FINAL PRELIMINARY ENGINEERING REPORT

Florida Department of Transportation

District Seven

SR 56 Southbound C-D Road / Ramps to I-75/I-275

Project Development and Environment (PD&E) Study

Limits of Project: I-75 from south of the I-75/I-275 Apex to SR 56

Hillsborough and Pasco Counties, Florida

Work Program Item Segment Number: 430573-4

ETDM Number: 14330

Date: November 2022

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

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Prepared for:

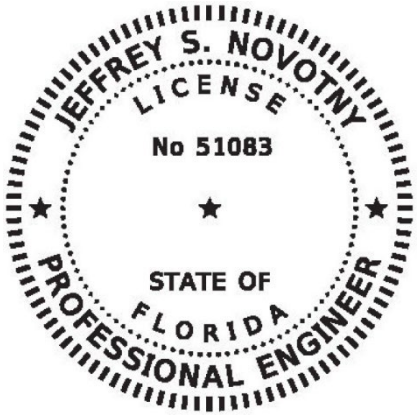
Florida Department of Transportation
District Seven

This preliminary engineering report contains engineering information that fulfills the purpose and need for the SR 56 Southbound C-D Road / Ramps to I-75/I-275 Project Development & Environment Study along I-75 from south of the I-75/I-275 Apex to SR 56 in Hillsborough and Pasco Counties, Florida. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering as applied through professional judgment and experience.

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

Jeffrey S Novotny
Digitally signed by Jeffrey S Novotny
Date: 2022.11.02 23:49:40 -04'00'

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



This item has been digitally signed and sealed by Jeffrey S. Novotny 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.

November 2022

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List of Acronyms

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
BFE	Base Flood Elevation
C-D	Collector-Distributor
CFR	Code of Federal Register
CRAS	*Cultural Resource Assessment Survey*
CZ	Clear zone
DDHV	Directional Design Hour Volume
D-factor	Directional Design Factor
DHT	Design Hour Trucks
ERP	Environmental Resource Permit
ETAT	Environmental Technical Advisory Team
ETDM	Efficient Transportation Decision Making
FAR	Florida Administrative Register
FDACS-DPI	Florida Department of Agriculture and Consumer Services - Division of Plant Industry
FDEP	Florida Department of Environmental Protection
FDM	FDOT Design Manual
FDOT	Florida Department of Transportation (also “Department”)
FEMA	Federal Emergency Management Agency
FGT	Florida Gas Transmission
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FLUCCS	Florida Land Use, Cover and Forms Classification System
FPC	Floodplain Compensation
FT	Feet
FTO	Florida Transportation Online
FWC	Florida Fish and Wildlife Conservation Commission
FY	Fiscal Year
GIS	Geographic Information System
HART	Hillsborough Area Regional Transit Agency
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
IMR	*Interchange Modification Report*
ITS	Intelligent Transportation System
I-75 or I-275	Interstate 75 or Interstate 275
LHM	*Location Hydraulics Memorandum*
LOS	Level of Service
LRE	Long Range Estimates
LRTP	Long Range Transportation Plan
MPH	Miles per Hour

MPO	Metropolitan Planning Organization
MSE	Mechanically stabilized earth
NAVD	North American Vertical Datum
NB	Northbound
NC	Normal Crown Superelevation
NEPA	National Environmental Policy Act of 1969
NHFN	National Highway Freight Network
NRCS	Natural Resources Conservation Service
NRE	*Natural Resources Evaluation*
OEM	Office of Environmental Management
OFW	Outstanding Florida Water
PC	Point of Curvature
pc/mi/ln	Passenger Car per Mile per Lane
PCPT	Pasco County Public Transportation
PD&E	Project Development and Environment
PHFS	Primary Highway Freight System
PSR	*Pond Siting Report*
PT	Point of Tangency
PTAR	*Project Traffic Analysis Report*
RC	Reverse Crown Superelevation
ROW	Right-of-Way
RTFP	Regional Transit Feasibility Plan
SB	Southbound
SDG	FDOT Structures Design Guidelines
SHPO	State Historic Preservation Officer
SHWT	Seasonal High Water Table
SIS	Strategic Intermodal System
SLD	Straight Line Diagram
SMF	Stormwater Management Facility(ies)
SR	State Road
STRAHNET	Strategic Highway Network
SWFWMD	Southwest Florida Water Management District
T24	Daily Truck Factor
TBARTA	Tampa Bay Regional Transit Authority
TBRPM	Tampa Bay Regional Planning Model
TIP	Transportation Improvement Plan
TPO	Transportation Planning Organization
TSM&O	Transportation System Management and Operations
USFWS	United States Fish and Wildlife Service
WBID	Water Body Identification
WPI	Work Program Item

Italicized acronyms in this report indicate report document prepared under this project.

SECTION 1 INTRODUCTION

1.1 PROJECT DESCRIPTION

This project consists of operational improvements on I-75/I-275 from south of County Line Road to SR 56 in Hillsborough and Pasco Counties, a distance of approximately 2.2 miles. See **Figure 1-1** for project location. This project consists of the construction of a southbound collector-distributor (C-D) road and the relocation of ramp connections to improve the southbound operations between the I-75/I-275 and I-75/SR 56 interchanges and eliminate undesirable weaving movements. This portion of I-75/I-275 is functionally classified by the Florida Department of Transportation (FDOT) as an urban principal arterial/interstate and is part of FDOT's Strategic Intermodal System (SIS). An *Interchange Modification Report* (IMR) was prepared to document the safety, operational and engineering acceptability of the interchange improvements proposed in the preferred alternative. The *IMR* dated September 2022 was approved by the FDOT's Systems Implementation Office and FDOT's Chief Engineer on October 17, 2022.

1.2 PD&E STUDY PURPOSE

The objective of the PD&E study is to assist the FDOT's Office of Environmental Management (OEM) in reaching a decision on the type, location, and conceptual design of the necessary improvements for the southbound on-ramps from State Road (SR) 56 to Interstate 75 (I-75) and I-275 to safely and efficiently accommodate future travel demand. This study documents the need for the improvements as well as the procedures utilized to develop and evaluate various improvements, including elements such as proposed typical sections, preliminary horizontal alignments, and interchange enhancement alternatives.

The PD&E study satisfies all applicable requirements, including the National Environmental Policy Act (NEPA), to qualify for federal-aid funding of subsequent development phases (design, right-of-way acquisition, and construction). This project was screened through the FDOT's Efficient Transportation Decision Making (ETDM) process as ETDM Project No. 14330. An ETDM Programming Screen Summary Report was published on February 21, 2018, containing comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical, and social resources. A Type 2 Categorical Exclusion will be prepared as part of this PD&E study.

1.3 PROJECT PURPOSE AND NEED

1.3.1 Purpose

The purpose of the project is to improve operations on southbound I-75 between SR 56 and the southbound off-ramp to I-275 (I-75/I-275 interchange).

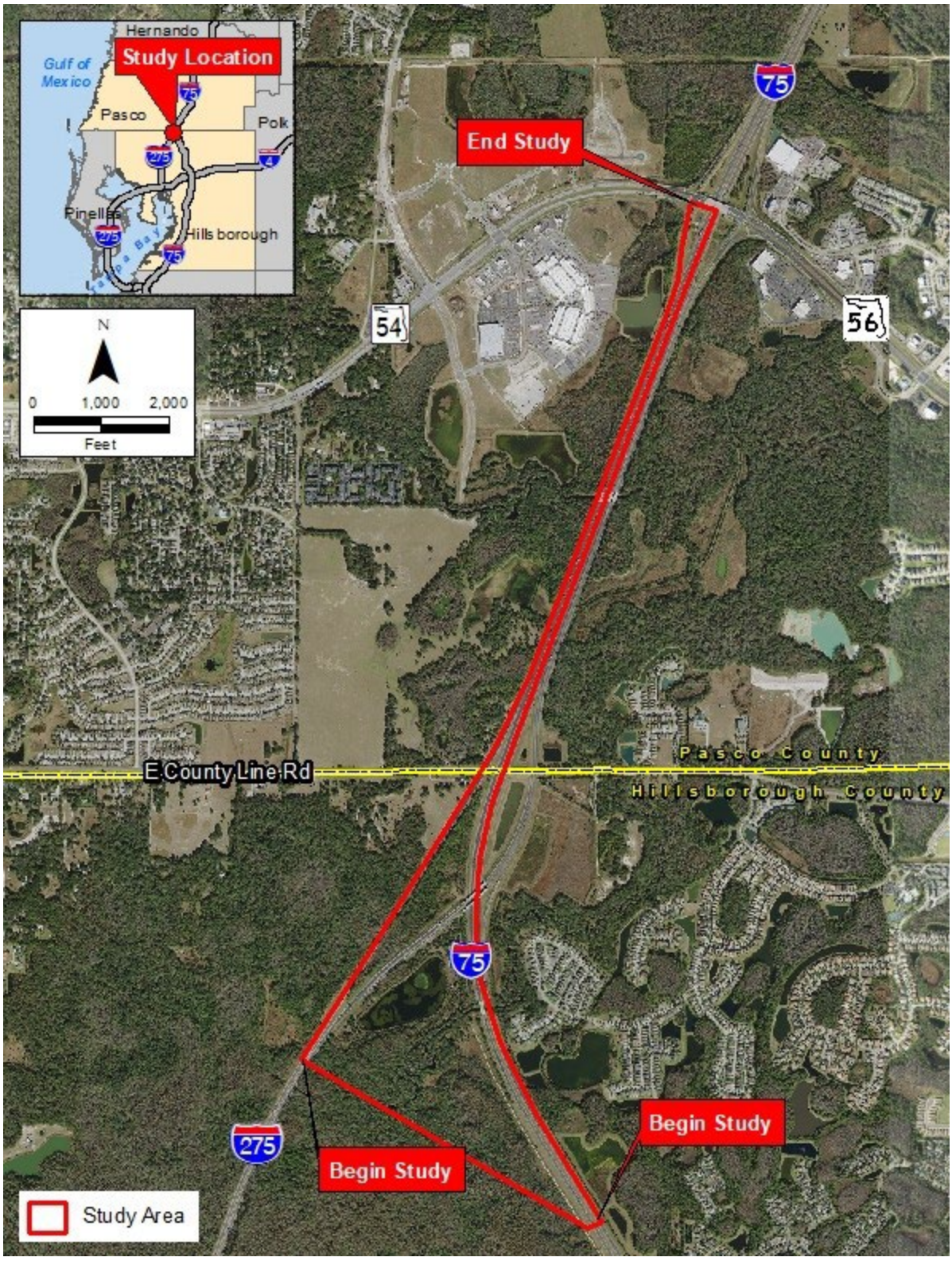

Figure 1-1 Project Location Map

1.3.2 Need

This project is needed to address the effect on operations by reducing the number of weaving vehicles in the project area.

1.3.3 Roadway Capacity/Deficiencies

I-75 currently operates at an acceptable level of service (LOS) C. It is expected that by 2040 the study segment of I-75 will operate at an unacceptable LOS F. This capacity analysis is based on the Generalized Service Volume Tables form the FDOT 2013 Quality/Level of Service Handbook.

In 2013, an Interchange Improvement Alternative Study was commissioned by the FDOT to evaluate the I-75/SR 56 interchange. As a result, a diverging diamond interchange (DDI) at I-75 and SR 56 is currently under construction. As part of the 2013 study, the southbound C-D road was also analyzed. The presence of the southbound C-D road does improve level of service on I-75.

1.3.4 Safety

The distribution of crash types on this segment of I-75 between 2014 and 2018 show that rear end crashes make up 35% of the crashes and sideswipe crashes make up 20%. These crash types are indicative of an inadequate weaving segment.

1.4 COMMITMENTS

As documented in the *Natural Resources Evaluation (NRE)* report, the FDOT has made three commitments as part of this project.

1. The FDOT will incorporate the most current US Fish and Wildlife Service (USFWS) guideline Standard Protection Measures for the Eastern Indigo Snake during construction.
2. Surveys to update locations of active osprey and bald eagle nest sites will be conducted during the permitting phase of the project, and permits will be acquired if there are unavoidable impacts during construction. Coordination with USFWS and Florida Fish and Wildlife Conservation Commission (FWC) will take place as necessary.
3. Plant surveys should be conducted prior to construction during the appropriate survey season. If protected species are located, coordination with the Florida Department of Agriculture and Consumer Services - Division of Plant Industry (FDACS-DPI) will be initiated to determine requirements.

1.5 DESCRIPTION OF PREFERRED ALTERNATIVE

The Preferred Alternative includes operational improvements to construct a southbound C-D Road adjacent to and parallel to southbound I-75. The southbound C-D Road will eliminate the existing weave between the southbound on-ramp from SR 56 and the I-75/I-275 diverge. The traffic from the southbound on-ramp is proposed to remain separated from southbound I-75 lanes until downstream from the I-75/I-275 diverge in a C-D Road. The C-D Road will be split into separate ramps that will

merge to I-75 and I-275. **Figure 1-2** shows a simplified schematic of the differences between the existing traffic routing for southbound I-75 and SR 56 on-ramps to I-275 and I-75 and the elimination of the existing weave zone with the Preferred Alternative through the addition of the C-D Road.

The southbound C-D Road will be barrier-separated from southbound I-75 and include three travel lanes with shoulders on the inside and outside. A new bridge will carry the C-D Road over Cypress Creek adjacent to the existing I-75 bridge over the same creek (Bridge No. 140061). The proposed typical section for the C-D Road is shown adjacent to the existing southbound I-75 lanes in **Figure 1-3**.

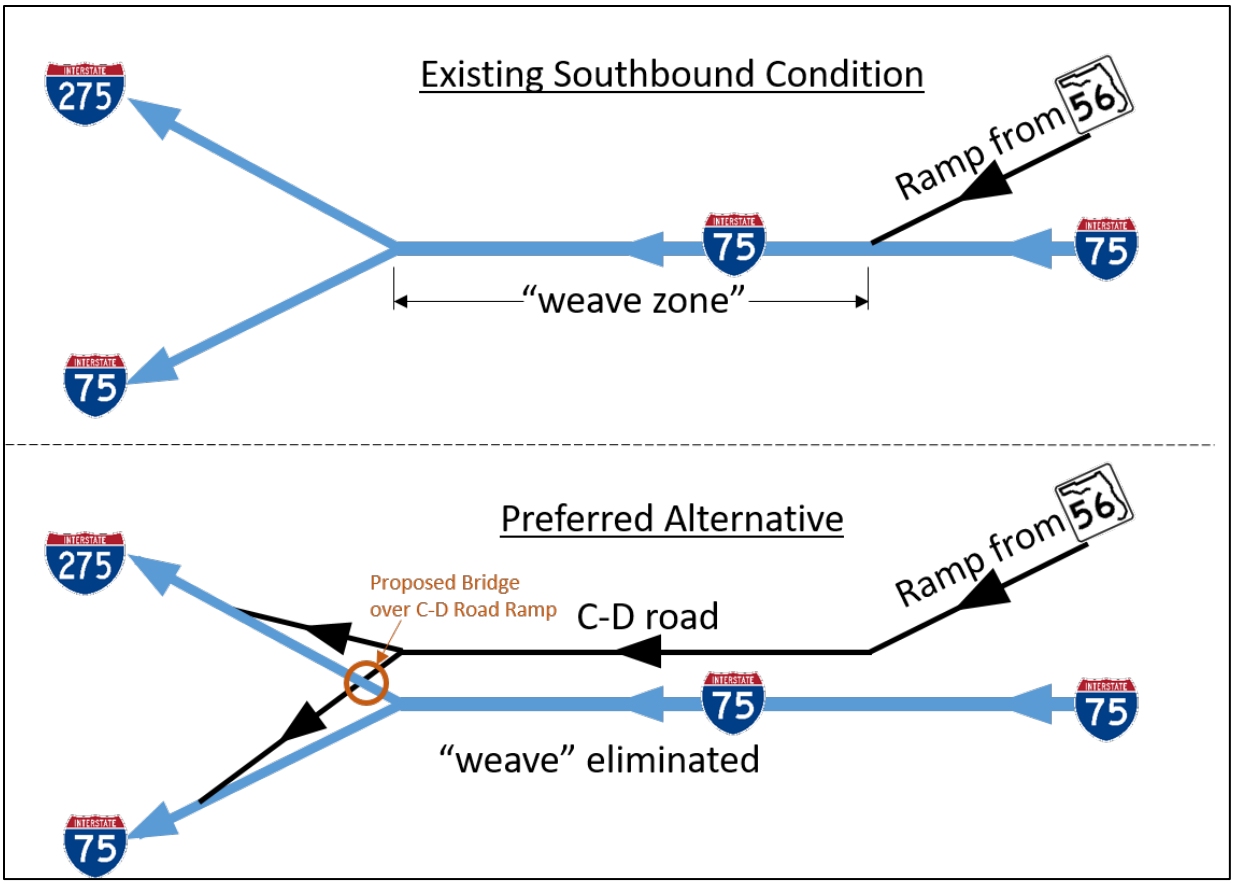

Figure 1-2 Existing and Proposed Traffic Routing for I-75, I-275 & SR 56 Ramp

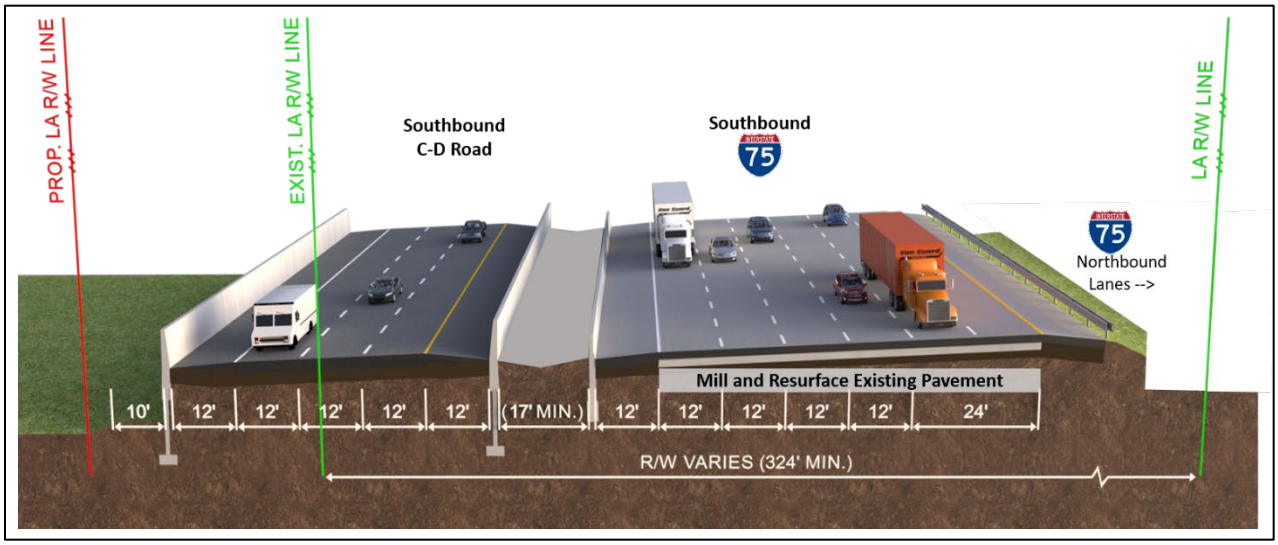

Figure 1-3 Graphically Enhanced Typical Section of Preferred Alternative

(Looking North along I-75 between I-75/I-275 Apex and SR 56 On-Ramp)

A new bridge over Cypress Creek to be built adjacent to Bridge No. 140061 to carry the C-D Road. **Figure 1-4** shows the new proposed bridge carrying the southbound C-D Road over Cypress Creek.

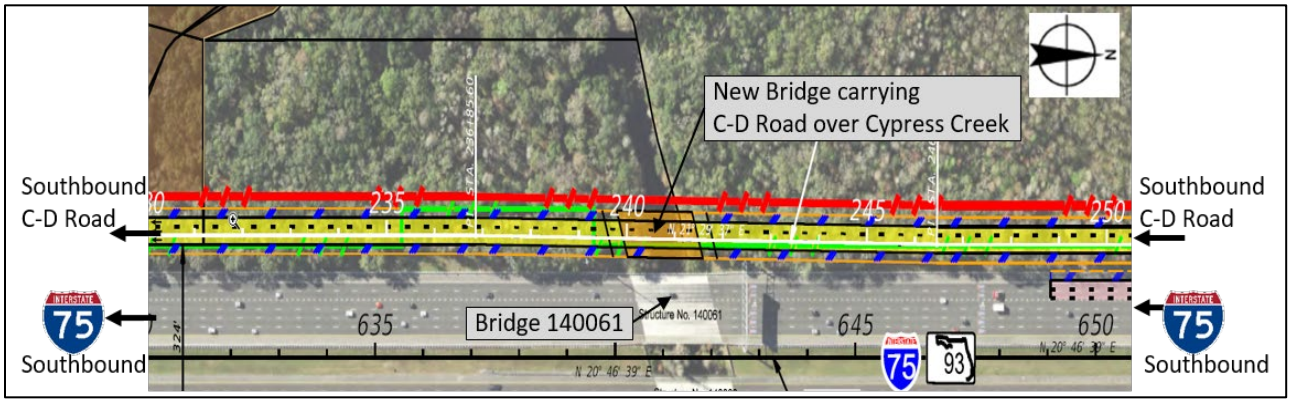

Figure 1-4 Preferred Alternative–New C-D Road Bridge over Cypress Creek
(Figure 1-4 is not to scale and compressed to fit on page)

The diverge point of the I-75/I-275 apex was shifted slightly south of the existing diverge point so the I-275 southbound lanes will pass under a different span of the County Line Road bridge (Bridge No 100492) to the east of the existing crossing location. The C-D Road split to the ramp to I-275 and the ramp to I-75 will be located under the bridge span which I-275 currently passes though on this same bridge. The three C-D Road lanes will diverge to a two-lane ramp to I-75 and a two-lane ramp to I-275. The southbound I-275 lanes will crossover the C-D Road ramp to I-75 on a new bridge. South of this new bridge, the 2-lane ramp to I-75 will cross under the existing bridges carrying northbound I-275 and its off ramp to SR 56 (Bridge Nos. 100411 and 100833 respectively). **Figure 1-5** shows the C-

D Road diverge point and new bridge carrying southbound I-275 over the C-D Road ramp to I-75. **Figure 1-6** shows a section view of the 2-lane on-ramp under Bridge No. 100411 and the shoulder narrowing necessary for the ramp to fit under the end span, which will require a design exception for ramp inside and outside shoulder width at approximately 5-ft.

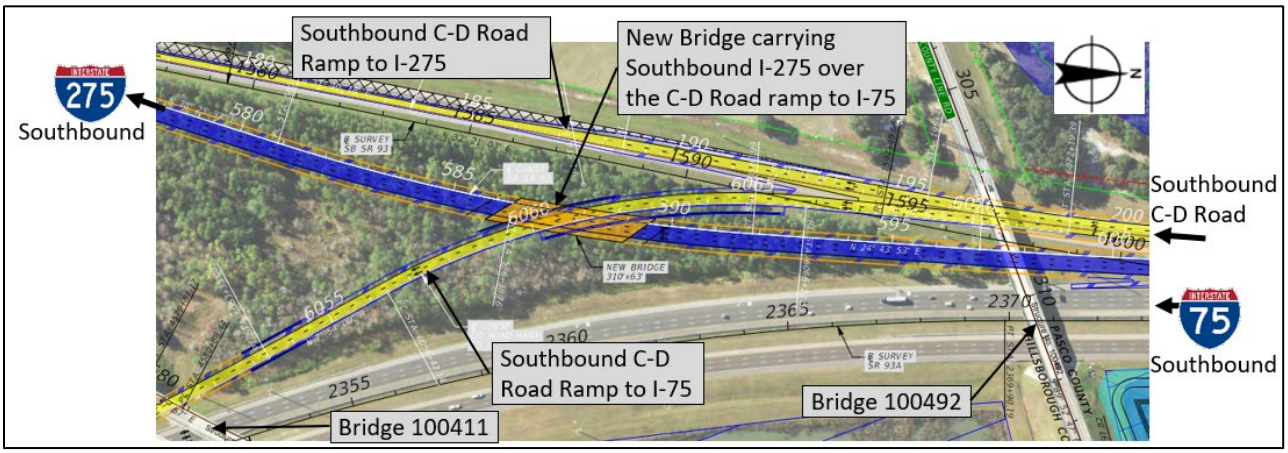

Figure 1-5 Preferred Alternative–C-D Road Diverge & New I-275 Bridge over C-D Road Ramp

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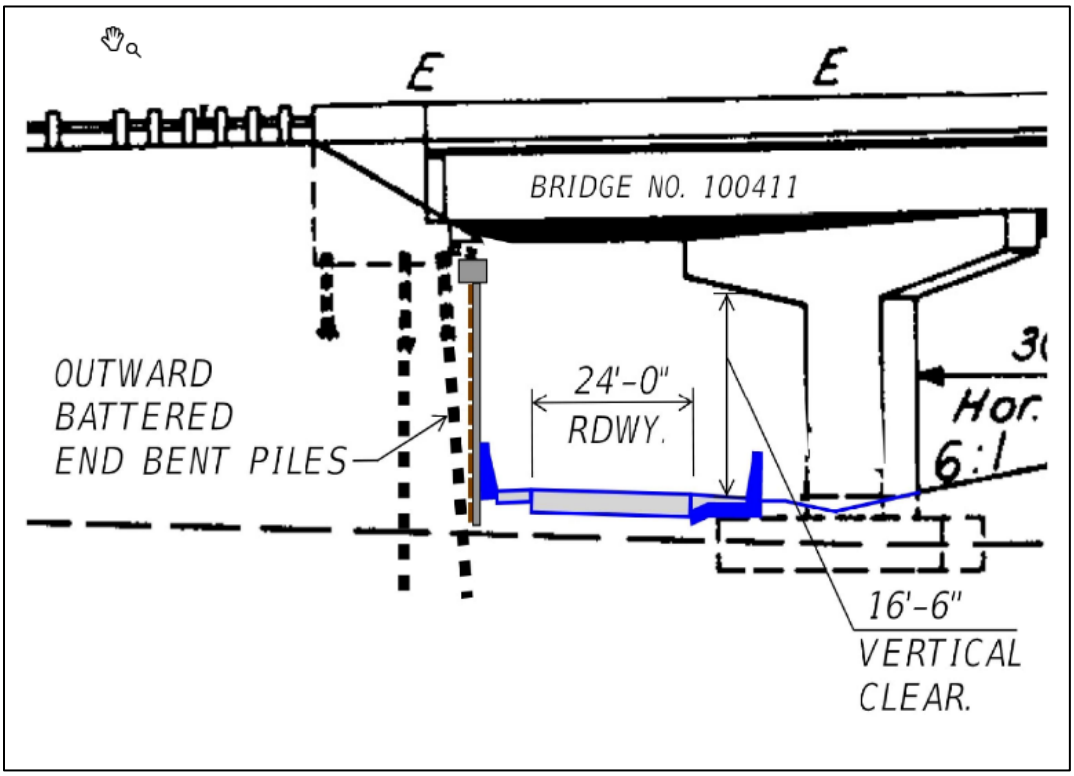

Figure 1-6 2-Lane On-Ramp Under Bridge-No. 100411 – Section View

The 2-lane on-ramp will merge to I-75 south of the Bridge Nos. 100411 and 100833 with a 1500 ft. acceleration distance prior to dropping the outside ramp lane, followed by an additional 1500 ft. acceleration distance prior to dropping the second ramp lane. For the 2-lane on-ramp to southbound I-75 to be constructed, the existing bridge carrying I-75 over Cypress Creek (Bridge No. 100412) will need to be widened by 26 ft. 7 inches to the outside to accommodate removal of the existing barrier and the addition of 2 travel lanes. **Figure 1-7** shows a plan view layout of the bridge widening.

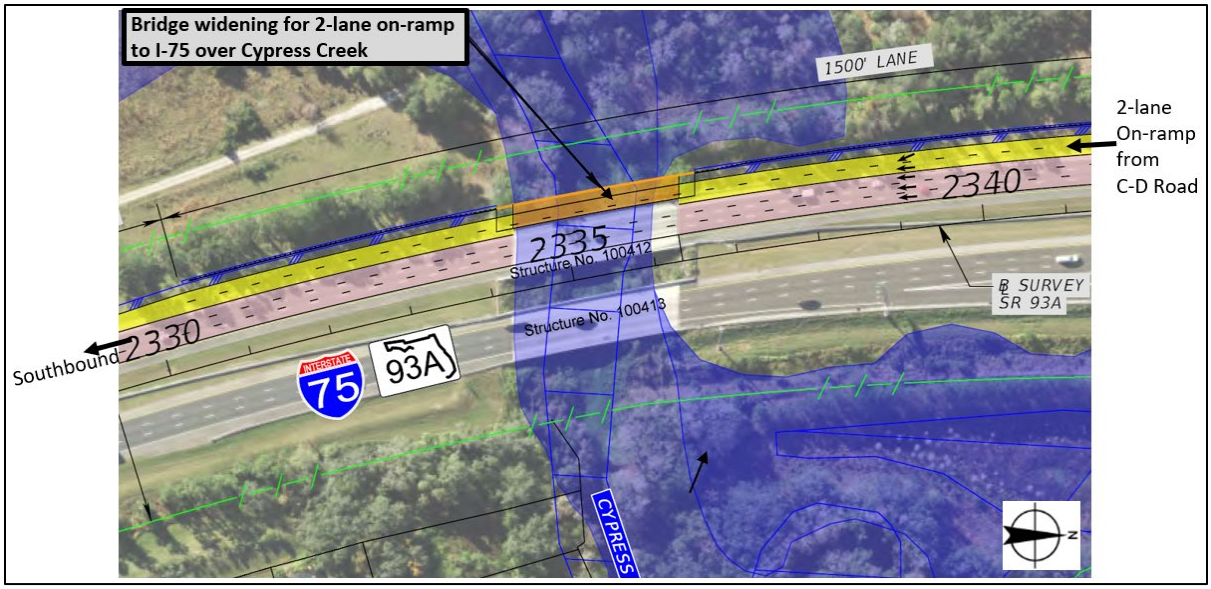

Figure 1-7 Bridge-No. 100412 Widening

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Approximately 8.1 acres of additional right of way (ROW) is required for constructing the C-D Road and 10.7 acres of additional ROW is required for constructing the proposed floodplain compensation (FPC) sites. No additional ROW is required for the stormwater management facilities (SMF) as they can be located within the existing ROW footprint or through expansion of existing SMFs. No business or residential relocations will be required.

The conceptual plans for the Preferred Alternative are shown in **Appendix A** and the preliminary estimated project costs are shown in **Table 1-1**.

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

Estimated Costs Present Day Costs in $ Million Rounded to the Nearest 0.1 Million $	Pasco County Segment 430573-2	Hillsborough County Segment 430573-3	Total Project
Construction of Roadway, Bridges and Ponds[1]	$41.8	$33.2	$75.0
Right of Way for I-75 Roadway Widening	$0.8	$0	$0.8
Right of Way for Stormwater Ponds and Floodplain Compensation Site	$1.0	$0	$1.0
Wetlands Mitigation (5.37 acres)	$1.5	$0	$1.5
Design and Construction Inspection (20% of construction)	$8.4	$6.6	$15.0
Total Project Estimated Costs	**$53.5**	**$39.8**	**$93.3**

[1]*Construction cost based on Long Range Estimate (LRE) system prepared June 2022*

The design for the Preferred Alternative will be developed as one project but segmented by county for funding purposes. Both county segments will be constructed as one combined construction project. WPI Segment 430573-2 is set aside as the Pasco County segment (from County Line Road to SR 56) and WPI Segment 430573-3 is set aside as the Hillsborough County segment (from south of County Line Road to County Line Road).

SECTION 2 EXISTING CONDITIONS

2.1 ROADWAY CLASSIFICATION

The straight line diagrams (SLD) for I-75 and I-275 which indicate the roadway classifications are included in **Appendix B**.

2.1.1 Roadway Functional Classification

Existing I-75 and I-275 within the study limits are both functionally classified as Urban Principal Arterial Interstate. The Federal Highway Adminstration (FHWA) Urban Boundary Map for Hillsborough and Pasco Counties is shown on **Figure 2-1.** These maps show the study limits is within the urban area boundary.

2.1.2 Context Classification and Access Management Classification

The FDOT's Context Classification system does not apply to interstate facilities as they are limited access facilities. I-75 and I-275 are Access Class 1 being limited access facilities. The project area included in an existing FHWA urbanized boundary are considered Area Type 2 which provides for an applicable interchange spacing of 2 miles.

2.1.3 Roadway Classification – Emergency Evacuation, Military and Freight Routes

As interstate highways, both I-75 and I-275 are classified as emergency evacuation routes. I-75 and I-275 are included on the state's SIS. Additionally, interstate highways are also routes on the Strategic Highway Network (STRAHNET) which is a designation given to roads that provide "defense access, continuity and emergency capabilities for movements of personnel and equipment in both peace and war" according to the US Department of Defense.

I-75 is on the National Highway Freight Network (NHFN) as a Primary Highway Freight System (PHFS) Route which is a network of highways identified as the most critical highway portions of US freight transportation system determined by measurable and objective national data. I-275 is on the NHFN as a portion of Other Interstate Portions not on the PHFS.

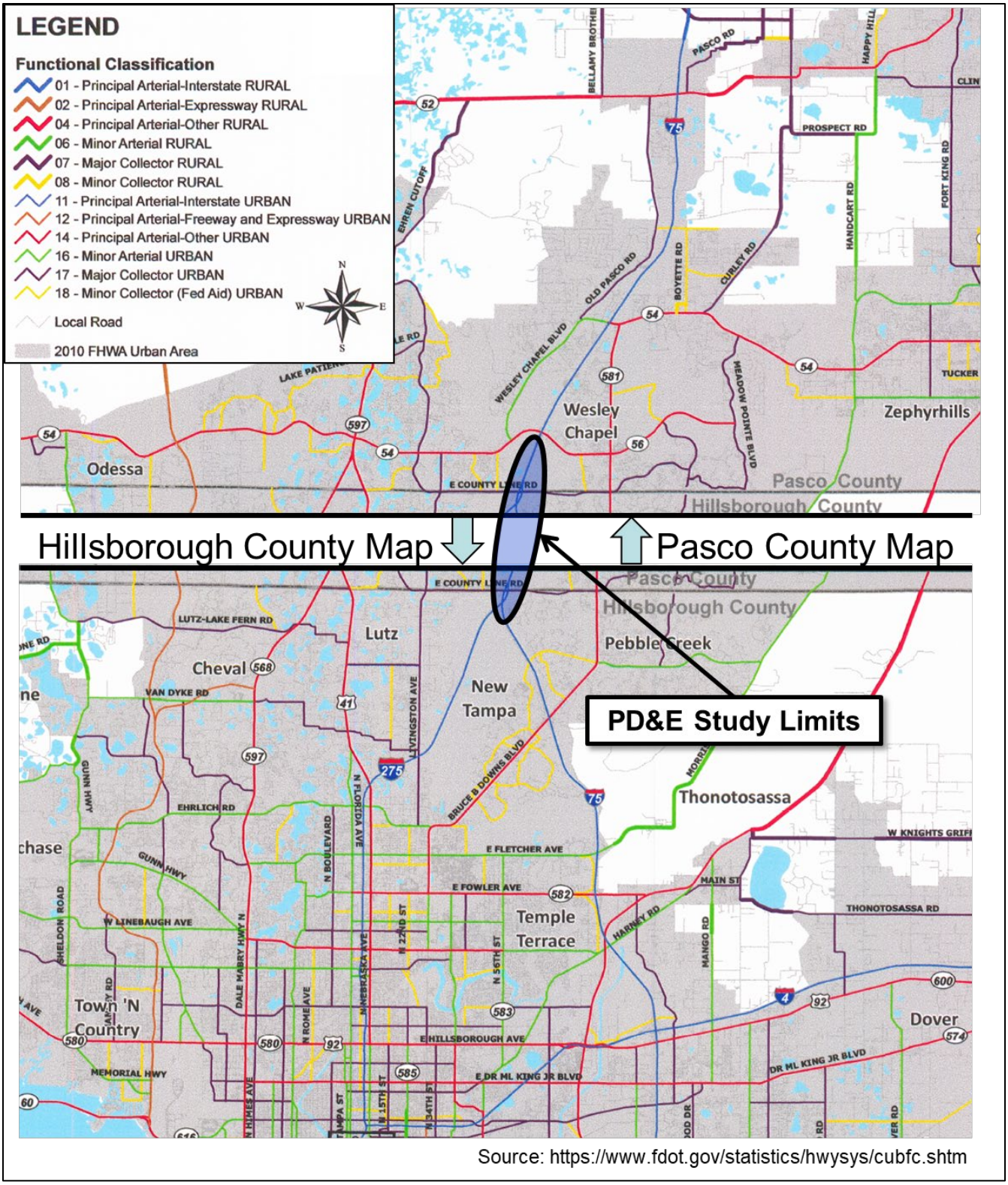


Figure 2-1 FHWA Urban Boundary Map

2.2 INTERSTATE CONNECTIONS AND EXISTING LANE GEOMETRY

Southbound I-75 consists of four through lanes north of SR 56. At the connection of the SR 56 southbound on-ramp to I-75, there are six lanes of traffic, two that are added from the SR 56 ramp. The six lanes of traffic separate to four lanes that continue southbound on I-75, which merges to three lanes immediately south of the diverge and three lanes that exit to southbound I-275 - the fourth lane from the inside is a choice-lane such that the driver has the choice to either continue onto southbound I-75 or onto southbound I-275. For vehicles entering I-75 from SR 56 to proceed on southbound I-75, they must weave with the southbound I-75 vehicles that are exiting onto southbound I-275. **Figure 2-2** shows a simplified schematic of the existing and traffic routes for southbound I-75 and SR 56 ramp to I-275 and I-75 and the existing weave zone.

The mainline location of the southbound I-75/I-275 diverge ramp gore is at approximately station 2387+00 and the location of the SR 56 on-ramp gore is approximately station 670+00. Accounting for the station equation of approx. 2390+10=617+73, the distance between these ramp gores (or length of the "weave zone" is approximately 5,500 feet (1.04 miles).

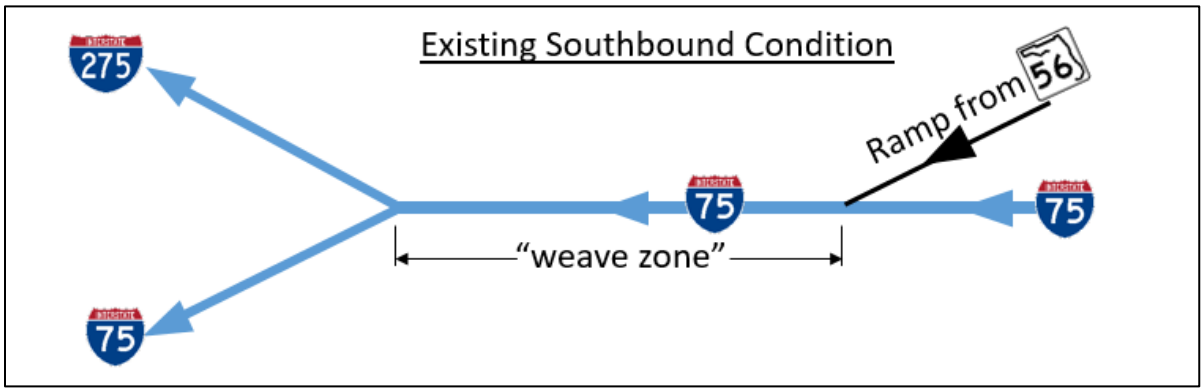


Figure 2-2 Existing Southbound Traffic Routes for I-75, I-275 & SR 56 On-Ramp

Figure 2-3 shows the overhead sign designation for southbound I-75 traffic to continue on southbound I-75 or southbound I-275. Note the "choice lane" as the fourth lane from the left. The existing lane geometry for southbound SR 56 on-ramp, I-75 southbound and the southbound system interchange is shown in **Figure 2-4**.

Figure 2-3 Southbound Diverge at I-75 and I-275 System Interchange

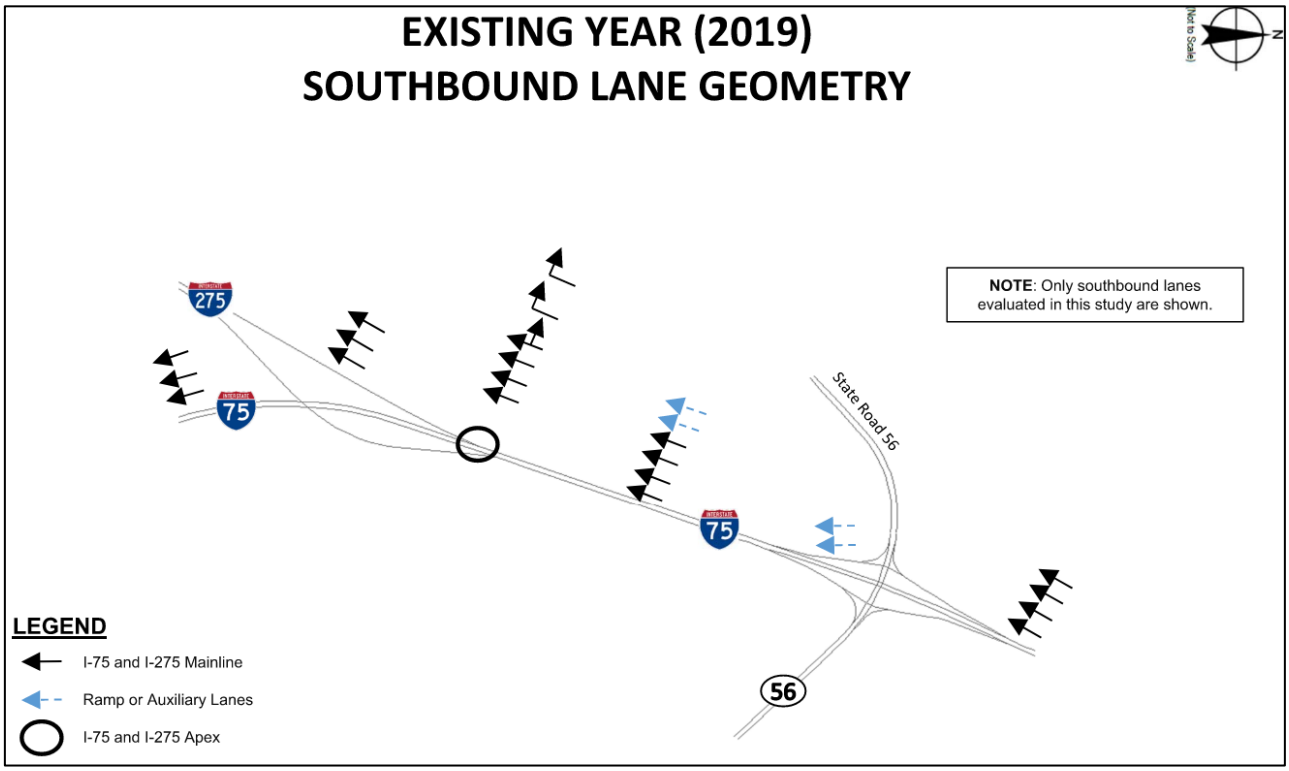


Figure 2-4 Existing Lane Geometry

2.3 TYPICAL SECTION AND DESIGN SPEEDS

Figure 2-5 shows the existing typical section of I-75 between the I-75/I-275 apex and the SR 56 on-ramp and the location of the choice lane. The posted speeds listed as miles per hour (mph) for I-75 and I-275 are both 70 mph. The speed limit for the southbound on-ramp from SR 56 is not posted.

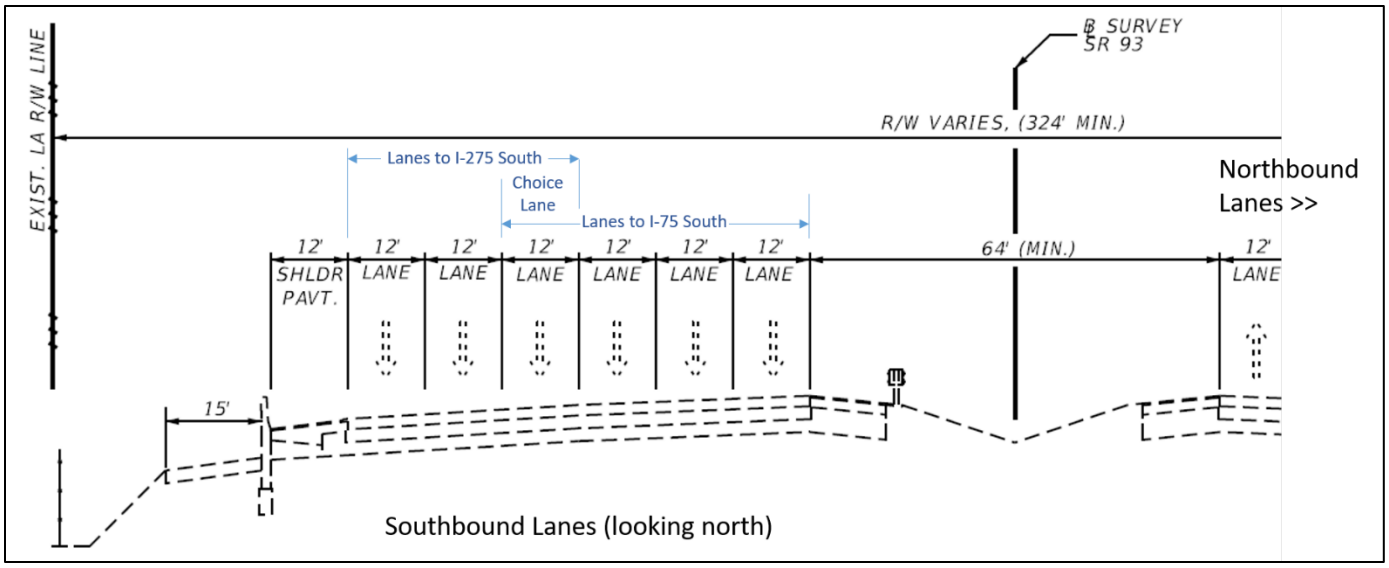


Figure 2-5 Existing I-75 Between I-75/I-275 Apex and SR 56 On-Ramp

2.4 PAVEMENT CONDITIONS

A flexible pavement condition survey was conducted by FDOT for the project corridor as reported February 2021. Each section of pavement was rated for cracking and ride on a 0-10 scale with 0 the worst and 10 the best. Any rating of 6.4 or less is considered deficient pavement. **Table 2-1** identifies the existing pavement condition ratings by segment. The existing pavement is generally in good condition. I-275 is projected to maintain a rating above deficient range through 2026. The I-75 pavement is projected to reach the deficient range by 2026.

Table 2-1 Pavement Condition Survey Results

Beginning Milepoint	Ending Milepoint	Most Recent Surveyed Year	Condition Category	Ratings	Year Finished Paving
Hillsborough County Segment I-75 (Roadway ID 10-075-000					
30.198 Fowler Ave/SR 582 (South of project limits)	39.854 County Line	2021	Cracking	7.5	2016
			Ride	8.4	
Hillsborough County Segment I-275 (Roadway ID 10-320-000)					
15.159 South of NB Off Ramp	16.021 County Line	2021	Cracking	9.0	2016
			Ride	8.0	
Pasco County Segment I-275/75 (Roadway Segment ID 14-140-000)					
0.260 End of I-275	0.812 Cypress Creek Bridge	2021	Cracking	10.0	2016
			Ride	8.4	
0.812 Cypress Creek Bridge	4.892 SR 54 (North of project limits)	2021	Cracking	7.5	2015
			Ride	8.4	
Pasco County Segment I-75 (Roadway Segment ID (14-075-000)					
0.000 County Line	0.260 End of I-275	2021	Cracking	10.0	2016
			Ride	8.3	

2.5 PEDESTRIAN AND BICYCLE ACCOMMODATIONS

There are no pedestrian or bicycle facilities along I-75 or I-275 within the study area.

2.6 TRANSIT FACILITIES

Neither the Hillsborough Area Regional Transit Authority (HART) nor Pasco County Public Transportation (PCPT) operate an existing fixed transit route along I-75 nor I-275 in the project area, nor utilize the SR 56 southbound ramp. There are no transit stops located within the study area. The study area is encompassed within the Tampa Bay Area Regional Transit Authority's (TBARTA) evaluation of feasibility for supporting regional transit with a catalyst project (See **Section 5.4.2**).

2.7 RIGHT-OF-WAY

The existing ROW varies in width throughout the study area. The concept plans in **Appendix A** show the existing ROW throughout the project limits with a green line and label the total existing ROW width. The existing right of way width along I-75 varies between 324 and 374 feet. The existing right of way width along I-275 is 300 feet. The right of way width increases for the apex of I-275 at I-75, consisting of a maximum width of 1186 feet.

2.8 HORIZONTAL ALIGNMENT

The existing horizontal alignment was obtained from baseline survey data obtained from FDOT's survey section. **Table 2-2** summarizes the existing horizontal curves within the study limits for I-75

and I-275 southbound. The existing alignment for I-75 has two curves with degrees of curve of 1 degree 00 minutes (radius of 5730 feet) and 0 degrees 20 minutes (radius of 17,189 feet). Both existing curves for I-75 meet design standards for up to 70 mph design speed with superelevation of 0.039 ft/ft and reverse crown. The existing alignment for I-275 southbound has two curves with degrees of curve of 0 degrees 20 minutes (radii of 11,459 feet). Both existing curves for I-275 southbound meet design standards for up to 70 mph design speed with reverse crown (RC).

Table 2-2 Existing Horizontal Curves

Curve #	Curve Direction	Point of Inter-section (PI) Location	Degree of Curve	Curve Length (Ft)	Est. Design Speed (MPH)	Meet Criteria?
I-75						
1	Right	2345+86.60	1° 00'	5195	70	Yes, 0.039
2	Right	691+29.55	0° 20'	1953	70	Yes, RC
I-275 Southbound						
1	Right	1534+31.66	0° 30'	2713	70	Yes, RC
2	Left	1606+10.79	0° 30'	2314	70	Yes, RC

2.9 VERTICAL ALIGNMENT

During the future design phase, survey data would be collected where the vertical alignment may be determined and evaluated.

2.10 INTERSECTIONS AND SIGNALIZATION

There are no intersections along I-75 or I-275 within the study area.

2.11 CRASH DATA AND SAFETY ANALYSIS

The following was excerpted from the *Project Traffic Analysis Report (PTAR)* which contains additional information related to crash data within the entire project limits. The five-year crash analysis (2014 – 2018) for southbound I-75, southbound I-275 and southbound SR 56 on-ramp within the study area found 236 total crashes with an average of 47.2 crashes per year. **Table 2-3** shows the summary of crash data for the five-year period.

Table 2-3 Crash Summary for the Entire Project Area Southbound

	Year					Total
	2014	2015	2016	2017	2018	
No. of Fatal Crashes	1	0	0	0	0	1
No. of Injury Crashes	19	24	11	12	11	77
No. of Property Damage Only Crashes	37	25	32	41	23	158
Total Crashes	***57***	***49***	***43***	***53***	***34***	***236***
Wet weather crashes	23	21	6	6	12	68
Night-time crashes	23	16	17	19	11	86

Night-time crashes accounted for 36% of the total number of crashes. This number exceeds the statewide average of 24% from data published on page 33 in the Florida Highway Safety and Motor Vehicles *Traffic Crash Facts Annual Report 2018. Most of these crashes in dark conditions occurred in the Pasco County segment of I-75.*

As shown in **Table 2-4** the most prominent crash type recorded for this roadway is rear end (35%) with hit fixed object (23%) as the second most prominent crash type for the reported time period, and sideswipe (20) as the third most. These crash types could be attributed to congestion from vehicle weaving that is occurring in the study area. There were no pedestrian/bicycle crashes reported.

Table 2-4 Crash Type Summary for Southbound I-275

Crash Type	Year					Total	%
	2014	2015	2016	2017	2018		
Angle	0	1	0	2	0	3	1%
Rear End	17	12	18	27	8	82	35%
Sideswipe	9	11	12	8	7	47	20%
Left-Turn	0	0	0	0	1	1	0%
Head-On	1	0	0	0	0	1	0%
Run off-road	0	1	0	1	0	2	1%
Overturned/Rollover	3	0	0	0	0	3	1%
Hit Fixed Object	16	14	7	5	13	55	23%
Hit Non-Fixed Object	4	1	2	5	1	13	6%
Single Vehicle	6	9	4	4	2	25	11%
Other	1	0	0	1	2	4	2%
Total	***57***	***49***	***43***	***53***	***34***	***236***	***100%***

The crash data plotted for frequency of crash locations along southbound I-75 within Pasco County on **Figure 2-6** suggest that the higher crash locations (total crashes reported at 14, 25, 11 and 22 crashes) are situated near the SR 56 on-ramp gore area, and in several areas further south prior to County Line Road where I-75 and I-275 traffic diverge. This suggests the weave zone between the SR 56 on-ramp and the I-75/275 split may be contributing to the crash history.

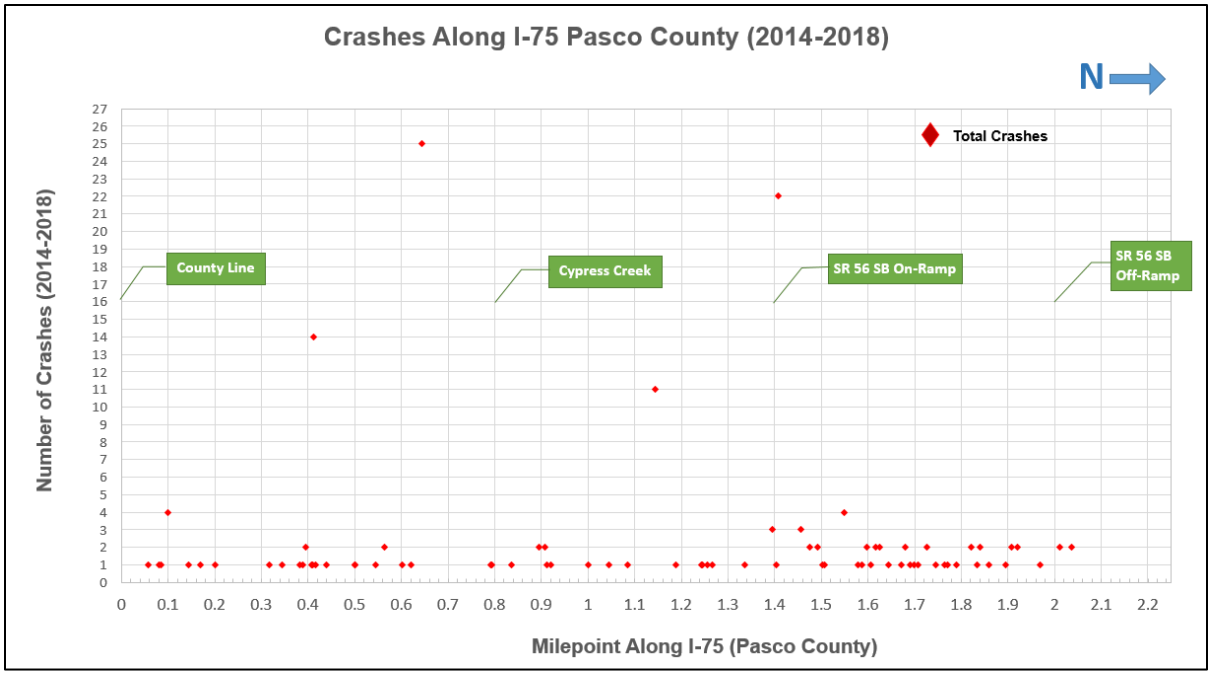


Figure 2-6 Crash Frequency by Location for Southbound I-75 (Pasco County)

2.12 EXISTING STRUCTURES

Figure 2-7 on the following page shows the existing bridge structures within the study limits. All structures were last inspected in 2021. None of the bridges are considered historically significant.

There are two existing I-75 bridge pairs over Cypress Creek within the study limits. These are shown in pink/violet shading on **Figure 2-7.** The first pair is the I-75 southbound and northbound lanes over Cypress Creek in Hillsborough County (Bridge Nos. 100412 and 100413, respectively). This bridge pair is approximately 0.6 miles south of County Line Road. The second bridge pair, located approximately 0.8 miles north of County Line Road, is the I-75 southbound and northbound lanes over Cypress Creek in Pasco County (Bridge Nos. 140061 and 140062, respectively). The Hillsborough County bridge pair was built in 1982 and widened in 2014 while the Pasco County bridge pair was built in 1963 and the southbound bridge was widened in 2007. According to the bridge inspection reports, both are in very good condition, as shown in **Table 2-5**. None of the bridges are posted for load rating. A *Bridge Hydraulic Report* will be prepared during the design phase to determine the Cypress Creek water elevations and associated vertical clearance requirements.

Table 2-5 Existing I-75 Bridge Structure Information

Bridge Number	Roadway ID	Milepost	Sufficiency Rating	Health Index
100412	10075000	39.219	96	94.43
100413	10075000	39.216	96	96.85
140061	14140000	0.770	93.9	93.41
140062	14140000	0.782	93.4	89.65

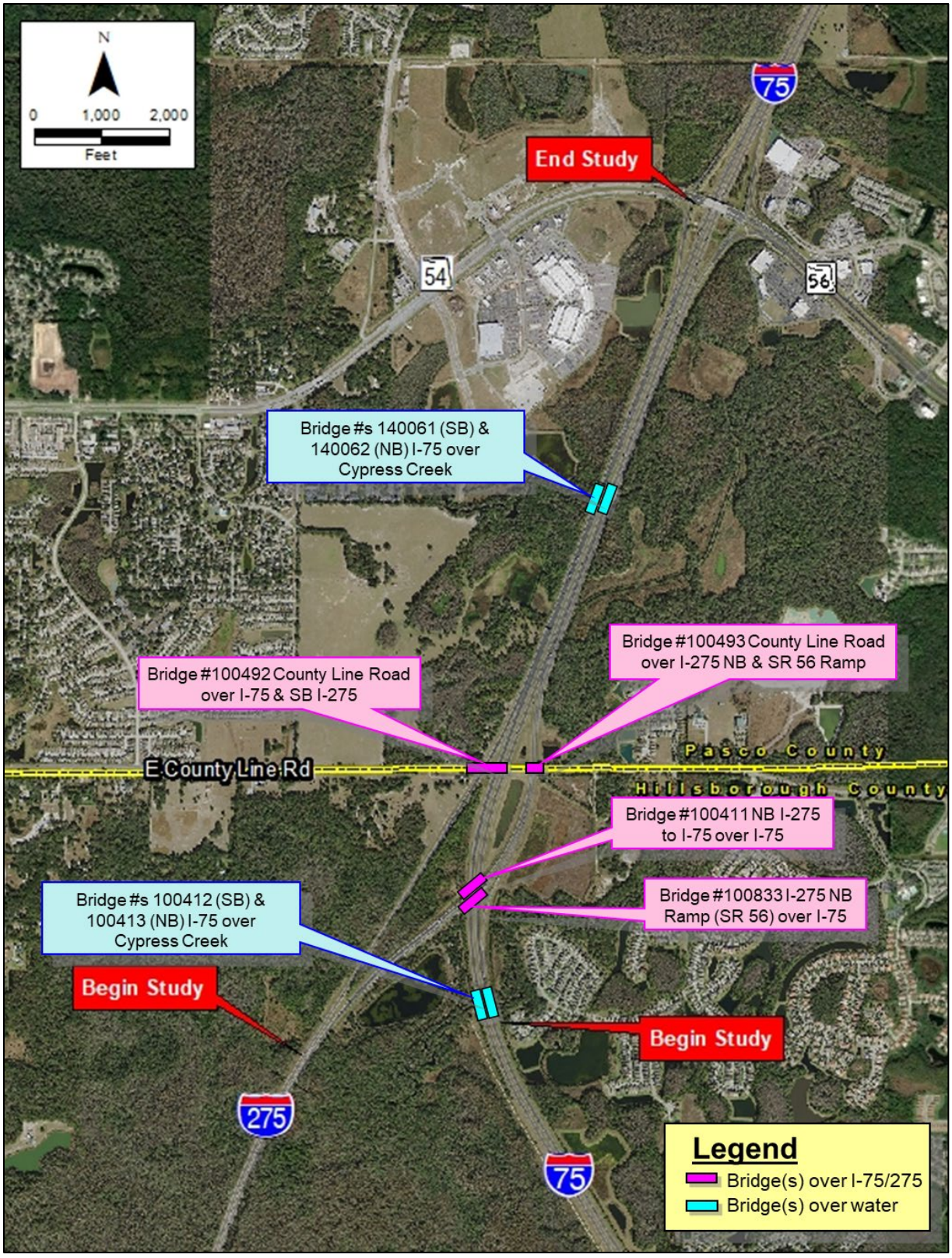


Figure 2-7 Existing Bridge Structure Locations

There are two bridges that carry County Line Road over I-75/I-275. Bridge No. 100492 spans over I-75 in both directions and southbound I-275, while Bridge No. 100493 spans over northbound I-275 and the northbound ramps to SR 56. Both bridges were constructed in 1985. Bridge 100493 is outside the project limits as it applies only to northbound traffic. Bridge No. 100411 carries northbound I-275 to I-75 over I-75 and was constructed in 1982. This bridge has been identified as functionally obsolete. Bridge No. 100833 carries the I-275 northbound off ramp to SR 56 over I-75 and was constructed in 2010. **Table 2-6** provides structure information for the three overpass bridges in the study limits.

Table 2-6 Existing Overpass Bridge Structure Information

Bridge Number	Carries	Over	Sufficiency Rating	Health Index
100492	County Line Rd	I-75 & SB I-275	86.2	99.61
100411	NB I-275	I-75	85.9	93.91
100833	NB I-275 off-ramp to SR 56	I-75	96.2	99.89

NB=northbound, SB=southbound

There is one existing bridge culvert located within the project limits. Bridge No. 100419, constructed in 1984, is a double 10 ft.x6 ft. box culvert which crosses I-75 over Cypress Slough at approximately station 2320+60 - milepost 38.956. The 2021 inspection showed a sufficiency rating of 83 and health index of 34.52.

2.13 LIGHTING

There is existing high mast lighting along I-75 and I-275 within the project limits. The lighting is maintained by Pasco County and the power is supplied by Withlacoochee River Electric Cooperative. There are two existing load centers, one is located on the east side of I-75, south of SR 56 and one is located on the south side of SR 56, east of I-75.

2.14 UTILITIES, ITS AND RAILROADS

There are numerous utilities throughout the study corridor, as shown in **Table 2-7**, based on a One-Call design ticket on June 28, 2021. Coordination with utility owners is ongoing and additional information will be provided with the preparation of a *Utility Assessment Package* for this project during the design phase.

Table 2-7 Existing Utilities in the Study Area

Utility Owner	Type of Facilities
CenturyLink	Fiber Optic Telephone
Florida Gas Transmission	36" & 30" Gas Pipelines
Frontier	Cable, Fiber Optic
MCI	Fiber
Pasco County Utilities	Water, Sewer & Reclaimed Water
Spectrum	Cable, Fiber Optic
Tampa Electric	Electric Power
Tampa Water	Water
TECO Peoples Gas	Gas
Withlacoochee River Electric Cooperative	Electric Power
Unti Fiber LLC	Fiber

There are Intelligent Transportation System (ITS) facilities within the project limits. The existing ITS is located on the west side of I-75. There is a portable traffic monitoring site #140156 for traffic counting located on I-75 just to the south of SR 56 at Pasco County milepost 0.431. There is also a portable traffic monitoring site #14140021 for traffic counting located on the SR 56 southbound on ramp at milepost 0.156, which is located just north of the project limits.

There are no existing railroads within the project limits.

2.15 DRAINAGE AND FLOODPLAINS

A *Pond Siting Report (PSR)* was prepared for this project, and it outlines the existing and proposed drainage conditions and is summarized in the following sections.

2.15.1 Regional Drainage Conveyance

At the regional level, stormwater within the project area is collected in wetlands that connect to Cypress Creek via natural weirs and cross drains. Cypress Creek is a tributary of the Hillsborough River, which is classified as an Outstanding Florida Water (OFW). The Cypress Creek floodplains lie just outside of the I-75 right of way on both the east and west sides for the entirety of the project. Refer to **Appendix B** for SLDs that depict the cross drains and Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels that identify the flood zone and location of the floodplains. Within the project limits, the existing drainage system is comprised of four basins and includes a combination of inlets, pipes, ditches, and wet detention ponds that treat roadway runoff prior to discharge to the receiving waters. Generally, the runoff from I-75 and the I-75/I-275 interchange is conveyed via shoulder gutter to gutter inlets, after which pipes of varying size drain the runoff to one of five permitted wet detention ponds. Segments of median and side swales supplement the shoulder gutter drainage by collecting runoff in ditch bottom inlets and connecting to the gutter inlet pipe networks. South of County Line Road, two of the existing SMFs connect to a roadside ditch adjacent to the I-75 NB lanes and drain south to Cypress Creek. The other SMF drains west via 24" and

30” culverts to wetlands adjacent to the I-275 SB ramp. North of County Line Road, a pair of ponds interconnected by an 18” equalizer pipe outflow east via 48” pipe to adjacent wetland. The *PSR* provides additional details and characteristics of each drainage basin. See **Table 2-8** and **Figure 2-7** for cross drain and bridge locations. The bridges are further described in **Section 2.12**.

2.15.2 Drainage-Related Maintenance Issues

There are no drainage-related maintenance nor flooding concerns along I-75 as documented in the *PSR*.

Table 2-8 Existing Cross Drains

Cross Drain No.	Mile Post	Description
Hillsborough County Section		
CD-1	38.893	Double 10’ x 6’ CBC
CD-2	39.494	24” RCP
CD-3A	39.652	30” RCP
CD-3B	39.681	30” RCP
Pasco County Section		
CD-4	0.270	10’ x 4’ CBC
CD-5	1.032	10’ x 10’ CBC
CD-6A	1.605	4’ x 4’ CBC
CD-6B	1.610	54” RCP

Source: Straight Line Diagrams and Pond Siting Report
Note: CC denotes concrete culvert and CBC denotes concrete box culvert

2.15.3 Floodplains

A *Location Hydraulics Memorandum (LHM)* was prepared for this project detailing floodplain involvement. FEMA FIRM panels 12057C0070H, 12101C0417F, and 12101C0409F identify the flood zone information for the project area. The I-75 roadway and I-275 interchange south of County Line Road, including the infield areas, are not within a floodplain. Other than the interchange, zone AE floodplains, ranging in elevation from 42-ft North American Vertical Datum (NAVD) to 53.8-ft NAVD, exist within the I-75 right of way or adjacent to it for the entirety of the project limits. The I-75 roadway is above the 100-year floodplain, and no history of flooding has been identified within the project limits. **Figure 2-8** shows the FEMA Floodplain Map for Hillsborough County and **Figure 2-9** shows the map for Pasco County within the study limits.

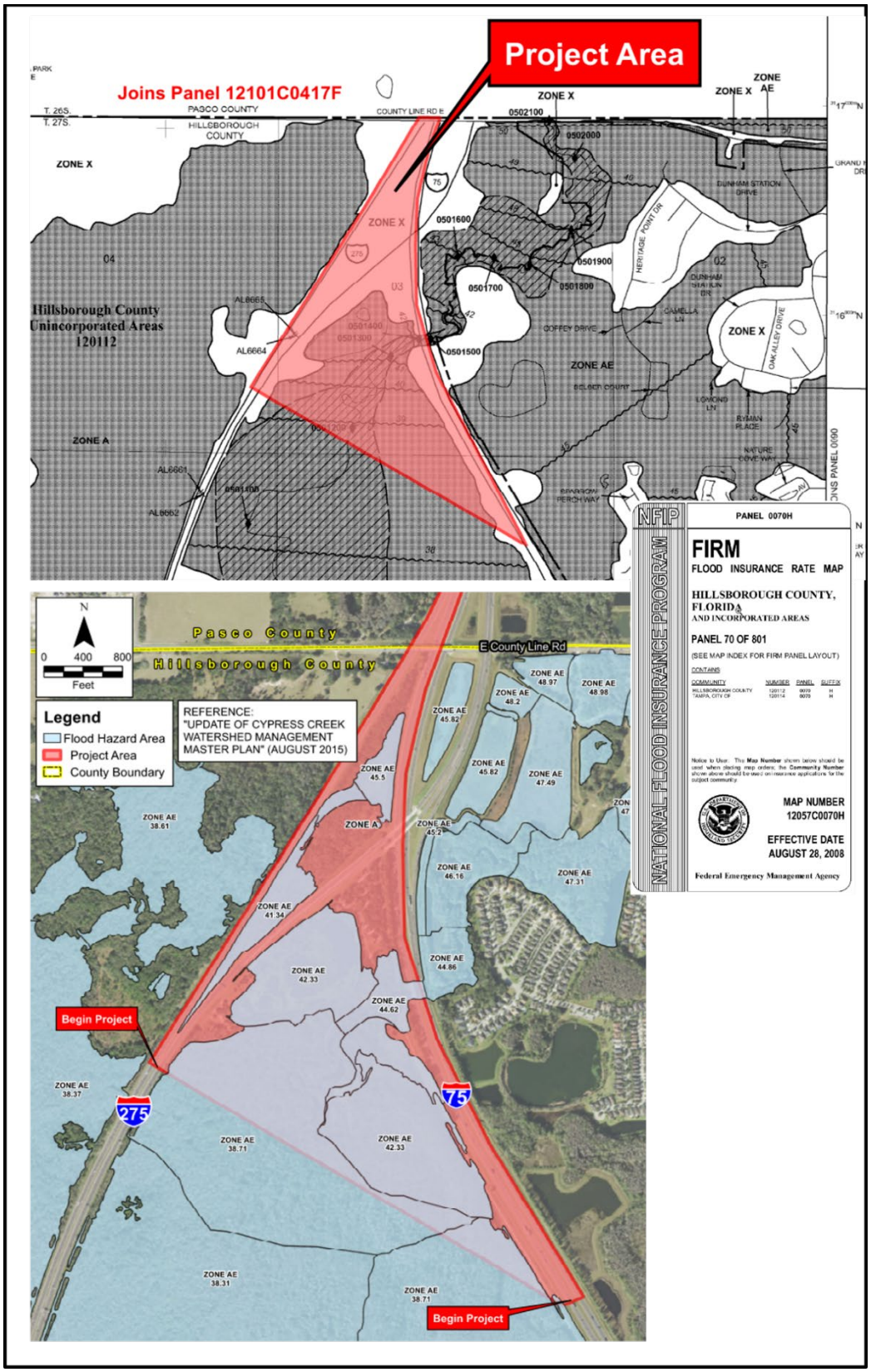


Figure 2-8 FEMA Floodplain Map – Hillsborough County

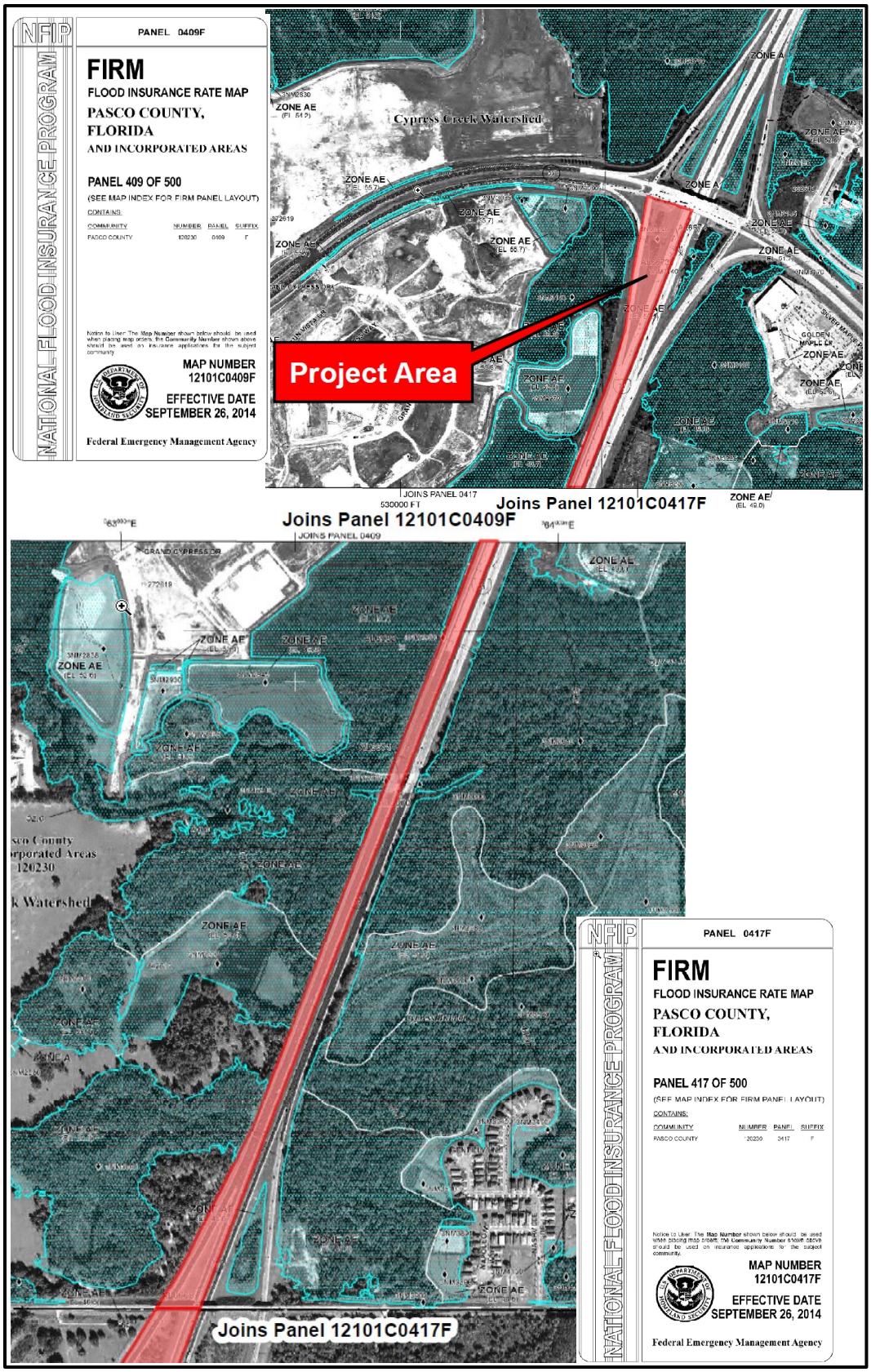


Figure 2-9 FEMA Floodplain Map – Pasco County

2.15.4 Existing Environmental Permits

The drainage design for the project location was originally permitted as part of Southwest Florida Water Management District (SWFWMD) Environmental Resource Permit (ERP) No. 43024745, but has since been revised under SWFWMD ERP Nos. 43033020.002, 43033020.004, and 43033020.006. ERP No. 43033020.002 documents revisions to NB I-75 from south of the I-275 interchange to State Road 56, revisions to two previously permitted SMFs, and the addition of two SMFs. Information on the cross drains, bridges, existing drainage conditions, and details regarding SMF I, SMF J1-1, SMF J1-2, and SMF J2 were retrieved from this permit. ERP No. 43033020.004 permitted revisions to SB I-75 from Bruce B. Downs Boulevard to State Road 56 and segments of the I-275 SB and NB ramps at the interchange. Supplementary information about the existing drainage conditions of I-75 was gathered from this permit. ERP No. 43033020.006 includes revisions to the I-275 ramps at the interchange and to the existing SMF within the infield between the NB and SB ramps. This permit provides further details about the existing drainage within the interchange and information about SMF 800A. Modifications to permitted facilities may require changes to the control device and elevation to meet SWFWMD criteria.

2.15.5 Special Basin Criteria

The project is within the Cypress Creek watershed, associated with water body identification (WBID) No. 1402. This water body is not nutrient impaired; thus, a nutrient loading evaluation is not necessary. Cypress Creek is a tributary of the Hillsborough River, which is classified as an OFW. The study basins discharge directly to Cypress Creek or to its wetlands, thus the SMFs require an additional 50% of runoff from the contributing basin area to be treated.

2.15.6 Drainage Basins

The areas surrounding the project limits are primarily wetland. Each drainage basin is described below.

<u>Basin 1 (Basin I, Permit No. 43033020.002)</u>

Beginning at bridge No. 100412/100413 and ending at County Line Road, this basin consists of the I-75 lanes from right of way to right of way and a segment of the I-275 NB ramp. Shoulder gutter and shoulder inlets collect runoff and route it via pipe of varying size to permitted SMF I, an infield wet detention pond. The runoff is treated and subsequently routed via 30” pipe to an existing ditch running south alongside the I-275 NB ramp to Cypress Creek. SMF I was designed to accommodate 100% impervious coverage within the basin boundaries.

<u>Basin 2 (Basin 800A, Permit No. 43033020.006)</u>

This basin is located at the I-75 and I-275 interchange and includes a triangular area around the I-275 NB lanes, the I-275 SB lanes, and the infield area that their paths outline. There is an existing facility within this basin, known as SMF 800A, which was last revised under ERP 4433020.006. Runoff is conveyed to SMF 800A via swale and shoulder gutter inlets. There are two existing culverts along the

I-275 SB ramp, 24" and 30" pipes, through which treated runoff is discharged to wetlands on the west side of southbound I-275.

Basin 3 (Basin J1, Permit No. 43033020.002)

This basin collects runoff from I-75 between County Line Road and bridge pair No. 140061/140062. The permitted SMF within this basin consists of two wet detention ponds, SMF J1-1 and SMF J1-2, interconnected by an 18" equalizer pipe. SMF J1-1 is located north of County Line Road in the infield between I-75 and the I-275 NB ramp. SMF J1-1 treats runoff from the I-275 SB lanes and I-75 SB lanes from County Line Road to bridge pair 140061/140062, which is captured by shoulder gutter inlets and median ditch bottom inlets. A 60" culvert under I-75 discharges the runoff collected by the shoulder gutter inlets to SMF J1-1. On the other hand, SMF J1-2 treats the runoff from NB I-75 and the I-275 NB ramp between County Line Road and station 2385+40, just north of Cross Drain 3. A network of shoulder gutter inlets and various pipes lead to a 36" pipe that discharges to SMF J1-2. Following treatment, runoff outflows east from SMF J1-2 via 48" pipe to adjacent wetlands.

Basin 4 (Basin J2, Permit No. 43033030.002)

The northern-most basin within the project limits begins along I-75 north of County Line Road at Cross Drain 3 and extends to approximately 600' north of State Road 56. Similar to the other basins, J2 is associated with a permitted wet detention pond, in this case SMF J2. This SMF is designed to treat the entire contributing area within the existing right of way as impervious coverage. The contributing area includes I-75 N from Cross Drain 19 to SR 56, and I-75 S from bridge pair 140061/140062 to SR 56 including the entrance and exit ramps at SR 56. SMF J2 is located southeast of the County Line Road bridge over the I-275 NB ramp, adjacent to the I-275 NB ramp right of way. This SMF is outside of the boundary of its associated basin. Approximately 5,000 feet of 84" and similar sized pipes convey the runoff collected by shoulder gutter inlets and ditch bottom inlets to SMF J2. After treatment, runoff is discharged via 36" pipe to an adjacent roadside ditch that flows south to Cypress Creek.

2.16 GEOTECHNICAL DATA

The Natural Resources Conservation Service (NRCS) *Soil Survey of Hillsborough County* (1989) and *Soil Survey of Pasco County* (1980) and geographic information system (GIS) data indicate that there are multiple soil types that exist within and adjacent to the project area. Soils within a 500-foot buffer from the existing right of way of the project were evaluated. See **Table 2-9** for acreages and percentages of soil types within the project buffer and **Figure 2-10** for a detailed soils map.

Table 2-9 Existing Soils Data (NRCS)

Map Unit Symbol	Description	Acreage (Approx. 500' from Centerline, and SMF and FPC sites)	Percentage
Pasco County Soils			
4	Felda fine sand (0-2% slopes) – *hydric*	2.9	0.5%
5	Myakka-Myakka, wet, fine sands, (0-2% slopes) – *hydric*	0.9	0.2%
6	Tavares sand (0-5% slopes)	1.0	0.2%
10	Wabasso-Wabasso, wet, fine sand, (0-2% slopes) – *hydric*	18.3	3.4%
11	Adamsville fine sand (0-2% slopes) – *hydric*	2.3	0.4%
22	Basinger fine sand (0-2% slopes) – *hydric*	2.4	0.4%
26	Narcoossee fine sand (0-2% slopes)	34.1	6.3%
27	Anclote fine sand (0-2% slopes), ponded – *hydric*	34.4	6.4%
28	Pits – *hydric*	5.0	0.9%
30	Okeelanta-Terra Ceia association – *hydric*	12.2	2.3%
35	EauGaille fine sand – *hydric*	43.5	8.1%
39	Chobee soils, frequently flooded – *hydric*	60.7	11.2%
59	Newnan fine sand (0-5% slopes)	12.1	2.1%
63	Delray mucky fine sand – *hydric*	26.3	4.9%
99	Water	8.2	1.5%
Hillsborough County Soils			
5	Basinger, Holopaw, and Samsula soils, depressional – *hydric*	67.3	12.5%
15	Felda fine sand (0-2% slopes) – *hydric*	4.6	0.9%
16	Felda fine sand (0-2% slopes), occasionally flooded – *hydric*	1.8	0.3%
21	Immokalee fine sand (0-2% slopes) – *hydric*	48.3	8.9%
27	Malabar fine sand (0-2% slopes) – *hydric*	6.8	1.3%
29	Myakka fine sand (0-2% slopes) – *hydric*	70.7	14.6%
46	St. Johns fine sand – *hydric*	1.1	0.2%
59	Winder fine sand (0-2% slopes) – *hydric*	0.3	0.1%
60	Winder fine sand, frequently flooded – *hydric*	15.6	2.9%
61	Zolfo fine sand (0-2% slopes) – *hydric*	36.0	6.7%
99	Water	15.3	2.8%
	Total	**540.2**	**100%**

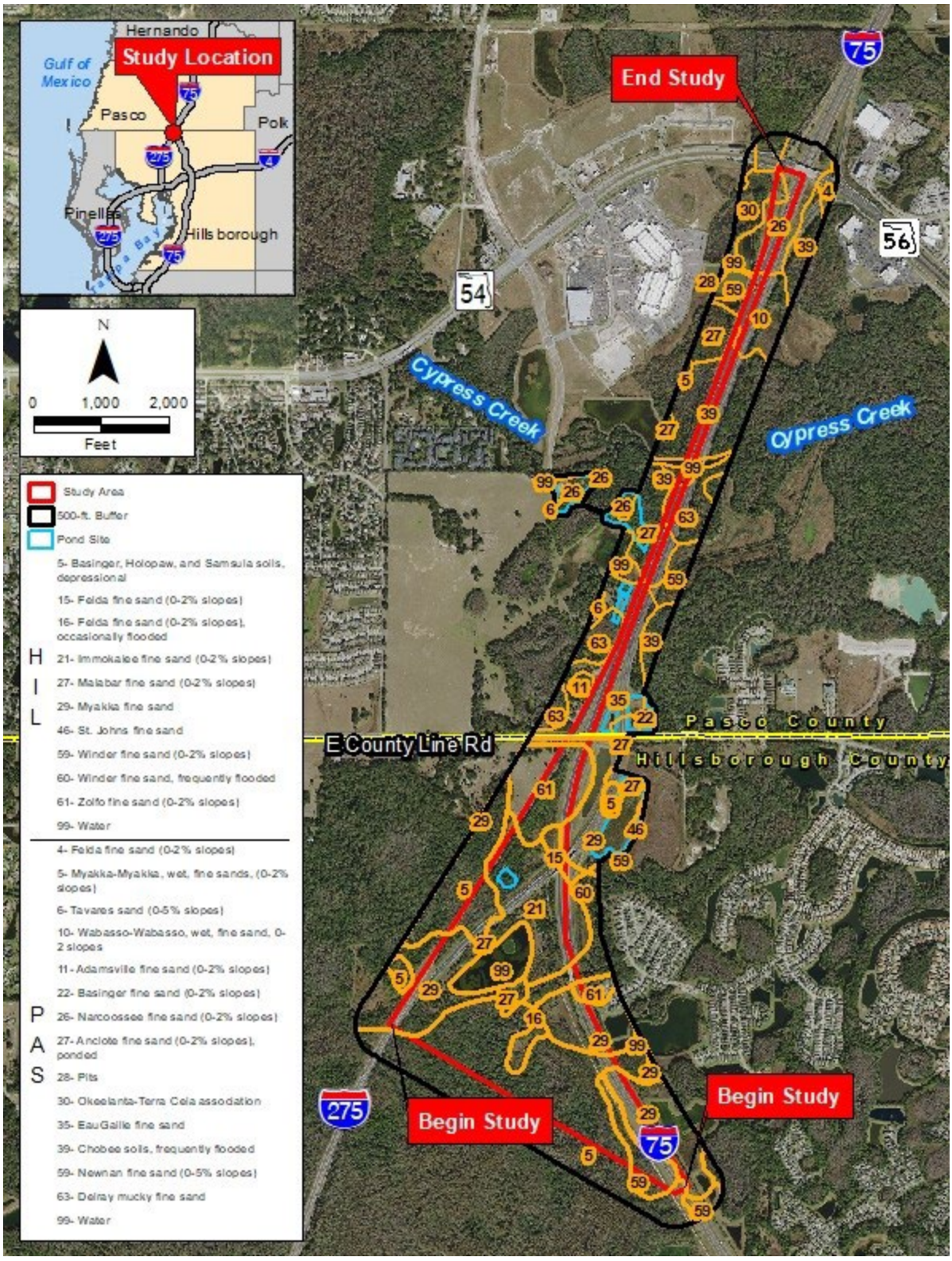


Figure 2-10 Existing Soils Map

2.17 EXISTING AND FUTURE LAND USE

Land use and vegetative cover within and adjacent to the study area was classified using the FDOT's *Florida Land Use, Cover and Forms Classification System* (FLUCCS). The study area, located in Hillsborough and Pasco Counties, is mostly undeveloped consisting of natural uplands and bottomlands outside of the existing interstate. For evaluating existing land use within the study area, a 500-foot buffer was created from the existing right of way of I-75/I-275 southbound lanes from south of County Line Road to SR 56, as well as a 50-foot buffer around the proposed SMF and FPC sites. The predominant land uses within the 500-foot buffer of the study area is transportation (8100), followed by stream and lake swamps (bottomland) (6150), and open land (1900). The remainder of the land uses and their percent cover within the 500-foot buffer area are shown in **Table 2-10**. Land uses within the study area are shown in **Figure 2-11**.

Table 2-10 Existing Land Use

FLUCCS	Description	Acreage (Approx. 500' from Centerline, and SMF and FPC sites)	Percent Cover
1300	Residential High Density	3.5	0.6%
1400	Commercial and Services	2.7	0.5%
1900	Open Land	59.0	10.9%
2100	Cropland and Pastureland	14.7	2.7%
3200	Shrub and Brushland	5.2	1.0%
4100	Upland Coniferous Forest	2.7	0.5%
4340	Upland Hardwood-Coniferous Mix	32.7	6.1%
5100	Streams and Waterways	1.2	0.2%
5300	Reservoirs	11.5	2.1%
6100	Wetland Hardwood Forest	4.5	0.8%
6150	Stream and Lake Swamps (Bottomland)	118.3	21.9%
6210	Cypress	21.9	4.1%
6300	Wetland Forested Mix	15.7	2.9%
6410	Freshwater Marshes	26.1	4.8%
6440	Emergent Aquatic Vegetation	25.7	4.8%
6530	Intermittent Ponds	4.6	0.9%
8100	Transportation	187.8	34.8%
8200	Communication	2.4	0.4%
	Total	**540.2**	**100.0%**

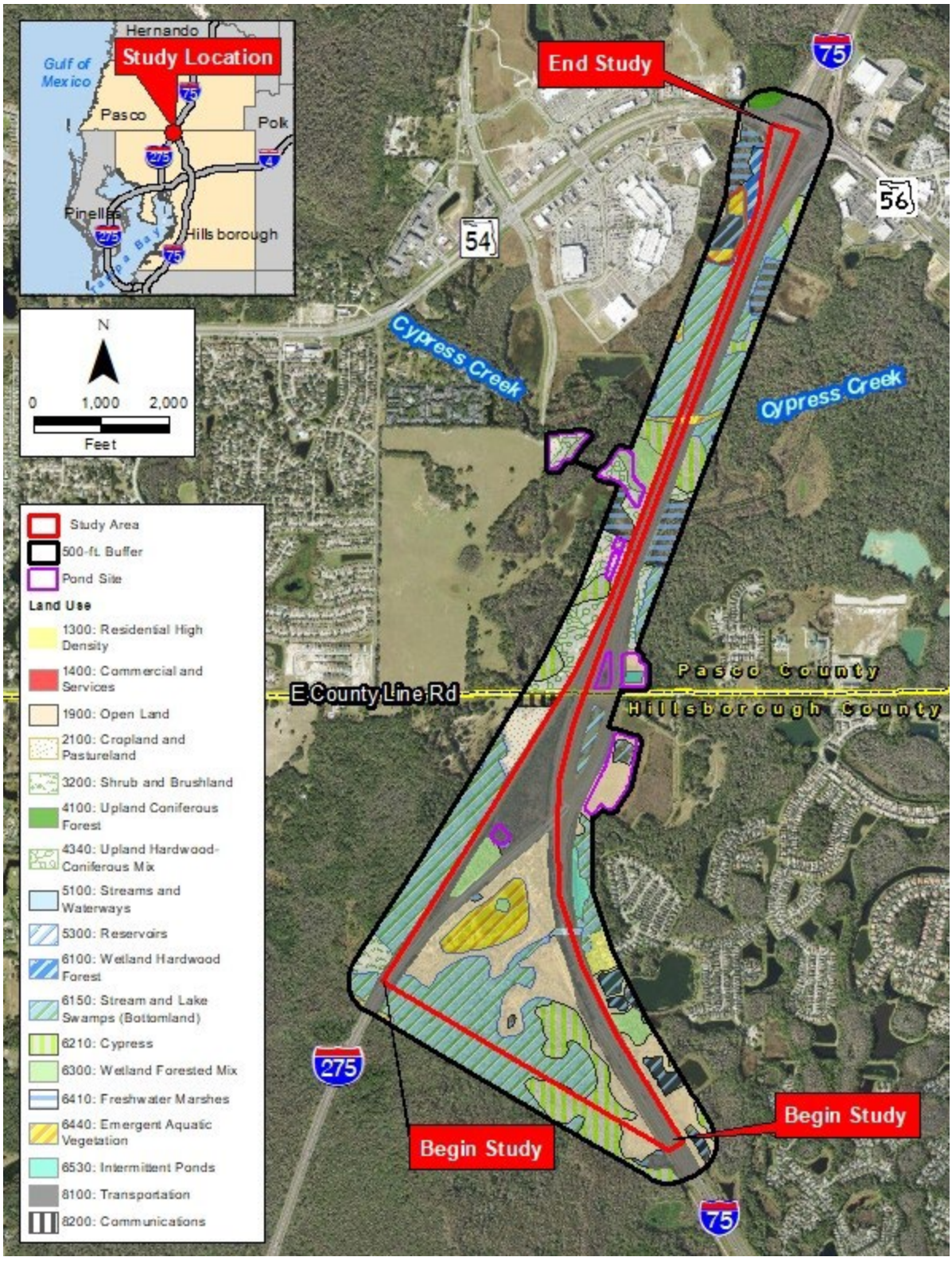


Figure 2-11 Existing Land Use Map

2.18 ENVIRONMENTAL CHARACTERISTICS

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

- *Natural Resource Evaluation Report*
- *Natural Resource Evaluation Technical Memorandum*
- *Location Hydraulics Memorandum*
- *Water Quality Impact Evaluation Checklist*
- *Contamination Screening Evaluation Report*
- *Noise Study Report*
- *Cultural Resource Assessment Survey*
- *Cultural Resource Assessment Survey Addendum*
- *Cultural Resource Assessment Survey Pond Technical Memorandum*
- *Type 2 Categorical Exclusion*

SECTION 3 TRAFFIC ANALYSIS AND FUTURE CONDITIONS

The information in this section has been extracted and summarized from the project's *PTAR* and *IMR.*

3.1 EXISTING YEAR TRAFFIC VOLUMES AND TRAFFIC CHARACTERISTICS

The SR 56 interchange with I-75 was under construction at the onset of this PD&E Study. Data collection for this study did not include new traffic counts. Traffic data for the SR 56 ramps to I-75, the I-75 mainline and I-275 came from adjacent studies and Florida Traffic Online (FTO) website. FTO data for all historic years including Existing Year (2019) that was available on the website was utilized for this study. The existing count information used in this study to develop traffic factors was the 72-hour count information provided in the *I-75 and SR 56 Interchange Operational Study* in 2016.

The Directional Design factor (D-factor) for I-75 and I-275 were calculated by averaging the most recent 5-year historic data provided from FTO at sites 100154 (I-75 south of I-275), 140156 (I-75 between I-275 and SR 56), 140190 (I-75 one mile north of SR 56 telemetered site), and site 109955 (I-275/SR 93 Hillsborough County telemetered site). In order to have the same D-factor for I-75 and I-275, the averages from the site's 5-year average were then also averaged, respectively.

The daily truck factor (T24) for I-75 should decrease north of the I-275 northbound merge based on existing traffic patterns. FTO site 100154 (I-75 south of I-275) does not show this for years 2014, 2018 and 2019 and has T24 less than site 140156 which is north of the I-275 merge. To calculate accurate T24 for this study that represent existing traffic factors, T24's were averaged for all years that data is provided in the FTO with outliers removed. The Design Hour Truck (DHT) factor was calculated by dividing the T24's in half. The T24 for the SR 56 ramps were calculated based on the traffic counts taken for the 2016 I-75 and SR 56 Interchange Operational Study.

A standard K-factor of 9.0 was used for all roadway segments within the study area except for SR 56 to I-75 on ramp which was calculated from existing counts. Due to the SR 56 southbound traffic onto I-75 being one-way directional peak-to-daily ratio factor for the AM and PM peak hour was calculated using 72-hour count data provided in the September 2014 *Interchange Operational Analysis Report (IOAR) for the I-75 (SR 93) / SR 56 Interchange.* Traffic factors used in this study are shown in **Table 3-1**.

Table 3-1 Recommended Traffic Factors

Roadway	K-factor (%)	D-factor (%)	T24	DHT
I-275	9.0	62.5	5.3	2.6
I-75 (south of I-275)	9.0	56.7	14.5	7.2
I-75 (between I-275 and SR 56)	9.0	56.7	12.7	6.4
I-75 (north of SR 56)	9.0	56.7	12.3	6.2
SR 56 southbound on-ramp to I-75	9.0	N/A	4.0	2.0

The Existing Year (2019) Annual Average Daily Traffic (AADT) traffic volumes were obtained from FTO and balanced throughout the study area. The 2019 AADT traffic volumes are shown in **Figure 3-1**.

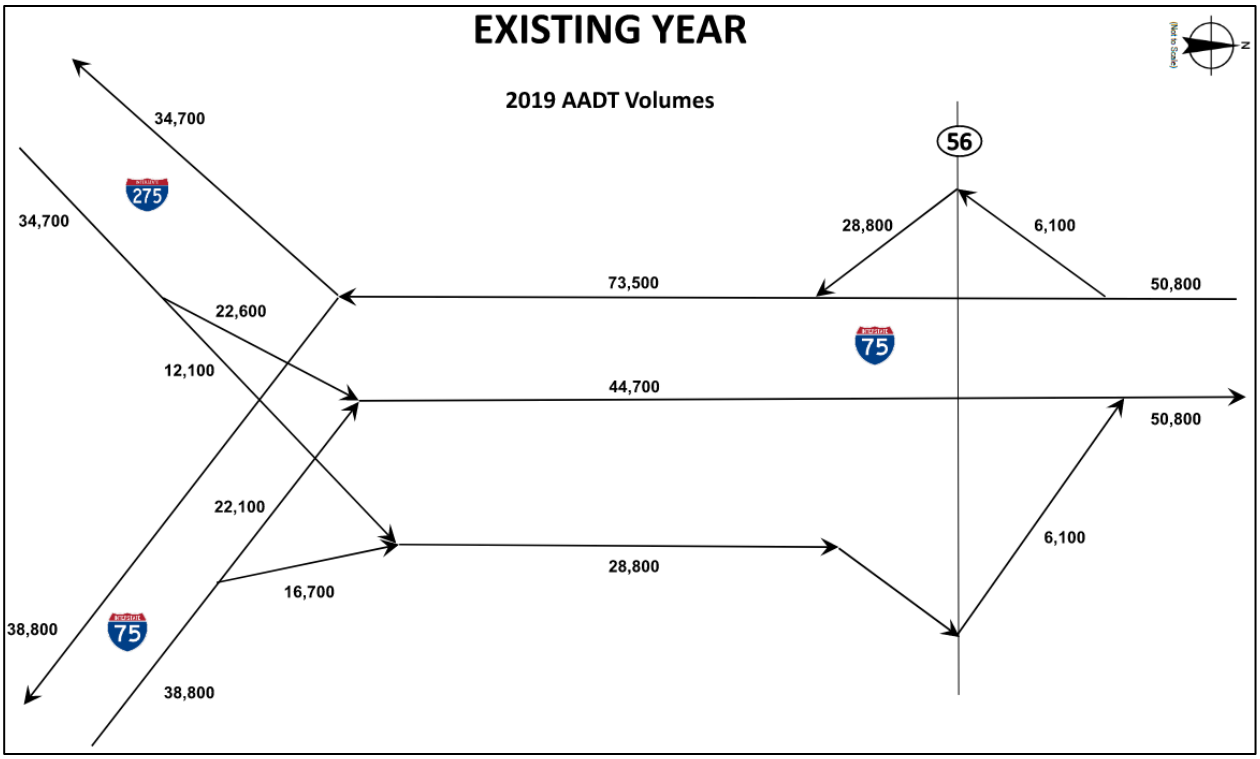


Figure 3-1 Existing Year (2019) AADT Volumes

The Existing Year (2019) Directional Design Hourly Volumes (DDHVs) traffic volumes were calculated from the 2019 AADT and recommended traffic factors for the study area. The hourly volumes were then balanced along the study area and manual adjustments were made due to I-275 and I-75 having different directional factors. The Existing Year (2019) DDHVs are shown in **Figure 3-2**.

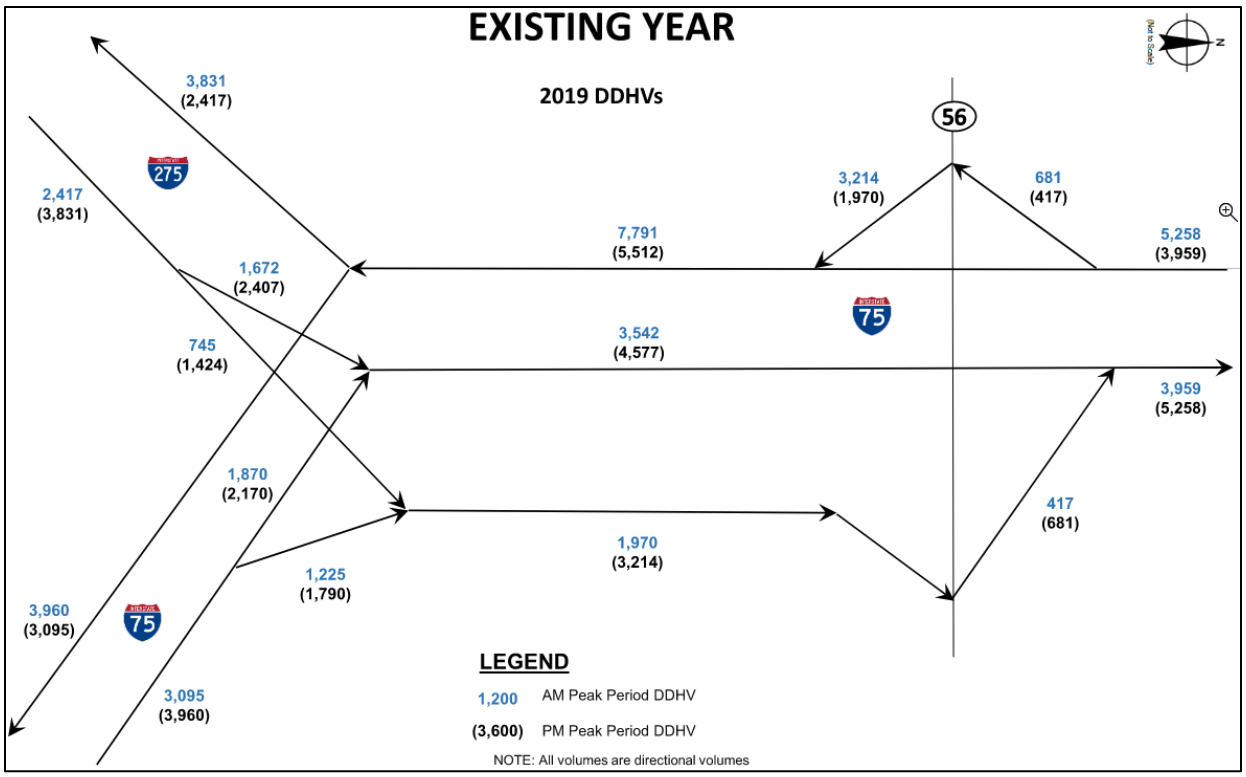


Figure 3-2 Existing Year (2019) DDHVs

3.2 EXISTING YEAR LEVELS OF SERVICE

Utilizing the existing lane geometry shown in **Figure 2-4** and the Existing Year (2019) peak hour volumes for the AM and PM peak period shown in **Figure 3-2** the existing traffic operational analysis was conducted using *Highway Capacity Software* (HCS). A visual representation of the LOS analysis areas for the study area is shown in **Figure 3-3**.

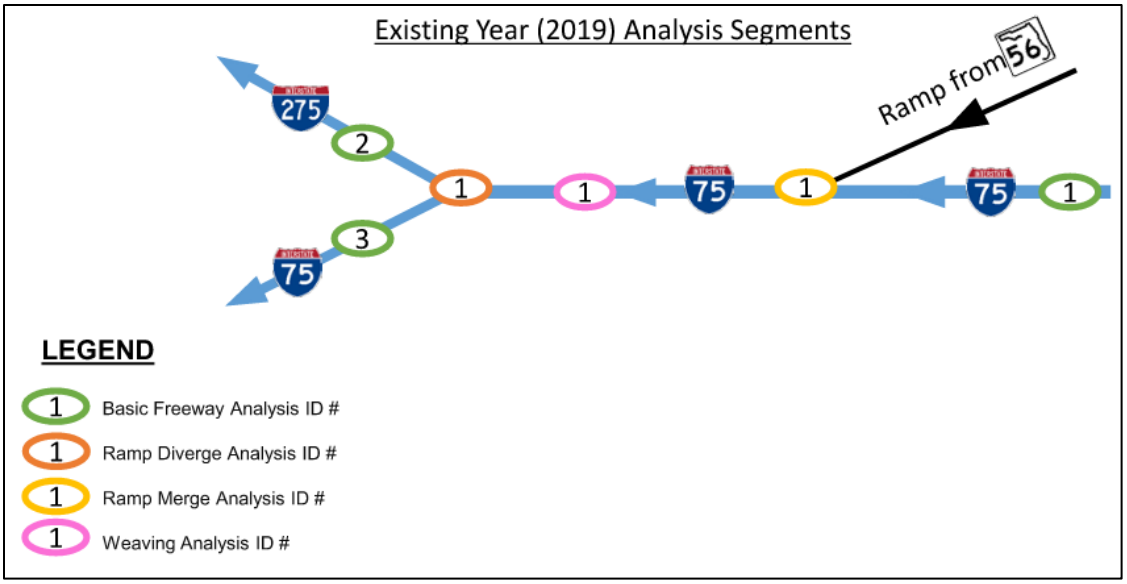


Figure 3-3 Existing Year (2019) LOS Analysis Areas

The LOS operational analysis for the study's basic freeway segments for Existing Year (2019) show all three segments operating at densities of passenger car per mile per lane (pc/mi/ln) of acceptable LOS for both peak periods. The diverge area was identified as a major diverge area and *Highway Capacity Manual* (*HCM)* Equation 14.28 was used to calculate LOS and density. The ramp diverge operational analysis resulted in acceptable LOS for both the AM and PM peak periods for the diverge segment of southbound I-75 to southbound I-275. The merge analysis for I-75 southbound from SR 56 resulted in both the upstream and downstream peak demand volumes not exceeding the existing capacity. The operational analysis did find the weaving segment of I-75 southbound between the southbound on-ramp from SR 56 and the off-ramp to I-275 to operate at unacceptable LOS for both the AM and PM peak periods. The volume to capacity ratio of the SR 56 southbound on-ramp was evaluated and results show (less than a value of one) that the volume of the ramp does not exceed the capacity. LOS results from the HCS analysis is shown in **Table 3-2**.

Table 3-2 Summary of Existing Year (2019) LOS Results

Analysis ID	Roadway Segment	DENSITY (pc/mi/ln) & LOS			
		AM		PM	
Basic Freeway Analysis					
1	I-75 southbound north of on-ramp from SR 56	22.1	C	16.4	B
2	I-275 southbound south of I-75	19.9	C	12.4	B
3	I-75 southbound south of off-ramp to I-275 southbound	21.8	C	16.6	B
Diverge Analysis					
1	I-75 southbound to I-275**	34.1	D	24.1	C
Merge Analysis***					
1	I-75 southbound from SR 56 - Upstream	Demand volume doesn't exceed capacity			
1	I-75 southbound from SR 56 - Downstream	Demand volume doesn't exceed capacity			
Weaving Analysis					
1	I-75 southbound between on-ramp from SR 56 and off-ramp to I-275 southbound	**>43.0***	**F**	**>43.0***	**F***

**Exact density value not calculated due to HCS limitations for LOS F*

*** Highway Capacity Manual (HCM) Equation 14.28 used to determine density and LOS*

****Major merge segment, therefore, capacity check was conducted upstream and downstream of the merge segment per HCM*

3.3 ASSUMPTIONS AND METHODOLOGY FOR FUTURE TRAFFIC PROJECTIONS

Future traffic volumes were forecasted using the methodology presented in *Traffic Methodology Statement* dated Feburary 18, 2021 (provided in Appendix A of the *PTAR*).

3.4 FUTURE TRAFFIC PROJECTIONS

The DDHVs for the No Build and Build Alternative differ due to the proposed C-D roadway in the Build Alternative as explained later in **Section 3-6**. For the Build Alternative traffic demand modeling, employing the Tampa Bay Regional Planning Model (TBRPM) Version 9.1, was used to determine the origin and destination pairs of traffic using the proposed ramps at the system interchange for the southbound direction. The forecasted AADT volumes for the Opening Year (2025) and Design Year (2045) for the No-Build Alternative are shown in **Figure 3-4**. The forecasted AADT volumes for the Opening Year (2025) and Design Year (2045) for the Build Alternative are shown in **Figure 3-5**.

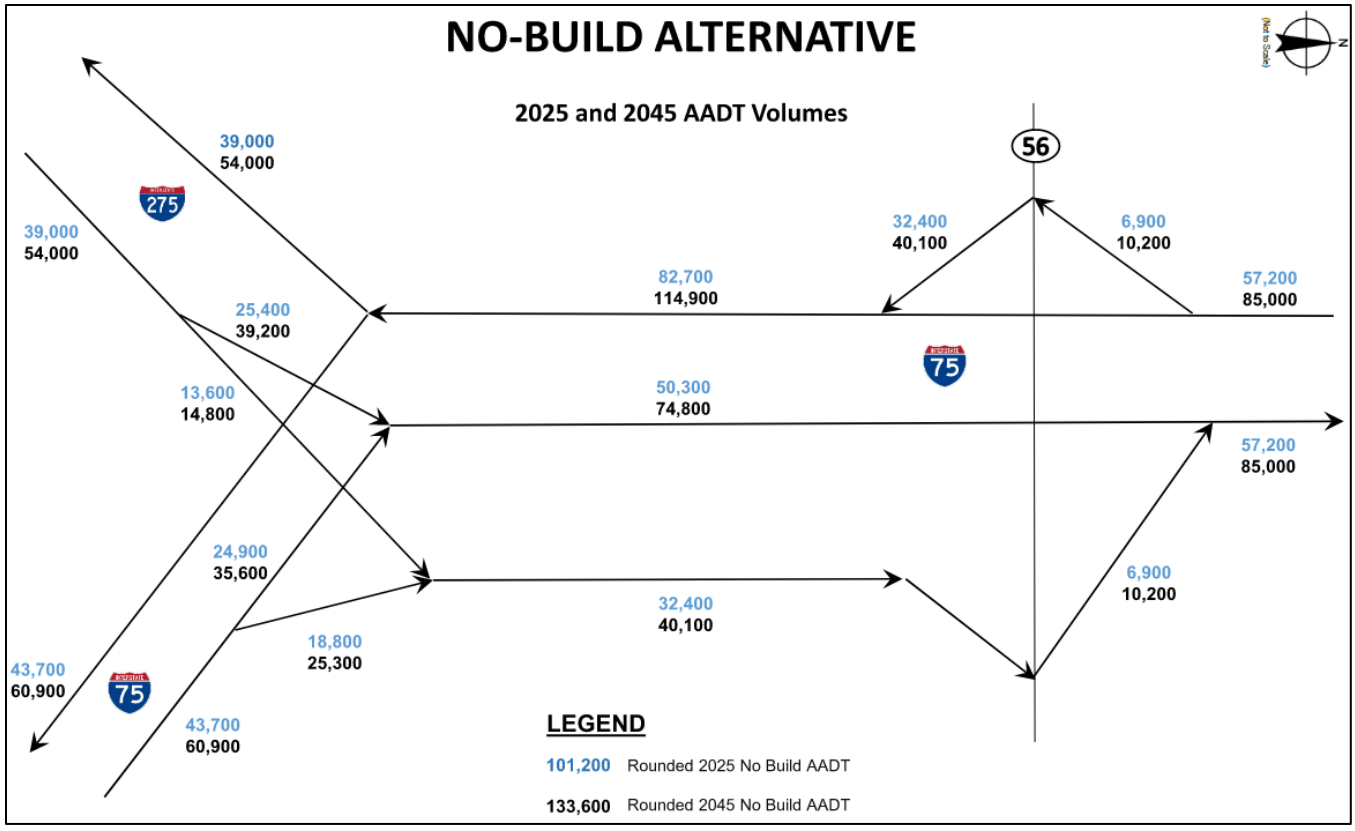


Figure 3-4 No-Build Opening Year (2025) and Design Year (2045) AADT Volumes

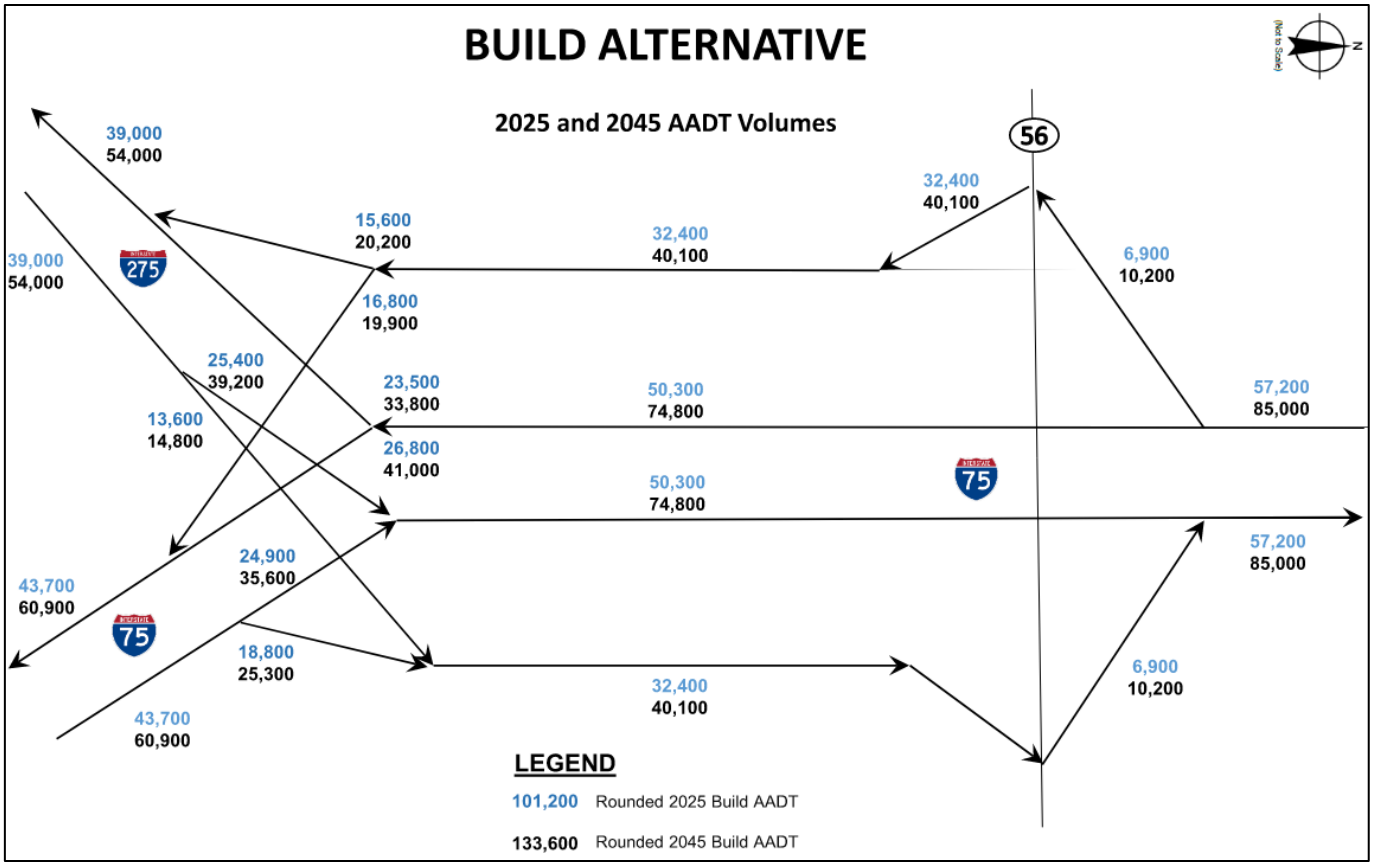


Figure 3-5 Build Opening Year (2025) and Design Year (2045) AADT Volumes

Utilizing the traffic factors presented in **Table 3-1**, DDHVs for the study area were forecasted for the Opening Year (2025) and Design Year (2045). The volumes were balanced between segments due to the highway segments being limited access with no driveways or sidestreets to account for. **Figure 3-6** through **Figure 3-9** show the forecasted DDHVs for this study.

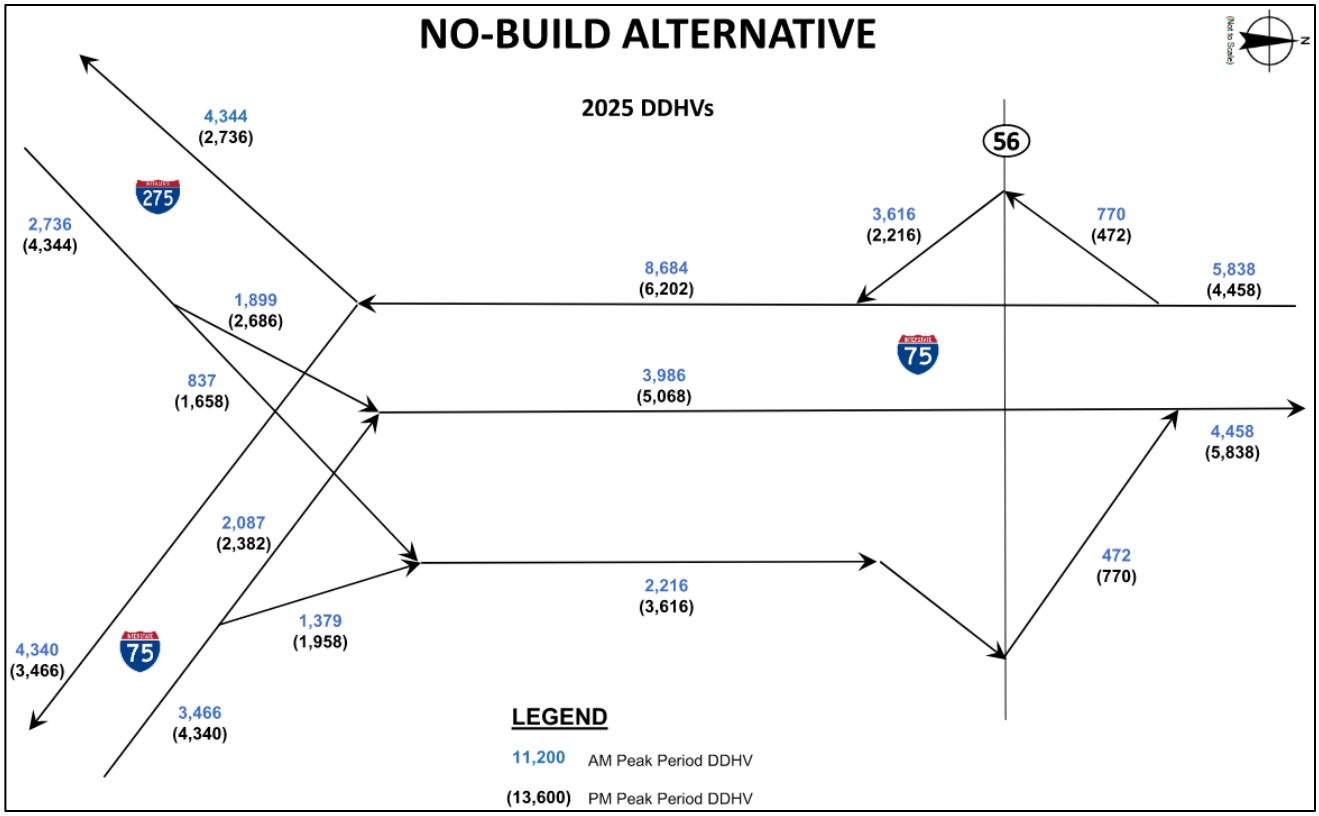


Figure 3-6 No-Build Opening Year (2025) DDHVs

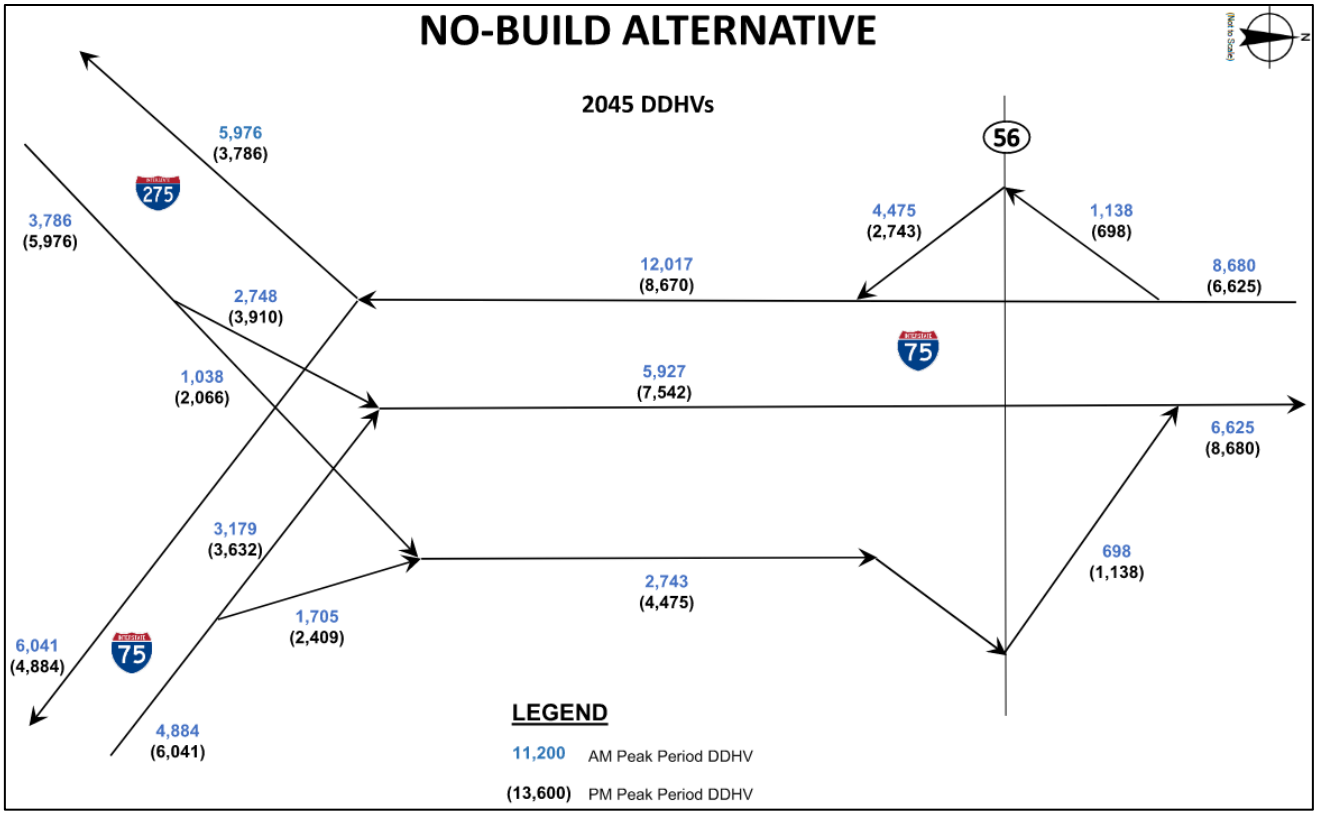


Figure 3-7 No-Build Design Year (2045) DDHVs

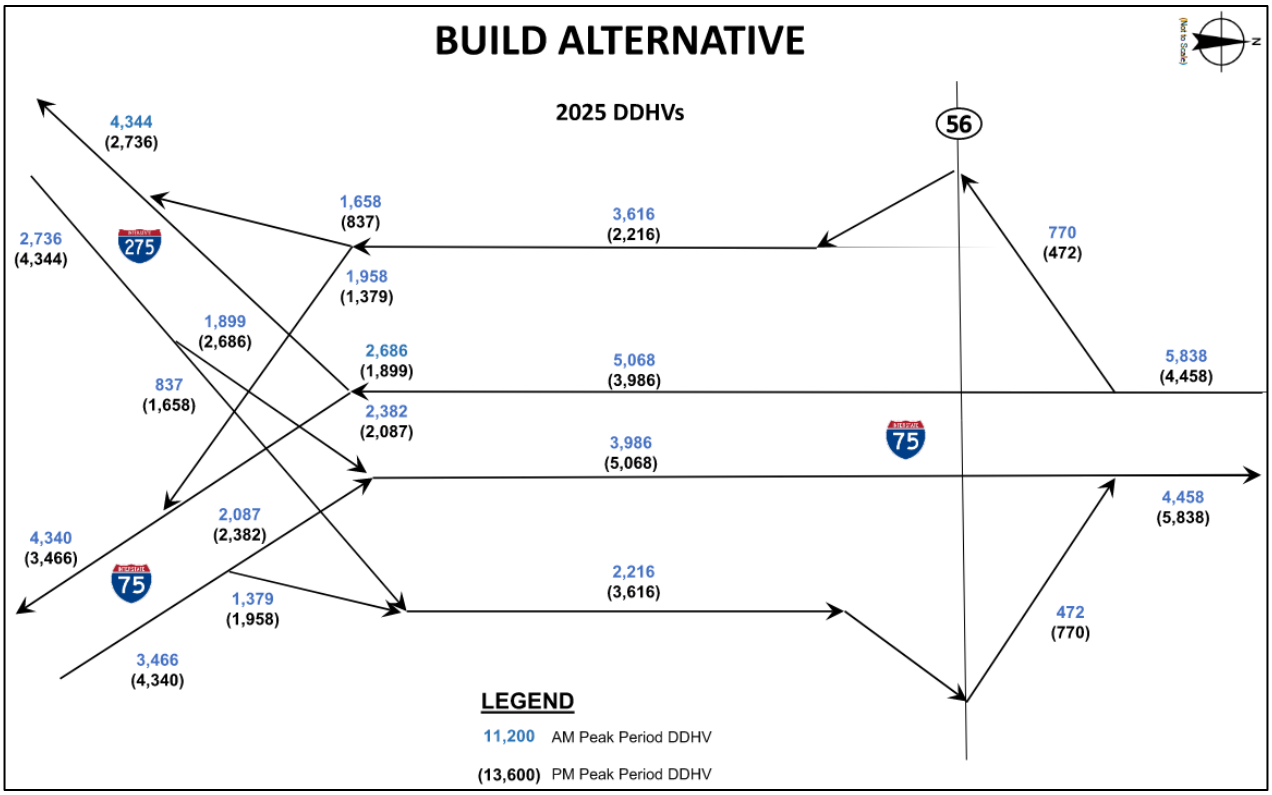


Figure 3-8 Build Opening Year (2025) DDHVs

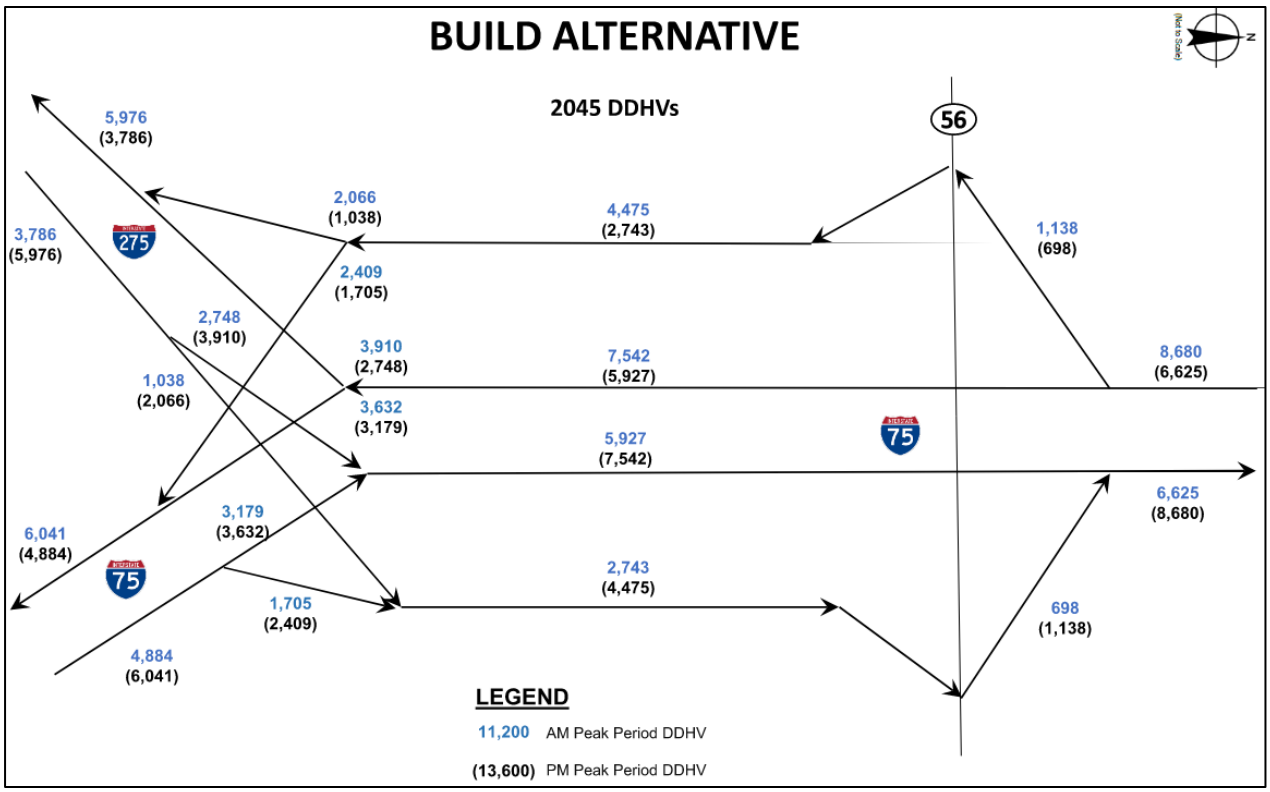


Figure 3-9 Build Design Year (2045) DDHVs

3.5 NO-BUILD ALTERNATIVE LEVEL OF SERVICE

The No-Build Alternative traffic operational analysis utilized the existing lane geometry presented in **Figure 2-4** and the design hour volumes shown in **Figure 3-6** and **Figure 3-7** for the Opening Year (2025) and Design Year (2045), respectively.

3.5.1 Opening Year (2025) No-Build Analysis

For Opening Year (2025) the No-Build Alternative LOS results found that all basic freeway segments operate at an acceptable LOS for both the AM and PM peak period. The No-Build Alternative ramp diverge LOS analysis resulted in acceptable LOS for the PM peak period. The AM peak period resulted in unacceptable LOS with a density of 38.0 pc/mi/ln. The No-Build Alternative ramp merge LOS analysis resulted in demand volumes not exceeding capacity for both upstream and downstream of the major merge. The weaving analysis for the segment of southbound I-75 between the on-ramp from SR 56 and off-ramp to I-275 southbound resulted in failing LOS for both the AM and PM peak periods. The HCS has a limitation where it doesn't calculate density for segments with a LOS F. The density and LOS results of the study segments are shown in **Table 3-3**.

Table 3-3 Summary of No-Build Alternative LOS Analysis – Opening Year (2025)

Analysis ID	Roadway Segment	DENSITY (pc/mi/ln) & LOS			
		AM		PM	
Basic Freeway Analysis					
1	I-75 southbound north of on-ramp from SR 56	25.1	C	18.5	C
2	I-275 southbound south of I-75	23.2	C	14.1	B
3	I-75 southbound south of off-ramp to I-275 southbound	24.5	C	18.7	C
Diverge Analysis					
1	I-75 southbound to I-275**	**38.0**	**E**	27.1	C
Merge Analysis***					
1	I-75 southbound from SR 56 - Upstream	Demand volume does not exceed capacity.			
1	I-75 southbound from SR 56 - Downstream	Demand volume does not exceed capacity.			
Weaving Analysis					
1	I-75 southbound between on-ramp from SR 56 and off-ramp to I-275 southbound	**>43.0***	**F**	**>43.0***	**F**

** Exact density value not calculated due to HCS limitations for LOS F*

*** HCM Equation 14.28 used to determine density and LOS*

****Major merge segment, therefore, capacity check was conducted upstream and downstream of the merge segment per HCM*

3.5.2 Design Year (2045) No-Build Analysis

For Design Year (2045) the No-Build Alternative LOS results found that all basic freeway segments operate at an unacceptable LOS for the AM peak period. The No-Build Alternative ramp diverge LOS analysis resulted in unacceptable LOS for the AM and PM peak period. The No-Build Alternative ramp merge LOS analysis resulted in acceptable capacity for both upstream and downstream of the major merge. The weaving analysis for the segment of southbound I-75 between the on-ramp from SR 56 and off-ramp to I-275 southbound resulted in failing LOS for both the AM and PM peak periods. The HCS has a limitation where it doesn't calculate density for segments with a LOS F. The density and LOS results of the study segments are shown in **Table 3-4**.

Table 3-4 Summary of No-Build Alternative LOS Analysis – Design Year (2045)

Analysis ID	Roadway Segment	DENSITY (pc/mi/ln) & LOS			
		AM		PM	
Basic Freeway Analysis					
1	I-75 southbound north of on-ramp from SR 56	**>45.0***	**F**	29.9	D
2	I-275 southbound south of I-75	**38.1**	**E**	19.7	C
3	I-75 southbound south of off-ramp to I-275 southbound	**42.7**	**E**	29.9	D
Diverge Analysis					
1	I-75 southbound to I-275**	**52.6**	**E**	**37.9**	**E**
Merge Analysis***					
1	I-75 southbound from SR 56 - Upstream	Demand volume does not exceed capacity.			
1	I-75 southbound from SR 56 - Downstream	Demand volume does not exceed capacity.			
Weaving Analysis					
1	I-75 southbound between on-ramp from SR 56 and off-ramp to I-275 southbound	**>43.0***	**F**	**>43.0***	**F**

** Exact density value not calculated due to HCS limitations for LOS F*

*** HCM Equation 14.28 used to determine density and LOS*

****Major merge segment, therefore, capacity check was conducted upstream and downstream of the merge segment per HCM*

3.5.3 Design Year (2050) No-Build Analysis from IMR

The *IMR* further evaluated the no-build condition for year 2050. Below are the results of that evaluation.

- Vehicle operating speeds on southbound I-75 between SR 56 and the I-275/I-75 Apex are projected to degrade to an estimated speed of 36.3 mph and 57.8 mph during the AM and PM peak hours, respectively.

- A ramp capacity check using HCM, 6th Edition volume thresholds reveals that the southbound I-75 on ramp at SR 56 is projected to operate over capacity with a volume-to-capacity ratio of 1.12 during the higher volume AM peak hour, and
- Due to increased traffic volumes by the design year (2050), the southbound I-75 and northbound I-75 ramp terminal intersections at SR 56 will experience overall vehicle delays that exceed 80 seconds per vehicle (LOS F) during both AM and PM peak hours.

3.6 RECOMMENDED TRAFFIC OPERATIONAL AND SAFETY IMPROVEMENTS

Based on the crash data and safety information provided in **Section 2.11** and operational evaluation provided in **Section 3.5.2**, the No-Build alternative is not a viable option for the long-term range. As shown in **Figure 2-6** many of the crashes that occurred from years 2014-2018 happened in the weave zone between the southbound SR 56 on-ramp merge and the I-75/I-275 diverge. Further, based on the traffic analysis, by year 2045, the basic freeway segment analysis, the diverge analysis and the weave analysis all realize failing LOS by 2045, with the diverge and weave analyses failing by 2025.

Proposed Improvements

To eliminate the weave between the southbound on-ramp from SR 56 and the I-75/I-275 diverge, the traffic from the southbound on-ramp is proposed to remain separated from southbound I-75 lanes until downstream from the I-75/I-275 diverge in a C-D road that will be split into separate ramps that will merge to I-75 and I-275. **Figure 3-10** shows a simplified schematic of the differences between the existing and proposed traffic routing for southbound I-75 and SR 56 on-ramp to I-275 and I-75 and the elimination of the existing weave zone.

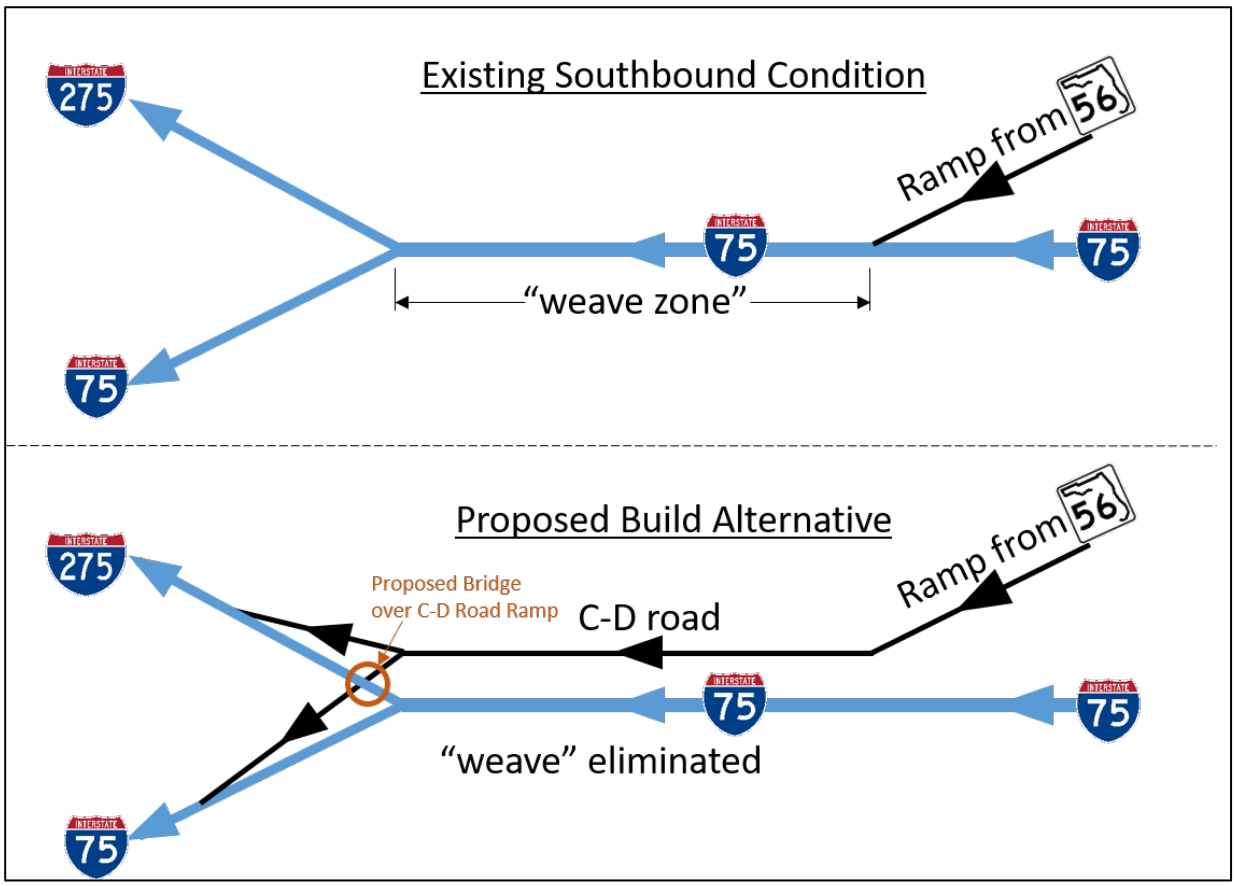


Figure 3-10 Existing and Proposed Traffic Routing for I-75, I-275 & SR 56 Ramp

3.7 BUILD ALTERNATIVE LEVEL OF SERVICE

The Build Alternative operational analysis utilizes the lane geometry presented in **Figure 3-10** and more specifically on Concept Plans in **Appendix A** and the design hourly volumes shown in **Figure 3-8** and **Figure 3-9** for the Opening Year (2025) and Design Year (2045), respectively. The Build HCS traffic operational result tables coincide with the analysis segments are identified in **Figure 3-11**.

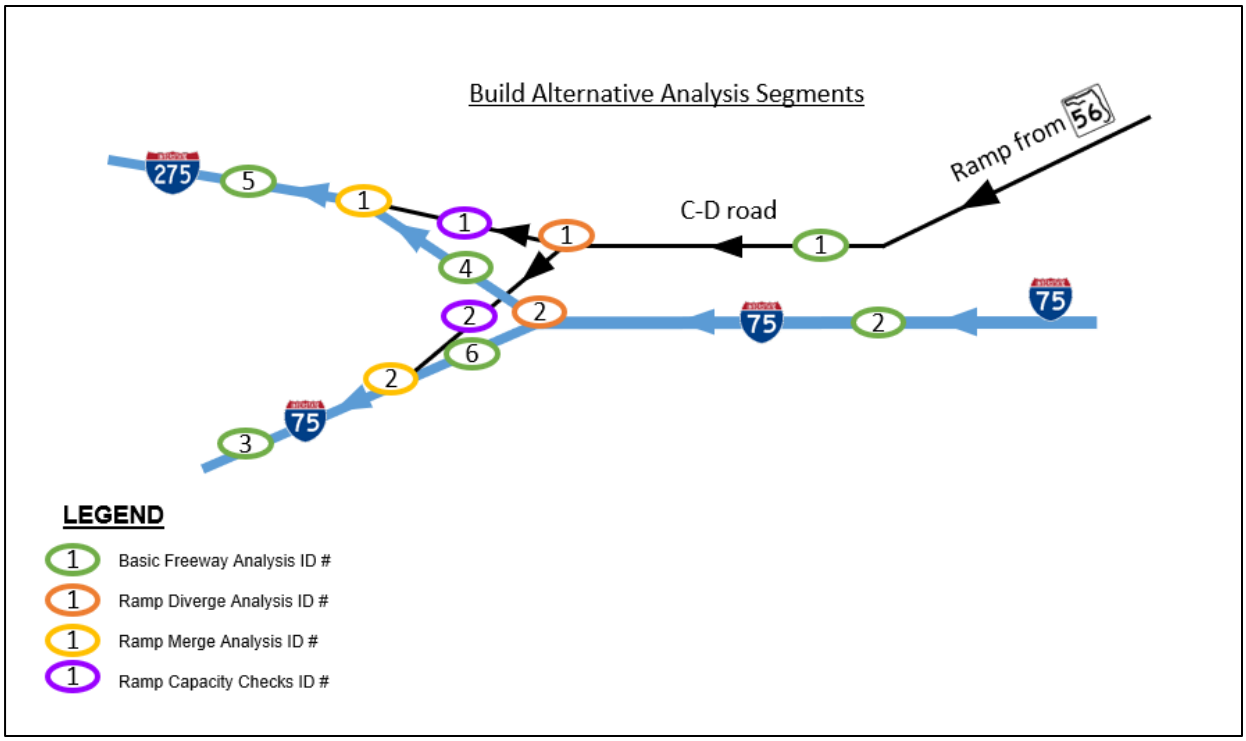


Figure 3-11 Build Traffic Operational Analysis Area Identification

3.7.1 Opening Year (2025) Build Analysis

For Opening Year (2025) the Build Alternative LOS results found that all basic freeway segments operate at an acceptable LOS for both the AM and PM peak period. All ramps diverge segments operate at an acceptable LOS for both the AM and PM peak period. All ramp merge segments operate at an acceptable LOS for both the AM and PM peak period. The volume to capacity ratio of the proposed southbound C-D Road ramps to southbound I-75 and I-275 were also evaluated. The capacity of the ramps were determined from *HCM Exhibit 14-12* for a single-lane ramp with a free flow speed greater then 50 mph. Both ramps have a volume to capacity ratio less than one. The on-ramp to I-75 was also evaluated as a 2-lane ramp similar to the evaluation for year 2045 in **Section 3.7.2**. The density and LOS results of the study segments are shown in **Table 3-5**.

Table 3-5 Summary of Build Alternative LOS Analysis – Opening Year (2025)

Analysis ID	Roadway Segment	DENSITY (pc/mi/ln) & LOS			
		AM		PM	
Basic Freeway Analysis					
1	I-75 southbound C-D Road	21.5	C	13.2	B
2	I-75 southbound north of diverge to I-275	13.5	B	10.6	A
3	I-75 southbound south of merge from C-D Road ramp	24.5	C	18.7	C
4	I-75 southbound between diverge to I-275 and merge at I-275	13.8	B	9.8	A
5	I-275 southbound south of merge from C-D Road and I-75	23.2	C	14.1	B
6	I-75 southbound between diverge to I-275 and C-D Road ramp merge at I-75	12.8	B	11.2	B
Diverge Analysis					
1	I-75 southbound C-D Road to I-275**	21.1	C	12.9	B
2	I-75 southbound to I-275**	14.8	B	11.6	B
Merge Analysis					
1	I-75 southbound C-D Road to I-275	24.9	C	14.4	B
2	I-75 southbound C-D Road ramp to I-75 (as 2-lane on-ramp)	23.6	C	17.5	B
Ramp Volume to Capacity Analysis***					
1	Southbound C-D to I-275 Ramp	Demand volume does not exceed capacity.			
2	Southbound C-D to I-75 Ramp	Demand volume does not exceed capacity.			

**Density not calculated due to HCS limitations, v/c ratio reported instead*

*** HCM Equation 14.28 used to determine density and LOS*

****Single-lane ramp capacity for FFS > 50 mph = 2200 based on HCM Exhibit 14-12*

3.7.2 Design Year (2045) Build Analysis

For Design Year (2045) the Build Alternative LOS results found that almost all basic freeway segments operate at an acceptable LOS for both the AM and PM peak period. Two basic freeway segments are forecasted to operate at an unacceptable LOS of E in the AM peak period. The two segments are southbound I-275 and southbound I-75, south of the system interchange apex. Adding capacity to these two segments would require proposed improvements extending to adjacent south interchanges and out of the limits of this project scope; therefore, no improvements for these segments are proposed in this study.

All ramps diverge segments operate at an acceptable LOS for both the AM and PM peak period. The ramp merge segment from the proposed I-75 C-D Road ramp to I-275 to operate at an acceptable LOS for both the AM and PM peak periods.

The ramp merge segment from the proposed I-75 southbound C-D roadway to I-75 (Merge Analysis ID 2) is forecasted to operate within target LOS for the AM and PM peak periods with 1-lane ramp with an acceleration length of 1500 feet. Due to bridge structure 100412 over the Cypress Creek, the proposed C-D roadway to I-75 acceleration length was initially constrained to 900 feet in length. The merge analysis for this segment is forecasted to operate at LOS E for the AM peak period in the Design Year (2045). Interpolating the input design year hourly volumes, the constrained merge segment was found to reach LOS E in year 2039. It should be noted that this segment is merging onto Basic Freeway Segment ID #3 (I-75 southbound south of merge from C-D Road) which is expected to operate at LOS E downstream of the merge in the AM peak period. For this merge segment to reach acceptable LOS with the forecasted 2045 volumes and downstream LOS conditions, the acceleration length will need to be extended to 1500 feet. A straight-line interpolation of the Opening Year (2025) and Design Year (2045) density results for the merge, results in an expected LOS E with a Density E (>35 pc/mi/ln) in year 2039. Extending the acceleration length of this merge segment to 1500' and over bridge 100415 will be further evaluated at a later time.

A volume to capacity ratio evaluation was completed for the proposed southbound C-D Road ramps to I-275 and I-75. Using the peak hour demand volumes the volume to capacity ratios were calculated. The peak demand volume for the southbound C-D Road ramp to I-75 does exceed the capcity of a single-lane ramp (with a free flow speed greater than 50 mph) by less than 10%.

Upon further analysis, this on-ramp was evaluated as a 2-lane on-ramp. As a 2-lane on-ramp this merge is forecast to operate within target LOS for the AM and PM peak periods (LOS D in Am and LOS C in PM).

The density and LOS results of the study segments are shown in **Table 3-6**.

Table 3-6 Summary of Build Alternative LOS Analysis – Design Year (2045)

Analysis ID	Roadway Segment	DENSITY (pc/mi/ln) & LOS			
		AM		PM	
Basic Freeway Analysis					
1	I-75 southbound C-D Road	26.7	D	16.3	B
2	I-75 southbound north of diverge to I-275	20.4	C	15.8	B
3	I-75 southbound south of merge from C-D Road ramp	**42.7**	**E**	28.9	D
4	I-75 southbound between diverge to I-275 and merge at I-275	20.4	C	14.1	B
5	I-275 southbound south of merge from C-D Road and I-75	**38.1**	**E**	19.7	C
6	I-75 southbound between diverge to I-275 and C-D Road ramp merge at I-75	19.7	C	17.1	B
Diverge Analysis					
1	I-75 southbound C-D Road to I-275**	26.1	C	16.0	B
2	I-75 southbound to I-275**	22.0	C	17.3	B
Merge Analysis					
1	I-75 southbound C-D Road ramp to I-275	34.7	D	20.3	C
2	I-75 southbound C-D Road ramp to I-75 (1-lane ramp acceleration length = 900')	**38.2**	**E**	30.2	D
2	I-75 southbound C-D Road ramp to I-75 (1-lane ramp, acceleration length = 1500')	35.0	D	26.9	C
2	I-75 southbound C-D Road ramp to I-75 (2-lane ramp, acceleration length = 1500' for each lane merge)	33.4	D	25.1	C
Ramp Volume to Capacity Analysis***					
1	Southbound C-D to I-275 Ramp	Demand volume does not exceed capacity.			
2	Southbound C-D to I-75 Ramp	Demand volume does not exceed capacity.			

**Density not calculated due to HCS limitations, v/c ratio reported instead*

*** HCM Equation 14.28 used to determine density and LOS*

****Single-lane ramp capacity for FFS > 50 mph = 2200 based on HCM Exhibit 14-12*

Based on the analysis for Merge #2, it is recommended for the C-D Road ramp to southbound I-75 to be a 2-lane on-ramp. Considering the entrance point along I-75 which is in horizontal curve and immediately south of the northbound I-275/SR 56 ramp overpass bridges, successive 1500 ft. acceleration distances prior to dropping each lane is also recommended.

3.7.3 Design Year (2050) Build Analysis from IMR

The *IMR* further evaluated the build condition for year 2050. Below are the results of that evaluation.

- Vehicle operating speeds on southbound I-75 between SR 56 and the I-275/I-75 Apex are projected to degrade to an estimated speed of 65.0 mph and 66.2 mph during the AM and PM peak hours, respectively.
- A ramp capacity check using HCM, 6th Edition volume thresholds reveals that the southbound I-75 on ramp at SR 56 is projected to operate over capacity with a volume-to-capacity ratio of 0.72 during the higher volume AM peak hour,
- Intersection delay results are expected to be the same as the 2050 No-Build Alternative (see **Section 3.5.3**) with both ramp terminal intersections at SR 56 operating at an overall poor LOS (LOS F) during both AM and PM peak hours, and
- The Build Alternative will not impact the operations of the ramp terminal intersections at the I-75 at SR 56 DDI.

3.8 QUANTITATIVE SAFETY ANALYSIS

As documented in the *IMR*, a quantitative safety analysis, using procedures from the Highway Safety Manual was conducted to estimate the safety benefits of the proposed improvements. The quantitative safety analysis revealed that providing the southbound I-75 CD road from SR 56 to the I-275/I-75 Apex is projected to reduce overall crashes by 13 percent, which equates to an annual cost savings of $4.8 million. The Build Alternative improvements would provide greater level of mobility and safety for all southbound users in study area.

SECTION 4 DESIGN CONTROLS AND CRITERIA

Proposed design controls, standards and criteria are shown below in **Tables 4-1 & 4-2.**

Table 4-1 I-75/I-275 Mainline and C-D Road Design Controls and Criteria

DESIGN ELEMENT	2 to 3-Lane Collector-Distributor	I-75/275 Mainline	Source
Context Classification	N/A		FDM Section 200.4 (Limited Access)
Design Year	2045		PTAR
Design Speed	60 mph (Flush Shoulder)	70 mph (Flush Shoulder)	FDM Table 201.5.1
Design Vehicle	WB-62FL		FDM Section 201.6
HORIZONTAL ALIGNMENT			
Maximum Superelevation	0.10		FDM Table 210.9.1
Maximum Curvature	5°15'	3°30'	FDM Table 210.9.1
Maximum Curvature w/o Superelevation	0°15'		FDM Table 210.9.1
Max. Deflection w/o Horizontal Curve	0° 45' 00"		FDM Section 211.7.1
Minimum Length of Horizontal Curve	1800 ft Desirable 900 ft Minimum	2100 ft Desirable 1050 ft Minimum	FDM Table 211.7.1
Superelevation Rate	1:180	1:200	FDM Table 210.9.3
VERTICAL ALIGNMENT			
Maximum Grade	4.00%	3.00%	FDM Table 211.9.1
Minimum Grade	0.30%	N/A	FDM Section 210.10.1.1
Minimum Distance Between VPI's	250 ft	N/A	FDM Section 210.10.1.1
Min. K Value for Crest Vertical Curves	313 ft	506 ft	FDM Table 211.9.2
Min. K Value for Sag Vertical Curves	157 ft	206 ft	FDM Table 211.9.2
Minimum Vertical Curve Length	Crest: 1800 ft	Sag: 800 ft	FDM Table 211.9.3
Minimum Stopping Sight Distance	645 ft	820 ft	FDM Table 211.10.1
Max. Change in Grade w/o Vertical Curve	0.40	0.20	FDM Table 210.10.2
Roadway Base Clearance	3 ft (Minimum)		FDM Section 210.10.3
ROADWAY CROSS SECTION			
Lane Widths	12 ft	12 ft	FDM Section 211.2
Cross Slopes (Roadway)	2% two inside lanes, 3% outside lane		FDM Figure 211.2.1
Cross Slopes (Shoulder)	Outside 6%, Inside 5%		FDM Section 211.4.2
Median Width (Minimum)	64 ft	64 ft	FDM Table 211.3.1
Shoulders: Outside & Median	Full Width 12 ft, Paved Width 10 ft (Paved 12 ft w/Shoulder Barrier Wall)	Full Width 12 ft, Paved Width 10 ft	FDM Table 211.4.1
Sidewalk Width	N/A	N/A	N/A (Limited Access)
Clear Zone (CZ)	36 ft (Mainline)	24 ft (Aux Lane)	FDM Table 215.2.1
Lateral Offset	36 ft (Outside CZ)		FDM Table 215.2.2
Front Slopes	1:6 to edge of CZ, then 1:4, 1:3, or 1:2 w guardrail (based on fill height)		FDM Table 215.2.3
Back Slopes	1:4 or 1:3 w std. width trapezoidal ditch & 1:6 front slope		FDM Table 215.2.3
Minimum Border Width	94 ft		FDM Section 211.6
Access Classification	1		FDM Table 201.4.1
Minimum Level of Service (LA Facility)	D		PTAR
SOURCE: *FDOT Design Manual* (FDM), January 2022; *PTAR*			

Table 4-2 One Lane and Two-Lane Ramp Design Controls and Criteria

DESIGN ELEMENT	One-Lane Ramp (Interstate)	Two-Lane Ramp (Interstate)	Source
Context Classification	N/A		FDM Section 200.4 (Limited Access)
Design Year	2045		PTAR
Design Speed	60 mph (Flush Shoulder)		FDM Table 201.5.1
Design Vehicle	WB-62FL		FDM Section 201.6
HORIZONTAL ALIGNMENT			
Maximum Superelevation	0.10		FDM Table 210.9.1
Maximum Curvature	5°15'		FDM Table 210.9.1
Maximum Curvature w/o Superelevation	0°15'		FDM Table 210.9.1
Max. Deflection w/o Horizontal Curve	0° 45' 00"		FDM Section 211.7.1
Minimum Length of Horizontal Curve	1800' Desirable	900 ft Minimum	FDM Table 211.7.1
Superelevation Rate	1:225	1:200	FDM Table 210.9.3
VERTICAL ALIGNMENT			
Maximum Grade	4.00%		FDM Table 211.9.1
Minimum Grade	0.30%		FDM Section 210.10.1.1
Minimum Distance Between VPI's	N/A		FDM Section 210.10.1.1
Min. K Value for Crest Vertical Curves	245 ft		FDM Table 211.9.2
Min. K Value for Sag Vertical Curves	136 ft		FDM Table 211.9.2
Minimum Vertical Curve Length	Crest: 400 ft	Sag: 300 ft	FDM Table 211.9.3
Minimum Stopping Sight Distance	570 ft		FDM Table 211.10.1
Max. Change in Grade w/o Vertical Curve	0.40		FDM Table 210.10.2
Roadway Base Clearance	3 ft (Minimum)		FDM Section 210.10.3
ROADWAY CROSS SECTION			
Lane Widths	15 ft	12 ft	FDM Section 211.2
Cross Slopes (Roadway)	2% two inside lanes, 3% outside lane		FDM Figure 211.2.1
Cross Slopes (Shoulder)	Outside 6%, Inside 5%		FDM Section 211.4.2
Median Width (Minimum)	64 ft	64 ft	FDM Table 211.3.1
Shoulders: Outside	Full Width 6 ft, Paved 4 ft	Full Width 12 ft, Paved 10 ft	FDM Table 211.4.1
Shoulders: Median	Full Width 6 ft, Paved 2 ft	Full Width 8 ft, Paved 4 ft	FDM Table 211.4.1
Sidewalk Width	N/A	N/A	N/A (Limited Access)
Clear Zone	36 ft (Mainline)	24 ft (Aux Lane)	FDM Table 215.2.1
Lateral Offset	36 ft (Outside CZ)		FDM Table 215.2.2
Front Slopes	1:6 to edge of CZ, then 1:4, 1:3, or 1:2 w guardrail (based on fill height)		FDM Table 215.2.3
Back Slopes	1:4 or 1:3 w std. width trapezoidal ditch & 1:6 front slope		FDM Table 215.2.3
Minimum Border Width	94 ft		FDM Section 211.6
Access Classification	1		FDM Table 201.4.1
Minimum Level of Service (LA Facility)	D		PTAR

SOURCE: *FDOT Design Manual* (FDM), January 2022; *PTAR*

Drainage and Stormwater Management Design Criteria: The design of SMFs and FPCs for this proposed project are governed by rules and criteria set forth by the FDOT, SWFWMD, and Florida Department of Environmental Protection (FDEP). The specific governing requirements from each agency are outlined in the *PSR* related to:

- FDOT Criteria (water quality, compensatory treatment, water quantity, stormwater management facilities, environmental look arounds, nutrient loading analysis)
- SWFWMD Criteria (water quality, overtreatment, off-site compensation, water quantity, floodplain encroachment)

SECTION 5 ALTERNATIVES ANALYSIS

5.1 NO-BUILD/REHABILITATION/REPAIR ALTERNATIVE

The No-Build Alternative would not construct any improvements along I-75 except for routine maintenance that may be planned in the future. The No-Build Alternative requires no additional expenditure of funds, requires no acquisition of additional ROW, and has no environmental impacts. However, the No-Build Alternative fails to fulfill the project's purpose and need and fails to meet the goals of the Hillsborough Transportation Planning Organization (TPO) and Pasco County Metropolitan Planning Organization (MPO) Long Range Transportation Plans (LRTP). The No-Build Alternative will remain a viable alternative throughout the study process and serve as the basis of comparison for the Build Alternatives.

5.2 TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS ALTERNATIVE

The objective of Transportation System Management & Operations (TSM&O) is to identify strategies with the operational objective of preserving the capacity and improving the security, safety, and reliability of the transportation system, while minimizing all environmental impacts. These strategies may include upgrades or additions to the existing facility, such as ramp signals, arterial traffic management systems, traffic incident management, work zone traffic management, road weather management, traveler information services, congestion pricing, parking management, traffic control, commercial vehicle operations, transit priority signals systems, and freight management.

For this proposed project, it was determined that the traffic operation improvement needs cannot be provided solely through the implementation of TSM&O improvements.

5.3 MULTIMODAL ALTERNATIVE

As noted in **Section 2.6**, there are no existing transit routes along I-75 or I-275 in the project limits. While a regional transit alternative could have the potential to improve traffic operations in the distant future, this alternative would fail to fulfill the purpose and need for the proposed project within the study area. Therefore, a transit alternative was not considered as a standalone solution for the expected future transportation demand deficiencies within the study area. Both I-75 and I-275 are limited access facilities, so no accommodations for pedestrians and bicycles are contemplated.

5.4 BUILD ALTERNATIVES

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

- Base concept plans were prepared using all available data, including county GIS data, as-built plans, FDOT ROW maps, and subdivision plats.
- Initial planning level alignment configuration options were developed to eliminate the southbound traffic weave between the SR 56 on-ramp and I-75/I-275 diverge.

- An alternative alignment was refined considering geometric complexity, lane continuity, impact to existing bridge structures, new bridge location and additional ROW needs.
- The required number of lanes was confirmed based on the traffic analysis summarized in **Section 3.**
- Alternative SMFs and FPCs were developed and evaluated.
- Potential impacts to environmental resources were assessed.
- A Preferred Alternative was selected.

5.4.1 Configuration Options Considered

Prior to the initiation of this PD&E Study, FDOT undertook a planning level evaluation of operational improvements to eliminate the existing weave between the southbound I-75/I-275 diverge and the on-ramp from SR 56 through the introduction of a three-lane C-D Road. The C-D Road begins from the southbound SR 56 on-ramp and distributes to I-75 and I-275 downstream of the existing I-75/I-275 diverge point. **Figure 5-1** schematically shows two alternative configurations developed in that initial planning evaluation. A more detailed layout of these two alternative configurations is included in the project files.

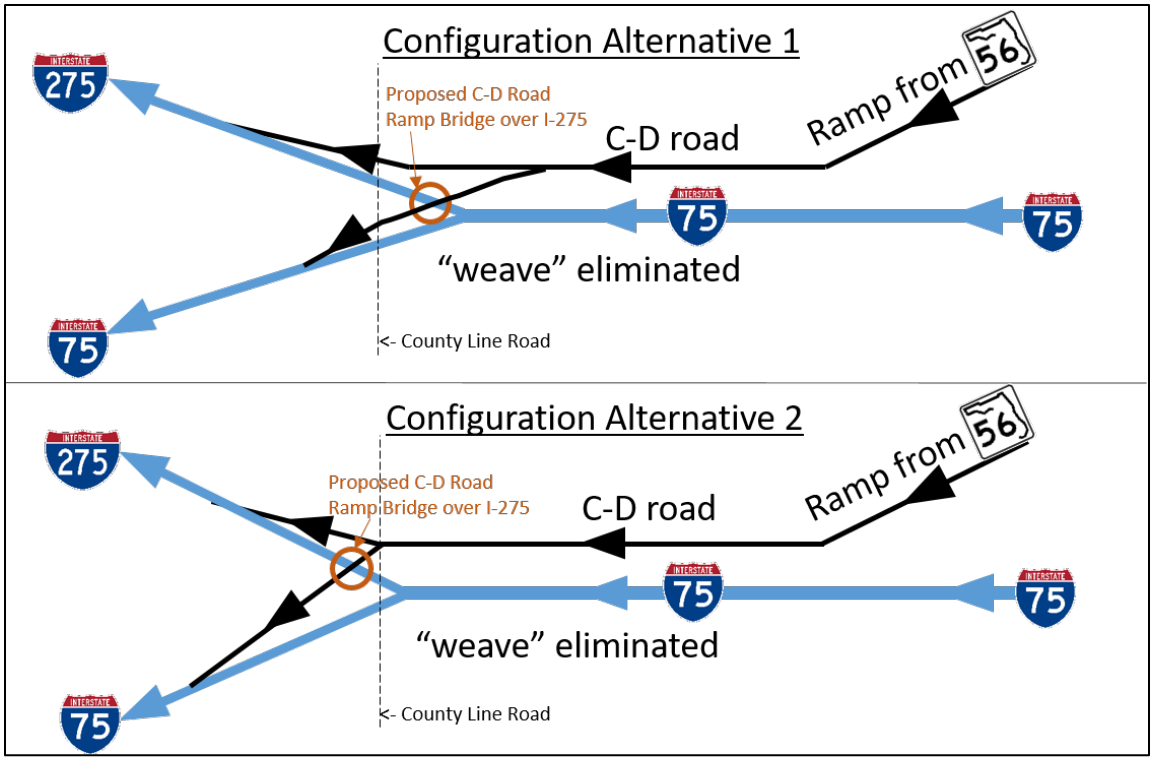


Figure 5-1 Initial Planning Level Configuration Alternatives 1 and 2

Configuration Alternative 1

Configuration Alternative 1 provides for a split in the three-lane southbound C-D Road lanes with two lanes continuing in a ramp to I-275 and two lanes continuing in a ramp to I-75 which then narrow to one-lane approximately 1,800 feet south of the diverge point. **Figure 5-2** shows the diverges for both the C-D Road and for I-75/I-275.

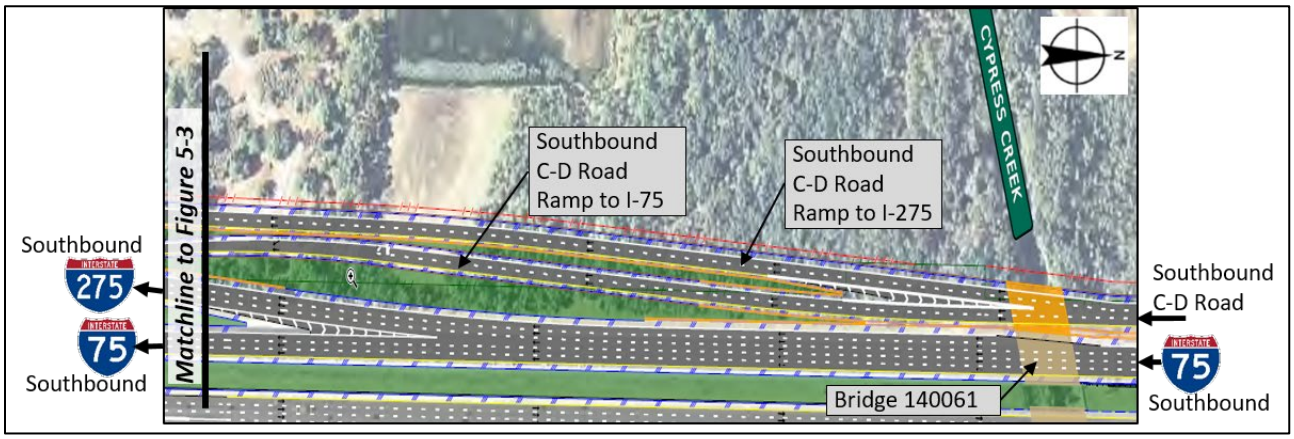


Figure 5-2 Alternative 1-Diverge Points for C-D Road & I-75/I-275

(Figure 5-2 is not to scale and compressed horizontally to fit on page)

A new bridge carrying the C-D Road ramp to I-75 over the southbound I-275 lanes is situated north of the existing County Line Road bridge overpass (Bridge 100492). **Figure 5-3** shows the County Line Road overpass bridge in relation to the proposed C-D Road bridge. In order to gain the sufficient crossing angle of this C-D Road bridge overpass, the C-D Road alignment was shifted further west starting near the I-75 bridge over Cypress Creek (Bridge No. 140061).

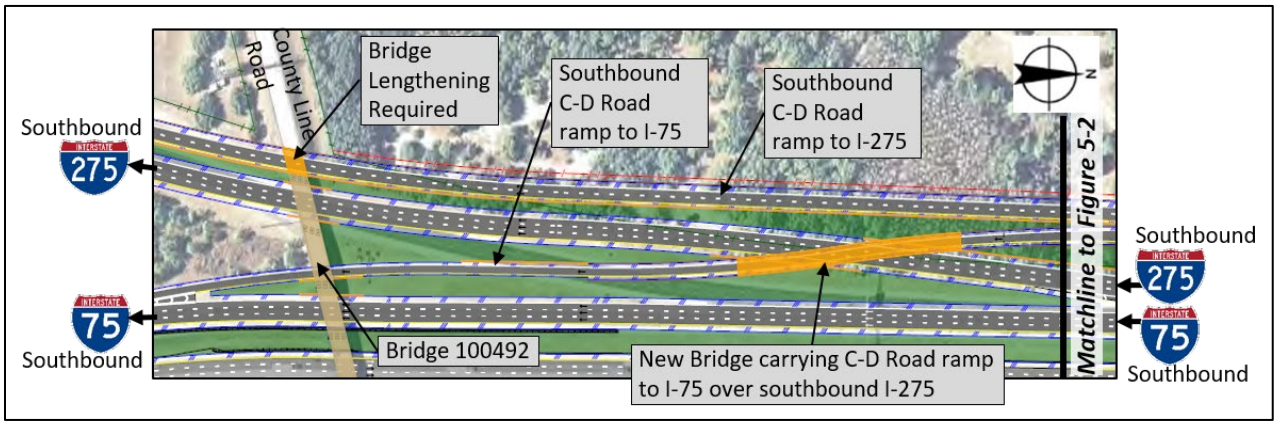


Figure 5-3 Alternative 1–C-D Road Ramp Bridge over I-275 & County Line Road Bridge

(Figure 5-3 is not to scale and compressed horizontally to fit on page)

The acute crossing angle of the C-D Road ramp to I-75 over southbound I-275 resulted in a bridge length of approximately 600 feet. An additional span would be needed for the existing bridge carrying County Line Road over I-275 (Bridge No. 100492) for the C-D Road ramp to I-275 to fit under the

overpass structure. This additional span would be added to the west of the existing bridge abutment. From a vertical alignment perspective, the C-D Road ramp to I-75 would need to be raised to cross over the southbound I-275 lanes and then lowered to fit under the County Line Road overpass bridge. The distance between these two crossing locations is approximately 1,300 feet.

Configuration Alternative 2

Configuration Alternative 2 differs from Alternative 1 in that it provides for a split in the three-lane southbound C-D Road lanes with two lanes continuing in a ramp to I-275 and only one-lane continuing in a ramp to I-75. The split occurs south of the existing County Line Road Bridge overpass (Bridge No. 100492). Unlike Configuration Alternative 1, the C-D Road alignment does not need to be shifted further west near the I-75 bridge over Cypress Creek (Bridge No. 140061). Thus, Alternative 2 would require less ROW than Alternative 1.

The crossing angle of the C-D Road overpass bridge is not as acute and thus the bridge length is shorter (approximately 400 feet). In this alternative, the bridge carrying County Line Road over I-275 (Bridge No. 100492) would not need to be lengthened for the C-D Road ramp to I-275 to fit under the overpass structure. The southbound I-275 lanes would be realigned to the east and could fit under a middle span of the County Line Road bridge. From a vertical alignment perspective, the C-D Road ramp to I-75 would need to be raised quickly after passing under the County Line Road bridge to cross over the southbound I-275 lanes. The distance between these two crossing locations is approximately 700 feet. **Figure 5-4** shows the diverges for both the C-D Road and for I-75/I-275.

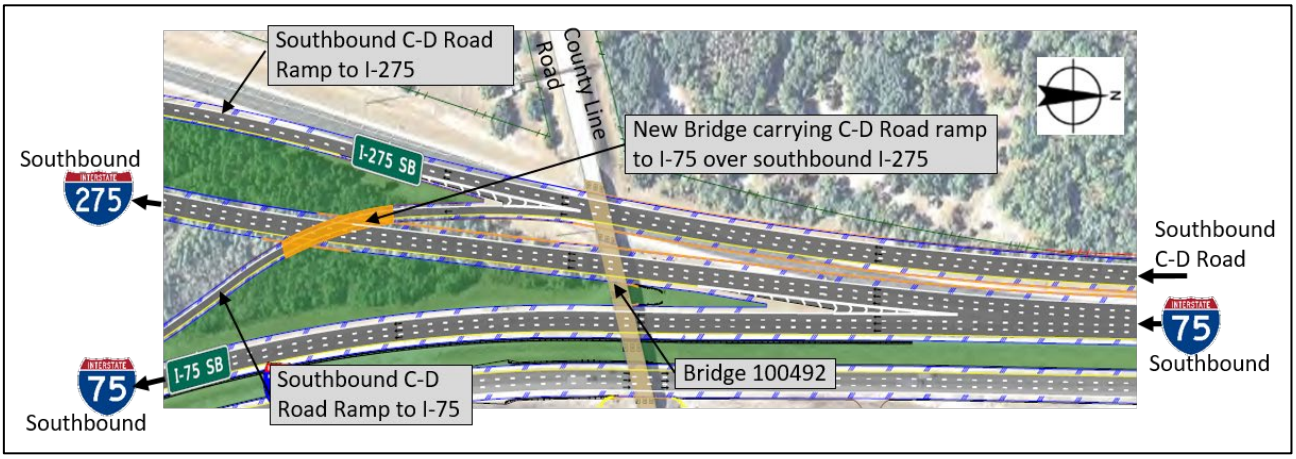


Figure 5-4 Alternative 2-Diverge Points for C-D Road & I-75/I-275

(Figure 5-4 is not to scale and compressed horizontally to fit on page)

In Alternative 2, the C-D Road ramp to I-75 joins I-75 further south than in Alternative 1 and would require the bridge carrying northbound I-275 over I-75 (Bridge No. 100411) to be lengthened, by moving the southern abutment further to the southwest so the additional ramp lane can fit under the

bridge. This is an existing curved steel girder bridge, so extending this bridge may not be easily constructed without replacing the entire bridge superstructure.

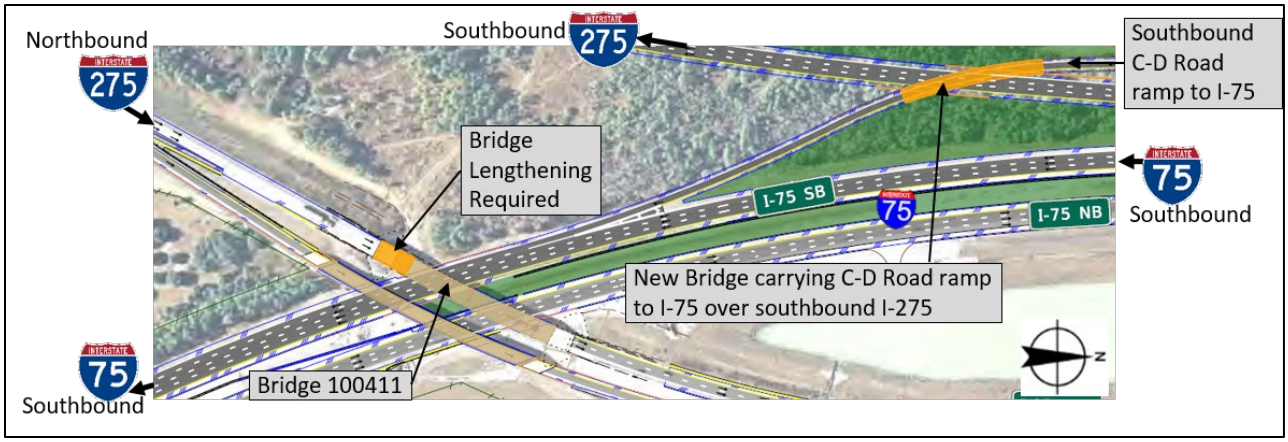


Figure 5-5 Alternative 2–C-D Road Ramp Bridge over I-275 & Under Northbound I-275 Bridge

(Figure 5-5 is not to scale and compressed to fit on page)

Based on the planning level evaluation, Alternative 1 was dropped from further consideration. Reasons for dropping Alternative 1 were based on Alternative 1 requiring more ROW, a longer and more acutely skewed new bridge carrying the C-D Road ramp to I-75 over southbound I-275, more widening (or a wider new bridge) required for the I-75 bridge over Cypress Creek (Bridge No. 140061), and the County Line Road bridge (Bridge No. 100492) would need to be lengthened.

Alternative 2 was selected to move forward for further evaluation and refinement and was renamed as Alternative 2A for comparison of further refinements.

Configuration Alternative 2B (refinement of Alternative 2A)

The horizontal alignment for Configuration Alternative 2A was refined in order to avoid lengthening the northbound I-275 bridge over I-75 (Bridge No. 100411), and to provide for better vertical alignments and shorter bridge lengths. These refinements resulted in Configuration Alternative 2B. See **Figure 5-6** showing a schematic of both Alternative 2A and Alternative 2B for comparison.

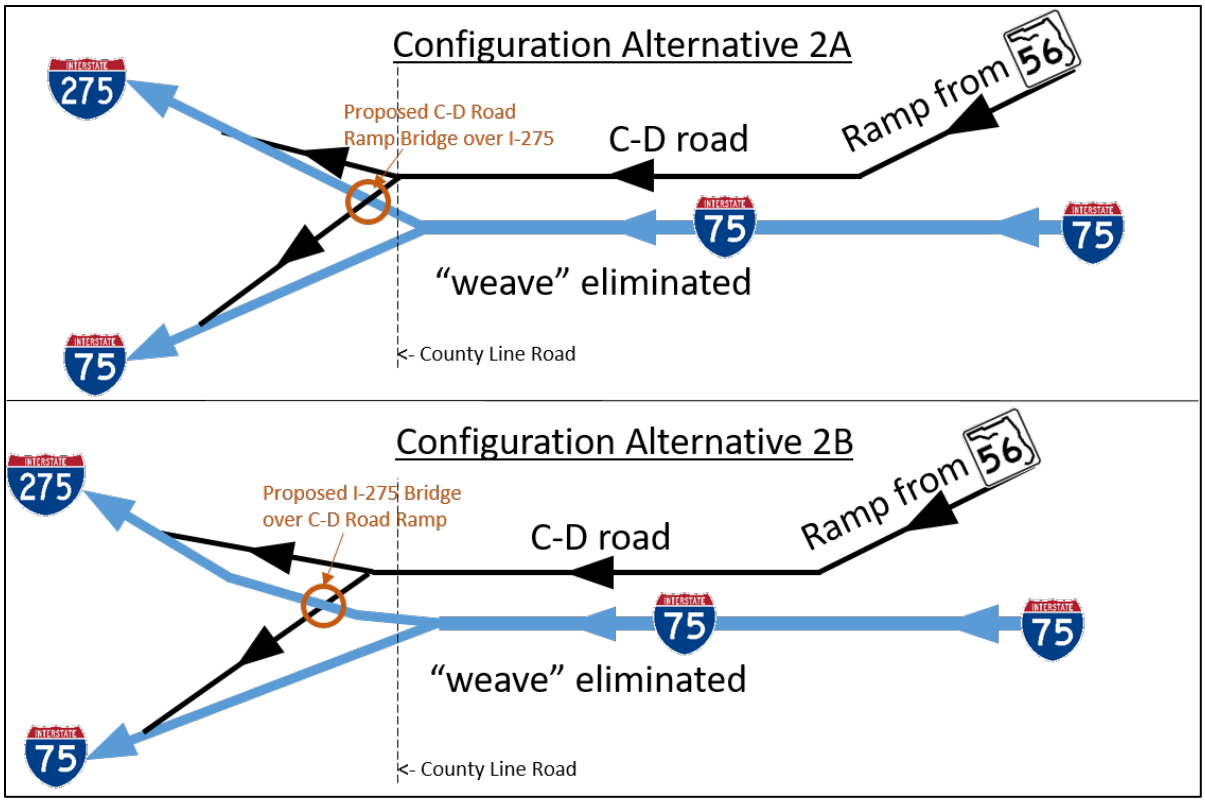


Figure 5-6 Configuration Alternatives 2A and 2B

Several refinements were developed for Alternative 2B. First, the alignment for the southbound I-275 lanes was shifted slightly to provide for a slightly less acute crossing angle for the C-D Road/I-275 bridge (approx. 72 degrees from perpendicular) and slightly longer distance from the County Line Road bridge (Bridge No. 100492) at approximately 1,000 feet. The stacking of this new bridge was also reversed so the I-275 lanes would cross over the C-D Road ramp to I-75. **Figure 5-7** shows the C-D Road diverge point and new bridge carrying southbound I-275 over the C-D Road ramp to I-75.

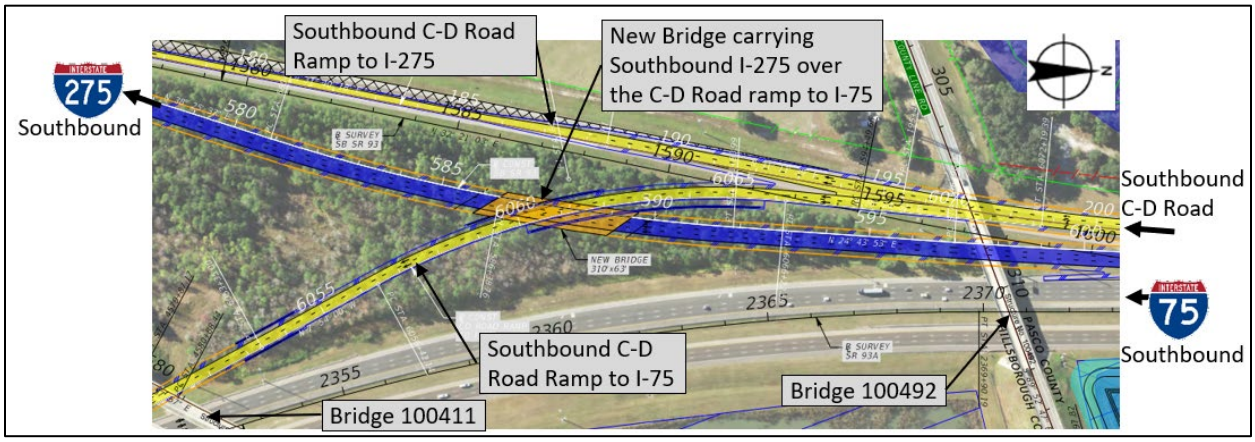


Figure 5-7 Alternative 2B–C-D Road Diverge & New I-275 Bridge over C-D Road Ramp

(Figure 5-7 is not to scale and compressed to fit on page)

To maximize driver horizontal sight distance on the C-D Road ramp, the inside shoulder width is widened approaching and under the bridge. These refinements result in a shorter bridge length than for Alternative 2A at approximately 310 feet. The alignment of the C-D Road ramp to I-75 was also adjusted so it can fit under the first span of the northbound I-275 bridge over I-75 (Bridge No. 100411), eliminating the need to extend or replace this structure at this time. To meet lane balance criteria, the C-D Road ramp to I-75 was widened to two lanes at the southbound C-D Road diverge to I-75 and I-275. This allows for the middle lane on the C-D Road to become a "choice lane" with an option to connect to either southbound I-275 or southbound I-75. The second lane on the C-D Road ramp to I-75 is carried under the bridges carrying I-275 over I-75 and merged as a 2-lane on-ramp with 1500 ft acceleration distances prior to successively dropping each of the ramp lanes. Due to the 2-lane on-ramp to I-75, the tie-in point of the C-D Road ramp to I-75 is shifted south of that in Alternative 2A, and connects to I-75 after the bridge carrying I-75 over Cypress Creek (Bridge No. 100412), requiring widening that bridge by approximately 24 ft.

The FDOT is currently undertaking a PD&E Study to add managed lanes to I-75 from south of US 301 to north of Bruce B. Downs (WPI Segment No. 419235-3). This study presently provides for the proposed managed lanes to be added to the median of I-75. The northern limit of WPI Segment 419235-3 is south of this PD&E Study. However, should these proposed managed lanes be contemplated for extension further north in the future through the limits of this study, the refinements made in Alternative 2B may not require substantial reconstruction.

The location of the southbound C-D Road was shifted to the west to better accommodate the potential for future managed lanes. This allows a new bridge over Cypress Creek to be built adjacent to Bridge No. 140061, rather than widening Bridge No. 140061. **Figure 5-8** shows the new proposed bridge carrying the southbound C-D Road over Cypress Creek.

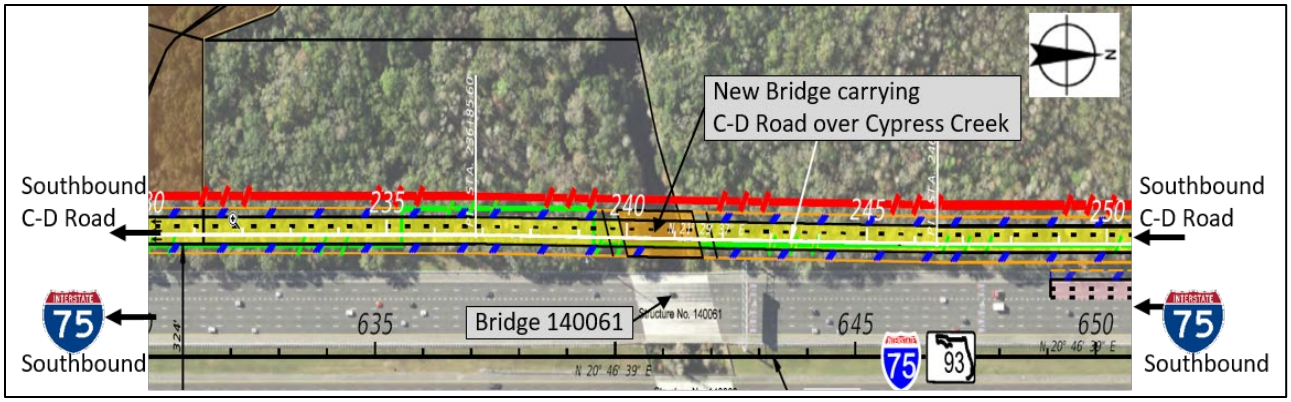


Figure 5-8 Alternative 2B–New C-D Road Bridge over Cypress Creek

(Figure 5-8 is not to scale and compressed to fit on page)

Constructing the C-D Road further west will facilitate safer maintenance of traffic as the existing southbound I-75 lanes can remain open during most phases of construction rather than potentially

closing the outside right-most lane for widening the pavement. Alternative 2B is shown in more detail on the Concept Plans in **Appendix A**.

After coordination with FDOT staff, it was determined that Alternative 2A be dropped from further consideration and Alternative 2B be carried forward as the Preferred Build Alternative for further engineering and traffic evaluation and environmental impact assessment.

5.4.2 Typical Roadway Sections

Figure 2-5 showed the existing typical section for southbound I-75 between the I-75/I-275 diverge and the on-ramp from SR 56. As noted in **Section 5.4.1**, I-75 lanes will remain the same in this location and a three-lane C-D Road will be constructed to the west. **Figure 5-9** shows the proposed roadway typical section in this area. To facilitate stormwater conveyance, concrete ditch pavement may be constructed between the walls for southbound I-75 and the C-D Road in lieu of the miscellaneous asphalt.

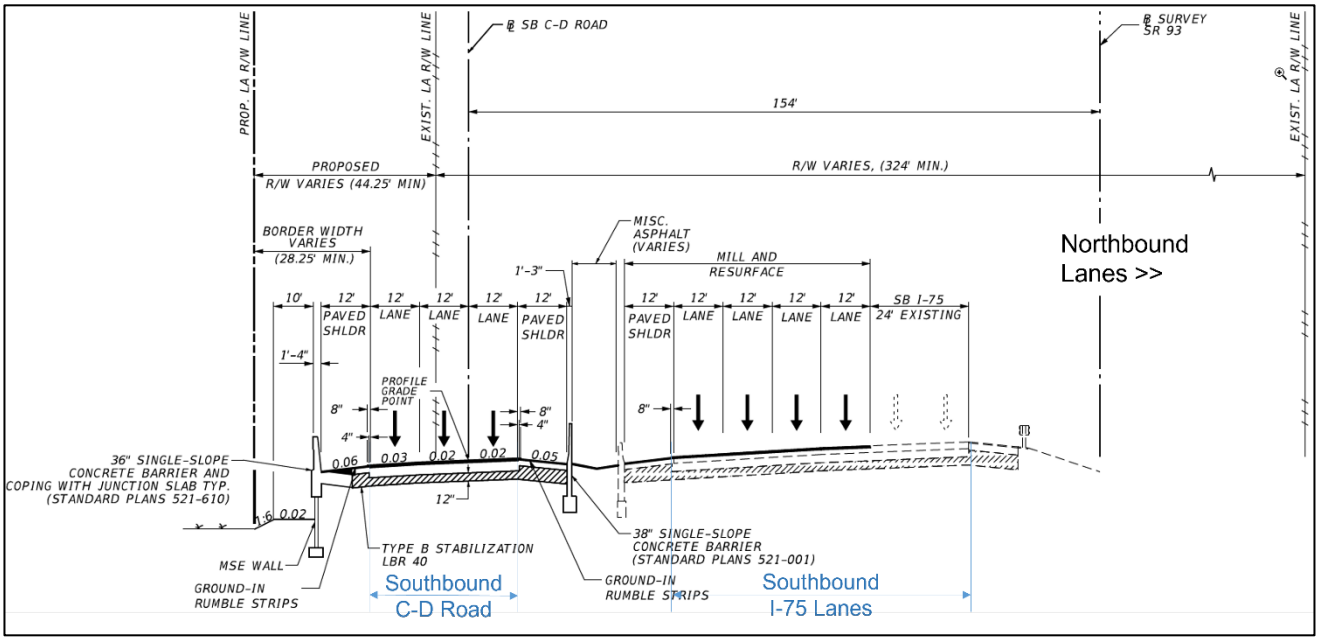


Figure 5-9 Proposed Typical Section Along Southbound I-75

The proposed typical section for I-75 shown in **Figure 5-9** is included in **Appendix C** with other proposed typical sections including:

- Southbound I-275 from C-D Road ramp connection to I-75/I-275 diverge (3-lanes)
- Southbound C-D Road ramp to I-275 (2-lanes and 1-lane)
- Southbound C-D Road ramp to I-75 (2-lanes and 1-lane)
- Southbound I-75 south of C-D Road ramp connection (4-lanes)

The proposed shoulders along the southbound C-D Road and along southbound I-75 are proposed to be 12 feet wide. In November 2018, TBARTA completed a Regional Transit Feasibility Plan (RTFP)

which identified a Catalyst Project within the study area. North of County Line Road, the RTFP identified a dedicated lane/shoulder for transit facilities and south of County Line Road, transit riding in mixed traffic. See **Figure 5-10** for graphics provided in the RTFP for the dedicated lane/shoulder concept and locations.

5.4.3 Proposed Horizontal Alignments

Table 5-1 lists the horizontal alignments and the corresponding curve data for the Preferred Build Alternative. More details of the horizontal alignment including the point of curvature (PC) and point of tangent (PT) of the curves are shown on the Concept Plans in **Appendix A**.

Table 5-1 Proposed Horizontal Curves

Curve #	Curve Direction	Point of Intersection (PI) Location	Degree of Curve	Curve Length (Ft)	Est. Design Speed (MPH)	Superelevation
I-275 Southbound						
1	Right	565+26.94	0° 31'	1163	70	RC
2	Left	586+38.76	1° 15'	1096	70	0.046
3	Left	601+46.37	0° 21'	896	70	NC
C-D Road Ramp to I-275 and C-D Road Southbound						
1	Left	169+42.70	0° 19'	915	60	NC
2	Left	200+82.37	0° 58'	1070	60	0.030
3	Left	276+29.41	1° 30'	914	60	0.043
C-D Road Ramp to I-75						
1	Left	6049+17.68	0° 29'	835	60	NC
2	Right	6061+47.56	3° 30'	980	60	0.085

RC = Reverse Crown, NC = Normal Crown

5.4.4 Structure Alternatives

There are two new bridge structures with the Preferred Alternative. They are shown on the Concept Plans in **Appendix A** with an orange shading. Below is a description of these new bridge structures.

New Bridge carrying Southbound I-275 over C-D Road Ramp to I-75

This new bridge structure is located between I-75 and I-275 south of County Line Road overpass bridge. This structure carries southbound I-275 (3 lanes) over the C-D Road ramp to I-75 (2-lanes). **Figure 5-11** shows a plan view layout of the new bridge from the Concept Plans in **Appendix A**.

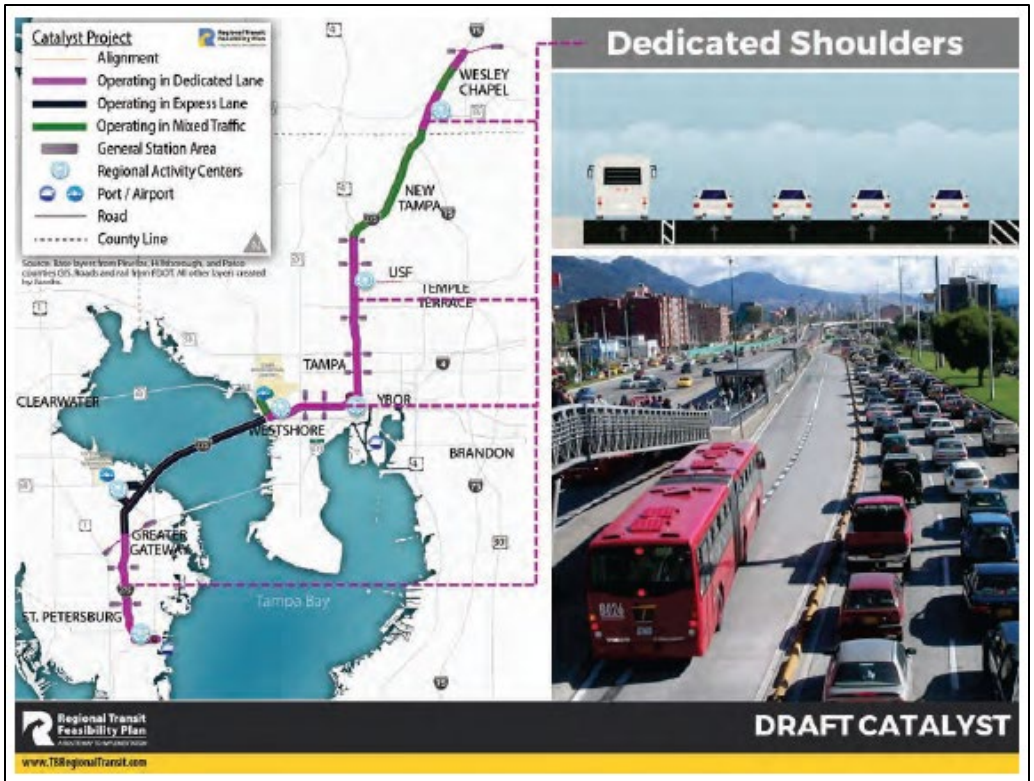


Figure 4.5 - Elements of the I-275 Rubber Tire on Dedicated Shoulders concept

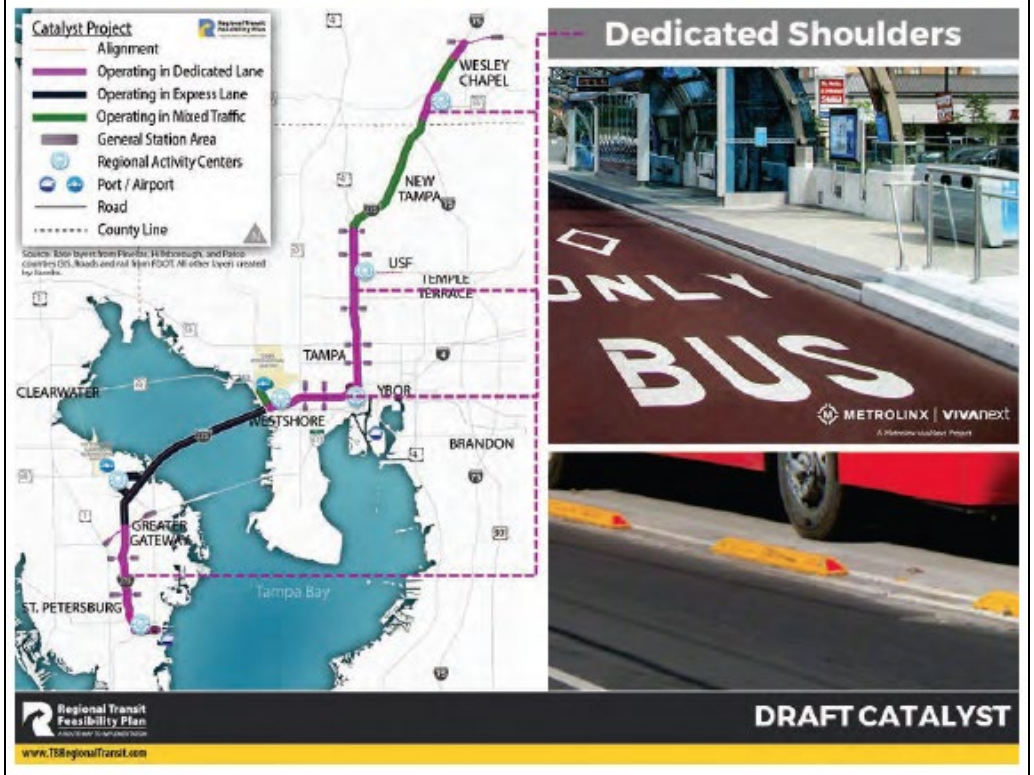


Figure 4.6 - Elements of the I-275 Rubber Tire on Dedicated Shoulders concept

Figure 5-10 TBARTA Regional Transit Plan – Dedicated Lane/Shoulder Concept

The bridge width is approximately 63 feet as it carries three lanes at 12 feet each, outside and inside shoulders at 12 feet each and parapet walls. The horizontal alignment for I-275 is in curvature, with a degree of curve of 1° 15' (radius approximately 4,584 feet) and superelevation at approximately 0.046 as shown in **Table 5-1**. The proposed width of the crossing C-D Road ramp is approximately 59 feet with two lanes at 12 feet each, inside and outside shoulders at 16-12 feet each respectively and a single faced barrier wall. The C-D Road ramp is also not tangent, with a degree of curve of 3° 21' (radius of approximately 1,710 feet) and a superelevation of approximately 0.039. The intersecting angle of the tangents of these two horizontal curves is approximately 72 degrees from perpendicular at intersection of the baselines of both roadways. The vertical clearance critical point based on horizontal geometry with the lowest point of superelevation of I-275 and the highest point of superelevation of the C-D Road ramp is the east side of the bridge where the outside shoulder of the C-D Road passes under the outside shoulder of I-275. The overall bridge is assumed to be approximately 310 feet in length, for a total bridge deck area of approximately 19,530 square feet. This length of 310 feet assumes not providing barrier protection of the bridge substructure for vehicles traveling along the ramp to I-75. Should barrier protection be provided, this bridge span length can be reduced to approximately 284 feet.

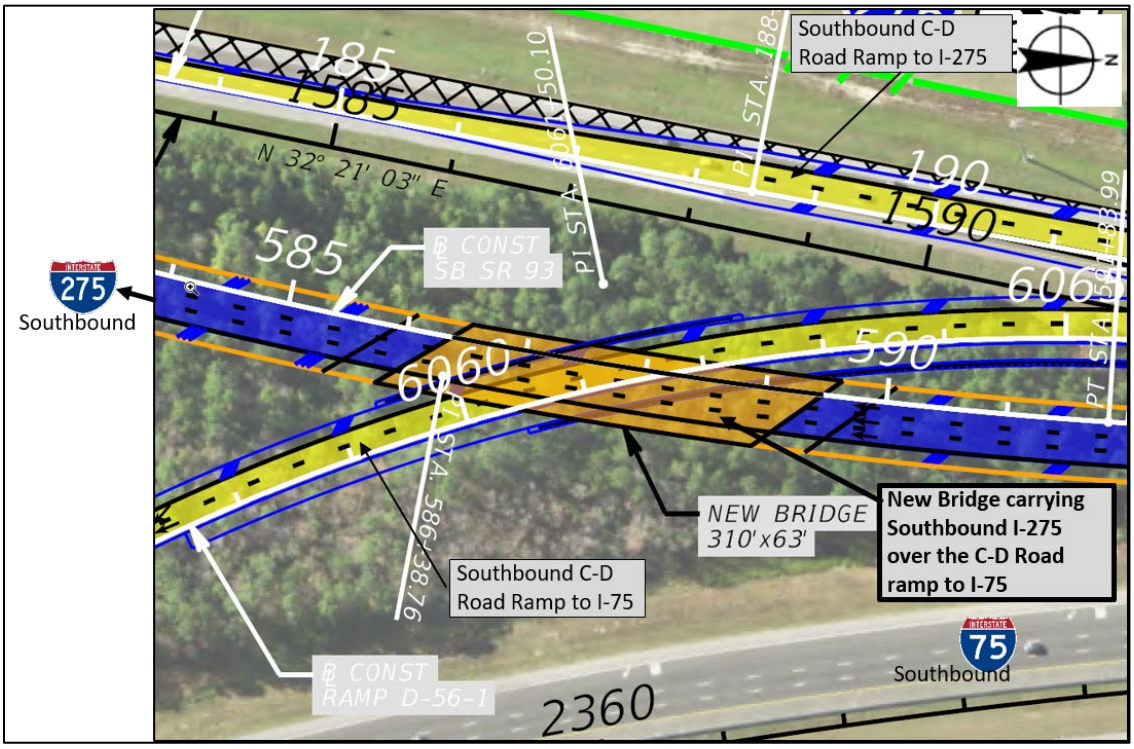


Figure 5-11 New Bridge-I-275 over C-D Road Ramp to I-75

(Figure 5-11 is not to scale)

New Bridge carrying Southbound C-D Road over Cypress Creek (adjacent to Bridge No. 140061)

This new bridge structure is located west of the I-75 southbound lanes and north of County Line Road overpass bridge. This structure carries the southbound C-D Road (3 lanes) over Cypress Creek. **Figure 5-12** shows a plan view layout of the new bridge from the Concept Plans in **Appendix A**.

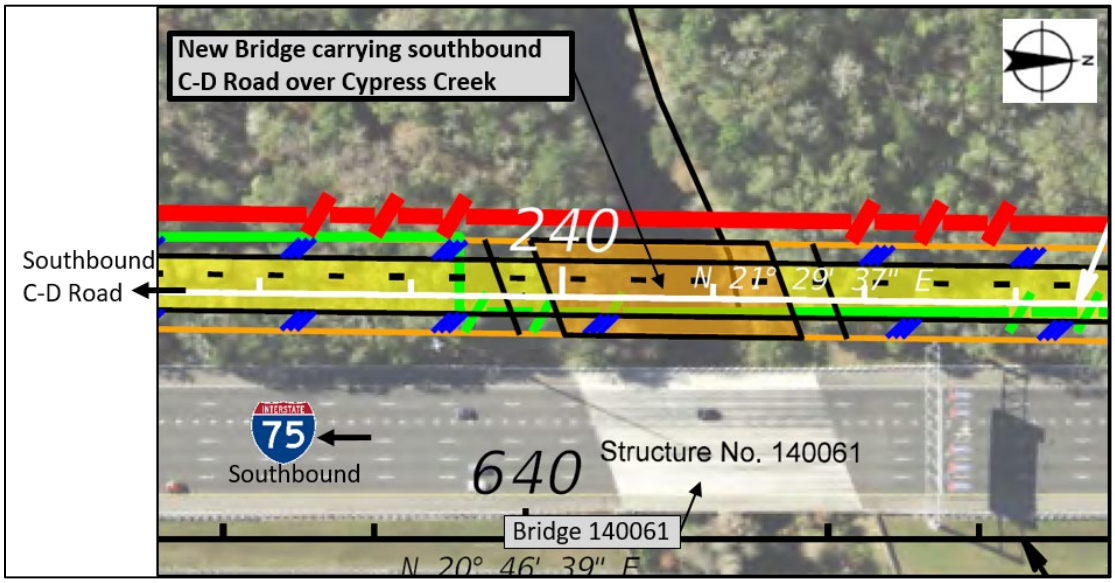


Figure 5-12 New Bridge-Southbound C-D Road over Cypress Creek

(Figure 5-12 is not to scale and compressed to fit on page)

The proposed bridge width is approximately 63 feet which includes three lanes at 12 feet each, outside and inside shoulders at 12 feet each and parapet walls. The horizontal alignment for the C-D Road is in tangent. The bridge length and skew angle is assumed to be similar to that of Bridge No. 140061 which also crosses over Cypress Creek approximately 10 feet east of this new bridge. Bridge No. 140061 is a three-span bridge (approx. 52-foot-long spans) and a skew angle of 20 degrees. Depending on the survey data collected and bridge hydraulics that will be determined during the design phase, the vertical clearance over Cypress Creek and span arrangement for the new bridge is anticipated to be similar to Bridge No. 140061 to minimize any impacts with flows of Cypress Creek. The total bridge deck area is approximately 9,830 square feet.

Modifications to Bridge No. 100411

For the C-D Road ramp to I-75 to be constructed, the slopewall of the south approach span to Bridge No. 100411 which carries northbound I-275 over I-75 will need to be removed. The alignment for the C-D Road ramp has been developed to fit under this bridge span between the abutment and the hammerhead pier. **Figure 5-13** shows a ground level photo of this span courtesy of Google Street view looking south from the southbound I-75 lanes at approximately station 2353+00 for reference. The existing slopewall is located just to the right of the I-75 sign behind the guardrail.

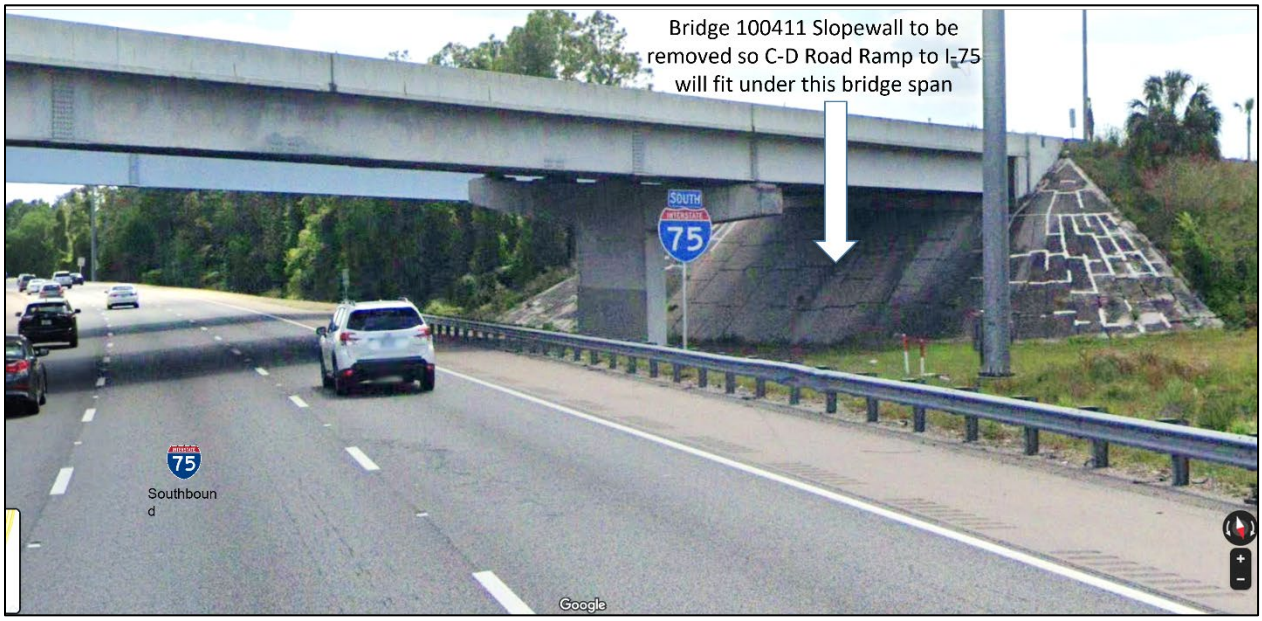


Figure 5-13 Bridge-No. 100411 Showing Slopewall to be Removed

(Google streetview picture)

In April 2022, a technical memo was prepared outlining the geometric and structural evaluation for the proposed 2-lane on-ramp to be accommodated through the end span of Bridge No. 100411. This memo is included in **Appendix F**. Alternative 2 noted in the April 2022 memo will be included in the proposed build alternative. The ramp shoulders will need to be narrowed to 5 ft. minimum, requiring a design exception as well as a design variation for curve length so the alignment of the 2-lane ramp can be adjusted accordingly. The alignment and layout is shown on the Concept Plans in **Appendix A**. **Figures 5-14** and **5-15** show a plan view and section view included in the April 2022 technical memo.

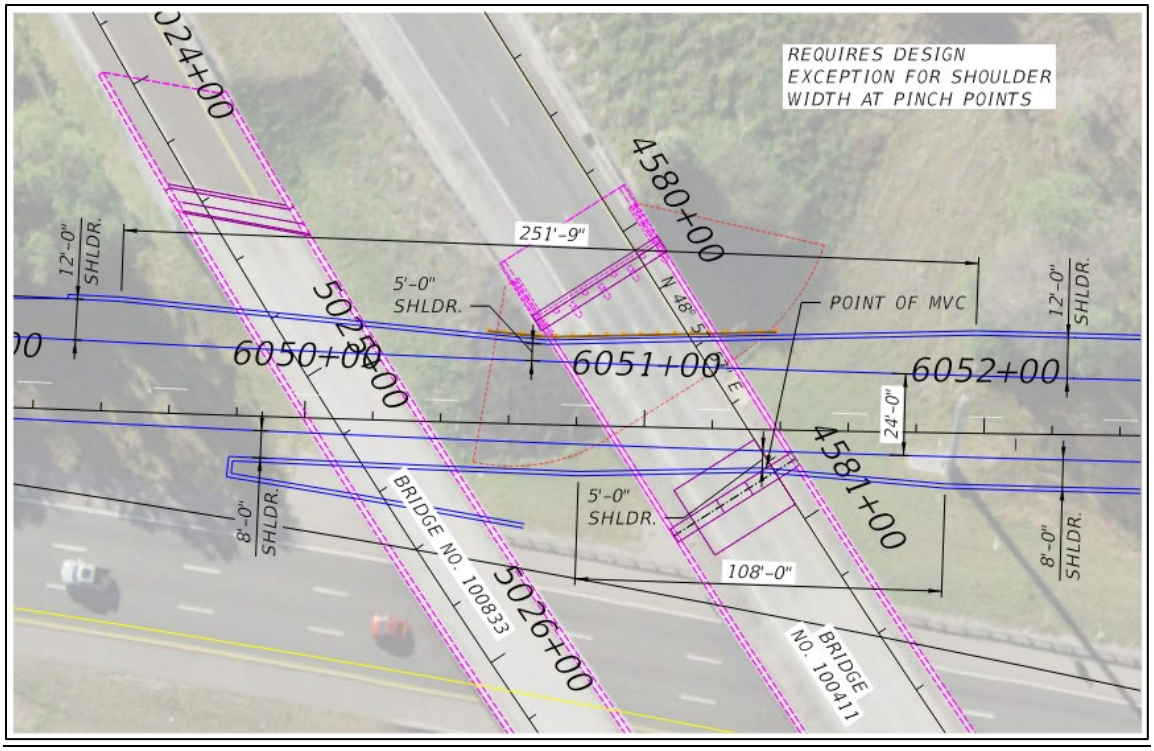


Figure 5-14 2-Lane On-Ramp Under Bridge-No. 100411 – Plan View

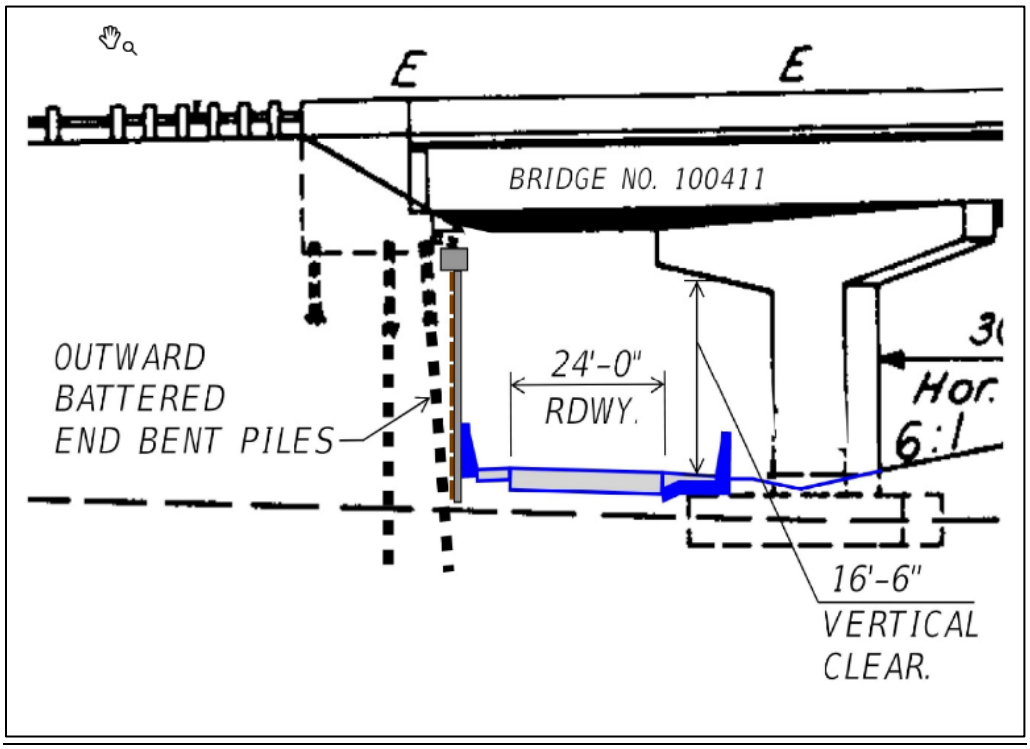


Figure 5-15 2-Lane On-Ramp Under Bridge-No. 100411 – Section View

Widening of Bridge No. 100412 – Southbound I-75 over Cypress Creek (Hillsborough Co)

For the 2-lane on-ramp to southbound I-75 from the proposed C-D Road to be constructed, the existing bridge carrying I-75 over Cypress Creek (Bridge No. 100412) will need to be widened by 24 ft. to the outside. This same three-span concrete bridge (203 ft. overall length) was widened to the inside in 2014 for the I-75 mainline widening to 3 southbound lanes. **Figure 5-16** shows a plan view layout of the bridge widening from the Concept Plans in **Appendix A**.

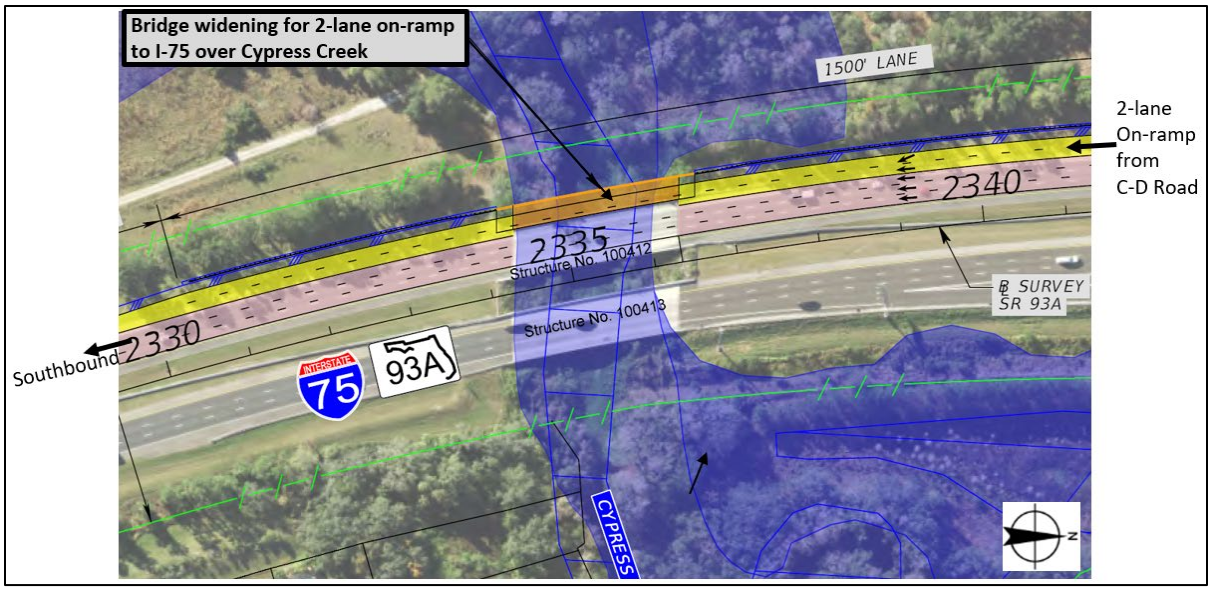


Figure 5-16 Bridge-No. 100412 Widening

(Figure 5-16 is not to scale and compressed to fit on page)

Retaining Walls

New retaining walls are proposed and shown with an orange line on the Concept Plans in **Appendix A**. The lengths will be determined when survey data is collected on the elevation of existing ground surfaces and when horizontal and vertical alignments for the adjacent roadways have been determined in greater detail.

5.4.5 Drainage and Floodplain Considerations

This section documenting the preferred drainage and floodplain considerations was extracted from the *PSR* where additional details are provided related to the calculations and alternative means of addressing the stormwater treatment and attenuation needs as well as floodplain compensation requirements of the Preferred Alternative. Minutes from the Pond Siting Long Listing Meeting held on 9/16/20 are included in **Appendix D**. The existing drainage basins and floodplain conditions are documented in **Section 2.15**.

Stormwater Management Requirements

As stated in the existing permits, Basins I, J1, and J2 were modeled such that the entire contributing area within the I-75 right of way is considered impervious area. Basin 800A was not modeled this way and instead considered both impervious and pervious areas. Therefore, the runoff from all new impervious area within Basin 800A requires water quality treatment and discharge attenuation. The other three basins will require discharge attenuation and water quality treatment only if the construction associated with the build alternative is outside of the existing I-75 right of way.

All construction associated with the Preferred Build Alternative occurring in Basin I is within the existing I-75 right of way; thus, no additional treatment or attenuation is required for this basin. Construction of the build alternative will require right of way expansion within basins J1 and J2. The boundaries of these basins will expand under proposed conditions to the proposed right of way. To maintain the original modeling assumptions, these two basins, under proposed conditions, will continue to treat all contributing area within the proposed I-75 right of way as impervious area. Therefore, the area between the existing and proposed rights of way will be considered entirely impervious area and will require discharge attenuation and water quality treatment. The estimated required additional stormwater management volumes for the four basins are given in **Table 5-2**.

Table 5-2 Stormwater Management Requirements

Basin No.	Permitted Basin Name	Estimated Required Additional Water Quality Treatment (ac-ft)	Estimated Required Additional Discharge Attenuation Volume (ac-ft)	Estimated Required Additional Stormwater Management Volume (ac-ft)
1	I	0	0	0
2	800A	0.36	0.29	0.65
3	J1	0.09	1.02	1.11
4	J2	0.54	4.33	4.87

To avoid both wetland impacts and acquisition of property for stormwater management, conversion of existing SMFs to conservation method wet detention ponds is recommended, where feasible. Each basin and its associated Stormwater Management Facility (SMF) is described in more detail in Section 4.3 of the *PSR*.

Floodplain Compensation Requirements

Construction of the C-D Road will require fill to be placed within the floodplains to the west of I-75. Five floodplains associated with the Cypress Creek Watershed will be impacted by the build alternative. These encroachments are listed in **Table 5-3** and shown in Figure B-6 of Appendix B of the *PSR*.

Table 5-3 Potential Floodplain Encroachments

Floodplain Encroachment	Cypress Creek Watershed Subbasin	Project Floodplain Limits	Base Flood Elev. (ft-NAVD)	Estimated Floodplain Encroachment Area (ac)	Estimated Floodplain Encroachment Volume (ac-ft)
1	M3860	Sta.2372+00 to Sta. 620+00	49.1	0.78	1.41
2	M2920	Sta. 620+00 to Sta. 627+00	49.1	0.44	0.38
3	M2940	Sta. 627+00 to Sta. 635+00	50-52	1.22	4.46
4	M2960	Sta 642+00 to Sta. 686+00	50-51	0.55	1.61
5	M2950	Sta. 635+00 to Sta. 642+00	49.7	2.09	7.65

For encroachments 1, 2, and 3, compensation has been provided on a cup-for-cup basis. The FPC sites provide cut equivalent to the fill at the encroachment site between the seasonal high water table (SHWT) and the base flood elevation (BFE). For encroachments 4 and 5, compensation can be provided at one of two alternative sites located upstream of the impacted floodplains. This has been evaluated and deemed feasible by developing existing conditions and post conditions Cypress Creek Watershed Models, the results of which can be found in Appendix C of the *PSR*. The SHWT elevation varies throughout the project limits. Refer to Appendix E of the *PSR* for SHWT elevations provided in the existing ERPs. SHWT elevations not provided in the existing permits were estimated using the 2011 LiDAR elevation data in conjunction with the site's soil data. A SHWT elevation evaluation should be performed at the time of design.

Each floodplain encroachment and associated alternative FPC is described in more detail in Section 4.4 of the *PSR*.

Recommended Stormwater Management and Floodplain Compensation Sites

Table 5-4 presents a site matrix indicating the preferred SMF and FPC alternatives. All these sites are shown on the Concept Plans in **Appendix A**. Right of way acquisition will not be required for any of the stormwater management facilities. The stormwater management requirements can be achieved through the modification of three existing stormwater management facilities and construction of a new SMF within existing right of way. FPC-1 and FPC-2 will require a single site to be acquired from a privately owned parcel (Parcel ID: 34-26-19-0000-00100-0000). FPC-3A would require land to be acquired from within the same parcel. FPC-3B would require a smaller area of land to be acquired from the aforementioned parcel in addition to the total acquisition of parcel 34-26-19-0000-00100-0060, both of which are owned by the same entity. FPC-3B is the preferred alternative due to its ease of access adjacent to the I-75 right of way, and because of the potential for future developments at the location of FPC-3A. There are no wetland impacts or relocations of businesses or residential units required for and of the SMF or FPCs.

Table 5-4 Stormwater Management and Floodplain Compensation Sites

Site Name	Site Area (Ac)	Wildlife and Habitat	Contamination	Cultural Resources	Est. Construction Cost	Est. Right of Way Cost	Est. Total Cost
SMF J1-1	1.82	Low	None	Low	$52,000	N/A	$52,000
SMF J1-2	3.65	Low	None	Low	$147,000	N/A	$147,000
SMF J2	10.59	Low	None	Low	$1,080,000	N/A	$1,080,000
SMF 800A-1	1.42	Low	None	Low	$171,000	N/A	$171,000
FPC-1*	1.41	High	None	Low	$80,000	$125,000	$252,000
FPC-2*	0.76	Medium	None	Low	$47,000		
FPC-3B	9.43	Low	None	Low	$648,000	$877,000	$1,525,000

* FPC-1 and FPC-2 will be located adjacent to each other on one site
Construction costs estimated June 2022, ROW costs estimated March 2021, *Pond Siting Report*

5.5 CONSTRUCTION AND RIGHT OF WAY COSTS BY COUNTY

Table 5-5 shows the estimated construction and right of way acquisition costs for the Build Alternative separated by county for work programming and coordination purposes. The construction costs are based on the FDOT's LRE cost estimating system as of June 2022. The ROW costs are based on FDOT estimates prepared as of March 2021. The wetlands mitigation cost is based on an estimate of $250,000 per acre of impact.

Table 5-5 Estimated Construction and Right of Way Costs by County

Estimated Costs Present Day Costs in $ Million Rounded to the Nearest 0.1 Million $	Pasco County Segment 430573-2	Hillsborough County Segment 430573-3	Total Project
Construction of Roadway, Bridges and Ponds	$41.8	$33.2	$75.0
Right of Way for I-75 Roadway Widening	$0.8	$0	$0.8
Right of Way for Stormwater Ponds and Floodplain Compensation Site	$1.0	$0	$1.0
Wetlands Mitigation (5.37 acres)	$1.5	$0	$1.5
Design and Construction Inspection (20% of construction)	$8.4	$6.6	$15.0
Total Project Estimated Costs	**$53.5**	**$39.8**	**$93.3**

5.6 ENVIRONMENTAL IMPACT EVALUATION OF ALTERNATIVES

There are no direct environmental impacts with implementing the No-Build Alternative. Anticipated environmental impacts for implementing the Preferred Build Alternative are documented in detail in technical reports listed in **Section 2.18** and summarized in the *Type 2 Categorical Exclusion*. Below is a description of these impacts.

5.6.1 Social and Economic Impacts

Social and economic effects are anticipated to be minimal. There are no planned changed to land use nor aesthetics. Economic conditions may be enhanced through the enhanced freight mobility. There is no involvement with farmland resources as defined by 7 Code of Federal Register (CFR) Part 658. There are no residential nor business relocations anticipated as part of the proposed right of way acquisition. Based on the demographic assessment above, no minority or low-income populations are identified or affected. This project complies with Executive Order 12898 and FHWA 6640.23A

Mobility is anticipated to be enhanced for all motorized vehicles including freight through the improved safety of the corridor through improved operation of the facilities and elimination of the traffic weave.

5.6.2 Cultural Resource Impacts

As documented in the *Cultural Resources Assessment Survey* (*CRAS*), *CRAS Pond Technical Memorandum*, and *CRAS Addendum*, potential resources were identified within the project area of potential effect, however the preferred build alternative will have no adverse effect on cultural resources listed or eligible for listing in the National Register of Historic Places. The State Historic Preservation Officer (SHPO) concurred with the findings on June 8, 2021, June 24, 2021 and October 4, 2022.

There are no properties within the project area that are protected pursuant to *Section 4(f) of the USDOT Act of 1966*, *Section 6(f) of the Land and Water Conservation Fund of 1965*, nor other recreational or protected lands.

5.6.3 Natural Resource Impacts

The *NRE* and *NRE Technical Memorandum* was accepted by agencies, documented all potential involvement of species and wetlands within the project area. The project will not have significant impacts to natural resources. There are several listed species that may be present, or their habitat may be present, but the effect determination of either no affect or may affect, not likely to affect was made for these species including the following Federal Listed faunal and floral species: eastern indigo snake, eastern black rail, and wood stork. A no adverse effect is anticipated for the following State Listed faunal and floral species: gopher tortoise, southeastern American kestrel, Florida sandhill crane, roseate spoonbill, little blue heron, tricolored heron Brooksville bellflower, pygmy fringe-tree, and Cooley's water willow.

The project would result in approximately 5.37 acres of wetland and 0.29 acres of surface water impacts with the Preferred Build Alternative. Impacts are planned to be mitigated through the purchase of wetland mitigation credits through an approved mitigation bank, or creation, restoration, or enhancement of wetlands within the project watersheds

As documented in the *LHM* and the *PSR*, the Preferred Build Alternative is estimated to approximately 5.08 acres of potential floodplain impacts. All fill placed below the base flood elevations of the impacted floodplains will be compensated for with equivalent cut volume, and the natural floodplain values will be maintained. There will be no flood-related risks to highway users, highway infrastructure, or residents. A public notification for floodplain impacts will not be necessary.

Water quality findings are documented in the *Water Quality Impact Evaluation Checklist* and *the PSR*.

The Cypress Creek is a tributary of the Hillsborough River, which is classified as an OFW. The bridge height for the new bridge along the southbound C-D road is anticipated to be constructed to provide at least the same vertical clearance as the existing adjacent I-75 bridge (Bridge No. 140061). The proposed bridge piers are anticipated to align with the existing bridge piers or be designed to span the creek so as not to impede the creek's free-flowing condition. The bridge widening for the I-75 southbound bridge (Bridge No. 100412) for the addition of the 2-lane ramp from the southbound C-D Road will occur on the "high" side of the bridge as the bridge is in superelevation. The widening will not result in a lower vertical clearance than the existing bridge.

There are no essential fish habitat, aquatic preserves, wild and scenic rivers, or coastal barrier resources in the project area.

5.6.4 Physical Environment Impacts

The *Contamination Screening Evaluation Report* documented the presence of potential contamination sources. No sites were rated as high or medium risk for potential contamination sources. One site was rated as low risk, with no further action required at this time. This site has potential to impact the study area but based on select variables has been determined to have low risk to the corridor. There are minimal to no variables that may change the risk rating for this site due to the nature of the incident. Should any of these variables change additional assessment of the site should be conducted.

The *Noise Study Report* documented the potential noise impacts. There is one common noise environment (CNE) with existing residential homes adjacent to the project limits that were evaluated for potential noise impacts. The CNE is located along the east side of I-75 near the southern project limit and on the other side of I-75 from the proposed 2-lane on-ramp to southbound I-75 from the proposed C-D road. The noise analysis identified six receptors that were impacted in the existing condition and two additional receptors that would be impacted with the proposed improvements, for a total of eight impacted receptors. Noise abatement measures, including noise barriers, were evaluated for the impacted receptors. Based on the noise analysis, noise barriers are not considered cost reasonable and feasible.

The study area is located within an attainment area for air quality, thus no further evaluation for air quality was performed.

The proposed alignment for I-75 and the construction of the new C-D Road may have impacts to aerial electric, telephone and cable facilities and in-ground water, sewer, reclaimed water, and communication including fiber optic. The realignment of southbound I-275 will cross over an existing Florida Gas Transmission (FGT) 36-inch and 30-inch pipeline. Coordination of utility conflicts and relocations will take place during the design phase of this project.

Construction impacts are anticipated to be minimal. Through the retention of the existing I-75 bridges, the need for detour routing is minimal and a maintenance of traffic plan will be developed during the final design phase to safely maintain traffic and access to all businesses and residences to the maximum extent possible during construction. Construction activities for the proposed project will have temporary water quality, and traffic flow effects for the travelers within the immediate vicinity of the project. These effects will be minimized through the application of the FDOT's *Standard Specifications for Road and Bridge Construction*.

5.7 EVALUATION MATRIX

The evaluation summary matrix comparing the project alternatives is shown in **Table 5-6**. This matrix was developed to compare the No-Build Alternative and the Preferred Build Alternative based on preliminary estimates of costs (ROW acquisition, wetland mitigation, engineering, and construction), as well as social and environmental factors. The data for the Build Alternative was developed based on the preferred alternative "footprint" along with base map information collected and prepared for this study. The construction cost estimates were prepared using the Department's LRE program.

Table 5-6 Evaluation Matrix of Project Alternatives

Evaluation Criteria	No-Build Alternative	Preferred Build Alternative
Potential Business Impacts		
Number of business relocations	0	0
Potential Residential Impacts		
Number of residential relocations	0	0
Potential ROW Impacts		
Number of affected parcels	0	4[1]
Area of ROW anticipated to be acquired for I-75 widening (acres)	0	8.1
Area of ROW anticipated to be acquired for Stormwater Ponds[2] and Floodplain Compensation Sites (acres)	0	10.7
Potential Environmental Effects		
Archeological/Historical sites	0	0
Section 4(f) sites	0	0
Noise sensitive areas	0	1[4]
Wetlands impacts that are not Other Surface Waters (acres)	0	5.37
Other Surface Waters impacts (acres)	0	0.29
Protected species involvement	None	Low
Petroleum and hazardous material sites (Risk rating)	None	0 (High) 0 (Medium) 1 (Low)
Estimated Costs[3] (Present Day Costs in $ Millions rounded to nearest 0.1 Million)		
Construction of Roadway, Bridges and Ponds	$0.0	$75.0
ROW for I-75 Roadway Widening	$0.0	$0.8
ROW for Stormwater Ponds and Floodplain Compensation Sites	$0.0	$1.0
Wetlands Mitigation	$0.0	$1.5
Design and Construction Inspection (20% of construction)	$0.0	$15.0
Total Project Estimated Costs	**$0.0**	**$93.3**

[1] One parcel includes both roadway and floodplain compensation sites

[2] No new ROW is required for Stormwater Ponds

[3] Construction cost based on LRE system prepared June 2022

[4] Based on noise barrier analysis, mitigation with a noise barrier was not cost reasonable per Noise Study Report

5.8 PREFERRED ALTERNATIVE

The No-Build Alternative was determined as not achieving the purpose and need of the project. Therefore, the operational improvements included in Build Alternative 2B, also called the Preferred Build Alternative, as described **Section 5.4.1** and subsequent portions of **Section 5** was selected as the Preferred Alternative. Additional details of the Preferred Alternative are included in **Section 7**.

SECTION 6 PUBLIC INVOLVEMENT/PROJECT COORDINATION

A *Public Involvement Plan* was prepared at the onset of this PD&E Study to outline the public outreach efforts planned.

A *Comments and Coordination Report* was prepared after the planned public hearing opportunity which provided a description of all of the public involvement performed for this PD&E study. Below is a summary of pertinent public involvement efforts for this study.

6.1 OUTREACH EFFORTS

Various public involvement activities were conducted during the study:

- A **Project Website** (https://www.fdotd7studies.com/projects/sr56-ramps-to-i75-i275/) was developed and maintained throughout the study period. This website contained information about the study and served as a clearinghouse of information for the public pertaining the project details. The website also included a page where the public may submit a comment or request a meeting.
- A **Notice of Opportunity to Request a Public Hearing** was placed in the local newspapers and in the Florida Administrative Register (FAR) in accordance with PD&E Manual Part 1, Chapter 11. If a public hearing had been requested, notification would have been provided to promote the public hearing and to encourage participation and receive public comments. See **Section 6.3** for additional details.

6.2 AGENCY AND STAKEHOLDER COORDINATION

Agency comments were received based on the initial findings provided in the *NRE* and coordination was conducted throughout the PD&E study process. FDOT coordinated with the USFWS and FWC for review of the *NRE*. USFWS provided concurrence on August 12, 2021, and FWC provided concurrence on September 9, 2021. In addition, FDOT coordinated with the SHPO on the findings of the *CRAS* and *CRAS Pond Technical Memorandum*. SHPO concurred with the findings of these documents on June 8 and June 24, 2021, respectively. These agency concurrence and coordination letters are found in Appendix A of the *Comments and Coordination Report*.

Additional agency coordination included:

- This project was screened through the FDOT's ETDM process as ETDM Project No. 14330. The ETDM Programming Screen Summary Report was published on February 22, 2018, containing comments from the ETAT on the project's effects on various natural, physical, and social resources.
- A meeting was held with the Southwest Florida Water Management District (SWFWMD) on September 16, 2020, to discuss the project's environmental, water quality, and water quantity considerations. Meeting notes are included in **Appendix D**.

There are no residences or communities within or adjacent to the project area. Coordination was conducted with the property owners located on the west side of I-75 to provide information about the project and give them the opportunity to ask questions. The project website was provided to the property owners to access draft project documents and information.

6.3 NOTICE OF OPPORTUNITY TO REQUEST A PUBLIC HEARING

A notice of opportunity to request a public hearing was published in the Tampa Bay Times on September 22, 2021, in La Gaceta on September 17, 2021, and in the Florida Sentinel on September 20, 2021. An advertisement was also placed in the Florida Administrative Record on September 22, 2021. No requests to hold a public hearing were received by the District within the 21 days of the notices requested in the advertisements.

The advertisements provided the public the opportunity to view information about the project and comment on the proposed improvements. The draft project documents were available for public review from September 17, 2021, through October 13, 2021, during normal operating hours at the FDOT District 7 Office, located at 11201 N. McKinley Drive, Tampa, FL 33612 and on the project website.

SECTION 7 PREFERRED ALTERNATIVE

This section describes additional engineering details of the operational improvements proposed for the Preferred Alternative.

7.1 DESIGN TRAFFIC VOLUMES

Design year (2045) AADTs and DDHVs were previously shown in **Figures 3-5** and **3-9**, respectively.

7.2 TYPICAL SECTION AND DESIGN SPEED

The preferred typical section for the C-D Road adjacent to I-75 were shown previously in **Figure 5-9** and in the graphically enhanced **Figure 7-1.** Additional typical sections are included in **Appendix C** along with the *Typical Section Package*. The proposed design speed for the C-D Road is 60 mph while the design speed of I-75 and I-275 is 70 mph. The proposed roadway cross slopes for the milling and resurfacing areas along I-75 will be coordinated during the design phase after survey data has been evaluated.

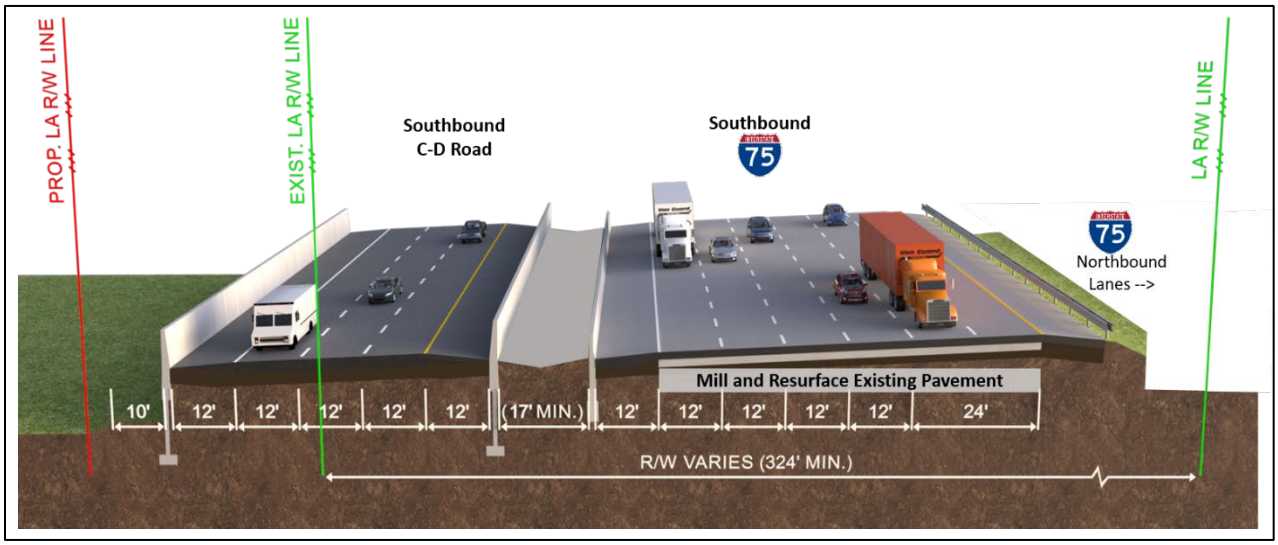


Figure 7-1 Graphically Enhanced Typical Section of Preferred Alternative

7.3 HORIZONTAL AND VERTICAL ALIGNMENT

The proposed horizontal alignment is described in **Section 5.4.3.** A proposed profile grade for the vertical alignment will be determined during the future design phase when full survey data is available.

7.4 ACCESS MANAGEMENT

The C-D Road and related ramps will be Access Classification 1, the same as I-75 and I-275 as they are limited access facilities.

7.5 INTERSECTION CONCEPTS AND SIGNALIZATION

There are no intersections involved with the Preferred Alternative.

7.6 RIGHT OF WAY NEEDS AND RELOCATIONS

The Preferred Alternative will require the acquisition of additional ROW including partial property acquisition. Acquisition from 3 parcels (8.1 acres) is required for the C-D Road. Acquisition from 2 parcels (10.7 acres of land) is required for the FPC sites. No additional ROW is needed for the SMF sites. One parcel needed for acquisition of ROW for a FPC site is also required for roadway widening site, so acquisition from a total of 4 parcels is required for the Preferred Alternative. All locations of proposed ROW are shown in a red line on the Concept Plans in **Appendix A**.

The ROW acquisition will not require the relocation of any businesses nor residences.

7.7 BICYCLE AND PEDESTRIAN FEATURES

The C-D Road and related ramps associated with the Preferred Alternative will be constructed with full paved shoulders, but there are no pedestrian or bicycle facilities along I-75 or I-275 within the study area.

7.8 MULTIMODAL CONSIDERATIONS

As noted in **Section 2.6** there are no existing transit vehicles from HART nor PCPT that currently utilize this portion of I-75 or I-275. The proposed shoulders along the southbound C-D Road and along southbound I-75 are proposed to be wider than FDOT standard width to at least 12 feet wide. As noted in **Section 5.4.2**, TBARTA's RTFP study, completed in November 2018, identified portions of I-275/75 for future transit usage. The portion north of County Line Road was identified for use by transit vehicles by a dedicated lane/shoulder for transit facilities and south of County Line Road, transit riding is proposed in mixed traffic. The proposed 12-foot wide paved shoulders and 12-foot shoulder width for bridges is intended to serve for shoulder riding use for transit vehicles. The Preferred Alternative will not preclude future use of the C-D Road or related ramps by transit vehicles.

7.9 STRUCTURES

7.9.1 Bridge Structures

As noted in **Section 5.4.4**, two new bridge structures and a modification to one bridge structure are proposed with the Preferred Alternative and are shown on the concept plans in **Appendix A**. Bridge Development Reports and Bridge Hydraulics Reports will be prepared in the design phase.

New Bridge carrying Southbound I-275 over C-D Road Ramp to I-75

This new bridge structure is located between I-75 and I-275 south of County Line Road overpass bridge. This structure carries southbound I-275 (3 lanes) over the C-D Road ramp to I-75 (2-lanes). **Figure 5-11** shows a plan view layout of the new bridge. More specifically, the proposed bridge will carry three 12-foot-wide lanes with two 12-foot-wide shoulders and two 36-inch single slope barriers resulting in a total bridge width of 62-feet-8-inches. **Figure 7-2** shows the preliminary typical section of the proposed bridge, which is also shown in the *Typical Section Package* in **Appendix C**.

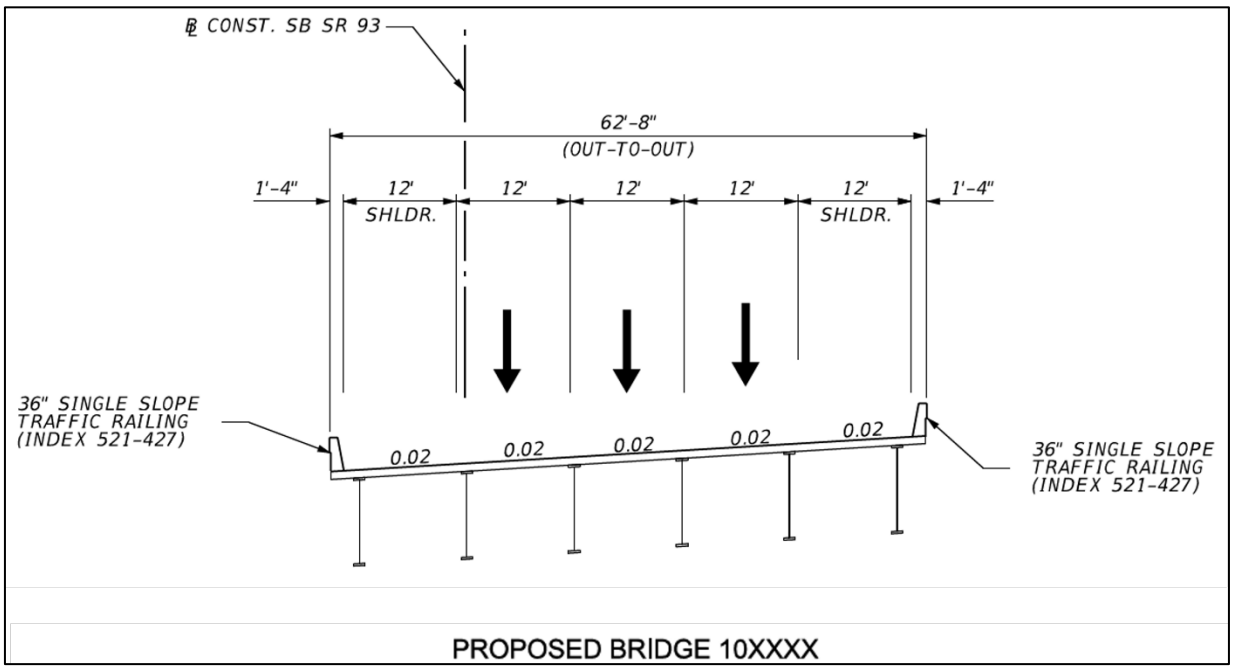


Figure 7-2 Typical Section of Proposed Southbound I-275 Bridge over C-D Road Ramp to I-75

This 284-foot-long bridge clear spans the proposed ramp taking traffic from the proposed C-D Road to Southbound I-75. Steel plate girders are anticipated to be used with an approximate depth of 106.5-inches requiring a total superstructure depth of approximately 121-inches or 10-foot 1-inch. The bridge is on a curved alignment with a radius of 4,584-feet. Steel girders maybe chorded with an overhang variance of approximately 3-feet. The profile will provide a 16-feet-6-inch minimum vertical clearance to comply with FDM Table 122.5.9.1. The maximum skew angle is 50 degrees which is equal to the 50 degrees limit required by the Structures Design Guidelines (SDG) 1.10. The bridge will have wrap around mechanically stabilized earth (MSE) walls to reduce the bridge length. **Figure 7-3** shows the preliminary elevation view of the proposed bridge. During the design phase, a Bridge Development Report may consider a span arrangement of a 2-span bridge with a straddle bent to result in a shallower superstructure and support lowering the roadway profile and height of the bridge and embankment.

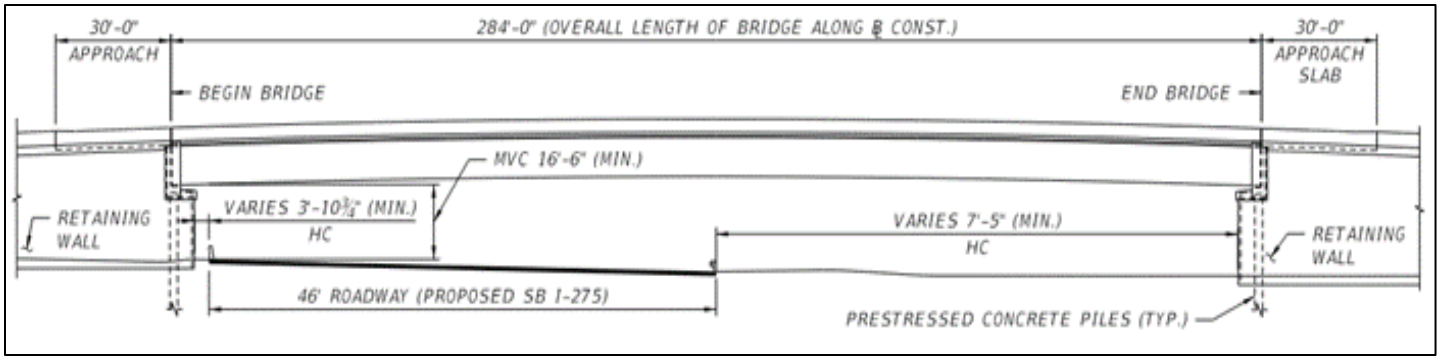


Figure 7-3 Elevation View of Proposed Southbound Bridge over C-D Road Ramp to I-75

New Bridge carrying Southbound C-D Road over Cypress Creek (adjacent to Bridge No. 140061)

This new bridge structure is located west of the I-75 southbound lanes and north of County Line Road overpass bridge. This structure carries the southbound C-D Road (3 lanes) over Cypress Creek. **Figure 5-12** shows a plan view layout of the new bridge. More specifically, this new bridge will convey three 12-foot lanes, two 12-foot shoulders and two – 36-inch single slope barriers for a total bridge width of 62-ft 8-inches. Shoulders are typically 10-feet wide however 12-foot-wide shoulders are used to allow shoulders to be used as lanes for emergency evacuations. **Figure 7-4** shows the preliminary typical section of the proposed bridge, which is also shown in the *Typical Section Package* in **Appendix C**.

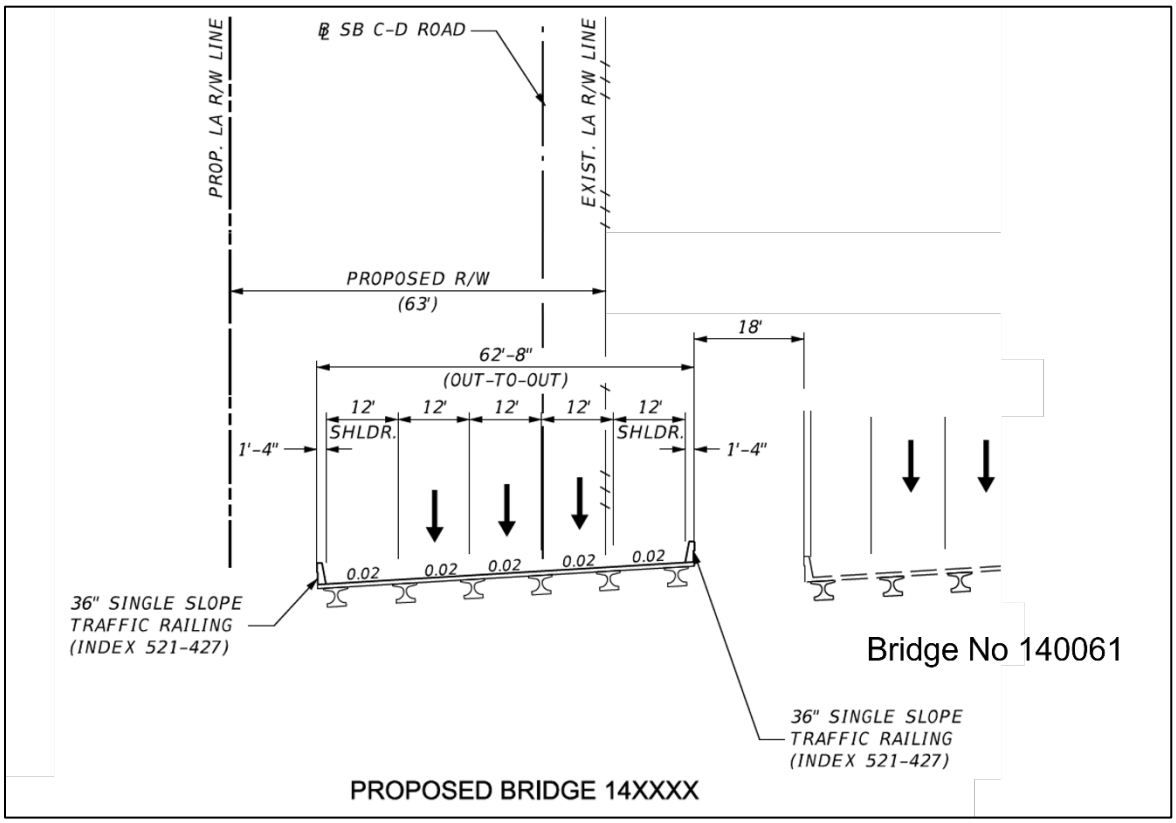


Figure 7-4 Typical Section of Proposed C-D Road Bridge over Cypress Creek

The 156-foot-long bridge consists of three – 52-foot spans supported by pile bents skewed to approximately 30 degrees similar to the existing adjacent bridges. 36-inch-deep Florida-I-Beam girders are anticipated to be used to match the height of the American Association of State Highway Transportation Officials (AASHTO) Type II girders of the adjacent bridges allowing for a similar profile to be used. This profile needs to provide the 2-foot minimum vertical clearance for drainage per FDM 260.8.1. Spill-thru abutments are located at the begin and end of the bridge with rubble riprap to control scour. Note that the adjacent bridge (Bridge No. 140061) has perched MSE walls along the west side at both beginning and end, therefore retaining walls may be required along the coping of the proposed bridge to match the proposed 156-foot length of the adjacent bridges. The maximum clearance between Bridge No. 140061 and the proposed bridge varies from approximately 17-feet 2-inches to 19-feet. FDM 260.5 requires the District Structures Maintenance Engineer be consulted when this spacing between bridges is less than 20-feet. **Figure 7-5** shows the preliminary elevation view of the proposed bridge. A *Bridge Hydraulics Report* will be prepared during the design phase to determine whether the existing vertical clearance over Cypress Creek for the adjacent Bridge No. 140061 can be maintained for this new bridge or would need to be increased.

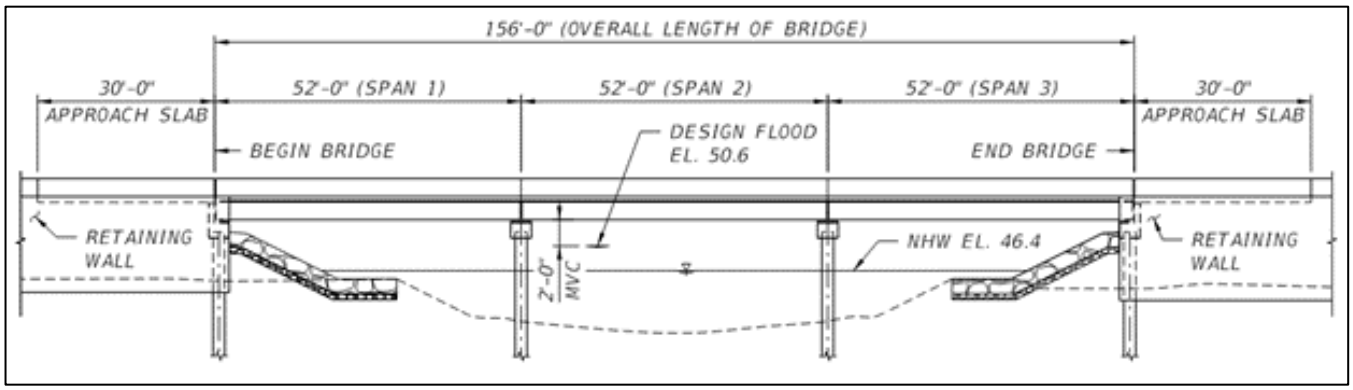


Figure 7-5 Elevation View of Proposed C-D Road Bridge over Cypress Creek

Modifications to Bridge No. 100411

For the C-D Road ramp to I-75 to be constructed, the slopewall of the south approach span to Bridge No. 100411 which carries northbound I-275 over I-75 will need to be removed. The alignment for the C-D Road 2-lane on-ramp has been developed to fit under this bridge span between the abutment and the hammerhead pier. See **Appendix F** for an April 2022 technical memo prepared regarding accommodations summarized in **Section 5.4.4** as well as **Figures 5-14** and **5-15** for ramp shoulder narrowing and structural considerations.

Widening of Bridge No. 100412 – I-75 over Cypress Creek (Hillsborough County)

The 2-lane on-ramp from the southbound C-D Road to I-75 will extend over the I-75 bridge over Cypress Creek, bridge 100412. This three-span bridge will be widened to the outside. This same

bridge was widened to the inside in 2014 when I-75 was widened to three southbound through lanes and is suitable for widening to the outside for this project. The existing traffic barrier wall will be removed, and the bridge will be widened by approximately 26 ft-7 inches to accommodate the lane widening, 10-foot shoulder to match the existing shoulder width and new barrier wall. AASHTO Type III beams were used with the 2014 widening which matched the original beams. It is anticipated that 36-inch Florida I-beams could be used if found more economical for the widening. **Figure 7-6** shows the preliminary typical section of the proposed bridge, which is also shown in **Appendix C**.

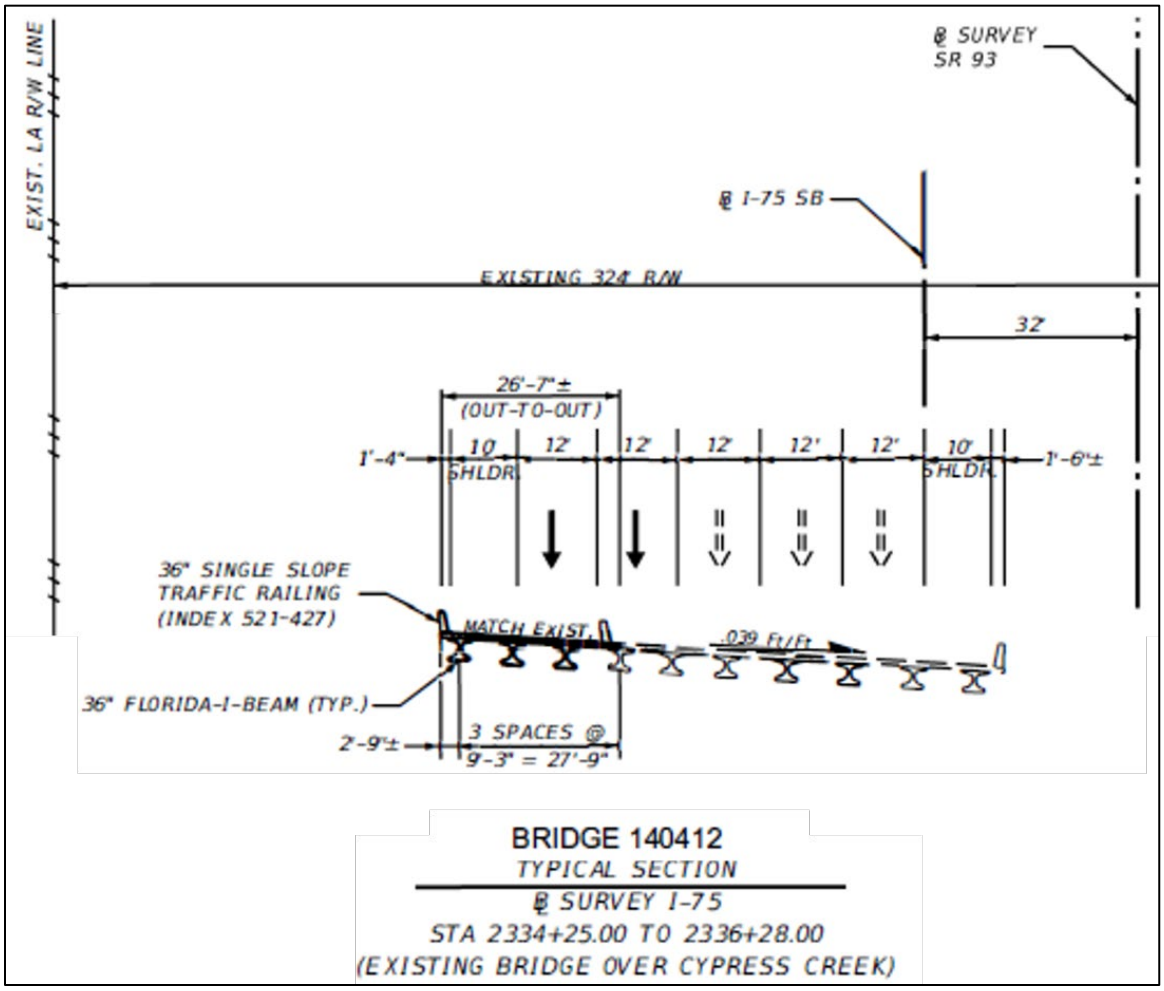


Figure 7-6 Typical Section of Proposed Widening of I-75 Bridge over Cypress Creek

7.9.2 Retaining Walls

Proposed gravity walls and MSE walls are proposed along the west shoulder of the C-D Road to minimize ROW needs and at the ends of the new bridges to retain the earthen embankment. A special wall will need to be constructed under Bridge No. 100411 against the bridge end-bent/abutment to accommodate construction of the 2-lane on-ramp to I-75. The locations of these walls are generally shown on the concept plans in **Appendix A**. The exact limits and heights of these walls will be determined in the design phase.

7.9.3 Sign Structures

The Preferred Alternative will require the construction of additional overhead and cantilever sign structures. An existing overhead sign located at approximately station 620+00 may need to be relocated based on a potential conflict with the northern column and the proposed C-D Road. This will be further evaluated when survey data is collected in the design phase. A preliminary signing plan is included in **Appendix E** showing the preliminary location of the proposed overhead or cantilever sign structures.

7.10 DRAINAGE AND STORMWATER MANAGEMENT

Section 5.4.5 provided details related to stormwater and floodplain compensation requirements for the Preferred Alternative. SMF site alternatives that are hydraulically feasible and environmentally permissible based on the best available information were analyzed. These alternatives were then compared based on community impacts; environmental impacts including wetlands, upland habitat, and protected species involvement; petroleum and hazardous materials contamination; cultural resources; and economic factors including ROW costs. **Table 5-4** summarizes the environmental evaluation and potential impacts of the preferred SMF and FPC site alternatives. Most categories were given a ranking of No, Low, Moderate, or High based on potential impacts. A more detailed discussion of drainage and stormwater management is provided in the *PSR*. All proposed SMF and FPC sites are shown on the Concept Plans in **Appendix A**.

7.11 LIGHTING

The Preferred Alternative will impact up to 15 existing high mast light poles along the proposed southbound C-D Road, the proposed ramps to I-75 and I-275 and the realignment of southbound I-275. A Lightning Analysis Report will be prepared during the design phase to determine the lighting requirements for replacing and installing new lighting facilities.

7.12 SPECIAL FEATURES

The Preferred Alternative will impact existing landscaping around the I-75/I-275 junction. The placement and maintenance of any landscaping shall comply with the required clear zone and sight distance. No other provisions or commitments have been made yet regarding special aesthetic features.

As documented in the *Noise Study Report*, no noise barriers are proposed with the Preferred Alternative.

The project is located within ten miles of Tampa Aero Park, so coordination will be required with Federal Aviation Administration Form 7460-1 for vertical clearances of ITS, sign structures, bridges and lighting.

7.13 USER BENEFITS

The public will realize benefits after the improvements of the Preferred Alternative are constructed. Reduction in travel time, reduced vehicle operating costs, reduced traffic crash related costs and reduced emergency response times are the primary benefits. Freight vehicles will be provided safer and more efficient accommodations with the Preferred Alternative.

7.14 RECYCLING AND SALVAGEABLE MATERIALS

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

7.15 UTILITY AND RAILROAD IMPACTS

Existing utilities are described in **Section 2.14**. Depending on the location and depth of the utilities, construction of the Preferred Alternative will likely require adjustments or relocation of some facilities. The cost for utility adjustments is not included in the total estimated project costs presented in **Section 7.19**, since some may be incurred by the utility owners. Determination of any utility relocation reimbursement costs will be made by FDOT's legal department during the future design phase. Coordination with utility owners will be ongoing throughout the study process.

The proposed realignment of southbound I-275 will cross over two existing FGT pipelines (36-inch and 30-inch) at approximately station 584+00 about 200 feet south of the proposed bridge carrying southbound I-275 over the ramp to I-75 from the southbound C-D Road. Relocation of the pipelines will not be required. Coordination with FGT will initiate early in the design phase to coordinate design accommodations in accordance with the FGT Agreement and Global Settlement.

Several utilities may be currently located under the existing pavement and would also be under the proposed improvements. The relocation costs could be reduced significantly if these utilities were permitted to remain within the travel way. Approval would be required from both the utility owners and the FDOT. Impacts to existing utility facilities can also be reduced or eliminated if Subsurface Utility Engineering (SUE) is performed during the design phase at potential conflict locations (drainage facilities, sign structures, etc.).

There are Intelligent Transportation System (ITS) facilities within the project limits. The existing ITS is located on the west side of I-75 and a hub station located under the County Line Road bridge that will need to be relocated due to the realignment of southbound I-275 under this bridge.

There is a portable traffic monitoring site #140156 for traffic counting located on I-75 just to the south of SR 56 at Pasco County milepost 0.431. There is also a portable traffic monitoring site #14140021

for traffic counting located on the SR 56 southbound on ramp at milepost 0.156, which is located just north of the project limits.

There are no existing railroads within the project limits.

7.16 POTENTIAL DESIGN VARIATIONS AND EXCEPTIONS

There are no design exceptions nor variations currently anticipated with the C-D Road portion of the Preferred Alternative. As noted in an April 2022 technical memo included in **Appendix F**, a Design Exception for Shoulder Width (minimum 5' inside and 5' outside width) and a Design Variation for Horizontal Curve Length (835' for normal crown) are anticipated for the 2-lane On-ramp to I-75 in order to align the ramp and fit through the end span of the NB I-275 bridge (Bridge No. 100411). When survey data is collected, and the existing vertical geometry is established during the design phase, the need for design exceptions or variations for existing conditions to remain will be reexamined.

7.17 TEMPORARY TRAFFIC CONTROL PLAN CONCEPTS

Due to its importance, the existing travel lanes should be maintained to the maximum extent possible during construction of the Preferred Alternative. Lane closures, if necessary, would occur during night or other off-peak hours.

The following conceptual construction sequence will help maintain traffic operations along I-75, I-275, and the southbound SR 56 ramp:

- Relocate existing utilities within the existing or proposed ROW and construct protection measures for spanning over the existing Florida Gas Transmission pipelines with the realignment of southbound lanes of I-275.
- Relocate ITS hub from its existing location under the County Line Road bridge over I-75/275 (bridge 100492).
- Construct SMF and FPC sites
- Construct C-D Roads, C-D Road Ramp to I-75 and southbound I-275 and related drainage facilities, walls, sign structures and ITS infrastructure that fall outside the limits of the existing pavement and shoulders
- Construct the proposed bridges for the C-D Road over Cypress Creek, for southbound I-275 over the C-D Road ramp to I-75 and the I-75 bridge widening over Cypress Creek
- Remove slope wall of the south approach span to Bridge No. 100411 which carries northbound I- 275 over I-75 so the 2-lane on-ramp to I-75 can be constructed
- Construct any temporary pavement to shift traffic to newly completed C-D Road and ramps
- Mill & resurface existing pavement along I-75 and I-275
- Remove existing pavement not needed in the permanent condition along existing SR 56 ramp from I-75 to I-275 and along I-275.

- Construct remainder of pavement in transition areas
- Remove temporary pavement where applicable, complete final pavement markings and shift traffic to final permanent lane locations

7.18 VALUE ENGINEERING RESULTS

A value engineering study is planned early in the design phase.

7.19 COST ESTIMATES

The preliminary cost estimates were updated for the Preferred Alternative ($millions, rounded) are included in **Table 7-1**. These costs are separated by County for programming purposes. Construction costs are based on FDOT's LRE cost estimating system prepared in June 2022. These costs include components for earthwork, roadway, shoulder, walls, bridges, sign structures, signing/marking, drainage (including SMF and FPC sites) as well as temporary traffic control, mobilization, and an initial contingency. Estimated costs for retaining walls and will be refined in the design phase as field survey is collected to establish needs and wall heights. All costs are preliminary and will be refined as the design phase progresses.

Table 7-1 Estimated Construction and Right of Way Costs by County

Estimated Costs Present Day Costs in $ Million Rounded to the Nearest 0.1 Million $	Pasco County Segment 430573-2	Hillsborough County Segment 430573-3	Total Project
Construction of Roadway, Bridges and Ponds[1]	$41.8	$33.2	$75.0
Right of Way for I-75 Roadway Widening	$0.8	$0	$0.8
Right of Way for Stormwater Ponds and Floodplain Compensation Site	$1.0	$0	$1.0
Wetlands Mitigation (5.67 acres)	$1.5	$0	$1.5
Design and Construction Inspection (20% of construction)	$8.4	$6.6	$15.0
Total Project Estimated Costs	**$53.5**	**$39.8**	**$93.3**

[1]*Construction cost based on LRE system prepared June 2022*

7.20 POTENTIAL CONSTRUCTION SEGMENTS AND PHASING

The entire project is anticipated to be constructed as one construction project.

Advance funding for ROW acquisition could include securing potential off-site SMF and/or FPC areas or properties along the C-D Road that become listed for sale by the property owners or willing sellers. As developments are submitted for approval to Pasco County, provisions for land dedications and

accommodations of drainage, floodplain and wetland impacts would be considered in accordance with the County's Comprehensive Plan and Land Development Code.

7.21 PROJECT FUNDING AND WORK PROGRAM SCHEDULE

As of December 2021, for the Pasco County segment (WPI Segment No. 430573-2), the 2045 LRTP for the Pasco County MPO identifies funding (design, ROW acquisition and construction phases) for this project. The 2022-2026 Transportation Improvement Plan (TIP) for the Pasco County MPO identifies design funding in fiscal year (FY) 2023, ROW acquisition funding in FY 2025 and construction funding after FY 2026.

For the Hillsborough County segment (WPI Segment No. 430573-3) the 2045 LRTP for the Hillsborough County TPO identifies funding for design and construction phases for this project. There is no ROW acquisition anticipated in the Hillsborough County segment. The 2022-2026 TIP for the Hillsborough TPO identifies design funding in FY 2023 and construction funding after FY 2026.

SECTION 8 LIST OF TECHNICAL REPORTS

Public Involvement Items

- *Public Involvement Plan*
- *Comments and Coordination Report*

Engineering Items

- *This Preliminary Engineering Report with Conceptual Design Plans*
- *Project Traffic Analysis Report*
- *Interchange Modification Report*
- *Pond Siting Report*

Environmental Items

- *Natural Resource Evaluation Report*
- *Natural Resource Evaluation Technical Memorandum*
- *Location Hydraulics Memorandum*
- *Water Quality Impact Evaluation*
- *Contamination Screening Evaluation Report*
- *Cultural Resource Assessment Survey*
- *Cultural Resource Assessment Survey Addendum*
- *Cultural Resource Assessment Survey Pond Technical Memorandum*
- *Noise Study Report*
- *Type 2 Categorical Exclusion*

APPENDICES

Appendix A	Preferred Alternative Concept Plans
Appendix B	Straight Line Diagram Inventory
Appendix C	Proposed Typical Sections
Appendix D	Design Documentation
Appendix E	Preliminary Conceptual Signing Plan
Appendix F	Two-Lane On-Ramp Technical Memo

APPENDIX A

Preferred Alternative Concept Plans

CONTRACT PLANS COMPONENTS

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

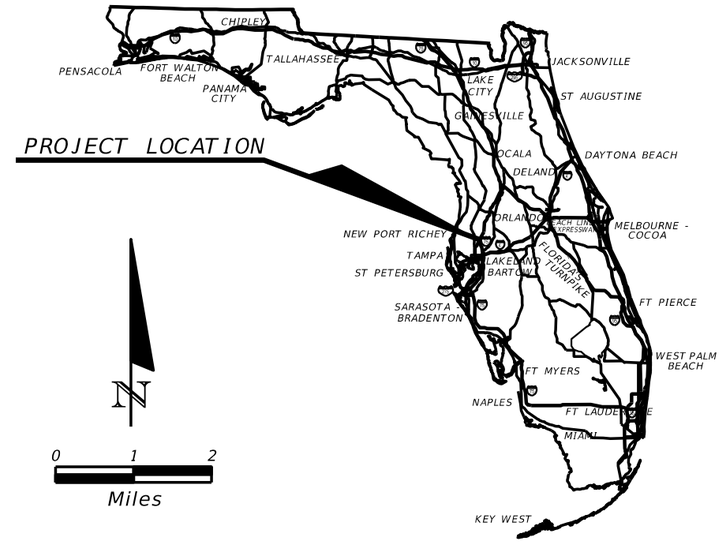
PROJECT DEVELOPMENT AND ENVIRONMENTAL STUDY CONCEPT PLANS

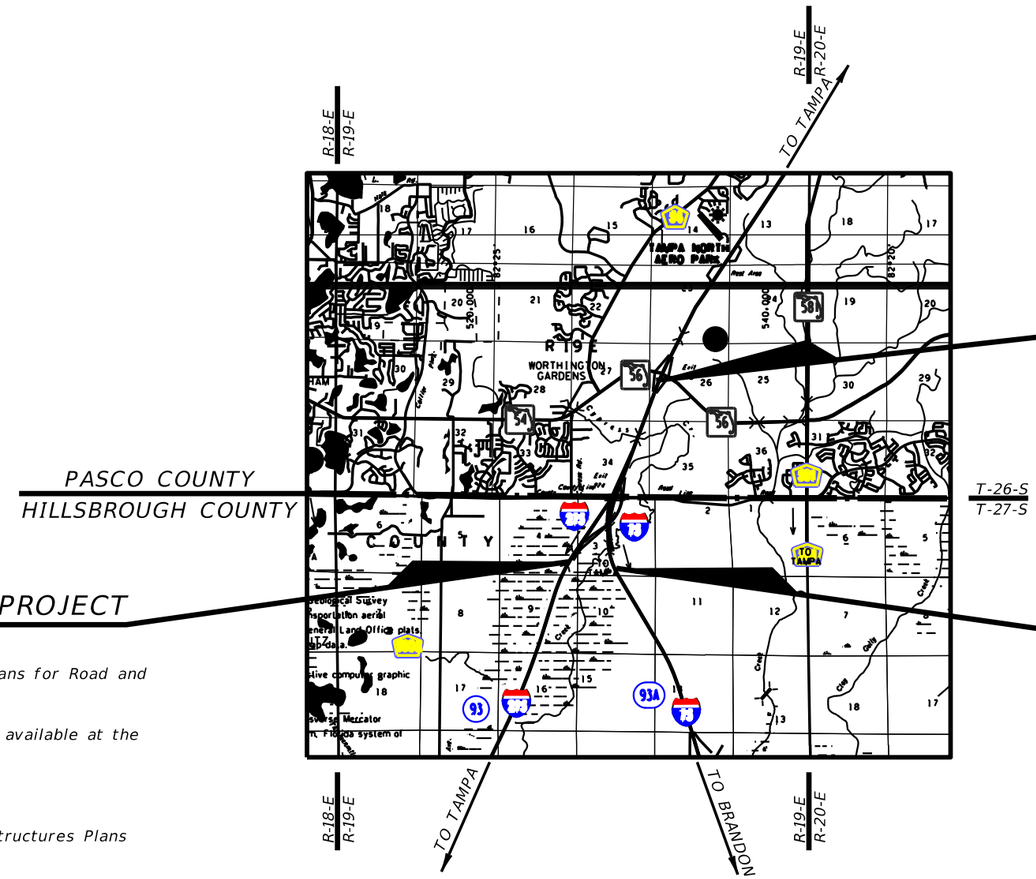
FINANCIAL PROJECT ID 254552-1-22-19

HILLSBROUGH COUNTY

PASCO COUNTY

STATE ROAD NO. SR 93/SR 93A /SR 56





INDEX OF ROADWAY PLANS

GOVERNING STANDARD PLANS:

Florida Department of Transportation, FY_____ Standard Plans for Road and Bridge Construction and applicable Interim Revisions (IRs).

Standard Plans for Road Construction and associated IRs are available at the following website: http://www.fdot.gov/design/standardplans

APPLICABLE IRs: IR___-___-__

Standard Plans for Bridge Construction are included in the Structures Plans Component

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, Standard Specifications for Road and Bridge Construction at the following website: http://www.fdot.gov/programmanagement/Implemented/SpecBooks

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Dated 10/27/2022

ROADWAY PLANS ENGINEER OF RECORD:

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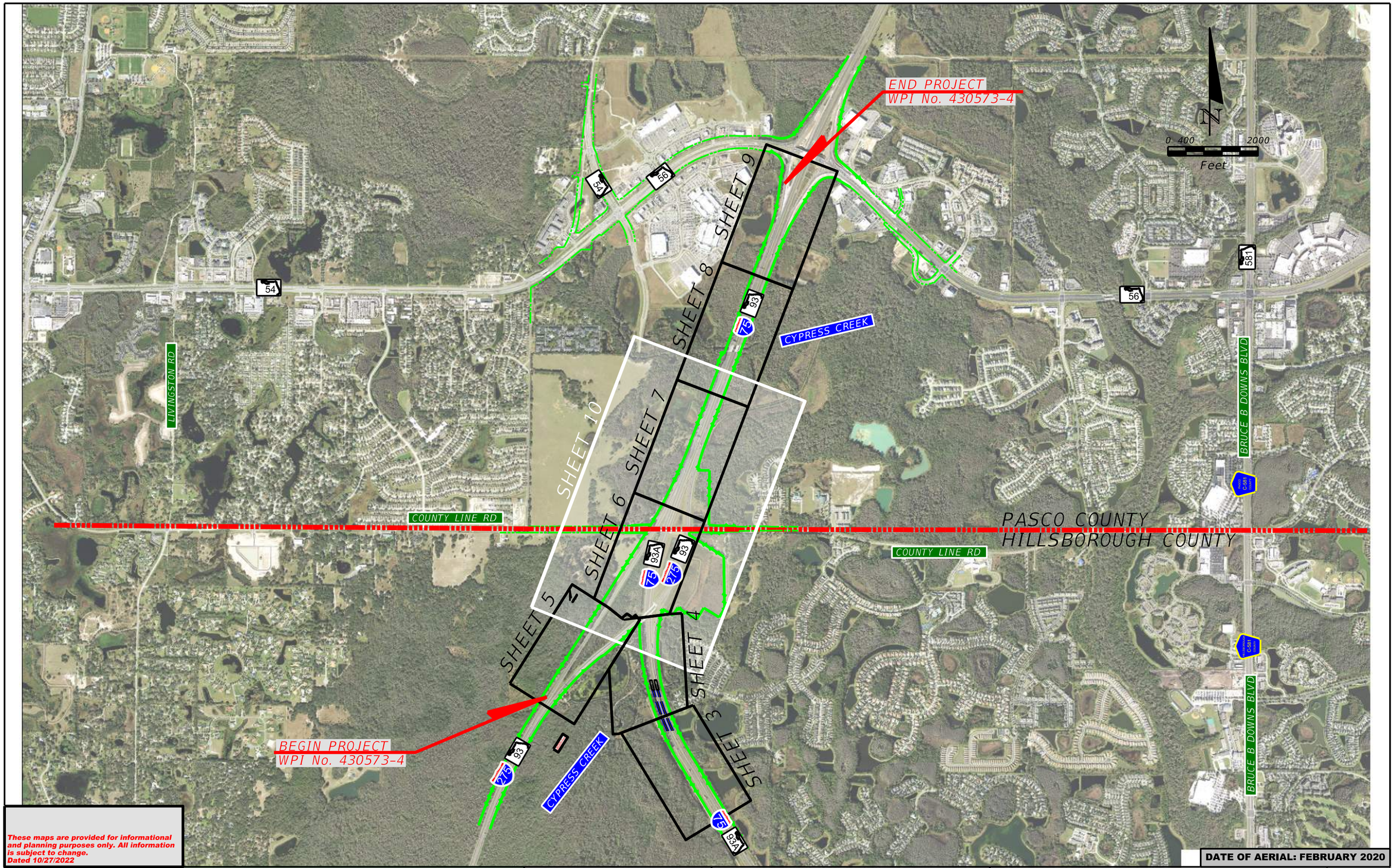
WESLEY CHAPEL, FLORIDA 33544
ENGINEERING BUSINESS NO.: EB7110

FDOT PROJECT MANAGER: ASHLEY HENZEL, P.E.

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
		1



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LEGEND

- EXISTING ROW
- EXISTING L/A ROW
- PROPOSED L/A ROW
- COUNTY LINE
- PLAN SHEET BOUNDARY
- STORMWATER MANAGEMENT FACILITY/FLOODPLAIN COMPENSATION SITE SHEET BOUNDARY

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DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93/ SR 93A/ SR 56	HILLSBOROUGH/ PASCO	254552-1-22-19

SB I-75/I-275 from South of County Line Road to SR 56 (SB C-D Road with Flyover Ramp)
Concept Plan Layout Sheet
WPI Segment No. 430573-4

SHEET NO. 2

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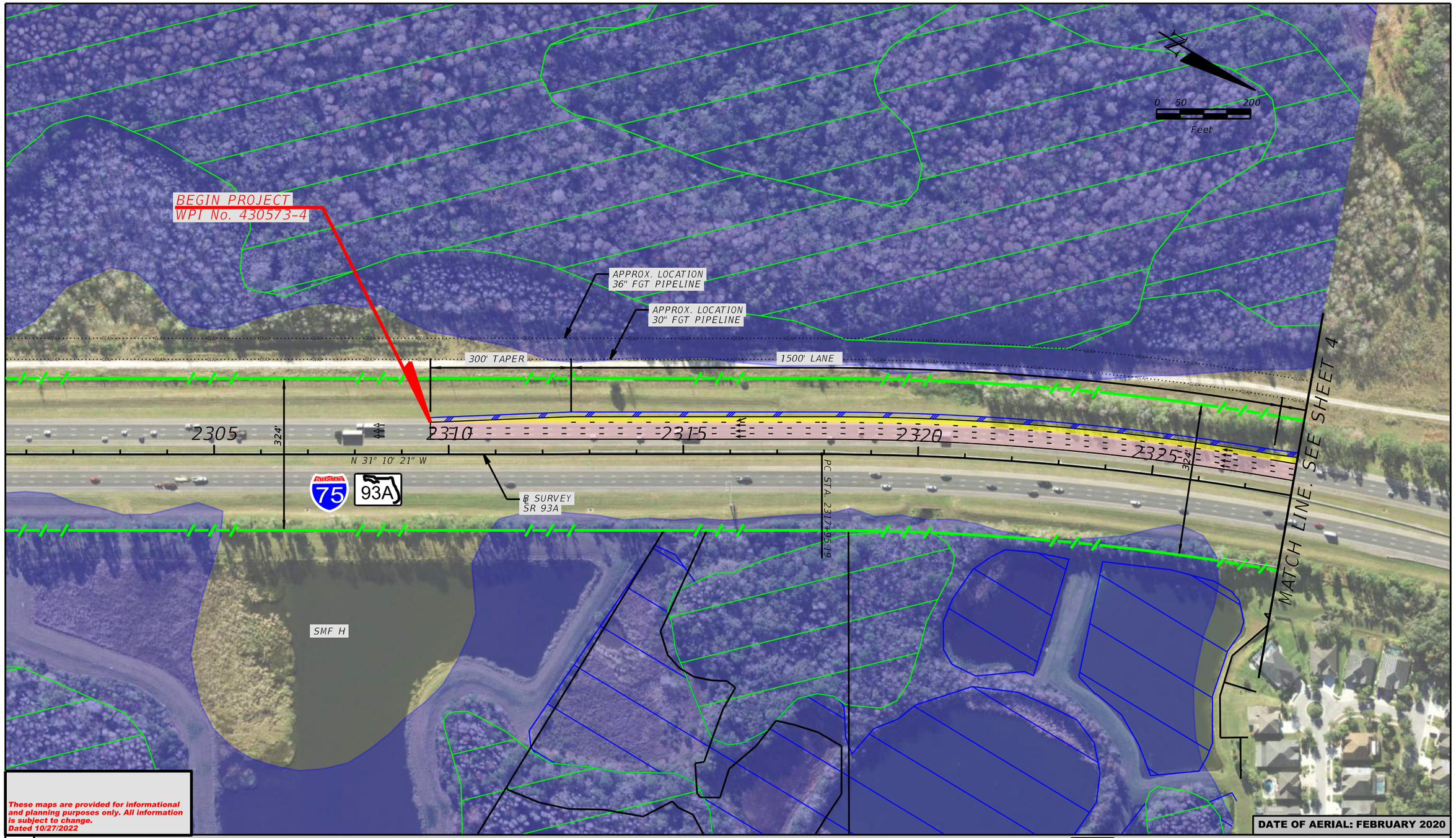

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- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- POTENTIALLY CONTAMINATED SITE
- MILL / RESURFACE
- PROPOSED C-D ROADS/RAMPS
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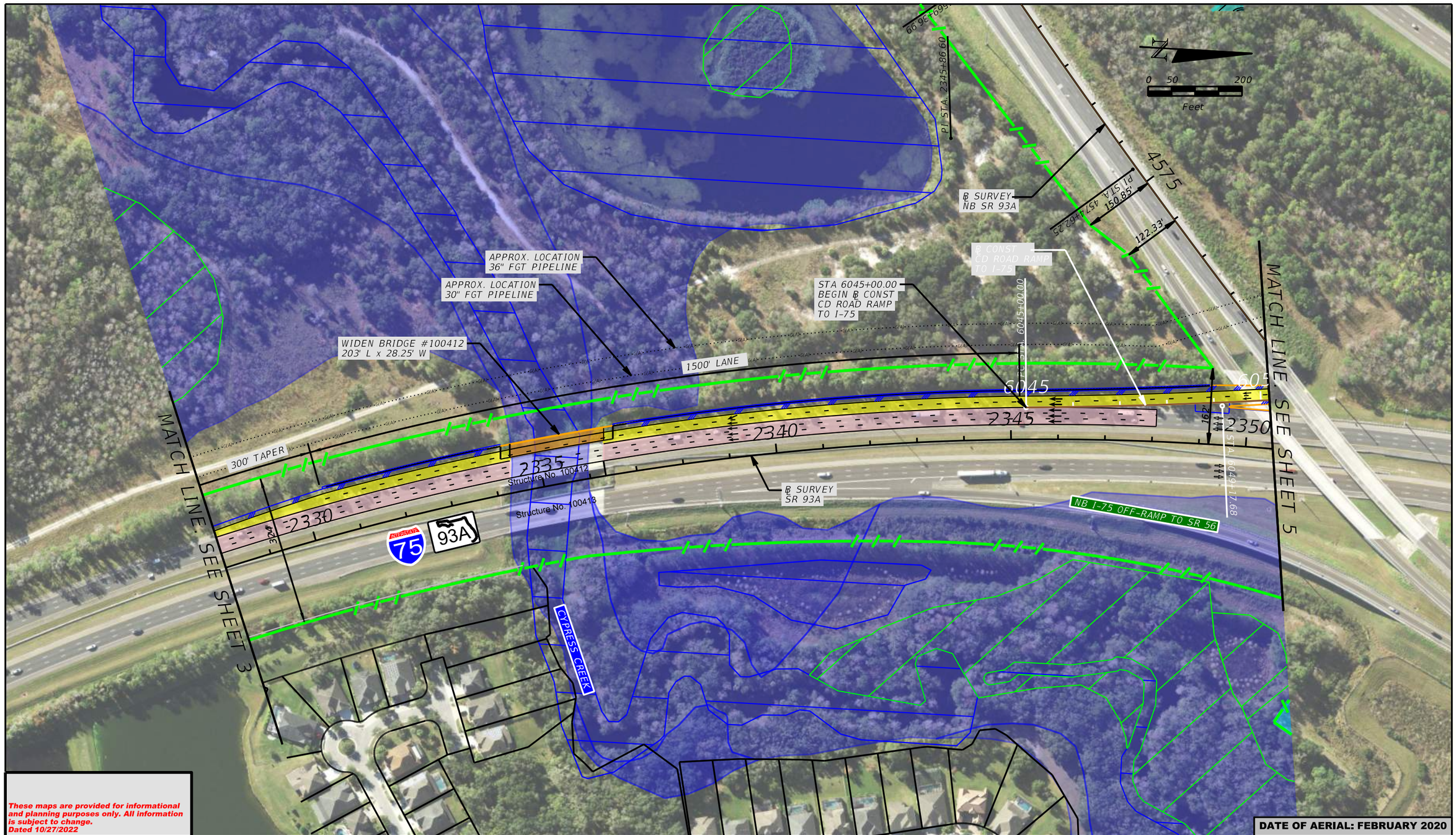

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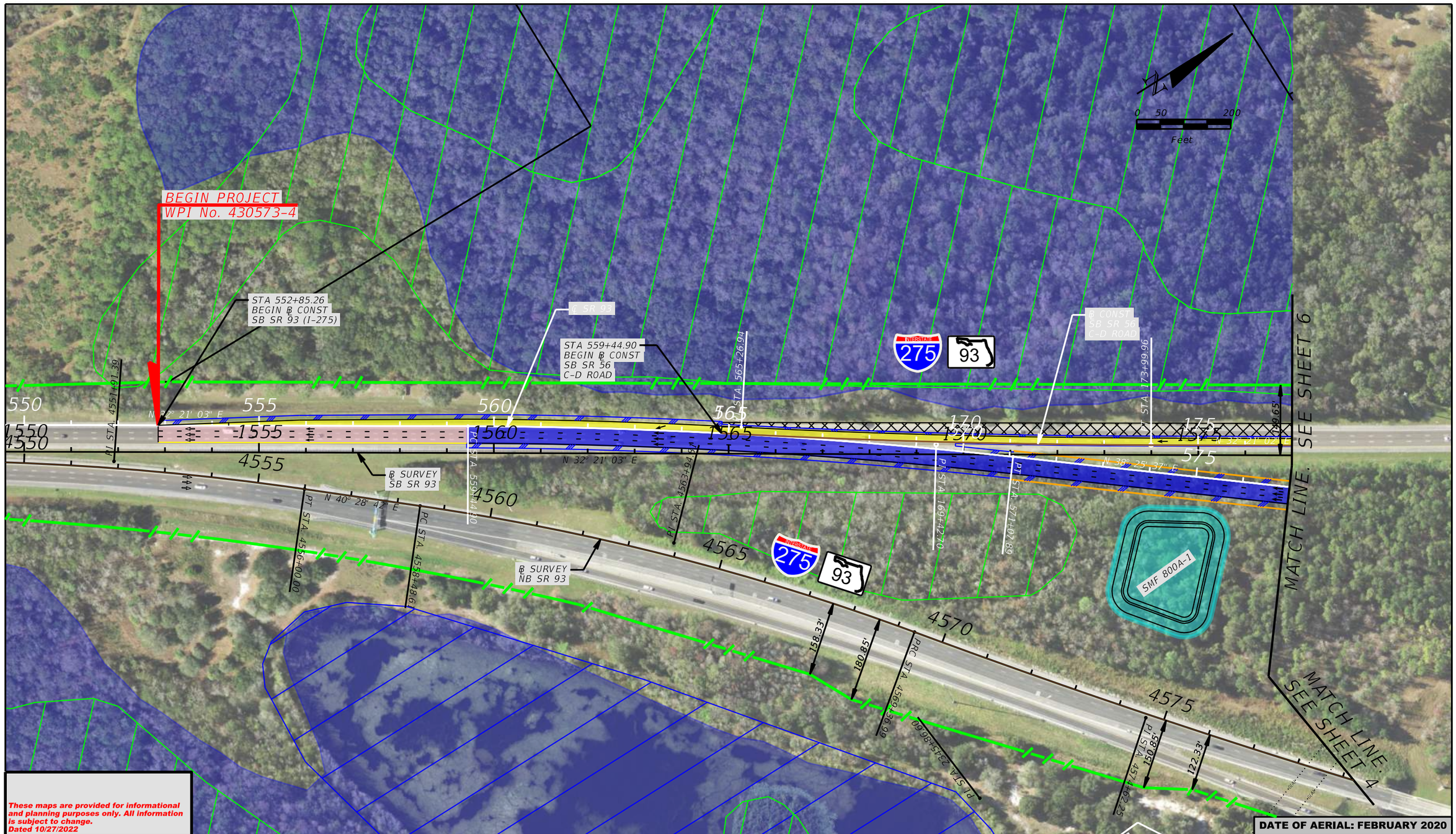

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SB I-75/I-275 from South of County Line Road to SR 56 (SB C-D Road with Flyover Ramp) Concept Plans WPI Segment No. 430573-4

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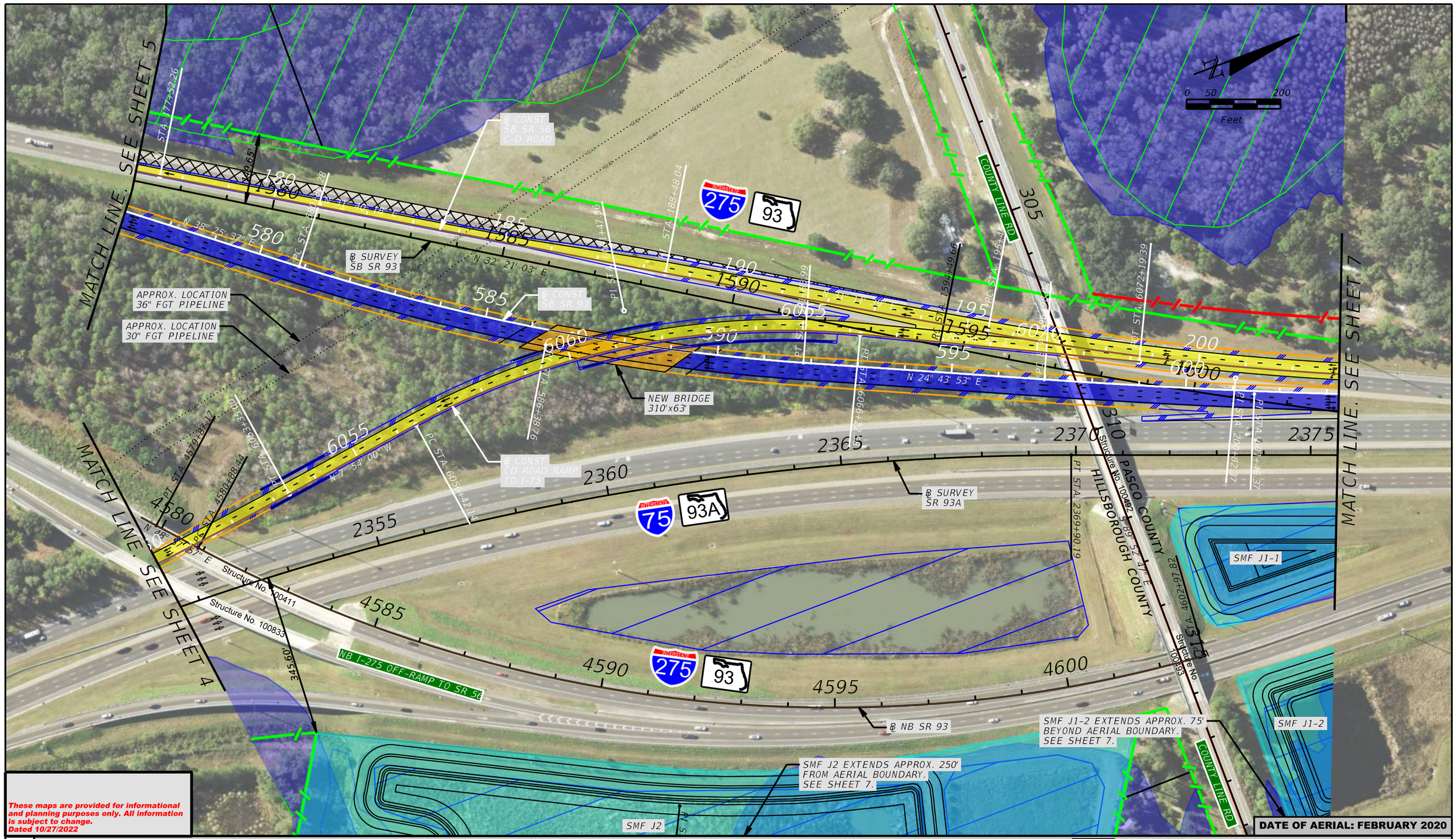

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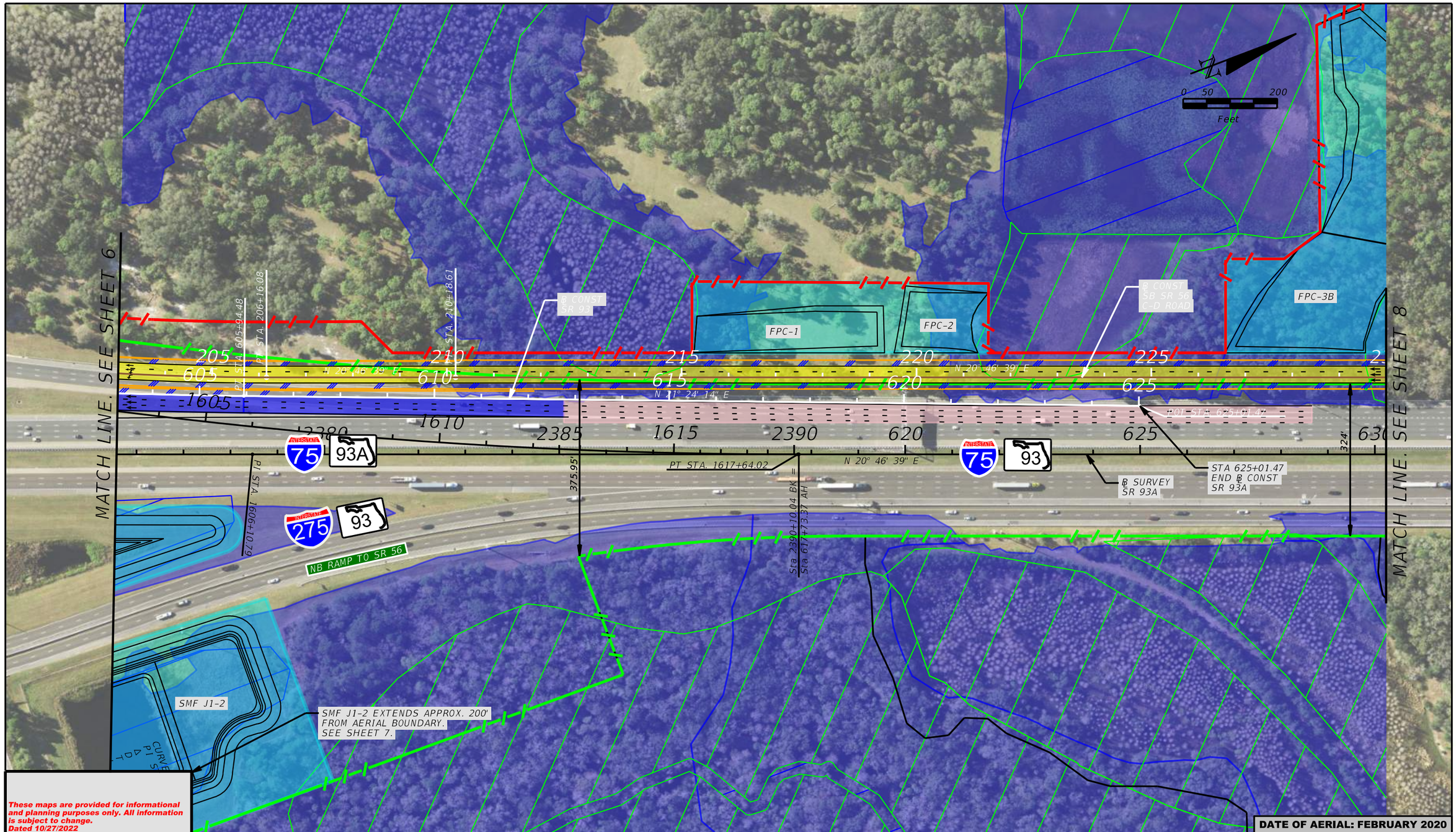

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FPC-3B

FPC-3B EXTENDS APPROX. 150' FROM AERIAL BOUNDARY. SEE SHEET 7.

0 50 200
Feet

MATCH LINE, SEE SHEET 7

MATCH LINE, SEE SHEET 9

℄ STA. 236+85.60

℄ CONST SB SR 56 C-D ROAD

℄ STA. 246+45.83

230 235 240 245 250 255

N 21° 29' 37" E

N 20° 46' 39" E

635 640 645 650 655

324' 324' 354'

Structure No. 140061

Structure No. 140062

Structure No. 140135

℄ SURVEY SR 93A

NB RAMP TO SR 56

CYPRESS CREEK

INTERSTATE 75

93

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SHEET NO. 8

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NOTE:
FPID No. 430573-1 SR 56 @ I-75 DIVERGING DIAMOND INTERCHANGE IMPROVEMENT PROJECT ESTIMATED COMPLETION YEAR 2022.

0 50 200
Feet

END PROJECT
WPI No. 430573-4

MATCH LINE, SEE SHEET 8

℄ CONST SB SR 56 C-D ROAD

℄ SURVEY SR 93A

SB RAMP D FROM SR 56

WB RAMP TO SR 56

N 20° 46' 39" E

N 57° 47' E

PC STA 300+00.00
PC STA 303+00.33
PC STA 271+70.07
PT STA 312+21.36
PC STA 320+84.36
PT STA 315+32.84
PC STA 209+12.85
PC STA 318+54.58
PT STA 318+54.58
PT STA 307+63.09
PC STA 681+51.84

260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620 625 630 635 640 645 650 655 660 665 670 675 680 685

354'
395'

INTERSTATE 75
93

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- PROPOSED BRIDGE
- PAVEMENT REMOVAL
- COUNTY LINE
- PROPERTY LINE
- EXISTING R/W
- EXISTING LA R/W
- PROPOSED LA R/W

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

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93/ SR 93A/ SR 56	HILLSBOROUGH/ PASCO	254552-1-22-19

SB I-75/I-275 from South of County Line Road to SR 56 (SB C-D Road with Flyover Ramp) Concept Plans
WPI Segment No. 430573-4

SHEET NO. 9

5devorm 10/27/2022 11:55:36 AM c:\pw_work\american-pw-01\dms54479\PLANRD05.dgn

THIS SHEET IS INTENDED TO SHOW THE FULL EXTENT OF THE PREFERRED STORMWATER MANAGEMENT FACILITIES (SMF) AND FLOODPLAIN COMPENSATION (FPC) SITES THAT ARE SHOWN IN PART ON THE CONCEPT PLANS ON SHEETS 1-30. PLEASE REFER TO SHEETS 1-6 FOR THE CONCEPT PLANS DEPICTING THE PREFERRED ALTERNATIVE ALONG SR 56/I-275/I-75

0 100 400
Feet

PASCO COUNTY
HILLSBOROUGH COUNTY
COUNTY LINE RD
SMF 800A-1
SMF J1-1
SMF J1-2
SMF J2
FPC-1
FPC-2
FPC-3B
NB I-75 OFF-RAMP TO SR 56
NB I-275 OFF-RAMP TO SR 56
NB RAMP TO SR 56
INTERSTATE 275 93
INTERSTATE 75 93A
INTERSTATE 275 93
INTERSTATE 75 93

These maps are provided for informational and planning purposes only. All information is subject to change.
Dated 10/27/2022

DATE OF AERIAL: FEBRUARY 2020

LEGEND

- WETLANDS
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- POTENTIALLY CONTAMINATED SITE
- MILL / RESURFACE
- PROPOSED C-D ROADS/RAMPS
- PROPOSED MAINLINE
- PROPOSED MEDIAN BARRIER WALL / MSE WALL
- PROPOSED BRIDGE
- PAVEMENT REMOVAL
- COUNTY LINE
- PROPERTY LINE
- EXISTING R/W
- EXISTING LA R/W
- PROPOSED LA R/W

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Wesley Chapel, Florida 33544
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Jeffrey S. Novotny, P.E. No. 51083

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93/ SR 93A/ SR 56	HILLSBOROUGH/ PASCO	254552-1-22-19

SB I-75/I-275 from South of County Line Road to SR 56 (SB C-D Road with Flyover Ramp)
Concept Plans
WPI Segment No. 430573-4

SHEET NO. 10

5devorm 10/27/2022 11:56:53 AM c:\pw_work\american-pw-01\dms54479\PLANRD07.dgn

APPENDIX B

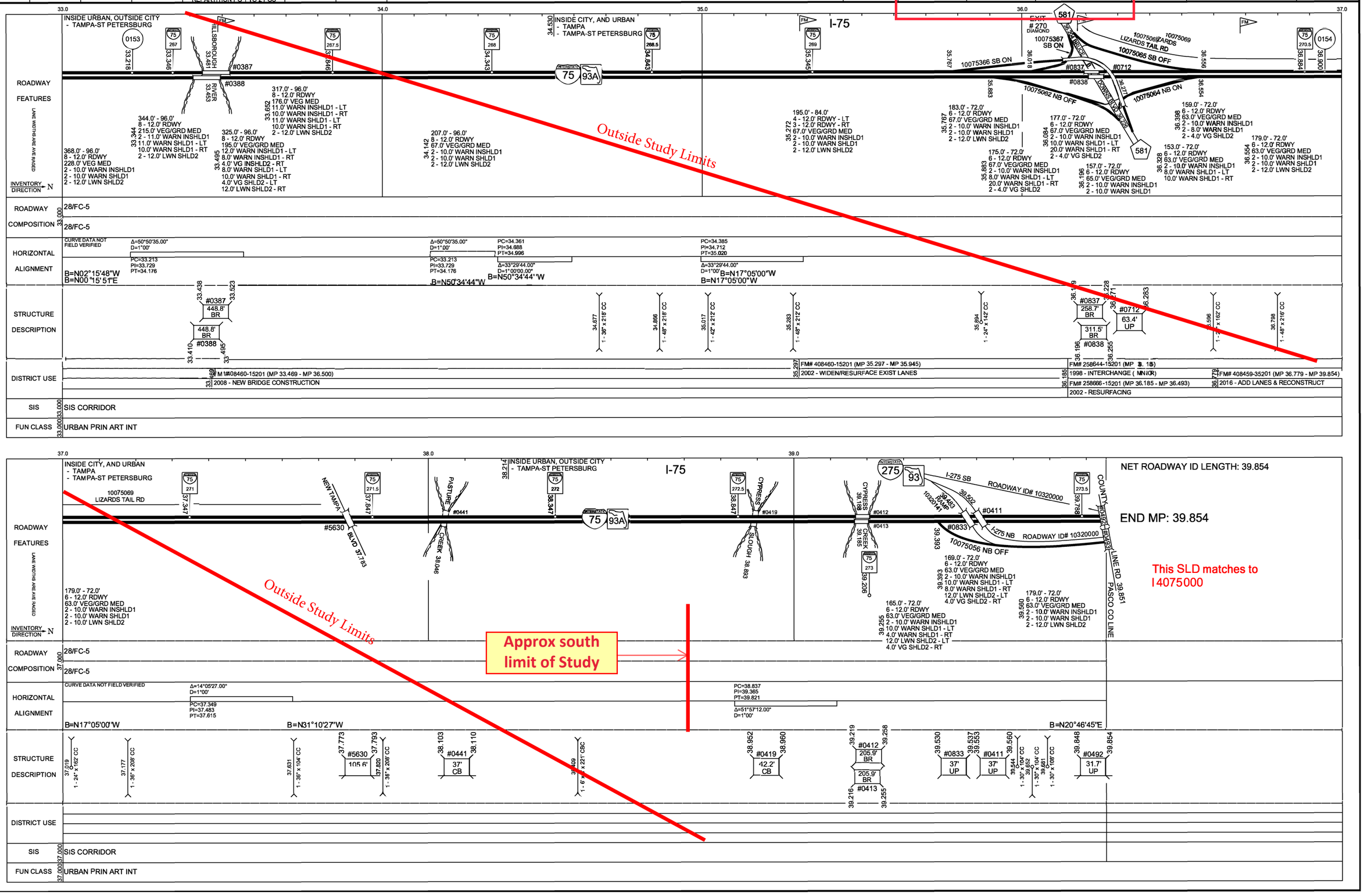
Straight Line Diagram Inventory

	5 YR/INV	SLD REV	INTERIM REVISIONS BMP	EMP	INV	SLD REV
DATE	08 / 24 / 2012	09 / 27 / 2012	0.000	12.540	03 / 23 / 2021	04 / 19 / 2021
BY	FTE / JW-KA	FTE / KA	CONSTRUCTION ACCEPT & REPARTITION PG 1 TO 2 PGS		FTE / IM-KA	FTE / KA

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	I-75	SR 93A	HILLSBOROUGH	07	10 075 000	5 OF 5

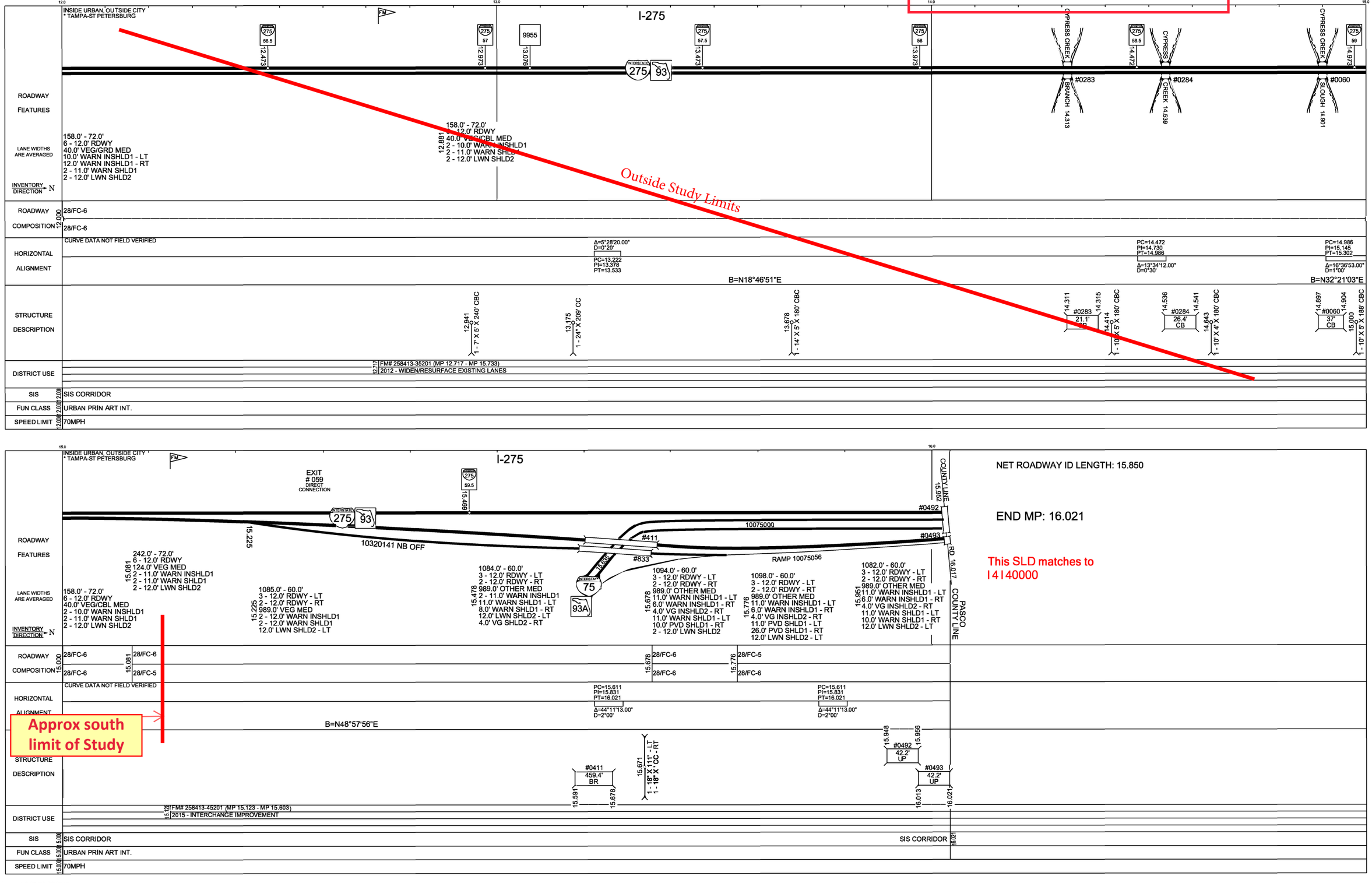


	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	01/24/2018	02/26/2018	0.368	0.465		08/05/2020
BY	FTE / IM-BK	FTE / KA	REVISED F252 EXIT 45A & 45B			FTE/KA

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:
12	I 275	SR 93	HILLSBOROUGH	07	10 320 000	4 OF 5



NET ROADWAY ID LENGTH: 15.850

END MP: 16.021

This SLD matches to I 4 I 40000

Version: 1.4.2.27 02/23/2018

	5 YR INV	SLD REV
DATE	05/01/2017	06/22/2017
BY	FTE / JR-IM	FTE / KA

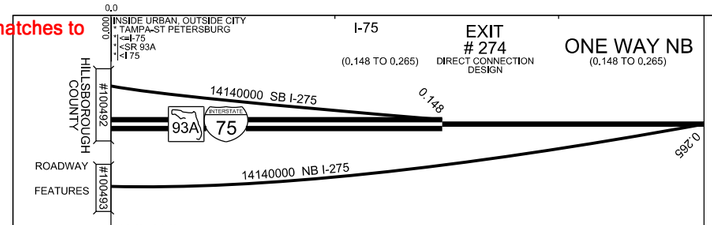
BMP	EMP	INV	SLD REV
0.000	0.265		12/11/2017
EMP SHORTENED TO 0.265			FTE / KA

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	I 75	SR 93A	PASCO	07	14 075 000	1 OF 1

This SLD matches to I 0075000



NET ROADWAY ID LENGTH: 0.265

END MP: 0.265

ROADWAY COMPOSITION	0.000	28/FC-2 28/FC-2	0.148 28/FC-2
HORIZONTAL ALIGNMENT		Δ=11°35'00" CURVE DATA NOT FIELD VERIFIED D=0°00'01" PC=0,000 P=0,156 PT=0,311 B=N20°32'24E	
STRUCTURE DESCRIPTION		0.102 1 - 18" X 182' CC	
DISTRICT USE			
SIS	0.000	SIS CORRIDOR	SIS CORRIDOR 0.265
FUN CLASS	0.000,0.000	URBAN PRIN ART INT.	
SPEED LIMIT	0.000	65MPH	

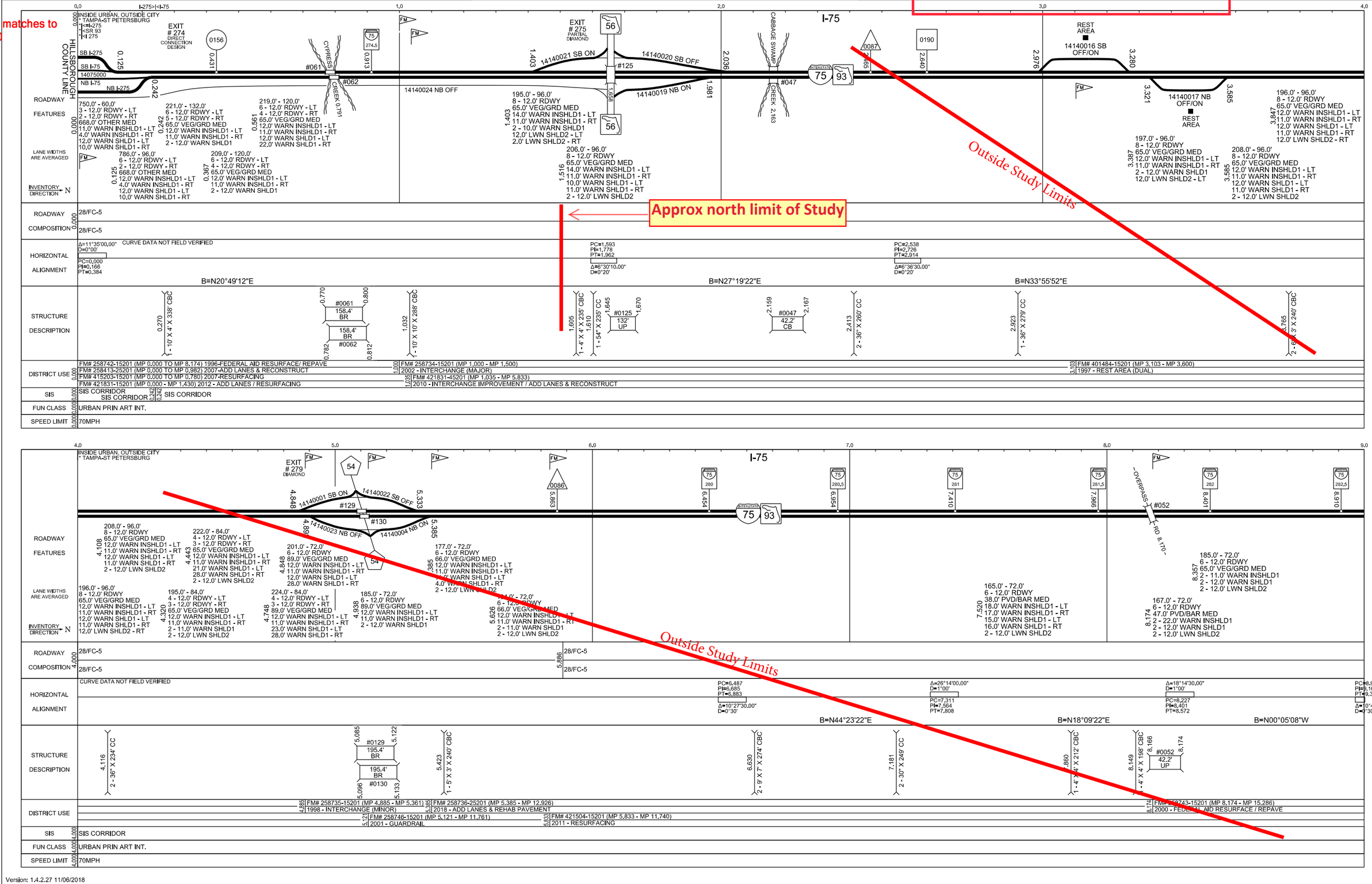
	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	08/28/2018	11/06/2018				
BY	FTE / IM-BK	FTE / KA				

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	I 275/I 75	SR 93	PASCO	07	14 140 000	1 OF 3

This SLD matches to I 0320000



Version: 1.4.2.27 11/06/2018

APPENDIX C

Proposed Typical Sections

STATE OF FLORIDA

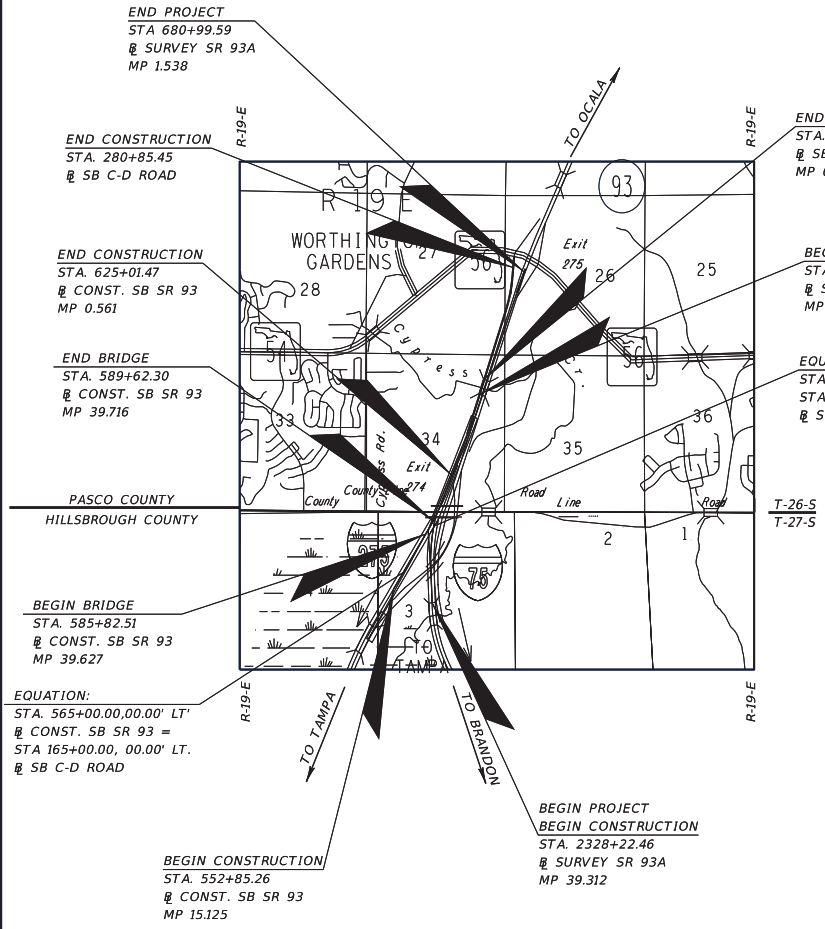
DEPARTMENT OF TRANSPORTATION

PD&E TYPICAL SECTION PACKAGE

FINANCIAL PROJECT ID 430573-4-22-01

PASCO COUNTY (14140000)/HILLSBOROUGH COUNTY (10075000)

SR 56 SOUTHBOUND C-D ROAD/RAMPS PD&E STUDY
FROM SOUTH OF THE I-75/I-275 APEX TO SR 56



APPROVED BY:

JEFFREY S. NOVOTNY LICENSE No 51083 STATE OF FLORIDA PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Jeffrey S Novotny
2022.01.27 07:53:13 -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.

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

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

Digitally signed by: Allan J Urbonas
Date: 2022.03.03 16:07:40 -05'00'

FDOT DISTRICT DESIGN ENGINEER

Mamunur R Siddiqui
Mamunur R Siddiqui
2022.02.09 09:57:53 -05'00'

FDOT DISTRICT STRUCTURES DESIGN ENGINEER

FDOT STATE STRUCTURES DESIGN ENGINEER

FHWA TRANSPORTATION ENGINEER

DESIGN SPEED AND POSTED SPEED CONCURRENCE:

Ronald A Chin
Digitally signed by: Ronald A Chin
DN: CN = Ronald A Chin C = US O = FLORIDA DEPARTMENT OF TRANSPORTATION OU = A0f410C00000171 9E15A88400000382 A7
Date: 2022.04.20 14:42:12 -04'00'

FDOT DISTRICT TRAFFIC OPERATIONS ENGINEER

Digitally signed by: Allan J Urbonas
Date: 2022.03.03 16:08:58 -05'00'

FDOT DISTRICT DESIGN ENGINEER

CONTEXT CLASSIFICATION CONCURRENCE:

Justin P Hall
Digitally signed by Justin P Hall
Date: 2022.02.22 18:05:22 -05'00'

FDOT DISTRICT INTERMODAL SYSTEMS DEVELOPMENT MANAGER

SHEET NO.
1

1/26/2022 10:15:12 PM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

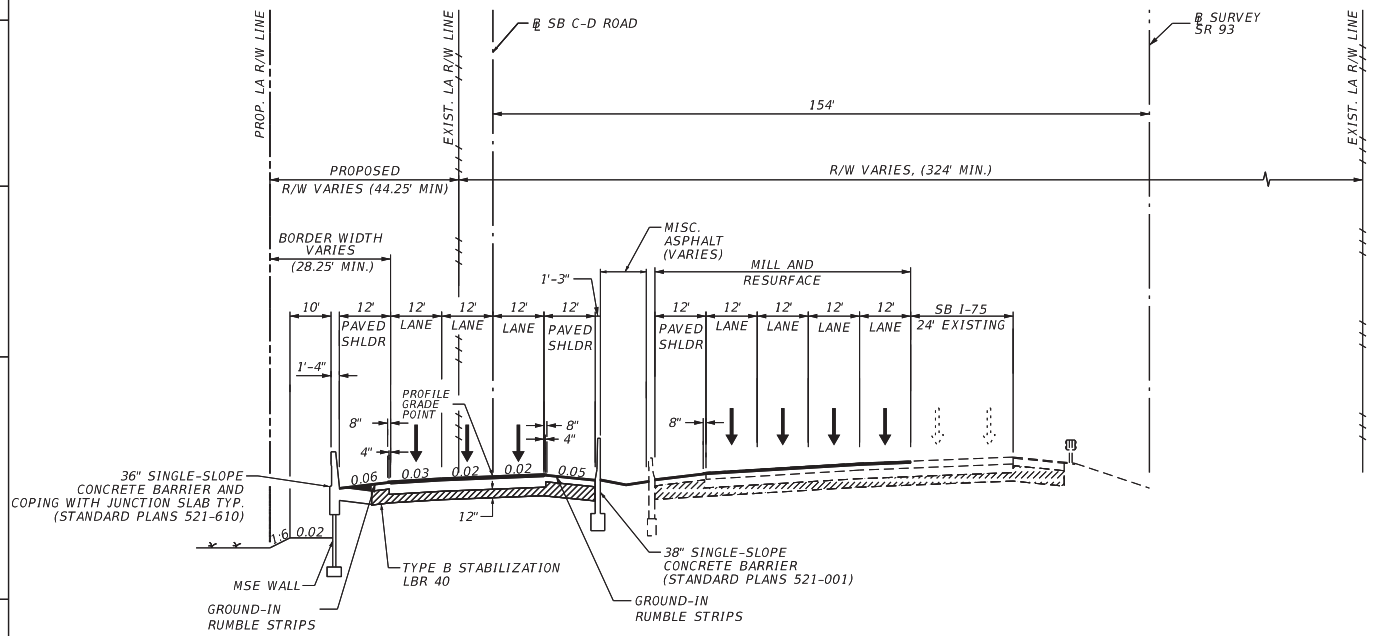
- (x) 1 - FREEWAY
- ( ) 2 - RESTRICTIVE w/Service Roads
- ( ) 3 - RESTRICTIVE w/660 ft. Connection Spacing
- ( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- ( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
- ( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- ( ) 7 - BOTH MEDIAN TYPES

CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 1



TYPICAL SECTION
℄ SB C-D ROAD
STA 165+00.00 TO STA 280+85.45
℄ CONST. SB SR 93
STA. 552+85.26 TO STA 625+01.47
(THREE LANE RAMP)

TRAFFIC DATA
CURRENT YEAR * = 2019 AADT = N/A
ESTIMATED OPENING YEAR= 2025 AADT = 32,400
ESTIMATED DESIGN YEAR = 2045 AADT = 40,100
K = 9.0% D = N/A T = 4.0% (24 HOUR)
DESIGN HOUR T= 2.0%
DESIGN SPEED = 60 MPH
POSTED SPEED = 60 MPH
TARGET SPEED = 60 MPH

* 2019 DATE OF THE TRAFFIC STUDY

TYPICAL SECTION
℄ SURVEY SR 93A
STA. 2328+22.46 TO STA. 2390+10.04
(EQUATION: STA. 2390+10.04 (BK) =
STA. 617+73.37 (AH))
STA. 617+73.37 TO STA. 680+99.59

TRAFFIC DATA
CURRENT YEAR * = 2019 AADT = 28,800
ESTIMATED OPENING YEAR= 2025 AADT = 50,300
ESTIMATED DESIGN YEAR = 2045 AADT = 74,800
K = 9.0% D = 56.7% T = 12.7% (24 HOUR)
DESIGN HOUR T= 6.4%
DESIGN SPEED = 70 MPH
POSTED SPEED = 70 MPH
TARGET SPEED = 70 MPH

* 2019 DATE OF THE TRAFFIC STUDY

** THE INFORMATION INCLUDED IN THE PD&E TYPICAL SECTION PACKAGE IS BASED ON THE BEST AVAILABLE INFORMATION AND CRITERIA IS BASED ON THE FLORIDA DESIGN MANUAL AT THE DATE OF THE SUBMITTAL. THE PD&E TYPICAL SECTION PACKAGE IS SUBJECT TO CHANGE. THE PD&E TYPICAL SECTIONS ARE NOT SUITABLE FOR CONSTRUCTION.

FINANCIAL PROJECT ID	SHEET NO.
430573-4-22-01	2

1/26/2022 10:16:18 PM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

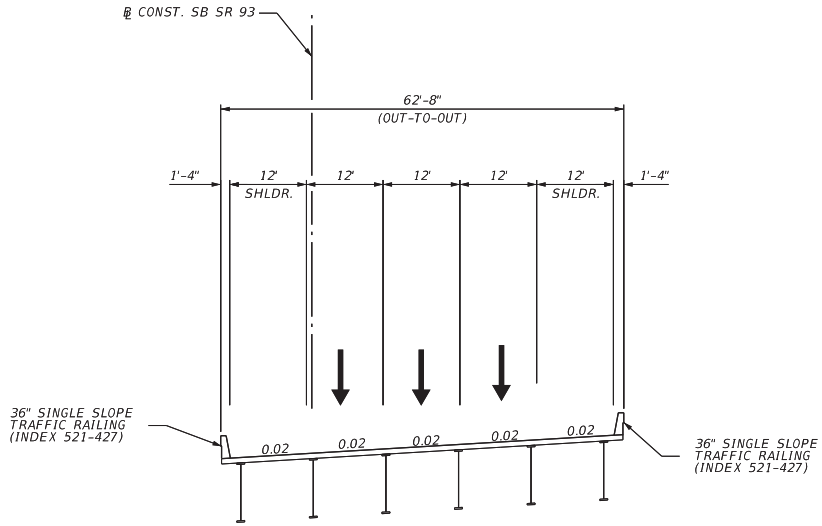
(x) 1 - FREEWAY
( ) 2 - RESTRICTIVE w/Service Roads
( ) 3 - RESTRICTIVE w/660 ft. Connection Spacing
( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 2



PROPOSED BRIDGE 10XXXX

TYPICAL SECTION
℄ CONST. SB SR 93
STA 585+82.51 TO STA 589+62.30
(I-275 BRIDGE OVER SB C-D ROADWAY ON RAMP TO SB I-75)

TRAFFIC DATA

CURRENT YEAR * = 2019 AADT = 34,700
ESTIMATED OPENING YEAR = 2025 AADT = 23,500
ESTIMATED DESIGN YEAR = 2045 AADT = 33,800
K = 9.0% D = 62.5% T = 5.3% (24 HOUR)
DESIGN HOUR T= 2.6%
DESIGN SPEED = 70 MPH
POSTED SPEED = 70 MPH
TARGET SPEED = 70 MPH

* 2019 DATE OF THE TRAFFIC STUDY

FINANCIAL PROJECT ID	SHEET NO.
430573-4-22-01	3

1/26/2022 10:16:47 PM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

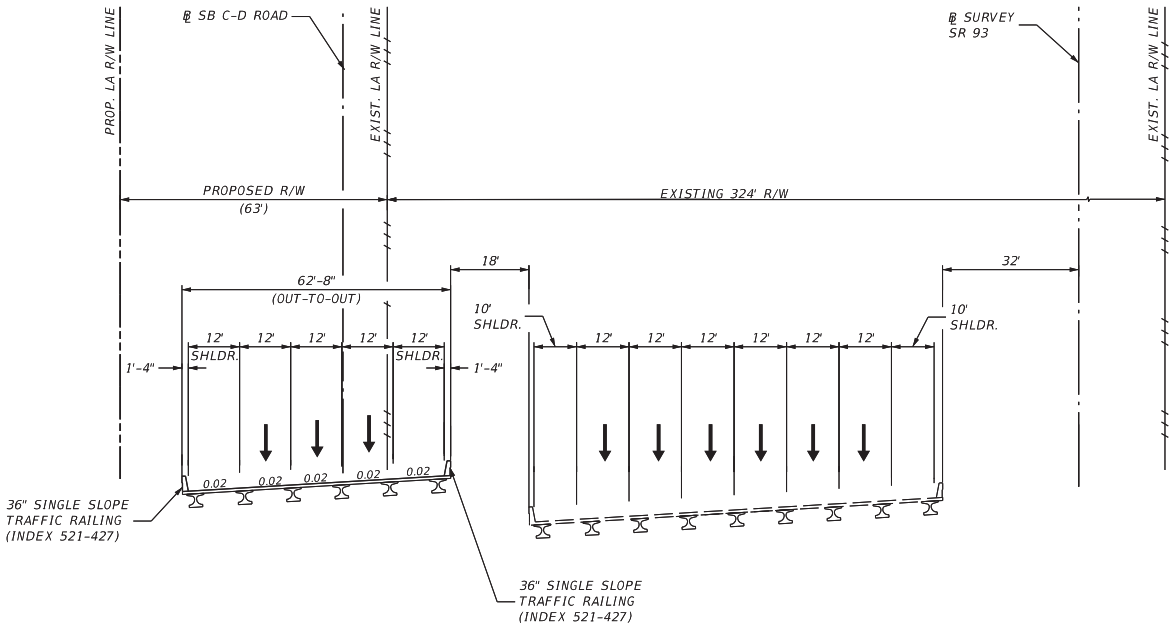
- (x) 1 - FREEWAY
- ( ) 2 - RESTRICTIVE w/Service Roads
- ( ) 3 - RESTRICTIVE w/660 ft. Connection Spacing
- ( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- ( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
- ( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- ( ) 7 - BOTH MEDIAN TYPES

CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 3



PROPOSED BRIDGE 14XXXX

BRIDGE 140061

TYPICAL SECTION
℄ SB C-D ROAD
STA 239+48.59 TO 241+88.96
(NEW BRIDGE OVER CYPRESS CREEK)

TRAFFIC DATA

CURRENT YEAR * = 2019 AADT = N/A
ESTIMATED OPENING YEAR = 2025 AADT = 32,400
ESTIMATED DESIGN YEAR = 2045 AADT = 40,100
K = 9.0% D = N/A T = 4.0% (24 HOUR)
DESIGN HOUR T= 2.0%
DESIGN SPEED = 60 MPH
POSTED SPEED = 60 MPH
TARGET SPEED = 60 MPH

* 2019 DATE OF THE TRAFFIC STUDY

FINANCIAL PROJECT ID	SHEET NO.
430573-4-22-01	4

1/26/2022 10:17:14 PM

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

(x)	1 - FREEWAY
( )	2 - RESTRICTIVE w/Service Roads
( )	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

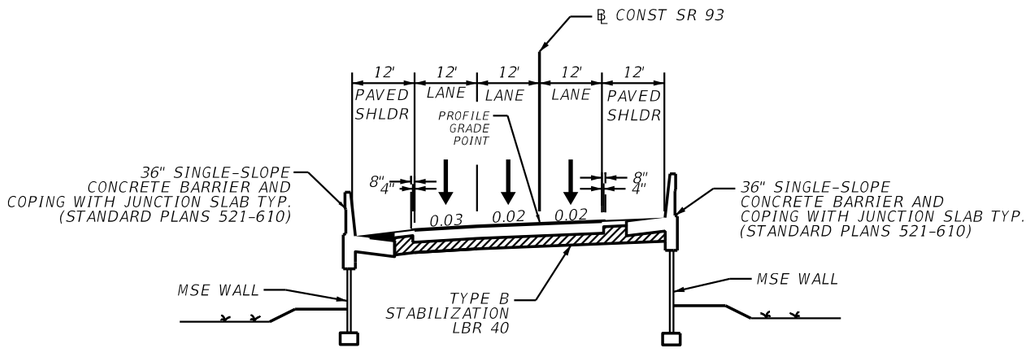
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No.

This Section is conceptual - not included in Typical Section Package
Will be updated in the design phase



TYPICAL SECTION
℄ SR 93 MAINLINE
STA 559+42.26 TO STA 612+76.30

Southbound I-275
from C-D Road Ramp Connection to I-75/I-275 diverge

FINANCIAL PROJECT ID	SHEET NO.

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

(X) NATIONAL HIGHWAY SYSTEM

(X) STRATEGIC INTERMODAL SYSTEM

( ) STATE HIGHWAY SYSTEM

( ) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

(X) 1 - FREEWAY

( ) 2 - RESTRICTIVE w/Service Roads

( ) 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

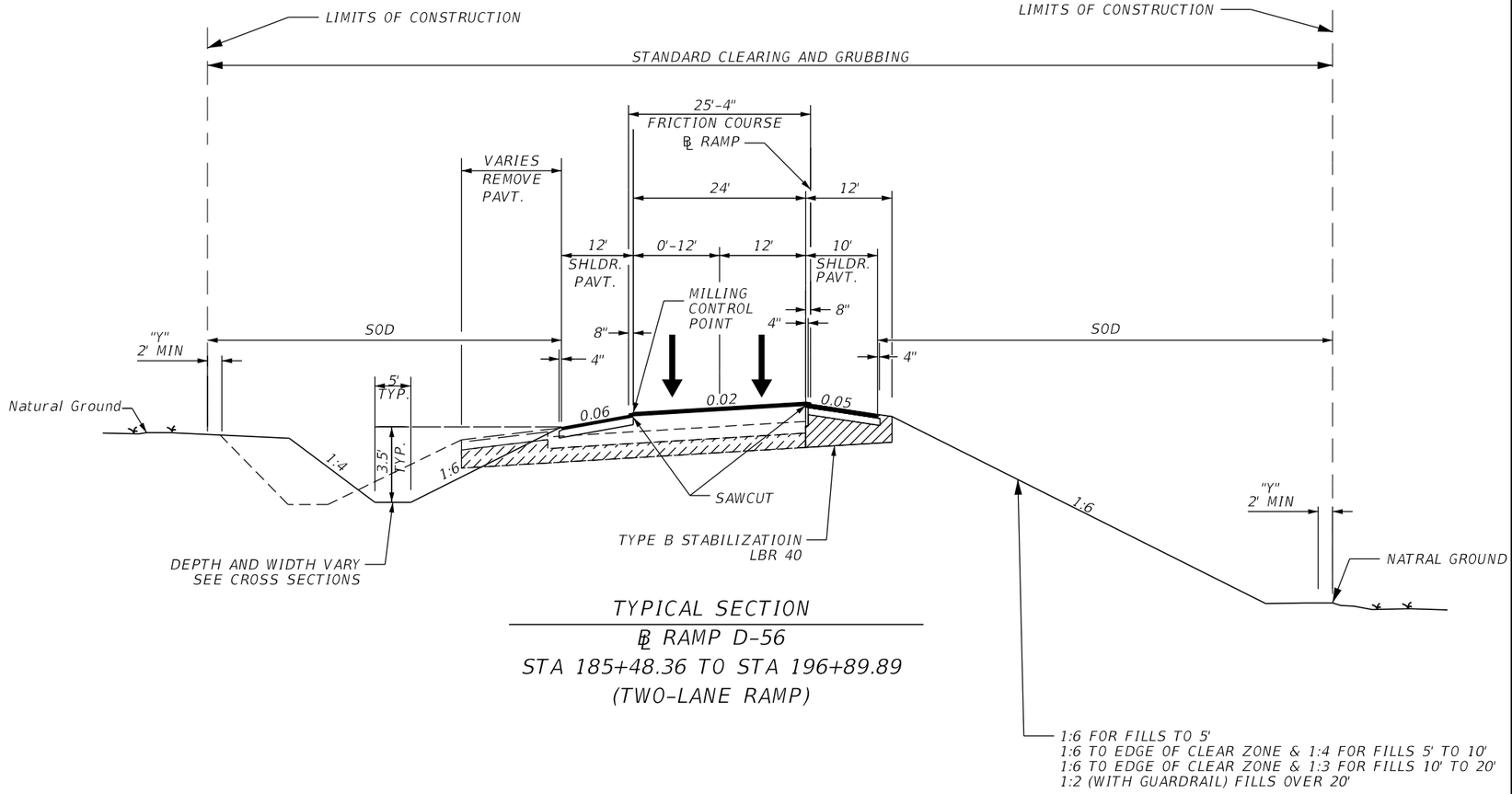
( ) RESURFACING (LA FACILITIES)

( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No.

This Section is conceptual - not included in Typical Section Package
Will be updated in the design phase



TYPICAL SECTION
℄ RAMP D-56
STA 185+48.36 TO STA 196+89.89
(TWO-LANE RAMP)

Southbound C-D Road Ramp to
I-275 (2-Lane Ramp)
South of C-D Road Ramp diverge

"Y" THE AREA DISTURBED
BY CONSTRUCTION VARIES.

FINANCIAL PROJECT ID	SHEET NO.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

2/10/2021 11:29:45 AM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

(X)	1 - FREEWAY
( )	2 - RESTRICTIVE w/Service Roads
( )	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

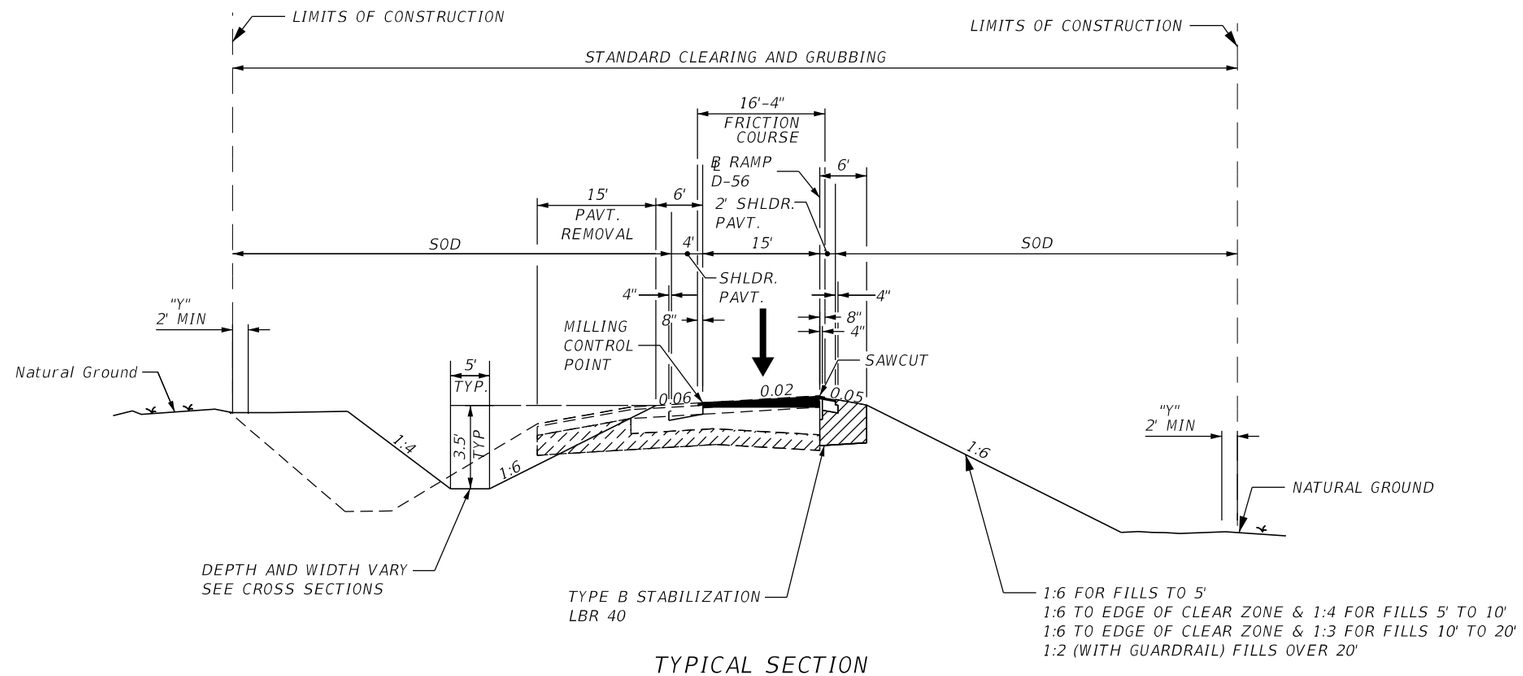
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No.

This Section is conceptual - not included in Typical Section Package
Will be updated in the design phase



TYPICAL SECTION

℄ RAMP D-56

STA 164+85.26 TO STA 185+48.36

(SINGLE LANE RAMP)

Southbound C-D Road Ramp to I-275
(1-Lane Ramp)
South of C-D Road Ramp diverge
Prior to connection to I-275

NOTE:

PROVIDE PLASTIC EROSION MAT ON SLOPES STEEPER THAN 1:3

"Y" THE AREA DISTURBED BY CONSTRUCTION VARIES.

FINANCIAL PROJECT ID	SHEET NO.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

2/10/2021 11:29:45 AM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

- (X) 1 - FREEWAY
- ( ) 2 - RESTRICTIVE w/Service Roads
- ( ) 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:

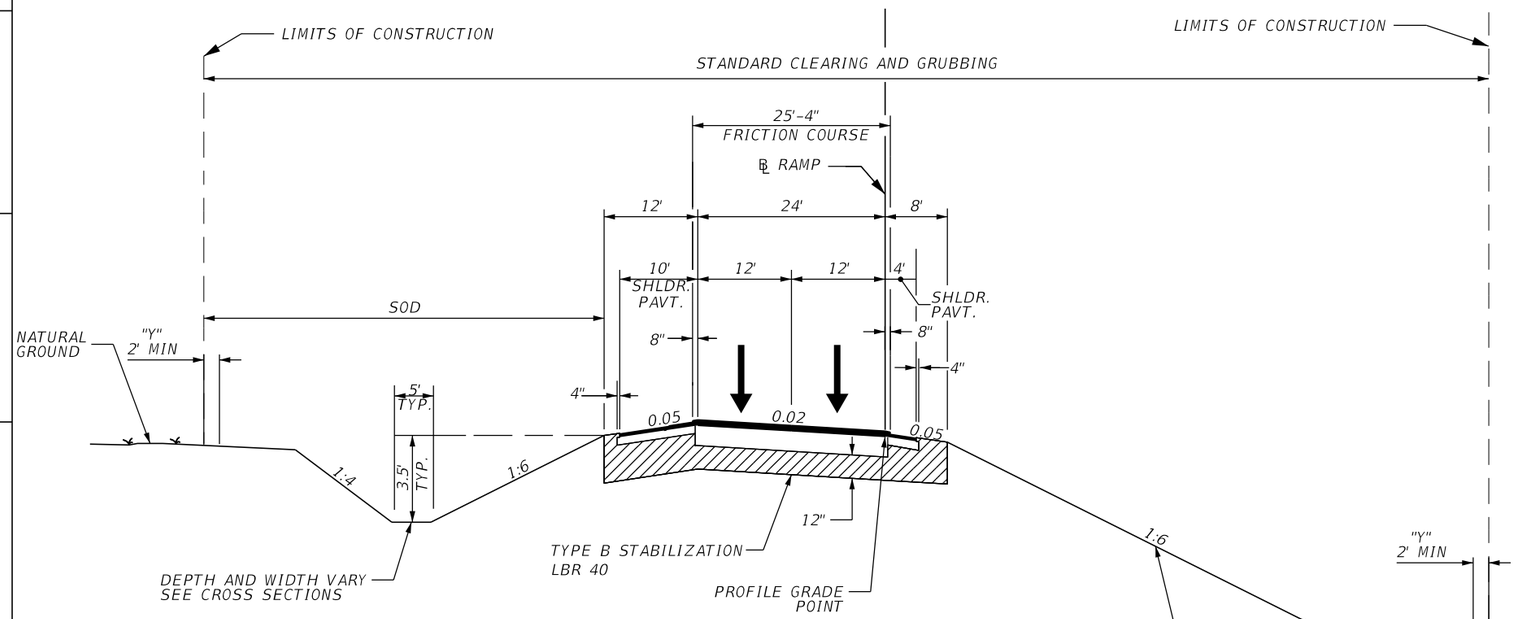
At Section of Ramp under NB I-275 Bridge (Bridge No 100411)

Exception - Shoulder Width (5-ft minimum)

Variation - Curve Length (835' normal crown curve)

TYPICAL SECTION No.

This Section is conceptual - not included in Typical Section Package
Will be updated in the design phase



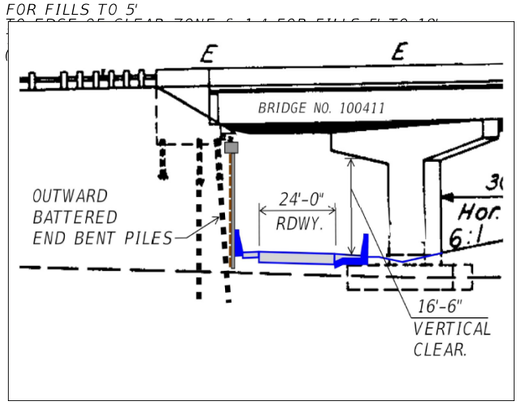
TYPICAL SECTION

℄ RAMP D-56-1

STA 6053+28.45 TO STA 6072+53.47

(TWO-LANE RAMP)

Southbound C-D Road Ramp to I-75 (2-Lane Ramp) South of C-D Road Ramp diverge



Proposed Section for Ramp under NB I-275 Bridge (Bridge No 100411)

"Y" THE AREA DISTURBED BY CONSTRUCTION VARIES.

FINANCIAL PROJECT ID	SHEET NO.

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2/10/2021 11:29:45 AM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

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

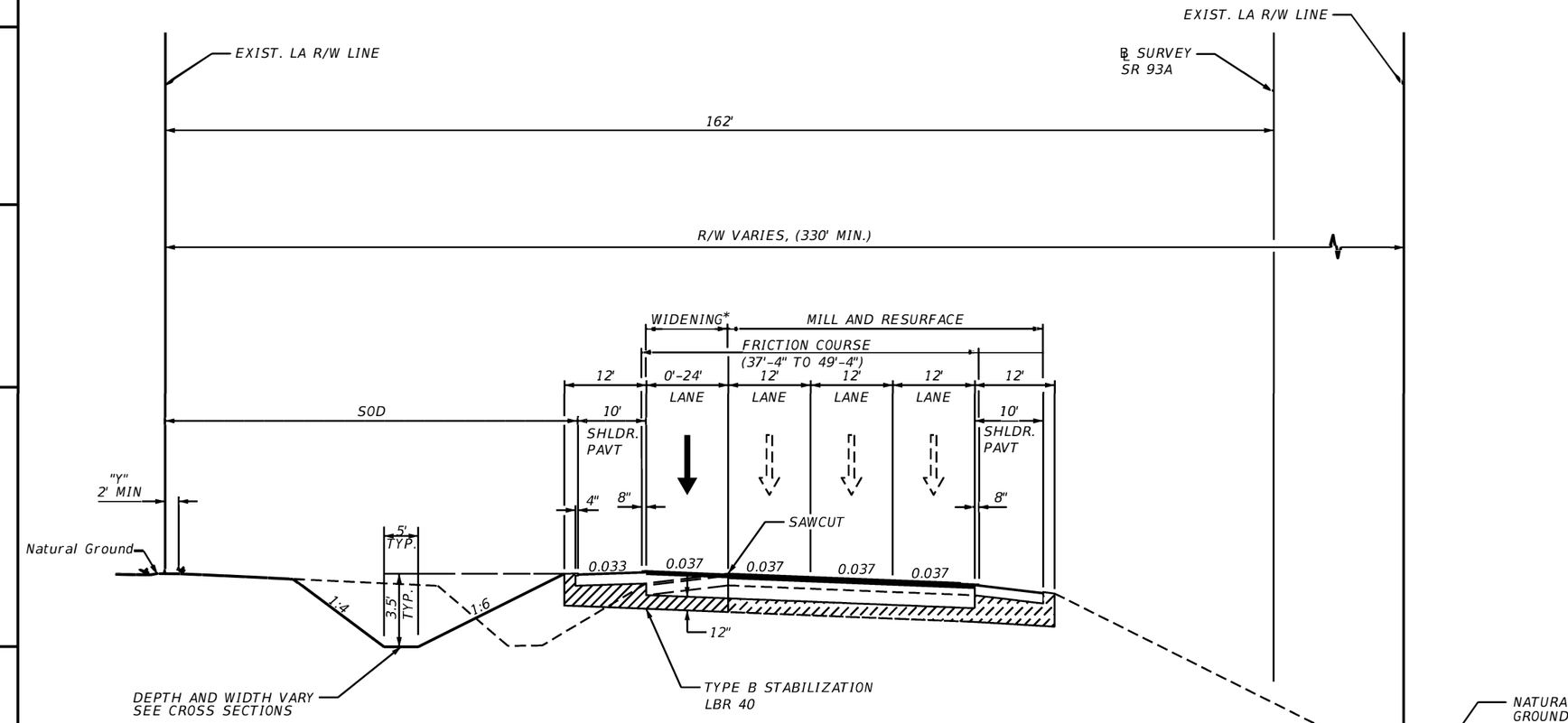
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No.

This Section is conceptual - not included in Typical Section Package
Will be updated in the design phase



* ACTUAL WIDTH OF BASE WIDENING MAY VARY DUE TO EXISTING PAVEMENT WIDTH. A UNIFORM WIDTH BASE WIDENING STRIP MAY BE CONSTRUCTED AT NO ADDITIONAL COMPENSATION.

TYPICAL SECTION
℄ SURVEY SR 93A
STA 2309+60.97 TO STA 2345+19.23

FINANCIAL PROJECT ID	SHEET NO.

6/3/2022 2:42:12 PM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

( )	1 - FREEWAY
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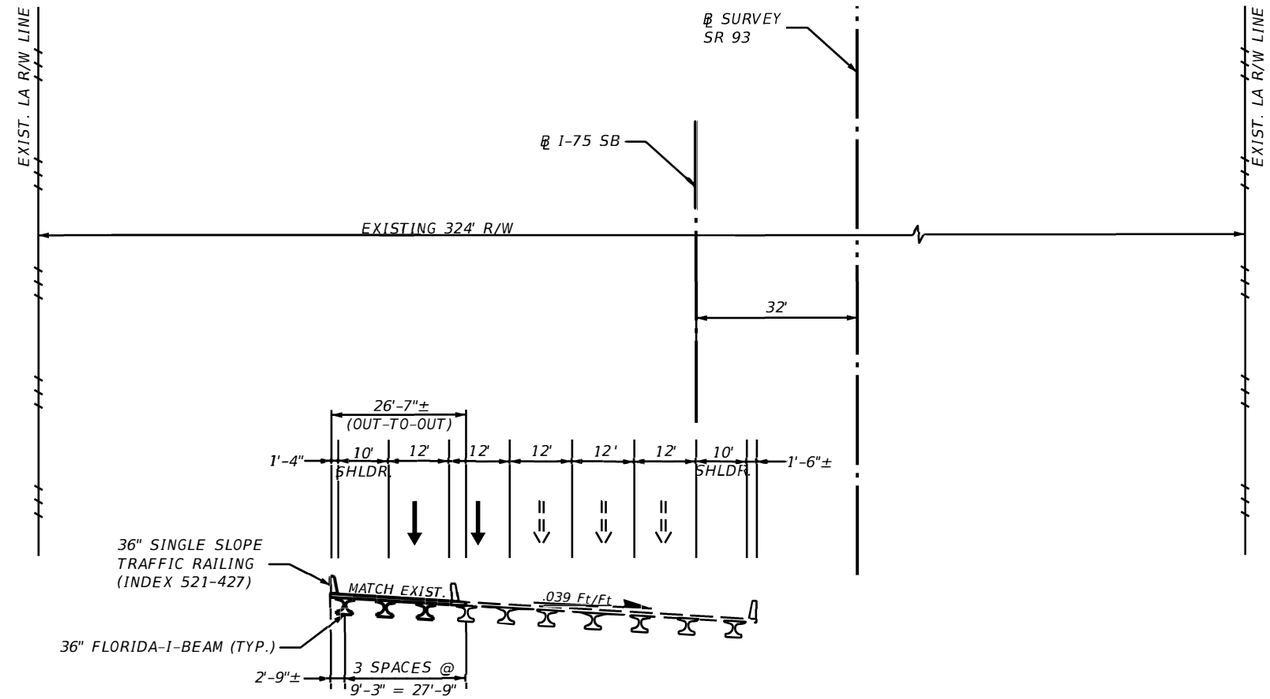
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 4

This Section is conceptual - not included in Typical Section Package
Will be updated in the design phase



BRIDGE 140412

TYPICAL SECTION
℄ SURVEY I-75
STA 2334+25.00 TO 2336+28.00
(EXISTING BRIDGE OVER CYPRESS CREEK)

TRAFFIC DATA

CURRENT YEAR * = 2019 AADT = 28,800
ESTIMATED OPENING YEAR = 2025 AADT = 50,300
ESTIMATED DESIGN YEAR = 2045 AADT = 74,800
K = 9.0% D = 56.7% T = 12.7% (24 HOUR)
DESIGN HOUR T= 6.4%
DESIGN SPEED = 70 MPH
POSTED SPEED = 70 MPH
TARGET SPEED = 70 MPH

* 2019 DATE OF THE TRAFFIC STUDY

FINANCIAL PROJECT ID	SHEET NO.
430573-4-22-01	

APPENDIX D

Design Documentation

MEETING MINUTES

Meeting Date:	March 27, 2020	**Date Issued:**	March 31, 2020
Location:	Teleconference at 9:30am through GoTo Meeting		
Project Name:	430573-2/3-22-01, I75/I275 SB FROM S OF COUNTY LINE RD TO SR 56		
Purpose:	To review interim and ultimate concept designs (Accommodating future express lanes)		
Notes by:	Adam Perez	**American Project #:**	5167733_010
Copies to:	All attendees		

Attendees	Representing	Phone	Fax or e-mail
Allan Urbonas	FDOT Design	813-975-6083	Allan.Urbonas@dot.state.fl.us
Daniel Lauricello	FDOT Roadway Design	813-975-6083	Daniel.Lauricello@dot.state.fl.us
Kirk Bogen	FDOT EMO	813-975-6448	Kirk.Bogen@dot.state.fl.us
Amber Russo	FDOT (GEC) EMO	813-975-6260	Amber.Russo@dot.state.fl.us
Ashley Henzel	FDOT (GEC) EMO	813-975-6433	Ashley.Henzel@dot.state.fl.us
Jeff Novotny	American Consulting	813-435-2646	JNovotny@acp-fl.com
Daniel Intriago	American Consulting	813-435-2626	DIntriago@acp-fl.com
Adam Perez	American Consulting	813-435-2628	Aperez@acp-fl.com
Mike DeVore	American Consulting	813-435-2650	MDeVore@acp-fl.com

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

The meeting began at 9:30am, with a roll call of attendees on the teleconference.

American provided an updated interim concept and ultimate concept layout as a follow-up to a previous meeting held on March 11, 2020. The ultimate concept shows the future condition with 2 express lanes in each direction as provided previously by FDOT/HNTB with the connection of the SB SR 56 (C-D Road Ramp). The interim concept shows just the SB SR 56 C-D Road ramp and its connection to existing conditions on SB I-75 and SB I-275. An overview of the interim concept design was reviewed. It was noted that the concept design has been updated to accommodate the future express lanes along I-75 and any transitions or potential "throw away" construction was shown on the concept drawings by color differences.

A review of each ramp movement was provided by Adam. Design elements of note are as follows:

- The SB SR 56 ramp (C-D Road) will be three lanes, barrier separated from SB I-75, with a separate bridge over Cypress Creek.
- The SB SR 56 ramp (C-D Road) will have a 2-2 split, just south of the Count Line Road bridge, where two lanes will travel to SB I-75 and two lanes will travel to SB I-275. This meets lane

balance criteria. The express lanes concept that American received showed this as a 2-1 split, not providing lane balance, so this is one change that was made.

- The SB SR 56 (C-D Road) ramp to SB I-75 will go under the three SB I-75 system ramp lanes which will connect to SB I-275. The express lanes concept showed this in reverse (C-D Road Ramp over the SB I-75 system ramp). As American reviewed this, flipping these minimizes the vertical challenge in getting up and over between County Line Road and the NB I-275 entrance system ramp bridge). With the SB SR 56 ramp traveling under the SB I-275 lanes, there will be a shorter bridge required with a skew angle that meets criteria.
- The SB C-D Road ramp to SB I-75 will taper to one lane prior to traveling under the two bridges coming from NB I-275 (one for NB I-75 and one for SR 56). The bridge embankment can be cut back for the bridge leading to NB I-75 to allow for the SB C-D Road ramp to be constructed without replacing the bridge in the interim condition. A normal crown curve was designed under the bridges to allow for future widening for the connection to the ultimate express lanes design. This also allows for meeting break over criteria where the ramp merges with SB I-75, which is at a 0.030 ft/ft superelevation rate in the opposite direction.
- None of the existing bridges will need to be reconstructed for the updated interim concept design provided. The SB I-75 to SB I-275 lanes will travel between the existing piers of the County Line Road bridge. An ITS equipment building will need to be relocated for this to occur.
- Where the SB I-75 system ramp lanes connect with the existing SB I-275 lanes, it is anticipated that overbuild will be used to simplify TCP and minimize reconstruction. The lanes will match the 0.02 ft/ft slope of the inside lane along I-275 with a reverse crown curve, leaving only the outside two lanes to be transitioned back to normal crown (sloped to the outside). Similarly, the existing SB I-275 lanes will be reused from the connection point mentioned above, to north of the County Line Road bridge.
- All curve lengths now meet the new requirements in the FDOT Design Manual (FDM). The express lanes concept provided to American had several C-D Road and Ramp curves not meeting the new FDM requirements.

Daniel Lauricello provided questions concerning the potential wetland impacts, and drainage floodplain compensation needs from 2000 and how it could be used. His questions were emailed to the attendees for consideration during the development of the PD&E documents. Those questions are attached.

It was requested that the final graphics for the interim and ultimate concept design show the existing pier locations for the County Line Road bridges.

American mentioned that they provided the work program update cost estimates to Ashley that reflect costs of the interim concept, split into one FPID number for work in Hillsborough County and one FPID number for work in Pasco County. In addition, the ROW needs were sent to Bill McTeer

Meeting was adjourned at approximately 10:00am.

Perez, Adam S.

From: Lauricello, Daniel <Daniel.Lauricello@dot.state.fl.us>
Sent: Friday, March 27, 2020 10:03 AM
To: Russo, Amber; Bogen, Kirk; Chin, Ronald; Urbonas, Allan; Henzel, Ashley; Waris, Abdul
Cc: Novotny, Jeffrey S.; Intriago, Daniel A.; Perez, Adam S.; DeVore, Mike
Subject: RE: (PD&E) I75/I275 SB FROM S OF COUNTY LINE RD TO SR 56: Revised Concept

Good Morning Everyone,

Due to the meeting being abbreviated I wanted to provide my comments by email. I worked on the original PD&E back in the early 2000s.

This project will have significant impacts to wetlands and floodplains. These impacts will likely drive the project and what is done with the roadway geometry. I suggest the following:

- As the wetlands and FP impacts will likely drive the project, I suggest a meeting with drainage and environmental permitting. Also a pre-application meeting with the SWFWMD would also be advised.
- The ponds may have been sized with extra stormwater treatment capacity. At one time we were designing the ponds for the 10-Lane interstate condition. Was this done on this project?
- The Existing FPCs might have also be designed for the 10-lane condition. Is there extra FP comp volume?
- There is a huge FDOT wetland mitigation site that at one time had excess wetland mitigation and excess floodplain mitigation. But I think it was built, Pre-2000s. Can FDOT still utilize the excess wetland mitigation and FP at that time?
- I suggest that preliminary FP impact volumes be established to attempt to get an order of magnitude of the FP impacts and attempt to figure out where you can mitigate for that impact. You may be able to do it in the past excess volume created.

Thanks,

Daniel M. Lauricello, P.E.
District Roadway Engineer - District VII
Roadway Design Section

State of Florida
Department of Transportation
11201 N. McKinley Drive, MS 7-800
Tampa, Florida 33612-6403
(813) 975-6083

-----Original Appointment-----
From: Russo, Amber <Amber.Russo@dot.state.fl.us>
Sent: Thursday, March 12, 2020 2:39 PM
To: Russo, Amber; Bogen, Kirk; Chin, Ronald; Lauricello, Daniel; Urbonas, Allan; Henzel, Ashley
Cc: Novotny, Jeffrey S.; Intriago, Daniel A.; Perez, Adam; DeVore, Mike
Subject: (PD&E) I75/I275 SB FROM S OF COUNTY LINE RD TO SR 56: Revised Concept

When: Friday, March 27, 2020 9:30 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: GoToMeeting

(PD&E) I75/I275 SB FROM S OF COUNTY LINE RD TO SR 56: Revised Concept
Fri, Mar 27, 2020 9:30 AM - 10:00 AM (EDT)

Please join my meeting from your computer, tablet or smartphone.

https://global.gotomeeting.com/join/970958133

You can also dial in using your phone.
(For supported devices, tap a one-touch number below to join instantly.)

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- One-touch: tel:+15713173122,,970958133#

Access Code: 970-958-133

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Meeting ID: 970 958 133
Or dial directly: 970958133@67.217.95.2 or 67.217.95.2##970958133

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https://global.gotomeeting.com/install/970958133

Ron, Allan, & Daniel- The PD&E team has revised the concept (attached) in order to accommodate the future expansion of I-75. Let's meet to discuss any questions or concerns. Thank you!

MEETING MINUTES

Meeting Date:	9/16/2020	**Date Issued:**	9/16/2020
Location:	Virtual (Teams Meeting)		
Project Name:	430573-4/I75/I275 SB FROM S OF COUNTY LINE RD TO SR 56		
Purpose:	Pond Siting Longlist Meeting		
Notes by:	Eric Nelson	**American Project #:**	5167733-010
Copies to:	Attendees		

Attendees	Representing	Fax or e-mail
Henzel, Ashley	FDOT D7	Ashley.Henzel@dot.state.fl.us
Bogen, Kirk	FDOT D7	Kirk.Bogen@dot.state.fl.us
Waris, Abdul	FDOT D7	Abdul.Waris@dot.state.fl.us
McTeer, Bill	FDOT D7	Bill.Mcteer@dot.state.fl.us
Rhinesmith, Robin	FDOT D7	Robin.Rhinesmith@dot.state.fl.us
Conner, Allison	FDOT D7	Allison.Conner@dot.state.fl.us
Geiger, Crystal	FDOT D7	Crystal.Geiger@dot.state.fl.us
Goss, Marcel	FDOT D7	Marcel.Goss@dot.state.fl.us
Novotny, Jeff	American	JNovotny@acp-fl.com
Salicco, Chris	American	CSalicco@acp-fl.com
Nelson, Eric	American	ENelson@acp-fl.com

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

The purpose of this meeting was to discuss the pond and floodplain compensation site alternatives for the proposed express lanes and southbound CD ramp on I-75, between from the I-275 interchange to the SR 56 interchange.

- JN briefly discussed the proposed roadway concept. Discussed both build alternatives and future consideration of express lanes. Discussed the need for pond siting and floodplain impacts.
- EN then went through the pond needs and FPC needs. The following items were noted during this discussion:
  - SMF J1 and J2 will be converted from wet detention to conservation pond.
    - Will need to excavated each pond deeper and modify the control structures.
    - This eliminates the need for additional pond sites within these basins.
  - County Line Rd is in kind replacement, whereas the map showed it as a future need if replaced
    - SMF B-1 and B-2 can be eliminated. This is most likely exempt from permitting

- I-275 NB Ramp is also an in-kind replacement
  - American will need to adjust calculations for SMF 800A-1 accordingly.
  - No alternative sites were needed because it is in the infield of the FDOT r/w.
- American will look at expanding the area for FPC J2-1 to also accommodate FPC J1-2
  - EN mentioned that it will still need to be divided into two FPC sites utilizing a berm.
- American will attempt bring J2-2 closer to the r/w for access purposes.
- American will move J2-3 to the east out of the way of the future Wesley Chapel Blvd extension.
- American will label County and FDOT owned land
  - Also review further if they could be used for FPC sites
- American will label Cypress Creek Preserve on east side of the I-75
- AW questioned if net improvement is required
  - EN answered that there are no impaired WBIDs
  - *Correction to statement: Cypress Creek is an OFW. Therefore 50% net improvement is required. However, the affected ponds will still have sufficient capacity and no expansion is necessary.*
- FDOT questioned whether we would look at modeling the FPC
  - *Confirmed after meeting - this was not included in American's scope and fee for this TWO.*
- *Other items emailed immediately following the meeting (per AH):*
  - *Include the existing and proposed R/W lines*
  - *Change the FPID number from the CSC contract to the project number*
  - *If there is a FPC site that is not adjacent to the R/W, we need to show an access easement*
  - *Add roadway labels*

THIS FORM IS INTENDED TO FACILITATE AND GUIDE THE DIALOGUE DURING A PRE-APPLICATION MEETING BY PROVIDING A PARTIAL "PROMPT LIST" OF DISCUSSION SUBJECTS. IT IS NOT A LIST OF REQUIREMENTS FOR SUBMITTAL BY THE APPLICANT.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
RESOURCE REGULATION DIVISION
PRE-APPLICATION MEETING NOTES

FILE NUMBER:

PA 407927

Date:	09/16/2020		
Time:	11:00		
Project Name:	SB I-75/I-275 Ramps from SR 56 PD&E Study		
District Engineer:	Scott VanOrsdale		
District ES:	Lauren Greenawalt		
Attendees:	Eric Nelson, PE, Chris Salicco		
County:	Pasco	**Sec/Twp/Rge:**	26, 27, 34 & 35/26/19, 3 & 4/27/19
Total Land Acreage:	N/A	**Project Acreage:**	unknown acres

Prior On-Site/Off-Site Permit Activity:

- ERP – 43033020.004

Project Overview:

- PD&E/PSR phase of project. Proposing to widen I-75 r/w to the west to accommodate new SB Ramp from SR 56 to I-275, modifications to existing ramps at I-75/I-275 interchange. Will require SMF(s) to treat new impervious. Three permitted in the interchange will be modified from wet treatment to conservation ponds. FPC sites also required.
- Project will modify existing permit, Individual Major Modification.
- Discussed utilizing storage modeling to show no adverse floodplain impacts where cup for cup cannot be provided.
- Discussed digging three existing ponds deeper to function better and reduce maintenance issues. Provide justification for removing the littoral zone.

Environmental Discussion: (Wetlands On-Site, Wetlands on Adjacent Properties, Delineation, T&E species, Easements, Drawdown Issues, Setbacks, Justification, Elimination/Reduction, Permanent/Temporary Impacts, Secondary and Cumulative Impacts, Mitigation Options, SHWL, Upland Habitats, Site Visit, etc.)

- Provide the limits of jurisdictional wetlands and surface waters. Roadside ditches or other water conveyances, including permitted and constructed water conveyance features, can be claimed as surface waters per Chapter 62-340 F.A.C. if they do not meet the definition of a swale as stated under Rule 403.803 (14) F.S.
- Provide appropriate mitigation using UMAM for impacts, if applicable.
- The site is located in the Hillsborough River ERP Basin. Mitigation Banks that serve this area include Hillsborough River and North Tampa. For an interactive map of permitted mitigation banks and their service areas, use this LINK.
- If the wetland mitigation is appropriate and the applicant is proposing to utilize mitigation bank credit as wetland mitigation, the following applies: Provide letter or credit availability or, if applicable, a letter of reservation from the wetland mitigation bank. The wetland mitigation bank current credit ledgers can be found out the following link: https://www.swfwmd.state.fl.us/business/epermitting/environmental-resource-permit, Go to “ERP Mitigation Bank Wetland Credit Ledgers”
- Demonstrate elimination and reduction of wetland impacts.
- Maintain minimum 15 foot, average 25 foot wetland conservation area setback or address secondary impacts.
- The project is proposing to attenuate/treat in wetlands. Please demonstrate that adverse impacts to the wetland hydro-periods will not occur by providing hydrographs of the 2.33 year mean annual storm. The graph should start and end at the pop-off elevation with Existing Condition and Proposed Condition hydrographs superimposed for comparison. Please provide a supporting narrative for the hydrographs explaining any variations that are shown. The invert of the agricultural ditches may be the existing ‘pop-off’ elevation, or SHWL of the wetland and may need to be considered when designing the storm water management system.
- Determine SHWL’s at pond locations, wetlands, and OSWs.
- Determine normal pool elevations of wetlands.

- Determine 'pop-off' locations and elevations of wetlands.
- As of October 1, 2017, the District will no longer send a copy of an application that does not qualify for a State Programmatic General Permit (SPGP) to the U.S. Army Corps of Engineers. If a project does not qualify for a SPGP, you will need to apply separately to the Corps using the appropriate federal application form for activities under federal jurisdiction. Please see the Corps' Jacksonville District Regulatory Division Sourcebook for more information about federal permitting. Please call your local Corps office if you have questions about federal permitting. Link: http://www.saj.usace.army.mil/Missions/Regulatory/Source-Book/

Site Information Discussion: (SHW Levels, Floodplain, Tailwater Conditions, Adjacent Off-Site Contributing Sources, Receiving Waterbody, etc.)

- Existing roadway/intersections – I-75, I-275; SR 54
- Watersheds – Cypress Creek
- WBIDs need to be independently verified by the consultant - WBID 1402 – Cypress Creek; not impaired at this time. Possible WBID 1440E – Cypress Creek (North); not impaired at this time. Possible WBID 1455 – Trout Creek; TMDL for Fecal Coliform and impaired for Escherichia.
- OFW – Cypress Creek, at least one pond will have a direct discharge.
- Document/justify SHWE's at pond locations, wetlands, and OSWs.
- Determine normal pool elevations of wetlands.
- Determine 'pop-off' locations and elevations of wetlands.
- Provide documentation to support tailwater conditions for quality and quantity design
- Proposed control structures in wetlands should be consistent with existing 'pop-off' elevations of wetlands; demonstrate no adverse impacts to wetland hydroperiod for up to 2.33yr mean annual storm.
- Minimum flows and levels of receiving waters shall not be disrupted.
- Contamination issues need to be resolved with the FDEP. Check FDEP MapDirect layer for possible contamination points within/adjacent to the project area. FDEP MapDirect Link
  - FDEP Site ID No. **9101790** located within or adjacent to site. Please verify with FDEP if any have current contamination issues.
  For known contamination within the site or within 500' beyond the proposed stormwater management system:
  - after the application is submitted, please contact FDEP staff listed below and provide them with the ERP Application ID # along with a mounding analysis (groundwater elevation versus distance) of the proposed stormwater management system that shows the proposed groundwater mound will not adversely impact the contaminated area. FDEP will review the plans submitted to the District and mounding analysis to determine any adverse impacts. Provide documentation from FDEP that the proposed construction will not result in adverse impacts. This is required prior to the ERP Application being deemed complete.
  - If a SWMS is to be constructed within a contamination zone area, a groundwater sample collected from the first aquifer water bearing zone (i.e. zone of saturation or first zone that the water table is encountered) will most likely be required.
  FDEP Contacts:
  - For projects located within Citrus, Hernando, Pasco, Hillsborough, Pinellas, Manatee, Polk and Hardee Counties: Yanisa Angulo yanisa.angulo@floridadep.gov
- Check for District owned lands over and adjacent to project area.
- Stormwater retention and detention systems are classified as moderate sanitary hazards with respect to public and private drinking water wells. Stormwater treatment facilities shall not be constructed within 100 feet of an existing public water supply well and shall not be constructed within 75 feet of an existing private drinking water well. Subsection 4.2, A.H.V.II.
- Any wells on site should be identified and their future use/abandonment must be designated.
- Are there any high water data, flooding complaints or issues onsite or nearby?
- District data collection site may be impacted by proposed construction. Contact data.maps@watermatters.org to coordinate relocation of District data collection site.

Water Quantity Discussions: (Basin Description, Storm Event, Pre/Post Volume, Pre/Post Discharge, etc.)

- Demonstrate that post development peak discharges from proposed project area will not cause an adverse impact for a 25-year, 24-hour storm event.
- Demonstrate that site will not impede the conveyance of contributing off-site flows.
- Demonstrate that the project will not increase flood stages up- or down-stream of the project area(s).
- Provide equivalent compensating storage for all 100-year, 24-hour riverine floodplain impacts if applicable. Providing cup-for-cup storage in dedicated areas of excavation is the preferred method of compensation~~.~~ if no impacts to flood conveyance are proposed and storage impacts and compensation occur within the same

basin. In this case, tabulations should be provided at 0.5-foot increments to demonstrate encroachment and compensation occur at the same levels. Otherwise, storage modeling will be required to demonstrate no increase in flood stages will occur on off-site properties, using the mean annual, 10-year, 25-year, and 100-year storm events for the pre- and post-development conditions.

- Please be aware that if there is credible historical evidence of past flooding or the physical capacity of the downstream conveyance or receiving waters indicates that the conditions for issuance will not be met without consideration of storm events of different frequency or duration, applicants shall be required to provide additional analyses using storm events of different duration or frequency than the 25-year 24-hour storm event, or to adjust the volume, rate or timing of discharges. [Section 3.0 Applicant's Handbook Volume II]

Water Quality Discussions: (Type of Treatment, Technical Characteristics, Non-presumptive Alternatives, etc.)

- Replace treatment function of existing ditches to be filled.
- Presumptive Water Quality Treatment for Alterations to Existing Public Roadway Projects:
  -Refer to Section 4.5 A.H.V.II for Alterations to Existing Public Roadway Projects.
  -Refer to Sections 4.8, 4.8.1 and 4.8.2 A.H.V.II for Compensating Stormwater Treatment, Overtreatment, and Offsite Compensation.
  -All co-mingled existing & new impervious that is proposed to be connected to a treatment pond will require treatment for an area equal to the co-mingled existing & new impervious (times ½" for dry treatment or 1" for wet treatment). This applies whether or not equivalent treatment concepts are used.
  -However, if equivalent treatment concepts are used it is possible to strategically locate the pond(s) so that the minimum treatment requirement may be for an area equivalent to the new impervious area only. That is, co-mingled existing & new impervious that is not connected to a treatment pond may bypass treatment (as per Section 4.5(2), A.H.V.II); if the 'total impervious area' that is connected to the treatment pond(s) is at least equivalent to the area of new impervious only. The 'total impervious area' that is connected to the pond(s) may be composed of co-mingled existing & new impervious.
  -Offsite impervious not required to be treated; but may be useful to be treated when using equivalent treatment concepts.
  -Existing treatment capacity displaced by any road project will require additional compensating volume. Refer to Subsection 4.5(c), A.H.V.II.
- Will acknowledge compensatory treatment to offset pollutant loads associated with portions of the project area that cannot be physically treated.
- Provide additional 50% treatment for any direct discharges to OFW. Refer to ERP Applicant's Handbook Vol. II Subsection 4.1(f).
- Please be advised that although use of isolated wetlands for ERP treatment purposes is permittable as per Section 4.1(a)(3), A.H.V.II, use of isolated wetlands for treatment purposes may not necessarily meet US Army Corps criteria.

Sovereign Lands Discussion: (Determining Location, Correct Form of Authorization, Content of Application, Assessment of Fees, Coordination with FDEP)

- The project may be located within state owned sovereign submerged lands (SSSL). Be advised that a title determination will be required from FDEP to verify the presence and/or location of SSSL.
- If use of SSSL is proposed, authorization will be required. Refer to Chapter 18-21, F.A.C. and Chapter 18-20, F.A.C. for guidance on projects that impact SSSL and Aquatic Preserves.

Operation and Maintenance/Legal Information: (Ownership or Perpetual Control, O&M Entity, O&M Instructions, Homeowner Association Documents, Coastal Zone requirements, etc.)

- The permit must be issued to entity that owns or controls the property.
- Provide evidence of ownership or control by deed, easement, contract for purchase, etc. Evidence of ownership or control must include a legal description. A Property Appraiser summary of the legal description is NOT acceptable.

Application Type and Fee Required:

- SWERP Individual Major Modification – Sections A, C, and E of the ERP Application.
- < 40 acres of project area and < 3 wetland or surface water impacts - $1,082.00 Online Submittal
- < 100 acres of project area and <10 acre of wetland or surface water impacts - $1,245.75
- Consult the fee schedule for different thresholds.

Other: (Future Pre-Application Meetings, Fast Track, Submittal Date, Construction Start Date, Required District Permits – WUP, WOD, Well Construction, etc.)

- An application for an individual permit to construct or alter a dam, impoundment, reservoir, or appurtenant work, requires that a notice of receipt of the application must be published in a newspaper within the affected area. Provide documentation that such noticing has been accomplished. Note that the published notices of receipt for an ERP can be in accordance with the language provided in Rule 40D-1.603(10), F.A.C.

- Provide a copy of the legal description (of all applicable parcels within the project area) in one of the following forms:
  a. Deed with complete Legal Description attachment.
  b. Plat.
  c. Boundary survey of the property(ies) with a sketch.

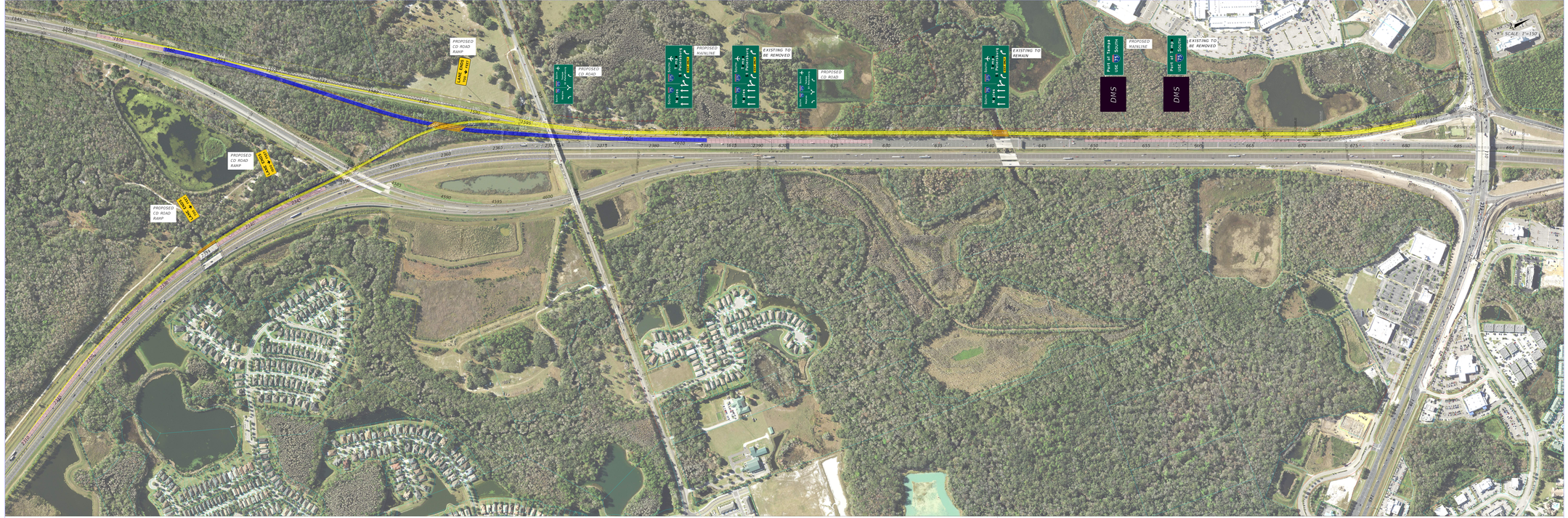
- The plans and drainage report submitted electronically must include the appropriate information required under Rules 61G15-23.005 and 61G15-23.004 (Digital), F.A.C. The following text is required by the Florida Board of Professional Engineers (FBPE) to meet this requirement when a digitally created seal is not used and must appear where the signature would normally appear:

  ELECTRONIC (Manifest): *[NAME] State of Florida, Professional Engineer, License No. [NUMBER] This item has been electronically signed and sealed by [NAME] on the date indicated here using a SHA authentication code. Printed copies of this document are not considered signed and sealed and the SHA authentication code must be verified on any electronic copies*

  DIGITAL: *[NAME] State of Florida, Professional Engineer, License No. [NUMBER]; This item has been digitally signed and sealed by [NAME] on the date indicated here; Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.*
- Provide soil erosion and sediment control measures for use during construction. Refer to ERP Applicant's Handbook Vol. 1 Part IV Erosion and Sediment Control.
- Demonstrate that excavation of any stormwater ponds does not breach an aquitard (see Subsection 2.1.1, A.H.V.II) such that it would allow for lesser quality water to pass, either way, between the two systems. In those geographical areas of the District where there is not an aquitard present, the depth of the pond(s) shall not be excavated to within two (2) feet of the underlying limestone which is part of a drinking water aquifer. [Refer to Subsection 5.4.1(b), A.H.V.II]
- If lowering of SHWE is proposed, then burden is on Applicant to demonstrate no adverse onsite or offsite impacts as per Subsection 3.6, A.H.V.II. Groundwater drawdown 'radius of influence' computations may be required to demonstrate no adverse onsite or offsite impacts. Please note that new roadside swales or deepening of existing roadside swales may result in lowering of SHWE. Proposed ponds with control elevation less than SHWE may result in adverse lowering of onsite or offsite groundwater.

APPENDIX E

Preliminary Conceptual Signing Plan



MASTER SIGNAGE PLAN OVERHEAD AND CANTILEVER SIGNS ONLY

SR 56 SOUTHBOUND C-D ROAD / RAMPS TO I-75/I-275
I-75 FROM SOUTH OF THE I-75/I-275 APEX TO SR 56

WPI Segment No. 430573-4

APPENDIX F

Two-Lane On-Ramp Technical Memo

Patel, Greene & Associates, LLC

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TECHNICAL MEMORANDUM

TO: Gautom Dey, PE; D7 District Structures Design Office

FROM: Joseph Losaria, PE

Patel, Greene & Associates, LLC

SUBJECT: I-275 / I-75 Apex Southbound Collector-Distributor (SBCD), One-Lane and Two-Lane Ramp Alternatives

Hillsborough County

FPID: 430573-3-32-01

DATE: April 15, 2022

Introduction

Patel, Greene & Associates, LLC (PGA) was tasked by the D7 District Structures Design Office to evaluate one-lane and two-lane ramp alternatives under two existing bridges for the southbound collector-distributor (SBCD) road proposed in the PD&E Study, FPID 254552-1-22-19. The PD&E includes a concept for a one-lane ramp under the first span of Bridge Nos. 100411 and 100833. This memorandum will summarize different alternatives evaluated by PGA and the cost difference of a two-lane ramp alternative compared to the PD&E one-lane ramp configuration, modified as described under **One-lane Ramp Evaluation** on Page 2.

The goal of this evaluation initially was to confirm the one-lane ramp alternative from the PD&E is constructable, given the geometry of the existing bridges, the sloped embankment conditions, and the horizontal / vertical clearance constraints. However, given the anticipated future traffic volumes identified during development of the Interchange Modification Report (IMR), evaluations were added for a two-lane ramp beneath the bridges. The findings of this evaluation can help the Department propose a final ramp alternative in the IMR, PD&E, and design concept plans. This evaluation was performed based on limited information, including As-built Plans and a field review. Preliminary geometry was performed without the benefit of survey data.

Existing Conditions

Bridge No. 100411 carries I-275 NB over I-75 to eventually merge all I-275 NB traffic onto I-75 NB. The bridge was built in 1982 and has a Sufficiency Rating of 85.9 and a Health Index of 93.91. It is a four-span continuous steel plate girder bridge with sloped embankment in the first span, where the new ramp is proposed.

Bridge No. 100833 is adjacent to Bridge No. 100411 and is a dedicated ramp bridge carrying the I-275 NB Off-Ramp to SR 56 over I-75. The bridge was built in 2010 and has a Sufficiency Rating of 96.2 and a Health Index of 99.89. It is a two-span continuous steel plate girder bridge with end bents behind wraparound MSE walls at a sufficient offset from the proposed ramp.

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The area around these bridges is commonly referred to as the I-275 / I-75 Apex. See ***Figure 1*** below for the plan view of the bridges from the as-built plans for Bridge No. 100833.

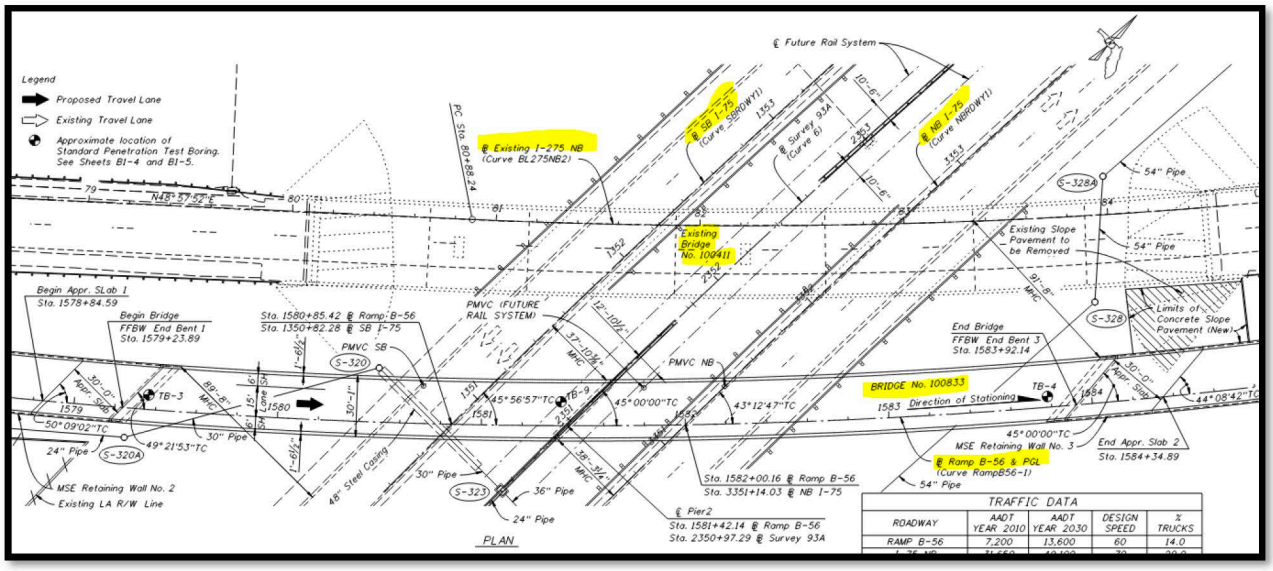

***Figure 1**: Plan View of Bridge Nos. 100411 and 100833 over I-75*

Proposed Conditions

The PD&E Study proposed a re-alignment of SB I-75 to SB I-275, a barrier separated SBCD road, and a dedicated ramp that will merge traffic from SB SR 56 onto SB I-75, south of the Apex. This new SBCD ramp will take the traffic under the above-mentioned existing bridges.

One-lane Ramp Evaluation

The PD&E Study included a one-lane ramp (merged into one-lane from a two-lane ramp) under Bridge Nos. 100411 and 100833. Based on the additional geometry evaluations performed by PGA, the one-lane ramp alternative was confirmed to be a viable and constructable alternative. The geometry would result in a 15-ft travel width and 6-ft shoulders with shoulder barrier walls under the existing bridges. There is a one-lane ramp scenario with an acceptable vertical clearance under Bridge No. 100411, and the horizontal clearance is maintained by the introduction of a retaining wall to support the existing sloped embankment as it is cut-back to provide room for the ramp. The retaining wall would be a Schnabel Wall, a Soldier Pile Wall, a Soil-Nail Wall, or another wall system. There will be some challenges associated with wall design and construction due to the existing battered end bent piles and limited headroom, but a wall is possible. Based on correspondence with the Department, the one-lane alternative will be modified to include widening of the I-75 SB bridge over Cypress Creek (Bridge No. 100412) to provide the required acceleration lane distance. **The findings of this evaluation are that a one-lane ramp is constructable and would not require any Design Exceptions or Design Variations.**

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Two-lane Ramp Evaluations

A few alternatives were evaluated to provide a two-lane ramp connection from the SBCD road from SR 56 to southbound I-75. The alternatives are summarized below. Similar to the one-lane ramp, the two-lane ramp alternatives require a retaining wall to support the sloped embankment at Bridge No. 100411.

An initial alternative was evaluated which would provide two 12-ft travel lanes, a 12-ft outside shoulder (10-ft paved), and an 8-ft inside shoulder (4-ft paved) to meet design criteria in the 2022 Florida Design Manual (FDM). Full-width paved shoulders and shoulder barriers would be required in the vicinity of the two bridges. To fit the full typical section of the ramp within the first span of Bridge No. 100411, a curve radius of 1146' was used. The departing alignment forced the inside travel lane of the two-lane ramp to encroach into the outside travel lane of southbound I-75. For this reason, the initial alternative was considered not feasible (See ***Appendix E*** for Initial Alternative (unfeasible) graphics).

Two-lane Alternative 1

Alternative 1 was evaluated to improve the encroachment issues from the initial unfeasible alternative, but results in reduced shoulder widths in order to fit a two-lane ramp within the first span of Bridge No. 100411. A larger curve radius than the one used in the initial alternative was selected to generate a minimum 5-ft outside shoulder and a 2.8-ft inside shoulder. The radius of the curve beneath the bridge requires a 3.6% superelevation. This alternative requires the two-lane ramp to remain as a barrier separated roadway from the southbound I-75 lanes (superelevated in the opposite direction at 3.7%) since the maximum 4% change in cross slope between lanes per FDM Figure 211.2.1 would be violated. The shoulder barriers would need to transition to a Special 44" Wall Shielding Barrier (outside) and to a Special 44" Shoulder barrier and then to a Median Barrier – Grade-Separated (inside). The alignment south of Bridge No. 100833 requires a separate ramp bridge structure over Cypress Creek. Additionally, the final merge location of the two-lane ramp with southbound I-75 would be located 2900' south of the Cypress Creek bridge. While this alternative is constructable, it is considered undesirable due to the 5-ft outside and 2.8-ft inside shoulder widths (which would require a Design Exception), the deficient curve length (406.35-ft, which would require a Design Variation), the need for a separate ramp bridge structure over Cypress Creek, and the extended roadway length necessary to connect to southbound I-75. (See ***Appendix E*** for Alternative 1 graphics)

Two-lane Alternative 2

Alternative 2 includes alignment modifications from just south of the existing County Line Road bridge to the connection with southbound I-75. This two-lane ramp alternative consists of two 12-ft travel lanes, a 12-ft outside shoulder (10-ft paved), and an 8-ft inside shoulder (4-ft paved) per FDM, Table 211.4.1. The northern end bent of the new ramp bridge for southbound I-75 to southbound I-275 will need to be located to account for the required horizontal sight distance of the two-lane SBCD road. Full-width paved shoulders and shoulder barriers would be required in the vicinity of the two existing bridges.

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In order to fit the two-lane ramp alignment beneath Bridge Nos. 100411 and 100833, the two-lane ramp shoulder widths need to be reduced to a minimum of 5.0-ft on the inside and outside. The shoulder reduction would be required for a length of 250-ft out of the total ramp length of 5,050-ft, which is about 0.5% of the total ramp length. Since the PD&E and this evaluation did not include survey, the final shoulder widths could vary 6-in (+/-). There is also the potential to reduce the width of one of the travel lanes from 12-ft to 11-ft in order to increase the available shoulder width, but an additional Design Exception would be required. Similar to Alternative 1, use of a Special 44" Shoulder Barrier under the bridges allows for no setback distance from the top face of the barrier to above ground hazards behind the barrier. The Special 44" Shoulder Barrier allows for the inside shoulder to be located under the pier cap of Bridge No. 100411, while still maintaining the required vertical clearance. For this evaluation, 16.5-ft was used for minimum vertical clearance, but per FDM Table 260.6.1, the vertical clearance could be as little as 16.0-ft for new construction affecting an existing bridge. It is anticipated that details will need to be developed for a Special Shoulder Barrier footing (Modifications to Standard Plans, Index 521-001), given the presence of a shallow spread footing of the existing pier. See ***Appendix B*** for a concept for the Special 44" Shoulder Barrier. The depth of the existing pier spread footing and the available vertical clearance value were measured in a field review on March 25, 2022 (See ***Appendix D*** for field review photos).

The proposed 5-ft minimum shoulder widths are located at pinch points, staggered from each other. This arrangement provides for a minimum of 37-ft of total pavement width between the shoulder barriers within the deficient shoulder width areas. In the unlikely event a vehicle is disabled at either of the shoulder width pinch points, two lanes of traffic would still be accommodated and operable.

A shoulder width Design Exception will be required for the substandard shoulder widths. Additionally, a Design Variation for curve length will be required for the normal crown curve (835-ft) that connects to the southbound I-75 lanes as it does not meet the minimum 900-ft length per the FDM, Table 211.7.1, for a ramp with a Design Speed of 60mph.

Where the two-lane ramp connects to the southbound I-75 lanes, one lane is merged north of the existing I-75 SB mainline bridge over Cypress Creek (Bridge No. 100412) and the other lane extends south as an auxiliary lane for a total of 2,500-ft from the entrance as required by the 2011 AASHTO, 6th Edition, page 10-120. A minor bridge widening of existing Bridge No. 100412 is required to provide the additional ramp lane merge, but it is similar to the modified one-lane ramp alternative.

Although Alternative 2 requires a Design Exception for shoulder width and a Design Variation for curve length, there are substantial benefits to these concessions. In order to provide full shoulder widths that meet FDM criteria, Bridge No. 100411 would need to be reconstructed at a substantial cost. This change would also require a temporary roadway and a temporary bridge to maintain traffic. As such, the Design Exception and Design Variation are more feasible for this new ramp than a bridge replacement. Alternative 2 is the preferred two-lane ramp alternative due to the practicality, greatest shoulder width beneath the existing bridges, and similar widening of the

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Cypress Creek bridge. **The findings of this evaluation are that a two-lane ramp is constructable, but it would require a Design Exception and a Design Variation.**

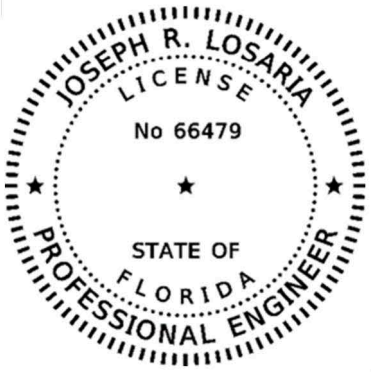
Appendix A shows the preferred two-lane alternative (Alternative 2) overlaying the PD&E one-lane ramp alternative shown in the Preliminary Engineering Report dated November 2021.

Estimated Comparative Construction Cost

The preferred two-lane ramp alternative (Alternative 2) would increase the construction cost by approximately $500K compared to the one-lane ramp in the PD&E Study (as modified herein) due to the additional roadway area and length needed to merge onto SB I-75. ***Appendix C*** shows a breakdown of the increase in costs.

Conclusion

The findings of this evaluation are that **both a one-lane ramp and a two-lane ramp under Bridge Nos. 100411 and 100833 are feasible and constructable**. Alternative 2 is the preferred alternative for the two-lane ramp, but a Design Exception for shoulder width and a Design Variation for curve length would be required. The cost of the two-lane ramp is approximately $500K higher than the one-lane ramp, but overall, the additional cost is minimal compared to the long-term benefits of the second ramp lane. ***Appendix E*** includes some of the correspondence with the Department as these evaluations were being performed. Based on the information supplied within this memorandum, the Department should be able to propose a final ramp alternative in the IMR, PD&E, and in the design concept plans.



This item has been digitally signed and sealed by

Joseph R Losaria
2022.04.25 16:12:35 -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.

Patel, Greene & Associates, LLC
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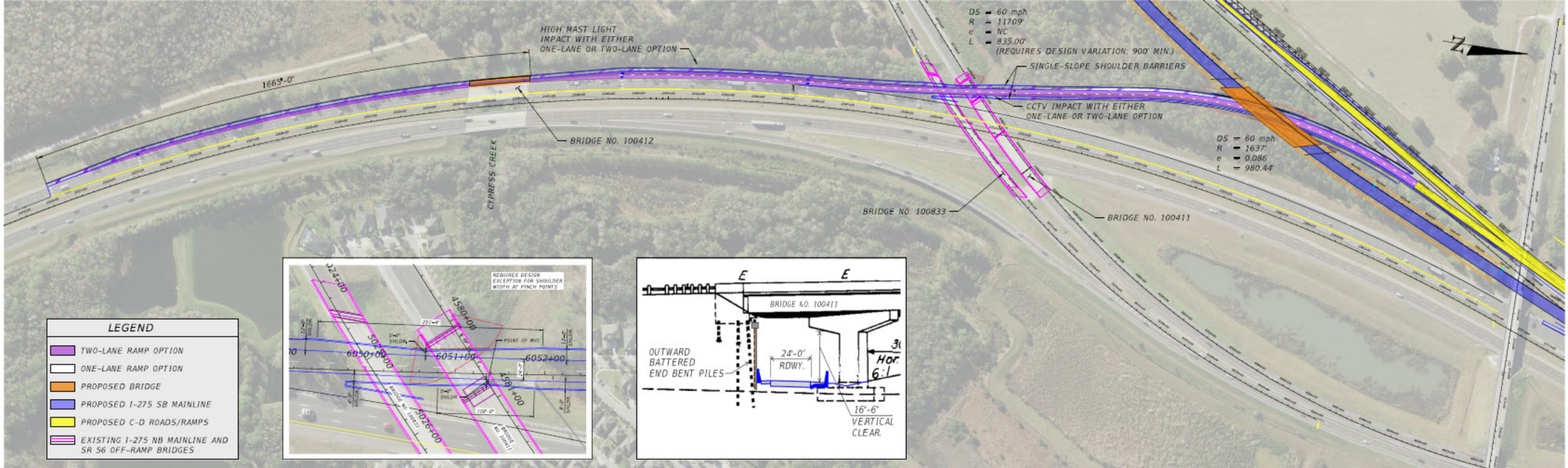
Temple Terrace, FL 33637
Joseph R. Losaria, P.E. No. 66479

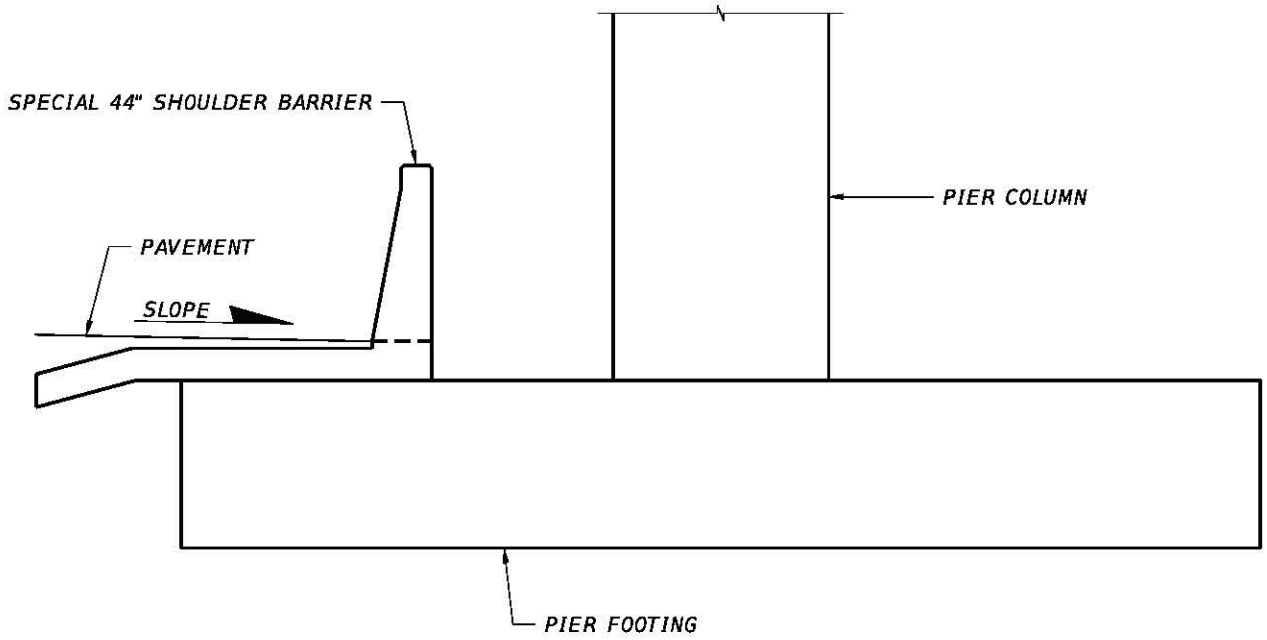
Appendix A

Roll Plot: Two-lane Ramp (Alternative 2) overlaying the PD&E One-lane Ramp


HIGH MAST LIGHT
IMPACT WITH EITHER
ONE-LANE OR TWO-LANE OPTION
1663'-0"
BRIDGE NO. 100412
CYPRESS CREEK
DS = 60 mph
R = 1170'
e = NC
L = 835.00'
(REQUIRES DESIGN VARIATION: 900' MIN.)
SINGLE-SLOPE SHOULDER BARRIERS
CCTV IMPACT WITH EITHER
ONE-LANE OR TWO-LANE OPTION
DS = 60 mph
R = 1637'
e = 0.086
L = 980.44'
BRIDGE NO. 100833
BRIDGE NO. 100411
N
LEGEND
TWO-LANE RAMP OPTION
ONE-LANE RAMP OPTION
PROPOSED BRIDGE
PROPOSED I-275 SB MAINLINE
PROPOSED C-D ROADS/RAMPS
EXISTING I-275 NB MAINLINE AND SR 56 OFF-RAMP BRIDGES
6024+00
6050+00
6051+00
6052+00
6059+00
6025+00
4580+00
REQUIRES DESIGN EXCEPTION FOR SHOULDER WIDTH AT PINCH POINTS
POINT OF MVC
BRIDGE NO. 100411
BRIDGE NO. 100412
E
E
BRIDGE NO. 100411
OUTWARD
BATTERED
END BENT PILES
24'-0"
RDWY.
Hor.
6:1
16'-6"
VERTICAL
CLEAR.

Appendix B

Special 44” Shoulder Barrier (Concept)



SPECIAL 44" SHOULDER BARRIER DETAIL

Concept:
- Modification of the 44" Shoulder Barrier from Index 521-001, Sheet 16 of 26.
- Introduces a footing similar to a Junction Slab from Index 521-610, Sheet 3 of 3.
- Include an organic felt bond breaker material below footing.
- Minimum length of Special 44" Shoulder Barrier to be determined by impact resistance.

Benefit:
- Shallow footing maximizes vertical clearance above the shoulder.
- Allows for a 6" asphalt depth at the edge of the footing, similar to Index 521-610.

Appendix C

Estimated Cost Increase: Two-lane Ramp cost beyond the Modified One-lane Ramp cost

ENGINEER'S ESTIMATE

FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 7

FINANCIAL PROJECT ID # :	430573-3-52-01
PROJECT DESCRIPTION:	I-75 / I-275, From S. of County Line Rd. to County Line Rd. Cost Comparison of 1-lane vs 2-lane CD Road from SB SR 56
PAY ITEM SPEC YEAR:	January 2022
SUBMITTAL TYPE:	Phase I Estimate
COUNTY:	Hillsborough
DATE:	
ENGINEERING CONSULTANT FIRM:	Patel, Greene & Associates, LLC
CONTACT NAME:	
PHONE NUMBER:	(813) 978-3100
FILE VERSION:	EE_11-09-21_Rev32
PAGE NUMBER:	1 of 1

COMPONENT GROUPS

100 - STRUCTURES	*NOT USED*		
200 - ROADWAY			$409,485.83
300 - SIGNING & PAVEMENT MARKINGS	*NOT USED*		
400 - LIGHTING	*NOT USED*		
500 - SIGNALIZATION	*NOT USED*		
550 - ITS	*NOT USED*		
600 - LANDSCAPE / PERIPHERALS	*NOT USED*		
700 - UTILITIES	*NOT USED*		
800 - ARCHITECTURAL	*NOT USED*		
900 - MASS TRANSIT	*NOT USED*		
1000 - INVALID & OTHER ITEMS	*NOT USED*		
	COMPONENT SUB-TOTAL		$409,485.83
(102-1) MOT (Maintenance of Traffic)		5%	$20,474.29
	SUB-TOTAL		$429,960.12
(101-1) MOB (Mobilization)			
	SUB-TOTAL		$429,960.12
PU (Project Unknowns)		15%	$64,494.02
	SUB-TOTAL		$494,454.14
(999-25) Initial Contingency (Do Not Bid)			
	PROJECT GRAND TOTAL		**$494,454.14**

NOTES:

ENGINEER'S ESTIMATE
FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 7

FINANCIAL PROJECT ID:	430573-3-52-01
FILE VERSION:	EE_11-09-21_Rev32
PAGE NUMBER:	

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
0101 1	MOBILIZATION			See Summary Sheet	
0102 1	MAINTENANCE OF TRAFFIC		5%	See Summary Sheet	
0999 25		LS	1		
0110 1 1	CLEARING & GRUBBING	AC	2	$16,827.65	$33,318.75
0120 6	EMBANKMENT	CY	4800	$10.56	$50,688.00
0160 4	TYPE B STABILIZATION	SY	6147	$4.55	$27,968.85
0285701	OPTIONAL BASE,BASE GROUP 01	SY	2116	$14.15	$29,941.40
0285709	OPTIONAL BASE,BASE GROUP 09	SY	869	$16.54	$14,373.26
0285712	OPTIONAL BASE,BASE GROUP 12	SY	2863	$25.27	$72,348.01
0334 1 53	SUPERPAVE ASPH CONC, TRAF C, PG76-22	TN	1242	$110.81	$137,626.02
0337 7 25	ASPH CONC FC,INC BIT,FC-5,PG76-22	TN	149	$143.94	$21,447.06
0521 72 40	SHLDR CONC BARRIER,38" OR 44" HEIGHT	LF	78	$279.16	$21,774.48
		COMPONENT TOTAL			$409,485.83

	Two-lane Alt.	One-lane Alt.	Difference	Total Difference	
Friction Course FC-5	85691 SF	52099 SF	33592 SF	149 TN	
Type SP (Traffic C) (PG 76-22)(3")	49432 SF	41609 SF	7823 SF	143 TN	1242 Total for all SP
Type SP (Traffic C) (PG 76-22)(5.5")	36259 SF	10490 SF	25769 SF	866 TN	
Type SP (Traffic C) (PG 76-22)(2") - Paved Shoulders	55341 SF	36293 SF	19048 SF	233 TN	
OBG 12	36259 SF	10490 SF	25769 SF	2863 SY	
OBG 9	49432 SF	41609 SF	7823 SF	869 SY	
OBG 1	55341 SF	36293 SF	19048 SF	2116 SY	
Type B Stabilization	154392 SF	99072 SF	55320 SF	6147 SY	
Barrier - 44" Shoulder	844 FT	766 FT	78 FT	78 FT	
Embankment				4800 CY	Assume 12' lane x 3600' x 3' depth
Clearing and Grubbing				1.98 AC	Assume 24' x 3600'

Appendix D

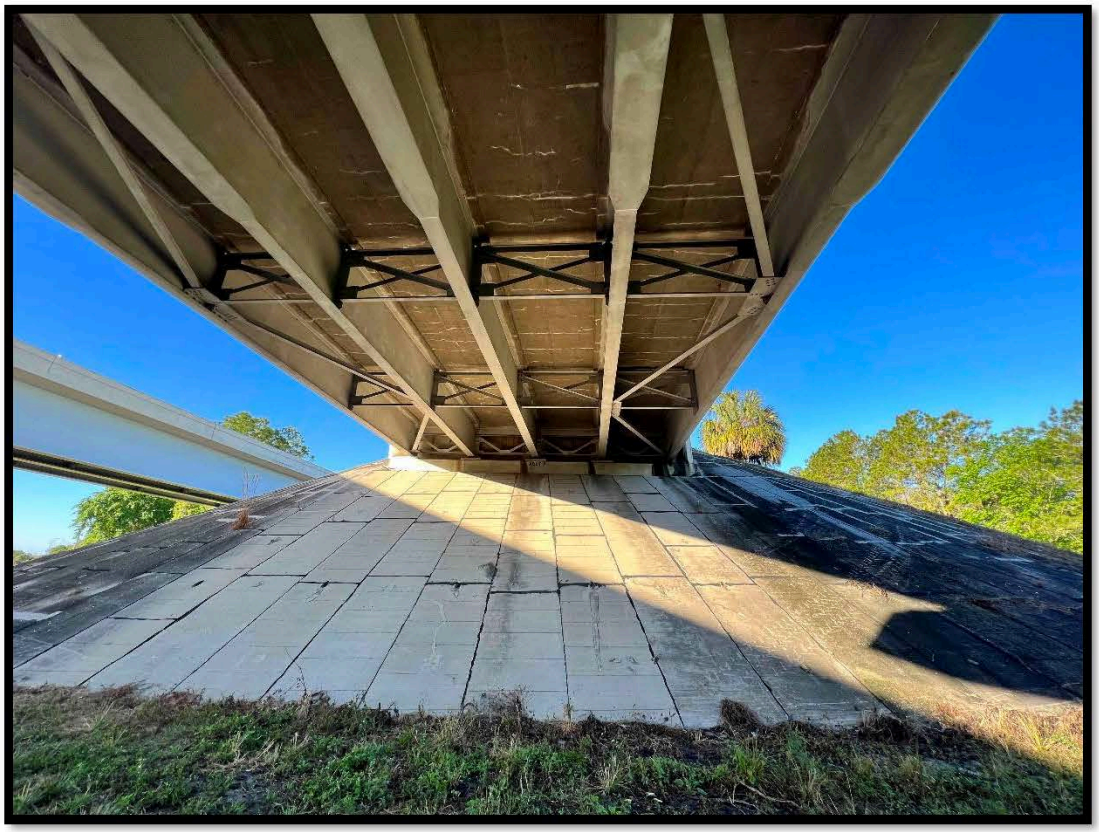
Field Review Photos

Looking north near proposed ramp location; I-75 SB (right), Bridge No. 100833 (close) and 100411 (far).

Looking south near proposed ramp location; Bridge No. 100411 (close) and 100833 (far)

Spread Footing Depth Probe; Bridge No. 100411 – Pier 2 (first pier)

Spread Footing Depth Measurement (~1.5’); Bridge No. 100411 – Pier 2 (first pier)



Looking West at Slope Embankment; Bridge No. 100411 – End Bent 1

Looking East at Pier; Bridge No. 100411 – Pier 2 (first pier)

Appendix E

Correspondence

Correspondence 1:
DSDO deliverables and action-items

From: Joseph Losaria
To: Dey, Gautom; Cristina.Suarez (Cristina.Suarez@dot.state.fl.us)
Cc: Chris Cromwell; Adam Perez
Subject: RE: I-275/I-75 Apex SBCD - Two-Lane Ramp Exhibit
Date: Wednesday, April 6, 2022 8:46:57 AM

Cristina/Gautom,

I think that was a productive meeting yesterday. With Richard and Waddah onboard with the concept, it looks like we can wrap up this task soon. Based on the discussions yesterday, the action items for PGA are the following:

- Prepare a brief report to summarize the alignment alternatives developed for the two-lane ramp. I think we can have this ready by end of next week. If we have that time, I think we can thoroughly document the alternatives evaluated and also summarize the coordination and discussions with the District. The report we will prepare will become an appendix to the IMR that Waddah's group is preparing.
- Send DGN files over to Kirk Bogen and Amber Russo of the final alternative so that the PD&E and PER team can evaluate and incorporate. I plan on sending this out together with the report above.
- Send list of anticipated design variations, design exceptions and the preliminary cost estimate to the Kirk Bogen and Amber Russo also to evaluate and incorporate in the PD&E and PER. I plan on sending this out together with the report above.

Let me know if I missed anything else or if anything else is needed. Thanks.

Joseph Losaria, P.E.
VP/Structures Group Manager

Patel, Greene & Associates, LLC (PGA)
12570 Telecom Drive, Temple Terrace, FL 33637
Office: (813) 978-3100, Ext. 302 | Cell: (813) 598-7557 | Email: Joseph.Losaria@patelgreene.com

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From: Joseph Losaria
Sent: Friday, April 1, 2022 3:25 PM
To: Dey, Gautom <Gautom.Dey@dot.state.fl.us>; Cristina.Suarez (Cristina.Suarez@dot.state.fl.us) <cristina.suarez@dot.state.fl.us>
Cc: Chris Cromwell <Chris.Cromwell@patelgreene.com>; Jill Lukas <Jill.Lukas@patelgreene.com>; Adam Perez <Adam.Perez@patelgreene.com>
Subject: RE: I-275/I-75 Apex SBCD - Two-Lane Ramp Exhibit

Cristina and Gautom,

Attached is an updated exhibit incorporating the comments we had discussed yesterday. This exhibit also now includes the elevation view at the pinch point of the ramp.

I've also attached a brief agenda for next week's meeting. Please review and feel free to add any other discussion items you would like to bring up at the meeting. PGA can cover Items 4 and 5 on the agenda. I was hoping DSDO can cover Items 1 through 3 if that's ok.

Take a look and we can discuss further on Monday if any other changes are needed. Adam and myself plan to attend in-person next week.

Thank you and have a great weekend.

Joseph Losaria, P.E.
VP/Structures Group Manager

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From: Joseph Losaria
Sent: Wednesday, March 30, 2022 5:44 PM
To: Dey, Gautom <Gautom.Dey@dot.state.fl.us>; Cristina.Suarez (Cristina.Suarez@dot.state.fl.us) <cristina.suarez@dot.state.fl.us>
Cc: Chris Cromwell <Chris.Cromwell@patelgreene.com>; Jill Lukas <Jill.Lukas@patelgreene.com>; Adam Perez <Adam.Perez@patelgreene.com>
Subject: I-275/I-75 Apex SBCD - Two-Lane Ramp Exhibit

Gautom and Cristina,

Attached is the draft version of the roll plot exhibit for the two-lane ramp alignment we had discussed this past Monday. We are sending for your review and feedback so that we have time to incorporate any additional comments DSDO may have.

The one-lane ramp PD&E geometry on this exhibit is based on the DGN file we received from Peter Maass. We noticed the linework in that DGN file varies slightly from the PD&E PDF exhibits we have received. We are assuming the DGN file from Peter is the latest version.

We will be working on the elevation view you had requested tomorrow and will include it as an additional inset in this roll plot. Send us any DSDO comments before this Friday, 04/01 so that we can incorporate prior to the D7 meeting next week. We did get the meeting invite for next week on Tuesday, 04/05 and will likely attend in person.

Let us know if you have any questions. Thank you.

Joseph Losaria, P.E.
VP/Structures Group Manager

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Correspondence 2:
PD&E Files and One-lane Assumptions

From: Joseph Losaria
To: Chris Cromwell
Subject: FW: I-75 I-275 SR 56 SB CD Road
Date: Wednesday, April 13, 2022 9:08:56 AM
Attachments: 2-LaneEntrance-OvertopOption_20220311.pdf

FYI

From: Maass, Peter <Peter.Maass@dot.state.fl.us>
Sent: Wednesday, April 6, 2022 10:03 AM
To: Joseph Losaria <Joseph.Losaria@patelgreene.com>
Cc: Adam Perez <Adam.Perez@patelgreene.com>; Suarez, Cristina <Cristina.Suarez@dot.state.fl.us>; Dey, Gautom <Gautom.Dey@dot.state.fl.us>; Russo, Amber <Amber.Russo@dot.state.fl.us>
Subject: RE: I-75 I-275 SR 56 SB CD Road

I am not aware that a PD&E exhibit had moved forward enough to show the widening of Cypress Creek Bridge.

When our analysis showed that a two lane ramp was needed, a couple of scenarios for a two lane option were looked at which included replacing the bridge over I-75 or putting the ramp on a third level. We had provided comments that even with a one lane going under the I-275 bridge that Cypress Creek would need be widened to get the needed acceleration lane distance.

Hope that helps.

Peter Maass, PE, PTOE
District Seven Project Development and Analysis
peter.maass@dot.state.fl.us
813-975-6425

From: Joseph Losaria <Joseph.Losaria@patelgreene.com>
Sent: Wednesday, April 6, 2022 9:02 AM
To: Maass, Peter <Peter.Maass@dot.state.fl.us>
Cc: Adam Perez <Adam.Perez@patelgreene.com>; Suarez, Cristina <Cristina.Suarez@dot.state.fl.us>; Dey, Gautom <Gautom.Dey@dot.state.fl.us>
Subject: RE: I-75 I-275 SR 56 SB CD Road

Peter,

At the meeting yesterday, you had mentioned the PD&E anticipates widening the Cypress Creek bridge as well for the one-lane ramp. Do you know if there are updated PD&E exhibits that show this concept? Or did they just include the bridge widening in their LRE but have not updated their PD&E concepts yet to show this bridge widening for the one-lane ramp?

Just wanted to properly document that in the report we will be preparing for the two-lane ramp.

Thanks.

Joseph Losaria, P.E.
VP/Structures Group Manager

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Office: (813) 978-3100, Ext. 302 | Cell: (813) 598-7557 | Email: Joseph.Losaria@patelgreene.com

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From: Maass, Peter <Peter.Maass@dot.state.fl.us>
Sent: Thursday, March 31, 2022 3:32 PM
To: Joseph Losaria <Joseph.Losaria@patelgreene.com>
Cc: Chris Cromwell <Chris.Cromwell@patelgreene.com>; Suarez, Cristina <Cristina.Suarez@dot.state.fl.us>; Dey, Gautom <Gautom.Dey@dot.state.fl.us>
Subject: RE: I-75 I-275 SR 56 SB CD Road

Joe,
I just returned your call. Yes the original concept developed was trying to avoid the bridge over Cypress Creek. We recognize that this bridge will need to be widened.

Let me know if you need further information.

Peter Maass, PE, PTOE
District Seven Project Development and Analysis
peter.maass@dot.state.fl.us
813-975-6425

From: Joseph Losaria <Joseph.Losaria@patelgreene.com>
Sent: Thursday, March 31, 2022 3:16 PM
To: Maass, Peter <Peter.Maass@dot.state.fl.us>
Cc: Cromwell, Chris <Chris.Cromwell@PatelGreene.com>; Suarez, Cristina <Cristina.Suarez@dot.state.fl.us>; Dey, Gautom <Gautom.Dey@dot.state.fl.us>
Subject: FW: I-75 I-275 SR 56 SB CD Road

Peter,

I had left you a voicemail earlier as well. Me and Chris Cromwell were assisting D7 DSDO with the task from the emails below. We just wanted to ask about the DGN file we received, see

attached.

When we referenced the DGN file and reviewed it, there were two models in the DGN file. One was called "OriginalDesign" and the other model was called "LRE Calculations". It looks like the "OriginalDesign" model matches the PD&E concept plans PDF file and the "LRE Calculations" model varies some. We are assuming the latest concept for the PD&E should be the "OriginalDesign" model to match the linework with the PD&E PDF file sent. Is this assumption correct?

The main difference we are seeing is that the "LRE Calculations" model file includes a bridge widening on the I-75 SB Mainline Bridge over Cypress Creek. It appears the latest PD&E concept does not anticipate including that bridge widening, correct?

Let us know when you have a moment. Thank you.

Joseph Losaria, P.E.
VP/Structures Group Manager

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From: Maass, Peter <Peter.Maass@dot.state.fl.us>
Sent: Wednesday, March 16, 2022 2:42 PM
To: Chris Cromwell <Chris.Cromwell@patelgreene.com>; Suarez, Cristina <Cristina.Suarez@dot.state.fl.us>
Cc: Dey, Gautom <Gautom.Dey@dot.state.fl.us>
Subject: RE: I-75 I-275 SR 56 SB CD Road

Cristina/Chris,
Please find attached the dgn file.

Peter Maass, PE, PTOE
District Seven Project Development and Analysis
peter.maass@dot.state.fl.us
813-975-6425

From: Maass, Peter
Sent: Wednesday, March 16, 2022 1:09 PM
To: Cromwell, Chris <Chris.Cromwell@PatelGreene.com>; Suarez, Cristina <Cristina.Suarez@dot.state.fl.us>
Cc: Dey, Gautom <Gautom.Dey@dot.state.fl.us>
Subject: I-75 I-275 SR 56 SB CD Road

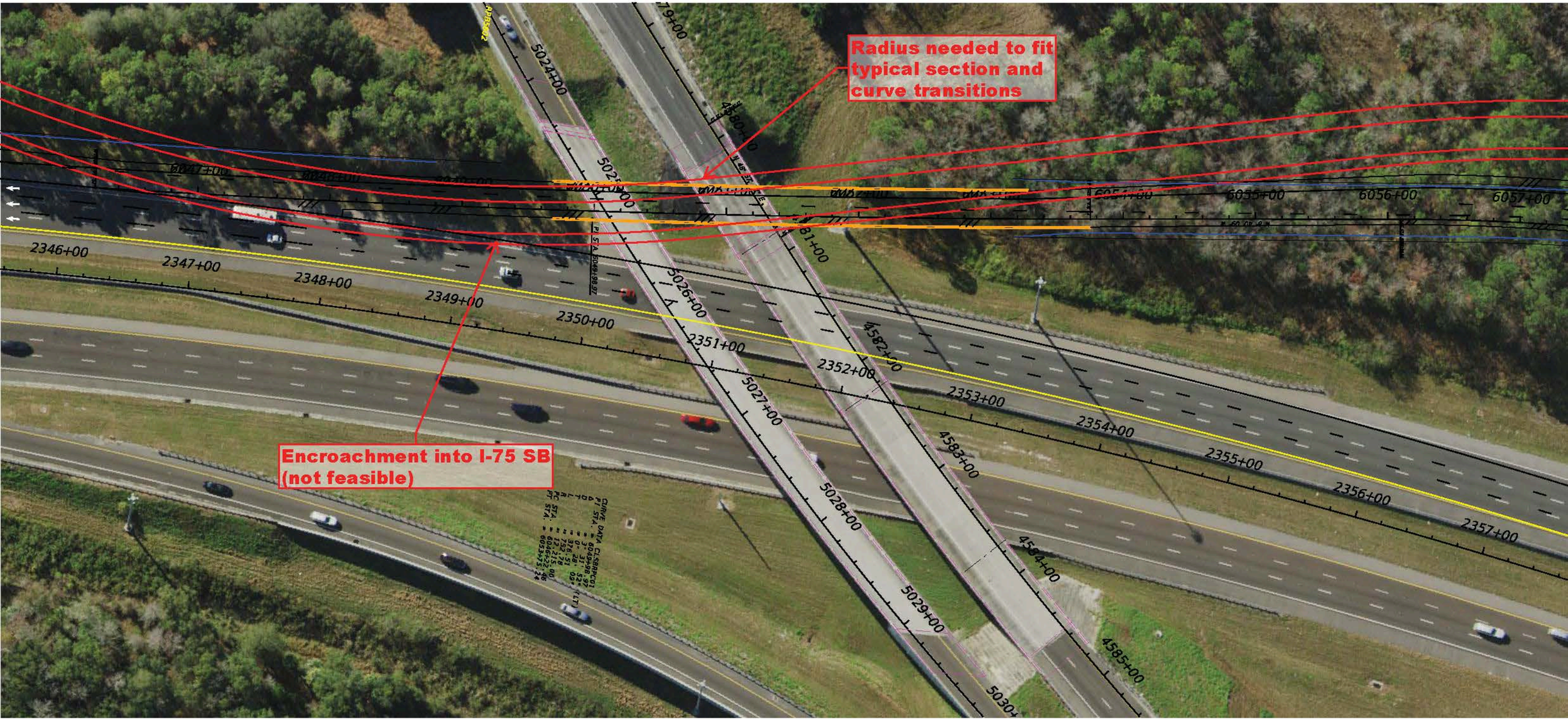
Cristina/Chris,
Please find attached the concept for the I-75 I-275 SR 56 SB CD Road with the one lane ramp underneath the NB I-275 flyover. I have made a request for the dgn files.

Thank you!

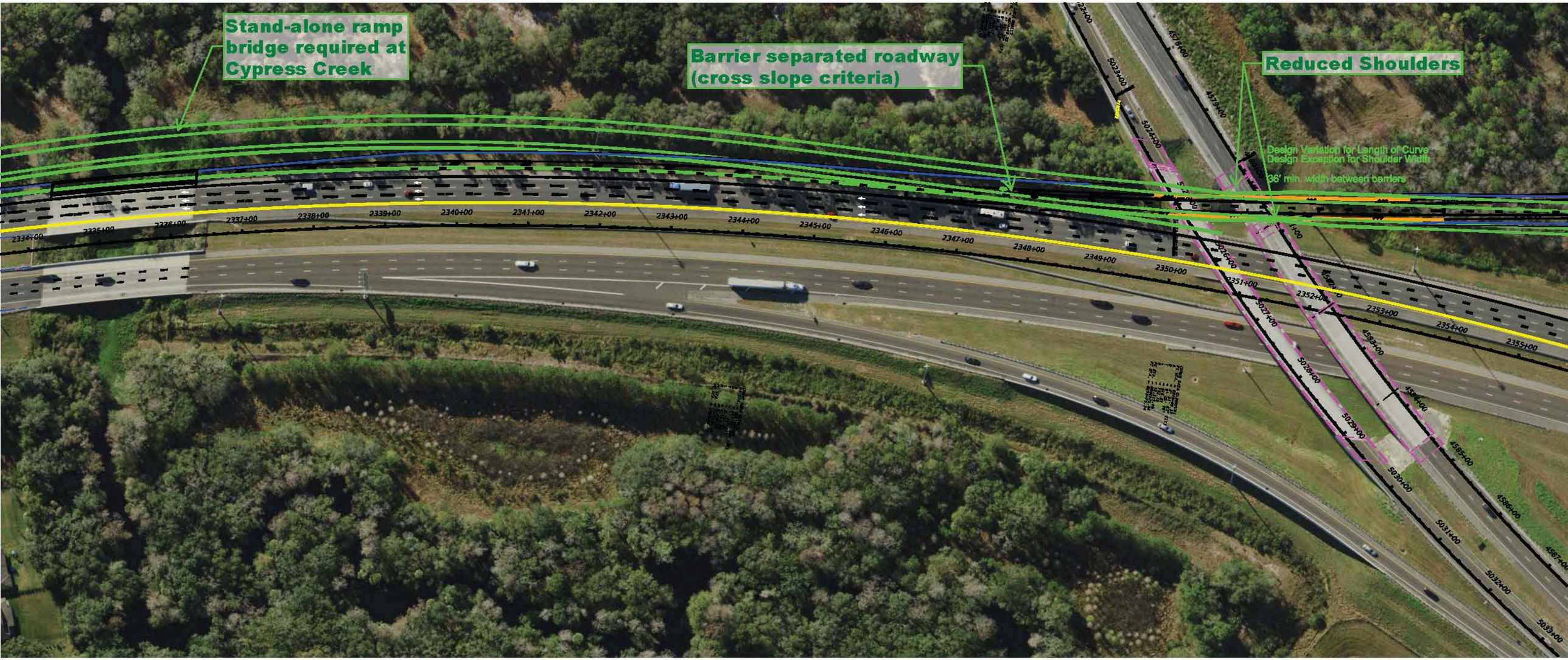
Peter Maass, PE, PTOE
District Seven Project Development and Analysis
peter.maass@dot.state.fl.us
813-975-6425

Correspondence 3:
Ramp Alternatives Meeting Follow-up

Two-Lane Ramp Initial Alternative (unfeasible)



Two-Lane Ramp Alternative 1



From: Adam Perez
To: Joseph Losaria
Cc: Chris Cromwell
Subject: RE: 2-Lane Ramp.....
Date: Tuesday, March 29, 2022 12:16:05 PM

Joe,
I have cleaned up the two-lane preferred alternative and saved it in a separate file here: \\pgadc02\projects (Tampa)\FDOT7\Projects\District Wide (Structures)\Temp Folder - I-75 & I-275 Apex\Struct
File Name: B1PlanElev01_Pref_Alt

All models have been deleted or marked as "old" except for the preferred alternative and only the proposed linework is live in the file. I also included some notes pertaining to the alignment, required Design Variation and Exception, and infrastructure that would be impacted whether constructing the one-lane or two-lane alternative. The referenced design file is the linework we received from the Department.

I did notice one Design Variation need that we didn't talk about yesterday and that is for the curve length of the NC curve under the bridges. It is just short of the required 900' for ramp curves, but this should not be an issue for approval.

Jill is more than welcome to contact me if she has any questions while finishing up the graphic.
Let me know if you need anything else.
Thanks!

Adam Perez, PE
Chief Engineer I

Patel, Greene & Associates, LLC (PGA)
12570 Telecom Drive, Temple Terrace, FL 33637
Office: (813) 978-3100, Ext. 308 | Cell: (813) 690-4330 | Email: Adam.Perez@patelgreene.com

---

From: Joseph Losaria <Joseph.Losaria@patelgreene.com>
Sent: Friday, March 25, 2022 10:56 AM
To: Adam Perez <Adam.Perez@patelgreene.com>
Cc: Chris Cromwell <Chris.Cromwell@patelgreene.com>
Subject: RE: 2-Lane Ramp.....

Adam,

Our field pictures are located here: T:\FDOT7\Projects\District Wide (Structures)\Temp Folder - I-75 & I-275 Apex\Field Pictures
Thanks.

Joseph Losaria, P.E.
VP/Structures Group Manager

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Office: (813) 978-3100, Ext. 302 | Cell: (813) 598-7557 | Email: Joseph.Losaria@patelgreene.com

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From: Adam Perez <Adam.Perez@patelgreene.com>
Sent: Friday, March 25, 2022 10:49 AM
To: Joseph Losaria <Joseph.Losaria@patelgreene.com>; Suarez, Cristina <Cristina.Suarez@dot.state.fl.us>; Dey, Gautom <Gautom.Dey@dot.state.fl.us>
Cc: Chris Cromwell <Chris.Cromwell@patelgreene.com>
Subject: RE: 2-Lane Ramp.....

Thanks Joe. I will take a look at this today. We will need most of the 1.5' of ground clearance over the pier footing for the pavement structure (asphalt and base), but I'll see what we can squeeze in there.
Stay tuned...

Adam Perez, PE
Chief Engineer I

Patel, Greene & Associates, LLC (PGA)
12570 Telecom Drive, Temple Terrace, FL 33637
Office: (813) 978-3100, Ext. 308 | Cell: (813) 690-4330 | Email: Adam.Perez@patelgreene.com

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Due to security concerns, we can no longer accept .zip attachments in emails.

From: Joseph Losaria <Joseph.Losaria@patelgreene.com>
Sent: Friday, March 25, 2022 10:44 AM
To: Suarez, Cristina <Cristina.Suarez@dot.state.fl.us>; Dey, Gautom <Gautom.Dey@dot.state.fl.us>; Adam Perez <Adam.Perez@patelgreene.com>
Cc: Chris Cromwell <Chris.Cromwell@patelgreene.com>
Subject: RE: 2-Lane Ramp.....

Adam,

We completed the field measurements on the existing I-75/I-275 bridge, see attached. This should provide the approximate vertical clearance available for the additional alternative we will evaluate that puts the proposed two-lane SBCD ramp underneath the pier cap. There is at least 16.7-ft +/- at the outer corner of the pier cap and this value decreases to about 15.1-ft at the cap/column interface. Also, we did verify we have around 1.5-ft of cover to the top of the spread footing. Based on these dimensions, it appears we have room to accommodate the 16.5-ft vertical clearance required for the two-lane ramp running underneath the pier cap.

Let us know if you have any questions and the outcome of your evaluation. Thanks.

Joseph Losaria, P.E.
VP/Structures Group Manager

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From: Suarez, Cristina <Cristina.Suarez@dot.state.fl.us>
Sent: Thursday, March 24, 2022 3:57 PM
To: Joseph Losaria <Joseph.Losaria@patelgreene.com>; Dey, Gautom <Gautom.Dey@dot.state.fl.us>
Subject: RE: 2-Lane Ramp.....

Great thanks

Cristina Kay Suarez
FDOT-District Seven
Structures Designer
813-975-6147
Strong people help themselves, STRONGER people help others!

From: Joseph Losaria <Joseph.Losaria@patelgreene.com>
Sent: Thursday, March 24, 2022 3:56 PM
To: Dey, Gautom <Gautom.Dey@dot.state.fl.us>
Cc: Suarez, Cristina <Cristina.Suarez@dot.state.fl.us>
Subject: RE: 2-Lane Ramp.....

We will be out there tomorrow morning (to let the rain die down some) instead to get some field measurements of the pier cap vertical clearance. Adam will then look at the ramp geometry tomorrow once we give him the measurements. I'll give you both an update once we have some additional information/alternatives. Might be early next week before we have some additional findings.

Thanks.

Joseph Losaria, P.E.
VP/Structures Group Manager

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From: Joseph Losaria
Sent: Thursday, March 24, 2022 2:05 PM
To: Dey, Gautom <Gautom.Dey@dot.state.fl.us>
Cc: Cristina.Suarez (Cristina.Suarez@dot.state.fl.us) <cristina.suarez@dot.state.fl.us>
Subject: 2-Lane Ramp.....

FYI

Joseph Losaria, P.E.
VP/Structures Group Manager

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