



District Seven

Final Preliminary Engineering Report

**State Road 50 (US 98/Cortez Boulevard)
From the Brooksville Bypass to west of Interstate 75**

Project Development and Environment (PD&E) Study

Hernando County, Florida

**Work Program Item Segment No. 430051-1
Federal Aid Project No. To be determined
ETDM Project No. 13980**

October 2020

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

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Prepared for:

Florida Department of Transportation
District Seven

This preliminary engineering report contains engineering information that fulfills the purpose and need for the State Road 50/US 98/Cortez Project Development & Environment Study from the Brooksville Bypass/SR 50A/East Jefferson Street to west of I-75 in Hernando County, Florida. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering as applied through professional judgment and experience.

I hereby certify that I am a registered professional engineer in the State of Florida practicing with American Consulting Engineers of Florida, LLC, and that I have prepared or approved the evaluation, findings, opinions, conclusions or technical advice for this project.



Jeffrey S. Novotny
10-12-2020

Jeffrey S. Novotny, P.E.
Florida PE #51083

This item has been signed and sealed by Jeffrey S. Novotny on the date adjacent to the seal.

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October 2020

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Acronyms

AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
BFE	Base Flood Elevation
BHR	Bridge Hydraulics Report
C2	Context Classification 2 (Rural)
C3R	Context Classification 3R (Suburban Residential)
CBC	Concrete Box Culvert
CC	Concrete Culvert
CCC	Chairs Coordinating Committee
CN	Curve Numbers
CRAS	<i>Cultural Resources Assessment Survey</i>
DDHV	Directional Design Hour Volume
DEP	Department of Environmental Protection
DHT	Design Hour Trucks
ERP	Environmental Resource Permit
ETDM	Efficient Transportation Decision Making
F.A.C.	Florida Administrative Code
FDM	FDOT Design Manual
FDOT	Florida Department of Transportation (also “Department”)
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FPC	Floodplain Compensation
FT	Feet
FTI	Florida Transportation Information
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information System
GULS	General Use Lanes
HCS	Highway Capacity Software
I-75	Interstate 75
LHM	<i>Location Hydraulics Memorandum</i>
LOS	Level of Service
LRE	Long Range Estimates
LRTP	Long Range Transportation Plan
MPH	Miles per Hour
MPO	Metropolitan Planning Organization
MUTCD	Manual on Uniform Traffic Control Devices
NAVD	North American Vertical Datum
NCHRP	National Cooperative Highway Research Program
NRCS	Natural Resources Conservation Service

NRE	<i>Natural Resources Evaluation Report</i>
NSR	<i>Noise Study Report</i>
PD&E	Project Development and Environment
PER	<i>Preliminary Engineering Report</i>
PHF	Peak Hour Factor
PTAR	<i>Project Traffic Analysis Report</i>
ROW	Right-of-Way
SCS	Soil Conservation Service
SIS	Strategic Intermodal System
SMF	Stormwater Management Facility(ies)
SR	State Road
SUE	Subsurface Utility Engineering
SWFWMD	Southwest Florida Water Management District
T24	Daily Truck
TBARTA	Tampa Bay Area Regional Transit Authority
TBRPM	Tampa Bay Regional Planning Model
TSM&O	Transportation System Management and Operations
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
VE	Value Engineering
VPD	Vehicles per Day
WBID	Water Body Identification
WPI	Work Program Item
WQIE	Water Quality Impact Evaluation

SECTION 1 PROJECT SUMMARY

1.1 PROJECT DESCRIPTION

In order to accommodate projected traffic increases along State Road (SR) 50, the Florida Department of Transportation (FDOT) conducted a Project Development and Environment (PD&E) study to evaluate alternative capacity and operational improvements from the Brooksville Bypass/SR 50A/East Jefferson Street to west of Interstate 75 (I-75) (See **Figure 1-1**).

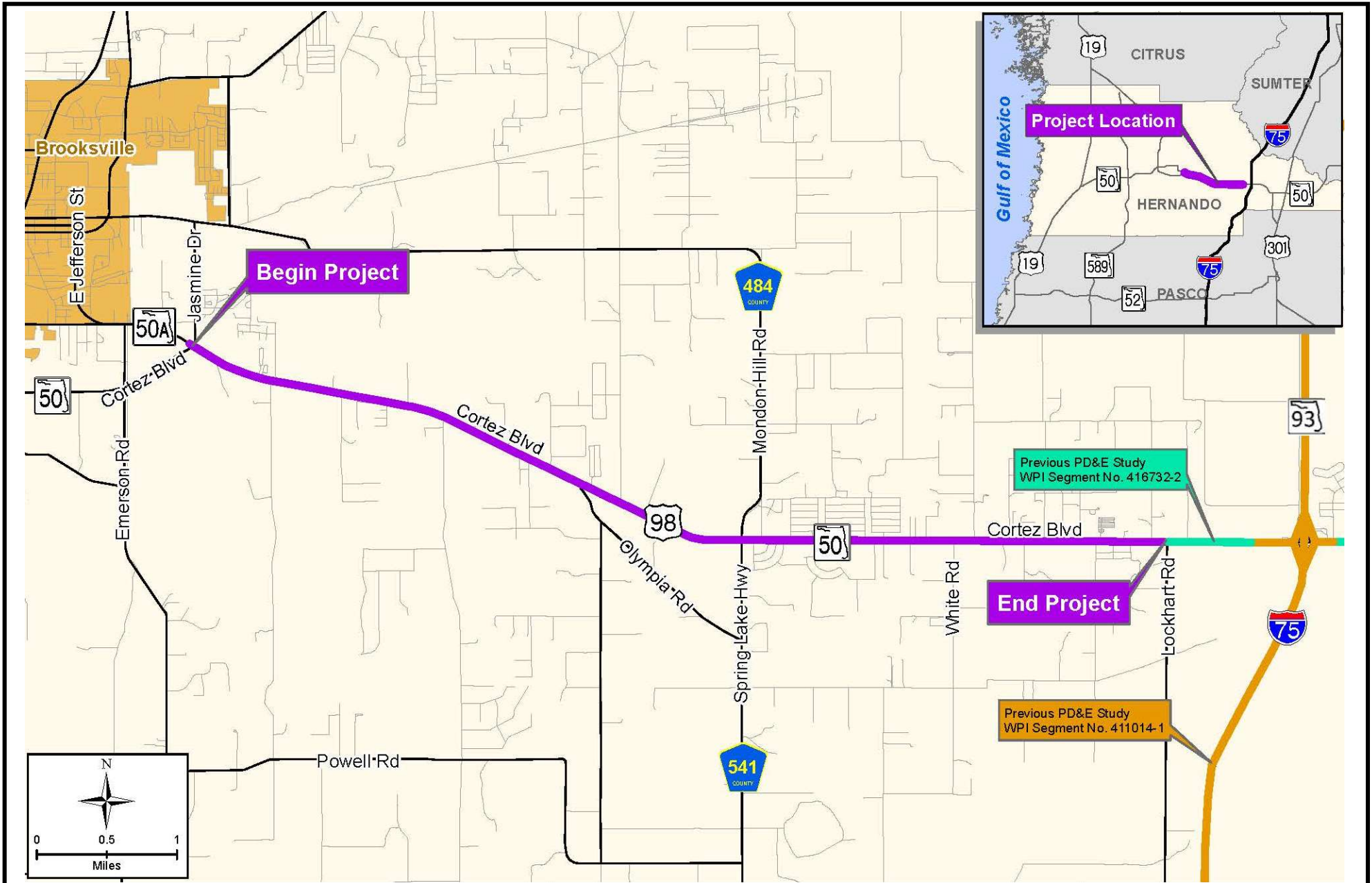
The study area extended to Lockhart Road on the east end of the project for a length of 7.2 miles. The section along SR 50 to the east of Lockhart Road was studied as a part of a separate approved PD&E study – SR 50 (Cortez Boulevard) from west of I-75 to US 301 (SR 35/Treiman Boulevard), Work Program Item (WPI) Segment No. 416732-2, with the I-75 interchange area excepted out under WPI Segment No. 411014-1. Improvements for the Lockhart Road intersection were included in the PD&E Study for WPI Segment No. 416732-2 and design project for WPI Segment No. 430051-2. The SR 50 highway is expected to be improved from an existing, four-lane divided rural facility to a six-lane divided facility. The proposed improvements will include construction of stormwater management facilities (SMF) and floodplain compensation (FPC) facilities and various intersection improvements, in addition to multimodal facilities (pedestrian, bicycle and transit accommodations).

1.2 PURPOSE AND NEED

Section 3 outlines the project's purpose and need in more detail. SR 50 is a major east-west arterial that spans central Florida from coast to coast. In Hernando County, SR 50 connects to several regionally significant corridors, including US 19, SR 589 (Suncoast Parkway), US 41, I-75, and US 301. SR 50 is a hurricane evacuation route, a designated truck route, and part of the Strategic Intermodal System (SIS). This segment of SR 50 connects the City of Brooksville to I-75.

The purpose of this project is to address projected roadway congestion due to future growth along the project corridor and within Hernando County. Increasing roadway capacity along this segment of SR 50 will accommodate future growth, provide for enhanced emergency response times and emergency evacuation, and work in conjunction with other projects planned or underway to increase the capacity of SR 50.

Within the limits of this PD&E study, the Hernando/Citrus MPO 2045 *Long Range Transportation Plan* (LRTP), adopted December 4, 2019, shows a need for improving SR 50 to 6 lanes. The LRTP shows funding for the design phase and ROW phase for expansion to 6 lanes in the *Cost Feasible Plan*.



State Road 50 PD&E Study
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Project Location and Study Area Map

Figure 1-1

1.3 COMMITMENTS AND RECOMMENDATIONS

As documented in the *Natural Resources Evaluation (NRE)* report, *Noise Study Report (NSR)*, and the *Cultural Resource Assessment Survey (CRAS) Technical Memorandum – Proposed Stormwater SMF & FPC Sites*, the FDOT has made four commitments as part of this project.

1. The FDOT will evaluate/survey SMF 4C for archaeological resources prior to any groundbreaking activities if it is chosen as a final pond location by FDOT.
2. The FDOT will incorporate the most current US Fish and Wildlife Service (USFWS) guideline *Standard Protection Measures for the Eastern Indigo Snake* if it is determined that the project's construction limits would involve habitat for this species.
3. Surveys for the Southeastern American Kestrel will be conducted during the nesting season (May through August). If it is determined nest areas are found and could be impacted by the project, FDOT will coordinate with Florida Fish and Wildlife Conservation Commission (FWC) to determine appropriate avoidance and minimization measures during construction.
4. The construction of the noise barrier at the locations identified in the *NSR*, is contingent upon the following:
 - o Detailed noise analysis during the final design process supports the need for, and the feasibility and reasonableness of, providing the barrier as abatement;
 - o The detailed analysis demonstrates that the cost of the noise barrier will not exceed the cost-effective criteria;
 - o The residents/property owners benefitted by the noise barrier desire that a noise barrier be constructed; and
 - o All safety and engineering conflicts or issues related to construction of a noise barrier are resolved.

1.4 DESCRIPTION OF PREFERRED ALTERNATIVE

The project was divided into two study segments based on SR 50 roadway segment ID numbers.

- The West Segment (4.2 miles), roadway segment ID 08 050 000, extends from the Brooksville Bypass/Jasmine Road to Spring Lake Highway/Mondon Hill Road (including this intersection) and falls within the limits of Context Classification C2-Rural.
- The East Segment (3.0 miles), roadway segment ID 08 070 000, extends from Spring Lake Highway/Mondon Hill Road to Lockhart Road and falls within the limits of Context Classification C3R-Suburban Residential.

The preferred alternative for this project is the build alternative which would include widening the existing four-lane divided rural highway to a six-lane divided highway. The preferred roadway typical sections include both a rural typical section for the west segment of the project and a suburban typical section for the east segment of the project.

For the **west study segment**, a six-lane rural typical section with a 40-foot flush median is preferred for this segment consistent with Context Classification C2-Rural. This would provide a 65 miles per hour (mph) design speed, but would require a design variation for border width to stay within the existing 200 feet of right of way (ROW). Sidewalks would be extended on both sides of this segment, 5 feet wide on the north side and a wider 10 foot sidewalk on south side as requested by the Hernando-Citrus Metropolitan Planning Organization (MPO).

For the **east study segment** the preferred typical section is a six-lane suburban typical section with a 30-foot high speed curbed median, consistent with Context Classification C3R-Suburban Residential . This would provide a 50 mph design speed to be consistent with C3R, lower than the existing posted speed of 60 mph throughout much of this segment. Sidewalks would be installed on both sides of this segment, 6 feet wide on the north side and the same wider 10 foot sidewalk on the south side.

The proposed improvements will include construction of SMF and FPC facilities and various intersection improvements. Additional ROW is proposed for off-site SMF and sites. No additional ROW is required for the roadway typical sections along SR 50, with the exception of corner clips at several intersections to provide for the intersection improvements.

The conceptual plans for the preferred alternative are shown in **Appendix A** and the proposed typical sections are shown later in this report on **Figure 8-3**. The preliminary estimated project costs of the preferred alternative are shown in Table 1-1.

Table 1-1 Preliminary Estimated Project Costs of the Preferred Alternative

Component	Estimated Cost (\$millions)
Construction of Roadway, Bridges and Ponds ¹	\$90.6
Right of Way for Roadway Only	\$0.7
Right of Way for Stormwater Ponds and Floodplain Compensation Sites ²	\$7.2
Wetlands Mitigation (0.96 acres)	\$0.2
Design (10% of construction)	\$9.0
Construction Engineering & Inspection (10% of construction)	\$9.0
Totals	\$116.7

¹Construction cost based on Long Range Estimate (LRE) system prepared April 2020

²Based on estimated ROW costs for the preferred stormwater ponds and floodplain compensation sites

SECTION 2 INTRODUCTION

2.1 PD&E STUDY PROCESS

The objective of this PD&E study is to assist the FDOT in reaching a decision on the type, location, and conceptual design of the proposed improvements for widening SR 50 (US 98/Cortez Boulevard) between the Brooksville Bypass/SR 50A/East Jefferson Street and west of I-75 in Hernando County.

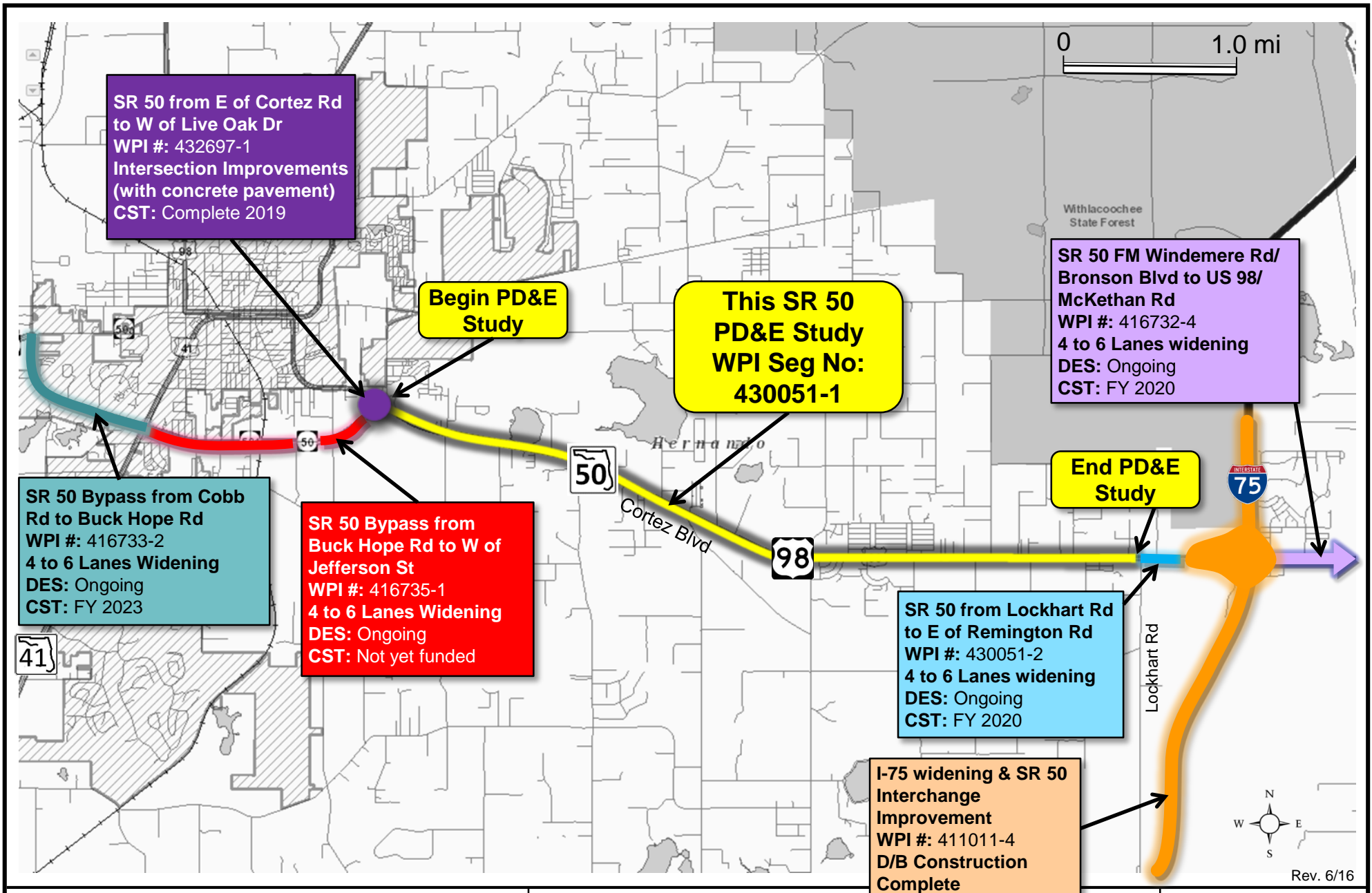
The PD&E study satisfies all applicable state and federal requirements in order for this project to qualify for federal funding of subsequent development phases (design, ROW acquisition, and construction). This project was screened through FDOT's Efficient Transportation Decision Making (ETDM) process as Project #13980. The *Final Programming Screen Summary Report* was published on January 7, 2014. A *Type 2 Categorical Exclusion* is being prepared as part of this study.

2.2 PROJECT HISTORY AND BACKGROUND

Future phases for this proposed project are not included in FDOT's current adopted 5-year work program (FY 2020 thru FY 2024). A separate PD&E study was conducted for the segment directly to the east, from west of I-75 to US 301/SR 35, and design, ROW and construction phases for this segment are programmed under WPI No. 430051-2. Improvements at the SR 50 intersection with Lockhart Road are included in this other project. In addition, the SR 50 Bypass to the west of this project is currently in the design phase for widening to six lanes; and the intersection at the west limit of the project was recently reconstructed with concrete pavement under WPI Segment No. 432697-1. These related projects are shown in **Figure 2-1**.

2.3 PURPOSE OF REPORT

This *Preliminary Engineering Report (PER)* is one of several documents that are being prepared as part of this PD&E study. This report documents all of the engineering-related aspects associated with the proposed widening of SR 50. Separate reports are being prepared to document engineering evaluations, environmental effects and public involvement efforts (see **Section 11** for list).



Rev. 6/16



State Road 50 PD&E Study
From the Brooksville Bypass to west of Interstate 75
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Map of Adjacent Roadway Projects

Figure 2-1

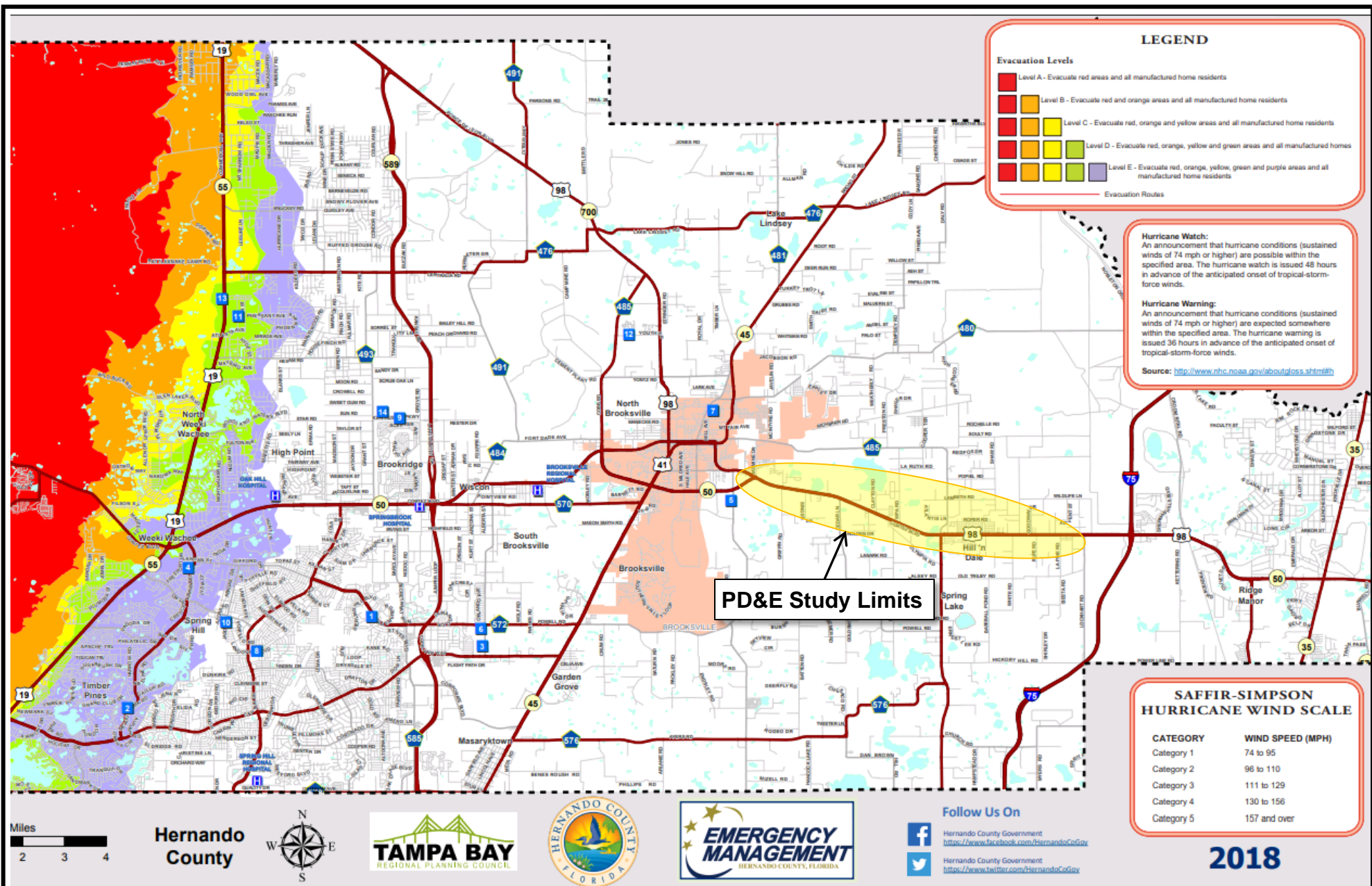
SECTION 3 PURPOSE AND NEED FOR PROJECT

SR 50 is a major east-west arterial that spans central Florida from coast to coast. In Hernando County, SR 50 connects to several regionally significant corridors, including US 19, SR 589 (Suncoast Parkway), US 41, I-75, and US 301. SR 50 is a hurricane evacuation route (**Figure 3-1**), a designated truck route, and part of the SIS (**Figure 3-2**). This segment of SR 50 connects the City of Brooksville to I-75.

The purpose of this project is to address projected roadway congestion due to future growth along the project corridor and within Hernando County. Increasing roadway capacity along this segment of SR 50 will accommodate future growth, provide for enhanced emergency response times and emergency evacuation, and work in conjunction with other projects planned or underway to increase the capacity of SR 50. The annual average daily traffic (AADT) within the study limits varied between 18,150 and 22,700 vehicles per day (VPD) in 2014. Year 2040 AADTs based on the Tampa Bay Regional Planning Model (TBRPM Version 7.2) are predicted to range from 47,400 to 59,100 VPD. This would result in level of service (LOS) "F" at the major intersections.

Within the limits of this PD&E study, the Hernando/Citrus MPO 2045 *Long Range Transportation Plan* (LRTP), adopted December 4, 2019, shows a need for improving SR 50 to 6 lanes. The LRTP shows funding for the design phase and ROW phase for expansion to 6 lanes in the *Cost Feasible Plan*.

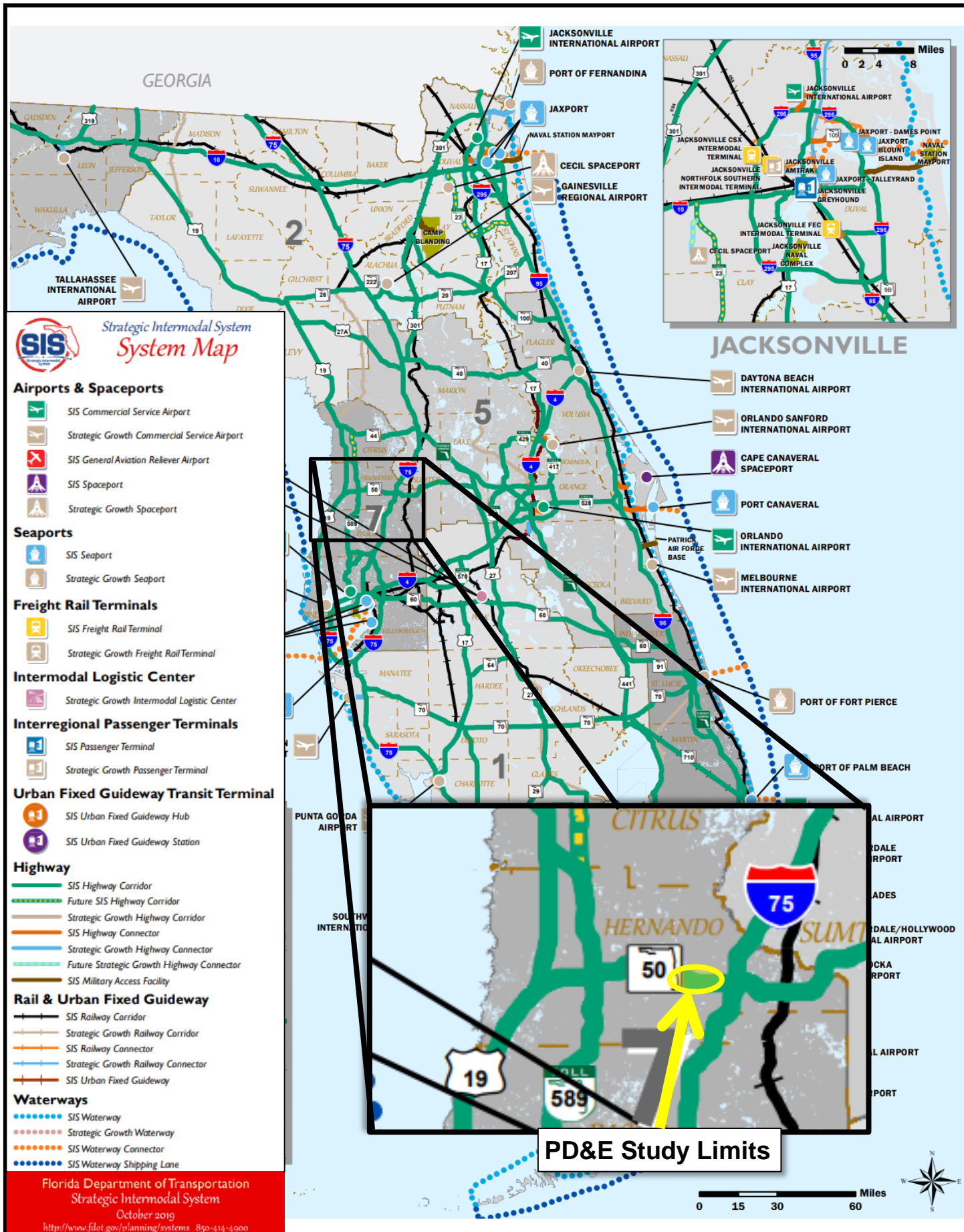
A more detailed discussion of the project's purpose and need is also included in the *ETDM Final Programming Screen Summary Report*.



State Road 50 PD&E Study
 From the Brooksville Bypass
 to west of Interstate 75
 WPI Segment No. 430051-1 Hernando County

Hernando County Evacuation Routes & Zones

Figure 3-1



State Road 50 PD&E Study
*From the Brooksville Bypass
 to west of Interstate 75*
 WPI Segment No. 430051-1 Hernando County

Florida's Strategic Intermodal System (SIS) Map Excerpt

Figure 3-2

SECTION 4 EXISTING CONDITIONS

4.1 EXISTING ROADWAY CHARACTERISTICS

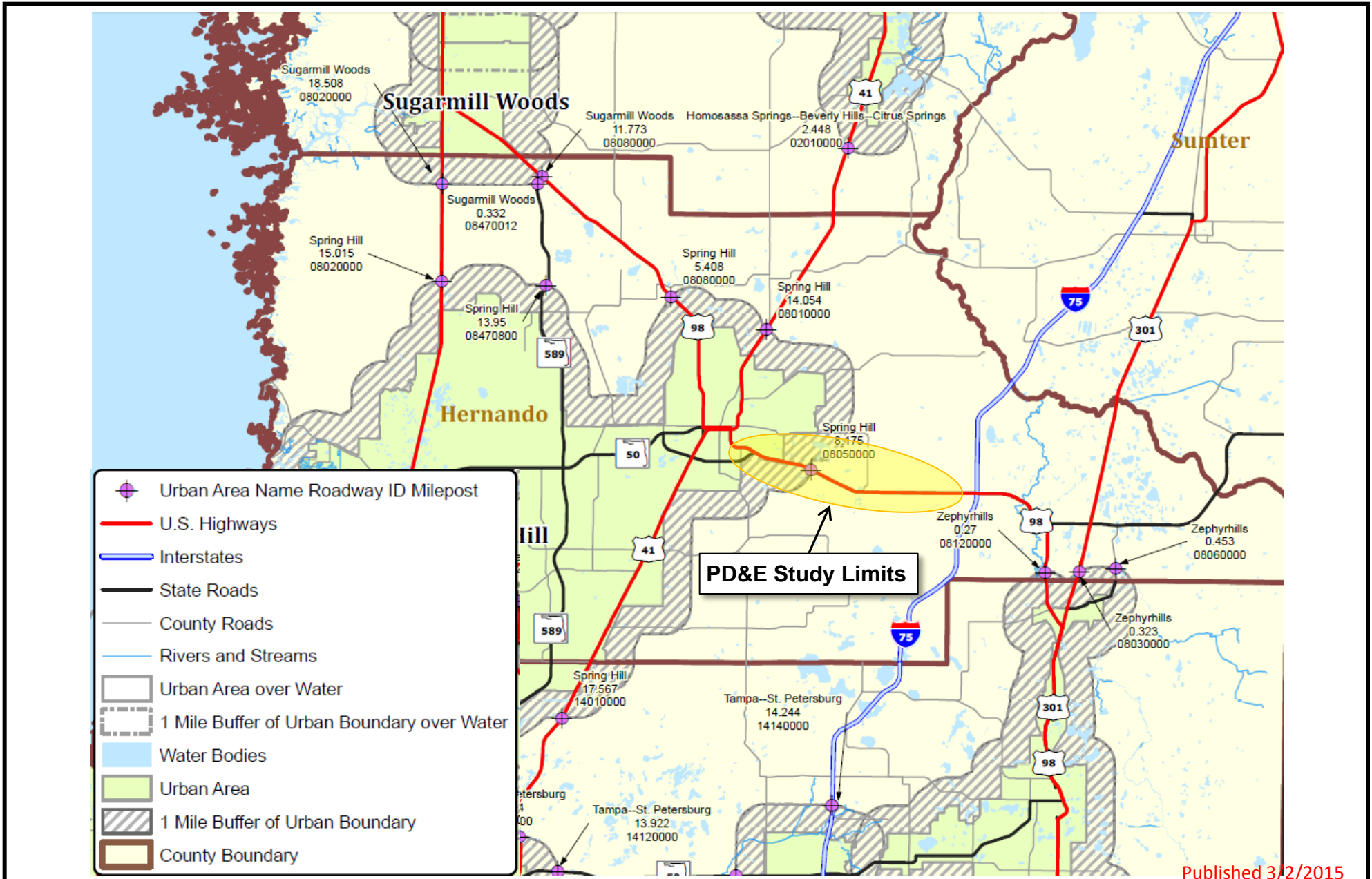
Appendix B includes Straight Line Diagram Inventory sheets for the study area which summarize basic information by milepoints along SR 50 for roadway segments 08-500-000 and 08-700-000. Note that the straight line diagram for 08-500-000 (west portion of the project) runs from east to west.

4.1.1 Roadway Classification, Context Classification and Access Management Classification

The existing highway is functionally classified as an “urban principal arterial – other” for the westernmost 1.12 miles of the study limits and as a “rural principal arterial – other” for the remainder of the study corridor. The Federal Highway Administration (FHWA) urban boundary map for this area is shown in **Figure 4-1**. This March 2015 revision of the map extended the one-mile buffer of the urban area boundary to milepoint 8.175, which is approximately one mile further east of the previous boundary.

In addition to the functional classification, the highway is part of the state’s SIS as noted previously and is also classified as an emergency evacuation route as noted in **Section 3**. The existing highway is classified as context classification **C2 (rural)** from the western limit of the project to Spring Lake Highway/Mondon Hill Road and **C3R (suburban residential)** from Spring Lake Highway/Mondon Hill Road to the east limit of the project west of I-75 at Lockhart Road.

The existing access management classification is **Class 3**, which requires minimum 1/2 mile spacing for full median openings and traffic signals and 1/4 mile spacing for directional median openings. The west segment (4.2-miles) between the Brooksville Bypass and Mondon Hill Road currently has 12 median openings—6 full and 6 directional—most of which meet Class 3 standards. In contrast to that segment, the east segment (3.0-miles) from of Mondon Hill Road has 12 median openings—all full openings—none of which meet Class 3 standards for median opening spacing. FDOT’s standards for access management are included in **Section 6**. Existing median opening types and locations are summarized in **Figure 4-2** and **Table 4-1**.



Published 3/2/2015



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FHWA Urban Area Boundary Map

Figure 4-1

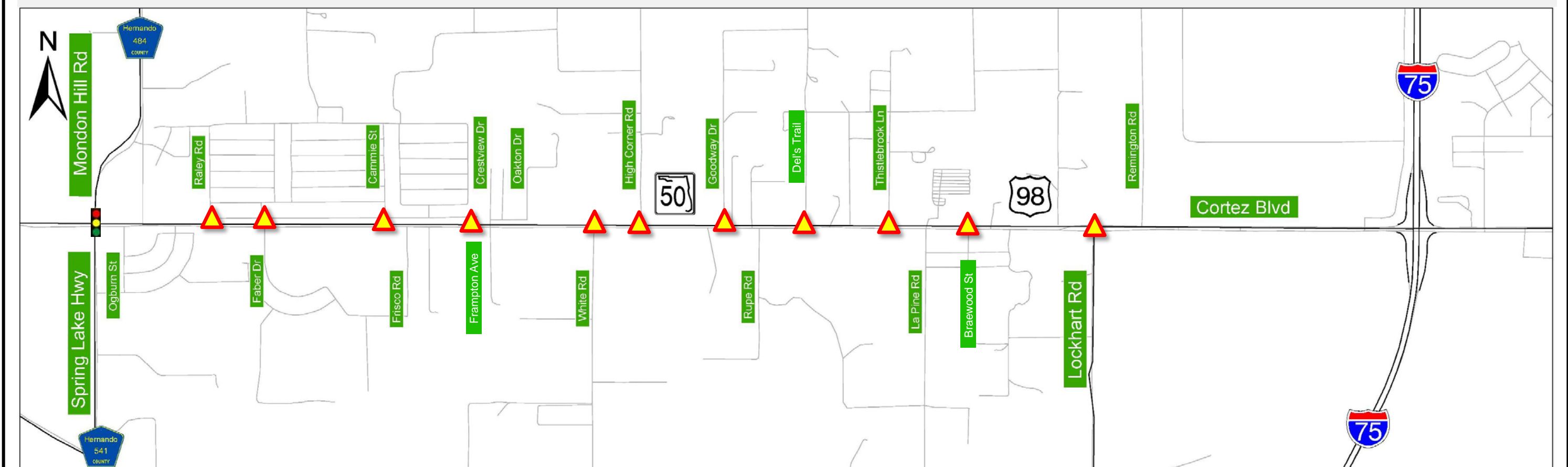
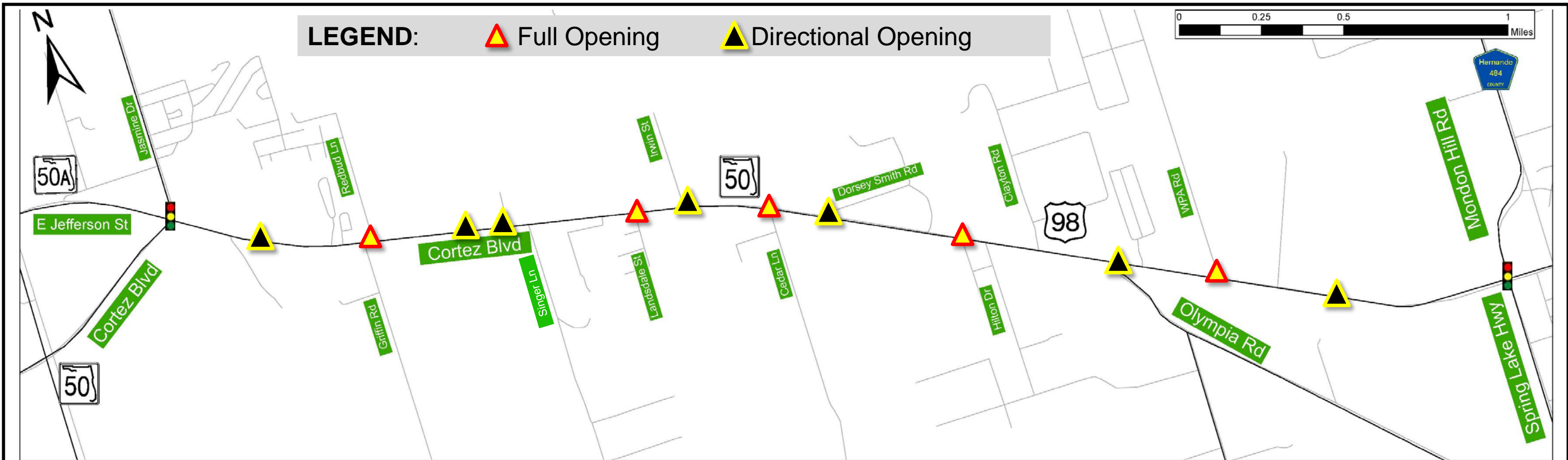


Table 4-1 Existing Median Openings Inventory

No.	Nearest Cross Road	Mile Point	Existing Access	Distance Existing (Ft)	Meet Criteria Existing?
West Segment – Roadway Segment ID 08 050 000					
1	SR 50 Bypass	10.312	SIGNAL		
2	E. of Jasmine Rd	9.995	DIRECTIONAL/ U-TURN ONLY	1674	YES
3	Griffin/Redbud	9.705	FULL	1531	YES
4	1100 Ft W. of Singer Ln	9.395	DIRECTIONAL	1637	YES
5	400 Ft W. of Singer Ln	9.265	DIRECTIONAL	686	NO
6	Landsdale St	8.860	FULL	2138	YES
7	E. of Landsdale St	8.67	DIRECTIONAL	1003	NO
8	Cedar Ln	8.439	FULL	1220	NO
9	Dorsey Smith Rd	8.262	EB DIRECTIONAL	935	NO
10	Hilton Dr	7.765	FULL	2624	YES
11	Olympia Rd	7.341	DIRECTIONAL	2239	YES
12	WPA Rd	7.042	FULL	1579	YES
13	E. of WPA Rd	6.672	EB DIRECTIONAL	1954	YES
14*	Spring Lake Hwy*	6.117/0.000	SIGNAL	2930	YES
East Segment – Roadway Segment ID 08 070 000					
15	Raley Rd	0.348	FULL	1837	NO
16	Faber Dr	0.518	FULL	898	NO
17	Cammie St	0.880	FULL	1911	NO
18	Frampton Ave.	1.158	FULL	1468	NO
19	White Rd	1.512	FULL	1869	NO
20	High Corner Rd	1.656	FULL	760	NO
21	Goodway Dr	1.906	FULL	1320	NO
22	Dels Trail	2.159	FULL	1336	NO
23	Thistlebrook Ln	2.414	FULL	1346	NO
24	Braewood St	2.654	FULL	1267	NO
25	Lockhart Rd	3.031	FULL	1991	NO

East of Lockhart Road covered by previously approved PD&E WPI #416732-2

* Roadway segment change
Shaded rows do not meet criteria

Access Management Class 3 Spacing Criteria	
Full	Directional
2640-ft	1320-ft

4.1.2 Typical Sections and Posted/Design Speeds

SR 50 is currently a four-lane rural highway with 4-foot (ft) paved outside shoulders and a depressed grassed median that varies from 40 to 46 feet in width (**Figure 4-3**). Several segments west of Mondon Hill Road have wider paved shoulders in sag vertical curve areas. Sidewalk is present on both sides of SR 50 for an approximate 0.95 mile segment between approximately 1,000 feet east of the Brooksville Bypass and Singer Lane. In some areas due to grade differential near the existing ROW line, there is a retaining wall and hand rails installed along the existing sidewalk. The posted speed limits vary from 45 mph to 60 mph, with 45 mph speed limits located near the west end and east of Lockhart Road, and an area with 55 mph speed is located on either side of the Spring Lake Highway/Mondon Hill Road intersection. The existing design speed is generally 65 mph based on the latest 3R as-built plans.

4.1.3 Pedestrian and Bicycle Facilities

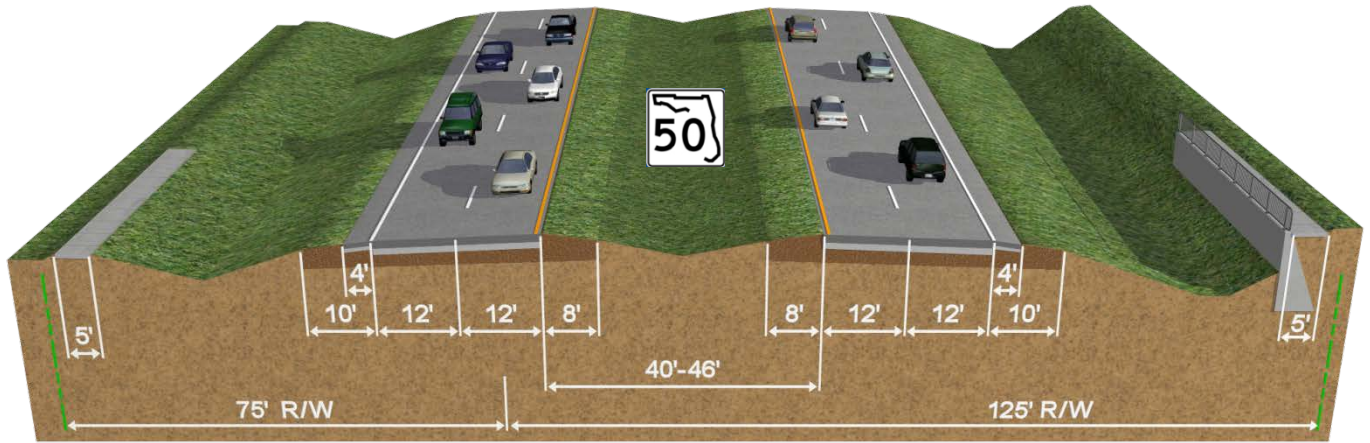
Other than the segment with sidewalk mentioned in **Section 4.1.2** above, the only other facilities for pedestrians are crosswalks and pedestrian signals included at the SR 50/Mondon Hill Road intersection. Existing SR 50 includes minimum 4-foot wide paved outside shoulders throughout which can be used by bicyclists throughout the study area. From the west end of the project to the Spring Lake Highway/Mondon Hill Road intersection, the paved shoulders are marked as bicycle lanes and “keyholes” are provided adjacent to right turn lanes where they are present.

4.1.4 Right of Way

The existing ROW is generally 200 feet wide throughout the study area. Exceptions include a short segment of 228 feet of ROW just east of Mondon Hill Road and a short segment west of Griffin Road, adjacent to the Brooksville Wesleyan Church with approximately 220 feet of ROW.

West Portion of Study Area

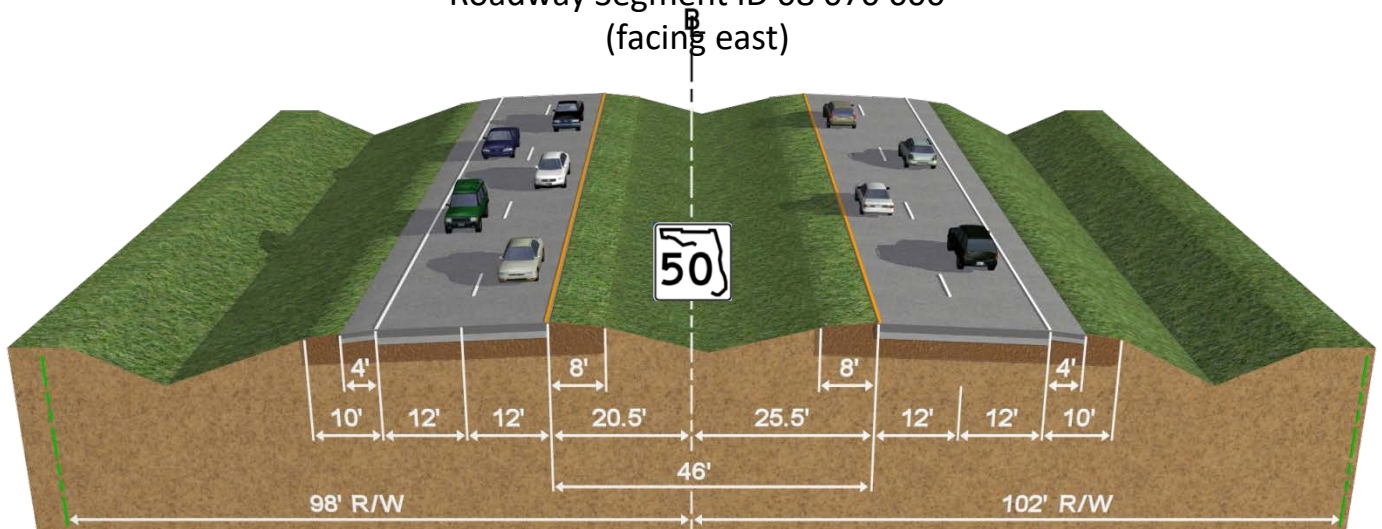
Roadway Segment ID 08 050 000
(facing east)



- From SR 50A/Brooksville Bypass/Cortez Blvd to Spring Lake Highway/Mondon Hill Road (4.2 miles)
- Posted Speed Varies: 45 mph at west end transitions to 60 mph throughout most of section
- Existing Context Classification: C2 Rural
- Sidewalks along western mile of segment

East Portion of Study Area

Roadway Segment ID 08 070 000
(facing east)



- From Spring Lake Highway/Mondon Hill Road to Lockhart Road (3.0 miles)
- Posted Speed Varies: 60 mph throughout most of section, transitions to 55 mph just west of Lockhart Road
- Existing Context Classification: C3R Suburban Residential



4.1.5 Horizontal Alignment

The existing horizontal alignment was obtained from baseline survey data obtained from FDOT’s survey section. **Table 4-2** summarizes the existing horizontal alignment. There are four horizontal curves within the study limits ranging from 1 degree to 3 degree curves, all of which are located west of Mondon Hill Road. In addition, based on the field survey data, there are a number of very minor deflection points located between Mondon Hill Road and Lockhart Road, but this segment is essentially tangent. Most of the curves appear to meet design standards for 65 mph design speed.

Table 4-2 Existing Horizontal Curves

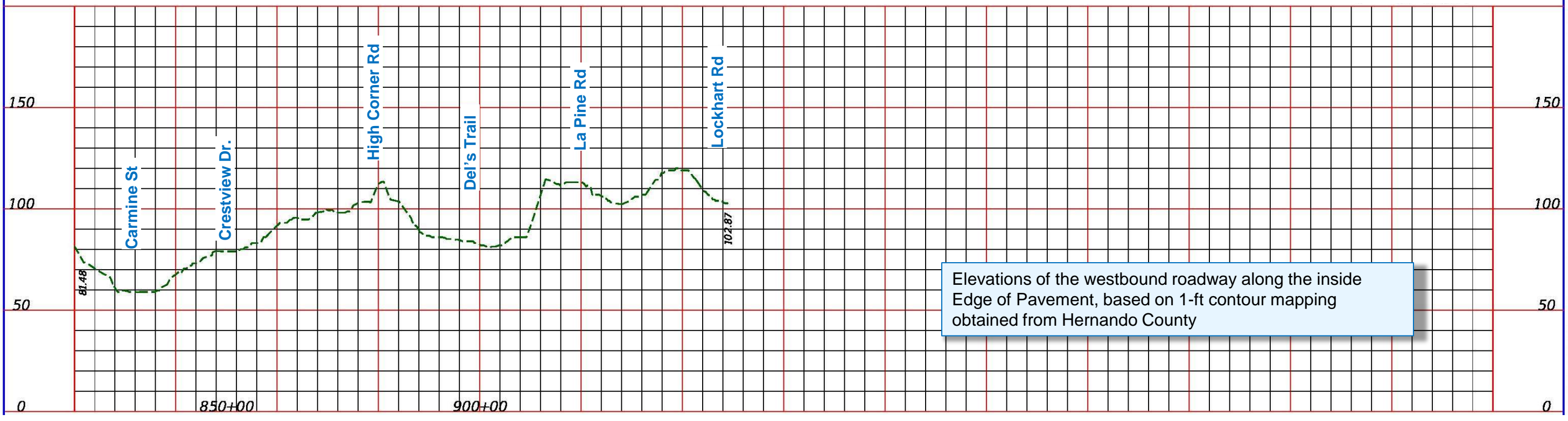
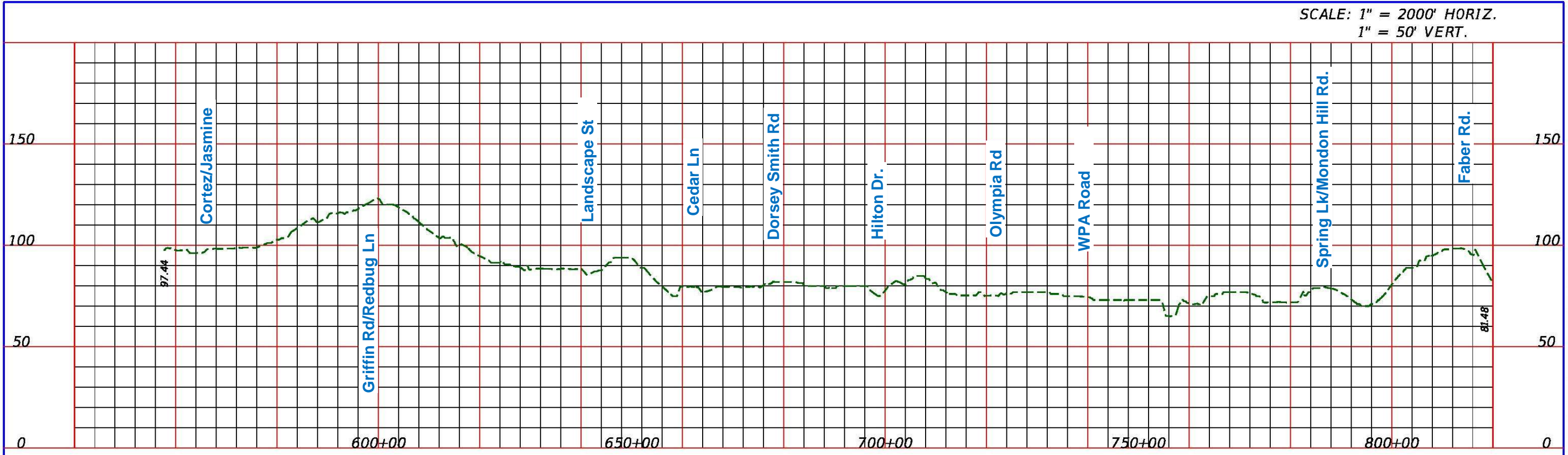
Curve #	Curve Location	Point of Intersection (PI) Location	Degree of Curve	Length (Ft)	Est. Design Speed (MPH)	Meet Criteria?	Superelevation		Meet Criteria?
							Existing	Req'd	
C4	Right	550+55.09	2° 00' 00"	1,546.02	65 mph	yes	unknown	0.062	unknown
C1	Left	586+64.02	1° 00' 00"	2,100.44	65 mph	yes	0.034	0.033	yes
C2	Right	659+29.94	1° 00' 00"	1,534.16	65 mph	yes	0.034	0.033	yes
C3	Left	771+12.20	3° 00' 00"	878.06	65 mph	yes	0.083 ⁴	0.087	no

Data Sources: 1) Curve Data: FDOT Official Survey Data from ROW maps and other sources; 2) Superelevation: Final Plans for State Project No. 0805-3511 (1997); 3) Required superelevation based on FDOT Design Manual (FDM), January 2019; 4) Estimated from the nearest cross section in the as-built plans; field survey required to confirm

4.1.6 Vertical Alignment

Existing roadway elevations were compiled from Hernando County one-foot contour interval topographic mapping to roughly approximate the existing roadway profile/ground line, as shown in **Figure 4-4**. Elevations range from a low of about 60 feet near Carmine Street to a high point of about 120 feet near Griffin Road/Redbug Lane and again near Lockhart Road. There are numerous vertical curves as summarized in **Table 4-3** (based on 1995 and 1996 as-built plans), and the terrain is generally rolling which is typical for many areas in Hernando County.

SCALE: 1" = 2000' HORIZ.
1" = 50' VERT.



Elevations of the westbound roadway along the inside Edge of Pavement, based on 1-ft contour mapping obtained from Hernando County

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Table 4-3 Existing Vertical Curves

PC Station	Curve #	Curve	Grade In	Grade Out	Algebraic Difference A*	Estimated Curve Length (ft)	Existing Curve K Value*	Est. Roadway Design Speed (mph)	Minimum** Required K Value	Comments on Actual K Value
West Segment - Roadway Segment ID 08 050 000										
595+52.60	1	Crest VC	1.150%	-2.059%	3.209%	1200	374	50 to 65	136 to 313	Meets 65 mph standard
608+00.00	2	Sag VC	-2.059%	-1.300%	0.759%	400	527	50 to 65	96 to 157	Meets 65 mph standard
613+00.00	3	Sag VC	-1.300%	-1.000%	0.300%	400	1333	50 to 65	96 to 157	Meets 65 mph standard
626+50.00	4	Sag VC	-1.000%	0.000%	1.000%	400	400	50 to 65	96 to 157	Meets 65 mph standard
640+00.00	5	Sag VC	0.000%	0.788%	0.788%	400	508	50 to 65	96 to 157	Meets 65 mph standard
645+75.00	6	Crest VC	0.788%	-2.326%	3.114%	900	289	50 to 65	136 to 313	Falls between 50 and 60 mph
654+75.00	7	Sag VC	-2.326%	0.000%	2.326%	450	193	50 to 65	96 to 157	Meets 65 mph standard
672+25.00 LT	8	Sag VC	0.000%	0.537%	0.537%	350	652	50 to 65	96 to 157	Falls between 50 and 60 mph
672+25.00 RT	8	Sag VC	0.000%	1.228%	1.228%	350	285	50 to 65	96 to 157	Meets 65 mph standard
675+75.00 LT	9	Crest VC	0.537%	-0.537%	1.074%	850	791	50 to 65	136 to 313	Meets 65 mph standard
675+75.00 RT	9	Crest VC	1.228%	-1.228%	2.456%	850	346	50 to 65	136 to 313	Meets 65 mph standard
684+25.00 LT	10	Sag VC	-0.537%	0.000%	0.537%	350	652	50 to 65	96 to 157	Meets 65 mph standard
684+25.00 RT	10	Sag VC	-1.228%	0.000%	1.228%	350	285	50 to 65	96 to 157	Meets 65 mph standard
699+25.00 LT	11	Sag VC	0.000%	1.350%	1.350%	350	259	50 to 65	96 to 157	Meets 65 mph standard
699+25.00 RT	11	Sag VC	0.000%	1.175%	1.175%	350	298	50 to 65	96 to 157	Meets 65 mph standard
702+75.00 LT	12	Crest VC	1.350%	-1.553%	2.903%	850	293	50 to 65	136 to 313	Meets 65 mph standard
702+75.00 RT	12	Crest VC	1.175%	-1.403%	2.578%	850	330	50 to 65	136 to 313	Meets 65 mph standard
712+25.00 LT	13	Sag VC	-1.553%	-0.100%	1.453%	350	241	50 to 65	96 to 157	Meets 65 mph standard
712+25.00 RT	13	Sag VC	-1.403%	-0.100%	1.303%	350	269	50 to 65	96 to 157	Meets 65 mph standard
728+75.00	14	Crest VC	-0.100%	-0.366%	0.266%	450	1692	50 to 65	136 to 313	Meets 65 mph standard
742+00.00	15	Sag VC	-0.366%	0.101%	0.467%	350	749	50 to 65	96 to 157	Meets 65 mph standard
754+55.00	16	Sag VC	-0.100%	0.300%	0.400%	350	875	50 to 65	96 to 157	Meets 65 mph standard
758+50.00 RT	17	Sag VC	0.300%	0.800%	0.500%	400	800	50 to 65	96 to 157	Meets 65 mph standard
764+60.00 RT	18	Crest VC	0.800%	-0.666%	1.466%	500	341	50 to 65	136 to 313	Meets 65 mph standard
762+00.00 LT	19	Sag VC	0.300%	0.700%	0.400%	400	1000	50 to 65	96 to 157	Meets 65 mph standard
775+97.00	20	Sag VC	-0.666%	1.253%	1.919%	350	182	50 to 65	96 to 157	Meets 65 mph standard
779+47.00	21	Crest VC	1.263%	0.182%	1.081%	600	555	50 to 65	136 to 313	Meets 65 mph standard
785+74.00	22	Crest VC	0.182%	-2.044%	2.226%	620	279	50 to 65	136 to 313	Meets 65 mph standard
East Segment - Roadway Segment ID 08 070 000										
792+04.00	23	Sag VC	-2.044%	3.501%	5.545%	740	133	50 to 65	96 to 157	Falls between 50 and 55 mph
799+94.00	24	Crest VC	3.501%	0.991%	2.511%	580	231	50 to 65	136 to 313	Falls between 50 and 55 mph
810+09.00	25	Crest VC	0.991%	-4.005%	4.996%	1,150	230	50 to 65	136 to 313	Falls between 50 and 55 mph
822+10.00	26	Sag VC	-4.005%	-1.880%	2.125%	280	132	50 to 65	96 to 157	Falls between 50 and 55 mph
829+34.00	27	Sag VC	-1.880%	1.850%	3.730%	600	161	50 to 65	96 to 157	Meets 65 mph standard
841+00.00	28	Crest VC	1.850%	0.105%	1.745%	700	401	50 to 65	136 to 313	Meets 65 mph standard
851+16.00	29	Sag VC	0.105%	2.654%	2.549%	568	223	50 to 65	96 to 157	Meets 65 mph standard
856+84.00	30	Crest VC	2.654%	0.465%	2.189%	600	274	50 to 65	136 to 313	Falls between 50 and 60 mph
875+84.00	31	Crest VC	1.141%	-2.706%	3.847%	1,000	260	50 to 65	136 to 313	Falls between 50 and 60 mph
885+84.00	32	Sag VC	-2.706%	-0.413%	2.293%	550	240	50 to 65	96 to 157	Meets 65 mph standard
896+34.00	33	Crest VC	-0.413%	-1.132%	0.718%	400	557	50 to 65	136 to 313	Meets 65 mph standard
900+34.00	34	Sag VC	-1.131%	3.513%	4.644%	800	172	50 to 65	96 to 157	Meets 65 mph standard
910+44.00	35	Crest VC	3.513%	-2.233%	5.746%	1,330	231	50 to 65	136 to 313	Falls between 50 and 55 mph
924+64.00	36	Sag VC	-2.233%	2.644%	4.877%	640	131	50 to 65	96 to 157	Falls between 50 and 55 mph
932+8900	37	Crest VC	2.644%	-2.750%	5.394%	1,240	230	50 to 65	136 to 313	Falls between 50 and 55 mph

Vertical curve lengths and grades are based on as-built plans.

*K = L/A where L = Length of the curve in feet, and A = algebraic difference in grades (percent)

**Minimum K Values for Vertical Curves based on FDOT FDM, January 2020

4.1.7 Drainage and Floodplains

A *Pond Siting Report (PSR)* was prepared for this project and it outlines the existing and proposed drainage conditions. The study limits of the SR 50 corridor are within two closed basins: Bystre Lake Watershed and Croom Watershed. Existing storm water management facilities consist of linear ponds (swales) within the ROW that provide water quality treatment and discharge attenuation. A FPC pond exists on the north side of SR 50 east of CR 541. The swales were designed to treat one-half inch of runoff from their contributing drainage area. Swales were equipped with ditch blocks to control discharge and retain water quality volume. The study limits of the SR 50 corridor traverses 15 project sub-basins with ultimate discharge to Bystre Lake. There are 19 cross drains and 1 bridge culvert (Bridge No. 080036) within the study limits. See **Tables 4-4** and **4-5** and **Figure 4-5** for cross drain and bridge locations.

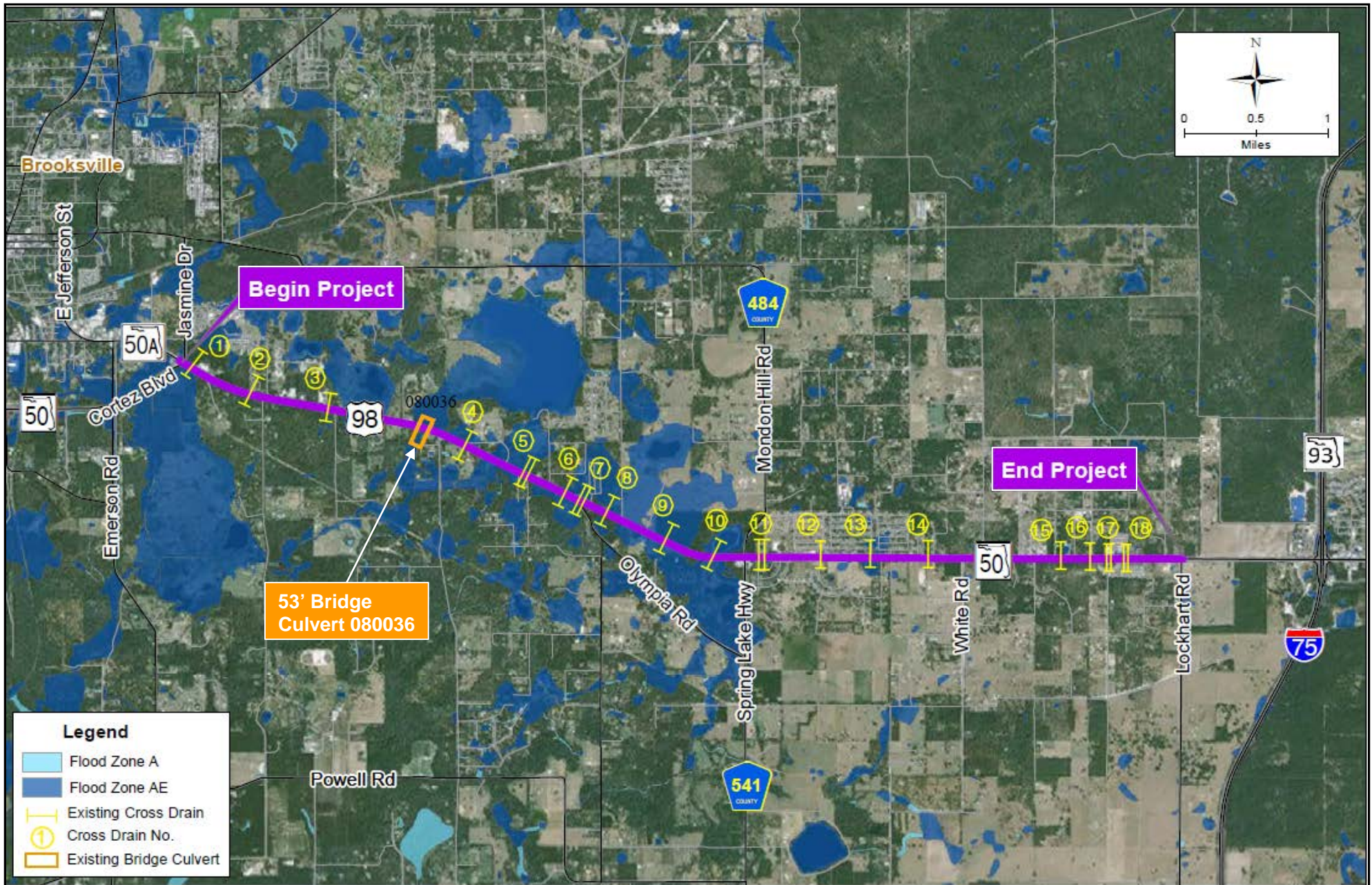
Table 4-4 Existing Cross Drains

Cross Drain No.	Mile Post	Station	Description
1	10.287	567+56	24" CC (Outfall Location)
2	9.786	594+30	24" CC
3	9.200	622+44	2-48" CC
4	9.022	634+30	76"X48" CC (Outfall Location)
5	8.296	673+83	24" CC (Outfall Location)
6	7.830	697+50	2-48" CC (Outfall Location)
7	7.460	721+50	18" CC
8	7.402	722+30	2-60"X38" CC (Outfall Location)
9	6.947	743+70	24" CC (Outfall Location)
10	6.708	756+30	10'X8' CBC (Outfall Location)
11	6.352	777+70	36" CC (Outfall Location)
12	0.133	794+80	2-36" CC (Outfall Location)
13	0.697	824+20	36" CC
14	0.847	832+10	36" CC (Outfall Location)
15	1.257	853+80	24" CC (Outfall Location)
16	2.212	903+80	30" CC (Outfall Location)
17	2.422	915+90	18" CC
18	2.624	926+40	2-45"X29" CC (Outfall Location)
19	2.684	929+50	2-30" CC

Note: CC denotes concrete culvert and CBC denotes concrete box culvert

Table 4-5 Existing Bridge Culvert

Bridge No.	Mile Post	Station	Description
080036	8.542 TO 8.552	659+30	53' Bridge Culvert (Outfall Location)



State Road 50 PD&E Study
*From the Brooksville Bypass
 to west of Interstate 75*

WPI Segment No. 430051 1 - Hernando County

Cross Drain and Bridge Locations

Figure 4-5

Table 4-6 summarizes verified Impaired Water Body Identification (WBID) System based on Department of Environmental Protection (DEP) Geographic Information System (GIS) data, and the WBID's are shown in **Figure 4-6**.

Table 4-6 Impaired WBIDs

Regional Basins	Project Basin No.	WBID	Impairments
Bystre Lake Watershed	1-8	1329E, 1329W	Nutrients (Total Phosphorus) in WBID 1329W
Croom Watershed	9-14	1329F	None

Bystre Lake has been identified to be impaired for nutrients (total phosphorus).

Drainage-Related Maintenance Issues

According to the District 7 Drainage Office there are four flood investigation sites (Investigation Nos. 0806192006827, 0806192006317, 0806042010344, and 0806092017259) within the project limits. No history of SR 50 roadway flooding has been identified. District 7 Maintenance Office also noted some concerns listed below:

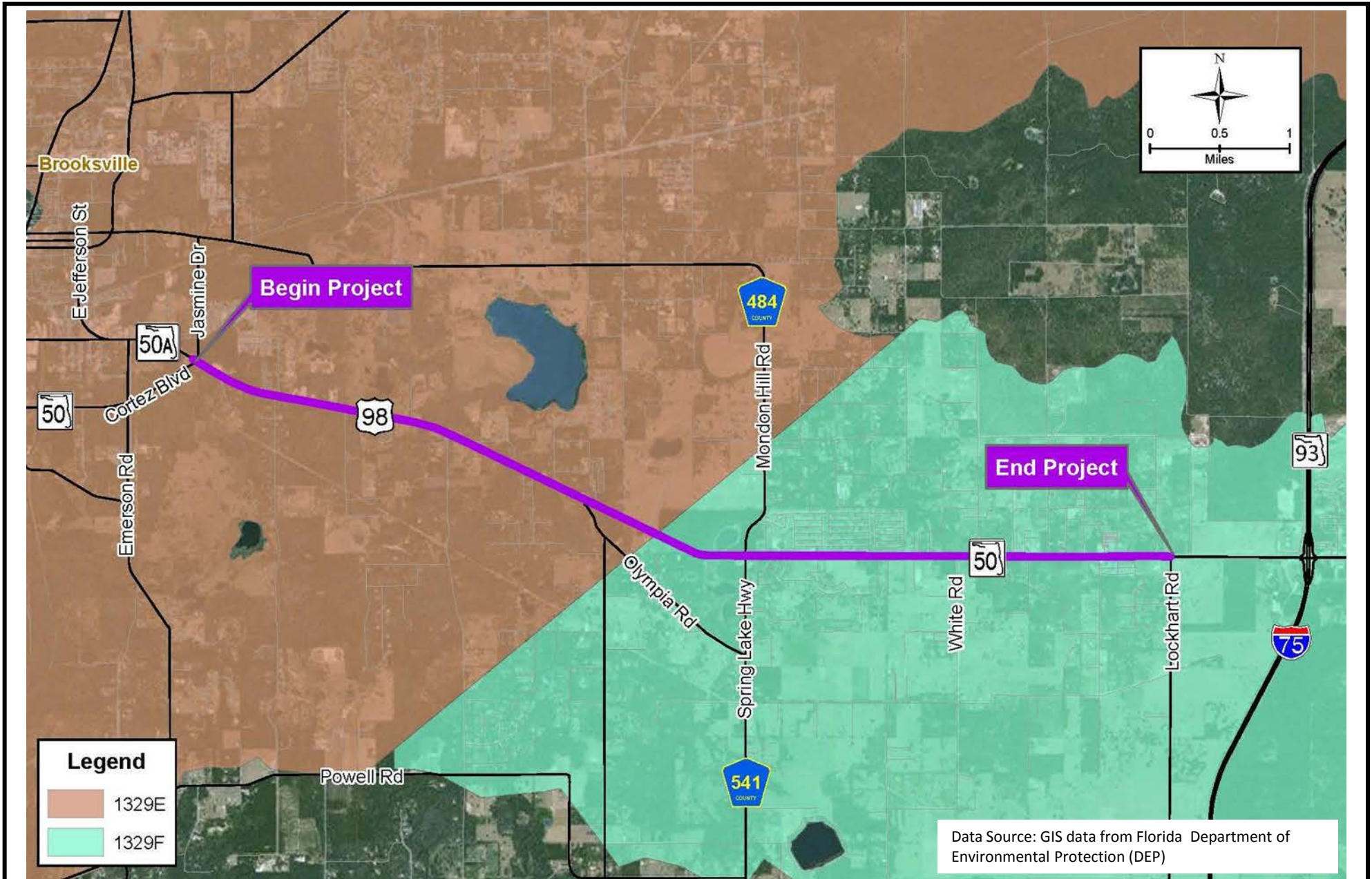
Maintenance-related issues identified include, Section #08050, from MP 6.117 to 10.130:

- Erosion under, behind and over pedestrian sidewalk
- Slime, mildew growing on sidewalks shaded by trees
- Erosion around headwalls
- Sidewalk constructed too close to trees are cracking, being stressed by tree growth
- Clogged drains installed on gravity walls (clogged with eroded sand from slopes)
- Silt over sidewalks
- Undermined sidewalks

Floodplains

A *Location Hydraulics Memorandum (LHM)* was prepared for this project detailing floodplain involvement.

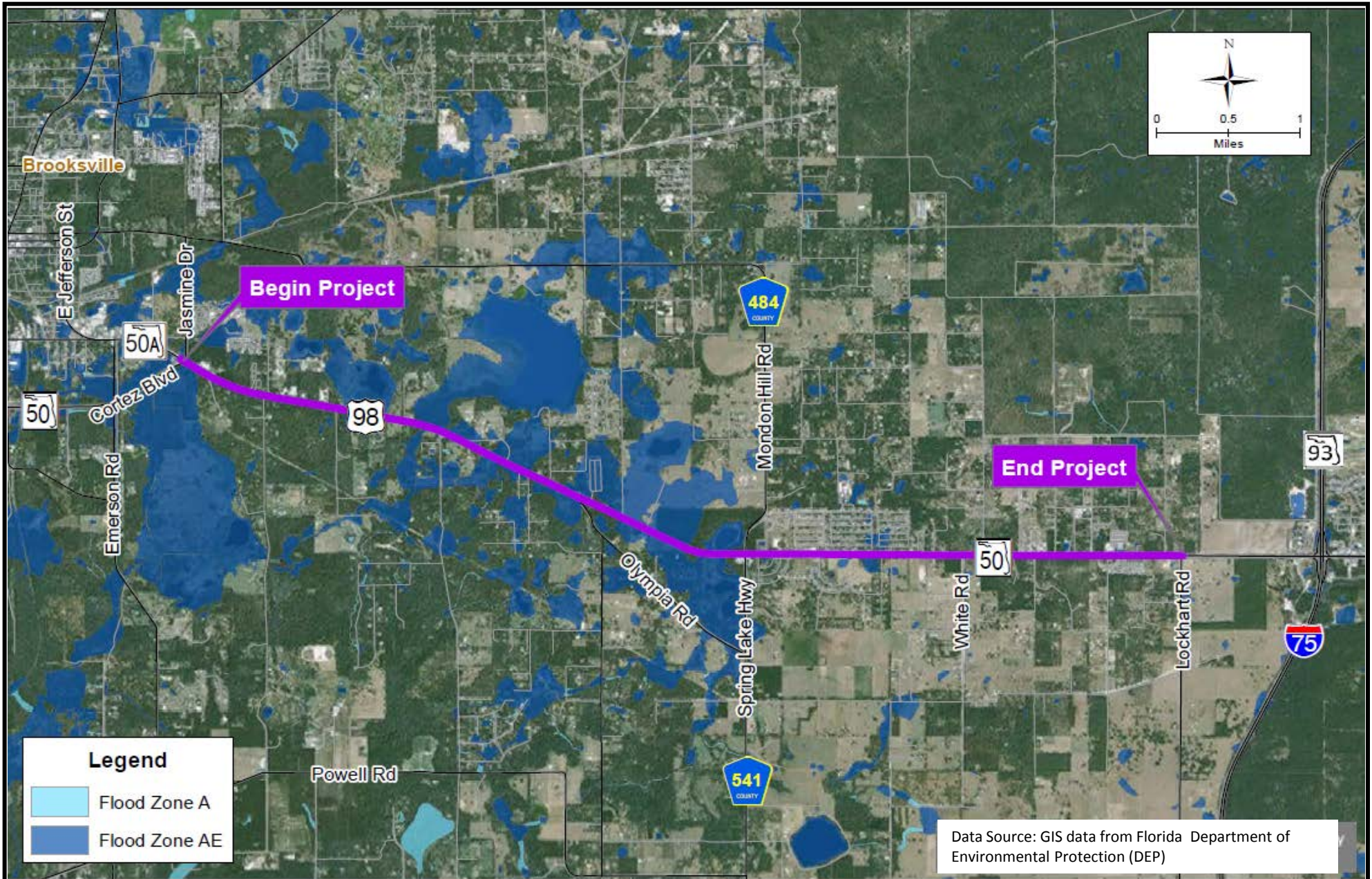
The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) dated February 2, 2012, (Firm Nos. 12053C0211D, 12053C0212D, 12053C0214D, 12053C0218D and 12053C0219D) indicate that portions of the study limits are within Flood Zones A and AE (elevations vary throughout limits). A FEMA floodplain map is provided below in **Figure 4-7**.



State Road 50 PD&E Study
From the Brooksville Bypass
to west of Interstate 75
 WPI Segment No. 430051-1 Hernando County

Water Body ID (WBID) Map

Figure 4-6



State Road 50 PD&E Study
*From the Brooksville Bypass
 to west of Interstate 75*
 WPI Segment No. 430051-1 Hernando County

FEMA Floodplain Map

Figure 4-7

Hernando County provided the following studies that establish the base floodplain for the project limits:

- *Bystre Lake Watershed Floodplain Justification Report*, dated March 2010
- *Justification for Updates to the FEMA Floodplain as a Result of Watershed Management Program for the Croom Watershed*, dated March 2010

Design floodplain elevations for each project sub-basin are identified in **Table 4-7**. The elevations provided in the table are for the 100-year storm event in feet North American Vertical Datum (NAVD) 88. The flood elevations utilized are per the current FEMA FIRMs and floodplain studies.

The project's drainage design will be consistent with local FEMA, FDOT, and Southwest Florida Water Management District (SWFWMD) design guidelines, which state that no net encroachment up to that, encompassed by the 100-year event, will be allowed, and that compensating storage shall be equivalently provided. Therefore, no significant changes in base flood elevations or limits will occur.

4.1.8 Geotechnical Data

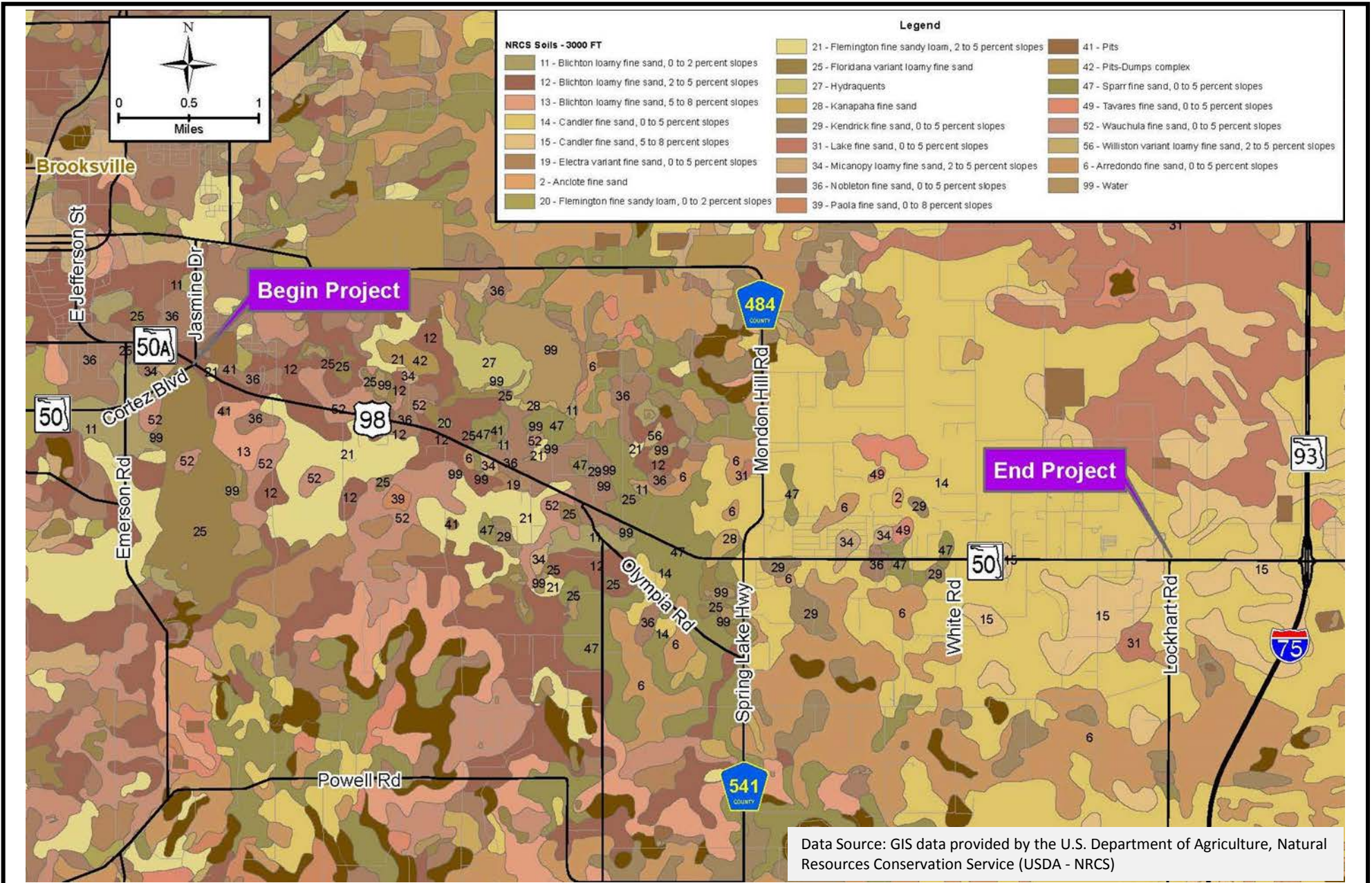
Based on a review of the U.S. Department of Agriculture's Natural Resources Conservation Service (USDA – NRCS) Soil Survey for Hernando County, Florida, the predominant soils within the study limits consist of Blichton loamy fine sand (12), Candler fine sand (14), Nobleton Fine Sand (36) and Sparr fine sand (47). For the purpose of estimating the Soil Conservation Service (SCS) runoff Curve Numbers, the Hydrologic Soil Group was retrieved from the SWFWMD Information System website. See **Table 4-8** for USDA soils and **Figure 4-8** for soils map. The runoff Curve Numbers (CN) were determined the *FDOT Drainage Design Guide* (dated January 2019) Appendix B Hydrology Design Aids Table B-7 using the Hydrologic Soil Group A/D.

Table 4-7 Floodplain Summary

Regional Basins	Project Sub-Basin No.	Project Sub Basin Boundaries	Model Node ID	Zone AE-Hernando County Design 100-yr Flood EL (ft – NAVD 88)
Bystre Lake Watershed	1	Sta 566+00 to Sta 598+25	NC0500	96.3
			NC0520	92.1
			NC0910	102.3
	2	Sta 598+25 to Sta 650+00	NC1400	87.8
			NC1405	85.1
	3	Sta 650+00 to Sta 669+00	NC1490/NA2040	78.2
			NC1345	77.5
	4	Sta 669+00 to Sta 680+00	NC1470/NC1480	78.2
	5	Sta 680+00 to Sta 707+00	NB0070	78.2
			NA1440/NA1480	77.4
	6	Sta 707+00 to Sta 731+00	NA1490	74.5
			NA1470	74.5
	7	Sta 731+00 to Sta 750+00	NA1770/NA1740	74.5
			NA1775/NA1790	74.5
	8	Sta 750+00 to Sta 769+00	NA1740	74.5
			NA1790/NA1880	74.5
Croom Watershed	9	Sta 769+00 to Sta 787+00	NA1240	74.5
			NA1248	74.5
	10	Sta 787+00 to Sta 813+00	NA1220	67.3
	11	Sta 813+00 to Sta 849+00	NK0510	58.1
			NK0430	63.6
			NK0500	57.9
	12	Sta 849+00 to Sta 879+00	NK0532	77.4
			NK0534	77.6
			NK0540	94.3
			NK0538	95.0
			NK0536	96.3
	13	Sta 879+00 to Sta 918+00	NL0293	86.8
			NL0297	84.5
			NL0300	79.1
NL0257			80.4	
14	Sta 918+00 to Sta 939+00	NL0120	101.4	
		NL0170	100.8	
		NL0180	102.4	

Table 4-8 USDA Soils

Map #	Soil Name	Hydrologic Group	Depth to High Water Table (ft)	Soil Type	Description
6	Arredondo Fine Sand	A	>6.0	Sandy and loamy soil	Well drained soil on the uplands, slopes 0-5%
12	Blichton Loamy Fine Sand	D	0-1.0	Sandy and loamy soil	Poorly drained soil on the uplands, slopes 2-5%
14	Candler Fine Sand	A	>6.0	Sandy soil	Excessively drained soil on uplands, slopes 0-5%
15	Candler Fine Sand	A	>6.0	Sandy soil	Excessively drained soil on uplands, slopes 5-8%
19	Electra Variant Fine Sand	C	2.0-3.5	Sandy and loamy soil	Excessively drained soil on uplands, slopes 0-5%
21	Flemington Fine Sandy Loam	D	0-2.5	Sandy and loamy soil	Poorly drained soil on the uplands, slopes 2-5%
25	Floridana Variant Loamy Fine Sand	A/D	+2-1.0	Sandy and loamy soil	Very poorly drained soil in depressions
28	Kanapaha Fine Sand	A/D	0-1.0	Sandy and loamy soil	Poorly drained soil on the uplands
29	Kendrick Fine Sand	A	>6.0	Sandy and loamy soil	Well drained soil on the uplands, slopes 0-5%
34	Micanopy Loamy Fine Sand	C	1.5-2.5	Sandy and loamy soil	Poorly drained soil on the uplands, slopes 2-5%
36	Nobleton Fine Sand	C	1.5-3.5	Sandy and loamy soil	Poorly drained soil on the uplands, slopes 2-5%
47	Sparr Fine Sand	A	1.5-3.5	Sandy and loamy soil	Poorly drained soil on the uplands, slopes 0-5%
52	Wauchula Fine Sand	B/D	0-1.0	Sandy and loamy soil	Poorly drained soil on the uplands, slopes 0-5%



State Road 50 PD&E Study
*From the Brooksville Bypass
 to west of Interstate 75*
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Existing Soils Map

Figure 4-8

4.1.9 Crash Data and Safety Analysis

Crash data along SR 50 within the project limits was obtained from the FDOT crash records database for the 5-year period 2013 through 2017. There were a total of 280 crashes reported within the project limits during this 5-year period which involved 238 injuries and 5 fatalities. **Table 4-9** summarizes the 5-year crash history along the study corridor. As a part of the analysis, the number of crashes that occurred at night was also summarized. The crash rate was calculated and compared to the statewide crash rate for similar type roadways.

Table 4-9 shows that the average crash rate for the study corridor is 0.91 which is lower than the statewide 5-year average crash rate of 1.669 for four to five lanes two-way divided raised suburban segments. Approximately 42.5 percent of the total crashes along SR 50 were night-time crashes; this compares to approximately 28 percent for the statewide average for all roadways.

The distribution of the crashes by milepoint is shown in **Figure 4-9**. The chart indicates that the majority of the crashes occurred at Spring Lake Highway/Mondon Hill Road and at or in the vicinity of La Rose Road/Nature Coast Boulevard and the I-75 Southbound Ramps.

Table 4-9 Summary of Crash Analysis along SR 50

SR 50 from Brooksville Bypass/SR 50A/E Jefferson St (MP 10.312) to I-75 (MP 4.020) in Hernando County	Year					5-Year Total
	2013	2014	2015	2016	2017	
No. of Fatal Crashes	1	0	0	1	3	5
No. of Injury Crashes	25	25	26	43	23	142
No. of Property Damage Only Crashes	29	30	26	18	30	133
Total Crashes	55	55	52	62	56	280
Night-time crashes	23	23	18	25	30	119
<i>Average Crash Rate with Average AADT of 20,400</i>						<i>0.91</i>
<i>Statewide 5-Year Average Crash Rate for Rural Segments*</i>						<i>1.669</i>

**Obtained from FDOT – District Seven*

The La Rose Road/ Nature Coast Boulevard intersection is included in the crash summary to document any influence with the adjacent I-75 interchange.

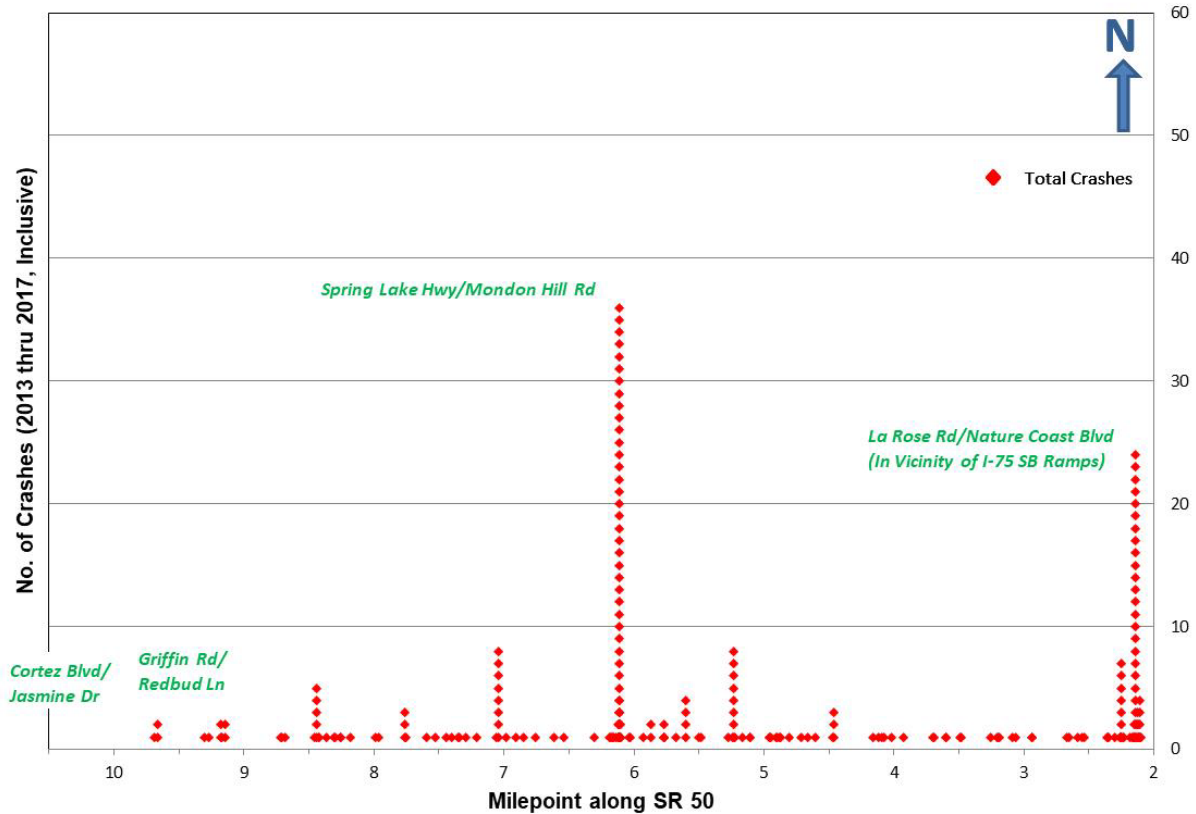


Figure 4-9 Distribution of Crashes along SR 50 by Milepoint

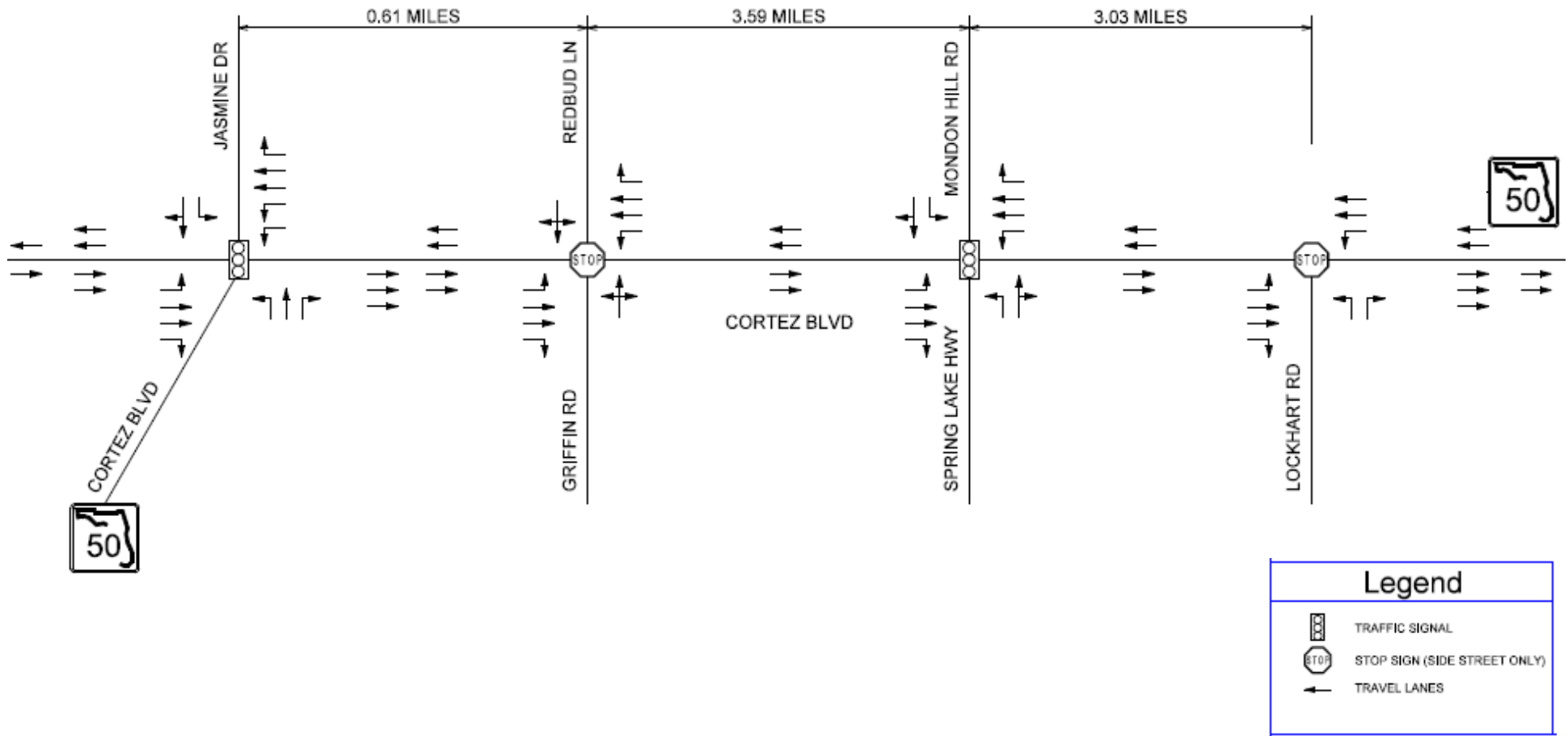
The breakdown of the total crashes within the study limits for the same 5-year period was also examined. Overall, rear-end crashes accounted for 28 percent of the total crashes, angle crashes accounted for 14 percent, left-turn crashes accounted for 15 percent and sideswipe crashes accounted for 9 percent and the remaining 34 percent of the crashes were the other crash types. There were 8 crashes involving a pedestrian or a bicycle.

The 5 fatalities along SR 50 occurred at Cammie Street, Winding Woods Way, La Rose Road/Nature Coast Boulevard, Olympia Road and Cedar Lane. It should be noted that the intersection of SR 50 and La Rose Road/ Nature Coast Boulevard intersection is outside the project limit but has been included in the crash summary to document any influence with the adjacent I-75 interchange. One of the fatal crashes involved a bike, 2 were hit fixed object, 1 was a single vehicle and the remaining one was an angle crash. Of these 5 fatalities, 3 occurred under dark – not lighted condition. The potential countermeasure to reduce fatality along the study corridor of SR 50 would be to add lighting along the corridor to better facilitate vehicular traffic and pedestrian/bicycle traffic under dark conditions.

4.1.10 Intersections and Signalization

Major intersections within the project limits include SR 50 at Cortez Boulevard/Jasmine Drive, CR 484/Spring Lake Highway and Lockhart Road. Existing signalized intersection locations and major unsignalized intersection locations along with the existing intersection lane geometry are shown in **Figure 4-10**.


 Drawing Not To Scale



State Road 50 PD&E Study
*From the Brooksville Bypass
 to west of Interstate 75*
 WPI Segment No. 430051 1 - Hernando County

Existing Intersection Laneage

Figure 4-10

4.1.11 Lighting

Except for street lighting in the vicinity of the westernmost intersection (at Jasmine/SR 50 Bypass) the existing roadway lacks street lighting. As shown in the crash analysis, over 42 percent of the crashes occurred during night conditions. This supports a need to add lighting to better facilitate pedestrian traffic in dark conditions. There were 8 crashes involving a pedestrian or a bicycle during the five year period from 2013 to 2017.

4.1.12 Utilities, ITS and Railroads

There are numerous utilities throughout the study corridor, as shown in **Table 4-10**, based on the *Draft Utility Assessment Package* prepared in August 2015 and data review updated in 2018. They include underground fiber and cable (Bright House Networks – Hernando – now Spectrum), underground water and sewer (City of Brooksville & Hernando County Utilities), overhead electric (Duke Energy & Withlacoochee River Electric Cooperative), and Telephone (AT&T/Distribution). TECO Peoples Gas stated that they have no utilities within the project limits, and that their nearest underground gas pipeline is east of Lockhart Road.

Hernando County water and sewer pipelines generally include 12-inch and 16-inch water lines and 4-inch sewer lines at various segments of the corridor starting from east of WPA Road. The City of Brooksville also has underground 6-inch and 12-inch water lines from the beginning of the project to Red Bud Lane. AT&T/Distribution has both aerial and buried (copper & fiber) cables throughout the project corridor. Other utility owner’s information will be investigated as the data is received and updated in the design phase.

Table 4-10 Existing Utilities in the Study Area

Utility Owner	Type of Facilities
Bright House Networks (now Spectrum)	Fiber Optic and Cable TV
City of Brooksville	Water & Sewer
Duke Energy	Electric Power
Hernando County Utilities	Water & Sewer
AT&T Distribution	Telephone
Withlacoochee River Electric Cooperative	Electric Power

4.1.13 Pavement Conditions

A flexible pavement condition survey was conducted by FDOT for the project corridor. Each section of pavement was rated for cracking and ride on a 0-10 scale with 0 the worst and 10 the best. Any rating of 6.4 or less is considered deficient pavement. **Table 4-11** identifies the existing pavement condition ratings by segment. The existing pavement is generally in good condition. The concrete

reconstruction project at the Brooksville Bypass/Jasmine Drive intersection was recently completed in September 2018.

Table 4-11 Pavement Condition Survey Results

Beginning Milepoint	Ending Milepoint	Side	Most Recent Surveyed Year	Condition Category	Ratings	Year Finished Paving
6.117 Mondon Hill Rd	10.130 E. of Jasmine	Both	2019	Cracking	8.0	2014
				Ride	8.3	
10.130 E. of Jasmine	10.463 W. of Jasmine	Both	2018	Cracking	10.0	2017
				Ride	6.4	
0.000 Mondon Hill Rd	5.230 East of I-75	Both	2017	Cracking	9.5	2020*
				Ride	8.1	

*Anticipated completion date per the Florida Department of Transportation All System Pavement Condition Forecast; Pavement Improvement Projects in FM WPA Tentative Plan – 2020 – 2025

4.2 EXISTING STRUCTURES

Bridge culvert number 080036 conveys the Bystream Overflow under SR 50 near milepoint 8.55. This 170-foot long culvert was constructed in 1997 and consists of four barrels that are each 12 feet wide and 7 feet tall. The bridge culvert was assigned a sufficiency rating of 80 and a health index of 65.72 after its last inspection on January 22, 2019. Based on this information, the bridge culvert may need some minor rehabilitation work but does not need to be replaced.

4.3 ENVIRONMENTAL CHARACTERISTICS

Existing environmental characteristics are documented in the following reports prepared for this PD&E Study:

- *Natural Resource Evaluation Report*
- *Noise Study Report*
- *Air Quality Screening Memo*
- *Water Quality Impact Evaluation Checklist*
- *Farmland Conversion Impact Rating (USDA Form 80-1006)*
- *Contamination Screening Evaluation Report*
- *Cultural Resource Assessment Survey*
- *Cultural Resource Assessment Survey Technical Memorandum – Proposed Stormwater Management Facilities (SMF) Sites & Floodplain Compensation (FPC) Sites*
- *Type 2 Categorical Exclusion*

SECTION 5 PLANNING PHASE/CORRIDOR ANALYSIS

A separate planning phase for this proposed project was not performed other than a screening in the FDOT's ETDM system. A planning phase screen was not run for this proposed project in ETDM; however, a Final Programming Screen Summary Report was published on January 7, 2014 under ETDM Project Number 13980 for the proposed roadway improvements.

A separate corridor analysis was not conducted as part of this study since the purpose of this PD&E study was to identify concepts for widening the existing highway (within the existing corridor) consistent with the MPO's Long-Range Transportation Plan.

SECTION 6 DESIGN CONTROLS AND CRITERIA

Proposed design controls, standards and criteria are shown below in **Table 6-1**.

Table 6-1 SR 50 Design Controls and Criteria

DESIGN ELEMENT	West Segment 08 050 000	East Segment 08 070 000	Source
	6-Lane Rural	6-Lane Suburban	
<i>Functional Classification</i>	Rural Principal Arterial Other (SIS Corridor)	Urban Principal Arterial (SIS Corridor)	FDOT SLD dated 2019
<i>Context Classification</i>	C2 (Rural)	C3R (Suburban Residential)	FDM Table 200.4.1
<i>Design Year</i>	2040	2040	Traffic Report
<i>Design Speed</i>	65 mph	50 mph	FDM Table 201.5.1
<i>Design Vehicle</i>	WB-62FL	WB-62FL	FDM Section 201.6
HORIZONTAL ALIGNMENT			
<i>Maximum Superelevation</i>	0.10	0.10	FDM Table 210.9.1
<i>Maximum Curvature</i>	4°15'	8°15'	FDM Table 210.9.1
<i>Maximum Curvature w/o Superelevation</i>	0°15'	0°30'	FDM Table 210.9.1
<i>Max. Deflection w/o Horizontal Curve</i>	0° 45' 00"	0° 45' 00"	FDM Section 210.8.1
<i>Minimum Length of Horizontal Curve</i>	975' Desirable 400' Minimum	750' Desirable 400' Minimum	FDM Table 210.8.1
<i>Superelevation Rate</i>	1:200	1:160	FDM Table 210.9.3
VERTICAL ALIGNMENT			
<i>Maximum Grade</i>	3.00%	6.00%	FDM Table 210.10.1
<i>Minimum Grade</i>	N/A	0.30%	FDM Section 210.10.1.1
<i>Minimum Distance Between VPI's</i>	N/A	250 ft	FDM Section 210.10.1.1
<i>Min. K Value for Crest Vertical Curves</i>	313	136	FDM Table 210.10.3
<i>Min. K Value for Sag Vertical Curves</i>	157	96	FDM Table 210.10.3
<i>Minimum Vertical Curve Length</i>	Crest: 450 ft Sag: 350 ft	Crest: 300 ft Sag: 200 ft	FDM Table 210.10.4
<i>Minimum Stopping Sight Distance</i>	645 ft	425 ft	FDM Table 210.11.1
<i>Max. Change in Grade w/o Vertical Curve</i>	0.30	0.60	FDM Table 210.10.2
<i>Clearance for the Roadway Base above the Base Clearance Water Elevation</i>	3 ft	3 ft	FDM Section 210.10.3
ROADWAY CROSS SECTION			
Based on Medium Traffic Vols.			
<i>Lane Widths</i>	12 ft	12 ft	FDM Table 210.2.1
<i>Cross Slopes (Roadway)</i>	2% two inside lanes 3% outside lane	2% two inside lanes 3% outside lane	FDM Figure 210.2.1
<i>Cross Slopes (Shoulder)</i>	Outside 6% Inside 5%	Outside: 6% Inside: Same as adjacent lane	FDM Section 210.4.1
<i>Median Width (Minimum)</i>	40 ft	30'	FDM Table 210.3.1
<i>Shoulders: Outside</i>	Full Width 10ft Paved Width 5'ft	Full Width 10 ft Paved Width 5 ft	FDM Table 210.4.1
<i>Shoulders: Median</i>	Full Width 10 ft	6.5 ft (6-lane)	FDM Section 210.5.1 / FDM Table 210.4.1
<i>Sidewalk widths</i>	5 ft	6 ft	FDM Table 222.1.1
<i>Clear Zone (CZ)</i>	36 ft (Mainline) 24 ft (Aux Lane)	24 ft (Mainline) 14 ft (Aux Lane)	FDM Table 215.2.1
<i>Front Slopes</i>	1:6 to edge of CZ, then 1:4, 1:3, or 1:2 w guardrail (based on fill height)	1:6 to edge of CZ, then 1:4, 1:3, or 1:2 w guardrail (based on fill height)	FDM Table 215.2.3
<i>Back Slopes</i>	1:4 or 1:3 w std. width trapezoidal ditch & 1:6 front slope	1:4 or 1:3 w std. width trapezoidal ditch & 1:6 front slope	FDM Table 215.2.3
<i>Minimum Border Width</i>	40 ft	29 ft curbed 40 ft flush shoulder	FDM Table 210.7.1
<i>Access Classification</i>	Existing	3	FDM Table 201.4.2
	Proposed	3	
<i>Minimum Level of Service (Arterial)</i>	C	D	Project's Traffic Report
SOURCE: (1) FDOT Florida Design Manual (FDM), January 2020			

FDOT's access management standards are shown below in **Table 6-2**. As noted previously, SR 50 within the existing study limits is designated as access management Class 3.

Table 6-2 FDOT's Access Management Standards

Access Class	Median Type	Connection Spacing (feet)		Median Opening Spacing (feet)		Signal Spacing (feet)
		>45 mph	≤45 mph	Directional	Full	
2	Restrictive with Service Roads	1320	660	1320	2640	2640
3	Restrictive	660	440	1320	2640	2640
4	Non-Restrictive	660	440			2640
5	Restrictive	440	245	660	2640 >45 mph 1320 ≤ 45 mph	
6	Non-Restrictive	440	245			1320
7	Both Median Types	125		330	660	1320

Notes:

- "Restrictive" physically prevent vehicle crossing.
- "Non-Restrictive" allow turns across at any point.
- Speeds shown in this table are posted speeds.

Connection Spacing Near Interchange Ramps:

Connections and median openings located within 1,320 feet of interchange ramps require the following spacing (measured from the ramp furthest from the interchange):

- 440 feet ≤ 45 mph
- 660 feet > 45 mph
- 1,320 feet on Access Class 2 Facilities > 45 mph

Sources: FDOT FDM, January 2020, Table 201.4.2 (Rule 14-97 – Arterial Access Classification & Standards)
Florida Department of State, Florida Administrative Code, FDOT Rule Chapter 14-97.

SECTION 7 TRAFFIC DATA

The information in this section has been extracted from the project's *Project Traffic Analysis Report (PTAR)*.

7.1 EXISTING TRAFFIC VOLUMES AND TRAFFIC CHARACTERISTICS

Traffic counts were collected during August and September of 2014. The traffic count data included 72-hour classification counts performed at two locations, 72-hour approach machine counts performed at major intersections, and 8-hour turning movement counts performed at four key intersections within the study corridor. The collected field traffic count data is included in the Appendix of the PTAR.

Table 7-1 shows the recommended design traffic factors for the SR 50 corridor.

Table 7-1 Recommended K, D, T Factors along SR 50

SR 50 Segment	Standard K	D	Daily Truck (T ₂₄)	Design Hour Truck (DHT)
<u>West Segment 08 050 000</u> Brooksville Bypass/SR 50A/East to Spring Lake Highway/Mondon Hill Road	9.00%	52.35%	20.2%	10.0%
<u>East Segment 08 070 000</u> Spring Lake Highway/ Mondon Hill Road to I-75			15.9%	8.0%

The design hour traffic factors recommended for the SR 50 PD&E study include a standard K factor of 9.0 percent per the *2014 Project Traffic Forecasting Handbook* along SR 50 and all the side-streets. The recommended D-factor along the SR 50 study corridor is 52.35 percent based on the 72-hour classification counts conducted. These recommended K and D factors were used in the development of existing and future traffic volumes.

Recommended daily truck percentage (T₂₄) along the study corridor based on the 72-hour classification counts are 20.2 percent between Brooksville Bypass/SR 50A/East Jefferson Street and Spring Lake Highway/Mondon Hill Road; and, 15.9 percent between Spring Lake Highway/Mondon Hill Road and I-75. For the existing and future analysis along the side streets, design hour truck (DHT) factors were used based on the AM and PM peak hour turning movement counts. DHT for SR 50 is assumed to be half of T₂₄, rounded up to the nearest percent. A Peak Hour Factor (PHF) of 0.95 was used in the existing and future analysis for this study.

Existing AADT volumes were obtained by applying a seasonal adjustment factor and axle adjustment factor to the raw average daily traffic (ADT) counts from the 72-hour approach counts. The adjustment factors were obtained from 2013 Florida Transportation Information (FTI) DVD. These

seasonally and axle adjusted existing AADT volumes are shown in **Figure 7-1**. The “existing year” (2014) AM and PM peak hour directional design traffic volumes (DDHV) were obtained by multiplying the existing AADT volumes by the recommended K and D factors of 9.0 percent and 52.35 percent, respectively.

The AM and PM peak hour turning movement volumes were developed by multiplying the existing turning percentages with the DDHV estimated from AADTs. The existing turning percentages were obtained from the AM (proposed peak: 7:30am – 8:30am) and the PM (proposed peak: 4:00pm – 5:00pm) peak hour raw turning movement counts. Westbound is considered to be the peak direction along SR 50 within the project limits during the AM peak period in the development of the peak hour turning volumes. For the PM peak, eastbound for SR 50 (reverse of the AM peak) was used as the peak direction. Peak directions for side streets were obtained from the existing traffic counts. The existing year (2014) AM and PM peak-hour volumes are shown in **Figure 7-2**.

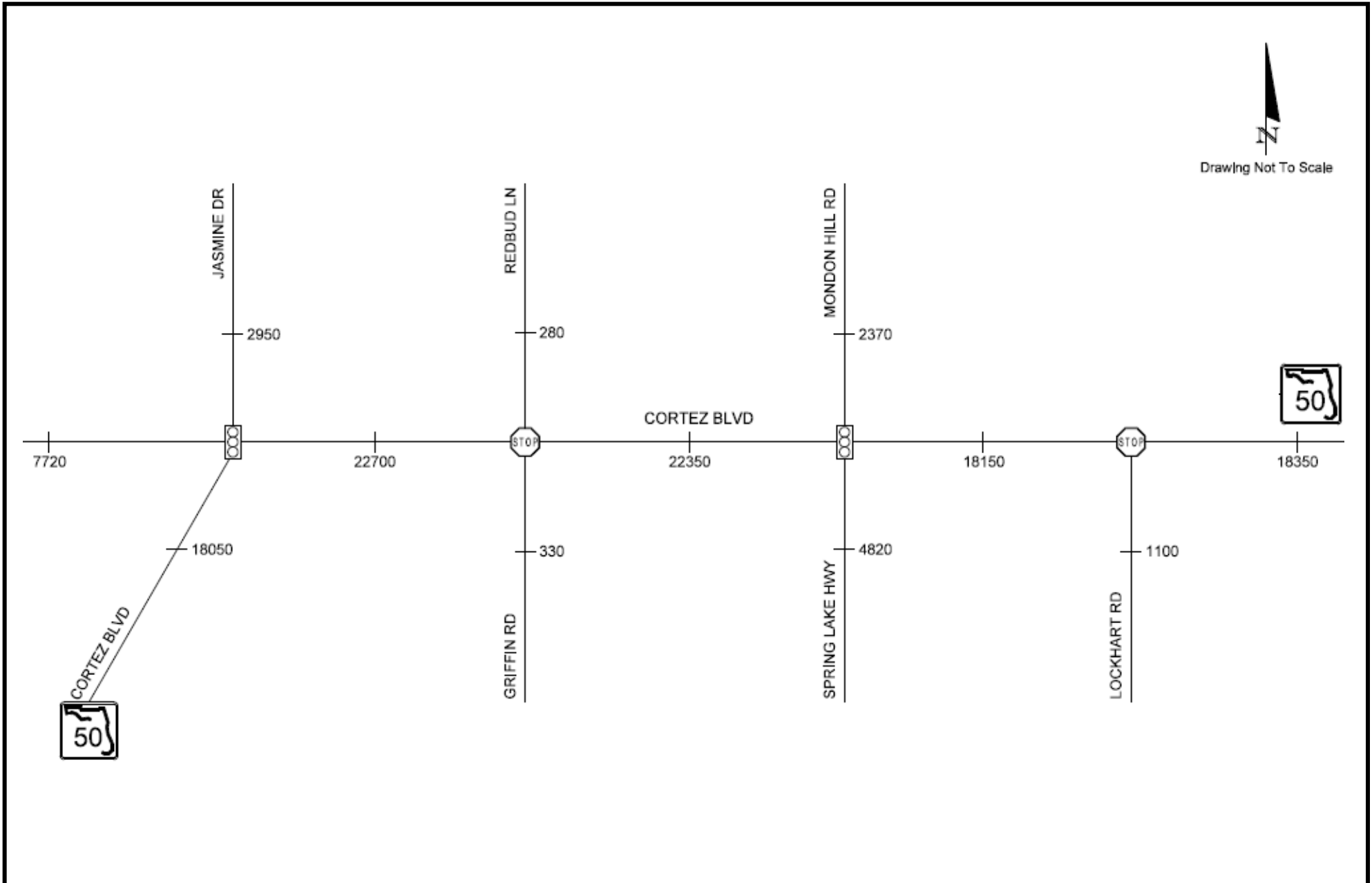
7.2 EXISTING LEVELS OF SERVICE

The existing lane geometry and approved existing AM and PM peak hour traffic volumes, along with signal timing plans obtained from Hernando County (with phasings verified from field review) were used for the existing analysis. The acceptable LOS standard for the existing condition in the study corridor of SR 50 in the urbanized area from Brooksville Bypass/SR 50A/East Jefferson Street to Singer Lane is ‘LOS D’ and along SR 50 in the transitioning area between Singer Lane and I-75 is ‘LOS C’ based on the Planning Boundaries for LOS standards for Hernando County and Page 123 of the 2013 FDOT Quality/LOS Handbook. SYNCHRO Version 8.0 (Build 805) was used as the analysis tool within the study limits. Signalized intersection LOS was estimated from SYNCHRO Version 8.0 (Build 805) software. The Highway Capacity Software (HCS) Version 5.6 was used for the un-signalized intersections. The existing LOS and control delay results for all the study intersections are summarized in **Table 7-2**.

Table 7-2 Year 2014 AM/PM Intersection Delay and LOS Summary

Intersection Along SR 50	Overall Average Delay (seconds/vehicle)	Overall Intersection LOS
SR 50A/SR 50 at Cortez Boulevard/Jasmine Drive (signalized)	24.4/23.2	C/C
SR 50 at Griffin Road/Redbud Lane ⁽¹⁾ (un-signalized)	25.6/25.6	D/D
SR 50 at Spring Lake Highway/Mondon Hill Road (signalized)	20.9/23.1	C/C
SR 50 at Lockhart Road (un-signalized)	15.6/18.5	C/C

(1) Un-signalized Intersection – Delay/LOS along worst minor approach.

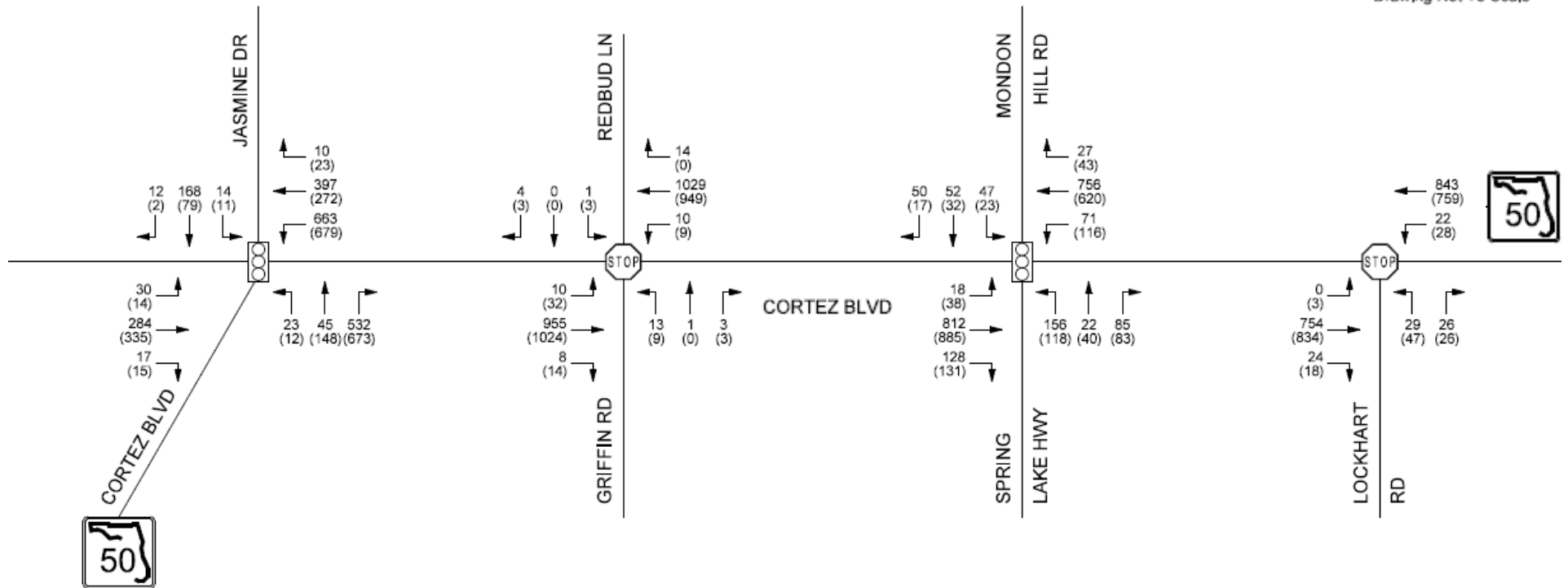


State Road 50 PD&E Study
From the Brooksville Bypass to west of Interstate 75
 WPI Segment No. 430051 1 - Hernando County



Year 2014 Annual Average Daily Traffic

Figure 7-1


 Drawing Not To Scale



Legend

-  TRAFFIC SIGNAL
-  STOP SIGN (SIDE STREET ONLY)
- 1234 AM PEAK HOUR VOLUME
(1234) (PM PEAK HOUR VOLUME)



State Road 50 PD&E Study
From the Brooksville Bypass to west of Interstate 75
 WPI Segment No. 430051 1 - Hernando County

Year 2014 AM and PM Peak Hour Traffic Volumes

Figure 7-2

Based on the existing analysis, all the study intersections operate at an acceptable LOS during both peak periods.

For the roadway segment analysis, the FDOT Generalized Quality/LOS Handbook tables (for uninterrupted flow highways) were used. The existing year (2014) roadway segment LOS analyses were conducted for SR 50 using the existing year (2014) AADT volumes. The existing roadway segment LOS results for SR 50 are summarized in **Table 7-3**.

Table 7-3 Year 2014 AM/PM Roadway Segment Speed and LOS Summary

Roadway Segment along SR 50	Annual Average Daily Traffic (AADT)	Existing (4-Lanes) LOS	Reference Tables from 2013 FDOT Quality/LOS Handbook
Cortez Boulevard/Jasmine Drive to Griffin Road/Redbud Lane	22,700	B	Table 1
Griffin Road/Redbud Lane to Spring Lake Highway/Mondon Hill Road	22,350	B	Table 2
Spring Lake Highway/Mondon Hill Road to Lockhart Road	18,150	B	Table 2
East of Lockhart Road	18,350	B	Table 2

Based on these results, the existing analysis shows that SR 50 within the study limits operate at an acceptable LOS.

7.3 ASSUMPTIONS AND METHODOLOGY FOR FUTURE TRAFFIC PROJECTIONS

Future year traffic volumes were developed using the TBRPM Version 7.2. Only one set of future traffic volumes were developed that were used for both the no-build and the build scenarios.

A base year (2006) model validation (reasonableness check) was performed for the study area. Adjustments were made to the base year model to improve the accuracy levels of the model volumes. Details on subarea validation are included in the PTAR. These subarea refinements including modifications to centroid connectors, facility types and area types were applied (as appropriate) to the future year 2035 model along SR 50 within project limits.

Based on the results of the subarea validation, National Cooperative Highway Research Program (NCHRP) 255 adjustment techniques (Ratio and Difference Method) were applied to the future year 2035 model volumes along SR 50 and major side-streets – Cortez Boulevard/Jasmine Drive, Spring Lake Highway/Mondon Hill Road, and Lockhart Road, where desired level of accuracy was not attained. This was discussed with FDOT - District Seven. The minor side-streets of Griffin Road/Redbud Lane were not identified in the TBRPM network that represents Hernando County’s 2035 Cost Affordable LRTP. Thus, an alternative travel demand forecasting methodology was employed to estimate future traffic volumes for the subject streets by using an annual growth rate of 5.42 percent in the socioeconomic data between the base year (2006) and future year (2035) for the

traffic analysis zones adjacent to this road. The adjusted 2035 model volumes along SR 50 and major side-streets within the project limits along with the NCHRP 255 adjusted volumes (where necessary) along with the existing AADT were used in forecasting.

7.4 FUTURE TRAFFIC PROJECTIONS

The opening year (2020), interim year (2030) and design year (2040) AADT were obtained by interpolation and extrapolation between the existing (2014) AADT and the established 2035 future model volumes to determine the SR 50 volumes and the major side-streets volumes within the project limits. For the minor side-street, future year AADTs were calculated by applying an annual growth rate of 5.42 percent to the existing (2014) AADT. The future year no-build and build AADT are shown in **Figure 7-3**.

The future year AM and PM peak hour DDHV were obtained by multiplying the future year AADT volumes by the recommended K and D factors, respectively. These estimated DDHVs were then distributed at the study intersections by applying the existing turning percentages from the existing traffic counts. As in the existing year (2014), westbound is considered to be the peak direction along SR 50 within the project limits during the AM peak period and eastbound is considered to be the peak direction during the PM peak period in the development of the peak hour turning volumes.

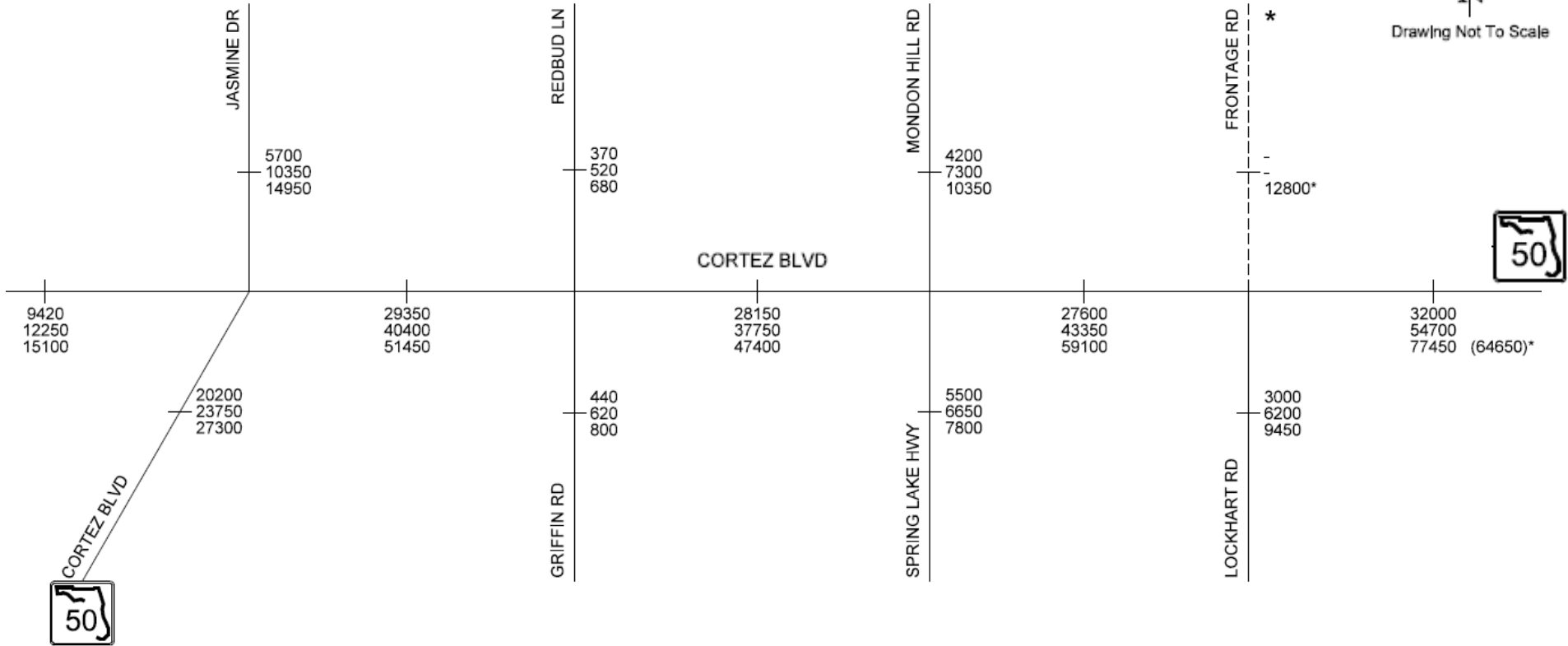
The future no-build and build AM and PM peak hour volumes for design year (2040) only are shown in **Figure 7-4**.

7.5 FUTURE LEVELS OF SERVICE

All signalized, un-signalized intersections and roadway segments within the study area were evaluated for both the no-build and the build scenarios to determine the future LOS. The acceptable LOS standard is 'LOS D' for the study corridor of SR 50 in the urbanized area between Brooksville Bypass/SR 50A/East Jefferson Street and Singer Lane. For the remaining of the study corridor between Singer Lane and I-75, the area is transitioning and therefore, acceptable LOS is considered to be 'LOS C' based on the Planning Boundaries for LOS standards for Hernando County. However, in the future year of 2035, the TBRPM Version 7.2 Cost Affordable Plan model indicates the area type along the corridor has been revised to reflect Outlying Business District (OBD) which indicates the study corridor will be urbanized as the result of very large growth in all the forecasted socioeconomic development within the project limits. Thus, 'LOS D' was used as an acceptable LOS standard for future years.

SYNCHRO Version 8.0 (Build 805) was used as the analysis tool for the signalized intersections within the study limits. The HCS+ Version 5.6 was used for the un-signalized study intersections. The SR 50 roadway segments within the study limits were analyzed using the FDOT Generalized Quality/LOS Handbook tables.

Drawing Not To Scale



Legend	
1234	2020 AADTS
1234	2030 AADTS
1234	2040 AADTS

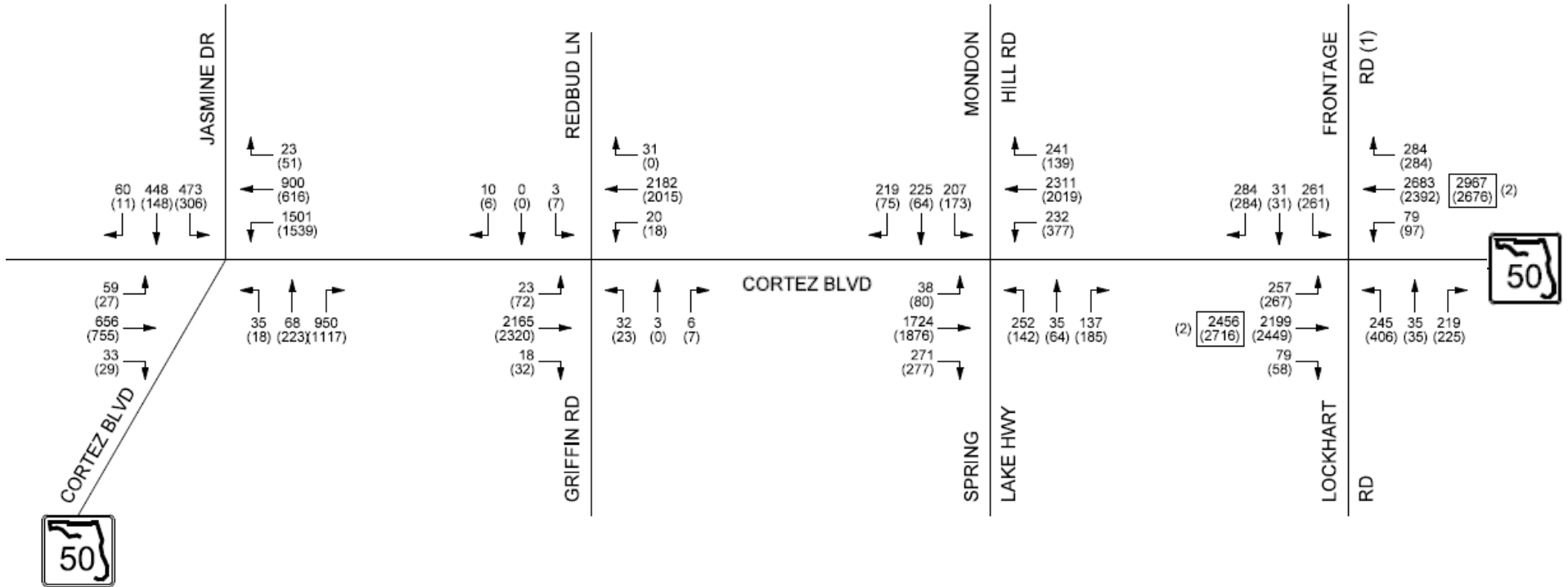
* ONLY FOR 2040 BUILD SCENARIO.
FRONTAGE ROAD FOR 2040 BUILD SCENARIO ONLY
PER SR 50 PD&E STUDY FROM LOCKHART ROAD
TO US 301 / SR 35 (WPID: 416732-2).



State Road 50 PD&E Study
*From the Brooksville Bypass
to west of Interstate 75*
WPI Segment No. 430051 1 - Hernando County

Future Year AADT Volumes

Figure 7-3



Legend	
1234	AM PEAK HOUR VOLUME
(1234)	(PM PEAK HOUR VOLUME)

- (1) FRONTAGE ROAD FOR 2040 BUILD SCENARIO ONLY PER SR 50 PD&E STUDY FROM LOCKHART ROAD TO US 301 / SR 35 (WPID: 416732-2).
- (2) 2040 NO-BUILD VOLUMES.



The following future analysis scenarios were evaluated in the future traffic operational analysis:

Opening Year	2020	No-Build and Build
Interim Year	2030	Build
Design Year	2040	No-Build and Build

The future operational analysis was conducted for the No-Build and the Build conditions. The no-build condition considers the existing lane geometry. The build analysis considers SR 50 to be widened to six lanes within the project limits. The proposed build typical section along SR 50 within the study limits comprises of six-lane divided roadway with 65 mph design speed between Brooksville Bypass/SR 50A/East Jefferson Street and east of Spring Lake Highway/Mondon Hill Road; and 50 mph design speed between Spring Lake Highway/Mondon Hill Road and Lockhart Road. Therefore, in the build analysis, an assumed posted speed limit of 60 and 45 mph were used respectively along SR 50 within the project limits. The build analysis also considered additional improvements required for SR 50 and the study intersections to operate at an acceptable LOS. The same traffic volumes were used for the no-build and the build analysis.

The un-signalized intersection module of the HCS cannot analyze six lane roadways (three lanes per approach). In these cases, the un-signalized analysis is performed considering two through lanes on each approach and using two-thirds of the through traffic volume. Also, the critical gap for the left and the through movement from the minor street was increased by 0.5 seconds for each additional lane to be crossed (more than two lanes) for passenger cars (the higher percentage of traffic being passenger cars along the minor street) according to Section C.9.B.4 and (d) from Florida Greenbook, Topic No. 625-000-015, May 2011.

7.5.1 Design Year No-Build Alternative LOS

The 2040 no-build condition includes the existing geometry. LOS for the study intersections were calculated using the design hour volumes shown previously. The 2040 no-build estimated LOS for signalized and un-signalized intersections within the project limits are summarized in **Table 7-4**. Signal timings were optimized as a part of the future year analysis. The design year no-build LOS analysis details (SYNCHRO and HCS intersection analysis worksheets) are included in the *PTAR*.

Table 7-4 Design Year (2040) No-Build AM/PM Intersection Delay and LOS Summary

Intersection	Overall Average Delay (seconds/vehicle)	Overall Intersection LOS
SR 50A/SR 50 at Cortez Boulevard/Jasmine Drive (signalized)	127.6/143.4	F/F
SR 50 at Griffin Road/Redbud Lane ⁽¹⁾ (un-signalized)	>50.0/>50.0	F/F
SR 50 at Spring Lake Highway/Mondon Hill Road (signalized)	160.4/97.8	F/F
SR 50 at Lockhart Road (un-signalized)	>50.0/- ⁽²⁾	F/F

(1) Un-signalized Intersection – Delay/LOS along worst minor approach.

(2) Delay exceeds software capacity.

Based on the 2040 no-build intersection analysis, all the study intersections do not operate at an acceptable LOS during both the peak periods.

7.5.2 Recommended Intersection Improvements

The 2040 build proposed lane geometry is shown in **Figure 7-5**. This includes the six-laning of SR 50 with additional improvements at the intersections. Based on the SR 50 PD&E Study to the east from Lockhart Road to US 301 (SR 35/Treiman Boulevard), WPI Segment No.: 416732-2, Lockhart Road was considered a signalized four-leg intersection with a frontage road as the north leg at this intersection. Under the build condition, the existing northbound to eastbound single free flow right-turn movement at the intersection of SR 50A/SR 50 and Cortez Boulevard/Jasmine Drive is recommended to be changed to dual right-turns operating under signal control.

7.5.3 Design Year Build Alternative LOS

Future Intersection Analysis

The LOS for the study intersections was calculated using the year 2040 DHVs. The 2040 build estimated LOS for signalized and un-signalized intersections within the project limits are summarized in **Table 7-5**. The design year build LOS analysis details (SYNCHRO and HCS intersection analysis worksheets) are included in the PTAR.

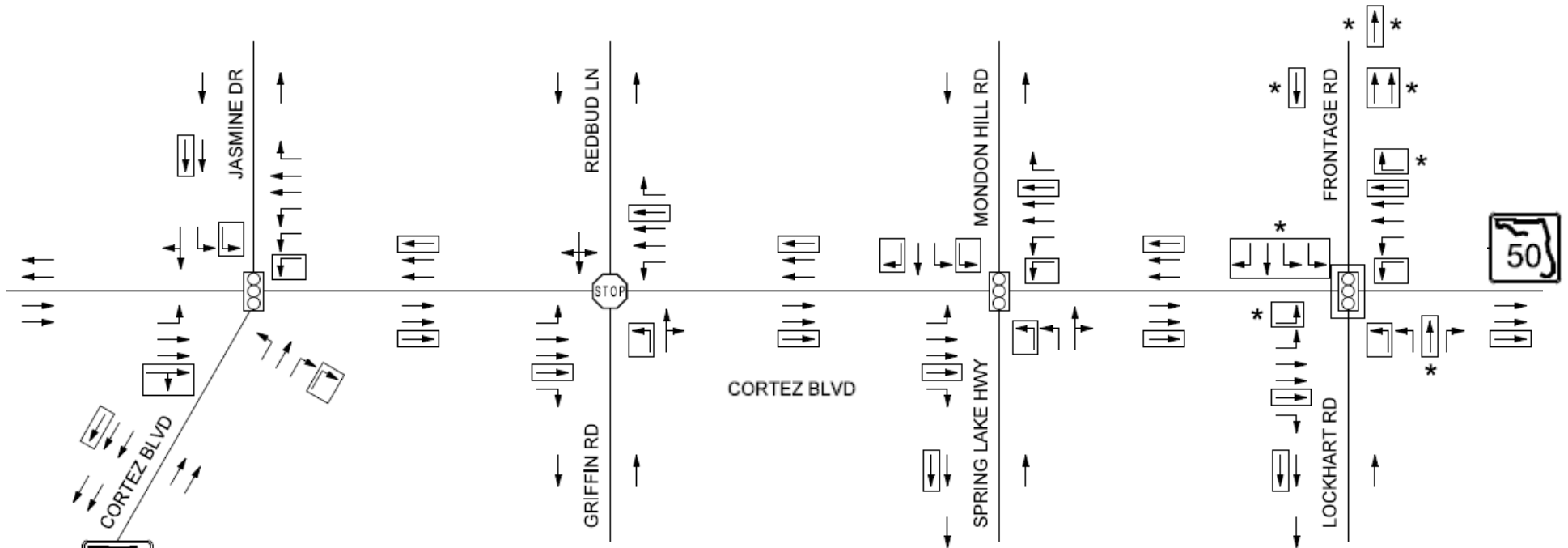
Table 7-5 Design Year (2040) Build AM/PM Intersection Delay and LOS Summary






Intersection	Overall Average Delay (seconds/vehicle)	Overall Intersection LOS
SR 50A/SR 50 at Cortez Boulevard/Jasmine Drive (signalized)	53.6/52.9	D/D
SR 50 at Griffin Road/Redbud Lane ⁽¹⁾ (un-signalized)	>50.0/>50.0	F/F
SR 50 at Spring Lake Highway/Mondon Hill Road (signalized)	38.4/38.7	D/D
SR 50 at Lockhart Road (signalized)	51.1/50.3	D/D

(1) Un-signalized Intersection – Delay/LOS along worst minor approach.

Based on the results of the 2040 build intersection analysis shown in the table above, all intersections are operating at an acceptable LOS except the minor approaches of the un-signalized intersection at Griffin Road/Redbud Lane which do not operate at an acceptable LOS during either the AM or PM peak. The 2040 AM and PM peak hour volumes for the worst failing approach along Griffin Road/Redbud Lane is 41 vehicles per hour and 30 vehicles per hour, respectively which is low compared even with the 70 percent volume threshold of 70 vehicles per hour for one lane approach from Signal Warrant 3 – Peak Hour Warrant from Manual on Uniform Traffic Control Devices (MUTCD) 2009 Edition. The 2040 AM and PM peak hour traffic volumes along Griffin Road/Redbud Lane are quite low in order for a signal to be warranted at this intersection. However, during the design phase, a complete signal warrant analysis may be performed at this location to evaluate if a traffic signal would be warranted.


 Drawing Not To Scale



Legend	
	TRAFFIC SIGNAL
	PROPOSED TRAFFIC SIGNAL
	STOP SIGN (SIDE STREET ONLY)
	TRAVEL LANES
	PROPOSED IMPROVEMENTS

* ONLY 2040 BUILD IMPROVEMENTS. FRONTAGE ROAD FOR 2040 BUILD SCENARIO ONLY PER SR 50 PD&E STUDY FROM LOCKHART ROAD TO US 301 / SR 35 (WPID: 416732-2).



State Road 50 PD&E Study
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Design Year 2040 Proposed Lane Geometry

Figure 7-5

Future Roadway Segment Analysis

Analysis of the roadway segments for the future years along SR 50 using FDOT Generalized Quality/LOS Handbook tables is shown in **Table 7-6** to determine the analysis year when proposed widening is needed to meet the adopted LOS standards on a segment-by-segment basis. The future AADT volumes along SR 50 roadway segments were used in this analysis.

Table 7-6 Design Year (2040) Roadway Segment LOS Summary

Roadway Segment along SR 50	Annual Average Daily Traffic	No-Build (4-Lanes) LOS	Build (6-Lanes) LOS	Reference Tables from 2013 FDOT Quality/LOS Handbook	
				No-Build	Build
Cortez Boulevard/Jasmine Drive to Griffin Road/Redbud Lane	51,450	C	B	Table 1	Table 1
Griffin Road/Redbud Lane to Spring Lake Highway/Mondon Hill Road	47,400	C	B	Table 2	Table 1
Spring Lake Highway/Mondon Hill Road to Lockhart Road	59,100	D	C	Table 2	Table 1
East of Lockhart Road (For 2040 Build Scenario with the Frontage Road per SR 50 PD&E Study WPI: 416732-2)	77,450 (64,650)	F	C	Table 2	Table 1

The future roadway segment analysis shows that the segment along SR 50 to the east of Lockhart Road will fail to operate at the acceptable LOS by the future design year 2040. That segment is presently under design for widening under WPI 416732-2.

SECTION 8 ALTERNATIVES ANALYSIS

8.1 NO-BUILD/REHABILITATION/REPAIR ALTERNATIVE

The No-Build Alternative would not construct any SR 50 improvements except for separate intersection or safety improvements planned in the future. The No-Build Alternative requires no additional expenditure of funds, requires no acquisition of additional ROW, and has no environmental impacts. However, the No-Build Alternative fails to fulfill the project's purpose and need and fails to meet the goals of the MPO's LRTP. The No-Build Alternative will remain a viable alternative throughout the study process and serve as the basis of comparison for the Build Alternatives.

8.2 TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS (TSM&O)

The objective of Transportation System Management & Operations (TSM&O) is to identify strategies that reduce existing traffic congestion and prevent its occurrence in areas that are currently congested. These strategies are designed to modify travel behavior and increase system efficiency without costly infrastructure improvements. TSM&O strategies are implemented when one or more of the following occurs:

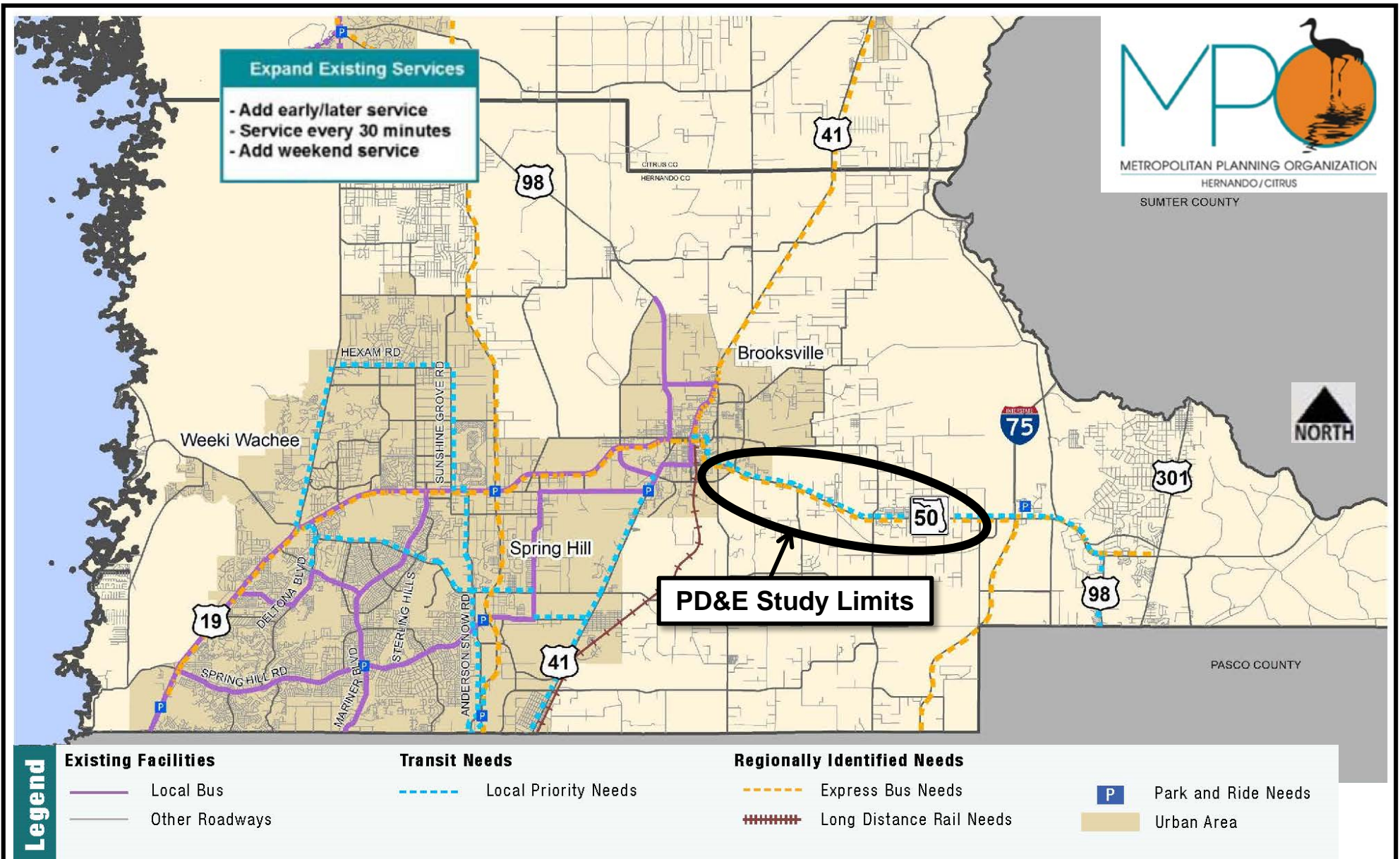
- Insufficient funds available to meet system improvement needs,
- Increased construction costs for new roadways and transit facilities,
- Increased need to improve operational efficiency, and/or changes in travel patterns.

TSM&O options generally include traffic signal and intersection improvements, access management, and transit improvements. For this proposed project, it was determined that the additional capacity required to meet the projected traffic volumes along SR 50 in the design year cannot be provided solely through the implementation of TSM&O improvements.

8.3 MULTIMODAL FACILITIES

Hernando County Transit Services (TheBus) is a cooperative effort of the Hernando County Board of County Commissioners, Hernando/Citrus MPO, City of Brooksville, FDOT, Federal Transit Administration and McDonald Transit Associates, Inc. in serving the citizens of Hernando County with affordable public transportation. There are currently no bus routes along SR 50. However, the Hernando/Citrus MPO's 2045 LRTP Cost Affordable Plan shows "aspirational local bus service" along SR 50, (**Figure 8-1**) as needed by 2045.

While a transit alternative could have the potential to improve traffic operations in the distant future, this alternative would fail to fulfill the purpose and need for the proposed project within the study area. Therefore, a transit alternative was not considered as a standalone solution for the expected future transportation demand deficiencies within the study area.



Source: Hernando-Citrus MPO 2045 Long Range Transportation Plan, Figure 20 – Transit Needs (Hernando County), adopted 12/4/2019



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**Hernando County Existing, Proposed and Needed
 Transit Services and Facilities**

Figure 8-1

8.4 BUILD ALTERNATIVES

The following steps were utilized to develop and evaluate viable alternatives:

- Base concept plans were prepared using all available data, including county GIS data, as-built plans, FDOT ROW maps, and subdivision plats
- The project was divided into major segments to facilitate evaluation
- The required number of through lanes and major intersection geometry was determined based on the traffic analysis summarized in **Section 7**
- Alternative typical sections were developed based on FDOT’s standard design criteria
- Alternative alignments were not considered since all alternatives considered can be constructed within the existing ROW.
- Alternative typical sections were evaluated based on a number of considerations including context classification (see **Appendix C** for the Context Classification Memo prepared by FDOT).
- A Preferred Alternative was selected

8.4.1 Typical Sections

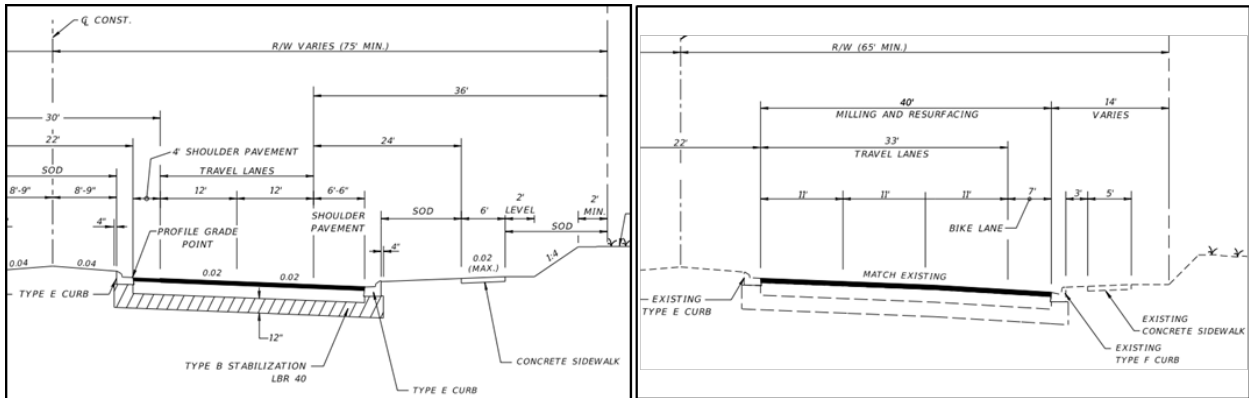
The project limits were divided into two study segments based on context classification, as summarized in **Table 8-1**:

Table 8-1 Study Segments

Study Segment	Segment Length (mi)	Segment Limits	Context Classification Status
West Roadway Segment ID 08 050 000	4.2	From Brooksville Bypass/Jasmine Drive to Spring Lake Highway/Mondon Hill Road	C2 Rural
East Roadway Segment ID 08 070 000	3.0	From Spring Lake Highway/Mondon Hill Road to Lockhart Road	C3R Suburban Residential
Length Subtotal	7.2		

For most of the project limits, the existing ROW is 200 feet wide. Although FDOT’s “standard” six-lane *rural* highway typically requires a minimum of 216 feet of ROW per the FDOT FDM, the typical section can be accommodated within the existing width. A border width variation would be needed in the west segment to accommodate the typical section.

In developing the suburban typical section, a combination of elements from two standard typical sections were considered and shown in **Figure 8-2** where half-sections of each are shown. One section (FDM Exhibit 306-6) is a high-speed 4-lane curbed section includes shoulder pavement between the inside median curb and the inside travel lane. The second section (FDM Exhibit 306-9) is a standard six-lane suburban (curbed) typical section.



FDM 4-lane High Speed Curbed section (Exhibit 309-6)

FDM 6-lane Curbed section (Exhibit 309-9)

Figure 8-2 Suburban/Curbed Typical Sections from the FDOT FDM

For the west study segment, both rural and suburban typical sections were initially considered. A **rural typical section is preferred** for this segment since it falls within context classification C2 Rural.

- It provides 65 mph design speed, utilizes existing pavement, and no additional ROW is required.
- It provides a 5-ft shoulder and typically includes 5-ft sidewalks on the north and south sides of SR 50. A wider 10-ft sidewalk is proposed on the south side based on coordination with the Hernando/Citrus MPO. The MPO concurred with the wider location on 10/22/2019.

The preferred typical section initially included a 46-foot wide median which was reduced to 30 feet when considering a suburban section to maximize the opportunity to provide swales on the sides of the road to potentially avoid off-side stormwater facilities; however, ultimately it was determined by department staff to maintain a 40-foot flush median to meet standards for this context classification. The preferred suburban typical section is shown in **Figure 8-3**.

For the east study segment, both rural and suburban typical sections were initially considered. The **preferred typical section is a six-lane suburban typical section** within the existing ROW based on context classification C3R Suburban Residential. This section is also shown in **Figure 8-3**.

- It provides 50 mph design speed, utilizes the existing pavement and provides a curbed median.
- It provides 5-ft paved shoulders to be striped as bike lanes and typically includes 6-ft sidewalks on the north and south sides of SR 50. A wider 10-ft sidewalk is proposed on the south side based on coordination with the Hernando/Citrus MPO. The MPO concurred with the wider location on 10/22/2019.

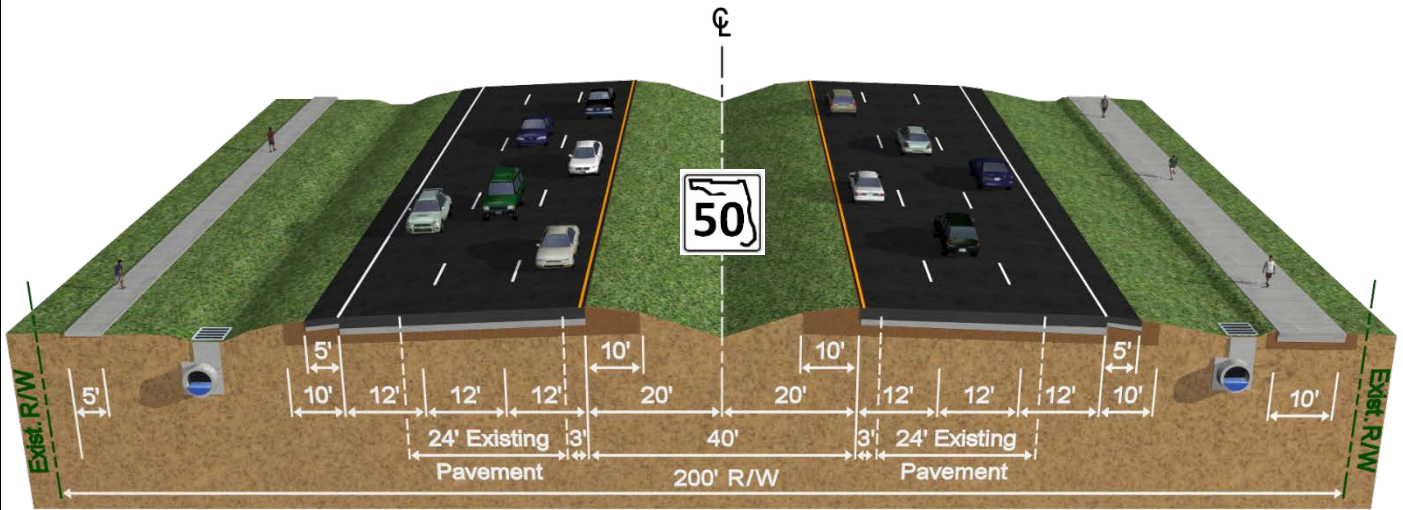
The FDOT FDM requires 10-foot shoulders for six lane rural highways. No additional ROW is required for the roadway improvements as long as a **border width design variation** is approved for the west segment (rural typical section), which will be requested with the typical section package submittal following the public hearing. The preferred typical section would provide a 34-foot wide border width compared to the 40-foot border width required by the FDOT FDM.

West Segment of Study Area

Roadway Segment ID 08 050 000

6-Lane Rural Typical Section – facing east

(from west limit of PD&E Study at SR 50/Brooksville Bypass to just east of Spring Lake Highway/Mondon Hill Road)



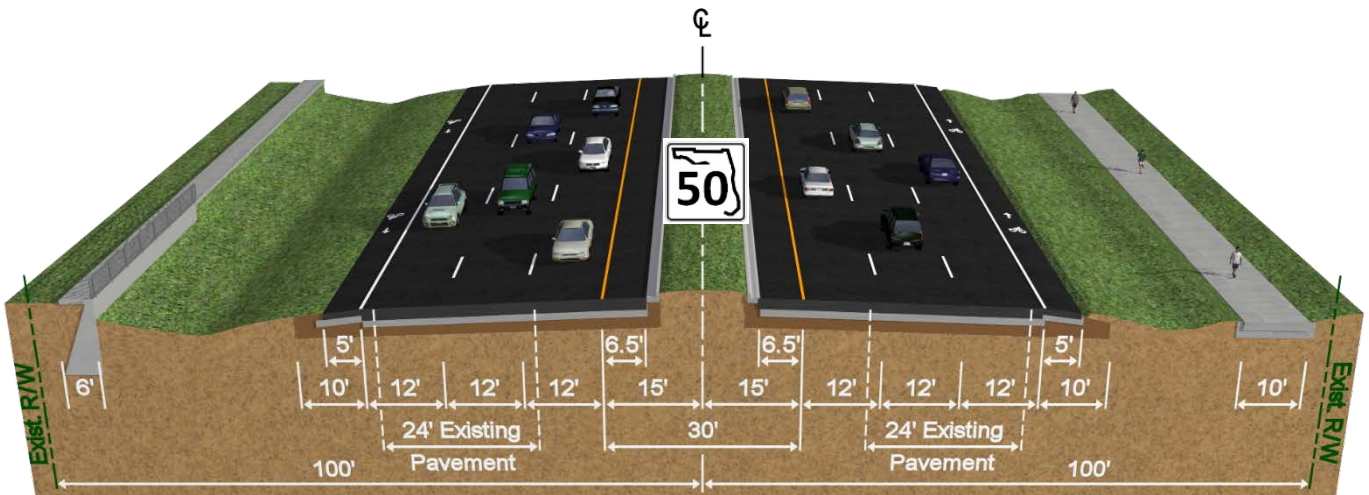
- Provides for 65 mph design speed
- Border width design variation required for left and right roadway sides (6 ft below standard)

East Segment of Study Area

Roadway Segment ID 08 070 000

6-Lane Suburban Typical Section – facing east

(from just east of Spring Lake Highway/Mondon Hill Road to east limit of PD&E study west of I-75 at Lockhart Road)



- Provides for 50 mph design speed



Sidewalks and Trails

Sidewalks are already included on both sides of SR 50 in the western mile of the project. Sidewalks will be extended throughout the project. In the western portion, the sidewalk width will be 5 ft in the rural typical section and will be 6 ft wide in the eastern portion with the suburban section. This extension of sidewalks is consistent with the Hernando/Citrus MPO 2040 LRTP Cost Affordable Plan for proposed sidewalks (**Figure 8-4**).

With respect to the potential need to include a trail(s) along SR 50, the LRTP from the Hernando-Citrus MPO shows a future trail running along SR 50 for the entire project limits (**Figure 8-5**). A 10 ft widened sidewalk is proposed on the south side of SR 50 in coordination with the Hernando/Citrus MPO on 10/22/2019. This 10 ft width and location is consistent with the current design plans for widening SR 50 near I-75 . See **Appendix C** for this documentation with the Hernando/Citrus MPO.

8.4.2 Alternative Alignments

Alternative alignments were not considered for this study since all of the preferred typical sections fit within the existing 200-foot ROW.

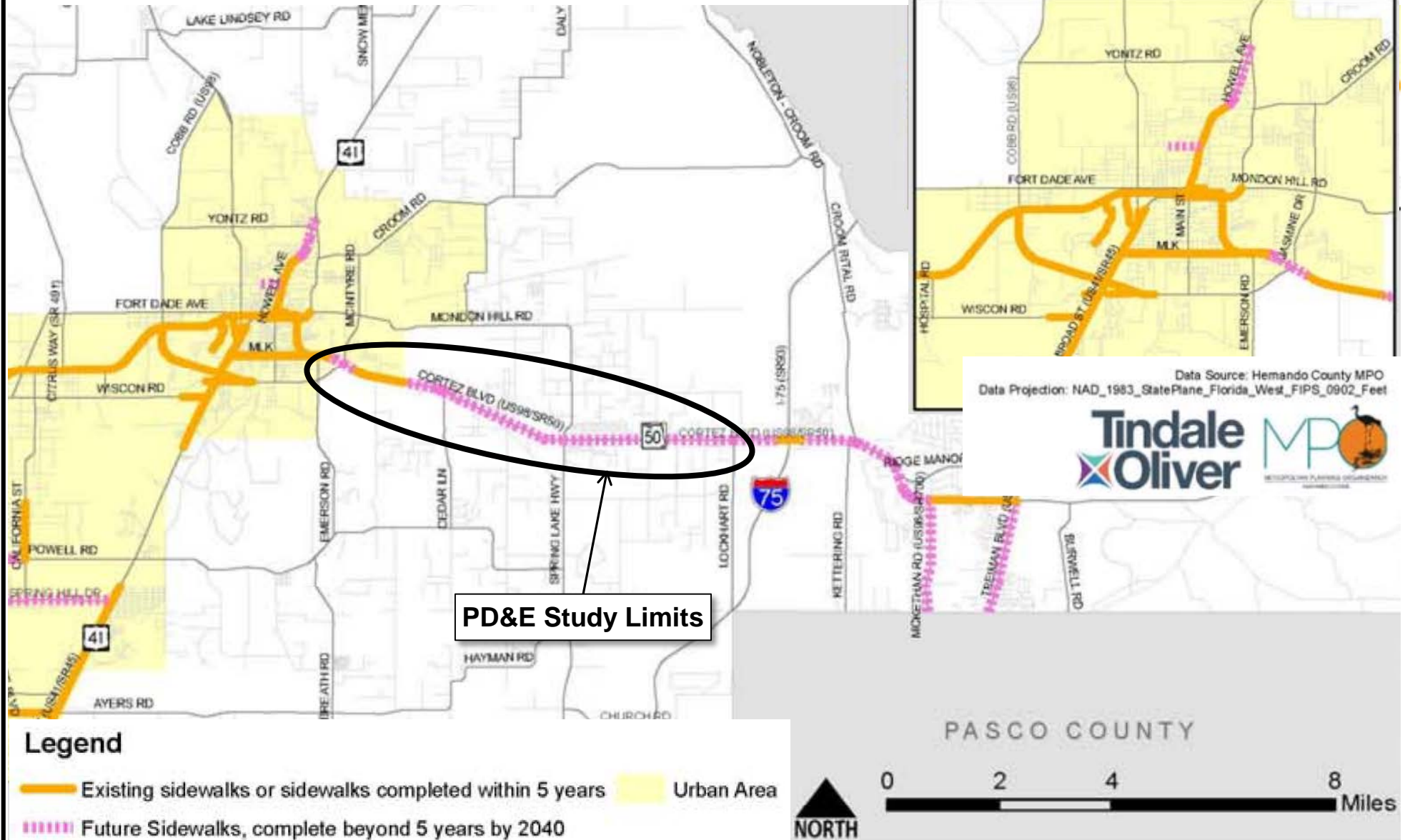
8.4.3 Drainage and Floodplain Considerations

The following information was taken from the *PSR* prepared for this study.

Design Criteria for Attenuation – Per the SWFWMD Environmental Resource Permit (ERP) Applicants Handbook II, Section 3.1 (d): For a project or portion of a project located within a closed drainage basin, the required retention volume shall be the post-development runoff volume less the pre-development runoff volume computed using the SWFWMD’s 24-hour/100-year rainfall map and the NRCS Type II Florida Modified 24-hour rainfall distribution with an antecedent moisture condition II.

The total post development volume leaving the site shall be no more than the total pre-development volume leaving the site for the design 100-year storm. The rate of runoff leaving the site shall not cause adverse off-site impacts. Maintenance of pre-development off-site low flow may be required in hydrologically sensitive areas. Additionally, being a closed basin, Florida Administrative Code (F.A.C.) 14-86 will require maintaining discharges to, at or below pre-developed discharges using a multiple storm approach. The required attenuation calculated is based on the difference of the existing and the proposed runoff volume for the critical storm event of 100-year/10-day.

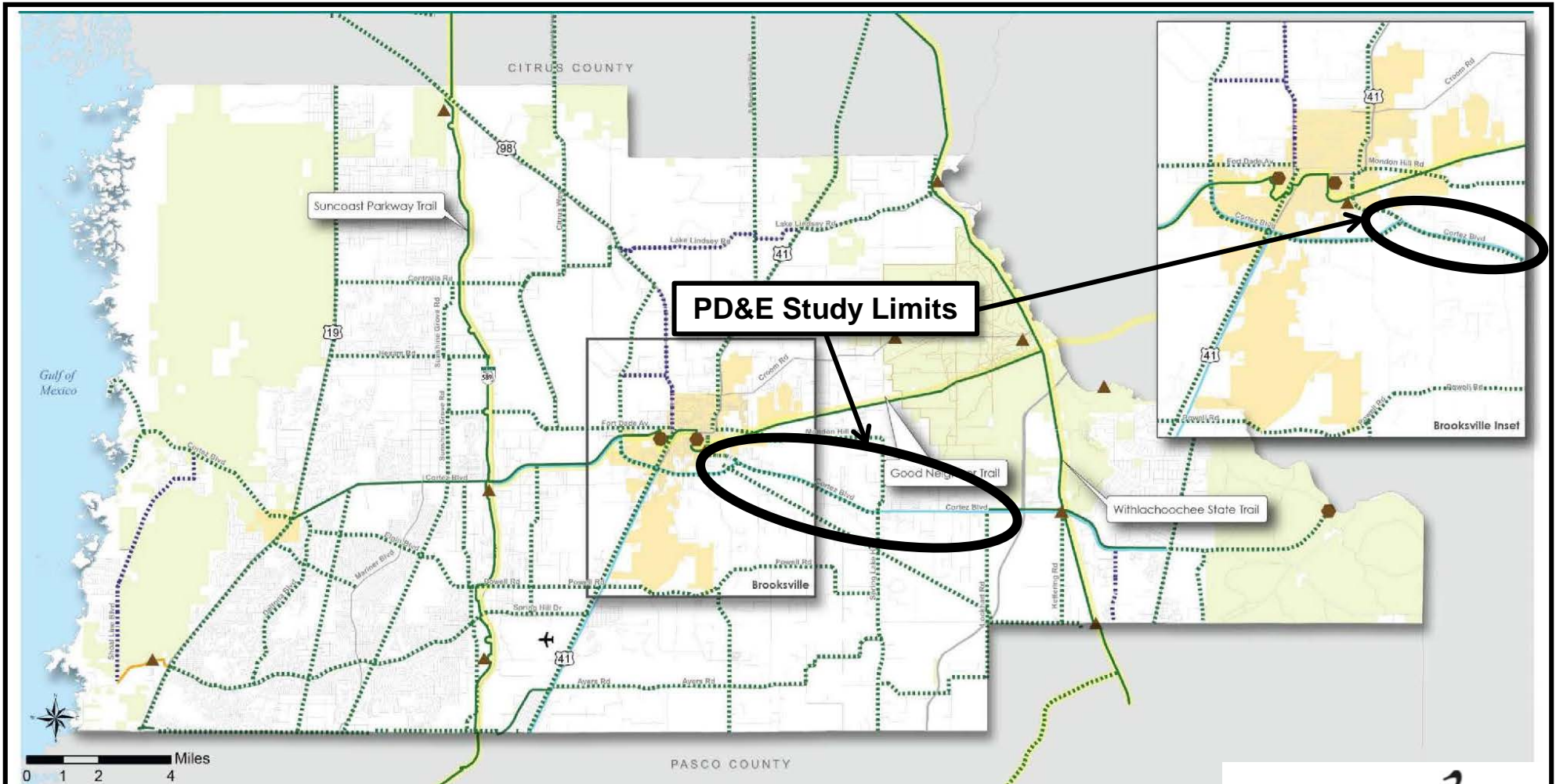
Source: Hernando-Citrus MPO 2040 Long Range Transportation Plan, Map 4-8
 (Hernando County Existing and Proposed Pedestrian Projects)



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Hernando County Pedestrian Facilities Existing and Proposed Projects

Figure 8-4



PD&E Study Limits

Legend

Proposed Needs

- Trail¹
- Buffered Bike Lane²

Proposed Trailhead

Existing/Committed Facilities

- Trail
- Bike Lane
- Paved Shoulder
- ▲ Existing Trailhead
- ▲ Airports
- SUNTrail Network
- Unpaved Trails

¹ Trails are proposed to be added to roads, where feasible, as they are widened
² Buffered bike lane is a dedicated space on the road including a 5' bike lane and a 2' buffer

Source: Hernando-Citrus MPO 2045 Long Range Transportation Plan, Figure 24 - Vision for Bikeways and Trails (Hernando County), adopted 12/4/2019



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Hernando County Existing, Proposed and Needed Bikeways and Trails Map

Figure 8-5

The roadway improvements considered would result in the filling in of existing ponds within the ROW. Therefore, to estimate the required offsite pond sizes, the pre-development condition is considered as the two lane (pre-SWFWMD permits No. 404773.01 and 44004306.002) condition. For estimation of pond sizes, the required attenuation volume is estimated as the difference in the 6-lane and 2-lane runoff volumes for the 100-year/10-day event.

Design Criteria for Water Quality

Water quality treatment shall be provided in accordance with SWFWMD criteria which vary according to the type of SMF as follows:

1. A wet detention treatment system shall treat one inch of runoff from the contributing area.
2. A dry retention pond shall treat one-half inch of runoff from the contributing area.

The depth to the water table for the basin area was utilized to assess if the treatment method would be wet or dry. Basins within depth to water table $>6'$ assumed to be dry retention pond areas.

Drainage Areas and Pond Sizes

The drainage area was calculated as the basin length multiplied by a typical ROW width of 200 feet. The impervious area for each basin was determined as the basin length multiplied by a typical impervious width and increased by 15% for intersections, etc. The pervious area was calculated as the remainder of the total drainage area. There is a separate PD&E study that has been conducted for the segment to the east under WPI Segment No. 416732-2. This extends past the project limits by approximately 1,400 feet; however, the area being calculated extends 900 feet to Lockhart Road. The calculations presented in this report are preliminary and help in estimating the preliminary size of the pond site facilities for each basin. The size requirements are preliminary based upon many assumptions and judgments. The results are tabulated in **Table 8-2**.

Table 8-2 summarizes the SMF and FPC site alternatives. The table includes all pond site area requirements, including the pond site, ingress/egress and conveyances to and from the pond. The table identifies estimated costs for construction and property acquisition for each alternative. There is one potential residential relocation associated with SMF 14A/FPC 14A.

Table 8-2 SMF and FPC Site Alternatives Cost Matrix

SMF #	Pond Area (Ac)	FPC #	FPC Sites (Ac)	Total Area (Ac)	Conveyance Easement (Ac)	Clearing & Grubbing	Pond Excavation (cy)	FPC Excavation (cy)	Excavation	Pond Embankment (cy)	FPC Embankment (cy)	Embankment	Conveyances (ft)		Online or Offline Pond	Conveyance	Major Crossing Cost	Total Const. Cost	Wetland Impacts (Ac)	Est. Right of Way Costs	Est. Total Costs	Comments
													From Pond	To Pond								
Units -->						acre	cubic yard								feet							
Unit Costs -->						\$ 4,004.25							\$ 4.70			\$ 186.00						
West Segment 08 050 000																						
1A	1.91	1A	0.64	4.08	0	\$ 16,337.34	3,403	3,608	\$ 24,749.75	4,047	0	\$ 19,019.48	0	85	Offline	\$ 15,810.00	\$ -	\$ 75,916.57	0	\$ 530,500.00	\$ 606,416.57	
1B	3.81	1B	0.59	7.02	0	\$ 28,109.84	10,026	3,613	\$ 48,145.90	4,139	0	\$ 19,454.69	0	375	Offline	\$ 69,750.00	\$ -	\$ 165,460.42	0	\$ 1,798,000.00	\$ 1,963,460.42	
1C	2.08	1C	0.69	5.33	0	\$ 21,342.65	13,196	3,989	\$ 60,661.43	1,242	0	\$ 5,837.20	0	360	Offline	\$ 66,960.00	\$ -	\$ 154,801.28	0	\$ 342,700.00	\$ 497,501.28	Preferred Alternative
2A	2.74	2A	0.33	5.27	0.74	\$ 24,065.54	32,995	3,692	\$ 129,502.26	1,073	0	\$ 5,041.61	0	100	Offline	\$ 18,600.00	\$ 50,000.00	\$ 227,209.42	0	\$ 371,000.00	\$ 598,209.42	Preferred Alternative
2B	2.94	2B	1.68	7.91	0	\$ 31,673.62	27,775	8,934	\$ 129,582.58	712	107	\$ 3,850.54	0	100	Offline	\$ 18,600.00	\$ 50,000.00	\$ 233,706.73	0.51	\$ 722,500.00	\$ 1,058,206.73	
2C	4.95	2C	1.51	9.93	0.39	\$ 41,323.86	85,299	8,557	\$ 331,310.66	0	9	\$ 44.46	0	145	Offline	\$ 26,970.00	\$ 50,000.00	\$ 449,648.99	0.20	\$ 645,900.00	\$ 1,135,548.99	
3A	1.81	3-4A	1.99	5.23	0	\$ 20,942.23	12,021	13,149	\$ 88,848.74	575	54	\$ 2,958.41	0	70	Offline	\$ 13,020.00	\$ 50,000.00	\$ 175,769.37	0	\$ 535,100.00	\$ 710,869.37	Preferred Alternative
3B	1.79	3-4B	3.63	9.05	0.51	\$ 38,280.63	7,933	16,232	\$ 85,304.76	1,879	681	\$ 12,029.65	0	470	Offline	\$ 87,420.00	\$ 50,000.00	\$ 273,035.04	2.08	\$ 495,000.00	\$ 1,184,035.04	
3C	1.75	3-4C	1.06	5.96	0.79	\$ 27,028.69	35,386	8,777	\$ 155,898.31	2	18	\$ 93.81	0	320	Offline	\$ 59,520.00	\$ 50,000.00	\$ 292,540.81	0	\$ 647,100.00	\$ 939,640.81	
4A	1.59	N/A	N/A	2.77	0	\$ 11,091.77	11,780	0	\$ 41,581.94	0	0	\$ -	0	100	Offline	\$ 18,600.00	\$ 50,000.00	\$ 121,273.71	0	\$ 283,500.00	\$ 404,773.71	
4B	1.20	N/A	N/A	2.25	0	\$ 9,009.56	7,676	0	\$ 27,097.83	751	0	\$ 3,529.35	0	140	Offline	\$ 26,040.00	\$ 50,000.00	\$ 115,676.74	0	\$ 1,283,800.00	\$ 1,399,476.74	
4C	1.63	N/A	N/A	3.55	0.20	\$ 15,015.94	1,008	0	\$ 3,559.57	1,460	0	\$ 6,862.16	0	70	Offline	\$ 13,020.00	\$ 50,000.00	\$ 88,457.67	0	\$ 263,600.00	\$ 352,057.67	Preferred Alternative
5A	1.85	5A	3.07	8.52	0	\$ 34,116.21	41,940	24,028	\$ 232,866.42	0	0	\$ -	0	95	Offline	\$ 17,670.00	\$ 50,000.00	\$ 334,652.63	0	\$ 685,500.00	\$ 1,020,152.63	
5B	1.84	5B	2.97	10.04	0	\$ 40,202.67	15,356	23,591	\$ 137,481.73	112	4	\$ 546.46	0	140	Offline	\$ 26,040.00	\$ 50,000.00	\$ 254,270.87	0	\$ 504,300.00	\$ 758,570.87	Preferred Alternative
5C	1.64	5C	1.64	5.86	0.79	\$ 26,628.26	16,045	18,978	\$ 123,632.50	104	0	\$ 490.37	120	1525	Online	\$ 305,970.00	\$ 50,000.00	\$ 506,721.13	0	\$ 1,328,500.00	\$ 1,835,221.13	
N/A	N/A	6-9A	12.99	21.54	0	\$ 86,251.55	0	181,551	\$ 640,873.49	0	544	\$ 2,558.72	0	0	N/A	\$ -	\$ -	\$ 729,683.75	0	\$ 936,200.00	\$ 1,665,883.75	Preferred Alternative
N/A	N/A	6-9B	12.25	20.14	0.44	\$ 82,407.47	0	188,635	\$ 665,881.24	0	26	\$ 122.01	0	0	N/A	\$ -	\$ -	\$ 748,410.72	0	\$ 1,203,500.00	\$ 1,951,910.72	
N/A	N/A	6-9C	10.92	15.31	0.15	\$ 61,905.71	0	183,587	\$ 648,062.03	0	10	\$ 45.24	0	0	N/A	\$ -	\$ -	\$ 710,012.97	0	\$ 703,700.00	\$ 1,413,712.97	
6A	2.68	N/A	N/A	4.03	0	\$ 16,137.13	26,437	0	\$ 93,321.39	1,019	0	\$ 4,787.40	0	90	Offline	\$ 16,740.00	\$ 50,000.00	\$ 180,985.92	0	\$ 426,600.00	\$ 607,585.92	
6B	1.70	N/A	N/A	2.45	0	\$ 9,810.41	7,877	0	\$ 27,804.38	2,277	0	\$ 10,703.50	0	85	Offline	\$ 15,810.00	\$ 50,000.00	\$ 114,128.30	0	\$ 341,200.00	\$ 455,328.30	Preferred Alternative
6C	2.36	N/A	N/A	3.52	0.94	\$ 17,858.96	22,559	0	\$ 79,634.13	50	0	\$ 233.43	0	1340	Offline	\$ 249,240.00	\$ 50,000.00	\$ 396,966.52	0	\$ 273,600.00	\$ 670,566.52	
7-8A	3.84	N/A	N/A	5.32	0	\$ 21,302.61	35,021	0	\$ 123,623.65	0	0	\$ -	0	75	Offline	\$ 13,950.00	\$ 50,000.00	\$ 208,876.26	0	\$ 447,900.00	\$ 656,776.26	
7-8B	2.67	N/A	N/A	3.72	0.33	\$ 16,217.21	37,740	0	\$ 133,221.90	79	0	\$ 372.34	0	620	Offline	\$ 115,320.00	\$ 50,000.00	\$ 315,131.45	0.09	\$ 280,000.00	\$ 613,131.45	
7-8C	2.48	N/A	N/A	3.08	0	\$ 12,333.09	23,849	0	\$ 84,188.67	421	0	\$ 1,977.87	0	85	Offline	\$ 15,810.00	\$ 50,000.00	\$ 164,309.63	0	\$ 255,400.00	\$ 419,709.63	Preferred Alternative
9A	1.51	N/A	N/A	2.57	0	\$ 10,290.92	26,018	0	\$ 91,843.59	7	0	\$ 32.71	0	85	Offline	\$ 15,810.00	\$ 50,000.00	\$ 167,977.22	0	\$ 242,800.00	\$ 410,777.22	Preferred Alternative
9B	1.24	N/A	N/A	2.06	0	\$ 8,248.76	15,205	0	\$ 53,672.76	336	0	\$ 1,581.17	0	75	Offline	\$ 13,950.00	\$ 50,000.00	\$ 127,452.68	0	\$ 282,400.00	\$ 409,852.68	
9C	1.27	N/A	N/A	2.52	0.26	\$ 11,131.82	19,897	0	\$ 70,236.28	0	0	\$ -	0	385	Offline	\$ 71,610.00	\$ 50,000.00	\$ 202,978.10	0	\$ 447,200.00	\$ 650,178.10	
East Segment 08 070 000																						
10A	3.18	N/A	N/A	4.57	0	\$ 18,299.42	69,572	0	\$ 245,590.22	0	0	\$ -	0	95	Offline	\$ 17,670.00	\$ 50,000.00	\$ 331,559.64	0	\$ 495,300.00	\$ 826,859.64	Preferred Alternative
10B	2.43	N/A	N/A	3.88	0	\$ 15,536.49	27,297	0	\$ 96,359.82	34	0	\$ 160.71	0	0	Online	\$ -	\$ -	\$ 112,057.02	0	\$ 824,600.00	\$ 936,657.02	
N/A	N/A	10A	0.74	1.93	0	\$ 7,728.20	0	4,415	\$ 15,586.00	0	2	\$ 9.11	0	0	N/A	\$ -	\$ -	\$ 23,323.31	0	\$ 272,900.00	\$ 296,223.31	Preferred Alternative
N/A	N/A	10B	0.61	1.56	0	\$ 6,246.63	0	3,705	\$ 13,077.38	0	0	\$ -	0	0	N/A	\$ -	\$ -	\$ 19,324.01	0.29	\$ 1,529,000.00	\$ 1,606,324.01	
11A	2.20	11A	0.34	4.02	0.30	\$ 17,298.36	19,909	7,177	\$ 95,611.94	792	0	\$ 3,723.26	0	530	Offline	\$ 98,580.00	\$ 50,000.00	\$ 265,213.55	0	\$ 292,100.00	\$ 557,313.55	
11B	1.84	11B	0.83	8.42	0	\$ 33,715.79	8,755	10,198	\$ 66,905.92	3,081	0	\$ 14,482.29	0	110	Offline	\$ 20,460.00	\$ 50,000.00	\$ 185,564.00	0	\$ 446,100.00	\$ 631,664.00	Preferred Alternative
12A	1.86	N/A	N/A	3.89	0	\$ 15,576.53	31,201	0	\$ 110,138.84	2,868	0	\$ 13,481.53	0	100	Offline	\$ 18,600.00	\$ 50,000.00	\$ 207,796.90	0	\$ 276,300.00	\$ 484,096.90	Preferred Alternative
12B	1.40	N/A	N/A	3.04	0	\$ 12,172.92	2,152	0	\$ 7,594.81	13,841	0	\$ 65,054.44	0	125	Offline	\$ 23,250.00	\$ 50,000.00	\$ 158,072.18	0	\$ 827,100.00	\$ 985,172.18	
N/A	N/A	12A	0.35	0.68	0	\$ 2,722.89	0	2,031	\$ 7,168.49	0	0	\$ -	0	0	N/A	\$ -	\$ -	\$ 9,891.38	0	\$ 225,100.00	\$ 234,991.38	
N/A	N/A	12B	0.42	0.99	0	\$ 3,964.21	0	2,354	\$ 8,310.91	0	0	\$ -	0	0	N/A	\$ -	\$ -	\$ 12,275.12	0	\$ 169,100.00	\$ 181,375.12	Preferred Alternative
N/A	N/A	12C	0.27	1.11	0	\$ 4,444.72	0	1,759	\$ 6,208.01	0	0	\$ -	0	0	N/A	\$ -	\$ -	\$ 10,652.72	0	\$ 1,128,100.00	\$ 1,138,752.72	
13A	2.26	N/A	N/A	5.00	0.40	\$ 21,622.95	47,687	0	\$ 168,335.00	0	0	\$ -	0	720	Offline	\$ 133,920.00	\$ 50,000.00	\$ 373,877.95	0	\$ 431,300.00	\$ 805,177.95	
13B	2.96	N/A	N/A	6.88	0	\$ 27,549.24	47,291	0	\$ 166,938.73	1	0	\$ 4.22	0	285	Offline	\$ 53,010.00	\$ 50,000.00	\$ 297,502.19	0	\$ 388,700.00	\$ 686,202.19	Preferred Alternative
13C	2.85	N/A	N/A	9.13	0	\$ 36,558.80	77,107	0	\$ 272,188.97	169	0	\$ 794.65	0	0	Online	\$ -	\$ -	\$ 309,542.43	0	\$ 1,381,500.00	\$ 1,691,042.43	
N/A	N/A	13A	1.20	2.93	0	\$ 11,732.45	0	7,901	\$ 27,891.74	0	0	\$ -	0	0	N/A	\$ -	\$ -	\$ 39,624.19	0	\$ 346,200.00	\$ 385,824.19	
N/A	N/A	13B	0.85	2.25	0	\$ 9,009.56	0	6,443	\$ 22,742.93	0	0	\$ -	0	0	N/A	\$ -	\$ -	\$ 31,752.49	0	\$ 214,300.00	\$ 246,052.49	Preferred Alternative
N/A	N/A	13C	1.48	3.31	0	\$ 13,254.07	0	8,945	\$ 31,577.07	0	0	\$ -	0	0	N/A	\$ -	\$ -	\$ 44,831.14	0	\$ 378,300.00	\$ 423,131.14	
14A	1.54	14A	N/A	4.65	0	\$ 18,619.76	18,519	0	\$ 65,370.95	0	0	\$ -	0	85	Offline	\$ 15,810.00	\$ 50,000.00	\$ 149,800.72	0	\$ 1,112,100.00	\$ 1,261,900.72	Preferred Alternative
14B	1.54	14B	N/A	3.46	0	\$ 13,854.71	26,588	0	\$ 93,857.07	2	0	\$ 7.41	0	0	Online	\$ -	\$ -	\$ 107,719.19	0	\$ 1,841,300.00	\$ 1,949,019.19	

- Notes:
- 1) Pond area is measured at outside berm area.
 - 2) Floodplain compensation area is measured at the SHW which will be the water surface elevation of the pond.
 - 3) Ponds are paired with FPC sites where it appears the most reasonable alternative to acquire both properties together.
 - 4) Construction costs are based on Area 7, 12-month average from 10/1/16 - 9/30/17.
 - 5) Est. Right of Way Costs are from FDOT District Seven Right of Way.
 - 6) Est. Total Costs include \$200,000 per acre of wetland impact.
 - 7) One potential residential relocation with SMF 14A/FPC 14A
 - 8) Preferred pond sites and preferred FPC sites are delineated by the **yellow highlighting**

Floodplain Impacts and Compensation

The project limits have been evaluated to determine potential impacts to the base floodplain and a *LHM* was prepared for this project detailing floodplain involvement. Floodplain compensation will be provided for any fill placed within the floodplain. FPC site requirements are identified separately from SMF sites. Floodplain impacts are estimated based on estimated floodplain encroachment area and approximate average depths. FPC site areas are estimated based on the required compensation volume and depth to water table. These are summarized in **Table 8-3**.

It is noted that the floodplain encroachment volumes reported include volume below the weir of existing linear ponds within the ROW. It appears reasonable and correct to not include this volume in the required encroachment. However, justification of not being floodplain storage may require demonstration through modeling at the time of design. For this reason, we have included the volume in the current calculations as a worst-case scenario.

Also noted is that the FEMA mapping of the floodplain identifies a combination of 24-hour/100-year and 120-hr/100-year elevations. The original data is available from the Bystre Lake Watershed Floodplain Justification Report and the Justification for Updates to the FEMA Floodplain as a result of Watershed Management Program for the Croom Watershed (B206) report.

Table 8-4 shows the estimated floodplain encroachment area and estimated floodplain encroachment volume.

A description of longitudinal versus transverse floodplain encroachments is not applicable for this project, due to the detailed floodplain models that have been developed for the project limits such that if the cup-for-cup compensation is not provided then it will be required to establish no-impact through modification of the floodplain modeling. Due to the complex conveyance and storage modeled to establish the floodplain zones, the traditional categorization of longitudinal vs. transverse encroachment is not identified.

SR 50 has no history of stormwater overtopping due to the existing floodplain, and the existing roadway elevation will not be lowered, therefore no emergency services or evacuation opportunities will be adversely affected.

The project's drainage design will be consistent with local FEMA, FDOT, and SWFWMD design guidelines, which state that no net encroachment up to that, encompassed by the 100-year event, will be allowed, and that compensating storage shall be equivalently provided. Therefore, no significant changes in base flood elevations or limits will occur.

Based on the evaluation of anticipated improvements, the applicable floodplain statement according to the *FDOT PD&E Manual Part 2 Chapter 13* is Statement 3- PROJECTS INVOLVING MODIFICATION TO EXISTING DRAINAGE STRUCTURES:

Table 8-3 SMF and FPC Site Environmental Screening and Cost Evaluation Matrix

SMF #	Pond Area (Ac)	FPC #	FPC Sites (Ac)	Total Area (Ac)	Wetlands	Wildlife and Habitat	Contamination	Cultural Resources	Potential Relocations	Estimated Cost
West Segment 08 050 000										
1A	1.91	1A	0.64	4.08	No	Low	Low	Low-Moderate	None	\$606,416.57
1B	3.81	1B	0.59	7.02	No	Low	Low-Moderate	Low-Moderate	None	\$1,963,460.42
1C	2.08	1C	0.69	5.33	No	Low	Low	Low-Moderate	None	\$497,501.28
2A	2.74	2A	0.33	5.27	Low	Low-Moderate	No	SMF 2A-Moderate FPC 2A-Low-Moderate	None	\$598,209.42
2B	2.94	2B	1.68	7.91	Low-Moderate	Low-Moderate	Moderate	Low	None	\$1,058,206.73
2C	4.95	2C	1.51	9.93	Low-Moderate	Low-Moderate	No	Low-Moderate	None	\$1,135,548.99
3A	1.81	3-4A	1.99	5.23	Low-Moderate	Low-Moderate	No	Low	None	\$710,869.37
3B	1.79	3-4B	3.63	9.05	Low-Moderate	Low-Moderate	No	Low	None	\$1,184,035.04
3C	1.75	3-4C	1.06	5.96	No	Low	No	Low-Moderate	None	\$939,640.81
4A	1.59	N/A	N/A	2.77	Low	Low	No	Low-Moderate	None	\$404,773.71
4B	1.20	N/A	N/A	2.25	Low	Low	No	Moderate	1	\$1,399,476.74
4C	1.63	N/A	N/A	3.55	Low	Low	No	Low	None	\$352,057.67
5A	1.85	5A	3.07	8.52	Low	Low	No	Low-Moderate	None	\$1,020,152.63
5B	1.84	5B	2.97	10.04	Moderate	Low-Moderate	Low	SMF5B-Low FPC 5B-Low-Moderate	None	\$758,570.87
5C	1.64	5C	1.64	5.86	No	Low	No	Moderate	None	\$1,835,221.13
N/A	N/A	6-9A	12.99	21.54	No	Low	No	Low	None	\$1,665,883.75
N/A	N/A	6-9B	12.25	20.14	No	Low	No	Moderate	None	\$1,951,910.72
N/A	N/A	6-9C	10.92	15.31	No	Low	No	Low-Moderate	None	\$1,413,712.97
6A	2.68	N/A	N/A	4.03	No	Low	No	Low-Moderate	None	\$607,585.92
6B	1.70	N/A	N/A	2.45	No	Low	Medium	Low-Moderate	None	\$455,328.30
6C	2.36	N/A	N/A	3.52	No	Low	No	Low	None	\$670,566.52
7-8A	3.84	N/A	N/A	5.32	No	Low	Low	Low-Moderate	None	\$656,776.26
7-8B	2.67	N/A	N/A	3.72	No	Low	Low	Moderate	None	\$613,131.45
7-8C	2.48	N/A	N/A	3.08	No	Low	No	Low	None	\$419,709.63
9A	1.51	N/A	N/A	2.57	No	Low	Low	Low	None	\$410,777.22
9B	1.24	N/A	N/A	2.06	No	Low	Low-Moderate	Low-Moderate	None	\$409,852.68
9C	1.27	N/A	N/A	2.52	No	Low	Low-Moderate	Low-Moderate	None	\$650,178.10
East Segment 08 070 000										
10A	3.18	N/A	N/A	4.57	No	Low	Low	Low	None	\$826,859.64
10B	2.43	N/A	N/A	3.88	No	Low	No	Low-Moderate	None	\$936,657.02
N/A	N/A	10A	0.74	1.93	No	Low	Low	Low	None	\$296,223.31
N/A	N/A	10B	0.61	1.56	Low	Low	Low	Low-Moderate	2	\$1,606,324.01
11A	2.20	11A	0.34	4.02	No	Low	Low	Low	None	\$557,313.55
11B	1.84	11B	0.83	8.42	No	Low	No	Low	None	\$631,664.00
12A	1.86	N/A	N/A	3.89	No	Low	No	Low	None	\$484,096.90
12B	1.40	N/A	N/A	3.04	No	Low	Low	Low-Moderate	None	\$985,172.18
N/A	N/A	12A	0.35	0.68	No	Low	No	Low-Moderate	None	\$234,991.38
N/A	N/A	12B	0.42	0.99	No	Low	No	Low-Moderate	None	\$181,375.12
N/A	N/A	12C	0.27	1.11	No	Low	No	Low-Moderate	2	\$1,138,752.72
13A	2.26	N/A	N/A	5.00	No	Low	No	Moderate	None	\$805,177.95
13B	2.96	N/A	N/A	6.88	No	Low	Low	Low-Moderate	None	\$686,202.19
13C	2.85	N/A	N/A	9.13	No	Low	Low	Low-Moderate	1	\$1,691,042.43
N/A	N/A	13A	1.20	2.93	No	Low	Low	Low-Moderate	None	\$385,824.19
N/A	N/A	13B	0.85	2.25	No	Low	Low	Low	None	\$246,052.49
N/A	N/A	13C	1.48	3.31	No	Low	Low	Low	None	\$423,131.14
14A	1.54	14A	N/A	4.65	No	Low	No	Low	1	\$1,261,900.72
14B	1.54	14B	N/A	3.46	No	Low	Low	Low-Moderate	None	\$1,949,019.19

Notes:

- 1) Preferred pond sites and preferred FPC sites are delineated by the **yellow highlighting**
- 2) There is one potential residential relocation associated with SMF 14A/FPC 14A

Table 8-4 Floodplain Encroachment Summary

Floodplain	Sub-Basins	Project Floodplain Limits	Base Flood Elev. (BFE)	Estimated Floodplain Encroachment Area (ac) ¹	Estimated Floodplain Encroachment Volume (ac-ft) ²
1	1A	Sta 566+00 to Sta 572+00 LT	96.3	0.48	0.48
	1B	Sta 577+62 to Sta 579+30 RT	102.3	0.10	0.05
2	2A	Sta 628+00 to Sta 641+50 RT	85.1	0.62	0.62
	2B	Sta 629+40 to Sta 637+00 LT	87.8	0.52	0.52
3-4	3A	Sta 656+55 to Sta 669+00 LT	78.2	0.57	0.86
	3B	Sta 657+30 to Sta 665+15 RT	77.5	0.45	0.34
	4	Sta 669+00 to Sta 678+00 LT	78.2	0.72	1.45
5	5A	Sta 685+50 to Sta 702+00 LT	78.2	1.33	3.31
	5B	Sta 683+50 to Sta 700+50 RT	77.4	1.17	2.93
6-9	6A	Sta 714+00 to Sta 731+00 LT	74.5	1.17	1.46
	6B	Sta 712+00 to Sta 731+00 RT		0.87	1.09
	7	Sta 731+00 to Sta 750+00 LT&RT		5.94	25.25
	8	Sta 750+00 to Sta 769+00 LT&RT		6.50	34.13
	9	Sta 769+00 to Sta 781+00 LT&RT		3.13	13.30
10	10A	Sta 793+25 to Sta 795+50 LT	67.3	0.18	0.18
	10B	Sta 793+07 to Sta 797+15 RT		0.28	0.56
11	11	Sta 829+35 to Sta 836+50 RT	57.9	0.66	1.97
12	12A	Sta 851+50 to Sta 852+90 LT	77.4	0.08	0.06
	12B	Sta 853+40 to Sta 854+50 LT	77.6	0.04	0.03
	12C	Sta 860+45 to Sta 862+00 LT	94.3	0.12	0.12
	12D	Sta 862+45 to Sta 866+35 LT	95.0	0.22	0.22
13	13A	Sta 899+45 to Sta 905+30 LT	80.4	0.54	0.40
	13B	Sta 888+20 to Sta 892+65 RT	86.8	0.46	0.69
	13C	Sta 895+00 to Sta 897+00 RT	84.5	0.09	0.11
	13D	Sta 900+20 to Sta 904+85 RT	79.1	0.32	0.48
14	14A	Sta 925+00 to Sta 928+35 LT	100.8	0.23	0.35
	14B	Sta 928+35 to Sta 930+05 LT	102.4	0.18	0.22
	14C	Sta 926+50 to Sta 927+72 RT	101.4	0.08	0.06
Totals				27.05	91.24

¹The estimated floodplain encroachment area is based on an average 20-40 ft width per the length of encroachment per side.

²An estimated fill depth based on existing ground and the average depth was estimated per basin.

“Modifications to existing drainage structures (extension of replacement of existing cross drains) included in this project will result in an insignificant change in their capacity to carry floodwater. These modifications will cause minimal increases in flood heights and flood limits which will not result in any significant adverse impacts on the natural and beneficial floodplain values or any significant change in flood risks or damage. There will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes as the result of the modifications to the existing drainage structures. Therefore, it has been determined that this encroachment is not significant.”

A *Water Quality Impact Evaluation (WQIE)* is included in the project files. A *Bridge Hydraulics Report (BHR)* will be prepared for the bridge culvert within the study limits during the proposed project's future design phase. If replaced, the future structure will be designed to be hydraulically equivalent to the existing bridge culvert.

8.5 EVALUATION MATRIX

The evaluation summary matrix shown at the December 10, 2019 public hearing, comparing the roadway alternatives is shown in **Table 8-5**. This matrix was developed to compare the No-Build Alternative and the Build Alternative based on preliminary estimates of costs (ROW acquisition, wetland mitigation, engineering and construction), as well as, social and environmental factors. The data for the Build Alternative was developed based on the preferred alternative "footprint" along with base map information collected and prepared for this study. The construction cost estimates were prepared using the Department's LRE program.

8.6 PREFERRED ALTERNATIVE

The Preferred Build Alternative consists of widening of the existing four-lane highway to a six-lane divided highway, with a rural typical section between the Brooksville Bypass/Jasmine Drive and Spring Lake Highway/Mondon Hill Road, and a suburban typical section between Spring Lake Highway/Mondon Hill Road and Lockhart Road. In addition, intersection geometric improvements are recommended at the following intersections:

- Brooksville Bypass/Jasmine Drive
- Griffin Road
- Mondon Hill Road/Spring Lake Highway
- Lockhart Road

In addition to roadway widening and intersection improvements, construction of ponds and other SMF and FPC sites will be required.

Preliminary conceptual design plans are included in **Appendix A** which shows the preferred improvements in plan-view.

Table 8-5 Evaluation Matrix from Public Hearing

(Estimated costs were updated following the public hearing)

Evaluation Criteria	No-Build Alternative	Build Alternative
Potential Business Impacts		
Number of business relocations	0	0
Potential Residential Impacts		
Number of residential relocations	0	1 ¹
Potential ROW Impacts		
Number of affected parcels	0	23 ³
Area of ROW anticipated to be acquired (acres)	0	0.1
Stormwater Ponds and Floodplain Compensation Sites (acres) ³	0	92.6
Potential Environmental Effects		
Archeological/Historical sites	0	1 ²
Section 4(f) sites	0	0
Noise sensitive areas	0	2
Wetlands (acres)	0	0.96
Threatened and endangered species	None	Low/Moderate
Petroleum and hazardous material sites	None	3 (High) 3 (Medium)
Estimated Costs⁴ (Present Day Costs in Millions)		
Construction of Roadway, Bridges and Ponds	\$0.0	\$65.0
Right of Way for Roadway Only	\$0.0	\$0.7
Right of Way for Stormwater Ponds and Floodplain Compensation Site ⁵	\$0.0	\$7.2
Wetlands Mitigation (0.96 acres)	\$0.0	\$0.2
Design and Construction Inspection (20% of construction)	\$0.0	\$13.0

¹Potential residential relocation identified for preferred stormwater management/floodplain compensation site 14A

²Potential; adjacent historic site (8HE712) is not impacted by the current build alternative

³Based on estimated total area for the preferred stormwater ponds and floodplain compensation sites

⁴Construction cost based on LRE system prepared September 2019

⁵Based on estimated ROW costs for the preferred stormwater ponds and floodplain compensation sites

SECTION 9 PUBLIC INVOLVEMENT/PROJECT COORDINATION

A *Public Involvement Plan* was prepared at the onset of this PD&E Study to outline the public outreach efforts planned. A *Comments and Coordination Report* was prepared after the planned public hearing which provides a description of all of the public involvement performed for this PD&E study. Below is a summary of pertinent public involvement efforts for this study.

9.1 OUTREACH EFFORTS

Various public involvement activities were conducted during the study:

- A **Project Website** (<http://active.fdotd7studies.com/sr50/brooksville-bypass-to-i75/>) was developed and maintained throughout the study period. This website contained information about the study and served as a clearinghouse of information for the public pertaining the project details. The website also included a page where the public may submit a comment or request a meeting.
- A **Project Kickoff Newsletter** was distributed early in the study in October 2015. The newsletter described the PD&E study process, discussed the project purpose, and provided a project schedule with the next steps in the study. The newsletter also included contact information and instructions for those needing special assistance or language support.
- A **Public Hearing Newsletter** was mailed to those on the project mailing list, in November 2019. The newsletter was sent to promote the public hearing and to encourage participation and receive public comments. It served as an official notice to adjacent property owners of the public hearing. The newsletter presented the proposed improvements on SR 50, within the study limits. Contact information and instructions for those needing special assistance or language support were also provided.

9.2 AGENCY AND STAKEHOLDER COORDINATION

Agency comments were received based on the initial findings provided in the *NRE* and coordination was conducted throughout the PD&E study process. A concurrence letter was received from USFWS on October 16, 2019, and a review and coordination letter was received from FWC on September 18, 2019. The SHPO also provided review and concurrence of the *CRAS* on July 27, 2015, and the *CRAS Technical Memorandum Proposed SMF Sites & FPC Sites* on September 18, 2019. These agency concurrence and coordination letters can be found in Appendix A of the *Comments and Coordination Report*. Additional agency coordination meetings included:

- A meeting was held between the FDOT and Hernando County and MPO on July 19, 2016 to discuss the typical sections, access management, pedestrian/bicycle accommodations and funding.

- A meeting was held between FDOT and Hernando County Public Works on July 2, 2018 concerning the drainage evaluation and potential stormwater management and FPC sites.
- A meeting was held between FDOT and SWFWMD on January 28, 2015 as a pre-application meeting concerning the drainage design and environmental permitting. SWFWMD provided the project File Number PA 406543.
- The project was presented to the MPO staff and their Citizens Advisory Committee and Bicycle/Pedestrian Advisory Committee, and Technical Advisory Committee on November 6, 2019, to discuss the study process and proposed alignment. A presentation was made to Hernando/Citrus MPO Board on February 13, 2020 to inform the MPO Board about the project.

9.3 OTHER STAKEHOLDER/SMALL GROUP MEETINGS

- A meeting was held on April 12, 2016 between FDOT and Laso Wrecker Service concerning access of their large vehicles from their site at 29114 Cortez Boulevard.

9.4 PUBLIC HEARING

A public hearing was held for this project on December 10, 2019, from 5:30 p.m. to 7:30 p.m. at the Brooksville Wesleyan Church in Brooksville. The hearing was held to inform citizens and interested parties about the project details and schedule. This hearing also included an opportunity to provide comments concerning the proposed improvements to SR 50. The hearing consisted of an open house from 5:30 p.m. to 6:30 p.m. and a formal presentation and public comment period beginning at 6:30 p.m., followed by resuming the open house until 7:30 p.m.

A newsletter advertising the public hearing was sent out November 15, 2019, via electronic mail to public officials and via direct mail to property owners within 300 feet of the project, as well as current tenants, agencies, and interested parties. A legal display notice advertising the public hearing was published in the Tampa Bay Times on November 15, 2019, and December 1, 2019, and also in La Gaceta on November 15, 2019, and November 29, 2019. An advertisement was also placed on the project website on November 8, 2019, as well as in the *Florida Administrative Register* on December 2, 2019.

The study's supporting documents for the public hearing were available for public review during the public hearing comment period from November 19, 2019, through December 23, 2019, on the project website as well as during normal operating hours at FDOT's District 7 office and the East Hernando Branch Library.

A total of 100 persons from the public signed the attendance roster at the public hearing. The *Public Hearing Transcript* is included in Appendix C of the *Comments and Coordination Report*.

A total of eighteen written comments were received at the hearing, mailed to FDOT, and by email directly to FDOT staff or through the website during the comment period. Two verbal comments were spoken to the court reporter and are included in the *Public Hearing Transcript*. No verbal statements

were made by a member of the public during the formal portion of the public hearing. Most comments asked questions or expressed support for the project. Concerns were mostly expressed about access management, sight distance concerns due to vertical curves, flooding issues and noise barriers and sidewalks abutting adjacent property lines. The *Comments and Coordination Report* contains a summary of the written comments and responses. The actual comments/responses are included in the project files.

See **Section 10.18** for improvements updated in coordination with a property owner along Hadley Drive regarding FDOT's response to Public Hearing Comment #18. In addition, see **Section 10.19** for adjustments made in the access management plans following the public hearing.

Copies of all public hearing displays and presentation materials are included in the *Public Hearing Scrapbook* that was prepared for this project and is included in the project files under separate cover.

SECTION 10 DESIGN DETAILS OF PREFERRED ALTERNATIVE

10.1 DESIGN TRAFFIC VOLUMES

Design year (2040) AADTs and year 2040 DDHV were previously shown in **Figures 7-4** and **7-5**, respectively.

10.2 TYPICAL SECTIONS AND DESIGN SPEED

Preferred typical sections were shown previously in **Figure 8-3**. The proposed design speed for the rural typical section in the west section of the project is 65 mph and the proposed design speed for the suburban typical section in the east section of the project is 50 mph.

10.3 HORIZONTAL AND VERTICAL ALIGNMENT

The proposed horizontal alignment generally follows the existing horizontal alignment since the proposed improvements consist of a combination of inside and outside pavement widening. A proposed profile grade for the vertical alignment will be determined during the future design phase when full survey data is available. As previously noted in **Section 4.1.6**, there are a number of vertical curves that do not meet current design standards for a 65 mph design speed. Options which would be considered during the future design phase include:

1. Reconstruction of the deficient areas
2. Requesting design exceptions or variations
3. Lowering the design speed by using a suburban typical section in lieu of a rural typical section

10.4 INTERSECTION CONCEPTS AND SIGNAL ANALYSIS

Preferred geometry (laneage) for major intersections was previously shown in **Figure 7-5**. The intersection of SR 50 at Lockhart Road is currently being improved as part of FDOT's SR 50 widening project to the east of Lockhart Road.

Intersection lane storage requirements for the signalized intersections were calculated for the design year 2040 build conditions based on the ITE "red-time" formula. The preferred turn lane lengths were rounded to the nearest 25 feet increment and are shown in **Table 10-1**. The detailed calculations for the queue lengths and turn lane lengths are included in the *PTAR*.

In addition, the left-turn lane and the right-turn storage lane lengths along SR 50 at the un-signalized intersection of SR 50 at Griffin Road were estimated for the 2040 build conditions. The preferred turn lane lengths were rounded to the nearest 25 feet increment and are shown in the same table as above.

Table 10-1 Design Year (2040) Build Preferred Turn Lane Lengths

SR 50 Intersections	Approach	Movement	Preferred Turn Lane Length (ft)
Cortez Boulevard/Jasmine Drive	Eastbound	Left	400 ⁽¹⁾
		Thru-Right	
	Westbound	Left	900
		Right	500 ⁽¹⁾
	Northbound	Left	425
		Right	900
Southbound	Left	625 ⁽¹⁾	
	Thru-Right		
Griffin Road/Redbud Lane* (un-signalized)	Eastbound	Left	350
		Right	300
	Westbound	Left	550
		Right	550
	Northbound	Left	200
		Thru-Right	
Southbound	Left- Thru-Right		
Spring Lake Highway/Mondon Hill Road	Eastbound	Left	675 ⁽¹⁾
		Right	700
	Westbound	Left	800
		Right	700 ⁽¹⁾
	Northbound	Left	425
		Thru-Right	
Southbound	Left	350	
	Right	450	
Lockhart Road**	Eastbound	Left	825 ⁽¹⁾
		Right	825 ⁽¹⁾
	Westbound	Left	875 ⁽¹⁾
		Right	875 ⁽¹⁾
	Northbound	Left	650
		Right	650
Southbound	Left	425	
	Right	625	

* For un-signalized intersections, turn lane lengths along SR 50 estimated from Figure 3-13 Florida Greenbook, May 2013.

**Based on the analysis longer turn lane lengths are preferred than the SR 50 (Cortez Boulevard) from Lockhart Road to US 301 (SR 35/Treiman Boulevard) PD&E study to the east (with the exception of the southbound turn lane lengths)

⁽¹⁾ Based on thru lane queue as thru lane queue exceeds storage length for turn lanes.

10.5 RIGHT OF WAY NEEDS AND RELOCATIONS

Specific locations for proposed ROW acquisition are shown on the preliminary conceptual design plans included in **Appendix A**. These presently consist of small “corner clips” at several intersections. No additional mainline ROW is required as long as a Border Width Variation (see **Section 10.6**) is approved, which will be requested with the preparation of the *Typical Section Package* during the design phase. In addition to these small areas, ROW would be needed for stormwater treatment facilities (mostly ponds) and for floodplain compensation sites. No relocations of businesses or residences are expected as part of the proposed roadway improvements. There is one potential residential relocation related to preferred SMF/FPC site 14A. It is estimated that 0.1 acres are required for the corner clips and 92.6 acres are required for the preferred SMF and FPC sites.

10.6 POTENTIAL DESIGN VARIATIONS AND EXCEPTIONS

Table 10-2 shows a list of potential design variations and exceptions required for this Study.

Table 10-2 Potential Design Variations and Exceptions

Design Elements	Condition		Required Action		Locations and Notes
	Is Existing Deficient?	Is Proposed Deficient?	Variation	Exception	
Superelevation	Yes	Maintain Existing	x		1 potential location; See Table 4-2
Vertical Alignment	Yes	Maintain Existing	x		West segment - 2 potential locations East Segment – 11 potential locations (if design speed does not drop to 50 mph) See Table 4-3
Border Width	No	Yes	x		A design variation for border width is anticipated in the west segment. The amount varies with a minimum of 6-ft of additional border width needed.

Source: (1) FDOT Florida Design Manual (FDM), January 2020

10.7 COST ESTIMATES

Preliminary cost estimates for the Preferred (Build) Alternative (\$millions, rounded) are included in **Table 10-3**. Construction costs are based on FDOT’s LRE cost estimating system prepared in April 2020. These costs include components for earthwork, roadway, shoulder, median, signing/markings, signalization, drainage (including SMF and FPC sites) as well as temporary traffic control, mobilization, and an initial contingency. Estimated costs for retaining walls and the noise barrier were determined after the public hearing and will be refined in the design phase as field survey is collected to establish

needs and wall heights. Noise barrier costs are included based on lengths and heights shown in the *Noise Study Report*. All costs are preliminary and will be refined as the design phase progresses.

Table 10-3 Estimated Costs for the Preferred Alternative

Component	Estimated Cost (\$millions)
Construction of Roadway, Bridges and Ponds ¹	\$90.6
Right of Way for Roadway Only	\$0.7
Right of Way for Stormwater Ponds and Floodplain Compensation Sites ²	\$7.2
Wetlands Mitigation (0.96 acres)	\$0.2
Design (10% of construction)	\$9.0
Construction Engineering & Inspection (10% of construction)	\$9.0
Totals	\$116.7

¹Construction cost based on LRE system prepared April 2020

²Based on estimated ROW costs for the preferred stormwater ponds and floodplain compensation sites

10.8 RECYCLING AND SALVAGEABLE MATERIALS

During construction of the project, recycling of reusable materials will occur to the greatest extent possible. Where feasible, removal and recycling of the existing pavement and base material for use in the new pavement will be considered. This will reduce the volume of the materials that need to be hauled away and disposed of potentially reducing the cost of purchasing new materials for construction. Other materials such as signs, drainage pipes, etc., will also be salvaged and reused for regular maintenance operations if they are deemed to be in acceptable condition.

10.9 USER BENEFITS (SAFETY, ETC.)

The public will realize benefits after the proposed improvements are constructed. Reduction in travel time, reduced vehicle operating costs, reduced traffic crash related costs and reduced emergency response times are the primary benefits. Bicyclists and pedestrians will be able to more safely share the corridor with motorists.

10.10 MULTIMODAL CONSIDERATIONS

Hernando County Transit Services (TheBus) is a cooperative effort of the Hernando County Board of County Commissioners, Hernando/Citrus MPO, City of Brooksville, FDOT, Federal Transit Administration and McDonald Transit Associates, Inc. in serving the citizens of Hernando County with affordable public transportation. There are currently no bus routes along SR 50. However, the Hernando-Citrus MPO’s 2045 LRTP Cost Affordable Plan shows “aspirational local bus service” along SR 50, as needed by 2045. Coordination with Hernando County Transit Services (TheBus) would occur during the future design phase to ensure that any required bus accommodations are incorporated in the final design plans for the future roadway improvements.

10.11 ECONOMIC AND COMMUNITY DEVELOPMENT

As previously discussed in **Section 3**, traffic demand is expected to steadily increase in the coming years due to the planned developments in central Hernando County. Expanding the capacity of this highway facility will help facilitate economic growth within central Hernando County, improve mobility, and provide safer access to the businesses and residences located along SR 50.

10.12 TEMPORARY TRAFFIC CONTROL PLAN

SR 50 provides access to several businesses along this corridor. Due to its importance, the existing four travel lanes should be maintained to the maximum extent possible during construction. Lane closures, if necessary, would occur during night or other off-peak hours.

The following conceptual construction sequence will help maintain traffic operations along SR 50:

- Relocate existing utilities within the mostly existing ROW
- Construct stormwater ponds and FPC site
- Construct temporary pavement as necessary to maintain existing traffic
- Widen the eastbound and westbound roadways while maintaining existing traffic on a combination of existing pavement and newly constructed or temporary pavement
- Shift traffic to the newly completed sections of pavement
- Remove temporary pavement where applicable and construct raised medians where applicable

10.13 BICYCLE AND PEDESTRIAN FACILITIES

Pedestrian safety and mobility will be enhanced by providing sidewalks along the entire project corridor. Along the north side of SR 50, these will be 5-foot wide in the West rural segment and 6-foot wide in the East suburban segment. Widened sidewalks (10-foot width) will be included along the south side of SR 50. The MPO concurred with this location on 10/22/2019. See **Appendix C** for the documentation. For bicyclists, the West segment will include 5-foot paved shoulders and keyholes adjacent to right turn lanes as they currently exist. The East segment will include a 7-foot buffered bike lane consistent with FDOT's latest requirements.

10.14 UTILITY AND RAILROAD IMPACTS

Existing utilities are described in **Section 4.1.12**. Depending on the location and depth of the utilities, construction of the proposed project will likely require adjustments or relocation of some facilities. Cost for utility adjustments are not included in the total estimated project costs presented in **Section 10.6**, since they will be incurred by the utility owners in many cases. Determination of any utility relocation reimbursement costs will be made by FDOT's legal department during the future design phase. Coordination with utility owners will be ongoing throughout the study process.

It should be noted that several utilities are currently located under the existing pavement and would also be under the proposed improvements. The relocation costs could be reduced significantly if these

utilities were permitted to remain within the travel way. Approval would be required from both the utility owners and the FDOT. Impacts to existing utility facilities can also be reduced or eliminated if Subsurface Utility Engineering (SUE) is performed during the design phase at potential conflict locations (drainage facilities, traffic signals).

10.15 VALUE ENGINEERING RESULTS

A value engineering (VE) study is planned to be conducted in early 2021 prior to the design phase.

10.16 DRAINAGE AND STORMWATER MANAGEMENT

SMF site alternatives that are hydraulically feasible and environmentally permissible based on the best available information were analyzed. These alternatives were then compared based on relocations and community impacts; environmental impacts including wetlands, upland habitat and protected species involvement; petroleum and hazardous materials contamination; cultural resources; and economic factors including ROW costs. **Tables 8-2** and **8-3** list the evaluation measures for all sites evaluated in the PSR. **Table 10-4** summarizes the environmental evaluation and potential impacts of the preferred SMF and FPC site alternatives. Most categories were given a ranking of No Low, Moderate, or High based on potential impacts. A more detailed discussion of drainage and stormwater management is provided in the *PSR*.

10.17 STRUCTURES

There are no bridge structures located within the study limits; however, there is one bridge culvert located west of Cedar Lane (west of Dorsey Smith Road).

Bridge culvert number 080036 conveys the Bystream Overflow under SR 50 near milepoint 8.55. This 170-foot long culvert was constructed in 1997 and consists of four barrels that are each 12 feet wide and 7 feet tall. The bridge culvert was assigned a sufficiency rating of 80 and a health index of 65.72 after its last inspection on January 22, 2019. Based on this information, the bridge culvert may need some minor rehabilitation work but does not need to be replaced.

The proposed six laning of SR 50 will require minor widening to the outside in this area, but the 170-foot length of this existing culvert should be able to accommodate this work without the need to extend the bridge culvert. The proposed sidewalks which would be located near the ROW lines will likely need to be shifted closer to SR 50 to cross over the box culvert. In addition, guardrail may need to be added if space is insufficient to provide the full required clear zone width.

An overhead sign structure will be added for westbound drivers approaching the SR 50/Brooksville Bypass intersection as the left-most through lane will become a left turn lane at this intersection. The exact location and any supplementary signage will be determined during the design phase. An approximate location is shown on the Concept Plans in **Appendix A**.

Table 10-4 SMF and FPC Site Evaluation Matrix for the Preferred Alternative

SMF #	FPC #	Total Area (acre)	Wetlands	Wildlife and Habitat	Contamination	Cultural Resources	Potential Relocations	Est. Right of Way Costs	Estimated Cost
West Segment 08 050 000									
1C	1C	5.33	No	Low	Low	Low-Moderate	None	\$342,700.00	\$497,501.28
2A	2A	5.27	Low	Low-Moderate	No	SMF 2A-Moderate FPC 2A-Low-Moderate	None	\$371,000.00	\$598,209.42
3A	3-4A	5.23	Low-Moderate	Low-Moderate	No	Low	None	\$535,100.00	\$710,869.37
4C	N/A	3.55	Low	Low	No	Low	None	\$263,600.00	\$352,057.67
5B	5B	10.04	Moderate	Low-Moderate	No	SMF 5B-Low FPC 5B-Low-Moderate	None	\$504,300.00	\$758,570.87
N/A	6-9A	21.54	No	Low	No	Low	None	\$936,200.00	\$1,665,883.75
6B	N/A	2.45	No	Low	Medium	Low-Moderate	None	\$341,200.00	\$455,328.30
7-8C	N/A	3.08	No	Low	No	Low	None	\$255,400.00	\$419,709.63
9A	N/A	2.57	No	Low	Low	Low	None	\$242,800.00	\$410,777.22
East Segment 08 070 000									
10A	N/A	4.57	No	Low	Low	Low	None	\$495,300.00	\$826,859.64
N/A	10A	1.93	No	Low	Low	Low	None	\$272,900.00	\$296,223.31
11B	11B	8.42	No	Low	SMF 11B - No FPC 11B - Low	Low	None	\$446,100.00	\$631,664.00
12A	N/A	3.89	No	Low	Low	Low	None	\$276,300.00	\$484,096.90
N/A	12B	0.99	No	Low	No	Low-Moderate	None	\$169,100.00	\$181,375.12
13B	N/A	6.88	No	Low	Low	Low-Moderate	None	\$388,700.00	\$686,202.19
N/A	13B	2.25	No	Low	Low	Low	None	\$214,300.00	\$246,052.49
14A	14A	4.65	No	Low	No	Low	1	\$1,112,100.00	\$1,261,900.72

10.18 SPECIAL FEATURES

The placement and maintenance of any landscaping shall comply with the required clear zone and sight distance at intersections. No other provisions or commitments have been made yet regarding special aesthetic features. With the addition of sidewalks, the addition of roadway lighting has been added to the LRE.

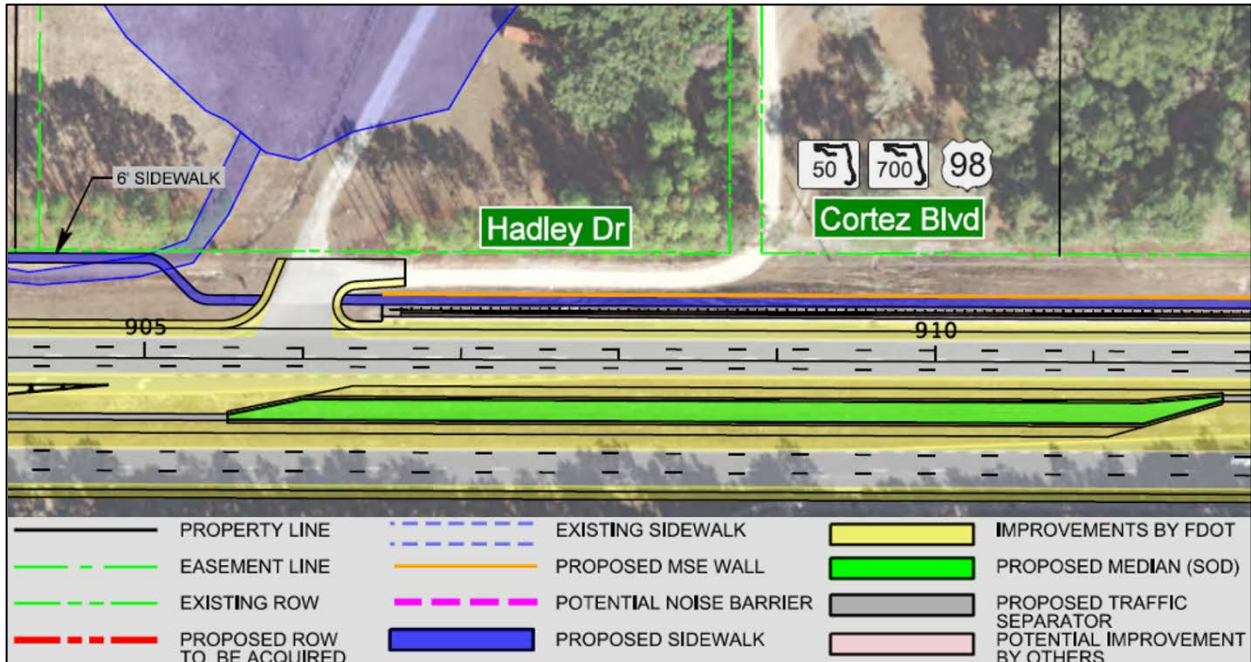
Retaining walls will be required to contain the typical section within the existing ROW. Preliminary locations are shown in the Concept Plans (**Appendix A**) and will be better refined in the design phase when field survey data has been collected and wall needs and heights can be established.

Future evaluation of lighting should be undertaken during the design phase. Based on the *Noise Study Report*, a noise barrier is feasible and reasonable at one general area to mitigate for noise impacts. This area will be reevaluated in the design phase to determine if the barrier is feasible from an engineering perspective and still remains cost reasonable. Barrier #11 as noted in the *Noise Study Report*, is along the north side of SR 50 in front of Hill 'n Dale subdivision. This barrier is split into several segments to allow for roadway access points from side streets. The overall barrier length is approximately 4,350-ft in length.

After the December 10, 2019 public hearing, Public Hearing Comment #18 was provided by a property owner located along the east segment of the study and along the north side of SR 50, specifically, regarding their property access along SR 50 via Hadley Drive. Further details of the comment and response are included in the *Comments and Coordination Report*. Based on the response, the FDOT will retain the connection to Hadley Drive as it currently exists which runs a short distance as a frontage road within the SR 50 ROW. In order to maintain positive drainage, curb/gutter and inlets may need to be considered along this portion of Hadley Drive. Based on the vertical elevation difference of SR 50 and the adjacent ground line in this area, a retaining wall would be constructed to retain the embankment of SR 50. The proposed sidewalk on the north side is planned to be routed closer to SR 50 adjacent to the proposed retaining wall. A guardrail or barrier wall is proposed between the sidewalk and SR 50 roadway to shield vehicles from the close proximity of the sidewalk and retaining wall drop off. A shoulder gutter and inlets may be needed between the roadway pavement and the sidewalk to convey stormwater from SR 50. A handrail or concrete parapet wall may be constructed on top of the proposed retaining wall to provide sidewalk users protection from the retaining wall drop off. The preliminary design features of this area will be refined further during the design phase when field survey data has been collected. **Figure 10-1** shows a zoomed in depiction of this area that is shown on the Concept Plans in **Appendix A**.

At a meeting with District staff on March 9, 2020, it was discussed to add a warning sign for westbound drivers approaching the SR 50 intersection with Redbud Lane for better warning of that intersection. The minutes from the March 9, 2020 meeting are in **Appendix C**.

Figure 10-1 Preliminary Design Features Near Hadley Drive



10.19 ACCESS MANAGEMENT

Existing access management characteristics are described in **Section 4.1.1**. Many of the existing openings, especially full openings east of Spring Lake Highway/Mondon Hill Road, do not meet Access Management Class 3 spacing standards. Preliminary recommendations for changes to median openings were reviewed with the Department on January 12, 2015. Subsequent to that meeting, the District Access Management Engineer provided additional recommendations for the Access Management plan. Proposed changes to opening Numbers 4, 9, 15, 16, 17, 18, 19, 20, 22, and 23 were shown at the public hearing on December 10, 2019. Subsequent to the public hearing, adjustments were evaluated at openings 2, 3, 17 and 22 based on further evaluation of sight distance observations in the field. A meeting was held with District staff on March 9, 2020 and it was agreed that changes would be made to those 4 openings. The minutes from the March 9, 2020 meeting are in **Appendix C**.

Table 10-5 shows the proposed median opening locations for the Preferred Build Alternative, and the conceptual design plans included in **Appendix A** show the locations of proposed directional and full median openings as depicted in the table. For the roadway segment west of Spring Lake Highway, two of the existing directional median openings are proposed to be closed. For the roadway segment east of Spring Lake Highway, four existing full openings are proposed to be converted to directional openings, and three of the existing full openings are proposed to be converted to single-direction directional openings. For those proposed median opening locations that do not meet minimum Access Management Class 3 standards, the percent deviation from the standards is also shown in **Table 10-**

5. During the design phase, an access management public hearing will be required to present the changes to opening numbers 3, 17 and 22 to the public prior to implementation in accordance with FDOT policies and statute.

In response to a comment from the public hearing, the proposed right turn lane for Goodway Drive (east segment of project on the north side of SR 50) will be extended past station 900+00 for this turn lane to also serve the entrance of a storage facility to facilitate movement of trucks. See **Appendix C** for the minutes of the March 9, 2020 meeting for details of this location and discussion with FDOT District staff and the Concept Plans in **Appendix A**.

10.20 POTENTIAL CONSTRUCTION SEGMENTS AND PHASING

Potential construction segments are “To be determined”. The intersection of Spring Lake Highway/Mondon Hill is a logical dividing point in the project as this intersection is signalized, it is located approximately in the middle of the study area and is a location where the context classification changes between C2 and C3R and the proposed typical section changes from rural to the west to suburban to the east. If the project is constructed in 2 separate segments, the Spring Lake Highway/Mondon Hill intersection should be fully constructed with the first segment.

Advance funding for ROW acquisition could include securing potential off-site pond and/or FPC areas due to properties that become listed for sale by the property owners. As developments are submitted for approval to Hernando County, provisions for land dedications and accommodations of drainage, floodplain and wetland impacts would be considered in accordance with the County’s Comprehensive Plan and Land Development Code.

10.21 PROJECT FUNDING AND WORK PROGRAM SCHEDULE

The 2045 LRTP for the Hernando-Citrus MPO identifies funding for this project in the 2036-2045 time horizon in the amounts of \$8,200,000 for design and partial funding \$2,046,150 of \$10,289,000 for ROW. Construction is unfunded in the 2045 LRTP.

No future phases are currently programmed in the FDOT’s current Five Year Work program (FY 2020-2024).

Table 10-5 SR 50 Access Management Plan

No.	Nearest Cross Road	Mile Point	Existing Access	Dist. Existing (Ft)	Meets Criteria ?	Proposed Access**	Proposed Distance (Ft)	Does it Meet Criteria?
West Segment – Roadway Segment ID 08 050 000								
1	SR 50 Bypass	10.312	SIGNAL					
*2	E. OF Jasmine Rd (Shift opening 200' west to ~Sta 581+80)	9.995	DIR/ U-TURN	1674	YES	DIR	1674 (less 200' to 1474)	YES
3	Griffin/Redbud (add intersection warning sign east of opening)	9.705	FULL	1531	YES	FULL (POTENTIAL FUTURE SIGNAL)	1531 (plus 200' to 1731)	YES
4	1100 Ft W. of Singer Ln	9.395	DIR	1637	YES	CLOSE		
5	400 Ft W. of Singer Ln	9.265	DIR	686	NO	DIR	2323	YES
6	Landsdale St	8.860	FULL	2138	YES	FULL	2138	YES
7	E. of Landsdale St	8.670	DIR	1003	NO	DIR	1003	NO 24% dev.
8	Cedar Ln	8.439	FULL	1220	NO	FULL	1220	NO 7.5% dev.
9	Dorsey Smith Rd	8.262	DIR	935	NO	CLOSE		
10	Hilton Dr	7.765	FULL	2624	YES	FULL	3559	YES
11	Olympia Rd	7.341	DIR	2239	YES	DIR	2239	YES
12	WPA Rd	7.042	FULL	1579	YES	FULL	1579	YES
13	E. of WPA Rd	6.672	EB DIR	1954	YES	EB DIR	1954	YES
14	Spring Lake Hwy	6.117/ 0.000	SIGNAL	2930	YES	SIGNAL	2930	YES
East Segment – Roadway Segment ID 08 070 000								
15	Raley Rd	0.348	FULL	1837	NO	EB DIR	1837	YES
16	Faber Dr	0.518	FULL	898	NO	WB DIR	898	NO 32% dev.
*17	Cammie St (Keep as full)	0.880	FULL	1911	NO	FULL	1911	YES
18	Frampton Ave.	1.158	FULL	1468	NO	DIR	1468	YES
19	White Rd	1.512	FULL	1869	NO	WB DIR	1869 WB	YES
20	High Corner Rd	1.656	FULL	760	NO	EB DIR	2629 EB	YES
21	Goodway Dr	1.906	FULL	1320	NO	FULL	2080 WB 1320 EB	YES
*22	Dels Trail (change to WB only)	2.159	FULL	1336	NO	WB DIR	1336	YES
23	Thistlebrook Ln	2.414	FULL	1346	NO	DIR	1346	YES
24	Braewood St	2.654	FULL	1267	NO	FULL	1267	NO 4.0% dev.
25	Lockhart Rd	3.031	FULL	1991	NO	FULL/ FUTURE SIGNAL	1991	NO 25% dev.

East of Lockhart Road covered by previously approved PD&E WPI #416732-2

* change made after Dec 2019 public hearing that will require access mgmt. change hearing in design phase

** median changes from existing noted in red

Percent of deviation to criteria

SECTION 11 LIST OF TECHNICAL REPORTS

Public Involvement Items

- *Public Involvement Plan*
- *Public Hearing Scrapbook*
- *Comments and Coordination Report (which includes Public Hearing Transcript)*

Engineering Items

- *This Preliminary Engineering Report with Conceptual Design Plans*
- *Project Traffic Analysis Report*
- *Pond Siting Report*
- *Value Engineering Information Report* planned for Spring 2021

Environmental Items

- *Natural Resource Evaluation Report*
- *Noise Study Report*
- *Air Quality Screening Memo*
- *Location Hydraulics Memorandum*
- *Water Quality Impact Evaluation*
- *Farmland Conversion Impact Rating (USDA Form 80-1006)*
- *Contamination Screening Evaluation Report*
- *Cultural Resource Assessment Survey*
- *Cultural Resource Assessment Survey Technical Memorandum – Proposed Stormwater Management Facilities (SMF) Sites & Floodplain Compensation (FPC) Sites*
- *Type 2 Categorical Exclusion*

LIST OF APPENDICES

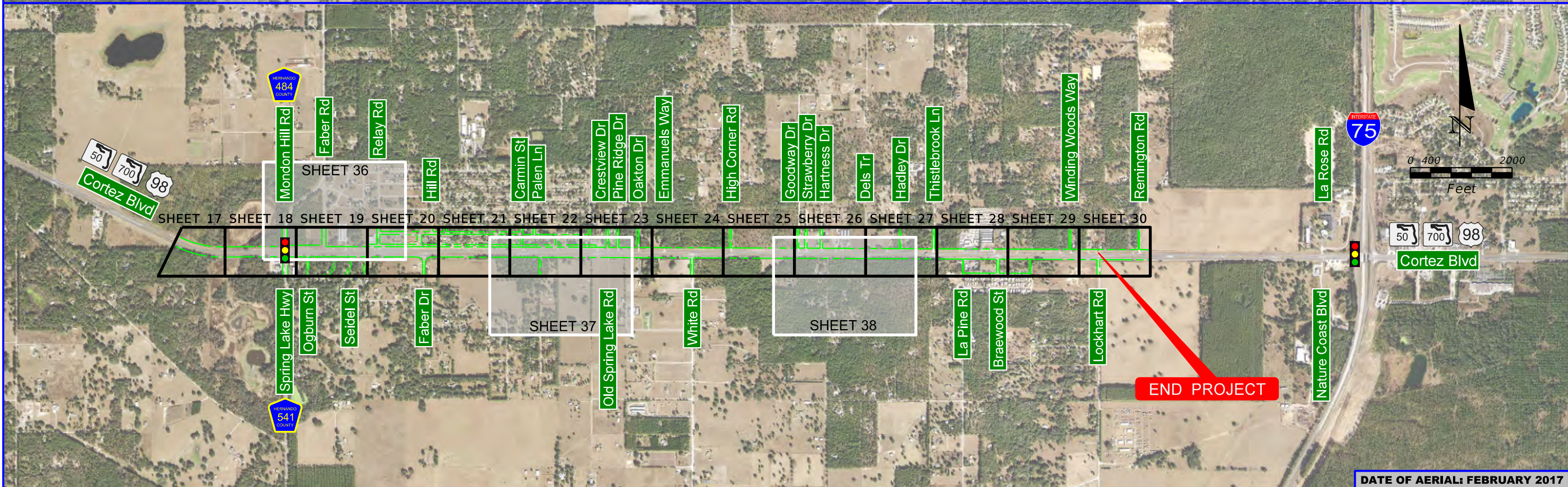
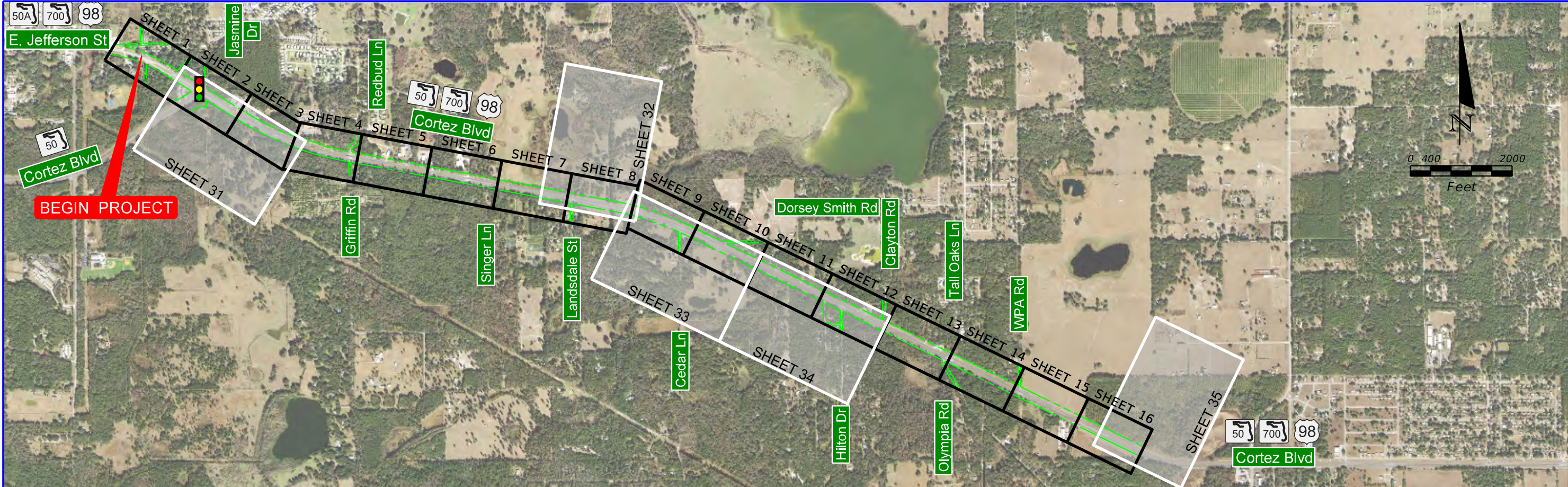
Appendix A Conceptual Design Plans

Appendix B Straight Line Diagram Inventory

Appendix C Design Documentation and Context Classification Memo

Appendix A

Conceptual Design Plans



DATE OF AERIAL: FEBRUARY 2017

LEGEND		EASEMENT LINE
		EXISTING ROW
		EXISTING TRAFFIC SIGNAL
		PLAN SHEET BOUNDARY
	STORMWATER MANAGEMENT FACILITY/FLOODPLAIN COMPENSATION SITE	
	SHEET BOUNDARY	


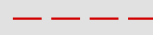
American Consulting Professionals, LLC
 2818 Cypress Ridge Blvd, Suite 200
 Wesley Chapel, Florida 33544
 Phone: (813) 435-2600 Fax: (813) 435-2601
 Engineering Business No. EB7110
 Jeffrey S. Novotny, P.E., No. 51083

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	430051-1-52-01

SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Concept Plan Sheet Layout Map
 WPI SEGMENT No.: 430051-1

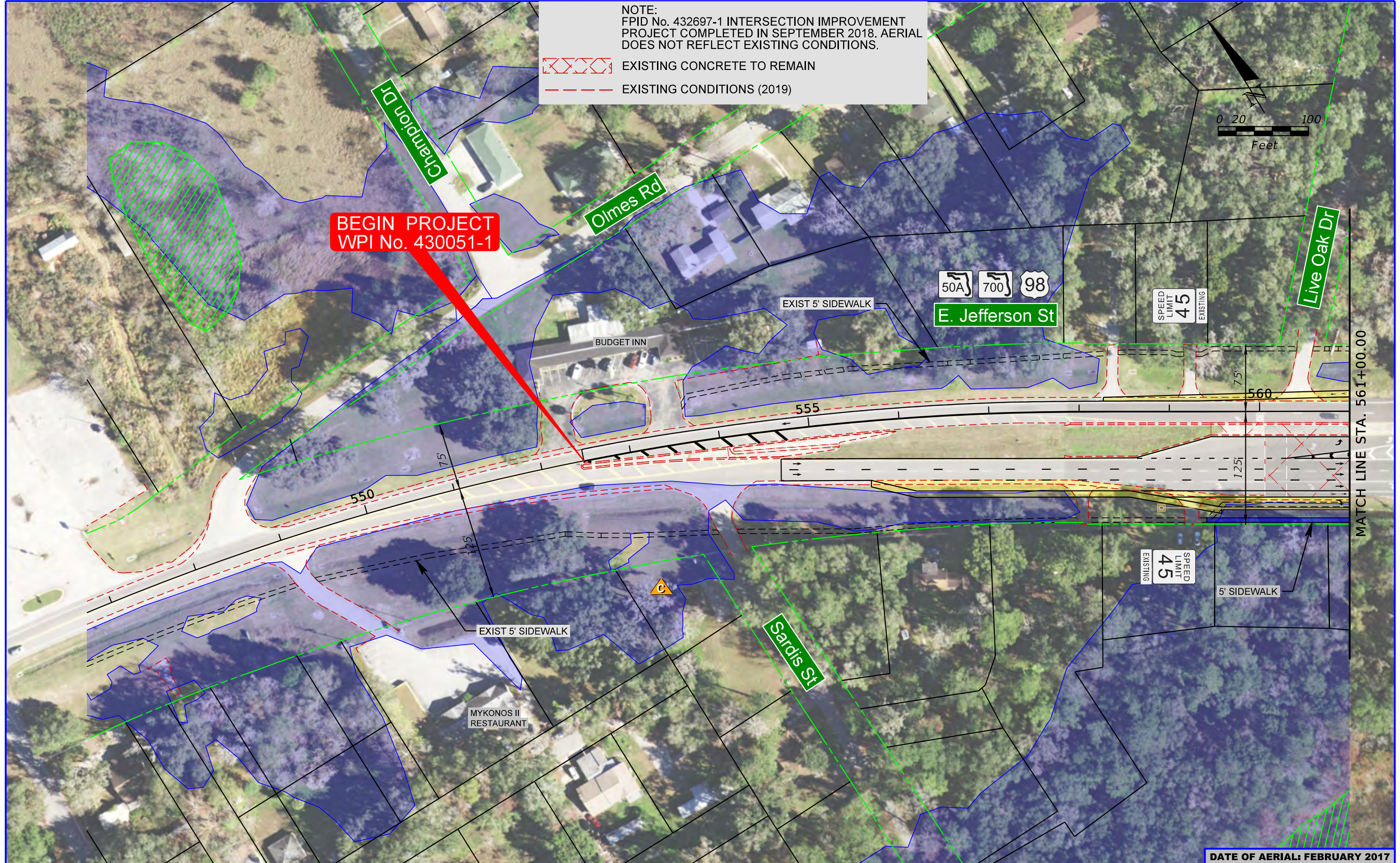
SHEET NO.

NOTE:
 FPID No. 432697-1 INTERSECTION IMPROVEMENT
 PROJECT COMPLETED IN SEPTEMBER 2018. AERIAL
 DOES NOT REFLECT EXISTING CONDITIONS.

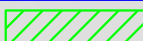
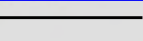

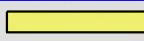
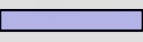





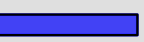
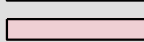




-  EXISTING CONCRETE TO REMAIN
-  EXISTING CONDITIONS (2019)



BEGIN PROJECT
 WPI No. 430051-1



DATE OF AERIAL: FEBRUARY 2017



LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

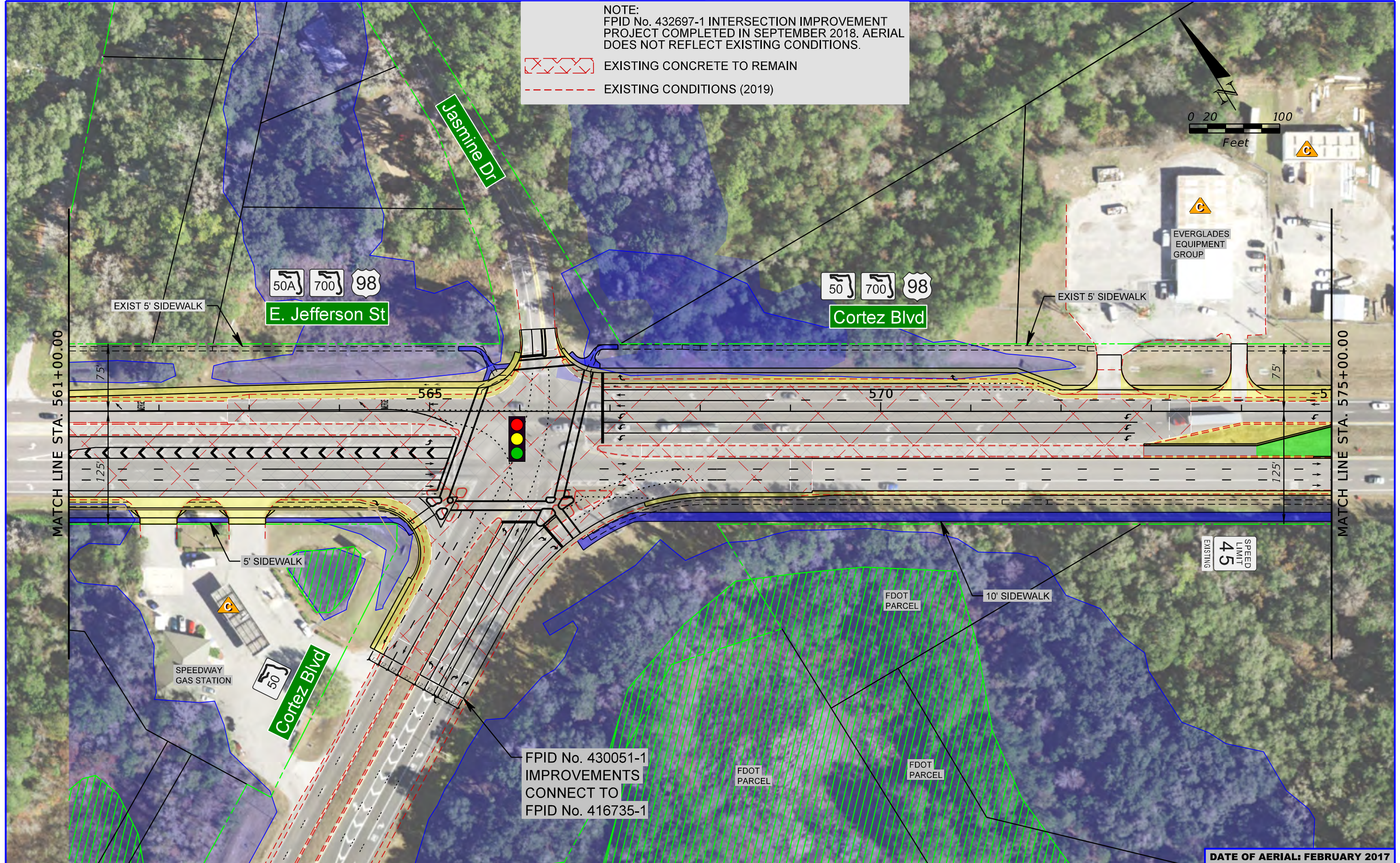
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SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
 1


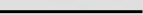

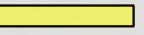





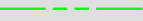



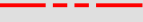

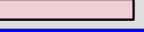
NOTE:
 FPID No. 432697-1 INTERSECTION IMPROVEMENT
 PROJECT COMPLETED IN SEPTEMBER 2018. AERIAL
 DOES NOT REFLECT EXISTING CONDITIONS.

 EXISTING CONCRETE TO REMAIN
 EXISTING CONDITIONS (2019)



FPID No. 430051-1
 IMPROVEMENTS
 CONNECT TO
 FPID No. 416735-1

DATE OF AERIAL: FEBRUARY 2017

LEGEND	 WETLANDS OR OTHER SURFACE WATERS BOUNDARY	 PROPERTY LINE	 EXISTING SIDEWALK	 IMPROVEMENTS BY FDOT
	 FLOODPLAINS AREA	 EASEMENT LINE	 PROPOSED MSE WALL	 PROPOSED MEDIAN (SOD)
	 PREFERRED SMF AND FPC AREA	 EXISTING ROW	 POTENTIAL NOISE BARRIER	 PROPOSED TRAFFIC SEPARATOR
	 POTENTIALLY CONTAMINATED SITE	 PROPOSED ROW TO BE ACQUIRED	 PROPOSED SIDEWALK	 POTENTIAL IMPROVEMENT BY OTHERS

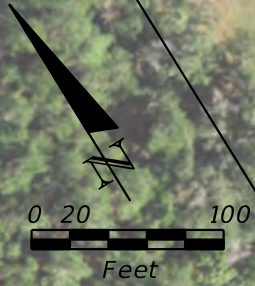
American Consulting Professionals, LLC
 2818 Cypress Ridge Blvd, Suite 200
 Wesley Chapel, Florida 33544
 Phone: (813) 435-2600 Fax: (813) 435-2601
 Engineering Business No. EB7110
 Jeffrey S. Novotny, P.E. No. 51083

SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
 2

NOTE:
 FPID No. 432697-1 INTERSECTION IMPROVEMENT
 PROJECT COMPLETED IN SEPTEMBER 2018. AERIAL
 DOES NOT REFLECT EXISTING CONDITIONS.

--- EXISTING CONDITIONS (2019)



50 700 98
Cortez Blvd

MATCH LINE STA. 575+00.00

MATCH LINE STA. 587+00.00

SPEED LIMIT 45 EXISTING

SPEED LIMIT 60 EXISTING

EXIST 5' SIDEWALK

10' SIDEWALK

COMPLETE BOAT REPAIR (ABANDONED)

SMF-1C EXTENDS APPROX. 400' FROM AERIAL BOUNDARY. FPC-1C IS LOCATED APPROX. 680' FROM EXIST. R/W. SEE SHEET 31.

SMF-1C

DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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 WPI SEGMENT No. 430051-1

SHEET NO.
 3



NEW OVERHEAD SIGN TO BE LOCATED IN ADVANCE OF SR50/CORTEZ BLVD INTERSECTION TO INDICATE PROPOSED ENDING OF LEFT THRU LANE.

HIDDEN VALLEY CAMPGROUND

Redbud Ln

50 700 98
Cortez Blvd

EXIST 5' SIDEWALK

MATCH LINE STA. 587+00.00

MATCH LINE STA. 600+00.00

10' SIDEWALK

Griffin Rd

DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
4



LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans

WPI SEGMENT No.: 430051-1

SHEET NO.
5

Sidevorn
9/29/2020
11:08:51 AM
F:\PROJECT\5147050\43005112201\roadway\PLANRD05.DGN

DATE OF AERIAL: FEBRUARY 2017



MATCH LINE STA. 614+00.00

MATCH LINE STA. 628+00.00

DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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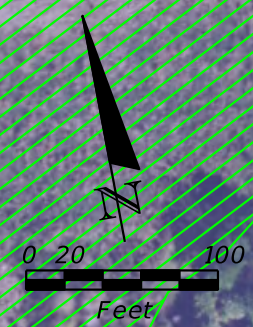
SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
6



MATCH LINE STA. 628+00.00

MATCH LINE STA. 642+00.00





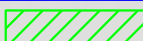
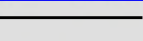

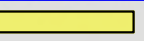
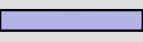





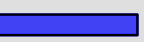
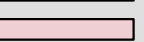





Cortez Blvd

5' SIDEWALK

10' SIDEWALK

BROOKSVILLE
PALMS INC.

DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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 Jeffrey S. Novotny, P.E. No. 51083

SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
 7



MATCH LINE STA. 642+00.00

MATCH LINE STA. 655+00.00

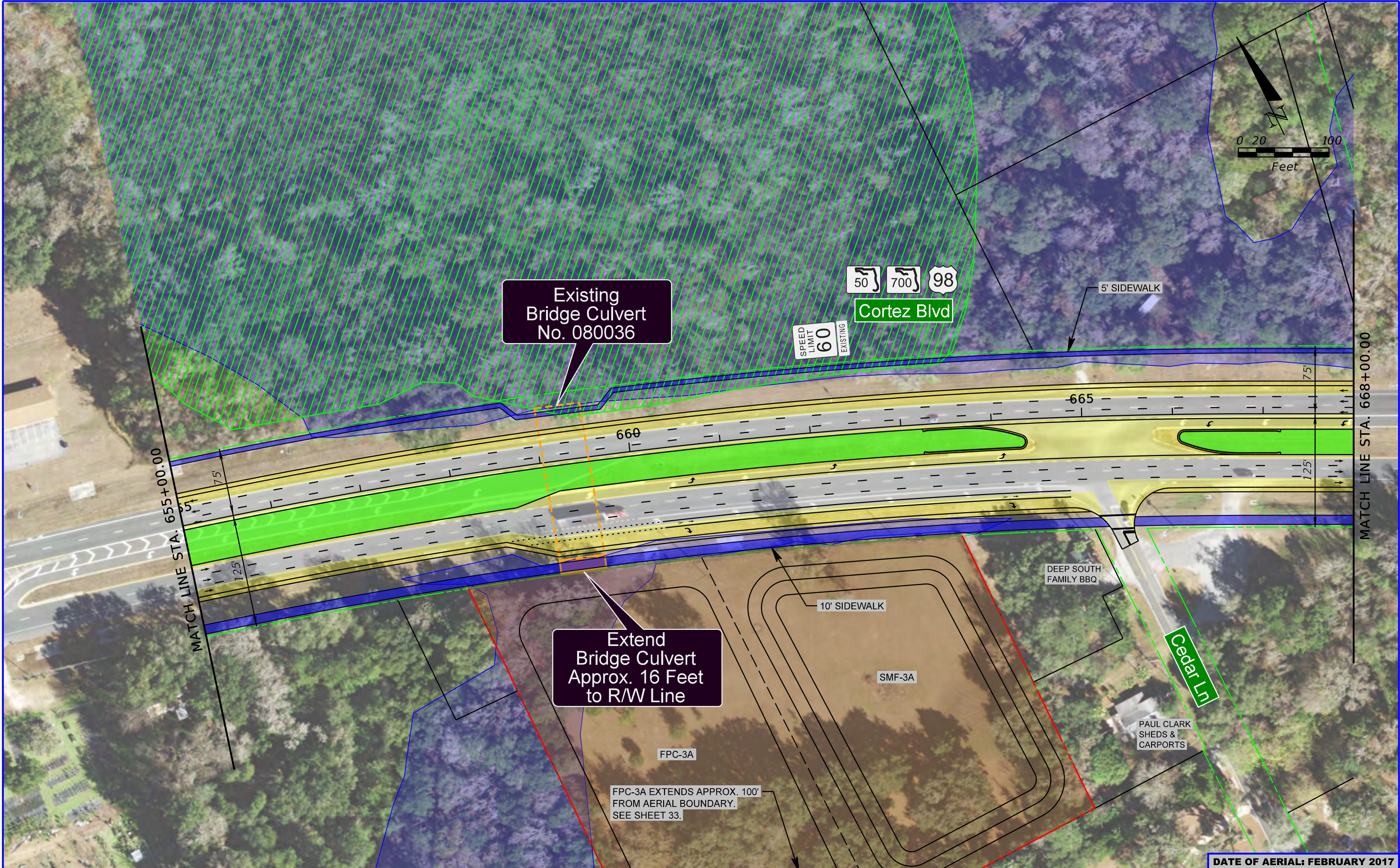
DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
 8



Existing
Bridge Culvert
No. 080036

50 700 98
Cortez Blvd
SPEED LIMIT 60 EXISTING

5' SIDEWALK

MATCH LINE STA. 655+00.00

MATCH LINE STA. 668+00.00

Extend
Bridge Culvert
Approx. 16 Feet
to R/W Line

10' SIDEWALK

SMF-3A

DEEP SOUTH
FAMILY BBQ

Cedar Ln

PAUL CLARK
SHEDS &
CARPORTS

FPC-3A EXTENDS APPROX. 100'
FROM AERIAL BOUNDARY.
SEE SHEET 33.

FPC-3A

DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
9



LEGEND	WETLANDS OR OTHER SURFACE WATERS BOUNDARY	PROPERTY LINE	EXISTING SIDEWALK	IMPROVEMENTS BY FDOT
	FLOODPLAINS AREA	EASEMENT LINE	PROPOSED MSE WALL	PROPOSED MEDIAN (SOD)
	PREFERRED SMF AND FPC AREA	EXISTING ROW	POTENTIAL NOISE BARRIER	PROPOSED TRAFFIC SEPARATOR
	POTENTIALLY CONTAMINATED SITE	PROPOSED ROW TO BE ACQUIRED	PROPOSED SIDEWALK	POTENTIAL IMPROVEMENT BY OTHERS

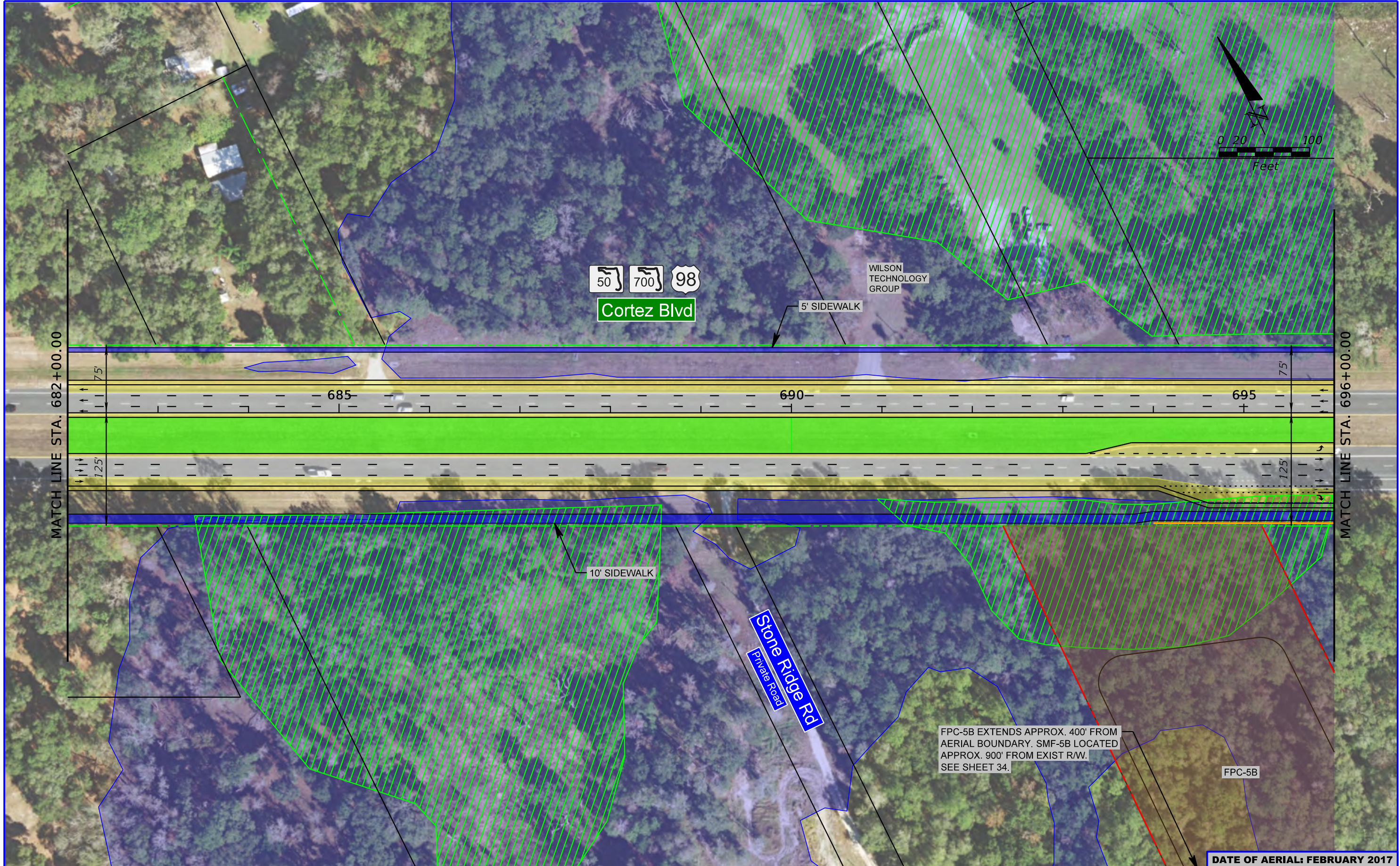
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SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans

WPI SEGMENT No.: 430051-1

DATE OF AERIAL: FEBRUARY 2017

SHEET NO.
10



Cortez Blvd

WILSON
TECHNOLOGY
GROUP

5' SIDEWALK

10' SIDEWALK

Stone Ridge Rd
Private Road

FPC-5B EXTENDS APPROX. 400' FROM
AERIAL BOUNDARY. SMF-5B LOCATED
APPROX. 900' FROM EXIST R/W.
SEE SHEET 34.

FPC-5B

MATCH LINE STA. 682+00.00

MATCH LINE STA. 696+00.00

DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
WPI SEGMENT No.: 430051-1

SHEET NO.
11



A READY ROOFING



Cortez Blvd

5' SIDEWALK

Clayton Rd



MATCH LINE STA. 696+00.00

MATCH LINE STA. 710+00.00

FPC-5B EXTENDS APPROX. 400' FROM AERIAL BOUNDARY. SMF-5B LOCATED APPROX. 900' FROM EXIST. R/W. SEE SHEET 34.

FPC-5B

Lang St

Hilton Dr

10' SIDEWALK

DATE OF AERIAL: FEBRUARY 2017

LEGEND	WETLANDS OR OTHER SURFACE WATERS BOUNDARY	PROPERTY LINE	EXISTING SIDEWALK	IMPROVEMENTS BY FDOT
	FLOODPLAINS AREA	EASEMENT LINE	PROPOSED MSE WALL	PROPOSED MEDIAN (SOD)
	PREFERRED SMF AND FPC AREA	EXISTING ROW	POTENTIAL NOISE BARRIER	PROPOSED TRAFFIC SEPARATOR
	POTENTIALLY CONTAMINATED SITE	PROPOSED ROW TO BE ACQUIRED	PROPOSED SIDEWALK	POTENTIAL IMPROVEMENT BY OTHERS

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SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
 12



MATCH LINE STA. 710+00.00

MATCH LINE STA. 724+00.00

LEGEND	 WETLANDS OR OTHER SURFACE WATERS BOUNDARY	 PROPERTY LINE	 EXISTING SIDEWALK	 IMPROVEMENTS BY FDOT
	 FLOODPLAINS AREA	 EASEMENT LINE	 PROPOSED MSE WALL	 PROPOSED MEDIAN (SOD)
	 PREFERRED SMF AND FPC AREA	 EXISTING ROW	 POTENTIAL NOISE BARRIER	 PROPOSED TRAFFIC SEPARATOR
	 POTENTIALLY CONTAMINATED SITE	 PROPOSED ROW TO BE ACQUIRED	 PROPOSED SIDEWALK	 POTENTIAL IMPROVEMENT BY OTHERS

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SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans

WPI SEGMENT No.: 430051-1

SHEET NO.
13

5dovorm
9/9/2020
9:36:50 AM
C:\5147050\43005112201\roadway\PLANRD13.DGN

DATE OF AERIAL: FEBRUARY 2017



DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

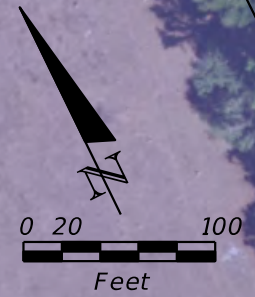
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From Brooksville Bypass to West of I-75
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 WPI SEGMENT No.: 430051-1

SHEET NO.
 14



HICKORY GROVE RANCH



WPA Rd

50 700 98

Cortez Blvd

5' SIDEWALK

MATCH LINE STA. 738+00.00

MATCH LINE STA. 752+00.00

740

745

750

10' SIDEWALK

C

WAGON WHEEL FEED AND HARDWARE

DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
 15



MATCH LINE STA. 752+00.00

MATCH LINE STA. 766+00.00

50 700 98
Cortez Blvd



FPC 6-9A EXTENDS APPROX. 1200' FROM AERIAL BOUNDARY. SEE SHEET 35.

FPC 6-9A

5' SIDEWALK

10' SIDEWALK

755

760

765

75'

75'

125'

125'

DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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 WPI SEGMENT No.: 430051-1

SHEET NO.
16



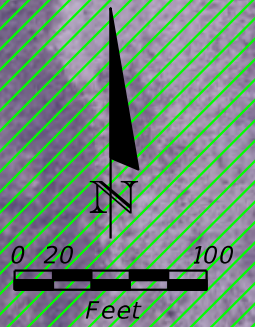
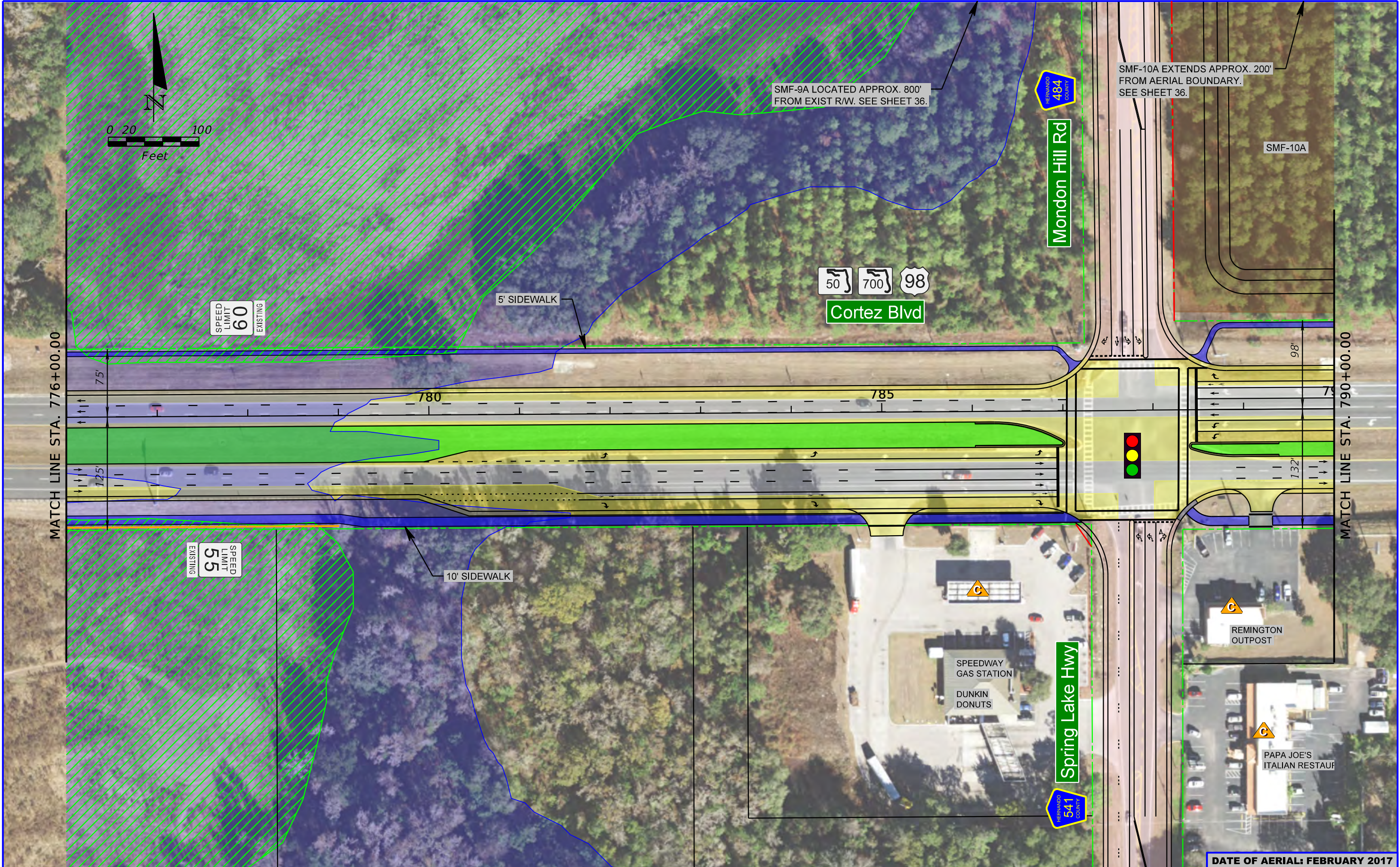
DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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From Brooksville Bypass to West of I-75
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 WPI SEGMENT No.: 430051-1

SHEET NO.
 17



SMF-9A LOCATED APPROX. 800'
FROM EXIST R/W. SEE SHEET 36.

SMF-10A EXTENDS APPROX. 200'
FROM AERIAL BOUNDARY.
SEE SHEET 36.

SPEED
LIMIT
60
EXISTING

5' SIDEWALK

50 700 98
Cortez Blvd

HERNANDO
484
COUNTY

HERNANDO
541
COUNTY

MATCH LINE STA. 776+00.00

MATCH LINE STA. 790+00.00

SPEED
LIMIT
55
EXISTING

10' SIDEWALK

SPEEDWAY
GAS STATION
DUNKIN
DONUTS

REMINGTON
OUTPOST

PAPA JOE'S
ITALIAN RESTAU

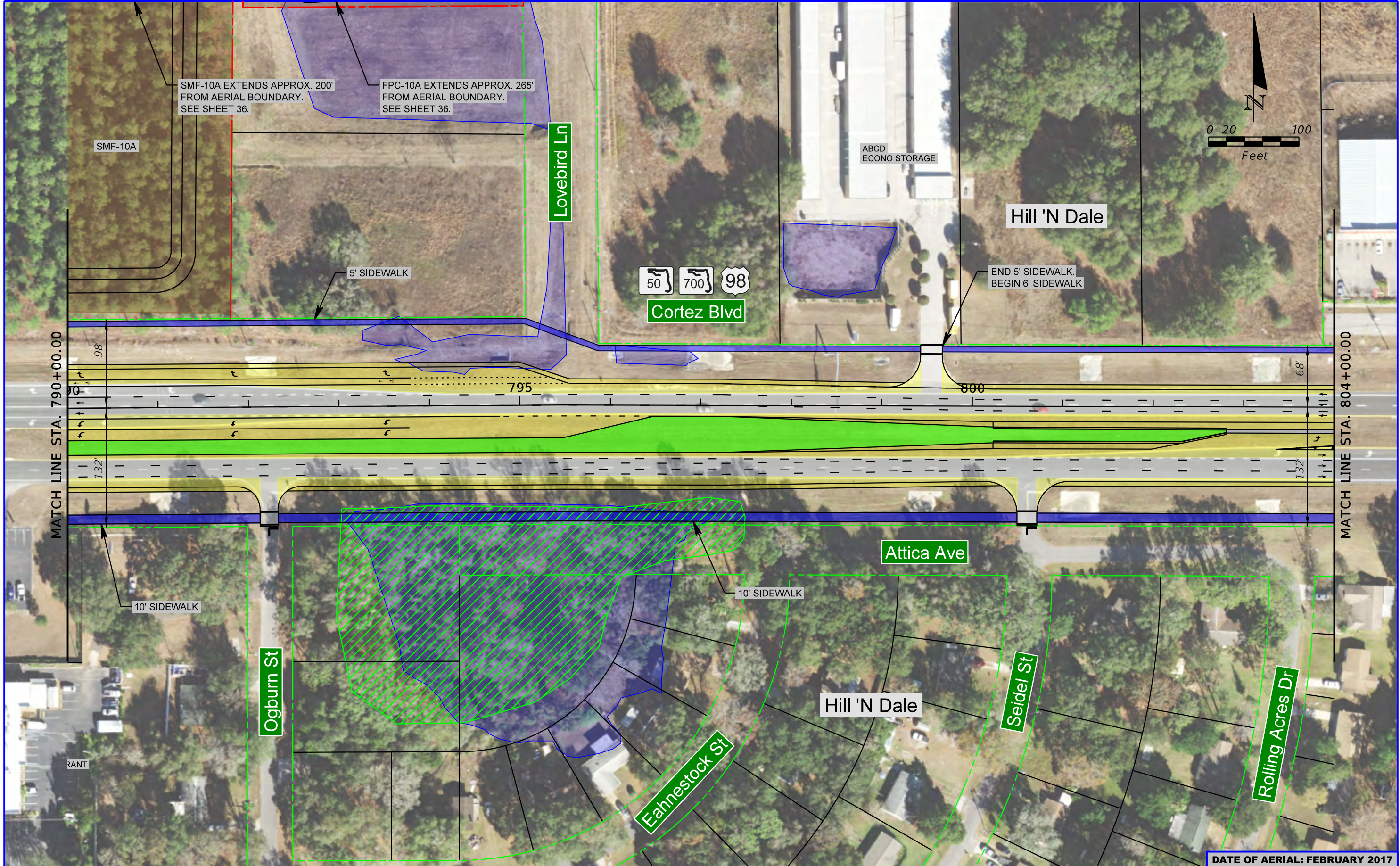
DATE OF AERIAL: FEBRUARY 2017

LEGEND	WETLANDS OR OTHER SURFACE WATERS BOUNDARY	PROPERTY LINE	EXISTING SIDEWALK	IMPROVEMENTS BY FDOT
	FLOODPLAINS AREA	EASEMENT LINE	PROPOSED MSE WALL	PROPOSED MEDIAN (SOD)
	PREFERRED SMF AND FPC AREA	EXISTING ROW	POTENTIAL NOISE BARRIER	PROPOSED TRAFFIC SEPARATOR
	POTENTIALLY CONTAMINATED SITE	PROPOSED ROW TO BE ACQUIRED	PROPOSED SIDEWALK	POTENTIAL IMPROVEMENT BY OTHERS

American Consulting Professionals, LLC
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Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
Engineering Business No. EB7110
Jeffrey S. Novotny, P.E. No. 51083

SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
WPI SEGMENT No.: 430051-1

SHEET NO.
18



SMF-10A EXTENDS APPROX. 200'
FROM AERIAL BOUNDARY.
SEE SHEET 36.

FPC-10A EXTENDS APPROX. 265'
FROM AERIAL BOUNDARY.
SEE SHEET 36.

ABCD
ECONO STORAGE

Hill 'N Dale

50 700 98
Cortez Blvd

END 5' SIDEWALK.
BEGIN 6' SIDEWALK

MATCH LINE STA. 790+00.00

MATCH LINE STA. 804+00.00

Attica Ave

Hill 'N Dale

Ogburn St

Eahnestock St

Seidel St

Rolling Acres Dr

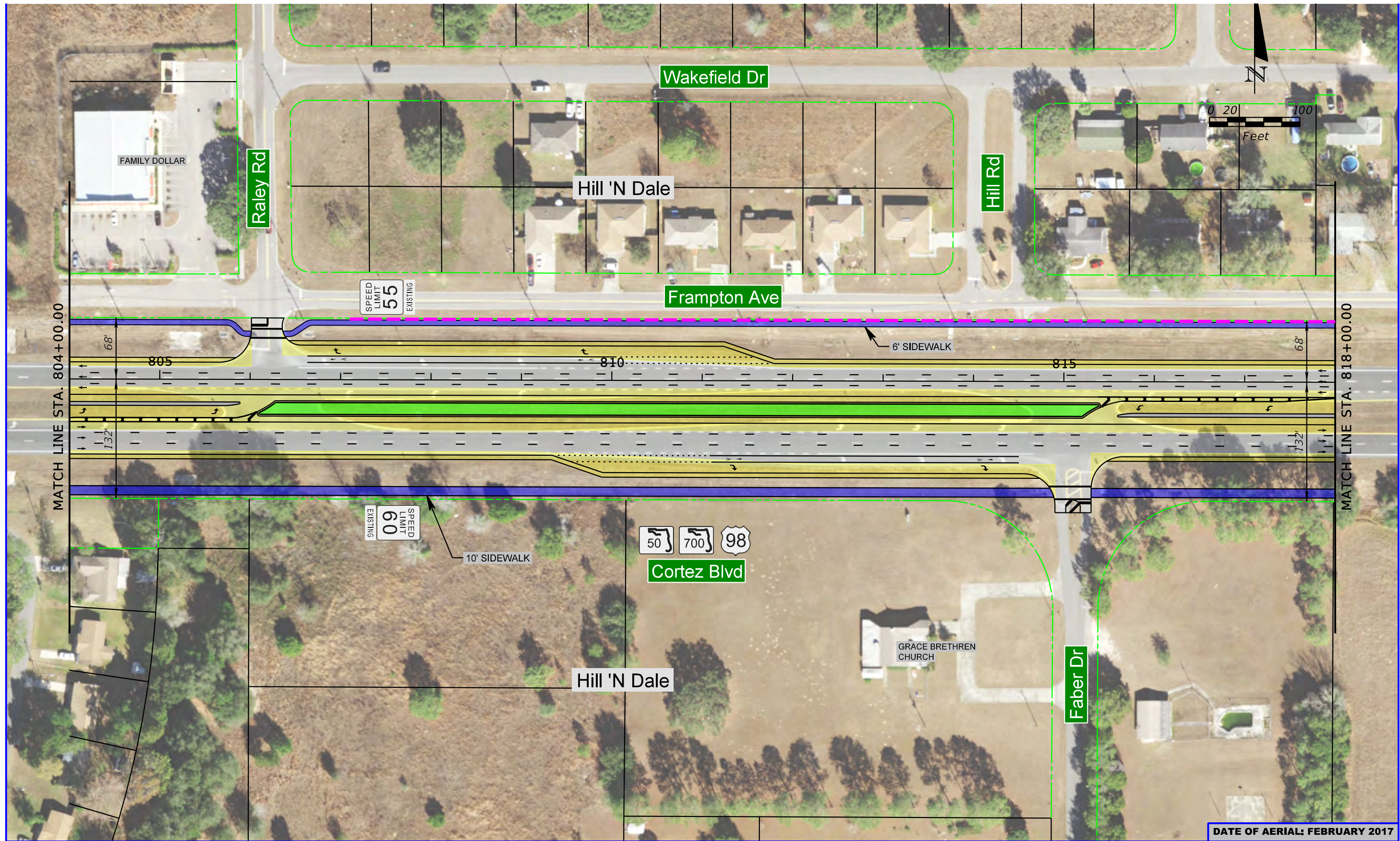
DATE OF AERIAL: FEBRUARY 2017

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		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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SHEET NO.
19



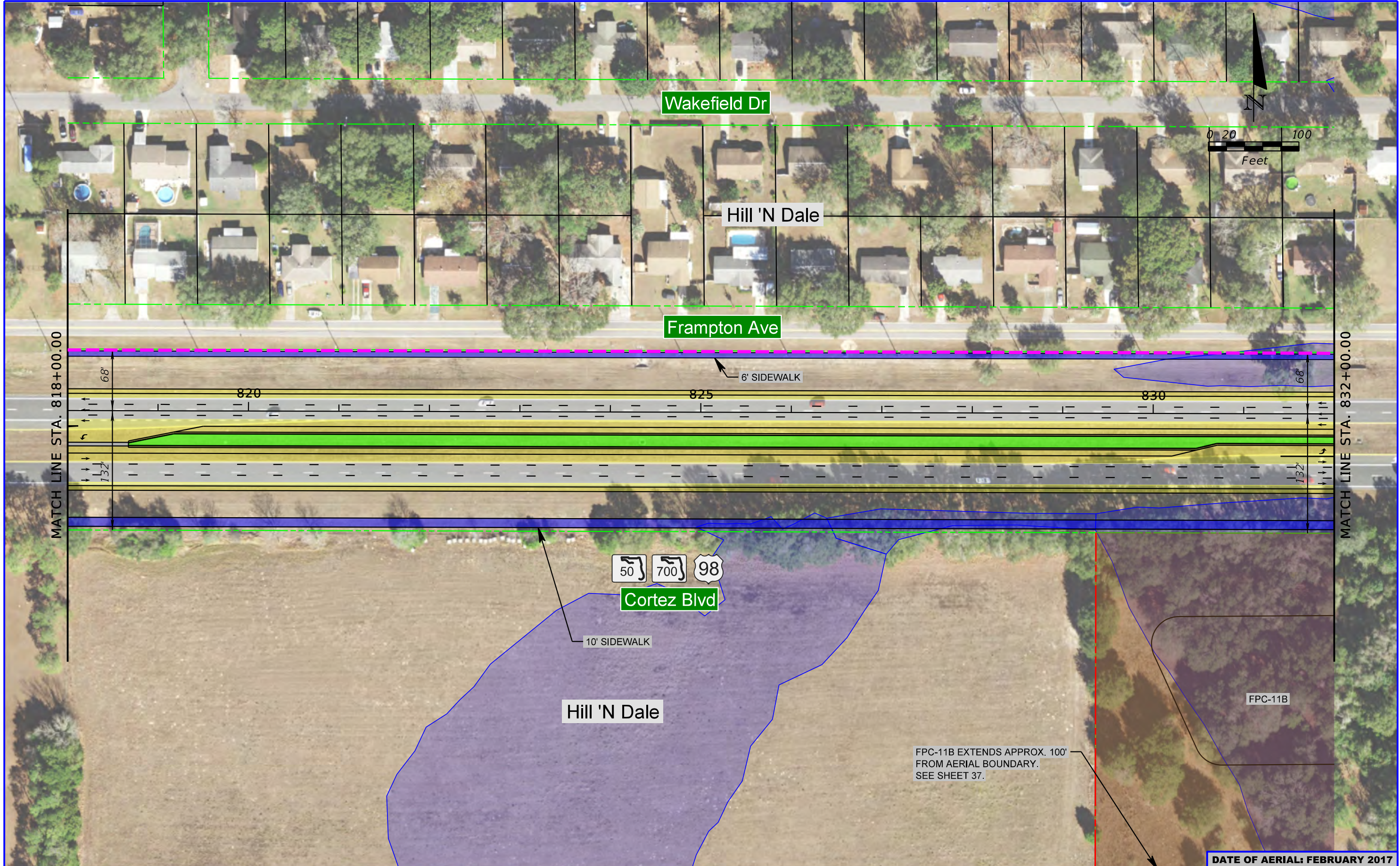
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LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
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Preferred Alternative Concept Plans
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SHEET NO.
20



LEGEND	WETLANDS OR OTHER SURFACE WATERS BOUNDARY	PROPERTY LINE	EXISTING SIDEWALK	IMPROVEMENTS BY FDOT
	FLOODPLAINS AREA	EASEMENT LINE	PROPOSED MSE WALL	PROPOSED MEDIAN (SOD)
	PREFERRED SMF AND FPC AREA	EXISTING ROW	POTENTIAL NOISE BARRIER	PROPOSED TRAFFIC SEPARATOR
	POTENTIALLY CONTAMINATED SITE	PROPOSED ROW TO BE ACQUIRED	PROPOSED SIDEWALK	POTENTIAL IMPROVEMENT BY OTHERS

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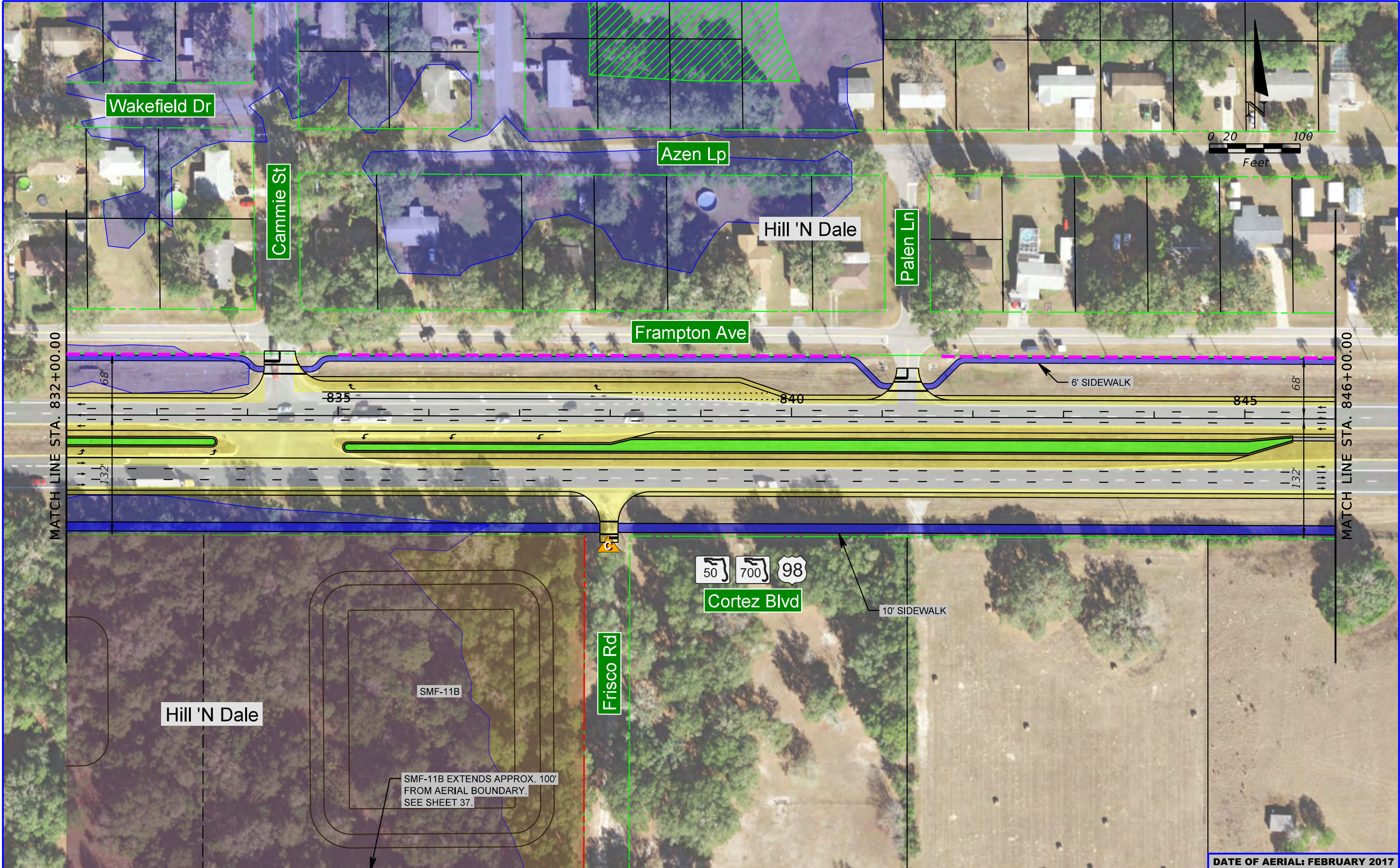
SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans

WPI SEGMENT No.: 430051-1

SHEET NO.

21

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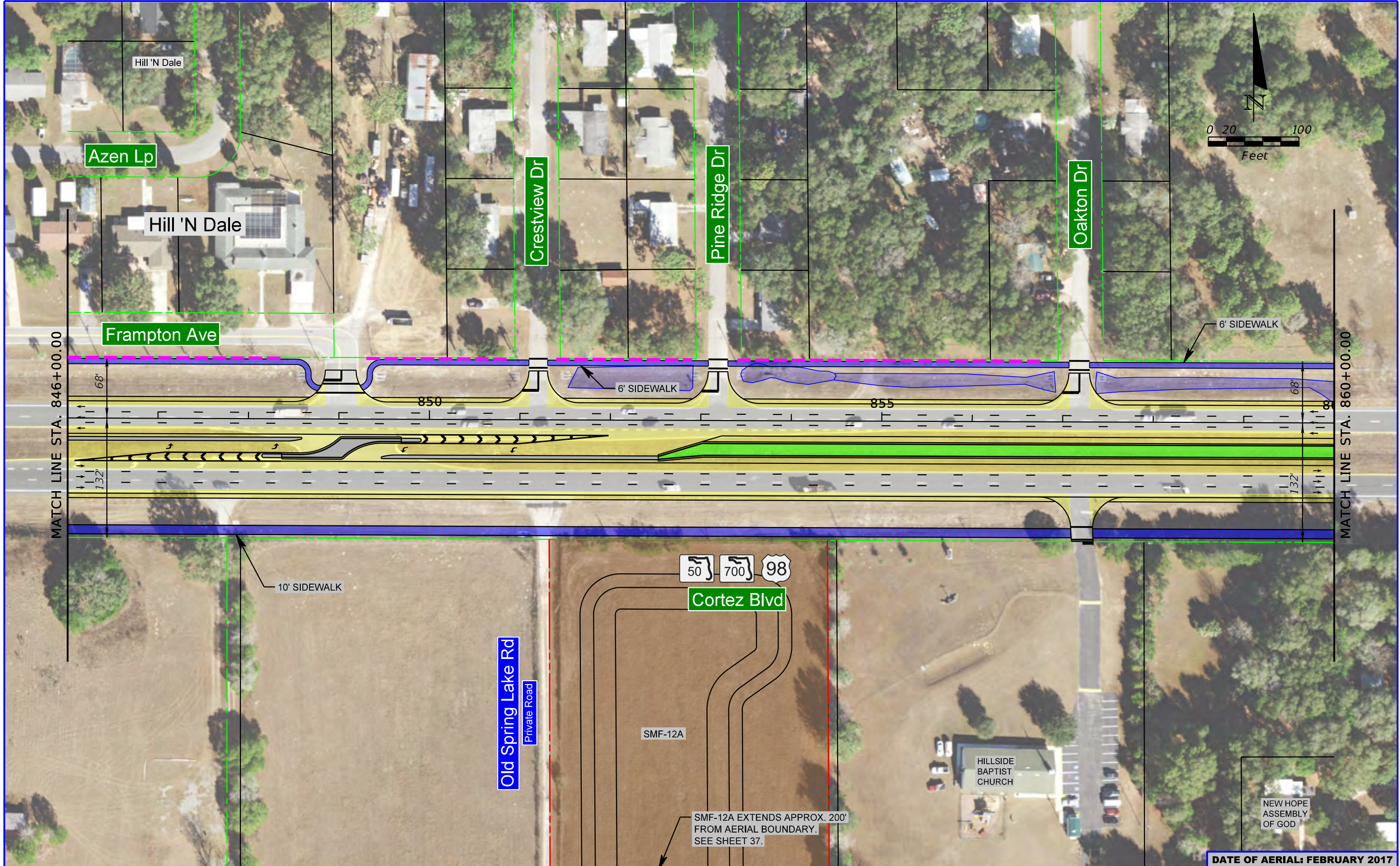
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SHEET NO.
 22



MATCH LINE STA. 846+00.00

MATCH LINE STA. 860+00.00

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
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SHEET NO.
 23

DATE OF AERIAL: FEBRUARY 2017

SMF-12A EXTENDS APPROX. 200' FROM AERIAL BOUNDARY. SEE SHEET 37.

NEW HOPE ASSEMBLY OF GOD

HILLSIDE BAPTIST CHURCH

SMF-12A

Old Spring Lake Rd
 Private Road

50 700 98
 Cortez Blvd

10' SIDEWALK

6' SIDEWALK

6' SIDEWALK

850

855

68'

68'

132'

132'

Frampton Ave

Azen Lp

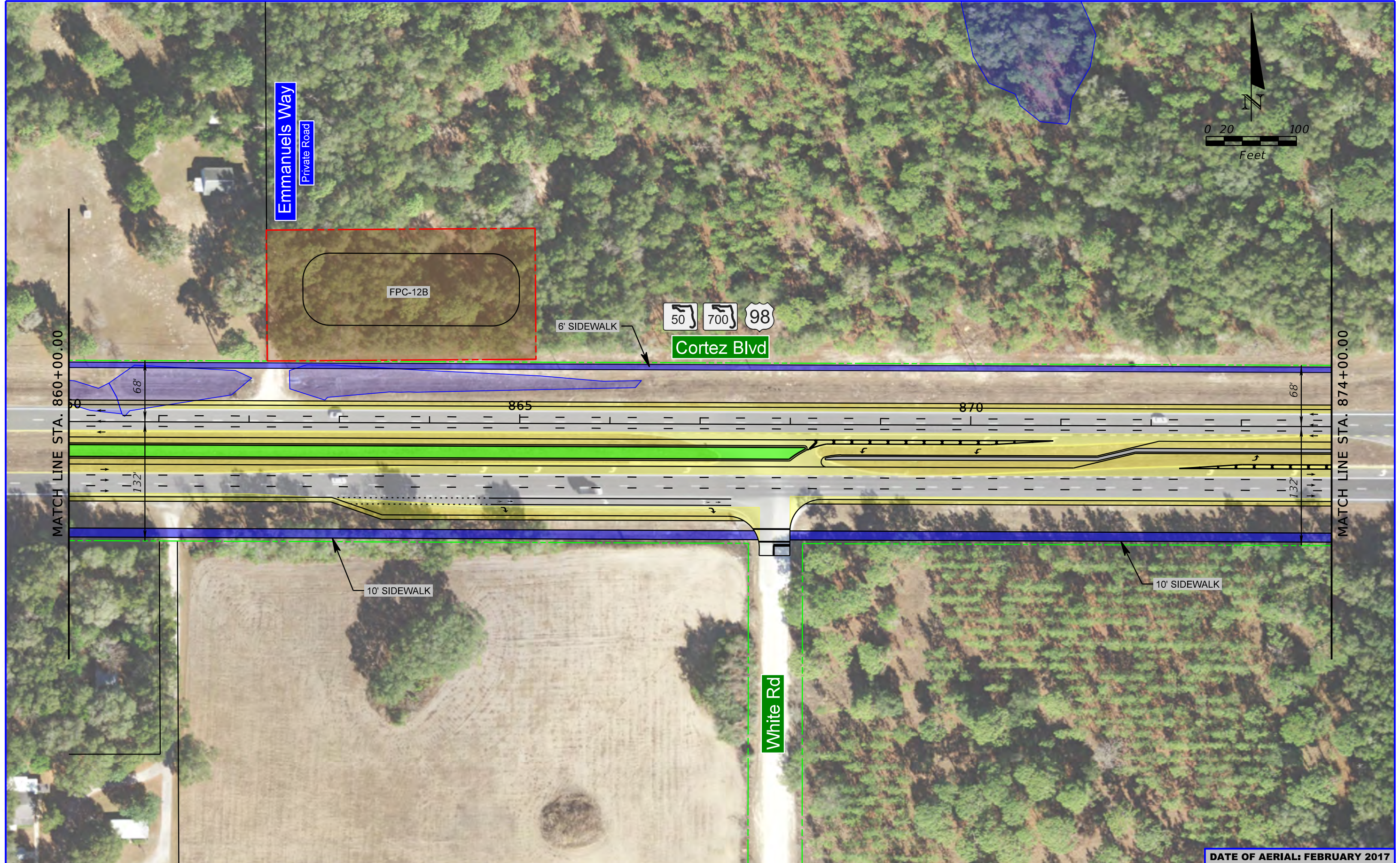
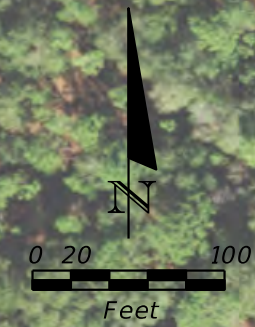
Hill 'N Dale

Hill 'N Dale

Crestview Dr

Pine Ridge Dr

Oakton Dr



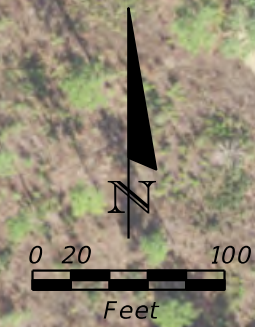
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SHEET NO.
 24



50 700 98
Cortez Blvd

MATCH LINE STA. 874+00.00

MATCH LINE STA. 888+00.00

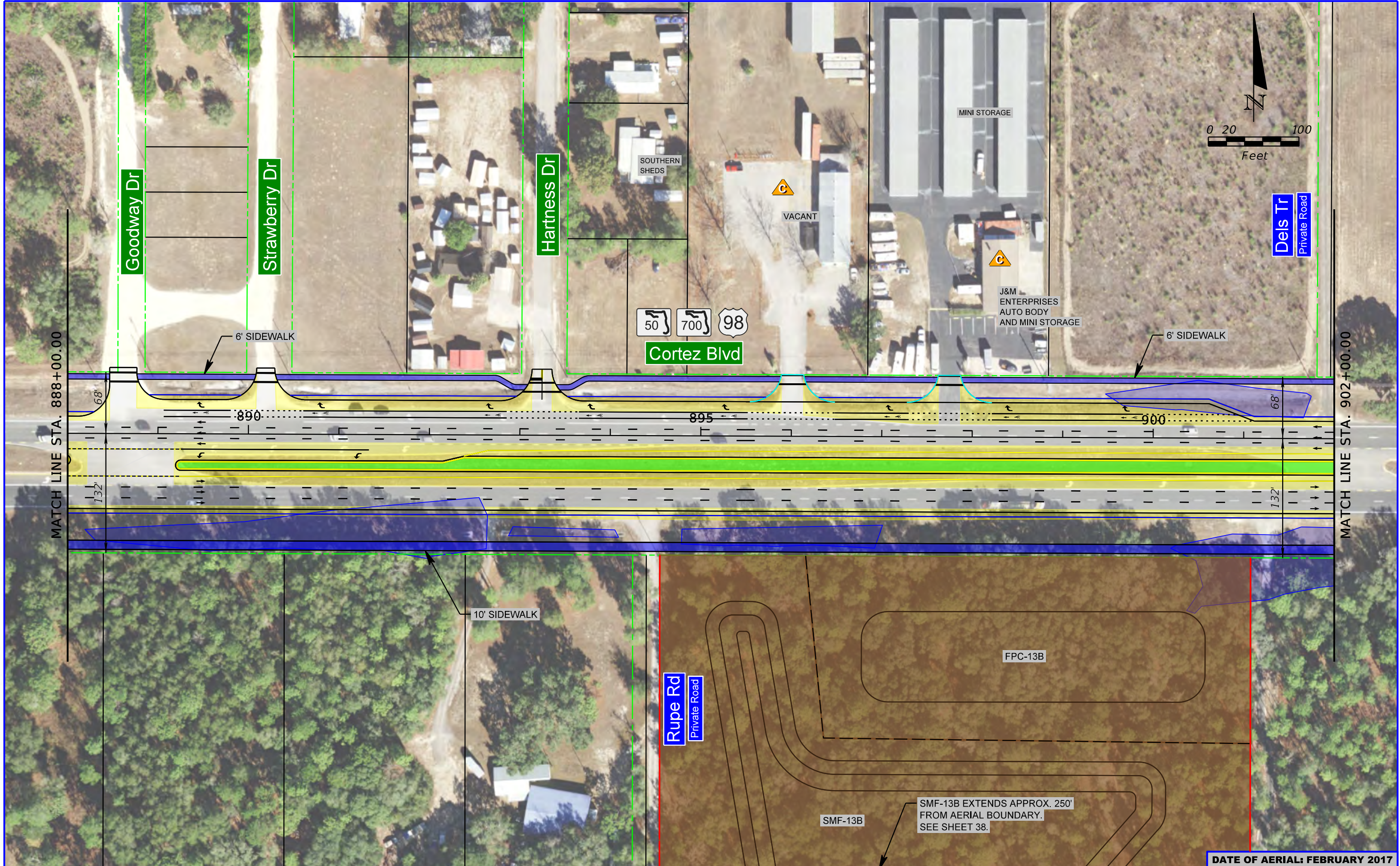
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SHEET NO.
25



DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
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SHEET NO.
 26



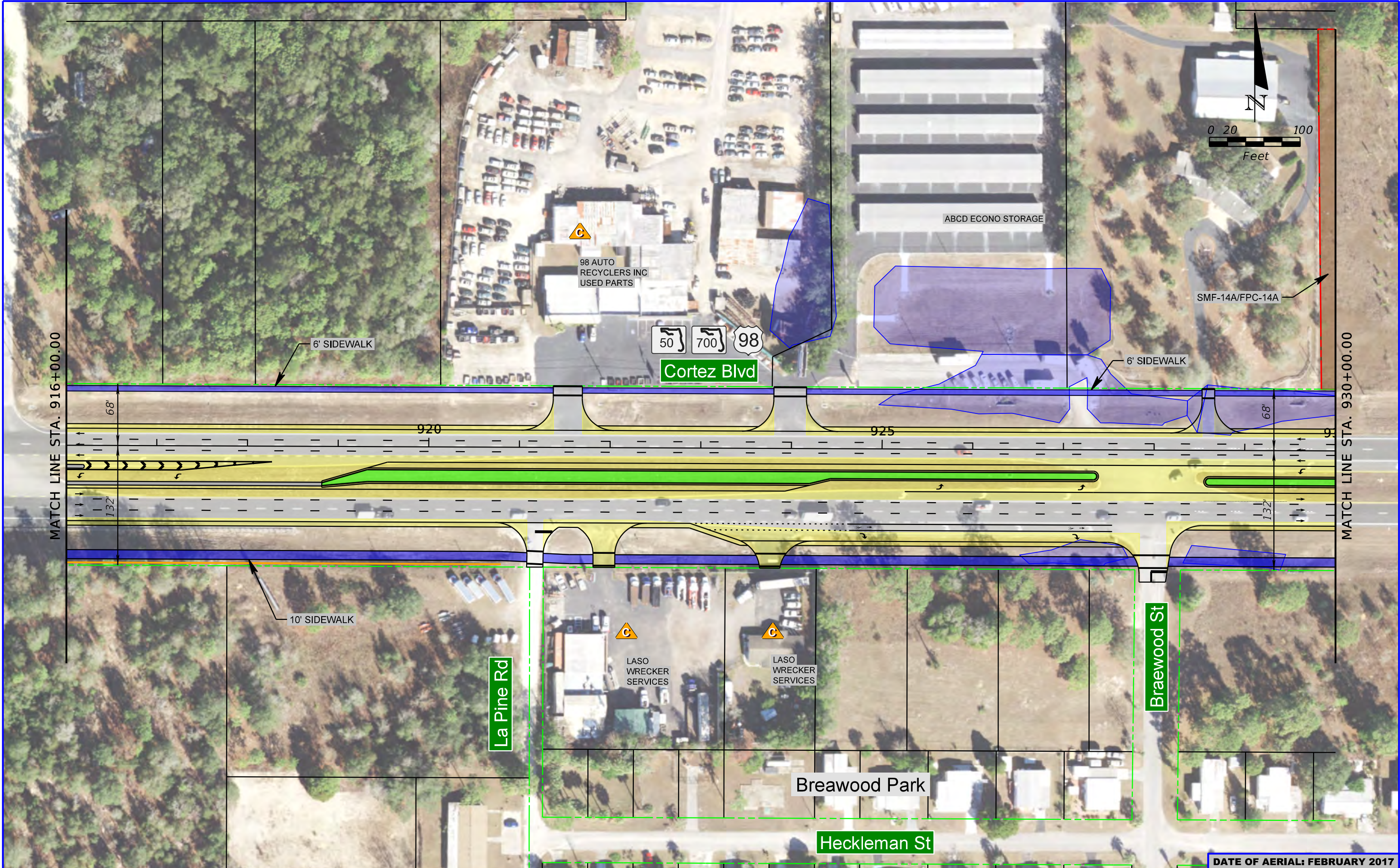
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SHEET NO.
 27



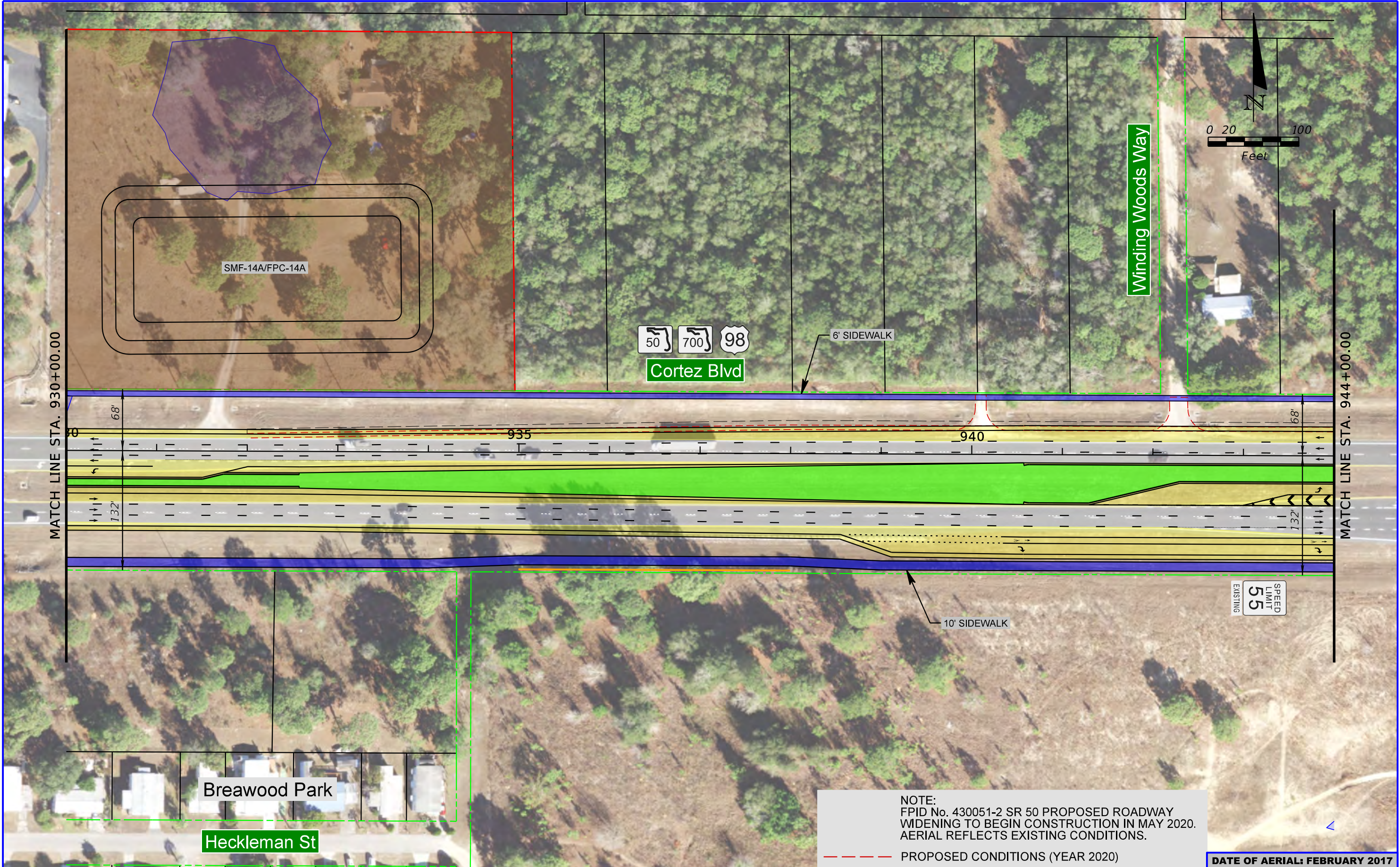
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From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
 28



NOTE:
 FPID No. 430051-2 SR 50 PROPOSED ROADWAY
 WIDENING TO BEGIN CONSTRUCTION IN MAY 2020.
 AERIAL REFLECTS EXISTING CONDITIONS.

--- PROPOSED CONDITIONS (YEAR 2020)

DATE OF AERIAL: FEBRUARY 2017

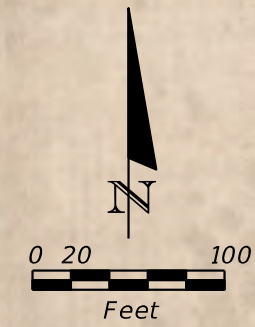
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SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans

WPI SEGMENT No.: 430051-1

SHEET NO.
 29



END PROJECT
WPI No. 430051-1

50 700 98
Cortez Blvd

Remington Rd

FUTURE EXTENSION OF LOCKHART ROAD
(CURRENTLY NOT SHOWN AS PART OF
HERNANDO COUNTY 2040 LRTP)

MATCH LINE STA. 944+00.00

6' SIDEWALK

10' SIDEWALK

945

950

955

Lockhart Rd

PROPOSED FUTURE
TRAFFIC SIGNAL

PROPOSED ROADWAY IMPROVEMENTS
UNDER WPI SEGMENT No. 430051-2

NOTE:
FPID No. 430051-2 SR 50 PROPOSED ROADWAY
WIDENING TO BEGIN CONSTRUCTION IN MAY 2020.
AERIAL REFLECTS EXISTING CONDITIONS.

--- PROPOSED CONDITIONS (YEAR 2020)

DATE OF AERIAL: FEBRUARY 2017

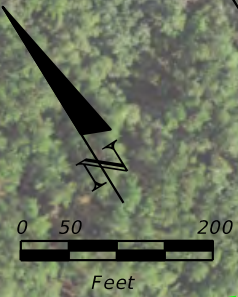
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SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
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WPI SEGMENT No. 430051-1

SHEET NO.
30

NOTE:
 FPID No. 432697-1 INTERSECTION IMPROVEMENT
 PROJECT COMPLETED IN SEPTEMBER 2018. AERIAL
 DOES NOT REFLECT EXISTING CONDITIONS.
 --- EXISTING CONDITIONS (2019)



50 700 98
Cortez Blvd

50
Cortez Blvd

SMF-1C

FPC-1C

THIS SHEET IS INTENDED TO SHOW THE FULL EXTENT OF THE PREFERRED STORMWATER MANAGEMENT FACILITIES (SMF) AND FLOODPLAIN COMPENSATION (FPC) SITES THAT ARE SHOWN IN PART ON THE CONCEPT PLANS ON SHEETS 1-30. PLEASE REFER TO SHEETS 1-30 FOR THE CONCEPT PLANS DEPICTING THE PREFERRED ALTERNATIVE ALONG SR 50.

DATE OF AERIAL: FEBRUARY 2017

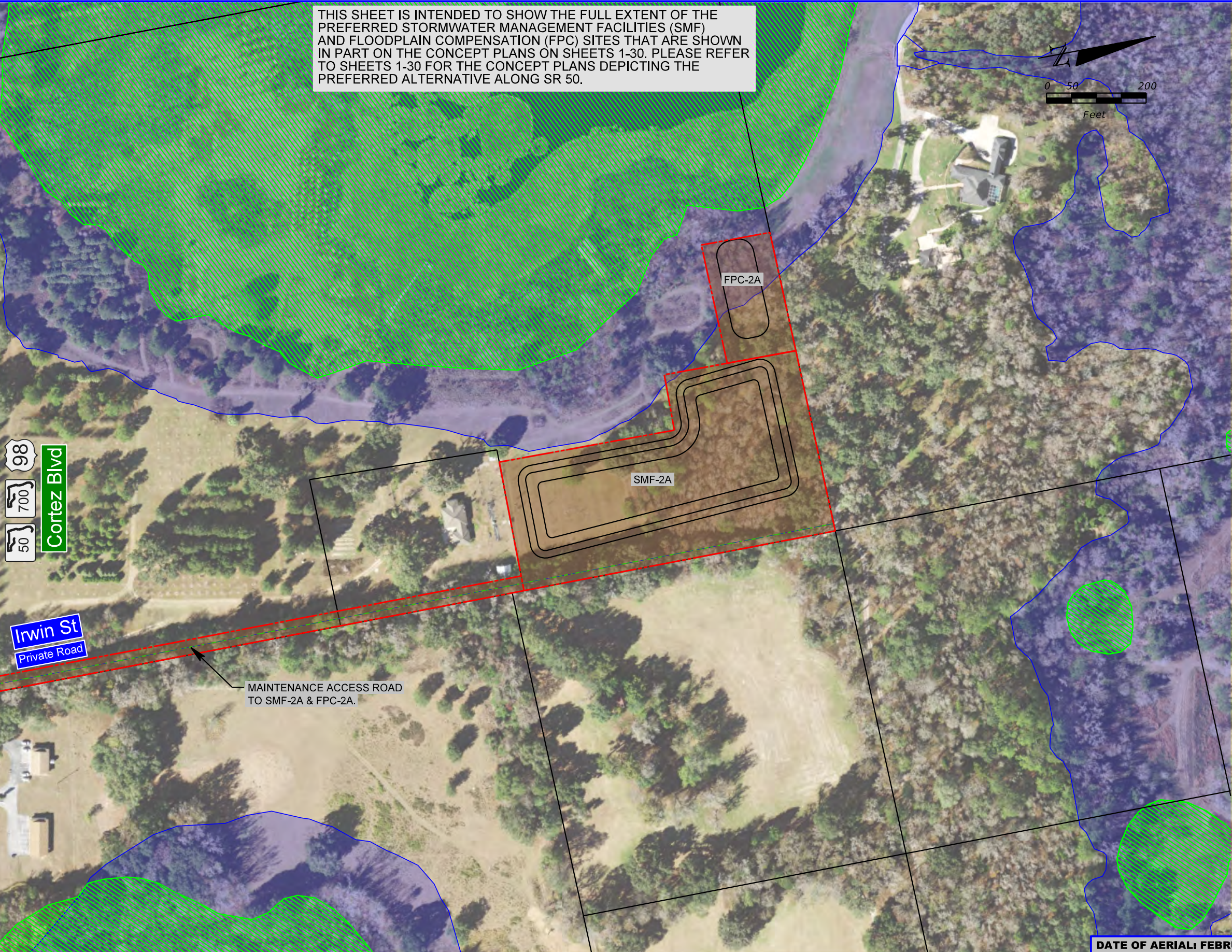
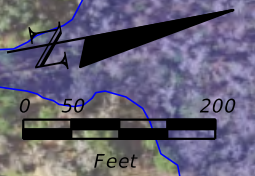
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Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
 31

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98
700
50
Cortez Blvd

Irwin St
Private Road

MAINTENANCE ACCESS ROAD TO SMF-2A & FPC-2A.

FPC-2A

SMF-2A

DATE OF AERIAL: FEBRUARY 2017

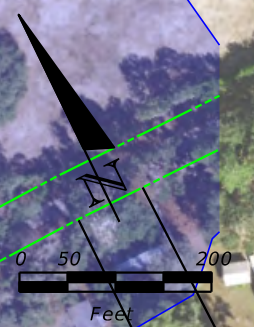
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SHEET NO.
32

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50 700 98

Cortez Blvd

Existing Bridge Culvert No. 080036

Extend Bridge Culvert Approx. 16 Feet to R/W Line

Cedar Ln

SMF-3A

FPC-3A

SMF-4C

DATE OF AERIAL: FEBRUARY 2017

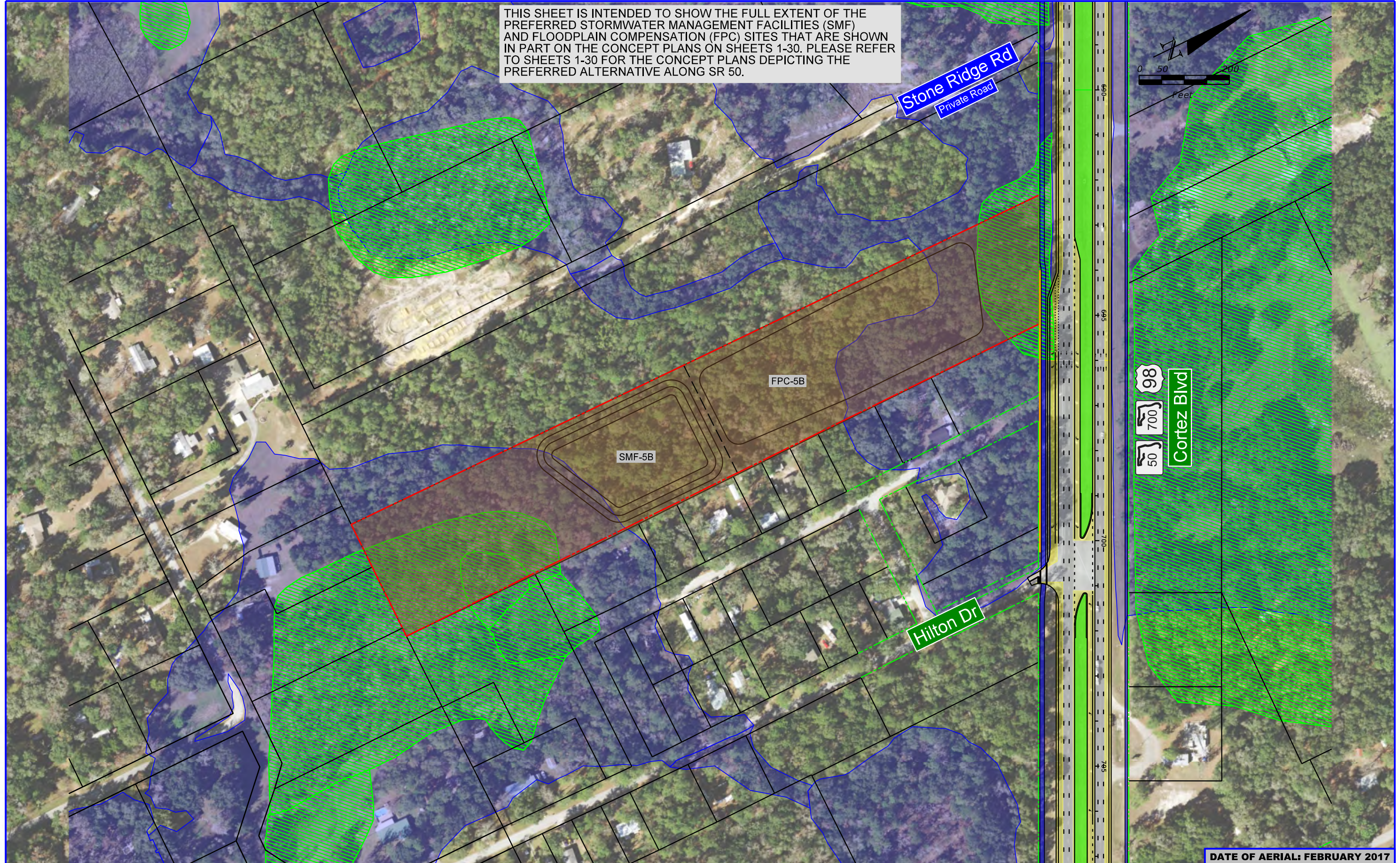
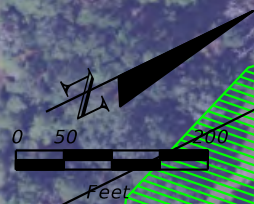
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SHEET NO.
 33

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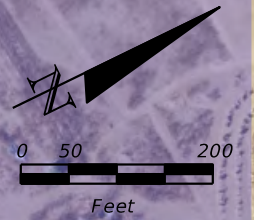
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From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
 34

DATE OF AERIAL: FEBRUARY 2017

THIS SHEET IS INTENDED TO SHOW THE FULL EXTENT OF THE PREFERRED STORMWATER MANAGEMENT FACILITIES (SMF) AND FLOODPLAIN COMPENSATION (FPC) SITES THAT ARE SHOWN IN PART ON THE CONCEPT PLANS ON SHEETS 1-30. PLEASE REFER TO SHEETS 1-30 FOR THE CONCEPT PLANS DEPICTING THE PREFERRED ALTERNATIVE ALONG SR 50.



98
700
50
Cortez Blvd

FPC 6-9A

SMF 7-8C

FPC 6-9A

DATE OF AERIAL: FEBRUARY 2017

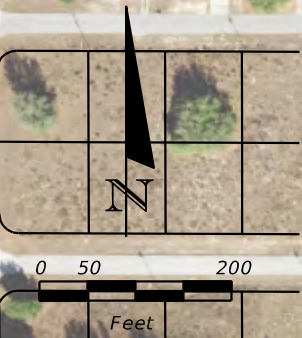
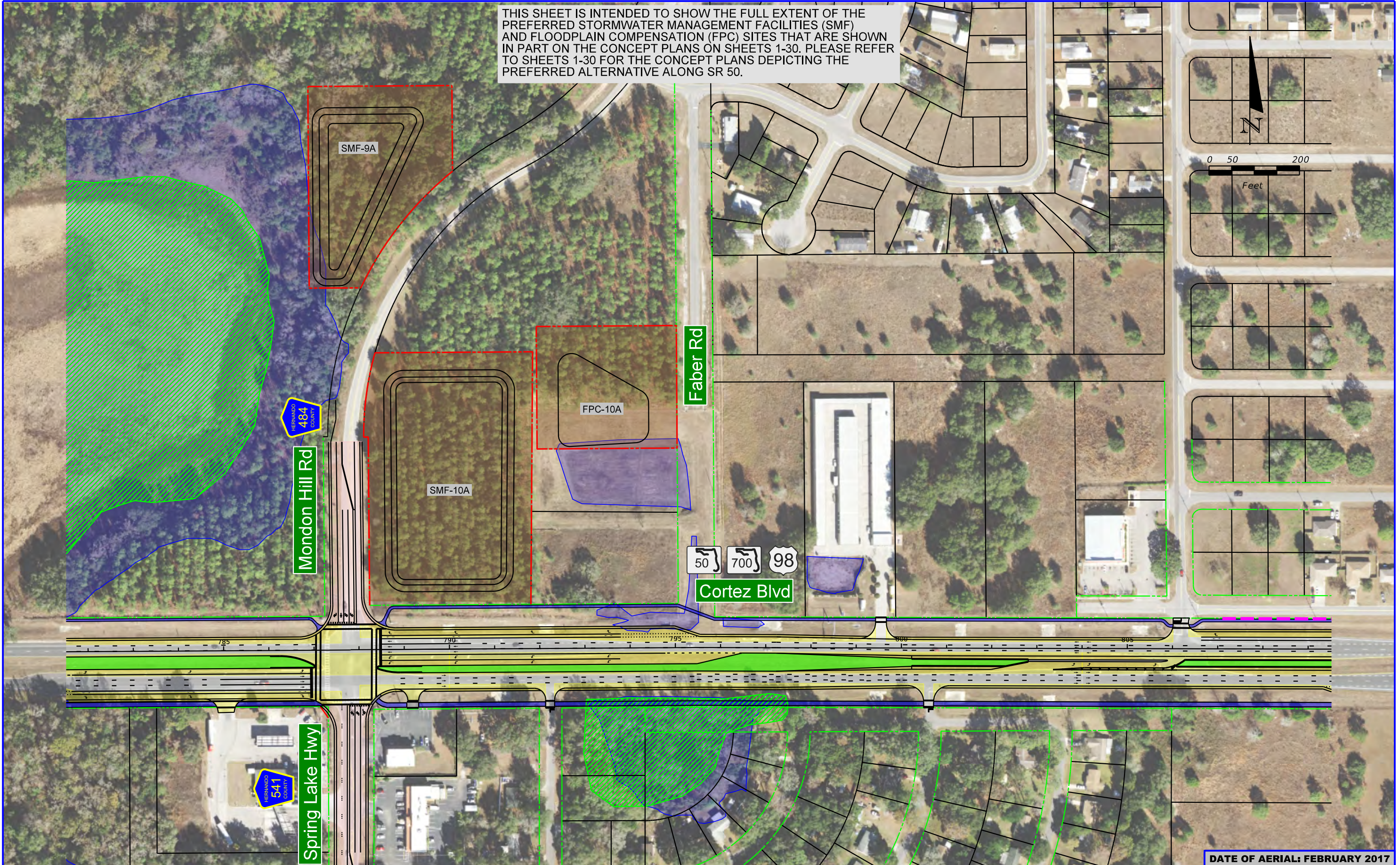
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		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

American Consulting Professionals, LLC
 2818 Cypress Ridge Blvd, Suite 200
 Wesley Chapel, Florida 33544
 Phone: (813) 435-2600 Fax: (813) 435-2601
 Engineering Business No. EB7110
 Jeffrey S. Novotny, P.E. No. 51083

SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
35

THIS SHEET IS INTENDED TO SHOW THE FULL EXTENT OF THE PREFERRED STORMWATER MANAGEMENT FACILITIES (SMF) AND FLOODPLAIN COMPENSATION (FPC) SITES THAT ARE SHOWN IN PART ON THE CONCEPT PLANS ON SHEETS 1-30. PLEASE REFER TO SHEETS 1-30 FOR THE CONCEPT PLANS DEPICTING THE PREFERRED ALTERNATIVE ALONG SR 50.



DATE OF AERIAL: FEBRUARY 2017

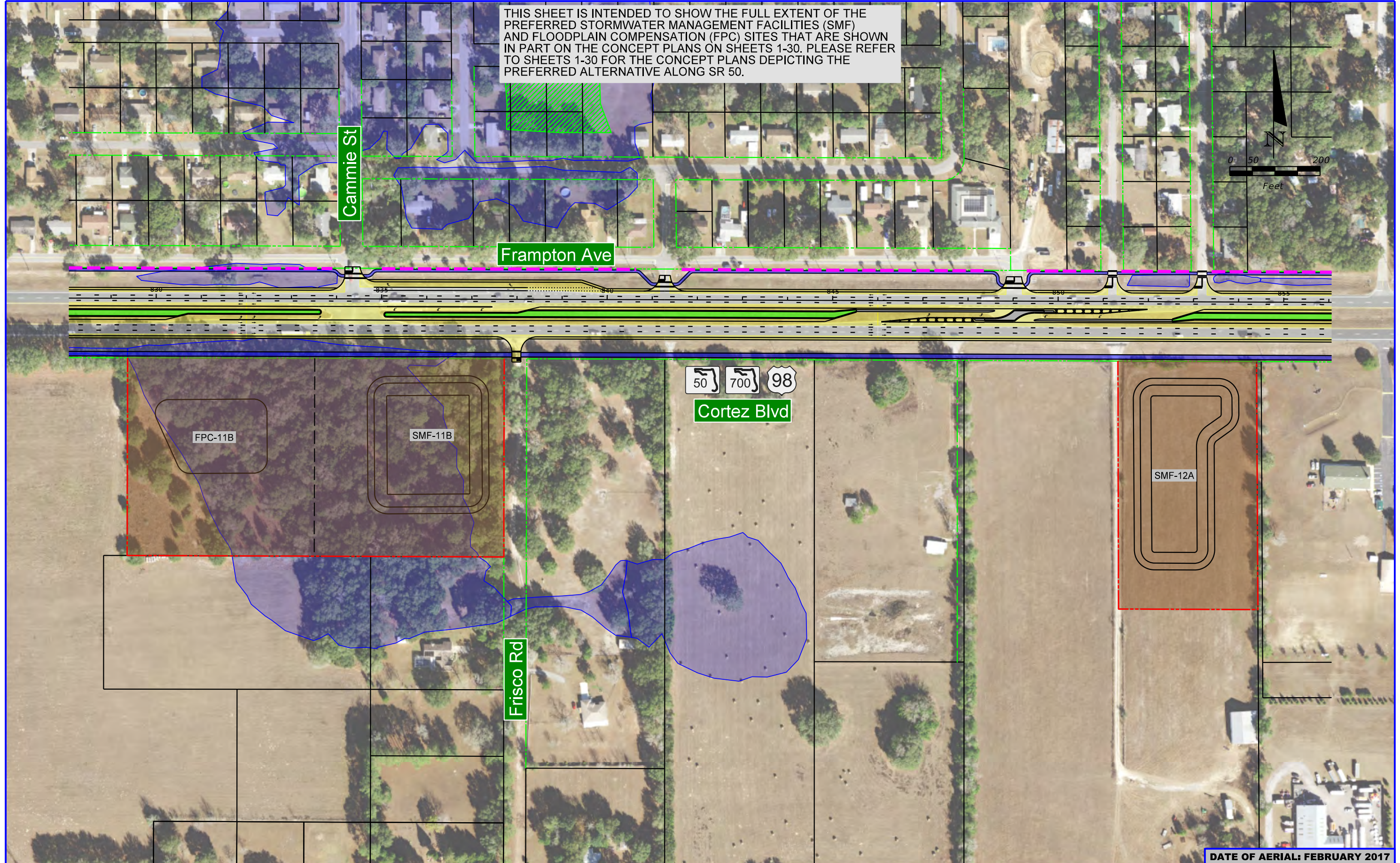
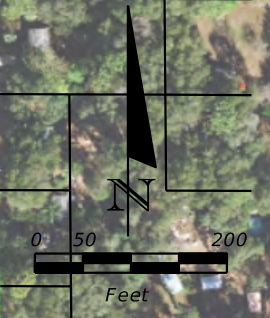
LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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SHEET NO.
 36

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LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
		PREFERRED SMF AND FPC AREA		EXISTING ROW		POTENTIAL NOISE BARRIER		PROPOSED TRAFFIC SEPARATOR
		POTENTIALLY CONTAMINATED SITE		PROPOSED ROW TO BE ACQUIRED		PROPOSED SIDEWALK		POTENTIAL IMPROVEMENT BY OTHERS

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SR50 PD&E STUDY
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Goodway Dr

50 700 98
Cortez Blvd

Rupe Rd
Private Road

FPC-13B

SMF-13B

DATE OF AERIAL: FEBRUARY 2017

LEGEND		WETLANDS OR OTHER SURFACE WATERS BOUNDARY		PROPERTY LINE		EXISTING SIDEWALK		IMPROVEMENTS BY FDOT
		FLOODPLAINS AREA		EASEMENT LINE		PROPOSED MSE WALL		PROPOSED MEDIAN (SOD)
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SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Preferred Alternative Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
38

Appendix B

Straight Line Diagram

Inventory

**FLORIDA DEPARTMENT OF TRANSPORTATION
STRAIGHT LINE DIAGRAM OF ROAD INVENTORY**

This Straight Line Diagram runs EAST to WEST - North is down

This point is in the middle of the project at a match line with SLD for 08 070 000 (page 1 of 2)

ROADWAY FEATURES LANE WIDTHS ARE AVERAGED INVENTORY DIRECTION → NW	ACTIVE OFF THE SHS TRANSFERRED TO HERNANDO COUNTY EFFECTIVE AS OF 7/29/1983 (MP 0.000 - MP 5.391)	ACTIVE OFF THE SHS TRANSFERRED TO HERNANDO COUNTY EFFECTIVE AS OF 1/28/1984 (MP 5.391 - MP 6.117)
ROADWAY COMPOSITION	28/FC-3	
HORIZONTAL ALIGNMENT	CURVE DATA NOT FIELD VERIFIED	
STRUCTURE DESCRIPTION	B=S89°37'31"W B=N64°01'58"W	
DISTRICT USE	FM# 254847-15201 (MP 0.000 - MP 3.836) 1997 - FEDERAL RESURFACE/REPAVE FM# 254845-15201 (MP 0.000 - MP 12.769) 1997 - RESURFACING FM# 254810-15201 (MP 6.117 - MP 8.462) 2002 - MULTI-LANE RECONSTRUCTION FM# 411478-15201 (MP 6.117 - MP 10.091) 2004 - FLEXIBLE PAVEMENT RECONSTRUCTION FM# 424558-15201 (MP 6.117 - MP 10.130) 2013 - RESURFACING	
SIS	SIS CORRIDOR	
FUN CLASS	RURAL PRIN ART OTHER	
SPEED LIMIT	55MPH	60MPH

ROADWAY FEATURES LANE WIDTHS ARE AVERAGED INVENTORY DIRECTION → NW	CORTEZ BLVD HILTON DR 7.765 CLAYTON RD 7.601 STONERIDGE RD 7.880 DORSEY SMITH RD 8.262 CEDAR LN 8.439 IRVING ST 8.710 LANDSDALE ST 8.860	CORTEZ BLVD OLIMPIA RD 7.341 TALL OAKS LN 7.315 CLAYTON RD 7.601 HILTON DR 7.765 STONERIDGE RD 7.880 DORSEY SMITH RD 8.262 CEDAR LN 8.439 IRVING ST 8.710 LANDSDALE ST 8.860
ROADWAY COMPOSITION	28/FC-3	
HORIZONTAL ALIGNMENT	CURVE DATA NOT FIELD VERIFIED	
STRUCTURE DESCRIPTION	B=N64°01'58"W B=N79°22'58"W	
DISTRICT USE	FM# 254811-15201 (MP 8.462 - MP 10.127) 2003 - MULTI-LANE RECONSTRUCTION	
SIS	SIS CORRIDOR	
FUN CLASS	RURAL PRIN ART OTHER	
SPEED LIMIT	60MPH	

5 YR INV		SLD REV		BMP		EMP		INV		SLD REV		SECTION STATUS		INT. or US ROUTE NO.		STATE ROAD NO.		COUNTY		DISTRICT		ROADWAY ID		SHEET NO:	
DATE 10/03/2016		10/27/2016		12.419		12.466		03/03/2020		03/30/2020		12		US 98/US 41		SR 700/SR 50 SR 50A/SR 45		HERNANDO		07		08 050 000		2 OF 2	
BY FTE / JR-IM		FTE / KA		CONSTRUCTION ACCEPTANCE		FTE / KA		FTE / KA		FLORIDA DEPARTMENT OF TRANSPORTATION STRAIGHT LINE DIAGRAM OF ROAD INVENTORY															

ROADWAY FEATURES	LANE WIDTHS ARE AVERAGED	INVENTORY DIRECTION	ROADWAY COMPOSITION	HORIZONTAL ALIGNMENT	STRUCTURE DESCRIPTION	DISTRICT USE	SIS	FUN CLASS	SPEED LIMIT
CORTEZ BLVD GRIFFIN RD REBUD LN ENTR HIDDEN VALLEY CAMPGROUND & MHP CORTEZ BLVD JASMINE DR LIVE OAK DR E JEFFERSON ST SARDIS ST OLMES RD KENNEDY BLVD EMERSON RD AERIFORM DR	128.0' - 48.0' 4 - 12.0' RDWY 48.0' VEG MED 2 - 4.0' PVD SHLD1 2 - 12.0' LWN SHLD2 126.0' - 48.0' 4 - 12.0' RDWY 46.0' CB&VEG MED 2 - 2.0' C&G INSHLD1 2 - 4.0' PVD SHLD1 2 - 12.0' LWN SHLD2 128.0' - 48.0' 4 - 12.0' RDWY 48.0' VEG MED 2 - 4.0' PVD SHLD1 2 - 12.0' LWN SHLD2 122.0' - 48.0' 4 - 12.0' RDWY 42.0' CB&VEG MED 2 - 2.0' C&G INSHLD1 2 - 4.0' PVD SHLD1 2 - 12.0' LWN SHLD2 114.0' - 48.0' 4 - 12.0' RDWY 40.0' TFSP MED 2 - 2.0' PVD INSHLD1 6.0' LWN SHLD2 - LT 12.0' LWN SHLD2 - RT 114.0' - 38.0' 2 - 12.5' RDWY - LT 1 - 13.0' RDWY - RT 52.0' TFSP MED 2 - 2.0' PVD INSHLD1 5.0' PVD SHLD1 - LT 3.0' LWN SHLD2 - RT 118.0' - 36.0' 2 - 12.0' RDWY - LT 1 - 12.0' RDWY - RT 50.0' CB&VEG MED 2.0' C&G INSHLD1 - LT 2.0' C&G INSHLD1 - RT 2 - 5.0' PVD SHLD1 2 - 12.0' LWN SHLD2 55.0' - 24.0' 2 - 12.0' RDWY 2 - 5.0' PVD SHLD1 9.0' LWN SHLD2 - LT 9.0' LWN SHLD2 - RT 52.0' - 24.0' 2 - 12.0' RDWY 12.0' PVD MED 6.0' PVD SHLD1 - LT 4.0' PVD SHLD1 - RT 0.0' RC SHLD2 - LT 6.0' LWN SHLD2 - RT	NW	28/FC-3 28/FC-3	CURVE DATA NOT FIELD VERIFIED B=N79°22'58"W	2206 9.112 1-18" X 80" CC 9.430 9.507 9.502 9.502 9.676 2.866 41.310 92.728 10.100	SR-50 - RDWY ID 08002000 FM# 432697-15201 (MP 10.106 - MP 10.625) 2018 - RESURFACING FM# 254814-15201 (MP 10.127 - MP 10.468) 1990 - INTERSECTION (MINOR) SIS CORRIDOR	SIS CORRIDOR	RURAL PRIN ART OTHER URBAN PRIN ART OTHER	60MPH 55MPH 45MPH

This Straight Line Diagram runs EAST to WEST - North is down

This is the west limit of the study

ROADWAY FEATURES	LANE WIDTHS ARE AVERAGED	INVENTORY DIRECTION	ROADWAY COMPOSITION	HORIZONTAL ALIGNMENT	STRUCTURE DESCRIPTION	DISTRICT USE	SIS	FUN CLASS	SPEED LIMIT
E JEFFERSON ST MARRANNE ST EARLY ST SMITH ST CRAWFORD ST CLEVELAND AVE ELBERTY ST N BROAD ST MILBROOK CT MAY AVE BELL AVE N ALABAMA AVE N GEORGIA AVE N ALABAMA AVE N BROOKSVILLE AVE N MAIN ST N ORANGE AVE N BALEY AVE N LEMON AVE N LEMON AVE N MILDRED AVE PONCE DE LEON BLVD PONCE DE LEON BLVD	51.0' - 24.0' 2 - 12.0' RDWY 5.0' PVD SHLD1 - LT 4.0' PVD SHLD1 - RT 12.0' LWN SHLD2 - LT 6.0' LWN SHLD2 - RT 30.0' - 26.0' 2 - 13.0' RDWY 2 - 2.0' C&G SHLD1 42.0' - 29.0' 2 - 14.5' RDWY 5.0' PVD SHLD1 - LT 4.0' PVD SHLD1 - RT 2 - 2.0' C&G SHLD2 42.0' - 25.0' 2 - 12.5' RDWY 9.0' PVD SHLD1 - LT 2.0' PVD SHLD1 - RT 2 - 2.0' C&G SHLD2 41.0' - 24.0' 2 - 12.0' RDWY 2.0' PVD SHLD1 - LT 8.0' PVD SHLD1 - RT 2 - 2.0' C&G SHLD2 42.0' - 25.0' 2 - 12.5' RDWY 9.0' PVD SHLD1 - LT 4.0' PVD SHLD1 - RT 2 - 2.0' C&G SHLD2 27.0' - 12.0' 1 - 12.0' RDWY 7.0' PVD SHLD1 - LT 12.4' PVD SHLD1 - RT 2 - 2.0' C&G SHLD2 41.0' - 21.0' 1 - 11.0' RDWY - LT 1 - 10.0' RDWY - RT 10.0' PVD MED 2 - 3.0' PVD SHLD1 2 - 2.0' C&G SHLD2	NW	28/FC-4 28/FC-4	CURVE DATA NOT FIELD VERIFIED B=N00°40'48"W B=S89°19'12"W	373 24" X 80" CC 11.11	US-41/US-98/SR-45/SR-50A/SR-700 - RDWY ID 08010000 US-41/SR-45 - RDWY ID 08010000 FM# 419257-15201 (MP 11.613 - MP 12.536) 2009 - RESURFACING FM# 254782-15201 (MP 12.341 - MP 12.541) 1991 - RAILROAD CROSSING FM# 433864-15201 (MP 12.419 - MP 12.466) 2019 - RAILROAD CROSSING FM# 258430-15201 (MP 12.500 - MP 12.600) 2002 - INTERSECTION (MAJOR) FM# 427150-15201 (MP 12.568 - MP 12.766) 2014 - RESURFACING SR-700 - RDWY ID 08080000 US-98/SR-700 - RDWY ID 08080000	URBAN PRIN ART OTHER	45MPH 35MPH	

Appendix C

Design Documentation and Context Classification Memo

MEETING MINUTES

Meeting Date: March 9, 2020 **Date Issued:** March 11, 2020
Location: FDOT District Seven
Project Name: WPI Segment No. 430051-1: SR 50 (US 98/Cortez Boulevard)
Purpose: Review of Access Management Adjustments after the Public Hearing
Notes by: Jeff Novotny / Chris Salicco **American Project #:** 5147050
Copies to: Attendees, File (5147050, B.3)

<u>Attendees</u>	<u>Representing</u>	<u>Phone</u>	<u>Fax or e-mail</u>
Kirk Bogen	FDOT		Kirk.bogen@dot.state.fl.us
Amber Russo	FDOT/GEC		Amber.russo@dot.state.fl.us
David Ayala	FDOT		David.ayala@dot.state.fl.us
John Foley	FDOT/GEC		John.foley@dot.state.fl.us
Mike DeVore	American Consulting		mdevore@acp-fl.com
Chris Salicco	American Consulting		csalicco@acp-fl.com
Jeff Novotny	American Consulting		jnovotny@acp-fl.com

The following notes reflect our understanding of the discussions and decisions made at this meeting. If you have any questions, additions or comments, please contact us at the above address. We will consider the minutes to be accurate unless written notice is received within 10 working days of the date issued.

The meeting started at 3pm.

Purpose of the meeting and background information mentioned at the onset

The purpose of the meeting was to discuss several potential adjustments to the proposed access management plan for the project following the PD&E Study public hearing in December 2019. At the public hearing there were a few public comments pertaining to median openings and turn lanes as shown at the public hearing. In addition, along the eastern portion of the project, there were numerous existing full median openings that were proposed to be changed to directional median openings shown and American was evaluating whether any of these could be altered to remain as full openings. American evaluated all proposed median openings and potential for limited sight distances in the field. The adjustments that were considered are discussed below. A roll-plot as shown at the public hearing was reviewed at the meeting to discuss each location in question. For background information:

- The proposed access class is 3 (one-quarter mile directional spacing and one-half mile full opening and signalized intersections).
- The context classification is C-2 (65 mph design speed) from the west end of the project at SR 50/Brooksville Bypass to Spring Lake Highway/Mondon Hill intersection, and C-3R (55 mph design speed) from Spring Lake Highway to the east end of the project at Lockhart Road.
- The PD&E Study is proposing to widen SR 50 from 4-lanes to 6-lanes by widening partially towards the median (to create a standard median width based on context class) and partially to the outside.

Attached are the concept plans in the current version of the draft Preliminary Engineering Report (PER) that depict the proposed access management as shown on the roll plot at the December public hearing. Reference to the locations below refer to the sheet number of the concept plans and stationing shown on the sheets. The notes below for each location reflect the information exchanged at the meeting by the attendees. Attached to this document are the draft concept plans sheets in the draft PER dated October 2019, made available to the public in advance of and at the public hearing. Due to file size, only the sheets reference below are in the attachment.

Median Adjustment 1 and 2 are within the western portion of the project with Context Classification C-2 and design speed 65 mph. The existing posted speed transitions from 45 mph at the Brooksville Bypass intersection to 50 mph to 60 mph.

- Median Adjustment 1 - PER Concept Plan sheets #3/#4 – proposed directional median opening at approx. station 583+50 which provides u-turn access in both directions. This is an existing directional opening with deceleration/turn lanes that are each approx. 700 feet long. This directional opening was proposed to remain at the same location with the same length of storage lanes. The opening is situated about 1700 feet east of the signal at the Brooksville Bypass intersection and 1500 feet west of a proposed full opening at Redbud/Griffin Road. The eastbound U-turn primarily serves ingress to several businesses on the north side west of the opening. The westbound U-turn cannot serve as an egress from the Brooksville Wesleyan Church on the north side (the turn lane striping would prohibit the movement, but its possible for vehicles to access. If they cannot, they are required to go to the Bypass signal and make a u-turn there.

The adjustment is to consider shifting the location of the opening to the west slightly by shortening the storage lanes. This would allow egress from the church to better utilize the u-turn and avoid adding traffic to the signalized intersection. The deceleration length for 65 mph is 460 feet per the FDM and if 50 feet of storage was provided, the turn lanes could be shortened to 510 feet and the directional opening can be shifted nearly 200 feet to the west. This would still meet spacing requirements and perhaps provide a better opportunity for egressing church traffic to reach the westbound u-turn. This adjustment was concurred at the meeting and will be adjusted in the plans and noted in the PER and in the final PD&E newsletter.

- Median Adjustment 2 – PER Concept Plan sheets #4#/5 – proposed full opening at approx. station 598+50 at the intersection with Redbud Lane on the north and Griffin Road on the south.. This is an existing full median opening with turn lane lengths of just under 600 feet. The opening is situated about 1500 feet east of the Median U-turns noted in Median Adjustment 1 above (and will change to approx. 1800 feet) and approx. 2350 feet west of the next directional opening. There are existing right turn lanes along SR 50 for this intersection in both directions and they are proposed to remain. There was comment at the public hearing that the sight distance seemed short for traffic entering SR 50 from Redbud Lane. In this area, the posted speed for SR 50 is 60 mph in the eastbound direction and 50 mph in the westbound direction.

The adjustment was to consider whether the median access needed to be changed. This location was observed in the field and the sight distance appeared to be met for vehicles on the side streets crossing, or from the left turn lanes in the median. The distance was closer to the minimum for vehicles looking east due to a vertical crest several hundred feet to the east of the intersection. No change to the median opening is proposed, however, it is suggested to add a warning sign east of the intersection for westbound SR 50 traffic, which may help warn drivers of the

intersection. This adjustment was concurred and this will be shown in the plans and notation made in the PER document.

Median Adjustments 3 and 4 are within the eastern portion of the project with Context Classification C-3 and proposed design speed 55 mph. The existing posted speed is 60 mph throughout this eastern portion.

- Median Adjustment 3 – PER Concept Plan sheets #21/#22 – proposed directional opening at approx. station 834+50 at the intersection with Cammie Street (north leg only). This is an existing full opening. There is an existing westbound right turn lane along SR 50 for Cammie Street that will remain. The opening is situated about 1900 feet east of a proposed directional median opening at Faber Drive and 1450 feet west of a proposed directional opening at Frampton Avenue. The sight distance at this location was observed in excess of the minimum in both directions. Cammie Street appears to provide the best access for most drivers accessing the Hill-n-Dale subdivision to the north side of SR 50.

The adjustment was to consider keeping this as a full median opening. This intersection would remain a T-intersection in the future should a proposed stormwater pond/floodplain compensation site planned on the south side of SR 50 at this location be constructed. Being a T-intersection, the full-opening would only serve traffic from the side-street to the north which has fewer conflicts than a normal 4-way intersection. This adjustment was concurred at the meeting and this will be shown in the plans and notation made in the PER document and in the final PD&E newsletter.

- Median Adjustment 4 – PER Concept Plan sheets #26/#27 – proposed directional opening at approx. station 902+00 at the intersection with Dels Trail (private road to the north only). This is an existing full opening. The opening is situated about 1300 feet east of a proposed full median opening at Goodway Drive and 1300 feet west of a proposed directional opening at Thistlebrook Lane. The field observation was that the sight distance for vehicles looking east from this location is limited due to a vertical crest a couple hundred feet to the east of Hadley Road to the east.

The adjustment is to eliminate the eastbound turn lane (left turn or U-turns) at this directional opening onto the private road due to the sight distance limitations. (U-turns may not have sufficient sight distance to make the full maneuver without slowing down or being overtaken by westbound traffic.) The westbound portion of the directional opening can remain. It serves a private road and not a public road. This adjustment was concurred at the meeting, and this will be shown in the plans and notation made in the PER document and in the final PD&E newsletter.

Adjustments 1, 3 and 4 make median access changes from what was shown at the December public hearing, and would require an access management public hearing during the design phase. A note will be included in the recommendations section of the PER making mention of this public hearing requirement along with any other proposed changes made after the December 2019 public hearing and into the design phase of the project, which is currently unfunded.

Other non-median opening plan adjustments discussed.

- The PER Concept Plan sheets #2/#3 show from approx. station 574+00 to 584+00 in the westbound direction, the 3 though lanes being narrowed to 2 through lanes before approaching the Brooksville Bypass signalized intersection. At that intersection, 2 lanes continue west into downtown Brooksville, while 3 lanes turn left onto the Bypass. The adjustment is to eliminate the westbound lane merge so 3 lanes continue into the approach so the intersection in the westbound direction. This adjustment was concurred at the meeting. The geometry will be adjusted slightly


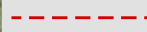
as this is also in an area with a variable median width and through the directional opening noted in Adjustment 1 above. Overhead signage will be added to inform drivers in the left-most through lane that this lane will turn left at the signalized intersection. This overhead signage will be added to the plans and project cost estimate.

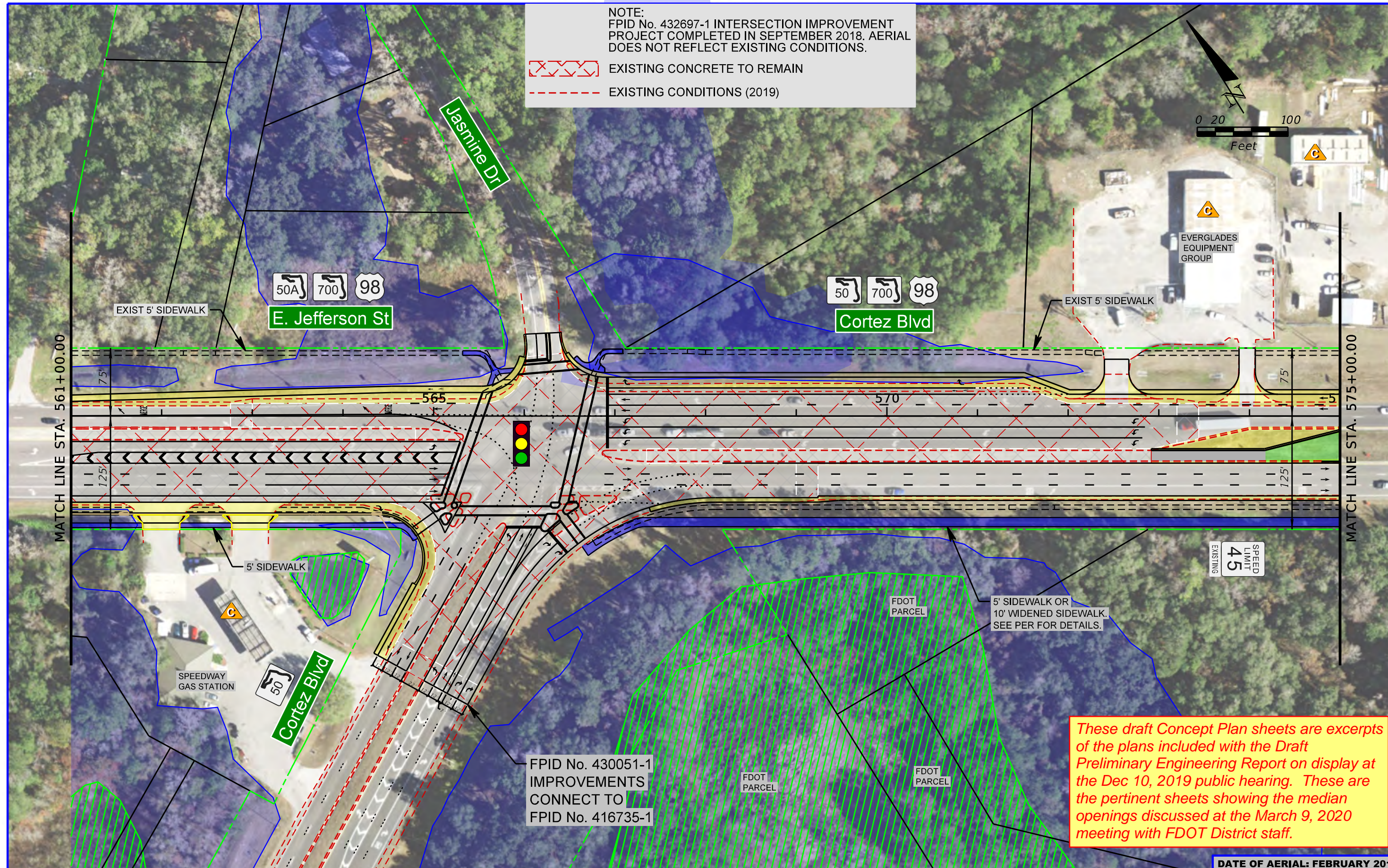
- The PER Concept Plan sheet #26 shows a proposed right turn lane at approx. station 889+00 on the north side of SR 50 for Goodway Drive. Due to the presence of several public streets to the east of this intersection, the right turn lane continues to approx. station 897+00. This is also an existing condition. There was a public comment by the owner of the storage facility on the north side at approx. station 898+00, that this right turn lane used to extend past their entrance before SR 50 was widened to 4 lanes and that there are large trucks that use the entrance that could benefit by extending the right turn lane for their access point as well. This adjustment was concurred at the meeting and will be added to the concept plans. (A response will also be provided to the individual making the comment at the public hearing indicating the change will be reflected in the PER.)

The meeting adjourned at approx. 3:40pm

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NOTE:
 FPID No. 432697-1 INTERSECTION IMPROVEMENT
 PROJECT COMPLETED IN SEPTEMBER 2018. AERIAL
 DOES NOT REFLECT EXISTING CONDITIONS.


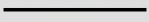

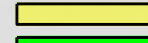


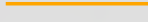


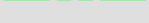






-  EXISTING CONCRETE TO REMAIN
-  EXISTING CONDITIONS (2019)



FPID No. 430051-1
 IMPROVEMENTS
 CONNECT TO
 FPID No. 416735-1

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DATE OF AERIAL: FEBRUARY 2017

LEGEND	 WETLANDS OR OTHER SURFACE WATERS BOUNDARY	 PROPERTY LINE	 EXISTING SIDEWALK	 IMPROVEMENTS BY FDOT
	 FLOODPLAINS AREA	 EASEMENT LINE	 PROPOSED MSE WALL	 PROPOSED MEDIAN (SOD)
	 PREFERRED SMF AND FPC AREA	 EXISTING ROW	 POTENTIAL NOISE BARRIER	 PROPOSED TRAFFIC SEPARATOR
	 POTENTIALLY CONTAMINATED SITE	 PROPOSED ROW TO BE ACQUIRED	 PROPOSED SIDEWALK	 POTENTIAL IMPROVEMENT BY OTHERS

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 Phone: (813) 435-2600 Fax: (813) 435-2601
 Engineering Business No. EB7110
 Jeffrey S. Novotny, P.E. No. 51083

SR50 PD&E STUDY
From Brooksville Bypass to West of I-75
Concept Plans
 WPI SEGMENT No.: 430051-1

SHEET NO.
 2

NOTE:
 FPID No. 432697-1 INTERSECTION IMPROVEMENT
 PROJECT COMPLETED IN SEPTEMBER 2018. AERIAL
 DOES NOT REFLECT EXISTING CONDITIONS.

--- EXISTING CONDITIONS (2019)



EVERGLADES
 EQUIPMENT
 GROUP

ANIMAL MEDICAL CENTER
 OF BROOKSVILLE

TEAL PLANK
 WORKSHOP

COUNTRY VILLAGE
 COMPLEX



Cortez Blvd

EXIST 5' SIDEWALK

SPEED
 LIMIT
 45
 EXISTING

SPEED
 LIMIT
 60
 EXISTING

MATCH LINE STA. 575+00.00

MATCH LINE STA. 587+00.00

5' SIDEWALK OR
 10' WIDENED SIDEWALK.
 SEE PER FOR DETAILS.

COMPLETE
 BOAT REPAIR
 (ABANDONED)

SMF-1C EXTENDS APPROX. 400'
 FROM AERIAL BOUNDARY.
 FPC-1C IS LOCATED APPROX. 680'
 FROM EXIST. R/W

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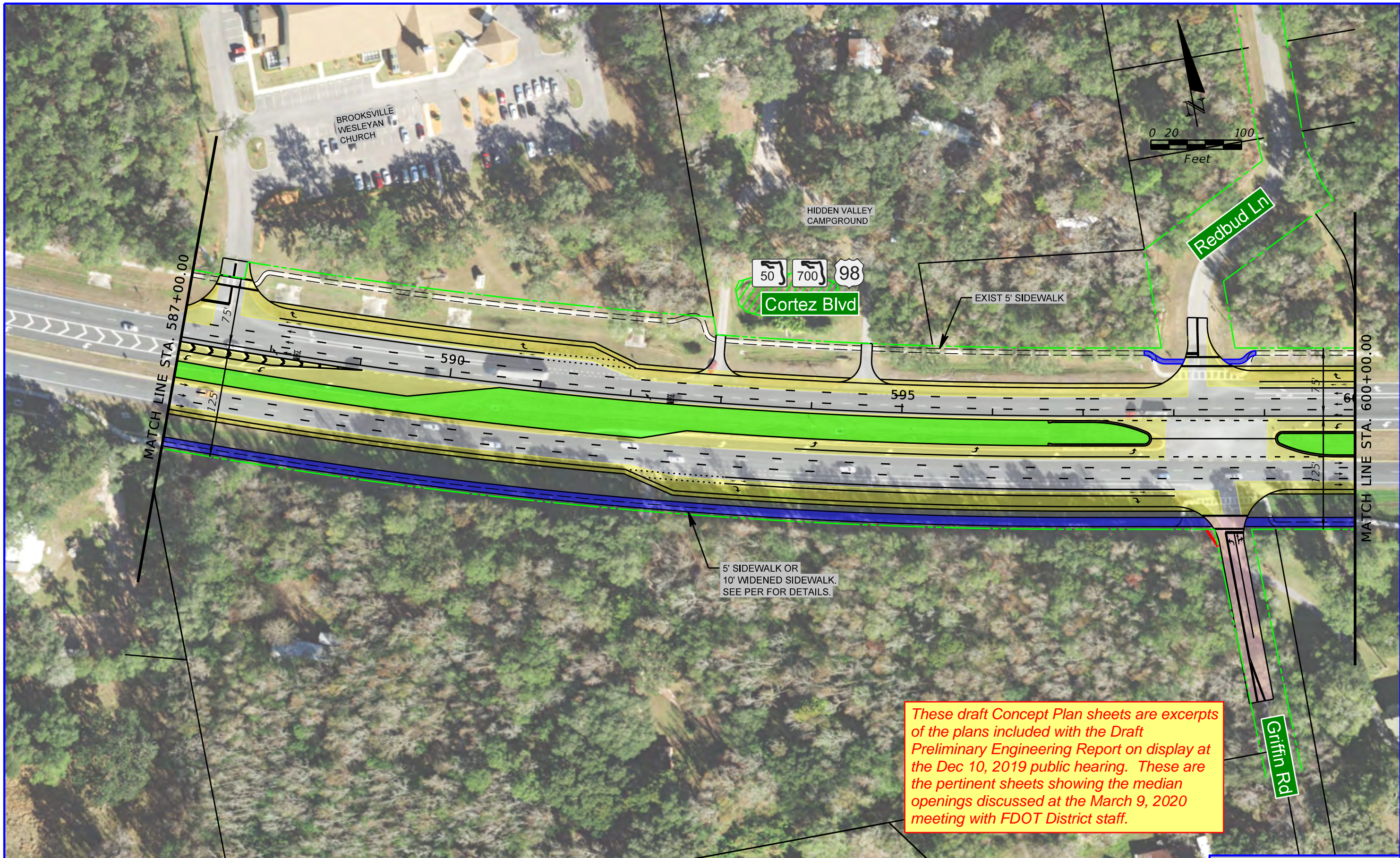
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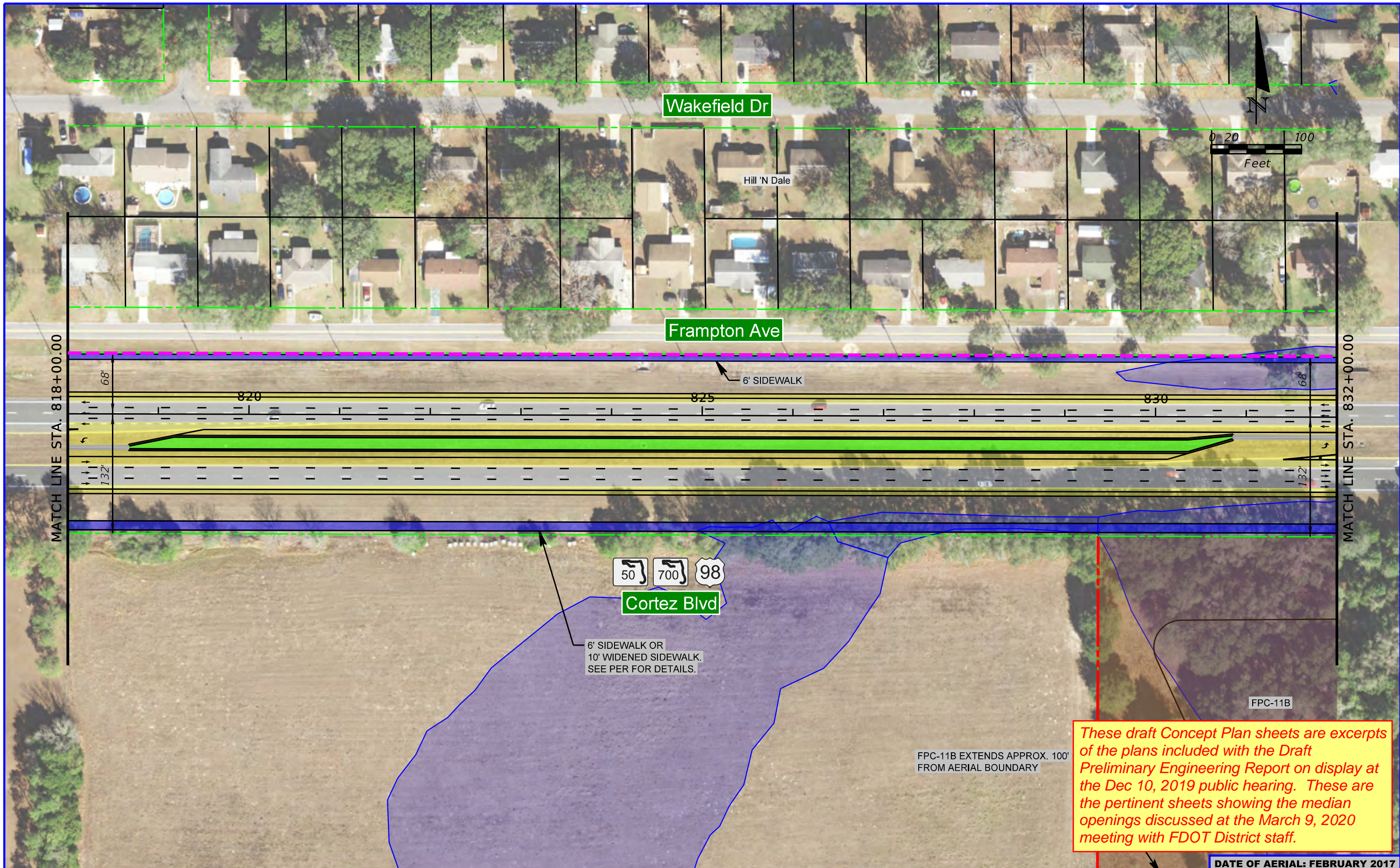
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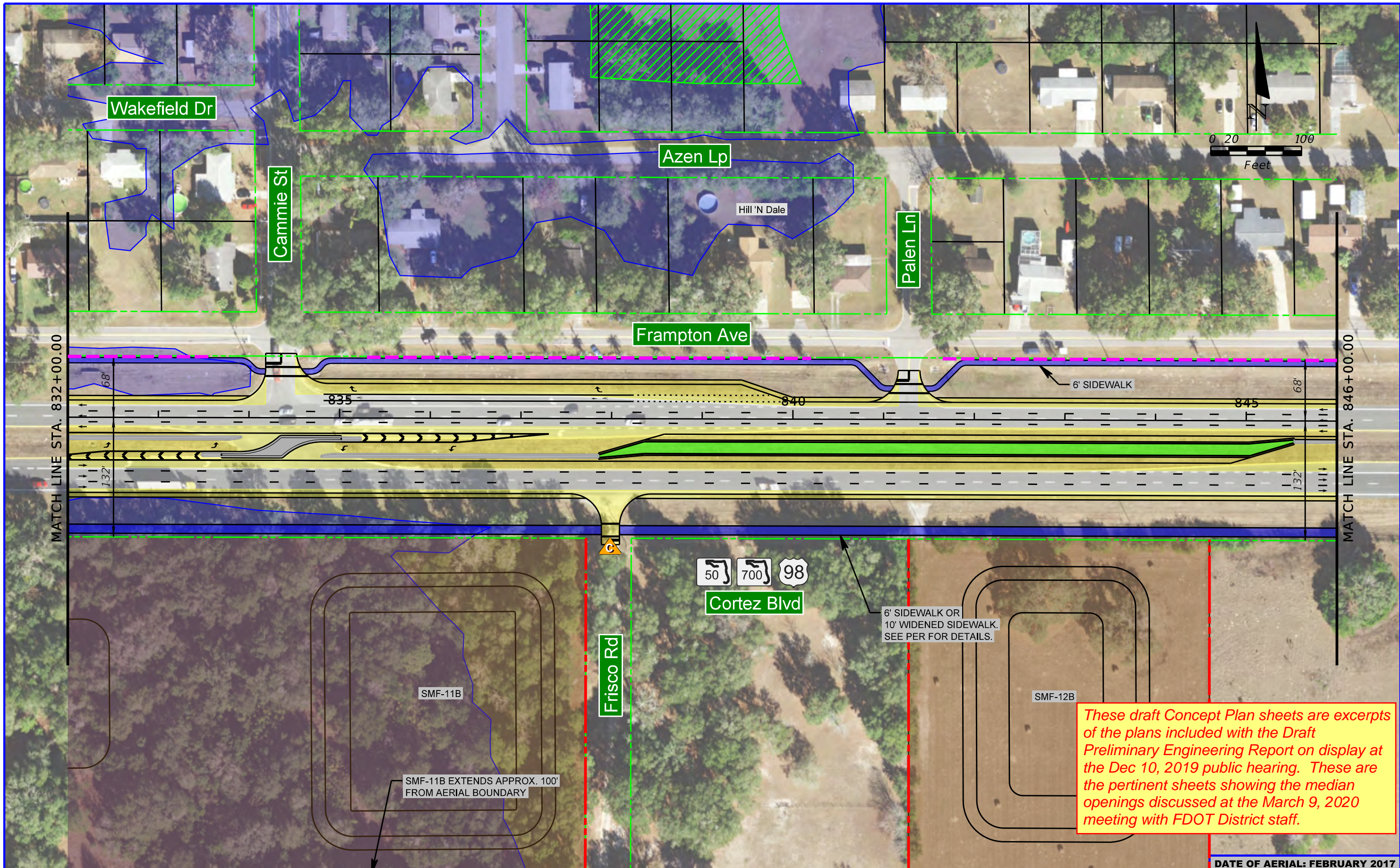
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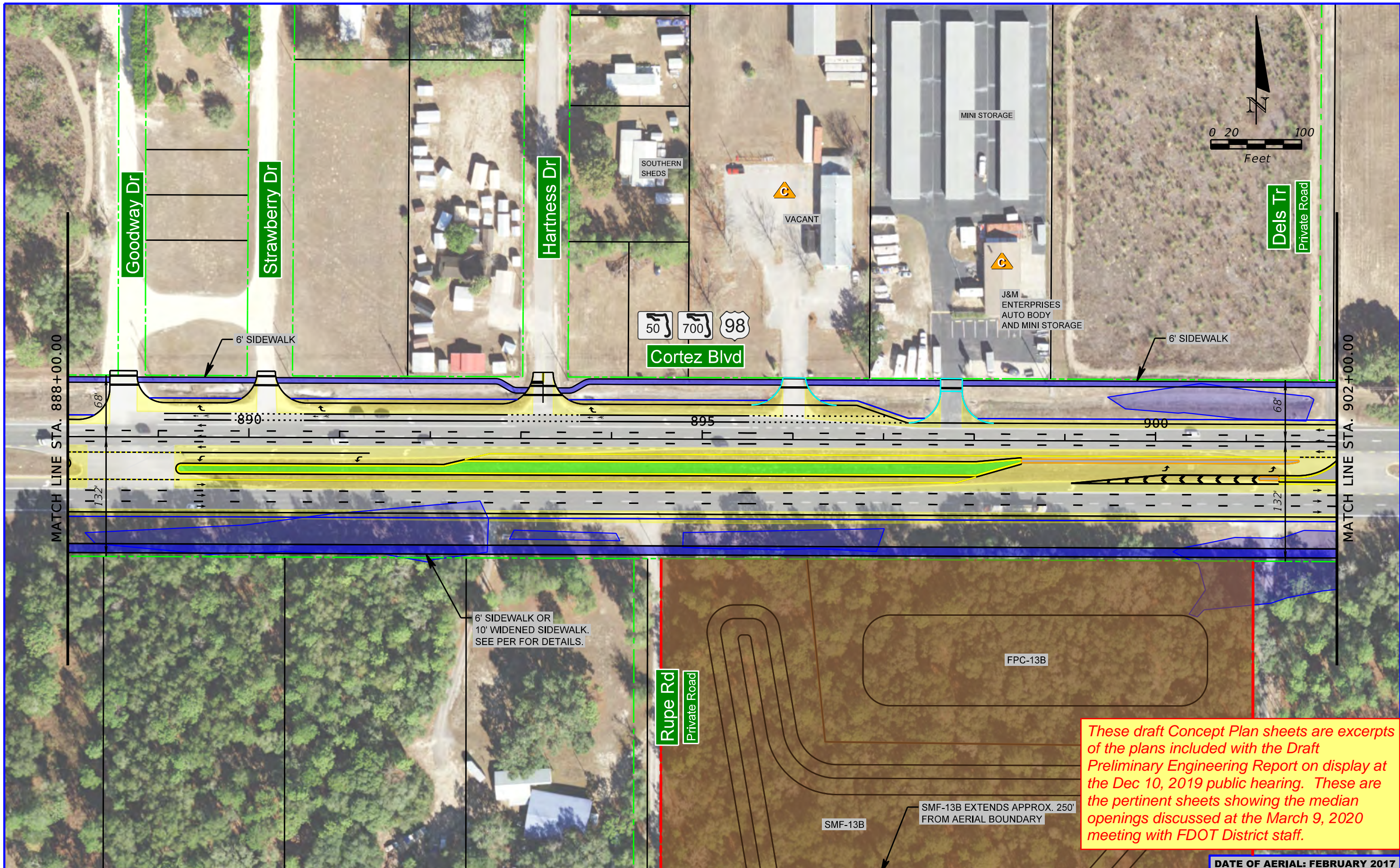
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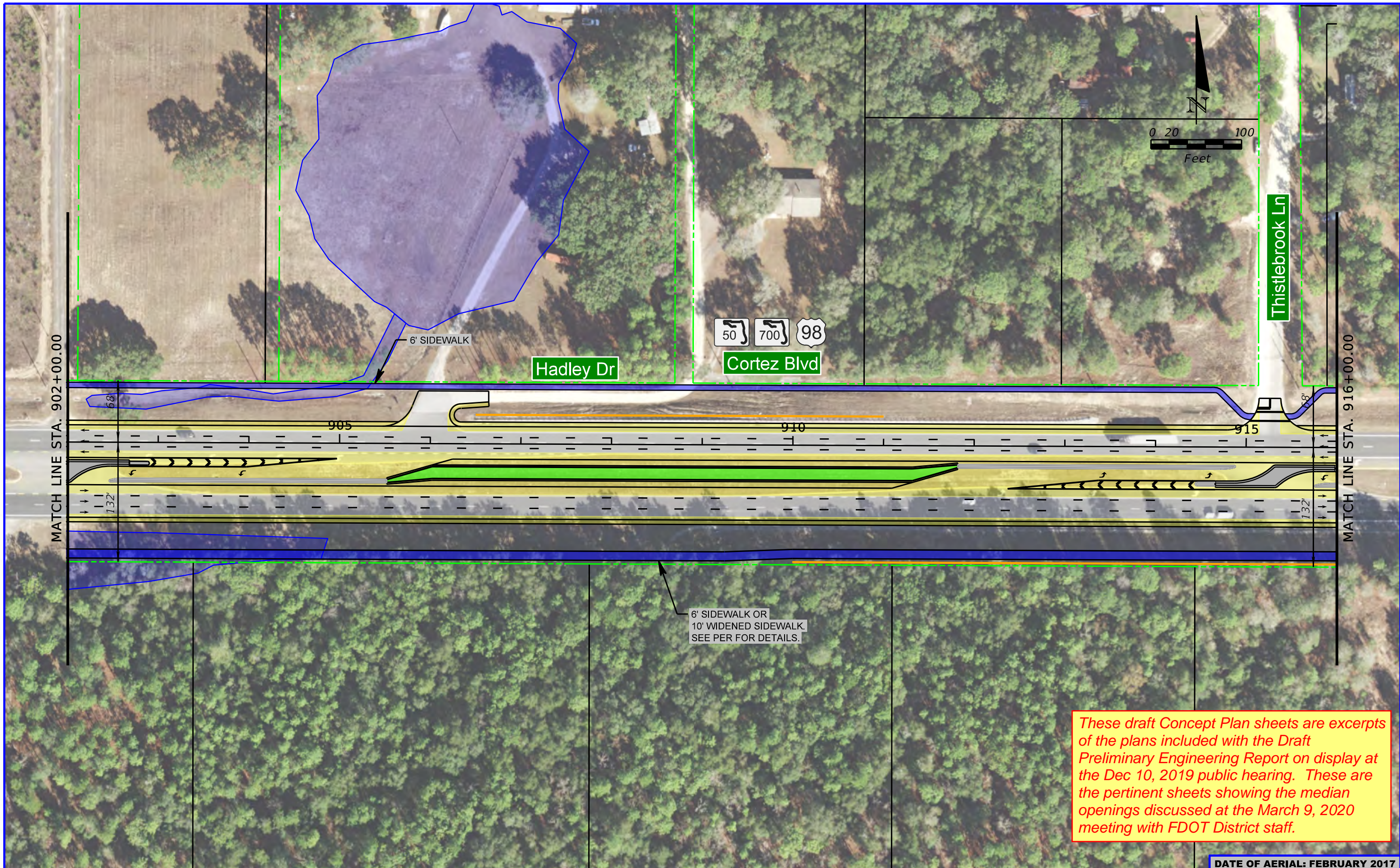
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SHEET NO.
27

From: [Steven Diez](#)
To: [Novotny, Jeffrey S.](#); Lilliam.Escalera@dot.state.fl.us
Subject: RE: FDOT WPI 430051-1 - SR 50 PD&E Study from Brooksville Bypass to west of I-75 - wider sidewalk location
Date: Tuesday, October 22, 2019 9:42:16 AM
Attachments: [image001.png](#)

Jeff,

Thank you for the confirmation regarding the SR50 PD&E. AS you said, to remain consistent, the wide-walk should remain on the south side of SR50. Additionally, as you mentioned there are no phases currently included in the 5-year Work Program, but the alignment for a multi-use path is shown in our current (and future) LRTP. Thank you.

Steve Diez
Executive Director
Hernando/Citrus MPO
1661 Blaise Dr.
Brooksville, FL 34601
Phone: 352-754-4082
E-mail: stevend@hernandocounty.us

From: Novotny, Jeffrey S. <JNovotny@acp-fl.com>
Sent: Tuesday, October 22, 2019 9:16 AM
To: Lilliam.Escalera@dot.state.fl.us; Steven Diez <StevenD@hernandocounty.us>
Subject: FDOT WPI 430051-1 - SR 50 PD&E Study from Brooksville Bypass to west of I-75 - wider sidewalk location

Steve,

This email is to confirm our phone conversation earlier this morning concerning the SR 50 PD&E Study from the Brooksville Bypass to west of I-75.

The proposed typical sections for this PD&E study for SR 50 will depict widening SR 50 from 4 lanes to 6 lanes with sidewalks on both sides of the road. A portion of the project will have a rural typical section and a portion will have a suburban section. The FDOT constructed a wider sidewalk along the south side of SR 50 in the vicinity of the I-75 interchange and that wider sidewalk will continue along the south side of SR 50 to the Lockhart Road intersection with another project that is presently in design. To remain consistent, this PD&E study will also show a wider (planned at 10 ft) sidewalk also running along the south side of SR 50 throughout the limits of the project to the SR 50 bypass.

Steve, you indicated concurrence with the location of the wider sidewalk on the south side of SR 50.

For your information, to allow the County future flexibility, and since the wider sidewalk is greater than standard width, we are indicating in the draft Preliminary Engineering Report that the wider sidewalk in this location will be based on the County's future priorities. This will provide the County with flexibility to change the limits of the wider sidewalk since the design phase is not presently funded in the 5-year work program. If a wider sidewalk is not desired at that later time, then the

FDOT would use a standard sidewalk width of either 5 ft or 6 ft depending on the typical section type.

-Jeff Novotny



Jeffrey S. Novotny, PE, AICP

Project Manager / Principal

American Consulting Professionals, LLC

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813.435.2646 (D) | 813.505.7597 (M) | JNovotny@acp-fl.com | acp-americas.com

MEMORANDUM

DATE: 9/20/2019

TO: Lilliam Escalera

FROM: Brian L Shroyer, Multimodal Project Manager

COPIES: PLEMO File

SUBJECT: Context Classification Determination for Item Segment 430051-1 SR 50 FROM BROOKSVILLE BYPASS TO I-75

The District Seven Planning & Environmental Management Office has reviewed the subject project location and has made the following determination.

Context Classification Summary Table	
Item Segment	430051-1
Primary Work Mix	PD&E
Roadway Name	SR 50
Roadway Limits	SR 50 FROM BROOKSVILLE BYPASS TO I-75
Section No. & Milepost Limits	08050000; 6.111 to 10.312 08070000; 0.00 to 4.020
Context Classification (existing)	C2 – Rural 08050000; 6.111 to 10.312 C3R – Suburban Residential 08070000; 0.00 to 4.020
Comments	SIS facility

Additional documentation is provided below to support this determination. This context classification determination shall apply to the design phase of the subject project only and only information available at the time of this analysis was used to support this determination. Changes to the project scope, location and roadway limits may trigger a change in this determination. Any changes should be coordinated with the PLEMO Office.

Primary Measures

Context Classification	Segment	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-Street Parking	Roadway Connectivity		
							Intersection Density	Block Perimeter	Block Length
		Description	Floor Levels	Description	Yes/No	Description	Intersections/square mile	Feet	Feet
C2	08050000; 6.111 to 10.312	Agricultural, woodlands, Sparsely settled lands	1-2		No	N/A	20	N/A	N/A
C3R	08070000; 0.00 to 4.020	Mostly residential	1-2		No		47.7	7794	813

2019 FDOT Design Manual Design Criteria

DESIGN CONTROL	C2	C3C/C3R
Allowable Design Speed Range (mph)	55-70	35-55
SIS Minimum Design Speed (mph)	65	50
Minimum Travel & Auxiliary Lane Width	12	35 mph: 10 ft 40-45 mph: 11 ft ≥ 50 mph: 12 ft
Two-Way Left Turn Lane	N/A	25-35 mph: 11 ft 40 mph: 12 ft
Median Width	High Speed Curbed 50-55, 30 ft Flush Shoulder, 40 ft	Curbed & Flush 25-35 mph: 22 ft 40-45 mph: 22 ft High Speed Curbed 50-55, 30 ft
Sidewalk Width	5	6