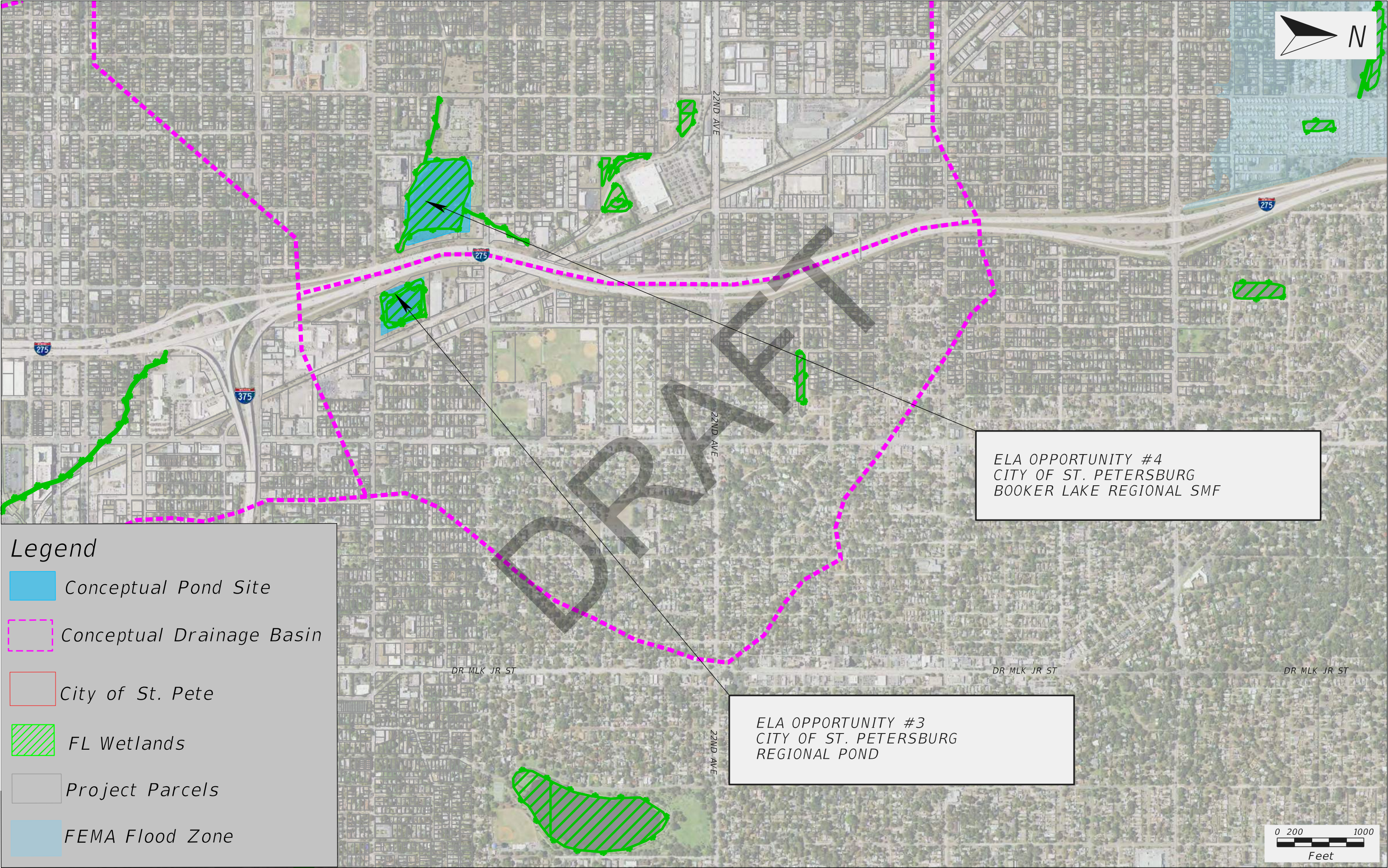
**1 in = 1,000 ft**



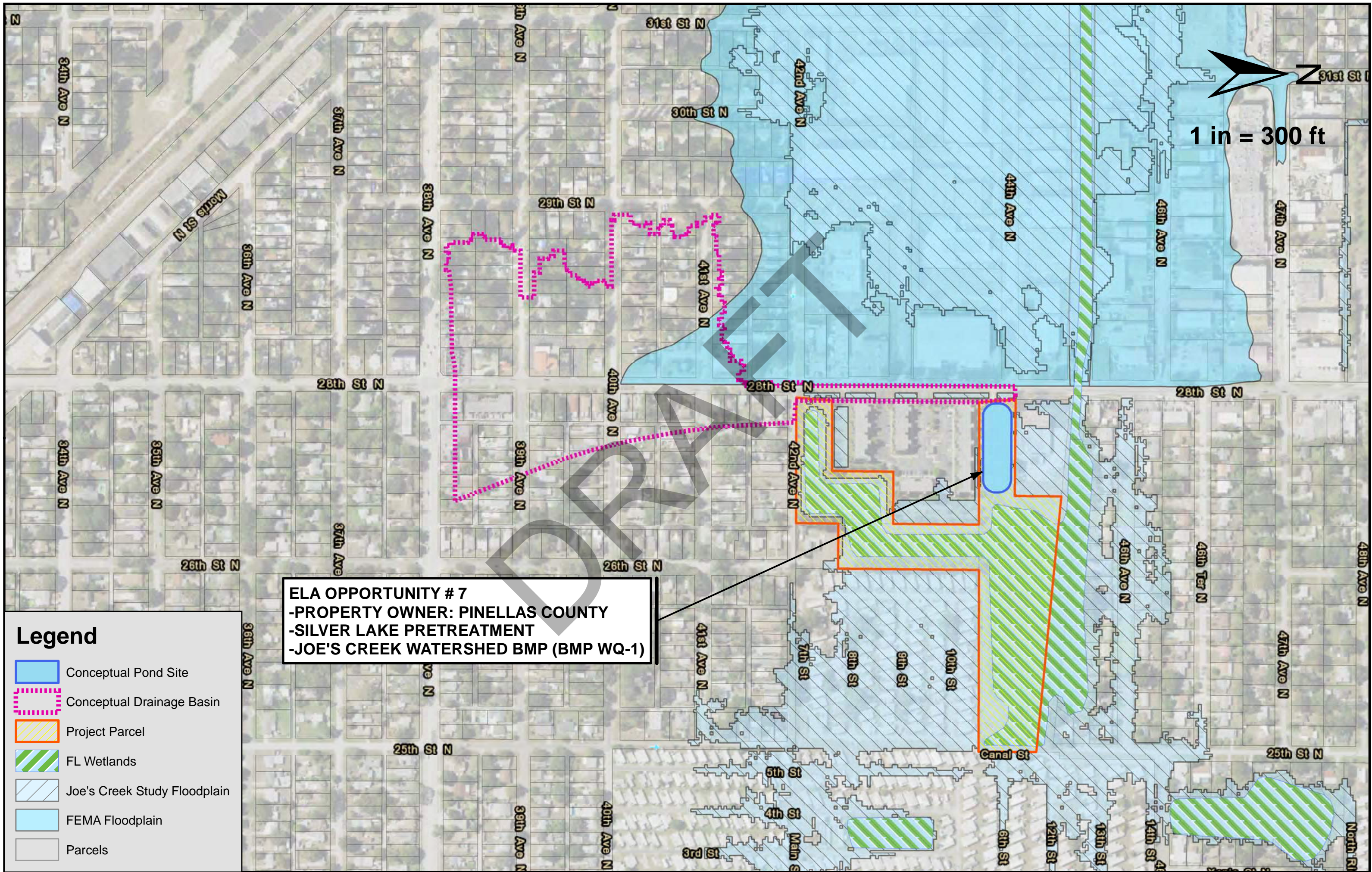




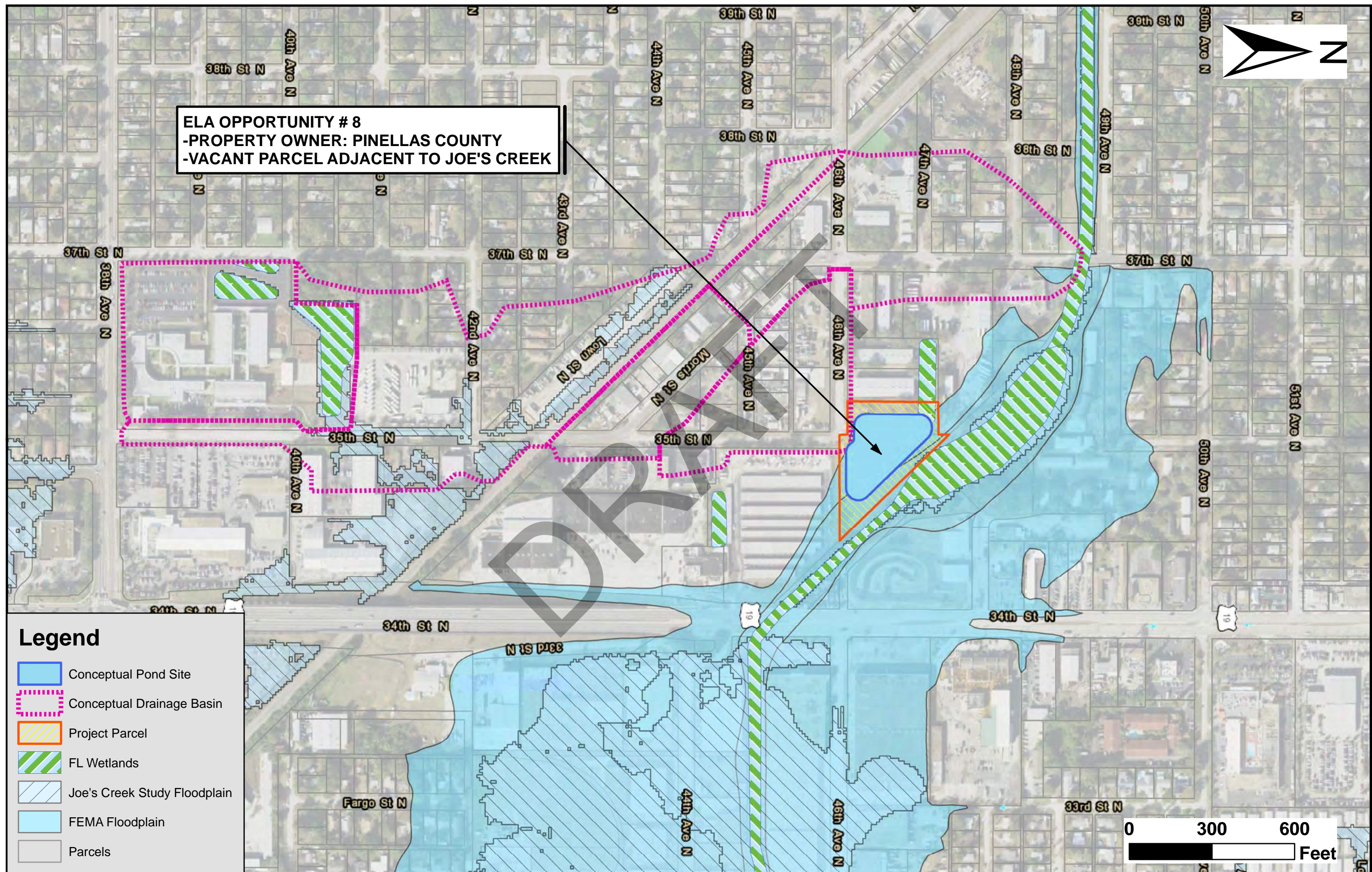




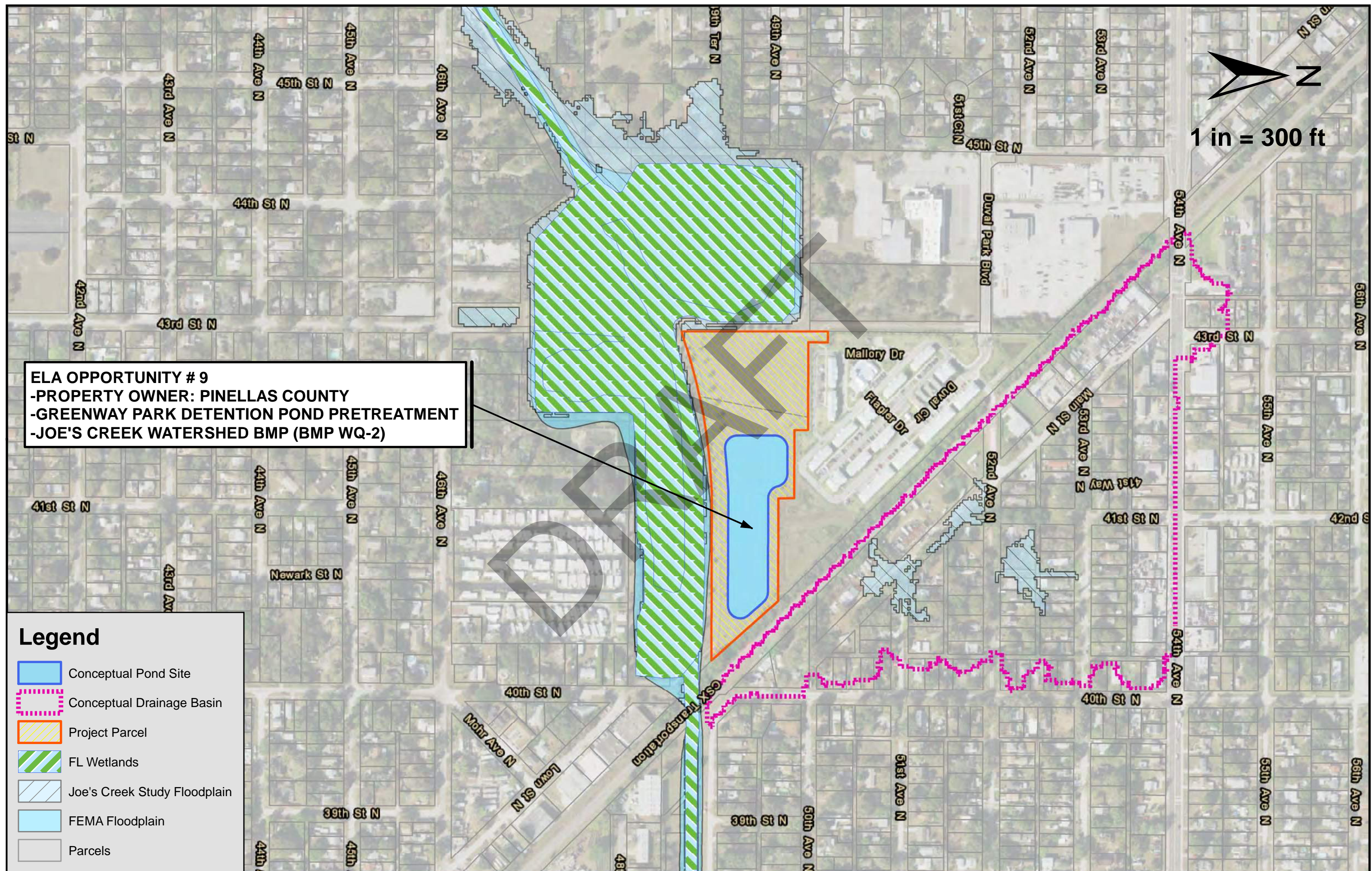












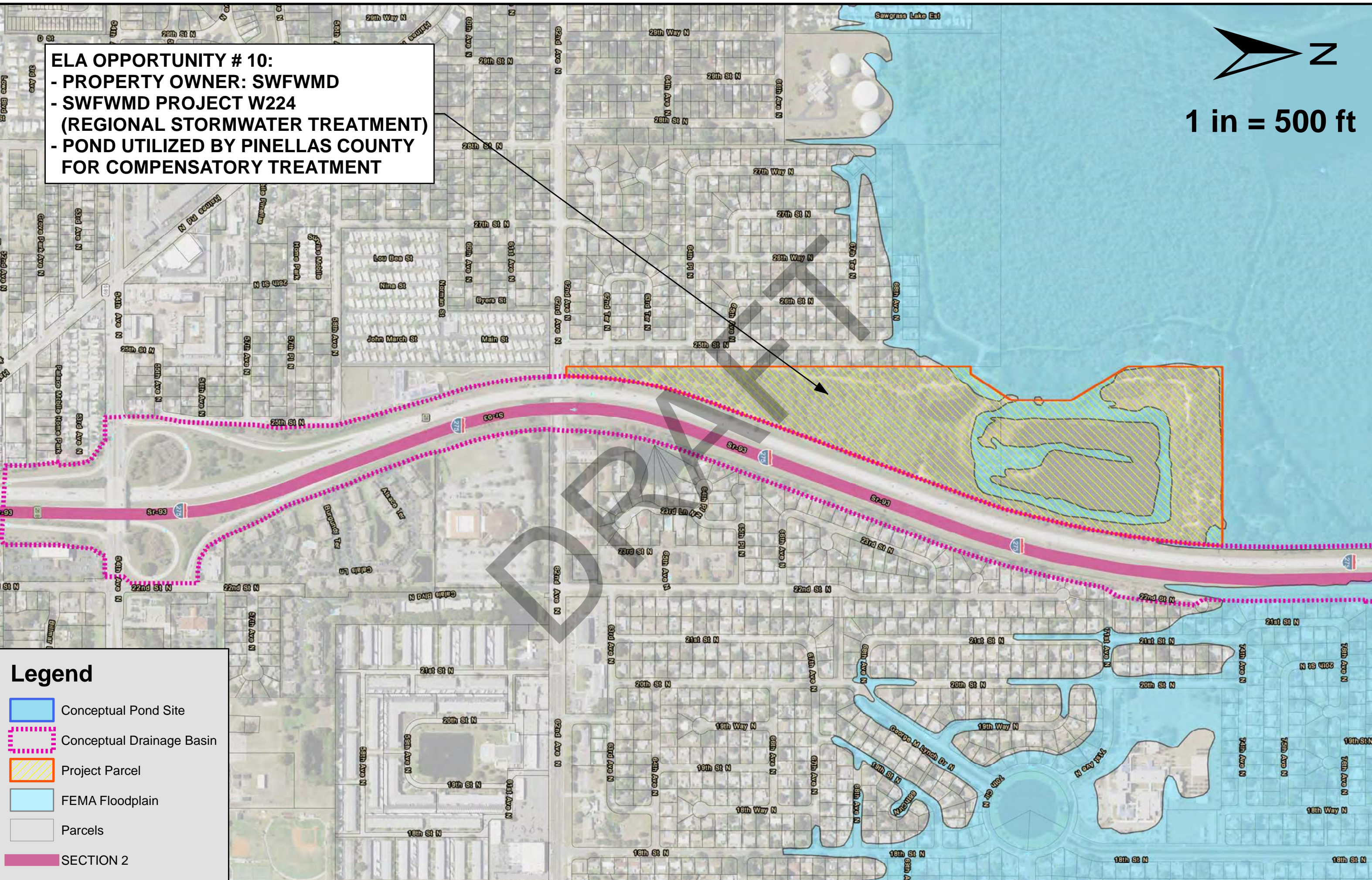


**ELA OPPORTUNITY # 10:**

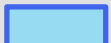


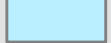
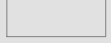

- PROPERTY OWNER: SWFWMD
- SWFWMD PROJECT W224  
(REGIONAL STORMWATER TREATMENT)
- POND UTILIZED BY PINELLAS COUNTY  
FOR COMPENSATORY TREATMENT



**1 in = 500 ft**



**Legend**


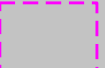
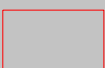
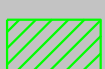
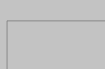

-  Conceptual Pond Site
-  Conceptual Drainage Basin
-  Project Parcel
-  FEMA Floodplain
-  Parcels
-  SECTION 2





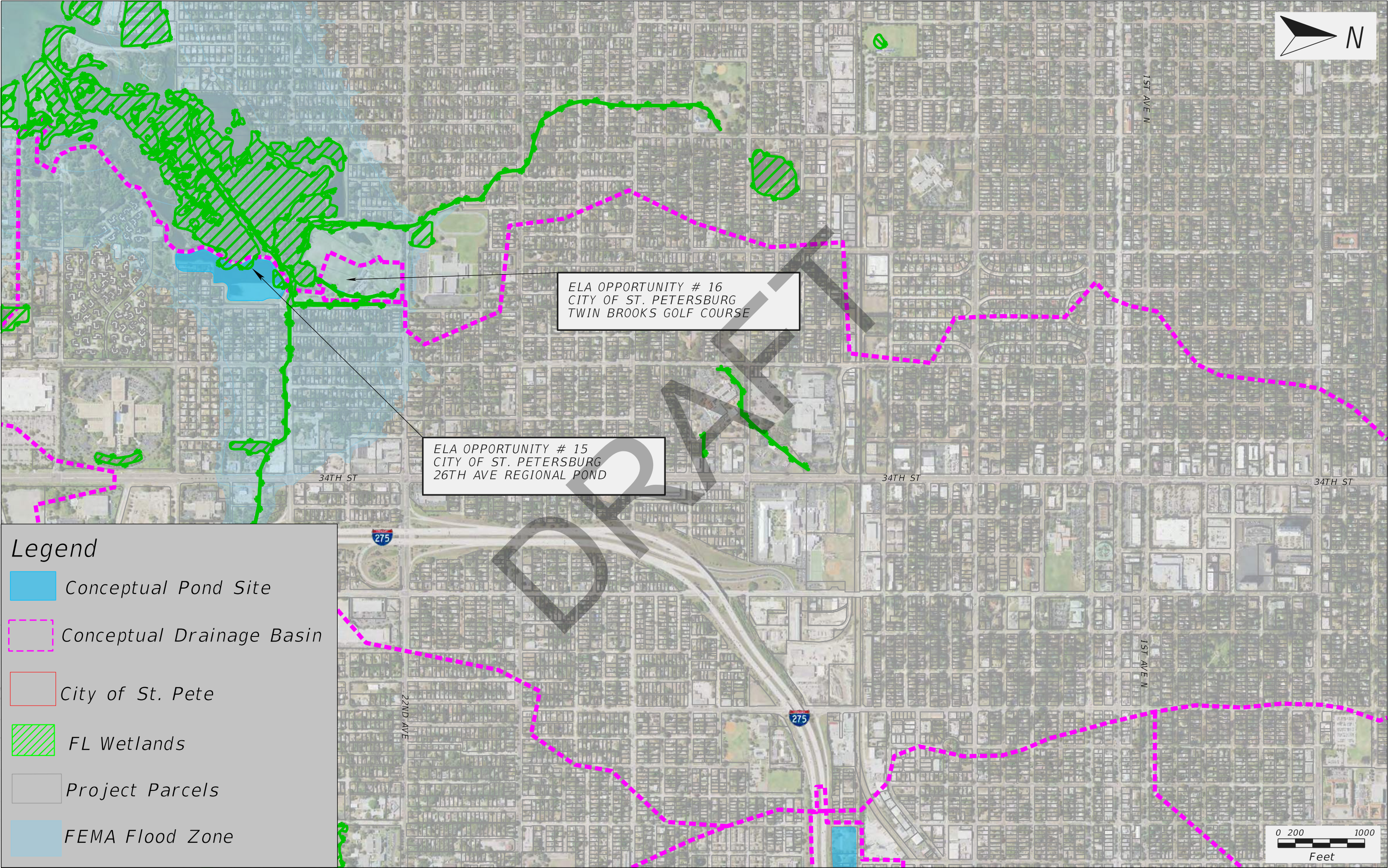
ELA OPPORTUNITY # 14  
CITY OF ST. PETERSBURG  
SW WRF

**Legend**

-  *Conceptual Pond Site*
-  *Conceptual Drainage Basin*
-  *City of St. Pete*
-  *FL Wetlands*
-  *Project Parcels*
-  *FEMA Flood Zone*







ELA OPPORTUNITY # 16  
CITY OF ST. PETERSBURG  
TWIN BROOKS GOLF COURSE

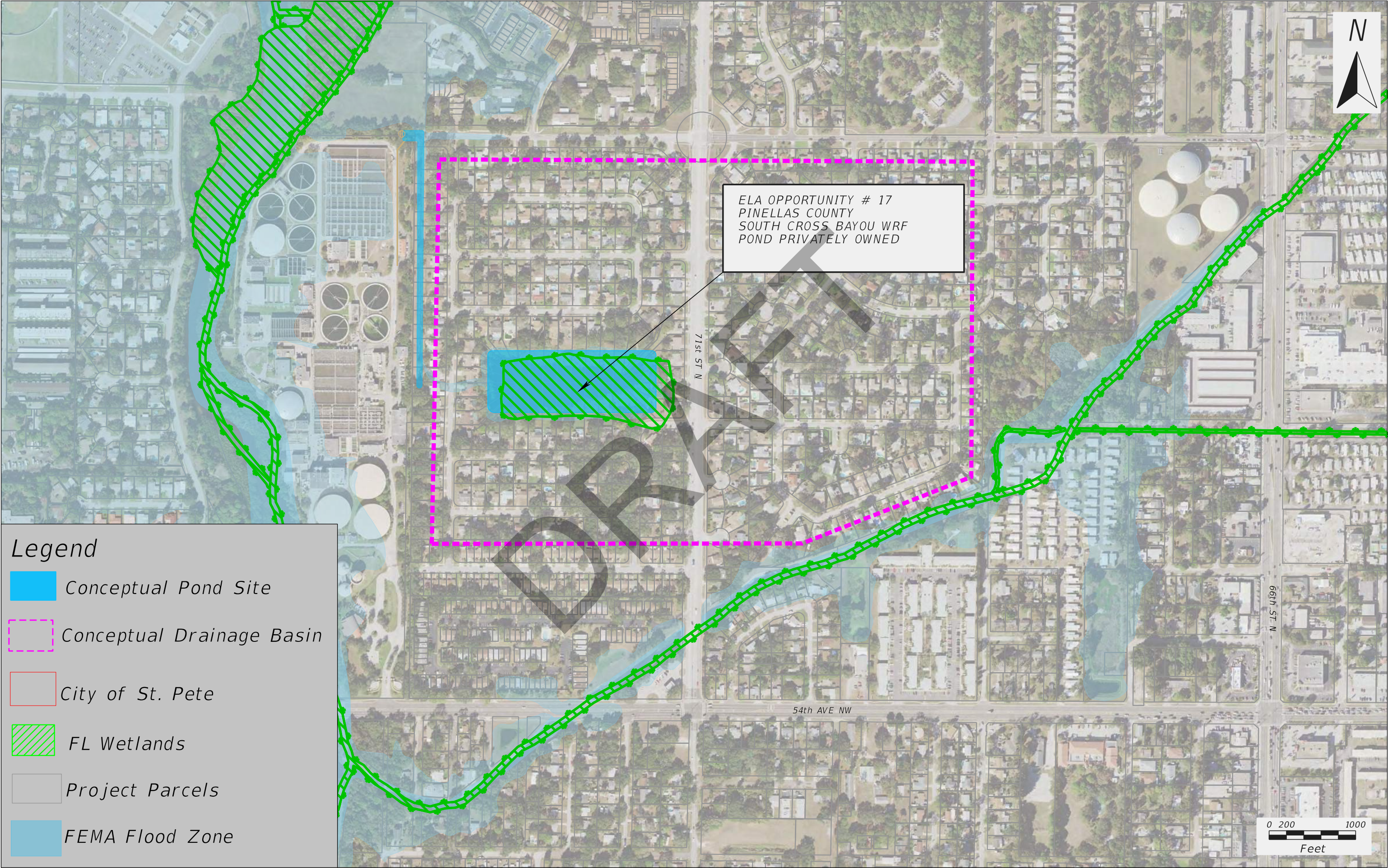
ELA OPPORTUNITY # 15  
CITY OF ST. PETERSBURG  
26TH AVE REGIONAL POND

**Legend**



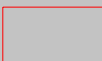
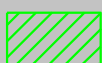
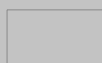

-  Conceptual Pond Site
-  Conceptual Drainage Basin
-  City of St. Pete
-  FL Wetlands
-  Project Parcels
-  FEMA Flood Zone







*Legend*

-  *Conceptual Pond Site*
-  *Conceptual Drainage Basin*
-  *City of St. Pete*
-  *FL Wetlands*
-  *Project Parcels*
-  *FEMA Flood Zone*

ELA OPPORTUNITY # 17  
PINELLAS COUNTY  
SOUTH CROSS BAYOU WRF  
POND PRIVATELY OWNED

