FINAL

PRELIMINARY ENGINEERING REPORT

Florida Department of Transportation

District One

SR 35 (US 98) PD&E Study

Limits of Project: From North of West Socrum Loop Road to South of CR 54

Polk County, Florida

Financial Management Number: 436673-1-22-01

ETDM Number: 14334

Date: March 2023

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

Final Preliminary Engineering Report

SR 35 (US 98)
Project Development and Environment (PD&E) Study
From North of West Socrum Loop Road to South of CR 54

FPID 436673-1
ETDM Project No. 14334
Polk County, Florida

Prepared for:

Florida Department of Transportation
District One

Prepared by:
AIM Engineering and Surveying, Inc.
201 E. Kennedy Boulevard, Suite 1800
Tampa, FL 33602

March 2023

PROFESSIONAL ENGINEER CERTIFICATION

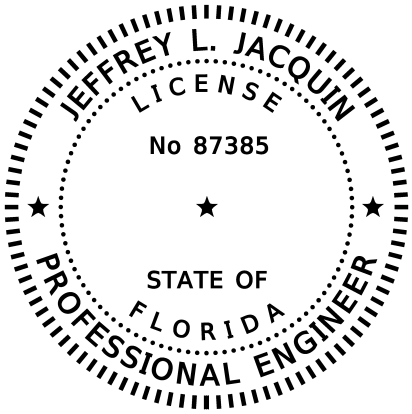
PRELIMINARY ENGINEERING REPORT

Project: SR 35 (US 98) PD&E Study

Financial Project ID: 436673-1

This preliminary engineering report contains engineering information that fulfills the purpose and need for the SR 35 (US 98) Project Development & Environment Study from North of West Socrum Loop Road to South of CR 54 in Polk 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 AIM Engineering & Surveying, Inc., and that I have prepared or approved the evaluation, findings, opinions, conclusions or technical advice for this project.



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ON THE DATE ADJACENT TO THE SEAL

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AIM ENGINEERING & SURVEYING, INC.
3802 CORPOREX PARK DRIVE STE. 225
TAMPA, FLORIDA 33619
TELEPHONE (888) 627-4144
CERTIFICATE OF AUTHORIZATION NO. 3114
JEFFREY L. JACQUIN, P.E. 87385

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1 INTRODUCTION

1.1 PROJECT DESCRIPTION

The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) study to evaluate capacity and safety improvements along SR 35 (US 98) from north of West Socrum Loop Road to south of CR 54 in Polk County. Throughout the remainder of this document only the US 98 designation will be used. The project limits are shown in **Figure 1-1** and the total project length is approximately 9.0 miles. The purpose of this PD&E study is to evaluate and document the benefits, costs, and impacts of widening US 98 from the existing two-lane undivided roadway to a four-lane divided roadway. US 98 is not designated as a Strategic Intermodal System (SIS) facility. The portion from West Socrum Loop Road to just north of Rock Ridge Road is functionally classified as Urban Principal Arterial Other, while the portion from just north of Rock Ridge Road to CR 54 is functionally classified as Rural Principal Arterial Other.

Figure 1-1 Project Location Map

This PD&E study will aid FDOT District One and the FDOT Office of Environmental Management (OEM) in determining the type, preliminary design, and location of the proposed improvements. This improvement is necessary to provide additional capacity to accommodate the future year travel demand generated by the projected population and employment growth in both northwest Polk County and southeast Pasco County. US 98 is a major north-south roadway that connects US 92 (Memorial Boulevard) in Lakeland to US 301 (Gall Boulevard) in Dade City and provides a critical regional connection between Polk and Pasco Counties. US 98 is a designated evacuation route and is also included in the Polk Transportation Planning Organization (TPO) Regional Freight Network.

1.2 PROJECT PURPOSE AND NEED

The purpose of the project is to improve an existing traffic bottleneck along US 98 from north of West Socrum Loop Road to south of CR 54 within unincorporated Polk County. The need for the project is based on the following criteria:

AREA WIDE NETWORK/SYSTEM LINKAGE – Improve Transportation Network Connectivity

The US 98 corridor is an intraregional connecting link between Polk and Pasco Counties. US 98 transitions from four lanes just north of West Socrum Loop Road to an undivided two-lane facility, creating a traffic bottleneck. The project is intended to enhance transportation network connectivity by:

- Maintaining a critical link to an SIS facility (i.e., I-4), and
- Providing a viable alternative route to parallel north-south arterials (i.e., Kathleen Road and Old Dade City Road).

CAPACITY/TRANSPORTATION DEMAND – Improve Operational Conditions

US 98 serves as a regional freight mobility corridor as it connects to I-4 (an SIS facility) and US 301 (a designated regional freight mobility corridor). Approximately 13.1 percent of the Average Annual Daily Traffic (AADT) volume on US 98 is composed of trucks. Defined Freight Activity Centers (FAC's) in the area (clusters of industrial land parcels) include the Kathleen Road FAC, North Combee Road FAC and West Lakeland Industrial Area FAC. Not only does this roadway facilitate truck traffic and the distribution of goods to local activity areas, but it also functions as an important north-south corridor for commuters between Pasco and Polk Counties.

According to Momentum 2045 (the Polk TPO's Long Range Transportation Plan (LRTP)), the Northwest Planning Area of Polk County where the project corridor is located, is projected to increase its population from 249,329 (in 2015) to 335,863 (in 2045). The total employment in the Northwest Planning Area is projected to increase from 100,221 (in 2015) to 157,544 (in 2045). A planning consistency table can be found in the Type 2 Categorical Exclusion (CE) prepared under separate cover in February 2023.

Based on the 2045 District One Regional Planning Model and the US 98 Project Traffic Analysis Report (PTAR) :

2021 AADT Volume

- From West Socrum Loop Road to Rock Ridge Road = 18,500 vehicles per day (vpd)
- From Rock Ridge Road to SR 471 = 14,500 vpd
- From SR 471 to CR 54 (Pasco County Line) = 13,000 vpd

2021 Level of Service (LOS)

- From West Socrum Loop Road to Rock Ridge Road = LOS "D"
- From Rock Ridge Road to SR 471 = LOS "C"
- From SR 471 to CR 54 (Pasco County Line) = LOS "C"

2045 AADT Volume (No-Build Alternative)

- From West Socrum Loop Road to Rock Ridge Road = 27,500 vpd
- From Rock Ridge Road to SR 471 = 23,000 vpd
- From SR 471 to CR 54 (Pasco County Line) = 22,500 vpd

2045 LOS (No-Build Alternative)

- From West Socrum Loop Road to Rock Ridge Road = LOS "E"
- From Rock Ridge Road to SR 471 = LOS "E"
- From SR 471 to CR 54 (Pasco County Line) = LOS "E"

Conditions along the roadway are anticipated to worsen by 2045 if no improvements occur as the roadway volumes are projected to approach the roadway capacity. The project is anticipated to improve operational conditions within the corridor by increasing its capacity. All three segments of the study corridor are projected to operate at Level of Service C with a four-lane divided roadway. This is above the target level of service (i.e., Level of Service D) established for this facility.

SAFETY – Improve Safety Conditions

According to Polk TPO's 2020 Roadway Network Database, during the five-year period from 2014 - 2018, there were 167 total crashes. The total number of crashes per roadway segment, along with the statewide average crash rate for similar facility types, are provided below:

- From West Socrum Loop Road to Rock Ridge Road - 37 crashes
  - Actual crash rate = 0.471
  - Statewide average crash rate = 1.202 (Suburban 2-3 lanes - 2-way undivided)
- From Rock Ridge Road to SR 471 – 93 crashes
  - Actual crash rate = 0.841
  - Statewide average crash rate = 0.768 (Rural 2-3 lanes - 2-way undivided)

- From SR 471 to CR 54 (Pasco County Line) – 37 crashes
  - Actual crash rate = 1.336
  - Statewide average crash rate = 0.768 (Rural 2-3 lanes - 2-way undivided)

The crash rates for two of the project roadway segments exceed the statewide average crash rate. The high number of crashes may be attributed to the current roadway's operational conditions. If no improvements are made to the existing roadway, the greater the probability for vehicle-to-vehicle conflicts to occur as traffic increases along the project corridor.

The proposed project is anticipated to improve safety conditions along the roadway by:

- Reducing congestion through the provision of additional capacity, and
- Enhancing a viable parallel alternate north-south route to Kathleen Road and Old Dade City Road that will aid in emergency access and response times.

1.3 PROJECT STATUS

The Polk TPO 2045 LRTP was adopted in March 2021, and amended on December 9, 2021, to update project information. The latest Polk TPO Transportation Improvement Plan (TIP) for FY2022/23 – FY2026/2027 was adopted on June 9, 2022, and amended on August 15, 2022, to update this project's funding timeframe. A planning consistency table can be found in the Type 2 Categorical Exclusion (CE) prepared under separate cover in February 2023.

1.4 COMMITMENTS

Commitment language provided by District One Staff is as follows:

1. The most current version of USFWS-approved *Standard Protection Measures for the Eastern Indigo Snake* will be adhered to during all construction phases of the proposed project.
2. A land use review will be conducted during the design phase to identify noise sensitive sites that may have received a building permit subsequent to the PD&E noise evaluations but prior to the date of public knowledge (i.e., date that the environmental document has been approved by the FDOT Office of Environmental Management). If the review identifies noise sensitive sites that have been permitted prior to the date of public knowledge, those sites will be evaluated for traffic noise and potential abatement considerations. The FDOT is committed to the construction of noise barriers at Cypress Lakes North and Gator Creek RV Park contingent upon the following:
   - Detailed noise analyses conducted during the final design process support the need, feasibility and reasonableness of providing abatement;
   - Cost analysis indicates that the cost of the noise barrier(s) will not exceed the cost reasonable criterion;

- Community input supporting types, heights, and locations of the noise barrier(s) is provided to the District Office; and
- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed and any conflicts or issues resolved.

1.5 DESCRIPTION OF PREFERRED ALTERNATIVE

The proposed build alternative is a four-lane divided roadway throughout the project limits. The typical section for the portion of US 98 from north of West Socrum Loop Road to Rock Ridge Road includes 12-foot travel lanes, curb and gutter along the inside and outside edges of pavement, a 22-foot grassed median, and 10-foot shared use paths on both sides of the roadway, as shown in **Figure 1-2**. Design, target, and posted speeds of 45 miles per hour (mph) are proposed for this 2.3-mile section of the project.

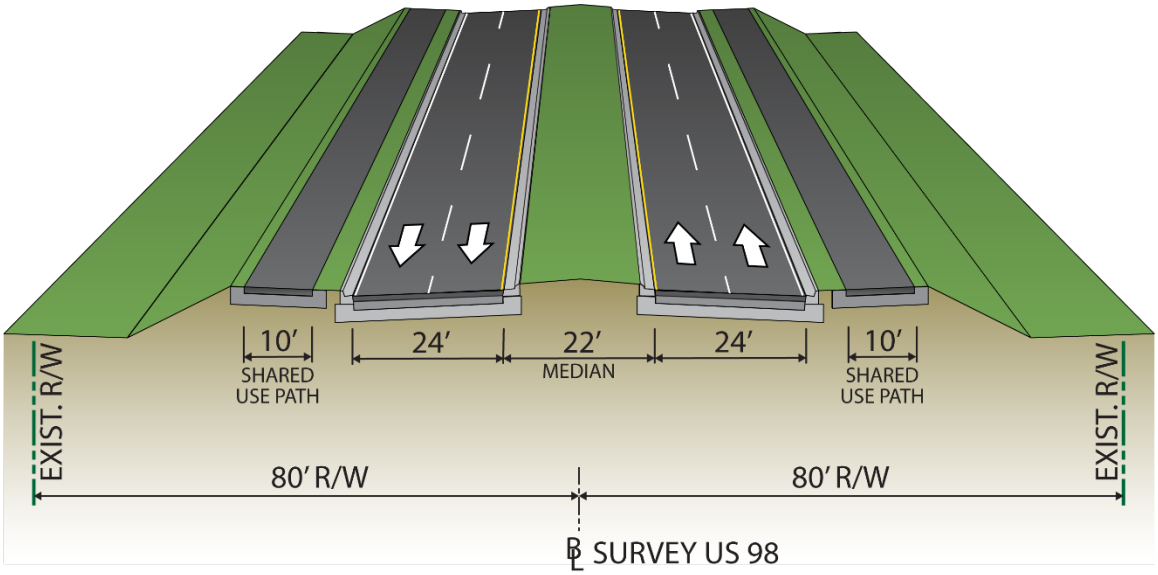


Figure 1-2 Proposed US 98 C3R (Suburban) Typical Section

The typical section for the portion of US 98 from Rock Ridge Road to CR 54 includes 11-foot travel lanes, four-foot paved shoulders with curb and gutter on the inside, ten-foot outside shoulders (five feet paved), and a 30-foot grassed median, as shown in **Figure 1-3**. Design, target, and posted speeds of 55 mph are proposed for this 6.4-mile section of the project.

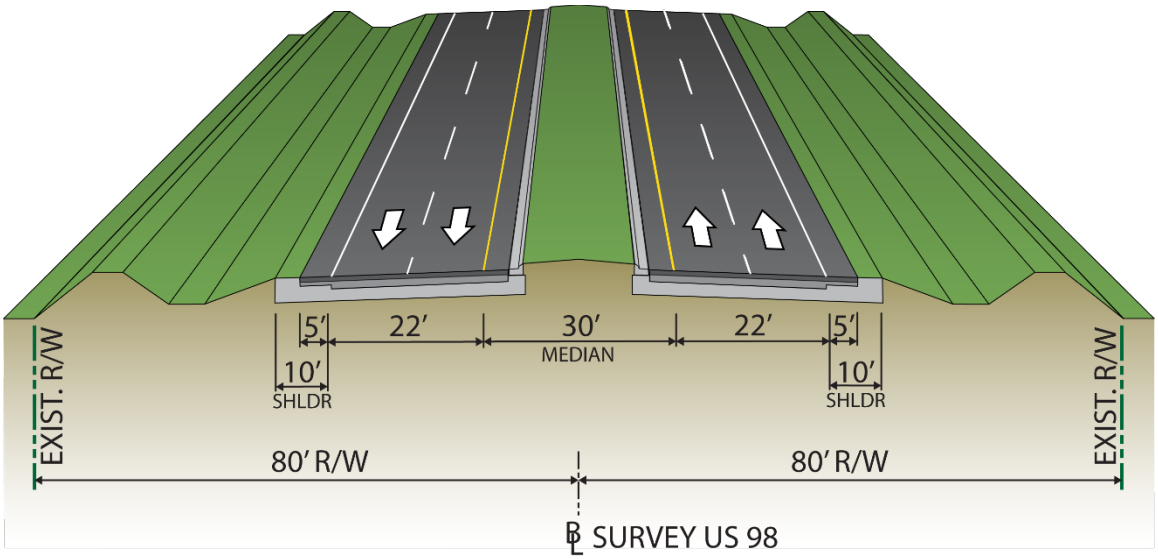


Figure 1-3 Proposed US 98 C2 (Rural) Typical Section

Both typical sections can be accommodated within the existing right-of-way (ROW). Stormwater runoff will be collected and conveyed to stormwater management facilities (SMFs) that will be constructed along the corridor and impacts to adjacent floodplains will be mitigated through the construction of floodplain compensation (FPC) sites. The approved typical section package and the Preferred Alternative Concept Plans are included in **Appendix A** and **Appendix B**, respectively.

1.6 LIST OF TECHNICAL DOCUMENTS

The technical reports prepared in support of this study, along with their respective completion dates, are listed below.

Table 1-1 Technical Documents

Document	Completion Date
Public Involvement	
Advance Notification Package	November 2020
Comments and Coordination Report	March 2023
Public Hearing Transcript	April 2022
Public Involvement Plan	April 2021
Engineering	
Big Cypress Boulevard Stage 1 Intersection Control Evaluation Form	October 2021
Rock Ridge Road Stage 2 Intersection Control Evaluation Form	December 2021
SR 471 Stage 1 Intersection Control Evaluation Form	October 2021
Location Hydraulics Report	November 2021

Document	Completion Date
Pond Siting Report	November 2021
Preliminary Engineering Report	March 2023
Project Traffic Analysis Report	March 2022
Environmental	
Contamination Screening Evaluation Report	July 2022
Cultural Resource Assessment Survey	January 2022
Cultural Resource Assessment Survey Technical Memorandum	November 2021
Cultural Resource Assessment Survey Technical Memorandum Addendum	June 2022
ETDM Summary Report	February 2022
Farmlands Evaluation	August 2022
Natural Resources Evaluation	November 2021
Natural Resources Evaluation Addendum	August 2022
Noise Study Report	April 2022
Section 4(f) No Use Forms	January 2023
Type 2 Categorical Exclusion	February 2023
Water Quality Impact Evaluation	November 2021

2 EXISTING CONDITIONS

2.1 ROADWAY

US 98 is a two-lane undivided facility with a posted speed limit of 60 mph throughout the project limits. The roadway is centered within 160 feet of existing ROW and consists of one 12-foot travel lane in each direction and eight-foot outside shoulders (four feet paved). There are no existing designated bicycle or pedestrian facilities. The US 98 intersection with Rock Ridge Road is signalized and there is a flashing signal at the intersection with SR 471. Conservation lands are present along portions of the corridor. The existing typical roadway section is depicted in **Figure 2-1**.

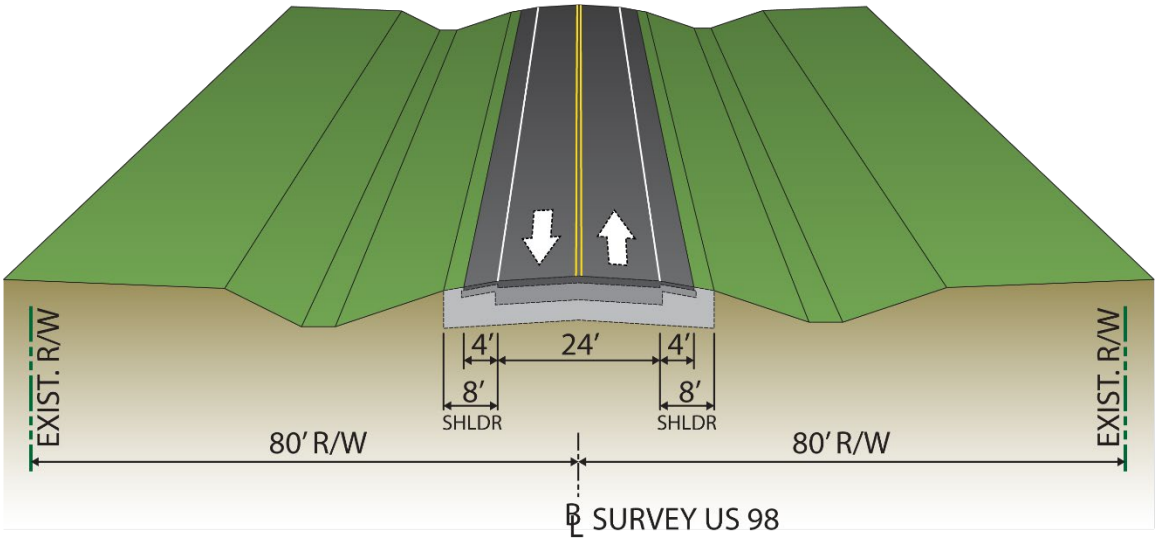


Figure 2-1 Existing US 98 Typical Section

2.2 EXISTING ROADWAY RIGHT-OF-WAY

Existing ROW information was obtained from FDOT ROW maps, Polk County property appraiser maps, and field survey. The roadway is typically centered within 160 feet of existing ROW. **Table 2-2** summarizes the existing ROW for the project limits with stationing and offsets based on the baseline shown on the plan sheets.

Table 2-1 Existing Right-of-Way

Begin Station	End Station	Total Length	Left of Baseline	Right of Baseline	Total Width
440+91.99	464+29.59	2,337.60 ft	70 ft – 69 ft	134 ft – 156.04 ft	204 ft – 225.04 ft
464+29.59	464+36.87	7.28 ft	69 ft	156.04 ft – 156.33 ft	225.04 ft – 225.33 ft
464+36.87	464+48.63	11.76 ft	69 ft – 80 ft	156.33 ft – 156.78 ft	225.33 ft – 236.78 ft
464+48.63	465+72.06	123.43 ft	80 ft	156.78 ft – 159 ft	236.78 ft – 239 ft
465+72.06	468+75.91	303.85 ft	80 ft	159 ft	239 ft
468+75.91	469+59.49	83.58 ft	80 ft	159 ft – 80 ft	239 ft – 160 ft
469+59.49	933+77.15	46,419.13 ft*	80 ft	80 ft	160 ft

*Station Equation: Sta. 470+04.92 Back = Sta. 470+03.45 Ahead

2.3 ROADWAY CLASSIFICATION

The portion of US 98 from north of West Socrum Loop Road to Rock Ridge Road is functionally classified as "Urban Principal Arterial Other" while the portion from Rock Ridge Road to south of CR 54 is functionally classified as "Rural Principal Arterial Other". The existing context classifications for the study corridor are summarized in **Table 2-2**.

Table 2-2 Existing Context Classification

Begin Limit	End Limit	Context Classification
North of West Socrum Loop Road	Rock Ridge Road	C3R – Suburban Residential
Rock Ridge Road	CR 54	C2 – Rural

2.4 EXISTING LAND USE

The predominant existing land uses adjacent to US 98 are low density and rural residential, conservation/recreation/vacant lands, and agricultural land uses. There are some isolated commercial land uses (e.g. Central Florida Paintball, Shell/Circle K, Chevron, Dollar General, Conibear RV Center, Red Top Pit Stop Restaurant, Ronnie's Carpets and Clark's Nursery) within the study corridor. There is also a large 55+ residential development (i.e., Cypress Lakes) and associated 36-hole golf course located on the west side of US 98 south of Rock Ridge Road. The primary conservation/recreational land uses include the Green Swamp Wilderness Preserve, Colt Creek State Park, Gator Creek Reserve, and the Gator Creek Campground/RV Park. A graphic illustrating the land uses adjacent to US 98 is provided in **Appendix C.**

2.5 HORIZONTAL AND VERTICAL ALIGNMENTS

There are four horizontal curves within the study limits. The degree of horizontal curvature ranges from 0° 30' 00" to 2° 00' 00". The horizontal alignment for this project is summarized in **Table 2-3.** The roadway profile is at an elevation of 136 feet (North American Vertical Datum of 1988 (NAVD 88)) near West Socrum Loop Road and gradually descends to a minimum elevation of 91 feet just south of CR 54.

Table 2-3 Existing Horizontal Alignment

Baseline PI Station	Bearing		Degree of Curvature	Radius	Length
	Back	Ahead			
453+29.78	N 0° 13' 26" E	N 46° 57' 33" W	2° 00' 00"	2,864.79 ft	2,336.77 ft
Station Equation: Sta. 470+04.92 Back = Sta. 470+03.45 Ahead					
548+16.46	N 46° 57' 33" W	N 24° 38' 26" W	1° 00' 00"	5,729.58 ft	2,231.87 ft
631+98.65	N 24° 38' 26" W	N 43° 40' 44" W	1° 00' 00"	5,729.58 ft	1,903.85 ft
843+08.69	N 43° 40' 44" W	N 57° 43' 24" W	0° 30' 00"	11,459.16 ft	2,808.88 ft
933+77.15	N 57° 43' 24" W	N 57° 43' 7" W	N/A	N/A	N/A
Station Equation: Sta. 933+77.15 Back = Sta. 933+82.19 Ahead					

2.6 PEDESTRIAN FACILITIES

There are no existing sidewalks or shared use paths on US 98 within the study limits. Pedestrian crossing signals are located in the northeast and northwest quadrants of the Rock Ridge Road intersection. There is also a pedestrian crosswalk on the north leg of this intersection; however, some of the existing pavement markings are worn and no longer visible.

2.7 BICYCLE FACILITIES

There are no designated bicycle lanes on US 98 within the study limits; however, there are four-foot paved outside shoulders available for bicycle use.

2.8 TRANSIT FACILITIES

There is no existing transit service currently available along the project corridor.

2.9 LIGHTING

There is no existing mainline lighting along US 98 within the study limits. Limited lighting exists at or near several intersections (i.e., Cypress Lakes Boulevard, Pioneer Drive and Little Cypress Drive) and these lights are attached to utility poles. In addition, there is also some lighting at the gas station/convenience stores located in the northeast and northwest quadrants of the Rock Ridge Road intersection.

2.10 INTERSECTION LAYOUT

There are 11 intersections within the study corridor and ten of these are T-intersections. The Rock Ridge Road intersection is a four-legged intersection. Nine of these intersections are controlled by stop signs on the cross street approach. There is a flashing signal at the SR 471 intersection. This signal displays yellow on the US 98 approaches and red on the SR 471 approach and therefore, operates as a stop controlled intersection. For the purposes of this PD&E study, eight intersections were identified and are listed as follows:

- Big Cypress Boulevard
- Pioneer Drive
- Little Cypress Drive
- Rock Ridge Road
- Lakeland Acres Road
- SR 471
- Old Dade City Road
- CR 54

The existing intersection lane configurations are depicted in **Figure 2-2**. Peak hour traffic operations analyses were conducted for these intersections and the results of the existing conditions analyses are discussed in **Section 2.15**.

2.11 SIGNALIZED INTERSECTIONS

The only signalized intersection within the study corridor limits is the Rock Ridge Road intersection.

2.12 POSTED SPEEDS

The posted speed limit throughout a majority of the study corridor is 60 mph. The posted speed limit is reduced to 55 mph in the southbound travel direction approximately 1,125 feet north of the West Socrum Loop Road intersection. Vehicle speeds were recorded for 72 hours from March 16, 2021, through March 18, 2021, at the following three mainline locations:

- South of Big Cypress Boulevard
- South of Rock Ridge Road
- South of SR 471

The average speed ranged from 54.2 mph to 63.4 mph, while the 85th-percentile speed ranged from 61.5 mph to 69.2 mph. The highest speeds were recorded on US 98 south of SR 471.

2.13 RAILROAD CROSSINGS

There are no railroad crossings within the study corridor limits.

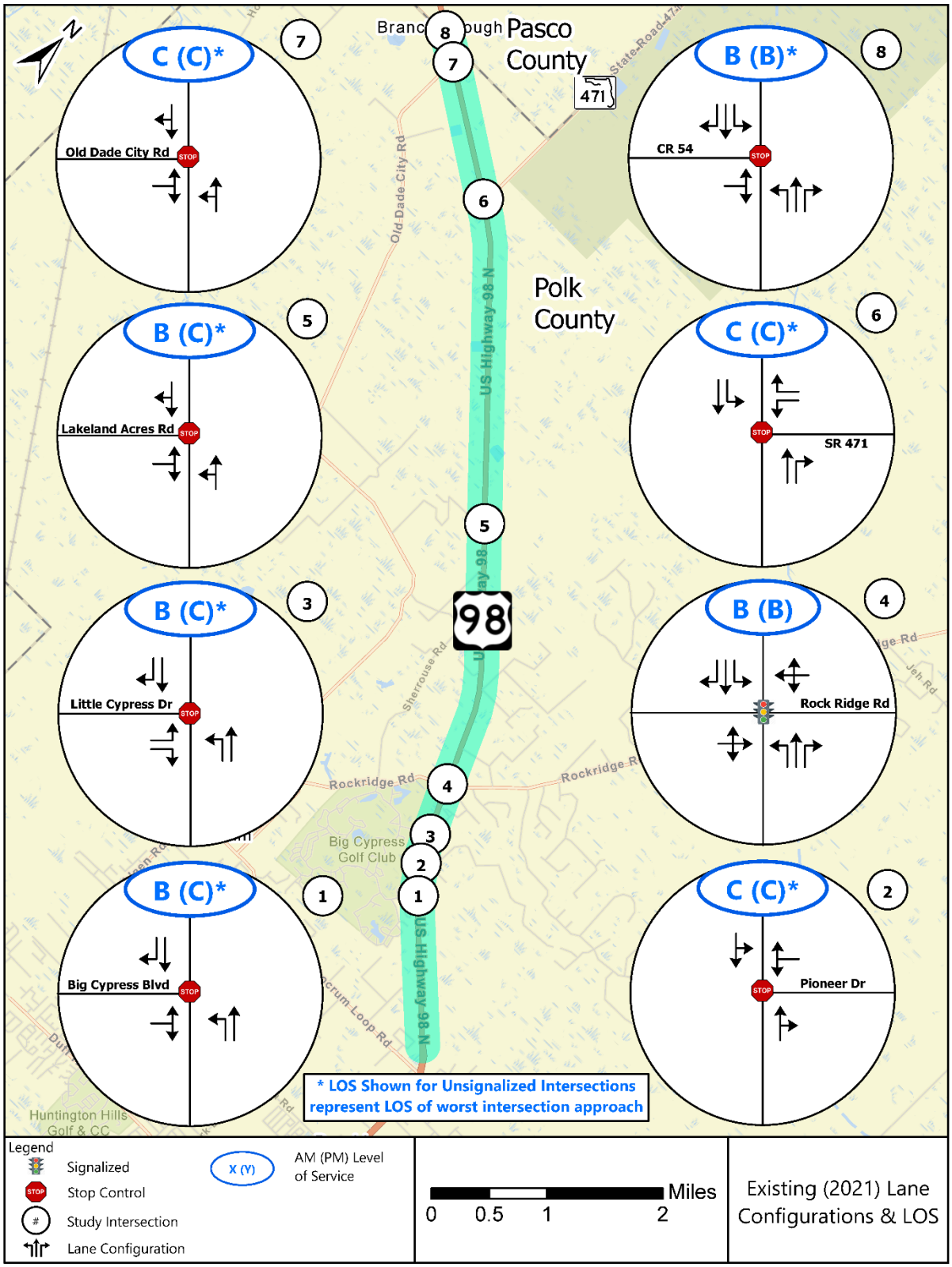


Figure 2-2 Existing (2021) Lane Configurations & LOS

2.14 DRAINAGE SYSTEMS

Stormwater runoff is collected in roadside ditches that outfall to adjacent wetlands and ultimately convey to the Hillsborough and Withlacoochee River watersheds. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), portions of the project intersect Zone A of the 100-year floodplain in multiple areas. These areas are associated with adjacent wetlands and depressional areas and have a 1% probability of flooding every year with predicted flood water elevations that have not been established. There are no federally regulated floodways within the project limits.

The topography of the project area is relatively flat, with a gradual downhill slope from the southern end of the study corridor to the northern end. US 98 does not traverse any Outstanding Florida Waters within the study corridor and is located within the following three Waterbody Identification Numbers (WBIDs):

- WBID No. 1445 – Port Lonesome Ditches
- WBID No. 1449B – Orange Hammock Drain
- WBID No. 1454 – Fox Branch

There are 19 existing cross drains underneath US 98 and three bridge culverts within the study corridor limits. The cross drains and bridge culverts allow for conveyance of offsite and onsite runoff beneath the road. The existing cross drains and bridge culverts are summarized in **Table 2-4**.

Table 2-4 Existing Cross Drains and Bridge Culverts

Structure No.	Station	Description	Remarks
CD-1	463+36	42” RCP	
CD-2	472+52	30” RCP	
CD-3	489+64	5’W x 3’H CBC	
CD-4	499+51	24” RCP	
CD-5	559+35	5’W x 3’H CBC	
CD-6	580+00	42” RCP	
CD-7	597+50	Triple 24” RCP	
CD-8	625+00	10’W x 3’H CBC	
CD-9	655+00	4’W x 3’H CBC	
CD-10	666+00	30” RCP	
CD-11	682+00	30” RCP	
CD-12	725+00	Double 30” RCP	
CD-13	738+00	8’W x 4’H CBC	
CD-14	750+00	24” RCP	
CD-15	766+00	24” RCP	
BC-1	784+50	Double 10’W x 2’H BC	Main Stream
BC-2	849+00	Quadruple 10’W x 3’H BC	Fox Branch
CD-16	867+00	36” RCP	

Structure No.	Station	Description	Remarks
CD-17	888+50	10'W x 2'H CBC	
BC-3	914+00	Triple 10'W x 2'H BC	Cypress Run
CD-18	921+24	10'W x 3'H CBC	
CD-19	929+00	5'W x 3'H CBC	

There are currently four existing drainage basins within the project limits. These drainage basins are part of the Hillsborough River and Withlacoochee River watersheds. Existing drainage basin limits were determined by reviewing Southwest Florida Water Management District (SWFWMD) watershed data and 1-foot contours taken from LiDAR data. The existing drainage basins are summarized in **Table 2-5**.

Table 2-5 Existing Drainage Basins

Basin	Begin Stations	End Station
1	455+50	503+98
2	503+98	633+58
3	633+58	784+49
4	784+49	934+35

2.15 EXISTING TRAFFIC CONDITIONS

This section provides a brief summary of the existing traffic conditions information. A more thorough discussion of the existing daily and peak hour traffic volumes, as well as the existing peak hour traffic operations analyses that were conducted in support of this project, is provided in the *PTAR* prepared under separate cover in March, 2022.

2.15.1 Existing Year (2021) Traffic Volumes

A traffic count program was conducted during the 72-hour periods from March 16, 2021, through March 18, 2021, and from March 30, 2021, through April 1, 2021. Bi-directional volume counts were conducted at 15 locations (including the cross streets) and bi-directional vehicle classification counts were conducted at four locations. **Figure 2-3** illustrates the 2021 Average Annual Daily Traffic (AADT) volumes for the study corridor. The 2021 AADT volumes on the US 98 mainline range from 11,500 vehicles per day (vpd) to 18,500 vpd. The existing daily truck percentages range between 15% and 20%.

Manual turning movement counts were also conducted on March 16, 2021, at the following eight intersections:

- Big Cypress Boulevard
- Pioneer Drive
- Little Cypress Drive
- Rock Ridge Road
- Lakeland Acres Road
- SR 471
- Old Dade City Road
- CR 54

The existing a.m. and p.m. peak hour intersection volumes are also illustrated in **Figure 2-3**.

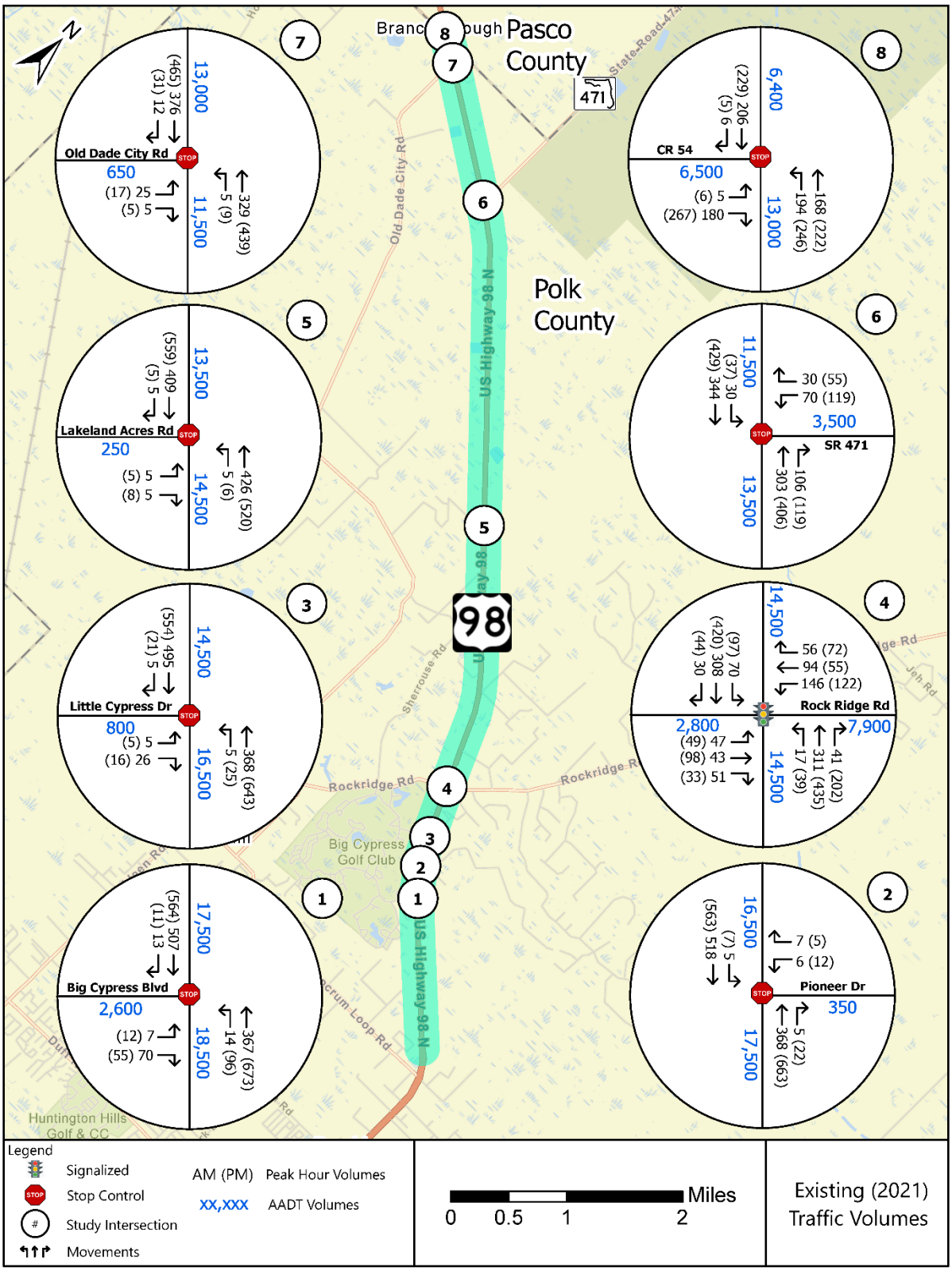


Figure 2-3 Existing (2021) Traffic Volumes

2.15.2 Existing Year (2021) Levels of Service

Three major roadway segments within the project limits were analyzed using the Generalized Level of Service tables provided in FDOT's *2020 Quality/Level of Service Handbook*. **Table 2-6** summarizes the results of the peak hour roadway segment analysis. Two of the three segments are currently operating at Level of Service C in both travel directions. The segment from north of West Socrum Loop Road to Rock Ridge Road is operating at Level of Service C in the southbound direction and Level of Service D in the northbound direction.

Table 2-6 Existing Year (2021) Roadway Segment LOS

Roadway Segment	Direction	From	To	Segment Length	Existing Year (2021)		
					Typical Section	DDHV	LOS
US 98	NB	North of West Socrum Loop Road	Rock Ridge Road	2.206	2-Lane, Undivided with LT & RT	769	D
	SB				2-Lane, Undivided with RT Only	619	C
	NB	Rock Ridge Road	SR 471	5.100	2-Lane, Undivided with RT Only	556	C
	SB				2-Lane, Undivided with LT & RT	567	C
	NB	SR 471	CR 54 (Polk/Pasco County Line)	1.460	2-Lane, Undivided with LT & RT	468	C
	SB				2-Lane, Undivided with LT Only	496	C

Table 2-7 summarizes the results of the peak hour traffic operations analyses conducted for the eight study intersections using the SYNCHRO software. All of the intersection approaches at the unsignalized intersections are currently operating at Level of Service C or better during both peak hours. In addition, all of the individual unsignalized intersection movements are currently operating at Level of Service D or better. In addition, the Rock Ridge Road signalized intersection is operating at Level of Service B overall during both peak hours.

Table 2-7 Existing Year (2021) Overall Intersection Operations

US 98 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]
Big Cypress Boulevard	TWSC (T-intersection)[3]	14.6 (NEB)	B	19.1 (NEB)	C
Pioneer Drive	TWSC (T-intersection)[3]	15.4 (SWB)	C	24.4 (SWB)	C
Little Cypress Drive	TWSC (T-intersection)[3]	13.4 (NEB)	B	15.6 (NEB)	C
Rock Ridge Road	Signalized	14.6	B	13.1	B
Lakeland Acres Road	TWSC (T-intersection)[3]	14.5 (EB)	B	17.4 (EB)	C
SR 471	TWSC (T-intersection)[3]	16.8 (SB)	C	24.7 (SB)	C
Old Dade City Road	TWSC (T-intersection)[3]	16.3 (NB)	C	17.3 (NB)	C

US 98 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]
CR 54	TWSC (T-intersection)[3]	12.0 (EB)	B	12.8 (EB)	B

1 Average Delay (Seconds/Vehicle)
2 Level of Service
3 For unsignalized intersections, worst approach delay is presented rather than overall intersection delay

2.16 CRASH HISTORY

This section provides a brief summary of the crash history in the US 98 study corridor. A more thorough discussion of the crash data and crash data analysis is provided in the *Project Traffic Analysis Report* (PTAR) prepared under separate cover in March 2022. Crash data for the five-year period from January 1, 2014, through December 31, 2018, was obtained from the State Safety Office Geographic Information System (SSOGIS) platform. **Table 2-8** summarizes the number of total, fatal, injury and property damage only crashes that occurred during each of these five years. A total of 173 crashes occurred during this five-year period. Nine crashes involved fatalities, 84 crashes involved injuries and 80 crashes involved property damage only. Eight of the nine fatal crashes occurred on the portion of US 98 from Rock Ridge Road to CR 54.

Table 2-8 Five-Year Historical Crash Data, by Severity (2014-2018)

	2014	2015	2016	2017	2018	Grand Total
Fatality	3	1	1	1	3	9
Injury	13	21	14	20	16	84
Property Damage Only	17	19	15	11	18	80
Grand Total	**33**	**41**	**30**	**32**	**37**	**173**

Table 2-9 summarizes the types of crashes that occurred between 2014 and 2018. The predominant crash types are rear-end crashes (23.7%), left-turn crashes (12.1%), sideswipe crashes (9.8%) and off-road crashes (9.8%). There were no crashes involving bicyclists or pedestrians.

Table 2-9 Five-Year Historical Crash Data, by Type (2014-2018)

Crash Type	2014	2015	2016	2017	2018	Total Occurrences	% of Total Crashes
Angle	1	3	1	3	3	11	**6.36%**
Animal	1	0	1	1	1	4	**2.31%**
Head On	1	1	2	1	3	8	**4.62%**
Left Turn	6	5	3	5	2	21	**12.14%**
Off Road	7	0	5	1	4	17	**9.83%**
Other	5	9	6	6	10	36	**20.81%**
Rear End	5	13	10	8	5	41	**23.70%**
Rollover	0	1	1	0	1	3	**1.73%**
Sideswipe	5	6	1	4	1	17	**9.83%**
Unknown	2	3	0	2	6	13	**7.51%**
Hit Object on Roadway	0	0	0	1	1	2	**1.16%**
Grand Total	**33**	**41**	**30**	**32**	**37**	**173**	**100.00%**

Table 2-10 summarizes the field conditions that were present for all of the crashes. A majority of the crashes occurred during daylight under clear and dry conditions. However, approximately 31.8% of the crashes occurred during dark non-lighted conditions and approximately 20.2% occurred on wet road surfaces. The most recent fatal and severe injury crash data (covering the period from January 1, 2019, through March 1, 2021) was also obtained from the SSOGIS database. Six fatal crashes and two serious injury crashes occurred during this time frame. Four of these eight crashes were head-on crashes.

Table 2-10 Five-Year Historical Crash Data, by Field Conditions (2014-2018)

Lighting							
Condition	**2014**	**2015**	**2016**	**2017**	**2018**	**No. of Crashes**	**% of Total Crashes**
Dark - Lighted	4	1	2	1	0	8	**4.62%**
Dark - Not Lighted	11	10	11	14	9	55	**31.79%**
Dark - Unknown Lighting	0	0	0	0	1	1	**0.58%**
Dawn	0	0	0	2	1	3	**1.73%**
Daylight	15	27	16	14	23	95	**54.91%**
Dusk	2	3	1	1	1	8	**4.62%**
Unknown	1	0	0	0	2	3	**1.73%**
Total	**33**	**41**	**30**	**32**	**37**	**173**	**100.00%**

Table continued on following page

Weather							
Condition	**2014**	**2015**	**2016**	**2017**	**2018**	**No. of Crashes**	**% of Total Crashes**
Clear	23	31	24	24	25	127	**73.41%**
Cloudy	1	3	0	2	6	12	**6.94%**
Fog, Smog, Smoke	0	1	0	2	0	3	**1.73%**
Other	1	0	0	0	1	2	**1.16%**
Rain	8	6	6	4	5	29	**16.76%**
Total	**33**	**41**	**30**	**32**	**37**	**173**	**100.00%**
Road Surface							
Condition	**2014**	**2015**	**2016**	**2017**	**2018**	**No. of Crashes**	**% of Total Crashes**
Dry	24	33	23	28	27	135	**78.03%**
Unknown	1	0	0	0	2	3	**1.73%**
Wet	8	8	7	4	8	35	**20.23%**
Total	**33**	**41**	**30**	**32**	**37**	**173**	**100.00%**

2.17 UTILITIES

Overhead utilities are located throughout the project limits. The existing utility agencies/owners (UAO's) within the study corridor are summarized in **Table 2-11.**

Table 2-11 Utility Companies and Facilities

Utility Company	Facilities
AT&T Transmission Mr. Michael Gamboa 818-859-9747 mgamboa@sdt-1.com	Buried Fiber Optic Cables along the north side of Rock Ridge Road.
City of Lakeland – Electric Ms. Hanna Greenfield 863-834-6428 Hannah.greenfield@lakelandelectric.com	12.47kV Overhead electric lines on the west side of US 98 spanning from south of W. Socrum Loop Road to Rock Ridge Road. The 12.47 kV electric line transitions to the east side of US 98 from Rock Ridge Road to Perkle Road.
Duke Transmission Mr. Scott Vanvelzor 727-332-9403 svanvelzor@pike.com	Electric substation parcel located on the east side of US 98 just north of Lakeland Acres Road. 230 kV overhead electric lines are located on both sides of US 98 extending from the substation parcel to the Pasco County line.
Frontier Florida, LLC Mr. Fred Valdes 863-688-9714 Fred.n.valdes@ftr.com	Buried telephone and fiber optic cables run along the west side of US 98 for the entire project limits. A buried telephone cable runs along the east side of US 98 from south of W. Socrum Loop Road to Rock Ridge Road. A buried telephone line runs on the east side of US 98 from north of Rock Ridge Road to Keen Road. An overhead telephone line is located on the east side of US 98 and extends from SR 471 to Old Dade City Road.
Level 3 Communications (Century Link) Mr. Ron Prario 407-754-0116 ron.prario@lumen.com	A buried fiber optic cable runs along the east side of US 98 from SR 471 to the Pasco County line.

Utility Company	Facilities
Spectrum Sunshine State, LLC Mr. Darin Daniels 863-333-4764 Darin.daniels@charter.com	Overhead fiber optic cables are located on the west side of US 98 and extend from south of W. Socrum Loop Road to north of Rock Ridge Road. The overhead fiber optic line becomes overhead television and crosses over to the east side of US 98 from north of Rock Ridge Road and extends to north of Earnest Road. Overhead fiber optic and television lines are located on Rock Ridge Road.
TECO Peoples Gas Mr. Shawn Winsor 407-420-6663 swinsor@tecoenergy.com	A 12" coated steel gas main is located on the east side of US 98 and extends from Rock Ridge Road to the Pasco County line.
Uniti Fiber LLC Mr. Terry Young 251-422-3872 Terry.Young@uniti.com	Buried fiber optic cables are located on the west side of US 98 and extend from Rock Ridge Road to the Pasco County line.
Zayo Group LLC Central Mailbox 1-866-364-8033 ZayoFLRelocations@zayo.com	Buried fiber optic cables are located on the west side of US 98 and extend from south of W. Socrum Loop Road to south of Central Florida Paintball.

2.18 SOILS AND GEOTECHNICAL DATA

The soil survey of Polk County, Florida, (2020) published by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) was reviewed for the project vicinity. The USDA Soil Survey Geographic (SSURGO) database was also obtained from the SWFWMD and was compared to the NRCS soil surveys. There are 25 different soil types located within the study corridor; however, the predominant soil types are Hydrologic Soil Groups (HSG) A/D and C/D. If a soil is assigned to a dual HSG, the first letter applies to drained areas while the second letter applies to un-drained areas.

Group A soils have low runoff potential and high infiltration rates even when thoroughly wetted. They primarily consist of deep, well to excessively drained sand or gravel and have a high rate of water transmission. Group C soils have low infiltration rates when thoroughly wetted and primarily consist of soils with a layer that impedes downward movement of water. Group D soils have high runoff potential and very low infiltration rates when thoroughly wetted. They primarily consist of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface and shallow soils over nearly impervious material. The groundwater depth varies from 0 feet to six feet along the study corridor. A graphic illustrating soil types adjacent to US 98 is provided in **Appendix D**.

2.19 ACCESS MANAGEMENT

The existing access management classification is Access Class 4. The spacing standards for Access Class 4 are as follows:

- Signalized intersection – 2,640 feet

- Driveway connection – 440 feet

Since Access Class 4 is associated with non-restrictive medians, directional and full median opening spacings do not apply to the existing condition. There are 11 roadway intersections and many direct driveway connections located within the study corridor limits.

2.20 STRUCTURES

There are three existing bridge culverts located within the study corridor limits. These bridge culverts are all maintained by FDOT District One.

The existing bridge over Main Stream (Bridge No. 160152) is a reinforced concrete culvert that was built in 1946. The structure is composed of 2 (10 feet wide by 3 feet high by 98 feet long) concrete box culverts. The structure has a sufficiency rating of 91.7 and a health index of 99.66.

The existing bridge over Fox Branch (Bridge No. 160052) is a reinforced concrete culvert that was built in 1947. The structure is composed of 4 (11 feet wide by 3 feet high by 101 feet long) concrete box culverts. The structure has a sufficiency rating of 86.5 and a health index of 34.75.

The existing bridge over Cypress Run (Bridge No. 160053) is a reinforced concrete culvert that was built in 1947. The structure is composed of 3 (10 feet wide by 2 feet high by 98 feet long) concrete box culverts. The structure has a sufficiency rating of 89.1 and a health index of 35.04.

2.21 NAVIGABLE WATERWAYS

There are no navigable waterways within the study corridor limits.

3 PROJECT DESIGN CONTROLS & CRITERIA

3.1 ROADWAY CONTEXT CLASSIFICATION

The existing and future context classifications for the study corridor are as follows:

- North of West Socrum Loop Road to Rock Ridge Road – C3R (Suburban Residential)
- Rock Ridge Road to south of CR 54 – C2 (Rural)

3.2 DESIGN CONTROL AND CRITERIA

The design criteria used to establish the proposed improvements for the US 98 study corridor adhere to the 2022 FDOT Design Manual (FDM) and are listed in **Table 3-1.** Twelve-foot travel lanes are utilized in the C3R portion of the project corridor to accommodate truck traffic. Conversely, 11-foot travel lanes are utilized in the C2 portion of the project corridor to facilitate lower travel speeds.

Table 3-1 Design Criteria

Design Element				West Socrum Loop Road to Rock Ridge Road	Rock Ridge Road to CR 54	Source
Typical Section	Context Classification			C3R - Suburban	C2 - Rural	FDOT D1
	Design Speed			45 mph	55 mph	Table 201.5.1
	Lane Widths			12 ft	11 ft	FDOT D1
	Minimum Median Width			22 ft	30 ft	Table 210.3.1
	Shoulder Width	Outside	Full	0 ft	10 ft	Table 210.4.1
			Paved	0 ft	5 ft	Table 210.4.1
		Inside	Full	0 ft	4 ft	Ch. 210.5.1
			Paved	0 ft	4 ft	Ch. 210.5.1
	Border Width			14 ft	40 ft	Table 210.7.1
Horizontal	Min. Stopping Sight Distance			360 ft	495 ft	Table 210.11.1
	Max. Deflection Without Curve			1° 00' 00"	0° 45' 00"	Ch. 210.8.1
	Length of Curve	Desirable		675 ft	825 ft	Table 210.8.1
		Minimum		400 ft	400 ft	Table 210.8.1
	Max. Superelevation			0.05	0.10	Table 210.9.1 Table 210.9.2
	Max. Curvature (e = NC)			1,528 ft	9,949 ft	Table 210.9.1 Table 210.9.2
Vertical	Max. Grade (Flat Terrain)			6%	4%	Table 210.10.1
	Max. Change in Grade without Vertical Curve			0.70%	0.50%	Table 210.10.2
	Crest Curve	K Value		98	185	Table 210.10.3
		Min. Length		135 ft	350 ft	Table 210.10.4
	Sag Curve	K Value		79	115	Table 210.10.3
		Min. Length		135 ft	250 ft	Table 210.10.4
Shared Use Path	Design Speed			18 mph		Ch. 224.9
	Paved Width			10 ft		Ch. 224.4
	Max. Grade (Flat Terrain)			5%		Ch. 224.6
	Horizontal Clearance			4 ft		Ch. 224.7
	Max. Curvature (Cross Slope = +2%)			74 ft		Table 224.10.1
	Max. Curvature (Cross Slope = -2%)			86 ft		Table 224.10.1
	Separation from Roadway			5 ft from face of curb		Ch. 224.12

4 ALTERNATIVES ANALYSIS

The objective of the alternatives analysis process is to identify technically and environmentally sound alternatives that meet the Purpose and Need for the project, are cost-effective and are acceptable to the community. This section describes the alternatives considered and the results of the alternatives evaluation.

4.1 FUTURE TRAFFIC CONDITIONS

The future year traffic forecasting and traffic analysis conducted for this PD&E study are fully documented in the *Project Traffic Analysis Report* (March 2022) prepared under separate cover. The future year traffic forecasting was accomplished with the use of the adopted Year 2040 District One Regional Planning Model (D1RPM). This was the most current version of the D1RPM available at the time in 2020 when the traffic forecasting was conducted. No-Build and Build Alternative models were developed and the 2040 AADT volumes projected by these models were used to calculate future year growth rates. The future year growth rates were subsequently applied to the existing (2021) AADT volumes to derive the design year (2045) AADT volumes for the PD&E study. **Figure 4-1** and **Figure 4-2** illustrate the 2045 AADT volumes for the No-Build and Build Alternatives, respectively. The 2045 No-Build Alternative AADT volumes on the US 98 mainline range from 20,000 vpd to 27,500 vpd. The 2045 Build Alternative AADT volumes on the US 98 mainline range from 25,500 vpd to 32,000 vpd.

The 2045 peak hour intersection volumes were subsequently derived using the 2045 AADT volumes, along with standard K-factors, selected D-factors and the existing peak hour turning movement percentages. The 2045 a.m. and p.m. peak hour intersection volumes are also graphically illustrated in **Figure 4-1** (No-Build Alternative) and **Figure 4-2** (Build Alternative). It should be noted that FDOT District 7 is determining the recommended intersection configuration/control type for the CR 54 intersection as part of their US 98 PD&E study (FPID No. 443368-2). The 2045 peak hour volumes documented in **Figure 4-1** and **Figure 4-2** for the CR 54 intersection were used in the District 7 study.

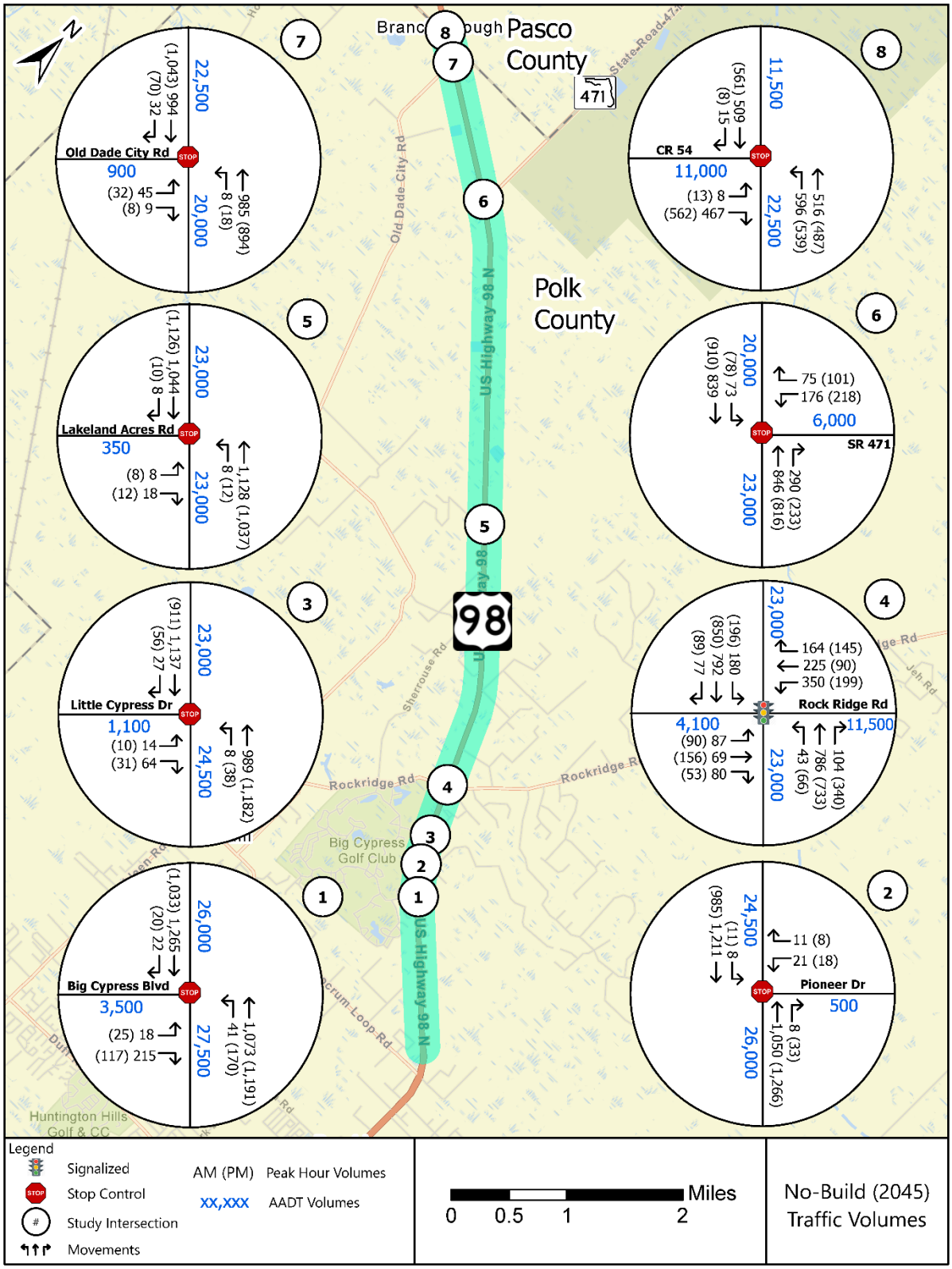


Figure 4-1 No-Build (2045) Traffic Volumes

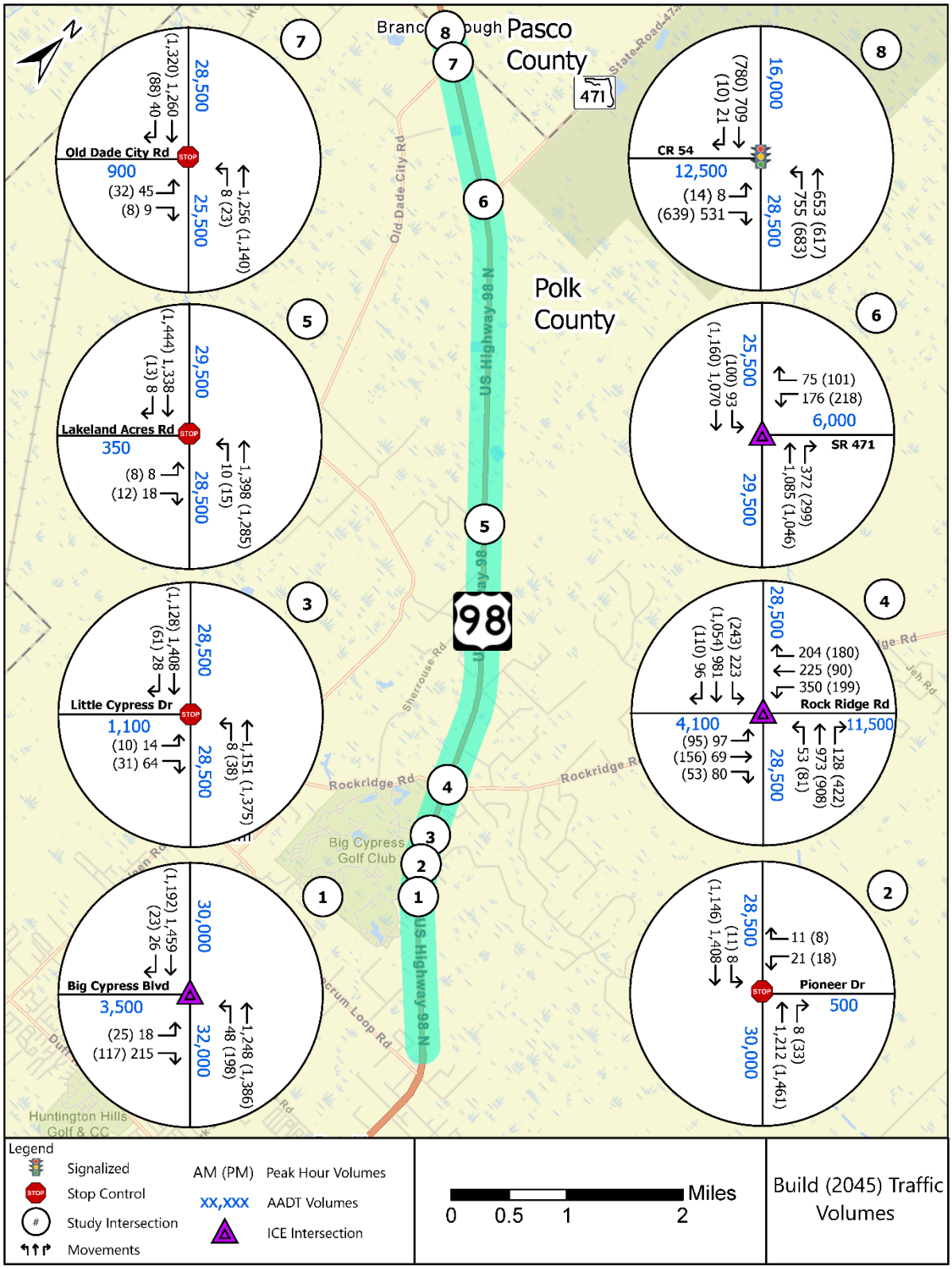


Figure 4-2 Build (2045) Traffic Volumes

4.2 NO-BUILD ALTERNATIVE

The No-Build Alternative assumes that US 98 will remain as a two-lane undivided roadway through the design year 2045 with only routine maintenance being conducted during this period. Three major roadway segments within the project limits were analyzed using the Generalized Level of Service tables provided in FDOT's *2020 Quality/Level of Service Handbook*. **Table 4-1** summarizes the results of the No-Build Alternative peak hour roadway segment analysis. All three segments are projected to operate at Level of Service E in both travel directions. This is below the target level of service (i.e., Level of Service D) established for this facility.

Table 4-1 Design Year (2045) No-Build Roadway Segment LOS

Roadway Segment	Direction	From	To	Segment Length	No-Build (2045)		
					Typical Section	DDHV	LOS
US 98	NB	North of West Socrum Loop Road	Rock Ridge Road	2.206	2-Lane, Undivided with LT & RT	1,361	E
	SB				2-Lane, Undivided with RT Only	1,480	E
	NB	Rock Ridge Road	SR 471	5.100	2-Lane, Undivided with RT Only	1,136	E
	SB				2-Lane, Undivided with LT & RT	1,138	E
	NB	SR 471	CR 54 (Polk/Pasco County Line)	1.460	2-Lane, Undivided with LT & RT	1,112	E
	SB				2-Lane, Undivided with LT Only	1,123	E

Table 4-2 summarizes the results of the No-Build Alternative peak hour traffic operations analyses conducted for the eight study intersections using the SYNCHRO software. Six of the seven unsignalized intersections are projected to have at least one cross street approach operating at Level of Service F during both peak hours. The eastbound approach at the Little Cypress Drive intersection is projected to operate at Level of Service E during both peak hours. In addition, the Rock Ridge Road signalized intersection is projected to operate at Level of Service F overall during both peak hours.

Table 4-2 Design Year (2045) No-Build Alternative Intersection Analysis Summary

US 98 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]
Big Cypress Boulevard	TWSC (T-intersection)[3]	586.4 (NEB)	F	800.0 (NEB)	F
Pioneer Drive	TWSC (T-intersection)[3]	234.9 (SWB)	F	219.6 (SWB)	F
Little Cypress Drive	TWSC (T-intersection)[3]	49.5 (NEB)	E	47.7 (NEB)	E
Rock Ridge Road	Signalized	201.2	F	81.4	F
Lakeland Acres Road	TWSC (T-intersection)[3]	84.5 (EB)	F	95.5 (EB)	F
SR 471	TWSC (T-intersection)[3]	>1000 (SB)	F	>1000 (SB)	F

US 98 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]
Old Dade City Road	TWSC (T-intersection)[3]	387.8 (NB)	F	247.2 (NB)	F
CR 54	TWSC (T-intersection)[3]	672.0 (EB)	F	861.3 (EB)	F

1 Average Delay (Seconds/Vehicle)
2 Level of Service (LOS E or worse in red)
3 For unsignalized intersections, worst approach delay is presented rather than overall intersection delay

The following are the advantages and disadvantages associated with the No-Build Alternative:

Advantages of the No-Build Alternative

- No inconvenience to traffic flow due to construction
- No right-of-way acquisition, design, or construction cost
- No direct effects to adjacent natural and human environments

Disadvantages of the No-Build Alternative

- Increased traffic congestion causing increased road user costs due to travel delay
- Not consistent with the local transportation plans
- Increased potential for vehicular crashes due to congested lanes and intersections
- Increased evacuation times and emergency vehicle response times
- Increased potential for crashes between vehicles and pedestrians/bicyclists due to the absence of sidewalks and bicycle lanes
- Increased vehicle emission pollutants due to higher levels of traffic congestion

The No-Build Alternative will remain a viable alternative throughout this PD&E study.

4.3 TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS ALTERNATIVES

Transportation Systems Management and Operations (TSM&O) alternatives are designed to maximize the efficiency of the existing facility through operational improvements and/or travel demand management. The TSM&O improvements generally include intersection improvements (i.e., changes in traffic signal phasing and timing, providing additional turn lanes, lengthening existing turn lanes), access management improvements (i.e., closing or modifying existing median openings) and/or advanced traffic monitoring/notification systems. The additional roadway capacity required to accommodate the design year traffic volumes on US 98 at an acceptable level of service cannot be provided through the implementation of these types of improvements; however, the TSM&O strategy of access management is included as a component of the Build Alternative.

4.4 MULTI-MODAL ALTERNATIVES

Public transit (bus) service is not currently provided within the study corridor and there is no future service identified in the Polk TPO's 2045 Cost-Feasible LRTP.

4.5 ALTERNATIVE CORRIDORS

Constructing a new roadway in a corridor outside of the existing US 98 corridor would result in significant environmental impacts, residential relocations and an overall cost that would be prohibitive. Based on the analysis of the surrounding area, the existing US 98 corridor is the only viable corridor for the proposed improvements.

4.6 BUILD ALTERNATIVE EVALUATIONS

The Build Alternative assumes that US 98 will be widened to a four-lane divided roadway. Three major roadway segments within the project limits were analyzed using the Generalized Level of Service tables provided in FDOT's *2020 Quality/Level of Service Handbook*. **Table 4-3** summarizes the results of the Build Alternative peak hour roadway segment analysis. All three segments are projected to operate at Level of Service C in both travel directions. This is above the target level of service (i.e., Level of Service D) established for this facility.

Table 4-3 Design Year (2045) Build Alternative Roadway Segment LOS

Roadway Segment	Direction	From	To	Segment Length	Build (2045)		
					Typical Section	DDHV	LOS
US 98	NB	North of West Socrum Loop Road	Rock Ridge Road	2.206	4-Lane, Divided with LT & RT	1,584	C
	SB				4-Lane, Divided with LT & RT	1,674	C
	NB	Rock Ridge Road	SR 471	5.100	4-Lane, Divided with LT Only	1,457	C
	SB				4-Lane, Divided with LT & RT	1,457	C
	NB	SR 471	CR 54 (Polk/Pasco County Line)	1.460	4-Lane, Divided with LT & RT	1,408	C
	SB				4-Lane, Divided with LT & RT	1,419	C

Design year peak hour traffic operations analyses were conducted for seven of the eight US 98 intersections. As stated earlier in **Section 4.1**, FDOT District 7 determined the recommended intersection configuration/control type for the CR 54 intersection as part of their US 98 PD&E study. The FDOT's Intersection Control Evaluation (ICE) process was utilized to determine the recommended intersection control strategy for the Big Cypress Boulevard, Rock Ridge Road, and SR 471 intersections. The ICE technical memorandums and forms were prepared under separate cover for the respective intersections.

The ICE process can be conducted in up to three stages depending on the level of analysis needed to determine what the recommended intersection control strategy/configuration should be. A Stage 1 ICE analysis was conducted for all three of these intersections and a Stage 2 ICE analysis was conducted for the Rock Ridge Road intersection. The Stage 1 ICE included Capacity Analysis for Planning of Junctions (CAP-X) and Safety Performance for Intersection Control Evaluation (SPICE). The Stage 2 ICE included more detailed intersection analysis conducted using the SYNCHRO and SIDRA software, a more detailed SPICE analysis and a Benefit-Cost (B/C) ratio comparison of alternatives.

The results and recommendations of the Stage 1 ICE analysis are summarized in **Table 4-4.** The ICE memos and signed forms prepared under separate cover provide additional details. Roundabouts are recommended for both the Big Cypress Boulevard and SR 471 intersections. The following two alternative control strategies were recommended for advancement to Stage 2 for the Rock Ridge Road intersection:

- Partial Median U-Turn (PMUT) intersection
- Improved conventional signalized intersection

Table 4-4 Design Year (2045) Build Alternative Stage 1 ICE Summary

Intersection	Intersection Configurations	SPICE Ranking	CAP-X			Advance to Stage 2?
			Multi-modal Score	Overall AM V/C Ratio	Overall PM V/C Ratio	
Big Cypress Boulevard	TWSC (Base Build)	1	3.7	2.35	5.86	No
	Roundabout (2x1)	2	5.6	0.67	0.67	N/A[2]
	RCUT (Unsignalized)	3	4.4	2.48	0.91	No
Rock Ridge Road	Signal (Base Build)	6	4.8	1.03	0.78	No
	Roundabout (2x1)	1	5.6	1.94	0.98	No
	Median U-turn	2	6.3	0.82	0.73	No
	RCUT (Signalized)	7	6.3	0.66	0.61	No
	Partial Displaced Left-Turn	5	4.8	0.73	0.64	No
	NE Quadrant Roadway	-	4.4	0.71	0.57	No
	Partial Median U-turn	3	6.3	0.81	0.71	**Yes**
	Improved Traffic Signal[1]	4	4.8	0.90	0.78	**Yes**
SR 471	Signal (Base Build)	5	7.2	0.57	0.55	No
	Roundabout (2x1)	1	8.3	0.71	0.71	N/A[2]
	RCUT (Signalized)	6	9.4	0.57	0.57	No
	Partial Displaced Left-Turn	4	7.2	0.50	0.50	No
	Continuous Green Tee	2	4.4	0.57	0.55	No
	Partial Median U-turn	3	9.4	0.56	0.53	No

1. Improved Traffic Signal includes adding a left-turn lane to the westbound approach and modified the signal to operate as Split Phased.
2. Alternative was selected as the preferred after Stage One ICE analysis.

The results of the Stage 2 ICE analysis are summarized in **Table 4-5**. The B/C analysis revealed that although the PMUT provided a slight safety benefit over the improved signalized intersection, the signalized intersection provided an equal weighted delay benefit over the PMUT. The Rock Ridge Road intersection serves as the primary crossroads for small retail in the area. An improved signalized intersection would provide the least disruption to the retail businesses in the vicinity of the intersection and was therefore determined to be the recommended alternative for this location.

Table 4-5 Design Year (2045) Build Alternative Stage 2 ICE Summary

Intersection	Intersection Configurations	SPICE Ranking	Opening Year (2025) Delay (s)		Design Year (2045) Delay (s)		Overall B/C Ratio	Selected Alternative?
			AM	PM	AM	PM		
Rock Ridge Road	Partial Median U-turn	1	31.8	28.4	52.1	40.3	0.13	No
	Improved Traffic Signal[1]	2	28.9	27.6	58.3	42.9	N/A[2]	**Yes**

1. Improved Traffic Signal includes adding a left-turn lane to the westbound approach and modified the signal to operate as Split Phased.
2. Improved Traffic Signal served as the base condition to compare against; no B/C ratio

The results of the detailed 2045 a.m. and p.m. peak hour SIDRA and SYNCHRO traffic operations analyses conducted for the recommended alternatives for these three intersections are summarized in **Table 4-6** and **Table 4-7**, respectively. The Big Cypress Boulevard and SR 471 roundabouts are both projected to operate at Level of Service C or better during both peak hours. The Rock Ridge Road signalized intersection is projected to operate at Level of Service F overall in the a.m. peak hour and Level of Service E overall in the p.m. peak hour. The average overall intersection delays for the Rock Ridge Road Build Alternative are better (lower) than the delays projected for the No-Build Alternative. These overall levels of service could be improved with the provision of more exclusive turn lanes on the eastbound and westbound intersection approaches; however, this would require the acquisition of ROW along Rock Ridge Road, which is a non-State roadway.

The other study intersections were analyzed using only SYNCHRO. Their assumed median access configurations are provided below (in parentheses).

- Pioneer Drive (directional median opening)
- Little Cypress Drive (directional median opening)
- Lakeland Acres Road (full median opening)
- Old Dade City Road (directional median opening)

These median opening configurations were proposed as part of the development of the overall US 98 corridor access management plan and were approved by the FDOT District One Access Management staff. The design year peak hour traffic operations analysis results for these four unsignalized

intersections are summarized in **Table 4-8**. The cross-street approaches at three of the four non-ICE intersections are projected to operate at Level of Service C or better during both peak hours. The eastbound approach at the Lakeland Acres Road intersection is projected to operate at Level of Service F during both peak hours.

Table 4-6 Design Year (2045) ICE Intersection Preferred Build Alternative AM Peak Hour Operations

US 98 Intersection	Intersection Type	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]
Big Cypress Boulevard[4]	Roundabout	**Overall**	-	**13.5**	**B**	-
		SEB	Thru	11.7	B	143.6
			Thru/Right	11.7	B	143.6
		NWB	Left/Thru	9.9	A	105.8
			Thru	9.7	A	105.8
		NEB	Left/Right	46.1	E	117.5
Rock Ridge Road[5]	Improved Traffic Signal	**Overall**	-	**114.4**	**F**	-
		EB	Left/Thru/Right	235.8	F	695
		WB	Left	136.9	F	752.5
			Thru/Right	255.0	F	1200
		NB	Left	41.4	D	67.5
			Thru	85.3	F	820
			Right	17.1	B	175
		SB	Left	179.4	F	485
			Thru	54.4	D	687.5
			Right	19.1	B	115
SR 471[4]	Roundabout	**Overall**	-	**17.3**	**C**	-
		EB	Left/Thru	15.6	C	255.9
			Thru	15.6	C	255.9
		WB	Thru	17.0	C	169.3
			Thru/Right	17.0	C	169.3
		SB	Left	29.7	D	76.1
			Right	19.7	C	26.2

1. Average Delay (Seconds/Vehicle)
2. Level of Service
3. 95th-percentile Queue Length (Feet)
4. Results from SIDRA Report
5. Results from HCM 6th Edition Report from Synchro

Table 4-7 Design Year (2045) ICE Intersection Preferred Build Alternative PM Peak Hour Operations

US 98 Intersection	Intersection Type	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]
Big Cypress Boulevard[4]	Roundabout	**Overall**	-	**12.2**	**B**	-
		SEB	Thru	11.6	B	145.5
			Thru/Right	11.6	B	145.5
		NWB	Left/Thru	12.6	B	165.1
			Thru	12.4	B	165.1
		NEB	Left/Right	14.6	B	35
Rockridge Road[5]	Improved Traffic Signal	**Overall**	-	**72.8**	**E**	-
		EB	Left/Thru/Right	101.4	**F**	520
		WB	Left	58.3	**E**	280
			Thru/Right	113.4	**F**	492.5
		NB	Left	46.5	D	100
			Thru	97.5	**F**	707.5
			Right	33.2	C	530
		SB	Left	82.9	**F**	335
			Thru	57.2	**E**	647.5
			Right	15.4	B	112.5
SR 471[4]	Roundabout	**Overall**	-	**14.5**	**B**	-
		EB	Left/Thru	16.2	C	302.3
			Thru	16.2	C	302.3
		WB	Thru	11.1	B	129.1
			Thru/Right	11.1	B	129.1
		SB	Left	23.9	C	81.1
			Right	16.2	C	29.6

1. Average Delay (Seconds/Vehicle)
2. Level of Service
3. 95th-percentile Queue Length (Feet)
4. Results from SIDRA Report
5. Results from HCM 6th Edition Report from Synchro

A predictive crash analysis was also conducted to further quantify the benefits of the proposed improvements using the Highway Safety Manual (HSM) Part C Predictive Method. The American Association of State Highway and Transportation Officials' (AASHTO's) HSM Part C Predictive Method estimates crash frequency and severity. The predictive method utilizes safety performance functions (SPFs) which are equations that estimate the average crash frequency as a function of traffic volume and roadway characteristics, including number of lanes, median type, and shoulder widths. This predictive crash analysis was conducted for eight mainline roadway segments and seven study intersections.

The HSM spreadsheet tools provided by AASHTO were used to conduct the analyses. The HSM analyses were conducted for the 20-year period from 2025 through 2045. Some of the Build Alternative intersection configurations could not be accounted for in the spreadsheets, so Crash Modification Factors (CMF's) were used where applicable.

Table 4-8 Design Year (2045) Build Alternative Intersection Analysis Summary

US 98 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]
Big Cypress Boulevard	ICE Analysis	N/A	N/A	N/A	N/A
Pioneer Drive	TWSC (T-intersection)[3]	15.9 (SWB)	C	16.8 (SWB)	C
Little Cypress Drive	TWSC (T-intersection)[3]	20.4 (NEB)	C	13.8 (NEB)	B
Rock Ridge Road	ICE Analysis	N/A	N/A	N/A	N/A
Lakeland Acres Road	TWSC (T-intersection)[3]	77.9 (EB)	F	97.7 (EB)	F
SR 471	ICE Analysis	N/A	N/A	N/A	N/A
Old Dade City Road	TWSC (T-intersection)[3]	17.4 (NB)	C	15.2 (NB)	C
CR 54[4]	Signalized	-	-	-	-

1. Average Delay (Seconds/Vehicle)
2. Level of Service (LOS E or worse in Red)
3. For unsignalized intersections, worst approach delay is presented rather than overall intersection delay
4. FDOT D7 project recommending a signalized alternative for this intersection and will conduct an ICE analysis

The HSM analysis results for the No-Build Alternative are summarized in **Table 4-9** (roadway segments) and **Table 4-10** (intersections). The total number of crashes predicted to occur within the study area over the 20-year period is approximately 1,587. The total present value of these crashes is approximately $402.9 million (in 2021 dollars).

Table 4-9 No-Build HSM Analysis Segment Results

Segment Number	Segment Name	F/I	PDO	Total	Present Value of Segment Crashes
1	Socrum Loop Road to Big Cypress Drive	57.90	157.01	214.91	$31,285,391.91
2	Big Cypress Drive to Pioneer Drive	7.95	21.56	29.52	$4,297,772.93
3	Pioneer Drive to Little Cypress Drive	46.36	126.97	173.33	$25,235,600.44
4	Little Cypress Drive to Rockridge Road	11.61	31.42	43.03	$6,252,274.87
5	Rockridge Road to Lakeland Acres Road	85.72	181.33	267.05	$87,896,307.75
6	Lakeland Acres Road to SR 471	102.57	216.97	319.54	$104,815,797.55
7	SR 471 to Old Dade City Road	38.44	81.31	119.75	$39,341,091.11
8	Old Dade City Road to CR 54	5.50	11.63	17.13	$5,616,200.58
TOTAL		**356.06**	**828.20**	**1,184.26**	**$304,740,437.14**

Table 4-10 No-Build HSM Analysis Intersection Results

Intersection Number	Intersection Name	F/I	PDO	Total	Present Value of Intersection Crashes
1	Big Cypress Drive	13.43	28.08	41.51	$6,051,760.43
2	Pioneer Drive	12.37	17.54	29.91	$4,358,509.50
3	Little Cypress Drive	8.51	14.12	22.62	$3,296,972.74
4	Rockridge Road	29.27	61.30	90.57	$13,191,947.31
5	Lakeland Acres Road	21.31	30.04	51.35	$16,830,819.54
6	SR 471	38.87	54.79	93.66	$30,573,173.69
7	Old Dade City Road	30.24	42.62	72.86	$23,843,772.09
TOTAL		**153.99**	**248.48**	**402.48**	**$98,146,955.30**

The HSM analysis results for the Build Alternative are summarized in **Table 4-11** (roadway segments) and **Table 4-12** (intersections). The total number of crashes predicted to occur within the study area over the 20-year period is approximately 1,165. The total present value of these crashes is approximately $312.7 million (in 2021 dollars).

Table 4-11 Build Alternative HSM Analysis Segment Results

Segment Number	Segment Name	F/I	PDO	Total	Present Value of Segment Crashes
1	Socrum Loop Road to Big Cypress Drive	42.72	120.88	163.60	$23,763,713.91
2	Big Cypress Drive to Pioneer Drive	5.89	16.66	22.55	$3,275,138.30
3	Pioneer Drive to Little Cypress Drive	36.15	102.34	138.49	$20,117,130.36
4	Little Cypress Drive to Rockridge Road	9.41	26.62	36.04	$5,215,189.48
5	Rockridge Road to Lakeland Acres Road	106.06	113.13	219.18	$71,279,186.66
6	Lakeland Acres Road to SR 471	135.45	144.71	280.16	$90,857,276.63
7	SR 471 to Old Dade City Road	48.46	50.44	98.90	$32,065,177.70
8	Old Dade City Road to CR 54	8.11	8.62	16.73	$5,425,242.01
TOTAL		**392.27**	**583.39**	**975.66**	**$251,998,055.05**

A comparison of the No-Build and Build Alternative analysis results indicates the proposed improvements are anticipated to prevent approximately 43 fatal and injury crashes and 379 property damage only crashes, resulting in a present value of approximately $90.2 million.

Table 4-12 Build Alternative HSM Analysis Intersection Results

Intersection		Analysis Output			CMF ID	CMF Value	Intersection CMF Applied			
#	Name	F/I	PDO	Present Value of Crashes			F/I	PDO	Total	Present Value Of intersection Crashes
1	Big Cypress Drive	13.57	28.49	$5,651,085.92	9403	0.280	3.80	7.98	11.78	$1,582,304.06
2	Pioneer Drive	7.89	11.22	$2,566,007.00	3007	0.860	6.79	9.65	16.44	$2,206,766.02
3	Little Cypress Drive	9.46	15.75	$3,385,734.15	3007	0.860	8.14	13.54	21.68	$2,911,731.37
4	Rockridge Road	1.63	3.24	$10,485,616.68	N/A	N/A	1.63	3.24	4.86	$10,485,616.68
5	Lakeland Acres Road	25.20	36.78	$20,019,993.77	N/A	N/A	25.20	36.78	61.99	$20,019,993.77
6	SR 471	21.21	37.50	$18,910,165.54	9403	0.280	5.94	10.50	16.44	$5,294,846.35
7	Old Dade City Road	27.34	38.11	$21,108,959.61	3007	0.860	23.51	32.78	56.29	$18,153,705.27
TOTAL							**75.01**	**114.47**	**189.47**	**$60,654,963.51**

1. CMF ID 3007: Convert the full median opening on the major approach of an unsignalized 3-leg intersection to a directional median opening.
2. CMF ID 9403: Convert intersection with minor road stop control to a roundabout.

4.7 ALTERNATIVE COMPARISON

An evaluation matrix comparing the No-Build Alternative to the Build Alternative is shown in **Table 4-13**. The evaluation matrix includes environmental effects, residential and business relocations, ROW needs, and project costs. The potential for the proposed widening to impact archaeological/historic sites, noise sensitive sites, and threatened and endangered species were also qualified in the matrix. The bottom portion of the matrix details cost estimates for ROW acquisition, wetland mitigation, design, and construction engineering and inspection. Construction costs were estimated using the FDOT Long Range Estimate (LRE) provided in **Appendix E**.

Table 4-13 Evaluation Matrix

Evaluation Criteria	No-Build Alternative	Build Alternative
Purpose & Need		
Improves Transportation Network Connectivity?	✘	✓
Improves Operational Conditions?	✘	✓
Improves Safety Conditions?	✘	✓

Evaluation Criteria	No-Build Alternative	Build Alternative
Potential Right-of-Way Impacts		
Relocations (Business / Residential)	0 / 0	0 / 0
Number of Parcels Impacted	0	42
Right-of-Way Required (acres)	0	60.6
Potential Environmental Effects		
Archaeological & Historic Sites	0	0
Section 4(f) Resources	0	0
Contamination Sites (Medium / High)	0 / 0	4 / 2
Wetlands (acres)	0	48.9
Surface Waters (acres)	0	11.1
Floodplains (acre-feet)	0	19.6
Threatened & Endangered Species	None	Low
Estimated Costs (in millions)		
Right-of-Way Acquisition	$0	$15 M
Wetland Mitigation	$0	$1.3 M
Final Design & Construction	$0	$105 M
Construction Engineering & Inspection	$0	$10 M
Preliminary Estimate of Total Project Cost	**$0**	**$131 M**

1 Mitigation Cost is based on mitigation bank credit cost and an estimate of wetland function and value loss associated with wetland impacts.
2 Right-of-way cost estimates were prepared by FDOT in February 2022.
3 Construction costs were prepared by FDOT in February 2022.

5 PUBLIC INVOLVEMENT & PUBLIC HEARING

5.1 PUBLIC INVOLVEMENT

A comprehensive Public Involvement Plan (PIP) was prepared in April 2021 outlining the strategies used to address public engagement and outreach over the course of the study. The PIP also documented various public outreach methods including a project website, newsletters, public meetings, and a public hearing. Numerous agencies were identified that would have an interest in the US 98 PD&E Study. The agency mailing list contained representatives from the Environmental Technical Advisory Team (ETAT) including federal and state government officials, and state permitting agencies.

Coordination with FDOT District 7 was carried out during the study to determine project termini and intersection control evaluation responsibility. Through this coordination, it was determined that the District 7 project (FPID 443368-2) would include the CR 54 intersection and that the District One project would terminate south of CR 54 at approximately Sta. 930+00.00.

A public meeting was held for the Cypress Lakes community on Thursday, July 22, 2021, from 10:00 a.m. to 12:00 p.m. at the Cypress Lakes Community Clubhouse. The public meeting had 164 attendees as well as five consultant personnel and two FDOT staff members. The community had expressed concern over the proposed changes to US 98, particularly near the entrances to Cypress Lakes, and requested a presentation be given to community residents. A presentation on the status of the project, including the PD&E alternatives and project schedule, was given at the meeting. After the presentation, the public was directed to view two roundabout display boards and staff answered questions regarding how to safely navigate roundabouts. Ten written comments expressing concerns with property impacts, safety, drainage, and/or funding were received. As a result of comments received from this public meeting, modifications were made to the Preferred Alternative to provide a full median opening for the Veterans of Foreign Wars (VFW) Post 8002 building.

Three presentations were made to the Technical Advisory Committee (TAC) of the Polk County Transportation Planning Organization (TPO). These presentations took place on December 2, 2021, July 28, 2022, and September 13, 2022. Two presentations were also made to the Polk County TPO Board on December 8, 2021, and October 13, 2022. These presentations provided an overview of the project, including project limits, adjacent projects, and schedule.

5.2 PUBLIC HEARING

A hybrid public hearing was held on Thursday, March 31, 2022, from 5:00 p.m. to 7:00 p.m. at the New Life Assembly of God in Lakeland, Florida. The hearing was attended by 106 citizens. No public officials were in attendance. The virtual portion of the public hearing had 41 of the 106 citizens in attendance and was moderated by consultant staff present at the public hearing location. The Preferred Alternative was presented to the public and attendees were provided the opportunity to offer public testimony and/or written comments regarding the project, or to provide comments

within a 14-day comment period. Five citizens provided verbal comments during the public testimony portion and 6 written comments were received at the hearing. There were also an additional 21 comments received via comment forms and/or online during the 14-day comment period ending on April 14, 2022. A complete summary of the public hearing and public involvement activities for this project is provided in the Comments and Coordination Report prepared under separate cover.

6 DESIGN FEATURES OF THE PREFERRED ALTERNATIVE

6.1 TYPICAL SECTIONS

The Preferred Alternative is a four-lane divided roadway throughout the project limits. The typical section for the portion of US 98 from north of West Socrum Loop Road to Rock Ridge Road includes 12-foot travel lanes, curb and gutter along the inside and outside edges of pavement, a 22-foot grassed median, and 10-foot shared use paths on both sides of the roadway. This typical section is illustrated in **Figure 6-1**. Design, target, and posted speeds of 45 mph are proposed for this 2.3-mile section of the project. The decision to utilize 12-foot travel lanes was to accommodate truck traffic along the project corridor.

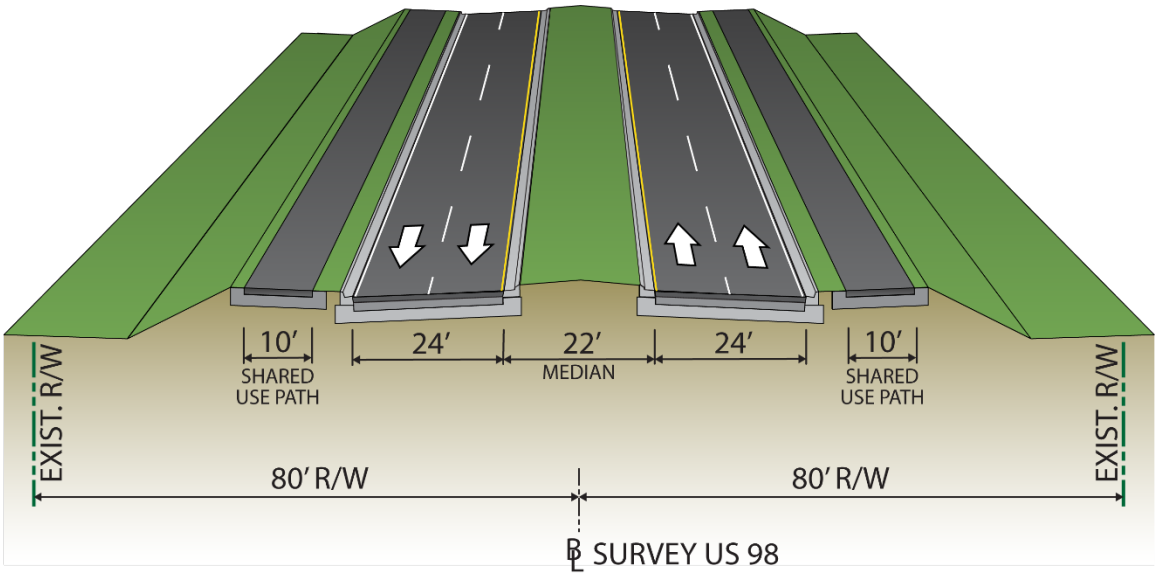


Figure 6-1 Proposed US 98 C3R (Suburban) Typical Section

The typical section for the portion of US 98 from Rock Ridge Road to CR 54 includes 11-foot travel lanes, four-foot paved shoulders with curb and gutter on the inside, 10-foot outside shoulders (five feet paved), and a 30-foot grassed median. A design variation was approved by District One in July 2022 for the 11-foot travel lanes and is further discussed in **Section 6.1.1**. This typical section is illustrated in **Figure 6-2**. Design, target, and posted speeds of 55 mph are proposed for this 6.4-mile section of the project.

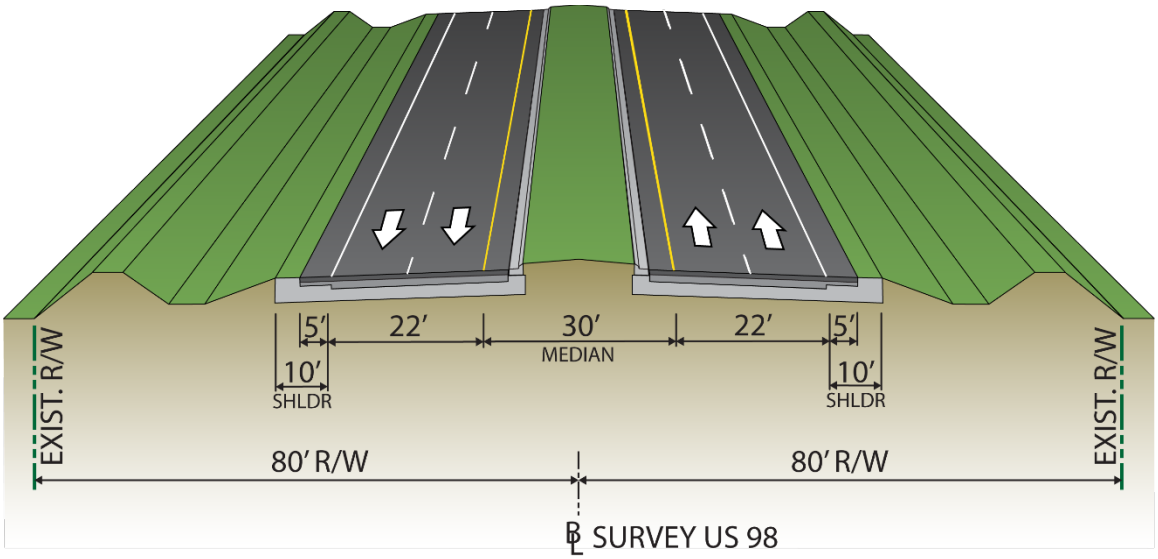


Figure 6-2 Proposed US 98 C2 (Rural) Typical Section

Both typical sections can be accommodated within the existing 160-foot-wide ROW. Stormwater runoff will be collected and conveyed to SMFs that will be constructed along the corridor. Impacts to adjacent floodplains will be mitigated through the construction of FPC sites. The approved typical section package for the Preferred Alternative is included in **Appendix A**.

6.1.1 Design Variations and Design Exceptions

The design criteria used for this project is provided in **Table 3-1.** The preferred alternative required variations for border width, front slopes, and lane width within the C2 (Rural) typical section. The proposed border width is 33 feet as opposed to 40 feet as required by the FDM. A 1:5 maximum front slope is proposed to conserve ROW while still accommodating clear zone requirements. The proposed lane width of 11 feet will allow other proposed improvements to be constructed within existing ROW. Narrower travel lanes also promote lower operating speeds which helps to reduce the severity of crashes. Design variation documentation is provided in **Appendix F**. No design exceptions are anticipated.

6.2 BICYCLE & PEDESTRIAN ACCOMODATIONS

The Preferred Alternative provides 10-foot shared use paths on both sides of the roadway from North of West Socrum Loop Road to Rock Ridge Road to enhance pedestrian and bicycle mobility. The shared use paths are displayed in **Appendix B**. Designated bicycle and pedestrian facilities are not proposed for US 98 north of Rock Ridge Road; however, five-foot paved shoulders are provided on both sides of the roadway.

6.3 INTERSECTION LAYOUT

The Preferred Alternative intersection geometry for the major intersections is illustrated in **Figure 6-3** and is also depicted on the Preferred Alternative concept plans included in **Appendix B**. The Preferred Alternative intersection geometry includes two-lane roundabouts at Big Cypress Boulevard and SR 471, as well as signalized intersections at Rock Ridge Road and CR 54. As stated earlier in **Section 4.1**, FDOT District 7 determined the recommended intersection configuration for the CR 54 intersection as part of their US 98 PD&E study.

6.4 RIGHT-OF-WAY NEEDS AND RELOCATIONS

The existing ROW width along a majority of the study corridor is 160 feet. The Preferred Alternative is centered within the existing ROW. An additional 60.6 acres of ROW is needed to construct the proposed roadway and drainage improvements. Additional ROW is needed at the Big Cypress Boulevard and SR 471 intersections, as well as at several proposed U-turn bulb-out locations. No residential or business relocations are anticipated. The proposed ROW required for the Preferred Alternative is identified on the concept plans provided in **Appendix B**.

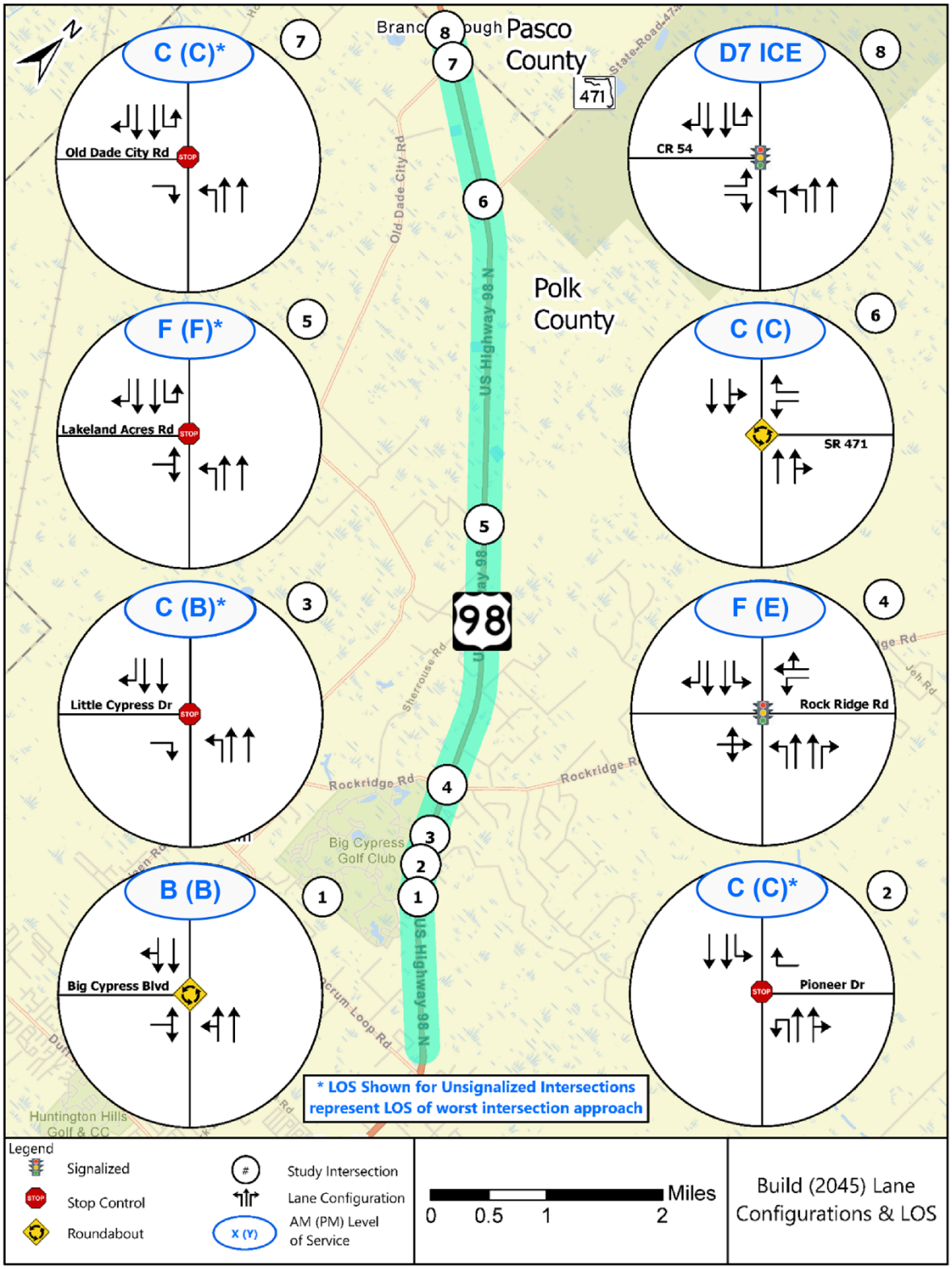


Figure 6-3 Build (2045) Lane Configurations & LOS

6.5 ACCESS MANAGEMENT

The Preferred Alternative access management plan was developed using Access Class 3 for the entire study corridor with restrictive median openings to regulate access. The spacing standards for Access Class 3 are as follows:

- Signalized intersection – 2,640 feet
- Full median opening – 2,640 feet
- Directional median opening – 1,320 feet
- Driveway connection – 440 feet

The access management plan includes nine full median openings and 18 directional median openings from West Socrum Loop Road to CR 54. One southbound-to-northbound U-turn bulb-out and two northbound-to-southbound U-turn bulb-outs are provided at three of the directional median openings. The design vehicle for the proposed bulb-outs is the WB-62FL freight truck. The approved access management plan is summarized in **Appendix G** and has been incorporated into the Preferred Alternative concept plans provided in **Appendix B**.

6.6 UTILITY IMPACTS

Widening US 98 will require some relocation of existing utilities within existing FDOT ROW. FDOT coordination with potentially affected utility owners will continue throughout future project design and construction phases. Project design efforts will seek to avoid or minimize impacts to existing utilities to the extent feasible within the roadway ROW. The utility agencies/owners known to operate facilities within the project corridor are shown in **Table 6-1** and a complete utility conflict matrix is provided in **Appendix H**.

Table 6-1 Utility Companies and Facilities

Utility Company	Facilities
AT&T Transmission Mr. Michael Gamboa 818-859-9747 mgamboa@sdt-1.com	Buried Fiber Optic Cables along the north side of Rock Ridge Road.
City of Lakeland – Electric Ms. Hanna Greenfield 863-834-6428 Hannah.greenfield@lakelandelectric.com	12.47kV Overhead electric lines on the west side of US 98 spanning from south of W. Socrum Loop Road to Rock Ridge Road. The 12.47 kV electric line transitions to the east side of US 98 from Rock Ridge Road to Perkle Road.
Duke Transmission Mr. Scott Vanvelzor 727-332-9403 svanvelzor@pike.com	Electric substation parcel located on the east side of US 98 just north of Lakeland Acres Road. 230 kV overhead electric lines are located on both sides of US 98 extending from the substation parcel to the Pasco County line.
Frontier Florida, LLC Mr. Fred Valdes 863-688-9714 Fred.n.valdes@ftr.com	Buried telephone and fiber optic cables run along the west side of US 98 for the entire project limits. A buried telephone cable runs along the east side of US 98 from south of W. Socrum Loop Road to Rock Ridge Road. A buried telephone line runs on the east side of US 98 from north of Rock Ridge Road to Keen Road.

Utility Company	Facilities
	An overhead telephone line is located on the east side of US 98 and extends from SR 471 to Old Dade City Road.
Level 3 Communications (Century Link) Mr. Ron Prario 407-754-0116 ron.prario@lumen.com	A buried fiber optic cable runs along the east side of US 98 from SR 471 to the Pasco County line.
Spectrum Sunshine State, LLC Mr. Darin Daniels 863-333-4764 Darin.daniels@charter.com	Overhead fiber optic cables are located on the west side of US 98 and extend from south of W. Socrum Loop Road to north of Rock Ridge Road. The overhead fiber optic line becomes overhead television and crosses over to the east side of US 98 from north of Rock Ridge Road and extends to north of Earnest Road. Overhead fiber optic and television lines are located on Rock Ridge Road.
TECO Peoples Gas Mr. Shawn Winsor 407-420-6663 swinsor@tecoenergy.com	A 12" coated steel gas main is located on the east side of US 98 and extends from Rock Ridge Road to the Pasco County line.
Uniti Fiber LLC Mr. Terry Young 251-422-3872 Terry.Young@uniti.com	Buried fiber optic cables are located on the west side of US 98 and extend from Rock Ridge Road to the Pasco County line.
Zayo Group LLC Central Mailbox 1-866-364-8033 ZayoFLRelocations@zayo.com	Buried fiber optic cables are located on the west side of US 98 and extend from south of W. Socrum Loop Road to south of Central Florida Paintball.

Additionally, a conduit for future fiber connectivity will be provided from the southern end of the project limit to the signalized intersection at Rock Ridge Road. The conduit will be comprised of one 4" outer duct housing two 1.25" inner ducts and one 1" inner duct.

6.7 TEMPORARY TRAFFIC CONTROL PLAN

The proposed construction of the US 98 widening can be accomplished in four phases. Phase 1A will require the construction of temporary pavement adjacent to the existing pavement. Ponds and floodplain compensation sites will be constructed to accommodate the proposed roadway improvements. Phase 1B will convert the southbound roadway into a two-lane road and construct the improvements on the northbound roadway. Phase 2 will convert the newly constructed northbound roadway into a two-lane road and construct the improvements on the southbound roadway. Phase 3 will shift traffic onto the northbound and southbound roadways providing a single lane in each direction and complete the construction of any remaining median. Phase 4 will apply friction course and final signing and pavement markings.

6.8 PRELIMINARY DRAINAGE ANALYSIS

6.8.1 Location Hydraulics

A Location Hydraulics Report (LHR) was prepared under separate cover in November 2021 and can be found in the project file. This document was prepared to address base floodplain encroachments resulting from the roadway improvements evaluated in the PD&E study. The intent is to avoid or minimize highway encroachments within the 100-year floodplains and to avoid encouraging land use development incompatible with floodplain values. The Preferred Alternative does not encroach into any regulatory floodways. Portions of the project intersect Zone A of the 100-year floodplain in multiple locations and 13 Floodplain Impact Areas (FIAs) were identified. These areas are associated with adjacent wetlands and depressional areas and have a 1% probability of flooding every year with predicted flood water elevations that have not been established. Approximately 19.49 acre-feet of 100-year floodplain volume is impacted within the project limits.

A preliminary analysis of the cross drains was conducted to determine whether the existing cross drains would have adequate capacity if they were lengthened. Replacement of these cross drains is anticipated due to an increase in headwater elevations caused by extension of the pipes, the need to relocate the pipe, or age and remaining service life. **Table 6-2** provides a summary of the proposed cross drain sizes. The proposed cross drains will be hydraulically equivalent to or greater than the existing cross drains, and backwater surface elevations are not expected to increase. Therefore, the project will not affect existing flood heights or floodplain limits. There will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes and it has been determined that this encroachment is not significant.

Table 6-2 Summary of Cross Drains

Structure No.	Station	Existing Condition				Proposed Condition				Remarks
		# of Barrels	Size	Type	Length (ft)	# of Barrels	Size	Type	Length (ft)	
CD-1	463+36	1	42"	RCP	186	1	48"	RCP	221	Upsize
CD-2	472+52	1	30"	RCP	100	1	36"	RCP	160	Upsize
CD-3	489+64	1	5' X 3'	CBC	98	1	5' X 3'	CBC	160	Replace
CD-4	499+51	1	24"	RCP	99	1	30"	RCP	160	Upsize
CD-5	559+35	1	5' X 3'	CBC	101	1	5' X 3'	CBC	160	Replace
CD-6	580+00	1	42"	RCP	103	1	48"	RCP	160	Upsize
CD-7	597+50	3	24"	RCP	101	3	30"	RCP	160	Upsize
CD-8	625+00	1	10' X 3'	CBC	101	1	10' X 3'	CBC	160	Replace
CD-9	655+00	1	4' X 3'	CBC	98	1	4' X 3'	CBC	160	Replace
CD-10	666+00	1	30"	RCP	103	1	36"	RCP	160	Upsize
CD-11	682+00	1	30"	RCP	100	1	36"	RCP	160	Upsize
CD-12	725+00	2	30"	RCP	103	3	30"	RCP	160	Upsize
CD-13	738+00	1	8' X 4'	CBC	99	1	8' X 4'	CBC	160	Replace
CD-14	750+00	1	24"	RCP	109	1	30"	RCP	160	Upsize
CD-15	766+00	1	24"	RCP	100	1	30"	RCP	160	Upsize

Structure No.	Station	Existing Condition				Proposed Condition				Remarks
		# of Barrels	Size	Type	Length (ft)	# of Barrels	Size	Type	Length (ft)	
BC-1	784+50	2	10' X 2'	BC	98	2	10' X 2'	BC	160	Replace
BC-2	849+00	4	10' X 3'	BC	101	4	10' X 3'	BC	160	Replace
CD-16	867+00	1	36"	RCP	100	1	42"	RCP	160	Upsize
CD-17	888+50	1	10' X 2'	CBC	98	1	10' X 2'	CBC	160	Replace
BC-3	914+00	3	10' X 2'	BC	98	3	10' X 2'	BC	160	Replace

6.8.2 Stormwater Management

A Pond Siting Report (PSR) was prepared under separate cover in November 2021 and can be found in the project file. This document was prepared to estimate the volume required to mitigate for stormwater impacts and to identify the ROW needed to construct the necessary off-site stormwater management facilities. The PSR identified seven pond sites and 15 floodplain compensation sites. The stormwater runoff for the project will be collected and conveyed to the recommended stormwater management facilities for each basin via either curb and gutter (for the portion from north of West Socrum Loop Road to Rock Ridge Road) or ditches (for the portion from Rock Ridge Road to south of CR 54). The stormwater management facilities will provide water quality (treatment) and water quantity (attenuation). The method of stormwater treatment for this project consists of wet detention. Following the public hearing in March 2022, further analysis was completed which resulted in the modification of the limits of Pond 3D-2.

Table 6-3 provides a summary of the ROW requirements associated with each of the recommended pond sites and floodplain compensation sites. The locations of the pond and floodplain compensation sites are shown in the Preferred Alternative Concept Plans in **Appendix B**. The sizes of these facilities were estimated using SWFWMD and FDOT water quality treatment and attenuation requirements. Approximately 59.3 acres of ROW will be needed for the stormwater management facilities.

In accordance with Part 2, Chapter 11 of the FDOT PD&E Manual, a Water Quality Impact Evaluation (WQIE) (November 2021) was prepared under separate cover for the project. The Preferred Alternative is expected to have no significant impact on water quality and quantity.

Table 6-3 Stormwater Management Facility Area Requirements

PD&E Description	Design Description	Area (ac)
Pond 1A	Pond 1	2.11
Pond 2C-2	Pond 3	4.27
Pond 2D-1	Pond 2	6.62
Pond 3D-1	Pond 4	3.74
Pond 3D-2 Option 2	Pond 5A	7.00

PD&E Description	Design Description	Area (ac)
FPC 5C	FPC 5A	1.84
FPC 5D	FPC 5B	1.04
FPC 5E	FPC 5C	0.83
FPC 6A	FPC 6A	1.75
FPC 6C	FPC 6B	3.32

PD&E Description	Design Description	Area (ac)
Pond 4C-2	Pond 6	6.83
Pond 4D-1	Pond 7	6.26
FPC 1B	FPC 1	2.74
FPC 2A	FPC 2	0.76
FPC 3B	FPC 3	0.62
FPC 4C	FPC 4	4.42
FPC 7B	FPC 7	1.07
FPC 8A	FPC 8	0.80
FPC 10A	FPC 10	0.63
FPC 11A	FPC 11	0.87
FPC 12A	FPC 12	0.65
FPC 13A	FPC 13	1.14
Total		**59.31**

6.9 HORIZONTAL AND VERTICAL GEOMETRY

The horizontal alignment for the Preferred Alternative includes four horizontal curves within the project limits. The horizontal alignment for the Preferred Alternative is summarized in **Table 6-4.** Plan sheets illustrating the Preferred Alternative are provided in **Appendix B**. The Preferred Alternative profile will generally follow the existing profile and will be increased above the existing profile, where necessary, to meet FDOT base clearance requirements. This increase in elevation is accommodated within the existing ROW. All of the minor vertical curves will meet the design criteria.

Table 6-4 Proposed Horizontal Alignment

Baseline PI Station	Bearing		Degree of Curvature	Radius	Length
	Back	Ahead			
453+29.78	N 0° 13' 26" E	N 46° 57' 33" W	2° 00' 00”	2,864.79 ft	2,336.77 ft
Station Equation: Sta. 470+04.92 Back = Sta. 470+03.45 Ahead					
548+16.46	N 46° 57' 33" W	N 24° 38' 26" W	1° 00' 00”	5,729.58 ft	2,231.87 ft
631+98.65	N 24° 38' 26" W	N 43° 40' 44" W	1° 00' 00”	5,729.58 ft	1,903.85 ft
843+08.69	N 43° 40' 44" W	N 57° 43' 24" W	0° 30' 00”	11,459.16 ft	2,808.88 ft
933+77.15	N 57° 43' 24" W	N 57° 43' 7" W	N/A	N/A	N/A
Station Equation: Sta. 933+77.15 Back = Sta. 933+82.19 Ahead					

6.10 COST ESTIMATES

The project costs estimated for the Preferred Alternative are summarized in **Table 6-5**. The construction costs were prepared in February 2022 using the FDOT's Long Range Estimating (LRE) program and are provided in **Appendix E**.

Table 6-5 Project Cost Estimate

Estimated Costs (in millions)	No Build Alternative	Preferred Alternative
Right-of-Way Acquisition	$0	$15 M
Wetland Mitigation	$0	$1.3 M
Final Design & Construction	$0	$105 M
Construction Engineering & Inspection	$0	$10 M
Preliminary Estimate of Total Project Cost	$0	$131 M

1. Right-of-way cost estimates were prepared by FDOT District One in February 2022.
2. Construction cost estimates were prepared by FDOT District One in February 2022.

6.11 ENVIRONMENTAL IMPACTS

6.11.1 Farmlands

The evaluation indicated 2.3 acres of soils classified as Prime and Unique Farmlands may occur. The NCRS Farmlands Conversion Impact Rating of 70.4 was less than the 160 points required for further consideration of protection of farmlands. Therefore, no significant farmland impacts are anticipated. The Farmlands Evaluation form can be found in the project file.

6.11.2 Section 4(f)

Section 4(f) resources along the project corridor include: Gator Creek Reserve, Colt Creek State Park, Green Swamp Wilderness Preserve East Tract, and Green Swamp Wilderness Preserve West Tract. Conflicts with the potentially protected Section 4(f) resources have been avoided through the selection of the Preferred Alternative.

Gator Creek Reserve is a 2,700-acre public facility under the jurisdiction of Polk County and located on the east side of, and accessed via, US 98. Activities include hiking, biking, jogging and butterfly watching. Facilities in the reserve include picnic shelters and trails. Gator Creek Reserve falls within the Green Swamp Area of Critical State Concern, a designation protecting a resource of major statewide significance. The Preferred Alternative does not require any ROW from the reserve; however, the existing US 98 ROW along Gator Creek Reserve will be converted to Limited Access (L.A.) ROW. This change to L.A. ROW will not constitute a use of this Section 4(f) resource and this action will not incorporate land or impact the features or attributes of the resource. Access to the reserve will be maintained during and after the construction phase.

Colt Creek State Park is a state park encompassing over 5,000 acres and located on the east side of SR 471, approximately 0.3 miles north of the intersection of US 98 and SR 471. Colt Creek State Park is managed by the[Florida Department of Environmental Protection (FDEP) and includes a variety of uses. It contains over 15 miles of multi-use trails, shared by hikers, bicyclists and those riding horseback. Other activities include birding, camping, fishing, geoseeking, paddling, picnicking, and wildlife viewing. The park also includes 27 full-facility campsites, six tent-only campsites, 10 equestrian campsites that accommodate horse trailers, two primitive campsites, canoe and kayak rentals, and three pavilions at the Mac Lake picnic area. The property does not directly abut US 98 and the Preferred Alternative does not require any ROW from the State Park.

The 51,149-acre Green Swamp Wilderness Preserve East Tract and the 37,350-acre Green Swamp Wilderness Preserve West Tract are wilderness preserves managed by the SWFWMD and located east of US 98. The East Tract is accessed from Rock Ridge Road and the West Tract is accessed from River Road. Combined, the preserves provide over 125 miles of multi-use trails and offer bicycling, birding, boating, camping, canoeing/paddling, equestrian uses, fishing, hiking, and hunting. The preserves are not accessed directly from US 98 and the Preferred Alternative does not require any ROW from the preserves; however, the existing US 98 ROW abutting the Green Swamp Wilderness Preserve East Tract will be converted to L.A. ROW. This change to L.A. ROW will not constitute a use of the Section 4(f) resource and this action will not incorporate land or impact the features or attributes of the resource.

The Preferred Alternative does not impact any of these resources and Section 4(f) "no-use" forms have been completed. These forms can be found in the project file.

6.11.3 Cultural Impacts

6.11.3.1 Historical and Archaeological

A *Cultural Resource Assessment Survey* (CRAS) was prepared for the proposed roadway widening under separate cover in January 2022 and can be found in the project file. A CRAS Technical Memorandum was prepared under separate cover in November 2021 for the proposed offsite stormwater management facilities. An addendum to the Technical Memorandum was also prepared under separate cover in June 2022. These two documents can also be found in the project file. Both the CRAS and CRAS Technical Memorandum indicated that no new historic or prehistoric archaeological sites were discovered and no evidence of the two previously recorded archaeological sites extending into the Area of Potential Effect (APE) was found. The field review resulted in the identification and evaluation of five historic resources within the APE. None of the newly identified historic resources appear to be eligible for listing in the NRHP, either individually or as part of a historic district. Consequently, there are no cultural resources within the APE that are listed, determined eligible or considered to be potentially eligible for the NRHP. The CRAS and CRAS Technical Memorandum were submitted to the State Historic Preservation Officer (SHPO), who provided concurrence on February 16, 2022. SHPO concurrence was provided for the CRAS Technical

Memorandum Addendum on July 6, 2022. Copies of the SHPO concurrence letters are provided in **Appendix I**.

6.11.4 Natural Resources

6.11.4.1 Wetlands

A *Natural Resources Evaluation Report* (NRE) was prepared under separate cover in November 2021 to ensure the protection, preservation, and enhancement of wetlands to the fullest extent possible. An NRE Addendum was also prepared under a separate cover in August 2022 for the proposed offsite stormwater management facilities. Both the NRE and NRE Addendum can be found in the project file. Field reviews identified a total of 65 wetlands and 92 other surface water habitats within the existing ROW within the study limits. **Table 6-6** lists the types of wetlands and other surface waters present within the limits of the mainline widening, along with their corresponding acreages. The primary wetlands and other surface waters include mixed wetland hardwoods, forested wetlands, freshwater marshes, streams, and waterways. An additional 18 wetlands and three other surface waters were identified within the recommended pond sites and floodplain compensation sites.

Table 6-7 lists the types of wetlands and other surface waters present within these sites, along with their corresponding acreages. The Preferred Alternative will directly impact 48.88 acres of wetlands and 11.06 acres of other surface waters. Secondary impacts were also evaluated for the project. The proposed improvements will result in a total of approximately 22.81 acres of secondary wetland impacts.

Table 6-6 Wetlands and Other Surface Waters within the Limits of Mainline Widening

FLUCFCS Code (USFWS Classification)	Direct Impact Acres
Federally Jurisdictional Wetlands	
617 - Mixed Wetland Hardwoods (PF01C)	1.99
621 - Cypress (PFO2C)	0.87
630 - Forested Wetland Mix (PFO1/2C)	6.19
631 - Wetland Scrub (PSS1C)	0.28
641 - Freshwater Marsh (PEM1C)	13.69
Subtotal Federally Jurisdictional Wetlands	23.02
Federally Jurisdictional Other Surface Waters	
510 - Streams and Waterways (PEMx)	1.87
State-only Jurisdictional Other Surface Waters	
510 - Streams and Waterways (PEMx)	4.41
Total	**29.30**

Table 6-7 Wetlands and Other Surface Waters within the SMF and FPC Sites

FLUCFCS Code (USFWS Classification)	Direct Impact Acres
Federally Jurisdictional Wetlands	
510 – Streams and Waterways (PEMx)	0.45
617 - Mixed Wetland Hardwoods (PF01C)	0.11
621 - Cypress (PFO2C)	0.40
630 - Forested Wetland Mix (PFO1/2C)	23.52
631 - Wetland Scrub (PSS1C)	0.09
641 - Freshwater Marsh (PEM1C)	0.36
643 - Wet Prarie (PEM1C)	0.93
Subtotal Federally Jurisdictional Wetlands	25.86
State-only Jurisdictional Other Surface Waters	
530 - Reservoir (POWx)	4.32
510 - Streams and Waterways (PEMx)	0.46
Subtotal State-only Jurisdictional Other Surface Waters	4.78
Total	**30.19**

The Preferred Alternative will result in an estimated Uniform Mitigation Assessment Methodology (UMAM) loss of 31.76 functional units. All UMAM scores, UMAM calculations, preliminary wetland boundaries and determinations discussed in the NRE are subject to revisions and approval by regulatory agencies during the permitting process. The anticipated mitigation credits required to offset impacts to wetlands are summarized below in **Table 6-8**. There are several private wetland mitigation banks available that service the Withlacoochee and Hillsborough River Watersheds, are state and federally permitted, and provide wood stork foraging habitat. The exact type of mitigation that will be used to offset wetland impacts from the proposed US 98 improvements will be coordinated with the SWFWMD and the Florida Department of Environmental Protection (FDEP) during the permitting phase of this project.

Table 6-8 Anticipated Mitigation Credits per Watershed

Watershed	Freshwater forested credits	Freshwater herbaceous credits
Withlacoochee	2.34	1.52
Hillsborough River	20.74	7.16

6.11.4.2 Protected Species and Habitat

An NRE was prepared under separate cover in November 2021 to evaluate and document the effects of the Preferred Alternative on protected species within the study corridor. An NRE Addendum was also prepared under separate cover in August 2022 for the proposed offsite stormwater management facilities.

Table 6-9, **Table 6-10**, and **Table 6-11** provide a complete listing of the species and their federal and state protection status. An effect determination was made based on an analysis of the potential impacts of the proposed project on each of the federal and state listed species. A summary of the project impact determination is also provided in **Table 6-9**, **Table 6-10**, and **Table 6-11**.

The Preferred Alternative Concept Plans propose several wildlife features along the project corridor. The purpose of the proposed wildlife features is to provide native fauna a safe passageway between the conservation lands situated to the east and west of the project corridor.

Table 6-9 Summary of Federally Listed Species Effect Determination

Project Impact Determination	Federal Species
May affect, not likely to adversely affect	Eastern Indigo Snake (*Drymarchon couperi*) Blue-tailed Mole Skink (*Plestiodon egregious lividus*) Sand Skink (*Plestiodon reynoldsi*) Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) Wood Stork (*Mycteria americana*) Everglade Snail Kite (*Rostrhamus sociabilis*)
No effect	Florida Panther (*Puma concolor coryi*) Florida Grasshopper Sparrow (*Ammodramus savannarum floridanus*) Audubon's Crested Caracara (*Caracara cheriway*) Federally listed plants

Table 6-10 Summary of State Listed Species Effect Determination

Project Impact Determination	State Species
No adverse effect anticipated	Gopher Tortoise (*Gopherus polyphemus*) Florida Pine Snake (*Pituophis melanoleucus mugitus*) Florida Sandhill Crane (*Antigone canadensis pratensis*) Florida Burrowing Owl (*Athene cunicularia floridana*) Little Blue Heron (*Egretta caerulea*) Tricolored Heron (*Egretta tricolor*) Southeast American Kestrel (*Falco sparverius paulus*)
No effect anticipated	Short-tailed Snake (*Lampropeltis extenuate*) Least Tern (*Sternula antillarum*) State listed plants

Table 6-11 Summary of Other Protected Species Effect Determination

Project Impact Determination	Other Protected Species
No effect anticipated	Bald Eagle (*Haliaeetus leucocephalus*) Osprey (*Pandion haliaetus*) Florida Black Bear (*Ursus americanus floridanus*)

6.12 PHYSICAL RESOURCES

6.12.1 Noise

A Noise Study Report (NSR) was prepared under separate cover in April 2022 and can be found in the project file. The Preferred Alternative is predicted to result in traffic noise levels ranging from 55.4 db(A) to 71.3 db(A). Noise levels were predicted at 220 noise sensitive sites located adjacent to US 98 for the existing and future year conditions with and without the proposed improvements. Thirty-eight of the 220 noise sensitive sites are predicted to experience future noise levels with the proposed improvements that approach, meet, or exceed the Noise Abatement Criteria (NAC) for their respective activity category. None of the 220 evaluated sites are predicted to experience a substantial increase in traffic noise (i.e, 15 db(A) or more) as a result of the proposed improvements. Of the 38 impacted receptors 37 represent residential properties and one receptor represents a tee box at the Big Cypress Golf Club.

Traffic management measures, modifications to the roadway alignment, buffer zones and noise barriers were considered as potential abatement measures at the impacted receptor locations. Noise barriers were the only potential abatement measure found to be cost reasonable and feasible. Two noise barriers were determined to be cost reasonable and feasible based on the noise analysis: Barrier 1 – Cypress Lakes North and Barrier 2 – Gator Creek RV Park. These barriers represent 17 of the 38 impacted receptors. The proposed barriers have the potential to benefit [provide a minimum dB(A) noise reduction] a total of 25 receptors. The locations of these barriers are shown in the Preferred Alternative concept plans.

The FDOT is committed to the construction of noise barriers at Cypress Lakes North and Gator Creek RV Park contingent upon the following:

- Detailed noise analyses during the final design process support the need, feasibility and reasonableness of providing abatement;
- Cost analysis indicates the cost of the noise barrier(s) will not exceed the cost reasonable criterion;
- Community input supporting the types, heights, and locations of the noise barrier(s) is provided to the District Office; and
- Safety and engineering aspects related to the roadway user and the adjacent property owner have been reviewed and any conflicts or issues resolved.

A table summarizing the predicted taffic noise levels for all the receptors that were modeled/analyzed is provided in **Appendix J**. The three locations where noise barriers were determined to not be cost reasonable are listed below:

- Residences north of Rock Ridge Road
- Residences north of Lakeland Acres Road
- Residences south of Old Dade City Road

Final recommendations on the construction of abatement measures will be determined during the project's final design phase and through the public involvement process.

6.12.2 Contamination

Level I contamination evaluations were conducted for this PD&E study and a Contamination Screening Evaluation Report (CSER) was prepared under separate cover in July 2022. According to the CSER, 12 contamination sites were identified within the study corridor and 23 pond sites were also evaluated and assigned contamination risk ratings. For the 12 roadway sites, seven were assigned a "Low" or "No" risk rating, four were assigned a "Medium risk" rating, and one was assigned a "High" risk rating. For the 23 pond sites, 22 were assigned a "Low" or "No" risk rating and one was assigned a"High" risk rating. Roadway contamination sites and pond contamination sites are summarized in **Table 6-12** and

Table 6-13 respectively. A Level II contamination evaluation will be performed during the final design phase of this project.

Table 6-12 Roadway Contamination Sites

Site Number	Site Description	Type of Contamination	Risk Rating
1	**Circle K #7334** 10704 US 98 N	Petroleum, Hazardous Materials	Medium
2	**Sunshine Food Mart #513 / Top King Food Mart #02** 10705 US 98 N	Petroleum	High
3	**Gator's Place** 12160 US 98 N	Petroleum	Low
4	**CM Overstreet** Star RT Box 165	Petroleum	Low
5	**Cypress Lakes WWTP, Big Cypress Golf & Country Club** 10000 US 98 N	Petroleum, Solvents, Herbicides, Pesticides, Arsenic	Low
6	**Groundwater Contamination - EDB Plume 53263283** No address	EDB	No
7	**Clark's Plant Nursery** 14254 US 98	Herbicides, Pesticides	Low
8	**Cell Tower** No address	Petroleum	No
9	**Cell Tower** No address	Petroleum	No
10	**Bridge Culvert #160152**	Hazardous Materials	Medium
11	**Bridge Culvert #160052**	Hazardous Materials	Medium
12	**Bridge Culvert #160053**	Hazardous Materials	Medium

Table 6-13 Pond Contamination Sites

Pond Site	Risk Rating
FPC 1B	Low
FPC 2A	No
FPC 3B	No
Pond 1A	No
FPC 4C	Low
FPC 5C	Low

Pond Site	Risk Rating
Pond 2D-1	Low
FPC 5D	High (Petroleum)
FPC 5E	No
Pond 2C-2	No
FPC 6A	No
FPC 6C	No
FPC 7B	No
FPC 8A	No
Pond 3D-1	No
Pond 3C-2	No
Pond 3D-2	No
Pond 4D-1	No
FPC 10A	No
FPC 11A	No
Pond 4C-2	No
FPC 12A	No
FPC 13A	No

6.12.3 Construction

Construction activities for the proposed project may cause minor short-term air quality, noise, water quality, traffic congestion, and visual impacts for residents and travelers within the immediate vicinity of the project.

The air quality effect will be temporary and will primarily be in the form of emissions from diesel-powered construction equipment and dust from embankment and haul road areas. Air pollution associated with the creation of airborne particles will be effectively controlled through the use of watering or the application of other controlled materials in accordance with FDOT's *Standard Specifications for Road and Bridge Construction.*

Noise and vibration effects will be from heavy equipment movement and construction activities. This will be minimized by adherence to noise control measures found in the most current edition of the FDOT's *Standard Specifications for Road and Bridge Construction*. Specific noise level problems that may arise during construction of the project will be addressed by the Construction Engineer in cooperation with the appropriate Environmental Specialist.

Water quality impacts resulting from erosion and sedimentation will be controlled in accordance with the most current edition of the FDOT's *Standard Specifications for Road and Bridge Construction*, "Prevention, Control, and Abatement of Erosion and Water Pollution," and through the use of best management practices (BMP).

Short-term construction related wetland impacts will be minimized by adherence to FDOT's *Standard Specifications for Road and Bridge Construction*. These specifications include BMPs, which include the

use of siltation barriers, dewatering structures, and containment devices that will be implemented for controlling turbid water discharges outside of construction limits.

Maintenance of traffic and sequence of construction will be planned and scheduled so as to minimize traffic delays throughout the project. Signage will be used as appropriate to provide pertinent information to the traveling public. The local news media will be notified in advance of road closings and other construction related activities that would excessively inconvenience the community so that motorists, residents, and business persons can make other accommodations. All provisions of FDOT's *Standard Specifications for Road and Bridge Construction* will be followed. A sign providing the name, address, and telephone of an FDOT contact person will be displayed on-site to assist the public in obtaining immediate answers to questions and logging complaints about project activity.

Access to local properties, businesses and residences will be maintained to the extent practical through controlled construction scheduling and the implementation of the project's specific Traffic Control Plan(s) and implementation of FDOT's *Standard Specifications for Road and Bridge Construction*.

For residents living along the project, some of the construction materials stored for the project may be displeasing visually; however, this will be a temporary condition and should pose no substantial problem.

APPENDICES

APPENDIX A

Preferred Alternative Typical Section Package

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

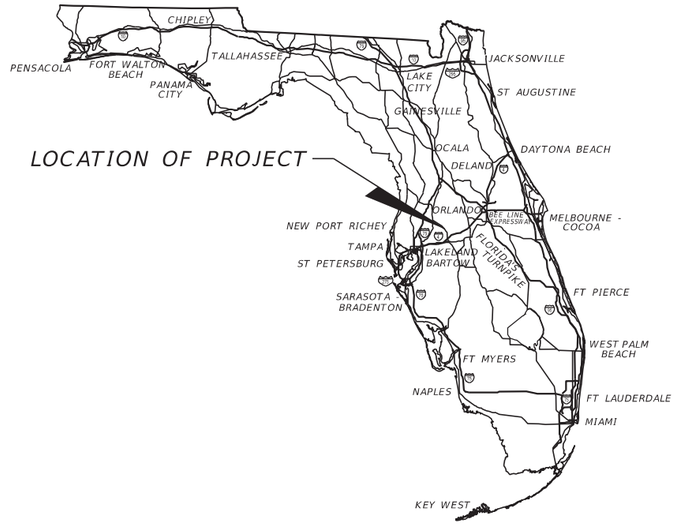
TYPICAL SECTION PACKAGE

FINANCIAL PROJECT ID 436673-1-52-01

POLK COUNTY (16210)

STATE ROAD NO. 35 (US 98)

FROM NORTH OF WEST SOCRUM LOOP ROAD TO SOUTH OF COUNTY ROAD 54



PROJECT LOCATION URL:	https://tinyurl.com/FPID4366731
PROJECT LIMITS:	BEGIN MP 8.676 - END MP 17.678
EXCEPTIONS:	NONE
BRIDGE LIMITS:	(# TBD) MP 14.935 - END MP 14.940 (# TBD) MP 16.147 - END MP 16.154 (# TBD) MP 17.375 - END MP 17.379
RAILROAD CROSSING:	NONE

FDOT DISTRICT DESIGN ENGINEER

Kevin Ingle

Digitally signed by Kevin Ingle
DN: C=US, E=Kevin.Ingle@dot.state.fl.us, O=Florida DEPARTMENT OF TRANSPORTATION, OU=CIVIL, CN=Kevin Ingle
Date: 2022.11.16 10:23:41 -05'00'

CONCURRING WITH:
TYPICAL SECTION ELEMENTS
TARGET SPEED
DESIGN & POSTED SPEEDS

FDOT DISTRICT TRAFFIC OPERATIONS ENGINEER

Mark Mathes

Date: 2022.11.16 08:42:31 -05'00'

CONCURRING WITH:
TARGET SPEED
DESIGN & POSTED SPEEDS

FDOT DISTRICT INTERMODAL SYSTEMS DEVELOPMENT MANAGER

Nicole E Mills
2022.11.16 09:25:26 -05'00'

CONCURRING WITH:
CONTEXT CLASSIFICATION
TARGET SPEED

FDOT DISTRICT STRUCTURES DESIGN ENGINEER

CONCURRING WITH:
TYPICAL SECTION ELEMENTS

FHWA TRANSPORTATION ENGINEER

CONCURRING WITH:
TYPICAL SECTION ELEMENTS

LOCAL TRANSPORTATION ENGINEER

CONCURRING WITH:
TYPICAL SECTION ELEMENTS

NOT USED

CONCURRING WITH:

NOT USED

CONCURRING WITH:

APPROVED BY:

NICHOLAS S. RUIZ LICENSE No 86664 STATE OF FLORIDA PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Nicholas S Ruiz Date: 2022.11.10 11:53:20-05'00'

ON THE DATE ADJACENT TO THE SEAL

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

AIM ENGINEERING & SURVEYING, INC.
201 EAST KENNEDY BOULEVARD, STE. 1800
TAMPA, FLORIDA 33602
NICHOLAS S. RUIZ, P.E. NO. 86664

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

INDEX OF SHEETS

SHEET NO.
1

PROJECT CONTROLS

CONTEXT CLASSIFICATION

( ) C1 : NATURAL
( ) C2 : RURAL
( ) C2T : RURAL TOWN
(X) C3R : SUBURBAN RES.
( ) N/A : L.A. FACILITY
( ) C3C : SUBURBAN COMM.
( ) C4 : URBAN GENERAL
( ) C5 : URBAN CENTER
( ) C6 : URBAN CORE

FUNCTIONAL CLASSIFICATION

( ) INTERSTATE
( ) FREEWAY/EXPWY.
(X) PRINCIPAL ARTERIAL
( ) MINOR ARTERIAL
( ) MAJOR COLLECTOR
( ) MINOR COLLECTOR
( ) LOCAL

HIGHWAY SYSTEM

(X) NATIONAL HIGHWAY SYSTEM
( ) STRATEGIC INTERMODAL SYSTEM
(X) STATE HIGHWAY SYSTEM
( ) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

( ) 1 - FREEWAY
( ) 2 - RESTRICTIVE w/Service Roads
(X) 3 - RESTRICTIVE w/660 ft. Connection Spacing
( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

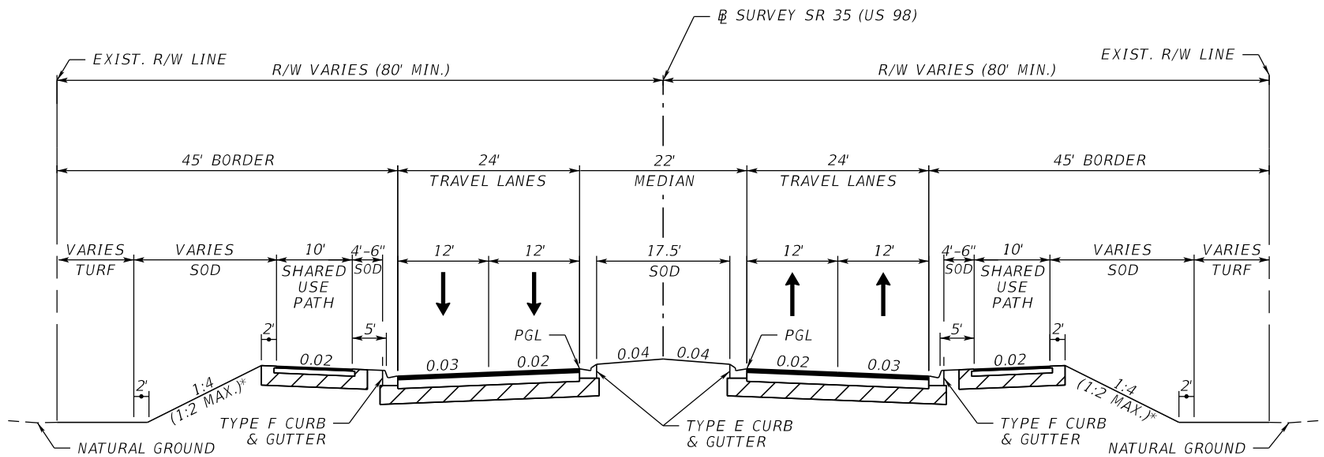
CRITERIA

(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RESURFACING (LA FACILITIES)
( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

N/A

TYPICAL SECTION No. 1



SR 35 (US 98)
MP 9.005 TO MP 11.325

* SLOPES STEEPER THAN 1:4 MAY BE USED AS FOLLOWS:
1:3 SLOPES MAY BE USED WHERE 1:4 SLOPES TIE IN OUTSIDE OF THE R/W
1:2 SLOPES MAY BE USED WHERE 1:3 SLOPES TIE IN OUTSIDE OF THE R/W

TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 19,055
ESTIMATED OPENING YEAR = 2025 AADT = 20,700
ESTIMATED DESIGN YEAR = 2045 AADT = 32,000
K = 9.0% D = 55% T = 15% (24 HOUR)
DESIGN HOUR T = 7.5%
DESIGN SPEED = 45 MPH
POSTED SPEED = 45 MPH
TARGET SPEED = 45 MPH

NOT TO SCALE

FINANCIAL PROJECT ID	SHEET NO.
436673-1-52-01	2

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

( )	C1 : NATURAL	( )	C3C : SUBURBAN COMM.
(X)	C2 : RURAL	( )	C4 : URBAN GENERAL
( )	C2T : RURAL TOWN	( )	C5 : URBAN CENTER
( )	C3R : SUBURBAN RES.	( )	C6 : URBAN CORE
( )	N/A : L.A. FACILITY		

FUNCTIONAL CLASSIFICATION

( )	INTERSTATE	( )	MAJOR COLLECTOR
( )	FREEWAY/EXPWY.	( )	MINOR COLLECTOR
(X)	PRINCIPAL ARTERIAL	( )	LOCAL
( )	MINOR ARTERIAL		

HIGHWAY SYSTEM

(X)	NATIONAL HIGHWAY SYSTEM
( )	STRATEGIC INTERMODAL SYSTEM
(X)	STATE HIGHWAY SYSTEM
( )	OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

( )	1 - FREEWAY
( )	2 - RESTRICTIVE w/Service Roads
(X)	3 - RESTRICTIVE w/660 ft. Connection Spacing
( )	4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
( )	5 - RESTRICTIVE w/440 ft. Connection Spacing
( )	6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( )	7 - BOTH MEDIAN TYPES

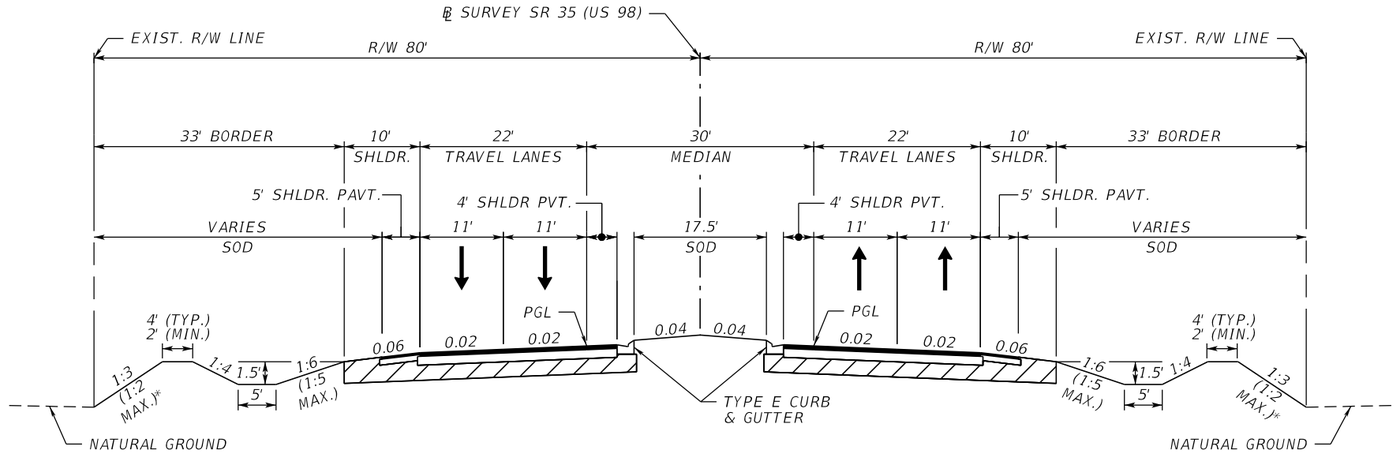
CRITERIA

(X)	NEW CONSTRUCTION / RECONSTRUCTION
( )	RESURFACING (LA FACILITIES)
( )	RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

LANE WIDTH
FRONT SLOPE
BORDER WIDTH

TYPICAL SECTION No. 2



SR 35 (US 98)
MP 11.325 TO MP 17.678

* SLOPES STEEPER THAN 1:3 MAY BE USED AS FOLLOWS:
1:2 SLOPES MAY BE USED WHERE 1:3 SLOPES TIE IN OUTSIDE OF THE R/W

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 15,225
ESTIMATED OPENING YEAR = 2025 AADT = 17,400
ESTIMATED DESIGN YEAR = 2045 AADT = 32,000
K = 9.5% D = 52% T = 20% (24 HOUR)
DESIGN HOUR T = 10%
DESIGN SPEED = 55 MPH
POSTED SPEED = 55 MPH
TARGET SPEED = 55 MPH

FINANCIAL PROJECT ID	SHEET NO.
436673-1-52-01	3

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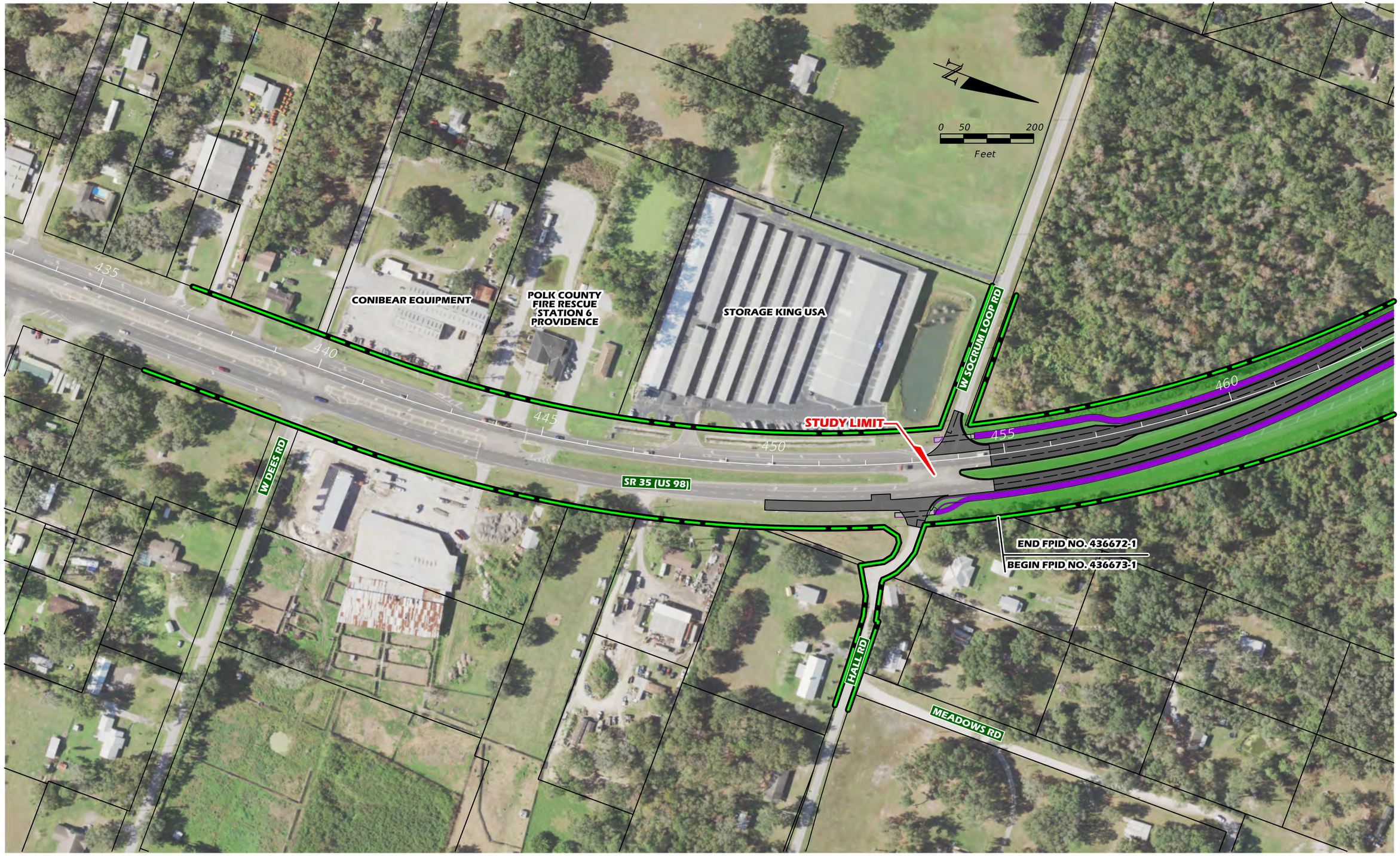
APPENDIX B

Preferred Alternative Concept Plans

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
PROPOSED TRAFFIC SEPARATOR
PROPOSED SOD
PROPOSED POND
PROPOSED FLOODPLAIN COMPENSATION SITE (FPC)

AIM ENGINEERING & SURVEYING, INC.
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 35	POLK	436673-1-22-01

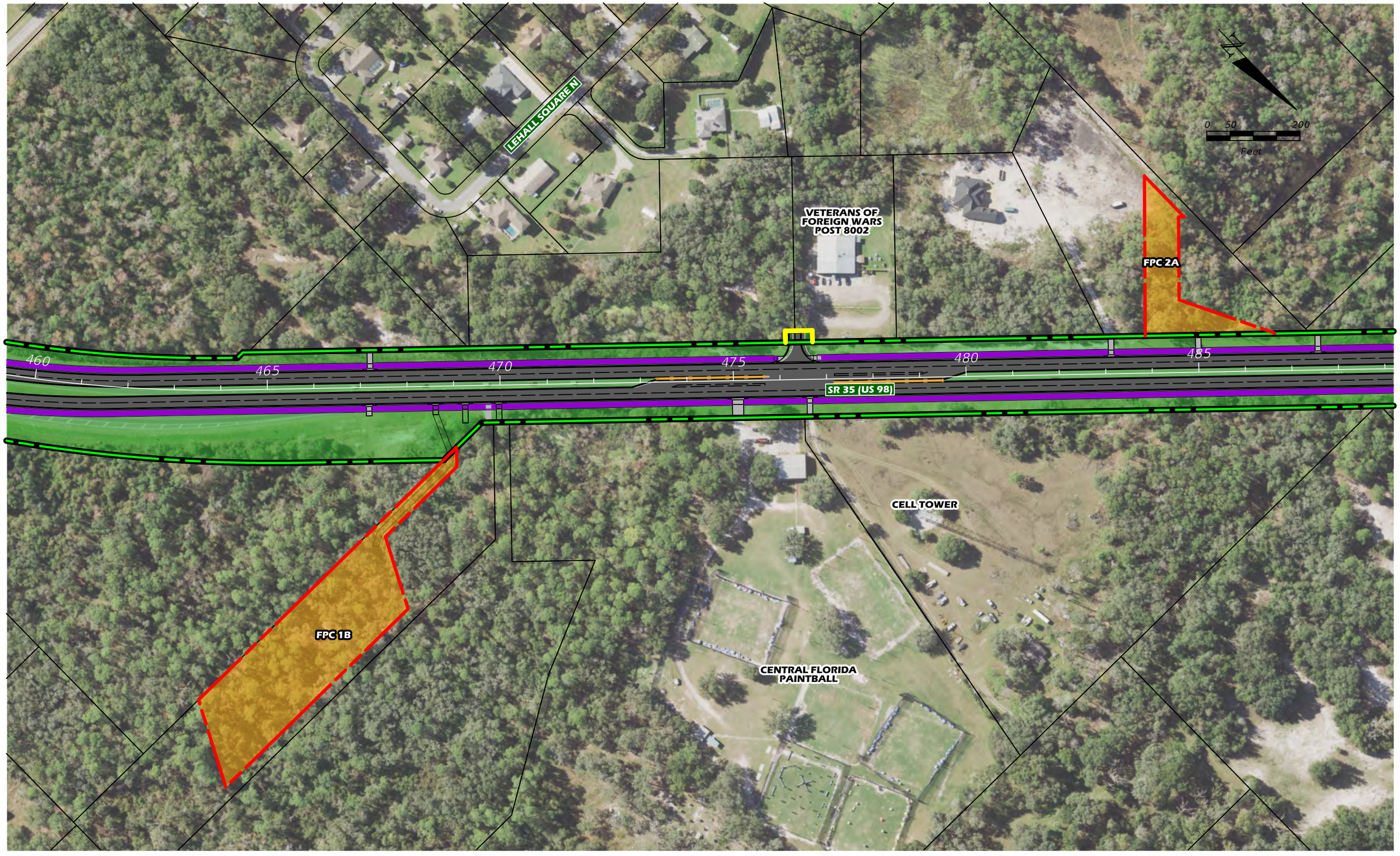
SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 1

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
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SR 35	POLK	436673-1-22-01

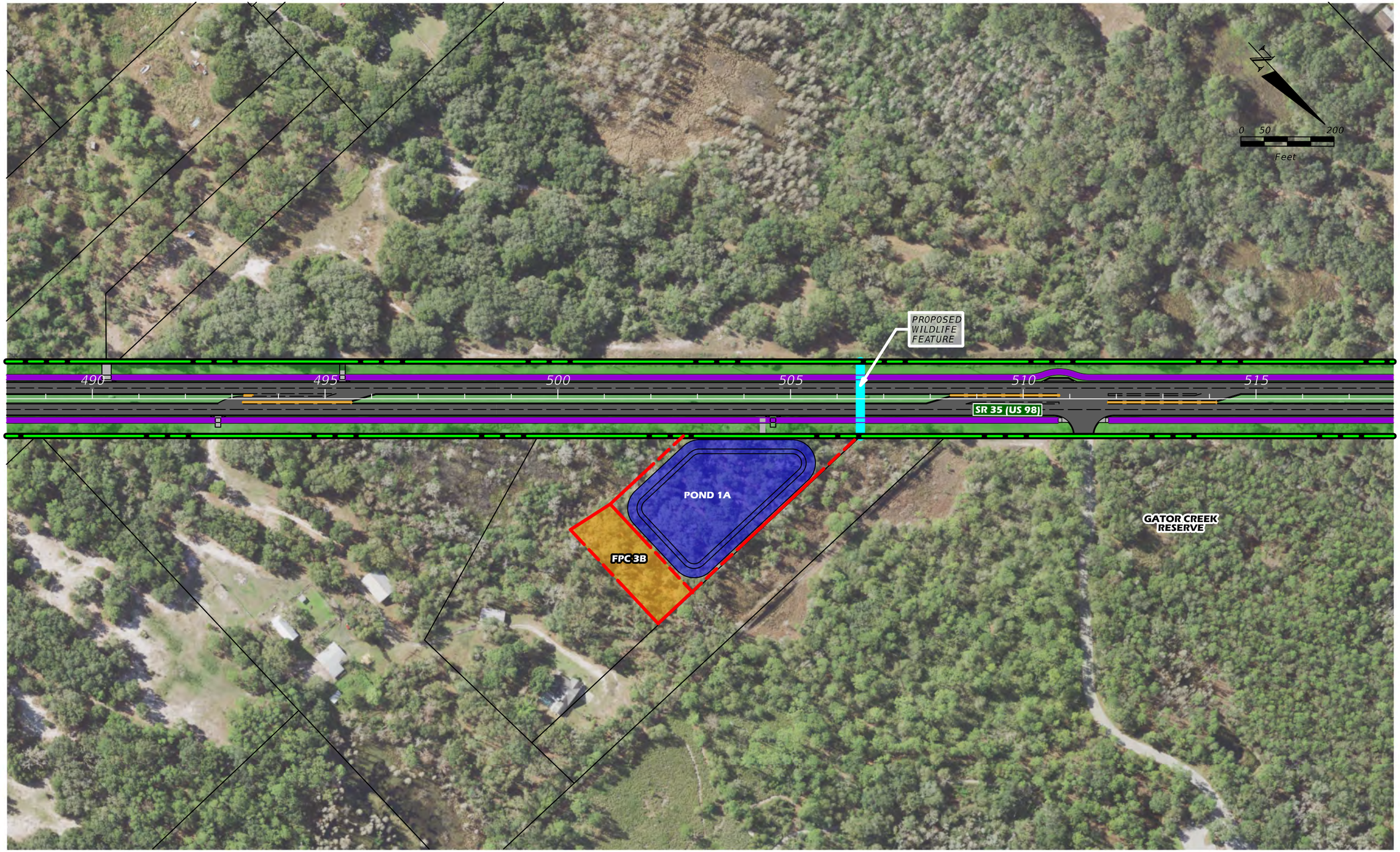
SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 2

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
PROPOSED TRAFFIC SEPARATOR
PROPOSED SOD
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SR 35	POLK	436673-1-22-01

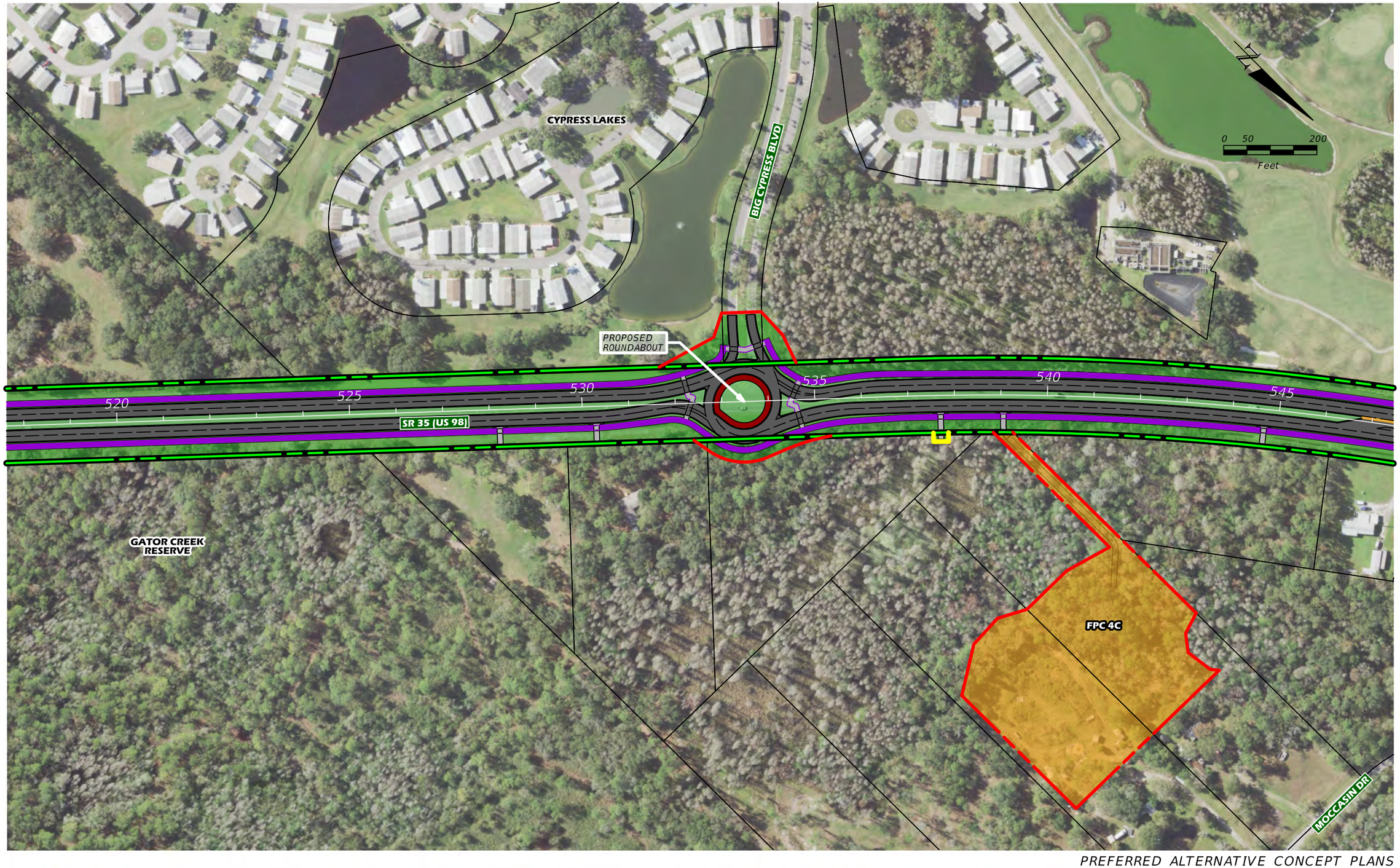
SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 3

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
PROPOSED TRAFFIC SEPARATOR
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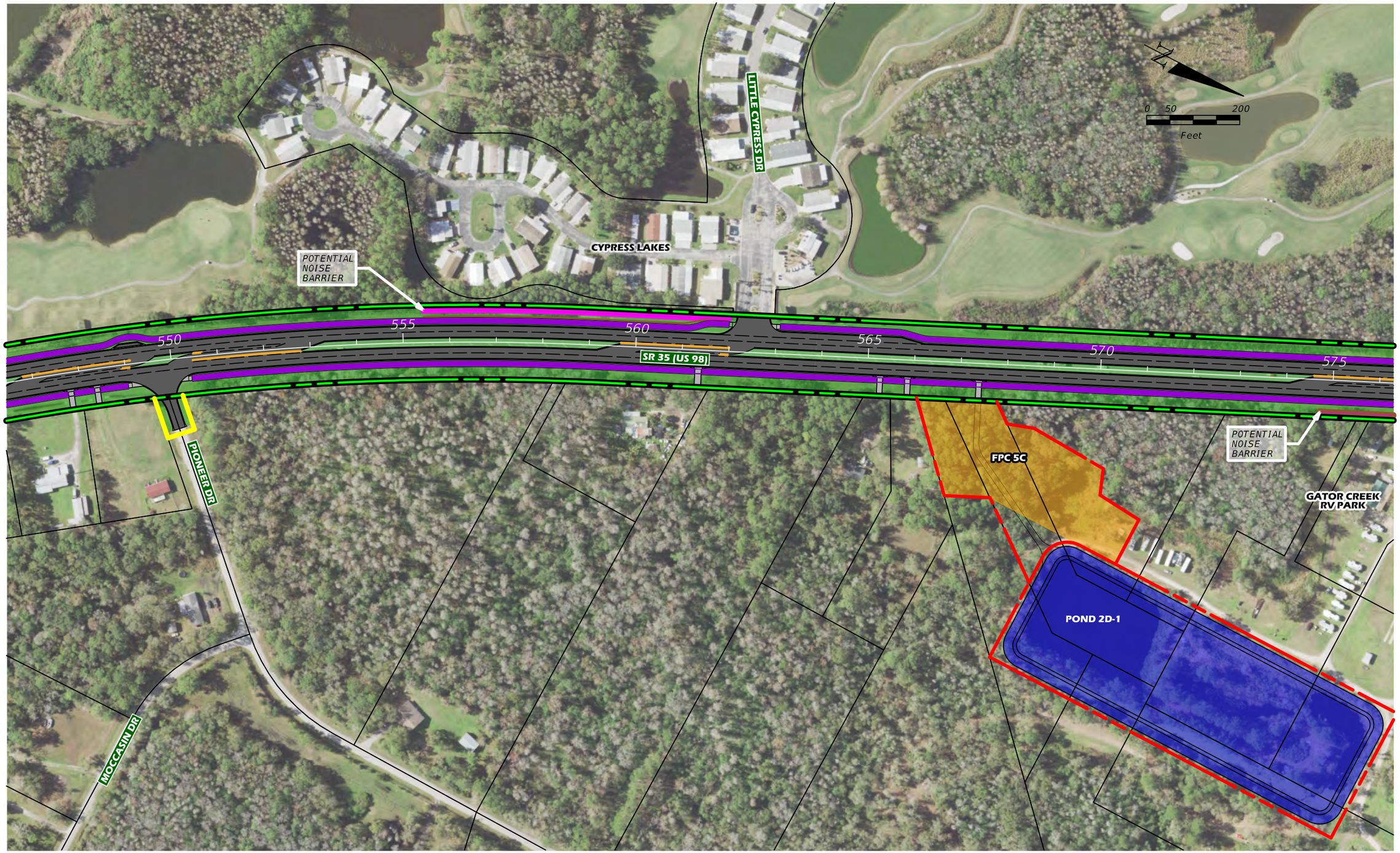
SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 4

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50
- CENTERLINE OF CONSTRUCTION
- EXISTING R/W LINE
- PROPOSED R/W LINE
- PROPERTY LINE
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED ROADWAY
- PROPOSED 10-FT SHARED USE PATH
- # POTENTIAL MED./HIGH CONTAMINATION SITE
- PROPOSED TRAFFIC SEPARATOR
- PROPOSED SOD
- PROPOSED POND
- PROPOSED FLOODPLAIN COMPENSATION SITE (FPC)

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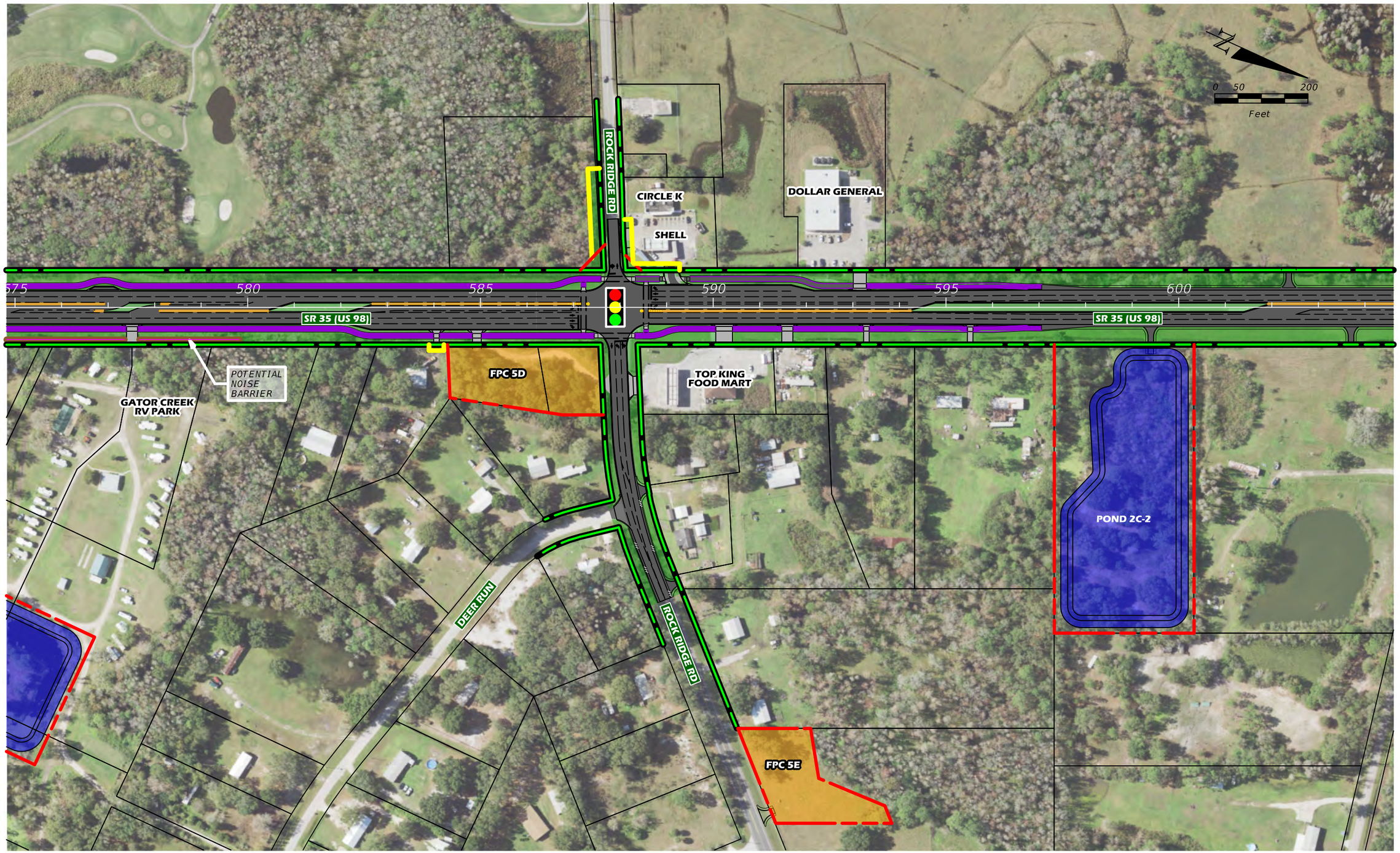
SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 5

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
PROPOSED TRAFFIC SEPARATOR
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PROPOSED POND
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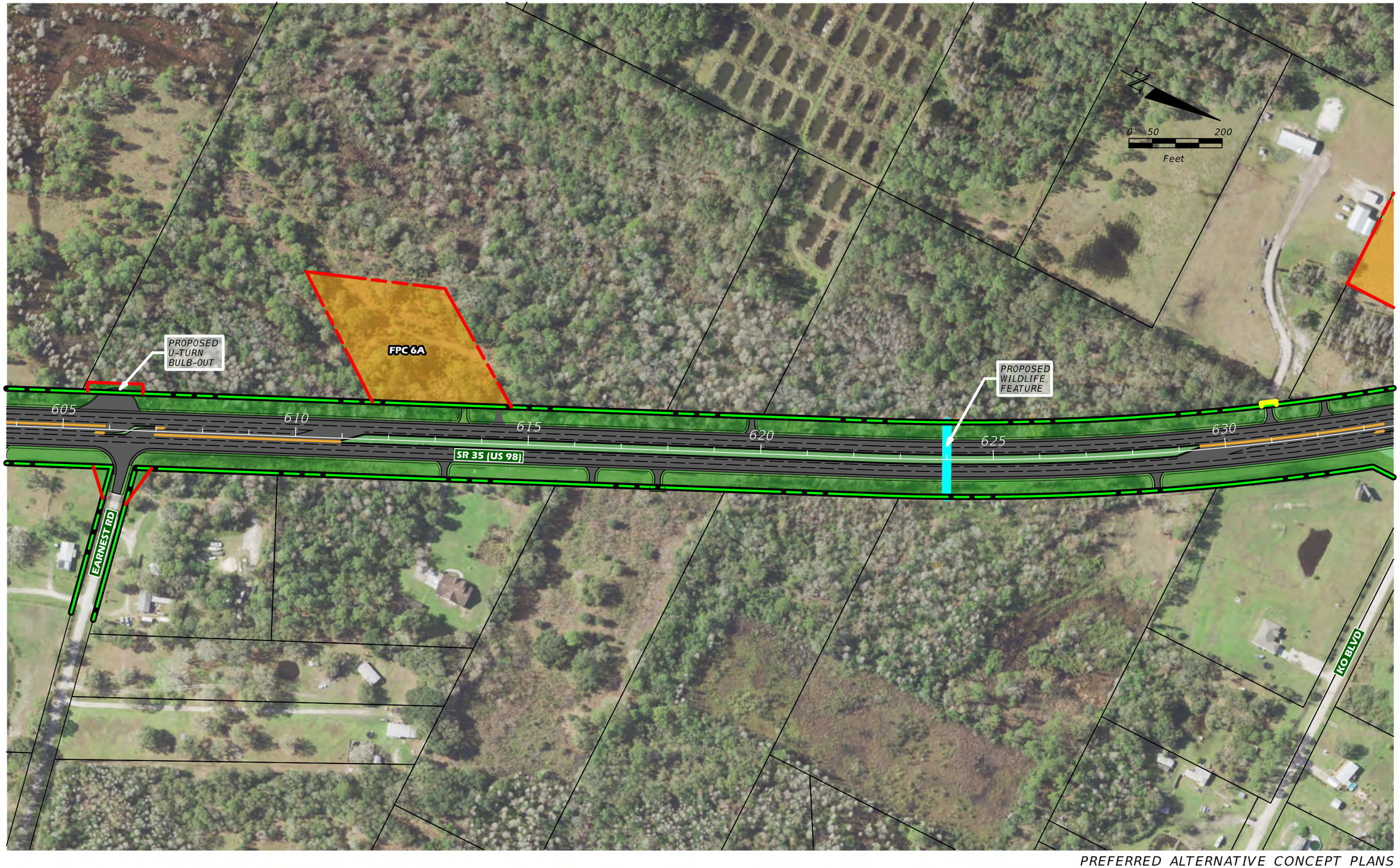
SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 6

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50
CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
PROPOSED TRAFFIC SEPARATOR
PROPOSED SOD
PROPOSED POND
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 35	POLK	436673-1-22-01

SR 35 (US 98) PD&E STUDY

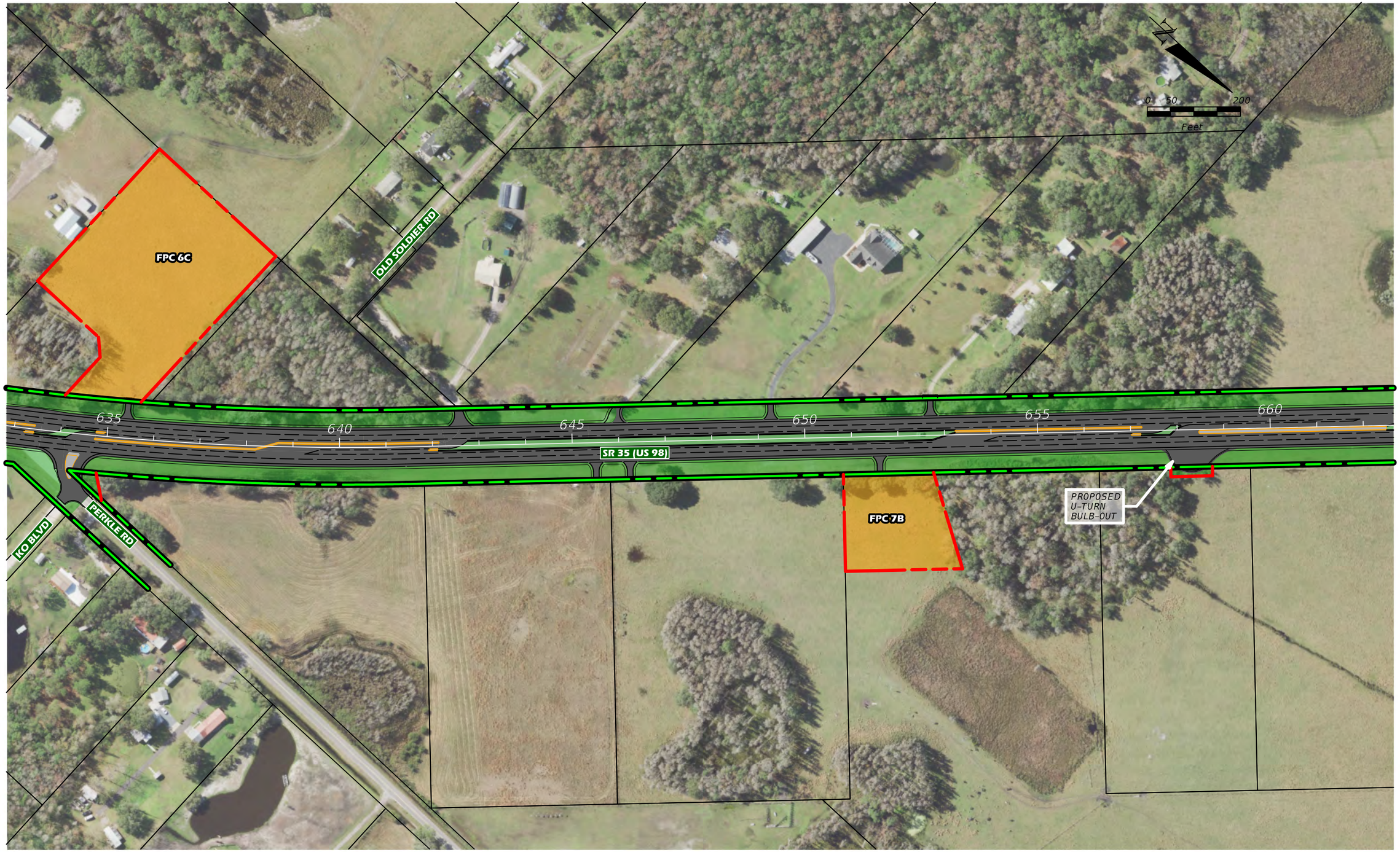
FROM NORTH OF W. SOCRUM LOOP ROAD

TO SOUTH OF CR 54

SHEET NO. 7

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
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PROPOSED TRAFFIC SEPARATOR
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SR 35	POLK	436673-1-22-01

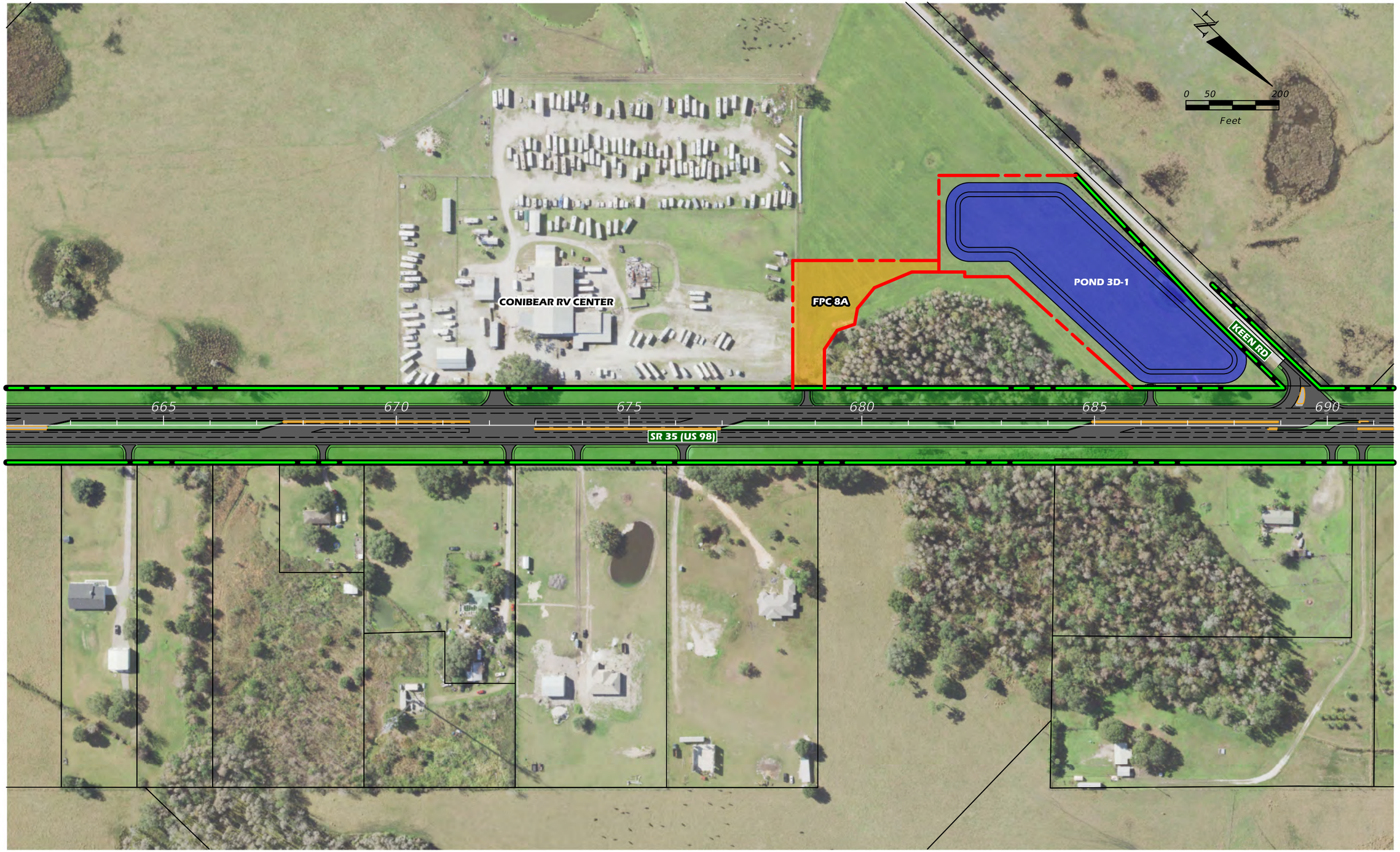
SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 8

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
PROPOSED TRAFFIC SEPARATOR
PROPOSED SOD
PROPOSED POND
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 35	POLK	436673-1-22-01

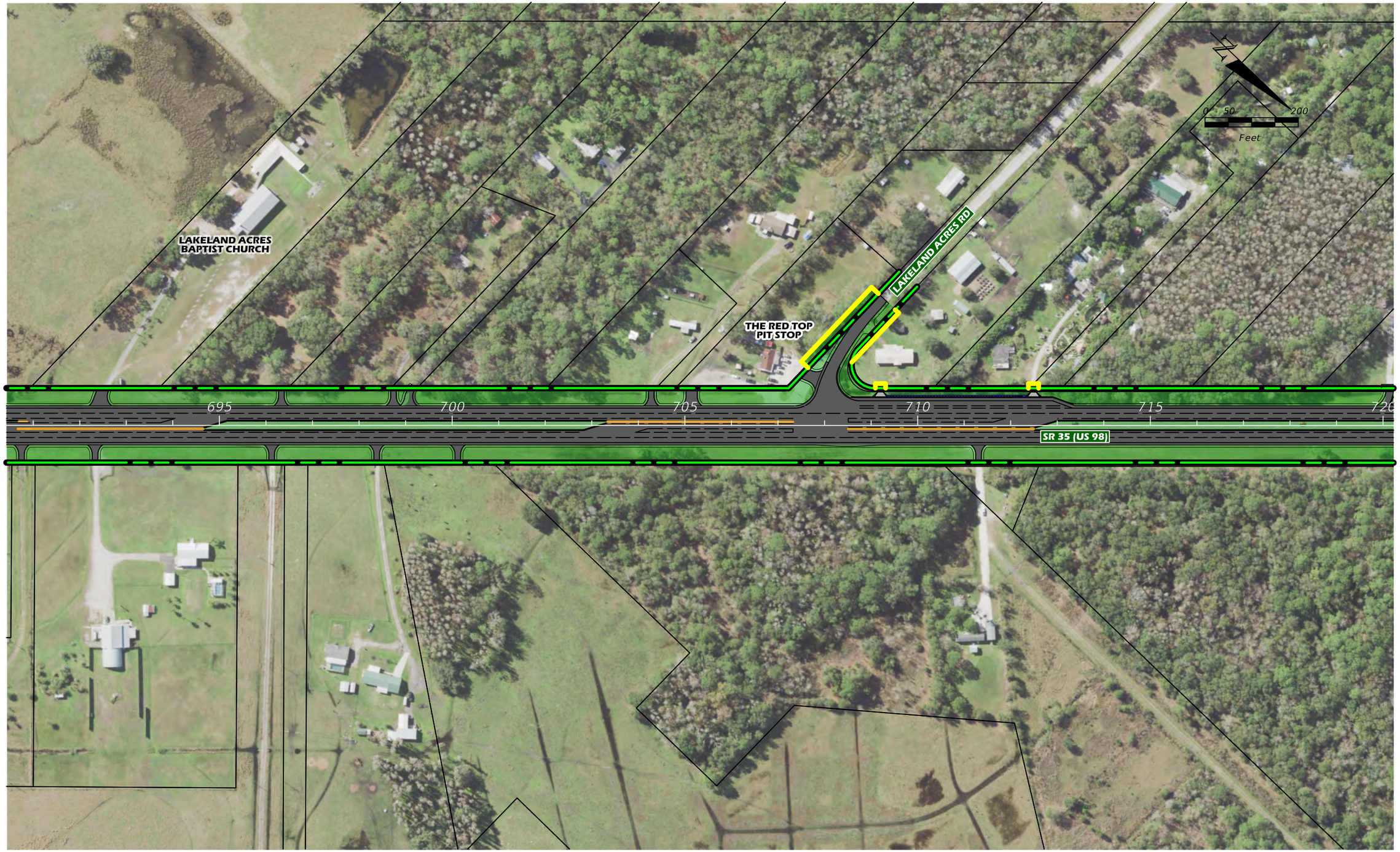
SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 9

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
PROPOSED TRAFFIC SEPARATOR
PROPOSED SOD
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SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 10

PRELIMINARY

Aerial Flight Date: 2020

PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
PROPOSED TRAFFIC SEPARATOR
PROPOSED SOD
PROPOSED POND
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 35	POLK	436673-1-22-01

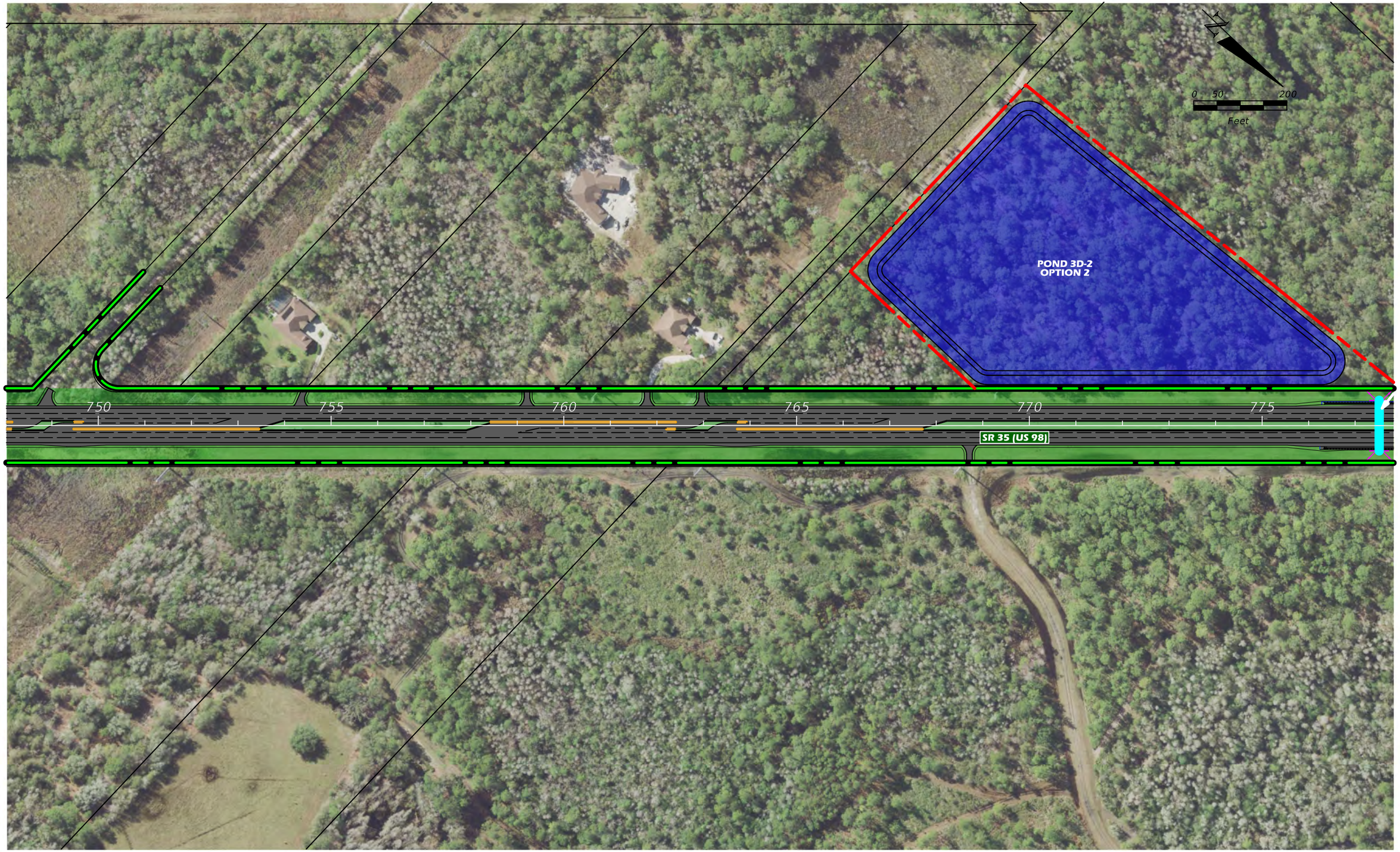
SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 11

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
PROPOSED TRAFFIC SEPARATOR
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PROPOSED POND
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 35	POLK	436673-1-22-01

SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 12

PRELIMINARY

Aerial Flight Date: 2020

PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
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PROPOSED POND
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 35	POLK	436673-1-22-01

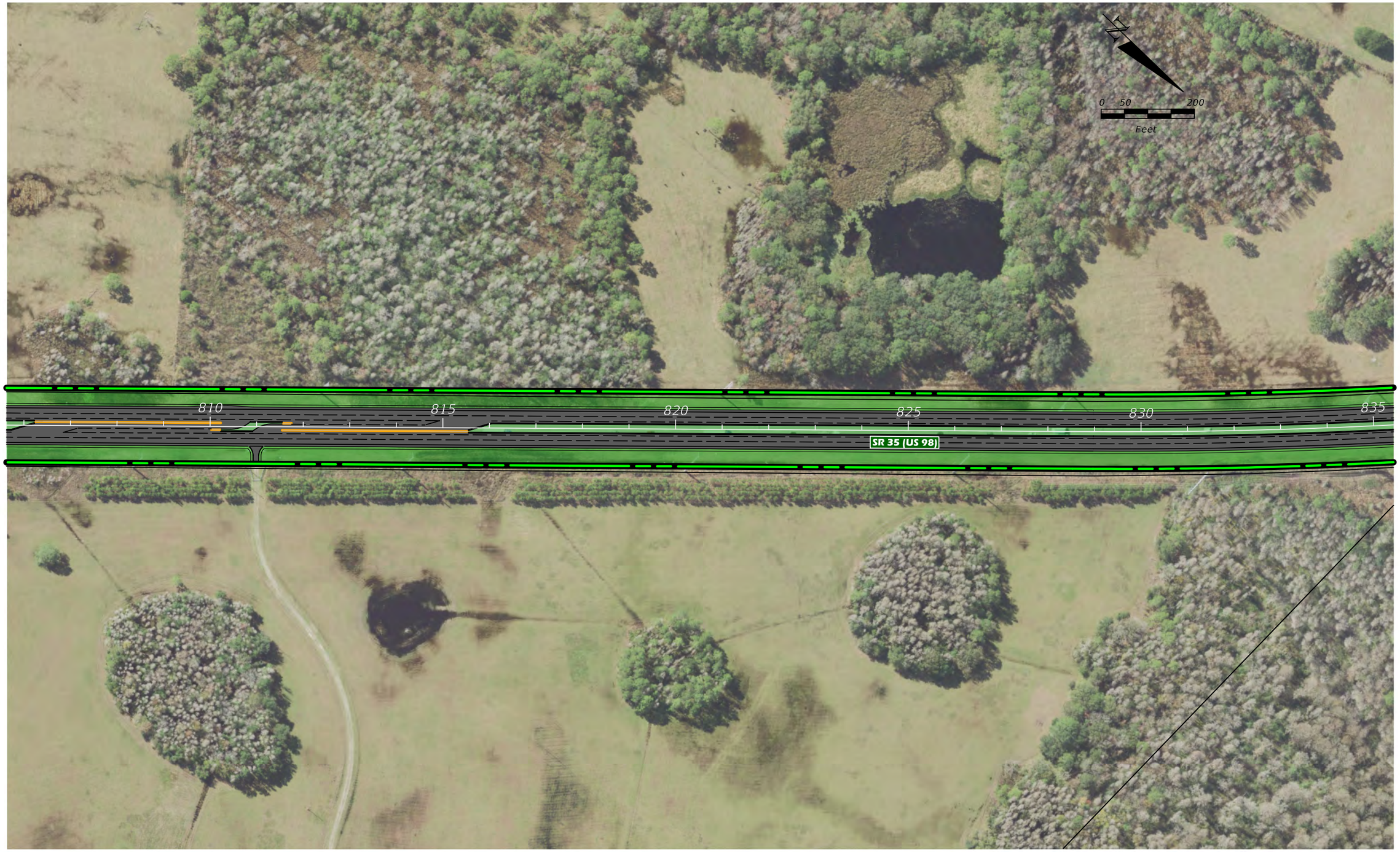
SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 13

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 35	POLK	436673-1-22-01

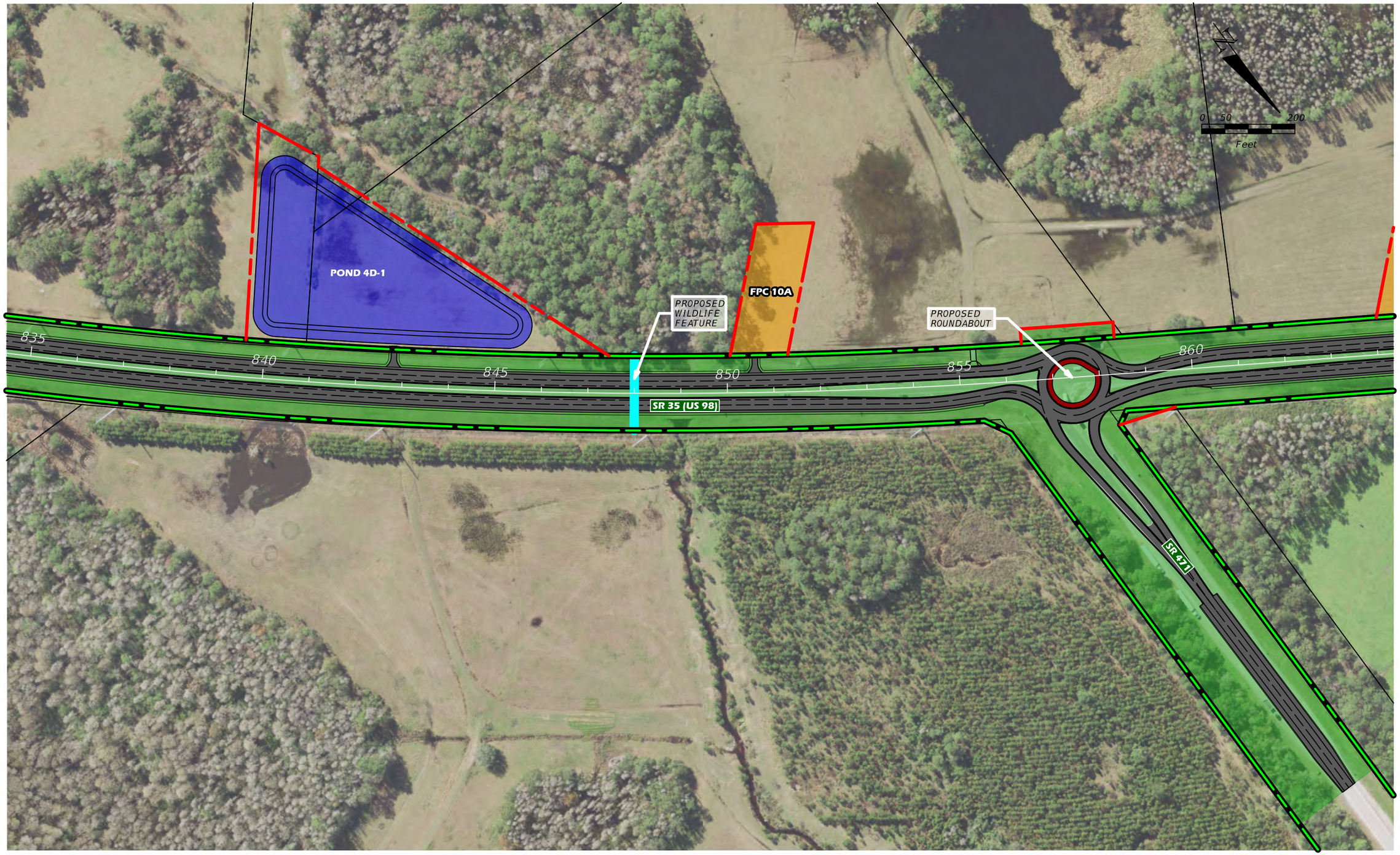
SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 14

PRELIMINARY

Aerial Flight Date: 2020



PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
PROPOSED TRAFFIC SEPARATOR
PROPOSED SOD
PROPOSED POND
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SR 35	POLK	436673-1-22-01

SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 15

PRELIMINARY

Aerial Flight Date: 2020

PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
PROPOSED TRAFFIC SEPARATOR
PROPOSED SOD
PROPOSED POND
PROPOSED FLOODPLAIN COMPENSATION SITE (FPC)

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SR 35	POLK	436673-1-22-01

SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 16

PRELIMINARY

Aerial Flight Date: 2020

PREFERRED ALTERNATIVE CONCEPT PLANS

CENTERLINE OF CONSTRUCTION	TEMPORARY CONSTRUCTION EASEMENT	PROPOSED TRAFFIC SEPARATOR
EXISTING R/W LINE	PROPOSED ROADWAY	PROPOSED SOD
PROPOSED R/W LINE	PROPOSED 10-FT SHARED USE PATH	PROPOSED POND
PROPERTY LINE	POTENTIAL MED./HIGH CONTAMINATION SITE	PROPOSED FLOODPLAIN COMPENSATION SITE (FPC)

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 35	POLK	436673-1-22-01

SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 17

PRELIMINARY

Aerial Flight Date: 2020

PREFERRED ALTERNATIVE CONCEPT PLANS

50 CENTERLINE OF CONSTRUCTION
EXISTING R/W LINE
PROPOSED R/W LINE
PROPERTY LINE
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED ROADWAY
PROPOSED 10-FT SHARED USE PATH
POTENTIAL MED./HIGH CONTAMINATION SITE
PROPOSED TRAFFIC SEPARATOR
PROPOSED SOD
PROPOSED POND
PROPOSED FLOODPLAIN COMPENSATION SITE (FPC)

AIM ENGINEERING & SURVEYING, INC.
201 E. KENNEDY BLVD, SUITE 1800
TAMPA, FLORIDA 33602
TEL: (813) 627-4144
WWW.AIMENGR.COM

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 35	POLK	436673-1-22-01

SR 35 (US 98) PD&E STUDY

FROM NORTH OF W. SOCRUM LOOP ROAD
TO SOUTH OF CR 54

SHEET NO. 18

APPENDIX C

Existing Land Use

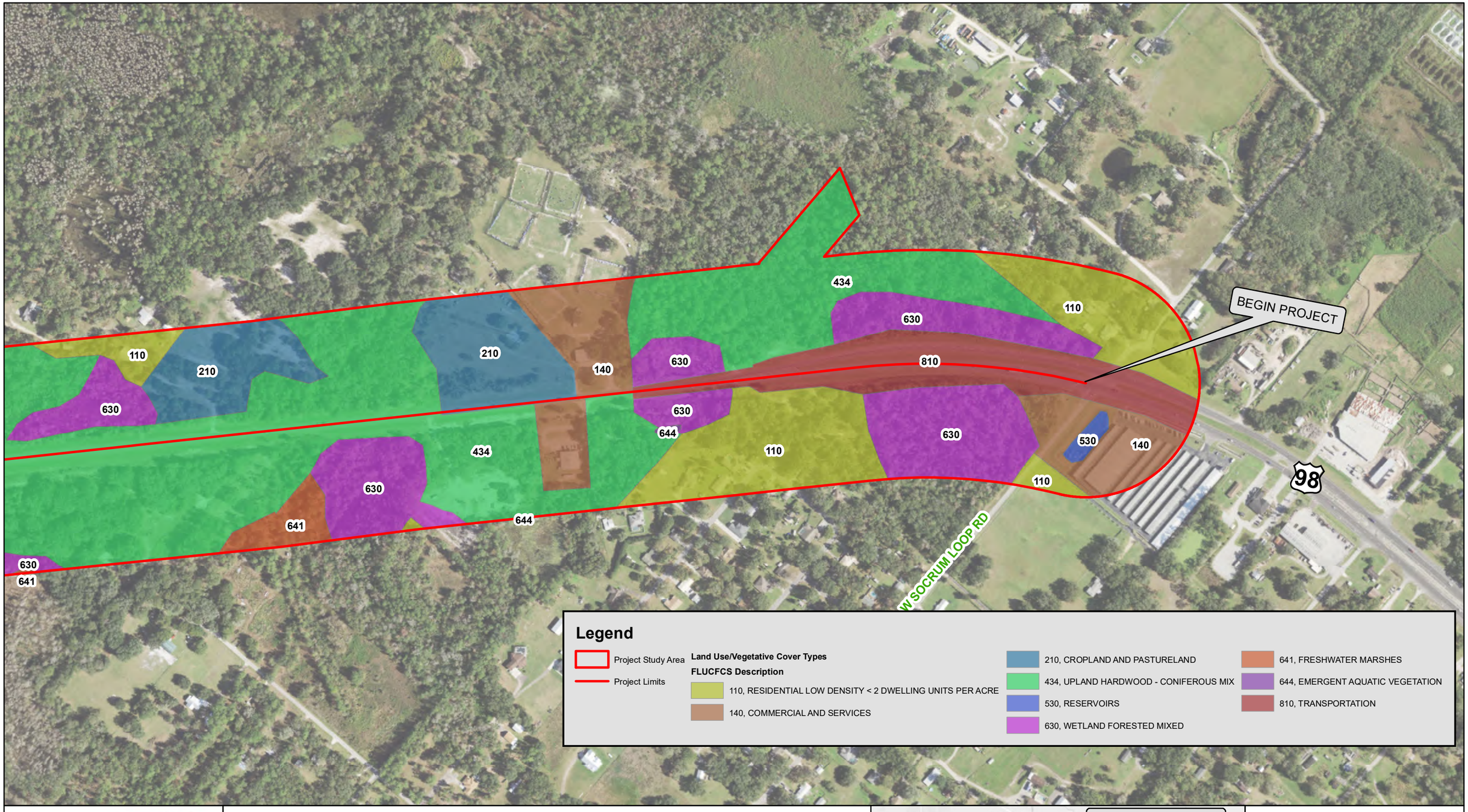
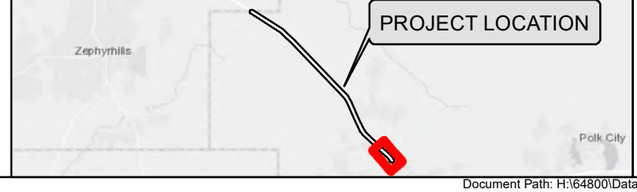


Figure A-1- Land Use/Vegetative Cover

Page 1 of 9

US 98 PD&E Study from From West Socrum Loop Road to CR 54
FPID: 436673-1
Polk County, FL



Data Source:
- FDA, ESRI, SWFWMD

1 inch = 401 feet
0 200 400
Feet

Coordinate System: NAD 1983
Florida State Plane West

Document Path: H:\64800\Data-GIS\mxd\Draft NRE\Figure A-1 - FLUCCS Land Use_rev2.mxd

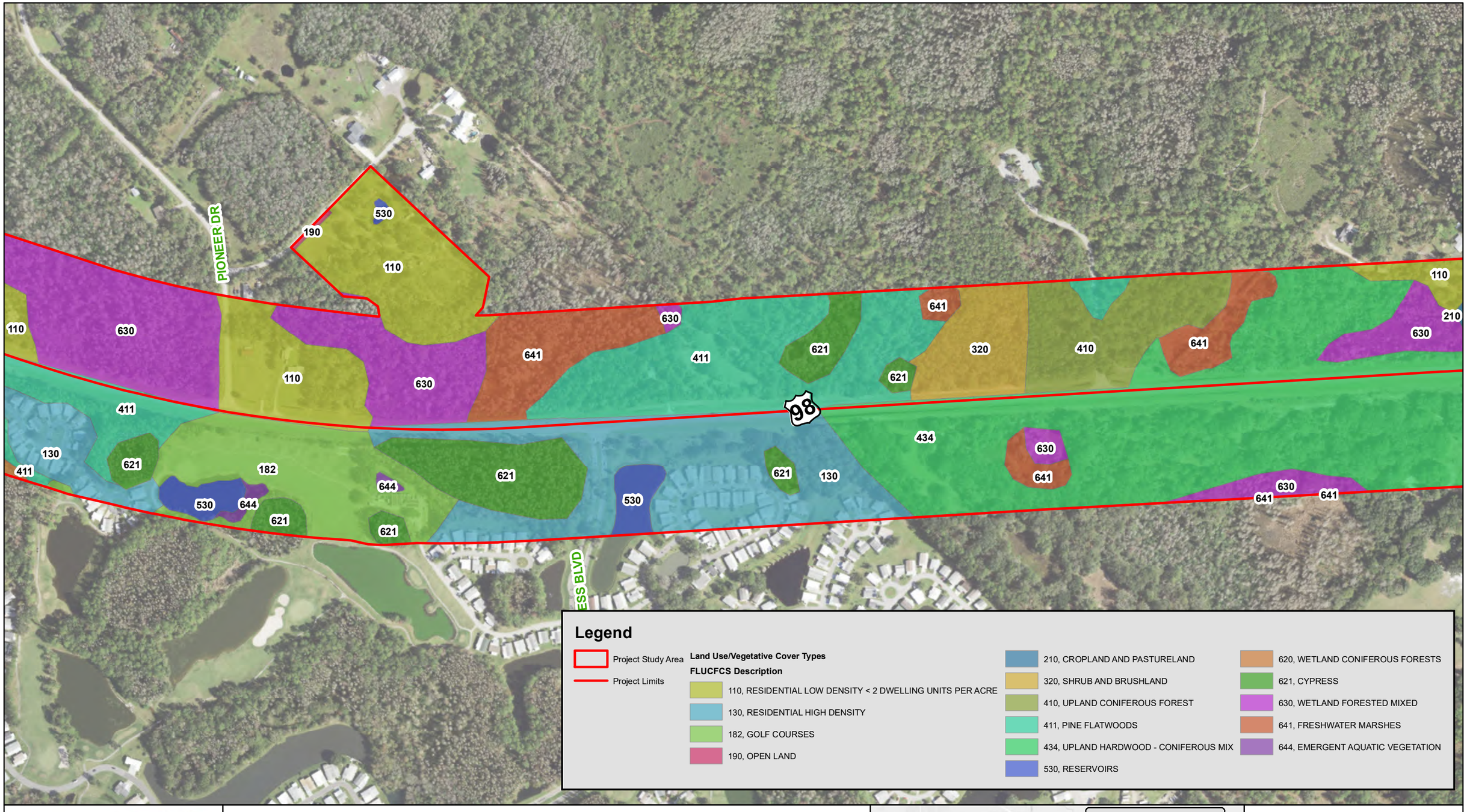
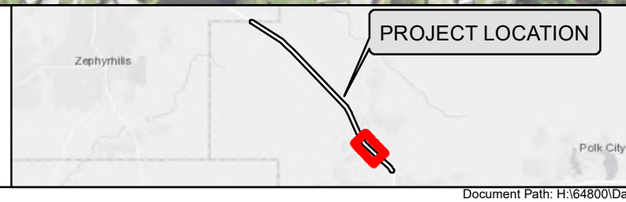


Figure A-1- Land Use/Vegetative Cover

Page 2 of 9

US 98 PD&E Study from From West Socrum Loop Road to CR 54
FPID: 436673-1
Polk County, FL



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- FDA, ESRI, SWFWMD

1 inch = 401 feet
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Feet

Coordinate System: NAD 1983
Florida State Plane West

Document Path: H:\64800\Data-GIS\mxd\Draft NRE\Figure A-1 - FLUCCS Land Use_rev2.mxd

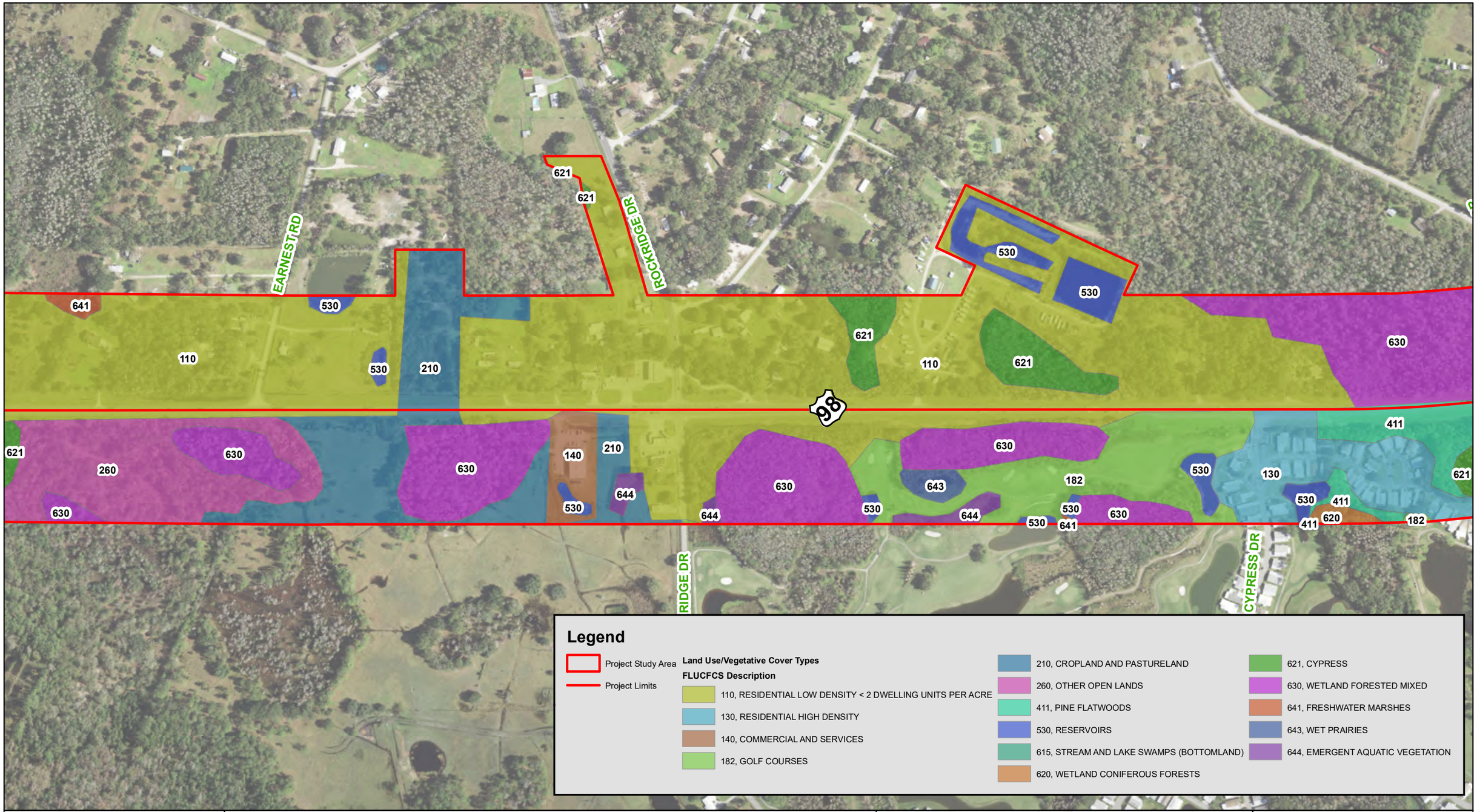
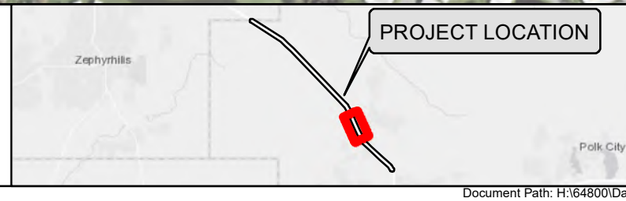


Figure A-1- Land Use/Vegetative Cover

US 98 PD&E Study from From West Socrum Loop Road to CR 54
FPID: 436673-1
Polk County, FL



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- FDA, ESRI, SWFWMD

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Florida State Plane West

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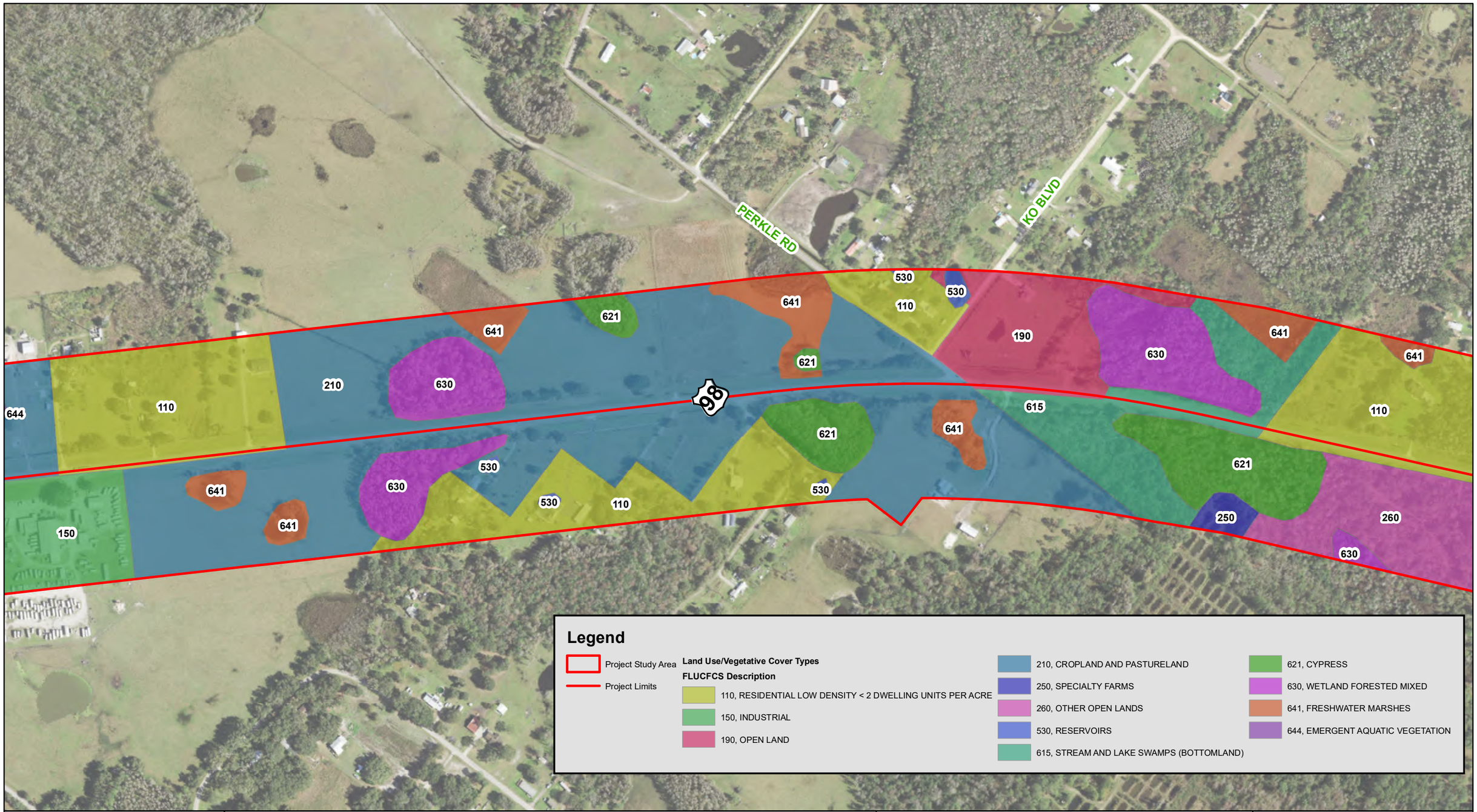
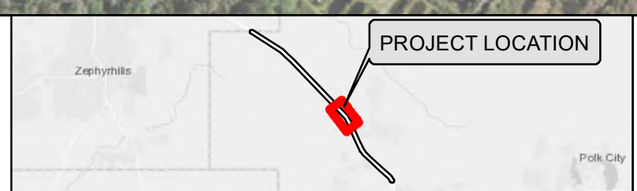


Figure A-1- Land Use/Vegetative Cover

Page 4 of 9

US 98 PD&E Study from From West Socrum Loop Road to CR 54
FPID: 436673-1
Polk County, FL



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- FDA, ESRI, SWFWMD

1 inch = 401 feet
0 200 400
Feet

Coordinate System: NAD 1983
Florida State Plane West

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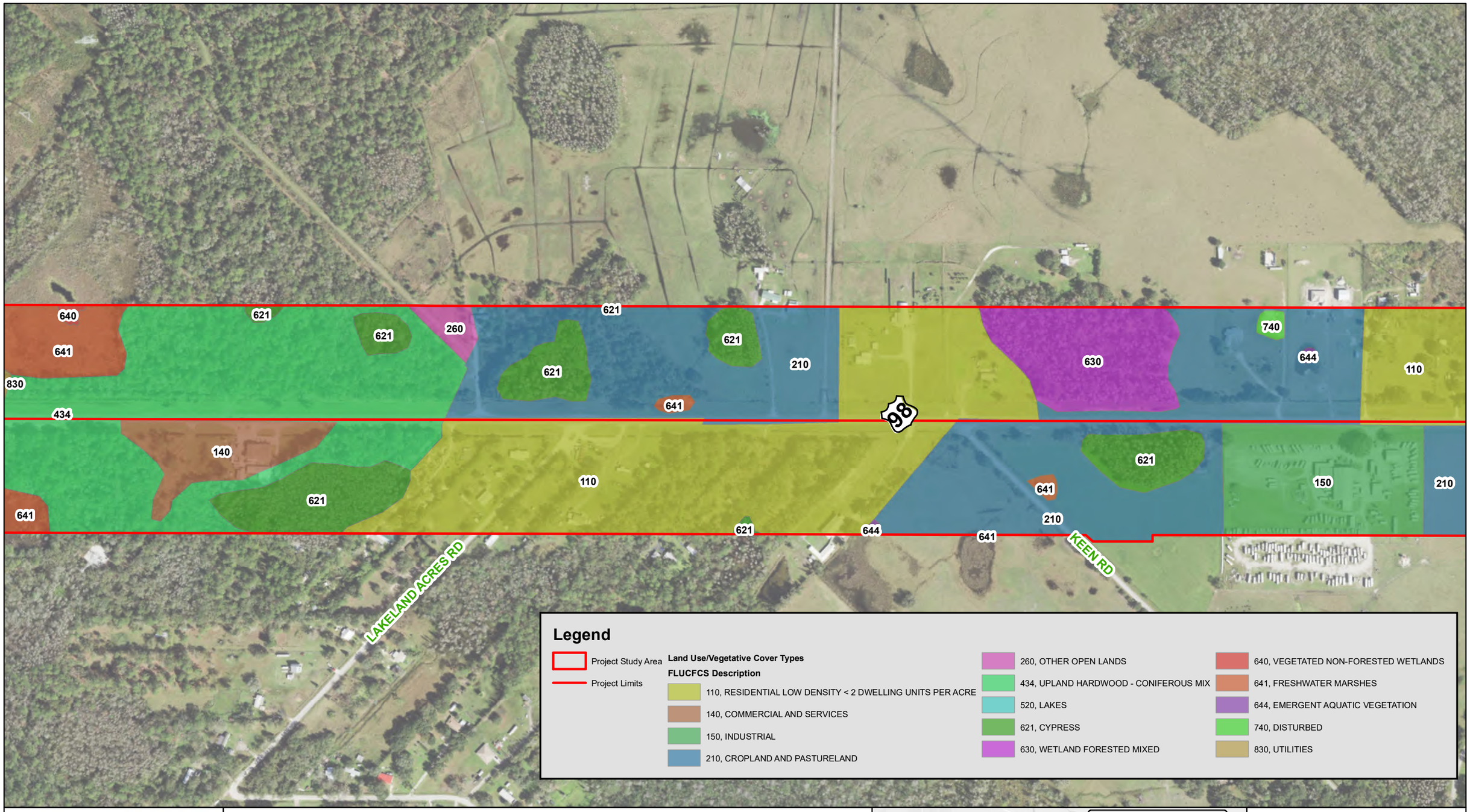
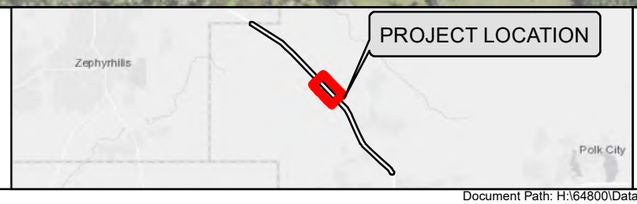


FDOT

Figure A-1- Land Use/Vegetative Cover

Page 5 of 9

US 98 PD&E Study from From West Socrum Loop Road to CR 54
FPID: 436673-1
Polk County, FL



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1 inch = 401 feet
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Feet

Coordinate System: NAD 1983
Florida State Plane West

Document Path: H:\64800\Data-GIS\mxd\Draft NRE\Figure A-1 - FLUCCS Land Use_rev2.mxd

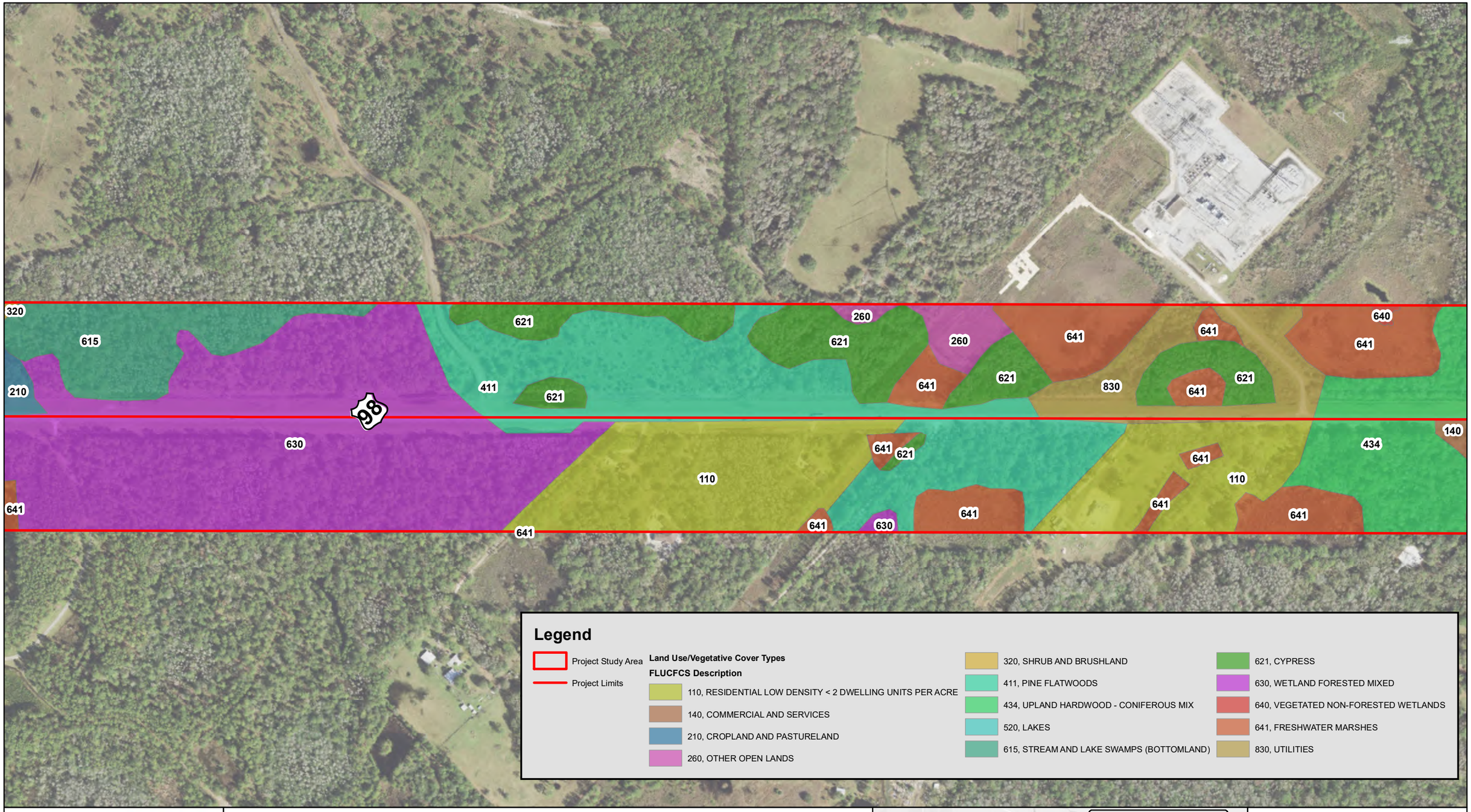
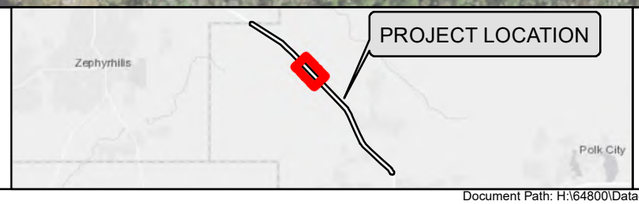


Figure A-1- Land Use/Vegetative Cover

US 98 PD&E Study from From West Socrum Loop Road to CR 54
FPID: 436673-1
Polk County, FL



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1 inch = 401 feet
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Coordinate System: NAD 1983
Florida State Plane West

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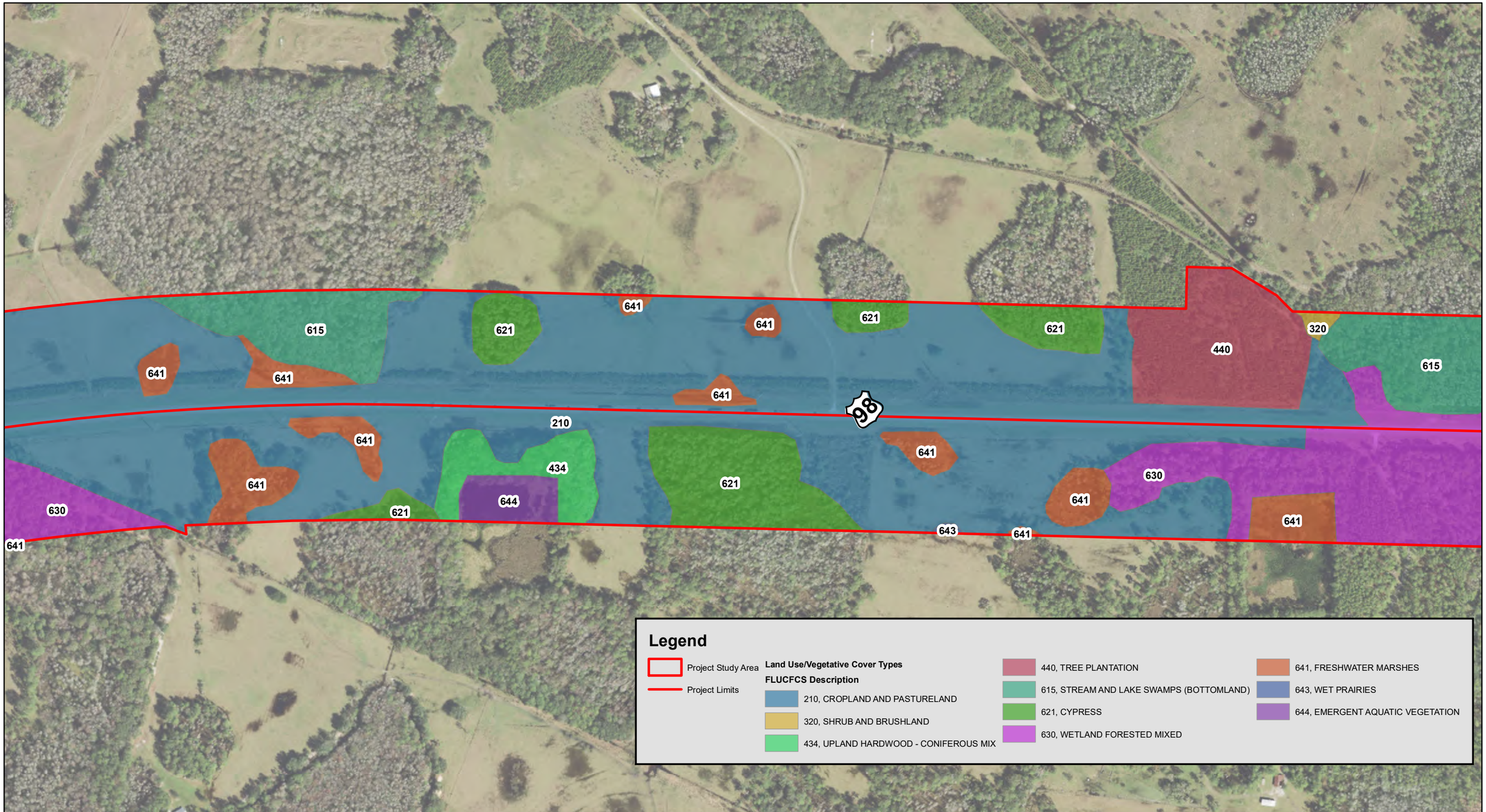
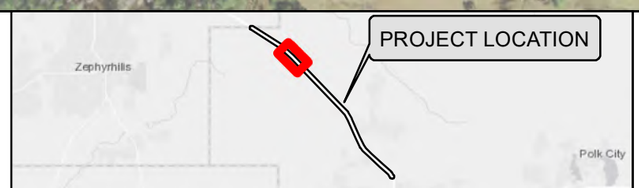


Figure A-1- Land Use/Vegetative Cover

Page 7 of 9

US 98 PD&E Study from From West Socrum Loop Road to CR 54
FPID: 436673-1
Polk County, FL



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1 inch = 401 feet
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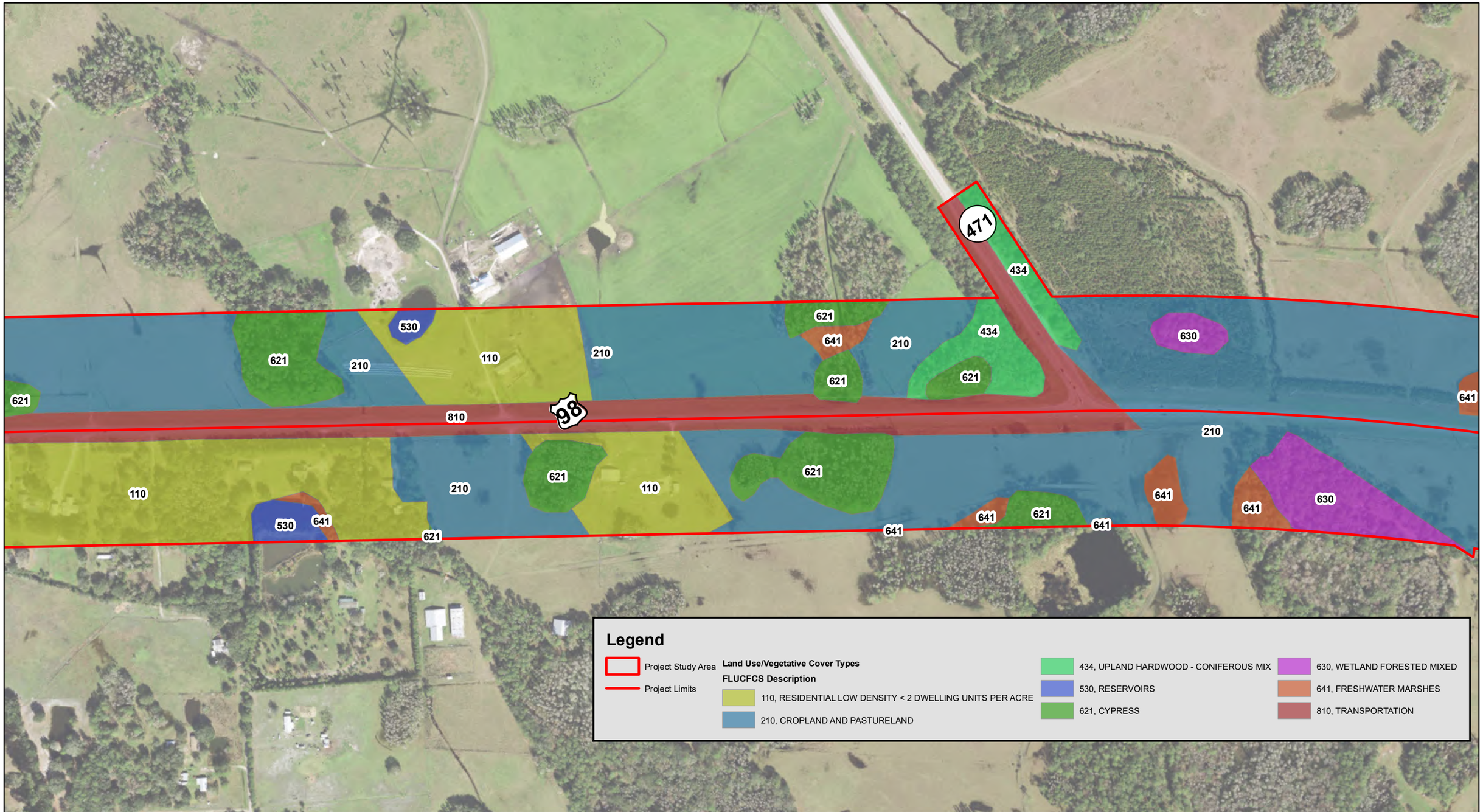
Feet

Coordinate System: NAD 1983
Florida State Plane West

Document Path: H:\64800\Data-GIS\mxd\Draft NRE\Figure A-1 - FLUCCS Land Use_rev2.mxd

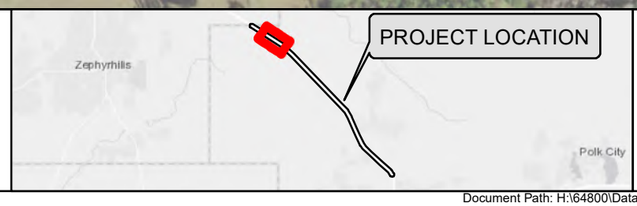


FDOT

Figure A-1- Land Use/Vegetative Cover

Page 8 of 9

US 98 PD&E Study from From West Socrum Loop Road to CR 54
FPID: 436673-1
Polk County, FL



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Feet

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Florida State Plane West

Document Path: H:\64800\Data-GIS\mxd\Draft NRE\Figure A-1 - FLUCCS Land Use_rev2.mxd

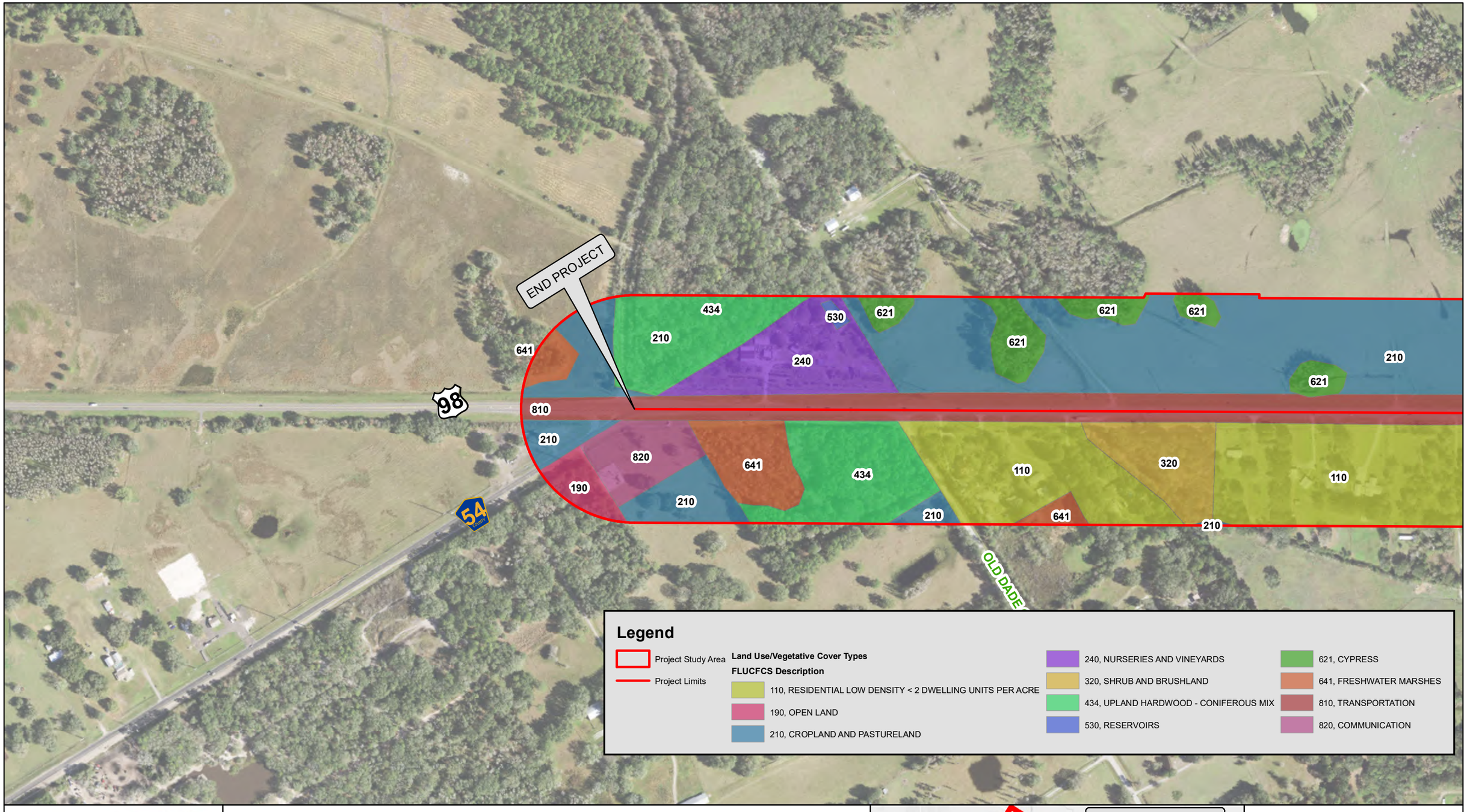
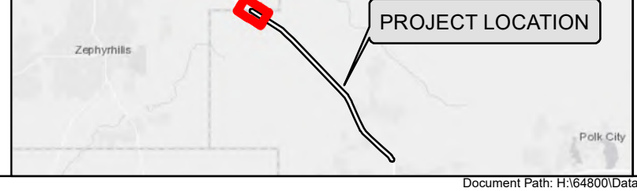


Figure A-1- Land Use/Vegetative Cover

Page 9 of 9

US 98 PD&E Study from From West Socrum Loop Road to CR 54
FPID: 436673-1
Polk County, FL



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1 inch = 401 feet
0 200 400
Feet

Coordinate System: NAD 1983
Florida State Plane West

Document Path: H:\64800\Data-GIS\mxd\Draft NRE\Figure A-1 - FLUCCS Land Use_rev2.mxd

APPENDIX D

Soils Map

Legend

- Project Limits
- Parcels
- County Line

Soil Rating

- A
- A/D
- B/D
- C
- C/D
- Water
- Urban Land / Udorthants, Excavated

0 625 1,250 2,500 Feet

BEGIN PROJECT

98 700

Polk County Soil Descriptions

5: EauGallie Fine Sand

6: Eaton Mucky Fine Sand, Depressional

7: Pomona Fine Sand

9: Lynne Sand

10: Malabar Fine Sand, 0 to 2 Percent Slopes

13: Samsula Muck, Frequently Ponded, 0 to 1 Percent Slopes

14: Sparr Sand, 0 to 5 Percent Slopes

15: Tavares Fine Sand, 0 to 5 Percent Slopes

16: Urban Land, 0 to 2 Percent Slopes

17: Smyrna and Myakka Fine Sands

19: Floridana Mucky Fine Sand, Frequently Ponded, 0 to 1 Percent Slopes

20: Fort Meade Sand, 0 to 5 Percent Slopes

25: Placid and Myakka Fine Sands, Depressional

26: Lochloosa Fine Sand

31: Adamsville Fine Sand, 0 to 2 Percent Slopes

32: Kaliga Muck, Frequently Ponded, 0 to 1 Percent Slopes

33: Holopaw Fine Sand, Frequently Ponded, 0 to 1 Percent Slopes

35: Hontoon Muck, Frequently Ponded, 0 to 1 Percent Slopes

36: Basinger Mucky Fine Sand, Frequently Ponded, 0 to 1 Percent Slopes

38: Electra Fine Sand

40: Wauchula Fine Sand

43: Oldsmar Fine Sand

47: Zolfo Fine Sand, 0 to 2 Percent Slopes

58: Udorthants, Excavated

62: Wabasso-Wabasso, Wet, Fine Sand, 0 to 2 Percent Slopes

76: Millhopper Fine Sand, 0 to 5 Percent Slopes

87: Basinger Fine Sand, 0 to 2 Percent Slopes

99: Water

Florida Department of Transportation

District 1

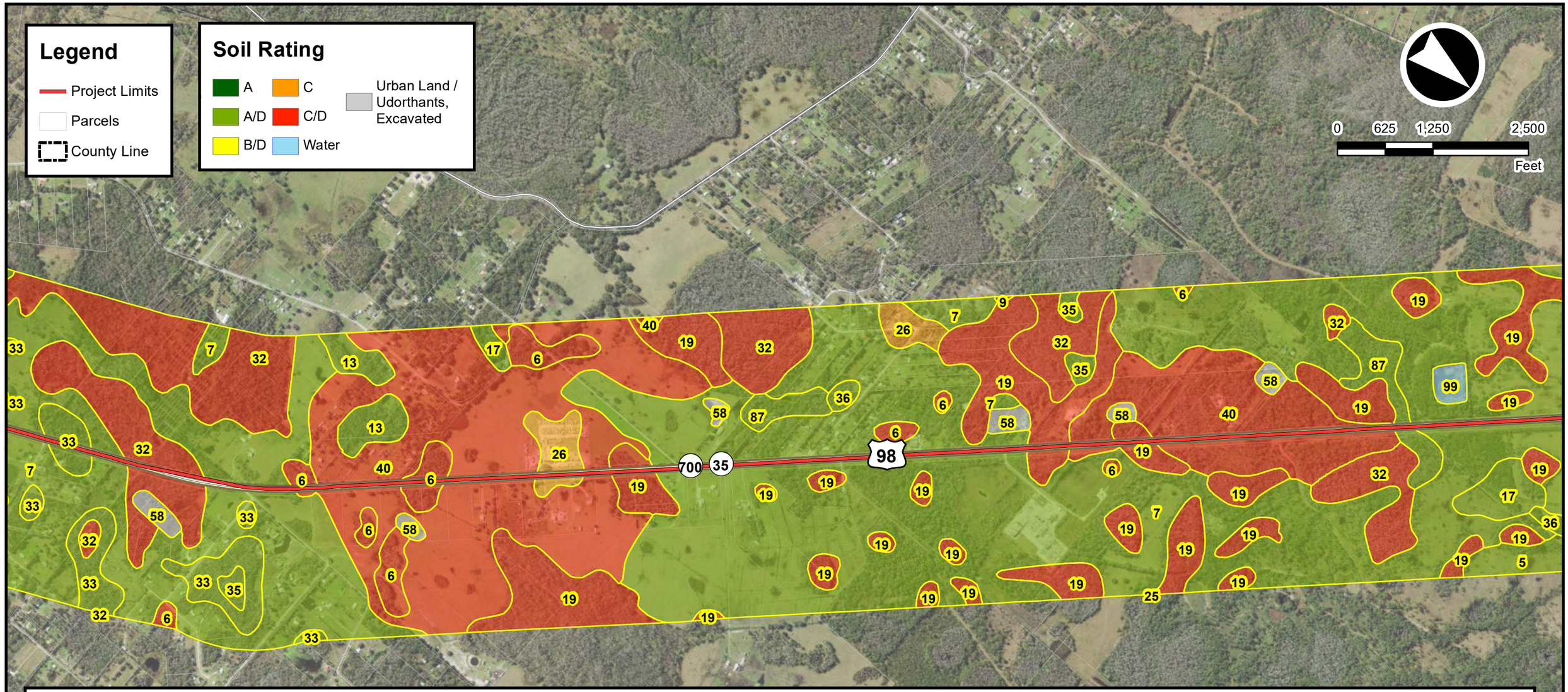
US 98 PD&E Study

From W Socrum Loop Road to County Road 54
Polk County, Florida

Financial Project ID: 436673-1-52-01

NRCS SOILS MAP

Figure 4A



Polk County Soil Descriptions

5: EauGallie Fine Sand

6: Eaton Mucky Fine Sand, Depressional

7: Pomona Fine Sand

9: Lynne Sand

10: Malabar Fine Sand, 0 to 2 Percent Slopes

13: Samsula Muck, Frequently Ponded, 0 to 1 Percent Slopes

14: Sparr Sand, 0 to 5 Percent Slopes

15: Tavares Fine Sand, 0 to 5 Percent Slopes

16: Urban Land, 0 to 2 Percent Slopes

17: Smyrna and Myakka Fine Sands

19: Floridana Mucky Fine Sand, Frequently Ponded, 0 to 1 Percent Slopes

20: Fort Meade Sand, 0 to 5 Percent Slopes

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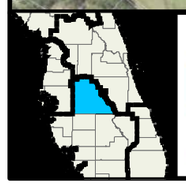
99: Water



Florida Department of Transportation

District 1

US 98 PD&E Study

From W Socrum Loop Road to County Road 54
Polk County, Florida

Financial Project ID: 436673-1-52-01

NRCS SOILS MAP

Figure

4B

Legend

- Project Limits
- Parcels
- County Line

Soil Rating

- A
- A/D
- B/D
- C
- C/D
- Water
- Urban Land / Udorthants, Excavated

Pasco County Soil Descriptions

2: Pomona Fine Sand

5: Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes

8: Sellers Mucky Loamy Fine Sand

16: Zephyr Muck

23: Basinger Fine Sand, Depressional, 0 to 1 Percent Slopes

35: EauGallie Fine Sand

0 625 1,250 2,500 Feet

POLK COUNTY

PASCO COUNTY

END PROJECT

Polk County Soil Descriptions

5: EauGallie Fine Sand

6: Eaton Mucky Fine Sand, Depressional

7: Pomona Fine Sand

9: Lynne Sand

10: Malabar Fine Sand, 0 to 2 Percent Slopes

13: Samsula Muck, Frequently Ponded, 0 to 1 Percent Slopes

14: Sparr Sand, 0 to 5 Percent Slopes

15: Tavares Fine Sand, 0 to 5 Percent Slopes

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99: Water

Florida Department of Transportation
District 1

US 98 PD&E Study

From W Socrum Loop Road to County Road 54
Polk County, Florida

Financial Project ID: 436673-1-52-01

NRCS SOILS MAP

Figure 4C

APPENDIX E

Construction Cost Estimate

Date: 2/3/2022 7:55:58 AM

FDOT Long Range Estimating System - Production
R3: Project Details by Sequence Report

Project: 436673-1-52-01 **Letting Date:** 01/2099

Description: SR 35 (US 98) FROM N OF WEST SOCRUM LOOP RD TO S OF CR 54

District: 01	**County:** 16 POLK	**Market Area:** 08	**Units:** English
Contract Class: 9	**Lump Sum Project:** N	**Design/Build:** Y	**Project Length:** 9.089 MI

Project Manager: JMK-JJM-DCT

Version 11 Project Grand Total **$105,041,625.93**
Description: Phase I Estimate markups Per PM from Version 10 - 2/2/22

Sequence: 1 NDU - New Construction, Divided, Urban **Net Length:** 2.696 MI 14,235 LF

Description: 45 mph C3 typical section from Socrum Loop Rd to North of Rockridge

---

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	80.00 / 80.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	2.696
Top of Structural Course For Begin Section	103.00
Top of Structural Course For End Section	103.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	52.29 AC	$15,552.29	$813,229.24
120-6	EMBANKMENT	138,025.61 CY	$10.92	$1,507,239.66

Earthwork Component Total $2,320,468.90

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	24.00 / 24.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	92,242.02 SY	$9.27	$855,083.53
285-711	OPTIONAL BASE,BASE GROUP 11	75,919.36 SY	$28.54	$2,166,738.53
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	10,438.91 TN	$99.42	$1,037,836.43
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	6,263.35 TN	$166.26	$1,041,344.57

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
334-1-12	SUPERPAVE ASPHALTIC CONC, TRAFFIC B	2,609.73 TN	$133.47	$348,320.66
400-0-11	CONC CLASS NS, GRAVITY WALL	266.10 CY	$813.21	$216,395.18
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	1,330.50 LF	$56.98	$75,811.89

EX-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
0102-2-XX	SPECIAL DETOUR	1.00 EA	$300,000.00	$300,000.00

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	13.00
Stabilization Code	Y
Base Code	Y
Friction Course Code	Y

Pay Items

Pay	Description	Quantity Unit	Unit Price	Extended

Pay item				Amount
160-4	TYPE B STABILIZATION	11,991.46 SY	$9.27	$111,160.83
285-711	OPTIONAL BASE,BASE GROUP 11	9,869.52 SY	$28.54	$281,676.10
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	1,357.06 TN	$99.42	$134,918.91
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	814.24 TN	$166.26	$135,375.54

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-1-1	RAISED PAVMT MARK, TYPE B W/O FINAL SURF	1,092.00 EA	$4.67	$5,099.64
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	10.78 GM	$1,040.45	$11,216.05
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	5.39 GM	$423.60	$2,283.20
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	10.78 GM	$4,329.79	$46,675.14
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"	5.39 GM	$1,522.78	$8,207.78

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	10.00 / 10.00
Bike Path Structural Spread Rate	165
Noise Barrier Wall Length	1,150.00
Noise Barrier Wall Begin Height	16.00
Noise Barrier Wall End Height	16.00

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	37,959.68 SY	$9.27	$351,886.23

285-701	OPTIONAL BASE,BASE GROUP 01	31,633.07 SY	$19.11	$604,507.97
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	2,609.73 TN	$146.81	$383,134.46
534-72-101	SOUND/NOISE BARRIER-INC FOUNDATION, PERM	18,400.00 SF	$40.65	$747,960.00
	Roadway Component Total			$8,865,632.64

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.25 / 8.25
Total Outside Shoulder Perf. Turf Width L/R	6.00 / 6.00
Sidewalk Width L/R	0.00 / 0.00

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	14,234.88 LF	$28.26	$402,277.71
520-1-10	CONCRETE CURB & GUTTER, TYPE F	14,234.88 LF	$28.26	$402,277.71
570-1-2	PERFORMANCE TURF, SOD	18,979.84 SY	$3.61	$68,517.22

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	28,469.76 LF	$1.48	$42,135.24
104-11	FLOATING TURBIDITY BARRIER	674.00 LF	$14.57	$9,820.18
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	674.00 LF	$4.63	$3,120.62
104-15	SOIL TRACKING PREVENTION DEVICE	3.00 EA	$2,310.72	$6,932.16
104-18	INLET PROTECTION SYSTEM	138.00 EA	$92.83	$12,810.54
107-1	LITTER REMOVAL	68.61 AC	$31.59	$2,167.39
107-2	MOWING	68.61 AC	$67.47	$4,629.12
	Shoulder Component Total			$954,687.89

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	17.50

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	28,469.76 LF	$25.60	$728,825.86
570-1-2	PERFORMANCE TURF, SOD	27,678.93 SY	$3.61	$99,920.94
	Median Component Total			$828,746.80

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	97.00 EA	$4,772.71	$462,952.87
425-1-451	INLETS, CURB, TYPE J-5, <10'	67.00 EA	$6,277.40	$420,585.80
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	6,080.00 LF	$114.26	$694,700.80
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	3,264.00 LF	$171.11	$558,503.04
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	2,104.00 LF	$251.25	$528,630.00
570-1-1	PERFORMANCE TURF	468.00 SY	$2.90	$1,357.20

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
425-1-361	INLETS, CURB, TYPE P-6, <10'	31.00 EA	$5,197.74	$161,129.94
425-1-461	INLETS, CURB, TYPE J-6, <10'	15.00 EA	$6,891.17	$103,367.55
425-1-549	INLETS, DT BOT, TYPE D, MODIFY	3.00 EA	$5,385.17	$16,155.51
425-1-551	INLETS, DT BOT, TYPE E, <10'	28.00 EA	$4,479.28	$125,419.84
425-2-61	MANHOLES, P-8, <10'	8.00 EA	$4,514.78	$36,118.24
425-2-91	MANHOLES, J-8, <10'	14.00 EA	$6,863.11	$96,083.54

430-175-118	PIPE CULV, OPT MATL, ROUND, 18"S/CD	15,480.00 LF	$96.21	$1,489,330.80
430-175-130	PIPE CULV, OPT MATL, ROUND, 30"S/CD	4,504.00 LF	$138.22	$622,542.88
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	2,504.00 LF	$186.16	$466,144.64
430-175-154	PIPE CULV, OPT MATL, ROUND, 54"S/CD	1,384.00 LF	$288.38	$399,117.92
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	1,384.00 LF	$339.82	$470,310.88
430-524-300	STRAIGHT CONC ENDW 24", TRIP, 0 ROUND	2.00 EA	$10,400.18	$20,800.36
430-530-100	STRAIGHT CONC ENDW 30", SINGLE, 0 ROUND	2.00 EA	$3,827.00	$7,654.00
430-536-100	STRAIGHT CONC ENDW 36", SINGLE, 0 ROUND	2.00 EA	$5,353.57	$10,707.14
430-554-100	STRAIGHT CONC ENDW 54", SINGLE, 0 ROUND	4.00 EA	$15,723.07	$62,892.28
430-982-129	MITERED END SECT, OPTIONAL RD, 24" CD	3.00 EA	$1,683.58	$5,050.74
430-982-141	MITERED END SECT, OPTIONAL RD, 48" CD	2.00 EA	$4,631.32	$9,262.64
430-982-143	MITERED END SECT, OPTIONAL RD, 60" CD	1.00 EA	$7,260.00	$7,260.00
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	20.00 EA	$1,911.47	$38,229.40
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	3.00 EA	$2,155.17	$6,465.51
	Comment: Ponds 1, 2, and 3			

Box Culvert 1

Description	Value
Size	5 x 4
Length	118.00
Multiplier	1

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	72.02 CY	$1,873.82	$134,952.52
415-1-1	REINF STEEL- ROADWAY	8,305.00 LB	$0.96	$7,972.80

Box Culvert 2

Description	Value
Size	5 x 4
Length	118.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	72.02	CY	$1,873.82	$134,952.52
415-1-1	REINF STEEL- ROADWAY	8,305.00	LB	$0.96	$7,972.80

Box Culvert 3

Description	Value
Size	10 x 4
Length	118.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	134.26	CY	$1,873.82	$251,579.07
415-1-1	REINF STEEL- ROADWAY	16,727.20	LB	$0.96	$16,058.11

Retention Basin 1

Description	Value
Size	2 AC
Multiplier	1
Depth	8.00
Description	Pond 1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.11	AC	$15,552.29	$32,815.33
120-1	REGULAR EXCAVATION	27,233.07	CY	$8.51	$231,753.43

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-549	INLETS, DT BOT, TYPE D, MODIFY	1.00	EA	$5,385.17	$5,385.17
425-2-61	MANHOLES, P-8, <10'	3.00	EA	$4,514.78	$13,544.34
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	520.00	LF	$114.26	$59,415.20
430-982-129	MITERED END SECT, OPTIONAL RD, 24" CD	1.00	EA	$1,683.58	$1,683.58

Retention Basin 2

Description	Value

Size	5 AC
Multiplier	1
Depth	8.00
Description	Pond 2

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	5.77 AC	$15,552.29	$89,736.71
120-1	REGULAR EXCAVATION	74,471.47 CY	$8.51	$633,752.21

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
425-1-549	INLETS, DT BOT, TYPE D, MODIFY	1.00 EA	$5,385.17	$5,385.17
425-2-61	MANHOLES, P-8, <10'	2.00 EA	$4,514.78	$9,029.56
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	104.00 LF	$114.26	$11,883.04
430-982-129	MITERED END SECT, OPTIONAL RD, 24" CD	1.00 EA	$1,683.58	$1,683.58

Retention Basin 3

Description	Value
Size	2 AC
Multiplier	1
Depth	8.00
Description	Pond 3

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.71 AC	$15,552.29	$57,699.00
120-1	REGULAR EXCAVATION	47,883.73 CY	$8.51	$407,490.54

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
425-1-549	INLETS, DT BOT, TYPE D, MODIFY	1.00 EA	$5,385.17	$5,385.17
425-2-61	MANHOLES, P-8, <10'	1.00 EA	$4,514.78	$4,514.78
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	256.00 LF	$114.26	$29,250.56
430-982-129	MITERED END SECT, OPTIONAL RD, 24" CD	1.00 EA	$1,683.58	$1,683.58

Retention Basin 4

Description	Value
Size	2.5 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.00	AC	$15,552.29	$46,656.87
120-1	REGULAR EXCAVATION	8,066.67	CY	$8.51	$68,647.36
570-1-1	PERFORMANCE TURF	12,100.00	SY	$2.90	$35,090.00

Retention Basin 5

Description	Value
Size	1 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.00	AC	$15,552.29	$15,552.29
120-1	REGULAR EXCAVATION	3,226.67	CY	$8.51	$27,458.96
570-1-1	PERFORMANCE TURF	4,840.00	SY	$2.90	$14,036.00

Retention Basin 6

Description	Value
Size	1 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 3

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.00	AC	$15,552.29	$15,552.29
120-1	REGULAR EXCAVATION	3,226.67	CY	$8.51	$27,458.96
570-1-1	PERFORMANCE TURF	4,840.00	SY	$2.90	$14,036.00

Retention Basin 7

Description	Value
Size	5 AC

Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 4

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	5.00	AC	$15,552.29	$77,761.45
120-1	REGULAR EXCAVATION	16,133.33	CY	$8.51	$137,294.64
570-1-1	PERFORMANCE TURF	24,200.00	SY	$2.90	$70,180.00

Retention Basin 8

Description	Value
Size	2.5 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 5A

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.00	AC	$15,552.29	$46,656.87
120-1	REGULAR EXCAVATION	8,066.67	CY	$8.51	$68,647.36
570-1-1	PERFORMANCE TURF	12,100.00	SY	$2.90	$35,090.00

Retention Basin 9

Description	Value
Size	1 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 5B

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.00	AC	$15,552.29	$15,552.29
120-1	REGULAR EXCAVATION	3,226.67	CY	$8.51	$27,458.96
570-1-1	PERFORMANCE TURF	4,840.00	SY	$2.90	$14,036.00

Retention Basin 10

Description	Value
Size	1 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 5C

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.00 AC	$15,552.29	$15,552.29
120-1	REGULAR EXCAVATION	3,226.67 CY	$8.51	$27,458.96
570-1-1	PERFORMANCE TURF	4,840.00 SY	$2.90	$14,036.00
	Drainage Component Total			$9,790,565.84

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	65.00 AS	$365.34	$23,747.10
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	6.00 AS	$1,203.44	$7,220.64
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	6.00 AS	$5,872.19	$35,233.14
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	6.00 AS	$9,985.59	$59,913.54
	Signing Component Total			$126,114.42

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	4 Lane Strain Pole
Multiplier	1
Description	Rockridge Road

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	750.00 LF	$10.35	$7,762.50
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	200.00 LF	$24.42	$4,884.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00 PI	$6,628.71	$6,628.71
634-4-143	SPAN WIRE ASSEMBLY, F&I, SINGLE PT, BOX	1.00 PI	$6,363.17	$6,363.17
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	14.00 EA	$801.68	$11,223.52
639-1-	ELECTRICAL POWER	1.00 AS	$3,372.10	$3,372.10

112	SRV,F&I,OH,M,PUR BY CON			
639-2-1	ELECTRICAL SERVICE WIRE, F&I	30.00 LF	$6.00	$180.00
641-2-16	PREST CNC POLE,F&I,TYP P-VI	4.00 EA	$12,107.45	$48,429.80
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	12.00 AS	$990.36	$11,884.32
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00 AS	$619.29	$4,954.32
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	12.00 EA	$405.04	$4,860.48
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	12.00 AS	$1,024.67	$12,296.04
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00 EA	$227.96	$1,823.68
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	$33,602.02	$33,602.02
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00 EA	$252.66	$1,010.64
	Signalizations Component Total			$159,275.30

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	**Value**
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	1,795.65	LF	$10.35	$18,584.98
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	356.41	LF	$24.42	$8,703.53
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	12.00	EA	$801.68	$9,620.16
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	6,558.20	LF	$2.13	$13,968.97
715-4-13	LIGHT POLE COMPLETE, F&I- STD, 40'	12.00	EA	$5,802.23	$69,626.76
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	12.00	EA	$582.76	$6,993.12
	Subcomponent Total				$127,497.52
	Lighting Component Total				$127,497.52

Sequence 1 Total $23,172,989.31

Sequence: 2 NDR - New Construction, Divided, Rural

Net Length: 0.057 MI / 301 LF

Description: Big Cypress Blvd. Roundabout Central Island, includes landscaping and irrigation system

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EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	80.00 / 80.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.057
Top of Structural Course For Begin Section	100.00
Top of Structural Course For End Section	100.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.11	AC	$15,552.29	$17,263.04

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
120-1	REGULAR EXCAVATION	400.00	CY	$8.51	$3,404.00
	Comment: 22000 ft x 0.5 ft deep / 27 = 407 CY use 400 CY				
120-6	EMBANKMENT	400.00	CY	$10.92	$4,368.00
	Comment: 22000 ft x 0.5 ft deep / 27 = 407 CY use 400 CY				

Earthwork Component Total $25,035.04

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	16.00 / 16.00
Structural Spread Rate	275
Friction Course Spread Rate	165

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,800.00	SY	$9.27	$16,686.00
	Comment: measure (22121-6175)SF /9 = 1772 SY use 1800 SY				
285-711	OPTIONAL BASE,BASE GROUP 11	1,400.00	SY	$28.54	$39,956.00
	Comment: measure (18991-6267)SF /9 = 1413SY use 1400SY				
334-1-15	SUPERPAVE ASPHALTIC CONC, TRAFFIC E	192.50	TN	$141.05	$27,152.12
	Comment: (1400 X 110 X 2.5)/2000				
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	115.50	TN	$166.26	$19,203.03
	Comment: 1.5" FC-12.5 Traffic E PG 76-22 (1400 X 110 X 1.5)/2000				
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.05	GM	$1,040.45	$52.02
710-11-141	PAINTED PAVT MARK,STD,WH,DOT GUIDE, 6"	0.02	GM	$602.84	$12.06
710-11-170	PAINTED PAVT MARK,STD,WHITE, ARROWS	6.00	EA	$29.96	$179.76
710-11-201	PAINTED PAVT MARK,STD,YELLOW,SOLID,6"	0.07	GM	$1,028.92	$72.02

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended

				Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	8.00 EA	$5.07	$40.56
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.23 GM	$4,921.60	$1,131.97
	Roadway Component Total			$104,485.55

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.00 / 10.00
Total Outside Shoulder Perf. Turf Width L/R	2.67 / 2.67
Paved Outside Shoulder Width L/R	5.00 / 5.00
Structural Spread Rate	275
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,310.72	$2,310.72
107-1	LITTER REMOVAL	0.25	AC	$31.59	$7.90
107-2	MOWING	0.25	AC	$67.47	$16.87
	Shoulder Component Total				$2,335.49

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	0.00
Performance Turf Width	0.00
Total Median Shoulder Width L/R	0.00 / 0.00
Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	275
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
350-30-13	CONC PAVEMENT FOR ROUNDABOUT APRON, 12"	435.00	SY	$165.28	$71,896.80
520-2-4	CONCRETE CURB, TYPE D	290.00	LF	$24.92	$7,226.80
520-2-8	CONCRETE CURB, TYPE RA	370.00	LF	$31.86	$11,788.20
570-1-2	PERFORMANCE TURF, SOD	700.00	SY	$3.61	$2,527.00
	Median Component Total				$93,438.80

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	4.00	AS	$365.34	$1,461.36
	Signing Component Total				$1,461.36

LIGHTING COMPONENT

Rural Lighting Subcomponent

Description	Value
Multiplier (Number of Poles)	16

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	3,200.00	LF	$10.35	$33,120.00
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	16.00	EA	$801.68	$12,826.88
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	9,600.00	LF	$2.13	$20,448.00
715-4-14	LIGHT POLE COMPLETE, F&I- STD, 45'	16.00	EA	$5,289.92	$84,638.72
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	16.00	EA	$582.76	$9,324.16
	Subcomponent Total				$160,357.76
	Lighting Component Total				$160,357.76

LANDSCAPING COMPONENT

User Input Data

Description	Value
Lump Sum	40,000.00
Cost %	0.00
Component Detail	N

Landscaping Component Total $40,000.00

Sequence 2 Total $427,114.00

Sequence: 3 NDR - New Construction, Divided, Rural

Net Length: 0.023 MI 120 LF

Description: Big Cypress Blvd. Roundabout 2-Lane Approach I

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	40.00 / 40.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.023
Top of Structural Course For Begin Section	100.00
Top of Structural Course For End Section	100.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.22	AC	$15,552.29	$3,421.50

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
120-1	REGULAR EXCAVATION	350.00	CY	$8.51	$2,978.50
	Comment: 2-Lane Leg: 19200 ft X 0.5 ft / 27=356 CY use 350 CY				
120-6	EMBANKMENT	350.00	CY	$10.92	$3,822.00

Comment: 2-Lane Leg: 19200 ft X 0.5 ft / 27=356 CY use 350 CY

Earthwork Component Total $10,222.00

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	17.00 / 17.00
Structural Spread Rate	275
Friction Course Spread Rate	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	580.00	SY	$9.27	$5,376.60
	Comment: 2-Lane Leg: 5200 SF/9 = 577 SY use 580SY				
285-711	OPTIONAL BASE,BASE GROUP 11	450.00	SY	$28.54	$12,843.00
	Comment: 2-Lane Leg: Measure approx. 450 SY				
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	61.90	TN	$99.42	$6,154.10
	Comment: 2.5" Superpave Traffic E (450 X 110 X 2.5)/2000 = 61.9 TN				
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	37.10	TN	$166.26	$6,168.25
	Comment: 1.5" FC-12.5 Traffic E PG 76-22 (450 X 110 X 1.5)/2000=37.1 TN				
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.15	GM	$1,040.45	$156.07
710-11-123	PAINTED PAVT MARK,STD,WHITE,SOLID, 12"	60.00	LF	$0.57	$34.20
710-11-125	PAINTED PAVT MARK,STD,WHITE,SOLID,24"	90.00	LF	$1.19	$107.10
710-11-141	PAINTED PAVT MARK,STD,WH,DOT GUIDE, 6"	0.02	GM	$602.84	$12.06
710-11-144	PAINTED PAVEMENT MARKINGS, STANDARD, WHI	0.01	GM	$991.37	$9.91
710-11-160	PAINTED PAVT MARK,STD,WHITE, MESSAGE	1.00	EA	$41.04	$41.04
710-11-201	PAINTED PAVT MARK,STD,YELLOW,SOLID,6"	0.15	GM	$1,028.92	$154.34
710-11-224	PAINTED PAVT MARK,STD,YELLOW,SOLID,18"	50.00	LF	$1.10	$55.00

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	3.00	EA	$5.07	$15.21
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.09	GM	$4,921.60	$442.94
	Roadway Component Total				$31,569.82

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.00 / 10.00
Total Outside Shoulder Perf. Turf Width L/R	2.67 / 2.67
Paved Outside Shoulder Width L/R	5.00 / 5.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-701	OPTIONAL BASE,BASE GROUP 01	267.00	SY	$19.11	$5,102.37
	Comment: 2 Lane Leg: (10 ft. path x 120 ft length x 2 sides)/9 = 266.7 SY, use 267 SY				
334-1-12	SUPERPAVE ASPHALTIC CONC, TRAFFIC B	22.00	TN	$133.47	$2,936.34
	Comment: 1.5" Superpave, Traffic B: (267 SY X 110 X 1.5)/2000=22 TN				
520-1-10	CONCRETE CURB & GUTTER,	375.00	LF	$28.26	$10,597.50

	TYPE F			
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	440.00 SY	$51.83	$22,805.20
527-2	DETECTABLE WARNINGS	104.00 SF	$29.29	$3,046.16
570-1-2	PERFORMANCE TURF, SOD	380.00 SY	$3.61	$1,371.80

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	311.63	LF	$1.48	$461.21
107-1	LITTER REMOVAL	0.55	AC	$31.59	$17.37
107-2	MOWING	0.55	AC	$67.47	$37.11
	Shoulder Component Total				$46,375.06

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	0.00
Performance Turf Width	0.00
Total Median Shoulder Width L/R	0.00 / 0.00
Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	240.00	LF	$25.60	$6,144.00
527-2	DETECTABLE WARNINGS	40.00	SF	$29.29	$1,171.60
570-1-2	PERFORMANCE TURF, SOD	100.00	SY	$3.61	$361.00
	Median Component Total				$7,676.60

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	200.00	LF	$115.21	$23,042.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-361	INLETS, CURB, TYPE P-6, <10'	2.00	EA	$5,197.74	$10,395.48
	Drainage Component Total				$33,437.48

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	8.00	AS	$365.34	$2,922.72
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00	AS	$4,527.09	$4,527.09
	Signing Component Total				$7,449.81

Sequence 3 Total $136,730.77

Sequence: 5 NUU - New Construction, Undivided, Urban

Description: Rock Ridge East - 36' width

Net Length: 0.040 MI / 212 LF

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.040
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.48	AC	$15,552.29	$7,465.10
120-6	EMBANKMENT	2,622.48	CY	$10.92	$28,637.48
	Earthwork Component Total				$36,102.58

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	18.00 / 18.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	970.72	SY	$9.27	$8,998.57
285-711	OPTIONAL BASE,BASE GROUP 11	849.02	SY	$28.54	$24,231.03
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	116.74	TN	$99.42	$11,606.29
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	70.04	TN	$166.26	$11,644.85

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	22.00	EA	$3.97	$87.34
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.16	GM	$1,040.45	$166.47
710-11-131	PAINTED PAVT	0.08	GM	$423.60	$33.89

	MARK,STD,WHITE,SKIP, 6"			
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	0.16 GM	$4,329.79	$692.77
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"	0.08 GM	$1,522.78	$121.82
	Roadway Component Total			$57,583.03

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	4.25 / 4.25
Total Outside Shoulder Perf. Turf Width L/R	2.00 / 2.00
Sidewalk Width L/R	0.00 / 0.00

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	212.26 LF	$28.26	$5,998.47
520-1-10	CONCRETE CURB & GUTTER, TYPE F	212.26 LF	$28.26	$5,998.47
570-1-2	PERFORMANCE TURF, SOD	94.34 SY	$3.61	$340.57

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	424.51 LF	$1.48	$628.27
104-11	FLOATING TURBIDITY BARRIER	10.05 LF	$14.57	$146.43
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	10.05 LF	$4.63	$46.53
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$2,310.72	$2,310.72
104-18	INLET PROTECTION SYSTEM	3.00 EA	$92.83	$278.49
107-1	LITTER REMOVAL	0.49 AC	$31.59	$15.48
107-2	MOWING	0.49 AC	$67.47	$33.06
	Shoulder Component Total			$15,796.49

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	2.00	EA	$4,772.71	$9,545.42
425-1-451	INLETS, CURB, TYPE J-5, <10'	1.00	EA	$6,277.40	$6,277.40
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$3,786.98	$3,786.98
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$4,154.31	$4,154.31
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	96.00	LF	$114.26	$10,968.96
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	16.00	LF	$171.11	$2,737.76
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	208.00	LF	$251.25	$52,260.00
570-1-1	PERFORMANCE TURF	12.22	SY	$2.90	$35.44
	Drainage Component Total				$89,766.27

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	$365.34	$365.34
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,203.44	$1,203.44
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$5,872.19	$5,872.19
	Signing Component Total				$7,440.97

Sequence 5 Total $206,689.34

Sequence: 6 NUR - New Construction, Undivided, Rural

Net Length: 0.074 MI 390 LF

Description: Rock Ridge East - 24' width

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00

Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.074
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	4 to 1 / 4 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.90	AC	$15,552.29	$13,997.06
120-6	EMBANKMENT	3,192.04	CY	$10.92	$34,857.08
	Earthwork Component Total				$48,854.14

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	12.00 / 12.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,560.77	SY	$9.27	$14,468.34
285-711	OPTIONAL BASE,BASE GROUP 11	1,069.13	SY	$28.54	$30,512.97
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	143.07	TN	$99.42	$14,224.02
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	85.84	TN	$166.26	$14,271.76

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint	1

Applications	
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	10.00	EA	$3.97	$39.70
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.15	GM	$1,040.45	$156.07
710-11-231	PAINTED PAVT MARK,STD,YELLOW,SKIP,6"	0.07	GM	$395.89	$27.71
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	0.15	GM	$4,329.79	$649.47
711-16-231	THERMOPLASTIC, STD-OTH, YELLOW, SKIP, 6"	0.07	GM	$1,069.41	$74.86
	Roadway Component Total				$74,424.90

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	2.00 / 2.00
Paved Outside Shoulder Width L/R	4.00 / 4.00
Structural Spread Rate	0
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-701	OPTIONAL BASE,BASE GROUP 01	375.45	SY	$19.11	$7,174.85
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	28.61	TN	$166.26	$4,756.70
570-1-2	PERFORMANCE TURF, SOD	173.42	SY	$3.61	$626.05

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended

				Amount
104-10-3	SEDIMENT BARRIER	1,014.50 LF	$1.48	$1,501.46
104-11	FLOATING TURBIDITY BARRIER	18.47 LF	$14.57	$269.11
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	18.47 LF	$4.63	$85.52
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$2,310.72	$2,310.72
107-1	LITTER REMOVAL	0.90 AC	$31.59	$28.43
107-2	MOWING	0.90 AC	$67.47	$60.72
	Shoulder Component Total			$16,813.56

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	64.00	LF	$115.21	$7,373.44
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	16.00	LF	$171.11	$2,737.76
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	3.00	EA	$1,911.47	$5,734.41

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-2	PERFORMANCE TURF, SOD	52.03	SY	$3.61	$187.83
	Drainage Component Total				$16,033.44

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	$365.34	$365.34
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	2.00	AS	$1,203.44	$2,406.88
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00	AS	$4,527.09	$4,527.09
	Signing Component Total				$7,299.31

Sequence 6 Total $163,425.35

Sequence: 7 NDR - New Construction, Divided, Rural

Net 6.306 MI
Length: 33,296 LF

Description: 55 mph C2 Typical Section from North of Rockridge to County Road 54

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	88.00 / 72.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	6.306
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	2.00 % / 2.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	122.30	AC	$15,552.29	$1,902,045.07
120-6	EMBANKMENT	565,409.97	CY	$10.92	$6,174,276.87
	Earthwork Component Total				$8,076,321.94

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	26.00 / 26.00
Structural Spread Rate	495
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	266,365.44	SY	$9.27	$2,469,207.63
285-711	OPTIONAL BASE,BASE GROUP 11	197,258.41	SY	$28.54	$5,629,755.02
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	47,612.82	TN	$99.42	$4,733,666.56
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	7,695.00	TN	$169.41	$1,303,609.95

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	2,115.60	TN	$166.26	$351,739.66
	Comment: Crossover Pavement				
400-0-11	CONC CLASS NS, GRAVITY WALL	642.50	CY	$813.21	$522,487.42
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	3,212.50	LF	$56.98	$183,048.25

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	13.00
Stabilization Code	Y
Base Code	Y
Friction Course Code	N

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	34,627.51	SY	$9.27	$320,997.02
285-711	OPTIONAL BASE,BASE GROUP 11	25,643.59	SY	$28.54	$731,868.06
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	6,189.67	TN	$99.42	$615,376.99

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	2,554.00	EA	$3.97	$10,139.38
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	25.22	GM	$1,040.45	$26,240.15
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	12.61	GM	$423.60	$5,341.60
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	25.22	GM	$4,921.60	$124,122.75
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	12.61	GM	$1,510.74	$19,050.43
	Roadway Component Total				$17,046,650.88

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.00 / 10.00
Total Outside Shoulder Perf. Turf Width L/R	2.67 / 2.67
Paved Outside Shoulder Width L/R	5.00 / 5.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-705	OPTIONAL BASE,BASE GROUP 05	39,436.88	SY	$18.51	$729,976.65
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	4,069.47	TN	$99.42	$404,586.71
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	1,479.81	TN	$166.26	$246,033.21
570-1-2	PERFORMANCE TURF, SOD	19,755.44	SY	$3.61	$71,317.14

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	86,568.77	LF	$1.48	$128,121.78
104-11	FLOATING TURBIDITY	1,576.50	LF	$14.57	$22,969.60

	BARRIER			
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	1,576.50 LF	$4.63	$7,299.20
104-15	SOIL TRACKING PREVENTION DEVICE	7.00 EA	$2,310.72	$16,175.04
104-18	INLET PROTECTION SYSTEM	38.00 EA	$92.83	$3,527.54
107-1	LITTER REMOVAL	152.86 AC	$31.59	$4,828.85
107-2	MOWING	152.86 AC	$67.47	$10,313.46
	Shoulder Component Total			$1,645,149.19

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	17.50
Total Median Shoulder Width L/R	0.00 / 0.00
Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-2	PERFORMANCE TURF, SOD	64,741.60	SY	$3.61	$233,717.18

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	66,600.00	LF	$25.60	$1,704,960.00
	Median Component Total				$1,938,677.18

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-551	INLETS, DT BOT, TYPE E, <10'	95.00	EA	$4,479.28	$425,531.60
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	9,840.00	LF	$114.26	$1,124,318.40

430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	4,320.00 LF	$171.11	$739,195.20
430-530-100	STRAIGHT CONC ENDW 30", SINGLE, 0 ROUND	4.00 EA	$3,827.00	$15,308.00
430-530-200	STRAIGHT CONC ENDW 30", DOUBLE, 0 ROUND	2.00 EA	$5,283.33	$10,566.66
430-536-100	STRAIGHT CONC ENDW 36", SINGLE, 0 ROUND	4.00 EA	$5,353.57	$21,414.28
430-542-100	STRAIGHT CONC ENDW 42", SINGLE, 0 ROUND	2.00 EA	$7,013.43	$14,026.86

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-553	INLETS, DT BOT, TYPE E, J BOT, <10'	22.00	EA	$8,118.84	$178,614.48
425-2-61	MANHOLES, P-8, <10'	16.00	EA	$4,514.78	$72,236.48
425-2-91	MANHOLES, J-8, <10'	8.00	EA	$6,863.11	$54,904.88
430-175-118	PIPE CULV, OPT MATL, ROUND, 18"S/CD	15,352.00	LF	$96.21	$1,477,015.92
430-175-130	PIPE CULV, OPT MATL, ROUND, 30"S/CD	5,240.00	LF	$138.22	$724,272.80
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	3,264.00	LF	$186.16	$607,626.24
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	1,600.00	LF	$251.25	$402,000.00
430-175-154	PIPE CULV, OPT MATL, ROUND, 54"S/CD	2,000.00	LF	$288.38	$576,760.00
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	1,904.00	LF	$339.82	$647,017.28
430-982-140	MITERED END SECT, OPTIONAL RD, 42" CD	1.00	EA	$4,440.80	$4,440.80
430-982-141	MITERED END SECT, OPTIONAL RD, 48" CD	2.00	EA	$4,631.32	$9,262.64
430-982-143	MITERED END SECT, OPTIONAL RD, 60" CD	1.00	EA	$7,260.00	$7,260.00
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	58.00	EA	$1,911.47	$110,865.26
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	4.00	EA	$2,155.17	$8,620.68
	Comment: For Ponds 4, 5, 6, & 7				
570-1-2	PERFORMANCE TURF, SOD	956.00	SY	$3.61	$3,451.16

Box Culvert 1

Description	Value
Size	4 x 3
Length	138.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	61.66	CY	$1,873.82	$115,539.74
415-1-1	REINF STEEL- ROADWAY	7,571.80	LB	$0.96	$7,268.93

Box Culvert 2

Description	Value
Size	8 x 5
Length	138.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	128.44	CY	$1,873.82	$240,673.44
415-1-1	REINF STEEL- ROADWAY	15,720.60	LB	$0.96	$15,091.78

Box Culvert 3

Description	Value
Size	10 x 4
Length	138.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	153.66	CY	$1,873.82	$287,931.18
415-1-1	REINF STEEL- ROADWAY	19,195.20	LB	$0.96	$18,427.39

Box Culvert 4

Description	Value
Size	10 x 4
Length	138.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	153.66	CY	$1,873.82	$287,931.18
415-1-1	REINF STEEL- ROADWAY	19,195.20	LB	$0.96	$18,427.39

Box Culvert 5

Description	Value

Size	5 x 4
Length	138.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	81.82	CY	$1,873.82	$153,315.95
415-1-1	REINF STEEL- ROADWAY	9,515.00	LB	$0.96	$9,134.40

Box Culvert 6

Description	Value
Size	10 x 4
Length	138.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	153.66	CY	$1,873.82	$287,931.18
415-1-1	REINF STEEL- ROADWAY	19,195.20	LB	$0.96	$18,427.39

Box Culvert 7

Description	Value
Size	10 x 4
Length	138.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	153.66	CY	$1,873.82	$287,931.18
415-1-1	REINF STEEL- ROADWAY	19,195.20	LB	$0.96	$18,427.39

Box Culvert 8

Description	Value
Size	10 x 4
Length	138.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	153.66	CY	$1,873.82	$287,931.18
415-1-1	REINF STEEL- ROADWAY	19,195.20	LB	$0.96	$18,427.39

Retention Basin 1

Description	Value
Size	2.5 AC
Multiplier	1
Depth	8.00
Description	Pond 4

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.50	AC	$15,552.29	$38,880.72
120-1	REGULAR EXCAVATION	32,266.67	CY	$8.51	$274,589.36

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-549	INLETS, DT BOT, TYPE D, MODIFY	1.00	EA	$5,385.17	$5,385.17
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	104.00	LF	$114.26	$11,883.04
430-982-129	MITERED END SECT, OPTIONAL RD, 24" CD	1.00	EA	$1,683.58	$1,683.58

Retention Basin 2

Description	Value
Size	10 AC
Multiplier	1
Depth	6.00
Description	Pond 5

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	10.00	AC	$15,552.29	$155,522.90
120-1	REGULAR EXCAVATION	96,800.00	CY	$8.51	$823,768.00
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00	EA	$4,442.98	$8,885.96
425-2-71	MANHOLES, J-7, <10'	2.00	EA	$6,163.38	$12,326.76
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	104.00	LF	$186.16	$19,360.64
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	400.00	LF	$339.82	$135,928.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	2,780.00	LF	$18.82	$52,319.60
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	3.00	EA	$2,155.17	$6,465.51
570-1-1	PERFORMANCE TURF	48,400.00	SY	$2.90	$140,360.00

Retention Basin 3

Description	Value
Size	5 AC
Multiplier	1
Depth	6.00
Description	Pond 6

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	5.00	AC	$15,552.29	$77,761.45
120-1	REGULAR EXCAVATION	48,400.00	CY	$8.51	$411,884.00
425-1-541	INLETS, DT BOT, TYPE D, <10'	1.00	EA	$4,442.98	$4,442.98
425-2-71	MANHOLES, J-7, <10'	2.00	EA	$6,163.38	$12,326.76
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	56.00	LF	$186.16	$10,424.96
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	400.00	LF	$339.82	$135,928.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	1,860.00	LF	$18.82	$35,005.20
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	2.00	EA	$2,155.17	$4,310.34
570-1-1	PERFORMANCE TURF	24,200.00	SY	$2.90	$70,180.00

Retention Basin 4

Description	Value
Size	5 AC
Multiplier	1
Depth	8.00
Description	Pond 7

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	5.00	AC	$15,552.29	$77,761.45
120-1	REGULAR EXCAVATION	64,533.33	CY	$8.51	$549,178.64

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-549	INLETS, DT BOT, TYPE D, MODIFY	1.00	EA	$5,385.17	$5,385.17
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	104.00	LF	$114.26	$11,883.04
430-982-	MITERED END SECT,	1.00	EA	$1,683.58	$1,683.58

129 OPTIONAL RD, 24" CD

Retention Basin 5

Description	Value
Size	2 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 6A

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.00	AC	$15,552.29	$31,104.58
120-1	REGULAR EXCAVATION	6,453.33	CY	$8.51	$54,917.84
570-1-1	PERFORMANCE TURF	9,680.00	SY	$2.90	$28,072.00

Retention Basin 6

Description	Value
Size	.5 AC
Multiplier	7
Depth	2.00
Description	Floodplain Comp Site 6B

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.50	AC	$15,552.29	$54,433.02
120-1	REGULAR EXCAVATION	11,293.31	CY	$8.51	$96,106.07
570-1-1	PERFORMANCE TURF	16,940.00	SY	$2.90	$49,126.00

Retention Basin 7

Description	Value
Size	1 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 7

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.00	AC	$15,552.29	$15,552.29
120-1	REGULAR EXCAVATION	3,226.67	CY	$8.51	$27,458.96
570-1-1	PERFORMANCE TURF	4,840.00	SY	$2.90	$14,036.00

Retention Basin 8

Description	Value

Size	1 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 8

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.00	AC	$15,552.29	$15,552.29
120-1	REGULAR EXCAVATION	3,226.67	CY	$8.51	$27,458.96
570-1-1	PERFORMANCE TURF	4,840.00	SY	$2.90	$14,036.00

Retention Basin 9

Description	Value
Size	1 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 10

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.00	AC	$15,552.29	$15,552.29
120-1	REGULAR EXCAVATION	3,226.67	CY	$8.51	$27,458.96
570-1-1	PERFORMANCE TURF	4,840.00	SY	$2.90	$14,036.00

Retention Basin 10

Description	Value
Size	1 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 11

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.00	AC	$15,552.29	$15,552.29
120-1	REGULAR EXCAVATION	3,226.67	CY	$8.51	$27,458.96
570-1-1	PERFORMANCE TURF	4,840.00	SY	$2.90	$14,036.00

Retention Basin 11

Description	Value
Size	1 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 12

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.00	AC	$15,552.29	$15,552.29
120-1	REGULAR EXCAVATION	3,226.67	CY	$8.51	$27,458.96
570-1-1	PERFORMANCE TURF	4,840.00	SY	$2.90	$14,036.00

Retention Basin 12

Description	Value
Size	1.5 AC
Multiplier	1
Depth	2.00
Description	Floodplain Comp Site 13

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.50	AC	$15,552.29	$23,328.44
120-1	REGULAR EXCAVATION	4,840.00	CY	$8.51	$41,188.40
570-1-1	PERFORMANCE TURF	7,260.00	SY	$2.90	$21,054.00

Drainage Component Total $13,087,608.13

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	13.00	AS	$365.34	$4,749.42
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	152.00	AS	$1,203.44	$182,922.88
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	13.00	AS	$4,527.09	$58,852.17
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	38.00	AS	$5,872.19	$223,143.22

Signing Component Total $469,667.69

Sequence 7 Total $42,264,075.01

Sequence: 8 NDR - New Construction, Divided, Rural

Net Length: 0.057 MI 301 LF

Description: SR 471 Roundabout

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	80.00 / 80.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.057
Top of Structural Course For Begin Section	100.00
Top of Structural Course For End Section	100.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.11	AC	$15,552.29	$17,263.04

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
120-1	REGULAR EXCAVATION	400.00	CY	$8.51	$3,404.00
	Comment: 22000 ft x 0.5 ft deep / 27 = 407 CY use 400 CY				
120-6	EMBANKMENT	400.00	CY	$10.92	$4,368.00
	Comment: 22000 ft x 0.5 ft deep / 27 = 407 CY use 400 CY				
	Earthwork Component Total				$25,035.04

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	16.00 / 16.00
Structural Spread Rate	330
Friction Course Spread Rate	165

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,350.00	SY	$9.27	$12,514.50
	Comment: measure (18305-6268)SF /9 = 1337 SY use 1350 SY				
285-711	OPTIONAL BASE,BASE GROUP 11	800.00	SY	$28.54	$22,832.00
	Comment: measure (18305-11310)SF /9 = 777 SY use 800 SY				
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	132.00	TN	$99.42	$13,123.44
	Comment: 3" Superpave Traffic E, PG 76-22 (800 X 110 X 3)/2000				
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	66.00	TN	$166.26	$10,973.16
	Comment: 1.5" FC-12.5 Traffic E, PG 76-22 (800 X 1.5 X 110)/2000				
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.05	GM	$1,040.45	$52.02
710-11-141	PAINTED PAVT MARK,STD,WH,DOT GUIDE, 6"	0.02	GM	$602.84	$12.06
710-11-170	PAINTED PAVT MARK,STD,WHITE, ARROWS	6.00	EA	$29.96	$179.76
710-11-201	PAINTED PAVT MARK,STD,YELLOW,SOLID,6"	0.07	GM	$1,028.92	$72.02

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	8.00	EA	$5.07	$40.56
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.23	GM	$4,921.60	$1,131.97

	Roadway Component Total	$60,931.49

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.00 / 10.00
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Paved Outside Shoulder Width L/R	5.00 / 5.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,310.72	$2,310.72
107-1	LITTER REMOVAL	0.25	AC	$31.59	$7.90
107-2	MOWING	0.25	AC	$67.47	$16.87
	Shoulder Component Total				$2,335.49

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	0.00
Performance Turf Width	0.00
Total Median Shoulder Width L/R	0.00 / 0.00
Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
350-30-13	CONC PAVEMENT FOR ROUNDABOUT APRON, 12"	435.00	SY	$165.28	$71,896.80
520-2-4	CONCRETE CURB, TYPE D	290.00	LF	$24.92	$7,226.80
520-2-8	CONCRETE CURB, TYPE RA	370.00	LF	$31.86	$11,788.20

570-1-2	PERFORMANCE TURF, SOD	700.00 SY	$3.61	$2,527.00
	Median Component Total			$93,438.80

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	4.00	AS	$365.34	$1,461.36
	Signing Component Total				$1,461.36

LANDSCAPING COMPONENT

User Input Data

Description	Value
Lump Sum	40,000.00
Cost %	0.00
Component Detail	N
Landscaping Component Total	$40,000.00

Sequence 8 Total $223,202.18

Sequence: 9 NUR - New Construction, Undivided, Rural

Net Length: 0.095 MI 500 LF

Description: SR 471 High Speed Approach

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	50.00 / 50.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.095
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00

Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	0.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.15	AC	$15,552.29	$17,885.13
120-6	EMBANKMENT	5,518.16	CY	$10.92	$60,258.31
	Earthwork Component Total				$78,143.44

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	12.00 / 12.00
Structural Spread Rate	330
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	2,666.75	SY	$9.27	$24,720.77
285-711	OPTIONAL BASE,BASE GROUP 11	1,370.04	SY	$28.54	$39,100.94
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	220.01	TN	$99.42	$21,873.39
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	110.00	TN	$166.26	$18,288.60

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK,	13.00	EA	$3.97	$51.61

	TYPE B			
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.19 GM	$1,040.45	$197.69
710-11-231	PAINTED PAVT MARK,STD,YELLOW,SKIP,6"	0.09 GM	$395.89	$35.63
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	0.19 GM	$4,329.79	$822.66
711-16-231	THERMOPLASTIC, STD-OTH, YELLOW, SKIP, 6"	0.09 GM	$1,069.41	$96.25
	Roadway Component Total			$105,187.54

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	12.00 / 12.00
Total Outside Shoulder Perf. Turf Width L/R	2.00 / 2.00
Paved Outside Shoulder Width L/R	10.00 / 10.00
Structural Spread Rate	0
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-701	OPTIONAL BASE,BASE GROUP 01	1,147.81	SY	$19.11	$21,934.65
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	91.67	TN	$166.26	$15,241.05
570-1-2	PERFORMANCE TURF, SOD	222.23	SY	$3.61	$802.25

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,300.04	LF	$1.48	$1,924.06
104-11	FLOATING TURBIDITY BARRIER	23.68	LF	$14.57	$345.02
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	23.68	LF	$4.63	$109.64
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,310.72	$2,310.72
107-1	LITTER REMOVAL	1.15	AC	$31.59	$36.33
107-2	MOWING	1.15	AC	$67.47	$77.59

	Shoulder Component Total	$42,781.31

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	80.00	LF	$115.21	$9,216.80
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	16.00	LF	$171.11	$2,737.76
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	4.00	EA	$1,911.47	$7,645.88

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-2	PERFORMANCE TURF, SOD	66.67	SY	$3.61	$240.68
	Drainage Component Total				$19,841.12

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	$365.34	$365.34
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	2.00	AS	$1,203.44	$2,406.88
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00	AS	$4,527.09	$4,527.09
	Signing Component Total				$7,299.31

Sequence 9 Total $253,252.72

Sequence: 10 NDR - New Construction, Divided, Rural

Net Length: 0.095 MI / 502 LF

Description: SR 471 Roundabout 2-Lane Approach I

EARTHWORK COMPONENT

User Input Data

Description	Value

Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.50
Alignment Number	1
Distance	0.095
Top of Structural Course For Begin Section	100.00
Top of Structural Course For End Section	100.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.50	AC	$15,552.29	$7,776.14

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
120-1	REGULAR EXCAVATION	350.00	CY	$8.51	$2,978.50
	Comment: 2-Lane Leg: 19200 ft X 0.5 ft / 27=356 CY use 350 CY				
120-6	EMBANKMENT	350.00	CY	$10.92	$3,822.00
	Comment: 2-Lane Leg: 19200 ft X 0.5 ft / 27=356 CY use 350 CY				
	Earthwork Component Total				$14,576.65

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	12.00 / 12.00
Structural Spread Rate	330
Friction Course Spread Rate	165

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

160-4	TYPE B STABILIZATION	1,850.00 SY	$9.27	$17,149.50
	Comment: 2-Lane Leg: 16666 SF/9 = 1851.8 SY use 1850 SY			
285-711	OPTIONAL BASE,BASE GROUP 11	1,300.00 SY	$28.54	$37,102.00
	Comment: 2-Lane Leg: Measure approx. 1300 SY			
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	215.00 TN	$99.42	$21,375.30
	Comment: 3" Type SP, Traffic E, PG 76-22 (1300 X 110 X 3)/2000 = 214.5 TN			
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	112.00 TN	$166.26	$18,621.12
	Comment: 1.5" FC-12.5 Traffic E, PG 76-22 (1300 X 110 X 1.5)/2000=112.3 TN			
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.15 GM	$1,040.45	$156.07
710-11-123	PAINTED PAVT MARK,STD,WHITE,SOLID, 12"	60.00 LF	$0.57	$34.20
710-11-125	PAINTED PAVT MARK,STD,WHITE,SOLID,24"	90.00 LF	$1.19	$107.10
710-11-141	PAINTED PAVT MARK,STD,WH,DOT GUIDE, 6"	0.02 GM	$602.84	$12.06
710-11-144	PAINTED PAVEMENT MARKINGS, STANDARD, WHI	0.01 GM	$991.37	$9.91
710-11-160	PAINTED PAVT MARK,STD,WHITE, MESSAGE	1.00 EA	$41.04	$41.04
710-11-201	PAINTED PAVT MARK,STD,YELLOW,SOLID,6"	0.15 GM	$1,028.92	$154.34
710-11-224	PAINTED PAVT MARK,STD,YELLOW,SOLID,18"	50.00 LF	$1.10	$55.00

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	13.00	EA	$5.07	$65.91
711-15-	THERMOPLASTIC, STD-OP,	0.38	GM	$4,921.60	$1,870.21

101	WHITE, SOLID, 6"	
	Roadway Component Total	$96,753.76

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,000.00	LF	$28.26	$28,260.00

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	600.00	LF	$1.48	$888.00
107-1	LITTER REMOVAL	2.30	AC	$31.59	$72.66
107-2	MOWING	2.30	AC	$67.47	$155.18
	Shoulder Component Total				$29,375.84

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	0.00
Performance Turf Width	0.00
Total Median Shoulder Width L/R	0.00 / 0.00
Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	600.00	LF	$25.60	$15,360.00
570-1-2	PERFORMANCE TURF, SOD	350.00	SY	$3.61	$1,263.50
	Median Component Total				$16,623.50

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	200.00	LF	$114.26	$22,852.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-361	INLETS, CURB, TYPE P-6, <10'	6.00	EA	$5,197.74	$31,186.44
	Drainage Component Total				$54,038.44

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	8.00	AS	$365.34	$2,922.72
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00	AS	$4,527.09	$4,527.09
	Signing Component Total				$7,449.81

Sequence 10 Total $218,818.00

Sequence: 11 NDR - New Construction, Divided, Rural

Net Length: 0.028 MI 150 LF

Description: SR 471 Roundabout 4-Lane Approach I

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	80.00 / 80.00
Incidental Clearing and Grubbing Area	0.70
Alignment Number	1
Distance	0.029
Top of Structural Course For Begin Section	100.00
Top of Structural Course For End Section	100.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.70	AC	$15,552.29	$10,886.60

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
120-1	REGULAR EXCAVATION	500.00	CY	$8.51	$4,255.00
	Comment: 27000 ft X 0.5 ft deep / 27 = 500 CY				
120-6	EMBANKMENT	500.00	CY	$10.92	$5,460.00
	Comment: 27000 ft X 0.5 ft deep / 27 = 500 CY				
	Earthwork Component Total				$20,601.60

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	22.00 / 22.00
Structural Spread Rate	330
Friction Course Spread Rate	165

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,290.00	SY	$9.27	$11,958.30

	Comment: 4-Lane Leg: 11575 sf/9=1286 SY use 1290SY			
285-711	OPTIONAL BASE,BASE GROUP 11	880.00 SY	$28.54	$25,115.20
	Comment: 4-Lane Leg: measure approx. 880 SY			
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	145.00 TN	$99.42	$14,415.90
	Comment: 3" Type SP, Traffic E, PG 76-22 (880 X 110 X 3)/2000 = 145.2 TN use 145 TN			
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	73.00 TN	$166.26	$12,136.98
	Comment: 1.5" FC-12.5 Traffic E, PG 76-22 (880 X 110 X 1.5)/2000 = 72.6 TN use 73 TN			
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.20 GM	$1,040.45	$208.09
710-11-102	PAINTED PAVT MARK,STD,WHITE,SOLID,8"	0.04 GM	$1,470.43	$58.82
710-11-123	PAINTED PAVT MARK,STD,WHITE,SOLID, 12"	115.00 LF	$0.57	$65.55
710-11-124	PAINTED PAVT MARK,STD,WHITE,SOLID, 18"	30.00 LF	$1.03	$30.90
710-11-125	PAINTED PAVT MARK,STD,WHITE,SOLID,24"	198.00 LF	$1.19	$235.62
710-11-141	PAINTED PAVT MARK,STD,WH,DOT GUIDE, 6"	0.02 GM	$602.84	$12.06
710-11-144	PAINTED PAVEMENT MARKINGS, STANDARD, WHI	0.01 GM	$991.37	$9.91
710-11-160	PAINTED PAVT MARK,STD,WHITE, MESSAGE	2.00 EA	$41.04	$82.08
710-11-170	PAINTED PAVT MARK,STD,WHITE, ARROWS	4.00 EA	$29.96	$119.84
710-11-201	PAINTED PAVT MARK,STD,YELLOW,SOLID,6"	0.15 GM	$1,028.92	$154.34
710-11-224	PAINTED PAVT MARK,STD,YELLOW,SOLID,18"	55.00 LF	$1.10	$60.50

Pavement Marking Subcomponent

Description	**Value**
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	12.00	EA	$5.07	$60.84
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.06	GM	$423.60	$25.42
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.11	GM	$4,921.60	$541.38
	Roadway Component Total				$65,291.73

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	330
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	300.00	LF	$28.26	$8,478.00
570-1-2	PERFORMANCE TURF, SOD	380.00	SY	$3.61	$1,371.80

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	600.00	LF	$1.48	$888.00
107-1	LITTER REMOVAL	0.69	AC	$31.59	$21.80
107-2	MOWING	0.69	AC	$67.47	$46.55
	Shoulder Component Total				$10,806.15

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	0.00

Performance Turf Width	0.00
Total Median Shoulder Width L/R	0.00 / 0.00
Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	300.00	LF	$25.60	$7,680.00
570-1-2	PERFORMANCE TURF, SOD	120.00	SY	$3.61	$433.20
	Median Component Total				$8,113.20

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	224.00	LF	$114.26	$25,594.24

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-361	INLETS, CURB, TYPE P-6, <10'	2.00	EA	$5,197.74	$10,395.48
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$4,154.31	$4,154.31
	Drainage Component Total				$40,144.03

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	7.00	AS	$365.34	$2,557.38
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00	AS	$4,527.09	$4,527.09
	Signing Component Total				$7,084.47

Sequence 11 Total $152,041.18

Sequence: 12 NDR - New Construction, Divided, Rural

Description: SR 471 Roundabout 4-Lane Approach II

Net Length: 0.038 MI / 200 LF

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	80.00 / 80.00
Incidental Clearing and Grubbing Area	0.70
Alignment Number	1
Distance	0.038
Top of Structural Course For Begin Section	100.00
Top of Structural Course For End Section	100.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.70	AC	$15,552.29	$10,886.60

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
120-1	REGULAR EXCAVATION	500.00	CY	$8.51	$4,255.00
	Comment: 27000 ft X 0.5 ft deep / 27 = 500 CY				
120-6	EMBANKMENT	500.00	CY	$10.92	$5,460.00
	Comment: 27000 ft X 0.5 ft deep / 27 = 500 CY				

Earthwork Component Total $20,601.60

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	22.00 / 22.00
Structural Spread Rate	330
Friction Course Spread Rate	165

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,200.00	SY	$9.27	$11,124.00
	Comment: 4-Lane Leg: 10766 sf/9=1196 SY use 1200 SY				
285-711	OPTIONAL BASE,BASE GROUP 11	1,000.00	SY	$28.54	$28,540.00
	Comment: 4-Lane Leg: measure approx. 977 SY use 1000 SY				
334-1-55	SUPERPAVE ASPH CONC, TRAF E, PG76-22	165.00	TN	$99.42	$16,404.30
	Comment: 3" Type SP Traffic E, PG 76-22 (1000 X 110 X 3)/2000 = 165 TN				
337-7-88	ASPH CONC FC,TRAFFIC E,FC-12.5,PG 76-22	83.00	TN	$166.26	$13,799.58
	Comment: 1.5" FC-12.5 Traffic E PG 76-22 (1000 X 110 X 1.5)/2000 = 83 TN				
339-1	MISCELLANEOUS ASPHALT PAVEMENT	18.70	TN	$272.86	$5,102.48
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.20	GM	$1,040.45	$208.09
710-11-102	PAINTED PAVT MARK,STD,WHITE,SOLID,8"	0.04	GM	$1,470.43	$58.82
710-11-123	PAINTED PAVT MARK,STD,WHITE,SOLID, 12"	115.00	LF	$0.57	$65.55
710-11-124	PAINTED PAVT MARK,STD,WHITE,SOLID, 18"	30.00	LF	$1.03	$30.90
710-11-125	PAINTED PAVT MARK,STD,WHITE,SOLID,24"	198.00	LF	$1.19	$235.62
710-11-141	PAINTED PAVT MARK,STD,WH,DOT GUIDE, 6"	0.02	GM	$602.84	$12.06
710-11-144	PAINTED PAVEMENT MARKINGS, STANDARD, WHI	0.01	GM	$991.37	$9.91
710-11-160	PAINTED PAVT MARK,STD,WHITE, MESSAGE	2.00	EA	$41.04	$82.08
710-11-170	PAINTED PAVT MARK,STD,WHITE, ARROWS	4.00	EA	$29.96	$119.84
710-11-201	PAINTED PAVT MARK,STD,YELLOW,SOLID,6"	0.15	GM	$1,028.92	$154.34
710-11-224	PAINTED PAVT MARK,STD,YELLOW,SOLID,18"	55.00	LF	$1.10	$60.50

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	15.00	EA	$5.07	$76.05
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.08	GM	$423.60	$33.89
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.15	GM	$4,921.60	$738.24
	Roadway Component Total				$76,856.25

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	400.00	LF	$28.26	$11,304.00

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

104-10-3	SEDIMENT BARRIER	520.29 LF	$1.48	$770.03
107-1	LITTER REMOVAL	0.92 AC	$31.59	$29.06
107-2	MOWING	0.92 AC	$67.47	$62.07
	Shoulder Component Total			$12,165.16

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	0.00
Performance Turf Width	0.00
Total Median Shoulder Width L/R	0.00 / 0.00
Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	240.00	LF	$25.60	$6,144.00
	Median Component Total				$6,144.00

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	224.00	LF	$114.26	$25,594.24

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-361	INLETS, CURB, TYPE P-6, <10'	2.00	EA	$5,197.74	$10,395.48
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$4,154.31	$4,154.31
	Drainage Component Total				$40,144.03

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	7.00 AS	$365.34	$2,557.38
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00 AS	$4,527.09	$4,527.09
	Signing Component Total			$7,084.47

Sequence 12 Total $162,995.51

Sequence: 13 MIS - Miscellaneous Construction

Net Length: 0.227 MI 1,199 LF

Description: Wildlife Crossing

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.00

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
120-6	EMBANKMENT	27,238.00 CY	$10.92	$297,438.96
	Earthwork Component Total			$297,438.96

ROADWAY COMPONENT

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
455-133-2	SHEET PILING STEEL, TEMPORARY-CRITICAL	18,000.00 SF	$19.86	$357,480.00
520-6	SHOULDER GUTTER-CONCRETE	450.00 LF	$35.38	$15,921.00
536-1-1	GUARDRAIL- ROADWAY, GEN TL-3	400.00 LF	$18.55	$7,420.00
536-85-20	GUARDRAIL END TREAT- TRAILING ANCHORAGE	2.00 EA	$1,104.37	$2,208.74
536-85-24	GUARDRAIL END	2.00 EA	$2,823.59	$5,647.18

	TREATMENT- PARA APP TERM			
550-10-150	FENCING, TYPE A, 8.1-10.0', STANDARD	4,000.00 LF	$16.30	$65,200.00
	Roadway Component Total			$453,876.92

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00 EA	$3,786.98	$3,786.98

Box Culvert 1

Description	Value
Size	12 x 8
Length	160.00
Multiplier	1

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	268.00 CY	$1,873.82	$502,183.76
415-1-1	REINF STEEL-ROADWAY	32,046.00 LB	$0.96	$30,764.16
	Drainage Component Total			$536,734.90

Sequence 13 Total $1,288,050.78

Date: 2/3/2022 7:56:02 AM

FDOT Long Range Estimating System - Production
R3: Project Details by Sequence Report

Project: 436673-1-52-01 **Letting Date:** 01/2099

Description: SR 35 (US 98) FROM N OF WEST SOCRUM LOOP RD TO S OF CR 54

District: 01 **County:** 16 POLK **Market Area:** 08 **Units:** English

Contract Class: 9 **Lump Sum Project:** N **Design/Build:** Y **Project Length:** 9.089 MI

Project Manager: JMK-JJM-DCT

Version 11 Project Grand Total **$105,041,625.93**
Description: Phase I Estimate markups Per PM from Version 10 - 2/2/22

Project Sequences Subtotal			**$68,669,384.15**
102-1	Maintenance of Traffic	15.00 %	$10,300,407.62
101-1	Mobilization	10.00 %	$7,896,979.18
Project Sequences Total			**$86,866,770.95**
Project Unknowns		5.00 %	$4,343,338.55
Design/Build		15.00 %	$13,681,516.43

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$150,000.00	$150,000.00
Project Non-Bid Subtotal					**$150,000.00**
Version 11 Project Grand Total					**$105,041,625.93**

APPENDIX F

Design Variation Documentation

Form 122-A

SUBMITTAL/APPROVAL LETTER

To: Kevin S. Ingle, P.E.
District or Turnpike Design Engineer

Date: 7/12/22

Financial Project ID: 436673-1-52-01 New Const. ☑ RRR ☐
Federal Aid Number:
Project Name: SR 35 (US 98) From N of W Socrum Loop Rd to S of CR 54
State Road Number: SR 35 Co./Sec./Sub. 16210000
Begin Project MP: 8.676 End Project MP: 17.678
FHWA Project of Division Interest: Yes ☐ No ☑
Request for: Design Exception ☐ Design Variation ☑ Design Variation Memorandum ☐
Community Aesthetic Feature: Conceptual ☐ Final ☐
Re-submittal: Yes ☐ No ☑ Original Ref# _____ - ____ - _____

Requested for the following element(s):

☐ Design Speed	☑ Lane Width	☐ Shoulder Width	☐ Cross Slope
☐ Design Loading Structural Capacity	☐ Vertical Clearance	☐ Maximum Grade	☐ Stopping Sight Distance
☐ Superelevation	☐ Horizontal Curve Radius	☐ Other _____	

This variation is being requested to allow the proposed travel lane width of 11 feet on State Road 35 (US 98) from north of Rock Ridge Road (11.372) to south of County Road 54 (17.678) in Polk County. Please refer to the attached documentation for additional information.

NICHOLAS S. RUIZ
LICENSE
No. 86664
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Recommended by:

Nicholas S Ruiz Date: 2022.07.12 14:39:36-04'00' Date 7/12/2022

Name: Nicholas S. Ruiz, P.E.
Responsible Professional Engineer or Landscape Architect (Lanscape-Only Projects)

Approvals:

Kevin Ingle Digitally signed by Kevin Ingle DN: CN=Kevin Ingle, SN=Qualifier=A01410D000017EB57BF94E00053BE7, OU=FLORIDA DEPARTMENT OF TRANSPORTATION, C=US Date: 2022.07.14 15:53:07-04'00' Date _____

Name: Kevin S. Ingle, P.E.
District or Turnpike Design Engineer

_____ Date _____
Name:
District Structures Design Engineer

_____ Date _____
Name:
State Roadway Design Engineer

_____ Date _____
Name:
State Structures Design Engineer

_____ Date _____
Name:
Chief Engineer

_____ Date _____
Name:
FHWA Division Administrator

LANE WIDTH DESIGN VARIATION REPORT

SR 35 (US 98) FROM NORTH OF WEST SOCRUM LOOP RD TO SOUTH OF CR 54
(MP 8.676 to MP 17.678)
Polk County

APRIL 2022

FINANCIAL PROJECT NUMBER: 436673-1-52-01

Prepared For:

Florida Department of Transportation
District One
801 North Broadway Avenue
Bartow, FL 33830

Prepared By:

AIM Engineering & Surveying, Inc.
201 E. Kennedy Blvd., Suite 1800
Tampa, FL 33602

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APPENDICES

1. Project Description

The scope of this project is to widen State Road 35 (US 98) from two lanes undivided to four lanes divided from north of West Socrum Loop (MP 8.676) to south of CR 54 (MP 17.678) in Polk County (See **Appendix A – Project Location Map**).

State Road 35 (US 98) has an existing context classification of C2-Rural throughout the entirety of the project corridor. The existing typical section within the project limits consists of a two-lane undivided highway with 12-foot travel lanes and 4-foot paved shoulders. The minimum right of way along State Road 35 is 160 feet wide.

The proposed improved roadway will have functional classifications of C3R-Suburban Residential from MP 8.676 (north of West Socrum Loop Rd.) to MP 11.372 (north of Rock Ridge Rd.) and C2-Rural from MP 11.372 (north of Rock Ridge Rd.) to MP 17.678 (south of CR 54). A design speed of 45 mph will be used in the C3R-Suburban Residential section, and a design speed of 55 mph will be used in the C2-Rural section. All proposed typical section improvements are scoped to fit within the existing right of way.

2. Project Schedule and Lifespan

The project is scheduled to be let to construction in fiscal year 2023 through a design-build contract. The plans production date has not yet been determined. The pavement design for this project has been developed to produce an estimated twenty-year lifespan.

3. Variation Description

a. Minimum Travel Lane Width

Per Section 122.2.2 of the 2022 FDOT Design Manual (FDM), a formal design variation is required when criteria are not met for any Controlling Design Element. Table 210.2.1 of the FDM provides values for minimum travel and auxiliary lane widths. For a C2-Rural facility with a design speed of greater than or equal to 50 miles per hour, the minimum travel lane width is 12 feet.

FDM Table 122.5.2 provides a minimum AASHTO value of 11-foot lane width for a rural arterial. A design speed of 55 miles per hour and lane widths of 11 feet are proposed from MP 11.372 (north of Rock Ridge Rd.) to MP 17.678 (south of CR 54). A design variation is requested to allow proposed lane widths of 11 feet for the typical section as shown in **Figure 1**.

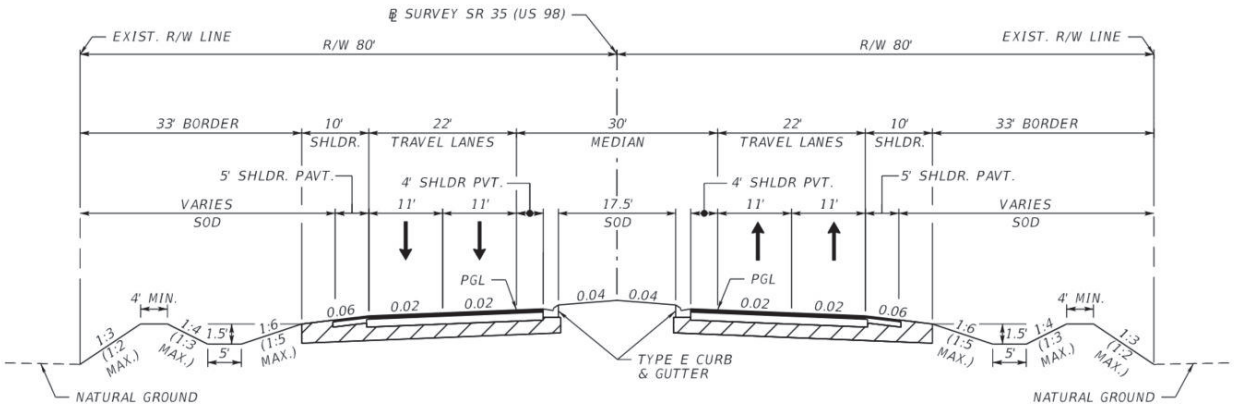


Figure 1 – SR 35 (US 98) C2 Typical Section from MP 11.372 to MP 17.678

4. Alternative Designs Considered

Three alternative designs were proposed to accommodate 12-foot travel lanes. These included reducing the median width from 30 feet to 22 feet, reducing outside shoulder widths from 10 feet to 8 feet, and increasing front slope from 1:6 to 1:5.

A Highway Safety Manual predictive crash analysis was conducted for a 20-year period based off multiple typical section modifications including reductions to lane width, median width, outside shoulder width, and roadside slopes. During this period, decreasing the lane width from 12 feet to 11 feet resulted in the lowest number of predicted fatal crashes and total crashes. The proposed lane width reduction also results in a reduction of speed and is expected to improve the safety of the facility. All other modifications resulted in increased predicted crashes. The results are summarized in the table below:

Table 1 – Highway Safety Manual Predictive Crash Analysis Results

Scenario	Criteria	Specification / Change	CMF #	CMF Value	# Crashes (2025-2045)		
					Fatal / Injury	PDO	Total
Base Build	-	-	-	-	154	435	588
Alt A	Lane Width	From 12 ft to 11 ft	7825	0.760	117	330	447
Alt B	Median Width	From 30 ft to 22 ft	8704 (Inverse Value)	1.039	160	452	611
Alt C	Outside Shoulder Width	Reduce from 10 ft to 8 ft	8711 (Inverse Value)	1.082	166	470	637
Alt D	Front Slope	From 1:6 to 1:5	4620 (Inverse Value)	1.031	158	448	607

5. Impacts of the Variation to:

a. Safety Performance

Narrower lanes result in lower operating speeds; lower operating speeds reduce the severity of crashes.

b. Operational Performance

i. Narrower lanes influence the comfort of driving; however, reduce lane widths result in slightly lower operating speeds.
ii. The design year (2045) AADT is 32,000. The 24-hour truck percentage is 20 percent.
iii. The proposed improvements will tie into an adjacent widening of SR 35 (US 98) at the north limits of this project (FPID 443368-3). The adjacent project will widen SR 35 (US 98) to four 12-foot lanes. (See **Appendix I – Adjacent Projects**).
iv. The proposed design variation does not have a significant impact on the capacity, level of service, or traffic operations for this corridor.

c. Right of Way

The proposed design variation will allow the proposed improvements to be constructed within the existing right of way.

d. Community

Members of the community have voiced concerns regarding crashes and high speeds along the existing road. Reducing the travel lane widths to 11 feet will result in reduced speeds and will increase safety for the facility.

6. Costs

An additional 3.115 acres of right of way must be acquired to achieve travel lane widths of 12 feet throughout the project limits. The additional right of way cost to provide 12-foot travel lanes is approximately $1.78 million based on the preliminary cost estimate of $95,000/acre and $20,000 per parcel. These acre and parcel costs are from the preliminary Pond Siting Report provided by District One. The cost of additional roadway pavement is $1.42 million. The resulting cost increase is $3.2 million greater than an 11-foot travel lane alternative. (See **Appendix H – Right of Way Acquisition Cost Estimate**).

There is no crash history associated with the proposed typical section; therefore, a benefit cost analysis is not necessary.

7. Mitigation Measures

Potential mitigation strategies are narrow lane signs, audible and vibratory treatments, paved shoulders, traversable slopes and roadside elements with breakaway safety hardware. The roadway typical section includes adjacent 4-foot inside paved shoulders at the same cross slope as the roadway and 10-foot outside shoulders with 5-feet paved width. Paved shoulders allow for safe correction when a vehicle departs the lane and additional width for vehicles passing trucks or wide loads.

8. Summary and Conclusions

It is recommended that a design variation be approved to allow the criteria for travel lane width to be reduced to 11 feet within the limits described in this report.

APPENDIX A

Project Location Map

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

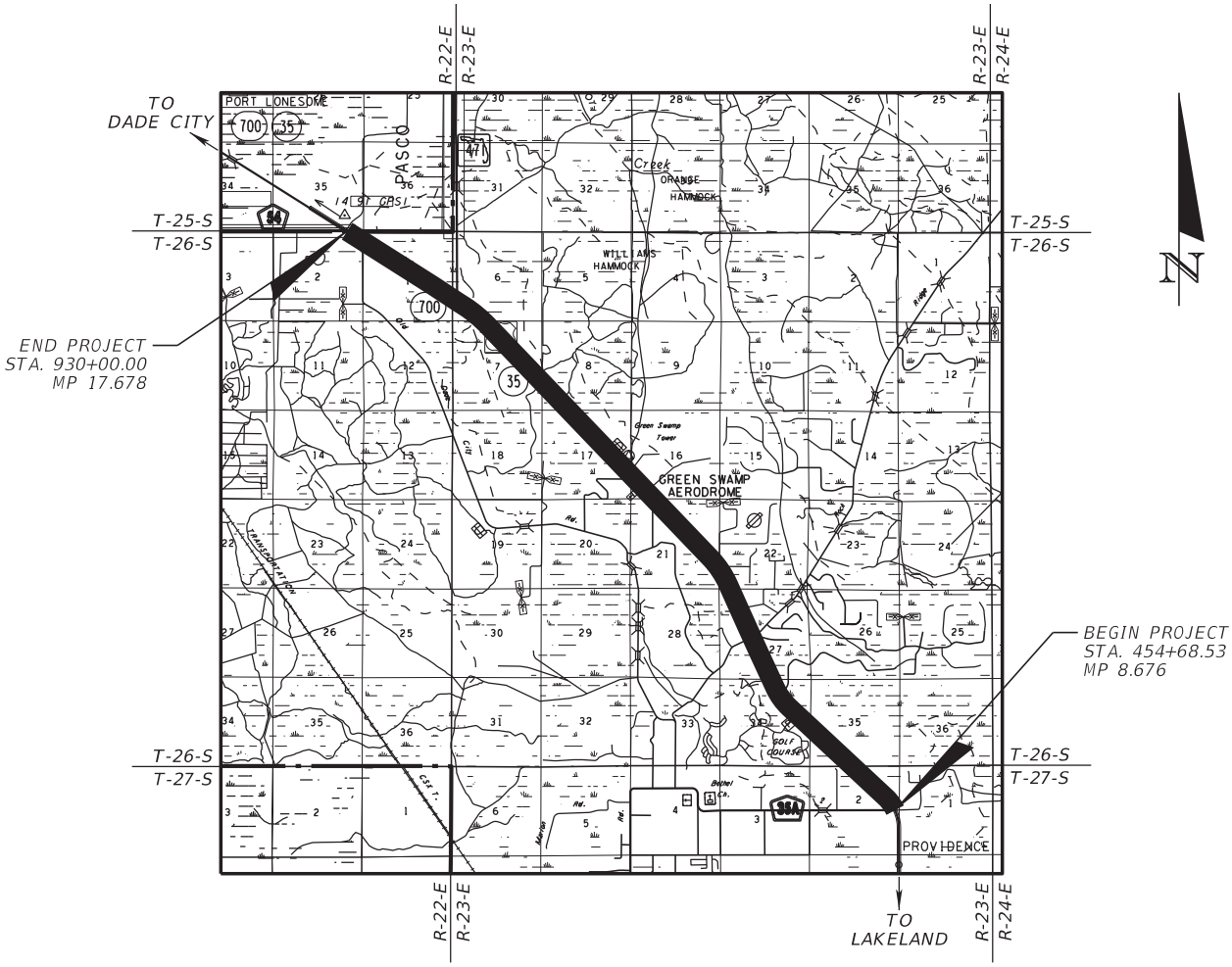
PROJECT LOCATION MAP

FINANCIAL PROJECT ID 436673-1-52-01

POLK COUNTY (16210)

STATE ROAD NO. 35 (US 98)

FROM NORTH OF WEST SOCRUM LOOP ROAD TO SOUTH OF COUNTY ROAD 54



APPENDIX B

Typical Section Package

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

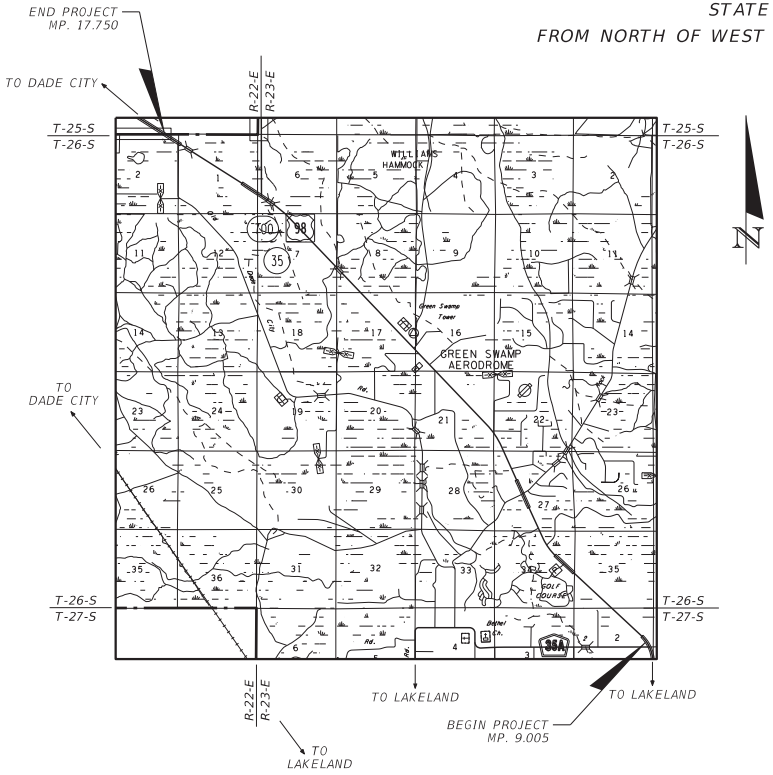
TYPICAL SECTION PACKAGE

FINANCIAL PROJECT ID 436673-1-52-01

POLK COUNTY (16210)

STATE ROAD NO. 35 (US 98)

FROM NORTH OF WEST SOCRUM LOOP RD. TO SOUTH OF CR 54



APPROVED BY:

NICHOLAS S. RUIZ LICENSE No 86664 STATE OF FLORIDA PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Nicholas S Ruiz
2021.09.16 09:18:07-04'00'

ON THE DATE ADJACENT TO THE SEAL

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

AIM ENGINEERING & SURVEYING, INC.
3802 CORPOREX PARK DRIVE, STE. 225
TAMPA, FLORIDA 33619
NICHOLAS S. RUIZ, P.E. NO. 86664

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

TYPICAL SECTION PACKAGE

TYPICAL SECTION CONCURRENCE

Kevin Ingle
FDOT DISTRICT DESIGN ENGINEER

FDOT DISTRICT STRUCTURES DESIGN ENGINEER

Richard M Oujevolk
Digitally signed by: Richard M Oujevolk
DN: CN = Richard M Oujevolk C = US O = Florida Department of Transportation OU = A01410C0000017497FB2D0900009B37
Date: 2021.09.29 10:02:51 -04'00'
FDOT DISTRICT PROJECT DEVELOPMENT ENGINEER / MANAGER

DESIGN SPEED AND POSTED SPEED CONCURRENCE:

Mark Mathes
Date: 2021.10.08 14:41:51 -04'00'
FDOT DISTRICT TRAFFIC OPERATIONS ENGINEER

Kevin Ingle
FDOT DISTRICT DESIGN ENGINEER

CONTEXT CLASSIFICATION CONCURRENCE:

Nicole E Mills
2021.09.30 12:03:47 -04'00'
FDOT DISTRICT INTERMODAL SYSTEMS DEVELOPMENT MANAGER

SHEET NO.
1

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

( )	C1 : NATURAL	( )	C3C : SUBURBAN COMM.
( )	C2 : RURAL	( )	C4 : URBAN GENERAL
( )	C2T : RURAL TOWN	( )	C5 : URBAN CENTER
(X)	C3R : SUBURBAN RES.	( )	C6 : URBAN CORE
( )	N/A : L.A. FACILITY		

FUNCTIONAL CLASSIFICATION

( )	INTERSTATE	( )	MAJOR COLLECTOR
( )	FREEWAY/EXPWY.	( )	MINOR COLLECTOR
(X)	PRINCIPAL ARTERIAL	( )	LOCAL
( )	MINOR ARTERIAL		

HIGHWAY SYSTEM

- (X) NATIONAL HIGHWAY SYSTEM
- ( ) STRATEGIC INTERMODAL SYSTEM
- (X) STATE HIGHWAY SYSTEM
- ( ) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- ( ) 1 - FREEWAY
- ( ) 2 - RESTRICTIVE w/Service Roads
- (X) 3 - RESTRICTIVE w/660 ft. Connection Spacing
- ( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- ( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
- ( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- ( ) 7 - BOTH MEDIAN TYPES

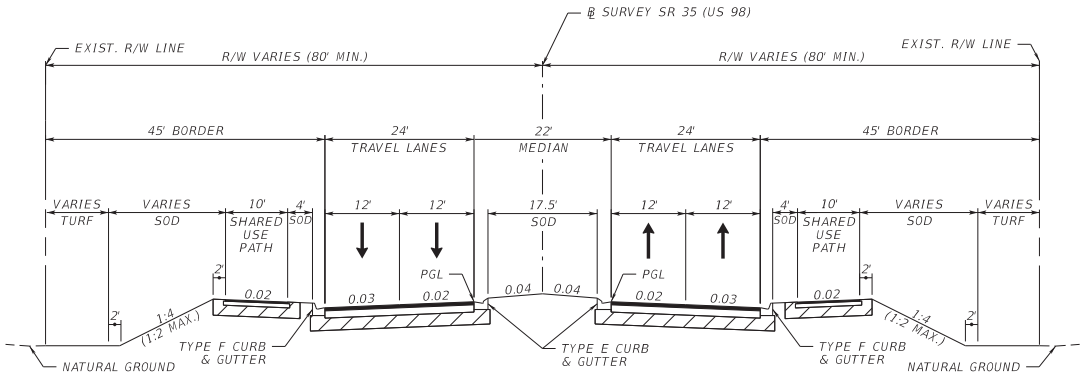
CRITERIA

- (X) NEW CONSTRUCTION / RECONSTRUCTION
- ( ) RESURFACING (LA FACILITIES)
- ( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

SHARED USE PATH HORIZONTAL CLEARANCE

TYPICAL SECTION No. 1



SR 35 (US 98)
MP 9.005 TO MP 11.325

TRAFFIC DATA

CURRENT YEAR = 2021 AADT = 18,500
ESTIMATED OPENING YEAR = 2025 AADT = 20,700
ESTIMATED DESIGN YEAR = 2045 AADT = 32,000
K = 9.0% D = 55% T = 15% (24 HOUR)
DESIGN HOUR T = 7.5%
DESIGN SPEED = 45 MPH
POSTED SPEED = 45 MPH
TARGET SPEED = 45 MPH

NOT TO SCALE

FINANCIAL PROJECT ID	SHEET NO.
436673-1-52-01	2

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

( )	C1 : NATURAL	( )	C3C : SUBURBAN COMM.
(X)	C2 : RURAL	( )	C4 : URBAN GENERAL
( )	C2T : RURAL TOWN	( )	C5 : URBAN CENTER
( )	C3R : SUBURBAN RES.	( )	C6 : URBAN CORE
( )	N/A : L.A. FACILITY		

FUNCTIONAL CLASSIFICATION

( )	INTERSTATE	( )	MAJOR COLLECTOR
( )	FREEWAY/EXPWY.	( )	MINOR COLLECTOR
(X)	PRINCIPAL ARTERIAL	( )	LOCAL
( )	MINOR ARTERIAL		

HIGHWAY SYSTEM

- (X) NATIONAL HIGHWAY SYSTEM
- ( ) STRATEGIC INTERMODAL SYSTEM
- (X) STATE HIGHWAY SYSTEM
- ( ) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- ( ) 1 – FREEWAY
- ( ) 2 – RESTRICTIVE w/Service Roads
- (X) 3 – RESTRICTIVE w/660 ft. Connection Spacing
- ( ) 4 – NON-RESTRICTIVE w/2640 ft. Signal Spacing
- ( ) 5 – RESTRICTIVE w/440 ft. Connection Spacing
- ( ) 6 – NON-RESTRICTIVE w/1320 ft. Signal Spacing
- ( ) 7 – BOTH MEDIAN TYPES

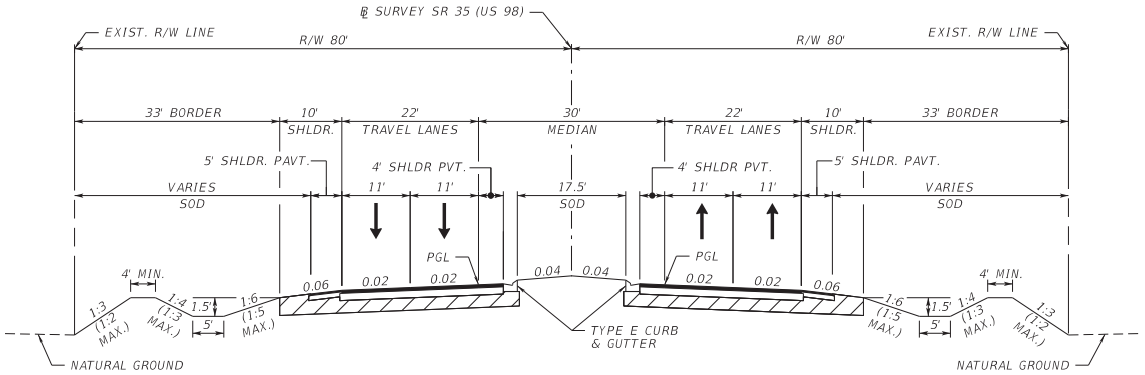
CRITERIA

- (X) NEW CONSTRUCTION / RECONSTRUCTION
- ( ) RESURFACING (LA FACILITIES)
- ( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

LANE WIDTH
CLEAR ZONE
BORDER WIDTH

TYPICAL SECTION No. 2



SR 35 (US 98)
MP 11.325 TO MP 17.750

TRAFFIC DATA

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ESTIMATED OPENING YEAR = 2025 AADT = 17,400
ESTIMATED DESIGN YEAR = 2045 AADT = 32,000
K = 9.5% D = 52% T = 20% (24 HOUR)
DESIGN HOUR T = 10%
DESIGN SPEED = 55 MPH
POSTED SPEED = 55 MPH
TARGET SPEED = 55 MPH

NOT TO SCALE

FINANCIAL PROJECT ID	SHEET NO.
436673-1-52-01	3

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APPENDIX C

Traffic Data

US 98 from Socrum Loop Rd to CR 54 - Proposed Traffic Factors

US 98 Intersection	Intersection Leg	Selected Traffic Factors								
		K-Factor		D-Factor				T-factor		
		AM	PM	AM	Dir.	PM	Dir.	AM	PM	24-hr
Big Cypress Boulevard	South (US 98)	9.0%		55%	SB	55%	NB	10%	7%	15%
	North (US 98)	9.0%		55%	SB	55%	NB	11%	8%	15%
	West (Big Cypress Blvd)	9.0%		74%	EB	55%	WB	0%	1%	2%
Pioneer Drive	South (US 98)	9.0%		55%	SB	55%	NB	11%	8%	15%
	North (US 98)	9.0%		55%	SB	55%	NB	11%	8%	15%
	East (Pioneer Dr)	9.0%		72%	WB	55%	EB	9%	7%	10%
Little Cypress Drive	South (US 98)	9.0%		55%	SB	55%	NB	11%	8%	15%
	North (US 98)	9.0%		55%	SB	55%	NB	11%	8%	15%
	West (Little Cypress Dr)	9.0%		79%	EB	59%	WB	0%	0%	2%
Rockridge Road	South (US 98)	9.0%		55%	SB	55%	NB	11%	8%	15%
	North (US 98)	9.5%		52%	NB	52%	SB	19%	10%	20%
	West (Rockridge Rd)	9.0%		55%	WB	55%	EB	7%	5%	10%
	East (Rockridge Rd)	9.5%		65%	WB	65%	EB	17%	4%	15%
Lakeland Acres Road	South (US 98)	9.5%		52%	NB	52%	SB	20%	10%	20%
	North (US 98)	9.5%		52%	NB	52%	SB	20%	10%	20%
	West (Lakeland Acres Rd)	9.5%		75%	EB	55%	WB	8%	0%	10%
SR 471	South (US 98)	9.5%		52%	NB	52%	SB	19%	10%	20%
	North (US 98)	9.5%		52%	NB	52%	SB	17%	5%	20%
	East (SR 471)	9.5%		56%	EB	56%	WB	27%	19%	40%
Old Dade City Road	South (US 98)	9.5%		52%	NB	52%	SB	17%	5%	20%
	North (US 98)	9.5%		52%	NB	52%	SB	17%	5%	20%
	West (Old Dade City Rd)	9.5%		63%	EB	55%	WB	7%	0%	10%
CR 54	South (US 98)	9.5%		52%	NB	52%	SB	17%	5%	20%
	North (US 98)	9.5%		52%	NB	52%	SB	17%	8%	20%
	West (CR 54)	9.5%		55%	WB	55%	EB	17%	2%	15%

US 98 from North of Socrum Loop Rd to CR 54 PD&E Study - Traffic Growth Rates and AADTs

US 98 Location	Base Year TDM PSWADT (2010)	Future Year No-Build TDM PSWADT (2040)	No-Build TDM Annual Growth Rate	Future Year Build TDM PSWADT (2040)	Build TDM Annual Growth Rate	Historic Trends	R^2 Value[1]	BEBR Low	BEBR Medium	BEBR High	Selected Growth Rate (No-Build)	Existing Year (2021) AADT	Future Year (2045) No-Build AADT	Selected Growth Rate (Build)	Future Year (2045) Build AADT
North of W Socrum Loop Rd	16,370	25,296	1.82%	29,737	2.72%	1.36%	55.36%	0.44%	1.40%	2.47%	2.00%	18,500	27,500	3.00%	32,000
South of Big Cypress Blvd															
Between Big Cypress Blvd and Pioneer Dr	18,768	28,152	1.67%	33,283	2.58%						2.00%	17,500	26,000	3.00%	30,000
Between Pioneer Dr and Little Cypress Dr											2.00%	16,500	24,500	3.00%	28,500
Between Little Cypress Dr and Rockridge Rd	13,013	20,080	1.81%	23,518	2.69%						2.00%	14,500	21,500	3.00%	25,000
North of Rockridge Rd	8,664	17,005	3.21%	21,682	5.01%	2.81%	73.52%				3.00%	14,500	25,000	5.00%	32,000
Between North of Rockridge Rd and Lakeland Acres Rd	9,910	19,188	3.12%	24,349	4.86%						3.00%	14,500	25,000	5.00%	32,000
Between Lakeland Acres Rd and SR 471											3.00%	13,500	23,000	5.00%	29,500
Between SR 471 and Old Dade City Rd	8,203	16,057	3.19%	21,575	5.43%	2.70%	56.75%				3.00%	11,500	20,000	5.00%	25,500
Between Old Dade City Rd and CR 54	8,203	16,057	3.19%	21,575	5.43%						3.00%	13,000	22,500	5.00%	28,500
North of CR 54						2.88%	79.11%				3.00%	6,400 [2]	11,500 [3]	5.00%	16,000 [4]
Cross Street Location	**Base Year TDM PSWADT (2010)**	**Future Year No-Build TDM PSWADT (2040)**	**No-Build TDM Annual Growth Rate**	**Future Year Build TDM PSWADT (2040)**	**Build TDM Annual Growth Rate**	**Historic Trends**	**R^2 Value[1]**	**BEBR Low**	**BEBR Medium**	**BEBR High**	**Selected Growth Rate (No-Build)**	**Existing Year (2021) AADT**	**Future Year (2045) No-Build AADT**	**Selected Growth Rate (Build)**	**Future Year (2045) Build AADT**
CR 54 - West of US 98						2.62%	96.20%	0.44%	1.40%	2.47%	3.00%	6,500	11,000	3.00%	12,500 [5]
SR 471 - North of US 98	2,255	4,356	3.11%	4,355	3.10%	5.20%	88.89%				3.00%	3,500	6,000	3.00%	6,000
Rockridge Rd - North of US 98	3,342	4,940	1.59%	4,746	1.40%						1.50%	7,900	10,500	1.50%	10,500
Rockridge Rd - North of Creekwood Run	3,526	4,841	1.24%	4,958	1.35%										
Rockridge Rd - South of US 98	4,691	4,740	0.03%	4,326	-0.26%						1.50%	2,800	3,800	1.50%	3,800
Rockridge Rd - South of Curlew Dr/Sherrouse Rd	7,102	9,858	1.29%	9,511	1.13%										
Minor Cross Streets	**Base Year TDM PSWADT (2010)**	**Future Year No-Build TDM PSWADT (2040)**	**No-Build TDM Annual Growth Rate**	**Future Year Build TDM PSWADT (2040)**	**Build TDM Annual Growth Rate**	**Historic Trends**	**R^2 Value[1]**	**BEBR Low**	**BEBR Medium**	**BEBR High**	**Selected Growth Rate (No-Build)**	**Existing Year (2021) AADT**	**Future Year (2045) No-Build AADT**	**Selected Growth Rate (Build)**	**Future Year (2045) Build AADT**
All Other Minor Cross Streets								0.44%	1.40%	2.47%	1.50%	*Varies*	*Varies*	1.50%	*Varies*

[1] R^2 values that fall below the 75% acceptable threshold are in red

[2] AADT value adopted from adjacent project to the North

[3] AADT increased by 500 in order to balance AADTs at this intersection

[4] AADT increased by 2,000 in order to balance AADTs at this intersection

[5] AADT increased by 1,500 in order to balance AADTs at this intersection

APPENDIX D

Cost Estimates

AIM Engineering & Surveying, Inc.

JOB: US98 - W Socrum Lp to S of CR54

PROJECT NUMBER: 436673 SCALE: N/A PAGE: ___ OF: 1

CALCULATED BY: Adam Ayala DATE: 12/10/2021

CHECKED BY: Nicholas Ruiz DATE: 12/10/2021

Cost of increasing from 11-foot to 12-foot travel lanes

4-lanes ⇒ 4-ft add'l pavt width for 6.425 mi

$6.425\,m \times 5280\,ft = 33{,}924\,ft$

FC-5 (0.75")

$4\,ft \times 33{,}924\,ft \times \frac{yd^2}{9\,ft^2} \times \frac{80\,lb}{yd^2} \times \frac{TN}{2000\,lb} \times \frac{\$113}{TN} = \$68{,}150$ ✓

SP-12.5 (4.5")

$4\,ft \times 33{,}924\,ft \times \frac{yd^2}{9\,ft^2} \times \frac{495\,lb}{yd^2} \times \frac{TN}{2000\,lb} \times \frac{\$89}{TN} = \$332{,}116$ ✓

OBG II

$4\,ft \times 33{,}924\,ft \times \frac{yd^2}{9\,ft^2} \times \frac{\$56}{yd^2} = \$844{,}331$ ✓

Stabilization

$4\,ft \times 33{,}924\,ft \times \frac{yd^2}{9\,ft^2} \times \frac{\$11.41}{yd^2} = \$172{,}032$

Total cost to widen all lanes to 12 feet:

$\$1{,}416{,}629$ ✓

R/W Cost - $4\,ft \times 33{,}924\,ft / 43560 = 3.115\,ac$

Approx 74 parcels Rt. & 84 parcel Lt.

$20,000 per parcel and $95,000/ac.

$(\$20{,}000 \times 74) + (\$95{,}000 \times 3.115) = \$1{,}775{,}925$ ✓

APPENDIX E

Crash Modification Factors

CRASH MODIFICATION FACTORS CLEARINGHOUSE

CMF / CRF Details

CMF ID: 4620

Flatten sideslope from 1V:5H to 1V:6H

Description: Flatten sideslope from 1V:5H to 1V:6H

Prior Condition: ***No Prior Condition(s)***

Category: Roadside

Study: ***Accident Modification Factors for Traffic Engineering and ITS Improvements*****, Harkey et al., 2008**

Star Quality Rating:	

Crash Modification Factor (CMF)	
Value:	0.97
Adjusted Standard Error:	
Unadjusted Standard Error:	

Crash Reduction Factor (CRF)	
Value:	3 *(This value indicates a* ***decrease*** *in crashes)*
Adjusted Standard Error:	

Unadjusted Standard Error:	

Applicability

Crash Type:	All
Crash Severity:	Not specified
Roadway Types:	Minor Arterial
Number of Lanes:	2
Road Division Type:	
Speed Limit:	
Area Type:	Rural
Traffic Volume:	
Time of Day:	

If countermeasure is intersection-based

Intersection Type:	
Intersection Geometry:	
Traffic Control:	
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	
Municipality:	
State:	No state(s) chosen.

Country:	
Type of Methodology Used:	11
Sample Size Used:	

Other Details

Included in Highway Safety Manual?	
Date Added to Clearinghouse:	Dec-01-2009
Comments:	HSM 1st Ed, Table 13-18

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

CMF / CRF Details

CMF ID: 7825

Convert 12-foot lanes to 11-foot lanes

Description: Convert 12-foot lanes to 11-foot lanes

Prior Condition: Roadway with 12-foot lanes

Category: Roadway

Study: *Validation and Application of Highway Safety Manual (Part D) in Florida*, Abdel-Aty et al., 2014

Star Quality Rating:	[View score details]

Crash Modification Factor (CMF)	
Value:	0.76
Adjusted Standard Error:	
Unadjusted Standard Error:	0.07

Crash Reduction Factor (CRF)	
Value:	24 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	

Unadjusted Standard Error:	7

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Not specified
Number of Lanes:	>2
Road Division Type:	Divided by Median
Speed Limit:	
Area Type:	Rural
Traffic Volume:	1600 to 139000 *Annual Average Daily Traffic (AADT)*
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	
Intersection Geometry:	
Traffic Control:	
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	2010 to 2012
Municipality:	
State:	FL

Country:	USA
Type of Methodology Used:	7
Sample Size Used:	

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Mar-08-2016
Comments:	CMFs of narrowing lane width from 12 feet to 11 feet on rural divided multiple-lane roadways.

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

CMF / CRF Details

CMF ID: 8704

Increase median width

Description:

Prior Condition: Roadways with narrower median width

Category: Access management

Study: *Evaluation of Safety Effectiveness of Multiple Cross Sectional Features on Urban Arterials*, Park and Abdel-Aty, 2016

Star Quality Rating:	★★★☆☆ [View score details]

Crash Modification Factor (CMF)	
Value:	$$CMF = \exp\{-0.0048 \times (MW - Base_{MW})\}$$ Where: MW = Median Width (feet) Base_{MW} = Baseline Median Width (feet)
Adjusted Standard Error:	

Unadjusted Standard Error:	

Crash Reduction Factor (CRF)

Value:	*(This value indicates an **increase** in crashes)*
Adjusted Standard Error:	
Unadjusted Standard Error:	

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Principal Arterial Interstate
Number of Lanes:	2-8
Road Division Type:	All
Speed Limit:	20-65
Area Type:	Urban
Traffic Volume:	1000 to 94500 *Annual Average Daily Traffic (AADT)*
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	
Intersection Geometry:	
Traffic Control:	
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	2008 to 2012
Municipality:	
State:	FL
Country:	USA
Type of Methodology Used:	7
Sample Size Used:	

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Nov-06-2017
Comments:	This CMF is for KABCO crashes. CMF applies to urban arterials.

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

CMF / CRF Details

CMF ID: 8711

Widen shoulder

Description:

Prior Condition: Roadway with narrower shoulders

Category: Shoulder treatments

Study: *Evaluation of Safety Effectiveness of Multiple Cross Sectional Features on Urban Arterials*, Park and Abdel-Aty, 2016

Star Quality Rating:	★★★☆☆ [View score details]

Crash Modification Factor (CMF)	
Value:	$$CMF = \exp\{-0.0394 \times (SW - Base_{SW})\}$$ Where: SW = Shoulder Width (feet) Base_{SW} = Baseline Shoulder Width (feet)
Adjusted Standard Error:	
Unadjusted Standard Error:	

Crash Reduction Factor (CRF)

Value:	*(This value indicates an **increase** in crashes)*
Adjusted Standard Error:	
Unadjusted Standard Error:	

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Principal Arterial Other
Number of Lanes:	2-8
Road Division Type:	All
Speed Limit:	20-65
Area Type:	Urban
Traffic Volume:	1000 to 94500 *Annual Average Daily Traffic (AADT)*
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	
Intersection Geometry:	
Traffic Control:	
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	2008 to 2012

Municipality:	
State:	FL
Country:	USA
Type of Methodology Used:	7
Sample Size Used:	

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Nov-06-2017
Comments:	The CMF is for KABCO crashes. CMF applies to urban arterials.

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

CMF ID: 8711
Widen Shoulder
http://www.cmfclearinghouse.org/detail.cfm?facid=8711

Prop, SW	8
Base, SW	10
CMF	1.08199
CMF ^-1	0.92422

100	8' shldr
108.2	10' shldr
-8.2	Reduced Crashes

$$CMF = \exp\{-0.0394 \times (SW - Base_{SW})\}$$

Where:

SW = Shoulder Width (feet)

Base_{SW} = Baseline Shoulder Width (feet)

APPENDIX F

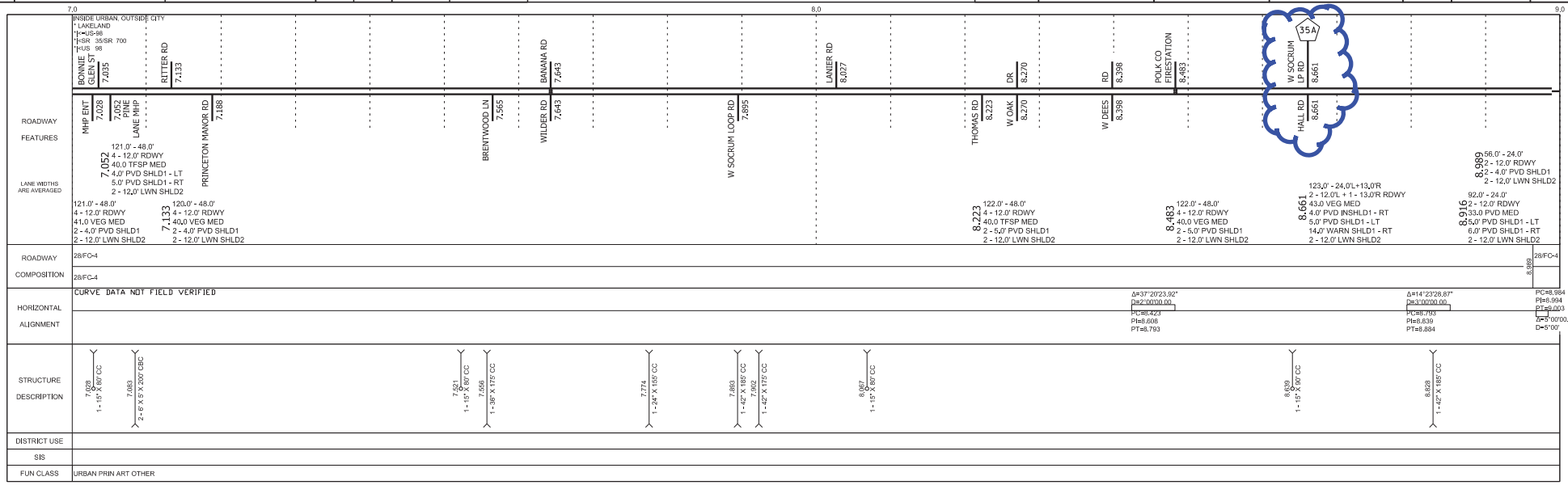
Straight Line Diagram

	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	09/20/2017	10/19/2017	00.000	17.750		12/16/19(C.DRAINS)
BY	FTE	FTE				

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
02	US 98	SR 35/SR 700	POLK	01	16210000	3 OF 4



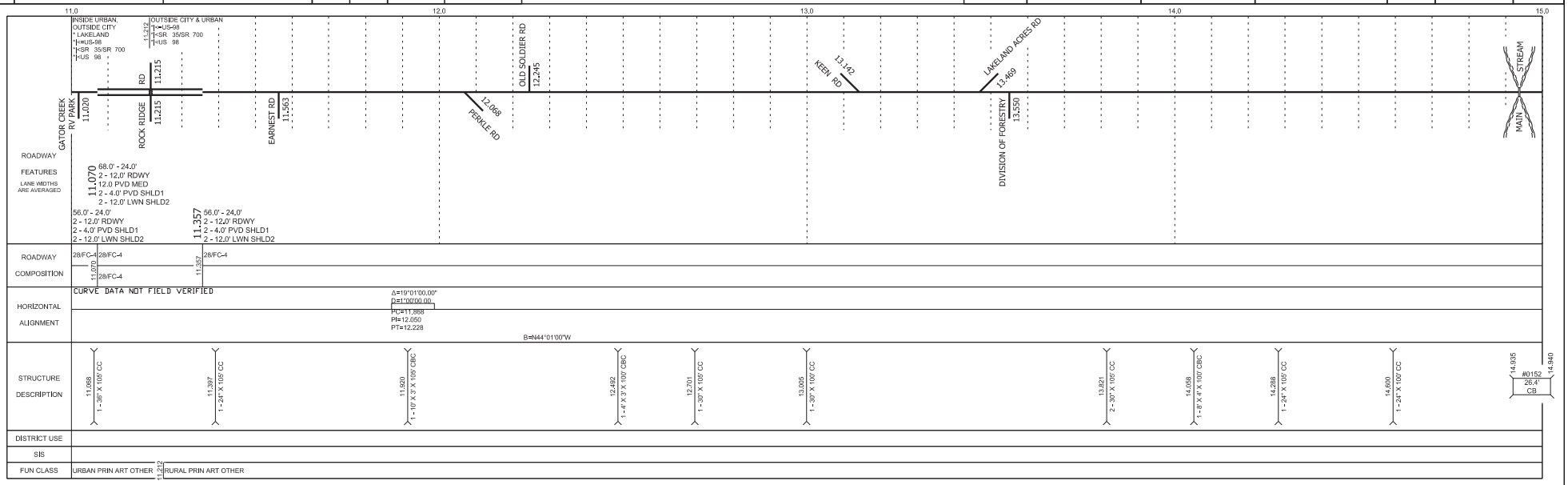
Version: 1.4.2.27 10/17/2017

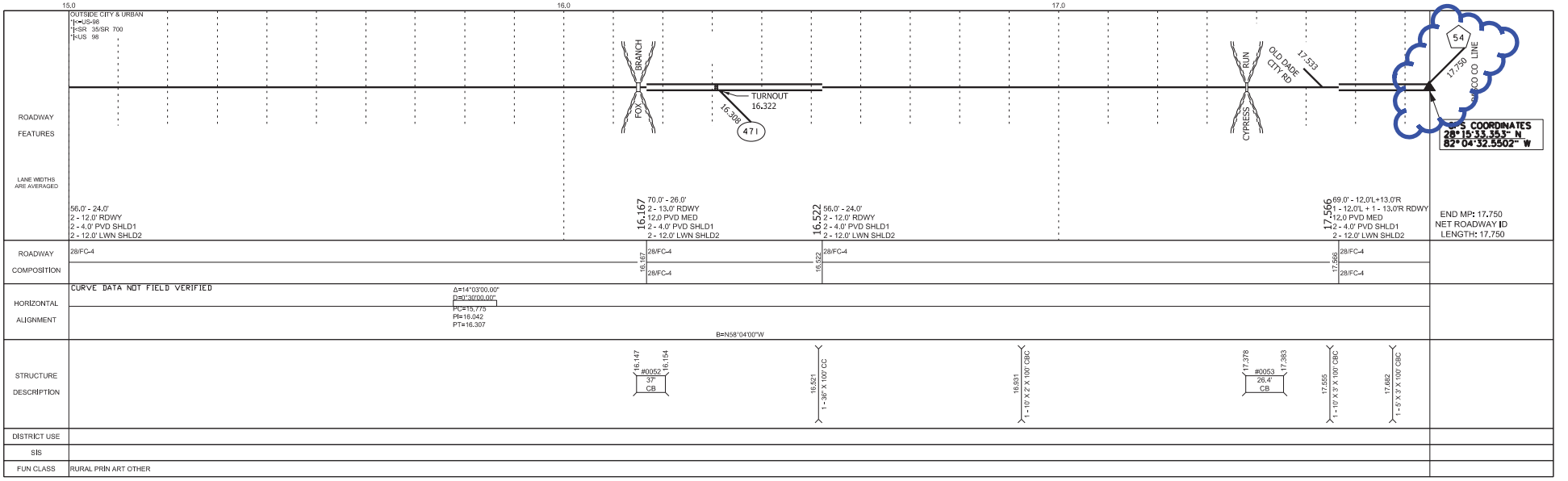
	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	09/20/2017	10/19/2017	00.000	17.750		12/16/19(C.DRAINS)
BY	FTE	FTE				

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
02	US 98	SR 35/SR 700	POLK	01	16210000	4 OF 4





Version: 1.4.2.27 10/17/2017

APPENDIX G

Project Traffic Analysis Report (PTAR) Draft

Project Traffic Analysis Report (PTAR)

SR 35 (US 98)
Project Development and Environment (PD&E) Study
From North of West Socrum Loop Road to South of CR 54

Polk County, Florida

FPID 436673-1
ETDM Project No. 14334

Prepared for:

Florida Department of Transportation
District One

Prepared for:
FDOT District One
801 N Broadway Avenue
Bartow, Florida 33830

January 2022

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

PROFESSIONAL ENGINEER CERTIFICATE

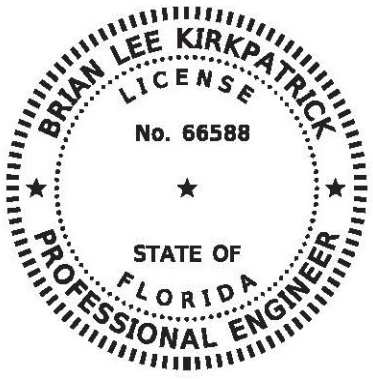
I hereby certify that I am a registered professional engineer in the State of Florida practicing with RS&H, Inc., a Florida corporation authorized to operate as an engineering business, (EB No. EB0005620) by the State of Florida Department of Professional Regulation, Board of Engineers and that I have prepared or approved the evaluation, findings, opinions, conclusions or technical advice hereby reported for:

PROJECT: State Road 35 (US 98) PD&E Study
Project Traffic Analysis Report (PTAR)

LOCATION: Polk County, Florida

FPID-NUMBER: 436673-1

This report contains a summary of data collection efforts, safety analysis, operational analysis, discussion of Build alternatives, and summary of conclusions. 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.



THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

ON THE DATE ADJACENT TO THE SEAL

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

RS&H, INC
1715 NORTH WESTSHORE BOULEVARD
SUITE 600
TAMPA, FL 33607
CERTIFICATE OF AUTHORIZATION NO. 5620
BRIAN KIRKPATRICK, P.E., NO. 66588

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) study along State Road 35/US Highway 98 (US 98) in Polk County to evaluate roadway and safety improvements along the corridor. The study limits extend for 8.7 miles from north of West Socrum Loop Road to south of County Road 54 (CR 54), near the Pasco County line. The study will evaluate the effects of widening this section of US 98 from a two-lane undivided roadway to a four-lane divided roadway and will also assess existing and future traffic operations, access management, and freight mobility.

The PD&E study is supported by preliminary engineering design activities and will determine the proposed Build alternative, which will be depicted on typical roadway sections and conceptual design plans. The Build alternative and the No-Build, or "no action," alternative will be evaluated and compared to assess potential effects to the natural and physical environment, to determine their ability to meet the project's Purpose and Need, to obtain and consider agency and public comments, and to ensure compliance with all applicable federal and state laws. The proposed Build alternative will include the construction of stormwater management facilities (SMFs) and floodplain compensation (FPC) sites. The No-Build alternative will assume no improvements are made to the facility beyond routine roadway maintenance. A Type 2 Categorical Exclusion (Type 2 CE) is being prepared as the environmental document for this study.

This Project Traffic Analysis Report was prepared to evaluate the traffic operations and safety of the future No-Build condition and the future Build condition (roadway widening and intersection improvements). Intersection Control Evaluation (ICE) was conducted on three major intersections within the study area to determine the preferred future control type and configuration in terms of safety and overall operations.

An access management evaluation was conducted, in part, to determine the most appropriate median treatments at intersections and major driveways. A total of 10 full median openings are recommended and a total of 17 directional median openings are recommended (see Appendix K). The CR 54 intersection has been recommended to be converted into a Traffic Signal by FDOT D7.

As a result of the ICE analysis, it is recommended that Big Cypress Boulevard and SR 471 be converted into 2x1 Roundabouts. It is recommended that the existing traffic signal at Rock Ridge Road is maintained but an additional westbound left-turn lane is provided, and signal timing be reprogrammed to operate as Split-Phased for the east-west movements.

A Highway Safety Manual (HSM)-based safety analysis supports the described Build improvements and predicts that the Build alternative will prevent approximately 43 fatal/injury crashes and 379 property damage only crashes (compared to the No-Build Alternative) over the 20-year design life of the project resulting in a present value of just over $90 million. The proposed Build alternative design concept is provided in Appendix K.

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Appendix A	US 98 From W Socrum Loop Road to CR 54 Final Traffic Methodology Memorandum
Appendix B	Raw Traffic Data
Appendix C	Rock Ridge Road Signal Timing Plan
Appendix D	Existing Year (2021) HCM 6th Edition Reports
Appendix E	Raw Crash Data and Serious Crash Summaries
Appendix F	US 98 Subarea Model Validation Technical Memorandum
Appendix G	Polk County BEBR & Florida Traffic Online (FTO) Historical AADTs
Appendix H	No-Build (2045) HCM 6th Edition Reports
Appendix I	Build (2045) HCM 6th Edition Reports
Appendix J	Supporting ICE Material
Appendix K	Roadway Concepts
Appendix L	Highway Safety Manual (HSM) Analysis Documentation
Appendix M	No-Build (2025) HCM 6th Edition Reports
Appendix N	Build (2025) HCM 6th Edition Reports

All appendices are provided electronically.

SECTION 1 INTRODUCTION

1.1 PROJECT DESCRIPTION

The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) study to evaluate capacity and safety improvements along SR 35 (US 98) from north of West Socrum Loop Road to south of CR 54 in Polk County. Throughout the remainder of this document only the US 98 designation will be used. The project limits are shown in **Figure 1-1** and the total project length is approximately 8.7 miles. The purpose of this PD&E study is to evaluate and document the benefits, costs, and impacts of widening US 98 from the existing two-lane undivided roadway to a four-lane divided roadway. US 98 is not designated as a Strategic Intermodal System (SIS) facility. The portion from West Socrum Loop Road to just north of Rock Ridge Road is functionally classified as Urban Principal Arterial Other facility, while the portion from just north of Rock Ridge Road to CR 54 is functionally classified as Rural Principal Arterial Other facility.

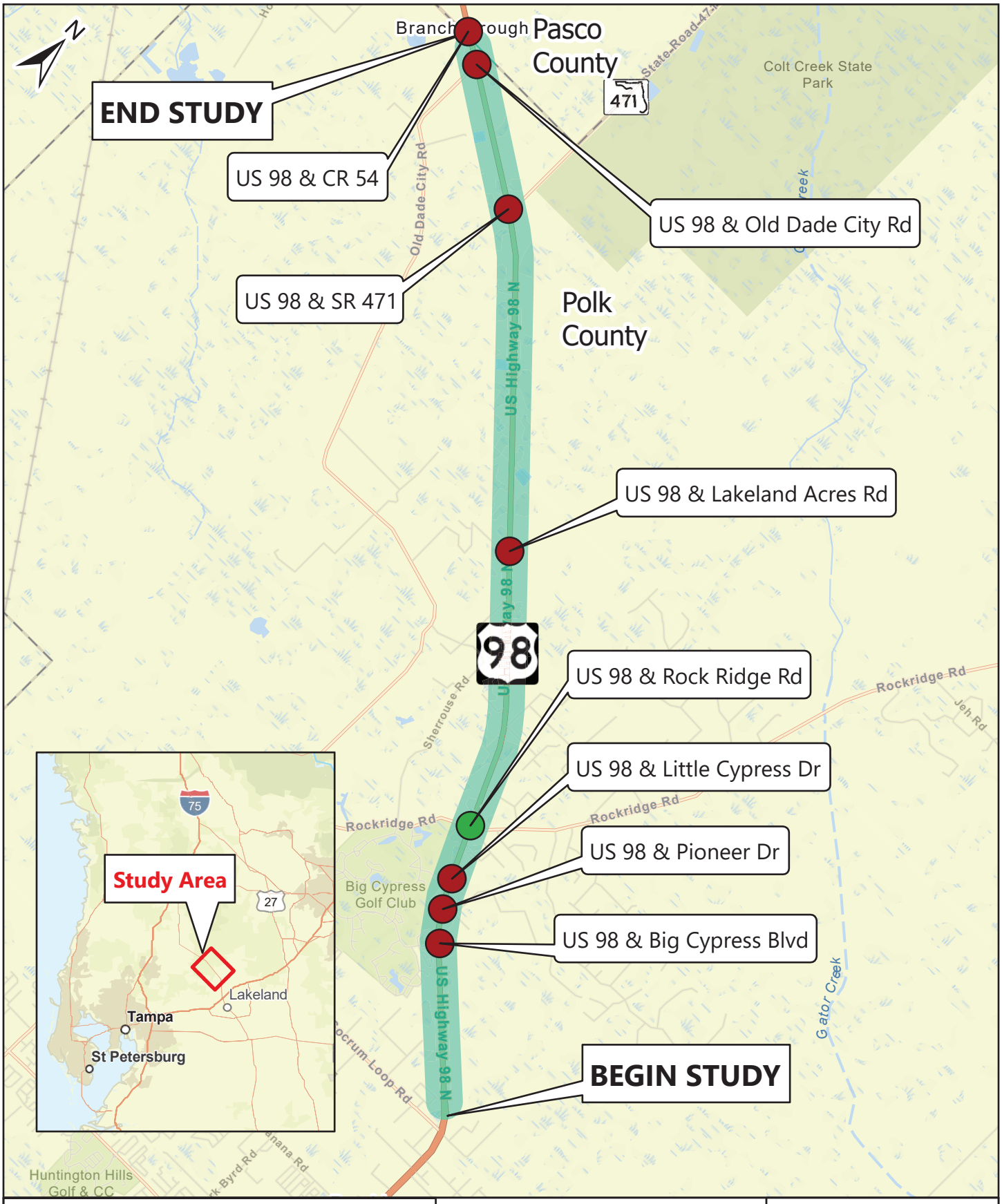


Figure 1-1:
Project Location Map

This PD&E study will aid FDOT District One and the FDOT Office of Environmental Management (OEM) in determining the type, preliminary design, and location of the proposed improvements. This improvement is necessary to provide additional capacity to accommodate the future year travel demand generated by the projected population and employment growth in both northwest Polk County and southeast Pasco County. US 98 is a major north-south roadway that extends from US 92 (Memorial Boulevard) in Lakeland to US 301 (Gall Boulevard) in Dade City and provides a critical regional connection between Polk and Pasco Counties. US 98 is a designated evacuation route and is also included in the Polk Transportation Planning Organization (TPO) Regional Freight Network.

This project was screened through the Efficient Transportation Decision Making (ETDM) process as ETDM Project Number 14334. The initial results were published in the *Preliminary Programming Screen Summary Report* on March 11, 2021, with comments provided by the Environmental Technical Advisory Team (ETAT). The ETAT evaluated the proposed project's effects on various natural, physical, and social resources. The Class of Action was determined to be a Type 2 Categorical Exclusion (Type 2 CE).

1.2 PROJECT PURPOSE AND NEED

The following Purpose and Need statement was documented in the March 11, 2021, Preliminary Programming Screen Summary Report*:*

The purpose of the project is to improve an existing traffic bottleneck along US 98 from north of West Socrum Loop Road to south of CR 54 within unincorporated Polk County. The need for the project is based on the following criteria:

AREA WIDE NETWORK/SYSTEM LINKAGE – Improve Transportation Network Connectivity

The US 98 corridor is an intraregional connecting link between Polk and Pasco Counties. The project segment of US 98 transitions from four lanes just north of West Socrum Loop Road to an undivided two-lane facility, creating a traffic bottleneck. The project is intended to enhance transportation network connectivity by:

- Maintaining a critical link to an SIS facility (i.e., I-4), and
- Providing a viable alternate route to parallel north-south arterials (i.e., Kathleen Road and Old Dade City Road).

CAPACITY/TRANSPORTATION DEMAND – Improve Operational Conditions

US 98 serves as a regional freight mobility corridor as it connects to I-4 (an SIS facility) and US 301 (a designated regional freight mobility corridor). Approximately 13.1 percent of the Annual Average Daily Traffic (AADT) volume on US 98 is composed of trucks. Defined Freight Activity Centers (FAC's) in the area (clusters of industrial land parcels) include the Kathleen Road FAC, North Combee Road FAC and West Lakeland Industrial Area FAC. Not only does this roadway facilitate truck traffic and the distribution of goods to local activity areas, but it also functions as an important north-south corridor for commuters between Pasco and Polk Counties.

According to Momentum 2040 (the Polk TPO's Long Range Transportation Plan (LRTP)), the northwest area of Polk County, where the project corridor is located, is projected to increase in population by approximately 39,000 people and employment by approximately 11,000 employees by 2040.

Per the Polk TPO's 2020 Roadway Network Database and Momentum 2040:

2019 AADT

- From West Socrum Loop Road to Rock Ridge Road = 16,900 vehicles per day (vpd)
- From Rock Ridge Road to SR 471 = 11,900 vpd
- From SR 471 to CR 54 (Pasco County Line) = 10,400 vpd

2019 Level of Service (LOS)

- From West Socrum Loop Road to Rock Ridge Road = LOS "C"
- From Rock Ridge Road to SR 471 = LOS "C"
- From SR 471 to CR 54 (Pasco County Line) = LOS "D"

2019 Volume-to-Capacity Ratio

- From West Socrum Loop Road to Rock Ridge Road = 0.51
- From Rock Ridge Road to SR 471 = 0.64
- From SR 471 to CR 54 (Pasco County Line) = 1.11

2040 Volume-to-Capacity Ratio

- From West Socrum Loop Road to SR 471 = 1.25 – 1.50
- From SR 471 to CR 54 (Pasco County Line) = 1.00 – 1.25

It is important to note that a Volume-to-Capacity (V/C) ratio greater than 1.0 means the volume of vehicles on the roadway segment is greater than what the roadway was designed for when it was constructed. The 2019 V/C ratio on US 98 from SR 471 to CR 54 is 1.11. The 2040 V/C ratios for the project corridor are 1.25 – 1.50 from West Socrum Loop Road to SR 471 and 1.00 – 1.25 from SR 471 to CR 54. The TPO conducted this evaluation using the 2013 Quality/Level of Service Handbook Generalized Service Volume Tables. Conditions along the roadway are anticipated to worsen by 2040 if no improvements occur as the roadway will exceed its capacity and not be able to accommodate future travel demand. The project is anticipated to enhance operational conditions within the corridor by increasing its capacity.

SAFETY – Improve Safety Conditions

According to Polk TPO's 2020 Roadway Network Database, during the five-year period from 2014 - 2018, there were 167 total crashes. The total number of crashes per roadway segment, along with the statewide average crash rate for similar facility types, are provided below:

- From West Socrum Loop Road to Rock Ridge Road - 37 crashes

  - Actual crash rate = 0.471
  - Statewide average crash rate = 1.202 (Suburban 2-3 lanes - 2-way undivided)
- From Rock Ridge Road to SR 471 – 93 crashes
  - Actual crash rate = 0.841
  - Statewide average crash rate = 0.768 (Rural 2-3 lanes - 2-way undivided)
- From SR 471 to CR 54 (Pasco County Line) – 37 crashes
  - Actual crash rate = 1.336
  - Statewide average crash rate = 0.768 (Rural 2-3 lanes - 2-way undivided)

The crash rates for two of the project roadway segments exceed the statewide average crash rate. The high number of crashes may be attributed to the current roadway's operational conditions. If no improvements are made to the existing roadway, the greater the probability for vehicle-to-vehicle conflicts to occur as traffic increases along the project corridor.

The proposed project is anticipated to improve safety conditions along the roadway by:

- Reducing congestion through the provision of additional capacity, and
- Enhancing a viable parallel alternate north-south route to Kathleen Road and Old Dade City Road that will aid in emergency access and response times.

1.3 EXISTING FACILITY AND PROPOSED IMPROVEMENTS

1.3.1 Existing Facility

US 98 is a two-lane undivided facility with a posted speed limit of 60 miles per hour (mph) throughout the project limits. The roadway is centered within 160 feet of existing right-of-way (ROW) and consists of one 12-foot travel lane in each direction and eight-foot outside shoulders (four feet paved). There are no existing designated bicycle or pedestrian facilities. Stormwater runoff is collected in roadside ditches that outfall to adjacent wetlands and ultimately convey to the Hillsborough and Withlacoochee River watersheds. There are 22 cross drains within the project limits, including bridge culverts at Main Stream, Fox Branch, and Cypress Run. The US 98 intersection with Rock Ridge Road is signalized and there is a flashing signal at the intersection with SR 471. Overhead utilities are located throughout the project limits and conservation lands are present along portions of the corridor. The assigned US 98 Context Classifications within the project limits are shown in **Table 1-1** and the existing typical roadway section is depicted in **Figure 1-2**.

Table 1-1: Existing Context Classification

Begin Limit	End Limit	Context Classification
North of West Socrum Loop Road	Rock Ridge Road	C3R – Suburban Residential
Rock Ridge Road	CR 54	C2 – Rural

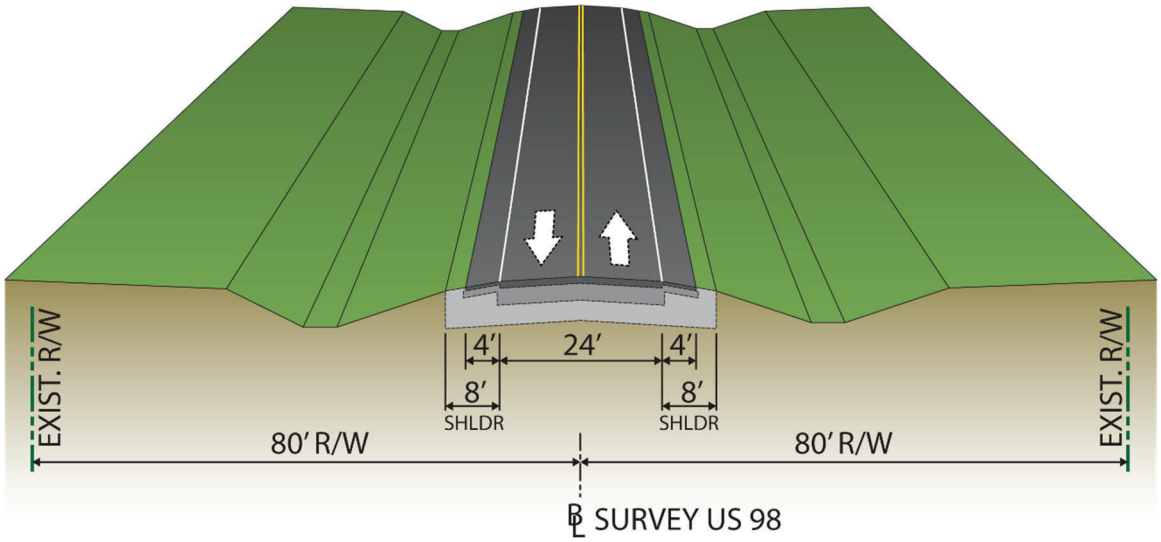


Figure 1-2: Existing US 98 Typical Section

1.3.2 Proposed Improvements

The proposed Build alternative is a four-lane divided roadway throughout the project limits. The typical section for the portion of US 98 from north of West Socrum Loop Road to Rock Ridge Road includes 12-foot travel lanes, curb and gutter along the inside and outside edges of pavement, a 22-foot grassed median, and 10-foot shared use paths on both sides of the roadway, as shown in **Figure 1-3**. Design, target, and posted speeds of 45 mph are proposed for this 2.3-mile section of the project.

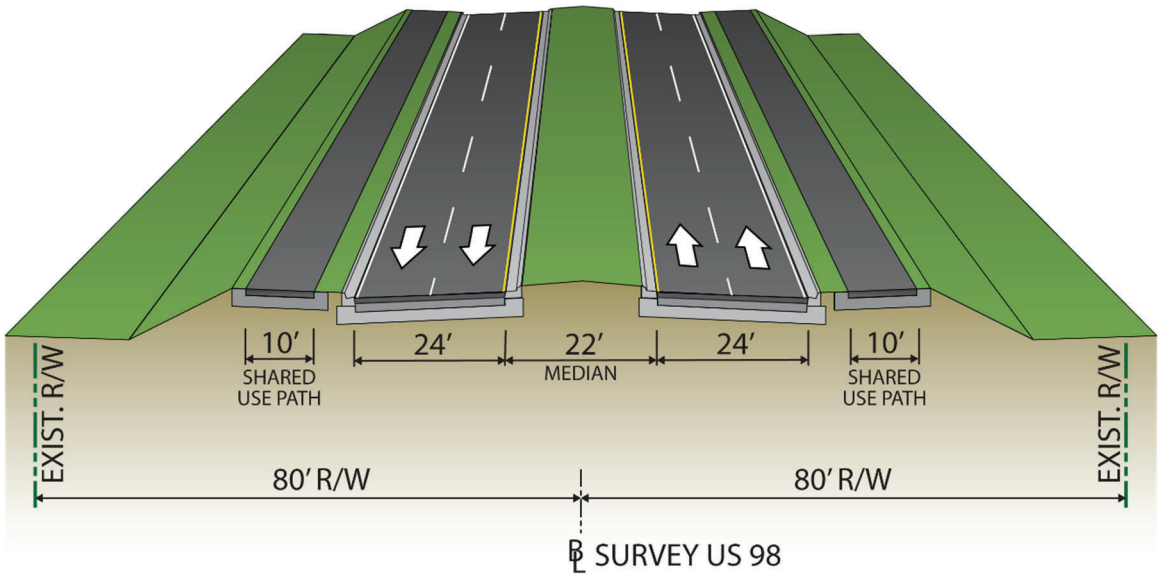


Figure 1-3: Proposed US 98 C3R (Suburban) Typical Section

The typical section for the portion of US 98 from Rock Ridge Road to CR 54 includes 11-foot travel lanes, four-foot paved shoulders with curb and gutter on the inside, ten-foot outside shoulders (five feet paved), and a 30-foot grassed median, as shown in **Figure 1-4**. Design, target, and posted speeds of 55 mph are proposed for this 6.4-mile section of the project.

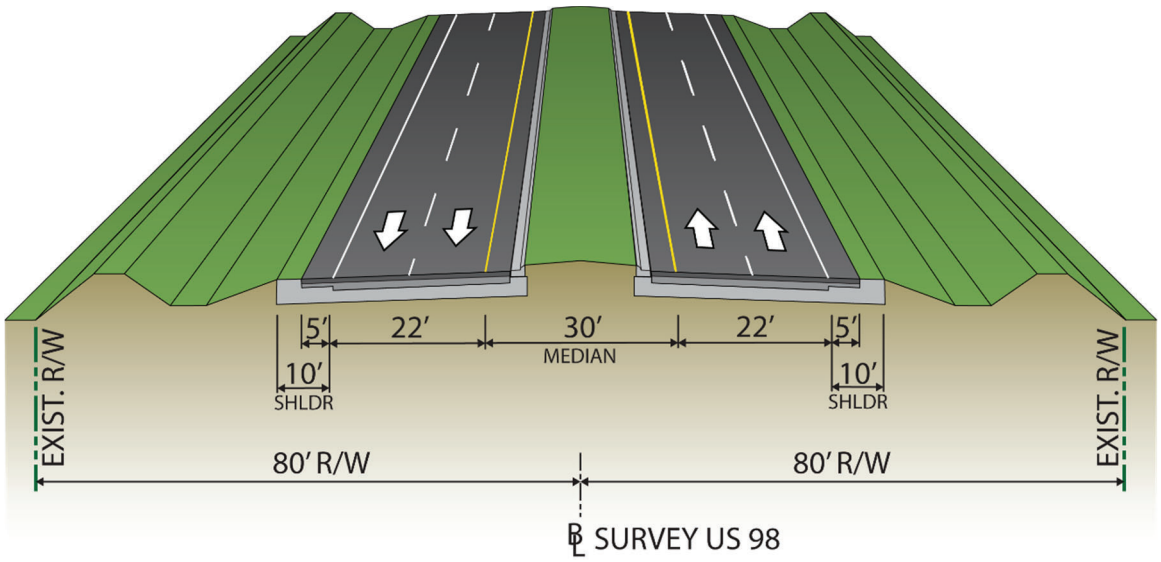


Figure 1-4: Proposed US 98 C2 (Rural) Typical Section

Both typical sections can be accommodated within the existing ROW. Stormwater runoff will be collected and conveyed to stormwater management facilities (SMFs) that will be constructed along the corridor and impacts to adjacent floodplains will be mitigated through the construction of floodplain compensation (FPC) sites.

1.4 PURPOSE OF THIS REPORT

The purpose of this PTAR is to quantify and compare the potential impacts of the proposed widening of US 98 from two (2) to four (4) lanes and identify potential additional improvements. This PTAR was prepared in accordance with the FDOT *PD&E Manual* to meet the requirements of the National Environmental Policy Act (NEPA) and other associated federal and state laws, rules, and regulations.

A Traffic Methodology Memorandum for this study was prepared in May 2021 (see **Appendix A**).

This PTAR is intended to document the analysis of Existing (2021) Conditions, a summary of crash history, Opening Year (2025) and Design Year (2045) traffic forecasts for the No-Build and Build Alternatives, an analysis of No-Build conditions and the results of ICE analyses for new or modified intersections. Also included in this submittal is an HSM-based predictive crash analyses for the No-Build and Build Alternatives in accordance with Part 2, Chapter 2 of the PD&E Manual.

SECTION 2 METHODOLOGY

2.1 AREA OF INFLUENCE

The area of influence, depicted in the project location map (**Figure 1-1**), encompasses the extents of US 98 from just north of W Socrum Loop Road to County Road (CR) 54. The following existing intersections are included in the area of influence:

- Big Cypress Boulevard
- Pioneer Drive
- Little Cypress Drive
- Rock Ridge Road
- Lakeland Acres Road
- SR 471
- Old Dade City Road
- CR 54

2.2 ANALYSIS YEARS

The following study years have been established for this study:

- Existing Year: 2021
- Opening Year: 2025
- Design Year: 2045

This PTAR presents the Existing Conditions (2021) analysis and the Opening Year (2025) and Design Year (2045) analysis results for the No-Build and Build Alternatives.

2.3 DATA COLLECTION

A variety of transportation data was collected as part of this study. The following sections describe the types and methods of data collection that were employed.

2.3.1 4-hour Turning Movement Counts

Four-hour vehicle and bicycle/pedestrian turning movement counts (TMCs) for peak periods were performed at the following intersections:

1. US 98 at Pioneer Drive
2. US 98 at Little Cypress Drive
3. US 98 at Rock Ridge Road

4. US 98 at Lakeland Acres Road
5. US 98 at SR 471
6. US 98 at Old Dade City Road
7. US 98 at CR 54

2.3.2 24-hour Turning Movement Counts

24-hour manual vehicle and bicycle/pedestrian turning movement counts (TMCs) for peak periods were collected at the following intersection:

1. US 98 at Big Cypress Boulevard

2.3.3 72-hour Vehicle Volume Counts

72-hour traffic machine counts (approach volumes and departure volumes at 15-minute increments) were performed at the following locations:

1. Big Cypress Boulevard west of US 98
2. Pioneer Drive east of US 98
3. Little Cypress Drive west of US 98
4. Rock Ridge Road east of US 98
5. Rock Ridge Road west of US 98
6. Lakeland Acres Road west of US 98
7. SR 471 north of US 98
8. Old Dade City Road south of US 98
9. CR 54 west of US 98
10. US 98 north of Big Cypress Boulevard
11. US 98 south of Little Cypress Drive
12. US 98 south of CR 54

2.3.4 72-hour Vehicle Volume and Classification Counts

72-hour traffic machine vehicle classification counts were performed at the following locations:

1. US 98 north of Rock Ridge Road
2. US 98 north of SR 471

2.3.5 72-hour Vehicle Volume, Classification and Speed Counts

72-hour traffic machine vehicle volume, classification, and speed counts were performed at the following locations:

1. US 98 approximately 1 mile south of Big Cypress Boulevard
2. US 98 approximately 1 mile south of SR 471

2.3.6 72-hour Vehicle Volume and Speed Counts

A 72-hour traffic machine vehicle volume and speed count was performed at the following location:

- US 98 south of Rock Ridge Road

All data collected has been provided in **Appendix B** and count locations are depicted in **Figure 2-1**.

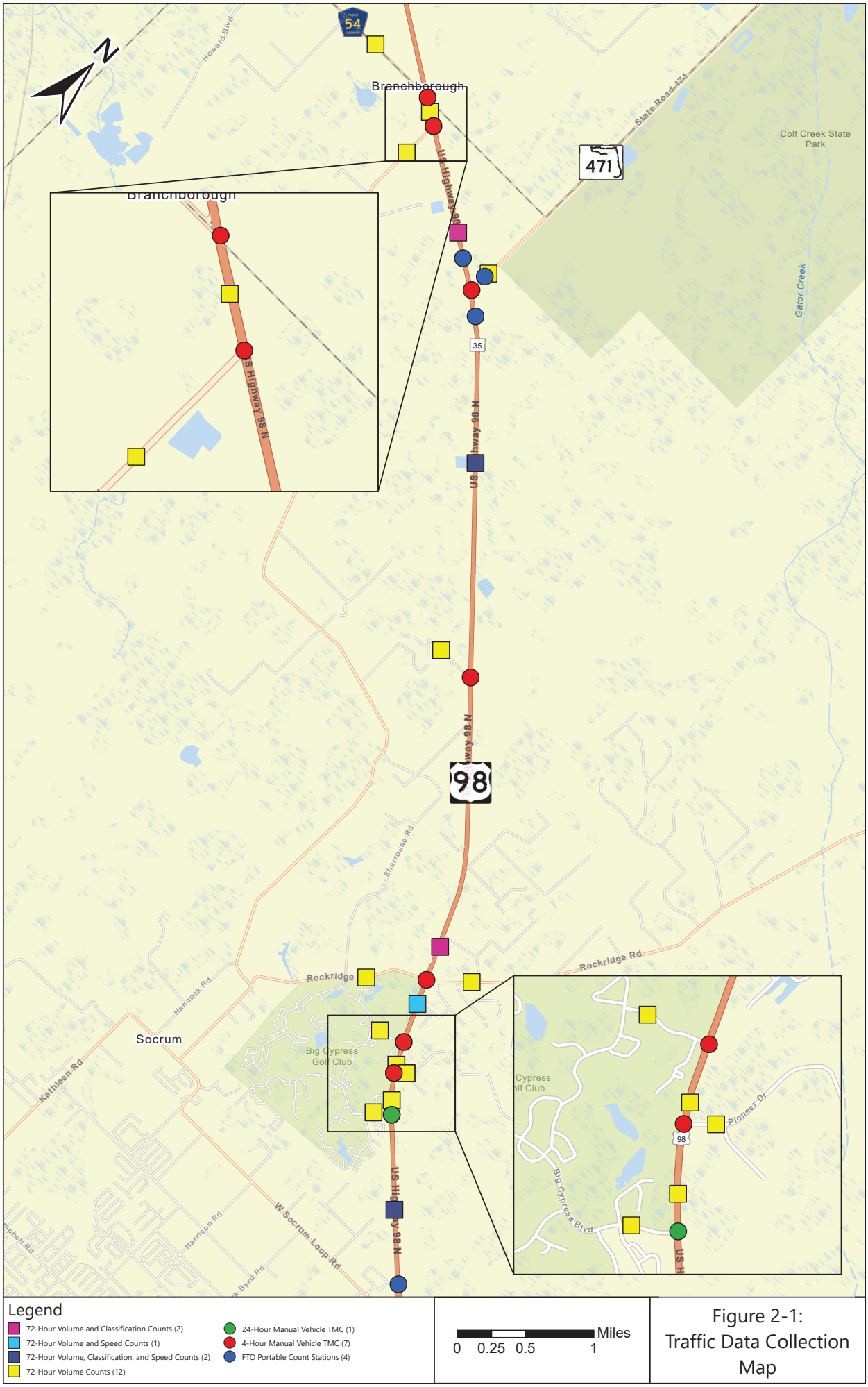


Figure 2-1:
Traffic Data Collection Map

2.3.7 Intersection Geometry and Signal Timings

Existing roadway features and intersection configurations were obtained from field reviews and aerial imagery. Traffic signal timing plans for the lone signalized study intersection (Rock Ridge Road) was obtained from FDOT and is included in **Appendix C**.

2.4 TRAFFIC FACTORS AND CHARACTERISTICS

Traffic characteristics were developed from the data collected, including directional (D) factors, truck (T) factors, and K-factors. The K-factor is the proportion of annual average daily traffic (AADT) occurring in the peak hour. These traffic factors were utilized in the development of future design hour volumes (see **SECTION 5**). **Table 2-1** summarizes the existing traffic factors for the study roadway segments.

Table 2-1: Existing Year (2021) Traffic Factors

US 98 Intersection	Intersection Leg	Selected Traffic Factors									
		K-Factor		D-Factor				T-factor			PHF*
		AM	PM	AM	Dir.	PM	Dir.	AM	PM	24-hr	
Big Cypress Boulevard	South (US 98)	9.0%		55%	SB	55%	NB	10%	7%	15%	0.92
	North (US 98)	9.0%		55%	SB	55%	NB	11%	8%	15%	0.92
	West (Big Cypress Blvd)	9.0%		74%	EB	55%	WB	0%	1%	2%	0.92
Pioneer Drive	South (US 98)	9.0%		55%	SB	55%	NB	11%	8%	15%	0.92
	North (US 98)	9.0%		55%	SB	55%	NB	11%	8%	15%	0.92
	East (Pioneer Dr)	9.0%		72%	WB	55%	EB	9%	7%	10%	0.92
Little Cypress Drive	South (US 98)	9.0%		55%	SB	55%	NB	11%	8%	15%	0.92
	North (US 98)	9.0%		55%	SB	55%	NB	11%	8%	15%	0.92
	West (Little Cypress Dr)	9.0%		79%	EB	59%	WB	0%	0%	2%	0.92
Rock Ridge Road	South (US 98)	9.0%		55%	SB	55%	NB	11%	8%	15%	0.92
	North (US 98)	9.5%		52%	NB	52%	SB	19%	10%	20%	0.88
	West (Rock Ridge Rd)	9.0%		55%	WB	55%	EB	7%	5%	10%	0.92
	East (Rock Ridge Rd)	9.5%		65%	WB	65%	EB	17%	4%	15%	0.88
Lakeland Acres Road	South (US 98)	9.5%		52%	NB	52%	SB	20%	10%	20%	0.88
	North (US 98)	9.5%		52%	NB	52%	SB	20%	10%	20%	0.88
	West (Lakeland Acres Rd)	9.5%		75%	EB	55%	WB	8%	0%	10%	0.88
SR 471	South (US 98)	9.5%		52%	NB	52%	SB	19%	10%	20%	0.88
	North (US 98)	9.5%		52%	NB	52%	SB	17%	5%	20%	0.88
	East (SR 471)	9.5%		56%	EB	56%	WB	27%	19%	40%	0.88
Old Dade City Road	South (US 98)	9.5%		52%	NB	52%	SB	17%	5%	20%	0.88
	North (US 98)	9.5%		52%	NB	52%	SB	17%	5%	20%	0.88
	West (Old Dade City Rd)	9.5%		63%	EB	55%	WB	7%	0%	10%	0.88
CR 54	South (US 98)	9.5%		52%	NB	52%	SB	17%	5%	20%	0.88
	North (US 98)	9.5%		52%	NB	52%	SB	17%	8%	20%	0.88
	West (CR 54)	9.5%		55%	WB	55%	EB	17%	2%	15%	0.88

*Selected based on Guidance from FDOT Traffic Analysis Handbook (2021): Transitioning Area = 0.92, Rural Area = 0.88

2.5 LEVEL OF SERVICE TARGET

FDOT maintains minimum acceptable operating Level of Service (LOS) targets for the State Highway System as well as the Strategic Intermodal System (SIS). The term LOS is defined as the system of six designated ranges from "A" (best) to "F" (worst) used to evaluate roadway facility performance. The FDOT minimum acceptable operating LOS targets were used for this study. The LOS target for the intersections analyzed in this PTAR is LOS "D".

2.6 ANALYSIS PROCEDURES

This study was conducted based on guidance contained in FDOT's PD&E Manual, Traffic Analysis Handbook, and Project Traffic Forecasting Handbook. Traffic analysis was conducted in two ways: a traditional Synchro analysis for five minor study intersections along the corridor, and an ICE analysis for three major study intersections along the corridor. *Synchro*, *Version 10*, was used for the evaluation of intersection operations for the existing and future scenarios. Intersection and movement vehicular delays, queues, and Levels of Service based on Highway Capacity Manual (HCM) 6th Edition procedures were used as Measures of Effectiveness (MOEs). SIDRA was also used to evaluate roundabout alternatives for the ICE intersections. If a preferred alternative could not be selected after a Stage 1 ICE analysis, a Stage 2 analysis was performed. This document presents the results of the both the Stage 1 and Stage 2 ICE analysis including CAP-X, SPICE, Synchro and SIDRA results.

SECTION 3 EXISTING CONDITIONS ANALYSIS

3.1 EXISTING CONDITIONS (2021)

To serve as an assessment of current operations and a baseline for comparison to future scenarios, an existing conditions analysis was conducted for all eight (8) existing study intersections. This analysis is representative of typical, weekday traffic conditions in the year 2021. It is not intended to represent special conditions, such as holidays or major events. Morning (AM) and evening (PM) peak hours were identified for the network to be 7:00-8:00 AM and 4:45-5:45 PM, respectively. Peaking characteristics were generally consistent throughout the network.

Existing AM and PM peak hour volumes collected as part of this study were utilized in the existing intersection analysis. A minimum of 5 vehicles per hour (vph) was assumed for all legally permitted turning movements. Volumes were then balanced along the corridor in one of two ways: adding right-turn vehicles upstream/downstream of an intersection or using a dummy node as a sink/source to represent various minor access points (e.g., driveways).

Existing intersection lane configurations and intersection control types are depicted in **Figure 3-1**. Existing annual average daily traffic (AADT) volumes and existing AM/PM peak hour intersection volumes are shown in **Figure 3-2**.

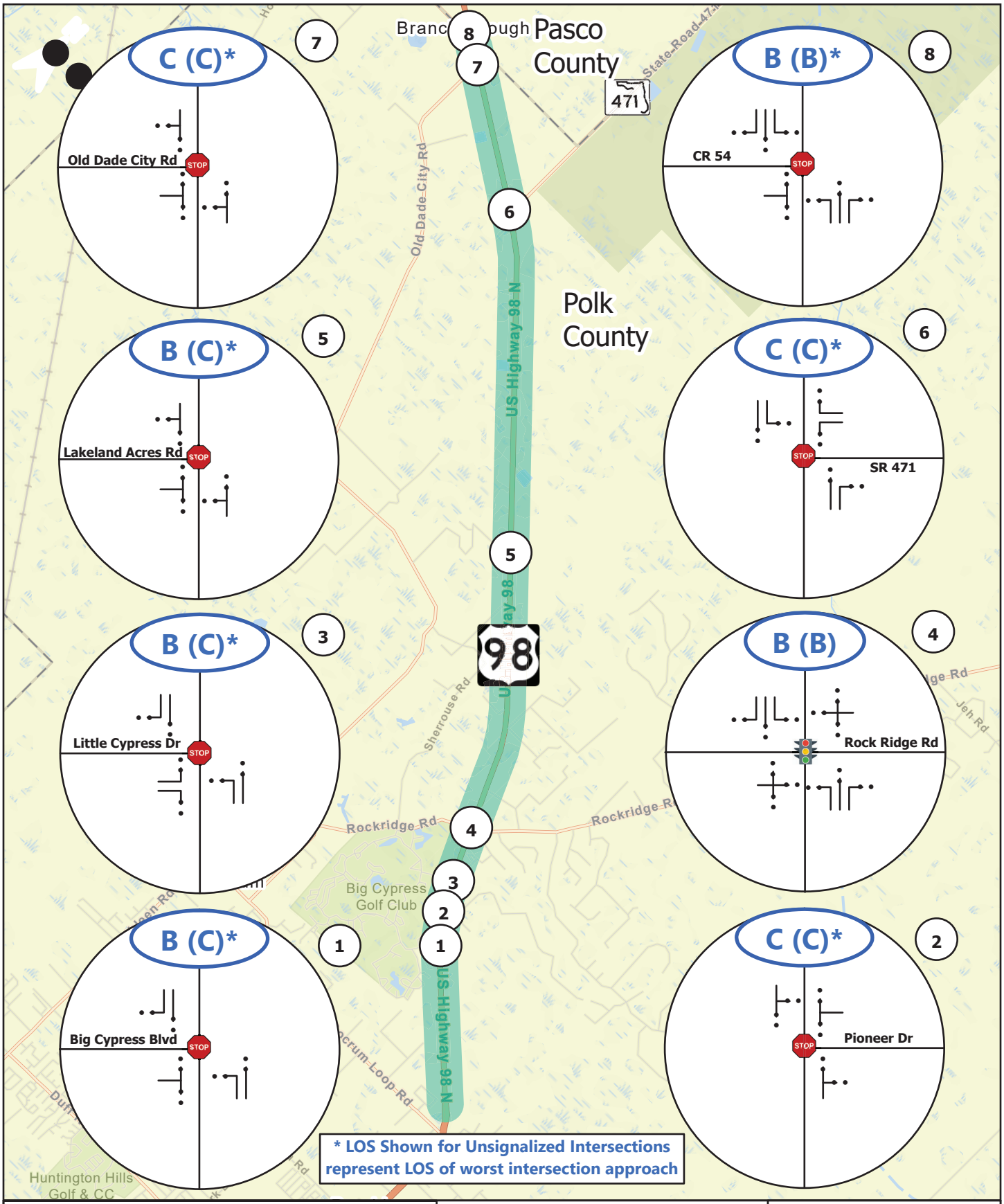
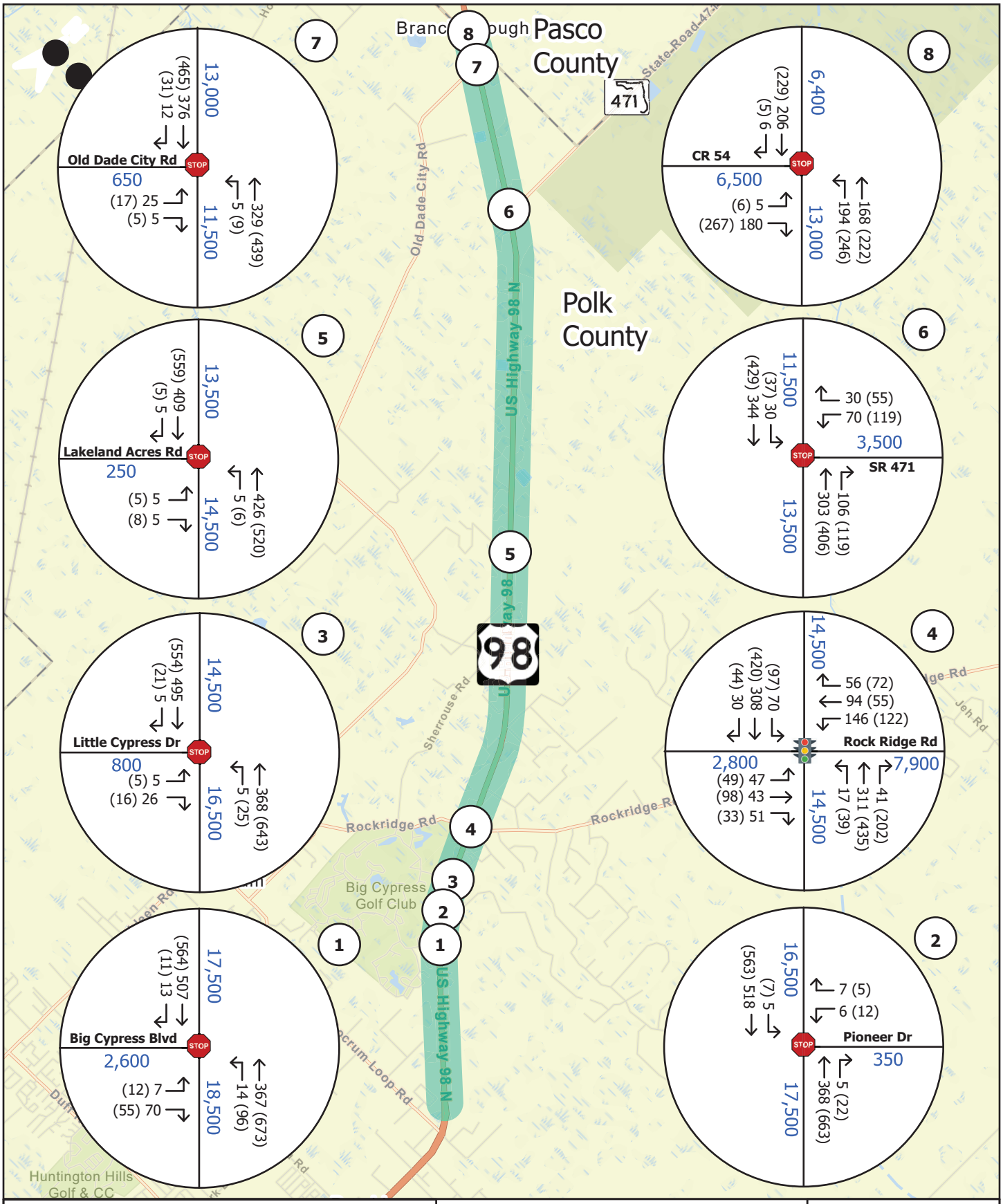


Figure 3-1: Existing (2021) Lane Configurations & LOS



Legend

- Signalized
- Stop Control
- # Study Intersection
- Movements

AM (PM) Peak Hour Volumes

XX,XXX AADT Volumes

0 0.5 1 2 Miles

Figure 3-2: Existing (2021) Traffic Volumes

3.2 EXISTING YEAR (2021) INTERSECTION ANALYSIS

Trafficware's *Synchro*, *Version 10*, was used to analyze each of the study intersections and Highway Capacity Manual (HCM) 6th Edition Methodology was used to report the performance measures. For signalized intersections, HCM 6th Edition requires strict adherence to standard dual ring NEMA phasing and operating speeds between 25 miles per hour (mph) and 55 mph. HCM 6th Edition does not compute operational results for intersections with shared left/through lanes. Speed limits in the area of the US 98 and Rock Ridge Road intersection (the only signalized intersection along the study corridor) are 60 mph and thus do not adhere to HCM 6th Edition methodology. In order to compute HCM 6th Edition results operating speeds were lowered to 55 mph within *Synchro*.

For unsignalized intersections, HCM 6th Edition reports provide all necessary performance measures. The HCM 6th Edition Reports for the Existing Year peak hour intersection analyses are included in **Appendix D**.

3.2.1 Synchro Analysis Results

Table 3-1, **Table 3-2**, and **Table 3-3** summarize the results of the *Synchro* intersection analysis for overall intersection performance, AM peak performance by movement, and PM peak performance by movement. Overall intersection operations perform generally well, with all intersections operating at LOS "C" or better. All individual movements currently operate at LOS D or better.

Table 3-1: Existing Year (2021) Overall Intersection Operations

US 98 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]
Big Cypress Boulevard	TWSC (T-intersection)[3]	14.6 (NEB)	B	19.1 (NEB)	C
Pioneer Drive	TWSC (T-intersection)[3]	15.4 (SWB)	C	24.4 (SWB)	C
Little Cypress Drive	TWSC (T-intersection)[3]	13.4 (NEB)	B	15.6 (NEB)	C
Rock Ridge Road	Signalized	14.6	B	13.1	B
Lakeland Acres Road	TWSC (T-intersection)[3]	14.5 (EB)	B	17.4 (EB)	C
SR 471	TWSC (T-intersection)[3]	16.8 (SB)	C	24.7 (SB)	C
Old Dade City Road	TWSC (T-intersection)[3]	16.3 (NB)	C	17.3 (NB)	C
CR 54	TWSC (T-intersection)[3]	12.0 (EB)	B	12.8 (EB)	B

1: Average Delay (Seconds/Vehicle)
2: Level of Service
3: For unsignalized intersections, worst approach delay is presented rather than overall intersection delay

Table 3-2: Existing Year (2021) AM Peak Hour Intersection Operations

US 98 Intersection	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]	Storage Length[4]
Big Cypress Boulevard	SEB	Thru	0.0	A	-	-
		Right	0.0	A	0	400
	NWB	Left	9.0	A	2.5	410
		Thru	0.0	A	-	-
	NEB	Left/Right	14.6	B	17.5	-
Pioneer Drive	NB	Thru/Right	0.0	A	-	-
	SB	Left/Thru	8.3	A	0	-
	SWB	Left/Right	15.4	C	2.5	-
Little Cypress Drive	NB	Left	8.9	A	0	350
		Thru	0.0	A	-	-
	SB	Thru	0.0	A	-	-
		Right	0.0	A	0	400
	NEB	Left	18.9	C	2.5	280
		Right	12.3	B	5	280
Rockridge Road	EB	Left/Thru/Right	14.4	B	52.5	-
	WB	Left/Thru/Right	18.2	B	130	-
	NB	Left	15.2	B	5	500
		Thru	13.1	B	95	-
		Right	9.6	A	10	500
	SB	Left	16.8	B	27.5	400
		Thru	13.2	B	95	-
		Right	9.5	A	7.5	350
Lakeland Acres Road	EB	Left/Right	14.5	B	2.5	-
	SEB	Thru/Right	0.0	A	-	-
	NWB	Left/Thru	8.6	A	0	-
SR 471	EB	Left	8.2	A	2.5	395
		Thru	0.0	A	-	-
	WB	Thru	0.0	A	-	-
		Right	0.0	A	0	500
	SB	Left	19.4	C	22.5	-
		Right	10.8	B	5	550
Old Dade City Road	EB	Thru/Right	0.0	A	-	-
	WB	Left/Thru	8.6	A	0	-
	NB	Left/Right	16.3	C	7.5	-
CR 54	EB	Left/Thru/Right	12.0	B	30	-
	SEB	Left	0.0	A	0	675
		Thru	0.0	A	-	-
		Right	0.0	A	0	435
	NWB	Left	8.6	A	17.5	400
		Thru	0.0	A	-	-
		Right	0.0	A	0	260

1: Average Delay (Seconds/Vehicle)
2: Level of Service
3: 95th-percentile Queue Length (Feet)
4: Length of Full Width Turn Lane (Feet)

Table 3-3: Existing Year (2021) PM Peak Hour Intersection Operations

US 98 Intersection	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]	Storage Length[4]
Big Cypress Boulevard	SEB	Thru	0.0	A	-	-
		Right	0.0	A	0	400
	NWB	Left	9.2	A	7.5	410
		Thru	0.0	A	-	-
	NEB	Left/Right	19.1	C	20	-
Pioneer Drive	NB	Thru/Right	0.0	A	-	-
	SB	Left/Thru	9.3	A	0	-
	SWB	Left/Right	24.4	C	7.5	-
Little Cypress Drive	NB	Left	8.9	A	2.5	350
		Thru	0.0	A	-	-
	SB	Thru	0.0	A	-	-
		Right	0.0	A	0	400
	NEB	Left	26.6	D	2.5	280
		Right	12.2	B	2.5	280
Rockridge Road	EB	Left/Thru/Right	18.5	B	77.5	-
	WB	Left/Thru/Right	20.3	C	112.5	-
	NB	Left	13.7	B	12.5	500
		Thru	10.9	B	110	-
		Right	8.9	A	42.5	500
	SB	Left	16.2	B	37.5	400
		Thru	10.8	B	105	-
		Right	7.5	A	7.5	350
Lakeland Acres Road	EB	Left/Right	17.4	C	5	-
	SEB	Thru/Right	0.0	A	-	-
	NWB	Left/Thru	9.0	A	0	-
SR 471	EB	Left	8.4	A	2.5	395
		Thru	0.0	A	-	-
	WB	Thru	0.0	A	-	-
		Right	0.0	A	0	500
	SB	Left	30.7	D	60	-
		Right	11.6	B	7.5	550
Old Dade City Road	EB	Thru/Right	0.0	A	-	-
	WB	Left/Thru	8.5	A	0	-
	NB	Left/Right	17.3	C	5	-
CR 54	EB	Left/Thru/Right	12.8	B	45	-
	SEB	Left	0.0	A	0	675
		Thru	0.0	A	-	-
		Right	0.0	A	0	435
	NWB	Left	8.4	A	17.5	400
		Thru	0.0	A	-	-
		Right	0.0	A	0	260

1: Average Delay (Seconds/Vehicle)
2: Level of Service
3: 95th-percentile Queue Length (Feet)
4: Length of Full Width Turn Lane (Feet)

In summary, the existing intersection analysis reveal that most movements are operating well along this corridor. All movements in the AM peak hour operate at LOS C or better and only two movements operate at LOS D in the PM peak hour: the northeast bound left-turn at Little Cypress Drive and the southbound left-turn at SR 471.

3.3 EXISTING YEAR (2021) ROADWAY SEGMENT LOS

Three major roadway segments within the project limits were analyzed using the Generalized Level of Service tables provided in FDOT's 2020 Quality/Level of Service Handbook. The following Generalized LOS tables were utilized to assess the LOS for each US 98 segment:

- Table 8: Transitioning Areas
    - North of West Socrum Loop Road to Rock Ridge Road
- Table 9: Rural Undeveloped Areas
    - Rock Ridge Road to SR 471
    - SR 471 to CR 54 (Polk/Pasco County Line Road)

For a Class I state signalized arterial roadway such as US 98, the tables in the Quality/Level of Service Handbook can only indicate if a segment will operate at LOS C or better, LOS D, or LOS E or worse. All segments of US 98 operate at LOS D or better in the Existing conditions.

Table 3-4 shows the LOS for each direction of each roadway segment.

Table 3-4: Existing Year (2021) Roadway Segment LOS

Roadway Segment	Direction	From	To	Segment Length	Existing Year (2021)		
					Typical Section	DDHV	LOS
US 98	NB	North of West Socrum Loop Road	Rock Ridge Road	2.206	2-Lane, Undivided with LT & RT	769	D
	SB				2-Lane, Undivided with RT Only	619	C
	NB	Rock Ridge Road	SR 471	5.100	2-Lane, Undivided with RT Only	556	C
	SB				2-Lane, Undivided with LT & RT	567	C
	NB	SR 471	CR 54 (Polk/Pasco County Line)	1.460	2-Lane, Undivided with LT & RT	468	C
	SB				2-Lane, Undivided with LT Only	496	C

3.4 CRASH HISTORY

Historical crash data was collected and evaluated as part of this study. Crash data was acquired for the last five (5) years (spanning from January 1, 2014 to December 31, 2018) via the SSOGIS platform. The crash data has been organized by severity, type, and field conditions in **Table 3-5**, **Table 3-6**, and **Table 3-7**, respectively. The following sections summarize the overall crash statistics, and also provide detailed information related to severe crash events.

The most recent severe injury and fatal crash data (January 1, 2019 – March 1, 2021) was also collected through SSOGIS to aid in identifying any trends that carry from the previous 5 years of data. This supplemental crash data is discussed further in **Section 3.4.2**.

3.4.1 Overall Crash Statistics

In the five years examined, 173 crashes occurred, resulting in 173 injuries (resulting from 84 injury crashes) and eleven (11) fatalities (resulting from 9 fatal crashes). The most common crash types were rear end, left turn, sideswipe, and off road, in that order. Daytime crashes were the most common (54.9%). 16.8% of crashes occurred in the rain, and 20.2% of crashes occurred when the road surface was wet. There were no crashes involving bicyclists or pedestrians reported. The crash severities are presented in **Figure 3-3** while the crash counts by type are presented in **Figure 3-4**. An overall crash heat map is also shown in **Figure 3-5**. The historical crash data and crash reports are documented in **Appendix E**. Brief summaries of each incapacitating injury crash and fatal crash are also included in **Appendix E**.

Table 3-5: 5-Year Historical Crash Data, by Severity (2014-2018)

	2014	2015	2016	2017	2018	Grand Total
Fatality	3	1	1	1	3	9
Injury	13	21	14	20	16	84
Property Damage Only	17	19	15	11	18	80
Grand Total	**33**	**41**	**30**	**32**	**37**	**173**

Table 3-6: 5-Year Historical Crash Data, by Type (2014-2018)

Crash Type	2014	2015	2016	2017	2018	Total Occurrences	% of Total Crashes
Angle	1	3	1	3	3	11	6.36%
Animal	1	0	1	1	1	4	2.31%
Head On	1	1	2	1	3	8	4.62%
Left Turn	6	5	3	5	2	21	12.14%
Off Road	7	0	5	1	4	17	9.83%
Other	5	9	6	6	10	36	20.81%
Rear End	5	13	10	8	5	41	23.70%
Rollover	0	1	1	0	1	3	1.73%
Sideswipe	5	6	1	4	1	17	9.83%
Unknown	2	3	0	2	6	13	7.51%
Hit Object on Roadway	0	0	0	1	1	2	1.16%
Grand Total	**33**	**41**	**30**	**32**	**37**	**173**	**100.00%**

Table 3-7: 5-Year Historical Crash Data, by Field Conditions (2014-2018)

Lighting							
Condition	**2014**	**2015**	**2016**	**2017**	**2018**	**No. of Crashes**	**% of Total Crashes**
Dark - Lighted	4	1	2	1	0	8	4.62%
Dark - Not Lighted	11	10	11	14	9	55	31.79%
Dark - Unknown Lighting	0	0	0	0	1	1	0.58%
Dawn	0	0	0	2	1	3	1.73%
Daylight	15	27	16	14	23	95	54.91%
Dusk	2	3	1	1	1	8	4.62%
Unknown	1	0	0	0	2	3	1.73%
Total	**33**	**41**	**30**	**32**	**37**	**173**	**100.00%**
Weather							
Condition	**2014**	**2015**	**2016**	**2017**	**2018**	**No. of Crashes**	**% of Total Crashes**
Clear	23	31	24	24	25	127	73.41%
Cloudy	1	3	0	2	6	12	6.94%
Fog, Smog, Smoke	0	1	0	2	0	3	1.73%
Other	1	0	0	0	1	2	1.16%
Rain	8	6	6	4	5	29	16.76%
Total	**33**	**41**	**30**	**32**	**37**	**173**	**100.00%**
Road Surface							
Condition	**2014**	**2015**	**2016**	**2017**	**2018**	**No. of Crashes**	**% of Total Crashes**
Dry	24	33	23	28	27	135	78.03%
Unknown	1	0	0	0	2	3	1.73%
Wet	8	8	7	4	8	35	20.23%
Total	**33**	**41**	**30**	**32**	**37**	**173**	**100.00%**

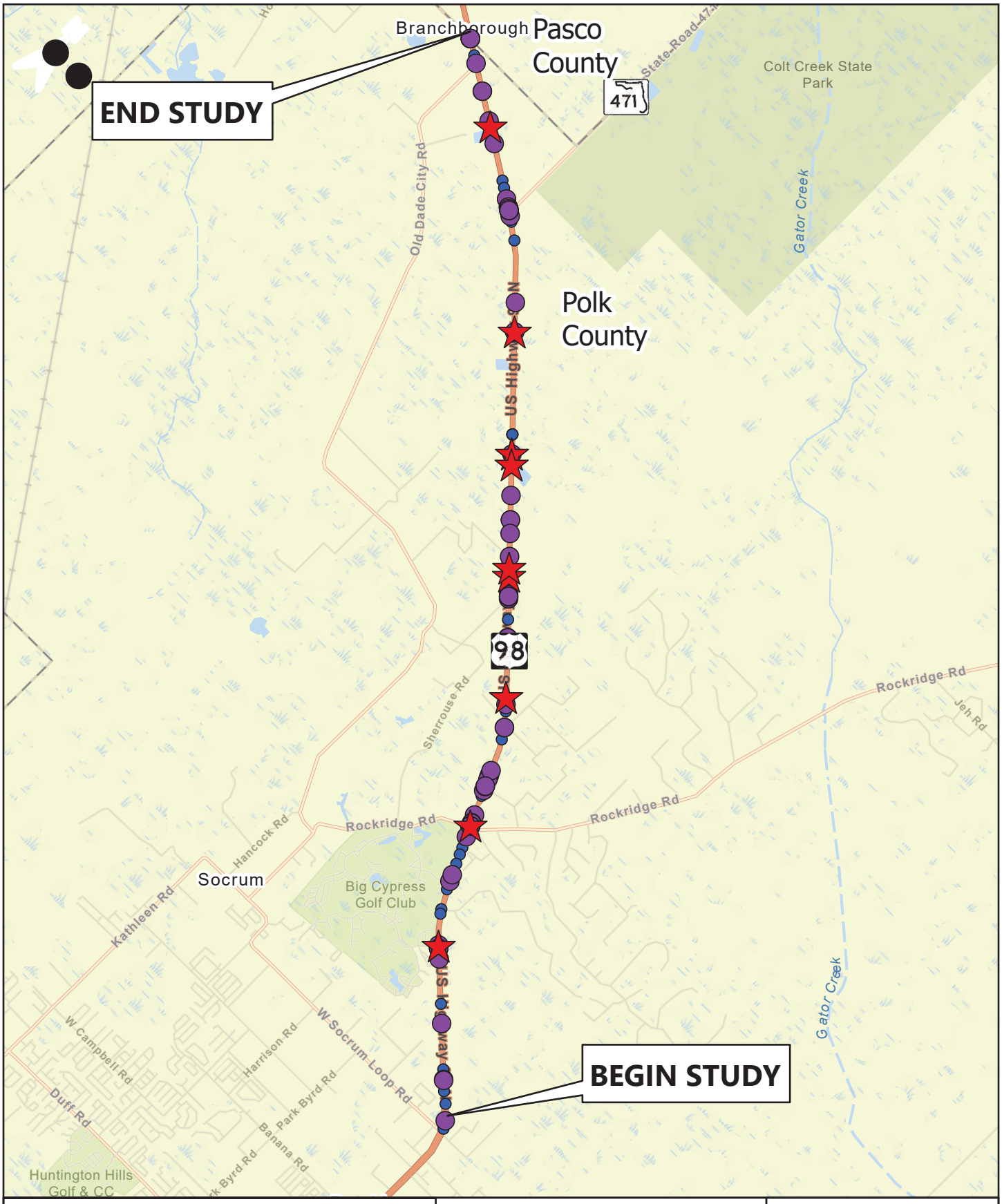


Figure 3-3:
5-Year Historical Crash Severities Map

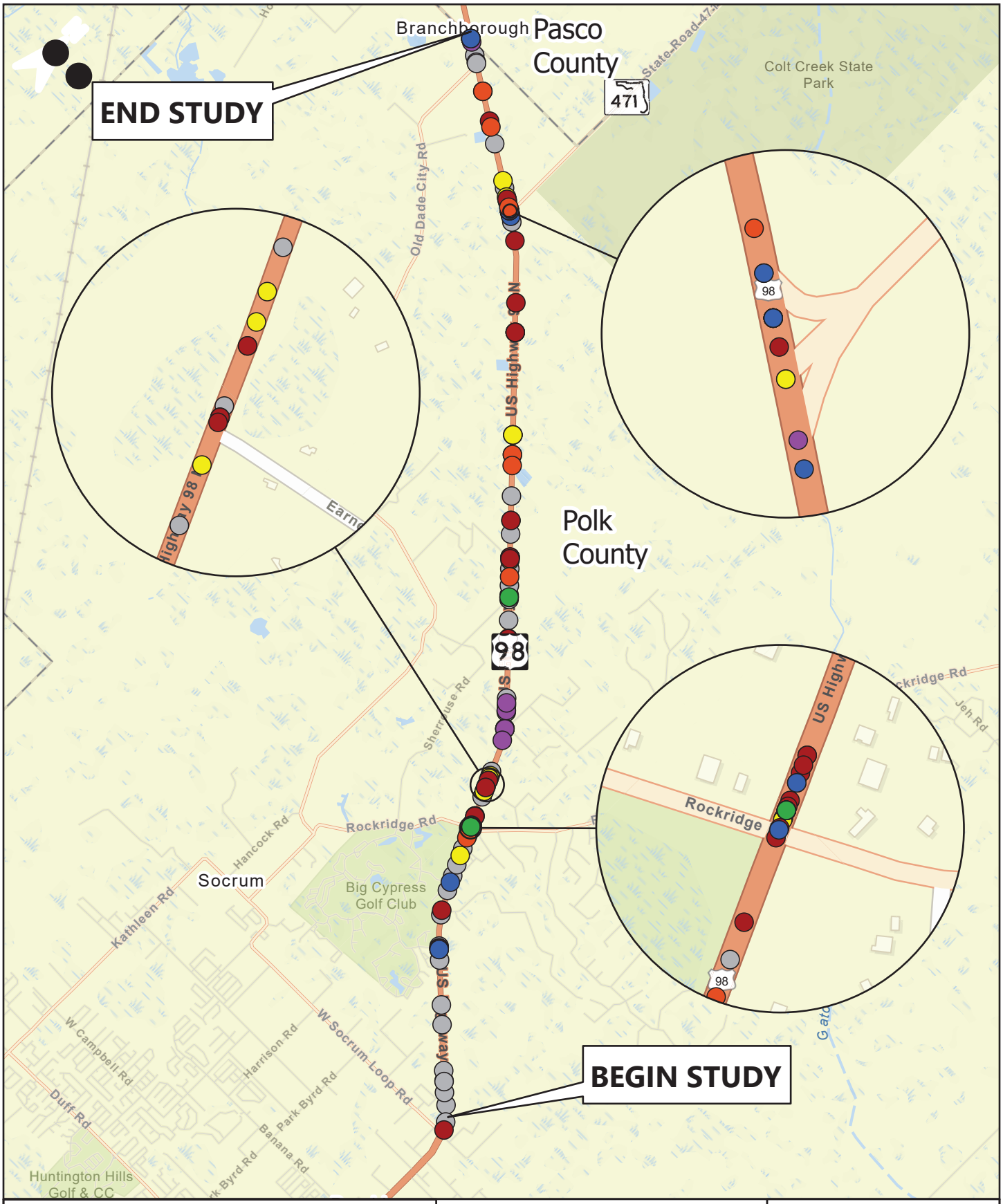
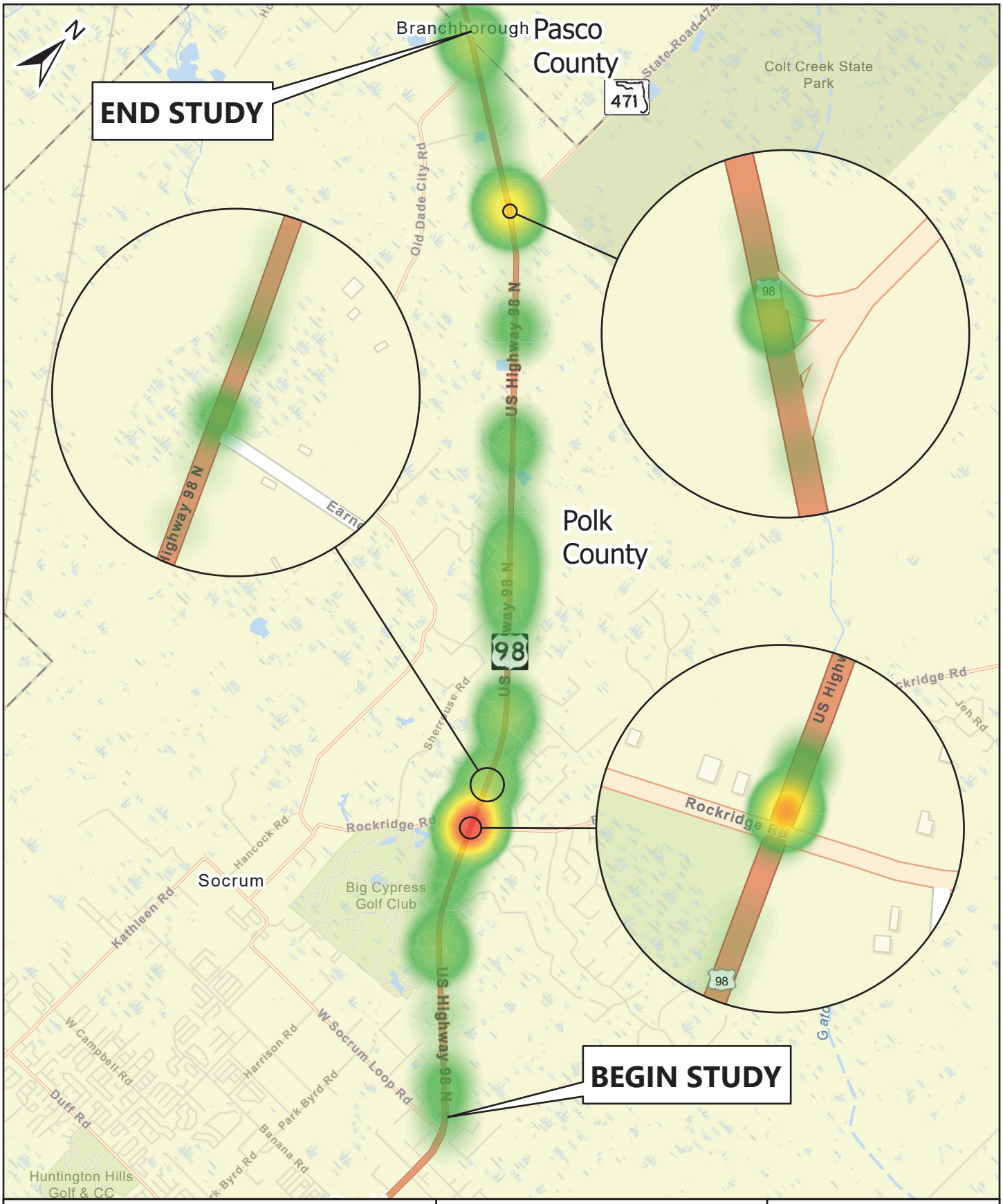


Figure 3-4:
5-Year Historical Crash Types Map



Legend
Sparse
Dense

0 0.5 1 2 Miles

Figure 3-5:
5-Year Historical Crash Heat Map

3.4.2 Supplemental Severe Crash Data

The most recent serious injury/fatal crash data for January 1, 2019 – March 1, 2021 was available on SSOGIS and was collected for analysis. Six fatal and three serious injury crashes occurred during this time frame. All these crashes are summarized in **Table 3-8**, **Table 3-9**, and **Table 3-10** below and in **Figure 3-6**.

Table 3-8: Recent Severe Crash Data, by Severity (January 2019 – March 2021)

	2019	2020	2021 (Partial Year)	Grand Total
Fatality	3	2	1	6
Injury	1	1	0	2
Grand Total	**4**	**3**	**1**	**8**

Table 3-9: Recent Severe Crash Data, by Type (January 2019 – March 2021)

Crash Type	2019	2020	2021 (Partial Year)	Total Occurrences	% of Total Crashes
Head On	3	0	1	4	**50.00%**
Left Turn	0	1	0	1	**12.50%**
Off Road	0	1	0	1	**12.50%**
Rear End	0	1	0	1	**12.50%**
Right Turn	1	0	0	1	**12.50%**
Grand Total	**4**	**3**	**1**	**8**	**100.00%**

Table 3-10: Recent Severe Crash Data, by Field Conditions (January 2019 – March 2021)

Lighting					
Condition	**2019**	**2020**	**2021 (Partial Year)**	**No. of Crashes**	**% of Total Crashes**
Dark - Not Lighted	4	0	1	5	**62.50%**
Daylight	0	3	0	3	**37.50%**
Total	**4**	**3**	**1**	**8**	**100.00%**
Weather					
Condition	**2019**	**2020**	**2021 (Partial Year)**	**No. of Crashes**	**% of Total Crashes**
Clear	2	2	1	5	**62.50%**
Cloudy	1	0	0	1	**12.50%**
Rain	1	1	0	2	**25.00%**
Total	**4**	**3**	**1**	**8**	**100.00%**
Road Surface					
Condition	**2019**	**2020**	**2021 (Partial Year)**	**No. of Crashes**	**% of Total Crashes**
Dry	3	2	1	6	**75.00%**
Wet	1	1	0	2	**25.00%**
Total	**4**	**3**	**1**	**8**	**100.00%**

As indicated by the new serious injury/fatal injury crash data, many crashes still occur in dark conditions. Similarly, most fatal crashes occur on the more rural segment north of Rock Ridge Road, as shown in **Figure 3-6**. Several of the fatal crashes were head on collisions and/or involved motorcycles.

Legend

★ Fatality

▲ Incapacitating Injury

0 0.5 1 2 Miles

Figure 3-6: Recent Severe Crashes Map

3.4.3 Summary of All Fatal Crashes

A total of nine (9) fatal crashes and 84 injury crashes occurred along the project study limits within the five-year period (2014 – 2018) analyzed. Six more fatal crashes occurred in the more recent crash data set (2019 - March 2021). All the fatal crash events are briefly summarized below. Unless otherwise stated, Vehicle #1 was determined to be the "at-fault" vehicle in the crash.

Fatal Injury Crashes (2014-2018)

1. This fatal crash occurred at 12:35 PM on 3/6/2014 in rainy weather. Vehicle #1 was traveling southbound on US 98 just north of Old Soldier Road and failed to maintain their lane of travel. Vehicle #1 swerved into the northbound lane of travel and struck a Vehicle #2 head on. The driver of Vehicle #1 sustained fatal injuries.

2. This fatal crash occurred at 11:15 PM on 8/15/2014 in clear weather. Vehicle #1 (motorcycle) was traveling southbound on US 98 at Big Cypress Boulevard and failed to maintain their lane of travel. Vehicle #1 swerved off the road into the northbound shoulder and was fully ejected from the motorcycle. The driver sustained fatal injuries.

3. This fatal crash occurred at 6:27 PM on 12/24/2014 in rainy weather. Vehicle #1 was traveling southbound on US 98 when it failed to maintain their lane of travel. Vehicle #1 crossed into the northbound travel lane and struck a northbound Vehicle #2 and a Vehicle #3. Both drivers of Vehicle #1 and #3 sustained fatal injuries.

4. This fatal crash occurred at 2:37 PM on 3/13/2015 in clear weather. Vehicle #1 (motorcycle) was traveling northbound on US 98 two miles south of SR 471 and attempted to pass a semi-truck ahead by proceeding into the southbound lane. Vehicle #2 was traveling southbound and struck Vehicle #1 in a head on collision. The driver of Vehicle #1 sustained fatal injuries.

5. This fatal crash occurred at 11:05 PM on 4/30/2016 in clear weather. Vehicle #1 was traveling southbound on US 98 one mile south of SR 471. Vehicle #1 drifted into the northbound travel lane where it struck Vehicle #2 head on. Vehicle #2 then collided with Vehicle #3 which was traveling just behind. The driver of Vehicle #1 sustained fatal injuries.

6. This fatal crash occurred at 5:56 AM on 12/19/2017 in foggy weather. Vehicle #1 was traveling northbound on US 98 one mile south of SR 471. Vehicle #1 drifted into the southbound travel lane where it struck Vehicle #2 head on. The driver of Vehicle #1 sustained fatal injuries.

7. This fatal crash occurred at 2:35 PM on 5/17/2018 in rainy weather. Vehicle #1 was traveling northbound on US 98 at Rock Ridge Road. Vehicle #1 ran the red light and struck eastbound Vehicle #2 at an angle. The driver of Vehicle #2 sustained fatal injuries.

8. This fatal crash occurred at 10:12 PM on 3/28/2018 in clear weather. Vehicle #1 was traveling northbound on US 98 just south of Lakeland Acres Road. Vehicle #1 drifted into the

southbound travel lane, overcorrected, veered into the unpaved northbound shoulder. Vehicle #1 rolled, re-entered the travel lanes and collided with southbound Vehicle #2. A passenger of Vehicle #1 sustained fatal injuries.

9. This fatal crash occurred at 4:22 PM on 7/29/2018 in cloudy weather. Vehicle #1 was traveling northbound on US 98 just north of Lakeland Acres Road when it attempted to pass a northbound vehicle. Vehicle #1 failed to yield right-of-way to the southbound Vehicle #2 (motorcycle) and caused a head on collision. The driver of Vehicle #2 sustained fatal injuries.

Fatal Injury Crashes (2019-March 2021)

1. This fatal crash occurred at 3:10 AM on 6/26/2019 in clear weather. Vehicle #1 was traveling southbound on US 98 about 800 feet south of Keen Road when it swerved into the northbound travel lane and then off the road. The driver attempted to correct and crossed back into the northbound travel lane when it struck Vehicle #2 (semi-truck) in a head on collision. The driver of Vehicle #1 sustained fatal injuries.

2. This fatal crash occurred at 4:17 AM on 9/15/2019 in clear weather. Vehicle #1 was traveling southbound on US 98 about a mile south of SR 471 when it swerved into the northbound travel lane. Vehicle #1 struck a northbound Vehicle #2 in a head on collision. Both drivers sustained fatal injuries.

3. This fatal crash occurred at 1:15 AM on 12/22/2019 in rainy weather. Vehicle #1 was traveling northbound on US 98 north of Lakeland Acres Road. Vehicle #1 was directly behind Vehicle #2. Vehicle #3 was traveling southbound on US 98. Vehicle #1 failed to stop the vehicle and rear-ended Vehicle #2. Vehicle #2 then swerved into the southbound travel lane, causing a collision with Vehicle #3. The driver of Vehicle #3 sustained fatal injuries.

4. This fatal crash occurred at 4:40 PM on 4/3/2020 in clear weather. Vehicle #1 was traveling southbound on US 98 about 1.2 miles south of SR 471 when it attempted to pass a slower northbound vehicle. The driver misjudged the distance of the incoming southbound vehicle and swerved to the left and off the roadway. The vehicle struck a fence and tree. The driver and three passengers sustained incapacitating injuries while one passenger sustained fatal injuries.

5. This fatal crash occurred at 12:54 PM on 6/1/2020 in clear weather. Vehicle #1 was traveling northbound on US 98 directly behind Vehicle #2. The driver of Vehicle #1 failed to slow down as Vehicle #2 was making a right-turn. Vehicle #1 rear ended Vehicle #2, causing Vehicle #2 to swerve into southbound traffic, striking a southbound Vehicle #3 and #4. Both the passenger and driver of Vehicle #3 sustained fatal injuries.

6. This fatal crash occurred at 3:01 AM on 1/20/2021 in clear weather. Vehicle #1 was located on the southbound US 98 shoulder before the crash. Failing to yield right-of-way to southbound traffic, Vehicle #1 pulled into the southbound travel lane and was struck by

Vehicle #2 (semi-truck). The driver of Vehicle #1 was fully ejected from the vehicle and sustained fatal injuries.

Brief narratives of all incapacitating crash events are including in **Appendix E**, which also contains the supporting crash data.

SECTION 4 FUTURE TRAFFIC FORECASTING

4.1 SOCIOECONOMIC DATA AND ROADWAY NETWORK

The latest available future land use data was obtained as part of the travel demand forecasting process for this study. Anticipated socioeconomic and roadway network changes to the study subarea were incorporated into the modeling effort that is documented within the US 98 Subarea Modeling Technical Memorandum completed in October 2020 (see **Appendix F**). The modeling effort involved conducting a sub-area base year (2010) validation refinement for the study area, as well as development of refined horizon year (2040) models. The regional travel demand model applied for this study was based on the adopted District One 2040 Regional Planning Model (D1RPM v1.0.6), which was the current/latest model at the time in 2020. The D1RPM is a travel demand forecasting tool developed by FDOT District One, in conjunction with the six District MPO/TPOs in support of their 2040 Long Range Transportation Plans (LRTP).

Following the development of the 2040 Model, which represents the traffic growth in the No-Build Alternative, a Build Alternative model was developed. The Build Alternative model plot is also included in **Appendix F**. These models were then used in the development of Design Year (2045) traffic volumes.

The 2045 No-Build Alternative only includes the adjacent projects that are included in the respective LRTP Cost Feasible Plans.

The 2045 Build Alternative consists of US 98 operating as a four-lane arterial from W. Socrum Loop Road to north of CR 54, transitioning to match the planned six-lane configuration south of W. Socrum Loop Road. It is also planned that US 98 be reconstructed as a four-lane arterial north of the study limits. The widening project to the north is underway by FDOT District Seven.

4.2 DEVELOPMENT OF DESIGN YEAR (2045) TRAFFIC VOLUMES

4.2.1 Selection of Growth Rates

Both the No-Build and Build volume forecasts have been reviewed for reasonableness by comparison to historical traffic trends analysis and population projections from the Bureau of Economic and Business Research (BEBR) where applicable. Based on this comparison, Build and No-Build Alternative traffic growth rates for the study area have been developed and are presented in **Table 4-1**. The Polk County BEBR Population Projection report as well as the Florida Traffic Online (FTO) Historical AADT reports are included in **Appendix G.**

Table 4-1: US 98 from North of W Socrum Loop Road to CR 54 Growth Rates

Location		Base Year TDM PSWADT (2010)	Future Year No-Build TDM PSWADT (2040)	No-Build TDM Annual Growth Rate	Future Year Build TDM PSWADT (2040)	Build TDM Annual Growth Rate	Historic Trends	R^2 Value[1]	BEBR Low	BEBR Medium	BEBR High	Selected Growth Rate (No-Build)	Selected Growth Rate (Build)
US 98	North of W Socrum Loop Rd	16,370	25,296	1.82%	29,737	2.72%	1.36%	55.36%	0.44%	1.40%	2.47%	**2.00%**	**3.00%**
	South of Big Cypress Blvd												
	Between Big Cypress Blvd and Pioneer Dr	18,768	28,152	1.67%	33,283	2.58%						**2.00%**	**3.00%**
	Between Pioneer Dr and Little Cypress Dr											**2.00%**	**3.00%**
	Between Little Cypress Dr and Rock Ridge Rd	13,013	20,080	1.81%	23,518	2.69%						**2.50%**	**4.00%**
	North of Rock Ridge Rd	8,664	17,005	3.21%	21,682	5.01%	2.81%	73.52%				**2.50%**	**4.00%**
	Between North of Rock Ridge Rd and Lakeland Acres Rd	9,910	19,188	3.12%	24,349	4.86%						**2.50%**	**4.00%**
	Between Lakeland Acres Rd and SR 471											**3.00%**	**5.00%**
	Between SR 471 and Old Dade City Rd	8,203	16,057	3.19%	21,575	5.43%	2.70%	56.75%				**3.00%**	**5.00%**
	Between Old Dade City Rd and CR 54	8,203	16,057	3.19%	21,575	5.43%						**3.00%**	**5.00%**
	North of CR 54						2.88%	79.11%				**3.00%**	**5.00%**
Cross Streets	CR 54 - West of US 98						2.62%	96.20%	0.44%	1.40%	2.47%	**3.00%**	**3.00%**
	SR 471 - North of US 98	2,255	4,356	3.11%	4,355	3.10%	5.20%	88.89%				**3.00%**	**3.00%**
	Rock Ridge Rd - North of US 98	3,342	4,940	1.59%	4,746	1.40%						**2.00%**	**2.00%**
	Rock Ridge Rd - North of Creekwood Run	3,526	4,841	1.24%	4,958	1.35%							
	Rock Ridge Rd - South of US 98	4,691	4,740	0.03%	4,326	-0.26%						**2.00%**	**2.00%**
	Rock Ridge Rd - South of Curlew Dr/Sherrouse Rd	7,102	9,858	1.29%	9,511	1.13%							
	All Other Minor Cross Streets								0.44%	1.40%	2.47%	**1.50%**	**1.50%**

Selected average annual growth rates along US 98 ranged from 2.0% to 3.0% for the No-Build scenario and 3.0% to 5.0% in the Build scenario. The selected growth rates for the major cross streets in the study area (Rock Ridge Road, SR 471, CR 54) are the same in both scenarios (Build and No-Build). A growth rate of 1.5% was selected for all other minor cross streets based on the medium BEBR projection.

4.2.2 Design Year (2045) Annual Average Daily Traffic (AADT) Volumes

Future design year daily (AADT) volumes were developed for the No-Build and Build Alternatives by linearly growing the Existing (2021) AADTs by the respective selected growth rates to the design year of 2045. In both the No-Build and Build scenarios, some manual adjustments of AADTs were required to maintain AADT balance at the US 98 & CR 54 intersection. In the No-Build scenario, 500 vehicles per day (vpd) were added to the AADT on US 98 North of CR 54. In the Build scenario, 2,000 vpd were added to the AADT on US 98 North of CR 54 and 1,500 vpd were added to CR 54 West of US 98. No-Build AADTs are shown in **Figure 4-1** and Build AADTs are shown in **Figure 4-2**.

4.2.3 Design Year (2045) Directional Design Hour Volumes (DDHVs) and Turning Movement Volumes

Design year (2045) directional design hour volumes (DDHVs) were developed in accordance with FDOT's Project Traffic Forecasting Handbook by applying standard K- and selected D- factors to the 2045 AADT values. Peak hour turning movement volumes were developed at study intersections by applying the existing turning movement percentages to the DDHVs. The resulting volume distribution were smoothed to replicate logical corridor distribution, ensuring that calculated values are not lower than existing values and accounting for volume imbalances between intersections (where appropriate). **Table 2-1** in **Section 2.4** documents the K- and D-factors used in developing peak hour volumes for both the No-Build and Build scenarios.

For both the No-Build and Build scenarios, some manual adjustments were necessary to achieve better balance and proper traffic growth. Any volumes under five vehicles per hour (vph) were adjusted to a minimum of five vph. Any volumes that resulted in values less than 150% of Existing turning volumes after the application of K-, D- and turning percentages were adjusted upward to be equal to 150% of existing turning volumes to ensure reasonable growth for all movements. If there was a difference of 150 vph or more between an intersection's departure volume and a downstream intersection's approach volume, manual additions were made to turning movements to reduce the difference below 150 vph. Differences below 150 vph were handled through right-in/right-out dummy intersections between study intersections. No-Build turning movement volumes are shown in **Figure 4-1** and Build turning movement volumes are shown in **Figure 4-2**. It should be noted that FDOT District 7 is determining the intersection configuration/control type at the CR 54 intersection as part of their US 98 project. Design year DDHVs for this project have been reviewed and approved by the Department for use in alternatives analysis.

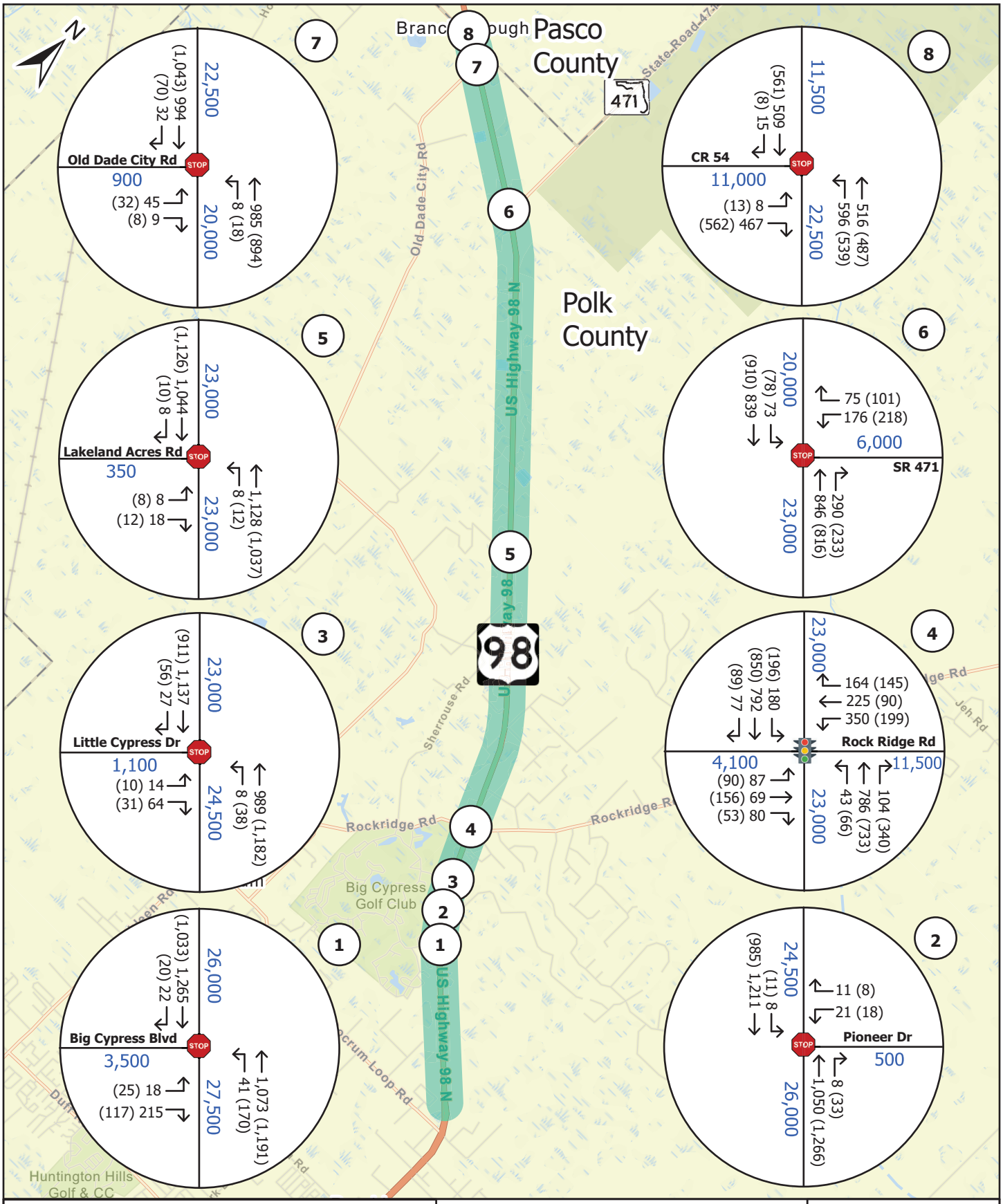


Figure 4-1: No-Build (2045) Traffic Volumes

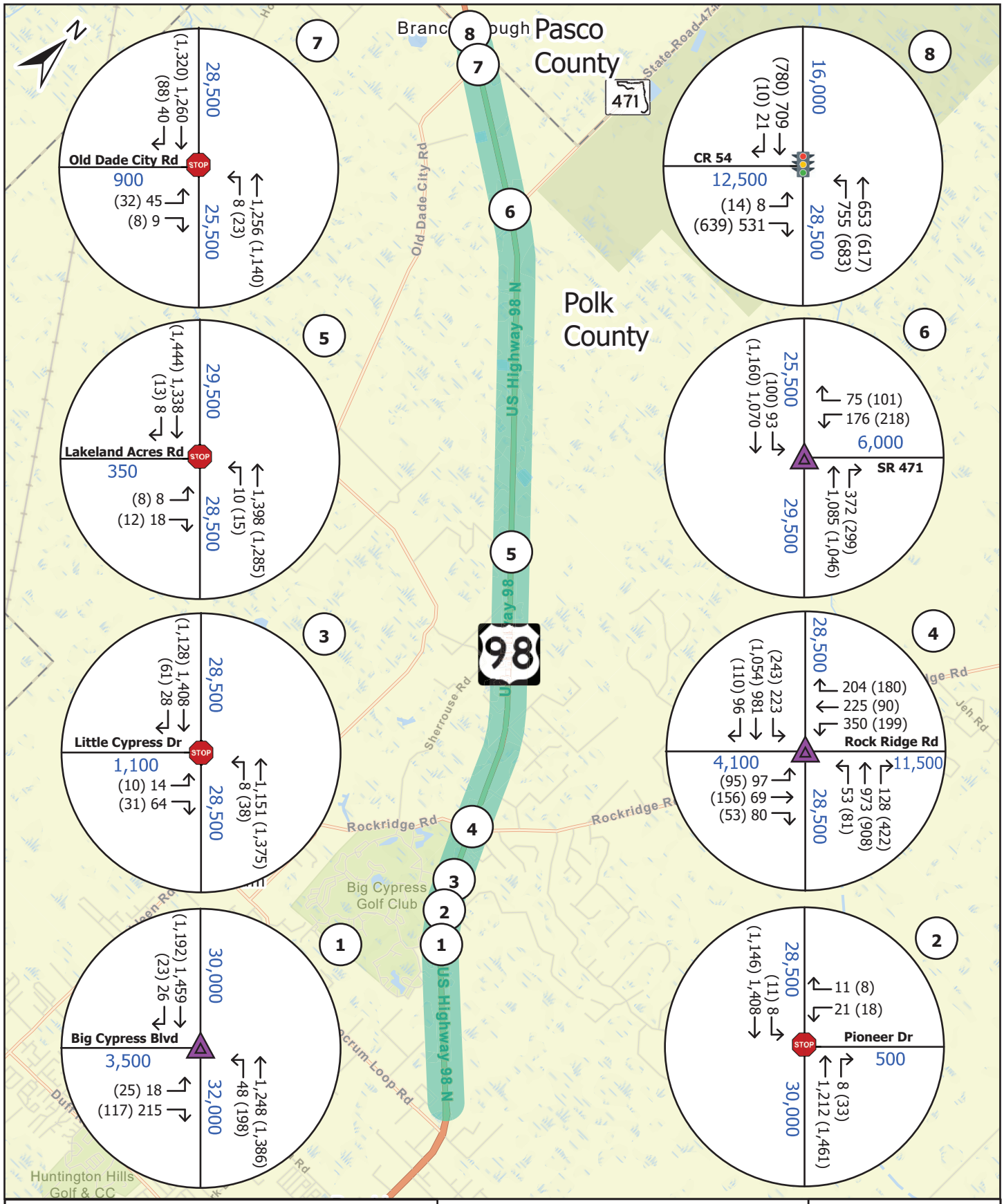


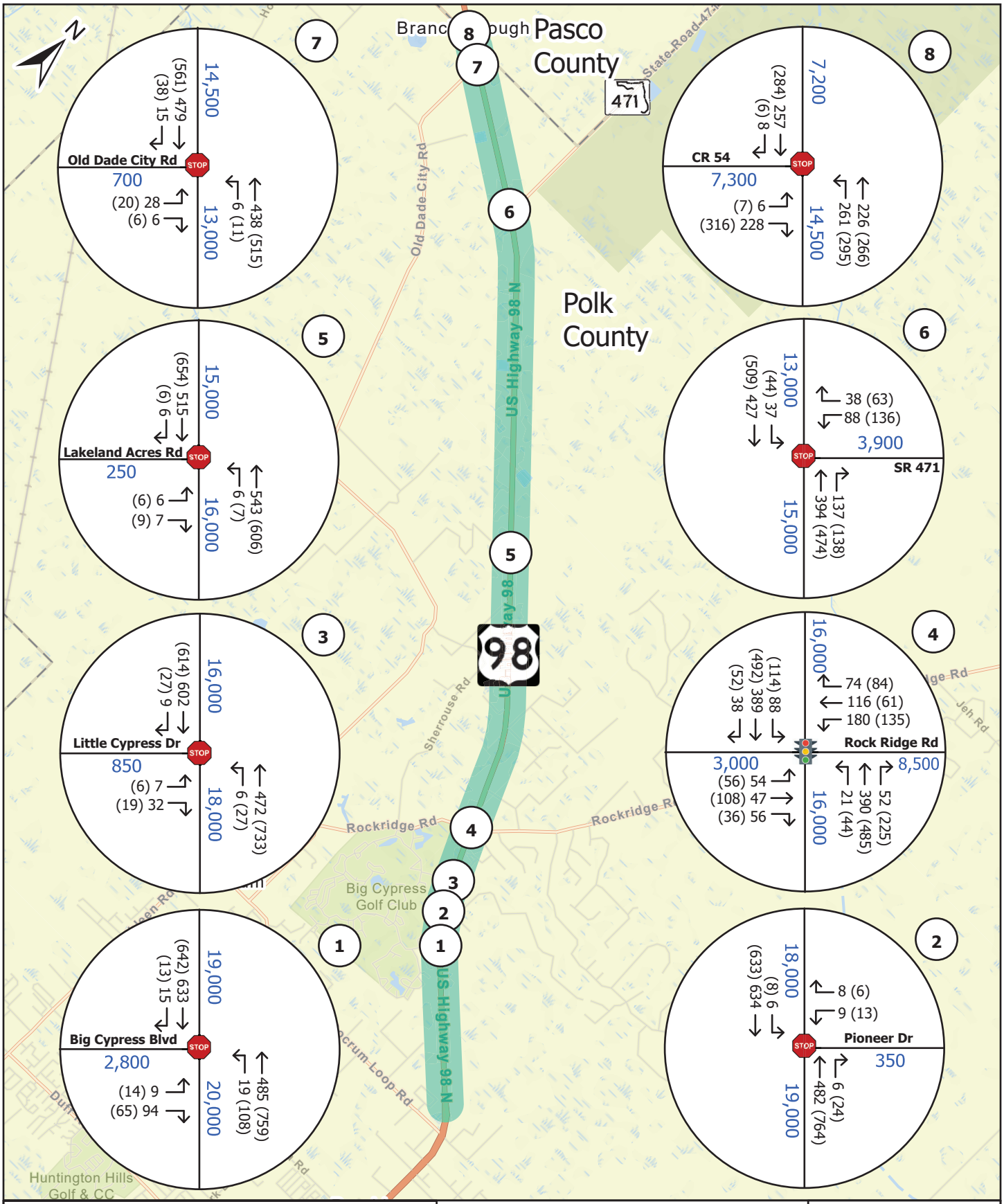
Figure 4-2: Build (2045) Traffic Volumes

4.2.4 Opening Year (2025) Annual Average Daily Traffic (AADT) Volumes

Opening year daily (AADT) volumes were developed for the No-Build and Build Alternatives by linearly growing the Existing (2021) AADTs by the respective selected growth rates to the opening year of 2025. In both the No-Build and Build scenarios, some manual adjustments were necessary to maintain AADT balance at the US 98 & CR 54 intersection. In both scenarios, 500 vehicles per day (vpd) were added to the AADT on US 98 North of CR 54. No-Build AADTs are shown in **Figure 4-3** and Build AADTs are shown in **Figure 4-4**.

4.2.5 Opening Year (2025) Turning Movement Volumes

Opening year (2025) peak hour turning movement volumes were developed by linearly interpolating between the 2021 and 2045 peak hour turning movement volumes. No-Build turning movement volumes are shown in **Figure 4-3** and Build turning movement volumes are shown in **Figure 4-4**.



Legend

- Signalized
- Stop Control
- Study Intersection
- Movements

AM (PM) Peak Hour Volumes

XX,XXX AADT Volumes

0 0.5 1 2 Miles

Figure 4-3: No-Build (2025) Traffic Volumes

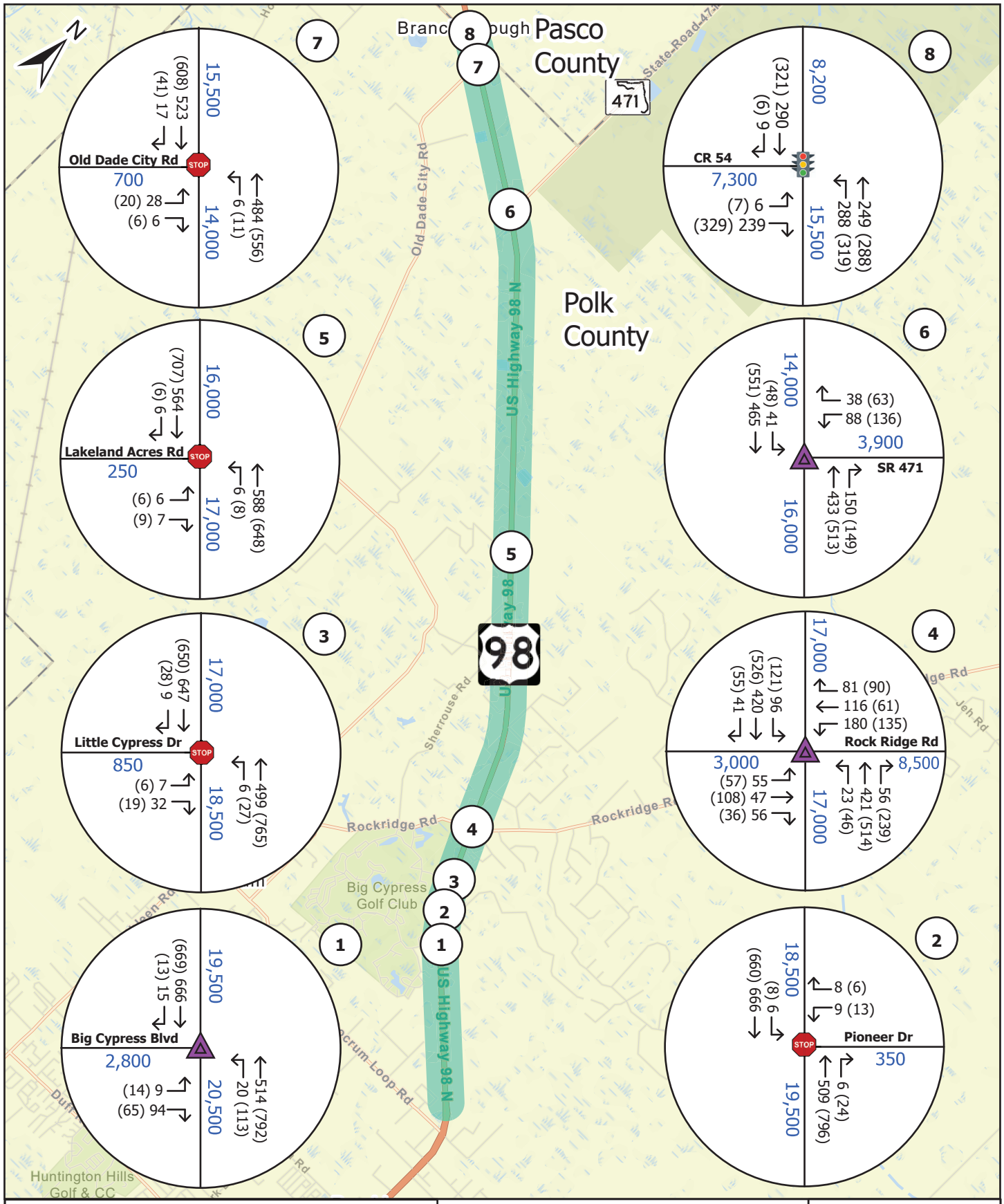


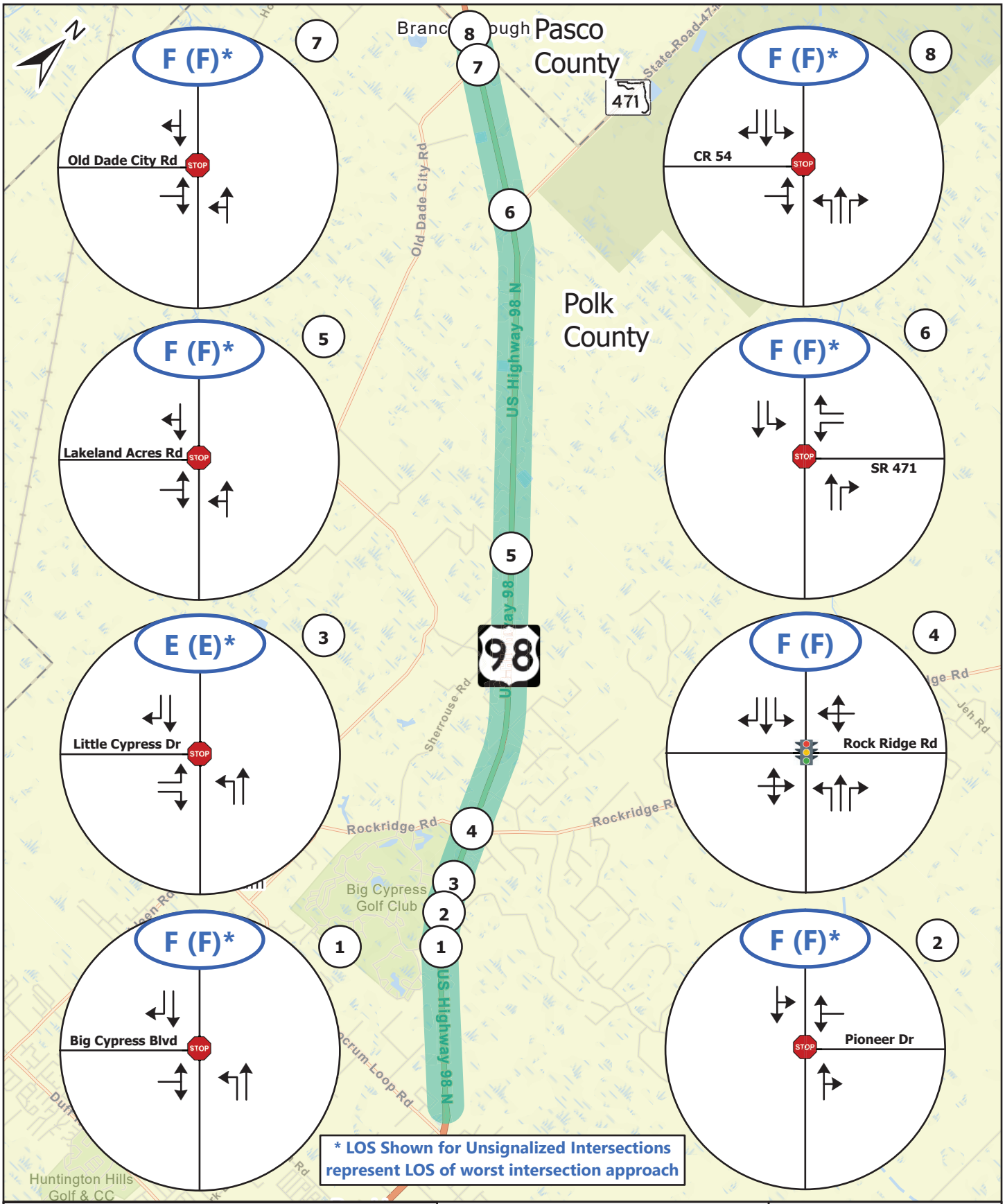
Figure 4-4: Build (2025) Traffic Volumes

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

The following sections contain the results of the operational analyses for the No-Build and Build Alternatives for design year (2045) conditions.

5.1 DESIGN YEAR (2045) NO-BUILD ALTERNATIVE INTERSECTION ANALYSIS

Using estimated 2045 design hour traffic volumes, the 2045 No-Build Alternative was analyzed for intersection performance in *Synchro 10* using Highway Capacity Manual (HCM) 6th Edition methodology, similar to the analysis of existing conditions. Future signal timings (movement splits) at Rock Ridge Road were optimized for 2045 conditions in the No-Build scenario to represent a realistic condition assuming no capacity improvements are constructed by 2045. The No-Build Alternative hourly traffic conditions are depicted in **Figure 5-1**. The signalized intersection at Rock Ridge Road is anticipated to operate with an overall LOS worse than the target of LOS "D" by the year 2045 and all the unsignalized intersections are anticipated to operate with at least one movement LOS worse than the target of LOS "D" by the year 2045. Overall intersection operations are summarized in **Table 5-1**. Detailed results, by movement, are summarized in **Table 5-2** and **Table 5-3**. No-Build Alternative HCM 6th Edition reports can be found in **Appendix H**.



Legend

- Signalized
- Stop Control
- # Study Intersection
- Lane Configuration
- X (Y) AM (PM) Level of Service

0 0.5 1 2 Miles

Figure 5-1: No-Build (2045) Lane Configurations & LOS

Table 5-1: Design Year (2045) No-Build Alternative Intersection Analysis Summary

US 98 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]
Big Cypress Boulevard	TWSC (T-intersection)[3]	586.4 (NEB)	F	800.0 (NEB)	F
Pioneer Drive	TWSC (T-intersection)[3]	234.9 (SWB)	F	219.6 (SWB)	F
Little Cypress Drive	TWSC (T-intersection)[3]	49.5 (NEB)	E	47.7 (NEB)	E
Rock Ridge Road	Signalized	201.2	F	81.4	F
Lakeland Acres Road	TWSC (T-intersection)[3]	84.5 (EB)	F	95.5 (EB)	F
SR 471	TWSC (T-intersection)[3]	>1000 (SB)	F	>1000 (SB)	F
Old Dade City Road	TWSC (T-intersection)[3]	387.8 (NB)	F	247.2 (NB)	F
CR 54	TWSC (T-intersection)[3]	672.0 (EB)	F	861.3 (EB)	F

1: Average Delay (Seconds/Vehicle)
2: Level of Service (LOS E or worse in Red)
3: For unsignalized intersections, worst approach delay is presented rather than overall intersection delay

Table 5-2: Design Year (2045) No-Build Alternative AM Peak Hour Operations

US 98 Intersection	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]	Storage Length[4]
Big Cypress Boulevard	SEB	Thru	0.0	A	-	-
		Right	0.0	A	0	400
	NWB	Left	13.6	B	7.5	410
		Thru	0.0	A	-	-
	NEB	Left/Right	586.4	F	527.5	-
Pioneer Drive	NB	Thru/Right	0.0	A	-	-
	SB	Left/Thru	11.3	B	0	-
	SWB	Left/Right	234.9	F	80	-
Little Cypress Drive	NB	Left	12.0	B	2.5	350
		Thru	0.0	A	-	-
	SB	Thru	0.0	A	-	-
		Right	0.0	A	0	400
	NEB	Left	142.3	F	32.5	280
		Right	29.2	D	32.5	280
Rockridge Road	EB	Left/Thru/Right	22.0	C	157.5	-
	WB	Left/Thru/Right	438.1	F	2317.5	-
	NB	Left	44.4	D	45	500
		Thru	70.1	F	765	-
		Right	11.8	B	40	500
	SB	Left	562.8	F	715	400
		Thru	124.0	F	1150	-
		Right	11.6	B	30	350
Lakeland Acres Road	EB	Left/Right	84.5	F	40	-
	SEB	Thru/Right	0.0	A	-	-
	NWB	Left/Thru	12.0	B	2.5	-
SR 471	EB	Left	11.2	B	10	395
		Thru	0.0	A	-	-
	WB	Thru	0.0	A	-	-
		Right	0.0	A	0	500
	SB	Left	1784.1	F	570	-
		Right	23.5	C	32.5	550
Old Dade City Road	EB	Thru/Right	0.0	A	-	-
	WB	Left/Thru	11.7	B	2.5	-
	NB	Left/Right	387.8	F	147.5	-
CR 54	EB	Left/Thru/Right	672.0	F	1095	-
	SEB	Left	0.0	A	0	675
		Thru	0.0	A	-	-
		Right	0.0	A	0	435
	NWB	Left	18.7	C	167.5	400
		Thru	0.0	A	-	-
		Right	0.0	A	0	260

1: Average Delay (Seconds/Vehicle)
2: Level of Service (LOS E or worse in Red)
3: 95th-percentile Queue Length (Feet)
4: Length of Full Width Turn Lane (Feet)

Table 5-3: Design Year (2045) No-Build Alternative PM Peak Hour Operations

US 98 Intersection	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]	Storage Length[4]
Big Cypress Boulevard	SEB	Thru	0.0	A	-	-
		Right	0.0	A	0	400
	NWB	Left	13.8	B	32.5	410
		Thru	0.0	A	-	-
	NEB	Left/Right	800.0	F	380	-
Pioneer Drive	NB	Thru/Right	0.0	A	-	-
	SB	Left/Thru	12.9	B	2.5	-
	SWB	Left/Right	219.6	F	67.5	-
Little Cypress Drive	NB	Left	11.0	B	5	350
		Thru	0.0	A	-	-
	SB	Thru	0.0	A	-	-
		Right	0.0	A	0	400
	NEB	Left	138.6	F	25	280
		Right	18.4	C	10	280
Rockridge Road	EB	Left/Thru/Right	32.5	C	242.5	-
	WB	Left/Thru/Right	215.7	F	957.5	-
	NB	Left	66.2	E	90	500
		Thru	25.0	C	407.5	-
		Right	12.4	B	137.5	500
	SB	Left	269.2	F	560	400
		Thru	67.6	F	827.5	-
		Right	9.4	A	30	350
Lakeland Acres Road	EB	Left/Right	95.5	F	35	-
	SEB	Thru/Right	0.0	A	-	-
	NWB	Left/Thru	12.2	B	2.5	-
SR 471	EB	Left	10.7	B	10	395
		Thru	0.0	A	-	-
	WB	Thru	0.0	A	-	-
		Right	0.0	A	0	500
	SB	Left	2393.7	F	722.5	-
		Right	23.9	C	42.5	550
Old Dade City Road	EB	Thru/Right	0.0	A	-	-
	WB	Left/Thru	11.9	B	2.5	-
	NB	Left/Right	247.2	F	100	-
CR 54	EB	Left/Thru/Right	861.3	F	1425	-
	SEB	Left	0.0	A	0	675
		Thru	0.0	A	-	-
		Right	0.0	A	0	435
	NWB	Left	15.9	C	127.5	400
		Thru	0.0	A	-	-
		Right	0.0	A	0	260

1: Average Delay (Seconds/Vehicle)
2: Level of Service (LOS E or worse in Red)
3: 95th-percentile Queue Length (Feet)
4: Length of Full Width Turn Lane (Feet)

5.2 DESIGN YEAR (2045) NO-BUILD ALTERNATIVE ROADWAY SEGMENT LOS

As was done for the Existing Conditions analysis, three major roadway segments within the project limits were analyzed using the Generalized Level of Service tables provided in FDOT's 2020 Quality/Level of Service Handbook. The following roadway segments were analyzed:

- Table 8: Transitioning Areas
    - North of West Socrum Loop Road to Rock Ridge Road
- Table 9: Rural Undeveloped Areas
    - Rock Ridge Road to SR 471
    - SR 471 to CR 54 (Polk/Pasco County Line Road)

For a Class I state signalized arterial roadway such as US 98, the tables in the Quality/Level of Service Handbook can only indicate if a segment will operate at LOS C or better, LOS D, or LOS E or worse. As expected, with large traffic growth and no capacity improvements made, all segments of US 98 operate at LOS E or worse in the No-Build condition.

Table 5-4 shows the LOS for each direction of each roadway segment.

Table 5-4: Design Year (2045) No-Build Roadway Segment LOS

Roadway Segment	Direction	From	To	Segment Length	No-Build (2045)		
					Typical Section	DDHV	LOS
US 98	NB	North of West Socrum Loop Road	Rock Ridge Road	2.206	2-Lane, Undivided with LT & RT	1,361	E
	SB				2-Lane, Undivided with RT Only	1,480	E
	NB	Rock Ridge Road	SR 471	5.100	2-Lane, Undivided with RT Only	1,136	E
	SB				2-Lane, Undivided with LT & RT	1,138	E
	NB	SR 471	CR 54 (Polk/Pasco County Line)	1.460	2-Lane, Undivided with LT & RT	1,112	E
	SB				2-Lane, Undivided with LT Only	1,123	E

5.3 DESIGN YEAR (2045) BUILD ALTERNATIVE INTERSECTION ANALYSIS

Using estimated 2045 design hour traffic volumes, the 2045 Build Alternative was analyzed for intersection performance using *Synchro 10* and FDOT's Intersection Control Evaluation (ICE) process. ICE can be performed up to 3 Stages depending on the level of detailed analysis necessary in selecting a preferred intersection configuration. The ICE for this study included Stage 1 analysis for the intersections at Big Cypress Boulevard, Rock Ridge Road and SR 471 and Stage 2 analysis for the intersection of Rock Ridge Road. Stage 1 ICE consists of Capacity Analysis for Planning of Junctions (CAP-X) and Safety Performance for Intersection Control Evaluation (SPICE). Stage 2 ICE consists of *Synchro* analysis of alternative intersection configurations, a more detailed SPICE analysis and a

Benefit-Cost (B/C) comparison of alternatives. The following other study intersections were evaluated using only *Synchro* 10. Their assumed median access configuration is in parenthesis.

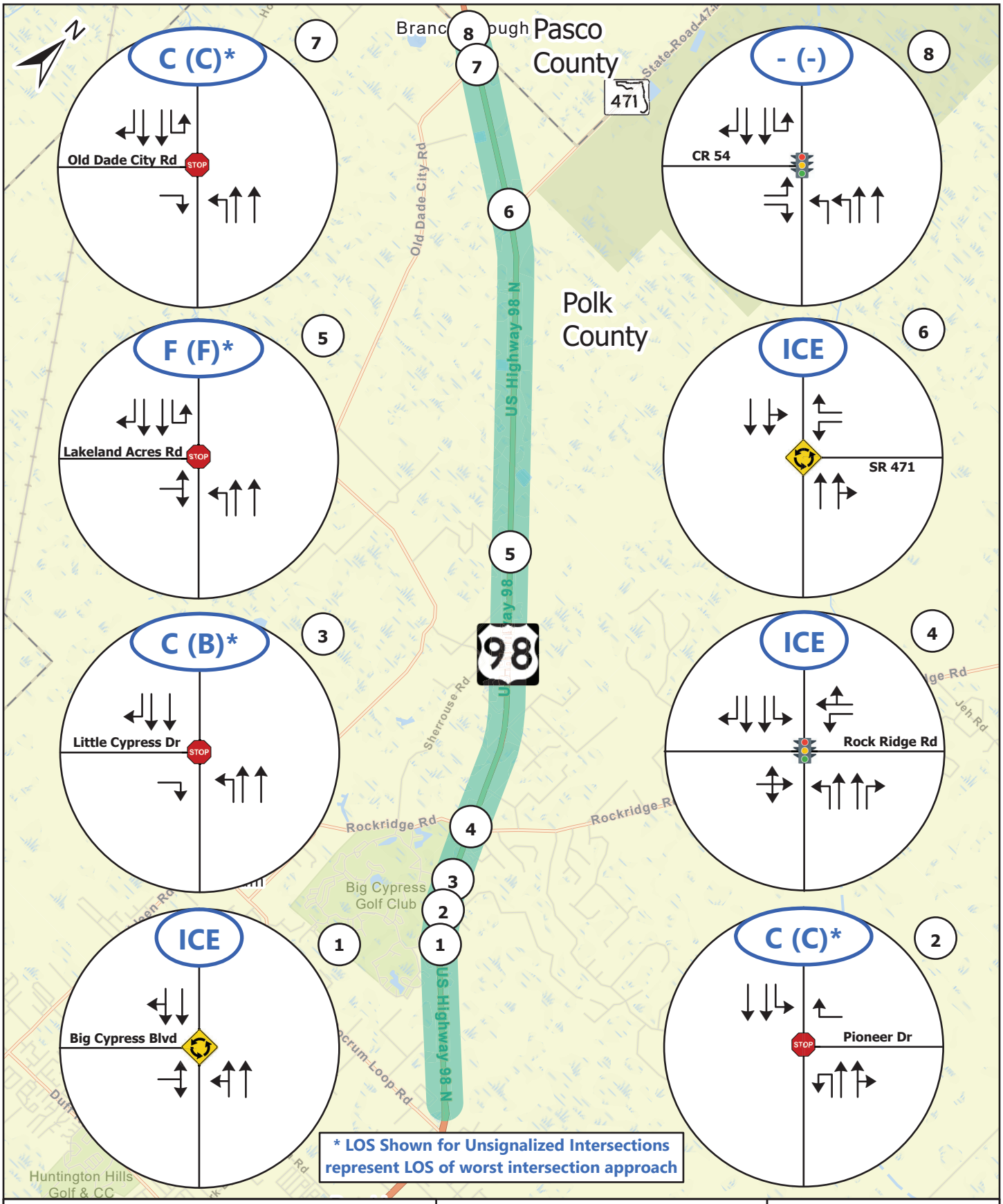
- Pioneer Drive (assumed Directional-Median Opening according to Access Management evaluation)
- Little Cypress Drive (assumed Directional-Median Opening based on FDOT guidance)
- Lakeland Acres Road (assumed Full-Median Opening per Access Management evaluation)
- Old Dade City Road (assumed Directional-Median Opening per Access Management evaluation)
- CR 54 (assumed a Traffic Signal per FDOT D7 project recommendation)
    - Analysis not included in this document

Based on Stage 1 ICE Analysis, a roundabout (2-lane on US 98, 1-lane on side street) was a clear choice in terms of SPICE ranking and CAP-X operations for both Big Cypress Boulevard and SR 471. Both an Improved Traffic Signal and a PMUT was recommended to be evaluated in Stage 2 ICE for the Rock Ridge Road intersection. A few configurations of an Improved Traffic Signal were evaluated with various combinations of turn lane additions and signal re-phasing but based on coordination with Polk County and District One Traffic Operations, the final recommended configuration was an added westbound left-turn lane and signal retiming to operate as Split Phased. The ICE Tool B/C analysis comparing the Improved Traffic Signal and the PMUT revealed that although the PMUT provided a slight safety benefit over the Improved Traffic Signal, the Improved Traffic Signal provided an equal weighted delay benefit over the MUT. This intersection serves as the primary crossroads for small retail in the area. The Improved Traffic Signal would provide the least disruption to the small community and was thus recommended as the preferred alternative.

The Build Alternative hourly traffic conditions are depicted in **Figure 5-2**. The intersections evaluated using ICE are identified on this figure, but traffic operations results are provided in **Table 5-8**. Two of the five non-ICE intersections have at least one movement that is anticipated to operate with LOS worse than the target of LOS "D" by the year 2045. Overall intersection operations are summarized in **Table 5-5**. Detailed results, by movement, are summarized in **Table 5-6** and **Table 5-7**. Build Alternative HCM 6th Edition reports can be found in **Appendix I**.

The results and final recommendations of the ICE analyses are summarized in **Table 5-8** and **Table 5-9**. SIDRA and HCM 6th Edition operational results of the recommended alternatives for the ICE intersections are shown in **Table 5-10** and **Table 5-11**. It should be noted that for the B/C Analysis at the Rock Ridge Road intersection, Simtraffic Total Delay/Vehicle Reports for 10 simulations were used to compare the operations of the PMUT to the Improved Signal. Once the Improved Traffic Signal was selected as the preferred alternative, HCM 6th Edition Reports were used to develop the results in **Table 5-10** and **Table 5-11**. HCM 6th Edition results provide a better comparison to the No-Build operations. Supporting ICE material, including the SIDRA and HCM 6th Edition Reports for the ICE intersections, can be found in **Appendix J**.

Recommended turn lane lengths for each study intersection are shown in **Table 5-12**. The turn lane lengths are based on the 95th percentile queue length and appropriate deceleration lane length based on design speed as defined in Chapter 212 in the FDOT Design Manual. Concepts representing the Build Alternative, including intersection configurations, are presented in **Appendix K**.



Legend

- Signalized
- Stop Control
- Roundabout
- # Study Intersection
- Lane Configuration
- X (Y) AM (PM) Level of Service

0 0.5 1 2 Miles

Figure 5-2:
Build (2045) Lane Configurations & LOS

Table 5-5: Design Year (2045) Build Alternative Intersection Analysis Summary

US 98 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]
Big Cypress Boulevard	ICE Analysis	N/A	N/A	N/A	N/A
Pioneer Drive	TWSC (T-intersection)[3]	15.9 (SWB)	C	16.8 (SWB)	C
Little Cypress Drive	TWSC (T-intersection)[3]	20.4 (NEB)	C	13.8 (NEB)	B
Rock Ridge Road	ICE Analysis	N/A	N/A	N/A	N/A
Lakeland Acres Road	TWSC (T-intersection)[3]	77.9 (EB)	F	97.7 (EB)	F
SR 471	ICE Analysis	N/A	N/A	N/A	N/A
Old Dade City Road	TWSC (T-intersection)[3]	17.4 (NB)	C	15.2 (NB)	C
CR 54[4]	Signalized	-	-	-	-

1: Average Delay (Seconds/Vehicle)
2: Level of Service (LOS E or worse in Red)
3: For unsignalized intersections, worst approach delay is presented rather than overall intersection delay
4: FDOT D7 project recommending a signalized alternative for this intersection and will conduct an ICE analysis

Table 5-6: Design Year (2045) Build Alternative AM Peak Hour Operations

US 98 Intersection	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]	Storage Length[4]
Pioneer Drive	NB	U-turn	0	A	0	285
		Thru/Right	0.0	A	-	-
	SB	Left	23.3	C	10	285
		Thru	0.0	A	-	-
	SWB	Right	16.0	C	7.5	-
Little Cypress Drive	NB	Left	48.3	E	27.5	285
		Thru	0.0	A	-	-
	SB	Thru	0.0	A	-	-
		Right	0.0	A	0	285
	NEB	Right	20.4	C	27.5	-
Lakeland Acres Road	EB	Left/Right	77.9	F	37.5	-
	SEB	U-turn	0.0	A	0	450
		Thru	0.0	A	-	-
		Right	0.0	A	0	450
	NWB	Left	15.3	C	2.5	450
		Thru	0.0	A	-	-
Old Dade City Road	EB	Left	0.0	A	0	450
		Thru	0.0	A	-	-
		Right	0.0	A	0	450
	WB	Left	14.9	B	2.5	450
		Thru	0.0	A	-	-
	NB	Right	17.4	C	15	-

1: Average Delay (Seconds/Vehicle)
2: Level of Service
3: 95th-percentile Queue Length (Feet)
4: Length of Full Width Turn Lane (Feet)

Table 5-7: Design Year (2045) Build Alternative PM Peak Hour Operations

US 98 Intersection	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]	Storage Length[4]
Pioneer Drive	NB	U-turn	0	A	0	285
		Thru/Right	0.0	A	-	-
	SB	Left	25.3	D	10	285
		Thru	0.0	A	-	-
	SWB	Right	17.1	C	7.5	-
Little Cypress Drive	NB	Left	17.1	C	15	285
		Thru	0.0	A	-	-
	SB	Thru	0.0	A	-	-
		Right	0.0	A	0	285
	NEB	Right	13.8	B	7.5	-
Lakeland Acres Road	EB	Left/Right	97.7	F	35	-
	SEB	U-turn	0.0	A	0	450
		Thru	0.0	A	-	-
		Right	0.0	A	0	450
	NWB	Left	15.8	C	5	450
		Thru	0.0	A	-	-
Old Dade City Road	EB	Left	0.0	A	0	450
		Thru	0.0	A	-	-
		Right	0.0	A	0	450
	WB	Left	13.6	B	5	450
		Thru	0.0	A	-	-
	NB	Right	15.2	C	10	-

1: Average Delay (Seconds/Vehicle)
2: Level of Service
3: 95th-percentile Queue Length (Feet)
4: Length of Full Width Turn Lane (Feet)

Table 5-8: Design Year (2045) Build Alternative Stage One ICE Summary

Intersection	Intersection Configurations	SPICE Ranking	CAP-X			Advance to Stage 2?
			Multi-modal Score	Overall AM V/C Ratio	Overall PM V/C Ratio	
Big Cypress Boulevard	TWSC (Base Build)	1	3.7	2.35	5.86	No
	Roundabout (2x1)	2	5.6	0.67	0.67	N/A[2]
	RCUT (Unsignalized)	3	4.4	2.48	0.91	No
Rock Ridge Road	Signal (Base Build)	6	4.8	1.03	0.78	No
	Roundabout (2x1)	1	5.6	1.94	0.98	No
	Median U-turn	2	6.3	0.82	0.73	No
	RCUT (Signalized)	7	6.3	0.66	0.61	No
	Partial Displaced Left-Turn	5	4.8	0.73	0.64	No
	NE Quadrant Roadway	-	4.4	0.71	0.57	No
	Partial Median U-turn	3	6.3	0.81	0.71	**Yes**
	Improved Traffic Signal[1]	4	4.8	0.90	0.78	**Yes**
SR 471	Signal (Base Build)	5	7.2	0.57	0.55	No
	Roundabout (2x1)	1	8.3	0.71	0.71	N/A[2]
	RCUT (Signalized)	6	9.4	0.57	0.57	No
	Partial Displaced Left-Turn	4	7.2	0.50	0.50	No
	Continuous Green Tee	2	4.4	0.57	0.55	No
	Partial Median U-turn	3	9.4	0.56	0.53	No

1: Improved Traffic Signal includes adding a left-turn lane to the westbound approach and modified the signal to operate as Split Phased.

2: Alternative was selected as the preferred after Stage One ICE analysis.

Table 5-9: Design Year (2045) Build Alternative Stage Two ICE Summary

Intersection	Intersection Configurations	SPICE Ranking	Opening Year (2025) Delay (s)		Design Year (2045) Delay (s)		Overall B/C Ratio	Selected Alternative?
			AM	PM	AM	PM		
Rock Ridge Road	Partial Median U-turn	1	31.8	28.4	52.1	40.3	0.13	No
	Improved Traffic Signal[1]	2	28.9	27.6	58.3	42.9	N/A[2]	**Yes**

1: Improved Traffic Signal includes adding a left-turn lane to the westbound approach and modified the signal to operate as Split Phased.

2: Improved Traffic Signal served as the base condition to compare against; no B/C ratio

Table 5-10: Design Year (2045) ICE Intersection Preferred Build Alternative AM Peak Hour Operations

US 98 Intersection	Intersection Type	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]
Big Cypress Boulevard[4]	Roundabout	**Overall**	-	**13.5**	**B**	-
		SEB	Thru	11.7	B	143.6
			Thru/Right	11.7	B	143.6
		NWB	Left/Thru	9.9	A	105.8
			Thru	9.7	A	105.8
		NEB	Left/Right	46.1	E	117.5
Rock Ridge Road[5]	Improved Traffic Signal	**Overall**	-	**114.4**	F	-
		EB	Left/Thru/Right	235.8	F	695
		WB	Left	136.9	F	752.5
			Thru/Right	255.0	F	1200
		NB	Left	41.4	D	67.5
			Thru	85.3	F	820
			Right	17.1	B	175
		SB	Left	179.4	F	485
			Thru	54.4	D	687.5
			Right	19.1	B	115
SR 471[4]	Roundabout	**Overall**	-	**17.3**	**C**	-
		EB	Left/Thru	15.6	C	255.9
			Thru	15.6	C	255.9
		WB	Thru	17.0	C	169.3
			Thru/Right	17.0	C	169.3
		SB	Left	29.7	D	76.1
			Right	19.7	C	26.2

1: Average Delay (Seconds/Vehicle)
2: Level of Service
3: 95th-percentile Queue Length (Feet)
4: Results from SIDRA Report
5: Results from HCM 6th Edition Report from Synchro

Table 5-11: Design Year (2045) ICE Intersection Preferred Build Alternative PM Peak Hour Operations

US 98 Intersection	Intersection Type	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]
Big Cypress Boulevard[4]	Roundabout	**Overall**	-	**12.2**	**B**	-
		SEB	Thru	11.6	B	145.5
			Thru/Right	11.6	B	145.5
		NWB	Left/Thru	12.6	B	165.1
			Thru	12.4	B	165.1
		NEB	Left/Right	14.6	B	35
Rockridge Road[5]	Improved Traffic Signal	**Overall**	-	**72.8**	**E**	-
		EB	Left/Thru/Right	101.4	**F**	520
		WB	Left	58.3	**E**	280
			Thru/Right	113.4	**F**	492.5
		NB	Left	46.5	D	100
			Thru	97.5	**F**	707.5
			Right	33.2	C	530
		SB	Left	82.9	**F**	335
			Thru	57.2	**E**	647.5
			Right	15.4	B	112.5
SR 471[4]	Roundabout	**Overall**	-	**14.5**	**B**	-
		EB	Left/Thru	16.2	C	302.3
			Thru	16.2	C	302.3
		WB	Thru	11.1	B	129.1
			Thru/Right	11.1	B	129.1
		SB	Left	23.9	C	81.1
			Right	16.2	C	29.6

1: Average Delay (Seconds/Vehicle)
2: Level of Service
3: 95th-percentile Queue Length (Feet)
4: Results from SIDRA Report
5: Results from HCM 6th Edition Report from Synchro

Table 5-12: Build Alternative Recommended Turn Lane Lengths

Intersection	Build Configuration	Turn Lane	Recommended Turn Lane Length (ft)[1]
Big Cypress Boulevard	**Convert into** Roundabout	None	N/A
Pioneer Drive	**Convert into** Directional Median opening	SBL	285
Little Cypress Drive	**Convert into** Directional Median opening	SBR	285
		NBL	285
Rock Ridge Road	**Improve** Traffic Signal	WBL	910
		NBL	285
		NBR	285
		SBL	610
		SBR	285
Lakeland Acres Road	**Maintain** Full Median opening	NBL	450
		SBR	450
SR 471	**Convert into** Roundabout	SBR	505
Old Dade City Road	**Convert into** Directional Median opening	EBR	450
		WBL	450
CR 54[2]	FDOT D7 Signalize	None	N/A

1: Turn lane lengths are based on the 95th percentile queue length and appropriate deceleration lane length based on design speed as defined in Chapter 212 in the FDOT Design Manual

2: FDOT D7 project recommending a signalized alternative for this intersection; D7 will recommend turn lane lengths

It should be noted that the recommended turn lane length of the westbound left-turn lane at Rock Ridge Road was not fully accommodated in the concept because of existing utility and right-of-way constraints, as well as the proximity of a nearby local roadway intersection.

5.4 DESIGN YEAR (2045) BUILD ALTERNATIVE ROADWAY SEGMENT LOS

As was done for the Existing Conditions and No-Build analysis, three major roadway segments within the project limits were analyzed using the Generalized Level of Service Tables 8 and 9 provided in FDOT's 2020 Quality/Level of Service Handbook. The following roadway segments were analyzed:

- Table 8: Transitioning Areas
    - North of West Socrum Loop Road to Rock Ridge Road
- Table 9: Rural Undeveloped Areas
    - Rock Ridge Road to SR 471
    - SR 471 to CR 54 (Polk/Pasco County Line Road)

For a Class I state signalized arterial roadway such as US 98, the tables in the Quality/Level of Service Handbook can only indicate if a segment will operate at LOS C or better, LOS D, or LOS E or worse. With the widening from 2 to 4 lanes, all segments of US 98 operate at LOS C or better in the Build condition. **Table 5-13** shows the LOS for each direction of each roadway segment.

Table 5-13: Design Year (2045) Build Alternative Roadway Segment LOS

Roadway Segment	Direction	From	To	Segment Length	Build (2045)		
					Typical Section	DDHV	LOS
US 98	NB	North of West Socrum Loop Road	Rock Ridge Road	2.206	4-Lane, Divided with LT & RT	1,584	C
	SB				4-Lane, Divided with LT & RT	1,674	C
	NB	Rock Ridge Road	SR 471	5.100	4-Lane, Divided with LT Only	1,457	C
	SB				4-Lane, Divided with LT & RT	1,457	C
	NB	SR 471	CR 54 (Polk/Pasco County Line)	1.460	4-Lane, Divided with LT & RT	1,408	C
	SB				4-Lane, Divided with LT & RT	1,419	C

5.5 HSM PREDICTIVE CRASH ANALYSIS

An additional metric used in determining the efficacy of a proposed improvement is a predictive crash analysis using the Highway Safety Manual (HSM) Part C Predictive Method. The American Association of State Highway and Transportation Officials' (AASHTO's) HSM Part C Predictive Method estimates crash frequency and severity. The predictive method relies on safety performance functions (SPFs). SPFs are equations that estimate predicted average crash frequency as a function of traffic volume and roadway characteristics, including number of lanes, median type, shoulder width, etc.

The No-Build scenario maintains the existing 2-lane, undivided typical section. Along the entire project limits, the Build alternative widens US 98 from 2 to 4-lanes and provides a median. The following elements are planned within the respective segment limits:

- West Socrum Loop Road to Rock Ridge Road
    - Four (4) 12' travel lanes
    - 10' Shared Use Paths on both sides of US 98
    - Curb & Gutter
- Rock Ridge Road to CR 54 (Polk / Pasco County Line)
    - Four (4) 11' travel lanes
    - 4' Paved Inside Shoulders
    - 5' Paved Outside Shoulders
    - Curb & Gutter

Additionally, the Build Alternative's intersection improvements (where applicable) were also analyzed using the HSM Predictive Method. Improvements at the intersections include:

- Convert intersection at Big Cypress Boulevard into a roundabout (2 lanes on US 98, 1 lane on Big Cypress Boulevard)
- Convert intersection at Pioneer Drive into a directional median opening
- Convert intersection at Little Cypress Drive into a directional median opening
- Turn lane addition and signal retiming at Rock Ridge Road intersection
- Convert intersection at SR 471 to roundabout (2 lanes on US 98, 1 lane on SR 471)
- Convert intersection at Old Dade City Road to directional median opening

The HSM spreadsheet tools provided by AASHTO were employed to conduct the predictive method analyses. There are spreadsheets for the rural roadways and urban arterial segments and intersections and for freeway segments and interchange elements. The non-freeway spreadsheets are named for the chapters: rural two-lane two-way roads (HSM Chapter 10), rural multilane highways (HSM Chapter 11), and urban and suburban arterials (HSM Chapter 12). All three non-freeway spreadsheets were employed for this analysis effort based on the context classification and characteristics of the study roadway and study area. All HSM analyses were conducted for a 20-year period spanning from the opening year to the design year (2025-2045).

5.5.1 No-Build HSM Analysis

Based on the characteristics of US 98 in the No-Build condition, the study area was segmented as follows (**Table 5-14**) for the purposes of the HSM analysis.

Table 5-14: HSM No-Build Analysis Segmentation

Segment Number	Segment Name	Segment Length (mi)	HSM Tool
1	Socrum Loop Road to Big Cypress Drive	1.47	Urban/Suburban Arterial
2	Big Cypress Drive to Pioneer Drive	0.219	Urban/Suburban Arterial
3	Pioneer Drive to Little Cypress Drive	0.145	Urban/Suburban Arterial
4	Little Cypress Drive to Rockridge Road	0.388	Urban/Suburban Arterial
5	Rockridge Road to Lakeland Acres Road	2.159	Rural Two-Lane*
6	Lakeland Acres Road to SR 471	2.744	Rural Two-Lane*
7	SR 471 to Old Dade City Road	1.130	Rural Two-Lane*
8	Old Dade City Road to CR 54	0.170	Rural Two-Lane*
Intersection Number	**Intersection Name**	**Milepost**	HSM Tool
1	W Socrum Loop Road	8.661	Urban/Suburban Arterial
2	Big Cypress Drive	10.178	Urban/Suburban Arterial
3	Pioneer Drive	10.492	Urban/Suburban Arterial
4	Little Cypress Drive	10.732	Urban/Suburban Arterial
5	Rockridge Road	11.215	Rural Two-Lane*
6	Lakeland Acres Road	13.469	Rural Two-Lane*
7	SR 471	16.308	Rural Two-Lane*

*AADT values for some analysis years are out of range for the Rural 2-lane HSM tool

The spreadsheets used to conduct the HSM analysis for the No-Build scenario include rural two-lane two-way roads (HSM Chapter 10) and urban and suburban arterials (HSM Chapter 12) as documented in **Appendix L**.

5.5.2 Build Alternative HSM Analysis

Based on the characteristics of US 98 in the Build condition, the study area was segmented as follows (**Table 5-15**) for the purposes of the HSM analysis.

Table 5-15: HSM Build Alternative Analysis Segmentation

Segment Number	Segment Name	Segment Length (mi)	HSM Tool
1	Socrum Loop Road to Big Cypress Drive	1.47	Urban/Suburban Arterial
2	Big Cypress Drive to Pioneer Drive	0.219	Urban/Suburban Arterial
3	Pioneer Drive to Little Cypress Drive	0.145	Urban/Suburban Arterial
4	Little Cypress Drive to Rockridge Road	0.388	Urban/Suburban Arterial
5	Rockridge Road to Lakeland Acres Road	2.159	Rural Multilane
6	Lakeland Acres Road to SR 471	2.744	Rural Multilane
7	SR 471 to Old Dade City Road	1.130	Rural Multilane
8	Old Dade City Road to CR 54	0.170	Rural Multilane
Intersection Number	**Intersection Name**	**Milepost**	**HSM Tool**
1	W Socrum Loop Road	8.661	Urban/Suburban Arterial
2	Big Cypress Drive	10.178	Urban/Suburban Arterial
3	Pioneer Drive	10.492	Urban/Suburban Arterial
4	Little Cypress Drive	10.732	Urban/Suburban Arterial
5	Rockridge Road	11.215	Rural Multilane
6	Lakeland Acres Road	13.469	Rural Multilane
7	SR 471	16.308	Rural Multilane

The spreadsheets used to conduct the HSM analysis for the Build scenario include rural multilane highways (HSM Chapter 11) and urban and suburban arterials (HSM Chapter 12) as documented in **Appendix L**. Some of the Build alternative intersection configurations could not be accounted for in

the spreadsheets, so appropriate Crash Modification Factors (CMFs) were applied where applicable (**Table 5-16**). The application of the selected CMFs is documented in **Table 5-20**.

Table 5-16: HSM Build Alternative Crash Modification Factors

CMF ID	CMF Description	CMF Rating	CMF Value	Intersection
3007	Convert the open median on the major approach of an unsignalized 3-leg intersection to a directional median	☆☆☆	0.86	2, 3, 7
9403	Convert intersection with minor-road stop control to modern roundabout	☆☆☆	0.28	1, 6

5.5.3 HSM Analysis Results

The predicted crashes are categorized by severity: fatal/injury (F/I) and property damage only (PDO). The present value of crashes was calculated by applying the appropriate HSM crash distribution for Florida (facility type specified), up to date KABCO costs, and an assumed 2% rate of return (ROR). The HSM analysis results for the No-Build scenario are included in **Table 5-17** and **Table 5-18**. The total number of crashes predicted to occur within the study area under the No-Build scenario is 1,586.74 over a 20-year period. The total present value of these crashes is equivalent to approximately $402 million (2021 dollars).

Table 5-17: No-Build HSM Analysis Segment Results

Segment Number	Segment Name	F/I	PDO	Total	Present Value of Segment Crashes
1	Socrum Loop Road to Big Cypress Drive	57.90	157.01	214.91	$31,285,391.91
2	Big Cypress Drive to Pioneer Drive	7.95	21.56	29.52	$4,297,772.93
3	Pioneer Drive to Little Cypress Drive	46.36	126.97	173.33	$25,235,600.44
4	Little Cypress Drive to Rockridge Road	11.61	31.42	43.03	$6,252,274.87
5	Rockridge Road to Lakeland Acres Road	85.72	181.33	267.05	$87,896,307.75
6	Lakeland Acres Road to SR 471	102.57	216.97	319.54	$104,815,797.55
7	SR 471 to Old Dade City Road	38.44	81.31	119.75	$39,341,091.11
8	Old Dade City Road to CR 54	5.50	11.63	17.13	$5,616,200.58
TOTAL		**356.06**	**828.20**	**1,184.26**	**$304,740,437.14**

Table 5-18: No-Build HSM Analysis Intersection Results

Segment Number	Intersection Name	F/I	PDO	Total	Present Value of Intersection Crashes
1	W Socrum Loop Road	13.43	28.08	41.51	$6,051,760.43
2	Big Cypress Drive	12.37	17.54	29.91	$4,358,509.50
3	Pioneer Drive	8.51	14.12	22.62	$3,296,972.74
4	Little Cypress Drive	29.27	61.30	90.57	$13,191,947.31
5	Rockridge Road	21.31	30.04	51.35	$16,830,819.54
6	Lakeland Acres Road	38.87	54.79	93.66	$30,573,173.69
7	SR 471	30.24	42.62	72.86	$23,843,772.09
TOTAL		**153.99**	**248.48**	**402.48**	**$98,146,955.30**

The HSM analysis results for the Build scenario are included in **Table 5-19** and **Table 5-20.** The total number of crashes predicted to occur within the study area under the No-Build scenario is 1,165.13 over a 20-year period. The total present value of these crashes is equivalent to approximately $312 million (2021 dollars).

Table 5-19: Build Alternative HSM Analysis Segment Results

Segment Number	Segment Name	F/I	PDO	Total	Present Value of Segment Crashes
1	Socrum Loop Road to Big Cypress Drive	42.72	120.88	163.60	$23,763,713.91
2	Big Cypress Drive to Pioneer Drive	5.89	16.66	22.55	$3,275,138.30
3	Pioneer Drive to Little Cypress Drive	36.15	102.34	138.49	$20,117,130.36
4	Little Cypress Drive to Rockridge Road	9.41	26.62	36.04	$5,215,189.48
5	Rockridge Road to Lakeland Acres Road	106.06	113.13	219.18	$71,279,186.66
6	Lakeland Acres Road to SR 471	135.45	144.71	280.16	$90,857,276.63
7	SR 471 to Old Dade City Road	48.46	50.44	98.90	$32,065,177.70
8	Old Dade City Road to CR 54	8.11	8.62	16.73	$5,425,242.01
TOTAL		**392.27**	**583.39**	**975.66**	**$251,998,055.05**

Table 5-20: Build Alternative HSM Analysis Intersection Results

Intersection		Analysis Output			CMF ID	CMF Value	Intersection CMF Applied			
#	Name	F/I	PDO	Present Value of Crashes			F/I	PDO	Total	Present Value Of intersection Crashes
1	W Socrum Loop Road	13.57	28.49	$5,651,085.92	9403	0.280	3.80	7.98	11.78	$1,582,304.06
2	Big Cypress Drive	7.89	11.22	$2,566,007.00	3007	0.860	6.79	9.65	16.44	$2,206,766.02
3	Pioneer Drive	9.46	15.75	$3,385,734.15	3007	0.860	8.14	13.54	21.68	$2,911,731.37
4	Little Cypress Drive	1.63	3.24	$10,485,616.68	N/A	N/A	1.63	3.24	4.86	$10,485,616.68
5	Rockridge Road	25.20	36.78	$20,019,993.77	N/A	N/A	25.20	36.78	61.99	$20,019,993.77
6	Lakeland Acres Road	21.21	37.50	$18,910,165.54	9403	0.280	5.94	10.50	16.44	$5,294,846.35
7	SR 471	27.34	38.11	$21,108,959.61	3007	0.860	23.51	32.78	56.29	$18,153,705.27
TOTAL							**75.01**	**114.47**	**189.47**	**$60,654,963.51**

A comparison of the No-Build and Build alternative results is displayed in **Table 5-21**. Based on the HSM predictive method analysis, the improvements included in the Build Alternative are anticipated to prevent approximately 43 fatal/injury crashes and 379 property damage only crashes resulting in a present value of just over $90 million.

Table 5-21: No-Build and Build Alternative HSM Analysis Results Comparison

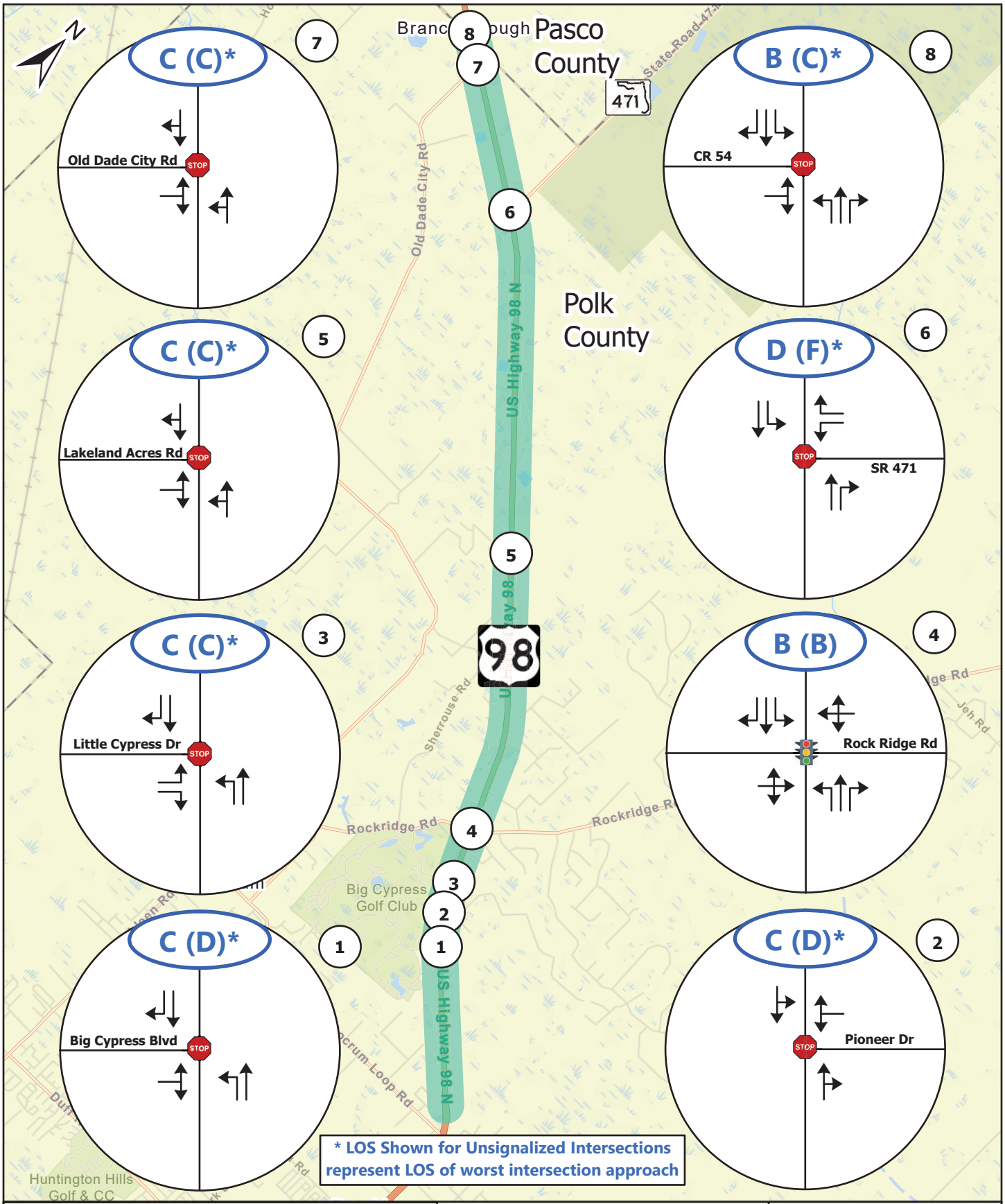
	Total F/I Crashes	Total PDO Crashes	Total Crashes	Present Value of Crashes
No-Build	510.05	1,076.69	1,586.74	$402,887,392.44
Build	467.28	697.86	1,165.13	$312,653,018.56
Reduction	**42.77**	**378.83**	**421.61**	**$90,234,373.88**

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

The following sections contain the results of the operational analyses for the No-Build and Build Alternatives for opening year (2025) conditions.

6.1 OPENING YEAR (2025) NO-BUILD ALTERNATIVE INTERSECTION ANALYSIS

Using estimated 2025 design hour traffic volumes, the 2025 No-Build Alternative was analyzed for intersection performance in *Synchro 10* using Highway Capacity Manual (HCM) 6th Edition methodology, similar to the analysis of existing conditions. Future signal timings (movement splits) at Rock Ridge Road were optimized for 2025 conditions in the No-Build scenario to represent a realistic condition assuming no capacity improvements are constructed by 2025. The No-Build Alternative hourly traffic conditions are depicted in **Figure 6-1**. The signalized intersection at Rock Ridge Road is anticipated to operate with an overall LOS better than the target of LOS "D" by the year 2025 and most unsignalized intersections are anticipated to operate with at least one movement LOS worse than the target of LOS "D" by the year 2025. Overall intersection operations are summarized in **Table 6-1**. Detailed results, by movement, are summarized in **Table 6-2** and **Table 6-3**. No-Build Alternative HCM 6th Edition reports can be found in **Appendix M**.



Legend

- Signalized
- Stop Control
- # Study Intersection
- Lane Configuration
- X (Y) AM (PM) Level of Service

0 0.5 1 2 Miles

Figure 6-1: No-Build (2025) Lane Configurations & LOS

Table 6-1: Opening Year (2025) No-Build Alternative Intersection Analysis Summary

US 98 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]
Big Cypress Boulevard	TWSC (T-intersection)[3]	17.5 (NEB)	C	27.1 (NEB)	D
Pioneer Drive	TWSC (T-intersection)[3]	19.3 (SWB)	C	32.4 (SWB)	D
Little Cypress Drive	TWSC (T-intersection)[3]	15.0 (NEB)	C	18.3 (NEB)	C
Rock Ridge Road	Signalized	19.3	B	16.5	B
Lakeland Acres Road	TWSC (T-intersection)[3]	18.3 (EB)	C	21.4 (EB)	C
SR 471	TWSC (T-intersection)[3]	26.5 (SB)	D	68.0 (SB)	F
Old Dade City Road	TWSC (T-intersection)[3]	21.0 (NB)	C	24.6 (NB)	C
CR 54[4]	TWSC (T-intersection)[3]	14.5 (EB)	B	17.9 (EB)	C

1: Average Delay (Seconds/Vehicle)
2: Level of Service (LOS E or worse in Red)
3: For unsignalized intersections, worst approach delay is presented rather than overall intersection delay
4: Intersection is over capacity/HCM 6th computation is not defined; FDOT D7 project recommending a signalized alternative for this intersection

Table 6-2: Opening Year (2025) No-Build Alternative AM Peak Hour Operations

US 98 Intersection	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]	Storage Length[4]
Big Cypress Boulevard	SEB	Thru	0.0	A	-	-
		Right	0.0	A	0	400
	NWB	Left	9.3	A	2.5	410
		Thru	0.0	A	-	-
	NEB	Left/Right	17.5	C	27.5	-
Pioneer Drive	NB	Thru/Right	0.0	A	-	-
	SB	Left/Thru	8.7	A	0	-
	SWB	Left/Right	19.3	C	5	-
Little Cypress Drive	NB	Left	9.1	A	0	350
		Thru	0.0	A	-	-
	SB	Thru	0.0	A	-	-
		Right	0.0	A	0	400
	NEB	Left	22.8	C	2.5	280
		Right	13.3	B	5	280
Rockridge Road	EB	Left/Thru/Right	15.1	B	70	-
	WB	Left/Thru/Right	21.7	C	220	-
	NB	Left	23.1	C	12.5	500
		Thru	17.8	B	185	-
		Right	12.3	B	17.5	500
	SB	Left	25.3	C	57.5	400
		Thru	20.1	C	205	-
		Right	12.2	B	15	350
Lakeland Acres Road	EB	Left/Right	18.3	C	5	-
	SEB	Thru/Right	0.0	A	-	-
	NWB	Left/Thru	9.0	A	0	-
SR 471	EB	Left	8.6	A	2.5	395
		Thru	0.0	A	-	-
	WB	Thru	0.0	A	-	-
		Right	0.0	A	0	500
	SB	Left	32.8	D	52.5	-
		Right	11.9	B	5	550
Old Dade City Road	EB	Thru/Right	0.0	A	-	-
	WB	Left/Thru	8.9	A	0	-
	NB	Left/Right	21.0	C	12.5	-
CR 54	EB	Left/Thru/Right	14.5	B	50	-
	SEB	Left	0.0	A	0	675
		Thru	0.0	A	-	-
		Right	0.0	A	0	435
	NWB	Left	9.0	A	25	400
		Thru	0.0	A	-	-
		Right	0.0	A	0	260

1: Average Delay (Seconds/Vehicle)
2: Level of Service (LOS E or worse in Red)
3: 95th-percentile Queue Length (Feet)
4: Length of Full Width Turn Lane (Feet)

Table 6-3: Opening Year (2025) No-Build Alternative PM Peak Hour Operations

US 98 Intersection	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]	Storage Length[4]
Big Cypress Boulevard	SEB	Thru	0.0	A	-	-
		Right	0.0	A	0	400
	NWB	Left	9.8	A	12.5	410
		Thru	0.0	A	-	-
	NEB	Left/Right	27.1	D	37.5	-
Pioneer Drive	NB	Thru/Right	0.0	A	-	-
	SB	Left/Thru	9.8	A	0	-
	SWB	Left/Right	32.4	D	12.5	-
Little Cypress Drive	NB	Left	9.3	A	2.5	350
		Thru	0.0	A	-	-
	SB	Thru	0.0	A	-	-
		Right	0.0	A	0	400
	NEB	Left	34.6	D	5	280
		Right	13.2	B	2.5	280
Rockridge Road	EB	Left/Thru/Right	21.0	C	115	-
	WB	Left/Thru/Right	24.7	C	187.5	-
	NB	Left	19.8	B	22.5	500
		Thru	13.5	B	187.5	-
		Right	10.6	B	72.5	500
	SB	Left	23.4	C	72.5	400
		Thru	14.5	B	205	-
		Right	8.8	A	15	350
Lakeland Acres Road	EB	Left/Right	21.4	C	5	-
	SEB	Thru/Right	0.0	A	-	-
	NWB	Left/Thru	9.4	A	0	-
SR 471	EB	Left	8.7	A	5	395
		Thru	0.0	A	-	-
	WB	Thru	0.0	A	-	-
		Right	0.0	A	0	500
	SB	Left	93.4	F	160	-
		Right	13.2	B	12.5	550
Old Dade City Road	EB	Thru/Right	0.0	A	-	-
	WB	Left/Thru	9.1	A	0	-
	NB	Left/Right	24.6	C	12.5	-
CR 54	EB	Left/Thru/Right	17.9	C	90	-
	SEB	Left	0.0	A	0	675
		Thru	0.0	A	-	-
		Right	0.0	A	0	435
	NWB	Left	9.1	A	27.5	400
		Thru	0.0	A	-	-
		Right	0.0	A	0	260

1: Average Delay (Seconds/Vehicle)
2: Level of Service (LOS E or worse in Red)
3: 95th-percentile Queue Length (Feet)
4: Length of Full Width Turn Lane (Feet)

6.2 OPENING YEAR (2025) BUILD ALTERNATIVE INTERSECTION ANALYSIS

Using estimated 2025 design hour traffic volumes, the 2025 Build Alternative was analyzed for intersection performance using *Synchro 10* and SIDRA. Preferred intersection configurations and control types at three locations were selected as a result of the ICE analysis. The intersection at Rock Ridge Road was evaluated as the Improved Traffic Signal in *Synchro* 10 and the intersections at SR 471 and Big Cypress Boulevard were evaluated as roundabouts in SIDRA. The following other study intersections were evaluated using only *Synchro* 10. Their assumed median access configuration is in parenthesis.

- Pioneer Drive (assumed Directional-Median Opening according to Access Management evaluation)
- Little Cypress Drive (assumed Directional-Median Opening based on FDOT guidance)
- Lakeland Acres Road (assumed Full-Median Opening per Access Management)
- Old Dade City Road (assumed Directional-Median Opening per Access Management evaluation)
- CR 54 (assumed a Traffic Signal per FDOT D7 project recommendation)
    - Analysis not included in this document

The Build Alternative hourly traffic conditions are depicted in **Figure 6-2**. The intersections evaluated using ICE are identified on this figure. One of the five non-ICE intersections have at least one movement that is anticipated to operate with LOS worse than the target of LOS “D” by the year 2025. Overall intersection operations are summarized in **Table 6-4**. Detailed results, by movement, are summarized in **Table 6-5** and **Table 6-6**. Build Alternative HCM 6th Edition reports can be found in **Appendix N**.

SIDRA and HCM 6th Edition operational results of the recommended alternatives for the ICE intersections are shown in **Table 6-7** and **Table 6-8**. Supporting ICE material, including the SIDRA and HCM 6th Edition Reports for the ICE intersections, can be found in **Appendix J**.

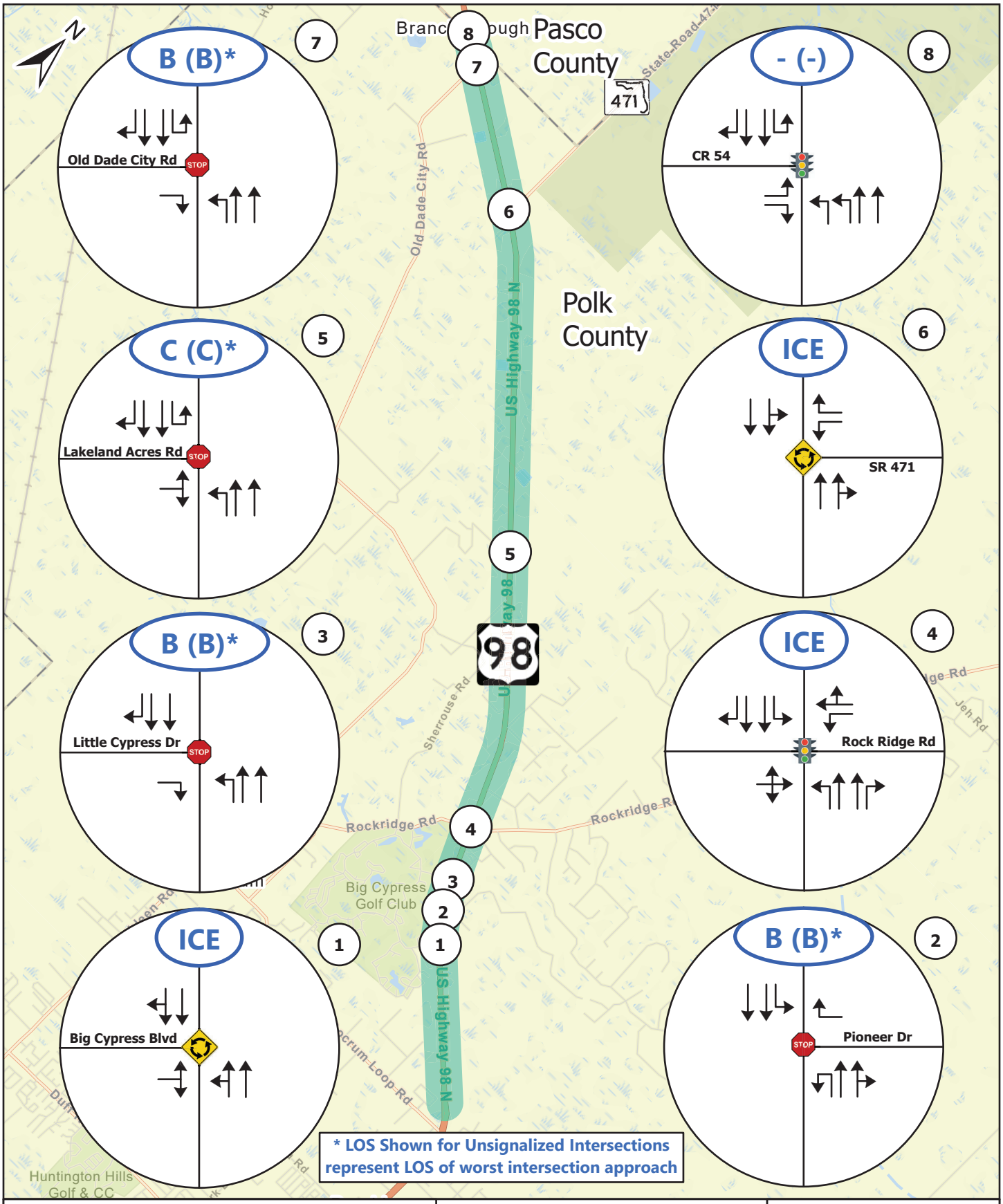


Figure 6-2:
Build (2025) Lane Configurations & LOS

Table 6-4: Opening Year (2025) Build Alternative Intersection Analysis Summary

US 98 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]
Big Cypress Boulevard	ICE Analysis	N/A	N/A	N/A	N/A
Pioneer Drive	TWSC (T-intersection)[3]	10.5 (SWB)	B	11.7 (SWB)	B
Little Cypress Drive	TWSC (T-intersection)[3]	11.2 (NEB)	B	10.7 (NEB)	B
Rock Ridge Road	ICE Analysis	N/A	N/A	N/A	N/A
Lakeland Acres Road	TWSC (T-intersection)[3]	15.4 (EB)	C	17.2 (EB)	C
SR 471	ICE Analysis	N/A	N/A	N/A	N/A
Old Dade City Road	TWSC (T-intersection)[3]	10.6 (NB)	B	10.5 (NB)	B
CR 54[4]	Signalized	-	-	-	-

1: Average Delay (Seconds/Vehicle)
2: Level of Service (LOS E or worse in Red)
3: For unsignalized intersections, worst approach delay is presented rather than overall intersection delay
4: Intersection is over capacity/HCM 6th computation is not defined; FDOT D7 project recommending a signalized alternative for this intersection

Table 6-5: Opening Year (2025) Build Alternative AM Peak Hour Operations

US 98 Intersection	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]	Storage Length[4]
Pioneer Drive	NB	U-turn	0	A	0	285
		Thru/Right	0.0	A	-	-
	SB	Left	10.1	B	2.5	285
		Thru	0.0	A	-	-
	SWB	Right	10.5	B	2.5	-
Little Cypress Drive	NB	Left	12.0	B	2.5	285
		Thru	0.0	A	-	-
	SB	Thru	0.0	A	-	-
		Right	0.0	A	0	285
	NEB	Right	11.2	B	5	-
Lakeland Acres Road	EB	Left/Right	15.4	C	2.5	-
	SEB	U-turn	0.0	A	0	450
		Thru	0.0	A	-	-
		Right	0.0	A	0	450
	NWB	Left	9.4	A	0	450
		Thru	0.0	A	-	-
Old Dade City Road	EB	Left	0.0	A	0	450
		Thru	0.0	A	-	-
		Right	0.0	A	0	450
	WB	Left	9.2	A	0	450
		Thru	0.0	A	-	-
	NB	Right	10.6	B	5	-

1: Average Delay (Seconds/Vehicle)
2: Level of Service
3: 95th-percentile Queue Length (Feet)
4: Length of Full Width Turn Lane (Feet)

Table 6-6: Opening Year (2025) Build Alternative PM Peak Hour Operations

US 98 Intersection	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]	Storage Length[4]
Pioneer Drive	NB	U-turn	0	A	0	285
		Thru/Right	0.0	A	-	-
	SB	Left	11.9	B	2.5	285
		Thru	0.0	A	-	-
	SWB	Right	11.7	B	2.5	-
Little Cypress Drive	NB	Left	10.6	B	5	285
		Thru	0.0	A	-	-
	SB	Thru	0.0	A	-	-
		Right	0.0	A	0	285
	NEB	Right	10.7	B	2.5	-
Lakeland Acres Road	EB	Left/Right	17.2	C	5	-
	SEB	U-turn	0.0	A	0	450
		Thru	0.0	A	-	-
		Right	0.0	A	0	450
	NWB	Left	9.8	A	0	450
		Thru	0.0	A	-	-
Old Dade City Road	EB	Left	0.0	A	0	450
		Thru	0.0	A	-	-
		Right	0.0	A	0	450
	WB	Left	9.1	A	0	450
		Thru	0.0	A	-	-
	NB	Right	10.5	B	2.5	-

1: Average Delay (Seconds/Vehicle)
2: Level of Service
3: 95th-percentile Queue Length (Feet)
4: Length of Full Width Turn Lane (Feet)

Table 6-7: Opening Year (2025) ICE Intersection Preferred Build Alternative AM Peak Hour Operations

US 98 Intersection	Intersection Type	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]
Big Cypress Boulevard[4]	Roundabout	**Overall**	-	**5.4**	**A**	-
		SEB	Thru	5.5	A	37.4
			Thru/Right	5.5	A	37.4
		NWB	Left/Thru	5.1	A	26.9
			Thru	5.0	A	26.9
		NEB	Left/Right	6.7	A	14.1
Rock Ridge Road[5]	Improved Traffic Signal	**Overall**	-	**32.6**	**C**	-
		EB	Left/Thru/Right	43.2	D	177.5
		WB	Left	36.9	D	180
			Thru/Right	39.3	D	202.5
		NB	Left	24.5	C	40
			Thru	32.6	C	197.5
			Right	27.6	C	47.5
		SB	Left	24.8	C	72.5
			Thru	28.0	C	180
			Right	24.2	C	32.5
SR 471[4]	Roundabout	**Overall**	-	**6.0**	**A**	-
		EB	Left/Thru	6.0	A	31.2
			Thru	6.0	A	31.2
		WB	Thru	5.8	A	34.8
			Thru/Right	5.8	A	34.8
		SB	Left	6.9	A	12.9
			Right	6.5	A	6.0

1: Average Delay (Seconds/Vehicle)
2: Level of Service
3: 95th-percentile Queue Length (Feet)
4: Results from SIDRA Report
5: Results from HCM 6th Edition Report from Synchro

Table 6-8: Opening Year (2025) ICE Intersection Preferred Build Alternative PM Peak Hour Operations

US 98 Intersection	Intersection Type	Approach	Movement	Delay[1]	LOS[2]	95% Queue[3]
Big Cypress Boulevard[4]	Roundabout	**Overall**	-	**6.3**	**A**	-
		SEB	Thru	6.0	A	40.0
			Thru/Right	6.0	A	40.0
		NWB	Left/Thru	6.7	A	54.9
			Thru	6.6	A	54.9
		NEB	Left/Right	6.2	A	10.5
Rockridge Road[5]	Improved Traffic Signal	**Overall**	-	**30.8**	**C**	-
		EB	Left/Thru/Right	40.8	D	197.5
		WB	Left	37.2	D	125
			Thru/Right	41.8	D	150
		NB	Left	22.3	C	30
			Thru	29.6	C	207.5
			Right	31.1	C	200
		SB	Left	22.6	C	80
			Thru	26.7	C	200
			Right	22.5	C	37.5
SR 471[4]	Roundabout	**Overall**	-	**6.1**	**A**	-
		EB	Left/Thru	6.3	A	38.0
			Thru	6.3	A	38.0
		WB	Thru	5.4	A	37.9
			Thru/Right	5.4	A	37.9
		SB	Left	7.6	A	20.2
			Right	6.8	A	9.8

1: Average Delay (Seconds/Vehicle)
2: Level of Service
3: 95th-percentile Queue Length (Feet)
4: Results from SIDRA Report
5: Results from HCM 6th Edition Report from Synchro

SECTION 7 CONCLUSIONS AND RECOMMENDATIONS

As part of the US 98 PD&E Study, this Project Traffic Analysis Report documents the Existing Conditions Analysis, Historical Crash Review, No-Build/Build Traffic Forecasts, No-Build/Build Traffic Operations Analysis, and a predictive Safety Analysis. As described in this document, the Existing Conditions do not show current intersection LOS failures, but with forecasted traffic growth, intersection improvements and corridor widening will be needed before the project's design year (2045).

With a widening from two to four-lane typical section, an intersection and access management evaluation has been conducted to identify preferred intersection configurations and median treatments. The following US 98 study intersections are recommended to be constructed as a directional median opening:

- Pioneer Drive
- Little Cypress Drive
- Old Dade City Road

A Full Median Opening is recommended at the Lakeland Acres Road intersection. The CR 54 intersection has been recommended to be converted into a Traffic Signal by FDOT D7.

The following intersections were analyzed using the Intersection Control Evaluation (ICE) process. Their recommended configuration/control type is also stated.

- Big Cypress Boulevard (2x1 Roundabout)
- Rock Ridge Road (Improved Traffic Signal)
    - Adds a left-turn lane to westbound approach and modifies the signal to operate as Split-Phased
- SR 471 (2x1 Roundabout)

Based on the HSM safety analysis, the Build Alternative, which includes the intersection improvements described above and the widening from a 2-lane typical section to a 4-lane typical section, is anticipated to eliminate just over $90 million worth of crash-related costs when compared to the No-Build.

APPENDICES

Appendix A US 98 From W Socrum Loop Road to CR 54 Final Traffic Methodology Memorandum

Appendix B Raw Traffic Data

Appendix C Rock Ridge Road Signal Timing Plan

Appendix D Existing Year (2021) HCM 6th Edition Reports

Appendix E Raw Crash Data and Serious Crash Summaries

Appendix F US 98 Subarea Model Validation Technical Memorandum

Appendix G Polk County BEBR & Florida Traffic Online (FTO) Historical AADTs

Appendix H No-Build (2045) HCM 6th Edition Reports

Appendix I Build (2045) HCM 6th Edition Reports

Appendix J Supporting ICE Material

Appendix K Roadway Concepts

Appendix L Highway Safety Manual (HSM) Analysis Documentation

Appendix M No-Build (2025) HCM 6th Edition Reports

Appendix N Build (2025) HCM 6th Edition Reports

APPENDIX H

Right of Way Acquisition Cost Estimate

Summary of Right of Way cost data utilized in the preliminary Pond Siting Report with data provided by District One

FPID 436673-1
US 98 from North of West Socrum Loop Road to South of CR 54
Polk County

Preferred Pond and FPC Sites
23-Aug-21

Description	Area (ac)	Archaeological /Historical Impact Potential	Threatened or Endangered Species Impact Potential	Hazardous Materials & Contamination Potential	Wetland Mitigation Cost	Construction Cost	ROW Cost	Total Cost
Pond 1A	2.11	Low	Medium	None	$0	$493,355	$385,000	$878,355
Pond 2C-2	4.27	Low	Medium	None	$108,000	$491,426	$220,000	$819,426
Pond 2D-1	6.62	Low-Moderate	Medium	None	$17,625	$881,388	$445,000	$1,344,013
Pond 3D-1	3.47	Low	Medium	None	$17,957	$498,788	$315,000	$831,745
Pond 3D-2	8.03	Low	Medium	None	$272,384	$1,602,992	$410,000	$2,285,376
Pond 4C-2	6.83	Low	Medium	None	$52,800	$1,059,074	$420,000	$1,531,874
Pond 4D-1	4.20	Low	Medium	None	$336,899	$519,903	$275,000	$1,131,802
FPC 1B + Esmt	2.74	Low-Moderate	Low	None	$0	$164,877	$345,000	$509,877
FPC 2A	0.76	Low-Moderate	Low	None	$0	$36,172	$175,000	$211,172
FPC 3B	0.62	Low	High	None	$0	$24,144	$185,000	$209,144
FPC 4C + Esmt	4.27	Low	Medium	None	$211,400	$265,876	$400,000	$877,276
FPC 5B	3.28	Low-Moderate	Medium	None	$34,800	$210,503	$625,000	$870,303
FPC 6A	1.75	Low	Medium	None	$54,903	$122,202	$200,000	$377,105
FPC 6C	3.32	Low	Medium	None	$29,131	$293,674	$215,000	$537,805
FPC 7B	1.07	Low	Medium	None	$2,492	$81,186	$150,000	$233,678
FPC 8A	0.80	Low-Moderate	Medium	None	$5,268	$40,721	$140,000	$185,989
FPC 9A	1.19	Low	Medium	None	$166,044	$50,905	$155,000	$371,949
FPC 10A	0.63	Low	Medium	None	$0	$24,682	$100,000	$124,682
FPC 11A	0.87	Low	Medium	None	$2,400	$36,893	$110,000	$149,293
FPC 12A	0.65	Low	Medium	None	$20,400	$31,499	$125,000	$176,899
FPC 13A	1.14	Low	Low	None	$0	$54,510	$155,000	$209,510
Total	**58.6**				**$1,332,503**	**$6,984,770**	**$5,550,000**	**$13,867,273**

APPENDIX I

Adjacent Projects

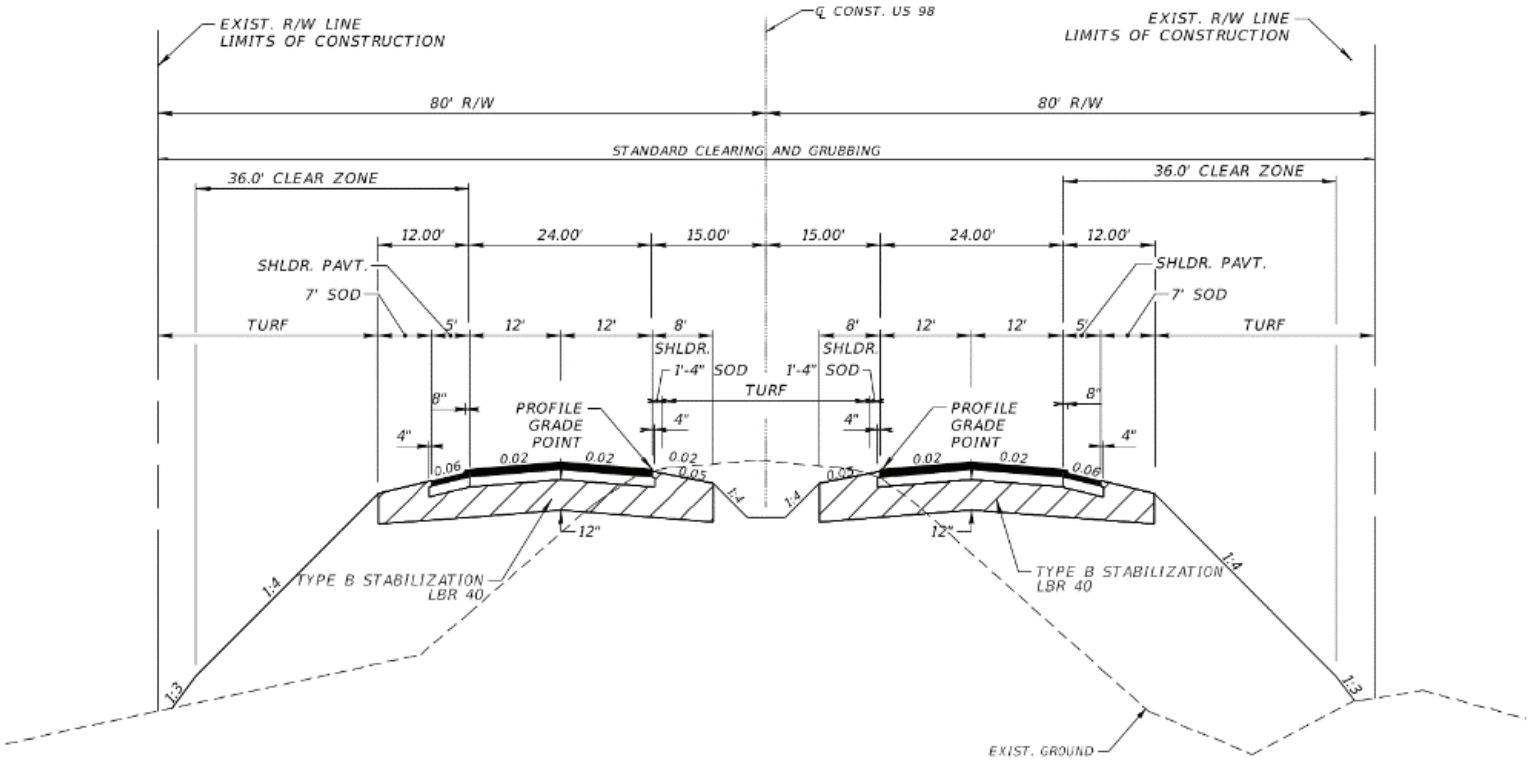


Figure 1-1 US 98 Widening Typical Roadway Section (Sta. 934+33 to 1203+78)

APPENDIX J

Highway Safety Manual Predictive Crash Analysis

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	Alex Bourne, PE	Roadway	US 98
Agency or Company	RS&H	Roadway Section	From Rockridge Road to Lakeland Acres Road
Date Performed	02/18/22	Jurisdiction	FDOT District One
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	2.26
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	28,500
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	30
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	6
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	3
Minor residential driveways (number)		--	21
Other driveways (number)		--	0
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	0.0
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	30
Calibration Factor, Cr		1.00	1.00

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	Alex Bourne, PE	Roadway	US 98
Agency or Company	RS&H	Roadway Section	From Lakeland Acres Road to SR 471
Date Performed	02/18/22	Jurisdiction	FDOT District One
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	2.84
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	29,500
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	30
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	1
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	2
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	10
Other driveways (number)		--	0
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	0.0
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	30
Calibration Factor, Cr		1.00	1.00

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	Alex Bourne, PE	Roadway	US 98
Agency or Company	RS&H	Roadway Section	From SR 471 to Old Dade City Road
Date Performed	02/18/22	Jurisdiction	FDOT District One
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	1.24
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	25,500
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	30
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	16
Other driveways (number)		--	0
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	0.0
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	30
Calibration Factor, Cr		1.00	1.00

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	Alex Bourne, PE	Roadway	US 98
Agency or Company	RS&H	Roadway Section	From Old Dade City Road to CR 54
Date Performed	02/18/22	Jurisdiction	FDOT District One
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	0.22
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	28,500
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	30
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	1
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	0
Other driveways (number)		--	0
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	0.0
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	30
Calibration Factor, Cr		1.00	1.00

Segment Crash Rates

Year	2045

US 98

	Segment 0	Segment_1	Segment_2	Segment_3	Segment_4	Segment_5	Segment_6	Segment_7	Segment_8
Year	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT
2020									
2021		14,500	13,500	11,500	13,000				
2022		15,000	14,000	12,000	13,500				
2023		15,500	15,000	12,500	14,500				
2024		16,500	15,500	13,500	15,000				
2025		17,000	16,000	14,000	15,500				
2026		17,500	17,000	14,500	16,000				
2027		18,000	17,500	15,000	17,000				
2028		18,500	18,000	15,500	17,500				
2029		19,000	19,000	16,000	18,000				
2030		20,000	19,500	17,000	19,000				
2031		20,500	20,000	17,500	19,500				
2032		21,000	21,000	18,000	20,000				
2033		21,500	21,500	18,500	21,000				
2034		22,000	22,000	19,000	21,500				
2035		22,500	23,000	19,500	22,000				
2036		23,500	23,500	20,500	22,500				
2037		24,000	24,000	21,000	23,500				
2038		24,500	25,000	21,500	24,000				
2039		25,000	25,500	22,000	24,500				
2040		25,500	26,000	22,500	25,500				
2041		26,000	27,000	23,000	26,000				
2042		27,000	27,500	24,000	26,500				
2043		27,500	28,000	24,500	27,000				
2044		28,000	29,000	25,000	28,000				
2045		28,500	29,500	25,500	28,500				
Annual	0	575	675	575	650	0	0	0	0

Cross Streets

	Max Approach	Max Approach	Max Approach	Max Approach	Max Approach	Max Approach	Max Approach	Max Approach
Year	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT
2020								
2021								
2022								
2023								
2024								
2025								
2026								
2027								
2028								
2029								
2030								
2031								
2032								
2033								
2034								
2035								
2036								
2037								
2038								
2039								
2040								
Annual	0	0	0	0	0	0	0	0

Worksheet 3A -- Predicted Crashes by Severity and Site Type and Observed Crashes Using the Site-Specific EB Method for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Collision type / Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes, $N_{observed}$** (crashes/year)	**Overdispersion Parameter, k**	**Weighted adjustment, w**	**Expected average crash frequency**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)			Equation A-5 from Part C Appendix	Equation A-4 from Part C Appendix
ROADWAY SEGMENTS							
Multiple-vehicle nondriveway							
Segment_1	11.085	3.034	8.051	0.000	1.320	0.064	0.709
Segment_2	14.599	3.986	10.612	0.000	1.320	0.049	0.720
Segment_3	5.228	1.443	3.785	0.000	1.320	0.127	0.662
Segment_4	1.079	0.295	0.784	0.000	1.320	0.412	0.445
Segment_5	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Segment_6	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Segment_7	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Segment_8	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Single-vehicle							
Segment_1	1.762	0.317	1.444	0.000	0.860	0.398	0.700
Segment_2	2.250	0.408	1.842	0.000	0.860	0.341	0.767
Segment_3	0.917	0.162	0.755	0.000	0.860	0.559	0.513
Segment_4	0.171	0.031	0.141	0.000	0.860	0.871	0.149
Segment_5	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Segment_6	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Segment_7	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Segment_8	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Multiple-vehicle driveway-related							
Segment_1	0.365	0.104	0.261	0.000	1.390	0.664	0.242
Segment_2	0.106	0.030	0.076	0.000	1.390	0.872	0.092
Segment_3	0.085	0.024	0.061	0.000	1.390	0.895	0.076
Segment_4	0.022	0.006	0.016	0.000	1.390	0.970	0.021
Segment_5	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Segment_6	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Segment_7	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Segment_8	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Segment Totals:	37.668	9.840	27.828	0.000			5.096
INTERSECTIONS							
Multiple-vehicle							
Intersection_1	0.000	0.000	0.000	0.000	0.390	1.000	0.000
Intersection_2	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection_3	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection_4	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection_5	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection_6	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection_7	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection_8	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Single-vehicle							
Intersection_1	0.000	0.000	0.000	0.000	0.360	1.000	0.000
Intersection_2	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection_3	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection_4	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection_5	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection_6	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection_7	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection_8	0.000	0.000	0.000	0.000	0.000	1.000	0.000
Intersection Totals:	0.000	0.000	0.000	0.000			0.000
COMBINED (sum of column)	37.668	9.840	27.828	0.000	--	--	5.096

Worksheet 3B -- Predicted Pedestrian and Bicycle Crashes for Urban and Suburban Arterials

(1)	(2)	(3)
Site Type	**N_{ped}**	**N_{bike}**
ROADWAY SEGMENTS		
Segment_1	0.251	0.066
Segment_2	0.322	0.085
Segment_3	0.118	0.031
Segment_4	0.024	0.006
Segment_5	0.000	0.000
Segment_6	0.000	0.000
Segment_7	0.000	0.000
Segment_8	0.000	0.000
INTERSECTIONS		
Intersection_1	0.000	0.000
Intersection_2	0.000	0.000
Intersection_3	0.000	0.000
Intersection_4	0.000	0.000
Intersection_5	0.000	0.000
Intersection_6	0.000	0.000
Intersection_7	0.000	0.000
Intersection_8	0.000	0.000
COMBINED (sum of column)	0.716	0.188

Worksheet 3C -- Site-Specific EB Method Summary Results for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)
Crash severity level	**$N_{predicted}$**	**N_{ped}**	**N_{bike}**	$N_{expected\ (VEHICLE)}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(8)_{COMB}$ Worksheet 3A	(3)+(4)+(5)
	37.668	0.716	0.188	5.096	6.001
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(5)_{TOTAL} * (2)_{FI} / (2)_{TOTAL}$	(3)+(4)+(5)
	9.840	0.716	0.188	1.331	2.235
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 3A	--	--	$(5)_{TOTAL} * (2)_{PDO} / (2)_{TOTAL}$	(3)+(4)+(5)
	27.828	0.000	0.000	3.765	3.765

Worksheet 4A -- Predicted Crashes by Collision and Site Type and Observed Crashes Using the Project-Level EB Method for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Collision type / Site type	**Predicted crashes**			**Observed crashes,**	**Overdispersion Parameter, k**	**$N_{predicted\ w0}$**	**$N_{predicted\ w1}$**	**W_0**	**N_0**	**w_1**	**N_1**	**$N_{expected/comb}$**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)	$N_{observed}$ (crashes/year)		Equation A-8 $(6)*(2)^2$	Equation A-9 sqrt((6)*(2))	Equation A-10	Equation A-11	Equation A-12	Equation A-13	Equation A-14
ROADWAY SEGMENTS												
Multiple-vehicle nondriveway												
Segment_1	11.085	3.034	8.051	--	1.320	162.193	3.825	--	--	--	--	--
Segment_2	14.599	3.986	10.612	--	1.320	281.314	4.390	--	--	--	--	--
Segment_3	5.228	1.443	3.785	--	1.320	36.080	2.627	--	--	--	--	--
Segment_4	1.079	0.295	0.784	--	1.320	1.537	1.193	--	--	--	--	--
Segment_5	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Segment_6	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Segment_7	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Segment_8	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Segment Totals:	31.991	8.758	23.232									
Single-vehicle												
Segment_1	1.762	0.317	1.444	--	0.860	2.669	1.231	--	--	--	--	--
Segment_2	2.250	0.408	1.842	--	0.860	4.354	1.391	--	--	--	--	--
Segment_3	0.917	0.162	0.755	--	0.860	0.724	0.888	--	--	--	--	--
Segment_4	0.171	0.031	0.141	--	0.860	0.025	0.384	--	--	--	--	--
Segment_5	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Segment_6	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Segment_7	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Segment_8	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Segment Totals:	5.100	0.918	4.183									
Multiple-vehicle driveway-related												
Segment_1	0.365	0.104	0.261	--	1.390	0.185	0.712	--	--	--	--	--
Segment_2	0.106	0.030	0.076	--	1.390	0.016	0.383	--	--	--	--	--
Segment_3	0.085	0.024	0.061	--	1.390	0.010	0.343	--	--	--	--	--
Segment_4	0.022	0.006	0.016	--	1.390	0.001	0.175	--	--	--	--	--
Segment_5	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Segment_6	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Segment_7	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Segment_8	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Segment Totals:	0.577	0.164	0.413									
INTERSECTIONS												
Multiple-vehicle												
Intersection_1	0.000	0.000	0.000	--	0.390	0.000	0.000	--	--	--	--	--
Intersection_2	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection_3	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection_4	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection_5	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection_6	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection_7	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection_8	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection Totals:	0.000	0.000	0.000									
Single-vehicle												
Intersection_1	0.000	0.000	0.000	--	0.360	0.000	0.000	--	--	--	--	--
Intersection_2	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection_3	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection_4	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection_5	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection_6	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection_7	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection_8	0.000	0.000	0.000	--	0.000	0.000	0.000	--	--	--	--	--
Intersection Totals:	0.000	0.000	0.000									
COMBINED (sum of column)	37.668	9.840	27.828	0	--	489.107	17.542	0.072	2.694	0.682	25.699	14.196

Worksheet 4B -- Predicted Pedestrian and Bicycle Crashes for Urban and Suburban Arterials

(1)	(2)	(3)
Site Type	**N_{ped}**	**N_{bike}**
ROADWAY SEGMENTS		
Segment_1	0.251	0.066
Segment_2	0.322	0.085
Segment_3	0.118	0.031
Segment_4	0.024	0.006
Segment_5	0.000	0.000
Segment_6	0.000	0.000
Segment_7	0.000	0.000
Segment_8	0.000	0.000
INTERSECTIONS		
Intersection_1	0.000	0.000
Intersection_2	0.000	0.000
Intersection_3	0.000	0.000
Intersection_4	0.000	0.000
Intersection_5	0.000	0.000
Intersection_6	0.000	0.000
Intersection_7	0.000	0.000
Intersection_8	0.000	0.000
COMBINED (sum of column)	0.716	0.188

Worksheet 4C -- Project-Specific EB Method Summary Results for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)
Crash severity level	**$N_{predicted}$**	**N_{ped}**	**N_{bike}**	$N_{expected\ (vehicle)}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 4A	$(2)_{COMB}$ from Worksheet 4B	$(3)_{COMB}$ from Worksheet 4B	$(13)_{COMB}$ Worksheet 4A	(3)+(4)+(5)
	37.668	0.716	0.188	14.196	15.101
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 4A	$(2)_{COMB}$ from Worksheet 4B	$(3)_{COMB}$ from Worksheet 4B	$(5)_{TOTAL} * (2)_{FI} / (2)_{TOTAL}$	(3)+(4)+(5)
	9.840	0.716	0.188	3.709	4.613
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 4A	--	--	$(5)_{TOTAL} * (2)_{PDO} / (2)_{TOTAL}$	(3)+(4)+(5)
	27.828	0.000	0.000	10.488	10.488

Criteria	Specification/Change	Most Applicable CMF #	CMF Rating	CMF Value	
Lane Width	From 12 feet to 11 feet	7825	☆☆☆	0.760	Urban, USA, 2-12 lanes
Median Width	From 22 feet to 30 feet	8704	☆☆☆	0.962	
Median Width	From 30 feet to 22 feet	Inverse of 8704	☆☆☆	1.039	
Side Slope	From 1:5 to 1:6	4620	N/A	0.970	Rural Minor Arterial (2 lane)
Front Slope	From 1:6 to 1:5	Inverse of 4620	N/A	1.031	
Back Slope	From 1:4 to 1:3				
Outside Shoulder Width (total) (ft)	Widen from 8' to 10'	8711	☆☆☆	0.924	
Outside Shoulder Width (total) (ft)	Narrow from 10' to 8'	Inverse of 8711	☆☆☆	1.082	

	Annual Number of Crashes		
Year	Site Specific ($N_{expected}$)	Fatal & Injury	PDO
2045	1.27	0.33	0.94

Build	Segment_4	Calculation			Transcription		
Year		Site Specific ($N_{expected}$)	Fatal & Injury	PDO	Site Specific ($N_{expected}$)	Fatal & Injury	PDO
2025		0.00	0.00	0.00	0.611	0.159	0.452
2026		0.00	0.00	0.00	0.634	0.165	0.469
2027		0.00	0.00	0.00	0.681	0.177	0.504
2028		0.00	0.00	0.00	0.705	0.184	0.521
2029		0.00	0.00	0.00	0.729	0.190	0.539
2030		0.00	0.00	0.00	0.777	0.203	0.574
2031		0.00	0.00	0.00	0.802	0.209	0.592
2032		0.00	0.00	0.00	0.827	0.216	0.611
2033		0.00	0.00	0.00	0.877	0.229	0.647
2034		0.00	0.00	0.00	0.902	0.236	0.666
2035		0.00	0.00	0.00	0.927	0.242	0.685
2036		0.00	0.00	0.00	0.953	0.249	0.704
2037		0.00	0.00	0.00	1.004	0.263	0.742
2038		0.00	0.00	0.00	1.030	0.270	0.761
2039		0.00	0.00	0.00	1.057	0.276	0.780
2040		0.00	0.00	0.00	1.110	0.290	0.819
2041		0.00	0.00	0.00	1.136	0.297	0.839
2042		0.00	0.00	0.00	1.163	0.304	0.859
2043		0.00	0.00	0.00	1.190	0.311	0.879
2044		0.00	0.00	0.00	1.245	0.325	0.920
2045		1.2725	0.3325	0.9400	1.272	0.332	0.940
				Total Lifecycle	**19.63**	**5.13**	**14.50**

Segment_4

# Crashes (2025-2045)	Fatal/Injury	PDO	Total
Segment_1	55.23	155.89	211.11
Segment_2	68.19	193.06	261.26
Segment_3	25.13	71.19	96.32
Segment_4	5.13	14.50	19.63
Total	**153.68**	**434.64**	**588.32**

Scenario	CMF	# Crashes (2025-2045)		
		Fatal/Injury	PDO	Total
Base Build	-	153.68	434.64	588.32
Alt A	0.76	116.80	330.33	447.13
Alt B	1.04	159.70	451.66	611.35
Alt C	1.08	166.28	470.28	636.56
Alt D	1.03	158.43	448.09	606.52
Alt E	no CMF	153.68	434.64	588.32

Scenario	Criteria	Specification/Change	CMF #	CMF Value	# Crashes (2025-2045)		
					Fatal/Injury	PDO	Total
Base Build	-	-	-	-	154	435	588
Alt A	Lane Width	From 12 feet to 11 feet	7825	0.760	117	330	447
Alt B	Median Width	From 30 feet to 22 feet	8704 (Inverse value)	1.039	160	452	611
Alt C	Outside Shoulder Width	Reduce from 10' to 8'	8711 (Inverse Value)	1.082	166	470	637
Alt D	Front Slope	From 1:6 to 1:5	4620 (Inverse value)	1.031	158	448	607
Alt E	Back Slope	From 1:4 to 1:3	No CMF available	N/A	154	435	588

	Annual Number of Crashes					
Year	Site Specific ($N_{expected}$)	Fatality	Incap.	Non-Inc.	Possible Injury	PDO
2025	13.21	0.11	0.61	1.88	3.09	7.54

HSM Crash Distribution for Florida						
Type Facility		K	A	B	C	O
Urban & Suburban Arterials	4-lane Divided	0.008	0.046	0.142	0.234	0.571

Rate of Return
2%

	K	A	B	C	O
Cost	$ 10,670,000.00	$ 872,612.00	$ 174,018.00	$ 106,215.00	$ 7,700.00

Segment_1

Build	Segment_1							Annual Cost						
Year		Site Specific ($N_{expected}$)	Fatality	Incap.	Non-Inc.	Possible Injury	PDO	Fatality	Incap.	Non-Inc.	Possible Injury	PDO	Total Cost	Present Value
2025		13.21	0.11	0.61	1.88	3.09	7.54	$1,127,712	$530,302	$326,457	$328,357	$58,086	$2,370,914	$2,147,410
2026		0.00	0.00	0.00	0.00	0.00	0.00							
2027		0.00	0.00	0.00	0.00	0.00	0.00							
2028		0.00	0.00	0.00	0.00	0.00	0.00							
2029		0.00	0.00	0.00	0.00	0.00	0.00							
2030		0.00	0.00	0.00	0.00	0.00	0.00							
2031		0.00	0.00	0.00	0.00	0.00	0.00							
2032		0.00	0.00	0.00	0.00	0.00	0.00							
2033		0.00	0.00	0.00	0.00	0.00	0.00							
2034		0.00	0.00	0.00	0.00	0.00	0.00							
2035		0.00	0.00	0.00	0.00	0.00	0.00							
2036		0.00	0.00	0.00	0.00	0.00	0.00							
2037		0.00	0.00	0.00	0.00	0.00	0.00							
2038		0.00	0.00	0.00	0.00	0.00	0.00							
2039		0.00	0.00	0.00	0.00	0.00	0.00							
2040		0.00	0.00	0.00	0.00	0.00	0.00							
2041		0.00	0.00	0.00	0.00	0.00	0.00							
2042		0.00	0.00	0.00	0.00	0.00	0.00							
2043		0.00	0.00	0.00	0.00	0.00	0.00							
2044		0.00	0.00	0.00	0.00	0.00	0.00							
2045		0.00	0.00	0.00	0.00	0.00	0.00							
													Segment_1	

	Present Value	
Base Build		YES
Alt A		YES
Alt B		YES
Alt C		YES
Alt D		YES
Alt E		YES

# Crashes	Fatal/Injury	PDO
Base Build		
Alt A		
Alt B		
Alt C		
Alt D		
Alt D		

https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/environment/pubs/pd-amp-e-studies-safety-analysisguidebook_-08222019.pdf?sfvrsn=7960a800_2

Project Design Variation Memorandum

To: Kevin S. Ingle, P.E.
District or Turnpike Design Engineer

Date: 7/12/22

Financial Project ID: 436673-1-52-01 New Const. ☑ RRR ☐

Federal Aid Number: _____

Project Name: SR 35 (US 98) From N of W Socrum Loop Rd to S of CR 54

State Road Number: SR 35 Co./Sec./Sub. 16210000

Begin Project MP: 8.676 End Project MP: 17.678

Request for: Design Variation

	Design Element	MP: Beg-End	Existing	Proposed	Required	Attr. Crashes	Approved	Denied	Addl. Docum.
1.	Front Slope	11.372-17.678	1:6	1:5	1:6	☐	☑	☐	☐
	Justification: FDM Table 215.2.3 requires 1:6 front slopes within the clear zone. There are areas along the corridor (Refer to Appendix C) where off-site drainage is collected within the Department right of way. The existing right of way width is constrained in these locations. A 1:5 front slope is proposed within these ranges to conserve right of way width while still accommodating the clear zone requirements.								
2.	Border Width	11.372-17.678	N/A	33 ft	40 ft	☐	☑	☐	☐
	Justification: FDM Table 210.7.1 requires a border width of 40-feet for a C2 Rural high speed arterial with flush shoulders. The proposed border width will be 33 ft due to the available width in the proposed typical section within the existing limited R/W.								
3.	N/A					☐	☐	☐	☐
	Justification:								
4.	N/A					☐	☐	☐	☐
	Justification:								

Design Element	MP: Beg-End	Existing	Proposed	Required	Attr. Crashes	Approved	Denied	Addl. Docum.
5. N/A					☐	☐	☐	☐
6. N/A					☐	☐	☐	☐

Justification: _____

Justification: _____

Appendices: Yes ☑ No ☐

Recommended by:

Nicholas S Ruiz Date: 2022.07.12 14:36:01-04'00' Date 7/12/2022

Name: *Nicholas S. Ruiz, P.E.*
Responsible Professional Engineer or Landscape Architect (Landscape-Only Projects)

NICHOLAS S. RUIZ
LICENSE
No. 86664
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Approvals:

_____ Date _____
Name:
District or Turnpike Traffic Operations Engineer

Kevin Ingle Digitally signed by Kevin Ingle DN: CN=Kevin Ingle, emQualifier=A01410D0000017EB57BF94E000538E7, OHFLORIDA DEPARTMENT OF TRANSPORTATION, C=US Date: 2022.07.14 15:46:45-04'00' Date 7/12/2022

Name: *Kevin S. Ingle, P.E.*
District or Turnpike Design Engineer

Appendix A – Project Description

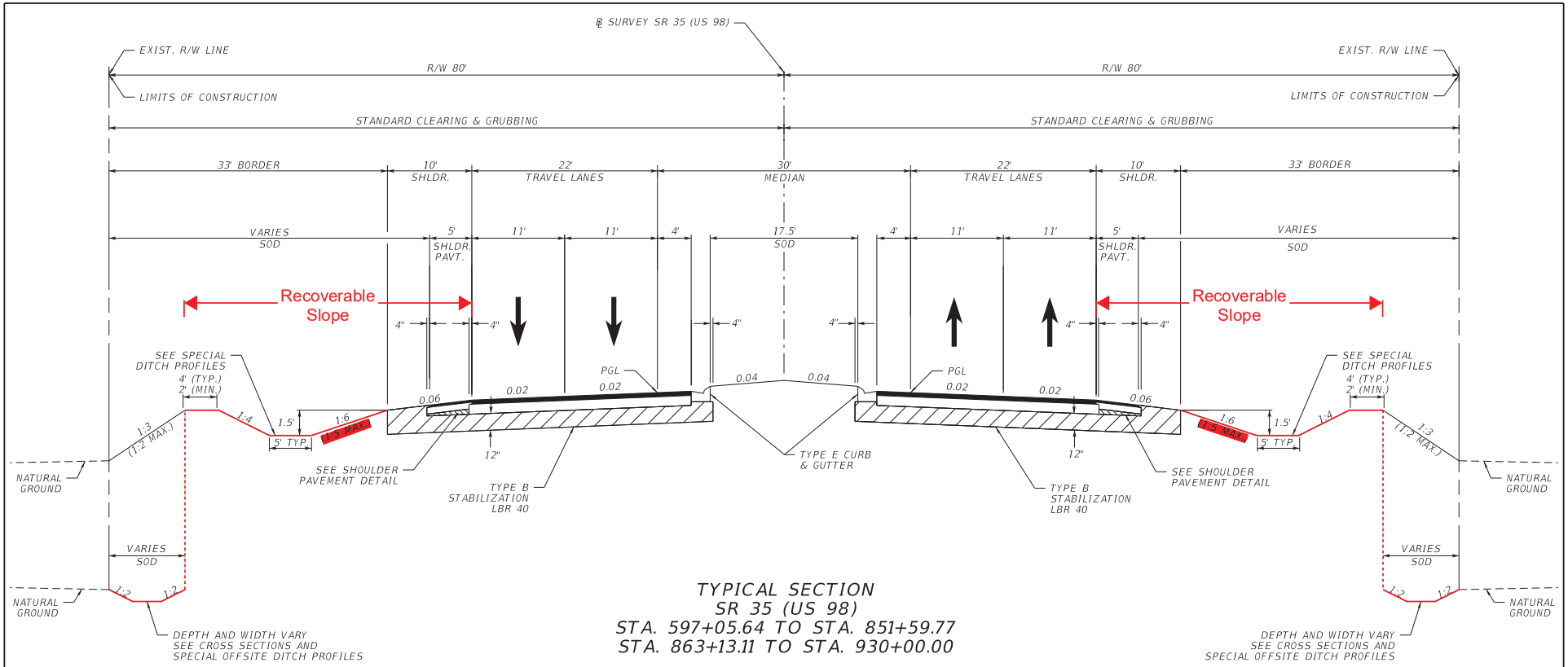
Project Description:

The scope of this project is to widen State Road 35 (US 98) from two lanes undivided to four lanes divided from north of West Socrum Loop (MP 8.676) to south of CR 54 (MP 17.678) in Polk County.

State Road 35 (US 98) has an existing context classification of C2-Rural throughout the entirety of the project corridor. The existing typical section within the project limits consists of a two-lane undivided highway with 12-foot travel lanes and 4-foot paved shoulders.

The proposed roadway will have functional classifications of C3R-Suburban Residential from 8.676 to MP 11.372 and C2-Rural from MP 11.372 to MP 17.678. A design speed of 45 mph is used in the C3R-Suburban Residential section, and a design speed of 55 mph is used in the C2-Rural section.

Appendix B – Typical Sections



TYPICAL SECTION
SR 35 (US 98)
STA. 597+05.64 TO STA. 851+59.77
STA. 863+13.11 TO STA. 930+00.00

Represents Section where 1:5 Front Slope is utilized

TRAVEL LANES, INSIDE SHOULDER PAVEMENT, & RIGHT TURN LANES

OPTIONAL BASE GROUP 11
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (2")
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (2 ½") (PG 76-22)
FRICTION COURSE FC-5 (¾") (PG 76-22)

OUTSIDE SHOULDER PAVEMENT

OPTIONAL BASE GROUP 2
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (2 ½") (PG 76-22)
FRICTION COURSE FC-5 (¾") (PG 76-22)

TRUCK BULB OUTS

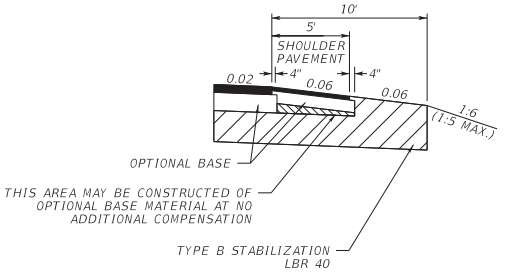
OPTIONAL BASE GROUP 2
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (2 ½") (PG 76-22)

INSIDE TURN LANES & CROSSOVERS

OPTIONAL BASE GROUP 11
TYPE SP STRUCTURAL COURSE (TRAFFIC E) (3")
FRICTION COURSE FC-12.5 (TRAFFIC E) (1 ½") (PG 76-22)

TRAFFIC DATA

CURRENT YEAR = 2021 AADT = 14,500
ESTIMATED OPENING YEAR = 2025 AADT = 17,400
ESTIMATED DESIGN YEAR = 2045 AADT = 32,000
K = 9.5% D = 52% T = 20% (24 HOUR)
DESIGN HOUR T = 10%
DESIGN SPEED = 55 MPH
POSTED SPEED = 55 MPH
TARGET SPEED = 55 MPH
CONTEXT CLASSIFICATION: C2



SHOULDER PAVEMENT DETAIL

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

AIM ENGINEERING & SURVEYING, INC.
201 EAST KENNEDY BOULEVARD,, STE. 1800
TAMPA, FLORIDA 33602
TELEPHONE (888) 627-4144
NICHOLAS S. RUIZ, P.E.
P.E. LICENSE NO. 86664

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 35	POLK	436673-1-52-01

TYPICAL SECTION

SHEET NO.

7/11/2022 3:41:11 PM nruiz
R:\Projects\D1_US98\Design\436673152O1\Roadway\TYPSRD01.dgn

Appendix C – 1:5 Front Slope Locations

A front slope value of 1:5 has been utilized at locations of off-site ditches where a dual ditch system is utilized. The ranges where the front slope does not satisfy the 1:6 criteria have been listed below in Table C-1 and Table C-2.

Table C-1 – 1:5 Front Slope Ranges (Left)

Station	to	Station	Side	Front Slope	Back Slope
599+00.00	to	604+00.00	LT.	1:5	1:4
615+00.00	to	654+00.00	LT.	1:5	1:4
664+00.00	to	707+20.00	LT.	1:5	1:4
713+00.00	to	725+00.00	LT.	1:5	1:4
734+00.00	to	740+00.00	LT.	1:5	1:4
747+00.00	to	765+00.00	LT.	1:5	1:4
850+80.00	to	868+00.00	LT.	1:5	1:4
882+40.00	to	889+00.00	LT.	1:5	1:4
896+00.00	to	930+00.00	LT.	1:5	1:4

Table C-2 – 1:5 Front Slope Ranges (Right)

Station	to	Station	Side	Front Slope	Back Slope
599+60.00	to	607+00.00	RT.	1:5	1:4
613+40.00	to	635+00.00	RT.	1:5	1:4
652+00.00	to	658+00.00	RT.	1:5	1:4
681+00.00	to	685+00.00	RT.	1:5	1:4
707+00.00	to	725+00.00	RT.	1:5	1:4
731+00.00	to	753+00.00	RT.	1:5	1:4
817+00.00	to	832+00.00	RT.	1:5	1:4
850+00.00	to	864+00.00	RT.	1:5	1:4

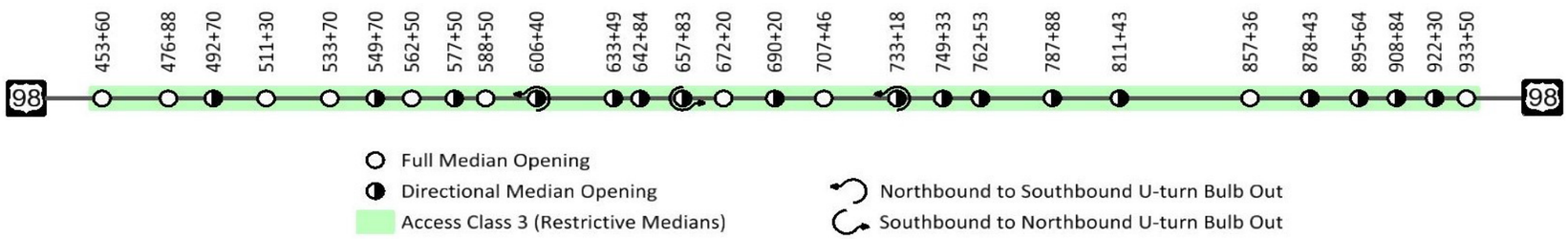
APPENDIX G

Access Management Plan

FPID 436673-1 US 98 PD&E Study
US 98 from North of W. Socrum Loop Road to South of CR 54
Access Management Plan
August 10, 2022

Access Class
Existing: 04
Proposed: 03

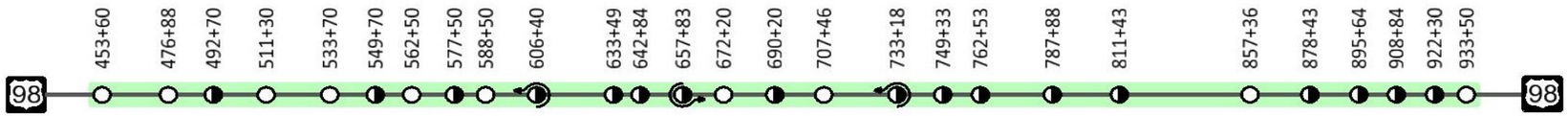
Rule 14-97 Minimum Spacing (ft)	
Directional Median Opening:	1,320
Full Median Opening:	2,640



Connection	Baseline of Survey Station	Proposed Median Opening Type	Directional Median Openings		Full Median Openings		Comments
			Proposed Directional Spacing (ft)	Distance Compared to Rule 14-97 (%)	Proposed Full Spacing (ft)	Distance Compared to Rule 14-97 (%)	
W. Socrum Loop Rd/Hall Rd	453+60	Full					Intersection geometry to be determined under FPID 436672-1.
					2,328	88.2%	
VFW Post 8002/Cell Tower Access	476+88	Full					SB US 98 vehicles will need to U-turn at W. Socrum Loop to access Central Florida Paintball.
			1,582	119.8%	3,442	130.4%	
Residential Driveway	492+70	SB Directional					
			1,860	140.9%			
Gator Creek Reserve	511+30	Full					Additional pavement added to accommodate NB to SB passenger vehicle U-turn.
					2,240	84.8%	
Big Cypress Blvd	533+70	Full					ICE analysis was conducted at this intersection: a roundabout has been selected as the preferred treatment.
			1,600	121.2%	5,480	207.6%	
Pioneer Dr	549+70	Dual Directional					Vehicles from Pioneer Dr will need to U-turn at Little Cypress Dr to travel south on US 98; additional pavement added to accommodate NB to SB passenger vehicle U-turn.
			1,280	97.0%			
Little Cypress Dr	562+50	NB Directional					ICE analysis was conducted at this intersection: a directional opening has been selected as the preferred treatment.
			1,500	113.6%			
Gator Creek RV Park	577+50	Dual Directional					Vehicles from Gator Creek will need to U-turn at Rock Ridge Rd to travel south on US 98; additional pavement added to accommodate NB to SB passenger vehicle U-turn.
			1,100	83.3%			
Rock Ridge Rd	588+50	Full					ICE analysis was conducted at this intersection: a traffic signal has been selected as the preferred treatment.
			1,790	135.6%	8,370	317.0%	
Earnest Rd	606+40	Dual Directional					**NB to SB U-turn bulb-out included at this location.** Vehicles from Earnest Rd will need to U-turn at Perkle Rd to travel south on US 98.
			2,709	205.2%			
Perkle Rd	633+49	Dual Directional					Additional pavement added to accommodate NB to SB passenger vehicle U-turn.
			935	70.8%			
Old Soldier Rd	642+84	NB Directional					Vehicles from Old Soldier Rd will need to U-turn at Perkle Rd to travel north on US 98.
			1,500	113.6%			
Residential Driveways	657+83	Dual Directional					**SB to NB U-turn bulb-out included at this location.** Additional pavement added to accommodate NB to SB passenger vehicle U-turn.
			1,437	108.9%			
Conibear RV Center	672+20	Full					Eliminates the need for large vehicles to make U-turns and avoids the need for bulb-outs.
			1,800	136.3%	3,526	133.6%	
Keen Rd	690+20	Dual Directional					Vehicles from Keene Rd vehicles will need to U-turn at the Conibear RV Center to travel north on US 98.
			1,727	130.8%			
Lakeland Acres Rd	707+46	Full					Additional pavement added to accommodate SB to NB passenger vehicle U-turn.
			2,571	194.8%			
Electric Substation	733+18	Dual Directional					**NB to SB U-turn bulb-out included at this location.**
			1,616	122.4%			

Access Class
Existing: 04
Proposed: 03

Rule 14-97 Minimum Spacing (ft)	
Directional Median Opening:	1,320
Full Median Opening:	2,640



Connection	Baseline of Survey Station	Proposed Median Opening Type	Directional Median Openings		Full Median Openings		Comments
			Proposed Directional Spacing (ft)	Distance Compared to Rule 14-97 (%)	Proposed Full Spacing (ft)	Distance Compared to Rule 14-97 (%)	
Residential Driveways	749+33	Dual Directional					Additional pavement added to accommodate SB to NB passenger vehicle U-turn.
			1,320	100.0%			
Residential Driveway	762+53	Dual Directional			14,990	567.8%	Additional pavement added to accommodate SB to NB passenger vehicle U-turn.
			2,534	192.0%			
Residential Driveway	787+88	Dual Directional					Additional pavement added to accommodate SB to NB passenger vehicle U-turn.
			2,355	178.4%			
Residential Driveway	811+43	Dual Directional					Additional pavement added to accommodate NB to SB passenger vehicle U-turn.
			4,594	348.0%			
SR 471	857+36	Full					ICE analysis was conducted at this intersection: a roundabout has been selected as the preferred treatment.
			2,107	159.6%			
Residential Driveways	878+43	Dual Directional*					See footnote.
			1,721	130.4%			
Residential Driveways	895+64	Dual Directional					Additional pavement added to accommodate NB to SB and SB to NB passenger vehicle U-turns.
			1,320	100.0%			
Residential Driveways	908+84	Dual Directional			7,614	288.4%	Additional pavement added to accommodate NB to SB passenger vehicle U-turn.
			1,346	102.0%			
Old Dade City Rd	922+30	Dual Directional					Passenger vehicles from Old Dade City Rd will need to U-turn at Sta. 908+84 to travel north on US 98; larger vehicles will need to U-turn at SR 471 to travel north on US 98. Additional pavement added to accommodate SB to NB passenger vehicle U-turn.
			1,120	84.8%			
CR 54	933+50	Full					Intersection geometry to be determined by FDOT District 7.
Average			**1,809**	**137.1%**	**5,999**	**227.2%**	

9 Full Median Openings (Average Spacing = 5,999 ft)
18 Directional Median Openings (Average Spacing = 1,809 ft)

**NB Directional at individual driveway & SB Directional at individual driveway. The distance between these two driveways is approximately 716 feet. Treated as a dual directional located at the midpoint of these two driveways.*

APPENDIX H

Utility Conflict Matrix

FPID 436673-1-52-01
UTILITY CONFLICT MATRIX
From N. of West Socrum Loop Road to S. of County Road 54 (Polk County)

Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
1	ZAYO	BFOC	454+17 - 454+57	55 LT.	CONFLICTS WITH PROP. DRAINAGE	RELOCATE
2	Frontier	PULL BOX	454+30	62.5 LT	CONFLICTS WITH PROP. DITCH GRADING	ADJUST TO FINAL GRADE
3	FRONTIER	BFOC	455+00	100 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
4	ZAYO	PULL BOX	456+92	60.5 LT.	BELOW PROPOSED GRADE	ADJUST TO FINAL GRADE
5	FRONTIER	BFOC	457+00 - 463+36	105 RT.	BT IS ABOVE PROPOSED GRADE	ADJUST TO FINAL GRADE
6	ZAYO	BFOC	459+06	47 LT.	CONFLICTS WITH PROP MULTIPOST	RELOCATE
7	LAKELAND ELECTRIC	DISTRIBUTION POLE	461+07	68 LT.	DITCH REGRADING	RELOCATE
8	ZAYO	BFOC	463+36	48 LT.	CONFLICTS WITH PROP. DRAINAGE	RELOCATE
9	FRONTIER	BFOC	463+36	40 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
10	FRONTIER	BFOC	463+36	102 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
11	FRONTIER	BFOC	463+97	39 LT.	CONFLICTS WITH TRENCH FOR PROP. INLET	RELOCATE
12	FRONTIER	PULL BOX	465+36	38.5 LT.	BETWEEN FRONT OF SUP AND BOC	RELOCATE
13	FRONTIER	BFOC	465+47	38 LT.	CONFLICTS WITH TRENCH FOR PROP. INLET	RELOCATE
14	LAKELAND ELECTRIC	DISTRIBUTION POLE	466+06	73 LT.	DITCH REGRADING	RELOCATE
15	FRONTIER	BFOC	467+97	39 LT.	CONFLICTS WITH TRENCH FOR PROP. INLET	RELOCATE
16	LAKELAND ELECTRIC	DISTRIBUTION POLE	468+80	70 LT.	DITCH REGRADING	RELOCATE
17	ZAYO	PULL BOX	469+04	42 LT.	BENEATH SUP	RELOCATE
18	FRONTIER	BT	469+80 - 476+48	36 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
19	LAKELAND ELECTRIC	DISTRIBUTION POLE	471+18	73 LT.	DITCH REGRADING	RELOCATE
20	ZAYO	BFOC	472+50	44 LT.	CONFLICTS WITH PROP. DRAINAGE	RELOCATE
21	FRONTIER	BFOC	472+52	33 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
22	FRONTIER	BT	472+52	37.8' RT	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
23	ZAYO	BFOC	473+50	38 LT.	CONFLICTS WITH PROP. DRAINAGE	RELOCATE
24	FRONTIER	BFOC	473+50	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
25	FRONTIER	BT	473+50	35.52' RT	CONFLICTS WITH TRENCH FOR PROP. PIPE & INLET	RELOCATE
26	ZAYO	BFOC	475+40	42 LT.	CONFLICTS WITH PROP. DRAINAGE	RELOCATE
27	FRONTIER	BFOC	475+40	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
28	FRONTIER	BT	475+40	37.40' RT	CONFLICTS WITH TRENCH FOR PROP. PIPE & INLET	RELOCATE
29	ZAYO	PULL BOX	475+64	40 LT.	BENEATH SUP	RELOCATE
30	FRONTIER	PULL BOX	475+88	31 LT	BENEATH TRAVEL LANE	RELOCATE
31	FRONTIER	BFOC	475+88	36 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
32	FRONTIER	BT	475+88	36.25' RT	CONFLICTS WITH TRENCH FOR PROP. PIPE & INLET	RELOCATE
33	FRONTIER		476+01	36 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
34	CHARTER	BFOC	476+02	37 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
35	FRONTIER	BFOC	477+00 - 482+30	75 LT.	BFOC IS ABOVE PROPOSED GRADE AND CONFLICTS WITH SIDE DRAINS	ADJUST TO FINAL GRADE
36	FRONTIER	BFOC	477+00 - 482+30	71 LT.	BFOC IS ABOVE PROPOSED GRADE AND CONFLICTS WITH SIDE DRAINS	ADJUST TO FINAL GRADE
37	CITY OF LAKELAND	BE	478+50 - 478+60	80 LT.	CONFLICTS WITH PROP. DITCH	RELOCATE
38	LAKELAND ELECTRIC	DISTRIBUTION POLE	478+61	74 LT.	DITCH REGRADING	RELOCATE
39	FRONTIER	BFOC	479+00	30 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
40	FRONTIER	BFOC	480+90	29 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
41	LAKELAND ELECTRIC	DISTRIBUTION POLE	481+15	73 LT.	DITCH REGRADING	RELOCATE
42	FRONTIER	BFOC	482+30 - 509+60	75 LT.	BT IS LESS THAN 2ft BELOW PROPOSED GRADE (BOTTOM OF DITCH) MUCH OF THE SPAN BFOC IS UP TO .5 FT FROM PROP GRADE AND CONFLICTS WITH SIDE DRAINS	RELOCATE OR PROTECT
43	FRONTIER	BFOC	482+30 - 509+60	71 LT.	BT IS LESS THAN 2ft BELOW PROPOSED GRADE (BOTTOM OF DITCH) MUCH OF THE SPAN BFOC IS UP TO .5 FT FROM PROP GRADE AND CONFLICTS WITH SIDE DRAINS	RELOCATE OR PROTECT
44	FRONTIER	BFOC	482+90 to 483+35	66.85' LT	CONFLICTS WITH TRENCH FOR PROP. PIPE	RELOCATE

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From N. of West Socrum Loop Road to S. of County Road 54 (Polk County)

Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
45	CITY OF LAKELAND	BE	483+45 - 483+67	77 LT.	CONFLICTS WITH PROP. DITCH	RELOCATE
46	CITY OF LAKELAND	BCATV	483+60 - 483+6	80 LT.	CONFLICTS WITH PROP. DITCH	RELOCATE
47	LAKELAND ELECTRIC	DISTRIBUTION POLE	483+68	73 LT.	DITCH REGRADING	RELOCATE
48	FRONTIER	BFOC	484+80 to 485+20	65.32' & 69.40' LT	CONFLICTS WITH TRENCH FOR PROP. PIPE	RELOCATE
49	LAKELAND ELECTRIC	DISTRIBUTION POLE	486+09	72 LT.	DITCH REGRADING	RELOCATE
50	FRONTIER	BFOC	487+00	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
51	FRONTIER	BFOC	487+35 to 488+80	65.11' & 72.35' LT	CONFLICTS WITH TRENCH FOR PROP. PIPE	RELOCATE
52	LAKELAND ELECTRIC	DISTRIBUTION POLE	488+62	72 LT.	DITCH REGRADING	RELOCATE
53	FRONTIER	BFOC	489+64	35 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
54	FRONTIER	BFOC	490+05 to 490+60	67.84' & 71.57' LT	CONFLICTS WITH TRENCH FOR PROP. PIPE	RELOCATE
55	FRONTIER	BFOC	490+60	37 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
56	LAKELAND ELECTRIC	DISTRIBUTION POLE	491+17	73 LT.	DITCH REGRADING	RELOCATE
57	LAKELAND ELECTRIC	DISTRIBUTION POLE	493+74	73 LT.	DITCH REGRADING	RELOCATE
58	FRONTIER	BFOC	494+00	40 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
59	FRONTIER	BT	494+11 - 509+58	38 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
60	FRONTIER	BFOC	494+90	39 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
61	LAKELAND ELECTRIC	DISTRIBUTION POLE	496+11	73 LT.	DITCH REGRADING	RELOCATE
62	FRONTIER	Manhole	498+42	42.5 LT.	BENEATH SUP	RELOCATE
63	LAKELAND ELECTRIC	DISTRIBUTION POLE	498+66	72 LT.	DITCH REGRADING	RELOCATE
64	FRONTIER	BFOC	498+90	40.40' LT	CONFLICTS WITH TRENCH FOR PROP. PIPE	RELOCATE
65	FRONTIER	BT	499+50	38.22' RT	CONFLICTS WITH TRENCH FOR PROP. PIPE	RELOCATE
66	FRONTIER	BFOC	499+51	41 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
67	LAKELAND ELECTRIC	DISTRIBUTION POLE	501+18	72 LT.	DITCH REGRADING	RELOCATE
68	FRONTIER	BT	502+50 to 505+00	38.00' RT	CONFLICTS WITH TRENCH FOR PROP. PIPE & INLET	RELOCATE
69	LAKELAND ELECTRIC	DISTRIBUTION POLE	503+73	72 LT.	DITCH REGRADING	RELOCATE
70	FRONTIER	BT	505+00 to 509+50	40.00' RT	CONFLICTS WITH TRENCH FOR PROP. PIPE & INLET	RELOCATE
71	LAKELAND ELECTRIC	DISTRIBUTION POLE	506+30	72 LT.	DITCH REGRADING	RELOCATE
72	FRONTIER	BFOC	506+50	40.29' LT	CONFLICTS WITH TRENCH FOR PROP. PIPE	RELOCATE
73	FRONTIER	BT	506+50	39.64' RT	CONFLICTS WITH TRENCH FOR PROP. PIPE	RELOCATE
74	FRONTIER	Pull BOX	507+41	43 LT.	BENEATH SUP	RELOCATE
75	LAKELAND ELECTRIC	DISTRIBUTION POLE	508+76	72 LT.	DITCH REGRADING	RELOCATE
76	FRONTIER	BFOC	509+50	41 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
77	FRONTIER	BFOC	514+50	41 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
78	FRONTIER	BT	514+50 - 533+81	36 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
79	FRONTIER	Pull BOX	516+41	40 LT.	BENEATH SUP	RELOCATE
80	FRONTIER	BFOC	519+50	39 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
81	LAKELAND ELECTRIC	DISTRIBUTION POLE	522+11	70 LT.	DITCH REGRADING	RELOCATE
82	FRONTIER	BFOC	524+00	40 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
83	FRONTIER	BFOC	524+50	40 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
84	FRONTIER	Pull BOX	525+42	40 LT.	BENEATH SUP	RELOCATE
85	FRONTIER	BFOC	526+00	41 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
86	LAKELAND ELECTRIC	DISTRIBUTION POLE	526+53	72 LT.	DITCH REGRADING	RELOCATE
87	LAKELAND ELECTRIC	DISTRIBUTION POLE	528+94	72 LT.	DITCH REGRADING	RELOCATE
88	FRONTIER	BFOC	531+06	70 LT.	CONFLICTS WITH LIGHTPOLE FOUNDATION	RELOCATE
89	FRONTIER	BFOC	531+06	63 LT.	CONFLICTS WITH LIGHTPOLE FOUNDATION	RELOCATE
90	LAKELAND ELECTRIC	DISTRIBUTION POLE	532+07	70 LT.	DITCH REGRADING	RELOCATE
91	FRONTIER	BFOC	533+19	54.05' LT	CONFLICTS WITH TRENCH FOR PROP. PIPE	RELOCATE
92	FRONTIER	BT	533+88	76 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
93	FRONTIER	Manhole	534+39	52 LT.	BETWEEN FRONT OF SUP AND BOC	RELOCATE
94	LAKELAND ELECTRIC	DISTRIBUTION POLE	534+61	71 LT.	DITCH REGRADING	RELOCATE

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95	FRONTIER	BT	535+78 - 575+00	37 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
96	LAKELAND ELECTRIC	DISTRIBUTION POLE	537+62	73 LT.	EMBANKMENT	PROTECT
97	LAKELAND ELECTRIC	DISTRIBUTION POLE	540+22	74 LT.	EMBANKMENT	PROTECT
98	LAKELAND ELECTRIC	DISTRIBUTION POLE	542+75	71 LT.	DITCH REGRADING	RELOCATE
99	FRONTIER	Pull BOX	544+74	43 LT.	BENEATH SUP	RELOCATE
100	LAKELAND ELECTRIC	DISTRIBUTION POLE	545+38	70 LT.	DITCH REGRADING	RELOCATE
101	LAKELAND ELECTRIC	DISTRIBUTION POLE	548+10	70 LT.	DITCH REGRADING	RELOCATE
102	LAKELAND ELECTRIC	DISTRIBUTION POLE	549+59	80 RT.	EMBANKMENT	PROTECT
103	FRONTIER	BFOC	550+00	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
104	FRONTIER	BT	550+00	60 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
105	LAKELAND ELECTRIC	DISTRIBUTION POLE	550+57	69 LT.	DITCH REGRADING	RELOCATE
106	FRONTIER	BFOC	551+30	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
107	FRONTIER	BT	551+30	60 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
108	FRONTIER	BFOC	552+50	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
109	FRONTIER	BT	552+50	58 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
110	FRONTIER	BFOC	553+40	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
111	FRONTIER	BT	553+40	59 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
112	LAKELAND ELECTRIC	DISTRIBUTION POLE	553+45	72 LT.	DITCH REGRADING	RELOCATE
113	LAKELAND ELECTRIC	DISTRIBUTION POLE	555+44 - 561+98	65 RT	OVERHEAD CONFLICT AT NOISE WALL	PROTECT
114	LAKELAND ELECTRIC	DISTRIBUTION POLE	556+19	72 LT.	DITCH REGRADING	RELOCATE
115	FRONTIER	BT	556+80	59 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
116	FRONTIER	BFOC	557+50	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
117	FRONTIER	BT	557+50	59 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
118	FRONTIER	BFOC	558+40	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
119	LAKELAND ELECTRIC	DISTRIBUTION POLE	558+99	72 LT.	DITCH REGRADING	RELOCATE
120	FRONTIER	BFOC	559+35	45 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
121	LAKELAND ELECTRIC	DISTRIBUTION POLE	561+65	70 LT.	DITCH REGRADING	RELOCATE
122	FRONTIER	Pull BOX	563+47	67 LT.	BELOW PROPOSED GRADE	ADJUST TO FINAL GRADE
123	CHARTER	JUNCTION BOX/SERVICE CABINET	564+40	74 LT.	ADJUSTING TO FINAL GRADE WOULD PUT BOX AND METER AT THE BOTTOM OF DITCH	RELOCATE
124	Duke Energy (Transmission)	METER ELECTRIC	564+43	74 LT.	ADJUSTING TO FINAL GRADE WOULD PUT BOX AND METER AT THE BOTTOM OF DITCH	RELOCATE
125	LAKELAND ELECTRIC	DISTRIBUTION POLE	564+47	70 LT.	DITCH REGRADING	RELOCATE
126	CHARTER	BCTAV	564+47 - 564+58	76 LT.	CONFLICTS WITH DITCH	RELOCATE
127	LAKELAND ELECTRIC	DISTRIBUTION POLE	566+97	72 LT.	DITCH REGRADING	RELOCATE
128	LAKELAND ELECTRIC	DISTRIBUTION POLE	569+76	72 LT.	EMBANKMENT	PROTECT
129	LAKELAND ELECTRIC	DISTRIBUTION POLE	572+40	75 LT.	EMBANKMENT	PROTECT
130	LAKELAND ELECTRIC	DISTRIBUTION POLE	575+11	72 LT.	EMBANKMENT	PROTECT
131	LAKELAND ELECTRIC	DISTRIBUTION POLE	576+70	70 RT	OVERHEAD CONFLICT AT NOISE WALL	PROTECT
132	LAKELAND ELECTRIC	DISTRIBUTION POLE	577+74	73 LT.	EMBANKMENT	PROTECT
133	FRONTIER	BFOC	580+00	61 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
134	FRONTIER	BT	580+00	37 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
135	FRONTIER	BT	580+15 - 582+35	38 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
136	LAKELAND ELECTRIC	DISTRIBUTION POLE	580+34	72 LT.	EMBANKMENT	PROTECT
137	LAKELAND ELECTRIC	DISTRIBUTION POLE	582+73	78 RT.	EMBANKMENT	PROTECT
138	LAKELAND ELECTRIC	DISTRIBUTION POLE	583+21	72 LT.	EMBANKMENT	RELOCATE
139	FRONTIER	BT	583+80	38 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
140	LAKELAND ELECTRIC	DISTRIBUTION POLE	585+49	72 LT.	EMBANKMENT	PROTECT
141	FRONTIER	BT	585+50	38 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
142	FRONTIER	BT	587+00	38 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE

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143	POLK COUNTY	BE	587+24	48 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
144	LAKELAND ELECTRIC	DISTRIBUTION POLE	587+28	65 RT.	IN SIDEWALK	PROTECT
145	TECO People's Gas	GAS, 12" COATED STEEL (GM)	587+33	47 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
146	TECO People's Gas	GAS, 12" COATED STEEL (GM)	587+46	46 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
147	POLK COUNTY	PULL BOX	587+51	73 RT.	BELOW PROPOSED GRADE	ADJUST TO FINAL GRADE
148	POLK COUNTY	PULL BOX	587+53	74 RT.	BELOW PROPOSED GRADE	ADJUST TO FINAL GRADE
149	LAKELAND ELECTRIC	DISTRIBUTION POLE	587+62	72 LT.	EMBANKMENT	PROTECT
150	POLK COUNTY	BE	588+17	76 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
151	FRONTIER	MANHOLE TELEPHONE	588+21	54.5 LT.	BENEATH TRAVEL LANE	RELOCATE
152	FRONTIER	BT	588+22 - 595+70	37 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
153	POLK COUNTY	PULL BOX	588+31	54 LT.	BETWEEN FRONT OF SUP AND BOC	RELOCATE
154	POLK COUNTY	PULL BOX	588+32	53 LT.	BETWEEN FRONT OF SUP AND BOC	RELOCATE
155	FRONTIER	Pull BOX	588+35	67 RT.	BENEATH SUP	RELOCATE
156	FRONTIER	BFOC	588+36	42 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
157	FRONTIER / (UNITI FIBER MAYBE)	PULL BOX	588+39	53 LT.	BETWEEN FRONT OF SUP AND BOC	RELOCATE
158	LAKELAND ELECTRIC	DISTRIBUTION POLE	589+94	67 LT.	DITCH REGRADING	RELOCATE
159	FRONTIER	BFOC	590+00	52 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
160	FRONTIER	BFOC	590+35	58 LT.	CONFLICTS WITH TRENCH FOR PROP. MANHOLE	RELOCATE
161	FRONTIER	BFOC	590+80 - 591+89	49 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
162	FRONTIER	BFOC	591+00	51 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
163	LAKELAND ELECTRIC	DISTRIBUTION POLE	591+85	64 LT.	DITCH REGRADING	RELOCATE
164	FRONTIER	BT	591+88	70 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
165	LAKELAND ELECTRIC	DISTRIBUTION POLE	592+44	65 LT.	DITCH REGRADING	RELOCATE
166	FRONTIER	BT	592+50	36 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
167	FRONTIER	BFOC	593+60	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
168	FRONTIER	BT	593+60	36 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
169	FRONTIER	BFOC	595+00	30 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
170	FRONTIER	BFOC	595+00	37 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
171	FRONTIER	BT	595+00	35 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
172	FRONTIER	BT	595+00	39 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
173	FRONTIER	BFOC	597+50	30 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
174	FRONTIER	BT	597+50	37 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
175	FRONTIER	BFOC	597+50	40 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
176	FRONTIER	BT	597+50	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
177	FRONTIER	BT	597+50	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
178	FRONTIER	BT	597+50	69 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
179	FRONTIER	BFOC	597+50	77 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
180	FRONTIER	BT	597+50	70 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
181	FRONTIER	BT	597+50	68 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
182	TECO People's Gas	GAS, 12" COATED STEEL (GM)	597+50 to 599+00	56 RT.	P-331	RELOCATE
183	LAKELAND ELECTRIC	DISTRIBUTION POLE	598+58	72 RT.	EMBANKMENT	RELOCATE
184	FRONTIER	BT	599+00	70 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
185	FRONTIER	BFOC	599+00	76 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
186	FRONTIER	BT	599+00	71 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
187	FRONTIER	BT	599+00	67 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
188	TECO People's Gas	GAS, 12" COATED STEEL (GM)	599+00 to 601+40	56 RT.	P-333	RELOCATE
189	LAKELAND ELECTRIC	DISTRIBUTION POLE	600+36	73 RT	DITCH REGRADING	RELOCATE
190	FRONTIER	BFOC	601+40	30 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
191	FRONTIER	BT	601+40	39 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
192	FRONTIER	BFOC	601+40	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE

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193	FRONTIER	BT	601+40	36 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
194	FRONTIER	BT	601+40	45 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
195	TECO People's Gas	GAS, 12" COATED STEEL (GM)	601+40 to 604+40	57 RT.	P-335	RELOCATE
196	LAKELAND ELECTRIC	DISTRIBUTION POLE	602+37	75 RT	DITCH REGRADING	RELOCATE
197	FRONTIER	BFOC	604+40	30 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
198	FRONTIER	BT	604+40	39 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
199	FRONTIER	BFOC	604+40	39 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
200	FRONTIER	BT	604+40	36 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
201	FRONTIER	BT	604+40	45 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
202	TECO People's Gas	GAS, 12" COATED STEEL (GM)	604+40 to 607+00	59 RT.	P-337	RELOCATE
203	FRONTIER / UNITI FIBER	PULL BOX	604+47	38 LT.	BENEATH TRAVEL LANE	RELOCATE
204	LAKELAND ELECTRIC	DISTRIBUTION POLE	604+49	74 RT	DITCH REGRADING	RELOCATE
205	FRONTIER	BFOC	606+00 - 606+60	77 RT.	CONFLICTS WITH TRENCH FOR PROP. SIDE DRAIN	RELOCATE
206	LAKELAND ELECTRIC	DISTRIBUTION POLE	606+55	73 RT	DITCH REGRADING	RELOCATE
207	FRONTIER	BFOC	607+00	29 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
208	FRONTIER	BT	607+00	35 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
209	FRONTIER	BFOC	607+00	23 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
210	FRONTIER	BT	607+00	34 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
211	FRONTIER	BT	607+00	40 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
212	TECO People's Gas	GAS, 12" COATED STEEL (GM)	607+00 to 609+10	58 RT.	P-339	RELOCATE
213	FRONTIER	BFOC	607+37	59 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
214	LAKELAND ELECTRIC	DISTRIBUTION POLE	608+87	74 RT	DITCH REGRADING	RELOCATE
215	TECO People's Gas	GAS, 12" COATED STEEL (GM)	609+10 to 612+10	55 RT.	P-340	RELOCATE
216	LAKELAND ELECTRIC	DISTRIBUTION POLE	611+13	74 RT	DITCH REGRADING	RELOCATE
217	TECO People's Gas	GAS, 12" COATED STEEL (GM)	612+10 to 615+10	58 RT.	P-341	RELOCATE
218	LAKELAND ELECTRIC	DISTRIBUTION POLE	613+31	75 RT	DITCH REGRADING	RELOCATE
219	LAKELAND ELECTRIC	DISTRIBUTION POLE	613+40	74 RT	DITCH REGRADING	RELOCATE
220	FRONTIER	BFOC	615+10	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
221	FRONTIER	BT	615+10	39 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
222	FRONTIER	BFOC	615+10	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
223	FRONTIER	BT	615+10	38 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
224	FRONTIER	BT	615+10	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
225	TECO People's Gas	GAS, 12" COATED STEEL (GM)	615+10 to 618+10	57 RT.	P-343	RELOCATE
226	LAKELAND ELECTRIC	DISTRIBUTION POLE	615+62	74 RT	DITCH REGRADING	RELOCATE
227	TECO People's Gas	GAS, 12" COATED STEEL (GM)	618+10 to 621+00	57 RT.	P-344	RELOCATE
228	LAKELAND ELECTRIC	DISTRIBUTION POLE	618+23	75 RT	DITCH REGRADING	RELOCATE
229	FRONTIER	PULL BOX	618+42	30 LT.	BENEATH TRAVEL LANE	RELOCATE
230	FRONTIER / (UNITI FIBER MAYBE)	PULL BOX	619+84	36 LT.	BENEATH TRAVEL LANE	RELOCATE
231	LAKELAND ELECTRIC	DISTRIBUTION POLE	620+80	74 RT	DITCH REGRADING	RELOCATE
232	TECO People's Gas	GAS, 12" COATED STEEL (GM)	621+00 to 622+80	57 RT.	P-345	RELOCATE
233	FRONTIER	BT	622+80	38 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
234	TECO People's Gas	GAS, 12" COATED STEEL (GM)	622+80 to 625+80	54 RT.	P-348	RELOCATE
235	LAKELAND ELECTRIC	DISTRIBUTION POLE	623+38	76 RT	DITCH REGRADING	RELOCATE
236	FRONTIER	BT	624+50	36 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
237	FRONTIER	BFOC	625+00	26 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
238	FRONTIER	BT	625+00	37 RT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
239	FRONTIER	BFOC	625+00	42 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
240	FRONTIER	BT	625+00	34 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
241	FRONTIER	BT	625+00	33 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
242	TECO People's Gas	GAS, 12" COATED STEEL (GM)	625+80 to 628+18	56 RT.	P-351	RELOCATE

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UTILITY CONFLICT MATRIX
From N. of West Socrum Loop Road to S. of County Road 54 (Polk County)

Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
243	LAKELAND ELECTRIC	DISTRIBUTION POLE	626+96	73 RT	DITCH REGRADING	RELOCATE
244	TECO People's Gas	GAS, 12" COATED STEEL (GM)	628+18 to 630+35	57 RT.	P-352	RELOCATE
245	LAKELAND ELECTRIC	DISTRIBUTION POLE	629+09	77 RT	DITCH REGRADING	RELOCATE
246	FRONTIER	BT	630+34	37 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
247	LAKELAND ELECTRIC	DISTRIBUTION POLE	631+32	78 RT	DITCH REGRADING	RELOCATE
248	LAKELAND ELECTRIC	DISTRIBUTION POLE	633+03	79 RT	DITCH REGRADING	PROTECT
249	LAKELAND ELECTRIC	GUY WIRE POLE	633+29	76 RT.	DITCH REGRADING	RELOCATE
250	LAKELAND ELECTRIC	DISTRIBUTION POLE	634+16	72 RT	CONFLICTS WITH ROADWAY CONSTRUCTION	RELOCATE
251	LAKELAND ELECTRIC	DISTRIBUTION POLE	634+25	82 RT	CONFLICTS WITH ROADWAY CONSTRUCTION	RELOCATE
252	LAKELAND ELECTRIC	DISTRIBUTION POLE	634+37	88 RT	CONFLICTS WITH ROADWAY CONSTRUCTION	RELOCATE
253	FRONTIER / UNITI FIBER	PULL BOX	634+85	37 LT.	BENEATH TRAVEL LANE	RELOCATE
254	FRONTIER	BT	634+97	37 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
255	TECO People's Gas	GAS, 12" COATED STEEL (GM)	635+00 to 637+20	57 RT.	P-401	RELOCATE
256	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	636+65	73 RT	DITCH REGRADING	RELOCATE
257	FRONTIER	BT	637+20	38 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
258	TECO People's Gas	GAS, 12" COATED STEEL (GM)	637+20 to 638+75	59 RT.	P-404	RELOCATE
259	FRONTIER	BT	638+75	38 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
260	TECO People's Gas	GAS, 12" COATED STEEL (GM)	638+75 to 641+50	60 RT.	P-407	RELOCATE
261	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	640+60	73 RT	DITCH REGRADING	RELOCATE
262	FRONTIER	BT	641+50	38 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
263	TECO People's Gas	GAS, 12" COATED STEEL (GM)	641+50 to 642+20	55 RT.	P-409	RELOCATE
264	FRONTIER	BT	642+20	38 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
265	TECO People's Gas	GAS, 12" COATED STEEL (GM)	642+20 to 644+70	57 RT.	P-413	RELOCATE
266	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	644+62	73 RT	DITCH REGRADING	PROTECT
267	TECO People's Gas	GAS, 12" COATED STEEL (GM)	644+70 to 647+70	57 RT.	P-414	RELOCATE
268	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	645+83	73 RT	DITCH REGRADING	PROTECT
269	TECO People's Gas	GAS, 12" COATED STEEL (GM)	647+70 to 650+70	57 RT.	P-416	RELOCATE
270	FRONTIER	PULL BOX	648+34	29 LT.	BENEATH TRAVEL LANE	RELOCATE
271	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	648+87	73 RT	DITCH REGRADING	PROTECT
272	UNITI FIBER	PULL BOX	649+74	43 LT.	BENEATH SHOULDER	RELOCATE
273	TECO People's Gas	GAS, 12" COATED STEEL (GM)	650+70 to 653+70	55 RT.	P-418	RELOCATE
274	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	653+05	72 RT	DITCH REGRADING	RELOCATE
275	TECO People's Gas	GAS, 12" COATED STEEL (GM)	653+70 to 656+70	56 RT.	P-422	RELOCATE
276	UNITI FIBER	BFOC	655+00	37 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
277	FRONTIER	BFOC	655+00	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
278	FRONTIER	BT	655+00	38 RT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
279	FRONTIER	BT	655+00	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
280	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	656+11	72 RT	DITCH REGRADING	RELOCATE
281	TECO People's Gas	GAS, 12" COATED STEEL (GM)	656+70 to 658+30	55 RT.	P-423	RELOCATE
282	TECO People's Gas	GAS, 12" COATED STEEL (GM)	658+30 to 661+00	59 RT.	P-424	RELOCATE
283	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	660+04	72 RT	DITCH REGRADING	RELOCATE
284	TECO People's Gas	GAS, 12" COATED STEEL (GM)	661+00 to 663+90	58 RT.	P-425	RELOCATE
285	TECO People's Gas	GAS, 12" COATED STEEL (GM)	663+90 to 666+90	59 RT.	P-426	RELOCATE
286	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	664+04	73 RT	DITCH REGRADING	RELOCATE
287	UNITI FIBER	BFOC	666+00	48 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
288	FRONTIER	BFOC	666+00	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
289	FRONTIER	BT	666+00	38 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
290	FRONTIER	BT	666+00	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
291	FRONTIER	BT	666+28	59 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
292	TECO People's Gas	GAS, 12" COATED STEEL (GM)	666+90 to 669+90	58 RT.	P-429	RELOCATE

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Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
293	FRONTIER	BT	667+87	61 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
294	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	668+00	73 RT	DITCH REGRADING	PROTECT
295	UNITI FIBER	BFOC	669+00	50 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
296	FRONTIER	BT	669+64 - 677+05	67 RT.	CONFLICTS WITH CONSTRUCTION OF DITCH (RANGES FROM 2 FT AWAY TO ABOVE PROP. GRADE)	ADJUST TO FINAL GRADE
297	TECO People's Gas	GAS, 12" COATED STEEL (GM)	669+90 to 672+70	58 RT.	P-431	RELOCATE
298	UNITI FIBER	PULL BOX	671+46	51 LT.	PULL BOX ON PROP. DITCH SLOPE	RELOCATE
299	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	672+00	74 RT	DITCH REGRADING	RELOCATE
300	TECO People's Gas	GAS, 12" COATED STEEL (GM)	672+70 to 675+00	57 RT.	P-432	RELOCATE
301	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	673+54	73 RT	DITCH REGRADING	RELOCATE
302	TECO People's Gas	GAS, 12" COATED STEEL (GM)	675+00 to 678+00	58 RT.	P-433	RELOCATE
303	UNITI FIBER	BFOC	678+00	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
304	FRONTIER	BFOC	678+00	33 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
305	TECO People's Gas	GAS, 12" COATED STEEL (GM)	678+00 to 681+00	57 RT.	P-435	RELOCATE
306	FRONTIER	PULL BOX	678+23	64 RT.	HALFWAY WITHIN DITCH PROFILE	ADJUST TO FINAL GRADE
307	FRONTIER	PULL BOX	678+32	32 LT.	BENEATH TRAVEL LANE	RELOCATE
308	UNITI FIBER	PULL BOX	679+66	39 LT.	BENEATH SHOULDER	RELOCATE
309	FRONTIER	BT	680+52	58 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
310	TECO People's Gas	GAS, 12" COATED STEEL (GM)	681+00 to 684+00	59 RT.	P-436	RELOCATE
311	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	681+70	73 RT	DITCH REGRADING	RELOCATE
312	UNITI FIBER	BFOC	682+00	41 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
313	FRONTIER	BFOC	682+00	29 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
314	FRONTIER	BT	682+00	39 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
315	FRONTIER	BT	682+00	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
316	UNITI FIBER	BFOC	684+00	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
317	FRONTIER	BFOC	684+00	28 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
318	FRONTIER	BT	684+00	39 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
319	FRONTIER	BT	684+00	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
320	TECO People's Gas	GAS, 12" COATED STEEL (GM)	684+00 to 687+00	60 RT.	P-438	RELOCATE
321	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	685+57	74 RT	DITCH REGRADING	RELOCATE
322	UNITI FIBER	BFOC	687+00	35 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
323	FRONTIER	BFOC	687+00	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
324	FRONTIER	BT	687+00	39 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
325	FRONTIER	BT	687+00	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	
326	FRONTIER	BT	687+00	55 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
327	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	689+56	74 RT	DITCH REGRADING	RELOCATE
328	TECO People's Gas	GAS, 12" COATED STEEL (GM)	689+90 to 690+30	59 RT.	P-SD-407	RELOCATE
329	FRONTIER	JUNCTION BOX/SERVICE CABINET	690+33	71 LT.	IMPACTED BY INTERSECTION GRADING	
330	FRONTIER	PULL BOX	690+96	31 LT.	BENEATH TRAVEL LANE	RELOCATE
331	FRONTIER	BT	691+14 - 695+90	78 LT.	BFOC IS LESS THAN 2ft BELOW PROPOSED GRADE (BOTTOM OF DITCH) ALSO CONFLICTS WITH SIDE DRAIN PIPE	RELOCATE
332	FRONTIER	Pedestal	691+17	78.6 LT	DITCH GRADING	
333	TECO People's Gas	GAS, 12" COATED STEEL (GM)	692+10 to 692+50	59 RT.	P-SD-502	RELOCATE
334	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	692+72	74 RT	DITCH REGRADING	RELOCATE
335	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	693+43	77 LT	DITCH REGRADING	RELOCATE
336	UNITI FIBER	PULL BOX	694+70	39 LT.	BENEATH SHOULDER	RELOCATE
337	UNITI FIBER	BFOC	695+20	38 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
338	FRONTIER	BFOC	695+20	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
339	FRONTIER	BT	695+20	45 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
340	TECO People's Gas	GAS, 12" COATED STEEL (GM)	695+20 to 698+05	58 RT.	P-501	RELOCATE

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Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
341	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	695+49	74 RT	DITCH REGRADING	RELOCATE
342	WITHLACOOCHEE RIVER ELECTRIC COOP.	DISTRIBUTION POLE	695+95	78 LT	DITCH REGRADING	RELOCATE
343	UNITI FIBER	BFOC	698+05	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
344	FRONTIER	BFOC	698+05	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
345	FRONTIER	BT	698+05	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
346	TECO People's Gas	GAS, 12" COATED STEEL (GM)	698+05 to 699+90	58 RT.	P-503	RELOCATE
347	TECO People's Gas	GAS, 12" COATED STEEL (GM)	699+90 to 701+00	58 RT.	P-503A	RELOCATE
348	TECO People's Gas	GAS, 12" COATED STEEL (GM)	701+00 to 703+60	59 RT.	P-504	RELOCATE
349	UNITI FIBER	BFOC	703+60	51 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
350	FRONTIER	BFOC	703+60	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
351	FRONTIER	BT	703+60	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
352	TECO People's Gas	GAS, 12" COATED STEEL (GM)	703+60 to 706+60	57 RT.	P-506	RELOCATE
353	UNITI FIBER	BFOC	706+60	53 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
354	FRONTIER	BFOC	706+60	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
355	FRONTIER	BT	706+60	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
356	TECO People's Gas	GAS, 12" COATED STEEL (GM)	706+60 to 709+60	58 RT.	P-508	RELOCATE
357	FRONTIER	BT	707+26 - 707+70	76 LT.	BT IS LESS THAN 2ft BELOW PROPOSED GRADE (BOTTOM OF DITCH) ALSO CONFLICTS WITH SIDE DRAIN PIPE	RELOCATE
358	FRONTIER	BT	707+97 - 709+58	76 LT.	BT IS LESS THAN 2ft BELOW PROPOSED GRADE (BOTTOM OF DITCH) ALSO CONFLICTS WITH SIDE DRAIN PIPE	RELOCATE
359	UNITI FIBER	PULL BOX	709+57	46 LT.	BENEATH TRAVEL LANE	RELOCATE
360	TECO People's Gas	GAS, 12" COATED STEEL (GM)	709+60 to 711+00	58 RT.	P-509	RELOCATE
361	FRONTIER	BT	710+69 - 711+35	75 LT.	BT IS LESS THAN 2ft BELOW PROPOSED GRADE (BOTTOM OF DITCH)	RELOCATE
362	UNITI FIBER	BFOC	711+00	51 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
363	FRONTIER	BFOC	711+00	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
364	FRONTIER	BT	711+00	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
365	TECO People's Gas	GAS, 12" COATED STEEL (GM)	711+00 to 711+60	58 RT.	P-511	RELOCATE
366	TECO People's Gas	GAS, 12" COATED STEEL (GM)	711+60 to 714+60	58 RT.	P-512	RELOCATE
367	FRONTIER	BT	711+72	63 LT.	CONFLICTS WITH ANCHOR FOR GUARDRAIL	RELOCATE
368	TECO People's Gas	GAS, 12" COATED STEEL (GM)	714+60 to 717+00	58 RT.	P-513	RELOCATE
369	TECO People's Gas	GAS, 12" COATED STEEL (GM)	717+00 to 718+50	58 RT.	P-514	RELOCATE
370	FRONTIER	PULL BOX	718+22	32 LT.	BENEATH TRAVEL LANE	RELOCATE
371	UNITI FIBER	BFOC	718+50	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
372	FRONTIER	BFOC	718+50	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
373	FRONTIER	BT	718+50	41 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
374	TECO People's Gas	GAS, 12" COATED STEEL (GM)	718+50 to 721+40	59 RT.	P-516	RELOCATE
375	FRONTIER	PULL BOX	719+77	34 LT.	BENEATH TRAVEL LANE	RELOCATE
376	FRONTIER	BT	719+96	77 LT.	CONFLICTS WITH TRENCH FOR PROP. SIDE DRAIN	RELOCATE
377	FRONTIER	BT	720+02 - 720+30	77 LT.	CONFLICTS WITH TRENCH FOR PROP. SIDE DRAIN	RELOCATE
378	FRONTIER	BFOC	720+03	76 LT.	CONFLICTS WITH TRENCH FOR PROP. SIDE DRAIN	RELOCATE
379	FRONTIER	BT	720+41 - 720+60	76 LT.	BT IS LESS THAN 2ft BELOW PROPOSED GRADE (BOTTOM OF DITCH)	RELOCATE
380	UNITI FIBER	BFOC	721+40	39 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
381	FRONTIER	BFOC	721+40	33 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
382	FRONTIER	BT	721+40	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT & DBI	RELOCATE
383	FRONTIER	BFOC	721+40	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
384	TECO People's Gas	GAS, 12" COATED STEEL (GM)	721+40 to 724+10	60 RT.	P-518	RELOCATE
385	FRONTIER	BT	721+97	76 LT.	CONFLICTS WITH TRENCH FOR PROP. SIDE DRAIN	RELOCATE
386	FRONTIER	BT	723+65 - 724+19	77 LT.	CONFLICTS WITH TRENCH FOR PROP. SIDE DRAIN	RELOCATE

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Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
387	FRONTIER	PULL BOX	723+66	34 LT.	BENEATH TRAVEL LANE	RELOCATE
388	FRONTIER	BFOC	723+76	57 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
389	FRONTIER	BFOC	723+80	77 LT.	CONFLICTS WITH TRENCH FOR PROP. SIDE DRAIN	RELOCATE
390	FRONTIER	BT	724+09	58 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
391	TECO People's Gas	GAS, 12" COATED STEEL (GM)	724+10 to 726+00	59 RT.	P-521	RELOCATE
392	FRONTIER	BT	724+14	77 LT.	CONFLICTS WITH TRENCH FOR PROP. SIDE DRAIN	RELOCATE
393	UNITI FIBER	BFOC	724+26	40 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
394	FRONTIER	BFOC	724+26	33 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
395	FRONTIER	BT	724+26	41 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
396	UNITI FIBER	PULL BOX	724+41	40 LT.	BENEATH SHOULDER	RELOCATE
397	UNITI FIBER	BFOC	725+00	41 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
398	FRONTIER	BFOC	725+00	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
399	FRONTIER	BT	725+00	40 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
400	FRONTIER	BT	725+00	76 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
401	TECO People's Gas	GAS, 12" COATED STEEL (GM)	726+00 to 728+00	62 RT.	P-522	RELOCATE
402	UNITI FIBER	BFOC	728+00	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
403	FRONTIER	BFOC	728+00	33 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
404	FRONTIER	BT	728+00	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
405	TECO People's Gas	GAS, 12" COATED STEEL (GM)	728+00 to 730+80	61 RT.	P-524	RELOCATE
406	UNITI FIBER	BFOC	730+80	41 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
407	FRONTIER	BFOC	730+80	33 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
408	FRONTIER	BT	730+80	41 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
409	TECO People's Gas	GAS, 12" COATED STEEL (GM)	730+80 to 734+00	60 RT.	P-526	RELOCATE
410	TECO People's Gas	GAS, 12" COATED STEEL (GM)	734+00 to 737+00	58 RT.	P-527	RELOCATE
411	UNITI FIBER	BFOC	737+00	34 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
412	FRONTIER	BFOC	737+00	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
413	FRONTIER	BT	737+00	35 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
414	TECO People's Gas	GAS, 12" COATED STEEL (GM)	737+00 to 739+00	59 RT.	P-529	RELOCATE
415	UNITI FIBER	BFOC	738+00	35 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
416	FRONTIER	BFOC	738+00	31 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
417	FRONTIER	BT	738+00	37 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
418	UNITI FIBER	PULL BOX	738+93	35 LT.	BENEATH TRAVEL LANE	RELOCATE
419	TECO People's Gas	GAS, 12" COATED STEEL (GM)	739+00 to 741+00	61 RT.	P-530	RELOCATE
420	TECO People's Gas	GAS, 12" COATED STEEL (GM)	741+00 to 743+80	60 RT.	P-531	RELOCATE
421	UNITI FIBER	BFOC	743+80	34 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
422	FRONTIER	BFOC	743+80	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
423	FRONTIER	BT	743+80	40 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
424	TECO People's Gas	GAS, 12" COATED STEEL (GM)	743+80 to 746+00	59 RT.	P-533	RELOCATE
425	TECO People's Gas	GAS, 12" COATED STEEL (GM)	746+00 to 747+80	59 RT.	P-534	RELOCATE
426	UNITI FIBER	BFOC	747+80	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
427	FRONTIER	BFOC	747+80	33 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
428	FRONTIER	BT	747+80	41 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
429	TECO People's Gas	GAS, 12" COATED STEEL (GM)	747+80 to 750+80	29 RT.	P-536	RELOCATE
430	FRONTIER	PULL BOX	748+17	32 LT.	BENEATH TRAVEL LANE	RELOCATE
431	UNITI FIBER	BFOC	750+00	38 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
432	FRONTIER	BFOC	750+00	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
433	FRONTIER	BT	750+00	38 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
434	TECO People's Gas	GAS, 12" COATED STEEL (GM)	750+80 to 754+00	62 RT.	P-537	RELOCATE
435	Duke Energy (Transmission)	TRANSMISSION POLE	752+15	76 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
436	UNITI FIBER	PULL BOX	753+89	51 LT.	PULL BOX ON PROP. DITCH SLOPE & CONFLICTS W/PROP CD.	RELOCATE

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UTILITY CONFLICT MATRIX
From N. of West Socrum Loop Road to S. of County Road 54 (Polk County)

Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
437	UNITI FIBER	BFOC	754+00	52 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
438	FRONTIER	BFOC	754+00	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
439	FRONTIER	BT	754+00	41 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
440	TECO People's Gas	GAS, 12" COATED STEEL (GM)	754+00 to 755+80	60 RT.	P-539	RELOCATE
441	Duke Energy (Transmission)	DISTRIBUTION POLE	754+69	60 LT	DITCH REGRADING	RELOCATE
442	UNITI FIBER	BFOC	755+80	59 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
443	FRONTIER	BFOC	755+80	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
444	FRONTIER	BT	755+80	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
445	TECO People's Gas	GAS, 12" COATED STEEL (GM)	755+80 to 757+00	60 RT.	P-541	RELOCATE
446	TECO People's Gas	GAS, 12" COATED STEEL (GM)	757+00 to 759+80	59 RT.	P-542	RELOCATE
447	TECO People's Gas	GAS, 12" COATED STEEL (GM)	759+80 to 761+00	58 RT.	P-543	RELOCATE
448	Duke Energy (Transmission)	DISTRIBUTION POLE	759+95	78 LT	DITCH REGRADING	RELOCATE
449	Duke Energy (Transmission)	TRANSMISSION POLE	760+73	75 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
450	UNITI FIBER	BFOC	761+00	56 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
451	FRONTIER	BFOC	761+00	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
452	FRONTIER	BT	761+00	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
453	TECO People's Gas	GAS, 12" COATED STEEL (GM)	761+00 to 764+00	58 RT.	P-545	RELOCATE
454	Duke Energy (Transmission)	DISTRIBUTION POLE	762+13	77 LT	DITCH REGRADING	RELOCATE
455	UNITI FIBER	BFOC	764+00	54 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
456	FRONTIER	BFOC	764+00	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
457	FRONTIER	BT	764+00	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
458	TECO People's Gas	GAS, 12" COATED STEEL (GM)	764+00 to 767+00	58 RT.	P-547	RELOCATE
459	UNITI FIBER	BFOC	766+00	61 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
460	FRONTIER	BFOC	766+00	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
461	FRONTIER	BT	766+00	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
462	UNITI FIBER	BFOC	767+00	57 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
463	FRONTIER	BFOC	767+00	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
464	FRONTIER	BT	767+00	41 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
465	TECO People's Gas	GAS, 12" COATED STEEL (GM)	767+00 to 771+00	61 RT.	P-549	RELOCATE
466	UNITI FIBER	PULL BOX	768+52	57 LT.	ADJUSTING TO FINAL GRADE WOULD PUT PULL BOX AT THE BOTTOM OF DITCH	RELOCATE
467	UNITI FIBER	BFOC	771+00	56 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
468	FRONTIER	BFOC	771+00	33 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
469	FRONTIER	BT	771+00	45 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
470	TECO People's Gas	GAS, 12" COATED STEEL (GM)	771+00 to 774+00	61 RT.	P-551	RELOCATE
471	TECO People's Gas	GAS, 12" COATED STEEL (GM)	774+00 to 775+50	61 RT.	P-552	RELOCATE
472	UNITI FIBER	BFOC	777+52	57 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
473	FRONTIER	BFOC	777+52	32 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
474	FRONTIER	BT	777+52	44 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
475	FRONTIER	PULL BOX	778+08	32 LT.	BENEATH TRAVEL LANE	RELOCATE
476	TECO People's Gas	GAS, 12" COATED STEEL (GM)	780+00 to 783+00	59 RT.	P-555	RELOCATE
477	UNITI FIBER	PULL BOX	782+81	58 LT.	ADJUSTING TO FINAL GRADE WOULD PUT PULL BOX AT THE BOTTOM OF DITCH	RELOCATE
478	UNITI FIBER	BFOC	783+00	59 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
479	FRONTIER	BFOC	783+00	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
480	FRONTIER	BT	783+00	45 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
481	TECO People's Gas	GAS, 12" COATED STEEL (GM)	783+00 to 786+00	60 RT.	P-558	RELOCATE
482	UNITI FIBER	BFOC	784+50	59 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	
483	FRONTIER	BFOC	784+50	33 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
484	FRONTIER	BT	784+50	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE

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From N. of West Socrum Loop Road to S. of County Road 54 (Polk County)

Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
485	UNITI FIBER	BFOC	786+00	58 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
486	FRONTIER	BFOC	786+00	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
487	TECO People's Gas	GAS, 12" COATED STEEL (GM)	786+00 to 789+00	60 RT.	P-560	RELOCATE
488	FRONTIER	BT	786+000	45 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
489	TECO People's Gas	GAS, 12" COATED STEEL (GM)	789+00 to 792+00	60 RT.	P-561	RELOCATE
490	TECO People's Gas	GAS, 12" COATED STEEL (GM)	792+00 to 794+10	59 RT.	P-564	RELOCATE
491	UNITI FIBER	PULL BOX	793+57	56 LT.	ADJUSTING TO FINAL GRADE WOULD PUT PULL BOX AT THE BOTTOM OF DITCH	RELOCATE
492	UNITI FIBER	BFOC	794+10	54 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
493	FRONTIER	BFOC	794+10	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
494	FRONTIER	BT	794+10	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
495	Duke Energy (Transmission)	TRANSMISSION POLE	795+14	76 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
496	FRONTIER	PULL BOX	798+06	31 LT.	BENEATH TRAVEL LANE	RELOCATE
497	Duke Energy (Transmission)	TRANSMISSION POLE	803+73	77 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
498	UNITI FIBER	PULL BOX	805+50	59 LT.	ADJUSTING TO FINAL GRADE WOULD PUT PULL BOX AT THE BOTTOM OF DITCH	RELOCATE
499	UNITI FIBER	BFOC	806+23	58 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
500	FRONTIER	BFOC	806+23	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
501	FRONTIER	BT	806+23	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
502	TECO People's Gas	GAS, 12" COATED STEEL (GM)	806+25 to 809+20	60 RT.	P-601	RELOCATE
503	TECO People's Gas	GAS, 12" COATED STEEL (GM)	809+20 to 812+00	60 RT.	P-602	RELOCATE
504	UNITI FIBER	BFOC	812+00	61 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
505	FRONTIER	BFOC	812+00	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
506	FRONTIER	BT	812+00	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
507	TECO People's Gas	GAS, 12" COATED STEEL (GM)	812+00 to 815+00	61 RT.	P-604	RELOCATE
508	UNITI FIBER	BFOC	815+00	48 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
509	FRONTIER	BFOC	815+00	31 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
510	FRONTIER	BT	815+00	39 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
511	TECO People's Gas	GAS, 12" COATED STEEL (GM)	815+00 to 818+00	59 RT.	P-406	RELOCATE
512	TECO People's Gas	GAS, 12" COATED STEEL (GM)	818+00 to 821+00	58 RT.	P-407	RELOCATE
513	TECO People's Gas	GAS, 12" COATED STEEL (GM)	821+00 to 824+00	60 RT.	P-408	RELOCATE
514	UNITI FIBER	PULL BOX	821+52	60 LT.	ADJUSTING TO FINAL GRADE WOULD PUT PULL BOX AT THE BOTTOM OF DITCH	RELOCATE
515	UNITI FIBER	BFOC	824+00	62 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
516	FRONTIER	BFOC	824+00	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
517	FRONTIER	BT	824+00	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
518	TECO People's Gas	GAS, 12" COATED STEEL (GM)	824+00 to 827+00	60 RT.	P-610	RELOCATE
519	TECO People's Gas	GAS, 12" COATED STEEL (GM)	827+00 to 829+50	59 RT.	P-611	RELOCATE
520	FRONTIER	PULL BOX	827+99	37.1 LT.	BENEATH TRAVEL LANE & SHOULDER	RELOCATE
521	UNITI FIBER	PULL BOX	828+12	61 LT.	ADJUSTING TO FINAL GRADE WOULD PUT PULL BOX AT THE BOTTOM OF DITCH	RELOCATE
522	TECO People's Gas	GAS, 12" COATED STEEL (GM)	829+50 to 832+00	59 RT.	P-612	RELOCATE
523	UNITI FIBER	BFOC	832+00	63 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	
524	FRONTIER	BFOC	832+00	36 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
525	FRONTIER	BT	832+00	45 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
526	TECO People's Gas	GAS, 12" COATED STEEL (GM)	832+00 to 835+00	59 RT.	P-614	RELOCATE
527	TECO People's Gas	GAS, 12" COATED STEEL (GM)	835+00 to 838+00	58 RT.	P-615	RELOCATE
528	TECO People's Gas	GAS, 12" COATED STEEL (GM)	838+00 to 840+50	59 RT.	P-616	RELOCATE
529	UNITI FIBER	BFOC	840+50	59 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
530	FRONTIER	BFOC	840+50	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE

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UTILITY CONFLICT MATRIX
From N. of West Socrum Loop Road to S. of County Road 54 (Polk County)

Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
531	FRONTIER	BT	840+50	45 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
532	TECO People's Gas	GAS, 12" COATED STEEL (GM)	840+50 to 842+50	58 RT.	P-619	RELOCATE
533	TECO People's Gas	GAS, 12" COATED STEEL (GM)	842+50 to 844+00	58 RT.	P-621	RELOCATE
534	UNITI FIBER	PULL BOX	842+55	59 LT.	ADJUSTING TO FINAL GRADE WOULD PUT PULL BOX AT THE BOTTOM OF DITCH	RELOCATE
535	UNITI FIBER	BFOC	844+00	63 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
536	FRONTIER	BFOC	844+00	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
537	FRONTIER	BT	844+00	46 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
538	TECO People's Gas	GAS, 12" COATED STEEL (GM)	844+00 to 847+00	60 RT.	P-623	RELOCATE
539	Duke Energy (Transmission)	TRANSMISSION POLE	846+14	77 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
540	UNITI FIBER	BFOC	847+00	59 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
541	FRONTIER	BFOC	847+00	36 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
542	FRONTIER	BT	847+00	45 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
543	TECO People's Gas	GAS, 12" COATED STEEL (GM)	847+00 to 850+00	58 RT.	P-625	RELOCATE
544	UNITI FIBER	BFOC	848+00	60 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
545	FRONTIER	BFOC	848+00	36 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
546	FRONTIER	BT	848+00	46 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
547	FRONTIER	BFOC	848+80 - 849+20	36 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
548	UNITI FIBER	BFOC	849+00	61 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
549	FRONTIER	BT	849+00	43 LT.	CONFLICTS WITH TRENCH FOR PROP. BRIDGE CULVERT	RELOCATE
550	UNITI FIBER	BFOC	850+00	61 LT.	CONFLICTS WITH LIGHTPOLE FOUNDATION	RELOCATE
551	FRONTIER	BFOC	850+00	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
552	FRONTIER	BT	850+00	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
553	DUKE ENERGY (TRANSMISSION)	TRANSMISSION POLE	851+68	77 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
554	UNITI FIBER	BFOC	856+44	72 LT.	CONFLICTS WITH LIGHTPOLE FOUNDATION	RELOCATE
555	UNITI FIBER	PULL BOX	857+64	71 LT.	BENEATH TRAVEL LANE/C&G	RELOCATE
556	FRONTIER	PULL BOX	858+00	41 LT.	BENEATH TRAVEL LANE	RELOCATE
557	UNITI FIBER	BFOC	858+18	72 LT.	CONFLICTS WITH LIGHTPOLE FOUNDATION	RELOCATE
558	DUKE ENERGY (TRANSMISSION)	TRANSMISSION POLE	858+22	77 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
559	Duke Energy (Transmission)	DISTRIBUTION POLE	858+48	84 RT	DITCH REGRADING	RELOCATE
560	TECO People's Gas	GAS, 12" COATED STEEL (GM)	860+20	60 RT.	Light Pole	RELOCATE
561	UNITI FIBER	BFOC	860+96	72 LT.	CONFLICTS WITH LIGHTPOLE FOUNDATION	RELOCATE
562	CENTURY LINK	BFOC	864+00	45 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
563	FRONTIER	BFOC	864+00	39 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
564	FRONTIER	BT	864+00	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
565	TECO People's Gas	GAS, 12" COATED STEEL (GM)	864+00 to 866+00	59 RT.	P-701	RELOCATE
566	CENTURY LINK / FKA	PULL BOX	864+53	46 RT.	BENEATH UN-PAVED SHOULDER	ADJUST TO FINAL GRADE
567	DUKE ENERGY (TRANSMISSION)	TRANSMISSION POLE	865+30	79 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
568	TECO People's Gas	GAS, 12" COATED STEEL (GM)	866+00 to 868+00	60 RT.	P-702	RELOCATE
569	CENTURY LINK	BFOC	867+00	46 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE	RELOCATE
570	UNITI FIBER	BFOC	867+00	61 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
571	FRONTIER	BFOC	867+00	40 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
572	FRONTIER	BT	867+00	41 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
573	TECO People's Gas	GAS, 12" COATED STEEL (GM)	868+00 to 871+00	59 RT.	P-703	RELOCATE
574	CENTURY LINK	BFOC	869+70 - 881+26	50 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
575	TECO People's Gas	GAS, 12" COATED STEEL (GM)	871+00 to 874+00	59 RT.	P-704	RELOCATE
576	UNITI FIBER	BFOC	874+00	60 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
577	FRONTIER	BFOC	874+00	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
578	FRONTIER	BT	874+00	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
579	CENTURY LINK	BT	874+00	46 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE

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Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
580	TECO People's Gas	GAS, 12" COATED STEEL (GM)	874+00 to 877+00	59 RT.	P-706	RELOCATE
581	UNITI FIBER	PULL BOX	874+34	59 LT.	ADJUSTING TO FINAL GRADE WOULD PUT PULL BOX AT THE BOTTOM OF DITCH	RELOCATE
582	TECO People's Gas	GAS, 12" COATED STEEL (GM)	877+00 to 880+00	59 RT.	P-707	RELOCATE
583	UNITI FIBER	BFOC	880+00	55 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	
584	FRONTIER	BFOC	880+00	36 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
585	FRONTIER	BT	880+00	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
586	CENTURY LINK	BT	880+00	45 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
587	TECO People's Gas	GAS, 12" COATED STEEL (GM)	880+00 to 883+00	59 RT.	P-709	RELOCATE
588	DUKE ENERGY (TRANSMISSION)	TRANSMISSION POLE	880+69	77 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
589	TECO People's Gas	GAS, 12" COATED STEEL (GM)	883+00 to 886+00	58 RT.	P-710	RELOCATE
590	CENTURY LINK	BT	883+03	59 RT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
591	CENTURY LINK	BFOC	884+00 - 920+40	48 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE, DBI AND BOX CULVERT	RELOCATE
592	UNITI FIBER	BFOC	886+00	60 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
593	FRONTIER	BT	886+00	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
594	CENTURY LINK	BT	886+00	46 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
595	TECO People's Gas	GAS, 12" COATED STEEL (GM)	886+00 to 889+00	58 RT.	P-712	RELOCATE
596	Duke Energy (Transmission)	DISTRIBUTION POLE	887+11	78 LT	DITCH REGRADING	RELOCATE
597	FRONTIER	BFOC	888+00	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
598	DUKE ENERGY (TRANSMISSION)	TRANSMISSION POLE	888+18	77 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
599	UNITI FIBER	BFOC	888+50	58 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
600	FRONTIER	BFOC	888+50	37 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
601	FRONTIER	BT	888+50	44 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
602	CENTURY LINK	BT	888+50	46 RT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
603	UNITI FIBER	BFOC	889+00	60 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
604	FRONTIER	BFOC	889+00	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
605	FRONTIER	BT	889+00	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
606	CENTURY LINK	BT	889+00	45 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
607	TECO People's Gas	GAS, 12" COATED STEEL (GM)	889+00 to 892+00	59 RT.	P-714	RELOCATE
608	UNITI FIBER	PULL BOX	889+30	59.5 LT.	ADJUSTING TO FINAL GRADE WOULD PUT PULL BOX AT THE BOTTOM OF DITCH	RELOCATE
609	CENTURY LINK	BT	891+71	59 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
610	TECO People's Gas	GAS, 12" COATED STEEL (GM)	892+00 to 895+000	59 RT.	P-715	RELOCATE
611	UNITI FIBER	BFOC	895+00	64 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
612	FRONTIER	BFOC	895+00	36 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
613	FRONTIER	BT	895+00	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
614	CENTURY LINK	BT	895+00	45 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
615	TECO People's Gas	GAS, 12" COATED STEEL (GM)	895+00 to 898+00	58 RT.	P-717	RELOCATE
616	DUKE ENERGY (TRANSMISSION)	TRANSMISSION POLE	895+84	77 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
617	TECO People's Gas	GAS, 12" COATED STEEL (GM)	898+00 to 900+00	58 RT.	P-718	RELOCATE
618	FRONTIER	PULL BOX	898+01	36 LT.	BENEATH TRAVEL LANE	RELOCATE
619	Duke Energy (Transmission)	DISTRIBUTION POLE	899+28	78 LT	DITCH REGRADING	RELOCATE
620	UNITI FIBER	BFOC	900+00	60 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
621	FRONTIER	BFOC	900+00	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
622	FRONTIER	BT	900+00	46 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
623	CENTURY LINK	BT	900+00	44 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
624	TECO People's Gas	GAS, 12" COATED STEEL (GM)	900+00 to 902+68	58 RT.	P-720	RELOCATE
625	CENTURY LINK	BT	900+70	59 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
626	UNITI FIBER	BFOC	902+68	63 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
627	FRONTIER	BFOC	902+68	38 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE

FPID 436673-1-52-01
UTILITY CONFLICT MATRIX
From N. of West Socrum Loop Road to S. of County Road 54 (Polk County)

Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
628	FRONTIER	BT	902+68	45 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
629	TECO People's Gas	GAS, 12" COATED STEEL (GM)	902+68 to 905+60	59 RT.	P-722	RELOCATE
630	CENTURY LINK	BT	902+68.	45 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
631	DUKE ENERGY (TRANSMISSION)	TRANSMISSION POLE	903+54	76 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
632	UNITI FIBER	PULL BOX	904+26	60 LT.	CONFLICTS WITH PROP. MITERED END & ADJUSTING TO FINAL GRADE WOULD PUT PULL BOX ON DITCH SLOPE NEAR DITCH BOTTOM	RELOCATE
633	UNITI FIBER	BFOC	905+60	60 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
634	FRONTIER	BFOC	905+60	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
635	FRONTIER	BT	905+60	43 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
636	CENTURY LINK	BT	905+60	45 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
637	TECO People's Gas	GAS, 12" COATED STEEL (GM)	905+60 to 908+20	58 RT.	P-724	RELOCATE
638	UNKOWN (NOT IN SURVEY)	JUNCTION BOX/SERVICE CABINET	906+81	79 LT.		REMAIN
639	Duke Energy (Transmission)	DISTRIBUTION POLE	906+81	79 LT	DITCH REGRADING	RELOCATE
640	CENTURY LINK	BT	908+20	52 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
641	TECO People's Gas	GAS, 12" COATED STEEL (GM)	908+20 to 909+50	58 RT.	P-717	RELOCATE
642	UNITI FIBER	BFOC	909+50	62 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
643	FRONTIER	BFOC	909+50	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
644	CENTURY LINK	BT	909+50	44 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
645	TECO People's Gas	GAS, 12" COATED STEEL (GM)	909+50 to 912+00	59 RT.	P-728	RELOCATE
646	FRONTIER	BT	909+51	44 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
647	DUKE ENERGY (TRANSMISSION)	TRANSMISSION POLE	911+19	78 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
648	UNITI FIBER	BFOC	911+65	62 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
649	TECO People's Gas	GAS, 12" COATED STEEL (GM)	912+00 to 915+20	59 RT.	P-731	RELOCATE
650	Duke Energy (Transmission)	DISTRIBUTION POLE	913+79	78 LT	DITCH REGRADING	RELOCATE
651	UNITI FIBER	BFOC	914+00	59 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
652	FRONTIER	BFOC	914+00	38 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
653	FRONTIER	BT	914+00	44 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
654	CENTURY LINK	BT	915+20	50 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
655	TECO People's Gas	GAS, 12" COATED STEEL (GM)	915+20 to 918+00	59 RT.	P-734	RELOCATE
656	UNITI FIBER	BFOC	916+00	60 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
657	UNITI FIBER	BFOC	916+43 - 918+00	58 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
658	Duke Energy (Transmission)	DISTRIBUTION POLE	917+55	79 LT	DITCH REGRADING	RELOCATE
659	UNITI FIBER	BFOC	918+00	57 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
660	FRONTIER	BFOC	918+00	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
661	FRONTIER	BT	918+00	42 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
662	CENTURY LINK	BT	918+00	44 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
663	TECO People's Gas	GAS, 12" COATED STEEL (GM)	918+00 to 921+00	59 RT.	P-736	RELOCATE
664	UNITI FIBER	PULL BOX	919+81	58 LT.	ADJUSTING TO FINAL GRADE WOULD PUT PULL BOX AT THE BOTTOM OF DITCH	RELOCATE
665	FRONTIER	PULL BOX	920+13	37 LT.	BENEATH TRAVEL LANE & SHOULDER	RELOCATE
666	Duke Energy (Transmission)	DISTRIBUTION POLE	920+41	75 LT	DITCH REGRADING	RELOCATE
667	UNKOWN (NOT IN SURVEY)	METER ELECTRIC	920+42	74 LT.	CONFLICTS WITH CONST. OF PIPE CULVERT	RELOCATE
668	UNKOWN (NOT IN SURVEY)	JUNCTION BOX/SERVICE CABINET	920+49	76 LT.	CONFLICTS WITH CONST. OF PIPE CULVERT	RELOCATE
669	FRONTIER	JUNCTION BOX/SERVICE CABINET	920+59	76 LT.	CONFLICTS WITH CONST. OF PIPE CULVERT	RELOCATE
670	FRONTIER	BT	920+60 - 921+12	75 LT.	CONFLICTS WITH TRENCH FOR PROP. SIDE DRAIN	RELOCATE
671	WITHLACOOCHEE RIVER ELECTRIC COOP.	METER ELECTRIC	920+89	70 LT.	WITH DITCH GRADING	ADJUST TO FINAL GRADE
672	WITHLACOOCHEE RIVER ELECTRIC COOP.	BE	920+92 - 921+20	76 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT & BOX CULVERT	RELOCATE
673	CENTURY LINK	BFOC	921+00	46 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE

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UTILITY CONFLICT MATRIX
From N. of West Socrum Loop Road to S. of County Road 54 (Polk County)

Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
674	UNITI FIBER	BFOC	921+00	61 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE
675	FRONTIER	BFOC	921+00	38 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
676	CENTURY LINK	BT	921+00	44 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
677	FRONTIER	BT	921+00 - 921+25	105 LT.	CONFLICTS WITH DITCH	ADJUST TO BELOW FINAL GRADE
678	TECO People's Gas	GAS, 12" COATED STEEL (GM)	921+00 to 923+40	59 RT.	P-738	RELOCATE
679	FRONTIER	BT	921+19	76 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
680	Duke Energy (Transmission)	DISTRIBUTION POLE	921+20	78 LT	DITCH REGRADING	RELOCATE
681	UNITI FIBER	BFOC	921+28	61 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
682	FRONTIER	BFOC	921+44	38 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
683	CENTURY LINK	BT	921+95	44 RT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
684	CENTURY LINK	BFOC	921+97	46 RT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
685	FRONTIER	BT	922+18	58 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
686	Duke Energy (Transmission)	DISTRIBUTION POLE	922+18	80 RT	DITCH REGRADING	RELOCATE
687	FRONTIER	BT	922+22	78 RT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
688	CENTURY LINK	BFOC	922+51 - 923+40	48 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE AND DBI	RELOCATE
689	CENTURY LINK	BT	922+51 to 923+40	49 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
690	UNITI FIBER	BFOC	923+40	59 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
691	FRONTIER	BFOC	923+40	37 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
692	CENTURY LINK	BT	923+40	44 RT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
693	Duke Energy (Transmission)	DISTRIBUTION POLE	925+04	78 RT	DITCH REGRADING	RELOCATE
694	DUKE ENERGY (TRANSMISSION)	TRANSMISSION POLE	926+51	77 LT	DITCH REGRADING	MONITOR/PROTECT IN PLACE
695	CENTURY LINK / FKA	Hand Hole # 0846	927+40	44 RT.	BENEATH SHOULDER (UN-PAVED PORTION)	RELOCATE
696	UNITI FIBER	BFOC	929+00	53 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
697	FRONTIER	BFOC	929+00	38 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
698	FRONTIER	BT	929+00	70 LT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
699	CENTURY LINK	BT	929+00	44 RT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
700	TECO People's Gas	GAS, 12" COATED STEEL (GM)	929+00	58 RT.	P-CD-19	RELOCATE
701	CENTURY LINK	BFOC	929+00.06	50 RT.	CONFLICTS WITH TRENCH FOR PROP. BOX CULVERT	RELOCATE
702	FRONTIER	BT	100+90	23 LT.	CONFLICTS WITH ANCHOR FOR PROP. LIGHT POLE	RELOCATE
703	LAKELAND ELECTRIC	DISTRIBUTION POLE	101+27 (CL_Rockridge_East)	24 RT.	EMBANKMENT	RELOCATE
704	UNITI FIBER	BFOC	102+05 (CL_Rockridge_east)	32 LT.	CONFLICTS WITH TRENCH FOR PROP. MES	RELOCATE
705	LAKELAND ELECTRIC	DISTRIBUTION POLE	102+21 (CL_Rockridge_East)	22RT.	EMBANKMENT	RELOCATE
706	FRONTIER	BT	102+44	20 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
707	AT&T	BFOC	102+45.93 (CL_ROCKRIDGE_EAST)	21 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
708	UNITI FIBER	BFOC	102+46.07 (CL_Rockridge_east)	30 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
709	UNITI FIBER	BFOC	103+71 - 104+29 (CL_Rockridge_east)	30 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
710	FRONTIER	BT	104+54	35 RT.	CONFLICTS WITH TRENCH FOR PROP. SIDE DRAIN	RELOCATE
711	LAKELAND ELECTRIC	DISTRIBUTION POLE	104+67 (CL_Rockridge_East)	36 RT.	EMBANKMENT	RELOCATE
712	UNITI FIBER	BFOC	105+83 - 106+47 (CL_Rockridge_east)	32 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE
713	FRONTIER	BT	204+11 (CL_Rockridge_west)	24 LT.	CONFLICTS WITH TRENCH FOR PROP. PIPE CULVERT	RELOCATE

FPID 436673-1-52-01
UTILITY CONFLICT MATRIX
From N. of West Socrum Loop Road to S. of County Road 54 (Polk County)

Conflict No.	Utility Agency Owner (UAO)	Facility Description (Material, Type, Number, Size)	Station	Offset LT / RT	Conflict	Comments/Resolutions
714	FRONTIER	BT	204+31 (CL_Rockridge_west)	25 LT.	CONFLICTS WITH TRENCH FOR PROP. DBI	RELOCATE

APPENDIX I

SHPO Concurrence Letters

Florida Department of Transportation

RON DESANTIS
GOVERNOR

801 North Broadway Avenue
Bartow, FL 33830

KEVIN J. THIBAULT, P.E.
SECRETARY

January 18, 2022

Dr. Timothy Parsons, Director
Florida Division of Historical Resources
Department of State, R.A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

Attn: Transportation Compliance Review Program

RE: Cultural Resource Assessment Survey
Technical Memorandum Mainline and Ponds
SR 35 (US 98) from North of West Socrum Loop Road to South of CR 54
Polk County, Florida
FPID No.: 436673-1; ETDM: 14334

Dear Dr. Parsons:

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) study to evaluate the proposed widening of US 98 from north of West Socrum Loop Road to south of CR 54 in northern Polk County, a distance of 8.7 miles. The purpose of this PD&E study is to evaluate engineering and environmental data, and document information that will aid the FDOT Office of Environmental Management (OEM) in determining anticipated environmental impacts associated with the proposed project. This study is being conducted to meet the requirements of the National Environmental Policy Act (NEPA) and other related federal and state laws, rules, and regulations.

A Cultural Resource Assessment Survey (CRAS) was performed within the area of potential effect (APE) for the US 98 project. A CRAS Report was prepared for the proposed roadway widening and a CRAS Technical Memorandum was prepared for the proposed offsite drainage facilities. The archaeological APE was defined as the footprint of the existing and proposed right-of-way (ROW) plus an additional 20-ft buffer. The historical/architectural APE includes immediately adjacent parcels where resources within 200 ft of the existing ROW were surveyed along the project corridor.

This CRAS was conducted in accordance with the requirements set forth in the National Historic Preservation Act of 1966 (as amended), which are implemented by the procedures contained in 36 CFR, Part 800, as well as the provisions contained in the revised Chapter 267, *Florida Statutes*. The investigations were carried out in accordance with Part 2, Chapter 8 (Archaeological and Historical Resources) of the FDOT's PD&E Manual, FDOT's Cultural Resources Manual, and the standards contained in the Florida Division of Historical Resources (FDHR) Cultural Resource Management Standards and Operations Manual (FDHR 2003). In addition, this survey meets the specifications set forth in Chapter 1A-46, Florida Administrative Code.

Archaeological background research indicated that two archaeological sites (8PO01538 and 8PO06189) are partially located within the APE, and one (8PO06188) is adjacent to the APE. Based on previous investigations in similar environmental settings, the APE was determined to have a low to moderate potential for the occurrence of aboriginal archaeological sites and a low occurrence for historic archaeological sites. The field investigations resulted in no evidence of the previously recorded sites being found within the APE. Two Archaeological Occurrences (AO) were found in FPC 1B and Pond 3D-1 and one lithic scatter site (8PO08686) was found in FPC 1B. Neither the AOs nor the one prehistoric archaeological site is considered eligible for listing in the NRHP.

Historic background research indicated that one historic resource was previously recorded within the APE. The resource is the circa (ca.) 1930 Neo-Classical Revival style Polk-Pasco County Line Obelisk (8PA03346) located on the northeastern side of US 98 at the intersection of CR 54. The obelisk was recently identified and recorded during the CRAS for the US 98 PD&E study conducted by FDOT District Seven in Pasco County (ACI 2021). As a result of the Pasco County survey, the Obelisk was determined eligible for listing in the NRHP by the State Historic Preservation Officer (SHPO) in November 2021. The Obelisk is eligible at the local level under Criterion A in the areas of Transportation and Local History as a reminder of Polk County's contributions to the state roadway system. A review of relevant historic USGS quadrangle maps, historic aerial photographs, and the Polk County property appraiser's website data revealed the potential for five new historic resources, 46 years of age or older (constructed in 1975 or earlier), within the APE.

The historical/architectural field survey resulted in the identification and evaluation of five historic resources within the APE. These five historic resources include two Masonry Vernacular style buildings (8PO08681 and 8PO08684), two Frame Vernacular style buildings (8PO08682 and 8PO08685), and one Mobile Home (8PO08683) constructed between ca. 1962 and ca. 1974. Furthermore, the historic resource located at 10545 US 98 N (8PO08681) is a ca. 1971 Masonry Vernacular style building and is adjacent to FPC 5B. Overall, the buildings are common examples of their respective architectural styles that have been altered and background research did not reveal any historic associations with significant persons and/or events. Therefore, none of the newly identified historic resources appear eligible for listing in the NRHP, either individually or as part of a historic district. In addition to the five historic resources identified within the APE, the Polk County property appraiser identified four historic resources constructed between ca. 1968 and ca. 1973 that could not be evaluated or recorded during the field survey due to lack of accessibility and/or obstructed views from the US 98 ROW. The resources are located at 10285 US Highway 98, 10715 US Highway 98, 12548 US Highway 98, and 10708 Rockridge Road. Based on available information, the resources are probably a typical example of vernacular style buildings or mobile homes; however, the status and condition of the resource is unknown. There is no proposed ROW acquisition from these parcels. Since the buildings are hidden by existing vegetation on the parcel and there is no proposed ROW acquisition, the proposed project should have no effect on the buildings.

Based on the background research and results of the field investigations, no new historic or prehistoric archeological sites were discovered and no evidence of the two previously recorded sites were found to extend into the APE. The historical/Architectural field survey resulted in the identification and evaluation of five historic resources (8PO08681-8PO08685) within the APE. None of the newly identified historic resources appear eligible for listing in the NRHP, either individually or as part of a historic district.

The Polk-Pasco County Line Obelisk (8PA03346) was determined eligible at the local level under Criterion A in the areas of Transportation and Local History and is located at the northeast

intersection of US 98 and CR 54 within the APE. Based on the proposed roadway improvements being performed under Financial Project ID No. 436673-1, all roadway work will end south of CR 54 and away from the Obelisk. As such, the obelisk will not be impacted and will maintain its current location. Based on the scope of work, the undertaking will not adversely result in physical destruction, damage, or alteration of all or part of the of the Obelisk. Therefore, it is the opinion of ACI, that the proposed undertaking will have *no adverse effect* on the Polk-Pasco County Line Obelisk (8PA03346).

The CRAS Report for the roadway widening and the CRAS Technical Memorandum for the proposed drainage sites are provided for your review and comment. If you have any questions, please do not hesitate to call me at (863) 519-2495 or email at Jonathon.Bennett@dot.state.fl.us.

Jonathon A. Bennett
Environmental Project Manager
ETDM Coordinator
Florida Department of Transportation, District One
801 North Broadway Avenue
Bartow, Florida 33830

Enclosures: One original copy of the CRAS (November 2021), One original copy of the CRAS Technical Memorandum for Proposed Drainage Facilities (November 2021), Eight FMSF Forms, Two Completed Survey Logs

CC: Jeffrey James (FDOT)
Jeffrey Jacquin, PE (AIM)
Maranda Kles, PhD, RPA (ACI)

The Florida State Historic Preservation Officer (SHPO) finds the attached Cultural Resources Assessment Survey Report complete and sufficient and ✓ concurs/ _____ does not concur with the recommendations and findings provided in this cover letter for SHPO/FDHR Project File Number 2020-1391. Or, the SHPO finds the attached document contains _____ insufficient information.

SHPO Comments:

Kelly L Chase For
Dr. Timothy Parsons, Director
State Historic Preservation Officer
Florida Division of Historical Resources

02/16/2022
Date

Florida Department of Transportation

RON DESANTIS
GOVERNOR

801 North Broadway Avenue
Bartow, FL 33830

JARED W. PERDUE, P.E.
SECRETARY

July 1, 2022

Dr. Timothy Parsons, Director
Florida Division of Historical Resources
Department of State, R.A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

Attn: Transportation Compliance Review Program

RE: Cultural Resource Assessment Survey
Technical Memorandum Addendum
Stormwater Management Facility (SMF) Sites
SR 35 (US 98) from North of West Socrum Loop Road to South of CR 54
Polk County, Florida
FPID No.: 436673-1; ETDM: 14334

Dear Dr. Parsons:

The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) study along State Road (SR) 35/US Highway 98 (US 98) in Polk County to evaluate roadway and safety improvements along the corridor. The study limits extend for 8.7 miles from north of West Socrum Loop Road to south of County Road (CR) 54, near the Pasco County line. The study will evaluate the effects of widening this section of US 98 from a two-lane undivided roadway to a four-lane divided roadway and will also assess existing and future traffic operations, access management, and freight mobility. The proposed build alternative will include the construction of stormwater management facilities (SMFs) and floodplain compensation (FPC) sites (hereinafter referred to as pond sites). This is a federally funded project and part of on-going improvements to the US 98 PD&E study. Previously, a Cultural Resource Assessment Survey (CRAS) and a CRAS Technical Memorandum for SMF and FPC sites were prepared in 2021 and both documents were concurred upon by the State Historic Preservation Officer (SHPO) in November 2021. After these documents were prepared, additional design changes were made.

The archaeological APE is defined as the area contained within the footprint of the expanded portion of Pond 4D-1 and Pond 5A. The historical/architectural APE includes the archaeological APE and immediately adjacent properties as contained within 100 feet (ft) of the footprint of each or not obstructed from view by vegetation.

This CRAS was conducted in accordance with the requirements set forth in the National Historic Preservation Act of 1966 (as amended), which are implemented by the procedures contained in 36 CFR, Part 800, as well as the provisions contained in the revised Chapter 267, *Florida Statutes*. The investigations were carried out in accordance with Part 2, Chapter 8 (Archaeological and Historical Resources) of the FDOT's PD&E Manual, FDOT's Cultural Resources Manual, and the standards contained in the Florida Division of Historical Resources (FDHR) Cultural Resource Management Standards and Operations Manual (FDHR 2003). In

addition, this survey meets the specifications set forth in Chapter 1A-46, Florida Administrative Code.

Archaeological background research indicated a low probability for the occurrence of historic and/or prehistoric archaeological sites. There are no previously recorded prehistoric archaeological sites within the pond sites but one is within one-half mile, 8PO01537, a lithic scatter that is not eligible for listing in the NRHP. As a result of the field survey, no historic or prehistoric archaeological sites were found. Historical/architectural background research included a review of the Florida Master Site File (FMSF) and the NRHP. The research indicated no historic resources were present within the historic APE and none were found during the field survey.

Based on the results of the background research and field survey, there are no significant historic or prehistoric archaeological sites or historic resources within the APE. Thus, it appears that the proposed undertaking will result in no historic properties affected and have no effect on any NRHP listed, determined eligible, or potentially eligible resources within the APE.

The CRAS Addendum Technical Memorandum is provided for your review and comment. If you have any questions, please do not hesitate to call me at (863) 519-2495 or email at Jonathon.Bennett@dot.state.fl.us.

Thank you,

Jonathon A. Bennett

Jonathon A. Bennett
Environmental Project Manager
ETDM Coordinator
Florida Department of Transportation, District One
801 North Broadway Avenue
Bartow, Florida 33830

Enclosures: One original copy of the CRAS Addendum Technical Memorandum (June 2022), One Completed Survey Log, GIS

CC: Jeffrey James (FDOT)
Jeffrey Jacquin, PE (AIM)
Maranda Kles, PhD, RPA (ACI)

The Florida State Historic Preservation Officer (SHPO) finds the attached Cultural Resources Assessment Survey Report complete and sufficient and ✓ concurs/ _____ does not concur with the recommendations and findings provided in this cover letter for SHPO/FDHR Project File Number 2020-1391F. Or, the SHPO finds the attached document contains _____ insufficient information.

SHPO Comments:

_____
_____
_____
_____
_____
_____

Kelly L. Chase, DSHPO

Digitally signed by Kelly L. Chase, DSHPO
DN: cn=Kelly L. Chase, DSHPO, o, ou, email=kelly.chase@dos.myflorida.com, c=US
Date: 2022.07.06 11:02:55 -04'00'

_____ 7.6.2022

Dr. Timothy Parsons, Director
State Historic Preservation Officer
Florida Division of Historical Resources

Date

APPENDIX J

Predicted Noise Levels

US 98 from West Socrum Loop Rd to CR 54 Traffic Noise Level Results Table								
Receiver ID	Aerial Plan Sheet	Dwelling Units	NAC	Existing (2021) Predicted Noise Level - dB(A)	No Build (2045) Predicted Noise Level - dB(A)	Build (2045) Predicted Noise Level - dB(A)	Increase Over Existing Noise Level - dB(A)	Impact
East of US 98 - South of Big Cypress Boulevard								
1-01	1	1	B	57.8	57.8	59.0	1.2	No
1-02	1	1	B	63.7	63.7	63.1	-0.6	No
1-03	1	1	B	65.3	65.3	65.3	0.0	No
1-04	1	1	B	56.6	56.6	56.8	0.2	No
1-05	2	0	C	56.8	56.8	58.6	1.8	No
1-06	2	0	C	57.5	57.5	59.5	2.0	No
1-07	2	0	C	58.4	58.4	60.4	2.0	No
1-08	3	1	B	55.6	55.6	57.3	1.7	No
1-09	3	1	B	53.3	53.3	55.4	2.1	No
West of US 98 - South of Big Cypress Boulevard								
2-01	1 and 2	1	B	56.9	56.9	58.2	1.3	No
2-02	1 and 2	1	B	59.0	59.0	60.2	1.2	No
2-03	2	1	B	56.3	56.3	57.6	1.3	No
2-04	2	1	B	59.7	59.7	60.8	1.1	No
2-05	2	1	B	57.0	57.0	58.4	1.4	No
2-06	2	1	B	57.7	57.7	59.2	1.5	No
2-07	2	0	E	62.1	62.1	63.2	1.1	No
2-08	2	1	B	58.9	58.9	60.5	1.6	No
East of US 98 - Between Big Cypress Boulevard and Rock Ridge Road								
3-01	5	1	B	66.4	66.4	65.5	-0.9	No
3-02	5	1	B	65.4	65.5	64.8	-0.6	No
3-03	6	1	B	63.8	64.7	64.5	0.7	No
3-04	6	1	B	61.3	62.2	62.8	1.5	No
3-06	7	1	B	65.2	66.0	65.8	0.6	No
3-07	7	1	B	62.6	63.6	62.5	-0.1	No
3-08	7	1	B	63.4	64.4	63.0	-0.4	No
3-09	8	1	B	69.4	70.3	69.0	-0.4	Yes
3-10	8	1	B	69.3	70.2	68.9	-0.4	Yes
3-11	8	1	B	69.2	70.2	68.7	-0.5	Yes
3-12	8	1	B	69.3	70.2	68.8	-0.5	Yes
3-13	8	1	B	69.1	70.1	68.7	-0.4	Yes
3-14	8	1	B	69.6	70.5	69.2	-0.4	Yes
3-15	8	1	B	69.3	70.3	68.9	-0.4	Yes
3-16	8	1	B	68.5	69.5	68.0	-0.5	Yes
3-17	8	1	B	67.3	68.4	66.7	-0.6	Yes
3-18	8	1	B	63.4	64.4	64.2	0.8	No
3-19	8	1	B	62.9	63.9	63.8	0.9	No
3-20	8	1	B	59.7	60.7	61.6	1.9	No
3-21	8	1	B	59.1	60.1	61.0	1.9	No
3-22	8	1	B	58.5	59.4	60.4	1.9	No
3-23	8	1	B	57.9	58.9	59.9	2.0	No

Receiver ID	Aerial Plan Sheet	Dwelling Units	NAC	Existing (2021) Predicted Noise Level - dB(A)	No Build (2045) Predicted Noise Level - dB(A)	Build (2045) Predicted Noise Level - dB(A)	Increase Over Existing Noise Level - dB(A)	Impact
3-24	8	1	B	57.4	58.3	59.4	2.0	No
3-25	8	1	B	56.9	57.8	58.9	2.0	No
3-26	8	1	B	56.3	57.3	58.4	2.1	No
3-27	8	1	B	55.9	56.8	57.9	2.0	No
3-28	8	1	B	55.5	56.5	57.6	2.1	No
3-29	8	1	B	55.0	56.0	57.2	2.2	No
3-30	8	1	B	54.6	55.5	56.8	2.2	No
3-31	8	1	B	54.2	55.1	56.5	2.3	No
3-32	8	1	B	63.6	64.6	64.3	0.7	No
3-33	8	1	B	62.6	63.6	63.6	1.0	No
3-34	8	1	B	61.4	62.4	62.7	1.3	No
3-35	8	1	B	60.5	61.5	62.1	1.6	No
3-36	8	1	B	59.9	60.9	61.7	1.8	No
3-37	8	1	B	59.1	60.1	61.0	1.9	No
3-38	8	1	B	60.9	61.9	62.4	1.5	No
3-39	8	1	B	59.8	60.8	61.6	1.8	No
3-40	8	1	B	58.9	59.9	60.8	1.9	No
3-41	8	1	B	57.7	58.7	59.8	2.1	No
3-42	8	1	B	56.5	57.5	58.7	2.2	No
3-43	8	1	B	55.9	56.8	58.1	2.2	No
3-44	8	1	B	55.4	56.3	57.6	2.2	No
3-45	8	1	B	54.9	55.9	57.2	2.3	No
3-46	8	1	B	54.5	55.5	56.9	2.4	No
3-47	8	1	B	61.6	62.6	62.4	0.8	No
3-48	8	1	B	68.0	68.9	67.4	-0.6	Yes
3-49	8	1	B	56.1	57.2	58.5	2.4	No
3-50	8	1	B	58.8	59.8	60.7	1.9	No
3-51	8 and 9	1	B	60.8	61.9	62.5	1.7	No
West of US 98 - Between Big Cypress Boulevard and Rock Ridge Road								
4-01	5	1	B	54.3	54.4	56.1	1.8	No
4-02	5	1	B	55.6	55.6	57.1	1.5	No
4-03	5	1	B	56.9	56.9	58.3	1.4	No
4-04	5	1	B	57.0	57.0	58.4	1.4	No
4-05	5	1	B	57.1	57.2	58.5	1.4	No
4-06	5	1	B	55.7	55.8	57.2	1.5	No
4-07	5	1	B	54.9	55.0	56.4	1.5	No
4-08	5	1	B	54.6	54.7	56.2	1.6	No
4-09	5	1	B	55.3	55.4	56.7	1.4	No
4-10	5	1	B	56.5	56.6	58.0	1.5	No
4-11	5	1	B	58.3	58.4	59.5	1.2	No
4-12	5	1	B	54.4	54.7	56.0	1.6	No
4-13	5	1	B	54.4	54.7	56.0	1.6	No
4-14	5	1	B	54.8	55.1	56.4	1.6	No
4-15	5	1	B	55.3	55.5	56.8	1.5	No

Receiver ID	Aerial Plan Sheet	Dwelling Units	NAC	Existing (2021) Predicted Noise Level - dB(A)	No Build (2045) Predicted Noise Level - dB(A)	Build (2045) Predicted Noise Level - dB(A)	Increase Over Existing Noise Level - dB(A)	Impact
4-16	5	1	B	56.2	56.3	57.6	1.4	No
4-17	5	1	B	57.4	57.6	58.7	1.3	No
4-18	5	1	B	57.5	57.7	58.8	1.3	No
4-19	5	1	B	57.4	57.6	58.7	1.3	No
4-20	5	1	B	57.2	57.5	58.5	1.3	No
4-21	5	1	B	57.4	57.6	58.7	1.3	No
4-22	5	1	B	57.4	57.8	58.6	1.2	No
4-23	5	1	B	56.3	56.7	57.6	1.3	No
4-24	5	1	B	55.2	55.6	56.7	1.5	No
4-25	5	1	B	60.9	60.9	61.6	0.7	No
4-26	5	1	B	60.2	60.3	61.0	0.8	No
4-27	5	1	B	60.1	60.2	61.0	0.9	No
4-28	5	1	B	60.1	60.2	61.0	0.9	No
4-29	5	1	B	60.4	60.5	61.2	0.8	No
4-30	5	1	B	60.2	60.4	61.1	0.9	No
4-31	5	1	B	60.2	60.4	61.1	0.9	No
4-32	5	1	B	59.3	59.8	60.3	1.0	No
4-33	5	1	B	57.9	58.4	58.8	0.9	No
4-34	5	1	B	56.6	57.1	57.7	1.1	No
4-35	5	1	B	55.6	56.1	56.8	1.2	No
4-36	5 and 6	1	B	55.1	55.7	56.0	0.9	No
4-37	6	1	B	56.3	57.0	56.9	0.6	No
4-38	6	1	B	56.6	57.3	57.2	0.6	No
4-39	6	1	B	56.4	57.1	57.0	0.6	No
4-40	6	1	B	56.2	57.0	57.0	0.8	No
4-41	6	1	B	56.0	56.8	56.9	0.9	No
4-42	6	1	B	56.4	57.2	57.3	0.9	No
4-43	6	1	B	56.5	57.3	57.4	0.9	No
4-44	6	1	B	56.1	56.9	57.2	1.1	No
4-45	6	1	B	55.2	56.0	56.4	1.2	No
4-46	6	0	C	55.0	55.8	56.5	1.5	No
4-47	6	0	C	61.2	62.0	62.4	1.2	No
4-48	6 and 7	1	B	57.3	58.1	58.8	1.5	No
4-49	6 and 7	1	B	56.1	56.9	57.6	1.5	No
4-50	7	1	B	54.9	55.6	56.5	1.6	No
4-51	7	1	B	55.6	56.4	56.9	1.3	No
4-52	7	1	B	56.6	57.4	57.8	1.2	No
4-53	7	1	B	57.3	58.1	58.3	1.0	No
4-54	7	1	B	58.4	59.3	59.2	0.8	No
4-55	7	1	B	58.6	59.4	59.3	0.7	No
4-56	7	1	B	58.8	59.7	59.4	0.6	No
4-57	7	1	B	58.8	59.6	59.2	0.4	No
4-58	7	1	B	59.5	60.3	59.7	0.2	No
4-59	7	1	B	60.9	61.8	60.7	-0.2	No

Receiver ID	Aerial Plan Sheet	Dwelling Units	NAC	Existing (2021) Predicted Noise Level - dB(A)	No Build (2045) Predicted Noise Level - dB(A)	Build (2045) Predicted Noise Level - dB(A)	Increase Over Existing Noise Level - dB(A)	Impact
4-60	7	1	B	62.3	63.2	61.7	-0.6	No
4-61	7	1	B	61.1	61.9	61.4	0.3	No
4-62	7	1	B	63.6	64.5	63.3	-0.3	No
4-63	7	1	B	67.1	67.9	66.0	-1.1	Yes
4-64	7	1	B	68.0	68.8	66.9	-1.1	Yes
4-65	7	1	B	67.9	68.7	66.8	-1.1	Yes
4-66	7	1	B	66.7	67.5	65.5	-1.2	No
4-67	7	1	B	64.1	65.0	63.2	-0.9	No
4-68	7	1	B	67.2	68.0	65.8	-1.4	No
4-69	7	1	B	68.3	69.0	66.5	-1.8	Yes
4-70	7	1	B	69.3	69.9	67.4	-1.9	Yes
4-71	7	1	B	69.4	70.1	67.6	-1.8	Yes
4-72	7	1	B	69.2	69.9	67.7	-1.5	Yes
4-73	7	1	B	70.2	71.0	69.6	-0.6	Yes
4-74	7	1	B	63.9	64.7	62.8	-1.1	No
4-75	7	1	B	64.1	64.9	62.9	-1.2	No
4-76	7	1	B	64.0	64.8	62.8	-1.2	No
4-77	7	1	B	63.9	64.8	62.8	-1.1	No
4-78	7	1	B	58.5	59.5	58.7	0.2	No
4-79	7	1	B	56.9	57.8	57.4	0.5	No
4-80	7	1	B	57.2	58.1	57.4	0.2	No
4-81	7	1	B	58.6	59.5	58.7	0.1	No
4-82	7	1	B	59.9	60.8	59.5	-0.4	No
4-83	7	1	B	61.5	62.5	60.7	-0.8	No
4-84	7	0	E	64.7	65.6	62.9	-1.8	No
4-85	7	0	C	69.2	70.0	67.9	-1.3	Yes
4-86	8	0	C	56.5	57.5	57.8	1.3	No
4-87	8	0	C	60.8	61.8	61.4	0.6	No
4-88	8	0	C	60.4	61.4	61.4	1.0	No
4-89	8	0	C	57.8	58.8	59.7	1.9	No
4-90	8	0	C	65.5	66.5	65.4	-0.1	No
East of US 98 - Between Rock Ridge Road and SR 471								
5-01	9	1	B	61.1	62.2	63.8	2.7	No
5-02	9	1	B	56.7	57.8	60.2	3.5	No
5-03	9	1	B	59.9	61.0	63.3	3.4	No
5-04	9	1	B	65.9	67.1	68.5	2.6	Yes
5-05	9	1	B	65.2	66.3	68.0	2.8	Yes
5-06	9	1	B	64.8	65.9	67.9	3.1	Yes
5-07	9	1	B	59.7	60.9	63.9	4.2	No
5-08	9 and 10	1	B	62.6	63.7	66.6	4.0	Yes
5-09	10	1	B	59.5	60.7	64.2	4.7	No
5-10	10	1	B	56.4	57.5	61.2	4.8	No
5-11	10	1	B	61.2	62.4	64.8	3.6	No
5-12	11	1	B	58.1	59.2	62.9	4.8	No

Receiver ID	Aerial Plan Sheet	Dwelling Units	NAC	Existing (2021) Predicted Noise Level - dB(A)	No Build (2045) Predicted Noise Level - dB(A)	Build (2045) Predicted Noise Level - dB(A)	Increase Over Existing Noise Level - dB(A)	Impact
5-13	11	1	B	60.7	61.8	65.2	4.5	No
5-14	11	1	B	58.4	59.5	63.4	5.0	No
5-15	11	1	B	54.6	55.8	60.1	5.5	No
5-16	13	1	B	59.6	60.7	63.7	4.1	No
5-17	13	1	B	65.6	66.8	68.9	3.3	Yes
5-18	13	1	B	59.0	60.1	63.8	4.8	No
5-19	14	1	B	55.5	56.6	60.7	5.2	No
5-20	14	1	B	59.5	60.6	63.7	4.2	No
5-21	14	1	B	65.2	66.3	68.9	3.7	Yes
5-22	15	1	B	62.1	63.3	65.9	3.8	No
5-23	15	1	B	57.3	58.4	62.3	5.0	No
5-24	15	1	B	56.3	57.4	61.0	4.7	No
5-25	15	1	B	55.5	56.6	60.2	4.7	No
5-26	16	1	B	57.6	58.7	62.5	4.9	No
5-27	16	1	B	60.2	61.4	64.5	4.3	No
West of US 98 - Between Rock Ridge Road and SR 471								
6-01	11	1	B	54.2	55.3	59.3	5.1	No
6-02	11 and 12	1	B	57.4	58.5	62.7	5.3	No
6-03	12	1	B	55.2	56.3	60.4	5.2	No
6-04	12	1	B	59.0	60.1	64.0	5.0	No
6-05	12	1	B	58.0	59.1	62.7	4.7	No
6-06	12	1	B	58.5	59.6	63.0	4.5	No
6-07	12	1	B	63.0	64.1	66.6	3.6	Yes
6-08	15	1	B	57.4	58.6	62.4	5.0	No
6-09	15	1	B	65.5	66.7	68.9	3.4	Yes
6-10	15	1	B	59.3	60.4	63.5	4.2	No
6-11	15	1	B	57.1	58.2	61.8	4.7	No
6-12	15	1	B	64.2	65.4	68.0	3.8	Yes
6-13	15	1	B	57.8	59.0	62.7	4.9	No
6-15	16	1	B	55.6	56.8	60.6	5.0	No
6-16	16	1	B	68.2	69.4	71.3	3.1	Yes
6-17	16	1	B	67.7	68.9	71.1	3.4	Yes
6-18	17	1	B	64.5	65.7	68.3	3.8	Yes
6-19	17 and 18	1	B	58.9	60.0	63.4	4.5	No
6-20	18	1	B	66.1	67.3	69.1	3.0	Yes
6-21	18 and 19	1	B	57.3	58.4	62.6	5.3	No
6-22	19	1	B	65.7	66.9	69.7	4.0	Yes
East of US 98 - North of SR 471								
7-01	26	1	B	51.9	53.6	57.3	5.4	No
West of US 98 - North of SR 471								
8-01	25	1	B	60.0	61.7	64.1	4.1	No
8-02	26	1	B	61.3	63.0	65.3	4.0	No
8-03	26	1	B	60.5	62.2	64.6	4.1	No
8-04	26	1	B	64.6	66.3	68.0	3.4	Yes

Receiver ID	Aerial Plan Sheet	Dwelling Units	NAC	Existing (2021) Predicted Noise Level - dB(A)	No Build (2045) Predicted Noise Level - dB(A)	Build (2045) Predicted Noise Level - dB(A)	Increase Over Existing Noise Level - dB(A)	Impact
8-05	27	1	B	53.6	55.3	59.2	5.6	No
8-06	27	1	B	59.3	61.1	63.9	4.6	No
8-07	27	1	B	60.4	62.1	64.8	4.4	No
8-08	27	1	B	59.7	61.4	64.4	4.7	No
8-09	27	1	B	67.2	69.0	71.1	3.9	Yes
8-10	27	1	B	65.0	66.7	69.1	4.1	Yes
8-11	27	1	B	58.7	60.4	63.5	4.8	No
8-12	27 and 28	1	B	59.9	61.6	64.3	4.4	No
8-13	28	1	B	56.9	58.6	62.1	5.2	No
8-14 1	28	1	B	62.9	64.6	67.1	4.2	Yes
8-14 2	28		B	65.2	66.9	68.7	3.5	Yes